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STATE OF VERMONT
AGENCY OF TRANSPORTATION

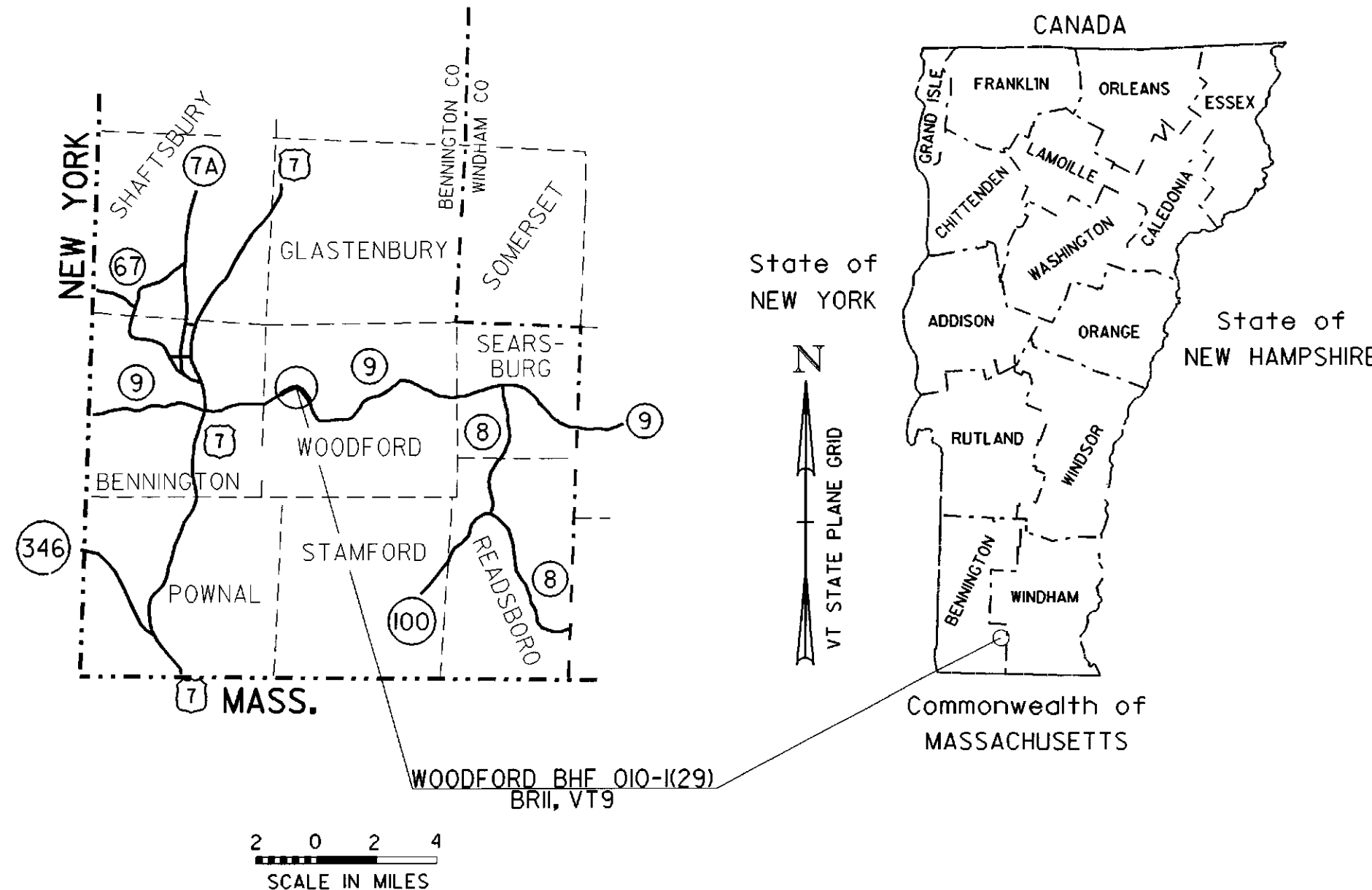


PROPOSED IMPROVEMENT
TOWN OF WOODFORD
COUNTY OF BENNINGTON
VT. ROUTE 9 - PRINCIPAL ARTERIAL

PROJECT LOCATION : BEGINNING AT A POINT 1.163 MILES EAST OF THE BENNINGTON - WOODFORD TOWN
LINE AND EXTENDING EASTERLY 0.166 MILES.

PROJECT DESCRIPTION : WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES REPLACEMENT AND
WIDENING OF BRIDGE NO. 11 OVER THE ROARING BRANCH OF THE WALLOOMSAC RIVER
AND NECESSARY APPROACH WORK GENERALLY ALONG EXISTING ALIGNMENT.

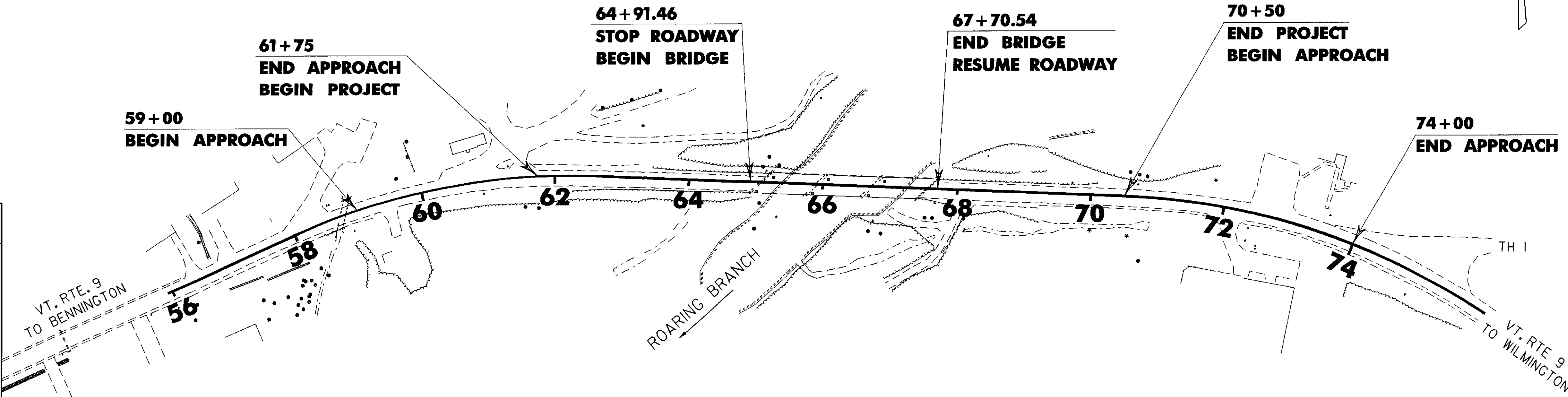
LENGTH OF ROADWAY = 595.92 FEET = 0.113 MILES
LENGTH OF BRIDGE = 279.08 FEET = 0.053 MILES
LENGTH OF PROJECT = 875.00 FEET = 0.166 MILES



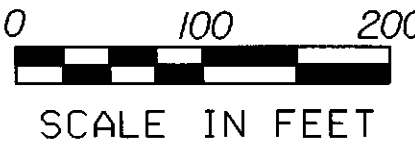
RECORD PLANS	
CONTRACTOR	RENAUD BROTHERS, INC. - VERNON, VT
RESIDENT ENGINEER	RON LEMAIRE
CONSTRUCTION BEGAN	JANUARY 9, 2006
CONSTRUCTION COMPLETE	JULY 2, 2008
RECORD PLANS BY	R. LEMAIRE, N. GARBACIK
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN	
BY	RESIDENT ENGINEER
DATE	10/07/09
NOTE Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives	

TRAFFIC DATA		
	2002	2022
ADT	5000	6700
DHV	N/A	1100
ADTT	490	790
TZ	8	10
DZ	N/A	51
V		50 MPH
ESAL'S	(2002-2022)	6,672,000
ESAL'S	(2002-2042)	17,913,000

CONVENTIONAL SYMBOLS	
COUNTY LINE	
TOWN LINE	
LIMITS OF ACCESS	
POINT OF ACCESS	
FENCE LINE	
STONE WALL	
TRAVELED WAY	
GUARD RAIL	
RAILROAD	
SURVEY LINE	
CULVERT	
POWER POLE	
TELEPHONE POLE	
TREES	
CONTROL OF ACCESS	
PROPERTY LINE	
R.O.W. TAKING LINE	
SLOPE RIGHTS	
TOP OF CUT	
TOE OF SLOPE	



SURVEYED BY :	MOREAU
SURVEYED DATE :	DEC 1988
DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	N/A



THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2001 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

de039t1t.1 03-OCT-2005

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED DATE 10-3-05
PROJECT MANAGER : M. EVANS-MONGEON
PROJECT NAME : WOODFORD
PROJECT NUMBER : BHF 010-1(29)
SHEET 1 OF 106 SHEETS

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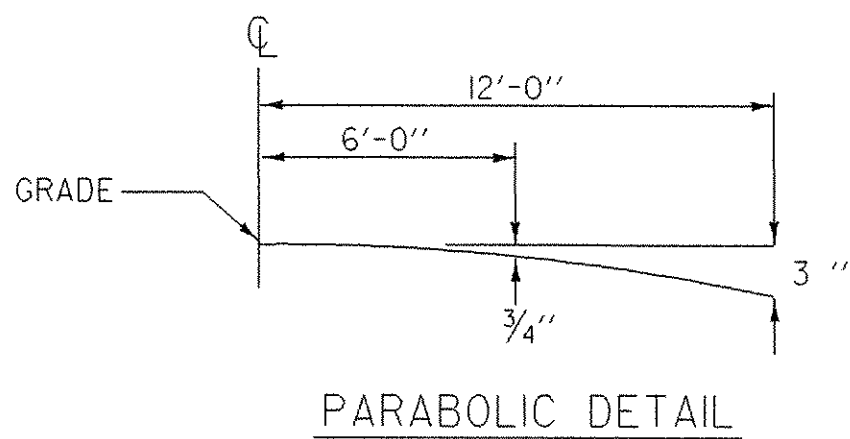
STANDARDS

B-5	SLOPE GRADING, EMBANKMENTS, MUCK	6/1/1994
B-71	RESIDENTIAL AND COMMERCIAL DRIVES	2/1/2004
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E-107A	BREAKAWAY BARRICADE DETAILS	8/8/1995
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J-1	PROJECT AND BOUNDARY MARKERS	6/1/1994

PROJECT NAME:	WOODFORD		
PROJECT NUMBER:	BHF 010-1(29)		
FILE NAME:	84e039/se039ind.xls	PLOT DATE:	6/21/2005
PROJECT LEADER:	84e039/se039ind.xls	DRAWN BY:	R. PELLETT
DESIGNED BY:	M. EVANS-MONGEON	CHECKED BY:	EVANS-MONGEON
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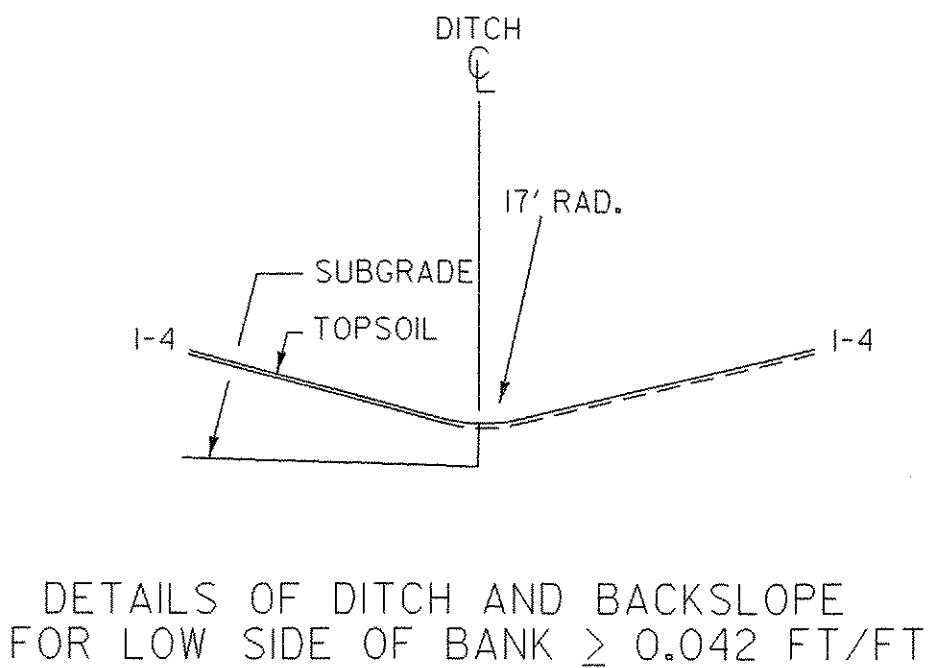
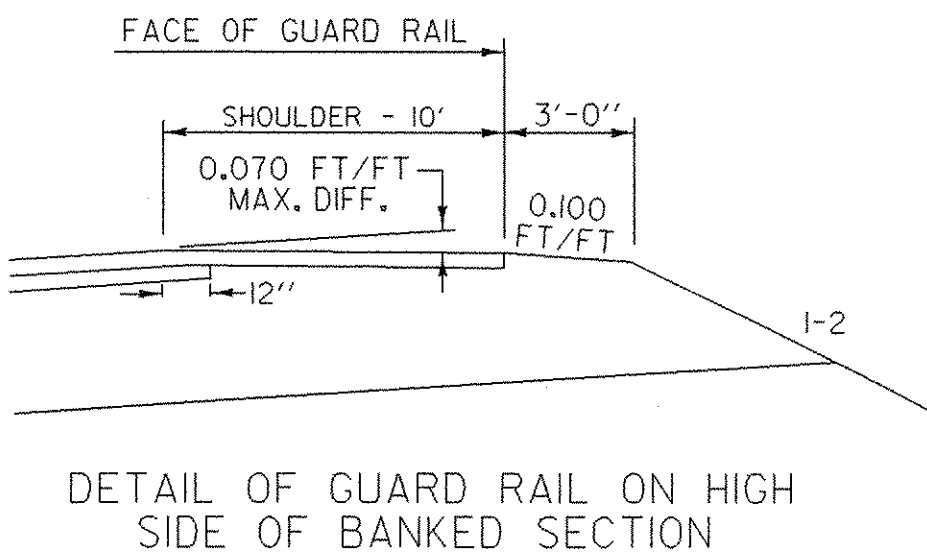
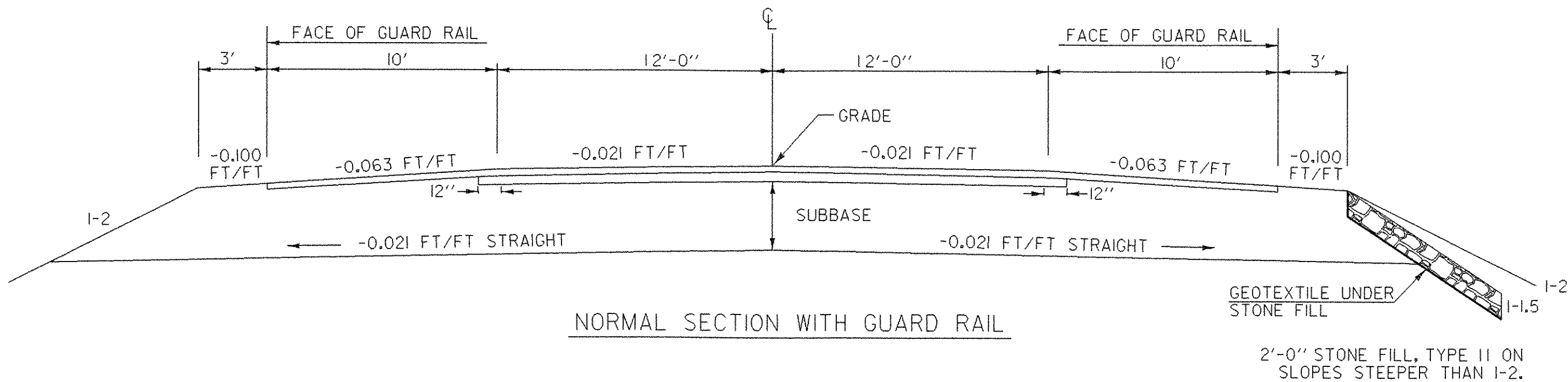
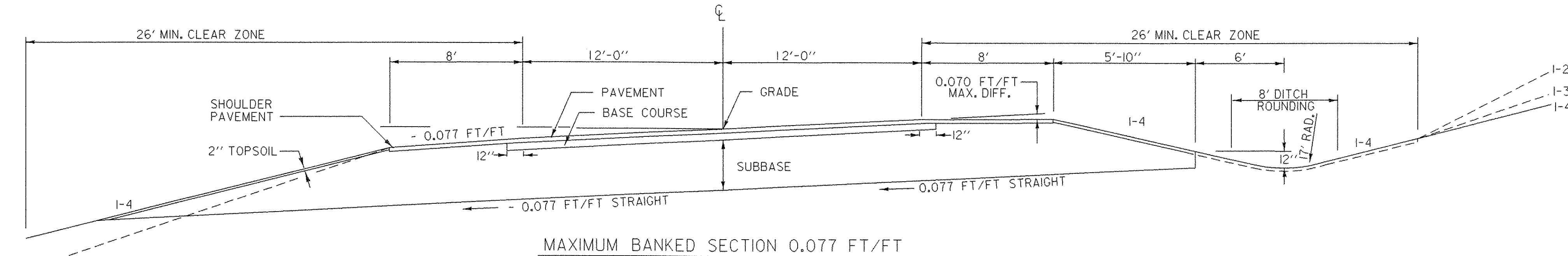
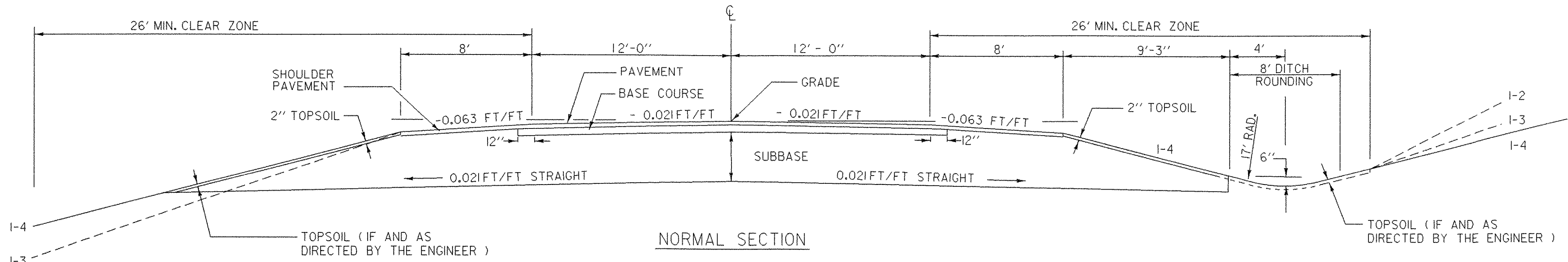
PLOTTED 03-OCT-2005

MATERIAL ITEM	THICKNESS TOLERANCE
PAVEMENT (TOTAL DEPTH)	± 1/4"
SUBBASE	± 1"



TYPICAL SECTIONS

1 1/2" BITUMINOUS CONCRETE PAVEMENT, TYPE III (PG 58-28)
2" BITUMINOUS CONCRETE PAVEMENT, TYPE III (PG 58-28)
5" BITUMINOUS CONCRETE PAVEMENT, TYPE II (PG 58-28) (TWO LIFTS OF 2 1/2")
36" SUBBASE OF CRUSHED GRAVEL (COARSE GRADED)
SHOULDERS : 3 1/2" BITUMINOUS CONCRETE PAVEMENT (1 1/2" TYPE III (PG 58-28) OVER 2" TYPE II (PG 58-28)
DETOUR : 3 1/2" BITUMINOUS CONCRETE PAVEMENT (2 LIFTS, 2' TYPE II OVER 1 1/2" TYPE III)



SEEDING FORMULA URBAN AREAS

% WT.	LBS./A.	NAME	PUR %	GERM %
42.5	34.0	CREeping RED FESCUE	98	85
10.0	8.0	PERENNIAL RYE GRASS	95	90
42.5	34.0	KENTUCKY BLUE GRASS	85	85
5.0	4.0	ANNUAL RYE GRASS	95	85
100.00	80.0			

SEEDING FORMULA RURAL AREAS

% WT.	LBS./A.	NAME	PUR %	GERM %
37.5	22.5	CREeping RED FESCUE	98	85
37.5	22.5	TALL FESCUE	95	90
5.0	3.0	RED TOP	95	90
15.0	9.0	BIRDSFOOT TREFOIL	98	85
5.0	3.0	ANNUAL RYEGRASS	95	85
100.0	60.0			

GENERAL NOTES

- SEED MIXTURE: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
- SEED: TO BE APPLIED PER SEEDING FORMULAS OR AS DIRECTED BY THE ENGINEER.
- FERTILIZER: FORMULA 10-20-10, TO BE USED WITH SEED, APPLIED AT THE RATE OF 500 LBS./ACRE. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).
- AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.
- HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.
- TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
- MARKER POSTS: TO BE PLACED AS INDICATED OR AS DIRECTED BY THE ENGINEER.
- SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD SHEET B-5.
- PAY LIMITS OF SAND BORROW: WHEN USED IN CONJUNCTION WITH UNDERDRAIN - SEE STANDARD SHEET D - 2.
- TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE OF 0.015 GAL/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT AS DIRECTED BY THE ENGINEER.

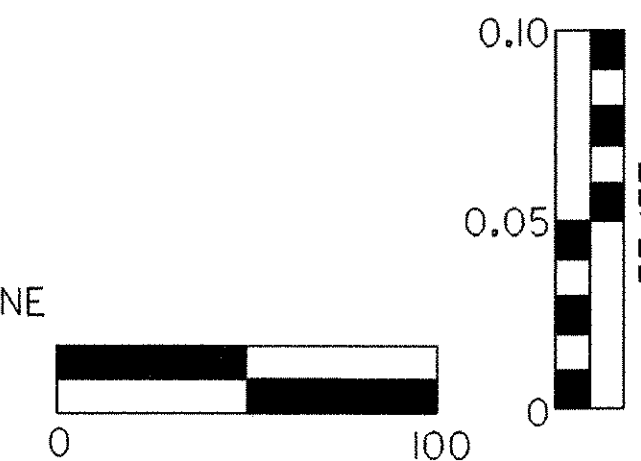
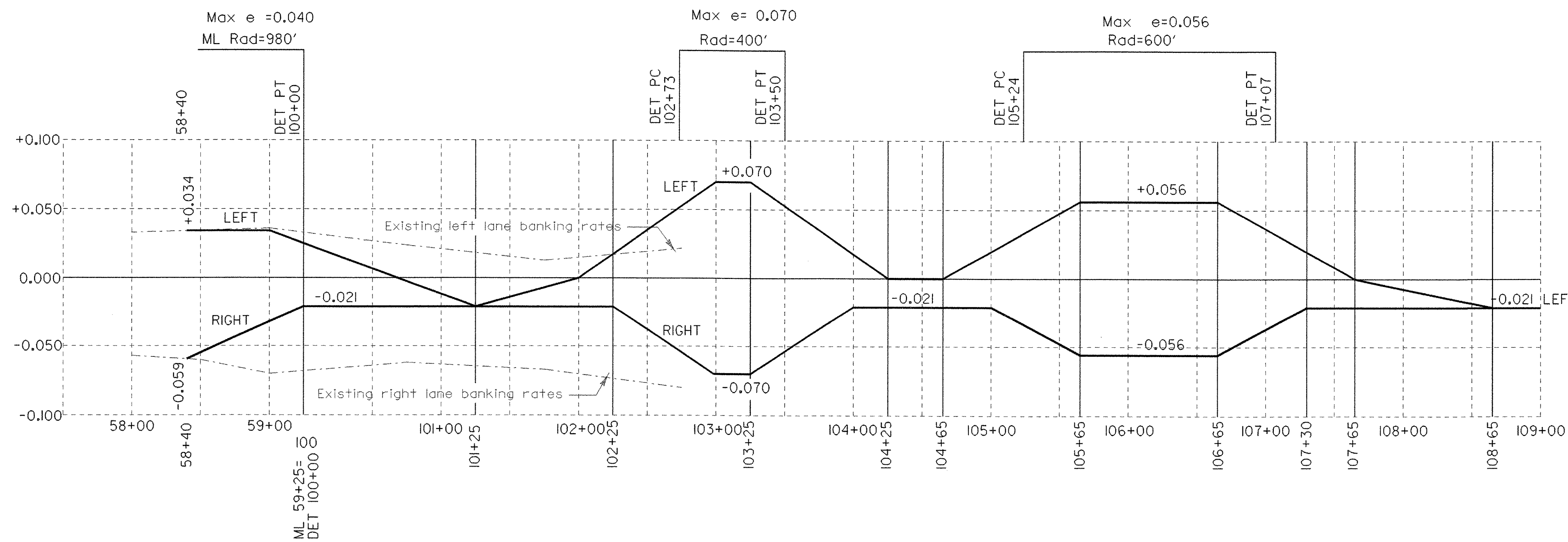
TYPICAL SECTIONS

DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	N/A

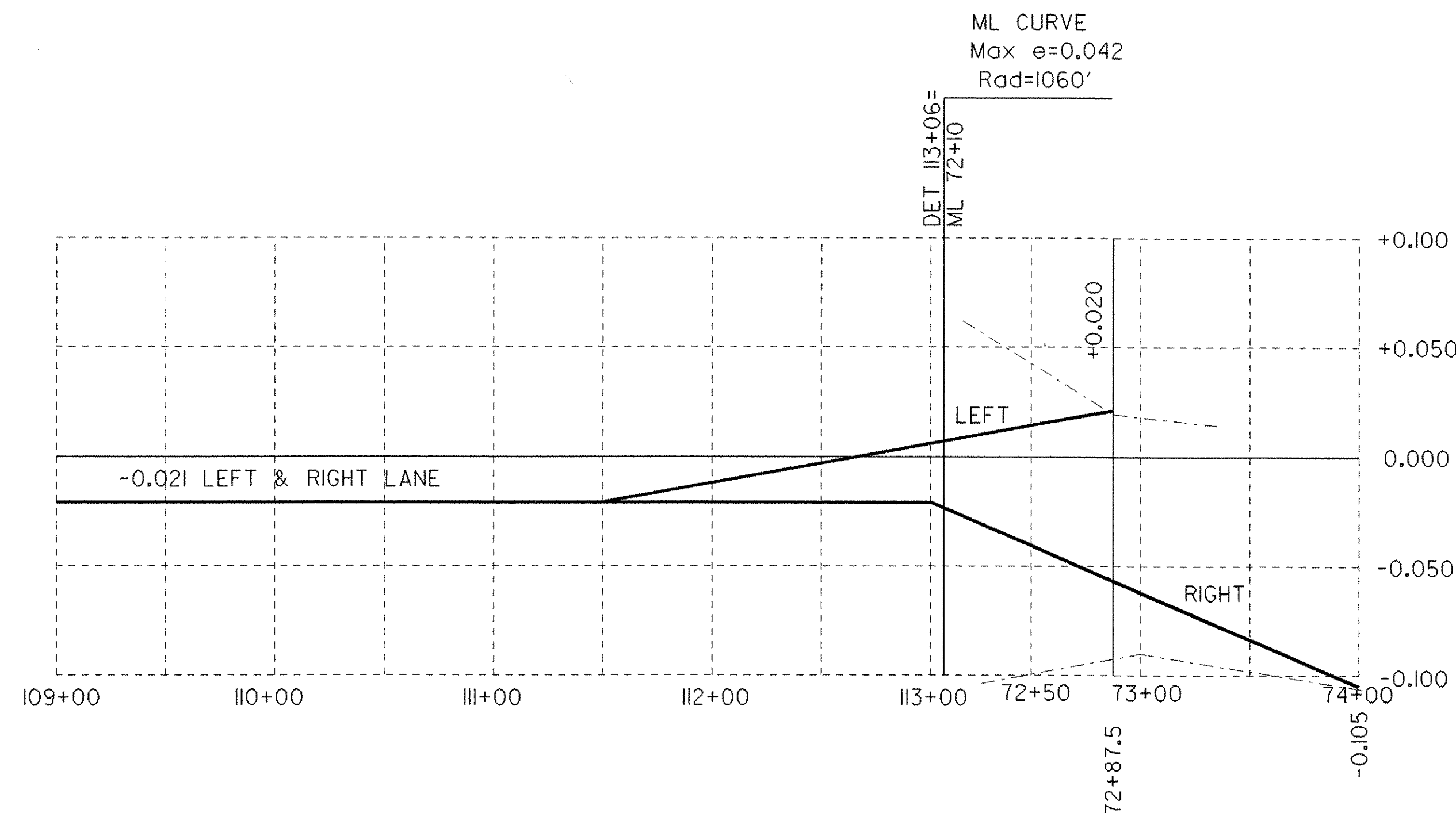
PROJECT:	WOODFORD	PROJECT NO.:	BHF 010-(129)
DESIGN FILE NAME:	/84e039/structures/de039frm.dgn	PLOT DATE:	03-OCT-2005
IPARM FILE NAME:	de039typ.i	SURVEY DATE:	12/88
SURVEYED BY:	MOREAU	DRAWN BY:	KJR
SQUAD LEADER:	PORTALUPI	SHEET:	4 OF 106

N.T.S.

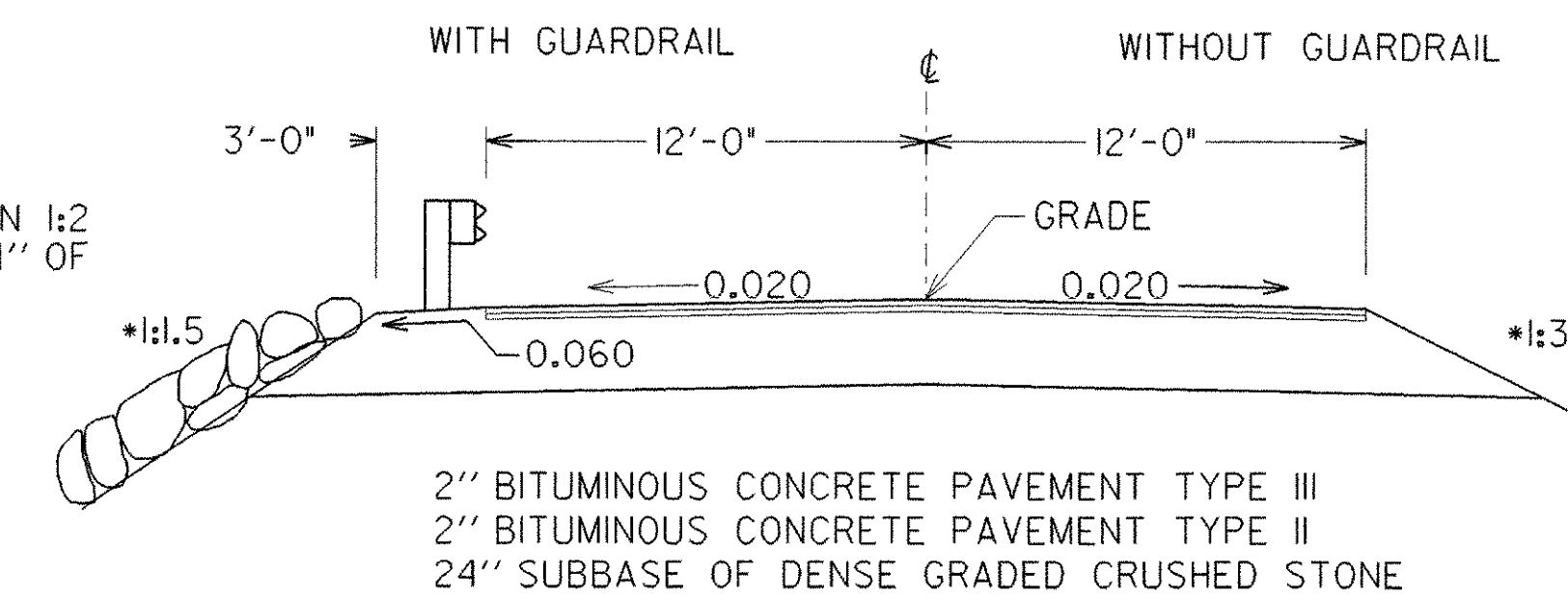
DETOUR BANKING DIAGRAM



Note: Detour Speed is to be 30 MPH.



* ANY SLOPES GREATER THAN 1:2 SHALL BE BLANKETED WITH 24" OF TYPE II STONE FILL.



DETOUR TYPICAL SECTION
N.T.S.

DETOUR BANKING AND TYPICAL SHEET

PROJECT NAME: WOODFORD	PROJECT NUMBER: BHF 010-1(29)
FILE NAME: /84e039/de039det.dgn	PLOT DATE: 03-OCT-2005
PROJECT LEADER: PORTALUPI	DRAWN BY: J. GEORGE
DESIGNED BY: G. SHANGRAW	CHECKED BY: EVANS-MONGEON
DETOUR SHEET: de039det.i	SHEET 5 OF 106

STATE OF VERMONT AGENCY OF TRANSPORTATION																	QUANTITY SHEET										
SUMMARY OF ESTIMATED QUANTITIES																	TOTALS			DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
	APPR SLAB NO 1	ABUT NO 1	PIER NO. 1	DECK	PIER NO. 2	ABUT NO. 2	APPR SLAB NO. 2			DETOUR	UTILITIES	TRAINING	FULL E&C ITEMS	EROSION CONTROL	ROADWAY	BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS		
															1			1		LS	CLEARING AND GRUBBING (INCLUDING INDIVIDUAL TREES AND STUMPS, 0.55 ACRES)	201.10			COMMON EXCAVATION		
															3390			3390		CY	COMMON EXCAVATION	203.15	3354	CY	MAINLINE		
															1500			1500		CY	SOLID ROCK EXCAVATION	203.16	30	CY	DRIVES		
		245				12										257		257		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27	6	CY	ROUNDING		
															5900			5900		SY	FINE GRADING-SUBGRADE	203.40	3390	CY	TOTAL		
											165			50	80			295		CY	TRENCH EXCAVATION OF EARTH	204.20			SUBBASE OF CRUSHED GRAVEL (COARSE GRADED)		
															80			80		CY	TRENCH EXCAVATION OF ROCK	204.21	5112	CY	MAINLINE		
		820				860										1680		1680		CY	STRUCTURE EXCAVATION	204.25	66	CY	DRIVES		
		170	300		350	170										990		990		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	250	CY	EROSION CONTROL		
			105		105											210		210		CY	COFFERDAM EXCAVATION, EARTH	208.30	22	CY	ROUNDING		
			415		435											850		850		CY	COFFERDAM EXCAVATION, ROCK	208.35	5450	CY	TOTAL		
			1													1		1		LS	COFFERDAM @ PIER NO. 1	208.40			BITUMINOUS CONCRETE PAVEMENT		
					1											1		1		LS	COFFERDAM @ PIER NO. 2	208.40	690	TON	BASE COURSE		
															550			550		SY	COLD PLANING-BIT PAVEMENT	210.10	476	TON	BINDER COURSE		
														250	5200			5450		CY	SUBBASE OF CRUSHED GRAVEL (COARSE GRADED)	301.25	523	TON	TOP COURSE		
															9			9		CWT	EMULSIFIED ASPHALT	404.65	109	TON	BRIDGE		
17				75		17									1720	109		1829		TON	BITUMINOUS CONCRETE PAVEMENT (PG 58-28)	406.25	23	TON	DRMES		
		4		356		4										364		364		CY	CONCRETE, CLASS A (QC/QA)	501.221					
				40												40		40		CY	CONCRETE, HIGH PERFORMANCE CLASS A	501.33					
54		117	220		239	130	54									814		814		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34					
				375027							5355					375027		380382		LB	STRUCTURAL STEEL(PLATE GIRDER)	506.55					
6545	10107	14409			15099	11054	6545									63759		63759		LB	REINFORCNG STEEL	507.15					
		1315		110707		1364										113386		113386		LB	EPOXY COATED REINFORCING STEEL	507.17					
				1												1		1		LS	SHEAR CONNECTORS (3876 - 7/8" X 7")	508.15					
				1												1		1		LS	STRUCTURAL PAINTING,SHOP APPLIED (17 TONS)	513.25					
				1												1		1		LS	SURFACE PREPARATION,SHOP (17 TONS)	513.40					
		4	15	21	15	5										60		60		GAL	WATER REPELLENT (MOD. SILANE)	514.10					
		67				67										134		134		LF	BRIDGE EXPANSION JOINT (VERMONT)	516.10					
122				1333		122										1577		1577		SY	SHEET MEMBRANE WATERPROOFING (MOD. - TORCH APPLIED)	519.20					
				547												547		547		LF	BRIDGE RAILING - NETC - 2 RAIL	525.33					
											1						1		LS	TWO-WAY TEMPORARY BRIDGE (7200SF)(MOD.)	528.11						
				810												810		810		SY	REMOVAL OF BRIDGE PAVEMENT	529.10					
				1												1		1		EACH	REMOVAL OF STRUCTURE (12300SF)	529.15					
		6				6										12		12		EACH	BEARNG DEVICE ASSEMBLY(ELASTOMERIC)(ABUTMENT)	531.10					
			6		6											12		12		EACH	BEARNG DEVICE ASSEMBLY(ELASTOMERIC)(PIER)	531.10					
														5	5			10		HR	BULLDOZER RENTAL, TYPE I	608.10					
															10			10		HR	POWER GRADER RENTAL	608.15					
														10	15			25		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25					
															10			10		HR	POWER BROOM RENTAL	608.30					
															10			10		HR	TRUCK RENTAL	608.37					
																						PROJECT NAME: WOODFORD					
																						PROJECT NUMBER: BHF 010-1(29)					
																						FILE NAME: /84e039/se039qs.xls		PLOT DATE: 8/2/2005			
																						PROJECT LEADER: A. PORTALUPI		DRAWN BY: G. SHANGRAW			
																						DESIGNED BY: EVANS-MONGEON		CHECKED BY: M.E.M.			
																						QUANTITY SHEET #1		SHEET 6 OF 106			

