SUSITNA HYDROELECTRIC PROJECT

AERIAL PHOTOGRAPHY

PHOTOGRAMMETRIC MAPPING

AND

PHOTOGRAMMETRIC CONTROL SURVEYS

NOVEMBER 1982

PREPARED BY:
R&M CONSULTANTS, INC.

PREPARED FOR:
ACRES

ALASKA POWER AUTHORITY

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SUSITNA HYDROELECTRIC PROJECT

TASK 2 - SURVEYS
SUBTASK 2.08 - CLOSEOUT REPORT
AERIAL PHOTOGRAPHY, PHOTOGRAMMETRIC MAPPING AND PHOTOGRAMMETRIC GROUND CONTROL SURVEYS

NOVEMBER 1982

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ALASKA POWER AUTHORITY
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AND PHOTOGRAMMETRIC CONTROL SURVEYS

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1 - INTRODUCTION

This report presents a reference guide to the aerial photography, photogrammetric mapping and supportive control surveys completed for the Susitna Hydroelectric Project Feasibility Study.

North Pacific Aerial Surveys compiled an extensive photographic data base under the direction of R&M Consultants. Portions of this photographic data base were used to compile detailed contour manuscripts for specific requirements of project subtasks.

This report provides a narrative of procedures and instruments used to execute the aerial photography and photogrammetric mapping. It also provides an update of associated survey control work completed since the closeout report of Subtask 2.09 (Control Surveys). Appendix A contains the current horizontal control monument positional values with primary and secondary network station descriptions; Appendix B contains vertical benchmark elevations and descriptions; Appendix C contains a tabular list of available photographic coverage; Appendix D contains control network diagrams; Appendix E contains aerial photography index maps and Appendix F contains index maps of available contour mapping.

2 - NARRATIVE - AERIAL PHOTOGRAPHY

2.1 - Background

Due to the requirements of specific subtasks, the large size of the project study area and lack of availability of prior low-level aerial photography it was determined that a comprehensive photographic data base was required in order to provide consistency and continuity for the feasibility study. R&M chose North Pacific Aerial Surveys (N.P.A.S.) to provide the required new photography and photographic mapping. A photographic base has been established and cataloged which includes photography or mapping established by other agencies to supplement the photography and mapping initiated for this study.

2.2 - Aerial Photography

R&M worked closely with N.P.A.S. to establish flight line plans based on the mapping task requirements, vegetation foliage, existing or required survey control, land status and other existing photography.

After completing the flight plans, photogrammetric pre-marks were established. When weather conditions at the project site were correct, the pre-planned flight lines were flown by N.P.A.S. utilizing a Cessna 320D Aircraft with a Ziess RMK-A 15/23 precision mapping camera for obtaining the photography. Actual flight lines were noted and field annotated on U.S.G.S. quadrangle maps.

R&M also flew low-level uncontrolled photography utilizing a Cessna 206 and a 35 mm Olympus OM-2 camera. This photography was utilized for river channel monitoring and hydrological analysis.

All aerial photography available for this project is listed in Appendix C. The list details the date flown, scale, print type, agency responsible for acquisition and locatin of negatives. The locations of the flight lines are shown on the Aerial Photography Index Maps in Appendix E.

2.3 - Photogrammetric Mapping

Topographic mapping for the proposed reservoir areas, access corridors and proposed facilities areas was required during the feasibility study. 26 sheets of 1"=200', 10' contour interval mapping covering the area near the Watana Damsite were previously mapped by the U.S. Army Corps of Engineers (U.S.C.E.) in 1978. After field checking the survey monuments established in conjunction with the U.S.C.E. mapping (see Subtask 2.09 - Closeout Report) it was determined that the mapping datum used for the U.S.C.E. contour maps would match the survey control datum established in Subtask 2.09 and that this area would not have to be re-mapped. The original U.S.C.E. mylars were reduced to 1"=400' to provide consistency with the new mapping.

N.P.A.S. provided contour mapping at a scale of 1"=400' with 10' contour intervals for the Watana Reservoir, Watana Quarry Site, the Alternate Access Corridor from Hurricane to Watana and the Denali Access Corridor. To provide greater detail, an area around the Devil Canyon Damsite was mapped at a scale of 1"=200' with 5' contour intervals.

R&M's survey control was compiled by N.P.A.S. using a Kern PMG2 Point Transfer Instrument in conjunction with a Kern MK2 Monocomparitor, all bridging, aerotriangulation, and analysis was processed by an E.D.S. Point 4 minicomputer. Due to the high order and consistency of the survey base, minimal difficulties were encountered in bridging the photography.

Plotting the manuscripts was accomplished with either a Kelsh stereoplotter or a Kern P62 AT-DC2 steroplotter. Plotting of the Devil Canyon Reservoir was done by Air Photo Tech Inc. (A.P.T.) using the plates bridged by N.P.A.S. A.P.T. was used to minimize delays in the completion of the mapping. All plotting was done to exceed National Mapping Standards. Pencil manuscripts on 6 mil mylar was delivered as an

end product. Direct Positive Mylars (DPM) were made to provide second-generation originals.

An index to the available topographic mapping generated is included in Appendix F.

3 - NARRATIVE - CONTROL SURVEYS

3.1 - Background

The precise horizontal and vertical network established by R&M under Subtask 2.09 was the basis of survey control for all photogrammetric mapping. The procedures, techniques and results of this network summarized in the Subtask 2.09 closeout report. Values for those stations remain unchanged.

The horizontal and vertical network was expanded in order to provide controlled photography in areas which were selected for possible topographic mapping. Additional specific task locations such as geologic test holes, hydrological investigations and seismic refraction lines were also added to the field control survey data base.

3.2 - Horizontal Network

The Susitna horizontal network currently consists of:

1. a primary control network consisting of 17 second-order, class I control points;

2. a secondary control network consisting of 224 second-order, class II control points, 151 of these are new since the close-out of Task 2.09;

3. additional control consisting of 88 third-order, class I control points, 29 of these are new since the close-out of Task 2.09;

4. 239 supplemental third-order, class II control points;

5. 9 fourth-order doppler satelite position control points; and

6. 97 fourth-order inertial positioning system control points.

The primary and secondary control networks established and reported in the Subtask 2.09 closeout report remained unchanged.

The additional survey control points required since the Subtask 2.09 completion were based on those networks. 34 traverse lines and 36 closed loops were established to provide control expansion to the required areas. One second-order class II traverse was run north from station Bulkey connecting to the NGS first-order network stations Brusk and Talus near the Denali highway. These NGS stations positions were held fixed in addition to the existing network for the adjustment.

R&M used second-order, class II; third-order, class I and third-order, class II techniques as set forth in the Standards for the Classification of

Geodetic Control prepared by the National Geodetic Survey (NGS) and shown in Tables 3.1 and 3.2.

Wild T-2 theodolites, HP 3808 laser distance measuring devices, and HP 3805 infrared, distance measuring devices were used on all surveys executed since the Subtask 2.09 closeout report.

Monumentation consisted of a 5/8 inch steel rod driven 26 to 28 inches into the ground with a self-identifying 3¼-inch aluminum cap crimped on top of the rod and protruding 2 to 4 inches above the surface. A 2x2 inch florescent orange sight post, 8 feet long, was plumbed and guyed over each station monument. A 6-foot metal fence post with a silk-screened witness sign was set adjacent to each monument.

A weighted simultaneous least-squares adjustment based on observation equations was made of all horizontal surveys using the technique of "variation of coordinates". The reference surface used in the adjustments is geodetic, using the parameters of Clarks Spheroid of 1866 and the North American Datum of 1927. An observation equation, containing the weight of measurement, was formed for each observation. The weights are inversely proportional to the standard deviations of the observations which are based on the instrument proportional part error, the instrument standard error, the length of the observed line, the set-up error, and the number of observations. All measurements were adjusted simultaneously in accordance with the weight of the observation.

The adjustment was run several times using varied parameters in order to evaluate the strength of the data. A statistical evaluation of the horizontal network adjustment was performed, and it was found that the positional accuracies exceeded all required closures. Data concerning the survey closures, the adjustment evaluation and any other data related to the surveys is available at R&M's Anchorage office.

R&M determined that the survey control for the powerline corridors linking Anchorage to Willow and Healy to Fairbanks would be performed most economically using satelite doppler and inertial positioning techniques. This would still provide accuracies adequate for future topographic mapping.

Due to the familiarity and past performance of International Technology, limited (ITECH) in this type of positioning, R&M subcontracted this control work to ITECH

All control points were set by R&M and conform to the previously described monument type but without the guyed sight posts.

ITECH chose to use doppler satellite receivers and the translocation technique for establishing control for their Ferranti Mark II Inertial Land Survey System. This technique involved placing one Magnavox 1502 Geocevier at a known location with a given datum, while a second unit successively occupies the various unknown stations comprising the network. Data taken simultaneously post-processed utilizing the Magnavox MAGNET programs run on an HP 1000 mini-computer. National Geodetic Survey (NGS) data for horizontal stations Isle, Bullion-R.M. 1, Willow, Bald Mountain, Garner, Chena West Base and vertical benchmarks C74, E104 and C4 were used to constrain the satellite positioning.

After control was translocated to nine control stations, ITECH used the Ferranti system mounted in a Hughes 500 helicopter to determine positions on the remaining control stations. Two separate missions (two readings on each mission) were flown to provide four observations on each station. The results were post processed using the HP 1000 and Sheltech Canada computer programs to provide proper data smoothing and corrections for system misalignment and drift.

R&M was provided with a job report and values for each station observed. ITECH reported that all positions were accurate to within 1 meter horizontally and vertically.

R&M choose to field spot-check the results provided for assurance of the claimed accuracy. Four traverse loops were run through three ITECH control points, and three NGS first-order triangulation stations using second-order, class I procedures and equipment. A doppler control station 6H-2(DP) was tied-through during this audit. This was a control station used for adjoining work that ITECH was performing for another job and is not an R&M station. The results of the comparative positions between NGS and ITECH values and R&M's audit are listed in Table 3.3. The list shows the accuracies to be within the claimed values.

3.3 - Vertical Network

The precise vertical control network and vertical angle benchmarks reported in the Subtask 2.09 closeout report remain unchanged. In addition, all new horizontal control points previously described in Section 3.2 have had a fourth-order elevation established. For all R&M tied horizontal control points this elevation was established using the procedures described in the Subtask 2.09 report. All control points for the transmission line corridors for Anchorage to Willow and Healy to Fairbanks and elevations were determined in by the doppler or inertial observations.

R&M also established 334 third and fourth-order vertical benchmarks in conjunction with the hydrologic cross-sections of the Susitna River. These benchmarks were leveled through existing first-order N.G.S. benchmarks along the Alaska Railroad. All leveling consisted of new spur loops and no interconnections between existing NGS benchmarks were made. The location of these benchmarks are shown on the Hydrographic River Maps of the Susitna River prepared by R&M and included in Subtask 216 closeout report.

3.4 - Summary

R&M has established a precise horizontal and vertical control network consisting of the following permanently monumented control points;

1. 52 first-order, class I vertical benchmarks;

2. 334 third and fourth-order vertical benchmarks;

3. 17 second-order, class I horizontal control stations and vertical angle benchmarks;

4. 224 second-order, class II horizontal control stations and vertical angle benchmarks;

5. 88 third-order, class I horizontal control stations and vertical angle benchmarks.

6. 239 supplemental third-order, class II horizontal control stations and vertical angle benchmarks;

7. 9 fourth-order doppler satelite horizontal and vertical control stations; and

8. 97 fourth-order inertial positioned horizontal and vertical control stations.

The appendices contain complete coordinate listings and index maps for all horizontal points listed above. Station descriptions for the primary and secondary horizontal control network stations is included in Appendix A.

The horizontal coordinate lists in Appendix A are broken into alphanumerically ordered sublists, each sublist representing a separate

phase of the surveys. The coordinates listed for the horizontal stations in Appendix A are:

1. geodetic coordinates (north latitude and west longitude);

2. Alaska State Plane Coordinate System, Zone 4 coordinate (a local transverse mercator projection) in feet; and

3. elevations in feet.

Horizontal coordinates are based on the North American Datum of 1927 using Clarks Spheriod of 1866. All Alaska State Plane Coordinates and elevations are given in U.S. survey feet. Elevations are based on NGS mean sea-level datum which approximates the U.S. sea-level datum of 1929.

Appendix B contains elevations in both U.S. Survey feet and meters, station descriptions, and station photographs for all first-order, class I benchmarks established. Elevations and station locations for the fourth-order benchmarks are also listed in Appendix B.

All first-order vertical benchmarks and all horizontal control stations except for the seismic, test hole and airstrip control are plotted on the horizontal and vertical control index maps, in Appendix D.

TABLE 3.1

STANDARDS FOR THE CLASSIFICATION OF GEODETIC CONTROL*

Horizontal Control

Classification	*First-Order*	*Second-Order*		*Third-Order*	
		Class I	*Class II*	*Class I*	*Class II*
Relative accuracy between directly connected adjacent points (at least)	1 part in 100,000	1 part in 50,000	1 part in 20,000	1 part in 10,000	1 part in 5,000

Vertical Control

Classification	*First-Order*		*Second-Order*		*Third-Order*
	Class I	*Class II*	*Class I*	*Class II*	
Relative accuracy between directly connected points or benchmarks (standard error)	0.5 mm $\sqrt{K}$	0.7 mm $\sqrt{K}$	1.0 mm $\sqrt{K}$	1.3 mm $\sqrt{K}$	2.0 mm $\sqrt{K}$

(K is the distance in kilometers between points.)

* From Classification, Standards of Accuracy, and General Specifications of Geodetic Control Surveys; U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Survey, 1980.

TABLE 3.2*
TRAVERSE

Classification	*First-Order*	*Second-Order*		*Third-Order*	
		Class I	*Class II*	*Class I*	*Class II*
Recommended spacing of principal stations	Network stations 10-15 km Other surveys seldom less than 3 km.	Principal stations seldom less than 4 km except in metropolitan area surveys where the limitation is 0.3 km.	Principal stations seldom less than 2 km except in metropolitan area surveys where the limitation is 0.2 km.	Seldom less than 0.1 km in tertiary surveys in metropolitan area surveys. As required for other surveys.	
Horizontal directions or angles[2]					
Instrument	0".2	0".2	0".2	1".0	1".0
Number of observations	16	8 or 12	6 or 8	4	2
Rejection limit from mean	4"	4" or 5"	4" or 5"	5"	5"
Length measurements					
Standard error[3]	1 part in 600,000	1 part in 300,000	1 part in 120,000	1 part in 60,000	1 part in 30,000
Reciprocal vertical angle observations[4]					
Number of and spread between observations	3 D/R—10"	3 D/R—10"	2 D/R—10"	2 D/R—10"	2 D/R—20"
Number of stations between known elevations	4-6	6-8	8-10	10-15	15-20
Astro azimuths					
Number of courses between azimuth checks[7]	5-6	10-12	15-20	20-25	30-40
No. of obs./night	16	16	12	8	4
No. of nights	2	2	1	1	1
Standard error	0".45	0".45	1".5	3".0	8".0
Azimuth closure at azimuth check point not to exceed[8]	1".0 per station or 2" $\sqrt{N}$	1".5 per station or 3" $\sqrt{N}$. Metropolitan area surveys seldom to exceed 2".0 per station or 3" $\sqrt{N}$	2".0 per station or 6" $\sqrt{N}$. Metropolitan area surveys seldom to exceed 4".0 per station or 8" $\sqrt{N}$	3".0 per station or 10" $\sqrt{N}$. Metropolitan area surveys seldom to exceed 6".0 per station or 15" $\sqrt{N}$	8" per station or 30" $\sqrt{N}$
Position closure after azimuth adjustment	0.04m $\sqrt{K}$ or 1:100,000	0.08m $\sqrt{K}$ or 1:50,000	0.2m $\sqrt{K}$ or 1:20,000	0.4m $\sqrt{K}$ or 1.10,000	0.8m $\sqrt{K}$ or 1:5,000

* From Classification, Standards of Accuracy, and General Specifications of Geodetic Control Surveys; U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Survey, 1980.

TABLE 3.3

RESULTS OF INERTIAL POSITIONING AUDIT

NGS FIRST ORDER STATION INVERSES

STATIONS	RECORD DISTANCE (GRID)	R&M FOUND DISTANCE (GRID)	DIFF.	PRECISION
Garner-Suntrana	38841.449	38840.469	0.980	39,634
Garner-Walker	48771.771	48770.238	1.533	31,815
Garner-Rex	108968.303	108965.179	3.124	34,881
Suntrana-Walker	57519.578	57518.019	1.559	36,895
Suntrana-Rex	116080.793	116078.250	2.543	45,647
Walker-Rex	61373.252	61371.857	1.395	43,995

COMPARATIVE INVERSES BETWEEN ITECH CONTROL POINTS

STATIONS	ITECH	R&M	DIFF.	PRECISION
6H-2 - 11-809F	53175.949	53176.346	0.397	133,945
6H-2 - 10-828F	66988.116	66990.234	2.118	66,988
6H-2 - 8-935F	127365.853	127365.102	0.751	169,594
11-809F- 10-828F	14279.198	14280.647	1.449	14,279
11-809F- 8-935F	74501.549	74500.288	1.261	59,080
10-828F- 8-935F	60412.054	60409.187	2.867	21,071

R&M POSITION TO ITECH POSITION INVERSE

STATION	BEARING (GRID)	DISTANCE (GRID)
8-935F	N74°29'46"E	0.435
10-828F	S22°41'29"E	2.928
11-809F	S15°49'15"W	1.644
6H-2 (DP)	S17°48'28"W	1.119

APPENDIX A

HORIZONTAL CONTROL STATIONS

3. HORIZONTAL CONTROL STATION DESCRIPTION INDEX
(Order Alphanumerically by Survey Phase)

3. HORIZONTAL CONTROL STATION DESCRIPTION INDEX

CONTROL STATION COORDINATE LISTING

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
ELEVATIONS ARE LOCAL MEAN SEA LEVEL DATUM BY V.A., DOPPLER OR INERTIAL
****

FIXED STATIONS -- N.G.S. FIRST-ORDER TRIANGULATION STATIONS

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
BRUSK	63 27' 14.6371"	148 25' 34.0780"	4953.0
CHUNILNA	62 42' 10.5540"	149 40' 42.2160"	3717.9
CLEAR	62 42' 03.5140"	149 25' 29.0930"	4154.7
CURRY	62 33' 23.6980"	149 38' 25.2140"	3631.0
INDIAN	62 52' 00.8921"	149 39' 33.9260"	4556.9
PORTAGE	62 54' 36.0010"	149 22' 50.8130"	4741.8
TALUS	63 21' 26.9620"	148 31' 46.2680"	5168.0

PRIMARY NETWORK -- R&M SECOND-ORDER, CLASS I HORIZONTAL STATIONS

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
BROWN	62 47' 52.6950"	147 44' 32.6536"	4725.6
BULKEY	62 53' 20.9084"	148 22' 38.1114"	3169.6
GOOSE	62 34' 38.4621"	147 43' 59.8592"	5604.6
GREBE	62 35' 27.7262"	148 47' 26.8058"	5849.5
HUB	62 40' 35.2360"	148 38' 32.8056"	5831.7
MARKUS	62 43' 13.7282"	148 25' 53.9068"	5132.2
MT. WATANA	62 43' 27.3620"	148 06' 58.0086"	6256.4
NICK	62 41' 38.1768"	147 47' 03.7365"	3606.0
OSHETNA	62 43' 18.8726"	147 20' 36.6694"	4498.3
PILCHCO	62 49' 22.3830"	148 56' 13.9580"	3782.4
SCOOTER	62 51' 27.2603"	148 01' 36.9688"	4855.7
WAR	62 53' 43.5012"	148 43' 58.2609"	4540.0
WINDUS	62 44' 26.5236"	147 33' 28.1573"	4190.4

SECONDARY NETWORK -- R&M SECOND-ORDER, CLASS II HORIZONTAL STATIONS

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
17-535F	63 23' 52.5570"	148 28' 09.8802"	2955.5
18-608F	63 21' 40.3448"	148 21' 54.5873"	2957.2
18-609F	63 22' 22.0824"	148 19' 25.0026"	2212.8
18-615F	63 20' 48.0980"	148 18' 03.6032"	2748.2
18-617F	63 21' 28.3323"	148 20' 25.1924"	2697.6
18-620F	63 20' 46.9028"	148 22' 01.6290"	4841.7
18-621F	63 19' 56.9617"	148 19' 51.1434"	3448.7
18-628F	63 19' 18.8430"	148 20' 01.6819"	3514.1

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
ELEVATIONS ARE LOCAL MEAN SEA LEVEL DATUM BY V.A., DOPPLER OR INERTIAL
****

SECONDARY NETWORK -- R&M SECOND-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
19-605F	63 17' 27.5381"	148 21' 00.1444"	3311.3
19-607F	63 16' 53.4192"	148 22' 34.9091"	3582.6
19-609BF	63 16' 42.5705"	148 20' 27.1262"	3345.2
19-609F	63 16' 57.1624"	148 18' 59.7409"	3234.0
19-617F	63 15' 46.2344"	148 20' 56.7298"	3942.8
19-627F	63 14' 04.2049"	148 16' 45.1230"	3256.7
19-633F	63 13' 57.7795"	148 19' 58.8459"	3899.7
20-613F	63 10' 48.7584"	148 14' 04.1522"	3240.1
20-614F	63 11' 03.2669"	148 15' 27.8594"	3278.9
20-623F	63 09' 58.8788"	148 16' 03.6791"	3862.5
20-624F	63 10' 15.2013"	148 13' 37.2522"	3289.6
21-505F	63 07' 21.9474"	148 10' 08.3742"	3465.9
21-520F	63 04' 29.3938"	148 09' 26.4329"	3578.3
21-521F	63 04' 41.3102"	148 07' 45.9504"	3429.0
21-528F	63 03' 49.6582"	148 08' 21.2084"	3299.4
21-532F	63 03' 29.2323"	148 10' 33.4379"	3467.2
21-601F	63 07' 13.4646"	148 13' 23.3023"	3507.5
22-1030F	62 58' 43.1517"	149 32' 55.8650"	3259.4
22-1123F	62 59' 18.2147"	149 35' 32.0155"	2156.0
22-1126F	62 58' 30.4480"	149 36' 25.2140"	1995.2
22-1132F	62 57' 40.3330"	149 41' 56.5925"	1474.9
22-1136F	62 57' 52.3140"	149 33' 10.4084"	3552.0
22-610F	63 01' 05.0853"	148 17' 05.0931"	3459.5
22-613F	63 00' 55.1819"	148 13' 33.7363"	3142.0
22-614F	63 00' 55.7893"	148 15' 28.6489"	3300.3
22-622F	62 59' 26.7259"	148 19' 02.7041"	2988.3
22-626F	62 59' 02.9003"	148 16' 32.5977"	3755.9
22-632F	62 58' 01.8301"	148 22' 59.9419"	3229.9
30-1112	62 42' 36.2330"	147 40' 41.6326"	2622.5
30-1209	62 42' 07.3878"	147 35' 35.2402"	2282.5
30-1211	62 42' 10.1385"	147 31' 50.8066"	2460.1
30-1212	62 42' 31.4016"	147 30' 47.1361"	2529.7
30-1213	62 41' 32.2997"	147 28' 21.5308"	2483.1
30-1215	62 41' 25.1279"	147 33' 51.9216"	2539.8
30-1217	62 41' 49.9897"	147 37' 37.0757"	2523.4
30-1303	62 42' 50.9808"	147 22' 44.9471"	4076.4
30-1312	62 41' 57.6979"	147 19' 18.5577"	3545.7
30-1317	62 41' 37.8362"	147 26' 27.8425"	2480.6
30-1320	62 40' 37.6266"	147 26' 07.3878"	2448.2
30-1325	62 39' 27.1334"	147 17' 56.2990"	2381.8
30-1326	62 39' 16.9300"	147 19' 47.0508"	2460.0
30-1328	62 40' 02.4308"	147 24' 52.1729"	2494.5

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
ELEVATIONS ARE LOCAL MEAN SEA LEVEL DATUM BY V.A., DOPPLER OR INERTIAL
****

SECONDARY NETWORK -- R&M SECOND-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
30-1329	62 39' 14.5218"	147 25' 26.1831"	2208.0
30-1332	62 38' 40.6981"	147 25' 36.7344"	2271.5
30-1333	62 38' 31.9758"	147 23' 49.7249"	2332.5
30-1335	62 38' 22.0160"	147 21' 00.0237"	2466.2
30-1403	62 43' 29.1083"	147 11' 33.4760"	2410.3
30-1408	62 41' 51.8960"	147 14' 48.1635"	2584.7
30-1410	62 42' 25.0776"	147 11' 43.7892"	2312.2
30-1421	62 40' 46.2644"	147 13' 57.1847"	2443.6
30-1430	62 39' 53.8305"	147 16' 33.7768"	2441.3
30-301	62 43' 03.5121"	149 11' 35.1514"	3815.7
30-302	62 42' 44.0269"	149 13' 15.8148"	3663.7
30-303	62 43' 11.1443"	149 15' 19.2880"	3982.4
30-310	62 42' 35.4408"	149 15' 32.5633"	3896.4
30-402	62 43' 15.9993"	149 01' 14.0200"	3030.1
30-404	62 43' 17.7384"	149 04' 33.9953"	3167.8
30-407	62 42' 28.3466"	149 09' 25.0029"	3060.9
30-408	62 41' 59.7939"	149 07' 24.4045"	2993.2
30-416	62 40' 58.1512"	149 06' 18.3329"	2999.6
30-418	62 41' 49.3472"	149 09' 16.8096"	3209.9
30-420	62 40' 27.6456"	149 06' 47.3031"	3174.5
30-421	62 40' 29.8041"	149 04' 56.9735"	3016.3
30-507	62 42' 22.8643"	148 57' 43.6398"	2307.7
30-510	62 42' 24.3227"	148 51' 51.3811"	1833.0
30-604	62 43' 21.1569"	148 42' 40.7460"	2396.4
30-605	62 43' 29.4347"	148 44' 10.8400"	2450.0
31-001	62 48' 18.8735"	149 32' 47.3678"	1353.9
31-008	62 47' 15.7520"	149 40' 46.3226"	766.0
31-009	62 47' 50.3494"	149 39' 32.5873"	753.7
31-011	62 47' 52.5033"	149 36' 05.4574"	731.4
31-016	62 46' 31.9264"	149 39' 02.3856"	1114.2
31-022	62 45' 55.6008"	149 38' 18.9969"	2572.0
31-025	62 44' 51.6026"	149 44' 07.5520"	663.8
31-030	62 45' 04.2636"	149 42' 32.2494"	667.9
31-031	62 44' 16.6558"	149 43' 15.0405"	687.4
31-032	62 43' 58.1967"	149 41' 06.1911"	3388.2
31-1006	62 47' 45.1377"	148 01' 30.1282"	2752.0
31-1010	62 47' 33.5666"	147 55' 13.5459"	2522.6
31-1016	62 46' 31.0246"	147 58' 09.6338"	2651.8
31-1024	62 45' 51.0154"	147 52' 43.9648"	3051.9
31-1116	62 46' 22.8390"	147 47' 04.0365"	2911.1
31-1124	62 45' 30.5762"	147 41' 31.8577"	2837.9
31-1128	62 44' 54.3891"	147 45' 58.5814"	2543.1

CONTROL STATION COORDINATE LISTING

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
ELEVATIONS ARE LOCAL MEAN SEA LEVEL DATUM BY V.A., DOPPLER OR INERTIAL
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SECONDARY NETWORK -- R&M SECOND-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
31-1136	62 44' 10.5559"	147 41' 19.1826"	2227.7
31-1231	62 44' 04.4717"	147 39' 19.9735"	2801.1
31-1433	62 43' 43.3330"	147 14' 04.1135"	2647.6
31-202	62 48' 11.1540"	149 23' 51.4464"	1408.8
31-211	62 47' 34.6319"	149 23' 49.6449"	2718.6
31-303	62 48' 38.9365"	149 14' 19.9034"	1734.2
31-304	62 48' 29.4751"	149 15' 42.7786"	1454.8
31-306	62 48' 50.7436"	149 20' 20.5736"	1504.6
31-307	62 47' 30.6382"	149 21' 17.3216"	2496.6
31-308	62 47' 36.1996"	149 19' 22.0761"	2422.8
31-309	62 47' 11.0091"	149 15' 55.8395"	2593.7
31-311	62 47' 52.0358"	149 12' 37.0241"	1834.5
31-313	62 46' 27.8387"	149 11' 23.8248"	3199.2
31-321	62 45' 21.4931"	149 17' 22.2960"	3037.4
31-334	62 44' 04.2415"	149 15' 08.5587"	3710.3
31-402	62 48' 06.6968"	149 00' 59.4113"	2176.1
31-405	62 48' 15.6640"	149 08' 10.9054"	1985.2
31-408	62 47' 37.9290"	149 06' 57.6969"	2464.1
31-411	62 47' 26.1414"	149 02' 08.0019"	2561.6
31-417	62 46' 37.5948"	149 07' 23.3667"	2420.4
31-419	62 46' 12.6187"	149 09' 15.1248"	3334.1
31-424	62 46' 22.8009"	149 00' 18.8035"	2129.4
31-431	62 44' 09.8387"	149 09' 05.1330"	3460.5
31-434	62 44' 02.4545"	149 03' 38.8088"	3213.9
31-507	62 47' 35.3872"	148 58' 51.6901"	2048.0
31-514	62 46' 41.5085"	148 49' 37.9022"	2296.6
31-517	62 46' 50.8986"	148 56' 46.3030"	2567.4
31-521	62 45' 48.2042"	148 53' 22.7477"	1905.5
31-521B	62 45' 24.3756"	148 55' 02.1574"	2306.2
31-524	62 45' 42.2259"	148 49' 00.0541"	1927.3
31-525	62 44' 35.1881"	148 48' 50.4100"	2035.3
31-528	62 44' 47.0512"	148 54' 30.3703"	2616.2
31-534	62 43' 43.4256"	148 52' 10.4178"	2210.3
31-534B	62 44' 12.3742"	148 52' 35.4828"	2369.1
31-612	62 47' 25.3189"	148 38' 18.9236"	2422.2
31-613	62 46' 53.9944"	148 37' 38.4393"	2644.0
31-615	62 46' 47.3878"	148 40' 46.1479"	1998.2
31-617	62 46' 36.9896"	148 44' 50.6822"	2104.4
31-628	62 44' 40.2808"	148 43' 11.3980"	2137.3
31-629	62 45' 10.3254"	148 44' 46.8885"	1913.7
31-634	62 44' 32.1714"	148 41' 02.2297"	2353.6
31-704	62 49' 07.7739"	148 32' 45.5246"	2158.9

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
ELEVATIONS ARE LOCAL MEAN SEA LEVEL DATUM BY V.A., DOPPLER OR INERTIAL
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SECONDARY NETWORK -- R&M SECOND-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME		NORTH LATITUDE	WEST LONGITUDE	ELEV.
31-704B		62 48' 22.8835"	148 31' 41.5892"	2602.0
31-704C		62 48' 10.6516"	148 31' 37.4604"	2523.3
31-706		62 48' 47.7660"	148 35' 35.4988"	2446.8
31-708		62 47' 28.5227"	148 33' 11.7338"	2520.7
31-709		62 47' 17.6988"	148 31' 24.9480"	2267.0
31-710		62 47' 57.0219"	148 30' 31.3955"	2352.4
31-717		62 46' 30.7452"	148 33' 32.8812"	2429.1
31-722		62 46' 00.8252"	148 29' 55.3597"	2321.7
31-733		62 44' 33.3030"	148 30' 40.2686"	2509.0
31-904		62 48' 07.7777"	148 09' 11.5235"	2254.9
31-913		62 46' 57.5236"	148 03' 51.1097"	2256.8
32-001		62 53' 27.4994"	149 33' 52.0088"	1419.2
32-010		62 52' 58.9669"	149 38' 09.4707"	4041.3
32-011		62 52' 58.6452"	149 34' 41.5718"	1259.2
32-012		62 53' 08.3924"	149 32' 46.4995"	1332.5
32-019		62 50' 36.4739"	149 42' 10.3874"	4439.0
32-023		62 51' 06.3958"	149 36' 12.5669"	1399.6
32-207		62 52' 28.9110"	149 31' 42.6959"	2374.1
32-212		62 53' 04.8075"	149 22' 13.2652"	2301.3
32-219		62 51' 15.6069"	149 32' 07.2268"	2237.2
32-220		62 51' 01.6664"	149 30' 21.5446"	2350.7
32-222		62 50' 38.0351"	149 26' 29.8708"	2203.7
32-223		62 51' 10.2091"	149 23' 54.0617"	1642.2
32-236		62 48' 44.5417"	149 21' 49.6025"	1741.1
32-314		62 51' 31.7429"	149 13' 01.7574"	2901.0
32-318		62 51' 35.9448"	149 20' 04.4388"	2442.0
32-325		62 50' 20.8207"	149 11' 30.2502"	2340.5
32-330		62 49' 40.2591"	149 19' 59.0578"	2206.8
32-330A		62 50' 03.4215"	149 21' 12.2721"	1700.7
32-331		62 49' 07.5211"	149 19' 52.6210"	1436.7
32-332A	RE-SET	62 49' 01.7957"	149 18' 24.6231"	1418.7
32-333		62 49' 13.7044"	149 16' 32.0088"	2015.8
32-408		62 52' 24.4037"	149 07' 25.0255"	3121.4
32-410		62 52' 51.8122"	149 03' 06.9362"	2486.5
32-416		62 51' 38.1189"	149 06' 46.0719"	2858.6
32-426		62 50' 08.0181"	149 01' 39.7292"	2548.1
32-431		62 48' 57.7501"	149 08' 51.8860"	2079.0
32-434		62 48' 59.5924"	149 03' 50.6030"	2151.8
32-501		62 53' 16.5848"	148 49' 29.0663"	3995.9
32-505		62 53' 40.6955"	148 57' 23.8224"	3665.8
32-511		62 52' 39.7163"	148 51' 12.9582"	3186.6
32-611		62 52' 28.6703"	148 39' 12.2102"	3020.7

CONTROL STATION COORDINATE LISTING

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
ELEVATIONS ARE LOCAL MEAN SEA LEVEL DATUM BY V.A., DOPPLER OR INERTIAL
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SECONDARY NETWORK -- R&M SECOND-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME		NORTH LATITUDE	WEST LONGITUDE	ELEV.
32-616		62 51' 38.8813"	148 43' 17.0506"	3015.0
32-617		62 51' 22.9161"	148 44' 05.1335"	2911.0
32-617B		62 52' 21.9418"	148 44' 55.7179"	3329.7
32-621		62 50' 54.5107"	148 43' 31.0450"	2758.4
32-623		62 50' 30.6681"	148 38' 45.4440"	2271.8
32-627		62 49' 52.5692"	148 40' 48.7264"	2496.9
32-703		62 53' 13.3510"	148 29' 14.2878"	2519.1
32-705		62 53' 26.4597"	148 34' 20.8914"	2758.2
32-720		62 51' 23.9791"	148 34' 31.4300"	2396.3
32-721B		62 50' 46.3847"	148 31' 34.3621"	2274.4
32-727		62 49' 56.1739"	148 29' 40.4620"	1955.2
32-728		62 50' 01.7608"	148 31' 47.1775"	2237.5
32-729	WA-5	62 49' 47.6865"	148 34' 11.8219"	2224.3
32-729A		62 49' 47.7202"	148 32' 55.4486"	2359.9
32-736		62 49' 27.4729"	148 27' 07.3315"	2092.3
32-822		62 50' 47.0063"	148 18' 14.0974"	2099.1
32-830		62 49' 48.3625"	148 24' 55.8168"	2182.5
32-833		62 49' 30.4891"	148 20' 49.6570"	2186.0
32-835		62 49' 17.4923"	148 15' 11.2399"	2159.3
32-929		62 49' 57.8089"	148 10' 56.4664"	2133.8
32-935		62 49' 09.0075"	148 06' 10.2111"	2420.6
33-013		62 57' 22.6826"	149 33' 31.2724"	2997.2
33-016		62 56' 42.1459"	149 40' 00.4599"	1536.9
33-021		62 55' 48.6943"	149 40' 13.5272"	1428.5
33-022		62 55' 42.5946"	149 37' 29.4816"	2221.1
33-024		62 56' 17.3741"	149 34' 53.0768"	1795.6
33-030		62 55' 11.9807"	149 42' 23.6201"	1317.5
33-031		62 54' 16.7358"	149 33' 07.7840"	3501.8
33-034		62 54' 38.0299"	149 37' 09.8880'	1340.4
33-036		62 54' 04.1265"	149 34' 43.9593"	1574.9
33-036		62 53' 58.6841"	149 33' 04.0706"	2904.3
33-529		62 55' 18.3953"	148 56' 46 1820"	2776.4
33-531		62 54' 39.8003"	148 57' 11.3492"	3089.4
33-532		62 54' 40.2748"	148 55' 39.6154"	3194.6
33-726		62 55' 17.8030"	148 28' 17.3971"	2950.3
33-734		62 54' 18.0732"	148 28' 32.6470"	2541.7
33-735		62 54' 32.9804"	148 26' 22.4453"	2642.4
33-817		62 57' 04.3591"	148 20' 27.0742"	3202.7
33-826		62 55' 20.1004"	149 00' 55.2870"	3676.7
33-830		62 55' 07.5974"	148 22' 50.9856"	3260.4
33-831		62 54' 10.3959"	148 22' 39.4415"	3367.6
DC-1		62 50' 21.8953"	149 19' 39.0996"	2600.9

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
ELEVATIONS ARE LOCAL MEAN SEA LEVEL DATUM BY V.A., DOPPLER OR INERTIAL
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SECONDARY NETWORK -- R&M SECOND-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
GOLD	63 02' 47.1344"	148 04' 20.7334"	4821.9
WA-3	62 48' 39.2931"	148 32' 18.0553"	2591.3
22-1126F	62 58' 30.4480"	149 36' 25.2140"	1995.2
32-001	62 53' 27.4994"	149 33' 52.0088"	1419.2

ADDITIONAL CONTROL -- R&M THIRD-ORDER, CLASS I HORIZONTAL STATIONS

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
21-615F	63 05' 31.7978"	148 18' 14.9548"	3934.9
21-624F	63 05' 28.0950"	148 14' 43.3718"	4843.9
21-627F	63 04' 13.3819"	148 18' 20.5736"	4291.1
22-1122F	62 59' 21.7297"	149 38' 23.3899"	1647.2
22-1128F	62 58' 45.0711"	149 38' 59.2403"	1675.9
29-1303	62 37' 45.2955"	147 22' 50.8732"	2583.7
29-1304	62 37' 58.4414"	147 24' 06.9572"	2540.3
29-1305	62 38' 00.7196"	147 26' 19.0419"	2563.1
29-1309	62 36' 35.5900"	147 24' 29.5444"	2540.4
29-1310	62 36' 53.4265"	147 22' 22.3004"	2587.7
30-1113	62 41' 14.6149"	147 40' 28.0505"	2976.1
30-1218	62 41' 44.8003"	147 39' 22.4415"	2678.1
30-1307	62 41' 56.4114"	147 28' 58.8458"	1990.2
31-1001	62 48' 16.8049"	147 52' 31.5105"	2745.5
31-1012	62 47' 40.8619"	147 52' 40.6781"	2463.9
31-1020	62 45' 13.4735"	147 59' 12.9956"	2805.2
31-1022	62 45' 24.6278"	147 55' 35.0816"	2644.2
31-1029	62 44' 44.9925"	147 59' 43.0434"	2889.1
31-1032	62 44' 17.1690"	147 59' 39.6388"	2733.7
31-1107	62 47' 29.8530"	147 51' 08.1688"	2389.5
31-402B	62 48' 47.6894"	149 02' 34.9781"	2407.8
31-407	62 47' 35.2827"	149 09' 34.8213"	2252.1
31-518	62 47' 04.9669"	148 58' 19.9643"	2173.3
31-519	62 45' 34.7436"	148 58' 53.6993"	2023.2
31-604	62 48' 20.2576"	148 42' 50.5214"	2217.0
31-607	62 47' 12.1257"	148 46' 53.1790"	2272.1
31-613	62 46' 53.9942"	148 37' 38.4425"	2644.9
31-614	62 46' 53.0431"	148 38' 30.2477"	2493.8
31-622	62 45' 02.1894"	148 41' 45.5581"	2293.9
31-623	62 45' 47.5231"	148 39' 39.9605"	2233.6
31-624	62 45' 46.7190"	148 37' 56.6504"	2181.8

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
ELEVATIONS ARE LOCAL MEAN SEA LEVEL DATUM BY V.A., DOPPLER OR INERTIAL
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ADDITIONAL CONTROL -- R&M THIRD-ORDER, CLASS I HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
32-226	62 50' 25.9024"	149 23' 30.0536"	1462.9
32-625	62 49' 55.1991"	148 37' 39.2941"	1973.4
32-711	62 52' 55.8849"	148 27' 36.5050"	2404.6
32-720	62 51' 23.9788"	148 34' 31.4290"	2396.3
32-721	62 50' 48.7564"	148 32' 27.1896"	2251.6
32-722	62 51' 02.7264"	148 28' 56.9147"	2385.5
32-723	62 51' 16.7835"	148 27' 15.4792"	2429.0
32-729B	62 49' 47.7187"	148 32' 55.4511"	2359.9
32-802	62 53' 13.0973"	148 17' 07.4226"	2495.0
32-810	62 52' 38.2302"	148 18' 58.8739"	2388.6
32-817	62 51' 34.9825"	148 22' 59.7311"	2449.4
32-833B	62 49' 00.5878"	148 20' 02.6783"	2271.4
32-901	62 53' 55.2934"	148 03' 57.1079"	3004.6
32-902	62 53' 54.1264"	148 06' 21.4224"	2434.8
32-906	62 53' 27.9889"	148 13' 16.7884"	2453.9
32-907	62 52' 35.0462"	148 13' 12.8666"	2331.7
32-910	62 52' 10.1807"	148 07' 43.5695"	2331.9
32-915	62 51' 42.8613"	148 06' 32.2845"	2472.1
32-915B	62 51' 42.8029"	148 07' 33.0277"	2532.2
32-919	62 50' 28.4238"	148 13' 07.7453"	2064.1
32-928	62 49' 51.2114"	148 08' 58.3453"	2174.9
33-834	62 54' 26.2027"	148 18' 06.6632"	2975.1
33-926	62 55' 21.4012"	148 04' 01.2224"	2466.7
33-928	62 55' 19.4384"	148 07' 43.8074"	2499.1
33-931	62 54' 16.6465"	148 12' 28.9437"	2477.4
33-933	62 54' 02.8595"	148 08' 01.1778"	2473.2
33-936	62 54' 26.1890"	148 03' 12.9779"	3626.9
DC-U1	62 48' 14.2038"	149 13' 16.8545"	994.9
DC-U2	62 48' 26.4687"	149 14' 56.2920"	964.8
DC-U3	62 48' 46.2940"	149 16' 01.2833"	946.7
DC-U4	62 49' 12.1147"	149 17' 59.0765"	927.3
DP-2	62 49' 29.4628"	148 33' 03.3145"	1531.7
DP-3	62 49' 28.5507"	148 32' 51.8857"	1521.3
DP-4	62 49' 28.0839"	148 32' 44.5609"	1552.9
DP-5	62 49' 27.0089"	148 32' 36.9291"	1563.0
DP-6	62 49' 28.6105"	148 32' 35.2384"	1653.4
DP-7	62 49' 30.4132"	148 32' 45.5637"	1698.8
DP-8	62 49' 31.0421"	148 32' 53.6352"	1720.2
KNOB	62 49' 36.8357"	148 30' 59.0958"	1695.2
LASC-1	62 49' 18.9524"	148 31' 43.5442"	1868.2
LASC-2A	62 49' 15.6679"	148 32' 28.0017"	1832.5
LASC-3	62 49' 20.9339"	148 32' 48.0894"	1729.0

