

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND  
 PUBLIC FACILITIES  
 SOUTHEAST REGION  
 DESIGN AND CONSTRUCTION DIVISION

HAINES ALASKA

HAINES HIGHWAY  
 BIG BOULDER CREEK  
 TO THE BORDER

PROJECT NO. SHAK-095-6(20) ~ 71874  
 GRADING, DRAINAGE AND PAVING

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
A1	TITLE SHEET
A2	LEGEND
A3-A6	SURVEY CONTROL
B1-B5	TYPICAL SECTIONS
C1	ESTIMATE OF QUANTITIES
D1-D2	SUMMARY TABLES
E1-E3	MISC. DETAILS
E4-E17	DRAINAGE DETAILS
F1-F12	PLAN AND PROFILE SHEETS
F13-F18	SPECIAL DRIVEWAY, BORDER STATION, AND TURNAROUND PLANS
G1-G5	MINING PLANS AND DETAILS
I1-I19	MITIGATION DETAILS
J1-J17	EROSION AND POLLUTION CONTROL PLANS & DETAILS
K1-K15	SIGNING & STRIPING PLANS, DETAILS, SIGN SUMMARY
T1-T3	TRAFFIC CONTROL PLANS
T4	LOOP DETECTOR DETAILS

THE FOLLOWING STANDARD DRAWINGS APPLY TO THIS PROJECT:

A-1, C-01.03, C-02.01, C-04.11, D-01.02, D-04.10, D-05.10, D-06.01, D-30.01, G-04.06S, G-04.07W, G-09.03S, G-09.04W, G-20.00, G-24.06S, G-24.06W, G-29.03W, G-45.01, G-46.00, I-30.01, I-81.00, M-16.01, M-23.12, S-00.00, S-05.00, S-20.00, S-30.01, T-20.00, T-21.02, T-22.02

AS-BUILT'S

contractor: Southeast Road Builders  
 project engineer: Greg Browning  
 construction dates: 1-3-00 to 9-10-01

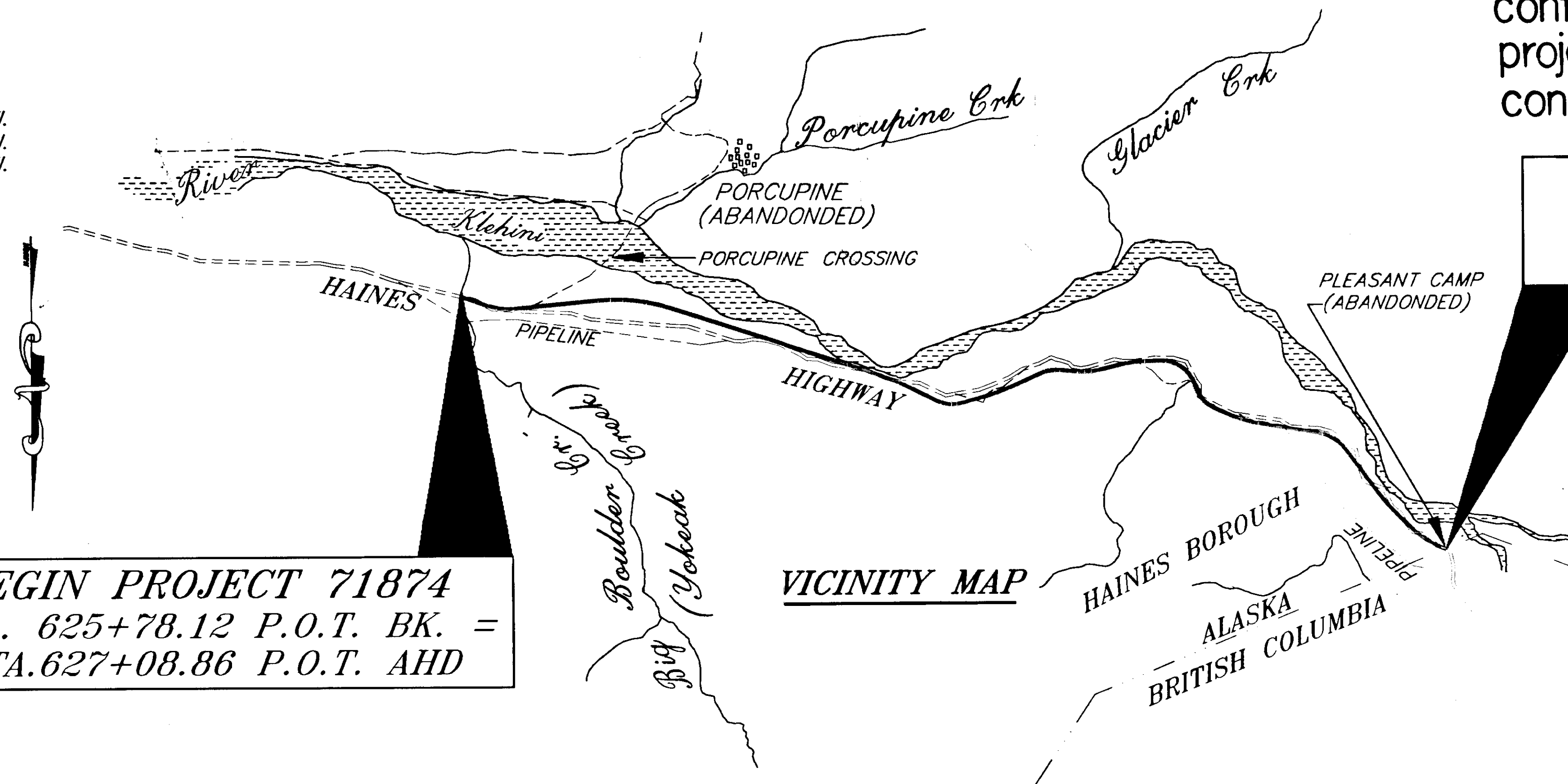
PROJECT SUMMARY

PAVEMENT WIDTH = 36'  
 LENGTH OF GRADING = 33,734.43' = 6.389 MI.  
 LENGTH OF PAVING = 33,734.43' = 6.389 MI.  
 LENGTH OF PROJECT = 33,734.43' = 6.389 MI.

DESIGN DESIGNATION

ADT 1997 = 324  
 ADT 2017 = 436  
 DHV (14%) = 53  
 V = 55  
 %T = 10  
 E.A.L.'S = 52500

BEGIN PROJECT 71874  
 STA. 625+78.12 P.O.T. BK. =  
 STA. 627+08.86 P.O.T. AHD



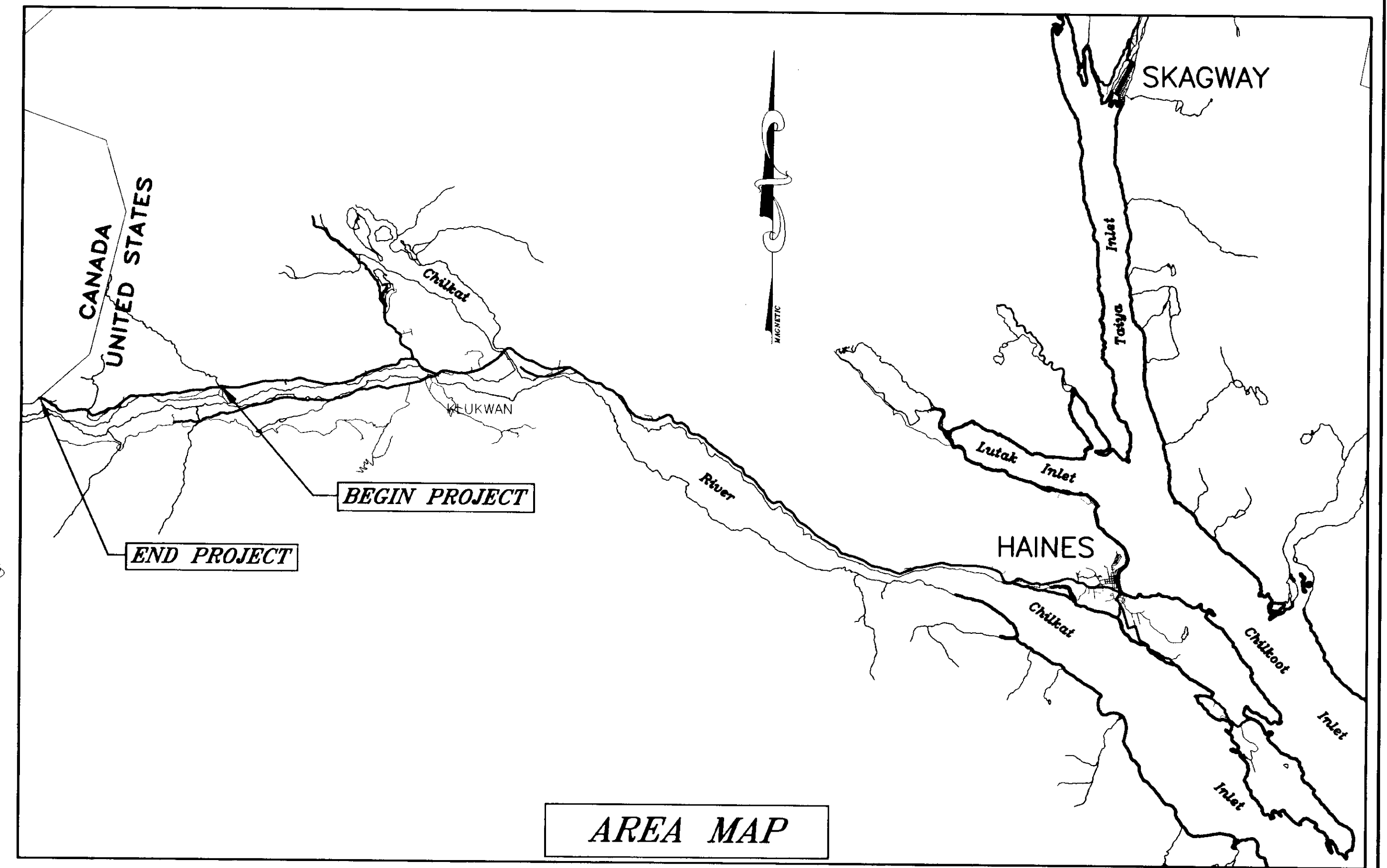
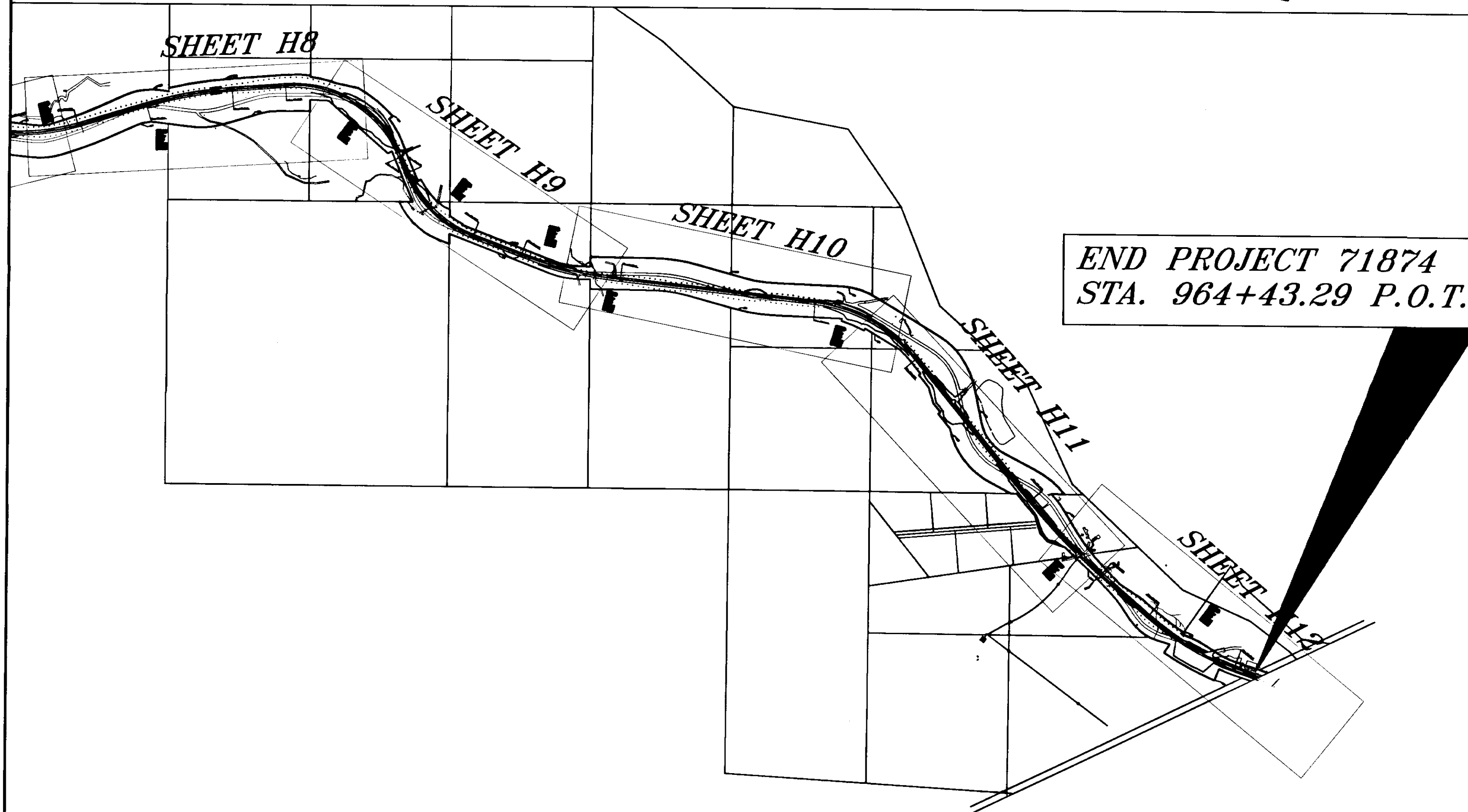
END PROJECT 71874  
 STA. 964+43.29 P.O.T.

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND  
 PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN SECTION

APPROVED [Signature] Date 11/16/99  
 Preconstruction Engineer

APPROVED [Signature] Date 10/20/99  
 REGIONAL DIRECTOR

PROJECT NUMBER: <b>71874</b>	ENGINEER'S SEAL
DATE: <b>1999</b>	
SHEET <b>A1 109</b> TOTAL SHEETS	



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BY:	DATE:	DESCRIPTION OF CHANGE:
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STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES**  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

**HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER**  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
**PLAN SHEET OVERVIEW**

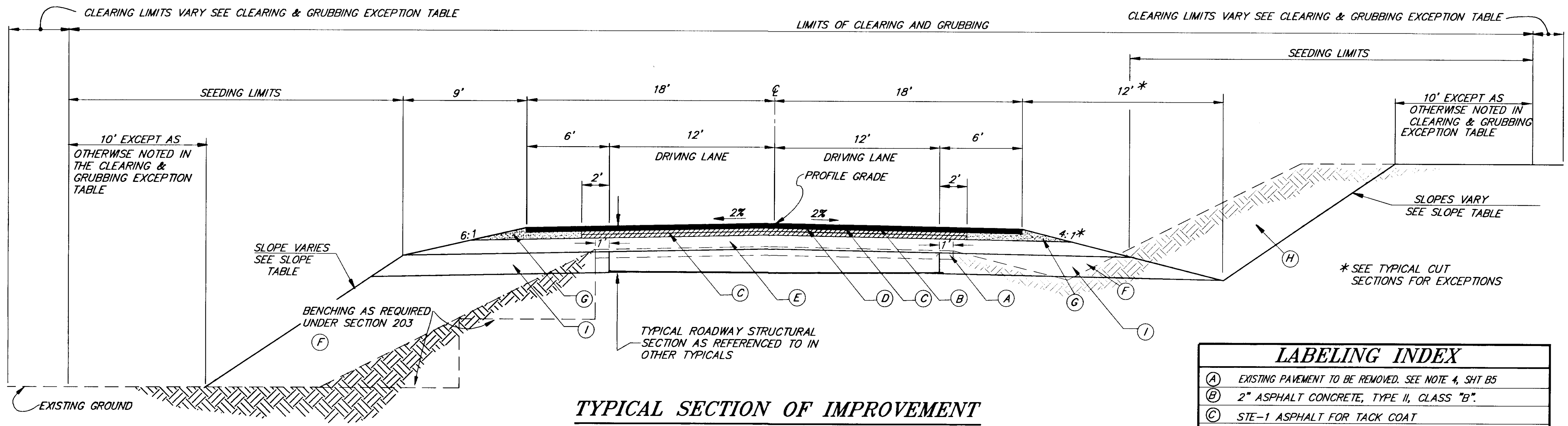
ALASKA

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

DESIGNED BY:  
L. ROBERTSON  
 DRAWN BY:  
L. ROBERTSON  
 CHECKED BY:  
T. MOORE

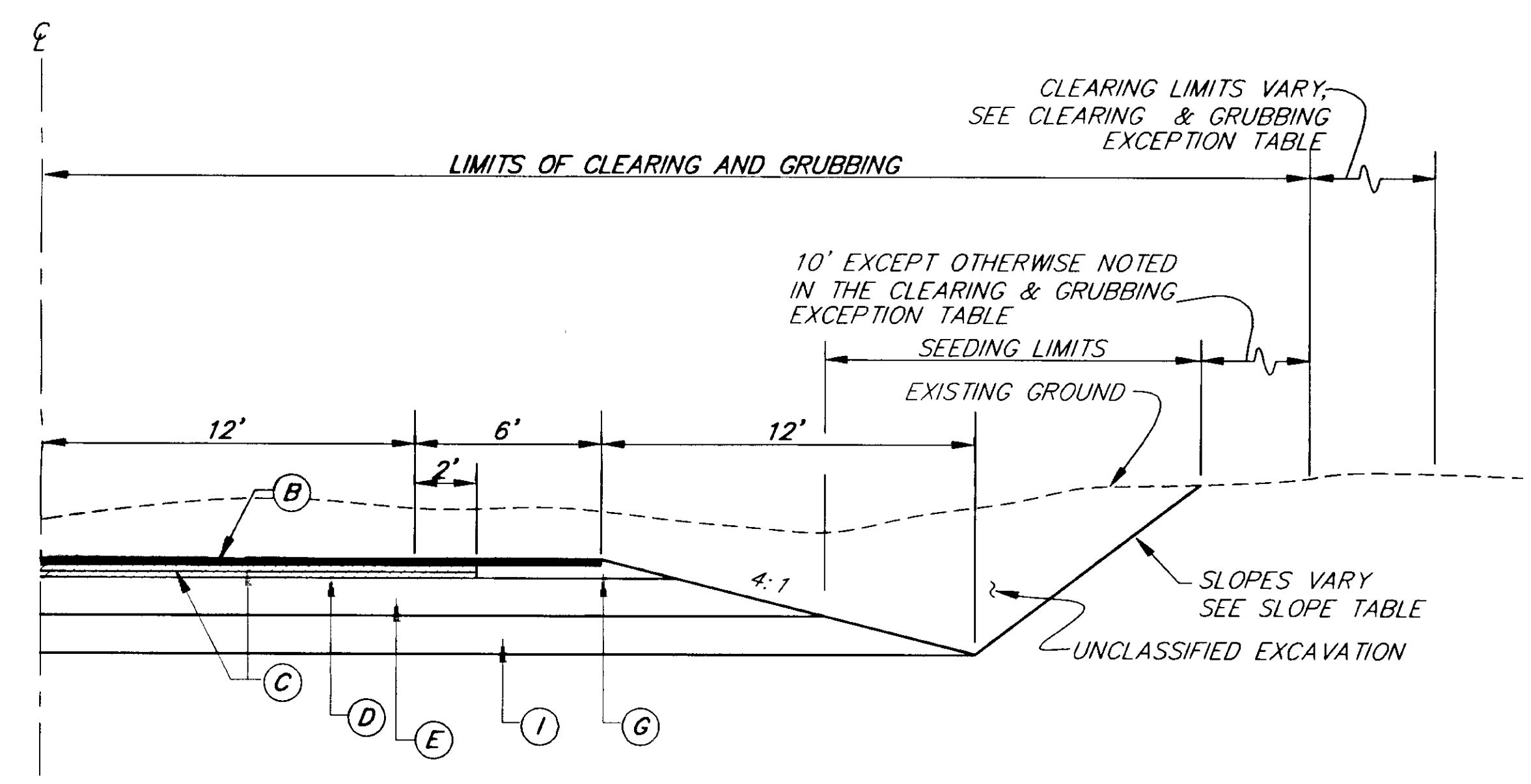
PROJECT NO.  
71874  
 DATE:  
1999  
 SHEET 42



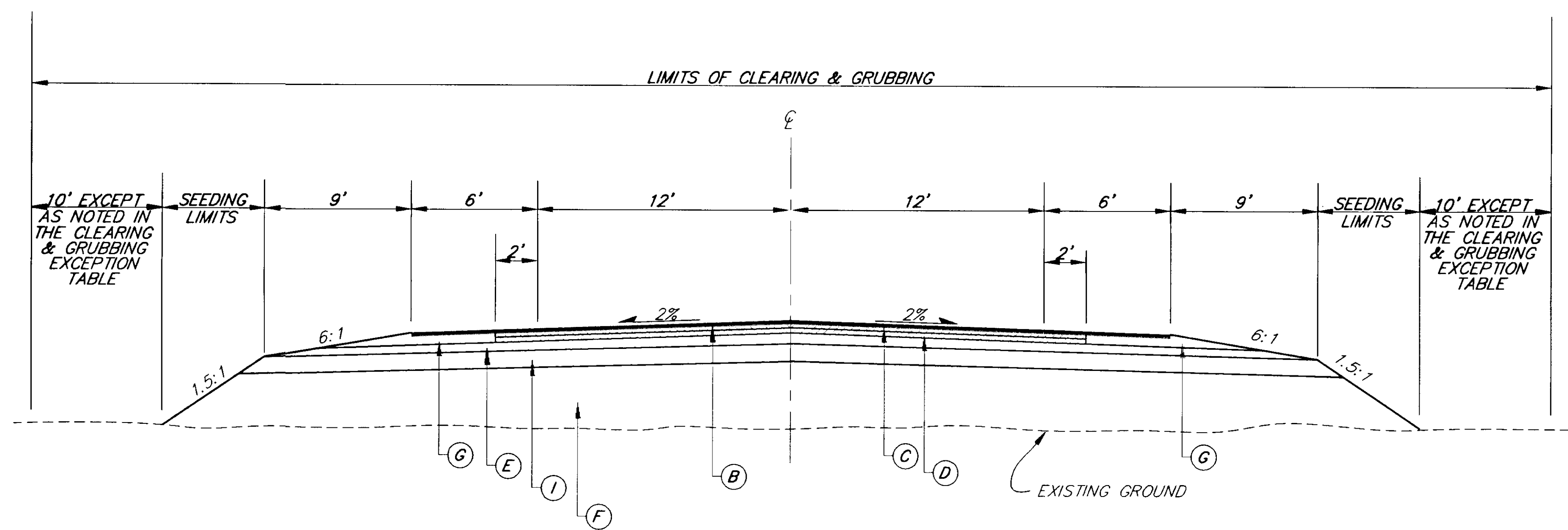


**TYPICAL SECTION OF IMPROVEMENT**  
**CUT AND FILL TYPICAL**  
**EACH SIDE OF ROADWAY**  
**STA. 627+08.86 TO 964+43.29**

LABELING INDEX	
(A)	EXISTING PAVEMENT TO BE REMOVED. SEE NOTE 4, SHT B5
(B)	2" ASPHALT CONCRETE, TYPE II, CLASS "B".
(C)	STE-1 ASPHALT FOR TACK COAT
(D)	4" ASPHALT TREATED BASE COURSE, 2- 2" LIFTS.
(E)	12" SUBBASE GRADING "C"
(F)	EMBANKMENT
(G)	4" CRUSHED AGGREGATE BASE COURSE
(H)	UNCLASSIFIED EXCAVATION
(I)	18" EMBANKMENT, TYPE "A"



**CUT TYPICAL IN NEW CONSTRUCTION AREAS**



**FILL TYPICAL SECTION IN NEW CONSTRUCTION AREAS**

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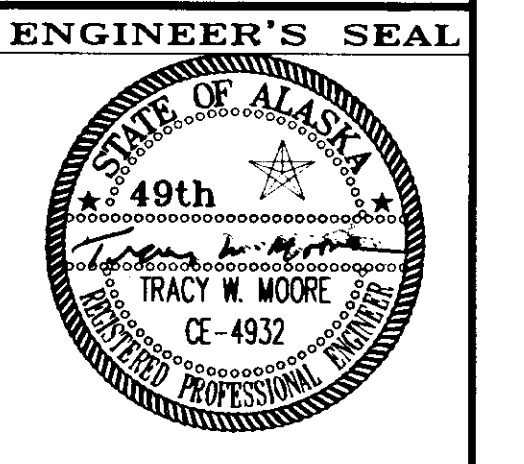
HAINES HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874

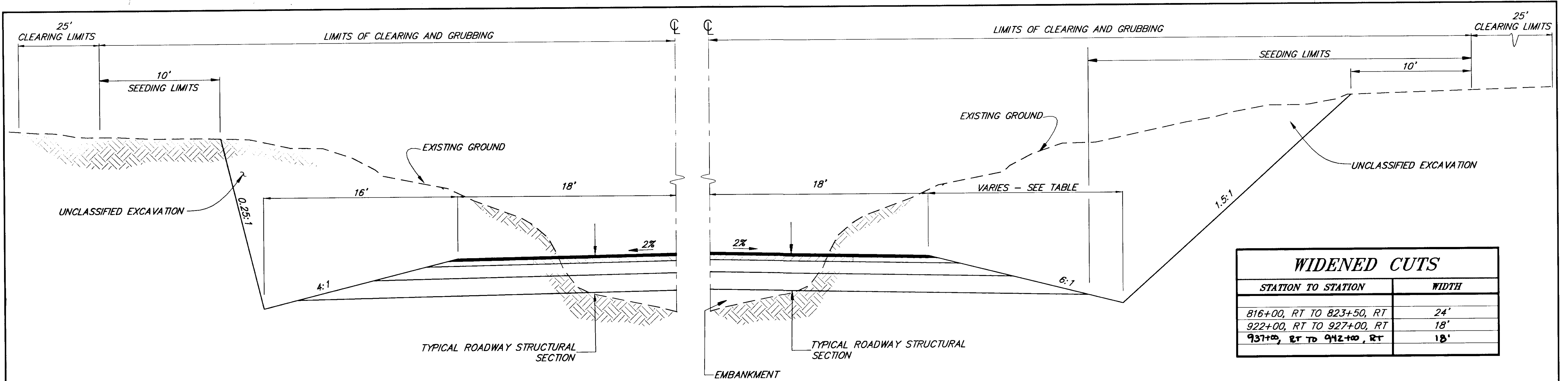
**TYPICAL SECTION OF IMPROVEMENT**

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

DESIGNED BY: C. HAKARI  
 DRAWN BY: L. ROBERTSON  
 CHECKED BY: T. MOORE

PROJECT NO. 71874  
 DATE: 1999  
 SHEET B1

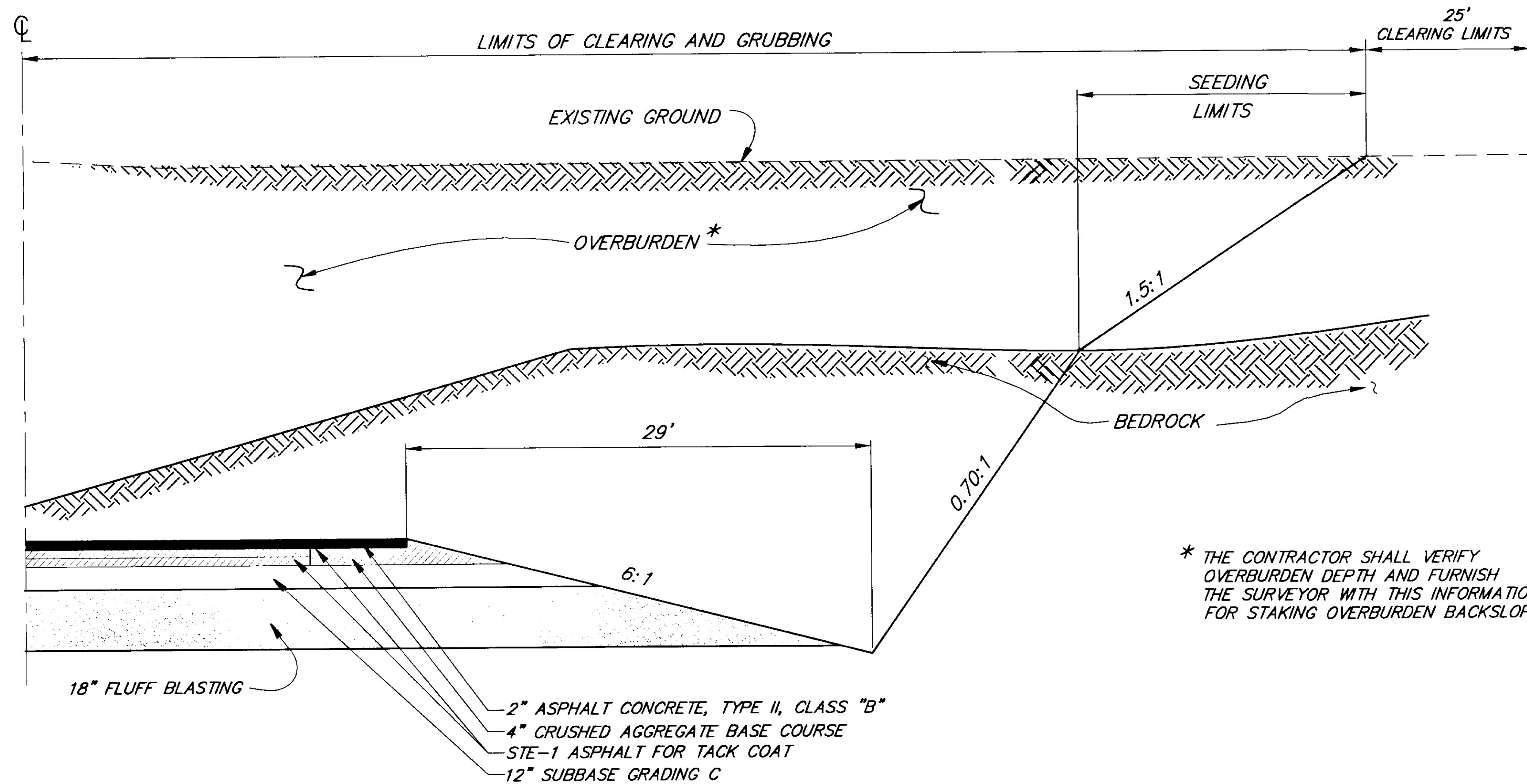




**TYPICAL CUT SECTION**  
STA. 868+00, LT. TO STA. 871+00, LT.

**TYPICAL WIDENED CUT SECTION**

NOTE:  
AT THE CONTRACTOR'S OPTION, ADDITIONAL ROCK MAY BE OBTAINED FROM CUTS WITHIN THE EXISTING HAINES HIGHWAY RIGHT-OF-WAY. THE ENGINEER'S APPROVAL OF THE CONTRACTOR PROVIDED QUARRY DEVELOPMENT AND RECLAMATION PLANS IS REQUIRED BEFORE WORK BEGINS.



\* THE CONTRACTOR SHALL VERIFY OVERBURDEN DEPTH AND FURNISH THE SURVEYOR WITH THIS INFORMATION FOR STAKING OVERBURDEN BACKSLOPE.

**FLUFF BLASTING AND ROCKCUT WITH OVERBURDEN TYPICAL**  
STA. 857+50, RT. TO STA. 864+50, RT.

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

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[PlotStamp Eval] Leonard Fri, 12/Nov/99 09:58am		

STATE OF ALASKA  
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SOUTHEAST REGION DESIGN & CONSTRUCTION

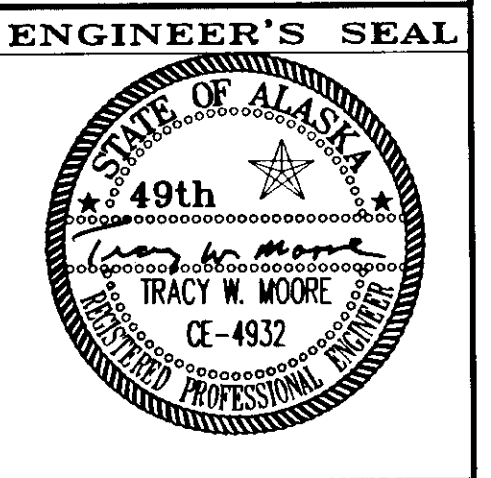
HAINES

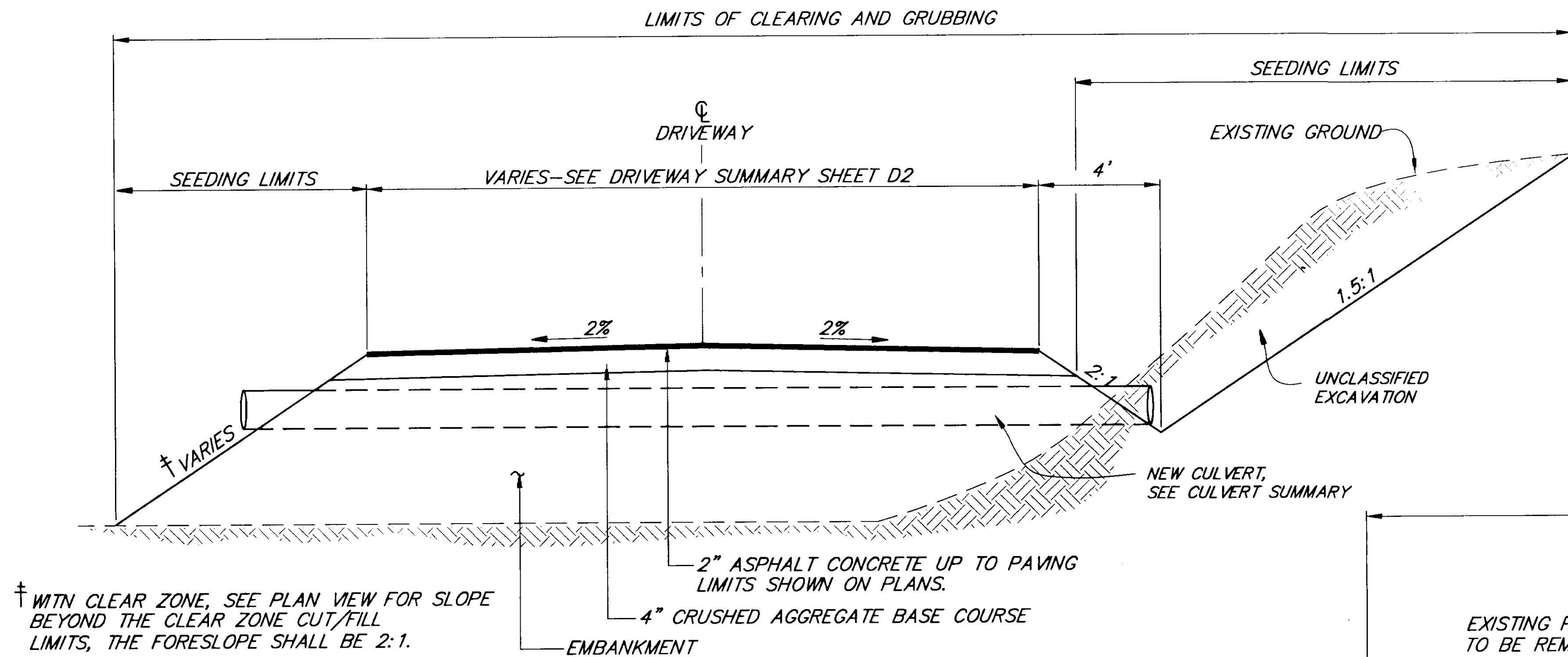
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874

ALASKA

DESIGNED BY: C. HAKARI  
DRAWN BY: L. ROBERTSON  
CHECKED BY: T. MOORE

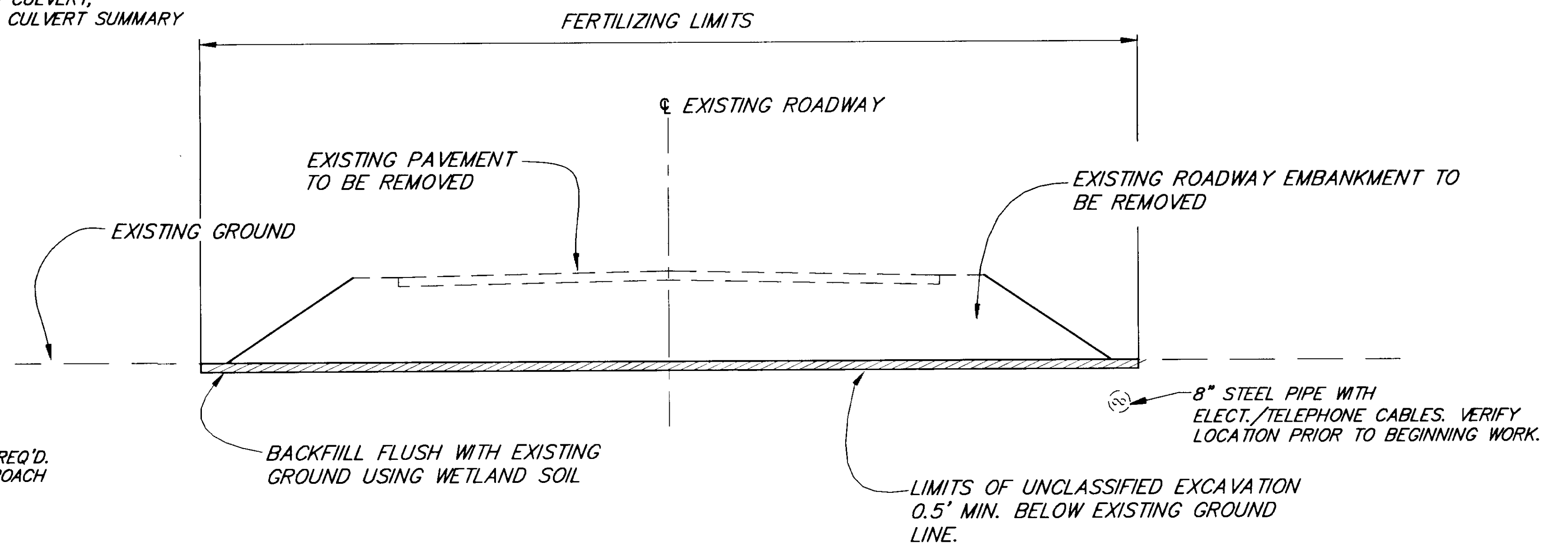
PROJECT NO. 71874  
DATE: 1999  
SHEET B2





† WITH CLEAR ZONE, SEE PLAN VIEW FOR SLOPE BEYOND THE CLEAR ZONE CUT/FILL LIMITS, THE FORESLOPE SHALL BE 2:1.

**DRIVEWAY TYPICAL SECTION**

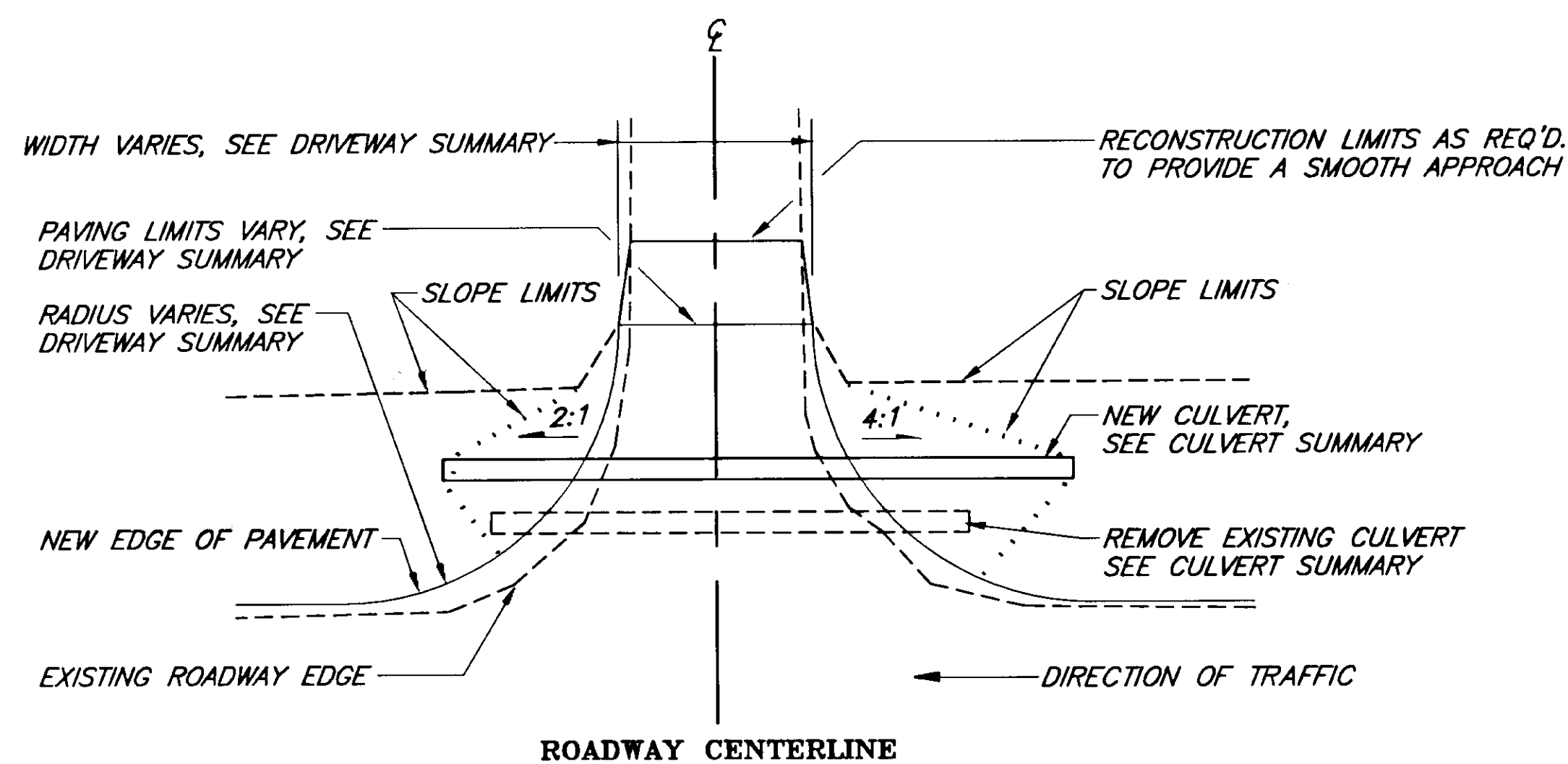


**WETLANDS CREATION AREA TYPICAL**

STA. 871+50, RT. TO STA. 873+50, RT.

**NOTE:**

SEE SECTION 646 OF THE SPECIFICATIONS FOR WETLANDS CREATION REQUIREMENTS.



**PLAN**

**APPROACH DRIVEWAY & DETAIL**

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BY:	DATE:
DESCRIPTION OF CHANGE:	
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RECORD OF REVISIONS	

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HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874

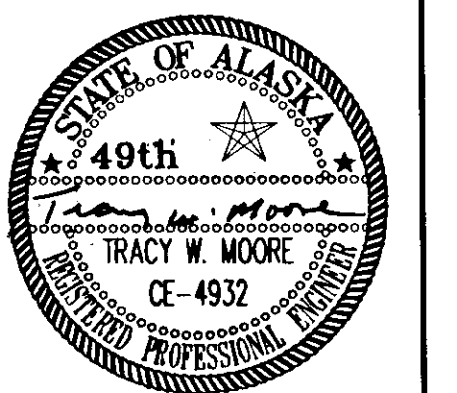
MISC. TYPICAL SECTIONS

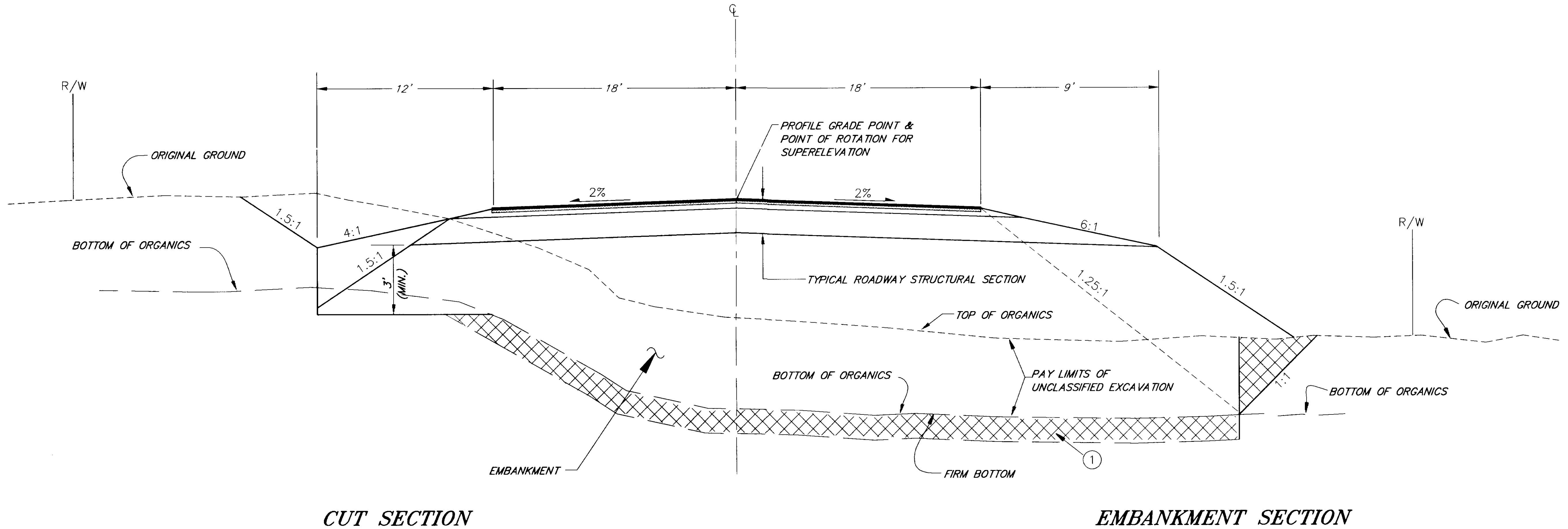
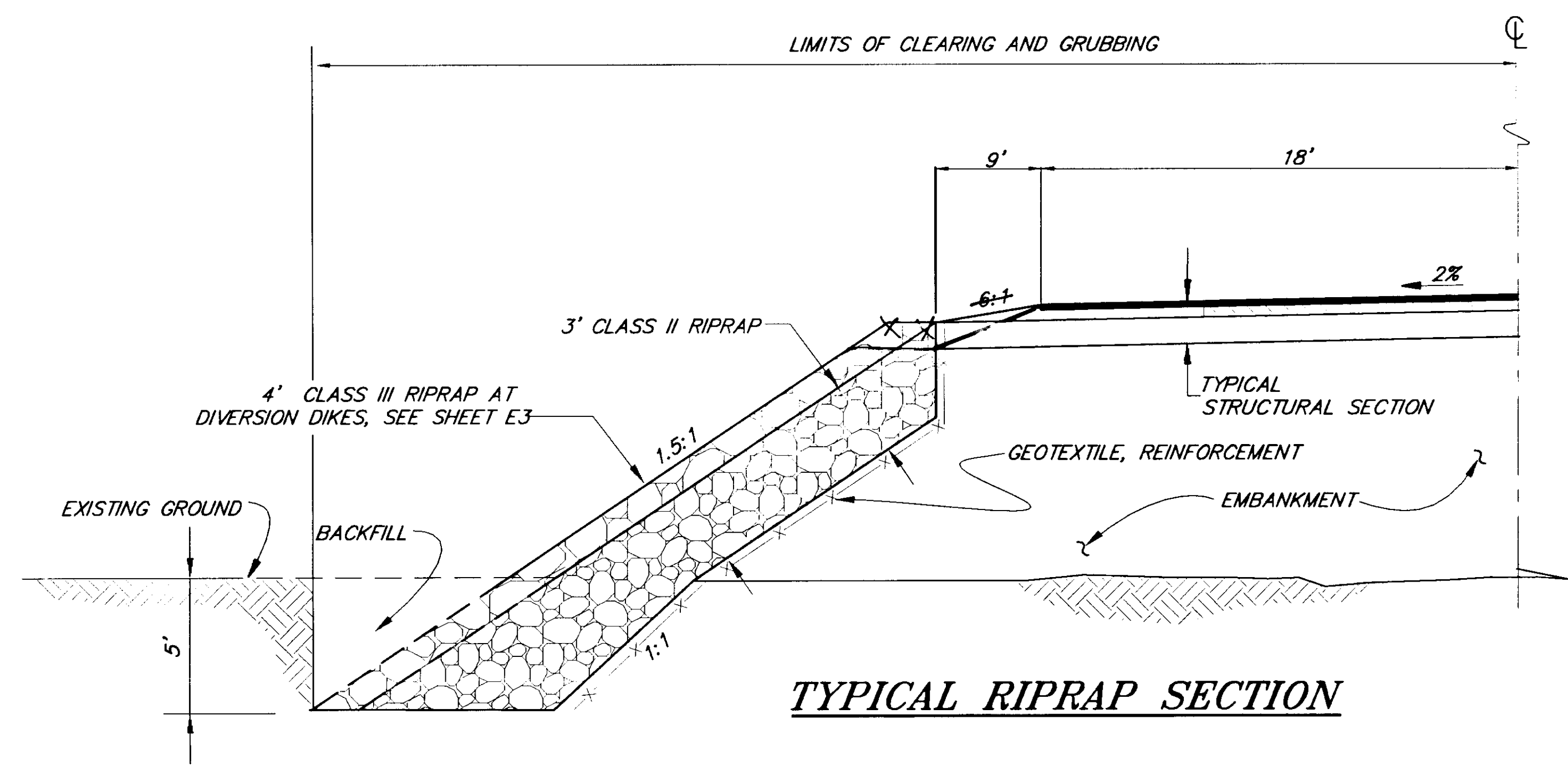
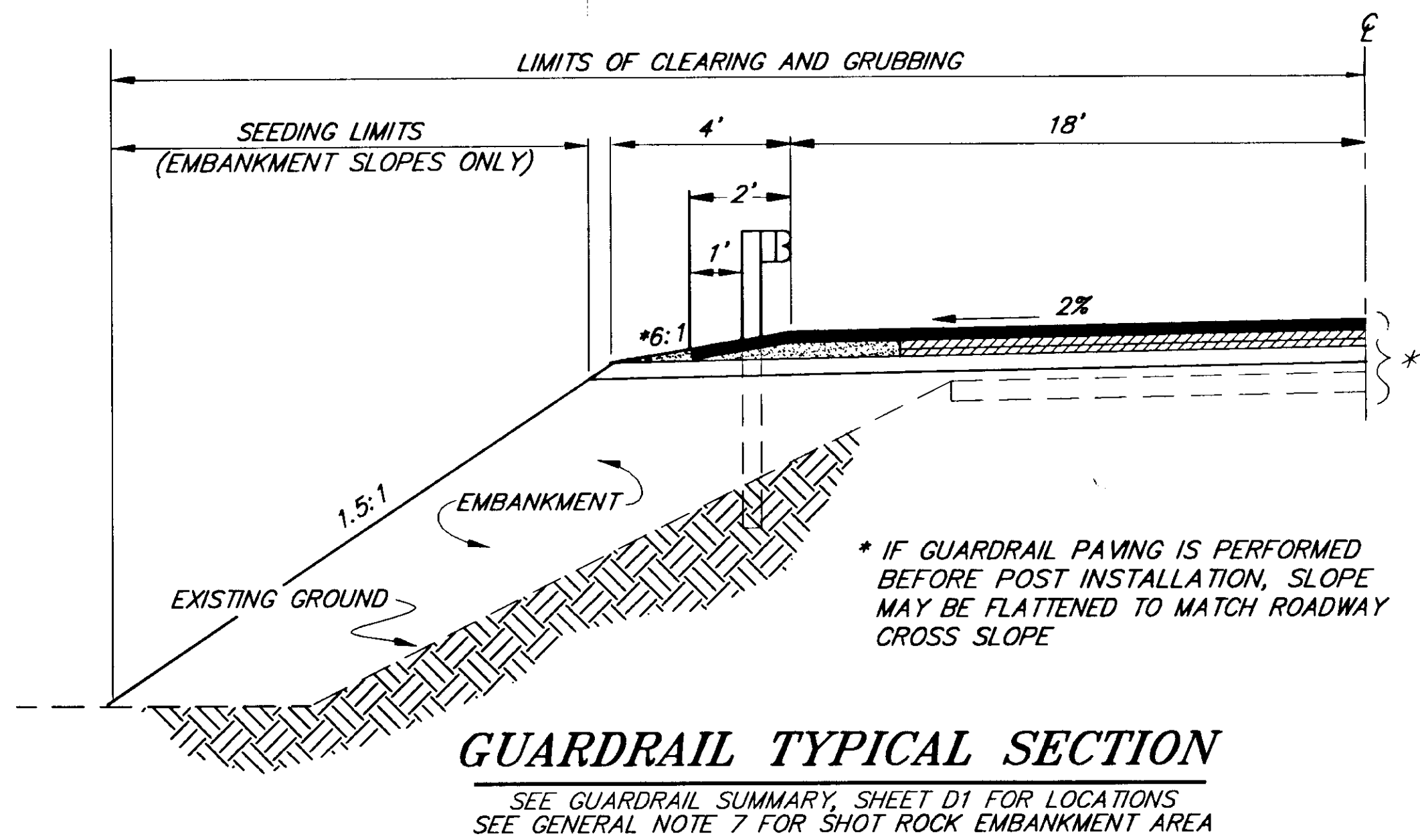
ALASKA

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	B3

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

ENGINEER'S SEAL





**STA. 824+00 TO STA. 836+00**  
**STA. 872+00 TO STA. 883+00**

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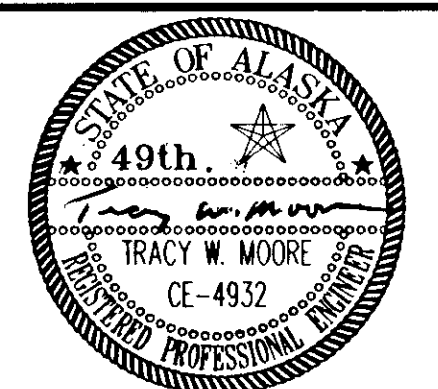
HAINES

HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874

ALASKA

**MISC. TYPICAL SECTIONS**

DESIGNED BY: C. HAKARI	PROJECT NO. 71874
DRAWN BY: L. ROBERTSON	DATE: 1999
CHECKED BY: T. MOORE	SHEET B4



SLOPE TABLE				
LEFT		RIGHT		
BACKSLOPE	FILL	STATION TO STATION	FILL	BACKSLOPE
	1.5:1	627+78 TO 630+00		1.5:1
	1.5:1	630+50 TO 648+50	1.5:1	
1.5:1		649+00 TO 652+50	1.5:1	
	1.5:1	653+00 TO 653+50	1.5:1	
	1.5:1	654+00 TO 654+50		1.5:1
	1.5:1	655+00 TO 816+00	1.5:1	
4:1		816+50 TO 823+50		1.5:1-SEE TYPICAL CUT SECTIONS
	1.5:1	824+00 TO 826+50		1.5:1
	1.5:1	827+00 TO 839+00	1.5:1	
	1.5:1	839+50 TO 840+50		1.5:1
	1.5:1	841+00 TO 854+50	1.5:1	
	1.5:1	855+00 TO 857+50		1.5:1-SEE TYPICAL CUT SECTIONS
4:1		858+00 TO 864+50		SEE TYPICAL CUT SECTIONS
	1.5:1	865+00 TO 867+50	1.5:1	
0.25:1		868+00 TO 871+00	1.5:1	
	1.5:1	871+50 TO 879+50	1.5:1	
	1.5:1	880+00 TO 880+50		1.5:1
	1.5:1	881+00 TO 882+50	1.5:1	
1.5:1		883+00 TO 886+50		1.5:1
	1.5:1	887+00 TO 902+00	1.5:1	
1.5:1		902+50 TO 904+00	1.5:1	
	1.5:1	904+50 TO 908+50	1.5:1	
1.5:1		909+00 TO 909+50	1.5:1	
1.5:1		910+00 TO 918+00		1.5:1
	1.5:1	918+50 TO 919+00		1.5:1
	1.5:1	919+50 TO 921+50	1.5:1	
	1.5:1	922+00 TO 922+50		1.5:1
1.5:1		923+00 TO 927+50		1.5:1
	1.5:1	928+00 TO 928+50		1.5:1
	1.5:1	929+00 TO 932+50	1.5:1	
	1.5:1	933+00 TO 933+50		1.5:1
1.5:1		934+00 TO 934+50		1.5:1
	1.5:1	935+00 TO 935+50		1.5:1
1.5:1		936+00 TO 940+00		1.5:1
	1.5:1	940+50 TO 943+00	1.5:1	
1.5:1		943+50 TO 944+00		1.5:1
	1.5:1	944+50 TO 949+00	1.5:1	
	1.5:1	949+50 TO 950+50		1.5:1
	1.5:1	951+00 TO 956+00	1.5:1	
	1.5:1	956+50		1.5:1
1.5:1		957+00 TO 964+43		1.5:1

CLEARING & GRUBBING EXCEPTION TABLE			
LEFT		STATION TO STATION	RIGHT
25' CLEARING		627+00 TO 668+00	25' CLEARING
25' CLEARING		668+00 TO 672+00	NO CLEARING OR GRUBBING BEYOND SLOPE LIMITS
25' CLEARING		672+00 TO 706+00	25' CLEARING
NO CLEARING OR GRUBBING BEYOND SLOPE LIMITS		706+00 TO 794+50	NO CLEARING OR GRUBBING BEYOND SLOPE LIMITS
NO CLEARING OR GRUBBING BEYOND SLOPE LIMITS		794+50 TO 810+00	25' CLEARING
25' CLEARING		810+00 TO 823+50	25' CLEARING
NO CLEARING OR GRUBBING BEYOND SLOPE LIMITS		823+00 TO 838+00	25' CLEARING
25' CLEARING		838+00 TO 871+50	25' CLEARING
NO CLEARING OR GRUBBING BEYOND SLOPE LIMITS		871+50 TO 885+00	25' CLEARING
NO CLEARING OR GRUBBING BEYOND SLOPE LIMITS		885+00 TO 888+00	NO ADDITIONAL CLEARING
NO CLEARING OR GRUBBING BEYOND SLOPE LIMITS		888+00 TO 889+00	NO CLEARING OR GRUBBING BEYOND SLOPE LIMITS
25' CLEARING		889+00 TO 949+00	25' CLEARING
NO CLEARING OR GRUBBING BEYOND SLOPE LIMITS		949+00 TO 956+00	25' CLEARING
25' CLEARING		956+00 TO 964+43	25' CLEARING
NO CLEARING OR GRUBBING BEYOND SLOPE LIMITS		929+00 TO 932+00	

**GENERAL NOTES**

- VERTICAL AND HORIZONTAL ALIGNMENTS SHOWN ON THESE PLANS ARE SUBJECT TO MINOR REVISIONS.
- PIPE LENGTHS AND LOCATIONS ARE APPROXIMATE ONLY AND SUBJECT TO MINOR REVISIONS.
- THE SUPERELEVATION SHALL BE REVOLVED ABOUT THE CENTERLINE. THE RATE OF SUPERELEVATION AND OTHER SUPERELEVATION DETAILS ARE SHOWN ON THE PLAN AND PROFILE SHEETS.
- THE EXISTING ASPHALT IS APPROXIMATELY 26 FEET WIDE AND IS BETWEEN 3 AND 5 INCHES THICK. ALL REMOVED PAVEMENT SHALL BE EITHER STOCKPILED AT THE APPROVED STOCKPILE AREA NORTH OF BIG BOULDER CREEK, AND CRUSHED FOR USE IN ASPHALT TREATED BASE IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS.
- SAWCUT THE EXISTING PAVEMENT AT STA. 627+08.86, AND STA. 964+43.29 TO PROVIDE A SMOOTH MATCH JOINT. SEE MATCH JOINT DETAILS, SHEET E1.
- ALL WASTE MATERIAL MEETING THE REQUIREMENTS FOR WETLANDS SOILS SHALL BE INCORPORATED INTO THE PROJECT.
- BETWEEN STA. 823+50 AND STA. 838+00, THE EMBANKMENT UP TO THE BOTTOM EMBANKMENT TYPE "A" LAYER SHALL BE SHOT ROCK
- BETWEEN STA. 960+00 AND THE E.O.P., THE ASPHALT TREATED BASE COURSE SHALL BE PLACED THE FULL WIDTH OF THE ROADWAY.
- BETWEEN STA. 883+00, RT. AND STA. 886+50, RT. AND BETWEEN STA. 944+00, RT. AND STA. 944+30, RT., CONSTRUCT 15' WIDE UNPAVED SHOULDERS AS DIRECTED.  
ADD ON: 939+40 LT TO 940+00 LT CONSTRUCT 32' WIDE UNPAVED / 6" SUBBASE SHOULDER.

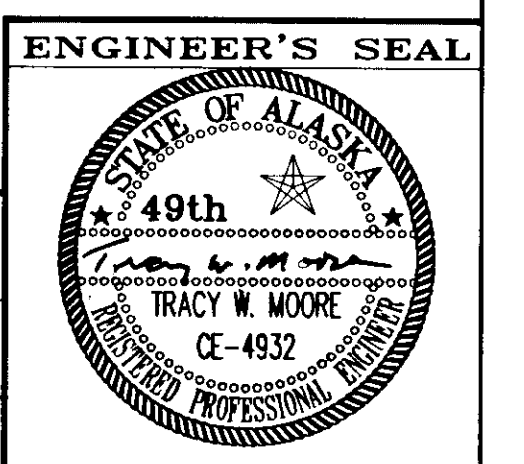
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STATE OF ALASKA  
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HAINES HAINES HIGHWAY ALASKA  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
**SLOPE AND CLEARING TABLES**

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	B5



# ESTIMATE OF QUANTITIES

ITEM NO.	PAY ITEM	UNIT	QUANT.
120(1)	DBE ADJUSTMENT	CS	ALL REQ'D.
201(1A)	CLEARING	ACRE	25.38
201(3A)	CLEARING AND GRUBBING	ACRE	52.31
201(6)	SELECTIVE TREE REMOVAL	EACH	50.55
202(1)	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	ALL REQ'D.
202(2)	REMOVAL OF PAVEMENT	SY	<del>80300</del> 95000
202(4)	REMOVAL OF CULVERT PIPE	LF	1448 1425
202(10)	SINGLE MAILBOX INSTALLATION	EACH	6
203(3)	UNCLASSIFIED EXCAVATION	CY	<del>11600</del> 307000
203(9)	OBLITERATION OF ROADWAY	STA	216.24
203(11)	EMBANKMENT	CY	<del>12000</del> 700000
203(12)	CONTROLLED BLASTING	SY	4500
203(14)	ROCK DOWELS	EACH	10.0
203(15)	ROCK SLOPE DRAIN HOLES	EACH	25.0
203(16)	ROCK BOLTS	LF	50.0
301(2)	CRUSHED AGGREGATE BASE COURSE	CY	<del>6071</del> 15000
304(2)	SUBBASE, GRADING "C"	CY	<del>9100</del> 67500
306(1)	ASPHALT TREATED BASE COURSE	TON	21200 27000
401(1)	ASPHALT CONCRETE PAVEMENT, TYPE II CLASS B	TON	17500
401(2)	ASPHALT CEMENT, PG 58-28	TON	<del>1012</del> 970
401(3)	ASPHALT PRICE ADJUSTMENT	CS	ALL REQ'D
402(2)	STE-1 ASPHALT FOR TACK COAT	TON	45.17
501(1)	CLASS "A" CONCRETE	LS	ALL REQ'D.
602(1)	STRUCTURAL PLATE PIPE DIAMETER 9'-0" GAUGE 12	LF	103.5
602(2A)	STRUCTURAL PLATE PIPE ARCH, SPAN 14'-3", RISE 9'-7"	LF	126
602(2B)	STRUCTURAL PLATE PIPE ARCH, SPAN 8'-1", RISE 6'-1"	LF	99
602(4A)	ALUMINUM BOX CULVERT, SPAN 20'-3", RISE 8'-5"	LS	ALL REQ'D.
602(4B)	ALUMINUM BOX CULVERT, SPAN 13'-3", RISE 6'-9"	LS	ALL REQ'D.
603(17-18)	18 INCH PIPE	LF	<del>160</del> 154
603(17-24)	24 INCH PIPE	LF	<del>422</del> 478
603(17-36)	36 INCH PIPE	LF	72
603(17-48)	48 INCH PIPE	LF	<del>278</del> 288
603(17-54)	54 INCH PIPE	LF	<del>100</del> 105
603(25)	ROAD DRAIN	SY	50.0
603(26)	SPRING INTERCEPTOR	SY	50.0
604(5)	INLET, TYPE A	EACH	1.0
606(1)	W-BEAM GUARDRAIL	LF	<del>2450</del> 2662.5
606(5)	REMOVAL AND DISPOSAL OF GUARDRAIL	LF	<del>3442</del> 3475
606(11)	EXTRUDER TERMINAL (ET-2000)	EACH	10
609(7)	RAISED ISLAND	LS	ALL REQ'D
611(1A)	RIPRAP, CLASS I	CY	<del>250</del> 386
611(1B)	RIPRAP, CLASS III	CY	40000
613(3)	MARKER POST	EACH	<del>100</del> 74
614(1)	SURVEY MONUMENTS	EACH	26.35
614(2)	MONUMENT CASES	EACH	26

# ESTIMATE OF QUANTITIES

ITEM NO	PAY ITEM	UNIT	QUANT.
615(1)	STANDARD SIGNS	SF	<del>24125</del> 239.94
615(2)	REMOVE & RELOCATE EXISTING SIGNS	EACH	1
618(1)	SEEDING	ACRE	25.39
618(3)	WATER FOR SEEDING	M. GAL	130.0
618(5)	FERTILIZATION	ACRE	19.21
618(6)	WETLANDS SEEDING	ACRE	15
618(7)	WILDFLOWER SEEDING	ACRE	3.8.5
631(2)	GEOTEXTILE, REINFORCEMENT	SY	<del>33500</del> 33000
639(1)	RESIDENCE DRIVEWAYS	EACH	13.21
640(1)	MOBILIZATION AND DEMOBILIZATION	LS	ALL REQ'D.
641(1)	EROSION AND POLLUTION CONTROL ADMINISTRATION	LS	ALL REQ'D.
641(2)	EROSION AND POLLUTION CONTROL	CS	ALL REQ'D.
641(3)	SILT FENCE	LF	<del>4200</del> 16,000
641(4)	TEMPORARY CHECK DAM	EACH	4.16
641(5)	SETTLING POOL	EACH	4.1
641(6)	PRELIMINARY SEEDING	ACRE	25.0
641(7)	SEDIMENT FILTER	EACH	190.0
642(1)	CONSTRUCTION SURVEYING	LS	ALL REQ'D.
642(2)	THREE PERSON SURVEY PARTY	HOURLY	50.35
642(5)	LAND BOUNDRY MONUMENT	EACH	2.1
643(2)	TRAFFIC MAINTENANCE	LS	ALL REQ'D.
643(3)	PERMANENT CONSTRUCTION SIGNS	LS	ALL REQ'D.
643(23)	TRAFFIC PRICE ADJUSTMENT	CS	ALL REQ'D.
643(27)	TRAFFIC CONTROL DEVICES	CS	ALL REQ'D.
643(29)	NEWSPAPER ADVERTISEMENTS	CS	ALL REQ'D.
644(2)	FIELD LABORATORY	LS	ALL REQ'D.
644(6)	ENGINEERING TRANSPORTATION	LS	ALL REQ'D.
645(1)	TRAINING PROGRAM, 2- TRAINEES/APPRENTICES	LABOR/HOUR	1000
646(1)	37 MILE CHANNEL CONSTRUCTION	STATION	78.74
646(2)	CHANNEL BANK TREATMENT, TYPE "A"	EACH	17.10
646(3)	CHANNEL BANK TREATMENT, TYPE "B"	STATION	3.5 2.2
646(4)	CHANNEL BANK TREATMENT "C"	EACH	19.22
646(5)	WETLANDS CHANNEL BANK	STATION	183.164
646(6)	CHANNEL TREATMENT LOG WITH ROOT WAD	EACH	150.244
646(7)	CHANNEL TREATMENT LOG WITHOUT ROOT WAD	EACH	150.265
646(8)	WILLOW CUTTINGS	EACH	<del>13376</del> 7000
646(9)	BRUSH CLUMPS	EACH	2000.32
646(10)	RUN/RIFLE BED MATERIAL	CY	7188.0
646(11)	SPAWNING BED MATERIAL	CY	<del>2507</del> 3982
646(12)	WETLANDS SOIL	CY	<del>2133</del> 28600
646(13)	WETLANDS ENHANCEMENT	CS	ALL REQ'D
647(1)	WIDE PAD DOZER, 80 H.P. MINIMUM	HOURLY	100.0
660(11)	LOOP COUNTER DETECTOR	EACH	1.2
670(1)	PAINTED TRAFFIC MARKINGS	LS	ALL REQ'D.
670(8)	RECESSED PAVEMENT MARKERS	EACH	476.509
680(1)	UTILITY CONDUIT INSTALLATION	LF	900.070
401(4)	Contractor furnished Profionometer	L.S.	All Req'd.
620(1)	Topsoil	L.S.	All Req'd.
680(2)	Utility Repair Reimbursement	L.S.	All Req'd.
401(10)	Kiewit Patch	L.S.	All Req'd.
615(9)	Modified Sign Posts	L.S.	All Req'd.
630(1)	Snow Pile Markers	EACH	125
615(8)	Interpretive Sign Mounts	L.S.	All Req'd.
610(1A)	Painted Traffic Markings Needs	L.S.	All Req'd.

# BASIS OF ESTIMATE

ITEM	ITEM NO.	ESTIMATING FACTOR
CRUSHED AGGREGATE BASE COURSE	301(1)	2.18 TONS/CUBIC YARD
SUBBASE GRADING "C"	304(2)	2.18 TONS/CUBIC YARD
ASPHALT TREATED BASE COURSE	306(1)	123 LBS./SQ. YD./ IN. OF DEPTH, SEE NOTE 1
ASPHALT CONCRETE, TYPE II, CLASS B	401(1)	123 LBS./SQ. YD./ IN. OF DEPTH
ASPHALT CEMENT PG 58-28	401(2)	5.5% OF ITEM NO. 401(1). SEE NOTE 1.
STE-1 ASPHALT FOR TACK COAT	402(2)	0.10 GAL PER SQ. YD.; 240 GAL./TON @ 60' F.

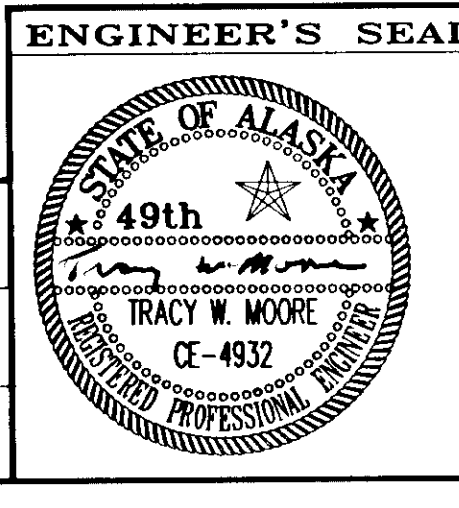
NOTE 1: ASPHALT CEMENT, PG 58-28 FOR ITEM 306(1) IS INCIDENTAL TO ITEM 306(1). ASSUME AN ESTIMATING FACTOR OF 4.0% OF ITEM 306(1).

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STATE OF ALASKA  
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 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 ESTIMATE OF QUANTITIES

DESIGNED BY:	C. HAKARI	71874
DRAWN BY:	L. ROBERTSON	DATE: 1999
CHECKED BY:	T.W. MOORE	SHEET C1



NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS





### CULVERT SUMMARY

PIPE #	STATION	OFFSET	SIZE					OTHER	APPROX. INLET INVERT	APPROX. OUTLET INVERT	REMARKS
			18"	24"	30"	36"	48"				
1	"B" 10+45	℄		68'						APPROACH ROAD "B"	
2	652+50	℄		74'	49'						
3	691+46	℄					78'	86'		1' BURIAL, STREAMBED MATERIAL, FISH PIPE	
4	705+91.00	℄					76.5'	490.28	490.00	20'-3" X 8'-5" ALUMINUM BOX CULVERT WITH ALUMINUM HEADWALLS AND WINGWALLS 1.0' BURIAL, CLASS I RIPRAP AND STREAM FILL-FISH PIPE 1' BURIAL, STREAMBED MATERIAL, FISH PIPE.	
5	790+16	℄							200'		
6	792+77.15	℄					126'	558.65	558.00	14'-3" X 9'-7" ALUMINUM STRUCTURAL PLATE PIPE ARCH WITH TYPE I HEADWALLS AND WEIR STRUCTURE, 2' BURIAL, CLASS I RIPRAP & STREAMFILL - FISH PIPE	
	798+58	LT	57'								
7	831+81 833+00	℄					100'	597.0	596.55	54" PIPE - 1.5' BURIAL CLASS I RIPRAP AND STREAMBED MATERIAL - FISH PIPE	
8	842+00	℄		76'							
9	871+62.87	℄					103.5'	662.59	661.53	9' STRUCTURAL PLATE PIPE WITH TYPE I HEADWALLS BURY INVERT 2.0', CLASS I RIPRAP AND STREAMBED MATERIAL-FISH PIPE	
	872+60	℄		120'							
10	882+00	℄				72'					
11	888+38.45	℄					58.5'	665.24	663.89	13'-3" X 6'-9" ALUMINUM BOX CULVERT WITH ALUMINUM HEADWALLS AND WINGWALLS-FISH PIPE, BURY INVERT 1.0' AND STREAMBED MATERIAL DITCH TO DRAIN	
12	890+17	40' LT.	34'								
13	911+00	30' LT.	40'								
14	918+20	40' LT.	40'								
15	925+58	40' LT.	40' 51"								
16	926+00	℄		60'							
17	946+74	℄					99'	764.10	756.38	8'-1" X 6'-1" X 100' ALUMINUM STRUCTURAL PLATE PIPE ARCH WITH TYPE I HEADWALLS 2' BURIALS AND BAFFLES-FISH PIPE	
18	953+00	℄		86'	102'						
19	962+97	℄		52'							
	873+00	℄								24" Plastic fish Pipe	

CULVERT REMOVAL SUMMARY		
STATION	LENGTH	REMARKS
643+84	56'	
691+48	31'	
706+48	61'	THESE PIPES ARE LOCATED ON THE PORTION OF THE EXISTING HIGHWAY THAT IS TO BE ABANDONED CONSTRUCT TRAVERSABLE CROSSING AS SHOWN IN THE MISC. DETAILS.
727+26	139'	
731+32	88'	
734+00	58'	
738+22	72'	
741+68	83'	
749+69	54'	
754+15	46'	
761+56	52'	
768+55	40'	
775+00	122'	
789+87	128'	
832+96	55'	
871+35	58'	
882+00	52'	
888+31	108'	
946+84	68'	
954+11	54'	
962+97	52'	

### RESIDENTIAL DRIVEWAY SUMMARY

STATION	OFFSET		RADIUS		WIDTH	REMARKS
	LT	RT	LT	RT		
636+71	X		20'	20'	14'	SEE "A" LINE DETAIL
647+88	X		20'	20'	14'	
650+40	X		20'	20'	14'	
798+58		X	20'	20'	16"	SEE "C" LINE DETAIL
865+73	X		20'	20'	14'	SEE "D" LINE DETAIL
886+82		X	20'	20'	14'	
890+17	X		20'	20'	14'	SEE "E" LINE DETAIL
911+00	X		20'	12'	20'	SEE "F" LINE DETAIL
918+20	X		20'	20'	14'	SEE "G" LINE DETAIL
925+48	X		20'	20'	20'	SEE "H" LINE DETAIL
944+16	X		20'	20'	16'	
943+85		X	20'	20'	16'	
959+34	X		45'	20'	22'	SEE BORDER STATION DETAILS, SHEET F17
641+00	X					
642+00	X					
645+00	X					
646+00	X					
944+50		X				
707+50		X				END OLD ROADWAY
740+00	X					

### MAILBOX SUMMARY

STATION	OFFSET		REMARKS
	LT	RT	
637+50	X		
637+52	X		
918+20	X		
944+25	X		
640+00	X		
ADD ALLOWANCE FOR 2-ADDITIONAL MAILBOXES			
643+00	X		

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STATE OF ALASKA  
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AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

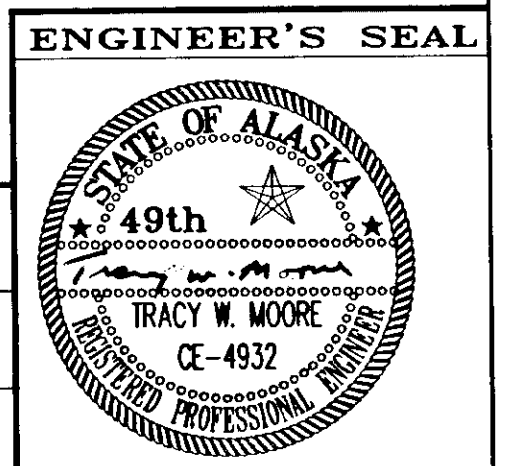
HAINES

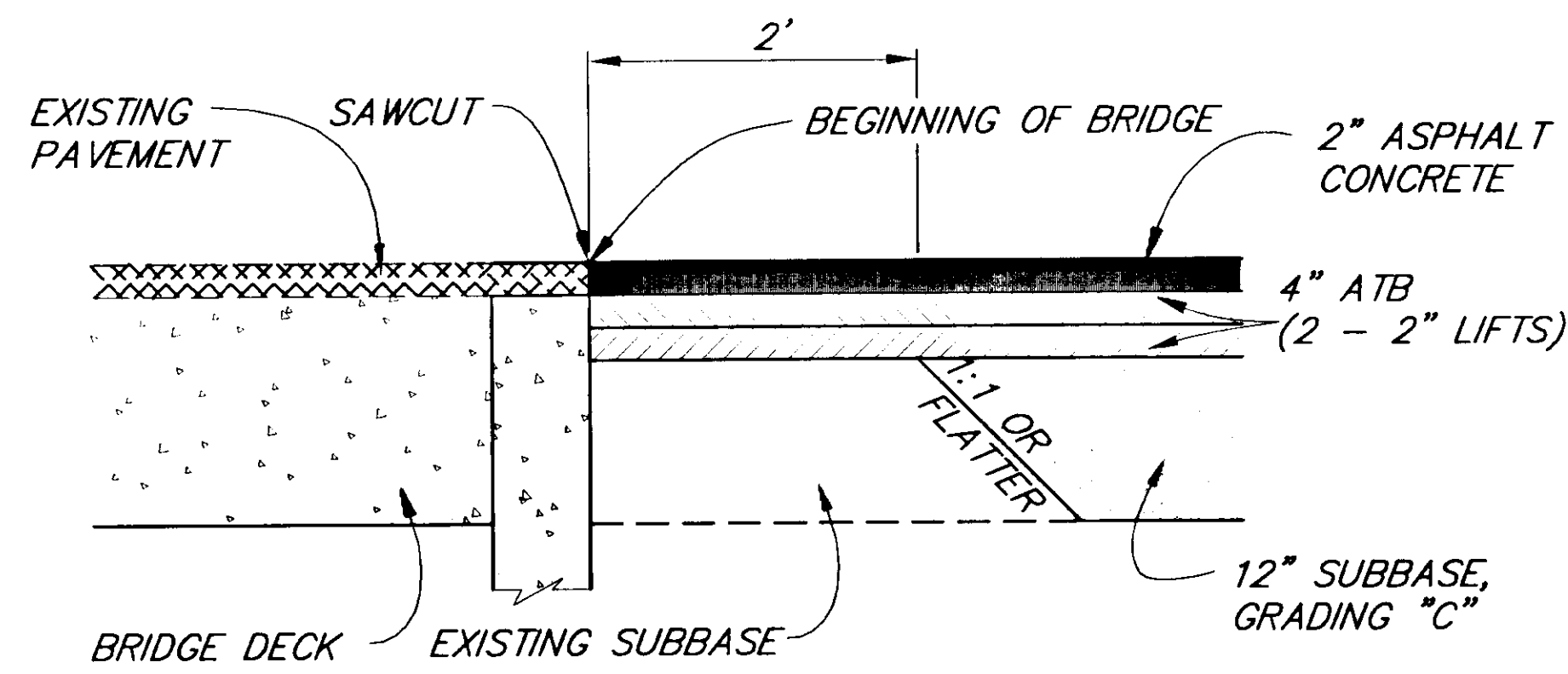
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874

### SUMMARY TABLES

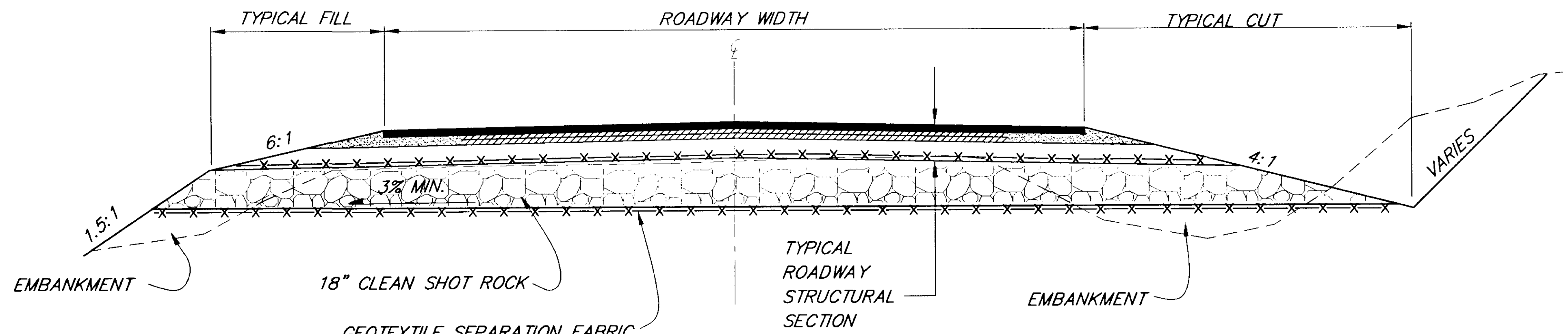
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

DESIGNED BY: C. HAKARI	PROJECT NO. 71874
DRAWN BY: L. ROBERTSON	DATE: 1999
CHECKED BY: T.W. MOORE	SHEET D2

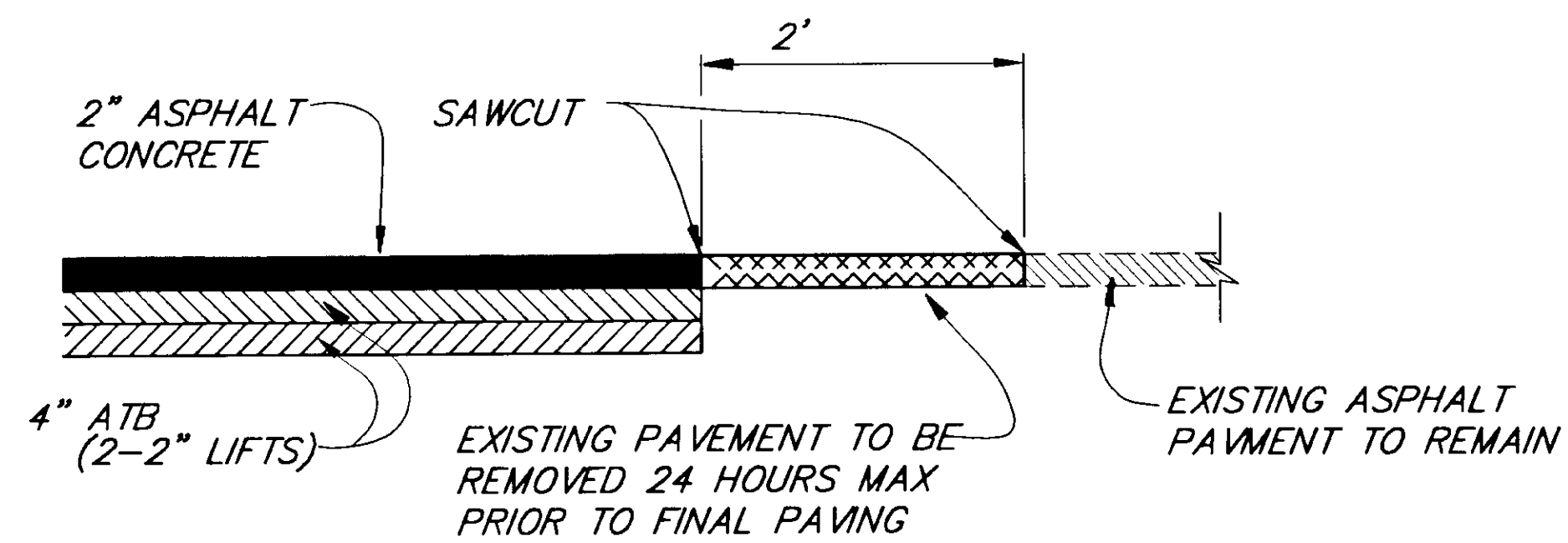




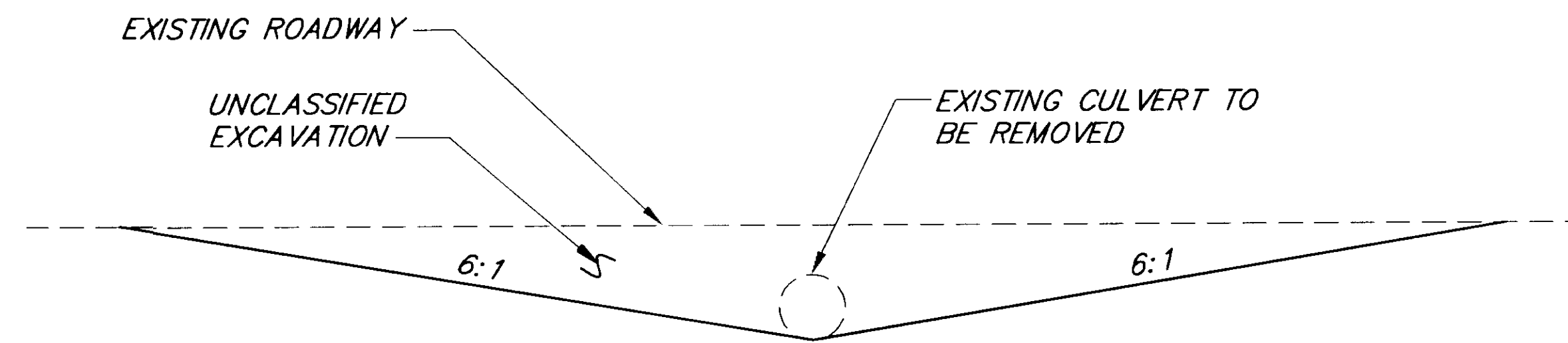
**PAVEMENT MATCH JOINT DETAIL**  
STA. 627+08.86



**ROAD DRAIN DETAIL**  
LOCATIONS TO BE DETERMINED BY THE ENGINEER

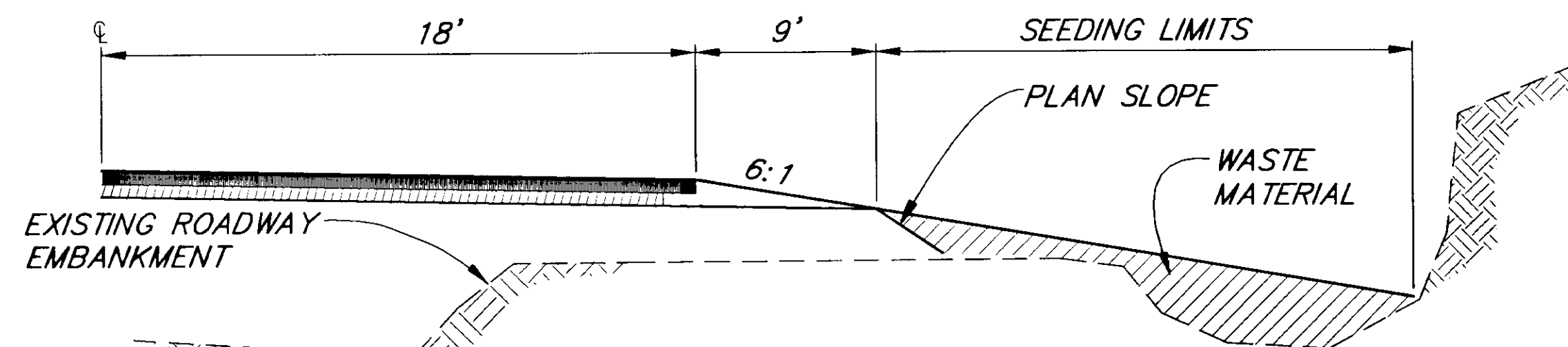


**PAVEMENT MATCH JOINT DETAIL**  
STA. "B" 11+89.39 STA. 964+41.00

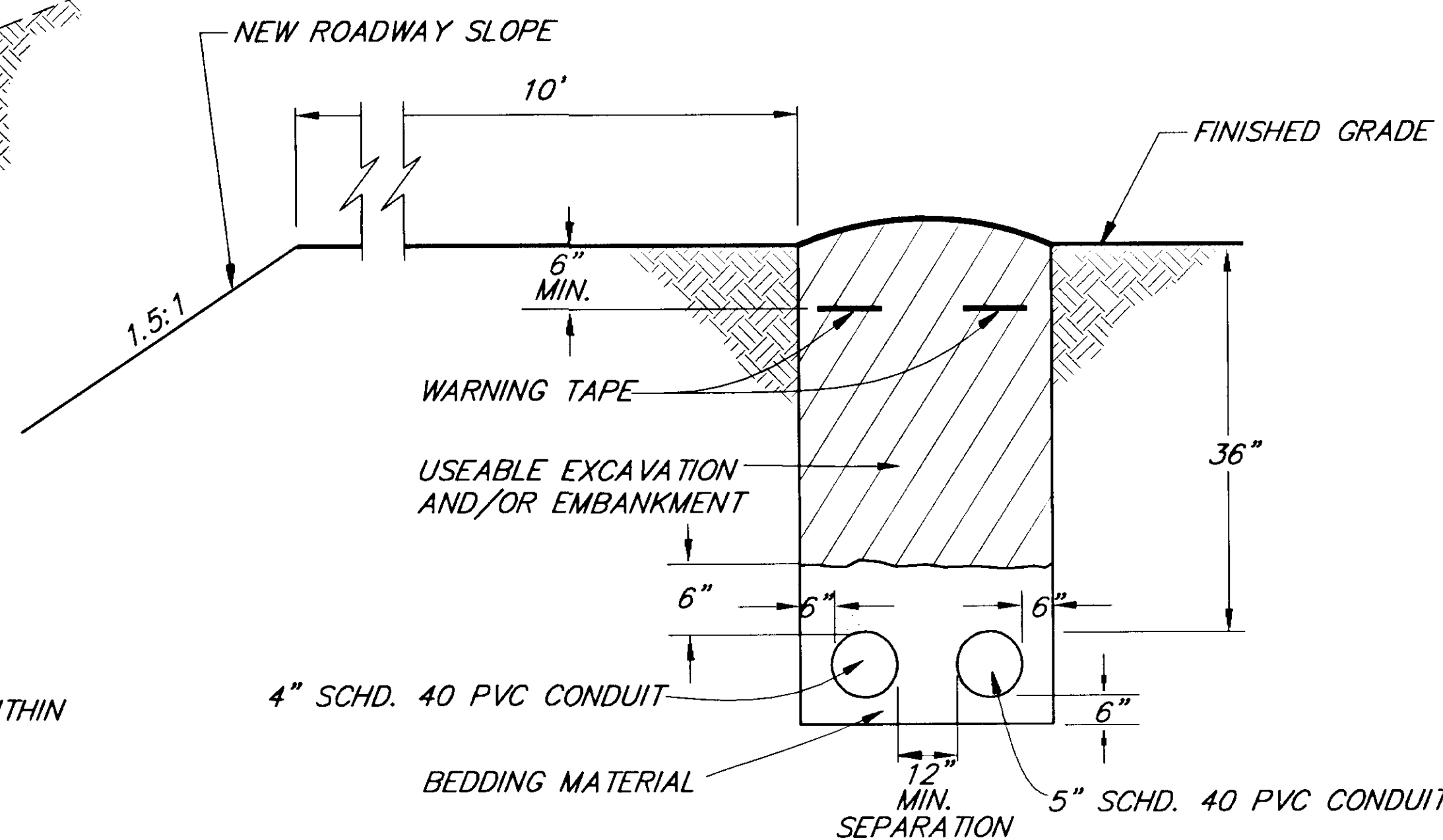


NOTE: EXCAVATE FULL WIDTH OF ROADWAY

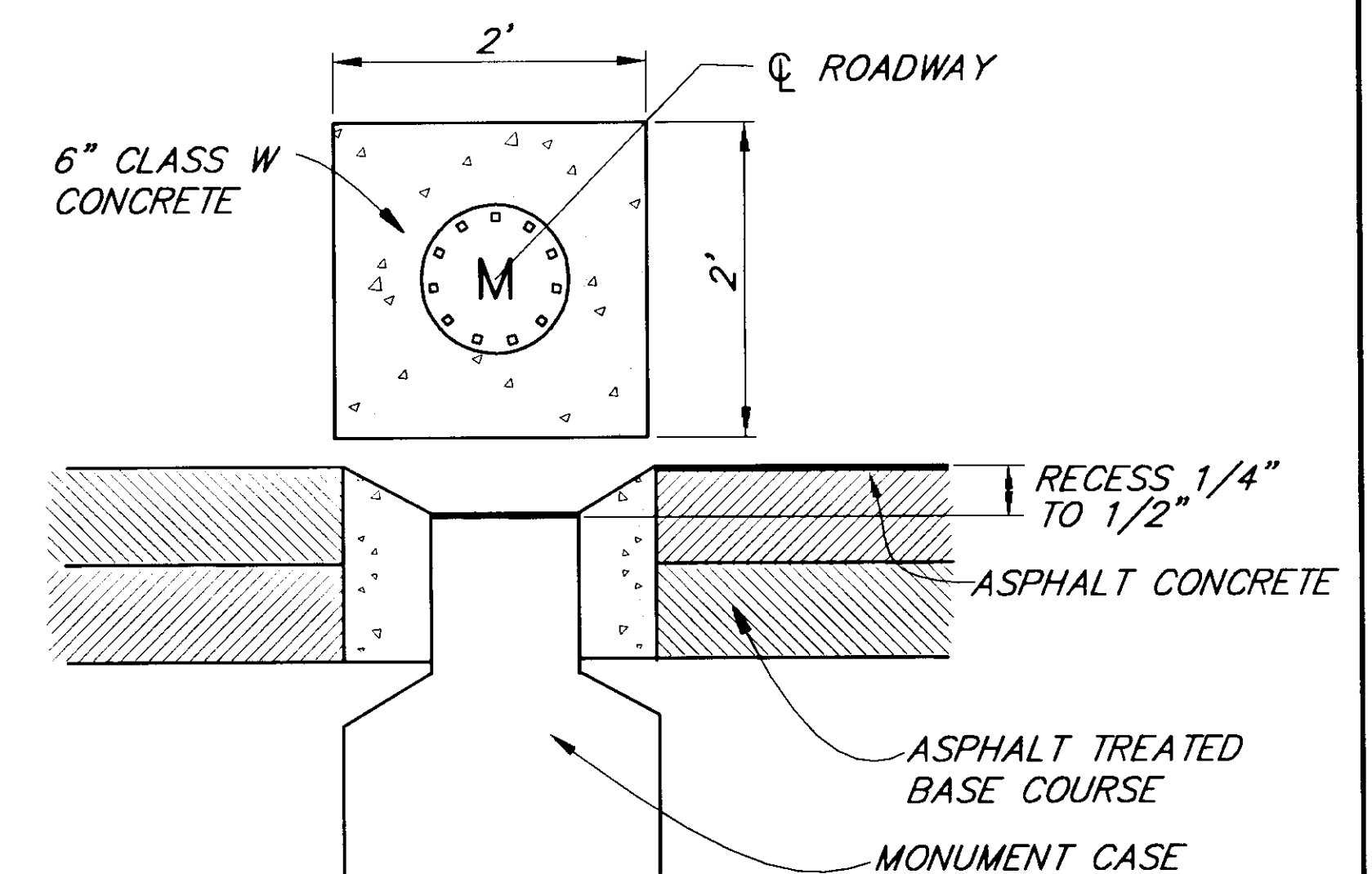
**TRAVERSABLE CROSSING AT CULVERT REMOVAL SITES**  
SEE CULVERT REMOVAL SUMMARY FOR LOCATIONS



**WASTE DISPOSAL DETAIL**



**TYP. TRENCH AND CONDUIT**  
**INSTALLATION DETAIL**



**MONUMENT ENCASEMENT DETAIL**

**NOTES:**

- OPTIONAL WASTE DISPOSAL AREAS SHALL BE BETWEEN STA. 640+00, RT. AND STA. 645+00, RT., AND BETWEEN STA. 827+00, RT. AND STA. 835+00, RT. OR AS APPROVED BY THE ENGINEER. WASTE MATERIALS MAY ALSO BE PLACED OVER SHOT ROCK FILLS WHEN APPROVED BY THE ENGINEER.
- WOODY DEBRIS NOT USED ON THE PROJECT SHALL BE BURNED IN APPROVED SITES WITHIN THE RIGHT-OF-WAY.
- TREES REMOVED ON EASEMENTS AND PERMIT AREAS OUTSIDE OF THE RIGHT OF WAY SHALL BE STOCKPILED FOR USE BY THE OWNER OF THE PROPERTY WHO GRANTED THE PERMIT/EASEMENT.
- ROADWAY OBLITERATION WILL NOT BE PAID FOR IN AREAS WHERE THE EXISTING ROADWAY IS COVERED WITH WASTE MATERIAL AS DETAILED ABOVE. EXISTING ASPHALT PAVEMENT SHALL BE REMOVED IN ACCORDANCE WITH SECTION 203 OF THE SPECIFICATIONS.

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

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HAINES

HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
FED. NO. SHAR-095-6(20) ~ PROJECT NO. 71874

MISCELLANEOUS DETAILS

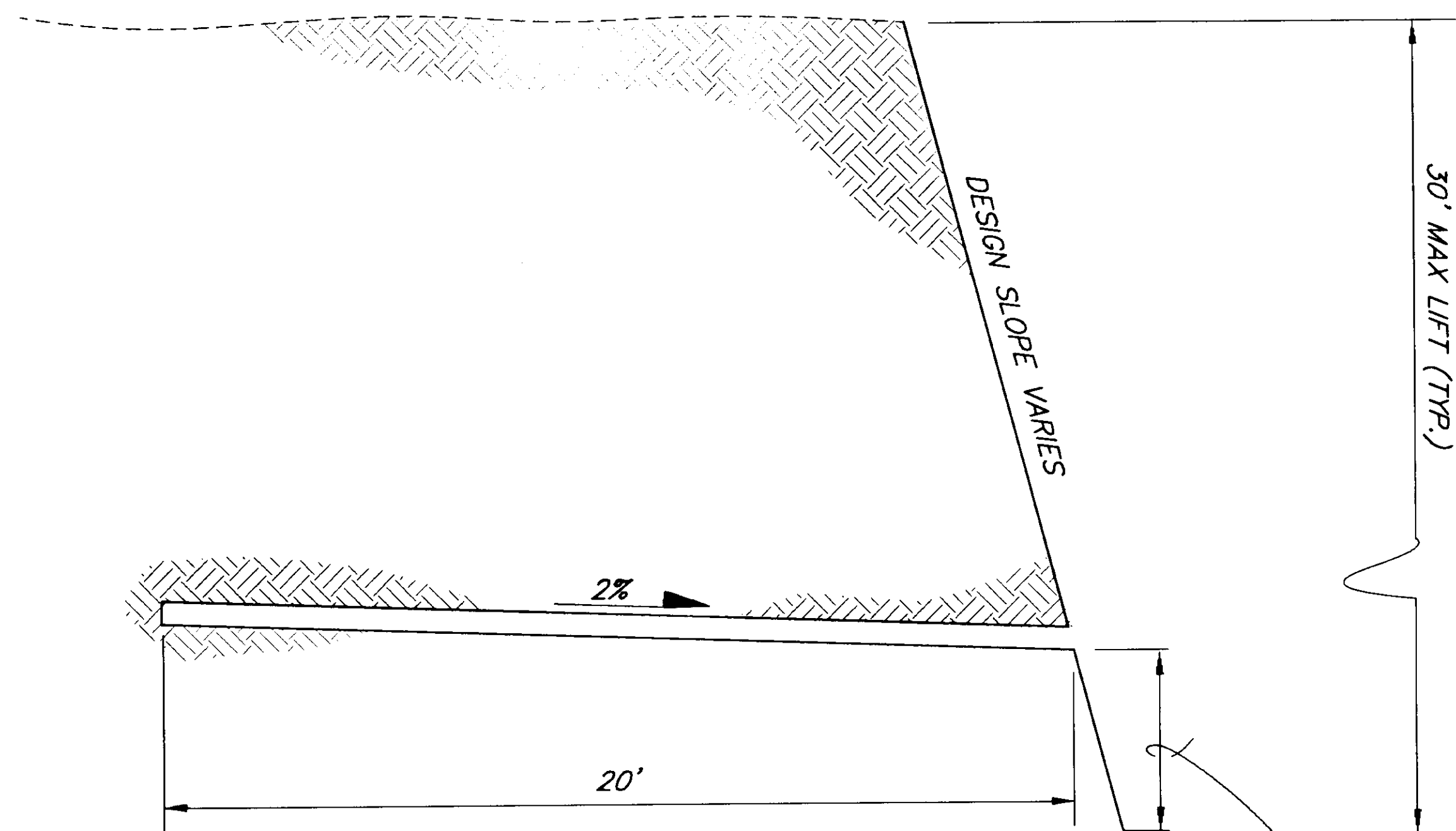
ALASKA

DESIGNED BY: C. HAKARI  
DRAWN BY: L. ROBERTSON  
CHECKED BY: T. MOORE

PROJECT NO. 71874  
DATE: 1999  
SHEET E1

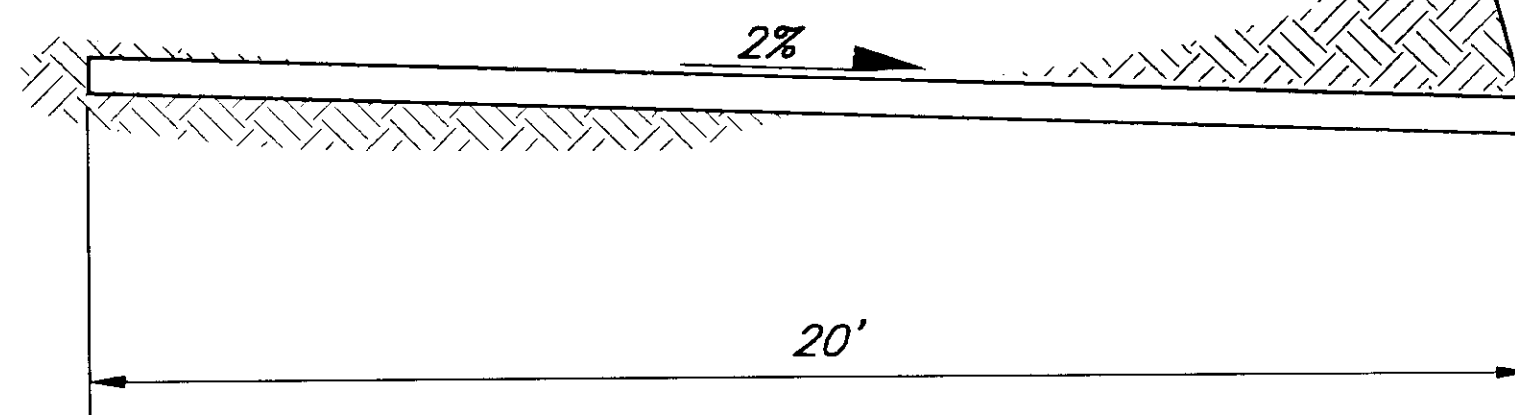
ENGINEER'S SEAL





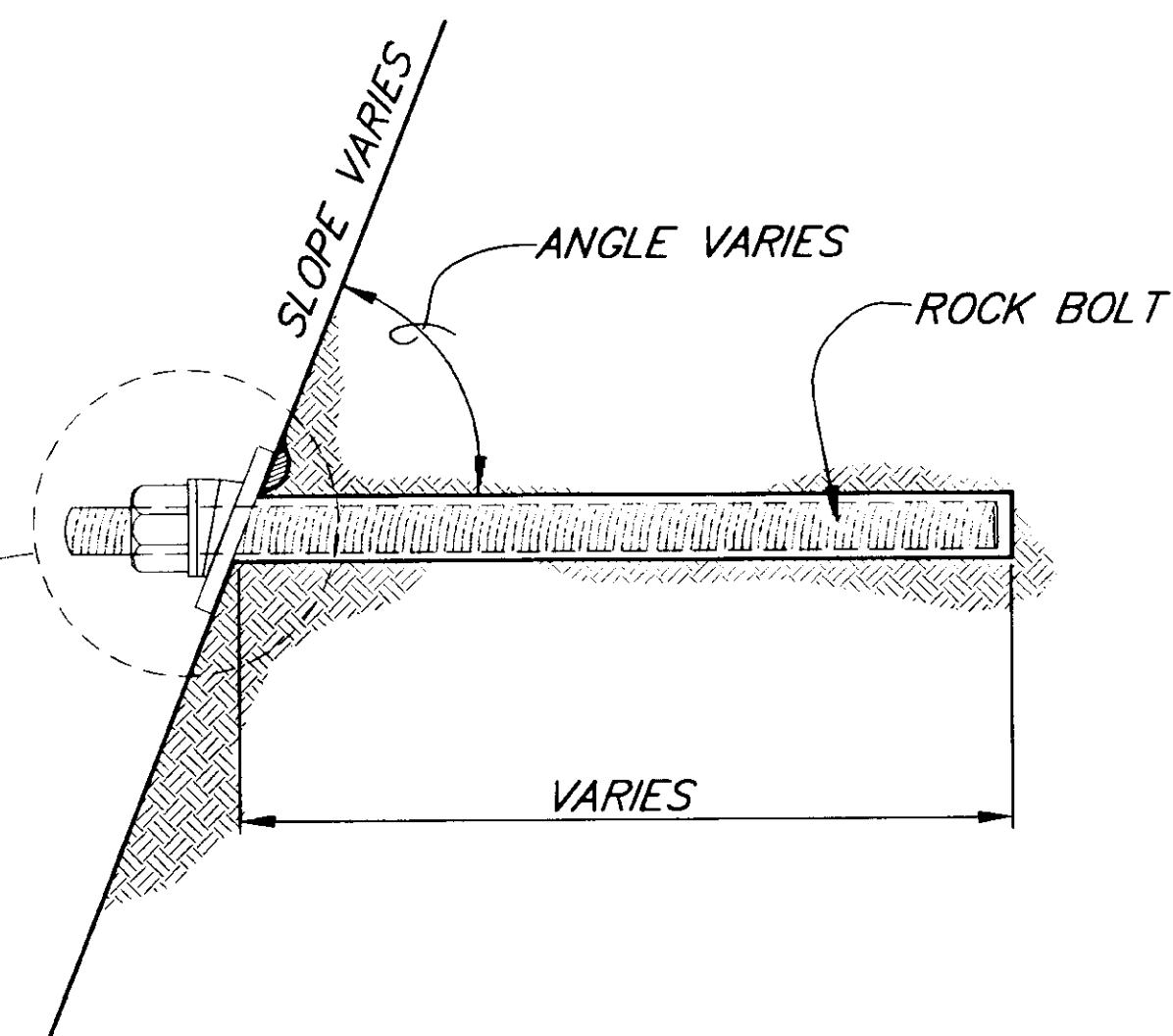
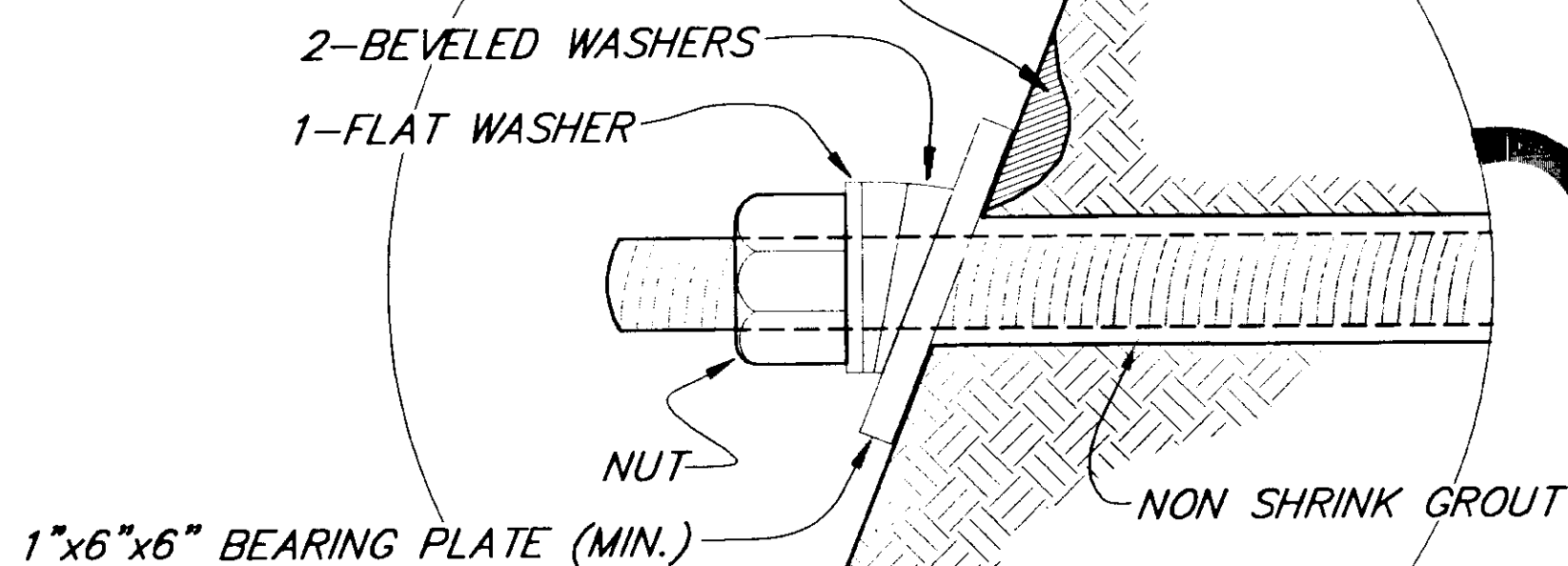
DRILL RIG OFFSET PER THE SPECIFICATIONS

AS CLOSE TO THE BOTTOM OF LIFT/DITCH AS THE DRILL RIG ALLOWS DRILL ON HORIZONTAL SPACING AS SPECIFIED BY THE ENGINEER



**ROCK SLOPE DRAIN HOLE DETAIL**

ENGINEER APPROVED BEARING PAD AS REQUIRED TO ENSURE UNIFORM BEARING PLATE CONTACT

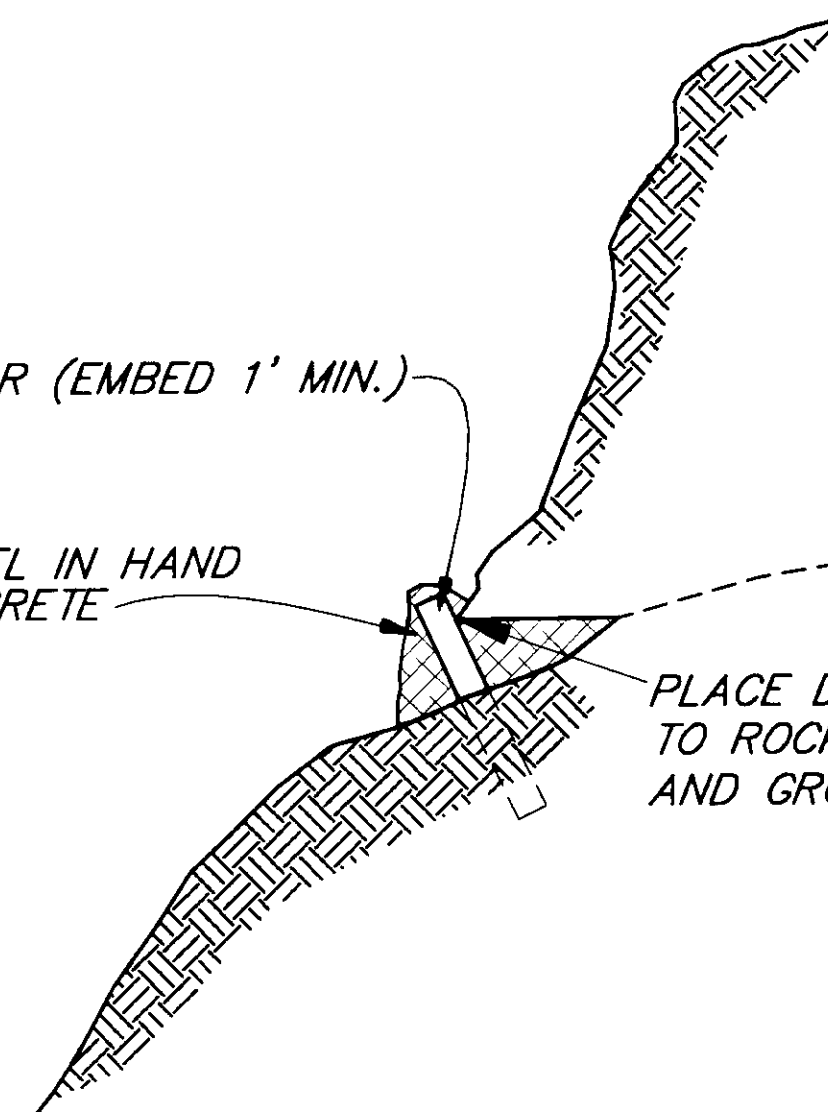


**ROCK BOLT DETAIL**

#11 RE-BAR (EMBED 1' MIN.)