STATE OF VERMONT

AGENCY OF TRANSPORTATION

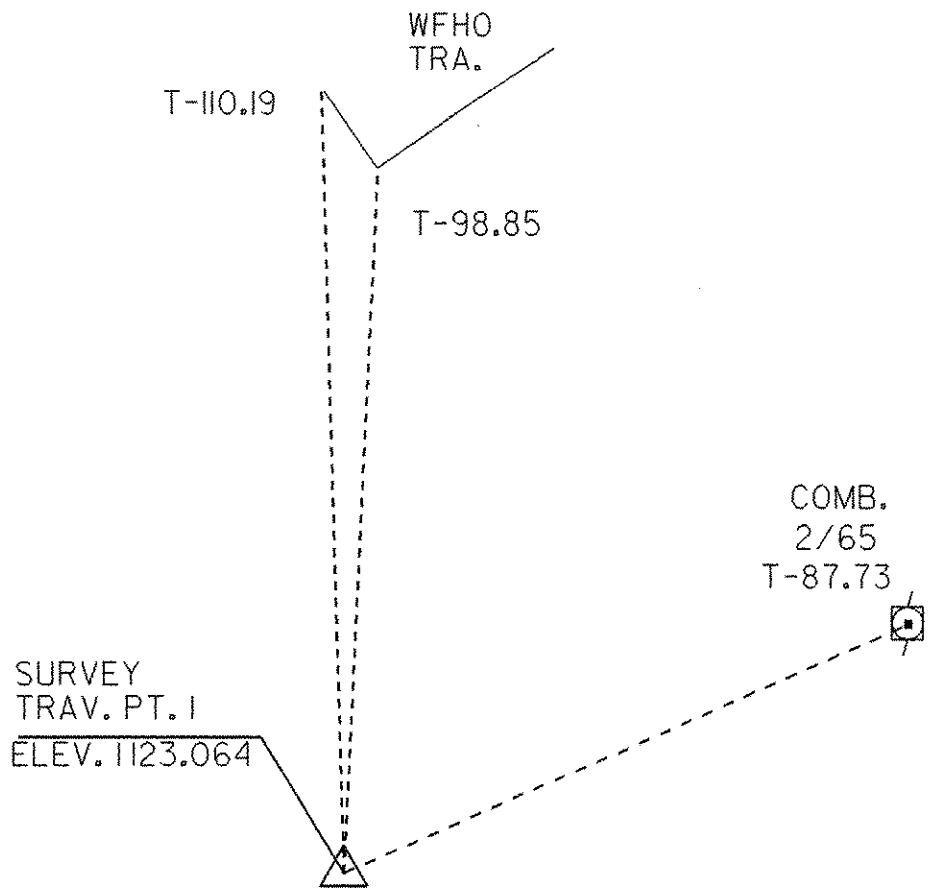
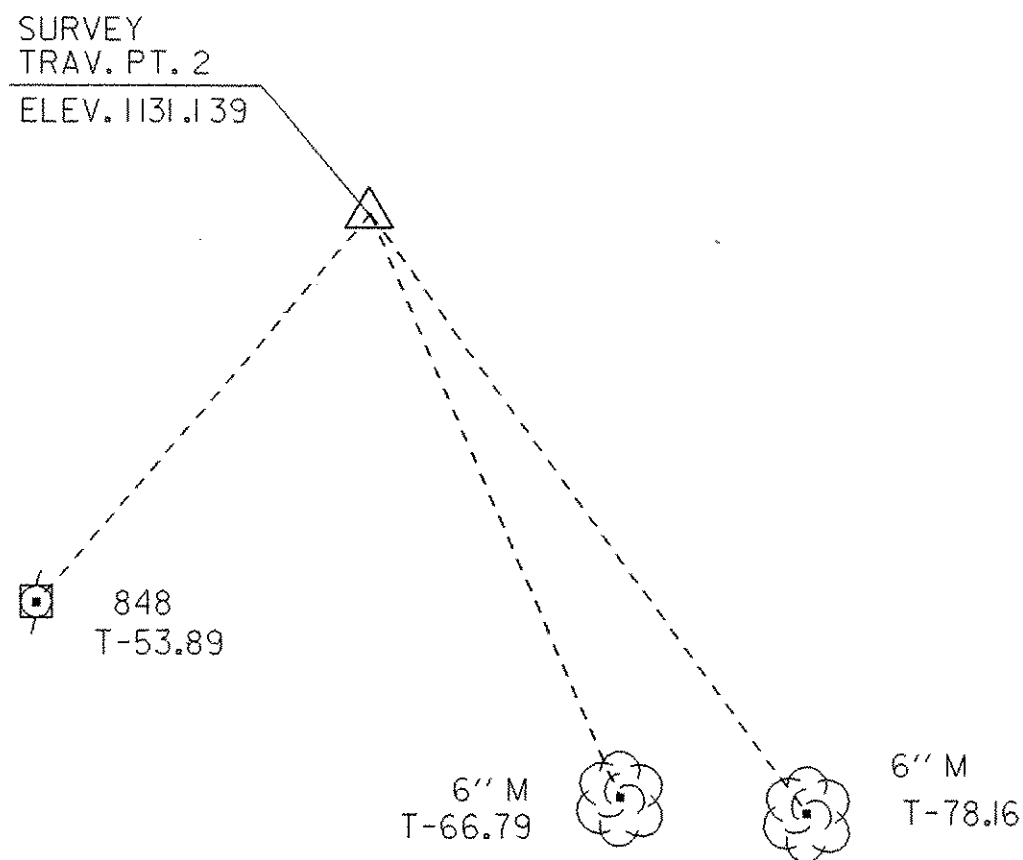
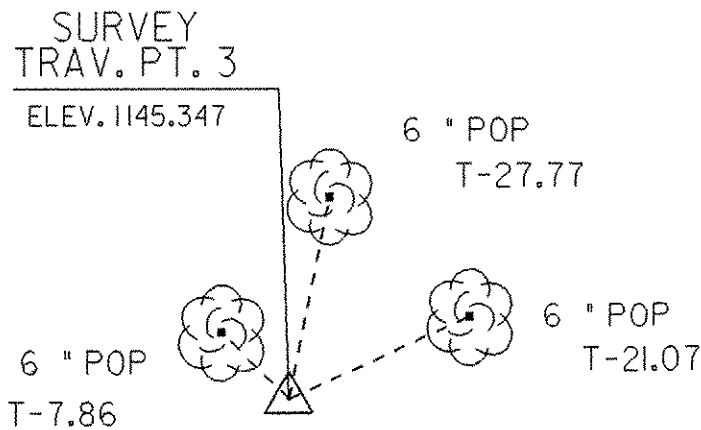
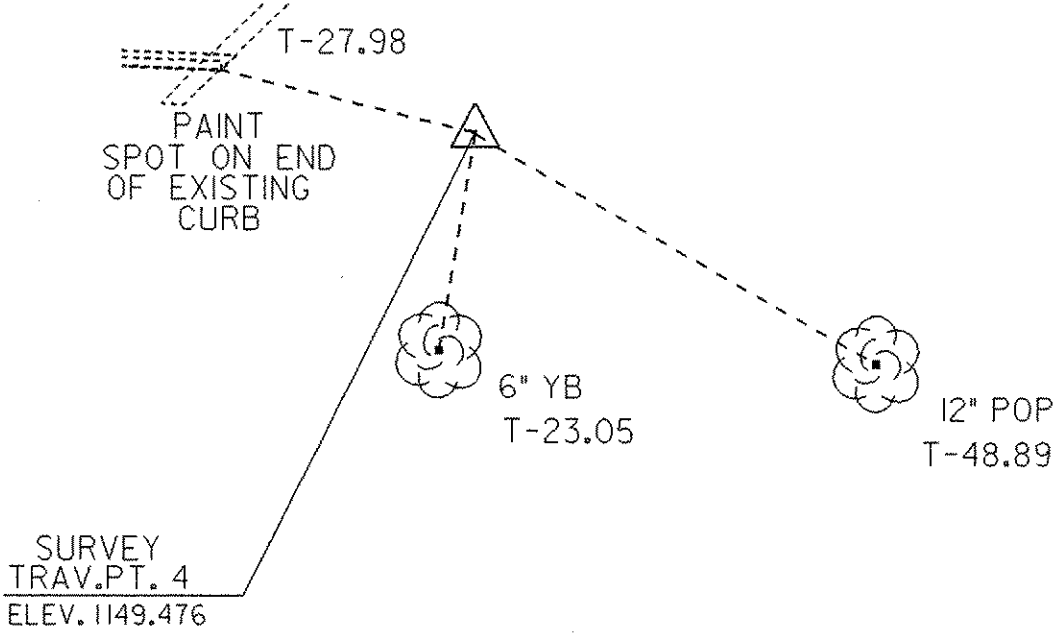
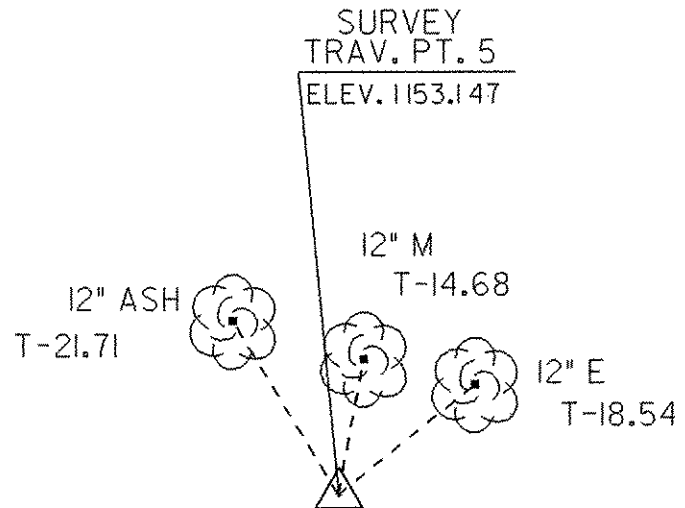
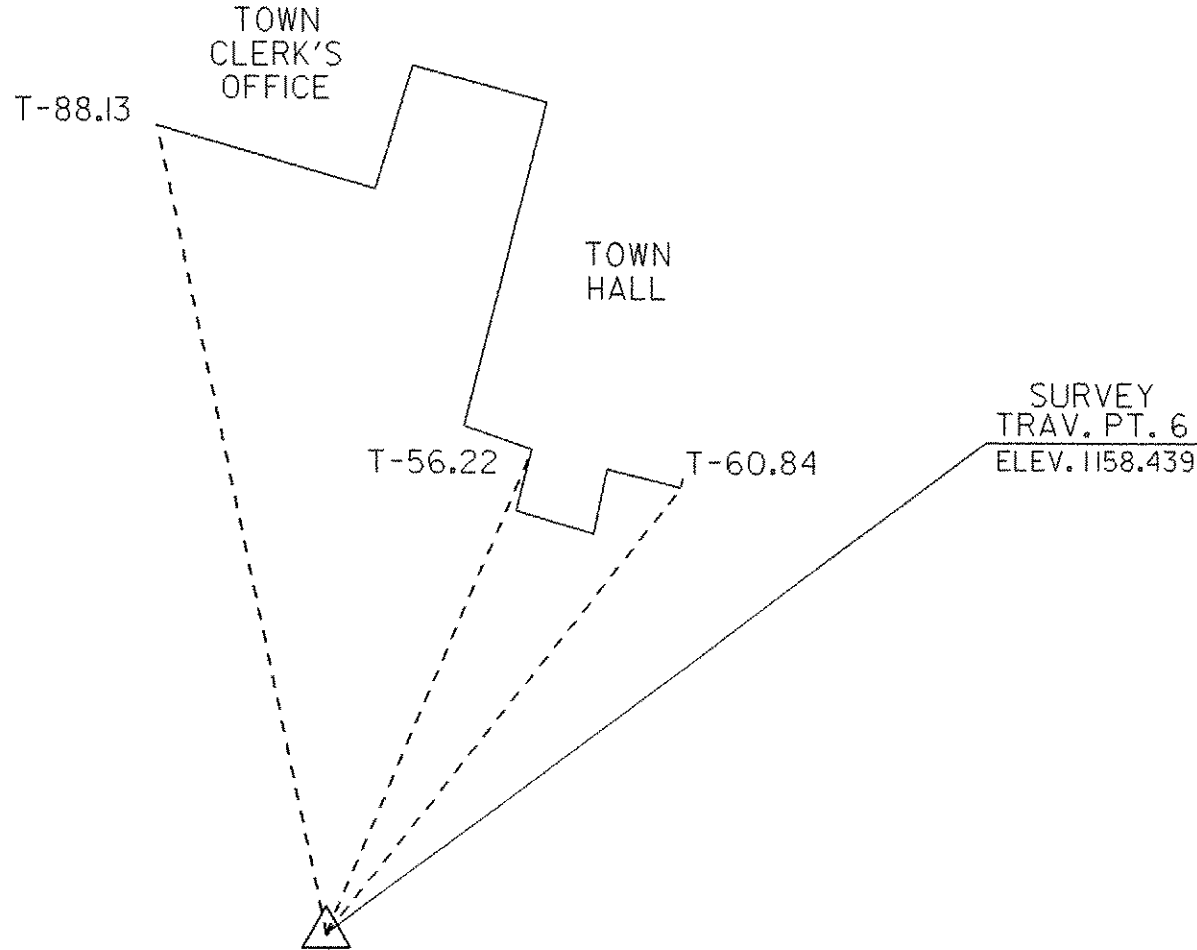
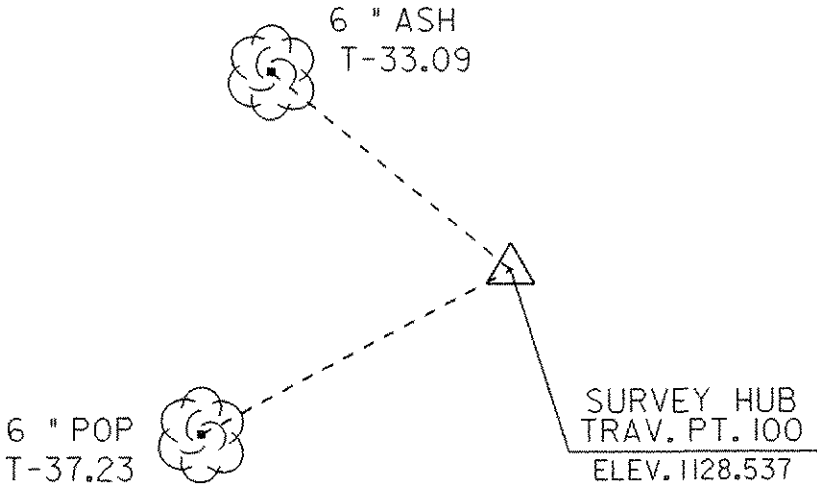
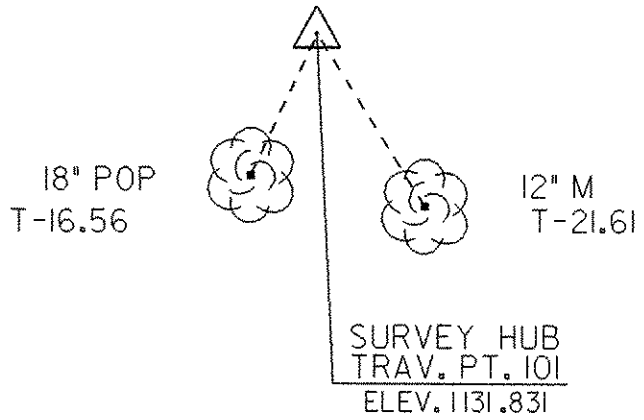
QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES																	TOTALS			DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES					
	APPR SLAB NO 1	ABUT NO 1	PIER NO. 1	DECK	PIER NO 2	ABUT NO 2	APPR SLAB NO. 2			DETOUR	UTILITIES	TRAINING	FULL E&C ITEMS	EROSION CONTROL	ROADWAY	BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS				
															10			10		HR	LOADER RENTAL, TYPE I	608.40							
														173				173		MGAL	DUST CONTROL WITH WATER (MOD.)	609.10							
															1			1		TON	DUST & ICE CONTROL WITH CALCIUM CHLORIDE	609.15							
														25				25		CY	STONE FILL, TYPE I	613.10							
														20				20		CY	STONE FILL, TYPE I (MOD- CONSTRUCTION ENTRANCE)	613.10							
															330			330		CY	STONE FILL, TYPE II	613.11							
		440	140		140	150										870		870		CY	STONE FILL, TYPE IV	613.13							
															160			160		LF	CAST-IN-PLACE CEMENT CONCRETE CURB, TYPE B	616.28							
															2050			2050		LF	SNOW FENCE (MOD. -PDF)	620.70							
															40			40		LF	SNOW FENCE (MOD.-TREE PROTECTION)	620.70							
															750			750		LF	HEAVY DUTY STEEL BEAM GUARD RAIL (GALVANIZED)	621.21							
															3			3		EACH	MANUFACTURED TERMINAL SECTION (FLARED)	621.505							
															1			1		EACH	MANUFACTURED TERMINAL SECTION (TANGENT)	621.505							
															4			4		EACH	GUARD RAIL APPR. SECTION.NETC 2 RAIL	621.72							
															733			733		LF	REMOVAL AND DISP OF GUARD RAIL	621.80							
											0.2							0.2		MFBM	INSULATION BOARD	622.10							
											70							70		LF	DUCTILE, IRON PIPE, CEM LINED (CL 52, 16")	629.24							
											2							2		EACH	GATE VALVE (16")	629.26							
											225							225		LF	PLASTIC WATER PIPE, RIGID (12" - CLASS 200)	629.33							
											2							2		EACH	TAPPING SLEEVE & VALVE WITH VALVE BOX (12")	629.35							
											1							1		LS	TRANSFER TO NEW SYSTEM-WATER SYSTEM	629.42							
											250							250		LF	PIPE INSULATION	629.44							
											200							200		TON	CRUSHED STONE BEDDING	629.54							
											1							1		LS	WATER MAIN ON BRIDGE (TEMPORARY) (12")	629.60							
											1							1		LS	WATER MAIN ON BRIDGE (PERMANENT) (16")	629.60							
															250			250		HR	UNIFORMED TRAFFIC OFFICERS	630.10							
															250			250		HR	FLAGGERS	630.15							
													1					1		LS	FIELD OFFICE-ENGINEERS	631.10							
													1					1		LS	TESTING EQUIPMENT - CONCRETE	631.16							
													1					1		LS	TESTING EQUIPMENT - BITUMINOUS	631.17							
													1					1		LU	FIELD OFFICE - TELEPHONE (N.A.B.I.)	631.25							
											520							520		HR	EMPLOYEE TRANEESHIP	634.10							
															1			1		LS	MOBILIZATION/ DEMOBILIZATION	635.11							
															1			1		LS	TRAFFIC CONTROL	641.10							
															2700			2700		LF	DURABLE 4" WHITE LINE	646.40							
															2700			2700		LF	DURABLE 4" YELLOW LINE	646.41							
															55			55		EACH	LINE STRIPING TARGETS	646.76							
		504	66		66	197									506	833		1339		SY	GEOTEXTILE UNDER STONE FILL	649.31							
														1100				1100		SY	GEOTEXTILE FOR SILT FENCE	649.51							
														70				70		LB	SEED	651.15							
														20				20		LB	SEED-WINTER RYE	651.17							
																						PROJECT NAME: WOODFORD PROJECT NUMBER: BHF 010-1(29) FILE NAME: /84e039/se039qs.xls PROJECT LEADER: A. PORTALUPI DESIGNED BY: EVANS-MONGEON QUANTITY SHEET #2				PLOT DATE: 8/2/2005 DRAWN BY: G. SHANGRAW CHECKED BY: M.E.M. SHEET 7 OF 106			

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES																	TOTALS			DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES				
	APPR SLAB NO. 1	ABUT NO. 1	PIER NO. 1	DECK	PIER NO.2	ABUT NO. 2	APPR SLAB NO. 2				DETOUR	UTILITIES	TRAINING	FULL E&C ITEMS	EROSION CONTROL	ROADWAY	BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS				ITEM NUMBER	QUANTITIES
															600					600		LB	FERTILIZER	651.18			
															29					29		LB	FERTILIZER (MOD.)(MYCORRHIZAL PRODUCT)	651.18			
															2.3					2		TON	AGRICULTURAL LIMESTONE	651.20			
															2.3					2		TON	HAYMULCH	651.25			
															50					50		EACH	HAY BALES FOR EROSION CONTROL	651.26			
															13					13		CY	CEDAR BARK MULCH (MOD.)	651.27			
															35	83				118		CY	TOPSOIL	651.35			
															19					19		CY	TOPSOIL (MOD.)(COMPOST)	651.35			
																	112			112		SY	GRUBBING MATERIAL	651.40			
															1					1		LS	EROSION PREVENTION AND SEDIMENT CONTROL PLAN	652.10			
															100					100		HR	MONITORING EROSION PREVENTION AND SEDIMENT CONTROL PLAN	652.20			
															1					1		LU	FIELD MAINTENANCE OF EROSION PREVENTION AND SEDIMENT CONTROL PLAN (N.A.B.I.)	652.30			
															300					300		SY	EROSION MATTING (JUTE MATTING)	654.10			
															21					21		EACH	EVERGREEN SEEDLINGS (WHITE PINE- 1.0-2.0' MINIMUM HEIGHT, 1 GALLON CONTAINER)	658.15			
															7					7		EACH	EVERGREEN TREES (WHITE PINE- 5.0-6.0' MINIMUM HEIGHT, CONTAINER/ B&B)	658.20			
															3					3		EACH	DECIDUOUS TREES (SUGAR MAPLE- 1.5-2.0" CALIPER, CONATINER/ B&B)	658.30			
															2					2		EACH	DECIDUOUS TREES (PAPER BIRCH, CLUMP OF 3- 8.0-10.0' MINIMUM HEIGHT, CONTAINER/ B&B)	658.30			
															48					48		EACH	DECIDUOUS TREES (GRAY BIRCH- 4.0-5.0' MINIMUM HEIGHT, 1 GALLON CONTAINER)	658.30			
															42					42		EACH	DECIDUOUS TREES (WHITE ASH- 4.0-5.0' MINIMUM HEIGHT, CONTAINER B&B)	658.30			
															34					34		EACH	DECIDUOUS TREES (BLACK CHERRY- 1.0" CALIPER, 1 GALLON CONTAINER)	658.30			
															28					28		EACH	DECIDUOUS TREES (CHOKE CHERRY- 1.0" CALIPER, 1 GALLON CONTAINER)	658.30			
															350					350		EACH	DECIDUOUS SHRUBS (BLACK CHOKEBERRY- 18.0" MINIMUM HEIGHT, 1 GALLON CONTAINER)	658.35			
															196					196		EACH	DECIDUOUS SHRUBS (GRAY DOGWOOD- 18.0" MINIMUM HEIGHT, 1 GALLON CONTAINER)	658.35			
															112					112		EACH	DECIDUOUS SHRUBS (STREAMCO WILLOW- 18.0" MINIMUM HEIGHT, 1 GALLON CONTAINER)	658.35			
															112					112		EACH	DECIDUOUS SHRUBS (NANNYBERRY- 18.0" MINIMUM HEIGHT, 1 GALLON CONTAINER)	658.35			
																34				34		SF	TRAFFIC SIGNS, TYPE A	675.20			
																88				88		LF	FLANGED CHANNEL SIGN POST	675.301			
																2				2		EACH	REMOVING SIGNS	675.50			

TRAV. PT. 1	TRAV. PT. 2	TRAV. PT. 3	TRAV. PT. 4
N = 10000.0000	N = 10093.0008	N = 10085.5514	N = 10036.1265
E = 50000.0000	E = 50347.5962	E = 50732.2625	E = 50983.7253
			
TRAV. PT. 5	TRAV. PT. 6	TRAV. PT. 100	TRAV. PT. 101
N = 10063.8445	N = 10016.8350	N = 10015.7323	N = 10009.1417
E = 51286.9591	E = 51574.5709	E = 50747.0379	E = 50891.2049
			

DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	N/A

NOT TO SCALE

TIE SHEET

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /str5/84e039/de039nul.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039tie.i	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: MGN
SQUAD LEADER: PORTALUPI	SHEET: 9 OF 106

STATE OF VERMONT
AGENCY OF TRANSPORTATION

ITEM DETAIL SHEET

[illegible][illegible][illegible][illegible]

PROJECT NAME: WOODFORD

PROJECT NUMBER: BHF 010-29(1)

FILE NAME:	/84e039/structures/se039ids.xlt	PLOT DATE:	11/22/2002
PROJECT LEADER:	Portalupi	DRAWN BY:	B. Nyquist
DESIGNED BY:	Evans-Mongeon	CHECKED BY:	BTN
ITEM DETAIL SHEET #1		SHEET 10	OF 106

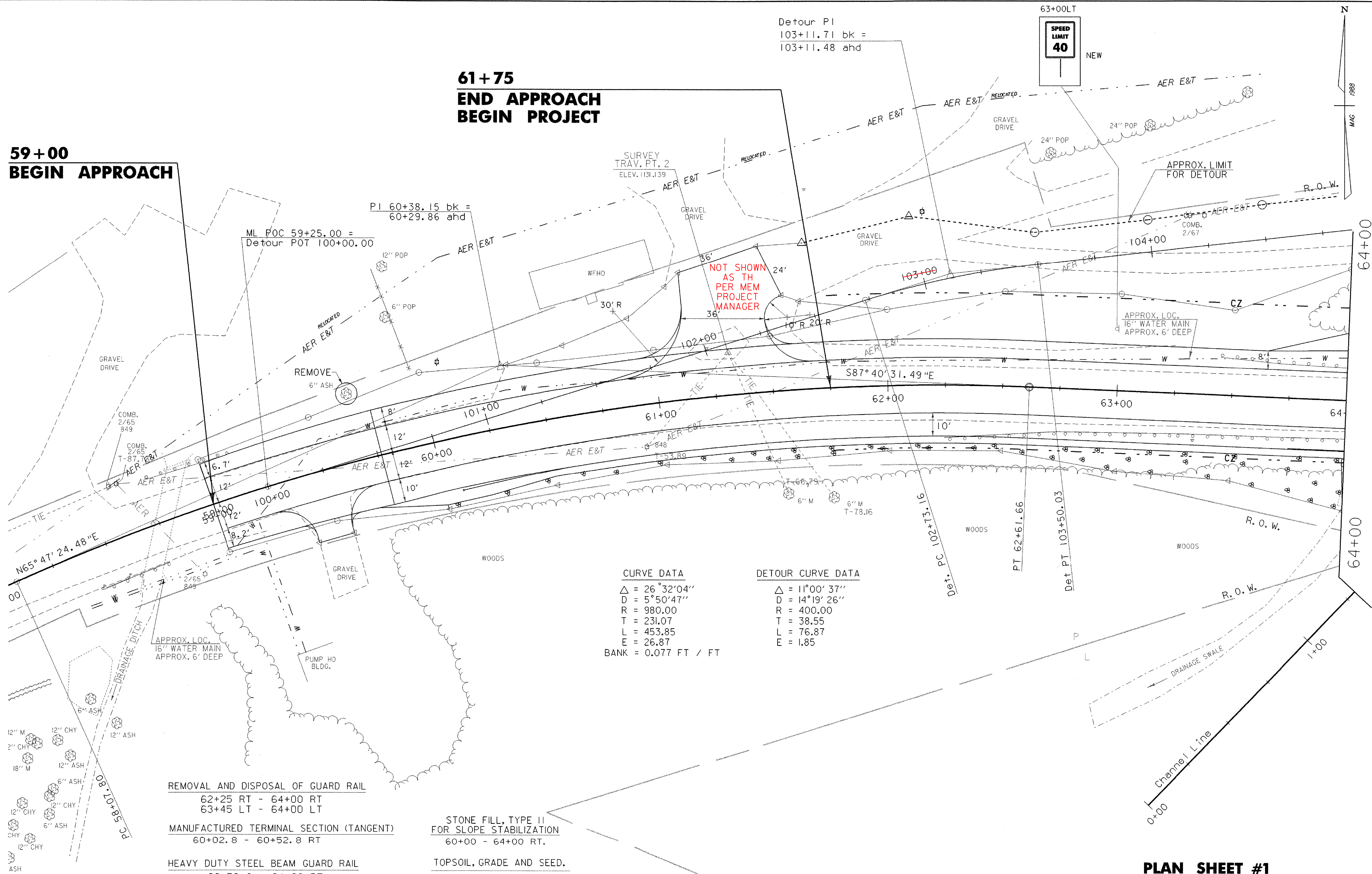
STATE OF VERMONT
AGENCY OF TRANSPORTATION

EARTHWORKS

[illegible]

59+00
BEGIN APPROACH

61+75
END APPROACH
BEGIN PROJECT



CURVE DATA
 $\Delta = 26^\circ 32' 04''$
 $D = 5^\circ 50' 47''$
 $R = 980.00$
 $T = 231.07$
 $L = 453.85$
 $E = 26.87$
 $BANK = 0.077 \text{ FT} / \text{FT}$

DETOUR CURVE DATA
 $\Delta = 11^\circ 00' 37''$
 $D = 14^\circ 19' 26''$
 $R = 400.00$
 $T = 38.55$
 $L = 76.87$
 $E = 1.85$

REMOVAL AND DISPOSAL OF GUARD RAIL
62+25 RT - 64+00 RT
63+45 LT - 64+00 LT
MANUFACTURED TERMINAL SECTION (TANGENT)
60+02.8 - 60+52.8 RT
HEAVY DUTY STEEL BEAM GUARD RAIL
60+52.8 - 64+00 RT

STONE FILL, TYPE II
FOR SLOPE STABILIZATION
60+00 - 64+00 RT.

TOPSOIL, GRADE AND SEED.
60+50-61+08 LT (EX. DRIVE)
61+50-62+20 LT (EX. DRIVE)
CONSTRUCT DRIVE
59+48 RT (16' GRAVEL) w/5' PAVED APRON
61+31 LT (36' GRAVEL) w/5' PAVED APRON

- * NOTES: 1) CLEAR ZONE SHALL BE CLEARED TO LIMIT SHOWN ON THE PLANS.
2) USE URBAN SEEDING FORMULA FOR ALL LAWN AREAS.

PLAN SHEET #1

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/structures/de039nul.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039iol.i	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 12 OF 106

SCALE 1" = 20'-0"
20 0 20

DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

64+91.46
END ROADWAY
BEGIN BRIDGE
F.G. 1144.79

67+70.54
END BRIDGE
RESUME ROADWAY
F.G. 1151.04

70+50
END PROJECT
BEGIN APPROACH

HEAVY DUTY STEEL BEAM GUARD RAIL

64+35.7 - 64+85.7 LT
64+00.0 - 64+40.3 RT
67+76.3 - 70+50.0 RT
68+21.7 - 69+46.7 LT

REMOVAL AND DISPOSAL OF GUARD RAIL

64+00 RT - 64+90 LT
64+00 LT - 65+22 LT
67+40 RT - 67+91 RT
67+70 LT - 70+10 LT

GUARD RAIL APPROACH SECTION, NETC 2 RAIL

64+40.3 - 64+72.3 RT
64+85.7 - 65+16.3 LT
67+45.7 - 67+76.3 RT
67+89.7 - 68+21.7 LT

MANUFACTURED TERMINAL SECTION (FLARED)

63+98.2 - 64+35.7 LT
69+38.9 - 69+76.9 LT

- NOTES: 1) CLEAR ZONE SHALL BE CLEARED TO LIMIT SHOWN ON THE PLANS.
2) USE URBAN SEEDING FORMULA FOR ALL LAWN AREAS.

DETOUR CURVE DATA

$\Delta = 17^{\circ}30'50''$
 $D = 9^{\circ}32'57''$
 $R = 600.00$
 $T = 92.42$
 $L = 183.41$
 $E = 7.08$

ML 64+81.54 =
CHAN. POT 2+40.86
48° 22' 08" LT

DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

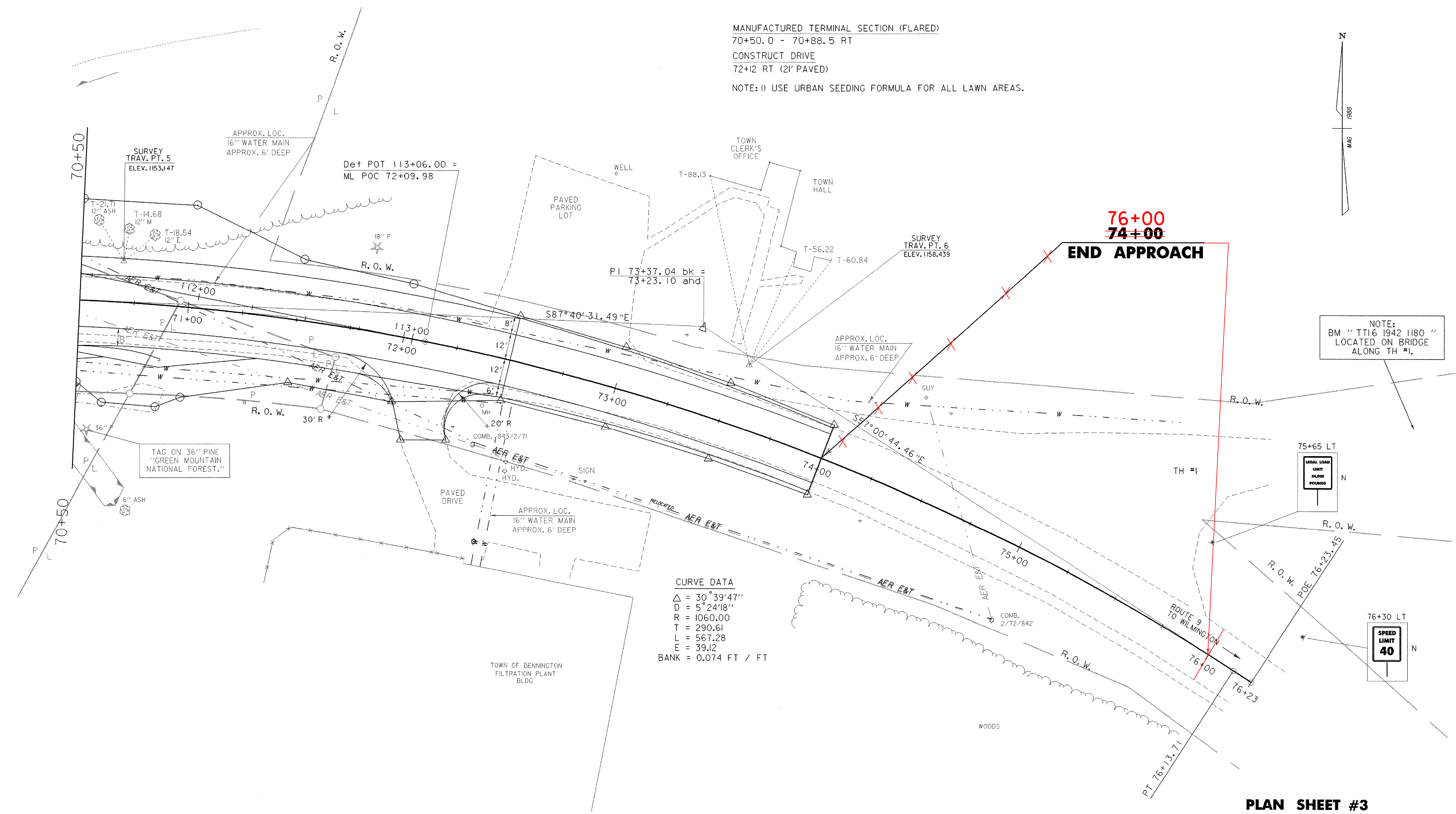
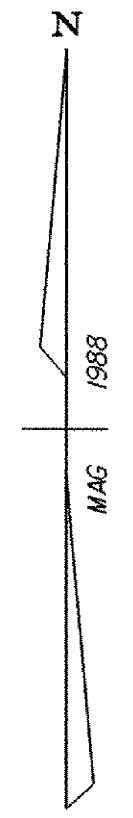
SCALE 1" = 20'-0"
20 0 20

PLAN SHEET #2

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/structures/de039nul.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039lo2.1	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 13 OF 106

MANUFACTURED TERMINAL SECTION (FLARED)
70+50.0 - 70+88.5 RT
CONSTRUCT DRIVE
72+12 RT (21' PAVED)

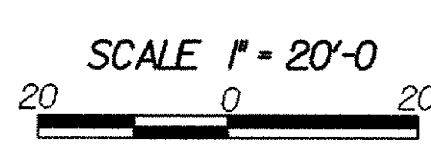
NOTE: 1) USE URBAN SEEDING FORMULA FOR ALL LAWN AREAS.



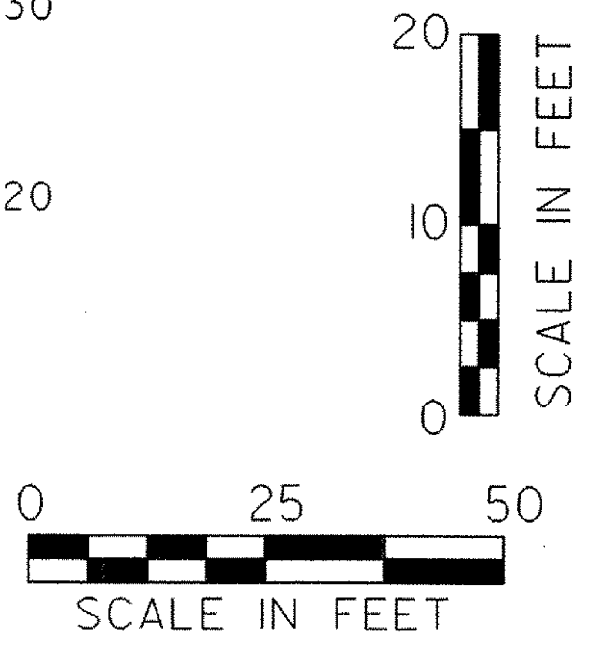
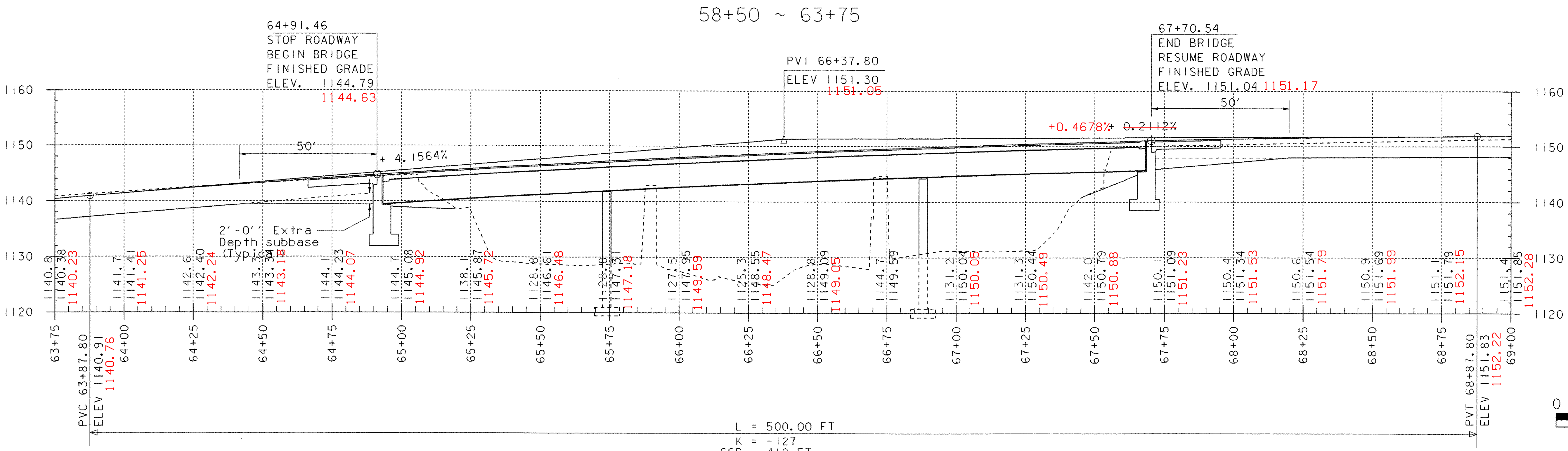
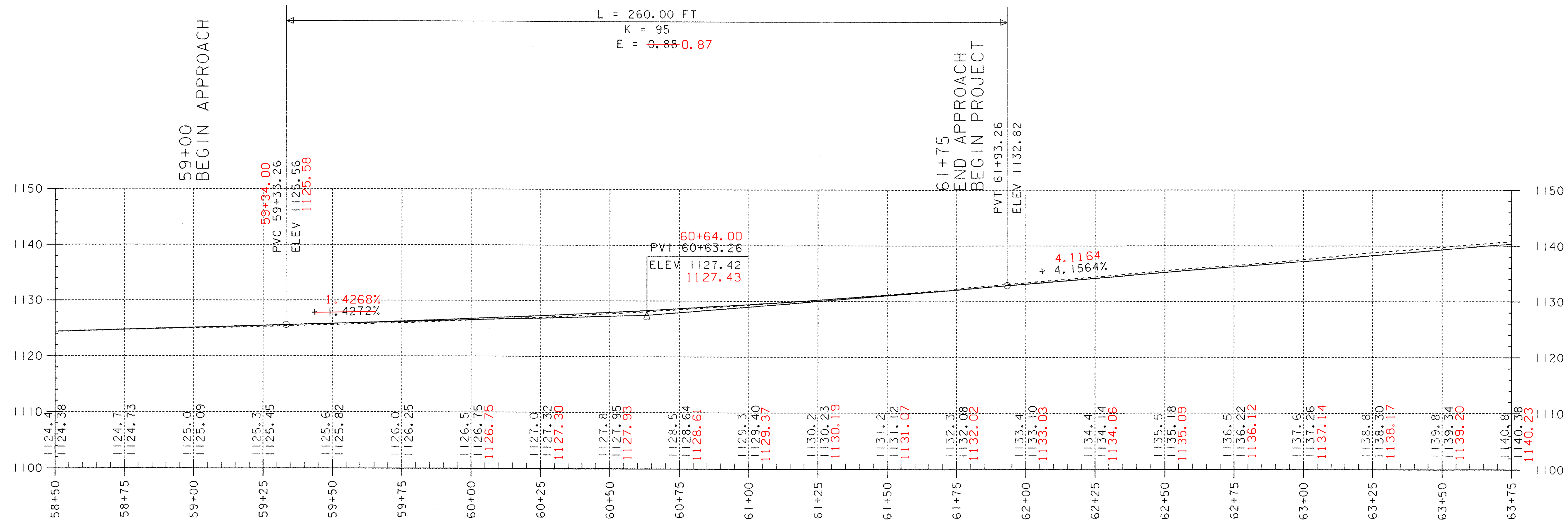
CURVE DATA
 $\Delta = 30^\circ 39' 47''$
 $D = 5^\circ 24' 18''$
 $R = 1060.00$
 $T = 290.61$
 $L = 567.28$
 $E = 39.12$
 $BANK = 0.074 \text{ FT} / \text{FT}$

PLAN SHEET #3

DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	N/A



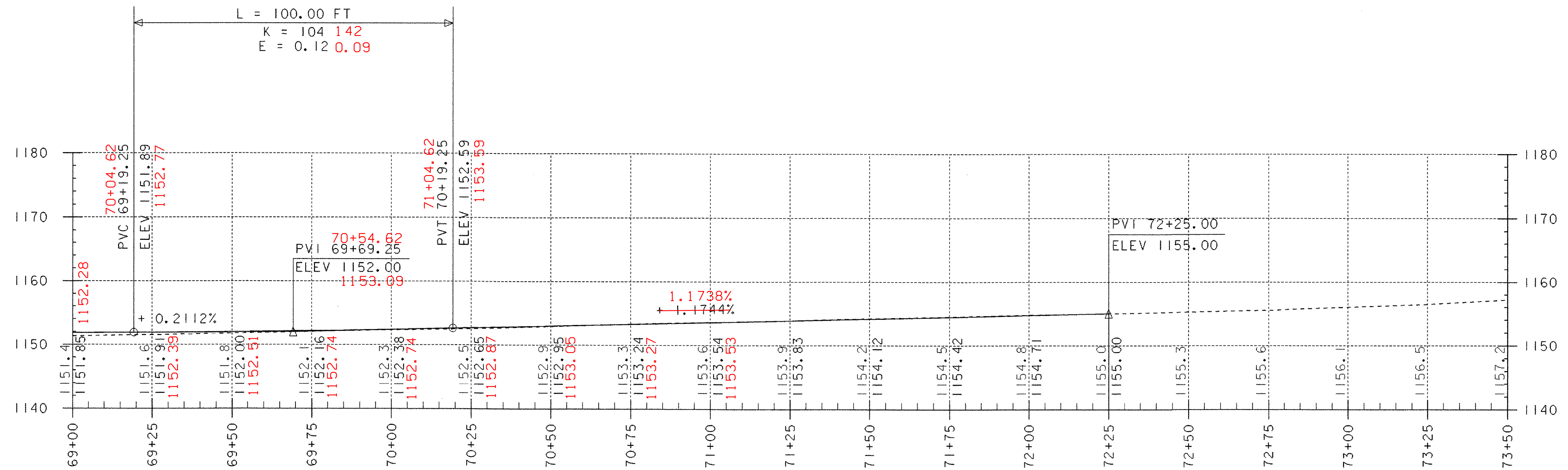
PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/structures/de039mul.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039lo3.i	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 14 OF 106



PROFILE #1 STATION 58+50 ~ 69+00

DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	N/A

PROJECT: WOODFORD	PROJECT NO.: BHF 010-K(29)
DESIGN FILE NAME: /84e039/structures/de039bdr.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: DE039PRI.I	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 15 OF 106



69+00 ~ 73+50

0 25 50
SCALE IN FEET

20
10
0
SCALE IN FEET

PROFILE #2 STATION 69+00 ~ 73+50

DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	N/A

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/structures/de039bdr.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: DE039PR2.1	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 16 OF 106

TABLE OF PROJECT PROPERTY ACQUISITION

STATE OF VERMONT
AGENCY OF TRANSPORTATION
RIGHT OF WAY PLANS
DETAIL SHEET

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	REM.	RIGHTS	TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS	REVISION NO.	SHEET	DESCRIPTION OF REVISION	DATE	MADE BY	APPROVED BY
1	WRIGHT, RONALD F.	9	59+48 RT.										16' GRAVEL MM 0113	1	8,10 11	PARCEL NO. 3 U.S. FOREST SERVICE. DELETE TAKING IN FEE OF 0.56A±. PER C.O. 8968.	05-28-98	M. J. R.	L. W. B.
2	SMITH, PHYLLIS L.	9	61+31 LT.										36' GRAVEL MM 0116	2	8,9	PARCEL NO. 1 WRIGHT. REMOVE THE PROPOSED 86' OPTION PIPE. REMOVE SLOPE (P) AT STA. 61+25 RT. ~ 61+53 RT. REMOVE CUL., DIT. & DR. (P) AT STA. 61+28 RT. CHANGE THE AREA OF CONST. (T) AT STA. 59+58 RT. ~ 64+28 RT. FROM 3590 S.F.± TO 1990 S.F.±. PER C.O. 8994.	09-09-98	M. J. R.	L. W. B.
3	UNITED STATES OF AMERICA U.S. FOREST SERVICE (DEPT. OF AGRICULTURE)	10,11	67+27 RT. 67+64 RT. 69+71 RT. 69+96 RT.	69+29 RT. 69+03 RT. 70+73 RT. 70+76 RT.			CONST. (T) 1640 S.F.± SLOPE (P) 680 S.F.± CONST. (T) 900 S.F.± SLOPE (P) 400 S.F.±							3	8,9	PARCEL NO. 2 SMITH. ADD THE DESIGN OF A 290' OPTION PIPE. CHANGE CULVERT (P) AT STA. 58+94 LT. ~ 58+97 LT. TO STA. 58+94 LT. ~ 59+20 LT. PER C.O. 8995.	09-09-98	M. J. R.	L. W. B.
4	STATE OF VERMONT	11	70+76 RT. 70+69 RT. 70+73 RT. 72+12 RT.	71+70 RT. 71+31 RT. 71+07 RT.	0.06A±			QCD	04-26-99	WOODFORD	33	6&7	2830 S.F.±(FORMERLY TOWN OF BENNINGTON) 21' PAVED MM 0137	4	8,11	PARCEL NO. 4 TOWN OF BENNINGTON. CHANGE OWNER TO STATE OF VERMONT. PER C.O. 9119	05-15-00	S. L. D.	R. P. D.
5	ADVENT CHRISTIAN CHURCH OF WOODFORD (LESSOR) TOWN OF WOODFORD - (LESSEE)	11	71+35 LT. 71+38 LT.	72+76 LT. 72+39 LT.			SLOPE (T) 160 S.F.± CONST. (T) 860 S.F.±							5	1,8 9,10	PARCEL NO. 1 WRIGHT. PROJECT ENVELOPE CHANGED RESULTING IN REDUCTION OF TAKE AND RIGHTS NEEDED. ELIMINATE ALL TAKE AND RIGHTS. LEAVE DRIVE STATIONING AND REMARKS ON DETAIL SHEET. PER C.O. 9146.	09-06-00	S. L. D.	R. P. D.
6	CENTRAL VERMONT PUBLIC SERVICE CORP.												UTILITY	6	1,8 9,10	PARCEL NO. 2 SMITH. PROJECT ENVELOPE CHANGED RESULTING IN NO RIGHTS NEEDED. ELIMINATE ALL RIGHTS. LEAVE DRIVE STATIONING AND REMARKS ON DETAIL SHEET. PER C.O. 9147.	09-06-00	S. L. D.	R. P. D.
7	BELL ATLANTIC - NEW ENGLAND												UTILITY			ELECTRONIC FILES TO STRUCTURES 4-12-02			
8	ADELPHIA CABLE T.V.												UTILITY						
9	TOWN OF BENNINGTON - WATER												UTILITY						

ACCT.rdrawn
IP:\PWP\dms06030\re039d.dgn
DATE PLOTTED 03-OCT-2005

DR.(P)- DRAINAGE RIGHT
DIT.(P)- DITCHING RIGHT
CH.(P)- CHANNEL RT.
DRIVE (T)- DRIVE RIGHT
CUL.(P)- CULVERT RIGHT
[W]- WATER SOURCES

PRESENT R.O.W.
TAKING WITHOUT ACCESS
TAKING WITHOUT ACCESS ALONG PROPERTY LINE
TAKING WITH ACCESS
PERMANENT EASEMENT
TEMPORARY EASEMENT

LEGEND
C&T (P) ---
CZ (P)
CONST. (T) ---
SR SR ---
P ---
L ---
△ △ △
○ ○ ○
CLEARING & TRIMMING
CLEAR ZONE
CONSTRUCTION EASEMENT
SLOPE RIGHTS
PROPERTY LINE
TOP OF CUT
TOE OF SLOPE
PERMANENT UTILITY EASEMENT

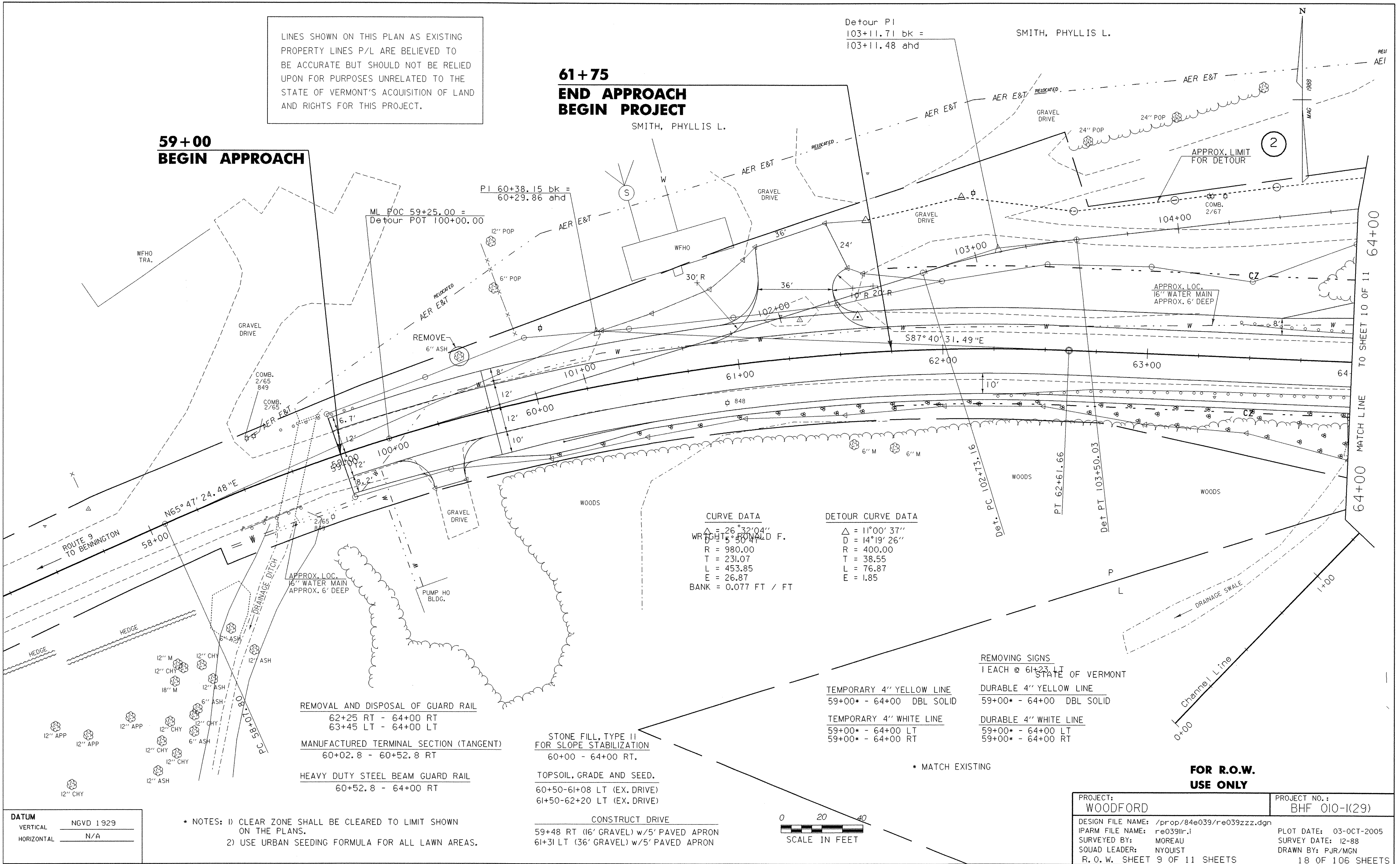
APPROVED: LAWRENCE W. BLISS DATE: 06-10-97
CHIEF, PLANS & TITLES

R. O. W. PLANS
WOODFORD
BHF 010-1 (29)
R. O. W. SHEET 8 OF 11 SHEETS
SHEET 17 OF 106

LINES SHOWN ON THIS PLAN AS EXISTING
PROPERTY LINES P/L ARE BELIEVED TO
BE ACCURATE BUT SHOULD NOT BE RELIED
UPON FOR PURPOSES UNRELATED TO THE
STATE OF VERMONT'S ACQUISITION OF LAND
AND RIGHTS FOR THIS PROJECT.

**59+00
BEGIN APPROACH**

**61+75
END APPROACH
BEGIN PROJECT**



CURVE DATA

WRIGHT, RONALD F.

