STATE	PROJECT	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS 0987(4)	1985	1	13

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
&
PUBLIC FACILITIES

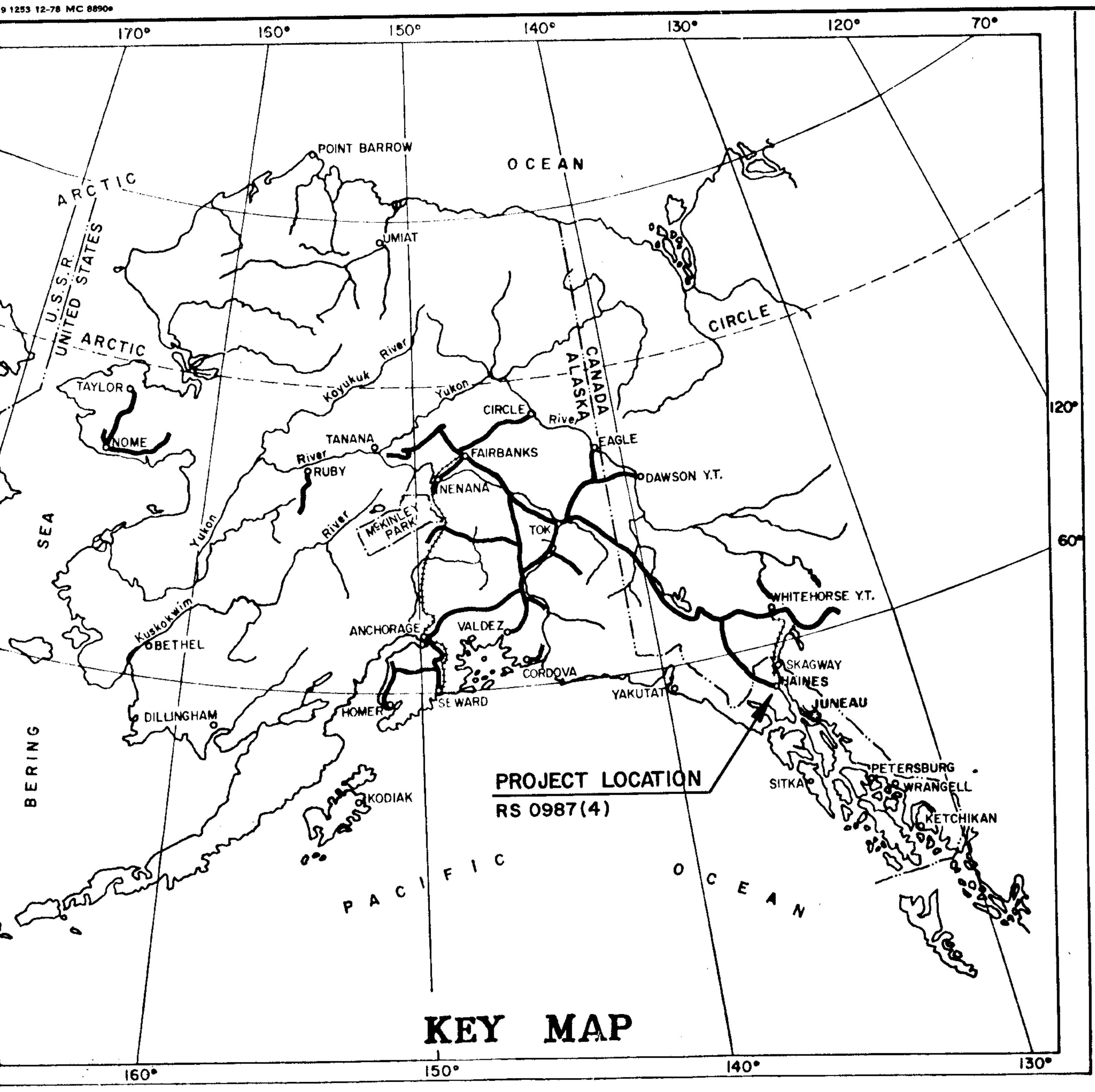
PLAN AND PROFILE
PROPOSED HIGHWAY PROJECT

RS 0987(4) (B- 30142)

MUD BAY ROAD—HAINES

STAGE II

GRADING, DRAINAGE, SURFACE TREATMENT



KEY MAP

INDEX OF SHEETS

THE FOLLOWING STANDARD DRAWINGS ARE INCLUDED IN THESE PLANS:

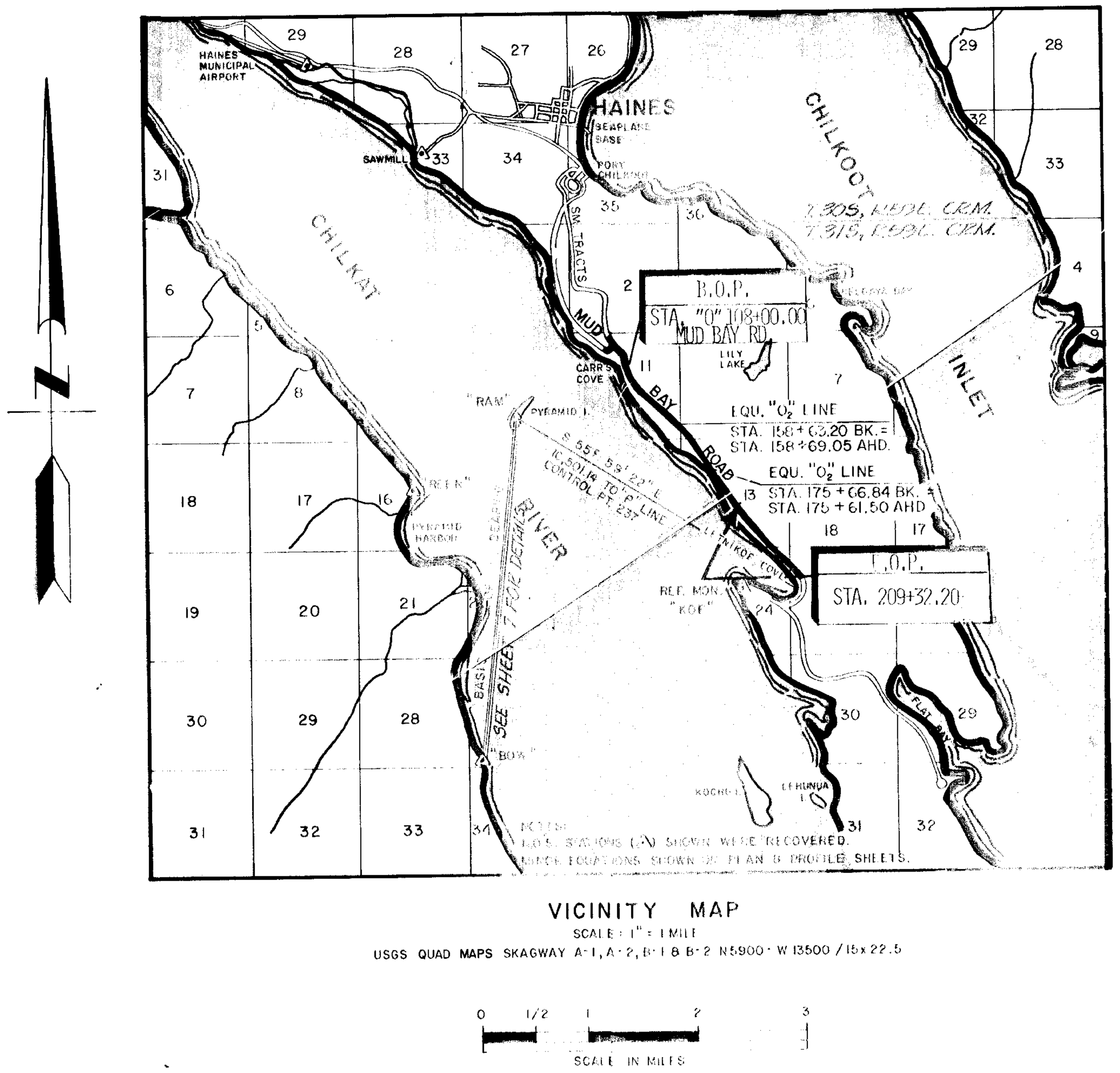
A-1 C-01.01 C-02.00 C-03.01 D-01.00 D-04.01 D-05.01 D-06.01 D-23.00 D-26.01 D-30.00 D-09.00 G-02.00 G-04.01W G-14.02W G-18.01 I-40.00 M-16.00 S-00.00 S-05.00 S-30.01 T-20.00 T-21.00 R-03.00

DESIGN DESIGNATION

ADT (1980) = 252
ADT (2000) = 455
DHV = 16%
T.I. = 6.0
D = 55-45
T = 3.5%
V = 40 M.P.H.

EXCEPTIONS TO VERTICAL ALIGNMENTS BETWEEN THE FOLLOWING STATIONS; "O₂" 120+00± to "O₂" 132+00+ AND "O₂" 162+00+ to "O₂" 177+00 WERE GRANTED BY FHWA ON 3-11-82.

For more information on the justification for the clear zone versus guardrail requirements shown herein, see memorandum to W.L. Baumgartner from Ed Cavagnaro, and dated 5/9/85.



VICINITY MAP
SCALE: 1" = 1 MILE
USGS QUAD MAPS SKAGWAY A-1, A-2, B-1 & B-2 N5900-W13500/15x22.5

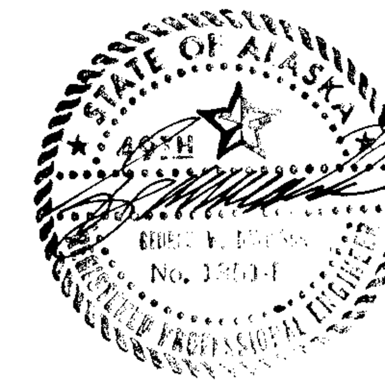
SCALE IN MILES

PROJECT SUMMARY

WIDTH OF SUBGRADE		32'
LENGTH OF PROJECT	10,627.51 FEET	2.01 MILES
LENGTH OF GRADING	11,127.51 FEET	2.11 MILES
LENGTH OF SURFACE TREATMENT	11,127.51 FEET	2.11 MILES
LENGTH OF TEMPORARY CONNECTION	500 FEET	.09 MILES

"As-Built" Plans

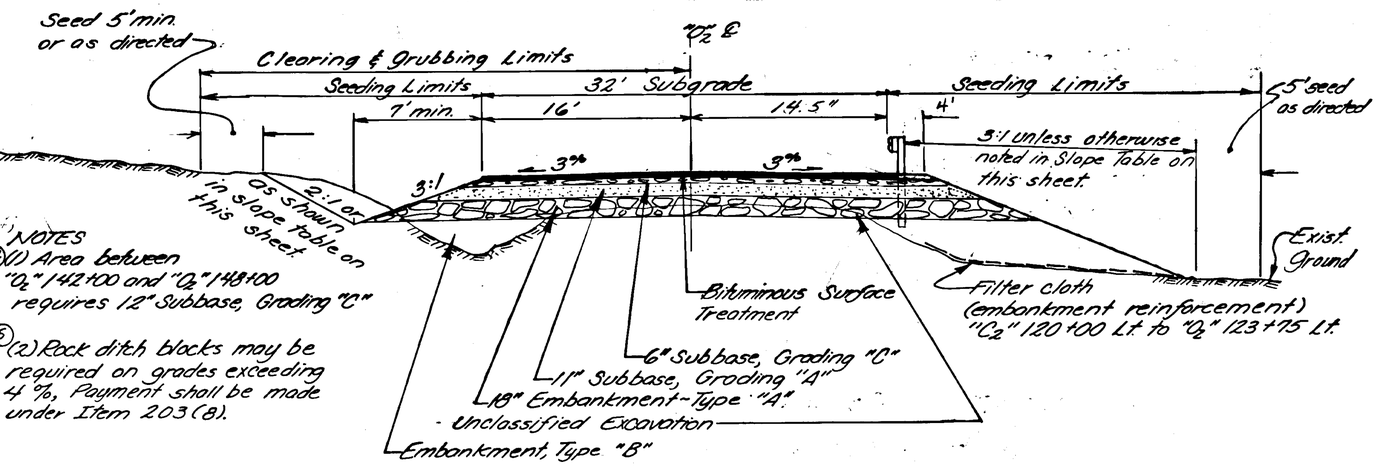
PROJECT ENGR.	LARRY GEISE
CONTRACTOR	NORTHERN TIMBER
BEGIN DATE	AUGUST 15, 1985
END DATE	AUGUST 4, 1985



EMPS ENGINEERING
JUNEAU, ALASKA

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-0987(4)	1985	2	13

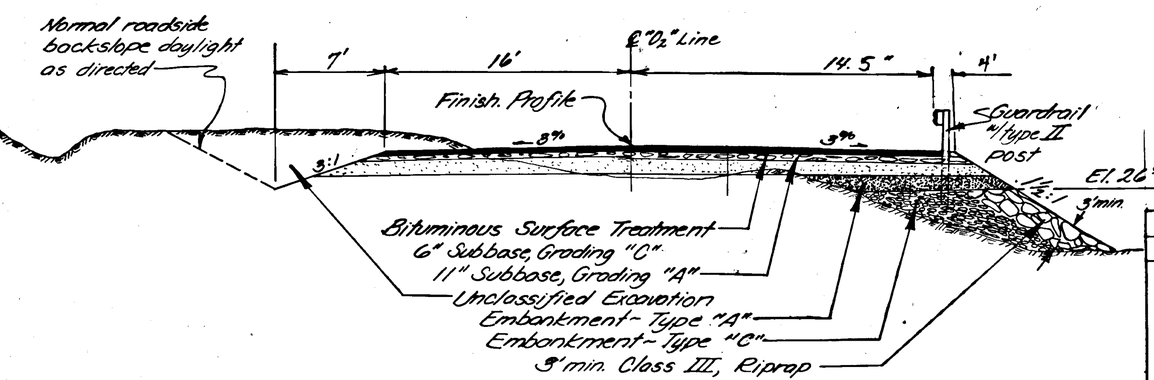
TYPICAL SECTIONS OF IMPROVEMENTS



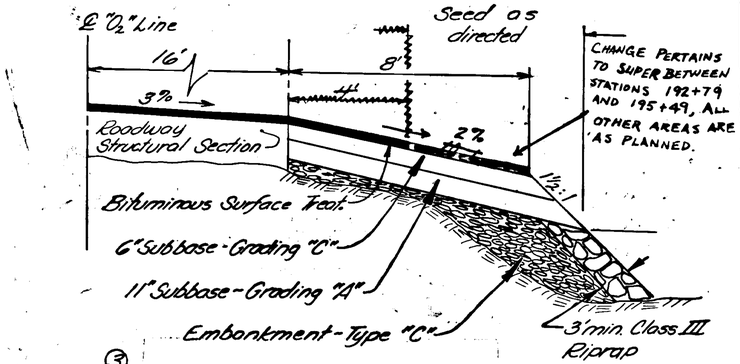
NOTES
(1) Area between "O₂" 142+00 and "O₂" 148+00 requires 12" Subbase, Grading "C"

(2) Rock ditch blocks may be required on grades exceeding 4 %, Payment shall be made under Item 203(8).