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ADDITIONAL CONTROL -- R&M THIRD-ORDER, CLASS I HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
MAC	62 49' 36.3430"	148 31' 14.2360"	1467.9
RASC-1	62 49' 25.4370"	148 32' 12.4362"	1645.1
UP-1	62 49' 34.5938"	148 31' 29.1993"	1694.8
UP-2	62 49' 36.1851"	148 31' 24.1757"	1673.0
UP-3	62 49' 35.1296"	148 31' 22.0216"	1544.8
UP-4	62 49' 33.4828"	148 31' 25.1052"	1535.2
UP-5	62 49' 37.3476"	148 31' 21.6327"	1513.7
W-W1	62 49' 47.7309"	148 27' 56.9787"	1520.6
W-W2	62 49' 44.6501"	148 30' 01.2911"	1448.7
W-W3	62 49' 28.7079"	148 33' 01.9116"	1457.4
W-W4	62 49' 23.9125"	148 35' 22.9505"	1448.3
W-W5	62 49' 23.5359"	148 37' 44.4330"	1436.2
W-W6	62 48' 56.8412"	148 39' 53.5400"	1414.7
32-729C	62 49' 49.0703"	148 32' 34.8680"	2349.1
32-722B	62 50' 27.8027"	148 29' 52.4040"	2267.6

SEISMIC LINE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL STATIONS

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
SL 15-X PT704	62 49' 41.5895"	148 31' 52.3900"	2182.2
SL 15-X PT745	62 49' 54.6281"	148 31' 20.6358"	2163.0
SL 16-81 PT800	62 50' 04.8049"	148 30' 54.8619"	2206.6
SL 16-81 PT818	62 50' 08.6688"	148 30' 29.0491"	2219.5
SL 17 PT29	62 48' 59.4648"	149 18' 23.6564"	1462.9
SL 80-1 1-F5	62 49' 31.9478"	148 33' 28.7775"	2015.4
SL 80-1 PT386	62 50' 46.6688"	148 32' 17.7737"	2241.8
SL 80-1 TP-6	62 50' 02.5275"	148 33' 30.5076"	2212.9
SL 80-1 TP-8	62 50' 16.4993"	148 33' 07.9033"	2075.4
SL 80-11 TP-1	62 49' 40.1088"	148 36' 23.6937"	1471.1
SL 80-11 TP-2	62 49' 43.0344"	148 36' 17.2460"	1477.4
SL 80-12 N 80-12	62 49' 00 8216"	149 18' 29.2641"	1434.0
SL 80-12 TP-1	62 48' 58.4507"	149 18' 28.6597"	1409.2
SL 80-13 N 80-13	62 49' 01.1650"	149 18' 23.3884"	1414.1
SL 80-13 TP-1	62 48' 59.2960"	149 18' 22.3761"	1407.2
SL 80-2 TP-1	62 49' 35.8560"	148 32' 46.1722"	2094.5
SL 80-2 TP-4	62 49' 48.5094"	148 32' 46.2705"	2340.4
SL 80-2X PT345	62 50' 39.1759"	148 31' 12.0213"	2267.6
SL 80-3 N 80-3	62 49' 39.0120"	148 31' 50.1187"	2077.4
SL 80-3 S 80-3	62 49' 13.4423"	148 31' 50.4157"	2022.2

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
ELEVATIONS ARE LOCAL MEAN SEA LEVEL DATUM BY V.A., DOPPLER OR INERTIAL
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SEISMIC LINE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME		NORTH LATITUDE	WEST LONGITUDE	ELEV.
SL 80-6	E 80-6	62 49' 58.7822"	148 31' 01.6619"	2132.0
SL 80-6	W 80-6	62 49' 56.6511"	148 31' 26.4037"	2206.6
SL 80-7	N 80-7	62 50' 33.2506"	148 30' 25.6638"	2307.0
SL 80-7	TP-1	62 50' 16.9177"	148 30' 22.9787"	2251.4
SL 80-8	TP-1	62 50' 20.1044"	148 28' 45.4428"	2176.9
SL 80-8	TP-2	62 50' 13.0165"	148 28' 45.6798"	2057.0
SL 80-9	S 80-9	62 49' 21.5989'	148 39' 24.0690"	1481.8
SL 80-9	SW 14-B	62 49' 21.9674"	148 39' 24.5562"	1486.5
SL 81-1	102LB	62 49' 45.2756"	148 28' 21.6088"	1524.4
SL 81-1	102RB	62 49' 48.6240"	148 28' 25.0167"	1527.8
SL 81-10	TP251	62 45' 35.5843"	148 43' 30.7246"	1361.1
SL 81-10	TP252	62 45' 37.0452"	148 43' 32.3964"	1368.1
SL 81-11	118LB	62 45' 43.4429"	148 45' 52.9191"	1350.3
SL 81-11	TP301	62 45' 48.5978"	148 45' 50.9176"	1346.2
SL 81-12	119LB	62 45' 58.8070"	148 47' 17.9922"	1340.4
SL 81-12	119RB	62 46' 04.3541"	148 47' 15.5314"	1347.1
SL 81-2	103RB	62 49' 54.8894"	148 29' 22.9704"	1516.3
SL 81-2	119LB	62 49' 40.8998"	148 29' 23.3817"	1500.8
SL 81-3	104RB	62 49' 43.8307"	148 30' 36.4159"	1492.2
SL 81-3	TP92	62 49' 43.3735"	148 30' 36.7493"	1479.3
SL 81-4	105LB	62 49' 32.8045"	148 31' 10.7346"	1478.6
SL 81-4	TP101	62 49' 33.0290"	148 31' 12.3049"	1467.5
SL 81-4	TP81	62 49' 41.2952"	148 31' 13.8767"	1468.1
SL 81-5	105RB	62 49' 34.1929"	148 31' 20.7253"	1489.8
SL 81-6	106RB	62 49' 26.9504"	148 31' 50.4349"	1488.4
SL 81-6	TP144	62 49' 24.8197"	148 31' 47.3968"	1463.8
SL 81-7	TP408	62 49' 05.7142"	148 39' 35.7662"	1416.7
SL 81-7	TP415	62 49' 01.9477"	148 39' 36.0841"	1418.2
SL 81-8	115LB	62 48' 07.8414"	148 40' 26.6026"	1413.6
SL 81-8	115RB	62 48' 08.3742"	148 40' 39.5137"	1399.7
SL 81-8	TP83	62 49' 01.3048"	148 40' 06.8726"	1410.2
SL 81-9	TP201	62 46' 07.4287"	148 43' 01.5719"	1368.6
SL 81-?	TP202	62 46' 25.9868"	148 42' 56.5818"	1378.4
SL BH-11	PT600	62 49' 41.2210"	148 31' 41.0582"	2062.8
SL BH-11	PT618	62 49' 45.0822"	148 31' 31.9612"	2109.7
SL BH-12	PT206	62 49' 04.7713"	148 32' 28.4896"	2190.5
SL BH-12	PT256	62 49' 13.7663"	148 32' 09.6678"	1943.1
SL QSB	PT400	62 50' 25.2888"	148 28' 25.7430"	2214.8
SL QSB	PT475	62 50' 12.5059"	148 29' 56.9973"	2197.5
SL SW-1X	PT101	62 49' 13.1408"	148 32' 14.0157"	1949.8
SL80-2X	TP	62 50' 24.0223"	148 31' 47.3107"	2199.3
SL81-15X	PT745	62 49' 54.6281"	148 31' 20.6358"	2163.0

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
ELEVATIONS ARE LOCAL MEAN SEA LEVEL DATUM BY V.A., DOPPLER OR INERTIAL
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SEISMIC LINE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
SL80-2 N END	62 50' 17.4780"	148 32' 00.1975"	2158.7
SL82-1 N END	62 49' 34.9951"	148 32' 34.7160"	2065.0
SL82-1 S END	62 49' 24.4031"	148 32' 35.8713"	1456.0
SL82-2 NE END	62 49' 25.8627"	148 32' 13.7710"	1667.0
SL82-2 SW END	62 49' 24.7617"	148 32' 24.6426"	1587.3
SL82-3 N END	62 49' 30.6685"	148 32' 44.0432"	1724.4
SL82-3 S END	62 49' 26.4118"	148 32' 46.5486"	1461.5
SL82-4 SW END	62 49' 28.7950"	148 32' 58.7780"	1474.7
SL82-4 NE END	62 49' 24.6771"	148 32' 20.0297"	1635.0
SL82-5 NE END	62 49' 47.9881"	148 31' 43.1092"	2139.0
SL82-5 SW END	62 49' 33.5872"	148 32' 46.0362"	1986.6
SL82-6 W END	62 49' 31.0468"	148 32' 55.9857"	1712.8
SL82-6 NE END	62 49' 26.8241"	148 32' 22.6025"	1708.5
SL82-7 NE END	62 49' 31.0154"	148 32' 49.3908"	1715.8
SL82-7 SW END	62 49' 29.6649"	148 32' 55.2907"	1605.1
SL82-8 N END	62 49' 38.8961"	148 32' 52.0179"	2131.5
SL82-8 S END	62 49' 30.1338"	148 32' 56.7480"	1640.1
GP2 SL82-9NE END (GP1 NT)	62 49' 31.4847"	148 32' 06.3002"	1872.1
SL82-9 SW END	62 49' 29.0563"	148 32' 27.2899"	1774.6
SL82-10 N END	62 49' 41.3928"	148 31' 41.2694"	2067.6
SL82-10 S END	62 49' 30.1747"	148 31' 42.3881"	1701.2
SL82-11 NE END	62 49' 33.5811"	148 31' 32.9785"	1714.5
SL82-11 SW END	62 49' 27.3289"	148 32' 02.6424"	1617.0
SL82-12 NE END	62 49' 19.4323"	148 31' 05.0218"	2078.1
SL82-12 SW END	62 49' 12.7344"	148 31' 52.7441"	2037.7
SL82-13 NE END	62 49' 42.2689"	148 31' 37.1985"	2053.0
SL82-13 SW END	62 49' 35.3081"	148 32' 04.6755"	2016.2
SL82-14 NE END	62 49' 57.4778"	148 32' 03.0403"	2201.0
SL82-14 SW END	62 49' 34.7878"	148 32' 47.1271"	2037.6
SL82-15 NE END(KNOB)	62 49' 36.8357"	148 30' 59.0958"	1695.2
SL82-15 SW END	62 49' 28.7177"	148 31' 15.4904"	1535.2
SL82-16 N END	62 50' 24.2599"	148 31' 46.8122"	2204.0
SL82-16 SW END	62 50' 16.2650"	148 32' 02.3989"	2155.7
SL82-17 NE END	62 50' 40.1740"	148 32' 34.6876"	2172.0
SL82-17 SW END	62 50' 07.4879"	148 34' 03.7364"	2074.2
SL82-18 NE END	62 50' 51.7635"	148 31' 28.3352"	2276.8
SL82-18 SW END	62 49' 58.5910"	148 33' 00.5292"	2242.3
SL82-19 E END	62 50' 04.8117"	148 30' 54.8608"	2206.8
SL82-19 W END	62 49' 53.9886"	148 31' 22.0531"	2200.4
SL82-20 NW END	62 50' 31.0680"	148 32' 57.0679"	1994.7
SL82-20 SE END	62 50' 04.8117"	148 30' 54.8608"	2206.8
SL82-21 E END	62 50' 12.5048"	148 29' 57.0024"	2197.6

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
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SEISMIC LINE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
SL82-21 W END	62 50' 07.9893"	148 30' 20.4179"	2185.1
SL82-22 N END	62 50' 28.0473"	148 29' 31.5316"	2270.6
SL82-22 S END	62 49' 57.3577"	148 29' 44.2836"	1981.1
SL82-FL1 N END	62 49' 20.3043"	148 28' 06.7023"	2180.6
.....TRAV PT	62 46' 18.4611"	148 23' 32.7296"	2506.4
SL82-FL1 S END	62 46' 15.7026"	148 23' 28.2045"	2539.4
SL82-FL2 W END	62 49' 22.9483"	148 21' 49.4134"	2202.2
'''''TRAV PT	62 48' 11.9293"	148 16' 57.6185"	2408.0
TRAV PT	62 48' 10.8691"	148 16' 53.2795"	2408.8
SL82-FL2 E END	62 48' 06.6802"	148 16' 34.8382"	2329.3
SL82-FL3 N END	62 48' 23.5334"	148 30' 02.0602"	2331.2
SL82-FL3 S END	62 47' 33.8485"	148 28' 32.0279"	2317.9

TEST HOLE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL POSITIONS

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
32-331B	62 48' 55.2929"	149 19' 50.4800"	1422.0
32-332B	62 48' 56.7361"	149 19' 02.0090"	1405.3
32-332C	62 49' 01.3049"	148 40' 06.8728"	1361.4
32-332D	62 49' 41.3038"	148 31' 13.8870"	1338.3
32-332E	62 49' 08.4011"	149 18' 20.9656"	1209.8
32-332Z	62 48' 59.3013"	149 18' 24.1359"	1418.1
AH D-1	62 50' 24.4412"	148 30' 26.0150"	2261.7
AH D-10	62 50' 55.2268"	148 29' 25.2415"	2357.8
AH D-11	62 50' 54.5355"	148 28' 50.5544"	2358.0
AH D-12	62 50' 50.9015"	148 28' 03.0246"	2337.9
AH D-13	62 51' 01.8509"	148 30' 11.0625"	2326.2
AH D-14	62 50' 50.2741"	148 30' 36.4642"	2272.7
AH D-2	62 50' 44.7571"	148 29' 30.4157"	2335.3
AH D-3	62 50' 47.0912"	148 28' 43.7869"	2339.9
AH D-4	62 50' 29.9221"	148 28' 45.8670"	2255.0
AH D-5	62 50' 07.4094"	148 30' 54.8775"	221.6
AH D-6	62 50' 21.3576"	148 30' 39.8280"	2262.9
AH D-7	62 50' 14.1220"	148 30' 18.3349"	2242.9
AH D-8	62 50' 28.4600"	148 30' 03.2632"	2276.1
AH D-9	62 50' 36.5430"	148 29' 27.2872"	2319.1
AH E-1	62 49' 08.6051"	148 39' 04.8495"	1424.5
AH E-2	62 49' 28.4108"	148 38' 10.8255"	1465.3
AH E-3	62 49' 34.4151"	148 37' 39.9507"	1456.1

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
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TEST HOLE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL POSITIONS
(Continued)

STATION NAME		NORTH LATITUDE	WEST LONGITUDE	ELEV.
AH E-4		62 49' 32.0356"	148 37' 07.6913"	1443.7
AH E-5		62 49' 36.8507"	148 36' 08.6632"	1580.5
AH E-5TP		62 49' 37.0223"	148 36' 09.2586"	
AH E-6		62 49' 16.0938"	148 38' 21.0555"	1436.8
AH E-6TP		62 49' 16.1265"	148 38' 21.5061"	1436.8
AH E-7		62 49' 40.1016"	148 36' 18.6225"	1469.3
AH E-8		62 49' 55.8323"	148 35' 56.4323"	1504.0
AH E-9		62 50' 01.0005"	148 35' 31.9641"	1524.8
AH G-1		62 49' 04.8467"	149 17' 58.7048"	982.3
AH G-10		62 49' 08.2440"	149 17' 56.8579"	980.0
AH G-4		62 49' 08.6546"	149 17' 51.6747"	983.1
AH G-9		62 49' 05.9994"	149 17' 56.9571"	982.0
AH H-1		62 45' 20.1404"	148 41' 49.2001"	2127.5
AH H-2		62 46' 08.9195"	148 41' 00.9143"	1970.9
AH H-3		62 45' 50.8244"	148 41' 21.6365"	2079.6
AH H-4		62 46' 02.5703"	148 40' 38.8904"	2064.5
AH H-5		62 45' 53.4545"	148 39' 18.6124"	2186.2
AH H-6		62 45' 47.2100"	148 37' 56.2539"	2181.0
AH H-7		62 45' 36.4272"	148 40' 48.0172"	2188.4
AH H-8		62 45' 36.5942"	148 41' 45.2037"	2093.5
BH 2	RE-TIE	62 49' 33.2884"	148 33' 09.1724"	1838.6
BH 3		62 49' 37.4730"	148 32' 24.5133"	2150.6
BH 6		62 49' 24.8976"	148 32' 21.8735"	1608.8
BH 8		62 49' 11.6932"	148 32' 17.6747"	1979.7
BH DC-1		62 49' 11.4259"	149 18' 24.8021"	1413.7
BH DC-2		62 49' 08.7376"	149 18' 21.1822"	1213.4
BH DC-3		62 48' 59.0067"	149 18' 26.0956"	1398.0
BH DC-4		62 48' 57.5921"	149 18' 23.8032"	1352.6
BH DC-5A		62 49' 06.9477"	149 18' 09.4983"	974.5
BH DC-5B		62 49' 06.9750"	149 18' 09.6725"	976.6
BH DC-7		62 48' 54.5994"	149 18' 20.8264"	1351.0
BH W-1		62 49' 35.1960"	148 32' 46.5861"	2049.7
BH W-12		62 49' 12.0617"	148 32' 16.9263"	1975.7
BH W-3		62 49' 37.4727"	148 32' 24.5467"	2150.7
BH W-4		62 49' 39.8254"	148 32' 38.0410"	2187.8
DH 21		62 49' 19.6442"	148 32' 18.2151"	1477.2
TP 1		62 48' 59.1686"	149 18' 23.5336"	1413.7
TP 9		62 49' 57.5126"	148 35' 15.2791"	1785.0
TP A		62 49' 22.2988"	148 38' 15.9509"	1458.1
TP B		62 49' 46.8581"	148 39' 15.3230"	2131.2
TP E-10A		62 49' 48.8543"	148 35' 57.6110"	1500.7
TP E-10B		62 49' 48.4913"	148 35' 57.9041"	1493.7

CONTROL STATION COORDINATE LISTING

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
ELEVATIONS ARE LOCAL MEAN SEA LEVEL DATUM BY V.A., DOPPLER OR INERTIAL
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TEST HOLE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL POSITIONS
(Continued)

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
TP E-11	62 49′ 56.7641"	148 35′ 41.8025"	1512.7
TP E-12	62 50′ 02.4509"	148 35′ 23.4659"	1534.9
TP E-14	62 49′ 55.7962"	148 35′ 56.3612"	1513.0
TP E-15	62 49′ 40.1450"	148 36′ 17.9824"	1468.3
TP E-16	62 49′ 39.5895"	148 36′ 32.0302"	1463.8
TP E-17	62 49′ 32.3855"	148 37′ 07.3561"	1441.7
TP E-18	62 49′ 34.4250"	148 37′ 40.0334"	1455.1
TP E-19	62 49′ 28.3979"	148 38′ 10.8238"	1464.7
TP E-2	62 49′ 19.5890"	148 38′ 59.9256"	1436.6
TP E-20	62 49′ 16.0342"	148 38′ 20.7482"	1435.0
TP E-21	62 49′ 08.5386"	148 39′ 05.3268"	1425.4
TP E-3	62 49′ 29.0533"	148 38′ 21.9007"	1464.2
TP E-4	62 49′ 23.7554"	148 38′ 24.1842"	1454.9
TP E-5	62 49′ 36.8571"	148 37′ 56.9084"	1470.1
TP E-6	62 49′ 27.6359"	148 37′ 41.1082"	1443.4
TP E-7	62 49′ 37.4473"	148 37′ 20.0593"	1450.7
TP E-8	62 49′ 31.9688"	148 36′ 23.1607"	1450.2
TP E-9	62 49′ 44.9438"	148 36′ 18.9658"	1476.7
BH W-3	62 49′ 37.4727"	148 32′ 24.5467"	2150.7
BH W-4	62 49′ 39.8254"	148 32′ 38.0410"	2187.8
AH15	62 50′ 50.5425"	148 30′ 09.7706"	2313.9
TPAH15	62 50′ 50.1674"	148 30′ 11.7112"	2322.4
AH16	62 50′ 28.0496"	148 29′ 31.9883"	2273.3
AH17	62 51′ 11.0459"	148 29′ 25.5559"	2386.0
TPAH17	62 51′ 01.7738"	148 29′ 42.6661"	2378.2
AH18	62 50′ 47.9412"	148 28′ 44.0102"	2343.7
TPAH18	62 50′ 53.6180"	148 27′ 55.9883"	2367.7
AH19	62 50′ 24.0247"	148 30′ 05.6150"	2264.1
AH20	62 50′ 12.1169"	148 32′ 10.8747"	2165.2
AH21	62 50′ 40.2232"	148 31′ 08.9443"	2277.6
TPAH21	62 50′ 40.0325"	148 31′ 09.6435"	2277.4
AH22	62 49′ 49.9738"	148 31′ 22.3768"	2095.4
AH23	62 50′ 23.4157"	148 32′ 17.2544"	2165.6
AH24	62 50′ 06.4823"	148 33′ 24.5588"	2169.5
TPAH24	62 50′ 04.7883"	148 33′ 23.1575"	2196.4
AH25	62 50′ 21.3277"	148 33′ 02.0184"	1990.3
TPAH25A	62 50′ 16.4599"	148 33′ 08.8068"	2082.0
TPAH25B	62 50′ 29.1442"	148 32′ 48.9882"	2105.6
AH26	62 50′ 01.1388"	148 31′ 29.6334"	2217.5
AH27	62 50′ 05.0420"	148 30′ 22.4310"	2151.7
TPAH27	62 49′ 22.6[illegible]3"	148 30′ 56.8516"	2086.3
AH28	62 50′ 20.8995"	148 29′ 40.6883"	2228.7

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
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TEST HOLE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL POSITIONS
(Continued)

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
AH29	62 51' 13.4984"	148 27' 38.0658"	2413.5
TPAH29	62 51' 13.5372"	148 27' 38.7982"	2414.6
AH30	62 50' 05.0885"	148 31' 26.8917"	2223.7
TPAH30A	62 50' 05.1852"	148 31' 37.5530"	2225.8
TPAH30B	62 50' 04.2035"	148 31' 31.3256"	2235.1
BH12	62 49' 12.0641"	148 32' 16.9328"	1975.4
WA16	62 51' 15.5788"	148 29' 13.1139"	2415.2
31-704D	62 48' 23.1868"	148 31' 34.8681"	2596.1
31-711	62 47' 10.2360"	148 26' 46.8136"	2386.8
SL80-2X TP	62 50' 24.0223"	148 31' 47.3107"	2199.3
SL81-15X PT745	62 49' 54.6281"	148 31' 20.6358"	2163.0
SL80-2 N END	62 50' 17.4780"	148 32' 00.1975"	2158.7

WATANA AIRSTRIP CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL POSITIONS

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
0+00	62 50' 02.6718"	148 31' 48.0829"	2236.6
32+00	62 50' 17.8965"	148 30' 47.7660"	2268.7
39+00	62 50' 21.2251"	148 30' 34.5684"	2269.2
60+00	62 50' 31.2144"	148 29' 54.9814"	2289.4

ITECH SURVEY CONTROL -- TRI-STATIONS RECOVERED & COORDINATES USED BY ITECH

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
BALD MOUNTAIN	62 18' 31.0960"	149 45' 08.2980"	
BULLION-R M.I.	61 43' 02.3980"	149 47' 04.8870"	
CHENA WEST BASE	64 51' 22.3530"	147 51' 43.4220"	463.8
GARNER	63 50' 04.6440"	148 58' 21.1050"	
ISLE	61 00' 59.6770"	149 44' 03.7520"	24.1
WILLOW	61 53' 08.1300"	149 41' 51.6210"	

CONTROL STATION COORDINATE LISTING

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
ELEVATIONS ARE LOCAL MEAN SEA LEVEL DATUM BY V.A., DOPPLER OR INERTIAL
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ITECH DOPPLER CONTROL -- DOPPLER SURVEY CONTROL STATIONS ESTABLISHED BY ITECH

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
1000(ITECH)	64 51' 22.2930"	147 51' 43.5630"	463.3
1001(ITECH)	64 10' 15.9420"	149 17' 16.5200"	818.2
1114(ITECH)	61 45' 40.7350"	150 02' 05.4390"	209.7
13-403/13403 ITECH	61 14' 22.4020"	149 59' 10.7260"	81.5
16-505/16505 ITECH	61 30' 32.2580"	150 13' 25.9700"	92.0
3-723F/3723F ITECH	64 38' 09.6180"	148 54' 00.4410"	529.1
612(ITECH)	63 51' 12.8300"	148 57' 37.3080"	1413.6
6515(ITECH)	63 43' 27.6780"	148 48' 42.5500"	2004.0
7-722F/7722F ITECH	67 17' 56.6840"	148 55' 04.6580"	590.1

ITECH INERTIAL CONTROL -- INERTIAL SURVEY SYSTEM STATIONS ESTABLISHED BY ITECH

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
1-103F/1103 ITECH	64 51' 15.8780"	147 54' 58.5580"	485.2
1-109F/1109 ITECH	64 50' 49.1070"	147 56' 38.9410"	547.9
1-227F/1227 ITECH	64 53' 25.4370"	147 56' 08.6320"	646.0
1-229F/1229 ITECH	64 53' 28.7750"	148 00' 34.4270"	1538.1
1-307F/1307 ITECH	64 50' 22.1460"	148 14' 32.5729"	513.5
1-311F/1311 ITECH	64 50' 55.5730"	148 04' 36.5581"	842.8
1-320F/1320 ITECH	64 48' 37.6870"	148 11' 49.8310"	1406.2
1-327F/1327 ITECH	64 47' 38.8220"	148 08' 39.7701"	1605.6
1-425F/1425 ITECH	64 47' 48.8670"	148 15' 50.1099"	611.9
1-432F/1432 ITECH	64 47' 04.5680"	148 24' 24.7370"	482.3
10-807F/10807 ITECH	64 04' 00.9670"	149 11' 24.4410"	1041.8
10-818F/10818 ITECH	64 02' 33.3170"	149 11' 50.9650"	1211.6
10-828F/10828 ITECH	64 01' 08.7800"	149 08' 18.8499"	1008.2
11-808F/11808 ITECH	63 58' 52.2990"	149 08' 38.2571"	1558.5
11-809F/11809 ITECH	63 58' 51.4780"	149 07' 10.3180"	1253.3
11-827F/11827 ITECH	63 55' 41.5490"	149 05' 20.6289"	1331.4
12-706F/12706 ITECH	63 54' 02.5160"	148 59' 44.1821"	1180.1
12-707F/12707 ITECH	63 52' 55.0170"	149 00' 30.6050"	1370.7
12-716F/12716 ITECH	63 52' 20.3690"	148 55' 38.3691"	1888.1
12-719F/12719 ITECH	63 51' 09.0070"	148 59' 34.2670"	1517.1
12-734F/12734 ITECH	63 50' 08.3000"	148 54' 28.1019"	1890.4
12-812F/12812 ITECH	63 53' 23.5210"	149 01' 30.7441"	1398.3
12-815F/12815 ITECH	63 52' 37.1330"	149 05' 4[illegible].5171"	1602.7
13-406/13406 ITECH	61 15' 10.5470"	150 03' 24.5490"	10.5
13-708F/13706 ITECH	63 49' 16.8080"	148 58' 03.9651"	1582.0
13-708F/13708 ITECH	63 48' 36.1670"	148 57' 23.1010"	1733.9

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
ELEVATIONS ARE LOCAL MEAN SEA LEVEL DATUM BY V.A., DOPPLER OR INERTIAL
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ITECH INERTIAL CONTROL -- INERTIAL SURVEY SYSTEM STATIONS ESTABLISHED BY ITECH
(Continued)

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
13-812F/13812 ITECH	63 48' 32.4730"	149 01' 25.5061"	3759.8
14-309/14309 ITECH	61 18' 54.1790"	149 48' 34.8431"	12.8
14-310/14310 ITECH	61 19' 23.8440"	149 47' 06.1091"	146.3
14-315/14315 ITECH	61 18' 15.7330"	149 47' 24.9681"	140.7
14-406/14406 ITECH	61 20' 25.9620"	150 04' 01.8899"	99.7
14-413/14413 ITECH	61 18' 17.2290"	149 54' 37.1649"	84.0
14-415/14415 ITECH	61 17' 53.4700"	149 58' 59.2680"	162.4
14-416/14416 ITECH	61 18' 11.1880"	149 59' 41.2869"	143.4
14-417/14417 ITECH	61 18' 16.4190"	150 01' 59.0441"	151.6
14-421/14421 ITECH	61 17' 09.7630"	150 00' 01.6311"	98.4
14-427/14427 ITECH	61 16' 16.9810"	149 58' 46.3269"	95.8
14-502/14502 ITECH	61 20' 11.3120"	150 07' 51.1460"	85.0
14-524/14524 ITECH	61 17' 24.8460"	150 05' 17.2000"	71.9
15-512/15512 ITECH	61 24' 42.9230"	150 04' 32.6311"	152.9
15-514/15514 ITECH	61 23' 36.4210"	150 08' 08.5700"	100.7
15-522/15522 ITECH	61 22' 32.8480"	150 09' 46.8730"	85.3
15-524/15524 ITECH	61 22' 31.8470"	150 06' 06.0790"	107.3
16-509/16504 ITECH	61 29' 46.2710"	150 11' 32.4490"	112.2
16-526/16526 ITECH	61 27' 06.8310"	150 08' 08.0381"	79.1
16-533/16533 ITECH	61 26' 26.8470"	150 10' 58.3299"	83.7
17-504/17504 ITECH	61 35' 42.9680"	150 11' 08.0671"	130.9
17-520/17520 ITECH	61 33' 26.1620"	150 13' 45.1721"	120.1
18-504/18504 ITECH	61 41' 02.9980"	150 10' 45.1179"	154.9
18-505/18505 ITECH	61 40' 53.1270"	150 14' 10.8580"	101.7
18-509/18509 ITECH	61 39' 56.2040"	150 12' 10.9380"	155.8
18-520/18520 ITECH	61 38' 06.4110"	150 13' 04.1310"	187.7
18-531/18531 ITECH	61 36' 12.4950"	150 14' 57.7590"	131.2
19-511/19511 ITECH	61 45' 00.7360"	150 07' 47.2289"	171.3
19-513/19513 ITECH	61 44' 34.6840"	150 05' 24.1270"	181.4
19-524/19524 ITECH	61 43' 51.0000"	150 06' 35.2200"	182.4
19-527/19527 ITECH	61 42' 43.9800"	150 10' 16.1029"	167.3
2-408F/2408 ITECH	64 44' 58.9380"	148 24' 02.0990"	1027.9
2-409F/2409 ITECH	64 44' 23.9920"	148 23' 24.3599"	594.2
2-513F/2513 ITECH	64 44' 04.6680"	148 28' 23.2280"	551.2
2-520F/2520 ITECH	64 43' 45.5660"	148 36' 43.8500"	587.3
2-527F/2527 ITECH	64 42' 44.6390"	148 32' 36.7130"	696.8
3-504F/3504 ITECH	64 41' 13.0940"	148 33' 06.1161"	585.0
3-506F/3506 ITECH	64 40' 53.0460"	148 38' 39.2811"	570.2
3-617F/3617 ITECH	64 39' 23.8310"	148 47' 36.1000"	537.1
3-619F/3619 ITECH	64 38' 26.6120"	148 49' 25.8939"	533.8
3-626F/3626 ITECH	64 37' 15.4940"	148 42' 34.7419"	362.9
3-725F/3725 ITECH	64 37' 57.2940"	148 51' 13.5659"	522.3

GEODETIC COORDINATES (CLARK 1866) AND ELEVATIONS IN FEET
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ITECH INERTIAL CONTROL -- INERTIAL SURVEY SYSTEM STATIONS ESTABLISHED BY ITECH
(Continued)

STATION NAME	NORTH LATITUDE	WEST LONGITUDE	ELEV.
3-734F/3734 ITECH	64 36' 26.0230"	148 56' 43.7789"	493.1
4-605F/4605 ITECH	64 35' 47.2200"	148 49' 01.8199"	353.3
4-703F/4703 ITECH	64 35' 39.9500"	148 56' 42.4441"	353.7
4-710F/4710 ITECH	64 34' 50.1170"	148 55' 04.9690"	354.0
4-716F/4716 ITECH	64 34' 21.5892"	148 58' 07.7308"	355.0
5-703F/5703 ITECH	64 30' 32.9100"	148 53' 55.6080"	382.2
5-704F/5704 ITECH	64 30' 51.9400"	148 57' 40.1150"	382.2
5-727F/5727 ITECH	64 31' 26.7030"	148 58' 08.9779"	374.0
5-728F/5728 ITECH	64 27' 25.7120"	148 56' 11.0641"	427.2
6-708F/6708 ITECH	64 25' 06.1740"	148 58' 23.6390"	446.5
6-715F/6715 ITECH	64 23' 40.3150"	148 54' 04.2359"	479.0
6-733F/6733 ITECH	64 21' 17.5100"	148 56' 05.4710"	516.4
6114(ITECH)	63 46' 31.2070"	148 54' 46.4350"	1573.8
6117(ITECH)	63 44' 21.7050"	148 53' 12.9310"	1558.1
613(ITECH)	63 51' 02.5720"	148 56' 29.4919"	1268.7
619(ITECH)	63 49' 55.0320"	148 55' 44.4451"	1817.9
7-709F/7709 ITECH	64 21' 17.5100"	148 56' 05.4710"	516.4
7-710F/7710 ITECH	64 19' 01.7840"	148 53' 53.1690"	568.9
7-825F/7825 ITECH	64 16' 57.3800"	149 02' 27.5999"	563.0
8-706F/8706 ITECH	64 15' 16.9040"	149 01' 44.6690"	593.5
8-804F/8804 ITECH	64 14' 39.2910"	149 09' 41.1231"	656.5
8-815F/8815 ITECH	64 13' 17.1060"	149 07' 04.3370"	685.4
8-818F/8818 ITECH	64 12' 28.3090"	149 12' 44.4040"	785.1
8-935F/8935 ITECH	64 10' 16.8850"	149 17' 06.1669"	779.5
9-902F/9902 ITECH	64 09' 21.0300"	149 16' 01.6699"	800.5
9-910F/9910 ITECH	64 09' 05.6140"	149 17' 42.4530"	910.8
9-926F/9926 ITECH	64 06' 42.2470"	149 16' 00.4859"	956.0

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
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FIXED STATIONS -- N.G.S. FIRST-ORDER TRIANGULATION STATIONS

STATION NAME	NORTHING	EASTING	ELEVATION
BRUSK	3,457,864.180	757,546.986	4953.0
CHUNILNA	3,180,171.625	554,006.011	3717.9
CLEAR	3,179,752.850	596,605.296	4154.7
CURRY	3,126,694.974	560,694.866	3631.0
INDIAN	3,240,147.401	556,874.490	4556.9
PORTAGE	3,256,248.212	603,254.003	4741.8
TALUS	3,422,152.880	741,441.736	5168.0

PRIMARY NETWORK -- R&M SECOND-ORDER, CLASS I HORIZONTAL STATIONS

STATION NAME	NORTHING	EASTING	ELEVATION
BROWN	3,221,409.430	877,835.275	4725.6
BULKEY	3,251,537.634	770,765.420	3169.6
GOOSE	3,140,831.225	882,195.178	5604.6
GREBE	3,141,032.373	703,818.012	5849.5
HUB	3,172,757.283	728,160.309	5831.7
MARKUS	3,189,655.255	763,193.408	5132.2
MT. WATANA	3,192,457.519	816,092.853	6256.4
NICK	3,183,142.810	872,121.343	3606.0
OSHETNA	3,196,161.806	945,714.096	4498.3
PILCHCO	3,225,363.759	677,740.859	3782.4
SCOOTER	3,241,631.230	829,559.552	4855.7
WAR	3,252,499.991	711,393.105	4540.0
WINDUS	3,201,607.015	909,510.523	4190.4

SECONDARY NETWORK -- R&M SECOND-ORDER, CLASS II HORIZONTAL STATIONS

STATION NAME	NORTHING	EASTING	ELEVATION
17-535F	3,437,169.960	750,956.389	2955.5
18-608F	3,424,165.642	768,388.860	2957.2
18-609F	3,428,580.357	775,098.243	2212.8
18-615F	3,419,133.893	779,061.139	2748.2
18-617F	3,423,050.519	772,496.398	2697.6
18-620F	3,418,730.282	768,206.075	4841.7
18-621F	3,413,812.031	774,290.679	3448.7
18-628F	3,409,928.518	773,910.322	3514.1

CONTROL STATION COORDINATE LISTING

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
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SECONDARY NETWORK -- R&M SECOND-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTHING	EASTING	ELEVATION
19-605F	3,398,556.297	771,531.990	3311.3
19-607F	3,394,980.894	767,288.387	3582.6
19-609BF	3,394,028.737	773,159.271	3345.2
19-609F	3,395,614.679	777,116.110	3234.0
19-617F	3,388,272.813	771,952.892	3942.8
19-627F	3,378,214.435	783,741.887	3256.7
19-633F	3,377,327.694	774,887.325	3899.7
20-613F	3,358,567.820	791,659.490	3240.1
20-614F	3,359,936.167	787,779.015	3278.9
20-623F	3,353,353.257	786,312.295	3862.5
20-624F	3,355,194.264	792,987.781	3289.6
21-505F	3,337,870.565	803,075.782	3465.9
21-520F	3,320,404.179	805,506.503	3578.3
21-521F	3,321,747.904	810,097.993	3429.0
21-528F	3,316,455.933	808,626.641	3299.4
21-532F	3,314,207.171	802,594.674	3467.2
21-601F	3,336,757.441	794,138.759	3507.5
22-1030F	3,281,118.116	575,052.885	3259.4
22-1123F	3,284,631.295	567,814.511	2156.0
22-1126F	3,279,764.307	565,386.642	1995.2
22-1132F	3,274,591.466	550,095.356	1474.9
22-1136F	3,275,949.839	574,416.725	3552.0
22-610F	3,299,072.624	784,940.723	3459.5
22-613F	3,298,331.684	794,719.723	3142.0
22-614F	3,298,248.341	789,415.921	3300.3
22-622F	3,288,941.158	779,775.931	2988.3
22-626F	3,286,705.451	786,772.754	3755.9
22-632F	3,280,039.034	769,036.831	3229.9
30-1112	3,189,663.985	889,729.989	2622.5
30-1209	3,187,259.770	904,120.902	2282.5
30-1211	3,187,934.917	914,573.984	2460.1
30-1212	3,190,207.543	917,459.061	2529.7
30-1213	3,184,472.161	924,481.209	2483.1
30-1215	3,183,150.779	909,100.108	2539.8
30-1217	3,185,282.885	898,505.480	2523.4
30-1303	3,193,085.815	939,853.130	4076.4
30-1312	3,188,072.961	949,695.607	3545.7
30-1317	3,185,243.416	929,760.890	2480.6
30-1320	3,179,169.547	930,957.997	2448.2
30-1325	3,172,950.436	954,171.228	2381.8
30-1326	3,171,699.303	949,043.355	2460.0
30-1328	3,175,737.136	934,610.811	2494.5

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
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SECONDARY NETWORK -- R&M SECOND-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTHING	EASTING	ELEVATION
30-1329	3,170,810.433	933,217.746	2208.0
30-1332	3,167,357.386	932,862.094	2271.5
30-1333	3,166,672.676	937,896.297	2332.5
30-1335	3,165,984.685	945,865.175	2466.2
30-1403	3,198,273.902	970,973.763	2410.3
30-1408	3,188,015.419	962,326.934	2584.7
30-1410	3,191,754.023	970,776.323	2312.2
30-1421	3,181,455.711	964,989.832	2443.6
30-1430	3,175,822.359	957,909.449	2441.3
30-301	3,186,263.345	635,430.114	3815.7
30-302	3,184,226.653	630,761.058	3663.7
30-303	3,186,912.740	624,971.795	3982.4
30-310	3,183,279.454	624,394.614	3896.4
30-402	3,187,932.761	664,367.795	3030.1
30-404	3,187,971.761	655,043.657	3167.8
30-407	3,182,769.533	641,544.363	3060.9
30-408	3,179,944.700	647,207.938	2993.2
30-416	3,173,726.582	650,376.914	2999.6
30-418	3,178,813.708	641,978.398	3209.9
30-420	3,170,609.748	649,067.353	3174.5
30-421	3,170,901.024	654,215.283	3016.3
30-507	3,182,689.917	674,261.201	2307.7
30-510	3,183,114.972	690,686.496	1833.0
30-604	3,189,369.530	716,249.466	2396.4
30-605	3,190,127.029	712,033.832	2450.0
31-001	3,217,713.748	575,892.303	1353.9
31-008	3,211,168.863	553,660.323	766.0
31-009	3,214,700.454	557,071.310	753.7
31-011	3,214,974.492	566,700.845	731.4
31-016	3,206,742.717	558,518.788	1114.2
31-022	3,203,064.352	560,558.406	2572.0
31-025	3,196,485.379	544,360.814	663.8
31-030	3,197,790.465	548,793.758	667.9
31-031	3,192,946.235	546,821.931	687.4
31-032	3,191,099.057	552,834.262	3388.2
31-1006	3,219,087.866	830,568.733	2752.0
31-1010	3,218,464.124	848,111.253	2522.6
31-1016	3,211,852.877	840,125.613	2651.8
31-1024	3,208,279.072	855,407.682	3051.9
31-1116	3,212,042.424	871,113.504	2911.1
31-1124	3,207,279.281	886,754.805	2837.9
31-1128	3,203,167.829	874,469.586	2543.1

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
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SECONDARY NETWORK -- R&M SECOND-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTHING	EASTING	ELEVATION
31-1136	3,199,176.735	887,636.155	2227.7
31-1231	3,198,759.688	893,210.359	2301.1
31-1433	3,199,414.165	963,895.106	2547.6
31-202	3,217,133.887	600,811.279	1408.8
31-211	3,213,425.273	600,929.740	2718.6
31-303	3,220,236.798	627,346.895	1734.2
31-304	3,219,231.025	623,506.378	1454.8
31-306	3,221,250.946	610,572.788	1504.6
31-307	3,213,088.269	608,017.242	2496.6
31-308	3,213,708.113	613,370.709	2422.8
31-309	3,211,254.745	622,990.201	2593.7
31-311	3,215,530.951	632,186.472	1834.5
31-313	3,207,021.896	635,697.324	3199.2
31-321	3,200,086.733	619,091.541	3037.4
31-334	3,192,311.250	625,409.422	3710.3
31-402	3,217,466.354	664,598.139	2176.1
31-405	3,218,089.476	644,527.179	1985.2
31-408	3,214,303.191	647,982.733	2464.1
31-411	3,213,299.302	661,471.279	2561.6
31-417	3,208,159.210	646,872.499	2420.4
31-419	3,205,553.067	641,706.118	3334.1
31-424	3,206,943.662	666,648.778	2129.4
31-431	3,193,089.395	642,335.313	3460.5
31-434	3,192,550.314	657,549.899	3213.9
31-507	3,214,378.840	670,585.703	2048.0
31-514	3,209,345.195	696,435.904	2296.6
31-517	3,209,954.430	676,490.054	2567.4
31-521	3,203,746.375	686,068.897	1905.5
31-521B	3,201,247.643	681,482.443	2306.2
31-524	3,203,356.881	698,307.245	1927.3
31-525	3,196,557.045	698,881.460	2035.3
31-528	3,197,482.034	683,026.547	2616.2
31-534	3,191,132.791	689,657.837	2210.3
31-534B	3,194,052.290	688,438.551	2369.1
31-612	3,214,415.523	727,928.590	2422.2
31-613	3,211,274.404	729,878.924	2044.0
31-615	3,210,420.974	721,161.484	1998.2
31-617	3,209,137.307	709,806.733	2104.4
31-628	3,197,376.371	714,661.208	2137.3
31-629	3,200,340.095	710,154.472	1913.7
31-634	3,196,674.023	720,693.874	2353.6
31-704	3,225,158.668	743,196.811	2158.9