Δ = 26°32'04"
R = 980.00
T = 231.07
L = 453.85
E = 26.87
BANK = 0.077 FT / FT

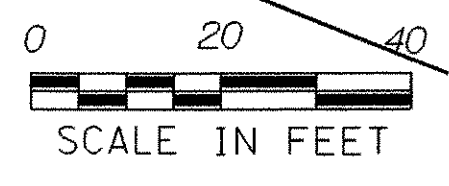
DETOUR CURVE DATA

Δ = 11°00'37"
D = 14°19'26"
R = 400.00
T = 38.55
L = 76.87
E = 1.85

- REMOVAL AND DISPOSAL OF GUARD RAIL**
62+25 RT - 64+00 RT
63+45 LT - 64+00 LT
- MANUFACTURED TERMINAL SECTION (TANGENT)**
60+02.8 - 60+52.8 RT
- HEAVY DUTY STEEL BEAM GUARD RAIL**
60+52.8 - 64+00 RT

- STONE FILL, TYPE II
FOR SLOPE STABILIZATION**
60+00 - 64+00 RT.
- TOPSOIL, GRADE AND SEED.**
60+50-61+08 LT (EX. DRIVE)
61+50-62+20 LT (EX. DRIVE)

- CONSTRUCT DRIVE**
59+48 RT (16' GRAVEL) w/5' PAVED APRON
61+31 LT (36' GRAVEL) w/5' PAVED APRON



- TEMPORARY 4" YELLOW LINE**
59+00* - 64+00 DBL SOLID
- TEMPORARY 4" WHITE LINE**
59+00* - 64+00 LT
59+00* - 64+00 RT

- REMOVING SIGNS**
TEACH @ 61+23 LT
- DURABLE 4" YELLOW LINE**
59+00* - 64+00 DBL SOLID
- DURABLE 4" WHITE LINE**
59+00* - 64+00 LT
59+00* - 64+00 RT

* MATCH EXISTING

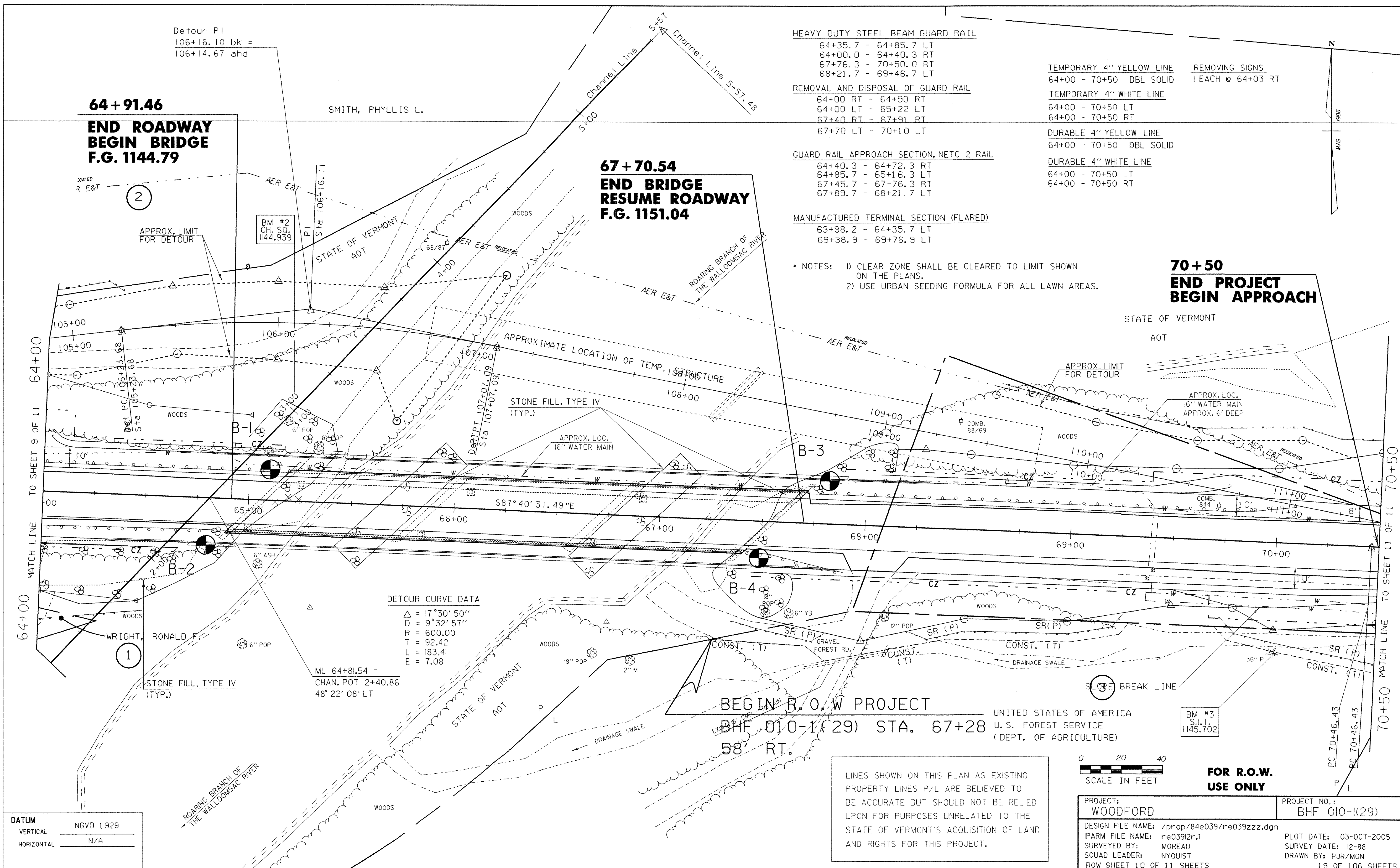
**FOR R.O.W.
USE ONLY**

DATUM

VERTICAL	NGVD 1929
HORIZONTAL	N/A

- * NOTES: 1) CLEAR ZONE SHALL BE CLEARED TO LIMIT SHOWN
ON THE PLANS.
2) USE URBAN SEEDING FORMULA FOR ALL LAWN AREAS.

PROJECT: WOODFORD	PROJECT NO.: BHF 010-K(29)
DESIGN FILE NAME: /prop/84e039/re039zzz.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: re039ilr.i	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: PJR/MGN
SQUAD LEADER: NYQUIST	
R.O.W. SHEET 9 OF 11 SHEETS	18 OF 106 SHEETS



Detour PI
106+16.10 bk =
106+14.67 ahd

64+91.46
END ROADWAY
BEGIN BRIDGE
F.G. 1144.79

SMITH, PHYLLIS L.

67+70.54
END BRIDGE
RESUME ROADWAY
F.G. 1151.04

HEAVY DUTY STEEL BEAM GUARD RAIL

64+35.7 - 64+85.7 LT
64+00.0 - 64+40.3 RT
67+76.3 - 70+50.0 RT
68+21.7 - 69+46.7 LT

REMOVAL AND DISPOSAL OF GUARD RAIL

64+00 RT - 64+90 RT
64+00 LT - 65+22 LT
67+40 RT - 67+91 RT
67+70 LT - 70+10 LT

GUARD RAIL APPROACH SECTION, NETC 2 RAIL

64+40.3 - 64+72.3 RT
64+85.7 - 65+16.3 LT
67+45.7 - 67+76.3 RT
67+89.7 - 68+21.7 LT

MANUFACTURED TERMINAL SECTION (FLARED)

63+98.2 - 64+35.7 LT
69+38.9 - 69+76.9 LT

TEMPORARY 4" YELLOW LINE

64+00 - 70+50 DBL SOLID

TEMPORARY 4" WHITE LINE

64+00 - 70+50 LT
64+00 - 70+50 RT

DURABLE 4" YELLOW LINE

64+00 - 70+50 DBL SOLID

DURABLE 4" WHITE LINE

64+00 - 70+50 LT
64+00 - 70+50 RT

REMOVING SIGNS
1 EACH @ 64+03 RT

70+50
END PROJECT
BEGIN APPROACH

STATE OF VERMONT

AOT

DETOUR CURVE DATA

Δ = 17°30' 50"
D = 9°32' 57"
R = 600.00
T = 92.42
L = 183.41
E = 7.08

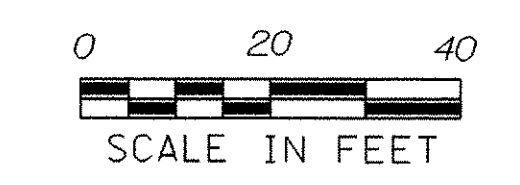
ML 64+81.54 =
CHAN. POT 2+40.86
48° 22' 08" LT

BEGIN R.O.W PROJECT
BHF 010-1(29) STA. 67+28
58' RT.

UNITED STATES OF AMERICA
U. S. FOREST SERVICE
(DEPT. OF AGRICULTURE)

BM #3
S.I.T.
1145.702

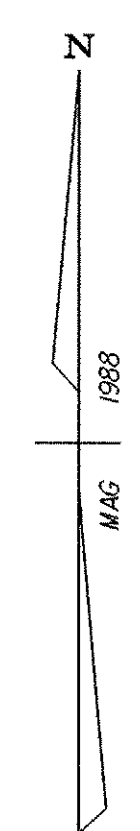
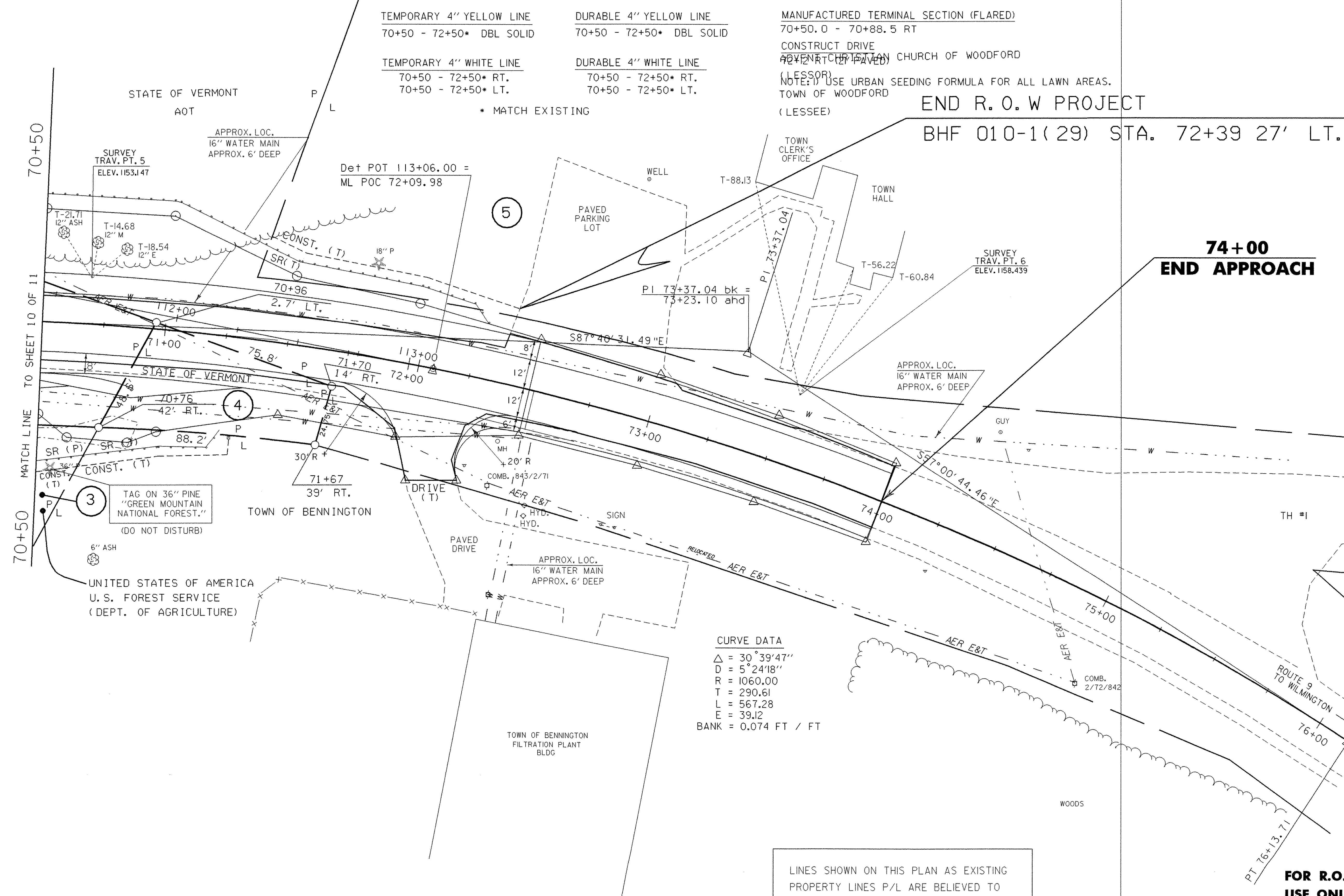
LINES SHOWN ON THIS PLAN AS EXISTING
PROPERTY LINES P/L ARE BELIEVED TO
BE ACCURATE BUT SHOULD NOT BE RELIED
UPON FOR PURPOSES UNRELATED TO THE
STATE OF VERMONT'S ACQUISITION OF LAND
AND RIGHTS FOR THIS PROJECT.



FOR R.O.W.
USE ONLY

DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

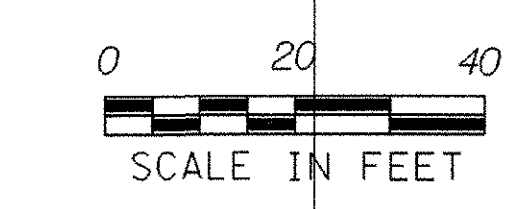
PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /prop/84e039/re039zzz.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: re03912r.i	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: PJR/MCN
SQUAD LEADER: NYQUIST	
ROW SHEET 10 OF 11 SHEETS	19 OF 106 SHEETS



NOTE:
BM "TT16 1942 1180"
LOCATED ON BRIDGE
ALONG TH #1.

CURVE DATA
Δ = 30°39'47"
D = 5°24'18"
R = 1060.00
T = 290.61
L = 567.28
E = 39.12
BANK = 0.074 FT / FT

LINES SHOWN ON THIS PLAN AS EXISTING
PROPERTY LINES P/L ARE BELIEVED TO
BE ACCURATE BUT SHOULD NOT BE RELIED
UPON FOR PURPOSES UNRELATED TO THE
STATE OF VERMONT'S ACQUISITION OF LAND
AND RIGHTS FOR THIS PROJECT.



**FOR R.O.W.
USE ONLY**

DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	N/A

PROJECT: WOODFORD		PROJECT NO.: BHF 010-K(29)
DESIGN FILE NAME: /prop/84e039/re039zzz.dgn		PLOT DATE: 03-OCT-2005
IPARM FILE NAME: re039i3r.i		SURVEY DATE: 12-88
SURVEYED BY: MOREAU		DRAWN BY: PJR/MCN
SQUAD LEADER: NYQUIST		
ROW SHEET 11 OF 11 SHEETS		20 OF 106 SHEETS

EROSION CONTROL NARRATIVE

PROJECT DESCRIPTION

THIS PROJECT IS LOCATED ON VT ROUTE 9 BEGINNING AT A POINT APPROXIMATELY 1.163 MILES EAST OF THE BENNINGTON - WOODFORD TOWN LINE, AND EXTENDING EASTERLY ALONG VT ROUTE 9 FOR 0.166 MILES. THE PURPOSE OF THE PROJECT IS TO REPLACE AND WIDEN BRIDGE 11 OVER THE ROARING BRANCH OF THE WALLOOMSAC RIVER. A TWO-WAY TEMPORARY BRIDGE WILL BE UTILIZED TO CARRY TRAFFIC DURING CONSTRUCTION.

THIS PROJECT INCLUDES THE REMOVAL OF THE OLD BRIDGE AND RAILING, GRADING, DRAINAGE, SUB-BASE, PAVEMENT, INSTALLATION OF GUARDRAILS, LANDSCAPING, SIGNAGE, STRIPING AND NECESSARY APPROACH WORK. THE TOTAL DISTURBED AREA EXCLUDING WASTE, BORROW AND STAGING AREAS, IS 2.4 ACRES.

SITE INVENTORY AND ANALYSIS

OFF SITE DRAINAGE CHARACTERISTICS

THERE EXIST UNLINED DRAINAGE DITCHES ALONG THE SIDES OF VT ROUTE 9. THE BANKS SLOPE STEEPLY IN THE VICINITY OF THE BRIDGE AND SOUTH WEST OF THE BRIDGE. THE VEGETATION IN THE IMMEDIATE VICINITY OF THE BRIDGE, AND A SHORT DISTANCE EAST AND WEST OF THE BRIDGE, IS PRIMARILY DENSE WOODED COVER.

DRAINAGE, WATERWAYS, BODIES OF WATER

THE ROARING BRANCH OF THE WALLOOMSAC RIVER FLOWS UNDER THE EXISTING THREE SPAN ROLLED-BEAM BRIDGE. THERE ARE SEVERAL DRAINAGE WAYS IN THE PROJECT AREA THAT CARRY RUNOFF FROM THE ROAD TO THE RIVER, BUT THERE ARE NO KNOWN EPHEMERAL STREAMS OR PONDS WITHIN THE PROJECT SITE.

TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES

THE TERRAIN HAS MODERATE TO STEEP SLOPES IN THE VICINITY OF THE PROJECT SITE. VT ROUTE 9 IS A PAVED STATE HIGHWAY. DEVELOPMENT ALONG VT ROUTE 9 CONSISTS OF A MIX OF PERMANENT RESIDENCES AND MUNICIPAL BUILDINGS LYING ON THE OUTSKIRTS OF THE PROJECT LIMITS. THE EXISTING CABLE, TELEPHONE, AND ELECTRICAL UTILITIES EXIST WITHIN THE PROJECT SITE AND WILL BE RELOCATED AERIALLY BY THEIR RESPECTIVE OWNERS. A MUNICIPAL WATER MAIN CURRENTLY TRAVELS ACROSS THE NORTH SIDE OF THE EXISTING BRIDGE AND WILL BE RELOCATED TO THE TEMPORARY BRIDGE DURING CONSTRUCTION AND THEN FINALLY ONTO THE NEW BRIDGE.

VEGETATION

THE PROJECT SITE CONTAINS A MIXTURE OF RESIDENTIAL AND FORESTED LANDS. IN THE RESIDENTIAL AREAS, THERE ARE SCATTERED TREES CONSISTING OF SOME ASH, CHERRY, MAPLE, POPLAR, APPLE, BIRCH AND PINE. THERE ARE ALSO SOME SHRUBS AND GRASSY LAWNS IN THE RESIDENTIAL AREA.

IN ORDER TO PLACE THE TEMPORARY BRIDGE ON THE UPSTREAM SIDE OF THE EXISTING BRIDGE, A NUMBER OF TREES, SHRUBS AND OTHER MISCELLANEOUS GROUND COVER WILL NEED TO BE REMOVED. DETAILED LANDSCAPE PLANS WERE DEVELOPED AND ARE INCLUDED IN THE EROSION AND SEDIMENT CONTROL FINAL CONDITIONS SITE PLAN TO DETERMINE HOW TO REPLACE THIS REMOVED VEGETATION ONCE THE TEMPORARY DETOUR AND ASSOCIATED TEMPORARY FILLS ARE REMOVED.

SOILS

THE SOIL TYPE IDENTIFIED FOR THIS PROJECT SITE IS COLTON GRAVELLY LOAMY SAND. THIS SOIL TYPE IS DESCRIBED AS VERY DEEP, EXCESSIVELY DRAINED SOIL FORMED IN GLACIOFLUVIAL DEPOSITS. THEY ARE ON TERRACES, KAMES, ESKERS, AND OUTWASH PLAINS. PERMEABILITY IS MODERATELY RAPID TO VERY RAPID IN THE SOLUM AND VERY RAPID IN THE SUBSTRATUM. SLOPES RANGE FROM 0 TO 50 PERCENT. THE *K* VALUE FOR THIS SOIL IS 0.17, WHICH HAS LOW ERODABILITY.

SENSITIVE RESOURCE AREAS

CLASS III WETLANDS WERE IDENTIFIED IN THE PROJECT AREA. THERE WILL BE SOME IMPACT TO THE WETLANDS ALTHOUGH EVERY ATTEMPT SHOULD BE MADE TO MINIMIZE OR ELIMINATE ANY IMPACT WITH THIS SITE.

NO THREATENED AND ENDANGERED SPECIES, PRIME AGRICULTURAL LAND, OR CRITICAL HABITATS HAVE BEEN IDENTIFIED WITHIN THE PROJECT AREA.

PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE REMOVAL OF THE EXISTING STRUCTURE, CONSTRUCTION AND REMOVAL OF THE TEMPORARY BRIDGE AND CONSTRUCTION OF THE NEW BRIDGE WILL TAKE PLACE ON THE BANKS AND OVER THE ROARING BRANCH OF THE WALLOOMSAC RIVER.

GENERAL EROSION AND SEDIMENT CONTROL GUIDELINES

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE WORK OUTLINED IN THIS NARRATIVE CONSISTS OF APPLYING MEASURES THROUGHOUT THE LIFE OF THE PROJECT TO CONTROL EROSION AND MINIMIZE THE SEDIMENTATION OF RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION CONTROLS.

THE INSTALLATION, USE, AND REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES WITH CONSTRUCTION ACTIVITIES TO ENSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS EROSION AND SEDIMENT CONTROL SHALL BE COORDINATED. TEMPORARY STABILIZATION PRACTICES IN INCREMENTAL STAGES AS CONSTRUCTION PROCEEDS SHALL BE EMPLOYED. THE CONTRACTOR WILL USE ADDITIONAL EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION AND AS DIRECTED BY THE RESIDENT ENGINEER. SEE SECTION 105.23 OF THE VERMONT AOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2001.

THE RESIDENT ENGINEER MAY DIRECT THE INSTALLATION OF CERTAIN EROSION CONTROL MEASURES IN ORDER TO AVOID POTENTIAL EROSION PROBLEMS, OR TO RESPOND TO STORM EVENTS OR DAMAGE BY CONSTRUCTION OPERATIONS.

INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN IN THE EROSION CONTROL PLAN OR AS DIRECTED BY THE RESIDENT ENGINEER. DO NOT MODIFY THE TYPE, SIZE OR LOCATION OF ANY CONTROL OR PRACTICE WITHOUT APPROVAL OF THE RESIDENT ENGINEER. ANY CHANGES SHALL BE NOTED ON THE PLANS, IN THE WEEKLY INSPECTION REPORT, AND REPORTED TO THE APPROPRIATE AUTHORITY IN A TIMELY MANNER. INSPECT ALL CONTROL MEASURES WEEKLY AND AFTER EACH RAINFALL EVENT. REPAIR OR REPLACE ANY DAMAGED MEASURES.

PREVENTING INITIAL SOIL EROSION IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. THEREFORE, STABILIZE ALL DISTURBED AREAS PROMPTLY AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED. PERIMETER CONTROL MEASURES SHALL BE INSTALLED FOLLOWING CLEARING, BUT PRIOR TO THE START OF ANY GRUBBING OR GRADING ACTIVITY, INSTALL OTHER TEMPORARY CONTROLS IN INCREMENTAL STAGES AS CONSTRUCTION PROCEEDS.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE. IN GENERAL, PRESERVE EXISTING GRASSES, SHRUBS, AND TREES WHEREVER POSSIBLE.

CONTROL ONLY SEDIMENT-LADEN RUNOFF GENERATED BY THE PROJECT SITE. COLLECT AND ROUTE CLEAN OFFSITE RUNOFF AROUND OR THROUGH THE PROJECT SITE USING DIVERSION BERMS, DIVERSION CHANNELS, CULVERTS AND/OR TEMPORARY PIPES.

DO NOT ALLOW CONSTRUCTION EQUIPMENT TO OPERATE ON THE DOWN SLOPE SIDE OF PERIMETER CONTROL MEASURES.

ALL IN-STREAM CONSTRUCTION SHALL TAKE PLACE IN A DRY CHANNEL BETWEEN JUNE 1 AND OCTOBER 1.

THIS WILL BE A MULTI-SEASON PROJECT AND WILL REQUIRE SEASONAL EROSION CONTROL MEASURES. IT IS RECOMMENDED THAT THOSE EROSION CONTROL MEASURES TO ESTABLISH VEGETATION TAKE PLACE BY SEPTEMBER 15TH OF EACH SEASON.

SPECIFIC GUIDELINES

PERIMETER EROSION CONTROLS

PRIOR TO ANY CONSTRUCTION ACTIVITIES, THE PROJECT DEMARCATION FENCING (PDF) SHALL BE PLACED ALONG THE PERIMETER OF THE PROJECT AS SHOWN ON THE EROSION CONTROL PLANS. THE INSTALLATION OF THE PDF WILL BE PERFORMED SUCH THAT NO VEGETATION ON THE OUTSIDE OF THE FENCING IS DISTURBED.

PRIOR TO ANY CONSTRUCTION OR STAGING, THE CONTRACTOR WILL INSTALL STABILIZED CONSTRUCTION ENTRANCES LEADING TO STAGING AREAS AND THE PROJECT SITE TO PREVENT THE TRACKING OF SILTS AND SEDIMENTS OFFSITE. COARSE STONE FILL OVER FILTER FABRIC SHOULD BE UTILIZED WHERE AN ALREADY ESTABLISHED STABLE ENTRANCE DOES NOT EXIST. THE CRUSHED STONE PRODUCT USED FOR THE CONSTRUCTION OF THE STABILIZED ENTRANCES SHALL BE MONITORED FOR SEDIMENT ACCUMULATION AND REPLACED AS NECESSARY AS DIRECTED BY THE RESIDENT ENGINEER. STABILIZED CONSTRUCTION ENTRANCES SHALL ALSO BE ESTABLISHED AND MAINTAINED AT ALL OFFSITE WASTE AND BORROW AREAS. THE MINIMUM SIZE OF A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 12 FEET WIDE BY 50 FEET LONG.

CONSTRUCT PERIMETER CONTROLS TO ENSURE THAT ANY DISTURBED SEDIMENT DOES NOT LEAVE THE SITE AFTER THE CLEARING OF TREES AND SHRUBS, BUT PRIOR TO ANY GRUBBING AND EXCAVATION. SEDIMENT TRAPS/BASINS, WHERE WATER HAS BEEN ADEQUATELY TREATED, MAY BE DIRECTED TO NEARBY UNDISTURBED STREAMS OR SWALES.

INSTALL PERIMETER SILT FENCE IN AREAS OF PROPOSED WORK AS SHOWN ON THE PLANS PRIOR TO GRUBBING AND ADDITIONAL SILT FENCING. IN AREAS OF EXPOSED LEDGE, STONE CHECK DAMS WILL BE UTILIZED.

AFTER GRUBBING OPERATIONS, ALL AREAS OF EXPOSED SOILS SHALL BE TEMPORARILY STABILIZED WITH SEEDING AND MULCHING, EROSION MATTING, OR STRAW MATTING AS SOON AS PRACTICABLE AND BEFORE ANY PREDICTED RAINFALL EVENT. THESE TEMPORARY EROSION CONTROL MEASURES CAN BE PLACED IN ANY COMBINATION IN AREAS OF POTENTIAL EROSION AS DEEMED NECESSARY BY THE RESIDENT ENGINEER.

AFTER PERIMETER CONTROLS ARE IN PLACE, AND PRIOR TO GRADING OPERATIONS, CONSTRUCT TEMPORARY ONSITE SEDIMENT TRAPS WHERE NECESSARY. GRADE DISTURBED AREAS TO DRAIN TOWARDS THE SEDIMENT TRAPS WHERE POSSIBLE.

ANY MATERIAL STOCKPILES, INCLUDING BUT NOT LIMITED TO, GRUBBING MATERIAL, SAND BORROW, EARTH BORROW, GRANULAR BORROW, TOPSOIL, AND ANY EXCAVATED WASTE PILES SHALL BE MULCHED AND SHALL ALSO HAVE SILT FENCE INSTALLED AROUND THE BASE OF THE STOCKPILE.

ANY OFF-SITE AREAS WHERE BORROW OR EXCAVATED MATERIALS WILL BE STOCKPILED AND ANY WASTE DISPOSAL AREAS WILL HAVE TWO INSTALLATIONS OF SILT FENCE, 2 FEET APART AROUND THE BASE OF EACH STOCKPILE. SEEDING AND MULCHING SHALL BE PERFORMED IMMEDIATELY AFTER FINAL GRADING. REMOVAL OF THE SILT FENCES AROUND THE WASTE AREAS SHALL BE PERFORMED ONLY AFTER APPROVAL FROM THE RESIDENT ENGINEER IS OBTAINED.

EROSION CONTROL NARRATIVE #1

PROJECT NAME:	WOODFORD
PROJECT NUMBER:	BHF 010-1(29)
FILE NAME: 84e039/structures/84e039erobdr.dgn	PLOT DATE: 03-OCT-2005
PROJECT LEADER: M EVANS-MONGEON	DRAWN BY: W FARLEY
DESIGNED BY: W FARLEY	CHECKED BY:
IPARM: epscnarr1.i	SHEET 23 OF 106

EROSION CONTROL NARRATIVE

TEMPORARY DETOUR EROSION CONTROLS

ON PARTIALLY COMPLETED FILL AND CUT SLOPES, ALL EXPOSED SLOPES WILL BE STABILIZED WITH STRAW MATTING AT THE END OF EACH WORKING DAY. IN ANY AREA ON THE DETOUR ROADWAY WHERE CONCENTRATED FLOWS MAY TEND TO COLLECT, TEMPORARY FLEXIBLE SLOPE PIPES WILL BE USED TO CHANNEL THE ANTICIPATED RUNOFF INTO SETTLING BASINS OR DETENTION PONDS, NO ROADWAY RUNOFF WILL BE ALLOWED TO BE CHanneLED DIRECTLY INTO THE ROARING BRANCH OF THE WALLOOMSAC RIVER WITHOUT BEING TREATED FOR SEDIMENT. ONCE THE DETOUR FILL SLOPES ARE COMPLETED, THE ENTIRE DETOUR, INCLUDING ALL FILL AND CUT SLOPES (EXCEPT THE PAVED SURFACES), SHALL BE ENTIRELY COVERED WITH STRAW MATTING.

BRIDGE EROSION

THE NEW PIER SUBSTRUCTURES WILL BE CONSTRUCTED IN THE DRY, AND WILL REQUIRE THE USE OF COFFERDAMS. THE COFFERDAMS WILL BE USED AS A BARRIER TO PREVENT SEDIMENTS FROM THE SUBSTRUCTURE EXCAVATION FROM ENTERING THE STREAM. CONSTRUCTION OF THE SUBSTRUCTURES MAY REQUIRE DEWATERING OF THE COFFERDAMS. ALL WATER PUMPED FROM THE SUBSTRUCTURE AND OTHER EXCAVATION AREAS WILL BE PUMPED TO EITHER A DIRT BAG SILT CONTAINMENT DEVICE, OR AN EXCAVATED SEDIMENT BASIN. THE FIRST PUMPING OF THE EXCAVATIONS WILL CONTAIN THE GREATEST VOLUME OF WATER WITH THE HIGHEST SEDIMENT LOAD. IT MAY BE NECESSARY TO CONSTRUCT ADDITIONAL SETTLING STRUCTURES, OR TO CONTROL THE RATE OF DRAWDOWN OF THE EXCAVATIONS.

AFTER COMPLETION OF THE SUBSTRUCTURES, ALL COLLECTED SEDIMENTS SHOULD BE REMOVED FROM THE SETTLING STRUCTURES AND THE GROUND SHAPED TO ITS FINAL GRADE AND SLOPE. DISPOSE OF THE COLLECTED SEDIMENTS IN AN UPLAND PORTION OF THE PROJECT, OR IN A MANNER APPROVED BY THE RESIDENT ENGINEER THAT WILL NOT RESULT IN SEDIMENTS OR POLLUTANTS ENTERING THE STREAM.

ROADWAY EROSION CONTROLS

ANY NEW FILL SLOPES THAT ARE DESIGNED WITH STONE FILL BLANKETS FOR SLOPE STABILIZATION SHALL BE CONSTRUCTED WITH THE STONE FILL BEING PLACED AS THE FILL SLOPE EMBANKMENT CONSTRUCTION PROGRESSES.

ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED FOLLOWING FINAL GRADING ACTIVITIES. ALL AREAS THAT ARE GRADED OUTSIDE OF THE GROWING SEASON SHALL BE TREATED WITH SLOPE STABILIZATION UNTIL SEEDING AND MULCHING CAN BE PERFORMED.

DETOUR REMOVAL AND FINAL EROSION CONTROLS

REMOVE TEMPORARY DETOUR FILL MATERIAL TO ORIGINAL GROUND.

AS THE TEMPORARY DETOUR FILLS ARE REMOVED, ALL EXPOSED SOIL SURFACES WILL BE STABILIZED WITH STRAW MATTING AND/OR SEED AND MULCH. ON PARTIALLY REMOVED TEMPORARY FILL SLOPES, ALL EXPOSED WILL BE STABILIZED AT THE END OF EACH WORK DAY.

THE CHANNEL STONE FILL SLOPES WILL BE COMPLETED, AND GRUBBING MATERIAL WILL BE APPLIED TO STONE FILLED AREAS AROUND EACH ABUTMENT. THE GRUBBING MATERIAL SHALL NOT BE PLACED BENEATH THE NEW STRUCTURE OR BELOW THE ORDINARY HIGH WATER ELEVATION. REFER TO THE HYDRAULICS INFORMATION ON THE PRELIMINARY INFORMATION SHEET.

THE NEWLY PLACED GRUBBING MATERIAL SHALL BE STABILIZED WITH STRAW MATTING AND/OR SEED AND MULCH AS DIRECTED BY THE RESIDENT ENGINEER.

REMOVAL OF SILT FENCE SHALL COMMENCE ONLY AFTER ALL UP-SLOPE AREAS ARE STABILIZED AND WELL ESTABLISHED, AND THE RESIDENT ENGINEER HAS APPROVED THE REMOVAL.

REMOVE ALL REMAINING TEMPORARY EROSION CONTROL MEASURES, RE-GRADE ANY AREAS IF NECESSARY, TREAT ALL RE-GRADED AREAS WITH STRAW MATTING AND/OR SEED AND MULCH, AND ESTABLISH ANY FINAL EROSION CONTROL DEVICES AS DEEMED NECESSARY BY THE RESIDENT ENGINEER.

SEDIMENT SETTLING BASIN SIZING CRITERIA

PUMP FLOW RATE		REQUIRED SURFACE AREA		LENGTH WIDTH = 2:1			
Q(gpm)	Q(m ³ /s)	FT ²	M ²	L(ft)	W(ft)	L(m)	W(m)
50	0.0032	595	55	35.0	17.0	10.6	5.3
100	0.0063	1200	111	49.0	24.5	15.0	7.5
150	0.0095	1776	165	59.6	29.8	18.2	9.1
200	0.0126	2368	220	68.8	34.4	21.0	10.5
250	0.0158	2970	276	77.0	38.5	23.4	11.7
300	0.0189	3560	330	84.4	42.2	25.8	12.9
350	0.0221	4155	386	91.2	45.6	27.8	13.9

LANDSCAPE NOTES

TREE PROTECTION NOTES:

PRIOR TO CONSTRUCTION; SITE WORK MAY NOT COMMENCE UNTIL THE CONTRACTOR MEETS ON-SITE WITH THE RESIDENT ENGINEER TO COMPLETE A PRE-CONSTRUCTION WALK-THROUGH TO REVIEW AND MAP ALL CONSTRUCTION AND WORK PROCEDURES, ACCESS ROUTES, STORAGE AND TREE PROTECTION AREAS RELATING TO THE PROTECTION OF TREES MARKED "TREE PROTECTION ZONE; NO CONSTRUCTION ACTIVITY WITHIN THIS FENCED TREE PROTECTION ZONE(TPZ), EXCEPT FOR THE INSTALLATION OF EROSION CONTROL MEASURES. (AS APPLICABLE)". ALSO AT THIS TIME ALL UNDERGROUND UTILITIES AND DRAIN OR IRRIGATION LINES SHALL BE ROUTED OUTSIDE THE TREE PROTECTION ZONE, IF LINES MUST TRAVERSE THE PROTECTION AREA, THEY SHALL BE TUNNELED OR BORED UNDER THE TREE AT SPECIFIED DEPTHS.

DURING CONSTRUCTION; PROTECT TREES TO BE SAVED BY ERECTING ORANGE SNOW FENCE JUST AT LIMIT OF CONSTRUCTION AS INDICATED (PLEASE SEE EPSC PLANS AND TREE PROTECTION DETAIL). INSTALL SIGNAGE AT EACH PROTECTION ZONE WHICH CLEARLY READS: "TREES ARE BEING PROTECTED. NO UNAUTHORIZED TRESPASS IS ALLOWED".

AVOID CUTTING ROOTS OF TREES WHENEVER POSSIBLE. WHEN AVOIDANCE IS NOT POSSIBLE, CUT ROOTS FLUSH (SAW THOSE ROOTS GREATER THAN 1IN WIDE), WHICH WILL ENCOURAGE NEW ROOT GROWTH. DO NOT RIP ROOTS WITH EXCAVATOR OR OTHER HEAVY EQUIPMENT.

BACKFILL AS SOON AS POSSIBLE; KEEP ROOT ENDS MOIST WITH WET BURLAP OR SIMILAR MATERIAL UNTIL ABLE TO BACKFILL. ADD A ROOT STIMULATOR SUCH AS MYCORRHIZAL FUNGIPER MANUFACTURER'S INSTRUCTIONS, AND WATER (PER APPROVED WATERING SPECIFICATIONS) THE ENTIRE BACKFILL AREA WITHIN 24 HOURS.

USE TUNNELING TO PRESERVE TREE ROOTS. IT IS BEST TO TUNNEL 1-2 FT ON EITHER SIDE OF THE TREE'S CENTER SO AS TO MISS THE TAP ROOT IF THERE IS ONE. TREES UNDER 1FT DIAMETER CAN TYPICALLY BE TUNNELED AT A DEPTH OF 3 FT; TREES 1FT DIAMETER OR MORE SHOULD BE TUNNELED AT A DEPTH OF 4 FT OR GREATER. FOR TREES 6 IN DBH IN DIAMETER OR LESS, TRENCHING TO INITIATE TUNNELING SHOULD COME NO CLOSER TO THE TREE THAN THE DRIPLINE. FOR TREES OVER 150 MM DBH:
6-9 IN DBH -5 FT DISTANCE FROM BOTH SIDES OF TREE
10-14 IN DBH -10 FT DISTANCE FROM BOTH SIDES OF TREE
15-19 IN DBH -12 FT DISTANCE FROM BOTH SIDES OF TREE
OVER 19 IN DBH -15 FT DISTANCE FROM BOTH SIDES OF TREE

NO EXCAVATED OR BACKFILL MATERIAL SHALL BE PILED IN TREE PROTECTION ZONE; NO EQUIPMENT SHALL BE STORED, PILED OR CLEANED IN ANY TREE PROTECTION ZONE.

IF A PROTECTED TREE IS DAMAGED DUE TO THE CONTRACTOR'S NEGLIGENCE AND IS NOT REPAIRABLE (AS DETERMINED BY THE ENGINEER OR VAOT LANDSCAPE ARCHITECT), THEN THE CONTRACTOR SHALL REPLACE THE TREE (AT THE CONTRACTOR'S EXPENSE AND ACCORDING TO APPROVED PLANTING TECHNIQUES) WITH THE SAME TREE OF EQUAL VALUE, OR TWO OR MORE TREES WITH A TOTAL VALUE EQUAL TO THAT OF THE DAMAGED TREE. IN ADDITION, ALL TREE PROTECTION MEASURES, INCLUDING FENCING, SIGNAGE, ROOT PRUNING, ROOT STIMULATORS, WATERING AND OTHER MATERIALS WILL NOT BE PAID SEPARATELY, BUT WILL BE CONSIDERED INCIDENTAL TO ALL OTHER CONTRACT ITEMS.

THE FOLLOWING SIGNIFICANT TREES WITHIN THE R.O.W. ARE INDICATED TO BE SAVED; ABSOLUTELY NO CONSTRUCTION WITHIN THIS FENCED TREE PROTECTION ZONE AS INDICATED:

SHEET NO	STATION	TREE
30	STA 71+82	18" WHITE PINE

EROSION CONTROL NARRATIVE #2

PROJECT NAME:	WOODFORD
PROJECT NUMBER:	BHF 010-1(29)
FILE NAME: 84e039/structures/84e039erobdr.dgn	PLOT DATE: 03-OCT-2005
PROJECT LEADER: M EVANS-MONGEON	DRAWN BY: W FARLEY
DESIGNED BY: W FARLEY	CHECKED BY:
IPARM: epscnarr2.1	SHEET 24 OF 106

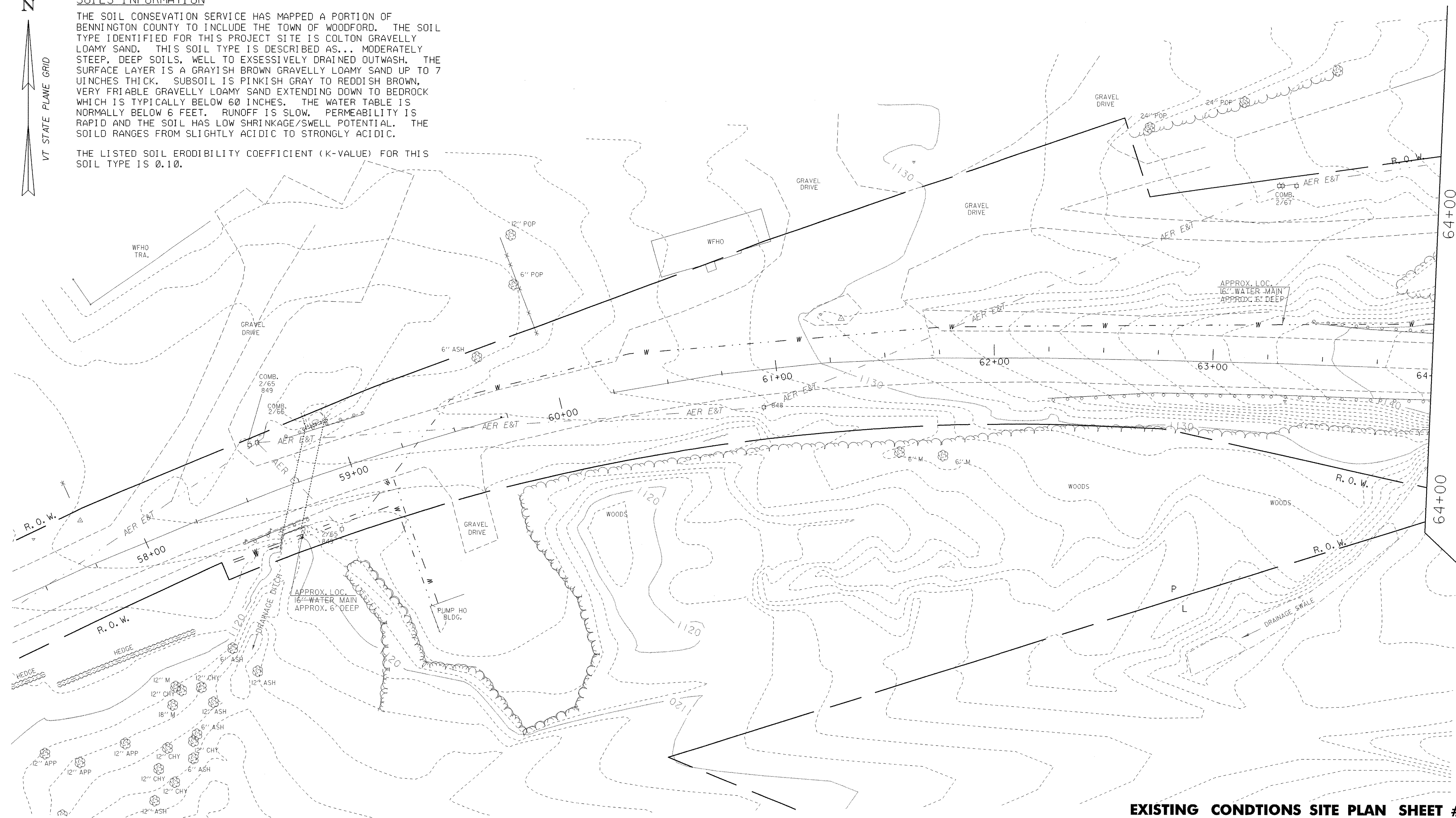
N

VT STATE PLANE GRID

SOILS INFORMATION

THE SOIL CONSERVATION SERVICE HAS MAPPED A PORTION OF BENNINGTON COUNTY TO INCLUDE THE TOWN OF WOODFORD. THE SOIL TYPE IDENTIFIED FOR THIS PROJECT SITE IS COLTON GRAVELLY LOAMY SAND. THIS SOIL TYPE IS DESCRIBED AS... MODERATELY STEEP, DEEP SOILS, WELL TO EXCESSIVELY DRAINED OUTWASH. THE SURFACE LAYER IS A GRAYISH BROWN GRAVELLY LOAMY SAND UP TO 7 INCHES THICK. SUBSOIL IS PINKISH GRAY TO REDDISH BROWN, VERY FRIABLE GRAVELLY LOAMY SAND EXTENDING DOWN TO BEDROCK WHICH IS TYPICALLY BELOW 60 INCHES. THE WATER TABLE IS NORMALLY BELOW 6 FEET. RUNOFF IS SLOW. PERMEABILITY IS RAPID AND THE SOIL HAS LOW SHRINKAGE/SWELL POTENTIAL. THE SOIL RANGES FROM SLIGHTLY ACIDIC TO STRONGLY ACIDIC.

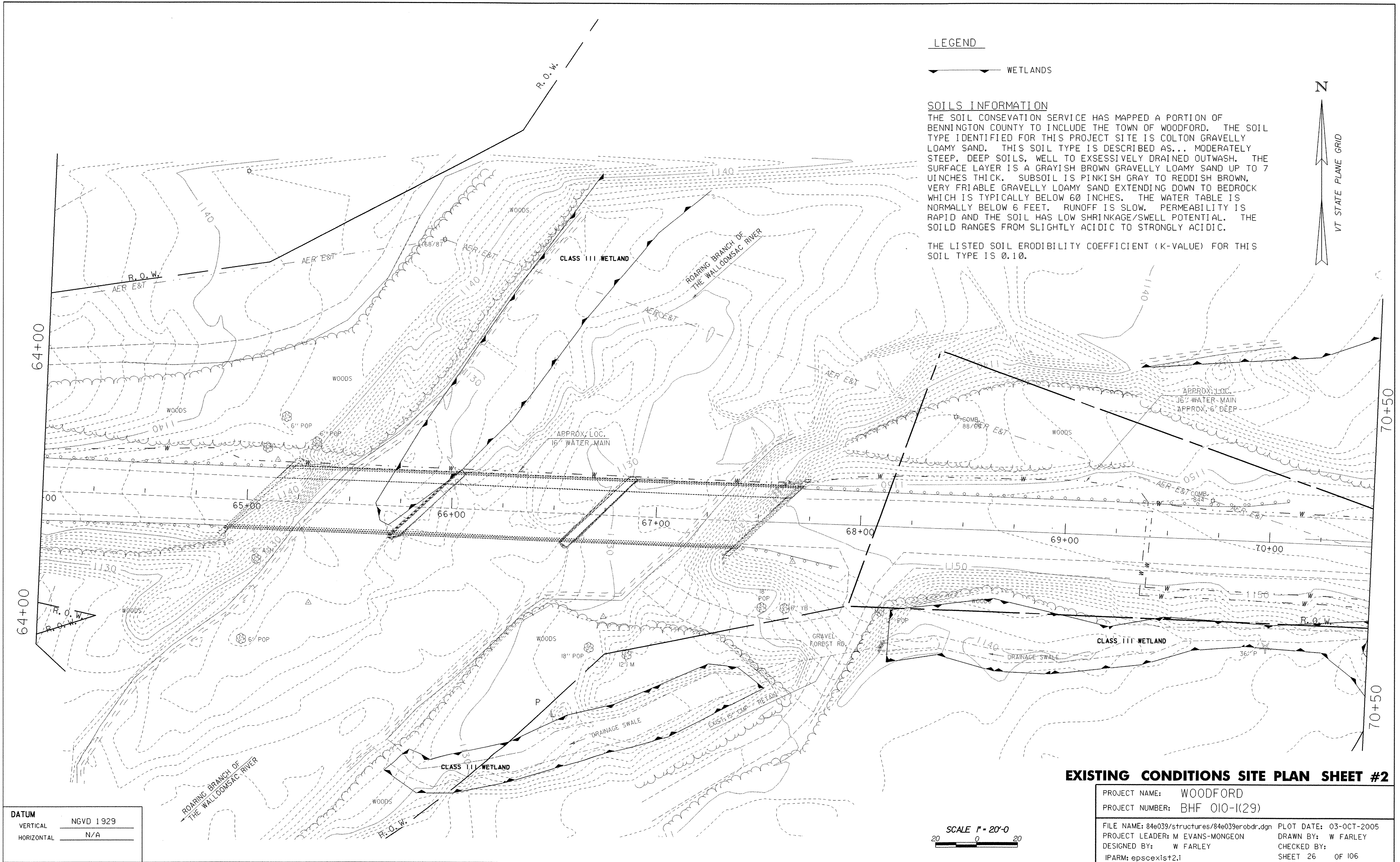
THE LISTED SOIL ERODIBILITY COEFFICIENT (K-VALUE) FOR THIS SOIL TYPE IS 0.10.

