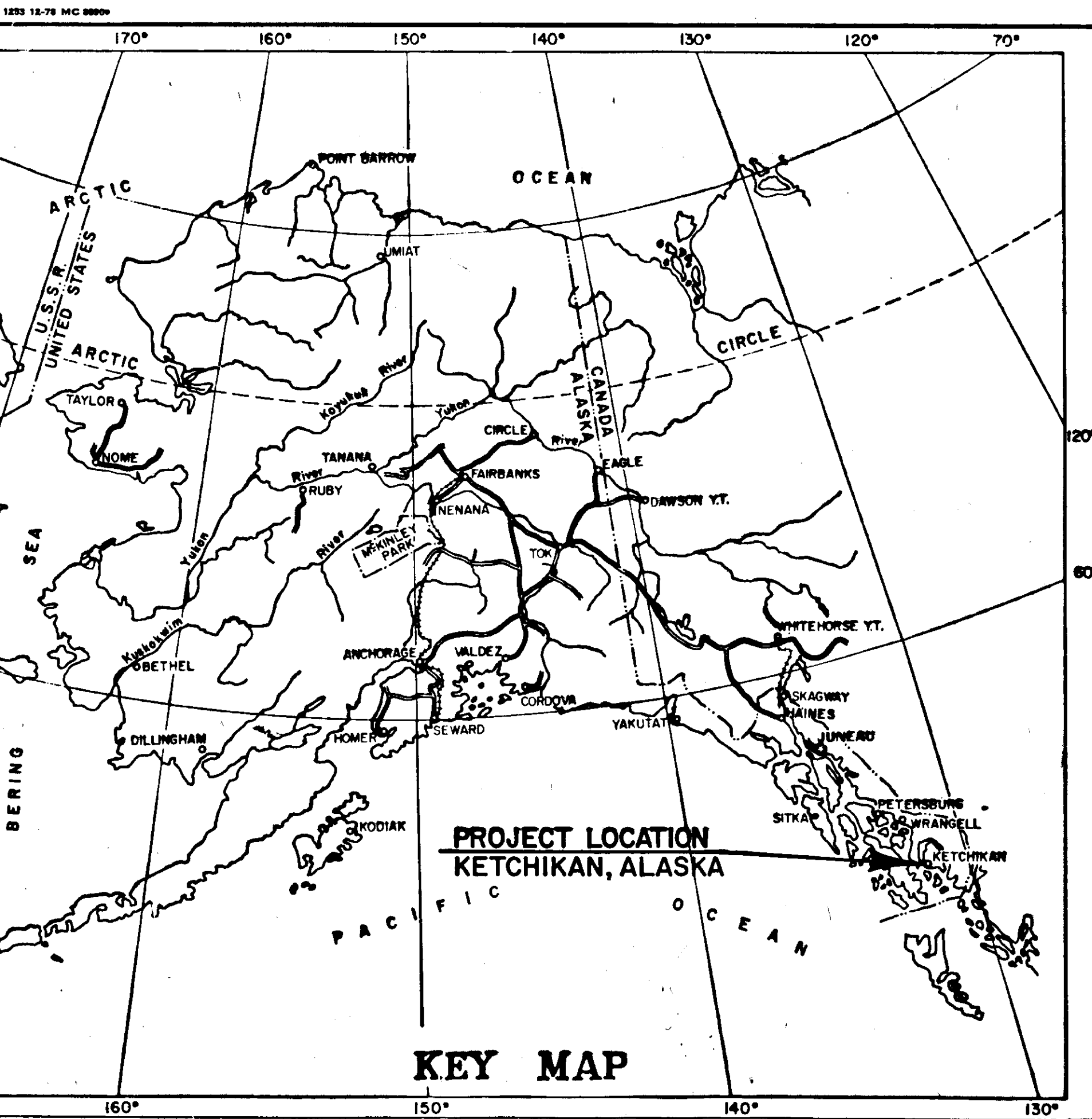




STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
&
PUBLIC FACILITIES

PLAN AND PROFILE
PROPOSED HIGHWAY PROJECT
NORTH TONGASS HIGHWAY PAVING
CITY LIMITS TO MILEPOST 7
RS-M-0920 (I7) & 67453
GRADING, PAVING, DRAINAGE,
& UTILITIES

STATE	PROJECT	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920 (I7) & 67453	1	68

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	TYPICAL SECTIONS OF IMPROVEMENT
3	EXCEPTIONS TO TYPICAL SECTIONS
4 - 5	ESTIMATE OF QUANTITIES
6 - 7	TRAFFIC CONTROL PLAN
8 - 26	PLAN & PROFILE SHEETS
27	PIPE SUMMARIES
28	MISCELLANEOUS DRAINAGE DETAILS
29 - 30	DRAINAGE DETAILS
31	6" Ø D.I.P. & APPURTENANCES SUMMARIES & DETAILS
32 - 33	DOMESTIC UTILITIES SUMMARIES & DETAILS
34	GUARD RAIL SUMMARIES & DETAILS
35	SIGNING SCHEDULE & MONUMENT SUMMARIES
36	MISCELLANEOUS SUMMARIES & LOOP DETECTOR DETAILS
37	TYPICAL RESIDENTIAL APPROACH SECTION & APPROACH SUMMARY
38 - 43	APPROACH DETAILS
44	SOUTH SHORELINE DRIVE STRIPING PLAN & STRIPING GENERAL NOTES
45	CONCRETE RETAINING WALLS BEGINNING AT STA. 0+58+80, 0+114+35, & 0+173+70
46 - 48	CONCRETE RETAINING WALL AT CANNERY CREEK BRIDGE
49 - 54	CANNERY CREEK BRIDGE
55 - 68	UTILITY RELOCATION DETAILS

PROJECT SUMMARY

- WIDTH OF PAVEMENT = 40'
- LENGTH OF PAVEMENT = 23,110.26' = 4.377 MI.
- LENGTH OF GRADING = 23,030.26' = 4.362 MI.
- LENGTH OF PROJECT = 23,300.04' = 4.413 MI.

'AS-BUILT' PLANS
South Coast, Inc
Dale Robbins
Constructed 10-19-87 thru 4-6-90

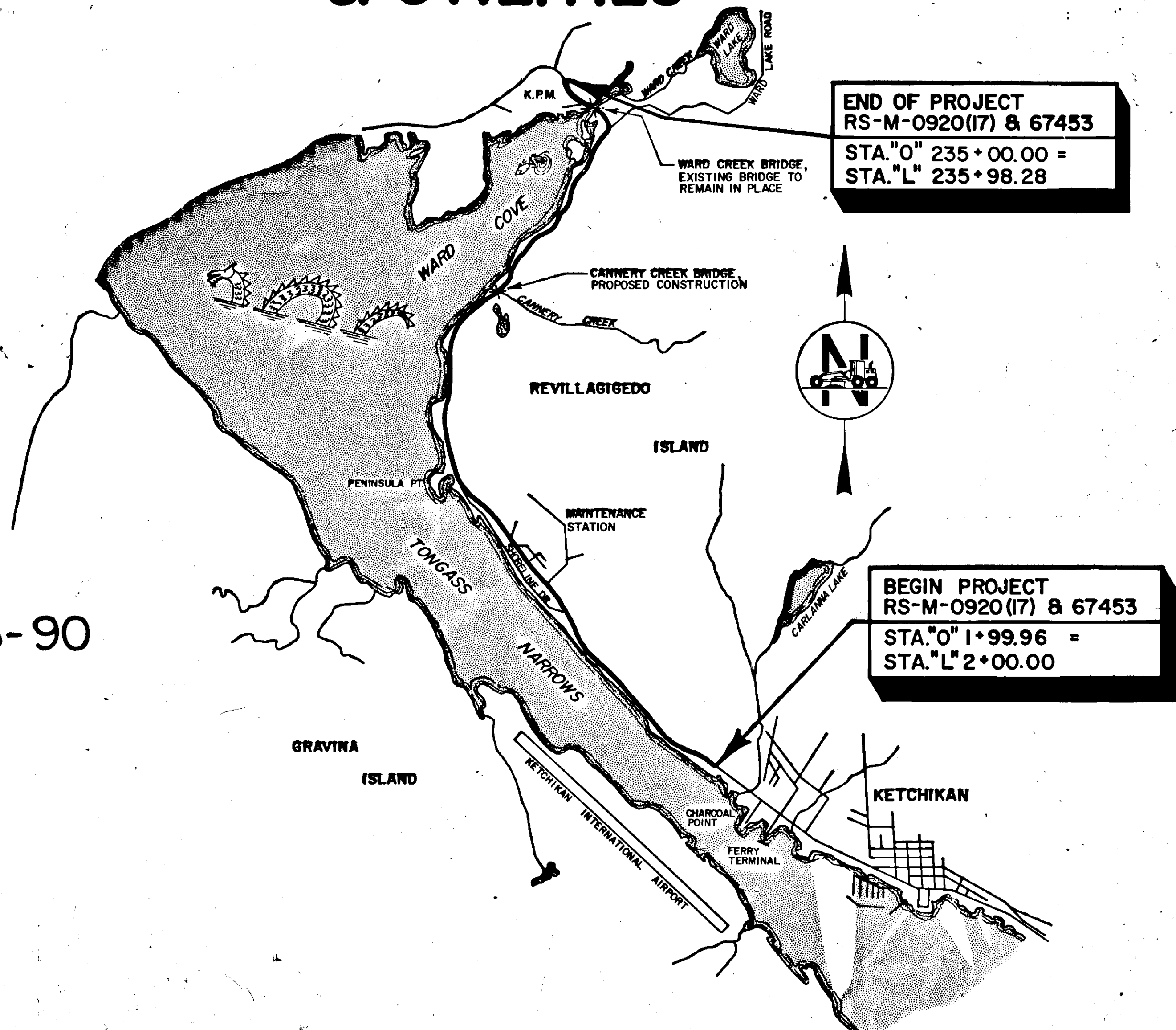
DESIGN DESIGNATION

- A.D.T. (1987) = 7,275
- A.D.T. (2008) = 10,810
- D.H.V. (13 %) = 1,405
- % T = 7 %
- V = 40 M.P.H. (0+1+99.96 to 0+13+00)
- V = 50 M.P.H. (0+13+00 to 0+235+00)
- T.I. = 8.5
- E.A.L. = 765.911.80

DESIGN EXCEPTIONS TO HORIZONTAL CURVATURE OCCUR AT STA. 0+217+09.00 & STA. 0+232+54.70.

DESIGN EXCEPTIONS TO ROADWAY WIDTH OCCUR FROM STA. 0+222+91.00 TO STA. 0+235+00.00.

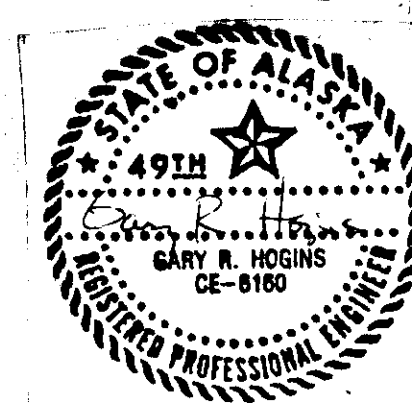
DESIGN EXCEPTIONS WERE GRANTED BY F.H.W.A. ON NOVEMBER 24, 1986



THE FOLLOWING STATE OF ALASKA, D.O.T. & P.F. STANDARD DRAWINGS SHALL APPLY TO THIS PROJECT: A-1, C-01.02, C-02.00, C-03.01, C-04.00, D-01.00, D-04.10, D-05.10, D-20.01, D-23.00, D-26.01, D-27.01, F-01.01, G-04.02 S, G-04.02 W, G-12.00, G-14.03 S, G-14.03 W, G-18.01, G-24.03 S, G-24.03 W, G-45.00, I-20.01, I-40.00, M-05.00, M-11.00, M-13.00, M-16.00, M-20.01, M-23.00, S-00.00, S-05.00, S-30.01, T-20.00, T-21.01, T-22.01, T-32.00, T-34.00, & U-03.00

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
&
PUBLIC FACILITIES

APPROVED
Walter K. Williams
SOUTHEASTERN REGION DESIGN CHIEF
Date 6-17-87



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
&
PUBLIC FACILITIES

APPROVED
Walter K. Williams
DIRECTOR, SOUTHEAST REGION DESIGN & CONSTRUCTION
Date 6-19-87

TYPICAL SECTIONS OF IMPROVEMENT

SEE SHEET 3 FOR EXCEPTIONS TO THE TYPICAL SECTIONS

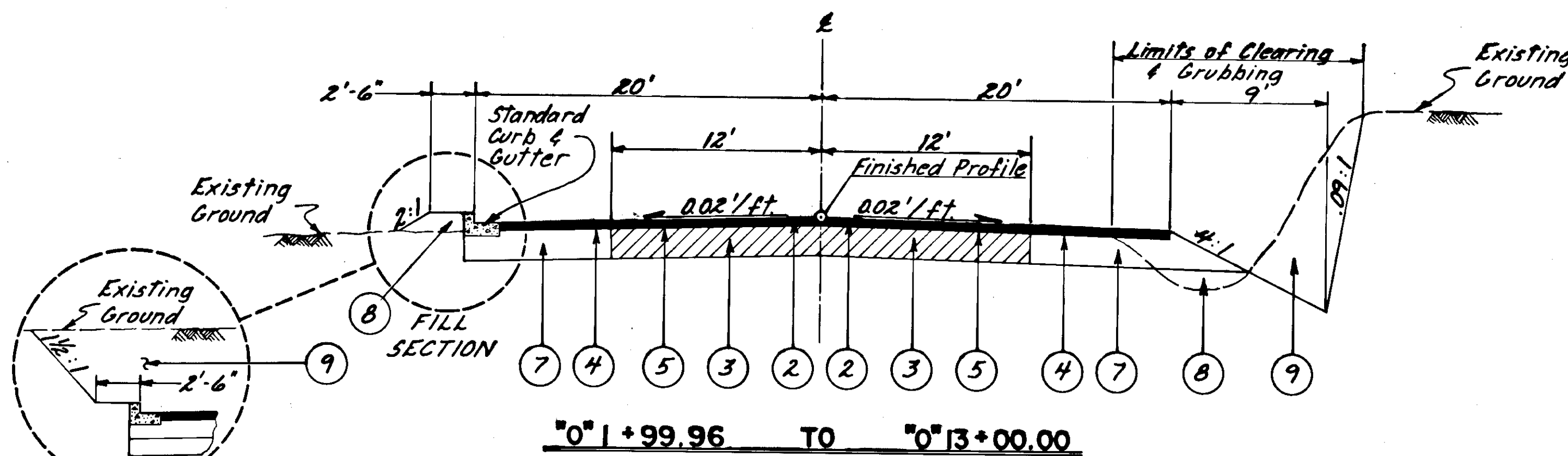
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	2	68

TABLE OF FILL SLOPES	
HEIGHT	SLOPE
0-5 FT.	4:1
5-10 FT.	3:1
10+ FT.	1 1/2:1

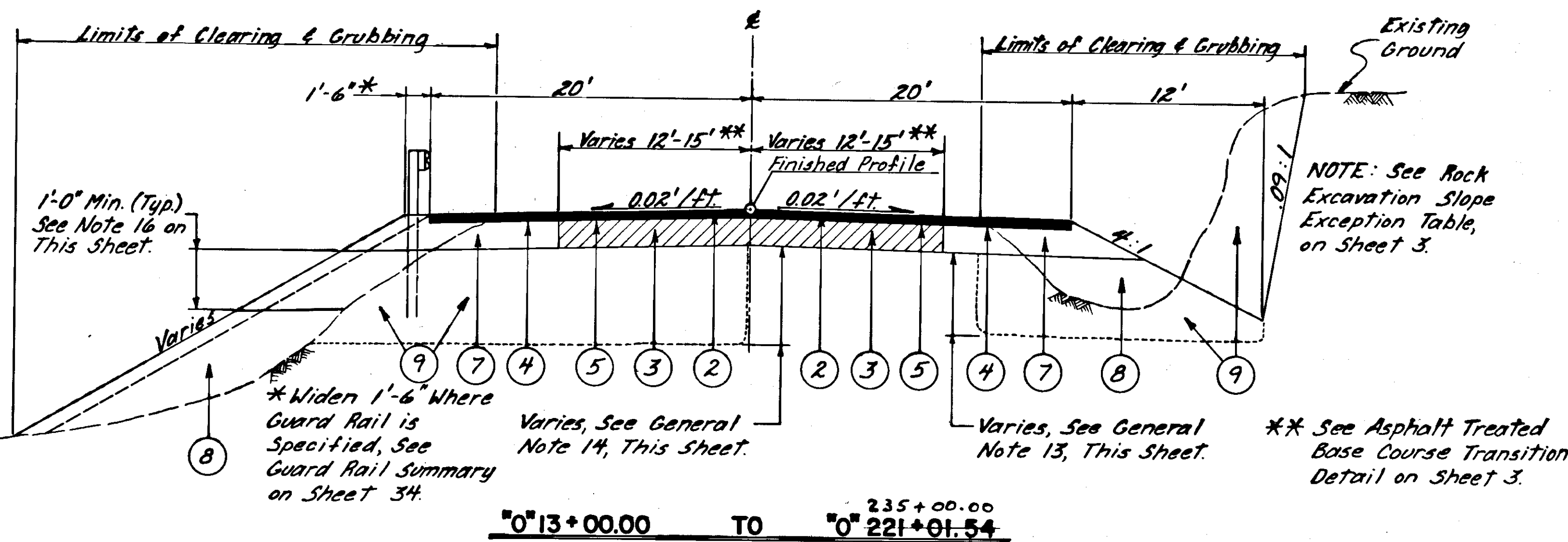
NOTE: See Fill Slope Exception Table on Sheet 3.

LABELING INDEX	
①	3" Hot Asphalt Pavement, Type I 2- 1 1/2" Lifts
②	2" Hot Asphalt Pavement, Type I Single Lift
③	5 1/2" Asphalt Treated Base Course 1-3" Lift; 1-2 1/2" Lift
④	MC-30 Liquid Asphalt for Prime Coat
⑤	CSS-1 Asphalt for Tack Coat
⑥	4" Crushed Aggregate Base Course
⑦	5 1/2" Crushed Aggregate Base Course
⑧	Useable Excavation
⑨	Excavation, Common and/or Rock

BASIS OF ESTIMATE	
ITEM NO.	ESTIMATING FACTOR
301(1)	2.04 Tons / Cu. Yd.
306(1)	119 Lbs. / Sq. Yd. / Inch Depth
401(1)	123 Lbs. / Sq. Yd. / Inch Depth
401(2)	6.0% of Item 401(1) & 4.0% of Item 306(1)
402(1)	0.1 Gal. / Sq. Yd. - 240 Gal. / Ton @ 60° F.
403(2)	0.2 Gal. / Sq. Yd. - 253 Gal. / Ton @ 60° F.



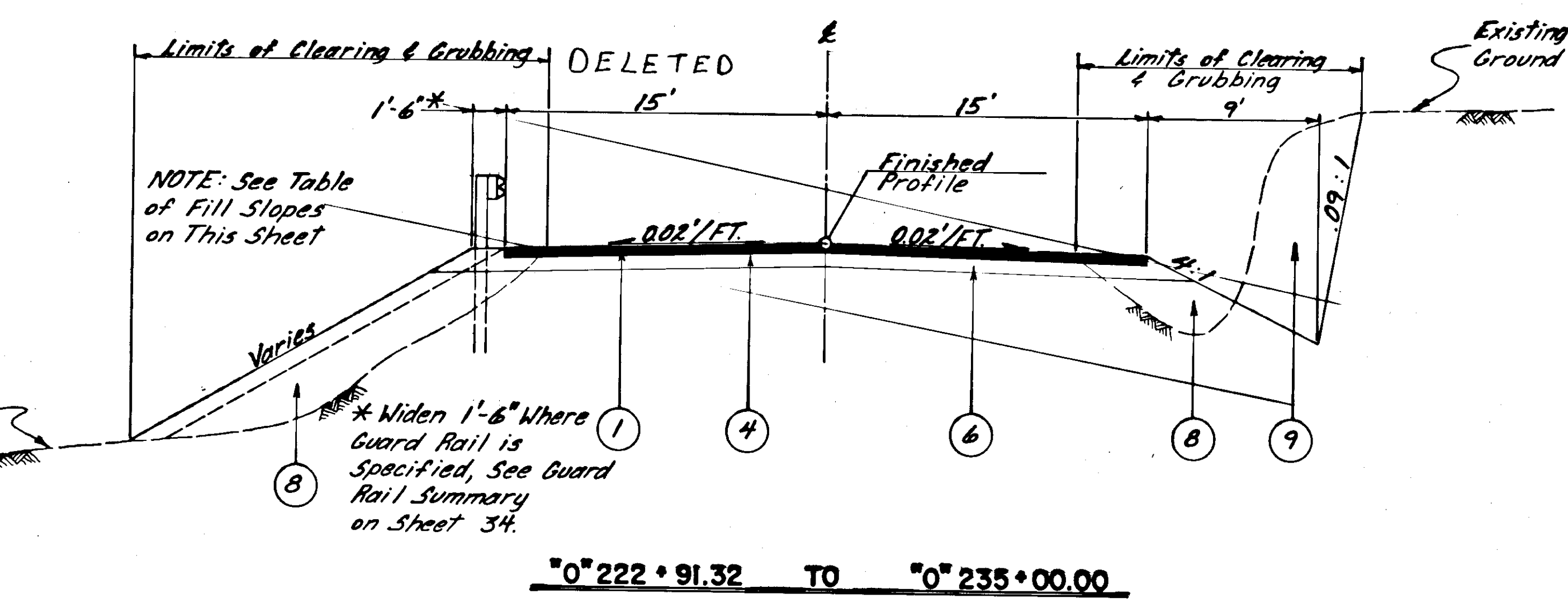
EXCAVATION SECTION



NOTE: See Table of Fill Slopes on This Sheet.

NOTE: See Rock Excavation Slope Exception Table, on Sheet 3.

** See Asphalt Treated Base Course Transition Detail on Sheet 3.



NOTE: See Table of Fill Slopes on This Sheet

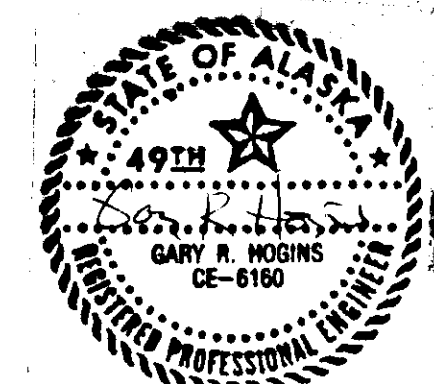
* Widen 1'-6" Where Guard Rail is Specified, See Guard Rail Summary on Sheet 34.

GENERAL NOTES

- Grades & alignment as shown on these plans may be subject to minor revisions by the engineer.
- Pipe conduit lengths & locations as shown on these plans may be subject to minor revisions as approved by the engineer.
- The location of utilities as shown on these plans are approximate only & should be field verified by the contractor.
- The superelevations shall be rotated around the centerline. The superelevation transition lengths & the stationing for the begin and end of full super is indicated with the curve data on the plan sheets.
- Curb & gutter between Sta. 0+1+99.96, Lt. and Sta. 0+3+00.00, Lt. is to be installed by others during the 1988 construction season under the Ketchikan Shuttle Ferry Facilities contract, Project No. FM-0922(2).
- Cross sections shall be available for review and inspection at the Southeast Region Construction Office D.O.T. & P.F., located in the 7 mile Glacier Hwy. Building, Juneau Alaska.
- The pavement width shall transition smoothly from 22' Rt. of & to 20' Rt. of & from Sta. 0+1+99.96 to Sta. 0+2+30.00.
- The pavement width shall transition smoothly from 40' to 51' from Sta. 0+56+75.00 to Sta. 0+61+00.00 and from 51' to 40' from Sta. 0+62+75.00 to Sta. 0+66+69. All widening shall be to the right of &.
- The pavement width shall transition smoothly from 40' to 34' from Sta. 0+219+60.00 to Sta. 0+220+20.00.
- The pavement width shall transition smoothly from 34' to 30' from Sta. 0+223+50.00 to Sta. 0+224+00.00.
- The regulatory speed limit within the project limits shall be set at 40 M.P.H. prior to construction start-up. With the project engineer's approval, the contractor may further reduce speeds as appropriate for construction conditions as they arise.
- The existing structural section to be excavated between Sta. 0+1+99.96 & Sta. 0+12+50.00 contains, in part, an unreinforced concrete slab 7" thick x 24' wide.
- From Sta. 0+78+00.00 to Sta. 0+87+00.00 excavate peat encountered between the edge of existing pavement and the toe of the proposed foreslope both left & right of 0' &. The average estimated depth of peat is 4'.
- Excavate the existing embankment to a depth directed by the engineer from 0' & to the left daylighting on the existing fill slope.

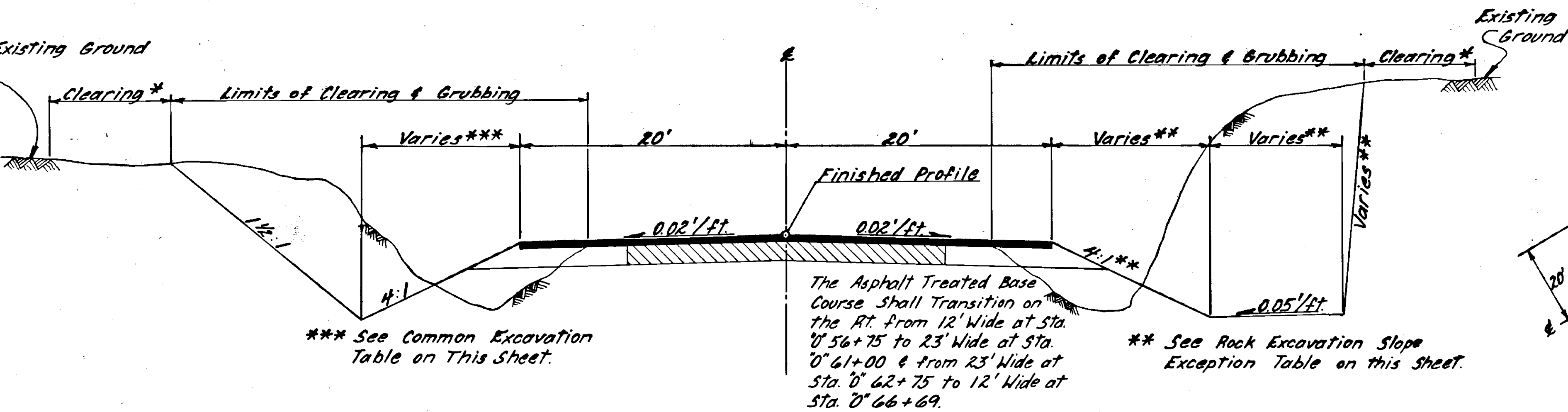
STATION TO	STATION	ESTIMATED DEPTH
0+25+40.00	0+26+20.00	15'
0+29+20.00	0+29+80.00	11'
0+78+30.00	0+78+60.00*	2.5'

Sta. 0+21+00.00 to Sta. 0+31+00.00 is the site of the old city dump. Reference pg. 13 of the Materials Report.
* Sta. 0+78+30.00 to Sta. 0+78+60.00 is to be backfilled with useable rock excavation.
- If bedrock is encountered while excavating to the bottom of the crushed aggregate base course or the asphalt treated base course, sub-cut rock to a depth of 1'-7" below finished grade. Back fill to the bottom of the crushed aggregate base course or the asphalt treated base course with embankment, borrow type "A".
- For the eight foot shoulders, if useable common excavation is to be utilized as embankment directly beneath the crushed aggregate base course, the useable common excavation shall be placed to a minimum depth of 1'-0" below the bottom of the crushed aggregate base course plane. If useable shot-rock embankment is used it shall be placed to the bottom of the crushed aggregate base course.
- Asphalt or concrete, if utilized in the embankment, shall not be placed within two feet (2') of the finished surface, & shall be broken to 12 inch (12") minus material.



EXCEPTIONS TO TYPICAL SECTIONS

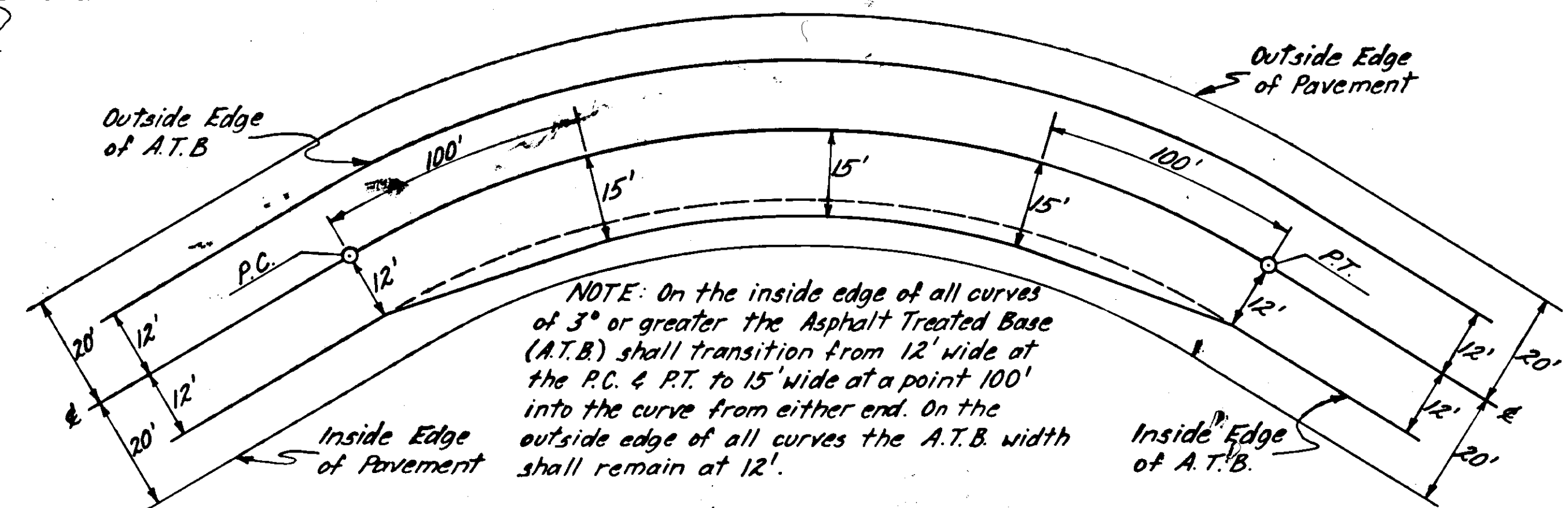
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	3	68



COMMON EXCAVATION

* See Clearing Summary Below

ROCK EXCAVATION



ASPHALT TREATED BASE COURSE TRANSITION DETAIL
NO SCALE

COMMON EXCAVATION TABLE				
STATION TO STATION	OFFSET	FORESLOPE		
		LT.	RT.	SLOPE
0+52+00	0+57+00	X		4:1
0+63+90	0+70+10		X	4:1
0+78+00	0+87+00		X	4:1
0+93+20	0+98+50	X		4:1
0+125+50	0+129+00		X	4:1
0+150+70	0+153+90	X		4:1

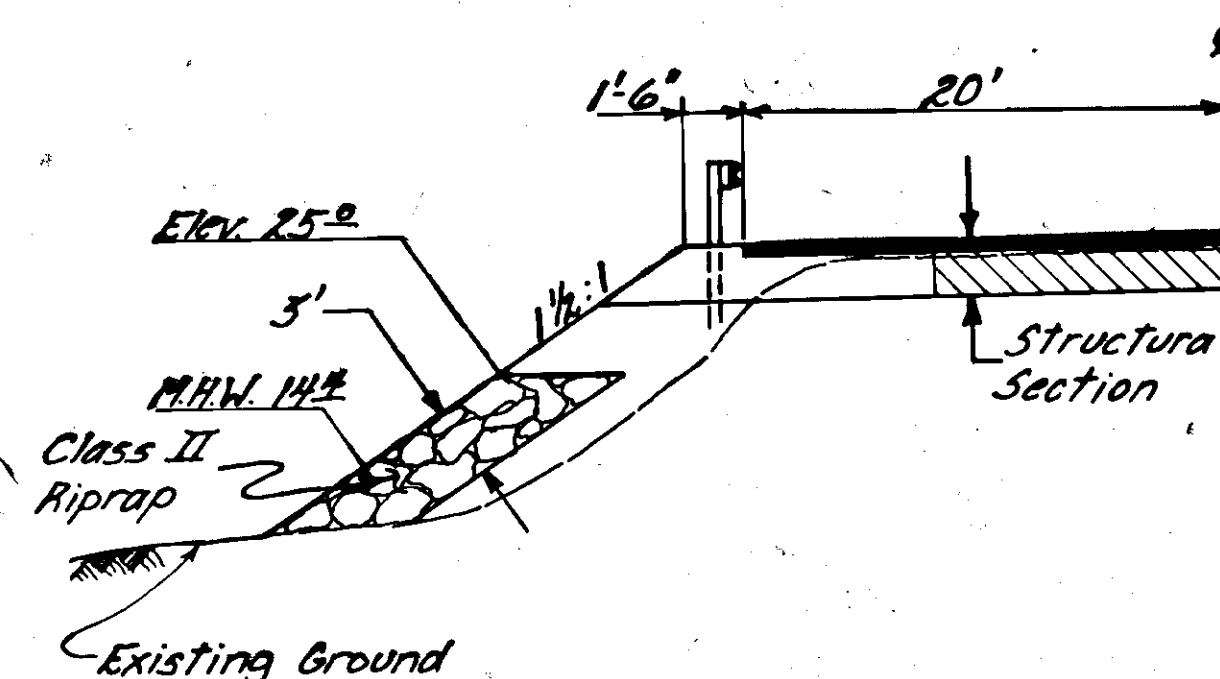
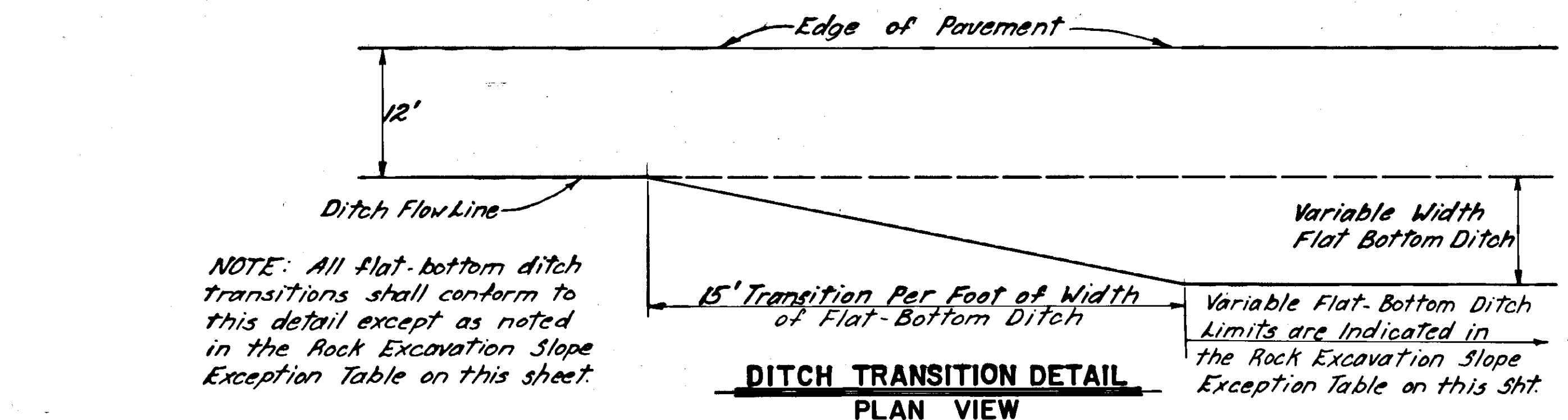
NOTE: This table consists of anticipated common excavation on side-hill cuts.

FILL SLOPE EXCEPTION TABLE				
STATION TO STATION	OFFSET	FORESLOPE		
		LEFT	RIGHT	SLOPE
0+33+20	0+34+60	X		1 1/2:1
0+42+25	0+42+50	X		2:1
0+42+50	0+45+50	X		1 1/2:1
0+48+50	0+51+50	X		1 1/2:1
0+70+00	0+71+50	X		4:1
0+84+00	0+90+25	X		1 1/2:1
0+98+80	0+108+50	X		1 1/2:1
0+109+00	0+123+00	X		1 1/2:1
0+123+50	0+124+50	X		2:1
0+129+00	0+131+00		X	4:1
0+131+00	0+134+20	X		1 1/4:1**
0+134+20	0+141+50	X		1 1/2:1
0+146+70	0+148+70	X		1 1/4:1**
0+148+70	0+149+75	X		2:1
0+154+10	0+155+00	X		1 1/2:1
0+156+25	0+157+25	X		1 1/4:1**
0+191+20	0+195+50	X		1 1/2:1

ROCK EXCAVATION SLOPE EXCEPTION TABLE									
STATION TO STATION	OFFSET	FORESLOPE		WIDTH, FLAT BOTTOM DITCH	BACK SLOPE	REMARKS			
		LT.	RT.						
0+41+00	0+43+00		X	4:1	12'	6'	09:1		
0+60+00	0+63+90		X	4:1	12'	8'	09:1		
0+75+00	0+77+50	X		4:1	8'	—	09:1		
0+120+50	0+123+05		X	4:1	12'	8'	09:1		
0+124+25	0+127+20	X		4:1	8'	—	09:1		
0+134+50	0+135+50		X	4:1	12'	10'	09:1		
0+142+50	0+144+50		X	4:1	12'	8'	09:1		
0+149+50	0+155+10		X	4:1	12'	4'	47:1		
0+155+70	0+158+40		X	4:1	12'	8'	47:1		
0+159+00	0+159+60	X		4:1	12'	4'	47:1		Talus Slope
0+160+00	0+167+00	X		4:1	12'	8'	47:1		
0+167+50		X		4:1	12'	12'	25:1		Transition
0+168+00		X		4:1	12'	15'	17:1		Transition
0+169+00	0+170+50	X		4:1	12'	22'	09:1		Wide Ditch for Detour
0+171+00		X		4:1	12'	19'	17:1		Transition
0+171+50		X		4:1	12'	15'	25:1		Transition
0+172+50	0+173+00	X		4:1	12'	8'	47:1		

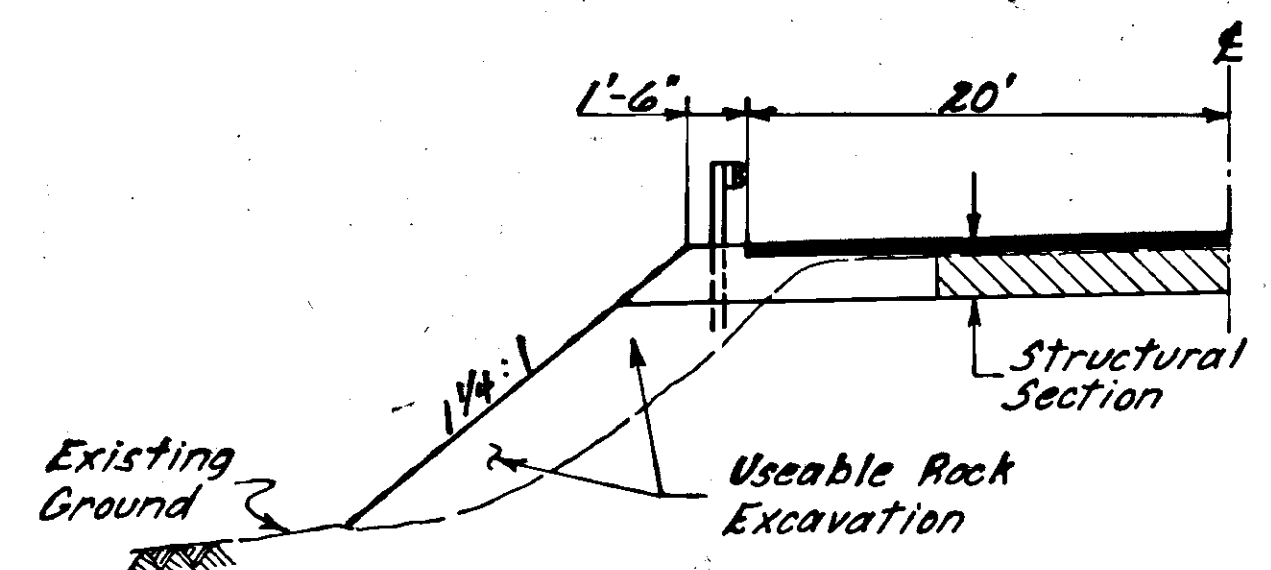
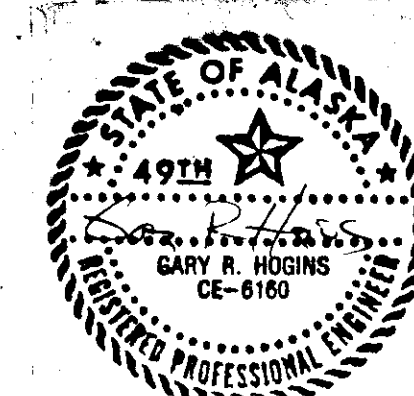
• - Indicates Abrupt Ditch Transition

CLEARING SUMMARY									
STATION TO STATION	OFFSET	DISTANCE		STATION TO STATION	OFFSET	DISTANCE		STATION TO STATION	DISTANCE
		LT.	RT.			LT.	RT.		
0+13+50	0+30+00		X	10'				0+133+50	0+139+50
0+34+80	0+45+00		X	5'					
0+58+00	0+63+00		X	10'				0+140+75	0+145+00
0+119+00	0+121+00		X	10'				0+169+50	0+185+00
								0+188+80	0+190+80
0+121+00	0+123+00		X	5'				0+192+50	0+200+50
								0+205+50	0+212+00
								0+216+50	0+220+30



CLASS II RIPRAP DETAIL
NO SCALE

CLASS II RIPRAP TABLE			
STATION TO STATION		STATION TO STATION	
0+140+35	0+140+80	0+140+75	0+145+00
0+185+60	0+188+60	0+169+50	0+185+00
0+212+40	0+215+90	0+188+80	0+190+80
		0+192+50	0+200+50
		0+205+50	0+212+00
		0+216+50	0+220+30



ROCK EMBANKMENT DETAIL
NO SCALE

ROCK EMBANKMENT TABLE			
STATION TO STATION		STATION TO STATION	
0+131+80	0+134+20	0+140+75	0+145+00
0+146+70	0+148+70	0+169+50	0+185+00
0+156+75	0+157+25	0+188+80	0+190+80

** - Embankment to be constructed from useable rock excavation, see Rock-Embankment Detail on this sheet.

ESTIMATE OF QUANTITIES

ITEM NUMBER	ITEM	UNIT	SHEET NUMBERS																				TOTAL QUANTITY
			8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26		
109(1)	Petroleum Adjustment	C.S.																					All Required
109(2)	D.B.E. and W.B.E. Adjustments	C.S.																					All Required
110(2)	Mobilization and Demobilization	L.S.																					All Required
111(1)	Temporary Erosion and Pollution Control	C.S.																					All Required
112(1)	Training Program	M.H.																					1,000.0
113(1)	Flagging	M.H.																					15,150.0
114(1)	Construction Surveying by the Contractor E.W.O.B	L.S.																					All Required
115(1)	Traffic Control E.W.O. B, 14, 18	L.S.																					All Required
115(2)	Construction Signs	S.F.																					All Required
115(15)	Temporary Pavement Markings	L.S.																					All Required
115(16)	Traffic Control at Cannery Creek	L.S.																					All Required
115(17)	Temporary Barriers	L.F.																					All Required
115(18)	Temporary Winter Striping E.W.O. 5	L.S.																					All Required
201(b)	Danger Tree Removal E.W.O. 1	S.F.																					194.9
201(2A)	Clearing and Grubbing E.W.O. B	ACRE	0.10	0.42	0.69	0.41	0.35	0.36		0.11	0.05	0.18	0.40	1.03	1.14	0.45	0.31	0.49	0.44	0.13	0.17		12.157
202(1)	Removal of Structures & Obstructions	L.S.								Refer to Sheet No. 36												All Required	
202(4)	Removal of Culvert Pipe C.O. 4, 6, 7, 8 E.W.O. B	L.F.	757	273	218	481	210	276	437	195	562	239	451	205	249	90	221	58	312	148	43		6272
202(1A)	Removal of Existing Structure EWO 9	L.S.																					All Required
202(9)	Single Mailbox Installation	EACH			1	2	4	1	2	1	6	1		1		1				1			22
202(11)	Double Mailbox Installation C.O. 9	EACH				3	5		11		2	4		3									28.0
202(12)	Removal of Cannery Creek Bridge	L.S.																					All Required
203(1)	Common Excavation C.O. 7 EWO 6, 25	Cu. Yd.	1,819	94	8,538	1,111	1,151	967	1,893	1,548	1,500	900	1,418	1,731	1,226	1,707	525	426	393	243	667		27,022
203(2)	Rock Excavation E.W.O. B	Cu. Yd.	670	3,721	5,809	4,182	2,898	13,726	1,515	1,152	629	7,110	12,240	38,579	52,287	15,297	5,851	12,368	13,512	3,109	1,088		212,492
203(3)	Sloughage Excavation E.W.O. 25	Cu. Yd.																					13,181.8
203(8)	Controlled Blasting E.W.O. B	SQ. YD.	602.8	1,455.5	3,869.5	2,272.4	1,647.3	2,547.1		316.6		1,776.4	3,350.2	6,977.9	7,616.8	2,322.4	1,966.9	2,561.1	1,861.1	538.9	1,166.7		38,049
203(9)	Rock Bolts	L.F.												840	1,200	160							2531.5
203(10)	Drain Holes	L.F.												40	320	40							2,000
203(11)	Pavement Removal E.W.O. 6	SQ. YD.																					38,825
301(1)	Crushed Aggregate Base Course EWO B C.O. 7, 9	TON	621.92	857.52	1,074.97	910.88	1,000.26	1,112.78	1,286.51	1,066.66	1,174.06	1,021.19	1,047.89	949.68	744.05	815.86	851.05	709.82	810.59	616.33	1,038.38		18,661.9
306(1)	Asphalt Treated Base Course EWO B	TON	785.44	837.84	1,309.00	1,047.20	1,104.23	1,431.68	1,352.63	1,317.37	1,312.60	1,180.75	1,296.64	1,199.68	872.67	1,010.79	1,117.51	872.67	959.93	860.86			21,982.7
401(1)	Asphalt Concrete, Type I EWO B C.O. 7, 9	TON	477.57	515.82	834.00	684.00	732.95	901.25	932.33	818.67	838.33	776.67	778.33	731.67	559.67	669.00	660.00	551.67	617.33	551.21	750.20		14,247.4
401(2)	Asphalt Cement, AC-5 EWO B C.O. 7, 9	TON	60.07	64.46	103.92	84.91	88.15	116.17	113.72	101.81	102.80	93.83	98.57	91.89	70.04	80.57	84.30	69.34	75.44	67.50	45.01		1,580.73
402(1)	CSS-1 Asphalt for Tack Coat	TON	2.00	2.14	3.34	2.66	2.86	3.66	3.44	3.36	3.36	3.00	3.32	3.04	2.22	2.74	2.84	2.22	2.44	2.18	1.68		26.09
403(2)	MC-30 Liquid Asphalt for Prime Coat C.O. 7	TON	1.20	1.46	2.29	2.17	2.48	2.99	3.49	2.24	2.69	2.57	1.96	1.94	1.67	1.66	1.57	1.55	1.76	1.81	3.24		18.38

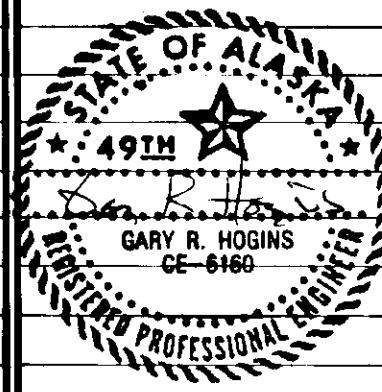
STATE OF ALASKA

49TH

GARY R. HODGINS

CE-6160

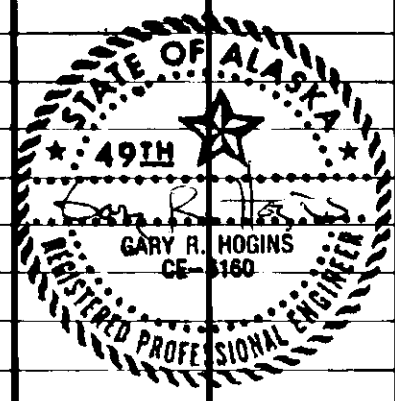
REGISTERED PROFESSIONAL ENGINEER



ESTIMATE OF QUANTITIES (CONTINUED)

ITEM NUMBER	ITEM	UNIT	SHEET NUMBERS																				TOTAL QUANTITY
			8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26		
501(2)	Retaining Wall Subfooting EWD 11	L.S.																				All Required	
501(1)	Class A Concrete CD2	L.S.																				All Required	
502(1)	Prestressed Structural Members (Bulb Tee Girders)	EACH																				5	
503(1)	Reinforcing Steel CD2	L.S.																				All Required	
503(2)	Subfooting Detail Installation EWD 12	L.S.																				All Required	
506(1)	Treated Timber	L.S.																				All Required	
507(5)	Concrete Bridge Rail	L.F.																				160.6	
509(1)	Deck Protection	L.S.																				All Required	
603(22-6)	6" Pipe CD 7	L.F.																				160	
603(22-18)	18" Pipe CD 3, 4, 7, 9 EWD 8	L.F.	118	166	34	150	396	194	306	66	310	184	70	80								871.0	
603(22-24)	24" Pipe CD 3, 4, 6	L.F.		76	230	292	144	40	86	140	286	206	232	158	222	144	78	134	202	266	42	1946.0	
603(22-36)	36" Pipe CD 3, 4, 6 EWD 4	L.F.	728	172		64				66			86	74	66	178		104				2911.0	
603(22-48)	48" Pipe CD 3, 4, 7	L.F.						120	116		78		76									974.0	
603(22-48)	36" Corr. Alum. Pipe E.W.D. 4	L.F.																				674.0	
603(22-48)																						600	
604(3)	Reconstruct Existing Manhole	EACH	2	1				3														6	
604(4)	Adjust Existing Manhole	EACH	2																			2	
604(5A)	Inlet, Type A C.D. 7	EACH	1																			+ 2	
604(5B)	Inlet, Type B	EACH	2	1																		3	
604(5C)	Inlet, Type "Field"	EACH		1																		1	
606(1)	Beam Type Guard Rail, Type I Post CD 8, EWD 21	L.F.		637.5	1,443.0	649.5	591.5	566.0	501.5	811.0	1,364.0	961.0	1,050.0	777.5	952.5	751.25	1,092.0	671.5	796.0	403.0	25.0	13,823.3	
606(5)	Removal and Disposal of Guard Rail	L.F.		632.0	1,179.0	230.0						375.0	722.5	742.5	750.0	620.0	810.0	210.0	180.0	390.0		7438.0	
606(6)	End Anchorages	EACH		1	1	4	6	3	5	2	4	8	4	2	2	9	3	2	2	2	1	61	
606(8)	Three Beam Guardrail EWD 21	L.S.																				All Required	
607(7)	Fence Extension EWD 24	L.S.																				All Required	
607(3)	Chain Link Fence 4 Ft.	L.F.											300.0									300.0	
609(2)	Curb & Gutter, Type "Standard"	L.F.	780	179																		987.0	
611(1A)	Riprap, Class I C.D. 7	C.Y.				482		29.14	30.62		29.14		34.88			16.85	13.25	2.37				159.2	
611(1B)	Riprap, Class II C.D. 1	C.Y.											1830			1,033.0				5830		1350.4	
628(13)	Misc. Water and Sewer Systems E.W.D. 20	L.S.																				All Required	
628(14)	Water Main Relocation E.W.D. 13	L.S.																				All Required	
613(1)	Right-of-Way Monuments	EACH	2	3			2	1	2					3			1	2				2	
614(1)	Survey Monuments	EACH	1	1	3	1	1	2	1	1	2	1	2	2		2	2	1		2	2	27	
614(2)	Monument Cases	EACH	1	1	3	1	1	2	1	1	2	1	2	2		2	2	1		2	2	27	
615(1)	Standard Sign C.D. 5	SQ. FT.	150	625	1500		1125	1635		860	3635					1950	1500		2300	3875	490	281.80	
627(1)	Watering	M. GAL.	12.0	12.0	20.0	16.0	16.0	19.0	21.0	19.0	19.0	17.0	12.0	17.0	13.0	17.0	16.0	13.0	15.0	15.0	12.0	232.5	
628(15)	Waterline Trench Block E.W.D. 17	L.S.																				All Required	
629(1)	Fval Line Modification E.W.D. 17	L.S.																				All Required	
631(2)	Stacked Rock Wall E.W.D. 14	L.S.																				All Required	
631(2A)	Stacked Rock Wall Addendum E.W.D. 23	L.S.																				All Required	
628(7)	Fire Hydrant Relocation	EACH	2																			2	
631(3)	Concrete Retaining Walls E.W.D. 16	L.S.																				All Required	
628(11)	Adjustment of Valve Box	EACH	4	1																		7	
628(12)	Domestic Water Systems	L.S.																				All Required	
631(1)	Rock Retaining Wall	SQ. YD.					93.8					39.1										174.3	
635(2)	Insulation Board C.D. 3	L.F.	160	125																		132.9	
639(1)	Approaches C.O. 6, 7, 8, 9	EACH	1	2	2	5	13	6	15	5	12	12	3	5	2	3	1	1				105	
660(9)	Traffic Counter Loop Detector E.W.D. 10	L.S.																				95	
670(1)	Painted Traffic Markings	L.S.																				All Required	
631(4)	Wet Point Retaining Wall E.W.D. 10	L.S.																				All Required	
631(4A)	Wet Point Retaining Wall Add. E.W.D. 22	L.S.																				All Required	
680(1)	Telephone System Relocation	L.S.																				All Required	
681(1)	Electric Power Relocation	L.S.																				All Required	
635(3)	Waterline Insulation Board E.W.D. 3	L.F.																				29.8	
670(8)	Recessed Pavement Markers E.W.D. 15	EACH																				451	
681(2)	Guywire Adjustment E.W.D. 2	L.S.																				All Required	
681(3)	Pole Protection Device E.W.D. 7	L.S.																				All Required	

STATE OF ALASKA
49TH
GARY R. HOGINS
CE-180
REGISTERED PROFESSIONAL ENGINEER



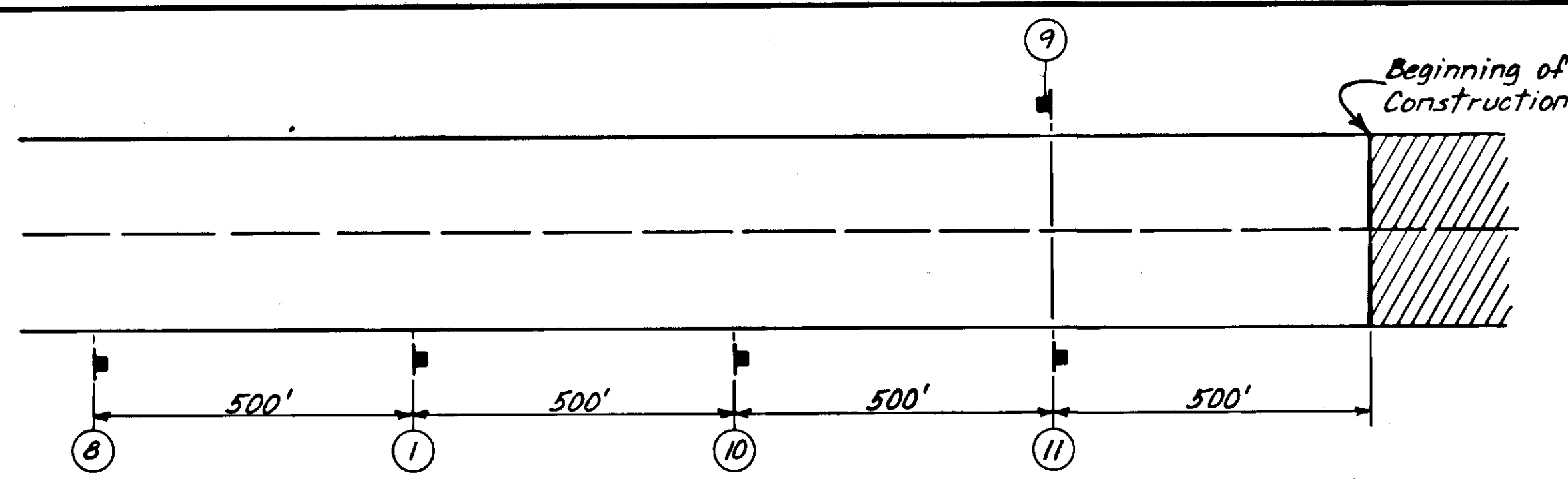
TRAFFIC CONTROL PLAN

CONSTRUCTION ZONE SIGN SCHEDULE			
SIGN NO.	CODE NO.	LEGEND	SIZE
1	CW20-1	ROAD CONSTRUCTION 1500 FEET	48" x 48"
2	CW20-2	DETOUR 1000 FEET	48" x 48"
3	CW20-4	ONE LANE ROAD 1000 FEET	48" x 48"
4	CW20-7	Symbol of Flagman Supplemental Plate 500 FEET	36" x 36" 24" x 18"
5	CW22-1	BLASTING ZONE 1000 FEET	48" x 48"
6	CW22-2	TURN OFF TWO-WAY RADIO	42" x 36"
7	CW22-3	END BLASTING ZONE	42" x 36"
8	G20-1	ROAD CONSTRUCTION NEXT 5 MILES	60" x 36"
9	G20-2	END CONSTRUCTION	60" x 24"
10	CW20-1	ROAD CONSTRUCTION 1000 FEET	48" x 48"
11	CW20-1	ROAD CONSTRUCTION 500 FEET	48" x 48"
12	CW20-5	LEFT LANE CLOSED 500 FEET	48" x 48"
13	CW20-5	RIGHT LANE CLOSED 500 FEET	48" x 48"
14	CW1-3L		36" x 36"
15	CW1-3R		36" x 36"
16	CW13-1	30 M.P.H.	24" x 24"
17	R11-2	ROAD CLOSED	48" x 30"
18	M4-10L	← DETOUR	48" x 18"
19	M4-10R	DETOUR →	48" x 18"

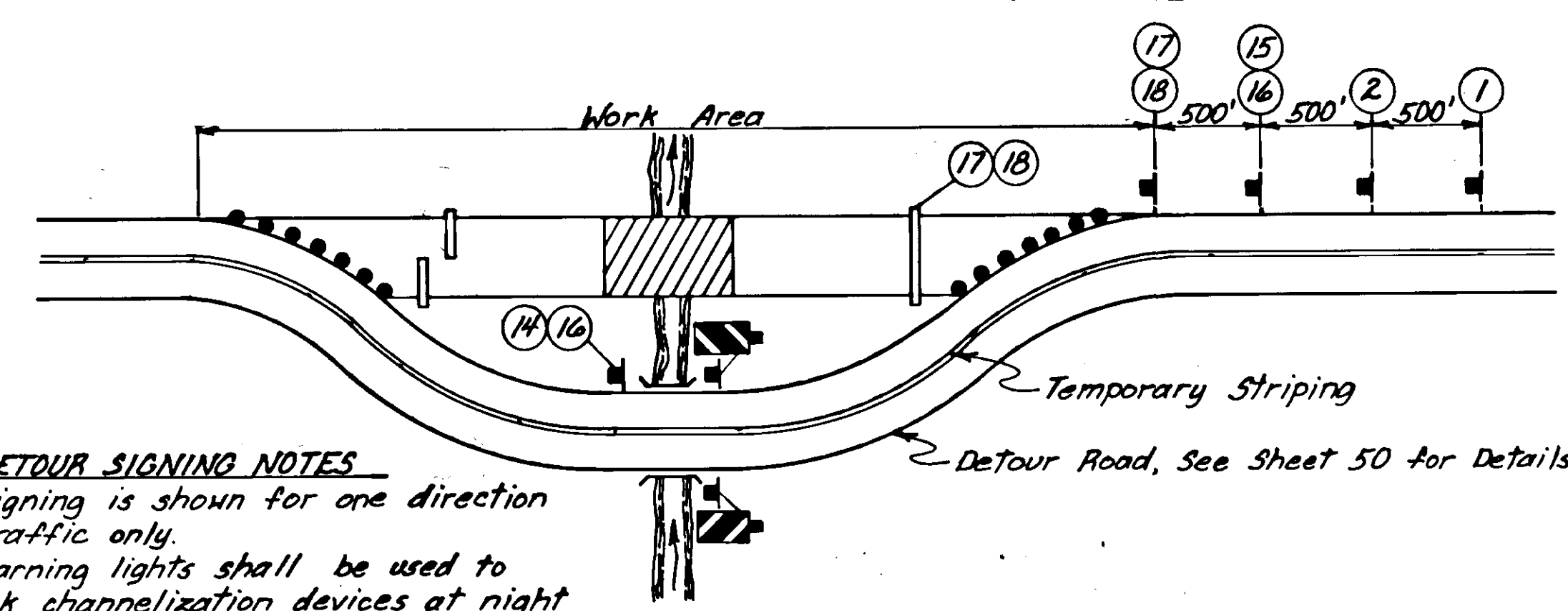
NOTES: Other signs may be required by the engineer or used at the contractors option upon approval of the engineer.
All signs shall be high intensity.

LEGEND

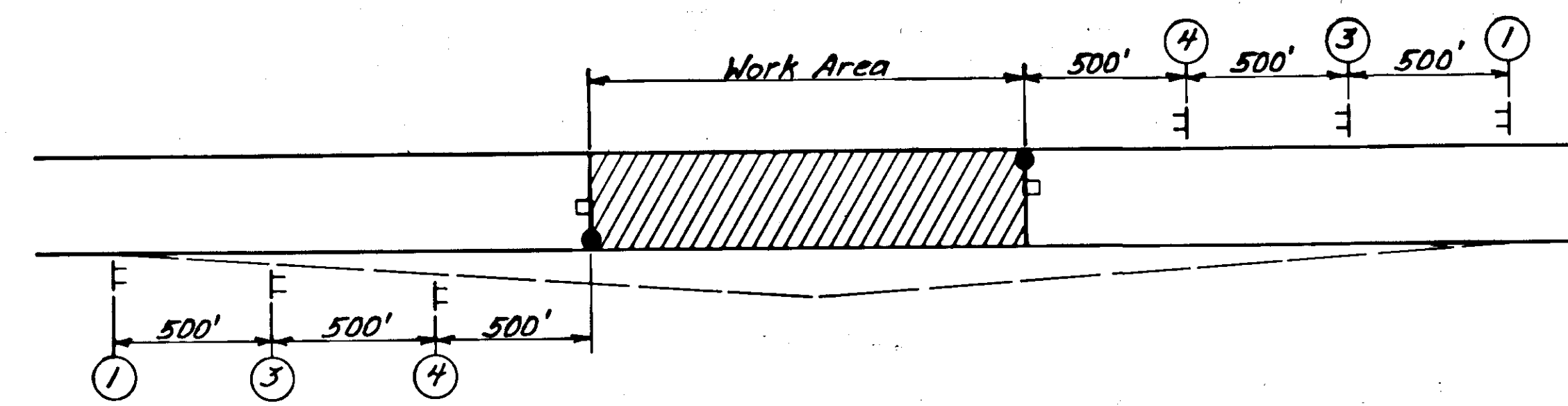
- Flag Person Station
- Fixed Sign
- Portable Sign
- Sign No., See Sign Schedule Above
- Channelization Devices
- Type III Barricade



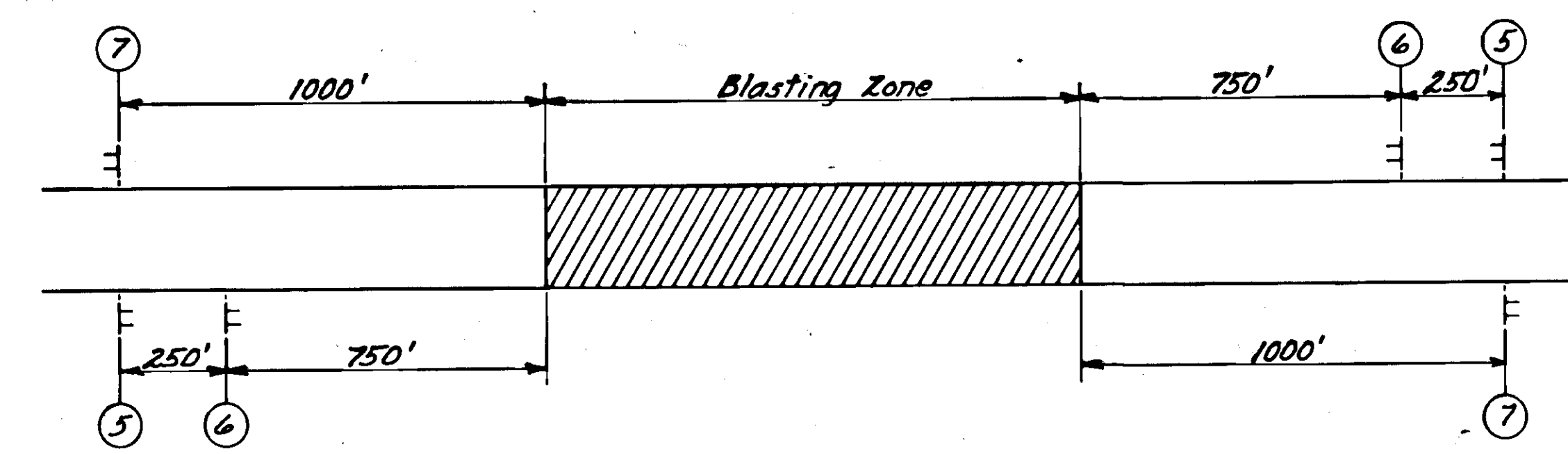
PROJECT IDENTIFICATION SIGNING DETAIL
NO SCALE



TYPICAL DETOUR SIGNING
NO SCALE



SIGNS REQUIRED AT EACH WORK AREA

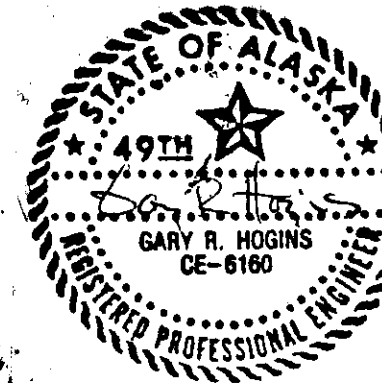


ADDITIONAL SIGN REQUIRED WHILE BLASTING
NO SCALE

TRAFFIC CONTROL NOTES

- Construction signing, flagging, detours, & general traffic control features shall conform to the guidelines set forth in the "C" Series Standard Drawings and the applicable portions of Section 107 & Section 115 of the Specifications, The Alaska Traffic Manual, & The Manual of Uniform Traffic Control Devices.
- The contractor shall specify, in writing to the engineer, which employee he has designated the responsibility of installing & maintaining all required Traffic Control Devices, and how the designee can be contacted at any time of the day. All Traffic Control Elements Shall Be Maintained 24 Hours A Day.
- All work involved with the installation, removal, & maintenance of construction signs shall be paid for under item 115(2), Construction Signs.
- Type II & type III barricades shall be fitted with warning lights as detailed in section 6E of the Manual on Uniform Traffic Control Devices.
- The project identification signing shall be as per The Manual of Uniform Traffic Control Devices.
- Signing shall be in place only when the conditions exist for which the signs are intended.
- The contractor shall keep the roadway in a safe & traversable condition free of rutting or washboarding as directed by the engineer.
- A minimum roadway width of 20' shall be maintained for 2-way traffic, and a width of 10' shall be maintained for 1-way traffic.
- The following road closure shall be implemented for traffic control for blasting sidehill cuts & the resultant muck pile excavation:
 - The roadway may be closed 10 minutes prior to a blast. If the blast is not made within this 10 minute time frame, the roadway shall be re-opened allowing both lanes to clear of traffic.
 - After a blast, the contractor shall work towards opening one lane of traffic. Upon opening one lane, both Northbound & Southbound traffic shall be allowed through the construction site one time each.
 - After the traffic is initially cleared each way through the construction site, the contractor may once again completely close the roadway for a maximum of 30 minutes. At the end of this period, both lanes of traffic shall once again be cleared. This cycle shall be continued until the traveling public has full & unrestricted use of the facility. Timing for 2-way traffic as indicated in note 10 on sheet 7 shall apply.
 - Only one segment of the highway may be closed at a time. At a given work site, if the work has progressed allowing for 2-way traffic, the next 30 minute closure may involve a different segment of the project.
 - The time that the closure started & the time that the roadway will open for traffic (one-way or two-way) shall be posted at the site of the closure in view of the traveling public.
 - Prior to a blast, the contractor shall notify the Alaska State Troopers & the Ketchikan Fire Dept. as to the time & location of the blast.

TRAFFIC CONTROL NOTES ARE CONTINUED ON SHEET 7.



STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920 (17) 8 67453	1987	7	68

TRAFFIC CONTROL PLAN (CONTINUED)

TRAFFIC CONTROL NOTES (CONTINUED)

10. The highway shall be open for 2-way traffic from 4:15 P.M. to 6:00 P.M. & from 6:00 A.M. to 8:30 A.M., & any time that contract work is not being performed. The exception to the above statement is the time allowed to lower the road grade between 0+23+00 & 0+34+00. In this area twenty-four hour continuous one-way traffic will be allowed, with the following provisions.

- Flagmen will be used to control traffic as opposed to the use of mechanical or electrical devices.
- "Jersey Type" concrete barriers shall be used to separate the one-way travel lane from the adjacent work site. See Suggested Work Sequence Schematic on this sheet.
- During hours of darkness, temporary illumination will be required. The minimum level of illumination shall average 2.0 foot candles on the roadway detour surface & at flag person stations.
- Each lane shall have a suitable driving surface subject to the project engineers approval prior to allowing traffic to be rerouted.
- Once the contractor institutes 24 hour one-way traffic, the highway shall be reopened for two-way traffic within twelve (12) days.

11. All portable concrete barriers shall conform to Standard Drawing G-45.00 & the following stipulations.

- All barrier sections in place shall be fastened together at all times.
- Barrier approach end sections shall be flared away from traffic & marked with Type II barricades or drums.

12. Upon the removal of the existing guard rail, a temporary barrier and/or temporary shoulder delineation is to be installed & shall remain in place until the installation of the new guard rail. See Suggested Shoulder Delineation Schematic on this sheet. This shall apply within the following limits.

Sta. 0+16+00 to Sta. 0+32+00
Sta. 0+43+00 to Sta. 0+52+00
Sta. 0+119+00 to Sta. 0+164+00
Sta. 0+174+00 to Sta. 0+188+00

A 10' offset is to be maintained between the outside edge of the traveled way & the hinge point.

13. Once the existing asphalt is stripped from a given section of roadway, the roadway embankment shall be constructed to grade and the asphalt treated base course placed full width & depth within 14 days. The first lift of A.T.B. may be placed during marginal weather conditions at the discretion of the engineer.

14. The contractor shall keep the public informed of his construction activities through the use of the local news media. Advance notice of 24 Hr. one-lane traffic & detours shall be published in the local newspaper & broadcast over the local radio & T.V. stations for 3 days prior to each activity.

During the rock excavation phase of the project, the contractor shall maintain a recorder telephone message indicating anticipated time of a proposed blast, anticipated duration of road closure, & the location (milepost) of the blast site. The message shall be updated daily by 7:00 P.M. for the following days work schedule. This telephone number shall be prominently displayed on signs & shall be announced through the use of the local media.