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SECONDARY NETWORK -- R&M SECOND-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME		NORTHING	EASTING	ELEVATION
31-704B		3,220,667.525	746,271.096	2602.0
31-704C		3,219,429.765	746,491.388	2523.3
31-706		3,222,951.431	735,345.038	2446.8
31-708		3,215,052.248	742,205.681	2520.7
31-709		3,214,065.750	747,196.219	2267.0
31-710		3,218,116.346	749,594.098	2352.4
31-717		3,209,162.880	741,353.606	2429.1
31-722		3,206,355.638	751,544.238	2321.7
31-733		3,197,419.383	749,659.721	2509.0
31-904		3,220,750.281	809,055.016	2254.9
31-913		3,214,054.366	824,160.678	2256.8
32-001		3,249,039.598	572,675.492	1419.2
32-010		3,246,067.445	560,758.770	4041.3
32-011		3,246,093.606	570,397.504	1259.2
32-012		3,247,119.894	575,725.453	1332.5
32-019		3,231,537.172	549,656.243	4439.0
32-023		3,234,665.758	566,249.038	1399.6
32-207		3,243,131.092	578,712.579	2374.1
32-212		3,247,002.830	605,683.757	2301.3
32-219		3,235,677.453	577,628.707	2237.2
32-220		3,234,298.066	582,543.917	2350.7
32-222		3,231,985.767	593,317.281	2203.7
32-223		3,235,318.723	600,519.803	1642.2
32-236		3,220,579.389	606,441.907	1741.1
32-314		3,237,831.264	630,765.261	2901.0
32-318		3,238,037.454	611,149.171	2442.0
32-325		3,230,680.586	635,101.417	2340.5
32-330		3,226,290.319	611,520.532	2206.8
32-330A		3,228,608.156	608,096.290	1700.7
32-331		3,222,968.370	611,854.029	1436.7
32-332A	RE-SET	3,222,430.100	615,948.817	1418.7
32-333		3,223,697.188	621,167.727	2015.8
32-408		3,243,380.994	646,315.997	3121.4
32-410		3,246,334.268	658,243.605	2486.5
32-416		3,238,704.910	648,187.217	2858.6
32-426		3,229,759.403	662,537.888	2548.1
32-431		3,222,338.490	642,565.706	2079.0
32-434		3,222,719.929	656,561.978	2151.8
32-501		3,249,475.545	696,114.651	3995.9
32-505		3,251,544.977	674,070.302	3665.8
32-511		3,245,644.385	691,366.068	3186.6
32-611		3,245,169.776	724,806.444	3020.7

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
ELEVATIONS ARE LOCAL MEAN SEA LEVEL DATUM BY V.A., DOPPLER, OR INERTIAL OBS.
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SECONDARY NETWORK -- R&M SECOND-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME		NORTHING	EASTING	ELEVATION
32-616		3,239,881.913	713,554.035	3015.0
32-617		3,233,216.489	711,355.303	2911.0
32-617B		3,244,165.034	708,891.791	3329.7
32-621		3,235,362.975	712,994.046	2758.4
32-623		3,233,212.280	726,299.604	2271.8
32-627		3,229,224.352	720,656.167	2496.9
32-703		3,250,322.902	752,423.682	2519.1
32-705		3,251,329.508	738,184.009	2758.2
32-720		3,238,880.543	737,970.932	2396.3
32-721B		3,235,247.752	746,273.425	2274.4
32-727		3,230,271.194	751,678.887	1955.2
32-728		3,230,702.590	745,782.130	2237.5
32-729	WA-5	3,229,122.062	739,097.866	2224.3
32-729A		3,229,204.841	742,644.368	2359.9
32-736		3,227,525.264	758,859.214	2092.3
32-822		3,236,225.263	783,411.980	2099.1
32-830		3,229,795.118	764,915.179	2182.5
32-833		3,228,267.530	776,392.181	2186.0
32-835		3,227,362.748	792,144.626	2159.3
32-929		3,231,784.045	803,862.300	2133.8
32-935		3,227,212.325	817,298.392	2420.6
33-013		3,272,933.520	573,472.770	2997.2
33-016		3,268,707.842	555,495.756	1536.9
33-021		3,263,275.639	554,919.018	1428.5
33-022		3,262,697.677	562,515.857	2221.1
33-024		3,266,274.865	569,732.824	1795.6
33-030		3,259,517.477	548,914.365	1317.5
33-031		3,254,054.542	574,690.465	3501.8
33-034		3,256,145.184	563,461.626	1340.4
33-036		3,252,743.744	570,243.302	1574.9
33-036		3,252,222.255	574,875.281	2904.3
33-529		3,261,495.859	675,652.035	2776.4
33-531		3,257,557.084	674,550.655	3089.4
33-532		3,257,675.240	678,798.350	3194.6
33-726		3,263,023.251	754,760.141	2950.3
33-734		3,256,940.950	758,197.898	2541.7
33-735		3,258,599.323	760,191.829	2642.4
33-817		3,274,383.008	776,252.683	3202.7
33-826		3,261,486.341	664,116.625	3676.7
33-830		3,262,356.556	769,896.173	3260.4
33-831		3,256,561.377	770,577.081	3367.6
DC-1		3,230,528.769	612,403.378	2600.9

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
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SECONDARY NETWORK -- R&M SECOND-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTHING	EASTING	ELEVATION
GOLD	3,310,433.911	819,893.849	4821.9
WA-3	3,222,295.322	744,538.537	2591.3
22-1126F	3,279,764.307	565,386.642	1995.2
32-001	3,249,039.598	572,675.492	1419.2

ADDITIONAL CONTROL -- R&M THIRD-ORDER, CLASS I HORIZONTAL STATIONS

STATION NAME	NORTHING	EASTING	ELEVATION
21-615F	3,326,070.889	781,002.704	3934.9
21-624F	3,325,956.409	790,749.940	4843.9
21-627F	3,318,101.150	780,954.142	4291.1
22-1122F	3,284,941.048	559,895.826	1647.2
22-1128F	3,281,208.710	558,306.246	1675.9
29-1303	3,162,045.723	940,837.984	2583.7
29-1304	3,163,236.246	937,228.483	2540.3
29-1305	3,163,220.544	931,047.104	2563.1
29-1309	3,154,783.802	936,511.060	2540.4
29-1310	3,156,835.084	942,387.823	2587.7
30-1113	3,181,401.013	890,662.097	2976.1
30-1218	3,184,576.246	893,611.192	2678.1
30-1307	3,186,851.648	922,645.359	1990.2
31-1001	3,223,099.935	855,498.870	2745.5
31-1012	3,219,436.648	855,193.142	2463.9
31-1020	3,203,886.420	837,424.398	2805.2
31-1022	3,205,340.663	847,531.602	2644.2
31-1029	3,200,951.065	836,115.674	2889.1
31-1032	3,198,131.009	836,362.146	2733.7
31-1107	3,218,461.499	859,530.512	2389.5
31-402B	3,221,562.687	660,093.729	2407.8
31-407	3,213,936.643	640,679.992	2252.1
31-518	3,211,312.806	672,110.231	2173.3
31-519	3,202,124.856	670,685.955	2023.2
31-604	3,219,735.247	715,187.589	2217.0
31-607	3,212,596.774	704,040.285	2272.1
31-613	3,211,274.385	729,878.776	2644.9
31-614	3,211,126.714	727,471.124	2493.8
31-622	3,199,681.412	718,614.075	2293.9
31-623	3,204,405.104	724,366.714	2233.6
31-624	3,204,424.444	729,176.878	2181.8

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
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ADDITIONAL CONTROL -- R&M THIRD-ORDER, CLASS I HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTHING	EASTING	ELEVATION
32-226	3,230,829.117	601,676.491	1462.9
32-625	3,229,675.322	729,447.025	1973.4
32-711	3,248,656.724	756,997.991	2404.6
32-720	3,238,880.507	737,970.978	2396.3
32-721	3,235,432.755	743,816.167	2251.6
32-722	3,237,077.010	753,541.610	2385.5
32-723	3,238,616.472	758,214.294	2429.0
32-729B	3,229,204.687	742,644.256	2359.9
32-802	3,251,141.841	786,111.033	2495.0
32-810	3,247,464.886	781,038.553	2388.6
32-817	3,240,755.986	770,033.732	2449.4
32-833B	3,225,287.447	778,652.531	2271.4
32-901	3,256,464.678	822,607.197	3004.6
32-902	3,256,147.307	815,925.694	2434.8
32-906	3,252,944.078	796,757.609	2453.9
32-907	3,247,573.210	797,088.012	2331.7
32-910	3,245,481.442	812,427.289	2331.9
32-915	3,242,804.108	815,814.208	2472.1
32-915B	3,242,715.765	812,997.052	2532.2
32-919	3,234,722.363	797,681.243	2064.1
32-928	3,231,270.371	809,365.645	2174.9
33-834	3,258,492.495	783,169.671	2975.1
33-926	3,265,202.079	822,153.900	2466.7
33-928	3,264,698.146	811,857.389	2499.1
33-931	3,257,946.365	798,836.955	2477.4
33-933	3,256,899.018	811,278.961	2473.2
33-936	3,259,663.356	824,556.481	3626.9
DC-U1	3,217,759.874	630,307.375	994.9
DC-U2	3,218,950.662	625,670.543	964.8
DC-U3	3,220,929.414	622,626.878	946.7
DC-U4	3,223,490.991	617,124.422	927.3
DP-2	3,227,342.558	742,320.822	1531.7
DP-3	3,227,261.895	742,853.724	1521.3
DP-4	3,227,222.168	743,195.000	1552.9
DP-5	3,227,121.010	743,551.935	1563.0
DP-6	3,227,285.432	743,626.784	1653.4
DP-7	3,227,457.663	743,143.084	1698.8
DP-8	3,227,513.066	742,766.762	1720.2
KNOB	3,228,222.661	748,072.926	1695.2
LASC-1	3,226,359.240	746,050.155	1868.2
LASC-2A	3,225,978.719	743,992.675	1832.5
LASC-3	3,226,492.379	743,047.503	1729.0

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
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ADDITIONAL CONTROL -- R&M THIRD-ORDER, CLASS I HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTHING	EASTING	ELEVATION
MAC	3,228,156.451	747,370.936	1467.9
RASC-1	3,226,987.175	744,693.169	1645.1
UP-1	3,227,962.871	746,680.081	1694.8
UP-2	3,228,129.820	746,909.684	1673.0
UP-3	3,228,024.922	747,012.184	1544.8
UP-4	3,227,854.407	746,872.811	1535.2
UP-5	3,228,250.578	747,025.081	1513.7
W-W1	3,229,527.248	756,504.333	1520.6
W-W2	3,229,078.391	750,738.987	1448.7
W-W3	3,227,267.364	742,387.705	1457.4
W-W4	3,226,634.918	735,847.695	1448.3
W-W5	3,226,454.758	729,276.862	1436.2
W-W6	3,223,617.805	723,336.175	1414.7
32-729C	3,229,363.525	743,596.974	2349.1
32-722B	3,233,470.131	751,049.449	2267.6

SEISMIC LINE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL STATIONS

STATION NAME	NORTHING	EASTING	ELEVATION
SL 15-X PT704	3,228,648.669	745,586.835	2182.2
SL 15-X PT745	3,230,006.473	747,031.105	2163.0
SL 16-81 PT800	3,231,067.452	748,204.057	2206.6
SL 16-81 PT818	3,231,487.534	749,393.440	2219.5
SL 17 PT29	3,222,193.842	615,996.282	1462.9
SL 80-1 1-F5	3,227,568.361	741,132.530	2015.4
SL 80-1 PT386	3,235,230.676	744,257.980	2241.8
SL 80-1 TP-6	3,230,671.957	740,982.655	2212.9
SL 80-1 TP-8	3,232,114.356	742,000.288	2075.4
SL 80-11 TP-1	3,228,218.268	732,990.680	1471.1
SL 80-11 TP-2	3,228,521.850	733,283.684	1477.4
SL 80-12 N 80-12	3,222,328.844	615,734.241	1434.0
SL 80-12 TP-1	3,222,088.346	615,764.913	1409.2
SL 80-13 N 80-13	3,222,366.656	616,006.875	1414.1
SL 80-13 TP-1	3,222,177.335	616,055.956	1407.2
SL 80-2 TP-1	3,228,009.738	743,102.343	2094.5
SL 80-2 TP-4	3,229,294.595	743,068.766	2340.4
SL 80-2X PT345	3,234,539.487	747,327.119	2267.6
SL 80-3 N 80-3	3,228,389.321	745,698.289	2077.4
SL 80-3 S 80-3	3,225,792.400	745,743.745	2022.2

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
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SEISMIC LINE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME		NORTHING	EASTING	ELEVATION
SL 80-6	E 80-6	3,230,448.572	747,902.425	2132.0
SL 80-6	W 80-6	3,230,205.767	746,758.569	2206.6
SL 80-7	N 80-7	3,233,987.453	749,492.727	2307.0
SL 80-7	TP-1	3,232,331.747	749,655.837	2251.4
SL 80-8	TP-1	3,232,761.346	754,176.185	2176.9
SL 80-8	TP-2	3,232,041.321	754,182.186	2057.0
SL 80-9	S 80-9	3,226,160.513	724,652.977	1481.8
SL 80-9	SW 14-B	3,226,197.462	724,629.565	1486.5
SL 81-1	102LB	3,229,250.717	755,366.514	1524.4
SL 81-1	102RB	3,229,586.989	755,200.199	1527.8
SL 81-10	TP251	3,202,974.815	713,649.983	1361.1
SL 81-10	TP252	3,203,121.629	713,569.229	1368.1
SL 81-11	118LB	3,203,643.963	707,015.538	1350.3
SL 81-11	TP301	3,204,169.248	707,098.661	1346.2
SL 81-12	119LB	3,205,129.075	703,026.314	1340.4
SL 81-12	119RB	3,205,694.566	703,130.241	1347.1
SL 81-2	103RB	3,230,159.777	752,494.131	1516.3
SL 81-2	119LB	3,228,738.700	752,508.354	1500.8
SL 81-3	104RB	3,228,957.318	749,109.781	1492.2
SL 81-3	TP92	3,228,910.534	749,095.372	1479.3
SL 81-4	105LB	3,227,800.848	747,541.812	1478.6
SL 81-4	TP101	3,227,821.973	747,468.354	1467.5
SL 81-4	TP81	3,228,659.724	747,376.071	1468.1
SL 81-5	105RB	3,227,931.185	747,074.572	1489.8
SL 81-6	106RB	3,227,164.136	745,711.553	1488.4
SL 81-6	TP144	3,226,950.977	745,857.603	1463.8
SL 81-7	TP408	3,224,536.048	724,143.211	1416.7
SL 81-7	TP415	3,224,153.240	724,136.399	1418.2
SL 81-8	115LB	3,218,609.974	721,902.500	1413.6
SL 81-8	115RB	3,218,651.735	721,301.251	1399.7
SL 81-8	TP83	3,224,058.280	722,707.357	1410.2
SL 81-9	TP201	3,208,266.749	714,902.196	1368.6
SL 81-9	TP202	3,208,124.942	715,137.290	1378.4
SL BH-11	PT600	3,228,623.264	746,113.937	2062.8
SL BH-11	PT618	3,229,025.027	746,527.424	2109.7
SL BH-12	PT206	3,224,871.654	743,995.075	2190.5
SL BH-12	PT256	3,225,804.933	744,848.696	1943.1
SL QSB	PT400	3,233,309.462	755,078.217	2214.8
SL QSB	PT475	3,231,911.774	750,872.441	2197.5
SL SW-1X	PT101	3,225,736.829	744,648.172	1949.8
SL80-2X	TP	3,232,963.109	745,724.325	2199.3
SL81-15X	PT745	3,230,006.473	747,031.105	2163.0

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
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SEISMIC LINE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTHING	EASTING	ELEVATION
SL80-2 N END	3,232,284.884	745,141.239	2158.7
SL82-1 N END	3,227,934.345	743,636.377	2065.0
SL82-1 S END	3,226,857.503	743,607.053	1456.0
SL82-2 NE END	3,227,028.995	744,630.187	1667.0
SL82-2 SW END	3,226,905.734	744,127.770	1587.3
SL82-3 N END	3,227,485.180	743,213.117	1724.4
SL82-3 S END	3,227,050.281	743,106.516	1461.5
SL82-4 SW END	3,227,279.484	742,533.049	1474.7
SL82-4 NE END	3,226,901.998	744,342.225	1635.0
SL82-5 NE END	3,229,308.282	746,002.983	2139.0
SL82-5 SW END	3,227,779.489	743,113.862	1986.6
SL82-6 W END	3,227,511.081	742,657.583	1712.8
SL82-6 NE END	3,227,117.319	744,217.777	1708.5
SL82-7 NE END	3,227,514.805	742,963.954	1715.8
SL82-7 SW END	3,227,371.478	742,693.029	1605.1
SL82-8 N END	3,228,312.336	742,823.892	2131.5
SL82-8 S END	3,227,417.570	742,624.269	1640.1
GP2 SL82-9NE END (GP1 NT)	3,227,607.801	744,964.195	1872.1
SL82-9 SW END	3,227,339.060	743,994.929	1774.6
SL82-10 N END	3,228,640.482	746,103.731	2067.6
SL82-10 S END	3,227,500.090	746,077.812	1701.2
SL82-11 NE END	3,227,856.010	746,506.917	1714.5
SL82-11 SW END	3,227,189.650	745,143.686	1617.0
SL82-12 NE END	3,226,449.010	747,838.383	2078.1
SL82-12 SW END	3,225,718.050	745,637.226	2037.7
SL82-13 NE END	3,228,752.775	746,290.745	2053.0
SL82-13 SW END	3,227,997.789	745,030.813	2016.2
SL82-14 NE END	3,230,250.849	745,055.508	2201.0
SL82-14 SW END	3,227,900.267	743,060.443	2037.6
SL82-15 NE END(KNOB)	3,228,222.661	748,072.926	1695.2
SL82-15 SW END	3,227,380.763	747,330.467	1535.2
SL82-16 N END	3,232,987.762	745,746.913	2204.0
SL82-16 SW END	3,232,159.381	745,041.850	2155.7
SL82-17 NE END	3,234,553.331	743,487.909	2172.0
SL82-17 SW END	3,231,141.267	739,428.603	2074.2
SL82-18 NE END	3,235,800.382	746,540.623	2276.8
SL82-18 SW END	3,230,303.461	742,383.581	2242.3
SL82-19 E END	3,231,068.147	748,204.094	2206.8
SL82-19 W END	3,229,940.024	746,966.785	2200.4
SL82-20 NW END	3,233,605.144	742,469.981	1994.7
SL82-20 SE END	3,231,068.147	748,204.094	2206.8
SL82-21 E END	3,231,911.666	750,872.209	2197.6

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
ELEVATIONS ARE LOCAL MEAN SEA LEVEL DATUM BY V.A., DOPPLER, OR INERTIAL OBS.
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SEISMIC LINE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL STATIONS
(Continued)

STATION NAME	NORTHING	EASTING	ELEVATION
SL82-21 W END	3,231,427.832	749,795.764	2185.1
SL82-22 N END	3,233,517.621	752,017.745	2270.6
SL82-22 S END	3,230,387.270	751,498.628	1981.1
SL82-FL1 N END	3,226,731.371	756,119.046	2180.6
.....TRAV PT	3,208,576.119	769,305.397	2506.4
SL82-FL1 S END	3,208,301.267	769,522.931	2539.4
SL82-FL2 W END	3,227,430.914	773,636.412	2202.2
'''''TRAV PT	3,220,572.381	787,381.227	2408.0
TRAV PT	3,220,470.104	787,585.758	2408.8
SL82-FL2 E END	3,220,067.598	788,451.901	2329.3
SL82-FL3 N END	3,220,840.228	750,895.076	2331.2
SL82-FL3 S END	3,215,893.040	755,198.611	2317.9

TEST HOLE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL POSITIONS

STATION NAME	NORTHING	EASTING	ELEVATION
32-331B	3,221,727.445	611,966.409	1422.0
32-332B	3,221,897.665	614,217.161	1405.3
32-332C	3,224,058.287	722,707.349	1361.4
32-332D	3,228,660.588	747,375.572	1336.3
32-332E	3,223,102.806	616,111.532	1209.8
32-332Z	3,222,177.000	615,974.181	1418.1
AH D-1	3,233,092.481	749,497.169	2261.7
AH D-10	3,236,284.520	752,245.001	2357.8
AH D-11	3,236,252.194	753,856.379	2358.0
AH D-12	3,235,935.449	756,070.885	2337.9
AH D-13	3,236,907.542	750,102.940	2326.2
AH D-14	3,235,704.579	748,951.397	2272.7
AH D-2	3,235,215.701	752,029.789	2335.3
AH D-3	3,235,503.647	754,188.305	2339.9
AH D-4	3,233,757.863	754,132.947	2255.0
AH D-5	3,231,331.928	748,197.232	221.6
AH D-6	3,232,764.501	748,863.200	2262.9
AH D-7	3,232,052.843	749,878.017	2242.9
AH D-8	3,233,525.134	750,543.817	2276.1
AH D-9	3,234,384.971	752,194.544	2319.1
AH E-1	3,224,859.603	725,573.359	1424.5
AH E-2	3,226,923.789	728,040.480	1465.3
AH E-3	3,227,564.001	729,461.517	1456.1

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
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TEST HOLE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL POSITIONS
(Continued)

STATION NAME		NORTHING	EASTING	ELEVATION
AH E-4		3,227,354.395	730,964.959	1443.7
AH E-5		3,227,902.524	733,695.901	1580.5
AH E-5TP		3,227,919.351	733,667.867	
AH E-6		3,225,662.909	727,591.760	1436.8
AH E-6TP		3,225,665.780	727,570.759	1436.8
AH E-7		3,228,222.635	733,226.211	1469.3
AH E-8		3,229,842.487	734,221.993	1504.0
AH E-9		3,230,392.112	735,346.682	1524.8
AH G-1		3,222,752.997	617,149.717	982.3
AH G-10		3,223,098.983	617,231.777	980.0
AH G-4		3,223,143.311	617,472.138	983.1
AH G-9		3,222,870.961	617,229.646	982.0
AH H-1		3,201,500.966	718,407.622	2127.5
AH H-2		3,206,500.329	720,554.411	1970.9
AH H-3		3,204,643.051	719,627.492	2079.6
AH H-4		3,205,876.535	721,592.518	2064.5
AH H-5		3,205,028.142	725,347.761	2186.2
AH H-6		3,204,474.698	729,194.273	2181.0
AH H-7		3,203,212.918	721,222.176	2188.4
AH H-8		3,203,175.666	718,559.861	2093.5
BH 2	RE-TIE	3,227,724.930	742,040.017	1838.6
BH 3		3,228,196.707	744,104.510	2150.6
BH 6		3,226,922.454	744,256.077	1608.8
BH 8		3,225,585.967	744,481.539	1979.7
BH DC-1		3,223,408.104	615,929.975	1413.7
BH DC-2		3,223,136.871	616,101.097	1213.4
BH DC-3		3,222,146.100	615,883.446	1398.0
BH DC-4		3,222,003.572	615,991.511	1352.6
BH DC-5A		3,222,960.949	616,645.912	974.5
BH DC-5B		3,222,963.636	616,637.788	976.6
BH DC-7		3,221,701.102	616,133.105	1351.0
BH W-1		3,227,942.287	743,084.635	2049.7
BH W-12		3,225,624.171	744,515.451	1975.7
BH W-3		3,228,196.635	744,102.963	2150.7
BH W-4		3,228,421.368	743,470.861	2187.8
DH 21		3,226,392.816	744,438.108	1477.2
TP 1		3,222,163.818	616,002.311	1413.7
TP 9		3,230,054.872	736,129.171	1785.0
TP A		3,226,298.052	727,815.549	1458.1
TP B		3,228,734.143	725,005.620	2131.2
TP E-10A		3,229,132.671	734,182.678	1500.7
TP E-10B		3,229,095.511	734,169.869	1493.7

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
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TEST HOLE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL POSITIONS
(Continued)

STATION NAME	NORTHING	EASTING	ELEVATION
TP E-11	3,229,951.916	734,899.253	1512.7
TP E-12	3,230,546.035	735,738.046	1534.9
TP E-14	3,229,838.897	734,225.374	1513.0
TP E-15	3,228,227.690	733,255.841	1468.3
TP E-16	3,228,157.156	732,604.665	1463.8
TP E-17	3,227,390.262	730,979.761	1441.7
TP E-18	3,227,564.928	729,457.654	1455.1
TP E-19	3,226,922.481	728,040.586	1464.7
TP E-2	3,225,979.848	725,778.712	1436.6
TP E-20	3,225,657.160	727,606.164	1435.0
TP E-21	3,224,852.327	725,551.327	1425.4
TP E-3	3,226,978.151	727,524.694	1464.2
TP E-4	3,226,437.893	727,429.996	1454.9
TP E-5	3,227,795.237	728,668.668	1470.1
TP E-6	3,226,874.409	729,422.425	1443.4
TP E-7	3,227,891.656	730,378.767	1450.7
TP E-8	3,227,392.164	733,033.324	1450.2
TP E-9	3,228,714.028	733,199.615	1476.7
BH W-3	3,228,196.635	744,102.963	2150.7
BH W-4	3,228,421.368	743,470.861	2187.8
AH15	3,235,760.575	750,189.600	2313.9
TPAH15	3,235,720.386	750,100.423	2322.4
AH16	3,233,517.358	751,996.541	2273.3
AH17	3,237,890.598	752,192.742	2386.0
TPAH17	3,236,930.436	751,420.837	2378.2
AH18	3,235,589.721	754,175.902	2343.7
TPAH18	3,236,219.078	756,390.856	2367.7
AH19	3,233,072.189	750,445.133	2264.1
AH20	3,231,729.189	744,657.937	2165.2
AH21	3,234,649.131	747,467.491	2277.6
TPAH21	3,234,629.010	747,435.487	2277.4
AH22	3,229,531.973	746,961.108	2095.4
AH23	3,232,869.850	744,335.700	2165.6
AH24	3,231,079.765	741,249.859	2169.5
TPAH24	3,230,909.198	741,318.780	2196.4
AH25	3,232,610.835	742,262.456	1990.3
TPAH25A	3,232,109.415	741,958.434	2082.0
TPAH25B	3,233,418.244	742,849.436	2105.6
AH26	3,230,658.056	746,598.166	2217.5
AH27	3,231,126.363	749,709.245	2151.7
TPAH27	3,226,788.701	748,210.256	2086.3
AH28	3,232,781.815	751,609.671	2228.7

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
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TEST HOLE CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL POSITIONS
(Continued)

STATION NAME	NORTHING	EASTING	ELEVATION
AH29	3,238,257.761	757,174.317	2413.5
TPAH29	3,238,260.889	757,140.240	2414.6
AH30	3,231,062.068	746,716.269	2223.7
TPAH30A	3,231,060.552	746,221.050	2225.8
TPAH30B	3,230,967.475	746,512.464	2235.1
BH12	3,225,624.412	744,515.148	1975.4
WA16	3,238,364.465	752,759.234	2415.2
31-704D	3,220,705.471	746,582.749	2596.1
31-711	3,213,612.142	760,148.375	2386.8
SL80-2X TP	3,232,963.109	745,724.325	2199.3
SL81-15X PT745	3,230,006.473	747,031.105	2163.0
SL80-2 N END	3,232,284.884	745,141.239	2158.7

WATANA AIRSTRIP CONTROL -- R&M THIRD-ORDER, CLASS II HORIZONTAL POSITIONS

STATION NAME	NORTHING	EASTING	ELEVATION
0+00	3,230,794.142	745,737.980	2236.6
32+00	3,232,404.503	748,502.817	2268.7
39+00	3,232,756.687	749,107.672	2269.2
60+00	3,233,813.798	750,921.730	2289.4

ITECH SURVEY CONTROL -- TRI-STATIONS RECOVERED & COORDINATES USED BY ITECH

STATION NAME	NORTHING	EASTING	ELEVATION
BALD MOUNTAIN	3,035,950.549	542,147.253	
BULLION-R.M.I.	2,819,746.419	537,353.948	
CHENA WEST BASE	3,973,109.143	832,608.408	463.8
GARNER	3,595,202.056	665,905.927	
ISLE	2,563,603.530	547,125.501	24.1
WILLOW	2,881,320.711	552,164.612	

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
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ITECH DOPPLER CONTROL -- DOPPLER SURVEY CONTROL STATIONS ESTABLISHED BY ITECH

STATION NAME	NORTHING	EASTING	ELEVATION
1000(ITECH)	3,973,102.844	832,602.522	463.3
1001(ITECH)	3,717,554.000	613,606.740	818.2
1114(ITECH)	2,835,765.890	493,963.497	209.7
13-403/13403 ITECH	2,645,020.222	502,411.258	81.5
16-505/16505 ITECH	2,743,573.921	460,897.137	92.0
3-723F/3723F ITECH	3,888,447.592	672,529.725	529.1
612(ITECH)	3,602,159.797	667,757.400	1413.6
6515(ITECH)	3,555,332.517	692,603.849	2004.0
7-722F/7722F ITECH	4,862,461.293	652,930.610	590.1

ITECH INERTIAL CONTROL -- INERTIAL SURVEY SYSTEM STATIONS ESTABLISHED BY ITECH

STATION NAME	NORTHING	EASTING	ELEVATION
1-103F/1103 ITECH	3,972,170.280	824,199.650	485.2
1-109F/1109 ITECH	3,969,309.610	819,950.810	547.9
1-227F/1227 ITECH	3,985,228.620	820,742.640	646.0
1-229F/1229 ITECH	3,985,200.010	809,263.100	1538.1
1-307F/1307 ITECH	3,965,172.900	773,623.410	513.5
1-311F/1311 ITECH	3,969,317.240	799,288.390	842.8
1-320F/1320 ITECH	3,954,761.350	780,961.780	1406.2
1-327F/1327 ITECH	3,949,020.510	789,363.040	1605.6
1-425F/1425 ITECH	3,949,512.070	770,698.080	611.9
1-432F/1432 ITECH	3,944,426.500	748,525.370	482.3
10-807F/10807 ITECH	3,679,649.820	629,693.800	1041.8
10-818F/10818 ITECH	3,670,731.300	628,626.120	1211.6
10-828F/10828 ITECH	3,662,267.330	638,185.600	1008.2
11-808F/11808 ITECH	3,648,391.990	637,507.050	1558.5
11-809F/11809 ITECH	3,648,362.030	641,431.850	1253.3
11-827F/11827 ITECH	3,629,138.170	646,601.550	1331.4
12-706F/12706 ITECH	3,619,304.640	661,799.620	1180.1
12-707F/12707 ITECH	3,612,415.880	659,828.980	1370.7
12-716F/12716 ITECH	3,609,108.200	672,972.870	1888.1
12-719F/12719 ITECH	3,601,687.410	662,521.450	1517.1
12-734F/12734 ITECH	3,595,746.920	676,349.670	1890.4
12-812F/12812 ITECH	3,615,269.710	657,092.020	1398.3
12-815F/12815 ITECH	3,610,390.470	645,799.240	1602.7
13-406/13406 ITECH	2,649,913.250	489,994.500	10.5
13-708F/13706 ITECH	3,590,355.560	666,753.220	1582.0
13-708F/13708 ITECH	3,586,257.320	668,654.310	1733.9

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
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ITECH INERTIAL CONTROL -- INERTIAL SURVEY SYSTEM STATIONS ESTABLISHED BY ITECH
(Continued)

STATION NAME	NORTHING	EASTING	ELEVATION
13-812F/13812 ITECH	3,585,709.970	657,778.690	3759.8
14-309/14309 ITECH	2,672,666.680	533,448.210	12.8
14-310/14310 ITECH	2,675,692.500	537,770.130	146.3
14-315/14315 ITECH	2,668,773.070	536,871.920	140.7
14-406/14406 ITECH	2,681,944.310	488,200.920	99.7
14-413/14413 ITECH	2,668,876.610	515,765.430	84.0
14-415/14415 ITECH	2,666,453.520	502,966.430	162.4
14-416/14416 ITECH	2,668,252.380	500,913.890	143.4
14-417/14417 ITECH	2,668,785.000	494,186.520	151.6
14-421/14421 ITECH	2,662,014.840	499,920.300	98.4
14-427/14427 ITECH	2,656,655.580	503,601.600	95.8
14-502/14502 ITECH	2,680,473.610	477,015.130	85.0
14-524/14524 ITECH	2,663,556.910	484,502.580	71.9
15-512/15512 ITECH	2,708,039.790	486,731.680	152.9
15-514/15514 ITECH	2,701,303.670	476,208.400	100.7
15-522/15522 ITECH	2,694,858.920	471,405.280	85.3
15-524/15524 ITECH	2,694,735.460	482,163.050	107.3
16-509/16504 ITECH	2,738,886.380	466,390.990	112.2
16-526/16526 ITECH	2,722,670.420	476,278.700	79.1
16-533/16533 ITECH	2,718,630.300	467,990.220	83.7
17-504/17504 ITECH	2,775,105.590	467,677.550	130.9
17-520/17520 ITECH	2,761,237.080	460,027.630	120.1
18-504/18504 ITECH	2,807,602.050	468,877.320	154.9
18-505/18505 ITECH	2,806,631.320	458,948.110	101.7
18-509/18509 ITECH	2,800,831.140	464,715.920	155.8
18-520/18520 ITECH	2,789,689.780	462,110.870	167.7
18-531/18531 ITECH	2,778,141.190	456,576.100	131.2
19-511/19511 ITECH	2,831,724.670	477,507.440	171.3
19-513/19513 ITECH	2,829,067.360	484,392.750	181.4
19-524/19524 ITECH	2,824,636.360	480,962.020	182.4
19-527/19527 ITECH	2,817,853.260	470,304.070	167.3
2-408F/2408 ITECH	3,931,690.710	749,828.480	1027.9
2-409F/2409 ITECH	3,928,182.670	751,555.890	594.2
2-513F/2513 ITECH	3,925,898.680	738,633.040	551.2
2-520F/2520 ITECH	3,923,458.370	716,944.730	587.3
2-527F/2527 ITECH	3,917,510.540	727,816.860	696.8
3-504F/3504 ITECH	3,908,182.490	726,752.040	585.0
3-506F/3506 ITECH	3,905,825.510	712,308.020	570.2
3-617F/3617 ITECH	3,896,290.860	689,131.610	537.1
3-619F/3619 ITECH	3,890,388.590	684,459.500	533.8
3-626F/3626 ITECH	3,883,512.880	702,516.600	362.9
3-725F/3725 ITECH	3,887,324.480	679,823.000	522.3

ALASKA STATE PLANE COORDINATES (ZONE 4) AND ELEVATIONS IN FEET
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ITECH INERTIAL CONTROL -- INERTIAL SURVEY SYSTEM STATIONS ESTABLISHED BY ITECH
(Continued)

STATION NAME	NORTHING	EASTING	ELEVATION
3-734F/3734 ITECH	3,877,803.030	665,588.140	493.1
4-605F/4605 ITECH	3,874,216.800	685,810.230	353.3
4-703F/4703 ITECH	3,873,123.710	665,724.210	353.7
4-710F/4710 ITECH	3,868,133.150	670,064.030	354.0
4-716F/4716 ITECH	3,865,102.260	662,131.990	355.0
5-703F/5703 ITECH	3,842,057.540	673,545.700	382.2
5-704F/5704 ITECH	3,843,824.990	663,686.710	382.2
5-727F/5727 ITECH	3,847,335.740	662,366.170	374.0
5-728F/5728 ITECH	3,822,940.390	667,935.000	427.2
6-708F/6708 ITECH	3,808,670.060	662,349.910	446.5
6-715F/6715 ITECH	3,800,139.070	673,893.320	479.0
6-733F/6733 ITECH	3,785,542.050	668,807.460	516.4
6114(ITECH)	3,573,682.170	675,902.930	1573.8
6117(ITECH)	3,560,600.850	680,334.560	1558.1
613(ITECH)	3,601,167.810	670,814.170	1268.7
619(ITECH)	3,594,341.230	672,948.460	1817.9
7-709F/7709 ITECH	3,785,542.050	668,807.460	516.4
7-710F/7710 ITECH	3,771,854.350	674,870.370	568.9
7-825F/7825 ITECH	3,758,849.570	652,384.670	563.0
8-706F/8706 ITECH	3,748,671.840	654,435.300	593.5
8-804F/8804 ITECH	3,744,551.550	633,435.360	656.5
8-815F/8815 ITECH	3,736,296.720	640,480.790	685.4
8-818F/8818 ITECH	3,731,142.350	625,499.340	785.1
8-935F/8935 ITECH	3,717,654.940	614,064.470	779.5
9-902F/9902 ITECH	3,712,013.480	616,988.010	800.5
9-910F/9910 ITECH	3,710,397.000	612,536.600	910.8
9-926F/9926 ITECH	3,695,884.380	617,226.250	956.0

********** R E C O V E R Y N O T E **********

STATION NAME--CLEAR STATE--AK COUNTY--3RD JUD. DIST. QUAD--N62149130 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--CGS	1923		MKR TYPE--TRIANG STA DISK	SEE DESCRIPTION	HRS MIN	METERS
RECOVERY BY--RMC	1980	MHS	CONDITION--GOOD	HELICOPTER	00 HRS 00 MIN	1.5 METERS

CODE	MARK TYPE *********	SETTING/LANDMARK TYPE **********	MAGNETIC PROPERTY
SURFACE--D85N	SURVEY DISK	SET INTO DRILL HOLE IN A PARTIALLY EXPOSED BOULDER	NO MAGNETIC MATERIAL

THE STATION WAS RECOVERED IN GOOD CONDITION AS DESCRIBED IN CGS CONTROL DATA DESCRIPTION. A 8 FOOT SIGHT POST WAS ERECTED AND CENTERED OVER THE STATION MARK. FLUORESCENT ORANGE 2 BY 2 FOOT TARGET SHEETS WERE SET AT TOP OF POST WITH THE BOTTOM OF THE TARGETS 6 FEET ABOVE THE STATION MARK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-333 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N6214914O STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 20 MIN	1.5 METERS

CODE MARK TYPE ********* SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D1OI SURVEY DISK — CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND — MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 3.3 MI. ON AN APROX. TRUE BEARING OF S77E FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. ON TOP EDGE OF ROCK CLIFF APROX. 0.4 MI. N OF THE SUSITNA RIVER AND APROX. 4.9 SW OF THE WEST END OF HIGH LAKE.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND APROX. 0.3 N OF THE STATION ON TOP OF KNOLL IN CLEARING. STATION IS AN APROX. 20 MINUTE PACK DOWNSLOPE TO STATION.

STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-333 RMC 1980--- CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN APROX. 26 INCHES IN ROCK.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 33 T32N R1E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-426 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62149110 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 00 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 0.9 MI. ON AN APROX. TRUE BEARING OF N39E FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. ON THE TOP OF A PROMINATE ROCK KNOLL APROX. 1.0 MI. N OF THE SUSITNA RIVER AND APROX. 2.7 MI. E OF THE EAST END OF HIGH LAKE.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND AT THE STATION.

STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-426 RMC 1980--- CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 25 INCHES INTO ROCK WITH TOP OF DISC 5 INCHES ABOVE THE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 26 T32N R2E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-431 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62149110 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 10 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D101 SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 3.2 MI. ON AN APROX. TRUE BEARING OF S79W FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. ON SOUTH EDGE OF W-E RIDGE APROX. 0.4 MI. N OF THE SUSITNA RIVER AND APROX. 2.6 MI. S OF THE WEST END OF HIGH LAKE.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND APROX. 600 FEET WEST OF STATION IN CLEARING ON RIDGE.

STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-431 RMC 1980--- CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 27 INCHES INTO GROUND WITH THE TOP OF DISC 3 INCHES ABOVE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 31 T32N R2E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-434 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62149110 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MH5	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 05 MIN	1.5 METERS

CODE MARK TYPE ********* SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D101 SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 0.8 MI. ON AN APROX. TRUE BEARING OF S40W FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. ON MODERATLY NORTHERLY SLOPEING GROUND APROX. 150 FEET N OF THE TOP OF A ROUND TOP KNOLL, APROX. 0.5 MI. S OF THE SUSITNA RIVER AND APROX. 2.5 MI. SE OF THE EAST OUTLET OF HIGH LAKE.

STATION WAS REACHED BY HELICOPTER WHICH CAN BE LANDED APROX. 150 FEET S OF STATION ON KNOLL TOP.

STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-434 RMC 1980--- CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 25 INCHES INTO ROCKY GROUND WITH DISC TOP 5 INCHES ABOVE THE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 34 T32N R2E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-727 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148140 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 20 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX 0.8 MI. ON AN APROX. TRUE BEARING OF N75W FROM THE JUNCTION OF THE SUSITNA RIVER AND DEADMAN CRK. ON A PROMINATE ROCK OUTCROP POINT AT THE TOP OF A CLIFF ON THE NORTH BANK OF THE SUSITNA RIVER. STATION IS APROX. 6.5 MI. SOUTH OF THE PEAK OF TSUSENA BUTTE.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND APROX. 0.2 MI. NE OF STATION IN SMALL CLEARING. PACK TIME IS APROX. 20 MINUTES.

THE STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-727 RMC 1980---CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 29 INCHES INTO ROCK WITH DISC TOP 1 INCH ABOVE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST CENTERED OVER DISC WITH GUYS.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 27 T32N R5E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--WA-5 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148410 STA--

MONUMENT BY--USE	YEAR 1978	CP	MKR TYPE--	REACHED BY	PACK TIME HRS	PACK TIME MIN	HGT OF TELESCOPE METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D12P SURVEY DISK SET INTO THE TOP OF A METAL PIPE IMBEDDED IN THE GROUND MKR IS A STEEL PIPE

UNDERGROUND--NONE

STATION IS LOCATED APROX. 1.4 MI. ON AN APROX. TRUE BEARING OF N70E FROM THE JUNCTION OF THE SUSITNA RIVER AND TSUSENA CRK. ON WEST FINGER TIP OF AN E-W RIDGE APROX. 0.4 MI. N OF THE SUSITNA RIVER AND APROX. 3.2 MI. N OF THE WEST END OF THE MOST EASTERLY LAKE OF FOG LAKES.

STATION IS A 3-1/2 INCH BRASS DISC STAMPED---WA-5 USE 1978--- SET IN A IRON PIPE WITH TOP OF DISC 7 INCHES ABOVE THE GROUND.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 29 T32N R5E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-736 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148140 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 00 MIN	1.5 METERS

CODE MARK TYPE ********* SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 0.7 MI. ON AN APROX. TRUE BEARING OF S70E FROM THE INTERSECTION OF THE SUSITNA RIVER AND DEADMAN CRK. ON MODERATELY SLOPEING GROUND OVERLOOKING THE SUSITNA RIVER 50 FEET SOUTH OF A STEEP BREAK TO THE RIVER. STATION IS APROX. 2.[illegible] MI. NE OF THE EAST END OF THE MOST NORTHERLY LAKE OF FOG LAKES.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND 300 FEET SOUTH OF THE STATION IN CLEAR AREA.

THE STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-736 RMC 1980---CRIMPED ON 5/8 INCH STEEL ROD DRIVEN 29 INCHES IN ROCKY GROUND WITH DISC TOP 1 INCH ABOVE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 36 T32N R5E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-822 STATE--AK COUNTY--3RD JUD. DIS. QUAD--N62148140 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 00 MIN	1.5 METERS

CODE MARK TYPE ********* SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 1.9 MI. ON AN APROX. TRUE BEARING OF N55W FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. ON TOP OF KNOLL OVERLOOKING THE SUSITNA RIVER. STATION IS APROX. 3.7 MI. NE OF THE EAST END OF THE MOST EASTERLY LAKE OF FOG LAKES.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND APROX. 50 FEET SW OF THE STATION.