**EXISTING CONDITIONS SITE PLAN SHEET #1**

DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

SCALE 1" = 20'-0"
20 0 20

PROJECT NAME:	WOODFORD
PROJECT NUMBER:	BHF 010-1(29)
FILE NAME:	84e039/structures/84e039erobdr.dgn
PROJECT LEADER:	M EVANS-MONGEON
DESIGNED BY:	W FARLEY
IPARM:	epscexis11
PLOT DATE:	03-OCT-2005
DRAWN BY:	W FARLEY
CHECKED BY:	
SHEET	25 OF 106



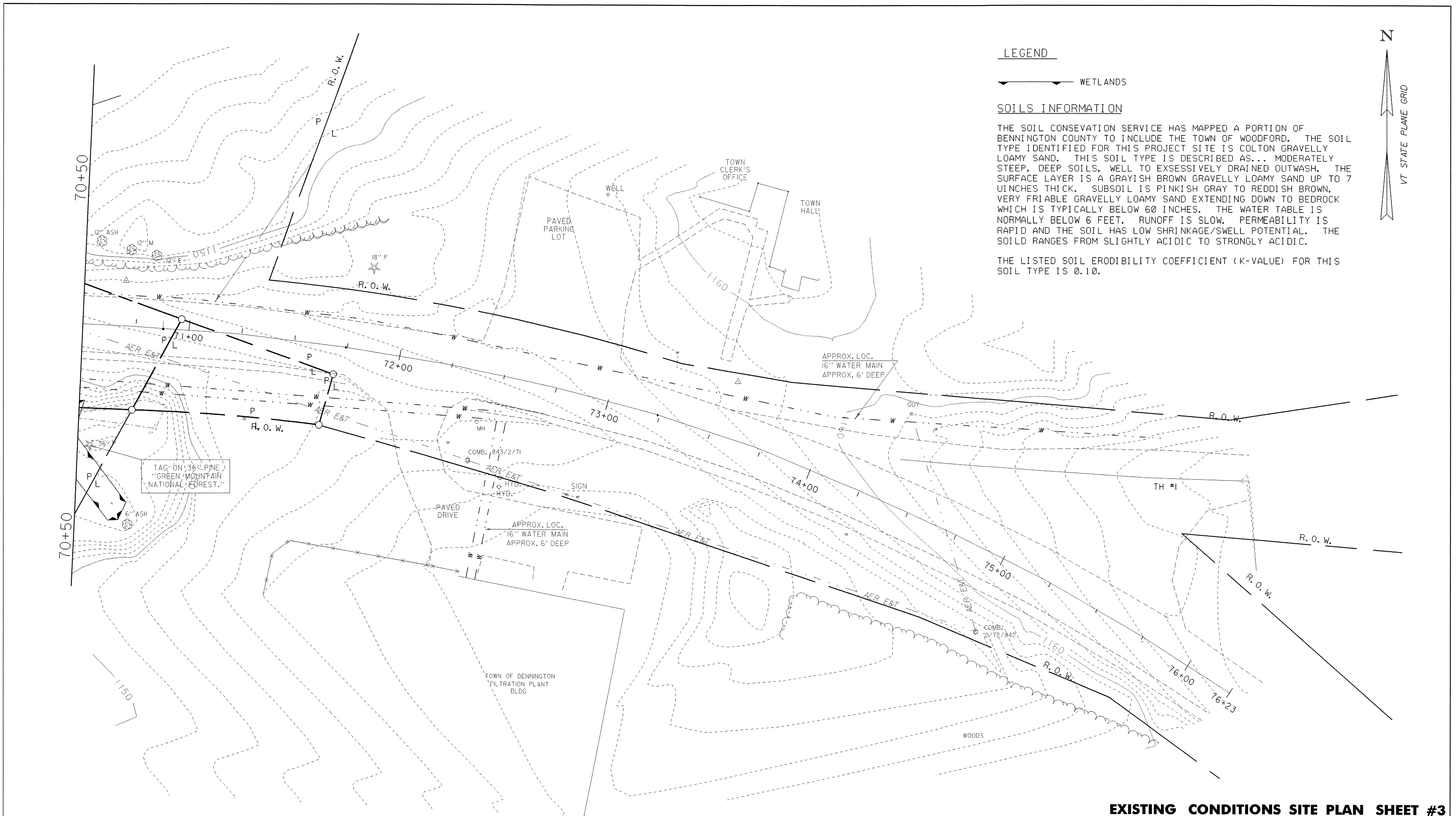
LEGEND

WETLANDS

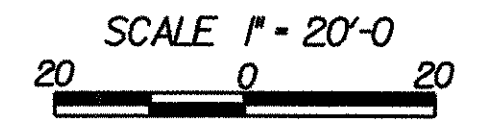
SOILS INFORMATION

THE SOIL CONSERVATION SERVICE HAS MAPPED A PORTION OF BENNINGTON COUNTY TO INCLUDE THE TOWN OF WOODFORD. THE SOIL TYPE IDENTIFIED FOR THIS PROJECT SITE IS COLTON GRAVELLY LOAMY SAND. THIS SOIL TYPE IS DESCRIBED AS... MODERATELY STEEP, DEEP SOILS, WELL TO EXCESSIVELY DRAINED OUTWASH. THE SURFACE LAYER IS A GRAYISH BROWN GRAVELLY LOAMY SAND UP TO 7 INCHES THICK. SUBSOIL IS PINKISH GRAY TO REDDISH BROWN, VERY FRIABLE GRAVELLY LOAMY SAND EXTENDING DOWN TO BEDROCK WHICH IS TYPICALLY BELOW 60 INCHES. THE WATER TABLE IS NORMALLY BELOW 6 FEET. RUNOFF IS SLOW. PERMEABILITY IS RAPID AND THE SOIL HAS LOW SHRINKAGE/SWELL POTENTIAL. THE SOIL RANGES FROM SLIGHTLY ACIDIC TO STRONGLY ACIDIC.

THE LISTED SOIL ERODIBILITY COEFFICIENT (K-VALUE) FOR THIS SOIL TYPE IS 0.10.



DATUM	NGVD 1929
VERTICAL	N/A
HORIZONTAL	N/A

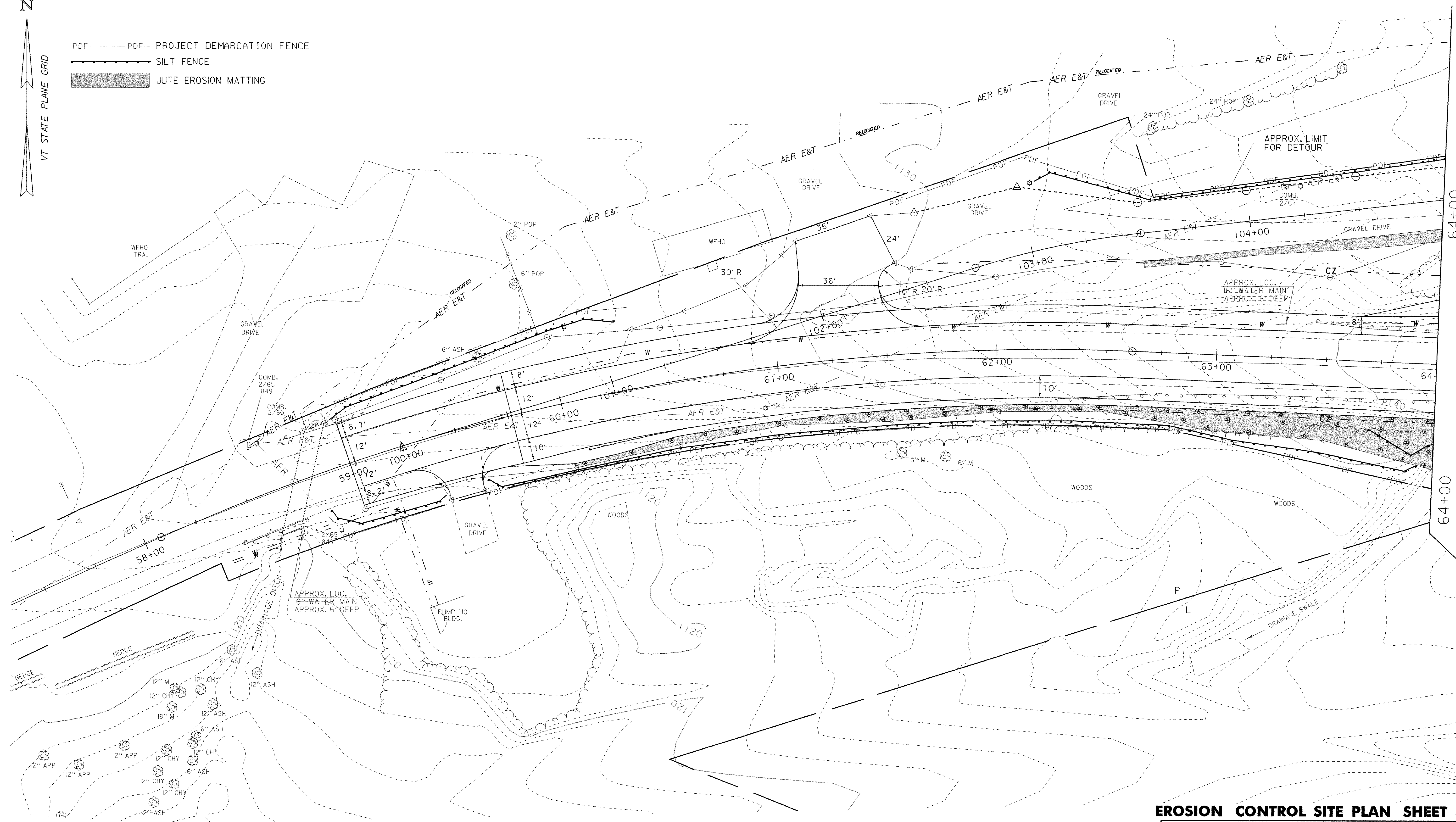


EXISTING CONDITIONS SITE PLAN SHEET #3

PROJECT NAME:	WOODFORD
PROJECT NUMBER:	BHF 010-I(29)
FILE NAME:	84e039/structures/84e039erobdr.dgn
PROJECT LEADER:	M EVANS-MONGEON
DESIGNED BY:	W FARLEY
IPARM:	epscoexist3.i
PLOT DATE:	03-OCT-2005
DRAWN BY:	W FARLEY
CHECKED BY:	
SHEET	27 OF 106



PDF — PDF — PROJECT DEMARCATION FENCE
— SILT FENCE
JUTE EROSION MATTING



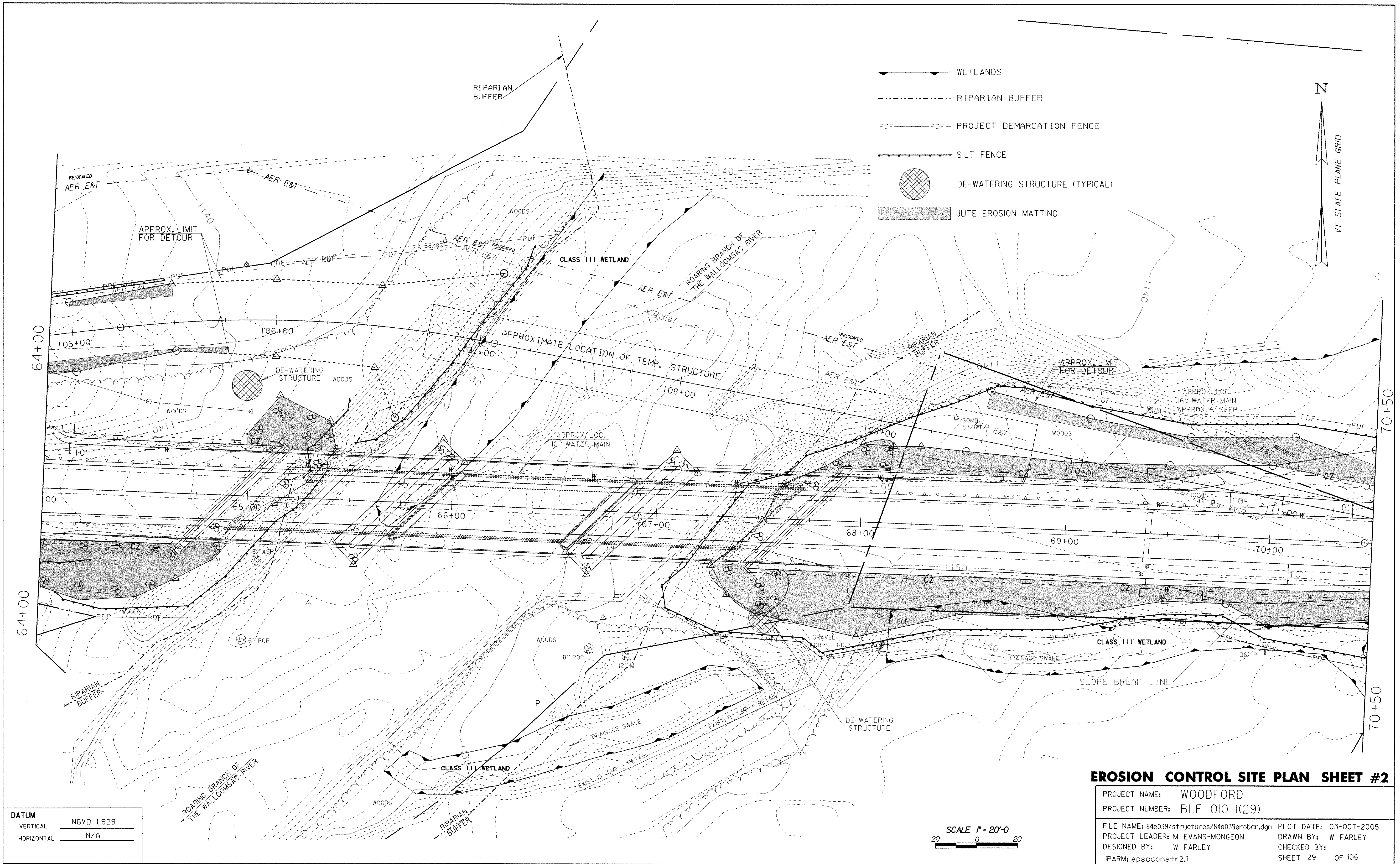
DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

SCALE 1" = 20'-0"
20 0 20

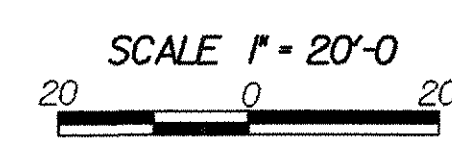
EROSION CONTROL SITE PLAN SHEET #1

PROJECT NAME: WOODFORD
PROJECT NUMBER: BHF 010-I(29)

FILE NAME: 84e039/structures/84e039erobdr.dgn PLOT DATE: 03-OCT-2005
PROJECT LEADER: M EVANS-MONGEON DRAWN BY: W FARLEY
DESIGNED BY: W FARLEY CHECKED BY:
IPARM: epsconstr11 SHEET 28 OF 106

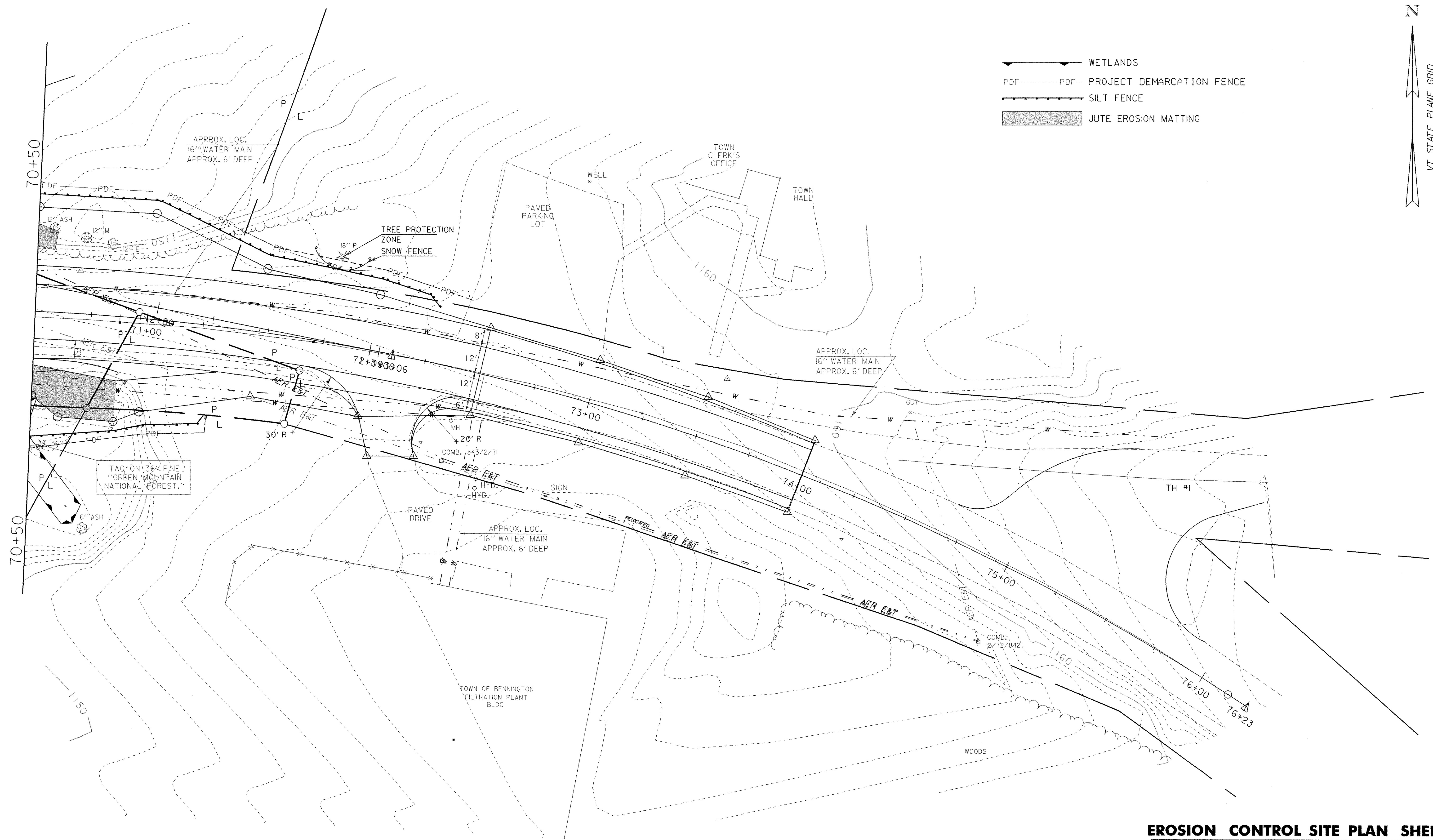


DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	N/A



EROSION CONTROL SITE PLAN SHEET #2	
PROJECT NAME:	WOODFORD
PROJECT NUMBER:	BHF 010-K(29)
FILE NAME:	84e039/structures/84e039erobdr.dgn
PROJECT LEADER:	M EVANS-MONGEON
DESIGNED BY:	W FARLEY
IPARM:	epsconstr2.i
PLOT DATE:	03-OCT-2005
DRAWN BY:	W FARLEY
CHECKED BY:	
SHEET	29 OF 106

- WETLANDS
- PDF — PDF — PROJECT DEMARCATION FENCE
- SILT FENCE
- JUTE EROSION MATTING



DATUM

VERTICAL NGVD 1929

HORIZONTAL N/A

SCALE 1" = 20'-0"

20 0 20

EROSION CONTROL SITE PLAN SHEET #3

PROJECT NAME: WOODFORD

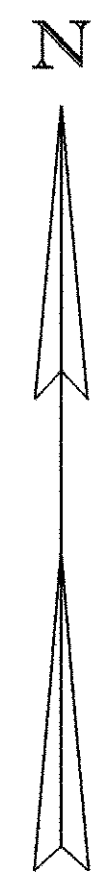
PROJECT NUMBER: BHF 010-1(29)

FILE NAME: 84e039/structures/84e039erobdr.dgn PLOT DATE: 03-OCT-2005

PROJECT LEADER: M EVANS-MONGEON DRAWN BY: W FARLEY

DESIGNED BY: W FARLEY CHECKED BY:

IPARM: epsconstr3.i SHEET 30 OF 106

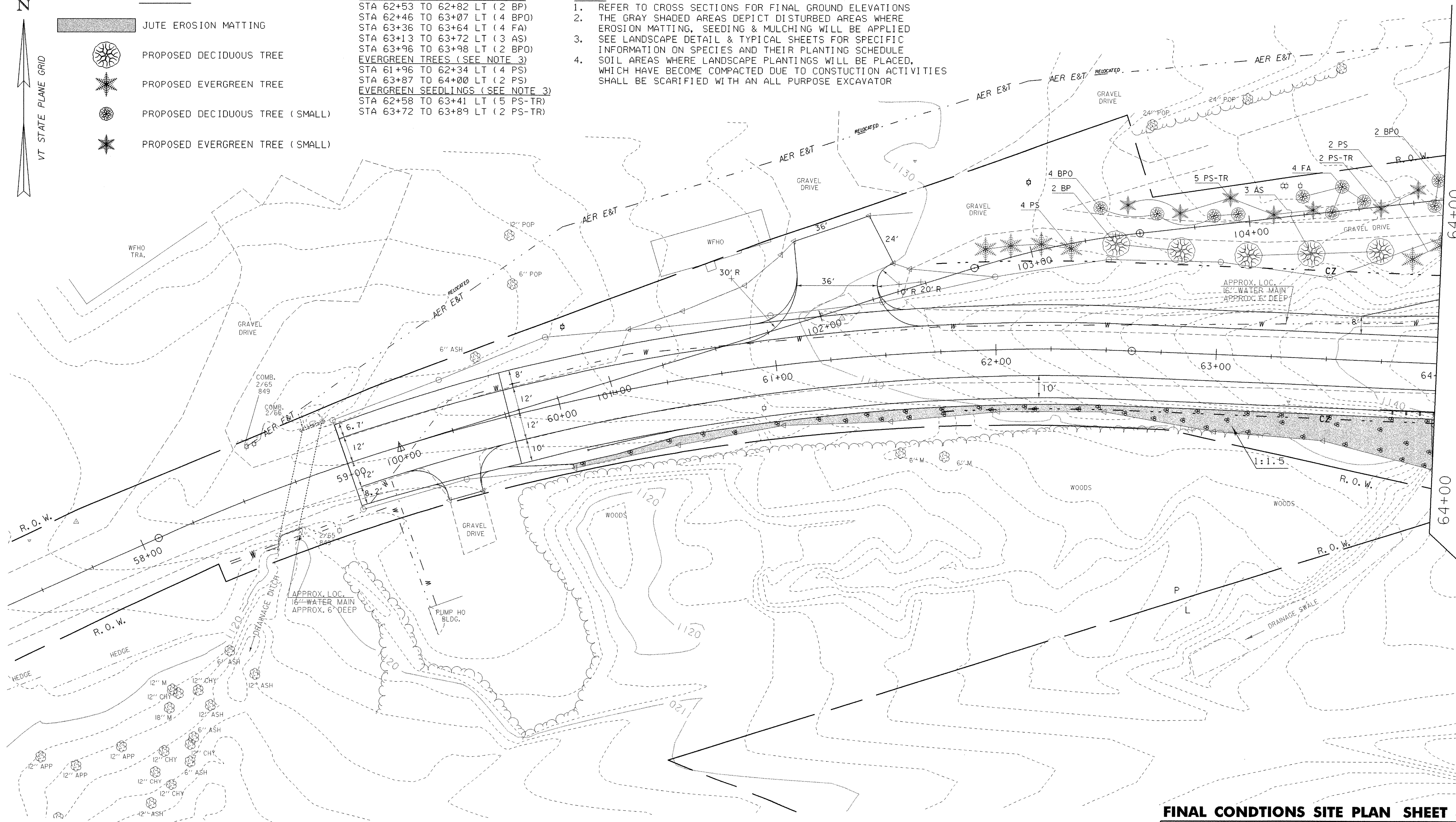


LEGEND

- JUTE EROSION MATTING
- PROPOSED DECIDUOUS TREE
- PROPOSED EVERGREEN TREE
- PROPOSED DECIDUOUS TREE (SMALL)
- PROPOSED EVERGREEN TREE (SMALL)

DECIDUOUS TREES (SEE NOTE 3)
STA 62+53 TO 62+82 LT (2 BP)
STA 62+46 TO 63+07 LT (4 BPO)
STA 63+36 TO 63+64 LT (4 FA)
STA 63+13 TO 63+72 LT (3 AS)
STA 63+96 TO 63+98 LT (2 BPO)
EVERGREEN TREES (SEE NOTE 3)
STA 61+96 TO 62+34 LT (4 PS)
STA 63+87 TO 64+00 LT (2 PS)
EVERGREEN SEEDLINGS (SEE NOTE 3)
STA 62+58 TO 63+41 LT (5 PS-TR)
STA 63+72 TO 63+89 LT (2 PS-TR)

- NOTES:
- REFER TO CROSS SECTIONS FOR FINAL GROUND ELEVATIONS
 - THE GRAY SHADED AREAS DEPICT DISTURBED AREAS WHERE EROSION MATTING, SEEDING & MULCHING WILL BE APPLIED
 - SEE LANDSCAPE DETAIL & TYPICAL SHEETS FOR SPECIFIC INFORMATION ON SPECIES AND THEIR PLANTING SCHEDULE
 - SOIL AREAS WHERE LANDSCAPE PLANTINGS WILL BE PLACED, WHICH HAVE BECOME COMPACTED DUE TO CONSTRUCTION ACTIVITIES SHALL BE SCARIFIED WITH AN ALL PURPOSE EXCAVATOR



DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

SCALE 1" = 20'-0"
20 0 20

FINAL CONDIONS SITE PLAN SHEET #1

PROJECT NAME: WOODFORD
PROJECT NUMBER: BHF 010-1(29)

FILE NAME: 84e039/structures/84e039erobdr.dgn PLOT DATE: 03-OCT-2005
PROJECT LEADER: M EVANS-MONGEON DRAWN BY: W FARLEY
DESIGNED BY: W FARLEY CHECKED BY:
IPARM: epscfinal.i SHEET 31 OF 106

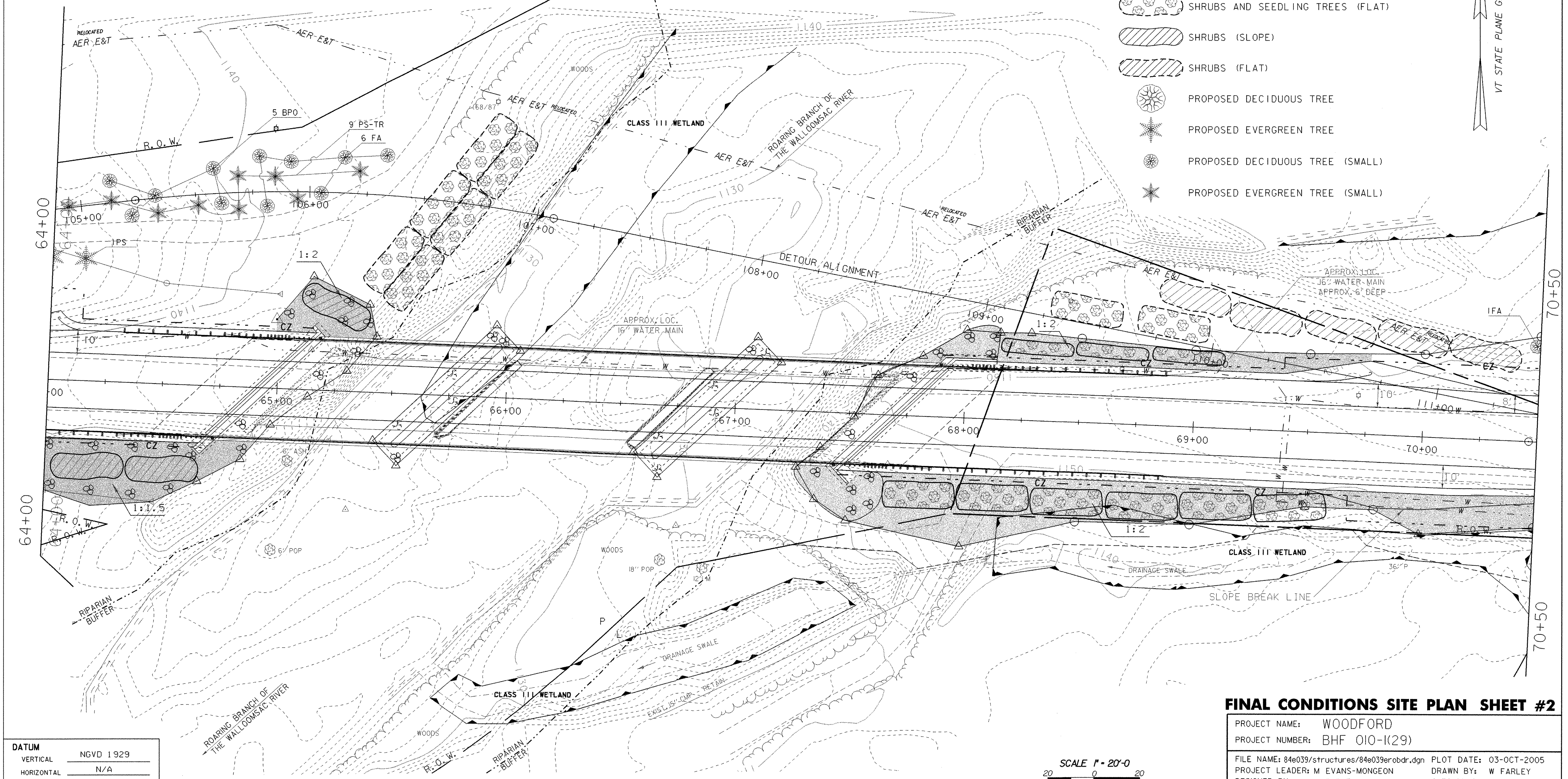
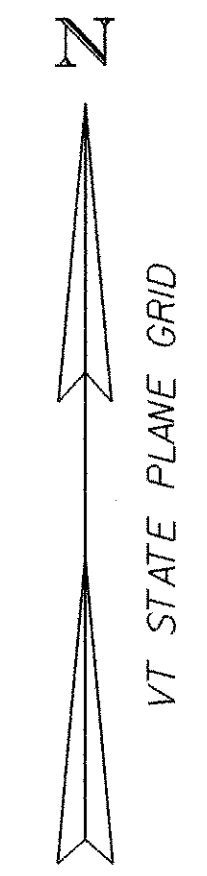
DECIDUOUS TREES (SEE NOTE 3)
STA 64+23 TO 64+73 LT (5 BPO)
STA 64+92 TO 65+44 LT (6 FA)
STA 70+49 LT (1 FA)
EVERGREEN TREES (SEE NOTE 3)
STA 64+14 LT (1 PS)
EVERGREEN SEEDLINGS (SEE NOTE 3)
STA 64+06 TO 65+32 LT (9 PS-TR)

EMBANKMENT GROUPINGS (SEE NOTE 3)
STA 64+02 TO 64+67 RT (2 GROUPS)
STA 65+09 TO 65+40 LT (1 GROUP)
STA 67+65 TO 69+59 LT (6 GROUPS)
STA 68+15 TO 69+13 LT (3 GROUPS) (SEE NOTE 4)
FLAT GROUND GROUPINGS (SEE NOTE 3)
STA 65+36 TO 66+09 LT (6 GROUPS)
STA 68+36 TO 69+06 LT (2 GROUPS)
STA 68+83 TO 70+42 LT (5 GROUPS)

- NOTES:
1. REFER TO CROSS SECTIONS FOR FINAL GROUND ELEVATIONS
 2. THE GRAY SHADED AREAS DEPICT DISTURBED AREAS WHERE EROSION MATTING, SEEDING & MULCHING WILL BE APPLIED
 3. SEE LANDSCAPE DETAIL & TYPICAL SHEETS FOR SPECIFIC INFORMATION ON SPECIES AND THEIR PLANTING SCHEDULE
 4. THESE GROUPS WILL UTILIZE THE UPPER PORTION OF THE GROUPING AS SHOWN ON THE LANDSCAPE DETAIL SHEETS
 5. SOIL AREAS WHERE LANDSCAPE PLANTINGS WILL BE PLACED, WHICH HAVE BECOME COMPACTED DUE TO CONSTRUCTION ACTIVITIES SHALL BE SCARIFIED WITH AN ALL PURPOSE EXCAVATOR

LEGEND

- JUTE EROSION MATTING
- WETLANDS
- SHRUBS AND SEEDLING TREES (SLOPE)
- SHRUBS AND SEEDLING TREES (FLAT)
- SHRUBS (SLOPE)
- SHRUBS (FLAT)
- PROPOSED DECIDUOUS TREE
- PROPOSED EVERGREEN TREE
- PROPOSED DECIDUOUS TREE (SMALL)
- PROPOSED EVERGREEN TREE (SMALL)

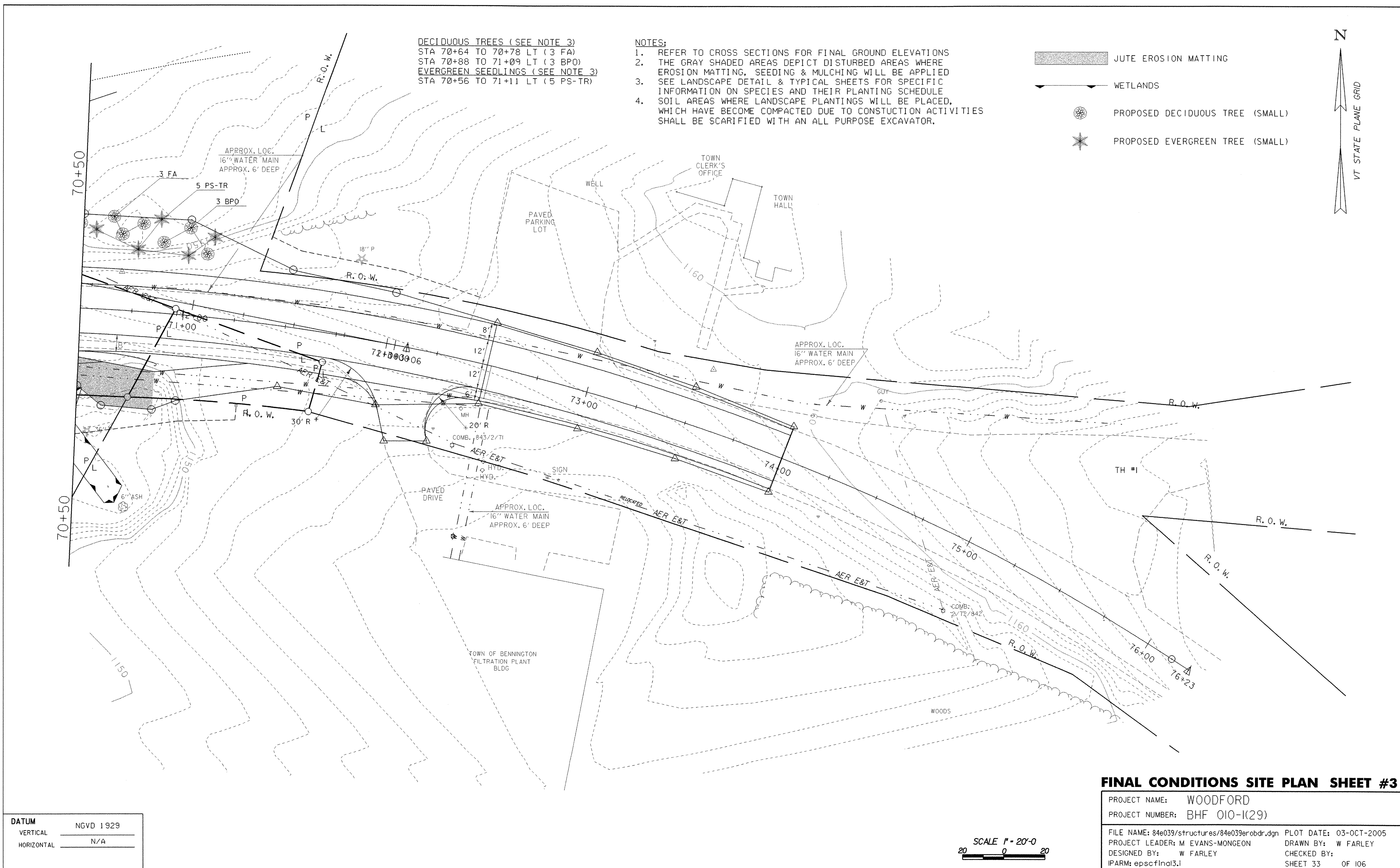


DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	N/A

SCALE 1" = 20'-0"

FINAL CONDITIONS SITE PLAN SHEET #2

PROJECT NAME:	WOODFORD
PROJECT NUMBER:	BHF 010-K29
FILE NAME:	84e039/structures/84e039erobdr.dgn
PROJECT LEADER:	M EVANS-MONGEON
DESIGNED BY:	W FARLEY
IPARM:	epscfind2.i
PLOT DATE:	03-OCT-2005
DRAWN BY:	W FARLEY
CHECKED BY:	
SHEET	32 OF 106



SILT FENCE

APPLICATION NOTES:

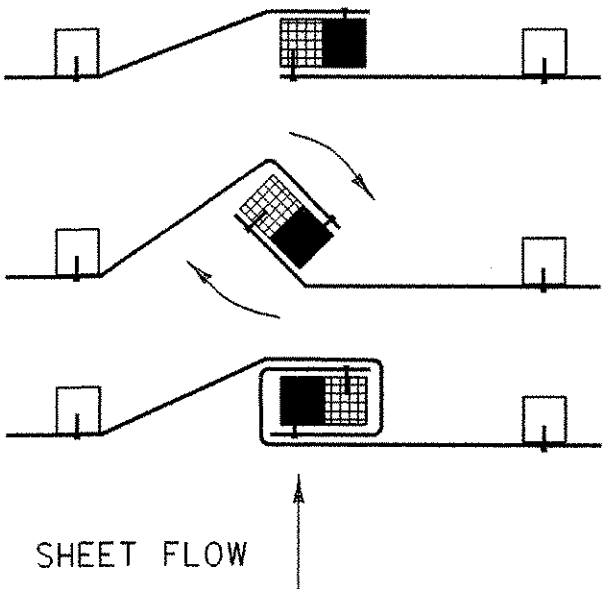
- A. THE PRIMARY PURPOSE OF SILT FENCE IS TO REDUCE RUNOFF VELOCITY AND TRAP SEDIMENT. VELOCITY IS REDUCED, WATER IS IMPOUNDED BEHIND THE MEASURE, AND SEDIMENT FALLS OUT OF SUSPENSION.
- B. SILT FENCE SHALL BE INSTALLED ON A LINE OF EQUAL ELEVATION (CONTOUR). IT MAY BE INSTALLED AT INTERMEDIATE POINTS UP SLOPES AS WELL AS AT THE BOTTOM, AS SHOWN IN THE DETAIL.
- C. SILT FENCE SHALL NOT BE USED ACROSS CONCENTRATED FLOW.

GENERAL NOTES:

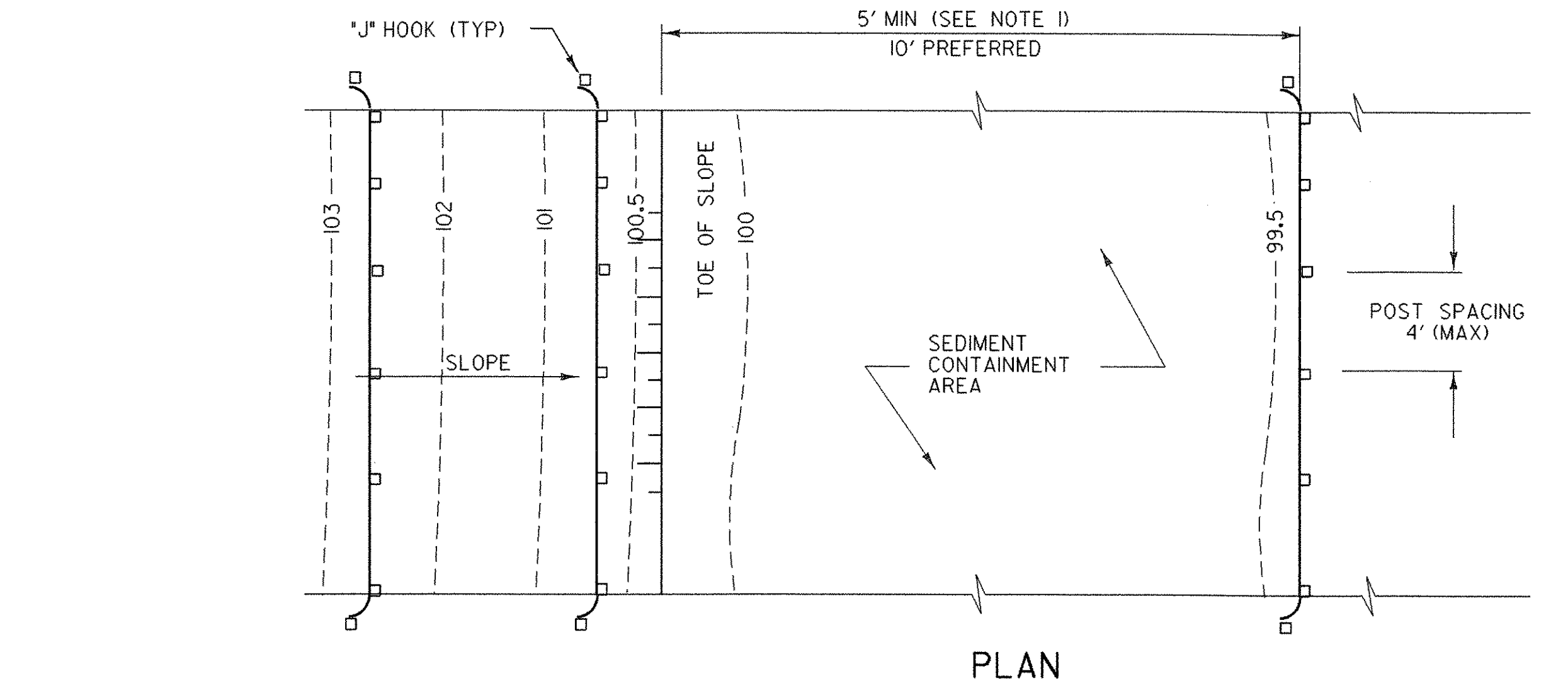
- 1. SILT FENCE SHALL GENERALLY BE PLACED A MINIMUM OF 5 FEET BEYOND TOE OF SLOPE, 10 FEET PREFERRED, TO PROVIDE ADEQUATE AREA FOR SEDIMENT STORAGE AND FACILITATE MAINTENANCE OF SEDIMENT CONTAINMENT AREA.
- 2. ALL ENDS SHALL BE "J" HOOKED TO TRAP SEDIMENT.
- 3. IN AREAS WITH TWO SLOPES, SILT FENCE SHALL BE USED TO ERECT A DAM AND TRAP SEDIMENT AT THE BASE OF THE STEEPER SLOPE.
- 4. THE BOTTOM EDGE OF SILT FENCE SHALL BE BURIED A MINIMUM OF 6 INCHES BELOW GROUND, AND KEYED IN 4 INCHES. THE FENCE SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC.
- 5. MAXIMUM DRAINAGE AREA TRIBUTARY TO 100 FEET OF SILT FENCE SHALL BE 0.25 ACRES.
- 6. THE FOLLOWING ARE MAXIMUM SLOPE LENGTHS FOR THESE MEASURES:

CONSTRUCTED SLOPE	SLOPE LENGTH (LS) FT	HORIZONTAL LENGTH (LH) FT
3 : 1	80	75
4 : 1	130	125
5 : 1	200	200
> 5 : 1	250	250

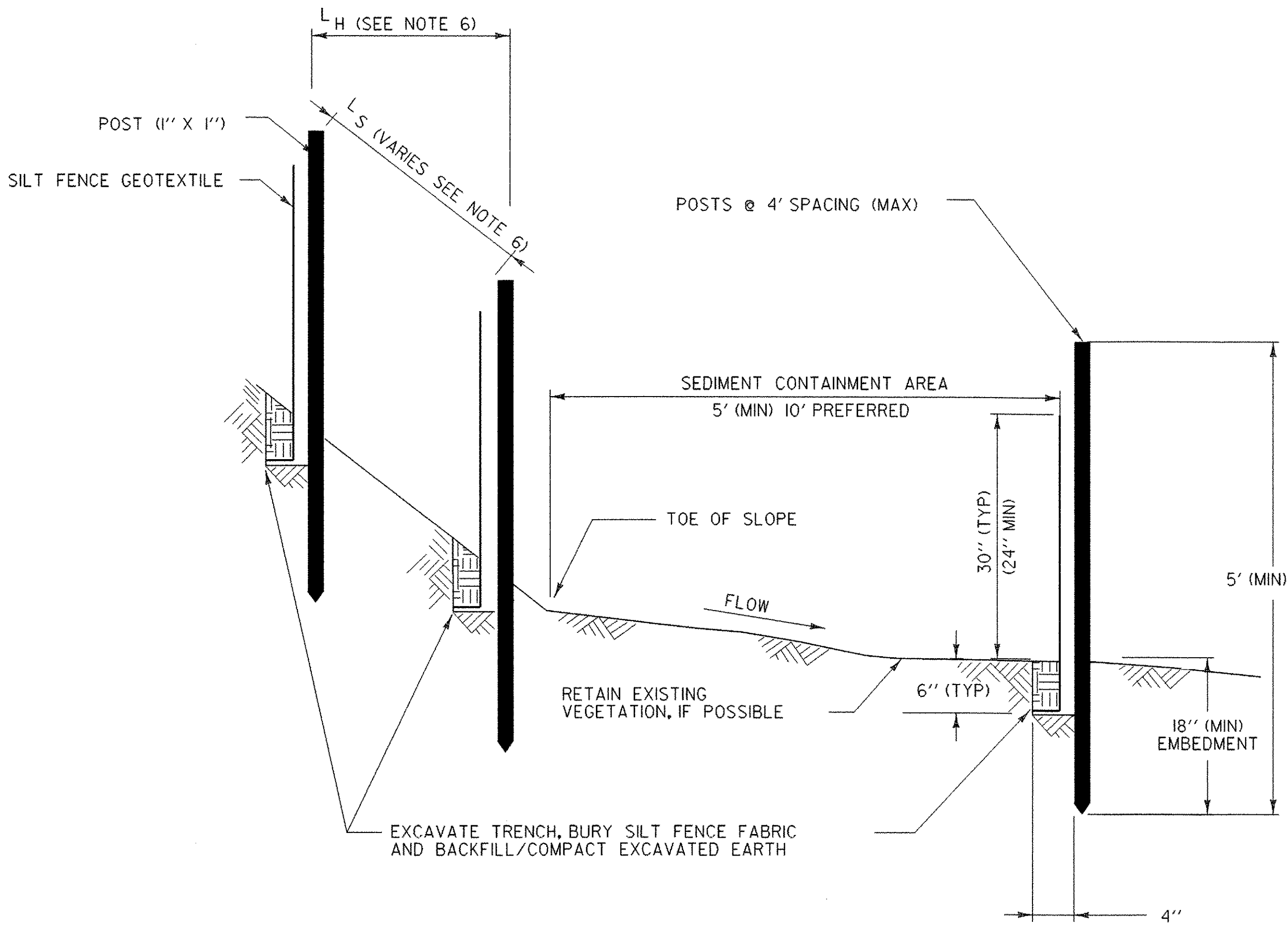
- 7. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
- 8. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
- 9. SILT FENCE SHALL BE REMOVED WHEN THE AREA HAS BEEN STABILIZED. AT TIME OF REMOVAL OF THE SILT FENCE, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
- 10. PAYMENT FOR INSTALLATION AND REMOVAL OF SILT FENCE SHALL BE MADE UNDER THE GEOTEXTILE FOR SILT FENCE ITEM.
- 11. PAYMENT FOR MONITORING SILT FENCE SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
- 12. PAYMENT FOR MAINTAINING SILT FENCE SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