TYPICAL SECTION "A"



TYPICAL SECTION "B"



③

TYPICAL SECTION

ROADWAY WIDENING
Sta 178+50 to 206+99.78 BK = 206+97.18 Ahd.

BASIS OF ESTIMATE	
ITEM	ESTIMATING FACTOR
304 (1B, 1C)	2.00 Tons/C.Y.
403 (2)	0.25 gal/s.y. 253 gal/ton
405 (1)	0.95 gal/s.y. 241 gal/ton
405 (2A)	45 lb./s.y.
405 (2B)	25 lb./s.y.

TYPICAL SECTION TABLE		
STATION TO STATION	TYPE A	TYPE B
"O" 104+00 to "O" 111+75		X ⑤
"O" 111+75 to "O" 113+00	X ⑤	
"O₂" 104+00 to "O₂" 115+00	X ⑤	
"O₂" 115+00 to "O₂" 117+00		X ⑤
"O₂" 117+00 to "O₂" 176+00	X ④,⑤	
"O₂" 176+00 to "O₂" 206+99.78 BK = 206+97.18 Ahd.	①,②,④ ①,②,③	

① In areas of roadway widening guardrail will not be installed.

② In areas of roadway widening, Riprap Type III will only be required on the edge of fill. Other embankment shall be Type "C".

CULVERT SUMMARY

STATION	SHEET	SIZE	LENGTH	COVER
~~"O₂" 109+30 Rt.~~	8	18"	40'	18"
~~"O" 109+95~~	8	24"	60'	5'
"O₂" 111+50	9	8"	90'	3'
"O" 112+90	7&8	54" B, C	200'	6'
"O₂" 112+90	7&8	24"	40'	6'
"O₂" 115+22	7&8	54" B, C	70'	10'
"O" 117+12	8	24"	60'	18"
"O₂" 117+83	8	24"	100'	5'
"O" 120+25	8	48" B, C	86'	5'
~~"O" 124+20 Rt.~~	8	18"	40'	18"
"O₂" 148+60	9	24"	60'	5'
"O₂" 149+00 Lt.	9	24"	10'	12"
"O" 155+20	9	24"	~~80'~~	5'
"O₂" 157+50	9	24"	70'	5'
"O" 161+20	9	24"	~~90'~~	5'
"O₂" 161+50 Lt.	9	18"	40'	18"
~~"O" 168+00 Lt.~~	10	24"	30'	12"
"O₂" 172+42	5&10	72" A	70'	16'
"O" 175+90	10	36"	~~80'~~ 82'	5'
"O₂" 175+90	10	~~36"~~ 24"	30'	5'
"O" 179+76	10	24"	~~60'~~ 60'	~~5'~~ 5'
~~"O" 190+50~~	10	24"	~~100'~~	~~5'~~
"O₂" 181+18	10	24"	~~60'~~	5'
"O" 183+70	10	24"	~~66'~~ 66'	5'
"O" 196+00 Lt.	11	24"	78'	12"
"O₂" 196+68	11	24"	75'	5'
"O" 203+35	11	24"	80'	5'
"O₂" 208+50	11	24"	60'	5'
~~"O" 217+00~~	11	48" B, C	~~62'~~	5'
~~"O₂" 222+49~~	11	24"	~~54'~~	5'
~~"O" 225+33~~ N.I.C.	12	24" N.I.C.	~~54'~~	5'
~~"O₂" 112+00 Rt.~~	8	24"	~~25'~~	~~3'~~
"O" 114+00 Rt.	8	24"	40' ~~35'~~	5'
~~"O₂" 249+45~~	6&12	34" B, D	~~82'~~	~~5'~~
"O₂" 191+75	10	24"	62' ~~68'~~	5'
~~"O" 150+43~~	9	24"	~~66'~~	~~5'~~
~~"O₂" 109+76~~	10	24"	50'	3'

A-See Detail, page 5
B-End Section required
C-Requires installation of class II Riprap

NOTES:
(1) Grade & alignment shown on plans are subject to minor revisions.

(2) Culvert lengths and locations are approximate only and are subject to minor revisions.

(3) Superelevation rates & length of transition shall be as indicated or as directed.

(4) Contractor shall use wood guardrail posts.

"O₂" 160+00 9 24"×60' (5) All approaches shall be constructed per Std. Plan I-40.00 unless otherwise noted on the plans, approach grades shall be as directed, surface treatment shall be applied to the end of the new construction. Approaches that slope toward centerline shall be crowned as directed.

"O₂" 178+55 10 24"×70'

(6) See Sht. 14 for bearings & distances between "P" refrenced in the field and "O₂" construction centerline, line points.

"O₂" 188+65 10 24"×60'

"O₂" 200+15 11 24"×60'

"O₂" 202+20 11 24"×80'

(7) Small Tracts Road has a Gross Vehical Weight restriction of 24,000 pounds, for through traffic.

(8) After initial clearing the contractor shall make the wood available to the public for a period not less than 14 days. The contractor shall notify the public as directed

(9) Payment for reconstruction of storm damage ("O" 104 to 109+00) shall be made under the appropriate item of work performed. No additional payment will be made.

GUARDRAIL SUMMARY

STATION	THRU	STATION	LINEAL FEET LEFT	LINEAL FEET RIGHT	REMARKS
"O" 104+00		"O₂" 114+28, 35' Rt.		1170'	R=50', L=74', R=10', L=31'
"O" 112+15		"O₂" 110+72	137.5'		R=50', L=140'
"O₂" 104+00		"O₂" 106+50		250'	
"O₂" 110+50		"O₂" 112+00	150'		
"O" 118+50		"O₂" 124+00		530'	R=40', L=31', R=25', L=31'
"O₂" 120+25		"O₂" 125+50	525'		
"O₂" 160+00		"O₂" 166+00		600'	
"O₂" 171+00		"B" 0+94.54 (Access Rd)		~~786'~~ 800	R=15', L=32', R=~~15~~ 40' L=40'
"B" 2+50 (Access Rd)		"O₂" 181+00		~~694'~~ 475	R=50', L=80', R=15', L=20'
~~"O" 244+00~~		~~"O₂" 244+80~~ N.I.C.		~~424'~~	~~R=50', L=20', R=50', L=20'~~
~~"O₂" 245+00~~		~~"O₂" 249+00~~ N.I.C.		~~446'~~	~~R=50', L=36', R=30', L=36'~~

* All guardrail having a Radius of 150' or less shall be shop fabricated.

TABLE OF SLOPES

STATION	THRU	STATION	SLOPE CUT ①	SLOPE FILL
"O" 108+00				
"O" 109+00 Rt.		"O" 111+00 Rt.		1½:1
"O₂" 110+50 Rt. (Small Tracts Rd.)		"O₂" 116+00 Lt. (Mud Bay Rd.)		2:1
"O₂" 115+00 Rt.		"O₂" 117+00 Rt.		1½:1
"O₂" 142+50 Rt. & Lt.		"O₂" 148+50 Rt. & Lt.		2:1
"O₂" 148+50 Rt.		"O₂" 174+50 Rt.		2:1
"O" 166+50 Lt.		"O" 171+00 Lt.	1½:1	
"O₂" 173+00 Lt.		"O₂" 174+50 Lt.	1½:1	
"O₂" 174+50 Rt.		"O₂" 206+99 Rt.		1½:1
"O₂" 192+50 Lt.		"O₂" 195+00 Lt.	1½:1	
~~"O₂" 209+00 Lt.~~	~~N.I.C.~~	~~"O₂" 212+00 Lt.~~	~~1½:1~~	
~~"O₂" 243+50 Lt.~~	~~N.I.C.~~	~~"O₂" 255+20 Lt.~~	~~1½:1~~	
"O" 111+00 Rt.		"O" 113+00 Rt.		2:1

① If bedrock is encountered slopes shall be 1/4:1

REMOVAL OF STRUCTURES & OBSTRUCTIONS

STATION	DESCRIPTION
"O₂" 175+90 L.F.	Shed
~~"O₂" 214+15 Rt.~~	~~N.I.C. Derelict Boat~~
~~"O₂" 236+15 Rt. N.I.C.~~	~~Wood Piling~~
"O₂" 112+80 Lt.	Smoke house
"O" 112+90 Rt.	Smoke house
"O" 112+50 Rt.	Wooden Deck
"O" 114+00 to "O₂" 117+00	Miscellaneous debris

STATE OF ALASKA 49TH LARRY C. GEISE No. CE-3951 REGISTERED PROFESSIONAL ENGINEER

STATE	PROJECT DESIGNATION	YEAR	SHEET NO	TOTAL SHEETS
ALASKA	RS-0987(4)	1985	3	13

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM	UNIT	SHEET NUMBER 8	9	10	11	12	13					TOTAL
110(2)	Mobilization & Demobilization	L.S.											All Req'd.
111(1)	Temporary erosion & pollution control	Cont. S.											" "
112(1)	Training program in accord. w/FHWA Order 1	man-Hr.											2000
113(1)	Flagging	man-Hr.											1500
114(1)	Construction Surveying by Contractor	L.S.											All Req'd.
115(1)	Traffic maintenance	L.S.											All Req'd.
115(2)	Construction Signs (Approx. Quant. 1660)	L.S.											All Req'd.
109(2)	DBE & WBE Adjustments	Cont. S.											Cont. Sum
201(2B)	Clearing & Grubbing	L.S.											All Req'd.
202(1)	Removal of Structures & Obstructions	L.S.											All Req'd.
202(4)	Removal of Culvert Pipe	L.F.	280	180	285	80	160						~~826~~ 1209
203(3)	Unclassified Excavation	C.Y.	21858	44051	11920	7310	5,725	1476					~~81,139~~ 79,934
203(8)	Embankment	C.Y.	30,937	18131	17,873	5647	7,285	641					~~72,508~~ 68,961
207(3)	Filter Cloth	S.Y.	3772		200		4,037						~~3972~~ 3969.5
304(1A)	Subbase, Grading "A"	Tons	8044	6425	9476	7228	7547	2030					31,173
304(1C)	Subbase, Grading "C"	Tons	3891	5395	4574	3488	3726	980					~~17,348~~ 21,010
403(2)	MC-30 Liquid Asphalt for Prime Coat	Tons	11.50	12.03	11.54	553	10.65	3.69					~~40.6~~ 39.5
405(1)	CRS-2 Asphalt for surface Treatment	Tons	46.07	48.21	51.24	33.17	42.66	14.70					~~178.0~~ 191.5
405(2A)	Grading "B" Cover Coat Material	Tons	262.0	274.1	289.91	126.00	242.6	83.57					~~952.0~~ 995
405(2B)	Grading "E" Cover Coat Material	Tons	145.6	152.3	161.03	70.02	134.8	46.43					~~529.0~~ 588
~~603(13-48)~~	~~48 Inch Corrugated Aluminum pipe~~	L.F.				62							62
603(13-54)	54 Inch " " "	L.F.	270				82						270
~~603(15-48)~~	~~End Section for 48 inch Corrugated Aluminum Pipe~~	ea.				2							2
603(15-54)	" " " 54 inch Corrugated Aluminum Pipe	ea.	4				2						4
603(22-18)	18 Inch Pipe	L.F.	80	40									~~120~~ 150
603(22-24)	24 " "	L.F.	320	376	393	320	216						~~1,453~~ 1,441
603(22-36)	36 " "	L.F.			110								~~110~~ 82
603(22-48)	48 " "	L.F.	86										86
603(22-72)	72 " "	L.F.			70								70
603(28-48)	End Section for 48 inch pipe	ea.	2										2
603(28-72)	" " " 72 inch "	ea.			1								1
604(5)	Type "A" Inlets	ea.	2										2-3
605(1)	8 Inch perforated Corrugated steel pipe underdrain	L.F.	370										~~390~~ 375
606(2)	Beam Type guardrail, Type II post	L.F.	2782.50	200	1877	0	2,570	180					4859.5
606(6A)	End anchorages	ea.	12	1	5	0	6	1					~~8~~ 17
611(1A)	Riprap, Class II	C.Y.	58	–	49		12						~~109~~ 393
611(1B)	Riprap, Class III	C.Y.	1057	–	2624	1807	3,400						~~5488~~ 6536
614(3)	Monuments & Monument Cases	ea.	9	8	10	5	6						32
615(1)	Standard Signs	S.F.	46.30	56.25	10.00			26.50					~~112.55~~ 132.0
618(2)	Seeding	acre	3.71	6.10	2.66	2.00	1.69	1.46					~~14.49~~ 9.9
618(4)	Water for maintenance	m/gal.	8.1	13.3	5.8	3.0	8.5	3.2					~~30.2~~ 117.8
627(1)	Watering	m/gal.	45.9	47.0	52.0	20.0	50.5	30.8					~~164.9~~ 607.7
636(1)	Gabions	C.F.			11,421								~~11,421~~ 10,030.5
639(1)	Approaches (driveways)	ea.	5	1	4			1					~~10~~ 12
670(1)	Painted Traffic markings (approx 94 mi 102 mi)	L.S.											All Req'd.
116(8)	Contractor Furnished Vehicles	ea.											5
	EWO #2												
619(2A)	Soil Stabilization	L.S.											All Req'd
	EWO #3												
605(6) 605(7)	Modified Fabric Underdrain	L.S.											All Req'd

Survey Monument Summary

Station	Point	Mon.	Case	
"O" 110+04.63	P.C.	/	/	
"O" 113+27.24	P.T.	/	/	
"O$_2$" 106+00.00	P.O.T.	/	/	
"O$_2$" 109+71.20	P.C.	/	/	
"O$_2$" 111+33.48	P.T.	/	/	
"O$_2$" 119+60.95	P.C.	/	/	
"O$_2$" 125+24.31	P.T.	/	/	
"O$_2$" 126+53.99	P.C.	/	/	
"O$_2$" 128+68.49	P.T.	/	/	
"O$_2$" 132+04.38	P.C.	/	/	
"O$_2$" 135+15.98	P.T.	/	/	
"O$_2$" 139+66.90	P.C.	/	/	
"O$_2$" 141+49.51	P.T.	/	/	
"O$_2$" 146+60.00	P.O.T.	/	/	
"O$_2$" 150+63.18	P.C.	/	/	
"O$_2$" 155+68.64	P.T.	/	/	
"O$_2$" 158+63.20 Bk.	P.C.	/	/	
"O$_2$" 163+19.68	P.T.	/	/	
"O$_2$" 166+95.40	P.C.	/	/	
"O$_2$" 170+13.02	P.T.	/	/	
"O$_2$" 170+91.36	P.C.	/	/	
"O$_2$" 173+66.10	P.T.	/	/	
"O$_2$" 173+91.14	P.C.	/	/	
"O$_2$" 175+66.84 Bk.	P.T.	/	/	
"O$_2$" 179+81.10	P.C.	/	/	
"O$_2$" 182+61.07	P.T.	/	/	
"O$_2$" 192+79.02	P.C.	/	/	
"O$_2$" 195+48.96	P.T.	/	/	
"O$_2$" 197+49.16	P.C.	/	/	
"O$_2$" 199+51.32	P.T.	/	/	
"O$_2$" 204+91.33	P.C.	/	/	
"O$_2$" 206+99.78 Bk. Ahd 207+97.18 Ahd.	P.T.	/	/	
"O$_2$" 209+32.20	P.C.	/	/	
"O$_2$" 213+35.37	P.T.	/	/	
"O" 216+28.49	P.C.	/	/	
"O$_2$" 219+73.02	P.T.	/	/	
"O$_2$" 230+10.76	P.C.	/	/	
"O$_2$" 232+26.76	P.T.	/	/	
"O$_2$" 234+33.10	P.C.	/	/	
"O$_2$" 237+96.51	P.T.	/	/	
"O" 243+12.36	P.C.	/	/	
"O$_2$" 246+23.29	P.T.	/	/	

N.K.C.