ENCASE DOWEL IN HAND PACKED CONCRETE

PLACE DOWEL AS CLOSE TO ROCK FACE AS POSSIBLE AND GROUT INTO DRILLED HOLE.



**ROCK DOWEL TYPICAL**

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

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 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. NH-F-095-6-(20) 71874

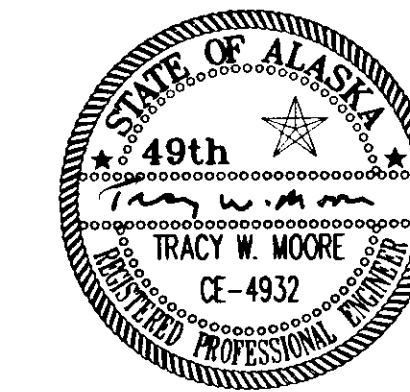
**SLOPE STABILIZATION DETAILS**

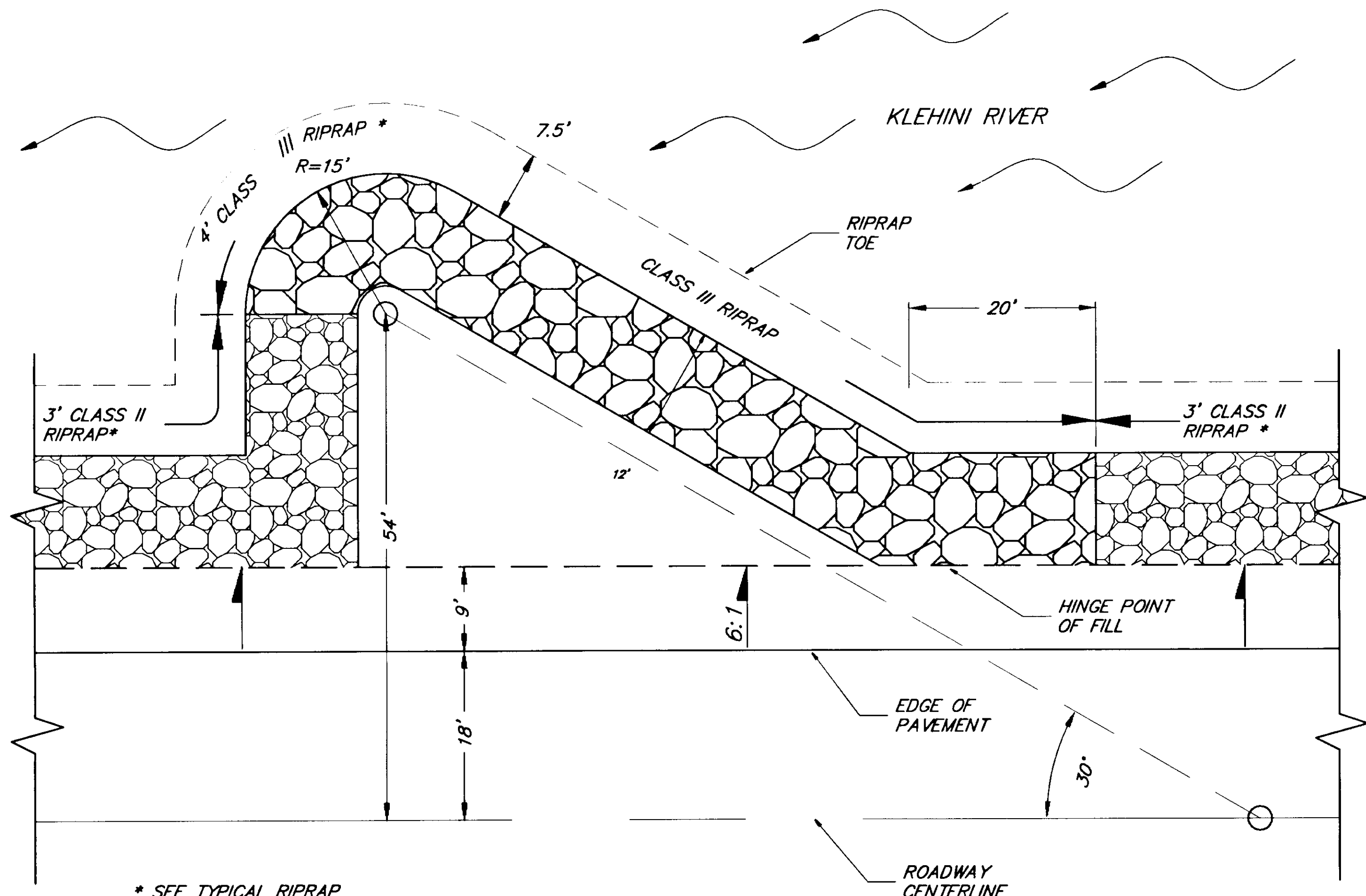
ALASKA

DESIGNED BY: C. HAKARI  
 DRAWN BY: L. ROBERTSON  
 CHECKED BY: T. MOORE

PROJECT NO. 71874  
 DATE: 1999  
 SHEET E2

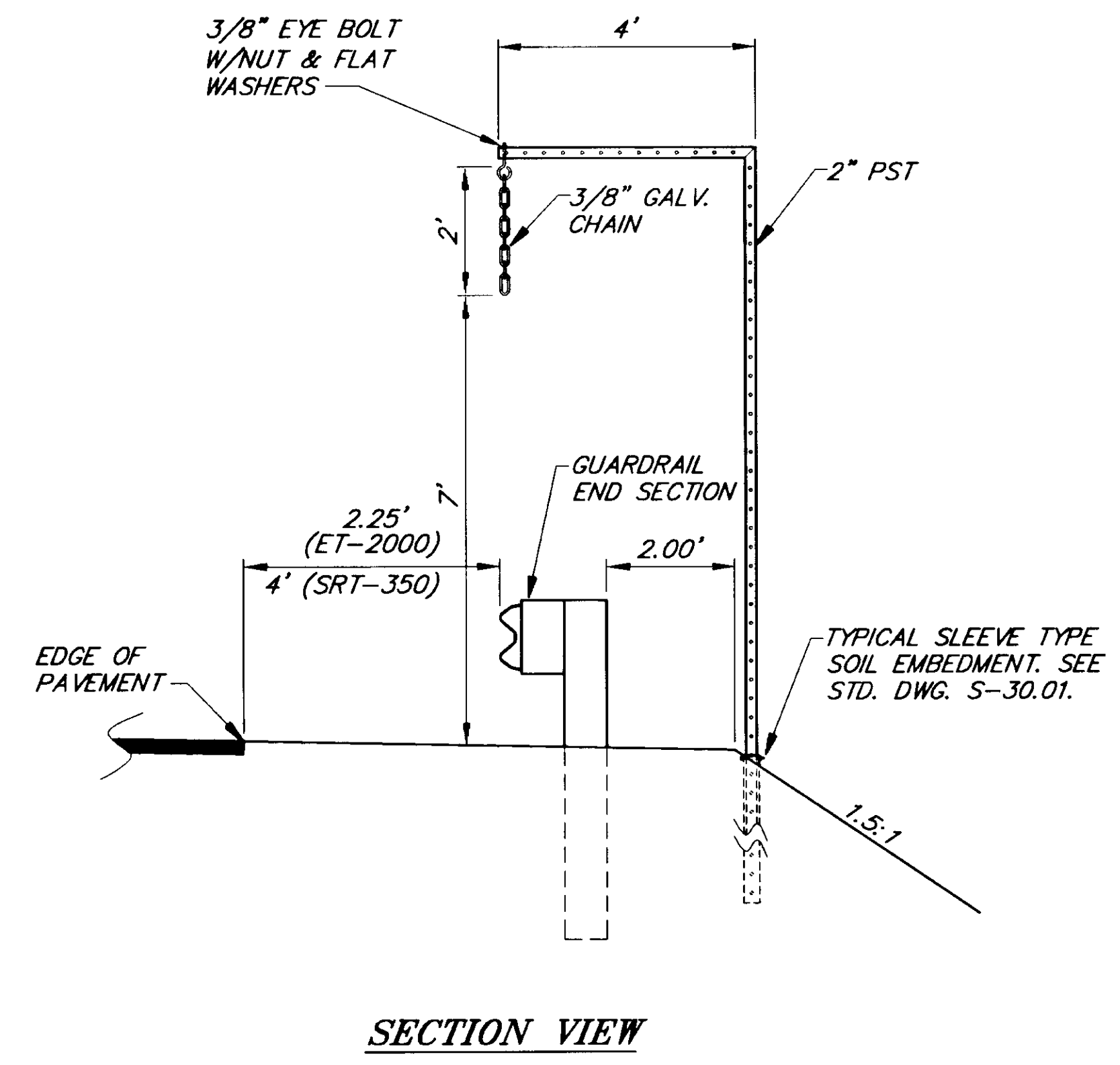
ENGINEER'S SEAL



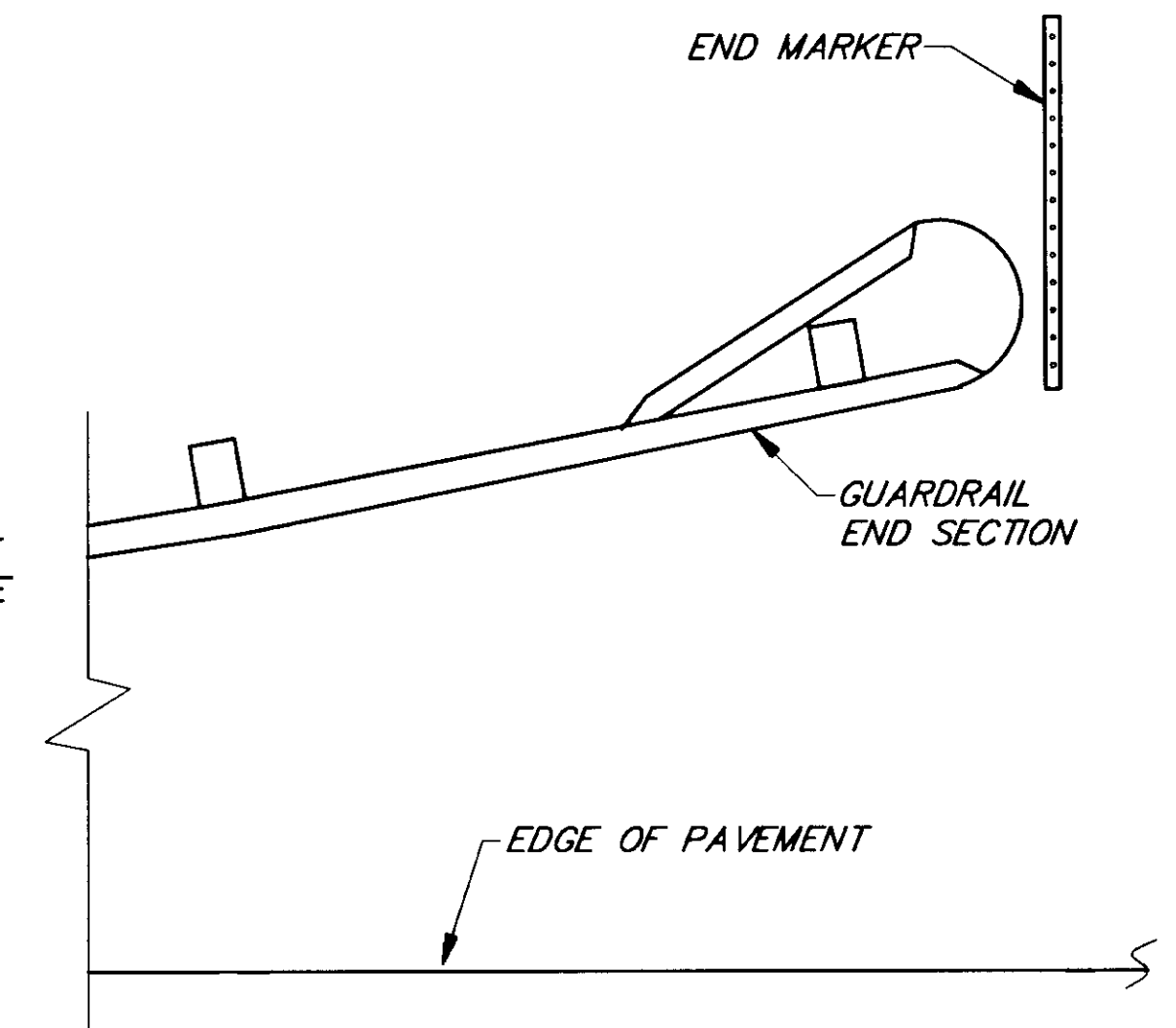


**PLAN VIEW  
DIVERSION DIKE**

\* SEE TYPICAL RIPRAP SECTION

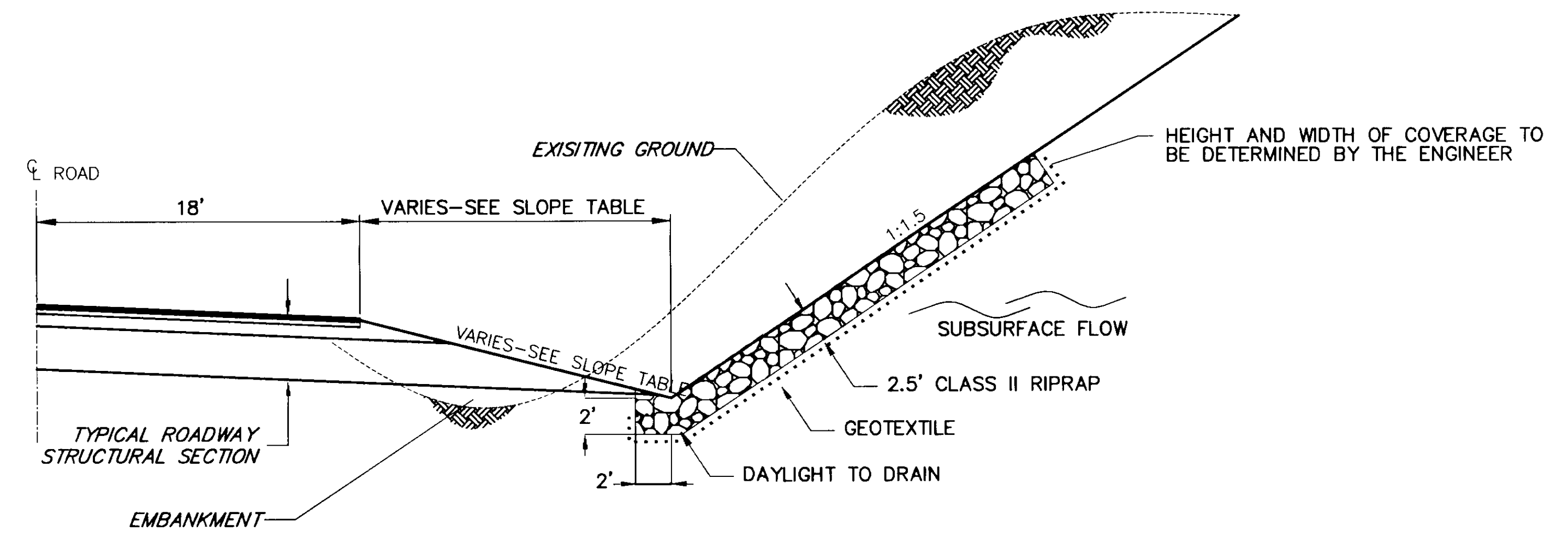


**SECTION VIEW**



**PLAN VIEW**

**GUARDRAIL END MARKER**



**SUBSURFACE FLOW SPRING INTERCEPTOR  
AND  
SLOPE STABILIZATION DETAIL**

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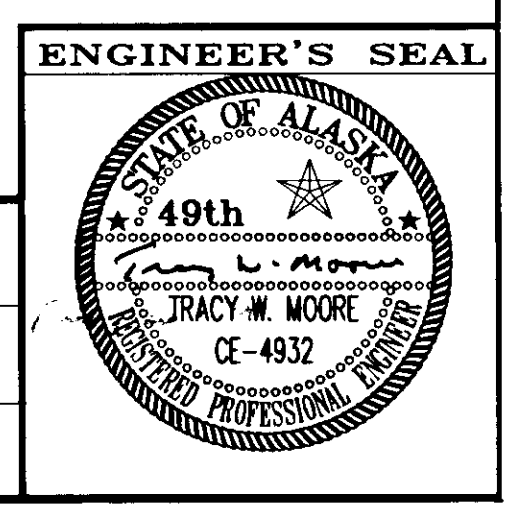
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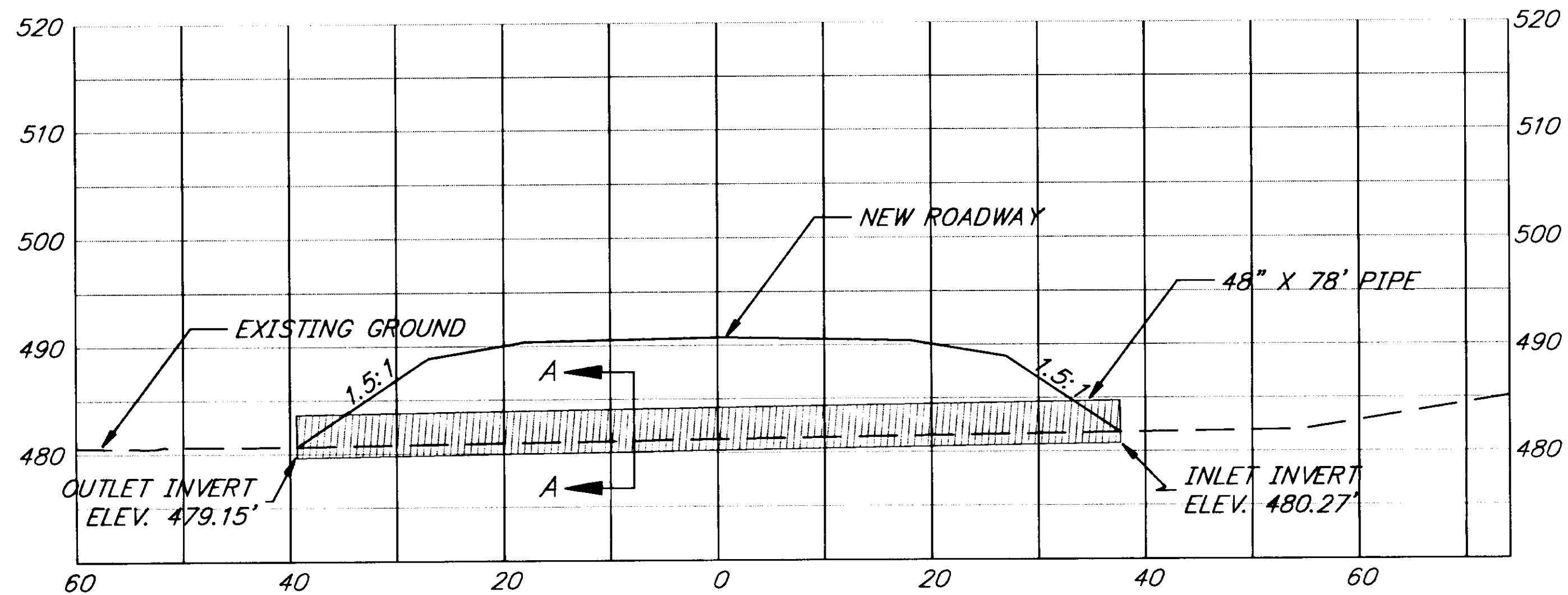
HAINES  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
ALASKA  
**MISC. DETAILS**

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

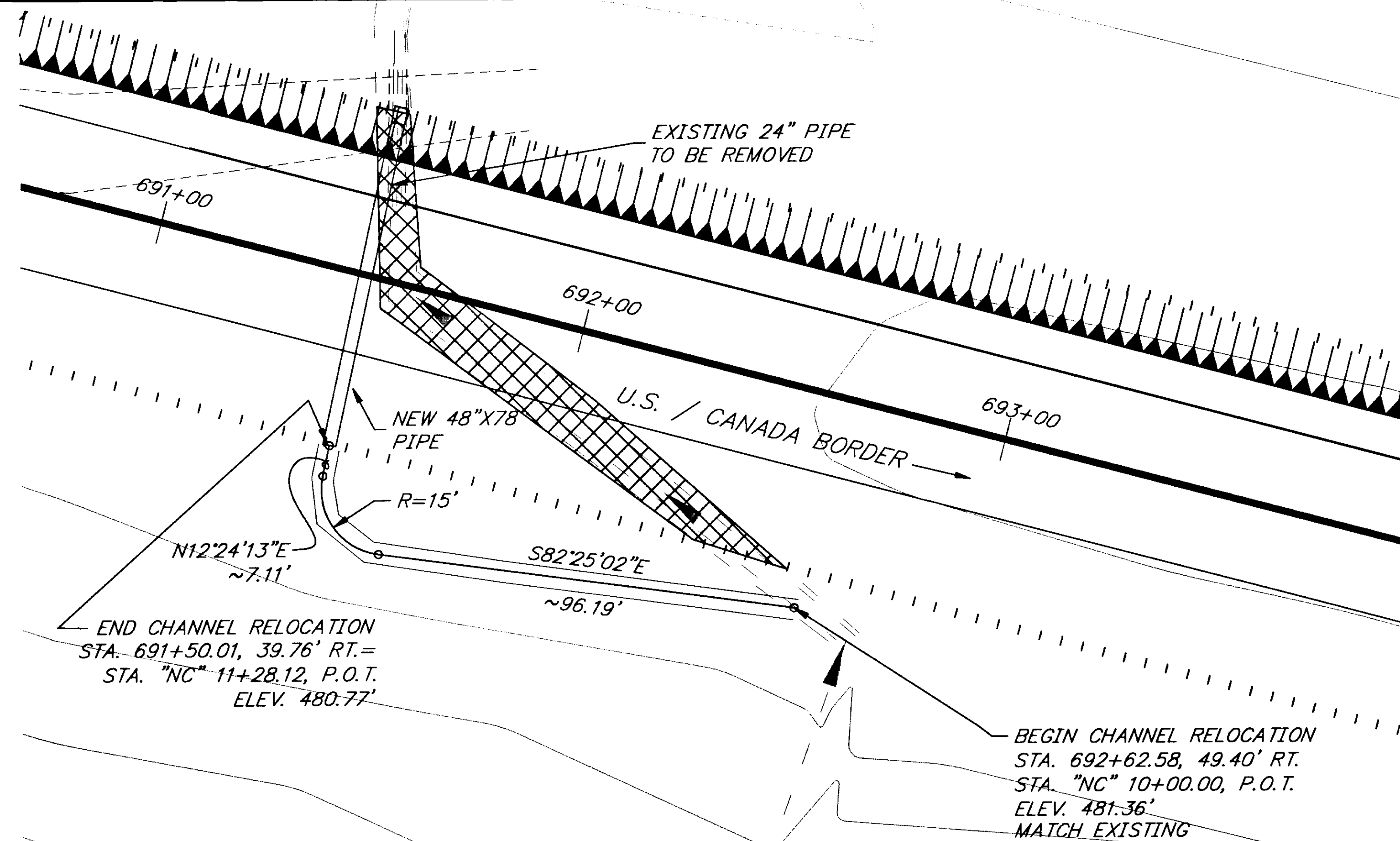
DESIGNED BY: C. HAKARI  
DRAWN BY: L. ROBERTSON  
CHECKED BY: T. MOORE

PROJECT NO. 71874  
DATE: 1999  
SHEET E3

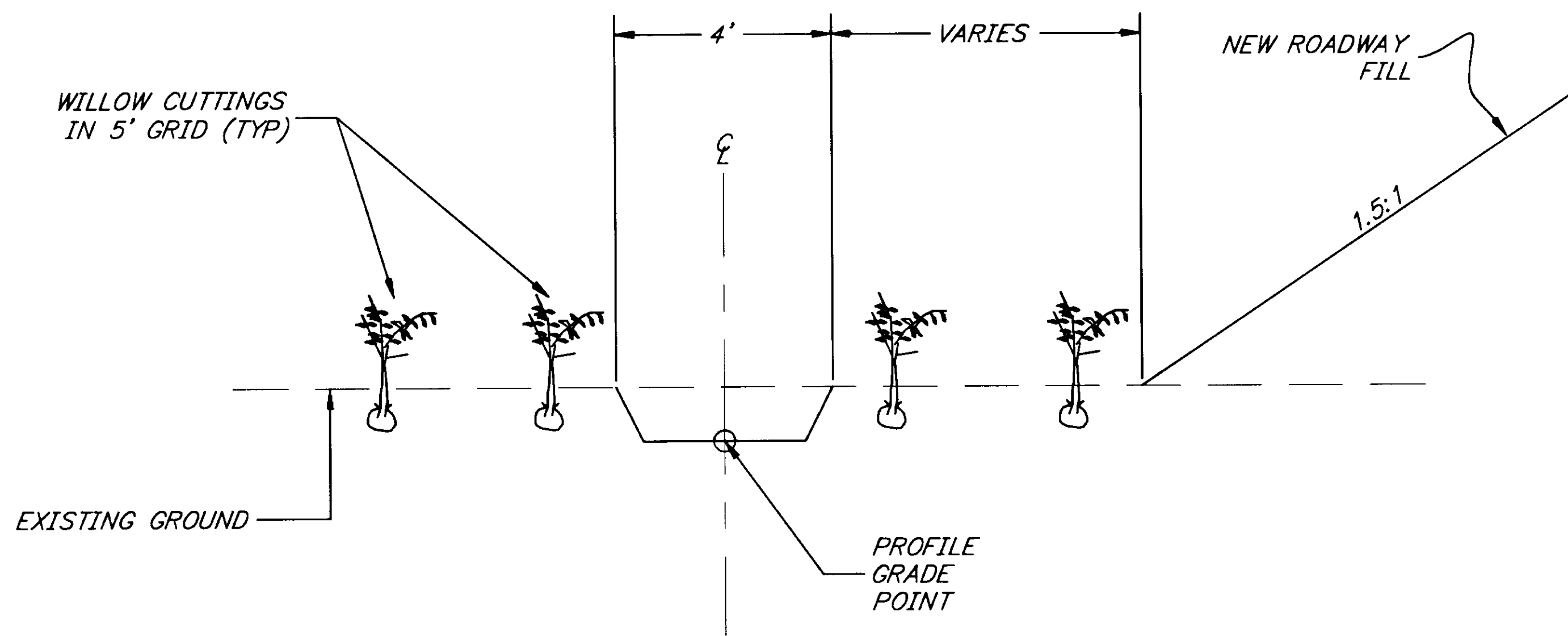




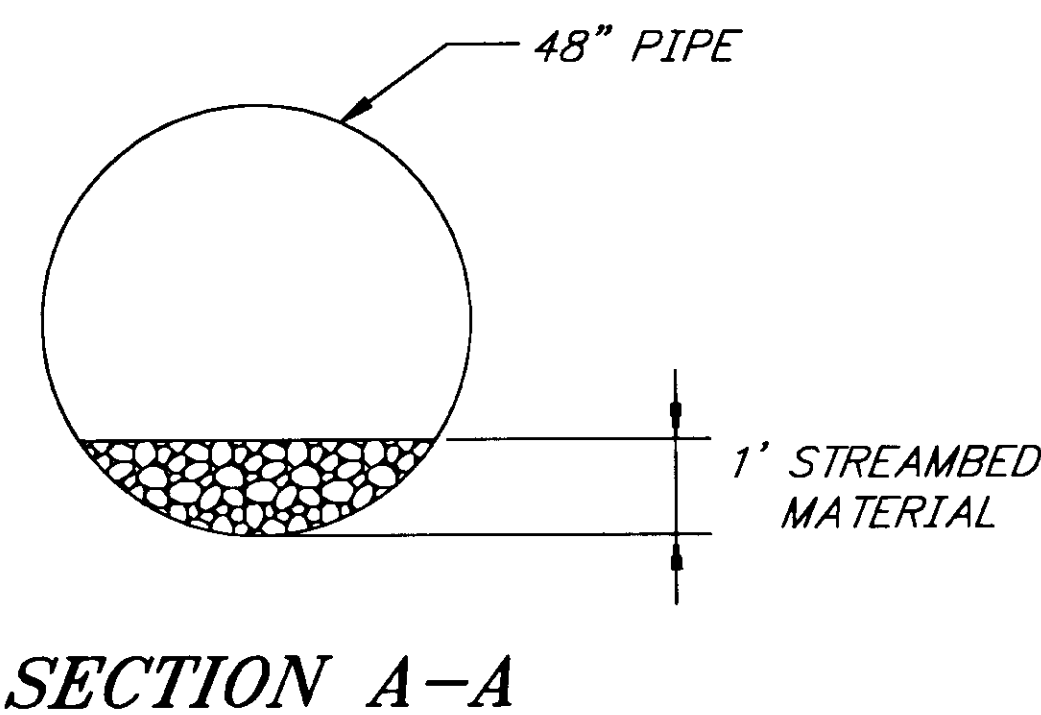
**PIPE INSTALLATION AND CHANNEL  
RELOCATION PROFILE STA. 691+46**



**PIPE INSTALLATION AND CHANNEL  
RELOCATION DETAILS STA. 691+46**



**STREAM CHANNEL RELOCATION TYPICAL  
LOOKING DOWNSTREAM**



**HYDROLOGIC AND  
HYDRAULIC SUMMARY**

DRAINAGE AREA	0.30 SQ. MILES
RECURRANCE INTERVAL	50 YEARS 100 YEARS
EXCEEDANCE PROBABILITY	2% 1%
DESIGN DISCHARGE	59 CFS 67 CFS
DESIGN HIGH WATER	EL. 486.3 FT. EL. 487.6 FT.

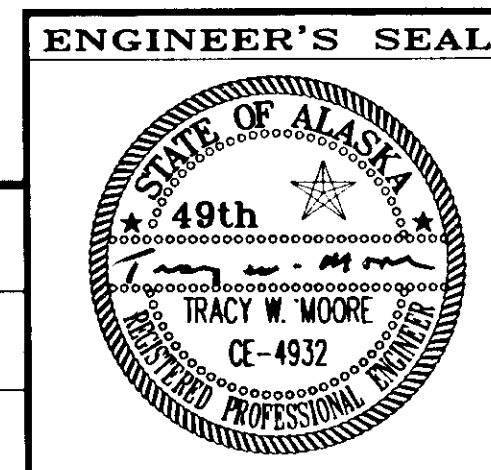
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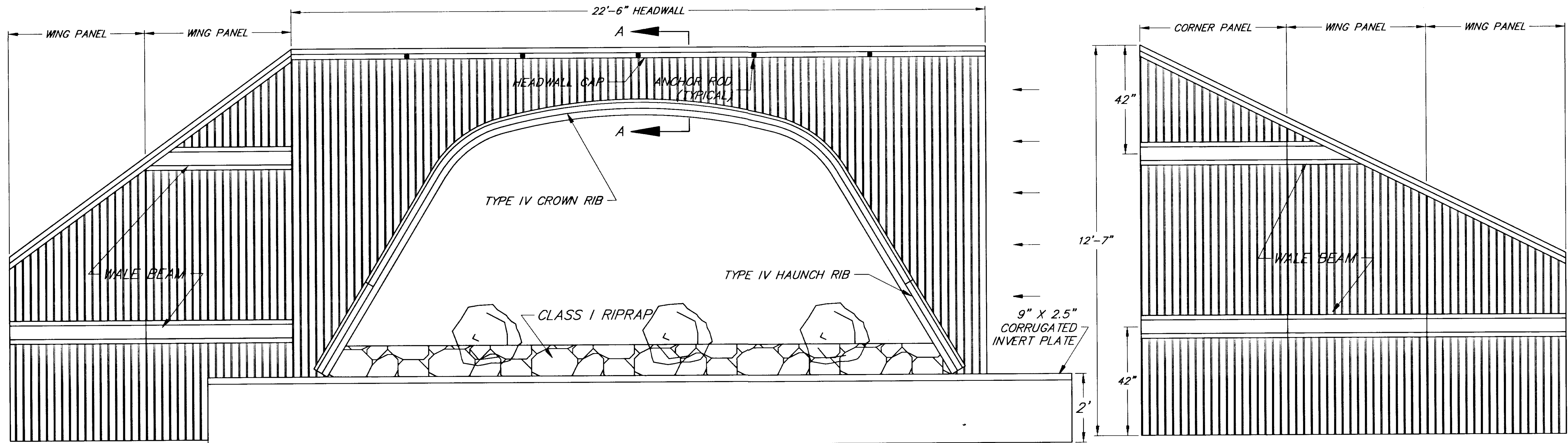
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HAINES HAINES HIGHWAY ALASKA  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-8(20) ~ 71874  
**CULVERT REPLACEMENT DETAILS STA. 691+46**

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T.W. MOORE	SHEET	E4

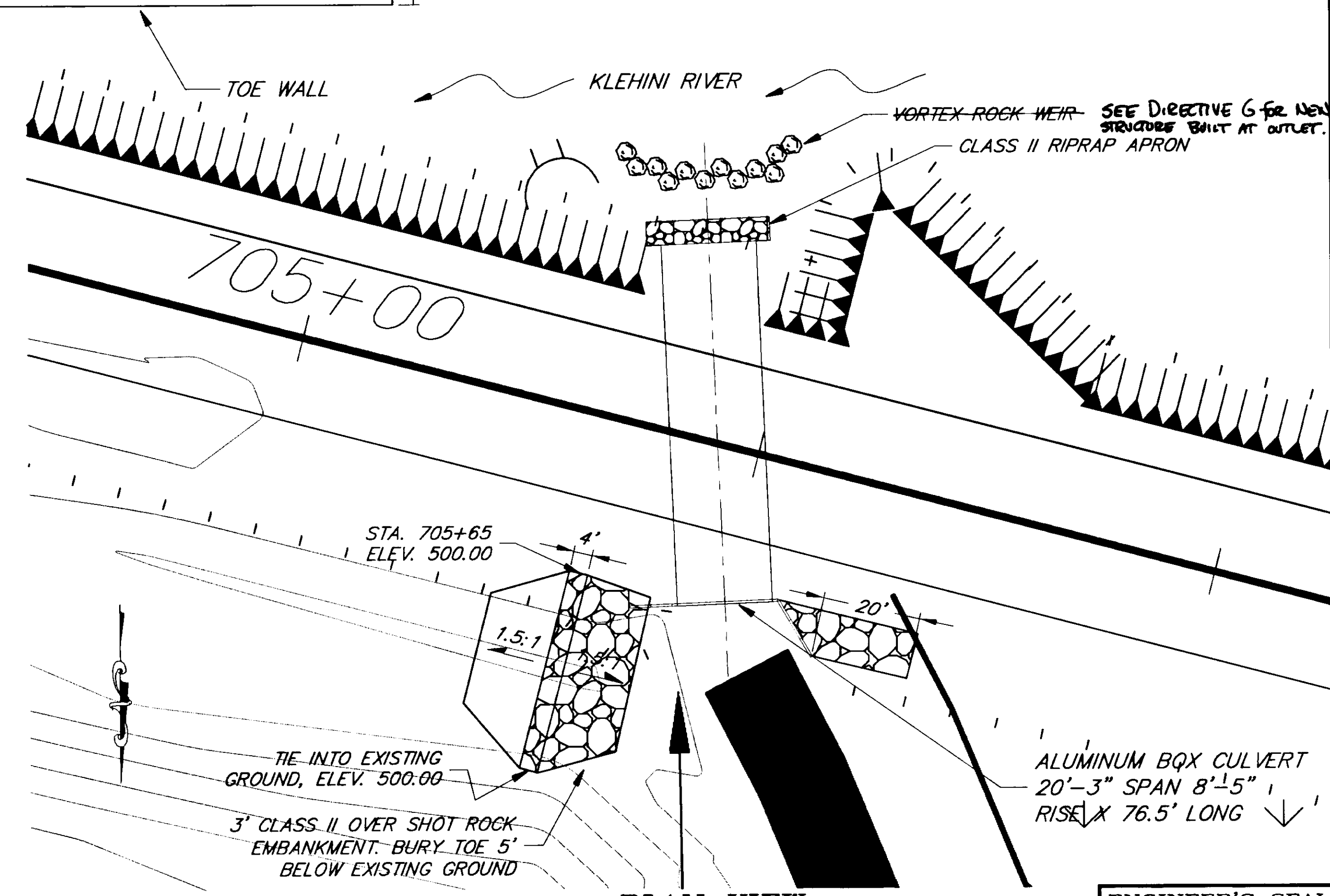




**NOTES:**

1. WING WALL ANGLE OF ATTACHMENT WILL VARY SEE DETAIL SHEET E6
2. SEE SHEET E15 FOR SECTION A-A AND OTHER BOX CULVERT DETAILS

**INLET HEADWALL ELEVATION**

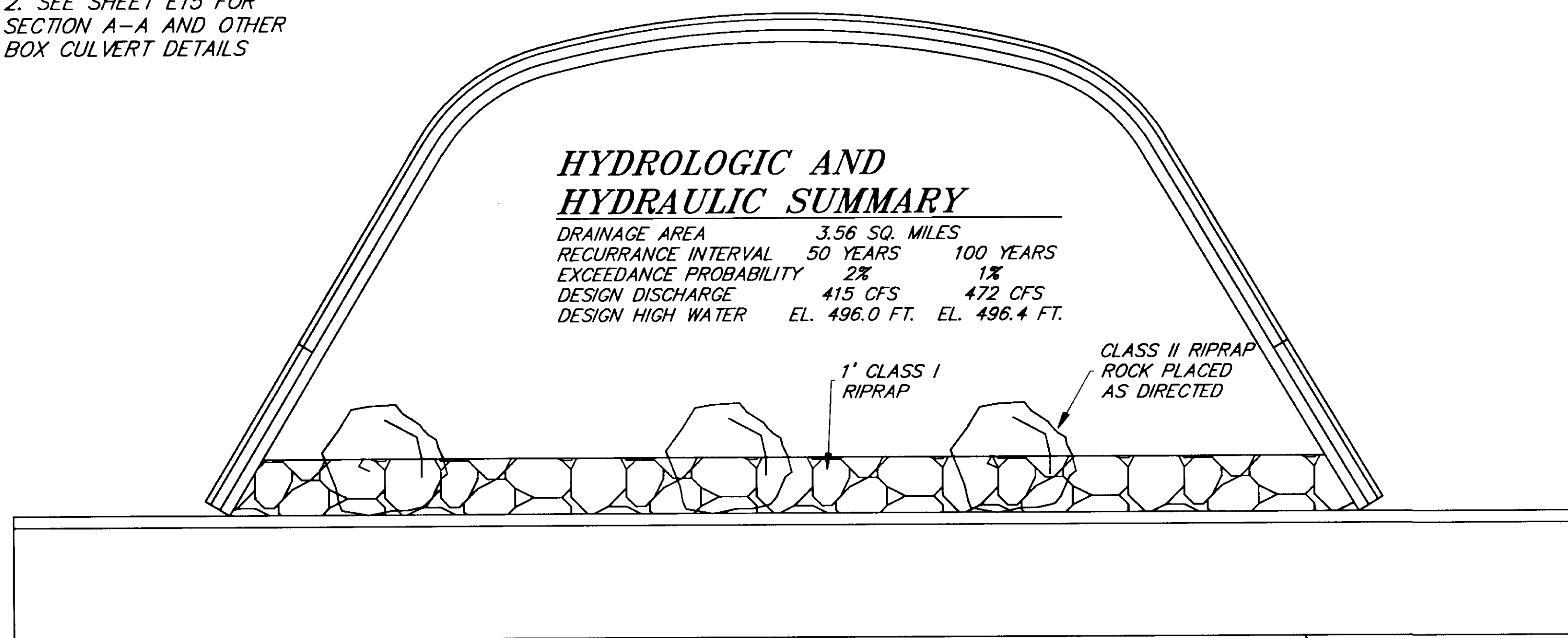


**PLAN VIEW**

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

**HYDROLOGIC AND HYDRAULIC SUMMARY**

DRAINAGE AREA	3.56 SQ. MILES
RECURRANCE INTERVAL	50 YEARS 100 YEARS
EXCEEDANCE PROBABILITY	2% 1%
DESIGN DISCHARGE	415 CFS 472 CFS
DESIGN HIGH WATER	EL. 496.0 FT. EL. 496.4 FT.



**OUTLET ELEVATION**

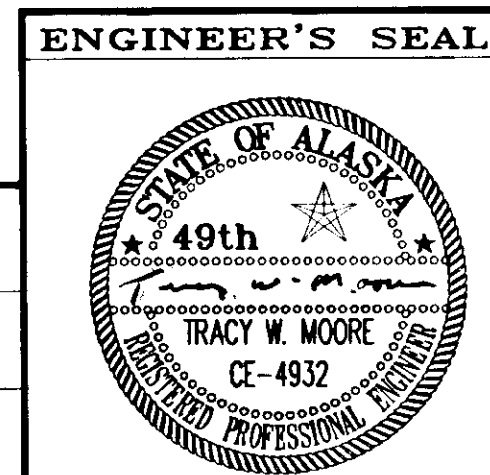
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BY:	DATE:
	DESCRIPTION OF CHANGE:
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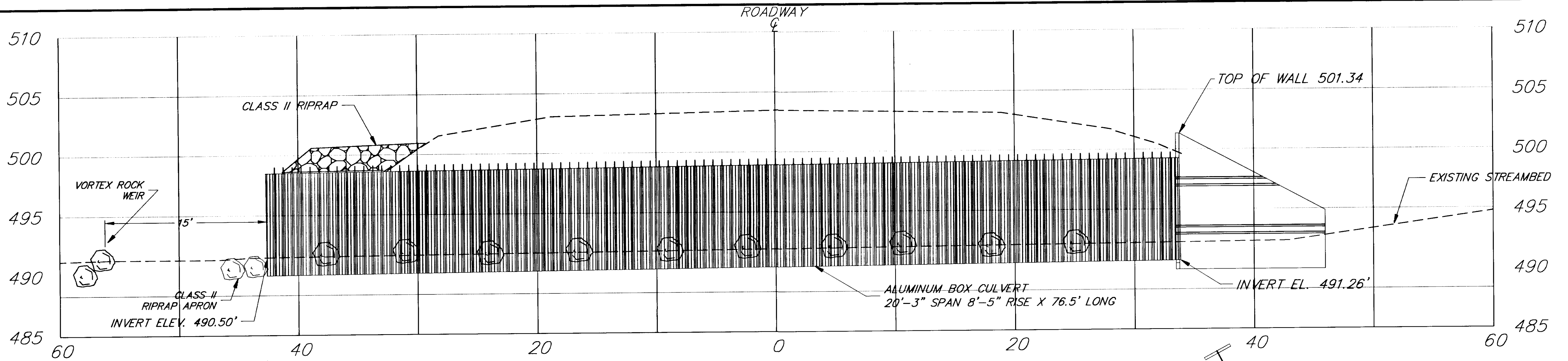
**RECORD OF REVISIONS**

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

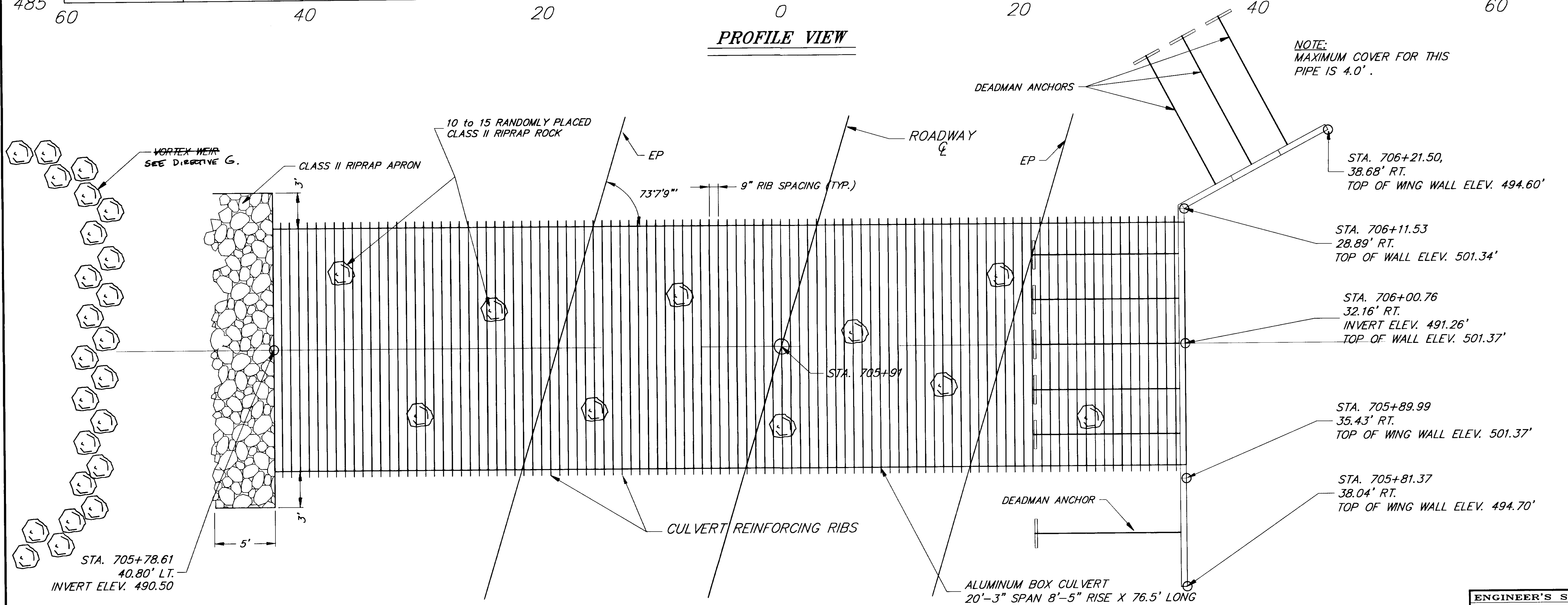
HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 ALASKA  
 ALUMINUM BOX CULVERT-STA. 705+91

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	E5





**PROFILE VIEW**



**BOX CULVERT LAYOUT**

NOTE: MAXIMUM COVER FOR THIS PIPE IS 4.0'.

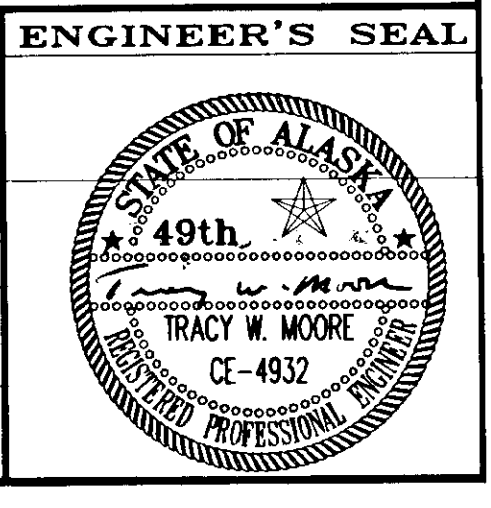
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

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BY:	DATE:
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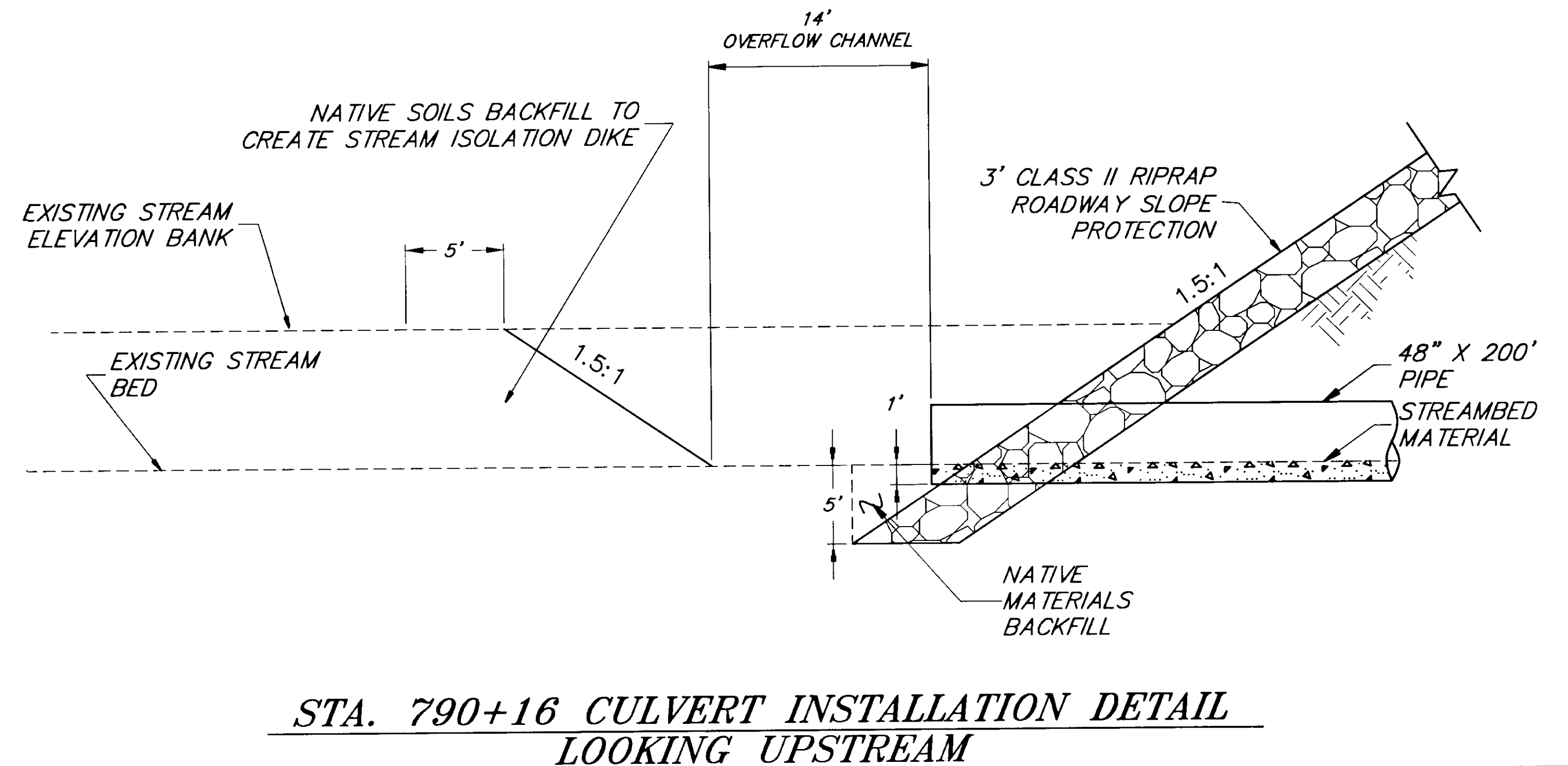
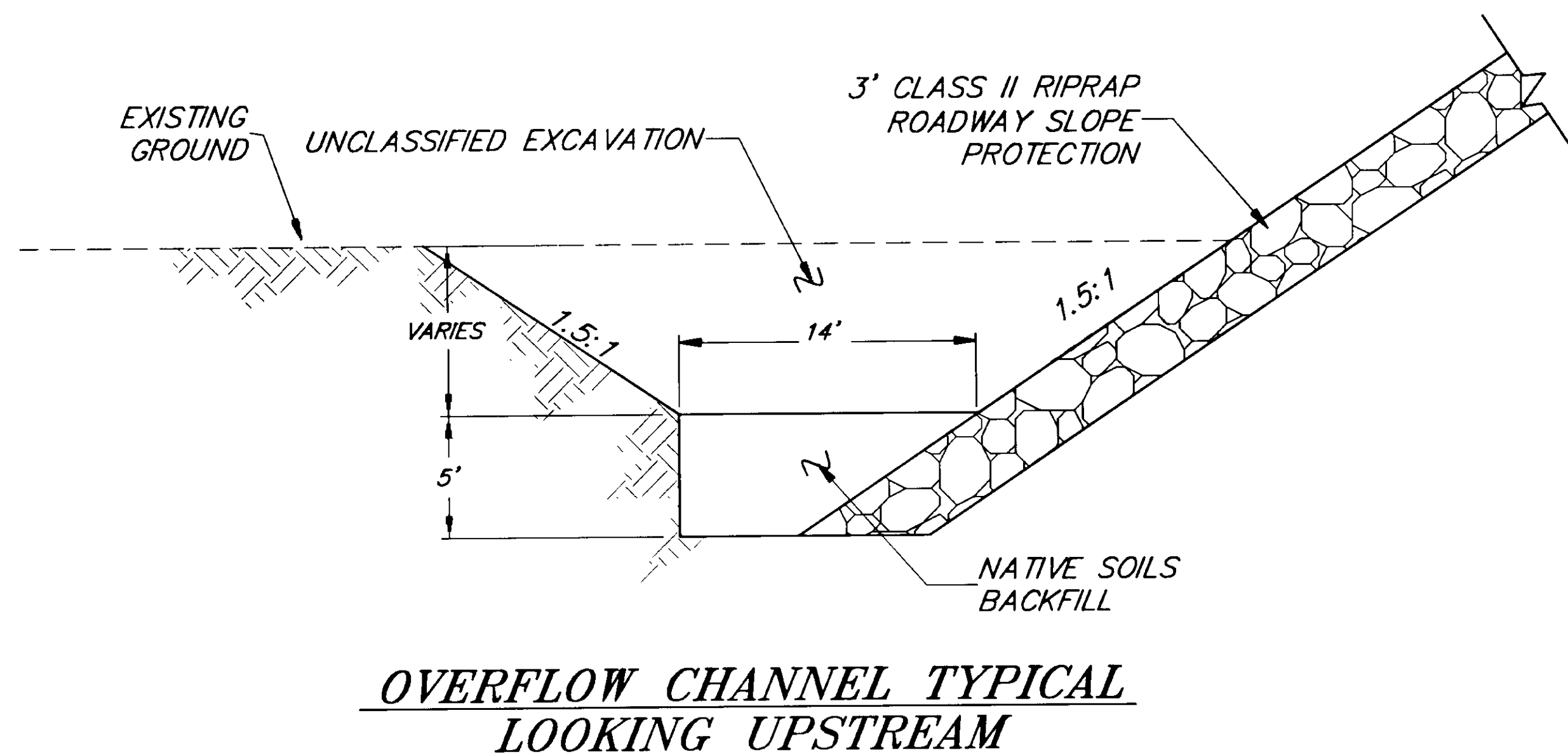
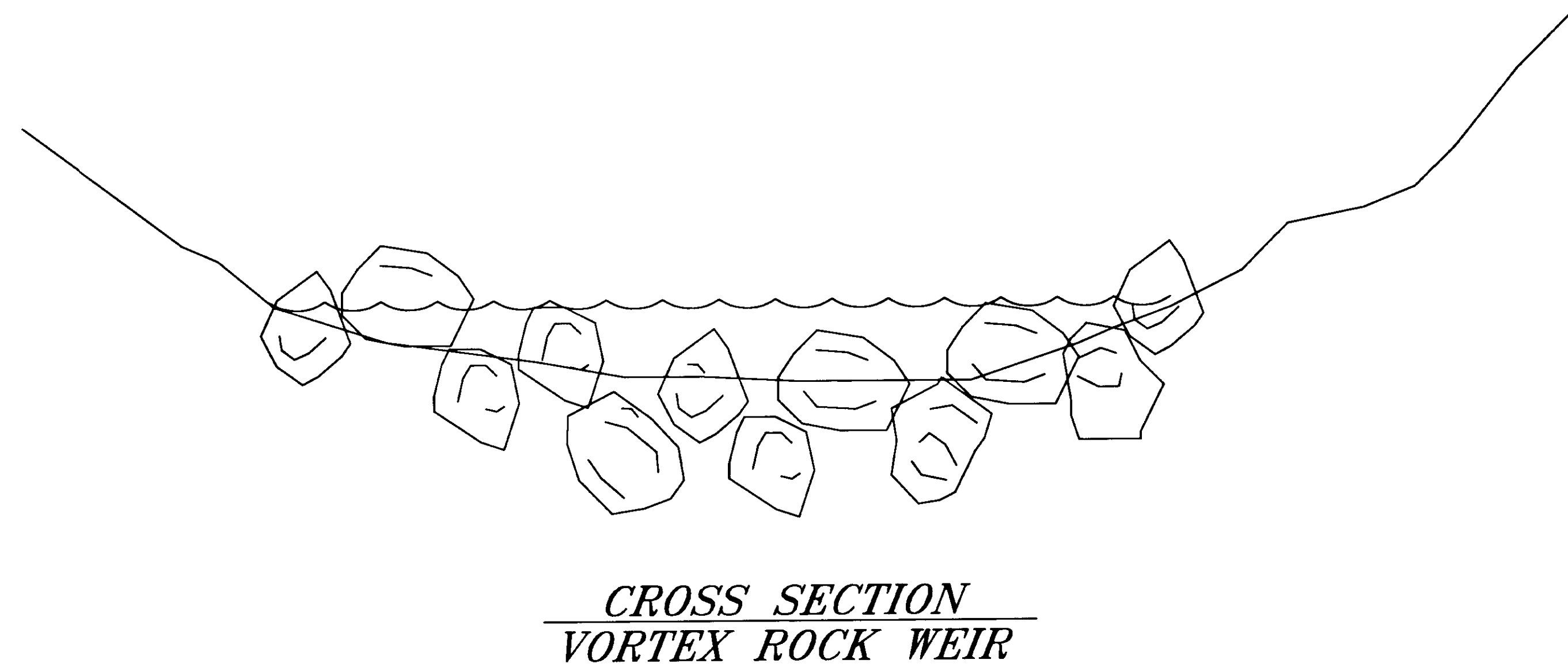
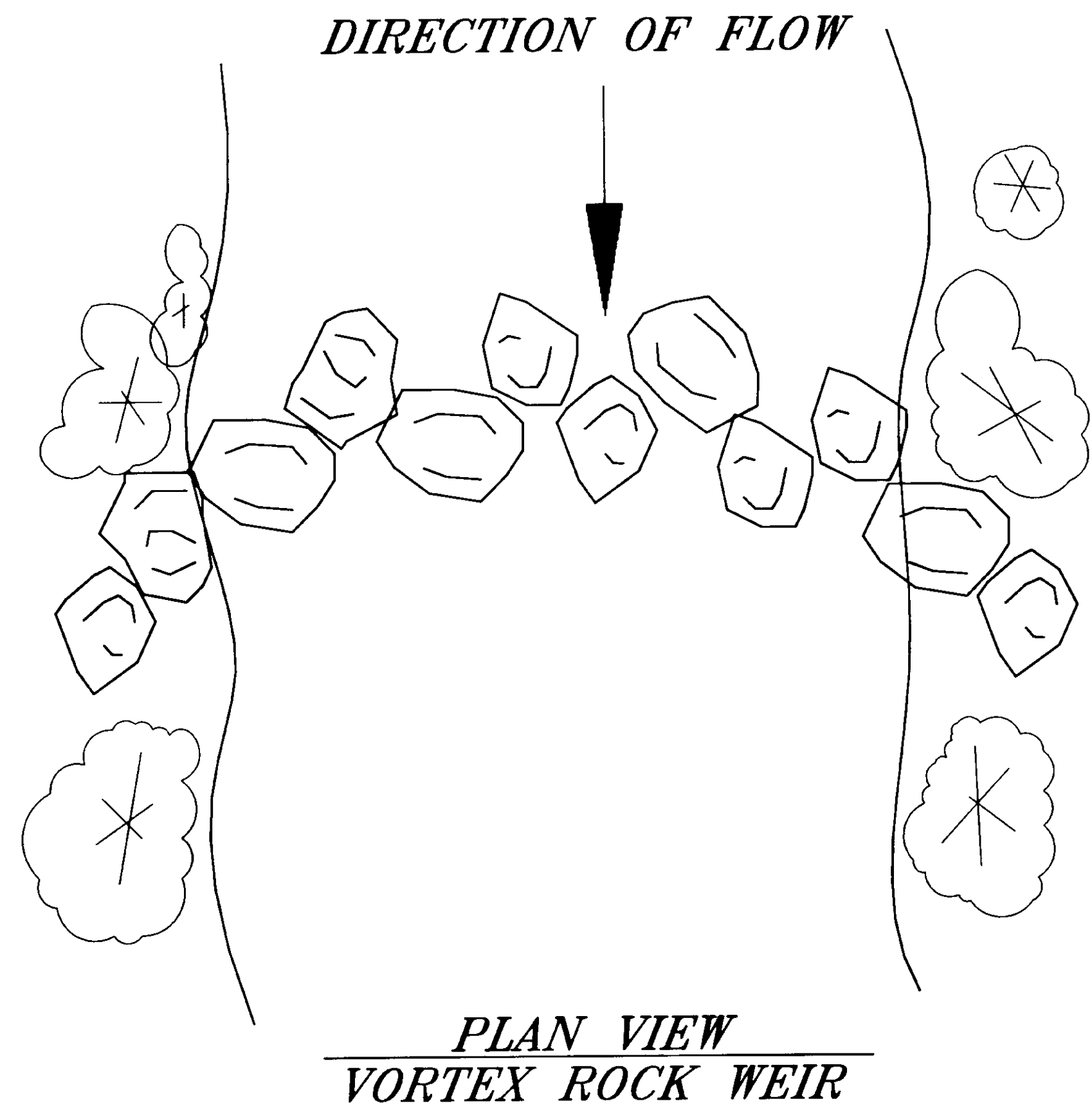
STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES HAINES HIGHWAY ALASKA  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
**ALUMINUM BOX CULVERT-STA. 705+91-PROFILE AND LAYOUT**

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	E6







NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

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BY:	DATE:	DESCRIPTION OF CHANGE:
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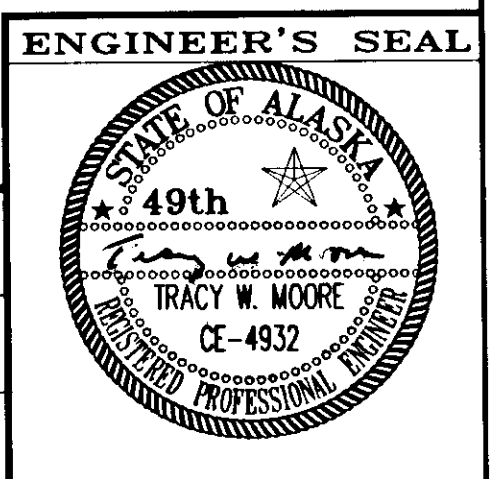
STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES**  
SOUTHEAST REGION DESIGN & CONSTRUCTION

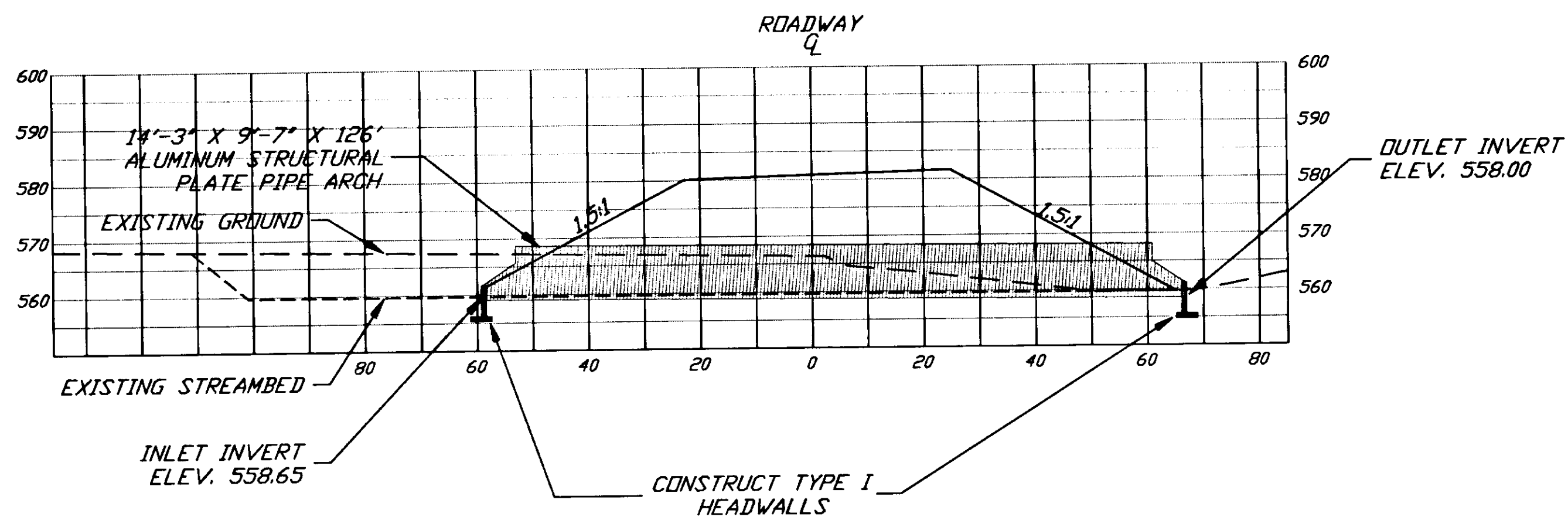
**HAINES**  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) 71874  
**OVERFLOW CHANNEL TYPICAL & STA. 790+16  
CULVERT INSTALLATION DETAIL**

ALASKA

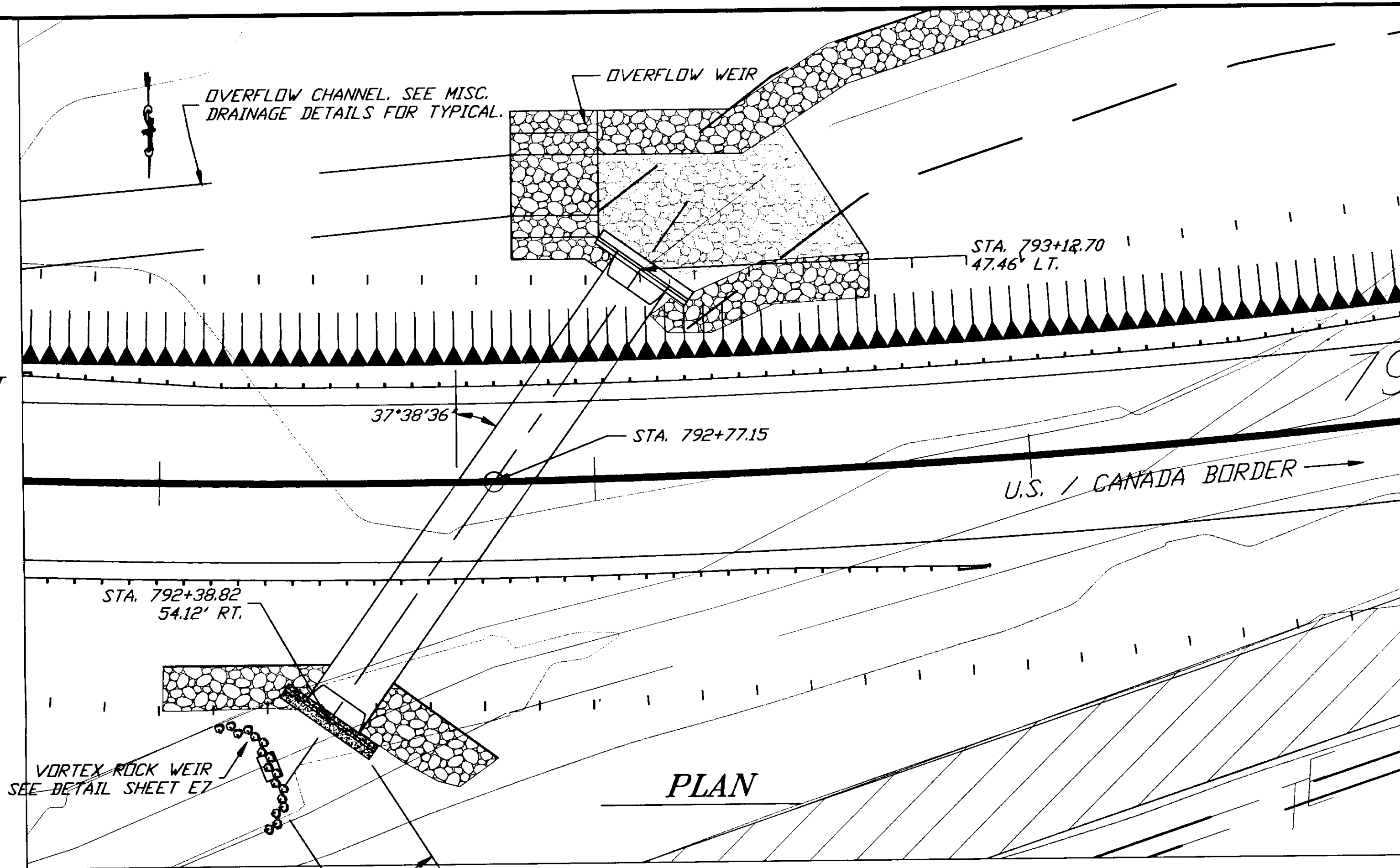
DESIGNED BY: C. HAKARI  
DRAWN BY: L. ROBERTSON  
CHECKED BY: T. MOORE

PROJECT NO. 71874  
DATE: 1999  
SHEET E7





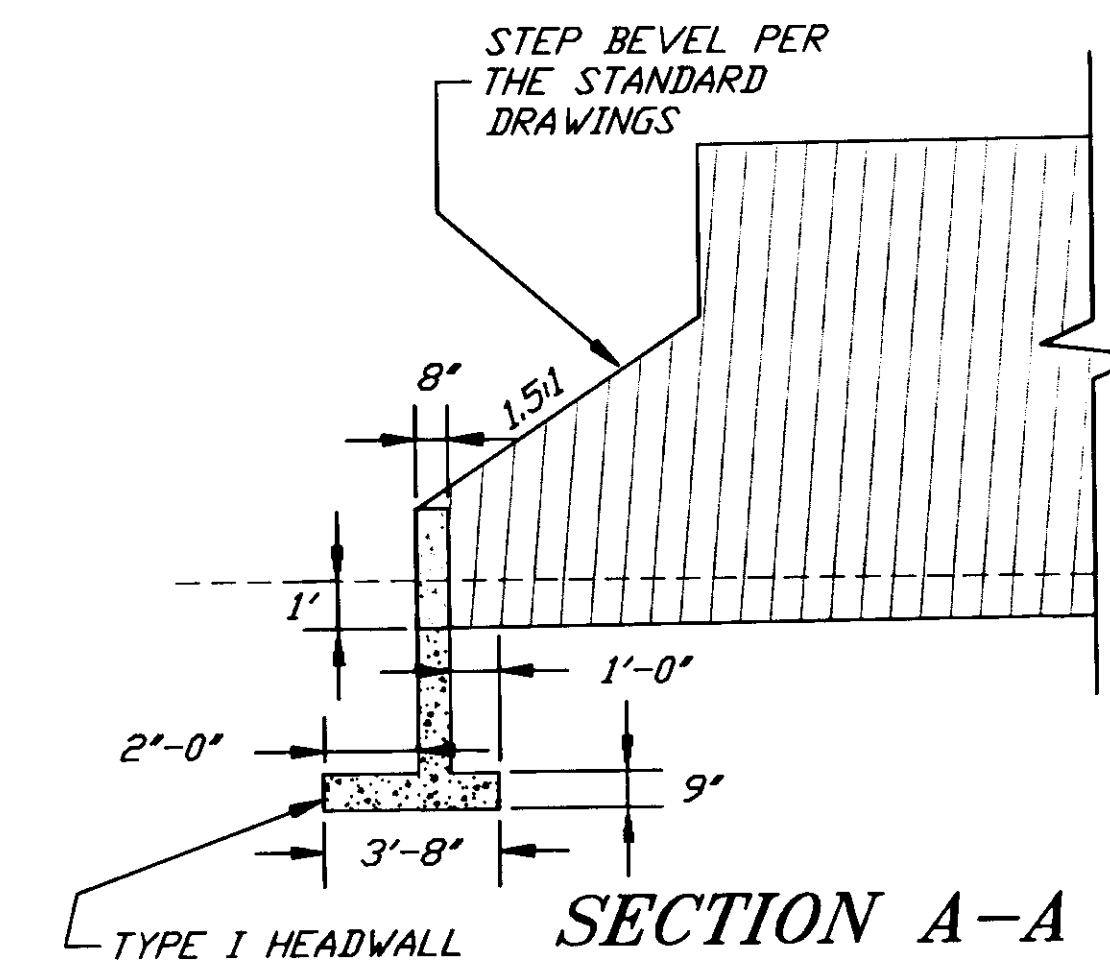
**PROFILE**



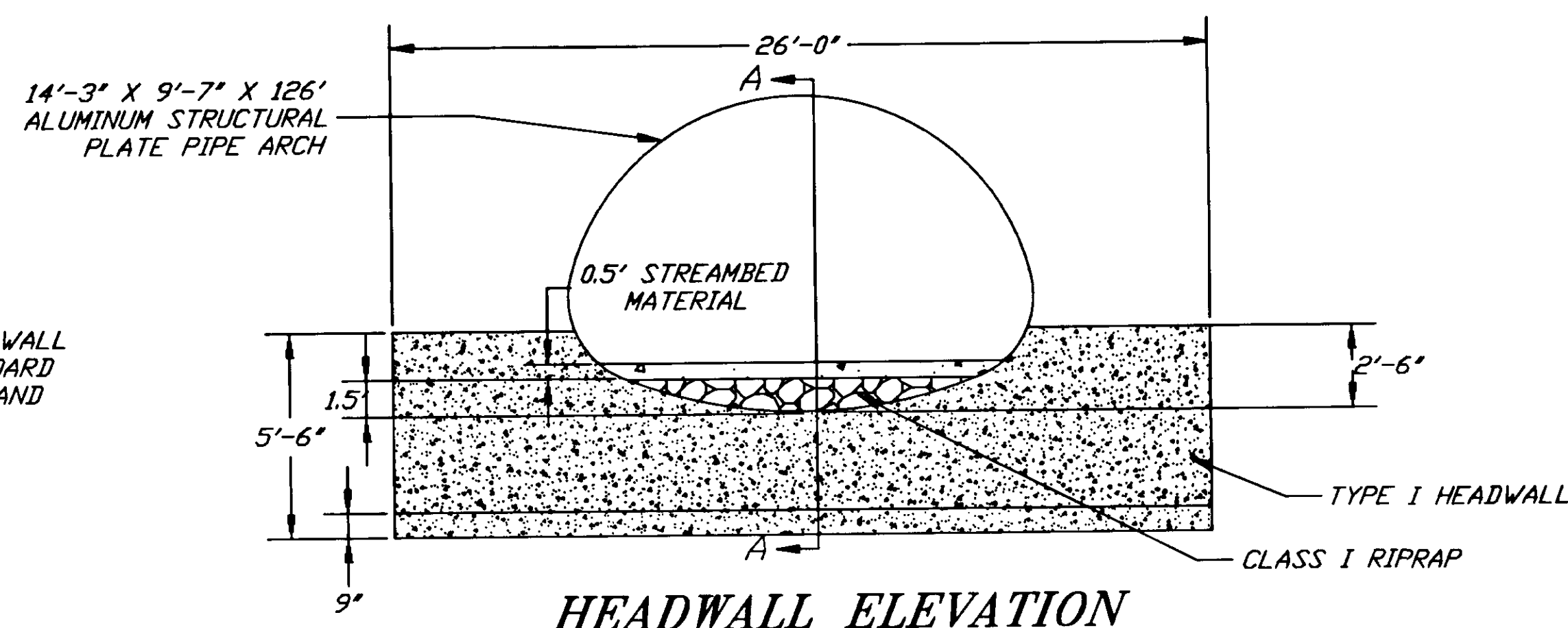
**PLAN**

**HYDROLOGIC AND HYDRAULIC SUMMARY**

DRAINAGE AREA	2.10 SQ. MILES
RECURRANCE INTERVAL	10 YEARS 100 YEARS
EXCEEDANCE PROBABILITY	10% 1%
DESIGN DISCHARGE	197 CFS 322 CFS
DESIGN HIGH WATER	EL. 563.6 FT. EL. 564.8 FT.



**SECTION A-A**



**HEADWALL ELEVATION**

NOTES:  
1. REINFORCING STEEL FOR TYPE I HEADWALL NOT SHOWN FOR CLARITY. SEE STANDARD DRAWINGS FOR STEEL REQUIREMENTS AND PLACEMENT

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

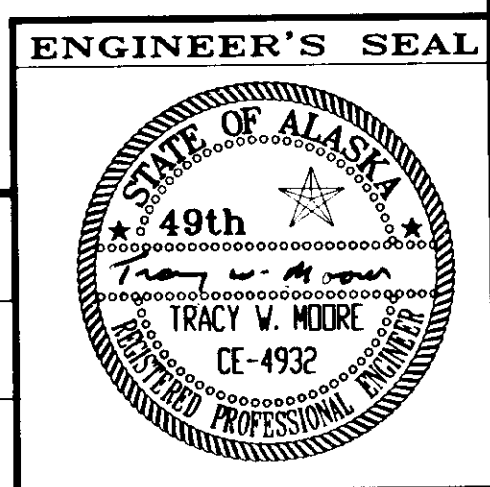
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[PlotStamp Eval]	Plot By Leonard	Fri, 12/Nov/99 01:47pm

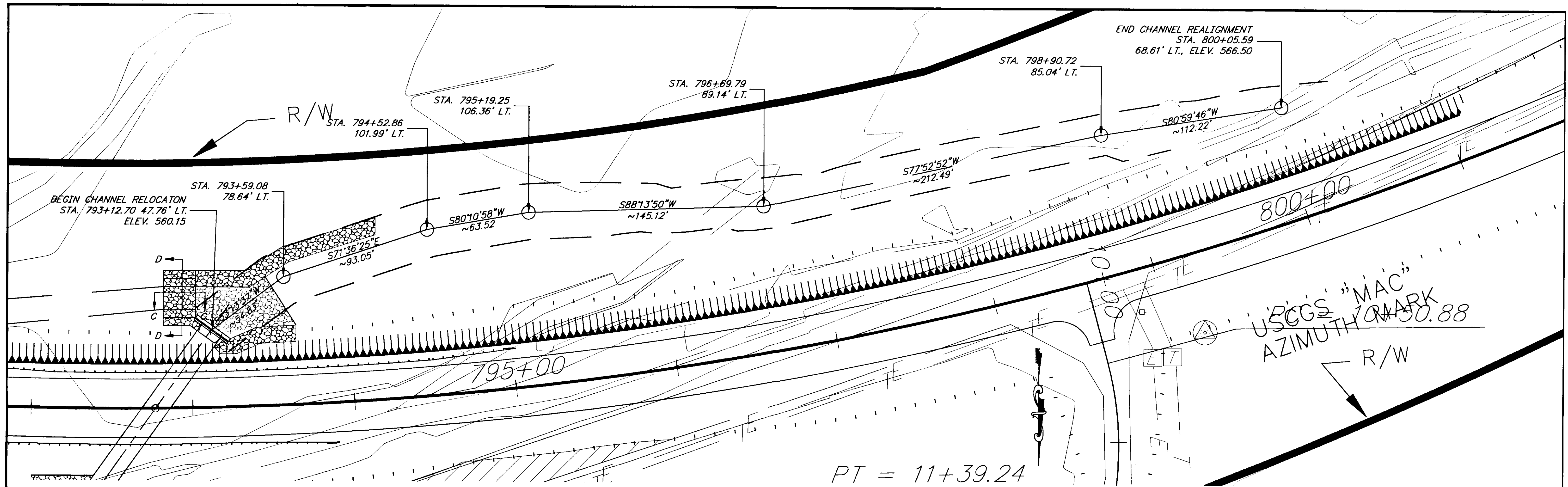
RECORD OF REVISIONS

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES HAINES HIGHWAY ALASKA  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6 (20) ~ 71874  
**CULVERT INSTALLATION DETAILS STA. 792+77.15**

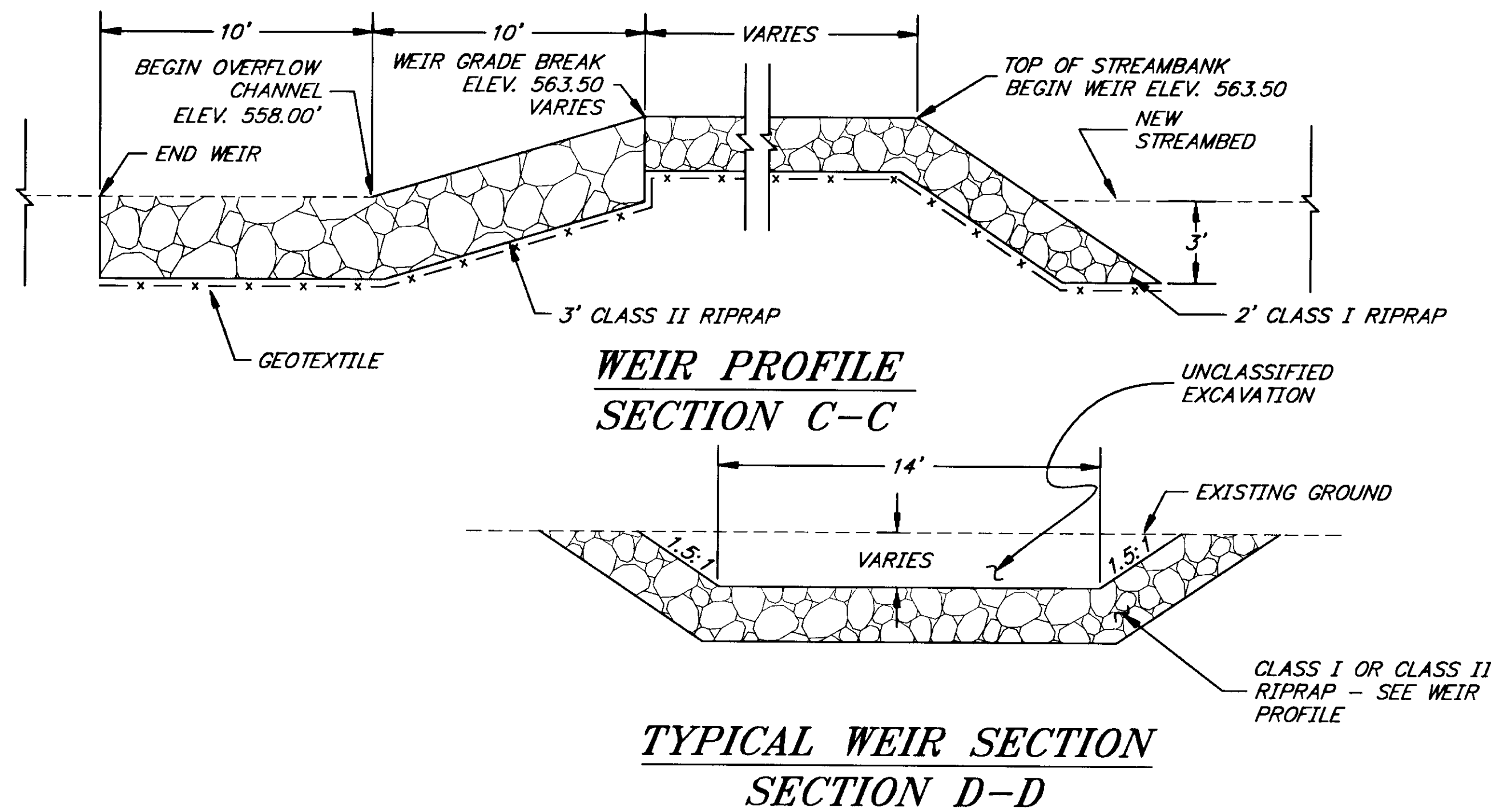
DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T.W. MOORE	SHEET	E8





PT = 11+39.24

NOTE: SEE MITIGATION PLAN SHEET I10 FOR CHANNEL RELOCATION TYPICALS SHEETS I5 AND I11 FOR CHANNEL SEQUENCES.



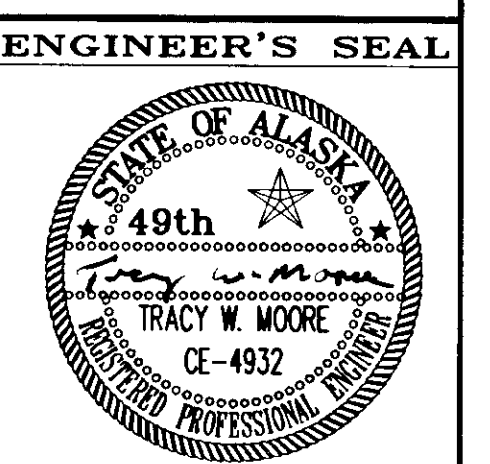
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<b>RECORD OF REVISIONS</b>		

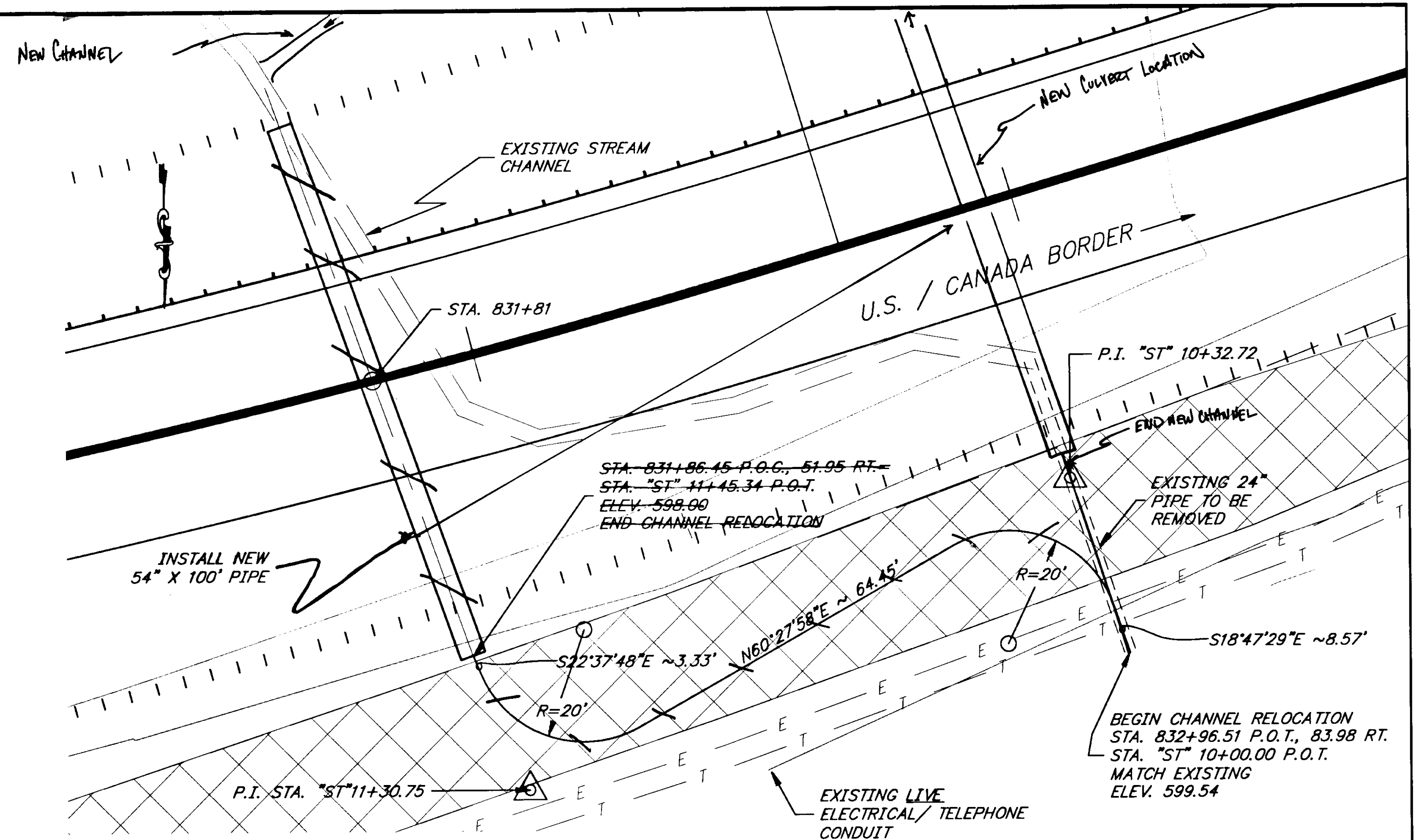
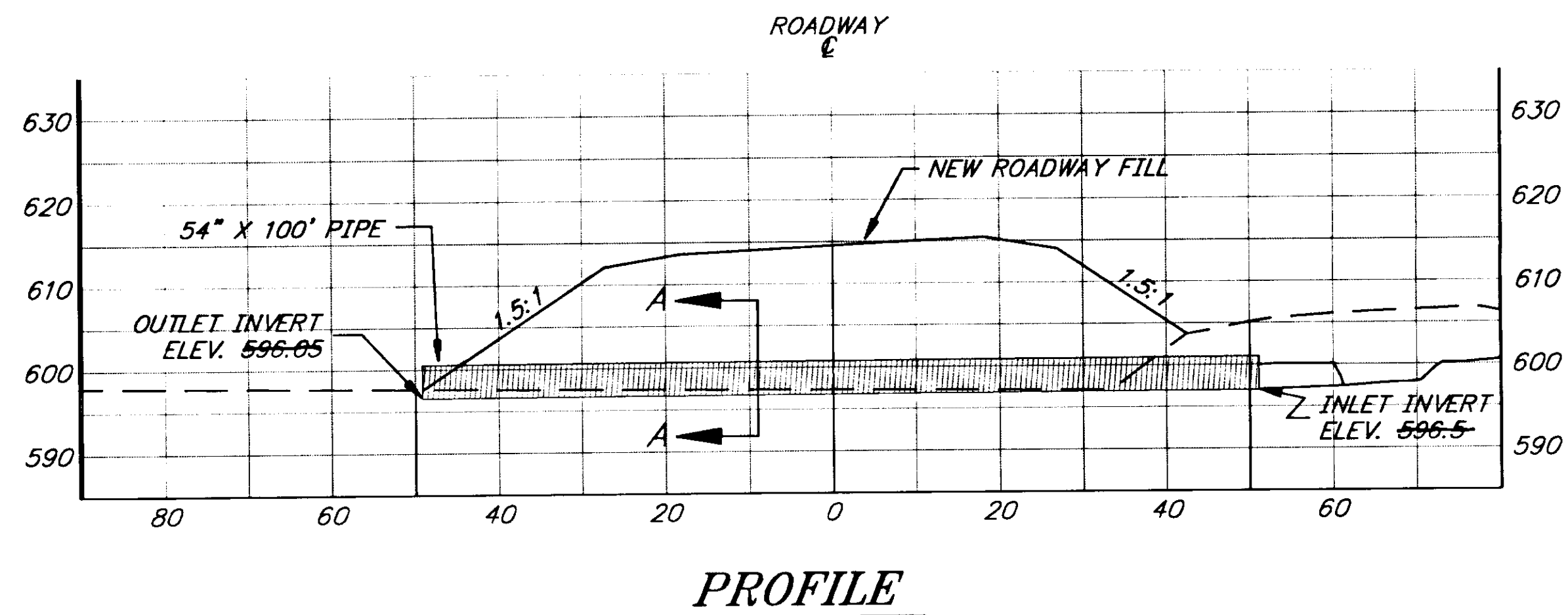
STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 ALASKA  
**STREAM CHANNEL RELOCATION AND WEIR DETAILS**  
 STA. 793+12, LT. TO STA. 800+05, LT.

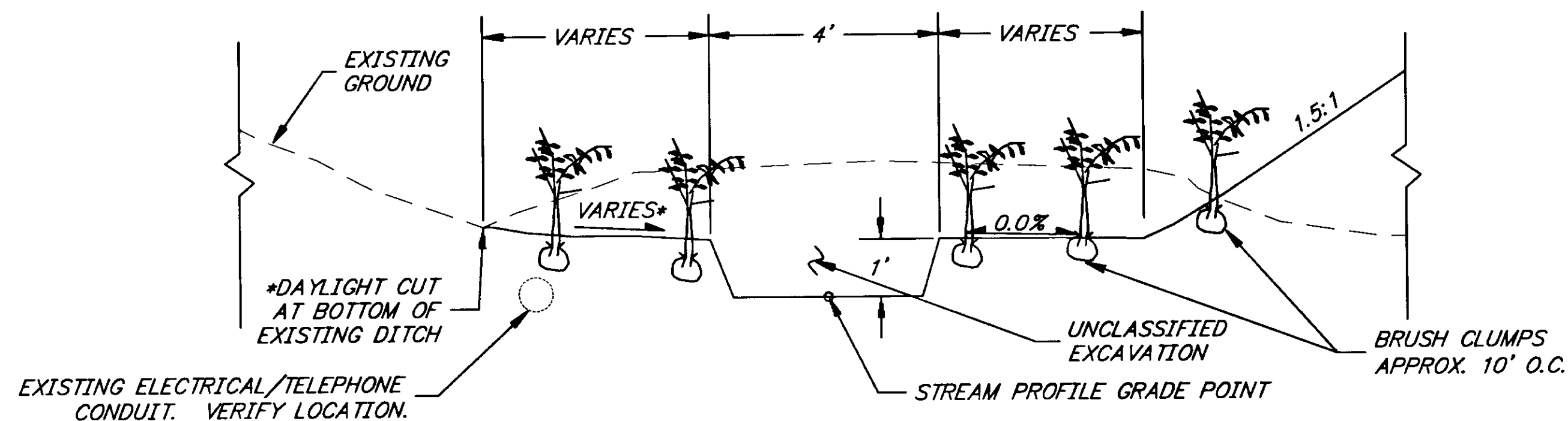
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T.W. MOORE	SHEET	E9





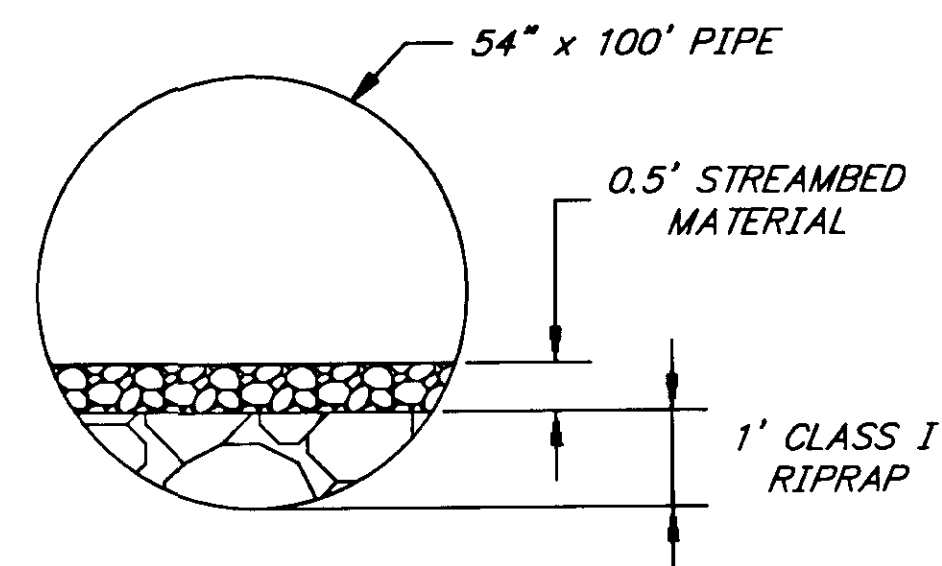
**CULVERT PIPE REPLACEMENT AND STREAM RELOCATION  
STA. 831+81**



**STREAM CHANNEL RELOCATION TYPICAL  
LOOKING DOWN STREAM**

**HYDROLOGIC AND  
HYDRAULIC SUMMARY**

DRAINAGE AREA	0.65 SQ. MILES	
RECURRENT INTERVAL	50 YEARS	100 YEARS
EXCEEDANCE PROBABILITY	2%	1%
DESIGN DISCHARGE	110 CFS	125 CFS
DESIGN HIGH WATER	EL. 607.6 FT.	EL. 610.0 FT.



**SECTION A-A**

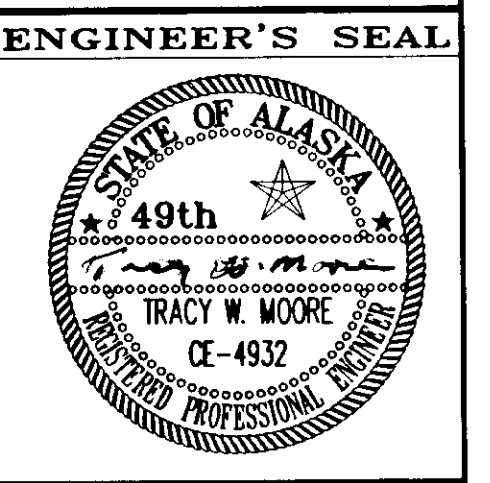
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

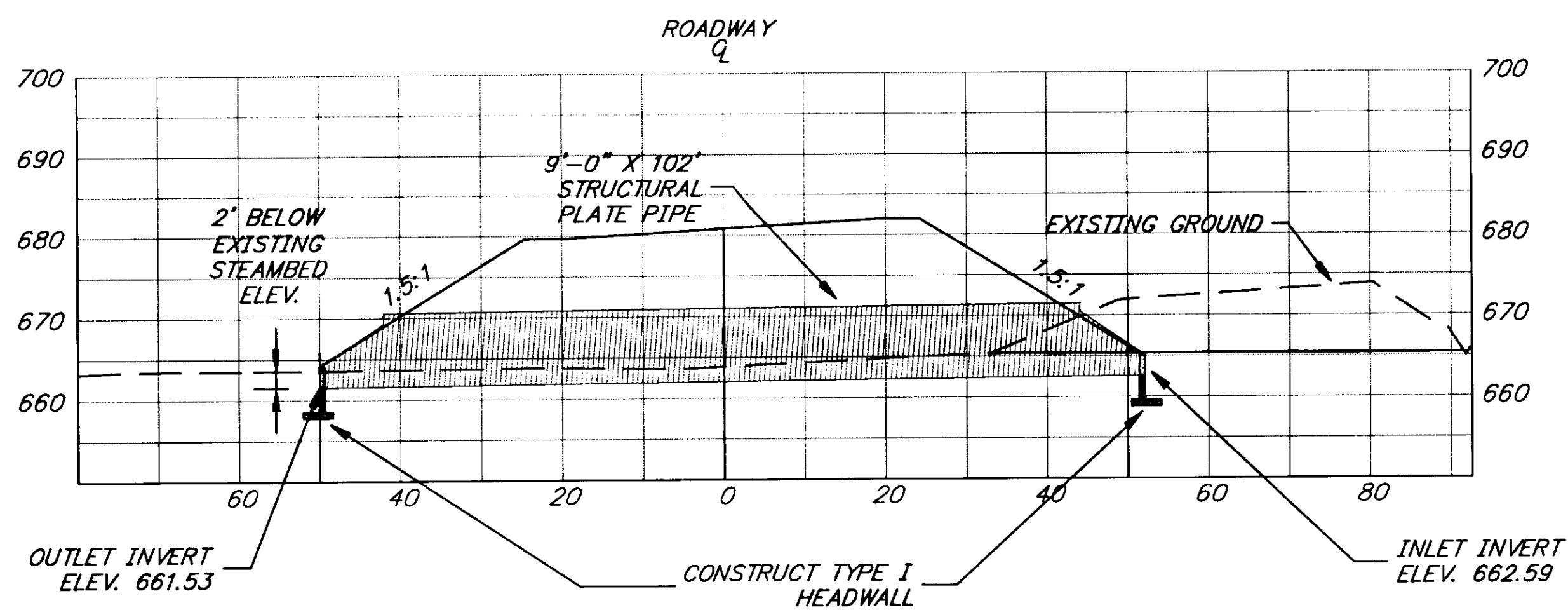
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<b>RECORD OF REVISIONS</b>		

STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES**  
SOUTHEAST REGION DESIGN & CONSTRUCTION

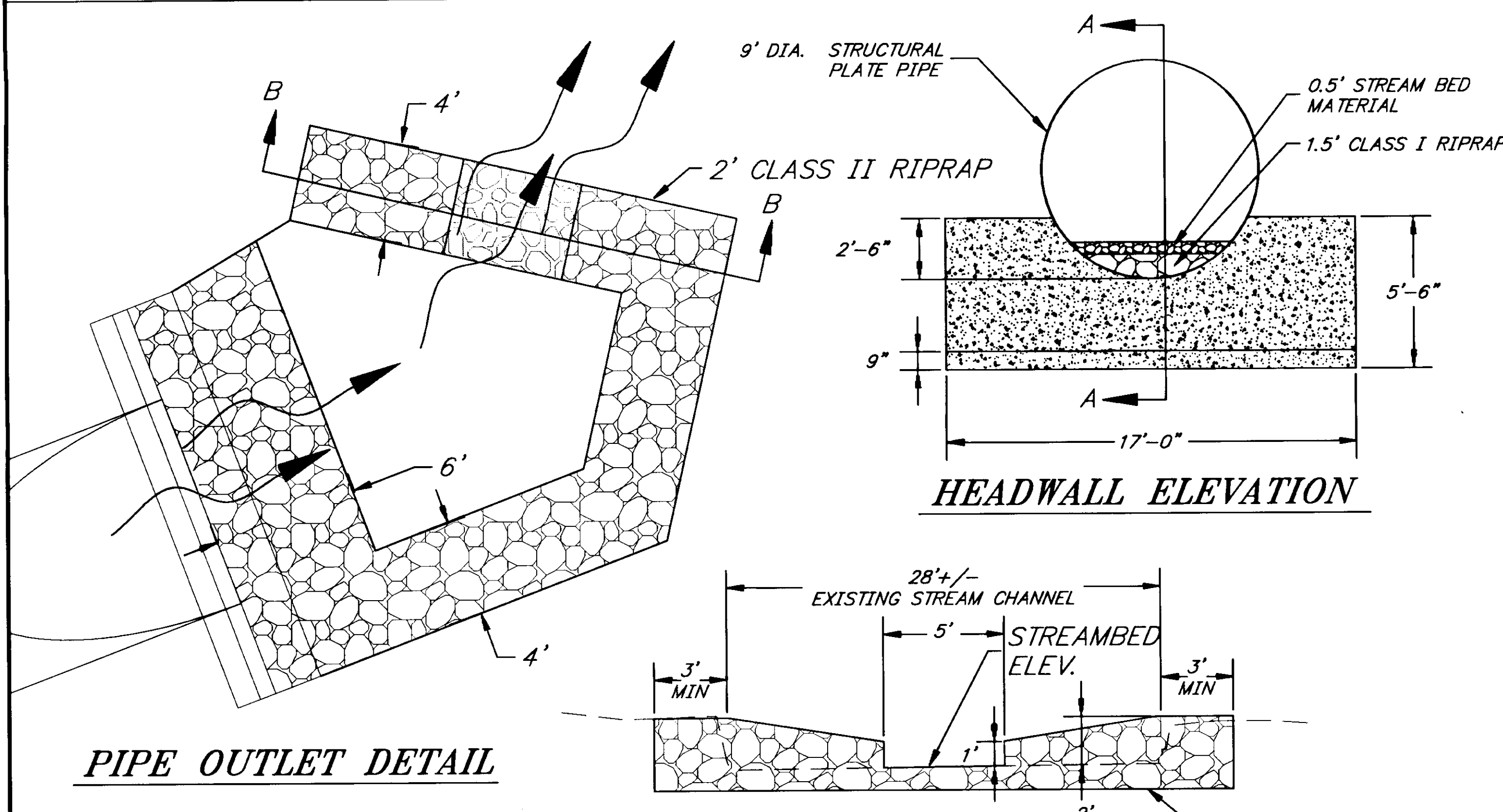
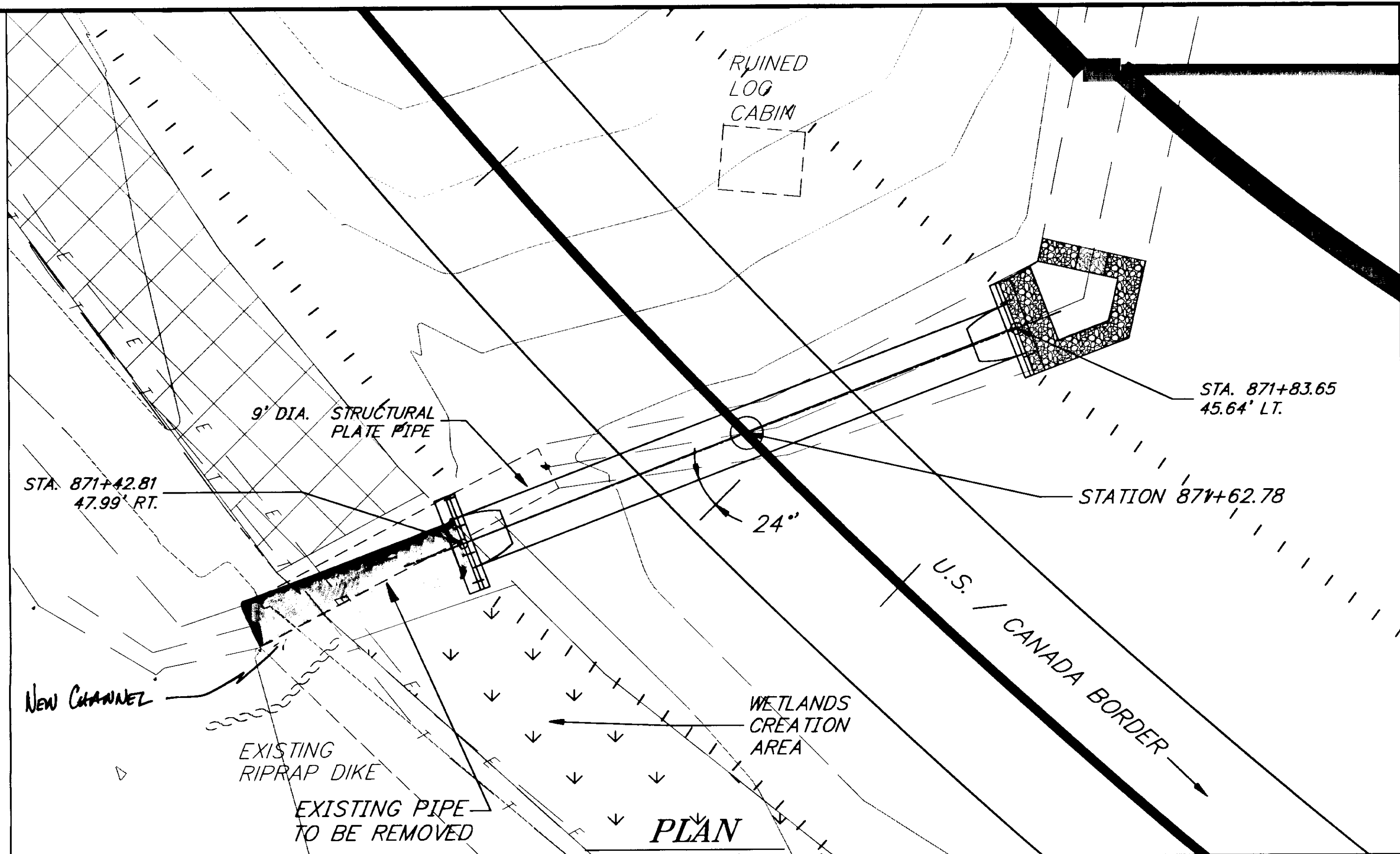
HAINES  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6 (20) ~ 71874  
**CULVERT REPLACEMENT DETAILS STA. 831+81**

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T.W. MOORE	SHEET	E10





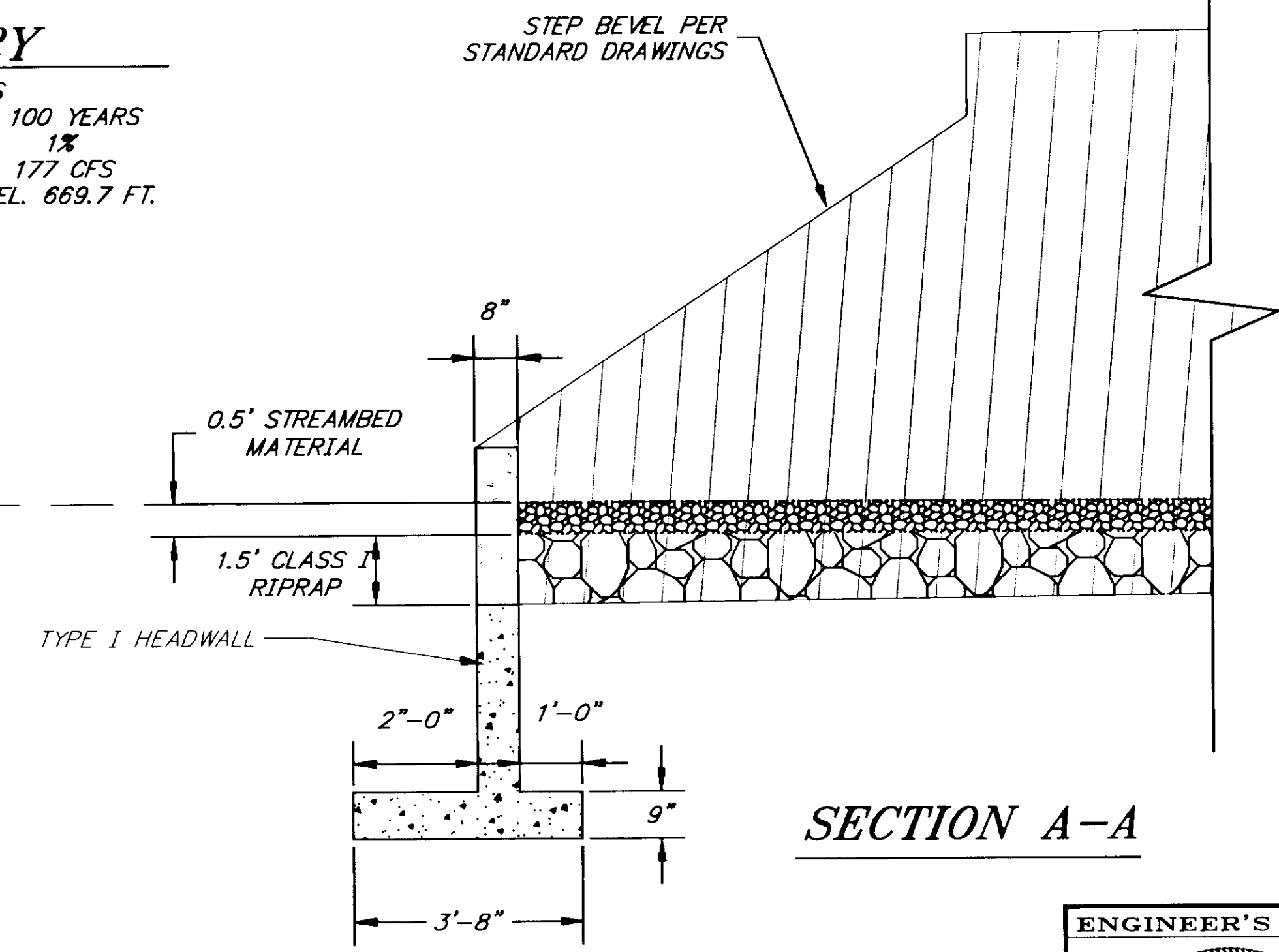
**ELEVATION**



**SECTION B-B**

**HYDROLOGIC AND HYDRAULIC SUMMARY**

DRAINAGE AREA	1.2 SQ. MILES
RECURRANCE INTERVAL	50 YEARS 100 YEARS
EXCEEDANCE PROBABILITY	2% 1%
DESIGN DISCHARGE	155 CFS 177 CFS
DESIGN HIGH WATER	EL. 669.3 FT. EL. 669.7 FT.