SPlicing DETAIL



PLAN

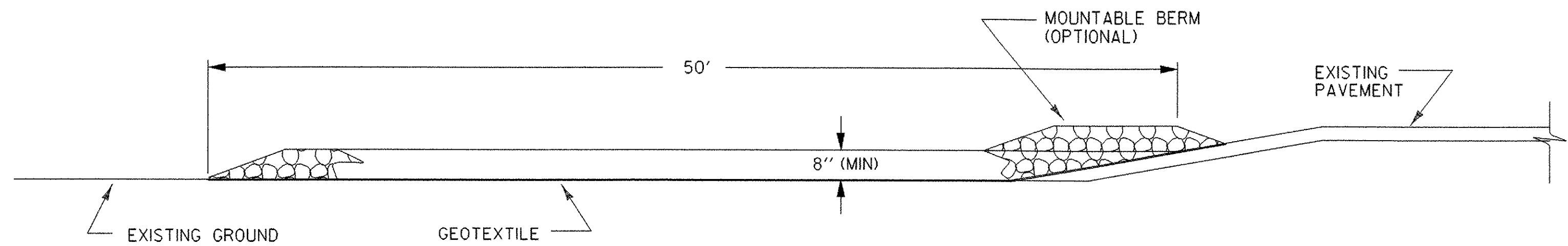


SECTION
SILT FENCE - TEMPORARY

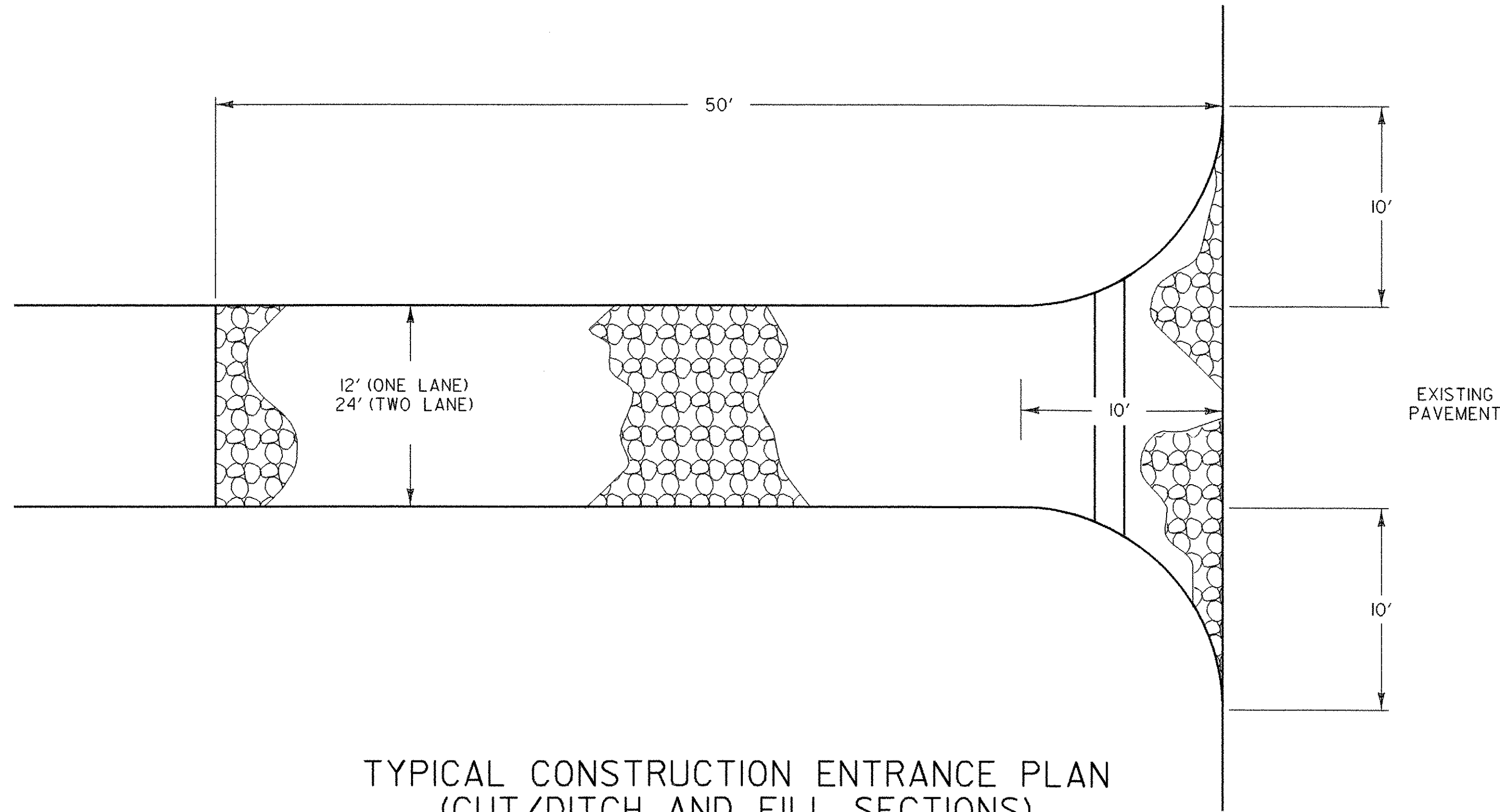
EROSION PREVENTION &
SEDIMENT CONTROL DETAILS
SILT FENCE

PROJECT NAME:	WOODFORD
PROJECT NUMBER:	NHF 010-I(29)
FILE NAME:	84e039/structures/84e039erobdr.dgn
PROJECT LEADER:	M EVANS-MONGEON
DESIGNED BY:	EROSION
IPARM:	epsdct1.i
PLOT DATE:	03-OCT-2005
DRAWN BY:	EROSION
CHECKED BY:	
SHEET	34 OF 106

STABILIZED CONSTRUCTION ENTRANCE



TYPICAL CONSTRUCTION ENTRANCE PROFILE
(CUT AND DITCH SECTIONS)



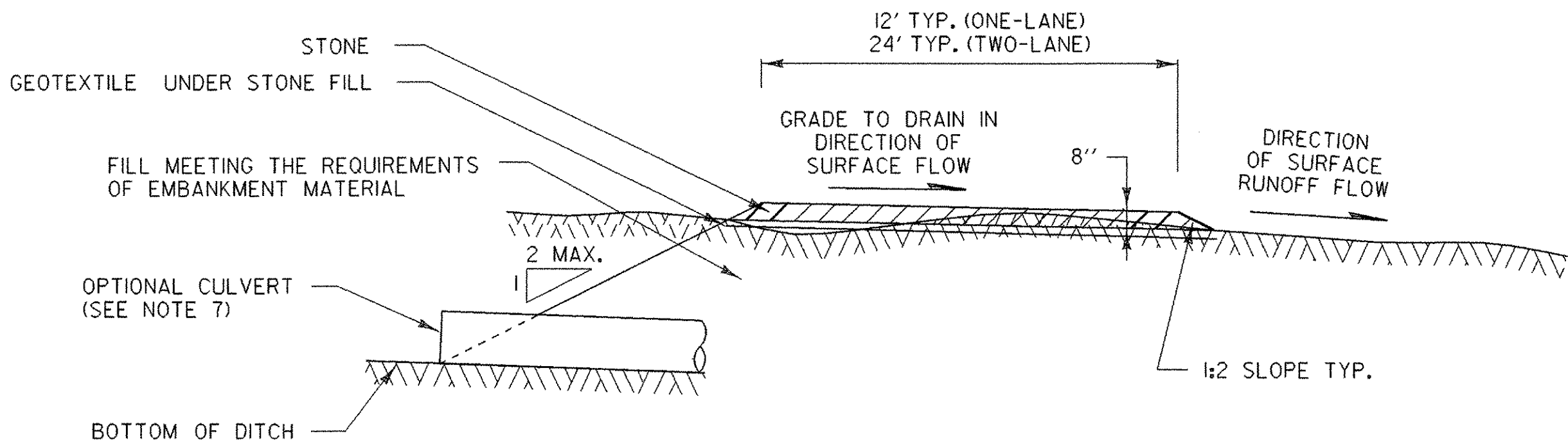
TYPICAL CONSTRUCTION ENTRANCE PLAN
(CUT/DITCH AND FILL SECTIONS)

APPLICATION NOTES:

A. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY OR STREETS.

GENERAL NOTES:

1. STONE SIZE - USE CLEAN STONE WITH GRADATION BETWEEN 2 INCHES AND 4 INCHES .
2. LENGTH - 50 FEET (MIN)
3. THICKNESS - 8 INCHES (MIN)
4. WIDTH - 12 FEET (MIN)
5. GEOTEXTILE UNDER STONE WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE AS DIRECTED BY THE ENGINEER. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. PROPOSED DRAINAGE PIPES SHALL BE SIZED WITH SUFFICIENT CAPACITY TO CARRY DITCH FLOWS. ALTERNATIVE WAYS OF TRANSPORTING DITCH DRAINAGE ACROSS CONSTRUCTION ENTRANCES MAY BE PROPOSED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER.
8. WHEN WASHING OF VEHICLE IS NECESSARY, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
10. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
11. AT THE TIME OF REMOVAL OF THE STABILIZED CONSTRUCTION ENTRANCE THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
12. PAYMENT OF THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.
13. PAYMENT FOR MONITORING STABILIZED CONSTRUCTION ENTRANCES SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
14. PAYMENT FOR MAINTAINING THE CONSTRUCTION ENTRANCE SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

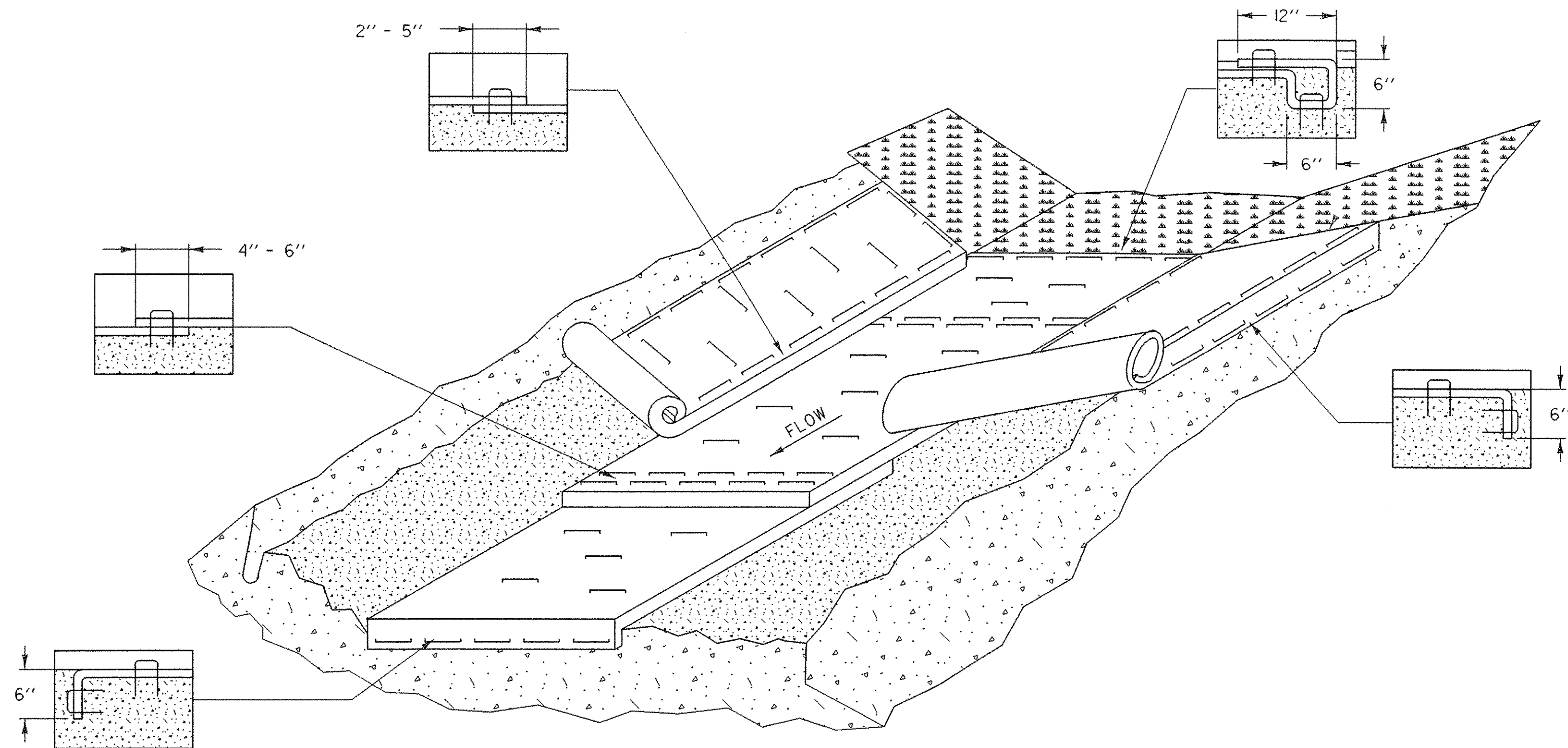


TYPICAL CONSTRUCTION ENTRANCE SECTION

EROSION PREVENTION & SEDIMENT CONTROL DETAILS CONSTRUCTION ENTRANCE

PROJECT NAME: WOODFORD
PROJECT NUMBER: BHF 010-1(29)

FILE NAME: 84e039/structures/84e039erobdr.dgn PLOT DATE: 03-OCT-2005
PROJECT LEADER: M EVANS-MONGEON DRAWN BY: EROSION
DESIGNED BY: EROSION CHECKED BY:
IPARM: epscdet4.i SHEET 35 OF 106



EROSION PROTECTION FOR DITCHES

APPLICATION NOTES:

- A. THE PURPOSE OF LINING THE DITCH WITH EROSION MATTING IS TO REDUCE EROSION AND AID THE ESTABLISHMENT OF VEGETATION AT LOW VELOCITIES.
- B. THE FOLLOWING CHARTS SHALL BE USED TO DETERMINE THE APPROPRIATE EROSION CONTROL MEASURE:

DITCH AND CHANNEL PROTECTION	
SLOPE	LINING
< 1 %	GRASS
1 % TO 4 %	EROSION MATTING
4 % TO 10 %	STONE FILL, TYPE I
> 10 %	STONE FILL, TYPE II

STONE FILL THICKNESS	
STONE FILL TYPE	THICKNESS
TYPE I	1 FT
TYPE II	2 FT

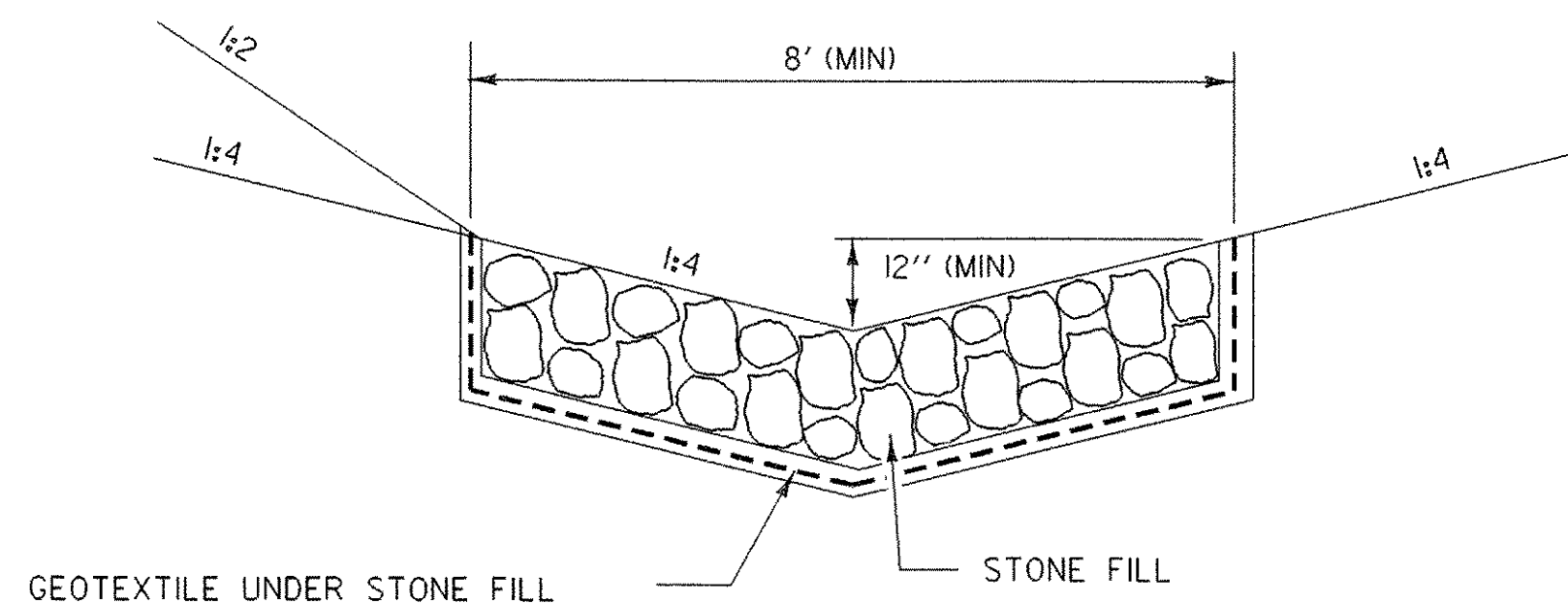
GENERAL NOTES:

1. WATER MAY NEED TO BE DIVERTED TO ALLOW PROPER MATTING INSTALLATION.
2. GRADE AND SMOOTH CHANNEL TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
3. APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
4. INSTALL MATTING IN THE CENTER OF THE CHANNEL, IN THE DIRECTION OF THE WATER FLOW.
5. INSTALL MATTING ON THE SIDE SLOPES OF THE CHANNEL, OVERLAPPING THE CENTER MAT.
6. ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INTALLATION INSTRUCTIONS.
7. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
8. MEASURES SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
9. PAYMENT FOR INSTALLATION OF MATTING SHALL BE MADE UNDER THE EROSION CONTROL WITH MATTING ITEM.
10. PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
11. PAYMENT FOR MAINTAINING DITCH PROTECTION SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

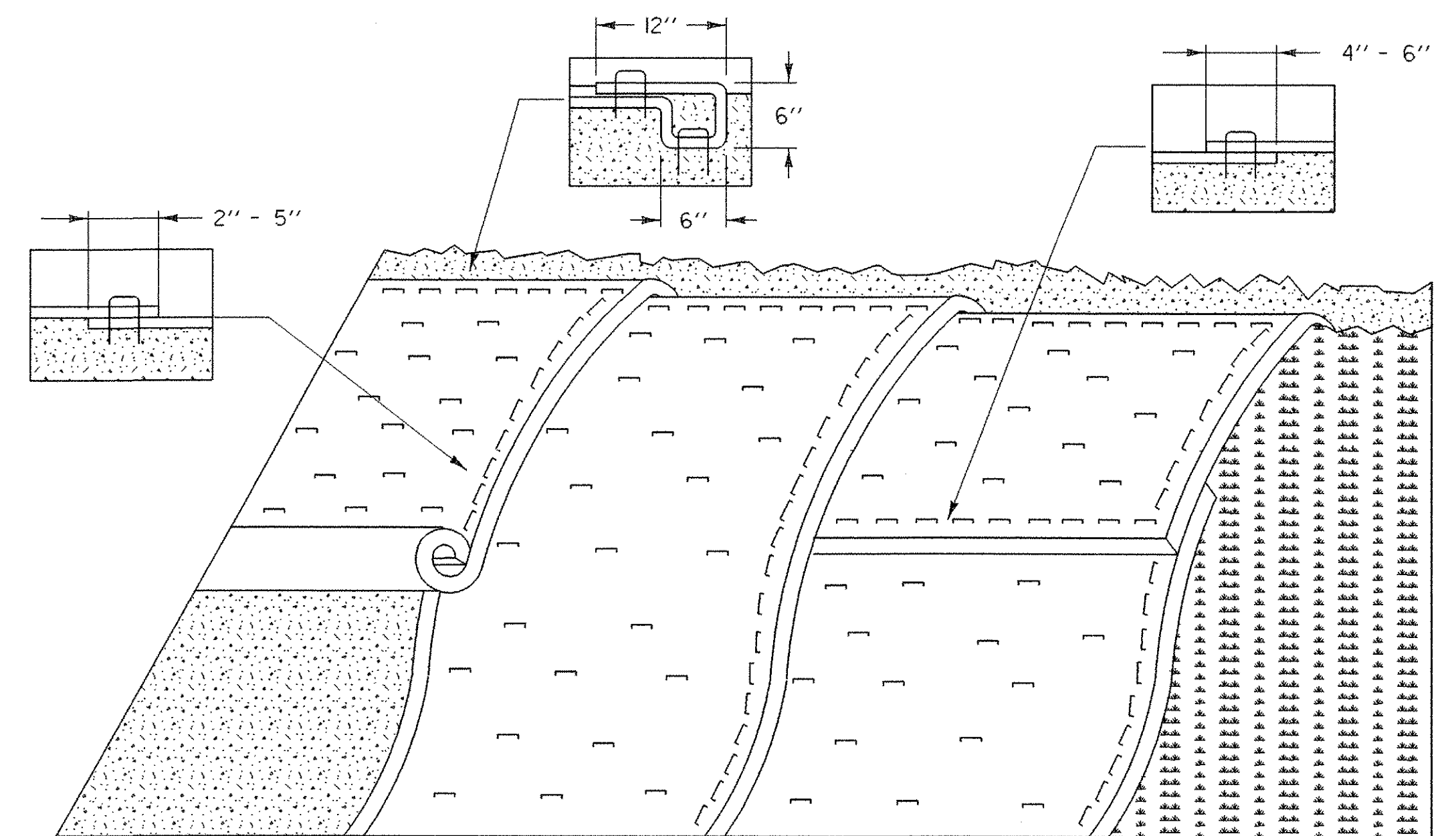
REVISIONS AND CORRECTIONS

MAY 18, 2004

N. GARBACIK



TEMPORARY
STONE LINED
DITCH



EROSION PREVENTION FOR SIDE SLOPES

APPLICATION NOTES:

- A. THE PURPOSE OF MATTING ON SIDE SLOPES IS TO REDUCE EROSION AND AID THE STABLISHMENT OF VEGETATION
- B. EROSION CONTROL MATTING SHALL BE USED FOR THE FOLLOWING REASONS:
- SIDE SLOPES > 3:1 (H:V)
 - AREAS WHERE SEED AND MULCH WILL NOT STAY IN PLACE ALONE
 - WHERE SEEDING IS OUTSIDE THE GROWING SEASON.

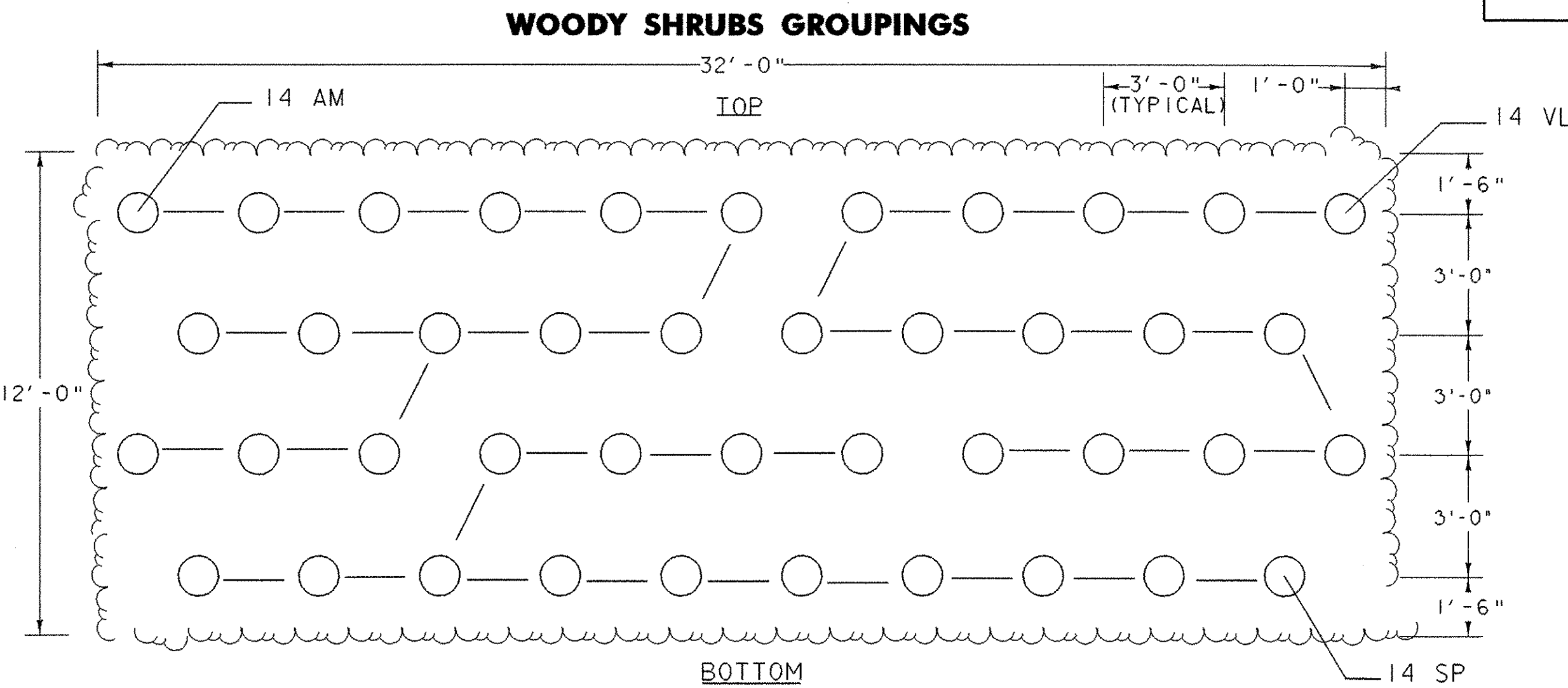
GENERAL NOTES:

1. GRADE AND SMOOTH THE SLOPE TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
2. APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
3. ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INTALLATION INSTRUCTIONS.
4. UNROLL MATTING VERTICALLY DOWN SLOPE IN THE DIRECTION OF WATER FLOW.
5. OVERLAP UPPER MATTING OVER LOWER MATTING AS SHOWN.
6. OVERLAP ADJACENT MATTING AS SHOWN.
7. CUT EXCESS MATTING AT END OF SLOPE AND ANCHOR THE END.
8. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
9. MATTING SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
10. PAYMENT FOR INSTALLATION OF MATTING SHALL BE MADE UNDER THE EROSION CONTROL WITH MATTING ITEM.
11. PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
12. PAYMENT FOR MAINTAINING SLOPE PROTECTION SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

EROSION PREVENTION & SEDIMENT CONTROL DETAILS DITCH & SLOPE PROTECTION

PROJECT NAME: WOODFORD
PROJECT NUMBER: BHF 010-1(29)

FILE NAME: 84e039/structures/84e039erobdr.dgn PLOT DATE: 03-OCT-2005
PROJECT LEADER: M EVANS-MONGEON DRAWN BY: EROSION
DESIGNED BY: EROSION CHECKED BY:
IPARM: epscde+5.1 SHEET 36 OF 106

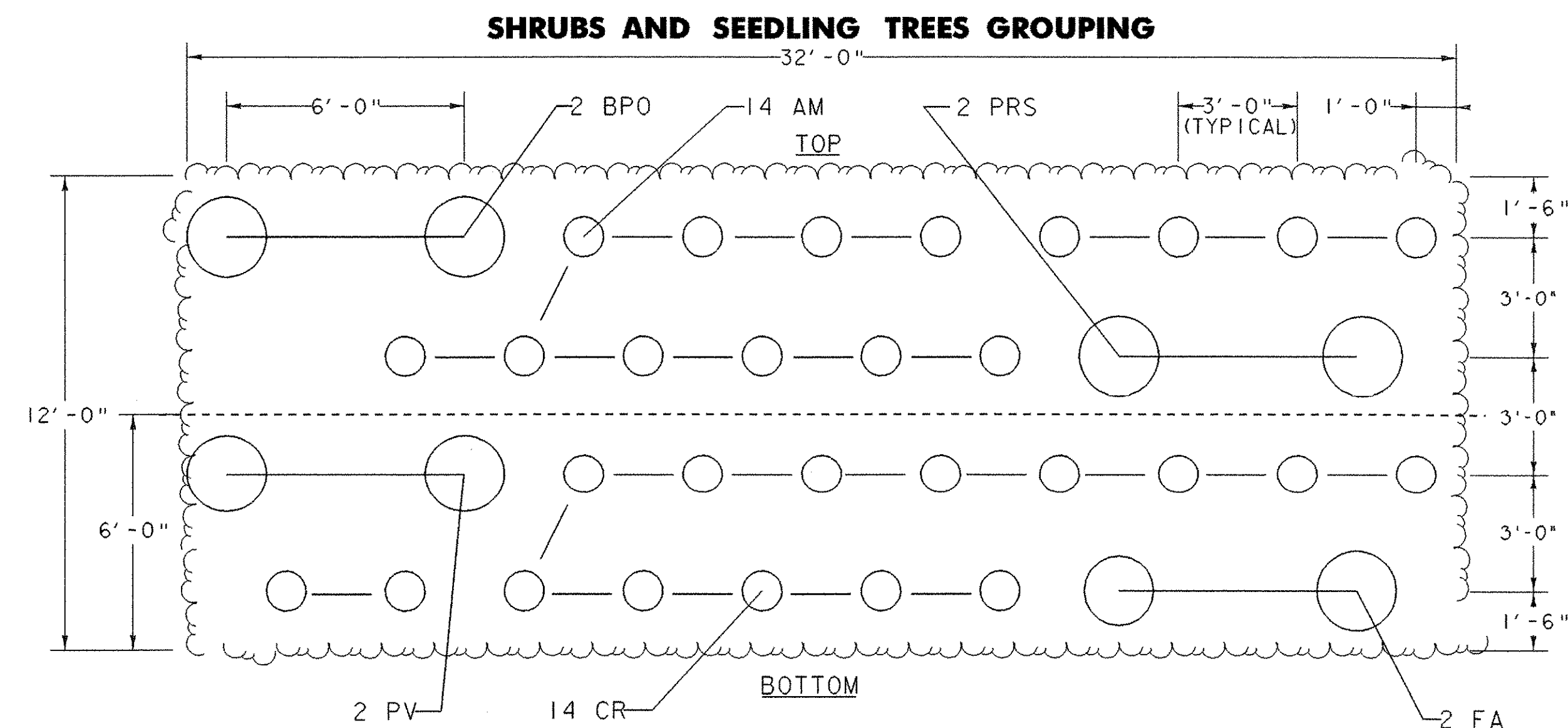


TYPICAL PLANT LIST FOR ONE WOODY SHRUBS DETAIL

QTY	KEY	COMMON NAME	BOTANICAL NAME
14	VL	NANNY BERRY	VIBURNUM LENTAGO
14	AM	BLACK CHOKEBERRY	ARONIA MELANOCARPA
14	SP	STREAMCO WILLOW	SALIX PURPUREA

LOCATION OF WOODY SHRUBS PLANTING LAYOUTS AND LENGTHS

STA 64+02 TO STA 64+67 RT (64' X 12')	REPEAT 2 X ON SLOPED GROUND
STA 65+09 TO STA 65+40 LT (32' X 12')	REPEAT 1 X ON SLOPED GROUND
STA 68+83 TO STA 70+42 LT (160' X 12')	REPEAT 5 X ON FLAT GROUND



TYPICAL PLANT LIST FOR ONE SHRUBS AND SEEDLING TREES DETAIL

QTY	KEY	COMMON NAME	BOTANICAL NAME
2	BPO	GRAY BIRCH	BETULA POPULIFOLIA
2	PRS	BLACK CHERRY	PRUNUS SEROTINA
2	FA	WHITE ASH	FRAXINUS AMERICANA
2	PV	CHOKE CHERRY	PRUNUS VIRGINIANA
14	AM	BLACK CHOKEBERRY	ARONIA MELANOCARPA
14	CR	GRAY DOGWOOD	CORNUS RACEMOSA

LOCATION OF SHRUBS AND SEEDLING TREES PLANTING LAYOUTS AND LENGTHS

STA 67+65 TO STA 69+59 RT (192' X 12')	REPEAT 6 X ON SLOPED GROUND
STA 65+36 TO STA 66+09 LT (96' X 24')	REPEAT 6 X ON FLAT GROUND
STA 68+36 TO STA 69+06 LT (64' X 12')	REPEAT 2 X ON FLAT GROUND

UTILIZE PART A FOR THE FOLLOWING STATIONS:

STA 68+15 TO STA 69+13 LT (96' X 6')	REPEAT 3 X ON SLOPED GROUND
--------------------------------------	-----------------------------

UTILIZE PART B FOR THE FOLLOWING STATIONS:

NOT USED

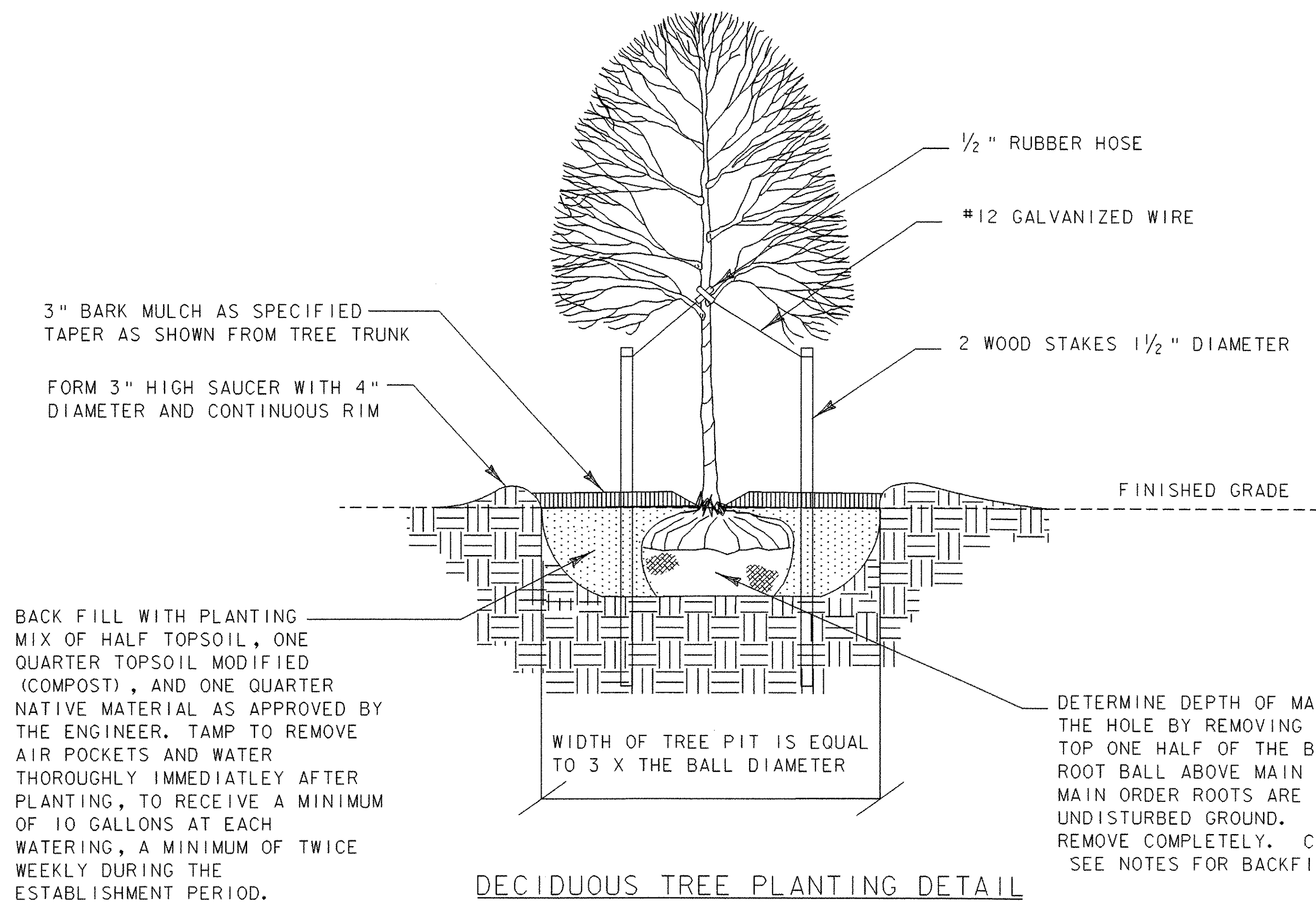
LANDSCAPE GROUPING DETAIL & PLANT LIST

PROJECT NAME: WOODFORD
PROJECT NUMBER: BHF 010-I(29)

FILE NAME: 84e039/structures/84e039erobdr.dgn PLOT DATE: 03-OCT-2005
PROJECT LEADER: M EVANS-MONGEON DRAWN BY: L GOLDSTEIN
DESIGNED BY: J BROWN CHECKED BY:
IPARM: epsclspdet11 SHEET 37 OF 106

NOT TO SCALE

NOT TO SCALE



DECIDUOUS TREE PLANTING DETAIL

NOTES:

1. STAKE ONLY THOSE TREES PLANTED IN WINDY, EXPOSED LOCATIONS, WHERE THEY MIGHT BE BLOWN OVER OR VANDALIZED.
2. COMPLETELY REMOVE ALL GUY WIRES, RUBBER HOSE, AND STAKES ONE YEAR AFTER PLANTING.

GENERAL LANDSCAPE NOTES:

1. FOLLOW STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 656.
2. SEE SPECIAL PROVISIONS FOR 651.18 FERTILIZER (MOD), THE APPLICATION OF MYCORRHIZAL FUNGI PER MANUFACTURER'S RECOMMENDATIONS AND 651.35 TOPSOIL (MOD), THE APPLICATION OF COMPOST.
3. TREE AND SHRUB SEEDLINGS FOR EROSION CONTROL AND RIPARIAN ZONE PLANTINGS ARE SPECIAL ORDER ITEMS. THE FOLLOWING ARE AMONG THE SOURCES FOR THIS SPECIFIC PLANT MATERIAL.

NEW ENGLAND WETLAND PLANTS, INC.
800 MAIN ST.
AMHERST, MA 01002
820 WEST ST. NURSERY
AMHERST, MA 01002
TEL: (413) 256-1752

HIGH REACH FARM
2847 TAMPICO ROAD
DANVILLE, VT 05828
TEL: (802) 748-3512

COBBLE CREEK NURSERY
991 TYLER BRIDGE ROAD
BRISTOL, VT 05443
TEL: (802) 453-3889
COBCREEK@MADRIVER.COM

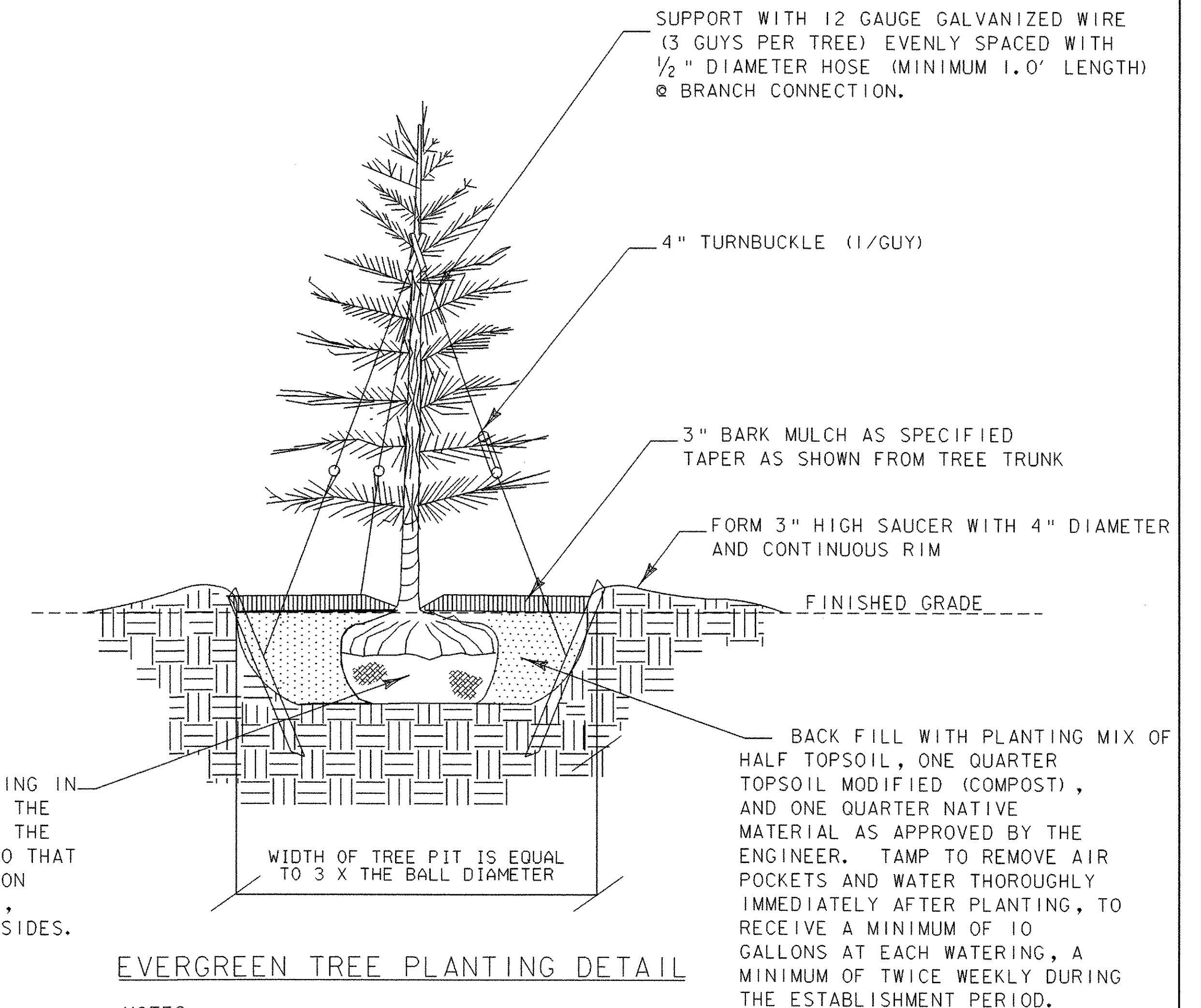
HORSFORD GARDENS & NURSERY
2111 GREENBUSH ROAD
CHARLOTTE, VT 05445
TEL: (802) 425-2811
FAX: (802) 425-2797

NORTHERN NURSERIES, INC.
WHOLESALE DISTRIBUTER (OUT OF CT)
P.O. BOX 1048
WHITE RIVER JCT. VT 05001
TEL: (802) 295-2117
FAX: (802) 295-4889

HOP RIVER NURSERY
251 HOP RIVER ROAD
ROUTE 6
BOLTON, CT 06043
TEL. & FAX: (860) 646-7099

BIGELOW NURSERIES
P.O. BOX 718
NORTHBOROUGH, MA 01532
TEL: (508) 845-2143
FAX: (508) 842-9245

PIERSON NURSERIES, INC.
24 BUZZELL ROAD
BIDDEFORD, MAINE 04005
TEL: (207) 499-2994
FAX: (207) 499-2912



EVERGREEN TREE PLANTING DETAIL

NOTES:

1. ANTI-DESICCANT SPRAY IS TO BE APPLIED TO ALL EVERGREENS PER MANUFACTURER SPECIFICATIONS.
2. COMPLETELY REMOVE ALL GUY-WIRES AND TURNBUCKLE ONE YEAR AFTER PLANTING.

SEEDING FORMULA

RURAL AREAS

% WT.	LBS. / A.	NAME	PUR %	GERM %
37.5	22.5	CREEPING RED FESCUE	98	85
37.5	22.5	TALL FESCUE	95	90
5.0	3.0	RED TOP	95	90
15.0	9.0	BIRDSFOOT TREFOIL	98	85
5.0	3.0	ANNUAL RYEGRASS	95	85
100.0	60.0			

GENERAL NOTES

1. SEED MIXTURE: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
2. SEED: TO BE APPLIED PER SEEDING FORMULAS OR AS DIRECTED BY THE ENGINEER. FERTILIZER: FORMULA 10-20-10, TO BE USED WITH SEED, APPLIED AT A RATE OF 500 LBS./ACRE. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA.)
3. AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.
HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

LANDSCAPE TREE PLANTING DETAIL

PROJECT NAME:	WOODFORD		
PROJECT NUMBER:	BHF 010-1(29)		
FILE NAME:	48e039/structures/84e039erobdr.dgn	PLOT DATE:	03-OCT-2005
PROJECT LEADER:	M EVENS-MONGEON	DRAWN BY:	SOUAD B
DESIGNED BY:	J BROWN	CHECKED BY:	
IPARM:	epscispdet2.l	SHEET	38 OF 106

NOT TO SCALE

NOTE:
SHRUBS SHALL BE MULCHED ONLY
ON FLAT GROUND OR DISCRETION
OF ENGINEER.

2" BARK MULCH AS SPECIFIED.
TAPER AT BASE AS SHOWN.

FORM SAUCER WITH 3" HIGH BY 3"
WIDE CONTINUOUS RIM.

EXISTING GRADE

FINISHED GRADE

BACK FILL MIX CONSISTS OF 1/2
TOPSOIL, 1/4 COMPOST, AND 1/4
NATIVE MATERIAL AS APPROVED BY
THE ENGINEER. TAMP TO REMOVE
AIR POCKETS AND WATER
THOROUGHLY AT TIME OF PLANTING.

PLACE SHRUB IN THE HOLE SUCH
THAT BARE ROOT BALL RESTS ON
UNDISTURBED GROUND. AVOID
PLANTING TOO DEEP. TOP OF
ROOTBALL SHOULD BE AT FINISHED
GRADE.

PLANTING HOLE SHALL BE AT
LEAST 3 X THE WIDTH OF
THE ROOT BALL.

SHRUB AND SEEDLING TREE PLANTING DETAIL

2" BARK MULCH AS SPECIFIED.
TAPER AT BASE AS SHOWN.

MAINTAIN MINIMUM 3" HIGH BY 3" WIDE
CONTINUOUS RIM ON LOWER SIDES OF
PLANTING TO RETAIN WATER.

ORIGINAL GROUND

BIODEGRADABLE
JUTE MESH

BACK FILL MIX CONSISTS OF 1/2 TOPSOIL,
1/4 COMPOST, AND 1/4 NATIVE MATERIAL AS
APPROVED BY THE ENGINEER. TAMP TO
REMOVE AIR POCKETS AND WATER THOROUGHLY
AT TIME OF PLANTING.

PLACE SHRUB IN THE HOLE SUCH THAT BARE
ROOT BALL RESTS ON UNDISTURBED GROUND.
AVOID PLANTING TOO DEEP. TOP OF ROOTBALL
SHOULD BE AT FINISHED GRADE.

PLANTING HOLE SHALL BE AT
LEAST 2 X THE WIDTH OF
THE ROOT BALL.

SHRUB AND SEEDLING TREE PLANTING ON SLOPES DETAIL

FORM 3" HIGH BY 3" WIDE LIP
SAUCER WITH CONTINUOUS RIM OF
2" BARK MULCH TAPERING AT BASE
AS SPECIFIED.

NOTE:
SEE SHRUB AND SEEDLING TREE PLANTING DETAIL.
SHRUBS SHALL BE MULCHED ON FLAT GROUND ONLY OR AT
DISCRETION OF ENGINEER.