Approach Summary

Location	Width		
~~"O$_2$" 107+70 R~~	~~16'~~		
~~"O$_2$" 108+50 L.~~	~~20'~~	"O$_2$" 114+00 RT	16'
"O$_2$" 114+50 R.	20'		
"O$_2$" 115+75 L.	14'		
~~"O$_2$" 124+25 R 125+75~~	~~14'~~		
~~"O$_2$" 161+50 L.~~	~~14'~~ 16'	"O$_2$" 165+50 RT	16'
~~"O$_2$" 166+80 R~~ 75	~~14'~~ 16'		
~~"O" 168+10 R 169+75 L.~~	~~14'~~ 14'		
"O" 191+45 L	18'	"O$_2$" 169+50 RT	16'
"O$_2$" 179+50 R	18'		
~~"O$_2$" 254+10 L.~~			

CULVERT REMOVAL SUMMARY

STATION	SIZE	LENGTH	STATION	SIZE	LENGTH	
"O$_2$" 107+80	24"	50'	~~"O$_2$" 232+30~~	~~18"~~	~~45'~~	N.I.C.
"O" 112+90	Barrel	70'	~~"O$_2$" 238+84~~	~~18"~~	~~45'~~	N.I.C.
"O$_2$" 115+20	2-24"	60'/ea.	~~"O$_2$" 247+15~~	~~48"~~	~~30'~~	N.I.C.
"O$_2$" 119+50	24"	40'	"O$_2$" 183+70	18"	50'	
"O$_2$" 150+60	18"	40'	"O$_2$" 196+50	18"	40'	
"O$_2$" 154+90	24"	40'	"O$_2$" 203+35	18"	40'	
"O$_2$" 157+50	18"	40'				
"O$_2$" 161+30 Lt	18"	60'				
"O$_2$" 168+40 Lt	18"	30'				
"O$_2$" 172+42	60"	80'				
"O$_2$" 175+90	24"	60'				
"O$_2$" 179+76	18"	35'				
"O$_2$" 180+95	18"	30'				

STATE OF ALASKA 49TH
LARRY C. GEISE
No. CE-3951
REGISTERED PROFESSIONAL ENGINEER

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS 0987(4)	1985	4	13

TCP GENERAL NOTES

1. THE CONTRACTOR SHALL DESIGNATE ONE OF HIS EMPLOYEES THE RESPONSIBILITY OF INSTALLING AND MAINTAINING THE REQUIRED TRAFFIC CONTROL ELEMENTS FOR THIS PROJECT. A COPY OF THE DESIGNATION SHALL BE FORWARDED TO THE ENGINEER.
2. ALL PROJECT CLOSURES SHALL BE AS SHOWN ON STANDARD DRAWINGS C-01.01, C-02.00, C-03.01 C-04.00. ADDITIONAL REQUIREMENTS ARE SHOWN IN THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, ALASKA SUPPLEMENT.
3. ALL ONE-LANE CLOSURES SHALL BE AS SHOWN ON STANDARD PLAN C-11.01. ALL DETOURS REQUIRED ON THE PROJECT SHALL BE CONSTRUCTED AND CONTINUOUSLY MAINTAINED TO THE FOLLOWING MINIMUM WIDTHS AT ALL TIMES:

   ONE-WAY TRAFFIC - 12'

   TWO-WAY TRAFFIC - 20'
4. ANY ONE-WAY DETOURS DURING DUST TO DAWN WILL REQUIRE TEMPORARY ILLUMINATION. THE MINIMUM LEVEL OF ILLUMINATION SHALL BE 2.0 FOOT-CANDLES ON THE ROADWAY SURFACE.
5. SHOULDER DROP-OFFS GREATER THAN 1 1/2 INCHES SHALL NOT BE ALLOWED DURING NON-WORKING HOURS.
6. THE FOLLOWING CONSTRUCTION SIGNING SCHEDULE SHALL BE CONSIDERED AS THE MINIMUM AMOUNT OF REQUIRED SIGNING. ADDITIONAL SIGNS MAY BE REQUIRED BY THE ENGINEER.
7. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF ONE-WAY TRAFFIC WITH FLAGGING OPERATIONS DURING WORKING HOURS. THE CONTRACTOR SHALL MAINTAIN TWO-WAY TRAFFIC THROUGHOUT THE ENTIRE PROJECT.
8. ALL ROADWAY CLOSURES FOR BLASTING SHALL BE LIMITED TO THREE (3) HOURS TOTAL, TWO (2) HOURS OF TOTAL CLOSURE WILL BE ALLOWED AND ONE (1) HOUR OF ONE-WAY TRAFFIC WITH A FLAGGING OPERATION.
9. ALL ROADWAY CLOSURES FOR REMOVAL AND INSTALLATION OF CULVERTS SHALL BE IN ACCORDANCE WITH SECTION 115-3.01 OF THE STANDARD SPECIFICATIONS.
10. IN ORDER TO AVOID DELAY TO SCHOOL BUS SCHEDULES NO ROAD CLOSURES WILL BE PERMITTED DURING THE FOLLOWING PERIODS: 6:00 A.M. TO 8:30 A.M. OR 4:00 P.M. TO 6:30 P.M. ADDITIONALLY, NO CLOSURES WILL BE PERMITTED ON FEDERAL OR STATE HOLIDAYS, WEEKENDS, OR DURING THE HAINES SLAMON DERBY OR 2 HOURS PRIOR TO ANY FERRY DEPARTURE FROM HAINES.
11. 24 HOURS PRIOR TO ANY ROADWAY CLOSURES, THE CONTRACTOR SHALL NOTIFY, IN WRITING, THE FOLLOWING PERSONS AND OR AGENCIES;

    a. D.O.T. & P.F. ENGINEER

    b. ALL LOCAL FIRE, POLICE AND CITY OFFICIALS

    c. PARK RANGERS AT CHILKAT AND CHILKOOT STATE PARKS

    d. SCHOOL BUS COMPANY, IF SCHOOL IS IN SESSION
12. THE CONTRACTOR SHALL ALSO BROADCAST THE TIMES OF ANY CLOSURES ON ALL LOCAL RADIO STATIONS. ALL NOTICES OF CLOSURES SHALL BE BROADCAST FOR 24 HOURS PRIOR TO THE CLOSURE, A MINIMUM OF FIVE (5) TIMES PER DAY BETWEEN THE HOURS OF 8:00 A.M. AND 10:00 P.M.
13. THE CONTRACTOR SHALL NOTIFY ALL LOCAL PROPERTY OWNERS 24 HOURS IN ADVANCE OF ANY RECONSTRUCTION OF PRIVATE DRIVEWAYS.
14. DURING PLACEMENT OF EACH SURFACE TREATMENT COURSE, THE CONTRACTOR SHALL UTILIZED ONE-WAY TRAFFIC WITH PILOT CARS FOR A MINIMUM OF 8 HOURS. NO TRAFFIC WILL BE ALLOWED ON THE FRESHLY PLACED SURFACE COURSE FOR A MINIMUM OF 8 HRS. DURING THE 8 HOUR CURING PERIOD THE MAXIMUM SPEED ON FRESHLY PLACED SURFACE COURSES SHALL BE 20 MPH.
15. A TRAFFIC CONTROL PLAN (TCP) MUST BE FOLLOWED AT ALL TIMES DURING THE LIFE OF THE PROJECT, FOR EACH PHASE OF CONSTRUCTION. THE TCP SHOWN ON THIS SHEET AND STANDARD DRAWING C-00.00 THROUGH C-11.01 IS OFFERED AS A GUIDE: THE CONTRACTOR MAY MODIFY THIS TCP OR USE AND ALTERNATE TCP OF HIS OWN DESIGN. HOWEVER, AN APPROVED TCP WILL BE REQUIRED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. THE GENERAL INTENT OF THE TCP IS THAT THE CONTRACTOR FOLLOW PROCEDURES WHICH RESULT IN A SAFE TRAVERSABLE FACILITY FOR PUBLIC VEHICULAR AND PEDESTRIAN TRAFFIC. THE TCP SHOWN IS NOT MEANT TO DESIGNATE CONSTRUCTION TECHNIQUE, EQUIPMENT OR SEQUENCE, BUT TO ADDRESS THE CENTRAL ISSUE OF TRAFFIC SAFETY.

TRAFFIC CONTROL PLAN (T.C.P.) CONSTRUCTION SIGNING SCHEDULE

LOCATION	QUANITY	SQ. FT.	CODE	SIZE	LEGEND
(1)	2	30.0	G20-1	36"x60"	ROAD CONSTRUCTION NEXT 3 MILES
(2)	2	20.0	G20-2	24"x60"	END CONSTRUCTION
(3)	2	4.5	CW13-1	18"x18"	20 M.P.H.
(4)	2	18.0	CW20-1B	36"x36"	ROAD CONSTRUCTION 1000 FT.
(5)	2	12.5	CW8-8	30"x30"	ROUGH ROAD
(6)	2	32.0	CW22-1	48"x48"	BLASTING ZONE 1000 FEET
(7)	2	21.0	CW22-2	36"x42"	TURN OFF 2-WAY RADIO
(8)	2	21.0	CW22-3	36"x42"	END BLASTING
(9)	6				Type 3 Barricades
(10)	3	6.75	CW13-1	18"x18"	* m.p.h.
Total sq.ft.		166			

*INDICATES ADVISORY SPEED TO BE DETERMINED AT SITE.

STANDARD SIGN SUMMARY

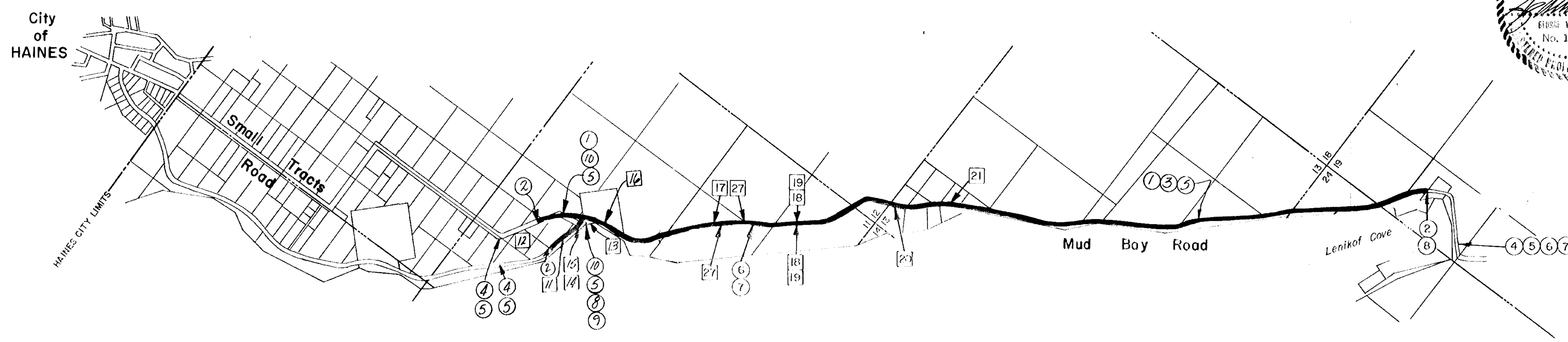
No.	Station	Dist. From Centerline	Code No.	Legend	Size	Thickness	Area S.F.	No. Posts	Type	Size	Length	Facing Traffic	Remarks
[17]	"O2" 130+00 LT.	~~28'~~ 21'	W1-4R	SYMBOL	30"x30"	0.08	6.25	1	TUBE	2"	14'	N.W. B.	
[18]	"O2" 146+50 RT. & LT.	28'	W7-1	SYMBOL	30"x30"	0.08	2 @ 6.25	2	TUBE	2"	14'	N.W. & S.E.B	
[19]	"O2" 146+50 RT. & LT.	28'	W7-3	9% GRADE	24"x18"	0.08	2 @ 3.0	-	-	-	-	N.W. & S.E. B.	MOUNT BELOW 18
[20]	"O2" 158+00 RT.	19'	W1-5R	SYMBOL	30"	0.08	6.25	1	TUBE	2"	8'	S.E. B.	
[21]	"O2" 177+00 LT.	28'	W1-5R	SYMBOL	30"	0.08	6.25	1	TUBE	2"	14'	N.W. B.	
[22]	"O2" 206+99 RT.	19'	W5-1	ROAD NARROWS	36"	0.08	9.0	1	TUBE	2"	12.5'	S.E. B.	
~~[23]~~	~~"O2" 253+00 RT.~~	~~28~~	~~W1-1R~~	~~SYMBOL~~	~~30"~~	~~0.08~~	~~6.25~~	~~1~~	~~TUBE~~	~~2"~~	~~14'~~	~~S.E. B.~~	N.I.C.
~~[24]~~	~~"O2" 253+00 RT.~~	~~28'~~	~~W13-1~~	~~25 M.P.H.~~	~~18"~~	~~0.08~~	~~2.25~~	~~-~~	~~-~~	~~-~~	~~-~~	~~S.E. B.~~	N.I.C.
~~[25]~~	~~"O2" 255+00 LT.~~	~~28'~~	~~R2-1~~	~~SPEED LIMIT 35~~	~~30"~~	~~0.08~~	~~6.25~~	~~1~~	~~TUBE~~	~~2"~~	~~12.5'~~	~~N.W. B.~~	N.I.C.
[26]	AS DIRECTED	~~28'~~ 19'	D10-1	MILE 3,4,& 5	10"x18"	0.08	3.75	3	TUBE	2"	-	N.W. B.	
[27]	"O2" 141+00 RT.	19'	I-4A	SYMBOL (MT. RILEY TRAIL)	42"x54"	0.08	15.75	2	TUBE	2"	14'	S.E. B.	
[27]	"O2" 153+00 LT.	28'	I-4A	SYMBOL (MT. RILEY TRAIL)	42"x54"	0.08	15.75	2	TUBE	2"	14'	N.W. B.	Replace existing Mileposts with new signs at original location if possible, Total 4 Posts.
*POST LENGTHS ARE APPROXIMATE ONLY. VERIFY LENGTH AFTER GRADING HAS BEEN COMPLETED.													
[11]	"O" 105+50 Rt.	19'	W5-1	Road Narrows	36"x36"	0.08	5.0	1	Tube	2"	15"	SB	
[12]	"O2" 106+00 Rt.	19'	W8-3A	Pavement ends	36"x36"		5.0	1	"	2"	15"	SB	
[13]	"O2" 113+05 Rt.	19'	R1-1	Stop	30"x30"		6.25	1	"	2"	14"	NB	
[14]	"O2" 111+50 Rt.	19'	D1-1	← Haines	12"x48"		4.0	2	"	2"	14' & 16'	NE. B	
[15]	"O2" 111+50 Rt.	19'	D7-1	Chilkat State Park 5 mi →	30"x72"	0.10	15.0	–	-	-	–	" "	mount below 14
[16]	"O2" 116+00 Rt.	19'	R2-1	Speed Limit 35	24"x36"	0.08	5.0	1	"	2"	14'	SE. B	

GENERAL SIGNING AND STRIPING NOTES.