15. Shoulder drop-offs greater than 2" shall not be allowed during non-working hours.

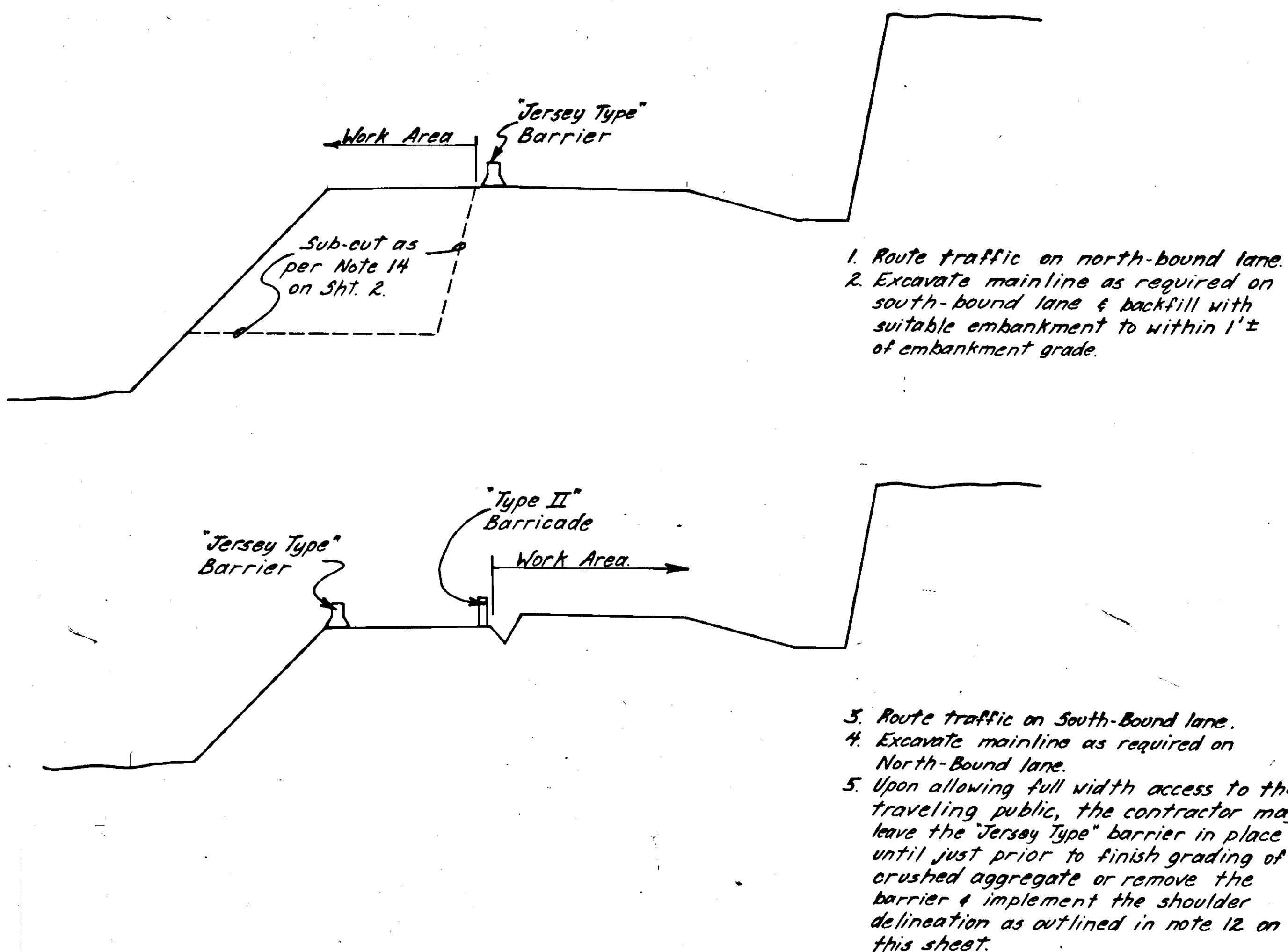
16. Refer to plan sh. 50 for a suggested detour plan for the bridge construction at Cannery Creek. If the contractor elects to bridge the creek with a structure, he shall submit to the engineer his structure design for approval. The contractor's proposed vehicle loading shall be included in this submittal. The minimum design loading shall be HS-20.

17. Any damage to the existing pavement prior to its removal for structural section construction shall be repaired or replaced with concrete, asphalt pavement, or an acceptable bituminous surface treatment. This includes all pavement patches for culverts & detours. Prior to rerouting the traffic over detours at the Cannery Creek Bridge & the retaining wall sites, the detours traveled way shall be surfaced.

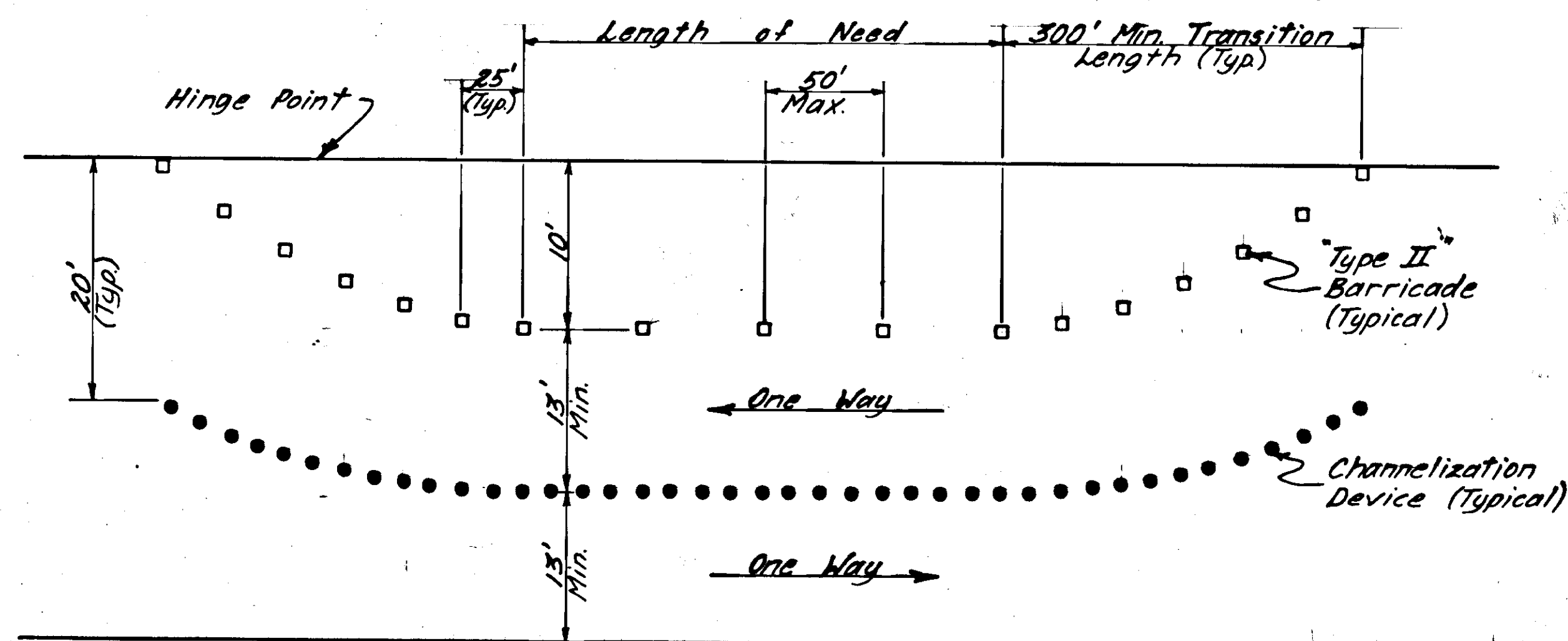
THE FOLLOWING IS A TABULATION OF TEMPORARY BARRIER SITES.

STATION TO STATION	L.F.	REMARKS
0+24+00 to 0+34+00	1000	Approx. on & See Note 10, this sheet
0+24+00 to 0+34+00	1000	Left Shoulder See Note 10, this sheet
0+58+70, Lt. to 0+59+40, Lt.	70	Retaining Wall Site
0+114+25, Lt. to 0+115+75, Lt.	150	Retaining Wall Site
0+11+50, Lt. to 0+14+20, Lt.	27.5	Cannery Creek Detour
0+12+10, Rt. to 0+13+50, Rt.	140	Cannery Creek Detour
0+173+60, Lt. to 0+175+60, Lt.	200	Retaining Wall Site
0+168+63, Lt. to 0+170+90, Lt.	227	8' Lt. of Cannery Cr. Detour (used during Removal of said Detour)

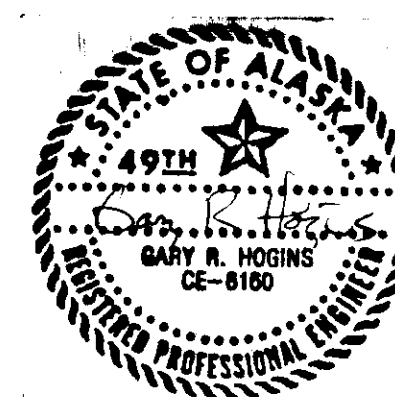
NOTE: Temporary Barrier May Consist of Guard Rail or Concrete "Jersey Type" Barrier.



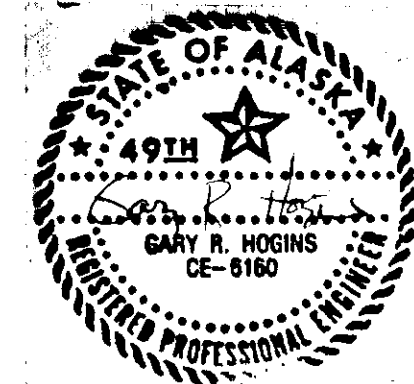
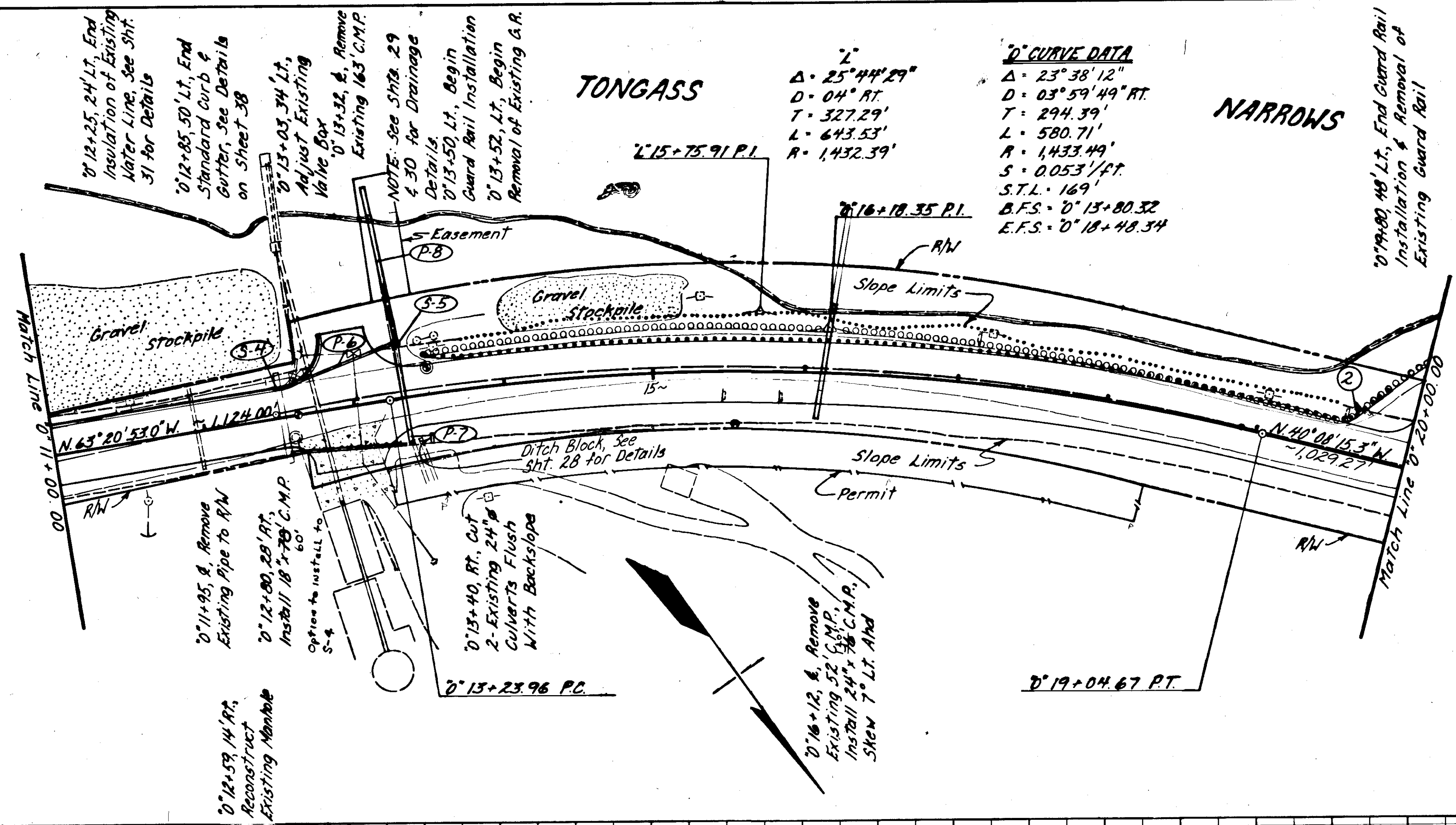
24 HOUR ONE-LANE CLOSURE SUGGESTED WORK SEQUENCE SCHEMATIC STA. "0" 23+00.00 TO STA. "0" 34+00.00



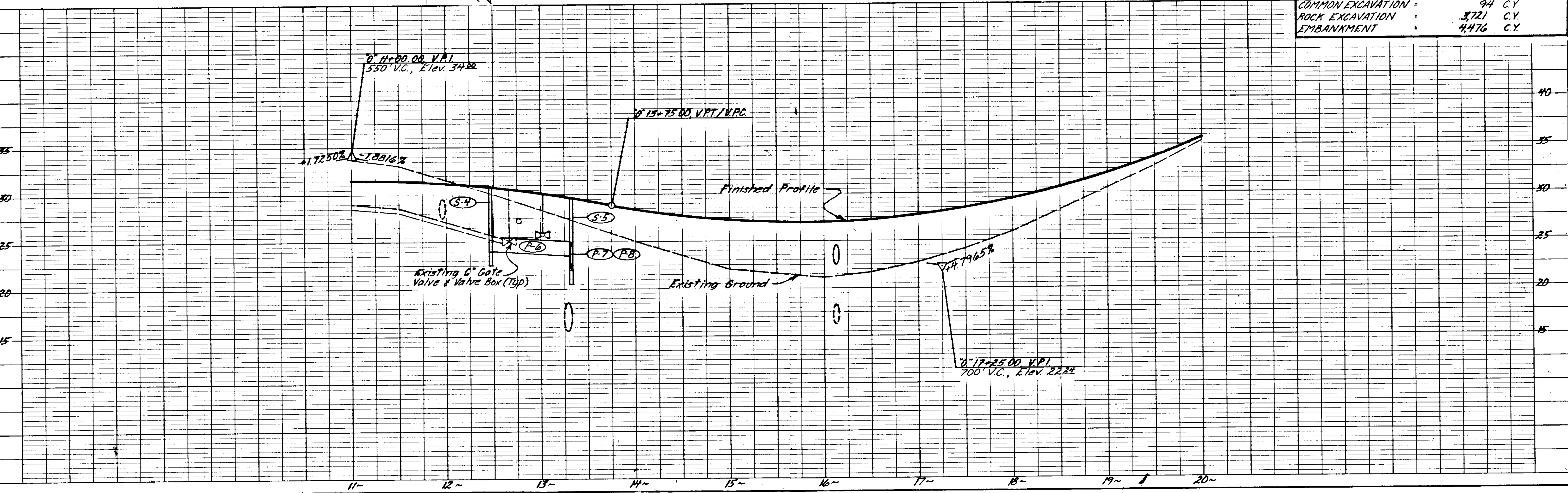
SUGGESTED SHOULDER DELINEATION SCHEMATIC

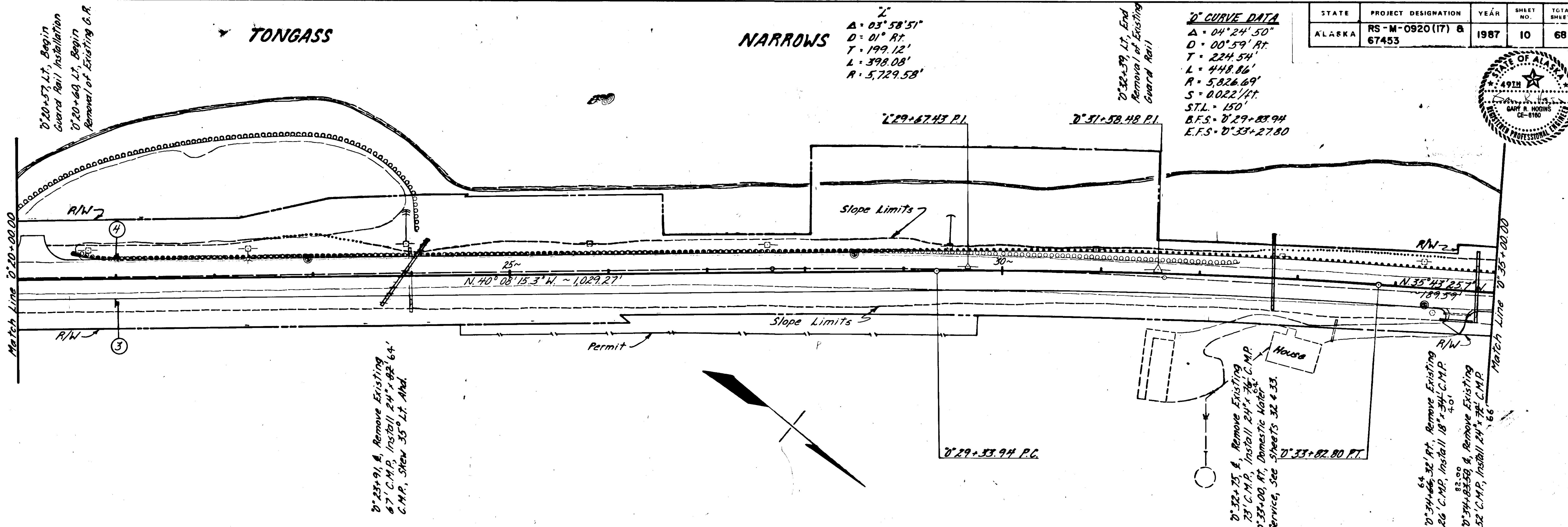


STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	9	68

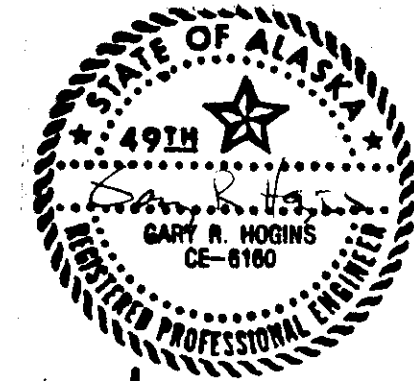


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ROCK EXCAVATION	=	3,721 C.Y.
EMBANKMENT	=	4,476 C.Y.

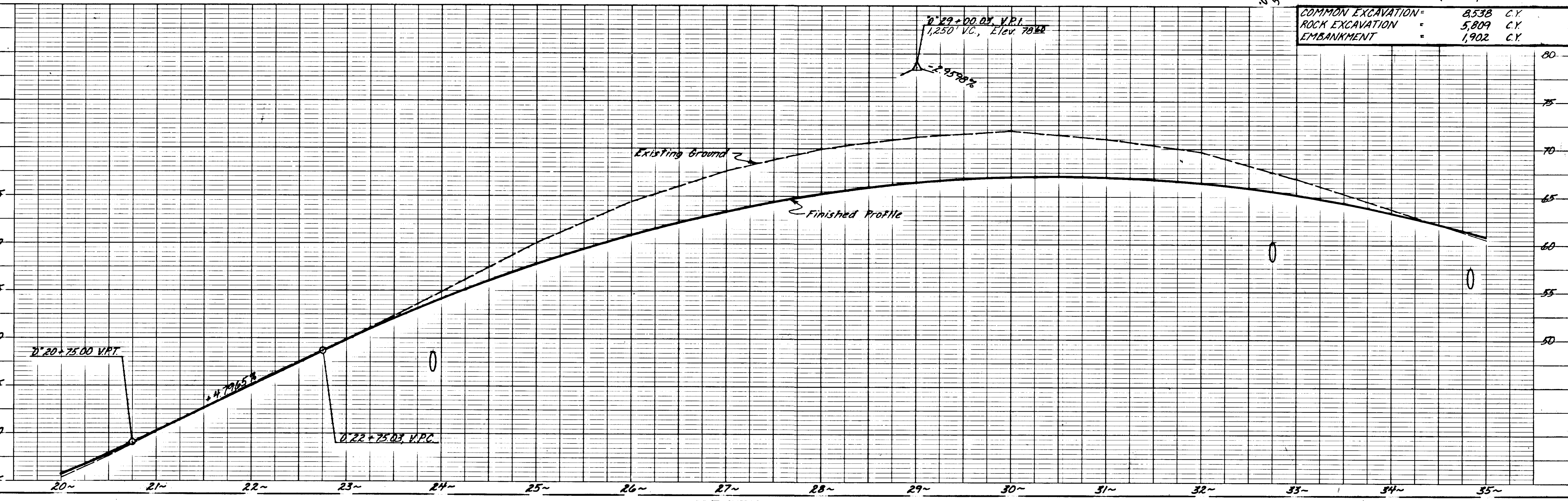




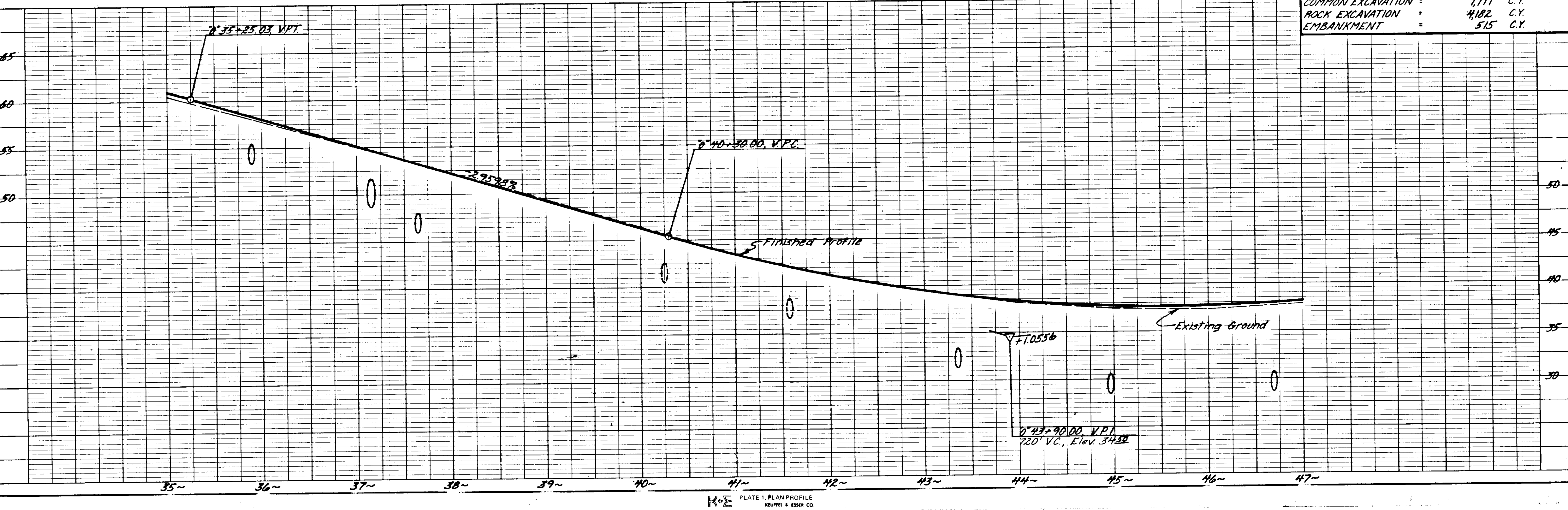
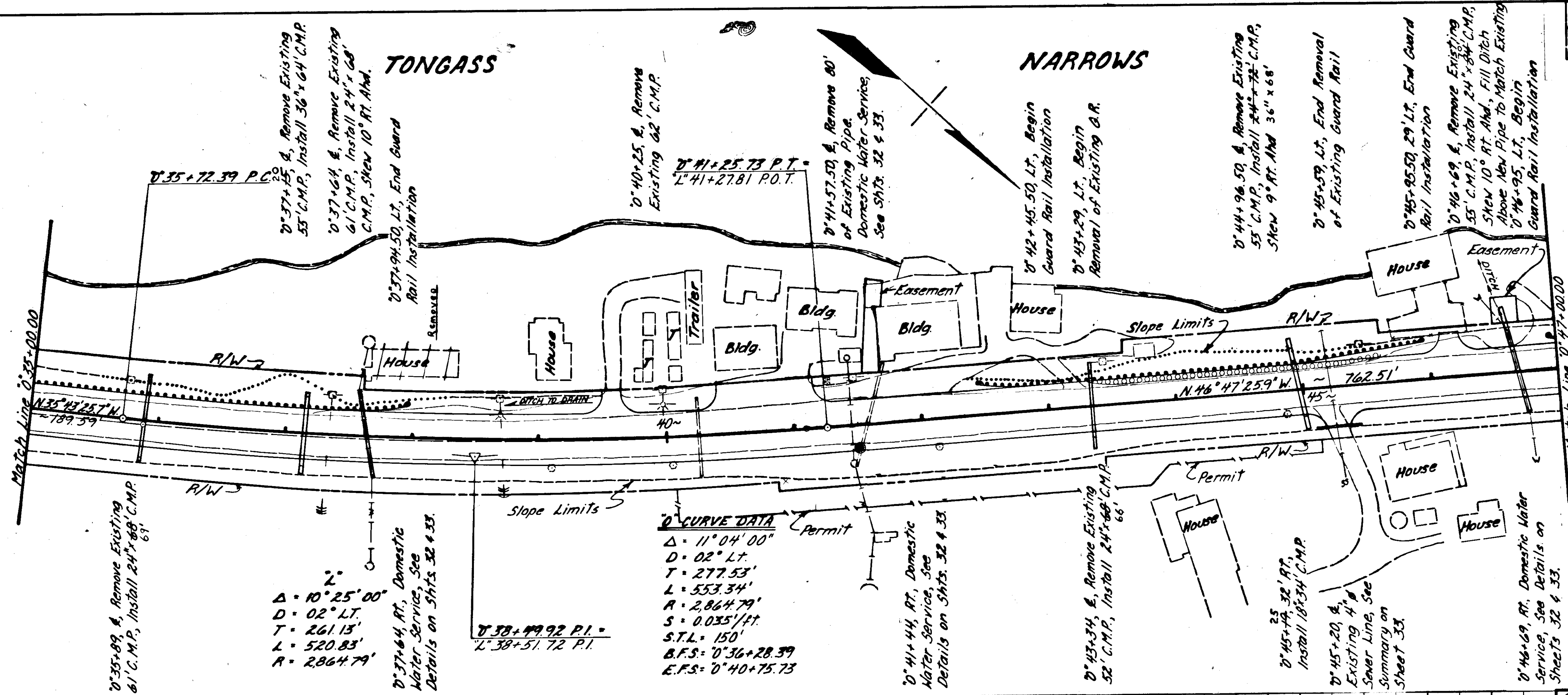
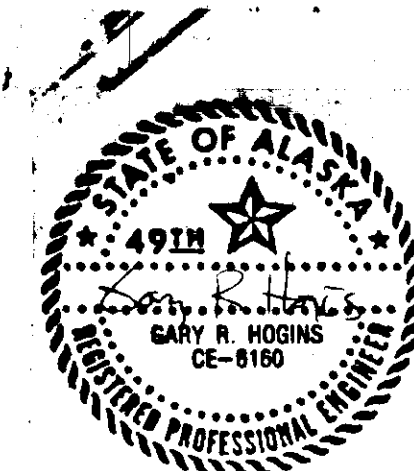
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	10	68



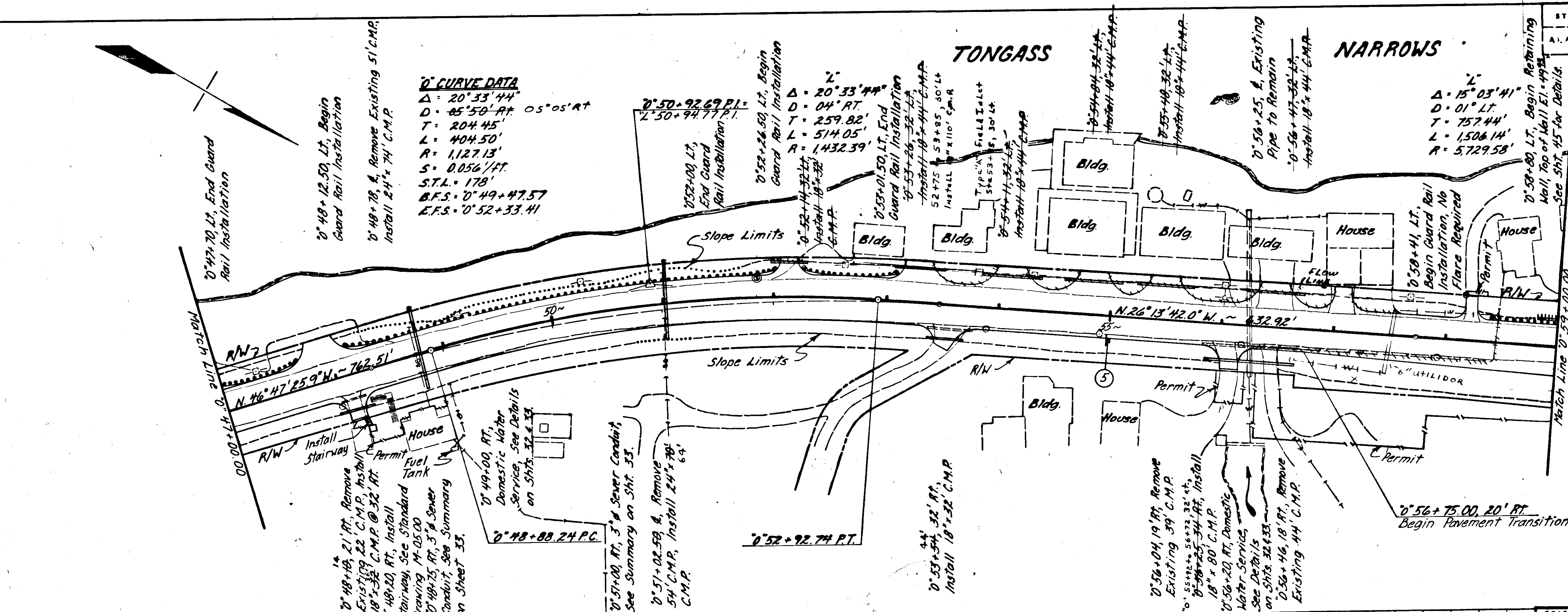
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ROCK EXCAVATION	=	5,809	C.Y.
EMBANKMENT	=	1,902	C.Y.



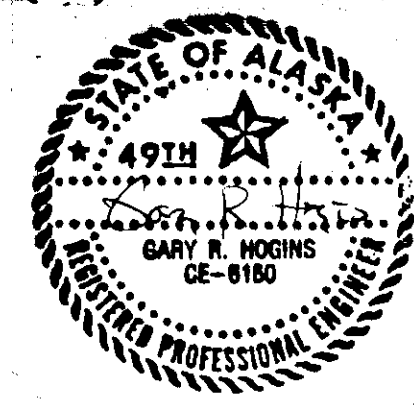
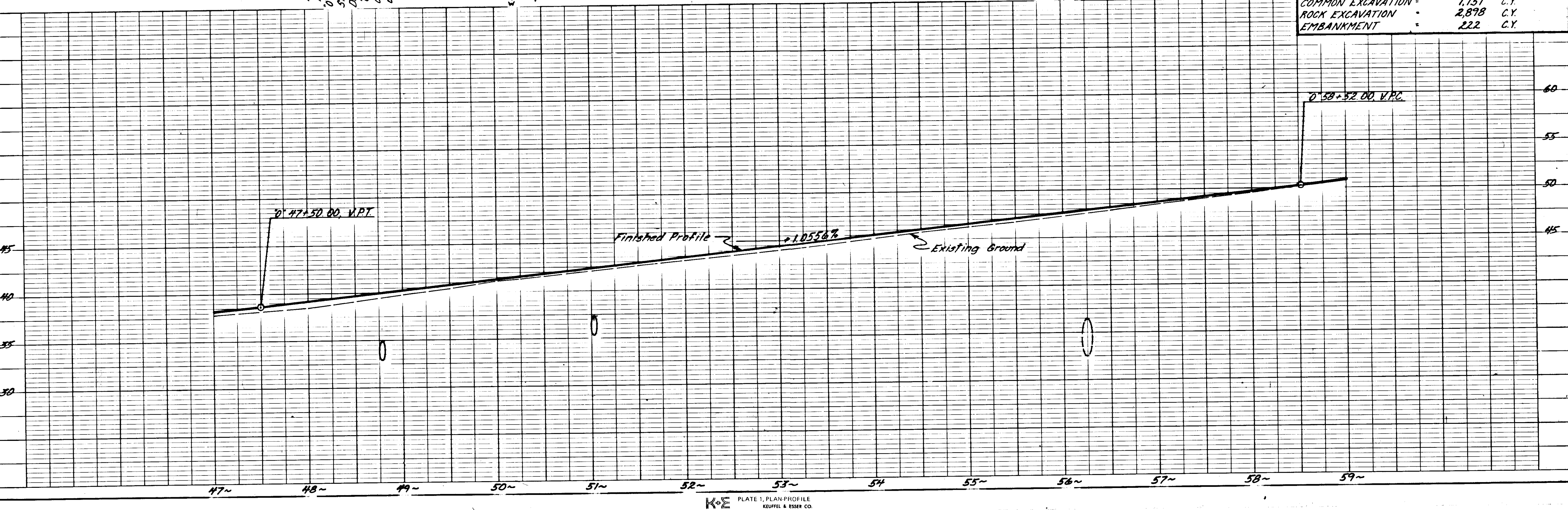
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	11	68



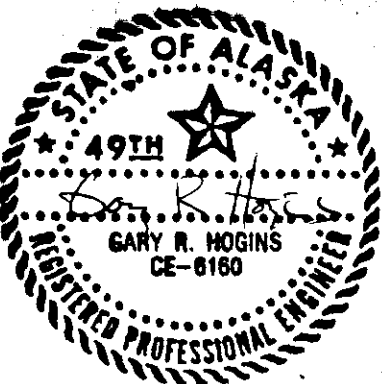
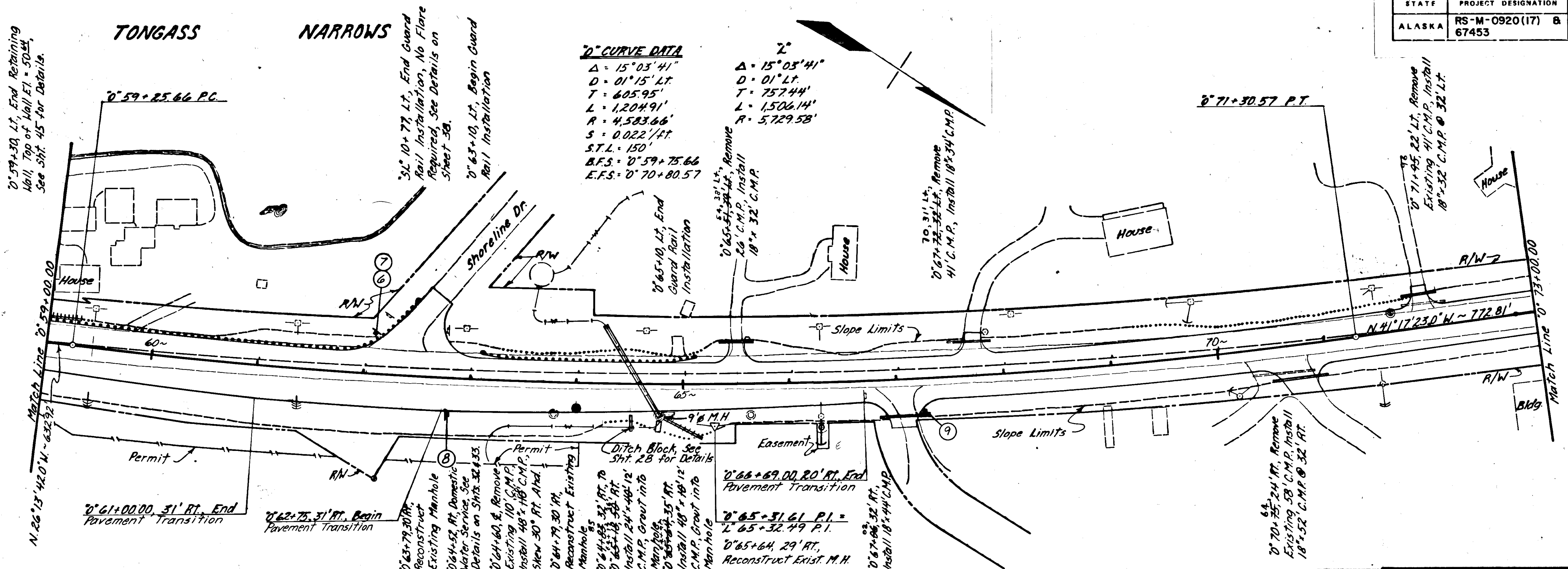
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ROCK EXCAVATION	=	4,182 C.Y.
EMBANKMENT	=	515 C.Y.



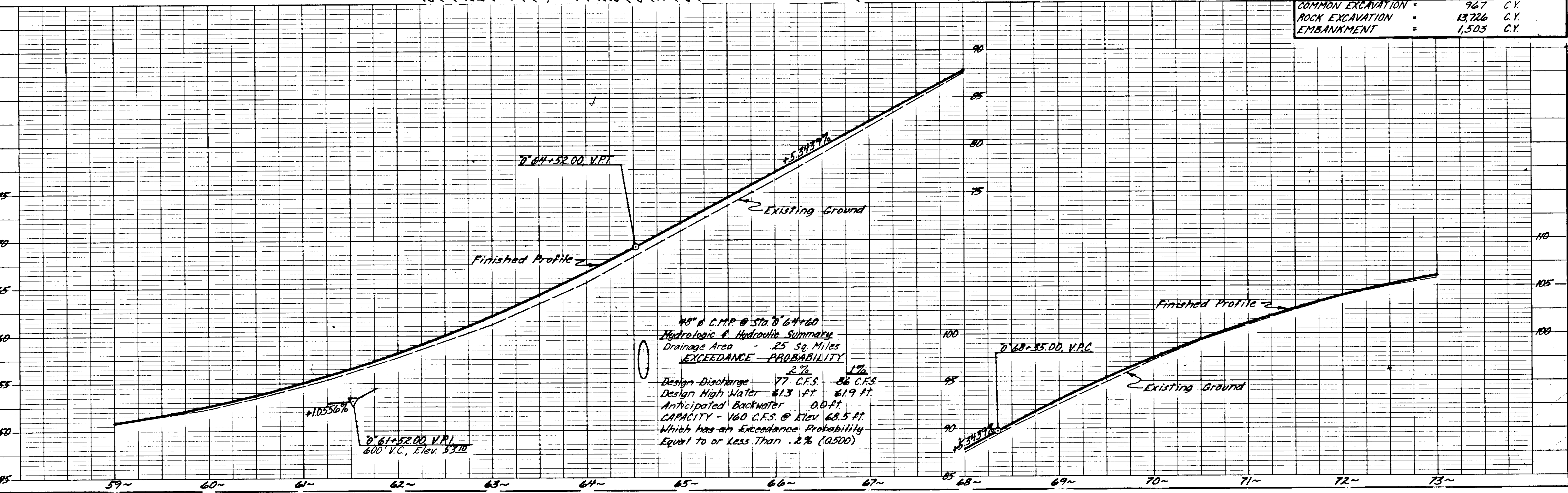
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ROCK EXCAVATION	=	2,878	C.Y.
EMBANKMENT	=	222	C.Y.

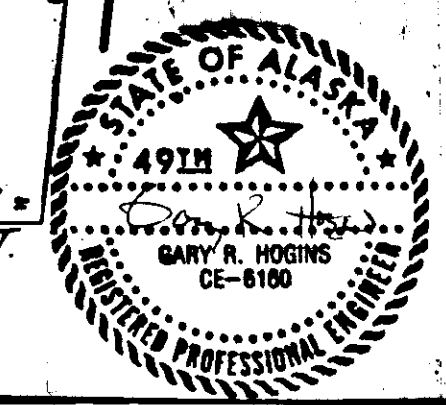


STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) 8 67453	1987	13	68

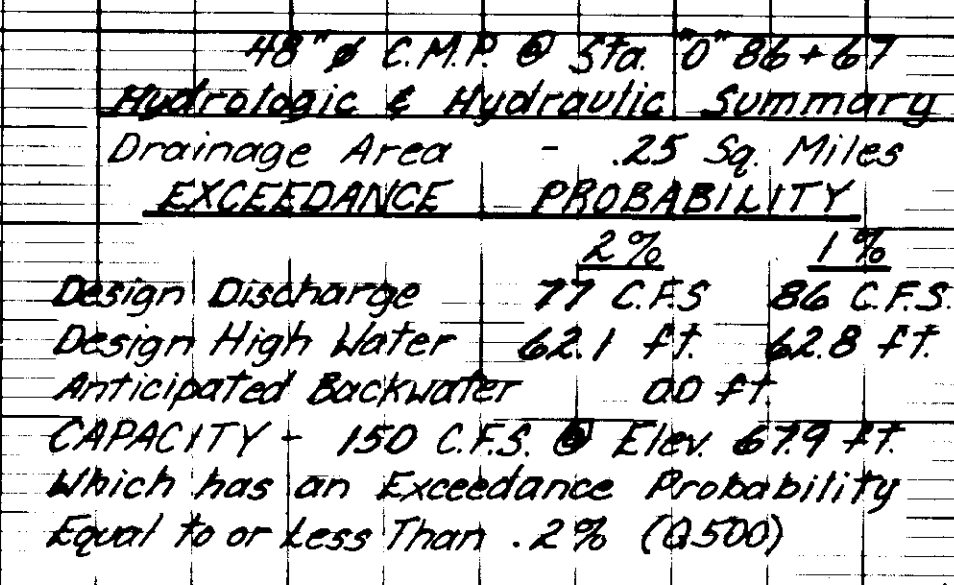


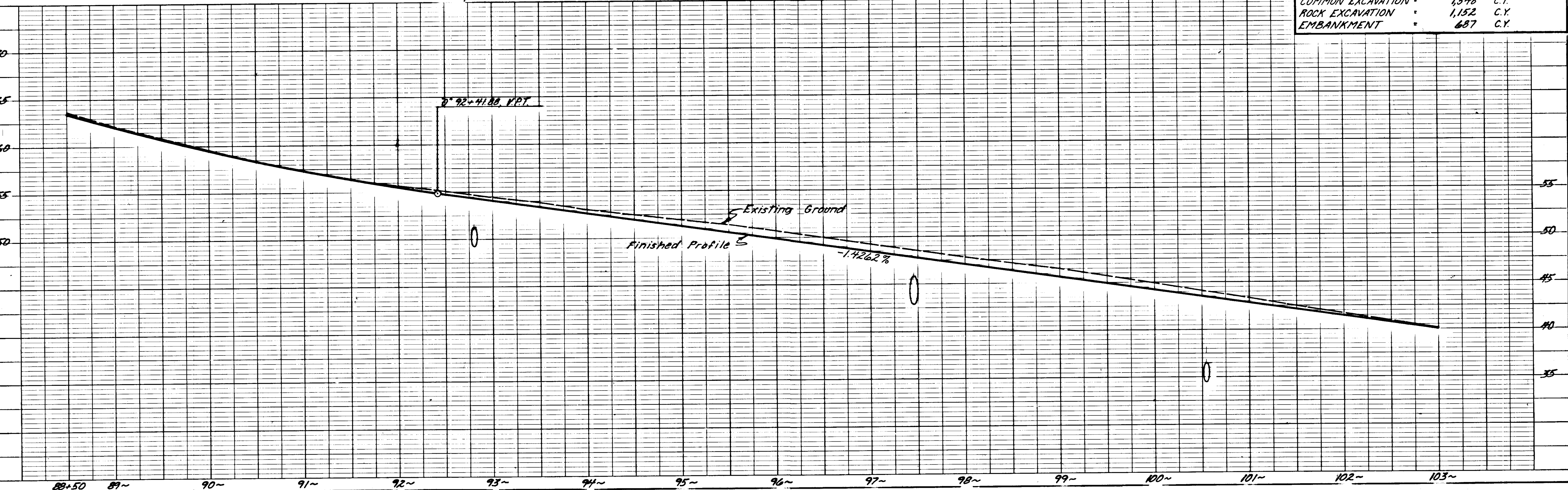
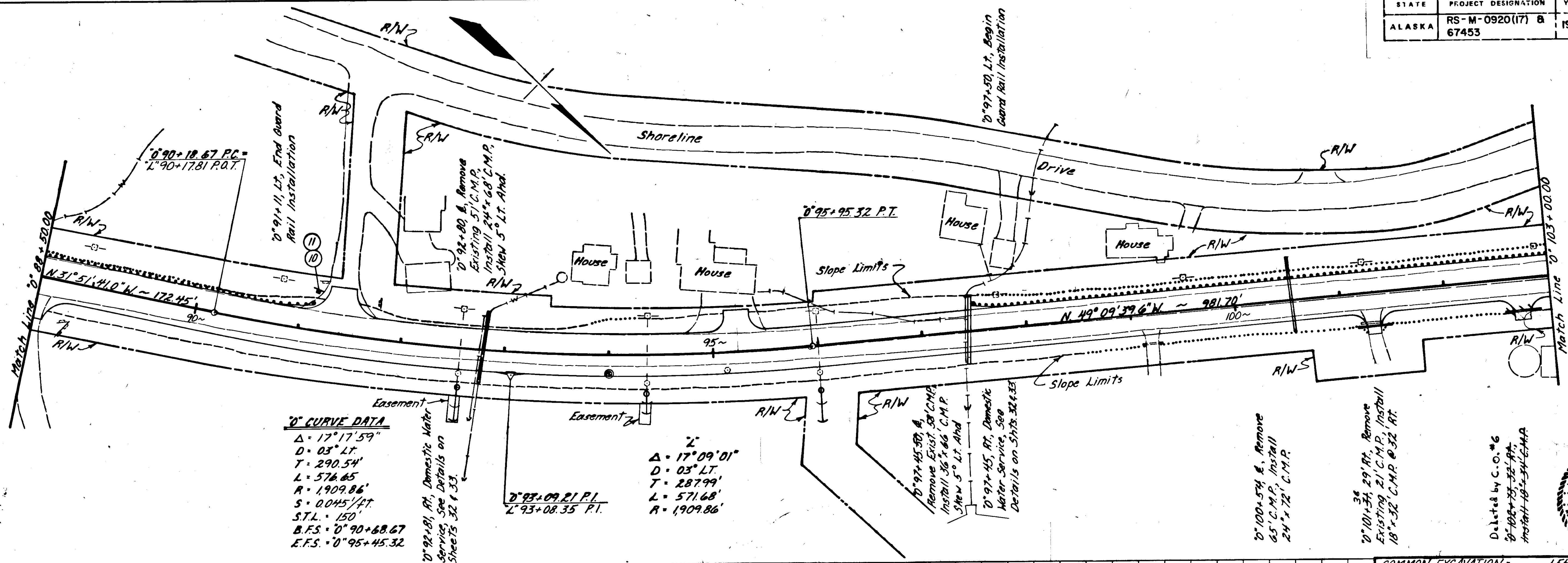
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EMBANKMENT	1,503	C.Y.





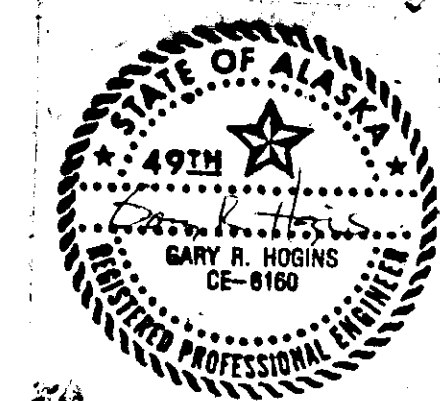
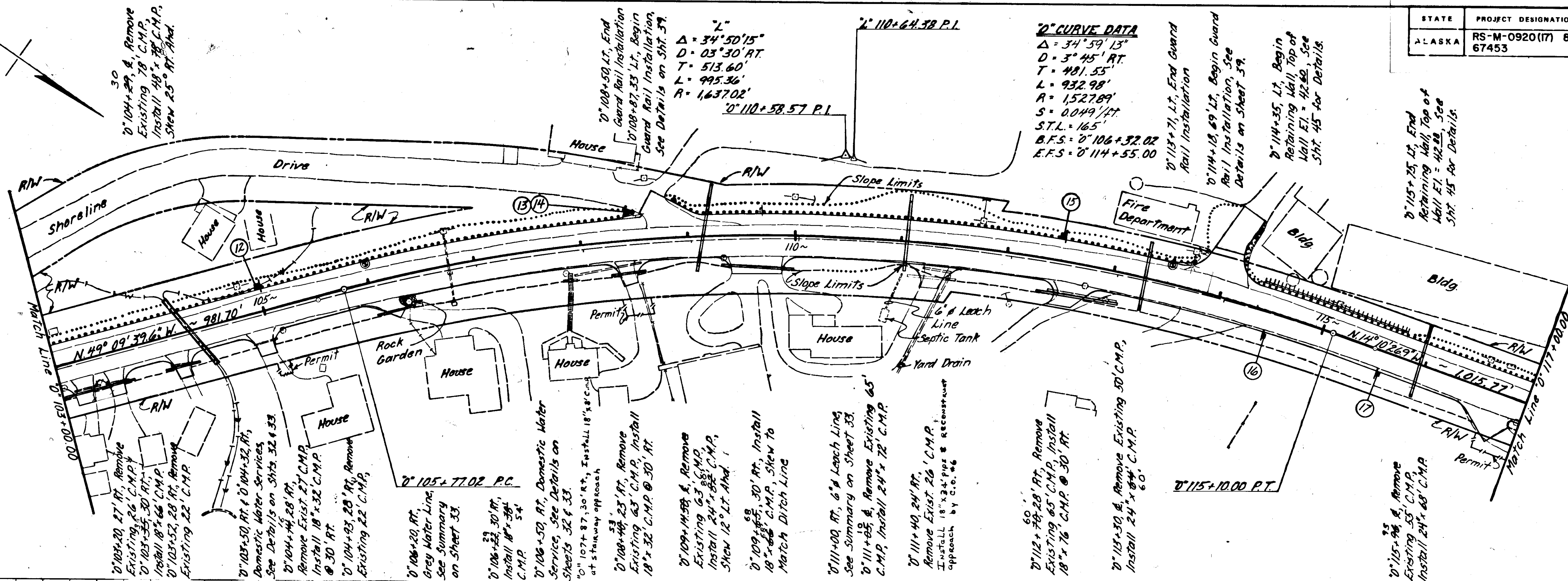
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ROCK EXCAVATION =	1,515	C.Y.
EMBANKMENT =	2,381	C.Y.



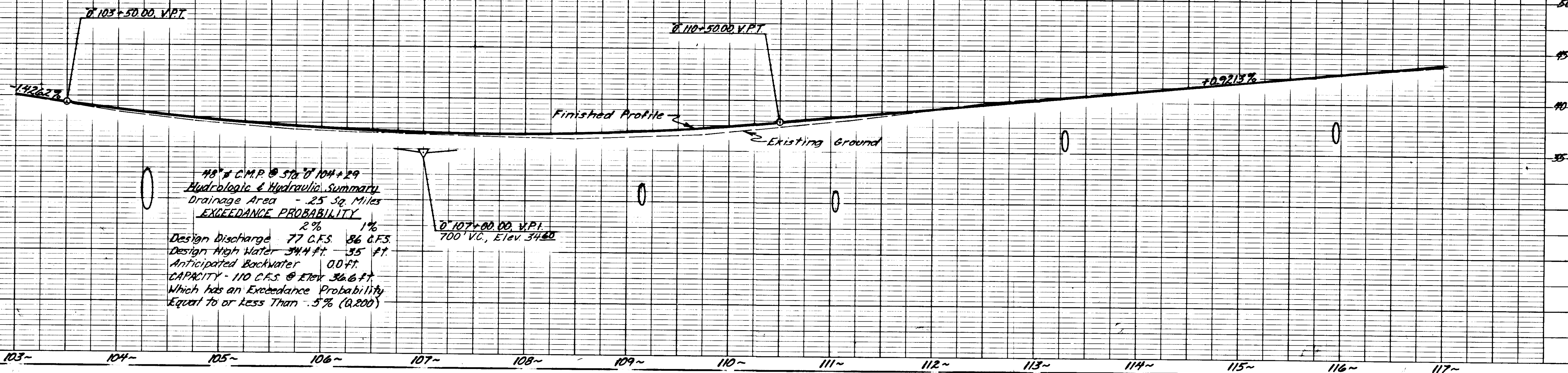


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ROCK EXCAVATION	1,152	C.Y.
EMBANKMENT	687	C.Y.

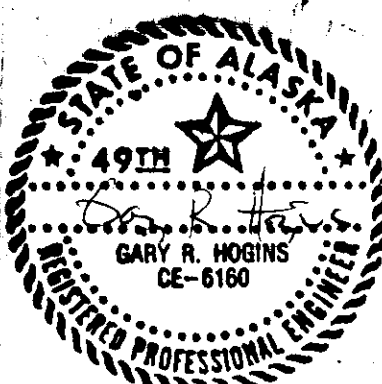
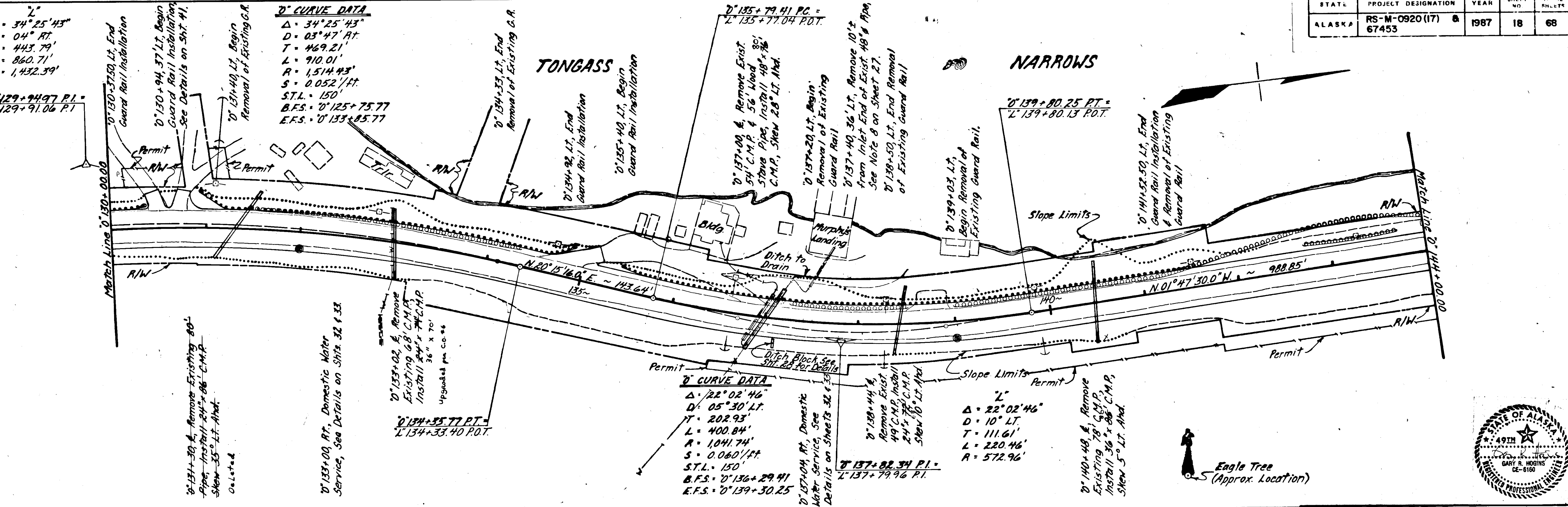
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	16	68



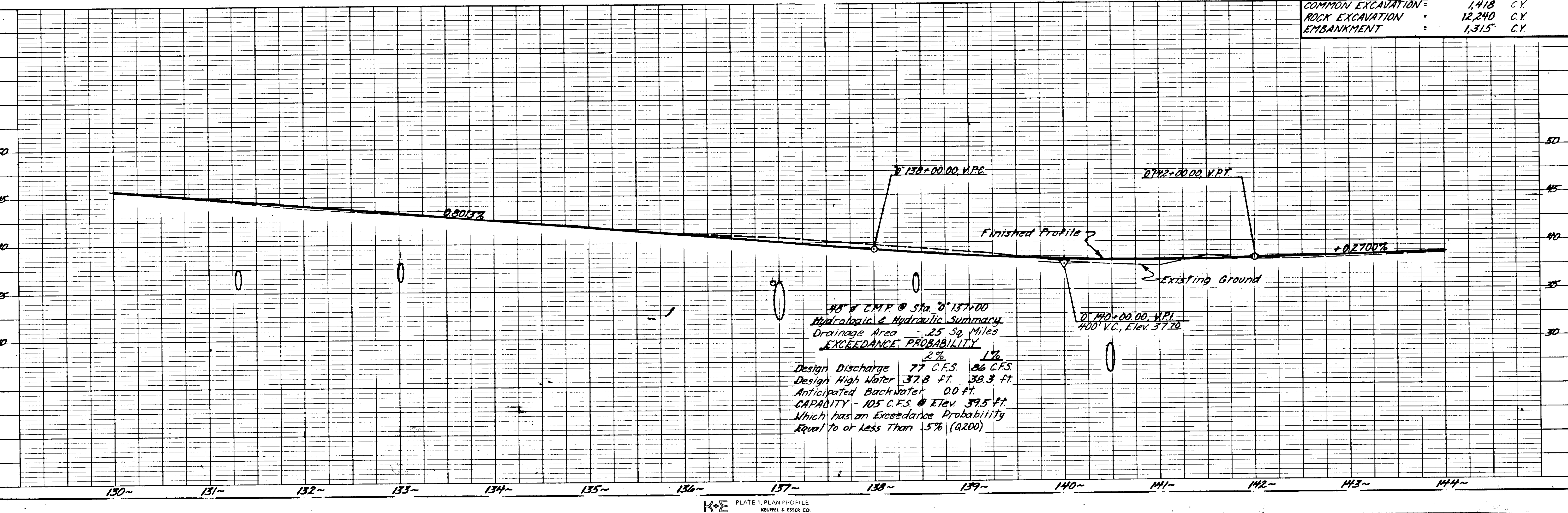
COMMON EXCAVATION	=	1,500	C.Y.
ROCK EXCAVATION	=	629	C.Y.
EMBANKMENT	=	1,401	C.Y.



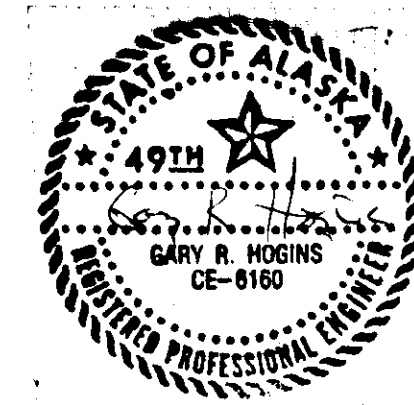
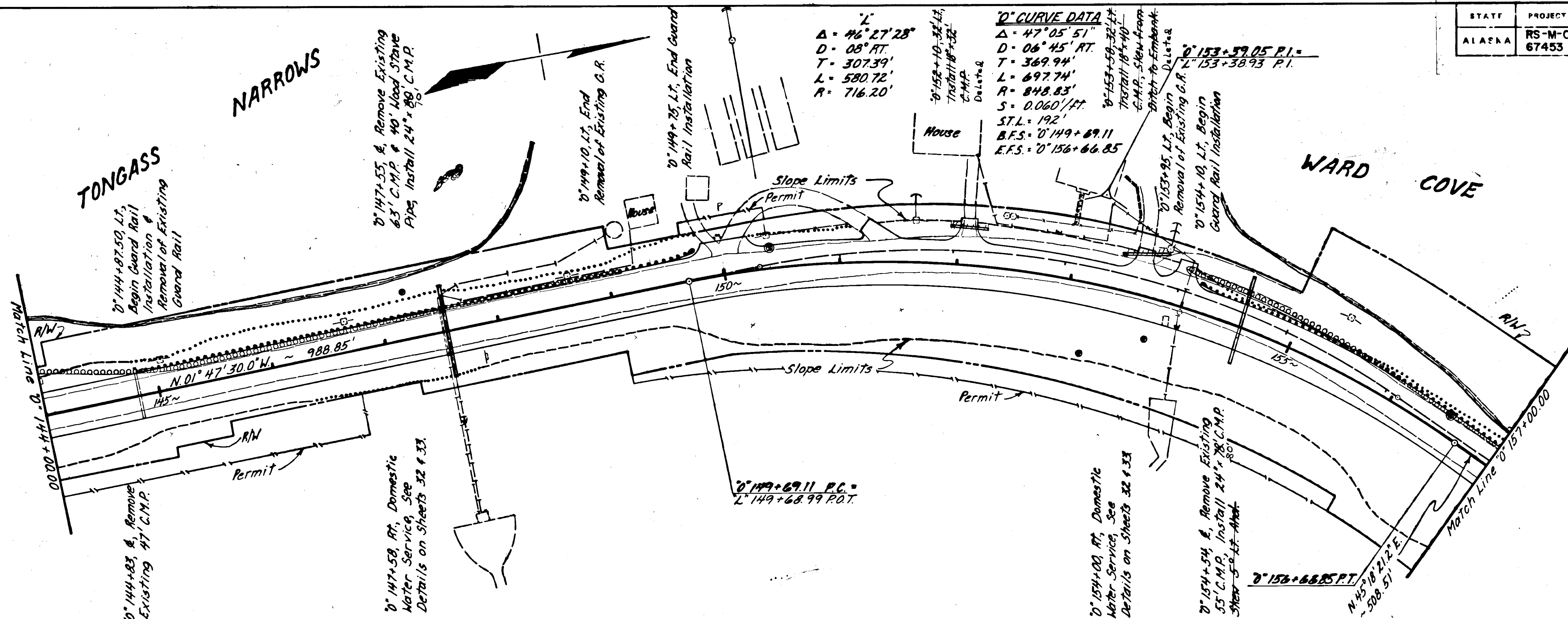
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920 (17) 67453	1987	18	68



COMMON EXCAVATION =	1,418 C.Y.
ROCK EXCAVATION =	12,240 C.Y.
EMBANKMENT =	1,315 C.Y.



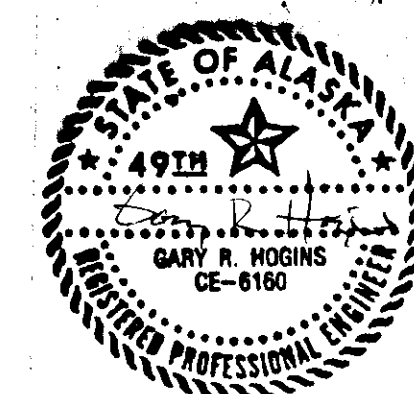
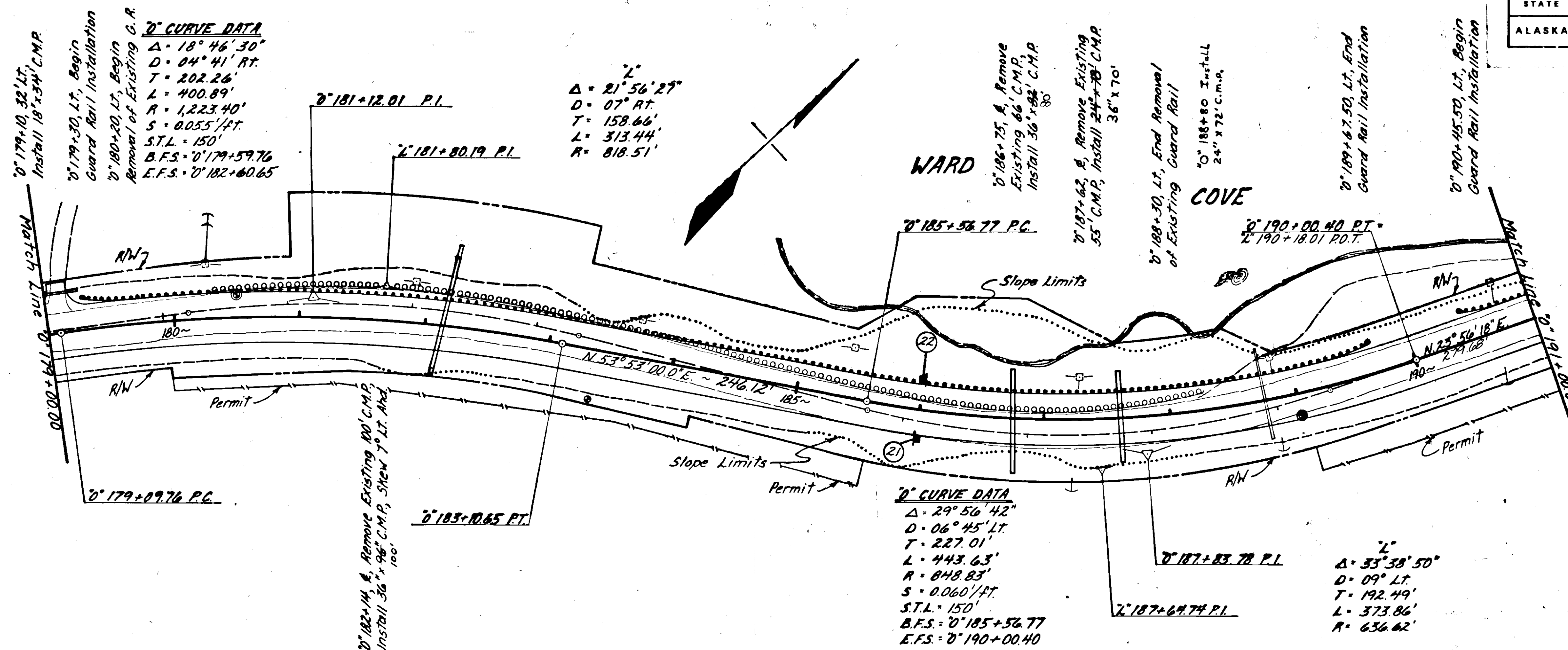
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) 8 67453	1987	19	68



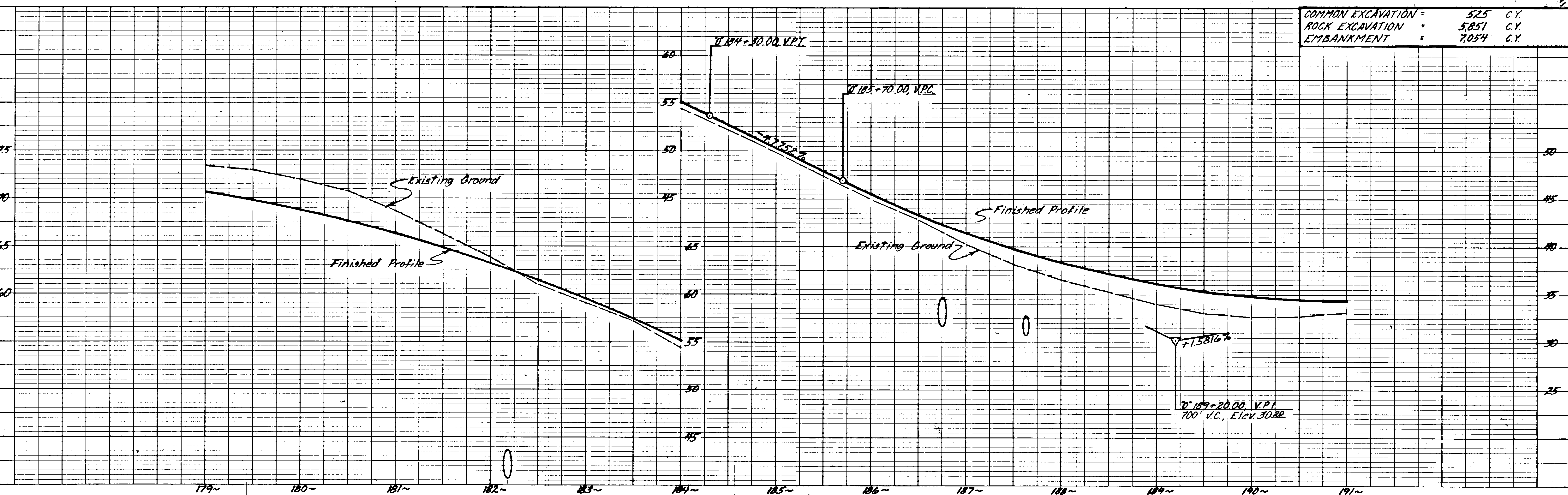
COMMON EXCAVATION =	1,731 C.Y.
ROCK EXCAVATION =	38,579 C.Y.
EMBANKMENT =	594 C.Y.



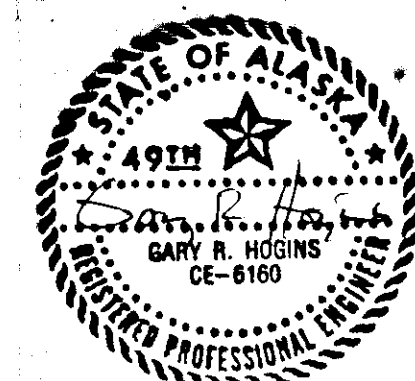
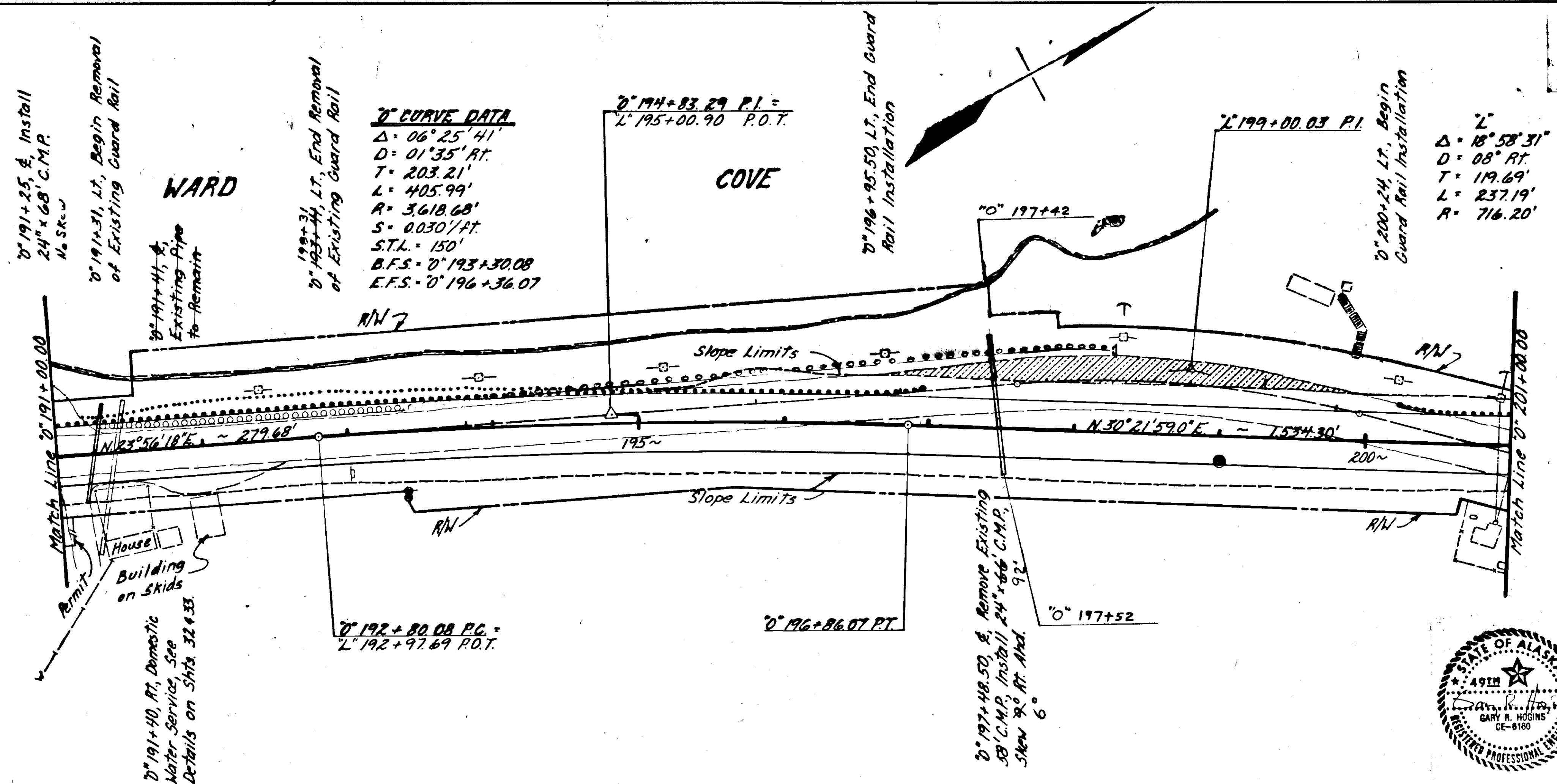
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	22	68



COMMON EXCAVATION	=	525	C.Y.
ROCK EXCAVATION	=	5,851	C.Y.
EMBANKMENT	=	7,054	C.Y.