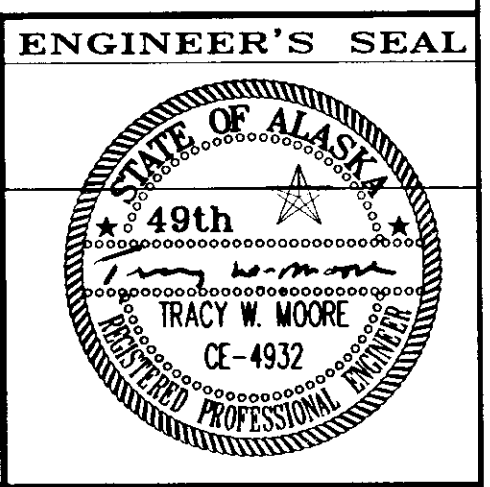
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

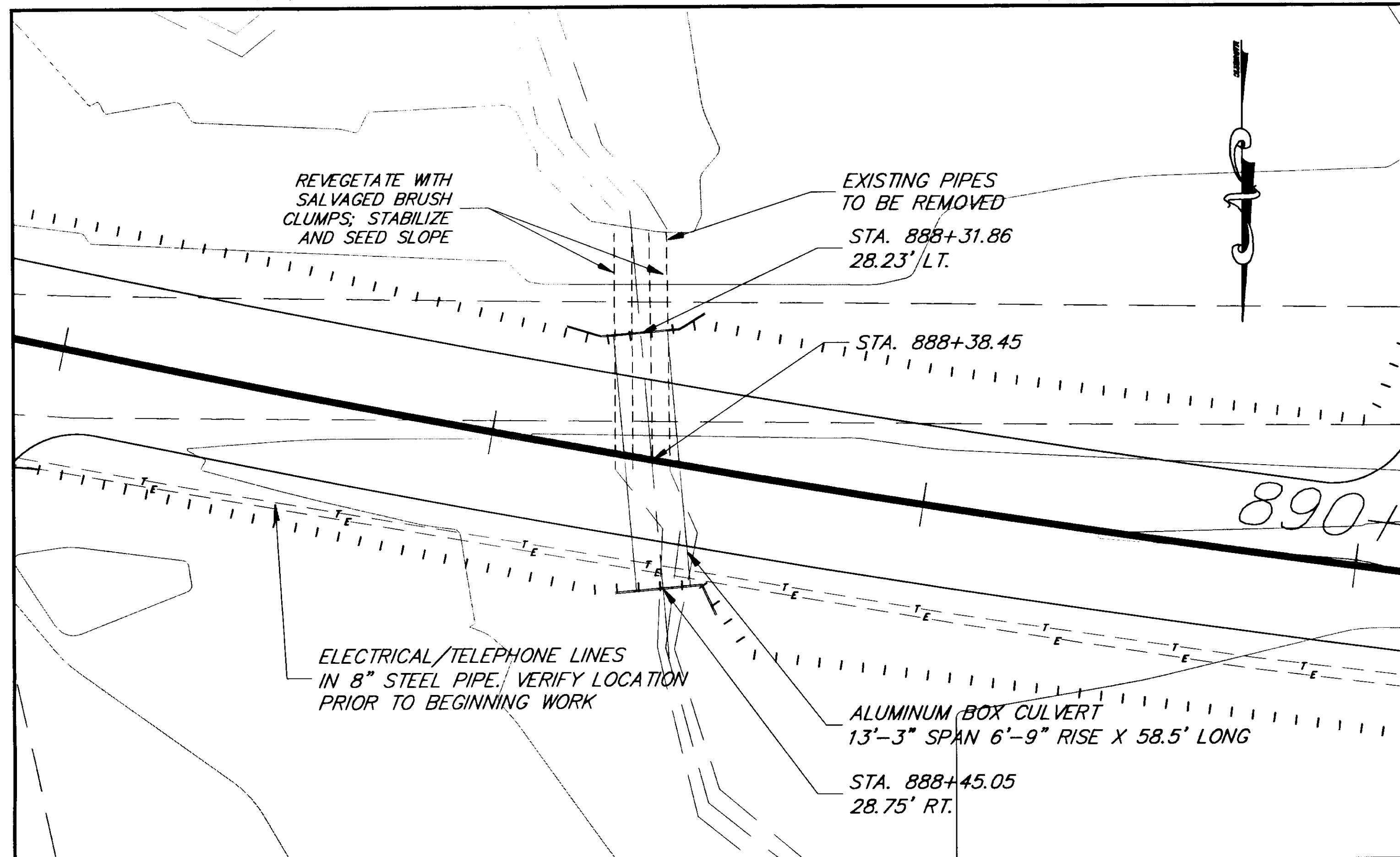
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<b>RECORD OF REVISIONS</b>		

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

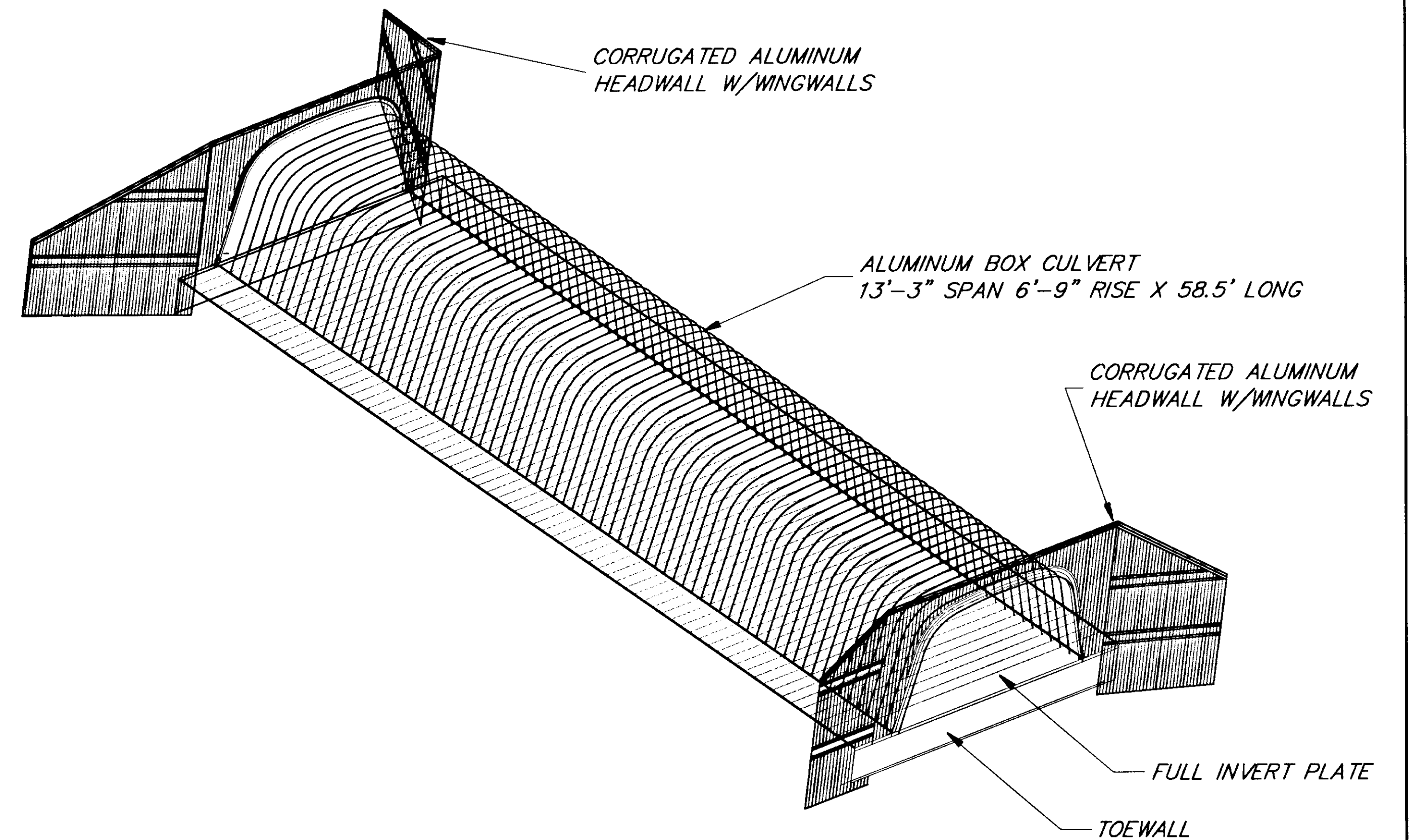
HAINES HAINES HIGHWAY ALASKA  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-8 (20) ~ 71874  
**CULVERT REPLACEMENT DETAILS STA. 871+62.78**

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T.W. MOORE	SHEET	E11





ALUMINUM BOX CULVERT PLAN



ASSEMBLY OVERVIEW DETAIL

**HYDROLOGIC AND  
HYDRAULIC SUMMARY**

DRAINAGE AREA	1.35 SQ. MILES	
RECURRANCE INTERVAL	50 YEARS	100 YEARS
EXCEEDANCE PROBABILITY	2%	1%
DESIGN DISCHARGE	216 CFS	246 CFS
DESIGN HIGH WATER	EL. 669.4 FT.	EL. 669.9 FT.

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BY:	DATE: [PlotStamp Eval] Leonard Fri, 12/Nov/99 02:01pm
RECORD OF REVISIONS	

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874

ALUMINUM BOX CULVERT-STA. 888+38.45

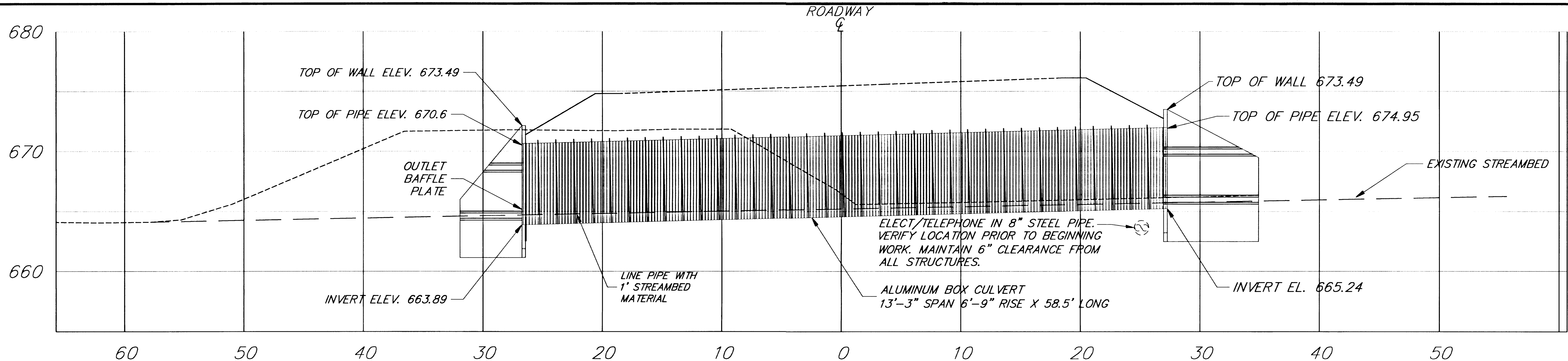
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

DESIGNED BY: C. HAKARI  
DRAWN BY: L. ROBERTSON  
CHECKED BY: T. MOORE

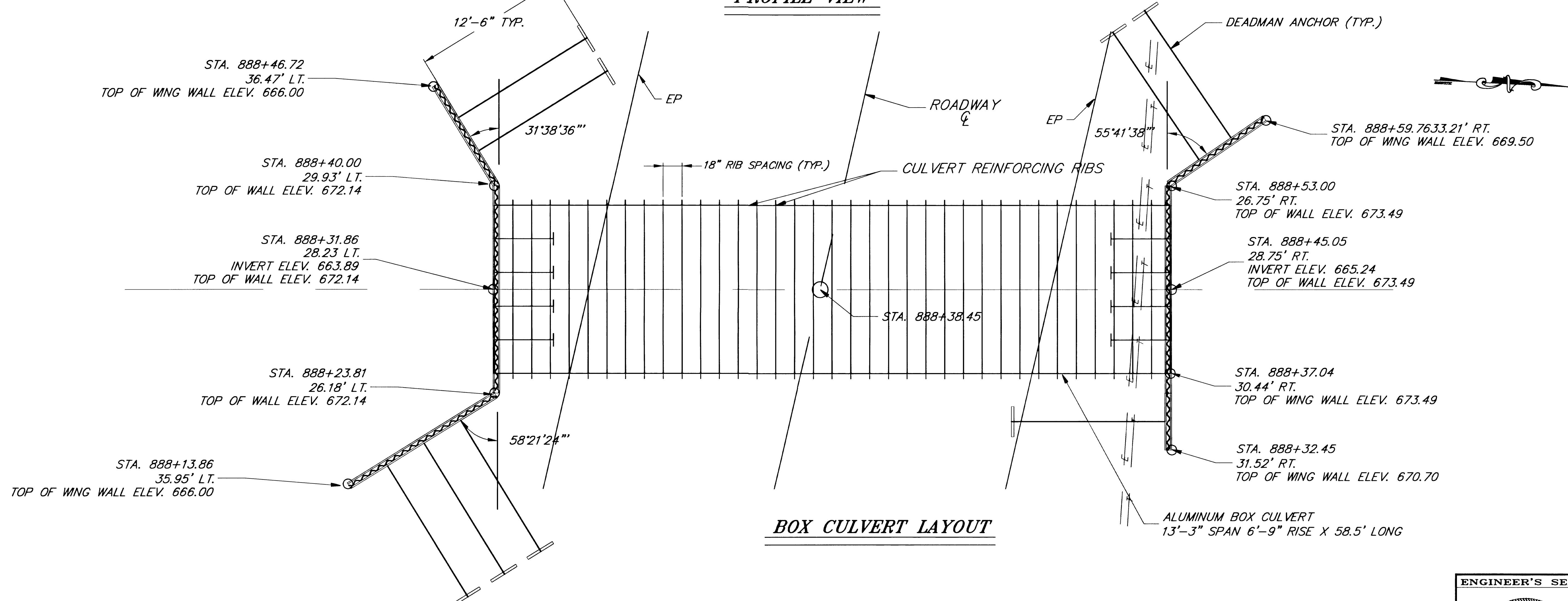
PROJECT NO. 71874  
DATE: 1999  
SHEET E12

ENGINEER'S SEAL





**PROFILE VIEW**



**BOX CULVERT LAYOUT**

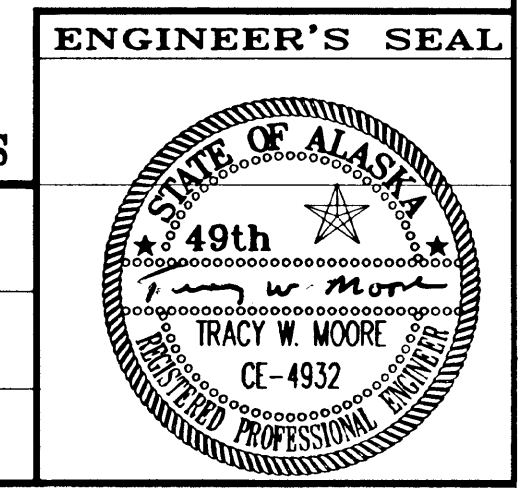
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

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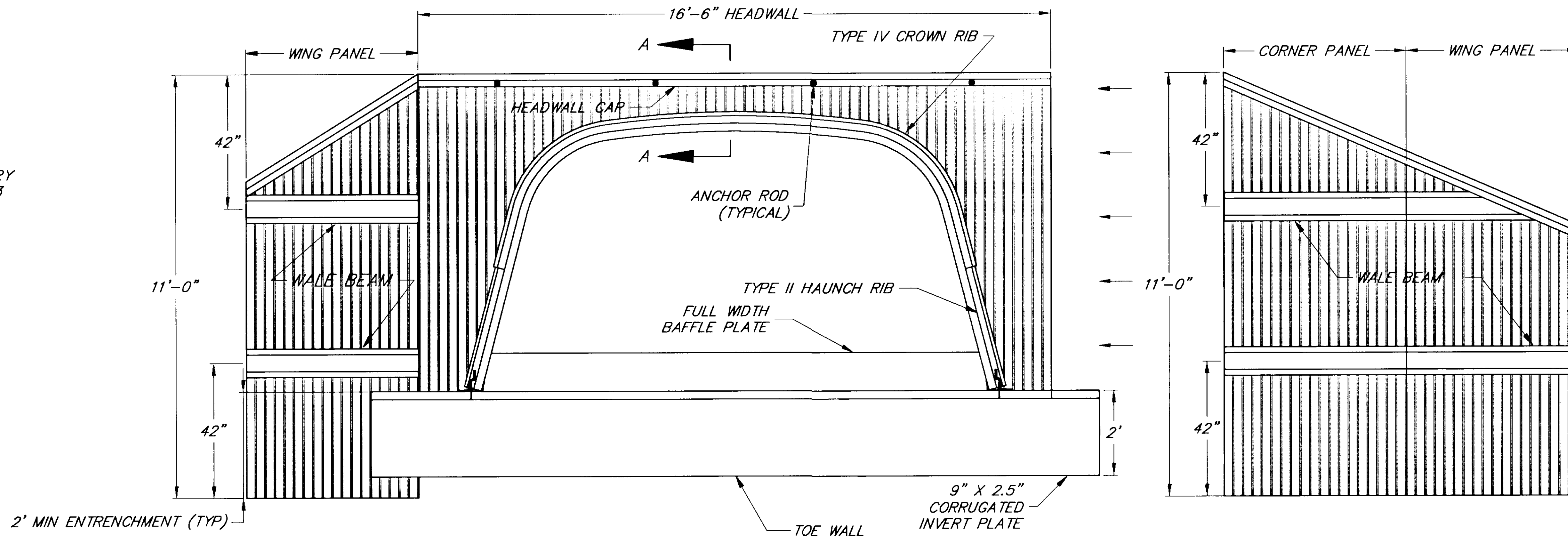
STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES**  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 ALASKA  
**ALUMINUM BOX CULVERT-STA. 888+38.45**  
**PROFILE AND LAYOUT**

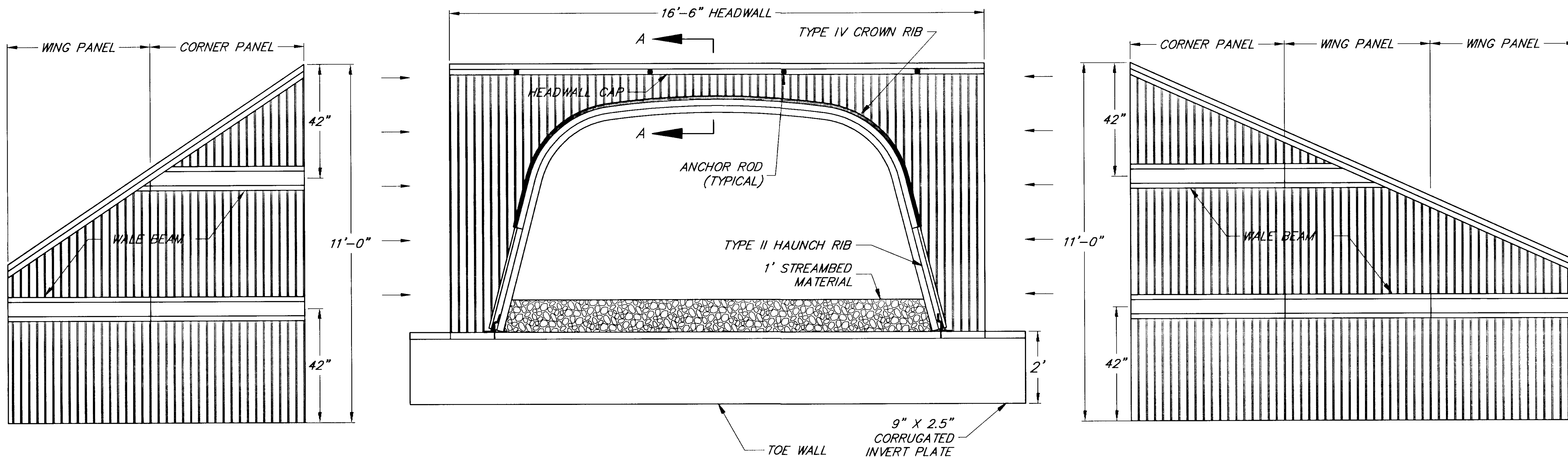
DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	E13



NOTE:  
WING WALL ANGLE OF  
ATTACHMENT WILL VARY  
SEE DETAIL SHEET E13



**OUTLET HEADWALL ELEVATION**



**INLET HEADWALL ELEVATION**

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

PATH:		DESCRIPTION OF CHANGE:
BY:	DATE:	[PlotStamp Eval] Leonard Fri, 12/Nov/99 02:07pm
RECORD OF REVISIONS		

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

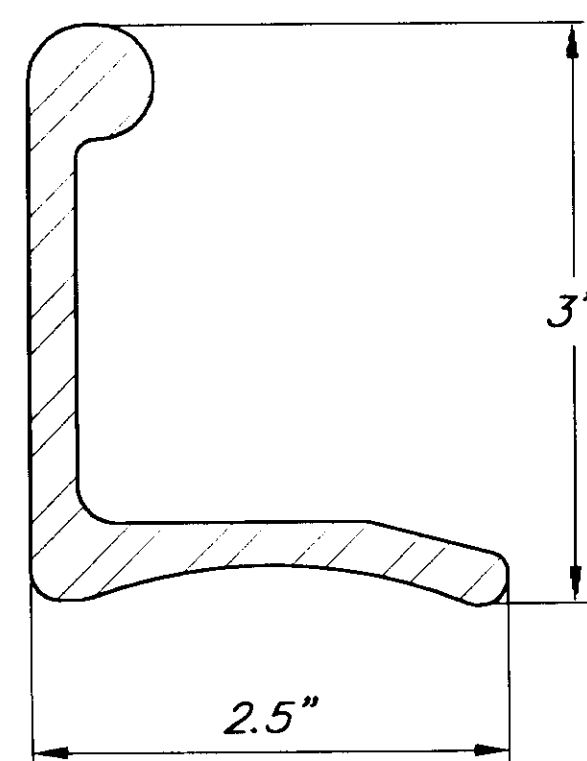
HAINES  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
ALASKA  
ALUMINUM BOX CULVERT -STA. 888+38.45  
WINGWALL/HEADWALL DETAILS

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	E14

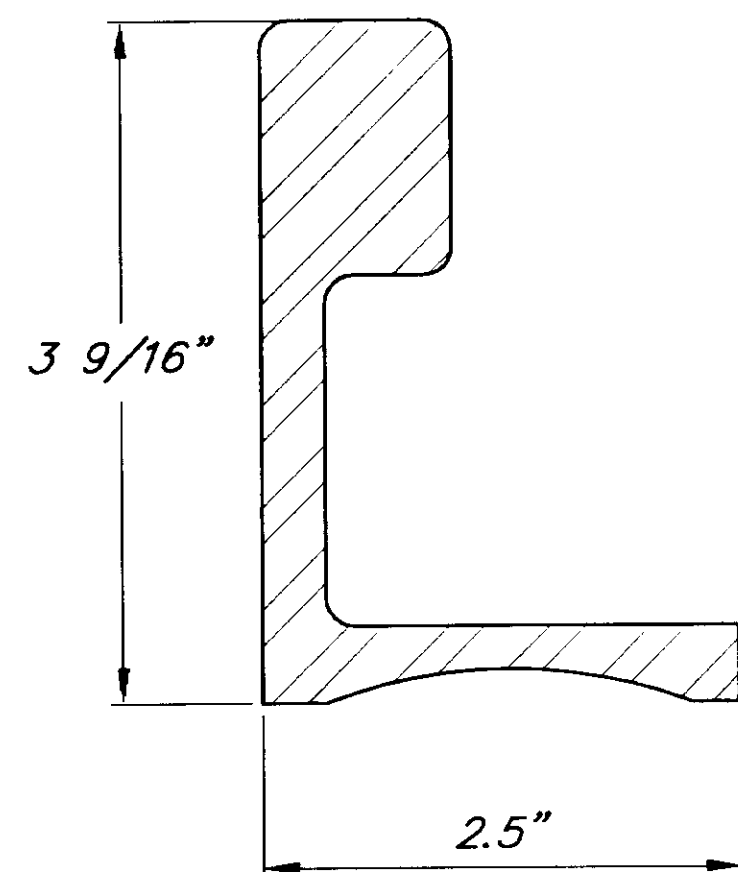
ENGINEER'S SEAL



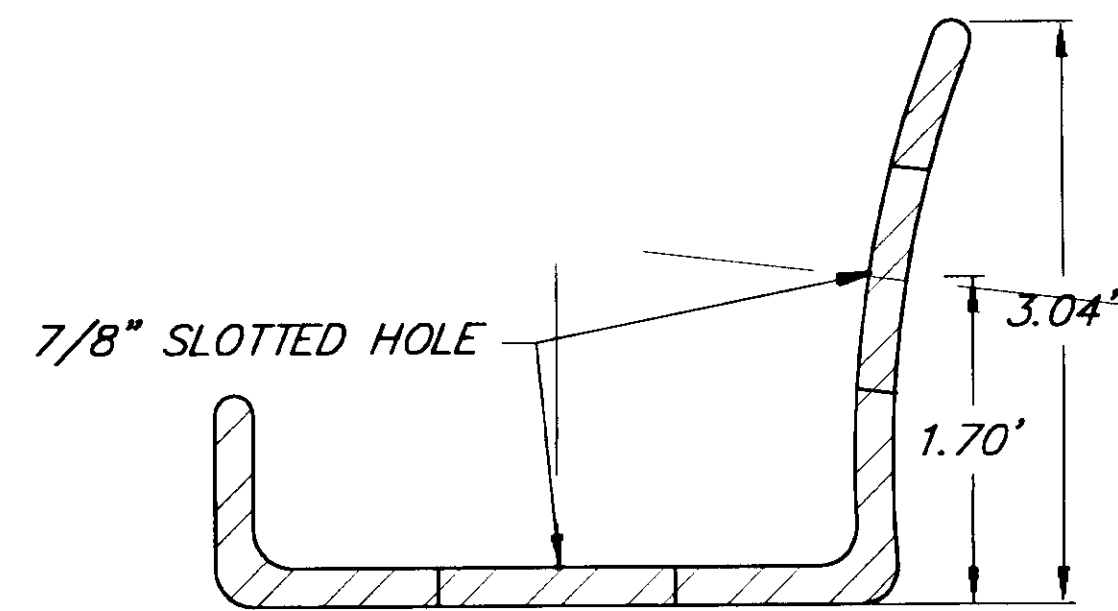




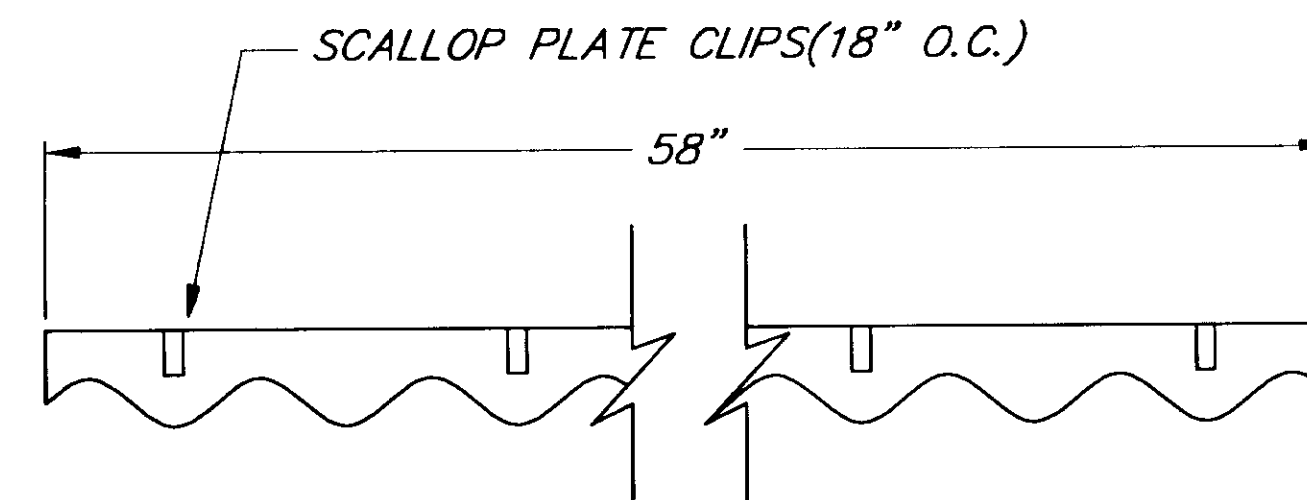
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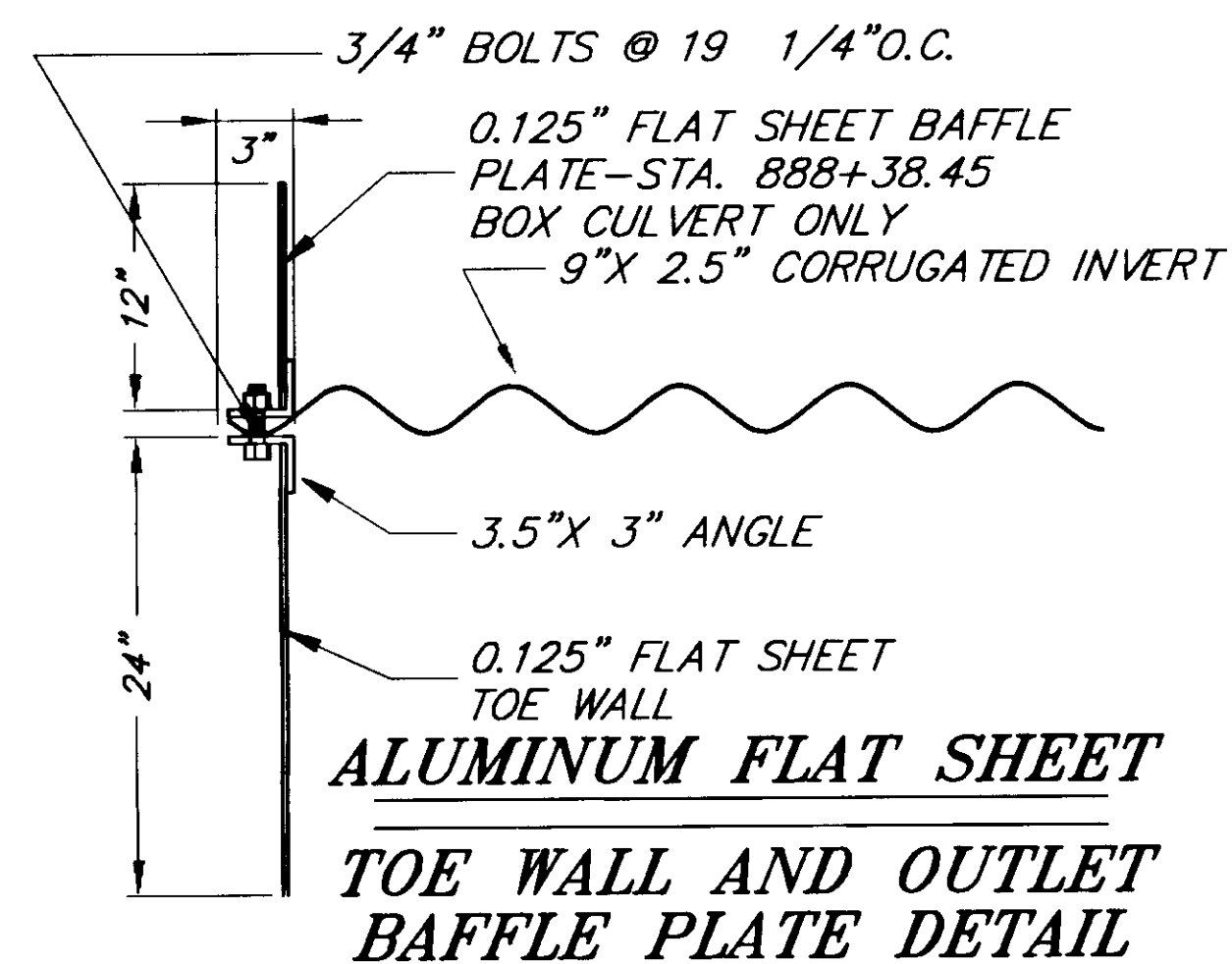
**TYPE IV RIB**



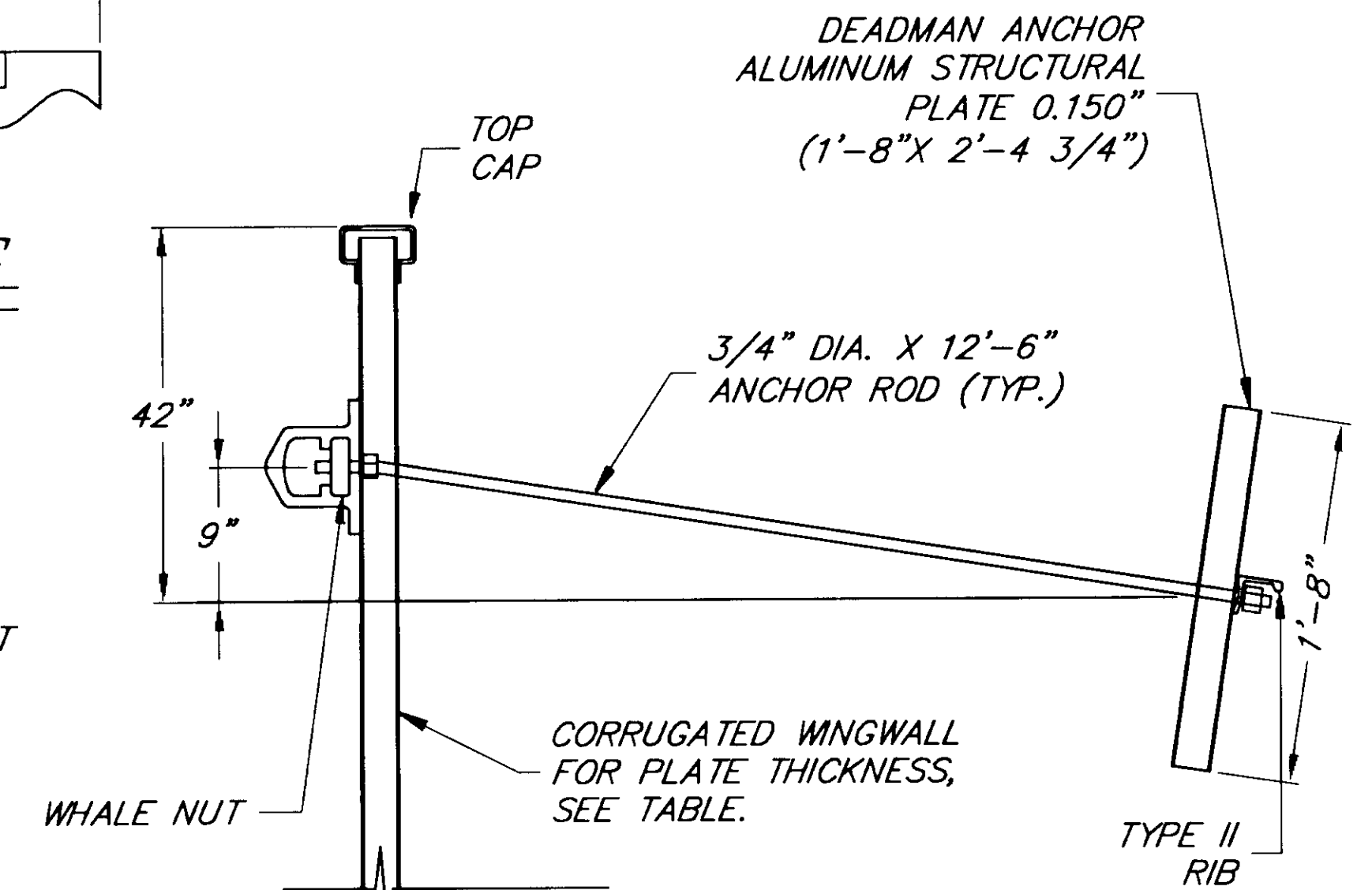
**ALUMINUM RECEIVING CHANNEL**



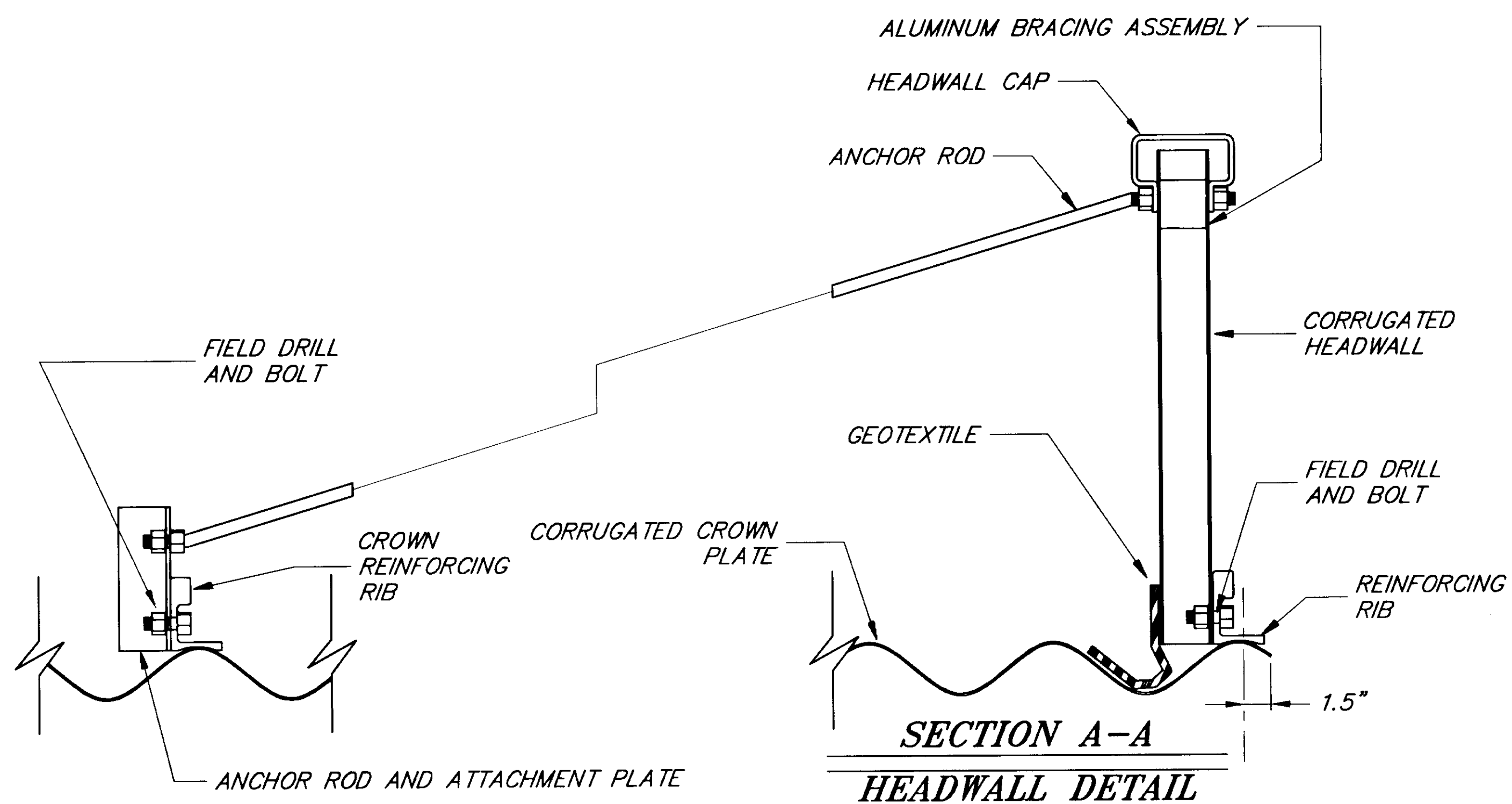
**ALUMINUM SCALLOP PLATE**



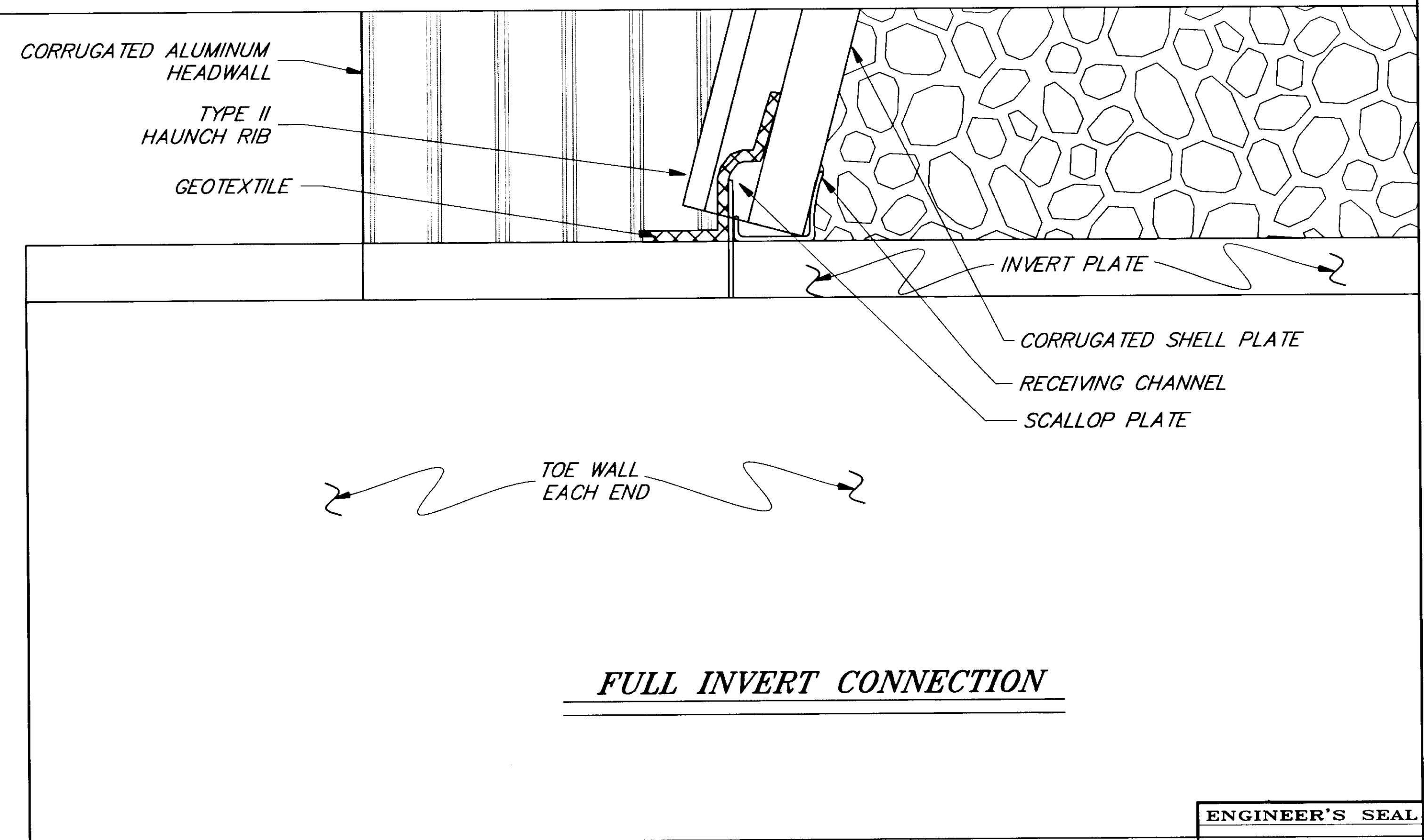
**ALUMINUM FLAT SHEET TOE WALL AND OUTLET Baffle Plate Detail**



**SINGLE DEADMAN ANCHOR**



**SECTION A-A HEADWALL DETAIL**



**FULL INVERT CONNECTION**

PATH:	[PlotStamp Eval] Q:\Hns\68800\Planset\detail1.dwg
BY:	DATE:
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	[PlotStamp Eval] Leonard Fri, 12/Nov/99 02:06pm
<b>RECORD OF REVISIONS</b>	

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

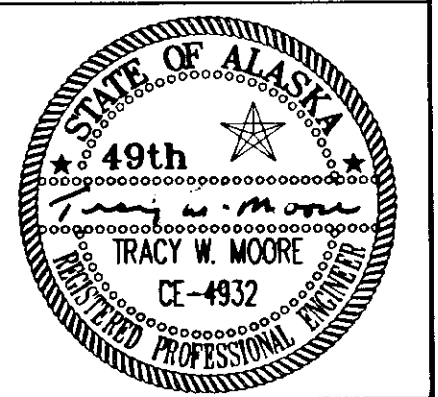
HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6 (20) ~ 71874

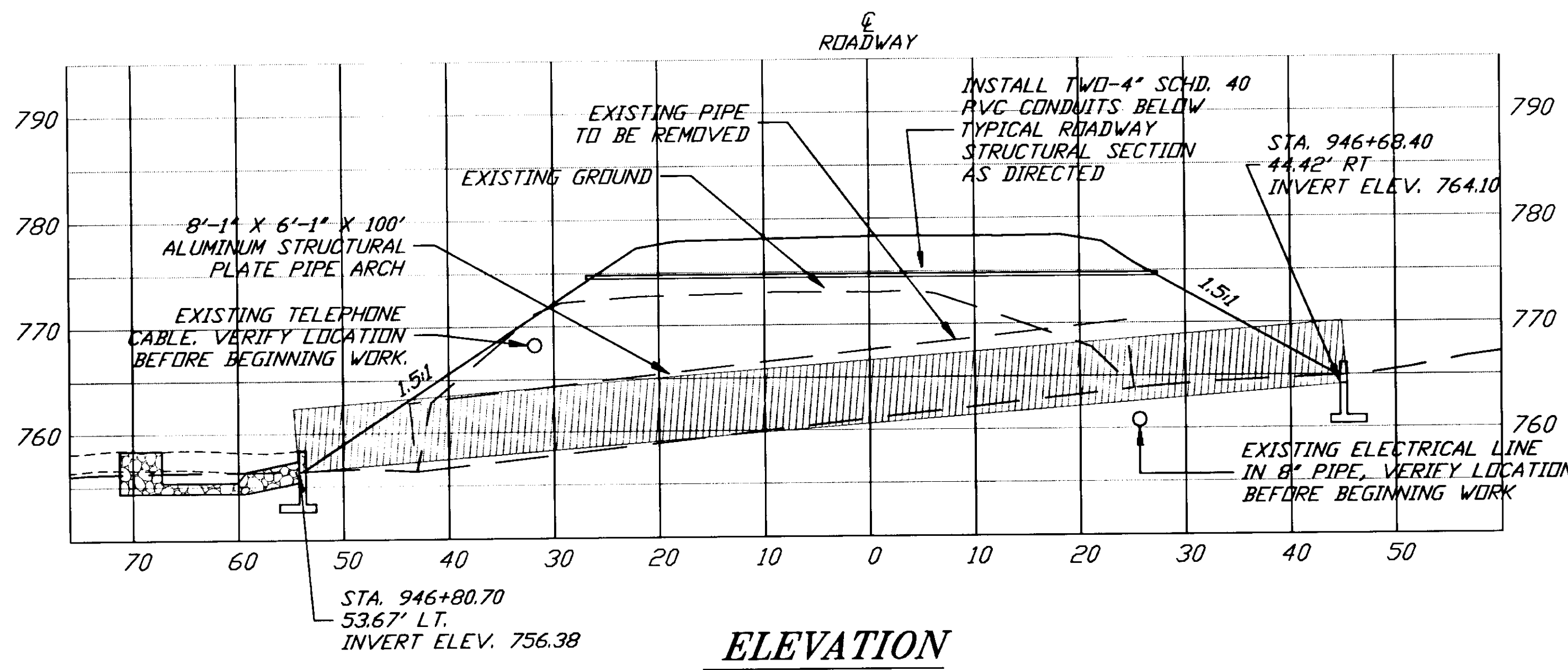
**ALUMINUM BOX CULVERT DETAILS**

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	E15

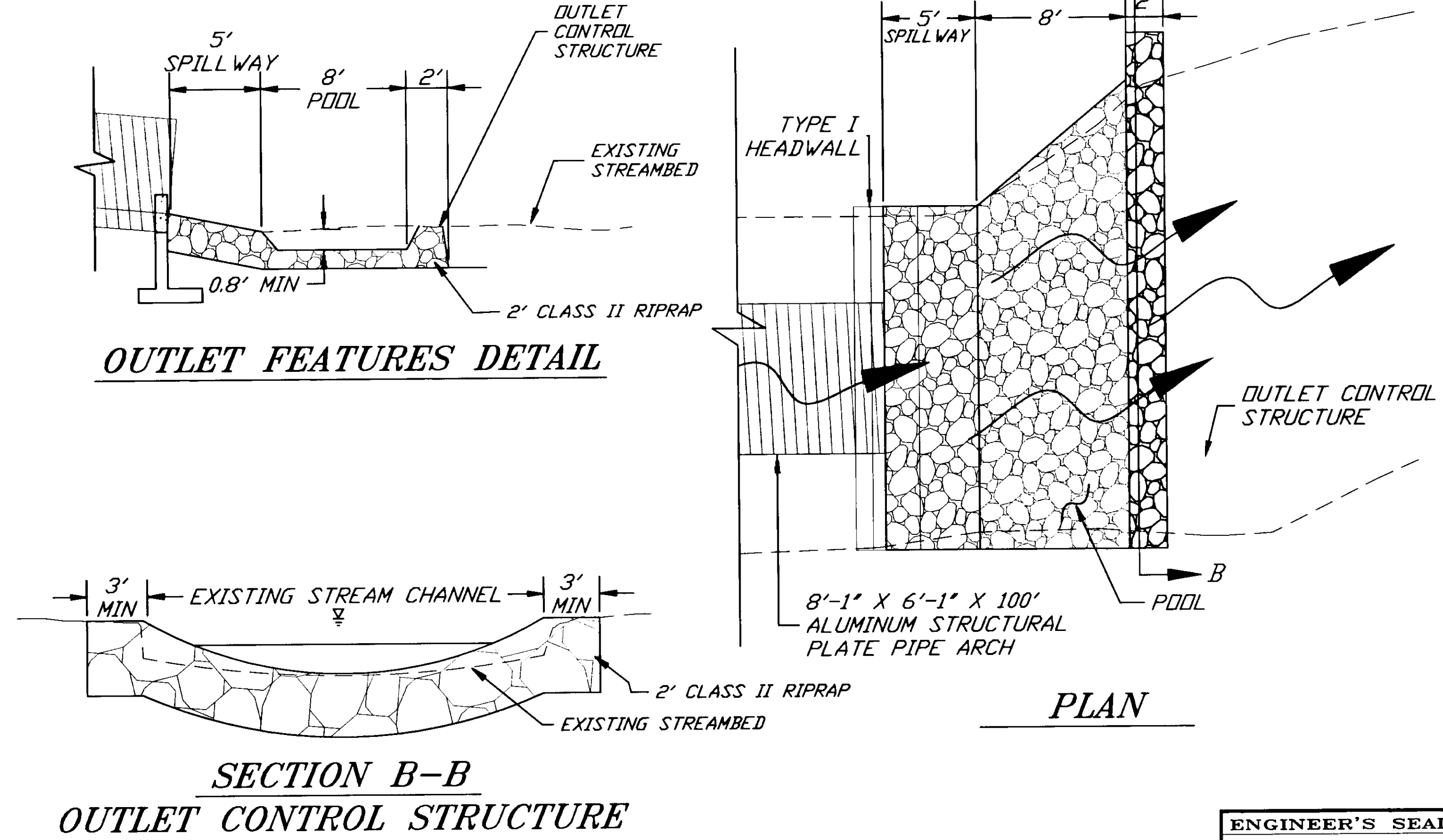
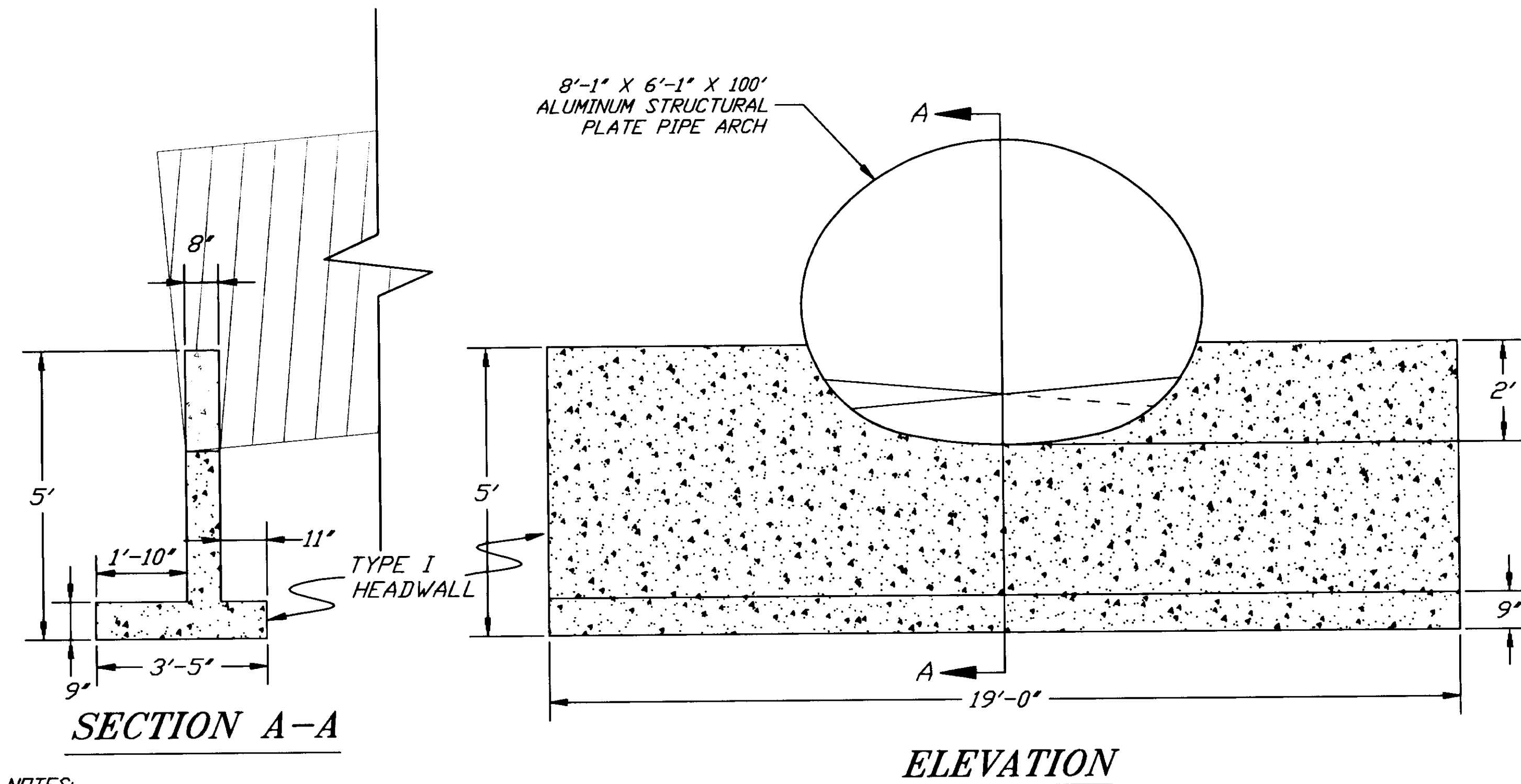
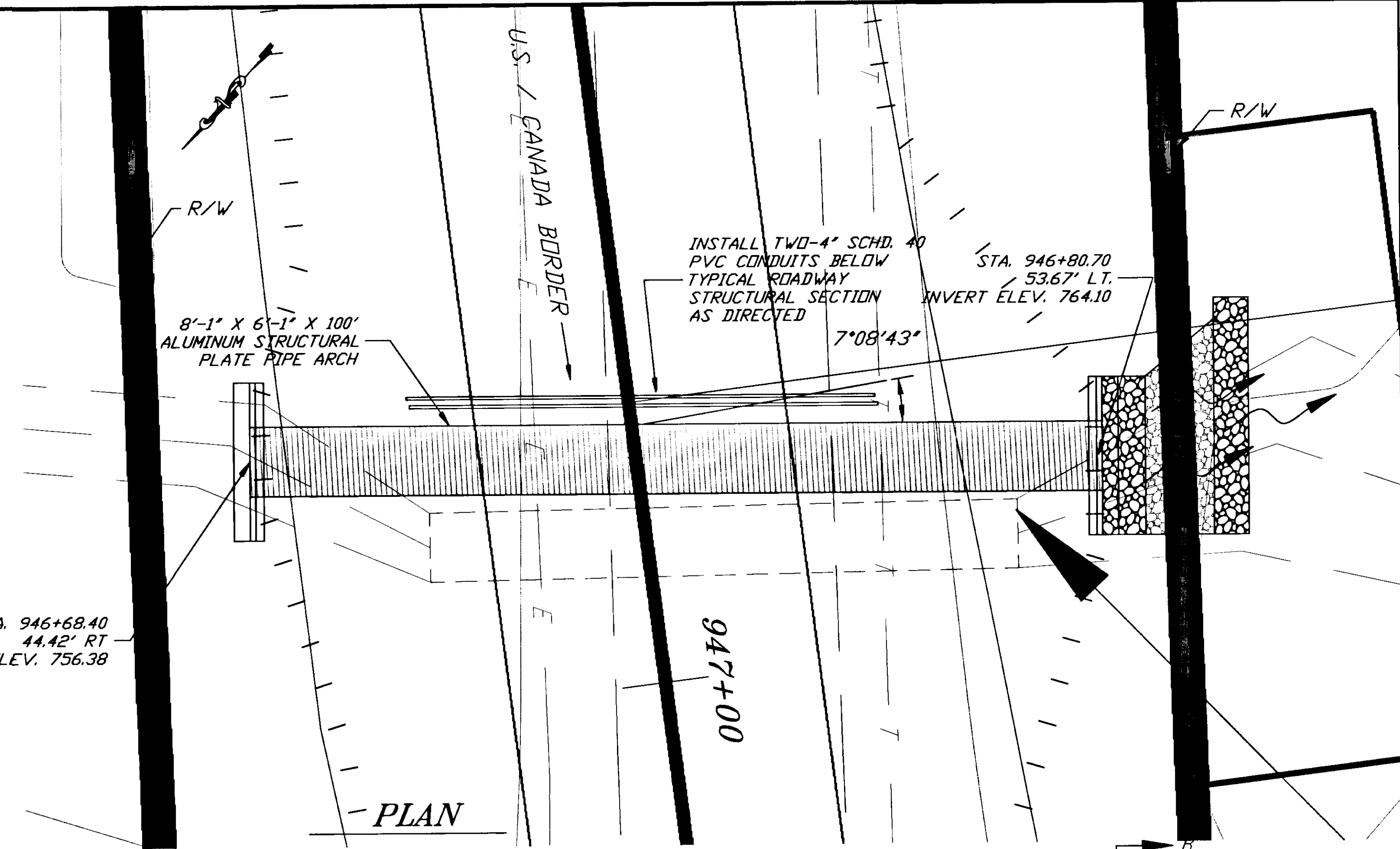
ENGINEER'S SEAL





**HYDROLOGIC AND  
HYDRAULIC SUMMARY**

DRAINAGE AREA	0.50 SQ. MILES	
RECURRENT INTERVAL	50 YEARS	100 YEARS
EXCEEDANCE PROBABILITY	2%	1%
DESIGN DISCHARGE	89 CFS	101 CFS
DESIGN HIGH WATER	EL. 766.9 FT.	EL. 767.2 FT.



NOTES:  
1. REINFORCING STEEL FOR TYPE I HEADWALL NOT SHOWN FOR CLARITY. SEE STANDARD DRAWINGS FOR STEEL REQUIREMENTS AND PLACEMENT

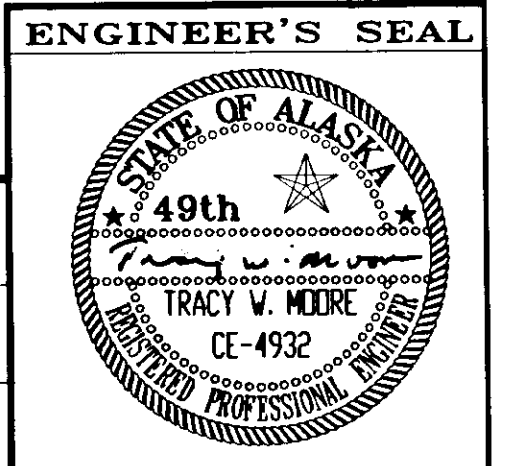
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RECORD OF REVISIONS		

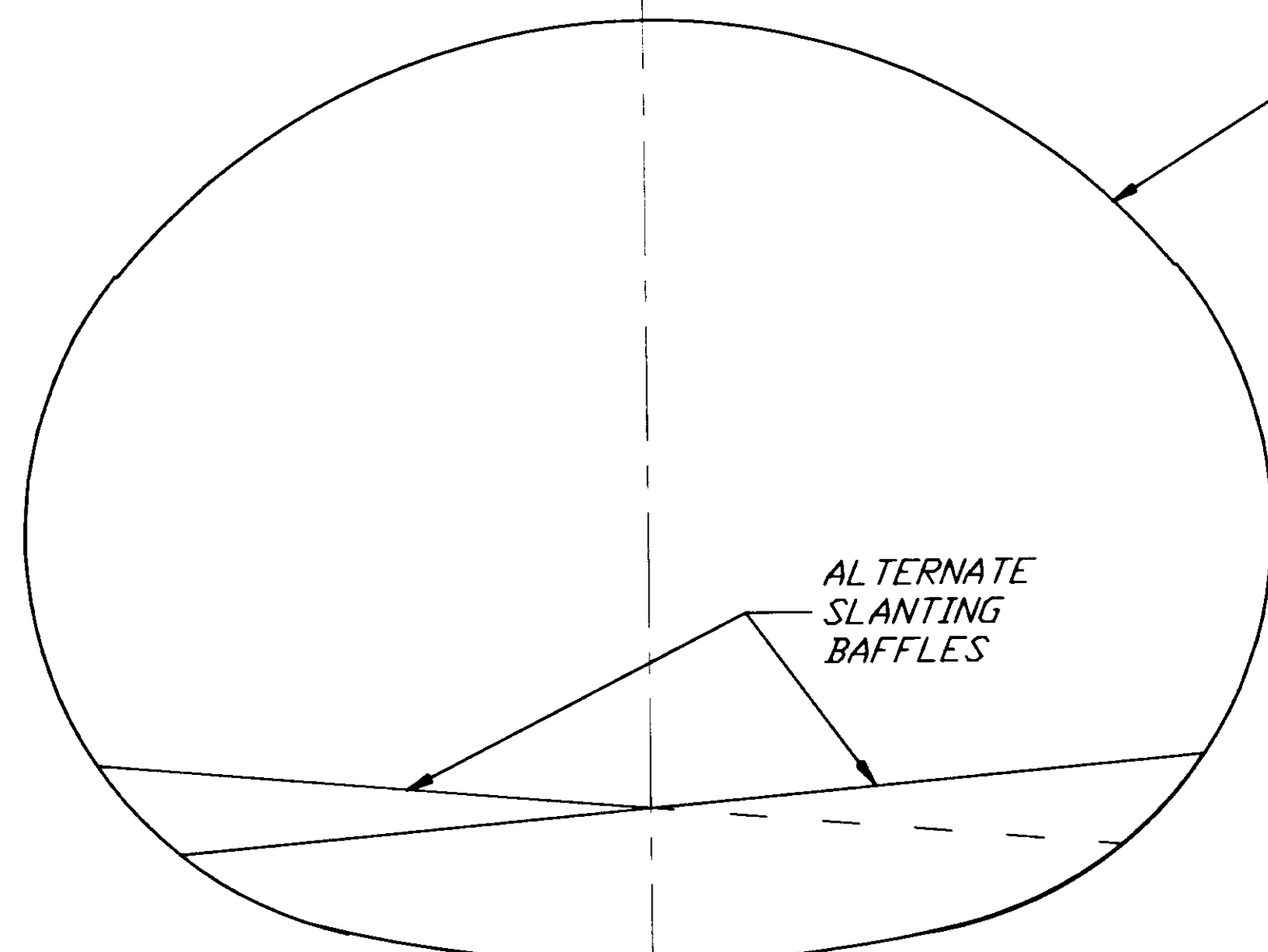
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK.-095-6(20) ~ 71874  
ALASKA  
CULVERT REPLACEMENT DETAILS STA. 946+74

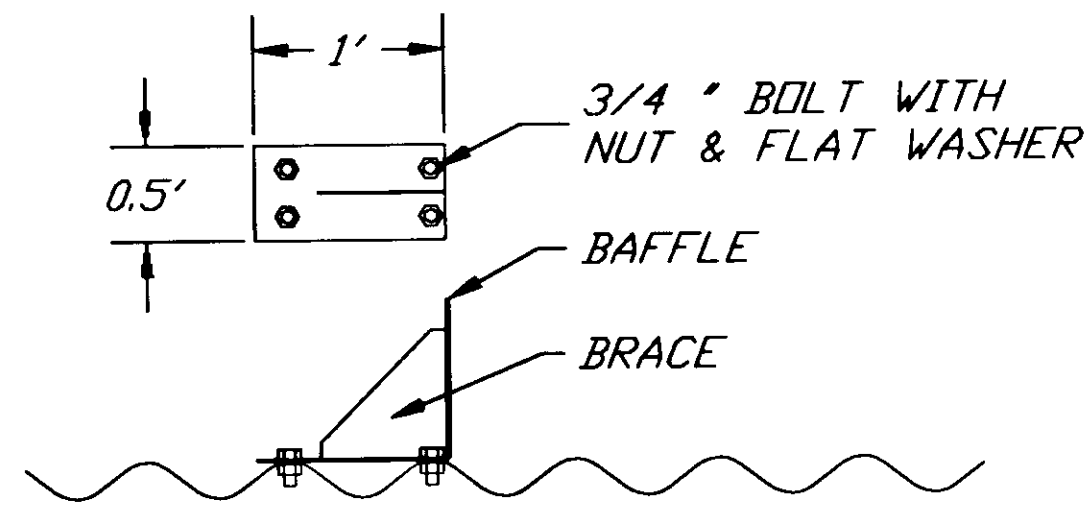
DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T.W. MOORE	SHEET	E16

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS





8'-1" X 6'-1"  
ALUMINUM STRUCTURAL PLATE  
PIPE ARCH

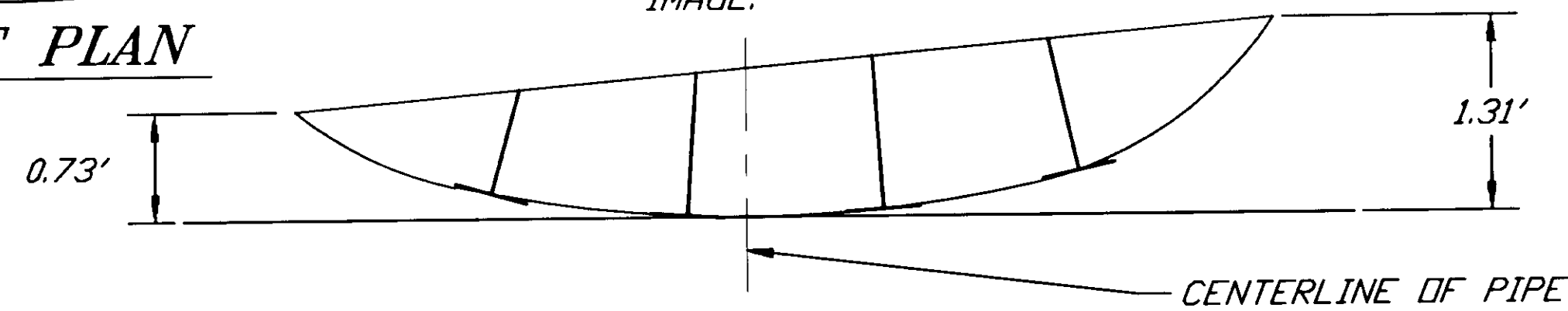


**BAFFLE PLAN**

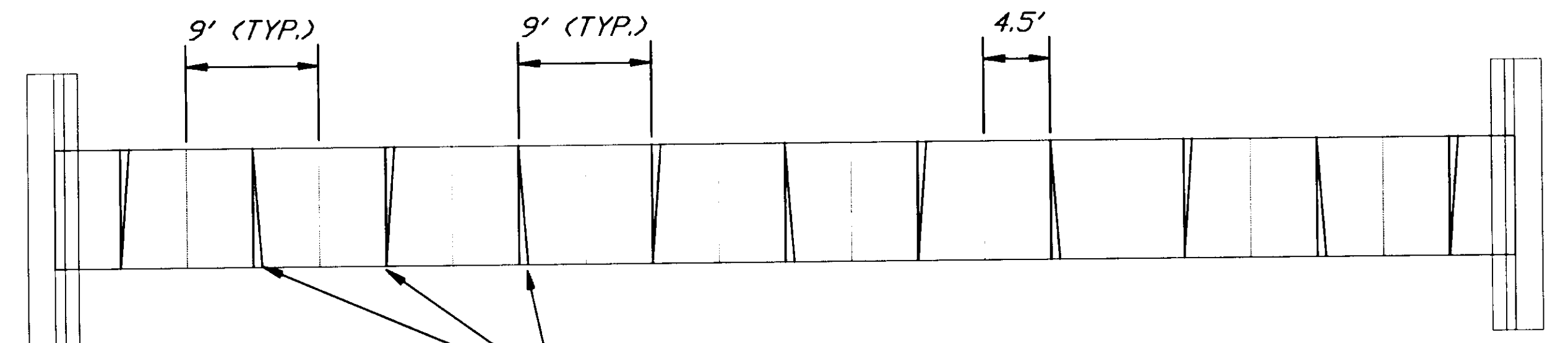
QUANTITY: 6 LEFT AND 5 RIGHT, LEFT AND RIGHT DENOTED BY LOOKING UPHILL AT PIPE.

NOTE: ALTERNATE BAFFLES BY INSTALLING EVERY OTHER PLATE 180 DEGREES MIRROR IMAGE.

**BAFFLE PLAN**



**BAFFLE PLATE SUPPORT LOCATIONS**



ALTERNATE  
SLANTING  
BAFFLES

**BAFFLE PLAN**

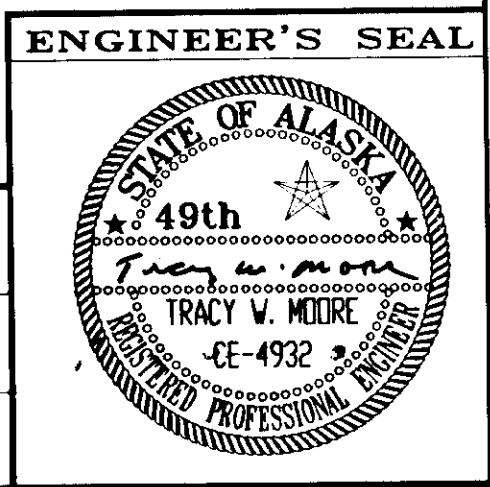
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

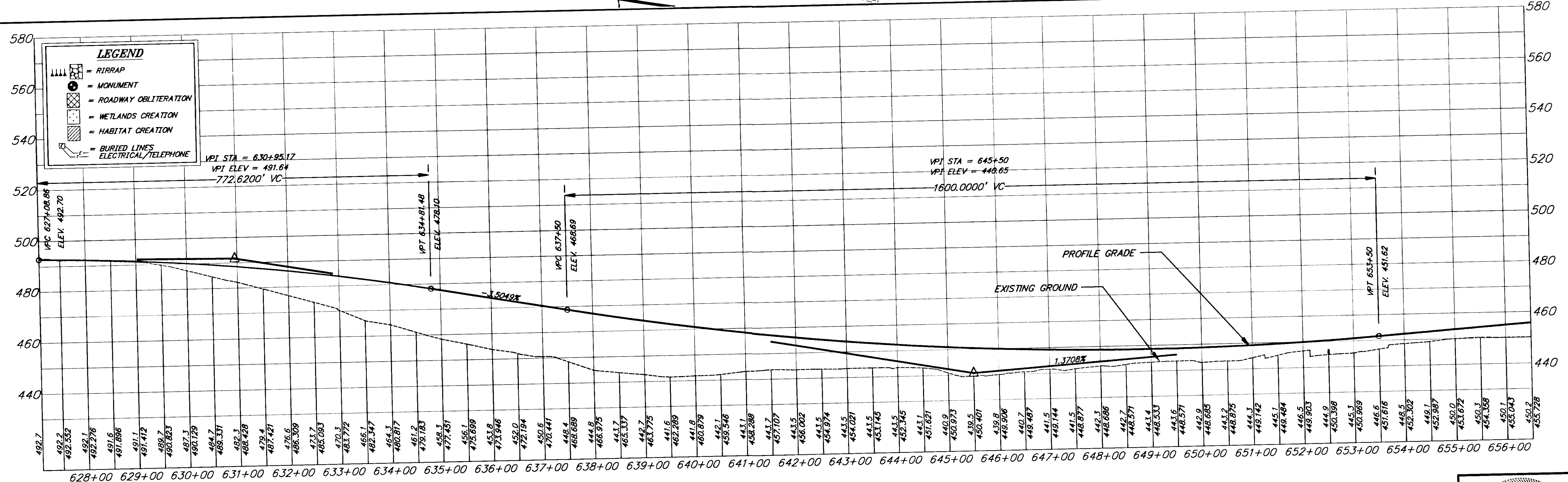
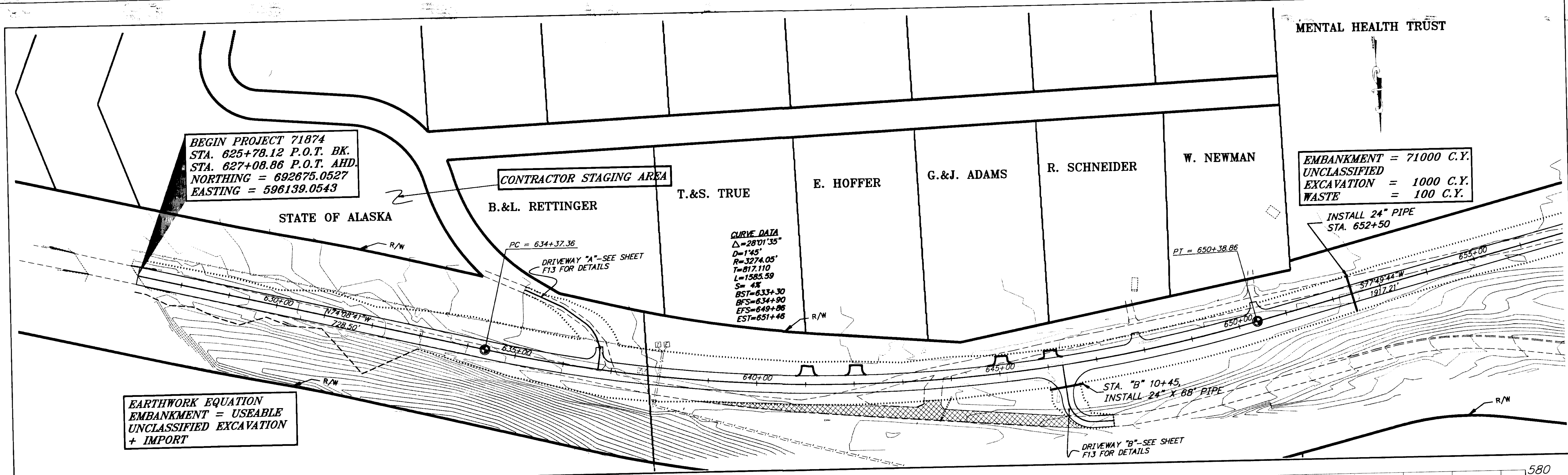
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BY:	DATE:	DESCRIPTION OF CHANGE:
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<b>RECORD OF REVISIONS</b>		

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES HAINES HIGHWAY ALASKA  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK.-095-6(20) ~ 71874  
**CULVERT REPLACEMENT DETAILS STA. 946+74**

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T.W. MOORE	SHEET	E17





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BY:	DATE:	DESCRIPTION OF CHANGE:
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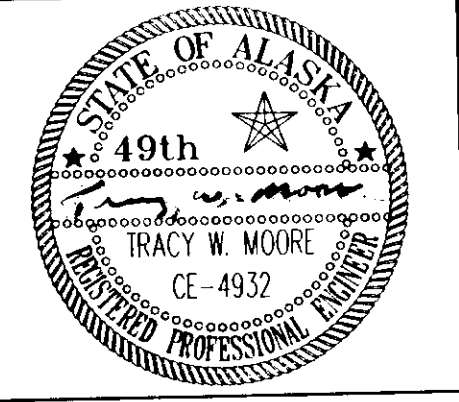
**RECORD OF REVISIONS**

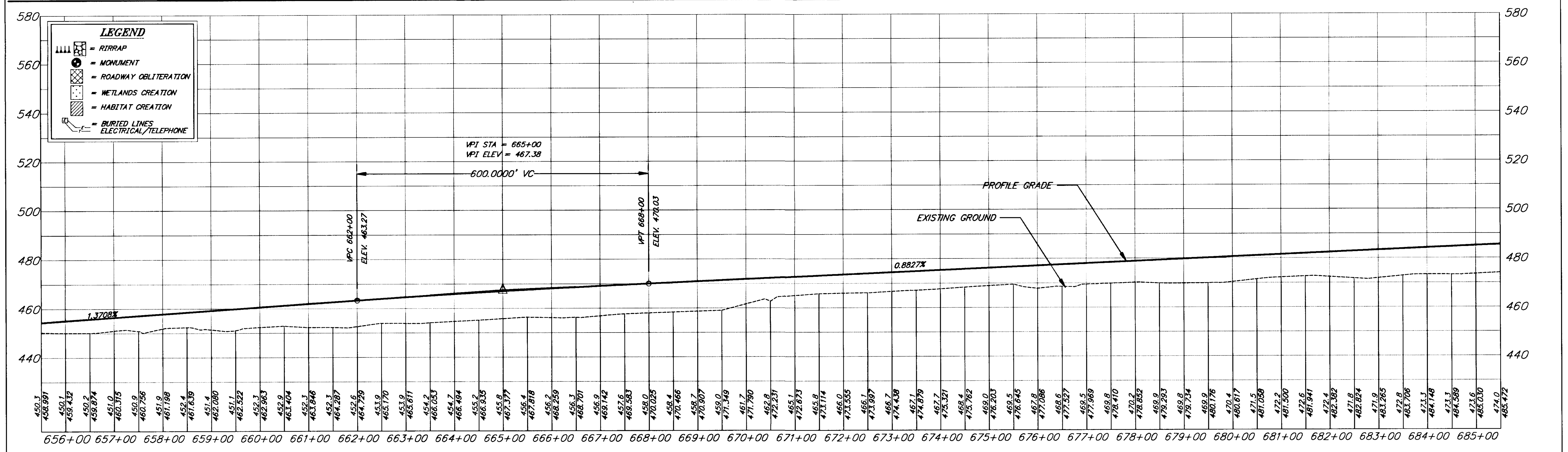
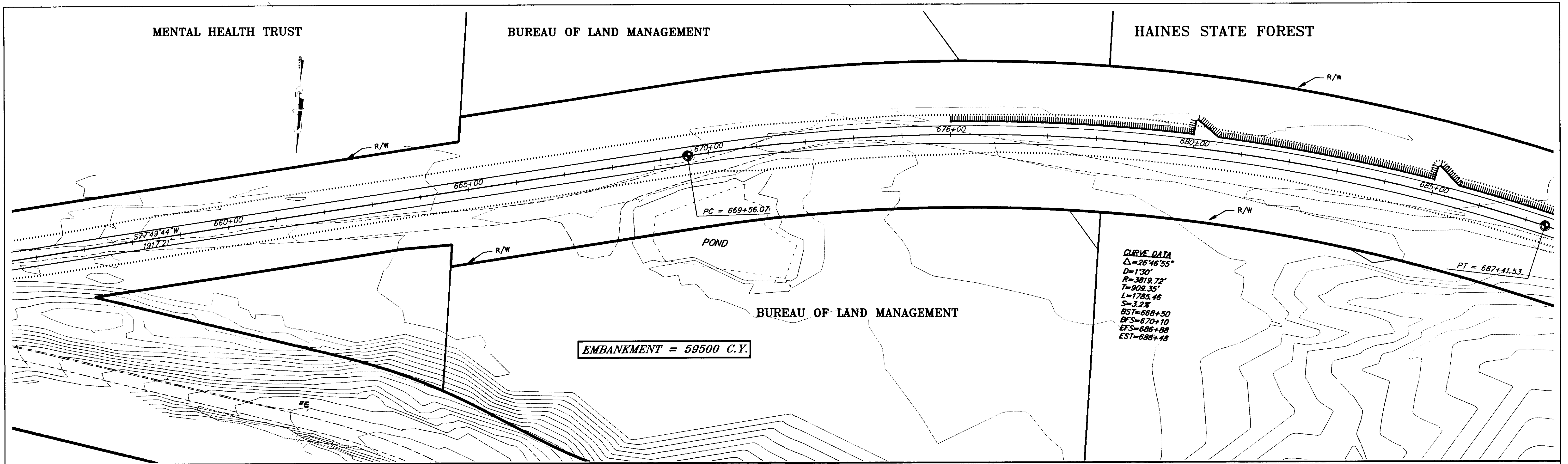
STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 B.O.P. STA. 627+08.86 TO 656+00

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

DESIGNED BY: C. HAKARI	PROJECT NO. 71874
DRAWN BY: L. ROBERTSON	DATE: 1999
CHECKED BY: T. MOORE	SHEET F1





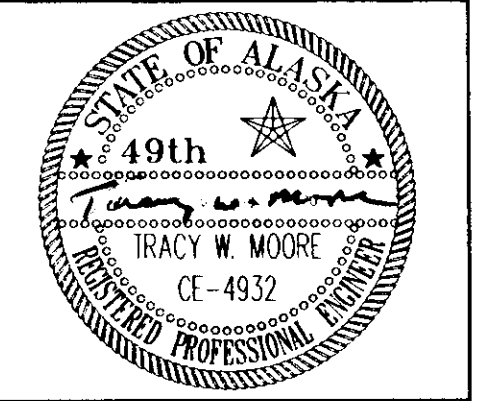
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

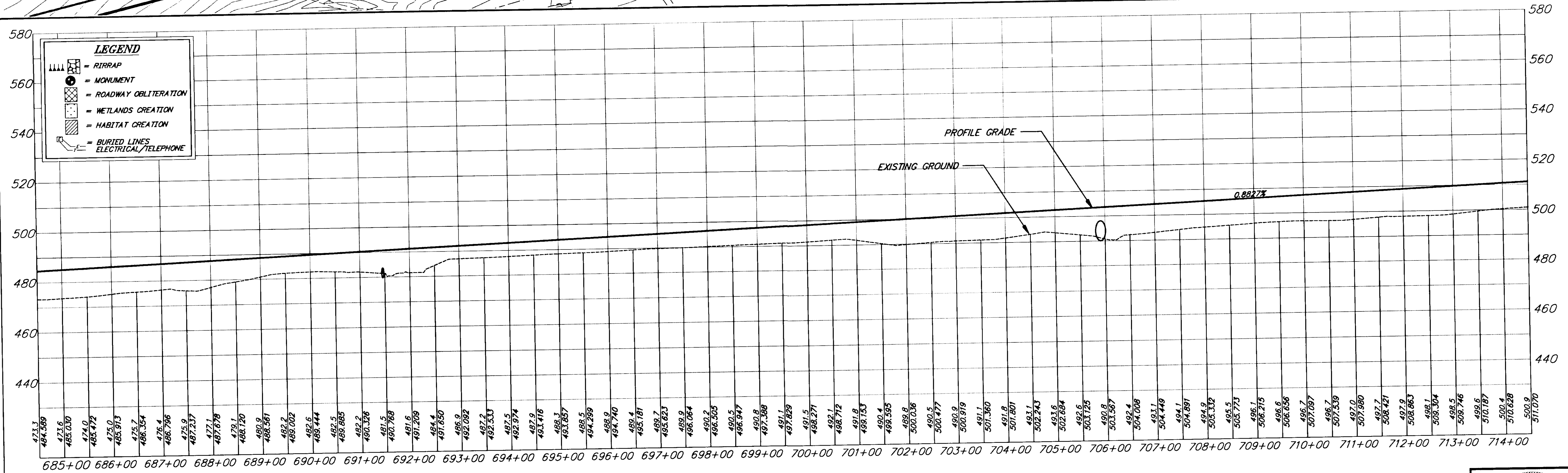
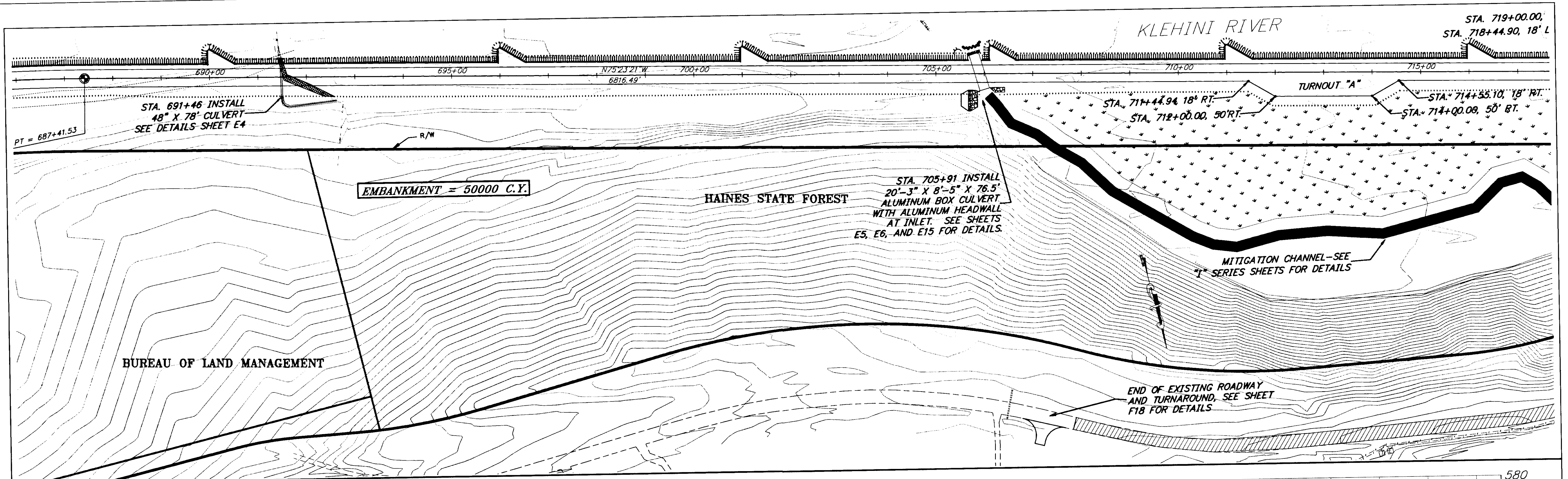
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BY:	DATE:	DESCRIPTION OF CHANGE:
		[PlotStamp Eval] Plot By: Leonard Mon, 15/Nov/99 08:49am
RECORD OF REVISIONS		

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
 ALASKA  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 STA. 656+00 TO 685+00

DESIGNED BY: C. HAKARI	PROJECT NO. 71874
DRAWN BY: L. ROBERTSON	DATE: 1999
CHECKED BY: T. MOORE	SHEET F2





NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

PATH: [PlotStamp Eval] Q:\Hns\68800\PlanSet\—plan.dwg		
PLOT: P:\-LIB\—PLOT\PLOT.PCP(1) OR PLOT.PCP(2)		
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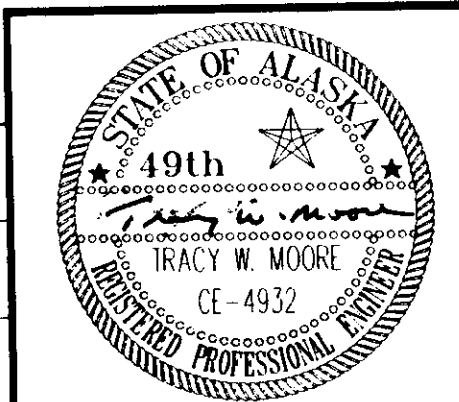
STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

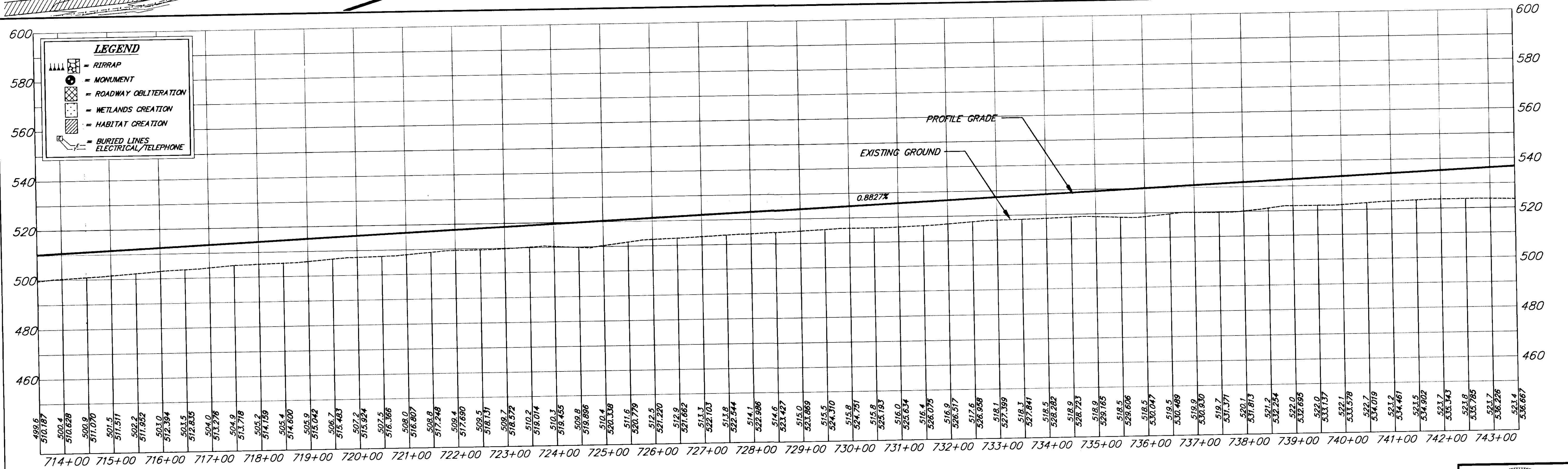
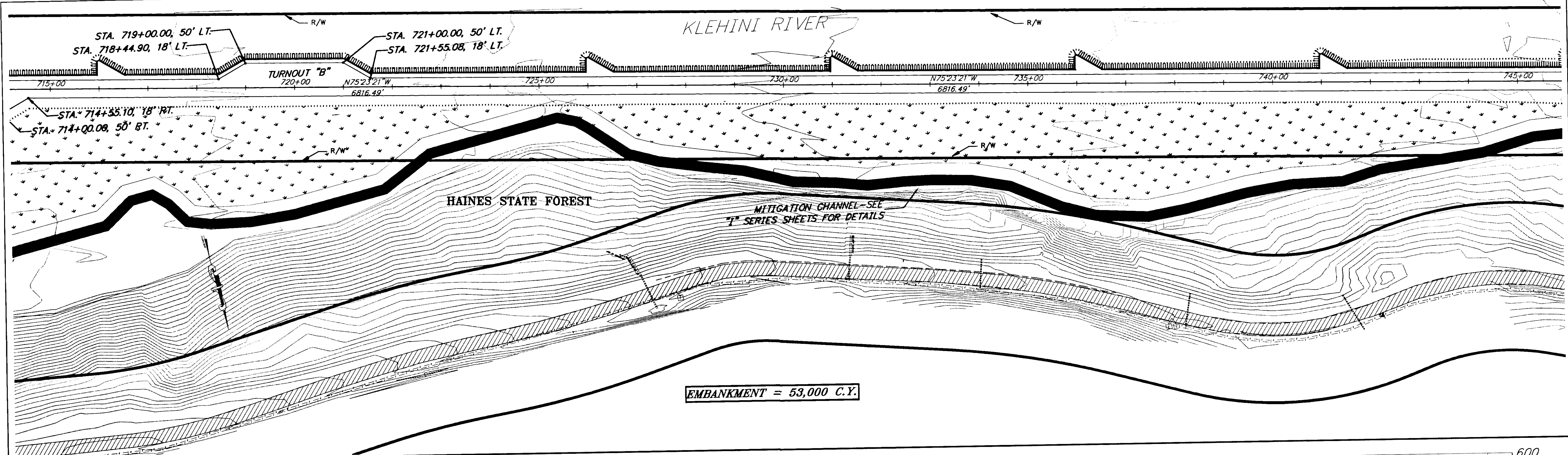
HAINES

HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 STA. 685+00 TO 714+00

ALASKA

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	F3





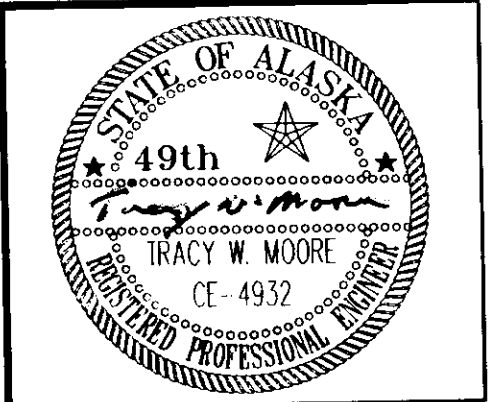
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

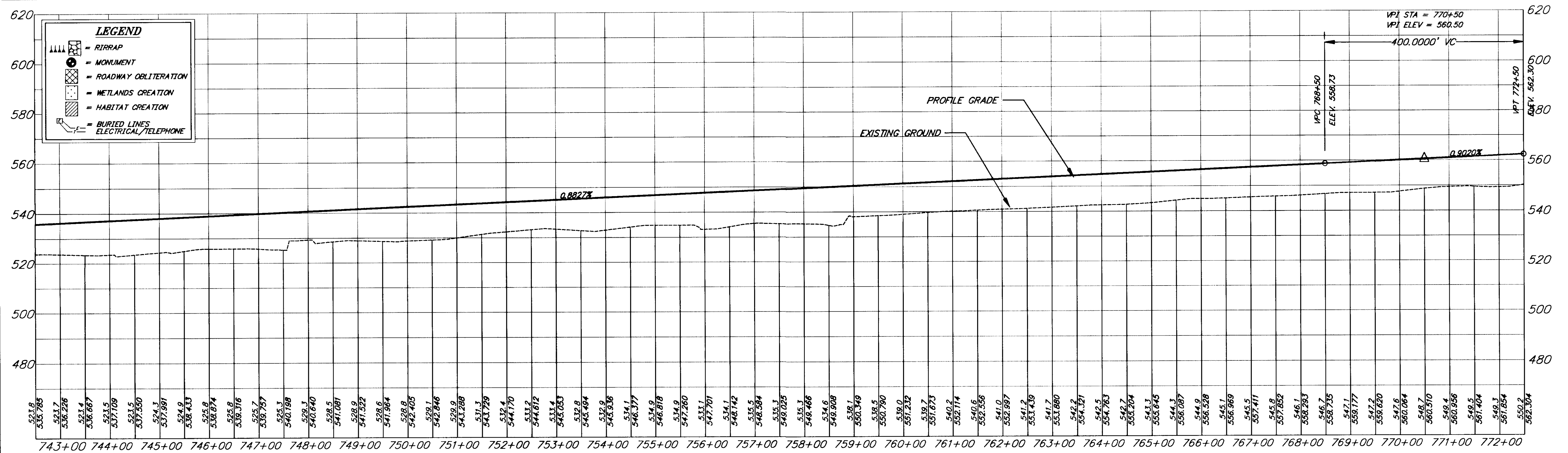
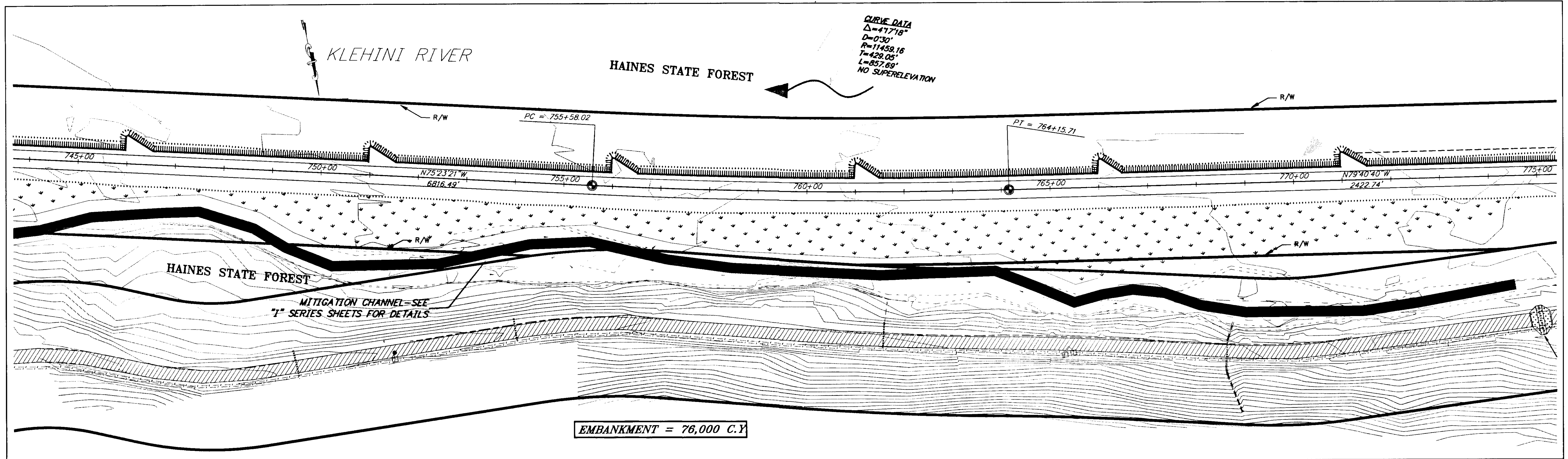
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BY:	DATE:	DESCRIPTION OF CHANGE:
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<b>RECORD OF REVISIONS</b>		

STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES**  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
**HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER**  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
**STA. 714+00 TO 743+00**

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	F4





NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

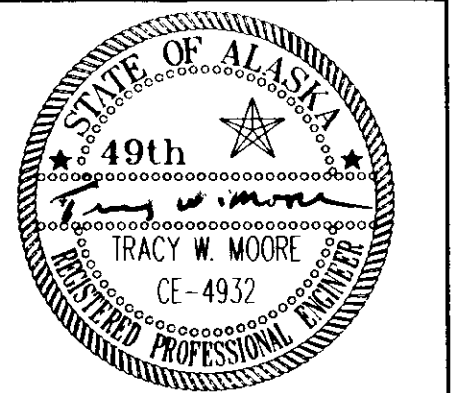
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BY:	DATE:	DESCRIPTION OF CHANGE:
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STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 STA. 743+00 TO 772+00

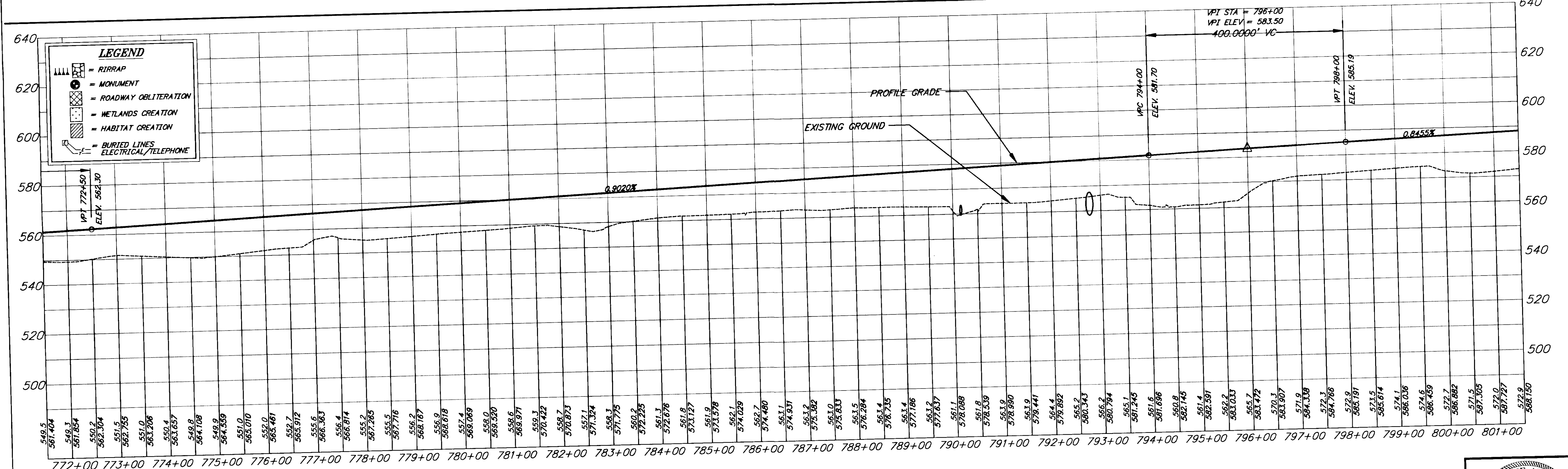
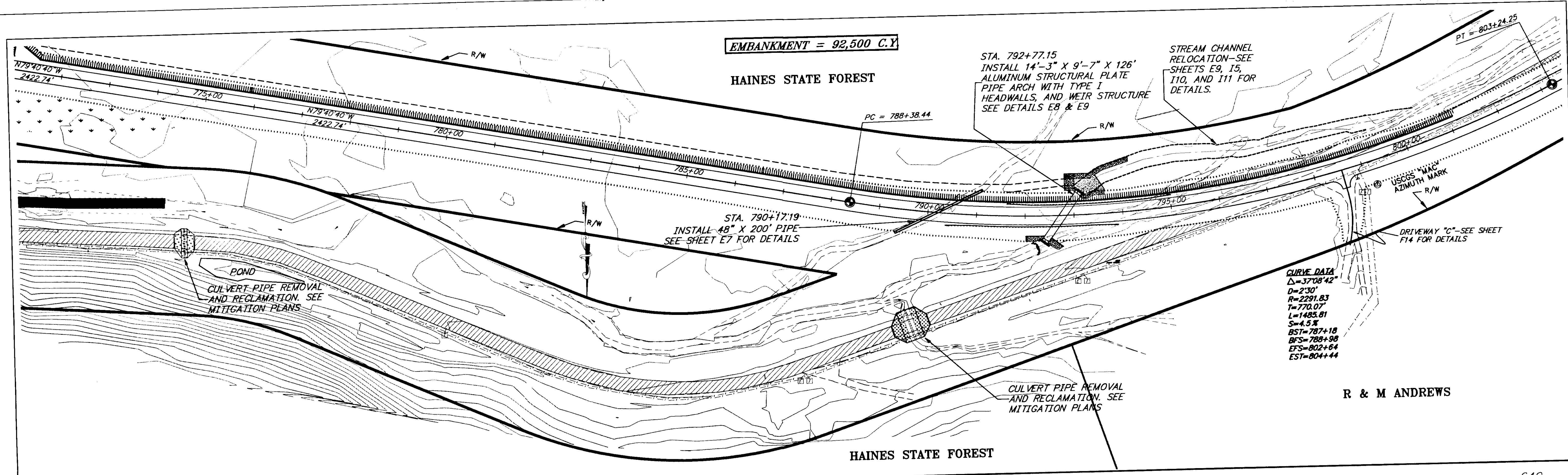
ALASKA  
 DESIGNED BY: C. HAKARI  
 DRAWN BY: L. ROBERTSON  
 CHECKED BY: T. MOORE

PROJECT NO. 71874  
 DATE: 1999  
 SHEET F5



RECORD OF REVISIONS





PATH: [PlotStamp Eval] Q: \Hns\68800\Planset\ -plan.dwg  
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 BY: DATE: DESCRIPTION OF CHANGE:  
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**RECORD OF REVISIONS**