1. Sign locations and post lengths are approximate only and are subject to minor revisions.
2. All sign posts shall be square telescoping perforated galvanized steel posts, the 2" size shall be used above ground and the 2-1/4" shall be used below ground for the sleeve.
3. All posts shall be installed with the sleeve type embedment in accordance with Standard Drawing S-30.01, except that the 2-1/4" size shall be used for the entire embedment depth.
4. Post lengths are from the cut-off in the sleeve to the top of the post. See Standard Drawing S-05.00 & S-30.01
5. Painted Traffic Markings shall be in accordance with Standard Drawing T-21.00 for paved shoulder and Section 670 of the Standard Specifications.

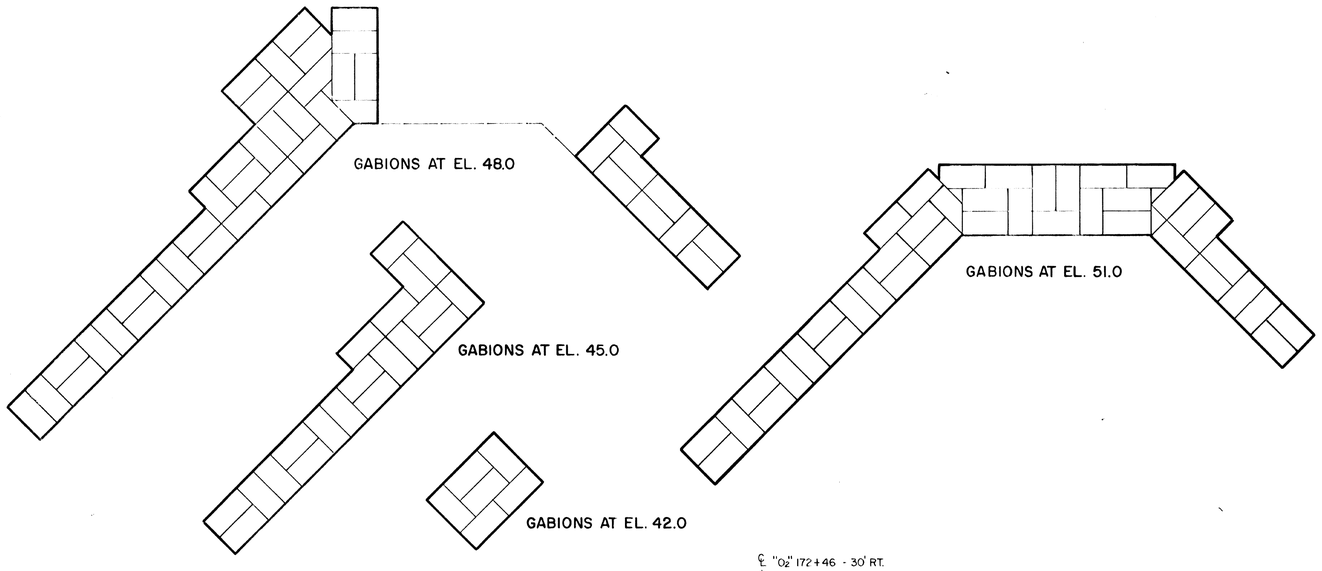
STATE OF ALASKA 49TH LARRY C. GEISE No. CE-3551 REGISTERED PROFESSIONAL ENGINEER

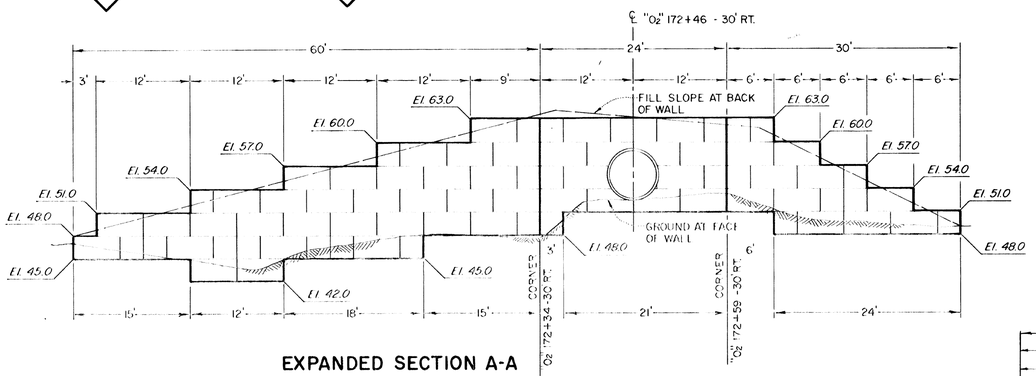
STATE OF ALASKA 49TH No. 1351-E REGISTERED PROFESSIONAL ENGINEER



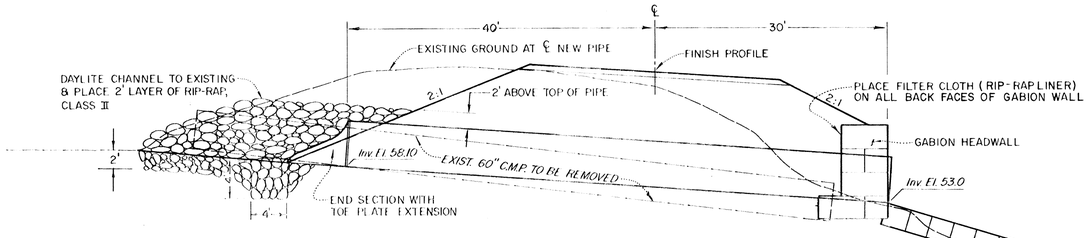
TRAFFIC CONTROL & CONSTRUCTION SIGNING PLAN

STATE	PROJECT DESIGNATION	YEAR	SHEET NO	TOTAL SHEETS
ALASKA	RS 0987(4)	1985	5	

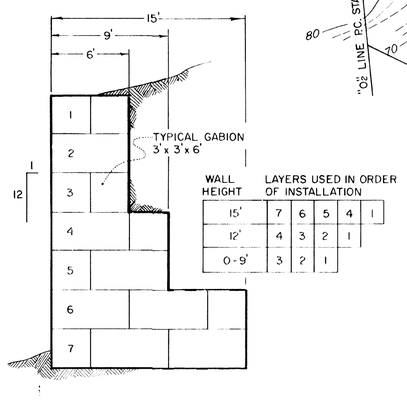




EXPANDED SECTION A-A
DOWNSTREAM HEADWALL



SECTION ALONG PIPE CENTERLINE

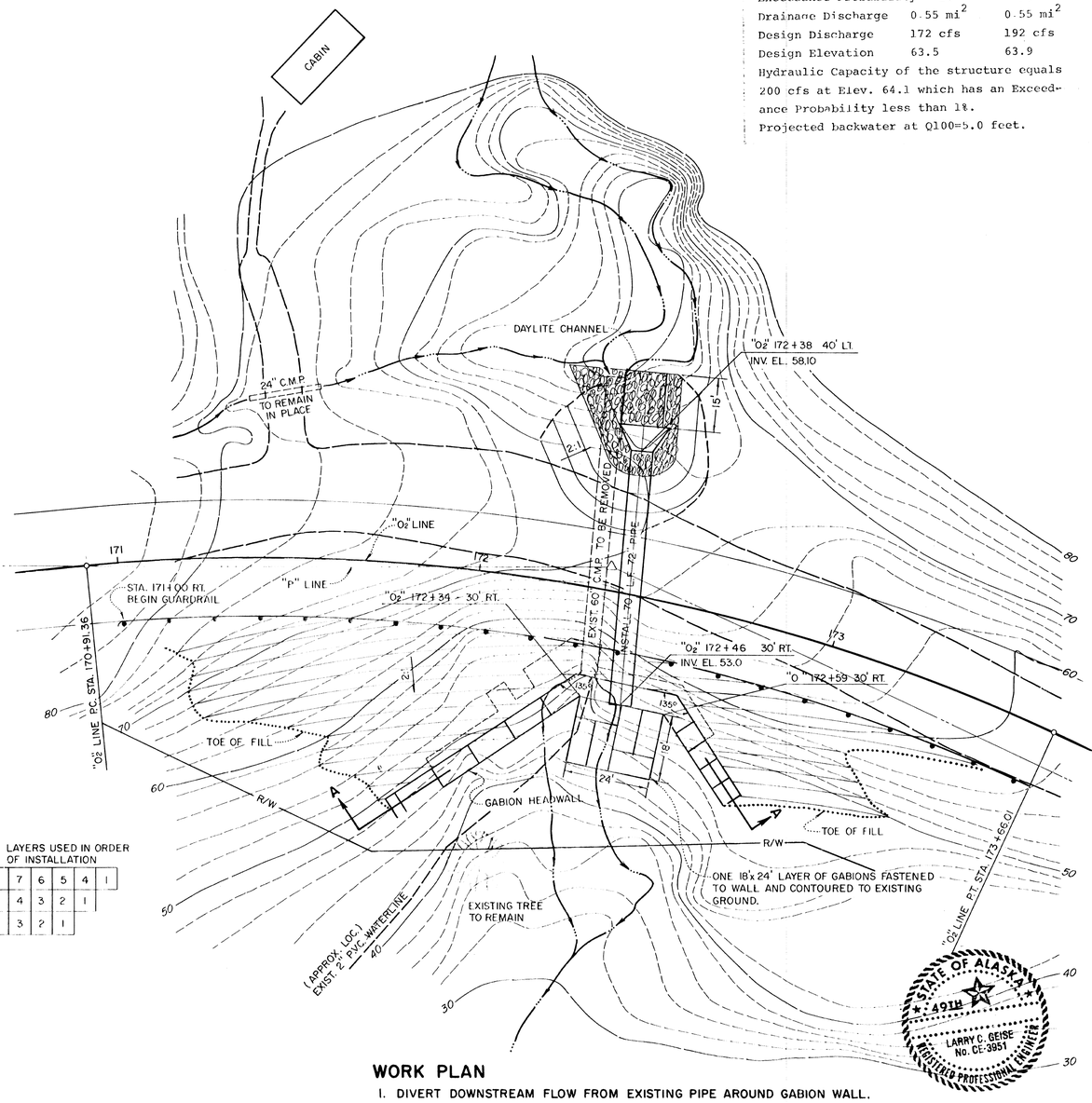


WALL HEIGHT	LAYERS USED IN ORDER OF INSTALLATION				
15'	7	6	5	4	1
12'	4	3	2	1	
0-9'	3	2	1		

HYDRAULIC & HYDROLOGIC SUMMARY STA 172 + 31

Flood Frequency	50 year	100 year
Exceedance Probability	2%	1%
Drainage Discharge	0.55 mi^2	0.55 mi^2
Design Discharge	172 cfs	192 cfs
Design Elevation	63.5	63.9

Hydraulic Capacity of the structure equals 200 cfs at Elev. 64.1 which has an Exceedance Probability less than 1%.
Projected backwater at Q100=5.0 feet.



STATE OF ALASKA
49TH
LARRY C. GEISE
No. CE-3951
REGISTERED PROFESSIONAL ENGINEER

WORK PLAN

1. DIVERT DOWNSTREAM FLOW FROM EXISTING PIPE AROUND GABION WALL.
2. INSTALL GABION WALL AND 72" PIPE
3. EXCAVATE UPSTREAM CHANNEL TO NEW INSTALLATION AND PLACE RIP-RAP, DIVERT FLOW TO NEW INSTALLATION.
4. RELOCATE EXISTING 2" P.V.C. WATERLINE IN NEW INSTALLATION. * PAYMENT CONSIDERED INCIDENTAL TO ITEM 636(1)
5. REMOVE EXISTING PIPE.
6. BACKFILL ENTIRE INSTALLATION.

NOTE: NO CONSTRUCTION EQUIPMENT OR TRAFFIC ALLOWED OVER NEW PIPE UNTIL THE MANUFACTURERS RECOMMENDED MINIMUM HEIGHT OF COVER MATERIAL IS IN PLACE AND COMPACTED.

STATE OF ALASKA
JOHN L. BOGGS
No. 3851 E
REGISTERED PROFESSIONAL ENGINEER

DRAINAGE DETAILS - STA. 172+42

STATE	PROJECT	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS 0987(5)	1985	6	13