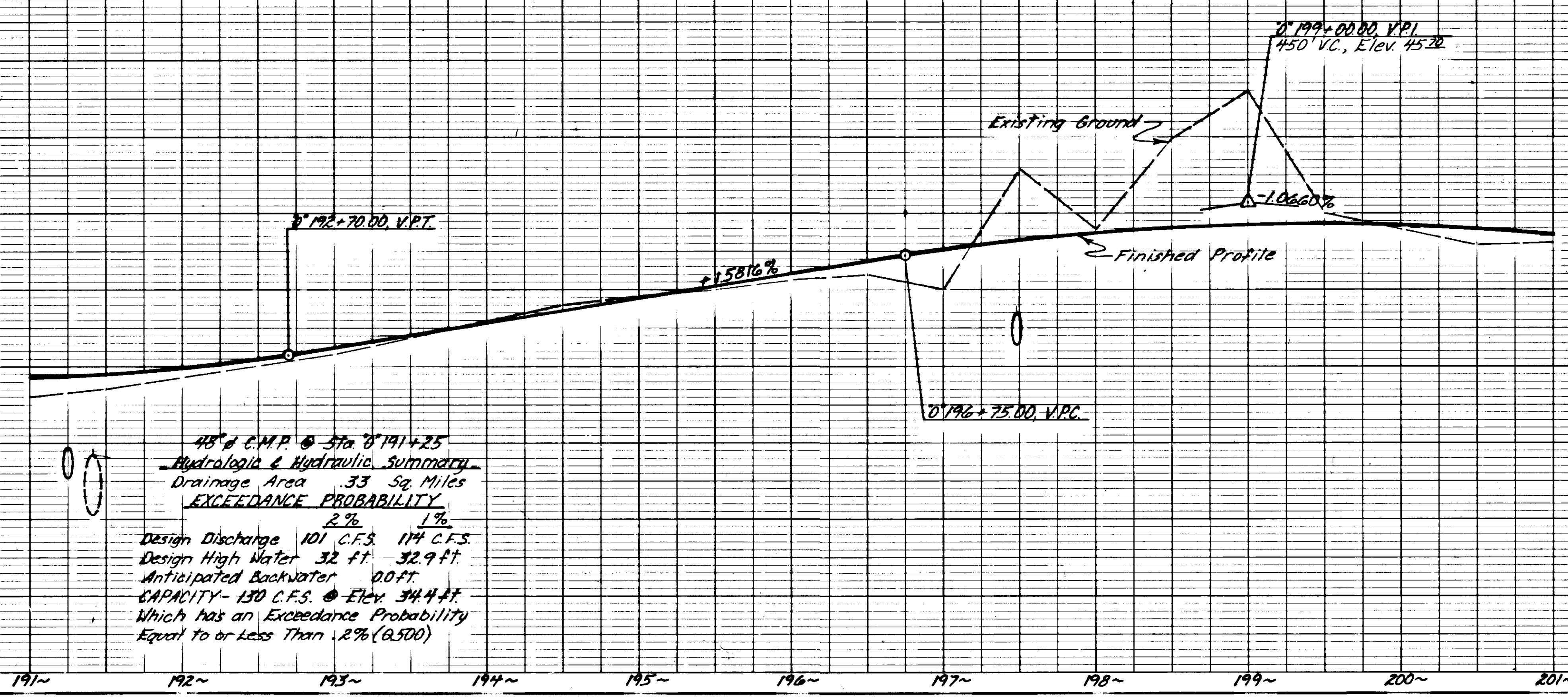


STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	23	68



Indicates Roadway Obliteration

COMMON EXCAVATION =	426 C.Y.
ROCK EXCAVATION =	12,368 C.Y.
EMBANKMENT =	819 C.Y.

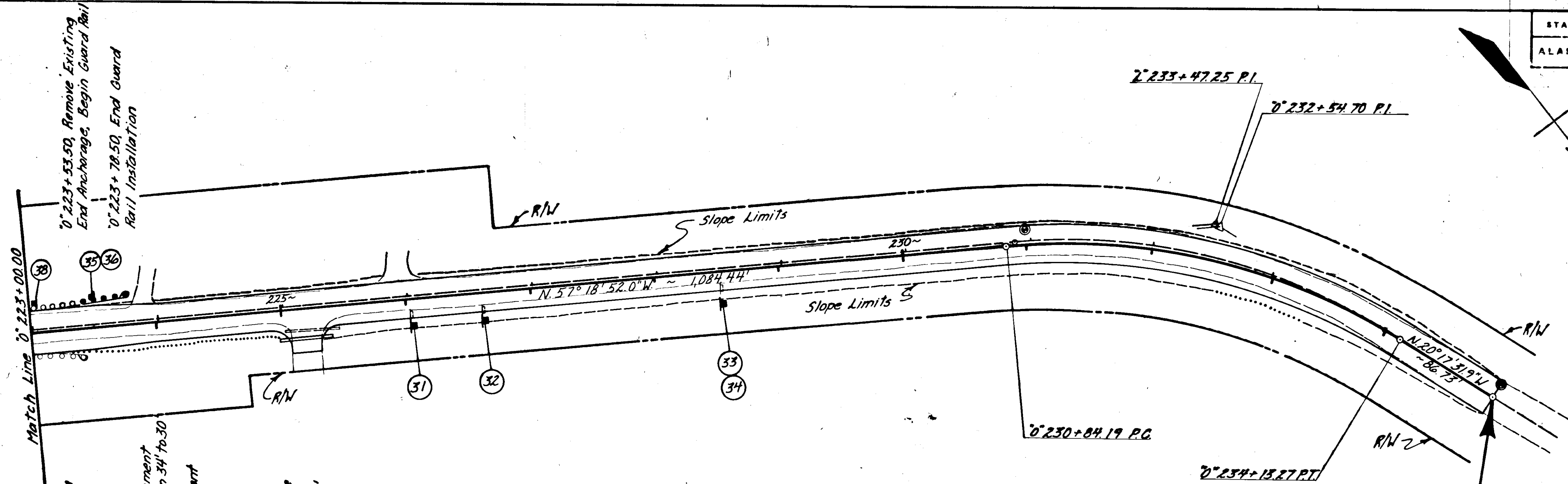
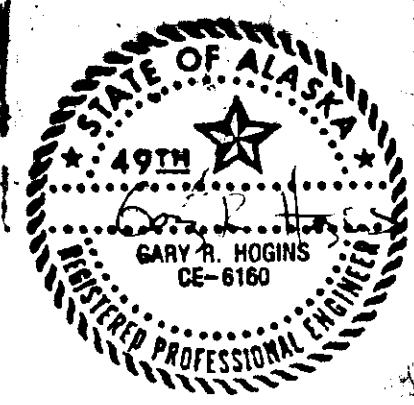


48" C.M.P. @ Sta. 0° 191+25
 Hydrologic & Hydraulic Summary
 Drainage Area 33 Sq. Miles
 EXCEEDANCE PROBABILITY

	2%	1%
Design Discharge	101 C.F.S.	114 C.F.S.
Design High Water	32 ft.	32.9 ft.
Anticipated Backwater	0.0 ft.	

 CAPACITY - 130 C.F.S. @ Elev. 34.4 ft.
 Which has an Exceedance Probability Equal to or Less Than .2% (0.500)

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920 (17) & 67453	1987	26	68



“O” CURVE DATA
 $\Delta = 37^{\circ}01'20''$
 $D = 11^{\circ}15' RT.$
 $T = 170.52'$
 $L = 329.09'$
 $R = 509.30'$
 $S =$
 $STL =$
 $BFS =$
 $EFS =$

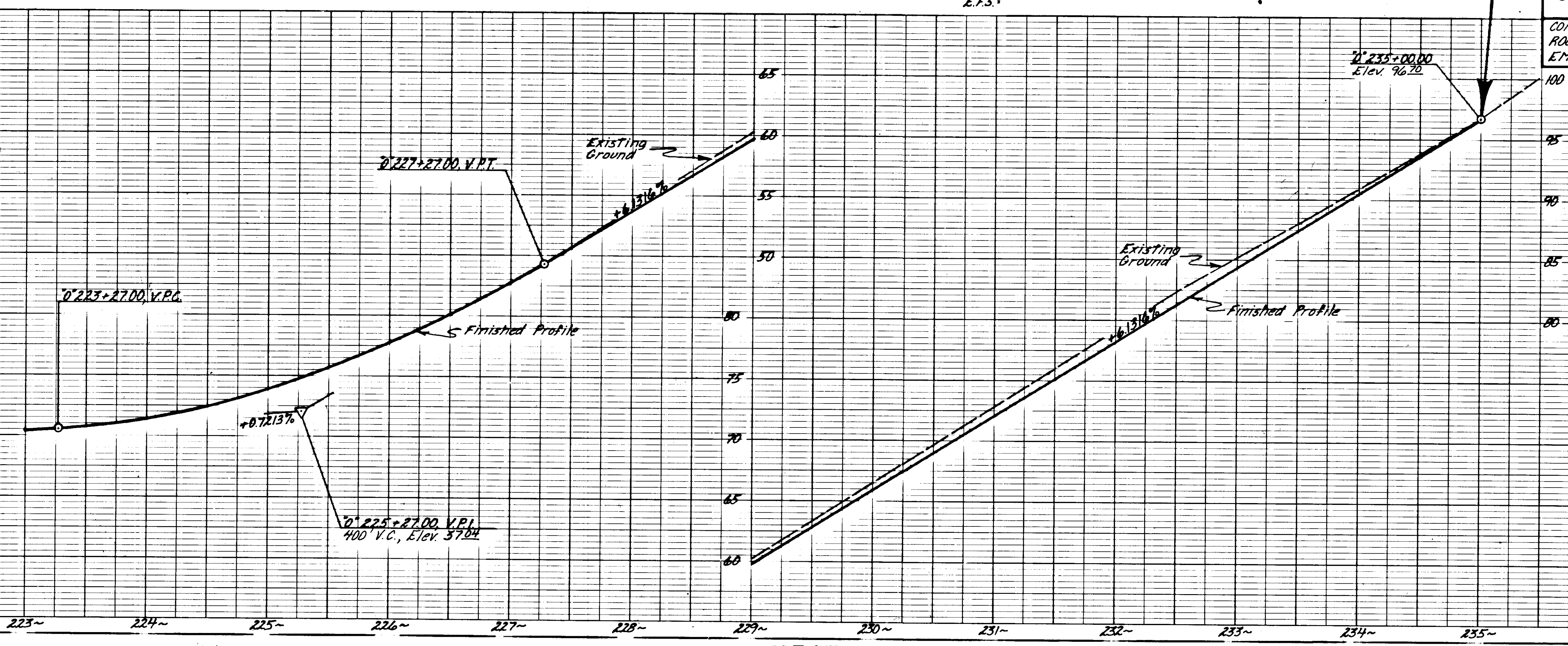
“L”
 $\Delta = 37^{\circ}01'20''$
 $D = 12^{\circ} RT.$
 $T = 159.86'$
 $L = 308.52'$
 $R = 477.47'$

END PROJECT
 RS-M-0920 (17) & 67453
 STA. "O" 235+00.00 =
 STA. "L" 235+98.28
 MATCH EXISTING
 ELEVATION

END PROJECT COORDINATES

STA. "O" 235+00.00, E.O.P. -	N. 112180.004
	E. 89940.359

COMMON EXCAVATION =	667 C.Y.
ROCK EXCAVATION =	1,083 C.Y.
EMBANKMENT =	187 C.Y.



PIPE SUMMARIES

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) 8 67453	1987	27	68

CROSS CULVERT INSTALLATION AND REMOVAL SUMMARY

STATION	FINISHED DEPTH OF COVER @ 6"	PIPE SIZE					SKEW ANGLE	PIPE REMOVAL	REMARKS
		24"	30"	36"	42"	48"			
0+3+90								355'	See Drainage Details on Shts. 29 & 30
0+5+50								347'	See Drainage Details on Shts. 29 & 30
0+8+00	4.3'							55'	Remove Existing Pipe to R/W
0+11+95	1.5'							58'	Remove Existing Pipe to R/W
0+13+32								163'	See Drainage Details on Shts. 29 & 30
0+16+12	2.5'	14' 7 1/2"					7° Lt. Ahd.	52'	
0+23+91	5.1'	6' 1 1/2"					35° Lt. Ahd.	67'	
0+32+75	6.8'	64' 7 1/2"						73'	
0+34+80-5 82	3.9'	66' 7 1/2"						52'	
0+35+89	3.2'	69' 0 1/2"						61'	
0+37+75 20	3.0'			64'				55'	
0+37+64	5.1'	68'					10° Rt. Ahd.	61'	See Note 6 this Sheet
0+40+25	3.0'							62'	
0+41+57.5								80'	See Domestic Utility Details on Shts. 32 & 33
0+43+34	5.6'	66' 2 1/2"						52'	
0+44+96.5	7.3'	72'		68'			9° Rt. Ahd.	55'	
0+46+69	7.3'	84'					10° Rt. Ahd.	51'	Fill Ditch Above New Pipe to Match Exist. Ground
0+48+78	5.1'	74'						54'	
0+51+02.5	5.0'	64' 7 1/2"							
0+56+25	10' ±								
0+64+60	10.2'						30° Rt. Ahd.	110'	Existing Pipe to Remain
0+65+64 35° Rt.							11' 18"		EXIST. CLASS I RIPRAP REQ'D. SEE DETAILS ON SHEET 28
0+65+85 32° Rt. 70									SEE NOTE 6 ON THIS SHEET
0+65+18 30° Rt. 64	17.36' Rt.	12' 4 1/2"							INSTALL PIPE FROM NEW DITCH LINE TO EXIST. M.M. W/ 1% SLOPE MINIMUM - DROUT INTO MANHOLE
0+86+67	13.3'								INSTALL PIPE FROM NEW DITCH LINE TO EXISTING MANHOLE W/ 1% SLOPE MINIMUM - DROUT INTO MANHOLE
0+87+60	14.0'	86'		84'			40° Lt. Ahd.	116'	29 C.Y. Class I Riprap Req'd., See Details Sht. 28
0+92+80	3.1'	68'					5° Lt. Ahd.	51'	See Note 6 this Sht.
0+97+45.5	2.0'			66'			5° Lt. Ahd.	58'	See Note 6 this Sht.
0+100+54	7.0'	72'						65'	
0+104+29 30	5.5'						25° Rt. Ahd.	78'	29 C.Y. CLASS I RIPRAP REQ'D. SEE DETAILS ON SHT. 28
0+109+14.5	5.1'	80' 8 1/2"					12° Lt. Ahd.	63'	SEE NOTE 6 ON THIS SHEET
0+111+85 10	6.8'	72'						65'	
0+113+30	3.3'	60' 6 1/4"						50'	
0+115+96 95	4.8'	68'						55'	
0+118+34 5 35	5.9'	68'						58'	
0+123+89	3.0'	60' 5 1/2"					10° Rt. Ahd.	57'	
0+126+90	1.0'	80'					52° Rt. Ahd.		Drains from Left to Right
0+128+93.5	4.5'							55'	
0+131+30	7.0'	86'					35° Lt. Ahd.	80'	
0+133+02	5.0'	74'		70'				68'	
0+137+00								56'	Wood Stave Pipe
0+137+00	4.5'						28° Lt. Ahd.	110'	29 C.Y. CLASS I RIPRAP REQ'D. SEE DETAILS ON SHT. 28
0+137+40								10'	SEE NOTE 6 ON THIS SHEET
0+138+44	2.6'	68' 7 1/2"					10° Lt. Ahd.	49'	See Note 8 on this Sheet
0+140+48	9.1'			80' 8 1/2"			5° Lt. Ahd.	78'	
0+144+83	3.2'							47'	
0+147+55	8.2'	70' 8 1/2"						103'	See Note 6 this Sht.
0+154+54	4.2'	80' 7 1/2"					5° Lt. Ahd.	55'	
0+158+73	8.0'	76'						51'	
0+160+74 55	5.8'	72'						58'	
0+162+08.5	4.8'	74'						53'	
0+163+75 82	5.7'			70' 7 1/2"			8° Lt. Ahd.	56'	
0+172+80	2.5'	76'							
0+174+80 40	6.5'	92' 6 1/2"					25° Lt. Ahd.	30'	Remove 30' of Pipe from Inlet End
0+175+17	4.0'			64' 6 1/2"			25° Rt. Ahd.	60'	
0+182+14	18.8'			100' 5 1/2"			7° Lt. Ahd.	100'	
0+186+75	8.0'			80' 8 1/2"				66'	
0+187+62	6.9'	78'		70'				55'	
0+191+25	5.0'	68'							
0+191+41	5.5'								EXISTING PIPE TO REMAIN - IS C.Y. CLASS I RIPRAP REQ'D. ON INLET END ONLY - SEE DETAILS ON SHEET 28.
0+188+80		72'							
0+197+48.5	4.8'	92' 6 1/4"					6° Rt. Ahd.	58'	
0+201+90	12.7'			70' 4"			10° Lt. Ahd.	74'	
0+201+95	12.7'							73'	
0+204+80	5.6'	88' 8 1/4"					11° Rt. Ahd.	55'	
0+206+90	4.2'	80' 6 1/2"						55'	
0+208+74	4.3'	114' 8 1/2"					5° Lt. Ahd.	55'	
0+213+49	4.9'	80' 6 1/4"					26° Rt. Ahd.	56'	
0+215+44	9.0'	156' 2 1/2"					45° Rt. Ahd.		
0+215+83	10.4'							92'	

APPROACH CULVERT INSTALLATION AND REMOVAL SUMMARY

STATION	OFFSET	18" PIPE LENGTH	PIPE REMOVAL	REMARKS	STATION	OFFSET	18" PIPE LENGTH	PIPE REMOVAL	REMARKS
0+12+80	28'	78'			0+79+74 86	32'	52'	38'	
0+34+66 64	32'	40' 3 1/4"	26'		0+83+00	32'	34'		
0+45+79 25	32'	34'			0+101+34 36	32'	32'	21'	
0+48+70 14	32'	36' 3 1/2"	22'		0+102+23	32'	34'		
0+52+14	32'	32'			0+103+20	27'		26'	
0+53+26	30' 3 1/2"	110' 7 1/4"			0+103+35 38	30'	66'		CONTINUOUS BENEATH 2 ADJACENT APPROACHES
0+53+54 44	32'	32'			0+107+87	30'	8'		
0+54+11	32'	44'			0+103+52	28'		22'	
0+54+84	32'	44'			0+104+74 16	31' 3 1/2"	32'	27'	
0+55+48	32'	44'			0+104+93			22'	
0+56+04	19'		39'		0+106+22 30	30'	4' 3 1/2"		
0+56+25 32	32' 3 1/4"	80'		CONTINUOUS BENEATH 2 ADJACENT APPROACHES	0+108+40 52	30'	32'	63'	
0+56+46	18'		44'		0+109+65 68	30'	4' 8' 6 1/2"		Skew to Match Ditch Line
0+56+47	32'	44'			0+107+80	32'	36'		
0+65+54 54	38' 3 1/2"	32'	26'		0+111+40	24'	34'	26'	Delete Approach
0+67+06 02	32'	44'			0+112+70	30'	76'	65'	
0+67+72 70	32'	34'	41'		0+124+37 38	32'	40'	22'	
0+70+75 64	32'	32'	58'		0+125+42	32'	40'		
0+71+95 96	32'	32'	41'		0+126+07	30'	36'	29'	
0+75+53	25'	32'			0+126+37 36	28'	36'		
0+73+48	32'	32'			0+126+89	32'	32'	18'	
0+74+82	25'	32'	40'		0+152+10	32'	32'		
0+75+60	32'	32'	20'		0+153+58	32'	40'		SKEN C.M.P. TO RUN ADJACENT TO POWER POLE & DRAIN DOWN EXTRACT
0+77+78 79	32'	32'	55'		0+164+00	36'	40'	31'	
0+78+19 24	32'	36'	20'		0+166+00	32'	48'		
0+78+55	26'	32'			0+166+15	32'	28'		
0+78+37 35	32'	34'	20'		0+179+10	32'	34'		
0+78+91 89	32'	32' 3 1/4"	30'		0+209+95	32'	76'		
0+79+31	24'	32'	22'		0+216+34	32'	36' 3 1/2"		
0+82+20	32'	34'			0+219+38	34'	50' 3 1/4"		
					0+225+19	32' 3 1/2"	50' 4 1/2"	43'	

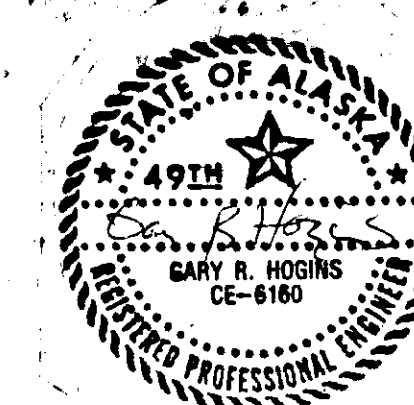
NOTE: See Drainage Details on Shts. 29 & 30.

q- Upgrade to 24" pipe

*- Pipe Installed by others

CULVERT NOTES

- Refer to The Occupational Safety & Health Administration for benching & shoring of trenches & other safety related requirements.
- Two-way traffic shall be maintained during non-working hours. No more work will be performed than that which can be completed by the end of the shift so as to leave no shoulder drop-off at the edge of existing pavement during non-working hours.
- Refer to the Traffic Control Plan for one lane traffic & flagging details.
- Pipe sub-excavation shall be paid for as common excavation when authorized by the engineer.
- Pipe conduit lengths & locations as shown on these plans may be subject to minor revisions as approved by the engineer.
- Refer to sheet 33 for utilidor stationing. Utilidors may be placed in the same trench as the proposed culverts.
- Two - existing 24" ϕ culverts at Sta. 0+13+40, Rt. shall be cut off flush with the finished backslope.
- Cut 10' $\pm$ from the inlet end of the existing 48" ϕ pipe at Sta. 0+137+40, 36' Lt. Ditch from the proposed cross culvert outfall at Sta. 0+137+18 to the new inlet at Sta. 0+137+40, Lt.



CULVERT PATCH NOTES

1. Patching in areas where the existing pavement will be used by the traveling public will be completed by the end of the final shift on Friday of the week that the pipe was installed. Patch material shall be as per T.C.P. note 17 on Sht. 7.
2. Culvert patches will be installed with a minimum width of 24'

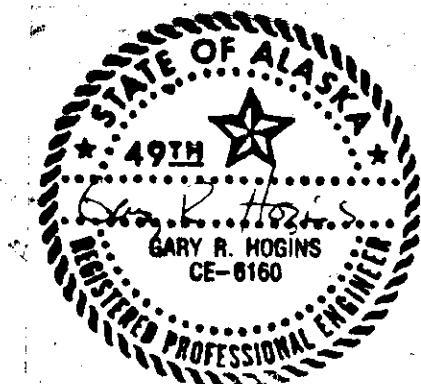


SECTION B-B

SEE CULVERT SPILLWAY SUMMARY THIS SHEET

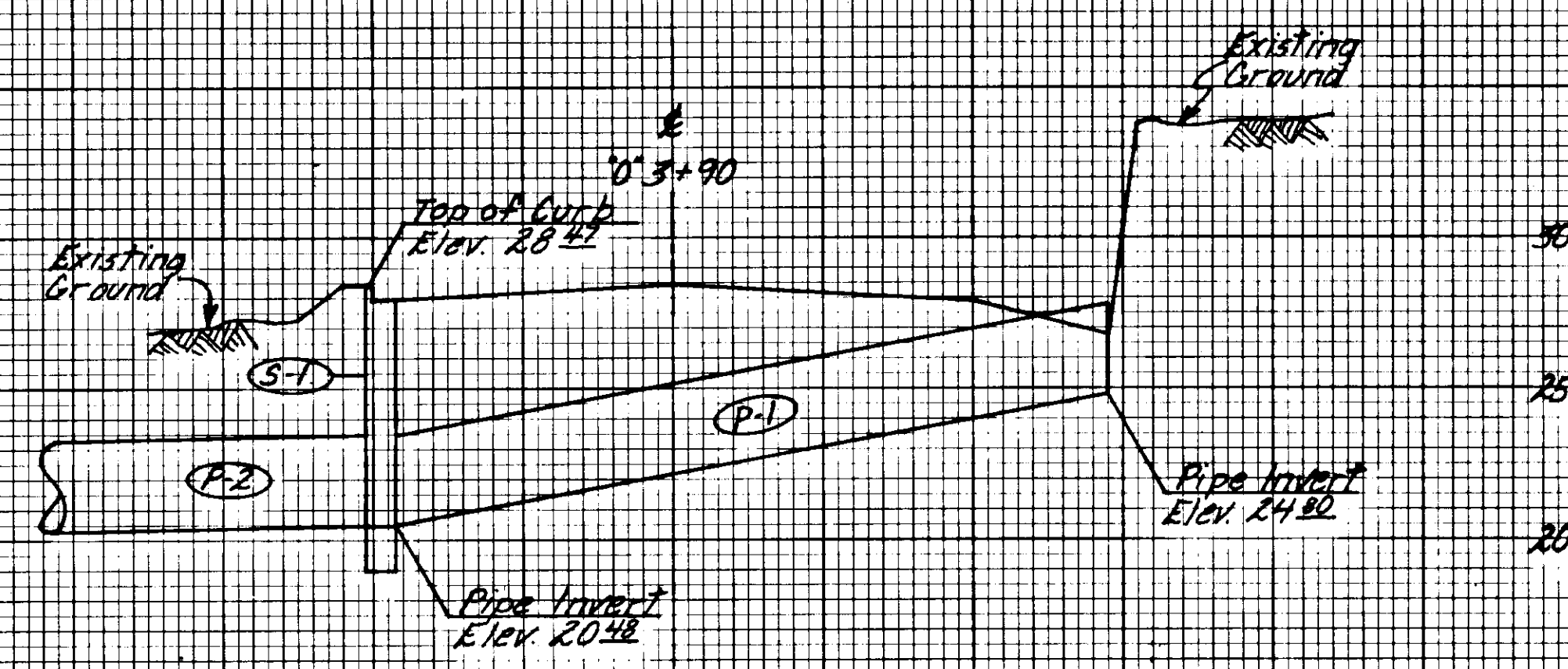
CULVERT SPILLWAY SUMMARY			
STATION	PIPE DIA	"X"	CLASS I RIPRAP REQUIRED
0+37+15	36"	12'	4.815 C.Y.
0+87+60	24"	4.5'	1.482 C.Y.
0+140+48	36"	16.5'	5.741 C.Y.
0+186+75	36"	30'	10.370 C.Y.
0+187+62	36"	16.5'	6.482 C.Y.
0+204+80	24"	7.5'	2.370 C.Y.

DITCH BLOCK SUMMARY			
STATION	OFFSET		ELEV.
	LEFT	RIGHT	
"0" 13+50		X	28.2
"0" 64+50		X	28.5
"0" 137+10		X	39.5

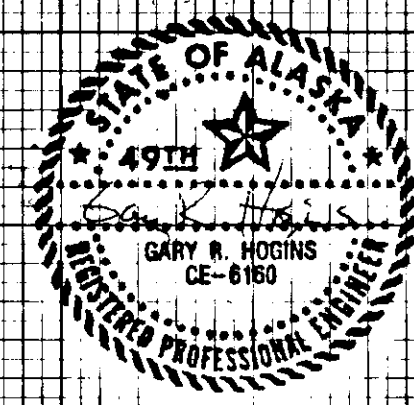
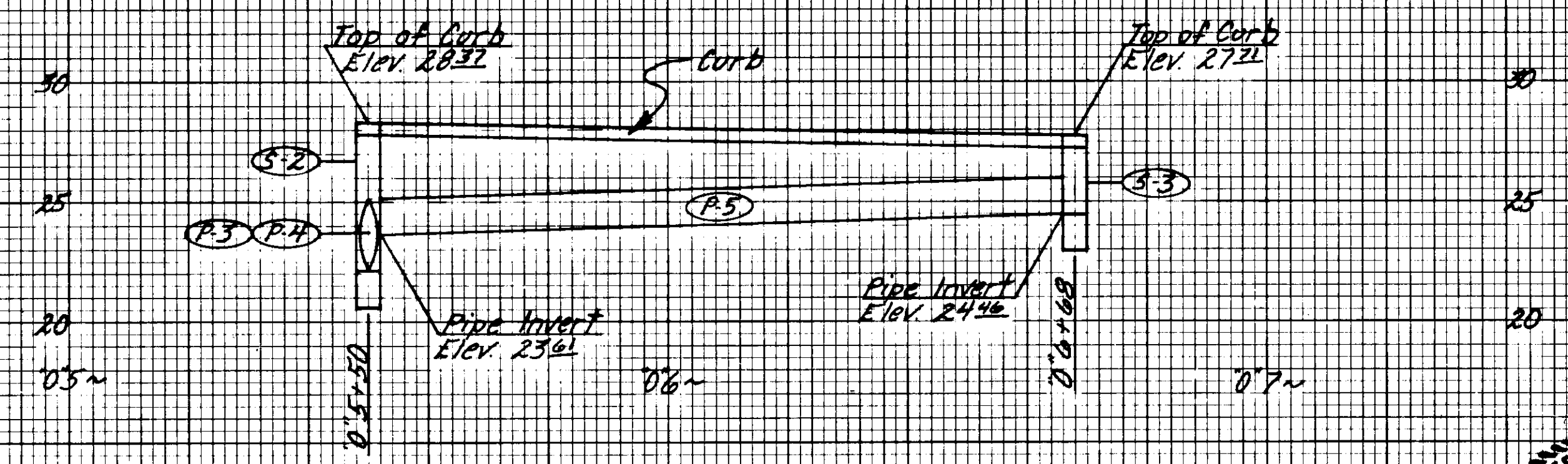
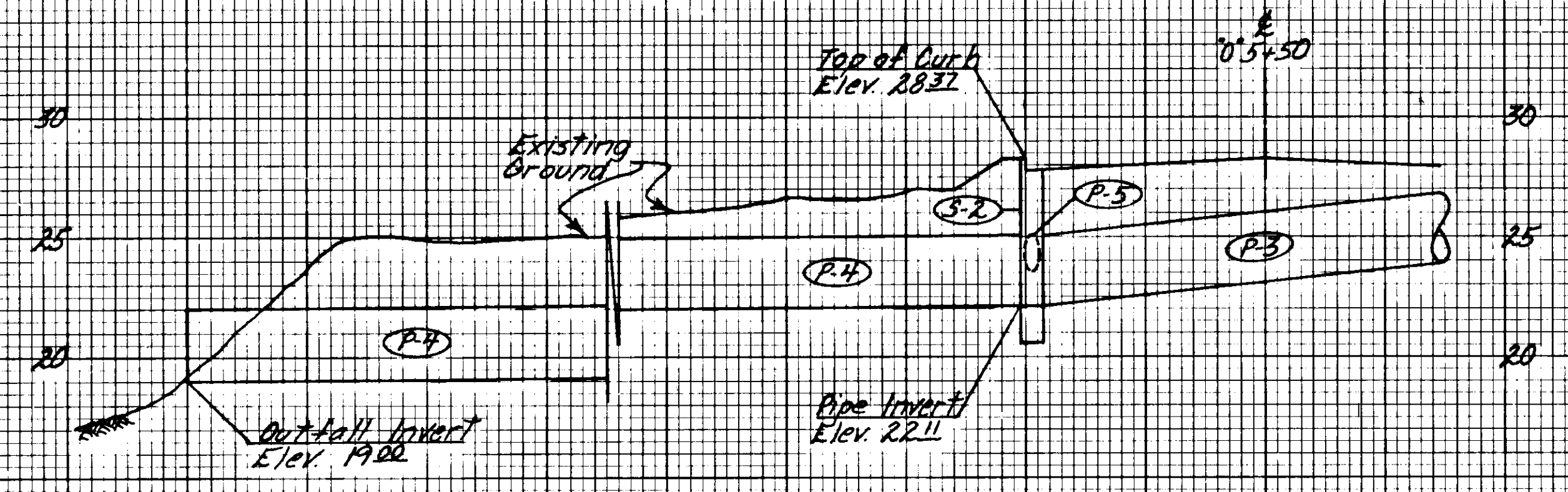
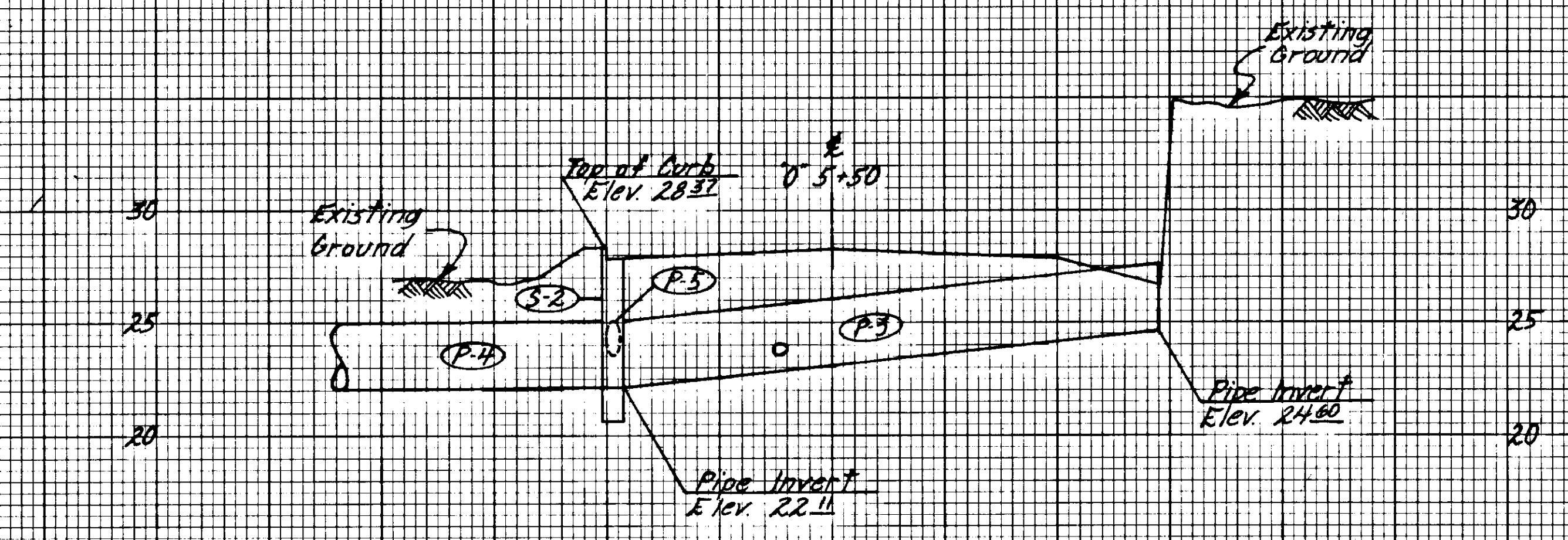
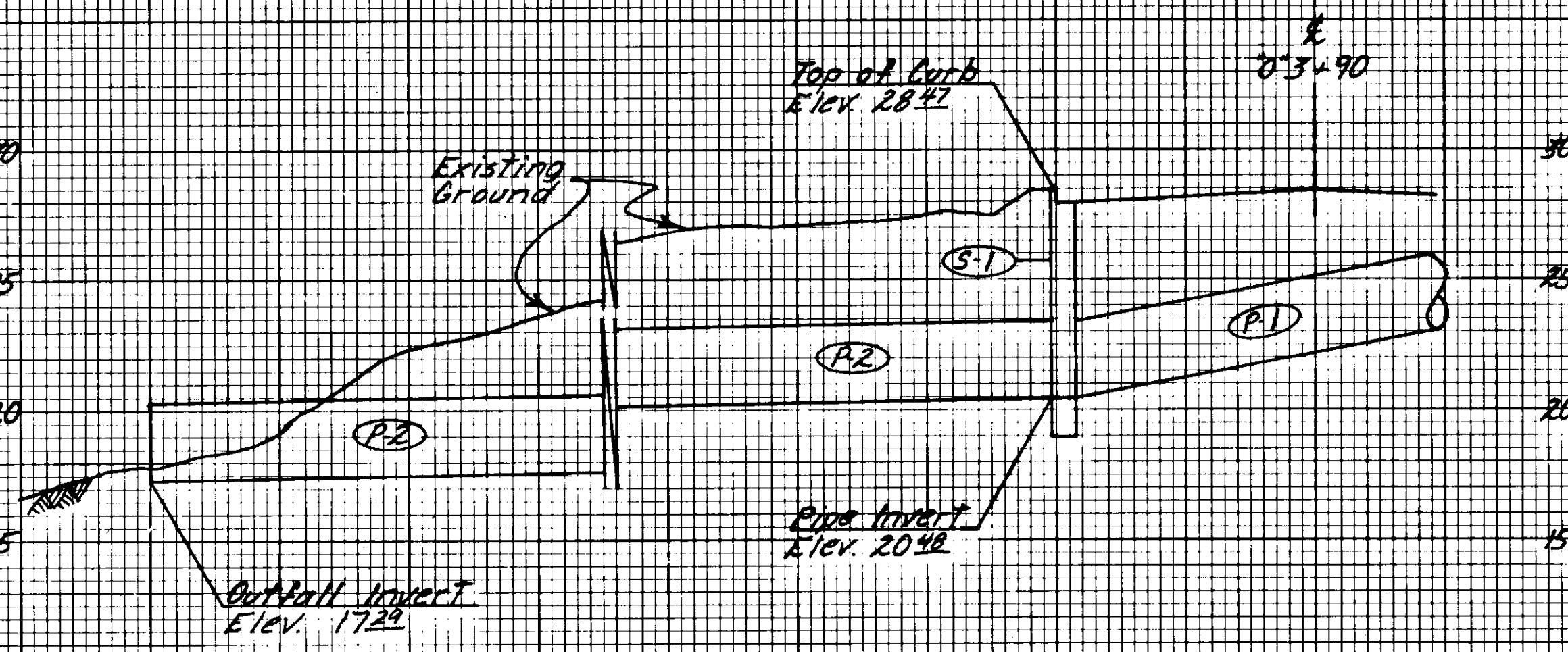


STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920 (17) & 67453	1987	29	68

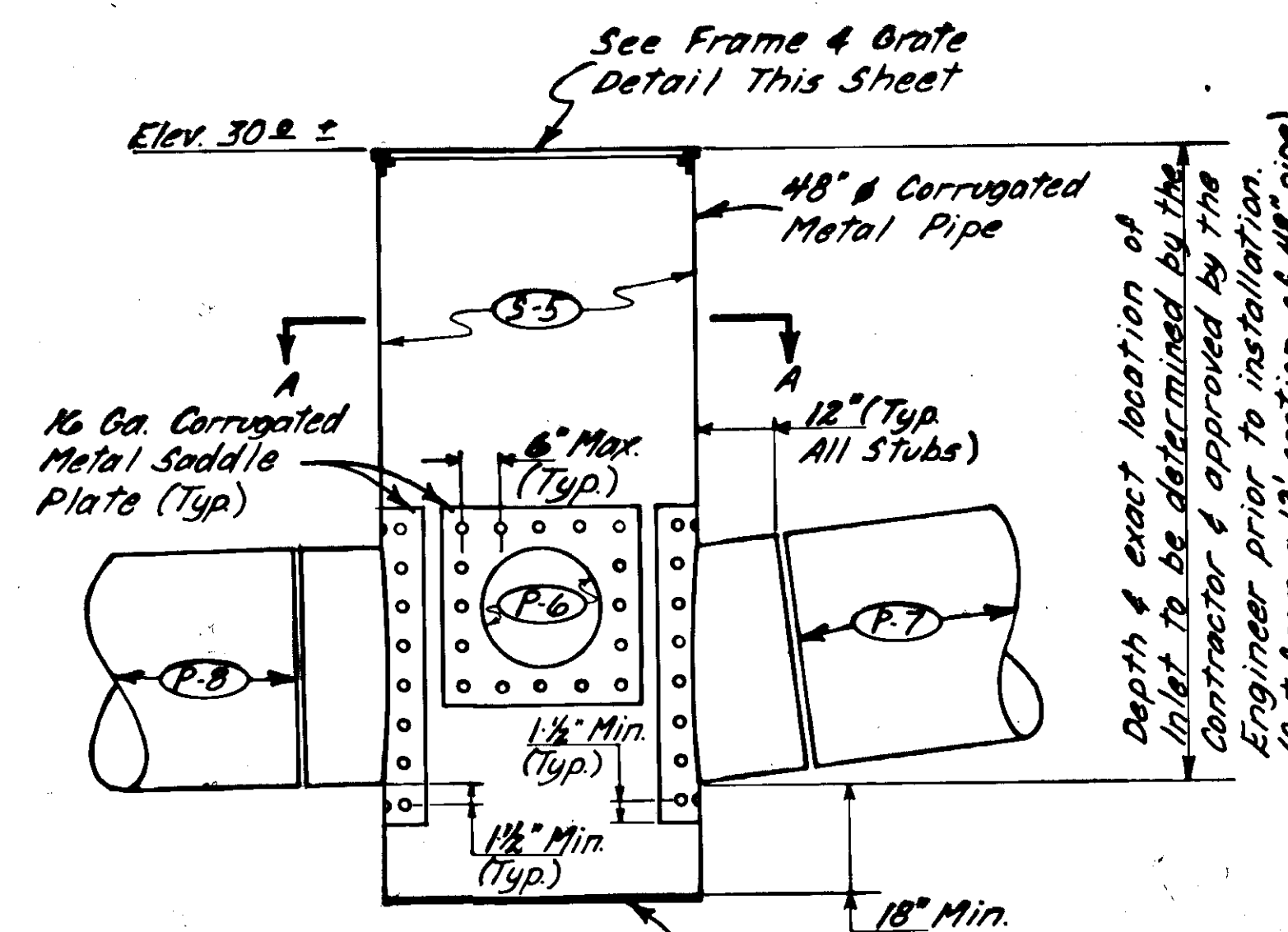
DRAINAGE DETAILS



NOTE: For Structure & Pipe Summaries See Sht. 30

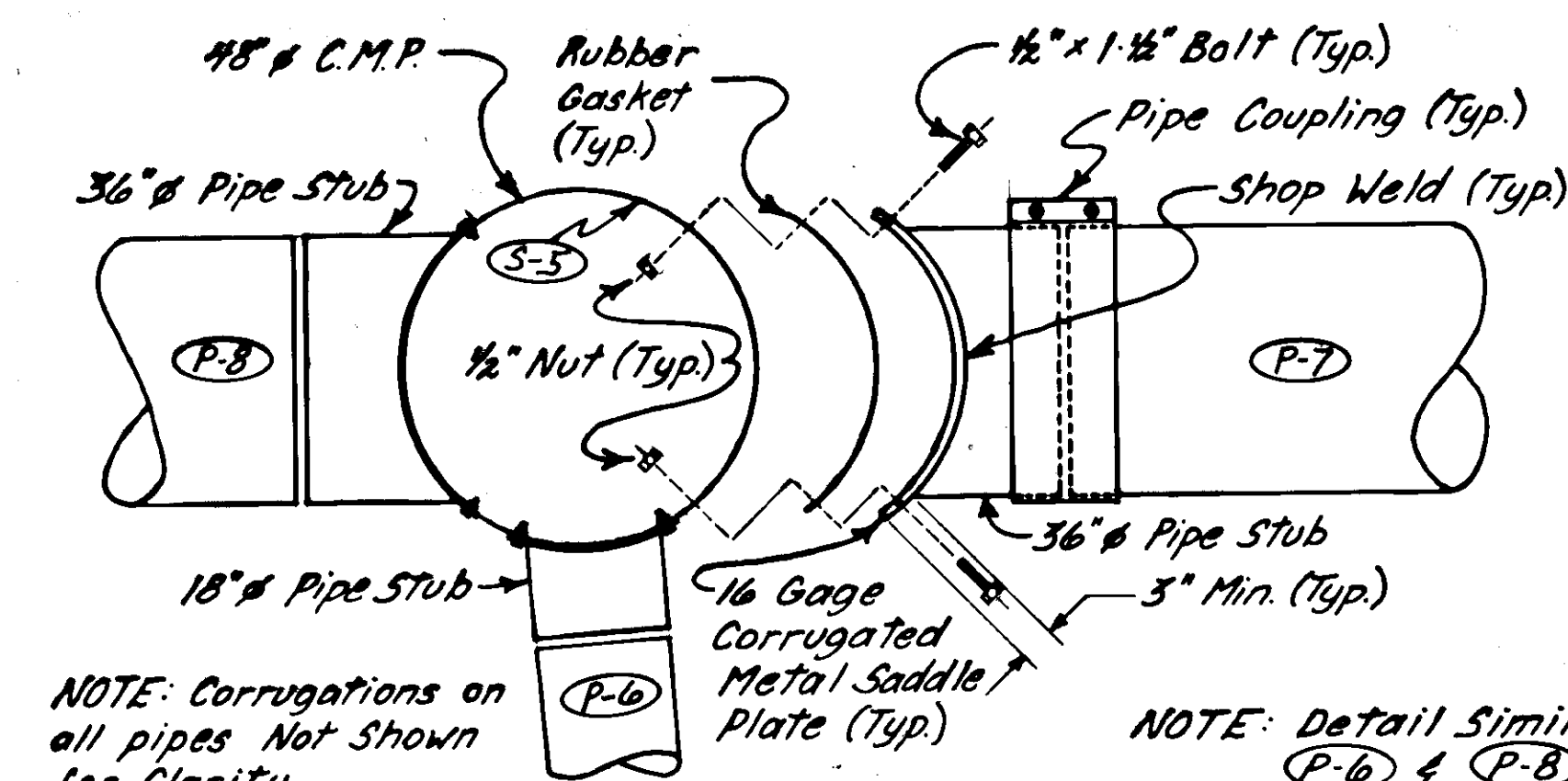


DRAINAGE DETAILS



NOTE: Corrugations on all pipes
Not Shown for Clarity.

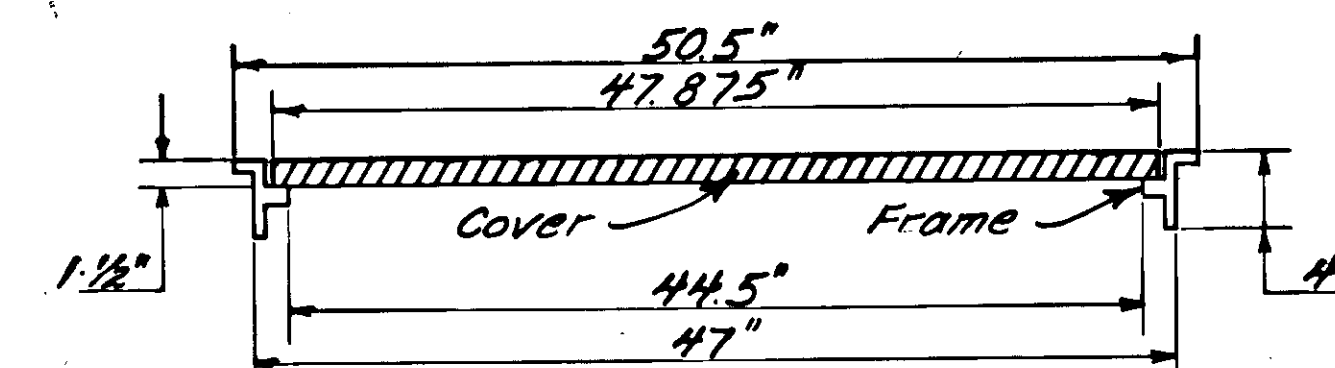
FIELD INLET DETAIL
SCALE: 1" = 2'



NOTE: Corrugations on
all pipes Not Shown
for Clarity.

NOTE: Detail Similar for
P-6 & P-8.

SECTION A-A
SCALE: 1" = 2'



NOTE: Use Neenah R-5902-K (48-inch)
Frame & Cover, or Approved
Equal.

FRAME AND GRATE DETAIL
N.T.S.

STRUCTURE SUMMARY

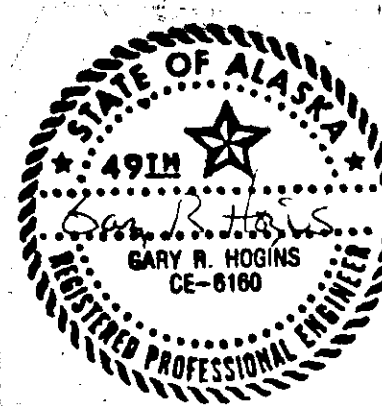
STRUCTURE NUMBER	STATION	OFFSET		TYPE	TOP OF CURB ELEVATION	DEPTH OF STRUCTURE	REMARKS
		LEFT	RIGHT				
S-1	0+3+90	20'		B	28.42	7'	G3L Grate
S-2	0+5+50	20'		B	28.32	5.5'	G3L Grate
S-3	0+6+68	20'		A	27.21	4'	G4 Grate
S-4	0+12+47	20'		B	31.01	8'	G4 Grate
S-5	0+13+34	36'-6"		*	N.A.	9.5'	Field Inlet

* The contractor has the option of providing the field inlet detailed on this sheet or a concrete Type "B" inlet as detailed on Standard Drawing D-27.01.

NOTE: All structures shall have 18" min. sumps.

PIPE SUMMARY

PIPE NUMBER	SIZE	FROM	TO	INLET ELEVATION	OUTLET ELEVATION	REMARKS
P-1	36" x 48' 50"	DITCH	S-1	24.00	20.40	0.0900'/ft.
P-2	36" x 320' 47"	S-1	OUTFALL	20.40	17.20	0.0100'/ft., Aluminum Pipe
P-3	36" x 48' 44"	DITCH	S-2	24.40	22.11	0.0521'/ft.
P-4	36" x 342' 26"	S-2	OUTFALL	22.11	19.00	0.0100'/ft., Aluminum Pipe
P-5	18" x 118' 11"	S-3	S-2	24.40	23.61	0.0072'/ft.
P-6	18" x 88' 80"	S-4	S-5	24.00	23.50	0.0057'/ft.
P-7	36" x 68' 44"	DITCH	S-5	22.00	22.00	0.0049'/ft.
P-8	36" x 104' 43"	S-5	OUTFALL	22.00	15.00	0.0673'/ft., Aluminum Pipe



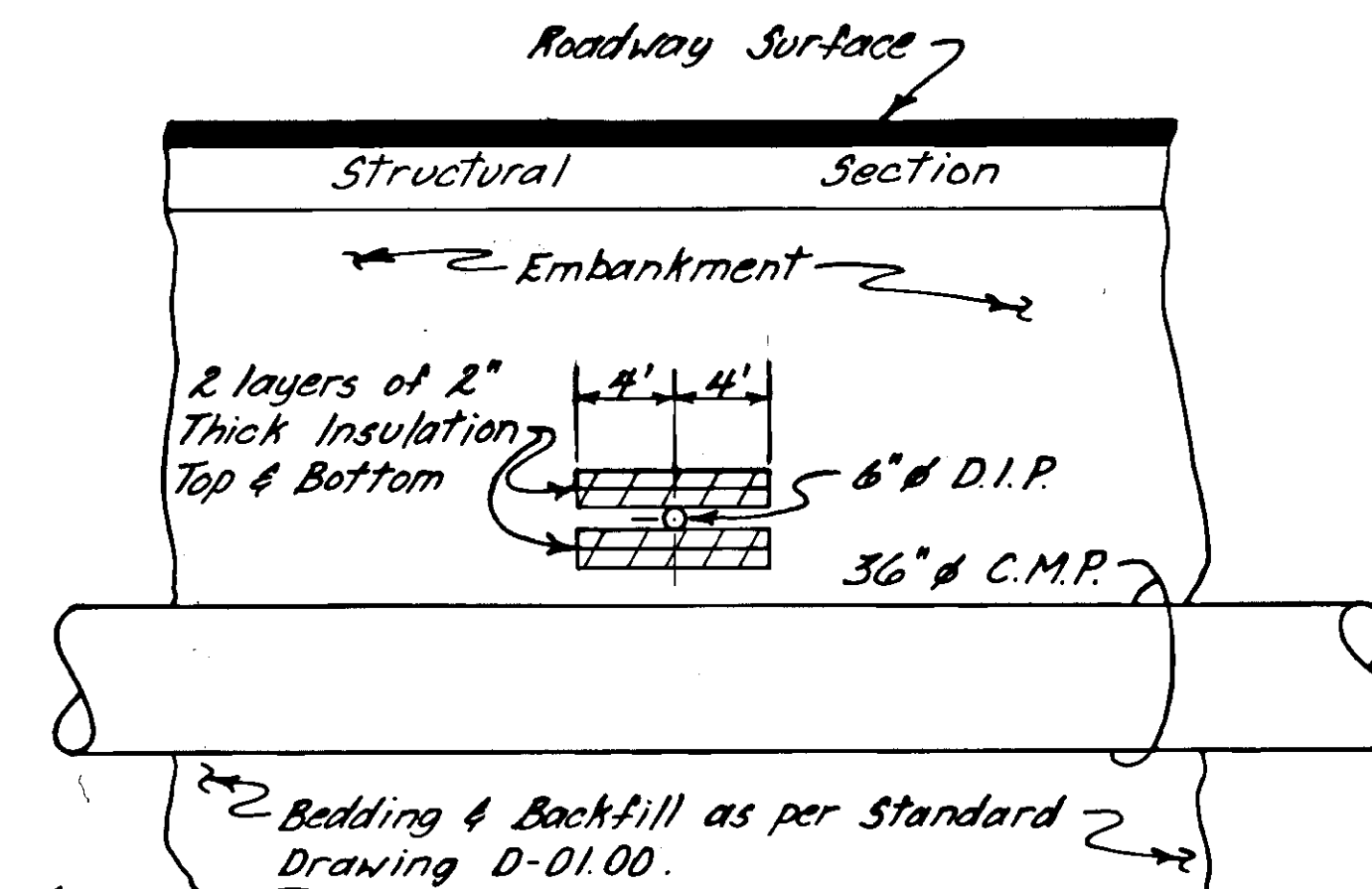
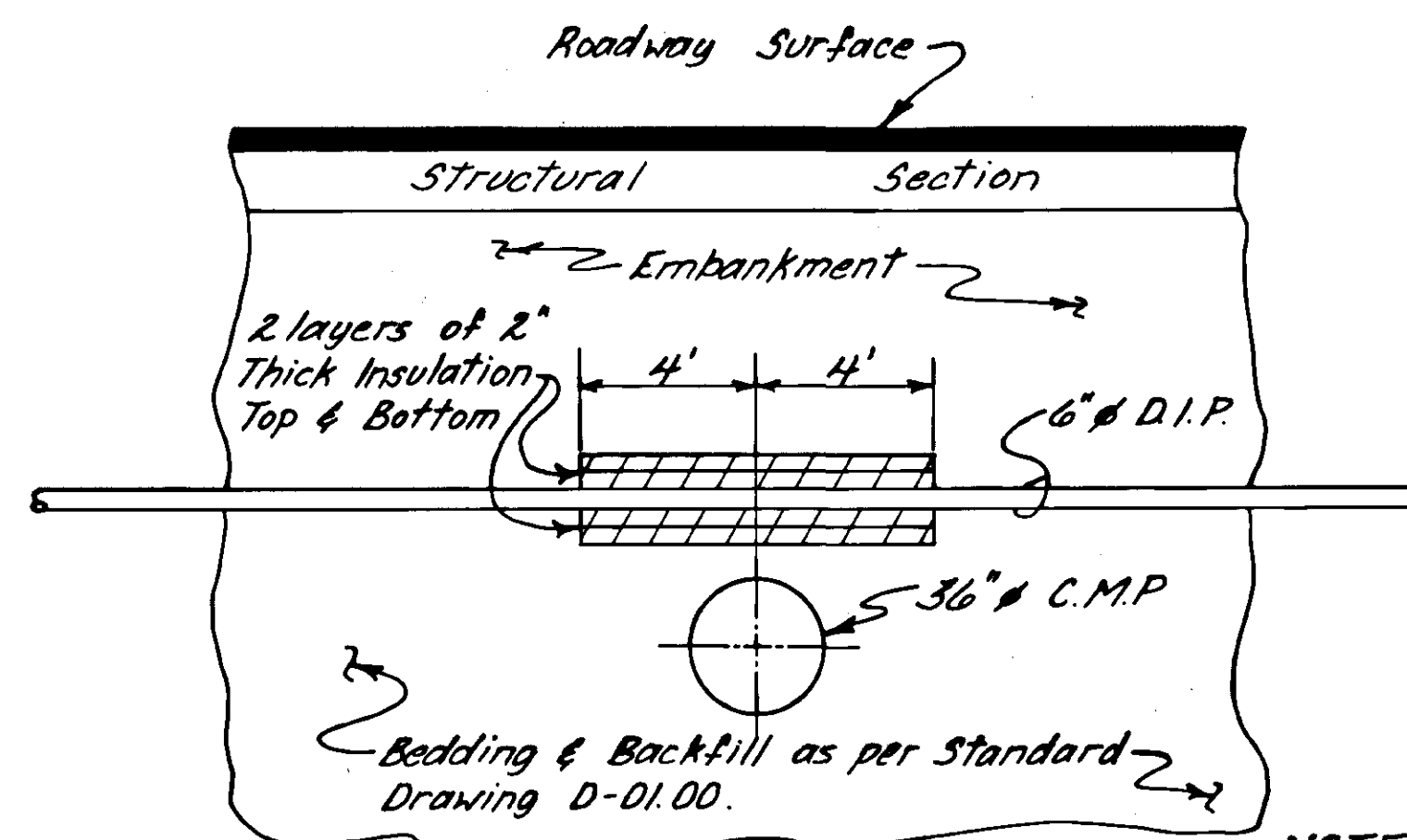
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) 8 67453	1987	31	68

6" Ø D.I.P. & APPURTENANCES SUMMARIES & DETAILS

VALVE BOX ADJUSTMENT SUMMARY			
STATION	OFFSET		REMARKS
	LEFT	RIGHT	
"0" 2+61		1'	
"0" 3+48		1'	
"0" 6+40	5'		
"0" 6+45	1'		
"0" 13+03	34'		

FIRE HYDRANT RELOCATION SUMMARY			
FROM STATION	OFFSET	TO STATION	OFFSET
"0" 3+49	23' RT.	"0" 3+49	28' RT.
"0" 6+30	16' RT.	"0" 6+30	28' RT.

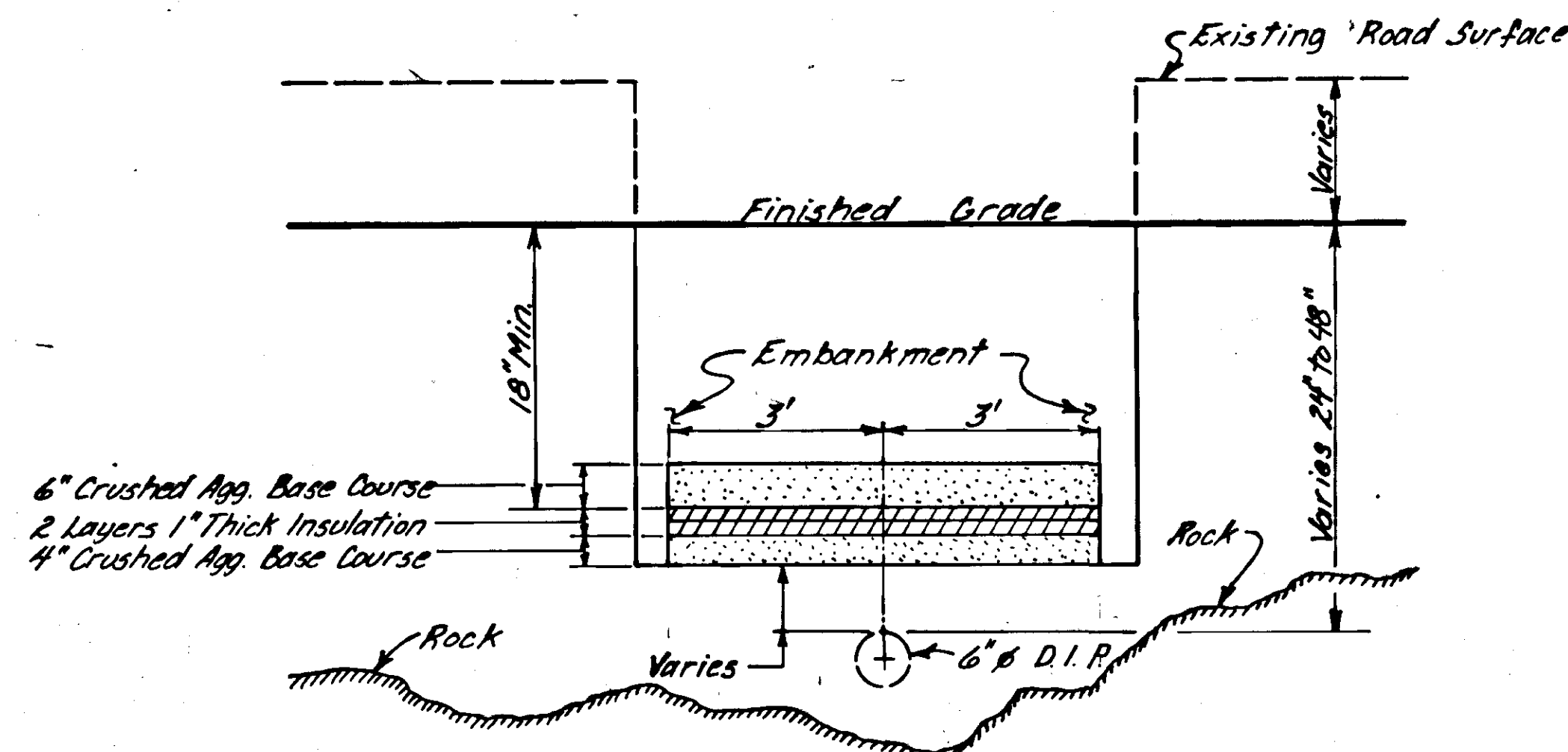
NOTE: Remove & Dispose of Existing Concrete Hydrant Pads.



NOTE: Materials & Labor Involved with Insulation of Existing 6" Ø D.I.P. is Considered Incidental to Item 603

WATERLINE INSULATION DETAILS

STA. "0" 3+90.00 & STA. "0" 5+50.00



NOTE: The Contractor Shall Verify Exact Location of 6" Ø C.I.P. Before Commencing Insulation Work.

6" Ø WATERLINE INSULATION DETAIL

STATION "0" 9+40, 15' LT. TO STATION "0" 12+25, 24' LT.

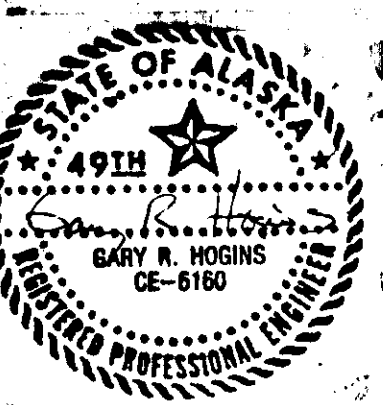
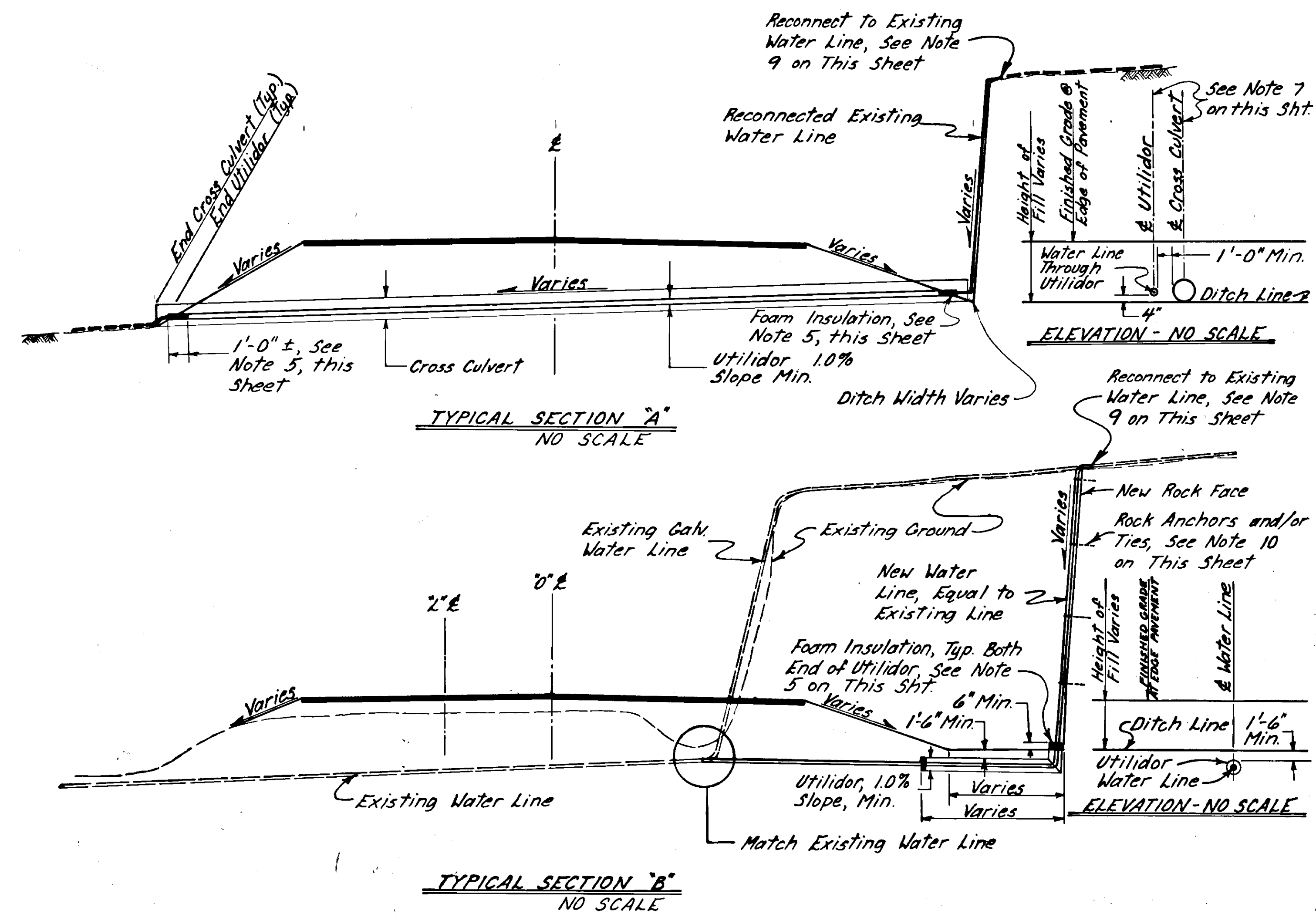


STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920 (17) & 67453	1987	32	68

DOMESTIC UTILITY GENERAL NOTES

DOMESTIC UTILITIES NOTES & DETAILS

- The contractor shall notify all residences to be impacted by construction activities 48 hours prior to commencing construction activities.
- Data shown in the Domestic Water Service Summary & the Domestic Septic Line Summary on sheet 33 represents, to the best of D.O.T. & P.F.'s knowledge, those domestic water lines, sources, structures, & septic lines existing within the project limits. These summaries in no way imply that other water lines, sources, structures, & septic lines do not exist. As such, other water lines, sources, structures, & septic lines may be encountered by the contractor throughout the term of the contract. It shall be the contractor's responsibility to verify all data made available on the plans prior to construction work & to perform his work in such a manner that if other water lines, sources, structures, & septic lines are encountered, any impact to said water lines, sources, structures, septic lines, & residences shall be kept to a minimum. If an unforeseen water line, source, structure, or septic line is disturbed the project engineer shall be notified immediately & every effort shall be made to restore the water line, source, structure, or septic line to the residence(s) affected to an operable condition while permanent measures to rectify the damage(s) can be made. In the case of a water line, source, or structure, the contractor shall ensure that potable water is provided to the residence(s) after temporary repairs are made. In the case of a septic line the contractor shall make every effort to ensure minimal contamination to the surrounding area.
- The water lines servicing the Ward Cove Cannery (Sta. 0+171+00) shall remain fully operational at all times between May 1st & September 15th. Between September 15th & May 1st the water lines may be disconnected for a maximum of 48 hours unless previous written arrangement have been made with the owners. See note 6 on this sheet & see sh. 33 regarding the water line at Sta. 0+169+45.
- Those existing lines that are presently insulated and/or heat-taped shall be insulated and/or heat-taped equivalent to existing conditions for the distances or lengths that the lines have been impacted due to construction activities.
- It is intended for the contractor to reuse the existing P.V.C. water lines. The contractor shall perform his work such that lines are disconnected, pulled from their existing locations, & reinstalled in their respective utilidors. The contractor shall ensure that the lines are handled such that dirt, rodent infiltration, & other objects do not get inside of the water lines during construction activities. If any such contamination does occur, the contractor shall disinfect the entire line in accordance with 628-3.07, Disinfection of Water Lines. Both ends of the utilidor shall be plugged with 1'-0" ± of expanding polyurethane foam insulation. This work shall be considered incidental to Item 628(12).
- Residences impacted by construction activities shall not be without potable water for more than 8 hours at any time unless previous written arrangements have been made between the contractor & the residence owner(s).
- Utilidors may be installed in the same trench adjacent to the proposed cross culverts. The utilidors shall be located on the downstream side of the cross culverts. A minimum of 4" shall be maintained between the ditch line & the bottom of the utilidor.
- Rock slopes vary, see Rock Excavation Slope Exception Table on sheet 3.
- Reconnect water lines as close as feasible to the top edge of the new rock face to avoid impacting the existing water lines any more than is necessary.
- Provide rock anchors and/or ties as required on rock cuts 10' high or higher to ensure against excess swaying and movement of waterline. Labor & materials for rock anchors and/or ties shall be considered incidental to Item 628(12).
- The domestic water service located adjacent to the cross culvert at Sta. 0+86+67, E, will not be impacted by construction activities. If this line should be impacted, the contractor shall provide a 6" Ø utilidor. The utilidor shall be paid for under Item 603(22-6), all other work shall be paid for according to Section 104-1.04 of the specifications.
- The contractor shall install a 6" Ø utilidor adjacent to the existing C.M.P. at Sta. 0+41+57.5 without disturbing the existing C.M.P. The utilidor shall stop at 40' Lt. of 0+E. Stake left end for future water service hook-up by residence at Sta. 0+42+00, Lt. The existing 18" Ø C.M.P. supplies water to the residence at Sta. 0+42+00, Lt. & shall remain undisturbed for one week after the utilidor is installed. The owner of this residence shall be allowed one week to hook up his new water system. After that time the contractor shall remove the existing C.M.P. at his discretion. If the residence owner has not installed his new water system or made other arrangements within this week, the contractor shall not be required to supply potable water to this residence.
- The plan sheets indicate the existing road crossing conditions only. The proposed crossings with utilidors are not depicted.