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

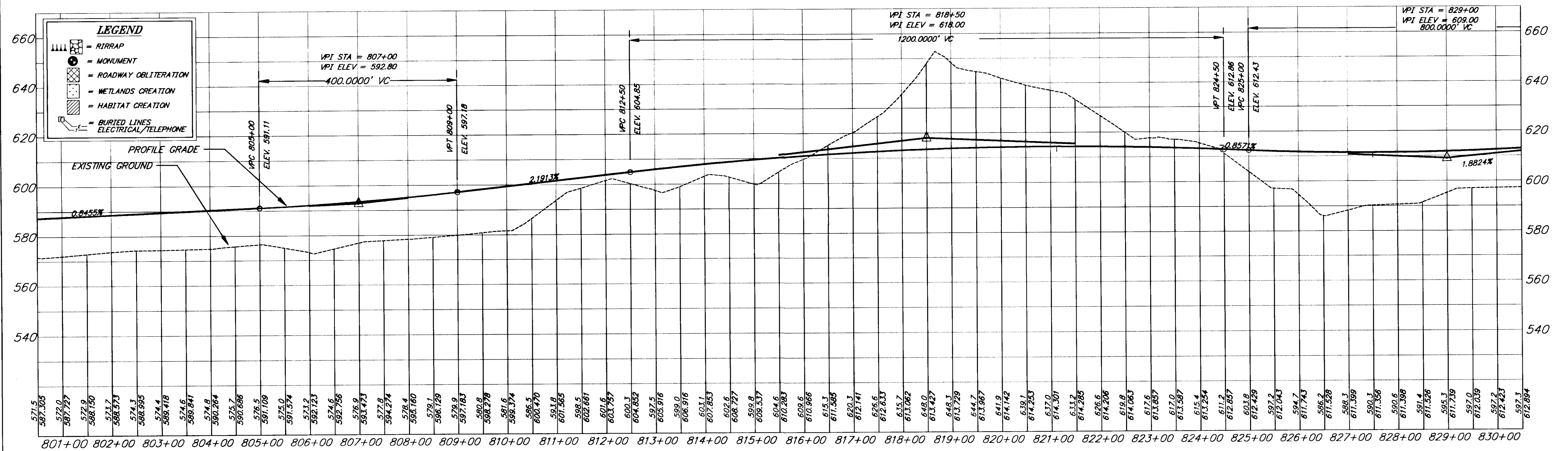
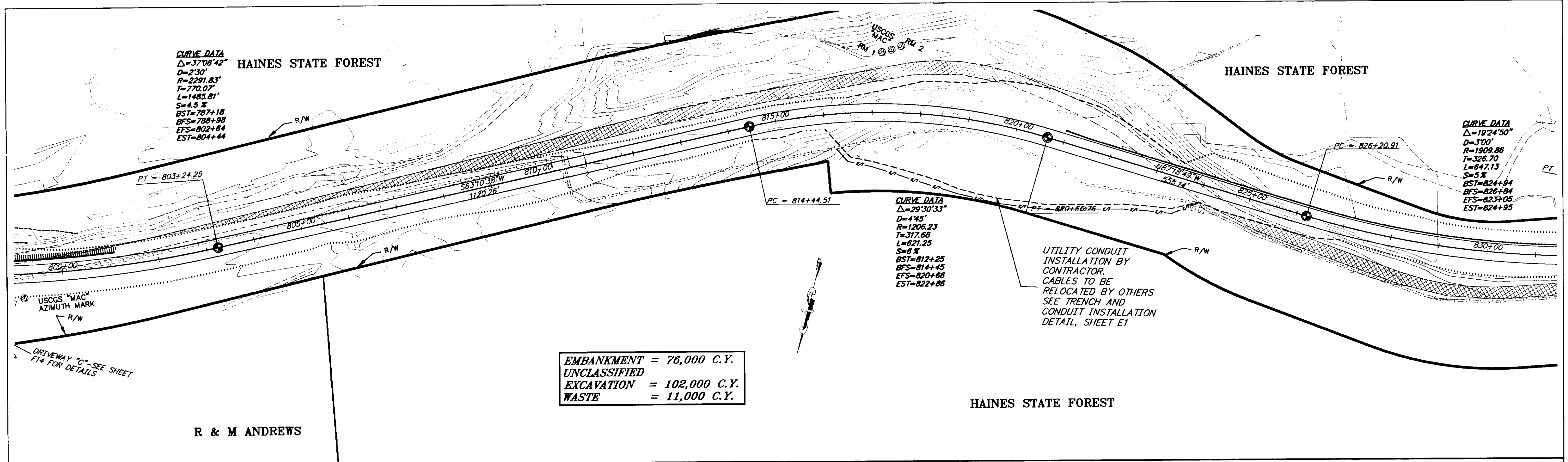
HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 STA. 772+00 TO 801+00

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

ALASKA  
 DESIGNED BY: C. HAKARI  
 DRAWN BY: L. ROBERTSON  
 CHECKED BY: T. MOORE

PROJECT NO. 71874  
 DATE: 1999  
 SHEET F6





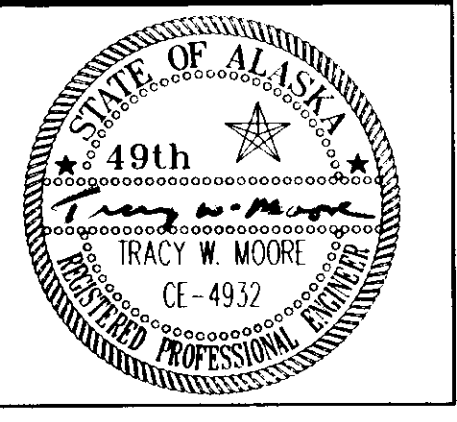
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

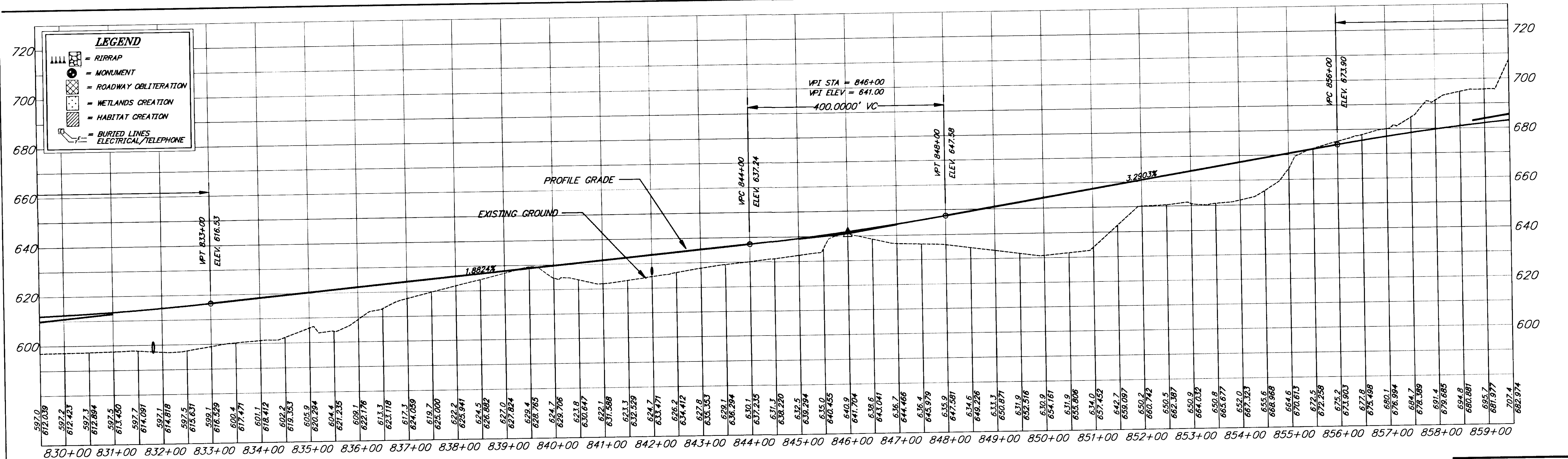
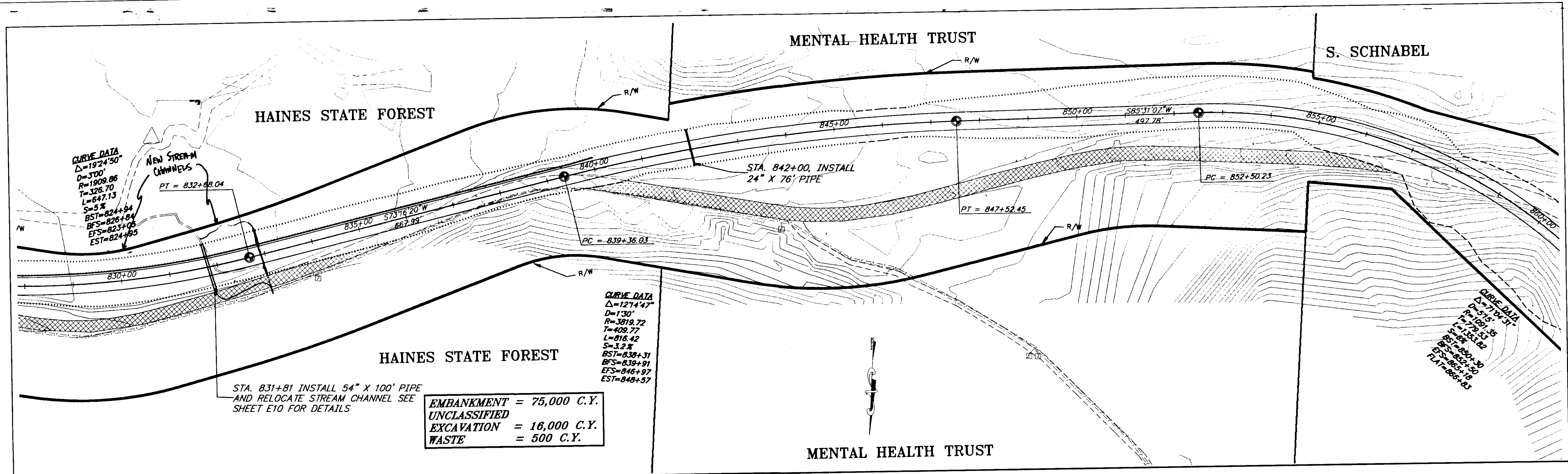
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BY:	DATE:	DESCRIPTION OF CHANGE:
		[PlotStamp Eval] Plot By: Leonard Man, 15/Nov/99 08:53am
<b>RECORD OF REVISIONS</b>		

STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES**  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
**HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER**  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 STA. 801+00 TO 830+00

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	F7





PATH: [PlotStamp Eval] Q:\Hns\68800\Planset\plan.dwg  
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 BY: [PlotStamp Eval] Plot By: Leonard Mon, 15/Nov/99 08:53am

DATE:	DESCRIPTION OF CHANGE:

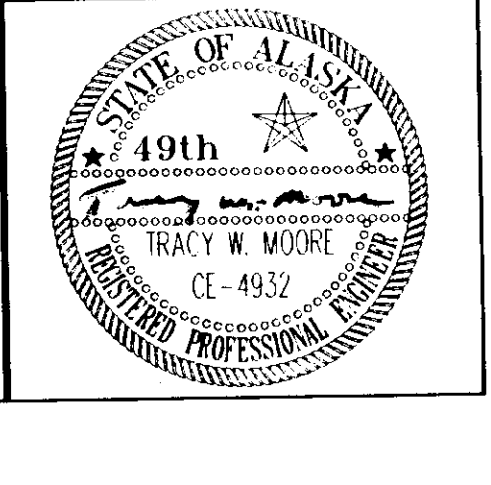
**RECORD OF REVISIONS**

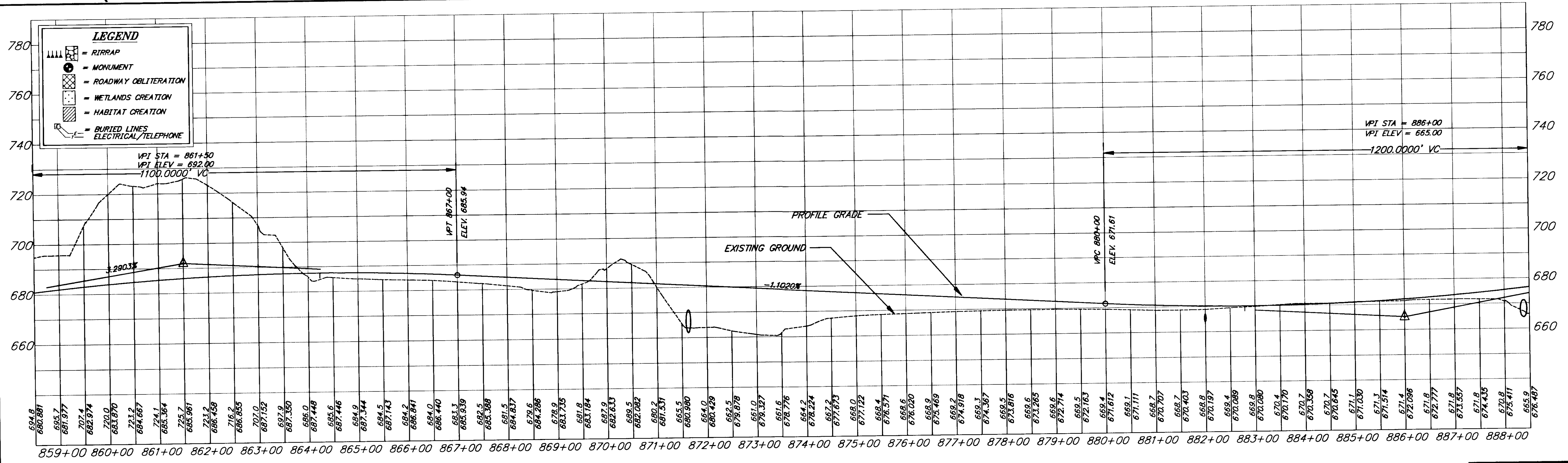
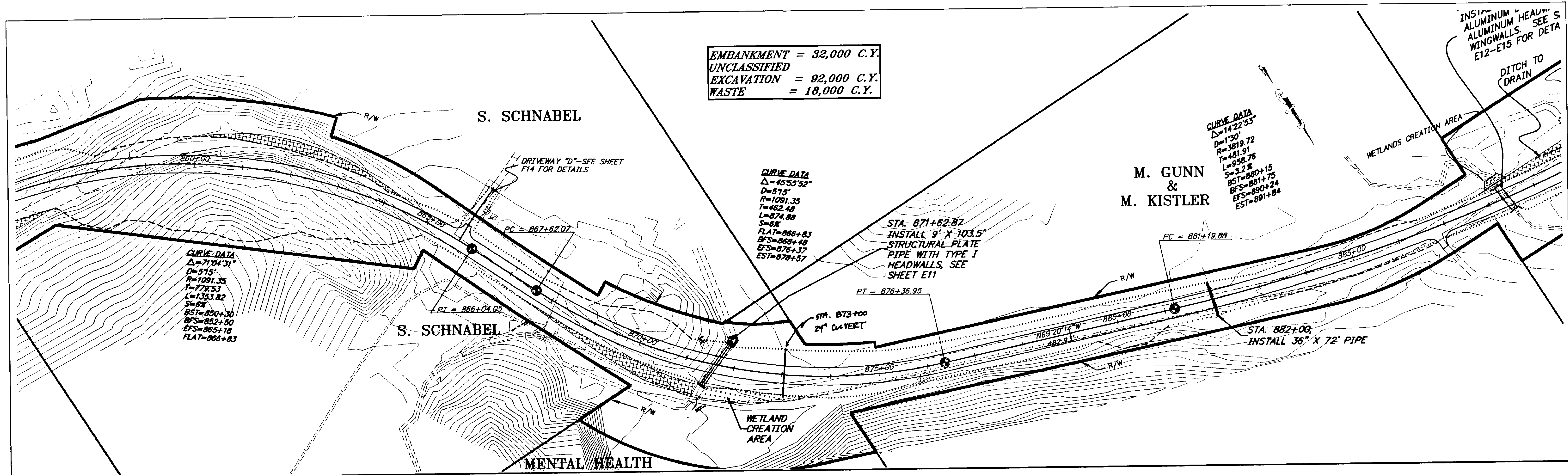
STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 STA. 830+00 TO 859+00  
 ALASKA

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

DESIGNED BY: C. HAKARI	PROJECT NO. 71874
DRAWN BY: L. ROBERTSON	DATE: 1999
CHECKED BY: T. MOORE	SHEET F8



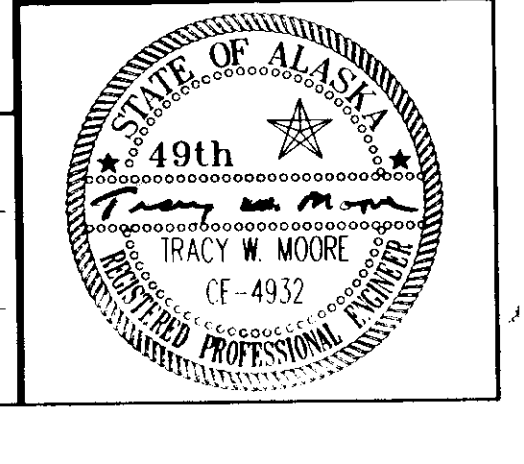


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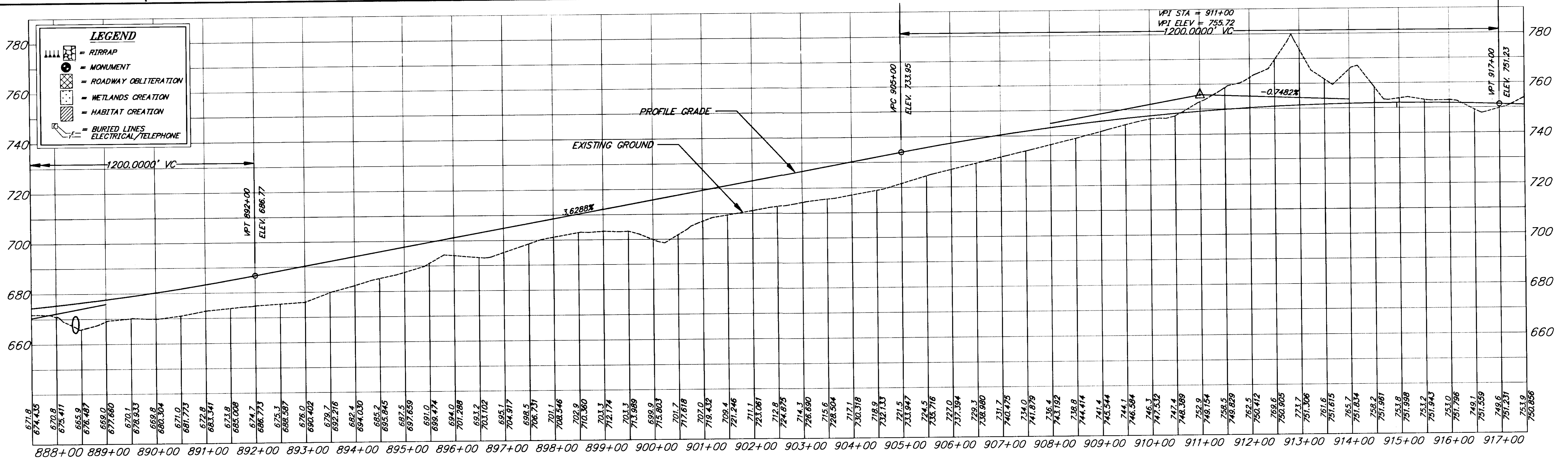
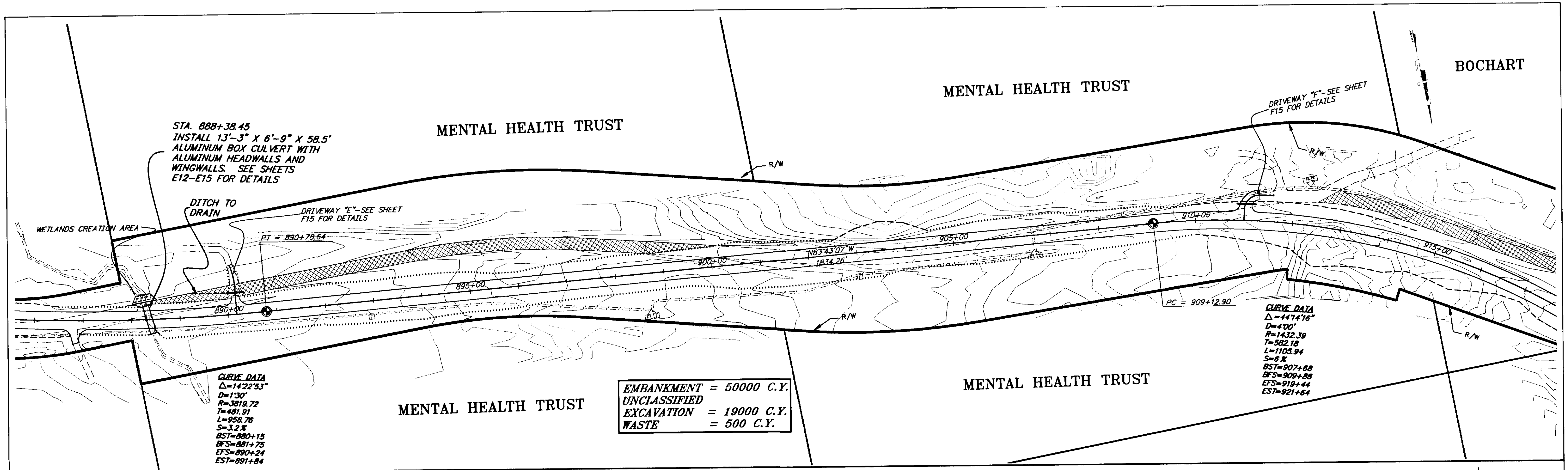
STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 STA. 859+00 TO 888+00

DESIGNED BY: C. HAKARI	PROJECT NO. 71874
DRAWN BY: L. ROBERTSON	DATE: 1999
CHECKED BY: T. MOORE	SHEET F9



NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS



PATH: [PlotStamp Eval] Q:\Hns\68800\Planset\plan.dwg

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BY:	DATE:	DESCRIPTION OF CHANGE:
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**RECORD OF REVISIONS**

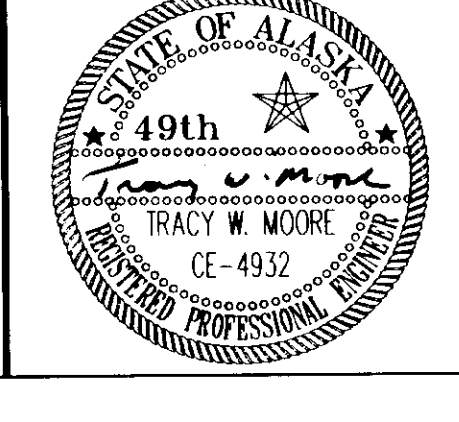
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
ALASKA

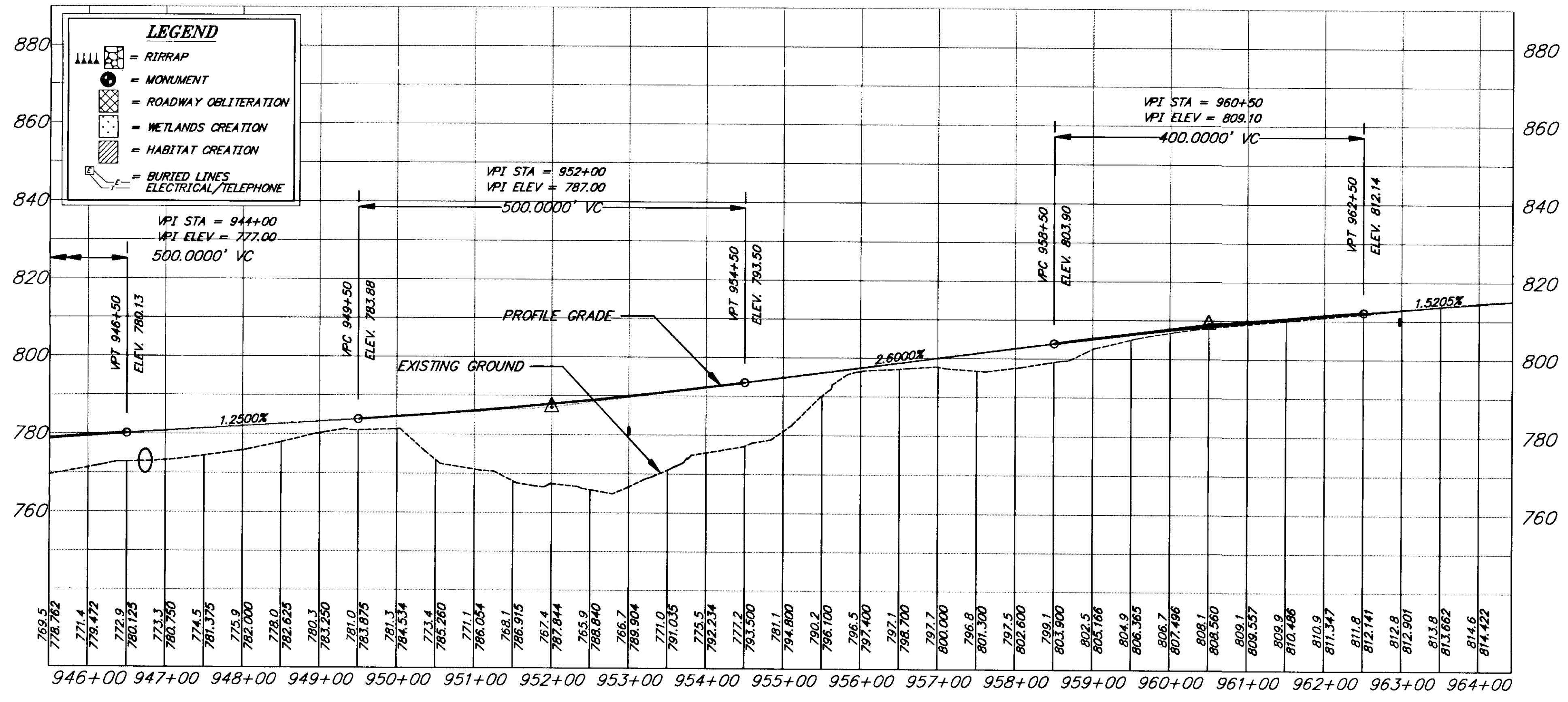
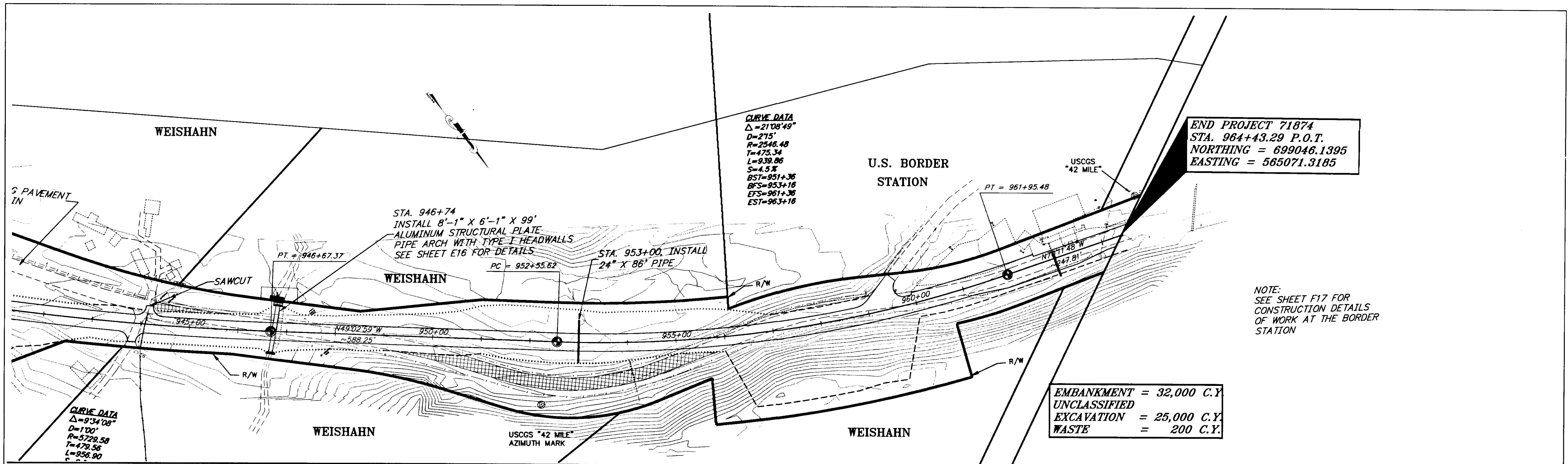
**HAINES HIGHWAY**  
**BIG BOULDER CREEK TO THE BORDER**  
PROJECT NO. SHAK-095-6(20) ~ 71874  
**STA. 888+000 TO 917+00**

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

DESIGNED BY: C. HAKARI	PROJECT NO. 71874
DRAWN BY: L. ROBERTSON	DATE: 1999
CHECKED BY: T. MOORE	SHEET F10







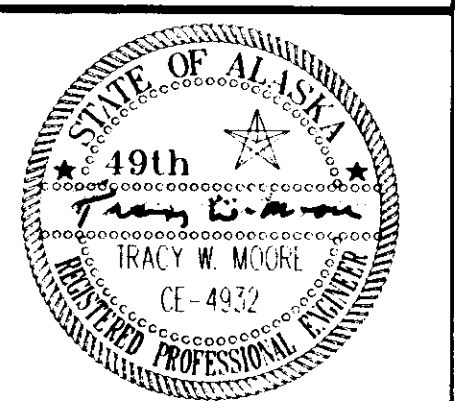
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 BY: DATE: DESCRIPTION OF CHANGE:  
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**RECORD OF REVISIONS**

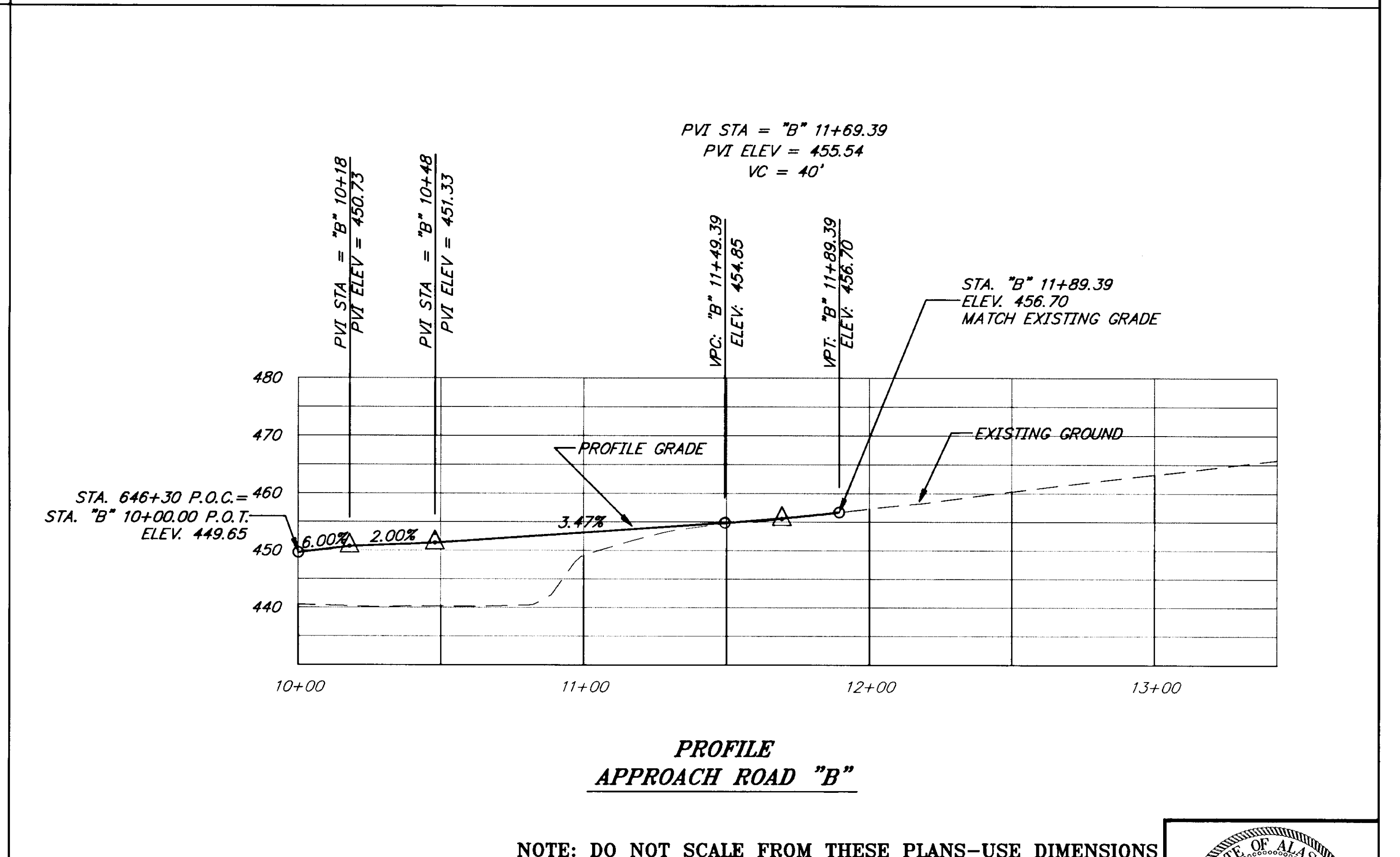
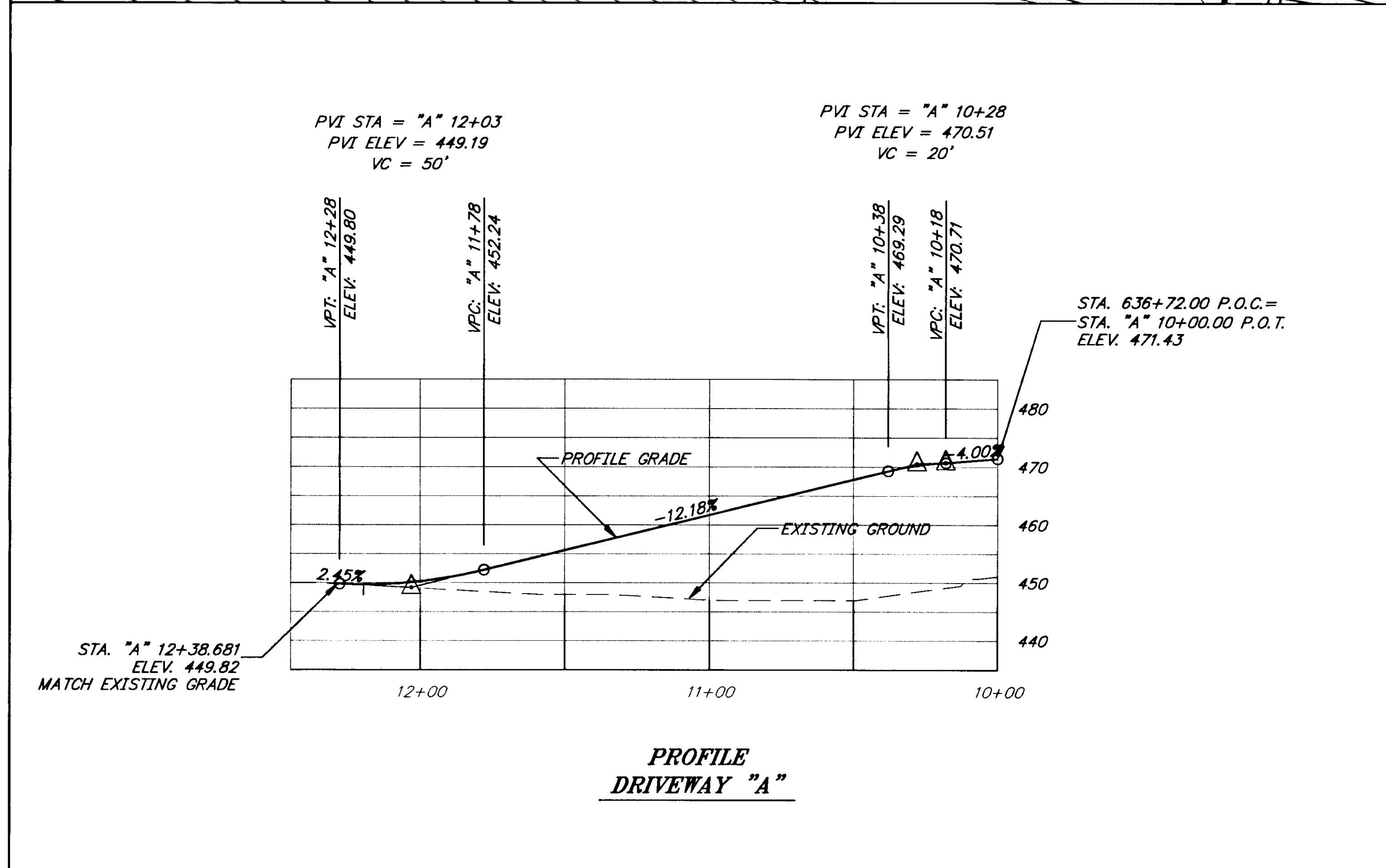
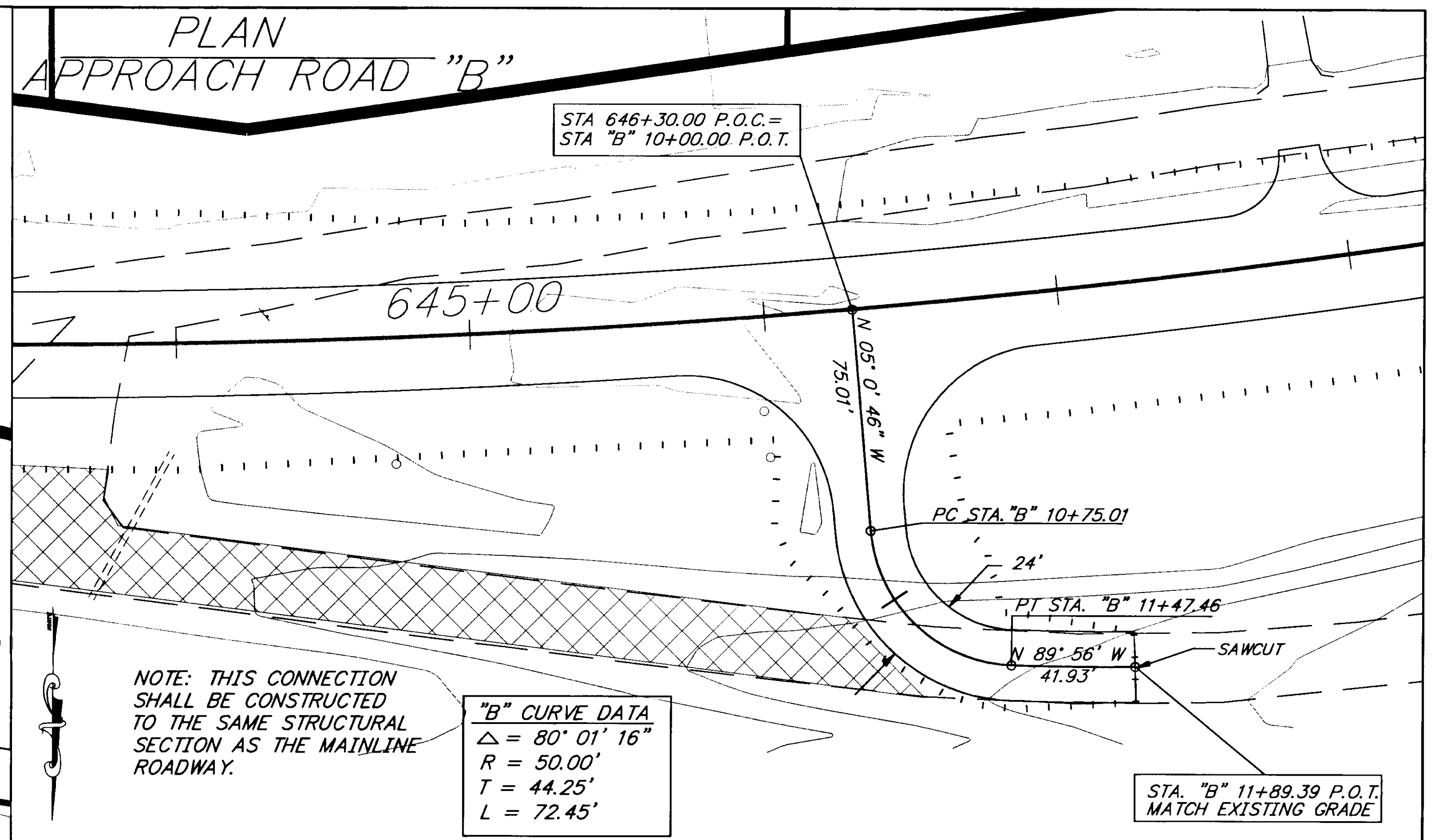
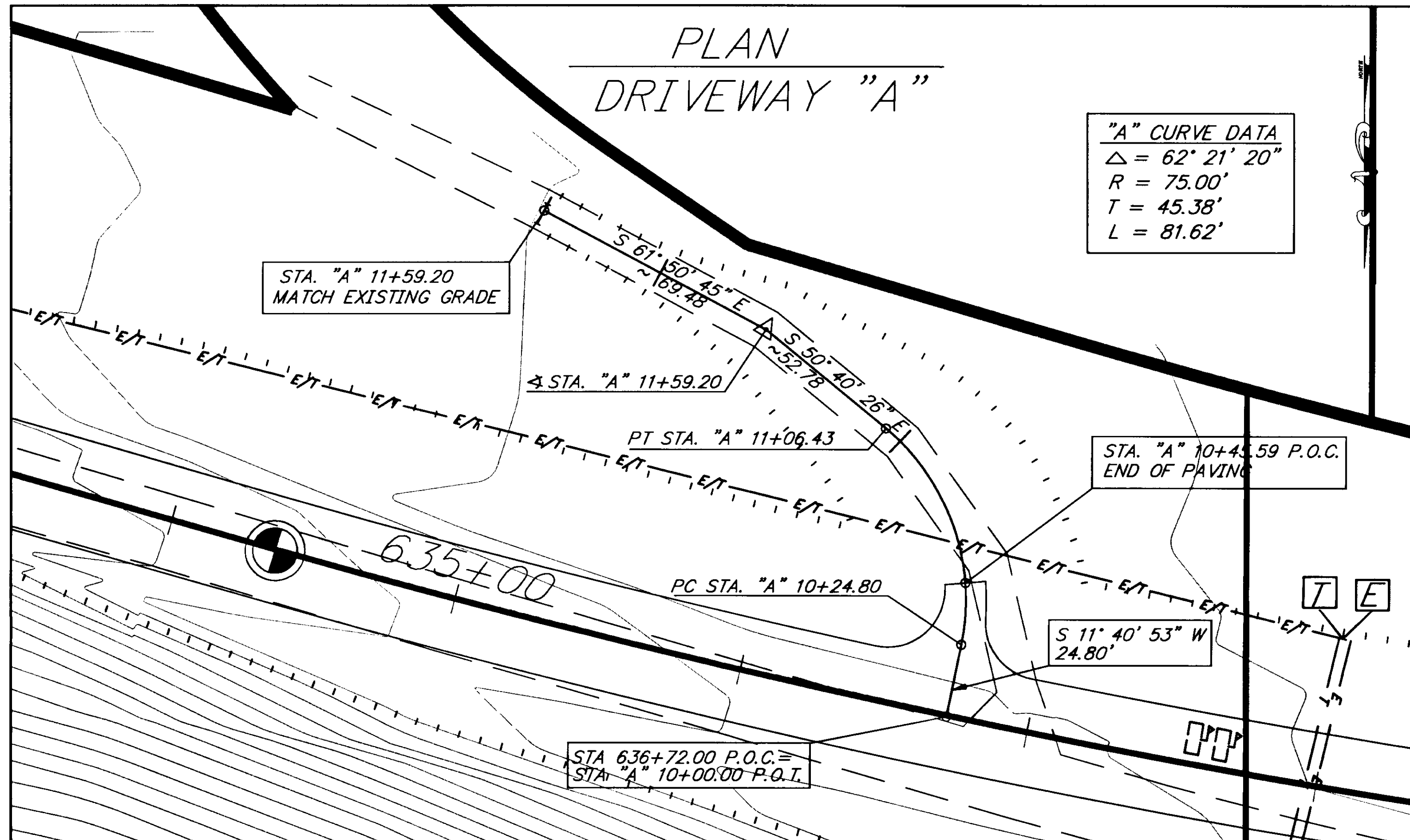
STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 ALASKA  
 STA. 946+00 TO 964+43.29

NOTE: DO NOT SCALE FROM THESE PLANS--USE DIMENSIONS

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	F12





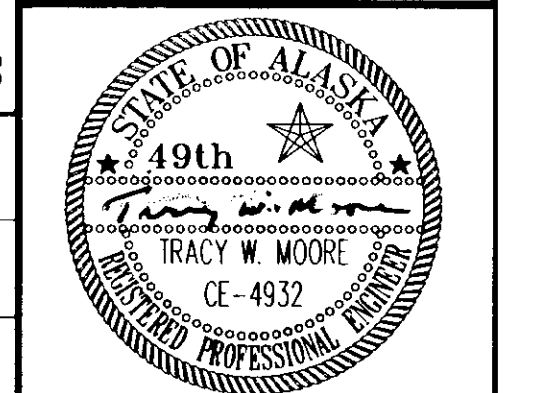
NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

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BY:	DATE:	DESCRIPTION OF CHANGE:
		[PlotStamp Eval] Plot By: Leonard Mon, 15/Nov/99 09:45am
<b>RECORD OF REVISIONS</b>		

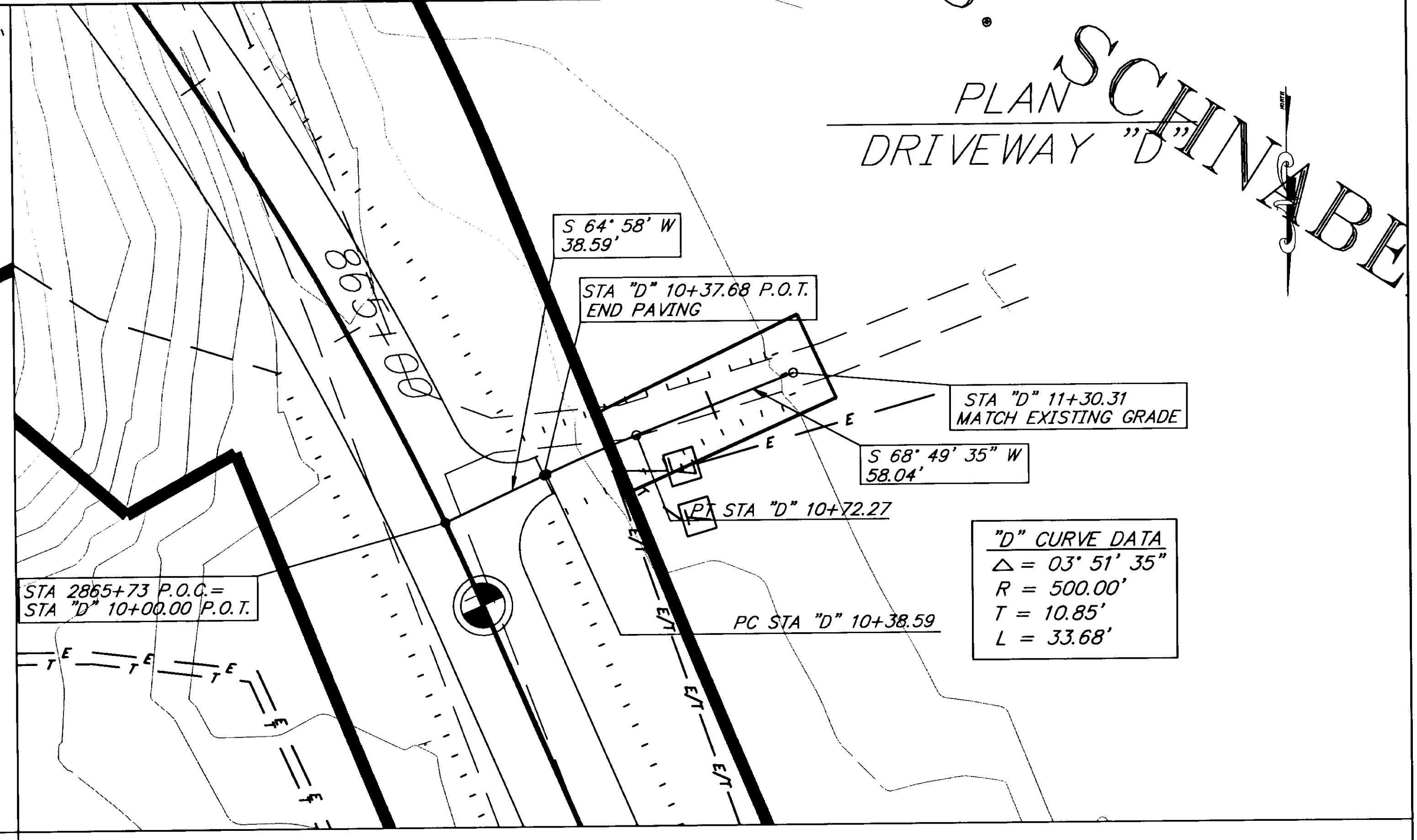
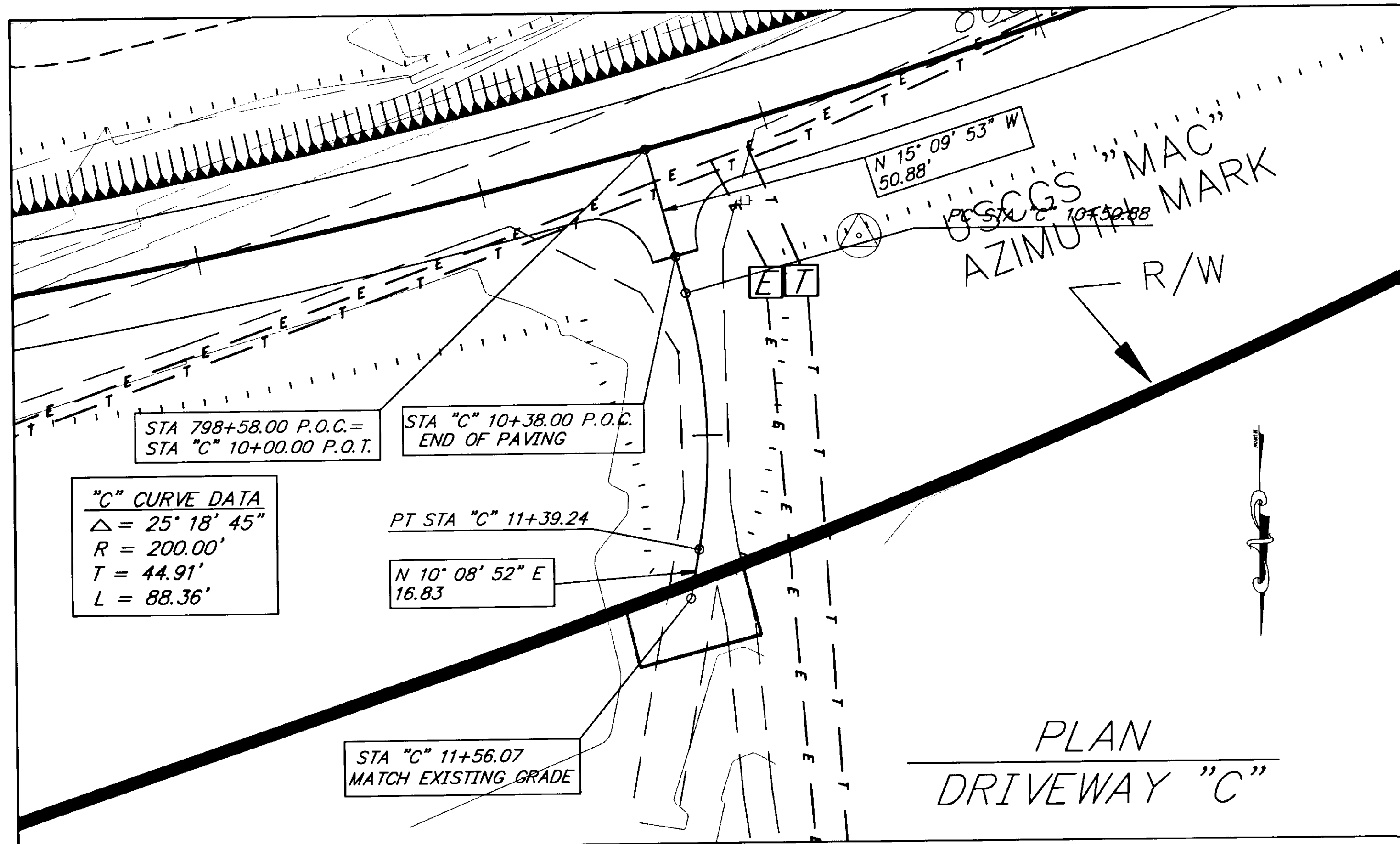
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
ALASKA  
**DRIVEWAY "A" & APPROACH RD. "B"**

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	F13

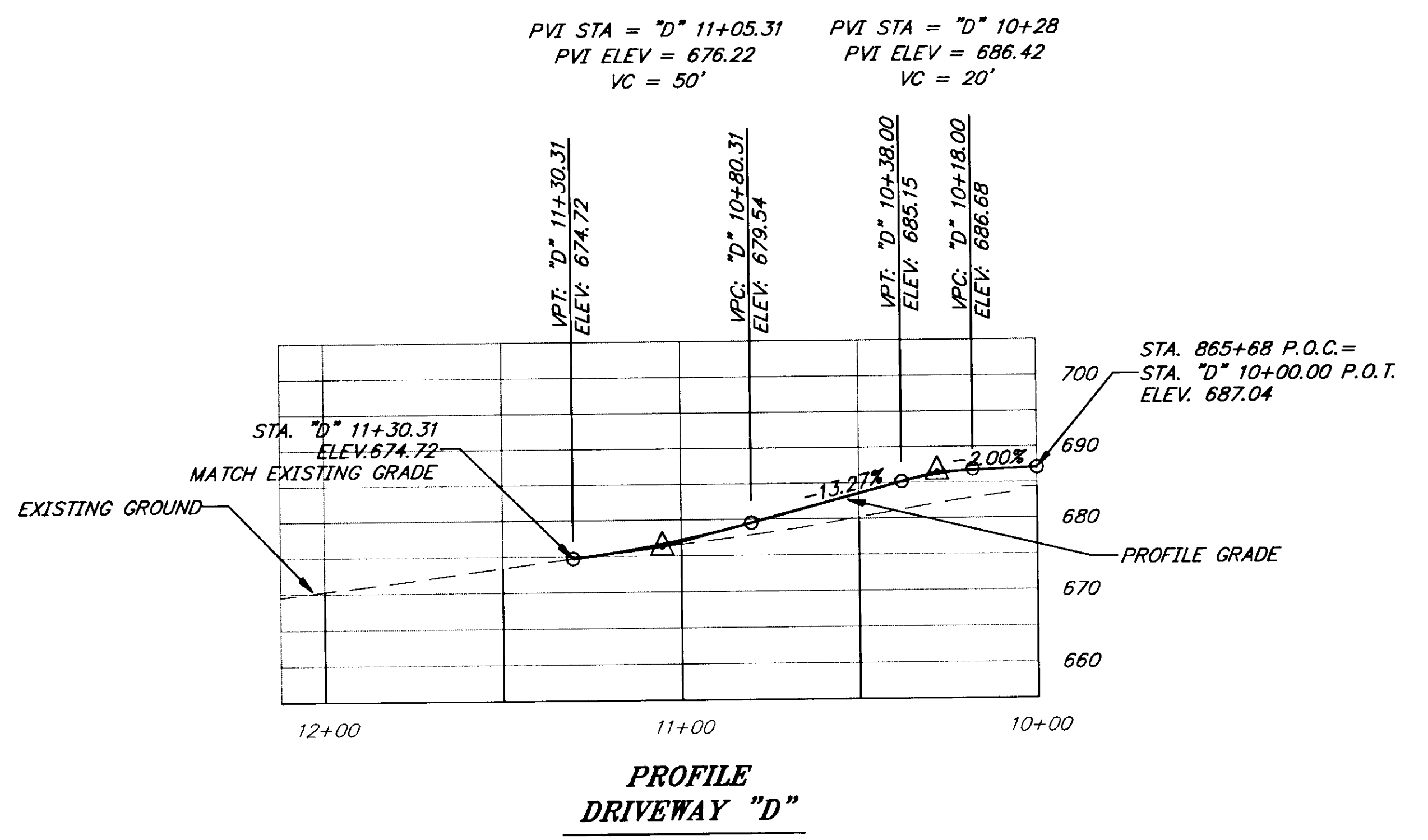
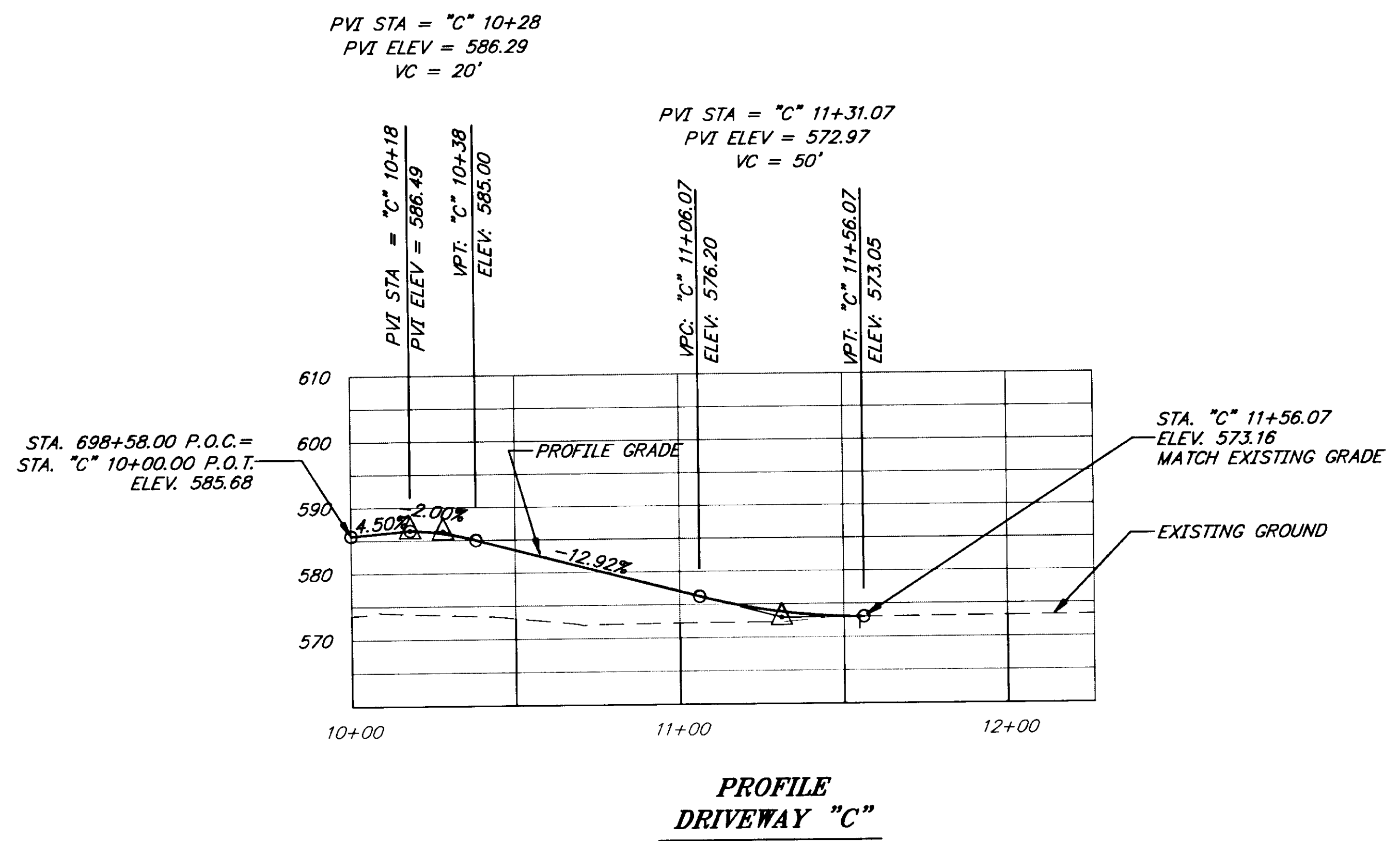






PLAN  
DRIVEWAY "D"  
SCHINABE

PLAN  
DRIVEWAY "C"



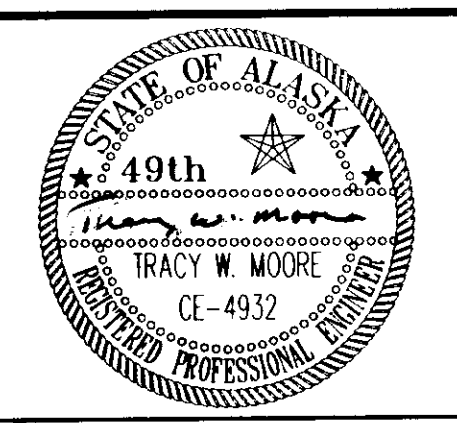
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

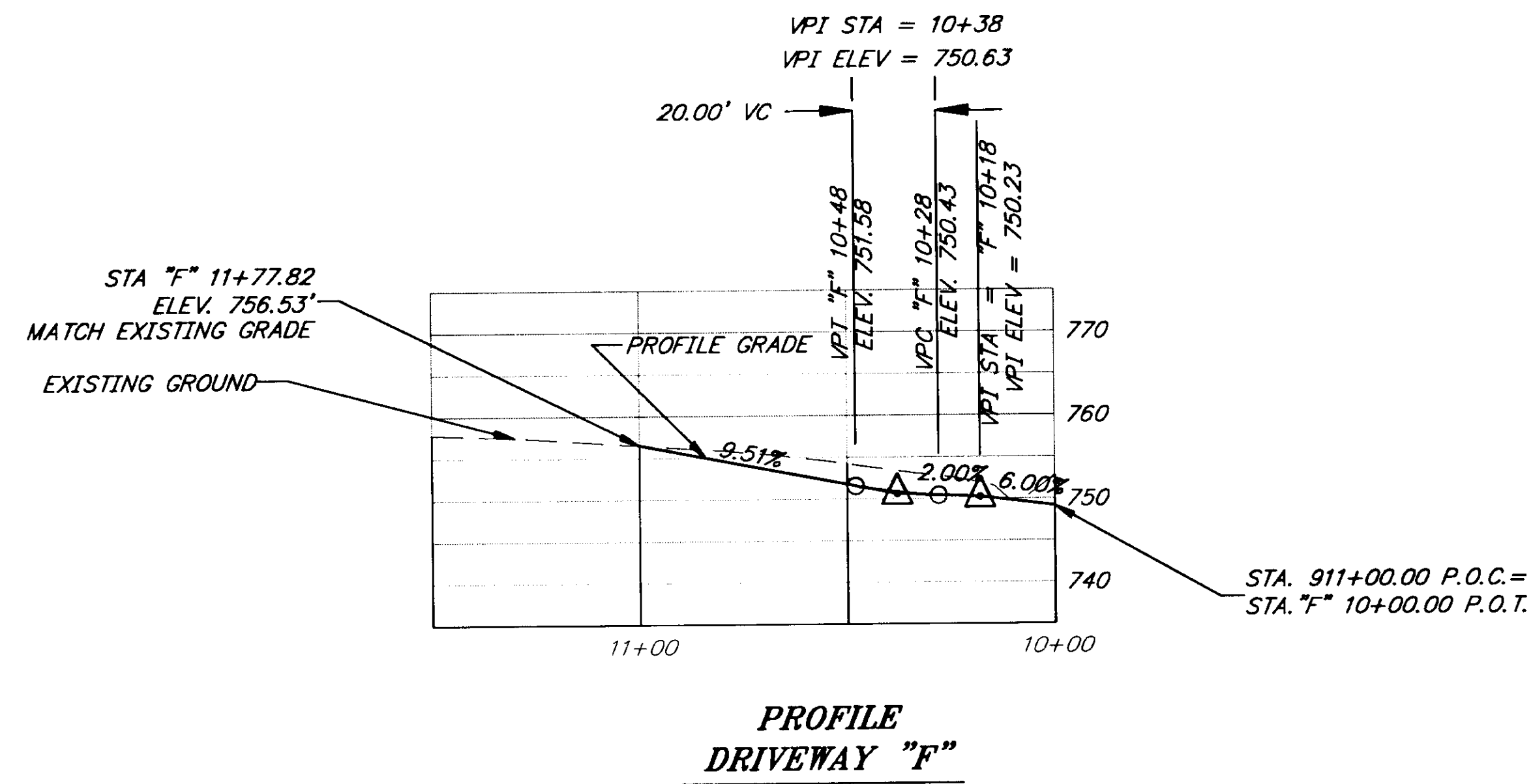
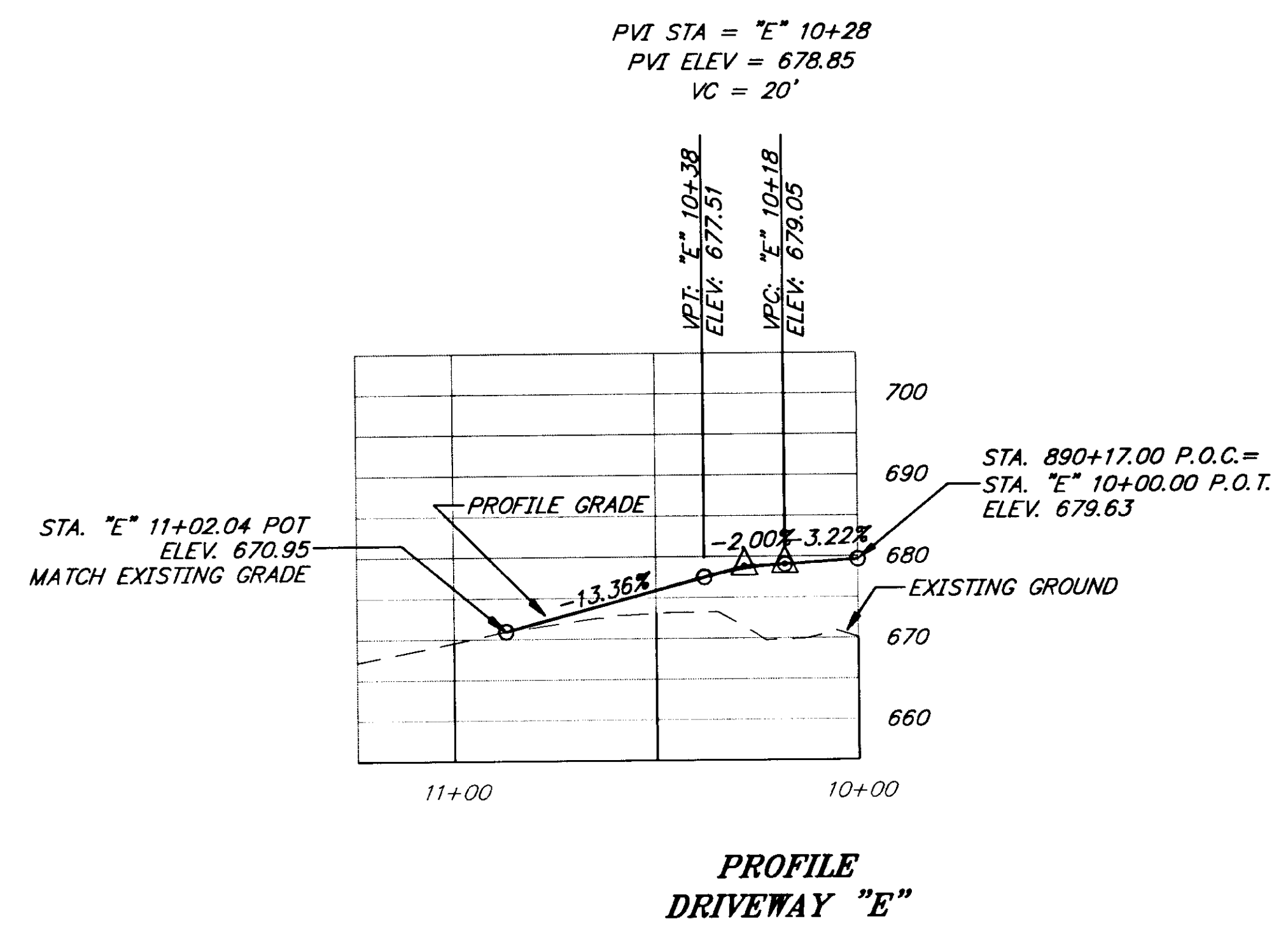
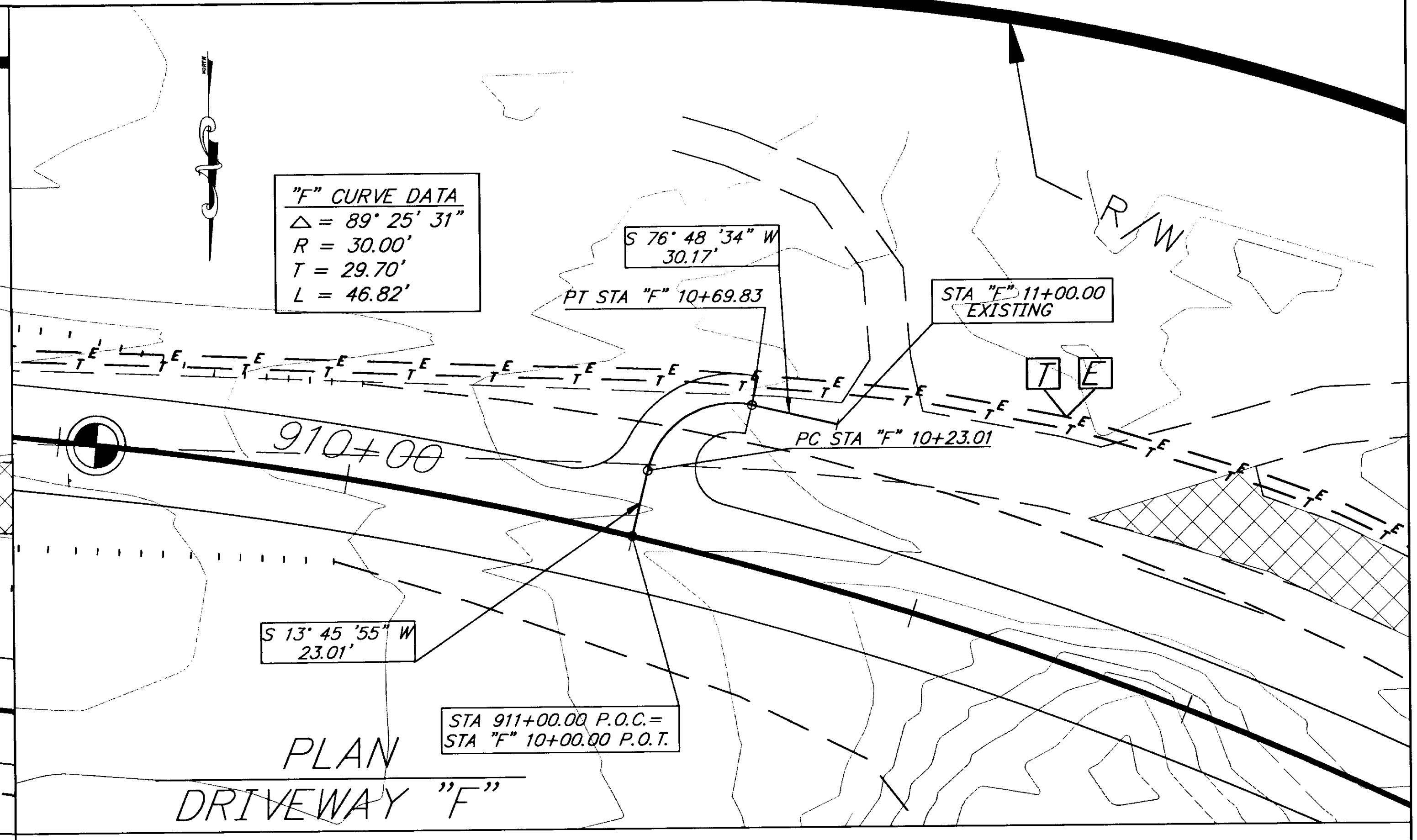
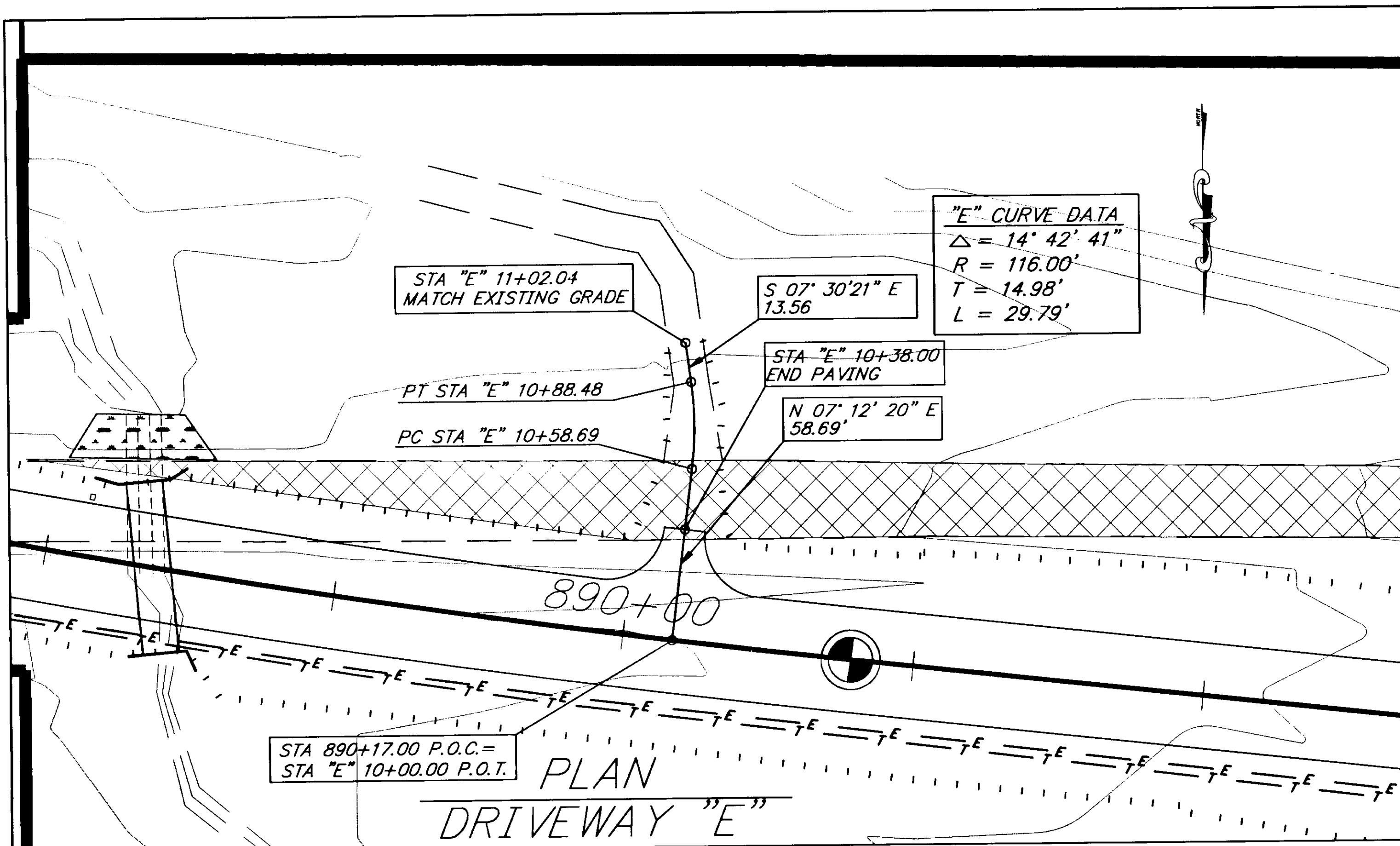
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BY:	DATE:	DESCRIPTION OF CHANGE:
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RECORD OF REVISIONS		

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
ALASKA  
DRIVEWAY "C" & "D"

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	F14





NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

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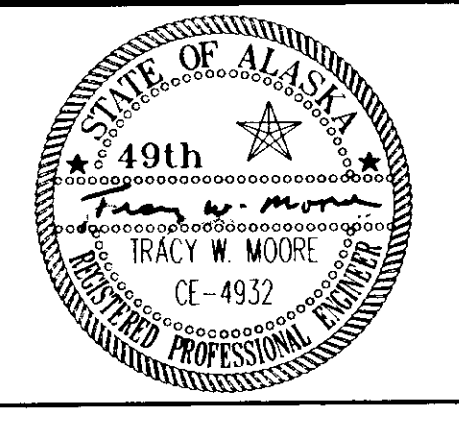
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

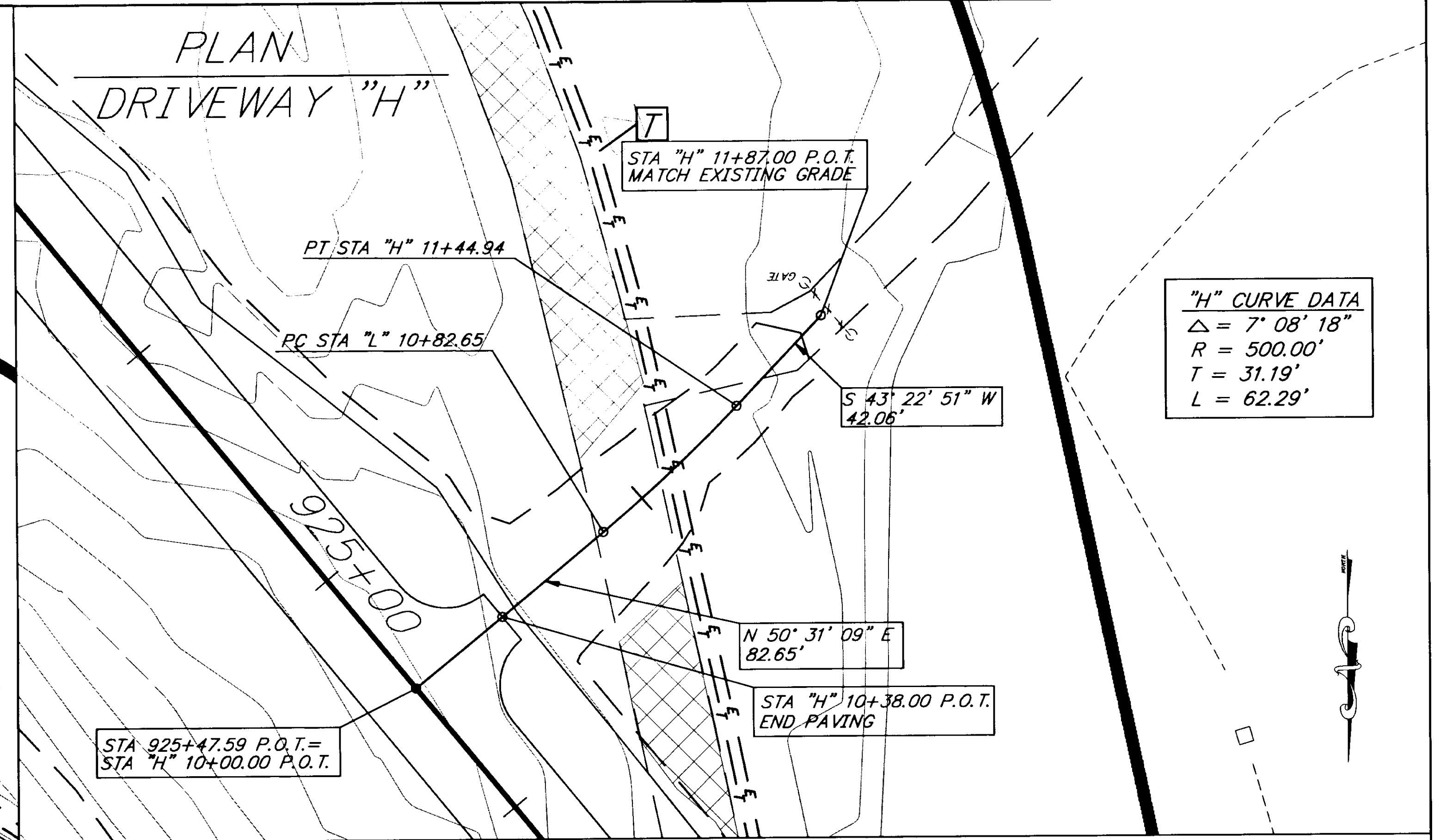
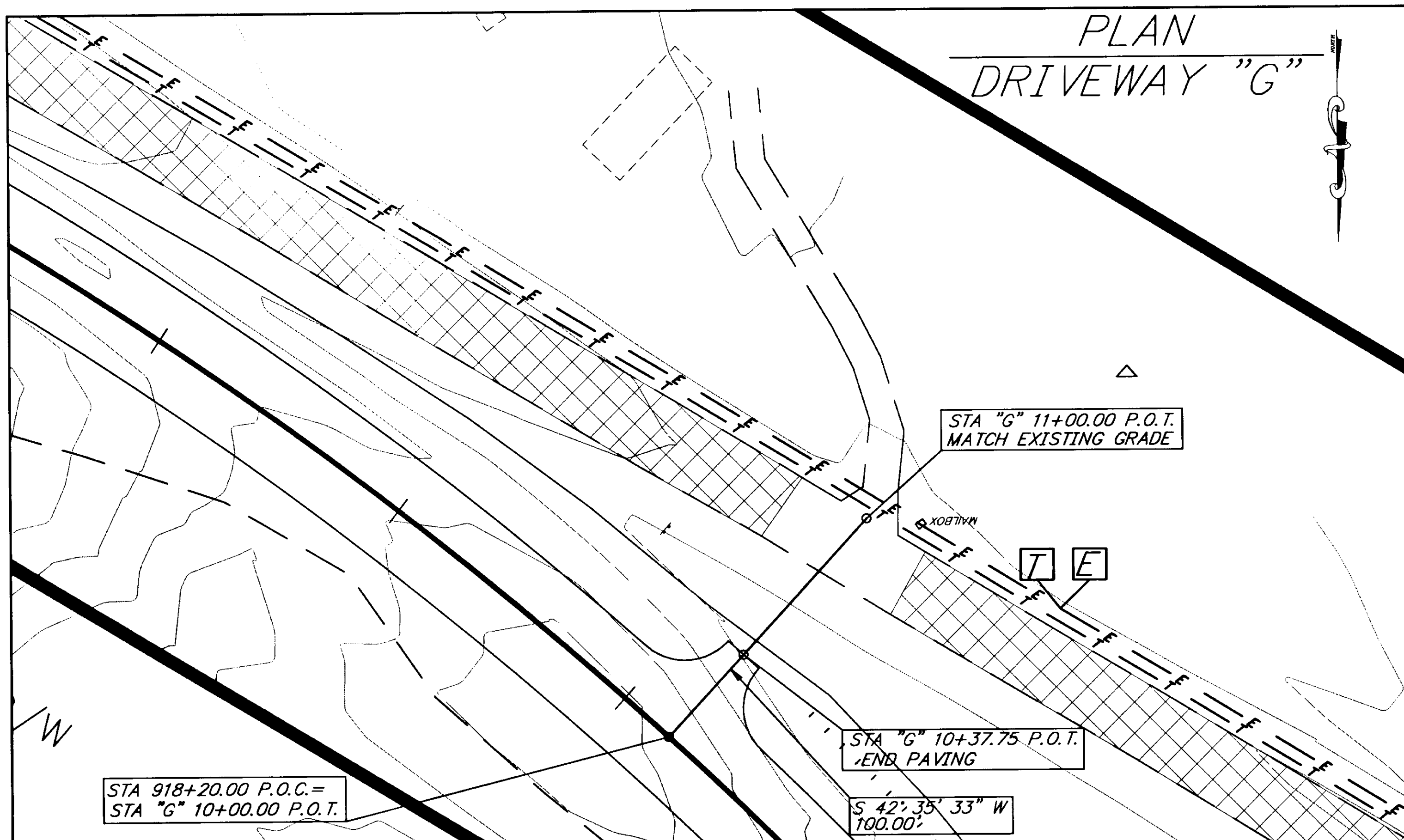
HAINES

HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
**DRIVEWAY "E" & "F"**

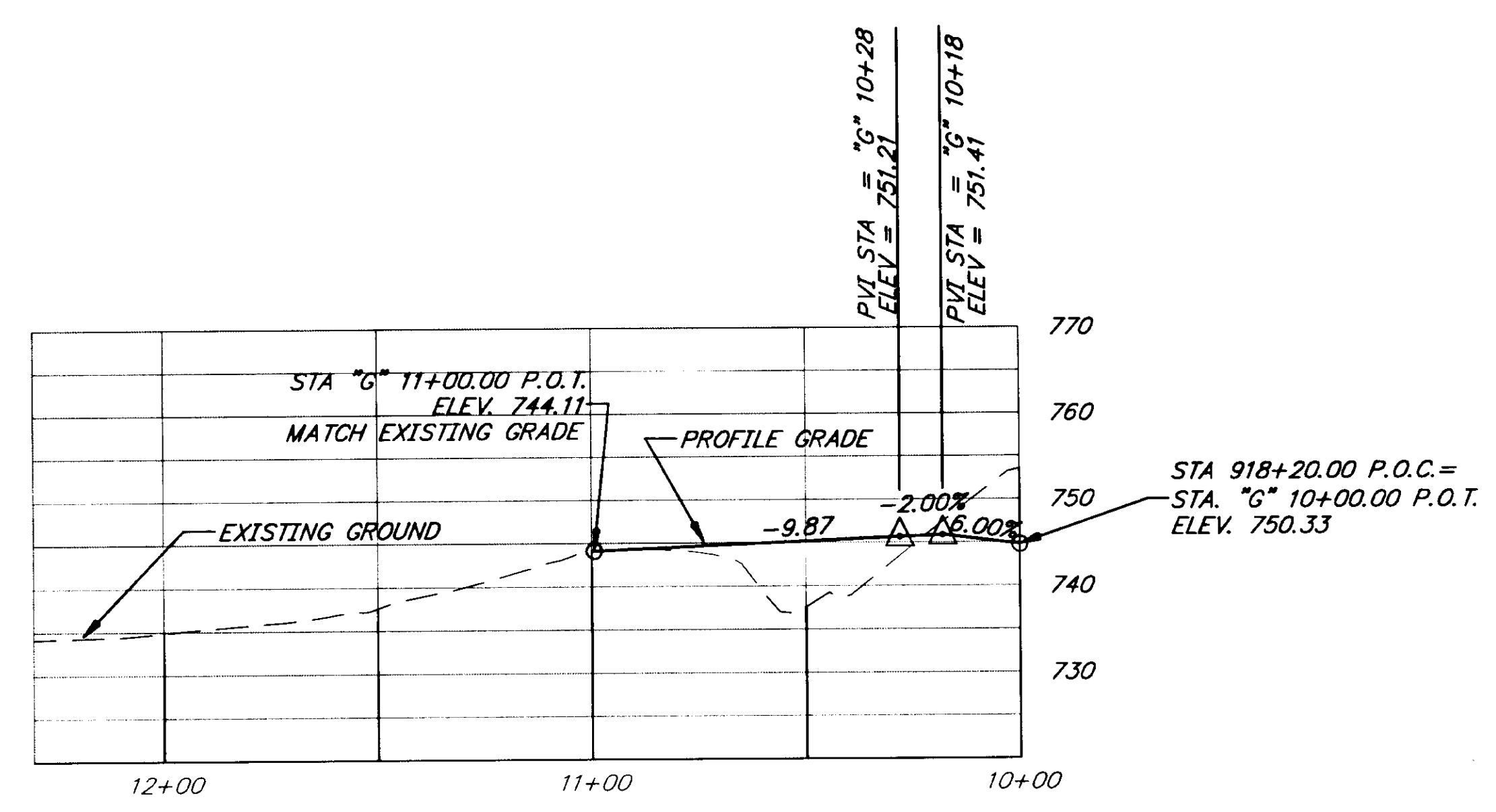
ALASKA  
DESIGNED BY: C. HAKARI  
DRAWN BY: L. ROBERTSON  
CHECKED BY: T. MOORE

PROJECT NO. 71874  
DATE: 1999  
SHEET F15

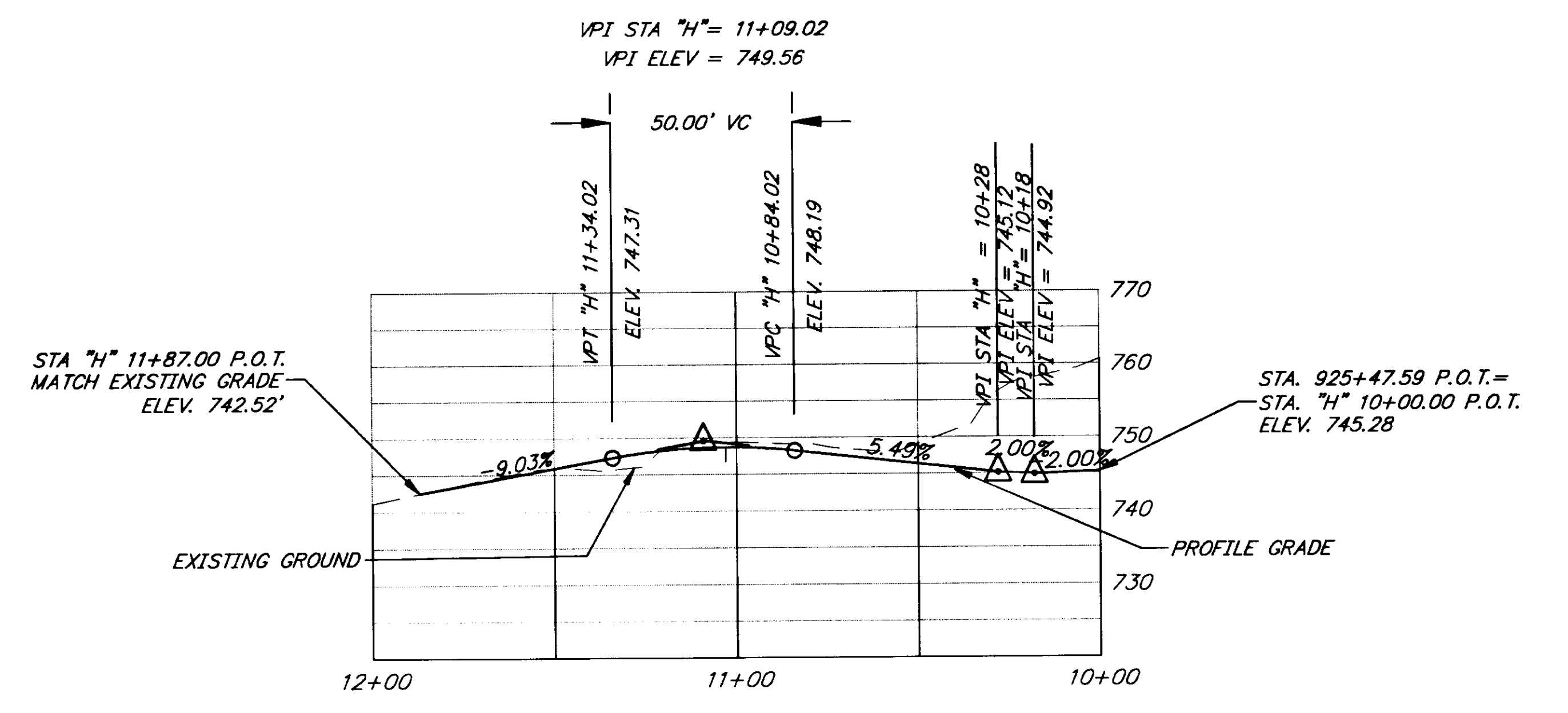




"H" CURVE DATA  
 $\Delta = 7^{\circ} 08' 18''$   
 $R = 500.00'$   
 $T = 31.19'$   
 $L = 62.29'$



PROFILE  
DRIVEWAY "G"



PROFILE  
DRIVEWAY "H"

NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

PATH: [PlotStamp Eval] Q: \Hns\68800\Planset\ -drvwp&p.dwg		
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BY:	DATE:	DESCRIPTION OF CHANGE:
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RECORD OF REVISIONS		

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

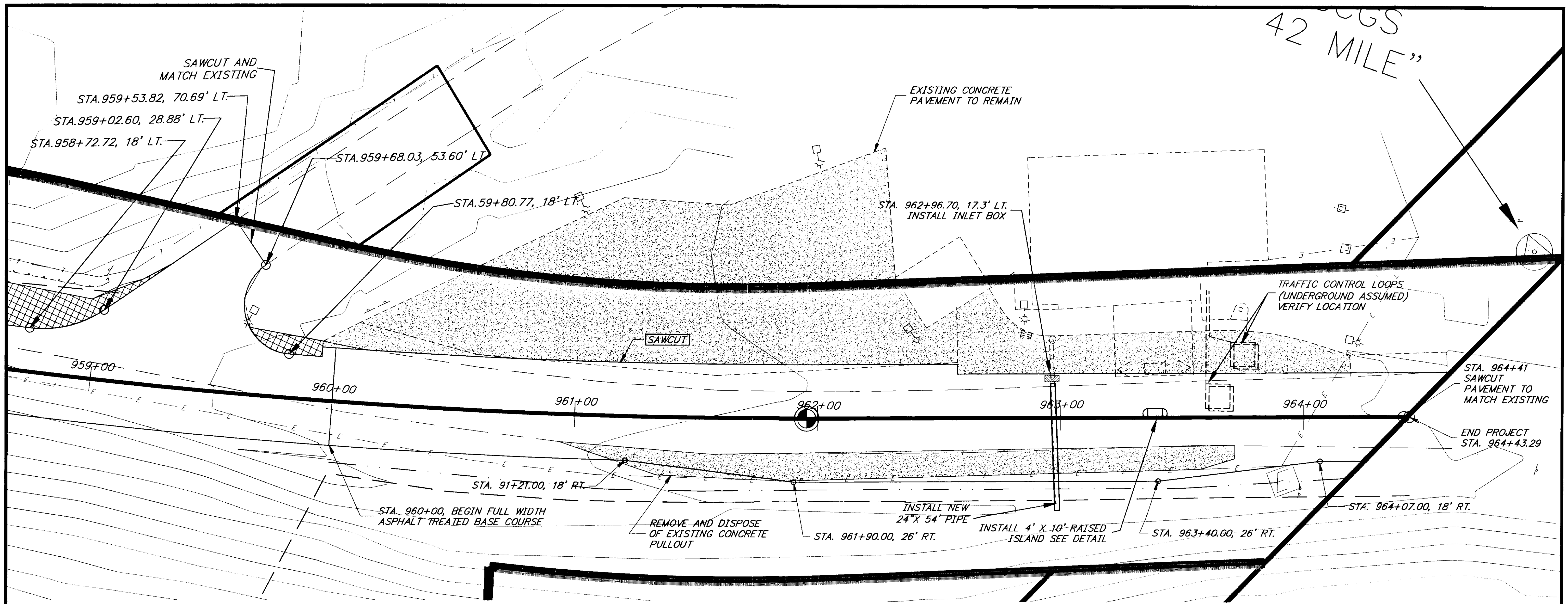
HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 DRIVEWAY "G" & "H"

ALASKA

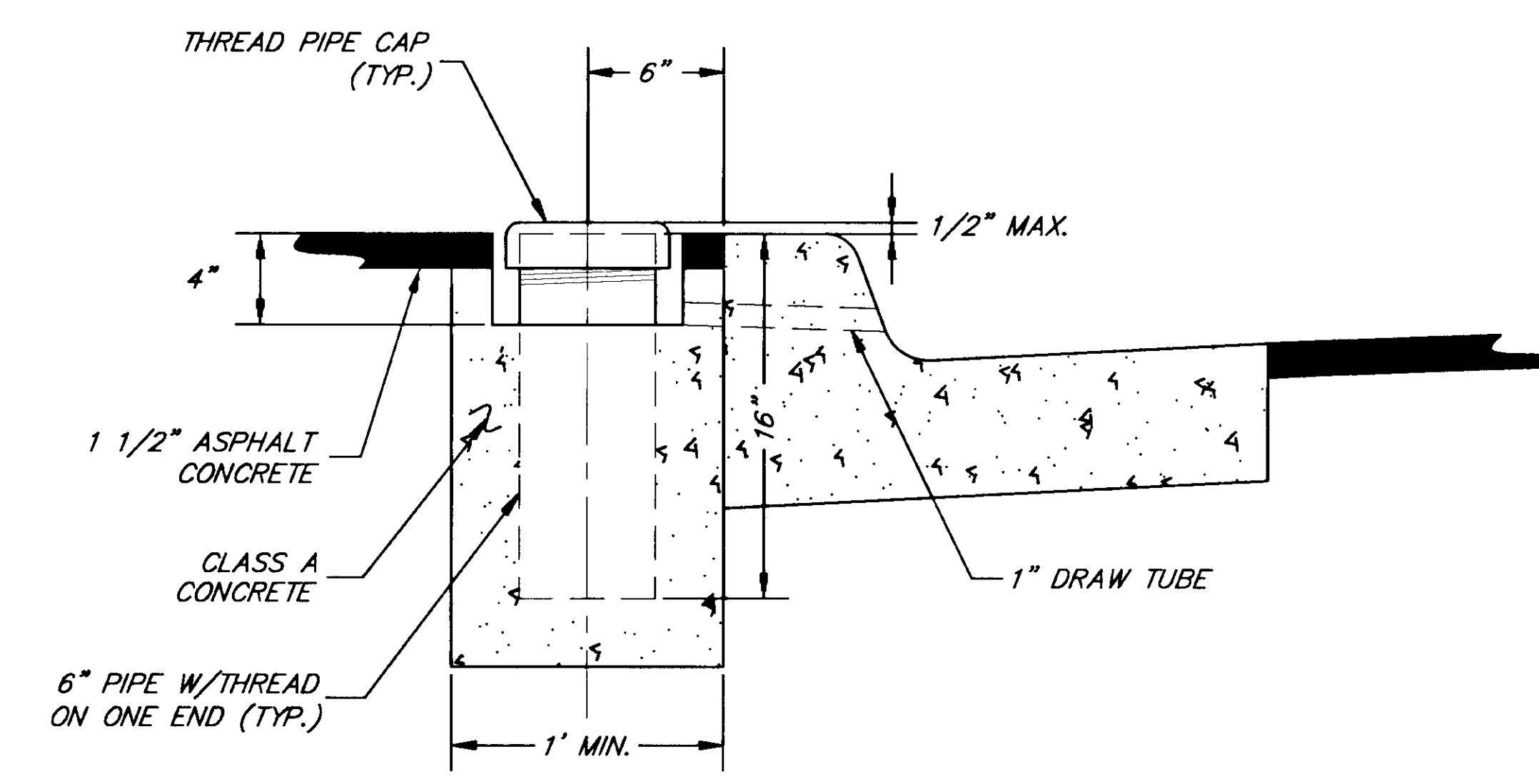
DESIGNED BY: C. HAKARI  
 DRAWN BY: L. ROBERTSON  
 CHECKED BY: T. MOORE

PROJECT NO. 71874  
 DATE: 1999  
 SHEET F16

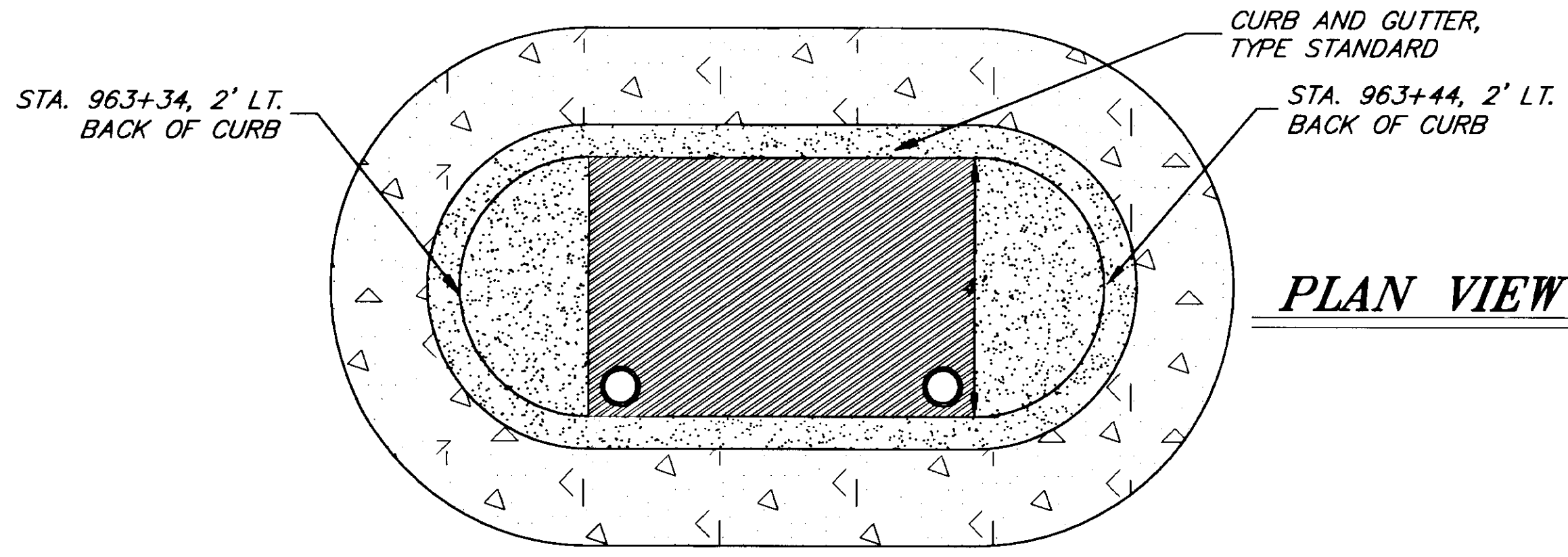




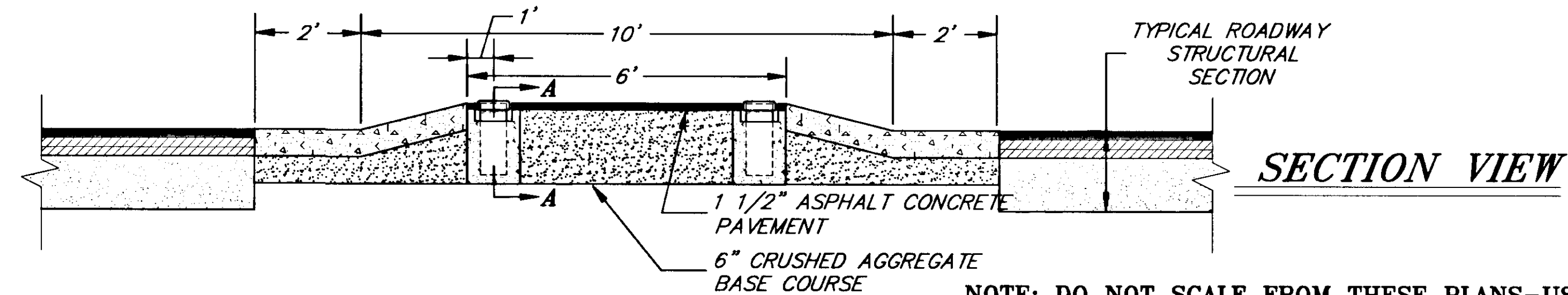
42 MILE



SECTION A-A



PLAN VIEW



SECTION VIEW

- NOTES:
1. AFTER REMOVAL OF CONCRETE PULLOUT SUBCUT EXISTING EMBANKMENT 18" AND BACKFILL WITH EMBANKMENT TYPE "A" AND SUBBASE GRADING C TO THE BOTTOM OF ATB.
  2. CLEAN EXISTING DITCH AND GRADE TO DRAIN
  3. TRAFFIC LOOP LOCATIONS TO BE INSTALLED PRIOR TO ATB PLACEMENT
  4. SAWCUT EXISTING CONCRETE MATCH JOINT AND TACK PRIOR TO ASPHALT CONCRETE MATCH. CONSTRUCT SWALE TO ALLOW EXISTING DRAINAGE PATTERNS TO REMAIN.

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

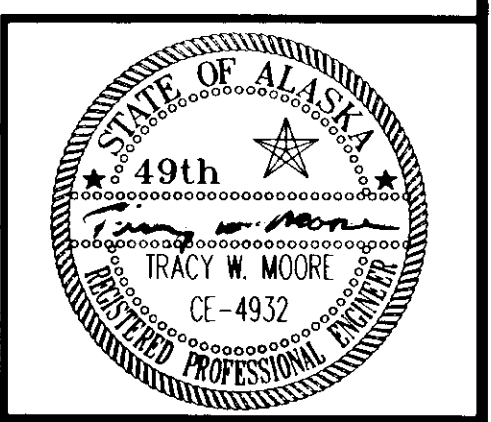
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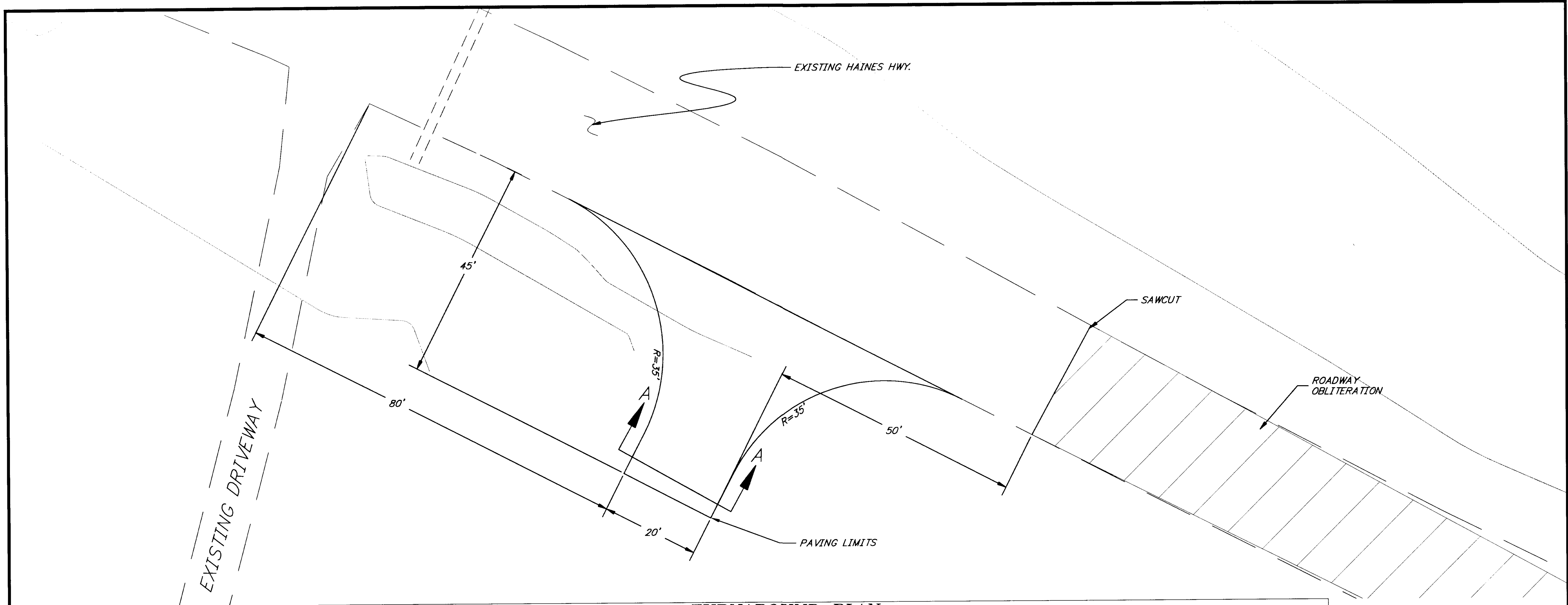
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION

HAINES  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-8(20) ~ 71874  
ALASKA  
U.S. BORDER STATION DETAIL

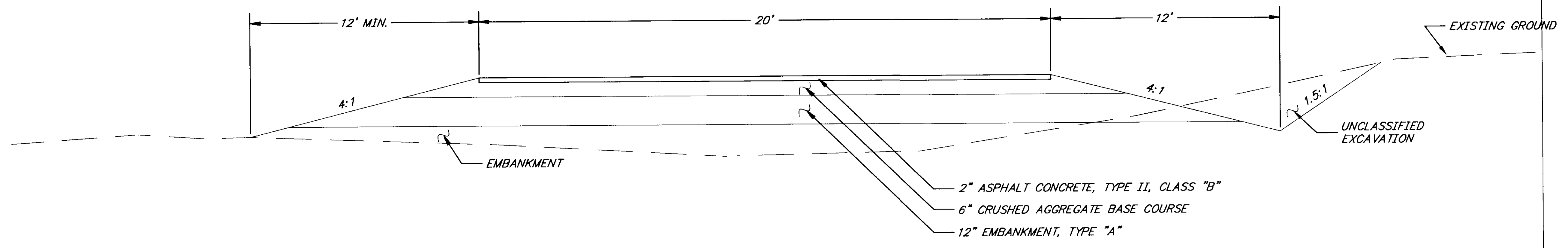
DESIGNED BY:  
C. HAKARI  
DRAWN BY:  
L. ROBERTSON  
CHECKED BY:  
T. MOORE

PROJECT NO.  
71874  
DATE:  
1999  
SHEET F17





**TURNAROUND PLAN**



**SECTION A-A**

NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

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<b>RECORD OF REVISIONS</b>		

STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES**  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
**HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER**  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
**TURNAROUND PLAN**

DESIGNED BY:  
C. HAKARI  
 DRAWN BY:  
L. ROBERTSON  
 CHECKED BY:  
T. MOORE

PROJECT NO.  
71874  
 DATE:  
1999  
 SHEET F18





**NOTES**

1. PROVIDE FREE DRAINAGE ALONG DOWNHILL EDGE OF MINED AREA.
2. CONNECT MINE DRAINAGE TO EXISTING DRAINAGE PATTERN.
3. PROVIDE SMOOTH TRANSITION FROM MINE TO UNDISTURBED AREAS ALONG UPHILL EDGE OF MINED AREA.
4. PLACE SALVAGED AND SUPPLEMENTAL WOODY DEBRIS ALONG MINED AREA AT 150-200 FT ON-CENTER AVERAGE SPACING.