THE STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-822 RMC 1980---CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 26 INCHES INTO ROCKY GROUND WITH DISC TOP 4 INCHES ABOVE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 22 T32N R6E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-830 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148140 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 00 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 1.8 MI. ON AN APROX. TRUE BEARING OF WEST FROM THE JUNCTION OF THE SUSITNA RIVER AND DEADMAN CRK. ON TOP OF A SMALL BENCH OVERLOOKING THE SUSITNA RIVER. STATION IS APROX. 2.8 MI. NW OF THE EAST END OF THE MOST EASTERLY LAKE OF FOG LAKES.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND APROX. 50 FEET NE OF STATION IN CLEAR AND LEVEL AREA.

THE STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-830 RMC 1980---CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 22 INCHES IN ROCK WITH DISC TOP 8 INCHES ABOVE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 30 T32N R6E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-833 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148140 STA--

	YEAR	CP			REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK		HELICOPTER	00 HRS 00 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 2.9 MI. ON AN APROX. TRUE BEARING OF S85W FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. ON A GENTLE NORTHERLY SLOPE OVERLOOKING THE SUSITNA RIVER. STATION IS APROX. 1.8 MI. NE OF THE EAST END OF THE MOST EASTERLY LAKE OF FOG LAKES.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND ADJACENT TO STATION.

THE STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-833 RMC 1980---CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 29 INCHES INTO ROCKY GROUND WITH TOP OF DISC 1 INCH ABOVE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 33 T32N R6E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-835 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148140 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 00 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 0.6 MI. ON AN APROX. TRUE BEARING OF S05E FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. ON NORTH SIDE OF A SMALL WESTERLY RIDGE OVERLOOKING THE SUSITNA RIVER. STATION IS APROX. 3.8 MI. NE OF THE EAST END OF THE MOST EASTERLY LAKE OF FOG LAKES.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND SE OF STATION APROX. 100 FEET IN CLEARING.

THE STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-835 RMC 1980---CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 22 INCHES INTO ROCKY GROUND WITH DISC TOP 8 INCHS ABOVE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 36 T32N R6E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-929 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148110 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 05 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D101 SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 2.3 MI. ON AN APROX. TRUE BEARING OF N88E FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK ON TOP OF A SMALL KNOLL APROX. 600 FEET WEST OF THE NARROW PART OF A SMALL N-S LAKE AND APROX. 7.8 MI. N OF THE PEAK OF MT. WATANA.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND APROX. 400 FEET EAST OF STATION BY A SMALL LAKE. STATION IS AN APROX. 5 MINUTE PACK.

STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-929 RMC 1980--- CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN APROX. 26 INCHES IN GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 29 T32N R7E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-935 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148110 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 00 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 4.9 MI. ON AN APROX. TRUE BEARING OF S81E FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. ON HIGH SPOT ON WEST END OF E-W RIDGE WITH SCATTERED SPRUCE APROX. 0.7 MI. N OF THE SUSITNA RIVER AND APROX. 6.6 MI. N OF THE PEAK OF MI. WATANA.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND ADJACENT TO STATION.

STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-935 RMC 1980--- CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN APROX. 26 INCHES IN THE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 35 T32N R7E S.M. AK.

APPENDIX B

VERTICAL CONTROL BENCHMARKS

1. FIRST ORDER BENCHMARK DESCRIPTIONS

Benchmark Name	Elevation (L.M.S.L.) (Feet)	(Meters)	Page
P-107	718.969	219.1423	B-1
Q-107	717.282	218.6280	B-1
R-107	764.239	232.9406	B-2
P-111	3038.740	926.2098	B-2
Q-111	3118.915	950.6471	B-3
N-111	3037.015	925.6841	B-3
62-A	1123.533	342.4535	B-4
61-A	1344.899	409.9260	B-4
34-A	1371.671	418.0862	B-5
36-A	1647.784	502.2455	B-5
38-A	1697.350	517.3532	B-6
48-A	1499.510	457.0517	B-6
47-A	1447.709	441.2627	B-7
51-A	1483.184	452.0754	B-7
60-A	1417.321	432.0004	B-8
78-B	1759.826	536.3959	B-8
79-B	1723.949	525.4608	B-9
80-B	2244.737	684.1971	B-9
81-B	2519.162	767.8422	B-10
82-B	2979.530	908.1626	B-10
83-B	3083.373	939.8141	B-11
84-B	2441.203	744.0802	B-11
85-B	2430.105	740.6975	B-12
86-B	2807.079	855.5994	B-12
87-B	2395.512	730.1536	B-13
101-B	1346.018	410.2672	B-13
102-B	1374.390	418.9149	B-14
103-B	1482.540	451.8790	B-14
104-B	1452.252	442.6474	B-15

All values given are based on R&M survey except Q-107 and P-111, which are the NGS values used as the basis for the vertical network.

All benchmarks are first-order, Class I. Elevations are based on a local NGS mean sea-level datum which approximates the U.S. sea-level datum of 1929.

1. FIRST ORDER BENCHMARK DESCRIPTION (Continued)

Benchmark Name	Elevation (L.M.S.L.) (Feet)	(Meters)	Page
105-B	1494.141	455.4150	B-15
22-C	2359.861	719.2871	B-16
21-C	2451.900	747.3405	B-16
20-C	2703.226	823.9450	B-17
19-C	3011.782	917.9931	B-17
18-C	3134.845	955.5027	B-18
17-C	3202.710	976.1879	B-18
16-C	3242.079	988.1877	B-19
15-C	3180.024	969.2732	B-19
14-C	3300.255	1005.9198	B-20
13-C	3575.910	1089.9396	B-20
12-C	3439.410	1048.3342	B-21
11-C	3417.231	1041.5740	B-21
10-C	3614.668	1101.7531	B-22
9-C	3687.682	1124.0078	B-22
8-C	3629.152	1106.1678	B-23
7-C	3604.048	1098.5161	B-23
6-C	3490.321	1063.8519	B-24
5-C	3496.074	1065.6054	B-24
4-C	3522.276	1073.5918	B-25
3-C	3395.444	1034.9335	B-25
2-C	3355.426	1022.7359	B-26
1-C	3392.835	1034.1381	B-26

All values given are based on R&M survey except Q-107 and P-11', which are the NGS values used as the basis for the vertical network.

All benchmarks are first-order, Class I. Elevations are based on a local NGS mean sea-level datum which approximates the U.S. sea-level datum of 1929.

2. FIRST ORDER BENCHMARK PHOTOGRAPH INDEX

3. THIRD AND FOURTH ORDER BENCHMARKS

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--P-107 STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149413 QSN-- LINE--101 AREA--GOLD CREEK
LOCATED 36.2 MI. N FROM THE CITY OR TOWN OF--TALKEETNA
MONUMENT BY--CGS YR--1965 CP--RJL MARK TYPE--FLANGE-ENCASED ROD
RECOVERY BY--RMC YR--1980 CP--JSB CONDITION--GOOD
SPECIFIC SETTING--COPPER-CLAD STEEL ROD IN SLEEVE MONUMENTATION CODE--B
STAMPING--P107 CGS 1965 OTHER CONTROL--
LATITUDE = 624520N LONGITUDE = 1494155W
********** RECOVERY DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND WAS FOUND IN GOOD CONDITION
AS DESCRIBED IN NGS VERTICAL CONTROL DATA DESCRIPTION.
ABOUT LEVEL WITH RAILROAD TRACKS.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--Q107 STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149413 QSN-- LINE--101 AREA--GOLD CREEK
LOCATED 38.1 MI. N FROM THE CITY OR TOWN OF--TALKEETNA
MONUMENT BY--CGS YR--1965 CP--RJL MARK TYPE--BM DISK
RECOVERY BY--RMC YR--1980 CP--JSB CONDITION--GOOD
SPECIFIC SETTING-- MONUMENTATION CODE--B
STAMPING--Q107 CGS 1965 OTHER CONTROL--
LATITUDE = 624610N LONGITUDE = 1494145W
********** RECOVERY DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND WAS RECOVERED IN GOOD
CONDITION AS DESCRIBED IN NGS VERTICAL CONTROL DATA DESCRIPTION.
BELOW RAILROAD TRACKS.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--R107 STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149413 QSN-- LINE--101 AREA--GOLD CREEK
LOCATED 37.2 MI. N FROM THE CITY OR TOWN OF--TALKEETNA
MONUMENT BY--CGS YR--1965 CP--RJL MARK TYPE--FLANGE-ENCASED ROD
RECOVERY BY--RMC YR--1980 CP--JSB CONDITION--GOOD
SPECIFIC SETTING--COPPER-CLAD STEEL ROD IN SLEEVE MONUMENTATION CODE--B
STAMPING--R 107 CGS 1965 OTHER CONTROL--
LATITUDE = 624650N LONGITUDE = 1494140W
********** RECOVERY DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND WAS RECOVERED IN GOOD
CONDITION AS DESCRIBED IN NGS VERTICAL CONTROL DATA DESCRIPTION.
BELOW RAILROAD TRACKS.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--P111 STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63147331 QSN-- LINE--101 AREA--DENALI HIGHWAY
LOCATED 13.7 MI. NW FROM THE CITY OR TOWN OF--SUSITNA BRIDGE
MONUMENT BY--CGS YR--1965 CP--RJL MARK TYPE--BM DISK
RECOVERY BY--RMC YR--1980 CP--JSB CONDITION--GOOD
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--P111 CGS 1965 OTHER CONTROL--
LATITUDE = 631355N LONGITUDE = 1474505W
********** RECOVERY DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND WAS RECOVERED IN GOOD
CONDITION AS DESCRIBED IN NGS VERTICAL DATA DESCRIPTION.
ABOVE HIGHWAY.

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ACRN=          ********** BENCH MARK DESCRIPTION **********
DESIGNATION--Q111                          STATE--AK  COUNTY--3RD. JUD. DIS.
QUAD--N63147331 QSN--          LINE--101    AREA--DENALI HIGHWAY
LOCATED 14.7 MI. NW FROM THE CITY OR TOWN OF--SUSITNA BRIDGE
MONUMENT BY--CGS                  YR--1965  CP--RJL  MARK TYPE--BM DISK
RECOVERY BY--RMC                  YR--1980  CP--JSB  CONDITION--GOOD
SPECIFIC SETTING--BOULDER                                MONUMENTATION CODE--C
STAMPING--Q111 CGS 1965                                   OTHER CONTROL--
LATITUDE = 631420N      LONGITUDE = 1474650W
           ********** RECOVERY DESCRIPTION **********
     BENCHMARK WAS REACHED BY HELICOPTER AND WAS RECOVERED IN GOOD
     CONDITION AS DESCRIBED IN NGS VERTICAL CONTROL DATA DESCRIPTION.
     ABOVE HIGHWAY.
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ACRN=          ********** BENCH MARK DESCRIPTION **********
DESIGNATION--N111                          STATE--AK  COUNTY--3RD. JUD. DIS.
QUAD--N63147324 QSN--          LINE--101    AREA--DENALI HIGHWAY
LOCATED 12.5 MI. NW FROM THE CITY OR TOWN OF--SUSITNA BRIDGE
MONUMENT BY--CGS                  YR--1965  CP--RJL  MARK TYPE--BM DISK
RECOVERY BY--RMC                  YR--1980  CP--JSB  CONDITION--GOOD
SPECIFIC SETTING--BOULDER                                MONUMENTATION CODE--C
STAMPING--N111 CGS 1965                                   OTHER CONTROL--
LATITUDE = 631340N      LONGITUDE = 1474305W
           ********** RECOVERY DESCRIPTION **********
     BENCHMARK WAS REACHED BY HELICOPTER AND WAS RECOVERED IN GOOD
     CONDITION AS DESCRIBED IN NGS VERTICAL CONTROL DESCRIPTION.  SIGN WAS
     MISSING FROM WITNESS POST.
     BELOW HIGHWAY.
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ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--62-A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149413 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 1.9 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--62-A RMC 1980 OTHER CONTROL--
LATITUDE = 624620N LONGITUDE = 1493840W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS APROX. 2.0 MI. ON AN APROX. TRUE BEARING OF N55E FROM THE GOLD CRK. RAILROAD STATION ON THE S SIDE OF AN OLD CATERPILLAR ROAD SET IN A ROCK BOULDER.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--61-A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149412 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 3.8 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--61-A RMC 1980 OTHER CONTROL--
LATITUDE = 624700N LONGITUDE = 1493530W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.8 MI. ON AN APROX. TRUE BEARING OF N59E FROM THE RAILROAD STATION AT GOLD CRK. APROX. 10 FEET S OF THE CENTER OF AN OLD CATERPILLER ROAD AND APROX. 200 FEET W OF AN UNNAMED CRK. WHICH FLOWS NW TO THE SUSITNA RIVER AND IS SET IN A ROCK BOULDER.

ACRN= **********BENCH MARK DESCRIPTION**********
DESIGNATION--34-A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149412 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 5.0 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--34-A RMC 1980 OTHER CONTROL--
LATITUDE = 624745N LONGITUDE = 1493140W
**********ORIGINAL DESCRIPTION**********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 5.0 MI. ON AN APROX. TRUE BEARING OF N57E FROM THE RAILROAD STATION AT GOLD CRK. APROX. 10 FEET S OF CENTER OF AN OLD CATERPILLAR ROAD, NEAR A CUT BANK S OF DIP IN ROAD APROX. 0.75 MI. E OF A CABIN ALONG ROAD AND IS SET IN A ROCK BOULDER.
ABOVE

ACRN= **********BENCH MARK DESCRIPTION**********
DESIGNATION--36-A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149412 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 6.5 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--36-A RMC 1980 OTHER CONTROL--
LATITUDE = 624815N LONGITUDE = 1493110W
**********ORIGINAL DESCRIPTION**********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 6.5 MI. ON AN APROX. TRUE BEARING OF N59E FROM THE RAILROAD STATION AT GOLD CRK. 15 FEET S OF A BEND IN AN OLD CATERPILLAR ROAD SET IN A PARTIALLY EXPOSED ROCK BOULDER.
BELOW

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--38-A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149143 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 7.8 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--38-A RMC 1980 OTHER CONTROL--
LATITUDE = 624800N LONGITUDE = 1492750W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.3 MI. ON AN APROX. TRUE BEARING OF S54W FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. ON S SIDE OF AN OLD CATERPILLAR ROAD APROX. 30 FEET WEST OF CREST IN ROAD IN A ROCK OUTCROP.
ABOVE CATERPILLAR ROAD.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--48-A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149143 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 9.0 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--48-A RMC 1980 OTHER CONTROL--
LATITUDE = 624755N LONGITUDE = 1492530W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.6 MI. ON AN APROX. TRUE BEARING OF S36W FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. ON THE S EDGE OF AN OLD CATERPILLAR ROAD IN TOP OF LARGE ROCK BOULDER.
ABOVE CATERPILLAR ROAD.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--47-A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149143 QSN-- LINE-- AREA--SISITNA HYDRO. FEASIBILIT
LOCATED 10.0 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--47-A RMC 1980 OTHER CONTROL--
LATITUDE = 624755N LONGITUDE = 1492330W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.2 MI. ON AN APROX. TRUE BEARING OF S11W FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. APROX. 30 FEET N OF AN OLD CATERPILLAR ROAD SET IN TOP OF AN EXPOSED BOULDER.
ABOVE NATURAL GROUND LEVEL.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--51/A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149142 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 11.0 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--51-A RMC 1980 OTHER CONTROL--
LATITUDE = 624755N LONGITUDE = 1492130W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.2 MI. ON AN APROX. TRUE BEARING OF S16E FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. ON S SIDE OF AN OLD CATERPILLAR ROAD SET IN A ROCK OUTCROP.
ABOVE CATERPILLAR ROAD.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--60-A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149142 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 13.0 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--60-A RMC 1980 OTHER CONTROL--
LATITUDE = 624850N LONGITUDE = 1491820W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.5 MI. ON AN APROX. TRUE BEARING OF S66E FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. SET IN A ROCK OUTCROP APROX. 200 FEET S OF THE TOP OF DEVILS CANYON BANK AND APROX. 300 FEET N OF THE W END OF A SMALL LAKE AND 10 FEET N OF HELICOPTER LANDING AREA.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--78-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149142 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 13 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--78-B RMC 1980 OTHER CONTROL--
LATITUDE = 624730N LONGITUDE = 1491755W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.5 MI. ON AN APROX. TRUE BEARING OF S45E FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CREEK ON THE E EDGE OF THE MOST EASTERLY ROCK OUTCROP APROX. 0.1 MI. NNW OF A Y IN AN UNNAMED CRK. WHICH FLOWS APROX. 1.6 MI. N OF Y TO THE SUSITNA RIVER. DISC IS SET IN A PIECE OF THE OUTCROP APROX. 6 FEET BY 12 FEET IN SIZE AND PROTRUDING APROX. 6 FEET.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--79-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149142 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 13.0 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--79-B RMC 1980 OTHER CONTROL--
LATITUDE = 624730N LONGITUDE = 1491745W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.6 MI. ON AN APROX. TRUE BEARING OF S45E FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. IN THE WEST END OF A 35 FOOT BY 15 FOOT ROCK OUTCROP WHICH IS 3 FEET ABOVE THE GROUND LINE APROX. 0.1 MI. NE OF A Y IN AN UNNAMED CRK. WHICH FLOWS N APROX. 1.6 MI. FROM Y TO THE SUSITNA RIVER AND IS ON W EDGE OF A RIDGE FINGER WHICH DROPS VERTICALY TO THE WEST OF BENCHMARK.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--80-B STATE--AK COUNTY--3RD. JUD. DIS
QUAD--N62149142 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 14.5 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--SHALLOW-SET METAL ROD MONUMENTATION CODE--D
STAMPING--80-B RMC 1980 OTHER CONTROL--
LATITUDE = 624720N LONGITUDE = 1491645W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 4.1 MI. ON AN APROX. TRUE BEARING OF S48 E FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. ON THE SW SIDE OF A MUSKEG KNOB IN A SERIES OF SEVERAL KNOBS AND IS ON THE N SIDE OF STEEPLY S SLOPEING GROUND TO A CREVASE AND IS APROX. 0.6 MI. ESE OF A Y IN AN UNNAMED CREEK WHICH FLOWS N APROX. 1.6 MI. FROM Y TO THE SUSITNA RIVER.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--81-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149113 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 14.5 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--81-B RMC 1980 OTHER CONTROL--
LATITUDE = 624630N LONGITUDE = 1491415W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS APROX. 5.8 MI. ON AN APROX. TRUE BEARING OF S51E FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. AND IS SET IN A 35 FOOT BY 15 FOOT ROCK OUTCROP WHICH IS 3 FEET ABOVE NATURAL GROUND AND IS APROX. 0.2 MI. N OF AN UNNAMED CRK. WHICH FLOWS NW THEN N TO THE SUSITNA RIVER.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--82-B STATE--AK COUNTY--3RD. JUD. DIS
QUAD--N62149113 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 16 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--82-B RMC 1980 OTHER CONTROL--
LATITUDE = 624545N LONGITUDE = 1491100W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 6.0 MI. ON AN APROX. TRUE BEARING OF S45W FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. ON A FLAT AREA OF THE NORTH SLOPE OF A DRAINAGE WHICH FLOWS W THEN N TO THE SUSITNA RIVER AND IS APROX. 0.5 MI. NW OF A SMALL LAKE.

ACRN=
********** BENCH MARK DESCRIPTION **********
DESIGNATION--83-B
STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149113 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 17.5 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--83-B RMC 1980 OTHER CONTROL--
LATITUDE = 624545N LONGITUDE = 1490915W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX 5.4 MI. ON AN APROX. TRUE BEARING OF S37W FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. ON THE TOP OF A PLATEAU IN A SERIES OF BENCHES ON THE SW SIDE OF A PROMINATE 3400 FOOT ELEVATION KNOLL AND IS APROX. 0.6 MI. W OF AN UNNAMED CRK. DISC IS CEMENTED IN A ROCK OUTCROP APROX. 15 FEET S OF THE S EDGE OF SAID PLATEAU.

ACRN=
********** BENCH MARK DESCRIPTION **********
DESIGNATION--84-B
STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149113 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 17.5 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--SHALLOW-SET METAL ROD MONUMENTATION CODE--D
STAMPING--84-B RMC 1980 OTHER CONTROL--
LATITUDE = 624600N LONGITUDE = 1490830W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 4.8 MI. ON AN APROX. TRUE BEARING OF S35W FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. ON A MODERATE EASTERLY SLOPE TO AN UNNAMED CRK. APROX. 0.15 MI. E WHICH FLOWS NORTHERLY. BENCHMARK IS ALSO APROX. 50 FEET S OF A BRUSHY DRAINAGE TO SAID UNNAMED CREEK AND SURROUNDING TERRAIN IS TUNDRA WITH OUTCROPS OF ROCK.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--85-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149113 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 18 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--85-B RMC 1980 OTHER CONTROL--
LATITUDE = 624615N LONGITUDE = 1490730W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED IN A 3 FOOT BY 6 FOOT ROCK OUTCROP ON A SMALL BENCH ON AN WESTERLY SLOPE TO A UNNAMED CREEK WHICH IS APROX. 0.2 MI. E., BENCHMARK IS LOCATED APROX. 2.4 MI. ON AN APROX. TRUE BEARING OF S27E FROM THE JUNCTION OF THE SUSITNA RIVER AND SAID UNNAMED CRK. AND APROX. 1.0 MI. E OF A 3400 FOOT ELEV. KNOLL TOP.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--86-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149112 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 20 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--86-B RMC 1980 OTHER CONTROL--
LATITUDE = 624700N LONGITUDE = 1490400W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED IN THE CENTER OF A 10 FOOT BY 20 FOOT ROCK LEDGE WHICH IS ON THE N SLOPE OF A PROMINENT 3400 FOOT ELEV. KNOLL APROX. 0.75 MI N20E FROM THE TOP. BENCHMARK IS APROX. 2.9 MI. ON AN APROX. TRUE BEARING OF S11W FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. A ROCK CAIRN WAS BUILT 18 FEET EAST OF DISC.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--87-B RMC STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149112 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 21.5 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--87-B RMC 1980 OTHER CONTROL--
LATITUDE = 624630N LONGITUDE = 1490200W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER WHICH IS LOCATED ON A E-W GRANITE OUTCROP RIDGE APROX S10E 3.5 MI. FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. APROX. 0.2 MI. SW OF A UNNAMED CRK. WITH DEEP VALLEY WHICH FLOWS EAST AND APROX. 1 MI. NE OF THE TOP OF A 3400 FOOT ELEV. MOUNTAIN TOP. DISC IS ON E END OF ROCK OUTCROP WHICH IS 8 FEET ABOVE GROUND ON N SIDE AND TAPERS TO FLUSH ON THE S SIDE.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--101-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148443 QSN-- LINE-- AREA--SUSUTNA HYDRO. FEASIBILIT
LOCATED 24 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP-- JS MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--101-B RMC 1980 OTHER CONTROL--
LATITUDE = 624615N LONGITUDE = 1485600W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 7.0 MI. ON AN APROX. TRUE BEARING OF S36W FROM THE JUNCTION OF THE SUSITNA RIVER AND FOG CRK. SET IN PROTRUDING ROCK APROX. 200 FEET N OF THE N BANK OF THE SUSITNA RIVER AT THE BASE OF VERTICAL ROCK CLIFFS APROX. 1.5 MI. E OF MAJOR NORTHERLY BEND OF THE SUSITNA RIVER.
ABOVE PROX RIVER LEVEL.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--102-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148442 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 27.5 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--102-B RMC 1980 OTHER CONTROL--
LATITUDE = 624545N LONGITUDE = 1484845W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.3 MI. ON AN APROX. TRUE BEARING OF S76W FROM THE JUNCTION OF THE SUSITNA RIVER AND FOG CRK. IN A ROCK OUTCROP APROX. 300 FEET S OF THE S BANK OF THE SUSITNA RIVER AND APROX. 1000 FEET N OF A SMALL SLOUGH IN AN OLD SLIDE AREA.
ABOVE PROX. RIVER LEVEL.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--103-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148413 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 32 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--103-B RMC 1980 OTHER CONTROL--
LATITUDE = 624630N LONGITUDE = 1484130W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 0.7 MI. ON AN APROX. TRUE BEARING OF EAST FROM THE JUNCTION OF THE SUSITNA RIVER AND FOG CRK. ON TOP OF THE FIRST SHEAR ROCK CLIFF ON THE N SIDE OF FOG CRK. UPSTREAM OF SAID RIVER JUNCTION.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--104-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148413 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 32.5 MI. ENE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--104-B RMC 1980 OTHER CONTROL--
LATITUDE = 624850N LONGITUDE = 1484030W

********** ORIGINAL DESCRIPTION **********

BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.0 MI. ON AN APROX. TRUE BEARING OF N25E FROM THE JUNCTION OF THE SUSITNA RIVER AND FOG CRK. SET IN LARGE BOULDER ON MODERATLY SE SLOPEING GROUND APROX. 0.2 MI. NW OF W END OF A LARGE WOODED ISLAND IN THE SUSITNA RIVER.
ABOVE PROX. RIVER LEVEL.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--105-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148412 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 35 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--105-B RMC 1980 OTHER CONTROL--
LATITUDE = 624915N LONGITUDE = 1483550W

********** ORIGINAL DESCRIPTION **********

BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 0.4 MI. ON AN APROX. TRUE BEARING OF N82E FROM THE JUNCTION OF THE SUSITNA RIVER AND TSUSENA CRK. SET IN A LEDGE OF A PROMINENT ROCK OUTCROP APROX. 50 FEET N OF THE N BANK OF THE SUSITNA RIVER AND APROX. 300 FEET DOWN RIVER OF APROX. 200 FOOT TALL ROCK CLIFFS.
ABOVE PROX. RIVER LEVEL.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--22-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148412 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 32 MI. ESE FROM THE CITY OR TOWN OF--CHULITNA
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--22-C RMC 1980 OTHER CONTROL--
LATITUDE = 624945N LONGITUDE = 1483300W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED Y HELICOPTER AND IS LOCATED APROX. 2.1 MI. ON AN APROX. TRUE BEARING OF N77E FROM THE JUNCTION OF THE SUSITNA RIVER AND TSUSENA CRK. IN ROCK OUTCROP ON HIGH SPOT OF PROMINENT E-W RIDGE APROX. 0.4 MI. N OF THE SUSITNA RIVER AND APROX. 200 FEET S OF A 12 BY 30 FOOT METAL TRAILERHOUSE.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--21-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148144 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 35.5 MI. E FROM THE CITY OR TOWN OF--CHULITNA
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--21-C RMC 1980 OTHER CONTROL--
LATITUDE = 625215N LONGITUDE = 1482755W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.9 MI. ON AN APROX. TRUE BEARING OF N04E FROM THE JUNCTION OF THE SUSITNA RIVER AND DEADMAN CREEK ON TOP OF A 15 BY 20 FOOT ROUND ROCK BOULDER ON NW GENTLE SLOPE APROX. 600 FEET NE OF W END OF A 1200 FOOT LONG LAKE WHICH RUNS NW-SE AND IS APROX. 0.3 MI. SW OF DEADMAN CRK.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--20-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148144 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 36.5 E FROM THE CITY OR TOWN OF--CHULITNA
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--20-C RMC 1980 OTHER CONTROL--
LATITUDE = 625405N LONGITUDE = 1482625W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 5.0 MI. ON AN APROX. TRUE BEARING OF N11E FROM THE JUNCTION OF THE SUSITNA RIVER AND DEADMAN CRK. IN FLAT ROCK OUTCROP ON SLIGHT WESTERLY SLOPE OF PROMINENT ROUNDED TOP RIDGE AND IS APROX. 0.6 MI E OF DEADMAN CRK..

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--19-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148144 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 38 MI. E FROM THE CITY OR TOWN OF--CHULITNA
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--19-C RMC 1980 OTHER CONTROL--
LATITUDE = 625545N LONGITUDE = 1482240W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 7.4 MI. ON AN APROX. TRUE BEARING OF N23E FROM THE JUNCTION OF THE SUSITNA RIVER AND DEADMAN CRK. ON TOP OF A POINTED 4 BY 4 FOOT ROCK OUTCROP IN OPEN TUNDRA AREA APROX. 100 FEET E OF SLIGHT SLOPE BREAK APROX. 0.3 MI. SE OF WHERE DEADMAN CRK. NARROWS IN WIDTH.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--18-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148141 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 39.5 MI. ENE FROM THE CITY OR TOWN OF--CHULITNA
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--18-C RMC 1980 OTHER CONTROL--
LATITUDE = 625745N LONGITUDE = 1481950W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 9.4 MI. ON AN APROX. TRUE BEARING OF N15W FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. ON TOP OF A POINTED ROCK OUTCROP APROX. 50 FEET E OF E EDGE OF ROCK PLATEAU APROX. 0.5 MI. E OF DEADMAN CRK. IN OPEN AREA FREE OF BRUSH.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--17-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148141 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 40 MI. ESE FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--17-C RMC 1980 OTHER CONTROL--
LATITUDE = 625755N LONGITUDE = 1481840W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 9.5 MI. ON AN APROX. TRUE BEARING OF N11E FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. IN BEDROCK OUTCROP BENCH APROX. 400 FEET SW OF A WELL DEFINED BRUSHY DRAINAGE AND IS IN OPEN TUNDRA AND ROCK AREA.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--16-C STATE--AK COUNTY--3RD. JUD. DIS
QUAD--N62148141 QSN-- LINE-- AREA--SUSITNA HYDRO. FEASIBILIT
LOCATED 40.5 MI. ESE FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--16-C RMC 1980 OTHER CONTROL--
LATITUDE = 625900N LONGITUDE = 1481735W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 10.6 MI. ON AN APROX. TRUE BEARING OF N07W FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. IN ROCK OUTCROP ON THE W SLOPE OF A 3700 FOOT ELEV. RIDGE WHICH RUNS NE.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--15-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148141 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 41 MI. ESE FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--15-C RMC 1980 OTHER CONTROL--
LATITUDE = 630000N LONGITUDE = 1481620W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 11.6 MI. ON AN APROX. TRUE BEARING OF N03W FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. IN HIGH POINT OF 20 BY 6 FOOT ROCK PROTRUDING 6 FEET ABOVE GROUND ON PLATEAU WITH LIGHT BRUSH APROX. 150 FEET N OF BRUSHY DRAINAGE WHICH FLOWS 0.3 MILES WEST TO DEADMAN CRK.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--14-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63148232 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 41 MI ESE FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--14-C RMC 1980 OTHER CONTROL--
LATITUDE = 630100N LONGITUDE = 1481525W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.4 MI. ON AN APROX. TRUE BEARING OD S14W FROM THE PEAK OF DEADMAN MOUNTAIN IN ROCK OUTCROP ON A WELL DEFINED BENCH APROX. 0.2 MI. N OF THE N SHORE OF DEADMAN LAKE.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--13-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63148223 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 43 MI. E FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--13-C RMC 1980 OTHER CONTROL--
LATITUDE = 630200N LONGITUDE = 1481315W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.0 MI. ON AN APROX. TRUE BEARING OF S07E FROM THE PEAK OF DEADMAN MOUNTAIN ON TOP OF 6 BY 8 FOOT ROCK BOULDER PROTRUDING 3 FEET ABOVE GROUND AT TOE OF STEEP SIDESLOPE OF DEADMAN MOUNTAIN IN SMALL BASIN.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--12-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63148223 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 43 MI. E FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--12-C RMC 1980 OTHER CONTROL--
LATITUDE = 630310N LONGITUDE = 1481103W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 1.5 MI. ON AN APROX. TRUE BEARING OF S77E FROM THE PEAK OF DEADMAN MOUNTAIN ON TOP OF A 10 BY 15 FOOT ROCK PROTRUDING 6 FEET ABOVE GROUND ON E SIDESLOPE OF DEADMAN MOUNTAIN APROX. 500 FEET SW OF SMALL CRK..

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--11-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--*N6314822 QSN--3 LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 44 MI. E FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--11-C RMC 1980 OTHER CONTROL--
LATITUDE = 6320410 LONGITUDE = N1480925
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.2 MI. ON AN APROX. TRUE BEARING OF N79E FROM THE PEAK OF DEADMAN MOUNTAIN ON TOP OF A 8 BY 6 FOOT ROCK PROTRUDING 3 FEET IN AN AREA OF SMALL BENCHES APROX. 0.7 MI. NW OF Y IN DEADMAN CRK..

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--10-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63148222 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 45.5 MI. E FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--10-C RMC 1980 OTHER CONTROL--
LATITUDE = 630540N LONGITUDE = 1480620W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 4.4 MI. ON AN APROX. TRUE BEARING OF N60E FROM THE PEAK OF DEADMAN MOUNTAIN ON TOP OF LARGE CLIFF ROCK OUTCROP ON S SIDESLOPE OF A 3715 FOOT ELEV. ROUND KNOB.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--9-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63148222 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 47 MI. ENE FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--9-C RMC 1980 OTHER CONTROL--
LATITUDE = 630620N LONGITUDE = 1480330W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 6.0 MI. ON AN APROX. TRUE BEARING OF N61E FROM THE PEAK OF DEADMAN MOUNTAIN ON TOP OF A PROMINENT 12 FOOT DIA. ROUND TOP ROCK OUTCROP APROX. 1000 FEET W OF UNNAMED CRK. ON S SIDESLOPE OF WEST RIDGE FORMING THE W SIDE OF DEADMAN CRK. DRAINAGE.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--8-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63148222 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 40 MI. ESE FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--8-C RMC 1980 OTHER CONTROL--
LATITUDE = 630650N LONGITUDE = 1480140N
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 7.2 MI. ON AN APROX. TRUE BEARING OF N59E FROM THE PEAK OF DEADMAN MOUNTAIN ON TOP OF A PROMINENT 3 BY 3 FOOT POINTED TRIANGULAR SHAPED ROCK IN LOW SPOT OF TUNDRA VALLEY ON SIDESLOPE OF PROMINENT RIDGE FORMING THE W SIDE OF DEADMAN CRK. DRAINAGE.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--7-C STATE--AK COUNTY--3RD. JUD. DIS
QUAD--N63147334 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 41 MI. ESE FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--7-C RMC 1980 OTHER CONTROL--
LATITUDE = 630750N LONGITUDE = 1475850W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 4.3 MI. ON AN APROX. TRUE BEARING OF S48W FROM THE S TIP OF BUTTE LAKE ON TOP OF PROMINENT POINTED ROCK OUTCROP ON A NE SIDESLOPE OF A 3820 FOOT ELEV. KNOB AND IS APROX. 0.3 MI. NE OF W TRIBUTARY OF BUTTE CRK..

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--6-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63147334 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 41.5 ESE FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--6-C RMC 1980 OTHER CONTROL--
LATITUDE = 630840N LONGITUDE = 1475720W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.1 MI. ON AN APROX. TRUE BEARING OF S51W FROM THE S TIP OF BUTTE LAKE ON TOP OF A PROMINENT 15 FOOT DIA. POINTED ROCK OUTCROP PROTRUDING APROX. 10 FEET ABOVE TUNDRA GROUND APROX. 50 FEET E OF BRUSHY CRK. DRAINAGE.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--5-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63147334 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 41 MI. ESE FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--5-C RMC 1980 OTHER CONTROL--
LATITUDE = 631000N LONGITUDE = 1475600W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 1.7 MI. ON AN APORX. TRUE BEARING OF S74W FROM THE S TIP OF BUTTE LAKE ON TOP OF A ROCK OUTCROP IN TUNDRA BENCH AREA OF THE E SIDESLOPE OF A PROMINENT RIDGE FORMING THE W SIDE OF BUTTE CRK. DRAINAGE. MARK IS APROX. 100 FEET W OF A 100 FOOT DIAMETER AREA OF LOW WILLOW BRUSH.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--4-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63147334 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 43.5 MI ESE FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--4-C RMC 1980 OTHER CONTROL--
LATITUDE = 631100N LONGITUDE = 1475355W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 0.8 MI. ON AN APROX. TRUE BEARING OF N41W FROM THE S TIP OF BUTTE LAKE ON SE SLOPE OF A 4200 FOOT ROUND TOP MOUNTAIN (PEAK APROX. 3.9 MI. NW) APROX. 100 FEET WEST OF DROP TO BRUSHY FLAT AREA, SET ON HIGH SPOT OF AN APROX. 15 FOOT ROUND ROCK OUTCROP WHICH PROJECTS APROX. 3 FEET ABOVE NATURAL GROUND.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--3-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63147331 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 44 MI. E FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--3-C RMC 1980 OTHER CONTROL--
LATITUDE = 631200N LONGITUDE = 1475155W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 1.9 MI. ON AN APROX. TRUE BEARING OF N12E FROM THE S TIP OF BUTTE LAKE AT TOP OF NE SLOPE OF A 4200 FOOT ELEV. ROUNDED TOP MOUNTAIN. BENCHMARK IS SET IN TOP OF AN EXPOSED ROCK BOULDER PROTRUDING APROX. 1 FOOT IN OPEN TUNDRA AREA.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--2-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63147331 QSN-- LINE-- AREA--SUSITAN HYDRO. FEASIBILIT
LOCATED 45 MI. E FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--2-C RMC 1980 OTHER CONTROL--
LATITUDE = 631230N LONGITUDE = 1475025W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.7 MI. ON AN APROX. TRUE BEARING OF N27E FROM THE SOUTH TIP OF BUTTE LAKE ON TOP OF APROX. 10 FOOT BY 10 FOOT POINTED EXPOSED ROCK BOULDER WHICH PROTUDES APROX. 3 FEET IN OPEN TUNDRA AREA.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--1-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63147331 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 46 MI. E FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--1-C RMC 1980 OTHER CONTROL--
LATITUDE = 631300N LONGITUDE = 1474800W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 4.0 MI. ON AN APROX. TRUE BEARING OF N39E FROM THE SOUTH TIP OF BUTTE LAKE ON HIGH SPOT OF SMALL RIDGE WHICH RUNS SW APROX. 1.8 MI. S OF MAJOR BEND IN THE DENALI HWY..