DOMESTIC UTILITIES SUMMARIES

DOMESTIC WATER SERVICE SUMMARY

STATION	OFFSET		DESCRIPTION (See Note 2 on Sht. 32)	WORK REQUIRED (Also Refer to Applicable Typical Section, Sht. 32)
	LT.	RT.		
0+33+00 ▲		X	(A) Exposed 1 1/2" P.V.C. from tank to residence(s)	⑤
0+37+64		X	(A) Exposed 1 1/2" P.V.C. on streambed from source approx. 75' upstream from C.M.P. inlet. P.V.C. line services wood water tank approx. 70' Lt. of 0+37+64. P.V.C. crosses hwy. through C.M.P. Heat tapes run from residence through C.M.P. to approx. 40' upstream from C.M.P. inlet.	Remove existing water lines within R/W. Water lines are to be abandoned. Residence to be demolished by owner. Install 6" galv. utilidor for future use. Plug both ends of utilidor to prevent water & rodent infiltration. This work shall be considered incidental to Item 628(12).
0+41+44 ■		X	(A) Exposed 1 1/2" P.V.C. joins exposed 2" galv. pipe. 2" galv. pipe drops off rock cliff to ditch line & crosses hwy. adjacent to C.M.P.	① During rock work. Reconnect w/ new 2" galv. pipe. New 2" galv. pipe shall be used from toe of new rock face to top of new rock face. New line shall be insulated & heat-taped to existing conditions ④
0+41+57.5	X		Existing C.M.P. (A)(B)	See Note 13 on Sheet 32.
0+46+69		X	(A) Existing 1" black P.V.C. water line running through C.M.P.	Remove existing water line within R/W. Line to be abandoned.
0+49+00 ●		X	(A) Exposed 1 1/2" P.V.C. services residences @ sta. 0+48+50, Rt. Residence stores water in concrete basement of house. Fuel line runs from rock face to fuel tank behind house.	Any construction work shall be performed in such a manner that residence basement water storage is not adversely impacted. No work req'd on fuel line. Contractor shall perform work in such a manner that fuel line is not impacted.
0+56+20 ▲		X	(A) Exposed 1 1/2" P.V.C. from dam crosses hwy. through C.M.P. Sta. 0+58+50, Lt. residence water line runs along ditch line Rt. to approx. sta. 0+58+40 & crosses under hwy.	⑤
0+64+52 ●		X	(A) EXPOSED 1 1/2" P.V.C. REDUCES TO 1" P.V.C. AT STORM DRAIN & CROSSES HIGHWAY THROUGH C.M.P.	① For storm drain & culvert work ②③④
0+86+67	£	£	Domestic Water Service	See Note 11 on Sheet 32
0+87+60 ●		X	(A) Exposed 1 1/2" P.V.C. crosses hwy. through C.M.P.	①②③④
0+92+81 ●		X	(A) Exposed 1 1/2" P.V.C. crosses hwy. through C.M.P. A 2" galv. pipe is partially exposed upstream of inlet & remaining is buried. The 2" galv. pipe is not visible at outlet of C.M.P. The contractor shall field verify whether the 2" galv. pipe crosses hwy. adjacent to C.M.P.	①②③④ For 1 1/2" P.V.C.. The 2" galv. pipe requires no work.
0+97+45 ▲		X	(A) 2" steel pipe & 1 1/2" P.V.C. exposed on streambed & crosses highway adjacent to C.M.P.	⑤ If lines are impacted ①②③④
0+103+50 ▲		X	1 1/2" P.V.C. exposed between two residences.	⑤
0+104+32 ●		X	(A) 1 1/2" P.V.C. & garden hose exposed for entire length and crosses hwy. through C.M.P. 2" steel pipe exposed at C.M.P. inlet. Contractor shall field verify whether the 2" steel pipe is still active prior to commencing construction work.	①②④ Move 1 1/2" P.V.C. & garden hose against pole line away from highway. If 2" steel pipe is still active, replace w/ 2" galv. pipe for length crossing hwy. Reconnect line through the 6" utilidor.
0+106+50 ▲		X	(B)	⑤
0+124+00 ▲		X	(B)	⑤
0+125+00 ▲		X	Exposed 1 1/2" P.V.C. to plastic pool storage tank.	⑤
0+133+00 ▲		X	Exposed 1 1/2" P.V.C. running through approx. 4" wood stove pipe. Approx. 70' of 1 1/2" P.V.C. is exposed on ground surface of roadway embankment.	⑤
0+137+04 ●		X	(A) Exposed 1 1/2" P.V.C. from log dam to C.M.P. inlet. Crosses hwy. through C.M.P. 1 1/2" white rubber hose ties off of 1 1/2" P.V.C. at C.M.P. inlet & crosses hwy. through 6" wood stove pipe adjacent to C.M.P.	①②③④ Remove both water lines & wood stove pipe. Install tee-connection at outlet end of utilidor to reconnect residence water line. Removal of wood stove pipe shall be paid for under Item 202(4). Place 1 1/2" P.V.C. on embankment to building.
0+147+58 ●		X	(A) Wood dam approx. 3'-6" high & 22' wide, 170' Rt. of 0+37+64. Exposed 1" P.V.C. crosses hwy. through C.M.P. 2" galv. steel pipe crosses hwy. through 6" wood stove pipe adjacent to C.M.P.	①②③④ The 2" galv. pipe shall be relocated as necessary for guard rail relocation. The 1" P.V.C. & the 2" galv. steel pipe shall share one 6" utilidor.
0+154+00 ■		X	(A) Wood dam approx. 8' high & 10' wide w/ 2" galv. pipe inlet through base. 2" galv. pipe buried in streambed to rock cliff adjacent to hwy. 2" pipe enters a 12" wood stove pipe to ditch line. Water line crosses hwy. then runs to residence on a skew to approx. 0+153+00, Lt.	①②③ Run 2" galv. pipe up new rock face to join existing 2" galv. pipe. Provide necessary rock anchors as required. See Note 10 on sht. 32. Wood ladder will not be replaced. ④
0+169+45		X	(A) Exposed 4" galv. pipe runs down streambed & crosses under existing bridge abutment 1.	①④ Reconnect 4" galv. pipe under new bridge to existing line as req'd. Utilidor not req'd. It will be necessary to maintain this line while the detour is in place.
0+171+00 ■		X	(A) Exposed 2" & 6" Steel pipe running down rock face.	The 2" line is presently abandoned & is to be removed. For 6" line ①④, See note 3 on sht. 32.
0+191+40 ▲		X	(A) Exposed 1 1/2" P.V.C. on streambed to residence at the base of the stream. Heat tapes extend from residence to approx. 15' upstream.	⑤

LEGEND

- (A) - Indicates a gravity feed system.
- (B) - Indicates a concrete holding tank in the basement of residence.
- ① - Temporarily disconnect water line to allow for construction activities.
- ②* - Install utilidor adjacent to new cross C.M.P. to be installed.
- ③ - Relocate water line(s) through utilidor.
- ④ - Provide potable water to residence(s) as required during interruption of existing system(s).
- ⑤ - No work required
- - Utilize Typical Section "A" on sheet 32
- - Utilize Typical Section "B" on sheet 32
- ▲ - No work required
- Ø - Diameter

* See Utilidor Summary & Utilidor Notes on This Sheet.

DOMESTIC SEPTIC LINE SUMMARY

STATION	OFFSET		SEWER CONDUIT REQUIRED	WORK REQUIRED
	LEFT	RIGHT		
0+45+20		X		No work req'd. on 4" sewer line, See sht. 11.
0+48+75		X	35	①②③ See note 2 on sht. 32
0+51+00		X	20	①②③ See note 2 on sht. 32
0+85+00		X		No work req'd. on 8" conc. sewer line, see sht. 14
0+106+20		X		No work req'd. on grey water line
0+111+00		X		No work req'd. on 6" leach line, See sht. 16
0+126+00 to 0+127+75		X		No work req'd. on 3" sewer line, See sht. 17
0+171+00		X	75	Remove wood stove pipe from within R/W. Install New 4" C.I.P. line to new rock face. Provide 3' stub & cap for future use.

LEGEND

- ① - Temporarily Disconnect Existing 4" Service Line
- ② - Extend Service Line to New Rock Face with New C.I.P.
- ③ - Reconnect to Existing Service Line

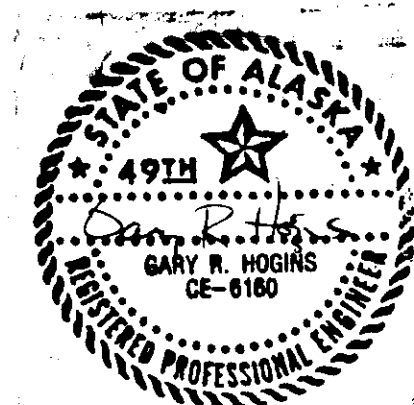
NOTE: All labor & materials required on domestic septic systems will be paid for under Item 628(12).

UTILIDOR SUMMARY

STATION	6" Ø		STATION	6" Ø	
0+37+64-67	66' 70 L.F.		0+104+29	80 L.F.	
			0+137+00	70 L.F.	
0+41+57.5	80 L.F.		0+147+55	70 L.F.	
0+64+60	100 L.F.		0+154+00	10 L.F.	
0+87+60	90 L.F.		0+171+00	16 L.F. 18" C.M.P.	
0+92+80	80 L.F.				

UTILIDOR NOTES

- Utilidors shall consist of 6" C.M.P. & shall be paid for under Item 203(22-6), unless otherwise specified in the utilidor summary.



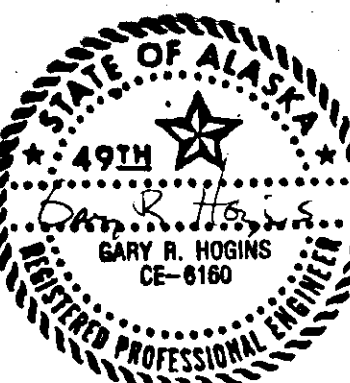
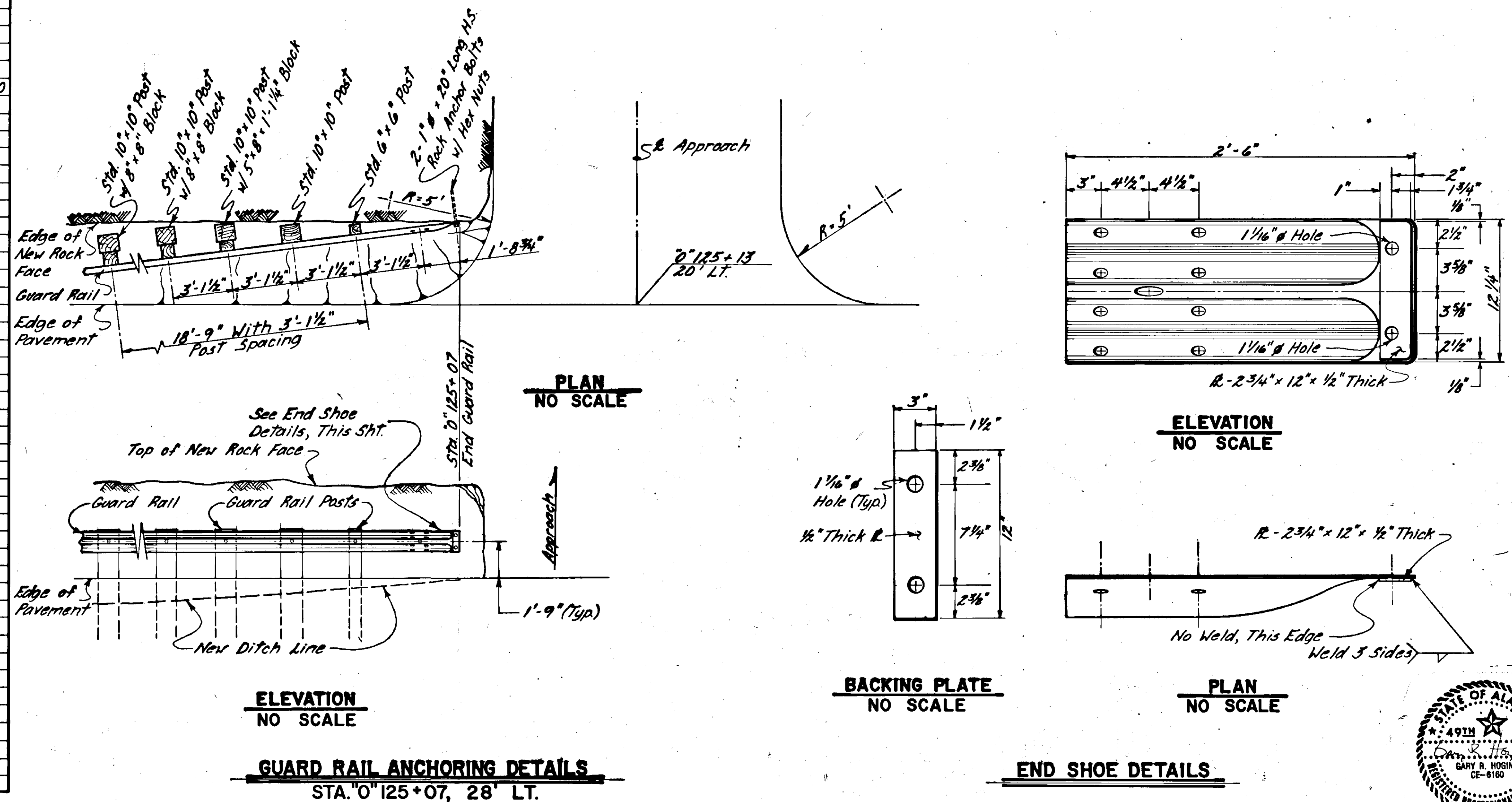
GUARD RAIL REMOVAL SUMMARY

STATION TO STATION		LENGTH (L.F.)		REMARKS
		LEFT	RIGHT	
0" 13+50	0" 19+80	637.5		R=15', 48' Lt. of 0" E, Match Exist. Guard Rail
0" 20+57	0" 37+94.50	1,737.5		
0" 42+45.50	0" 45+95.50	350.0		100' Flare to 29' Lt. of 0" 45+95.50
0" 46+95	0" 47+70	75.0		
0" 48+12.50	0" 52+00	387.5		
0" 52+26.50	0" 53+01.50	75.0		
0" 58+41	SL 10+77	425.0		No Flare Required, See Sheet 12. R=65, See Sheets 13 & 38.
0" 63+10	0" 65+10	200.0		
0" 82+50	0" 83+87.50	137.5		
0" 84+47	0" 85+72	125.0		Adjust to Fit as Directed by the Engineer
0" 86+11	0" 91+11	500.0		
0" 97+50	0" 108+50	1,100.0		
0" 108+87	0" 113+71	487.5		R=30', 33' Lt. of 0" E, See Sheets 16 & 39
0" 114+18	0" 118+85.50	525.0		R=25', 69' Lt. of 0" E, See Sheets 16 & 39 R=35', 44.5' Lt. of 0" E, See Shts. 17 & 40
0" 119+01.5	0" 123+01.50	400.0		No Flare Required, See Shts. 17 & 40
0" 123+45	0" 125+07	162.5		
0" 125+27	0" 126+02	75.0		
0" 128+75	0" 130+37.50	162.5		Adjust to Fit as Directed by the Engineer
0" 130+94	0" 134+92	400.0		R=25', 37' Lt. of 0" E, See Shts. 18 & 41 R=35'
0" 135+40	0" 141+52.50	612.5		Match Existing Guard Rail
0" 144+87.50	0" 149+75	487.5		Match Existing Guard Rail
0" 154+10	0" 165+72.50	1,162.5		
0" 166+20	0" 167+07.50	87.5		
0" 168+39.50	0" 169+27		87.5	Match Conc. Bridge Rail, See Sht. 54
0" 168+53.50	0" 169+41	87.5		Match Conc. Bridge Rail, See Sht. 54
0" 170+07	0" 170+63.25		56.25	Match Conc. Bridge Rail, See Sht. 54
0" 170+21	0" 171+71	150.0		Match Conc. Bridge Rail, See Sht. 54
0" 173+26.50	0" 175+89	262.5		
0" 176+50	0" 177+50	100.0		
0" 179+30	0" 189+67.50	1,037.5		
0" 190+45.50	0" 196+95.50	650.0		
0" 200+24	0" 207+49	725.0		
0" 210+53	0" 216+03	550.0		
0" 223+53.50	0" 223+78.50	25.0		

[illegible]

GUARD RAIL SUMMARIES AND DETAILS

1. Install an End Anchorage at Sta. "0" 220+47, Lt.
2. Remove & dispose existing Spade End & replace with an End Section at Sta. 0" 223+40, Rt.
3. The contractor may elect to use steel posts & shims for the guard rail end anchorage at Sta. 0" 125+07, 28' Lt., & detailed on this sheet. Drilling in bedrock will be necessary for the installation of the posts for the end anchorage at Sta. 0" 125+07, 28' Lt.
4. One (1) standard flat plate washer shall be installed beneath the head of the bolt that fastens the last rail element onto the terminal post.



STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) 8 67453	1987	35	68

SIGNING SCHEDULE

SIGN NO.	STATION	OFFSET		CODE NUMBER	LEGEND	SIGN PANEL			POST	FACING TRAFFIC	REMARKS
		LEFT	RIGHT			SIZE	THICKNESS	AREA(SF)			
1	0+10+00		25'	M10-2	MILEPOST 3	10"x18"	0.080"	1.5	1	Tube	5' From Shoulder, Legend Both Sides
2	0+19+62	30'		R1-1	STOP	30"x30"	0.080"	6.25	1	"	3' Behind Face of Guard Rail
3	0+21+00		25'	R2-1	SPEED LIMIT 50	30"x36"	0.080"	7.5	1	"	5' From Shoulder
4	0+21+00	22'		R2-1	SPEED LIMIT 35	30"x36"	0.080"	7.5	1	"	S.B.
5	0+55+10		22'	D3-2L	SHORELINE DR.	42"x8"	0.125"	11.25	2	"	4' Post Spacing
6	0+62+10	38'		D3-1B	SHORELINE DR.	42"x8"	0.100"	2.35	1	"	Legend Both Sides
7	0+62+10	38'		R1-1	STOP	30"x30"	0.100"	6.25		"	3' Behind Face of G.R., Mount Below 6
8	0+62+80		34'	M10-2	MILEPOST 4	10"x18"	0.080"	1.5	1	"	Legend Both Sides
9	0+67+25		30'	R1-1	STOP	30"x30"	0.080"	6.25	1	"	W.B.
10	0+91+15	38'		D3-1B	SHORELINE DR.	42"x8"	0.100"	2.35	1	"	Legend Both Sides
11	0+91+15	38'		R1-1	STOP	30"x30"	0.100"	6.25		"	3' Behind Face of G.R., Mount Below 10
12	0+105+00	23'		R2-1	SPEED LIMIT 50	30"x36"	0.080"	7.5	1	"	3' Behind Face of Guard Rail
13	0+108+45	26'		D3-1B	SHORELINE DR.	42"x8"	0.100"	2.35	1	"	Legend Both Sides
14	0+108+45	26'		R1-1	STOP	30"x30"	0.100"	6.25		"	3' Behind Face of G.R., Mount Below 13
15	0+112+50	23'		D3-2R	SHORELINE DR.	42"x8"	0.125"	11.25	2	"	4' Post Spacing
16	0+114+50		22'	R2-1	SPEED LIMIT 50	30"x36"	0.080"	7.5		"	N.B.
17	0+115+60		22'	M10-2	MILEPOST 5	10"x18"	0.080"	1.5	1	"	Legend Both Sides
18	0+168+40		22'	M10-2	MILEPOST 6	10"x18"	0.080"	1.5	1	"	Legend Both Sides
19	0+169+25		23'	I-3	CANNERY CREEK	54"x24"	0.100"	9.0	2	"	3' Behind Face of G.R., 3 1/2' Post Spacing
20	0+170+23	23'		I-3	CANNERY CREEK	54"x24"	0.100"	9.0	2	"	3' Behind Face of G.R., 3 1/2' Post Spacing
21	0+186+00		22'	R2-1	SPEED LIMIT 50	30"x36"	0.080"	7.5	1	"	N.B.
22	0+186+00	23'		R2-1	SPEED LIMIT 50	30"x36"	0.080"	7.5	1	Tube	3' Behind Face of Guard Rail
23	0+207+20		22'	D1-2	WARD LAKE ROAD	60"x24"	0.125"	10.0	2	Steel Pipe	3 1/2' Post Spacing
24	0+209+50		22'	W1-2L		36"x36"	0.100"	9.0	1	Tube	N.B.
25	0+209+50		22'	W13-1	40 M.P.H.	24"x24"	0.100"	4.0		"	Mount Below 24
26	0+213+00	23'		R2-1	SPEED LIMIT 50	30"x36"	0.080"	7.5	1	"	3' Behind Face of Guard Rail
27	0+215+02		38'	R1-1	STOP	30"x30"	0.080"	6.25	1	"	W.B.
28	0+215+00		150'	R2-1	SPEED LIMIT 45	30"x36"	0.080"	7.5	1	"	N.B.
29	0+221+00	23'		D1-2	WARD LAKE ROAD	60"x24"	0.125"	10.0	2	"	3' Behind Face of Guard Rail
30	0+220+50		24'	R2-1	SPEED LIMIT 50	30"x36"	0.080"	7.5	1	"	3 1/2' Post Spacing
31	0+226+04		22'	R2-1	SPEED LIMIT 45	30"x36"	0.080"	7.5	1	"	N.B.
32	0+226+62		22'	M10-2	MILEPOST 7	10"x18"	0.080"	1.5	1	"	Legend Both Sides
33	0+228+48		26'	W1-4R		36"x36"	0.100"	9.0	1	"	N.B.
34	0+228+48		26'	W13-1	35 M.P.H.	24"x24"	0.100"	4.0		"	Mount Below 33
35	0+223+50	24'		W1-2R		36"x36"	0.100"	9.0	1	"	N.B.
36	0+223+50	24'		W13-1	40 M.P.H.	24"x24"	0.100"	4.0		"	Mount Below 35
37	0+220+85	24'		I-3	WARD CREEK	42"x24"	0.100"	7.0	1	"	S.B.
38	0+223+05	24'		I-3	WARD CREEK	42"x24"	0.100"	7.0	1	"	S.B.

SIGNING NOTES

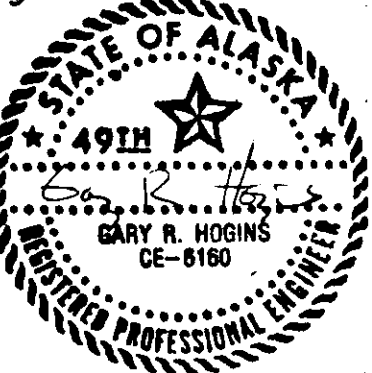
- Sign locations & post lengths are approximate only & are subject to minor field revisions. See Standard Drawing S-05.00.
- All sign posts shall be galvanized, telescoping, perforated, square steel posts except as noted in the signing schedule. All posts shall use the sleeve type embedment as detailed in Standard Drawing S-30.01.
- For signs which require 2 posts see Standard Drawing S-00.00 for post spacing details.
- Post lengths are from the cut-off in the sleeve to the top of the post. See Standard Drawing S-05.00.
- All signs to be replaced shall be dismantled by the contractor & stockpiled at the State of Alaska, D.O.T. & P.F. Maintenance Station as directed by the engineer.

SIGNING SCHEDULE AND MONUMENT SUMMARIES

SURVEY MONUMENT SUMMARY

STATION	MON.	CASE	REMARKS	STATION	MON.	CASE	REMARKS
0+2+00	X	X	Rt.	0+132+00	X	X	Rt.
0+13+50	X	X	Lt.	0+139+00	X	X	Rt.
0+22+95	X	X	Lt.				
				0+150+40	X	X	Lt.
				0+156+50	X	X	Lt.
0+28+50	X	X	Lt.				
0+34+30	X	X	Rt.				
				0+167+25	X	X	Rt.
				0+176+00	X	X	Rt.
0+41+50	X	X	Rt.				
				0+180+50	X	X	Lt.
				0+189+00	X	X	Rt.
0+51+85	X	X	Lt.				
0+64+00	X	X	Rt.				
				0+199+00	X	X	Rt.
0+71+65	X	X	Lt.				
0+77+25	X	X	Lt.				
				0+214+10	X	X	Rt.
				0+219+70	X	X	Rt.
0+94+00	X	X	Rt.				
				0+231+00	X	X	Lt.
				0+235+00	X	X	Lt.
0+106+00	X	X	Lt.				
0+113+50	X	X	Lt.				
0+126+00	X	X	Lt.				

NOTE: Refer to the Special Provisions for Details on Locating & Monuments.



RIGHT-OF-WAY MONUMENT SUMMARY

STATION	OFFSET LEFT	OFFSET RIGHT	DESCRIPTION	REMARKS
0+5+03.07	10.98'		C1, B.P.R. Centerline Monument in Case	
0+10+20.71		8.23'	B1, B.P.R. Centerline Monument in Case	
0+12+62.59	2.25'	2.25'	A1, B.P.R. Centerline Monument in Case	
0+12+62.85			Brass Cap Monument, By Others	
0+15+55.03		35.74'	Government Brass Cap Monument	
0+56+88.20	40.24'		Rebar/Cap	
0+58+15.86	40.83'		Brass Cap Monument, By Others	
0+62+15.51		97.09'	1 1/2" Iron Pipe	
0+82+20.93	44.32'		Brass Cap Monument, By Others	
0+83+93.13	44.94'		Brass Cap Monument, By Others	
0+147+23.92	41.61'		Brass Cap Monument, By Others	
0+153+19.39		61.48'	3" Iron Pipe	
0+153+76.84		35.86'	Brass Cap Monument, By Others	
0+183+38.22		39.53'	Government Brass Cap Monument	
0+193+38.89		40.91'	Government Brass Cap Monument	
0+193+38.95		44.95'	Government Brass Cap Monument	

MISCELLANEOUS SUMMARIES & LOOP DETECTOR DETAILS

REMOVAL OF STRUCTURES AND OBSTRUCTIONS

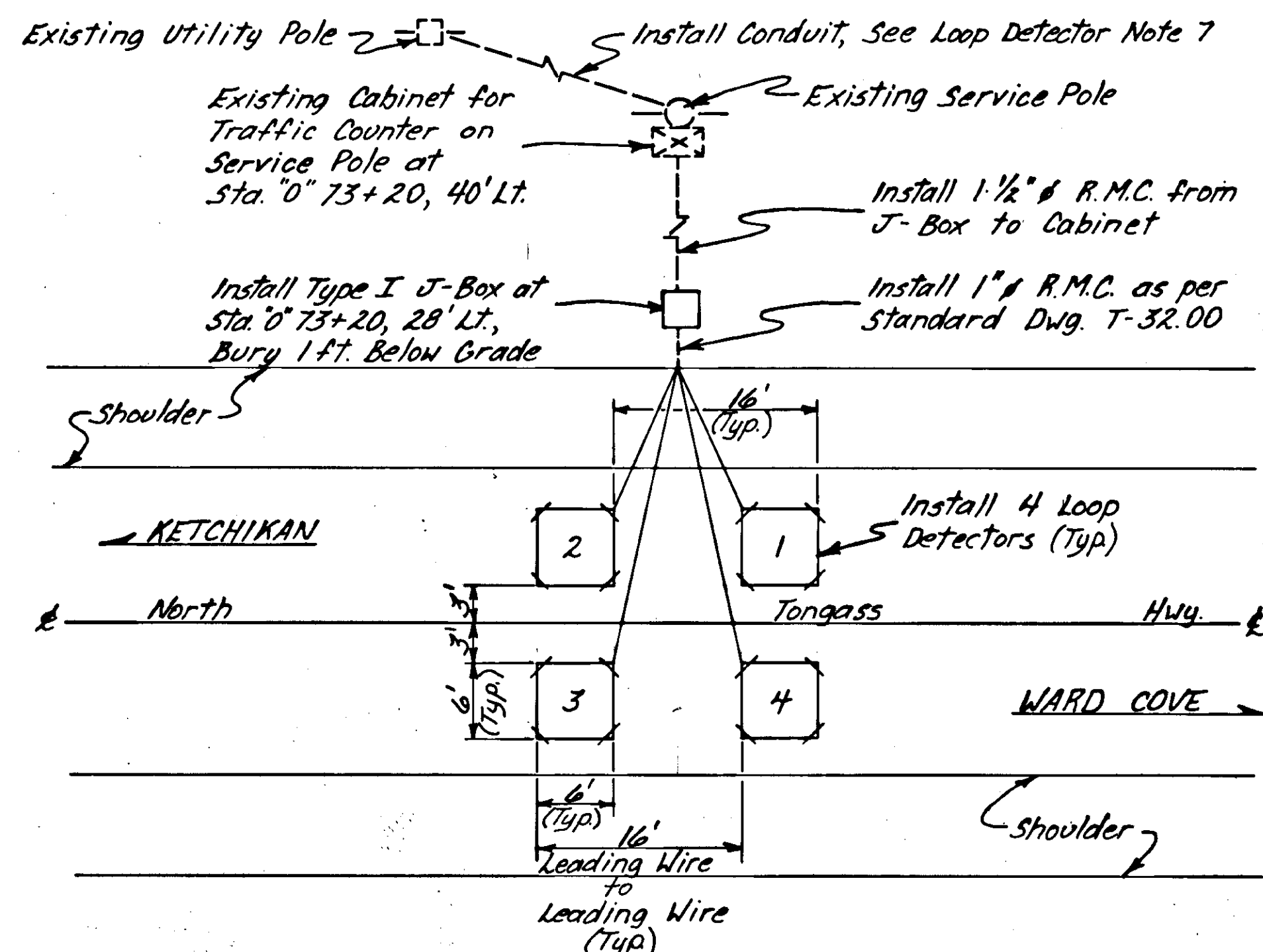
STATION TO STATION	OFFSET		REMARKS
	LEFT	RIGHT	
0+43+75	X		Relocate Shed on Skids to Outside of R/W.
0+46+00	X		Remove Fence from Within R/W.
0+48+40		X	Remove Wood Stairs, Temporary Access shall be Provided Until a Permanent Structure is Built.
0+106+35		X	Remove Rock Garden
0+126+50	X		Remove Wood Fence
0+150+50	X		Remove Fence From Within R/W
0+166+00	X		Remove Log Curbing From Within R/W
0+170+50		X	Remove House & 2" Fuel Line in its Entirety, See Sht. 21.
0+171+00		X	Remove Wood Stairs & Walkway
0+171+50		X	Remove House
0+173+30		X	Remove Parking Garage
0+173+75	X		Remove Concrete Pad at Top of Stairs.

NOTE: Above table reflects work required under Item 202(1). The removal of Cannery Creek Bridge shall be paid for under Item 202(12).

WASTE DISPOSAL SITES

- Waste excavation and clearing & grubbing waste shall be disposed of outside of the project R/W limits.
- The following are potential waste disposal sites that may be available to the contractor. The contractor will have to negotiate with the owners as to terms. Each site may have stipulations as to size, type, & quantity of material that may be disposed of on it.

TYPE OF MATERIAL THAT SITE IS AVAILABLE FOR	CONTACT	LOCATION
ROCK	KEVIN OR FRANCIS MURPHY PH. (907) 247-2463	MILEPOST 5 1/2 N. TONGASS HWY.
ROCK	LLOYD JONES SELEY INC. PH. (907) 225-2181	MILEPOST 9 N. TONGASS HWY.
ROCK	KANDY JOHNSON KETCHIKAN RED-MIX PH. (907) 225-2925	MILEPOST 3 N. TONGASS HWY.
ROCK	KENT HALVORSON BOYER TOWING PH. (907) 225-2090	SHORELINE DR., 1/4 MILE FROM SOUTH ENTRANCE
ROCK	ROBERT CROWDER PH. (907) 225-4813	MILEPOST 4 1/2 N. TONGASS HWY.



LOOP DETECTOR DETAIL

MANHOLE SUMMARY

STATION	OFFSET		REMARKS
	LEFT	RIGHT	
0+5+19	28'	6'	Adjust Both
0+7+74		18'	Reconstruct
0+10+22		22'	Reconstruct
0+12+59		14'	Reconstruct
0+63+79		30'	Reconstruct
0+64+79		30'	Reconstruct, 9' Diameter
0+65+64		29'	Reconstruct

NOTE: Top elev. of structure at Sta. 0+64+79 shall be within 1'-0" of the pavement shoulder grade. The embankment shall slope away from the top of the structure at a grade of 4:1.

4' CHAIN LINK FENCE INSTALLATION TABLE

STATION TO STATION	OFFSET		REMARKS
	LEFT	RIGHT	
0+120+00	0+123+00	50'	

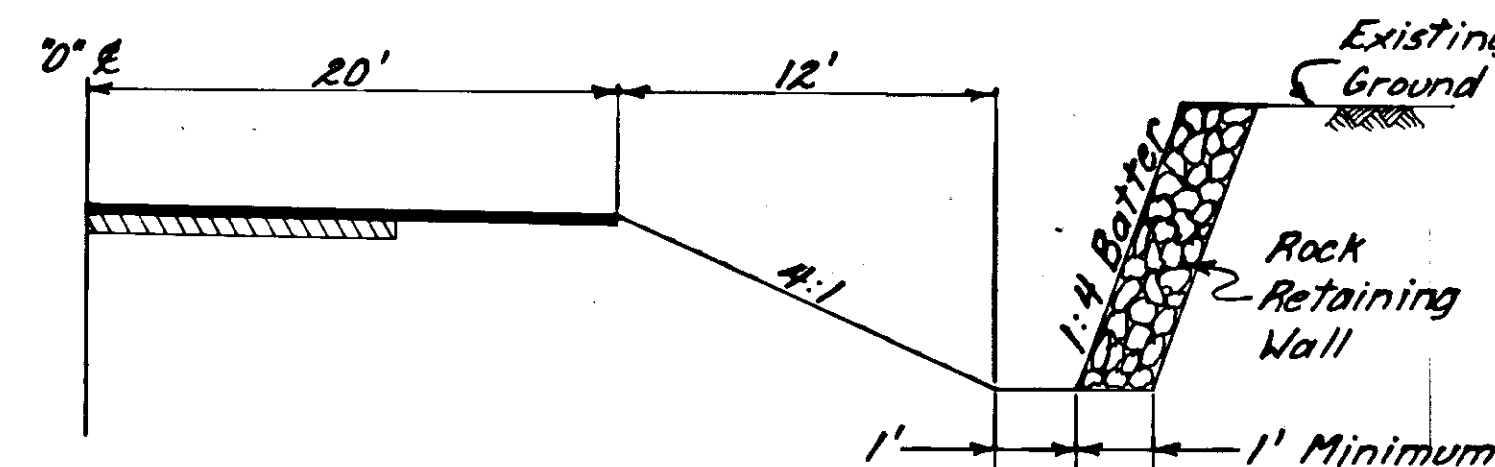
STAIRWAY INSTALLATION SUMMARY

STATION	OFFSET		REMARKS
	LEFT	RIGHT	
0+48+20		28'	

HAND-LAID ROCK SUMMARY

STATION TO STATION	OFFSET		ESTIMATED HEIGHT
	LEFT	RIGHT	
0+48+43	0+48+61	33'	8'
0+50+09	0+50+60	33'	4'
0+51+64	0+52+88	33'	4'
0+125+60	0+126+00	33'	4'
0+126+22	0+126+70	33'	4'

NOTE: The proposed rock walls are intended to replace existing rock walls to be removed as a result of constructing the new ditch line.



HAND-LAID ROCK DETAILS

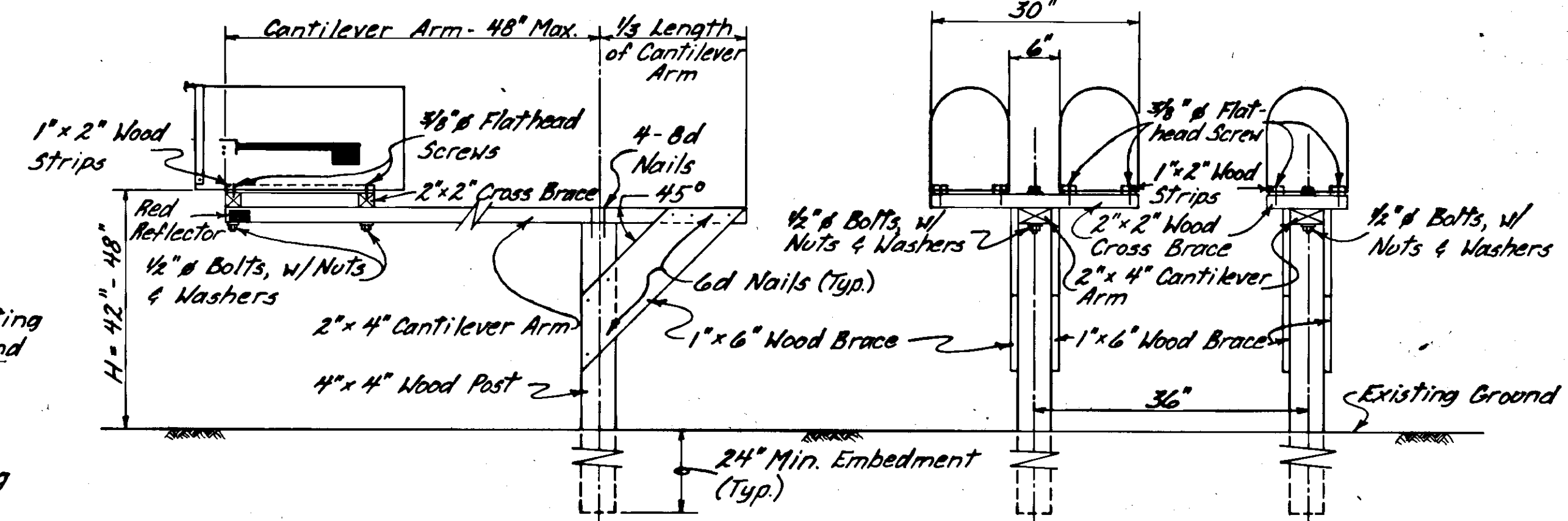
NO SCALE

LOOP DETECTOR NOTES

- Loop detector wire shall have its own P.V.C. ducting. The wire shall be #14 AWG, stranded T.H.H.N. (U.L.) 600V. The ducting shall be U.L. FR-1 rated 105°C, wall thickness 0.031", inner dia. nom. 0.186", moisture, chemical, & oil resistant.
- Saw-cuts for the loop detector wires shall be 3/8" wide.
- In lieu of 45° saw-cuts on loop corners, 2 1/2" dia. holes may be bored in the pavement or the pavement may be chipped out on the inside of the 45° saw-cut intersections to allow for a wire bending radius of not less than 1".
- All loops shall have 4 turns each & shall be 6" x 6".
- Each loop shall have its own lead-in cable. Cables shall be as per Alaska Standard Specifications for Highway Construction, 660-2.08 - Conductors. Lead-in cables shall be connected in the cabinet by others.
- A key to the cabinet may be obtained from the D.O.T. & P.F. Maintenance Shop.
- Install 1" R.M.C. from utility pole telephone box to service pole traffic counter box. Install parallel to the existing underground electrical service. Length required = approx. 20'.

MAILBOX SUMMARY

STATION	OFFSET		No. of Single Boxes Req'd	No. of Double Boxes Req'd	STATION	OFFSET		No. of Single Boxes Req'd	No. of Double Boxes Req'd
	LT.	RT.				LT.	RT.		
0+34+40		X	1		0+85+15		X	1	
0+38+20		X	1		0+95+15		X	1	
0+40+15		X	1		0+103+25		X	1	
0+42+00		X		1	0+103+40		X	1	
0+44+85		X		2	0+106+50		X	1	
0+48+00		X	1		0+107+80		X	1	
0+53+90		X	1	3	0+109+00		X	1	
0+54+90		X	1		0+113+50		X	1	
0+56+20		X	1		0+117+00		X	1	1
0+57+95		X		2	0+125+60		X	1	
0+67+80		X	1		0+126+60		X		4
0+77+40		X	1		0+151+50	X		1	3
0+78+75		X		2	0+173+80		X	1	
0+82+50		X	1	8	0+219+50		X	1	



PLAN

DOUBLE BOX SUPPORT

SINGLE BOX SUPPORT

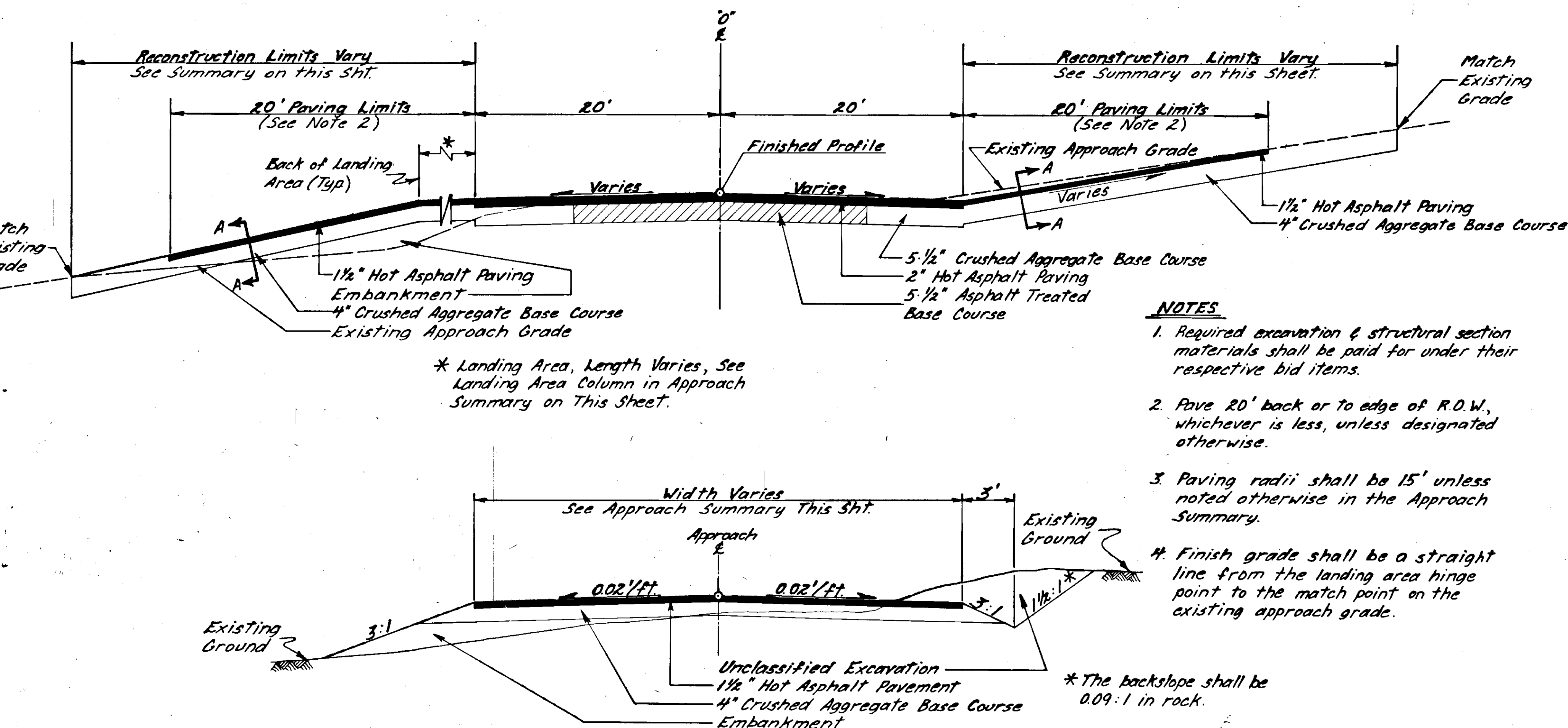
TYPICAL WOOD CANTILEVER INSTALLATION DETAILS

NO SCALE

MAILBOX INSTALLATION NOTES

- See Standard Drawing M-20.01, Mailbox Location, for details on location of posts & boxes along roadway.
- Posts shall be 4" x 4" Wood, S4S.
- Timber shall be standard dimensional lumber & may be any of the following types: Hemlock, Douglas Fir, Western Pine, Sitka Spruce, or other as approved by the engineer.
- End of timber to be embedded shall be treated with one of the following: Creosote Oil, Creosote & Coal Tar Solution, Creosote & Petroleum Solution, or Pentachlorophenol in accordance with the latest applicable standards of the American Wood Preservers Association.
- Predrilled holes for bolts & screws shall be in accordance with Alaska Standard Specifications for Highway Construction, Section 506-3.04.
- All steel fasteners shall conform to A.S.T.M. A307, Grade A.
- Each support structure shall not accommodate more than 2 mailboxes unless the support structure conforms to the requirements of the U.S. Postal Service & is approved by the engineer.

TYPICAL RESIDENTIAL APPROACH SECTION



NOTES

1. Required excavation & structural section materials shall be paid for under their respective bid items.
2. Pave 20' back or to edge of R.O.W., whichever is less, unless designated otherwise.
3. Paving radii shall be 15' unless noted otherwise in the Approach Summary.
4. Finish grade shall be a straight line from the landing area hinge point to the match point on the existing approach grade.

* The backslope shall be 0.09:1 in rock.

SECTION A-A

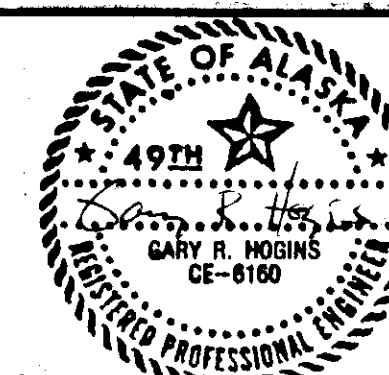
APPROACH

SUMMARY

STATION	OFFSET LT. RT.	RADIUS # LT. RT.	WIDTH	REMARKS	LANDING AREA LENGTH
0+98	X	No R. No R.	17'	Curb Cut Required	10'
0+12+89	X	30' 15'	45'	CONCRETE DRIVE, JOINT TO BE SAW-CUT 20' FROM 0+ E.P. OF PAVEMENT. PROVIDE 3" ASPHALT ON THIS APPROACH	0'
0+13+00	X	30' 30'	30'	See Sheet 38	10'
0+20+15	X	25' 25'	25'	Paving Limit at 25'	10'
0+34+66	X	8'	20'	Reconstruct 20' Back	10'
0+39+38	X		15'		10'
0+40+78	X		25'		10'
0+42+11	X	No R. 10'	10'	No Paving Required	10'
0+43+20	X		11'	Approach to be Deleted by Guard Rail	0'
0+45+19	X		15'		0'
0+46+17	X		15'	Paving Limit at 15' Bk. from 0+ E.P.	10'
0+46+95	X		14'	No Work to be Performed Beyond 0+ E.P.	0'
0+47+93	X	25' 25'	25'	Construct New Approach	10'
0+48+10	X		15'		10'
0+52+14	X		15'	Construct New Approach	10'
0+53+26	X	25' 25'	25'		10'
0+53+61	X		14'		0'
0+54+11	X	25' 25'	25'		10'
0+54+84	X	25' 25'	25'		10'
0+55+48	X	25' 25'	25'		10'
0+56+09	X		16'	Reconstruct 50' Bk.	0'
0+56+47	X	25' 25'	25'		10'

* See Note 3

* See Note 3



STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	37	68

APPROACH SECTIONS & SUMMARIES

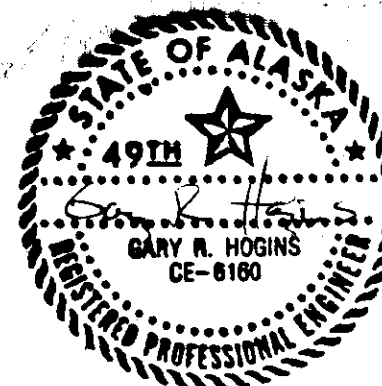
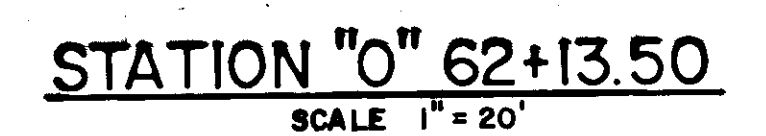
APPROACH SUMMARY (CONTINUED)

STATION	OFFSET LT. RT.	RADIUS # LT. RT.	WIDTH	REMARKS	LANDING AREA LENGTH
0+82+34	X		18'		0
0+83+00	X		15'	Reconstruct 25' Bk.	10'
0+84+02	X	16'	14'	Multiple Residential Approach	0
0+84+15	X	3'	10'	Mult. Res. App., Reconstruct 30' Bk.	0
0+85+95	X	5'	25'		0
0+87+25	X	30'	30'		0
0+88+44	X	30'	30'	Paved Approach, Reconstruct & Pave 30' Back	0
0+91+40	X	25'	25'	Paving Limits at 25'	0
0+95+24	X		24'		10'
0+99+20	X		13'	No Paving Required	0
0+101+31	X		14'		0
0+102+73	X		15'	Construct New Approach, See Sheet 15	10'
0+103+20	X		15'		0
0+103+52	X		14'		0
0+104+14	X		14'		10'
0+104+93	X		15'	Reconstruct 30' Back	0
0+106+10	X	4'	25'	Reconstruct 30' Back	0
0+108+40	X		14'	Reconstruct 30' Back	0
0+108+68	X	5'	30'	Shoreline Drive, See Details on Sheet 39	0
0+108+90	X			See 0+108+68 for Work Req'd.	
0+109+52	X	No R.	45'	Pave 15' Bk. from E.P. 0+109+42 to 0+109+87, Rt., See Sht. 16	0
0+109+80	X	No R.		See Note Above for Paving	0
0+111+40	X		16'	Approach to be Obliterated	0
0+112+74	X		16'		0
0+113+88.5	X	25'	30'	Reconstruct, See Sheet 39	0
0+113+99	X		14'	Approach to be Obliterated	0
0+116+62	X	6'	25'		0
0+118+67	X	37.5'	3'	Paved Approach, Reconstruct & Pave 81' Bk., See Sht. 40	0
0+123+18	X	25'	4'	Multiple Residential Approach	0
0+124+37	X		18'		0
0+125+13	X	5'	5'		0
0+125+42	X		22'		0
0+126+07	X		18'	Reconstruct 20' Back	0
0+126+37	X		14'		10'
0+126+85	X		14'		0
0+126+86	X	*	44'	Pave 15' Bk. from E.P. 0+126+00 to 0+127+24 Lt.	10'
0+127+19	X	*		See Note Above for Paving & Width	10'
0+127+73	X		15'		10'
0+128+54	X		24'	Multiple Res. Approach, Reconstruct, See Sheet 17	0
0+130+48	X	4'	16'	Reconstruct Approach, See Sheet 41	0
0+130+73	X	*	14'	See Sheet 41	0
0+134+88	X	25'	2'		0
0+136+85	X			Approach to be Obliterated	0
0+138+80	X			Approach to be Obliterated	0
0+150+03	X		40'	Multiple Access, Reconstruct 30' Bk.	0
0+151+39	X		14'		10'
0+152+10	X		14'		10'
0+153+58	X		15'		10'
0+153+95	X		15'		10'
0+164+00	X		15'	Reconstruct 40' Bk.	0
0+166+00	X	25' 25'	25'	Ward Cove Cannery Approach, Paving Limit @ 25'	10'
0+167+22.5	X		15'		10'
0+170+34	X		20'	Approach to be Deleted by Guard Rail	0
0+173+25	X		15'	Construct New Approach, See Details on Sht. 42	10'
0+176+15	X	10' 30'	46'	Concrete Drive, Joint to be Saw-Cut 15' from 0+ E.P.	0
0+178+90	X			Approach to be Obliterated	0
0+179+10	X		15'		10'
0+191+14	X		17'	Approach to be Obliterated	0
0+210+14	X	25' 30'	25'	Paving Limit @ 30' Bk.	10'
0+214+59	X	50' 50'	24'	Reconstruct, See Sheet 43	10'
0+216+24	X	25' 4'	14'	Reconstruct, See Sheet 25	10'
0+219+40	X		15'		10'
0+223+91	X		16'	No Paving Required	10'
0+225+19	X		24'		10'
0+225+96	X		18'	No Paving Required	10'

* See Note 3

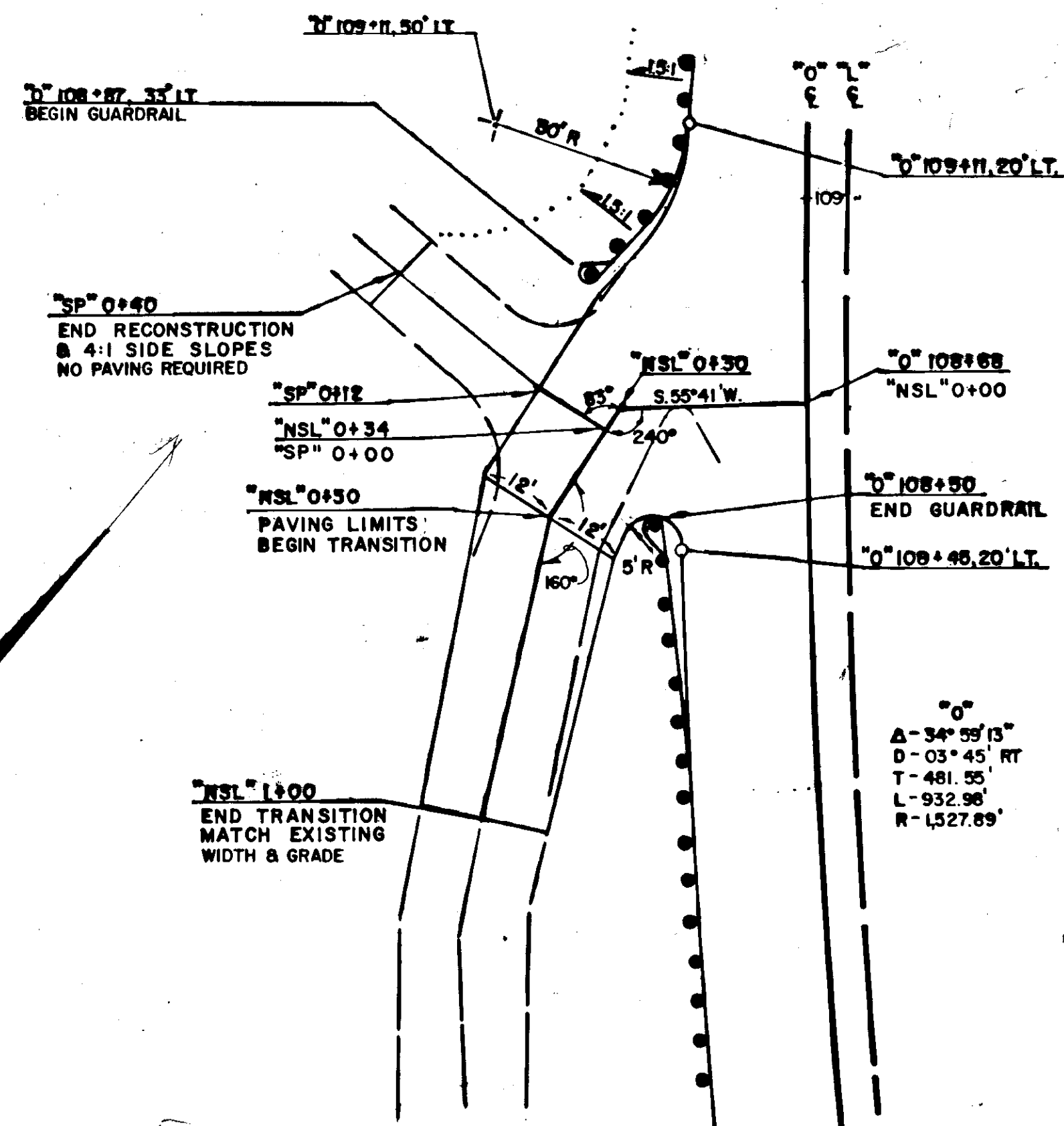
* Indicates Adjoining Approaches

APPROACH DETAILS

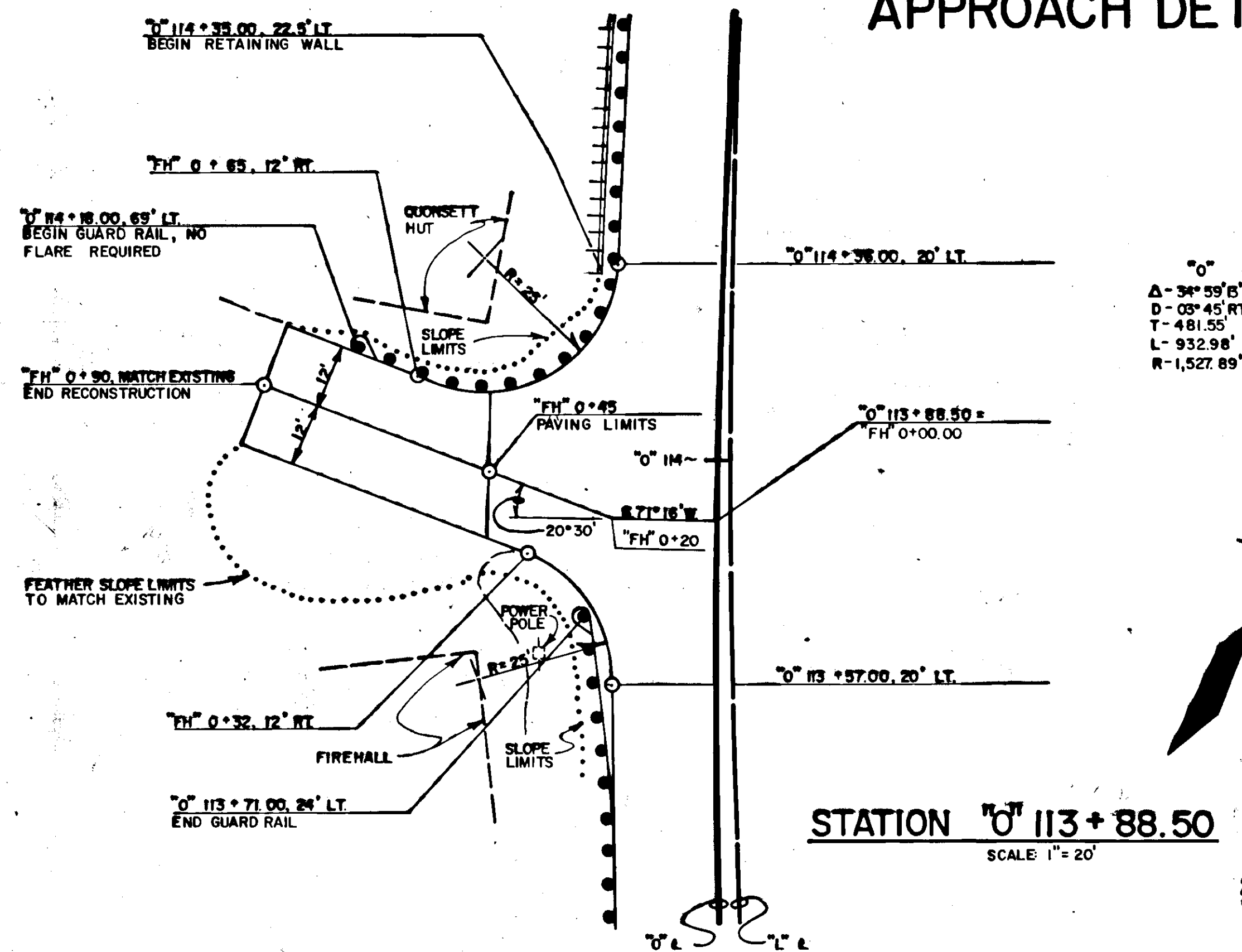


STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	39	68

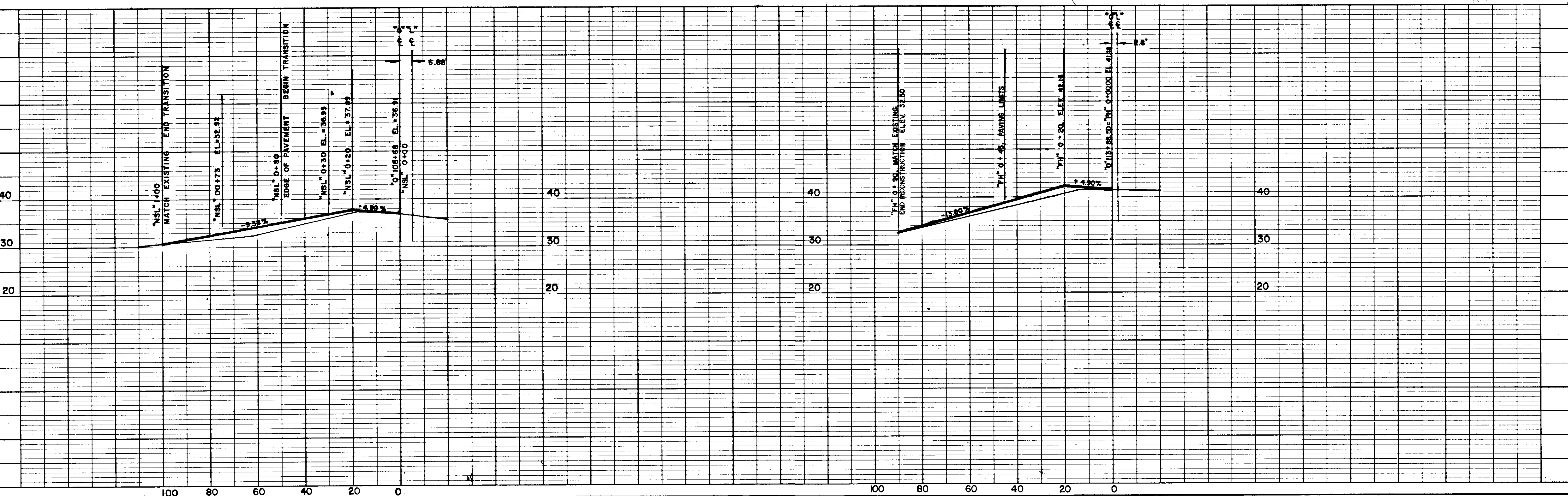
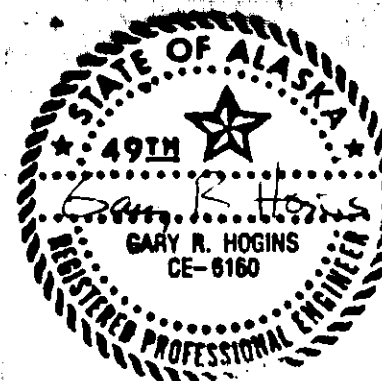
APPROACH DETAILS



STATION "0" 108+68
SCALE 1"=20'



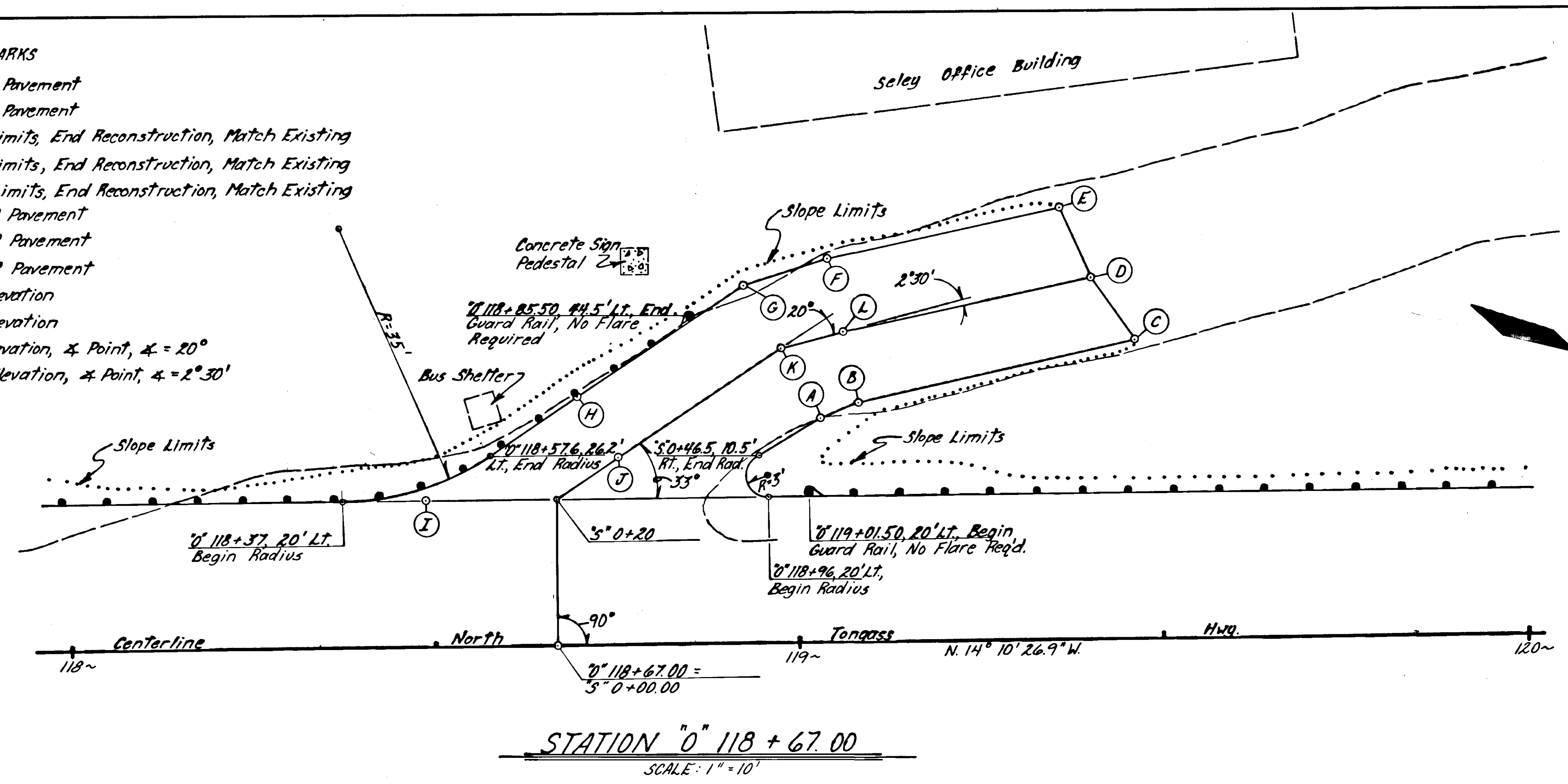
STATION "0" 113+88.50
SCALE 1"=20'



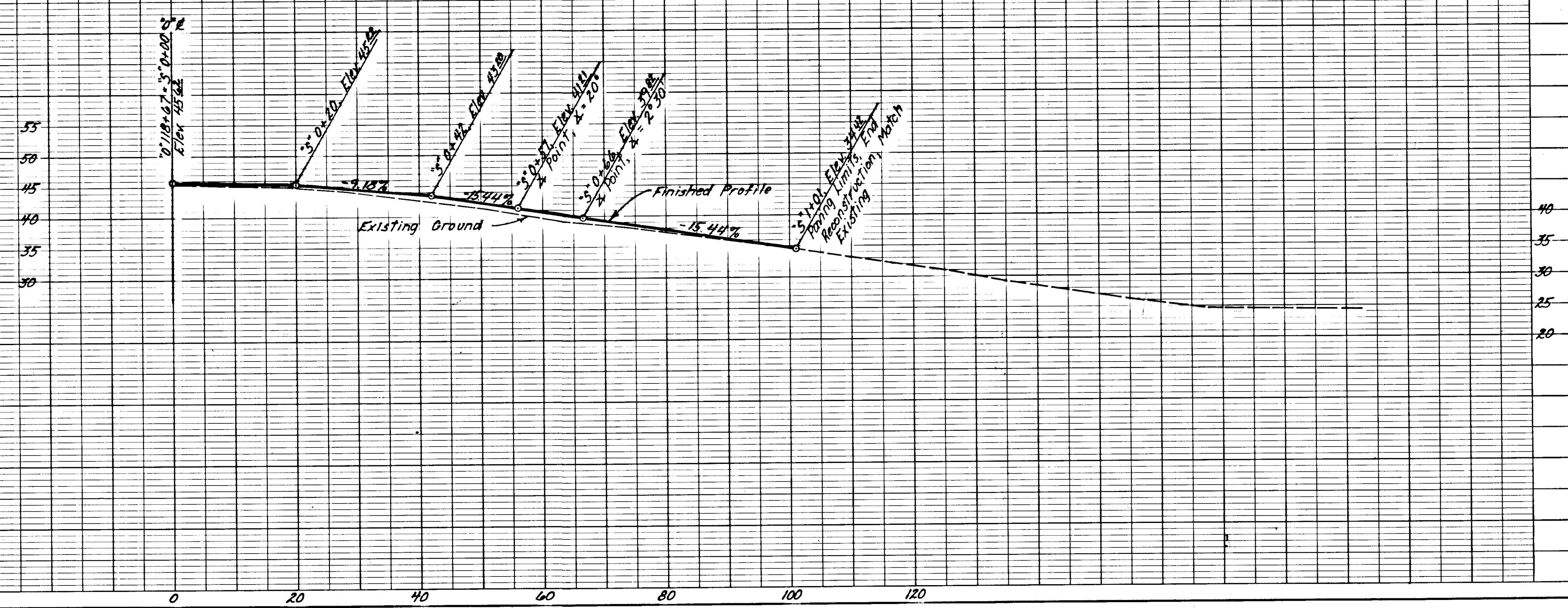
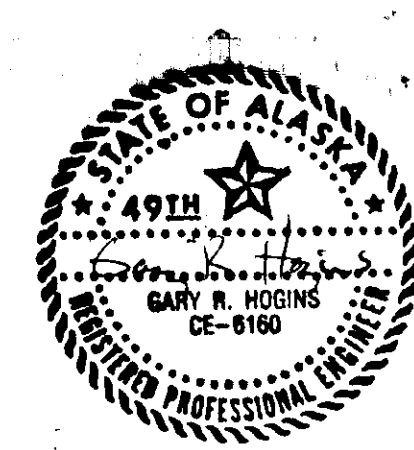
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	40	68

APPROACH DETAILS

POINT NO.	STATION & OFFSET	ELEV.	REMARKS
A	5+0+57.00, 11' Rt.	41.56	Edge of Pavement
B	5+0+66.00, 10' Rt.	41.21	Edge of Pavement
C	5+1+05.00, 10' Rt.	34.42	Paving Limits, End Reconstruction, Match Existing
D	5+1+01.00, E	34.42	Paving Limits, End Reconstruction, Match Existing
E	5+0+99.00, 10' Lt.	34.41	Paving Limits, End Reconstruction, Match Existing
F	5+0+66.00, 10' Lt.	38.77	Edge of Pavement
G	5+0+57.00, 10' Lt.	40.15	Edge of Pavement
H	5+0+30.00, 10' Lt.	44.26	Edge of Pavement
I	0+118+48.8, 20' Lt.	45.37	Spot Elevation
J	5+0+30.00, E	44.56	Spot Elevation
K	5+0+57.00, E	41.21	Spot Elevation, * Point, * = 20°
L	5+0+66.00, E	39.82	Spot Elevation, * Point, * = 2°30'