BACK FILL MIX CONSISTS OF 1/2
TOPSOIL, 1/4 COMPOST, AND 1/4
NATIVE MATERIAL AS APPROVED BY
THE ENGINEER.

TAMP TO REMOVE AIR POCKETS AND
WATER THOROUGHLY AT TIME OF
PLANTING.

SHRUBS AND SEEDLING TREE GROUPINGS CROSS SECTION

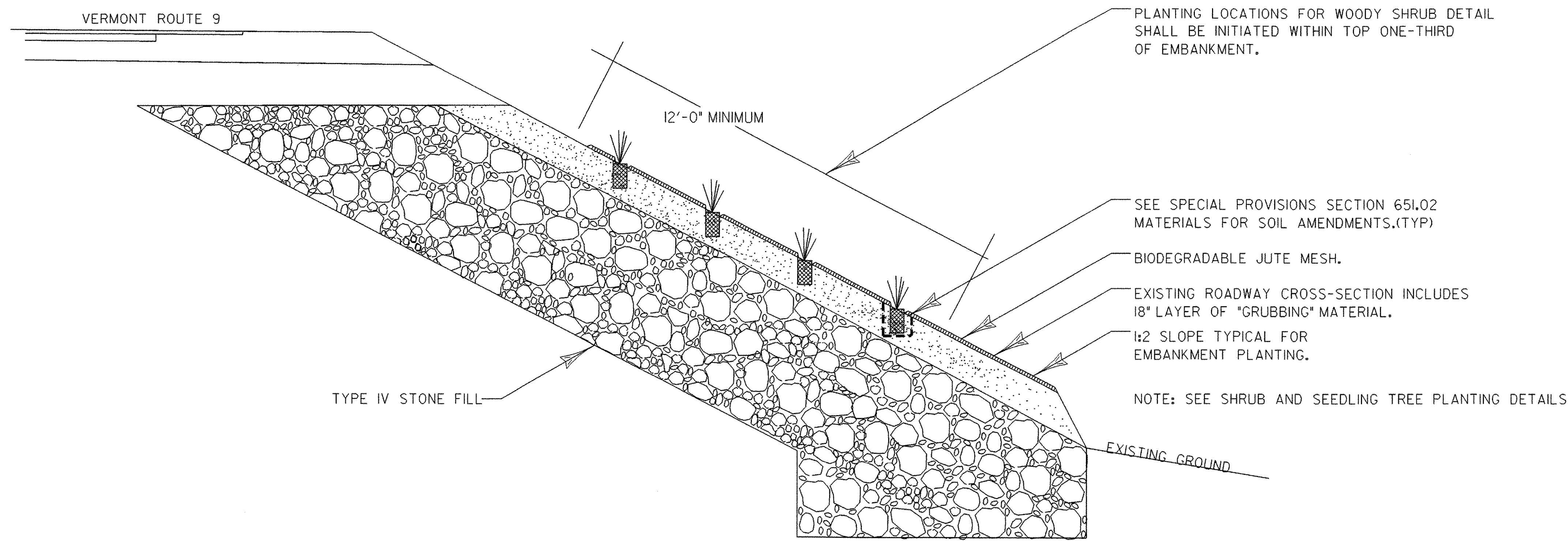
(FOR FLAT GROUND)

LANDSCAPE GROUP AND SHRUB CROSS-SECTION

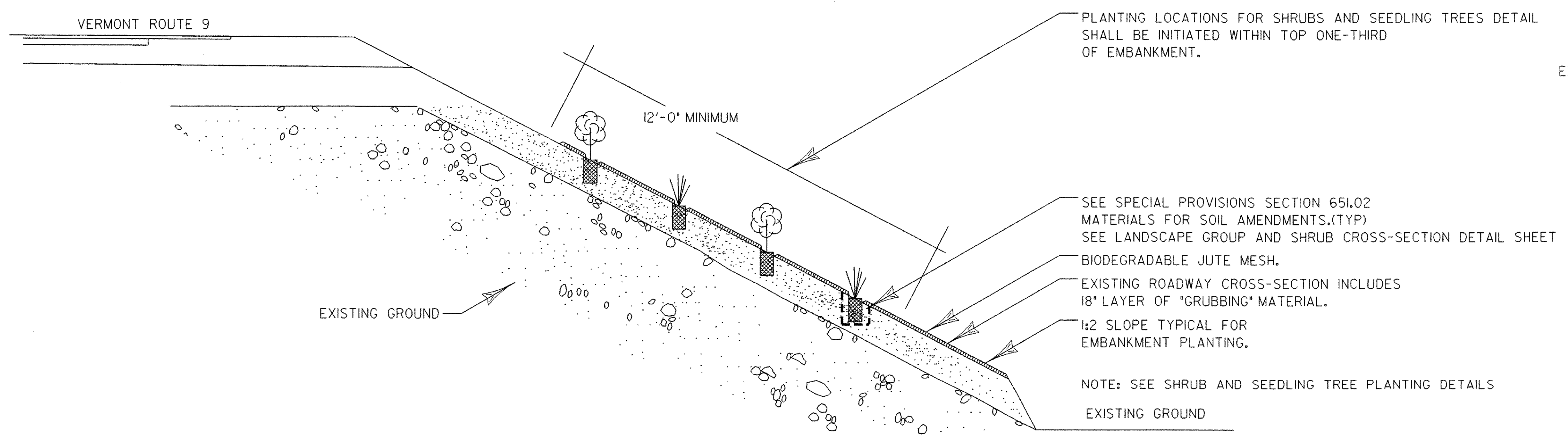
PROJECT NAME: WOODFORD
PROJECT NUMBER: BHF 010-I(29)

FILE NAME: 84e039/structures/84e039erobdr.dgn PLOT DATE: 03-OCT-2005
PROJECT LEADER: M EVANS-MONGEON DRAWN BY: L GOLDSTEIN
DESIGNED BY: J BROWN CHECKED BY:
IPARM: epsclspdet3.1 SHEET 39 OF 106

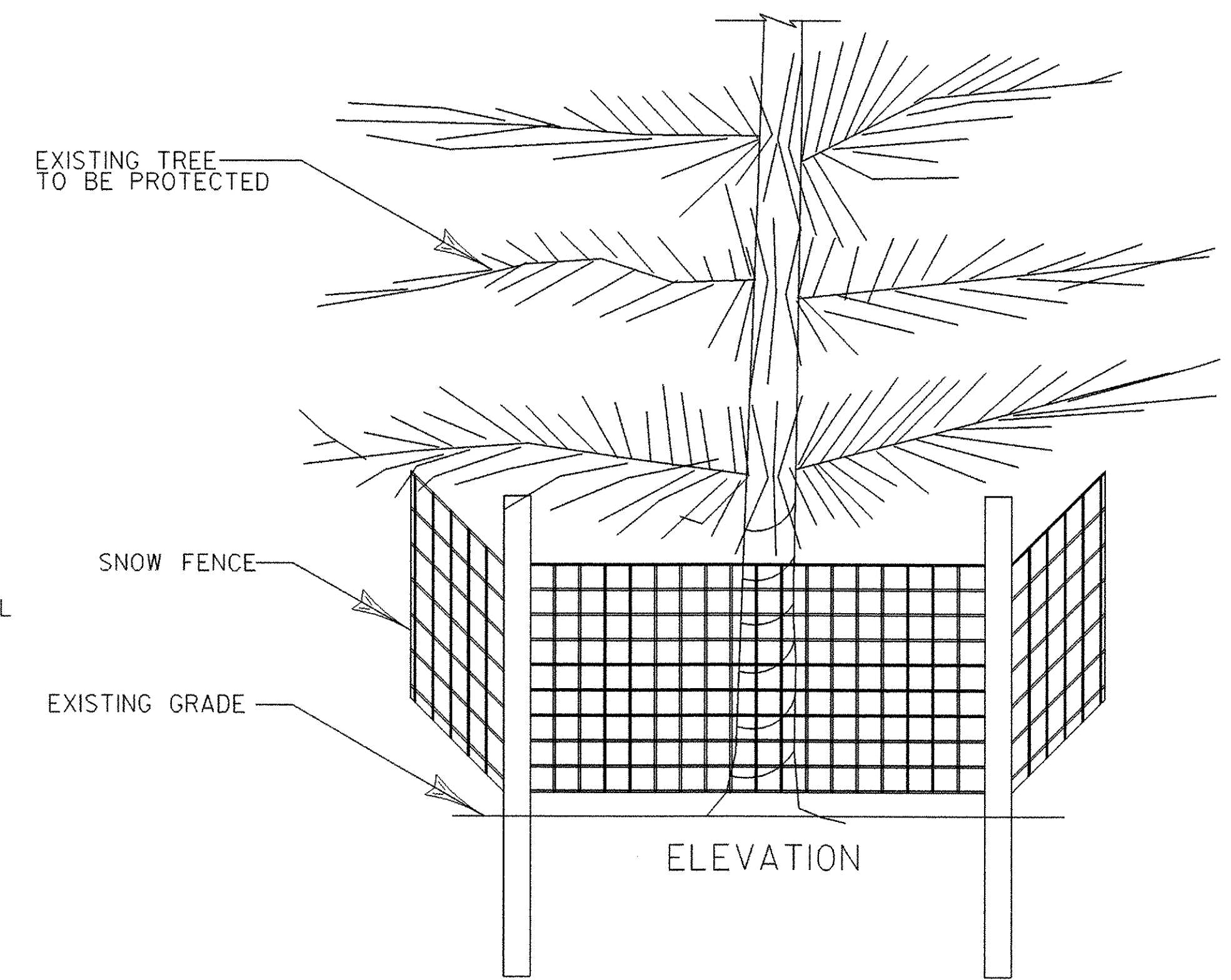
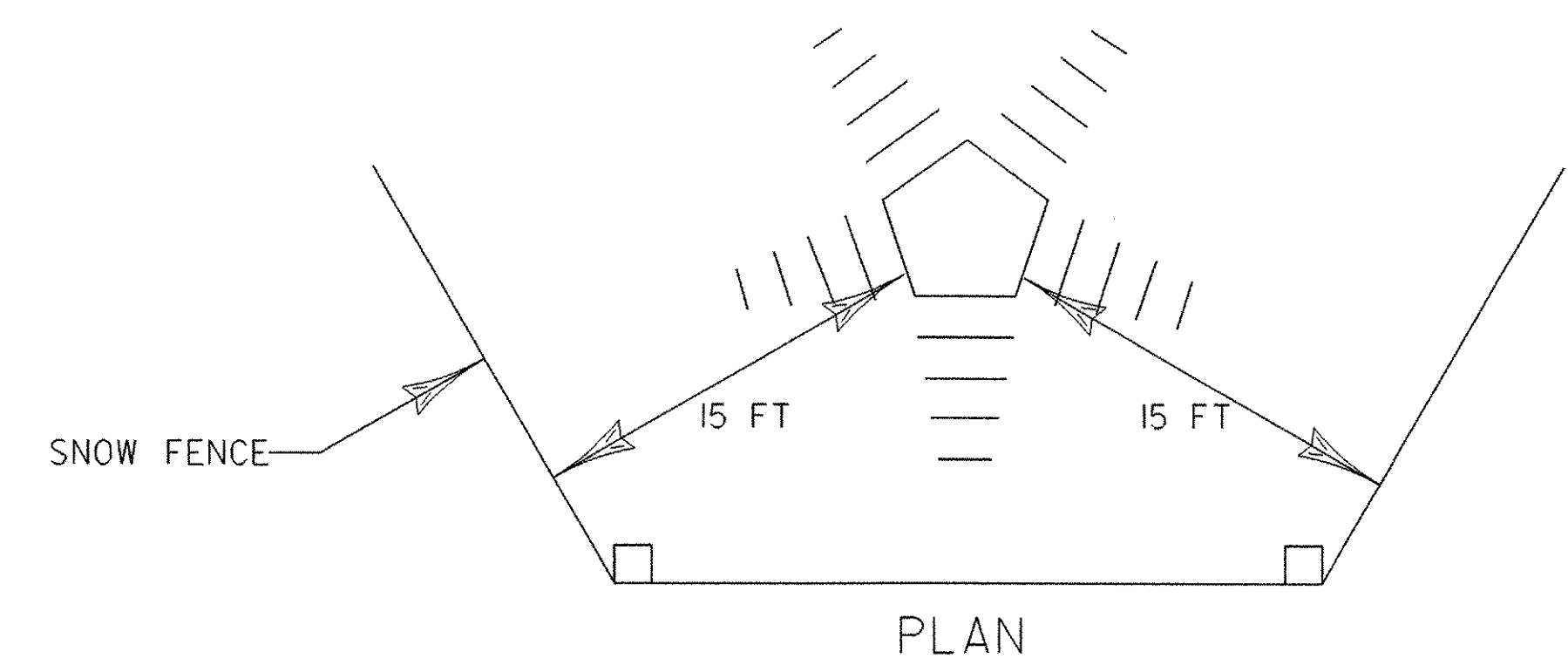
NOT TO SCALE



WOODY SHRUB GROUPING CROSS SECTION
(FOR SIDE SLOPES WITH STONE FILL)



SHRUBS AND SEEDLING TREE GROUPINGS CROSS SECTION
(FOR SIDE SLOPES WITH SOIL)



TREE PROTECTION DETAIL
SEE SECTION 620.04 (MOD) FOR DIMENSIONS

LANDSCAPE SLOPED GROUP CROSS-SECTION

PROJECT NAME: WOODFORD	
PROJECT NUMBER: BHF 010-1(29)	
FILE NAME: 84e039/structures/84e039erobdr.dgn	PLOT DATE: 03-OCT-2005
PROJECT LEADER: M EVANS MONGEON	DRAWN BY: L GOLDSTEIN
DESIGNED BY: J BROWN	CHECKED BY:
IPARM: epsclspdet4.1	SHEET 40 OF 106

NOT TO SCALE

TRAFFIC SIGN SUMMARY SHEET

						FT	FT	FT 88	FT	FT	FT		EA	LB	LB	LB		LB	LB	LB	LB					
TOTALS	SF 33.75	SF	EA.	SF		FT 88			FT				LB			EA.		LB				EA.		EA.	LB	

PROJECT NAME: WOODFORD	
PROJECT NUMBER: BHF OIO-I(29)	
FILE NAME: /84e039/structures/de039frm.dgn	PLOT DATE: 03-OCT-2005
PROJECT LEADER: PORTALUPI	DRAWN BY: CRAW
DESIGNED BY:	CHECKED BY: EVANS-MONGEON
TRAFFIC SIGN SUMMARY HALF SHEET	SHEET 43 OF 106

SOIL CLASSIFICATION

AASHTO

A1	Gravel and Sand
A3	Fine Sand
A2	Silty or Clayey Gravel and Sand
A4	Silty Soil - Low Compressibility
A5	Silty Soil - Highly Compressible
A6	Clayey Soil - Low Compressibility
A7	Clayey Soil - Highly Compressible

ROCK QUALITY DESIGNATION

R.O.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent

SHEAR STRENGTH

UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
>4000	Hard

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

COMMONLY USED SYMBOLS

▽	Water Elevation
⊕	Standard Penetration Boring
⊗	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test
	Blow Count Per Foot For:
	2" O.D. Sampler
	1 1/2" I.D. Sampler
	Hammer Weight Of 140 Lbs.
	Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 1 1/8"
BX	Core Size 1 3/8"
NX	Core Size 2 1/8"
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
SI	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	To Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
ROD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)

COLOR			
blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gry	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mtc	Multicolored
or	Orange		

BORING CHART

HOLE NO.	SURV. STATION	OFFSET	GROUND ELEV.
B-1	65+10	-15	1146.30
B-2	64+80	23	1138.06
B-3	67+82	-21	1145.14
B-4	67+49	18	1147.84

DEFINITIONS (AASHTO)

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.

BOULDER - A rock fragment with an average dimension > 12 inches.

COBBLE - Rock fragments with an average dimension between 3 and 12 inches.

GRAVEL - Rounded particles of rock < 3" and > 0.075" (#10 sieve).

SAND - Particles of rock < 0.075" (#10 sieve) and > 0.0025" (#200 sieve).

SILT - Soil < 0.0025" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

VARVED - Alternate layers of silt and clay.

HARDPAN - Extremely dense soil, cemented layer, not softened when wet.

MUCK - Soft organic soil (containing > 10% organic material).

MOISTURE CONTENT - Weight of water divided by dry weight of soil.

FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.

STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.

DIP - Inclination of bed with a horizontal plane.

GENERAL NOTES

- The subsurface explorations shown herein were made between 10/29/1996 and 12/02/1996 by the Agency.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.

4. Engineering judgement was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgement by the Contractor.

- Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
- Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual Subsurface Investigations, 1988.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	WOODFORD	Bridge No.	BR 11
Highway No.	VT 9	Log Sta.	
		Surv. Sta.	
VT 9 OVER ROARING BRANCH OF WALLOOMSAC			
BORING INFORMATION SHEET			
Designed By	M. EVANS-MONGEON	Drawn By	R. PELLETT
Checked By	Date	Bridge Design Supervisor	A. PORTALUPI Date
PROJECT	WOODFORD	PROJECT NO.	BHF 010-1 (29)
I.G.C. Info. /84e039/structures/de039bor.dgn			
Bridge Sheet No.		Sheet 44 of 106	

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH DIVISION SUBSURFACE INFORMATION				HOLE NO.: B-1 SHEET 1 OF 1 DATE STARTED: 12/2/96 DATE COMPLETED: 0/0/0					
PROJECT NAME: WOODFORD SITE NAME: BRIDGE #11 STATION: 65+10.00 GROUND EL.: 1146.30				PROJECT NUMBER: BHF 010-1(29) SITE NO.: ROUTE 9 OFFSET: -15.00 G.W. DEPTH:					
BORING CREW CREW CHIEF: MCGLYNN DRILLER: CHABOT E J LOGGER:				BORING RIG: TRUCK BORING TYPE: WASH BORE SAMPLE TYPE: SPLIT BARREL					
DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5		No Rec., Boulders							
		BXDC, 7.0'-10.0', Rec. = 2.1'							
10		No Rec.	46						
		BXDC, 12.0'-15.0', Rec. = 1.6'							
15		No Rec.	46						
		BXDC, 17.0'-20.0', Rec. = 3.0', Boulders							
20		A-1-b, GrSa, br, MTW, Rec. = 0.4'	R	13.2	40.6	50	9.4		
		BXDC, 21.0'-25.0', Rec. = 1.5'							
25		A-1-b, GrSa, br, MTW, Rec. = 1.0'	R	11.3	35.8	56.8	7.4		
		BXDC, 26.5'-30.0', Rec. = 1.5'							
30		A-1-b, GrSa, br, MTW, Rec. = 0.9'	R	12.2	35.7	56.2	8.1		
		BXDC, 31.5'-35.0', Rec. = 1.6'							
35		A-1-b, GrSa, br, MTW, Rec. = 1.7'	R	12.4	45.8	46.6	7.6		
40			Hole stopped @ 37.0' in SaGr + Bo						
45									

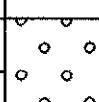
* BOTTOM OF FOOTING ABUT.1 - 1132.00

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH DIVISION SUBSURFACE INFORMATION				HOLE NO.: B-2 SHEET 1 OF 1 DATE STARTED: 11/14/96 DATE COMPLETED: 11/21/96					
PROJECT NAME: WOODFORD SITE NAME: BRIDGE #11 STATION: 64+80.00 GROUND EL.: 1138.06				PROJECT NUMBER: BHF 010-1(29) SITE NO.: ROUTE 9 OFFSET: 23.00 G.W. DEPTH:					
BORING CREW CREW CHIEF: MCGLYNN DRILLER: CHABOT E J LOGGER:				BORING RIG: TRUCK BORING TYPE: WASH BORE SAMPLE TYPE: SPLIT BARREL					
DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5		BXDC, 0.0'-5.0', Rec. = 4.1'							
		BXDC, 5.0'-10.0', Rec. = 3.2'							
10		No Rec., Boulders	R						
		BXDC, 11.5'-14.0', Rec. = 2.1'							
15		No Rec., Boulders	R						
		BXDC, 16.0'-20.0', Rec. = 1.6'							
20		A-1-a, SaGr, br, MTW, Rec. = 0.4'	R	11.6	51.7	39.8	8.5		
		BXDC, 21.5'-25.0', Rec. = 1.5'							
25		A-1-a, SaGr, br, MTW, Rec. = 0.5'	R	16.3	67.5	24.4	8.1		
		BXDC, 27.0'-30.0', Rec. = 3.0'							
30		A-1-a, SaGr, br, MTW, Rec. = 0.5'	R	12.5	60.8	29.8	9.4		
		BXDC, 31.0'-35.0', Rec. = 1.7'							
35		A-1-b, SaGr, br, MTW, Rec. = 0.5'	R	9.3	49.4	34.9	15.7		
40				Hole stopped @ 37.0' in Gr, HP + Bo					
45									

* BOTTOM OF FOOTING ABUT.1 - 1132.00

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH DIVISION SUBSURFACE INFORMATION				HOLE NO.: B-3 SHEET 1 OF 1 DATE STARTED: 0/0/0 DATE COMPLETED: 0/0/0					
PROJECT NAME: WOODFORD SITE NAME: BRIDGE #11 STATION: 67+82.00 GROUND EL.: 1145.14				PROJECT NUMBER: BHF 010-1(29) SITE NO.: ROUTE 9 OFFSET: -21.00 G.W. DEPTH:					
BORING CREW CREW CHIEF: MCGLYNN DRILLER: CHABOT E J LOGGER:				BORING RIG: TRUCK BORING TYPE: WASH BORE SAMPLE TYPE: SPLIT BARREL					
DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5		BXDC, 3.0' - 6.0', No Rec., Boulders							
10									
		No Rec., Gravelly Material with Boulders	41						
		BXDC, 12.0' - 14.0', Boulders							
15		A-1-a, SaGr, br, Wet, Rec. = 0.4'	39	15.9	71.7	23.7	4.6		
20		A-1-a, SaGr, br, MTW, Rec. = 1.1'	29	11.7	56.6	33.3	10.1		
		BXDC, 22.0' - 24.0', Rec. = 1.5', Boulders							
25		A-1-a, SaGr, br, MTW, Rec. = 0.5'	R	10.8	55	37.1	7.9		
		BXDC, 27.0' - 29.0', Rec. = 1.6', Boulders							
30		A-1-a, SaGr, br, MTW, Rec. = 0.5'	R	12.6	53.3	38.3	8.4		
		BXDC, 32.0' - 33.5', Rec. = 1.1', Boulders							
35		A-1-a, SaGr, br, MTW, Rec. = 0.4'	R	14.7	59.3	33.3	7.4		
40			Hole stopped @ 37.0' in Sa, Gr + Bo						
45									

* BOTTOM OF FOOTING ABUT.2 - 1138.50

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH DIVISION SUBSURFACE INFORMATION				HOLE NO.: B-4 SHEET 1 OF 1 DATE STARTED: 10/29/96 DATE COMPLETED: 11/1/96					
PROJECT NAME: WOODFORD SITE NAME: BRIDGE #II STATION: 67+49.00 GROUND EL.: 1147.84				PROJECT NUMBER: BHF 010-II(29) SITE NO.: ROUTE 9 OFFSET: 18.00 G.W. DEPTH:					
BORING CREW CREW CHIEF: MCGLYNN DRILLER: CHABOT E J LOGGER:				BORING RIG:		TRUCK BORING TYPE: WASH BORE SAMPLE TYPE: SPLIT BARREL			
DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5		No Rec., On Boulder BXDC, 5.2'-7.4', Boulders	R						
10		A-1-a, SaGr, br, Moist, Rec. = 0.5'	22	16.7	73.1	20.4	6.5		
15		A-1-a, Gr, br, Moist, Rec. = 0.2' No Rec., Boulders	R	N/A	87.2	10.2	2.6		
20		A-1-b, SaGr, br, Wet, Rec. = 0.8'	49	12.8	46.9	37.2	15.9		
25		A-1-a, SaGr, br, MTW, Rec. = 1.2'	39	11.6	52	33.5	14.5		
30		A-1-a, SaGr, br, Moist, Rec. = 1.4'	72	10.4	53.9	31.6	14.5		
35		A-1-a, SaGr, br, Moist, Rec. = 0.6'	R	9.6	51.2	38	10.8		
40		No Rec., Boulders BXDC, 40.4'-43.0', Boulders	R						
45			Hole stopped @ 43.0'						

* BOTTOM OF FOOTING ABUT.2 - 1138.50

BORING LOG SHEET

SURVEYED BY: J. TOUCETTE
DRAWN BY: J. TOUCETTE
SQUAD LEADER: C.C. BENDA
DESIGN FILE NO.: /matres/84e039/me039bor.dgn
IPARM FILE: de039bo2.i
DATE: 04/97
DATE PLOTTED: 03-OCT-2005
PROJ. NAME: WOODFORD
PROJ. NO.: BHF 010-1(29)
SHEET 45 OF 106 SHEETS

GENERAL NOTES

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2001, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SIXTEENTH EDITION, AND ITS LATEST REVISIONS.
2. BRIDGE IS DESIGNED FOR HS 25 LIVE LOAD WITH NO ALLOWANCE FOR FUTURE PAVEMENT.
3. THE CONTRACTOR SHALL ERECT, MAINTAIN, REMOVE AND/OR RESET AS REQUIRED ALL ON PROJECT SIGNS AND BARRICADES. THE COST OF ON-PROJECT SIGNS AND BARRICADES REQUIRED SHALL BE PAID FOR UNDER THE ITEM 641.10, TRAFFIC CONTROL.
4. TWO-WAY TRAFFIC WILL BE MAINTAINED ON THE TEMPORARY STRUCTURE, ALTHOUGH DURING THE CONSTRUCTION PERIOD, THE CONTRACTOR MAY, AT TIMES, USE ONE-WAY TRAFFIC WITH FLAGGERS. THE TEMPORARY BRIDGE AND TEMPORARY DETOUR SHALL BE MAINTAINED IN GOOD CONDITION AT ALL TIMES, PAYMENT FOR THIS WORK WILL BE UNDER ITEM 529.11, TWO-WAY TEMPORARY BRIDGE.
5. ACCESS TO ALL DRIVES WILL BE MAINTAINED AT ALL TIMES, DURING THE CONSTRUCTION OF THIS PROJECT.
6. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68°F UNLESS OTHERWISE NOTED.
7. THE STONE FILL TYPE IV UNDER THE BRIDGE SHALL BE PLACED BEFORE THE BEAMS ARE SET. AS MUCH OF THE EXISTING STONE FILL AROUND THE ABUMENTS AS POSSIBLE SHALL BE RETAINED.
8. THE FOLLOWING TABLE OF ALLOWABLE STRESSES AND WEIGHTS APPLY TO THESE PLANS FOR DESIGN PURPOSES:
- | | | | |
|--|----------------|-----|----------|
| STRUCTURAL STEEL, AASHTO M270/M270 GRADE 50W | | | |
| Fy = 50,000 PSI | | | |
| CONCRETE, CLASS A (QA/QC): f'c = 4,000 PSI fc = 1,600 PSI | | | |
| CONCRETE, HIGH PERFORMANCE CLASS A: f'c = 4,000 PSI fc = 1,600 PSI | | | |
| CONCRETE, HIGH PERFORMANCE CLASS B: f'c = 3,500 PSI fc = 1,400 PSI | | | |
| REINFORCING STEEL: | Ft 24,000 | PSI | GRADE 60 |
| SOIL: UNIT WEIGHT | 140 | PCF | |
| FOOTING PRESSURE DESIGN: | ABUTMENT NO. 1 | 6.2 | KSF |
| | PIER NO. 1 | 3.1 | KSF |
| | PIER NO. 2 | 3.1 | KSF |
| | ABUTMENT NO. 2 | 6.2 | KSF |
9. TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT A RATE OF 0.015 GAL/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT OR AS DIRECTED BY THE ENGINEER.
10. THE BRIDGE PLAQUE AND BENCH MARK SHALL BE FURNISHED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AS SHOWN ON THE PLANS. ALL COSTS SHALL BE INCLUDED IN ITEM 501.25, CONCRETE CLASS HPC-B.
11. THE ITEM 529.15 REMOVAL OF STRUCTURE SHALL CONSIST OF REMOVING THE FOLLOWING PARTS OF THE EXISTING STRUCTURE. THE EXISTING SUPERSTRUCTURE SHALL BE REMOVED IN ITS ENTIRETY. THE TWO PIERS SHALL ALSO BE REMOVED, DOWN TO STREAMBED ELEVATION. THE WEST ABUTMENT SHALL BE REMOVED ABOVE ELEVATION 1135.00. THE EAST ABUTMENT SHALL BE REMOVED ABOVE ELEVATION 1139.00.
12. THE EXISTING STRUCTURAL STEEL TO BE REMOVED UNDER THE ITEM 529.15 "REMOVAL OF STRUCTURE" IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. ALL STEEL REMOVED UNDER THIS ITEM IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR MAY DISPENSE OF IT OR RETAIN IT FOR FUTURE USE. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE STRUCTURAL STEEL.
13. PAYMENT FOR REMOVAL OF EXISTING BITUMINOUS CONCRETE PAVEMENT ON THE BRIDGE SHALL BE MADE UNDER THE ITEM 529.10, "REMOVAL OF BRIDGE PAVEMENT". THE MATERIAL BECOMES THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY AT AN OFF-SITE LOCATION.
14. PAYMENT FOR REMOVING THE PAVEMENT THAT IS USED ON THE TEMPORARY DETOUR WILL BE MADE UNDER ITEM 203.28, EXCAVATION OF SURFACES AND PAVEMENTS.

CONCRETE

15. THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL WIDTH OF THE JOINT. ANY UPWARD KEY SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.
16. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMPFERED 1" BY 1".
17. JOINTS AND SCOREMARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
18. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
19. REINFORCING PLACEMENT TOLERANCES SHALL BE:
- | |
|----------------|
| SPACING ± 1" |
| CLEARANCE ± ¾" |
20. ALL REINFORCING STEEL IN THE DECK, CURBS, AND THE TOPS OF THE BACKWALLS, SHALL BE EPOXY COATED AND PAID AS 507.17, EPOXY COATED REINFORCING STEEL. EPOXY COATED REINFORCING STEEL IS DESIGNATED IN REINFORCING STEEL SCHEDULE WITH A PREFIX OF "E".
21. MINIMUM COVER FOR REINFORCING STEEL SHALL BE TWO INCHES (2 ") ALONG THE BACK FACES OF WALLS AGAINST EARTH, TWO AND ONE-HALF INCHES (2 ½") ALONG THE TOP SURFACE OF THE DECK, ONE AND ONE-HALF INCHES (1 ½") ALONG THE BOTTOM SURFACE OF THE DECK AND THREE INCHES (3") ELSEWHERE, UNLESS OTHERWISE NOTED.
22. NO CONCRETE IN THE ABUTMENTS OR WINGWALLS SHALL BE PLACED ABOVE THE BRIDGE SEAT ELEVATIONS UNTIL THE BEAMS/GIRDERS HAVE BEEN PROFILED AND THE FINISHED GRADE OF THE DECK HAS BEEN DETERMINED.
23. FOR BRIDGE DECK POURS, THE MAXIMUM TIME LIMIT FOR ANY COMBINATION OF POURS DONE IN ANY ONE DAY SHALL BE EIGHT HOURS. THERE SHALL BE A MINIMUM OF 96 HOURS BETWEEN THE COMPLETION OF ONE DAY'S POUR AND THE BEGINNING OF OTHER ADJACENT POURS. ALL INDIVIDUAL DECK POURS SHALL START FROM THE LOW END OF THE BRIDGE. THE SEQUENCE OF DECK POURS SHALL BE AS SHOWN ON SHEET 51.
24. ALL SUBSTRUCTURE CONCRETE SHALL BE CONCRETE, HIGH PERFORMANCE CLASS B UNLESS OTHERWISE NOTED.
25. THE DECK SHALL BE CONCRETE, CLASS A QC/QA.
26. THE CURB SHALL BE CONCRETE, HIGH PERFORMANCE CLASS A.
27. SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL, OTHER BRIDGE SEAT AREAS SHALL BE SLOPED ¼" PER FOOT TOWARDS MID-SPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE SMOOTH STEEL TROWEL FINISHED.
28. NO TRAFFIC SHALL BE ALLOWED ON THE NEW DECK UNTIL THE CURE PERIOD IS UP AND THE 28 DAY DESIGN STRENGTH IS ATTAINED, AS EVIDENCED BY TEST CYLINDERS CURED UNDER FIELD CONDITIONS.
29. WATER REPELLENT (MOD. SILANE) SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF THE DECK BETWEEN THE DRIP BEADS.

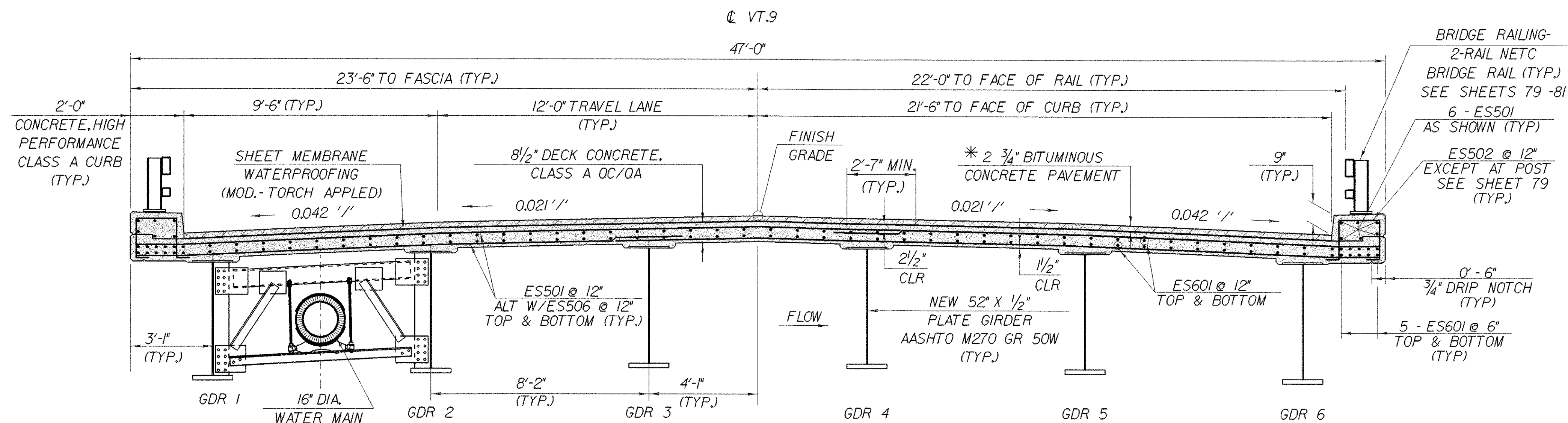
STRUCTURAL STEEL

30. ALL STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).
31. ITEM 506.55 - STRUCTURAL STEEL, PLATE GIRDER, SHALL INCLUDE THE PLATE GIRDERS, DOWNSPOUTS, CONNECTION PLATES, CROSSFRAMES AND BEARING STIFFENERS, ALONG WITH ALL REQUIRED FASTNERS.
32. SHEAR CONNECTORS SHALL BE FIELD WELDED USING AUTOMATICALLY TIMED STUD WELDING EQUIPMENT AND SHALL BE PAID AS ITEM 508.15, SHEAR CONNECTORS.
33. THE ENDS OF THE GIRDERS SHALL BE VERTICAL UNDER FULL DEAD LOAD DEFLECTION.
34. ANY CONNECTIONS THAT ARE NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.
35. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF VERMONT SPECIFICATION 506.10.
36. ANY HOLES IN THE WEBS OF THE FASCIA BEAMS/GIRDERS THAT ARE NOT OTHERWISE FILLED, SHALL BE FILLED WITH EITHER BUTTON HEAD OR HEX HEAD BOLTS. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH VERMONT SPECIFICATION 506.19.

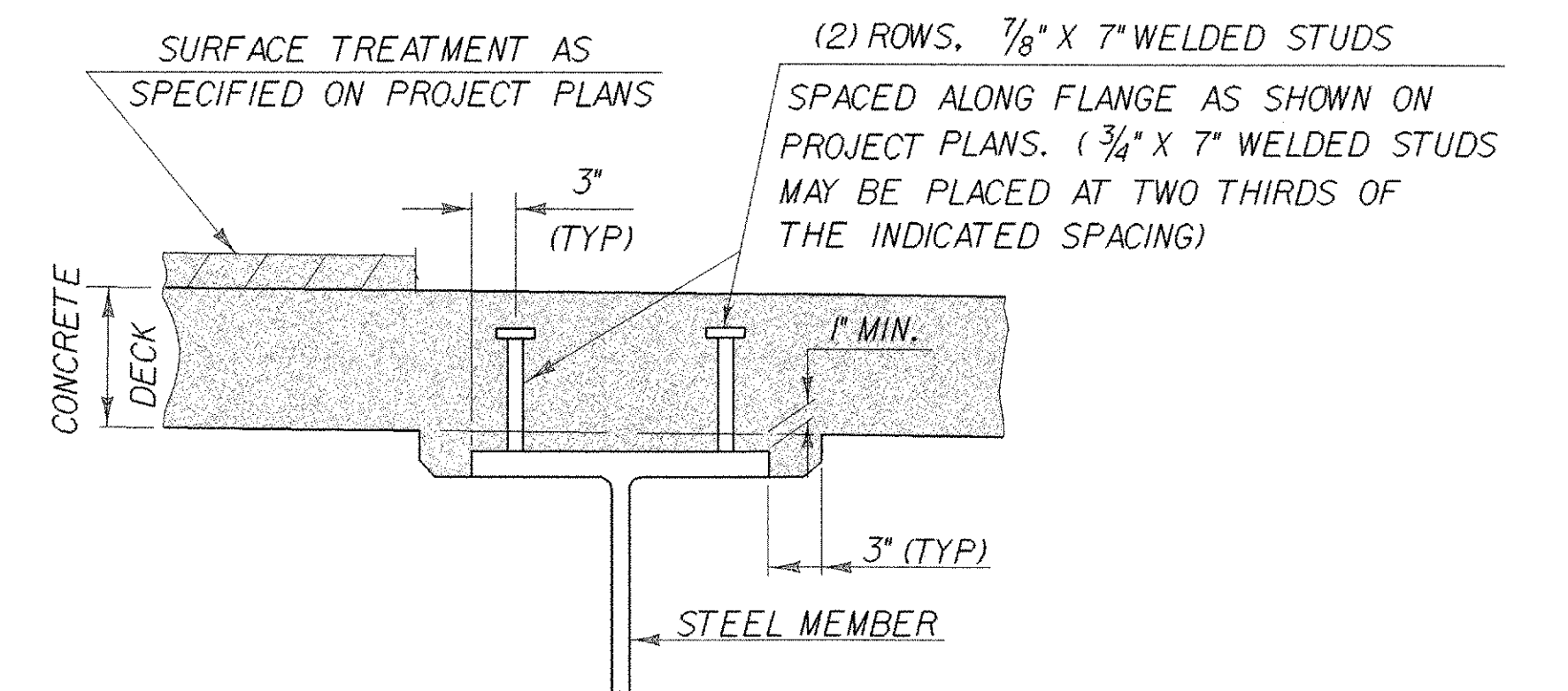
37. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER ASTM DESIGNATION A-325 TYPE III BOLTS IN 15/16" DIAMETER HOLES.
38. THE DESIGN OF THE FLEMING BRACKETS OR SIMILAR FALSEWORK WILL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE PLACED AT A MAXIMUM SPACING OF 4'-0".
39. AFTER THE SUPERSTRUCTURE HAS BEEN ERECTED, ELEVATIONS SHALL BE TAKEN ALONG THE TOP OF THE BEAMS/GIRDERS, AS DIRECTED BY THE RESIDENT ENGINEER, FOR USE IN DETERMINING THE FINISHED GRADE.
40. ALL STRUCTURAL STEEL INCLUDING GIRDERS, CROSSFRAMES AND CONNECTION PLATES, WITHIN A DISTANCE OF 10'-0" FROM THE EXPANSION END OF EACH GIRDER, WILL BE COATED WITH A PROTECTIVE PAINT SYSTEM AS PER VT SPECIFICATION 513. THE FINAL COLOR SHALL BE DARK BROWN, TO BLEND WITH THE COLOR OF THE WEATHERING STEEL. PAYMENT FOR THIS WORK WILL BE MADE UNDER ITEMS 513.25 AND 513.40, "STRUCTURAL PAINTING, SHOP APPLIED", AND "SURFACE PREPARATION".

PROJECT NAME: WOODFORD
PROJECT NUMBER: BHF 010-1(29)

FILE NAME: se039gen.xls	PLOT DATE: 8/3/2005
PROJECT LEADER: A.Portalupi	DRAWN BY: R.PELLETT
DESIGNED BY: EVANS-MONGEON	CHECKED BY: M.E.M
GENERAL NOTES SHEET #1	SHEET 49 OF 106

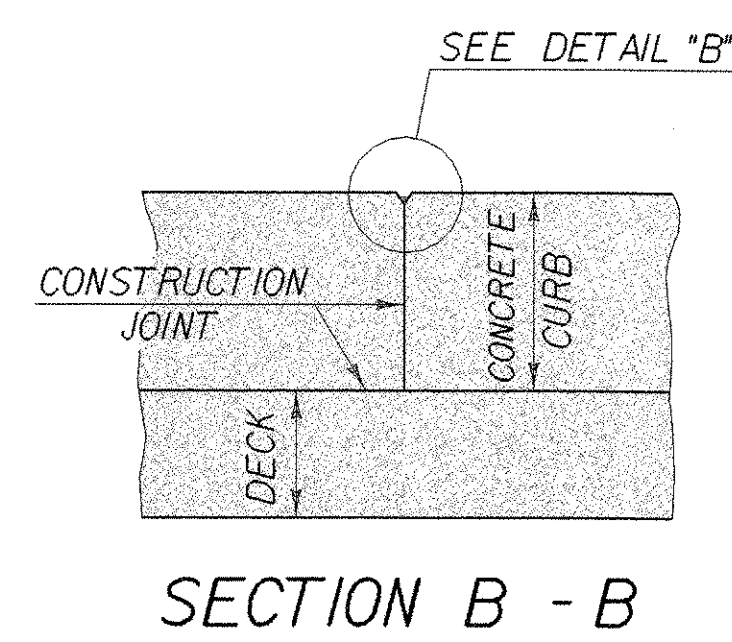
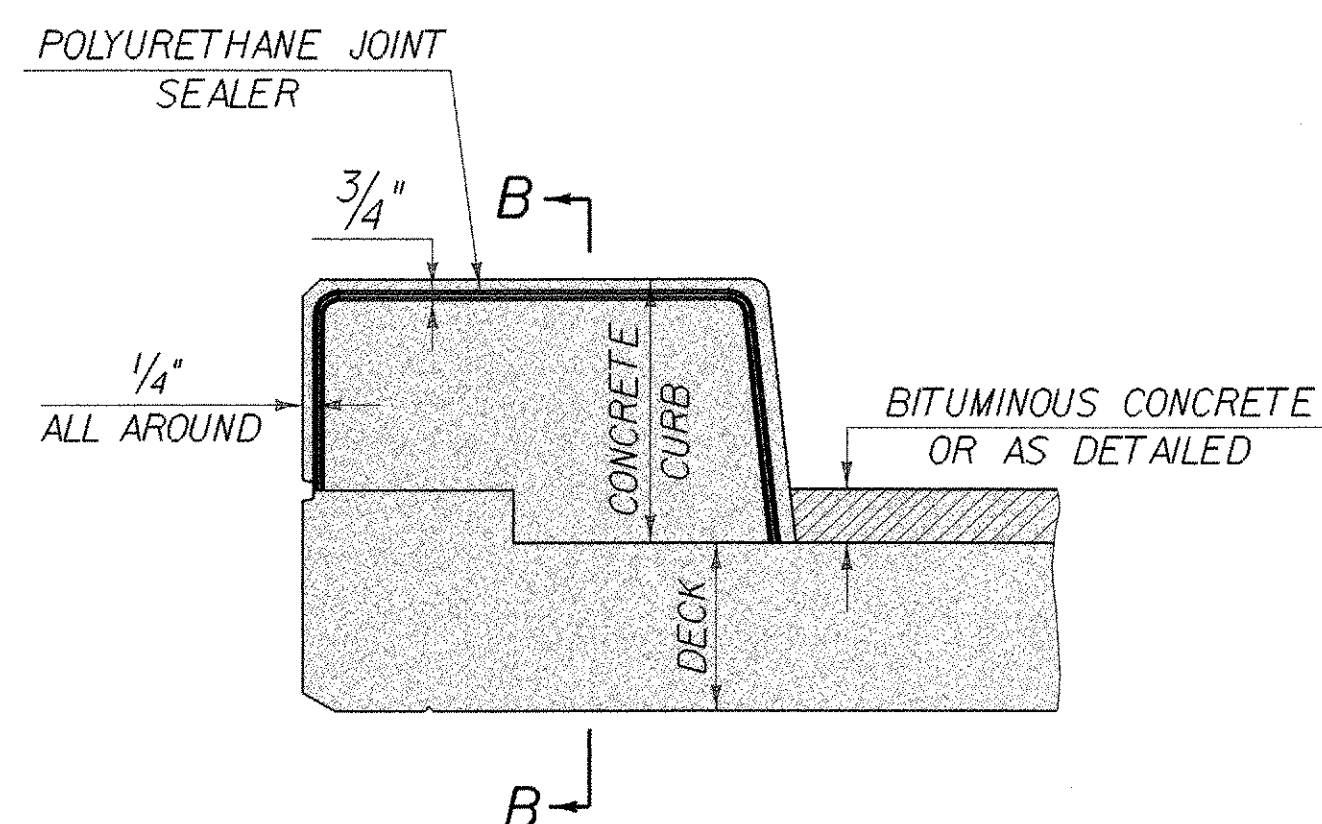


BRIDGE RAILING-
2-RAIL NETC
BRIDGE RAIL (TYP.)
SEE SHEETS 79-81
6 - ES501
AS SHOWN (TYP.)
ES502 @ 12"
EXCEPT AT POST
SEE SHEET 79
(TYP.)
3'-6"
3/4" DRIP NOTCH
(TYP.)
5 - ES601 @ 6"
TOP & BOTTOM
(TYP.)