*SITES I, II, & III  
RECLAMATION PLAN*

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

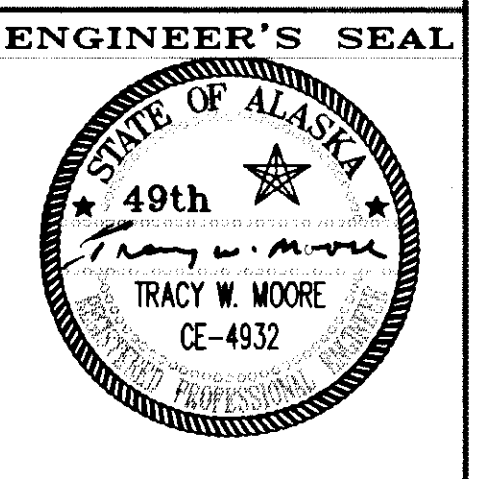
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BY:	DATE:	DESCRIPTION OF CHANGE:
RECORD OF REVISIONS		

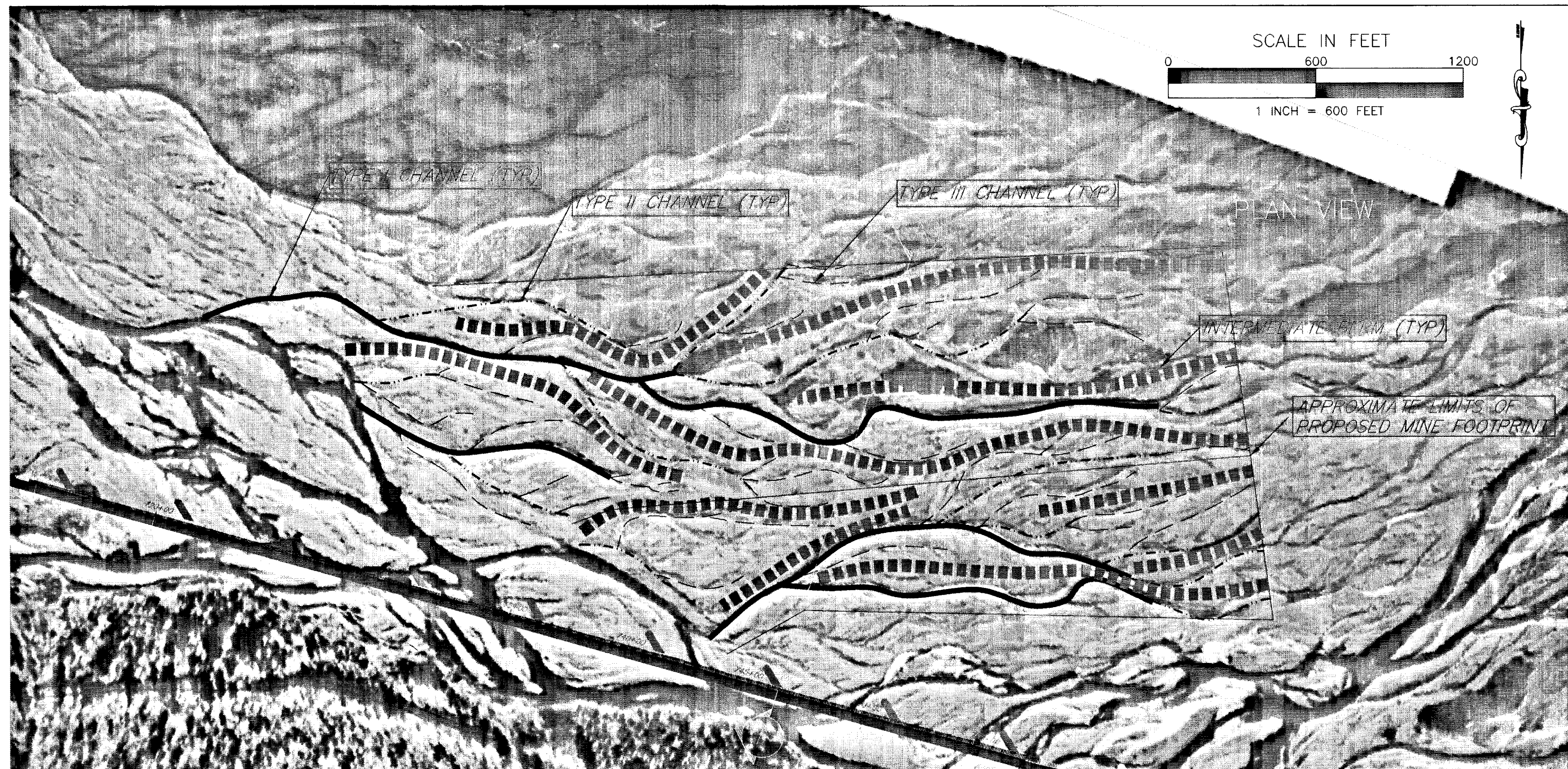
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
ALASKA  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
HAINES HIGHWAY RIVER MINING  
RECLAMATION PLAN

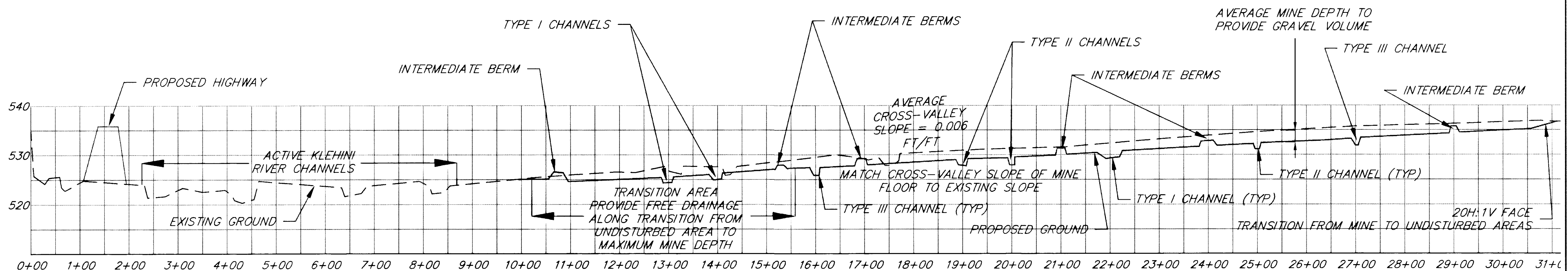
DESIGNED BY: DSM-INTER FLUV  
DRAWN BY: MRM-INTER FLUV  
CHECKED BY: TRACY MOORE

PROJECT NO. 71874  
DATE: 1999  
SHEET G2





SITE IV



SECTION VIEW A

NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

PATH: [PlotStamp Eval] Q: \Hns\68800\Planset\interfluv3.dwg		
BY:	DATE:	DESCRIPTION OF CHANGE:
RECORD OF REVISIONS		

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

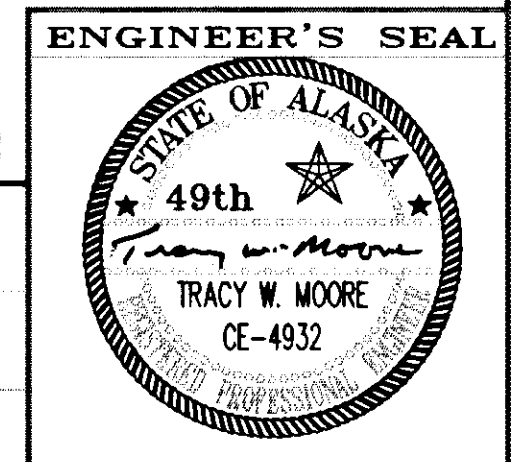
HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874

ALASKA

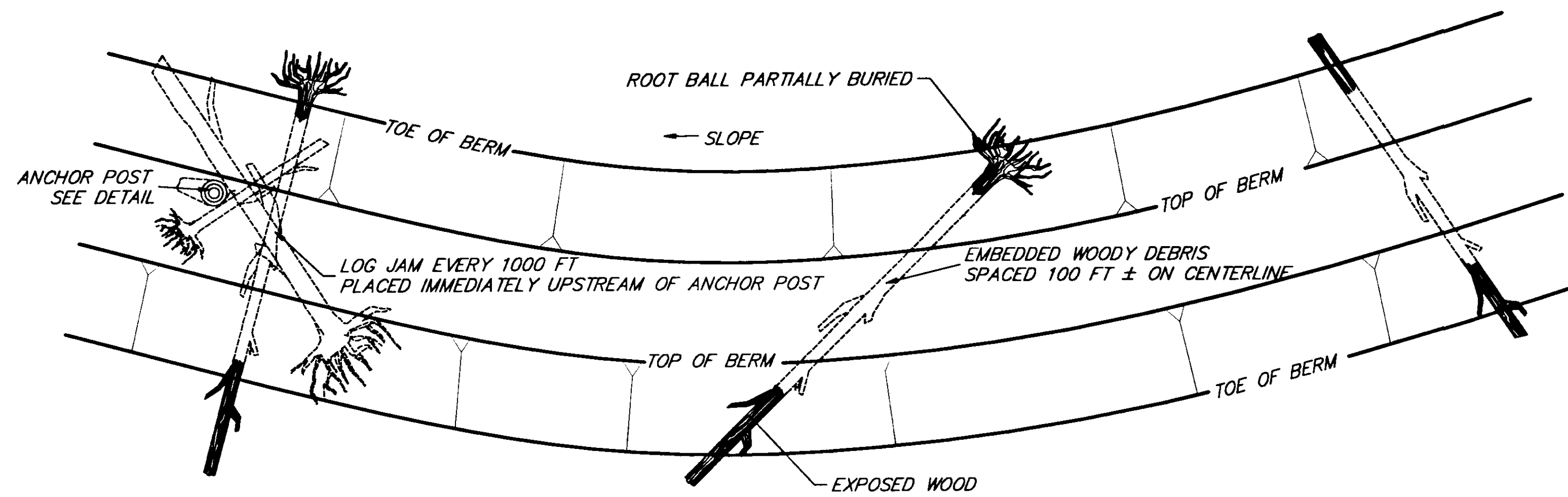
RIVER MINING RECLAMATION PLAN

DESIGNED BY: DSM-INTER FLUV  
 DRAWN BY: MRM-INTER FLUV  
 CHECKED BY: TRACY MOORE

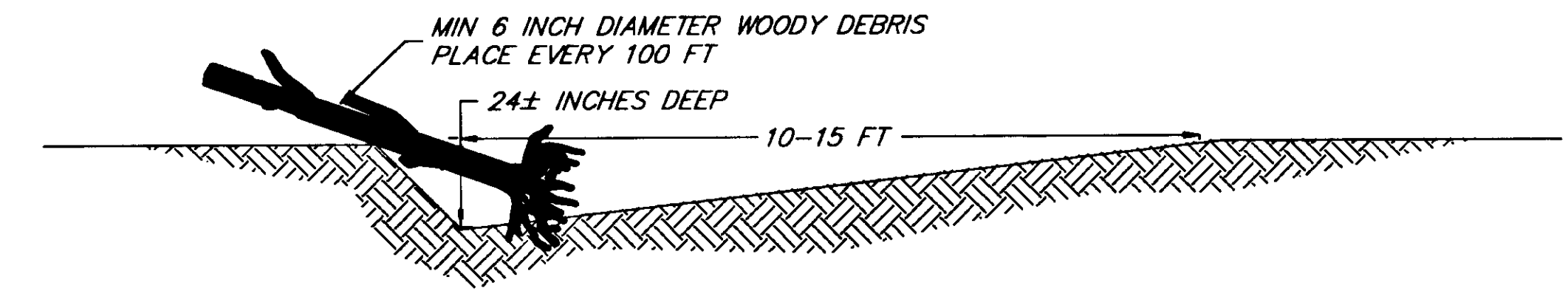
PROJECT NO. 71874  
 DATE: 1999  
 SHEET C3



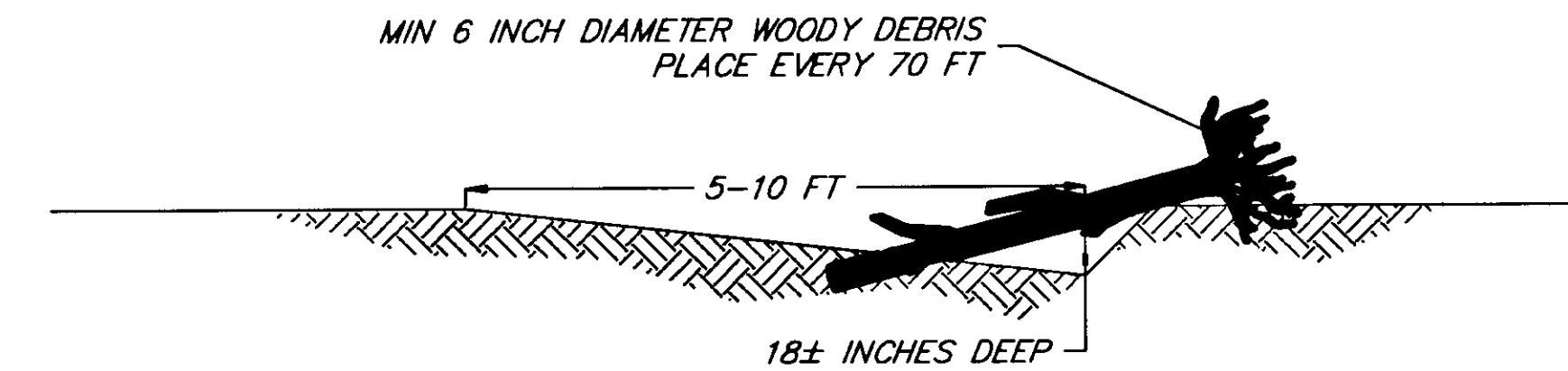




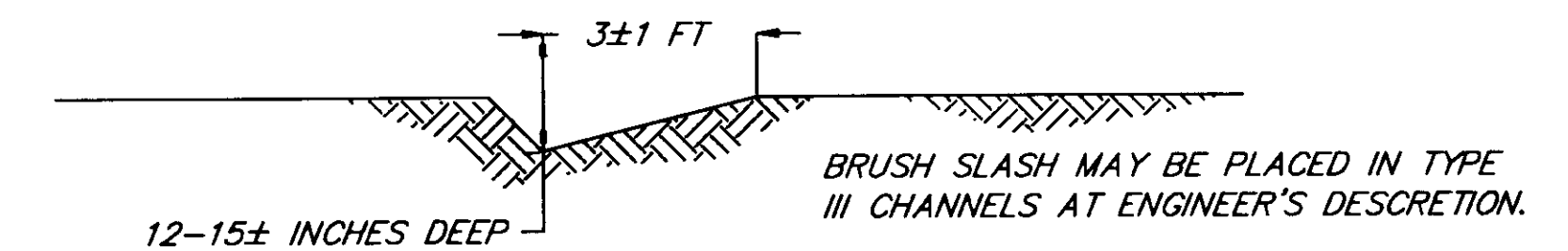
**PLAN VIEW**  
**INTERMEDIATE GRAVEL BERM WITH WOODY DEBRIS**  
 NOT TO SCALE



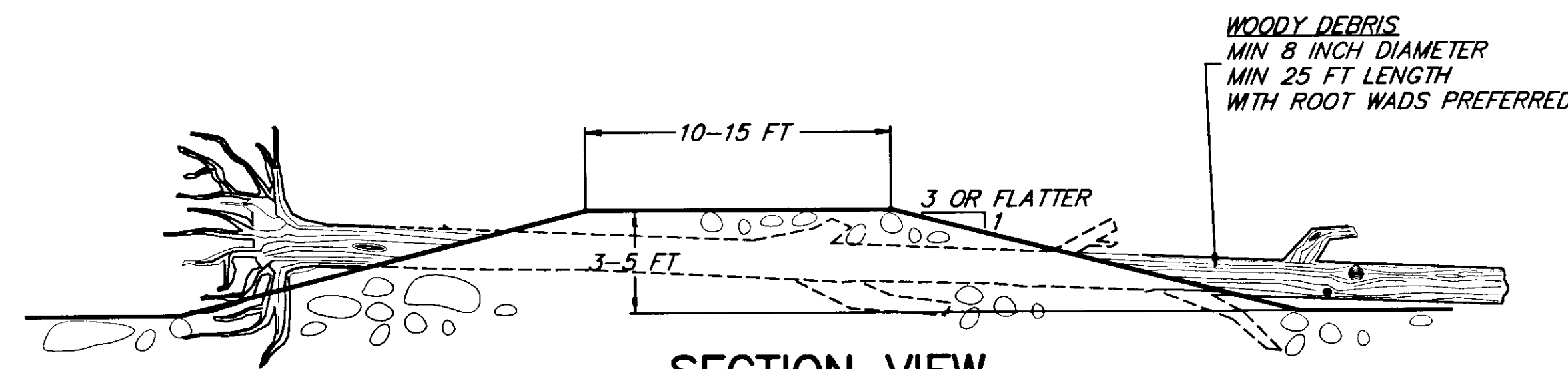
**SECTION VIEW**  
**TYPE I CHANNEL**  
 NOT TO SCALE



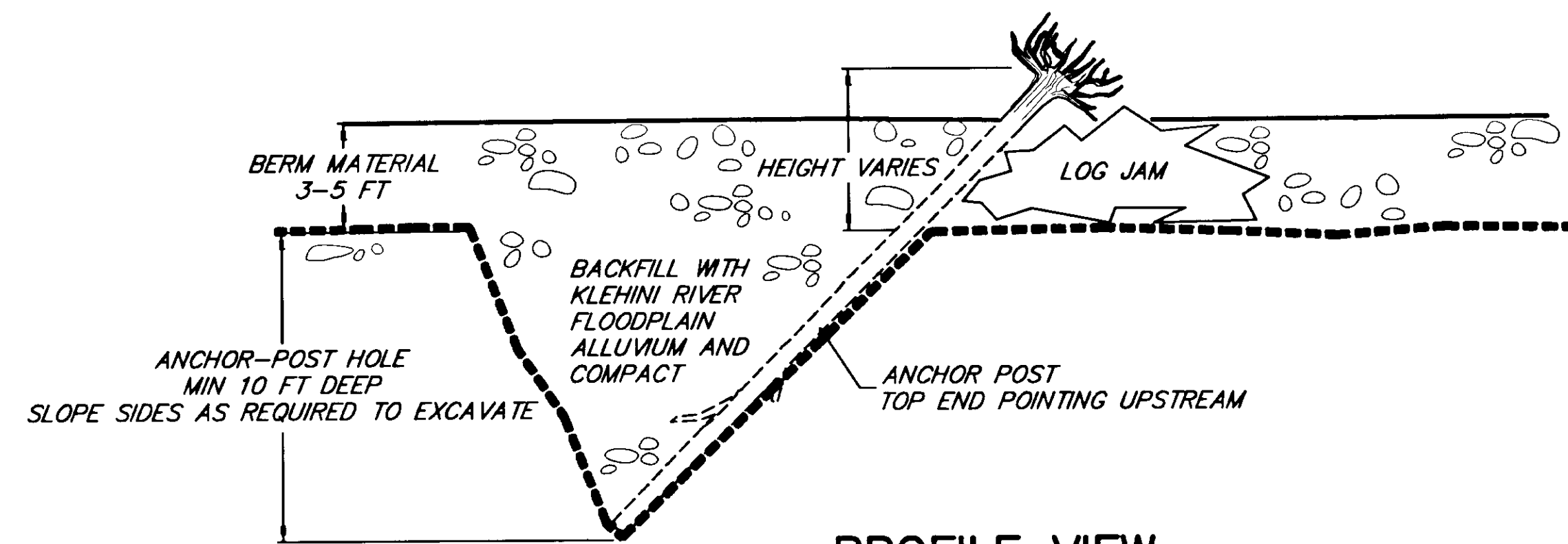
**SECTION VIEW**  
**TYPE II CHANNEL**  
 NOT TO SCALE



**SECTION VIEW**  
**TYPE III CHANNEL**  
 NOT TO SCALE



**SECTION VIEW**  
**INTERMEDIATE GRAVEL BERM WITH WOODY DEBRIS**  
 NOT TO SCALE



**PROFILE VIEW**  
**ANCHOR POST**  
 NOT TO SCALE

**SECTION VIEW A**

- NOTE:**
- EXCAVATE TYPE I, II, AND III CHANNEL DEEP POINTS AT OUTSIDE OF BENDS. TRANSITION SMOOTHLY BETWEEN BENDS. AS DIRECTED BY ENGINEER.
  - LOG TYPE AND CONFIGURATION TO VARY DEPENDING ON WHAT IS FOUND OUTSIDE AND HAS BEEN SELECTED FROM CLEARING AND GRUBBING OPERATIONS. A LAYOUT PLAN SHALL BE SUBMITTED BY THE MITIGATION AND RESTORATION MANAGER FOR APPROVAL BY THE ENGINEER.

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

PATH: [PlotStamp Eval] Q: \Hns\68800\Planset\INTERFLUVG4.dwg		
BY:	DATE:	DESCRIPTION OF CHANGE:
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STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

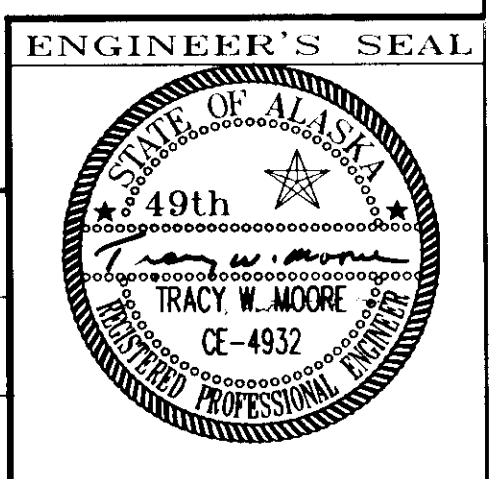
HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874

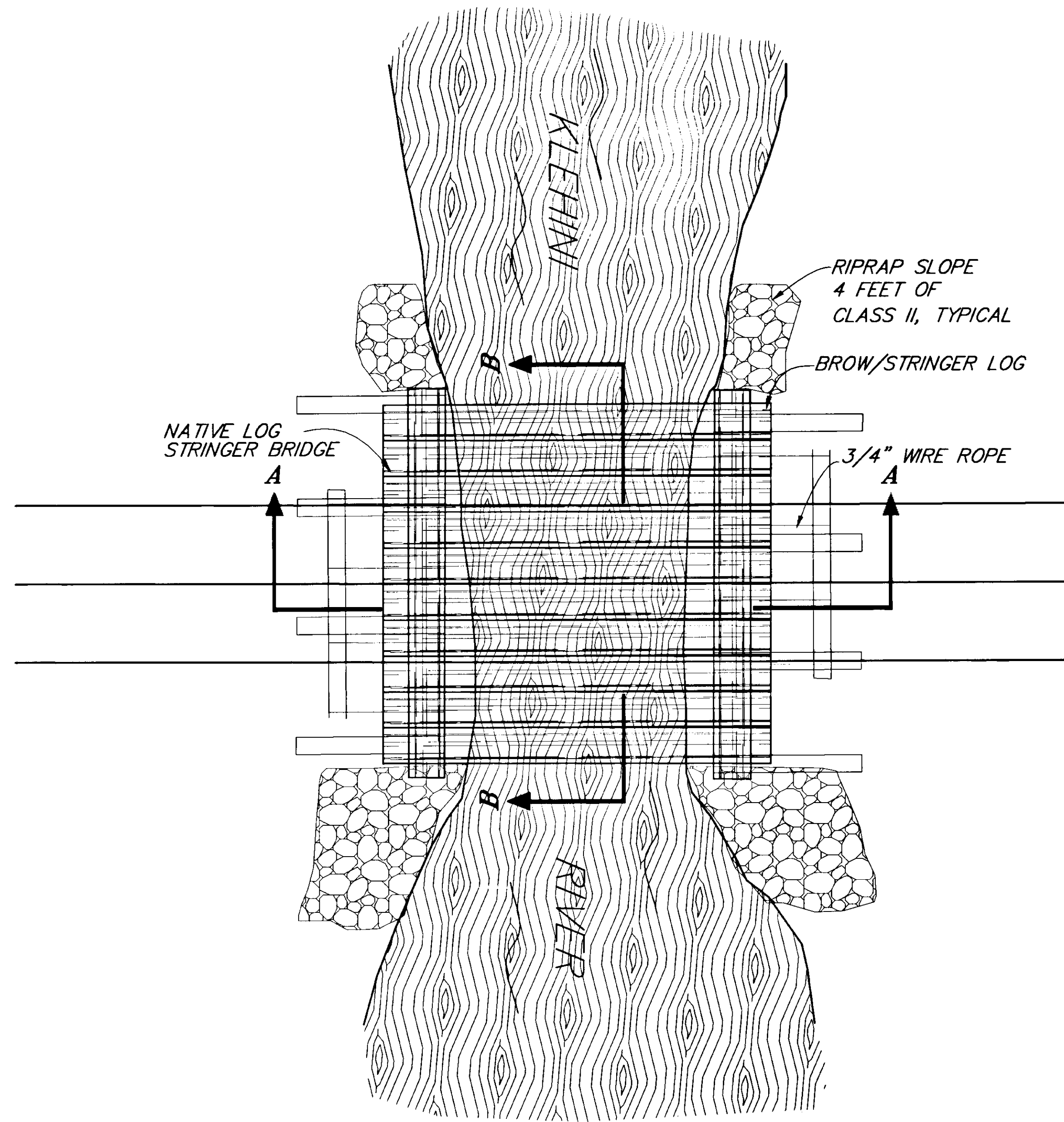
ALASKA

**RIVER RECLAMATION DETAILS**

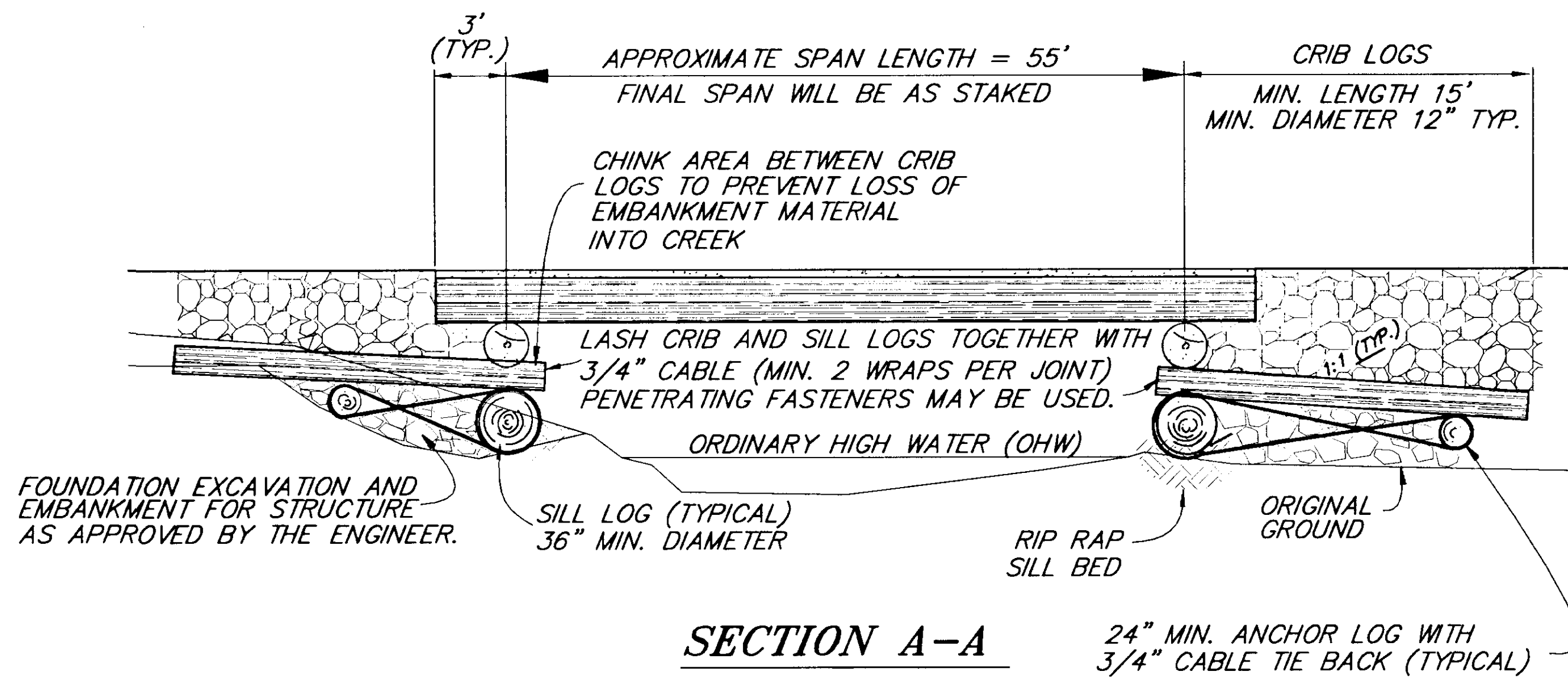
DESIGNED BY: DSM-INTER FLUV  
 DRAWN BY: MRM-INTER FLUV  
 CHECKED BY: TRACY MOORE

PROJECT NO. 71874  
 DATE: 1999  
 SHEET G4

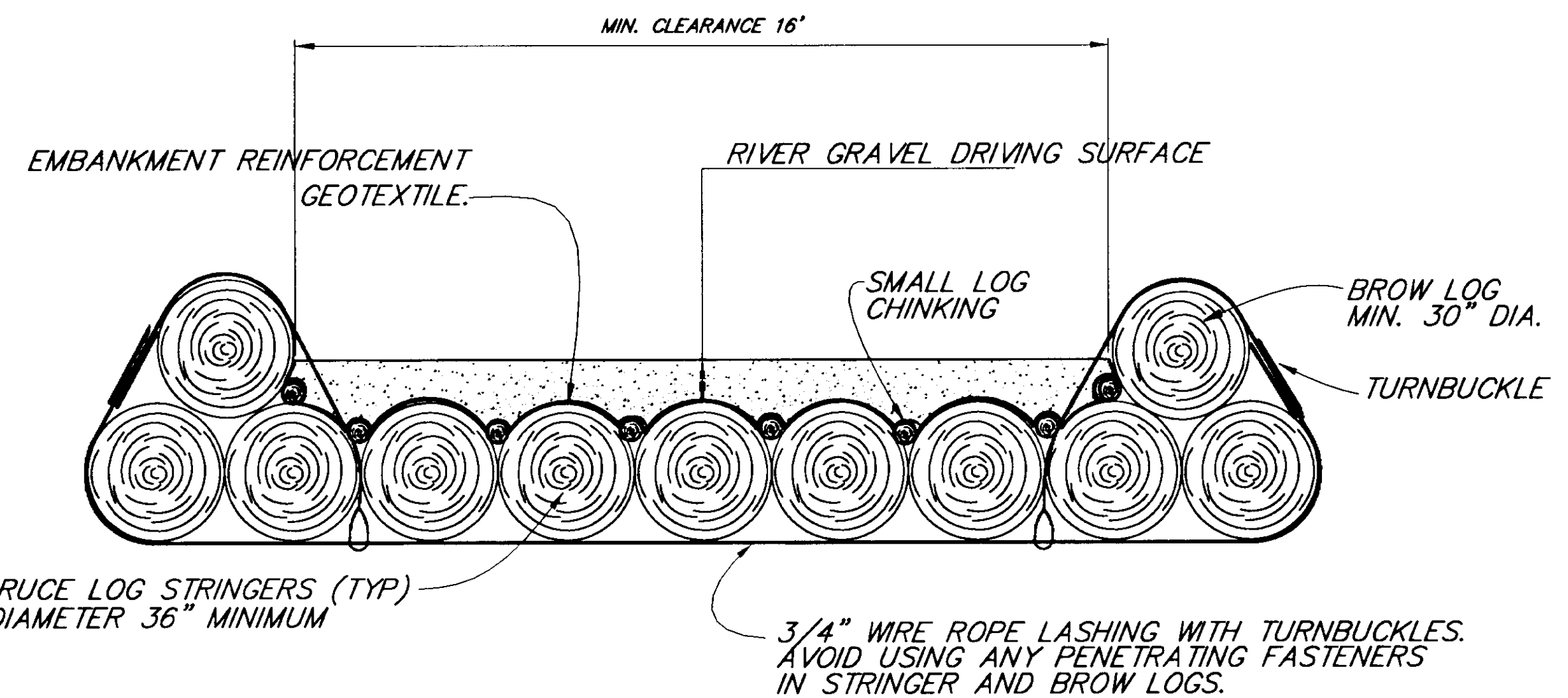




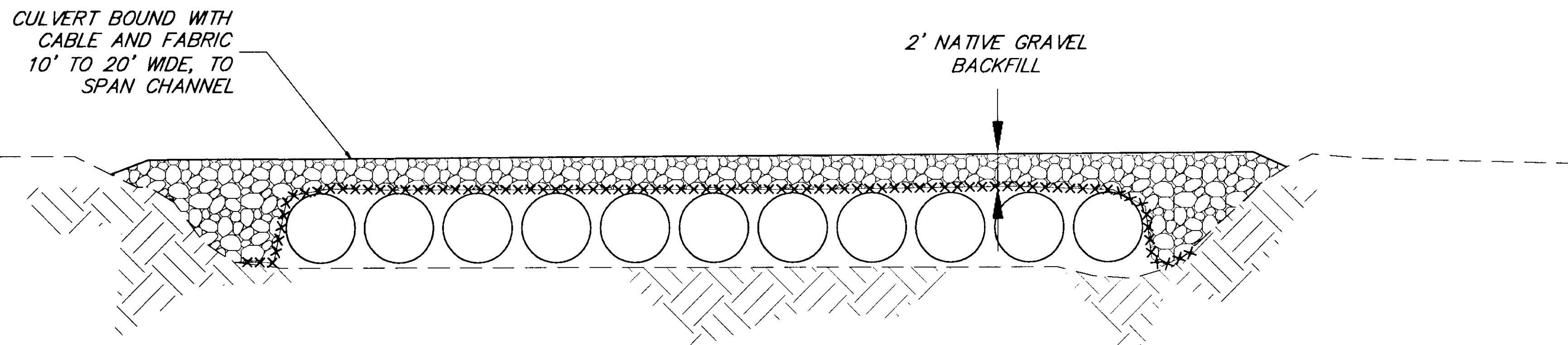
**TEMPORARY BRIDGE SITE PLAN**



**SECTION A-A**



**SECTION B-B**



**TYPICAL SECTION  
TEMPORARY CROSSING**

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

PATH:	[PlotStamp Eval] Q: \Hns\68800\Planset\rivmindet1.dwg
BY:	DATE:
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<b>RECORD OF REVISIONS</b>	

STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES**  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

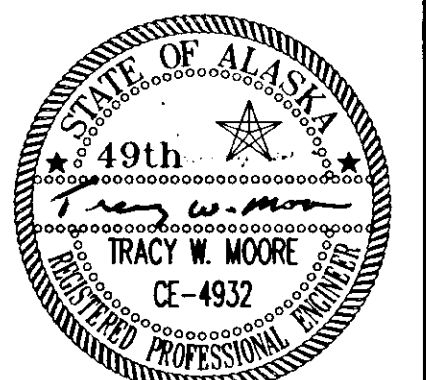
HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) 71874  
**RIVER MINING DETAILS**

ALASKA

DESIGNED BY: C. HAKARI  
 DRAWN BY: L. ROBERTSON  
 CHECKED BY: T. MOORE

PROJECT NO. 71874  
 DATE: 1999  
 SHEET G5

ENGINEER'S SEAL



# STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

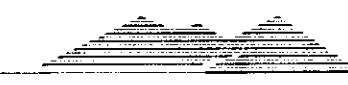
## HAINES HIGHWAY MILE 37 FISH HABITAT MITIGATION AND RESTORATION PLANS

### SHEET INDEX

1. COVER & SHEET INDEX
2. CREATED WETLANDS & MITIGATION CHANNEL SUBREACH 5 PLAN
3. CREATED WETLANDS & MITIGATION CHANNEL SUBREACH 4 PLAN
4. CREATED WETLANDS & MITIGATION CHANNEL SUBREACH 3 PLAN
5. CREATED WETLANDS & MITIGATION CHANNEL SUBREACH 1 & 2 PLAN
6. MITIGATION CHANNEL SUBREACH 5 DETAILS
7. MITIGATION CHANNEL SUBREACH 4 DETAILS
8. MITIGATION CHANNEL SUBREACH 3 DETAILS
9. MITIGATION CHANNEL SUBREACH 2 DETAILS
10. MITIGATION CHANNEL SUBREACH 1 DETAILS
11. MITIGATION CHANNEL PROFILE TABLE & CHANNEL BED MATERIAL GRADATIONS
12. MITIGATION CHANNEL TYPICAL PLAN & PROFILE
13. MITIGATION CHANNEL TYPICAL SECTIONS & DETAILS
14. CREATED WETLANDS DETAILS
15. CULVERT REMOVAL AT STATION 773+68
16. CULVERT REMOVAL AT STATION 789+22

[PlotStamp Eval] 15/Nov/99 O:\Hins\68800\Planset\11.dwg

**INTER-FLUVE, INC.**  
1020 Wasco Street, Suite 1  
Hood River, OR 97031  
(541) 386-9003 / Fax (541) 386-9241  
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STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION

HAINES

HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
COVER & SHEET INDEX

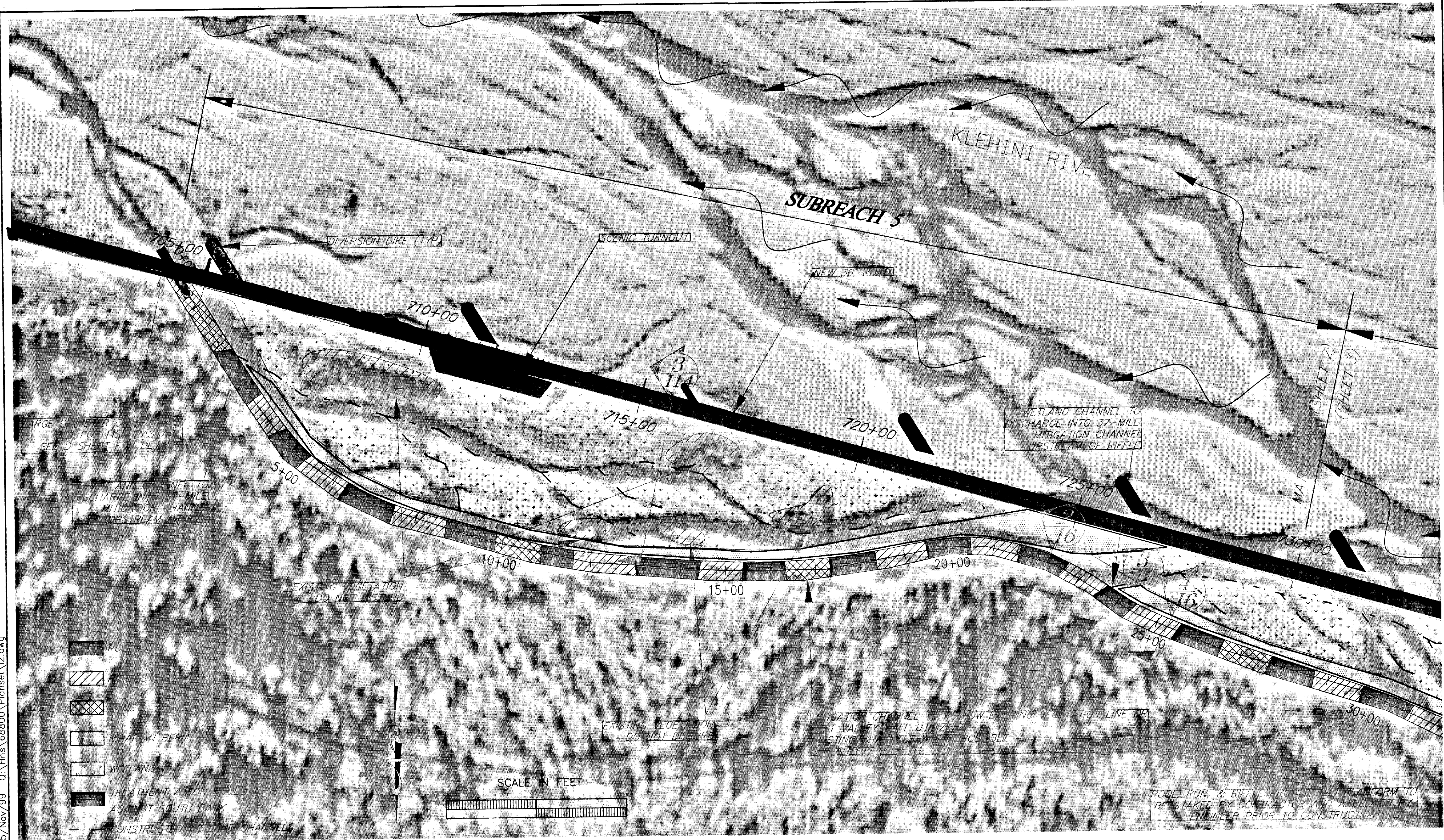
ALASKA

DESIGNED BY: MRM  
DRAWN BY: MRM  
CHECKED BY: GPK

PROJECT NO.  
71874  
DATE:  
OCT 14, 1999  
SHEET 11



[PlotStamp Eval] 15/Nov/99 0:\hns\68800\Planset\12.dwg



LARGE DIAPHRAGM OR BENT  
FOR FISH PASSAGE  
SEE 'D' SHEET FOR DETAILS

WETLAND CHANNEL TO  
DISCHARGE INTO 37-MILE  
MITIGATION CHANNEL  
UPSTREAM OF RIFFLE

EXISTING VEGETATION  
DO NOT DISTURB

EXISTING VEGETATION  
DO NOT DISTURB

MITIGATION CHANNEL TO FOLLOW EXISTING VEGETATION LINE OR  
FLOOD VALLEY. ALL UTILIZING  
EXISTING CHANNELS WHEN POSSIBLE.  
SHEETS 16 & 11.

WETLAND CHANNEL TO  
DISCHARGE INTO 37-MILE  
MITIGATION CHANNEL  
UPSTREAM OF RIFFLE

POOL RUN, & RIFFLE PROFILE AND PLATFORM TO  
BE STAKED BY CONTRACTOR AND APPROVED BY  
ENGINEER PRIOR TO CONSTRUCTION

PLAN: SUBREACH 5

**INTER-FLUVE, INC.**  
 1020 Wasco Street, Suite 1  
 Hood River, OR 97031  
 (541) 386-9003 / Fax (541) 386-9241 (406) 586-6926 / Fax (406) 586-6445  
 www.interfluve.com

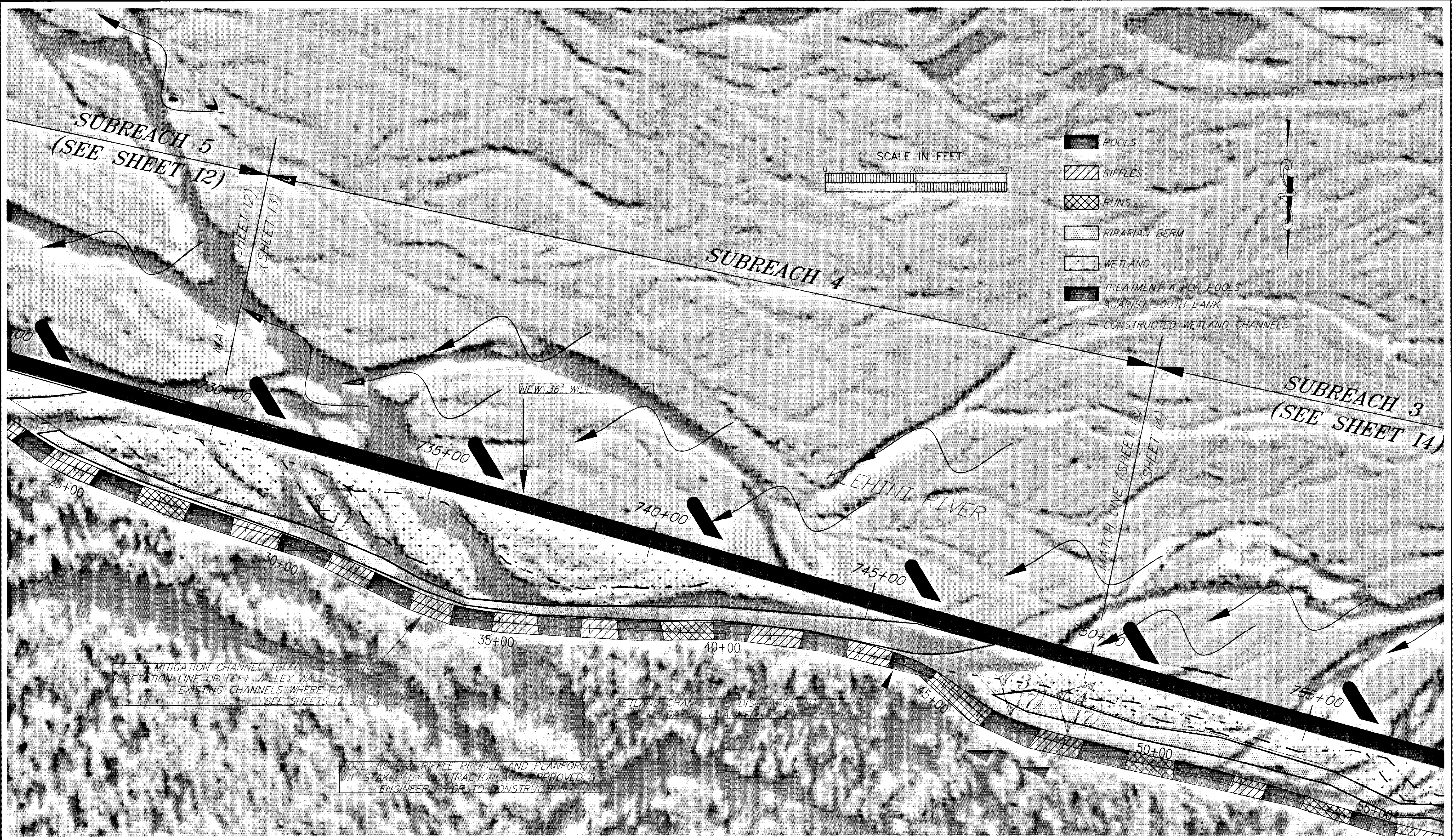
STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION

HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 ALASKA  
 CREATED WETLANDS & MITIGATION CHANNEL  
 SUBREACH 5 PLAN

DESIGNED BY: MRM  
 DRAWN BY: MRM  
 CHECKED BY: GPK

PROJECT NO.  
71874  
 DATE:  
OCT 14, 1999  
 SHEET 12





MITIGATION CHANNEL TO POOLS TO BE PLACED AT VEGETATION LINE OR LEFT VALLEY WALL UNLESS EXISTING CHANNELS WHERE POSSIBLE. SEE SHEETS 17 & 111.

WETLAND CHANNEL DISCHARGE INTO MITIGATION CHANNEL UPSTREAM OF RIFFLES

POOL, RUN & RIFFLE PROFILE AND PLANFORM TO BE STAKED BY CONTRACTOR AND APPROVED BY ENGINEER PRIOR TO CONSTRUCTION.

PLAN: SUBREACH 4

[PlotStamp Eval] 15/Nov/99 Q:\Hns\68800\PlanSet\13.dwg

**INTER-FLUVE, INC.**  
 1020 Wasco Street, Suite 1  
 Hood River, OR 97031  
 (541) 386-3003 / Fax (541) 386-9241  
 25 N. Wallace, Suite 5  
 Bozeman, MT 59715  
 (406) 586-6926 / Fax (406) 586-5445  
[www.interfluve.com](http://www.interfluve.com)

STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES**  
 SOUTHEAST REGION

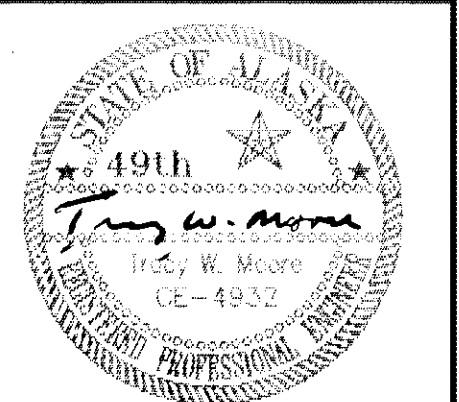
HAINES

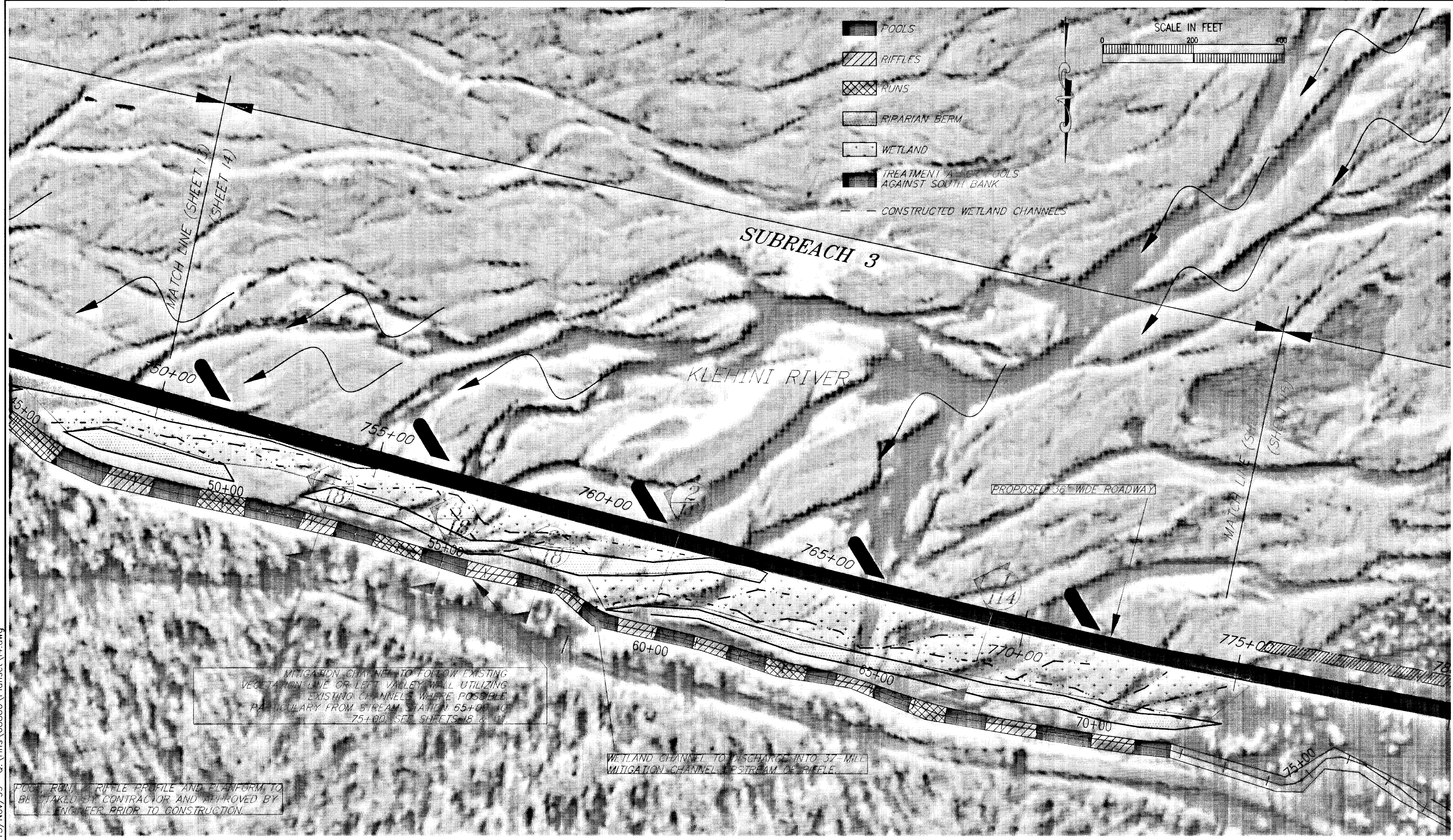
HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
**CREATED WETLANDS & MITIGATION CHANNEL  
 SUBREACH 4 PLAN**

ALASKA

DESIGNED BY:	MRM
DRAWN BY:	MRM
CHECKED BY:	GPK

PROJECT NO.	71874
DATE:	OCT 14, 1999
SHEET	13





PLAN: SUBREACH 3

[PlotStamp Eval] 15/Nov/99 Q:\Hns\68800\PlanSet\14.dwg

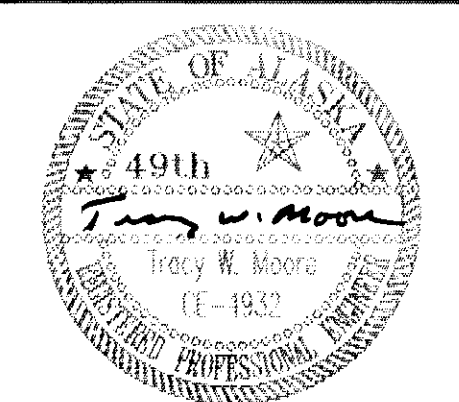
**INTER-FLUVE, INC.**  
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 SOUTHEAST REGION

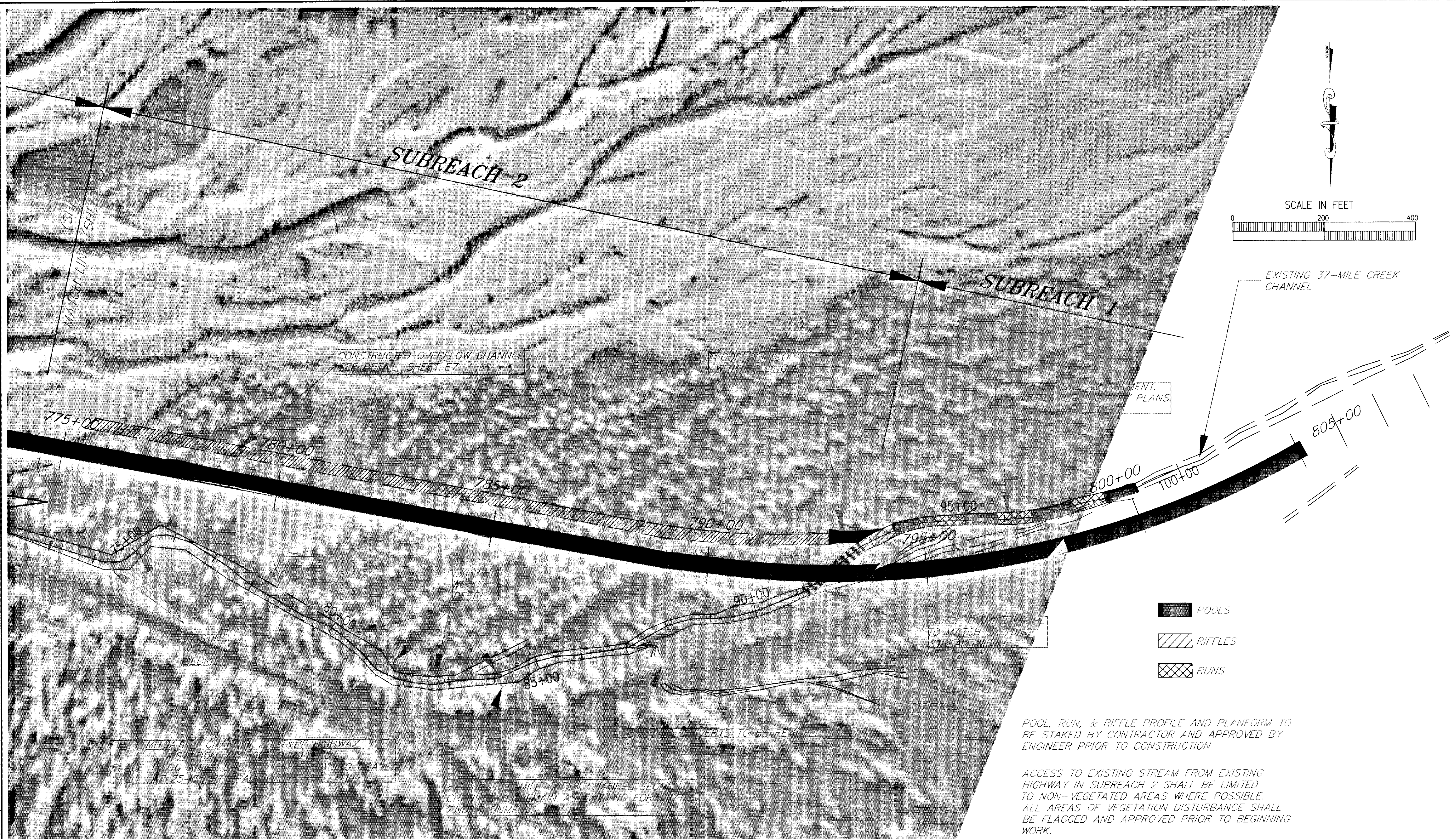
HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
**CREATED WETLANDS & MITIGATION CHANNEL**  
 SUBREACH 3 PLAN

ALASKA  
 DESIGNED BY: MRM  
 DRAWN BY: MRM  
 CHECKED BY: GPK

PROJECT NO.  
71874  
 DATE:  
OCT 14, 1999  
 SHEET 14



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PLAN: SUBREACHES 1 & 2

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1920 Wasco Street, Suite 1  
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STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES**  
SOUTHEAST REGION

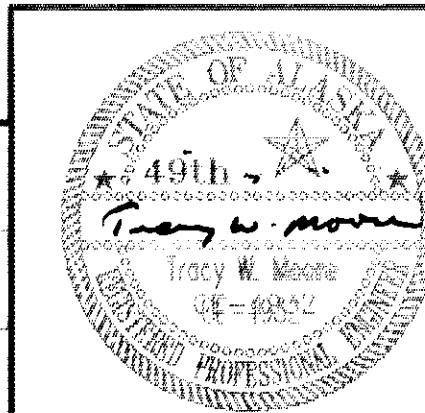
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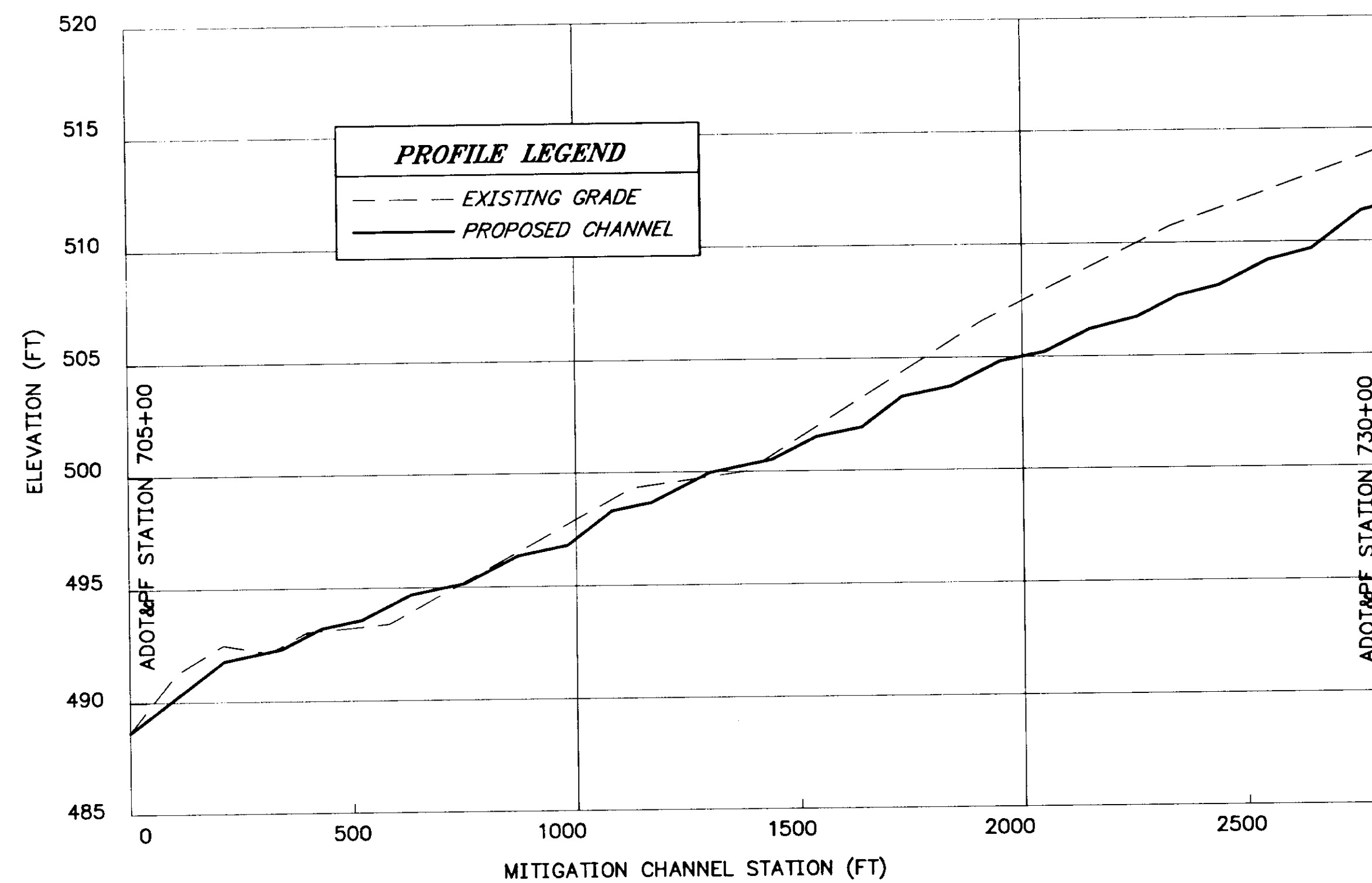
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
**CREATED WETLANDS & MITIGATION CHANNEL  
SUBREACH 1 & SUBREACH 2 PLAN**

ALASKA

DESIGNED BY: MRM  
DRAWN BY: MRM  
CHECKED BY: GPK

PROJECT NO.  
71874  
DATE:  
OCT 14, 1999  
SHEET 15

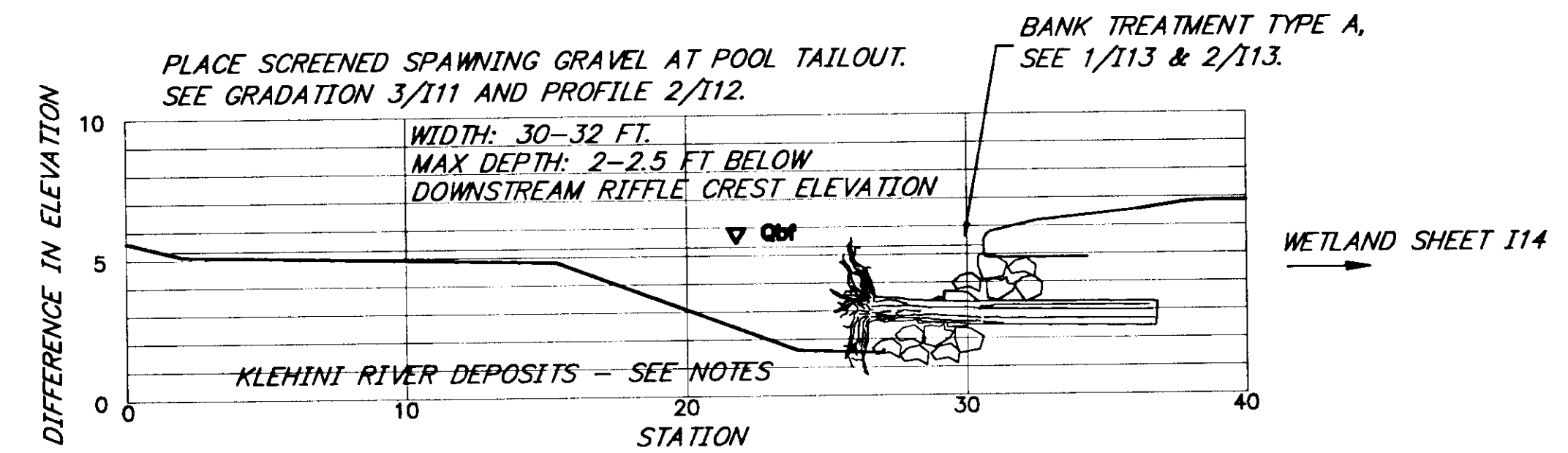




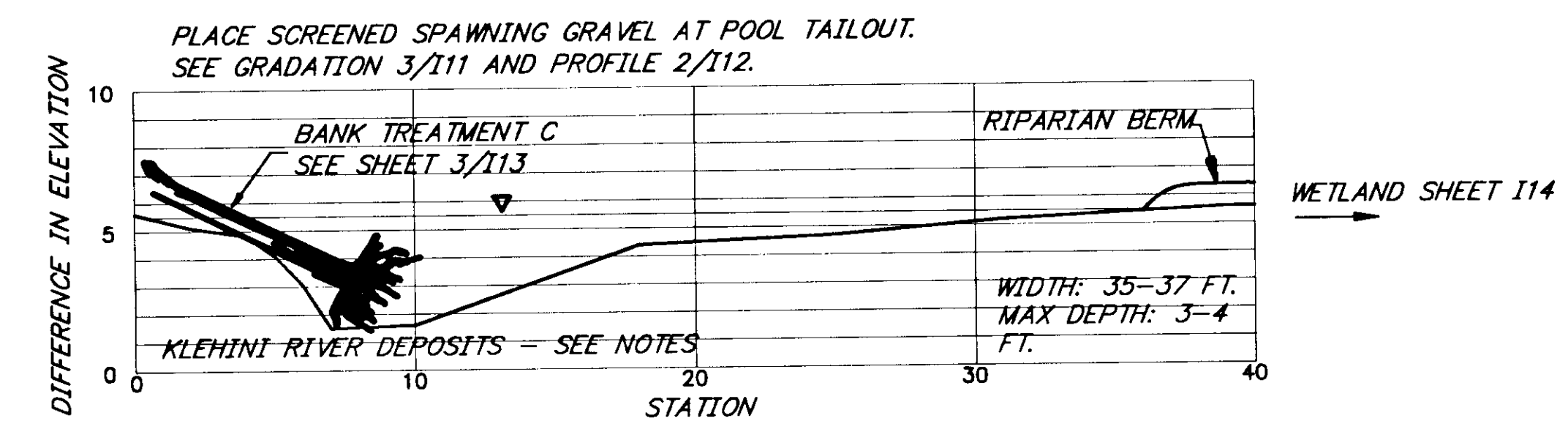
**1**  
**16** ADOT STATION 705+00 TO 730+00  
SUBREACH 5 MITIGATION CHANNEL PROFILE  
(37 MILE CREEK)

**CONSTRUCTION NOTES:**

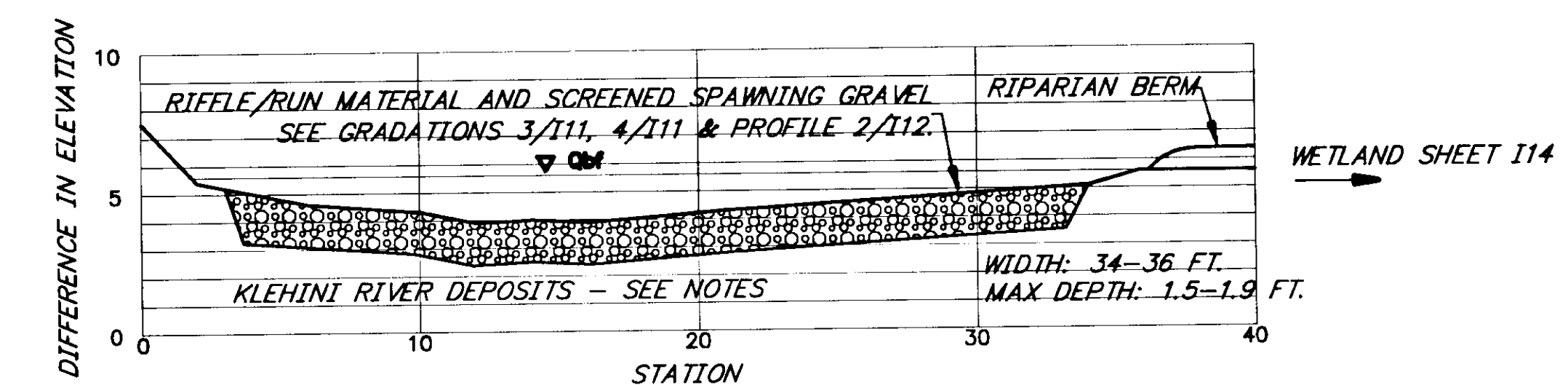
1. ORIGINAL GRADE VARIES; EXCAVATION AND/OR BACKFILL MAY BE REQUIRED ALONG MITIGATION CHANNEL.
2. FOR MITIGATION CHANNEL IN CUT AREAS: LEAVE EXISTING KLEHINI RIVER DEPOSITS AT LOCATIONS SHOWN ON PROFILE. BACKFILL SHALL BE PER SPAWNING GRAVEL DETAIL 3/I11.
3. ANY NECESSARY BACKFILL DUE TO EXCESS EXCAVATION SHALL BE WITH KLEHINI RIVER DEPOSITS AS DIRECTED BY ENGINEER.
4. FOR MITIGATION CHANNEL IN FILL AREAS: IMPORT AND PLACE KLEHINI RIVER DEPOSITS (FLOODPLAIN MATERIAL) PER GRADATION DETAIL 4/I11.
5. SEE TABLE 1/I11 FOR CHANNEL INVERT DESIGN ELEVATIONS. SEE DETAIL 1/I12 FOR GENERAL CONTOURS OF POOL, RIFFLE & RUN FEATURES.
6. LEFT BANK OF CHANNEL TO FOLLOW EXISTING VEGETATION LINE OR LEFT VALLEY WALL, UTILIZING EXISTING CHANNELS WHERE POSSIBLE. GRADE TO BE ADJUSTED IN UTILIZED CHANNEL AREAS, EXISTING VEGETATION NOT TO BE DISTURBED.
7. IF EXCAVATION OF MITIGATION CHANNEL TO DESIGN GRADE EXPOSES BED MATERIAL THAT IS FINER (LESS COARSE) THAN THE GRADATION CRITERIA DEFINED BY DETAIL 4/I11, OVEREXCAVATE BY 1.5 FT MIN AND BACKFILL WITH RIFFLE/RUN MATERIAL. SEE GRADATION 4/I11 AND PROFILE 2/I12.
8. CHANNEL LAYOUT TO BE STAKED ON A PLINE BASIS. ALL ANGLE POINTS TO BE SMOOTHED OUT DURING FINAL GRADING AND SLOPING WORK.



**2**  
**16** ADOT STATION 705+00 TO 730+00  
SUBREACH 5 TYPICAL CROSS-SECTION  
RIGHT-BANK POOL ENHANCEMENT



**3**  
**16** ADOT STATION 705+00 TO 730+00  
SUBREACH 5 TYPICAL CROSS-SECTION  
LEFT-BANK POOL ENHANCEMENT



**4**  
**16** ADOT STATION 705+00 TO 730+00  
SUBREACH 5 TYPICAL CROSS-SECTION  
RIFFLE/RUN ENHANCEMENT

NOTE: SECTION VIEWS LOOKING DOWNSTREAM

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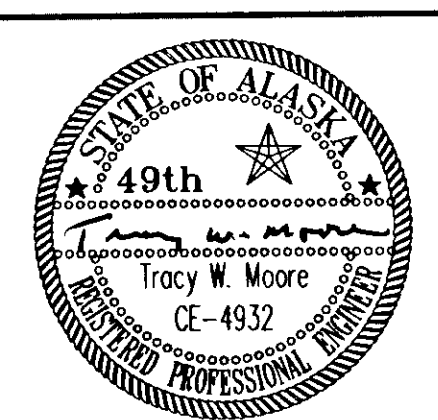
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION

HAINES

HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
ALASKA  
MITIGATION CHANNEL - SUBREACH 5 DETAILS

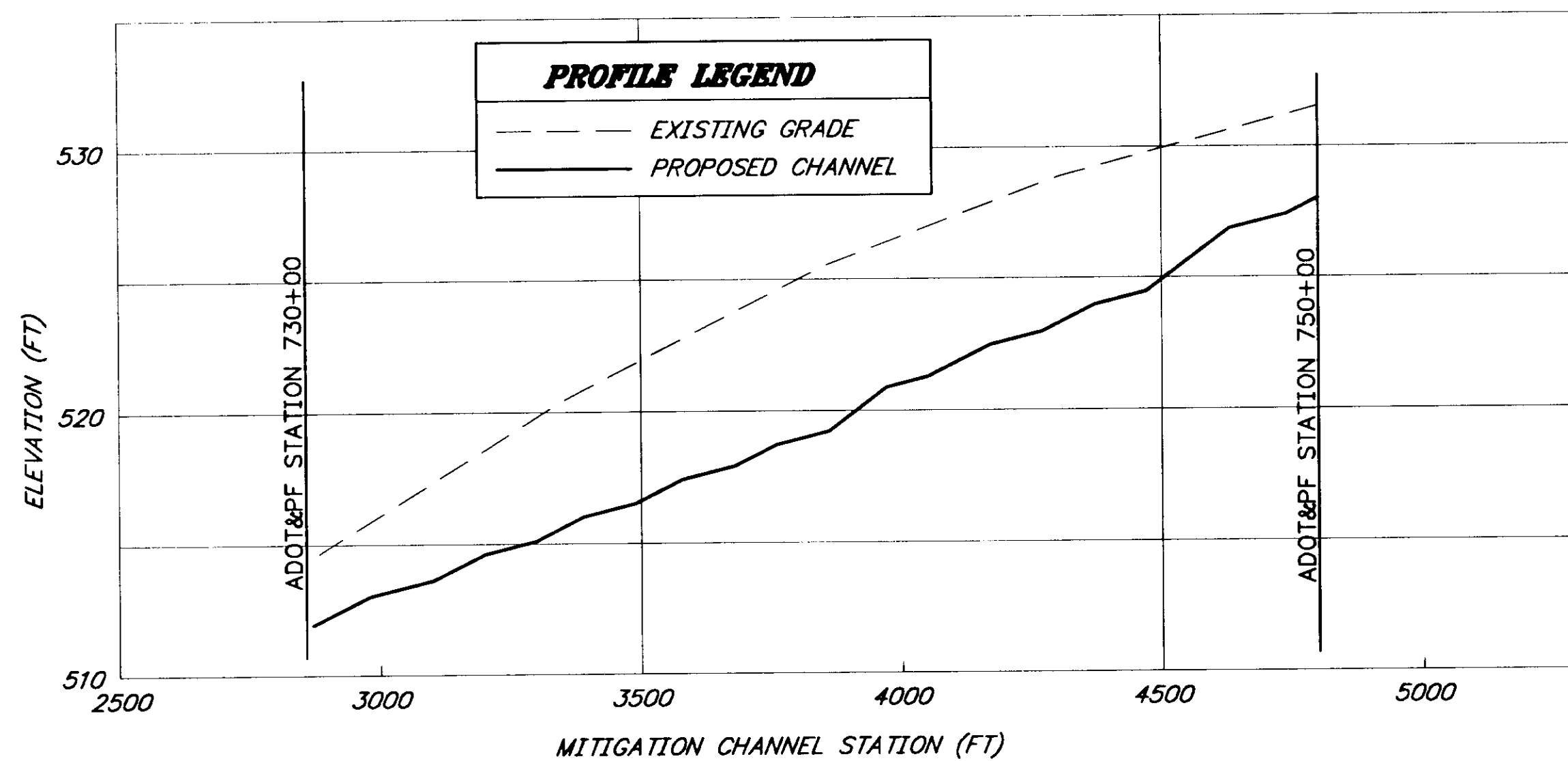
DESIGNED BY: GPK, KB  
DRAWN BY: MRM  
CHECKED BY: GPK

PROJECT NO. 71874  
DATE: OCT 14, 1999  
SHEET 16

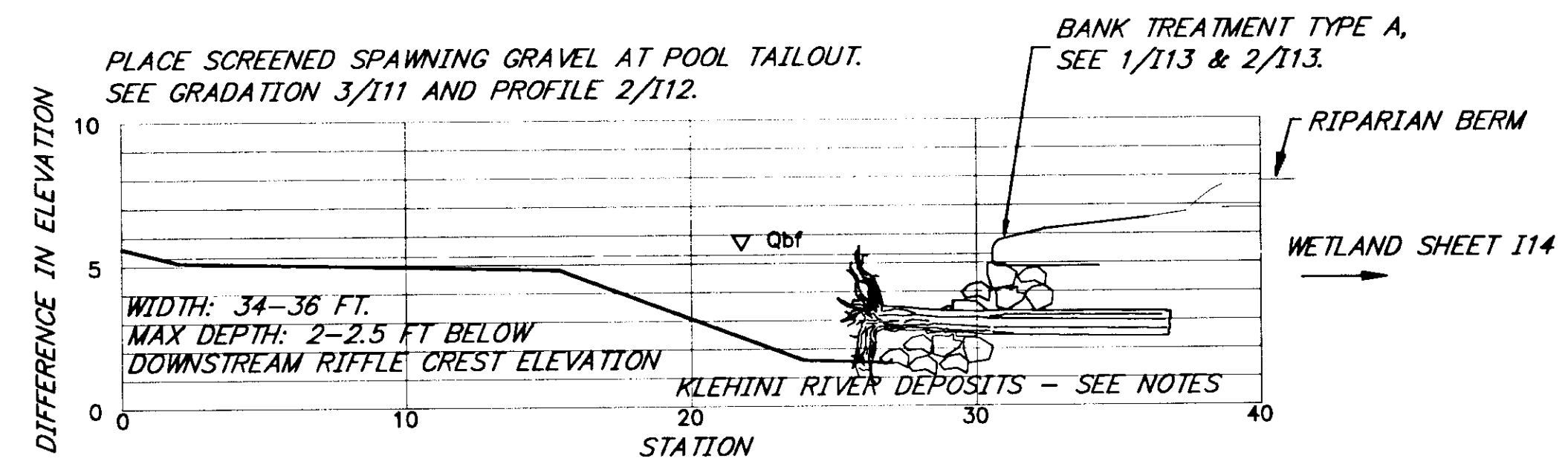


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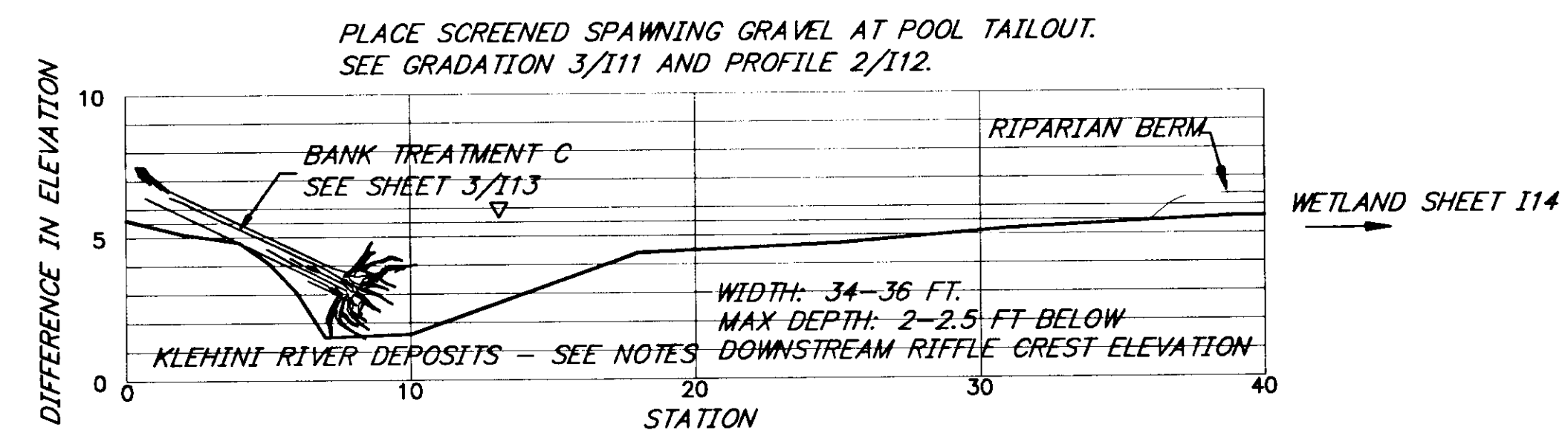




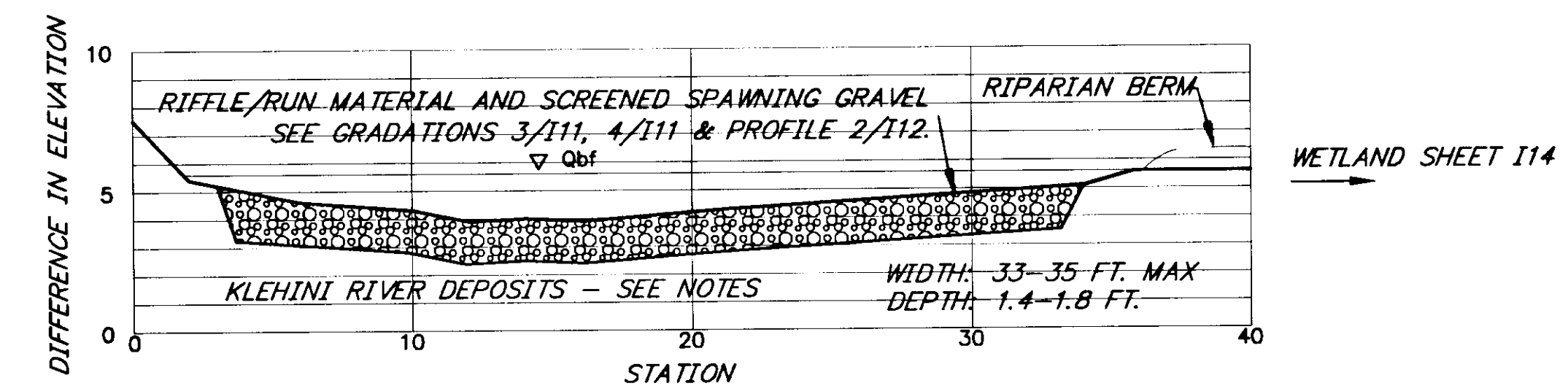
**1**  
**17** ADOT STATION 730+00 TO 750+00  
SUBREACH 4 MITIGATION CHANNEL PROFILE  
(37 MILE CREEK)



**2**  
**17** ADOT STATION 730+00 TO 750+00  
SUBREACH 4 TYPICAL CROSS-SECTION  
RIGHT-BANK POOL ENHANCEMENT



**3**  
**17** ADOT STATION 730+00 TO 750+00  
SUBREACH 4 TYPICAL CROSS-SECTION  
LEFT-BANK POOL ENHANCEMENT



**4**  
**17** ADOT STATION 730+00 TO 750+00  
SUBREACH 4 TYPICAL CROSS-SECTION  
RIFFLERUN ENHANCEMENT

NOTE: SECTION VIEWS LOOKING DOWNSTREAM

[PlotStamp\_Eval] 15/Nov/99 O:\Hns\68800\Planset\17.dwg

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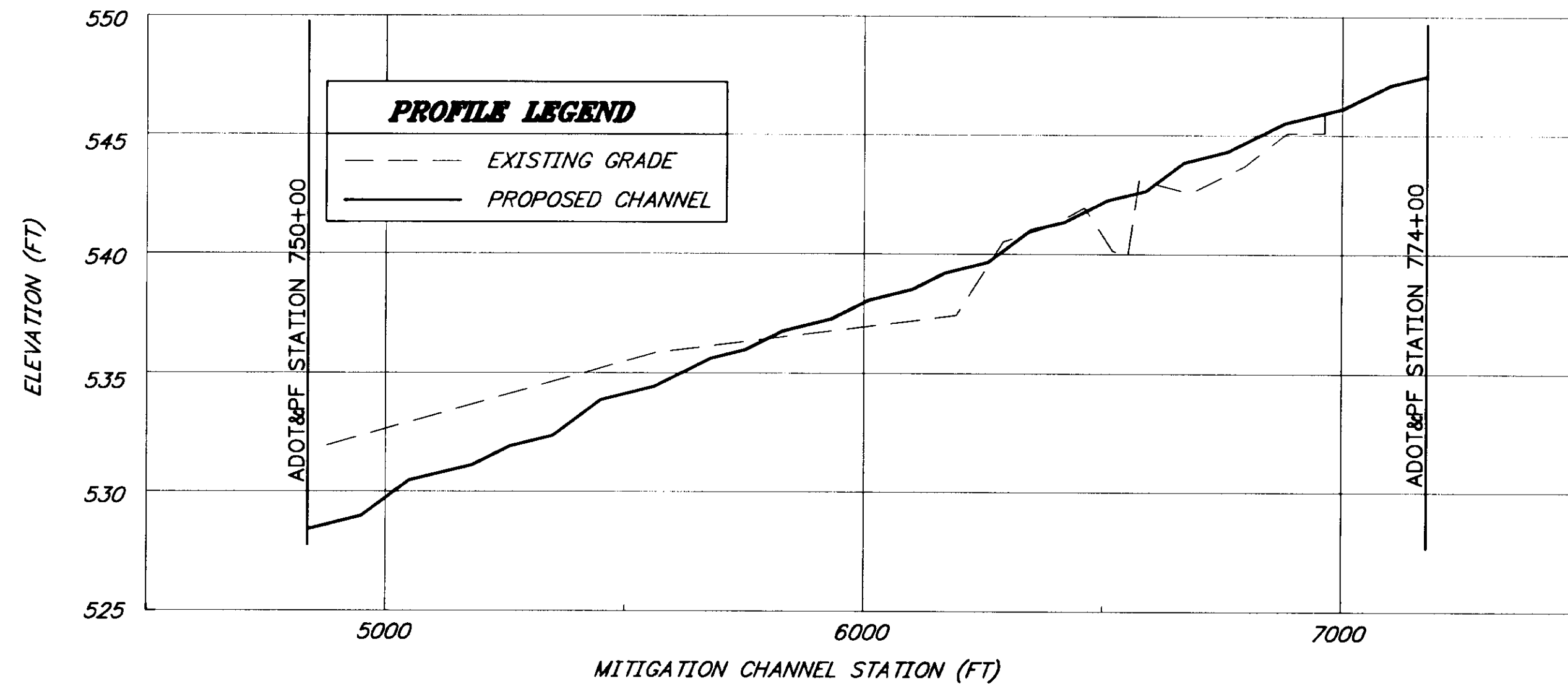
HAINES

HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
ALASKA  
MITAIGATION CHANNEL - SUBREACH 4 DETAILS

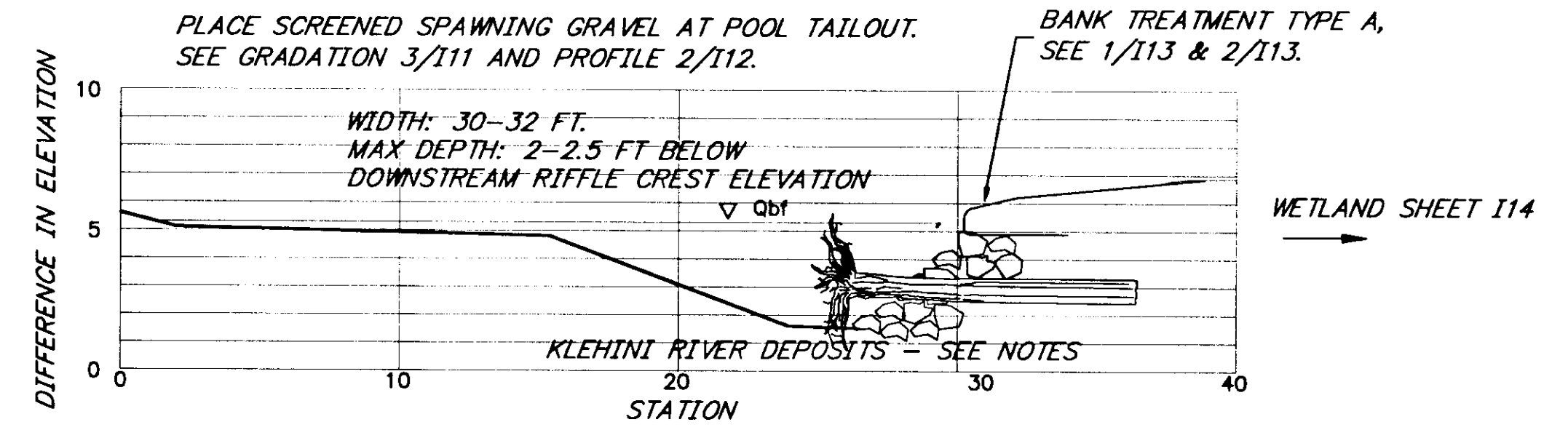
DESIGNED BY: GPK, KB  
DRAWN BY: MRM  
CHECKED BY: GPK

PROJECT NO. 71874  
DATE: OCT 14, 1999  
SHEET 17

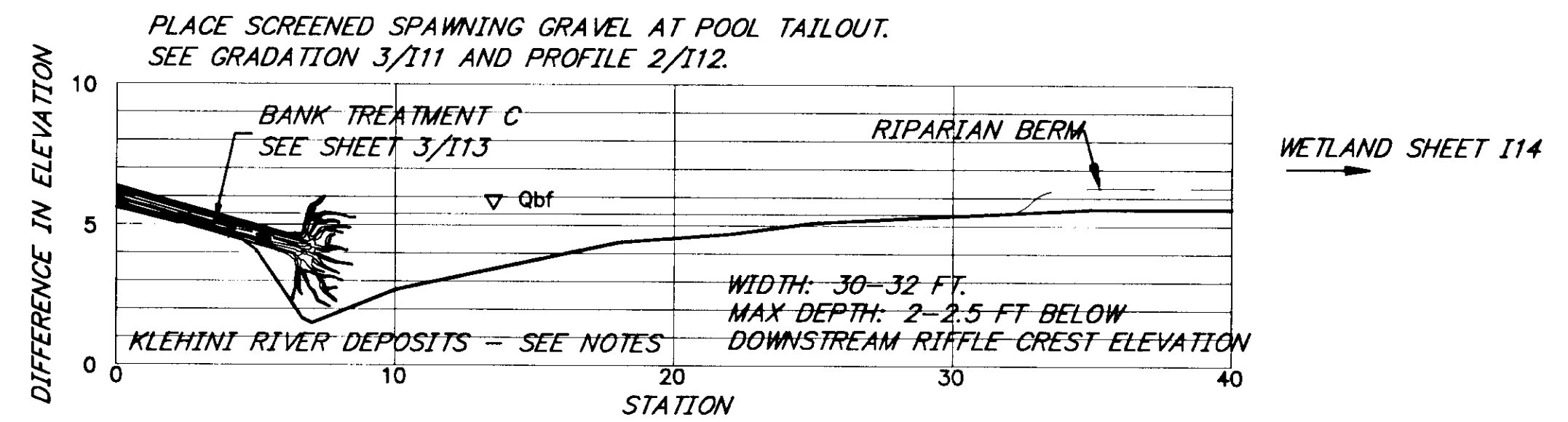




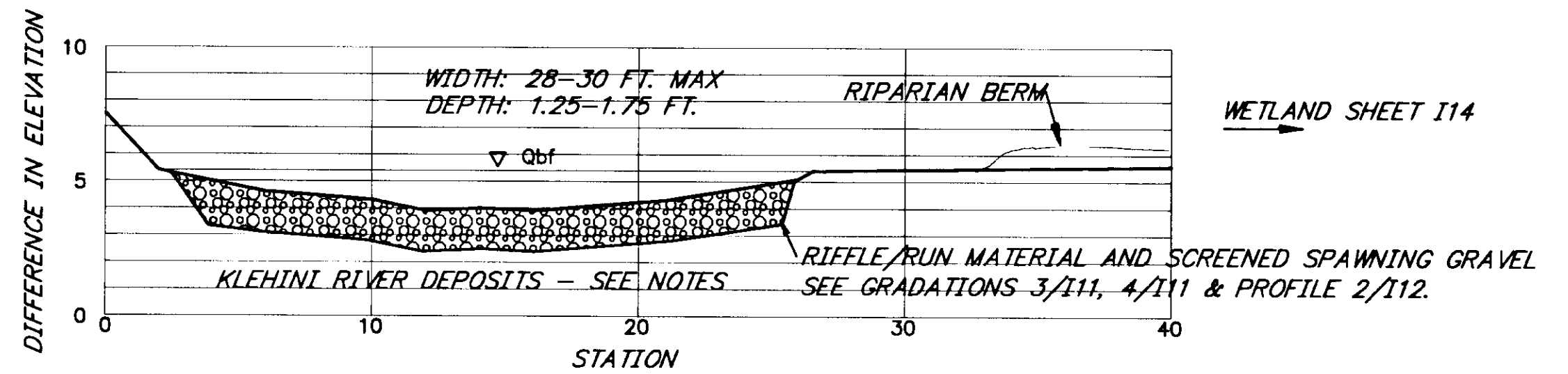
**1**  
**18** ADOT STATION 750+00 TO 774+00  
SUBREACH 3 MITIGATION CHANNEL PROFILE  
(37 MILE CREEK)



**2**  
**18** ADOT STATION 750+00 TO 774+00  
SUBREACH 3 TYPICAL CROSS-SECTION  
RIGHT-BANK POOL ENHANCEMENT



**3**  
**18** ADOT STATION 750+00 TO 774+00  
SUBREACH 3 TYPICAL CROSS-SECTION  
LEFT-BANK POOL ENHANCEMENT



**4**  
**18** ADOT STATION 750+00 TO 774+00  
SUBREACH 3 TYPICAL CROSS-SECTION  
RIFFLE/RUN ENHANCEMENT

NOTE: SECTION VIEWS LOOKING DOWNSTREAM

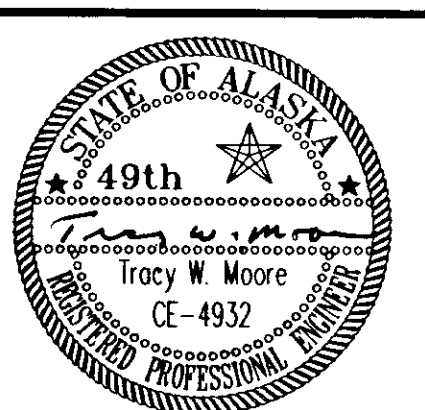
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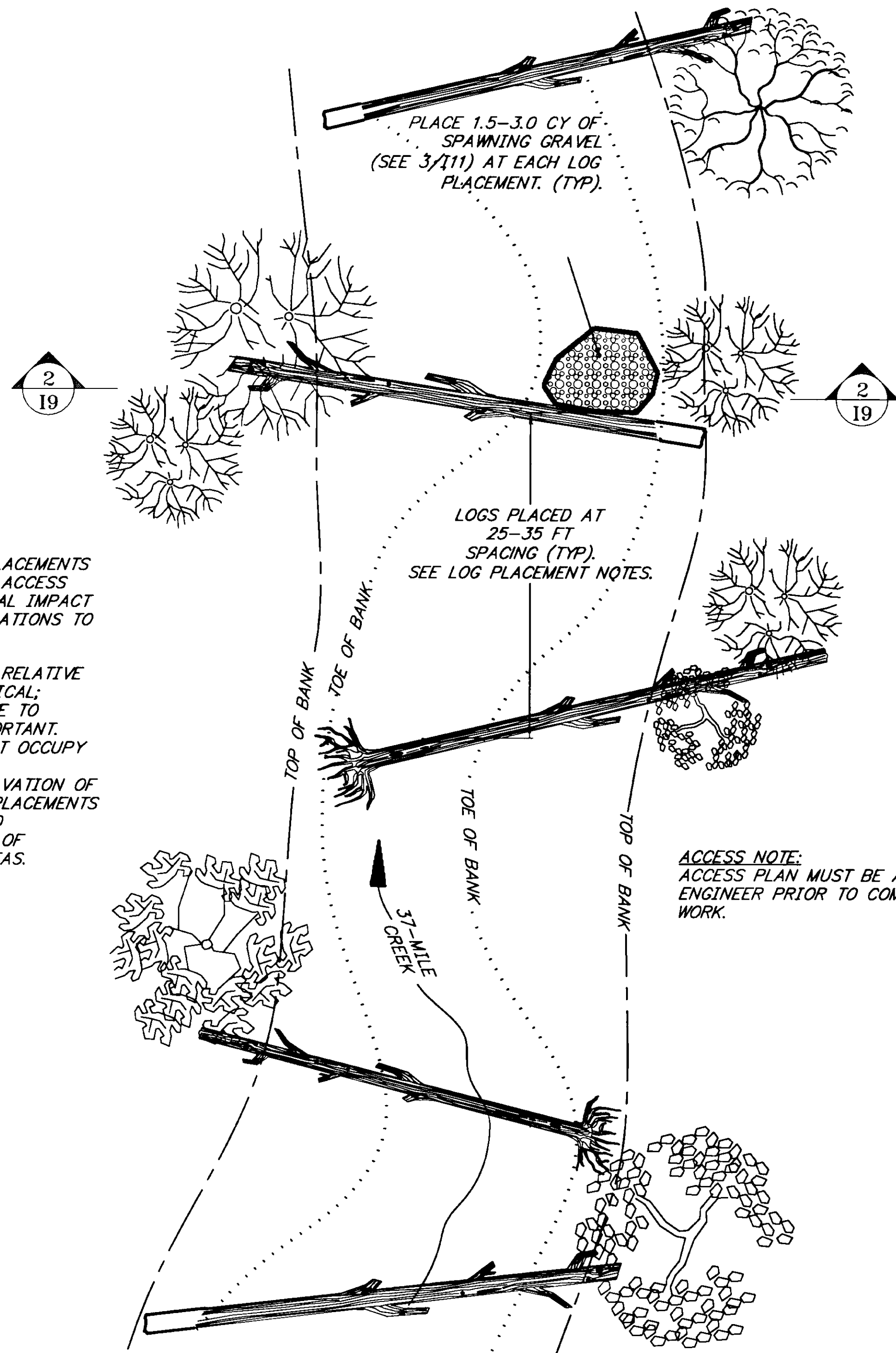
STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES**  
SOUTHEAST REGION

HAINES  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
ALASKA  
**MITIGATION CHANNEL - SUBREACH 3 DETAILS**

DESIGNED BY:	GPK, KB	PROJECT NO.	71874
DRAWN BY:	MRM	DATE:	OCT 14, 1999
CHECKED BY:	GPK	SHEET	18



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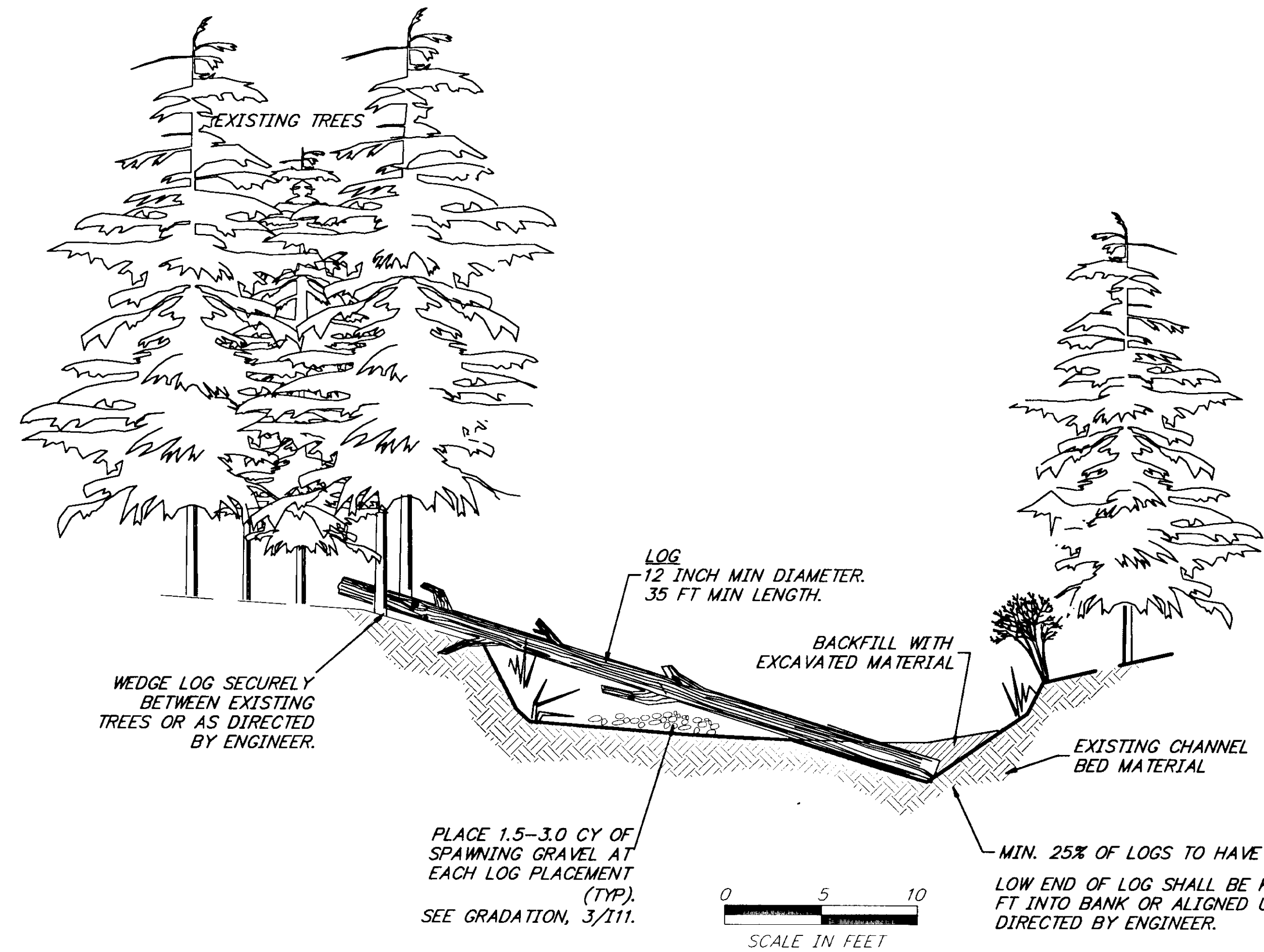
**LOG PLACEMENT NOTES:**  
ACTUAL LOCATIONS OF LOG PLACEMENTS TO BE DETERMINED BASED ON ACCESS CORRIDORS THAT HAVE MINIMAL IMPACT TO EXISTING VEGETATION. LOCATIONS TO BE APPROVED BY ENGINEER.

ORIENTATION OF LARGE WOOD RELATIVE TO STREAM FLOW IS NOT CRITICAL; HOWEVER, PLACEMENT RELATIVE TO HYDRAULIC FUNCTION IS IMPORTANT. WOOD PLACEMENTS SHOULD NOT OCCUPY MORE THAN 25% OF EXISTING CROSS-SECTIONAL AREA. EXCAVATION OF SCOUR HOLES AROUND WOOD PLACEMENTS IS PERMISSIBLE IF EXCAVATED MATERIALS CAN BE DISPOSED OF OUTSIDE OF FLOOD PRONE AREAS.

PLACE 1.5-3.0 CY OF SPAWNING GRAVEL (SEE 3/111) AT EACH LOG PLACEMENT. (TYP.)

LOGS PLACED AT 25-35 FT SPACING (TYP). SEE LOG PLACEMENT NOTES.

**ACCESS NOTE:**  
ACCESS PLAN MUST BE APPROVED BY ENGINEER PRIOR TO COMMENCING THIS WORK.



PLACE 1.5-3.0 CY OF SPAWNING GRAVEL AT EACH LOG PLACEMENT (TYP). SEE GRADATION, 3/111.

SCALE IN FEET

MIN. 25% OF LOGS TO HAVE ROOT WADS.  
LOW END OF LOG SHALL BE KEYED 3-5 FT INTO BANK OR ALIGNED UPSTREAM AS DIRECTED BY ENGINEER.  
ALTERNATE CHANNEL SIDE (LEFT AND RIGHT) THAT LOW END OF LOG IS PLACED.  
COTTONWOOD LOGS SHALL BE SALVAGED WITH ROOT WAD INTACT.