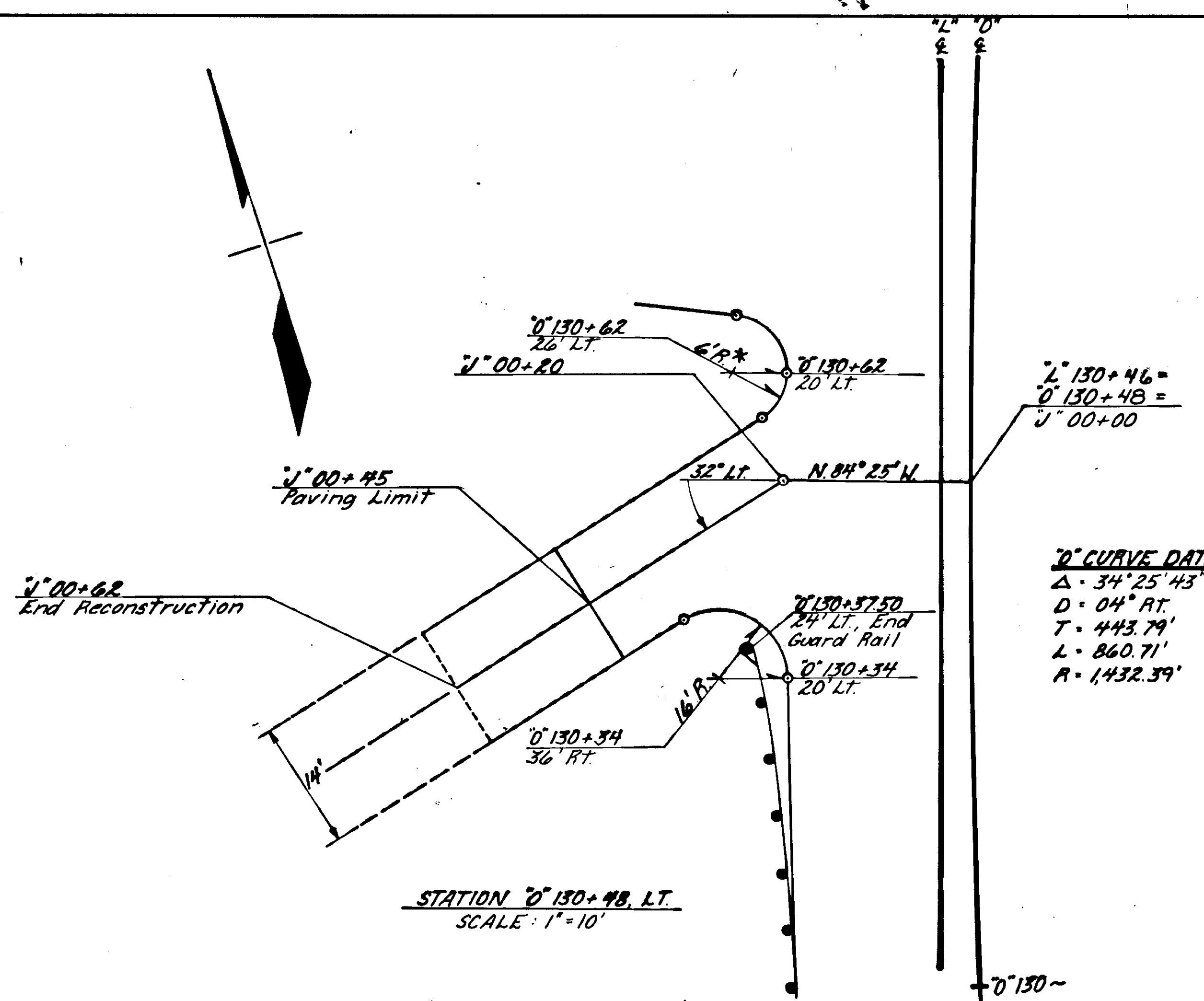


STATION "0" 118 + 67.00
SCALE: 1" = 10'

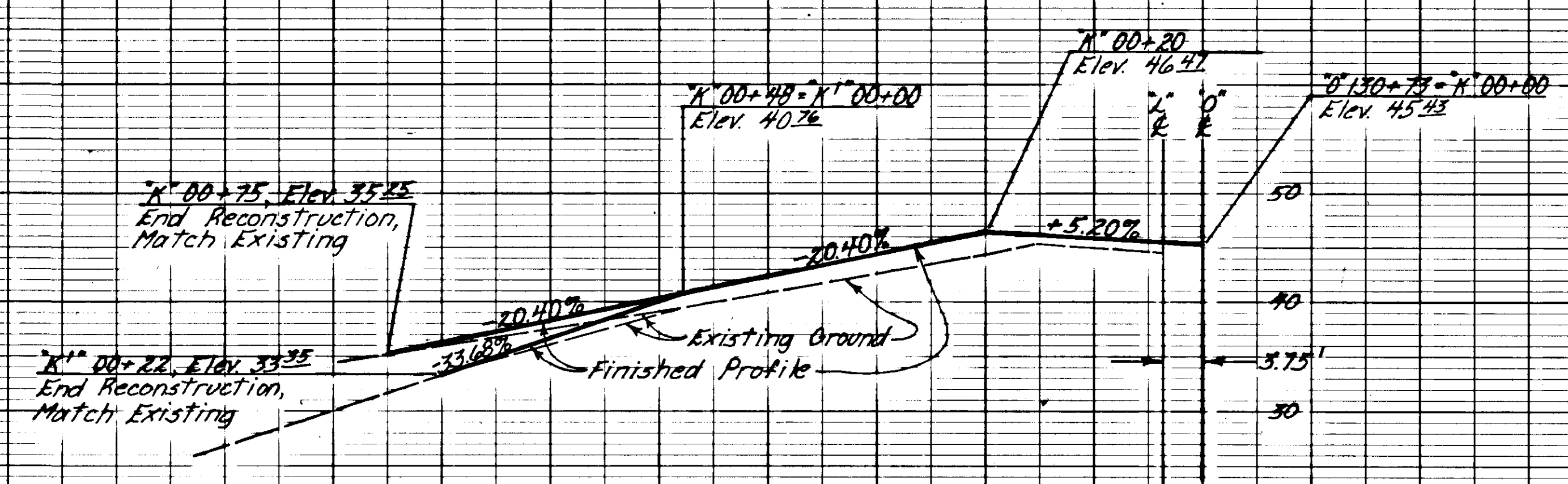
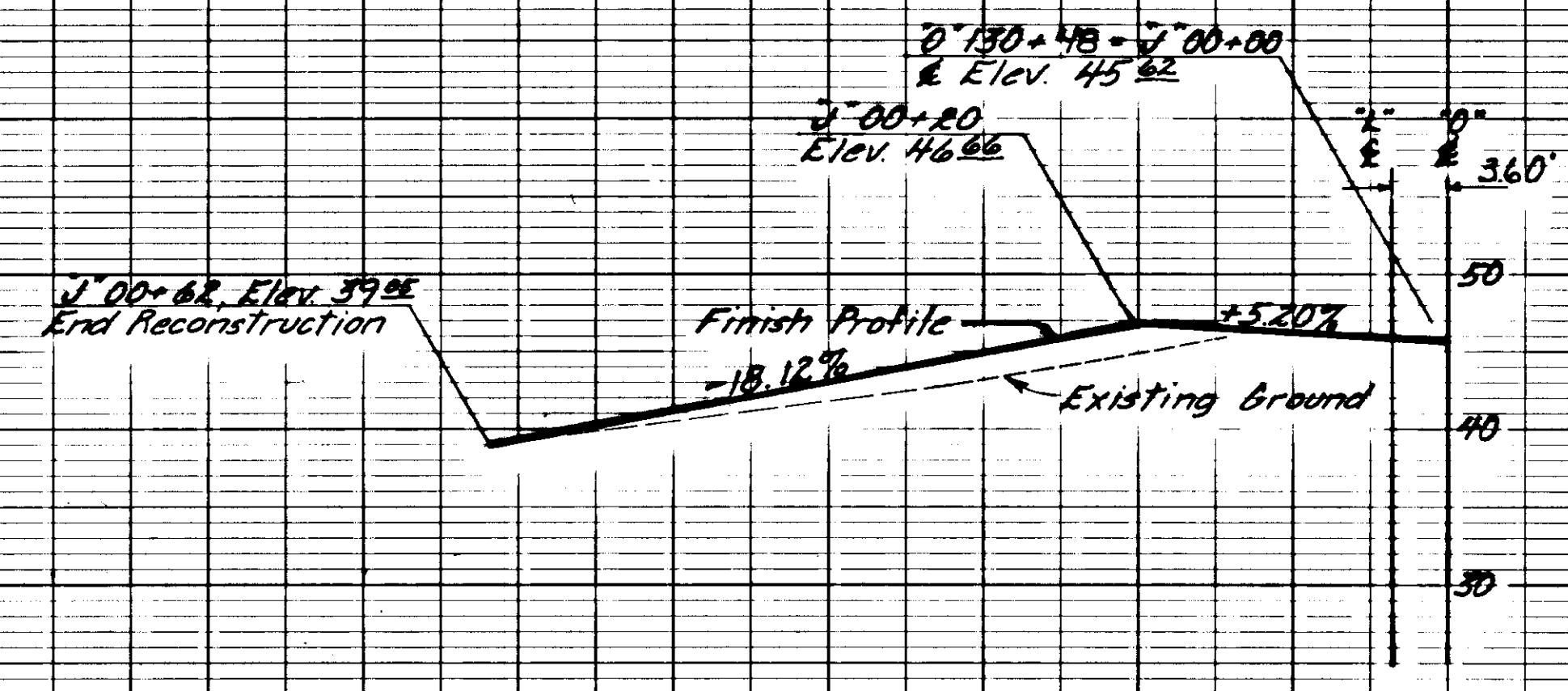
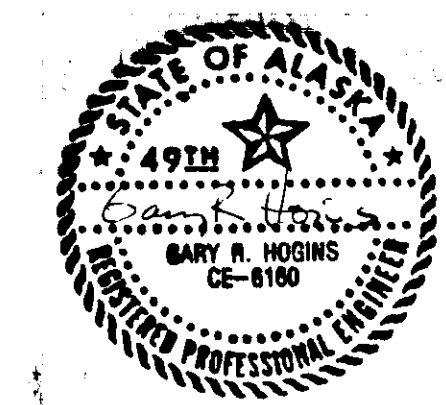
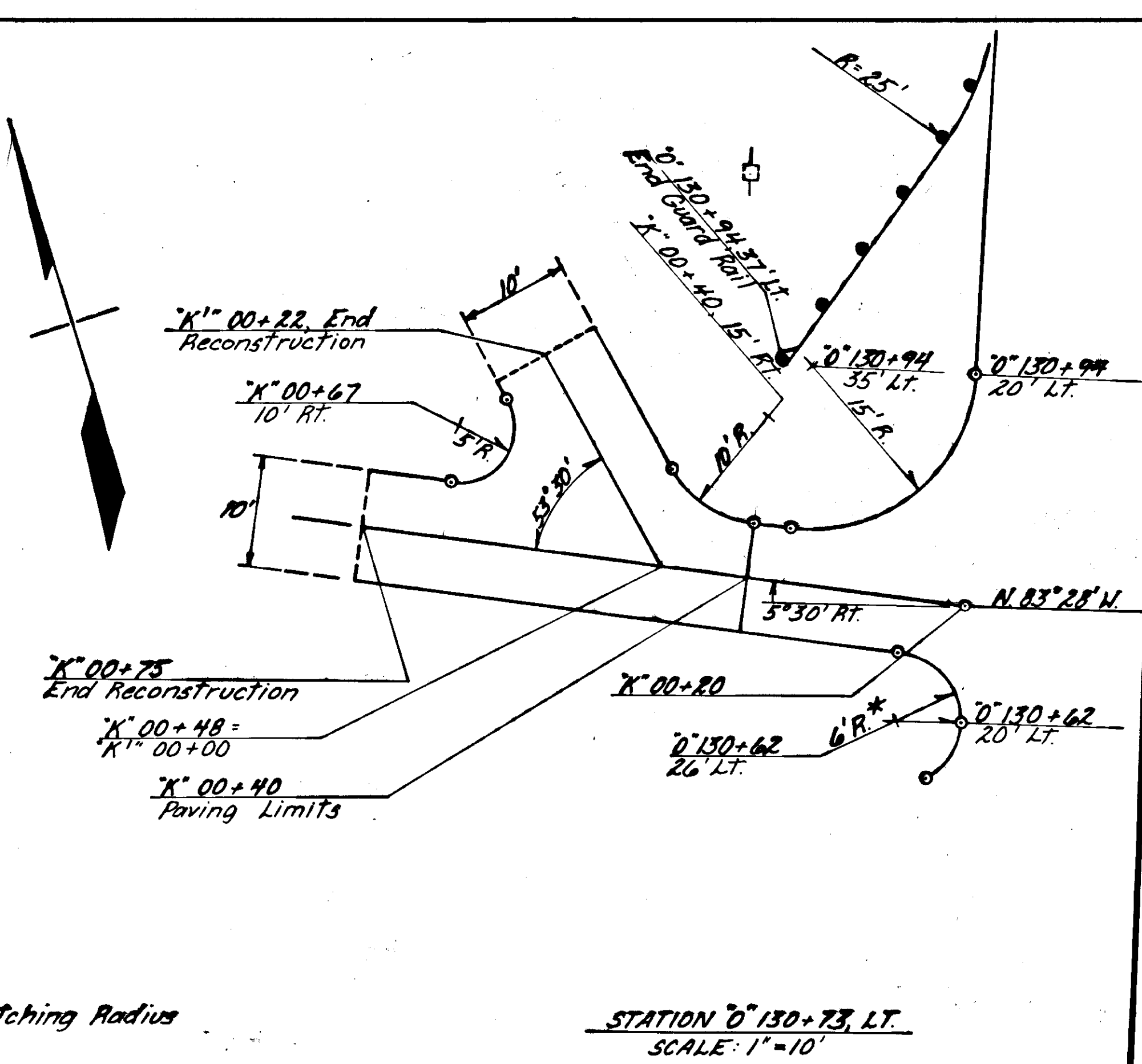


STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(7) & 67453	1987	41	68

APPROACH DETAILS

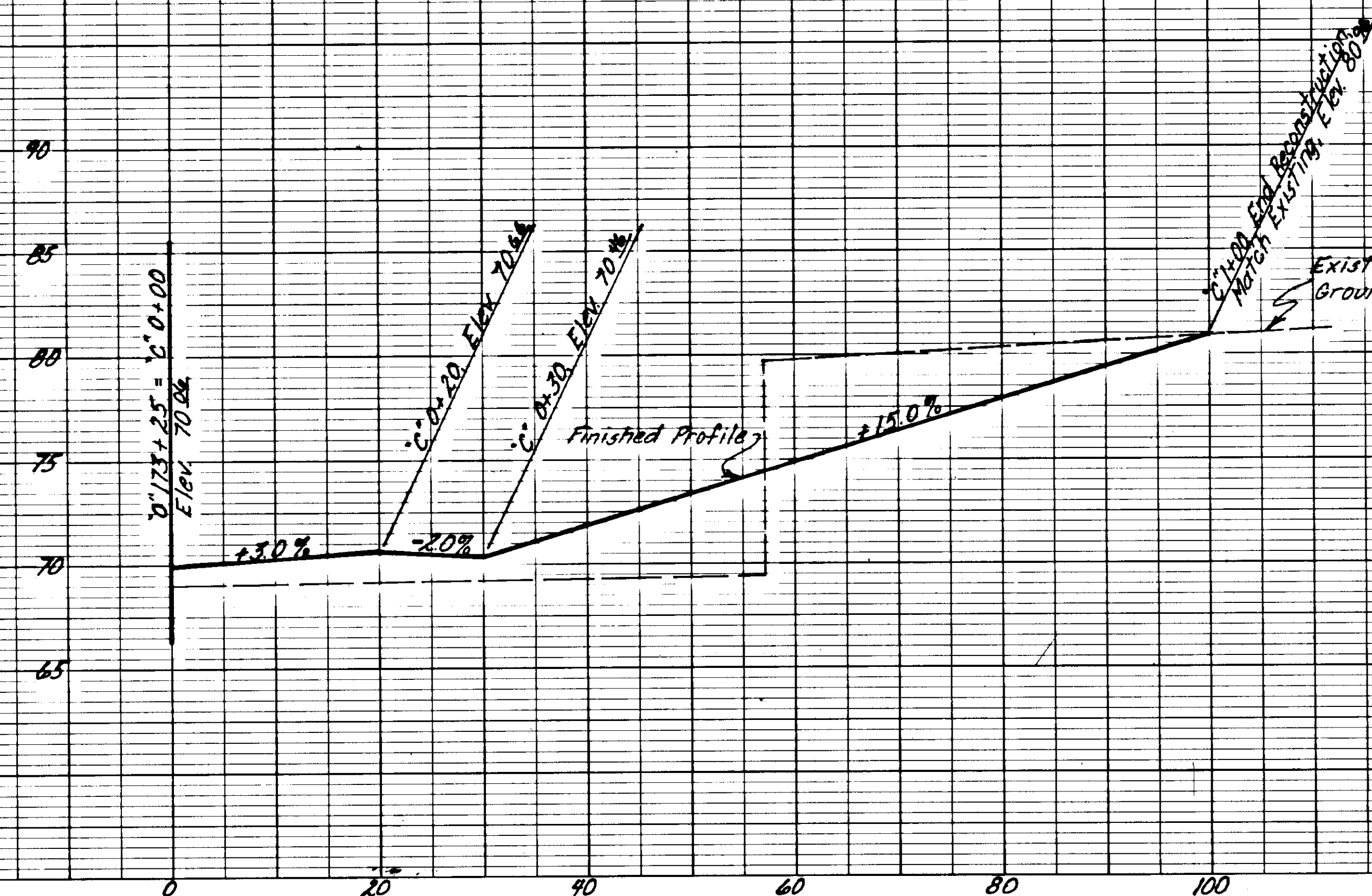
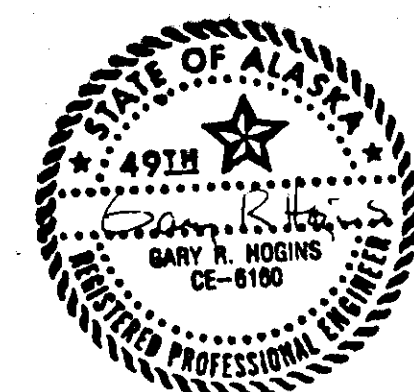
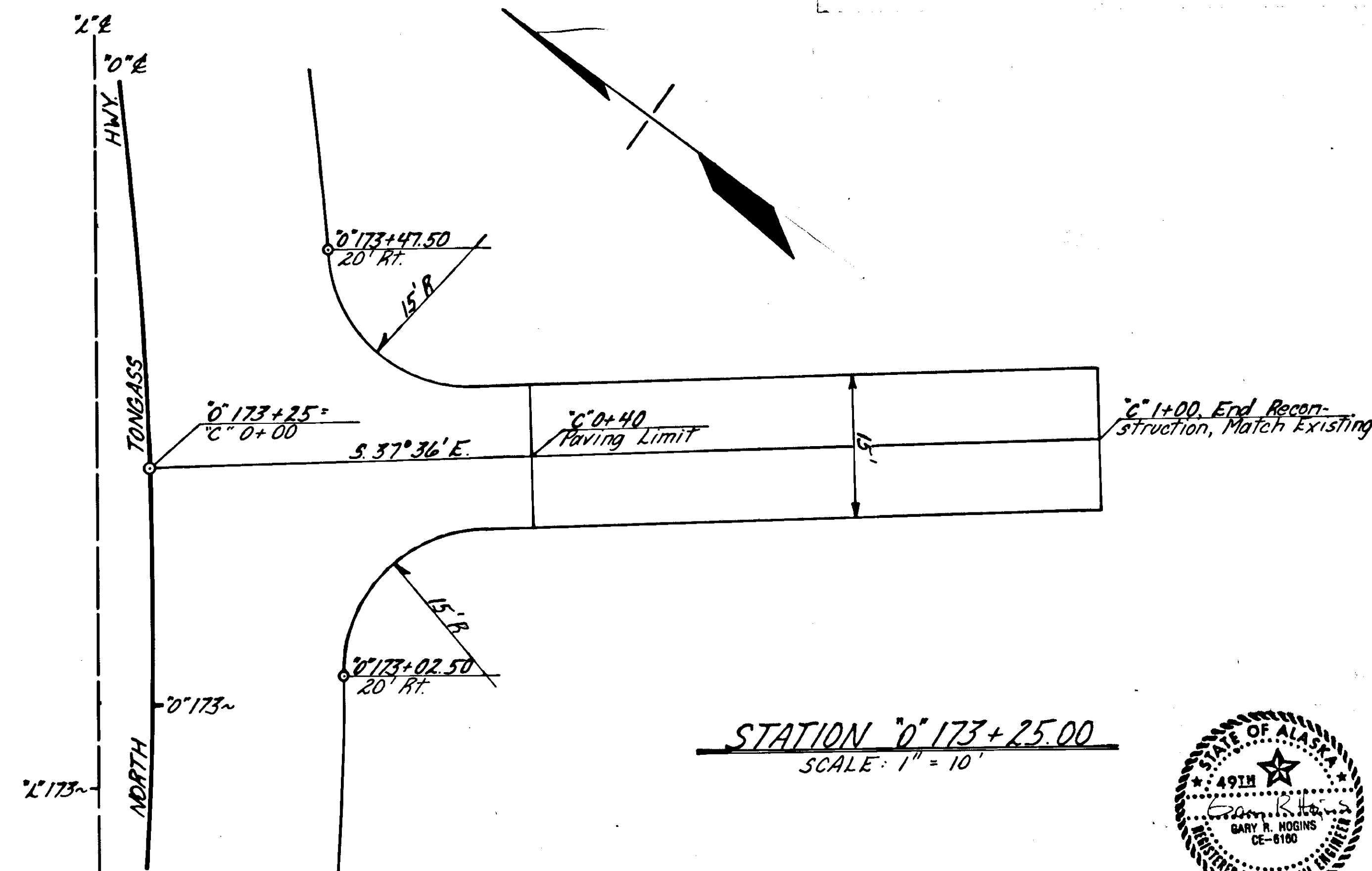


* Indicates Matching Radius



STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920 (17) & 67453	1987	42	68

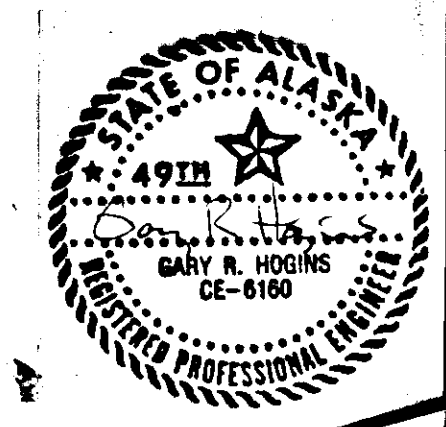
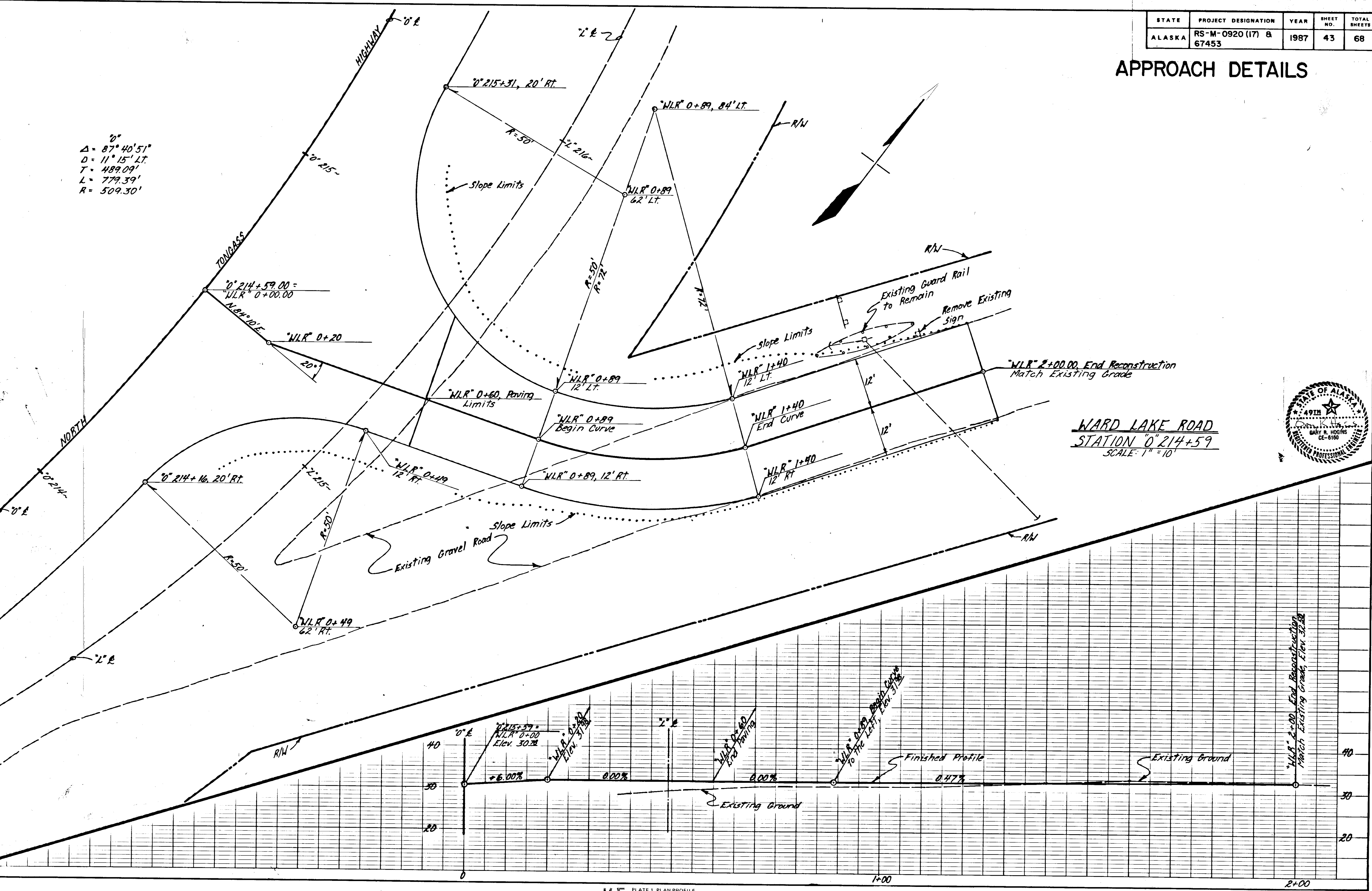
$\Delta = 19^{\circ}17'41''$
 $D = 04^{\circ}45'11''$
 $T = 205.04'$
 $L = 406.20'$
 $R = 1206.23'$



STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920 (17) & 67453	1987	43	68

APPROACH DETAILS

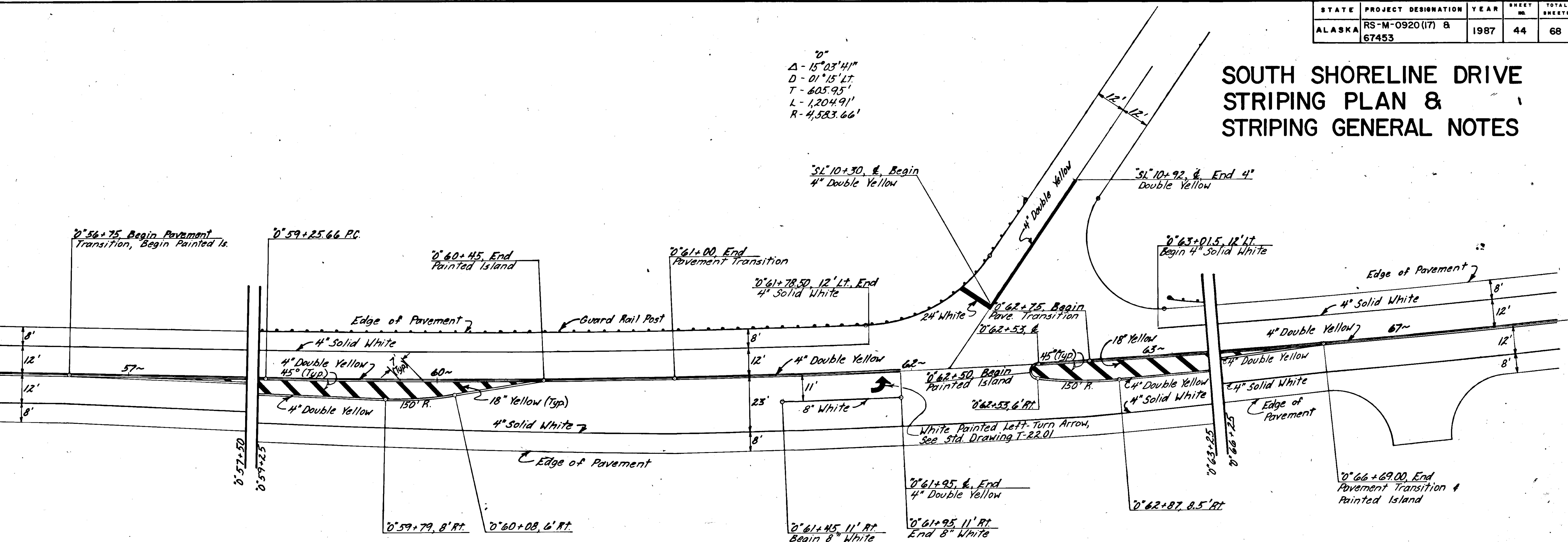
$\Delta = 87^{\circ} 40' 51''$
 $D = 11^{\circ} 15' \text{ LT.}$
 $T = 489.09'$
 $L = 779.39'$
 $R = 509.30'$



WARD LAKE ROAD
 STATION 0+214+59
 SCALE: 1" = 10'

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920 (17) 8 67453	1987	44	68

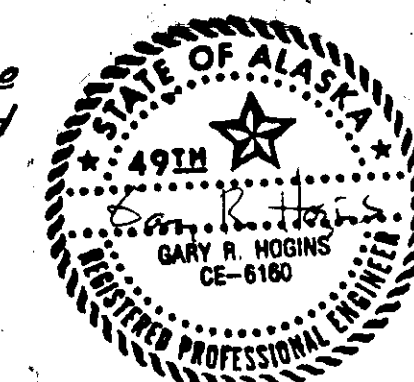
SOUTH SHORELINE DRIVE STRIPING PLAN & STRIPING GENERAL NOTES



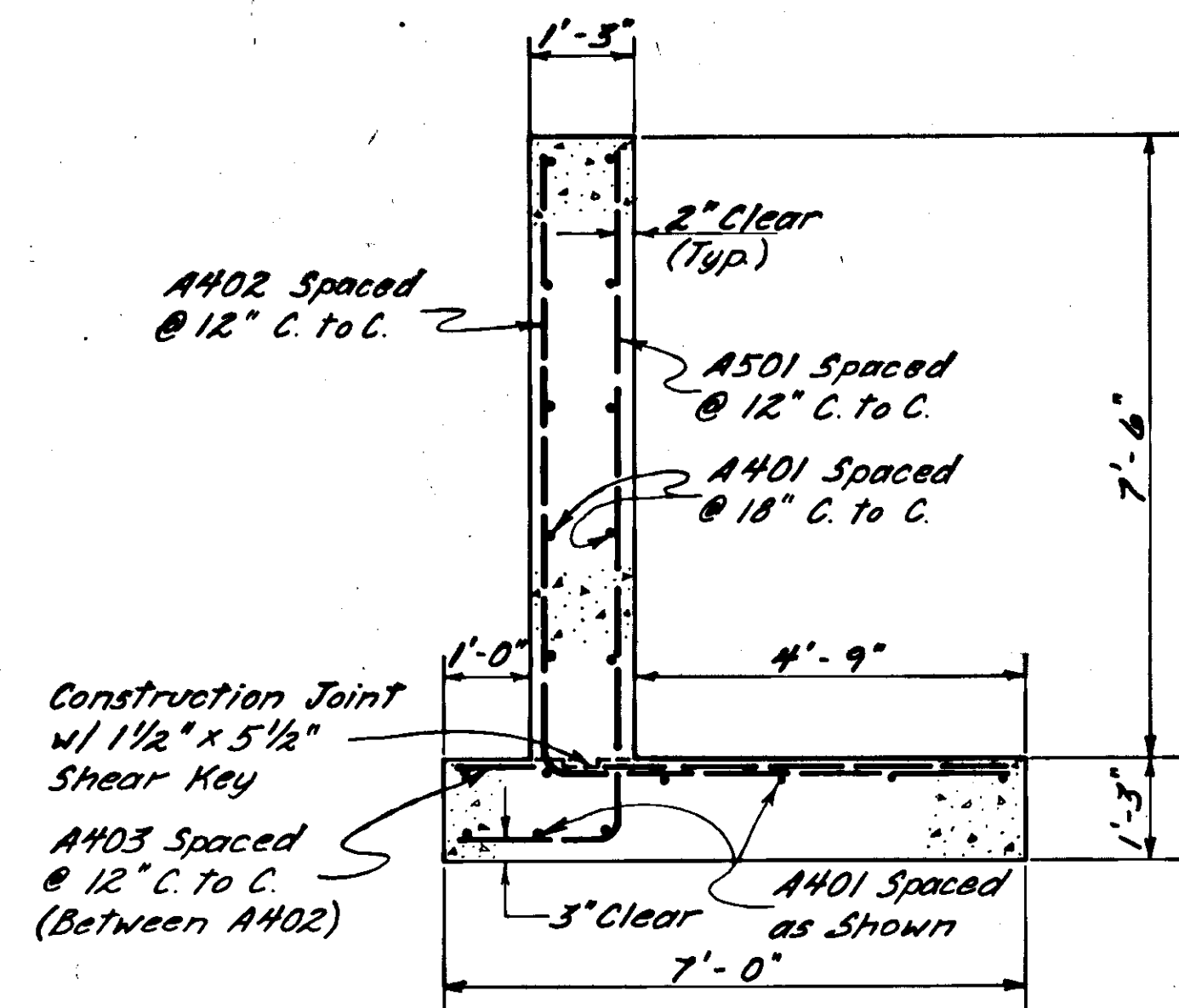
ITEM 670 (1), PAINTED TRAFFIC MARKINGS

- See Standard Drawings T-20.00, T-21.01, & T-22.01 for additional striping information.
- The stationing for the beginning & ending of the passing zones on North Tongass Highway shall be furnished by the Dept. of Transportation prior to striping.
- PROJECT TOTAL ESTIMATE OF QUANTITIES**

4" White	46,800 L.F.
4" Yellow	48,440 L.F.
8" White	50 L.F.
18" Yellow	375 L.F.
24" White	114 L.F.
- The existing striping on Ward Creek Bridge shall be removed utilizing a method approved by the project engineer.

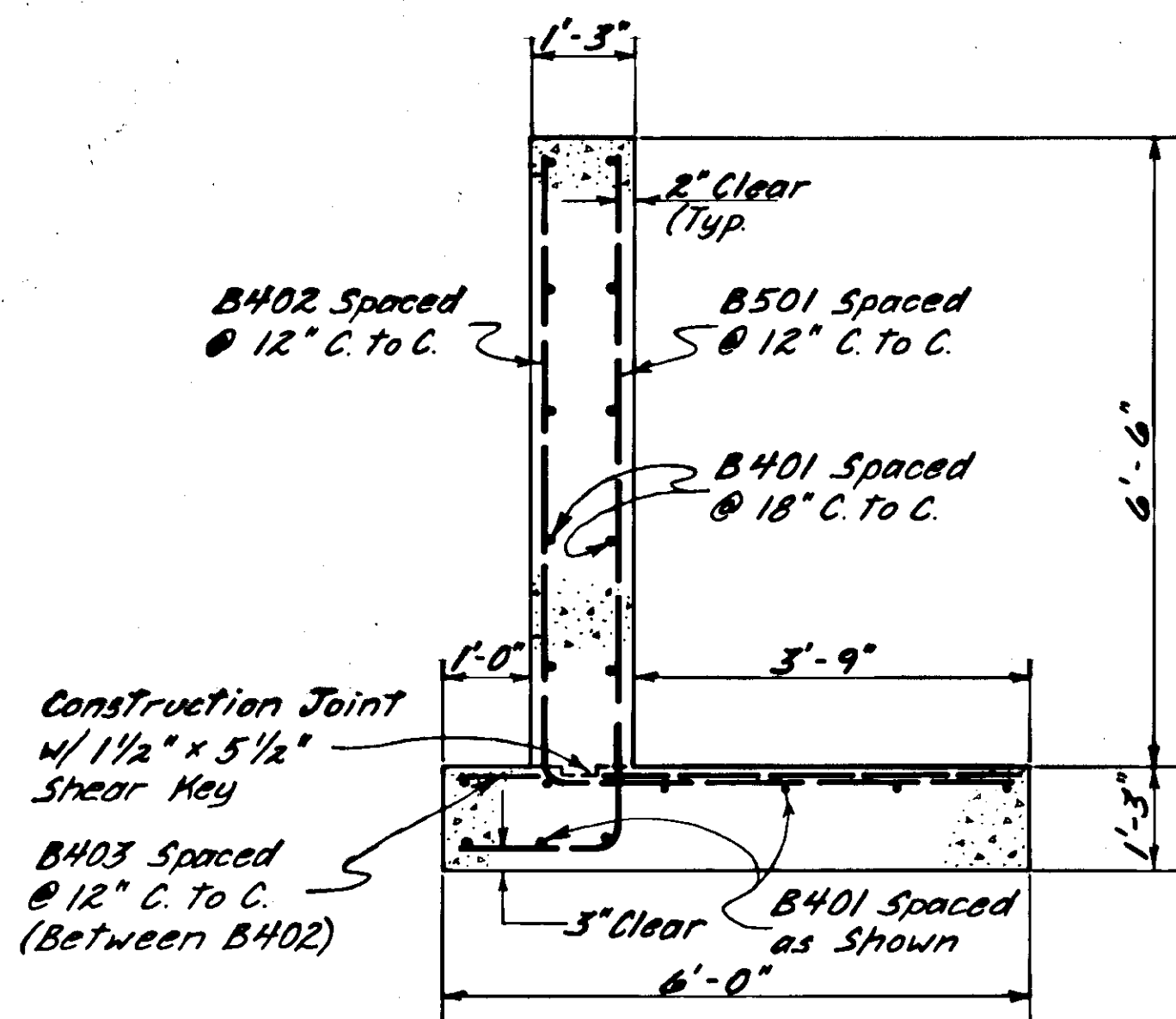


CONCRETE RETAINING WALLS BEGINNING AT STA. 0+58+80, 0+114+35, & 0+173+70



TYPE "A" CONCRETE RETAINING WALL

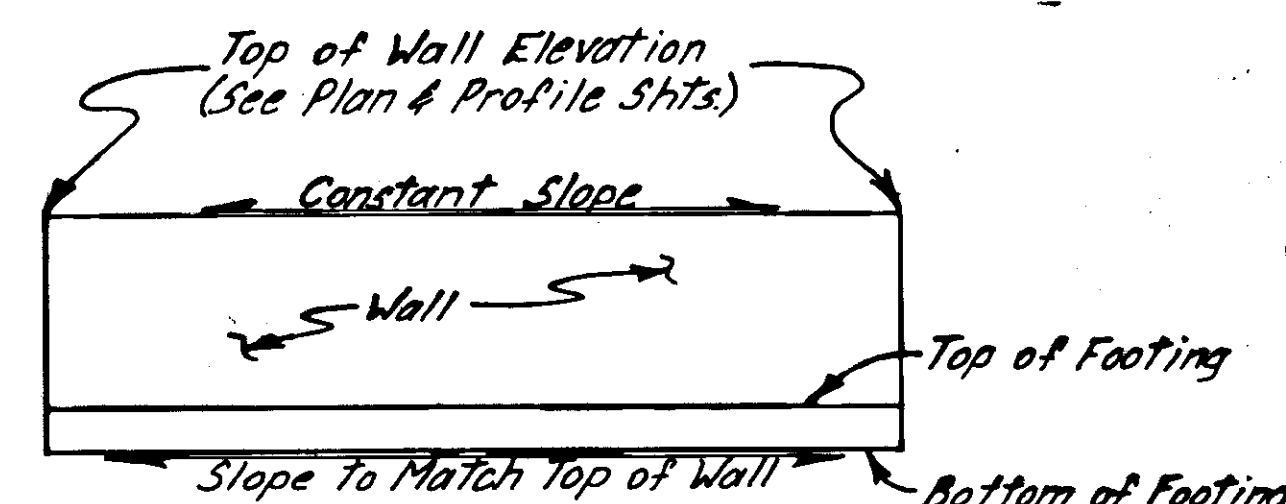
NO SCALE
STA. 0+114+35 TO STA. 0+115+75 (140' LONG) &
STA. 0+173+70 TO STA. 0+175+50 (180' LONG)



TYPE "B" CONCRETE RETAINING WALL

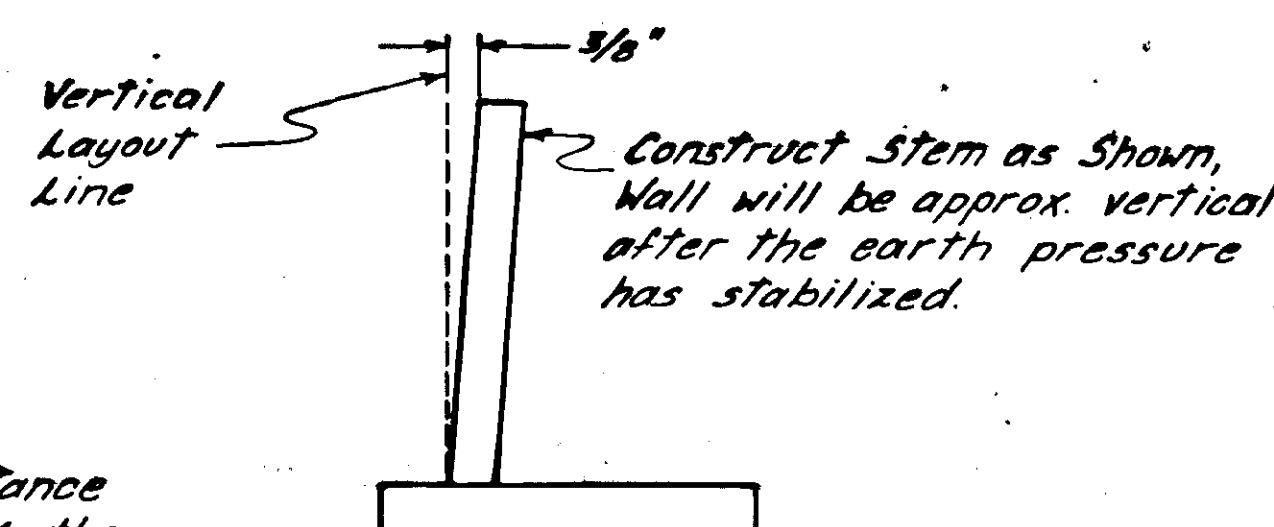
NO SCALE
STA. 0+58+80 TO STA. 0+59+30 (50' LONG)

ESTIMATE OF QUANTITIES FOR RETAINING WALLS		
STATION	CONCRETE	REBAR
0+58+80 to 0+59+30	29.0 C.Y.	1683 LBS.
0+114+35 to 0+115+75	94.0 C.Y.	5118 LBS.
0+173+70 to 0+175+50	120.8 C.Y.	6574 LBS.



RETAINING WALL ELEVATION DETAIL

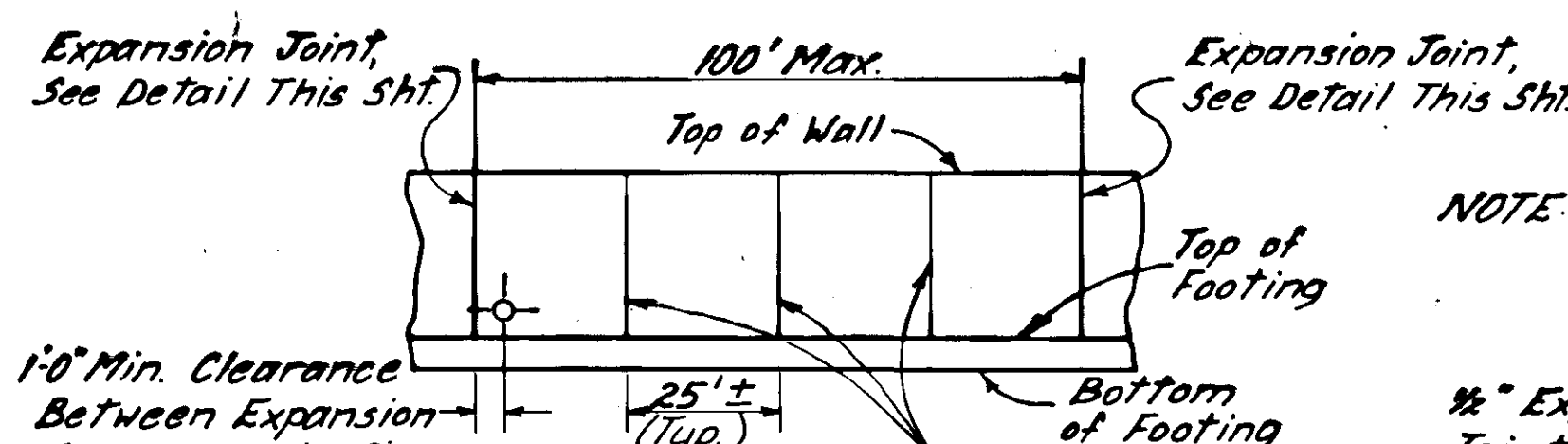
NO SCALE



APPROX. WALL OFFSET

NO SCALE

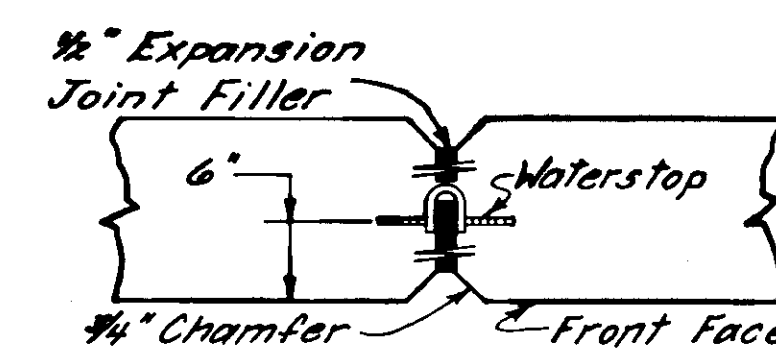
NOTE: The minimum distance between expansion joint & the end of wall shall be 60'-0".



EXPANSION & WEAKENED PLANE JOINT PLACEMENT DETAIL

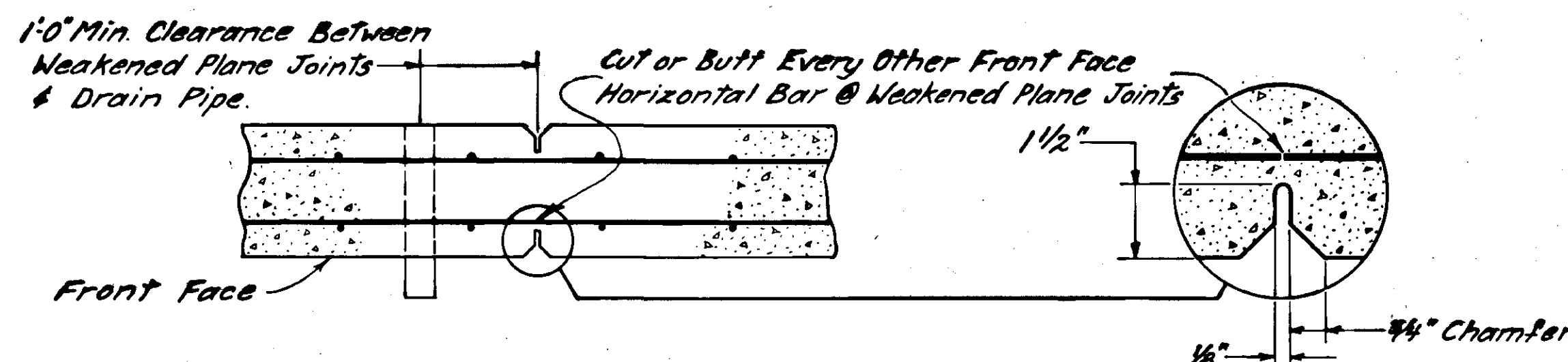
NO SCALE

NOTE: The expansion joint is to be in the wall only. The footing is continuous.



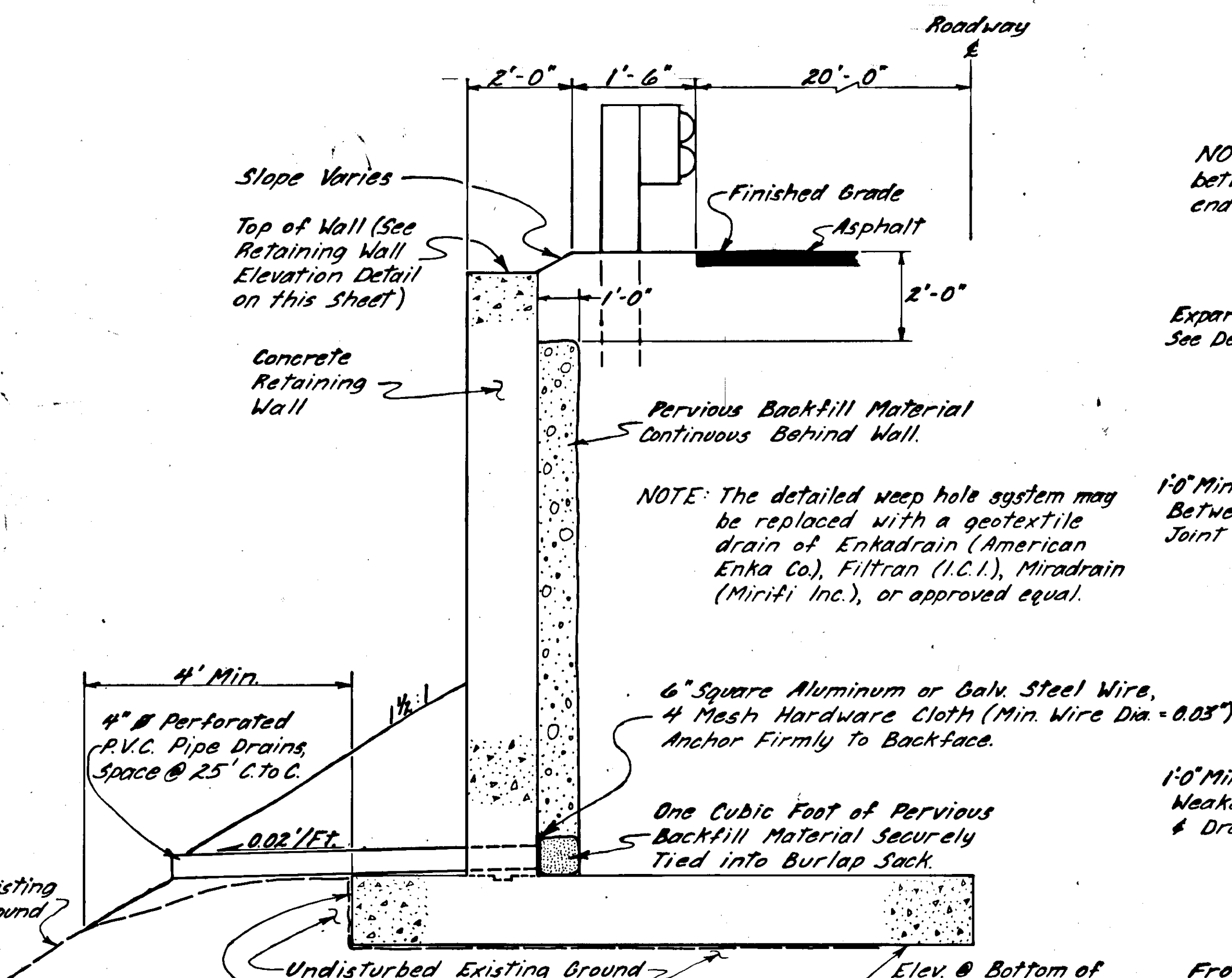
EXPANSION JOINT DETAIL

NO SCALE



WEAKENED PLANE JOINT DETAILS

NO SCALE



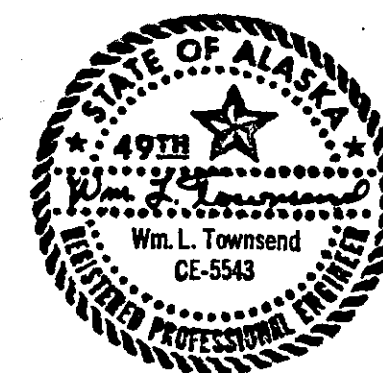
DESIGN & DRAINAGE DETAIL

NO SCALE

NOTE: Rebar Not Shown For Clarity.

REINFORCING STEEL (One Wall)					BENDING DIAGRAM	
STA. 0+114+35 TO STA. 0+115+75 (TYPE A)						
MARK	SIZE	NO.	LENGTH	TYPE		
A401*	4	19	139'-8"	Bent		
A402	4	141	13'-0"	Bent		
A403	4	140	6'-8"	Bent		
A501	5	141	10'-2"	Bent		
STA. 0+173+70 TO STA. 0+175+50 (TYPE A)						
MARK	SIZE	NO.	LENGTH	TYPE		
A401*	4	19	179'-8"	Bent		
A402*	4	181	13'-0"	Bent		
A403	4	180	6'-8"	Bent		
A501	5	181	10'-2"	Bent		
STA. 0+58+80 TO STA. 0+59+30 (TYPE B)						
MARK	SIZE	NO.	LENGTH	TYPE		
B401*	4	19	49'-8"	Bent		
B402	4	51	11'-0"	Bent		
B403	4	50	5'-8"	Bent		
B501	5	51	9'-2"	Bent		

*NOTE: Lengths shown do not include lap splices, if lap splices are used the min. length is 1'-4".



NOTES

SPECIFICATIONS:
DESIGN - AASHTO Standard Specifications for Highway Bridges, 1983 Edition with the Latest Interim Specifications.

CONSTRUCTION - State of Alaska Standard Specifications for Highway Construction, 1981, Standard Modifications & Special Provisions.

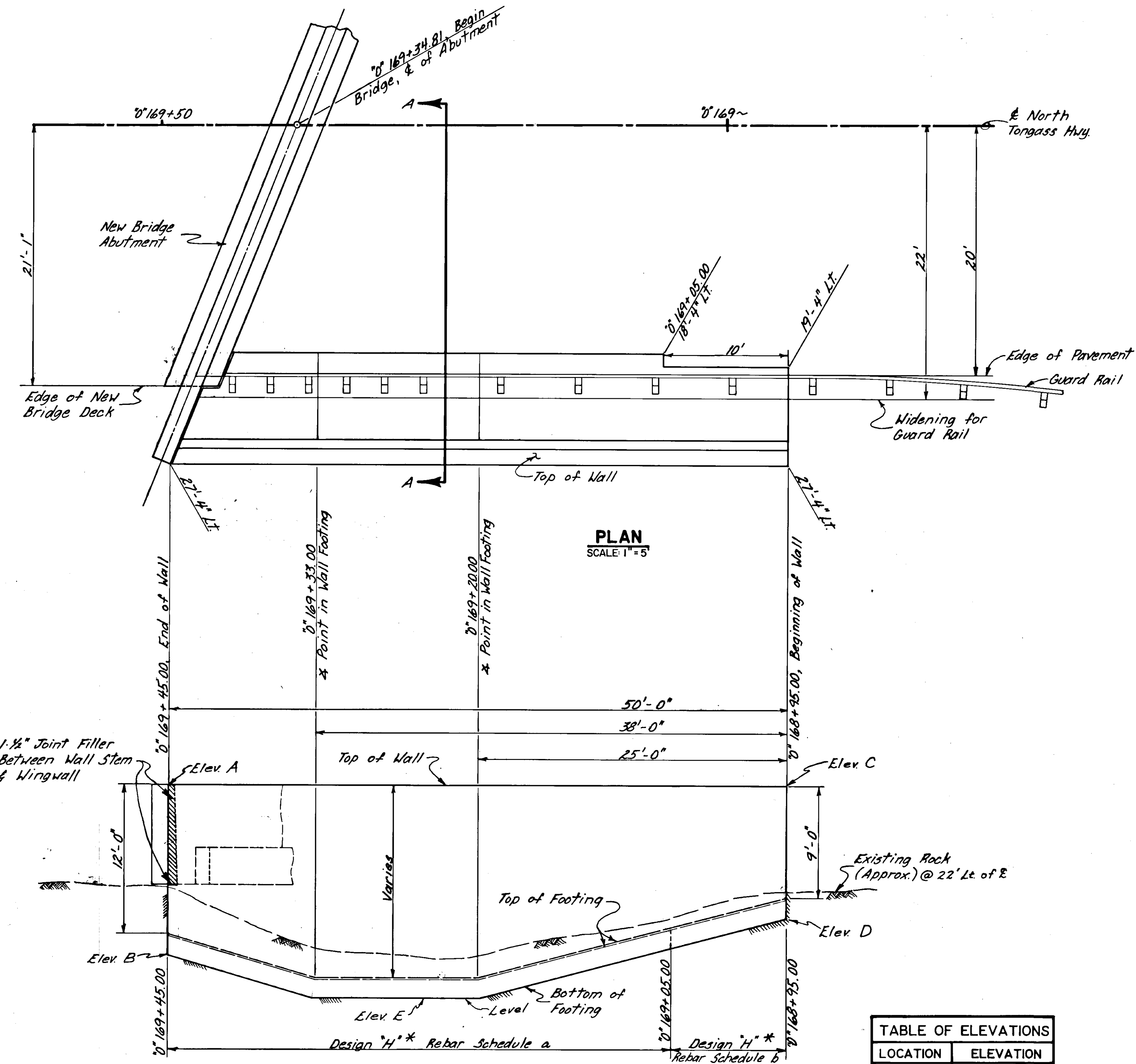
LIVE LOAD - 2' Surcharge
DEAD LOAD - Earth Weight = 120 p.c.f.
Equivalent Fluid Pressure = 40 p.c.f.

DESIGN UNIT STRESSES:
Cast-in-Place Concrete: Class A - $f'_c = 3,000$ p.s.i.
 $f_y = 60,000$ p.s.i.
Foundation Pressure - 1.0 Ton/Sq. Ft. @ Toe
- 0.0 Ton/Sq. Ft. @ Heel

- All cast-in-place concrete shall be Class A.
- All reinforcing steel shall be A.S.T.M. A615, Grade 60.

STATE	PROJECT DESIGNATION	YEAR	SHEET	TOTAL SHEETS
ALASKA	RS-M-0920 (17) & 67453	1987	46	68

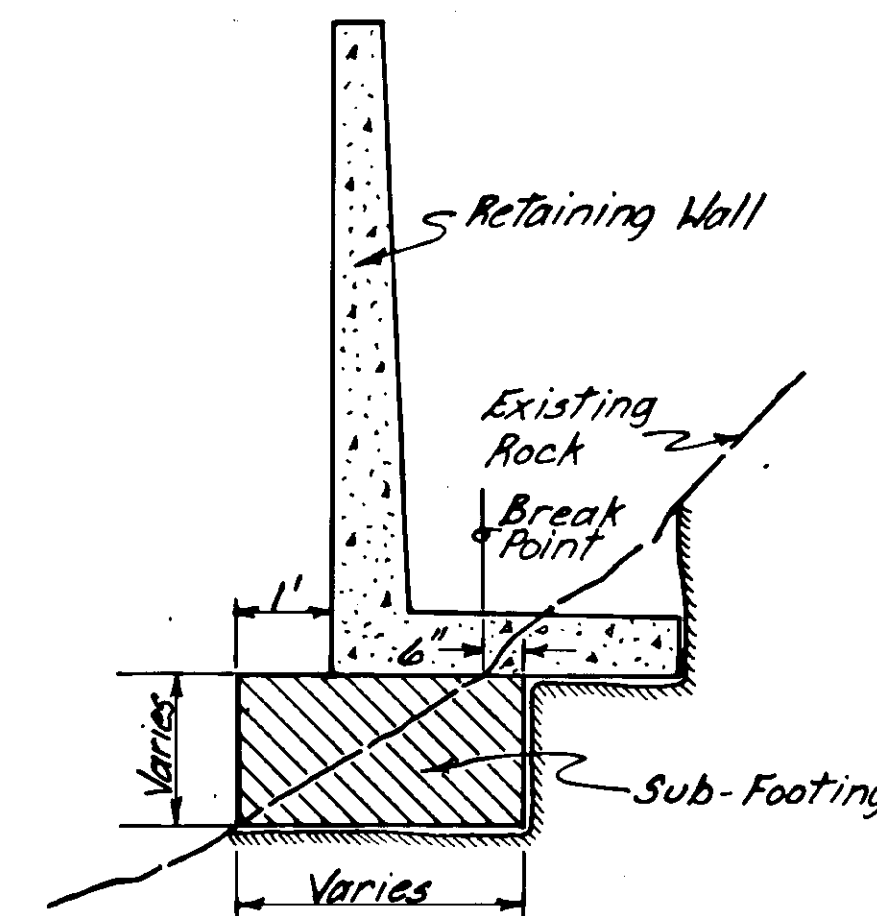
RETAINING WALL AT CANNERY CREEK BRIDGE PLAN, ELEVATION, & SECTION



* See Dimension Schedule on sheet 47.

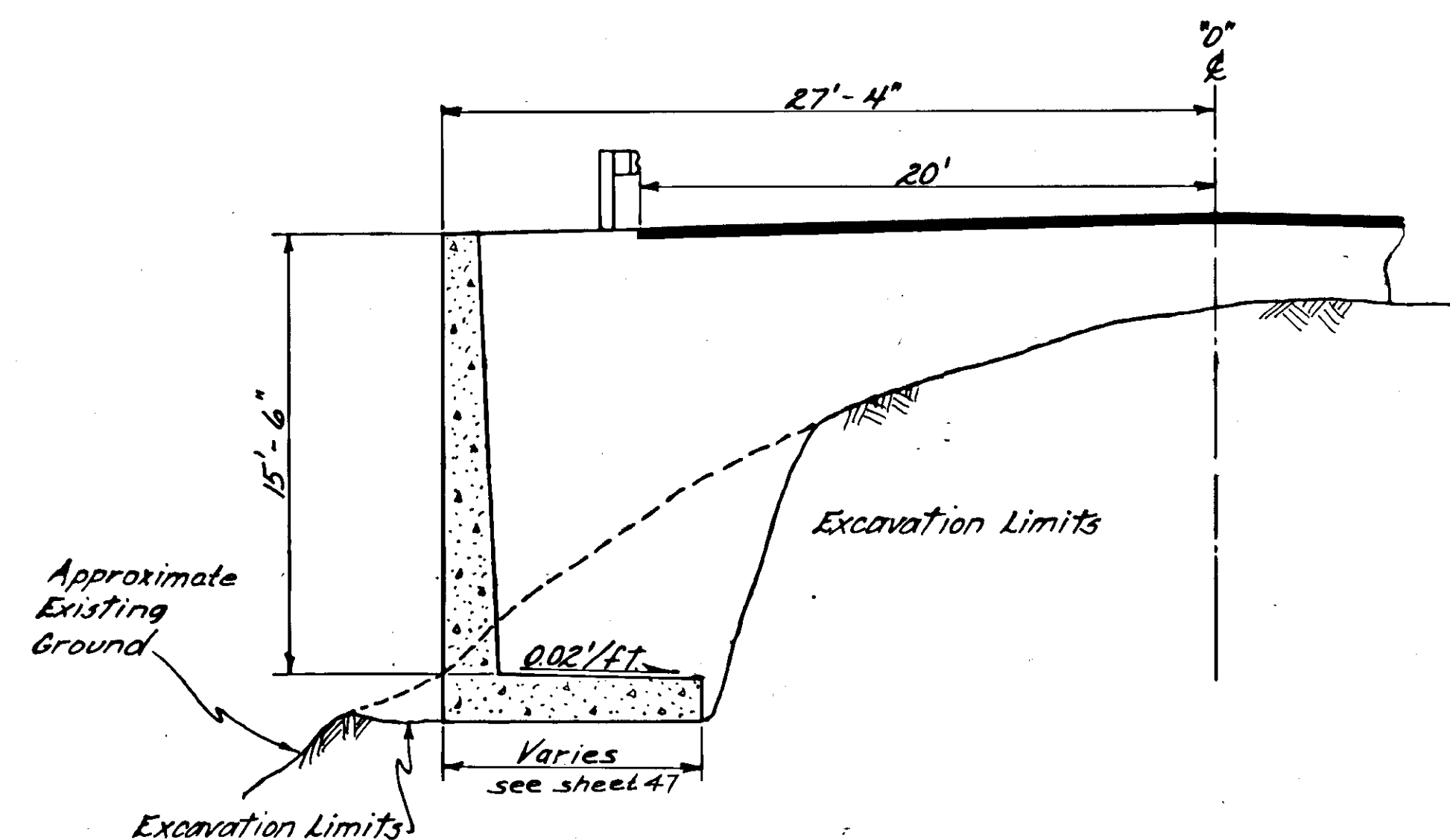
ELEVATION
SCALE: 1" = 5'

TABLE OF ELEVATIONS	
LOCATION	ELEVATION
A	60.84
B	47.16
C	59.66
D	49.04
E	43.07



CONTINGENCY FOOTING DETAIL
NO SCALE

NOTE: If the rock line does not provide sufficient width for the footing this detail shall apply. Set back of trench back 6" from Break Point as shown to ensure competent rock. No reinforcing steel is required in sub-footing.



NOTE: See Contingency Footing Detail on This Sheet.

SECTION A-A
SCALE: 1" = 5'

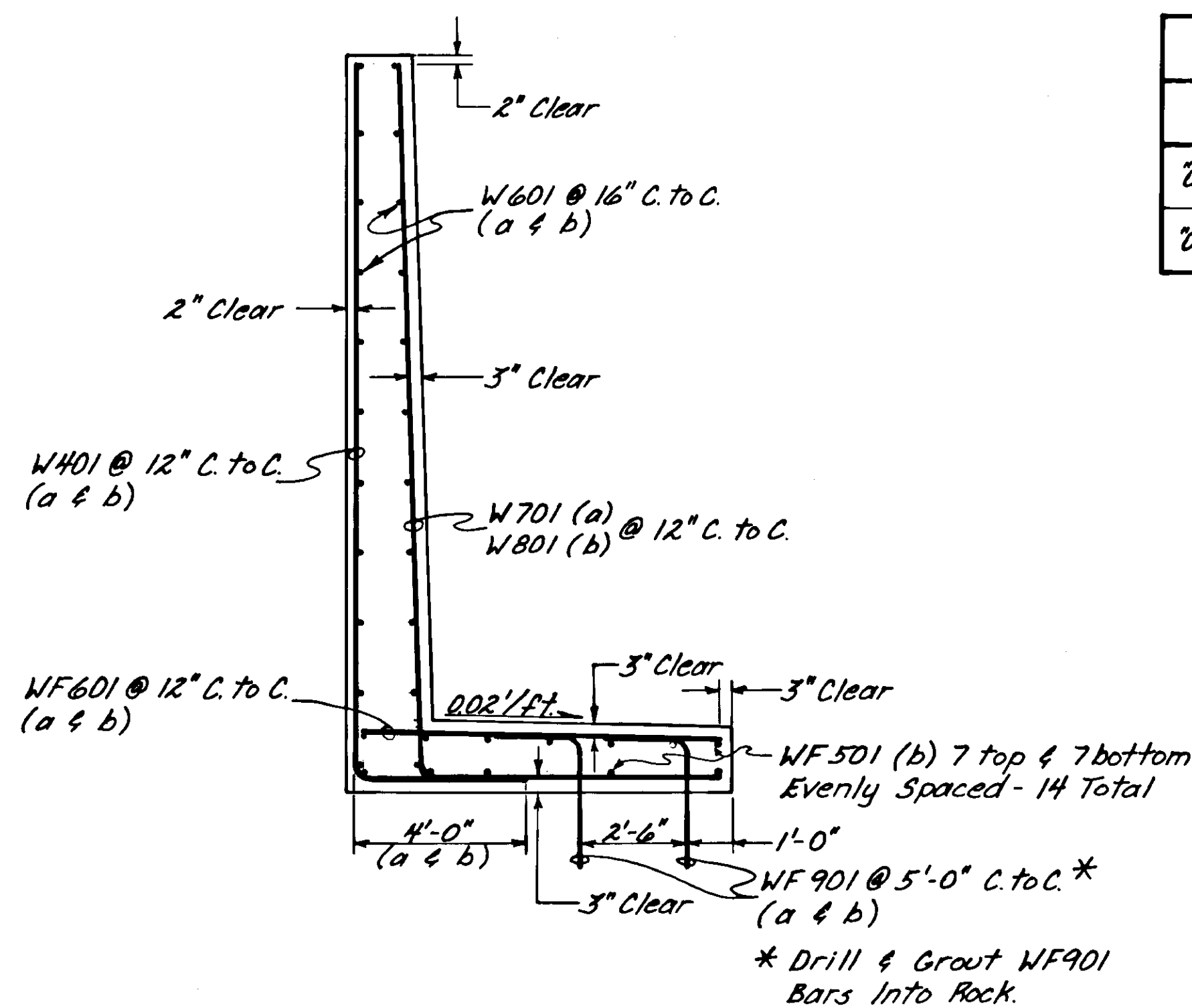


03/12/87

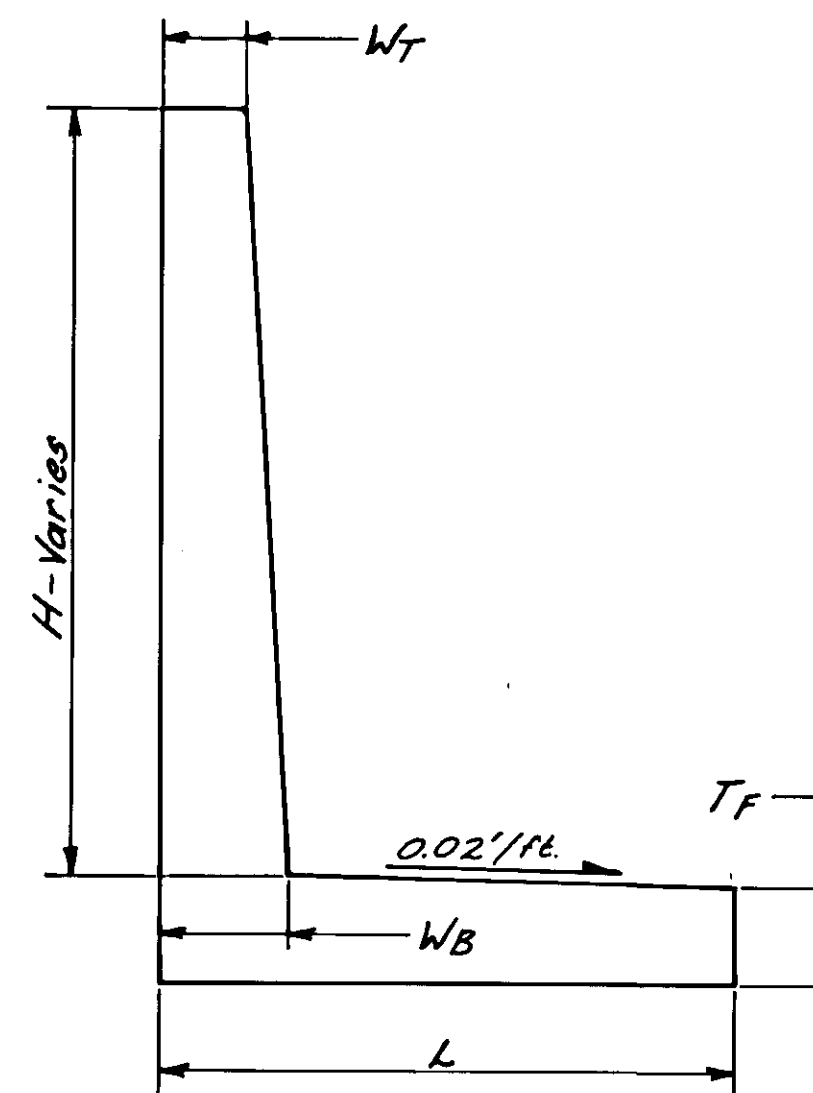
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	47	68

RETAINING WALL AT CANNERY CREEK BRIDGE REINFORCING STEEL DETAILS, ESTIMATED QUANTITIES, & GENERAL NOTES

DIMENSIONING SCHEDULE							
STATION TO STATION	DESIGN H	MIN. L	MIN. T _F	MIN. W _T	MIN. W _B	REBAR SCHEDULE	REMARKS
0+168+95	0+169+05	12'-0"	8'-0"	18"	15"	24"	a
0+169+05	0+169+45	15'-6"	9'-0"	18"	15"	24"	b



REINFORCING STEEL DETAIL
NO SCALE



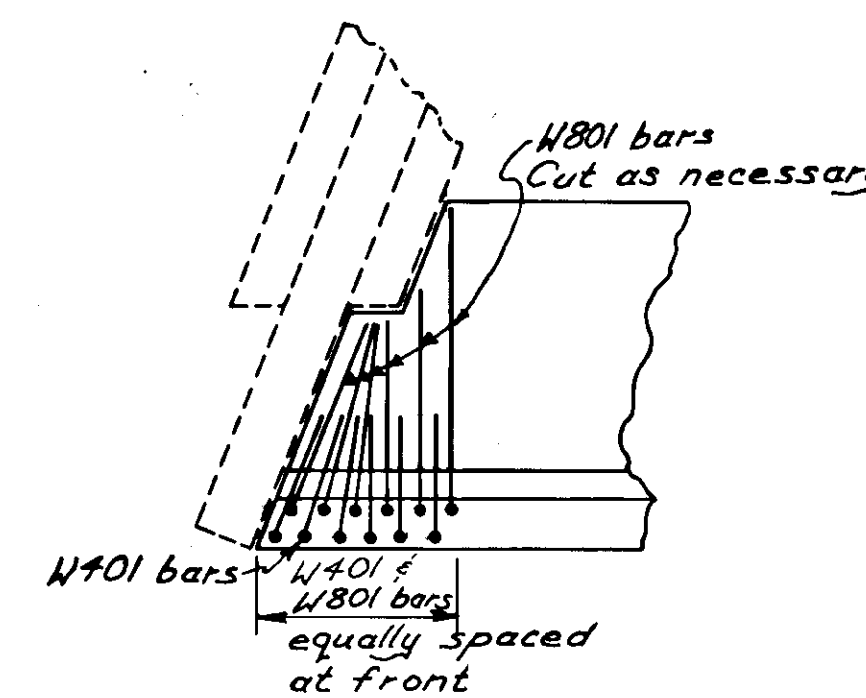
DIMENSIONING DIAGRAM
NO SCALE

REINFORCING STEEL SUMMARY				
MARK	SIZE	TYPE	NO. REQUIRED	LENGTH
W401	4	BENT	51	As Required
W601	6		22	"
W701	7(a)	BENT	11	"
W801	8(b)	BENT	41	"
W802	8	BENT	9	"
WF501	5		14	"
WF601	6		51	"
WF901	9	BENT	22	"

Note: Submit reinforcing steel schedule to engineer for approval.