BM 62A

BM 61A

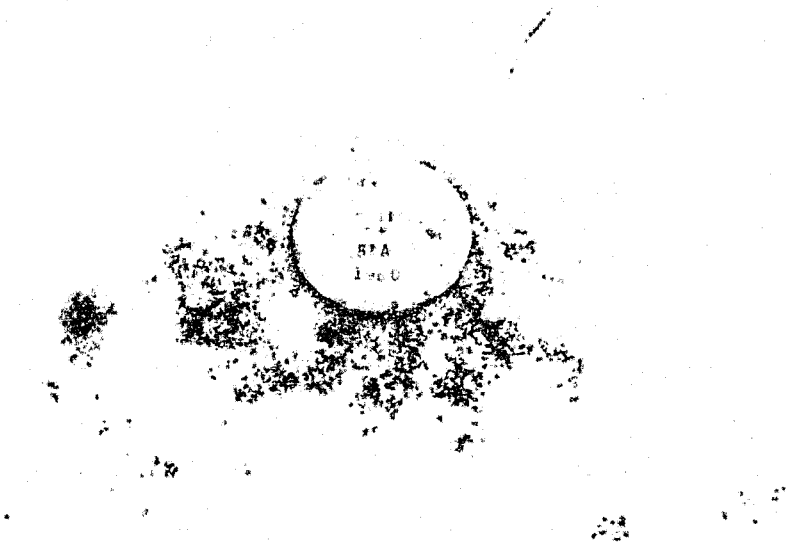
BM 34 A

BM 36A

BM 38A

BM 43A

BM 47A



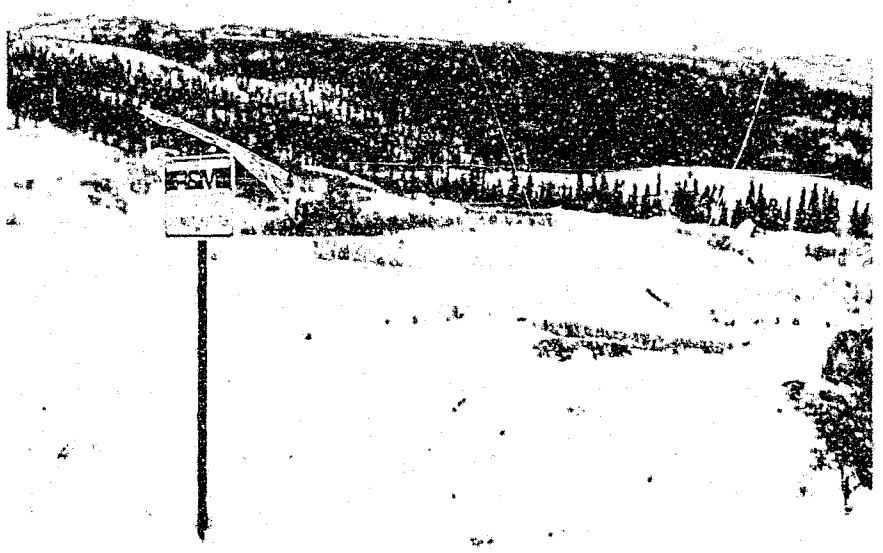
BM 51A

BM 60A

BM 78B

BM 79B

BM 80B



BM 81B

BM 82B

BM 83B

BM 84B

BM 85B

BM 86B

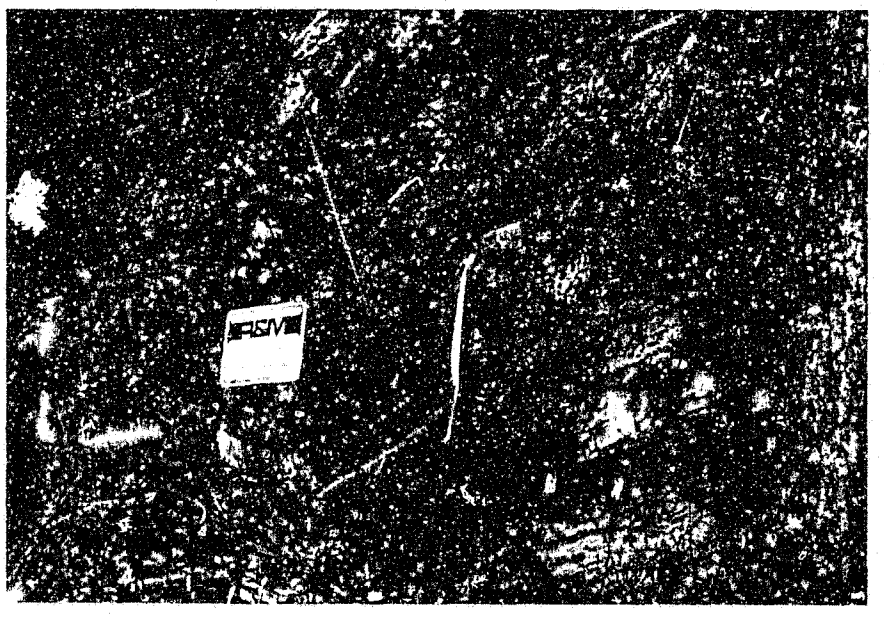
BM 87B

BM 101B

BM 102B

BM 103B

BM 104B

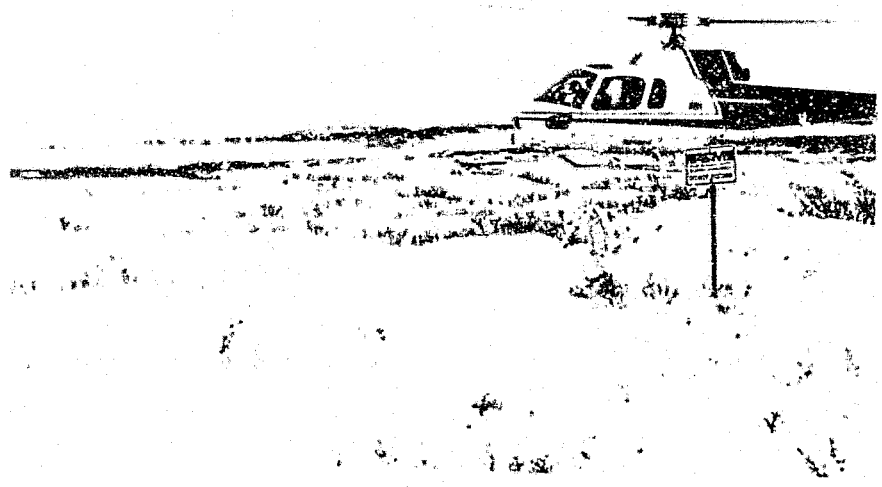


BM 105B

BM 22C

BM 21C

BM 20C



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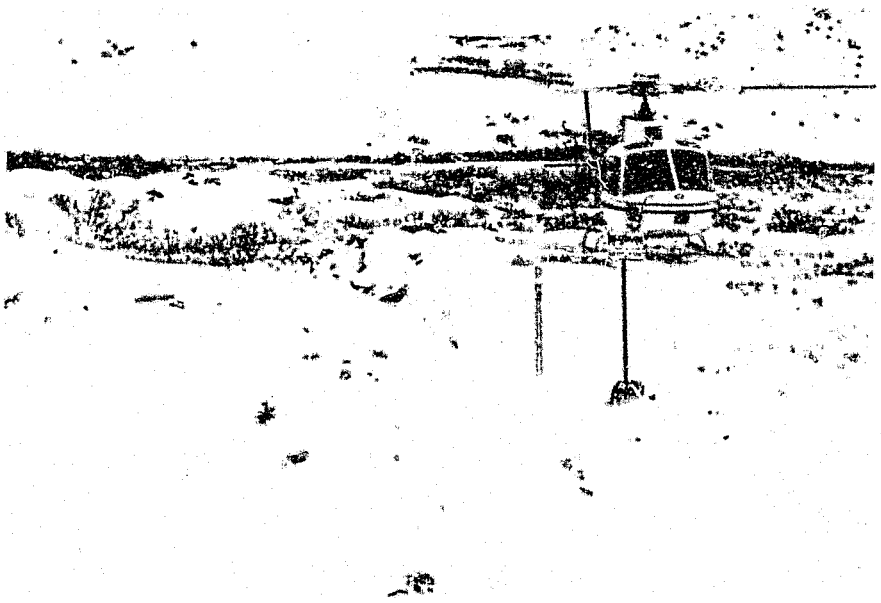

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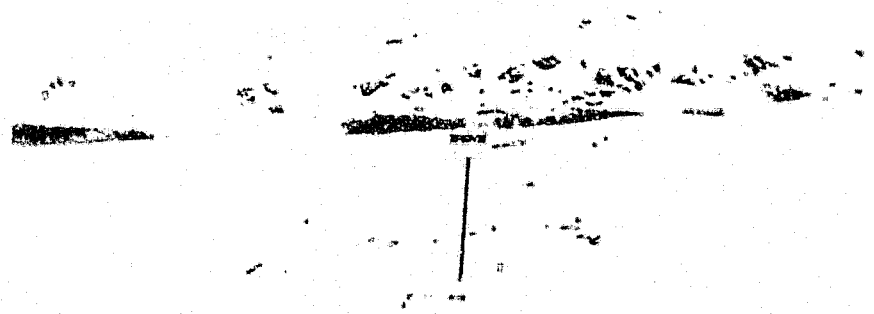
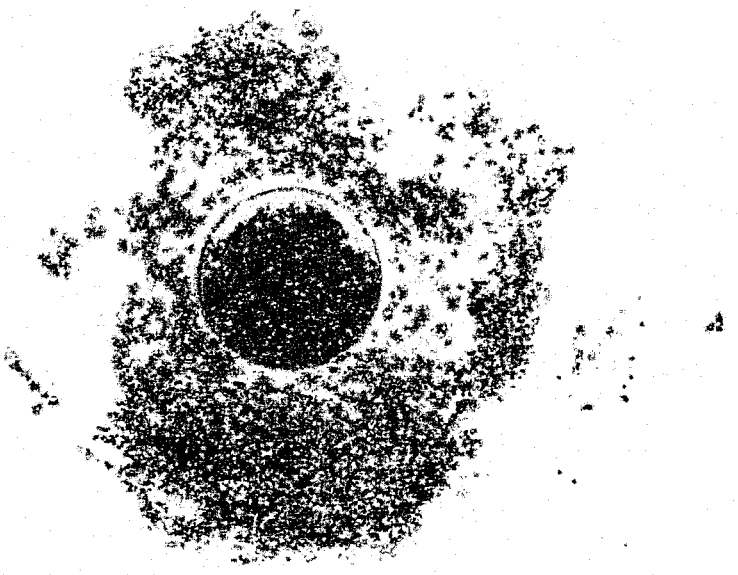


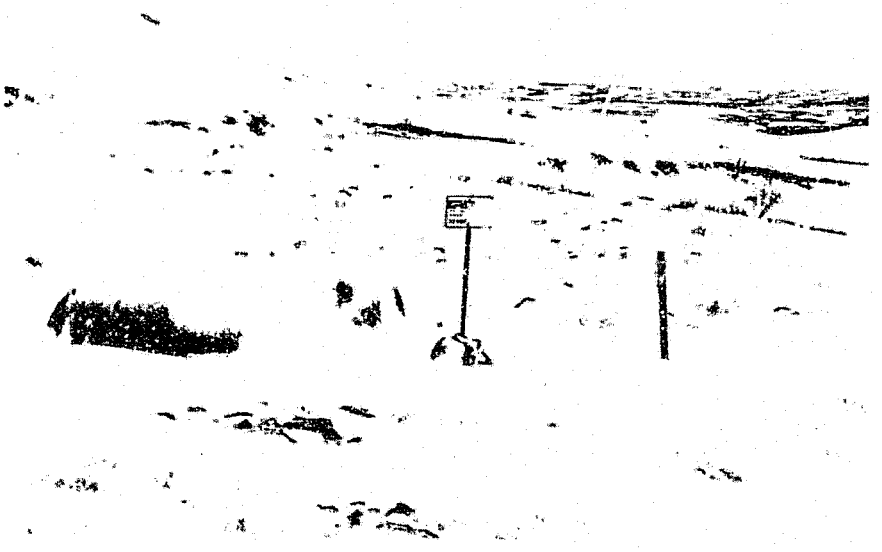
BM 17C

BM 16C



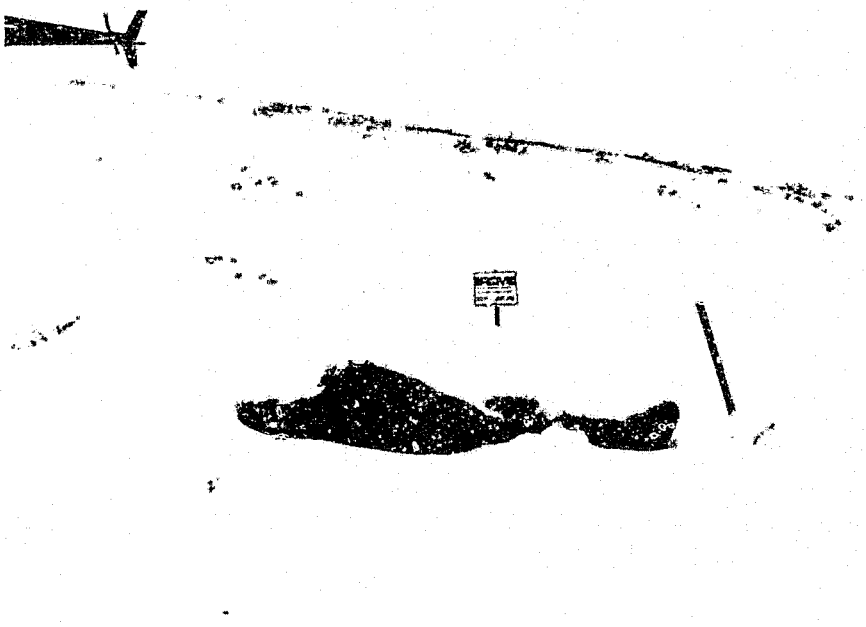
BM 15C

BM 14C



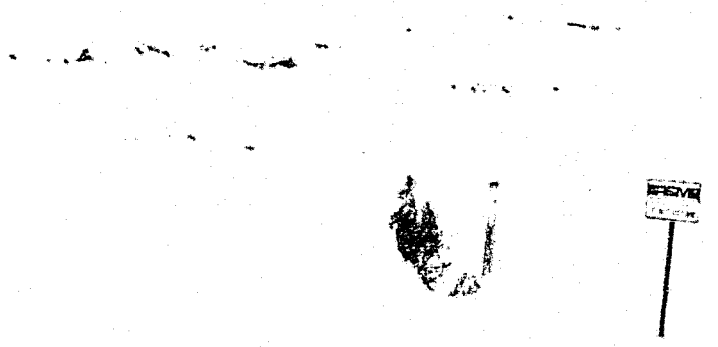
BM 13C

BM 12C



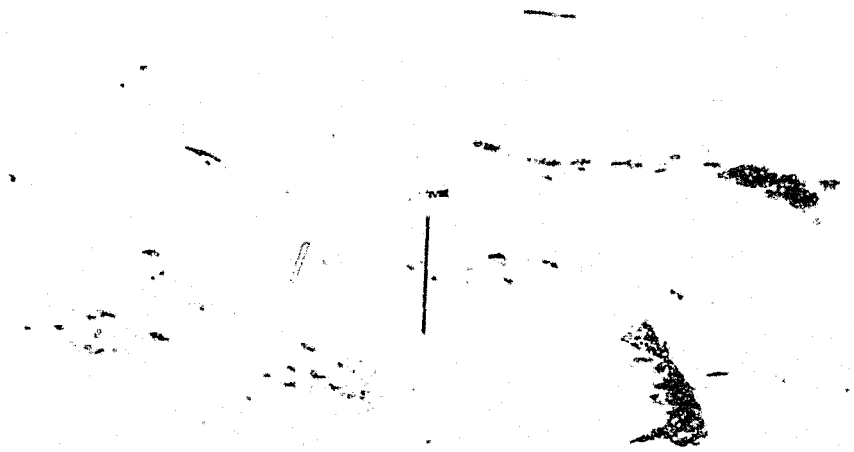
BM 11C

BM 10C



BM 9C

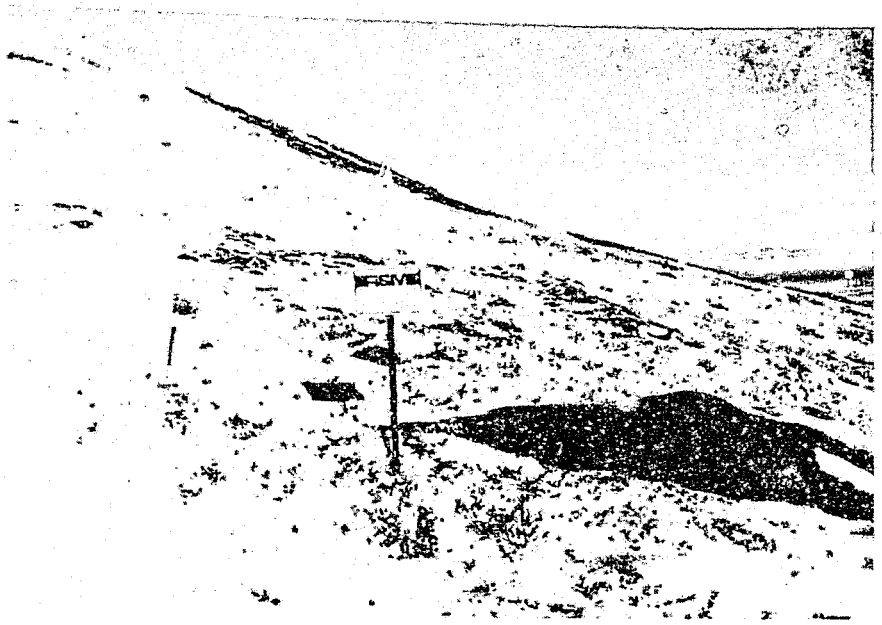
BM 8C



BM 7C

BM 6C

BM 5C



BM 4C

BM 3C

BM 2C

BM 1C

THIRD AND FOURTH ORDER BENCHMARKS SET IN ASSOCIATION WITH 1982 SUSITNA HYDROGRAPHIC SURVEYS

DEFINITION OF SYMBOLS AND ABBREVIATIONS

A - Access. Designation established by R&M for identification of survey monuments, referring to access channels leading to sloughs.

Alcap - Aluminum cap. A two inch aluminum disk usually set on 5/-8" rebar within .2 of a foot from ground level. Stamped R&M Consultants Inc., 1982 and with the location identification also stamped in block type.

B - Backwater. Designation established by R&M for identification of survey monuments. Referring to pools in sloughs immediately upstream from the slough mouth.

C.W. - Cottonwood. Abbreviation used in location descriptions.

D.S. - Downstream. Abbreviation used in location descriptions.

H - Head. Designation established by ADF&G for location identification of the upstream end of a slough where mainstem flow could diverge and flow through the slough.

L.B. & R.B. - Left and right bank respectively. This designation applies when looking downstream only. All R&M river bank designations are relative to the downstream view.

LRX - Lower river cross section. Designation established by R&M for identification of mainstem cross sections which were used primarily for computer modeling.

M - Mainstem. Designation established by ADF&G for identification of staff gages, referring to the main channel flow as opposed to side channels or flow through sloughs.

Rebar - 24" long steel rod, 5/8" in diameter.

S - Slough. Designation established by ADF&G for use in labelling and identification of staff gages.

S.G. - Staff Gage

SL - Slough

U.S. - Upstream. Abbreviation used in lccation descriptions

T - Tributary. Designation established by ADF&G for identification of staff gages.

W - Mouth. Designation established by ADF&G for use in labelling the mouth of sloughs where they converge with the mainstem.

X-sec - Cross Section

R&M CONSULTANTS
TEMPORARY BENCHMARKS FOR
MAIN CHANNEL CROSS SECTIONS
1980-1982*

Monument Description	Identification	Elevation
R&M Rebar & Alcap on left bank of canyon	LRX-68 L.B.	861.70
R&M Rebar & Alcap on right bank of canyon	LRX-67 R.B.	853.47
R&M Rebar & Alcap on right bank of canyon	LRX-66 R.B.	853.75
R&M Rebar & Alcap on right bank of canyon	LRX-65 R.B.	852.72
R&M Rebar & Alcap on right bank of canyon	LRX-64 R.B.	848.23
R&M Rebar & Alcap on right bank of canyon	LRX-63 R.B.	847.11
R&M Rebar & Alcap @ center of photo panel	-	844.26
R&M spike in 14" cottonwood, right bank	TBM 153	845.92
R&M Rebar & Alcap, left bank near RM 147.6	LRX-60 L.B.	831.87
R&M Rebar & Alcap, left bank near RM 144.9	LRX-59 L.B.	796.80
Nail in base of 16" cottonwood, top of right bank	LRX-59 R.B.	797.59
Rebar at toe of steep left bank	TBM 101	767.05
Nail in root of cottonwood near RM 143.2	LRX-58 R.B.	773.41
R&M Rebar & Alcap, left bank @ RM 142.3	LRX-57 L.B.	761.68
R&M Rebar & Alcap, left bank @ RM 142.1	LRX-56 L.B.	759.30
R&M Rebar & Alcap, top of left bank, main channel	LRX-55 L.B.	748.51
R&M Rebar & Alcap, Top of left bank, RM 140.8	LRX-54 L.B.	741.20
R&M Rebar & Alcap, left bank on terrace	LRX-53 L.B.	733.76
R&M Rebar & Alcap, left bank at RM 139.5	LRX-52 L.B.	735.67
Nail in 6" C.W. on right bank at LRX-51	Indian	716.01
R&M Rebar & Alcap, left bank at RM 138.9	LRX-51 L.B.	717.86

* NOTE: LRX-1 - LRX-62 were surveyed in 1980,
LRX-63 - LRX-68 were surveyed in 1981,
the remaining cross sections were surveyed in 1982.

R&M CONSULTANTS
TEMPORARY BENCHMARKS FOR
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1980 - 1982*

Monument Description	Identification	Elevation
R&M Rebar & Alcap, on steep bedrock, left bank	LRX-50 L.B.	709.34
R&M Rebar & Alcap, left bank at RM 138.2	LRX-49 L.B.	733.40
R&M Rebar & Alcap, top of left bank	LRX-48 L.B.	700.48
R&M Rebar & Alcap, left bank at RM 137.2	LRX-47 L.B.	700.48
R&M Rebar & Alcap, top of left bank, RM 136.9	LRX-46 L.B.	700.17
R&M Rebar & Alcap, left bank at RM 136.6	LRX-45 L.B.	690.81
Nail in 14" Cottonwood tree on right bank	LRX-44 R.B.	693.48
R&M Rebar & Alcap, angle point on far left bank	LRX-44 L.B.	688.67
R&M Rebar & Alcap, left bank main channel	LRX-43 L.B.	683.11
Nail in cottonwood tree on right bank	LRX-42 R.B.	676.71
R&M Rebar & Alcap, left bank RM 135.6	LRX-42 L.B.	703.81
Nail in tree stump on right bank	LRX-41 R.B.	664.55
R&M Rebar & Alcap, left bank RM 134.7	LRX-41 L.B.	703.01
Nail in 14" cottonwood tree, right bank	LRX-40 R.B.	663.30
R&M Rebar & Alcap, left bank RM 134.2	LRX-40 L.B.	676.53
R&M Rebar & Alcap, left bank RM 133.3	LRX-39 L.B.	652.06
R&M Rebar & Alcap, left bank east channel	LRX-38 L.B.	647.98
R&M Rebar & Alcap, left bank RM 131.9	LRX-37 L.B.	650.08
R&M Rebar & Alcap, left bank RM 131.2	LRX-36 L.B.	631.37
Spike in 36" cottonwood at crest gage	TBM-1	630.49
R&M Rebar & Alcap, top of left bank	LRX-35 L.B.	626.56

* NOTE: LRX-1 - LRX-62 were surveyed in 1980,
LRX-63 - LRX-68 were surveyed in 1981,
the remaining cross sections were surveyed in 1982.

R&M CONSULTANTS
TEMPORARY BENCHMARKS FOR
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1980 - 1982*

Monument Description	Identification	Elevation
R&M Rebar & Alcap, top of left bank, west channel	LRX-34 L.B.	625.38
R&M Rebar & Alcap, left bank main channel	LRX-33 L.B.	615.53
Nail in 12" cottonwood on right bank	-	619.05
R&M Rebar & Alcap, left bank RM 129.7	LRX-32 L.B.	608.72
R&M Rebar & Alcap, left bank main channel	LRX-31 L.B.	603.50
R&M Rebar & Alcap, right bank on veg. island	LRX-30 N3 R.B.	599.75
R&M Rebar & Alcap, left bank an island, RM 128.7	LRX-30 N3 L.B.	600.99
R&M Rebar & Alcap, right bank on small island	LRX-30 N2 R.B.	596.15
R&M Rebar & Alcap, left bank on sand bar	LRX-30 N1 L.B.	592.33
R&M Rebar & Alcap, right bank, island w/lone C.W.	LRX-30 N1 R.B.	593.44
R&M Rebar & Alcap, top of left bank, RM 127.5	LRX-30	596.07
R&M Rebar & Alcap, top of left bank, RM 126.1	LRX-29	578.43
R&M Rebar & Alcap, left bank of bypass channel	LRX-28A L.B.	569.73
R&M Rebar & Alcap, right bank main channel	LRX-28A R.B.	575.84
Spike in 48" cottonwood on left bank, RM 124.4	TBM-1	565.48
R&M Rebar & Alcap, top of left bank near crest gage	LRX-28	561.80
R&M Rebar & Alcap, left bank at RM 123.3	LRX-27	552.71
R&M Rebar & Alcap, left bank at RM 122.5	LRX-26	547.80
R&M Rebar & Alcap, left bank at RM 122.1	LRX-25A L.B.	539.88
R&M Rebar & Alcap, right bank of main channel	LRX-25A R.B.	542.10
Nail in 16" cottonwood stump on left bank main channel	TBM "Tooth"	539.50

* NOTE: LRX-1 - LRX-62 were surveyed in 1980,
LRX-63 - LRX-68 were surveyed in 1981,
the remaining cross sections were surveyed in 1982.

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1980 - 1982*

Monument Description	Identification	Elevation
R&M Rebar & Alcap, left bank of east channel	LRX-25 L.B.	536.55
Spike in 15" spruce near Curry crest gage	TBM-1	534.20
R&M Rebar & Alcap, left bank at RM 120.7	LRX-24 L.B.	531.39
Nail in base of 15" spruce at angle point on island	TBM "FLU"	528.18
R&M Rebar & Alcap, left bank at RM 119.3	LRX-23 L.B.	530.53
Nail in cottonwood on right bank at RM 119.2	TBM "Fern"	518.94
R&M Rebar & Alcap, left bAnk by RR tracks	LRX-21 L.B.	523.74
R&M Rebar & Alcap, right bank at RM 118.4	LRX-20B R.B.	511.45
R&M Rebar & Alcap, left bank of east channel	LRX-20A L.B.	511.20
R&M Rebar & Alcap, right bank of west channel	LRX-20A R.B.	505.98
R&M Rebar & Alcap, left bank at RM 117.2	LRX-20 L.B.	503.98
R&M Rebar & Alcap, left bank at RM 116.5	LRX-19 L.B.	496.41
R&M Rebar & Alcap, left bank at RM 115.9	LRX-18C L.B.	500.57
R&M Rebar & Alcap, right bank main channel	LRX-18C R.B.	492.29
R&M Rebar & Alcap, left bank east channel RM 115.3	LRX-18B L.B.	485.72
Orange painted rock on right bank main channel	LRX-18B R.B.	482.71
R&M Rebar & Alcap, left bank at head of Lane SL	LRX-18A L.B.	482.21
R&M Rebar & Alcap, right bank of west channel	LRX-18A R.B.	479.35
Nail set in tree at top of right bank	LRX-18 R.B.	471.44
R&M Rebar & Alcap, left bank at RM 113	LRX-18 L.B.	469.91
R&M Rebar & Alcap, left bank at RM 112.7	LRX-17 L.B.	471.59

* NOTE: LRX-1 - LRX-62 were surveyed in 1980,
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the remaining cross sections were surveyed in 1982.

R&M CONSULTANTS
TEMPORARY BENCHMARKS FOR
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1980 - 1982*

Monument Description	Identification	Elevation
Spike in 48" cottonwood on right bank, weat channel	LRX-16 R.B.	465.45
R&M Rebar & Alcap, left bank of east channel	LRX-16 L.B.	469.58
R&M Rebar & Alcap, right bank at toe of bluff	LRX-15 R.B.	457.73
R&M Rebar & Alcap, left bank of east channel	LRX-15 L.B.	468.25
R&M Rebar & Alcap, on right bank at toe of bluff	LRX-14 R.B.	450.66
R&M Rebar & Alcap, left bank of east channel	LRX-14 L.B.	450.92
R&M Rebar & Alcap, top of left bank at RM 110.3	LRX-13 L.B.	454.43
Spike in 25" cottonwood on right bank at RM 108.4	LRX-12 R.B.	434.38
Spike in railroad tie on left bank at RM 108.4	LRX-12 L.B.	449.02
R&M Rebar set near toe of right bank at RM 106.7	LRX-11 R.B.	413.28
R&M Rebar & Alcap, left bank at RM 106.7	LRX-11 L.B.	420.88
R&M Rebar & Alcap, left bank at RM 106.4	LRX-10C L.B.	420.32
R&M Rebar & Alcap, right bank below bluff	LRX-10C R.B.	416.17
R&M Rebar & Alcap, left bank at RM 105.9	LRX-10B L.B.	417.03
R&M Rebar & Alcap, right bank below bluff	LRX-10B R.B.	413.64
R&M Rebar & Alcap, left bank at RM 105.1	LRX-10A L.B.	403.99
R&M Rebar & Alcap, right bank of west channel	LRX-10A R.B.	403.18
R&M Rebar & Alcap, left bank at RM 104.8	LRX-10 L.B.	410.15
Spike in 28" cottonwood on left bank of west channel	TBM "RAIN"	404.63
R&M Rebar & Alcap, left bank at RM 104.1	LRX-9A L.B.	404.80
R&M Rebar & Alcap, right bank in vegetation	LRX-9A R.B.	392.93

* NOTE: LRX-1 - LRX-62 were surveyed in 1980,
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the remaining cross sections were surveyed in 1982.

R&M CONSULTANTS
TEMPORARY BENCHMARKS FOR
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1980 - 1982*

Monument Description	Identification	Elevation
R&M Rebar & Alcap, left bank ar RM 103.4	LRX-9 L.B.	387.82
Spike in 18" spruce near crest gages	TBM-1	397.06
Nail in 18" spruce stump in right bank	LRX-9 R.B.	393.75
R&M Rebar & Alcap, left bank at RM 102.5	LRX-8 L.B.	385.64
R&M Rebar & Alcap, right bank near edge of veg.	LRX-8 R.B.	383.70
R&M Rebar & Alcap, left bank at RM 101.5	LRX-7 L.B.	369.26
R&M Rebar on right bank of west channel	TBM "WHISKERS"	375.29
R&M Rebar on right bank below Whiskers Cr.	LRX-6 R.B.	371.09
R&M Rebar & Alcap, left bank at RM 101	LRX-6 L.B.	371.16
R&M Rebar & Alcap, left bank of east channel	LRX-5 L.B.	362.75
R&M Rebar & Alcap, left bank of east channel	LRX-4D L.B.	364.09
R&M Rebar & Alcap, right bank at RM 100.2	LRX-4D R.B.	360.61
R&M Rebar & Alcap, left bank of east channel	LRX-4C L.B.	359.16
R&M Rebar & Alcap, right bank at RM 100.1	LRX-4C R.B.	360.07
R&M Rebar & Alcap, left bank of east channel	LRX-4B L.B.	359.45
R&M Rebar & Alcap, right bank at RM 99.9	LRX-4B R.B.	359.60
R&M Rebar & Alcap, left bank of east channel	LRX-4A L.B.	358.35
R&M Rebar & Alcap, right bank at RM 99.8	LRX-4A R.B.	358.74
R&M Rebar & Alcap, left bank of east channel	LRX-4 L.B.	352.30
Spike in 10" Spruce near crest gages at RM 99.5	TBM-1	366.96
R&M Rebar & Alcap, left bank of main channel	LRX-3D L.B.	361.69

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R&M CONSULTANTS
TEMPORARY BENCHMARKS FOR
MAIN CHANNEL CROSS SECTIONS
1980 - 1982*

Monument Description	Identification	Elevation
R&M Rebar & Alcap, right bank of west channel	LRX-30 R.B.	350.50
R&M Rebar & Alcap, left bank of main channel	LRX-3C L.B.	352.39
R&M Rebar & Alcap, right bank on gravel island	LRX-3C R.B.	350.74
R&M Rebar & Alcap, left bank near slough head	LRX-38 L.B.	350.40
R&M Rebar & Alcap, right bank on island at RM 98.9	LRX-3B R.B.	351.75
R&M Rebar & Alcap, left bank of main channel	LRX-3A L.B.	349.18
R&M Rebar & Alcap, right bank of island	LRX-3A R.B.	349.84
Nail set in cottonwood log on bank of island	TBM COAST	349.68
R&M Rebar & Alcap, left bank of main channel	LRX-3 L.B.	346.45
R&M Rebar & Alcap, left bank of Susitna at RM 98.5	LRX-2C L.B.	346.93
R&M Rebar & Alcap, right bank of Chulitna River	LRX-2C R.B.	347.30
R&M Rebar & Alcap, left bank of Susitna at RM 98.3	LRX-2B L.B.	345.66
R&M Rebar & Alcap, right bank of Chulitna River	LRX-2B R.B.	346.63
R&M Rebar & Alcap, left bank at RM 98	LRX-2A L.B.	344.23
R&M Rebar & Alcap, right bank Chulitna right channel	LRX-2A R.B.	345.63
R&M Rebar & Alcap, left bank Susitna left channel	LRX-2 L.B.	343.87
R&M Rebar & Alcap, right bank at RM 97.9	LRX-2 R.B.	343.26
R&M Rebar & Alcap, left bank Susitna east channel	LRX-1B L.B.	341.90
R&M Rebar & Alcap, right bank of west channekl	LRX-1B R.B.	341.87
R&M Rebar & Alcap, left bank above Talkeetna R.	LRX-1A L.B.	339.86
R&M Rebar & Alcap, right bank of west channel	LRX-1A R.B.	340.41
R&M Rebar & Alcap, left bank near vegetation	LRX-1 L.B.	336.33

* NOTE: LRX-1 - LRX-62 were surveyed in 1980,
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the remaining cross sections were surveyed in 1982.

R&M CONSULTANTS
TEMPORARY BENCHMARKS FOR
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1980 - 1982*

Monument Description	Identification	Elevation
R&M Rebar & Alcap, right bank at RM 97	LRX-1 R.B.	338.80
R&M Rebar & Alcap, right bank near RM 96.6	LRX-I1 R.B.	336.77
R&M Rebar & Alcap, left bank near RM 96.8	LRX-I1 L.B.	338.43
R&M Rebar & Alcap, right bank near RM 96.2	LRX-I2 R.B.	334.54
R&M Rebar & Alcap, left bank near RM 96.5	LRX-I2 L.B.	340.68
R&M Rebar & Alcap, right bank near RM 95.9	LRX-I3 R.B.	334.62
R&M Rebar & Alcap, left bank near RM 95.6	LRX-I3 L.B.	330.55
R&M Rebar & Alcap, right bank near RM 95.5	LRX-I4 R.B.	329.14
R&M Rebar & Alcap, left bank near RM 95.2	LRX-I4 L.B.	328.98
R&M Rebar & Alcap, right bank near RM 94.9	LRX-I5 R.B.	323.80
R&M Rebar & Alcap, left bank near RM 94.9	LRX-I5 L.B.	332.39
R&M Rebar & Alcap, right bank near RM 94.5	LRX-I6 R.B.	323.22
R&M Rebar & Alcap, left bank near RM 94.5	LRX-I6 L.B.	339.22
R&M Rebar & Alcap, right bank near RM 94	LRX-I7 R.B.	322.22
R&M Rebar & Alcap, left bank near RM 94.2	LRX-I7 L.B.	321.66

* NOTE: LRX-1 - LRX-62 were surveyed in 1980,
LRX-63 - LRX-68 were surveyed in 1981,
the remaining cross sections were surveyed in 1982.

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS

Description/Location	River Mile I.D.	Elevation
Chiseled Square, right bank, mouth Portage Cr.	148.9 T R.B.	848.32
Photo panel center, rebar & Alcap	148.9 T L.B.	844.27
TBM "Portage Q R.B.", right bank @ discharge site	148.9 Q R.B.	845.46
R&M Rebar & Alcap, right bank, mouth Jacklong Cr.	144.9 T1 R.B.	794.13
R&M Rebar & Alcap, left bank, mouth Jacklong Cr.	144.9 T1 L.B.	796.94
R&M Rebar & Alcap, right bank, head SL 22	144.8 H4 R.B.	791.93
R&M Spike, left bank, SL 22	144.8 H4 L.B.	794.99
R&M Rebar & Alcap, right bank @ discharge site	144.6 S3 R.B.	789.54
R&M Spike, left bank, SL 22 @ discharge site	144.6 S3 L.B.	788.92
R&M Rebar & Alcap, right bank SL 22	144.4 S2 R.B.	785.16
ADF&G Spike, right bank, Susitna mainstem	144.3 M1 R.B.	794.78
R&M Spike in 12" C.W., right bank, Susitna	144.3 M1 R.B.	794.79
ADF&G Spike in 14" C.W., left bank, SL 22	144.3 S4 L.B.	788.86
ADF&G Spike in 8" C.W., left bank, SL 22	144.3 W3 L.B.	788.25
R&M Rebar & Alcap, right bank, mouth SL 22	144.2 W1 R.B.	786.00
R&M Rebar & Alcap, left bank, mouth SL 22	144.2 W1 L.B.	784.58
R&M Spike in 20" C.W., left bank, head SL 21	142.0 H9 L.B.	763.33
R&M Rebar & Alcap, right bank SL 21 @ recorder	141.9 S8 R.B.	752.21
R&M Rebar & Alcap, left bank, SL 21 @ recorder	141.9 S8 L.B.	751.66
R&M Rebar & Alcap, right bank, x-sec SL 21	141.8 S7 R.B.	750.39
R&M Rebar & Alcap, left bank, x-sec SL 21	141.8 S7 L.B.	751.45
R&M Rebar & Alcap, left bank of access channel	141.8 A6 L.B.	753.45
R&M Rebar & Alcap, right bank of access channel	141.8 A6 R.B.	753.04

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
R&M Rebar & Alcap, left bank of access channel	141.7 A5 L.B.	750.81
R&M Rebar & Alcap, right bank of access channel	141.7 A5 R.B.	751.27
R&M Rebar & Alcap, right bank of access channel	141.3 A4 R.B.	746.28
R&M Rebar & Alcap, left bank of access channel	141.0 A3 L.B.	743.45
R&M Rebar & Alcap, right bank of access channel	141.0 A3 R.B.	740.84
R&M Rebar & Alcap, left bank of access channel	140.8 A2 L.B.	741.00
R&M Rebar & Alcap, right bank on point of island	140.6 W1 R.B.	736.05
R&M Rebar & Alcap, left bank, mouth SL 21	140.6 W1 L.B.	735.53
R&M Rebar & Alcap, left bank, head SL 20	140.6 H3 L.B.	737.33
ADF&G nail in root of 12" birch, head SL 20	140.6 H3 L.B.	737.49
R&M Rebar & Alcap, right bank, head of SL 20	140.6 H3 R.B.	734.25
ADF&G, nail in 30" C.W. on Trib. to SL 20	-	735.73
R&M Rebar & Alcap, left bank @ discharge site, SL 20	140.2 S2 L.B.	729.66
R&M Rebar & Alcap, right bank @ discharge site, SL 20	140.2 S2 R.B.	732.20
R&M Rebar & Alcap, left bank, mouth of SL 20	140.1 W1 L.B.	728.14
ADF&G staff gage top, SL 20	140.1 T3 B.	732.57
ADF&G 1½" Alcap at mouth of SL 19, right bank	-	725.14
R&M Rebar & Alcap, left bank, mouth of SL 19	139.8 W1 L.B.	725.09
R&M Rebar & Alcap, left bank at mouth of Indian River	138.6 T1 L.B.	712.02
R&M TBM, 8" spike in 30" C.W. tree on right bank of Indian River	-	714.09

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
ADF&G Rebar on right bank at head of SL 16	-	708.22
ADF&G Rebar on left bank at head of SL 16	-	708.86
R&M Rebar & Alcap, left bank at recorder site, SL 16	138.0 S3 L.B.	705.62
R&M Rebar & Alcap, right bank at recorder site, SL 16	138.0 S3 R.B.	706.05
R&M Rebar & Alcap, on right bank SL 16, edge of vegetation	137.9 S2 R.B.	701.24
R&M Rebar & Alcap, left bank, mouth of SL 16	137.8 W1 L.B.	702.01
R&M Rebar & Alcap. right bank, mouth of SL 16	137.8 W1 R.B.	701.74
ADF&G Rebar on left bank (R.B. Head pin 1), SL 16	-	702.21
R&M Rebar & Alcap, left bank, Gold Cr. discharge site	136.8 T2 L.B.	698.86
R&M Rebar & Alcap, right bank, Gold Cr. discharge site	136.8 T2 R.B.	699.81
R&M Rebar & Alcap, left bank at mouth of Gold Cr.	136.8 T1 L.B.	694.16
R&M Rebar & Alcap, right bank at mouth of Gold Cr.	136.8 T1 R.B.	696.28
R&M Rebar & Alcap, left bank of SL 11 at head	136.5 H4 L.B.	689.36
R&M Rebar & Alcap, left bank bypass channel, discharge site	136.5 Q3 L.B.	688.63
R&M Rebar & Alcap, right bank bypass channel, discharge site	136.5 Q3 R.B.	686.17
R&M Rebar & Alcap, left bank at recorder site, SL 11	135.7 S2 L.B.	675.88
R&M Rebar & Alcap, right bank at recorder site, SL 11	135.7 S2 R.B.	674.76
R&M Rebar & Alcap, left bank, mouth of SL 11	135.5 W1 L.B.	675.80

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
R&M Rebar & Alcap, right bank, mouth of SL 11	135.5 W1 R.B.	672.77
R&M Rebar & Alcap, left bank SL 11A	135.1 S1 L.B.	672.00
R&M Rebar & Alcap, right bank SL 11A	135.1 S1 R.B.	669.56
R&M Rebar & Alcap, left bank of SL 10 at discharge site	134.1 S1 L.B.	654.37
R&M Rebar & Alcap, right bank of SL 10 at discharge site	134.1 S1 R.B.	654.24
R&M Rebar & Alcap, left bank of trib., 75 ft U.S. from mouth	131.9 T1 L.B.	639.85
R&M Rebar & Alcap, right bank of trib.	131.9 T1 R.B.	641.52
R&M Rebar & Alcap, right bank of slough near 4th of July Cr.	131.2 S4 R.B.	626.18
R&M Rebar & Alcap, left bank of slough near 4th of July Cr.	131.2 S4 L.B.	624.39
R&M Rebar & Alcap, right bank, 300 ft. D.S. of 4th of July Cr.	131.1 S1 R.B.	623.03
R&M Rebar & Alcap, left bank, 300 ft. D.S. of 4th of July Cr.	131.1 S1 L.B.	619.08
R&M Rebar & Alcap, left bank, mouth of 4th of July Cr.	131.1 T2 L.B.	621.52
R&M Rebar & Alcap, right bank at mouth of 4th of July Cr.	131.1 T2 R.B.	622.66
R&M Rebar & Alcap, right bank at discharge site, 4th of July Cr.	131.1 T3 R.B.	626.13
R&M Rebar & Alcap, left bank at discharge site, 4th of July Cr.	131.1 T3 L.B.	627.69
R&M Rebar & Alcap, left bank Sherman Cr. at discharge site	130.8 T2 L.B.	622.78
R&M Rebar & Alcap, right bank Sherman Cr. at discharge site	130.8 T2 R.B.	624.96

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
R&M Rebar & Alcap, left bank mouth of Sherman Cr.	130.8 T1 L.B.	622.25
R&M Rebar & Alcap, right bank mouth of Sherman Cr.	130.8 T1 R.B.	623.53
R&M TBM 9-4, Spike at base of 8" C.W. near well 9-4	129.5 T6	613.95
R&M Rebar & Alcap, near well 9-4 in SL 9	129.5 T6 L.B.	610.39
R&M Rebar & Alcap, near well 9-5 in SL 9	129.5 T6 R.B.	607.41
ADF&G TBM, Spike in fork of 3" birch, near S.G.	129.5 T6	605.15
R&M Rebar & Alcap, at mouth of trib. to SL 9	129.4 T7 R.B.	605.66
R&M Rebar & Alcap, at mouth of trib. in SL 9	129.4 T7 L.B.	605.43
R&M TBM 9-7, Spike at base of 24" C.W.	129.3 S8	609.23
R&M Rebar & Alcap, left bank SL 9	129.3 S8 L.B.	608.28
R&M, Rebar & Alcap, right bank SL 9, 350 ft D.S. of head	129.3 S8 R.B.	606.33
R&M Rebar & Alcap, left bank SL 9 at head	129.3 H9 L.B.	606.77
R&M Rebar & Alcap, right bank at head of SL 9	129.3 H9 R.B.	608.18
ADF&G Rebar HP2, left bank SL 9	129.3 H9	605.85
R&M TBM 9-10, nail at base of 8" birch, near well 9-10	129.2 T7	606.66
R&M Rebar & Alcap, left bank 30 ft. U.S. of well 9-10	129.2 S5 L.B.	605.08
R&M Rebar & Alcap, right bank 8.9 ft. D.S. of Well 9-11	129.2 S5 R.B.	606.01
R&M Rebar & Alcap, left bank of SL 9 @ recorder	128.8 S3 L.B.	600.10
R&M Rebar & Alcap, right bank of SL 9 @ recorder	128.8 S3 R.B.	598.94
ADF&G Spike @ base of 6" birch, near Trib. 129.0	128.8	600.18

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
TBM 9-14, spike @ base of 30" C.W. @ well 9-14	-	602.19
R&M Rebar & Alcap, right bank Trib. 128.5	128.5 T2 R.B.	597.19
R&M Rebar & Alcap, left bank of Trib. 128.5	128.5 T2 L.B.	597.76
R&M Rebar & Alcap, right bank at mouth of SL 9	128.4 W1 R.B.	597.48
R&M Rebar & Alcap, left bank, mouth of SL 9	128.4 W1 L.B.	599.08
TBM ADF&G, Nail @ Base of 8" birch, left bank	128.4 W1	600.97
R&M Rebar & Alcap, left bank of tributary	127.3 T1 L.B.	590.01
R&M Rebar & Alcap, right bank of tributary	127.3 T1 R.B.	590.72
R&M Rebar & Alcap, left bank SL 8	126.6 S9 L.B.	579.15
R&M Rebar & Alcap, right bank SL 8	126.6 S9 R.B.	579.84
R&M Rebar & Alcap, left bank SL 8	126.5 S8 L.B.	578.14
R&M Rebar & Alcap, right bank SL 8	126.5 S8 R.B.	578.85
R&M Rebar & Alcap, left bank SL 8	126.5 S7 L.B.	580.79
R&M Rebar & Alcap, right bank SL 8	126.5 S7 R.B.	575.73
R&M Rebar & Alcap, left bank SL 8 at head	126.1 H4 L.B.	576.32
R&M Rebar & Alcap, right bank SL 8 at head	126.1 H4 R.B.	577.12
R&M Rebar & Alcap, left bank SL 8	125.9 S6 L.B.	571.40
R&M Rebar & Alcap, right bank SL 8	125.9 S6 R.B.	571.56
R&M Rebar & Alcap, right bank SL 8	125.7 S3 R.B.	570.90
R&M Rebar & Alcap, left bank at SL 8 recorder	125.7 S5 L.B.	568.37
R&M Rebar & Alcap, right bank at SL 8 recorder	125.7 S5 R.B.	567.56
R&M Rebar & Alcap, left bank SL 8	125.7 S3 L.B.	570.01

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
R&M Rebar & Alcap, right bank, SL 8	125.6 S2 R.B.	567.25
R&M Rebar & Alcap, left bank SL 8	125.6 S2 L.B.	571.49
R&M Rebar & Alcap, left bank, mouth of SL 8	125.2 W1 L.B.	568.51
R&M Rebar & Alcap, right bank, mouth of SL 8	125.2 W1 R.B.	566.01
TBM 8-8, nail at base of 5" birch tree	-	573.56
TBM 8-12, spike in 6" alder	-	569.58
TBM 8-5, nail in 6" birch	-	579.99
R&M Rebar & Alcap, left bank of Skull Cr.	124.7 T1 L.B.	564.91
R&M Rebar & Alcap, right bank of Skull Cr.	124.7 T1 R.B.	560.04
R&M Rebar & Alcap, left bank tributary @ RM 123.9	123.9 T1 L.B.	554.31
R&M Rebar & Alcap, right bank trib.	123.9 T1 R.B.	555.61
R&M Rebar & Alcap, left bank mouth of Curry Creek	120.9 T1 L.B.	536.67
R&M Rebar & Alcap, left bank mouth trib. 121.0	121.0 T1 L.B.	533.73
R&M Rebar & Alcap, right bank mouth trib. 121.0	121.0 T1 R.B.	532.96
R&M Rebar & Alcap, right bank mouth trib. 117.4	117.4 T1 RB	502.20
R&M Rebar & Alcap, left bank mouth trib. 117.4	117.4 T1 L.B.	503.04
R&M Rebar & Alcap, right bank mouth Mackenzie Cr.	116.7 T1 R.B.	497.77
R&M Rebar & Alcap, left bank mouth Mackenzie Cr.	116.7 T1 L.B.	496.34
R&M Rebar & Alcap, right bank at head Lane S1	114.1 H1 R.B.	476.23
R&M Rebar & Alcap, left bank at head Lane Sl.	114.1 H1 L.B.	481.81
R&M Rebar & Alcap, right bank Lane Cr. @ bridge	113.6 T2 R.B.	478.27