**2**  
**19** **SUBREACH 2 TYPICAL POOL CROSS-SECTION ENHANCEMENT**  
**ADOT STATION 774+00 TO 794+00**  
NOTE: SECTION VIEW LOOKING DOWNSTREAM

**1**  
**19** **SCHEMATIC PLAN VIEW SUBREACH 2**  
**HABITAT ENHANCEMENT LOG PLACEMENT**  
NOT TO SCALE

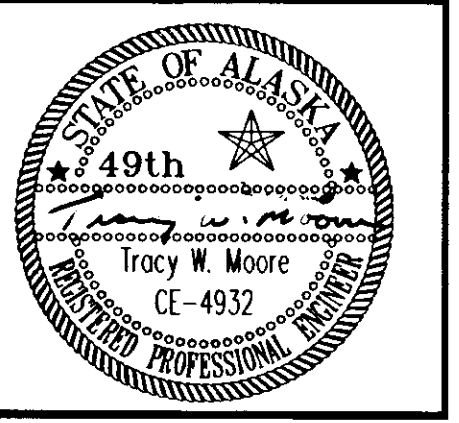
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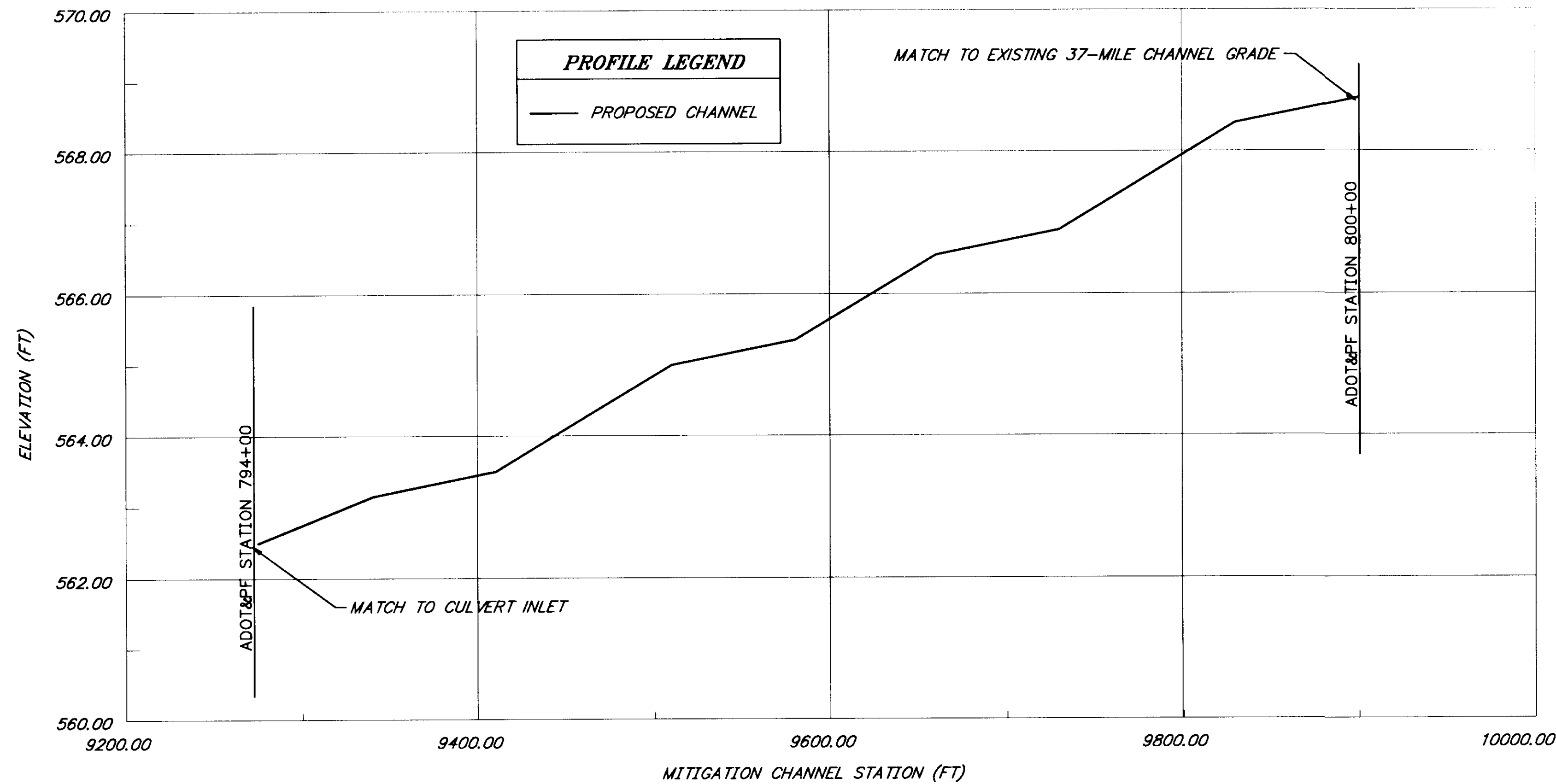
STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES**  
SOUTHEAST REGION

HAINES  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
ALASKA  
**MITIGATION CHANNEL - SUBREACH 2 DETAILS**

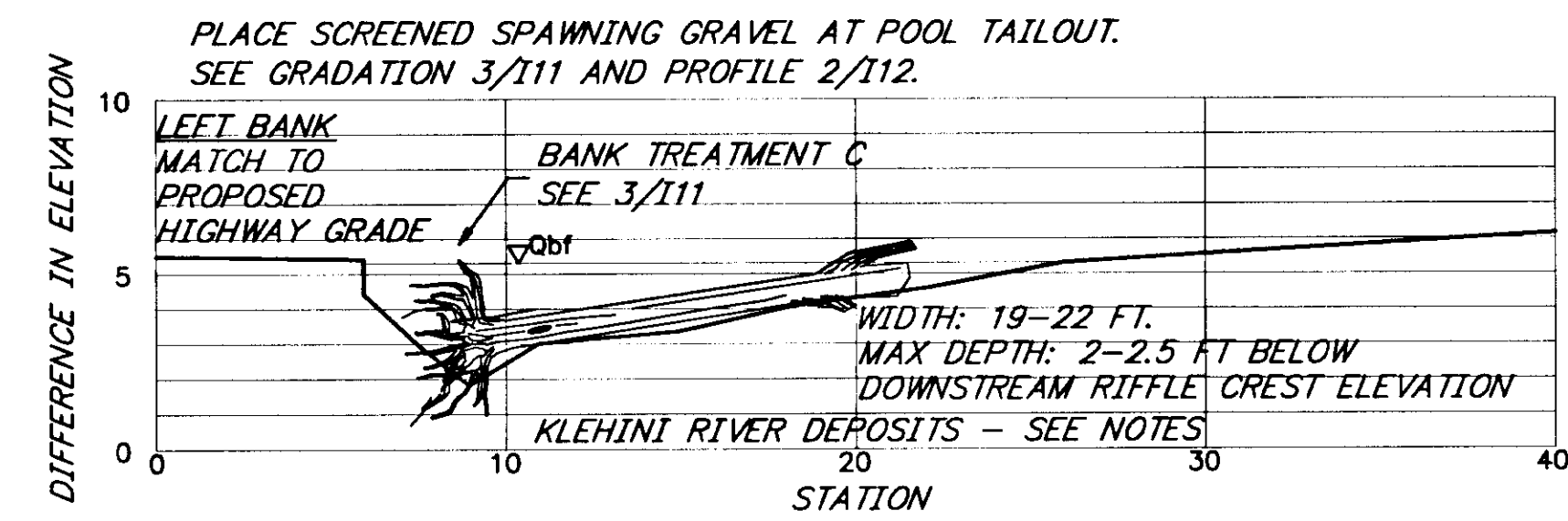
DESIGNED BY: GPK, KB  
DRAWN BY: MRM  
CHECKED BY: GPK

PROJECT NO. 71874  
DATE: OCT 14, 1999  
SHEET 19

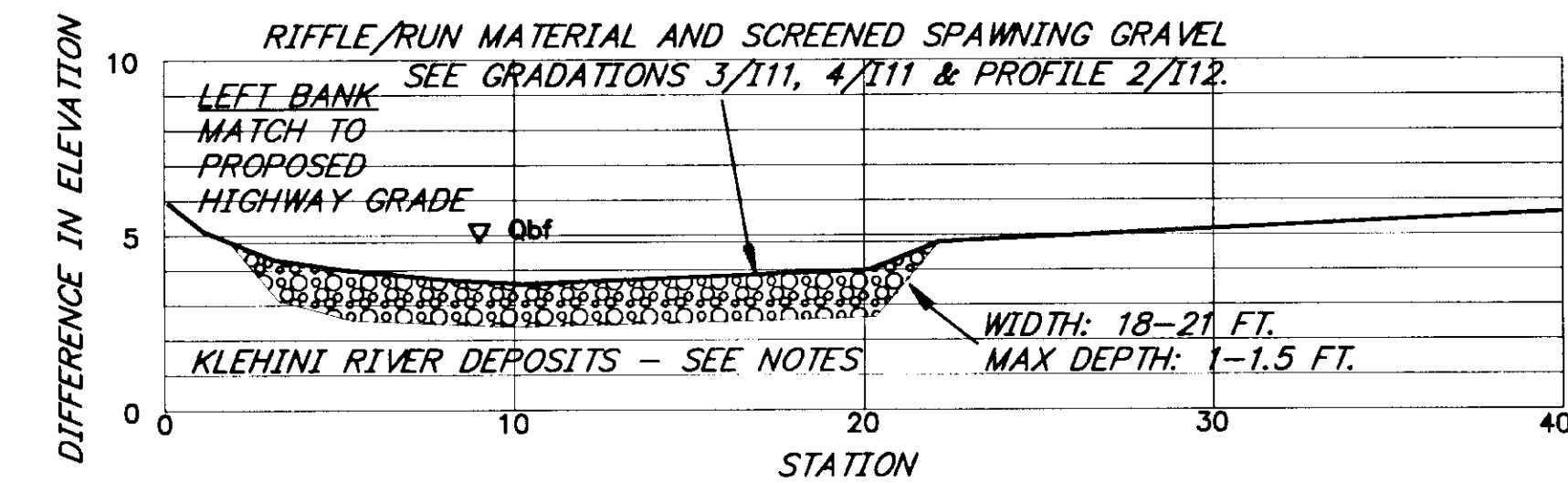




**1**  
**I10** ADOT STATION 794+00 TO UPSTREAM CROSSING  
SUBREACH 1 MITIGATION CHANNEL PROFILE



**2**  
**I10** ADOT STATION 794+00 TO UPSTREAM CROSSING  
SUBREACH 1 TYPICAL CROSS-SECTION  
POOL ENHANCEMENT



**3**  
**I10** ADOT STATION 794+00 TO UPSTREAM CROSSING  
SUBREACH 1 TYPICAL CROSS-SECTION  
RIFFLE/RUN ENHANCEMENT

NOTE: SECTION VIEWS LOOKING DOWNSTREAM

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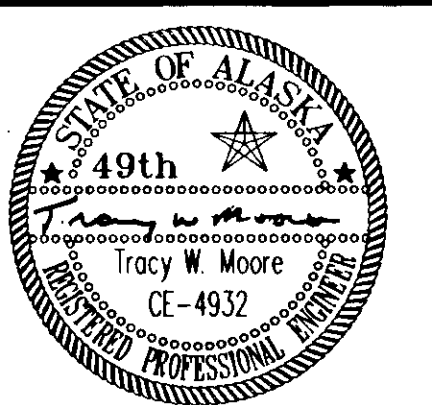
STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES**  
SOUTHEAST REGION

HAINES

HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
ALASKA  
**MITIGATION CHANNEL - SUBREACH 1 DETAILS**

DESIGNED BY: GPK, KB  
DRAWN BY: MRM  
CHECKED BY: GPK

PROJECT NO. 71874  
DATE: OCT 14, 1999  
SHEET 110



**1**  
**I11** PROPOSED POOL/RIFFLE SEQUENCE, SUBREACHES 1,3,4&5

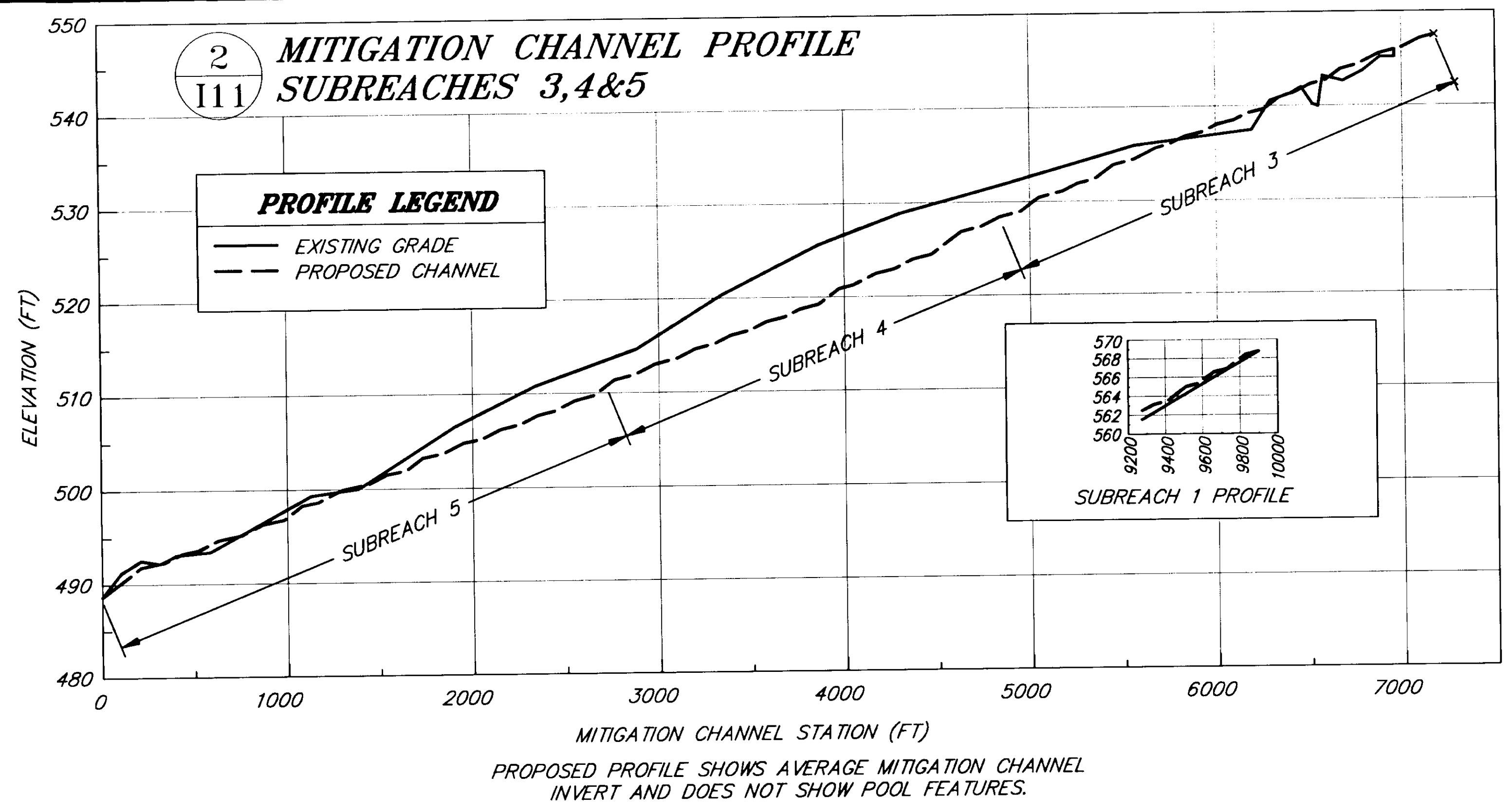
Subreach	Mitigation Channel Station (1) (ft)	Exist Elvn (ft)	Prop ch Invert Elev (ft)	Feature (2)	Length	bank treatment type (3)
5	0	488.7	488.7			
5	210		491.8	u/s end run	210	
5	340		492.3	u/s end pool	130	C
5	430		493.2	u/s end riffle	90	
5	520		493.6	u/s end pool	90	A
5	630		494.7	u/s end riffle	110	
5	750		495.2	u/s end pool	120	C
5	870		496.4	u/s end riffle	120	
5	980		496.8	u/s end pool	110	A
5	1080		498.3	u/s end run	100	
5	1170		498.7	u/s end pool	90	C
5	1300		500.0	u/s end riffle	130	
5	1440		500.5	u/s end pool	140	B
5	1540		501.5	u/s end riffle	100	
5	1640		501.9	u/s end pool	100	A
5	1730		503.3	u/s end run	90	
5	1840		503.7	u/s end pool	110	C
5	1950		504.8	u/s end riffle	110	
5	2050		505.2	u/s end pool	100	A
5	2150		506.2	u/s end riffle	100	
5	2260		506.8	u/s end pool	110	A
5	2350		507.7	u/s end riffle	90	
5	2440		508.1	u/s end pool	90	C
5	2550		509.2	u/s end riffle	110	
5	2650		509.7	u/s end pool	100	A
5	2760		511.4	u/s end run	110	
4	2870		511.9	u/s end pool	110	C
4	2980		513.0	u/s end riffle	110	
4	3100		513.6	u/s end pool	120	A
4	3200		514.6	u/s end riffle	100	
4	3300		515.1	u/s end pool	100	C
4	3390		516.0	u/s end riffle	90	
4	3490		516.5	u/s end pool	100	C
4	3580		517.4	u/s end riffle	90	
4	3680		517.9	u/s end pool	100	B
4	3760		518.7	u/s end riffle	80	
4	3860		519.2	u/s end pool	100	A
4	3970		520.9	u/s end run	110	
4	4050		521.3	u/s end pool	80	C
4	4170		522.5	u/s end riffle	120	
4	4270		523.0	u/s end pool	100	C
4	4370		524.0	u/s end riffle	100	
4	4470		524.5	u/s end pool	100	A
4	4630		526.9	u/s end run	160	
4	4740		527.4	u/s end pool	110	C
4	4840		528.4	u/s end riffle	100	

Subreach	Mitigation Channel Station (1) (ft)	Exist Elvn (ft)	Prop ch Invert Elev (ft)	Feature (2)	Length	bank treatment type (3)
3	4950		529.0	u/s end pool	110	C
3	5050		530.5	u/s end run	100	
3	5180		531.1	u/s end pool	130	A
3	5260		531.9	u/s end riffle	80	
3	5350		532.4	u/s end pool	90	C
3	5450		533.9	u/s end run	100	
3	5560		534.4	u/s end pool	110	B
3	5680		535.6	u/s end riffle	120	
3	5750		536.0	u/s end pool	70	A
3	5830		536.8	u/s end riffle	80	
3	5930		537.3	u/s end pool	100	C
3	6010		538.1	u/s end riffle	80	
3	6100		538.5	u/s end pool	90	A
3	6170		539.2	u/s end riffle	70	
3	6260		539.7	u/s end pool	90	A
3	6350		541.0	u/s end run	90	
3	6420		541.4	u/s end pool	70	C
3	6510		542.3	u/s end riffle	90	
3	6590		542.7	u/s end pool	80	A
3	6670		543.9	u/s end run	80	
3	6760		544.3	u/s end pool	90	C
3	6880		545.5	u/s end riffle	120	
3	7000		546.1	u/s end pool	120	A
3	7100		547.1	u/s end riffle	100	
3	7175	547.5	547.5	u/s end pool	75	C
1	9275	561.6	562.5	inlet culvert		
1	9340		563.2	u/s end riffle	65	
1	9410		563.5	u/s end pool	70	A
1	9510		565.0	u/s end riffle	100	
1	9580		565.4	u/s end pool	70	C
1	9660		566.6	u/s end riffle	80	
1	9730		566.9	u/s end pool	70	A
1	9830		568.4	u/s end riffle	100	
1	9900	568.8	568.8	u/s end pool	70	C

- Notes:**
- (1) Distance upstream from ADOT Station 705+00 along proposed mitigation channel alignment
  - (2) u/s = upstream
  - (3) See sheet I13 for bank treatment details.

**Note:**  
The Klehini River is an active system, channel alignment and floodplain topography rapidly change. Existing topography and elevations shall be verified with survey prior to construction. Engineer may direct modifications to proposed channel features and profile to accommodate changes in floodplain conditions.

Elevations subject to change by the Engineer.



**3**  
**I11** SPAWNING GRAVEL GRADATION

SCREENED SPAWNING GRAVEL GRADATION

SIEVE DESIGNATION	PERCENT PASSING BY WEIGHT (%)
4-inch	95 - 100
3-inch	90 - 100
2-inch	75 - 90
1.5-inch	45 - 90
1-inch	35 - 75
0.5-inch	15 - 30
no. 4	10 - 15

**4**  
**I11** RIFFLE/RUN BED MATERIAL GRADATION

RIFFLE/RUN BED MATERIAL GRADATION

SIEVE DESIGNATION	PERCENT PASSING BY WEIGHT (%)
9-inch	95 - 100
7.5-inch	90 - 100
6-inch	85 - 95
4-inch	65 - 80
2-inch	35 - 45
1-inch	13 - 22
1/2-inch	4 - 8

[PlotStamp Evol] 15/Nov/99 Q:\Hms\68800\Plans\I11.dwg

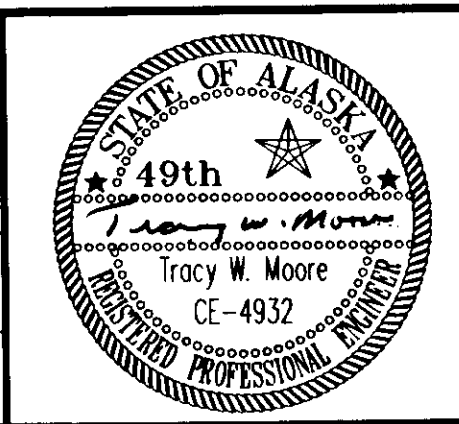
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(541) 386-9003 / Fax (541) 386-9241

25 N. Willson, Suite 5  
Bozeman, MT 59715  
(406) 586-6926 / Fax (406) 586-8445  
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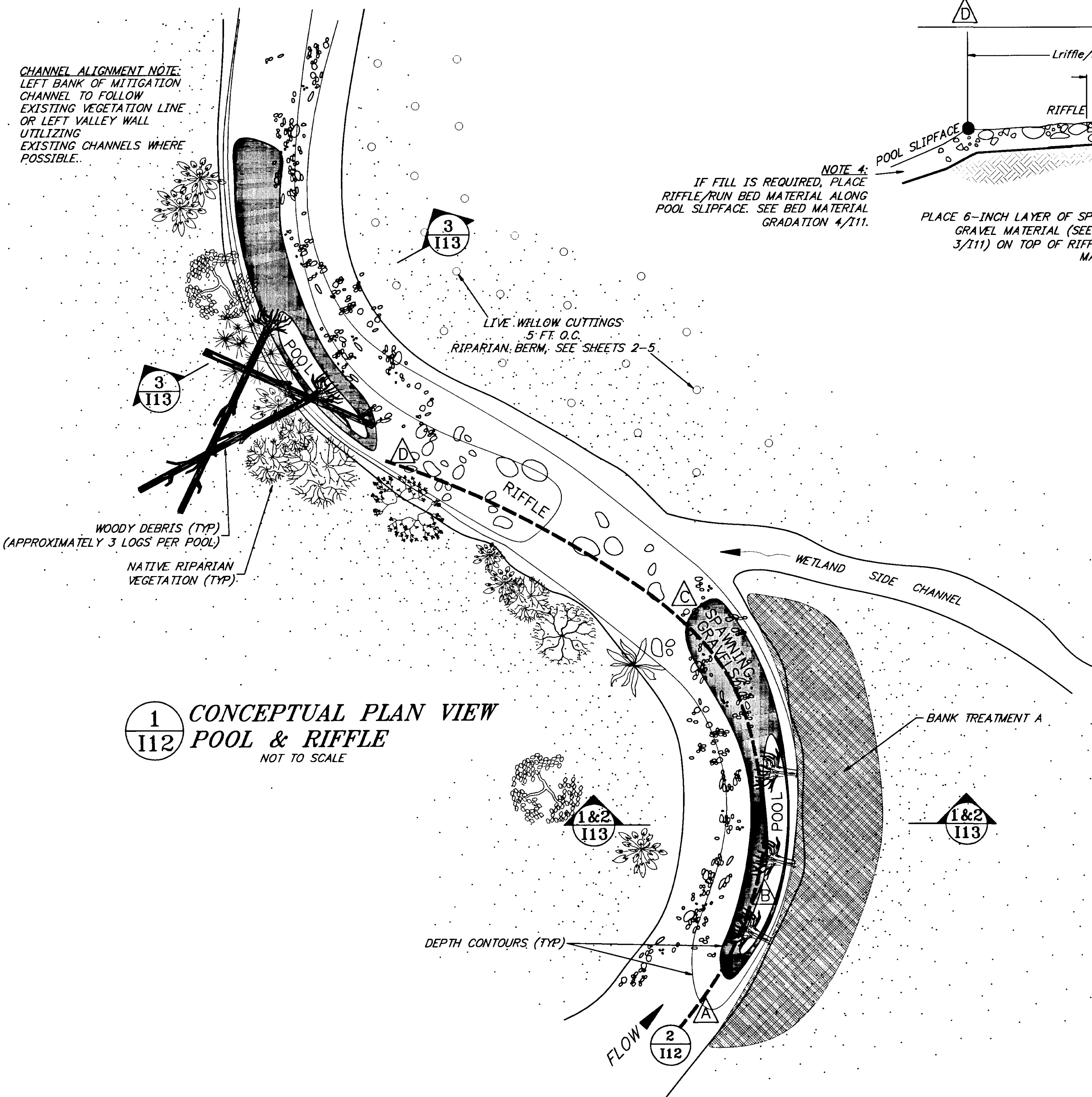
STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES**  
SOUTHEAST REGION

HAINES  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
ALASKA  
**MITIGATION CHANNEL PROFILE**

DESIGNED BY: GPK, KB	PROJECT NO. 71874
DRAWN BY: MRM	DATE: OCT 14, 1999
CHECKED BY: GPK	SHEET I11



CHANNEL ALIGNMENT NOTE:  
LEFT BANK OF MITIGATION  
CHANNEL TO FOLLOW  
EXISTING VEGETATION LINE  
OR LEFT VALLEY WALL  
UTILIZING  
EXISTING CHANNELS WHERE  
POSSIBLE.



**1**  
I12  
**CONCEPTUAL PLAN VIEW  
POOL & RIFFLE**  
NOT TO SCALE

WOODY DEBRIS (TYP)  
(APPROXIMATELY 3 LOGS PER POOL)

NATIVE RIPARIAN  
VEGETATION (TYP)

LIVE WILLOW CUTTINGS  
5 FT O.C.  
RIPARIAN BERM, SEE SHEETS 2-5

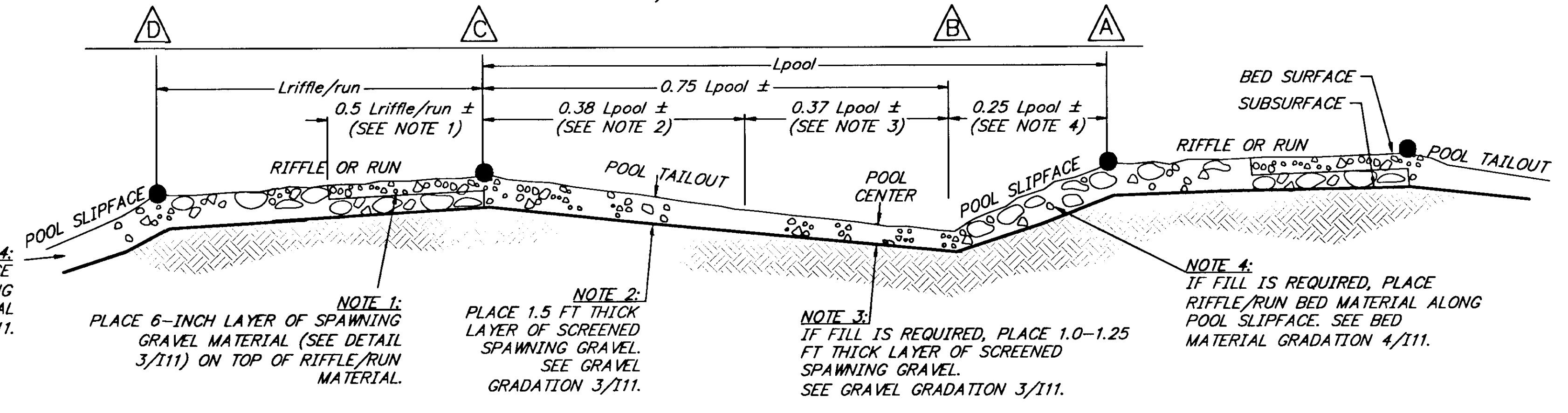
DEPTH CONTOURS (TYP)

FLOW

BANK TREATMENT A

WETLAND  
SIDE CHANNEL

● - UPSTREAM END OF POOL OR UPSTREAM END OF RIFFLE/RUN.  
DESIGN ELEVATIONS FROM TABLE 1/I11



**2**  
I12  
**PROFILE VIEW  
TYPICAL POOL & RIFFLE**  
NOT TO SCALE

NOTE 4:  
IF FILL IS REQUIRED, PLACE  
RIFFLE/RUN BED MATERIAL ALONG  
POOL SLIPFACE. SEE BED MATERIAL  
GRADATION 4/I11.

NOTE 1:  
PLACE 6-INCH LAYER OF SPAWNING  
GRAVEL MATERIAL (SEE DETAIL  
3/I11) ON TOP OF RIFFLE/RUN  
MATERIAL.

NOTE 2:  
PLACE 1.5 FT THICK  
LAYER OF SCREENED  
SPAWNING GRAVEL.  
SEE GRAVEL  
GRADATION 3/I11.

NOTE 3:  
IF FILL IS REQUIRED, PLACE 1.0-1.25  
FT THICK LAYER OF SCREENED  
SPAWNING GRAVEL.  
SEE GRAVEL GRADATION 3/I11.

NOTE 4:  
IF FILL IS REQUIRED, PLACE  
RIFFLE/RUN BED MATERIAL ALONG  
POOL SLIPFACE. SEE BED  
MATERIAL GRADATION 4/I11.

CONSTRUCTION NOTES:  
PLACE RIFFLE/RUN MATERIAL AS REQUIRED TO MEET  
GRADE OR AS DIRECTED BY ENGINEER.

SCREENED SPAWNING GRAVEL PLACEMENT IS TO EXTEND  
ACROSS FULL WIDTH OF CHANNEL.

POOL DEPTHS: RANGE 2-2.5 FEET BELOW DOWNSTREAM  
RIFFLE CREST ELEVATION.

POOL LENGTHS: RANGE 70-140 FEET. SEE TABLE 1/I11.

**MITIGATION CHANNEL DETAILS**

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**DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES**  
SOUTHEAST REGION

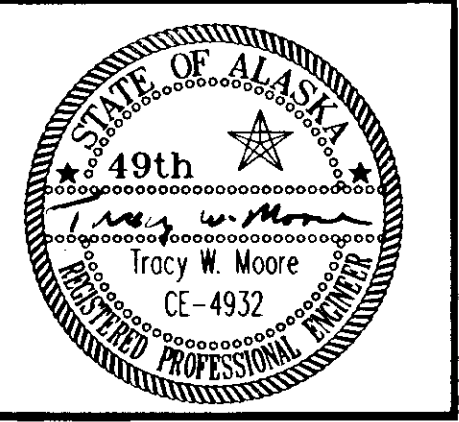
HAINES

HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
MITIGATION CHANNEL DETAILS

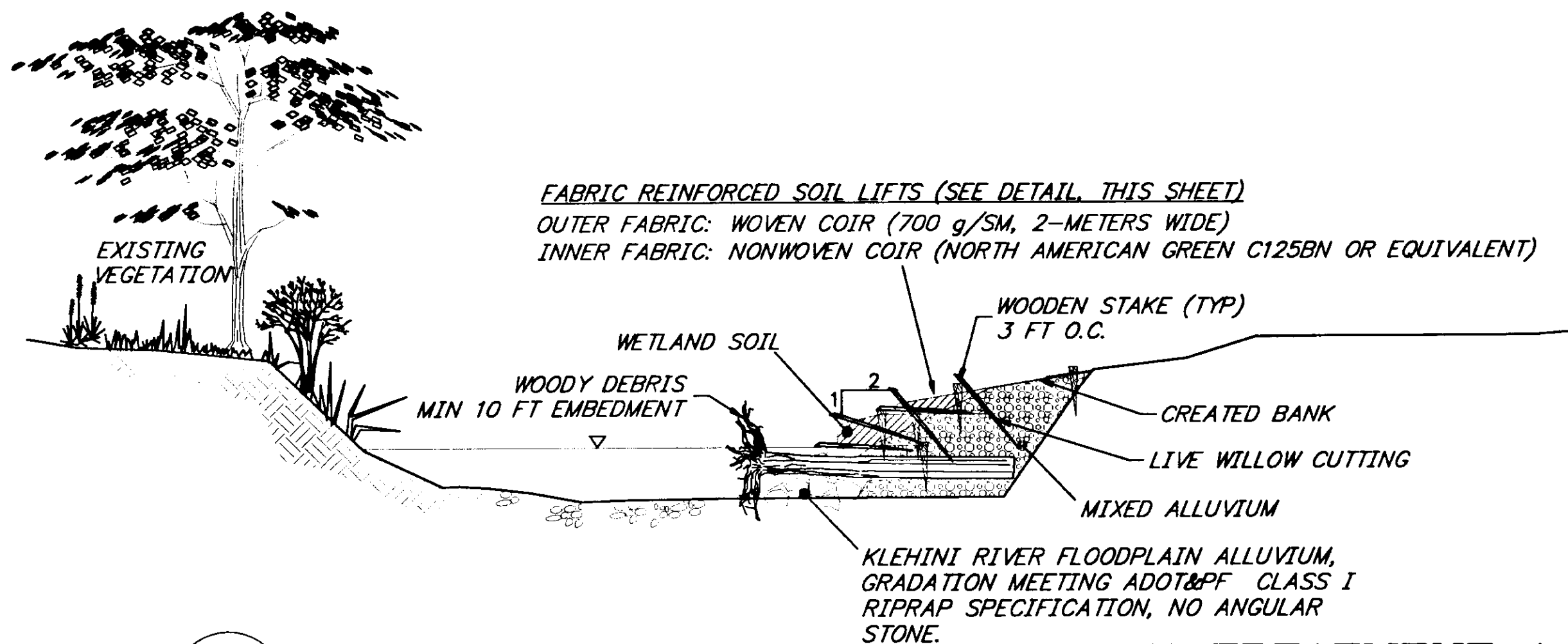
ALASKA

DESIGNED BY: KB  
DRAWN BY: MRM  
CHECKED BY: GPK

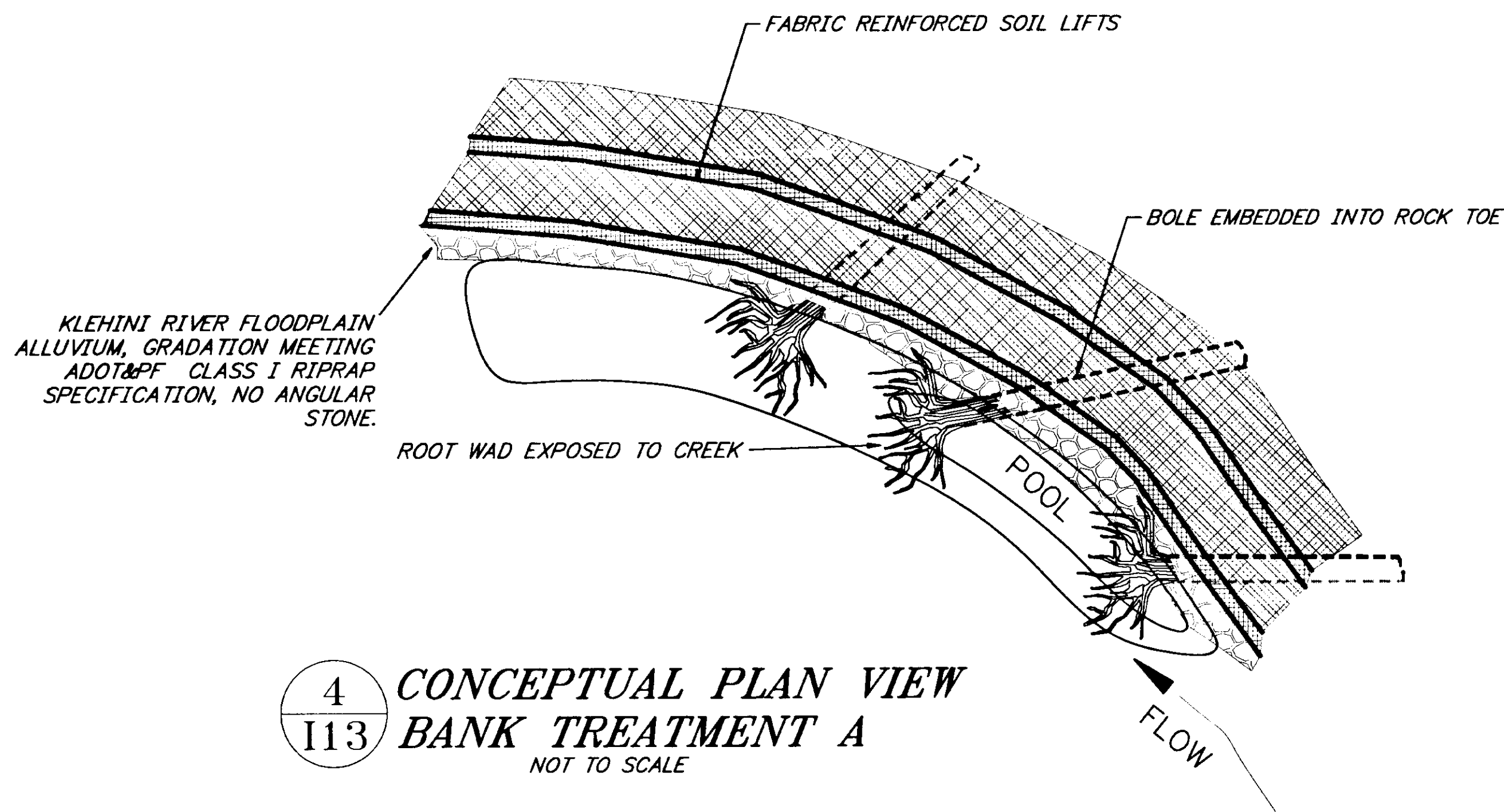
PROJECT NO.  
71874  
DATE:  
OCT 14, 1999  
SHEET I12



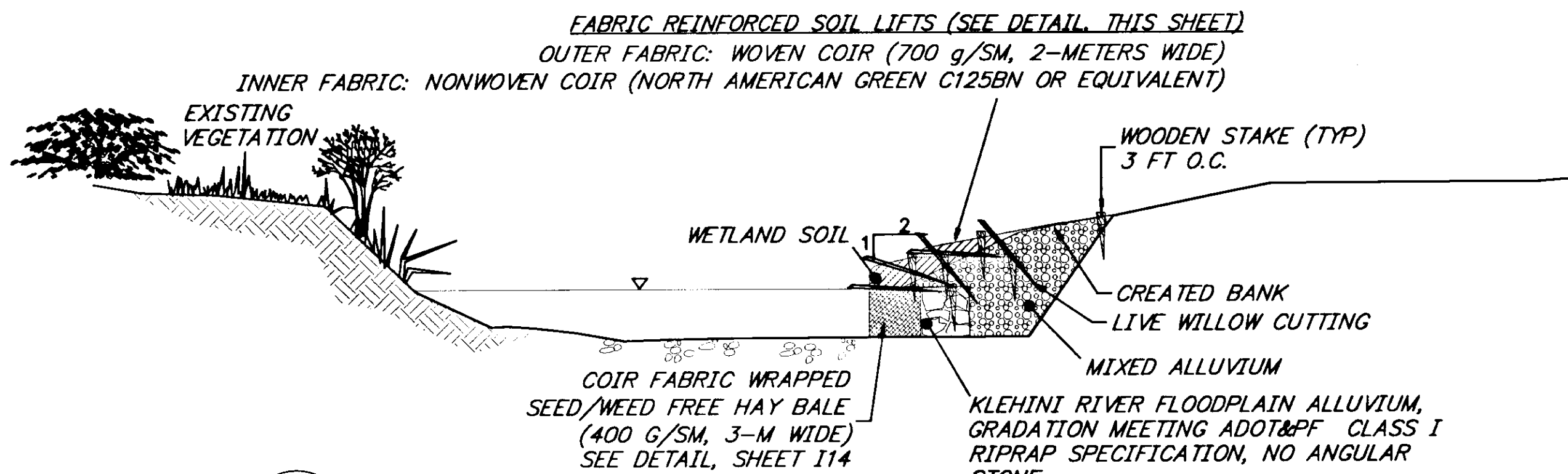
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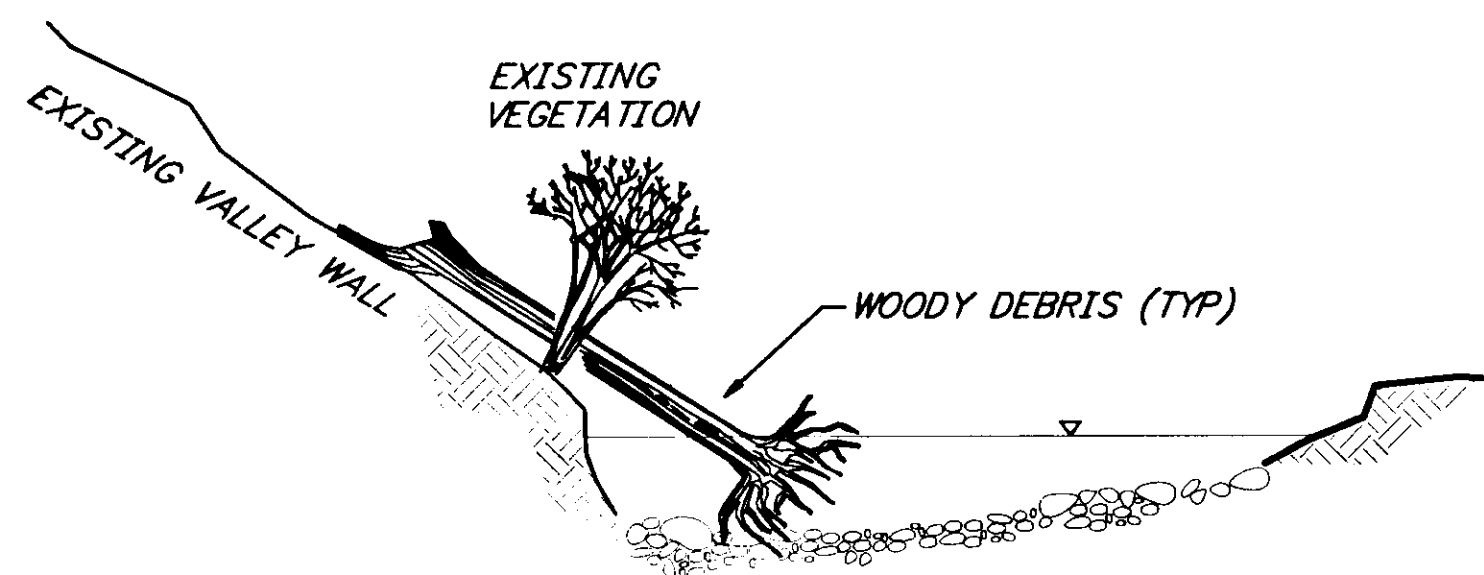
**1**  
I13 **CONCEPTUAL SECTION VIEW: BANK TREATMENT A**  
**TYPICAL BANK TREATMENT WITH WOODY DEBRIS**  
NOT TO SCALE



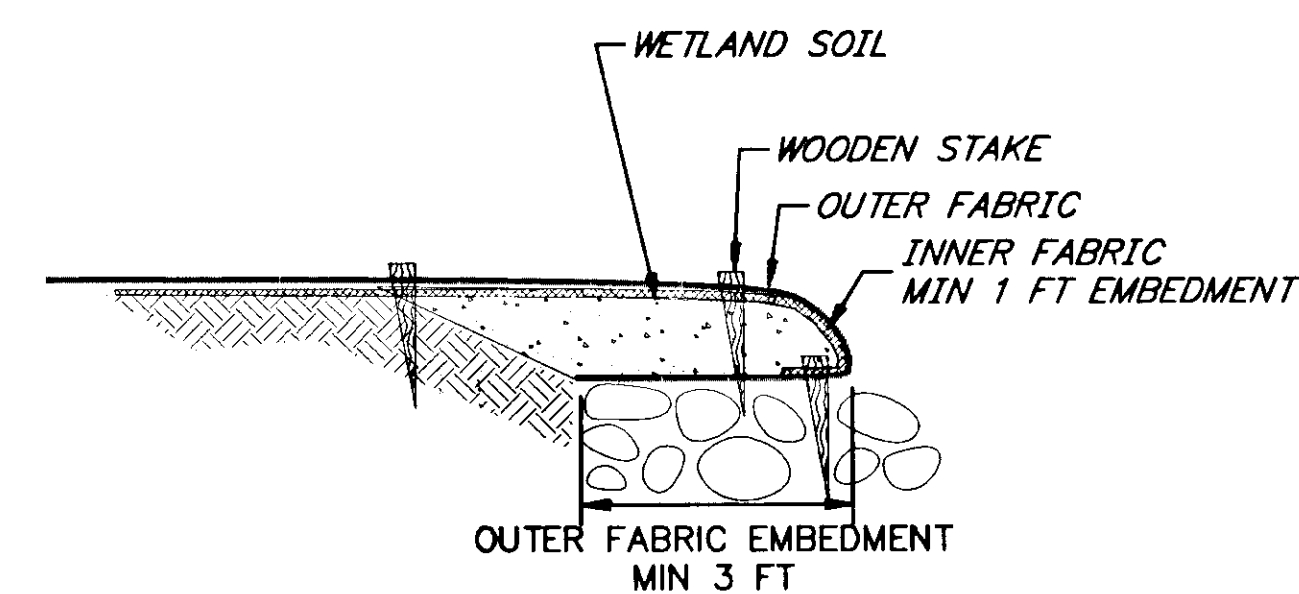
**4**  
I13 **CONCEPTUAL PLAN VIEW**  
**BANK TREATMENT A**  
NOT TO SCALE



**2**  
I13 **CONCEPTUAL SECTION VIEW: BANK TREATMENT B**  
**OVERHANGING BANK OPTION**  
NOT TO SCALE



**3**  
I13 **CONCEPTUAL SECTION VIEW: BANK TREATMENT C**  
**LOG JAM ALONG EXISTING FLOODPLAIN VALLEY WALL**  
NOT TO SCALE



**FABRIC REINFORCED SOIL LIFT DETAIL**  
NOT TO SCALE

**NOTES:**

- FOR TYPE A AND C BANK TREATMENTS, WOODY DEBRIS SHALL BE PLACED AT 25 TO 35 FOOT INTERVALS AND BE OF PROPER SIZE TO PERMIT EMBEDMENT OR ENTANGLEMENT AS REQUIRED.
- TYPE B BANK TREATMENT SHALL BE CONTINUOUS OVER THE SPECIFIED INTERVAL.

**NOTE:** SECTION VIEWS LOOKING DOWNSTREAM

[PlotStamp: Evt] 24/Nov/99 0:\Hms\68800\PlanSet\113.dwg

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(541) 386-9003 / Fax (541) 386-9241  
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Bozeman, MT 59715  
(406) 586-6926 / Fax (406) 586-8445  
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STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES**  
SOUTHEAST REGION

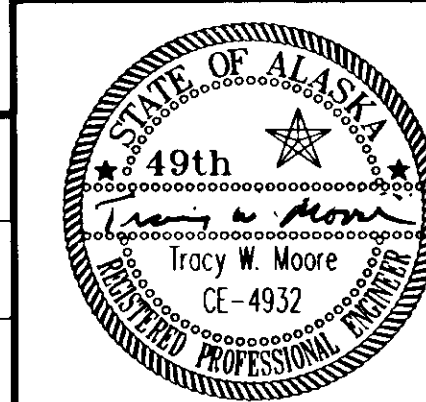
HAINES

HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
**MITIGATION CHANNEL DETAILS**

ALASKA

DESIGNED BY: GPK  
DRAWN BY: MRM  
CHECKED BY: GPK

PROJECT NO. 71874  
DATE: OCT 14, 1999  
SHEET I13



**WETLAND SOIL GRADING**  
pH 5-5.75

SIEVE DESIGNATION	PERCENT PASSING BY WEIGHT (%)
No. 4	95-100
No. 10	90-100
No. 40	60-90
No. 100	30-70
No. 200	15-50

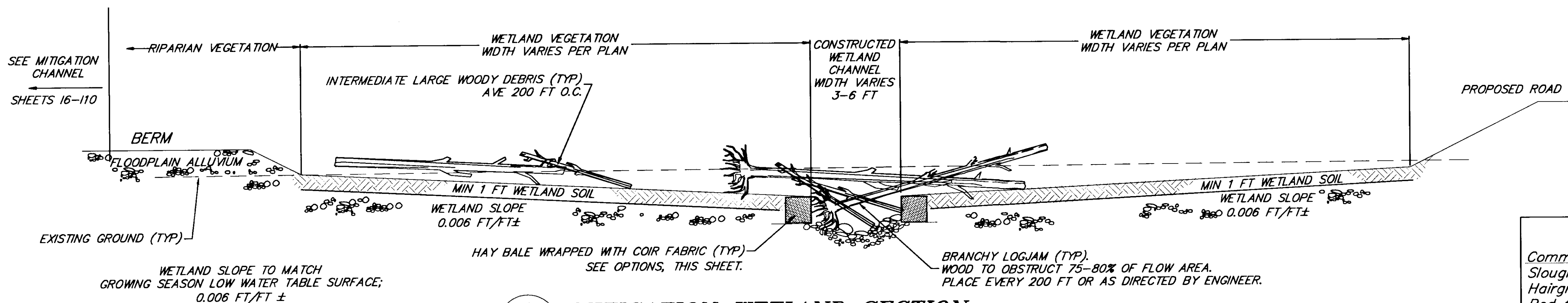
ORGANIC MATERIAL MINIMUM 5% BY VOLUME  
SUITABLE MATERIAL FROM GRUBBING AND EXCAVATION  
SHALL BE STOCKPILED FOR THE USE IN  
MANUFACTURING OF THIS WETLAND SOIL

**Wetland Seed Mix**

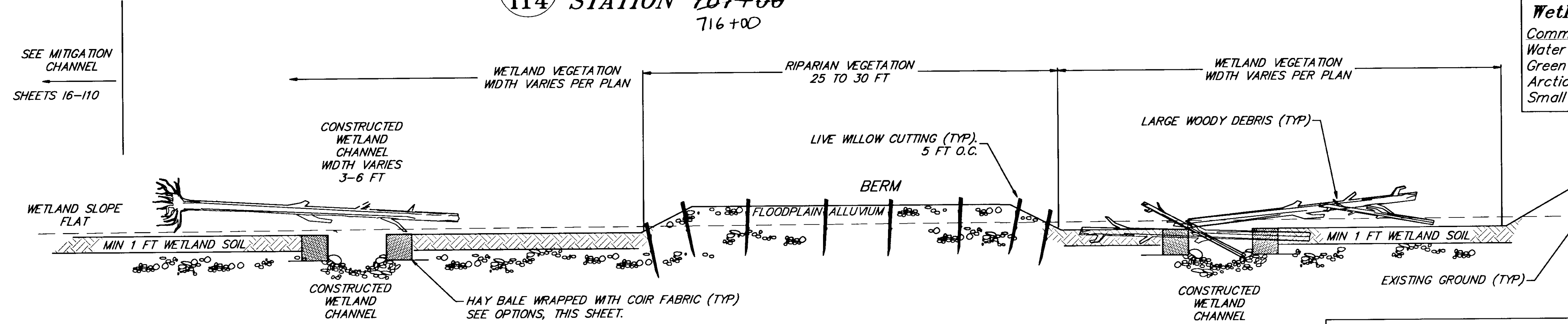
Common Name	Botanical Name	Seed Rate (lbs/ac)
Sloughgrass	Beckmannia syzigachne	8
Hairgrass	Deschampsia caespitosa	2
Red fescue	Festuca rubra	8
		<b>Total Rate 18</b>

**Wetland Species Available as Potential Salvage**

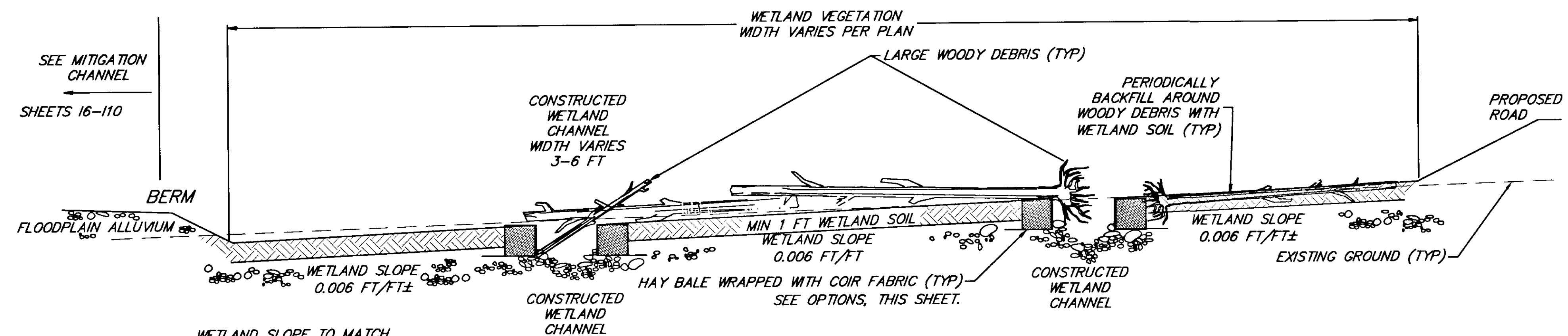
Common Name	Botanical Name
Water sedge	Carex aquatilis
Green sedge	Carex viridula
Arctic rush	Juncus arcticus
Small fruited bullrush	Scirpus microcarpus



**1 MITIGATION WETLAND SECTION**  
**I14 STATION 767+00**  
716+00

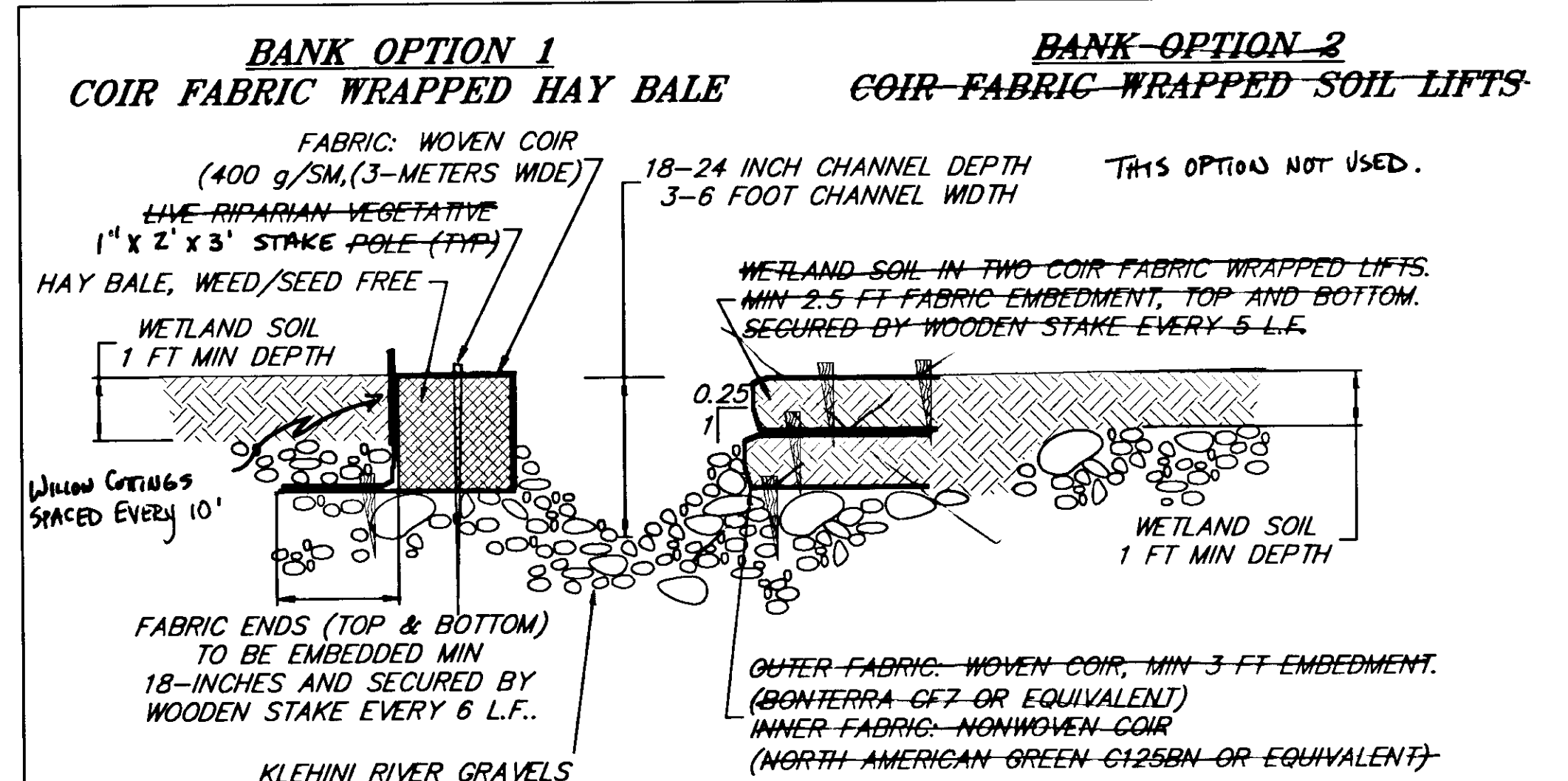


**2 MITIGATION WETLAND SECTION**  
**I14 STATION 761+50**



**3 MITIGATION WETLAND SECTION**  
**I14 STATION 716+00**  
767+00

NOTE: SECTION VIEWS LOOKING DOWNSTREAM



**CHANNEL CONSTRUCTION DETAIL**  
**OPTIONS 1 & 2**  
**(OPTION CHOICE AT CONTRACTOR'S DISCRETION)**

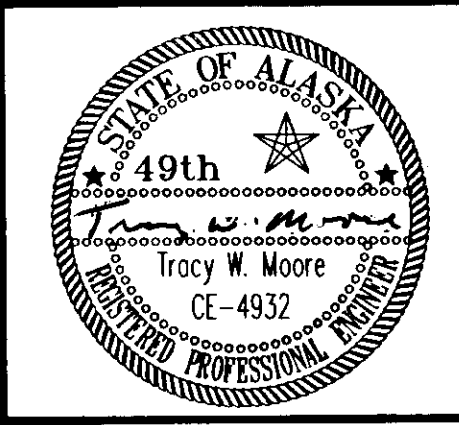
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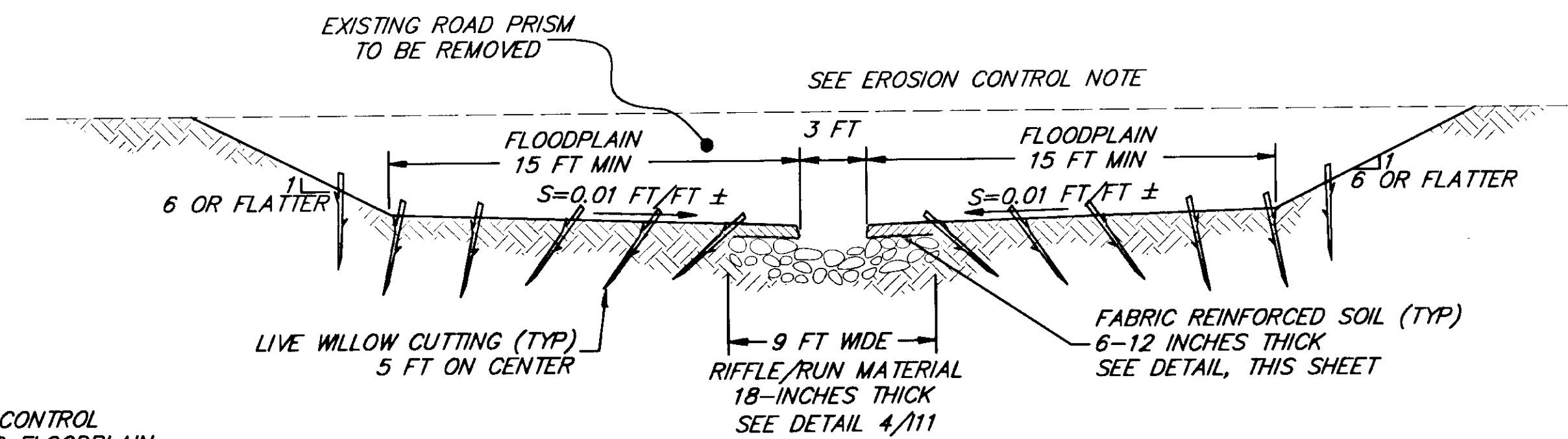
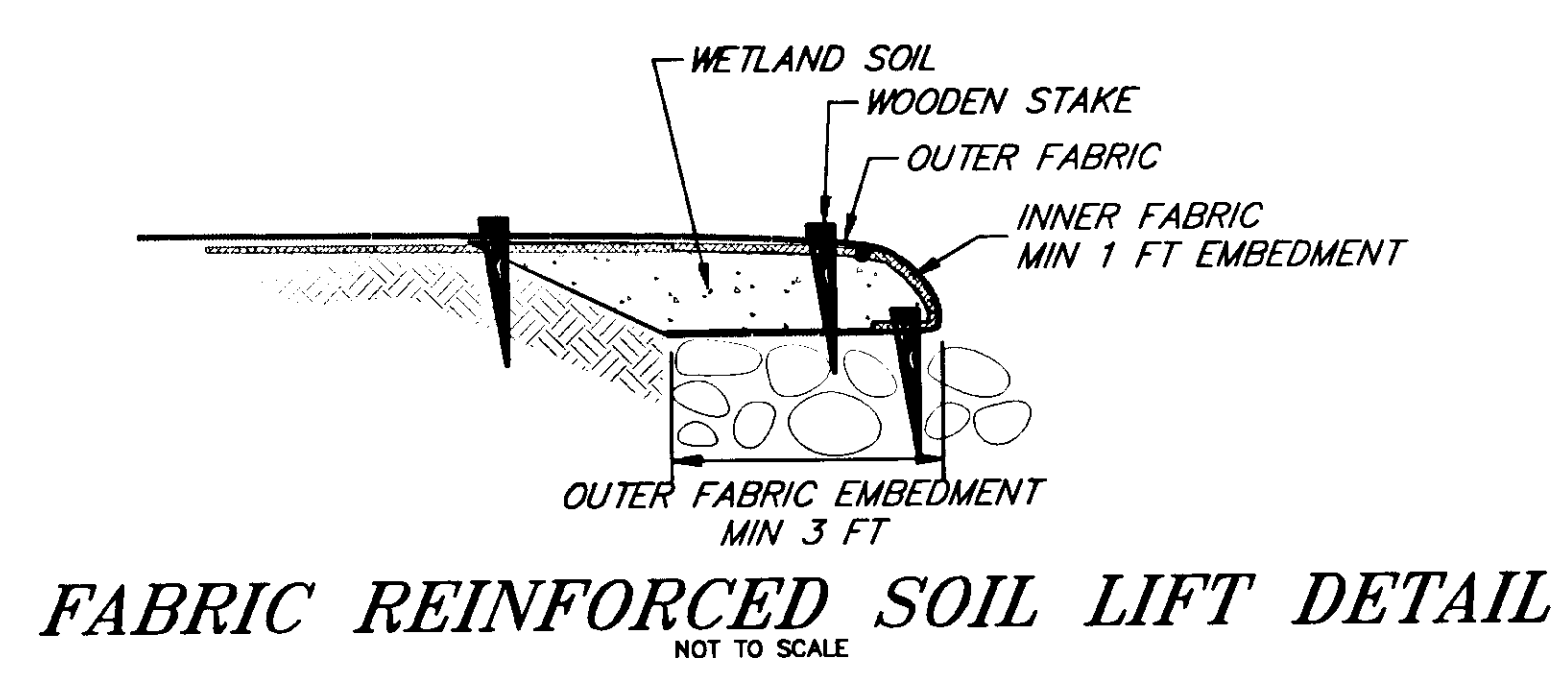
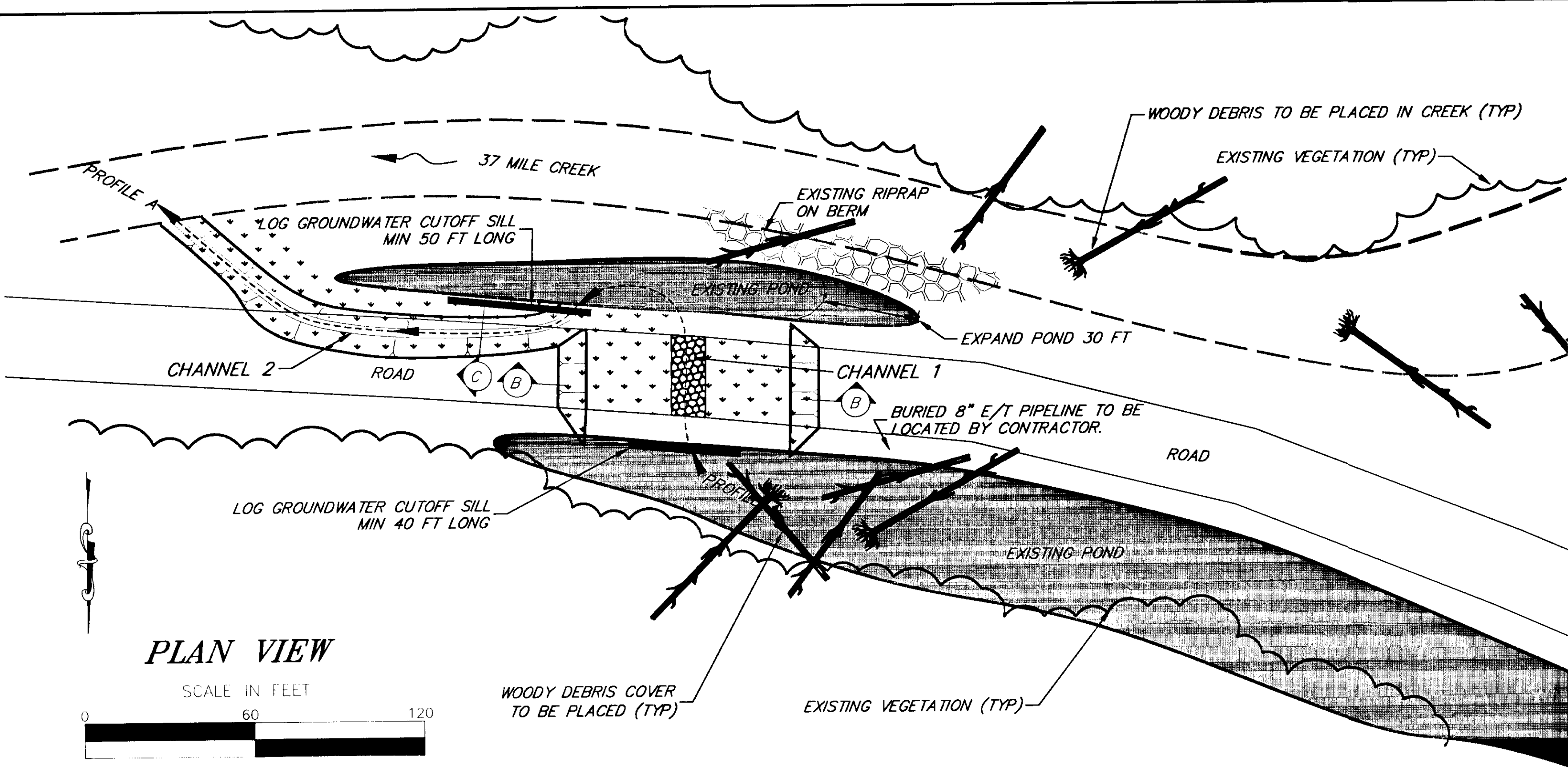
STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES**  
SOUTHEAST REGION

HAINES  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
ALASKA  
**CREATED WETLANDS DETAILS**

DESIGNED BY:	GPK	PROJECT NO.	71874
DRAWN BY:	MRM	DATE:	OCT 14, 1999
CHECKED BY:	GPK	SHEET	I14



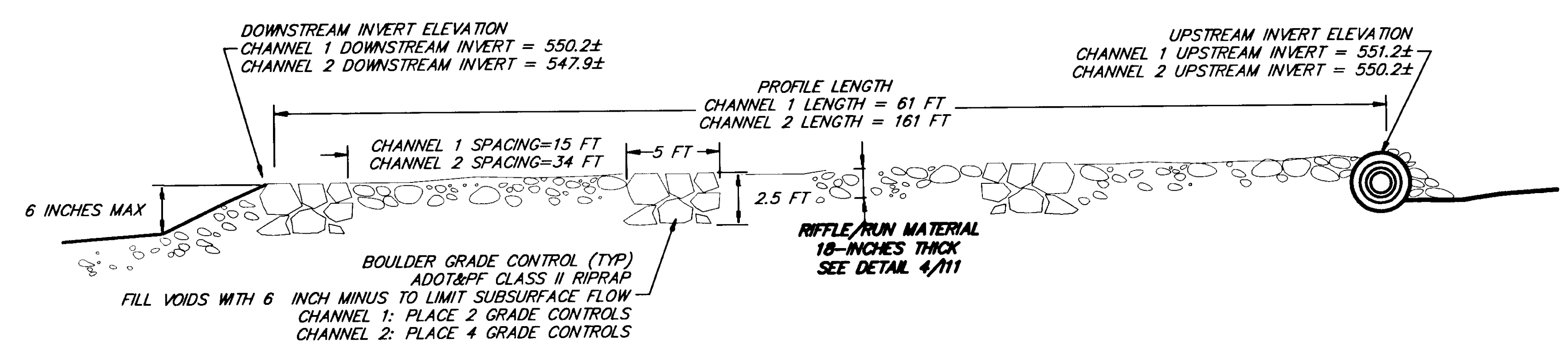
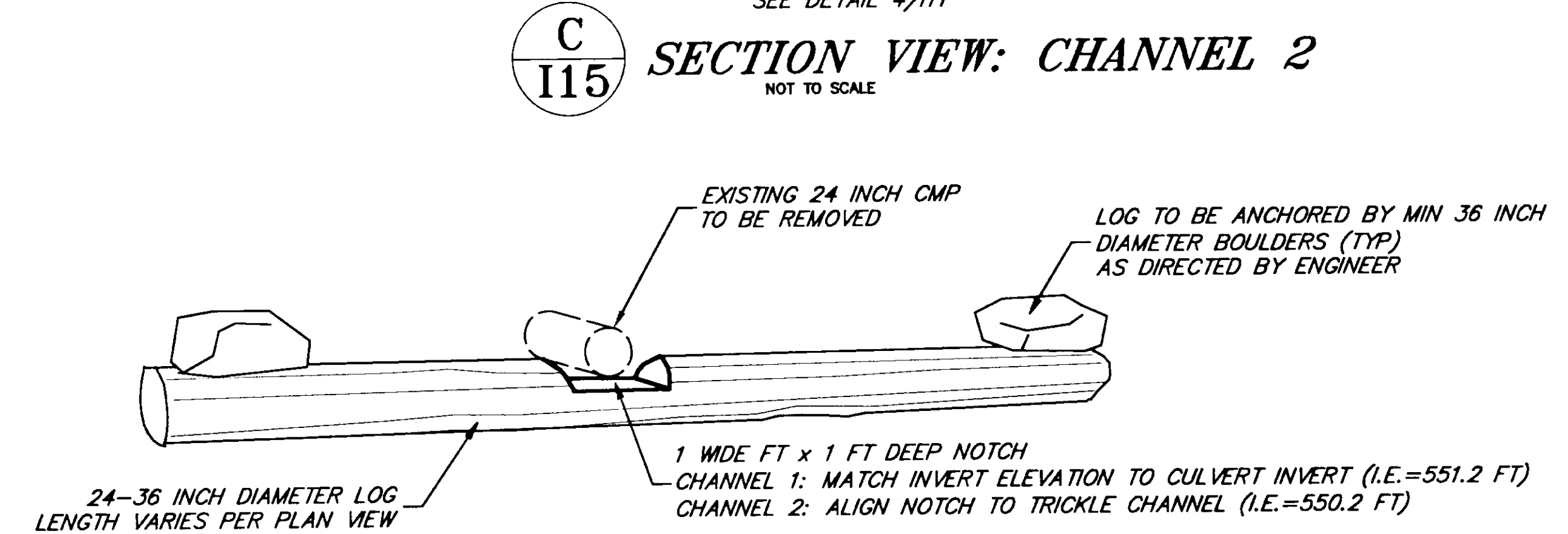
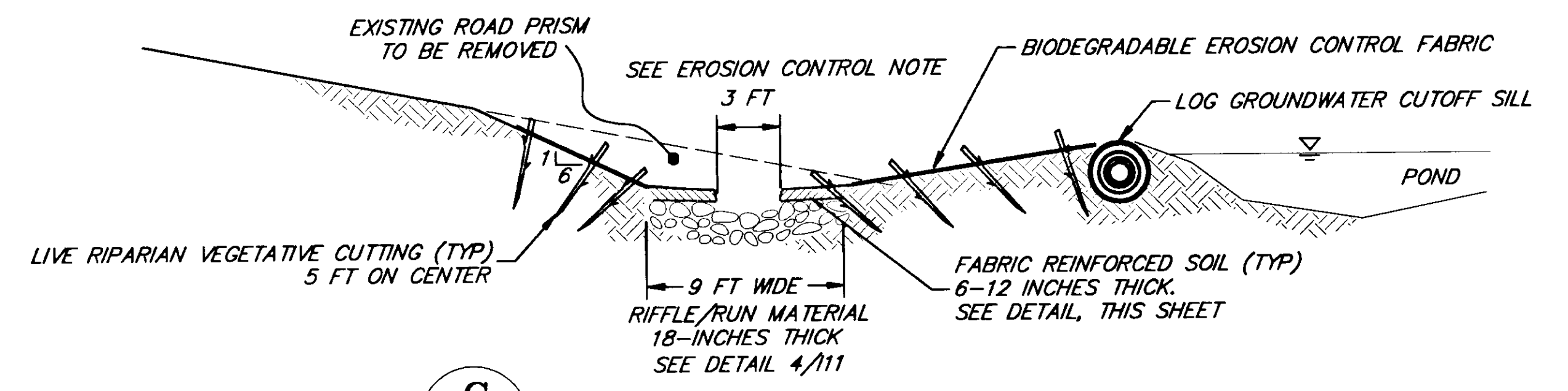




**EROSION CONTROL NOTE:**  
BIODEGRADABLE EROSION CONTROL FABRIC TO BE APPLIED TO FLOODPLAIN & CHANNEL BANK SURFACES, AND ANY DISTURBED GROUND AREAS. SECURE WITH WOODEN STAKES.

STANDARD SEED APPLICATION TO BE APPLIED TO ALL DISTURBED FLOODPLAIN AND UPLAND AREAS.

**NOTE:** SECTION VIEWS LOOKING DOWNSTREAM. RETAIN ENOUGH ROAD EMBANKMENT TO MAINTAIN DAM OF POND.



**INTER-FLUVE, INC.**  
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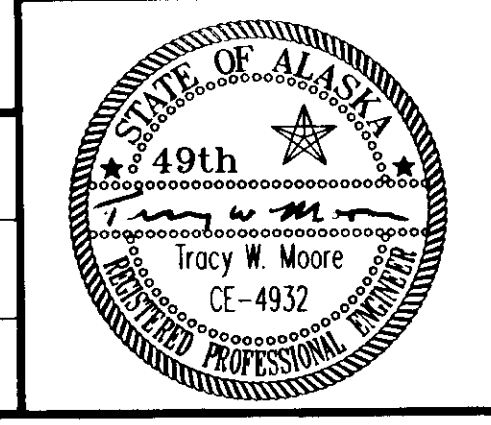
25 N. Wilson, Suite 5  
Bozeman, MT 59715  
(406) 586-6926 / Fax (406) 586-8445  
www.interfluve.com

STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES**  
SOUTHEAST REGION

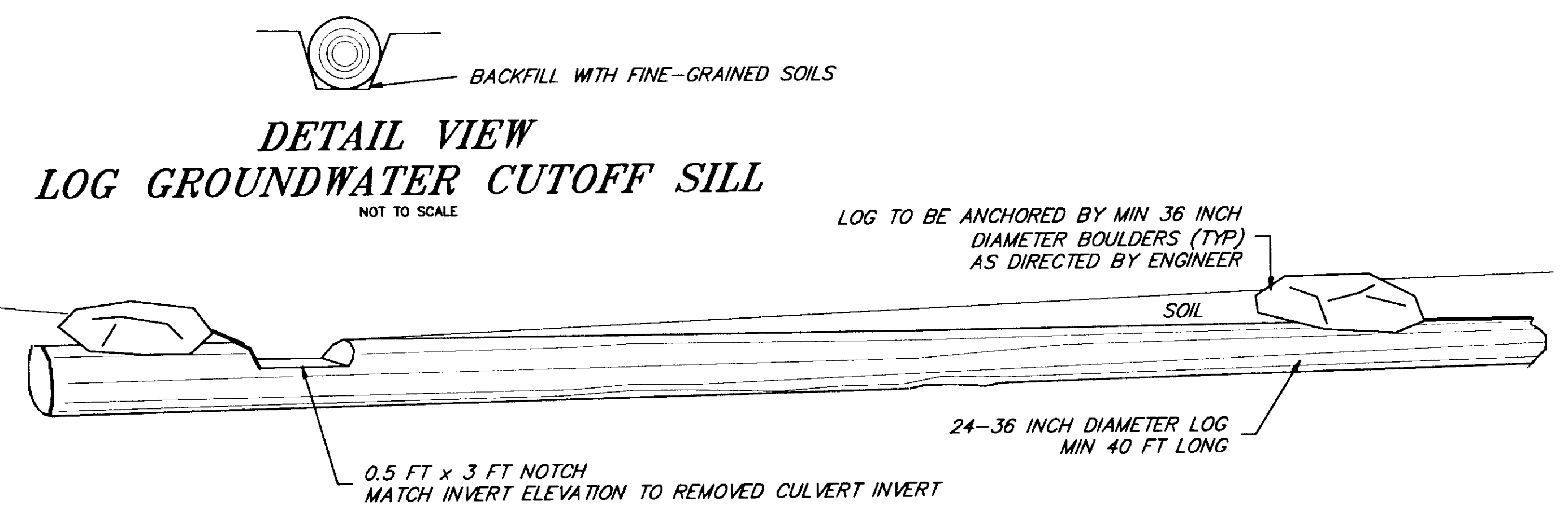
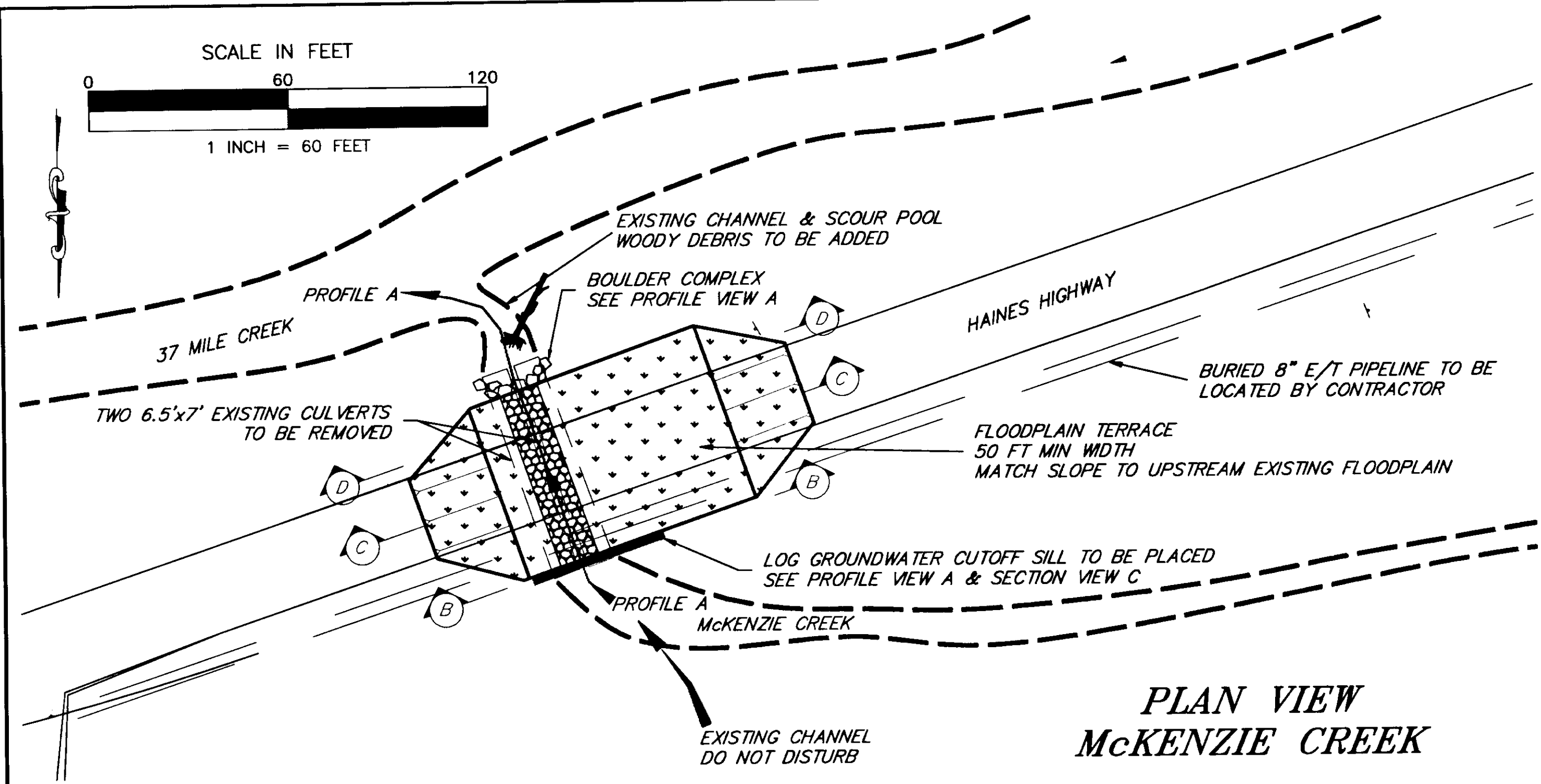
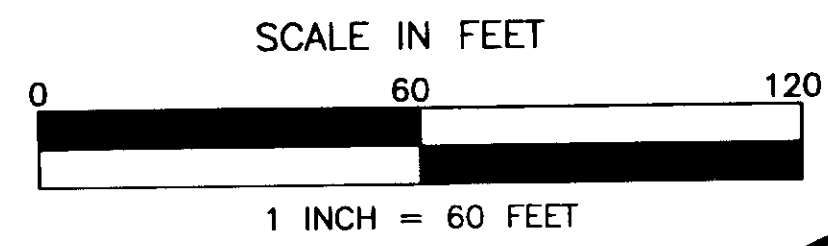
HAINES  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
ALASKA  
**CULVERT REMOVAL AT STATION 773+68**

DESIGNED BY: DSM  
DRAWN BY: MRM  
CHECKED BY: GPK

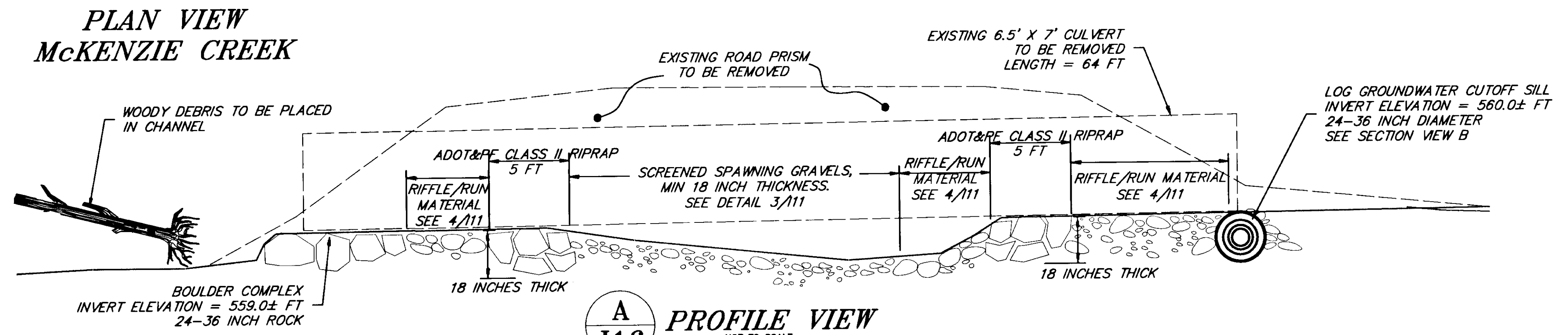
PROJECT NO. 71874  
DATE: OCT 14, 1999  
SHEET 115



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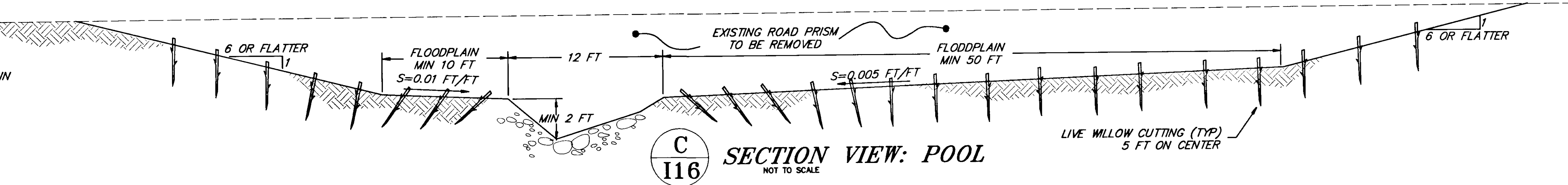
**B**  
I16 SECTION VIEW  
LOG GROUNDWATER CUTOFF SILL  
NOT TO SCALE



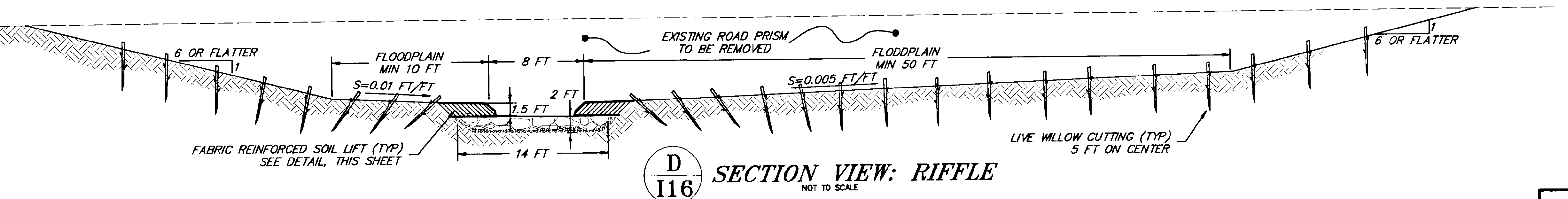
**A**  
I16 PROFILE VIEW  
NOT TO SCALE

**FABRIC REINFORCED SOIL LIFT DETAIL**  
NOT TO SCALE

**EROSION CONTROL NOTE:**  
BIODEGRADABLE EROSION CONTROL FABRIC TO BE APPLIED TO FLOODPLAIN & CHANNEL BANK SURFACES, AND ANY DISTURBED GROUND AREAS. SECURE WITH WOODEN STAKES.  
APPLY STANDARD SEED APPLICATION ON DISTURBED FLOODPLAIN AREAS.  
APPLY STANDARD SEED APPLICATION ON DISTURBED UPLAND AREAS.



**C**  
I16 SECTION VIEW: POOL  
NOT TO SCALE



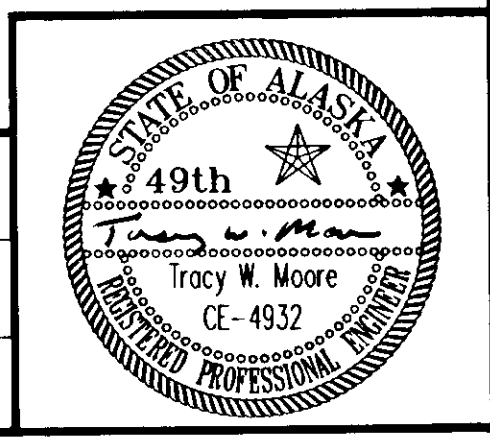
**D**  
I16 SECTION VIEW: RIFFLE  
NOT TO SCALE

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Bozeman, MT 59715  
(406) 586-6926 / Fax (406) 586-8445  
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STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION

HAINES  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
ALASKA  
CULVERT REMOVAL AT STATION 789+22

DESIGNED BY:	DSM	PROJECT NO.	71874
DRAWN BY:	MRM	DATE:	OCT 14, 1999
CHECKED BY:	GPK	SHEET	I16



[PlotStamp\_Eva] 15/Nov/99 Q:\Hns\68800\PlanSet\I16.dwg

**NOTES:**

PROVIDE FREE DRAINAGE ALONG DOWNHILL EDGE OF MINED AREA.

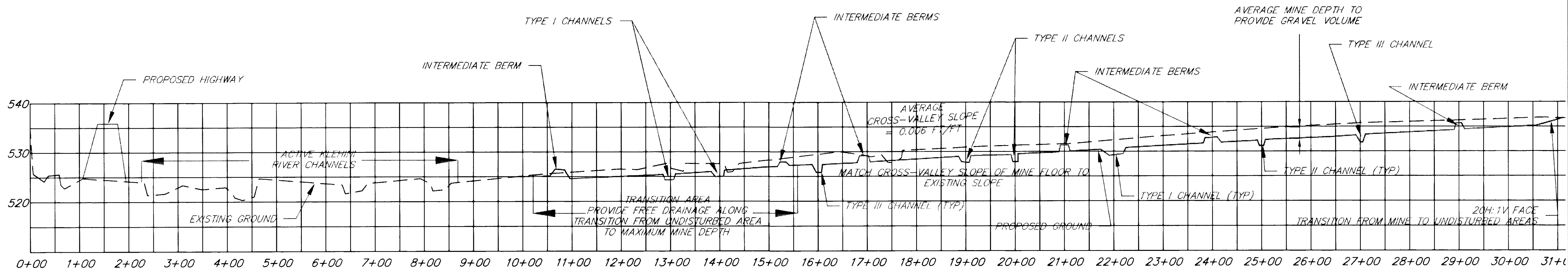
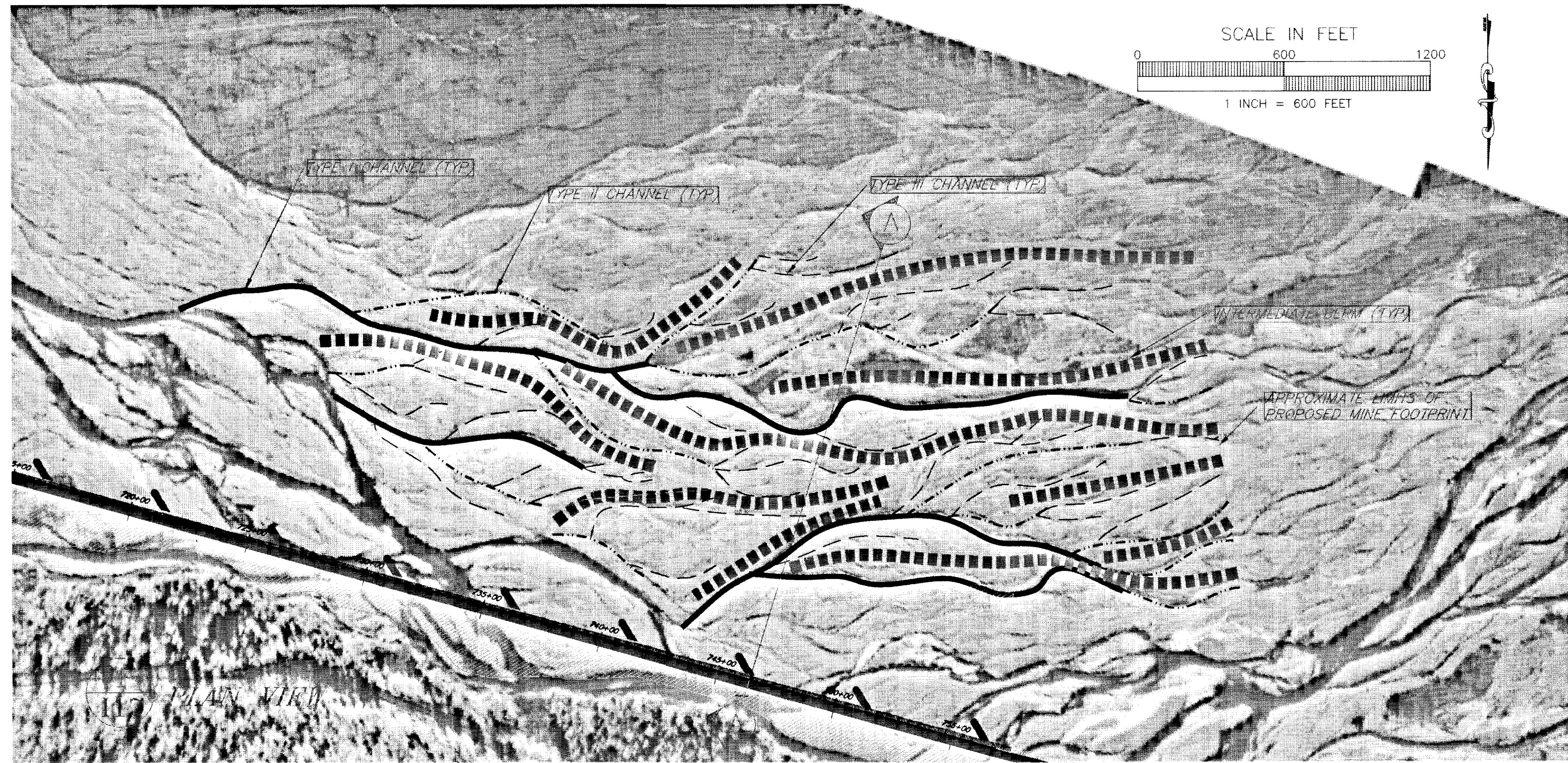
CONNECT MINE DRAINAGE TO EXISTING DRAINAGE PATTERN.

PROVIDE SMOOTH TRANSITION FROM MINE TO UNDISTURBED AREAS ALONG UPHILL EDGE OF MINED AREA.

SALVAGE EXISTING WOODY DEBRIS.

PLACE SALVAGED AND SUPPLEMENTAL WOODY DEBRIS ALONG MINED AREA AT 150-200 FT ON-CENTER AVERAGE SPACING.

LIMITS OF ACCESS ROADS AND MINE AREA DISTURBANCE AND SHALL BE STAKED BY CONTRACTOR AND APPROVED BY ENGINEER PRIOR TO WORK.



**A**  
**117** SECTION VIEW

[PlotStamp Eval] 15/Nov/99 G:\Hns\68800\PlanSet\117.dwg

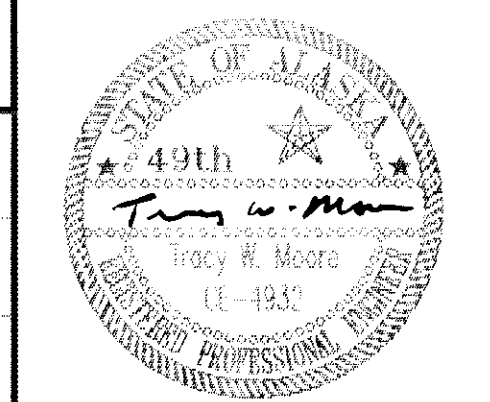
**INTER-FLUVE, INC.**  
 1050 Wasco Street, Suite 1  
 Hood River, OR 97031  
 (541) 386-9003 / Fax (541) 386-9241

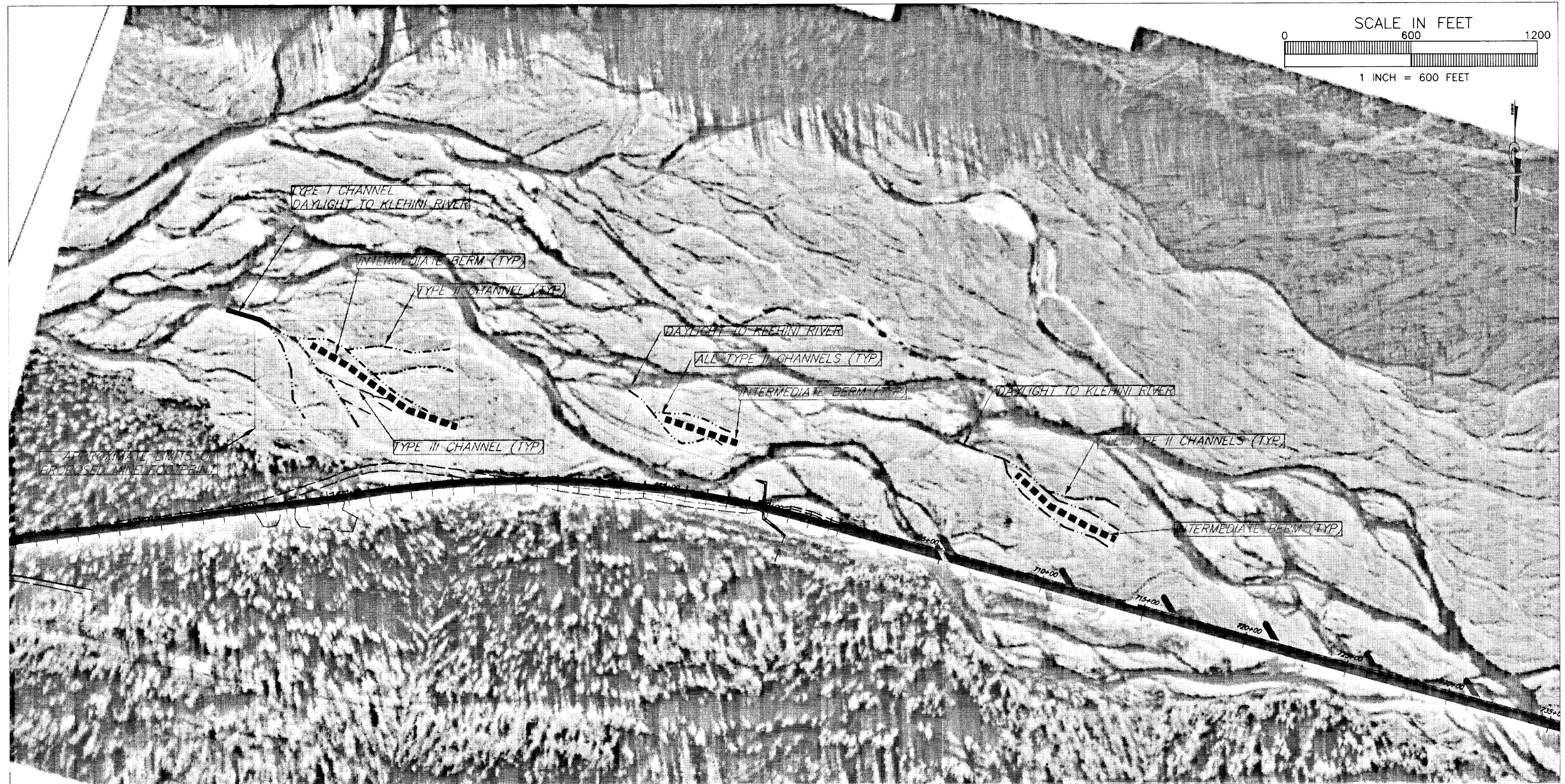
15 N. Union, Suite 20  
 Bozeman, MT 59713  
 (406) 366-6926 / Fax (406) 586-8445  
[www.interfluve.com](http://www.interfluve.com)

STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
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 SOUTHEAST REGION

HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 ALASKA  
**GRAVEL MINE RECLAMATION PLAN - 1**

DESIGNED BY:	DSM	PROJECT NO.	71874
DRAWN BY:	MRM	DATE:	OCT 14, 1999
CHECKED BY:	GPK	SHEET	I17





PLAN VIEW

**NOTES:**

PROVIDE FREE DRAINAGE ALONG DOWNHILL EDGE OF MINED AREA.

CONNECT MINE DRAINAGE TO EXISTING DRAINAGE PATTERN.

PROVIDE SMOOTH TRANSITION FROM MINE TO UNDISTURBED AREAS ALONG UPHILL EDGE OF MINED AREA.

SALVAGE EXISTING WOODY DEBRIS.

PLACE SALVAGED AND SUPPLEMENTAL WOODY DEBRIS ALONG MINED AREA AT 150-200 FT ON-CENTER AVERAGE SPACING.

LIMITS OF ACCESS ROADS AND MINE AREA DISTURBANCE SHALL BE STAKED BY CONTRACTOR AND APPROVED BY ENGINEER PRIOR TO WORK.

[PlotStamp Eval] 15/Nov/99 Q:\Hns\68800\PlanSet\118.dwg

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 1020 Wasco Street, Suite 1  
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 (541) 386-9003 / Fax (541) 386-9241  
 25 W. Main St., Box 15  
 Bezenant, MT 59715  
 (406) 586-6926 / Fax (406) 586-6445  
[www.interfluve.com](http://www.interfluve.com)

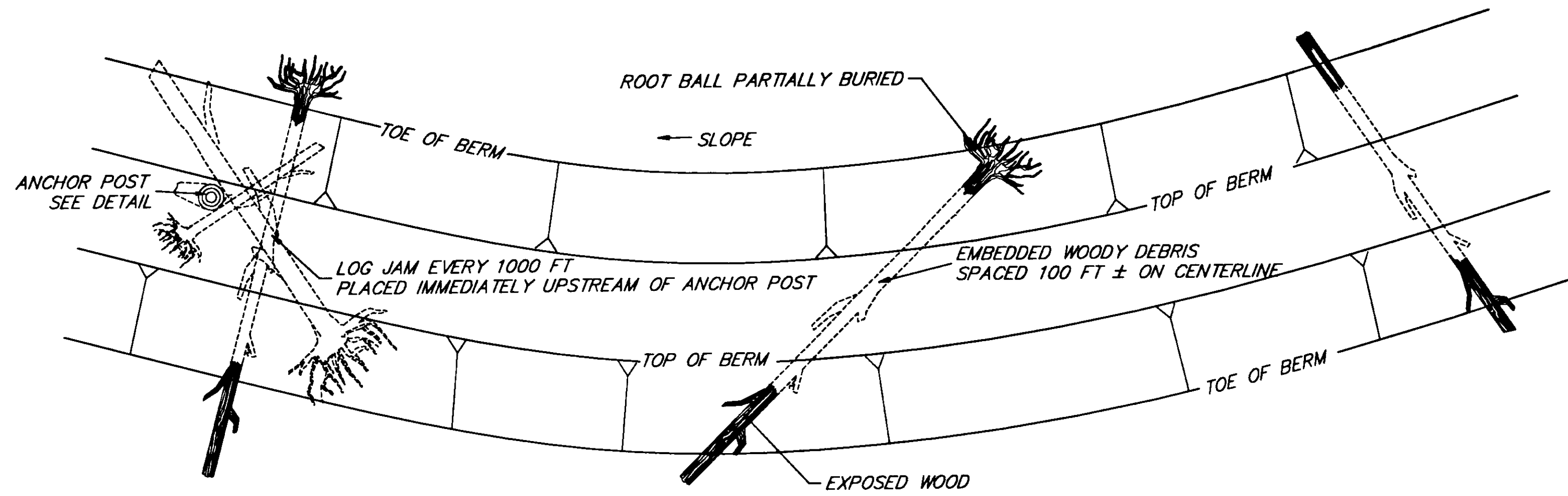
STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES**  
 SOUTHEAST REGION

HAINES  
**HAINES HIGHWAY**  
**BIG BOULDER CREEK TO THE BORDER**  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
**GRAVEL MINE RECLAMATION PLAN - 2**

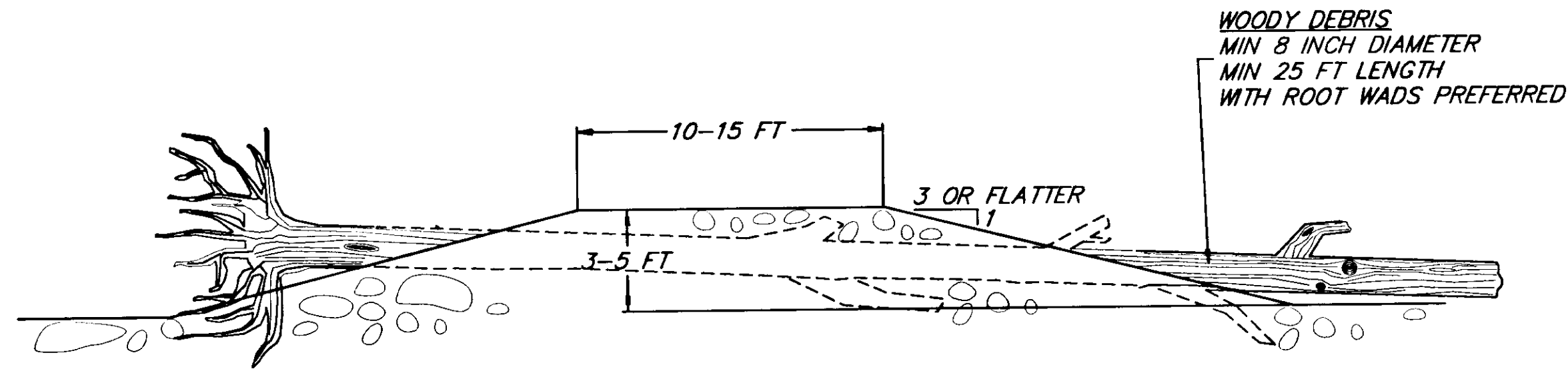
ALASKA  
 DESIGNED BY: DSM  
 DRAWN BY: MRM  
 CHECKED BY: GPK

PROJECT NO.  
 71874  
 DATE:  
 OCT 14, 1999  
 SHEET 118

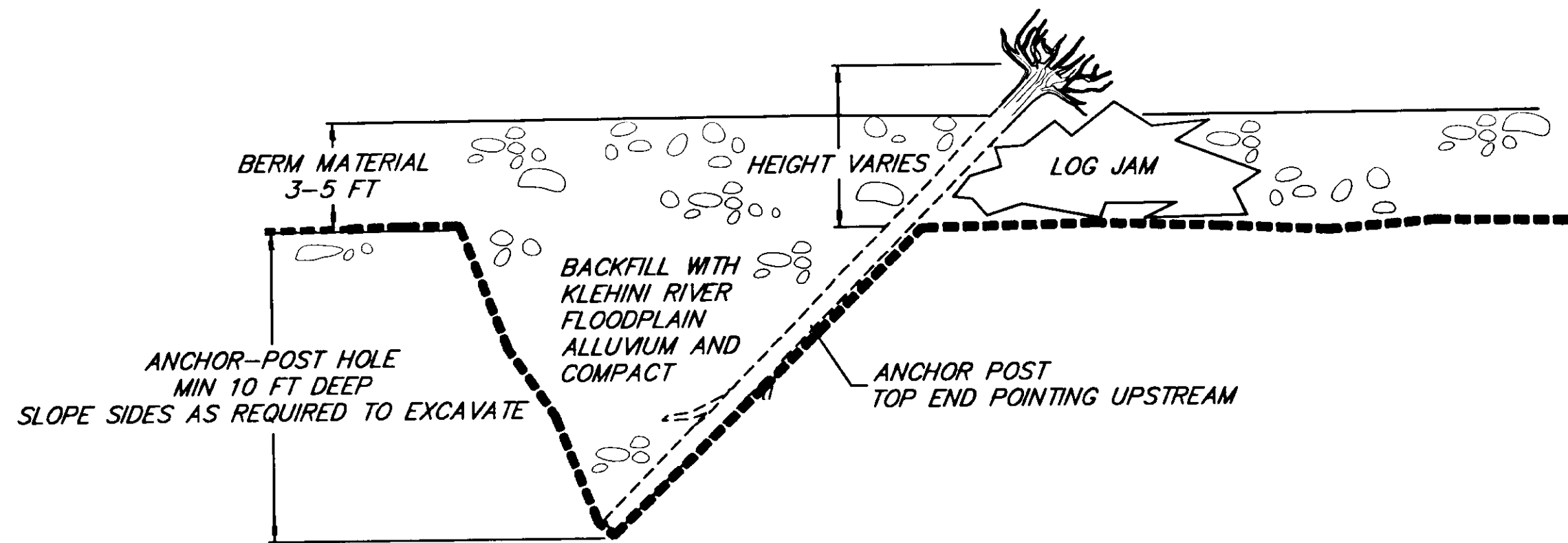




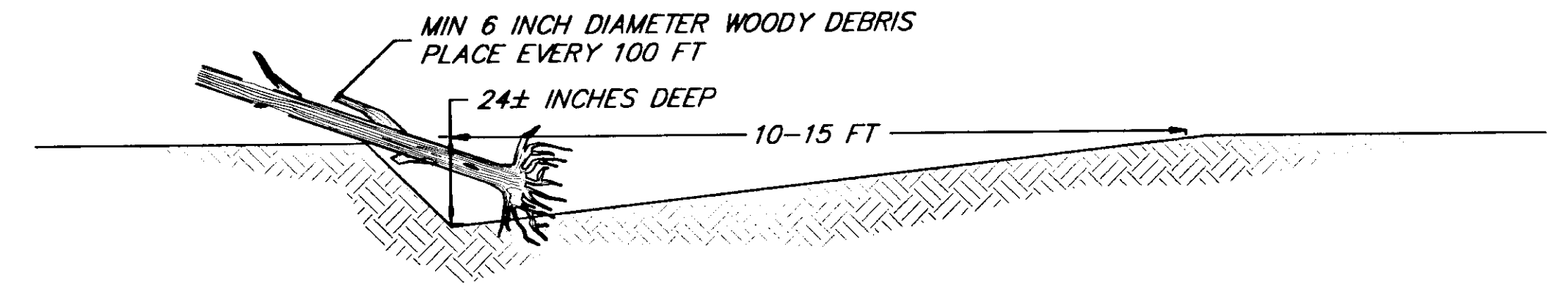
**PLAN VIEW**  
**INTERMEDIATE GRAVEL BERM WITH WOODY DEBRIS**  
 NOT TO SCALE



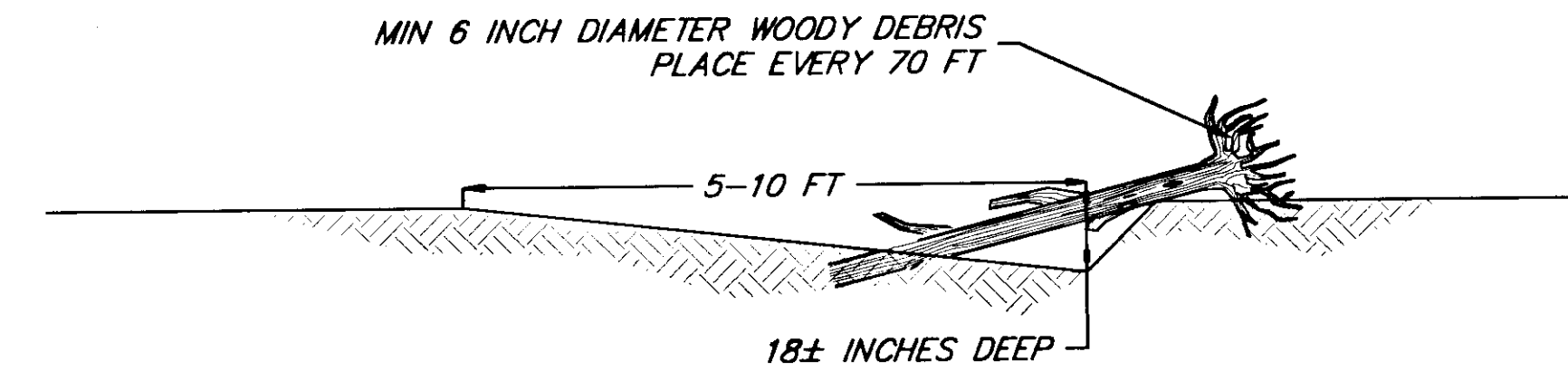
**SECTION VIEW**  
**INTERMEDIATE GRAVEL BERM WITH WOODY DEBRIS**  
 NOT TO SCALE



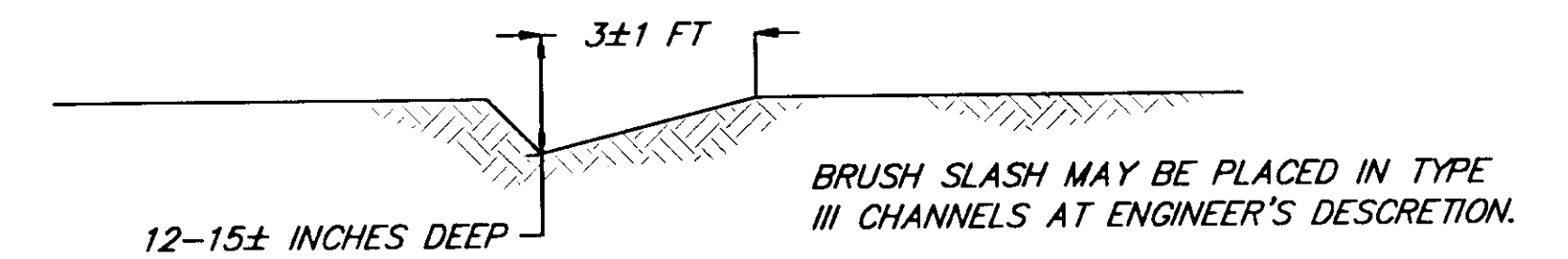
**PROFILE VIEW**  
**ANCHOR POST**  
 NOT TO SCALE



**SECTION VIEW**  
**TYPE I CHANNEL**  
 NOT TO SCALE



**SECTION VIEW**  
**TYPE II CHANNEL**  
 NOT TO SCALE



**SECTION VIEW**  
**TYPE III CHANNEL**  
 NOT TO SCALE

**NOTE:**  
 EXCAVATE TYPE I, II, AND III CHANNEL DEEP POINTS AT OUTSIDE OF BENDS. TRANSITION SMOOTHLY BETWEEN BENDS. AS DIRECTED BY ENGINEER.