ESTIMATED QUANTITIES			
ITEM NO.	ITEM	UNIT	QUANTITY
206(1W)	Excavation for Structures	C.Y.	75
501(1)	Class "A" Concrete	C.Y.	65*
503(1)	Reinforcing Steel	LB.	6,600

* NOTE: May increase due to erratic rock line encountered. See contingency footing detail on sheet 46.



**REINFORCING STEEL DETAIL
NEAR ABUTMENT**
NO SCALE

SPECIFICATIONS:

DESIGN - A.A.S.H.T.O. Standard Specifications for Highway Bridges, 1983 Edition with the Latest Interim Specifications.

CONSTRUCTION - State of Alaska Standard Specifications for Highway Construction, 1981 Standard Modifications & Special Provisions.

WIND LOAD - 30 Lbs./S.F.

LIVE LOAD - 2' Surcharge

DEAD LOAD - Earthweight = 140 p.c.f.

Equivalent Fluid Pressure = 24 p.c.f. (Active)
820 p.c.f. (Passive)

DESIGN UNIT STRESSES:

CAST-IN-PLACE CONCRETE - Class "A": $f'_c = 3,000$ p.s.i.
 $f_y = 60,000$ p.s.i.

GENERAL NOTES:

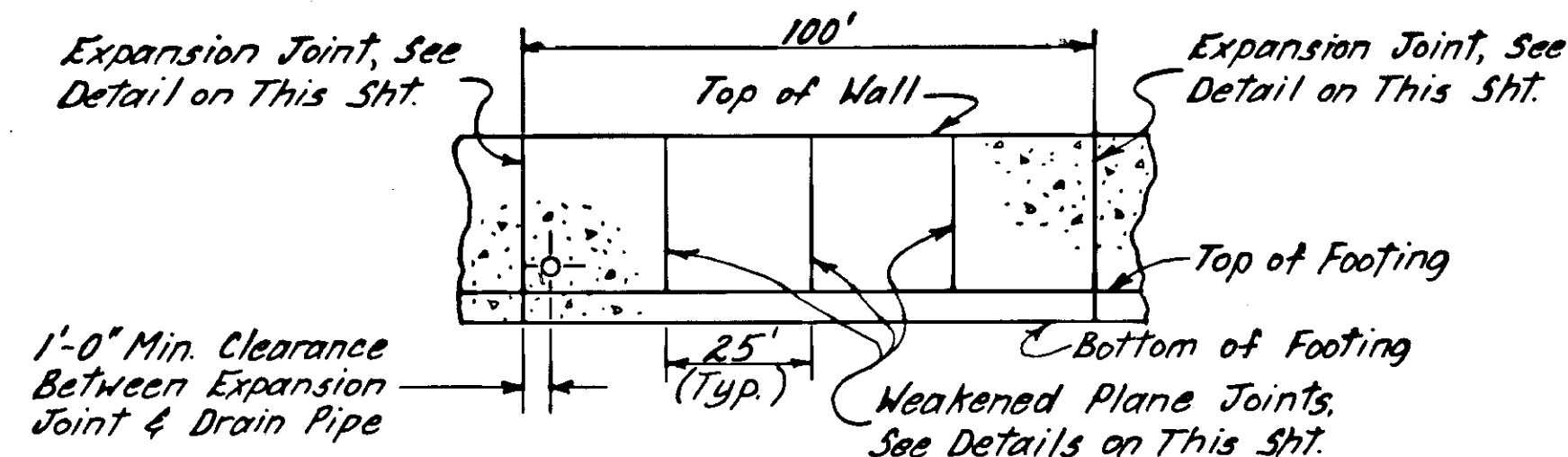
- All cast-in-place concrete shall be Class "A" & all reinforcing steel shall be A.S.T.M. A615 Grade 60.
- The constructed cast-in-place concrete wall shall have a weakened plane joint at each footing elevation change or direction change. See Weakened Plane Joint Details on sheet 48.
- Backfill sufficiently to prevent ponding. To be done after removal of wall forms & prior to backfilling behind wall.
- Prior to constructing the wall footing, the rock on which the wall footing is to be placed shall be thoroughly cleaned of all loose rock & deleterious material in order to produce a clean & sound base to set the wall on.
- Top of wall elevations for each end of wall are given on plan sheet 21. Top of wall shall follow same grade as highway profile. See table of elevations for additional data.
- Water may be encountered during excavation for the retaining wall. The contractor shall submit a drainage plan to the engineer for approval, prior to commencing excavation for the retaining wall.



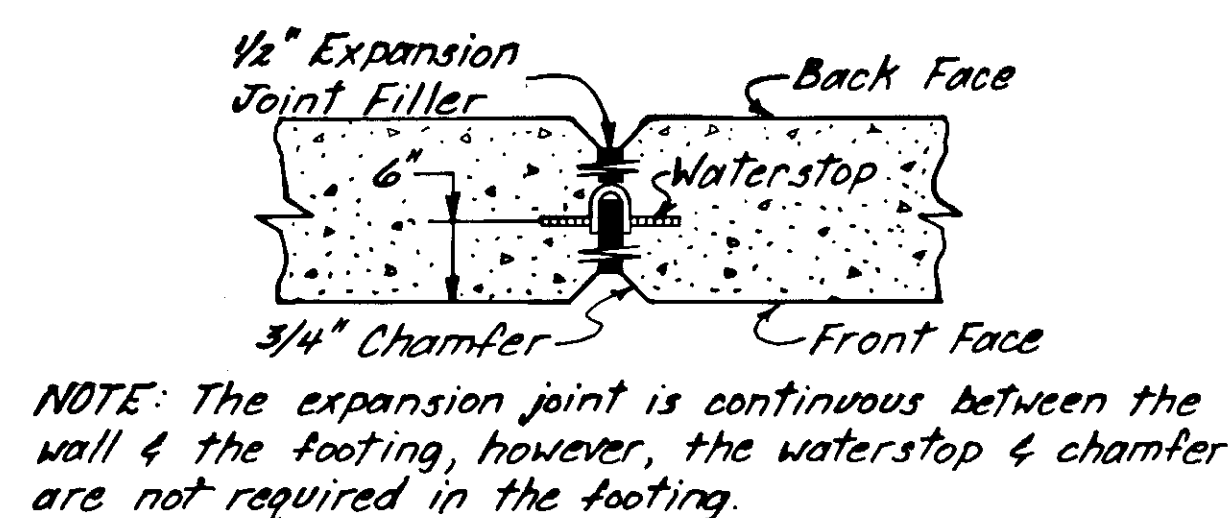
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	48	68

RETAINING WALL AT CANNERY CREEK BRIDGE MISCELLANEOUS DETAILS

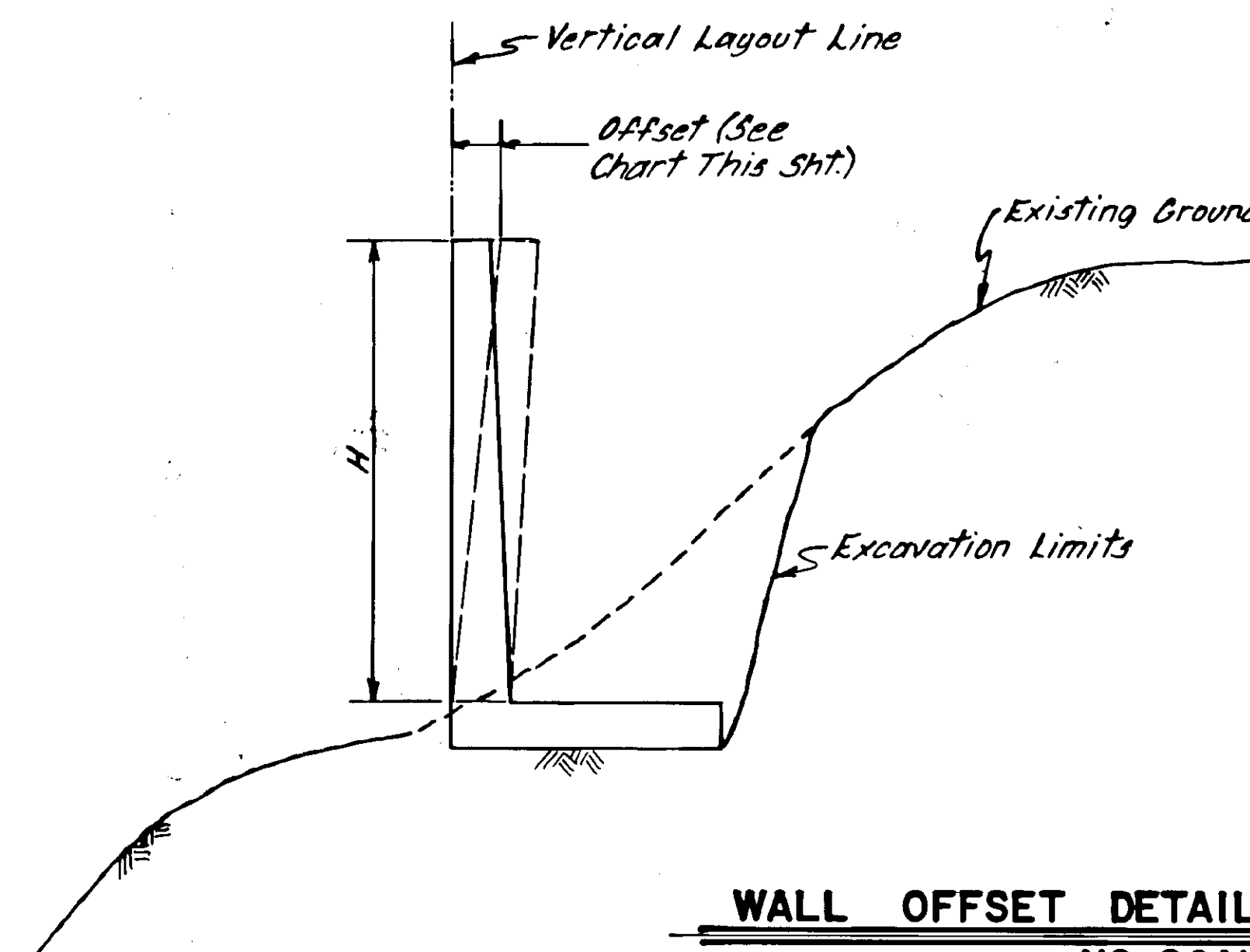
H	OFFSET
8'	1/2"
10'	5/8"
12'	3/4"
14'	1"
16'	1 1/4"
18'	1 1/2"



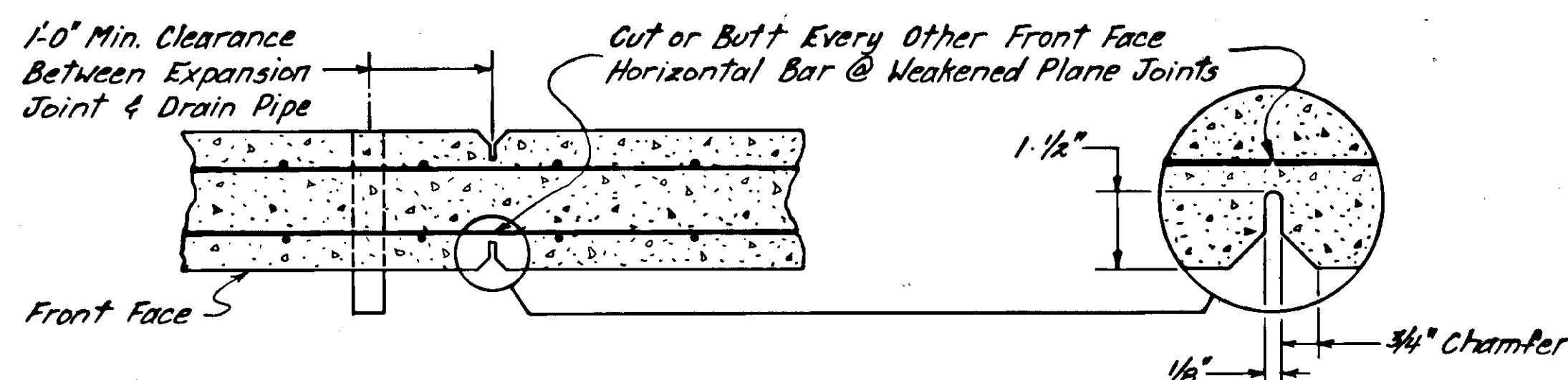
**EXPANSION & WEAKENED PLANE
JOINT PLACEMENT DETAIL**
NO SCALE



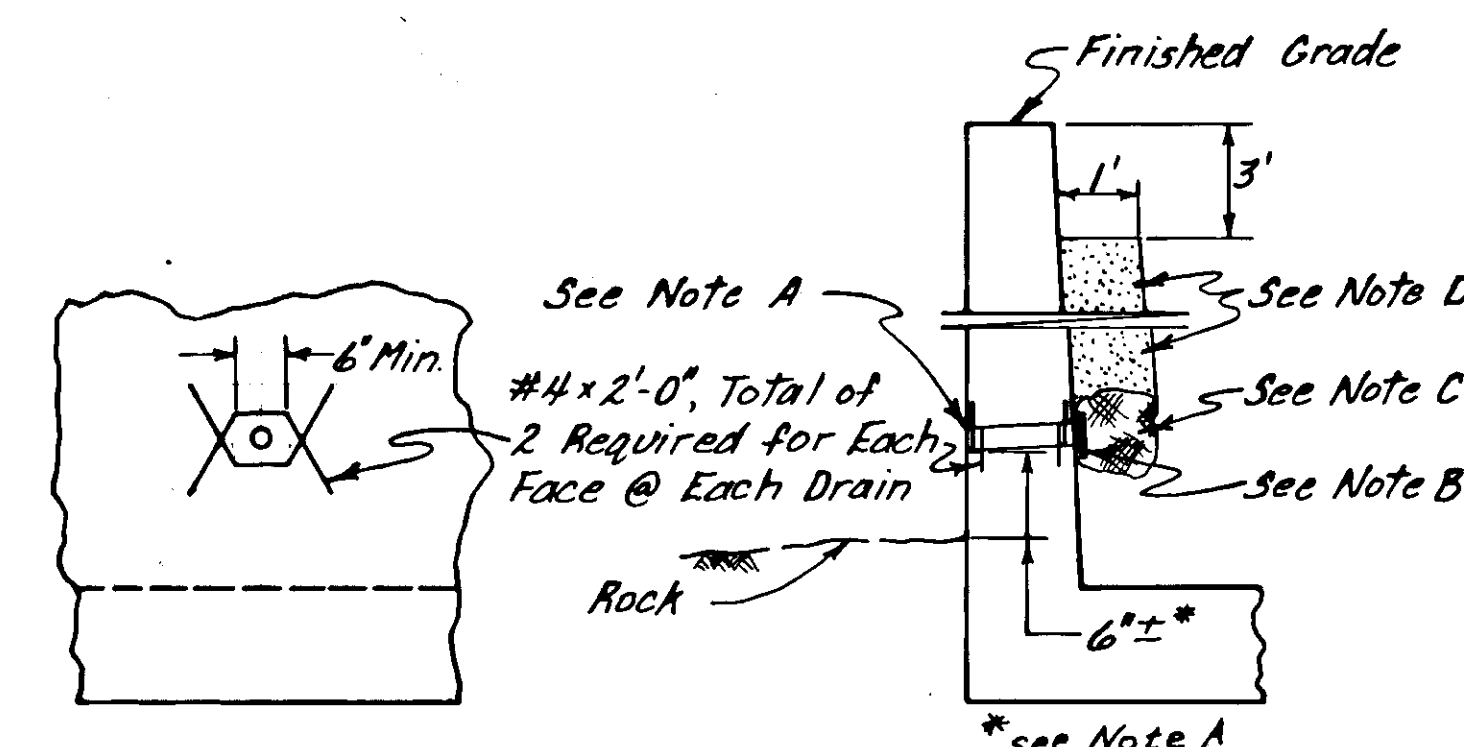
EXPANSION JOINT DETAIL
NO SCALE



WALL OFFSET DETAILS
NO SCALE

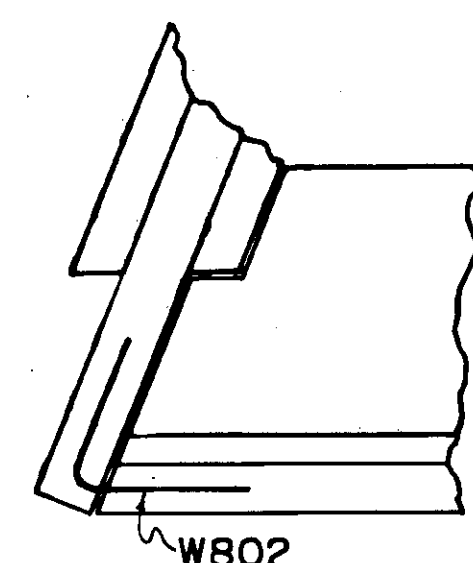


WEAKENED PLANE JOINT DETAILS
NO SCALE

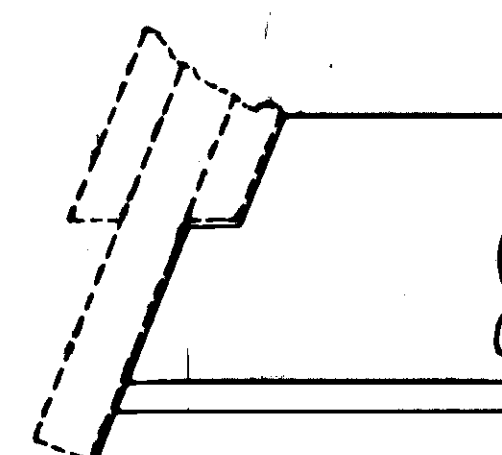
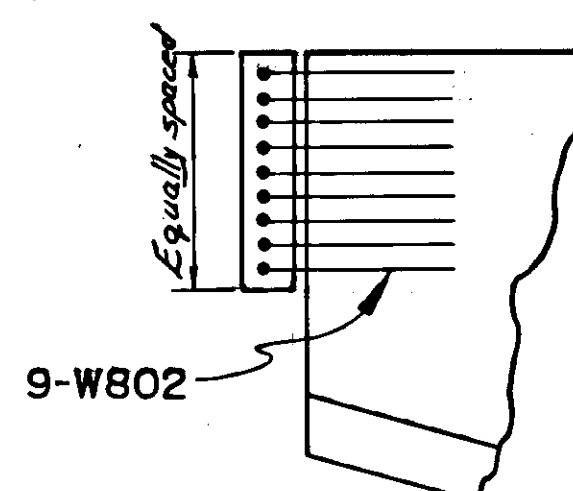


DRAIN PIPE & PERVIOUS BACKFILL MATERIAL DETAILS & NOTES
NO SCALE

- NOTES**
- 2" drains @ 5' max. C. to C. Exposed wall drains shall be located 6"± above finished slope outside wall.
 - 6" square aluminum or galv. steel wire 4 mesh hardware cloth (min. wire dia. = 0.03") Anchor firmly to back face of wall.
 - 1 cu. ft. pervious backfill material in a burlap sack, securely tied.
 - Pervious backfill material continuous behind retaining wall.
 - A geotextile drain of Enkadrain (American Enka Co.), Filtran (I.C.I.), Miradrain (Miriti Inc.), or approved equal may be substituted for the weep hole system detailed in notes A through D.

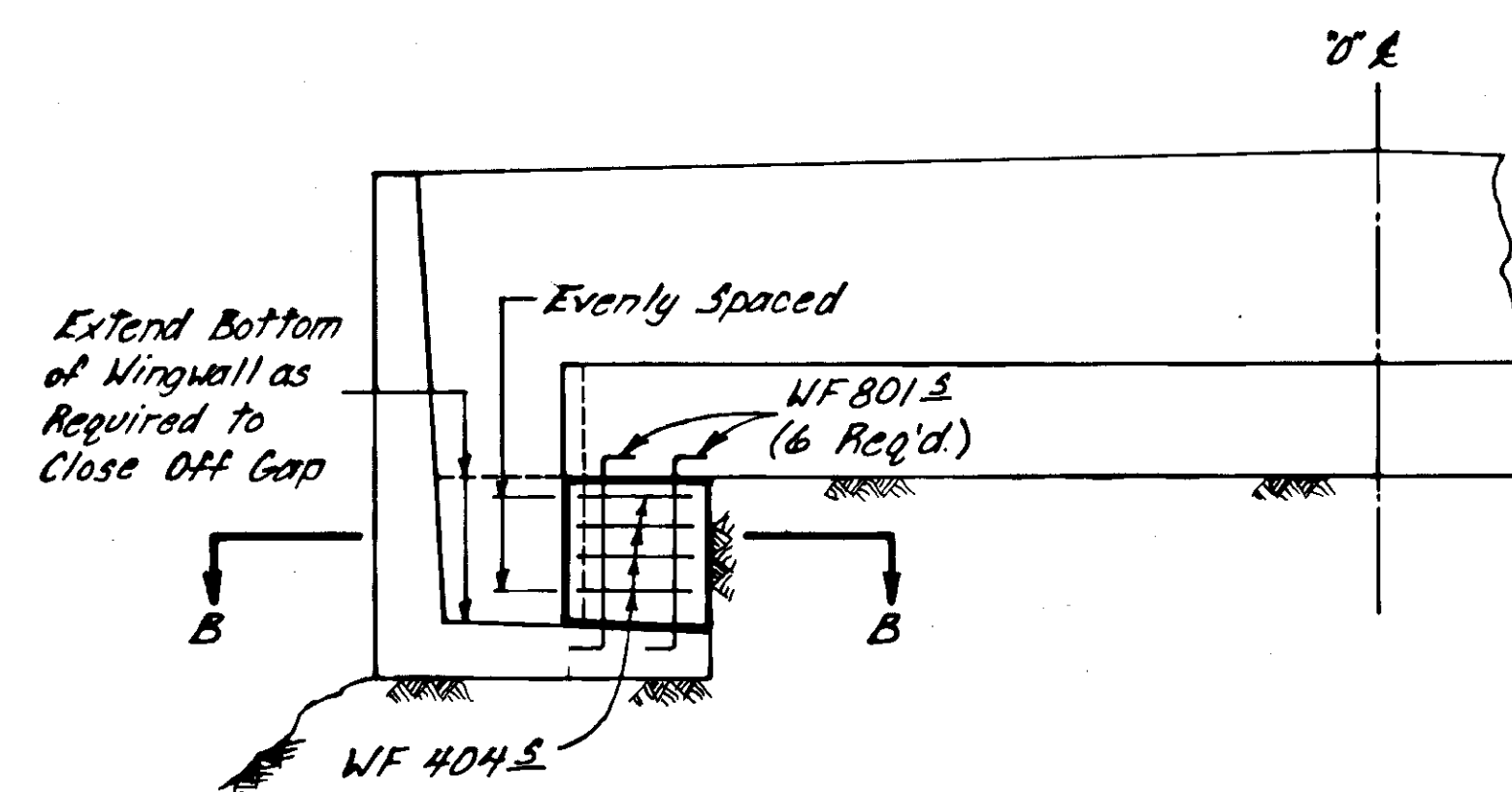


**REINFORCING STEEL DETAIL
WALL TO ABUTMENT CONNECTION**

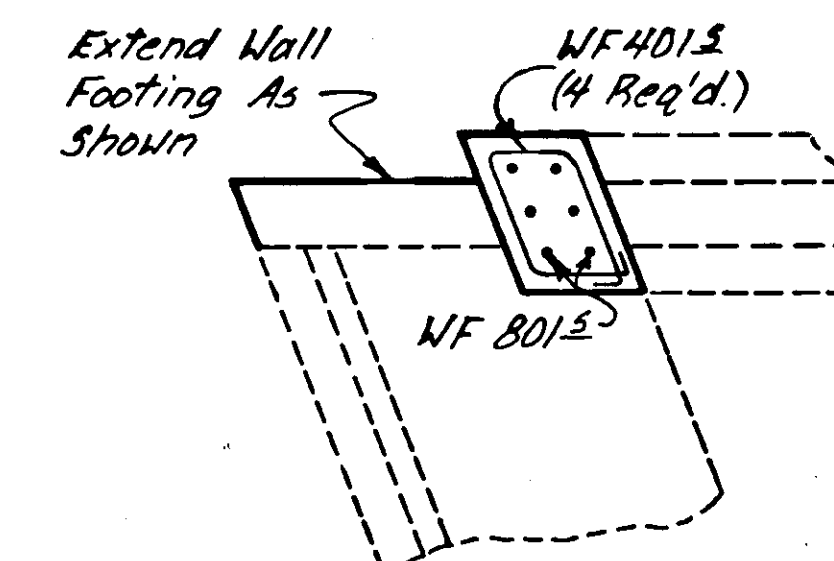


FOOTING DETAIL AT ABUTMENT

NOTE: Excavate for wall footing prior to construction of abutment.

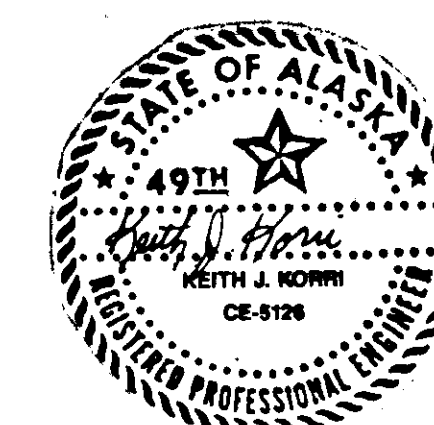


CONTINGENCY PEDESTAL DETAILS
NO SCALE



SECTION B-B

NOTE: If the rock line does not provide adequate bearing for the bridge abutment near the retaining wall footing, construct the pedestal as shown in the above drawing. The dimensions of the pedestal will vary due to the erratic rock line, therefore the dimensions & design details shall be determined by the engineer after excavation is completed.



P/P DWG. NO.	STRUC. NO.	STRUCTURE DATA										REMARKS (STRUCTURE DATA)	
		STRUCTURE / GUY DATA					FRAMING						
		STATION	STRUC. TYPE	POLE SIZE (I)	LINE ANGLE	GUY INFO	34.5 KV.	4-KV. FEEDER	4-KV. TAP	TELE- COMM.	TELE- NEUT SPAC'G.		
		SPAN	GUYING REWORK										
		L-Line											
	41	59+45				Remarks						Replace existing guys with GA-5 See Detail 1 GUY ANCHORS DWG.	
	42	61+35										Replace existing guys with GA-5 See Detail 1 Guy Anchors DWG.	
	45	66+25										Move stub pole and Anchor 10' to field. Install new GA-6.	
	51	77+00										Replace existing primary tap guys with G-15	
	60	92+60										Move stub pole and anchor 13' to field. Install new GA-6	
	61	94+40										Move stub pole and anchor 10' to field Install new GA-6	
	62	96+00										Move stub pole and anchor 17' to field. Install new GA-6	
	114	187+30										Replace existing guys with GA -5 See Detail 2, GUY ANCHORS DWG.	
	115	189+00				Remarks						Replace existing guys with GA-5 See Detail 2, GUY ANCHORS DWG.	
		T-Line	TRANSMISSION										
	126	211+25	Exist. STI	85'	7° 15' LT	GA-8A Remarks	UT3	UD2	—		No Attach.	Guy guards on in line guys. Rotate Pole to align 115KV insulators on angle bisector	
	127	212+98	STI	95'	—	—	UT1	UD1	—		6'		
	128	214+78	STI	90'	7° 15' LT	GA-8A	UT1	UD1	—		6'		
	129	216+65	STI	85'	—	—	UT1	UD1	—		6'		
	130	218+60	Exist SSTI	70'	14° RT	—	Exist SSTI	Exist SSTI	—		Exist 4'		
	131	220+80	STI	95'	—	—	UT1	UD1	—		6'		
	132	223+12	SDI	95'	Remarks	Remarks	See Below	See Below	See Below		6'	115KV Ckt: Line Angle 7° 15' RT, Guy Guards See Detail 1 P/P dwg for guy arrangement	
	133	225+72	Exist STI	70'	—	Exist	Exist	Exist	Exist		Exist		
		U-Line	DISTRIBUTION										
	132	0+00	See Above	See Above	Remarks	Remarks	UT3	UD2	UL1		See Above	Underbuild Ckts: Line Angle = 32° 45' LT Guy Arrangement = GA-11	
	133A	2+01	Dist.	65'	26° 45' LT	Remarks	UT2	UD3	—		6'	See Detail 2 P/P dwg for guy arrangement	
	134A	3+41	Dist.	55'	09° LT	GA-9A	UT1	UD1	—		6'		
	135A	4+57	Dist.	50'	17° LT	GA-10	UT2	UD3	—		6'		
	136A	5+79	Dist.	65'	04° LT	2- G3 GA-9 Remarks	UT3	UD2A	—		6'	Transfer existing transformer & secondary to new structure. Guy guards on in line guys.	

STRINGING SAG TABLE URB175-1										
PROJECT DESCRIPTION : SNOW LAKE T-LINE WIRE DESCRIPTION : 2/0 ACSR/AM "QUAIL/AM"										
TEMP. F :	20	30	40	50	60	70	80	90		
TEN. LB :	1138	1040	941	843	748	657	573	498		

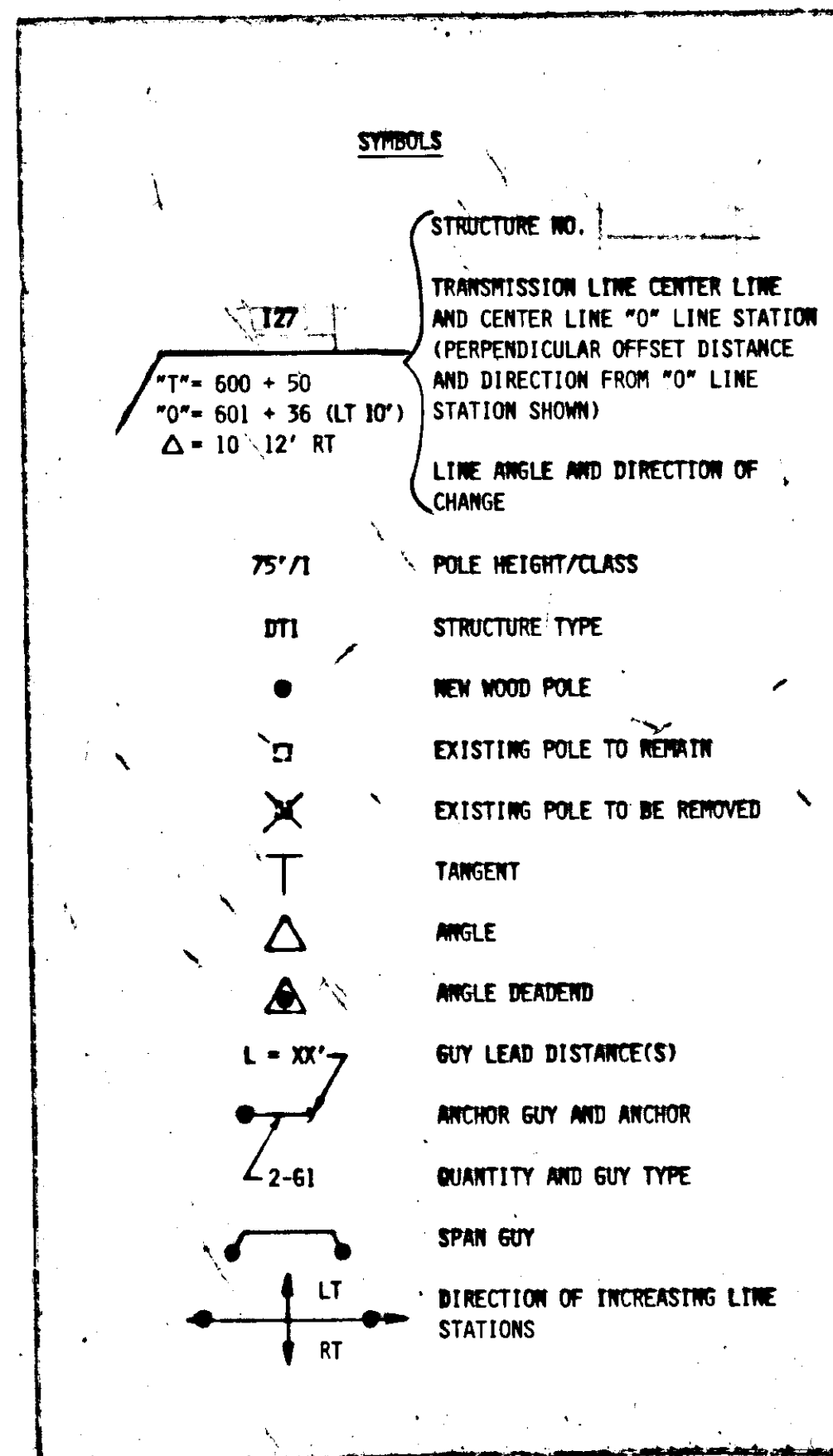
SPAN LENGTH	INITIAL SAG (FT-IN)									
100	0- 2	0- 3	0- 3	0- 3	0- 3	0- 4	0- 5	0- 5		
110	0- 3	0- 3	0- 3	0- 4	0- 4	0- 5	0- 5	0- 6		
120	0- 3	0- 4	0- 4	0- 4	0- 4	0- 5	0- 6	0- 7		
130	0- 4	0- 4	0- 5	0- 5	0- 6	0- 7	0- 8	0- 9		
140	0- 5	0- 5	0- 5	0- 6	0- 7	0- 8	0- 9	0-10		
150	0- 5	0- 6	0- 6	0- 7	0- 8	0- 9	0-10	1- 0		
160	0- 6	0- 6	0- 7	0- 8	0- 9	0-10	1- 0	1- 1		
170	0- 7	0- 7	0- 8	0- 9	0-10	1- 0	1- 1	1- 3		
180	0- 7	0- 8	0- 9	0-10	0-11	1- 1	1- 3	1- 5		
190	0- 8	0- 9	0-10	0-11	1- 1	1- 2	1- 4	1- 7		
200	0- 9	0-10	0-11	1- 0	1- 2	1- 4	1- 6	1- 9		
210	0-10	0-11	1- 0	1- 2	1- 3	1- 6	1- 8	1-11		
220	0-11	1- 0	1- 1	1- 3	1- 5	1- 7	1-10	2- 1		
230	1- 0	1- 1	1- 3	1- 4	1- 6	1- 9	2- 0	2- 4		
240	1- 1	1- 2	1- 4	1- 6	1- 8	1-11	2- 2	2- 6		
250	1- 2	1- 4	1- 5	1- 7	1-10	2- 1	2- 4	2- 9		
260	1- 4	1- 5	1- 7	1- 9	2- 0	2- 3	2- 7	2-11		
270	1- 5	1- 6	1- 8	1-11	2- 1	2- 5	2- 9	3- 2		

STRINGING SAG TABLE
URB175-2

PROJECT DESCRIPTION : SNOW LAKE T-LINE
WIRE DESCRIPTION : 4/0 AAC EC-H19

TEMP. F :	20	30	40	50	60	70	80	90		
TEN. LB :	703	591	498	426	371	329	297	272		

SPAN LENGTH	INITIAL SAG (FT-IN)									
100	0- 4	0- 5	0- 6	0- 7	0- 8	0- 9	0-10	0-11		
110	0- 5	0- 6	0- 7	0- 8	0-10	0-11	1- 0	1- 1		
120	0- 6	0- 7	0- 9	0-10	1- 0	1- 1	1- 2	1- 4		
130	0- 7	0- 9	0-10	1- 0	1- 2	1- 3	1- 5	1- 7		
140	0- 8	0-10	1- 0	1- 2	1- 4	1- 6	1- 8	1-10		
150	0-10	0-11	1- 1	1- 4	1- 6	1- 8	1-11	2- 1		
160	0-11	1- 1	1- 3	1- 6	1- 9	1-11	2- 2	2- 4		
170	1- 0	1- 3	1- 5	1- 8	1-11	2- 2	2- 5	2- 8		
180	1- 2	1- 4	1- 7	1-11	2- 2	2- 5	2- 9	3- 0		
190	1- 3	1- 6	1-10	2- 1	2- 5	2- 9	3- 0	3- 4		
200	1- 5	1- 8	2- 0	2- 4	2- 8	3- 0	3- 4	3- 8		
210	1- 7	1-10	2- 2	2- 7	2-11	3- 4	3- 8	4- 0		
220	1- 8	2- 0	2- 5	2-10	3- 3	3- 8	4- 1	4- 5		
230	1-10	2- 3	2- 8	3- 1	3- 6	4- 0	4- 5	4-10		



NOTES:

1. STUB POLES SHALL BE INSTALLED 35' FEET FROM O-LINE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. STUB POLES SHALL BE 30 FEET LONG UNLESS OTHERWISE NOTED ON THE DRAWINGS.

1	12/30/86	Reissued for bid with Revised Note 1.
0	11/12/86	Issued for bid
REV. NO.	DATE	DESCRIPTION

DRAWING REVISION RECORD

DESIGNED	CHW	CIVIL REVIEW	MECHANICAL REVIEW
DRAWN	TAB	STRUCTURAL REVIEW	ELECTRICAL REVIEW
CHECKED	CLS	DATE	11/12/86

R. W. BECK AND ASSOCIATES
ENGINEERS AND CONSULTANTS

SEATTLE, WASHINGTON

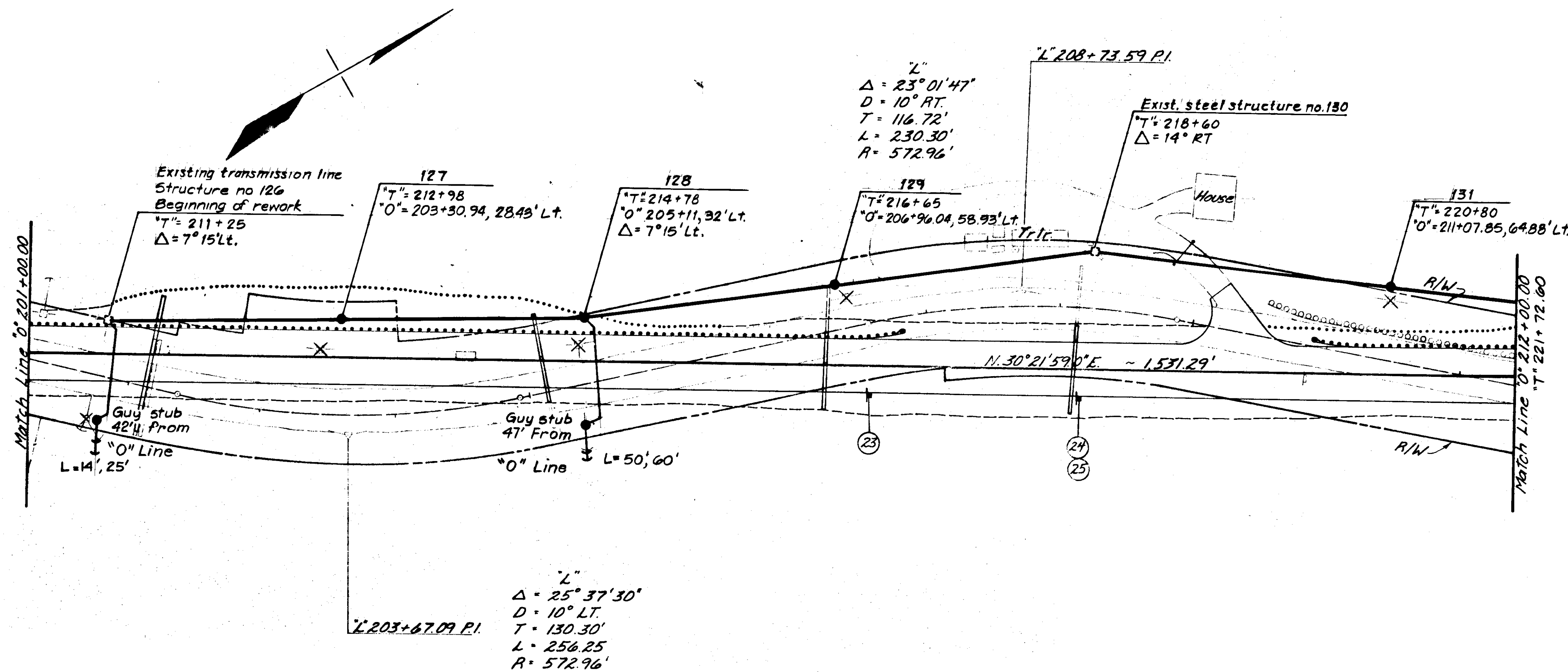
DENVER, COLORADO

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
NORTH TONGASS UTILITIES RELOCATION
PROJECT NO. RS-M-0920(17) & 67453
TRANSMISSION LINE STRUCTURE SCHEDULE

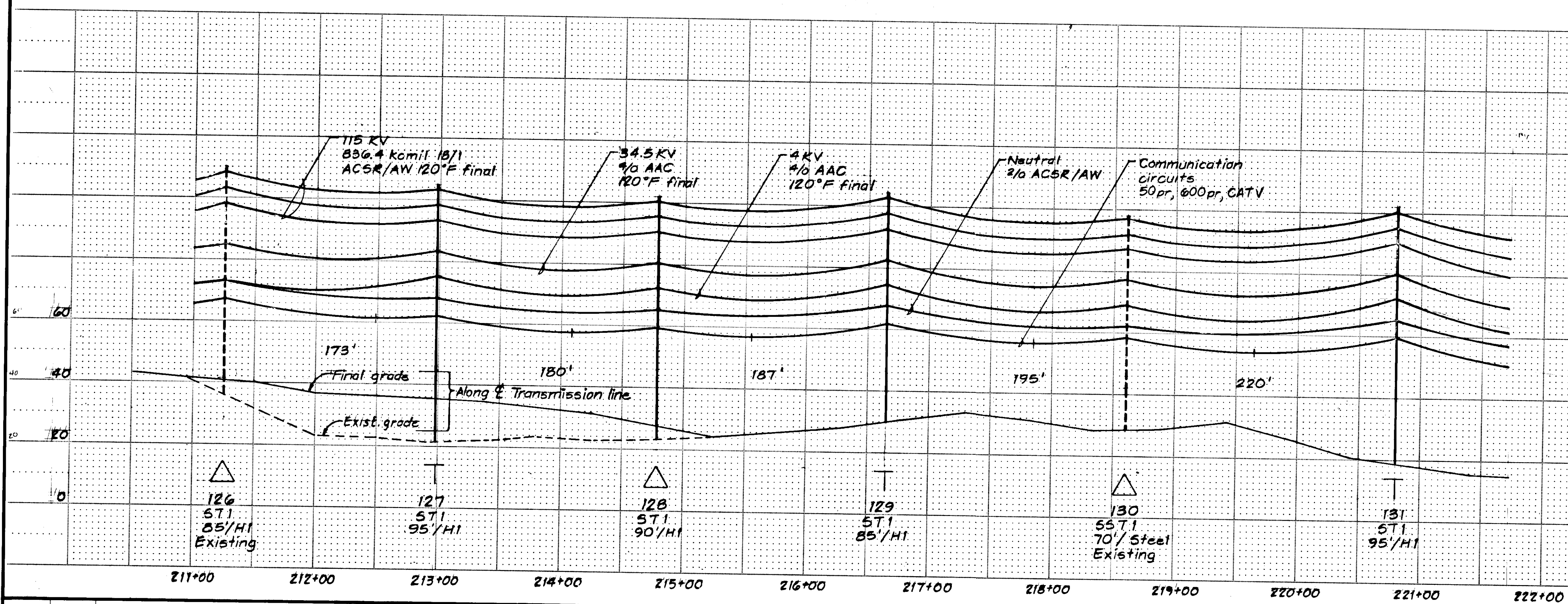
WORK ORDER NUMBER
EE-1971-E11-AB
DRAWING NUMBER
55 OF 68



STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	56	68



NOTE
 1. Profile along centerline of Transmission Line is approximate profile derived from ASDOT highway cross-sections at 50 foot intervals.

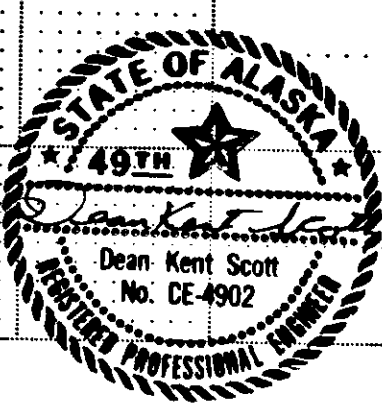


REV. NO.	DATE	DESCRIPTION
1	4/10/87	Reissued for bid with guy stub note structures 126 & 127.
0	11/12/86	Issued for bid

DESIGNED CHW	CIVIL REVIEW	MECHANICAL REVIEW
DRAWN J.M./L.E.L.	STRUCTURAL REVIEW	ELECTRICAL REVIEW
CHECKED CLS	DATE 11/12/86	APPROVED [Signature]

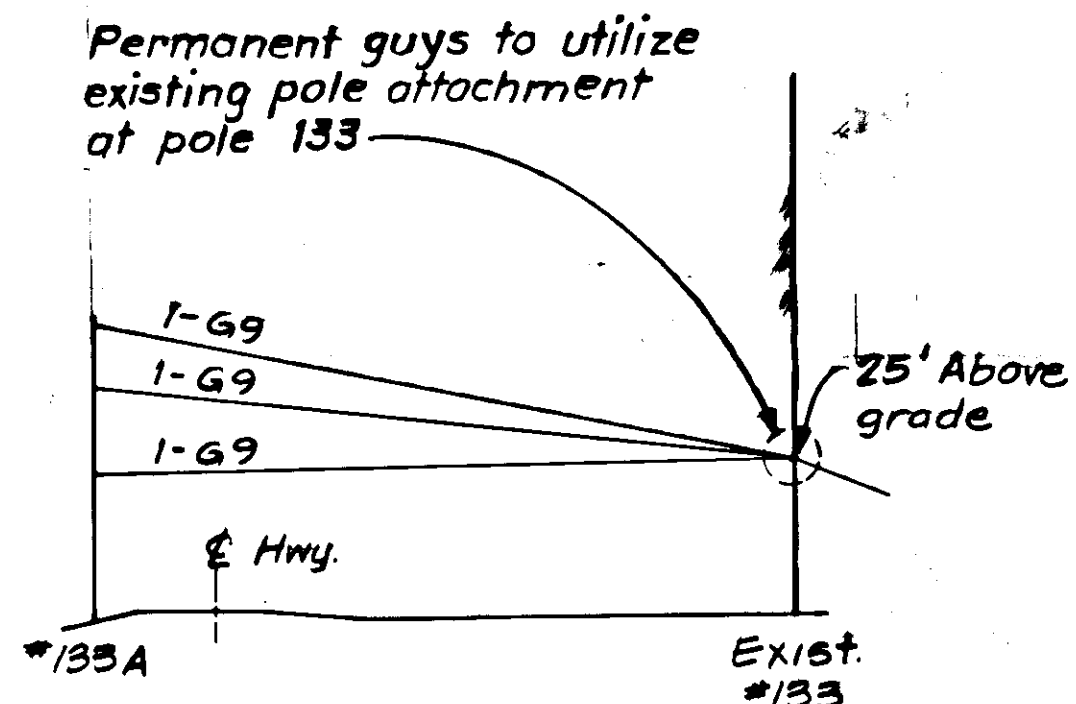
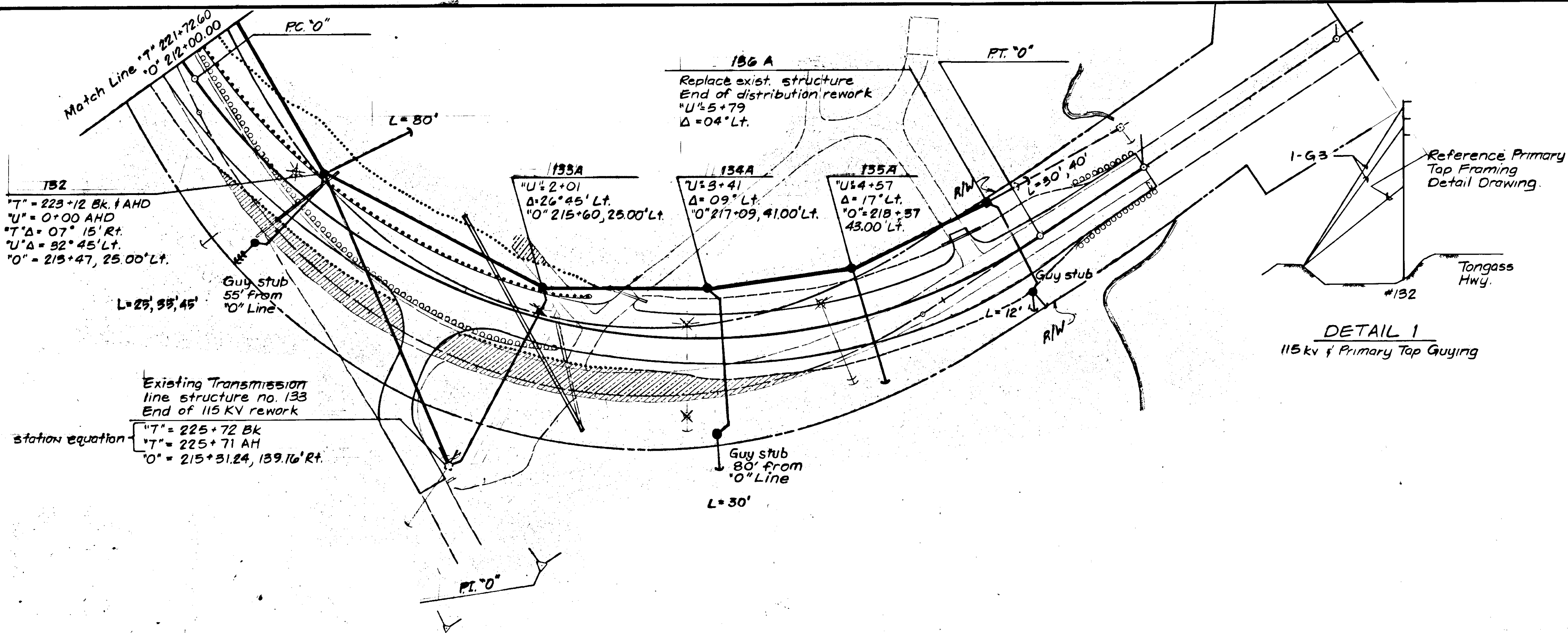
R. W. BECK AND ASSOCIATES
 ENGINEERS AND CONSULTANTS
 SEATTLE, WASHINGTON DENVER, COLORADO

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
 NORTH TONGASS - UTILITIES RELOCATION
 PROJECT NO. RS-M-0920(17) & 67453
TRANSMISSION LINE PLAN AND PROFILE - I



WORK ORDER NUMBER
 EE-1971-ETI-AB
 DRAWING NUMBER
56 OF 68

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920 (17) & 67453	1987	57	68

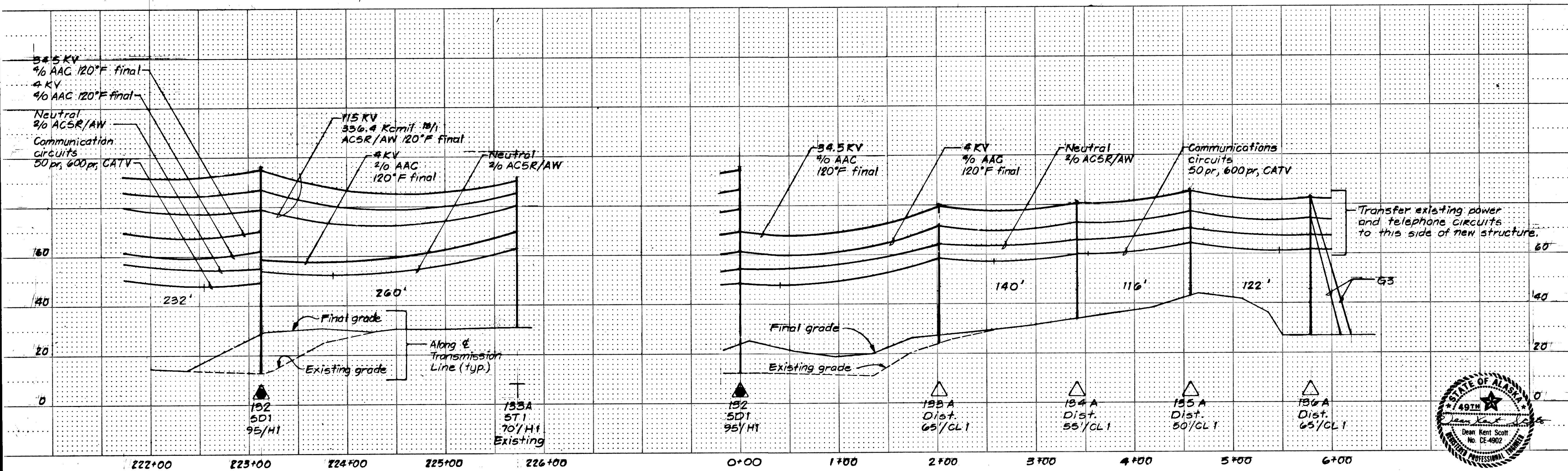


DETAIL 1
115 kv & Primary Tap Guying

DETAIL 2

NOTE

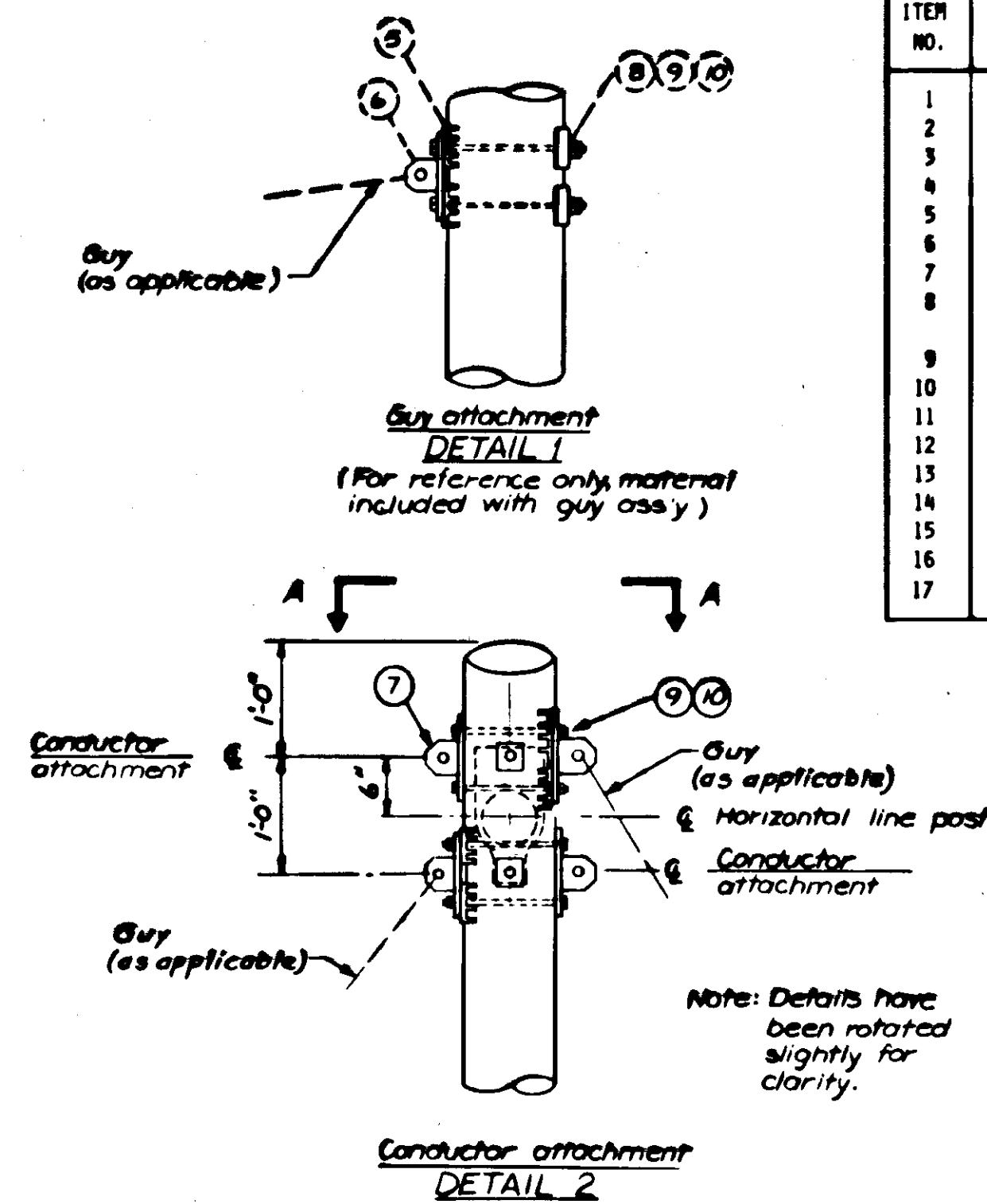
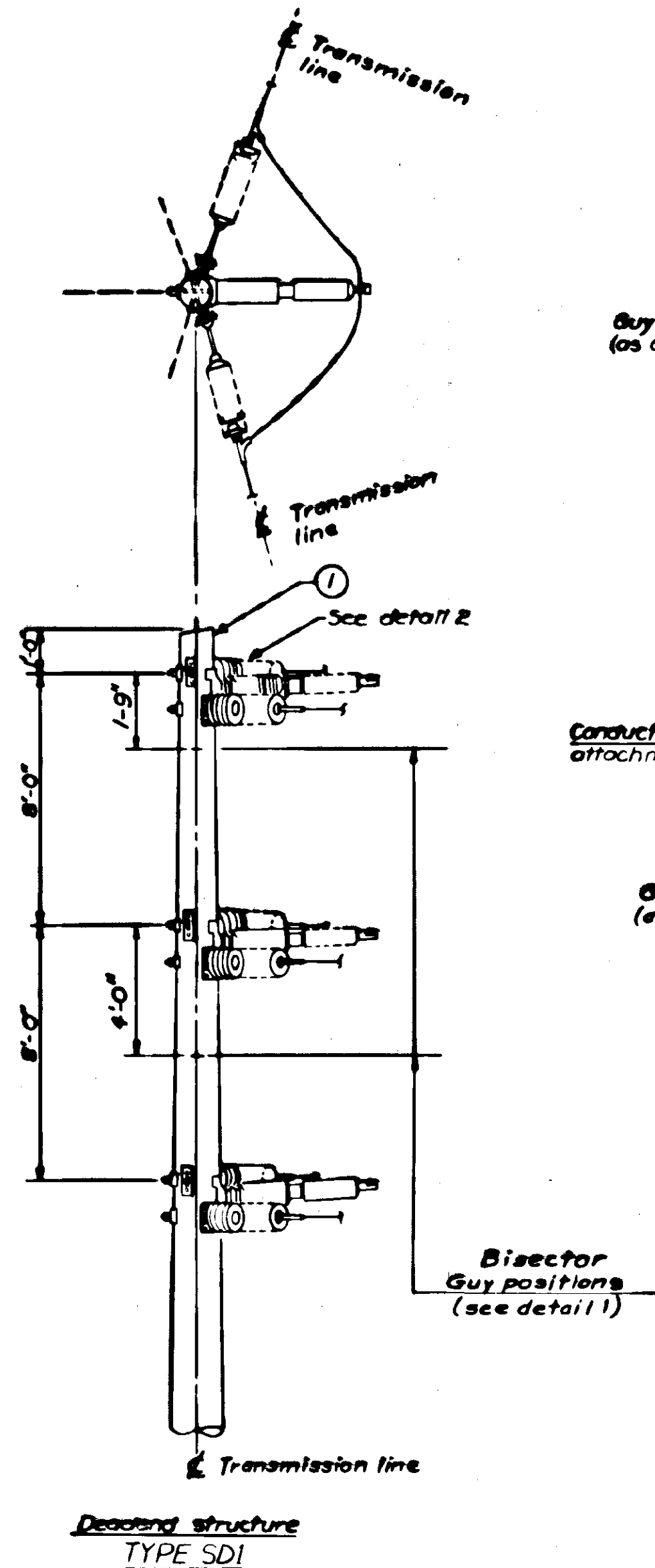
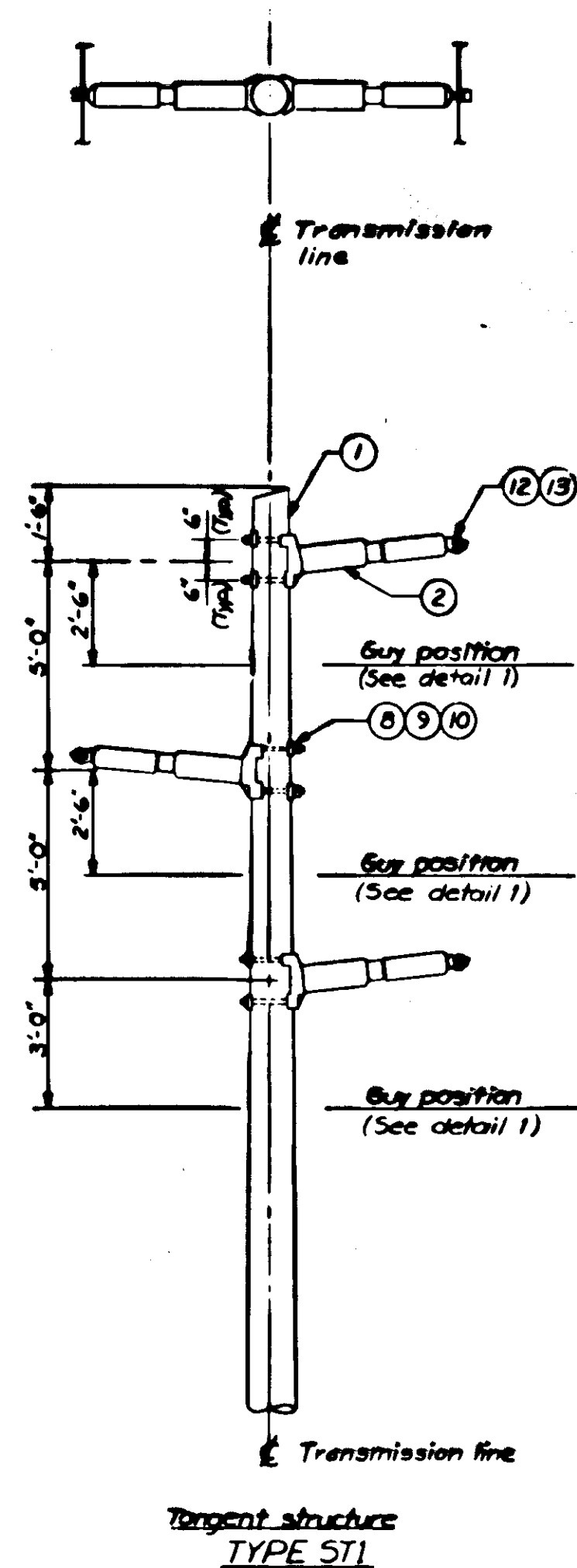
1. Profile along centerline of Transmission Line is approximate profile derived from ASDOT highway cross-sections at 50' foot intervals.



DESIGNED CHW	CIVIL REVIEW	MECHANICAL REVIEW	R. W. BECK AND ASSOCIATES ENGINEERS AND CONSULTANTS SEATTLE, WASHINGTON	STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES NORTH TONGASS - UTILITIES RELOCATION PROJECT NO. RS-M-0920(17) & 67453 TRANSMISSION LINE PLAN AND PROFILE - 2	WORK ORDER NUMBER EE-1971-ET1-AB DRAWING NUMBER 57 OF 68
DRAWN JM/L.E.L.	STRUCTURAL REVIEW	ELECTRICAL REVIEW			
CHECKED CLS	DATE 11/12/86	APPROVED [Signature]			

REV. NO.	DATE	DESCRIPTION
1	12/30/86	Reissued for bid with Guy Stub note structures 132 & 134A
0	11/12/86	Issued for bid





MATERIAL LIST				
ITEM NO.	DESCRIPTION	MANUFACT. & CAT. NO.	QUANTITIES	
			STI	SDI
1	Pole, wood	Note 2	-	-
2	Insulator, horizontal line post, porcelain	L 70148-PA	3	3
3	Insulator, suspension, porcelain	OB 47410	-	54
4	V-clevis/ball ext. link	A MYBC-30	-	6
5	Single curve grid plate (4" x 4")	MIF PX 122	-	-
6	Dead end and guying tee	HB 281	-	-
7	Dead end tee	HB 2817	-	12
8	Washer, square curved, 4" x 4" x 1/4", 13/16" hole	---	6	6
9	Machine bolt, 3/4" x req'd length	---	6	18
10	Locknut, NF type, 3/4" dia.	---	6	18
11	Socket eye	A SA-07	-	6
12	Armor rod	MG AAR533	3	-
13	Clamp, line post, AL 1.0" to 1.5" (tangent)	(C) LPS 150	3	-
14	Clamp, line post, AL 1.0" to 1.65" (angle)	(C) PAC-165	-	-
15	Strain clamp, aluminum	OB 86548	-	6
16	Jumper connector, compression	AL 5076.719	-	3
17	Clamp, line post, AL .35" to .84" (jumper)	(C) LPS 86	-	3

* Included with guy assembly

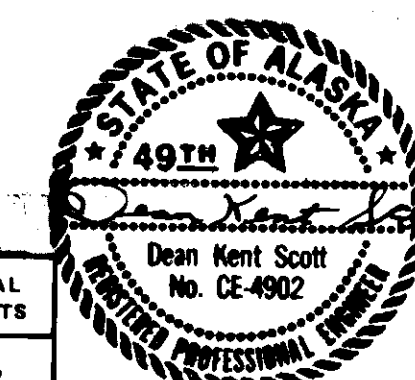
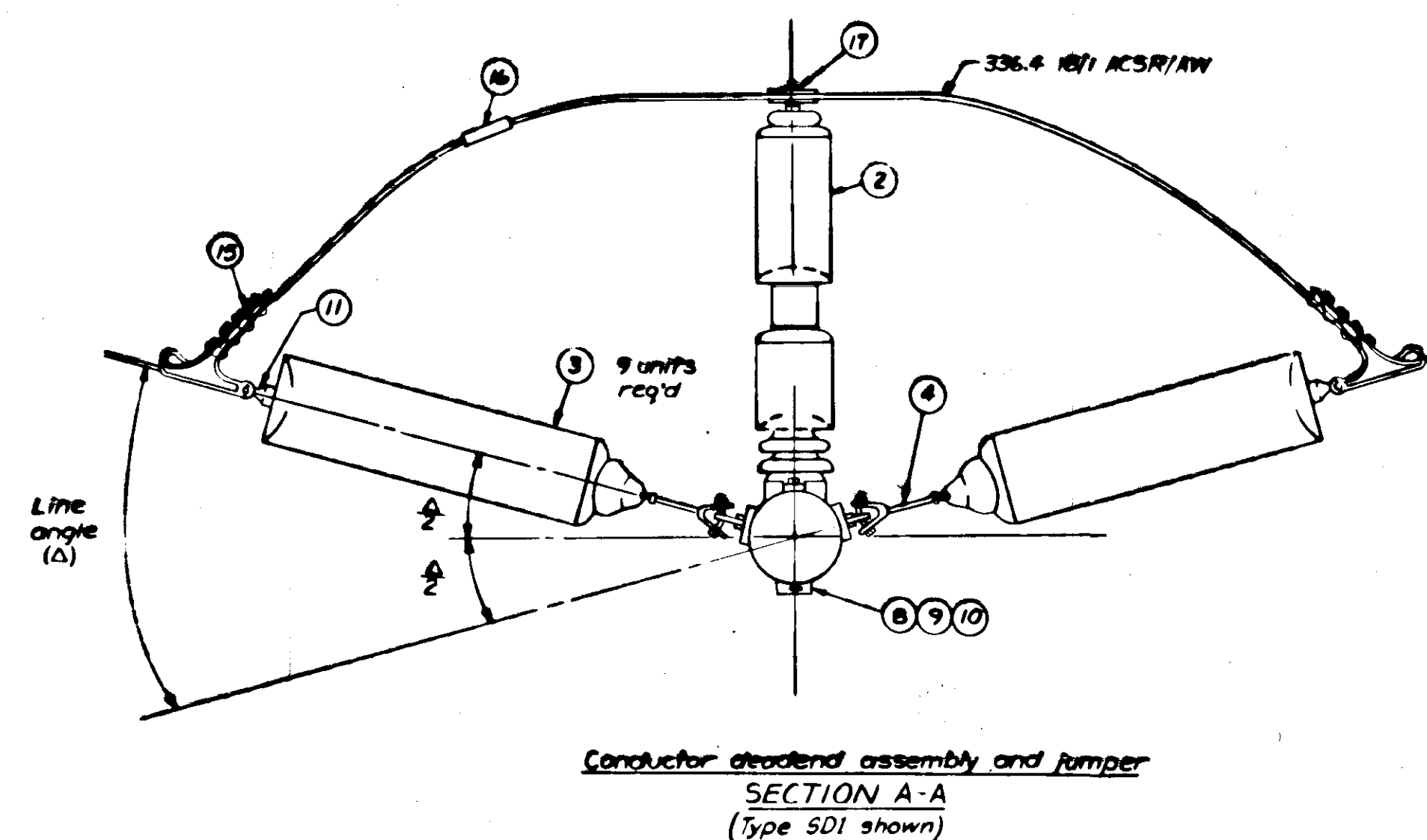
ABBREVIATIONS

OB - OHIO BRASS
HB - HUGHES BROTHERS
MIF - STANLEY G. FLAGG
J - JOSLYN
MX - MENDRIX
L - LAPP
AL - ALCOA
C - CHANCE
A - ANDERSON
(C) - CONTINENTAL
MG - MELICAL LINE PRODUCTS

M - MEYER
BE - BETHEA
BL - BLACKBURN

NOTES:

1. Unless otherwise noted STI structures are framed such that two phases are on the road side.
2. Reference Transmission Line Plan and Profile drawings for pole size.



STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	58	68

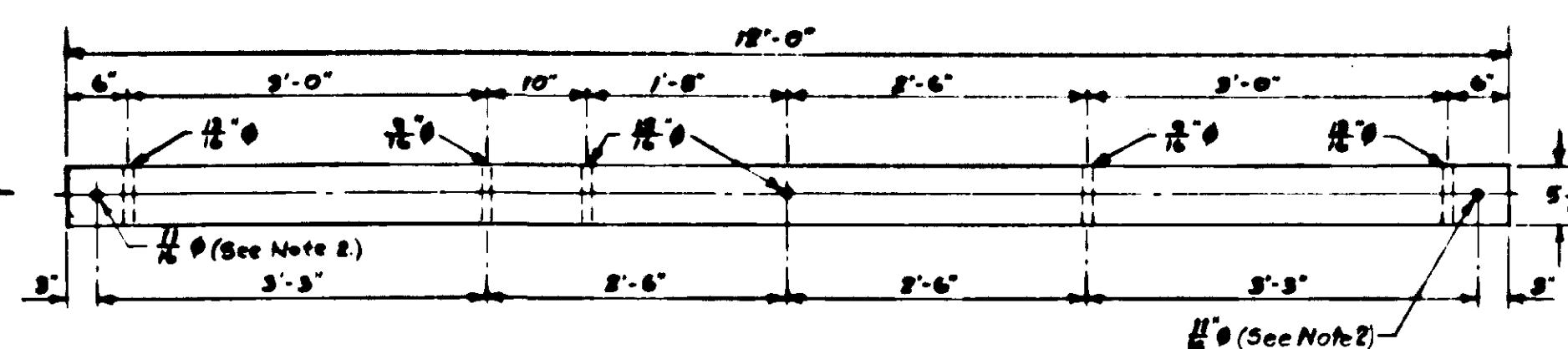
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
NORTH TONGASS - UTILITIES RELOCATION
PROJECT NO. RS-M-0920(17) & 67453
STRUCTURE DETAILS TYPE STI & SDI

WORK ORDER NUMBER
EE-1971-ETI-AB
DRAWING NUMBER
58 OF 68

REV. NO.	DATE	DESCRIPTION
0	11/12/86	Issued for bid

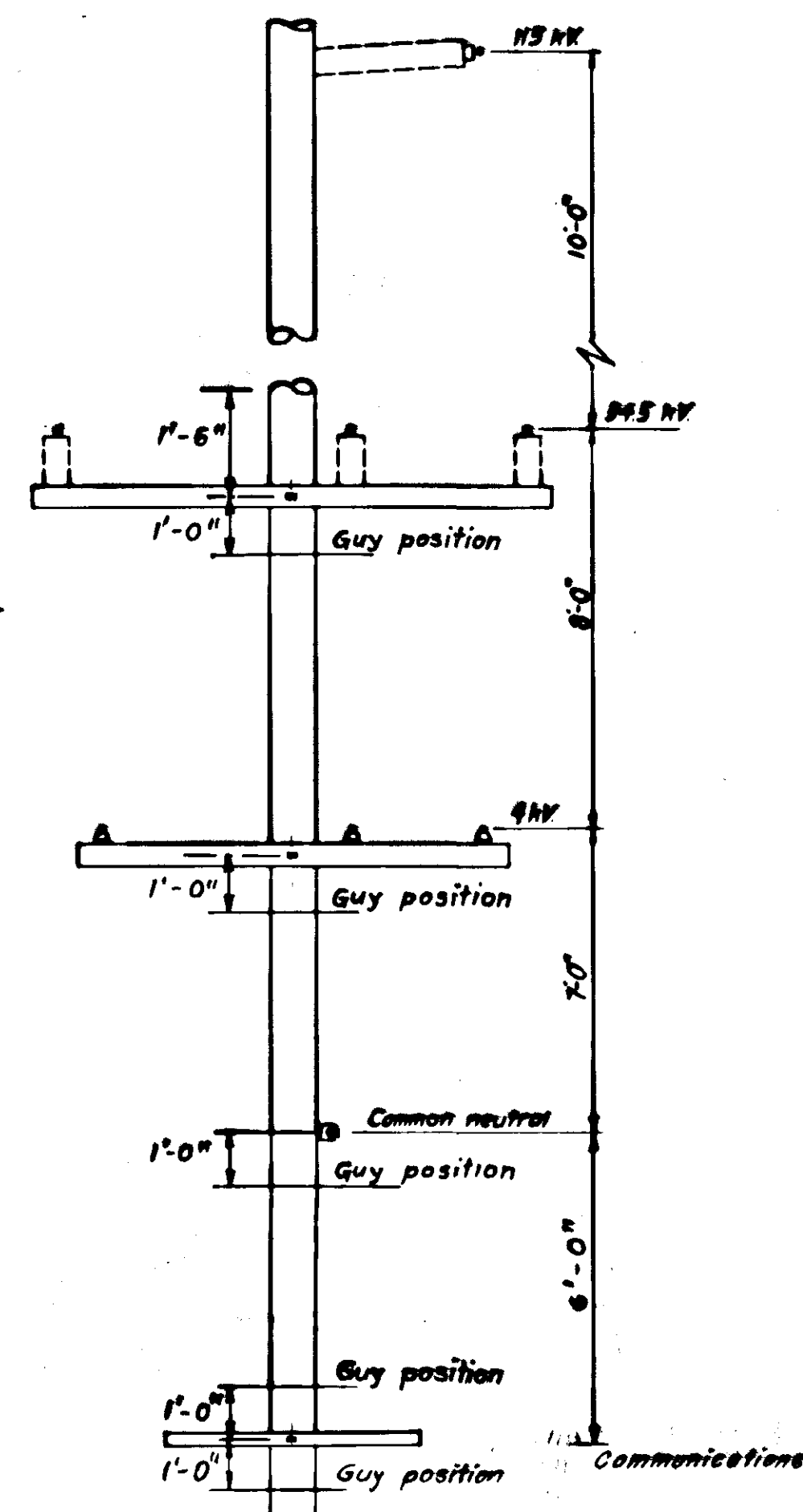
DESIGNED CLS	CIVIL REVIEW	MECHANICAL REVIEW
DRAWN REG	STRUCTURAL REVIEW	ELECTRICAL REVIEW
CHECKED CLS	DATE 11/12/86	APPROVED [Signature]

R. W. BECK AND ASSOCIATES
ENGINEERS AND CONSULTANTS
SEATTLE, WASHINGTON
DENVER, COLORADO

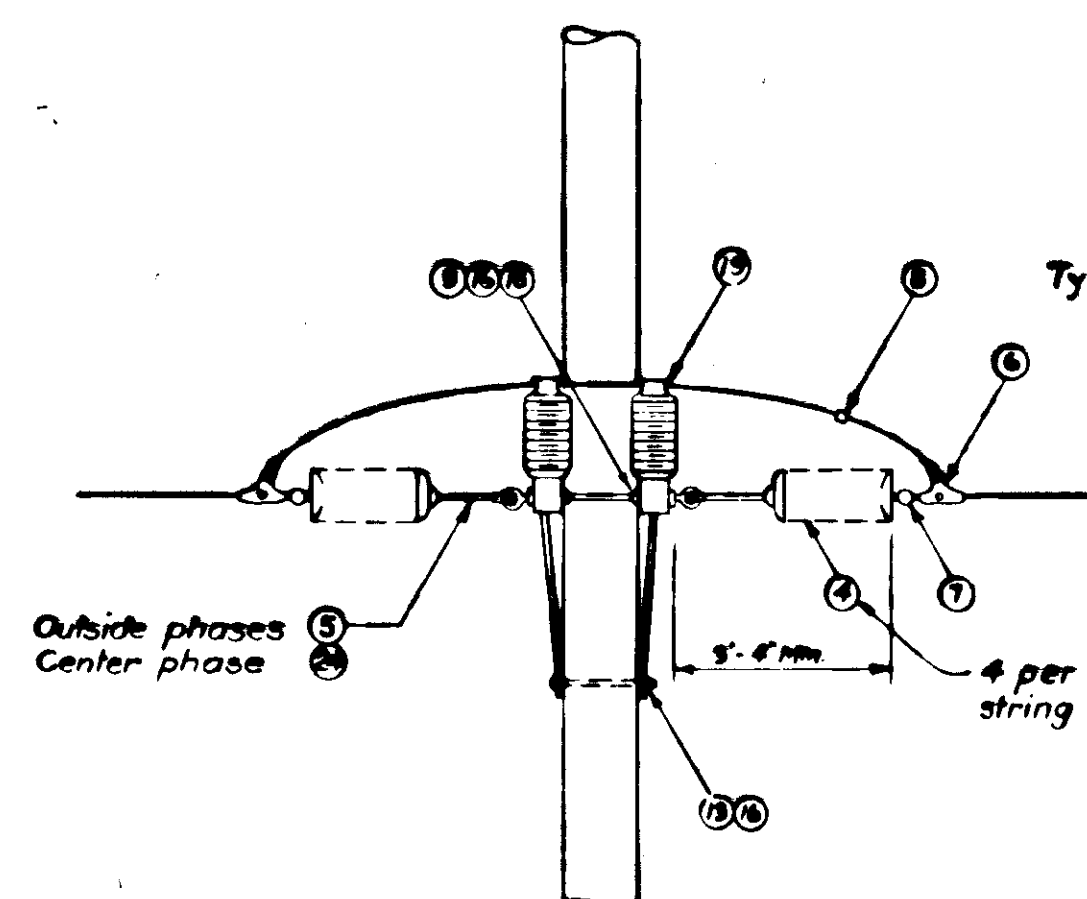


34.5KV CROSSARM

DETAIL 1



DETAIL 2
Typical clearances (See Note 1)



DOUBLE ARM DOUBLE DEADEND
TYPE UT3

MATERIAL LIST						
ITEM NO.	DESCRIPTION	MANUFACT. # CAT. NO.	QUANTITIES			
			UT1	UT2	UT3	
1	Crossarm wood, 4-5/8" x 5-5/8" x 12'-0"	---	1	2	2	
2	Double span braces, 60"	J 1508	1	2	2	
3	Insulator, vert. post porcelain 7" stud	L 944/5	3	6	6	
4	Insulator, suspension, porcelain	OB 4741Q	-	-	24	
5	Y-clevis/ball	OB 82857	-	-	4	
6	Strain clamp, aluminum	OB 86548	-	-	6	
7	Socket eye	4SA-07	-	-	6	
8	Connector (size per conductor)	---	-	-	3	
9	Bolt, double arming, 5/8" x req'd length	---	-	2	2	
10	Eyebut (5/8" bolt)	---	-	-	4	
11	Bolt, machine, 1/2" x req'd length	---	4	4	4	
12	Threaded rod, 3/4" x req'd length	---	-	1	1	
13	Bolt, machine, 5/8" x req'd length	---	1	1	1	
14	Washer, round, 1-3/8", 9/16" hole	---	6	4	4	
15	Locknuts HF type, 1/2" dia.	---	4	4	4	
16	Locknuts HF type, 5/8" dia.	---	1	9	5	
17	Locknuts HF type, 3/4" dia.	---	2	2	-	
18	Washer, square, 2-1/4", 11/16" hole	---	1	8	8	
19	Conductor tie wire No. 4 bare AL	---	os	os	os	
			req'd	req'd	req'd	
20	Line guard (single)	WG ALG 527	3	-	-	
21	Line guard (double)	WG ALG 627	-	3	-	
22	Washer, square, 2-1/4", 13/16" hole	---	2	2	2	
23	Eyebut (3/4" bolt)	---	-	-	2	
24	Y-clevis/ball, 18"	OB 99308	-	-	2	
25	Machine bolt, 3/4" x required length	---	1	-	-	

ABBREVIATIONS

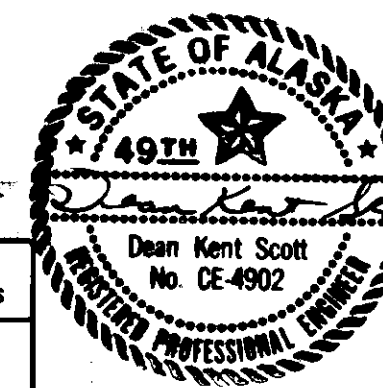
ON - OHIO BRASS
MB - HUGHES BROTHERS
MIF - STANLEY G. FLAGG
J - JOSLYN
MX - MENDRIX
L - LAPP
AL - ALCOA

C - CHANCE
A - ANDERSON
(C) - CONTINENTAL
MG - MELICAL LINE PRODUCTS
W - WEAVER
BE - BETHEA
DL - BLACKBURN

NOTES:

1. Unless otherwise noted on structure Schedule, 34.5-kV underbuild shall be framed such that two of three phases are on road side of line.
2. Field drill all double arms (angle) at two locations as noted in Detail No. 1.

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	59	68



0	11/12/86	Issued for bid
REV. NO.	DATE	DESCRIPTION
DRAWING REVISION RECORD		

DESIGNED CLS	CIVIL REVIEW	MECHANICAL REVIEW
DRAWN REG	STRUCTURAL REVIEW	ELECTRICAL REVIEW
CHECKED CLS	DATE 11/12/86	APPROVED [Signature]

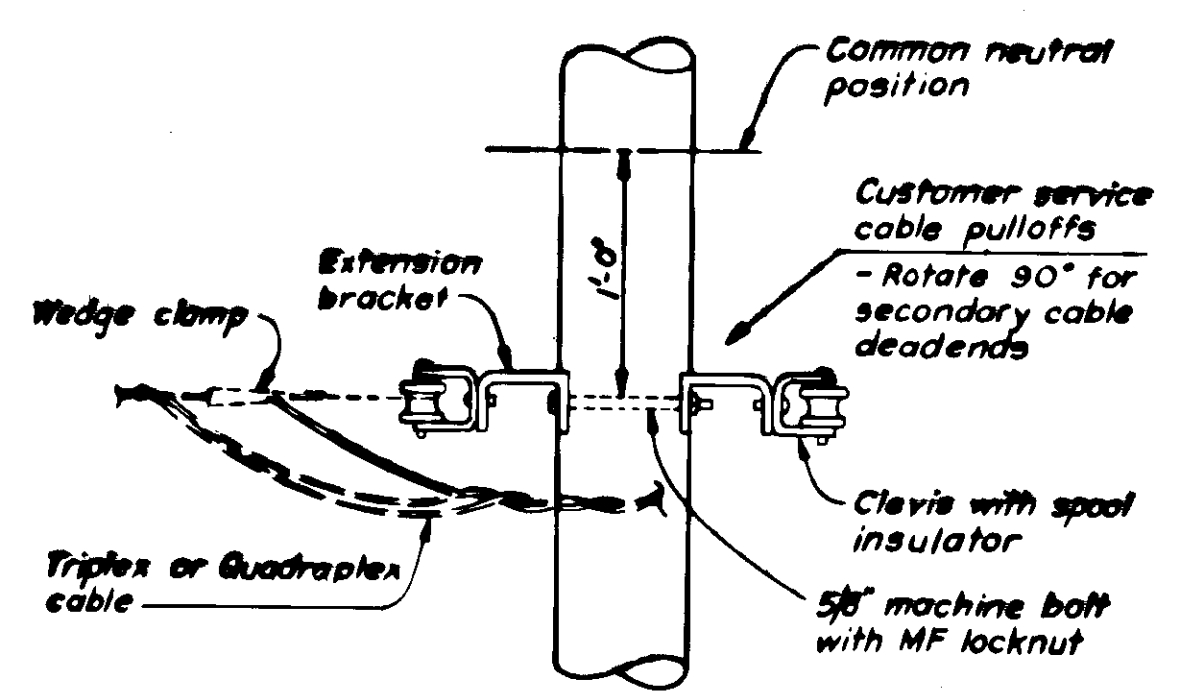
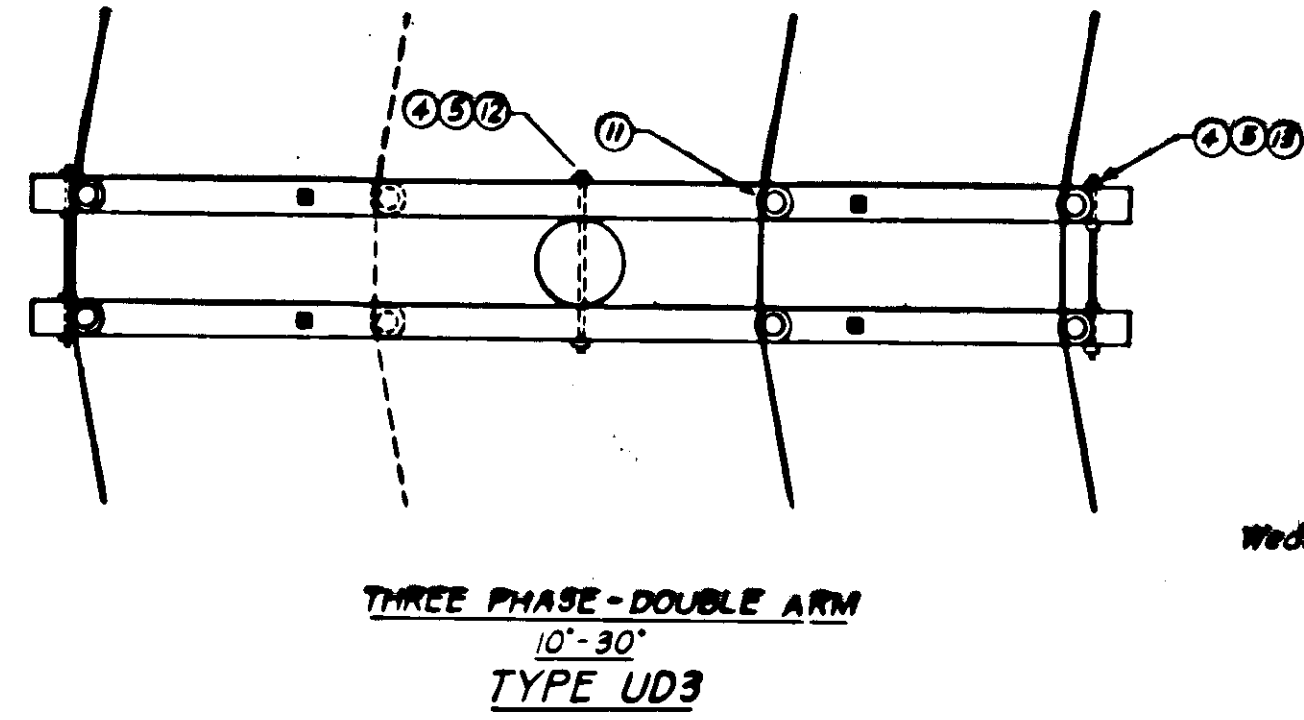
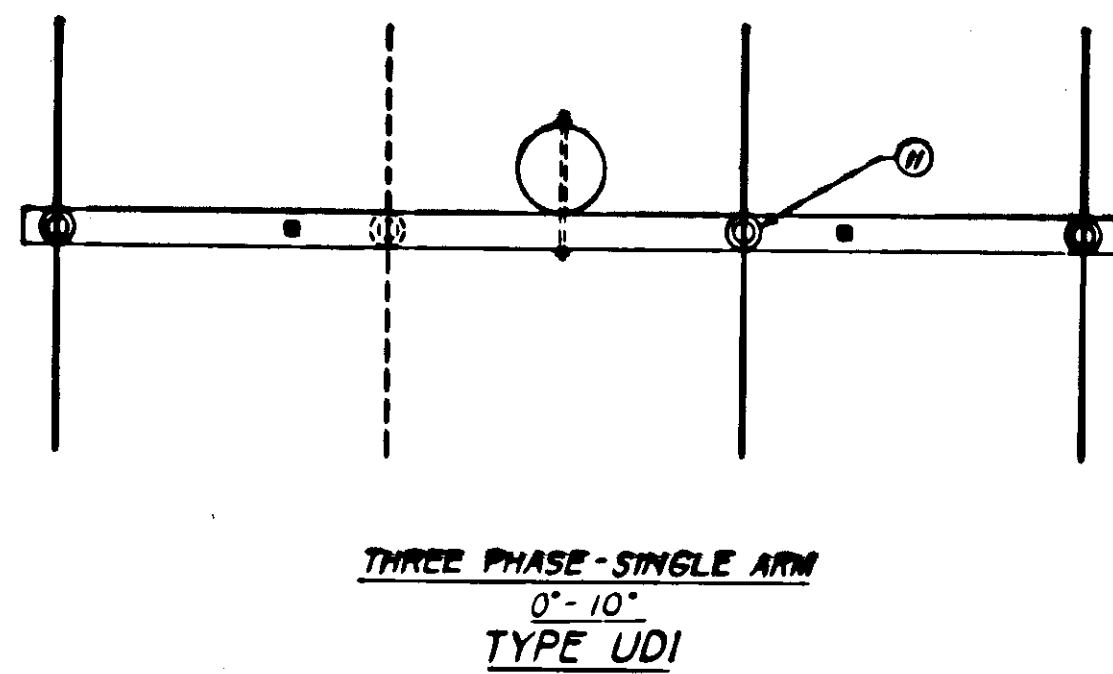
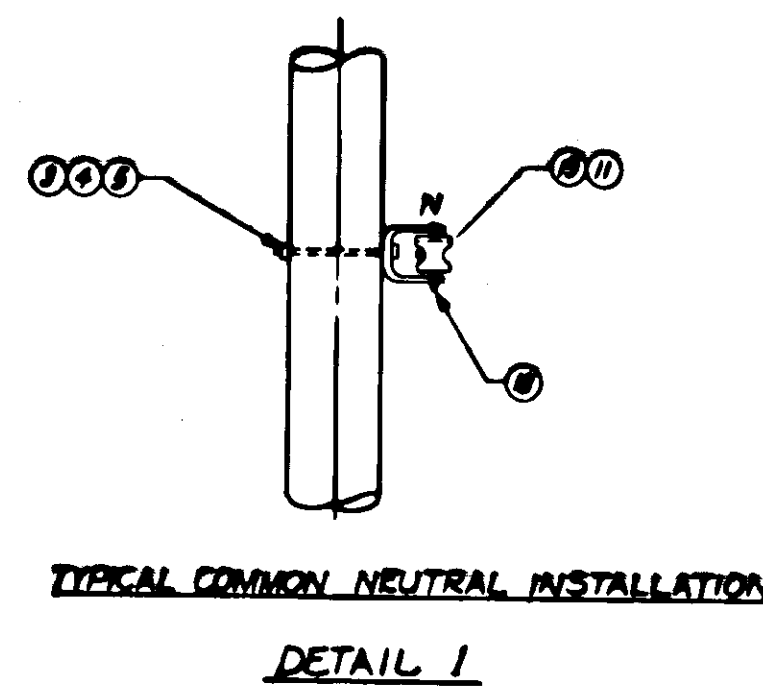
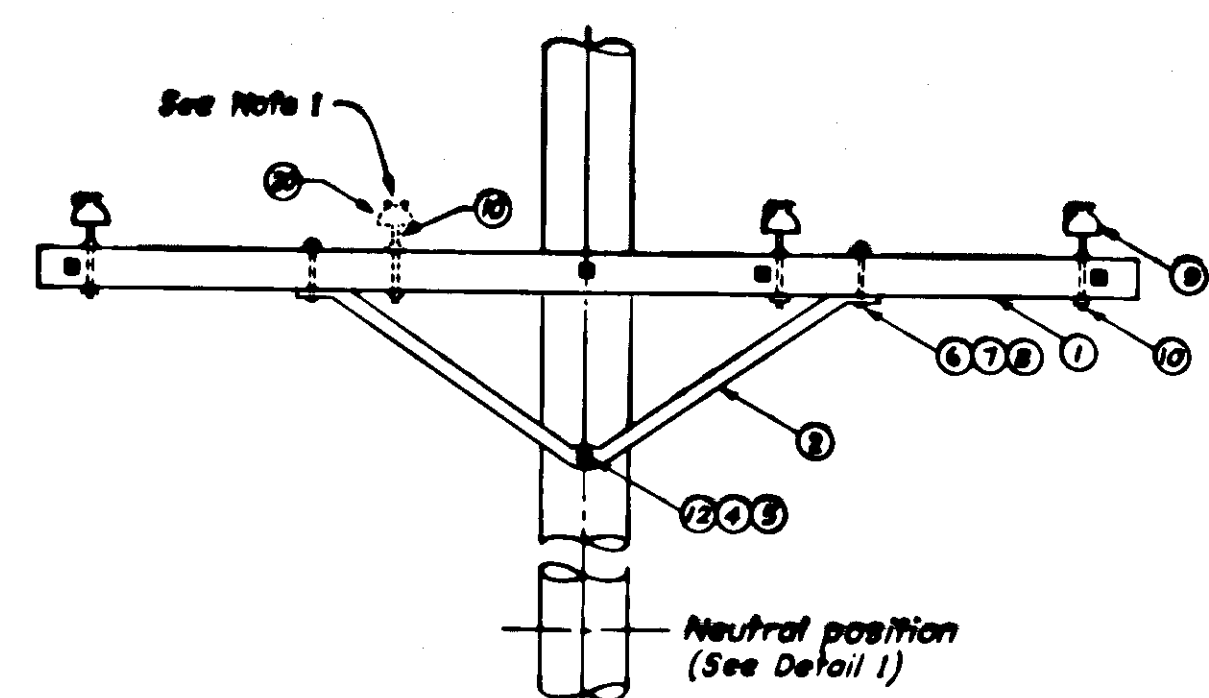
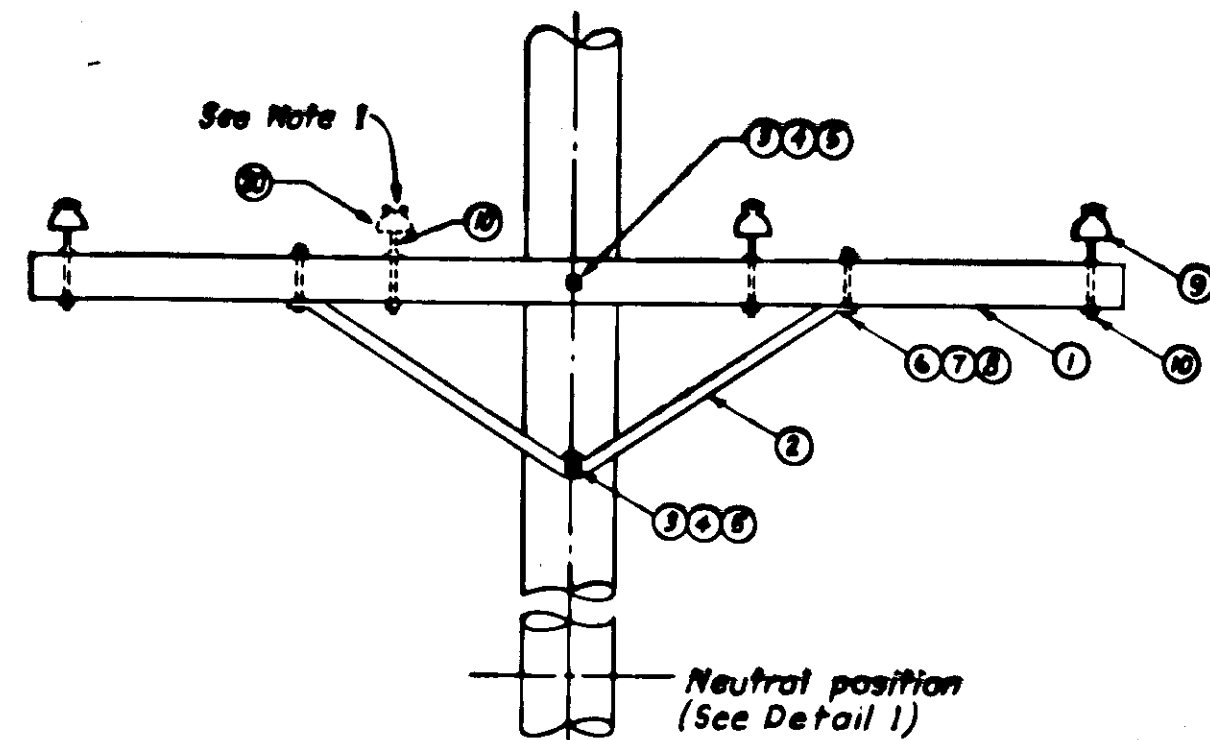
R. W. BECK AND ASSOCIATES
ENGINEERS AND CONSULTANTS

SEATTLE, WASHINGTON

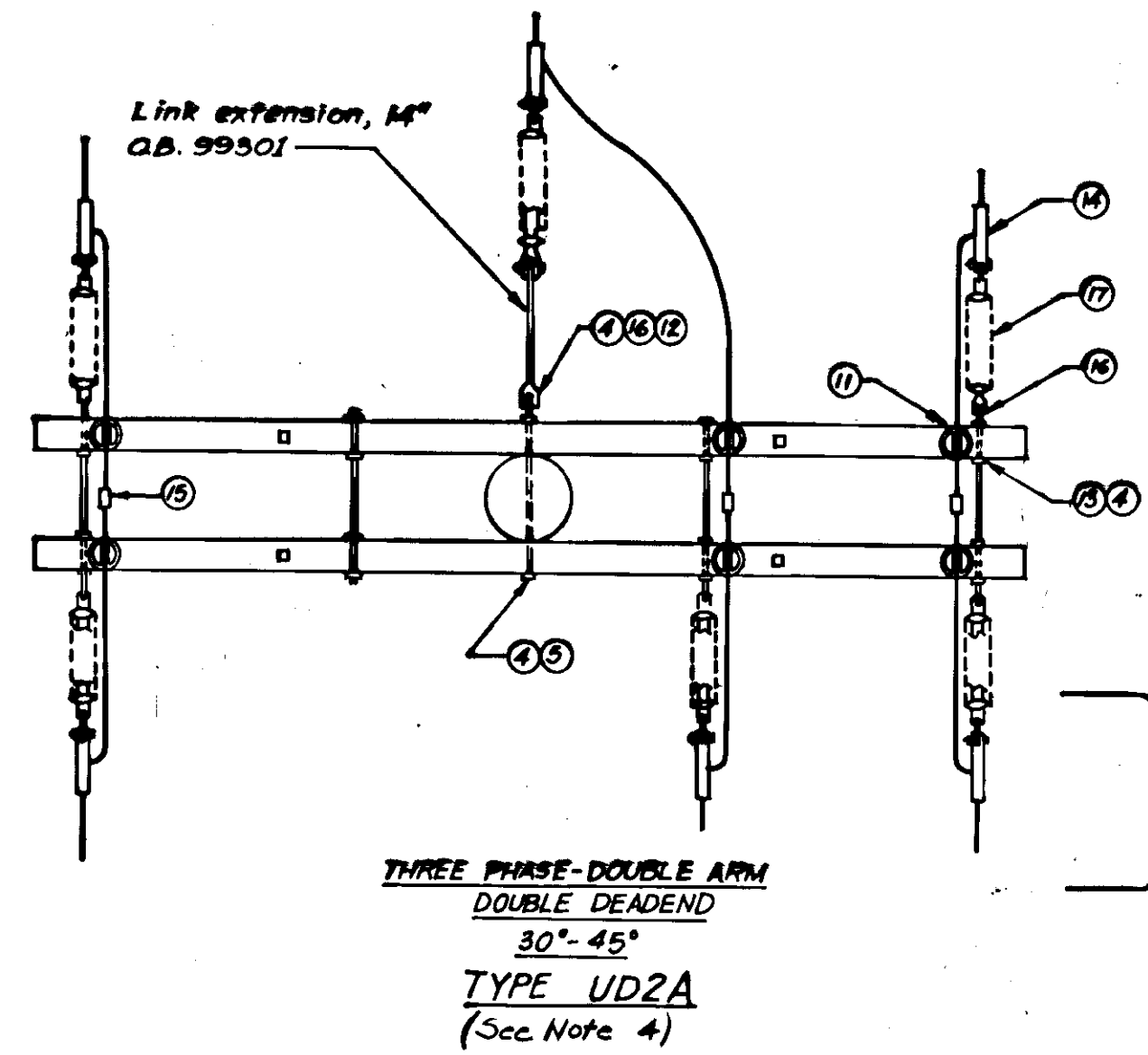
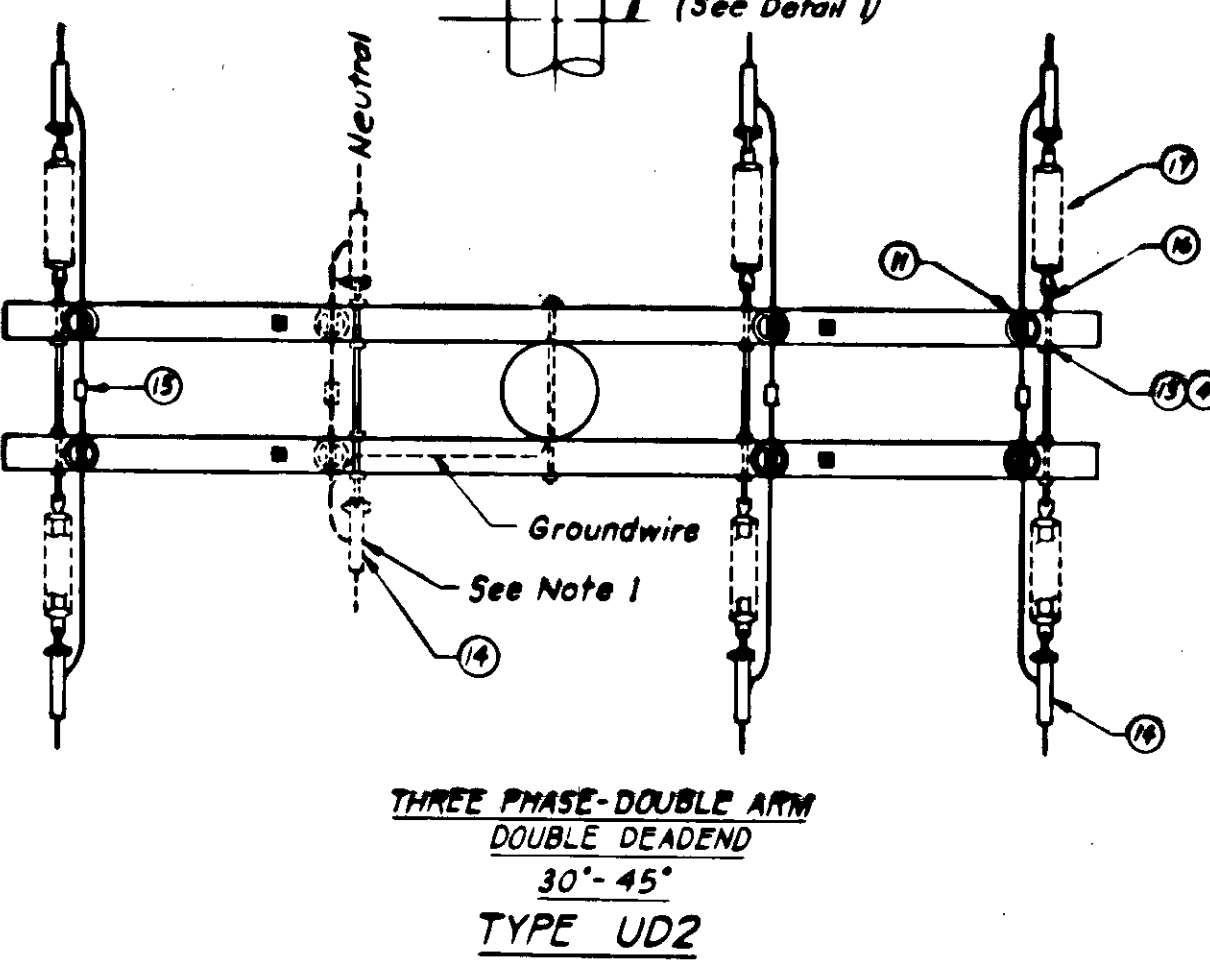
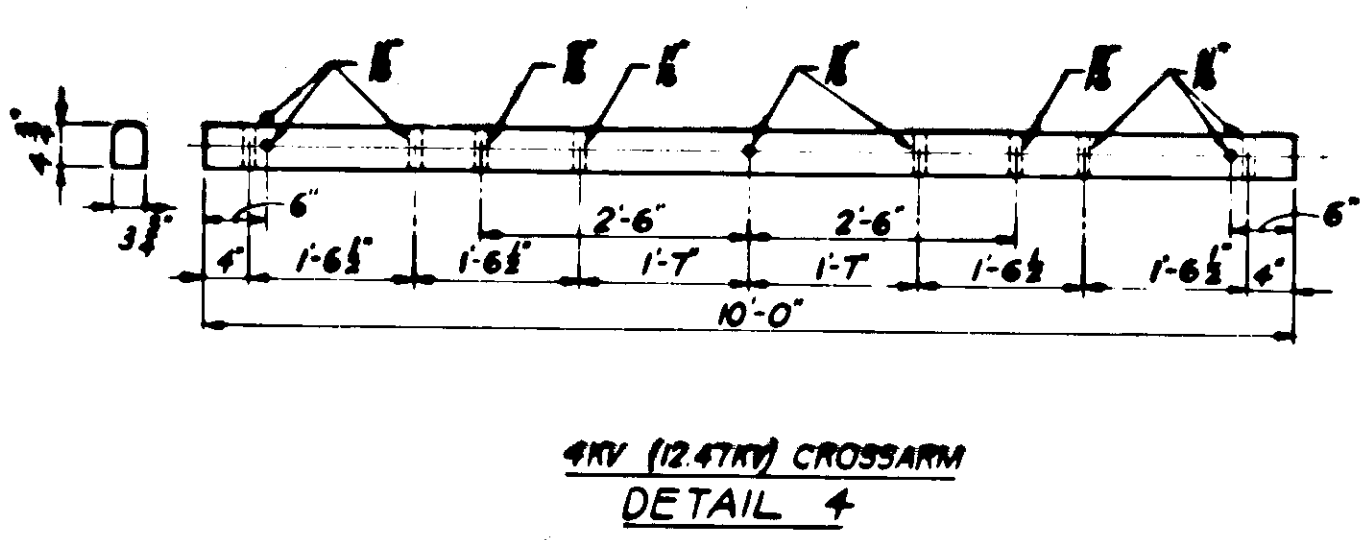
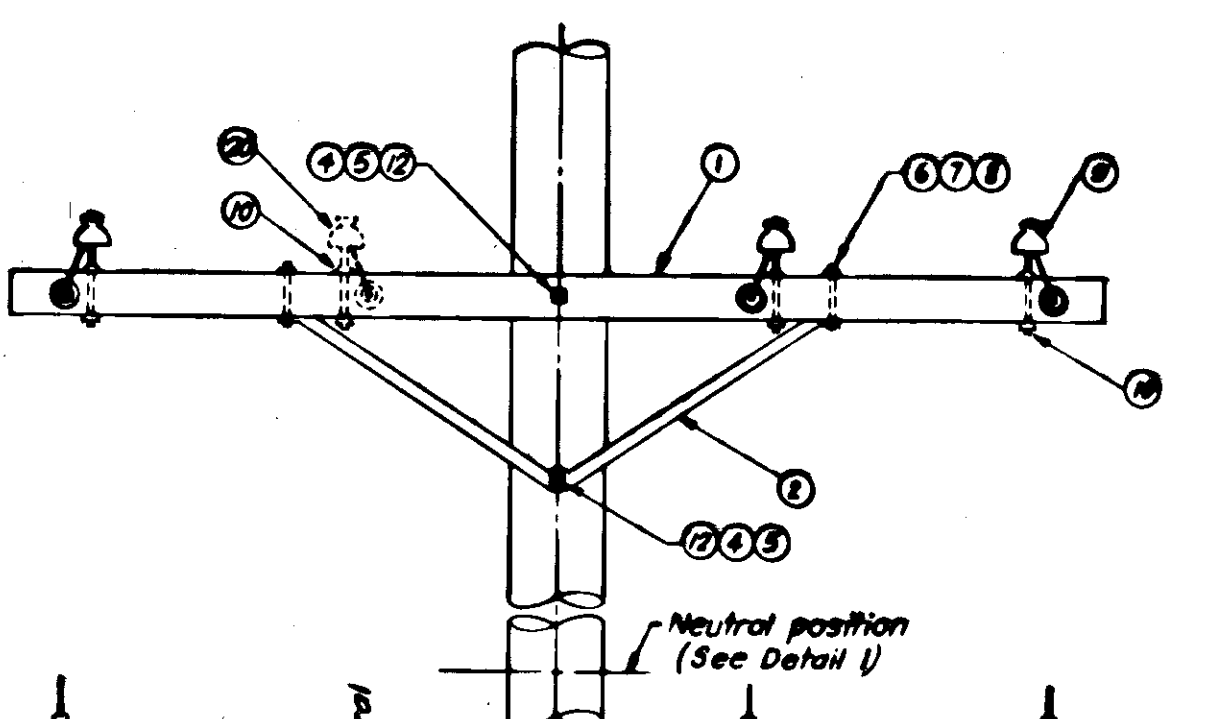
REVIEW OF READING

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
NORTH TONGASS - UTILITIES RELOCATION
PROJECT NO. RS-M-0920(17) & 67453
34.5-KV TRANSMISSION FRAMING DETAILS

WORK ORDER NUMBER	EE-1971-ETI-AB
DRAWING NUMBER	



SECONDARY CABLE DEADENDS
(TYPICAL)
DETAIL 2
(See Note 2)



MATERIAL LIST					
ITEM NO.	DESCRIPTION	MANUFACT. & CAT. NO.	QUANTITIES		
			UD1	UD2	UD3
1	Crossarm, wood, 3-3/4" x 4-3/4" x 10'-0"	---	1	2	2
2	Brace, span 60"	J 1508	1	2	2
3	Bolt, machine, 5/8" x req'd length	---	3	1	1
4	Washer, square, 2-1/4", 11/16" hole	---	4	16	12
5	Locknut, MF type, for 5/8" bolt	---	3	5	9
6	Bolt, machine, 1/2" x req'd length	---	2	4	4
7	Washer, round, 1-3/8", 9/16" hole	---	2	4	4
8	Locknut, MF type, for 1/2" bolt	---	2	4	4
9	Insulator, pin type, polymer	WX HP1-15	3	6	6
10	Pin, insulator, long shank	J 207	3	6	6
11	Conductor tie wire No. 4 bare AL	---	as req'd	as req'd	as req'd
12	Rod, threaded, 5/8" x req'd length	---	---	2	2
13	Bolt, double arming, 5/8" x req'd length	---	---	3	2
14	Clamp, strain, aluminum	A ADE 60W	---	6	---
15	Connector, (size per conductor)	---	---	3	---
16	Eyebolt for 5/8" bolt	---	---	6	---
17	Insulator, deadend, polymer	C 654-0000	---	6	---
18	Clevis, insulator mounting	---	1	1	1
19	Insulator, spool, porcelain	---	1	1	1
ADDITIONAL MATERIAL REQUIRED WHEN NEUTRAL IS PLACED ON ARM					
10	Pin, insulator, long shank	J 207	1	2	2
20	Insulator, pin type, neutral	---	1	2	2
14	Clamp, strain	A ADE 60W	---	2	---
4	Washer, square, 2-1/4", 11/16" hole	---	---	4	---
13	Bolt, double arming, 5/8" x req'd length	---	---	1	---
16	Eyebolt for 5/8" bolt	---	---	2	---

- ABBREVIATIONS
- OB - OHIO BRASS
 - MB - MUGHS BROTHERS
 - RIF - STANLEY G. FLAGG
 - J - JOSLYN
 - WX - MENDRIX
 - L - LAPP
 - AL - ALCOA
 - C - CHANCE
 - A - ANDERSON
 - (C) - CONTINENTAL
 - MB - MELICAL LINE PRODUCTS
 - W - WEAVER
 - BE - BETHEA
 - BL - BLACKBURN

- NOTES:
- Neutral is placed on arm only where indicated on plan/profile drawings.
 - Rigid insulated clevis/extension bracket combination, singly or back-to-back (as shown in Detail 2), is used for customer service cable pulloffs and/or #1/0 triplex secondary cables.
 - Separate connections to the common (system) neutral are made for transformer case ground, transformer secondary neutral, ground wire and service neutrals.
 - Material for UD2A is the same as for UD2 except as noted in framing detail for type UD2A.

REV. NO.	DATE	DESCRIPTION
0	11/12/86	Issued for bid

DESIGNED CLS	CIVIL REVIEW	MECHANICAL REVIEW
DRAWN CWL	STRUCTURAL REVIEW	ELECTRICAL REVIEW
CHECKED CLS	DATE 11/12/86	APPROVED [Signature]

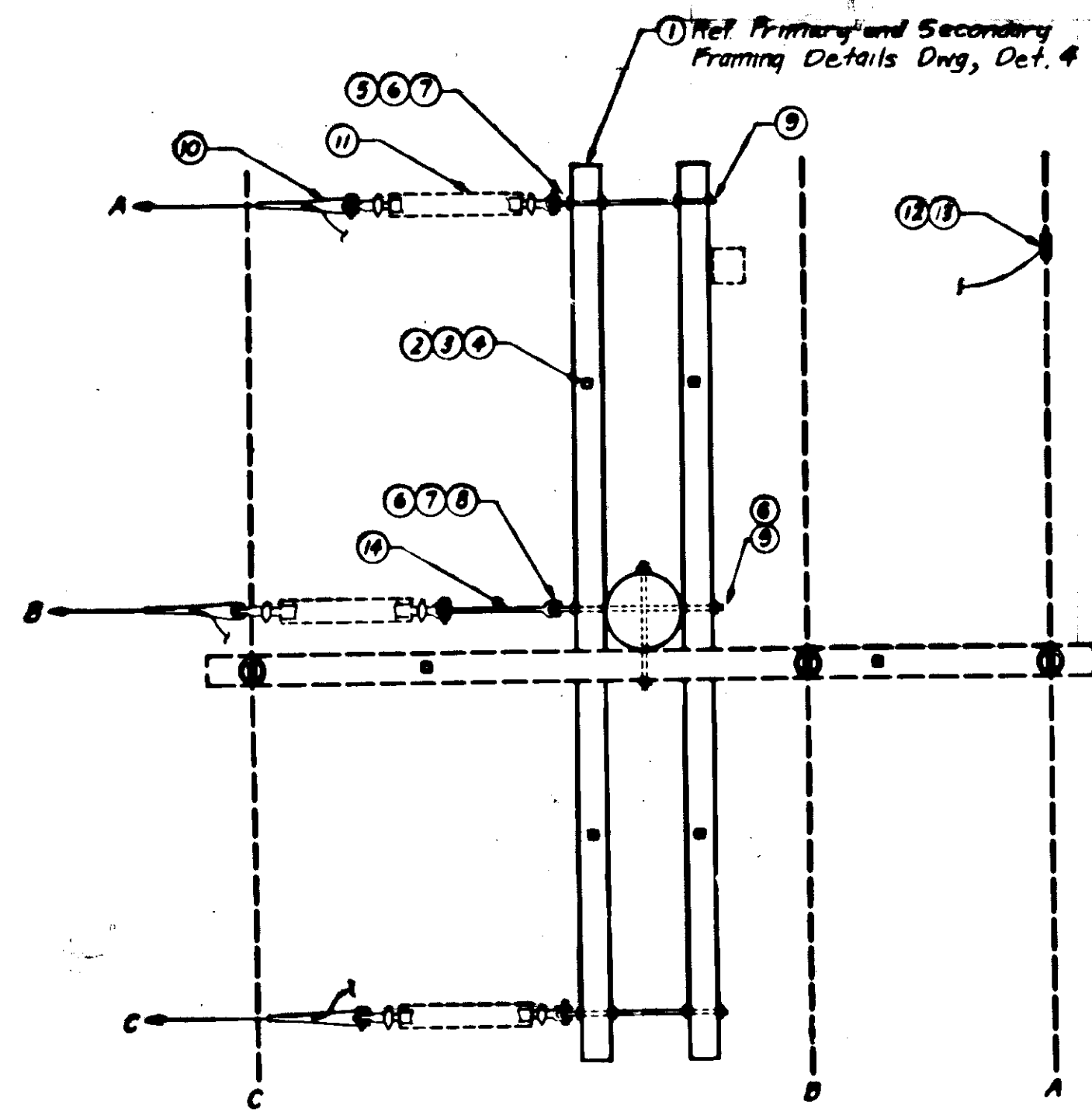
R. W. BECK AND ASSOCIATES
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SEATTLE, WASHINGTON DENVER, COLORADO

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920 (17) & 67453	1987	60	68



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
NORTH TONGASS UTILITIES RELOCATION
PROJECT NO. RS-M-0920 (17) & 67453
PRIMARY AND SECONDARY FRAMING DETAILS

WORK ORDER NUMBER
EE-1971-ETI-AB
DRAWING NUMBER
60 OF 68



Three-phase tap
TYPE ULI

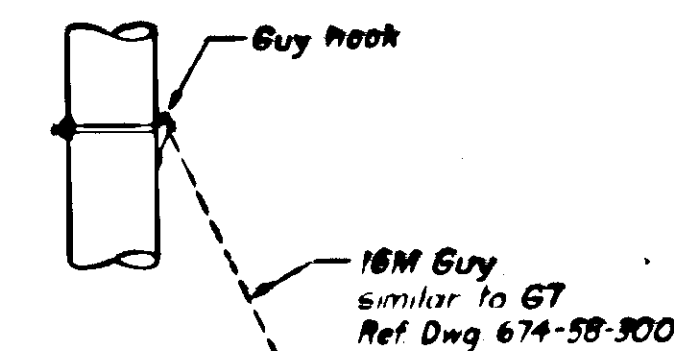
MATERIAL LIST				
ITEM NO.	DESCRIPTION	MANUFACT. & CAT. NO.	QUANTITIES	
			ULI	
1	Crossarm, wood, 3-3/4" x 4-3/4" x 10'	---	2	
2	Brace, span 60"	J 1508	2	
3	Bolt, machine 1/2" x req'd length	---	4	
4	Washer, round, 1-3/8", 9/16" hole	---	2	
5	Double arming bolt, 5/8" x req'd length	---	2	
6	Washer, square, 2-1/4", 11/16" hole	---	10	
7	Eyebolt, 5/8" bolt	---	3	
8	Rod, threaded, 5/8" x req'd length	---	1	
9	Locknut, PF type, 5/8" hole	---	3	
10	Clamp, strain (size per conductor)	---	3	
11	Insulator, deadend, polymer	C 654-0000	3	
12	Stirrup for 4/0 AAC	---	3	
13	Clamp, hot-line tap assembly	---	3	
14	Link, extension, 14"	0899301	1	
15	Shoulder eyebolt, with curved square washer welded, 5/8" x req'd length	---	-	
16	Washer, square curved, 4", 11/16" hole	---	-	

ABBREVIATIONS

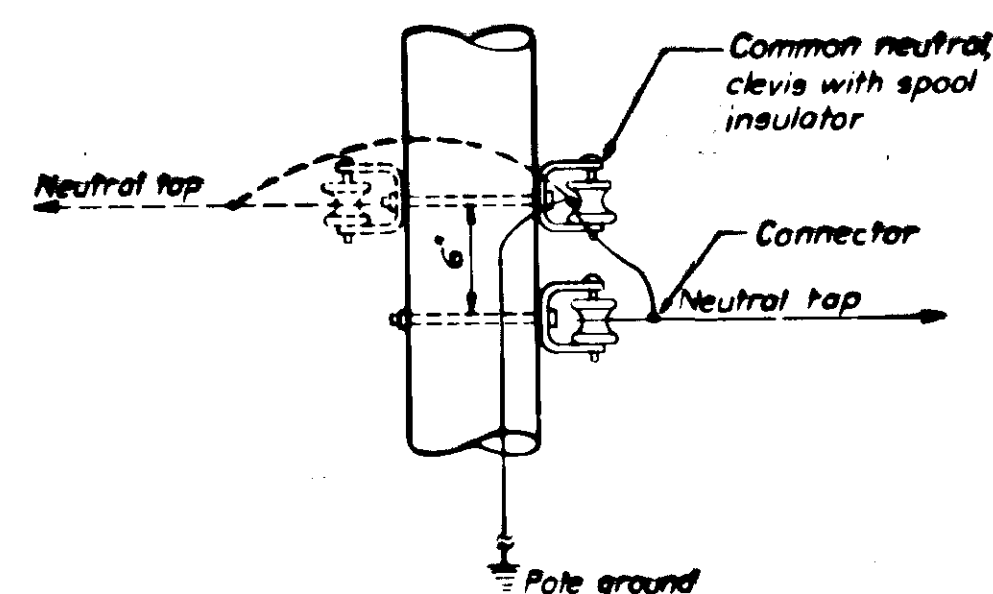
PLP - Preformed Line Products
OB - Ohio Brass
HB - Hughes Brothers
MIF - Stanley G. Flogg
J - Joslyn
HX - Hendrix
L - Lapp
AL - Alcoa
C - Chance
B - Burndy
RP - Redbell Plastics Inc.
K - Kearney

NOTES:

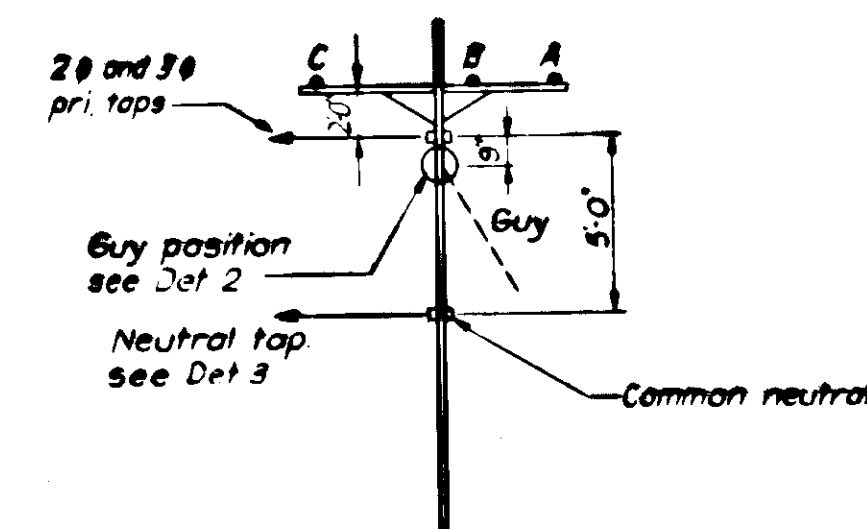
- Details indicate typical framing utilized on underbuild circuits.
- Cutouts are positioned on front or back of buckarms as necessary.



DETAIL 2
Primary tap guying
arrangements



DETAIL 3
Common neutral tap
arrangements



Three-phase
Primary tap clearances
DETAIL 4

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	61	68



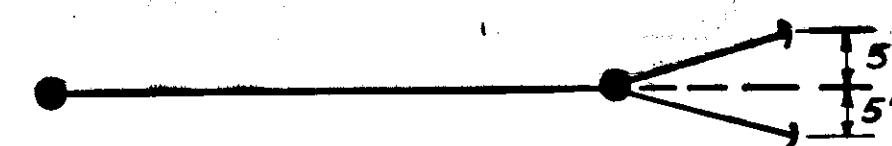
REV. NO.	DATE	DESCRIPTION
0	11/12/86	Issued for bid

DESIGNED CLS	CIVIL REVIEW	MECHANICAL REVIEW
DRAWN ESQ	STRUCTURAL REVIEW	ELECTRICAL REVIEW
CHECKED CLS	DATE 11/12/86	APPROVED [Signature]

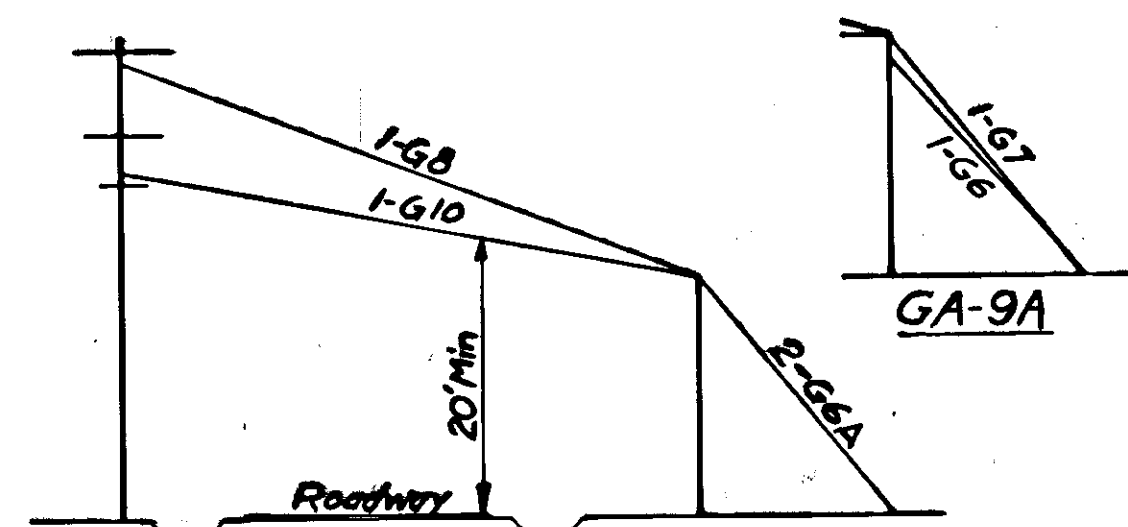
R. W. BECK AND ASSOCIATES
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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
NORTH TONGASS - UTILITIES RELOCATION
PROJECT NO. RS-M-0920(17) & 67453
PRIMARY TAP FRAMING DETAILS

WORK ORDER NUMBER
EE-1971-ETI-AB
DRAWING NUMBER
61 OF 68



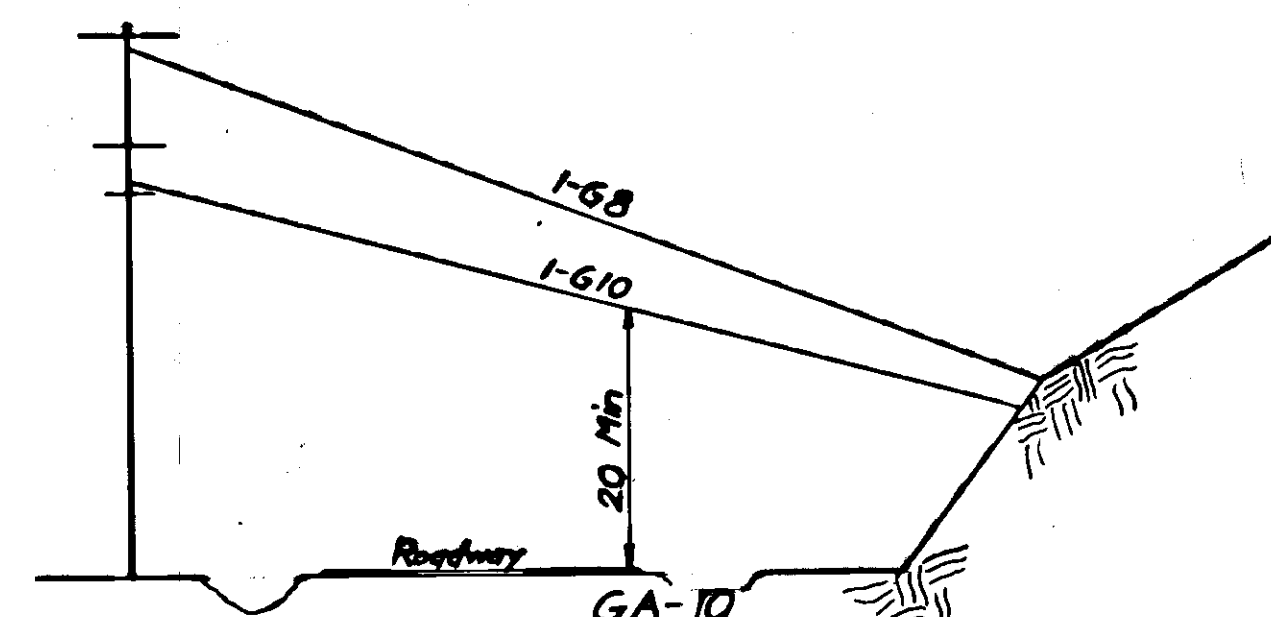
GA-9
PLAN



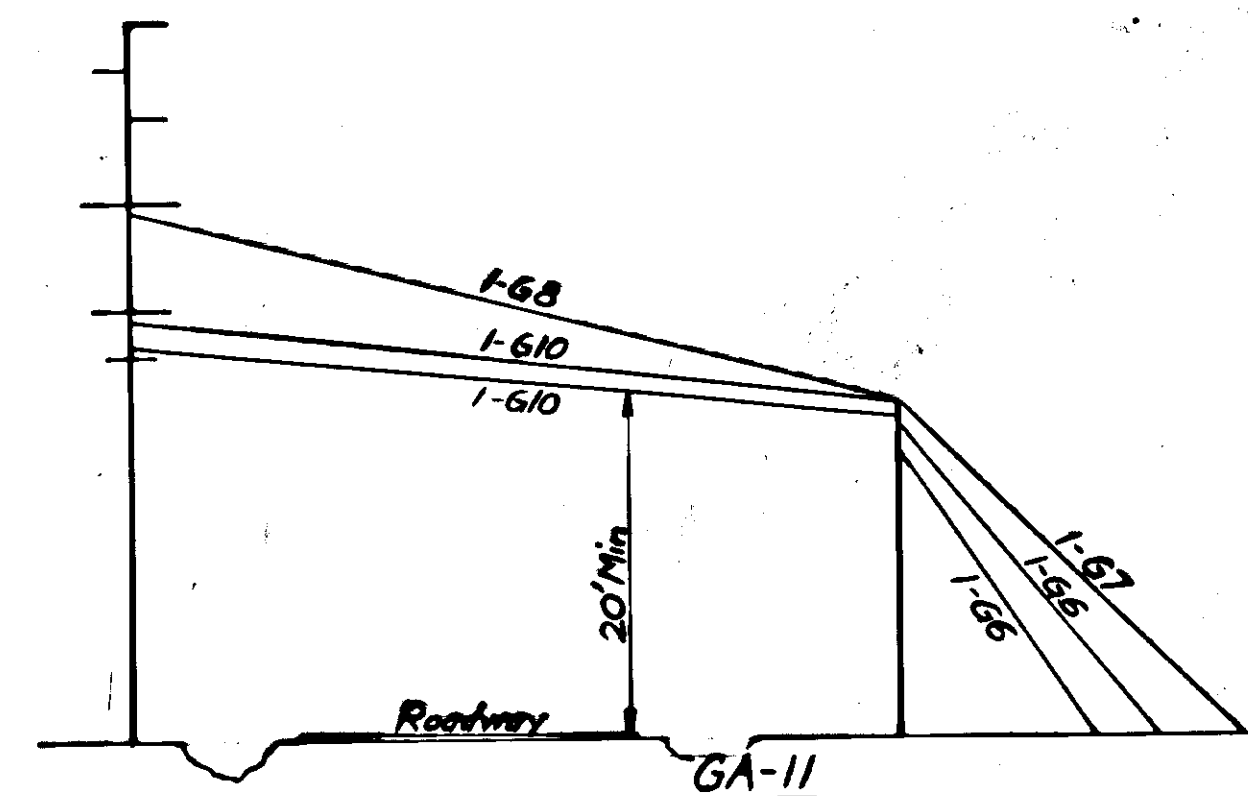
Guy type	Quantity
G6A	2
G6B	1
G10	1
Detail 1	1
Anchors	2

GA-9A

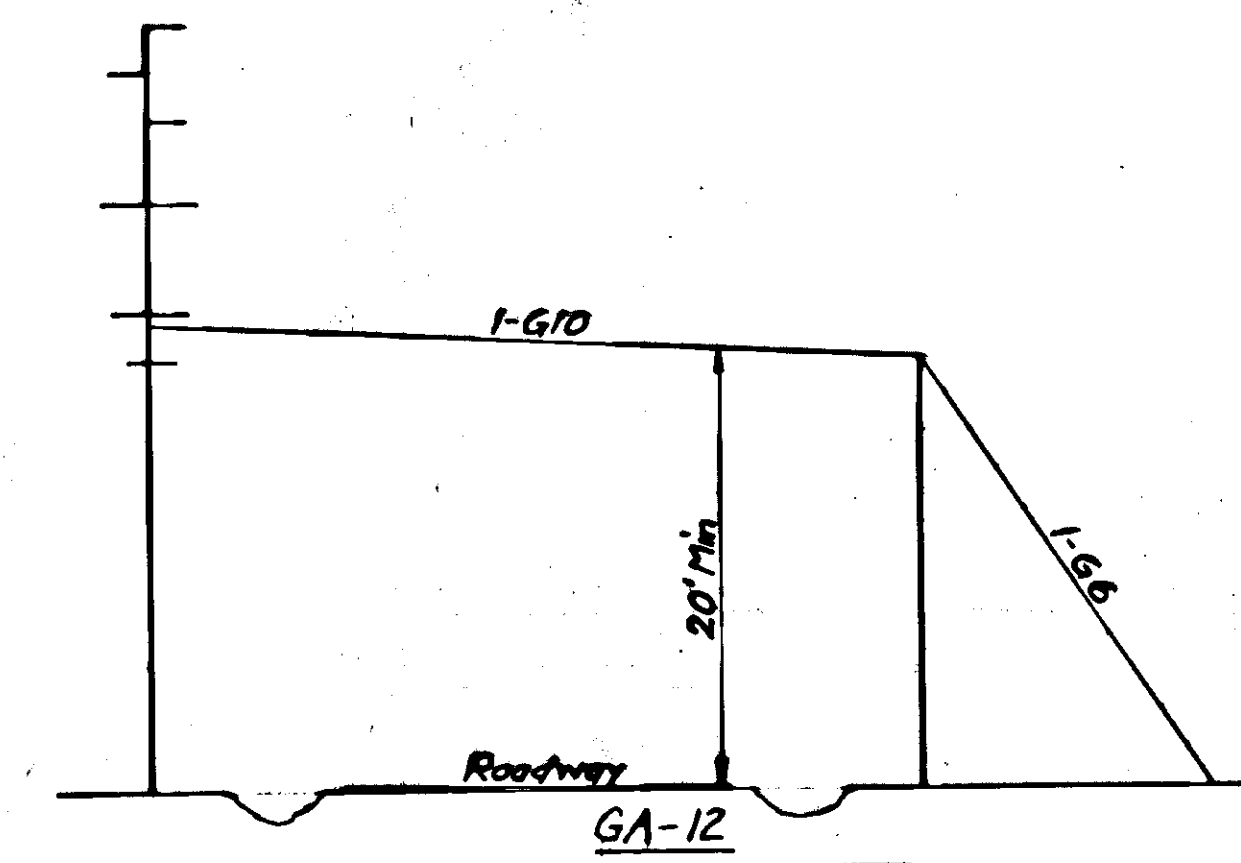
Guy type	Quantity
G6	1
G7	1
Anchors	1



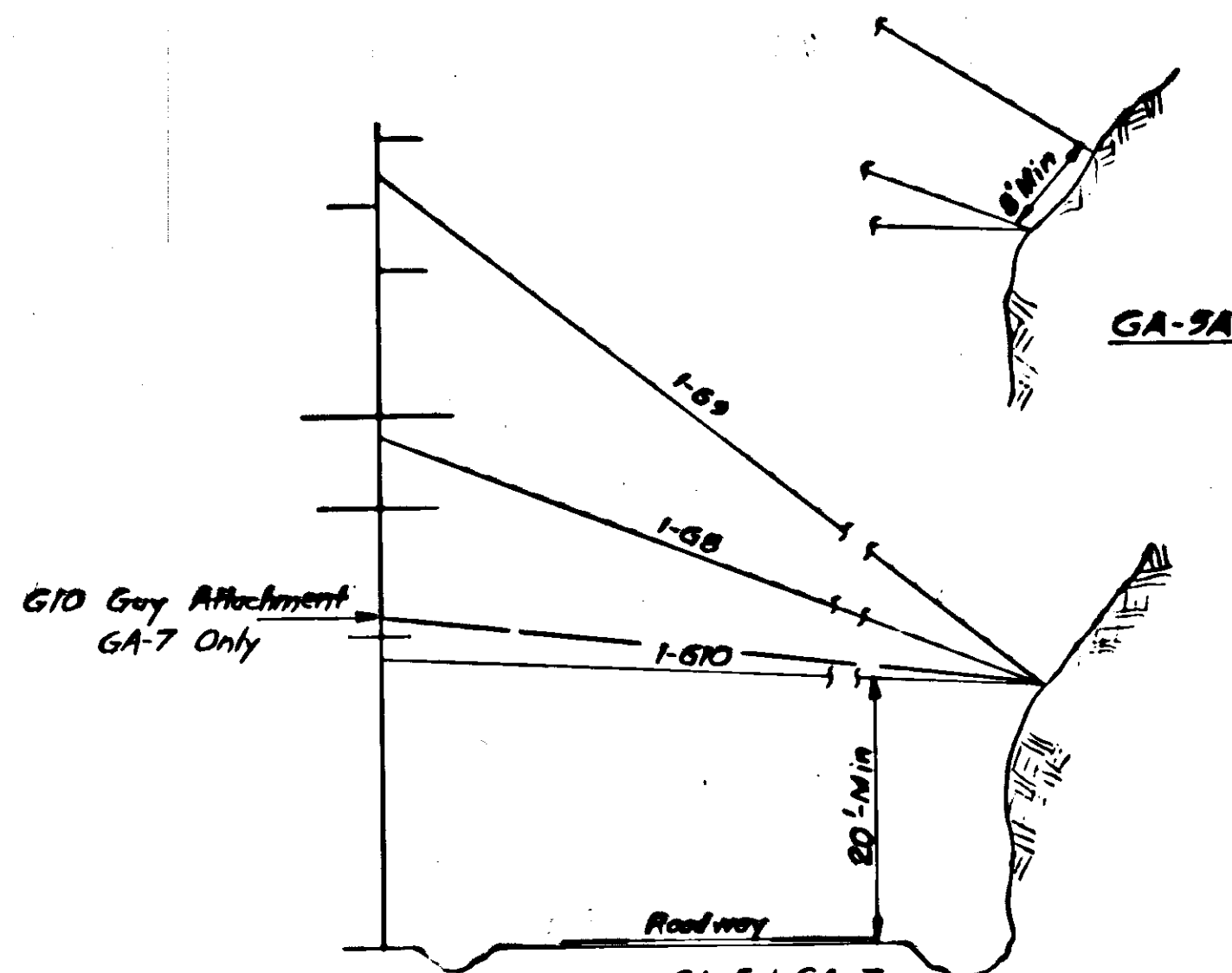
Guy type	Quantity
G6B	1
G10	1
Anchors	2



Guy type	Quantity
G6	2
G7	1
G8	1
G9	2
Anchors	3



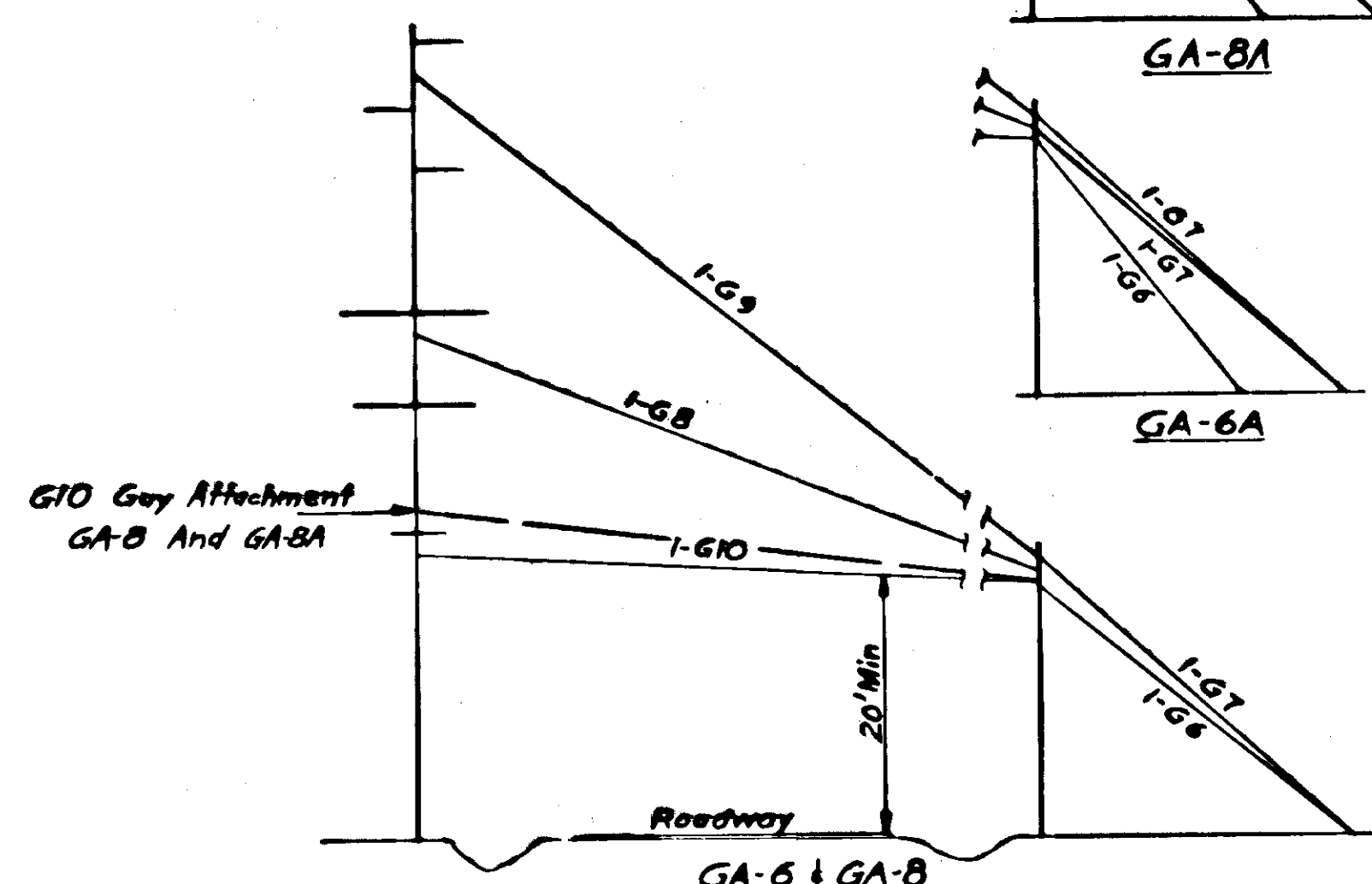
Guy type	Quantity
G6	1
G10	1
Anchors	1



Guy type	Quantity
G8	1
G9	1
G10	1
Anchors	1

GA-5A

Guy type	Quantity
G8	1
G9	1
G10	1
Anchors	2



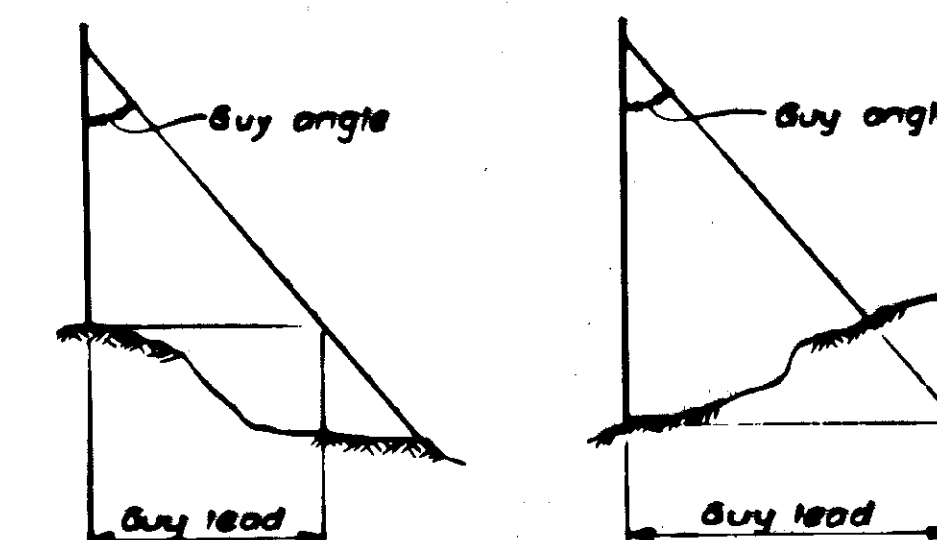
Guy type	Quantity
G6	1
G7	1
G8	1
G9	1
G10	1
Anchors	1