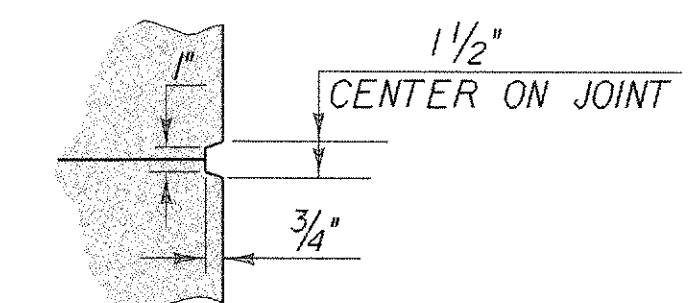
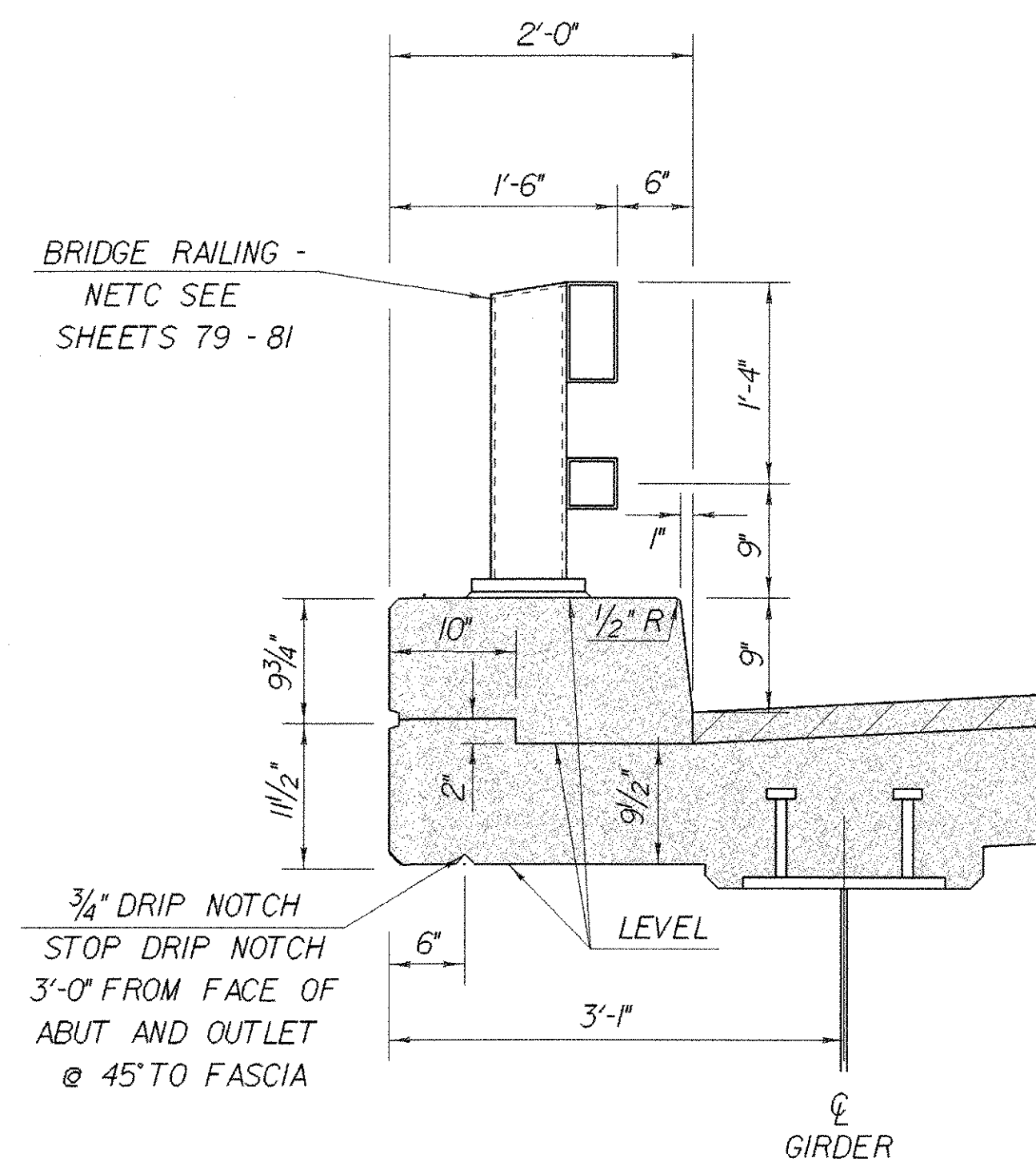
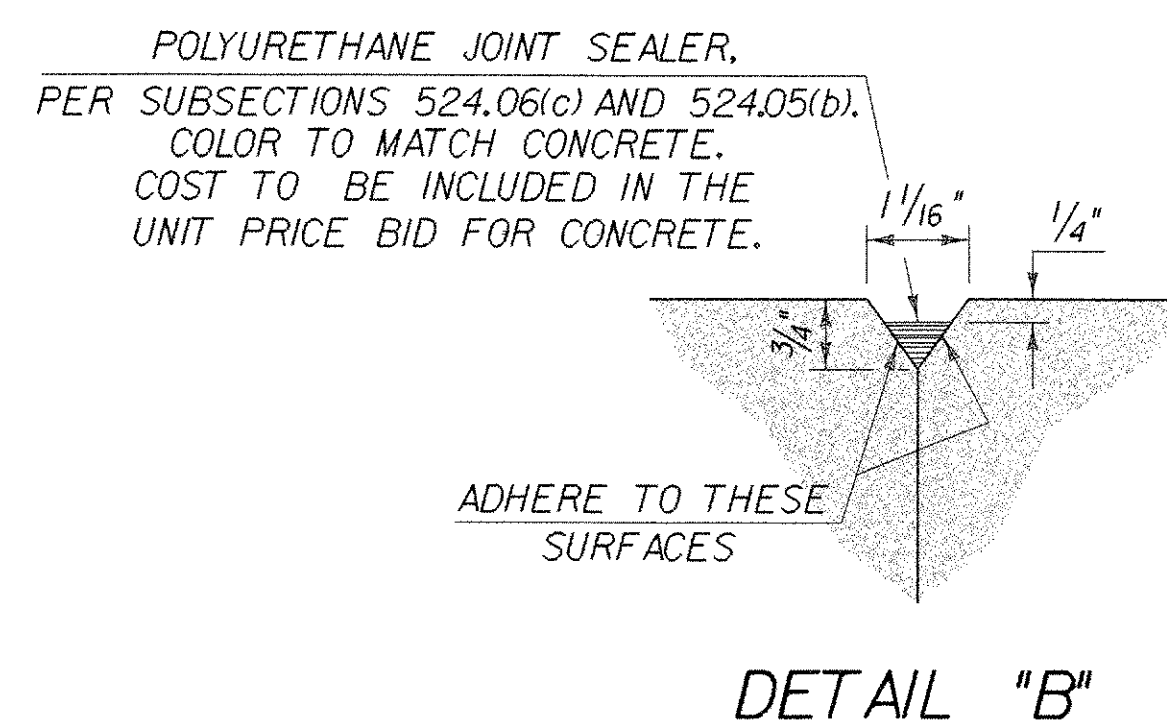


NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLR. UNLESS OTHERWISE
SPECIFIED ON THE PLANS.

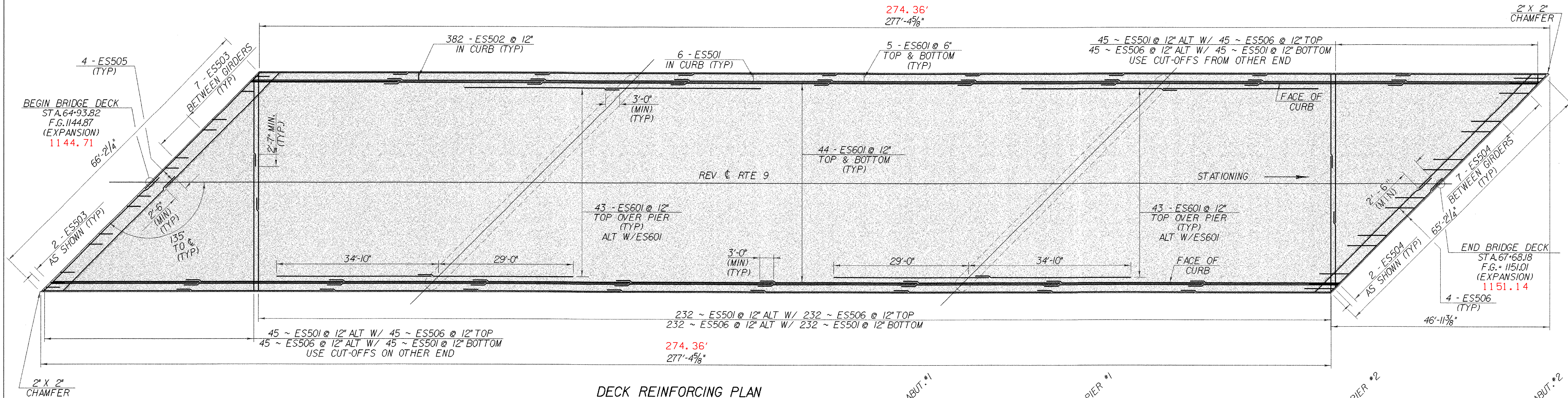


- NOTES:
- CONSTRUCTION JOINTS THROUGH CONCRETE CURBS SHALL BE SPACED MAXIMUM 15'-0" CENTER TO CENTER AND SHALL BE 1'-6" MINIMUM FROM THE CENTER OF THE NEAREST BRIDGE RAIL POST. CONCRETE SHALL BE PLACED IN ALTERNATING SECTIONS WITH A MINIMUM OF 48 HOURS DELAY BETWEEN ADJACENT POURS.
 - LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CURB CONSTRUCTION JOINTS.

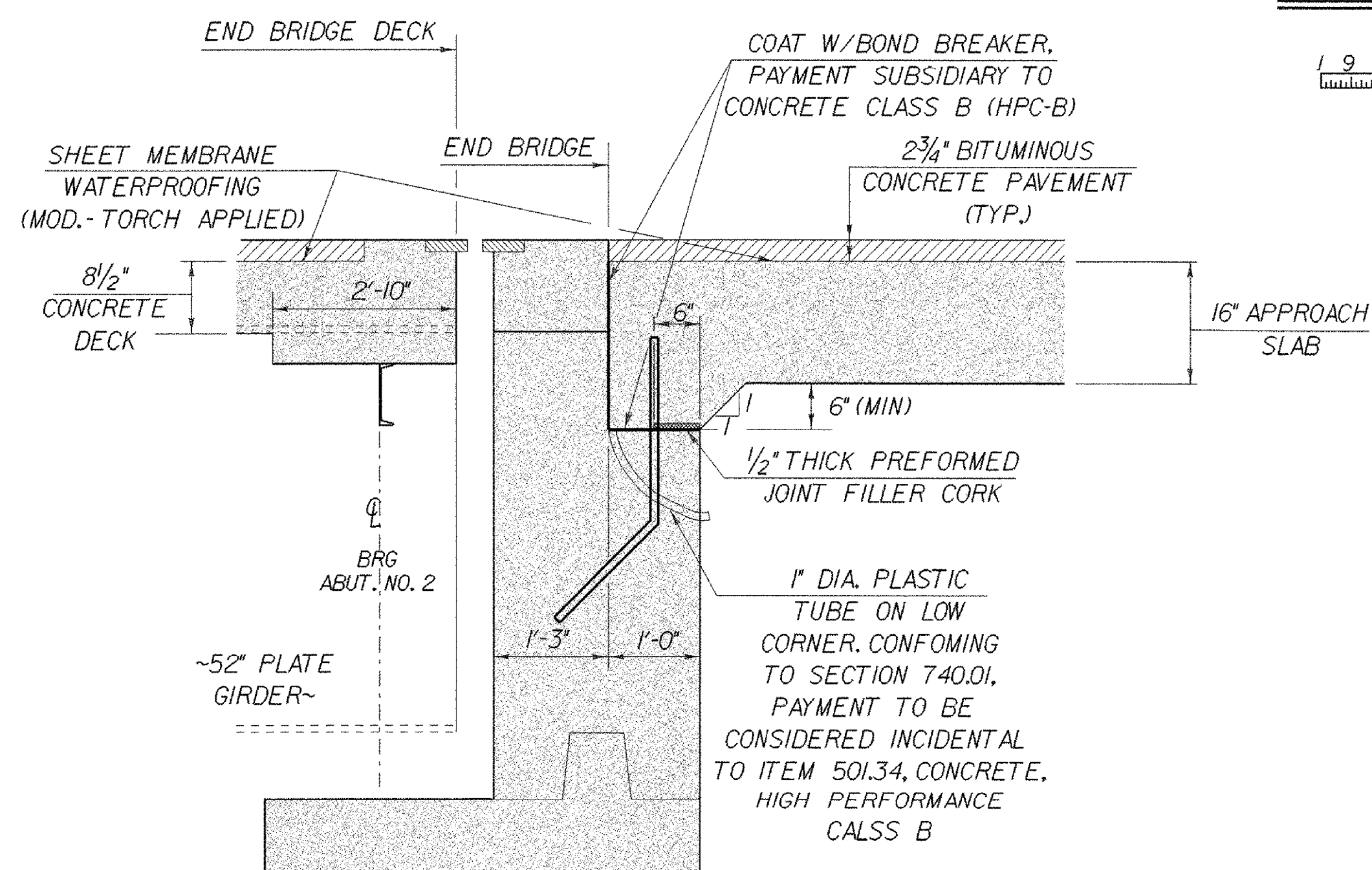
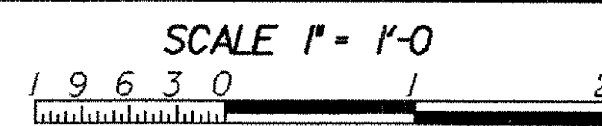


DECK TYPICAL SHEET

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	WOODFORD	Bridge No.	BR 11
Highway No.	VT 9	Log. Sta.	
		Surv. Sta.	
VT 9 OVER ROARING BRANCH			
DECK TYPICAL AND DETAILS			
Designed By	M.EVANS-MONGEON	Drawn By	R.PELLETT
Checked By	Date	Bridge Design Supervisor	
M.EVANS-MONGEON		A.PORTALUPI	Date
PROJECT	WOODFORD	PROJECT NO.	BHF 010-1(29)
I.G.C. Info.	/84e039/se039supdgn		se039dck1
Bridge Sheet No.		Sheet 50	of 106



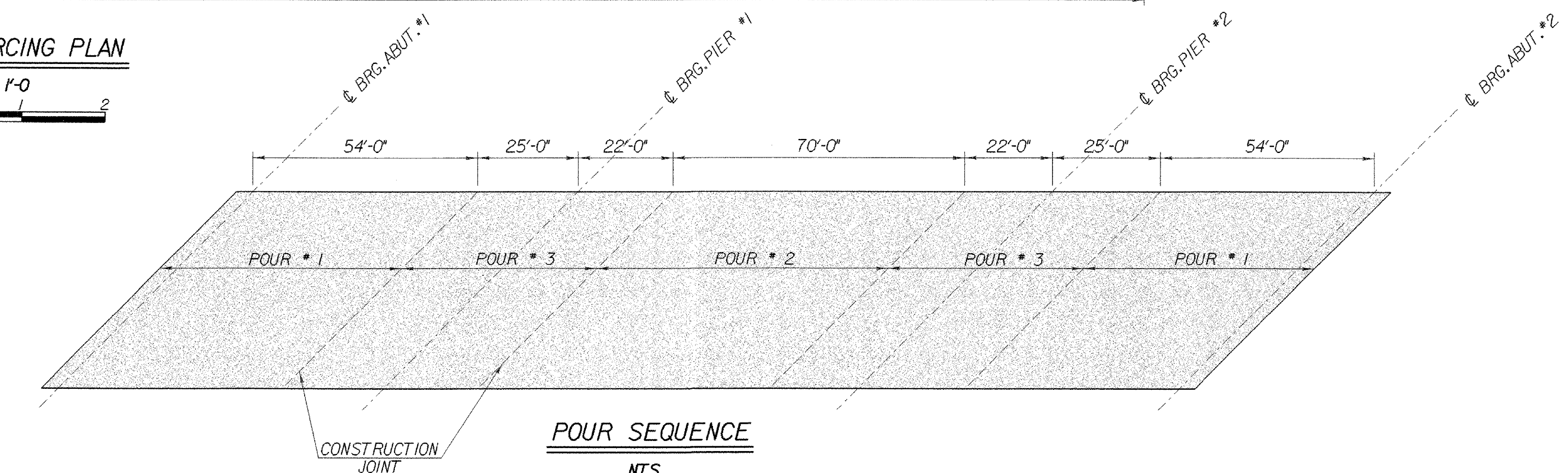
DECK REINFORCING PLAN



END DETAIL @ ABUTMENT
NORMAL TO ∇ BEARING

SCALE: $\frac{3}{4}$ " = 1'-0"

FOR ADDITIONAL DETAIL
AND REINFORCING
SEE SHEET 63
EXPANSION JOINT DETAIL



POUR SEQUENCE
NTS

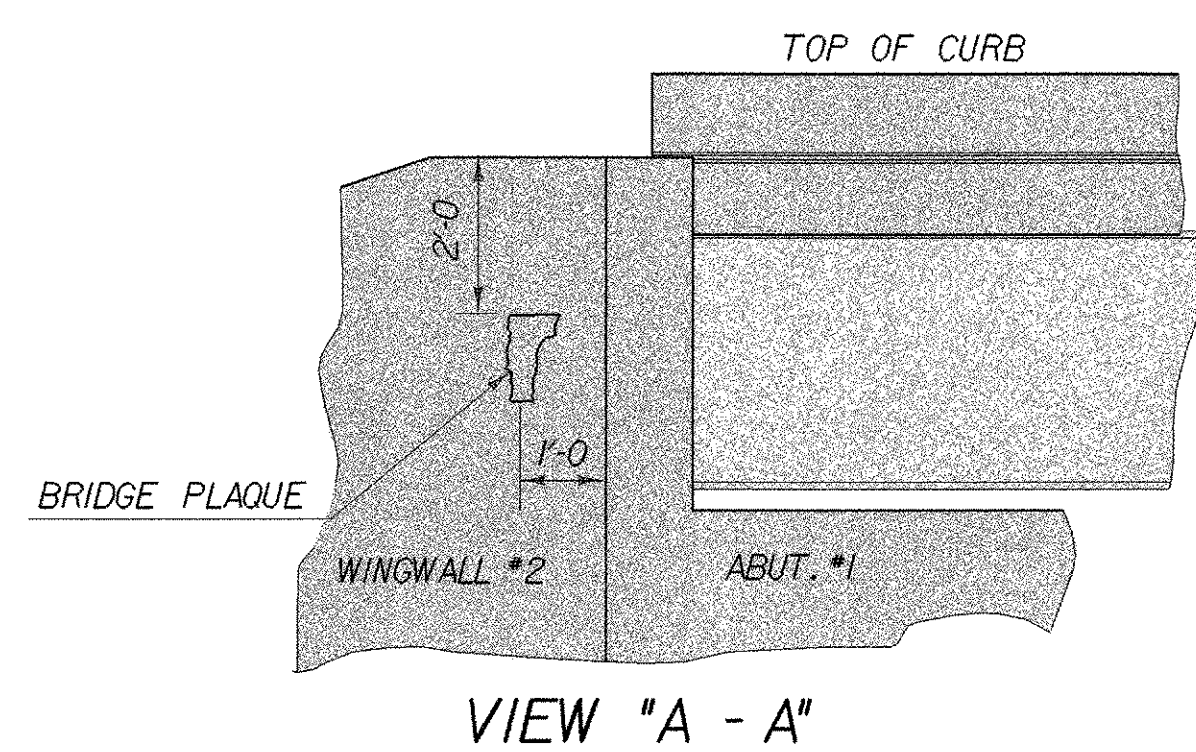
NOTES

- IF APPROVED BY THE ENGINEER, BOTH POUR NO. 1 SECTIONS AND/OR BOTH POUR NO. 3 SECTIONS MAY BE POURED THE SAME DAY, PROVIDED THAT THE MAXIMUM TIME SPAN OF THE POUR IS EIGHT HOURS. THE INDICATED POURING SEQUENCE SHALL BE FOLLOWED AND A RETARDING ADMIXTURE USED SO THAT THE DECK CONCRETE WILL NOT SET UP UNTIL ALL THE POUR HAS BEEN MADE. THE RETARDING ADMIXTURE SHALL BE INCIDENTAL TO ITEM 501.221, CONCRETE, CLASS A QC/QA.
- TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINTS, AS SHOWN ON THIS SHEET, SHALL BE USED BETWEEN ADJACENT DECK POURS.
- ALL INDIVIDUAL DECK POURS SHALL START FROM THE LOW END (RELATIVE TO GRADE).
- THERE SHALL BE A MINIMUM DELAY PERIOD OF 96 HOURS BETWEEN POURS.
- ANY POURING SEQUENCE OTHER THAN INDICATED SHALL BE SUBMITTED, IN WRITING, TO THE STRUCTURES ENGINEER FOR APPROVAL.

DECK PLAN SHEET

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/se039sup.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: se039dre.1	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: MEM
SQUAD LEADER: PORTALUPI	SHEET: 51 OF 106

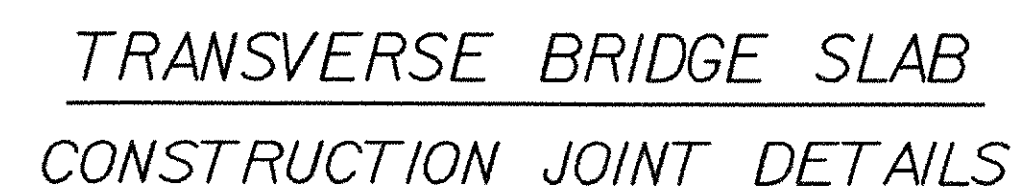
DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	N/A



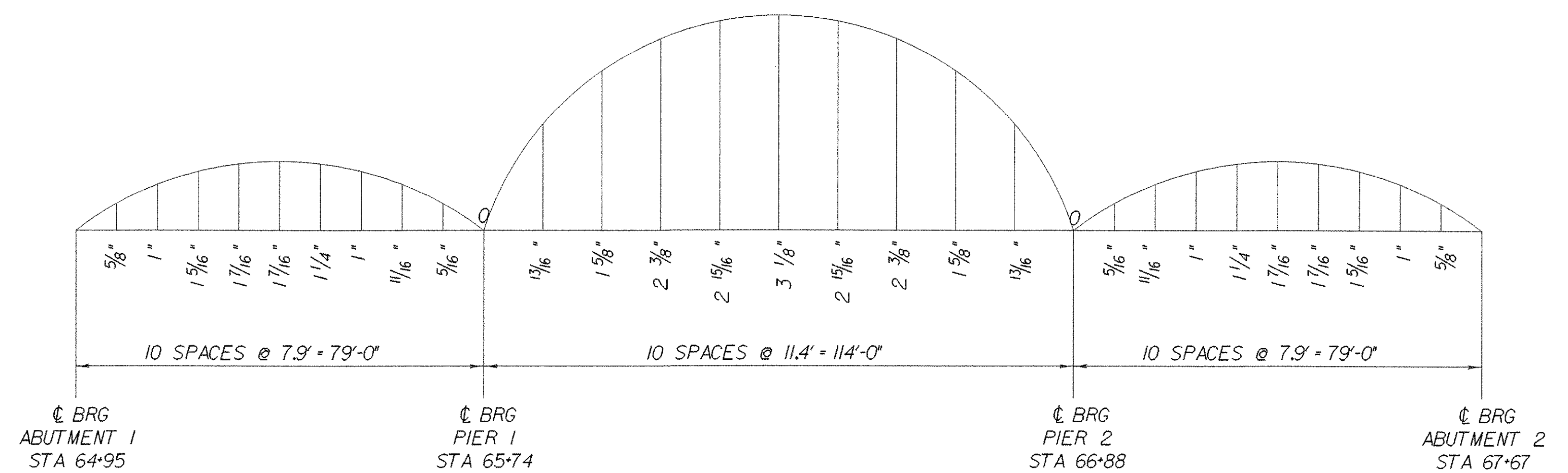
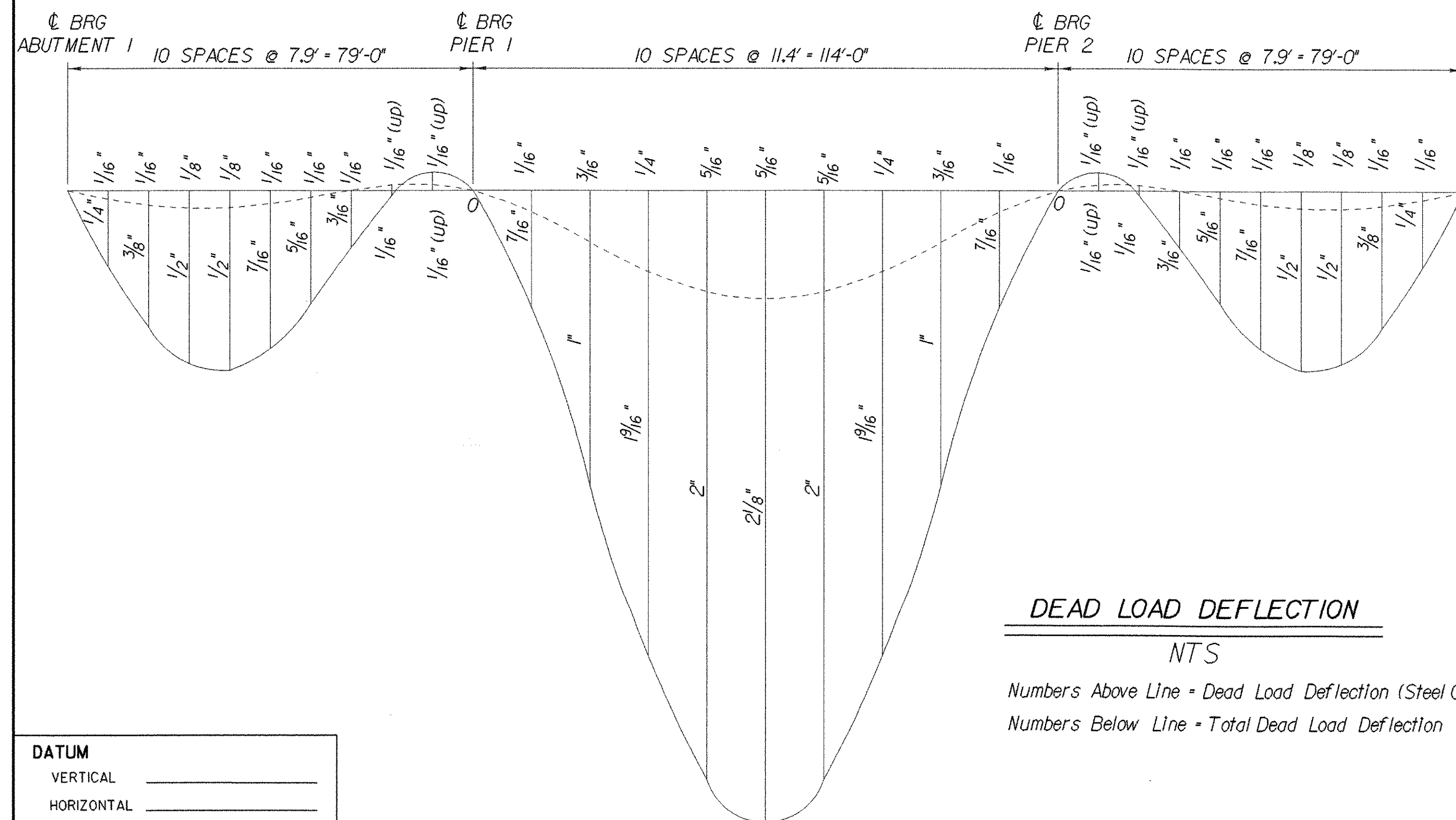
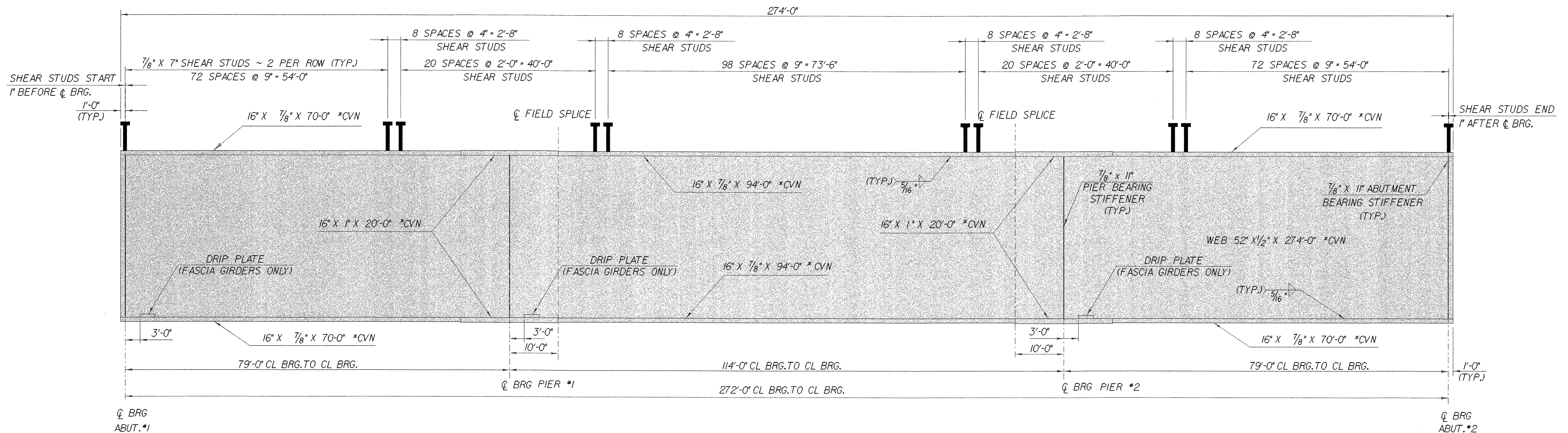
THE BRIDGE PLAQUE WILL BE SUPPLIED BY
THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY
THE CONTRACTOR AT ABUTMENT *1 ON THE RIGHT SIDE AS
SHOWN OR AS DIRECTED BY THE ENGINEER.



THE COSTS FOR P.V.C.WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE
BID FOR CONCRETE. OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL
OF THE STRUCTURES ENGINEER.



STATE OF VERMONT AGENCY OF TRANSPORTATION		
Town Of	WOODFORD	Bridge No. BR 11
Highway No.	VT 9	Log Sta.
VT 9 OVER ROARING BRANCH OF WALLOOMSAC		Surv. Sta.
MISCELLANEOUS CONCRETE DETAILS		
Designed By	M.EVANS-MONGEON	Drawn By R.PELLETT
Checked By	Date	Bridge Design Supervisor
M.EVANS-MONGEON		A.POTALUPI Date
PROJECT	WOODFORD	PROJECT NO. BHF 010-K29)
I.G.C. Info. /84e039/se039sub.dgn		se039mscJ
Bridge Sheet No.	Sheet 52	of 106



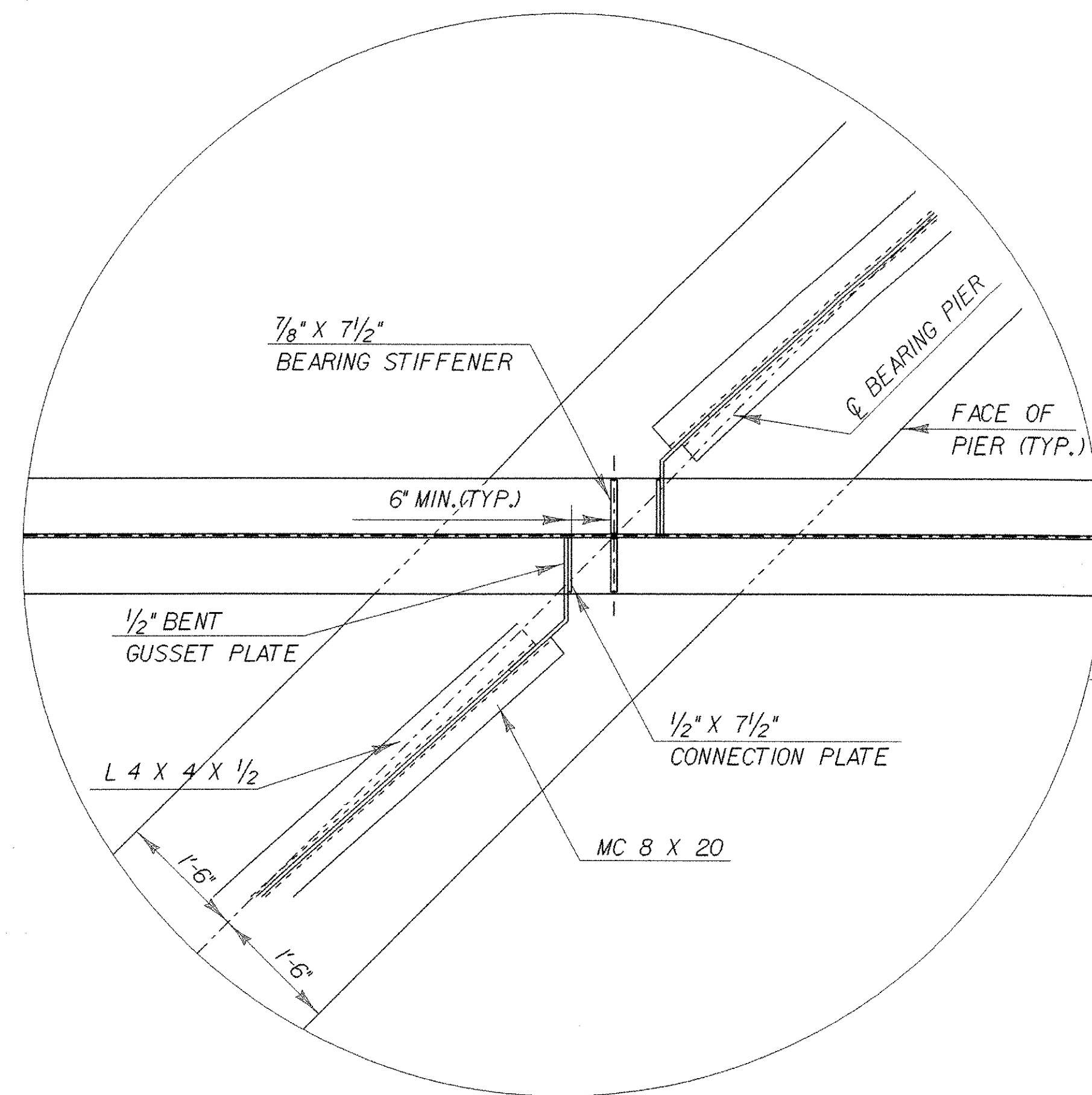
DATUM

VERTICAL _____

HORIZONTAL _____

GIRDER DETAILS

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/structures/se039sup.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: se039gdr.l	SURVEY DATE: 12-88
DESIGNED BY: M. EVANS-MONGEON	DRAWN BY:
SQUAD LEADER: PORTALUPI	SHEET: 53 OF 106

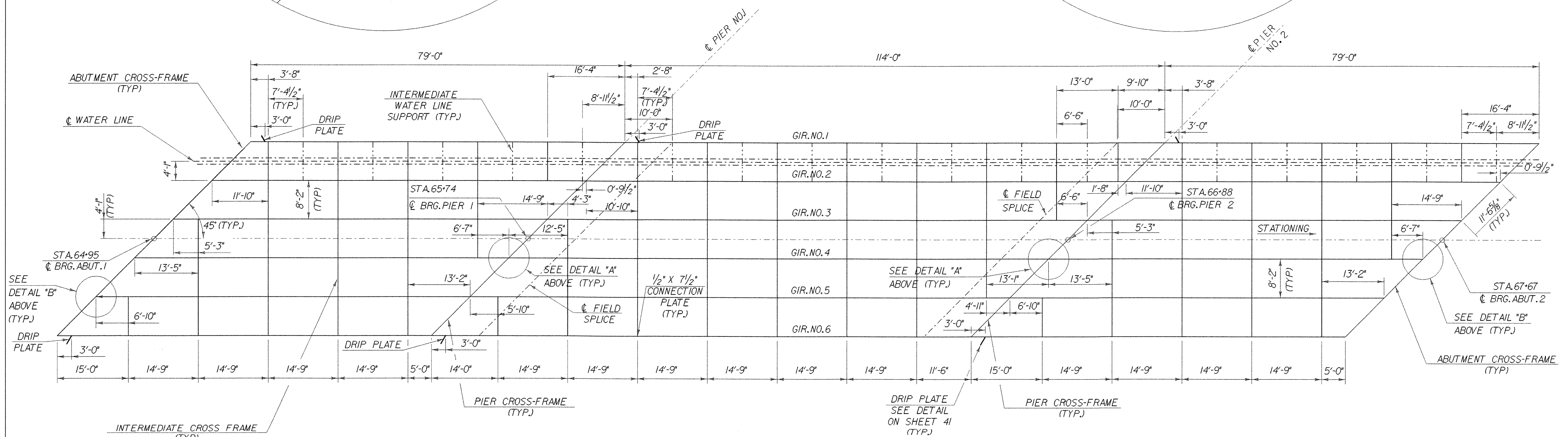
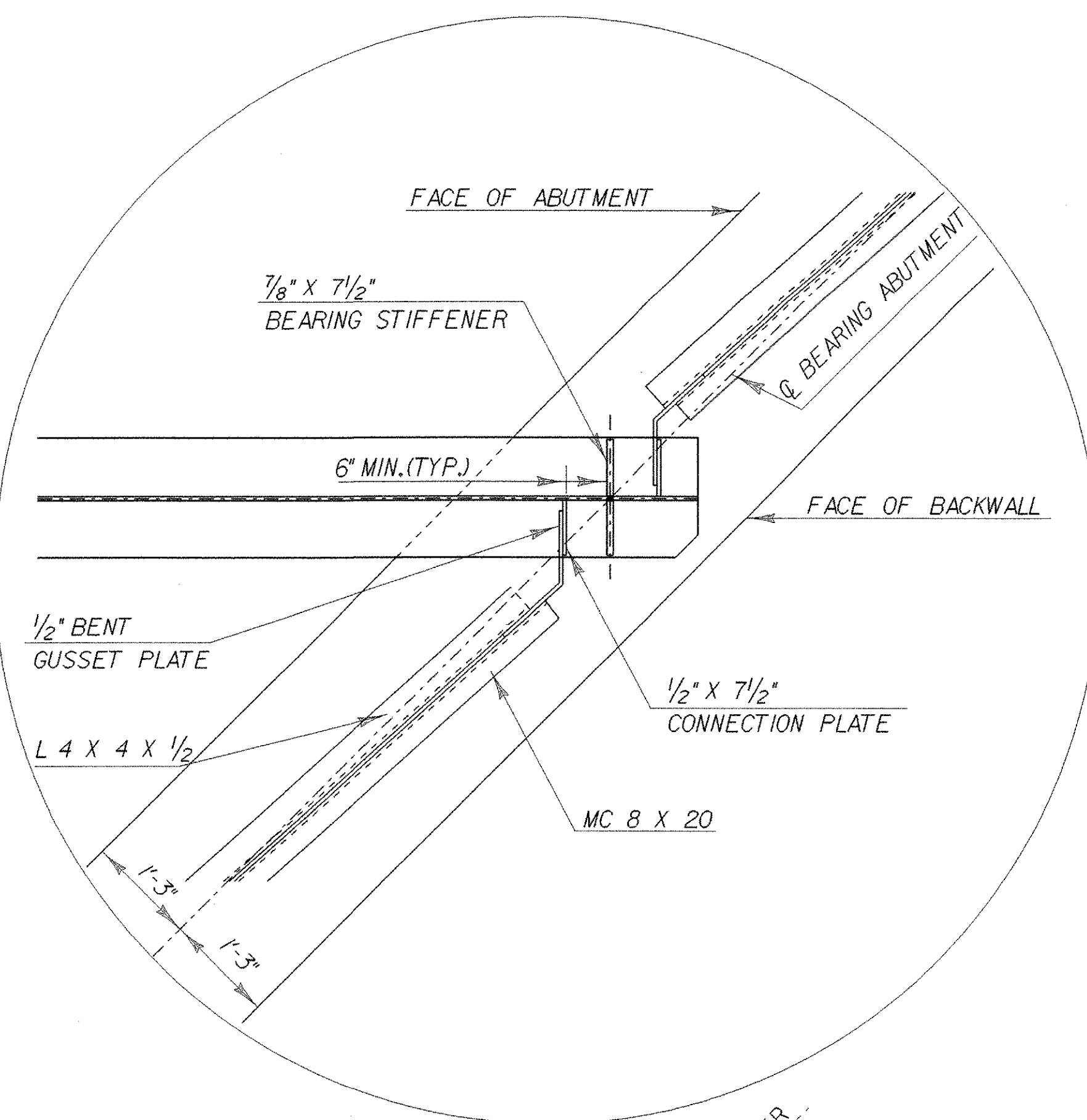


DETAIL "A"

SCALE $\frac{3}{4}" = 1'-0"$

DETAIL "B"

SCALE $\frac{3}{4}" = 1'-0"$



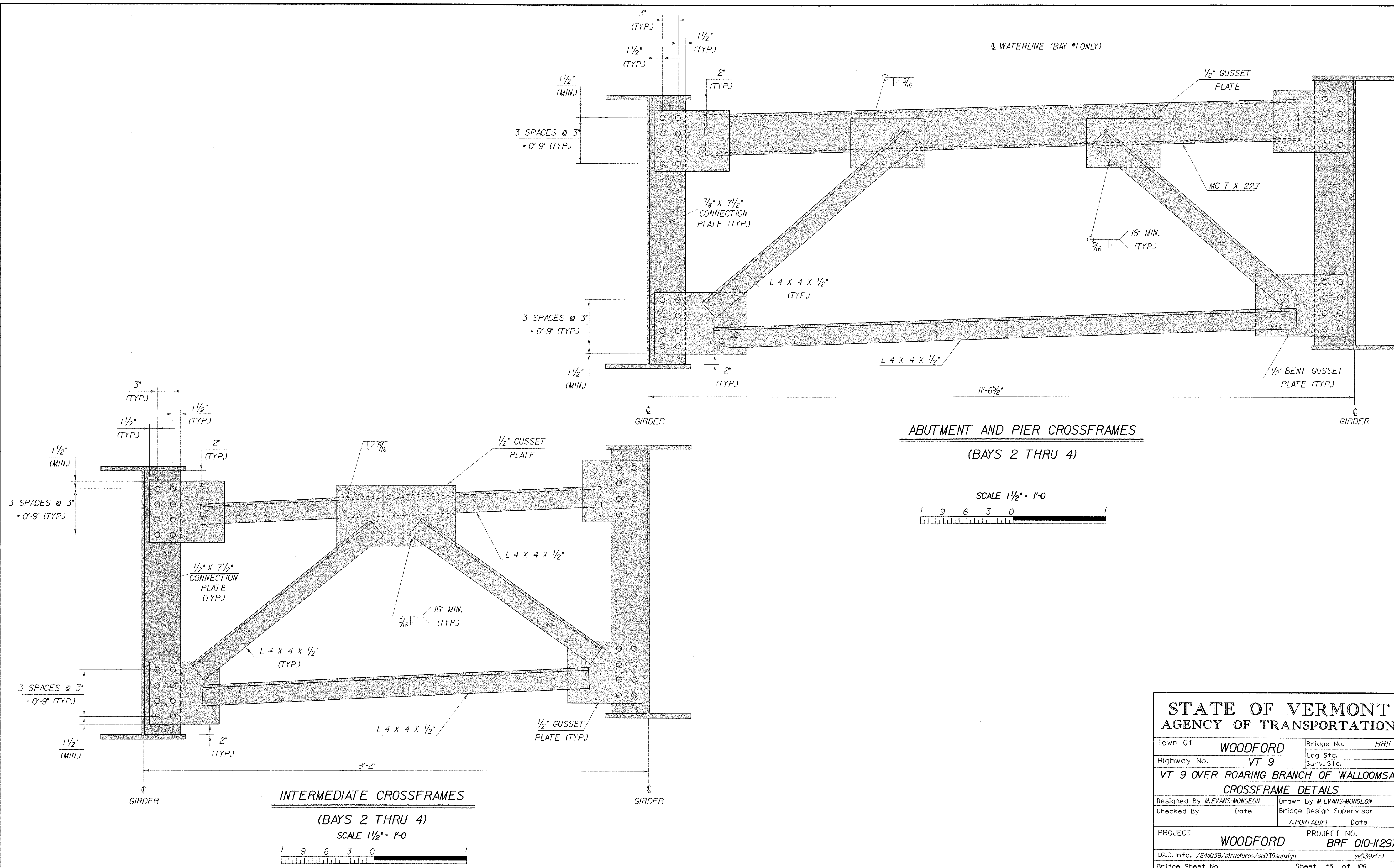
FRAMING PLAN

SCALE $1" = 1'-0"$

DATUM
VERTICAL _____
HORIZONTAL _____

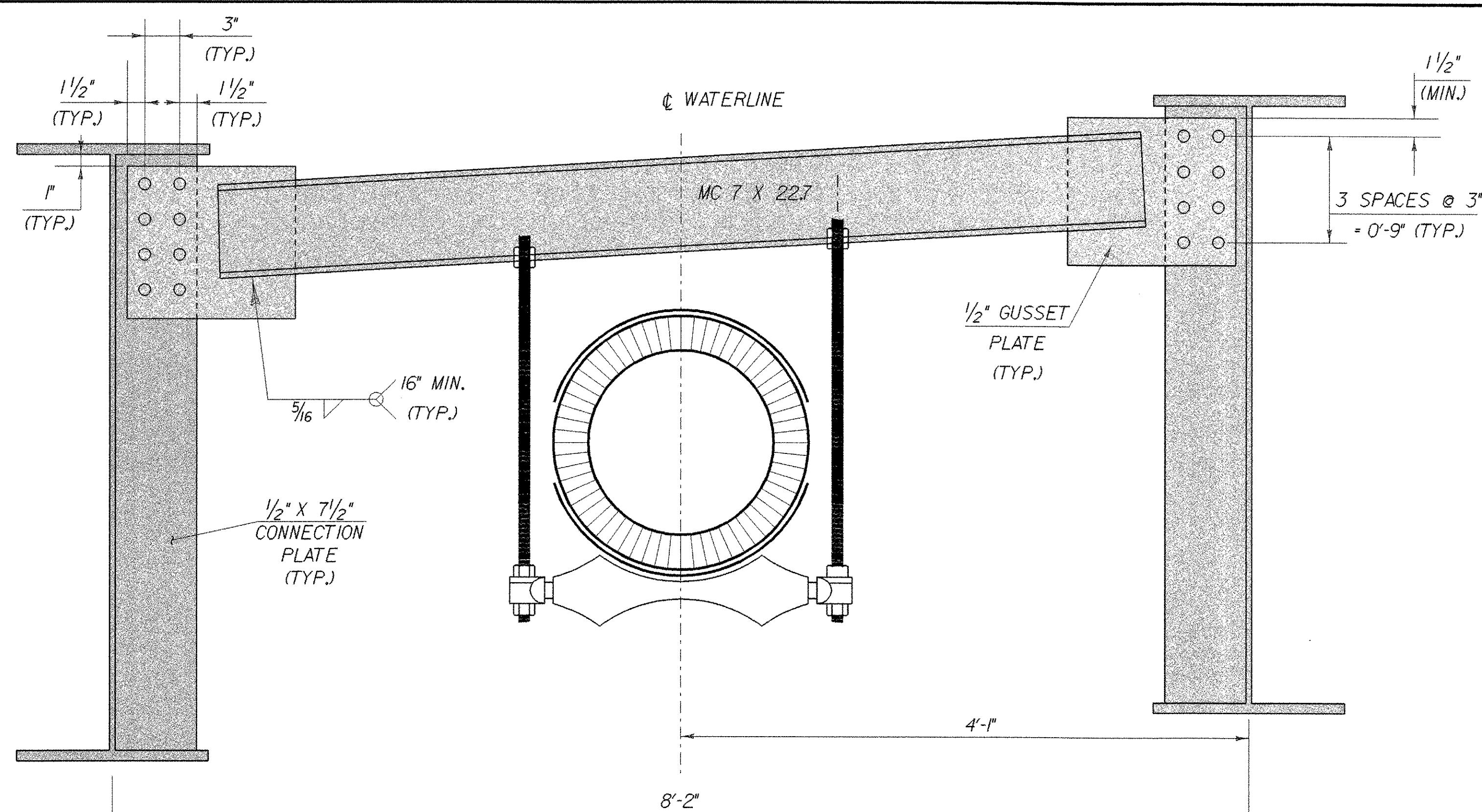
FRAMING PLAN

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/structures/se039sup.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: se039frm.1	SURVEY DATE: 12-88
DESIGNED BY: M. EVANS-MONGEON	DRAWN BY: RVH
SQUAD LEADER: PORTALUPI	SHEET: 54 OF 106