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STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES**  
 SOUTHEAST REGION

HAINES

HAINES HIGHWAY  
**BIG BOULDER CREEK TO THE BORDER**  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
**GRAVEL MINE RECLAMATION DETAILS**

ALASKA

DESIGNED BY: DSM, GPK  
 DRAWN BY: MRM  
 CHECKED BY: GPK

PROJECT NO. 71874  
 DATE: OCT 14, 1999  
 SHEET 119



STATE OF ALASKA

PC = 634+37.36

R/W







630+00

N74°08'41"W  
728.50'

635+00

R/W

**LEGEND**

-  = SEDIMENT FILTER
-  = FLOW
-  = SILT FENCE
-  = AREA OF DISTURBANCE
-  = TEMPORARY CHECK DAM
-  = SETTLING POND

PT = 650+38.86

R/W

640+00

645+00

650+00

S77°49'44"W  
1917.21'

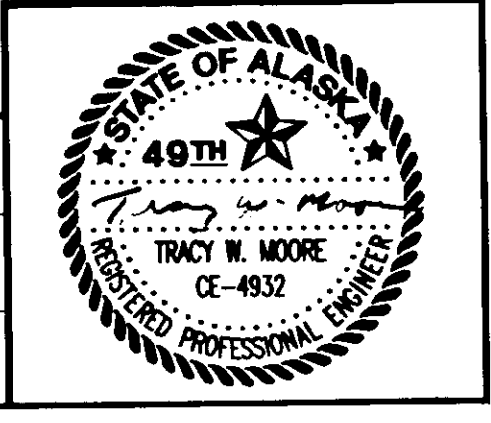
NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

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BY:	DATE:	DESCRIPTION OF CHANGE:
		[PlotStamp Eval] Plot By: Leonard Mon, 15/Nov/99 01:37pm
<b>RECORD OF REVISIONS</b>		







STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION

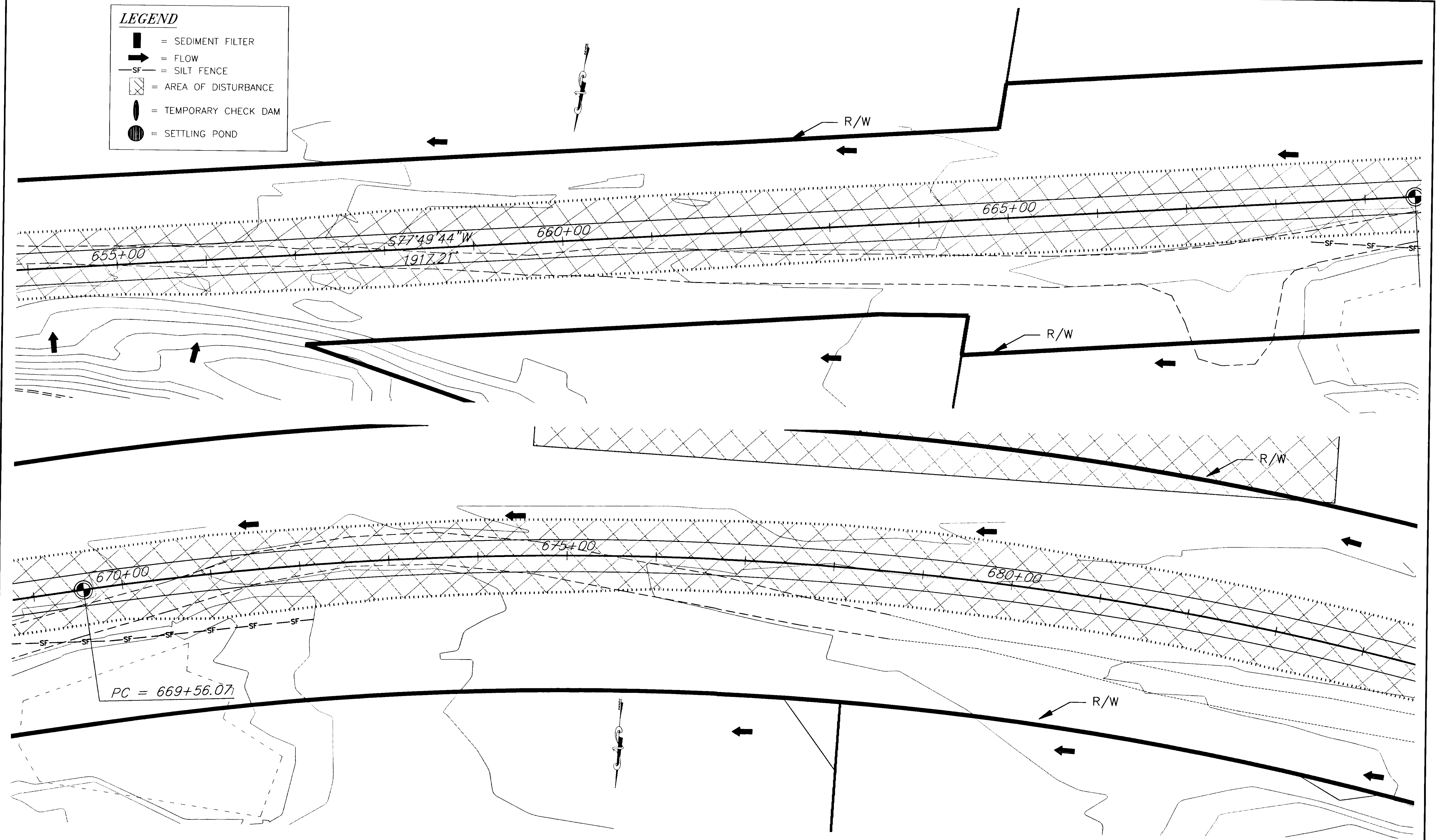
HAINES  
ALASKA  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
**EROSION AND SEDIMENT CONTROL PLAN**

DESIGNED BY: C. HAKARI	PROJECT NO. 71874
DRAWN BY: L. ROBERTSON	DATE: 1999
CHECKED BY: T. MOORE	SHEET J1



**LEGEND**

-  = SEDIMENT FILTER
-  = FLOW
-  = SILT FENCE
-  = AREA OF DISTURBANCE
-  = TEMPORARY CHECK DAM
-  = SETTLING POND



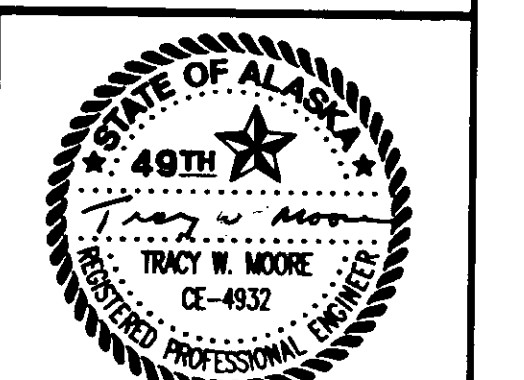
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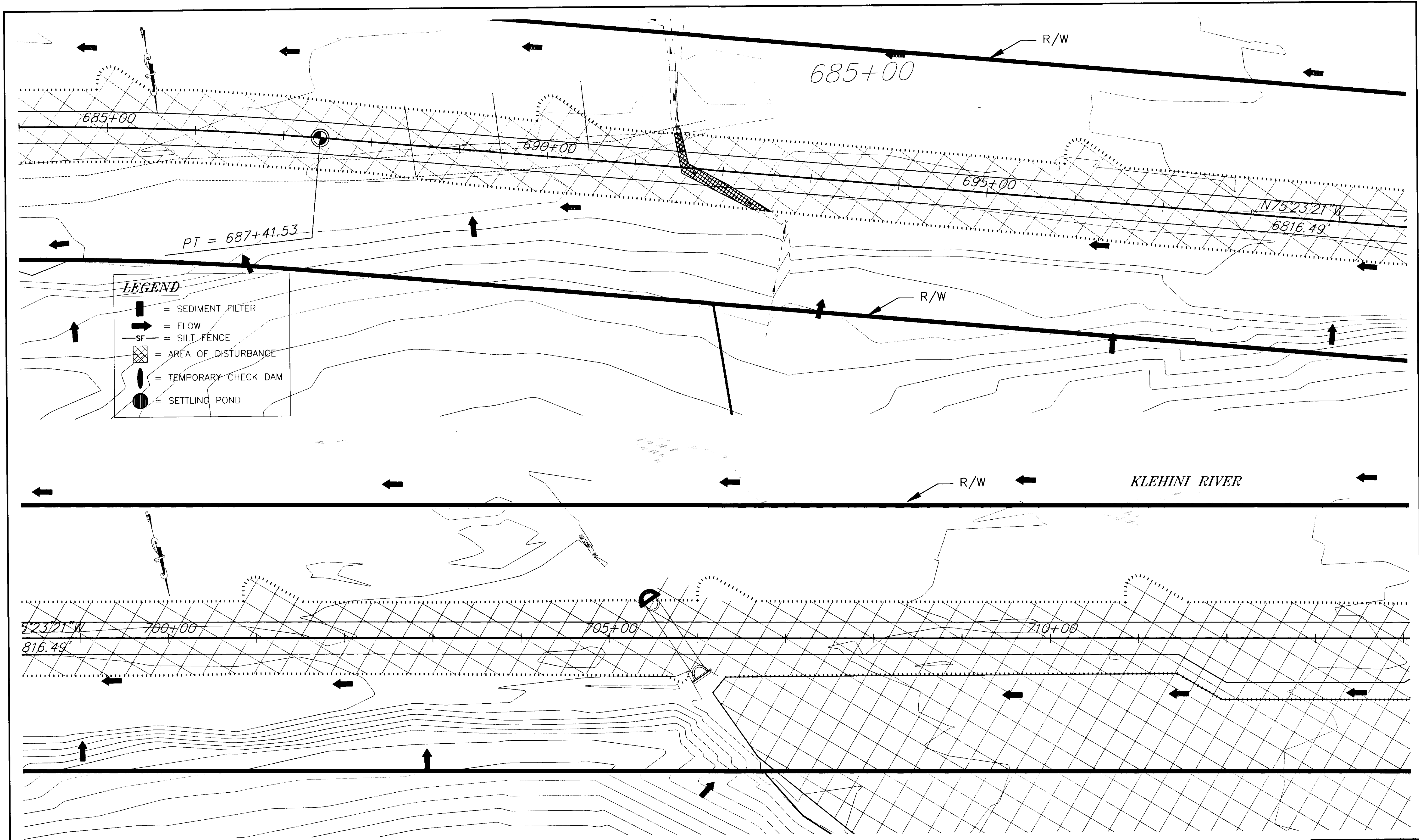
STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES**  
 SOUTHEAST REGION

HAINES  
**HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER**  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
**EROSION AND SEDIMENT CONTROL PLAN**

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET J2	





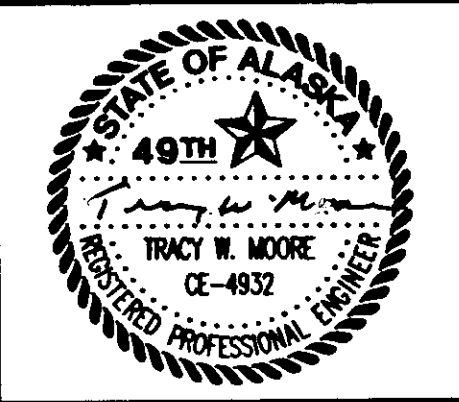
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

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PLOT:		
BY:	DATE:	DESCRIPTION OF CHANGE:
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<b>RECORD OF REVISIONS</b>		

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION

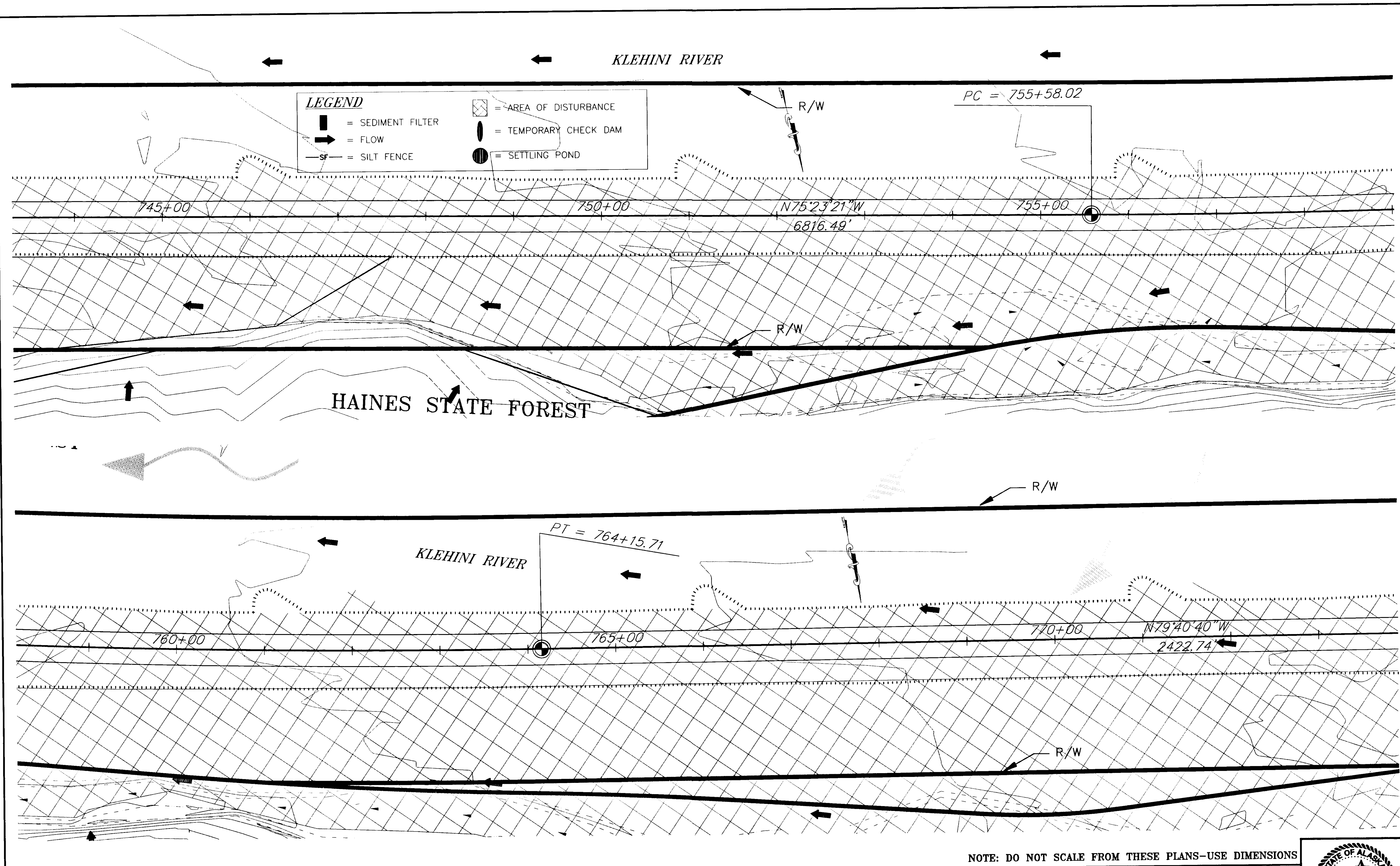
HAINES ALASKA  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
**EROSION AND SEDIMENT CONTROL PLAN**

DESIGNED BY: C. HAKARI	PROJECT NO. 71874
DRAWN BY: L. ROBERTSON	DATE: 1999
CHECKED BY: T. MOORE	SHEET J3









**LEGEND**

- = SEDIMENT FILTER
- = FLOW
- = SILT FENCE
- = AREA OF DISTURBANCE
- = TEMPORARY CHECK DAM
- = SETTLING POND

PC = 755+58.02

PT = 764+15.71

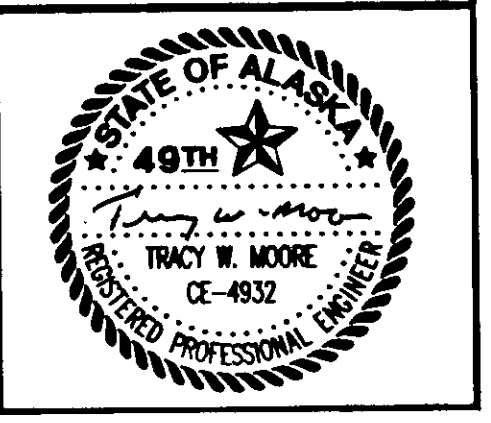
NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

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<b>RECORD OF REVISIONS</b>		

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION

HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 ALASKA  
**EROSION AND SEDIMENT CONTROL PLAN**



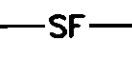



DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	J5

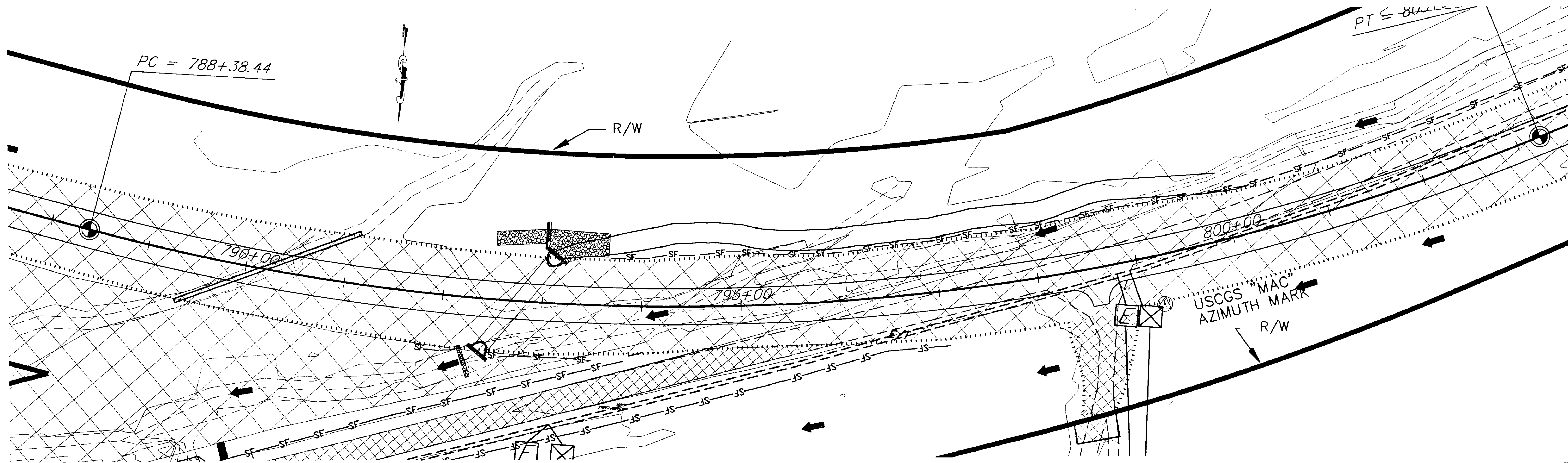
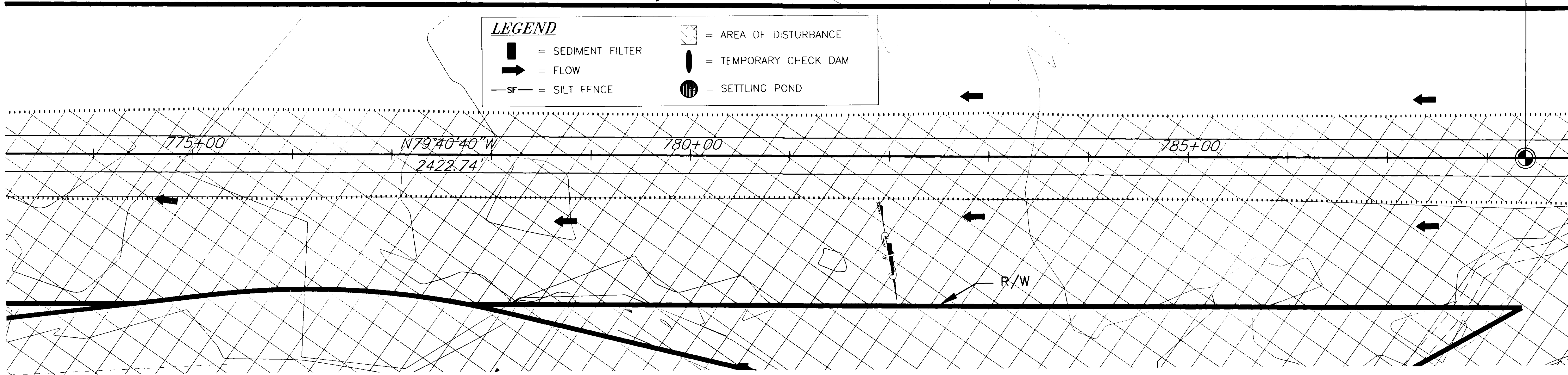


HAINES STATE

KLEHINI RIVER

**LEGEND**

-  = AREA OF DISTURBANCE
-  = FLOW
-  = SILT FENCE
-  = SEDIMENT FILTER
-  = TEMPORARY CHECK DAM
-  = SETTLING POND



NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

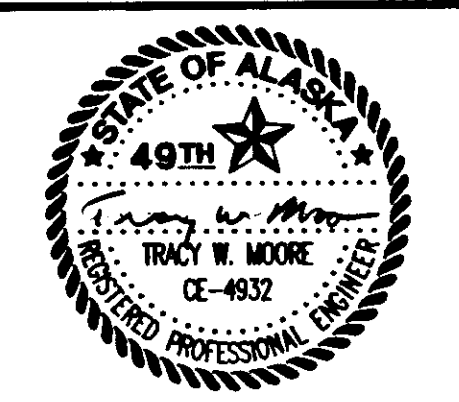
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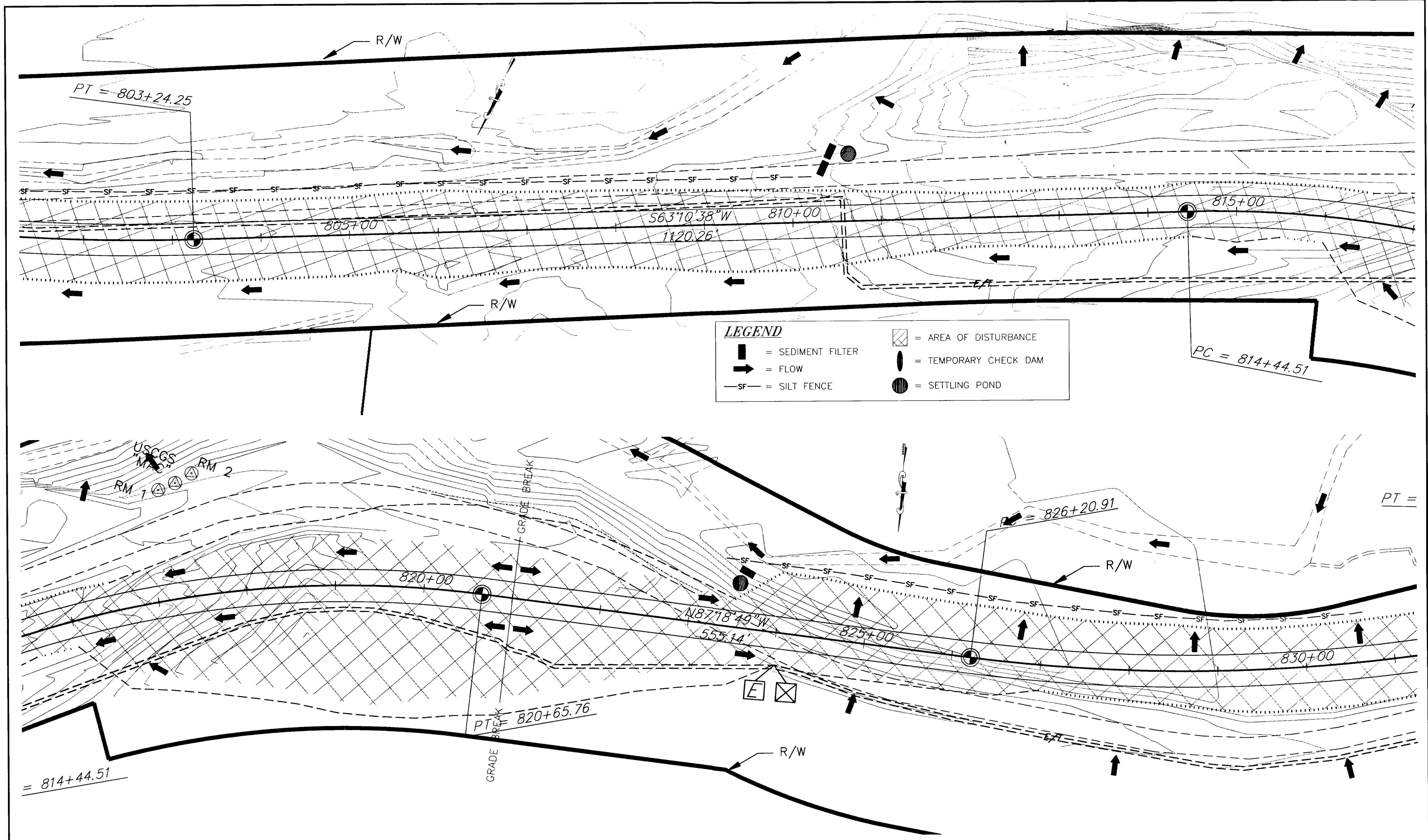
STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES**  
 SOUTHEAST REGION

HAINES  
**HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER**  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
**EROSION AND SEDIMENT CONTROL PLAN**

ALASKA  
 DESIGNED BY:  
**C. HAKARI**  
 DRAWN BY:  
**L. ROBERTSON**  
 CHECKED BY:  
**T. MOORE**

PROJECT NO.  
**71874**  
 DATE:  
**1999**  
 SHEET **J6**





**LEGEND**

- = SEDIMENT FILTER
- = FLOW
- = SILT FENCE
- = AREA OF DISTURBANCE
- = TEMPORARY CHECK DAM
- = SETTLING POND

NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

PATH: [PlotStamp Eval] Q:\Hns\68800\Planset\escp.dwg		
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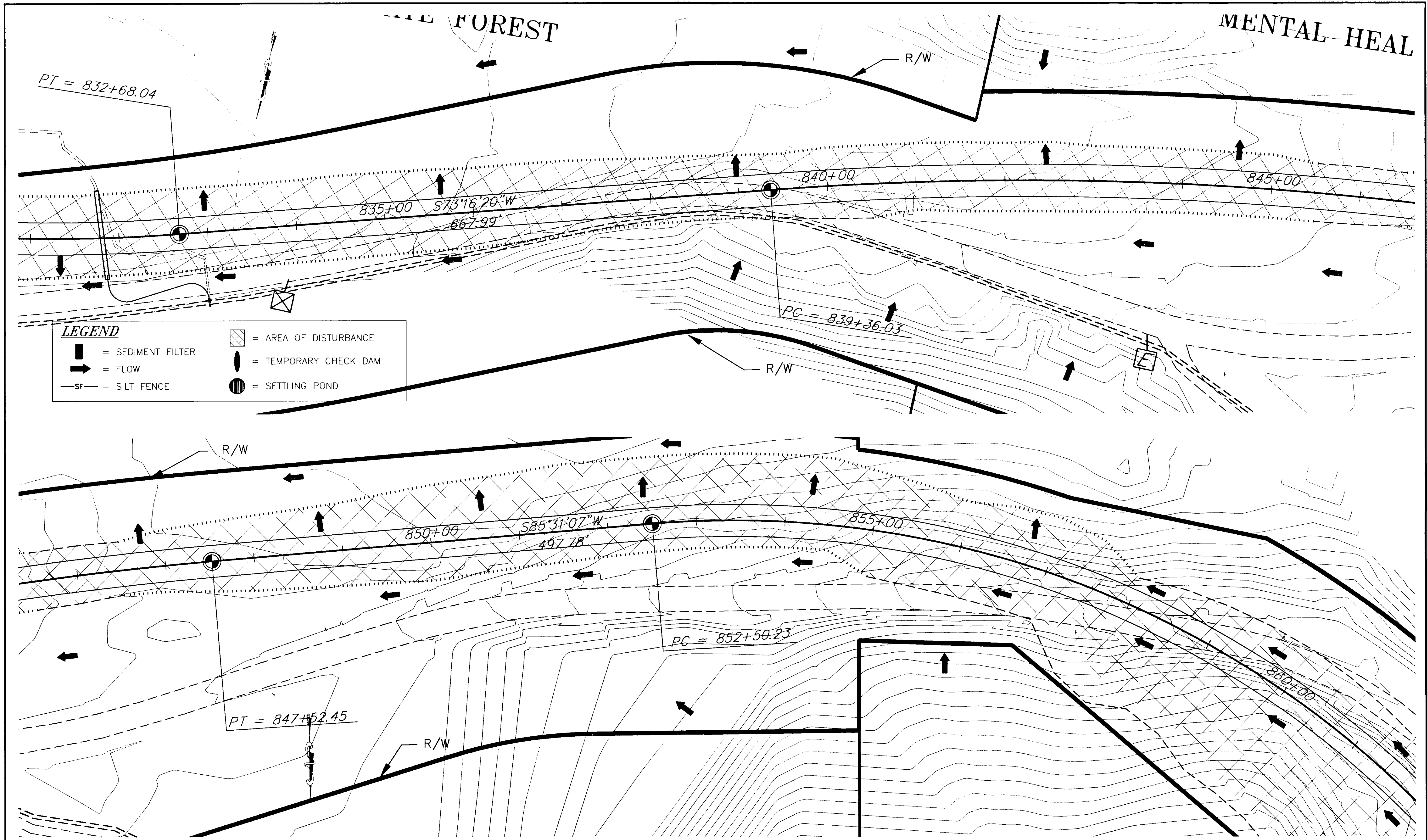
STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION

HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 ALASKA  
**EROSION AND SEDIMENT CONTROL PLAN**

DESIGNED BY:  
 C. HAKARI  
 DRAWN BY:  
 L. ROBERTSON  
 CHECKED BY:  
 T. MOORE

PROJECT NO.  
 71874  
 DATE:  
 1999  
 SHEET J7





**LEGEND**

	= SEDIMENT FILTER		= AREA OF DISTURBANCE
	= FLOW		= TEMPORARY CHECK DAM
	= SILT FENCE		= SETTLING POND

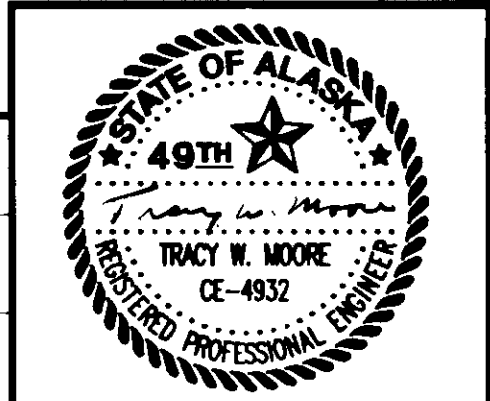
NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

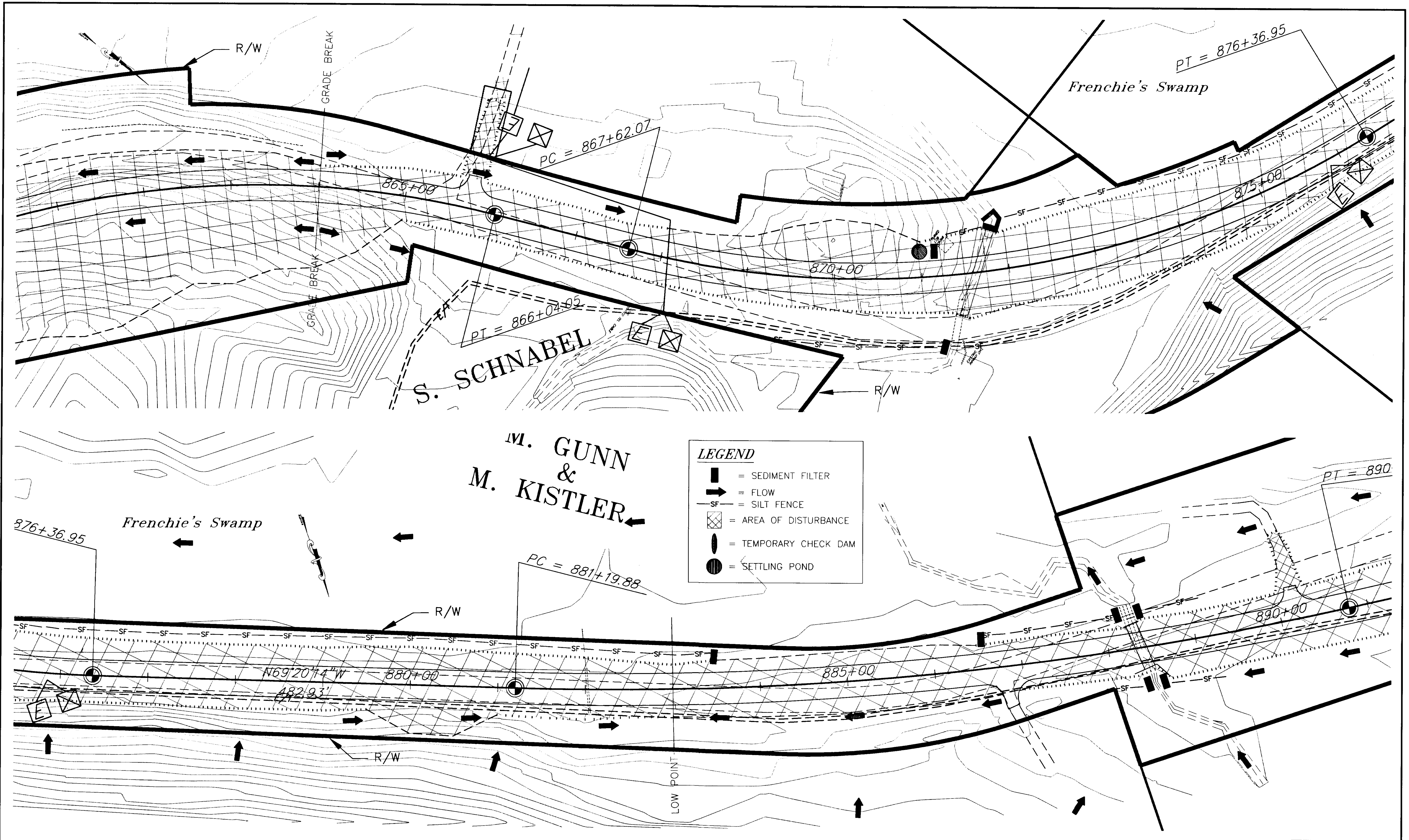
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BY:	DATE:	DESCRIPTION OF CHANGE:
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<b>RECORD OF REVISIONS</b>		

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION

HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 ALASKA  
**EROSION AND SEDIMENT CONTROL PLAN**

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	JB





**LEGEND**

- = SEDIMENT FILTER
- = FLOW
- = SILT FENCE
- = AREA OF DISTURBANCE
- = TEMPORARY CHECK DAM
- = SETTLING POND

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

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<b>RECORD OF REVISIONS</b>		

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION

HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 ALASKA  
**EROSION AND SEDIMENT CONTROL PLAN**

DESIGNED BY:  
C. HAKARI

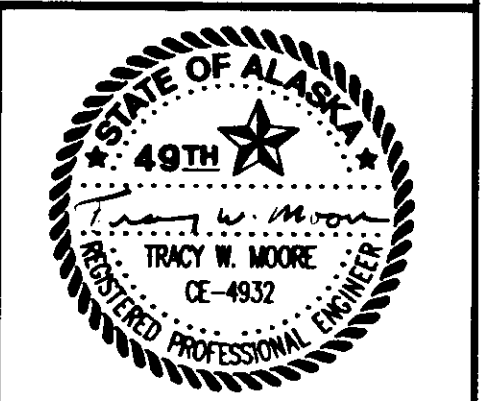
DRAWN BY:  
L. ROBERTSON

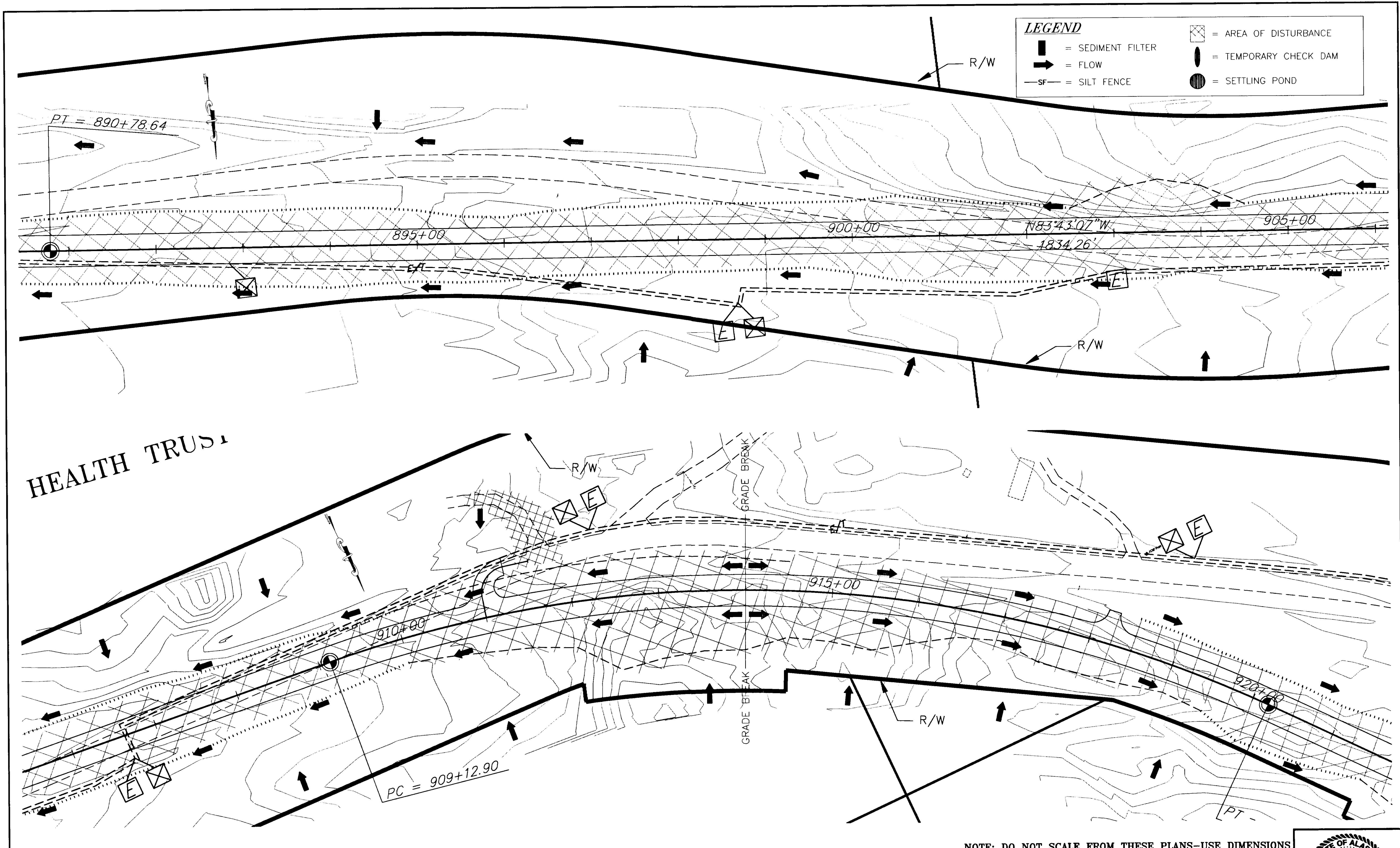
CHECKED BY:  
T. MOORE

PROJECT NO.  
71874

DATE:  
1999

SHEET 19





**LEGEND**

	= SEDIMENT FILTER		= AREA OF DISTURBANCE
	= FLOW		= TEMPORARY CHECK DAM
	= SILT FENCE		= SETTLING POND

HEALTH TRUST

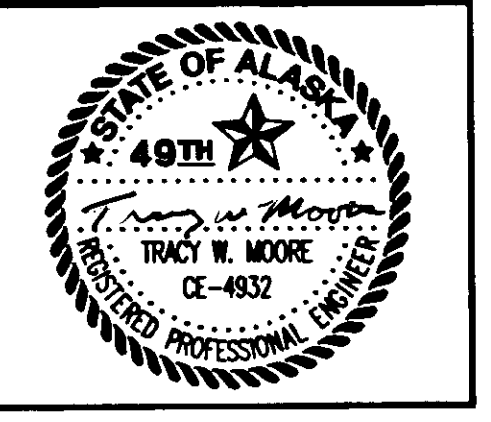
NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

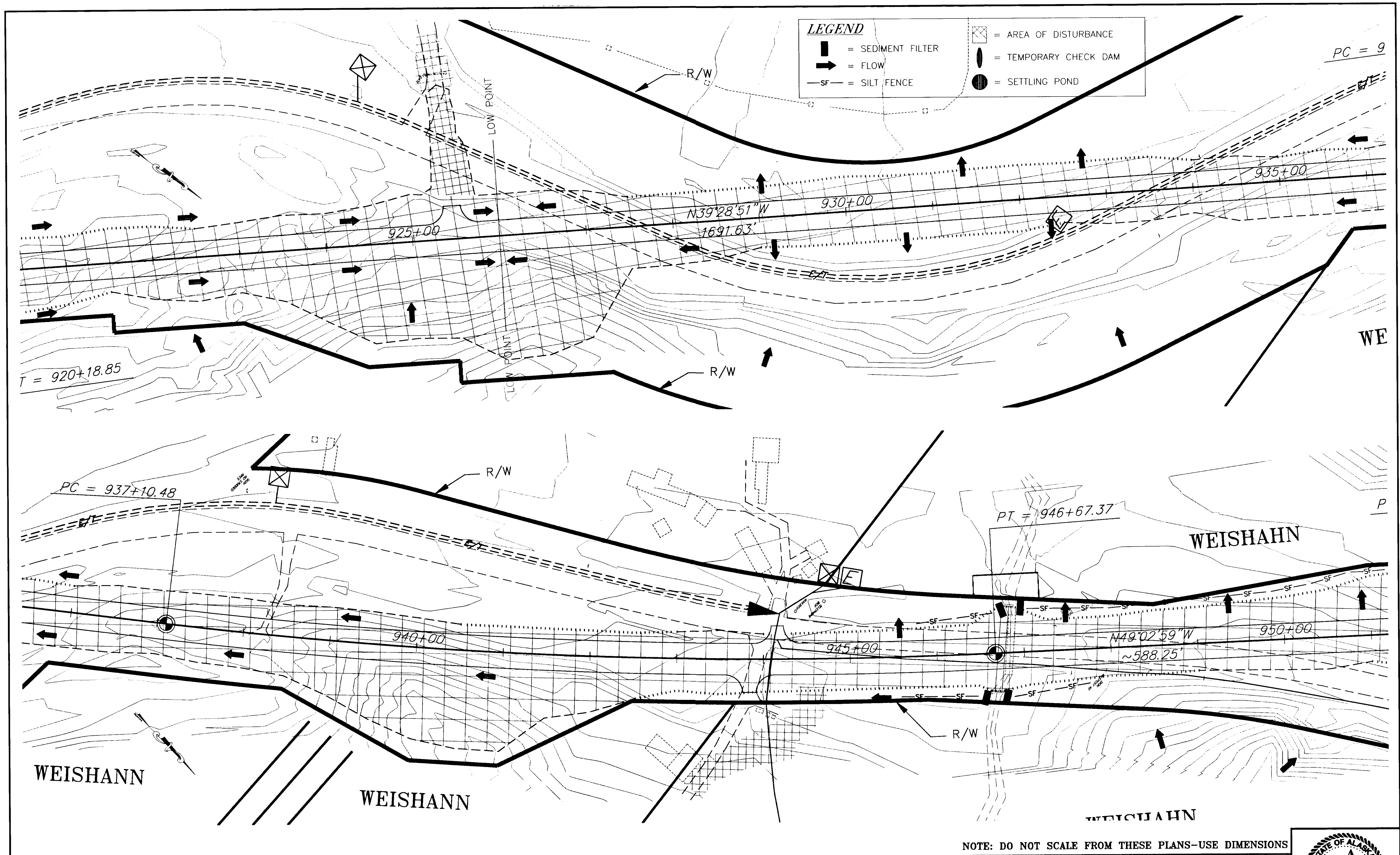
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<b>RECORD OF REVISIONS</b>		

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION

HAINES ALASKA  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
**EROSION AND SEDIMENT CONTROL PLAN**

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	J10





NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

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RECORD OF REVISIONS		

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION

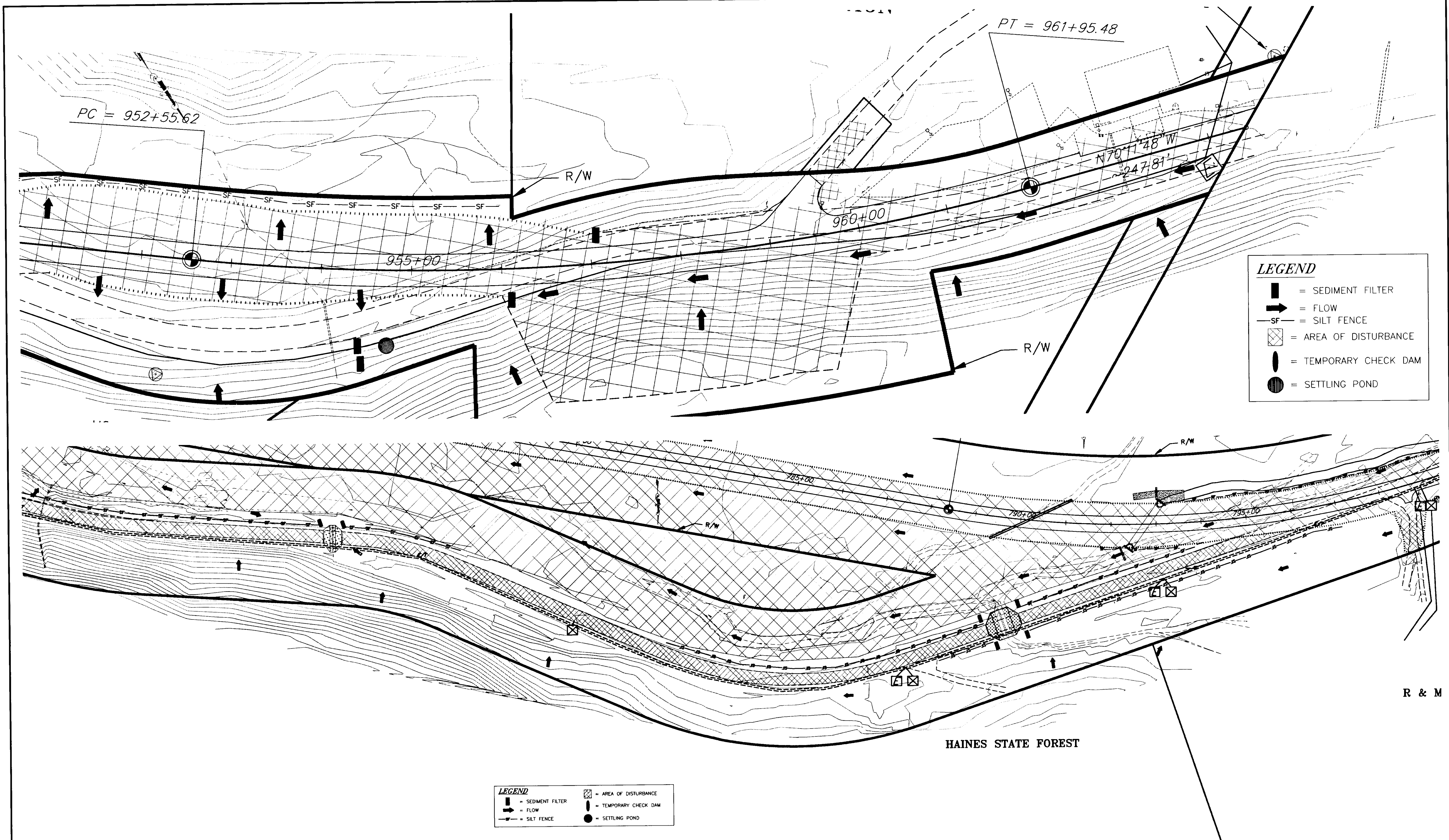
HAINES  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 ALASKA  
 EROSION AND SEDIMENT CONTROL PLAN

DESIGNED BY:  
 C. HAKARI  
 DRAWN BY:  
 L. ROBERTSON  
 CHECKED BY:  
 T. MOORE

PROJECT NO.  
 71874  
 DATE:  
 1999  
 SHEET J11







**LEGEND**

- = SEDIMENT FILTER
- = FLOW
- = SILT FENCE
- = AREA OF DISTURBANCE
- = TEMPORARY CHECK DAM
- = SETTLING POND

**LEGEND**

- = SEDIMENT FILTER
- = FLOW
- = SILT FENCE
- = AREA OF DISTURBANCE
- = TEMPORARY CHECK DAM
- = SETTLING POND

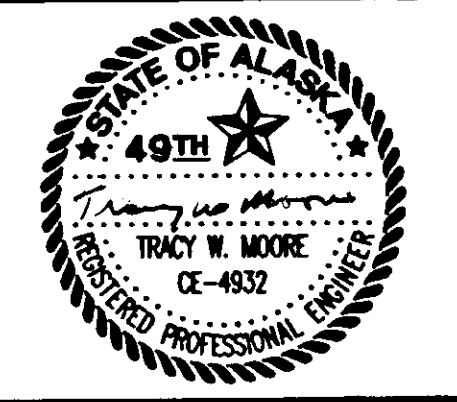
NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

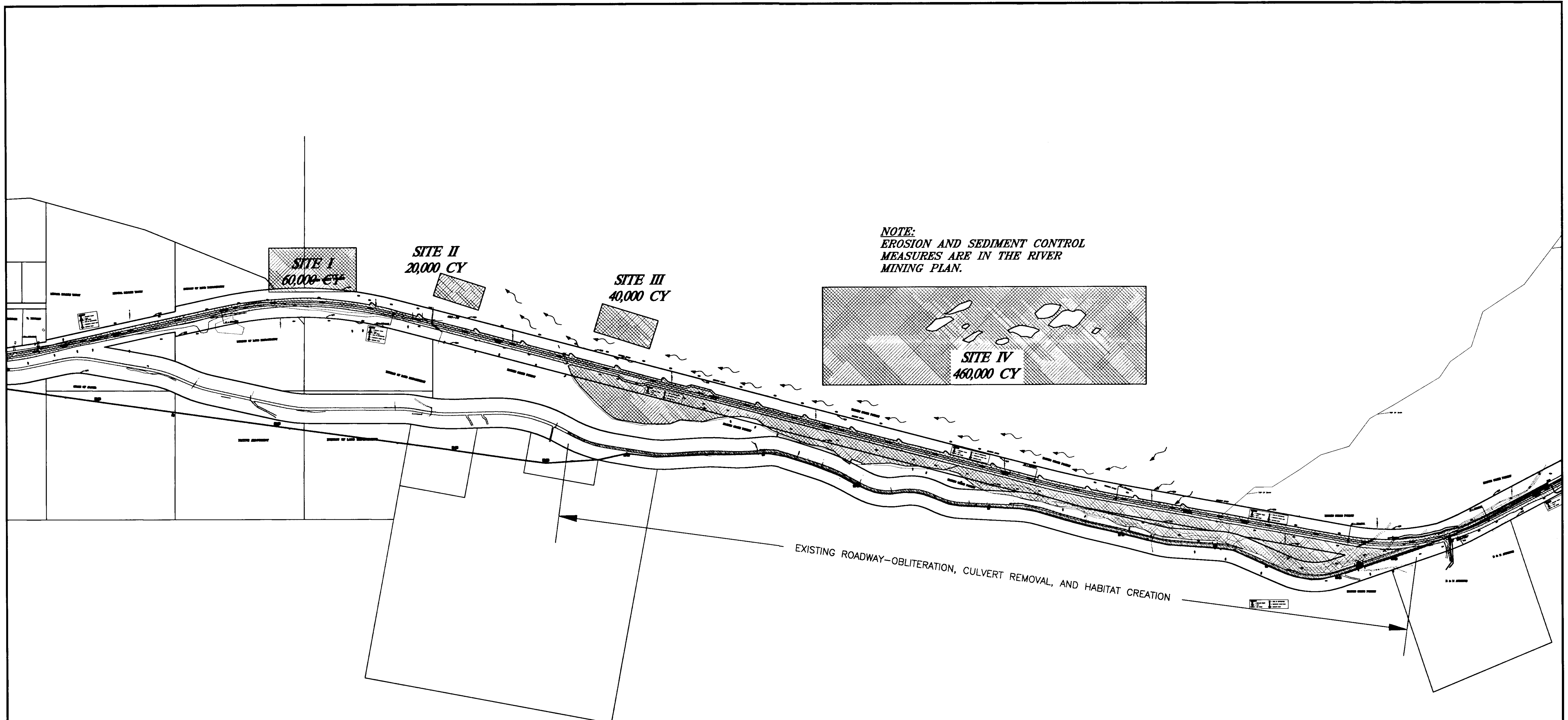
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STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES**  
 SOUTHEAST REGION

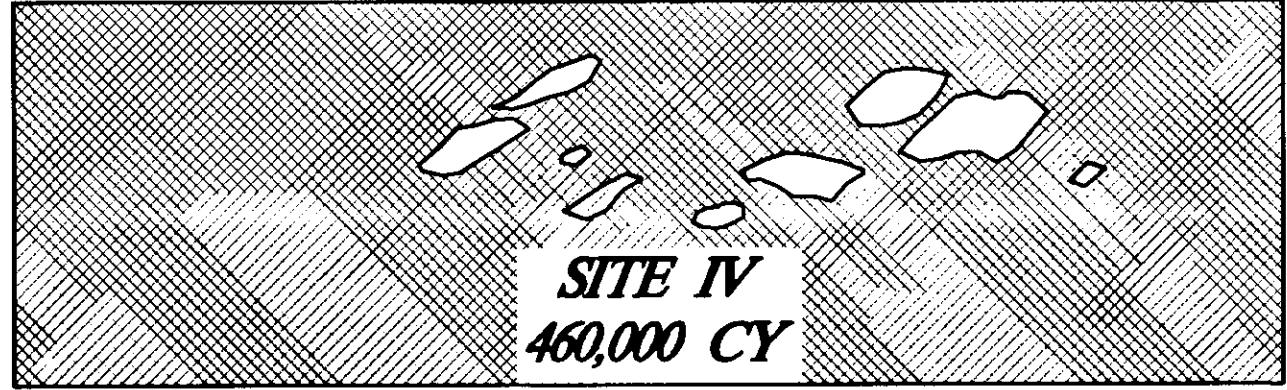
HAINES  
**HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER**  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
**EROSION AND SEDIMENT CONTROL PLAN**

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	T. MOORE	SHEET	J12





**NOTE:**  
 EROSION AND SEDIMENT CONTROL  
 MEASURES ARE IN THE RIVER  
 MINING PLAN.



LEGEND	
	= SEDIMENT FILTER
	= FLOW
	= SILT FENCE
	= AREA OF DISTURBANCE
	= TEMPORARY CHECK DAM
	= SETTLING POND

NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

PATH: [PlotStamp Eval] Q:\Hns\68800\Planset\escp.dwg		
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RECORD OF REVISIONS		

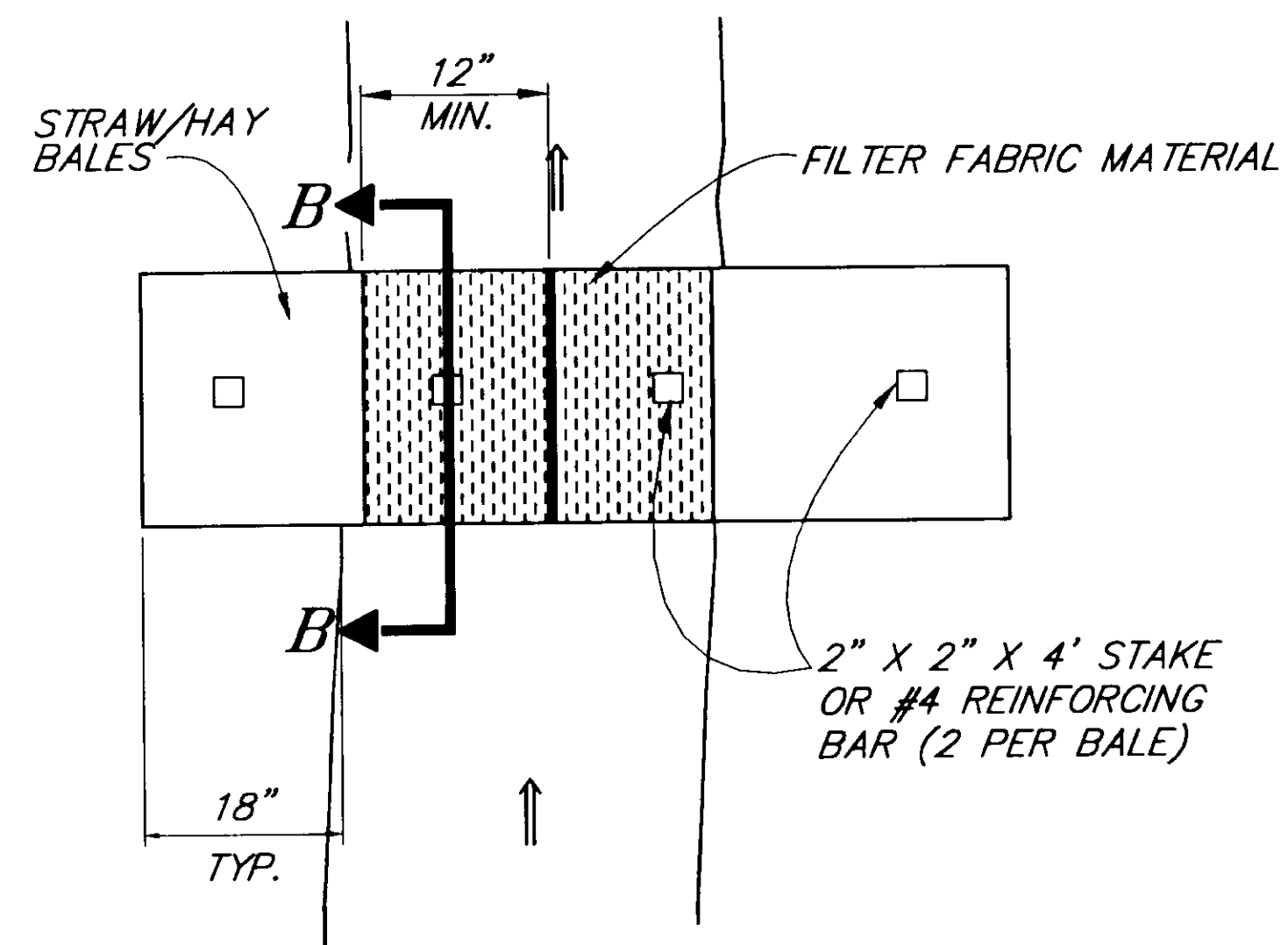
STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION

HAINES ALASKA  
 HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
**EROSION AND SEDIMENT CONTROL PLAN**

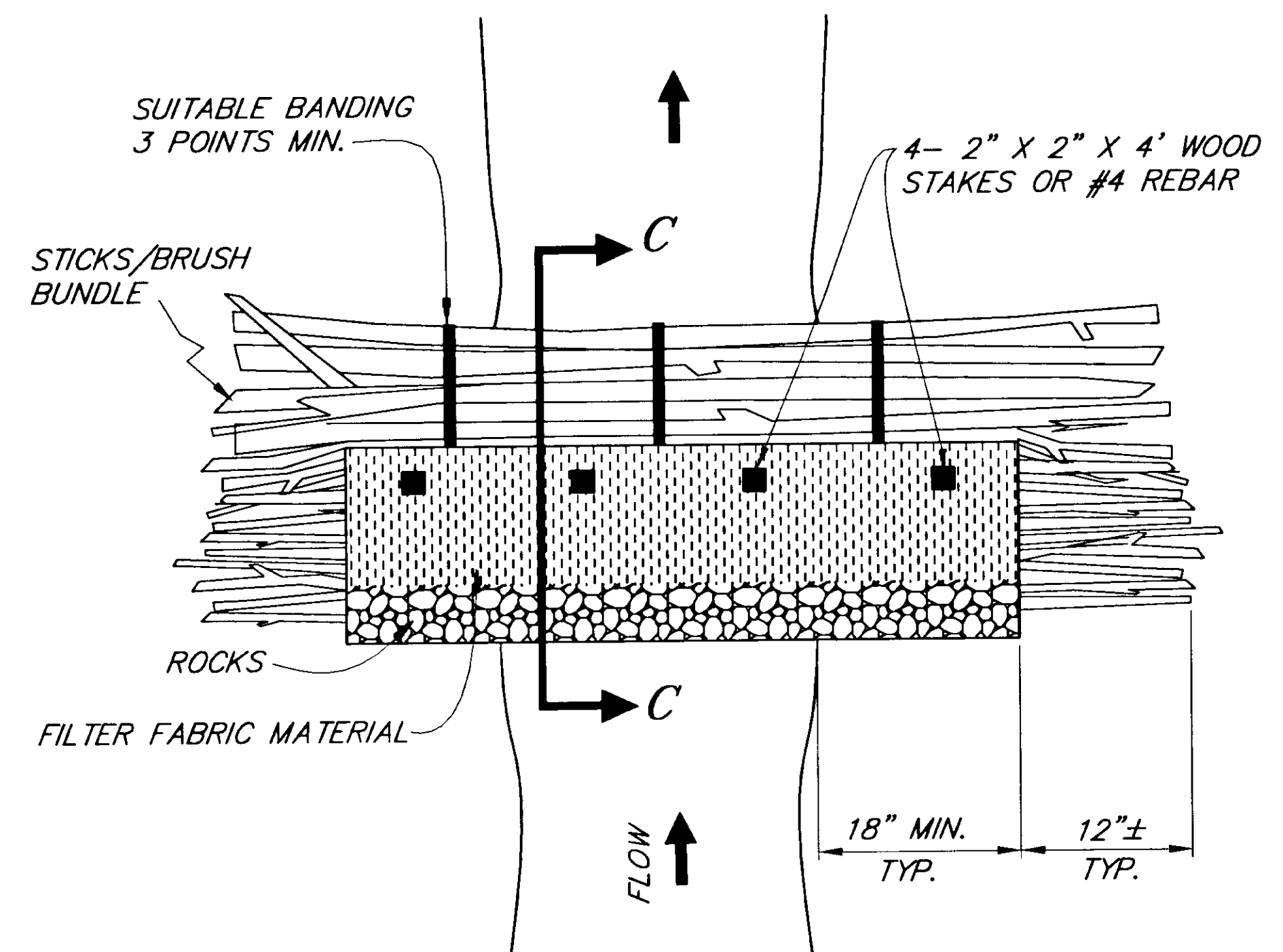
DESIGNED BY:  
 C. HAKARI  
 DRAWN BY:  
 L. ROBERTSON  
 CHECKED BY:  
 T. MOORE

PROJECT NO.  
 71874  
 DATE:  
 1999  
 SHEET J13

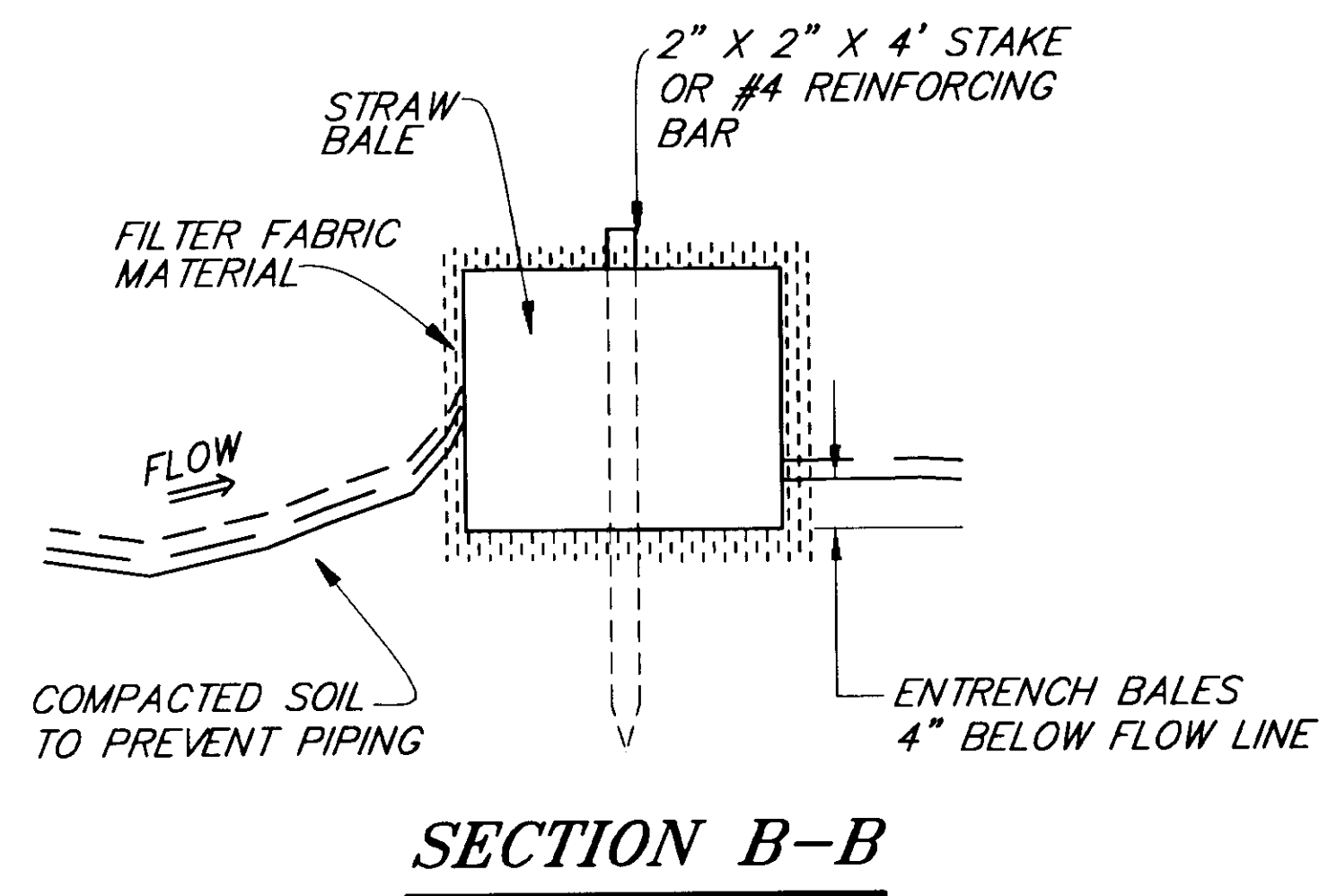




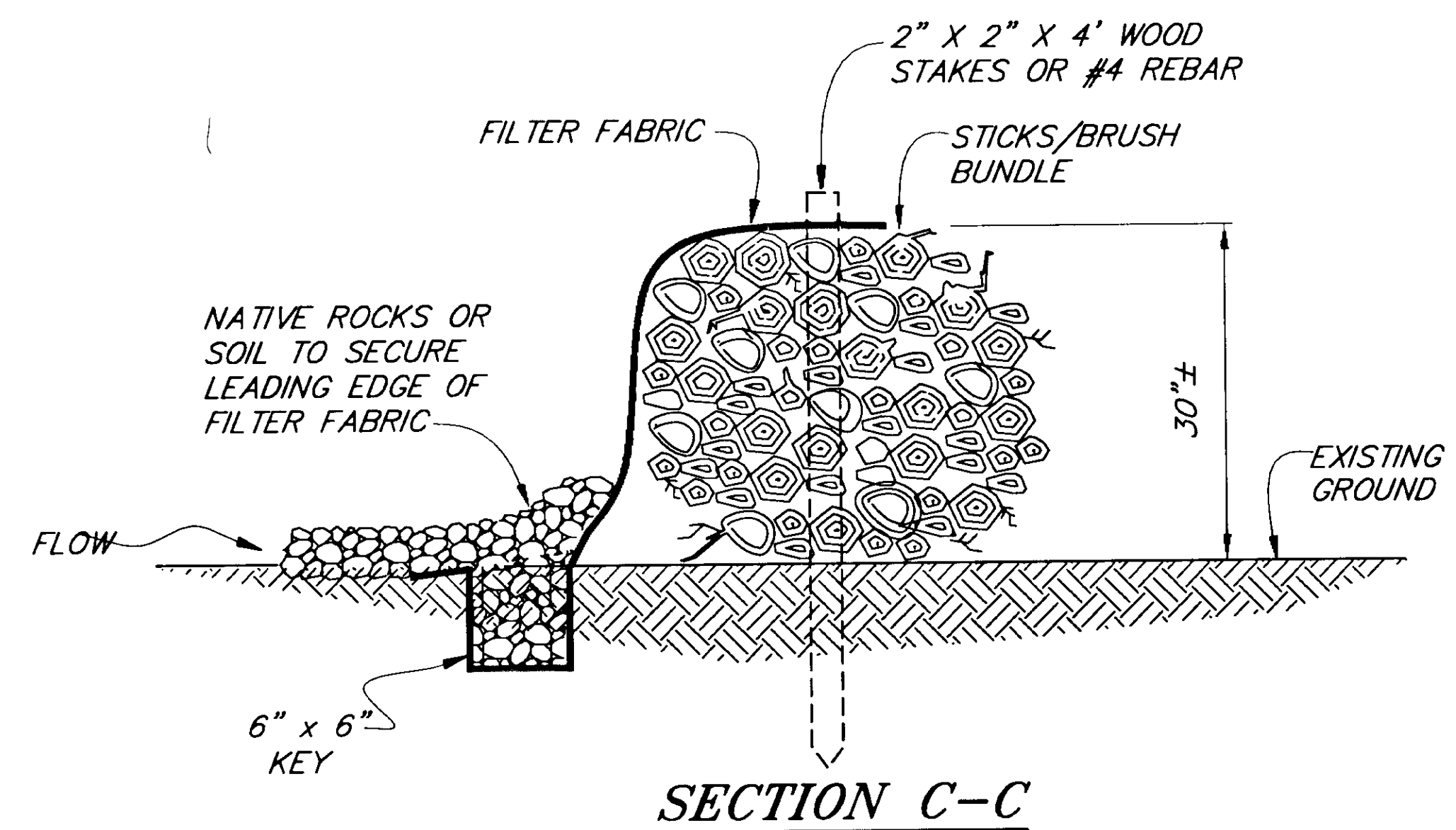
**TYPE "A" SEDIMENT FILTER DETAIL**



**TYPE "B" SEDIMENT FILTER DETAIL**



**SECTION B-B**



**SECTION C-C**

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

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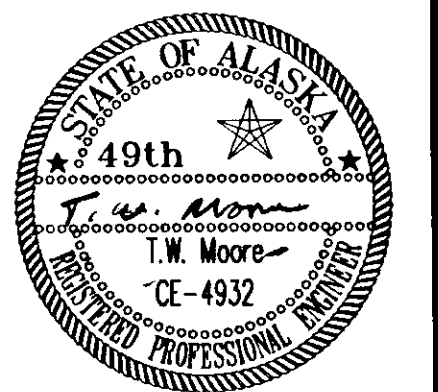
STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES**  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

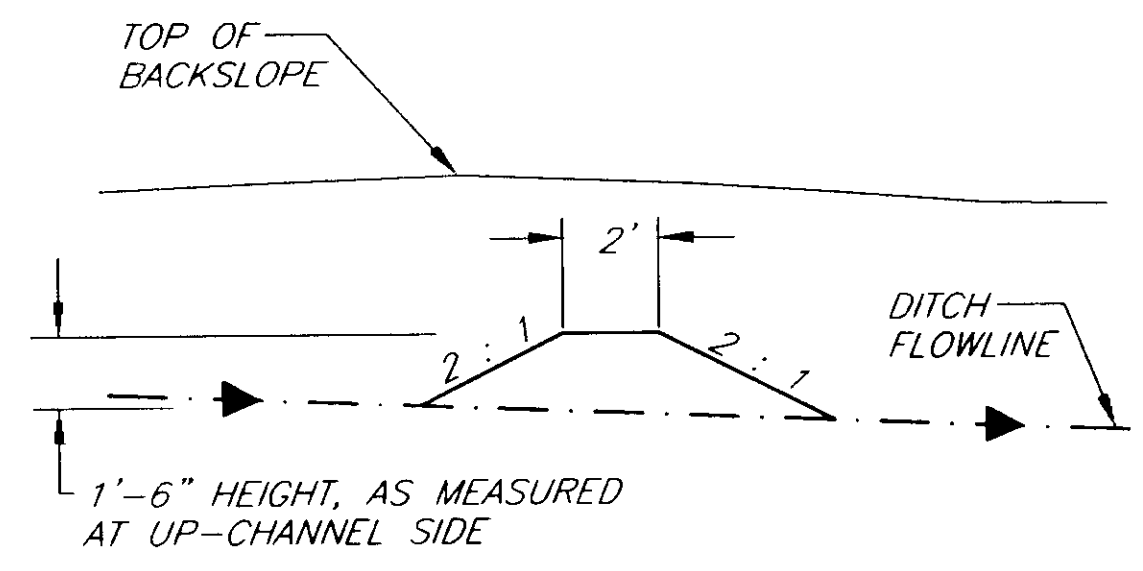
HAINES

HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20)-(71874)  
**EROSION AND SEDIMENT CONTROL DETAILS**

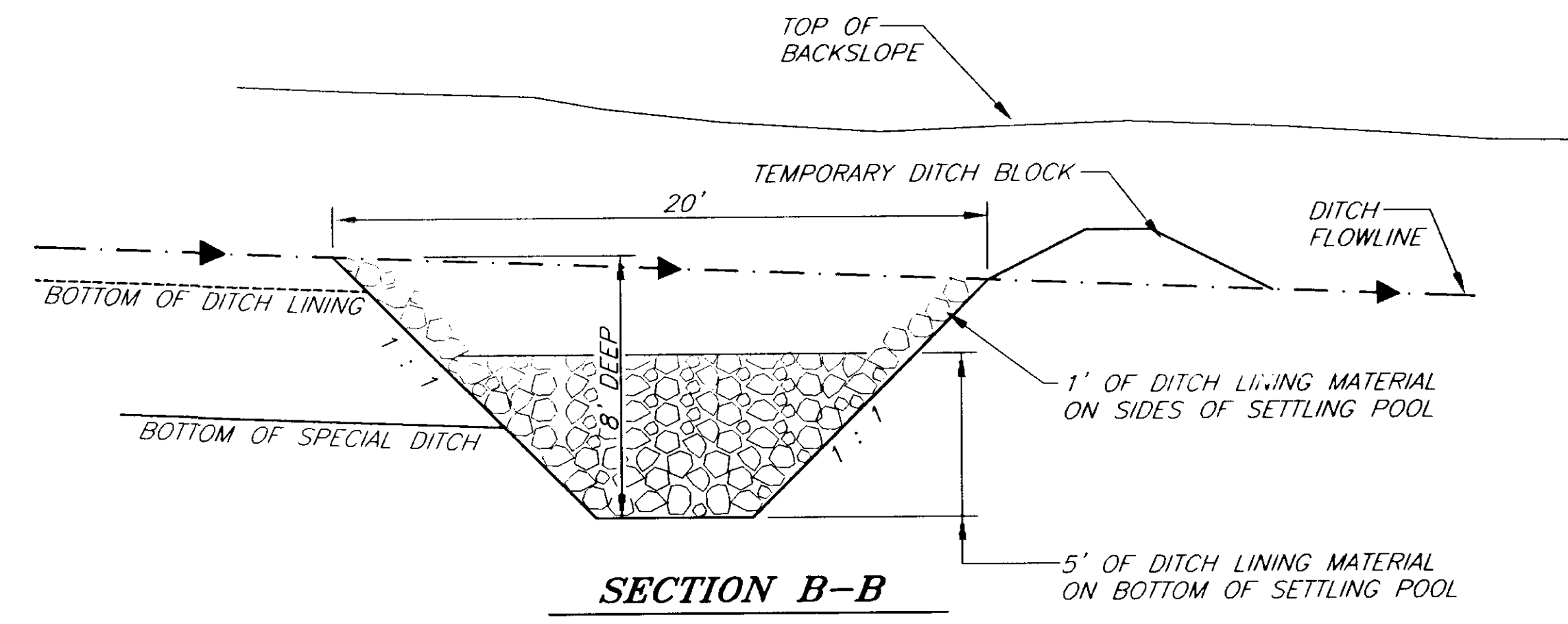
ALASKA

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	C. ANDERSON	DATE:	1999
CHECKED BY:	T.W. MOORE	SHEET	J14

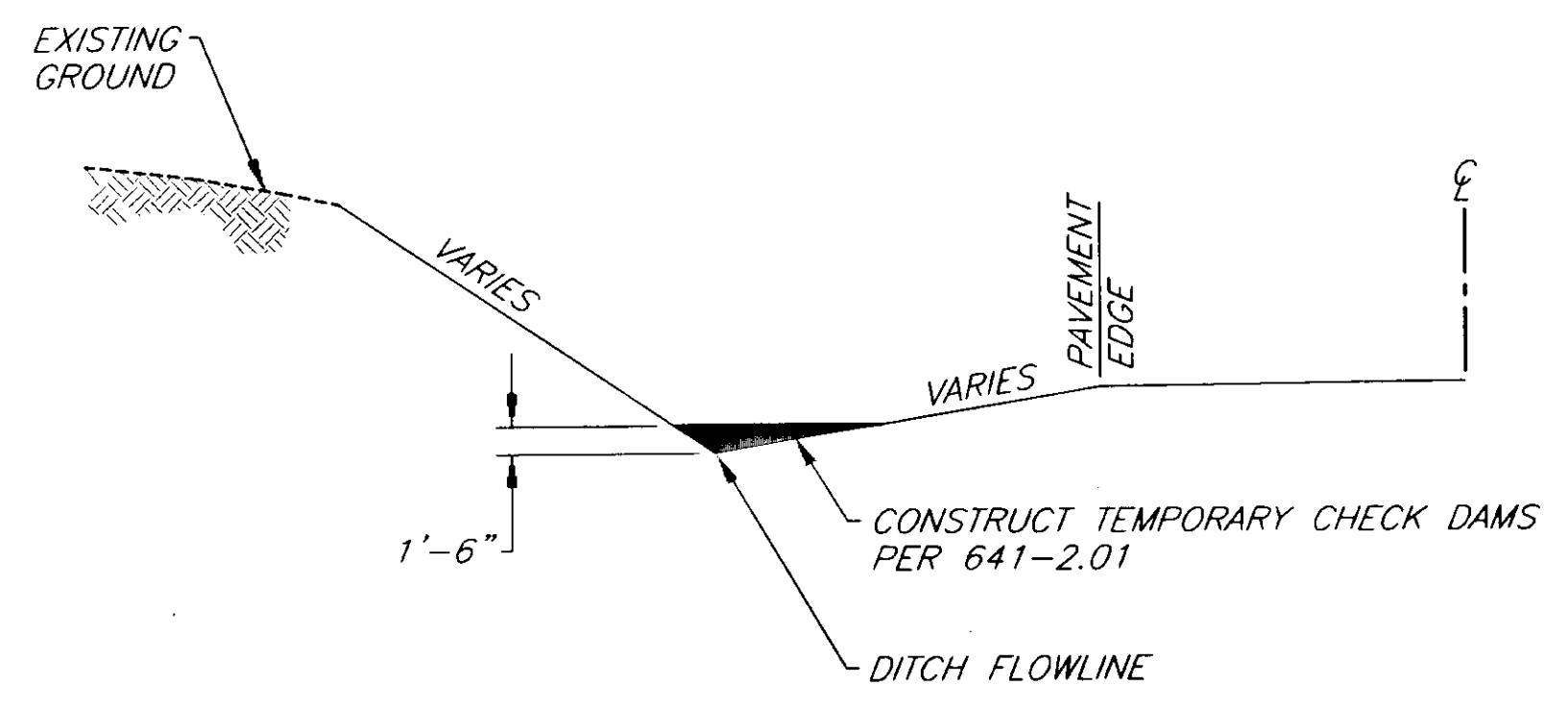




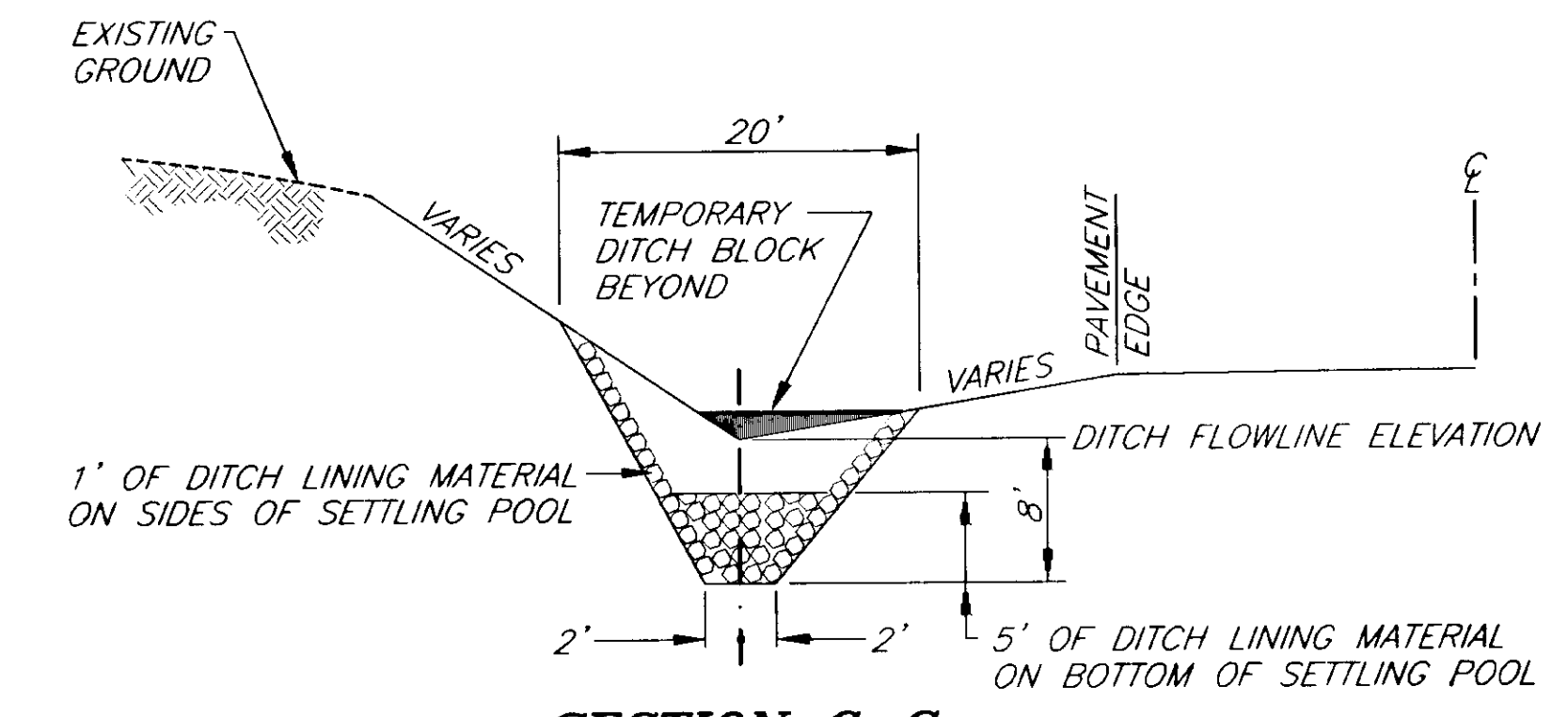
**SECTION A-A**



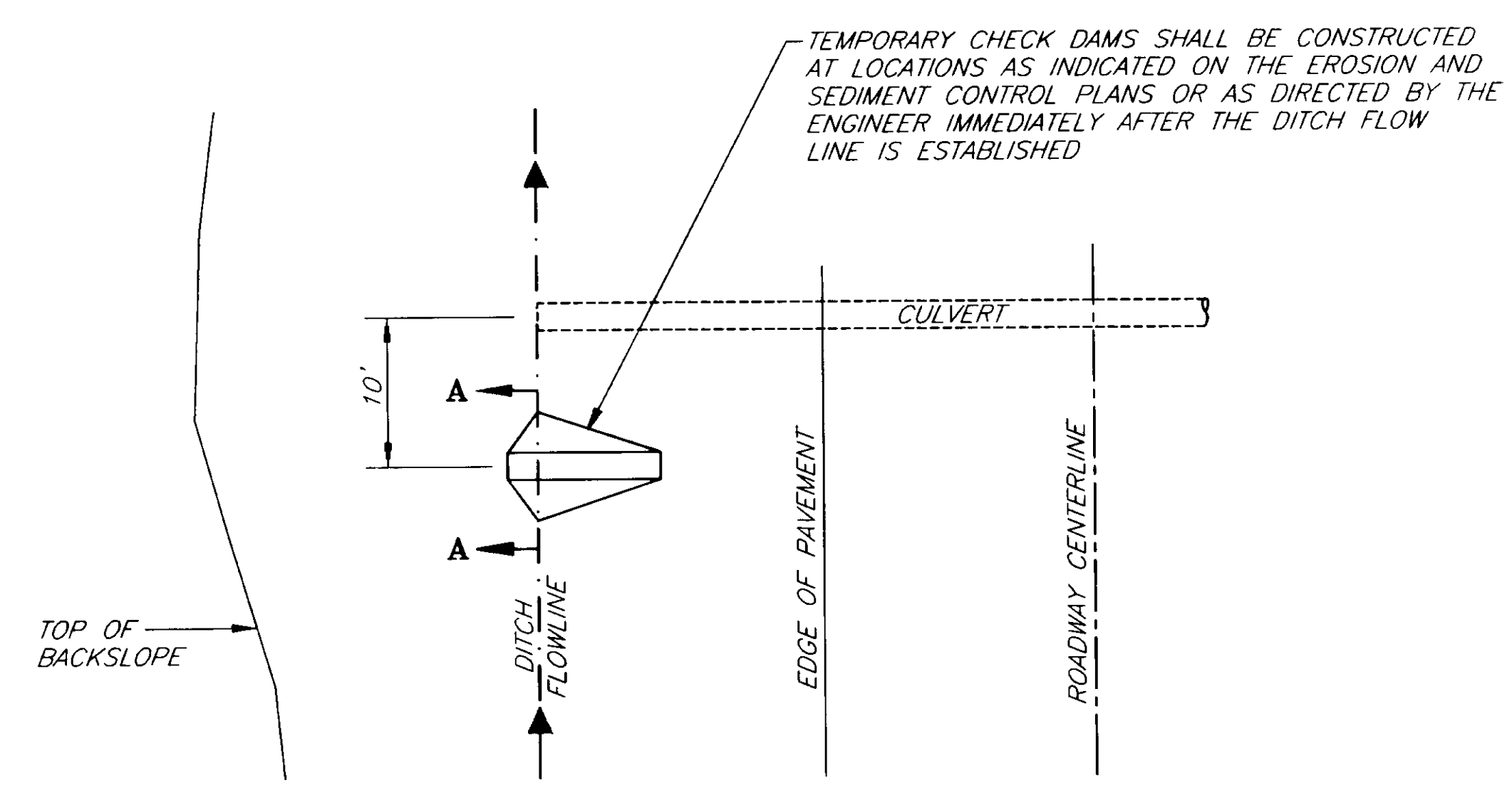
**SECTION B-B**



**ELEVATION**

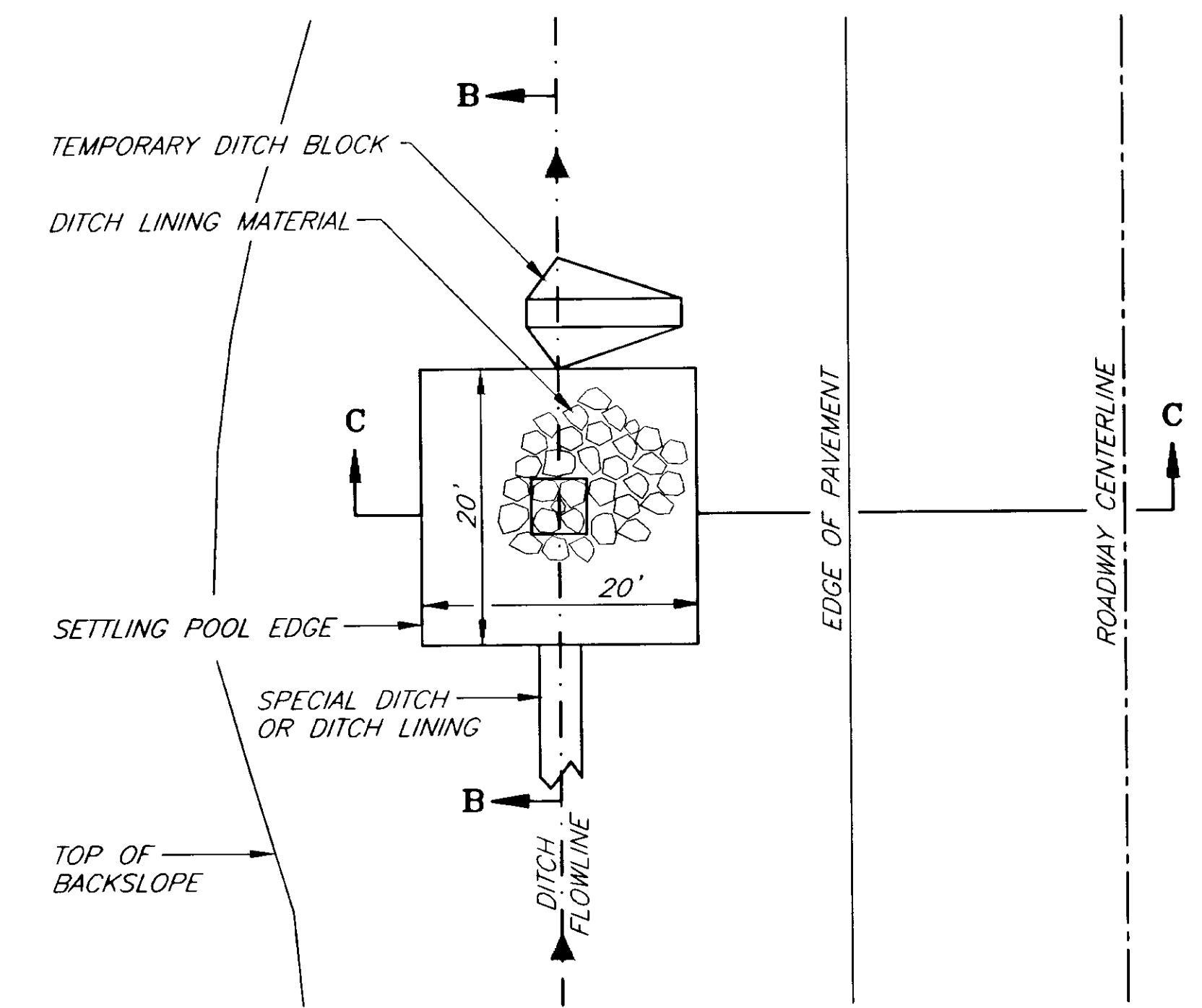


**SECTION C-C**



**PLAN**

**TEMPORARY CHECK DAM DETAILS**



**PLAN**

**SETTLING POOL DETAILS**

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

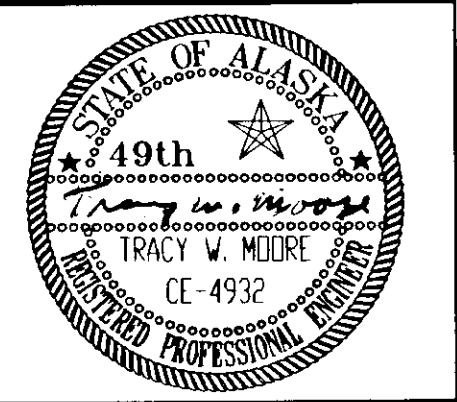
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RECORD OF REVISIONS		

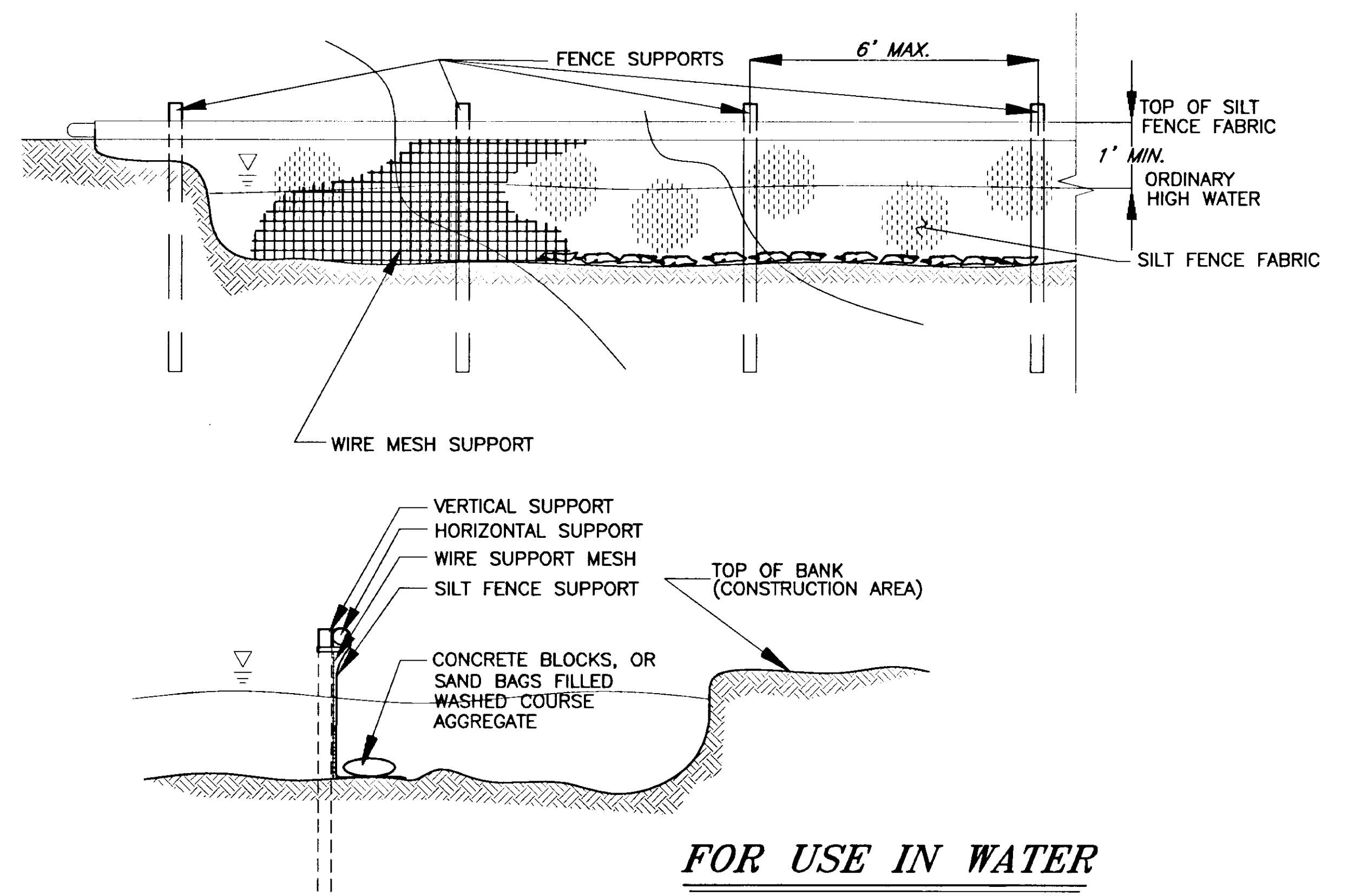
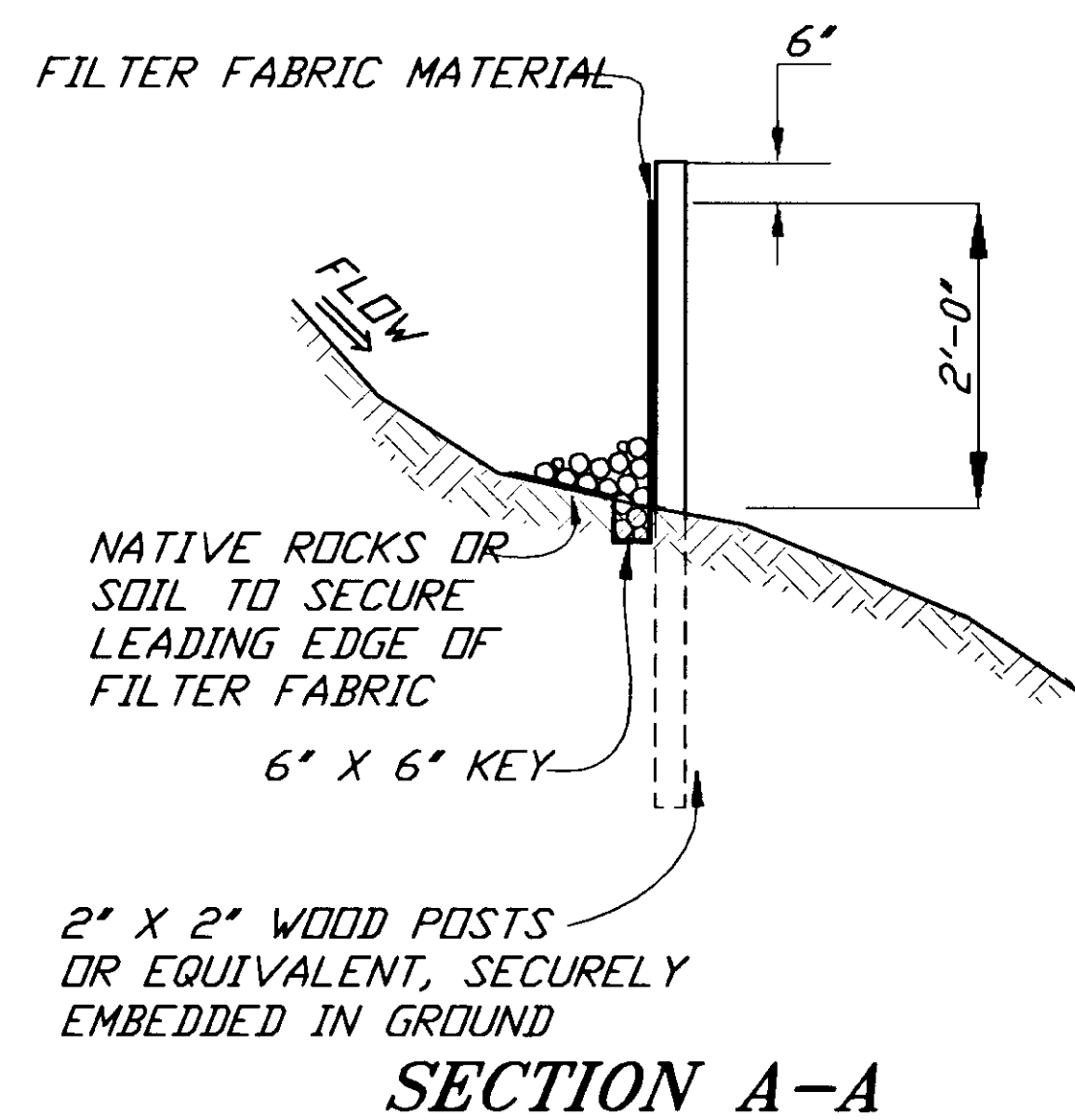
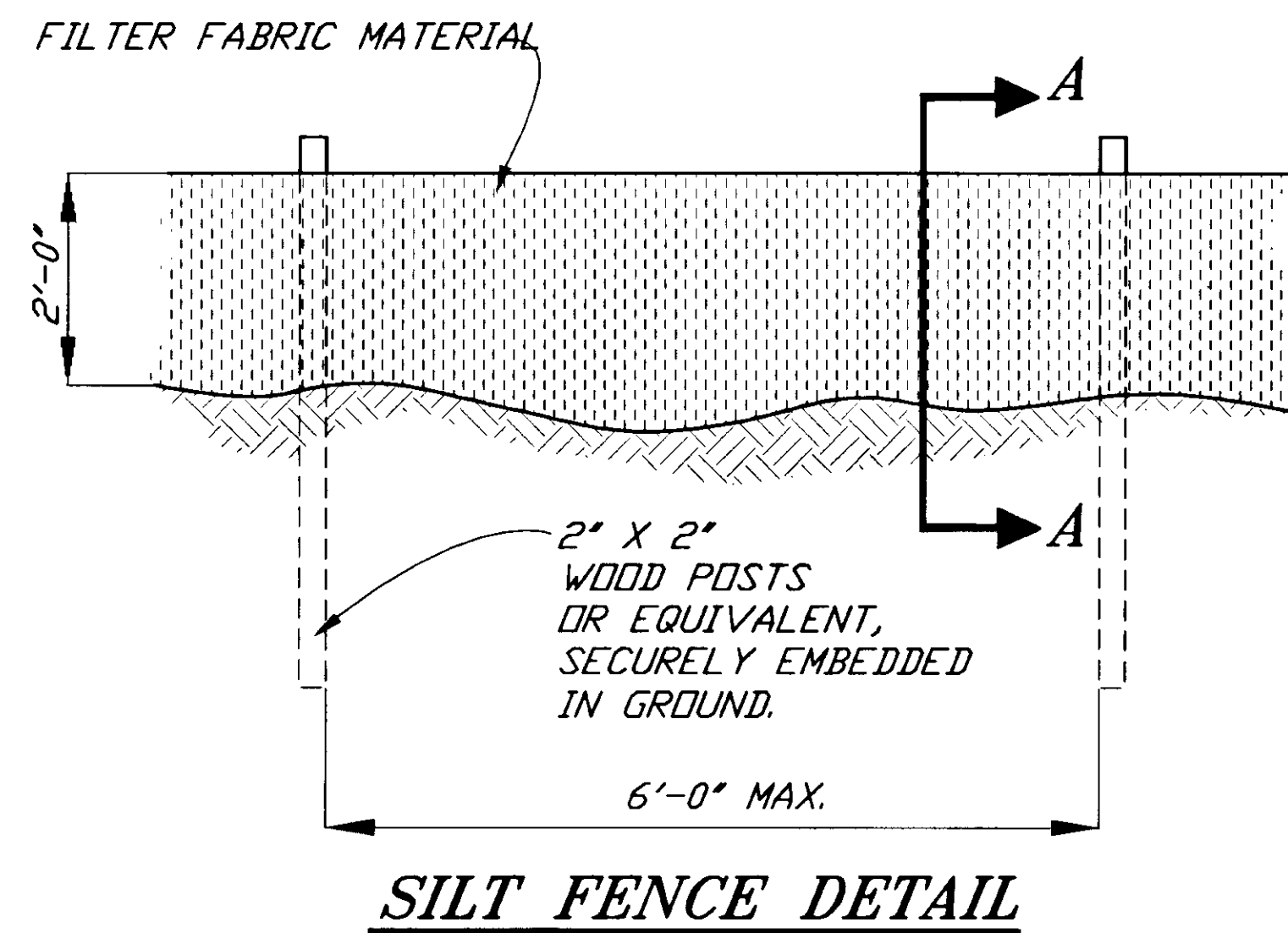
STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES**  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
**HAINES HIGHWAY**  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20)-(71874)  
**EROSION AND SEDIMENT CONTROL DETAILS**

ALASKA  
 DESIGNED BY: **C. HAKARI**  
 DRAWN BY: **W. HICKOK**  
 CHECKED BY: **T. MOORE**

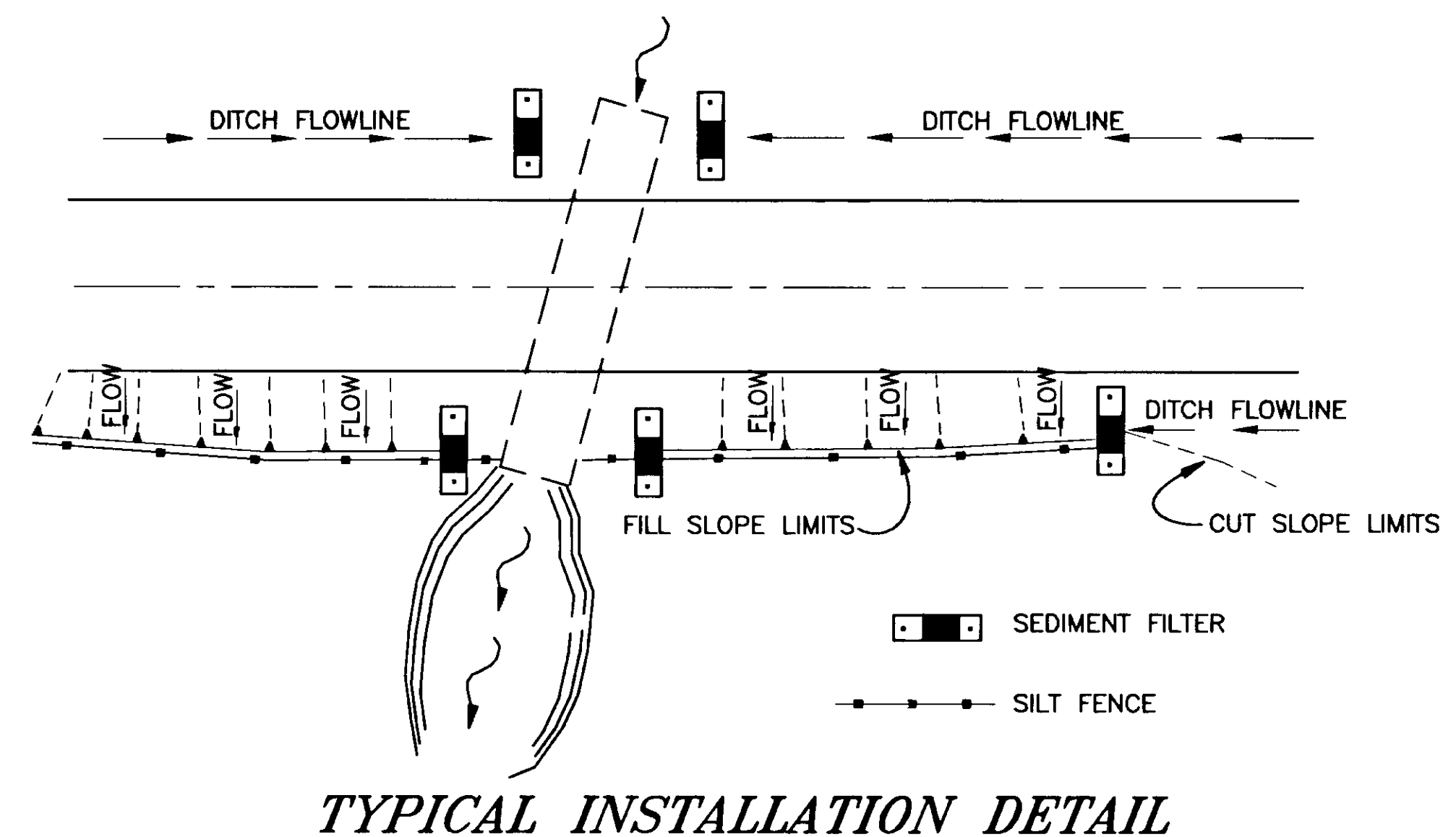
PROJECT NO. **71874**  
 DATE: **1999**  
 SHEET **J15**





**NOTES:**

1. SILT FENCE SUPPORTS SHALL BE 2" PVC PIPE REINFORCED WITH IRON PIPE OR #4 REBAR, WOOD POSTS, OR AS APPROVED BY THE ENGINEER.
2. SECURE THE ENDS OF SILT FENCE TO BANK.
3. USE WIRE SUPPORT MESH AS DIRECTED BY THE ENGINEER TO KEEP SILT FENCE FABRIC IN PLACE AS SHOWN.



NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

PATH: [PlotStamp Eval] Q:\Hns\68800\PlanSet\--erodet.dwg	
PLOT:	
BY:	DATE:
DESCRIPTION OF CHANGE:	
[PlotStamp Eval] Leonard Tue, 16/Nov/99 08:49am	
<b>RECORD OF REVISIONS</b>	

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

HAINES HIGHWAY  
 BIG BOULDER CREEK TO THE BORDER  
 PROJECT NO. SHAK-095-6(20)-(71874)  
**EROSION AND SEDIMENT CONTROL DETAILS**

ALASKA

DESIGNED BY:  
 C. HAKARI

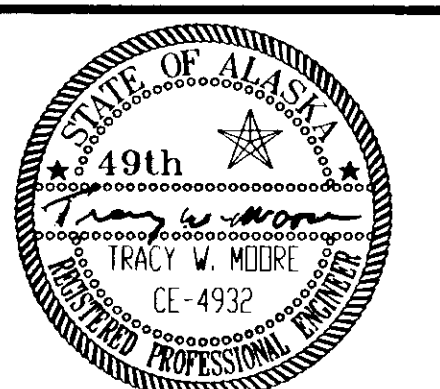
DRAWN BY:  
 W. HICKOK

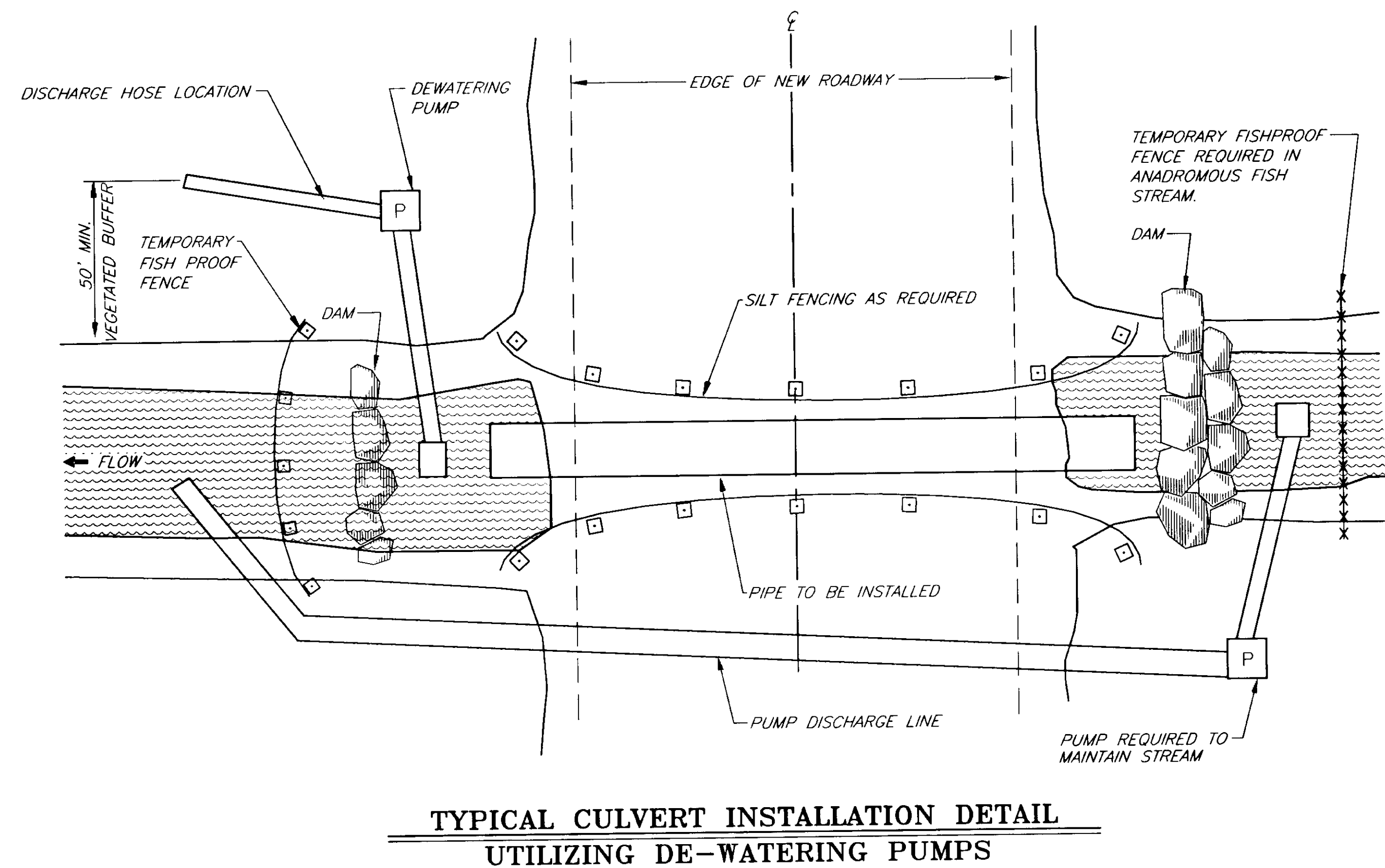
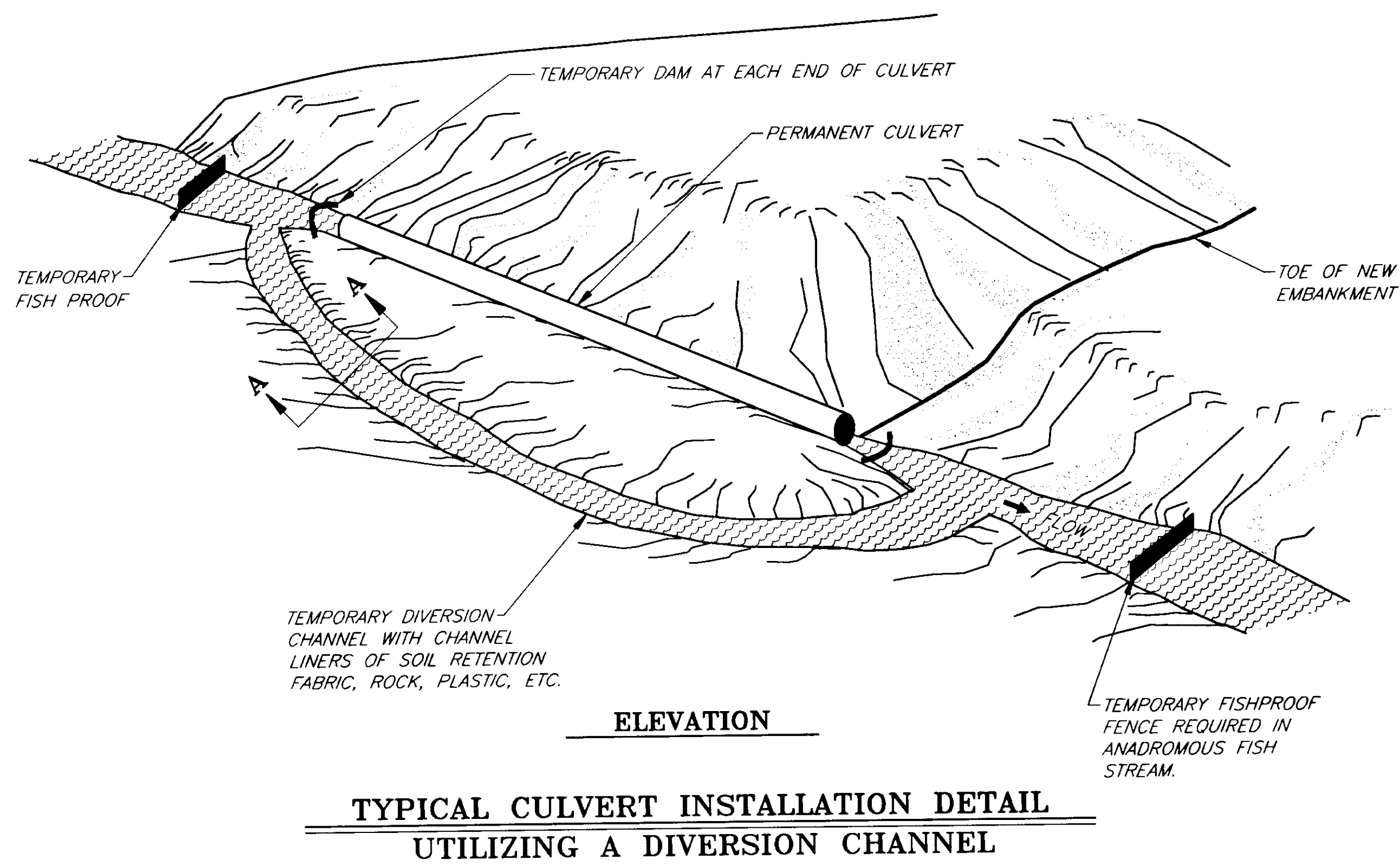
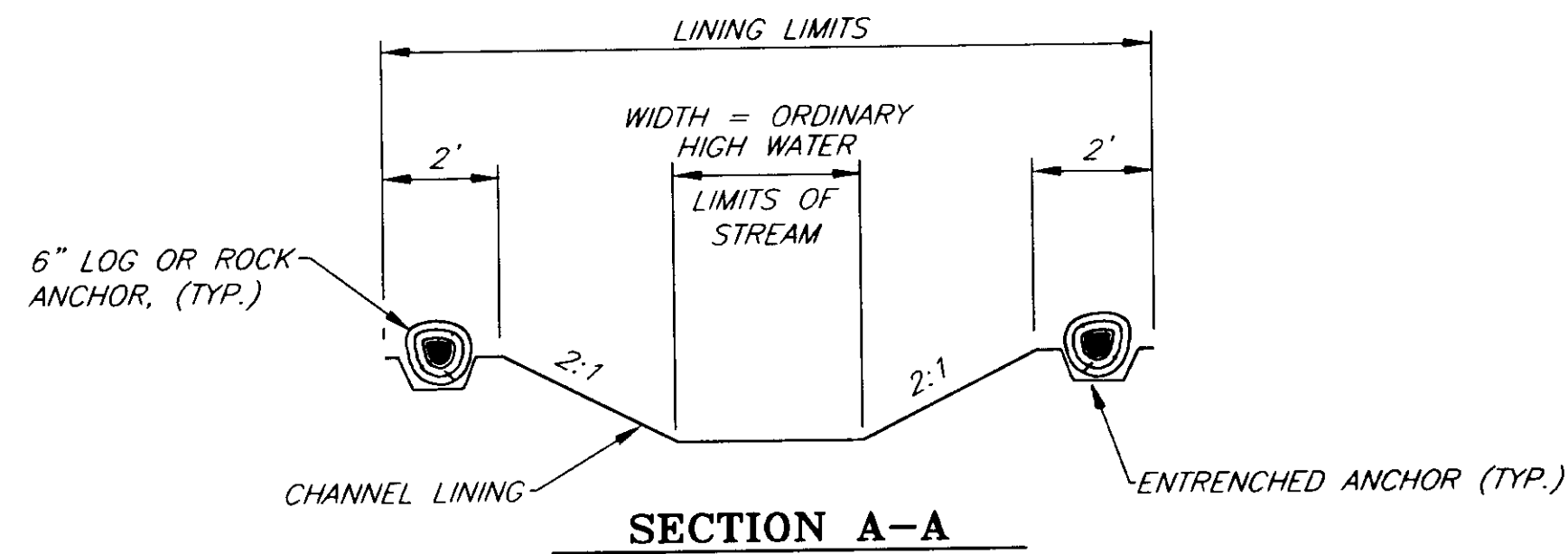
CHECKED BY:  
 T. MOORE

PROJECT NO.  
 71874

DATE:  
 1999

SHEET J16





NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

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BY:	DATE:	DESCRIPTION OF CHANGE:
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RECORD OF REVISIONS		

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20)~(71874)  
EROSION AND SEDIMENT CONTROL DETAILS

ALASKA

DESIGNED BY:  
C. HAKARI

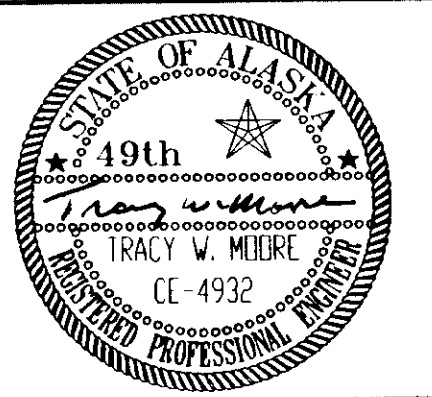
DRAWN BY:  
W. HICKOK

CHECKED BY:  
T. MOORE

PROJECT NO.  
71874

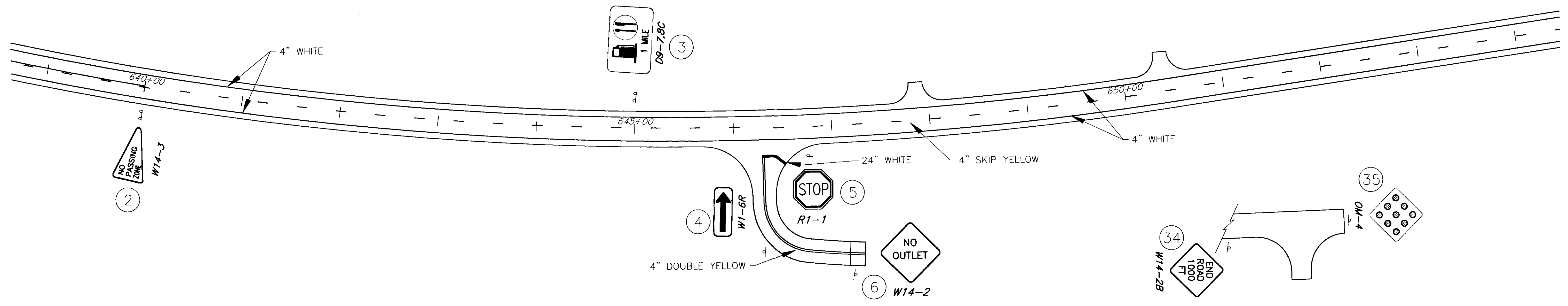
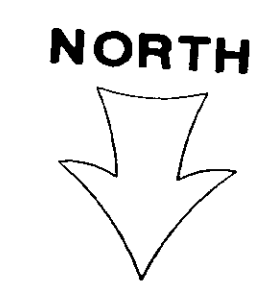
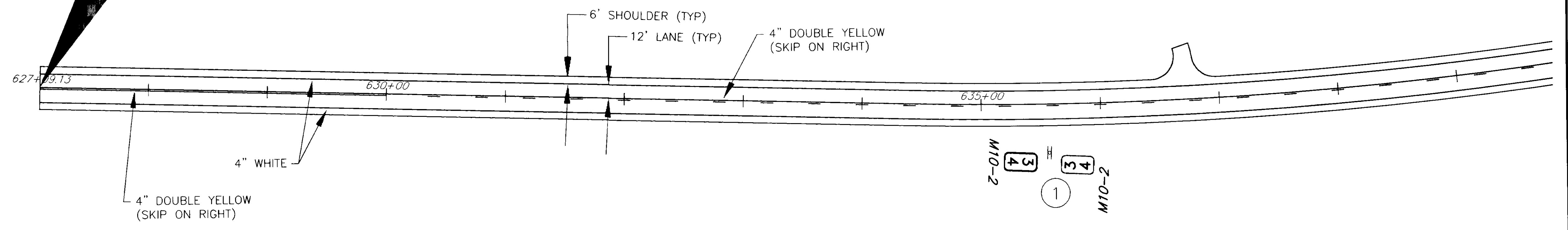
DATE:  
1999

SHEET J17





**STA. 627+08.86  
BEGIN PROJECT**



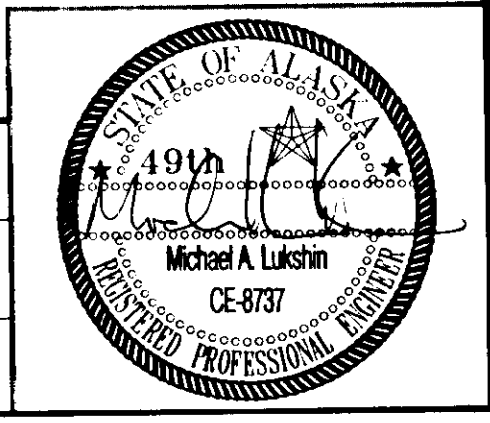
NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

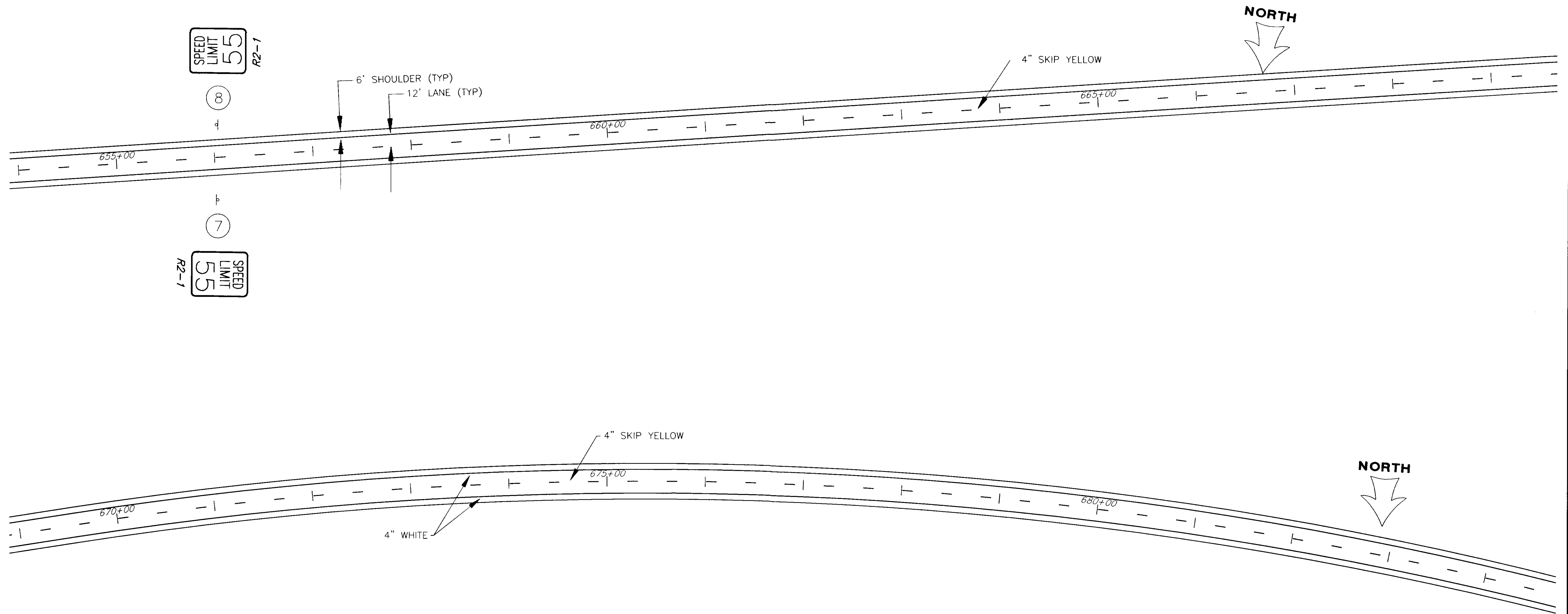
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RECORD OF REVISIONS		

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
HAINES HIGHWAY  
PROJECT NO. SHAK-095-6(20) ~ 71874  
BIG BOULDER CREEK TO THE BORDER  
ALASKA  
**STRIPING PLAN**

DESIGNED BY: <b>K. MATTSON</b>	PROJECT NO. <b>71874</b>
DRAWN BY: <b>L. ROBERTSON</b>	DATE: <b>1999</b>
CHECKED BY: <b>M. LUKSHIN</b>	SHEET <b>K1</b>





NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

PATH: [PlotStamp Eval] Q:\Hns\68800\Planset\striping.dwg		
PLOT:		
BY:	DATE:	DESCRIPTION OF CHANGE:
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<b>RECORD OF REVISIONS</b>		

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

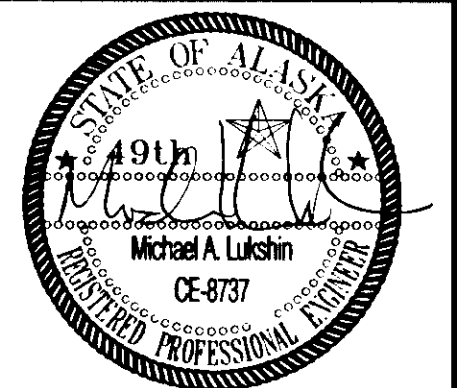
HAINES HIGHWAY  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 BIG BOULDER CREEK TO THE BORDER

ALASKA

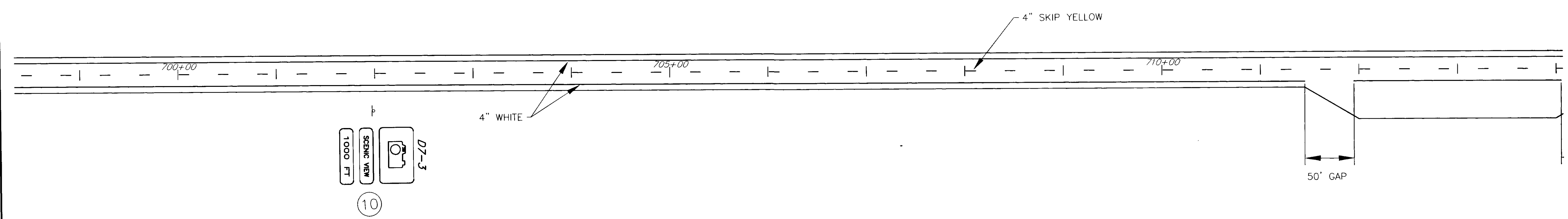
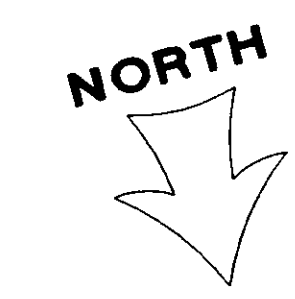
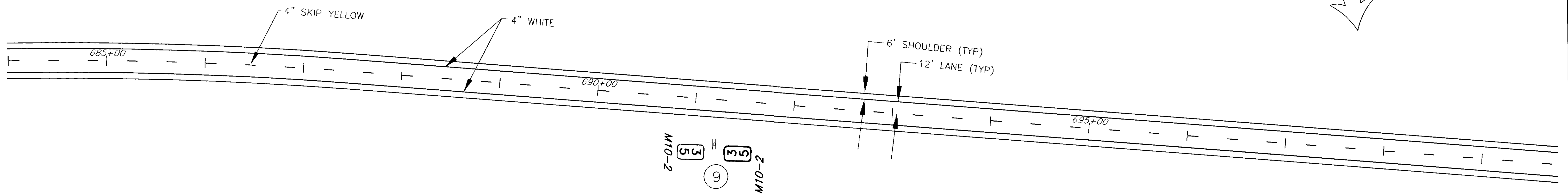
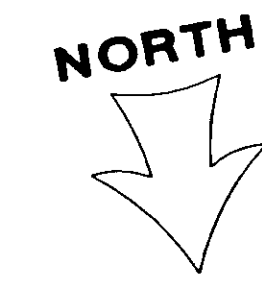
**STRIPING PLAN**

DESIGNED BY:	K. MATTSON
DRAWN BY:	L. ROBERTSON
CHECKED BY:	M. LUKSHIN

PROJECT NO.	71874
DATE:	1999
SHEET	K2







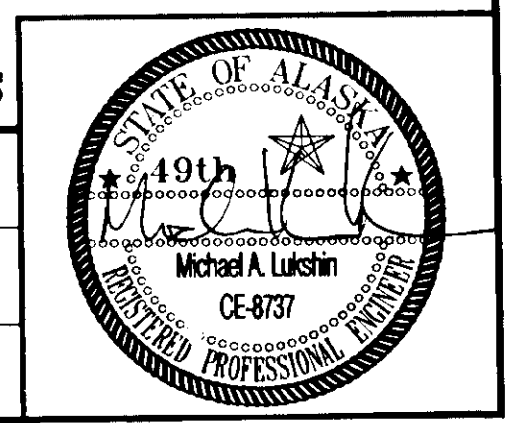
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

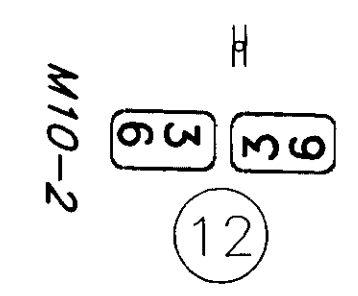
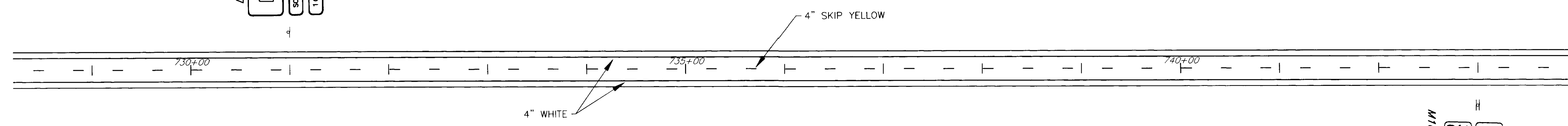
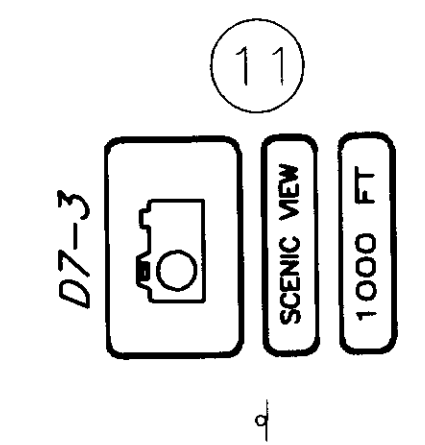
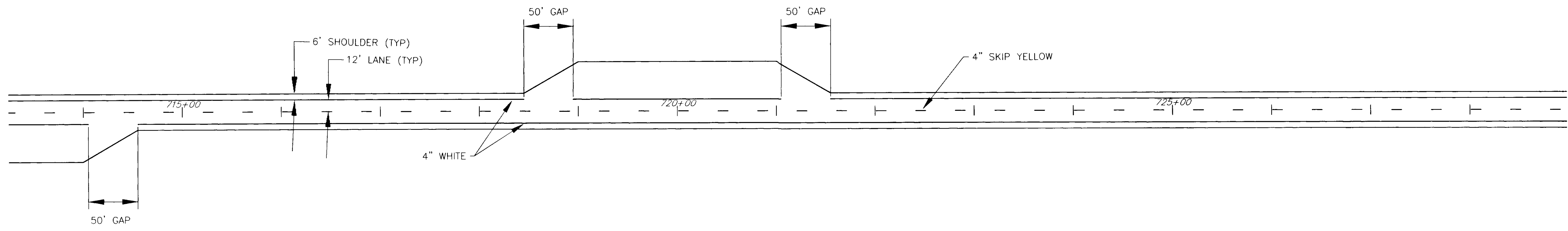
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BY:	DATE:	DESCRIPTION OF CHANGE:
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<b>RECORD OF REVISIONS</b>		

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES ALASKA  
 HAINES HIGHWAY  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 BIG BOULDER CREEK TO THE BORDER  
**STRIPING PLAN**

DESIGNED BY: <b>K. MATTSON</b>	PROJECT NO. <b>71874</b>
DRAWN BY: <b>L. ROBERTSON</b>	DATE: <b>1999</b>
CHECKED BY: <b>M. LUKSHIN</b>	SHEET <b>K3</b>





NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

PATH: [PlotStamp Eval] Q:\Hns\68800\Planset\striping.dwg		
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RECORD OF REVISIONS		

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

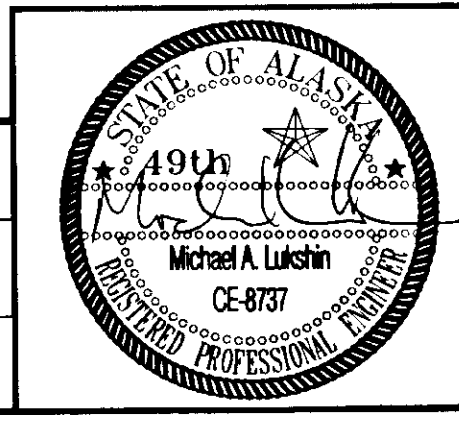
HAINES

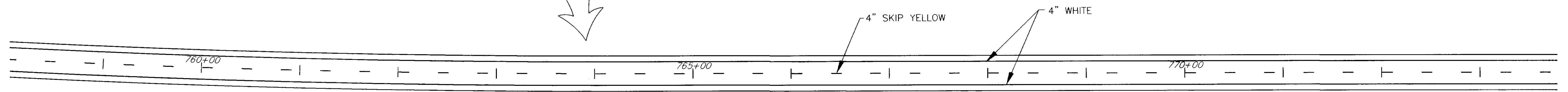
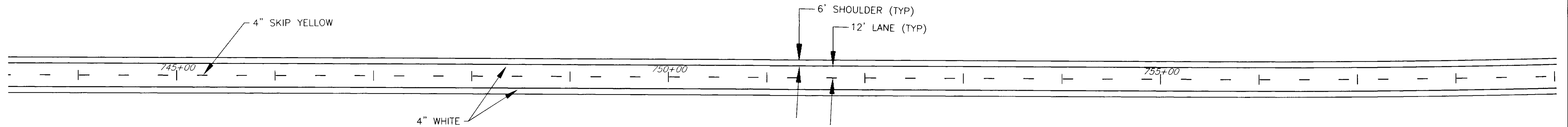
HAINES HIGHWAY  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 BIG BOULDER CREEK TO THE BORDER

ALASKA

STRIPING PLAN

DESIGNED BY: K. MATTSON	PROJECT NO. 71874
DRAWN BY: L. ROBERTSON	DATE: 1999
CHECKED BY: M. LUKSHIN	SHEET K4





NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

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RECORD OF REVISIONS		

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

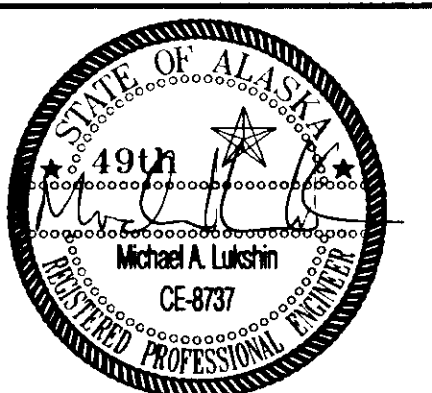
HAINES HIGHWAY  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 BIG BOULDER CREEK TO THE BORDER

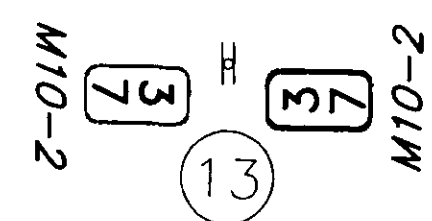
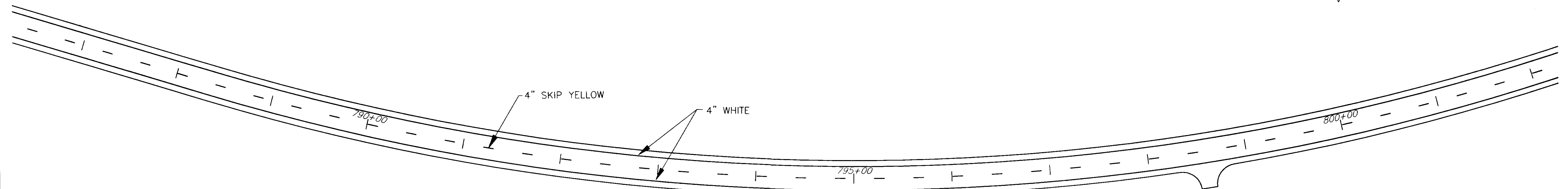
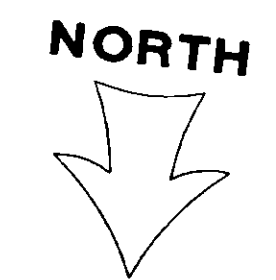
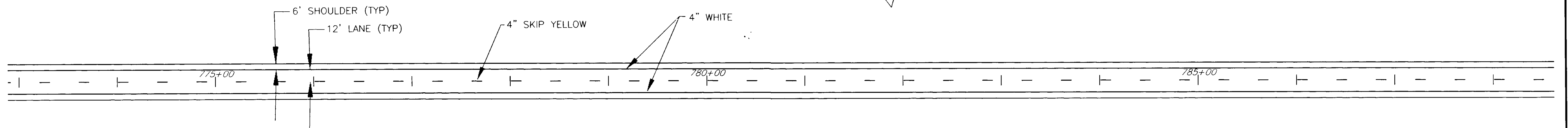
ALASKA

STRIPING PLAN

DESIGNED BY:	K. MATTSON
DRAWN BY:	L. ROBERTSON
CHECKED BY:	M. LUKSHIN

PROJECT NO.	71874
DATE:	1999
SHEET	K5





NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

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STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

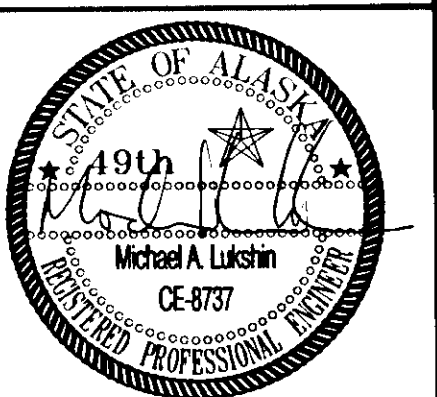
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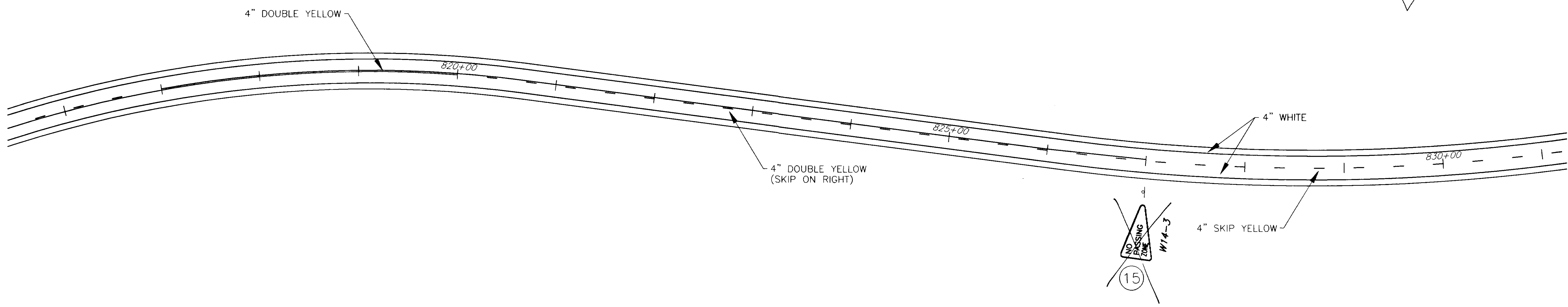
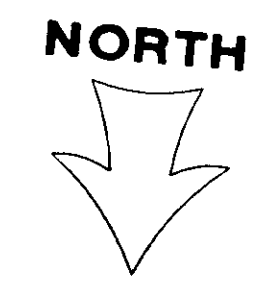
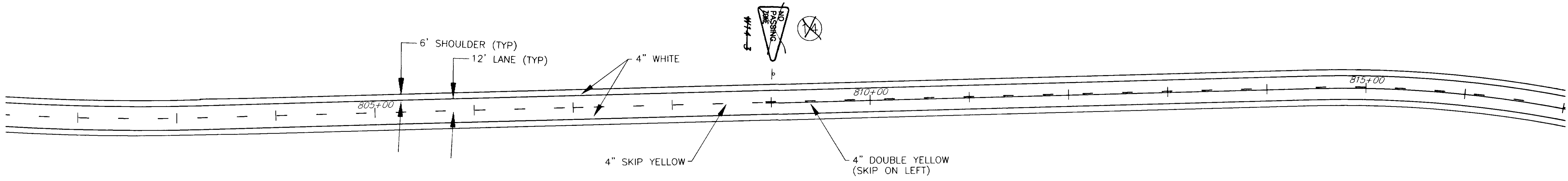
HAINES HIGHWAY  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 BIG BOULDER CREEK TO THE BORDER

ALASKA

**STRIPING PLAN**

DESIGNED BY: <i>K. MATTSON</i>	PROJECT NO. <b>71874</b>
DRAWN BY: <i>L. ROBERTSON</i>	DATE: <b>1999</b>
CHECKED BY: <i>M. LUKSHIN</i>	SHEET <b>K6</b>





NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

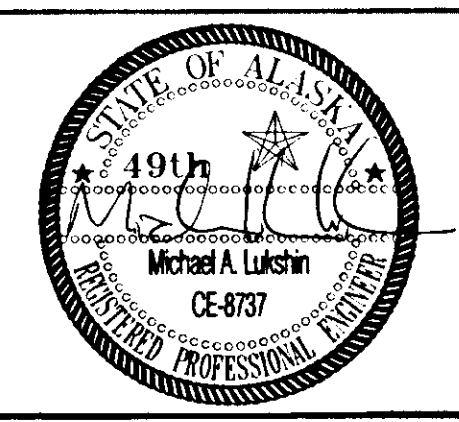
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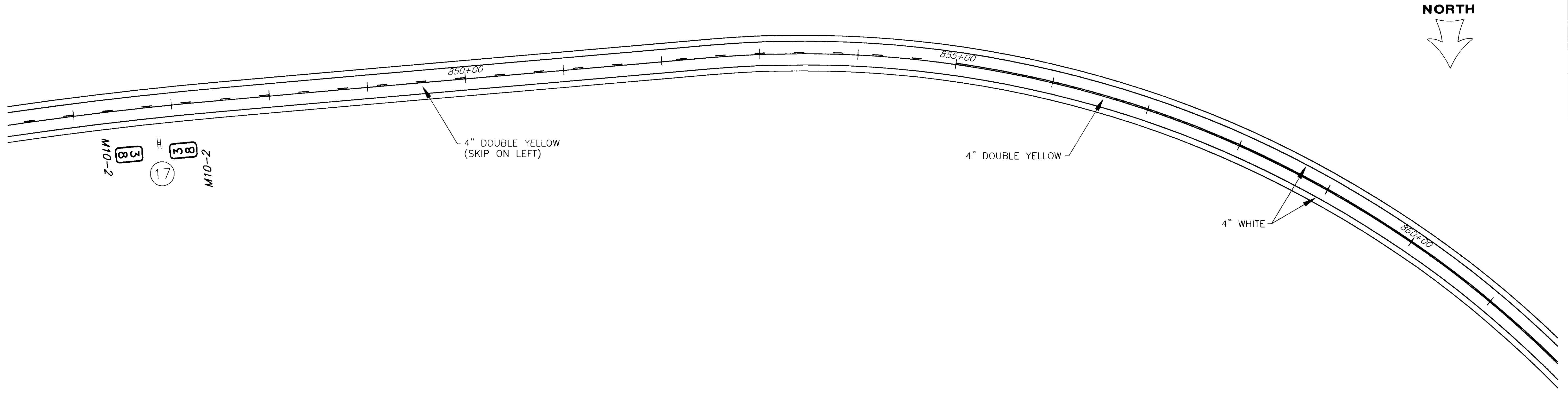
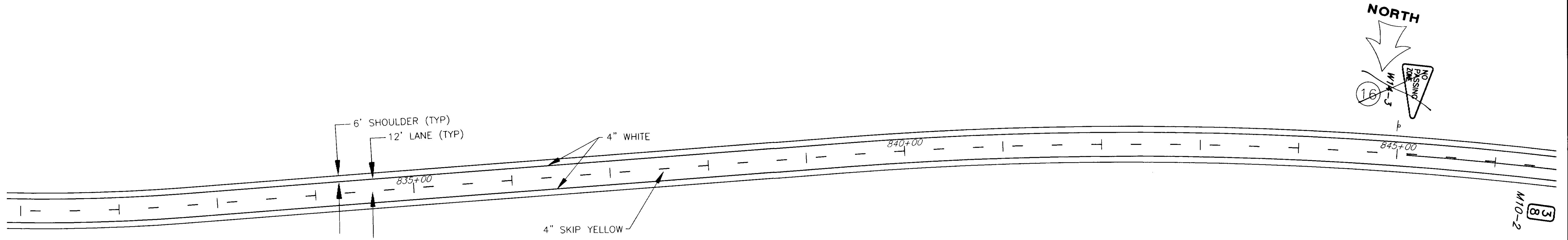
STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
 HAINES HIGHWAY  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 BIG BOULDER CREEK TO THE BORDER  
 ALASKA  
**STRIPING PLAN**

DESIGNED BY:  
 K. MATTSON  
 DRAWN BY:  
 L. ROBERTSON  
 CHECKED BY:  
 M. LUKSHIN

PROJECT NO.  
 71874  
 DATE:  
 1999  
 SHEET  
 K7





NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

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STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

HAINES HIGHWAY  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 BIG BOULDER CREEK TO THE BORDER

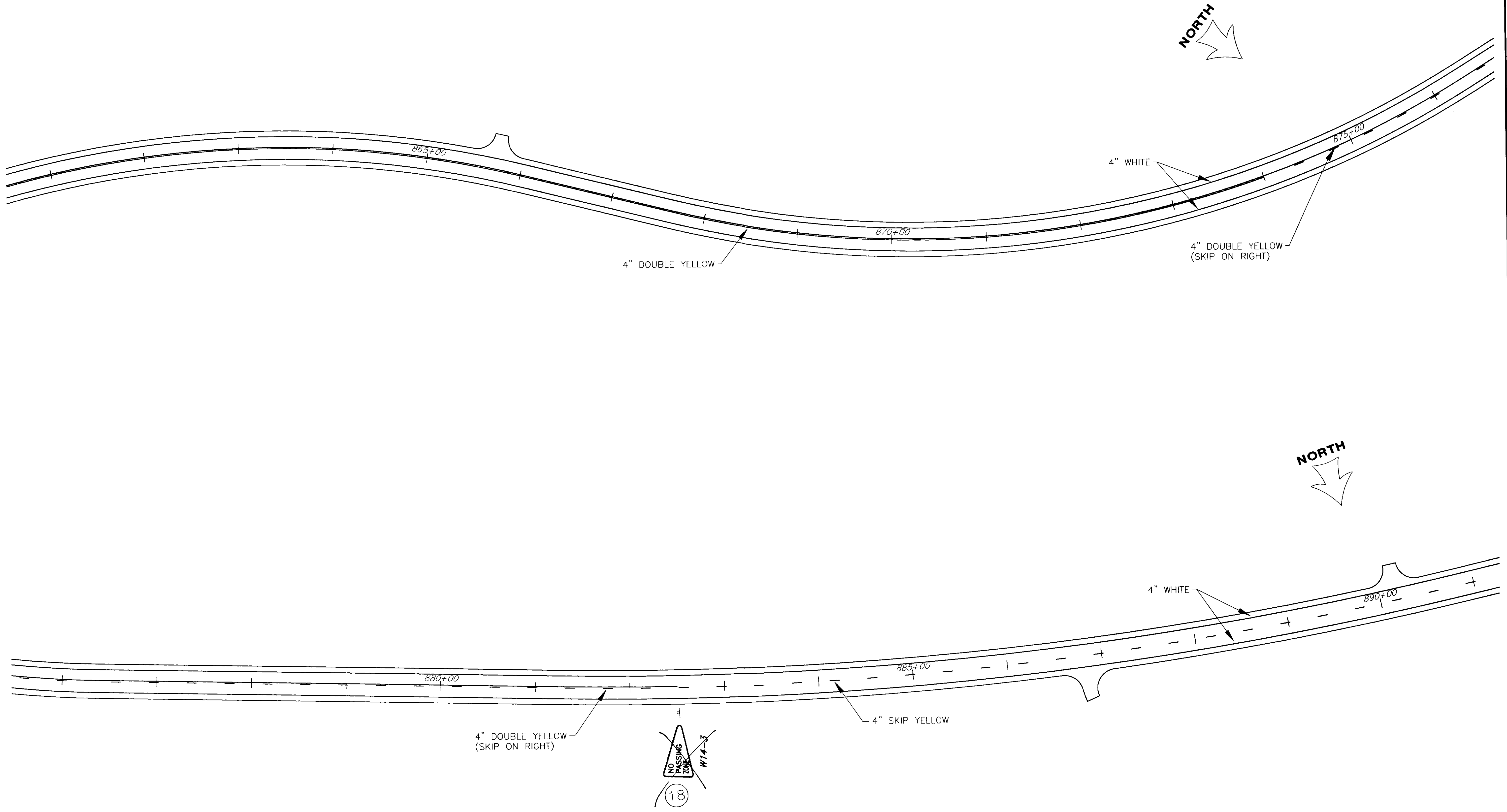
ALASKA

**STRIPING PLAN**

DESIGNED BY:	K. MATTSON
DRAWN BY:	L. ROBERTSON
CHECKED BY:	M. LUKSHIN

PROJECT NO.	71874
DATE:	1999
SHEET	K8





NORTH

NORTH

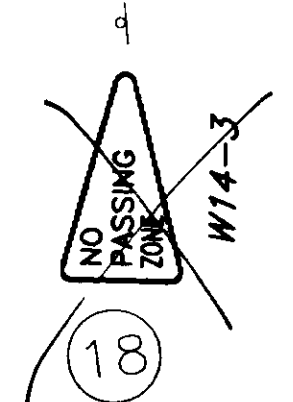
4" DOUBLE YELLOW

4" WHITE

4" DOUBLE YELLOW  
(SKIP ON RIGHT)

4" DOUBLE YELLOW  
(SKIP ON RIGHT)

4" SKIP YELLOW



NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

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BY:	DATE:	DESCRIPTION OF CHANGE:
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STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

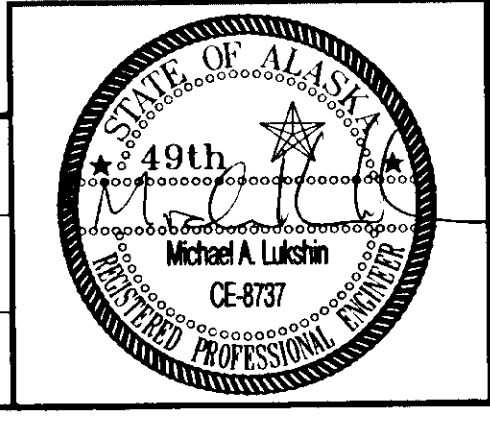
HAINES HIGHWAY  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 BIG BOULDER CREEK TO THE BORDER

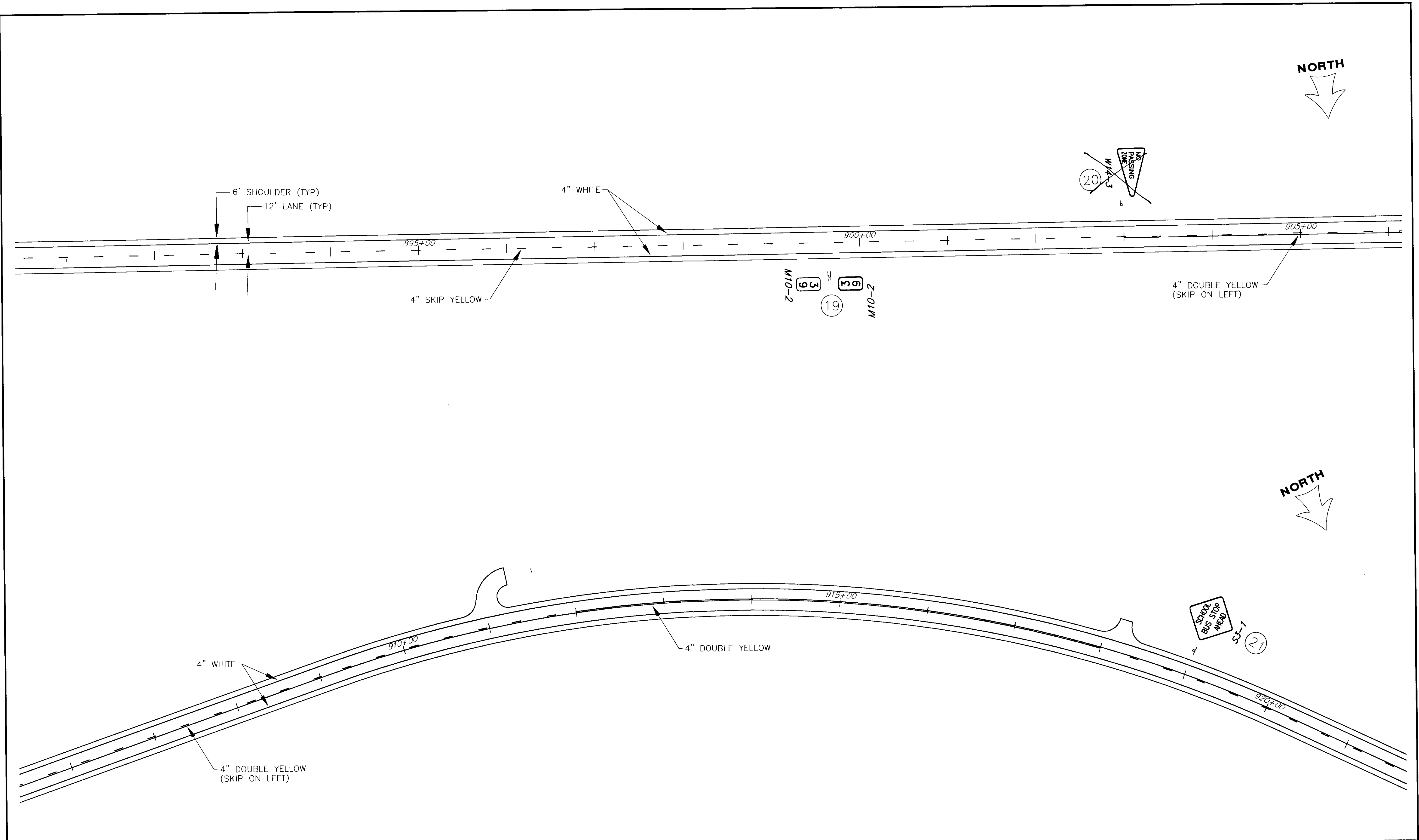
ALASKA

STRIPING PLAN

DESIGNED BY:	K. MATTSON
DRAWN BY:	L. ROBERTSON
CHECKED BY:	M. LUKSHIN

PROJECT NO.	71874
DATE:	1999
SHEET	K9





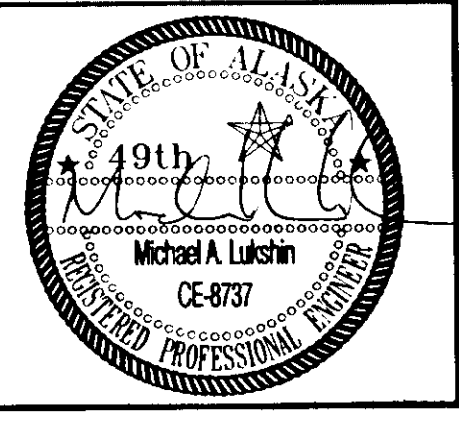
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<b>RECORD OF REVISIONS</b>		

STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES**  
SOUTHEAST REGION DESIGN & CONSTRUCTION

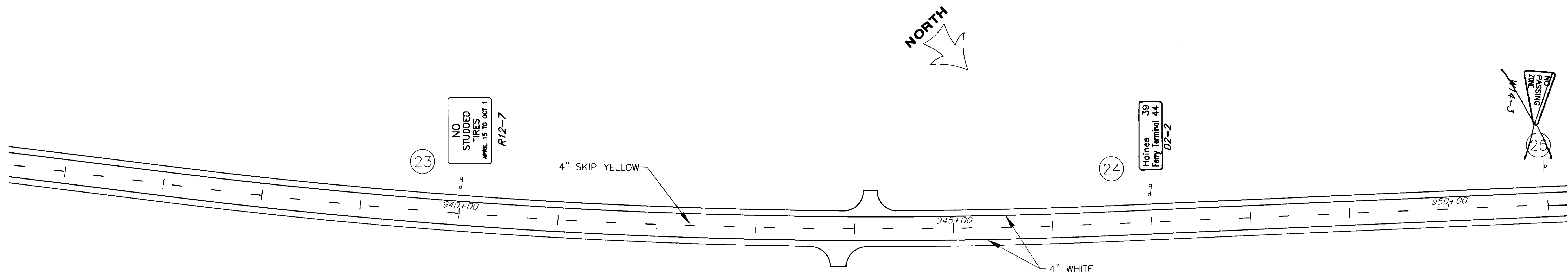
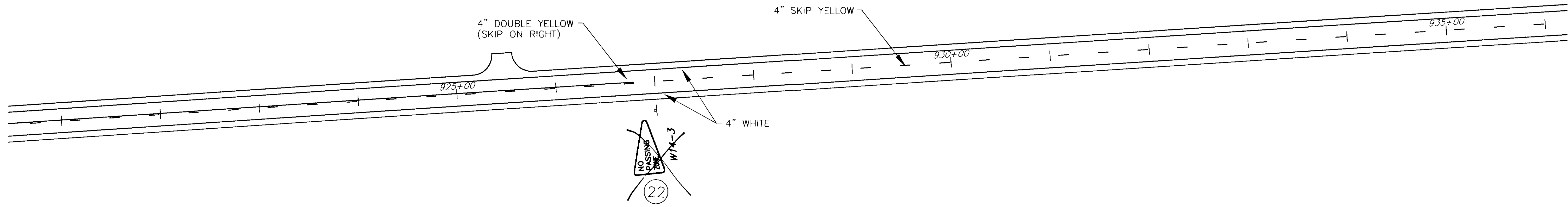
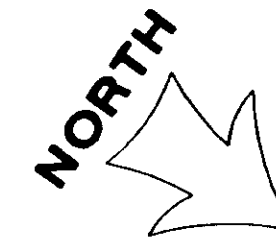
HAINES ALASKA  
**HAINES HIGHWAY**  
PROJECT NO. SHAK-095-6(20) ~ 71874  
BIG BOULDER CREEK TO THE BORDER  
**STRIPING PLAN**

NOTE: DO NOT SCALE FROM THESE PLANS--USE DIMENSIONS

DESIGNED BY: <b>K. MATTSON</b>	PROJECT NO. <b>71874</b>
DRAWN BY: <b>L. ROBERTSON</b>	DATE: <b>1999</b>
CHECKED BY: <b>M. LUKSHIN</b>	SHEET <b>K10</b>







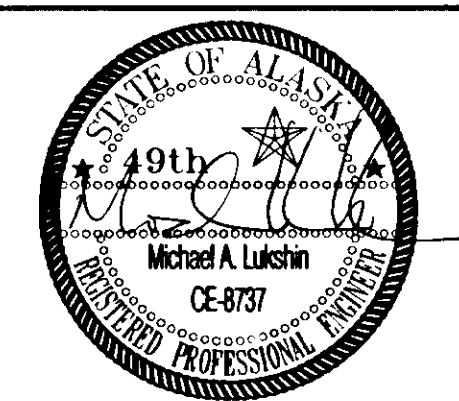
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

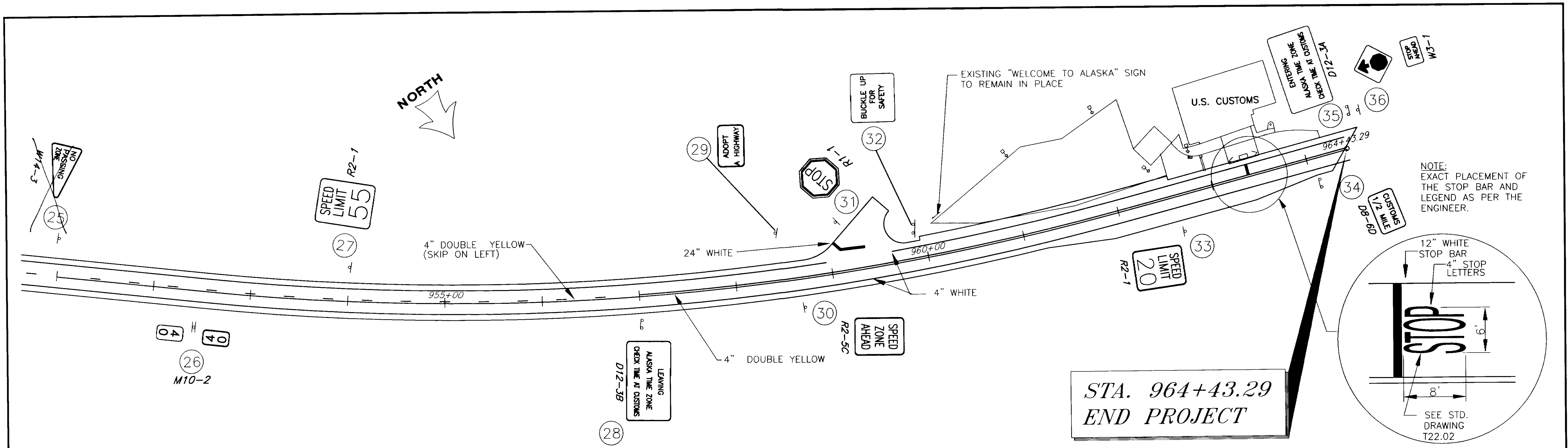
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STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES**  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES  
**HAINES HIGHWAY**  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 BIG BOULDER CREEK TO THE BORDER  
 ALASKA  
**STRIPING PLAN**

DESIGNED BY: <b>K. MATTSON</b>	PROJECT NO. <b>71874</b>
DRAWN BY: <b>L. ROBERTSON</b>	DATE: <b>1999</b>
CHECKED BY: <b>M. LUKSHIN</b>	SHEET <b>K11</b>





**STA. 964+43.29  
END PROJECT**

NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

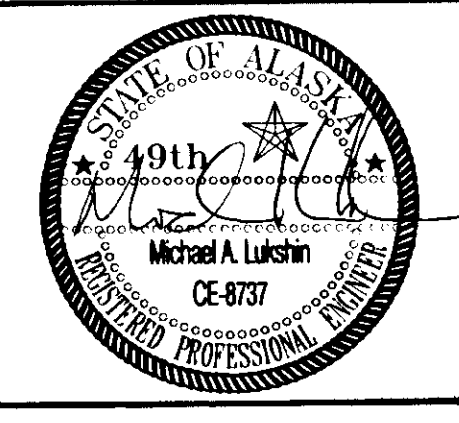
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STATE OF ALASKA  
**DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES**  
 SOUTHEAST REGION DESIGN & CONSTRUCTION

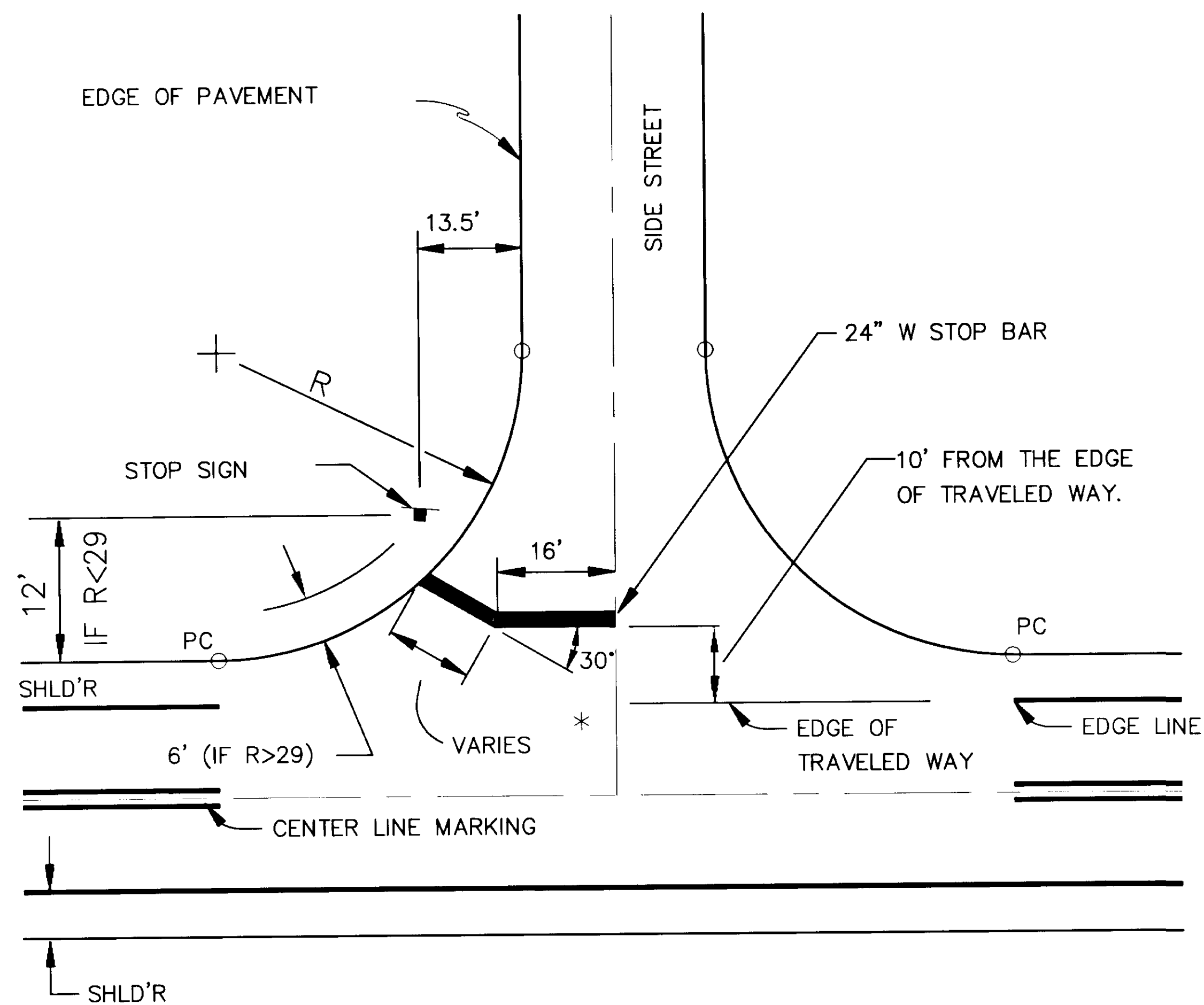
HAINES  
 HAINES HIGHWAY  
 PROJECT NO. SHAK-095-6(20) ~ 71874  
 BIG BOULDER CREEK TO THE BORDER  
 ALASKA  
**STRIPING PLAN**

DESIGNED BY:  
**K. MATTSON**  
 DRAWN BY:  
**L. ROBERTSON**  
 CHECKED BY:  
**M. LUKSHIN**

PROJECT NO.  
**71874**  
 DATE:  
**1999**  
 SHEET **K12**







**STOP BAR AND STOP SIGN  
INSTALLATION DETAIL**

(WITHOUT PATHWAY)

\* OMIT ANGLE IF LESS THAN 8'

NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

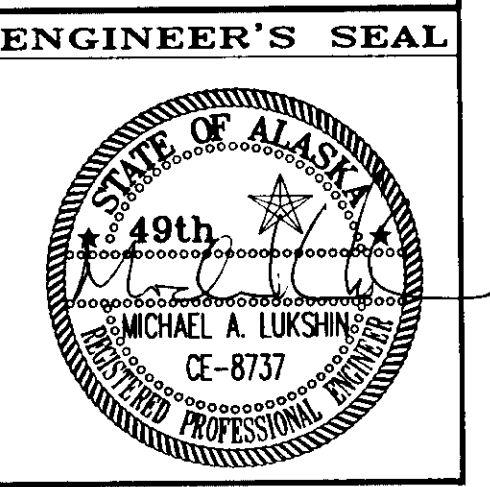
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RECORD OF REVISIONS		

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION

HAINES ALASKA  
HAINES HIGHWAY  
PROJECT NO. SHAK-095-6 (20) ~ 71874  
BIG BOULDER CREEK TO THE BORDER  
**STRIPING DETAILS**

DESIGNED BY: M. LUKSHIN  
DRAWN BY: D. STEVENS  
CHECKED BY: M. LUKSHIN

PROJECT NO. 71874  
DATE: 1999  
SHEET K14





### CONSTRUCTION SIGNS

CODE	LEGEND	SIZE	QUANT.
CW8-3B	PAVEMENT BREAK	48"X48"	4
CW13-1	20 M.P.H.	24"X24"	2
CW20-2F	DETOUR AHEAD	48"X48"	2
CW20-4E	ONE LANE ROAD 1500 FEET	48"X48"	4
CW20-7A	FLAGGER SYMBOL WITH SUPPLEMENTAL PLATE - 500 FT.	24"X18"	4
CW21-4F	ROAD WORK AHEAD	48"X48"	4
CW5-1	ROAD NARROWS	48"X48"	2
CW22-1	BLASTING ZONE 1000 FT	48"X48"	2
CW22-2	TURN OFF TWO-WAY RADIO	42"X36"	2
CW22-3	END BLASTING ZONE	42"X36"	2
R11-2	ROAD CLOSED	30"X48"	2
M4-10L		18"X48"	1
M4-10R		18"X24"	1
G20-4		36"X18"	1

### PERMANENT CONSTRUCTION SIGNS

CODE	LEGEND	SIZE	QUANT.
G20-1	ROAD WORK NEXT 6 MILES	60"X24"	2
G20-2A	END ROAD WORK	48"X24"	4
CW21-4F	ROAD WORK AHEAD	48"X48"	4

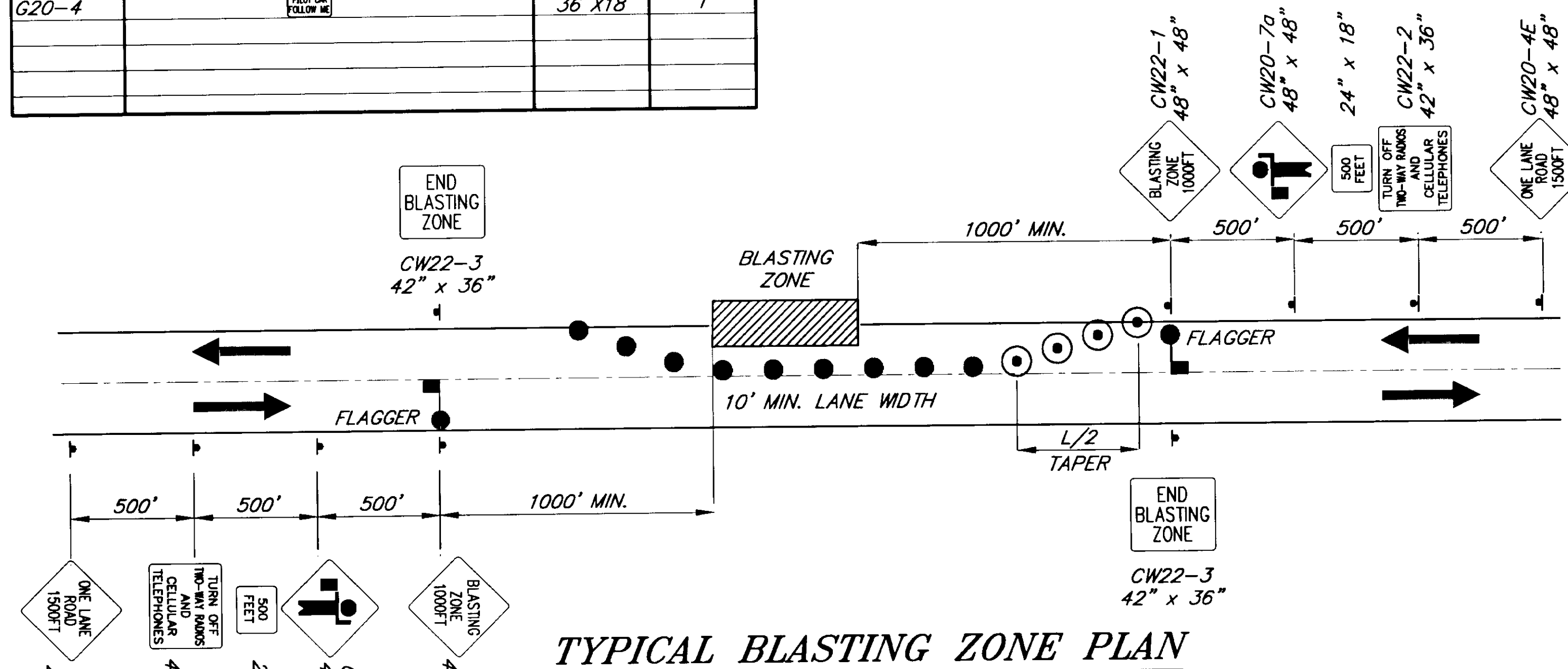
#### FORMULAS FOR L (TAPER LENGTH)

40 MPH OR LESS  $L = \frac{W \times S^2}{60}$  WHERE W = WIDTH OF OFFSET  
S = POSTED SPEED LIMIT OR ANTICIPATED OPERATING SPEED

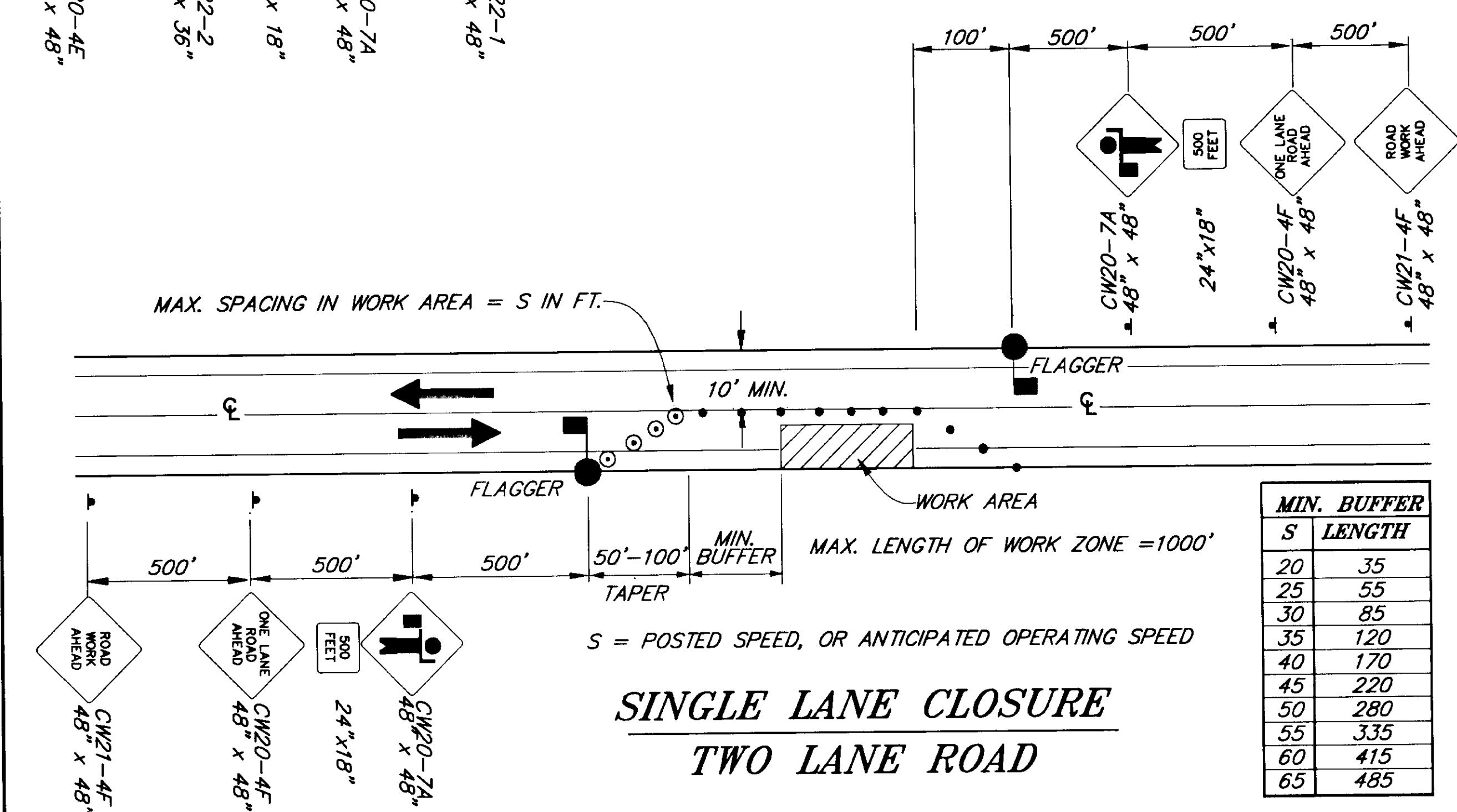
45 MPH OR GREATER..... L = WxS  
DRUM OR CONE SPACING..... = S (IN FEET)

### TRAFFIC CONTROL NOTES

- TWO LANES SHALL BE MAINTAINED AT ALL TIMES IN NON-WORK AREAS AND DURING NON-WORKING HOURS.
- TEMPORARY DRIVING LANES SHALL HAVE A MINIMUM WIDTH OF 10'-0".
- DRIVEWAYS MAY BE CLOSED DURING ACTUAL WORK ON A GIVEN DRIVEWAY, PROVIDED THAT THE CLOSURE DOES NOT EXCEED 8 HOURS AND THE AFFECTED RESIDENTS HAVE BEEN GIVEN 24 HOURS NOTICE OF THE CLOSURE.
- THE MAXIMUM LENGTH OF A ONE LANE, TWO-WAY WORK AREA SHALL BE 2500 FT. THE MINIMUM SEPARATION BETWEEN ONE LANE WORK AREAS SHALL BE 2000 FT.
- TEMPORARY PAVEMENT MARKINGS WILL BE REQUIRED AS DESCRIBED IN SECTION 643-3.09 OF THE SPECIFICATIONS.
- FLOOD LIGHTS SHALL BE PROVIDED FOR FLAGGER STATIONS DURING NIGHT OPERATIONS.
- A SINGLE FLAGGER MAY BE APPROVED BY THE ENGINEER IF THE ENTIRE WORK AREA IS VISIBLE FROM THE FLAGGER STATION.
- THE CONSTRUCTION SIGN SUMMARY SHOWN IN THESE PLANS IS TO BE USED FOR COST ESTIMATING ONLY. ADDED SIGNS MAY BE REQUIRED BY THE ENGINEER.
- CONSTRUCTION SIGNING SHALL BE IN PLACE ONLY WHEN THE CONDITIONS EXIST FOR WHICH THE SIGNS ARE INTENDED.
- THE CONTRACTOR SHOULD BE AWARE OF AND ACCOUNT FOR, IN HIS CONSTRUCTION PLAN, THE HIGHER TRAFFIC VOLUMES ASSOCIATED WITH THE ARRIVAL AND DEPARTURE OF FERRIES AT THE ALASKA MARINE HIGHWAY TERMINAL IN HAINES.
- CHANNELIZATION DEVICES, IF USED AT NIGHT, SHALL BE LIT IN ACCORDANCE WITH THE ALASKA TRAFFIC MANUAL.
- THE CONTRACTOR SHALL NOT PLACE ADVANCED WARNING SIGNS ON THE CANADIAN SIDE OF THE BORDER UNLESS PERMISSION HAS BEEN SECURED FROM THE CANADIAN GOVERNMENT.
- THE CONTRACTOR MAY CLOSE THE ROADWAY DURING THE HOURS THE CUSTOMS BORDER STATION IS CLOSED. ROAD CLOSURE SHALL BE IN ACCORDANCE WITH SECTION 643-3.02 OF THE SPECIAL PROVISIONS.
- THE CONTRACTOR SHALL MAINTAIN A PORTABLE CHANGEABLE MESSAGE SIGN BOARD AT THE NORTH END OF THE HAINES AIRPORT AND AT THE BORDER (E.O.P.) TO NOTIFY MOTORIST OF ROAD CLOSURES AND OTHER SIGNIFICANT EVENTS.
- DURING NO-ROAD CLOSURE HOURS, THE TRAVELING PUBLIC SHALL BE ABLE TO TRAVEL THROUGH THE PROJECT IN EITHER DIRECTION IN 30 MINUTES OR LESS.
- THE DOUBLE FINES SIGNS SHALL BE POSTED AT THE PROJECT LIMITS AS DETAILED ON STANDARD DRAWINGS C-04.11.



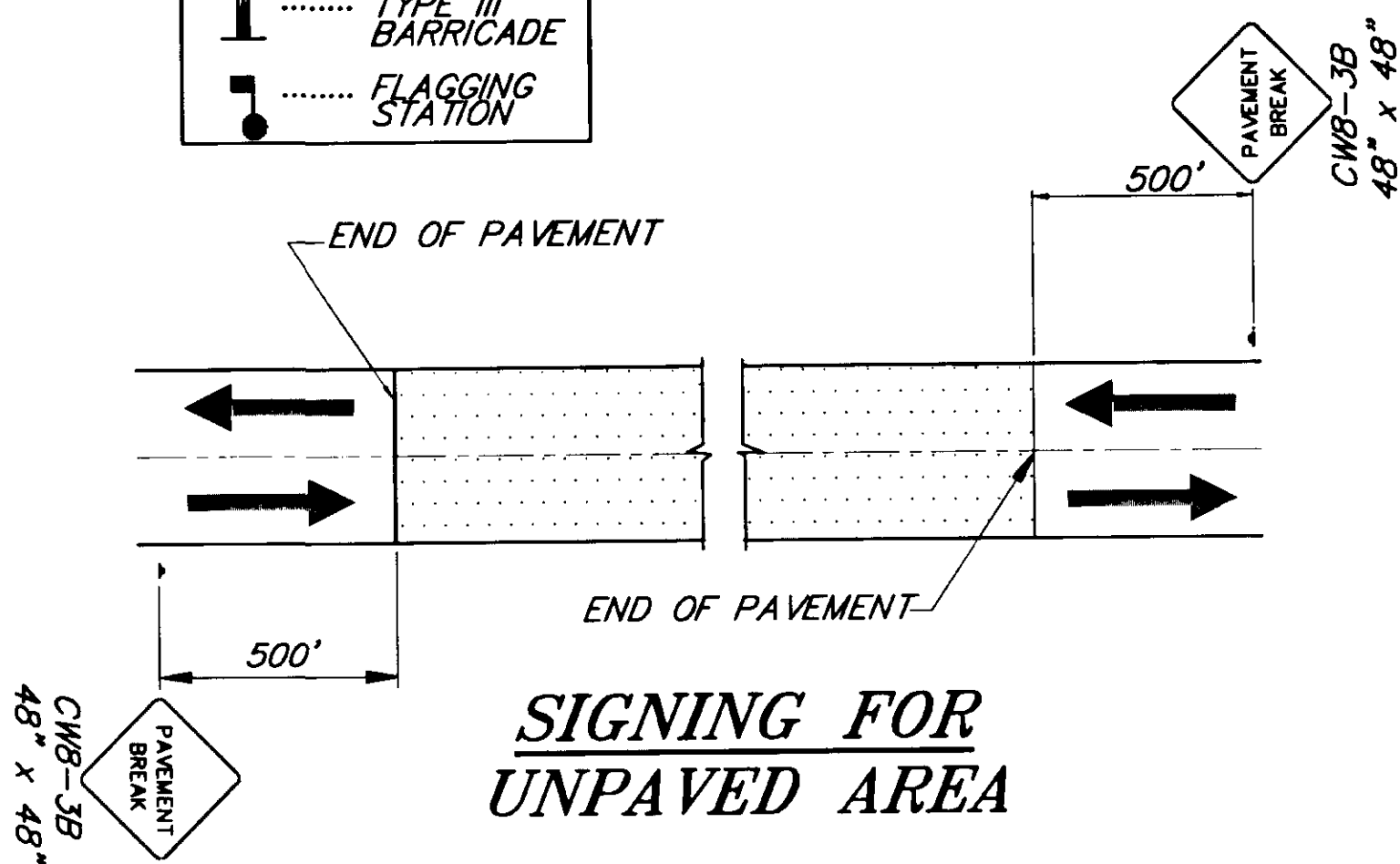
TYPICAL BLASTING ZONE PLAN



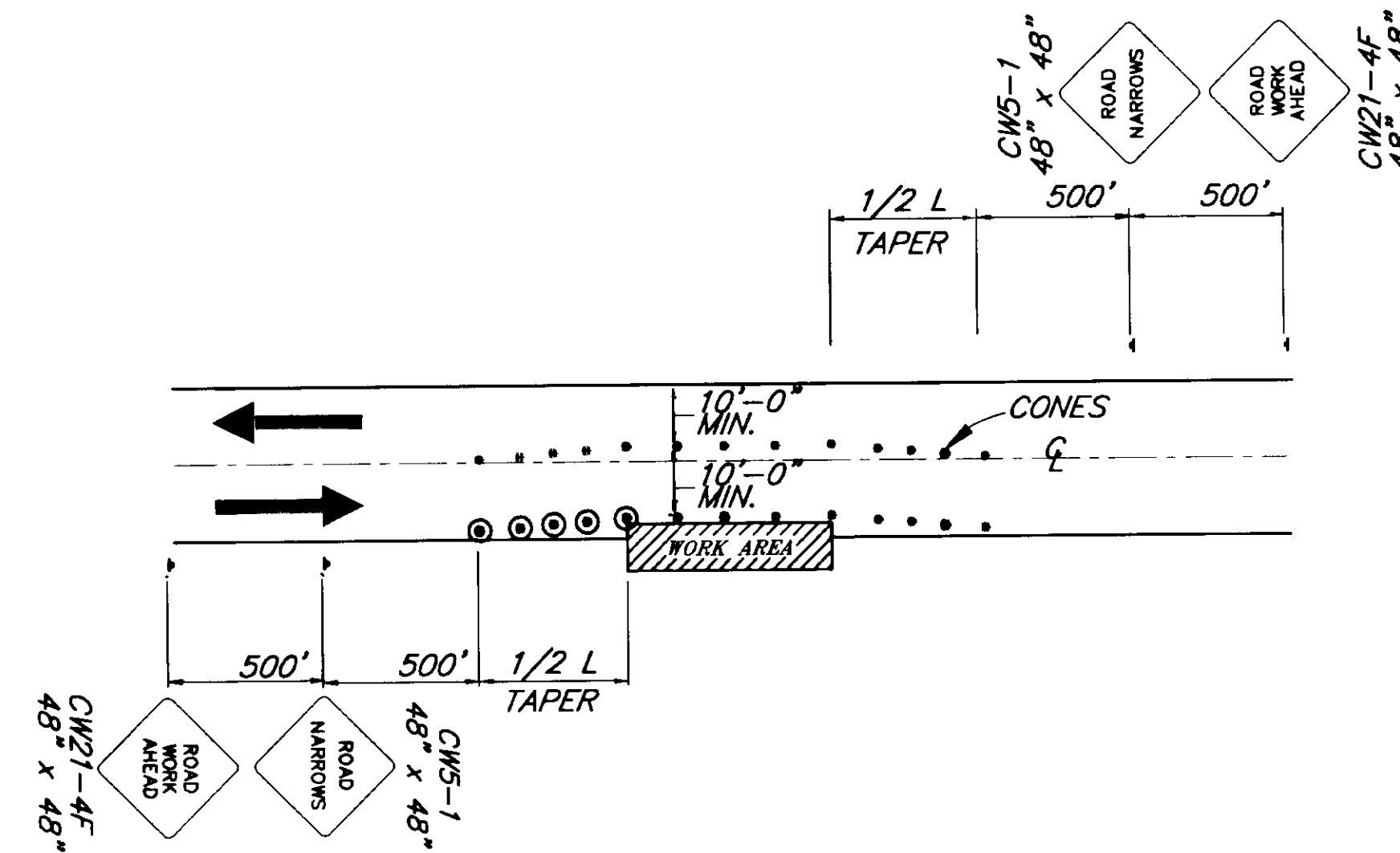
SINGLE LANE CLOSURE TWO LANE ROAD

**LEGEND**

- ..... SIGN
- ..... CONE
- ..... DRUM
- ..... TYPE III BARRICADE
- ..... FLAGGING STATION



SIGNING FOR UNPAVED AREA



ROADWAY ENCROACHMENT

NOTE: IF ONLY ONE LANE IS EFFECTED BY ROAD WORK (THAT IS, THE CONES ALONG THE WORK AREA ARE NO CLOSER THAN 10' TO CENTERLINE) THE CENTERLINE CONES FOR THE OPPOSING LANE MAY BE DELETED.

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

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BY: DATE:	[PlotStamp Eval] Leonard Tue, 16/Nov/99 09:21am

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

HAINES

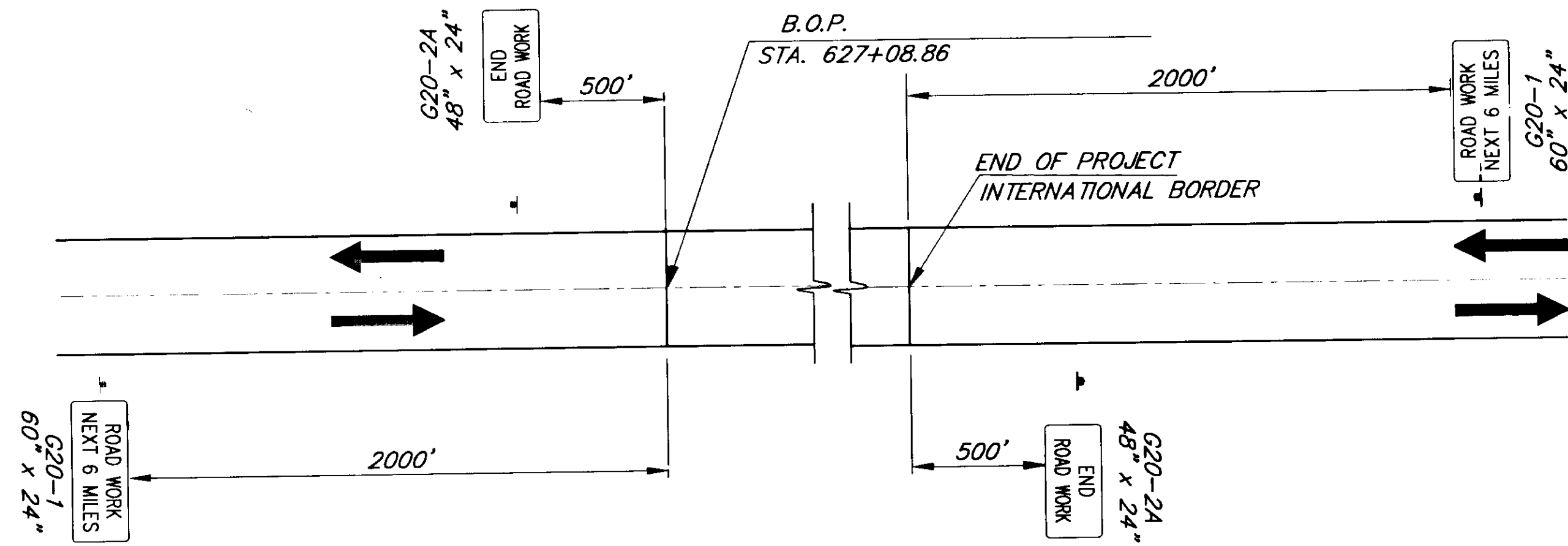
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874

### TRAFFIC CONTROL PLAN

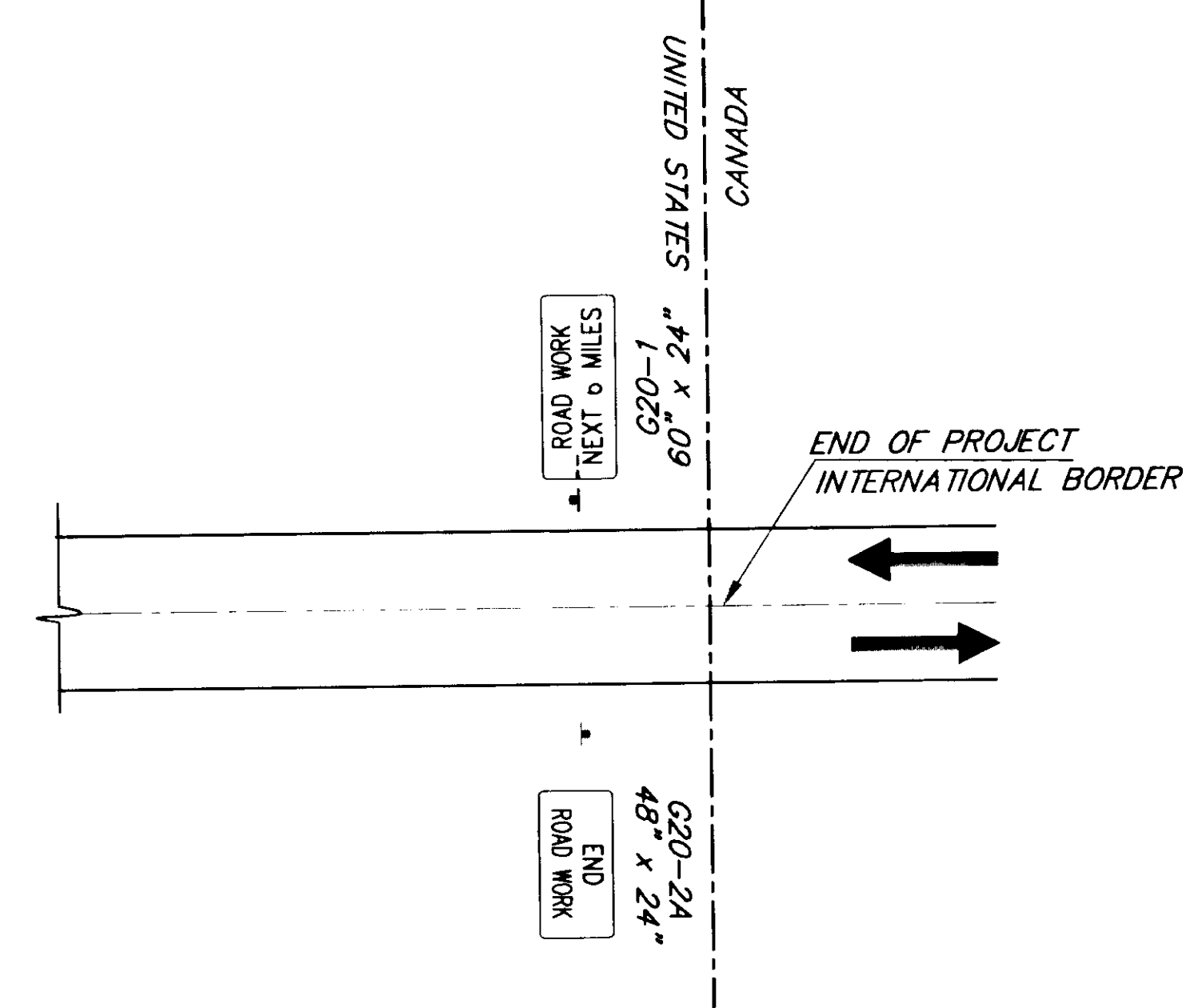
DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	M. LUKSHIN	SHEET	71

ENGINEER'S SEAL

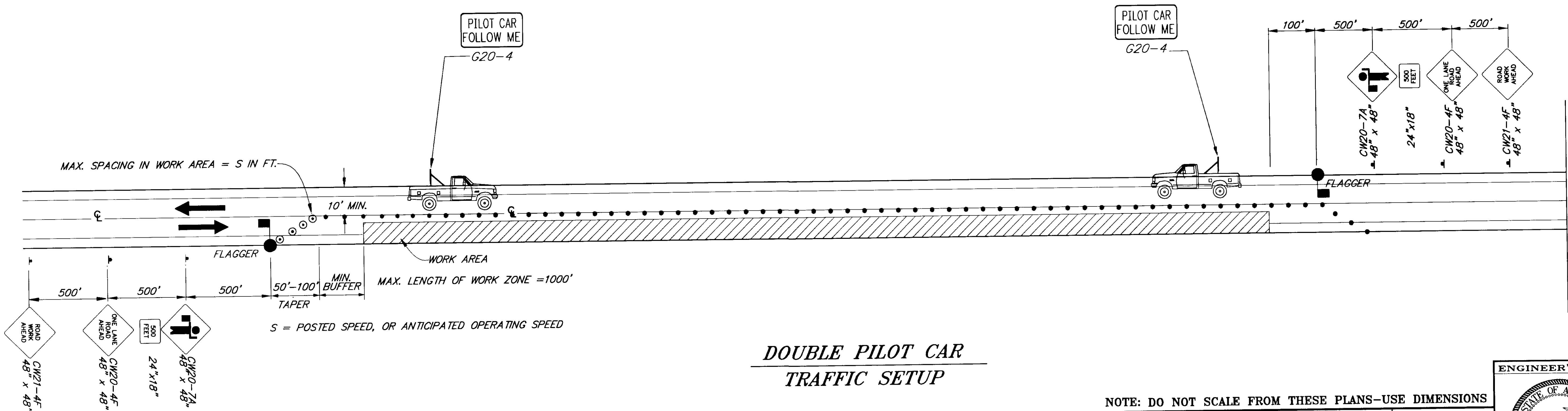




**PERMANENT CONSTRUCTION SIGNING  
(PREFERRED)**



**PERMANENT CONSTRUCTION SIGNING  
ALTERNATE SETUP AT BORDER**



**DOUBLE PILOT CAR  
TRAFFIC SETUP**

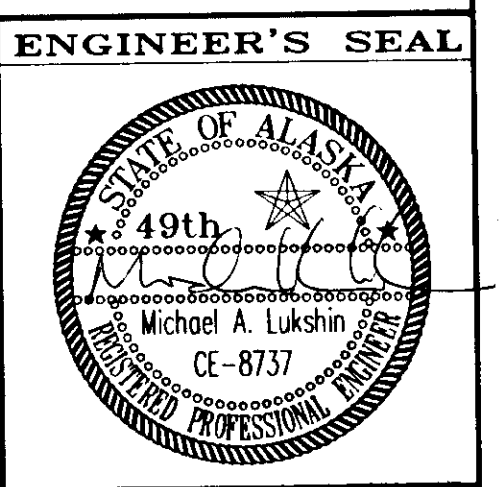
NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

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STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION DESIGN & CONSTRUCTION

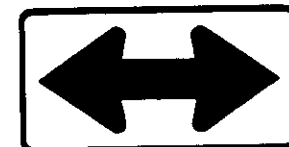
HAINES  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
ALASKA  
TRAFFIC CONTROL PLAN

DESIGNED BY:	C. HAKARI	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	M. LUKSHIN	SHEET	T2

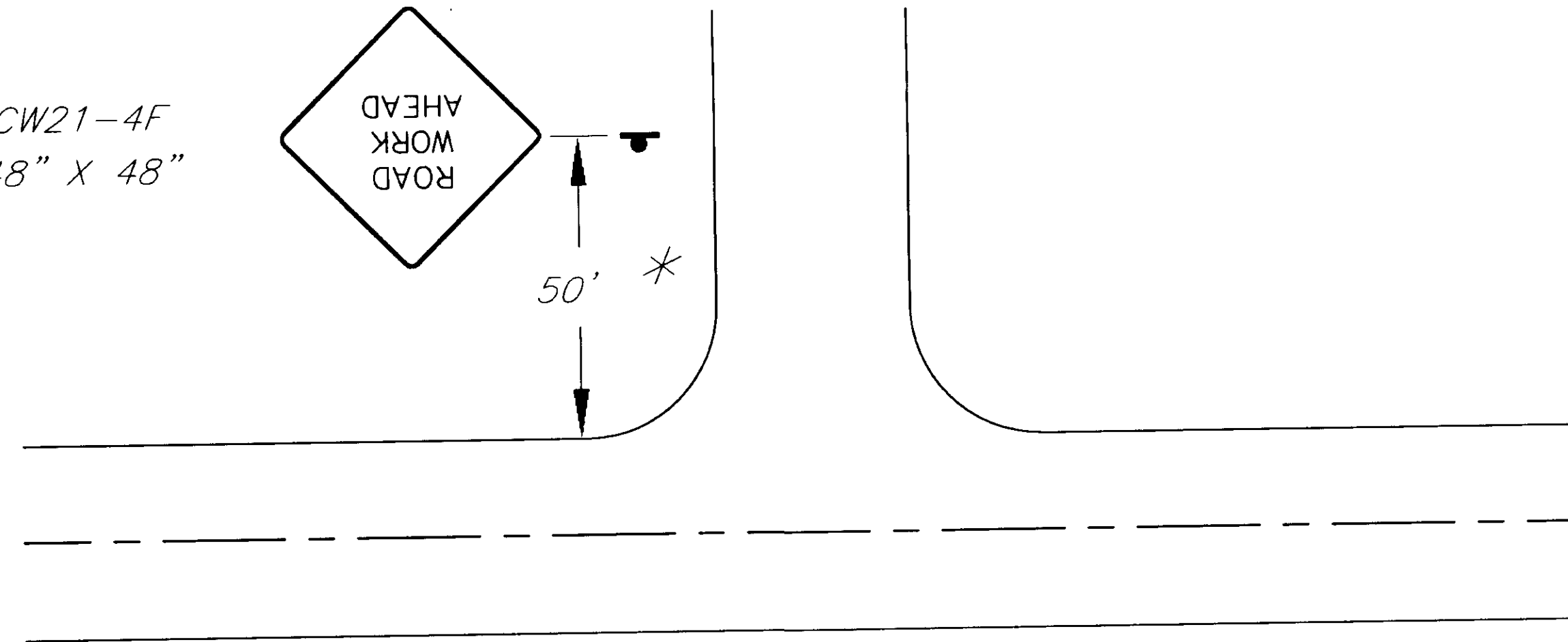
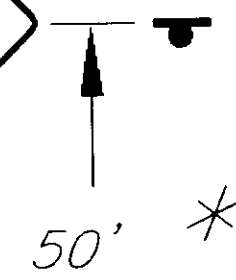
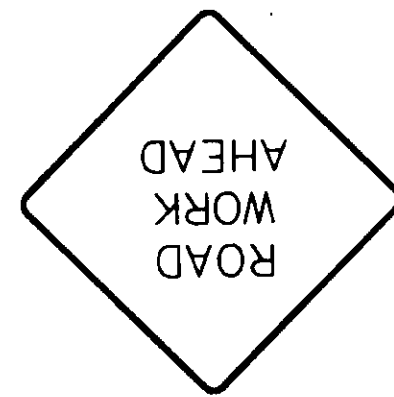


\* CONSTRUCTION SIGNS SHALL BE PLACED SUCH THAT THEY DO NOT OBSCURE EXISTING TRAFFIC SIGNS.

CW1-7  
36" X 18"



CW21-4F  
48" X 48"



PERMANENT CONSTRUCTION SIGNING  
SIDE STREETS

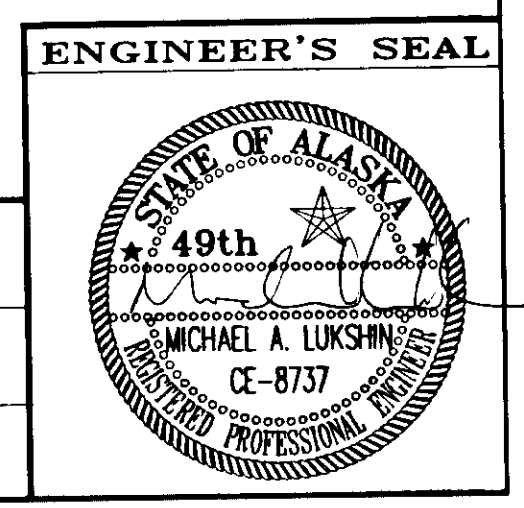
NOTE: DO NOT SCALE FROM THESE PLANS—USE DIMENSIONS

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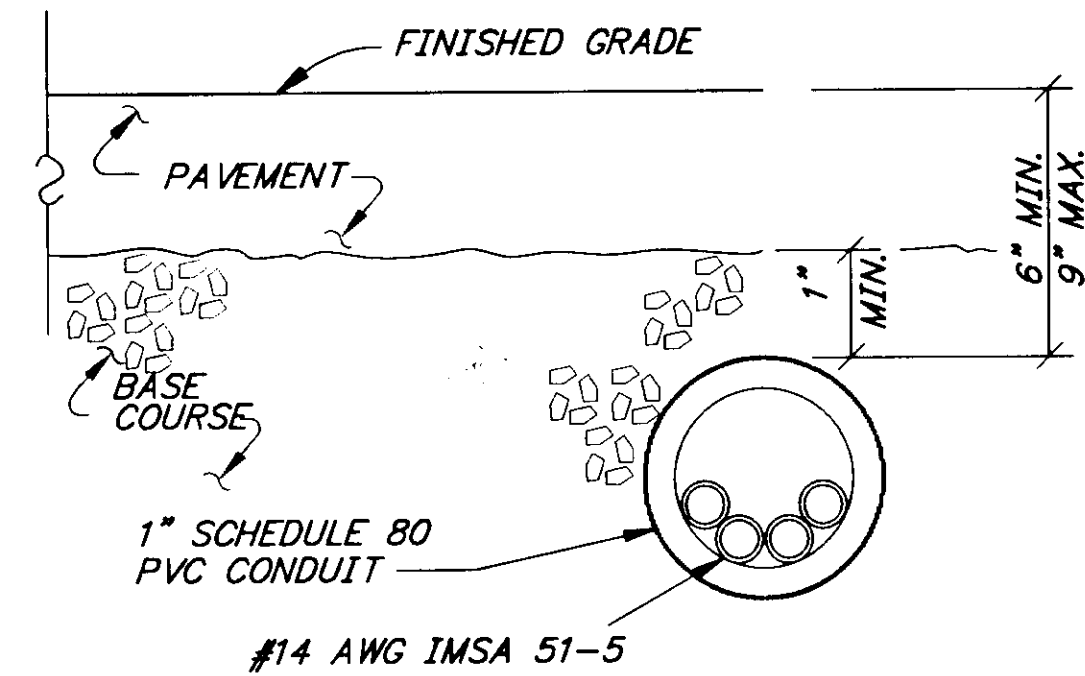
STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION

HAINES  
HAINES HIGHWAY  
BIG BOULDER CREEK TO THE BORDER  
PROJECT NO. SHAK-095-6(20)-71874  
TRAFFIC CONTROL PLAN

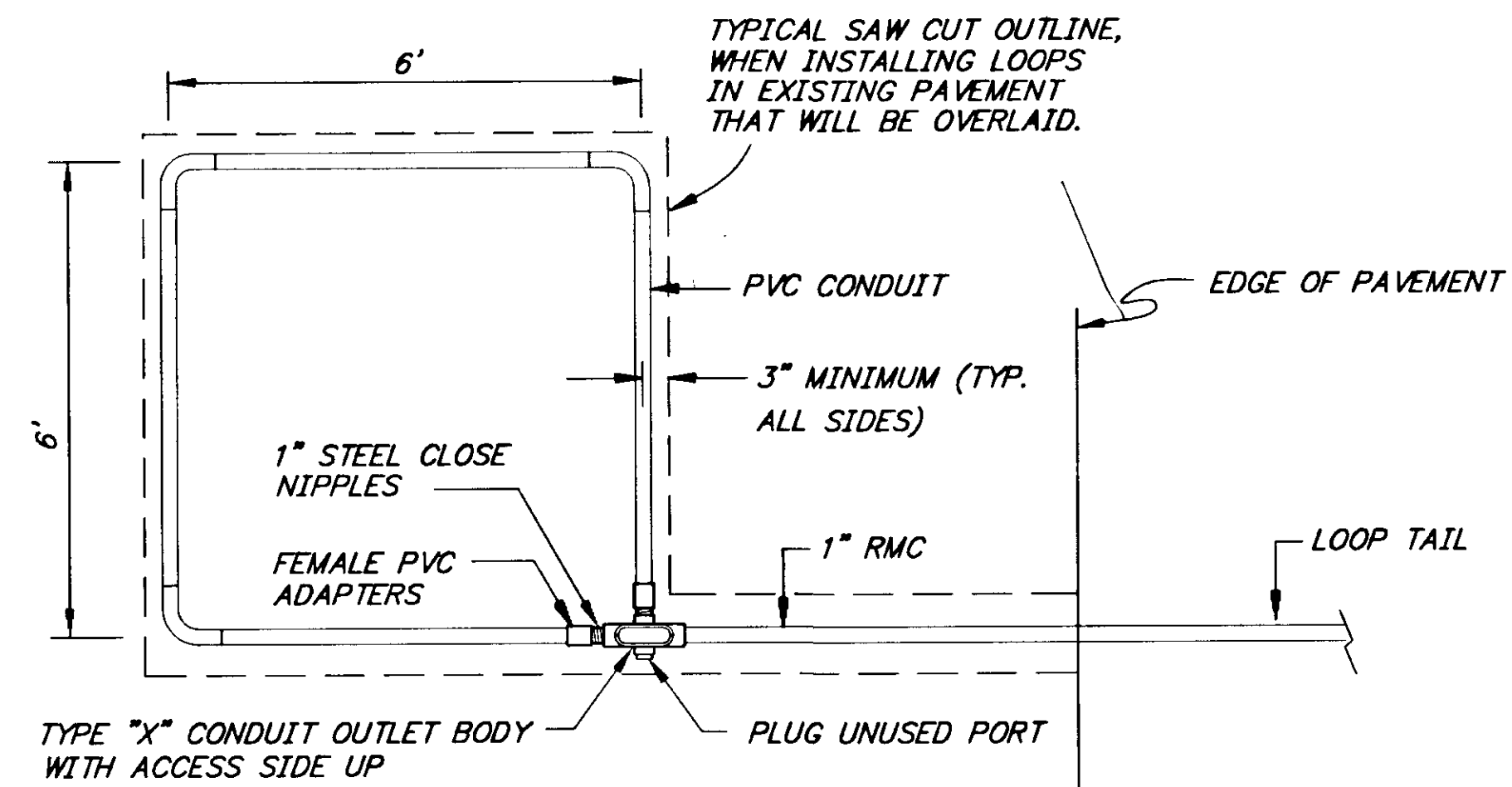
DESIGNED BY:	M. LUKSHIN	PROJECT NO.	71871
DRAWN BY:	D. STEVENS	DATE:	1999
CHECKED BY:	M. LUKSHIN	SHEET	13



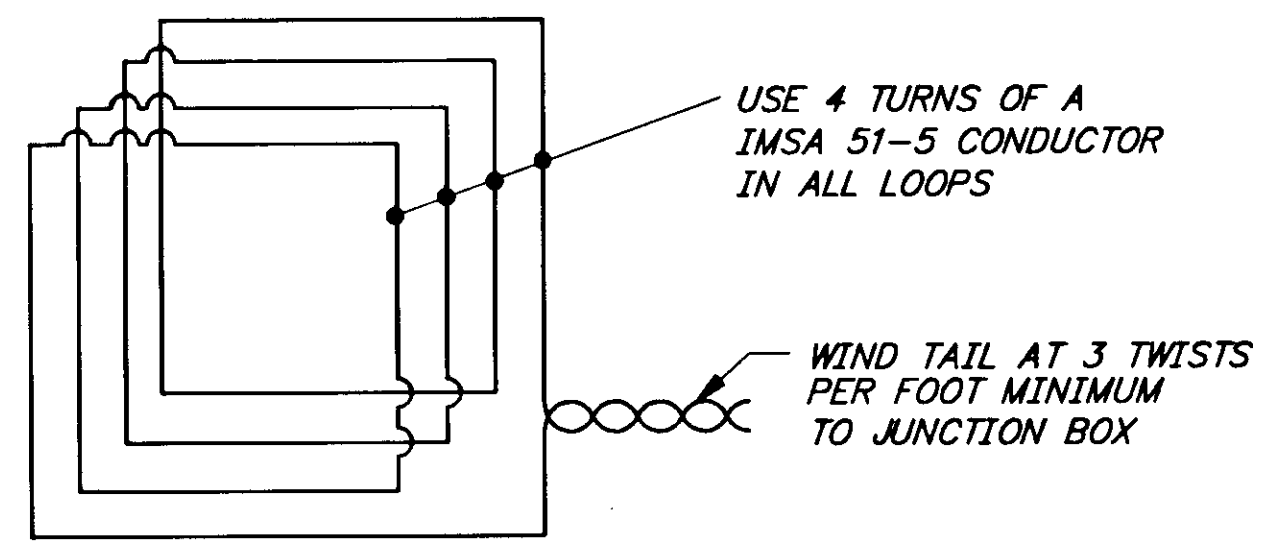




**SECTION A-A**



**SHOULDER SECTION**



**LOOP WIRING DETAIL**

**TYPICAL PVC CONDUIT ENCASED LOOP DETECTOR INSTALLATION**

FOR INSTALLATION UNDER NEW PAVEMENT

**GENERAL NOTES**

1. EACH LOOP DETECTOR SHALL CONSIST OF A SINGLE PIECE OF #14 AWG IMSA 51-5 DUCTED CONDUCTOR INSTALLED IN 1" SCHEDULE 80 PVC CONDUIT. FORM ALL LOOPS 6 FEET SQUARE, SOLVENT WELDING ALL PVC TO PVC JOINTS. USE TYPE X CONDUIT OUTLET BODIES THAT ARE MADE OF HOT DIP GALVANIZED STEEL TO JOIN THE LOOPS AND TAILS.
2. INSTALL 4 TURNS OF IMSA 51-5 DUCTED CONDUCTOR IN ALL LOOPS AND PROVIDE TAILS THAT EXTEND TO THE JUNCTION BOX SPECIFIED ON THE PLANS. USE #14 AWG CONDUCTOR IN A POLYETHYLENE TUBE CONFORMING TO IMSA SPECIFICATION 51-5. WIND THE TAIL CONDUCTORS TOGETHER AT A RATE OF 3 TWISTS PER FOOT.
3. INSTALL ALL LOOP DETECTORS PRIOR TO OVERLAYING EXISTING PAVEMENT OR PAVING A NEW ROADWAY.
4. INSTALL ALL LOOP DETECTORS SLOPED TO DRAIN INTO THE JUNCTION BOX THE LOOP TAIL ENTERS.
5. NO MINIMUM CLEARANCE IS REQUIRED BETWEEN A LOOP AND A TAIL OR BETWEEN TAILS. LOOP TAILS SHALL NOT CROSS LOOP CONDUITS.
6. TEST ALL LOOP DETECTORS FOR CONTINUITY AND INSULATION INTEGRITY PRIOR TO SEALING THE LOOPS UNDER ASPHALT.
7. WHEN INSTALLING LOOP DETECTORS IN EXISTING PAVEMENT, CUT THE ASPHALT WITH A SAW AND REMOVE ALL ASPHALT WITHIN THE SAW CUT. MATCH EXISTING PAVEMENT THICKNESS WHEN REPAIRING THE CUTOUT.
8. WHERE EXISTING PAVEMENT WILL NOT BE OVERLAID, ENCLOSE ALL LOOPS THAT ENTER A COMMON JUNCTION BOX WITHIN A TRAPEZOIDAL SAW CUT. CUT TO WITHIN 1 FOOT OF THE LANE AND EDGE LINES, PRESERVING THESE PAVEMENT MARKINGS; REMOVE THE ASPHALT TO THE LIP OF THE GUTTER WHEN THERE ARE NO EDGE LINES. CUT ACROSS LANE LINES WHEN LOOPS IN ADJACENT LANES ARE SIDE BY SIDE. CUT TRENCHES A MINIMUM OF 3 FEET WIDE WHEN INSTALLING LOOP TAILS ACROSS A LANE; TRENCHES CROSSING A SHOULDER ONLY MAY BE A MINIMUM 1 FOOT WIDE.
9. HEAT AND TACK COAT THE EDGES OF EXISTING PAVEMENT PRIOR TO PAVING THE CUTOUTS. COMPACT THE ASPHALT MIXTURE WITH A SELF PROPELLED STEEL WHEELED ROLLER. THE ASPHALT MIX SHALL CONFORM TO SECTION 401 OF THE SPECIFICATIONS, AND APPROVED FOR USE BY THE ENGINEER.
10. MAINTAIN THE REPLACEMENT ASPHALT MIX AT A TEMPERATURE ABOVE 225° F UNTIL THE TIME OF APPLICATION; IF NECESSARY, STORE THE MIX IN AN INSULATED BOX TO MAINTAIN THE SPECIFIED TEMPERATURE.

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

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STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
SOUTHEAST REGION

KETCHIKAN

HAINES HIGHWAY  
BIG BOULDER CREEK TO BORDER  
PROJECT NO. SHAK-095-6(20) ~ 71874  
**LOOP DETECTOR INSTALLATION DETAILS**

ALASKA

DESIGNED BY:	M. LUKSHIN	PROJECT NO.	71874
DRAWN BY:	L. ROBERTSON	DATE:	1999
CHECKED BY:	M. LUKSHIN	SHEET	T4