GA-6A

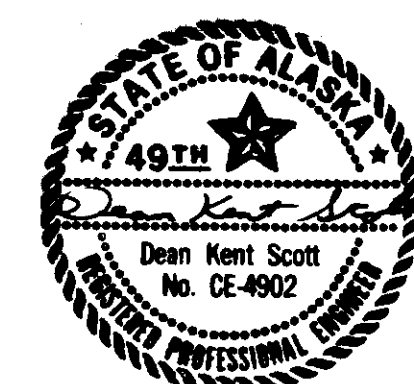
Guy type	Quantity
G6	1
G7	2
G8	1
G9	1
G10	1
Anchors	2

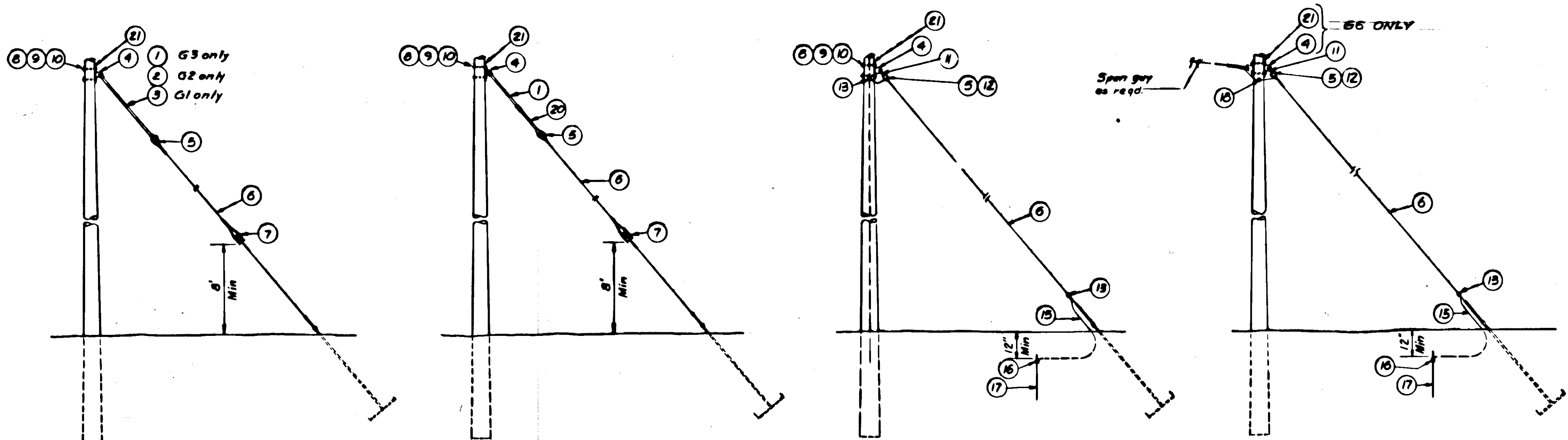
GA-8A

Guy type	Quantity
G6	1
G7	1
G8	1
G9	1
G10	1
Anchors	2



TYPICAL GUY TERMINOLOGY





- ABBREVIATIONS**
- OB - OHIO BRASS
 - MB - MUGHS BROTHERS
 - WIF - STANLEY G. FLAGG
 - J - JOSLYN
 - MX - MENDRIX
 - L - LAPP
 - AL - ALCOA
 - C - CHANCE
 - A - ANDERSON
 - (C) - CONTINENTAL
 - MG - MELICAL LINE PRODUCTS
 - W - WEAVER
 - BE - BETHEA
 - BL - BLACKBURN
 - ME - MCGRAW EDISON

NOTE:

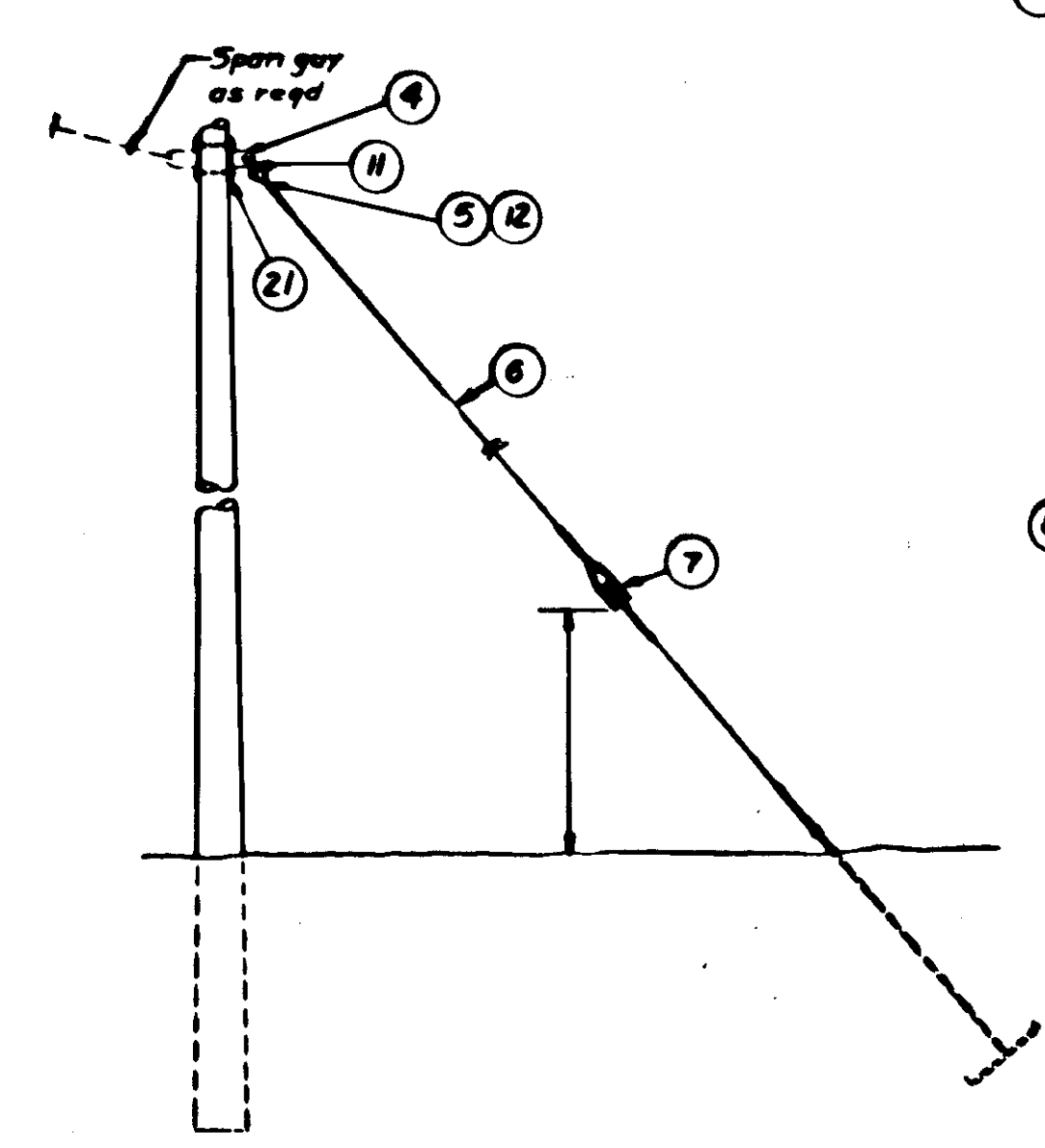
1. Ref. GUY ARRANGEMENT drawing for typical guy terminology.

GUY ASSEMBLY G1, G2 & G3

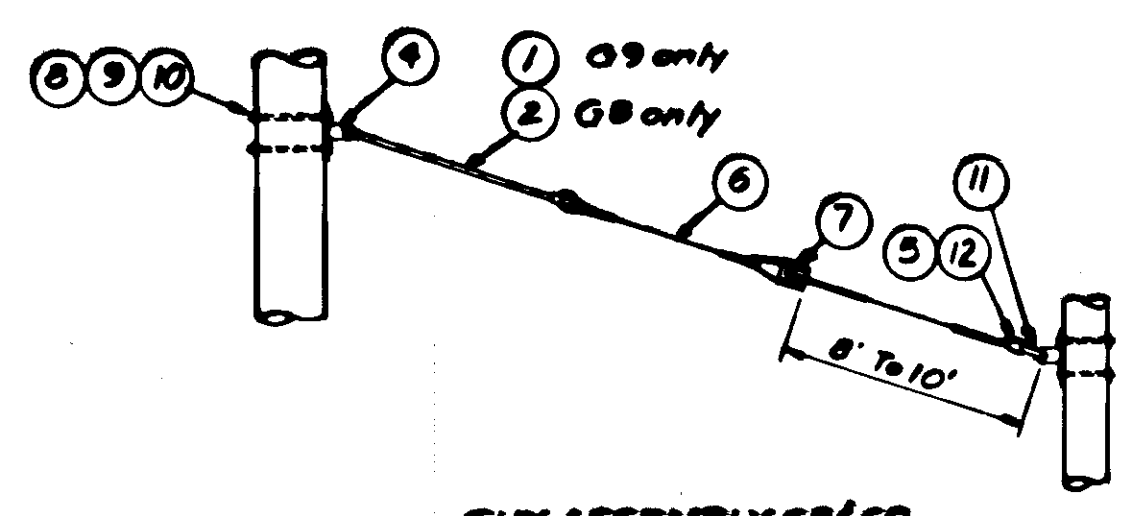
GUY ASSEMBLY G4

GUY ASSEMBLY G5

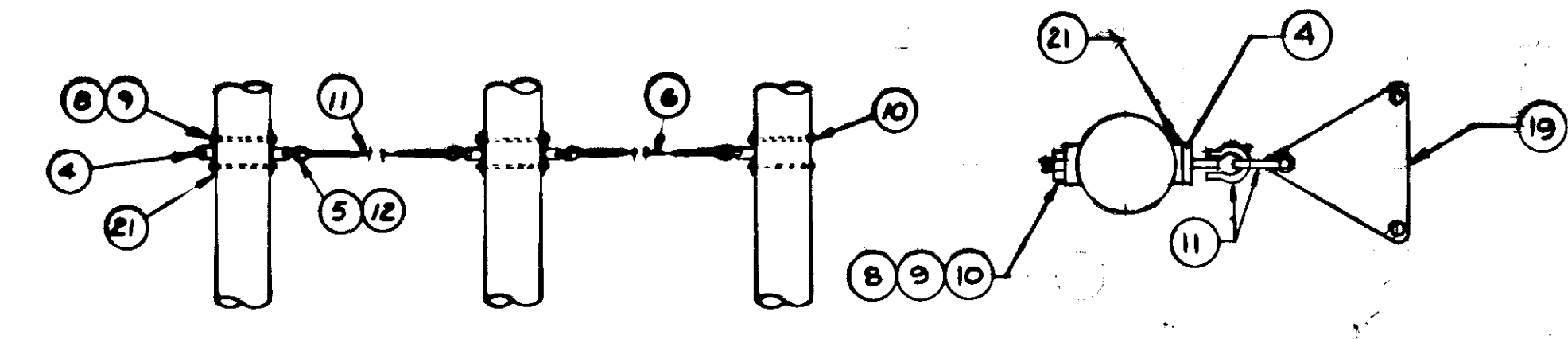
GUY ASSEMBLY G6 & G6A



GUY ASSEMBLY G7

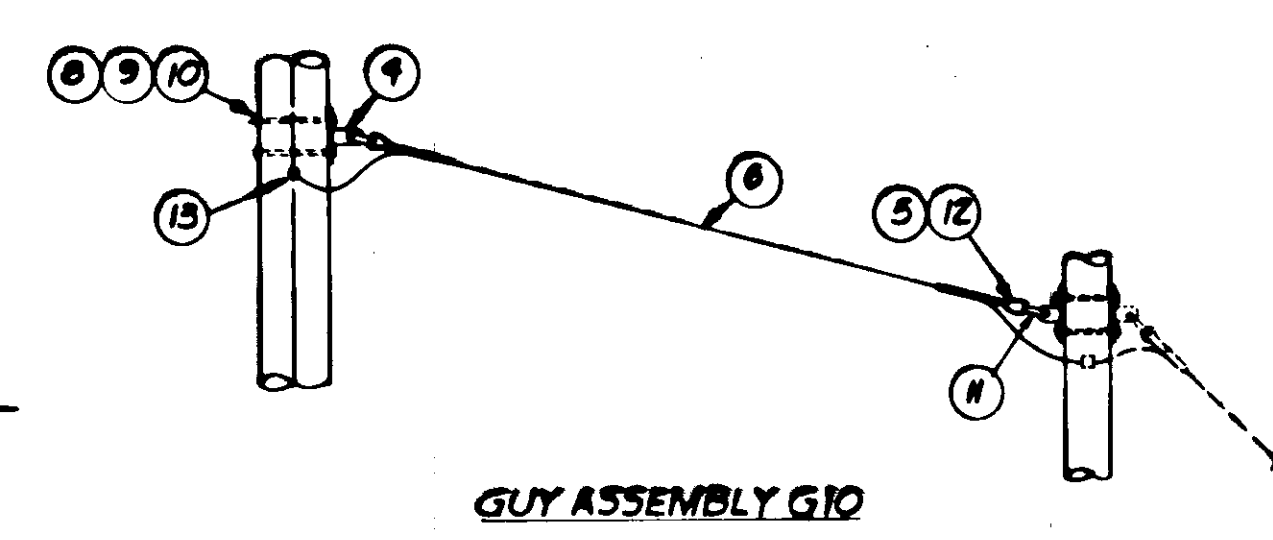


GUY ASSEMBLY G8 & G9

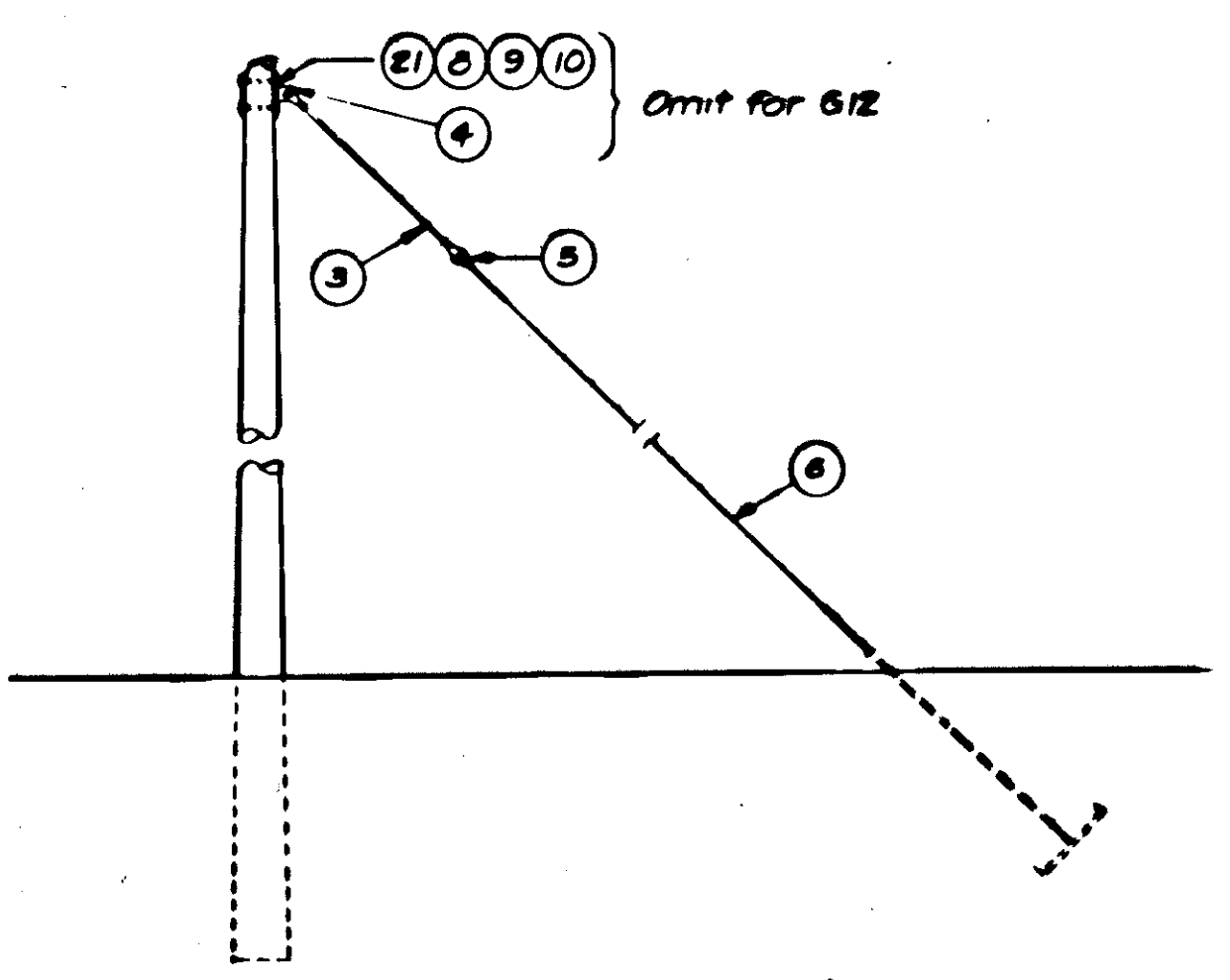


GUY ASSEMBLY G11

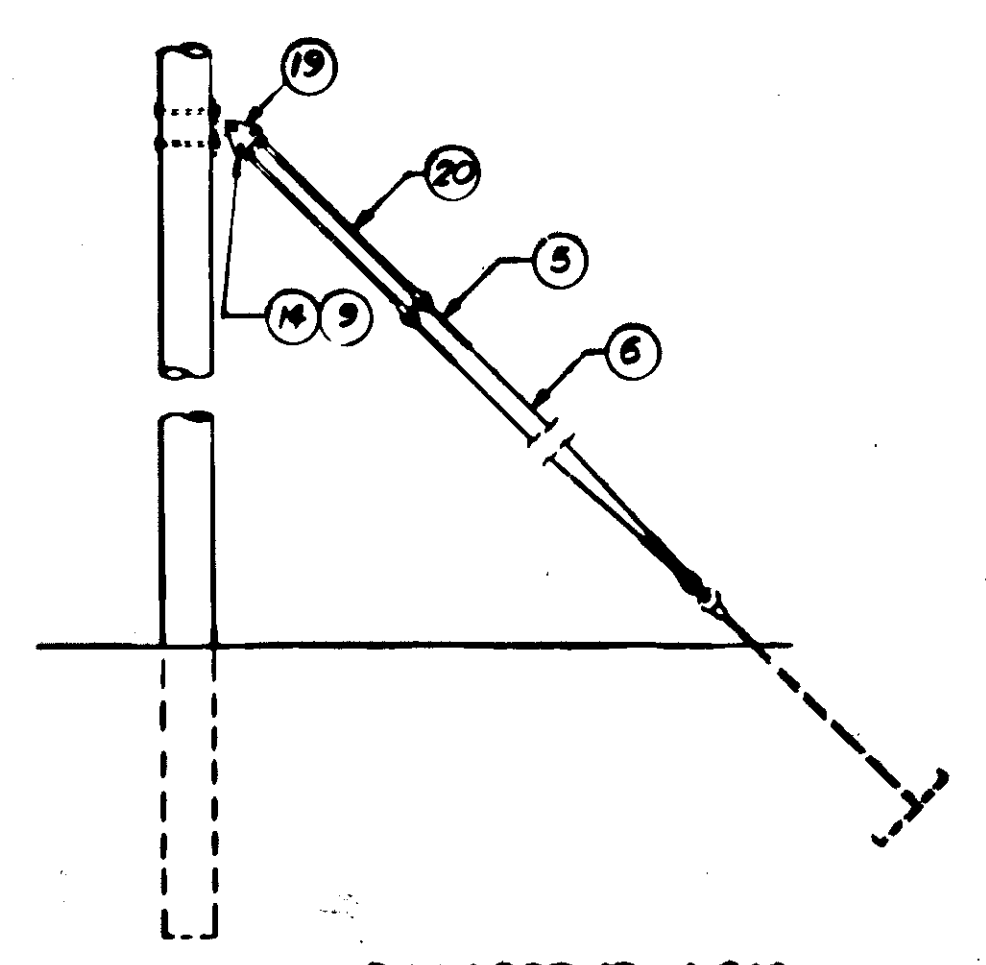
DETAIL I
Locate below span guy attachments



GUY ASSEMBLY G10

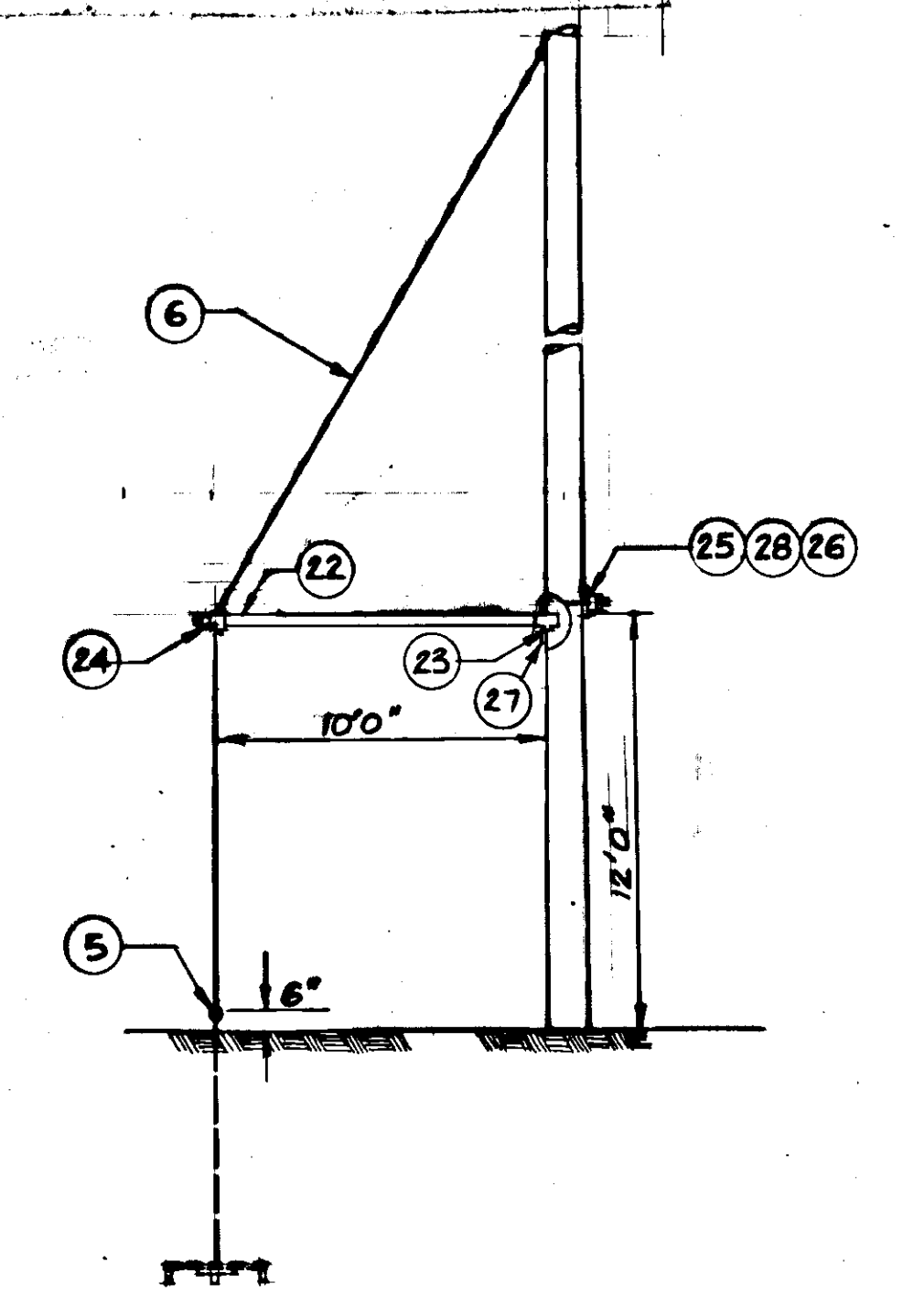


GUY ASSEMBLY G12 & G13



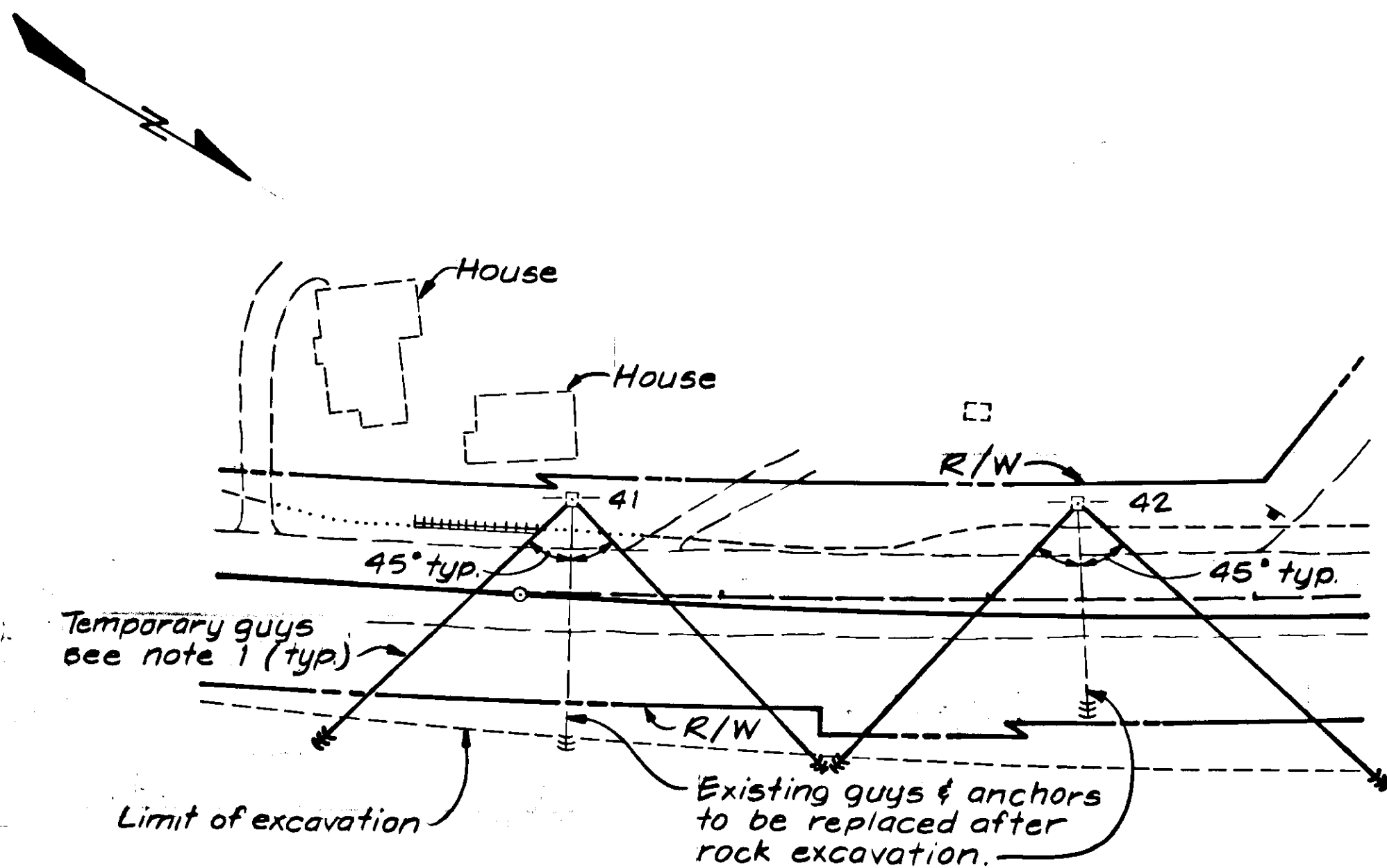
GUY ASSEMBLY G14

MATERIAL LIST			QUANTITIES																DET.
ITEM NO.	DESCRIPTION	MANUFACT. & CAT. NO.	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G6A	
1	Insulator, guy strain, fiberglass (144")	(C) GCC-144R	-	-	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-
2	Insulator, guy strain, fiberglass (96")	(C) GCC-96R	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
3	Insulators, guy strain, fiberglass (48")	MIF 210-48	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
4	Deadend tee	HB 2817	1	1	1	1	1	1	1	2	2	2	5	-	1	1	-	-	1
5	Guy grip, for 16R/AM	MG 525-16R	4	4	4	4	2	2	4	4	4	2	4	2	2	4	2	2	-
6	Guy strand, 16R/AM	---	AS REQUIRED																
7	Insulator, guy strain, porcelain	OB 31506	1	1	1	1	-	-	1	1	1	-	-	-	-	-	-	-	-
8	Bolt, machine 7/8" x req'd length	---	2	2	2	2	2	-	-	4	4	4	6	-	2	-	-	-	2
9	Locknut, NF type, 7/8" dia.	---	2	2	2	2	2	-	-	4	4	4	6	-	2	3	-	-	2
10	Washer, square curved, 4", 15/16" hole	---	2	2	2	2	2	-	-	4	4	4	2	-	2	-	-	-	2
11	Shackle, anchor	BE ASH 66A	-	-	-	-	-	1	1	1	1	2	4	-	-	-	-	-	1
12	Heavy cable thimble for 16R/AM	J J-1058	-	-	-	-	-	1	1	1	1	2	4	-	-	-	-	-	1
13	Connector, 16R/AM to #4 bare cu.	A LC 522A	-	-	-	-	-	2	1	-	-	1	-	-	-	-	-	-	1
14	Bolt, machine, 7/8" x 3"	---	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-
15	Wire, #4 bare cu.	---	-	-	-	-	-	-	as req'd	as req'd	-	-	-	-	-	-	-	as req'd	-
16	Clamp, 5/8" grnd. rod to #4 bare cu.	W WBS/8	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
17	Ground rod, 5/8" x 8' copperclad	W W-588	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
18	Connector, 16R/AM to 16R/AM	A LC 52A	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
19	Plate, yoke	MB 1896	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	1
20	Insulator, guy strain, fiberglass (48")	MIF 210-48CE	-	-	-	-	1	-	-	-	-	-	-	-	-	2	-	-	-
21	Gain, grid, single curved (4" x 4")	MIF PX122	2	2	2	2	2	2	2	-	-	-	2	-	2	-	-	-	2
22	Pipe, galvanized, 2" x 10'	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
23	Plate, Pole	ME D62D1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
24	Clamp, Guy	ME D65D1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
25	Bolt, machine, 5/8" x 12"	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
26	Locknut, 5/8"	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
27	Screw, Lag, 1/2" x 4-1/2"	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
28	Washer, square curved, 2-1/4", 11/16" hole	---	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-

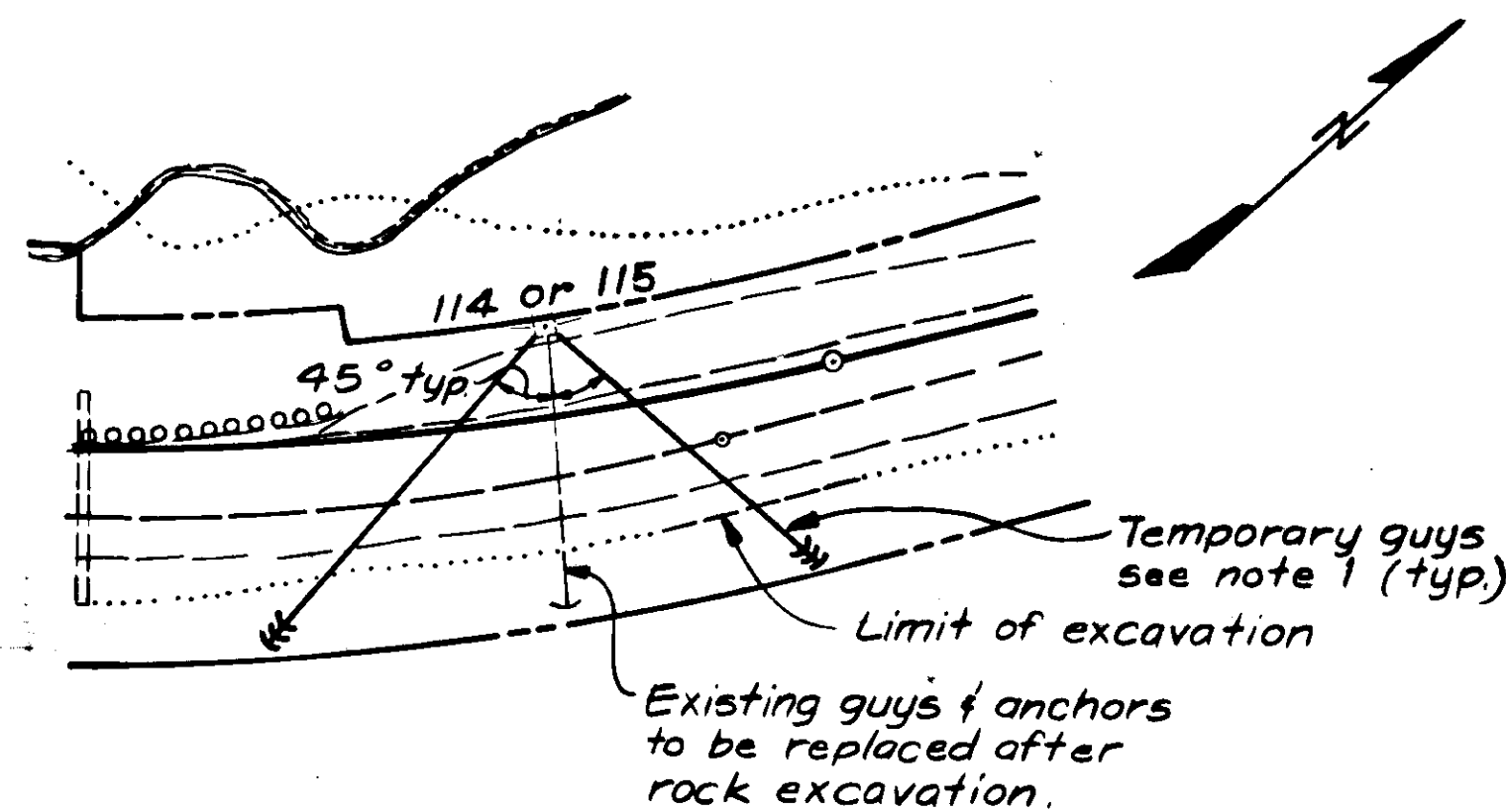


GUY ASSEMBLY G15

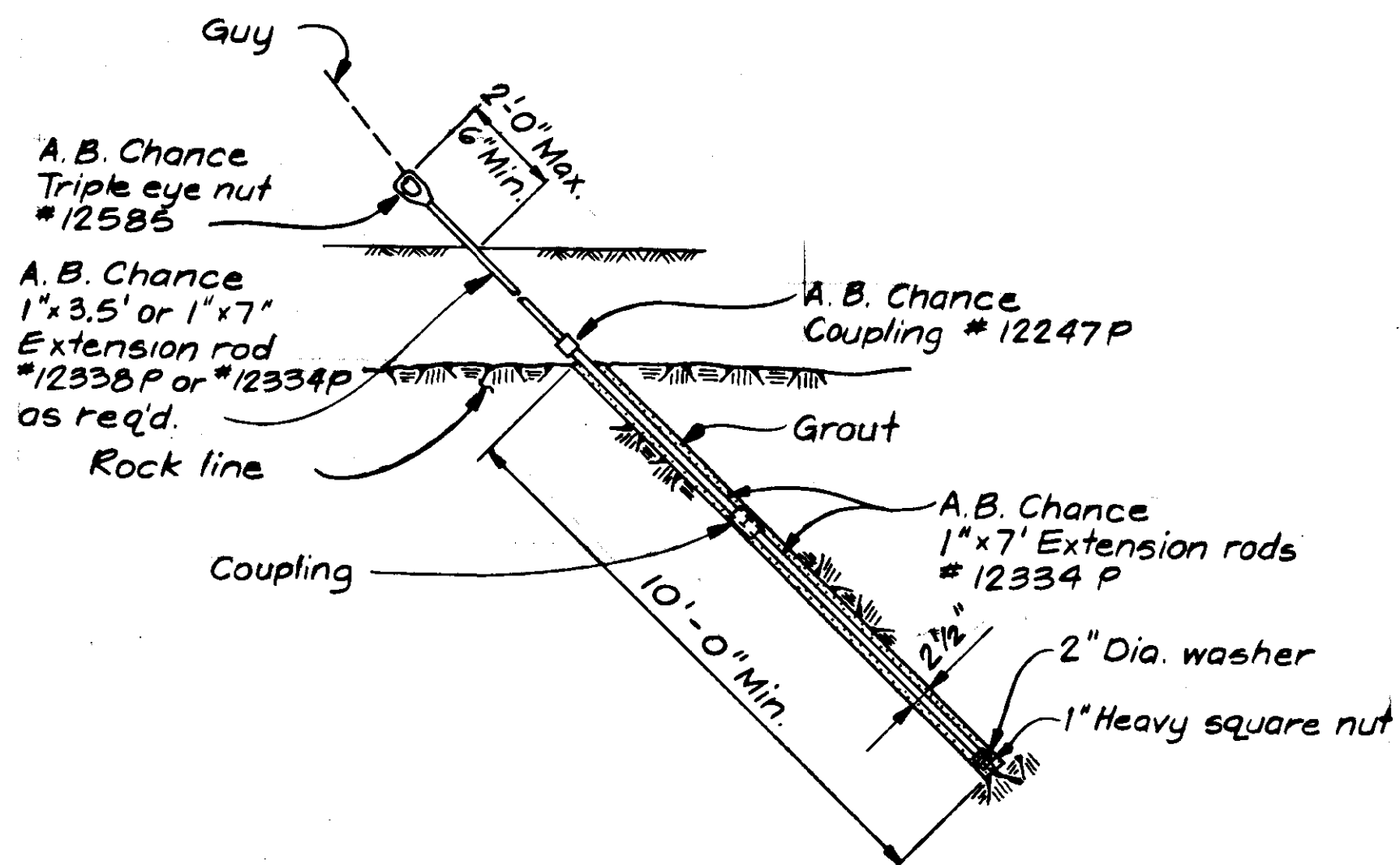
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920 (17) & 67453	1987	64	68



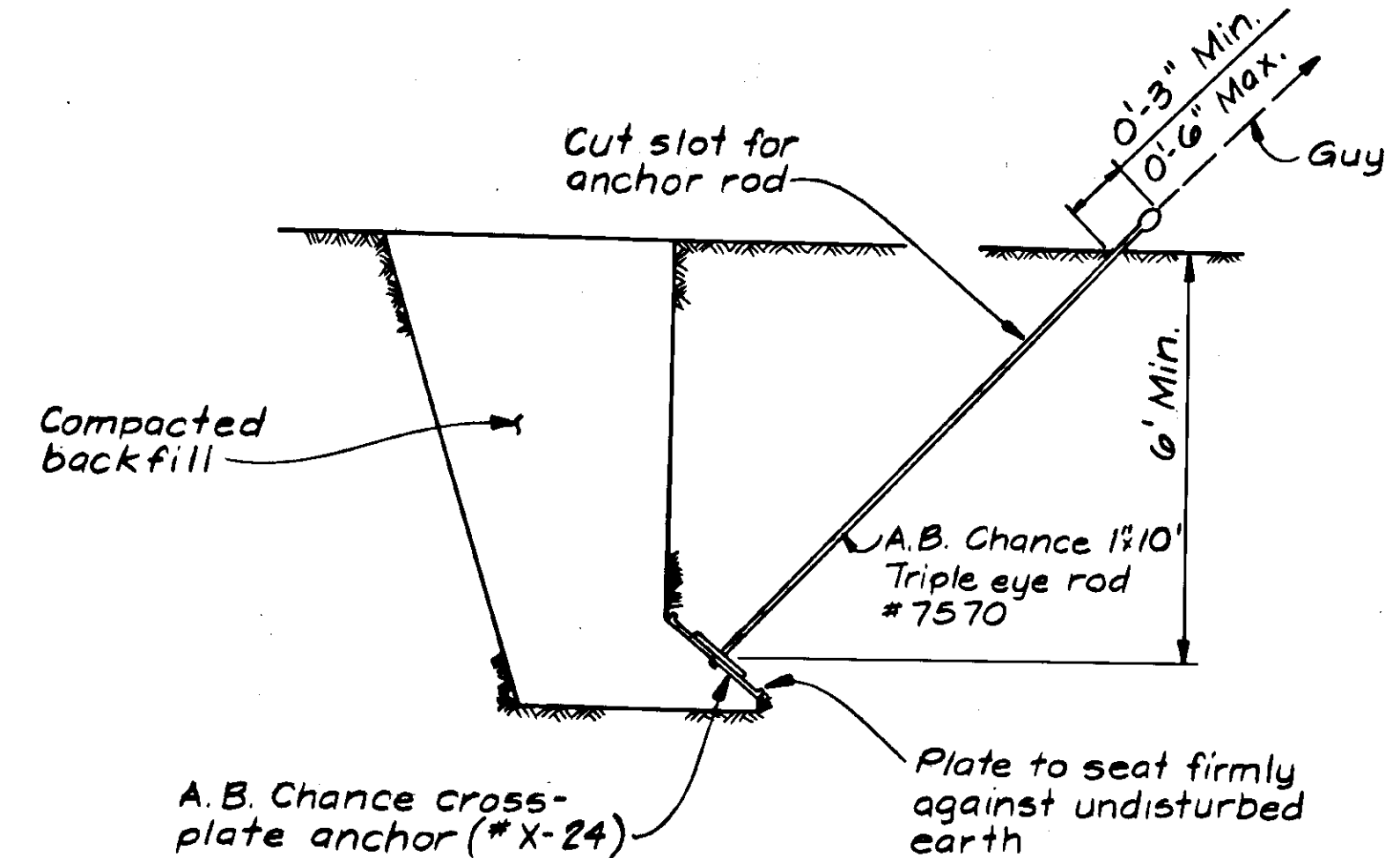
DETAIL 1



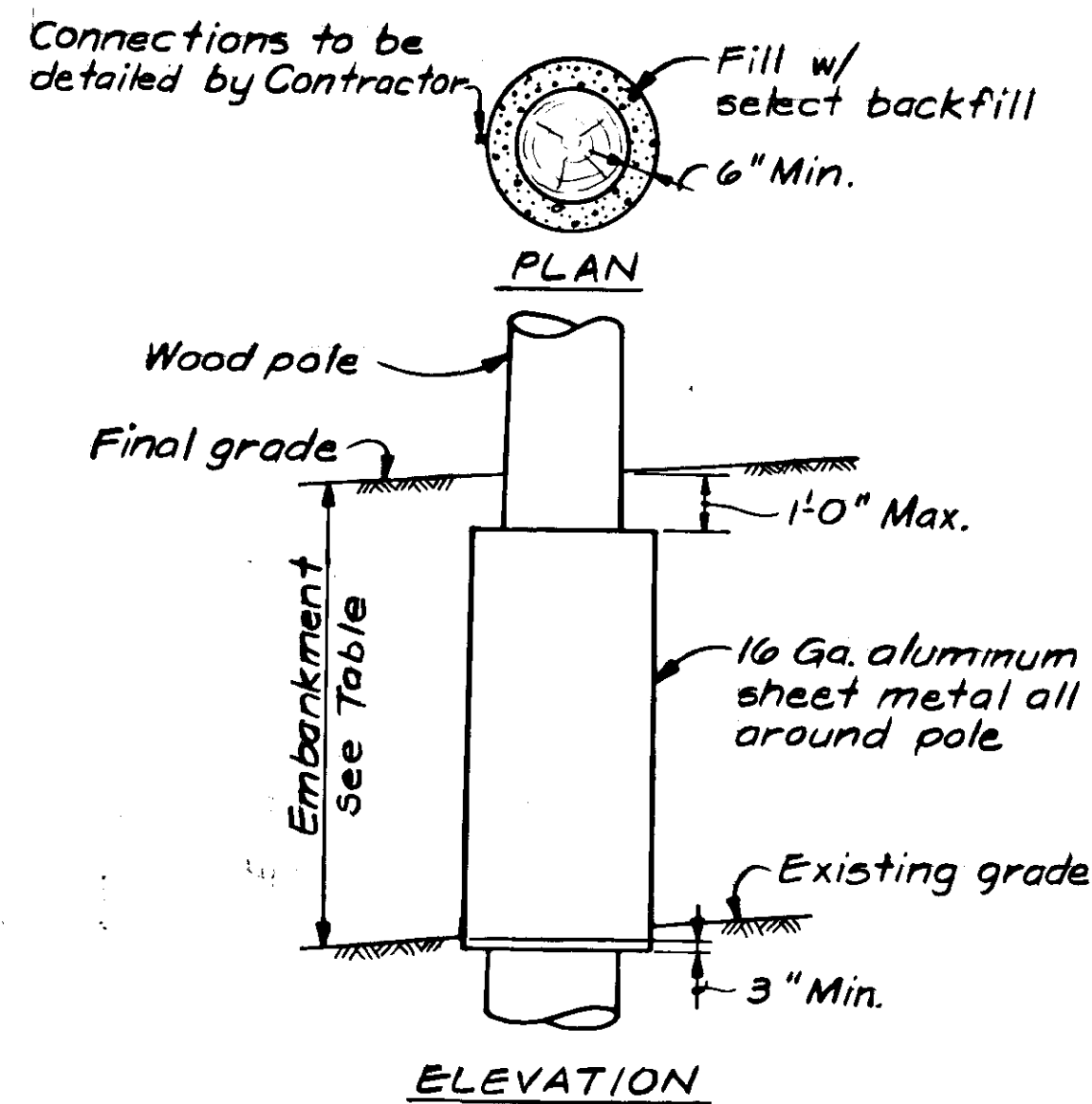
DETAIL 2
Typical for structures
114 and 115



GUY ANCHOR TYPE A-1 (ROCK)



GUY ANCHOR TYPE A-2 (PLATE)



POLE PROTECTION DEVICE

STATION	ESTIMATED HEIGHT
187 + 28, 34' LT	9.5'
203 + 30, 28' LT	14.5'
213 + 47, 25' LT	14'
215 + 60, 25' LT	4'

NOTE

- Temporary guys to be attached to pole using Hughes Brothers 111-B pole bands.

REV. NO.	DATE	DESCRIPTION
0	11/12/86	Issued for bid

DRAWING REVISION RECORD

DESIGNED GOH	CIVIL REVIEW	MECHANICAL REVIEW
DRAWN LEL	STRUCTURAL REVIEW	ELECTRICAL REVIEW
CHECKED CLS	DATE 11/12/86	APPROVED <i>[Signature]</i>

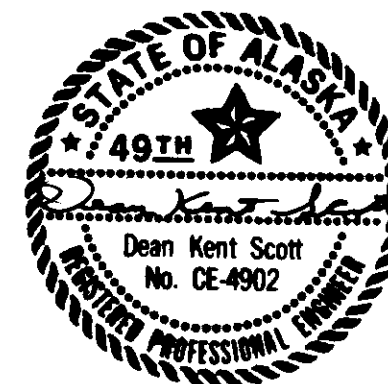
R. W. BECK AND ASSOCIATES
ENGINEERS AND CONSULTANTS

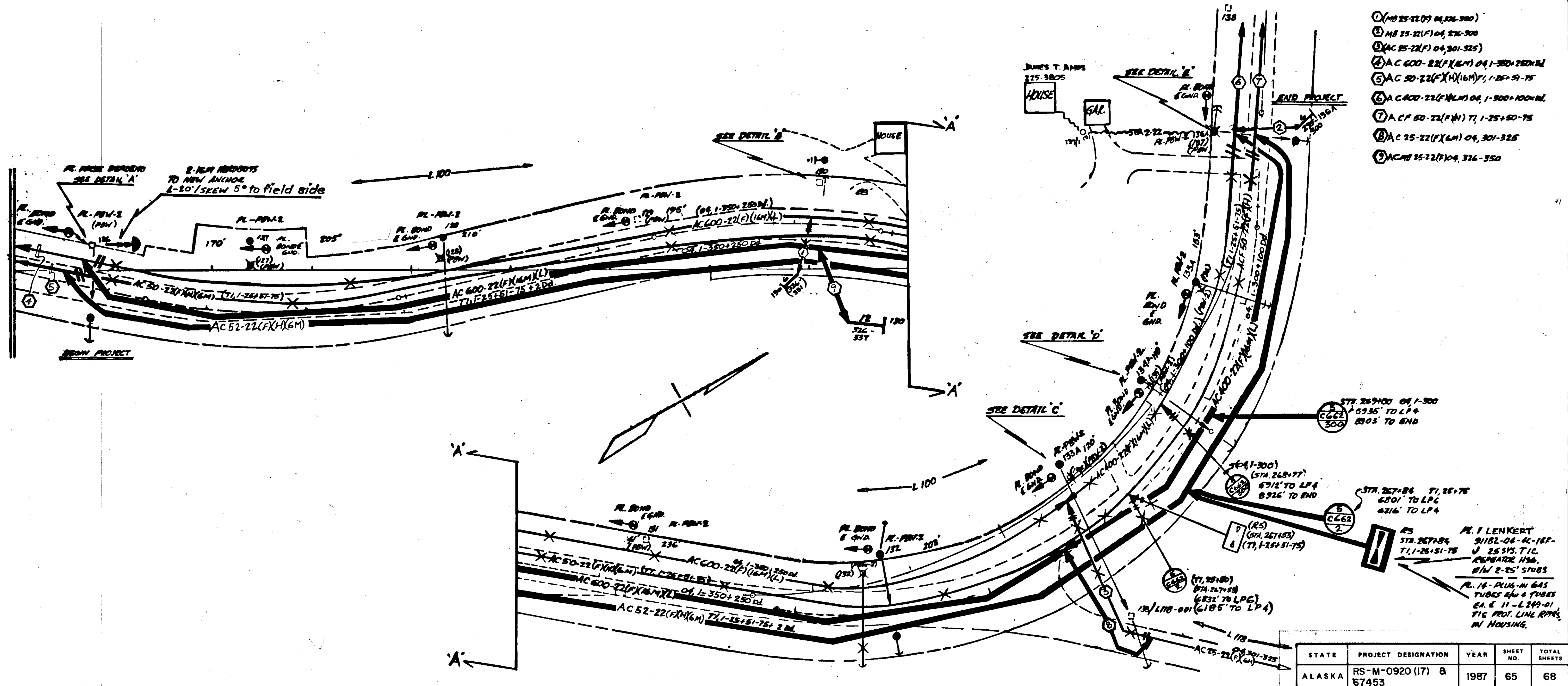
SEATTLE, WASHINGTON

DENVER, COLORADO

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
NORTH TONGASS - UTILITIES RELOCATION
PROJECT NO. RS-M-0920(17) & 67453
GUY ANCHORS

WORK ORDER NUMBER EE-1971-ETI-AB
DRAWING NUMBER 64 OF 68





- ① (M) 25-22(F) 04, 226-300
- ② (M) 25-22(F) 04, 226-300
- ③ (AC) 25-22(F) 04, 301-325
- ④ (AC) 600-22(F)(6M) 04, 1-300+250 DL
- ⑤ (AC) 50-22(F)(6M) 04, 1-25+51-75
- ⑥ (AC) 400-22(F)(6M) 04, 1-300+100 DL
- ⑦ (AC) 25-22(F)(6M) 04, 1-25+51-75
- ⑧ (AC) 25-22(F)(6M) 04, 301-325
- ⑨ (AC) 25-22(F) 04, 326-350

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920 (17) & 67453	1987	65	68

LOCATION	POLE UNITS	CABLE UNITS	GROUND AND MISC. UNITS	SPLICE UNITS	SERVICE ENTRANCE UNITS	MISCELLANEOUS UNITS
POLE NO.	STATION	POLE (12)	POLE (12)	POLE (12)	POLE (12)	POLE (12)
P126	253+36	1	1	1	1	1
P127	255+06	1	1	1	1	1
P128	257+11	1	1	1	1	1
P129	259+21	1	1	1	1	1
P130	261+16	1	1	1	1	1
INTERLINE	262+04					
P131	263+45	1	1	1	1	1
P132	265+81	1	1	1	1	1
P133A	267+84	1	1	1	1	1
P133(I)	269+54					
P134A	271+04	1	1	1	1	1
P135A	273+14	1	1	1	1	1
P136A	275+67	1	1	1	1	1
TOTAL		10	6	4		

1	4/10/87	REISSUED FOR BID W/REVISED CABLE UNITS P130 & P133A
0	11/12/86	Issued for bid
REV. NO.	DATE	DESCRIPTION
DRAWING REVISION RECORD		

Triple H Enterprises
Telecommunications Consulting
MAYDEN LAKE, IDAHO

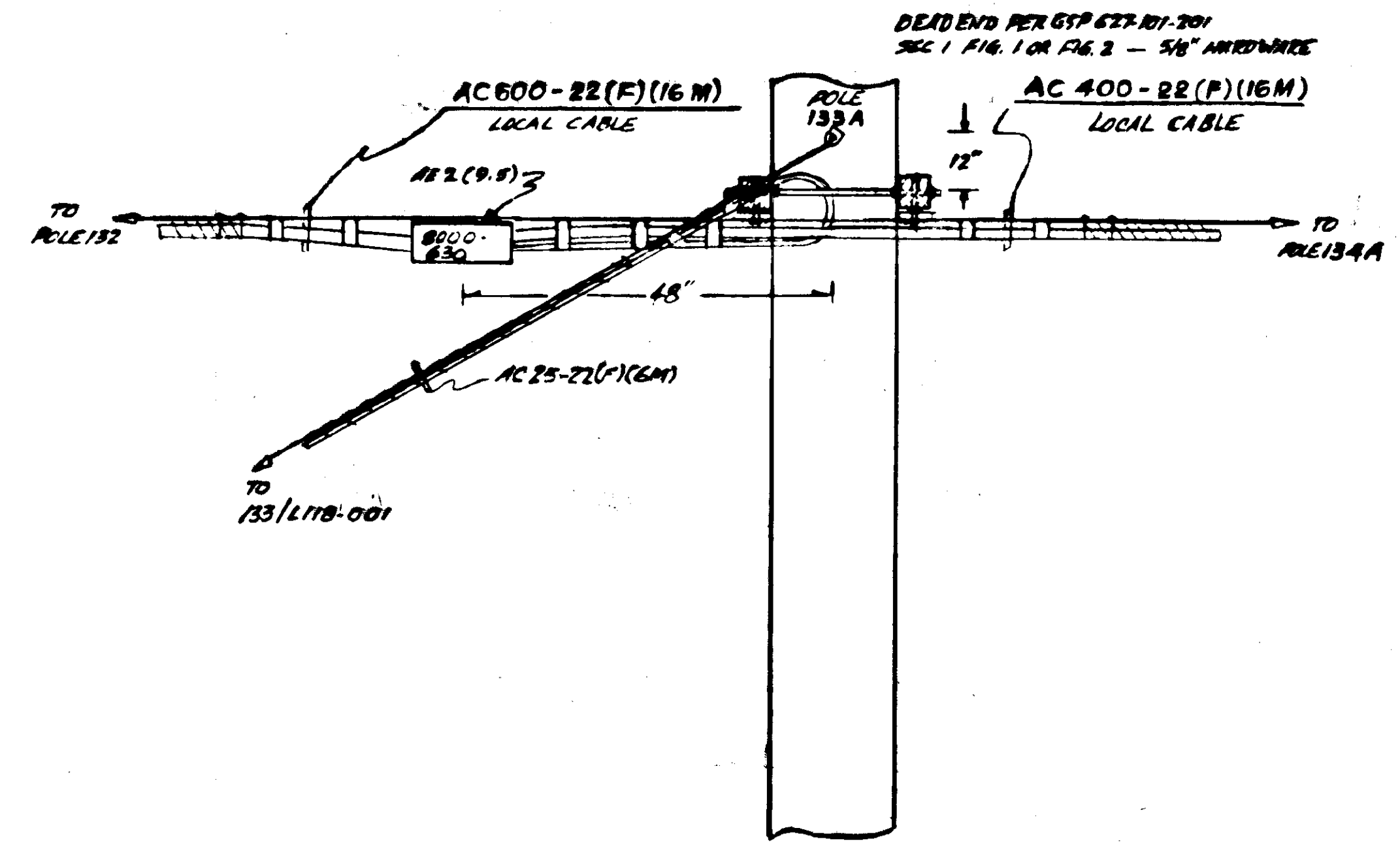
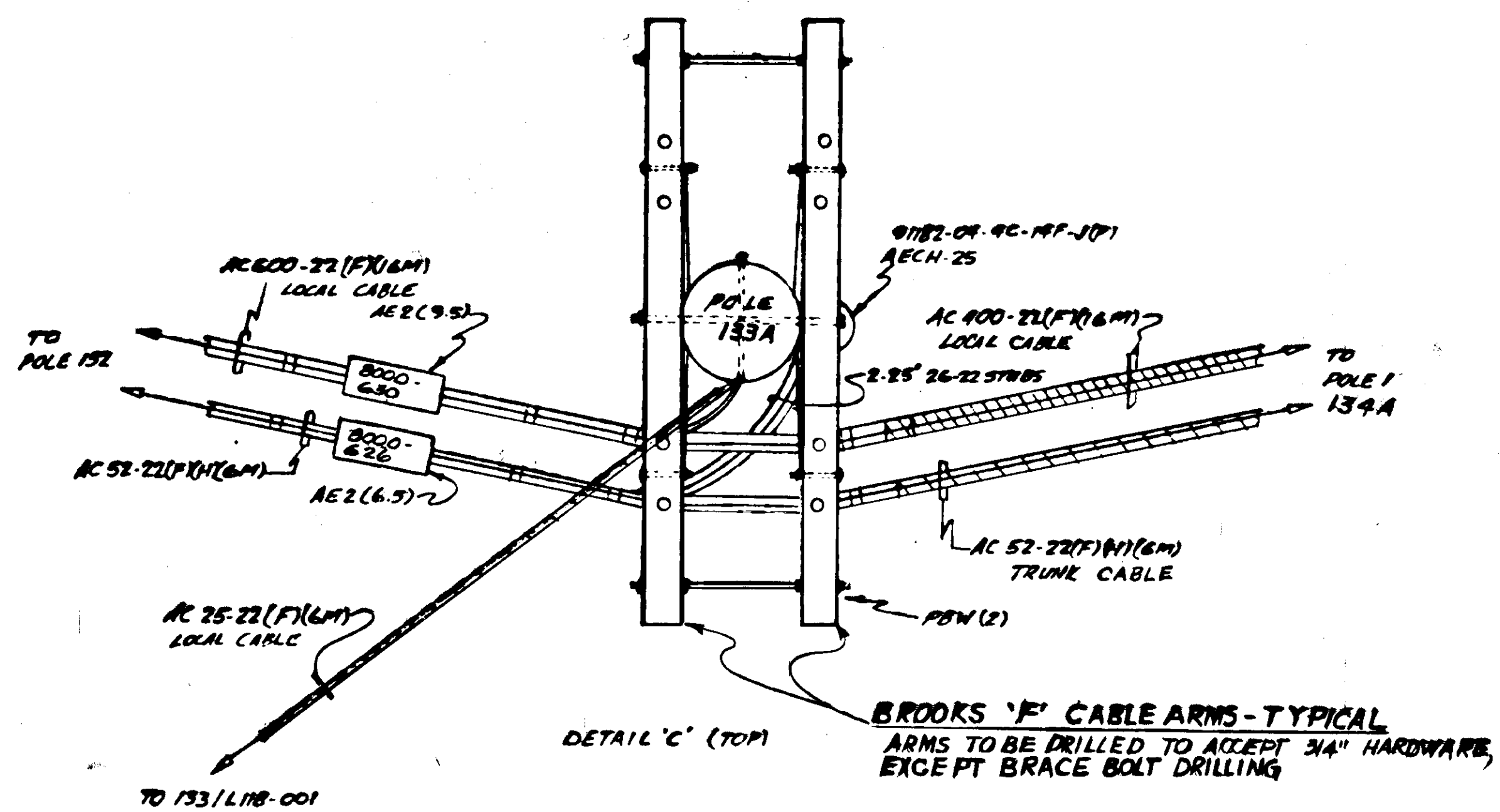
DESIGNED: CHP
DRAWN: CIVIL REVIEW
CHECKED: ELECTRICAL REVIEW
APPROVED: MECHANICAL REVIEW

R. W. BECK AND ASSOCIATES
ENGINEERS AND CONSULTANTS
SEATTLE, WASHINGTON
DENVER, COLORADO

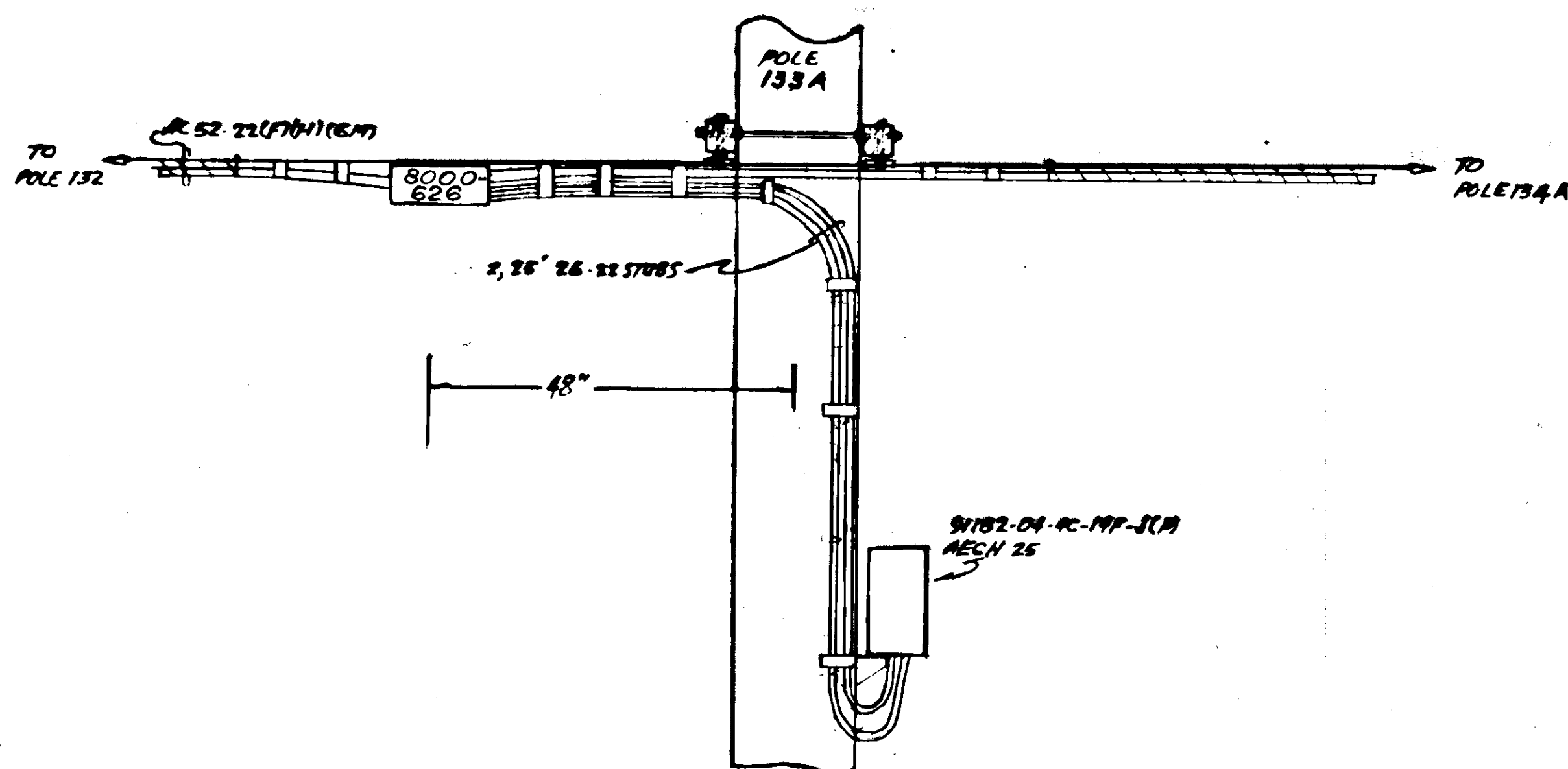
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
NORTH TONGASS - UTILITIES RELOCATION
PROJECT NO. RS-M-0920(17) & 67453
TELEPHONE UNDERBUILD I

WORK ORDER NUMBER
EE-1971-ETI-AB
DRAWING NUMBER
65 OF 68

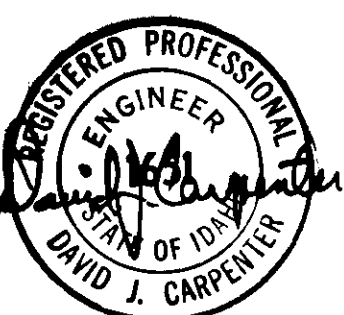
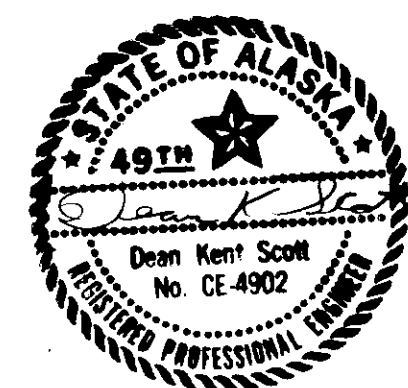
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	RS-M-0920(17) & 67453	1987	67	68



DETAIL 'C' (SIDE) LOCAL CABLE ONLY



DETAIL 'C' (SIDE) TRUNK CABLE ONLY



			 Triple H Enterprises Telecommunications Consulting BAYERN LAKE, IDAHO	DESIGNED CHI	CIVIL REVIEW	MECHANICAL REVIEW	R. W. BECK AND ASSOCIATES ENGINEERS AND CONSULTANTS SEATTLE, WASHINGTON DENVER, COLORADO	STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES NORTH TONGASS - UTILITIES RELOCATION PROJECT NO. RS-M-0920(17) & 67453 TELEPHONE UNDERBUILD 3	WORK ORDER NUMBER EE-1971-ETI-AB
0	11/12/86	Issued for bid		DRAWN	STRUCTURAL REVIEW	ELECTRICAL REVIEW			DRAWING NUMBER
REV. NO.	DATE	DESCRIPTION		CHECKED	DATE	APPROVED			
DRAWING REVISION RECORD									67 OF 68