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
R&M Rebar & Alcap, left bank at Lane Cr. bridge	113.6 T2 L.B.	481.04
R&M Rebar & Alcap, left bank mouth Lane Cr.	113.6 T1 L.B.	473.21
R&M Rebar & Alcap, right bank mouth of Lane Cr.	113.6 T1 R.B.	474.31
R&M Rebar & Alcap, left bank, trib. at RM 110.1	110.1 T1 L.B.	445.89
R&M Rebar & Alcap, right bank, trib. at RM 110.1	110.1 T1 R.B.	446.14
R&M Rebar & Alcap, left bank, head Whiskers Sl.	101.6 H4 L.B.	374.24
R&M Rebar & Alcap, right bank, head Whiskers Sl.	101.6 H4 R.B.	372.72
R&M Rebar & Alcap, left bank, backwater Whiskers Sl.	101.4 S3 L.B.	370.38
R&M Rebar & Alcap, right bank, backwater Whiskers Sl.	101.4 S3 R.B.	370.85
R&M Rebar & Alcap, left bank, mouth Whiskers Cr.	101.3 T2 L.B.	368.17
R&M Rebar & Alcap, right bank, mouth Whiskers Cr.	101.3 T2 R.B.	369.37
R&M Rebar & Alcap, right bank, mouth Whiskers Sl.	101.2 W1 R.B.	370.07
R&M Rebar & Alcap, left bank, mouth Whiskers Sl.	101.2 W1 L.B.	370.43
ADF&G Rebar, left bank, near staff gages 101.2 M4	101.2	370.74
TBM RR Spike in 6" birch, left bank Susitna R.	96.8	339.27
TBM RR Spike in 10" birch, left bank Susitna R.	96.6	338.44
TBM RR Spike in root of 12" Spruce, left bank	96.2	340.17
TBM RR Spike in 10" birch, left bank Susitna R.	95.7	331.65
TBM RR Spike in 8" birch, left bank Susitna R.	95.4	334.94
TBM RR Spike in opposite Mile Post 225, between rails in a railroad tie.	95.2	335.19

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
TBM RR Spike, west end of railroad tie	94.9	334.13
TBM RR Spike, west end of railroad tie	94.6	343.94
TBM RR Spike, west end of railroad tie	94.3	355.94
R&M Rebar & Alcap, left bank, head of Birch Cr.	93.1 H4 L.B.	315.47
R&M Rebar & Alcap, right bank, head of Birch Cr.	93.1 H4 R.B.	313.96
R&M Rebar & Alcap, right bank, Birch Cr. Slough	89.3 S1 R.B.	287.44
R&M Rebar & Alcap, left bank, Birch Cr. Slough	89.3 S1 L.B.	387.79
R&M Rebar & Alcap, right bank, Birch Cr.	89.3 T2 R.B.	290.97
R&M Rebar & Alcap, left bank, Birch Cr.	89.3 T2 L.B.	290.68
R&M Rebar & Alcap, right bank, Birch Cr.	89.3 T3 R.B.	287.25
R&M Rebar & Alcap, left bank, Birch Cr.	89.3 T3 L.B.	286.90
R&M Rebar & Alcap, left bank, head Sunshine Sl.	86.8 H3 L.B.	284.77
R&M Rebar & Alcap, right bank, head of Sunshine Sl.	86.8 H3 R.B.	285.02
R&M Rebar & Alcap, right bank, Sunshine Cr., backwater	86.1 T2 R.B.	267.97
R&M Rebar & Alcap, left bank, Sunshine Cr., backwater	86.1 T2 L.B.	268.82
R&M Rebar & Alcap, right bank, mouth Sunshine Cr.	85.7 T1 R.B.	268.33
R&M Rebar & Alcap, left bank, mouth Sunshine Cr.	85.7 T1 L.B.	267.44
R&M Rebar & Alcap, right bank, mouth Rabideaux Cr.	83.3 T1 L.B.	263.08
R&M Rebar & Alcap, right bank, mouth Rabideaux Cr.	83.3 T1 R.B.	262.97
R&M Rebar & Alcap, right bank, mouth Whitefish Sl.	78.9 W1 R.B.	241.74

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	RiverMile l.D.	Elevation
R&M Rebar & Alcap, left bank, mouth Whitefish Sl.	78.9 W1 L.B.	242.42
R&M Rebar & Alcap, left bank, head Goose Sl.	75.0 H5 L.B.	222.06
R&M Rebar & Alcap, right bank, head Goose Sl.	75.0 H5 R.B.	221.38
R&M Rebar & Alcap, left bank, x-sec. in Goose Sl.	73.2 S2 L.B.	212.76
R&M Rebar & Alcap, right bank, x-sec. in Goose Sl.	73.2 S2 R.B.	213.03
R&M Rebar & Alcap, left bank, mouth Goose Sl.	73.1 W1 L.B.	212.96
R&M Rebar & Alcap, right bank, mouth Goose Sl.	73.1 W1 R.B.	212.18
R&M Rebar & Alcap, right bank, Goose Cr.	73.1 T3 R.B.	215.71
R&M Rebar & Alcap, left bank, Goose Cr.	73.1 T3 L.B.	213.06
R&M Rebar & Alcap, right bank, Goose Cr.	73.0 T4 R.B.	215.17
R&M Rebar & Alcap, left bank, Goose Cr.	73.0 T4 L.B.	213.59

APPENDIX C

APPENDIX C
AERIAL PHOTOGRAPHY

Index No.	Date	Area	Scale	BW or Color	Contracting Agency	Location of Negatives
1310	1949-51	Susitna River Basin - Cook Inlet to Devil Canyon	1:40000	BW	USCE	EROS Data Center
1311	1951-54	Denali Highway - West from Maclaren River	1:40000	BW	USCE	EROS Data Center
1312	1951-54	Yentna River - Chelatna Lake	1:40000	BW	USCE	EROS Data Center
1313	1951	Talkeetna	1:40000	BW	USCE	EROS Data Center
1314	1961-62	Cook Inlet to Willow East of Susitna River	1:15840	BW	ADL	ADL (Project Symbol BL)
1315	1961-62	Cook Inlet, Mt. Yenlo West of Susitna River	1:20000	BW	BLM	BLM (Project Symbol GP 103, GP 120)
1316	1962	Delta Islands	1:20000	BW	BLM	BLM (Project Symbol GP 105)
1317	1962	Talkeetna	1:20000	BW	ADL	ADL (Project Symbol TAK)
1318	1962-63	Susitna Valley	1:15840	BW	ADL	ADL (Project Symbol SUS)
1320	1968	Upper Susitna Valley, Chulitna River	1:15840	BW	ADL	ADL (Project Symbol SUTP)
1325	1972	Lake Louise Area	1:24000	C	SDP	ADL (Project Symbol Lk. Lou.)
1330	1974	Devil Canyon	1:30000	BW	DOT	NPAS
1331	1974	Susitna River Basin	1:500000	BW	NASA	EROS Data Center
1332	1974	Cook Inlet to Talkeetna	1:63360	BW	CSSC	NPAS
1333	1976	Willow Basin	1:24000	BW&C	CSSC	ADL (Project Symbol WIL)
1334	1976-79	Susitna River Basin	1:500000 1:1000000	BW BW	NASA NASA	EROS Data Center EROS Data Center
1335	7/28/77 7/29/77	Susitna River Gold Creek to Glaciers	1:120000	C-IR	BLM	BLM
1336	1978	Susitna River	1:18000	BW	USCE	NPAS
1337	1978	Susitna River	1:72000	BW	USCE	NPAS

APPENDIX C - Aerial Photography (Continued)

Index No.	Date	Area	Scale	BW or Color	Contracting Agency	Location of Negatives
1338	4/8/79 8/25/78	Susitna River Cook Inlet to Talkeetna	1:60000 1:120000	C-IR BW	BLM BLM	BLM BLM
1339	8/11/80 8/1/80	Upper Susitna River Basin	1:60000 1:120000	C-IR BW	BLM BLM	BLM BLM
1340	7/19/80	Devil Canyon Reservoir	1:24000	C	R&M	NPAS
1341	7/19/80	Watana Reservoir	1:24000	C	R&M	NPAS
1342	7/19/80	Alternative Access Corridor - Susitna	1:24000	C	R&M	NPAS
1343	8/24/80	Lower Susitna River	1:48000	BW	R&M	NPAS
1344	11/14/80	Susitna River - Delta Islands to Watana Creek	1:60000	BW	R&M	R&M (35 mm Photography)
1345	12/5/80	Susitna River - Cook Inlet to Watana Creek	1:24000	BW	R&M	R&M (35 mm Photography)
1346	4/27/81	Susitna River - Bell Island to Watana Creek	1:24000	BW	R&M	R&M (35 mm Photography)
1347	5/6/81	Susitna River - Bell Island to Curry	1:24000	BW	R&M	R&M (35 mm photography)
1348	5/6/81	South Intertie - Pt. Mackenzie to Willow	1:30000	BW	R&M	NPAS
1349	5/12/81	North Intertie - Healy to Fairbanks	1:30000	BW	R&M	NPAS
1350	5/26/81	Alternative Access Corridors	1:24000	C	R&M	NPAS
1351	5/26/81	East-west intertie	1:24000	C	R&M	NPAS
1352	8/24/81	Susitna River Cook Inlet to Devil Canyon (For Vegetation Studies)	1:36,000	C	R&M	TES
1353	10/19/81	Susitna River Cook Inlet to Talkeetna, 5 miles up Chulitna, 5 miles up Upper Susitna (For Definition of Low Water Channel)	1:60,000	BW	R&M	R&M (35 mm photography)

APPENDIX C - Aerial Photography (Continued)

Index No.	Date	Area	Scale	BW or Color	Contracting Agency	Location of Negatives
1354	4/26/82	Susitna River - Talkeetna to Watana. Three sets of photos; morning, noon, evening. (For Shadow Study)	1:12000	BW	R&M	NPAS
1355	5/31/82	Susitna River - selected locations between Kashwitna and Devil Canyon (for Slough Studies)	1:48000	BW	R&M	NPAS
1356	5/31/82	Alternate Access Corridors Rand Between Sherman and Watana	1:24,000	BW	R&M	NPAS
1357	6/1/82	Susitna River - Talkeetna at Devil Canyon (For Slough Studies)	1:12,000	BW	R&M	NPAS
1358	8/22/82	Alternate Access Corridors Deadman Mountain	1:24,000	BW	R&M	NPAS
1359	8/22/82	Access Corridors South of Susitna River	1:24,000	BW	R&M	NPAS

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-333 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62149140 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 20 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 3.3 MI. ON AN APROX. TRUE BEARING OF S77E FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. ON TOP EDGE OF ROCK CLIFF APROX. 0.4 MI. N OF THE SUSITNA RIVER AND APROX. 4.9 SW OF THE WEST END OF HIGH LAKE.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND APROX. 0.3 N OF THE STATION ON TOP OF KNOLL IN CLEARING. STATION IS AN APROX. 20 MINUTE PACK DOWNSLOPE TO STATION.

STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-333 RMC 1980--- CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN APROX. 26 INCHES IN ROCK.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 33 T32N R1E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-426 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62149110 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 00 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK — CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND — MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 0.9 MI. ON AN APROX. TRUE BEARING OF N39E FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. ON THE TOP OF A PROMINATE ROCK KNOLL APROX. 1.0 MI. N OF THE SUSITNA RIVER AND APROX. 2.7 MI. E OF THE EAST END OF HIGH LAKE.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND AT THE STATION.

STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-426 RMC 1980--- CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 25 INCHES INTO ROCK WITH TOP OF DISC 5 INCHES ABOVE THE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STA ION IS LOCATED APROX. IN PROTRACTED SECTION 26 T32N R2E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-431 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62149110 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 10 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 3.2 MI. ON AN APROX. TRUE BEARING OF S79W FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. ON SOUTH EDGE OF W-E RIDGE APROX. 0.4 MI. N OF THE SUSITNA RIVER AND APROX. 2.6 MI. S OF THE WEST END OF HIGH LAKE.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND APROX. 600 FEET WEST OF STATION IN CLEARING ON RIDGE.

STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-431 RMC 1980--- CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 27 INCHES INTO GROUND WITH THE TOP OF DISC 3 INCHES ABOVE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 31 T32N R2E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-434 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N6214911O STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MH5	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 05 MIN	1.5 METERS

CODE MARK TYPE ********* SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 0.8 MI. ON AN APROX. TRUE BEARING OF S40W FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. ON MODERATLY NORTHERLY SLOPEING GROUND APROX. 150 FEET N OF THE TOP OF A ROUND TOP KNOLL, APROX. 0.5 MI. S OF THE SUSITNA RIVER AND APROX. 2.5 MI. SE OF THE EAST OUTLET OF HIGH LAKE.

STATION WAS REACHED BY HELICOPTER WHICH CAN BE LANDED APROX. 150 FEET S OF STATION ON KNOLL TOP.

STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-434 RMC 1980--- CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 25 INCHES INTO ROCKY GROUND WITH DISC TOP 5 INCHES ABOVE THE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 34 T32N R2E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-727 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148140 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 20 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX 0.8 MI. ON AN APROX. TRUE BEARING OF N75W FROM THE JUNCTION OF THE SUSITNA RIVER AND DEADMAN CRK. ON A PROMINATE ROCK OUTCROP POINT AT THE TOP OF A CLIFF ON THE NORTH BANK OF THE SUSITNA RIVER. STATION IS APROX. 6.5 MI. SOUTH OF THE PEAK OF TSUSENA BUTTE.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND APROX. 0.2 MI. NE OF STATION IN SMALL CLEARING. PACK TIME IS APROX. 20 MINUTES.

THE STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-727 RMC 1980---CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 29 INCHES INTO ROCK WITH DISC TOP 1 INCH ABOVE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST CENTERED OVER DISC WITH GUYS.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 27 T32N R5E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--WA-5 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148410 STA--

MONUMENT BY--USE YEAR 1978 CP MKR TYPE-- REACHED BY PACK TIME HRS MIN HGT OF TELESCOPE METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D12P SURVEY DISK SET INTO THE TOP OF A METAL PIPE IMBEDDED IN THE GROUND MKR IS A STEEL PIPE

UNDERGROUND--NONE

STATION IS LOCATED APROX. 1.4 MI. ON AN APROX. TRUE BEARING OF N70E FROM THE JUNCTION OF THE SUSITNA RIVER AND TSUSENA CRK. ON WEST FINGER TIP OF AN E-W RIDGE APROX. 0.4 MI. N OF THE SUSITNA RIVER AND APROX. 3.2 MI. N OF THE WEST END OF THE MOST EASTERLY LAKE OF FOG LAKES.

STATION IS A 3-1/2 INCH BRASS DISC STAMPED---WA-5 USE 1978--- SET IN A IRON PIPE WITH TOP OF DISC 7 INCHES ABOVE THE GROUND.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 29 T32N R5E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-736 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148140 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 00 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 0.7 MI. ON AN APROX. TRUE BEARING OF S70E FROM THE INTERSECTION OF THE SUSITNA RIVER AND DEADMAN CRK. ON MODERATLY SLOPEING GROUND OVERLOOKING THE SUSITNA RIVER 50 FEET SOUTH OF A STEEP BREAK TO THE RIVER. STATION IS APROX. 2.1 MI. NE OF THE EAST END OF THE MOST NORTHERLY LAKE OF FOG LAKES.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND 300 FEET SOUTH OF THE STATION IN CLEAR AREA.

THE STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-736 RMC 1980---CRIMPED ON 5/8 INCH STEEL ROD DRIVEN 29 INCHES IN ROCKY GROUND WITH DISC TOP 1 INCH ABOVE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 36 T32N R5E S.M. AK.

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                    ********************  S T A T I O N   D E S C R I P T I O N  ********************
STATION NAME--32-822                                  STATE--AK  COUNTY--3RD JUD. DIS.        QUAD--N62148140 STA--
                                 YEAR  CP                                 REACHED BY       PACK TIME    HGT OF TELESCOPE
MONUMENT BY--RMC                 1980  MHS   MKR TYPE--TRAV STA DISK      HELICOPTER       00 HRS 00 MIN      1.5 METERS

            CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********************************************** MAGNETIC PROPERTY
    SURFACE--D10I SURVEY DISK         CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND                      MKR IS A STEEL ROD
UNDERGROUND--NONE
```

STATION IS LOCATED APROX. 1.9 MI. ON AN APROX. TRUE BEARING OF N55W FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. ON TOP OF KNOLL OVERLOOKING THE SUSITNA RIVER. STATION IS APROX. 3.7 MI. NE OF THE EAST END OF THE MOST EASTERLY LAKE OF FOG LAKES.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND APROX. 50 FEET SW OF THE STATION.

THE STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-822 RMC 1980---CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 26 INCHES INTO ROCKY GROUND WITH DISC TOP 4 INCHES ABOVE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 22 T32N R6E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-830 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148140 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 00 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 1.8 MI. ON AN APROX. TRUE BEARING OF WEST FROM THE JUNCTION OF THE SUSITNA RIVER AND DEADMAN CRK. ON TOP OF A SMALL BENCH OVERLOOKING THE SUSITNA RIVER. STATION IS APROX. 2.8 MI. NW OF THE EAST END OF THE MOST EASTERLY LAKE OF FOG LAKES.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND APROX. 50 FEET NE OF STATION IN CLEAR AND LEVEL AREA.

THE STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-830 RMC 1980---CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 22 INCHES IN ROCK WITH DISC TOP 8 INCHES ABOVE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 30 T32N R6E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-833 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148140 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 00 MIN	1.5 METERS

CODE MARK TYPE ********* SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 2.9 MI. ON AN APROX. TRUE BEARING OF S85W FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. ON A GENTLE NORTHERLY SLOPE OVERLOOKING THE SUSITNA RIVER. STATION IS APROX. 1.8 MI. NE OF THE EAST END OF THE MOST EASTERLY LAKE OF FOG LAKES.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND ADJACENT TO STATION.

THE STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-833 RMC 1980---CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 29 INCHES INTO ROCKY GROUND WITH TOP OF DISC 1 INCH ABOVE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 33 T32N R6E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-835 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148140 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 00 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D101 SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 0.6 MI. OH AN APROX. TRUE BEARING OF S05E FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. ON NORTH SIDE OF A SMALL WESTERLY RIDGE OVERLOOKING THE SUSITNA RIVER. STATION IS APROX. 3.8 MI. NE OF THE EAST END OF THE MOST EASTERLY LAKE OF FOG LAKES.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND SE OF STATION APROX. 100 FEET IN CLEARING.

THE STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-835 RMC 1980---CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN 22 INCHES INTO ROCKY GROUND WITH DISC TOP 8 INCHS ABOVE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 36 T32N R6E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-929 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148110 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 05 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 2.3 MI. ON AN APROX. TRUE BEARING OF N88E FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK ON TOP OF A SMALL KNOLL APROX. 600 FEET WEST OF THE NARROW PART OF A SMALL N-S LAKE AND APROX. 7.8 MI. N OF THE PEAK OF MT. WATANA.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND APROX. 400 FEET EAST OF STATION BY A SMALL LAKE. STATION IS AN APROX. 5 MINUTE PACK.

STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-929 RMC 1980--- CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN APROX. 26 INCHES IN GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 29 T32N R7E S.M. AK.

********** S T A T I O N D E S C R I P T I O N **********

STATION NAME--32-935 STATE--AK COUNTY--3RD. JUD. DIS. QUAD--N62148110 STA--

	YEAR	CP		REACHED BY	PACK TIME	HGT OF TELESCOPE
MONUMENT BY--RMC	1980	MHS	MKR TYPE--TRAV STA DISK	HELICOPTER	00 HRS 00 MIN	1.5 METERS

CODE MARK TYPE ********** SETTING/LANDMARK TYPE ********** MAGNETIC PROPERTY

SURFACE--D10I SURVEY DISK CRIMPED ONTO A METAL ROD DRIVEN ONTO THE GROUND MKR IS A STEEL ROD

UNDERGROUND--NONE

STATION IS LOCATED APROX. 4.9 MI. ON AN APROX. TRUE BEARING OF S81E FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. ON HIGH SPOT ON WEST END OF E-W RIDGE WITH SCATTERED SPRUCE APROX. 0.7 MI. N OF THE SUSITNA RIVER AND APROX. 6.6 MI. N OF THE PEAK OF MI. WATANA.

STATION WAS REACHED BY HELICOPTER WHICH CAN LAND ADJACENT TO STATION.

STATION IS A 3-1/4 INCH ALUMINUM DISC STAMPED---32-935 RMC 1980--- CRIMPED ON A 5/8 INCH STEEL ROD DRIVEN APROX. 26 INCHES IN THE GROUND.

NO REFERENCE MARKS WERE SET.

8 FOOT ORANGE SIGHT POST WAS CENTERED AND GUYED OVER DISC.

STATION IS LOCATED APROX. IN PROTRACTED SECTION 35 T32N R7E S.M. AK.

APPENDIX B

VERTICAL CONTROL BENCHMARKS

1. FIRST ORDER BENCHMARK DESCRIPTIONS

Benchmark Name	Elevation (L.M.S.L.) (Feet)	(Meters)	Page
P-107	718.969	219.1423	B-1
Q-107	717.282	218.6280	B-1
R-107	764.239	232.9406	B-2
P-111	3038.740	926.2093	B-2
Q-111	3118.915	950.6471	B-3
N-111	3037.015	925.6841	B-3
62-A	1123.533	342.4535	B-4
61-A	1344.899	409.9260	B-4
34-A	1371.671	418.0862	B-5
36-A	1647.784	502.2455	B-5
38-A	1697.350	517.3532	B-6
48-A	1499.510	457.0517	B-6
47-A	1447.709	441.2627	B-7
51-A	1483.184	452.0754	B-7
60-A	1417.321	432.0004	B-8
78-B	1759.826	536.3959	B-8
79-B	1723.949	525.4608	B-9
80-B	2244.737	684.1971	B-9
81-B	2519.162	767.8422	B-10
82-B	2979.530	908.1626	B-10
83-B	3083.373	939.8141	B-11
84-B	2441.203	744.0802	B-11
85-B	2430.105	740.6975	B-12
86-B	2807.079	855.5994	B-12
87-B	2395.512	730.1536	B-13
101-B	1346.018	410.2672	B-13
102-B	1374.390	418.9149	B-14
103-B	1482.540	451.8790	B-14
104-B	1452.252	442.6474	B-15

All values given are based on R&M survey except Q-107 and P-111, which are the NGS values used as the basis for the vertical network.

All benchmarks are first-order, Class I. Elevations are based on a local NGS mean sea-level datum which approximates the U.S. sea-level datum of 1929.

1. FIRST ORDER BENCHMARK DESCRIPTION (Continued)

Benchmark Name	Elevation (L.M.S.L.) (Feet)	(Meters)	Page
105-B	1494.141	455.4150	B-15
22-C	2359.861	719.2871	B-16
21-C	2451.900	747.3405	B-16
20-C	2703.226	823.9450	B-17
19-C	3011.782	917.9931	B-17
18-C	3134.845	955.5027	B-18
17-C	3202.710	976.1879	B-18
16-C	3242.079	988.1877	B-19
15-C	3180.024	969.2732	B-19
14-C	3300.255	1005.9198	B-20
13-C	3575.910	1089.9396	B-20
12-C	3439.410	1048.3342	B-21
11-C	3417.231	1041.5740	B-21
10-C	3614.668	1101.7531	B-22
9-C	3687.682	1124.0078	B-22
8-C	3629.152	1106.1678	B-23
7-C	3604.048	1098.5161	B-23
6-C	3490.321	1063.8519	B-24
5-C	3496.074	1065.6054	B-24
4-C	3522.276	1073.5918	B-25
3-C	3395.444	1034.9335	B-25
2-C	3355.426	1022.7359	B-26
1-C	3392.835	1034.1381	B-26

All values given are based on R&M survey except Q-107 and P-1 1, which are the NGS values used as the basis for the vertical network.

All benchmarks are first-order, Class I. Elevations are based on a local NGS mean sea-level datum which approximates the U.S. sea-level datum of 1929.

2. FIRST ORDER BENCHMARK PHOTOGRAPH INDEX

3. THIRD AND FOURTH ORDER BENCHMARKS

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--P-107 STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149413 QSN-- LINE--101 AREA--GOLD CREEK
LOCATED 36.2 MI. N FROM THE CITY OR TOWN OF--TALKEETNA
MONUMENT BY--CGS YR--1965 CP--RJL MARK TYPE--FLANGE-ENCASED ROD
RECOVERY BY--RMC YR--1980 CP--JSB CONDITION--GOOD
SPECIFIC SETTING--COPPER-CLAD STEEL ROD IN SLEEVE MONUMENTATION CODE--B
STAMPING--P107 CGS 1965 OTHER CONTROL--
LATITUDE = 624520N LONGITUDE = 1494155W
********** RECOVERY DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND WAS FOUND IN GOOD CONDITION
AS DESCRIBED IN NGS VERTICAL CONTROL DATA DESCRIPTION.
ABOUT LEVEL WITH RAILROAD TRACKS.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--Q107 STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149413 QSN-- LINE--101 AREA--GOLD CREEK
LOCATED 38.1 MI. N FROM THE CITY OR TOWN OF--TALKEETNA
MONUMENT BY--CGS YR--1965 CP--RJL MARK TYPE--BM DISK
RECOVERY BY--RMC YR--1980 CP--JSB CONDITION--GOOD
SPECIFIC SETTING-- MONUMENTATION CODE--B
STAMPING--Q107 CGS 1965 OTHER CONTROL--
LATITUDE = 624610N LONGITUDE = 1494145W
********** RECOVERY DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND WAS RECOVERED IN GOOD
CONDITION AS DESCRIBED IN NGS VERTICAL CONTROL DATA DESCRIPTION.
BELOW RAILROAD TRACKS.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--R107 STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149413 QSN-- LINE--101 AREA--GOLD CREEK
LOCATED 37.2 MI. N FROM THE CITY OR TOWN OF--TALKEETNA
MONUMENT BY--CGS YR--1965 CP--RJL MARK TYPE--FLANGE-ENCASED ROD
RECOVERY BY--RMC YR--1980 CP--JSB CONDITION--GOOD
SPECIFIC SETTING--COPPER-CLAD STEEL ROD IN SLEEVE MONUMENTATION CODE--B
STAMPING--R 107 CGS 1965 OTHER CONTROL--
LATITUDE = 624650N LONGITUDE = 1494140W

********** RECOVERY DESCRIPTION **********

BENCHMARK WAS REACHED BY HELICOPTER AND WAS RECOVERED IN GOOD CONDITION AS DESCRIBED IN NGS VERTICAL CONTROL DATA DESCRIPTION. BELOW RAILROAD TRACKS.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--P111 STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63147331 QSN-- LINE--101 AREA--DENALI HIGHWAY
LOCATED 13.7 MI. NW FROM THE CITY OR TOWN OF--SUSITNA BRIDGE
MONUMENT BY--CGS YR--1965 CP--RJL MARK TYPE--BM DISK
RECOVERY BY--RMC YR--1980 CP--JSB CONDITION--GOOD
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--P111 CGS 1965 OTHER CONTROL--
LATITUDE = 631355N LONGITUDE = 1474505W

********** RECOVERY DESCRIPTION **********

BENCHMARK WAS REACHED BY HELICOPTER AND WAS RECOVERED IN GOOD CONDITION AS DESCRIBED IN NGS VERTICAL DATA DESCRIPTION. ABOVE HIGHWAY.

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ACRN=          ********** BENCH MARK DESCRIPTION **********
DESIGNATION--Q111                          STATE--AK  COUNTY--3RD. JUD. DIS.
QUAD--N63147331 QSN--          LINE--101    AREA--DENALI HIGHWAY
LOCATED 14.7 MI. NW FROM THE CITY OR TOWN OF--SUSITNA BRIDGE
MONUMENT BY--CGS                  YR--1965  CP--RJL  MARK TYPE--BM DISK
RECOVERY BY--RMC                  YR--1980  CP--JSB  CONDITION--GOOD
SPECIFIC SETTING--BOULDER                              MONUMENTATION CODE--C
STAMPING--Q111 CGS 1965                                 OTHER CONTROL--
LATITUDE = 631420N      LONGITUDE = 1474650W
            ********** RECOVERY DESCRIPTION **********
     BENCHMARK WAS REACHED BY HELICOPTER AND WAS RECOVERED IN GOOD
     CONDITION AS DESCRIBED IN NGS VERTICAL CONTROL DATA DESCRIPTION.
     ABOVE HIGHWAY.
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ACRN=          ********** BENCH MARK DESCRIPTION **********
DESIGNATION--N111                          STATE--AK  COUNTY--3RD. JUD. DIS.
QUAD--N63147324 QSN--          LINE--101    AREA--DENALI HIGHWAY
LOCATED 12.5 MI. NW FROM THE CITY OR TOWN OF--SUSITNA BRIDGE
MONUMENT BY--CGS                  YR--1965  CP--RJL  MARK TYPE--BM DISK
RECOVERY BY--RMC                  YR--1980  CP--JSB  CONDITION--GOOD
SPECIFIC SETTING--BOULDER                              MONUMENTATION CODE--C
STAMPING--N111 CGS 1965                                 OTHER CONTROL--
LATITUDE = 631340N      LONGITUDE = 1474305W
            ********** RECOVERY DESCRIPTION **********
     BENCHMARK WAS REACHED BY HELICOPTER AND WAS RECOVERED IN GOOD
     CONDITION AS DESCRIBED IN NGS VERTICAL CONTROL DESCRIPTION.  SIGN WAS
     MISSING FROM WITNESS POST.
     BELOW HIGHWAY.
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ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--62-A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149413 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 1.9 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--62-A RMC 1980 OTHER CONTROL--
LATITUDE = 624620N LONGITUDE = 1493840W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS APROX. 2.0 MI. ON AN APROX. TRUE BEARING OF N55E FROM THE GOLD CRK. RAILROAD STATION ON THE S SIDE OF AN OLD CATERPILLAR ROAD SET IN A ROCK BOULDER.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--61-A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149412 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 3.8 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--61-A RMC 1980 OTHER CONTROL--
LATITUDE = 624700N LONGITUDE = 1493530W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.8 MI. ON AN APROX. TRUE BEARING OF N59E FROM THE RAILROAD STATION AT GOLD CRK. APROX. 10 FEET S OF THE CENTER OF AN OLD CATERPILLER ROAD AND APROX. 200 FEET W OF AN UNNAMED CRK. WHICH FLOWS NW TO THE SUSITNA RIVER AND IS SET IN A ROCK BOULDER.

ACRN=
********** BENCH MARK DESCRIPTION **********
DESIGNATION--34-A
STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149412 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 5.0 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--34-A RMC 1980 OTHER CONTROL--
LATITUDE = 624745N LONGITUDE = 1493140W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 5.0 MI. ON AN APROX. TRUE BEARING OF N57E FROM THE RAILROAD STATION AT GOLD CRK. APROX. 10 FEET S OF CENTER OF AN OLD CATERPILLAR ROAD, NEAR A CUT BANK S OF DIP IN ROAD APROX. 0.75 MI. E OF A CABIN ALONG ROAD AND IS SET IN A ROCK BOULDER.
ABOVE

ACRN=
********** BENCH MARK DESCRIPTION **********
DESIGNATION--36-A
STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149412 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 6.5 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--36-A RMC 1980 OTHER CONTROL--
LATITUDE = 624815N LONGITUDE = 1493110W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 6.5 MI. ON AN APROX. TRUE BEARING OF N59E FROM THE RAILROAD STATION AT GOLD CRK. 15 FEET S OF A BEND IN AN OLD CATERPILLAR ROAD SET IN A PARTIALLY EXPOSED ROCK BOULDER.
BELOW

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--38-A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149143 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 7.8 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--38-A RMC 1980 OTHER CONTROL--
LATITUDE = 624800N LONGITUDE = 1492750W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.3 MI. ON AN APROX. TRUE BEARING OF S54W FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. ON S SIDE OF AN OLD CATERPILLAR ROAD APROX. 30 FEET WEST OF CREST IN ROAD IN A ROCK OUTCROP.
ABOVE CATERPILLAR ROAD.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--48-A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149143 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 9.0 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--48-A RMC 1980 OTHER CONTROL--
LATITUDE = 624755N LONGITUDE = 1492530W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.6 MI. ON AN APROX. TRUE BEARING OF S56W FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. ON THE S EDGE OF AN OLD CATERPILLAR ROAD IN TOP OF LARGE ROCK BOULDER.
ABOVE CATERPILLAR ROAD.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--47-A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149143 QSN-- LINE-- AREA--SISITNA HYDRO. FEASIBILIT
LOCATED 10.0 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--47-A RMC 1980 OTHER CONTROL--
LATITUDE = 624755N LONGITUDE = 1492330W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.2 MI. ON AN APROX. TRUE BEARING OF S11W FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. APROX. 30 FEET N OF AN OLD CATERPILLAR ROAD SET IN TOP OF AN EXPOSED BOULDER.
ABOVE NATURAL GROUND LEVEL.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--51/A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149142 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 11.0 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--51-A RMC 1980 OTHER CONTROL--
LATITUDE = 624755N LONGITUDE = 1492130W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.2 MI. ON AN APROX. TRUE BEARING OF S16E FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. ON S SIDE OF AN OLD CATERPILLAR ROAD SET IN A ROCK OUTCROP.
ABOVE CATERPILLAR ROAD.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--60-A STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149142 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 13.0 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--60-A RMC 1980 OTHER CONTROL--
LATITUDE = 624850N LONGITUDE = 1491820W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.5 MI. ON AN APROX. TRUE BEARING OF S66E FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. SET IN A ROCK OUTCROP APROX. 200 FEET S OF THE TOP OF DEVILS CANYON BANK AND APROX. 300 FEET N OF THE W END OF A SMALL LAKE AND 10 FEET N OF HELICOPTER LANDING AREA.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--78-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149142 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 13 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--78-B RMC 1980 OTHER CONTROL--
LATITUDE = 624730N LONGITUDE = 1491755W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.5 MI. ON AN APROX. TRUE BEARING OF S45E FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CREEK ON THE E EDGE OF THE MOST EASTERLY ROCK OUTCROP APROX. 0.1 MI. NNW OF A Y IN AN UNNAMED CRK. WHICH FLOWS APROX. 1.6 MI. N OF Y TO THE SUSITNA RIVER. DISC IS SET IN A PIECE OF THE OUTCROP APROX. 6 FEET BY 12 FEET IN SIZE AND PROTRUDING APROX. 6 FEET.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--79-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149142 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 13.0 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--79-B RMC 1980 OTHER CONTROL--
LATITUDE = 624730N LONGITUDE = 1491745W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.6 MI. ON AN APROX. TRUE BEARING OF S45E FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. IN THE WEST END OF A 35 FOOT BY 15 FOOT ROCK OUTCROP WHICH IS 3 FEET ABOVE THE GROUND LINE APROX. 0.1 MI. NE OF A Y IN AN UNNAMED CRK. WHICH FLOWS N APROX. 1.6 MI. FROM Y TO THE SUSITNA RIVER AND IS ON W EDGE OF A RIDGE FINGER WHICH DROPS VERTICALY TO THE WEST OF BENCHMARK.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--80-B STATE--AK COUNTY--3RD. JUD. DIS
QUAD--N62149142 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 14.5 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--SHALLOW-SET METAL ROD MONUMENTATION CODE--D
STAMPING--80-B RMC 1980 OTHER CONTROL--
LATITUDE = 624720N LONGITUDE = 1491645W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 4.1 MI. ON AN APROX. TRUE BEARING OF S48 E FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. ON THE SW SIDE OF A MUSKEG KNOB IN A SERIES OF SEVERAL KNOBS AND IS ON THE N SIDE OF STEEPLY S SLOPEING GROUND TO A CREVASE AND IS APROX. 0.6 MI. ESE OF A Y IN AN UNNAMED CREEK WHICH FLOWS N APROX. 1.6 MI. FROM Y TO THE SUSITNA RIVER.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--81-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149113 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 14.5 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--81-B RMC 1980 OTHER CONTROL--
LATITUDE = 624630N LONGITUDE = 1491415W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS APROX. 5.8 MI. ON AN APROX. TRUE BEARING OF S51E FROM THE JUNCTION OF THE SUSITNA RIVER AND PORTAGE CRK. AND IS SET IN A 35 FOOT BY 15 FOOT ROCK OUTCROP WHICH IS 3 FEET ABOVE NATURAL GROUND AND IS APROX. 0.2 MI. N OF AN UNNAMED CRK. WHICH FLOWS NW THEN N TO THE SUSITNA RIVER.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--82-B STATE--AK COUNTY--3RD. JUD. DIS
QUAD--N62149113 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 16 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--82-B RMC 1980 OTHER CONTROL--
LATITUDE = 624545N LONGITUDE = 1491100W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 6.0 MI. ON AN APROX. TRUE BEARING OF S45W FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. ON A FLAT AREA OF THE NORTH SLOPE OF A DRAINAGE WHICH FLOWS W THEN N TO THE SUSITNA RIVER AND IS APROX. 0.5 MI. NW OF A SMALL LAKE.

ACRN=
********** BENCH MARK DESCRIPTION **********
DESIGNATION--83-B
STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149113 QSN--
LINE--
AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 17.5 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC
YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP
MONUMENTATION CODE--A
STAMPING--83-B RMC 1980
OTHER CONTROL--
LATITUDE = 624545N LONGITUDE = 1490915W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX 5.4 MI. ON AN APROX. TRUE BEARING OF S37W FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. ON THE TOP OF A PLATEAU IN A SERIES OF BENCHES ON THE SW SIDE OF A PROMINATE 3400 FOOT ELEVATION KNOLL AND IS APROX. 0.6 MI. W OF AN UNNAMED CRK. DISC IS CEMENTED IN A ROCK OUTCROP APROX. 15 FEET S OF THE S EDGE OF SAID PLATEAU.

ACRN=
********** BENCH MARK DESCRIPTION **********
DESIGNATION--84-B
STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149113 QSN--
LINE--
AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 17.5 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC
YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--SHALLOW-SET METAL ROD
MONUMENTATION CODE--D
STAMPING--84-B RMC 1980
OTHER CONTROL--
LATITUDE = 624600N LONGITUDE = 1490830W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 4.8 MI. ON AN APROX. TRUE BEARING OF S35W FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. ON A MODERATE EASTERLY SLOPE TO AN UNNAMED CRK. APROX. 0.15 MI. E WHICH FLOWS NORTHERLY. BENCHMARK IS ALSO APROX. 50 FEET S OF A BRUSHY DRAINAGE TO SAID UNNAMED CREEK AND SURROUNDING TERRAIN IS TUNDRA WITH OUTCROPS OF ROCK.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--85-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149113 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 18 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--85-B RMC 1980 OTHER CONTROL--
LATITUDE = 624615N LONGITUDE = 1490730W
********** ORIGINAL DESCRIPTION **********

BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED IN A 3 FOOT BY 6 FOOT ROCK OUTCROP ON A SMALL BENCH ON AN WESTERLY SLOPE TO A UNNAMED CREEK WHICH IS APROX. 0.2 MI. E., BENCHMARK IS LOCATED APROX. 2.4 MI. ON AN APROX. TRUE BEARING OF S27E FROM THE JUNCTION OF THE SUSITNA RIVER AND SAID UNNAMED CRK. AND APROX. 1.0 MI. E OF A 3400 FOOT ELEV. KNOLL TOP.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--86-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149112 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 20 MI. NE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--86-B RMC 1980 OTHER CONTROL--
LATITUDE = 624700N LONGITUDE = 1490400W
********** ORIGINAL DESCRIPTION **********

BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED IN THE CENTER OF A 10 FOOT BY 20 FOOT ROCK LEDGE WHICH IS ON THE N SLOPE OF A PROMINENT 3400 FOOT ELEV. KNOLL APROX. 0.75 MI N20E FROM THE TOP. BENCHMARK IS APROX. 2.9 MI. ON AN APROX. TRUE BEARING OF S11W FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. A ROCK CAIRN WAS BUILT 18 FEET EAST OF DISC.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--87-B RMC STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62149112 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 21.5 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--87-B RMC 1980 OTHER CONTROL--
LATITUDE = 624630N LONGITUDE = 1490200W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER WHICH IS LOCATED ON A E-W GRANITE OUTCROP RIDGE APROX S10E 3.5 MI. FROM THE JUNCTION OF THE SUSITNA RIVER AND DEVIL CRK. APROX. 0.2 MI. SW OF A UNNAMED CRK. WITH DEEP VALLEY WHICH FLOWS EAST AND APROX. 1 MI. NE OF THE TOP OF A 3400 FOOT ELEV. MOUNTAIN TOP. DISC IS ON E END OF ROCK OUTCROP WHICH IS 8 FEET ABOVE GROUND ON N SIDE AND TAPERS TO FLUSH ON THE S SIDE.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--101-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148443 QSN-- LINE-- AREA--SUSUTNA HYDRO. FEASIBILIT
LOCATED 24 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP-- JS MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--101-B RMC 1980 OTHER CONTROL--
LATITUDE = 624615N LONGITUDE = 1485600W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 7.0 MI. ON AN APROX. TRUE BEARING OF S86W FROM THE JUNCTION OF THE SUSITNA RIVER AND FOG CRK. SET IN PROTRUDING ROCK APROX. 200 FEET N OF THE N BANK OF THE SUSITNA RIVER AT THE BASE OF VERTICAL ROCK CLIFFS APROX. 1.5 MI. E OF MAJOR NORTHERLY BEND OF THE SUSITNA RIVER.
ABOVE PROX RIVER LEVEL.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--102-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148442 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 27.5 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--102-B RMC 1980 OTHER CONTROL--
LATITUDE = 624545N LONGITUDE = 1484845W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.3 MI. ON AN APROX. TRUE BEARING OF S76W FROM THE JUNCTION OF THE SUSITNA RIVER AND FOG CRK. IN A ROCK CUTCROP APROX. 300 FEET S OF THE S BANK OF THE SUSITNA RIVER AND APROX. 1000 FEET N OF A SMALL SLOUGH IN AN OLD SLIDE AREA.
ABOVE PROX. RIVER LEVEL.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--103-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148413 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 32 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--103-B RMC 1980 OTHER CONTROL--
LATITUDE = 624630N LONGITUDE = 1484130W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 0.7 MI. ON AN APROX. TRUE BEARING OF EAST FROM THE JUNCTION OF THE SUSITNA RIVER AND FOG CRK. ON TOP OF THE FIRST SHEAR ROCK CLIFF ON THE N SIDE OF FOG CRK. UPSTREAM OF SAID RIVER JUNCTION.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--104-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148413 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 32.5 MI. ENE FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--104-B RMC 1980 OTHER CONTROL--
LATITUDE = 624850N LONGITUDE = 1484030W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.0 MI. ON AN APROX. TRUE BEARING OF N25E FROM THE JUNCTION OF THE SUSITNA RIVER AND FOG CRK. SET IN LARGE BOULDER ON MODERATLY SE SLOPEING GROUND APROX. 0.2 MI. NW OF W END OF A LARGE WOODED ISLAND IN THE SUSITNA RIVER.
ABOVE PROX. RIVER LEVEL.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--105-B STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148412 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 35 MI. E FROM THE CITY OR TOWN OF--GOLD CREEK
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--105-B RMC 1980 OTHER CONTROL--
LATITUDE = 624915N LONGITUDE = 1483550W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 0.4 MI. ON AN APROX. TRUE BEARING OF N82E FROM THE JUNCTION OF THE SUSITNA RIVER AND TSUSENA CRK. SET IN A LEDGE OF A PROMINENT ROCK OUTCROP APROX. 50 FEET N OF THE N BANK OF THE SUSITNA RIVER AND APROX. 300 FEET DOWN RIVER OF APROX. 200 FOOT TALL ROCK CLIFFS.
ABOVE PROX. RIVER LEVEL.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--22-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148412 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 32 MI. ESE FROM THE CITY OR TOWN OF--CHULITNA
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--22-C RMC 1980 OTHER CONTROL--
LATITUDE = 624945N LONGITUDE = 1483300W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.1 MI. ON AN APROX. TRUE BEARING OF N77E FROM THE JUNCTION OF THE SUSITNA RIVER AND TSUSENA CRK. IN ROCK OUTCROP ON HIGH SPOT OF PROMINENT E-W RIDGE APROX. 0.4 MI. N OF THE SUSITNA RIVER AND APROX. 200 FEET S OF A 12 BY 30 FOOT METAL TRAILERHOUSE.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--21-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148144 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 35.5 MI. E FROM THE CITY OR TOWN OF--CHULITNA
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--21-C RMC 1980 OTHER CONTROL--
LATITUDE = 625215N LONGITUDE = 1482755W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.9 MI. ON AN APROX. TRUE BEARING OF N04E FROM THE JUNCTION OF THE SUSITNA RIVER AND DEADMAN CREEK ON TOP OF A 15 BY 20 FOOT ROUND ROCK BOULDER ON NW GENTLE SLOPE APROX. 600 FEET NE OF W END OF A 1200 FOOT LONG LAKE WHICH RUNS NW-SE AND IS APROX. 0.3 MI. SW OF DEADMAN CRK.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--20-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148144 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 36.5 E FROM THE CITY OR TOWN OF--CHULITNA
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--20-C RMC 1980 OTHER CONTROL--
LATITUDE = 625405N LONGITUDE = 1482625W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 5.0 MI. ON AN APROX. TRUE BEARING OF N11E FROM THE JUNCTION OF THE SUSITNA RIVER AND DEADMAN CRK. IN FLAT ROCK OUTCROP ON SLIGHT WESTERLY SLOPE OF PROMINENT ROUNDED TOP RIDGE AND IS APROX. 0.6 MI E OF DEADMAN CRK..

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--19-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148144 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 38 MI. E FROM THE CITY OR TOWN OF--CHULITNA
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--19-C RMC 1980 OTHER CONTROL--
LATITUDE = 625545N LONGITUDE = 1482240W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 7.4 MI. ON AN APROX. TRUE BEARING OF N23E FROM THE JUNCTION OF THE SUSITNA RIVER AND DEADMAN CRK. ON TOP OF A POINTED 4 BY 4 FOOT ROCK OUTCROP IN OPEN TUNDRA AREA APROX. 100 FEET E OF SLIGHT SLOPE BREAK APROX. 0.3 MI. SE OF WHERE DEADMAN CRK. NARROWS IN WIDTH.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--18-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148141 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 39.5 MI. ENE FROM THE CITY OR TOWN OF--CHULITNA
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--18-C RMC 1980 OTHER CONTROL--
LATITUDE = 625745N LONGITUDE = 1481950W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 9.4 MI. ON AN APROX. TRUE BEARING OF N15W FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. ON TOP OF A POINTED ROCK OUTCROP APROX. 50 FEET E OF E EDGE OF ROCK PLATEAU APROX. 0.5 MI. E OF DEADMAN CRK. IN OPEN AREA FREE OF BRUSH.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--17-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148141 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 40 MI. ESE FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--17-C RMC 1980 OTHER CONTROL--
LATITUDE = 625755N LONGITUDE = 1481840W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 9.5 MI. ON AN APROX. TRUE BEARING OF N11E FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. IN BEDROCK OUTCROP BENCH APROX. 400 FEET SW OF A WELL DEFINED BRUSHY DRAINAGE AND IS IN OPEN TUNDRA AND ROCK AREA.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--16-C STATE--AK COUNTY--3RD. JUD. DIS
QUAD--N62148141 QSN-- LINE-- AREA--SUSITNA HYDRO. FEASIBILIT
LOCATED 40.5 MI. ESE FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--16-C RMC 1980 OTHER CONTROL--
LATITUDE = 625900N LONGITUDE = 1481735W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 10.6 MI. ON AN APROX. TRUE BEARING OF N07W FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. IN ROCK OUTCROP ON THE W SLOPE OF A 3700 FOOT ELEV. RIDGE WHICH RUNS NE.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--15-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N62148141 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 41 MI. ESE FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--15-C RMC 1980 OTHER CONTROL--
LATITUDE = 630000N LONGITUDE = 1481620W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 11.6 MI. ON AN APROX. TRUE BEARING OF N03W FROM THE JUNCTION OF THE SUSITNA RIVER AND WATANA CRK. IN HIGH POINT OF 20 BY 6 FOOT ROCK PROTRUDING 6 FEET ABOVE GROUND ON PLATEAU WITH LIGHT BRUSH APROX. 150 FEET N OF BRUSHY DRAINAGE WHICH FLOWS 0.3 MILES WEST TO DEADMAN CRK.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--14-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63148232 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 41 MI ESE FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--14-C RMC 1980 OTHER CONTROL--
LATITUDE = 630100N LONGITUDE = 1481525W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.4 MI. ON AN APROX. TRUE BEARING OD S14W FROM THE PEAK OF DEADMAN MOUNTAIN IN ROCK OUTCROP ON A WELL DEFINED BENCH APROX. 0.2 MI. N OF THE N SHORE OF DEADMAN LAKE.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--13-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63148223 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 43 MI. E FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--13-C RMC 1980 OTHER CONTROL--
LATITUDE = 630200N LONGITUDE = 1481315W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.0 MI. ON AN APROX. TRUE BEARING OF S07E FROM THE PEAK OF DEADMAN MOUNTAIN ON TOP OF 6 BY 8 FOOT ROCK BOULDER PROTRUDING 3 FEET ABOVE GROUND AT TOE OF STEEP SIDESLOPE OF DEADMAN MOUNTAIN IN SMALL BASIN.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--12-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63148223 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 43 MI. E FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--12-C RMC 1980 OTHER CONTROL--
LATITUDE = 630310N LONGITUDE = 1481103W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 1.5 MI. ON AN APROX. TRUE BEARING OF S77E FROM THE PEAK OF DEADMAN MOUNTAIN ON TOP OF A 10 BY 15 FOOT ROCK PROTRUDING 6 FEET ABOVE GROUND ON E SIDESLOPE OF DEADMAN MOUNTAIN APROX. 500 FEET SW OF SMALL CRK..

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--11-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--*N6314822 QSN--3 LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 44 MI. E FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--11-C RMC 1980 OTHER CONTROL--
LATITUDE = 6320410 LONGITUDE = N1480925
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.2 MI. ON AN APROX. TRUE BEARING OF N79E FROM THE PEAK OF DEADMAN MOUNTAIN ON TOP OF A 8 BY 6 FOOT ROCK PROTRUDING 3 FEET IN AN AREA OF SMALL BENCHES APROX. 0.7 MI. NW OF Y IN DEADMAN CRK..

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--10-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63148222 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 45.5 MI. E FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--10-C RMC 1980 OTHER CONTROL--
LATITUDE = 630540N LONGITUDE = 1480620W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 4.4 MI. ON AN APROX. TRUE BEARING OF N60E FROM THE PEAK OF DEADMAN MOUNTAIN ON TOP OF LARGE CLIFF ROCK OUTCROP ON S SIDESLOPE OF A 3715 FOOT ELEV. ROUND KNOB.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--9-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63148222 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 47 MI. ENE FROM THE CITY OR TOWN OF--HONOLULU
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--9-C RMC 1980 OTHER CONTROL--
LATITUDE = 630620N LONGITUDE = 1480330W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 6.0 MI. ON AN APROX. TRUE BEARING OF N61E FROM THE PEAK OF DEADMAN MOUNTAIN ON TOP OF A PROMINENT 12 FOOT DIA. ROUND TOP ROCK OUTCROP APROX. 1000 FEET W OF UNNAMED CRK. ON S SIDESLOPE OF WEST RIDGE FORMIMG THE W SIDE OF DEADMAN CRK. DRAINAGE.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--8-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63148222 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 40 MI. ESE FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--8-C RMC 1980 OTHER CONTROL--
LATITUDE = 630650N LONGITUDE = 1480140N
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 7.2 MI. ON AN APROX. TRUE BEARING OF N59E FROM THE PEAK OF DEADMAN MOUNTAIN ON TOP OF A PROMINENT 3 BY 3 FOOT POINTED TRIANGULAR SHAPED ROCK IN LOW SPOT OF TUNDRA VALLEY ON SIDESLOPE OF PROMINENT RIDGE FORMING THE W SIDE OF DEADMAN CRK. DRAINAGE.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--7-C STATE--AK COUNTY--3RD. JUD. DIS
QUAD--N63147334 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 41 MI. ESE FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--7-C RMC 1980 OTHER CONTROL--
LATITUDE = 630750N LONGITUDE = 1475850W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 4.3 MI. ON AN APROX. TRUE BEARING OF S48N FROM THE S TIP OF BUTTE LAKE ON TOP OF PROMINENT POINTED ROCK OUTCROP ON A NE SIDESLOPE OF A 3820 FOOT ELEV. KNOB AND IS APROX. 0.3 MI. NE OF W TRIBUTARY OF BUTTE CRK..

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--6-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63147334 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 41.5 ESE FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--6-C RMC 1980 OTHER CONTROL--
LATITUDE = 630840N LONGITUDE = 1475720W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 3.1 MI. ON AN APROX. TRUE BEARING OF S51W FROM THE S TIP OF BUTTE LAKE ON TOP OF A PROMINENT 15 FOOT DIA. POINTED ROCK OUTCROP PROTRUDING APROX. 10 FEET ABOVE TUNDRA GROUND APROX. 50 FEET E OF BRUSHY CRK. DRAINAGE.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--5-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63147334 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 41 MI. ESE FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--5-C RMC 1980 OTHER CONTROL--
LATITUDE = 631000N LONGITUDE = 1475600W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 1.7 MI. ON AN APORX. TRUE BEARING OF S74W FROM THE S TIP OF BUTTE LAKE ON TOP OF A ROCK OUTCROP IN TUNDRA BENCH AREA OF THE E SIDESLOPE OF A PROMINENT RIDGE FORMING THE W SIDE OF BUTTE CRK. DRAINAGE. MARK IS APROX. 100 FEET W OF A 100 FOOT DIAMETER AREA OF LOW WILLOW BRUSH.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--4-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63147334 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 43.5 MI ESE FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--4-C RMC 1980 OTHER CONTROL--
LATITUDE = 631100N LONGITUDE = 1475355W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 0.8 MI. ON AN APROX. TRUE BEARING OF N41W FROM THE S TIP OF BUTTE LAKE ON SE SLOPE OF A 4200 FOOT ROUND TOP MOUNTAIN (PEAK APROX. 3.9 MI. NW) APROX. 100 FEET WEST OF DROP TO BRUSHY FLAT AREA, SET ON HIGH SPOT OF AN APROX. 15 FOOT ROUND ROCK OUTCROP WHICH PROJECTS APROX. 3 FEET ABOVE NATURAL GROUND.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--3-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63147331 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 44 MI. E FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--BOULDER MONUMENTATION CODE--C
STAMPING--3-C RMC 1980 OTHER CONTROL--
LATITUDE = 631200N LONGITUDE = 1475155W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 1.9 MI. ON AN APROX. TRUE BEARING OF N12E FROM THE S TIP OF BUTTE LAKE AT TOP OF NE SLOPE OF A 4200 FOOT ELEV. ROUNDED TOP MOUNTAIN. BENCHMARK IS SET IN TOP OF AN EXPOSED ROCK BOULDER PROTRUDING APROX. 1 FOOT IN OPEN TUNDRA AREA.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--2-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63147331 QSN-- LINE-- AREA--SUSITAN HYDRO. FEASIBILIT
LOCATED 45 MI. E FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--2-C RMC 1980 OTHER CONTROL--