P.C. Sta. 117+33.48
24"x100' Pipe
118+00
CHAIN TURNOUT
12' 16' 16'
Surface treatment
Mainline pavement structure
TYPICAL SECTION FOR CHAIN TURNOUTS @ Sta. 117+50 & Sta. 180+50 Lt.
Exist. plastic waterline from exist. dam located outside Proposed R/W
INSTALL 2' THICKNESS OF CLASS II RIP-RAP AS INDICATED AND AT LEAST 2' ABOVE TOP OF PIPE AT INLET AND OUTLET OF PIPE
SMALL TRACTS ROAD "O2" 111+30 - 30' LT. INV. ELEV. = 40.50
"O2" 111+64 SMALL TRACTS RD. END TEMPORARY CONNECTION
"O" 111+50-30' Lt. Inv. el. 50.0±
"O2" 111+64.00 SMALL TRACTS ROAD= "O" 113+27.24 P.T. MUD BAY ROAD
"O" 111+50 - 30' Lt. Inv. el. = 50.0± Install 8" x 90' of perforated corrugated steel pipe underdrain w/holes up. See Section A-A this sht.
TOP OF CUT
BEGIN TEMPORARY CONNECTION "O1" 106+00 SMALL TRACTS ROAD SEE TRANSITION DETAIL THIS SHEET.
"O2" 110+50, LT. BEGIN GUARDRAIL
"O2" 112+00, Lt. End Guardrail
2" Polyethylene pipe
SMALL TRACTS ROAD
MUD BAY ROAD
See Sht. 7 for Details on wooden curb
TOE OF FILL
INSTALL 2' THICKNESS OF CLASS II RIP-RAP AS INDICATED AND AT LEAST 2' ABOVE TOP OF PIPE.
55 GAL DRUM CULVERT
FIELD CUT AND INSTALL TAPPING SADDLE CONNECTION BETWEEN 24" & 54" PIPE
"O2" 110+72 - 16' RT. BEGIN GUARDRAIL
"O2" 110+91 16' RT. EL. 55.67
"O2" 112+30 16' RT. EL. 45.94
GUARDRAIL
"O2" LINE
Install 24"x 40' pipe & tapping saddle. See detail this sheet.
GRADE AREA TO DRAIN
SMOKE HOUSE
"O" 112+07, 38' Rt. Inv. el. 40.0±
Approx. ℄ of exist. stream
"O" 114+50 = "B" 0+00 SEE SHEET 2 FOR DETAILS
"O2" 115+05 40' LT. INV. ELEV. = 18.0
"O" 112+50 16' LT. EL. 48.35
"O" 112+15 LT. END GUARDRAIL
WOOD DECK
WOOD WALK
CABIN
PROTECT EXISTING CABIN FROM ANY DAMAGE.
"O2" 114+28 35' Rt. End Guardrail
End Subdrain - See Details "A", "B" & "C".
"O2" 114+00, 57' Rt. "B" 0+83 P.O.T. El. 23.4
"B" 0+17 P.C. EL. 32.40
"B" 0+50 P.T. EL. 30.42
"O2" 115+50 LT. END GUARDRAIL
"O" 115+00 BEGIN ROCK EMB.
Relocate existing or Construct 5'x5' Privy. See Std. dwg. no. R-03.00
Provide 20'x 20' area for smoke house
Install 24"x 35' Pipe
Obliterate Old Roadway
MUD BAY ROAD Δ = 61°36'51" Lt. R = 300.00' T = 178.89' L = 322.61' S = 0.06 FT./FT.
B.S.T. "O" 109+20 B.F.S. "O" 110+45 E.F.S. "O" 112~ E.S.T. See Plans
Field cut & install tapping connection between 24" & 54" pipe saddle. See Detail "A" this sht.
SHED
INV. ELEV. = 25.0
"O" 112+00, 53' Rt. Begin Subdrain. See Subdrain Details "A", "B" & "C", sht. 7
"O" 112+90 REMOVE EXIST. 55 GAL. DRUM CULVERT INSTALL 54"x200' CULVERT w/2 END SECTIONS.
"O" 111+75 END ROCK EMBANKMENT
SMALL TRACTS ROAD Δ = 54°35'39" Rt. R = 800.00' T = 412.86' L = 762.27' S = 0.054 FT./FT.
B.S.T. "O2" 108+52 B.F.S. "O2" 110+32 E.F.S. "O2" 116+73 E.S.T. "O2" 116+73
"O2" 115+33 - 26' RT. INV. ELEV. = 14.0
"O2" 115+22 REMOVE 2 EXIST. 24" C.M.P.'S INSTALL 54"x 70' CULVERT w/2 END SECTIONS
P.C. "O" 109+71.20
P.C. "O" 110+04.63
S 56°46'26" E
S 75°58'36" E
MATCH EXISTING
"P" LINE
"O" LINE

NOTES:

(1) Relocation of exist. or construction of new privy and smoke-house pad is incidental to other items of work and shall not be measured for payment.

(2) Construction of wooden curb on sht. 7 is incidental to Item 606(2) and shall not be measured for payment.

(3) PAYMENT FOR OBLITERATION OF EXISTING ROAD SHALL BE CONSIDERED INCIDENTAL TO ITEM 203(3). SEEDING LIMITS SHALL BE AS DIRECTED.

(4) PAYMENT FOR CUTTING, FITTING AND INSTALLING TAPPING SADDLE CONNECTIONS BETWEEN 24" AND 54" CULVERTS SHALL BE CONSIDERED INCIDENTAL TO ITEM 603(13-54).

104 106 107 108 109 200' 300' TRANSITION

TEMPORARY CONNECTION TRANSITION DETAIL
Small Tracts Road

✱ Install 2"x 3/4" reducing tee w/drain plug & 3/4" hose bib @ location established by engineer.

✱✱ Indicates area to be planted with Alder. See Section 618 of the Special Provisions for more details & payment.

HYDRAULIC & HYDROLOGIC SUMMARY STA 115 + 22

	50 year	100 year
Flood Frequency	50 year	100 year
Exceedance Probability	2%	1%
Drainage Discharge	0.31 mi^2	0.31 mi^2
Design Discharge	106 cfs	118 cfs
Design Elevation	22.8	23.2

Hydraulic Capacity of the structure equals 100 cfs at Elev. 22.5 which has an Exceedance Probability less than 3%.
Projected backwater at Q100=5.2 feet.

HYDRAULIC & HYDROLOGIC SUMMARY STA 111 + 50

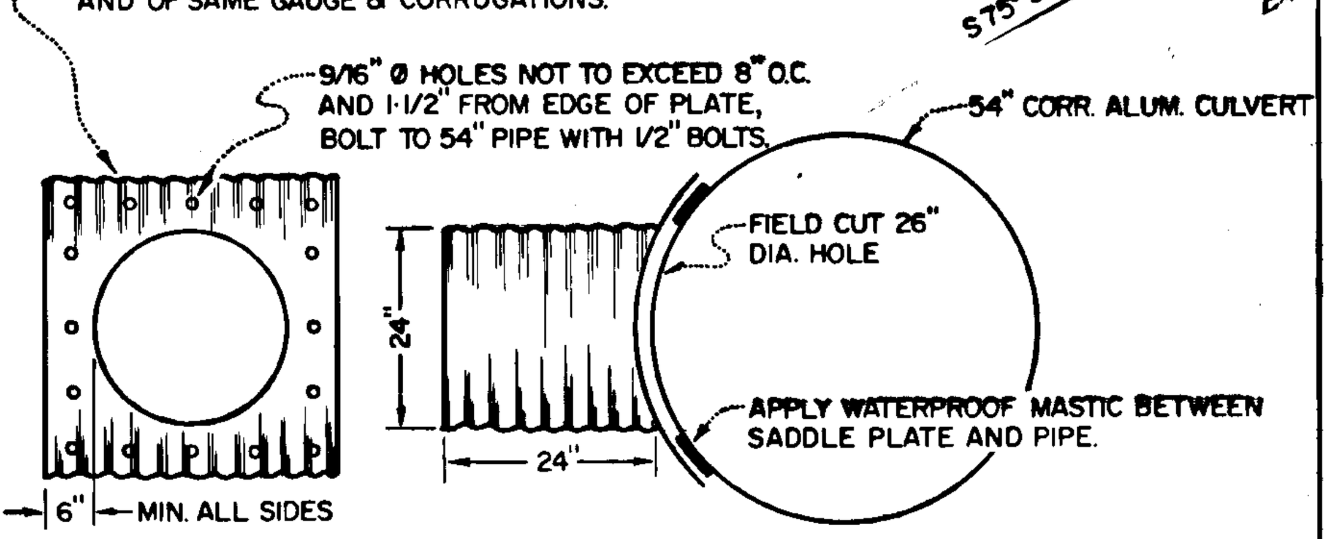
	50 year	100 year
Flood Frequency	50 year	100 year
Exceedance Probability	2%	1%
Drainage Discharge	0.25 mi^2	0.25 mi^2
Design Discharge	88 cfs	92 cfs
Design Elevation	44.6	44.7

Hydraulic Capacity of the structure equals 100 cfs at Elev. 45.0 which has an Exceedance Probability less than 1%.
Projected backwater at Q100=4.2 feet.

NOTE:

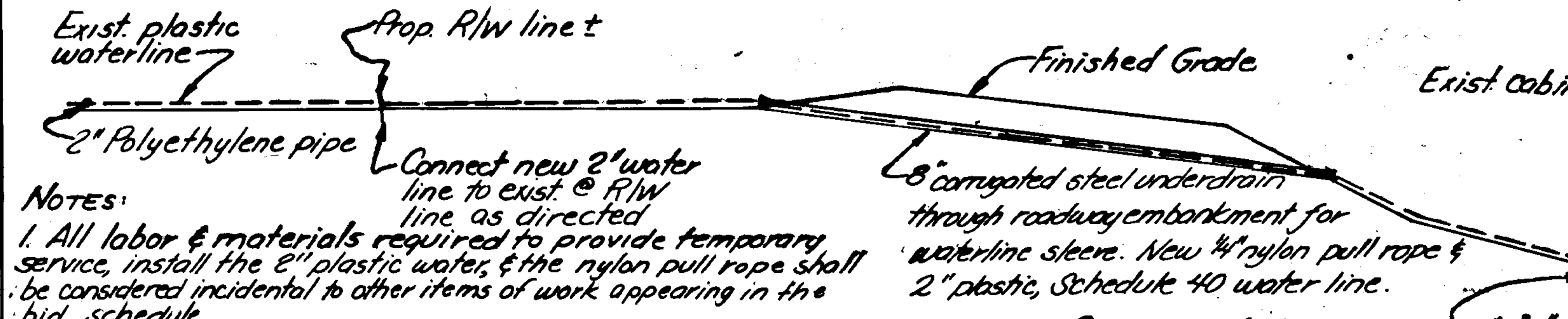
1. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN TEMPORARY DETOURS FOR SMALL TRACT ROAD AND MUD BAY ROAD. A MINIMUM WIDTH OF 20.
2. DETOURS SHALL BE MAINTAINED CONTINUOUSLY UNTIL TRAFFIC CAN BE ROUTED OVER THE NEW CONSTRUCTION.

CARR'S COVE



SADDLE PLATE CURVED TO SAME DIA. AS PIPE AND OF SAME GAUGE & CORRUGATIONS.
9/16" Ø HOLES NOT TO EXCEED 8" O.C. AND 1-1/2" FROM EDGE OF PLATE, BOLT TO 54" PIPE WITH 1/2" BOLTS.
54" CORR. ALUM. CULVERT
FIELD CUT 26" DIA. HOLE
APPLY WATERPROOF MASTIC BETWEEN SADDLE PLATE AND PIPE.
24"
6" MIN. ALL SIDES

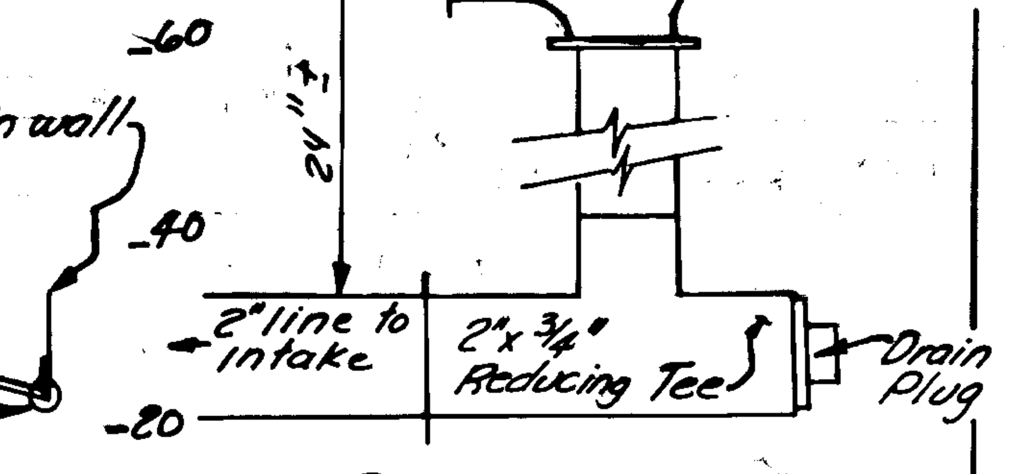
DETAIL - TAPPING SADDLE FOR 24" CULVERT



Exist. plastic waterline
Prop. R/W line ±
Finished Grade
Exist. cabin wall
2" Polyethylene pipe
Connect new 2" water line to exist. @ R/W line as directed
8" corrugated steel underdrain through roadway embankment for waterline sleeve. New 1/4" nylon pull rope & 2" plastic, Schedule 40 water line.
60
40
20
2"x 3/4" Reducing tee See Detail, this sht.

NOTES:
1. All labor & materials required to provide temporary service, install the 2" plastic water, & the nylon pull rope shall be considered incidental to other items of work appearing in the bid schedule.
2. During the reconstruction of the area shown on this sheet, the contractor shall provide temporary water service to the exist. cabin at all times.

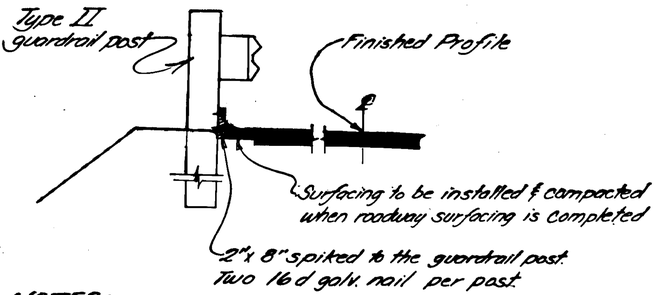
SECTION A-A



REDUCING TEE DETAIL

INTERSECTION DETAIL

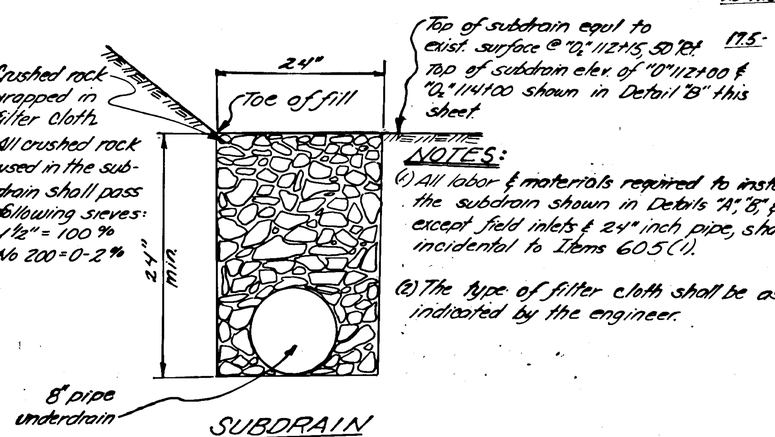
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-0987(3)	1985	7	13



NOTES:

1. The 2"x8" backing timber shall be rough sawn Douglas Fir & treated in accordance w/ applicable Standards of the American Wood Preservers Assoc.
2. Install from "0" 112+50, 16' Rt. to "0₂" 113+50, 16' Rt.

WOODEN CURB DETAIL

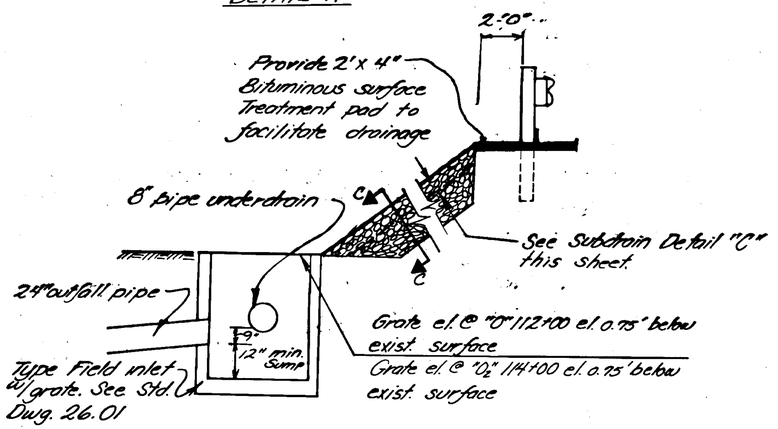


NOTES:

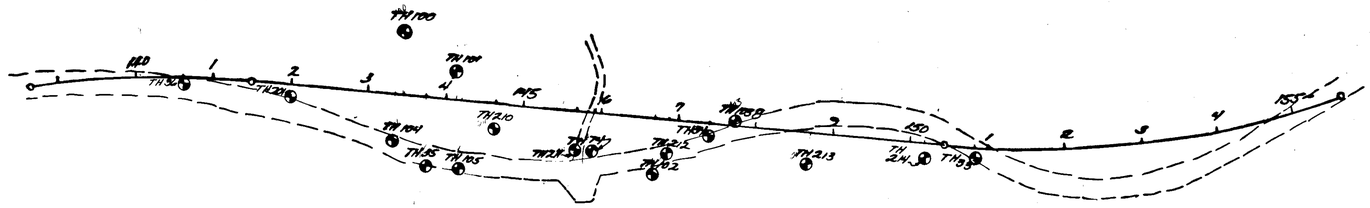
(1) All labor & materials required to install the subdrain shown in Details "A", "B" & "C" except field inlets & 24" inch pipe, shall be incidental to Items 605(1).

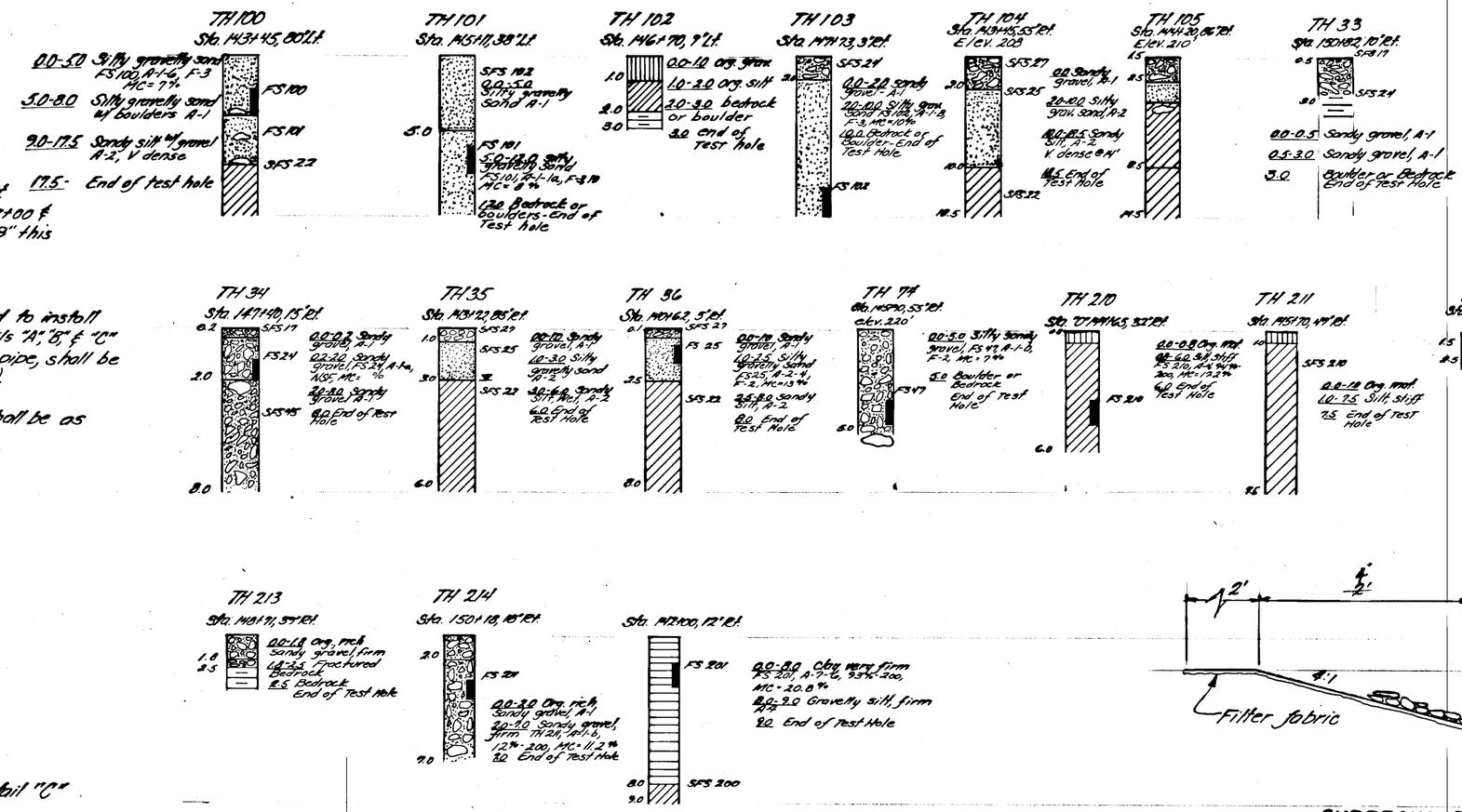
(2) The type of filter cloth shall be as indicated by the engineer.

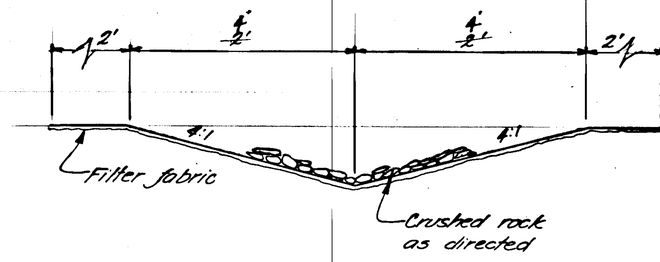
SUBDRAIN DETAIL "A"



SUBDRAIN DETAIL "B"







SUBDRAIN DETAIL "C"

INFORMATIONAL MATERIALS BORINGS
STATION 140+00 TO STATION 155+00

STATE	PROJECT	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS 0987(4)	1985	8	13

Sec. 11, T. 31 S., R. 59 E.

Sec. 11, T. 31S., R. 59E.

"O2" 104+00 RT. BEGIN GUARDRAIL
"O2" 106+50 RT END GUARDRAIL

BEGIN TEMPORARY CONNECTION
"O2" 104+00 SMALL TRACTS RD

P.O.T. 106+00

P.O.C. "O2" 111+64.00 SMALL TRACTS ROAD = P.T. "O" 113+27.24 MUD BAY ROAD

END TEMPORARY CONNECTION
"O2" 111+64 SMALL TRACTS RD.

P.C. "O2" 109+71.20

"O2" 112+90 INSTALL 24"x47' PIPE

"O2" 110+50 LT. BEGIN GUARDRAIL
"O2" 115+50 LT. END GUARDRAIL

"O2" 113+25 INSTALL 18"x40' PIPE

"O2" 114+00 INSTALL 24"x40' PIPE

NOTE: SEE SHEET No. 7 FOR INTERSECTION & DRAINAGE DETAILS

"O" 117+12 INSTALL 24"x60' PIPE

"O2" 120+25 LT. BEGIN GUARDRAIL
"O2" 125+50 LT. END GUARDRAIL

HYDRAULIC & HYDROLOGIC SUMMARY STA 120 + 25

Flood Frequency	50 year	100 year
Exceedance Probability	2%	1%
Drainage Discharge	0.20 mi²	0.02 mi²
Design Discharge	54 cfs	60 cfs
Design Elevation		

Hydraulic Capacity of the structure equals 73 cfs at Elev. which has an Exceedance Probability less than 1%.
Projected backwater at Q100=3.5 feet.

"O" 129+00 RT. TRUSTRAIL 18"x 40' PIPE

"O2" 114+28, 35' RT. END GUARDRAIL

"O" 109+05 TRUSTRAIL 24"x 60' PIPE

"O2" 115+22 Remove exist. 2-24"x 60"

Construct Chain Turnout. See detail, Sht. 6

"O2" 111+75 END ROCK EMBANKMENT

"O2" 115+00 BEGIN ROCK EMBANKMENT
"O2" 117+00 END ROCK EMBANKMENT

"O" 119+50 REMOVE EXIST. C.M.P.
"O2" 120+25 INSTALL 48"x 86' PIPE w/2 END SECTIONS.

BEGIN PROJECT "O" 108+00
RS-0987(4)

See sht. 9/13 for Vert. & Horiz. control plus note on TBM
See sht. 3/13, note no. 9 for earthwork back of B.O.P.

Indicates an area that is to have Filter Cloth (Embankment Reinforcement) installed over the exist. ground prior to beginning embankment construction.

"O" LINE
R = 800.00'
Δ = 29° 20' 49" LT.
L = 409.76
T = 208.48
S = 0.081 FT/FT
D = 7° 09' 43"

"O" LINE
R = 300.00'
Δ = 61° 36' 51" LT
L = 322.61
T = 178.89
S = 0.044 FT/FT
D = 19° 03' 55"

"O" LINE
R = 800.00'
Δ = 54° 35' 39" RT
L = 762.28
T = 412.86
S = 0.054 FT/FT
D = 7° 09' 43"

"O" LINE
R = 600.00'
Δ = 53° 47' 50" LT
L = 563.36
T = 304.38
S = 0.06 FT/FT
D = 9° 32' 57"

B.S.T. "O" 108+50
B.F.S. "O2" 110+32
E.F.S. "O" 116+73
B.S.T. "O2" 116+73

E.S.T. 120+24
B.F.S. 120+24
E.F.S. 124+61
B.S.T. 124+61

E.S.T. "O" 127+10
B.F.S. "O2" 127+10
E.F.S. "O2" 129+20
E.S.T. "O2" 130+90

"O" LINE
D = 5° 43' 55"
R = 1000.00'
Δ = 12° 03' 39" RT
L = 210.50
T = 105.64
S = 0.050 FT/FT

"O" LINE P.C. STA. 101+15.67
"O" LINE P.T. STA. 104+50.65
"O" LINE P.C. STA. 110+04.63
"O" LINE P.T. STA. 110+26.63
"O" LINE P.C. STA. 123+28.29
"O" LINE P.T. STA. 125+24.31
"O" LINE P.C. STA. 126+51.43
"O" LINE P.T. STA. 129+64.49
"O" LINE P.C. STA. 132+33.66
"O" LINE P.T. STA. 132+82.77
"O" LINE P.C. STA. 132+104.38
"O" LINE P.T. STA. 98+60.24
"O" LINE P.C. STA. 98+50.37

"p" LINE P.C. STA. 103+38.24
"p" LINE P.T. STA. 104+50.65
"p" LINE P.C. STA. 125+24.31
"p" LINE P.T. STA. 126+51.43
"p" LINE P.C. STA. 132+104.38
"p" LINE P.T. STA. 132+82.77
"p" LINE P.C. STA. 131+00 MATCH LINE

"O" LINE P.C. STA. 132+33.66
"O" LINE P.T. STA. 132+64.49

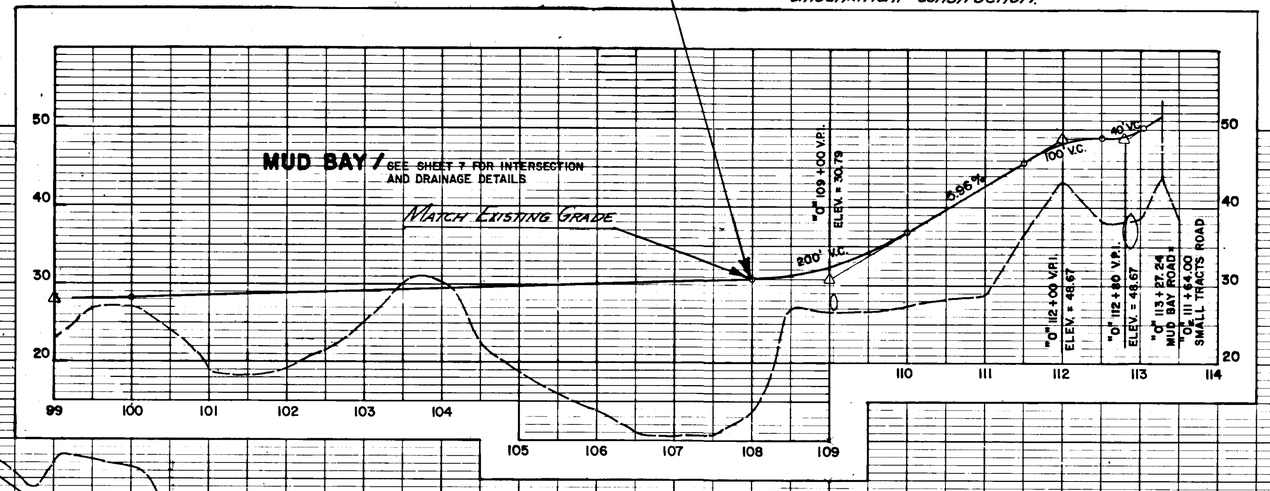
"O2" 124+00 RT. END GUARDRAIL

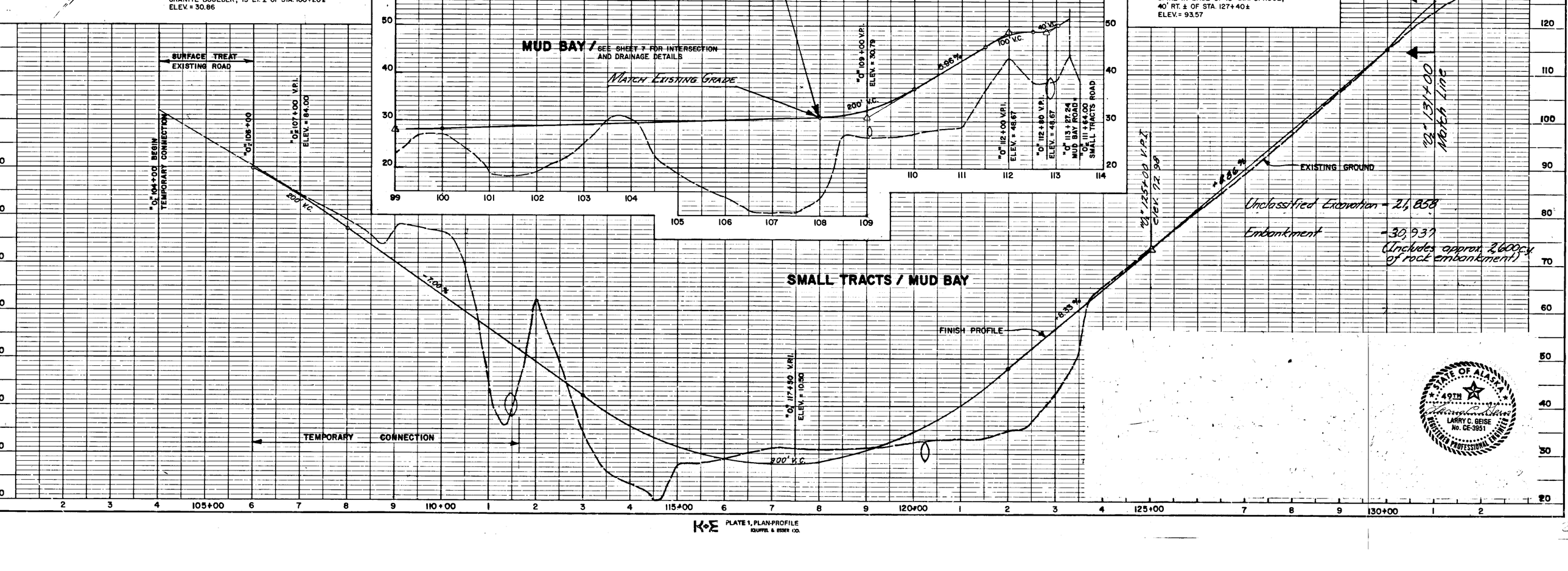
SMALL TRACTS ROAD
Lot 14
Lot 15
Lot 16
Lot 17
Lot 18
Lot 23
Lot 24
Lot 28
Tract A
Tract B
CARR'S COVE
BURNT CABIN
CTR. SEC. 11, T31S, R59E
DAYLITE DITCH
SPRUCE
OUTHOUSE
SMOKE HOUSES
BOARDWALK
106 CABIN
YIELD SIGN
TRAILER
BOAT RAMP
SHED
GUY POLE
GARAGE
BLDG.
STAIRS
HOUSE
CHICKEN SHED
REMOVE 24" C.M.P.
Begin quant. roll-118+50
S 46° 37' 47" E - 255.50'
S 75° 58' 36" E
S 43° 54' 58" E - 339.89'
S 55° 58' 37" E - 129.68'

T.B.M. No. 12
CHISELLED "O" ON EAST SIDE OF 8'x 10' GRANITE BOULDER, 15' LT. ± OF STA. 100+20±
ELEV. = 30.86

T.B.M. No. 13
SPIKE IN BASE OF POWER POLE, 140' RT. ± OF STA. 112+26±
ELEV. 28.90

T.B.M. No. 14
SPIKE IN BASE OF 18" DIA. SPRUCE, 40' RT. ± OF STA. 127+40±
ELEV.= 93.57





Unclassified Excavation - 21,858
Embankment - 30,937
(Includes approx. 2,600 c.y. of rock embankment)

STATE OF ALASKA 49TH
LARRY C. GEISE No. CE-3951
REGISTERED PROFESSIONAL ENGINEER

K+E PLATE 1, PLAN-PROFILE
KEUFFEL & ESSER CO.