LATITUDE = 631230N LONGITUDE = 1475025W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 2.7 MI. ON AN APROX. TRUE BEARING OF N27E FROM THE SOUTH TIP OF BUTTE LAKE ON TOP OF APROX. 10 FOOT BY 10 FOOT POINTED EXPOSED ROCK BOULDER WHICH PROTUDES APROX. 3 FEET IN OPEN TUNDRA AREA.

ACRN= ********** BENCH MARK DESCRIPTION **********
DESIGNATION--1-C STATE--AK COUNTY--3RD. JUD. DIS.
QUAD--N63147331 QSN-- LINE-- AREA--SUSITNA HYDRO FEASIBILITY
LOCATED 46 MI. E FROM THE CITY OR TOWN OF--BROAD PASS
MONUMENT BY--RMC YR--1980 CP--JSB MARK TYPE--BM DISK
SPECIFIC SETTING--ROCK OUTCROP MONUMENTATION CODE--A
STAMPING--1-C RMC 1980 OTHER CONTROL--
LATITUDE = 631300N LONGITUDE = 1474800W
********** ORIGINAL DESCRIPTION **********
BENCHMARK WAS REACHED BY HELICOPTER AND IS LOCATED APROX. 4.0 MI. ON AN APROX. TRUE BEARING OF N39E FROM THE SOUTH TIP OF BUTTE LAKE ON HIGH SPOT OF SMALL RIDGE WHICH RUNS SW APROX. 1.8 MI. S OF MAJOR BEND IN THE DENALI HWY..

BM 62A

BM 61A

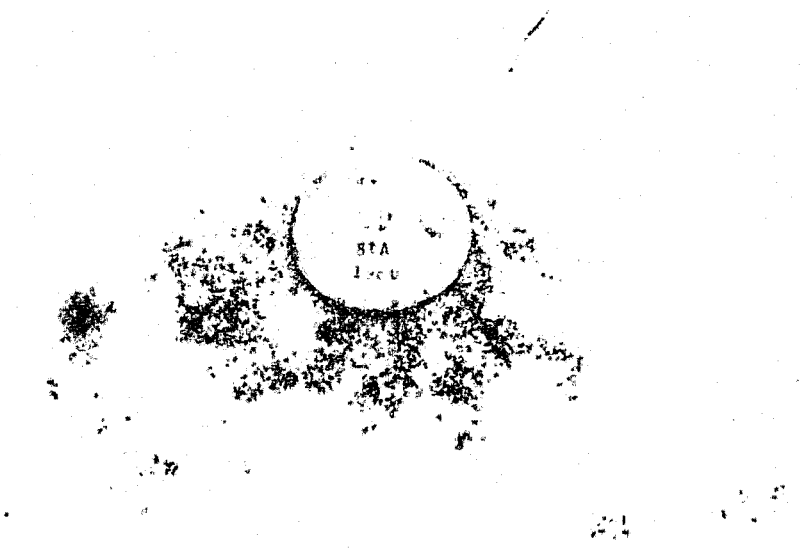
BM 34 A

BM 36A

BM 38A

BM 43A

BM 47A



BM 51A

BM 60A

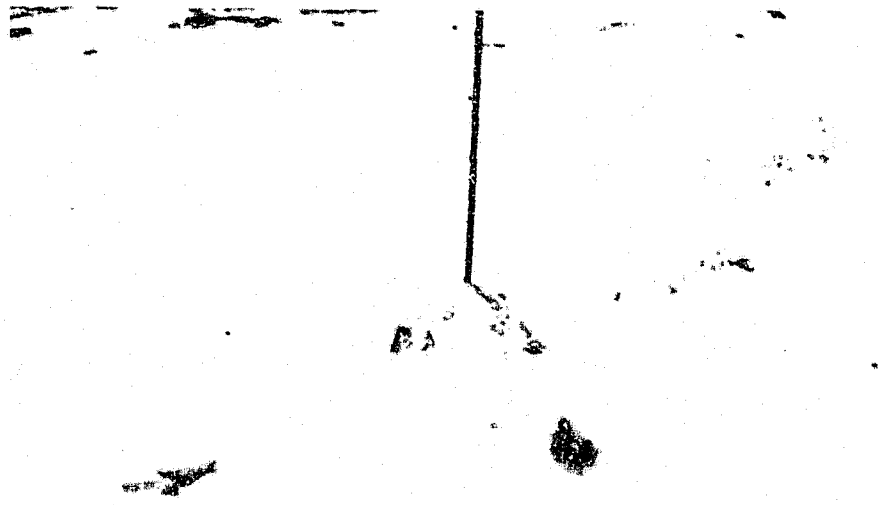
BM 78B

BM 79B

BM 80B

BM 81B

BM 82B



BM 83B

BM 84B

BM 85B

BM 86B

BM 87B

BM 101B

BM 102B

BM 103B

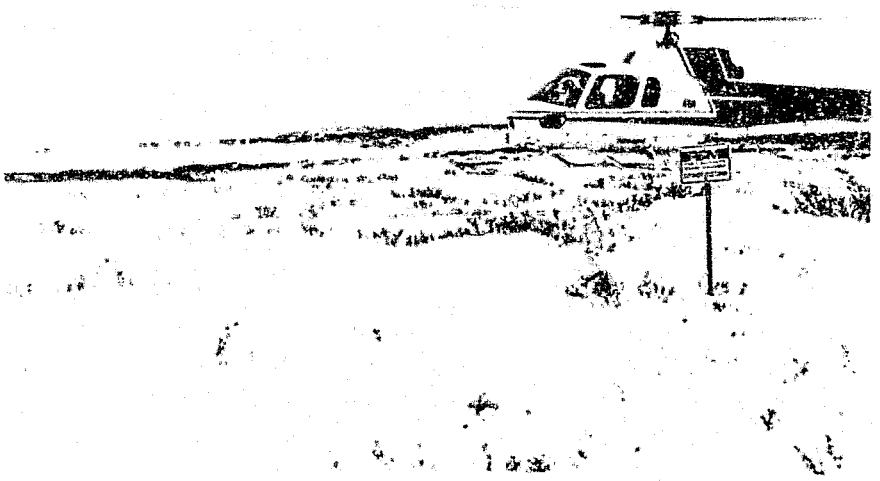
BM 104B

BM 105B

BM 22C

BM 21C

BM 20C



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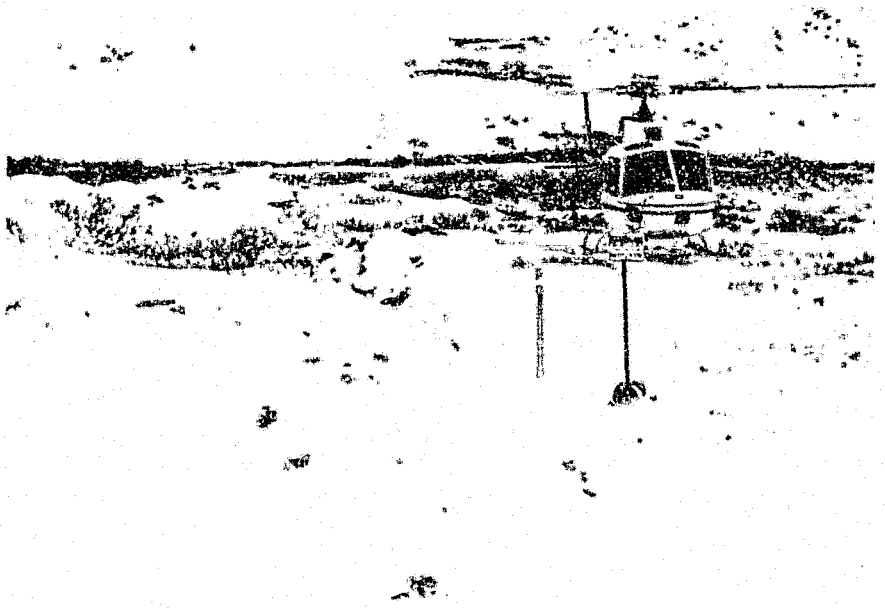
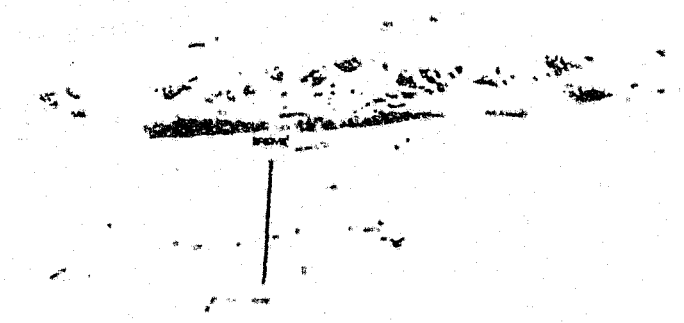
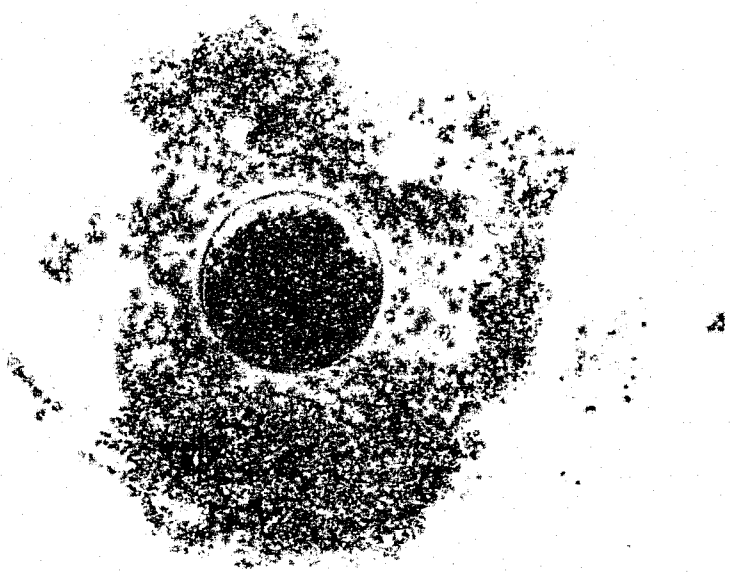


BM 18C



BM 17C

BM 16C

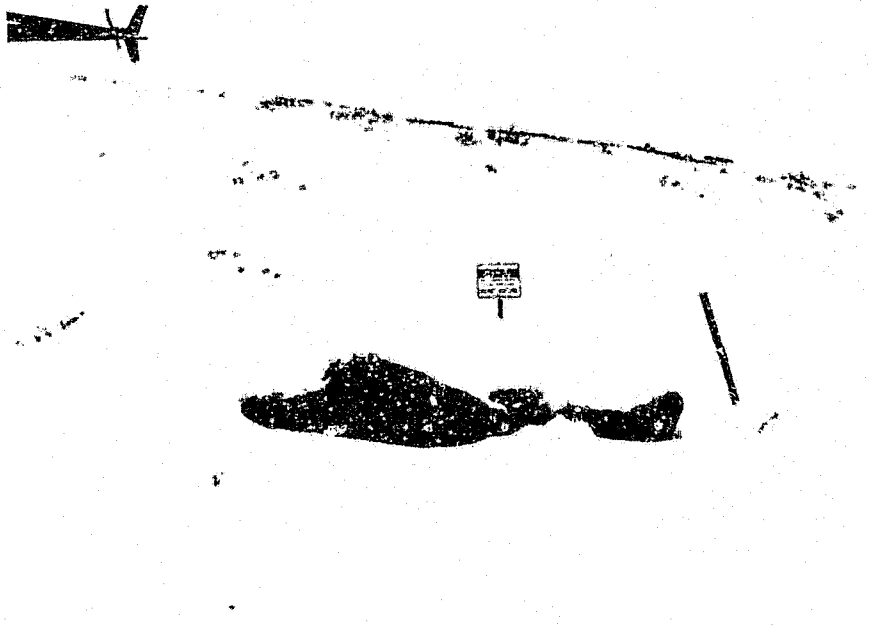


BM 15C

BM 14C

BM 13C

BM 12C



BM 11C

BM 10C

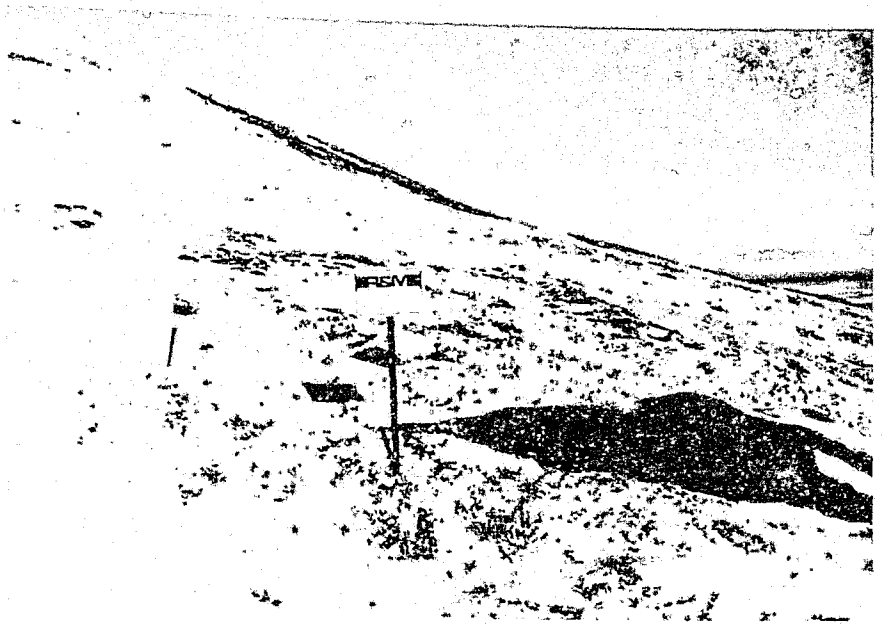
BM 9C

BM 8C

BM 7C

BM 6C

BM 5C



BM 4C

BM 3C

BM 2C

BM 1C

THIRD AND FOURTH ORDER BENCHMARKS SET IN ASSOCIATION WITH 1982 SUSITNA HYDROGRAPHIC SURVEYS

DEFINITION OF SYMBOLS AND ABBREVIATIONS

A - Access. Designation established by R&M for identification of survey monuments, referring to access channels leading to sloughs.

Alcap - Aluminum cap. A two inch aluminum disk usually set on 5/-8" rebar within .2 of a foot from ground level. Stamped R&M Consultants Inc., 1982 and with the location identification also stamped in block type.

B - Backwater. Designation established by R&M for identification of survey monuments. Referring to pools in sloughs immediately upstream from the slough mouth.

C.W. - Cottonwood. Abbreviation used in location descriptions.

D.S. - Downstream. Abbreviation used in location descriptions.

H - Head. Designation established by ADF&G for location identification of the upstream end of a slough where mainstem flow could diverge and flow through the slough.

L.B. & R.B. - Left and right bank respectively. This designation applies when looking downstream only. All R&M river bank designations are relative to the downstream view.

LRX - Lower river cross section. Designation established by R&M for identification of mainstem cross sections which were used primarily for computer modeling.

M - Mainstem. Designation established by ADF&G for identification of staff gages, referring to the main channel flow as opposed to side channels or flow through sloughs.

Rebar - 24" long steel rod, 5/8" in diameter.

S - Slough. Designation established by ADF&G for use in labelling and identification of staff gages.

S.G. - Staff Gage

SL - Slough

U.S. - Upstream. Abbreviation used in location descriptions

T - Tributary. Designation established by ADF&G for identification of staff gages.

W - Mouth. Designation established by ADF&G for use in labelling the mouth of sloughs where they converge with the mainstem.

X-sec - Cross Section

R&M CONSULTANTS
TEMPORARY BENCHMARKS FOR
MAIN CHANNEL CROSS SECTIONS
1980-1982*

Monument Description	Identification	Elevation
R&M Rebar & Alcap on left bank of canyon	LRX-68 L.B.	861.70
R&M Rebar & Alcap on right bank of canyon	LRX-67 R.B.	853.47
R&M Rebar & Alcap on right bank of canyon	LRX-66 R.B.	853.75
R&M Rebar & Alcap on right bank of canyon	LRX-65 R.B.	852.72
R&M Rebar & Alcap on right bank of canyon	LRX-64 R.B.	848.23
R&M Rebar & Alcap on right bank of canyon	LRX-63 R.B.	847.11
R&M Rebar & Alcap @ center of photo panel	-	844.26
R&M spike in 14" cottonwood, right bank	TBM 153	845.92
R&M Rebar & Alcap, left bank near RM 147.6	LRX-60 L.B.	831.87
R&M Rebar & Alcap, left bank near RM 144.9	LRX-59 L.B.	796.80
Nail in base of 16" cottonwood, top of right bank	LRX-59 R.B.	797.59
Rebar at toe of steep left bank	TBM 101	767.05
Nail in root of cottonwood near RM 143.2	LRX-58 R.B.	773.41
R&M Rebar & Alcap, left bank @ RM 142.3	LRX-57 L.B.	761.68
R&M Rebar & Alcap, left bank @ RM 142.1	LRX-56 L.B.	759.30
R&M Rebar & Alcap, top of left bank, main channel	LRX-55 L.B.	748.51
R&M Rebar & Alcap, Top of left bank, RM 140.8	LRX-54 L.B.	741.20
R&M Rebar & Alcap, left bank on terrace	LRX-53 L.B.	733.76
R&M Rebar & Alcap, left bank at RM 139.5	LRX-52 L.B.	735.67
Nail in 6" C.W. on right bank at LRX-51	Indian	716.01
R&M Rebar & Alcap, left bank at RM 138.9	LRX-51 L.B.	717.86

* NOTE: LRX-1 - LRX-62 were surveyed in 1980,
LRX-63 - LRX-68 were surveyed in 1981,
the remaining cross sections were surveyed in 1982.

R&M CONSULTANTS
TEMPORARY BENCHMARKS FOR
MAIN CHANNEL CROSS SECTIONS
1980 - 1982*

Monument Description	Identification	Elevation
R&M Rebar & Alcap, on steep bedrock, left bank	LRX-50 L.B.	709.34
R&M Rebar & Alcap, left bank at RM 138.2	LRX-49 L.B.	733.40
R&M Rebar & Alcap, top of left bank	LRX-48 L.B.	700.48
R&M Rebar & Alcap, left bank at RM 137.2	LRX-47 L.B.	700.48
R&M Rebar & Alcap, top of left bank, RM 136.9	LRX-46 L.B.	700.17
R&M Rebar & Alcap, left bank at RM 136.6	LRX-45 L.B.	690.81
Nail in 14" Cottonwood tree on right bank	LRX-44 R.B.	693.48
R&M Rebar & Alcap, angle point on far left bank	LRX-44 L.B.	688.67
R&M Rebar & Alcap, left bank main channel	LRX-43 L.B.	683.11
Nail in cottonwood tree on right bank	LRX-42 R.B.	676.71
R&M Rebar & Alcap, left bank RM 135.6	LRX-42 L.B.	703.81
Nail in tree stump on right bank	LRX-41 R.B.	664.55
R&M Rebar & Alcap, left bank RM 134.7	LRX-41 L.B.	703.01
Nail in 14" cottonwood tree, right bank	LRX-40 R.B.	663.30
R&M Rebar & Alcap, left bank RM 134.2	LRX-40 L.B.	676.53
R&M Rebar & Alcap, left bank RM 133.3	LRX-39 L.B.	652.06
R&M Rebar & Alcap, left bank east channel	LRX-38 L.B.	647.98
R&M Rebar & Alcap, left bank RM 131.9	LRX-37 L.B.	650.08
R&M Rebar & Alcap, left bank RM 131.2	LRX-36 L.B.	631.37
Spike in 36" cottonwood at crest gage	TBM-1	630.49
R&M Rebar & Alcap, top of left bank	LRX-35 L.B.	626.56

* NOTE: LRX-1 - LRX-62 were surveyed in 1980,
LRX-63 - LRX-68 were surveyed in 1981,
the remaining cross sections were surveyed in 1982.

R&M CONSULTANTS
TEMPORARY BENCHMARKS FOR
MAIN CHANNEL CROSS SECTIONS
1980 - 1982*

Monument Description	Identification	Elevation
R&M Rebar & Alcap, top of left bank, west channel	LRX-34 L.B.	625.38
R&M Rebar & Alcap, left bank main channel	LRX-33 L.B.	615.53
Nail in 12" cottonwood on right bank	-	619.05
R&M Rebar & Alcap, left bank RM 129.7	LRX-32 L.B.	608.72
R&M Rebar & Alcap, left bank main channel	LRX-31 L.B.	603.50
R&M Rebar & Alcap, right bank on veg. island	LRX-30 N3 R.B.	599.75
R&M Rebar & Alcap, left bank an island, RM 128.7	LRX-30 N3 L.B.	600.99
R&M Rebar & Alcap, right bank on small island	LRX-30 N2 R.B.	596.15
R&M Rebar & Alcap, left bank on sand bar	LRX-30 N1 L.B.	592.33
R&M Rebar & Alcap, right bank, island w/lone C.W.	LRX-30 N1 R.B.	593.44
R&M Rebar & Alcap, top of left bank, RM 127.5	LRX-30	596.07
R&M Rebar & Alcap, top of left bank, RM 126.1	LRX-29	578.43
R&M Rebar & Alcap, left bank of bypass channel	LRX-28A L.B.	569.73
R&M Rebar & Alcap, right bank main channel	LRX-28A R.B.	575.84
Spike in 48" cottonwood on left bank, RM 124.4	TBM-1	565.48
R&M Rebar & Alcap, top of left bank near crest gage	LRX-28	561.80
R&M Rebar & Alcap, left bank at RM 123.3	LRX-27	552.71
R&M Rebar & Alcap, left bank at RM 122.5	LRX-26	547.80
R&M Rebar & Alcap, left bank at RM 122.1	LRX-25A L.B.	539.88
R&M Rebar & Alcap, right bank of main channel	LRX-25A R.B.	542.10
Nail in 16" cottonwood stump on left bank main channel	TBM "Tooth"	539.50

* NOTE: LRX-1 - LRX-62 were surveyed in 1980,
LRX-63 - LRX-68 were surveyed in 1981,
the remaining cross sections were surveyed in 1982.

R&M CONSULTANTS
TEMPORARY BENCHMARKS FOR
MAIN CHANNEL CROSS SECTIONS
1980 - 1982*

Monument Description	Identification	Elevation
R&M Rebar & Alcap, left bank of east channel	LRX-25 L.B.	536.55
Spike in 15" spruce near Curry crest gage	TBM-1	534.20
R&M Rebar & Alcap, left bank at RM 120.7	LRX-24 L.B.	531.39
Nail in base of 15" spruce at angle point on island	TBM "FLU"	528.18
R&M Rebar & Alcap, left bank at RM 119.3	LRX-23 L.B.	530.53
Nail in cottonwood on right bank at RM 119.2	TBM "Fern"	518.94
R&M Rebar & Alcap, left bAnk by RR tracks	LRX-21 L.B.	523.74
R&M Rebar & Alcap, right bank at RM 118.4	LRX-20B R.B.	511.45
R&M Rebar & Alcap, left bank of east channel	LRX-20A L.B.	511.20
R&M Rebar & Alcap, right bank of west channel	LRX-20A R.B.	505.98
R&M Rebar & Alcap, left bank at RM 117.2	LRX-20 L.B.	503.98
R&M Rebar & Alcap, left bank at RM 116.5	LRX-19 L.B.	496.41
R&M Rebar & Alcap, left bank at RM 115.9	LRX-18C L.B.	500.57
R&M Rebar & Alcap, right bank main channel	LRX-18C R.B.	492.29
R&M Rebar & Alcap, left bank east channel RM 115.3	LRX-18B L.B.	485.72
Orange painted rock on right bank main channel	LRX-18B R.B.	482.71
R&M Rebar & Alcap, left bank at head of Lane SL	LRX-18A L.B.	482.21
R&M Rebar & Alcap, right bank of west channel	LRX-18A R.B.	479.35
Nail set in tree at top of right bank	LRX-18 R.B.	471.44
R&M Rebar & Alcap, left bank at RM 113	LRX-18 L.B.	469.91
R&M Rebar & Alcap, left bank at RM 112.7	LRX-17 L.B.	471.59

* NOTE: LRX-1 - LRX-62 were surveyed in 1980,
LRX-63 - LRX-68 were surveyed in 1981,
the remaining cross sections were surveyed in 1982.

R&M CONSULTANTS
TEMPORARY BENCHMARKS FOR
MAIN CHANNEL CROSS SECTIONS
1980 - 1982*

Monument Description	Identification	Elevation
Spike in 48" cottonwood on right bank, weat channel	LRX-16 R.B.	465.45
R&M Rebar & Alcap, left bank of east channel	LRX-16 L.B.	469.58
R&M Rebar & Alcap, right bank at toe of bluff	LRX-15 R.B.	457.73
R&M Rebar & Alcap, left bank of east channel	LRX-15 L.B.	468.25
R&M Rebar & Alcap, on right bank at toe of bluff	LRX-14 R.B.	450.66
R&M Rebar & Alcap, left bank of east channel	LRX-14 L.B.	450.92
R&M Rebar & Alcap, top of left bank at RM 110.3	LRX-13 L.B.	454.43
Spike in 25" cottonwood on right bank at RM 108.4	LRX-12 R.B.	434.38
Spike in railroad tie on left bank at RM 108.4	LRX-12 L.B.	449.02
R&M Rebar set near toe of right bank at RM 106.7	LRX-11 R.B.	413.28
R&M Rebar & Alcap, left bank at RM 106.7	LRX-11 L.B.	420.88
R&M Rebar & Alcap, left bank at RM 106.4	LRX-10C L.B.	420.32
R&M Rebar & Alcap, right bank below bluff	LRX-10C R.B.	416.17
R&M Rebar & Alcap, left bank at RM 105.9	LRX-10B L.B.	417.03
R&M Rebar & Alcap, right bank below bluff	LRX-10B R.B.	413.64
R&M Rebar & Alcap, left bank at RM 105.1	LRX-10A L.B.	403.99
R&M Rebar & Alcap, right bank of west channel	LRX-10A R.B.	403.18
R&M Rebar & Alcap, left bank at RM 104.8	LRX-10 L.B.	410.15
Spike in 28" cottonwood on left bank of west channel	TBM "RAIN"	404.63
R&M Rebar & Alcap, left bank at RM 104.1	LRX-9A L.B.	404.80
R&M Rebar & Alcap, right bank in vegetation	LRX-9A R.B.	392.93

* NOTE: LRX-1 - LRX-62 were surveyed in 1980,
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the remaining cross sections were surveyed in 1982.

R&M CONSULTANTS
TEMPORARY BENCHMARKS FOR
MAIN CHANNEL CROSS SECTIONS
1980 - 1982*

Monument Description	Identification	Elevation
R&M Rebar & Alcap, left bank ar RM 103.4	LRX-9 L.B.	387.82
Spike in 18" spruce near crest gages	TBM-1	397.06
Nail in 18" spruce stump in right bank	LRX-9 R.B.	393.75
R&M Rebar & Alcap, left bank at RM 102.5	LRX-8 L.B.	385.64
R&M Rebar & Alcap, right bank near edge of veg.	LRX-8 R.B.	383.70
R&M Rebar & Alcap, left bank at RM 101.5	LRX-7 L.B.	369.26
R&M Rebar on right bank of west channel	TBM "WHISKERS"	375.29
R&M Rebar on right bank below Whiskers Cr.	LRX-6 R.B.	371.09
R&M Rebar & Alcap, left bank at RM 101	LRX-6 L.B.	371.16
R&M Rebar & Alcap, left bank of east channel	LRX-5 L.B.	362.75
R&M Rebar & Alcap, left bank of east channel	LRX-4D L.B.	364.09
R&M Rebar & Alcap, right bank at RM 100.2	LRX-4D R.B.	360.61
R&M Rebar & Alcap, left bank of east channel	LRX-4C L.B.	359.16
R&M Rebar & Alcap, right bank at RM 100.1	LRX-4C R.B.	360.07
R&M Rebar & Alcap, left bank of east channel	LRX-4B L.B.	359.45
R&M Rebar & Alcap, right bank at RM 99.9	LRX-4B R.B.	359.60
R&M Rebar & Alcap, left bank of east channel	LRX-4A L.B.	358.35
R&M Rebar & Alcap, right bank at RM 99.8	LRX-4A R.B.	358.74
R&M Rebar & Alcap, left bank of east channel	LRX-4 L.B.	352.30
Spike in 10" Spruce near crest gages at RM 99.5	TBM-1	366.96
R&M Rebar & Alcap, left bank of main channel	LRX-3D L.B.	361.69

* NOTE: LRX-1 - LRX-62 were surveyed in 1980,
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the remaining cross sections were surveyed in 1982.

R&M CONSULTANTS
TEMPORARY BENCHMARKS FOR
MAIN CHANNEL CROSS SECTIONS
1980 - 1982*

Monument Description	Identification	Elevation
R&M Rebar & Alcap, right bank of west channel	LRX-30 R.B.	350.50
R&M Rebar & Alcap, left bank of main channel	LRX-3C L.B.	352.39
R&M Rebar & Alcap, right bank on gravel island	LRX-3C R.B.	350.74
R&M Rebar & Alcap, left bank near slough head	LRX-38 L.B.	350.40
R&M Rebar & Alcap, right bank on island at RM 98.9	LRX-3B R.B.	351.75
R&M Rebar & Alcap, left bank of main channel	LRX-3A L.B.	349.18
R&M Rebar & Alcap, right bank of island	LRX-3A R.B.	349.84
Nail set in cottonwood log on bank of island	TBM COAST	349.68
R&M Rebar & Alcap, left bank of main channel	LRX-3 L.B.	346.45
R&M Rebar & Alcap, left bank of Susitna at RM 98.5	LRX-2C L.B.	346.93
R&M Rebar & Alcap, right bank of Chulitna River	LRX-2C R.B.	347.30
R&M Rebar & Alcap, left bank of Susitna at RM 98.3	LRX-2B L.B.	345.66
R&M Rebar & Alcap, right bank of Chulitna River	LRX-2B R.B.	346.63
R&M Rebar & Alcap, left bank at RM 98	LRX-2A L.B.	344.23
R&M Rebar & Alcap, right bank Chulitna right channel	LRX-2A R.B.	345.63
R&M Rebar & Alcap, left bank Susitna left channel	LRX-2 L.B.	343.87
R&M Rebar & Alcap, right bank at RM 97.9	LRX-2 R.B.	343.26
R&M Rebar & Alcap, left bank Susitna east channel	LRX-1B L.B.	341.90
R&M Rebar & Alcap, right bank of west channekl	LRX-1B R.B.	341.87
R&M Rebar & Alcap, left bank above Talkeetna R.	LRX-1A L.B.	339.86
R&M Rebar & Alcap, right bank of west channel	LRX-1A R.B.	340.41
R&M Rebar & Alcap, left bank near vegetation	LRX-1 L.B.	336.33

* NOTE: LRX-1 - LRX-62 were surveyed in 1980,
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R&M CONSULTANTS
TEMPORARY BENCHMARKS FOR
MAIN CHANNEL CROSS SECTIONS
1980 - 1982*

Monument Description	Identification	Elevation
R&M Rebar & Alcap, right bank at RM 97	LRX-1 R.B.	338.80
R&M Rebar & Alcap, right bank near RM 96.6	LRX-11 R.B.	336.77
R&M Rebar & Alcap, left bank near RM 96.8	LRX-11 L.B.	338.43
R&M Rebar & Alcap, right bank near RM 96.2	LRX-12 R.B.	334.54
R&M Rebar & Alcap, left bank near RM 96.5	LRX-12 L.B.	340.68
R&M Rebar & Alcap, right bank near RM 95.9	LRX-13 R.B.	334.62
R&M Rebar & Alcap, left bank near RM 95.6	LRX-13 L.B.	330.55
R&M Rebar & Alcap, right bank near RM 95.5	LRX-14 R.B.	329.14
R&M Rebar & Alcap, left bank near RM 95.2	LRX-14 L.B.	328.98
R&M Rebar & Alcap, right bank near RM 94.9	LRX-15 R.B.	323.80
R&M Rebar & Alcap, left bank near RM 94.9	LRX-15 L.B.	332.39
R&M Rebar & Alcap, right bank near RM 94.5	LRX-16 R.B.	323.22
R&M Rebar & Alcap, left bank near RM 94.5	LRX-16 L.B.	339.22
R&M Rebar & Alcap, right bank near RM 94	LRX-17 R.B.	322.22
R&M Rebar & Alcap, left bank near RM 94.2	LRX-17 L.B.	321.66

* NOTE: LRX-1 - LRX-62 were surveyed in 1980,
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the remaining cross sections were surveyed in 1982.

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS

Description/Location	River Mile I.D.	Elevation
Chiseled Square, right bank, mouth Portage Cr.	148.9 T R.B.	848.32
Photo panel center, rebar & Alcap	148.9 T L.B.	844.27
TBM "Portage Q R.B.", right bank @ discharge site	148.9 Q R.B.	845.46
R&M Rebar & Alcap, right bank, mouth Jacklong Cr.	144.9 T1 R.B.	794.13
R&M Rebar & Alcap, left bank, mouth Jacklong Cr.	144.9 T1 L.B.	796.94
R&M Rebar & Alcap, right bank, head SL 22	144.8 H4 R.B.	791.93
R&M Spike, left bank, SL 22	144.8 H4 L.B.	794.99
R&M Rebar & Alcap, right bank @ discharge site	144.6 S3 R.B.	789.54
R&M Spike, left bank, SL 22 @ discharge site	144.6 S3 L.B.	788.92
R&M Rebar & Alcap, right bank SL 22	144.4 S2 R.B.	785.16
ADF&G Spike, right bank, Susitna mainstem	144.3 M1 R.B.	794.78
R&M Spike in 12" C.W., right bank, Susitna	144.3 M1 R.B.	794.79
ADF&G Spike in 14" C.W., left bank, SL 22	144.3 S4 L.B.	788.86
ADF&G Spike in 8" C.W., left bank, SL 22	144.3 W3 L.B.	788.25
R&M Rebar & Alcap, right bank, mouth SL 22	144.2 W1 R.B.	786.00
R&M Rebar & Alcap, left bank, mouth SL 22	144.2 W1 L.B.	784.58
R&M Spike in 20" C.W., left bank, head SL 21	142.0 H9 L.B.	763.33
R&M Rebar & Alcap, right bank SL 21 @ recorder	141.9 S8 R.B.	752.21
R&M Rebar & Alcap, left bank, SL 21 @ recorder	141.9 S8 L.B.	751.66
R&M Rebar & Alcap, right bank, x-sec SL 21	141.8 S7 R.B.	750.39
R&M Rebar & Alcap, left bank, x-sec SL 21	141.8 S7 L.B.	751.45
R&M Rebar & Alcap, left bank of access channel	141.8 A6 L.B.	753.45
R&M Rebar & Alcap, right bank of access channel	141.8 A6 R.B.	753.04

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
R&M Rebar & Alcap, left bank of access channel	141.7 A5 L.B.	750.81
R&M Rebar & Alcap, right bank of access channel	141.7 A5 R.B.	751.27
R&M Rebar & Alcap, right bank of access channel	141.3 A4 R.B.	746.28
R&M Rebar & Alcap, left bank of access channel	141.0 A3 L.B.	743.45
R&M Rebar & Alcap, right bank of access channel	141.0 A3 R.B.	740.84
R&M Rebar & Alcap, left bank of access channel	140.8 A2 L.B.	741.00
R&M Rebar & Alcap, right bank on point of island	140.6 W1 R.B.	736.05
R&M Rebar & Alcap, left bank, mouth SL 21	140.6 W1 L.B.	735.53
R&M Rebar & Alcap, left bank, head SL 20	140.6 H3 L.B.	737.33
ADF&G nail in root of 12" birch, head SL 20	140.6 H3 L.B.	737.49
R&M Rebar & Alcap, right bank, head of SL 20	140.6 H3 R.B.	734.25
ADF&G, nail in 30" C.W. on Trib. to SL 20	-	735.73
R&M Rebar & Alcap, left bank @ discharge site, SL 20	140.2 S2 L.B.	729.66
R&M Rebar & Alcap, right bank @ discharge site, SL 20	140.2 S2 R.B.	732.20
R&M Rebar & Alcap, left bank, mouth of SL 20	140.1 W1 L.B.	728.14
ADF&G staff gage top, SL 20	140.1 T3 B.	732.57
ADF&G 1½" Alcap at mouth of SL 19, right bank	-	725.14
R&M Rebar & Alcap, left bank, mouth of SL 19	139.8 W1 L.B.	725.09
R&M Rebar & Alcap, left bank at mouth of Indian River	138.6 T1 L.B.	712.02
R&M TBM, 8" spike in 30" C.W. tree on right bank of Indian River	-	714.09

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
ADF&G Rebar on right bank at head of SL 16	-	708.22
ADF&G Rebar on left bank at head of SL 16	-	708.86
R&M Rebar & Alcap, left bank at recorder site, SL 16	138.0 S3 L.B.	705.62
R&M Rebar & Alcap, right bank at recorder site, SL 16	138.0 S3 R.B.	706.05
R&M Rebar & Alcap, on right bank SL 16, edge of vegetation	137.9 S2 R.B.	701.24
R&M Rebar & Alcap, left bank, mouth of SL 16	137.8 W1 L.B.	702.01
R&M Rebar & Alcap, right bank, mouth of SL 16	137.8 W1 R.B.	701.74
ADF&G Rebar on left bank (R.B. Head pin 1), SL 16	-	702.21
R&M Rebar & Alcap, left bank, Gold Cr. discharge site	136.8 T2 L.B.	698.86
R&M Rebar & Alcap, right bank, Gold Cr. discharge site	136.8 T2 R.B.	699.81
R&M Rebar & Alcap, left bank at mouth of Gold Cr.	136.8 T1 L.B.	694.16
R&M Rebar & Alcap, right bank at mouth of Gold Cr.	136.8 T1 R.B.	696.28
R&M Rebar & Alcap, left bank of SL 11 at head	136.5 H4 L.B.	689.36
R&M Rebar & Alcap, left bank bypass channel, discharge site	136.5 Q3 L.B.	688.63
R&M Rebar & Alcap, right bank bypass channel, discharge site	136.5 Q3 R.B.	686.17
R&M Rebar & Alcap, left bank at recorder site, SL 11	135.7 S2 L.B.	675.88
R&M Rebar & Alcap, right bank at recorder site, SL 11	135.7 S2 R.B.	674.76
R&M Rebar & Alcap, left bank, mouth of SL 11	135.5 W1 L.B.	675.80

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
R&M Rebar & Alcap, right bank, mouth of SL 11	135.5 W1 R.B.	672.77
R&M Rebar & Alcap, left bank SL 11A	135.1 S1 L.B.	672.00
R&M Rebar & Alcap, right bank SL 11A	135.1 S1 R.B.	669.56
R&M Rebar & Alcap, left bank of SL 10 at discharge site	134.1 S1 L.B.	654.37
R&M Rebar & Alcap, right bank of SL 10 at discharge site	134.1 S1 R.B.	654.24
R&M Rebar & Alcap, left bank of trib., 75 ft U.S. from mouth	131.9 T1 L.B.	639.85
R&M Rebar & Alcap, right bank of trib.	131.9 T1 R.B.	641.52
R&M Rebar & Alcap, right bank of slough near 4th of July Cr.	131.2 S4 R.B.	626.18
R&M Rebar & Alcap, left bank of slough near 4th of July Cr.	131.2 S4 L.B.	624.39
R&M Rebar & Alcap, right bank, 300 ft. D.S. of 4th of July Cr.	131.1 S1 R.B.	623.03
R&M Rebar & Alcap, left bank, 300 ft. D.S. of 4th of July Cr.	131.1 S1 L.B.	619.08
R&M Rebar & Alcap, left bank, mouth of 4th of July Cr.	131.1 T2 L.B.	621.52
R&M Rebar & Alcap, right bank at mouth of 4th of July Cr.	131.1 T2 R.B.	622.66
R&M Rebar & Alcap, right bank at discharge site, 4th of July Cr.	131.1 T3 R.B.	626.13
R&M Rebar & Alcap, left bank at discharge site, 4th of July Cr.	131.1 T3 L.B.	627.69
R&M Rebar & Alcap, left bank Sherman Cr. at discharge site	130.8 T2 L.B.	622.78
R&M Rebar & Alcap, right bank Sherman Cr. at discharge site	130.8 T2 R.B.	624.96

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
R&M Rebar & Alcap, left bank mouth of Sherman Cr.	130.8 T1 L.B.	622.25
R&M Rebar & Alcap, right bank mouth of Sherman Cr.	130.8 T1 R.B.	623.53
R&M TBM 9-4, Spike at base of 8" C.W. near well 9-4	129.5 T6	613.95
R&M Rebar & Alcap, near well 9-4 in SL 9	129.5 T6 L.B.	610.39
R&M Rebar & Alcap, near well 9-5 in SL 9	129.5 T6 R.B.	607.41
ADF&G TBM, Spike in fork of 3" birch, near S.G.	129.5 T6	605.15
R&M Rebar & Alcap, at mouth of trib. to SL 9	129.4 T7 R.B.	605.66
R&M Rebar & Alcap, at mouth of trib. in SL 9	129.4 T7 L.B.	605.43
R&M TBM 9-7, Spike at base of 24" C.W.	129.3 S8	609.23
R&M Rebar & Alcap, left bank SL 9	129.3 S8 L.B.	608.28
R&M, Rebar & Alcap, right bank SL 9, 350 ft D.S. of head	129.3 S8 R.B.	606.33
R&M Rebar & Alcap, left bank SL 9 at head	129.3 H9 L.B.	606.77
R&M Rebar & Alcap, right bank at head of SL 9	129.3 H9 R.B.	608.18
ADF&G Rebar HP2, left bank SL 9	129.3 H9	605.85
R&M TBM 9-10, nail at base of 8" birch, near well 9-10	129.2 T7	606.66
R&M Rebar & Alcap, left bank 30 ft. U.S. of well 9-10	129.2 S5 L.B.	605.08
R&M Rebar & Alcap, right bank 8.9 ft. D.S. of Well 9-11	129.2 S5 R.B.	606.01
R&M Rebar & Alcap, left bank of SL 9 @ recorder	128.8 S3 L.B.	600.10
R&M Rebar & Alcap, right bank of SL 9 @ recorder	128.8 S3 R.B.	598.94
ADF&G Spike @ base of 6" birch, near Trib. 129.0	128.8	600.18

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
TBM 9-14, spike @ base of 30" C.W. @ well 9-14	-	602.19
R&M Rebar & Alcap, right bank Trib. 128.5	128.5 T2 R.B.	597.19
R&M Rebar & Alcap, left bank of Trib. 128.5	128.5 T2 L.B.	597.76
R&M Rebar & Alcap, right bank at mouth of SL 9	128.4 W1 R.B.	597.48
R&M Rebar & Alcap, left bank, mouth of SL 9	128.4 W1 L.B.	599.08
TBM ADF&G, Nail @ Base of 8" birch, left bank	128.4 W1	600.97
R&M Rebar & Alcap, left bank of tributary	127.3 T1 L.B.	590.01
R&M Rebar & Alcap, right bank of tributary	127.3 T1 R.B.	590.72
R&M Rebar & Alcap, left bank SL 8	126.6 S9 L.B.	579.15
R&M Rebar & Alcap, right bank SL 8	126.6 S9 R.B.	579.84
R&M Rebar & Alcap, left bank SL 8	126.5 S8 L.B.	578.14
R&M Rebar & Alcap, right bank SL 8	126.5 S8 R.B.	578.85
R&M Rebar & Alcap, left bank SL 8	126.5 S7 L.B.	580.79
R&M Rebar & Alcap, right bank SL 8	126.5 S7 R.B.	575.73
R&M Rebar & Alcap, left bank SL 8 at head	126.1 H4 L.B.	576.32
R&M Rebar & Alcap, right bank SL 8 at head	126.1 H4 R.B.	577.12
R&M Rebar & Alcap, left bank SL 8	125.9 S6 L.B.	571.40
R&M Rebar & Alcap, right bank SL 8	125.9 S6 R.B.	571.56
R&M Rebar & Alcap, right bank SL 8	125.7 S3 R.B.	570.90
R&M Rebar & Alcap, left bank at SL 8 recorder	125.7 S5 L.B.	568.37
R&M Rebar & Alcap, right bank at SL 8 recorder	125.7 S5 R.B.	567.56
R&M Rebar & Alcap, left bank SL 8	125.7 S3 L.B.	570.01

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
R&M Rebar & Alcap, right bank, SL 8	125.6 S2 R.B.	567.25
R&M Rebar & Alcap, left bank SL 8	125.6 S2 L.B.	571.49
R&M Rebar & Alcap, left bank, mouth of SL 8	125.2 W1 L.B.	568.51
R&M Rebar & Alcap, right bank, mouth of SL 8	125.2 W1 R.B.	566.01
TBM 8-8, nail at base of 5" birch tree	-	573.56
TBM 8-12, spike in 6" alder	-	569.58
TBM 8-5, nail in 6" birch	-	579.99
R&M Rebar & Alcap, left bank of Skull Cr.	124.7 T1 L.B.	564.91
R&M Rebar & Alcap, right bank of Skull Cr.	124.7 T1 R.B.	560.04
R&M Rebar & Alcap, left bank tributary @ RM 123.9	123.9 T1 L.B.	554.31
R&M Rebar & Alcap, right bank trib.	123.9 T1 R.B.	555.61
R&M Rebar & Alcap, left bank mouth of Curry Creek	120.9 T1 L.B.	536.67
R&M Rebar & Alcap, left bank mouth trib. 121.0	121.0 T1 L.B.	533.73
R&M Rebar & Alcap, right bank mouth trib. 121.0	121.0 T1 R.B.	532.96
R&M Rebar & Alcap, right bank mouth trib. 117.4	117.4 T1 RB	502.20
R&M Rebar & Alcap, left bank mouth trib. 117.4	117.4 T1 L.B.	503.04
R&M Rebar & Alcap, right bank mouth Mackenzie Cr.	116.7 T1 R.B.	497.77
R&M Rebar & Alcap, left bank mouth Mackenzie Cr.	116.7 T1 L.B.	496.34
R&M Rebar & Alcap, right bank at head Lane S1	114.1 H1 R.B.	476.23
R&M Rebar & Alcap, left bank at head Lane Sl.	114.1 H1 L.B.	481.81
R&M Rebar & Alcap, right bank Lane Cr. @ bridge	113.6 T2 R.B.	478.27

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
R&M Rebar & Alcap, left bank at Lane Cr. bridge	113.6 T2 L.B.	481.04
R&M Rebar & Alcap, left bank mouth Lane Cr.	113.6 T1 L.B.	473.21
R&M Rebar & Alcap, right bank mouth of Lane Cr.	113.6 T1 R.B.	474.31
R&M Rebar & Alcap, left bank, trib. at RM 110.1	110.1 T1 L.B.	445.89
R&M Rebar & Alcap, right bank, trib. at RM 110.1	110.1 T1 R.B.	446.14
R&M Rebar & Alcap, left bank, head Whiskers Sl.	101.6 H4 L.B.	374.24
R&M Rebar & Alcap, right bank, head Whiskers Sl.	101.6 H4 R.B.	372.72
R&M Rebar & Alcap, left bank, backwater Whiskers Sl.	101.4 S3 L.B.	370.38
R&M Rebar & Alcap, right bank, backwater Whiskers Sl.	101.4 S3 R.B.	370.85
R&M Rebar & Alcap, left bank, mouth Whiskers Cr.	101.3 T2 L.B.	368.17
R&M Rebar & Alcap, right bank, mouth Whiskers Cr.	101.3 T2 R.B.	369.37
R&M Rebar & Alcap, right bank, mouth Whiskers Sl.	101.2 W1 R.B.	370.07
R&M Rebar & Alcap, left bank, mouth Whiskers Sl.	101.2 W1 L.B.	370.43
ADF&G Rebar, left bank, near staff gages 101.2 M4	101.2	370.74
TBM RR Spike in 6" birch, left bank Susitna R.	96.8	339.27
TBM RR Spike in 10" birch, left bank Susitna R.	96.6	338.44
TBM RR Spike in root of 12" Spruce, left bank	96.2	340.17
TBM RR Spike in 10" birch, left bank Susitna R.	95.7	331.65
TBM RR Spike in 8" birch, left bank Susitna R.	95.4	334.94
TBM RR Spike in opposite Mile Post 225, between rails in a railroad tie.	95.2	335.19

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	River Mile I.D.	Elevation
TBM RR Spike, west end of railroad tie	94.9	334.13
TBM RR Spike, west end of railroad tie	94.6	343.94
TBM RR Spike, west end of railroad tie	94.3	355.94
R&M Rebar & Alcap, left bank, head of Birch Cr.	93.1 H4 L.B.	315.47
R&M Rebar & Alcap, right bank, head of Birch Cr.	93.1 H4 R.B.	313.96
R&M Rebar & Alcap, right bank, Birch Cr. Slough	89.3 S1 R.B.	287.44
R&M Rebar & Alcap, left bank, Birch Cr. Slough	89.3 S1 L.B.	387.79
R&M Rebar & Alcap, right bank, Birch Cr.	89.3 T2 R.B.	290.97
R&M Rebar & Alcap, left bank, Birch Cr.	89.3 T2 L.B.	290.68
R&M Rebar & Alcap, right bank, Birch Cr.	89.3 T3 R.B.	287.25
R&M Rebar & Alcap, left bank, Birch Cr.	89.3 T3 L.B.	286.90
R&M Rebar & Alcap, left bank, head Sunshine Sl.	86.8 H3 L.B.	284.77
R&M Rebar & Alcap, right bank, head of Sunshine Sl.	86.8 H3 R.B.	285.02
R&M Rebar & Alcap, right bank, Sunshine Cr., backwater	86.1 T2 R.B.	267.97
R&M Rebar & Alcap, left bank, Sunshine Cr., backwater	86.1 T2 L.B.	268.82
R&M Rebar & Alcap, right bank, mouth Sunshine Cr.	85.7 T1 R.B.	268.33
R&M Rebar & Alcap, left bank, mouth Sunshine Cr.	85.7 T1 L.B.	267.44
R&M Rebar & Alcap, right bank, mouth Rabideaux Cr.	83.3 T1 L.B.	263.08
R&M Rebar & Alcap, right bank, mouth Rabideaux Cr.	83.3 T1 R.B.	262.97
R&M Rebar & Alcap, right bank, mouth Whitefish Sl.	78.9 W1 R.B.	241.74

R&M CONSULTANTS
TEMPORARY BENCHMARKS
FOR 1982 SLOUGH SURVEYS
(Continued)

Description/Location	RiverMilel.D.	Elevation
R&M Rebar & Alcap, left bank, mouth Whitefish Sl.	78.9 W1 L.B.	242.42
R&M Rebar & Alcap, left bank, head Goose Sl.	75.0 H5 L.B.	222.06
R&M Rebar & Alcap, right bank, head Goose Sl.	75.0 H5 R.B.	221.38
R&M Rebar & Alcap, left bank, x-sec. in Goose Sl.	73.2 S2 L.B.	212.76
R&M Rebar & Alcap, right bank, x-sec. in Goose Sl.	73.2 S2 R.B.	213.03
R&M Rebar & Alcap, left bank, mouth Goose Sl.	73.1 W1 L.B.	212.96
R&M Rebar & Alcap, right bank, mouth Goose Sl.	73.1 W1 R.B.	212.18
R&M Rebar & Alcap, right bank, Goose Cr.	73.1 T3 R.B.	215.71
R&M Rebar & Alcap, left bank, Goose Cr.	73.1 T3 L.B.	213.06
R&M Rebar & Alcap, right bank, Goose Cr.	73.0 T4 R.B.	215.17
R&M Rebar & Alcap, left bank, Goose Cr.	73.0 T4 L.B.	213.59

APPENDIX C

APPENDIX C
AERIAL PHOTOGRAPHY

Index No.	Date	Area	Scale	BW or Color	Contracting Agency	Location of Negatives
1310	1949-51	Susitna River Basin - Cook Inlet to Devil Canyon	1:40000	BW	USCE	EROS Data Center
1311	1951-54	Denali Highway - West from Maclaren River	1:40000	BW	USCE	EROS Data Center
1312	1951-54	Yentna River - Chelatna Lake	1:40000	BW	USCE	EROS Data Center
1313	1951	Talkeetna	1:40000	BW	USCE	EROS Data Center
1314	1961-62	Cook Inlet to Willow East of Susitna River	1:15840	BW	ADL	ADL (Project Symbol BL)
1315	1961-62	Cook Inlet, Mt. Yenlo West of Susitna River	1:20000	BW	BLM	BLM (Project Symbol GP 103, GP 120)
1316	1962	Delta Islands	1:20000	BW	BLM	BLM (Project Symbol GP 105)
1317	1962	Talkeetna	1:20000	BW	ADL	ADL (Project Symbol TAK)
1318	1962-63	Susitna Valley	1:15840	BW	ADL	ADL (Project Symbol SUS)
1320	1968	Upper Susitna Valley, Chulitna River	1:15840	BW	ADL	ADL (Project Symbol SUTP)
1325	1972	Lake Louise Area	1:24000	C	SDP	ADL (Project Symbol Lk. Lou.)
1330	1974	Devil Canyon	1:30000	BW	DOT	NPAS
1331	1974	Susitna River Basin	1:500000	BW	NASA	EROS Data Center
1332	1974	Cook Inlet to Talkeetna	1:63360	BW	CSSC	NPAS
1333	1976	Willow Basin	1:24000	BW&C	CSSC	ADL (Project Symbol WIL)
1334	1976-79	Susitna River Basin	1:500000 1:1000000	BW BW	NASA NASA	EROS Data Center EROS Data Center
1335	7/28/77 7/29/77	Susitna River Gold Creek to Glaciers	1:120000	C-IR	BLM	BLM
1336	1978	Susitna River	1:18000	BW	USCE	NPAS
1337	1978	Susitna River	1:72000	BW	USCE	NPAS

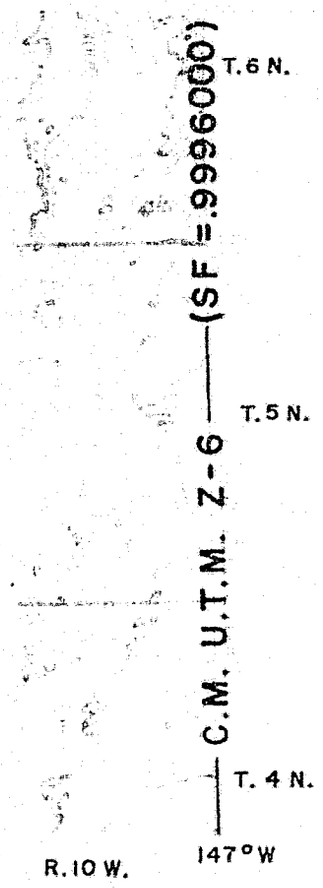
APPENDIX C - Aerial Photography (Continued)

Index No.	Date	Area	Scale	BW or Color	Contracting Agency	Location of Negatives
1338	4/8/79 8/25/78	Susitna River Cook Inlet to Talkeetna	1:60000 1:120000	C-IR BW	BLM BLM	BLM BLM
1339	8/11/80 8/1/80	Upper Susitna River Basin	1:60000 1:120000	C-IR BW	BLM BLM	BLM BLM
1340	7/19/80	Devil Canyon Reservoir	1:24000	C	R&M	NPAS
1341	7/19/80	Watana Reservoir	1:24000	C	R&M	NPAS
1342	7/19/80	Alternative Access Corridor - Susitna	1:240(0	C	R&M	NPAS
1343	8/24/80	Lower Susitna River	1:48000	BW	R&M	NPAS
1344	11/14/80	Susitna River - Delta Islands to Watana Creek	1:60000	BW	R&M	R&M (35 mm Photography)
1345	12/5/80	Susitna River - Cook Inlet to Watana Creek	1:24000	BW	R&M	R&M (35 mm Photography)
1346	4/27/81	Susitna River - Bell Island to Watana Creek	1:24000	BW	R&M	R&M (35 mm Photography)
1347	5/6/81	Susitna River - Bell Island to Curry	1:24000	BW	R&M	R&M (35 mm photography)
1348	5/6/81	South Intertie - Pt. Mackenzie to Willow	1:30000	BW	R&M	NPAS
1349	5/12/81	North Intertie - Healy to Fairbanks	1:30000	BW	R&M	NPAS
1350	5/26/81	Alternative Access Corridors	1:24000	C	R&M	NPAS
1351	5/26/81	East-west intertie	1:24000	C	R&M	NPAS
1352	8/24/81	Susitna River Cook Inlet to Devil Canyon (For Vegetation Studies)	1:36,000	C	R&M	TES
1353	10/19/81	Susitna River Cook Inlet to Talkeetna, 5 miles up Chulitna, 5 miles up Upper Susitna (For Definition of Low Water Channel)	1:60,000	BW	R&M	R&M (35 mm photography)

APPENDIX C - Aerial Photography (Continued)

Index No.	Date	Area	Scale	BW or Color	Contracting Agency	Location of Negatives
1354	4/26/82	Susitna River - Talkeetna to Watana. Three sets of photos; morning, noon, evening. (For Shadow Study)	1:32000	BW	R&M	NPAS
1355	5/31/82	Susitna River - selected locations between Kashwitna and Devil Canyon (for Slough Studies)	1:48000	BW	R&M	NPAS
1356	5/31/82	Alternate Access Corridors Rand Between Sherman and Watana	1:24,000	BW	R&M	NPAS
1357	6/1/82	Susitna River - Talkeetna at Devil Canyon (For Slough Studies)	1:12,000	BW	R&M	NPAS
1358	8/22/82	Alternate Access Corridors Deadman Mountain	1:24,000	BW	R&M	NPAS
1359	8/22/82	Access Corridors South of Susitna River	1:24,000	BW	R&M	NPAS

APPENDIX D



—NGS— EXISTING NGS FIRST ORDER TRIANGULATION NETWORK

—USGS— EXISTING USGS THIRD ORDER TRIANGULATION NETWORK

ALL OTHER HORIZONTAL CONTROL TIES WERE BY THIRD ORDER, CLASS I, TRAVERSE, ANGLE, OR DISTANCE OBSERVATIONS.

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GRAM & NOTE 2	MS	MH	
	MS	MH	
	CH.	APP.	APP.

ACRES

ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

HORIZONTAL AND VERTICAL CONTROL SURVEY NETWORK DIAGRAMS

R&M CONSULTANTS, INC.

DATE DECEMBER 1980 | SCALE 1:250,000

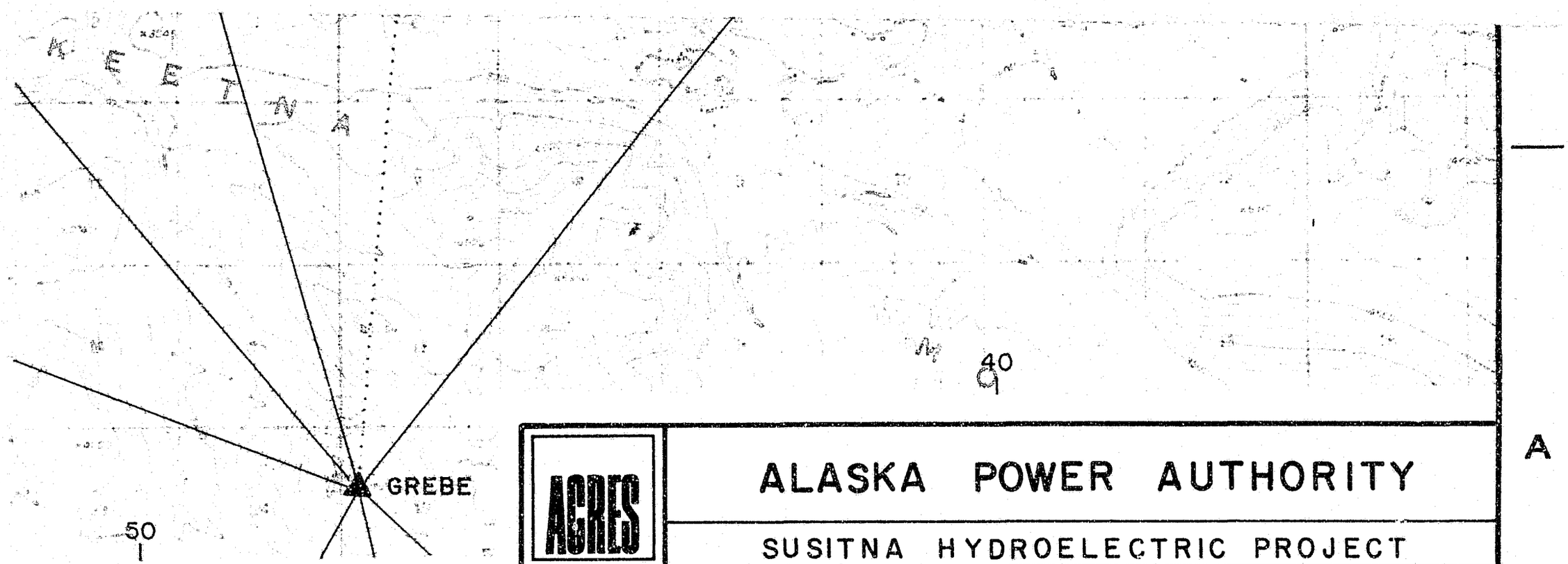
DEPARTMENT SURVEY | DRAWING NO.

PROJECT TASK 2 SUBTASK 2.09 | SHEET 1 OF 8 | REV. 3

A

3 2 1

ARCHITECTURAL	CIVIL	CONSTRUCTION	ELECTRICAL	GEOTECHNICAL	HYDRAULIC	MECHANICAL	SURVEY	DESIGNED	DRAWN	CHECKED
							MH/BD	MH/BD	OEP	MS



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	MS	MH	
	CH.	APP.	APP.

R&M CONSULTANTS, INC.

ACRES

ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

HORIZONTAL AND VERTICAL CONTROL SURVEY NETWORK DIAGRAMS

DATE 12-18-80

SCALE 1" = 1 MILE

DEPARTMENT SURVEY

DRAWING NO.

REV. 3

PROJECT TASK 2 SUBTASK 2.09

SHEET 2 OF 8

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3 2 1

ARCHITECTURAL	CIVIL	CONSTRUCTION	ELECTRICAL	GEOTECHNICAL	HYDRAULIC	MECHANICAL	SURVEY	DESIGNED	DRAWN	CHECKED
							MH/BD	MH/BD	OEP	MS

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ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

HORIZONTAL AND VERTICAL CONTROL SURVEY NETWORK DIAGRAMS

R&M CONSULTANTS, INC.

DATE 12-18-80
SCALE 1" = 1MILE
DEPARTMENT SURVEY
DRAWING NO.
REV. 3
PROJECT TASK 2 SUBTASK 2.09
SHEET 3 OF 8

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CHITECTURAL	CIVIL	CONSTRUCTION	ELECTRICAL	GEOTECHNICAL	HYDRAULIC	MECHANICAL	SURVEY	DESIGNED	DRAWN	CHECKED
							MH/BD	MH/BD	OEP	MS

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ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

HORIZONTAL AND VERTICAL CONTROL SURVEY NETWORK DIAGRAMS

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R&M CONSULTANTS, INC.

DATE 12-18-80

DEPARTMENT SURVEY

PROJECT TASK 2 SUBTASK 2.09

SCALE 1" = 1 MILE

DRAWING NO

SHEET 4 OF 8

REV. 2

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ARCHITECTURAL	CIVIL	CONSTRUCTION	ELECTRICAL	GEOTECHNICAL	HYDRAULIC	MECHANICAL	SURVEY	DESIGNED	DRAWN	CHECKED
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ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

HORIZONTAL AND VERTICAL CONTROL SURVEY NETWORK DIAGRAMS

R&M CONSULTANTS, INC.

DATE 12-18-80

SCALE 1" = 1 MILE

DEPARTMENT SURVEY

DRAWING NO.

REV. 3

PROJECT TASK 2 SUBTASK 2.09

SHEET 5 OF 8

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ARCHITECTURAL	CIVIL	CONSTRUCTION	ELECTRICAL	GEOTECHNICAL	HYDRAULIC	MECHANICAL	SURVEY	DESIGNED	DRAWN	CHECKED
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ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

HORIZONTAL AND VERTICAL CONTROL SURVEY NETWORK DIAGRAMS

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R&M CONSULTANTS, INC.

DATE 6-1-82

DEPARTMENT SURVEY

PROJECT TASK 2 SUBTASK 2.09

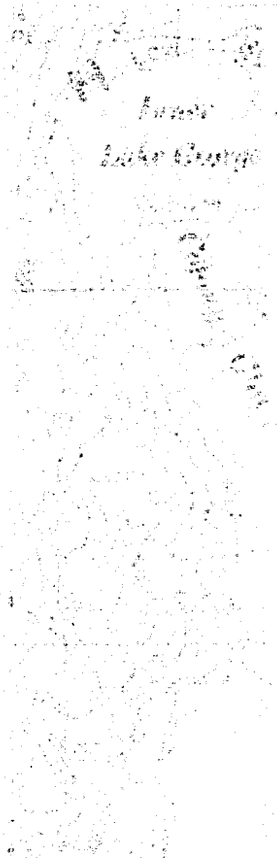
SCALE 1" = 1 MILE

DRAWING NO.

SHEET 6 OF 8

REV. 2

ARCHITECTURAL	CIVIL	CONSTRUCTION	ELECTRICAL	GEOTECHNICAL	HYDRAULIC	MECHANICAL	SURVEY	DESIGNED	DRAWN	CHECKED
							MH/BD	MS/MH	OEP	MS



ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

HORIZONTAL AND VERTICAL CONTROL SURVEY NETWORK DIAGRAMS

R&M CONSULTANTS, INC.

DATE OCT. 1982

SCALE 1:250,000

DEPARTMENT SURVEY

DRAWING NO.

REV. A

PROJECT TASK 2 SUBTASK 2.09

SHEET 7 OF 8

Prepared By NORTH PACIFIC AERIAL SURVEYS INC

	CH.	APP.	APP.

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ARCHITECTURAL	CIVIL	CONSTRUCTION	ELECTRICAL	GEOTECHNICAL	HYDRAULICS	MECHANICAL	SURVEY	DESIGNED	DRAWN	CHECKED
							MH/BD	MH/BD	OEP	MS

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T14S

T15S

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ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

HORIZONTAL AND VERTICAL CONTROL SURVEY NETWORK DIAGRAMS

	CH.	APP.	APP.

R&M CONSULTANTS, INC.

DATE OCT. 1982

SCALE 1:250,000

DEPARTMENT SURVEY

DRAWING NO.

REV.

PROJECT TASK 2 SUBTASK 2.09

SHEET 8 OF 8

Prepared By NORTH PACIFIC AERIAL SURVEYS INC

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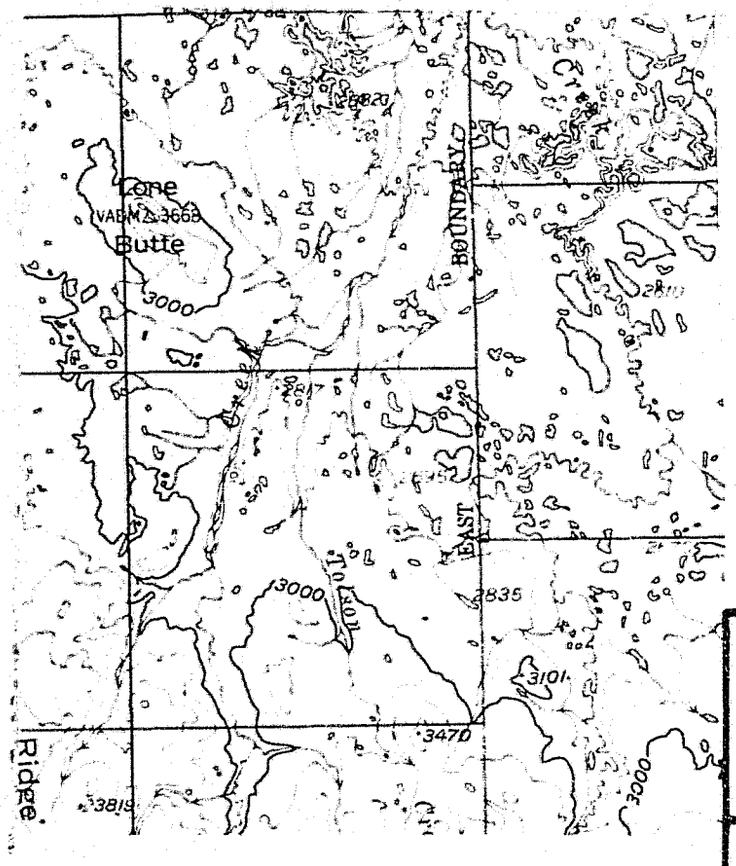
3 2 1

ITECTURAL	CIVIL	CONSTRUCTION	ELECTRICAL	GEOTECHNICAL	HYDRAULIC	MECHANICAL	SURVEY	DESIGNED	DRAWN	CHECKED
							MH/BD	MS	OEP	MS

APPENDIX E



TOPO COVERAGE	MS	BD	
FLTS. 18, 19, 20 & 21	MS	BD	
	CH.	APP.	APP.

ACRES

ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

AERIAL PHOTOGRAPHY INDEX MAP

R&M CONSULTANTS, INC.

DATE JAN. 15, 1982

DEPARTMENT SURVEY

PROJECT TASK 2 SUBTASK 2.08

SCALE 1:250,000

DRAWING NO.

SHEET 1 OF 3

REV. 2

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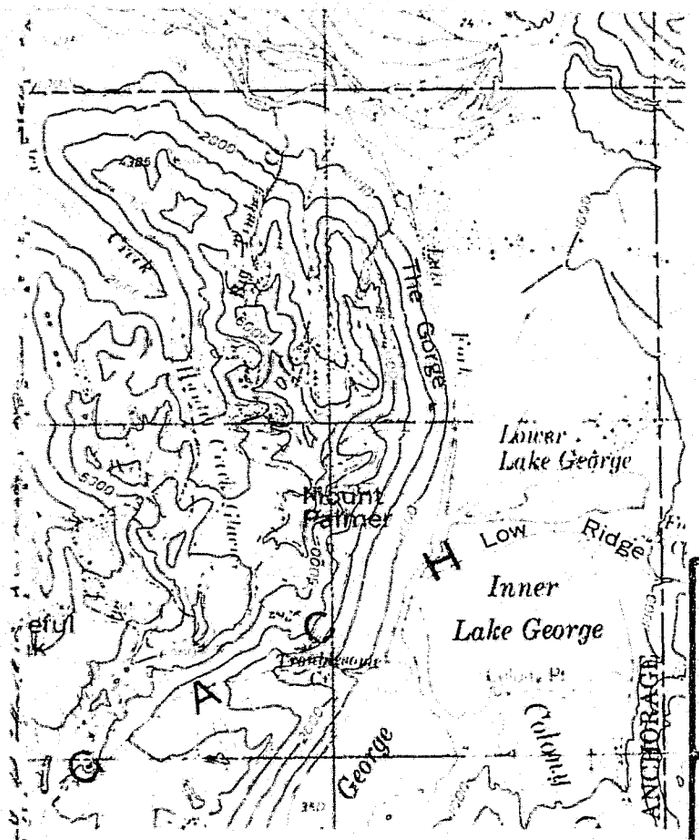
3 2 1

ARCHITECTURAL	CIVIL	CONSTRUCTION	ELECTRICAL	GEOTECHNICAL	HYDRAULIC	MECHANICAL	SURVEY	DESIGNED	DRAWN	CHECKED
							MH/BD	MS	OEP	



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ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

AERIAL PHOTOGRAPHY INDEX MAP

	MS	BD	
	CH.	APP.	APP.

R&M CONSULTANTS, INC.

DATE JAN. 15, 1982

SCALE 1:250,000

DEPARTMENT SURVEY

DRAWING NO.

REV. 1

PROJECT TASK 2
SUBTASK 2.08

SHEET 2 OF 3

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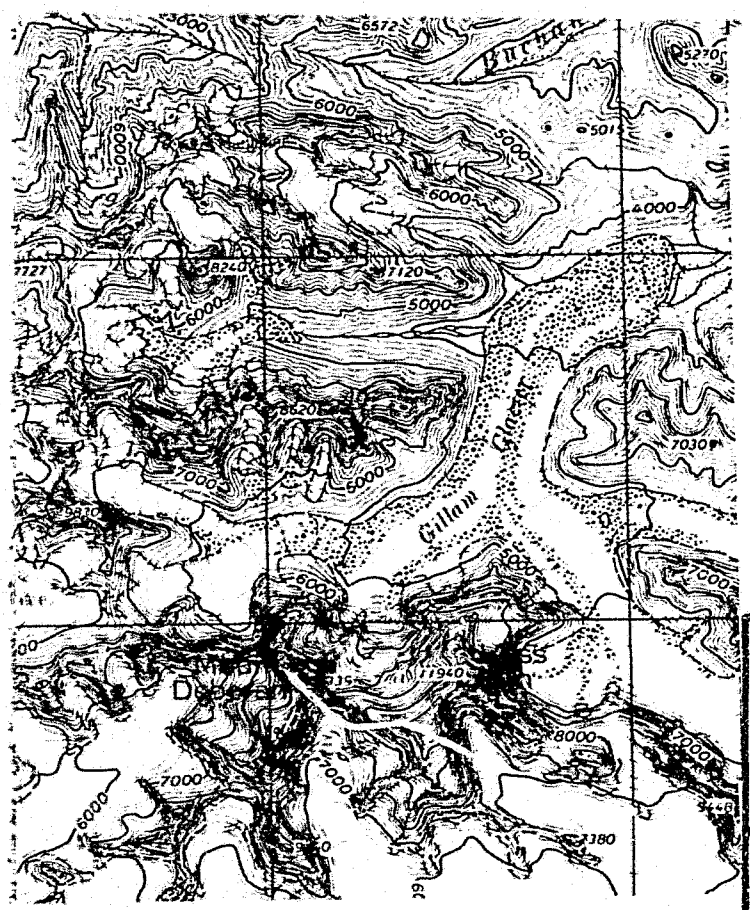
3 2 1

ARCHITECTURAL	CIVIL	CONSTRUCTION	ELECTRICAL	GEOTECHNICAL	HYDRAULIC	MECHANICAL	SURVEY	DESIGNED	DRAWN	CHECKED
							MH/BD	MS	OEP	



ACRES

ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

AERIAL PHOTOGRAPHY INDEX MAP

R&M CONSULTANTS, INC.

DATE OCTOBER 1982

DEPARTMENT SURVEY

PROJECT TASK 2 SUBTASK 2.08

SCALE 1:250,000

DRAWING NO.

SHEET 3 OF 3

REV. A

	CH.	APP.	APP.

ARCHITECTURAL	CIVIL	CONSTRUCTION	ELECTRICAL	GEOTECHNICAL	HYDRAULIC	MECHANICAL	SURVEY	DESIGNED	DRAWN	CHECKED
							MH/BD	MS	OEP	

APPENDIX F

— WATANA RESERVOIR 1"= 400' / 10 CI

DS — DEVIL CANYON DAMSITE 1"= 200' / 5' CI

QI — WATANA QUARRY SITE 1"= 400' / 10 CI

+4+ — ALTERNATE ACCESS CORRIDOR
DENALI ROUTE 1"= 400' / 10 CI

ACRES

ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

AERIAL PHOTOGRAPHY TOPOGRAPHIC CONTOUR MAPPING INDEX

	MS	MH/BD	
	CH.	APP.	APP.

R&M CONSULTANTS, INC.

DATE AUGUST 1981

SCALE 1:250,000

DEPARTMENT SURVEY

DRAWING NO.

REV. 1

PROJECT TASK 2 SUBTASK 2.08

SHEET 1 OF 1

Prepared By NORTH PACIFIC AERIAL SURVEYS, INC.

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TECTURAL	CIVIL	CONSTRUCTION	ELECTRICAL	GEOTECHNICAL	HYDRAULIC	MECHANICAL	SURVEY	DESIGNED	DRAWN	CHECKED
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