STATE	PROJECT	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS0987(4)	1985	9	13

Sec. 11, T.31S., R.59E.

B.S.T. "O2" 149+40
B.F.S. "O2" 150+95
E.F.S. "O2" 155+17
E.S.T. "O2" 156+92
** RELOCATE MT. RILEY TRAIL.
TRAIL TO BE 5'-0" WIDE (MIN.) LOCATED 10' BEYOND TOP OF CUT AND SURFACED WITH 2" INCHES OF GRADE "B" COVER COAT MATERIAL. EXACT LOCATION TO BE DETERMINED BY THE ENGINEER. ALL WORK SHALL BE CONSIDERED INCIDENTAL TO PAY ITEM 405 (2A).
EWO #3 MODIFIED & FABRIC UNDERDRAIN
"O2" 141+00± LT. DAYLITE DITCH AS DIRECTED
10' min from top of cut
"O2" 149+00 Lt Install 24"x10' Pipe
MATCH LINE
"O2" LINE P.C. STA. 132+04.38
"O2" LINE P.T. STA. 135+15.98
"P" LINE 141+80.93
"P" LINE 151+10.03
"O2" LINE P.C. STA. 150+43.18
"O2" LINE P.T. STA. 155+68.64
S 52°50'34" E - 350.92'
S 39°20'57" E - 893.67'
S 64°26'18" E
43°54'58" E - 339.89'
"O2" 131+00
"O2" LINE R=2000' Δ=8°55'36" LT. L=311.60' T=156.12' S=0.035 FT/FT D=2°51'53"
B.S.T. "O2" 132+14
B.F.S. "O2" 133+49
E.F.S. "O2" 134+81
E.S.T. "O2" 136+16
"P" LINE 133+62.77
"O2" LINE R=1200.00' Δ=13°29'37" RT L=282.61 T=141.96 S=0.046 FT/FT D=4°46'29"
"O2" LINE P.C. STA. 138+66.90
"O2" LINE P.T. STA. 141+49.51
B.S.T. "O2" 137+64
B.F.S. "O2" 139+19
E.F.S. "O2" 140+97
E.S.T. "O2" 142+52
PROVIDE 80'± x 200'± PARKING AREA IN DAYLITED CUT SECTION. FINAL LOCATION & DIMENSION TO BE DETERMINED BY THE ENGINEER. SEE TYPICAL SECTION THIS SHEET
PARKING SIGN
"P" LINE 147+18.51
"P" LINE 148+53.84
"O2" 148+60 Install 24"x60' pipe
"O2" 150+43 Install 24"x66' pipe
"P" LINE 154+42.28
"O2" 150+60 REMOVE EXISTING C.M.P.
"O2" LINE D=4°46'29" R=1200.00' Δ=25°05'21" LT. L=525.46 T=267.01 S=0.046 FT/FT
"O2" 154+90 REMOVE EXISTING C.M.P.
"O2" 157+50 REMOVE 18"x40' EXIST. C.M.P. INSTALL 24"x70' PIPE
"O2" 155+20 INSTALL 24"x60' PIPE
"O2" 161+30 LT. REMOVE EXIST. 18"x60' C.M.P.
"O2" 161+90 LT. INSTALL 18"x40' PIPE.
"O2" 160+00 INSTALL 24"x60' PIPE
"O2" 161+20 INSTALL 24"x90' PIPE
"O2" LINE R=600.00' Δ=43°01'56" RT L=450.63 T=236.54 S=0.06 FT/FT D=9°32'57"
"O2" 160+00 RT. BEGIN GUARDRAIL
B.S.T. "O2" 157+36
B.F.S. "O2" 159+32
E.F.S. "O2" 162+57
E.S.T. "O2" 164+47
P.O.T. STA. 158+63.20 BK. P.C. STA. 158+69.05 AHD.
EQU.
SPRUCE
"P" LINE 163+52.37
"O2" 162+00
Lot 24
Lot 27
Lot 28
Lot 30
Lot 1
Sec. 11 12
Sec. 14 13
T.B.M. No. 15 CHISELLED "O" ON TOP OF 5'x4' GRANITE BOULDER, STA. 145+30±, 110'± RT. ELEV. 221.49
T.B.M. No. 16 CHISELLED "O" IN TOP OF 6'x8' GRANITE BOULDER, STA. 151+40±, 70'± RT. ELEV. 191.58
TYPICAL SECTION
Mt. Riley Trail Parking Area
Structural section for parking area shall match that of existing.
Log barrier see Detail
Mainline structural section
DETAIL
12" Ø logs (min) spike barrier log to support member with rebar
Depth of cut shall be as directed
Log barrier support spaced @ 10' intervals
Material for log barrier shall be obtained from selected logs cut during the clearing operation. Logs used shall have bark removed. All work & materials req'd to const. log barrier shall be considered incidental to Pay Item 201(2B) Clearing & Grubbing
Sta. 146+00 V.P.I. Elev. 222.06 222.56
900' V.C.
Finish Profile
+2.93%
+4.67%
-5.62%
-1.54%
500' V.C.
400' V.C.
EXISTING GROUND
"O2" 132+00 V.P.I. ELEV. 135.00
"O2" 138+00 V.P.I. ELEV. 163.02
"O2" 153+00 V.P.I. ELEV. 171.48
"O2" 162+50 V.P.I. ELEV. 160.00
EQUATION "O2" LINE
"O2" 158+63.20 BK. = P.C. "O2" 158+69.05 AHD.
UNCLASSIFIED EXCAVATION = 44,051
EMBANKMENT = 18,131
STATE OF ALASKA 49TH LARRY C. GEISE No. CE-3951 REGISTERED PROFESSIONAL ENGINEER
STATE OF ALASKA 49TH GEORGE V. DENISON No. 1351-E REGISTERED PROFESSIONAL ENGINEER

VERTICAL CONTROL

U.S.C. & G.S. BENCHMARK No. 5 (1943) BRASS CAP ON GRANITE ROCK, 50'± EAST OF ℄ FRONT STREET & 300'± NORTH OF INTERSECTION OF FRONT STREET & HAINES CUT-OFF ROAD. ELEV. = 27.60 (1961 DATUM)

HORIZONTAL CONTROL

BASED UPON THE GRID BEARING BETWEEN N.O.S. STATION "RAM" AND "BOW".
"RAM" LAT. -59°11'45.007" LONG. -135°27'25.855" N. 2,693,954.563 E. 2,349,846.372
"BOW" LAT. -59°09'00.537" LONG. -135°27'58.864" N. 2,677,304.017 E. 2,347,685.937

PROJECT COORDINATES

179+86.34 N. 33,354.567 E. 37,104.789
271+50.00 N. 25,928.201 E. 41,724.099

NOTE: ALL T.B.M.'s SHOWN HEREON ARE TO BE CONSIDERED INFORMATIONAL ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE STATED INFORMATION PRIOR TO BEGINNING ANY WORK.

STATE	PROJECT	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS 0987(4)	1985	10	13

Sec. 12, T. 31 S., R. 59 E.

Sec. 13, T. 31 S., R. 59 E.

Sec. 13, T. 31 S., R. 59 E.

Letnikof Cove

MUD BAY ROAD

ACCESS ROAD DETAIL

B CURVE DATA
A R=15.00, Δ=124°, L=32.46
B R=15.00, Δ=78°, L=20.42
C R=41.00, Δ=56°, L=40.07
D R=50.00, Δ=90°, L=78.54
E R=59.00, Δ=78°, L=80.32

CHAIN TURNOUT DETAIL

"O" 162+00

"O" 165+50 Install 18"x30' PIPE

"O" LINE P.C. STA. 166+38.40

"O" LINE P.T. STA. 163+19.98

"O" LINE R=600.00' Δ=45°01'56" RT. L=450.63 D=9°32'57" T=236.54 S=0.06 FT/FT

SPRUCE

GREENHOUSE

SHED

HOUSE

ASLS 71-41

Tr. 2 Tr. 3 Tr. 4 Tr. 5 Tr. 6 Tr. 7 Tr. 8 Tr. 9 Tr. 10

Lot 1 Lot 5 Lot 11

Sec. 11 Sec. 12 Sec. 13 Sec. 14

"O" LINE R=515.00 Δ=35°20'12" T=164.04 L=317.62 D=11°07'31" S=0.06 FT/FT

"O" LINE R=515.00 Δ=30°53'58" T=140.72 L=274.98 D=11°07'31" S=0.06 FT/FT

"O" LINE R=76000 Δ=15°14'44" T=88.24 L=175.70 D=7°32'20" S=0.055 FT/FT EQU.

"O" 172+42 Lt. Remove exist. 60"x80' cmp & install 72"x70'

"O" 179+80 Install 24"x65' pipe

"O" 175+90 Remove exist. 24"x60' cmp & install 36"x80' & 36"x30" pipe. (2) 24"x30'

"O" 178+50

"B" 0+00 ACCESS ROAD

"B" 0+16 P.C. ACCESS ROAD

"B" 0+94.54 RT. END GUARDRAIL

"B" 2+50 END GUARDRAIL

"B" LINE

"B" 0+94.54 P.T. ACCESS ROAD

"O" 179+50

"O" 181+00 "O" 179+90 24' Lt. End Guardrail

"O" 166+00 RT. END GUARDRAIL

"O" 171+00 RT. BEGIN GUARDRAIL
"B" 0+94.54 ACCESS ROAD END GUARDRAIL

"O" 172+92 REMOVE EXIST. CMP INSTALL 72"x70' PIPE SEE SHEET 5 FOR DETAILS

℄ ACCESS ROAD 66' RT. "O" LINE SEE SHEET 2 FOR TYPICAL SECTION

"B" 1+50 LT. ACCESS RD. BEGIN GUARDRAIL
"B" 2+00 LT. BEGIN CLASS III RIP-RAP

"O" 181+18 C.M.P. - "O" 181+18 INSTALL 24" x 6' PIPE 60'

"O" 183+70 REMOVE EXIST. 18"x30" EXIST. CMP AND INSTALL 24"x22' PIPE 66'

"O" 188+65 INSTALL 24"x60' PIPE.

"O" 179+96 Remove exist. 18"x35' install 24"x68' pipe 68'

"O" LINE R=1000.00' Δ=16°02'28" Rt. T=140.91' L=279.97' S=0.05 FT/FT D=5°43'46"

"O" LINE R=1000.00' Δ=13°27'39" Lt. T=269.94' L=135.80' S=0.050 FT/FT D=5°43'46"

"O" LINE CLASS III RIP-RAP CONTINUES

"O" LINE

BASE OF CLIFF

Old Road

"O" 191+66 BEGIN CLASS III RIP-RAP

"O" 191+75 INSTALL 24"x68' PIPE 62'

MATCH LINE "O" 193+00

"P" LINE 196+74.34

"O" LINE P.T. STA. 195+51.96

"P" LINE 183+13.96

"P" LINE 178+89.21

"P" LINE 174+89.21

"P" LINE 170+89.17

"O" LINE P.C. STA. 175+66.84 BK. P.T. STA. 175+61.90 AHD.

"O" LINE P.C. STA. 173+91.14

"O" LINE P.T. STA. 173+66.14

"O" LINE P.T. STA. 171+41.10

"O" LINE P.C. STA. 170+74.75

"O" LINE P.T. STA. 170+49.75

"O" 171+54 E.S.T.
B.F.S. "O" 171+54
E.F.S. "O" 173+03
B.S.T. "O" 173+03

B.S.T. "O" 165+63
B.F.S. "O" 167+58
E.F.S. "O" 169+50
B.S.T. "O" 169+50

B.S.T. "O" 178+68
B.F.S. "O" 180+38
E.F.S. "O" 182+05
E.S.T. "O" 183+75

B.S.T. "O" 157+36
E.F.S. "O" 159+32
E.F.S. "O" 162+57
B.S.T. "O" 164+12

B.S.T. "O" 191+66
B.F.S. "O" 193+36
E.F.S. "O" 194+92
B.S.T. "O" 194+92

T.B.M. No. 17
SPIKE IN BASE OF 30" SPRUCE, 5' RT. ± OF STA. 162+60 ±
ELEV. = 156.23

T.B.M. No. 18
SPIKE IN BASE OF 21" SPRUCE, 30' LT. ± STA. 176+00 ±
ELEV. = 35.97

(A) CURVE DATA R=30' Δ=75° L=39.27

DRIVEWAY DETAIL 168+00

MATCH EXISTING DRIVEWAY 1+10

P.T. 0+61.25

P.C. 0+21.98

"O" 162+00 MATCH LINE

"O" 162+50 V.P.I. ELEV. = 160.00

"O" 171+50 A.P. ELEV. = 29.46

"O" 177+50 V.P.I. ELEV. = 25.43

"O" 180+00 LEFT BEGIN SPECIAL DITCH

EQUATION "O" 175+66.84 BK. = "O" 175+61.90 AHD.

FINISHED PROFILE

EXISTING GROUND

-1.5% 500' V.C. 9.00%

-0.9% -1.4%

DRIVEWAY PROFILE 168+00

EXISTING GRD. FINISHED PROFILE +11% 20' V.C.

ACCESS ROAD @ "O" 178+50

30' V.C. 3% -0.5% EXISTING GROUND

"O" 177+50 P.I. ELEV. = 27.00 ACCESS RD.

DITCH IN 22.62

DITCH IN 22.62

-1.69% +1.16% -1.16% +0.41% 0.00% -0.41% +0.65%

GRADE SPECIAL DITCH LEFT

UNCLASSIFIED EXCAVATION = 7,920 c.y.*

EMBANKMENT = 12,873 (Includes 2,259 c.y. of rock embankment)

STATE OF ALASKA 49TH GEORGE W. DAVISON No. 1351-E REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA 49TH LARRY C. REISE No. CE-3951 REGISTERED PROFESSIONAL ENGINEER

K+E PLATE 1, PLAN-PROFILE KEUFFEL & ESSER CO.

STATE	PROJECT	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS 0987(4)	1985	11	13

Sec. 13, T. 31 S., R. 59 E

Dependent Resurvey
Portion Sec. 13

Lot 13

Lot 14

Ft. Seward Military Reserve

Lot 2

Lot 3

Lot 4

"0_2" 191+66
"0_2" 193+36
"0_2" 194+92
"0_2" 194+92

"0_2" LINE
R = 1000.00'
Δ = 15°27'59" LT
L = 269.94'
T = 135.80'
S = 0.050 FT/FT
D = 5°43'46"

"0_2" LINE 195+48.96 P.T. STA.

"0_2" 196+50 REMOVE EXIST. 18"x50' C.M.P.

"0_2" 200+15 INSTALL 24"x60' PIPE

old road

4" ALUM. PIPE

See Details This Sheet

24"x 104' PIPE

78'

195

18" C.M.P.

BASE OF CLIFF

S 36° 30' 51" E
200.20'

S 34° 12' 52" E
540.01'

200

"0_2" 196+66 INSTALL 24"x 75' PIPE

B.S.T. "0_2" 196+66
B.F.S. "0_2" 197+91
E.F.S. "0_2" 199+09
E.S.T. "0_2" 200+34

"0_2" LINE
R = 2500.00'
Δ = 4°37'59" RT
L = 202.14'
T = 101.13'
S = 0.03 FT/FT
D = 2°17'41"

"P" STA. 196+74.34

"0_2" LINE P.C. Sta. 199+49.11

P.T. Sta. 199+51.25

"0_2" 203+35 REMOVE EXIST. C.M.P. AND INSTALL 24" x 80' PIPE

18" C.M.P.

"0_2" 208+50 INSTALL 24" x 48'66 PIPE

205

"O" LINE

"P" LINE

S 29° 26' 14" E
233.02

END CLASS III RIP-RAP "0_2" 203+50

"0_2" LINE
R = 2500.00'
Δ = 1°46'38" RT
L = 208.45'
T = 104.28'
S = 0.031 FT/FT
D = 2°17'31"

P.C. Sta. 204+91.33

P.T. Sta. 206+99.78

P.T. Sta. 206+97.18 Ahd.

B.S.T. "0_2" 204+01
B.F.S. "0_2" 205+36
E.F.S. "0_2" 206+55
E.S.T. "0_2" 207+87

"0_2" LINE
R = 1000.00'
Δ = 23°07'02" LT
L = 403.47'
T = 204.52'
S = 0.05 FT/FT
D = 5°43'46"

B.S.T. "0_2" 208+49
B.F.S. "0_2" 209+74
E.F.S. "0_2" 212+94
E.S.T. "0_2" 214+19

"0_2" LINE P.C. Sta. 209+32.20

"0_2" LINE P.T. Sta. 213+35.67

"0_2" 213+60 INSTALL 24"x25' Pipe

"P" STA. 213+94.58

BEGIN CLASS III RIP-RAP "0_2" 215+50

"0_2" 217+00 REMOVE EXIST. C.M.P. AND INSTALL 48"x 62' CULVERT W/E-END SECTIONS

"P" STA. 220+64.59

BASE OF CLIFF

48" C.M.P.

DERELICT BOAT

S 52° 33' 16" E
232.82

"0_2" 219+49 remove exist. CMP & install 24"x 55' Pipe

"0_2" LINE
R = 2000.00'
Δ = 09°52'12" RT
L = 344.53
T = 172.69
S = 0.035 FT/FT
D = 2°51'53"

"0_2" LINE P.C. Sta. 216+28.49

"0_2" LINE P.T. Sta. 219+73.02

B.S.T. "0_2" 215+29
B.F.S. "0_2" 216+64
E.F.S. "0_2" 219+28
E.S.T. "0_2" 220+63

N.I.C.

"0_2" 222+30 LT. REMOVE EXIST. C.M.P.

12" C.M.P.

MATCH LINE

225

220

S 42° 41' 04" E
998.39

CLASS III RIP-RAP CONTINUES

"0_2" 222+98 INSTALL 24" x 54' PIPE

"0_2" 224+00

Letnikof Cove

STATE OF ALASKA
49TH
LARRY C. GEISE
No. CE-3951
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA
REGISTERED ENGINEER

T.B.M. No. 19
Chiselled "O" near top of 8'x 14' granite boulder, Sta. 210+20±, 120'± Rt. elev. 20.67'

New 2" PVC pipes as directed
Masonry structure with drain & swale ditch to roadside ditch.

45'±
16'
℄
40" min.
6" SUBBASE, GRADING "C"
Surface Treatment
TYPE "A" INLET BOX
Slope as directed
11" SUBBASE, GRADING "A"
24' x 80'

TYPICAL SECTION
FOR TURNOUT BETWEEN
Sta. 195+00 Lt. & 197+50 Lt.
All regd. used in installing this turnout shall be 25'.

16'
25'±
Surface treatment
3%
mainline struct. section
mainline embant. section
1.5:1
El. 22.5
Exist. ground
Class III Riprap

TYPICAL SECTION
FOR TURNOUT
Sta. 211+00

END OF PROJECT
Beginning of Temporary Transition
"0_2" 209+32.20

END TEMPORARY CONNECTION
"0_2" 213+00 Lt.
Grade & Alignment Between E.O.P. & E.T.C. shall be as directed.

"0_2" 210+00 A.P.
ELEV. 25.43

EXISTING GROUND

FINISH PROFILE

+0.00 %
+0.65%
-0.65%
+0.48%
-0.48%
+0.61%
-0.65%
+1.08%
+0.05 %
N.I.C.

194+25 DITCH INV. 22.62

200+00 DITCH INV. 22.62

STA. 206+00 DITCH INV. 22.62

GRADE SPECIAL DITCH LEFT

END SPECIAL DITCH

MATCH LINE

"0_2" 193+00

"0_2" 224+00

40
30
20
10

3 4 195+00 6 7 8 9 200+00 1 2 3 4 205+00 6 7 8 9 210+00 1 2 3 4 215+00 6 7 8 9 220+00 1 2 3 4 225+00

UNCLASSIFIED EXCAVATION 7310
EMBANKMENT 5647
(Includes approx. 3,900 C.Y. of rock embankment)

KEY PLAT & PLAN SHEET

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS 0987(3)	1985	12	13

STATE OF ALASKA
49TH
LARRY C. GEISE
No. CE-3951
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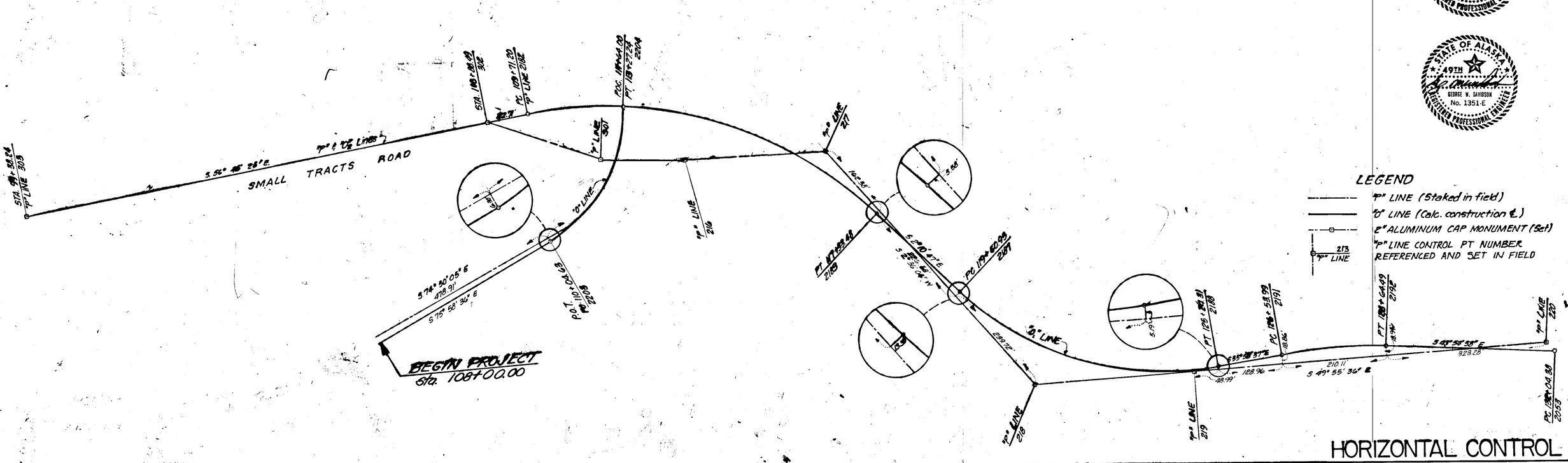
STATE OF ALASKA
49TH
GEORGE W. DAVIDSON
No. 1351-E
REGISTERED PROFESSIONAL ENGINEER



HORIZONTAL CONTROL

1253 7-81 IRC 2993•

STATE	PROJECT DESIGNATION	YEAR	SHEET NO	TOTAL SHEETS
ALASKA	RS0987(4)	1985	13	13

"P" LINE 220 — 14.74' — 16.65' — 7.22' — "P" LINE 221 — "P" LINE 222 — "P" LINE 223 — "P" LINE 224 — "P" LINE 225 — "P" LINE 226 — "P" LINE 227 — "P" LINE 228 — "P" LINE 229 — "P" LINE 230 — "P" LINE 231 — "P" LINE 232 — "P" LINE 233 — "P" LINE 234 — "P" LINE 235 — "P" LINE 236 — "P" LINE 237 — "P" LINE 238 — "P" LINE 239 — "P" LINE 240

PC 132+04.38 2053 — PT 135+15.98 2054 — PC 138+66.90 2057 — PT 141+99.51 2058

325.91' — S. 49°55'43" E. 350.46' — S. 52° 50' 34" E. — 25.00 — 141.79' — 140.21' — 22.21' — 397.37' — S. 30° 21' 00" E.

"0" LINE — S. 39° 10' 57" E.

NB 15 — S. 24° 31' 36" E. — 1691.10' — 357.01'

PT 155+08.64 2060 — PC 158+63.20 BK. 2059 — PC 158+69.05 AHD. — S. 64° 26' 18" E. 294.66' "P" & "0" LINES — 208.50' — S. 21° 04' 52" E. 220.47' — PT 163+19.68 2070 — 15.00

220.47' — S. 21° 24' 22" E. 375.42 — S. 21° 24' 22" E. — PT 163+19.68 2070 — 15.00 — PC 166+95.10 — 5.00 — 164.04' — 164.09' "0" LINE — S. 56° 44' 54" E. 74.34' — S. 50° 59' 00" E. "P" LINE 180.72' — PT 171+10.20 — PC 173+91.14 — LINE 228 — 264.00 — 10.05' — S. 26° 10' 56" E. "P" LINE — 44.00 — 88.84 — EQU. PT 175+66.84 BK= 175+61.40 AHD. — "P" LINE 222 — "P" LINE 223 — PC 150+43.18 2065 — "P" LINE 230 — 13.50' — "P" & "0" LINES 413.66' S. 39° 25' 20" E. — PC 129+81.10 2035 — PT 139+66.10 — "P" LINE 229 — PC 139+46.00 — 36.16 — "P" LINE 227 — PT 139+51.32 2094 — "P" LINE 231 — 132.30' — PC 182+14.07 2036 — 206.07' — S. 23° 22' 57" E. S. 24° 43' 59" E. — 1017.69' — 10.13' — PC 192+78.02 2089 — 136.24'

PC 192+79.02 2089 — PT 195+48.96 2090 — 11.15' — PC 197+49.16 2093 — 2.03' — S. 30° 50' 51" E. 199.31' — 201.81' — S. 94° 12' 52" E. "0" LINE — 539.96' — S. 93° 26' 59" E. — PC 204+91.93 2097 — 56.41' — PT 206+39.24 BK= 2098 PT 208+97.18 AHD. — 208.30' — S. 89° 26' 19" E. — 234.53' — PC 209+32.20 2101 — 14.91' — 204.01' — 204.52' — PT 213+35.67 2102 — S. 62° 38' 16" E. — PC 216+28.49 2105 — 172.69' — "P" LINE (PT) 233 — 172.69' — PT 219+73.02 2106 — N.I.C. — S. 42° 41' 04" E. "P" & "0" LINES

E.O.P. RS-0987(4)

"P" LINE 239 — 228.11' — S. 42° 41' 04" E. — S. 45° 07' 23" E. 266.30' — N.I.C — PC 229+71.41 2109 — 206.82' — S. 45° 07' 23" E. — PT 232+28.28 2110 — 100.06' — "P" LINE 235 — PC 234+33.10 2113 — 265.01' — "0" LINE — 5.00' — S. 38° 10' 57" E. 515.84' — S. 38° 10' 57" E. — PT 237+96.61 2114 — PC 243+12.36 2117 — 167.66' — 123.61' — "P" LINE 236 — PT 246+23.23 2118 — N.I.C. — END OF PROJECT "0" 249+71.35 — S. 47° 05' 21" E. "P" & "0" LINES — "P" LINE 237 — 150.00 — S. 42° 54' 39" W.

S. 47° 05' 21" E. "P" & "0" LINES — PC 255+19.60 — "P" LINE — S. 39° 22' 17" W. — PT 252+03.60 — S. 18° 48' 00" W. "0" LINE 578.81' — PC 247+88.41 — N.I.C. — 150.00 — 237 "P" LINE — N.I.C — 9.43' — S. 26° 20' 43" E. "P" LINE — 240 "P" LINE — 240.00 — "P" LINE — 240 "P" LINE — 240 "P" LINE

S. 55° 59' 22" E. 16,501.14 — N.O.S. STA. "RAM" — PC 255+19.60 — S. 89° 22' 17" W.

LEGEND

- "P" LINE (Staked in field)
- "0" LINE (Calc. construction ℄)
- 2" ALUMINUM CAP MONUMENT (Set)
- 236 "P" LINE — "P" LINE CONTROL PT. NUMBER REFERENCED AND SET IN FIELD

STATE OF ALASKA — 49TH — LARRY C. GEISE No. CE-3951 — REGISTERED PROFESSIONAL ENGINEER

HORIZONTAL CONTROL