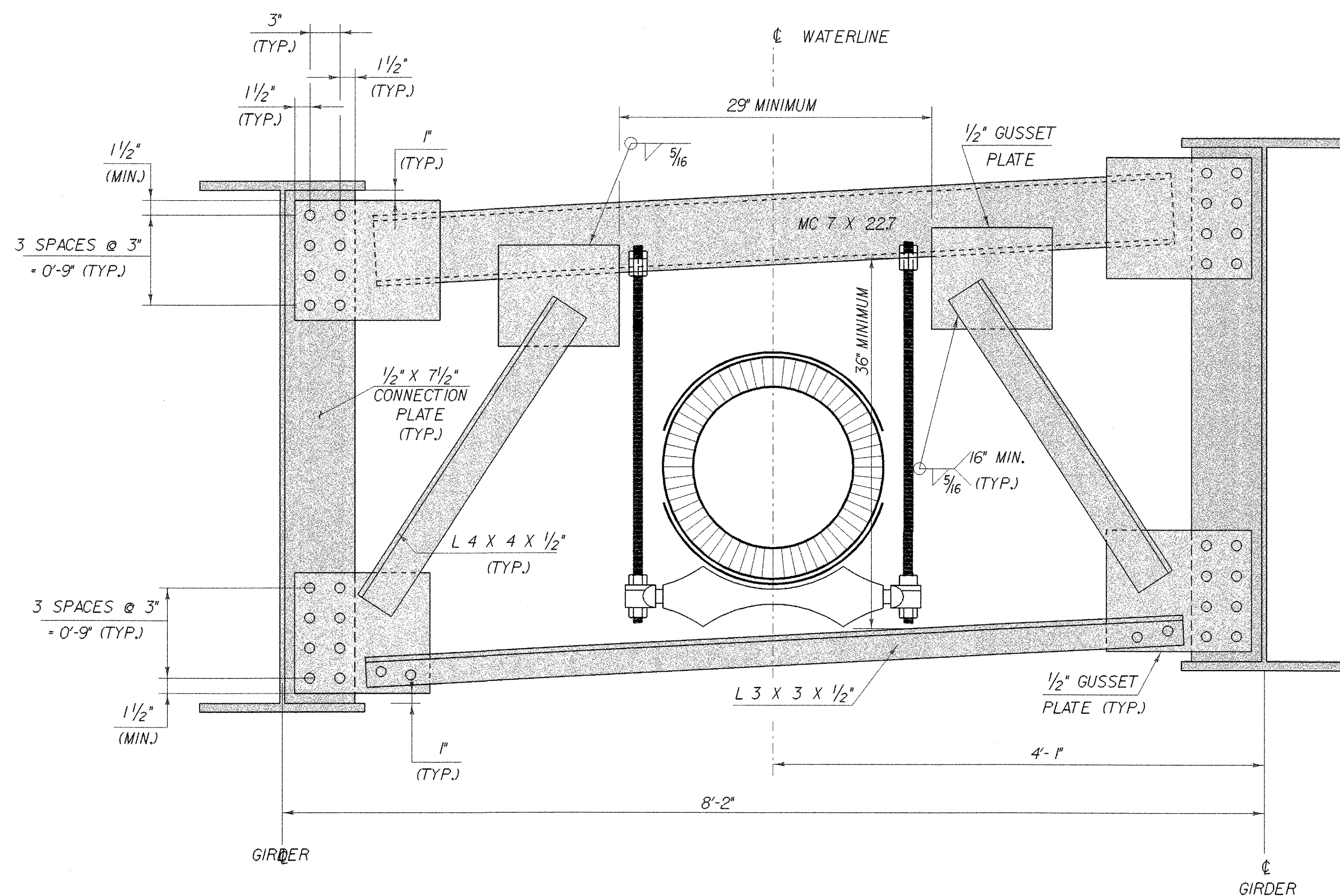
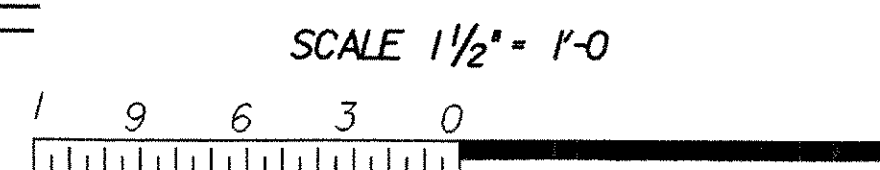


STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	WOODFORD	Bridge No.	BR11
Highway No.	VT 9	Log Sta.	
		Surv. Sta.	
VT 9 OVER ROARING BRANCH OF WALLOOMSAC			
CROSSFRAME DETAILS			
Designed By	M.EVANS-MONGEON	Drawn By	M.EVANS-MONGEON
Checked By	Date	Bridge Design Supervisor	Date
		A.FORTALUPI	
PROJECT	WOODFORD	PROJECT NO.	BRF 010-1(29)
I.G.C. Info.	/84e039/structures/se039supdgn		se039xfrJ
Bridge Sheet No.		Sheet	55 of 106

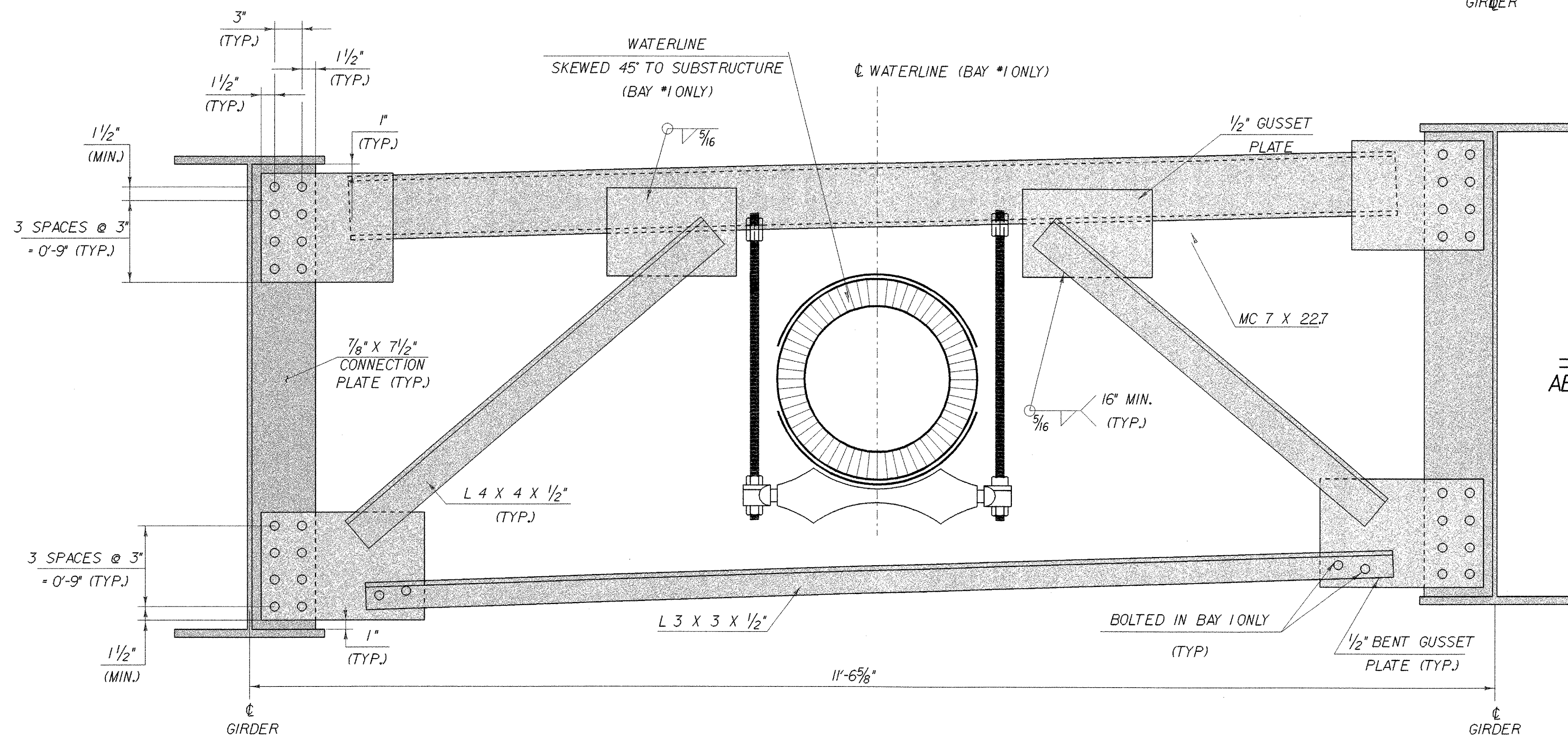
PLOTTED 03-OCT-2005



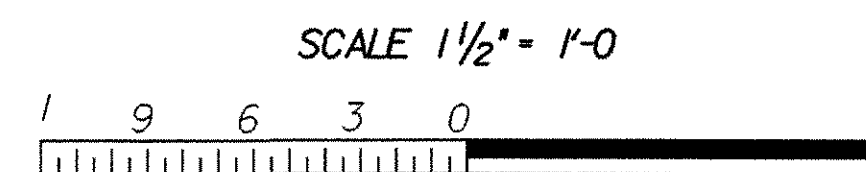
UTILITY CONNECTION
(BETWEEN CROSSFRAMES IN BAY #1)



INTERMEDIATE CROSSFRAMES
(IN BAY #1 ONLY)



BAY #1
ABUTMENT AND PIER CROSSFRAMES



STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of **WOODFORD** Bridge No. **BR11**

Highway No. **VT 9** Log Sta. **Surv. Sta.**

VT 9 OVER ROARING BRANCH OF WALLOOMSAC

UTILITY CONNECTIONS

Designed By **M. EVANS-MONGEON** Drawn By **M. EVANS-MONGEON**

Checked By **Date** Bridge Design Supervisor **Date**

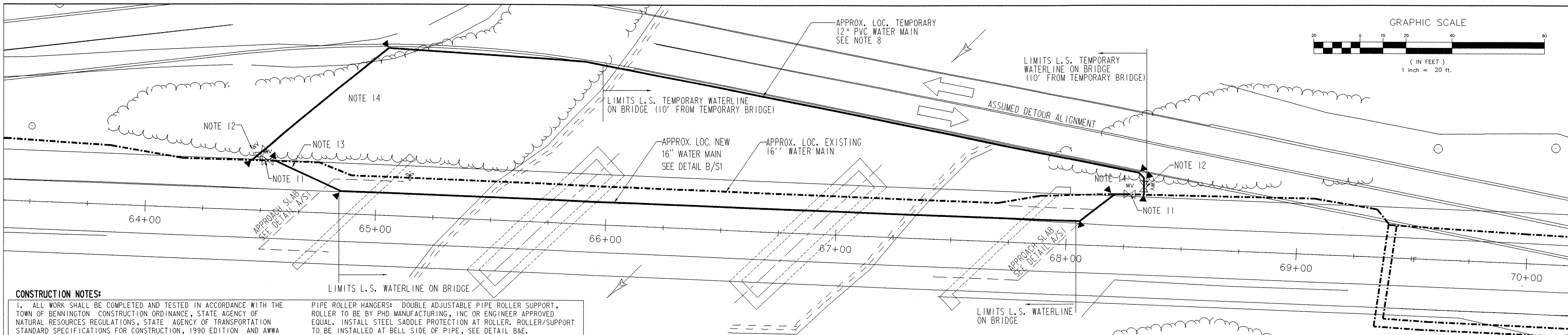
A. PORTALUPI **Date**

PROJECT **WOODFORD** PROJECT NO. **BHF 010-1(29)**

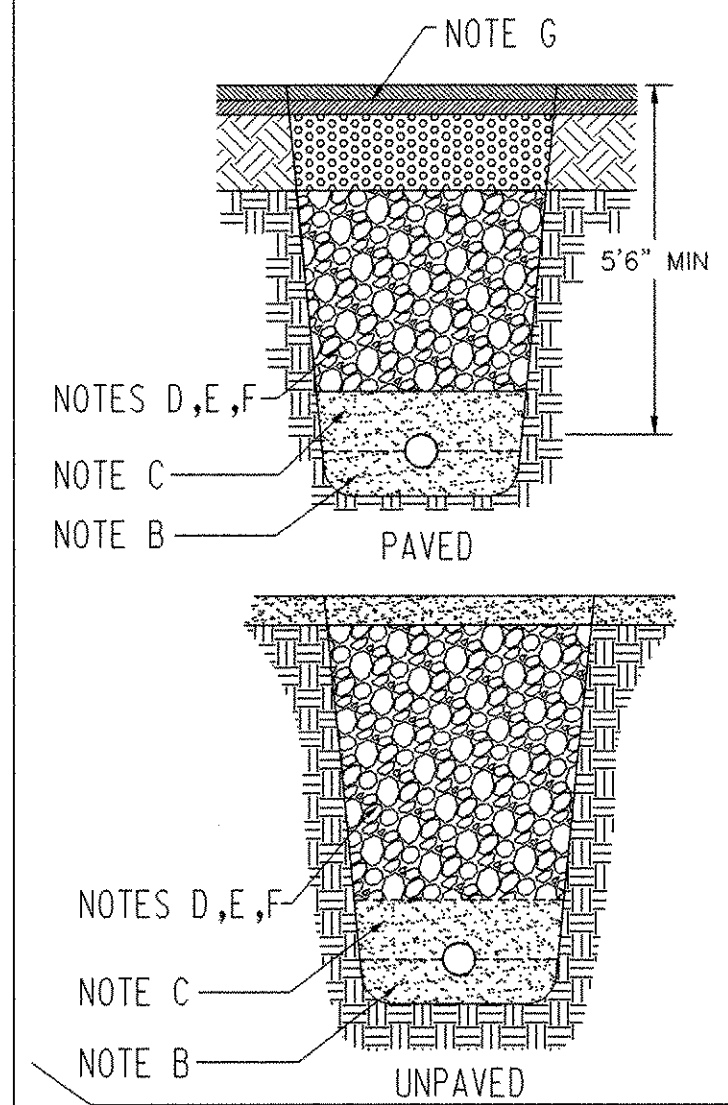
I.G.C. Info. **/84#039/structures/se039sup.dgn** **se039utcl**

Bridge Sheet No. **Sheet 56 of 106**

03-OCT-2005

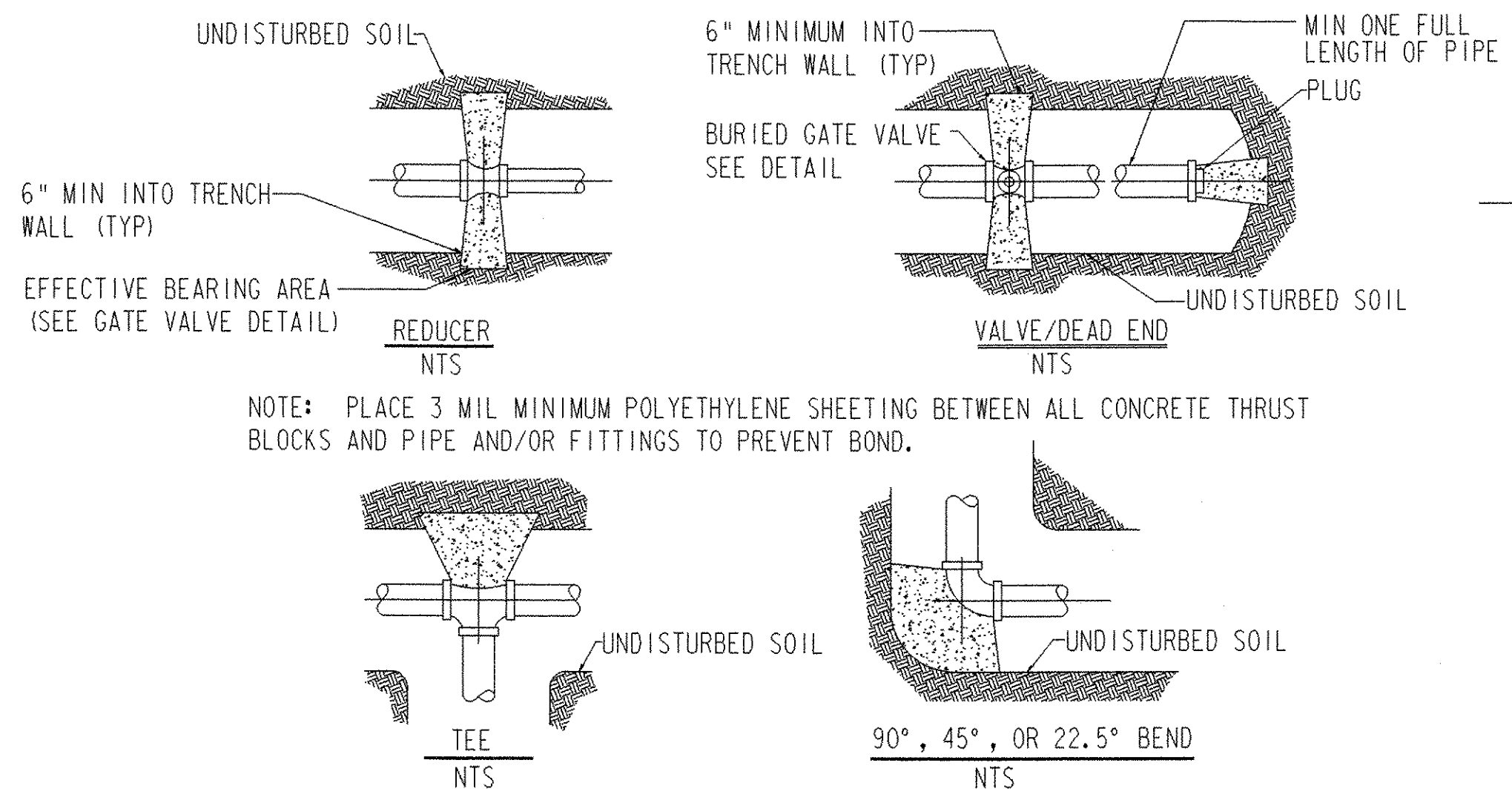


- CONSTRUCTION NOTES:**
- ALL WORK SHALL BE COMPLETED AND TESTED IN ACCORDANCE WITH THE TOWN OF BENNINGTON CONSTRUCTION ORDINANCE, STATE AGENCY OF NATURAL RESOURCES REGULATIONS, STATE AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, 1990 EDITION AND AWWA WATERLINE CONSTRUCTION STANDARDS C600 AND C652.
 - EXISTING UTILITIES ARE APPROXIMATE ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY ALL UTILITY CONFLICTS PRIOR TO THE PLACEMENT OF PIPE. ALL DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER. THE CONTRACTOR SHALL CONTACT 'DIG SAFE' (800.225.4977) PRIOR TO ANY CONSTRUCTION.
 - THE CONTRACTOR SHALL PROTECT AND SUPPORT EXISTING UTILITIES (i.e. POWER POLES, SEWER LINES, ETC.) AS NECESSARY DURING CONSTRUCTION. UTILITY COMPANIES SHALL BE CONTACTED BY THE CONTRACTOR WHEN CONSTRUCTION IS INITIATED IN THE VICINITY OF THEIR UTILITIES. THE CONTRACTOR SHALL COMPACT ALL MATERIAL UNDER EXISTING UTILITIES TO PREVENT SETTLEMENT. SPECIAL CARE AND COORDINATION SHALL BE OBSERVED WHILE WORKING NEAR POWER POLE. CONTRACTOR TO COORDINATE AND PAY FOR ANY NECESSARY UTILITY COMPANY CHARGES FOR TEMPORARY BRACING OF POLE.
 - THE CONTRACTOR SHALL MAINTAIN AND PROTECT ALL FOUNDATIONS, ROADS, TREES AND VEGETATION DURING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR/RESTORE ALL DAMAGE TO EXISTING UTILITIES, ROADS/DRIVES, WALKWAYS AND WALLS AS A DIRECT OR INDIRECT RESULT OF THE CONSTRUCTION AT NO COST TO THE OWNER.
 - INSTALL EXPANSION JOINT NEAR BRIDGE WEST END ABUTMENT TO ALLOW FOR MAINTENANCE ACCESS. JOINT TO BE "EX-TEND 200" SINGLE BALL TYPE AS MANUFACTURED BY EBAA IRON SALES (817-629-1731) OR ENGINEER APPROVED EQUAL. SUPPORT JOINT TO MANUFACTURES INSTALLATION RECOMMENDATIONS.
 - PIPING MATERIALS TO BE ATLANTIC STATES OR APPROVED EQUAL, CLASS 52 MECHANICAL JOINT DUCTILE IRON PIPE WITH MEGALUG RESTRAINTS. ALL PIPE TO BE MECHANICALLY RESTRAINED AT JOINTS.
- PIPE INSULATION: 2" THICKNESS POLYSOCYANURATE, 'TRYMER 2000'
- PIPE INSULATION JACKET: 'PERMA-JAC SX' PVC JACKET ON MAIN PIPE AND CORRUGATED ALUMINUM JACKET AT BRIDGE DIAPHRAGM LOCATIONS.
- PIPE ROLLER HANGERS: DOUBLE ADJUSTABLE PIPE ROLLER SUPPORT, ROLLER TO BE BY PHD MANUFACTURING, INC OR ENGINEER APPROVED EQUAL. INSTALL STEEL SADDLE PROTECTION AT ROLLER. ROLLER/SUPPORT TO BE INSTALLED AT BELL SIDE OF PIPE, SEE DETAIL B&E.
- IF THERE ARE ANY CONFLICTS OR INCONSISTENCIES WITH THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR VERIFICATION BEFORE WORK CONTINUES ON THE ITEM IN QUESTION.
 - CONTRACTOR TO DESIGN PVC WATERLINE AS PART OF TEMPORARY BRIDGE PROJECT. DESIGN WILL BE IN ACCORDANCE WITH TOWN OF BENNINGTON; STATE AGENCY OF NATURAL RESOURCES AND AMERICAN WATER WORKS ASSOCIATION STANDARDS. TOWN ENGINEER TO APPROVE DESIGN PRIOR TO CONSTRUCTION. TEMPORARY WATERLINE TO BE INSULATED IF CONTRACTOR INTENDS TO MAINTAIN WATERLINE OVER WINTER. LUMP SUM FOR WATERLINE ON BRIDGE TO START AND STOP 10' OFF TEMPORARY BRIDGE.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE TOWN OF BENNINGTON OF ALL WORK WITHIN THE STREET RIGHT-OF-WAY. THE CONTRACTOR SHALL COORDINATE WITH THE TOWN FOR ALL STREET EXCAVATIONS AND WATER LINE CONNECTIONS. STATE-CERTIFIED FLAG PERSONS SHALL BE UTILIZED AT ALL TIMES WHENEVER WORK IS TO BE PERFORMED WITHIN ROADWAY LIMITS.
 - CONTRACTOR SHALL CHLORINATE AND PRESSURE TEST NEW SEGMENT OF WATER PIPE PRIOR TO FINAL CONNECTION OF SYSTEM. TESTING SHALL BE IN ACCORDANCE WITH AWWA STANDARDS C600 AND C652.
 - INSTALL IN LINE VALVE. INSTALLATION TO BE DONE LIVE. CONTRACTOR TO INSTALL ALL NEW PIPING FROM NEW IN LINE VALVE.
 - INSTALL STAINLESS STEEL TAPPING SLEEVE AND 12" VALVE. NEW SLEEVE TO BE MODEL 3490AS BY POWER SEAL OR ENGINEER APPROVED EQUAL. AFTER PROJECT IS COMPLETED/TESTED/APPROVED BY TOWN CONTRACTOR TO INSTALL CAP ON VALVE AND ROD BACK TO SLEEVE/VALVE ASSEMBLY AND CLOSE VALVE.
 - INSTALL "T" AND VALVE FOR FLUSHING. AFTER COMPLETION OF TESTING AND ACCEPTANCE BY TOWN/STATE CAP AND THRUST BLOCK "T".
 - INSTALL TAPS FOR TESTING AND CLORINATION AS REQUIRED. REVIEW LOCATIONS WITH TOWN PRIOR TO INSTALLATION.



TYPICAL TRENCH DETAILS
NTS

- INSTALLATION SPECIFICATIONS:**
- MINIMUM BURIAL DEPTH 5'6" (4'-0" FOR SEWER)
IF CONDITIONS PREVENT MINIMUM BURIAL DEPTH, ALL SECTIONS OF LINE LESS THAN MIN. DEPTH SHALL BE INSULATED WITH 1" THICKNESS RIGID FOAM INSULATION PER FOOT LESS THAN MINIMUM.
 - BED PIPE IN 6" OF CRUSHED STONE (PASSING 1/2" BUT RETAINED ON #4 SIEVE) IF IN WET CONDITIONS. PIPE SHALL NOT BE LAID IN UNCOMPACTED SOIL OR IN WATER. IF IN LEDGE CONDITIONS, BED PIPE IN A MINIMUM OF 6" OF CLEAN SAND. DO NOT REST PIPE ON LEDGE ROCK.
 - BACKFILL OVER PIPE W/ 12" MINIMUM SAND, COMPACTED ENTIRE WIDTH OF TRENCH. BACKFILL WITH BEDDING STONE TO 12" DEPTH IF IN WATER.
 - REMAINDER OF BACKFILL TO BE SELECT EARTH OR BANK RUN GRAVEL NOT GREATER THAN 6" IN LARGEST DIMENSION. BACKFILL TO BE COMPACTED IN 6" LIFTS UNDER ROADS AND PAVED AREAS.
 - BACKFILL SHALL CONSIST OF SUITABLE MATERIAL REMOVED FROM EXCAVATION, AND SHALL BE FREE OF CLODS, DEBRIS, FROZEN CHUNKS, PAVEMENT PIECES, LARGE STONES, ORGANIC MATERIAL OR ANY OTHER MATERIAL DEEMED UNSUITABLE BY THE ENGINEER.
 - BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY IN ALL TRENCH EXCAVATIONS.
 - EDGES OF PAVEMENT SHALL BE CUT PRIOR TO EXCAVATION TO PREVENT LIFTING OF REMAINING PAVEMENT, AND FOLLOWING EXCAVATION PRIOR TO PAVEMENT PATCHING. PAVEMENT PATCH TO CONSIST OF 2" BASE, 1" TOPCOAT OVER COMPACTED BACKFILL.

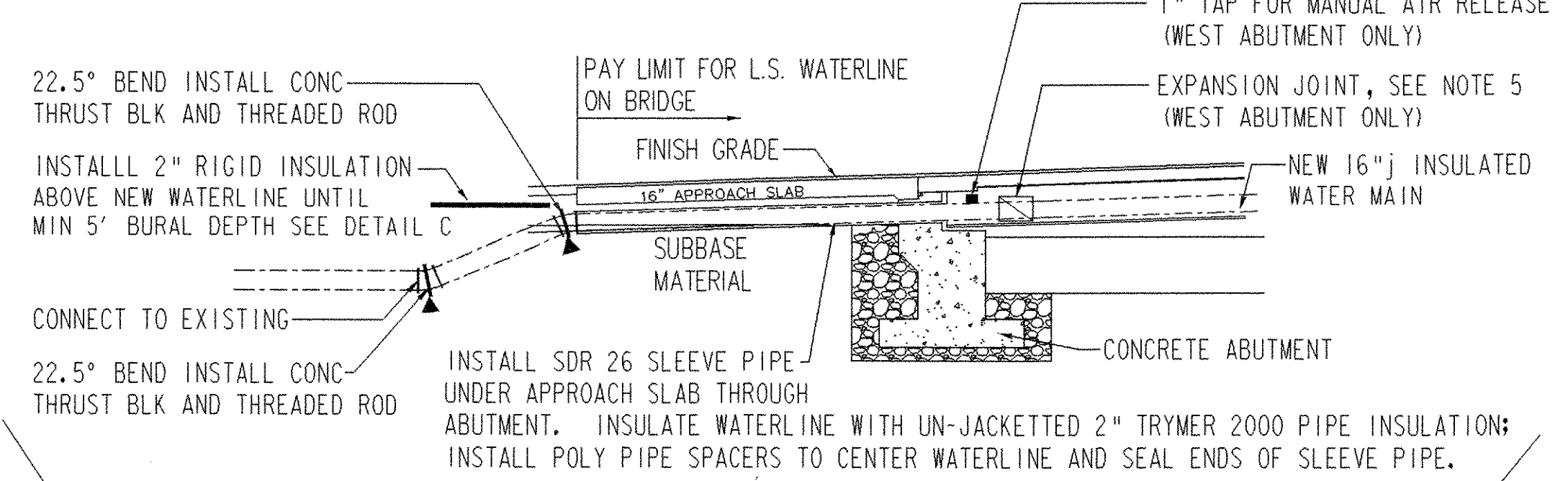


MINIMUM BEARING SURFACE AREA OF CONCRETE THRUST BLOCKS (IN SQUARE FEET)

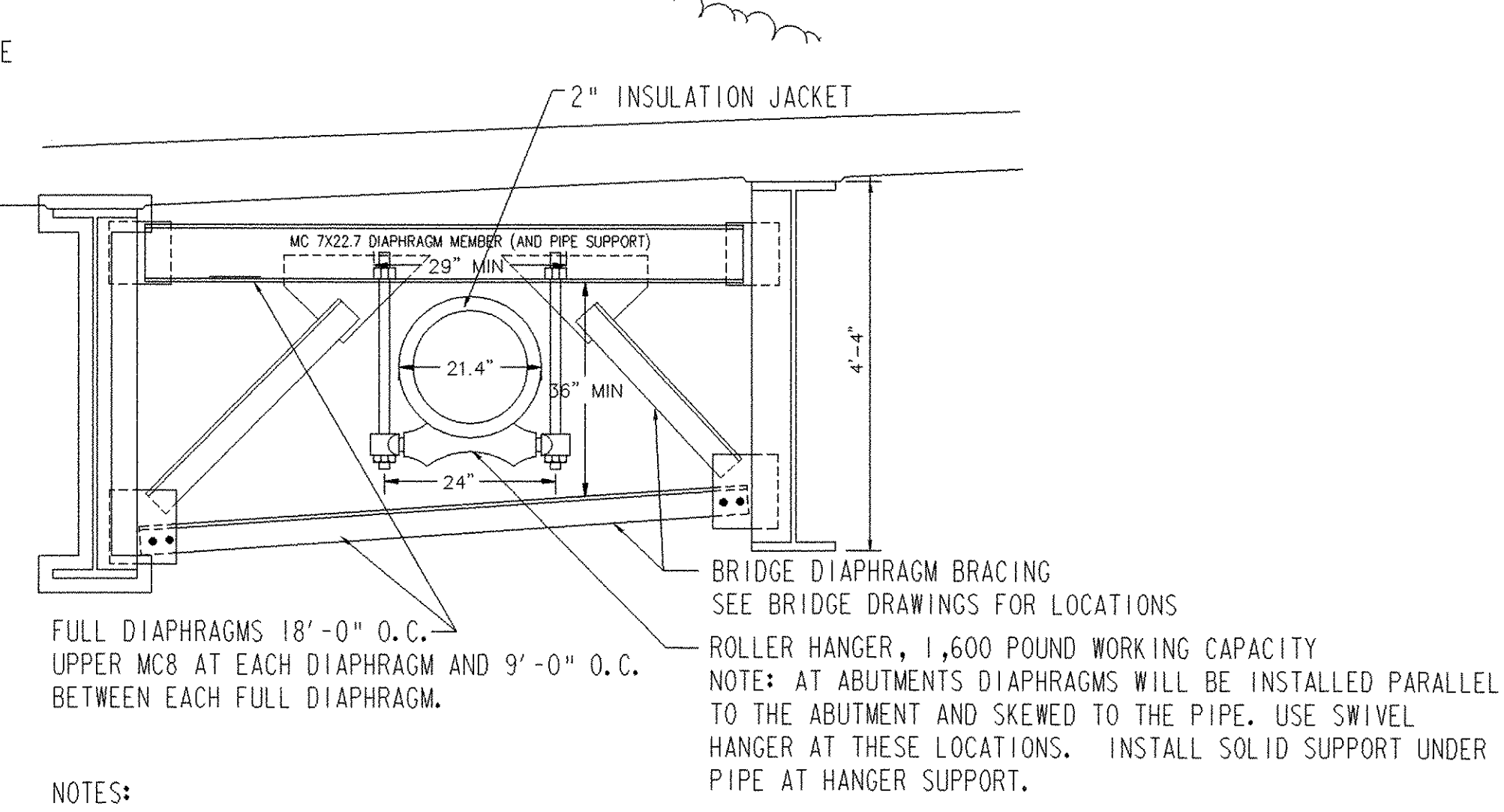
4"				6"				8"				12"				SOIL CONDITION	SAFE BEARING LOAD (PSF)
ENDS & TEES	90° ELB	45° ELB	225° ELB	ENDS & TEES	90° ELB	45° ELB	225° ELB	ENDS & TEES	90° ELB	45° ELB	225° ELB	ENDS & TEES	90° ELB	45° ELB	225° ELB		
0.5	1.0	0.5	0.5	1.0	1.5	1.0	0.5	2.0	2.5	1.5	1.0	4.0	5.5	3.0	1.5	SOFT SHALE	10000
1.5	2.0	1.0	0.5	3.0	4.0	2.0	1.0	4.5	6.5	3.5	2.0	10.0	14.0	7.5	2.0	CEMENTED GRAVEL AND SAND	4000
2.0	2.5	1.5	1.0	3.5	5.0	3.0	1.5	6.0	8.5	5.0	2.5	13.0	18.5	10.0	5.0	COARSE AND FINE COMPACT SAND	3000
2.5	3.5	2.0	1.0	5.5	7.5	4.0	2.0	9.0	13.0	7.0	3.5	20.0	27.5	15.0	8.0	MEDIUM CLAY (CAN BE SPADED)	2000
5.0	7.0	4.0	2.0	10.5	15.0	8.0	4.0	18.0	25.0	14.0	7.0	39.0	55.0	30.0	15.0	SOFT CLAY	1000

MAX WATER PRESSURE: 300 PSI NOTE: REDUCER BEARING AREA = 45° BEND, ONE SIZE LARGER PIPE

TYPICAL THRUST BLOCK DETAILS
NTS



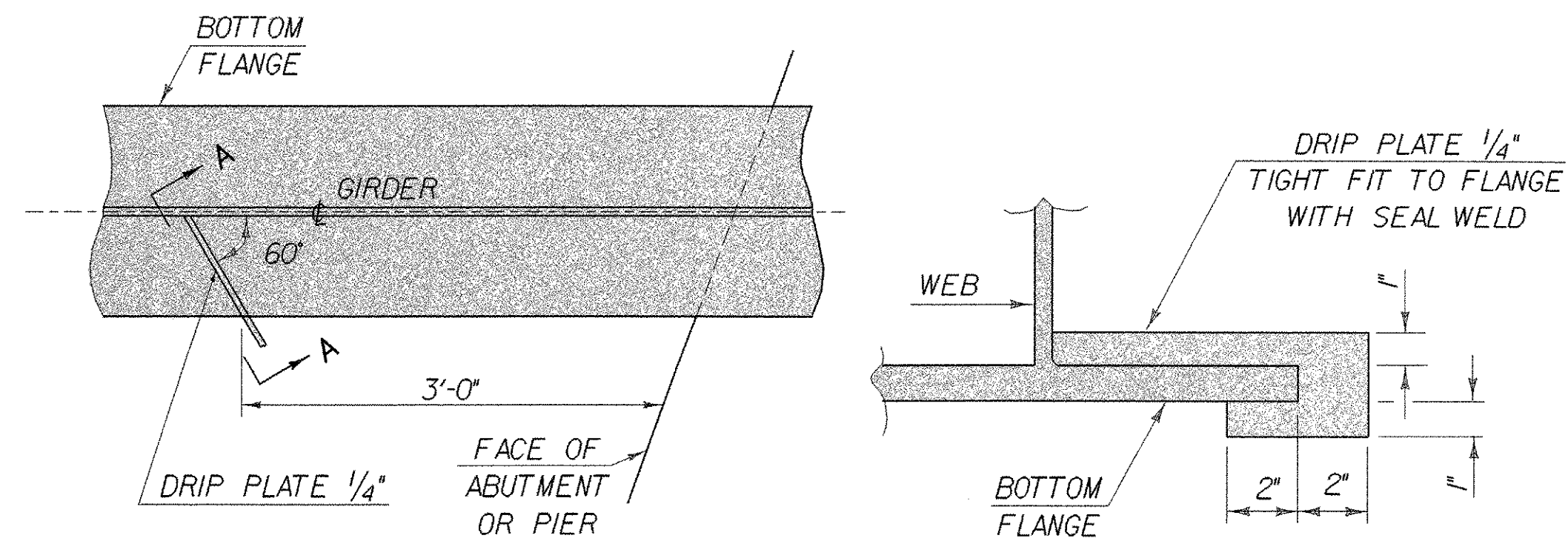
WATER MAIN THROUGH ABUTMENT SECTION
NTS



SECTION - PIPE SUPPORT
NTS

- LEGEND:**
- WV RESILIENT-WEDGE VALVE, OPEN RIGHT KENNEDY OR APPROVED EQUAL WITH MUELLER CURB SERVICE BOX ROD TYPE, TWO HOLE COVER.
 - NOTE: SEE CONSTRUCTION NOTES 11&12
- APPROXIMATE LOCATION CONCRETE THRUST BLOCKS

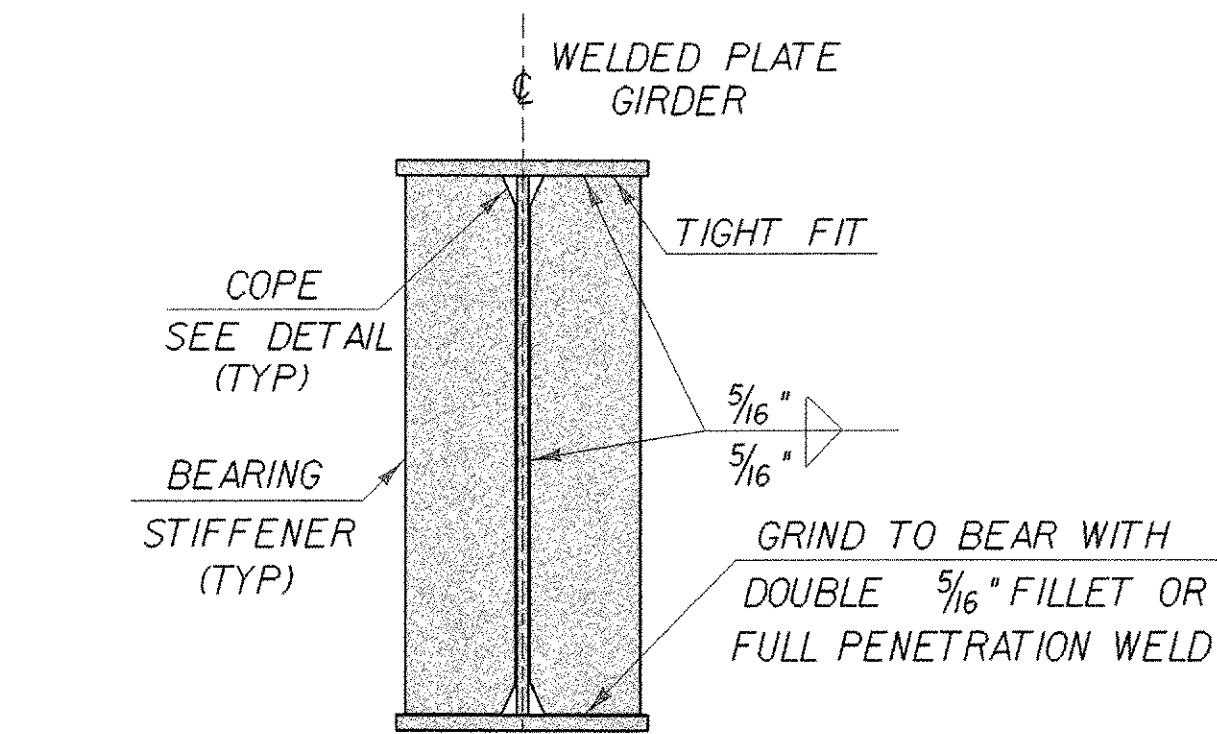
REVIS	REVIS	DATE
Δ	REVISED SECTION B/S1 BASED ON AOT COMMENTS	JMD 07/22/02
Δ	REVISED PER STATE AOT COMMENTS	JMD 07/15/2002
REV.	DESCRIPTION	BY DATE
MSK MSK ENGINEERING AND DESIGN, INC. P.O. BOX 168, HARWOOD HILL BENNINGTON, VT 05201 PH: (802) 447-3340 FAX: (802) 447-0702		
WOODFORD WATER LINE BRIDGE CROSSING AT TREATMENT PLANT WOODFORD, VERMONT		DRAWN BY: JFE SCALE: 1" = 20' DATE: 11-13-00
DESCRIPTION: WATERLINE PLAN		SHEET 57 OF 106 S-1



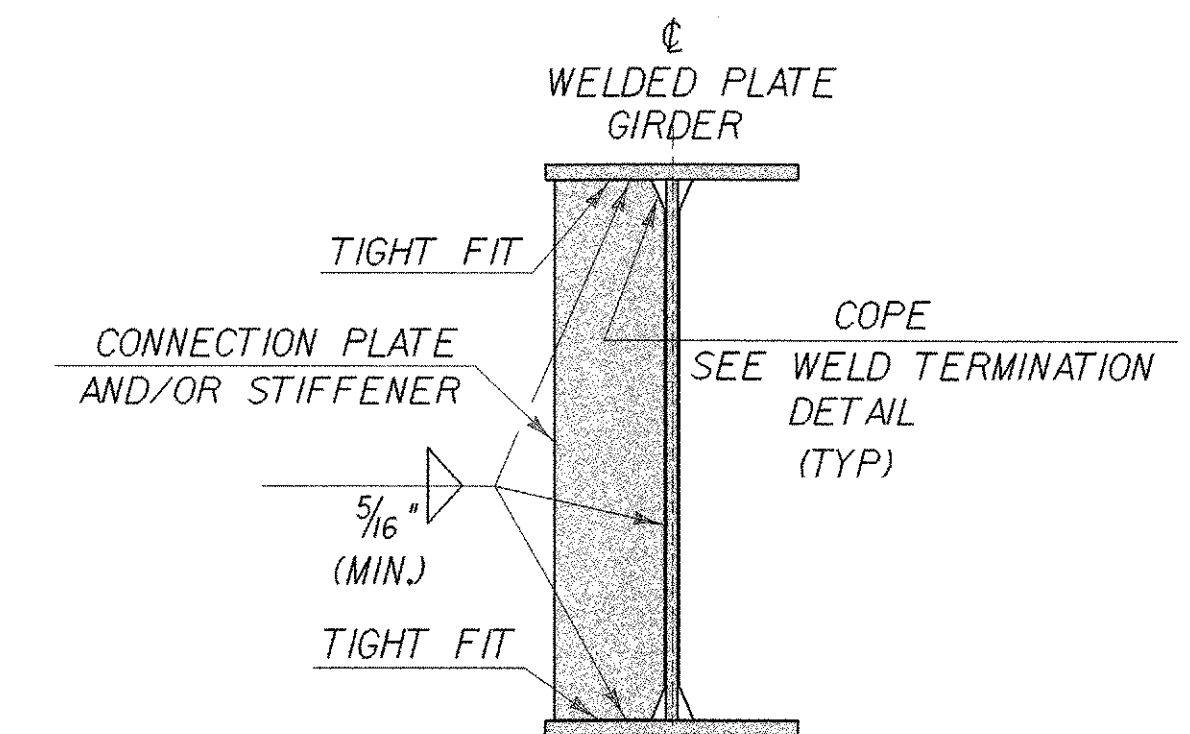
PLAN DRIPLATE

SECTION A - A

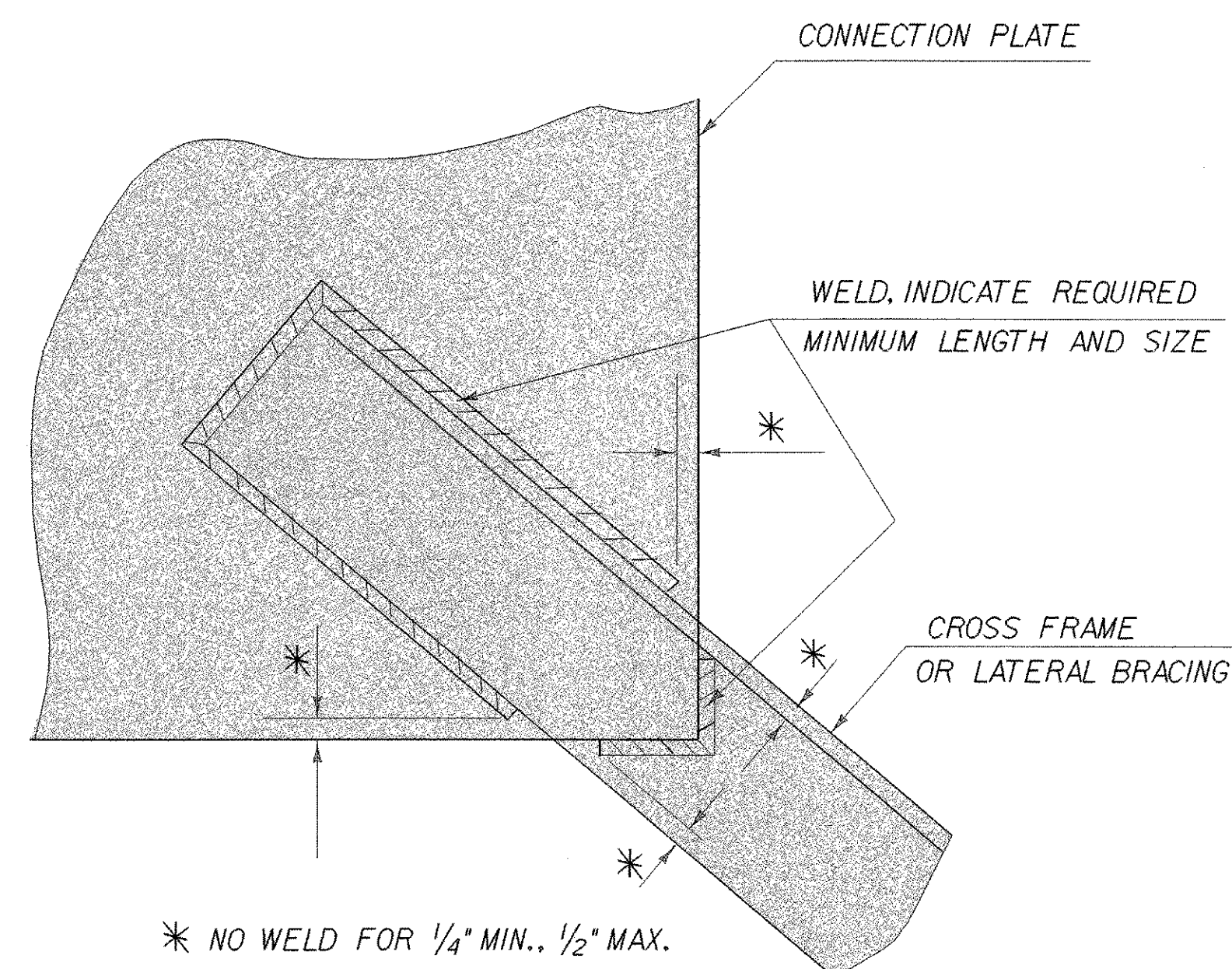
NOTE: DRIPLATES SHALL BE PLACED ON OUTSIDE EDGE OF FASCIA GIRDERS ON THE HIGH SIDE OF ALL PIERS AND ABUTMENTS OR AS INDICATED ON PROJECT PLANS.



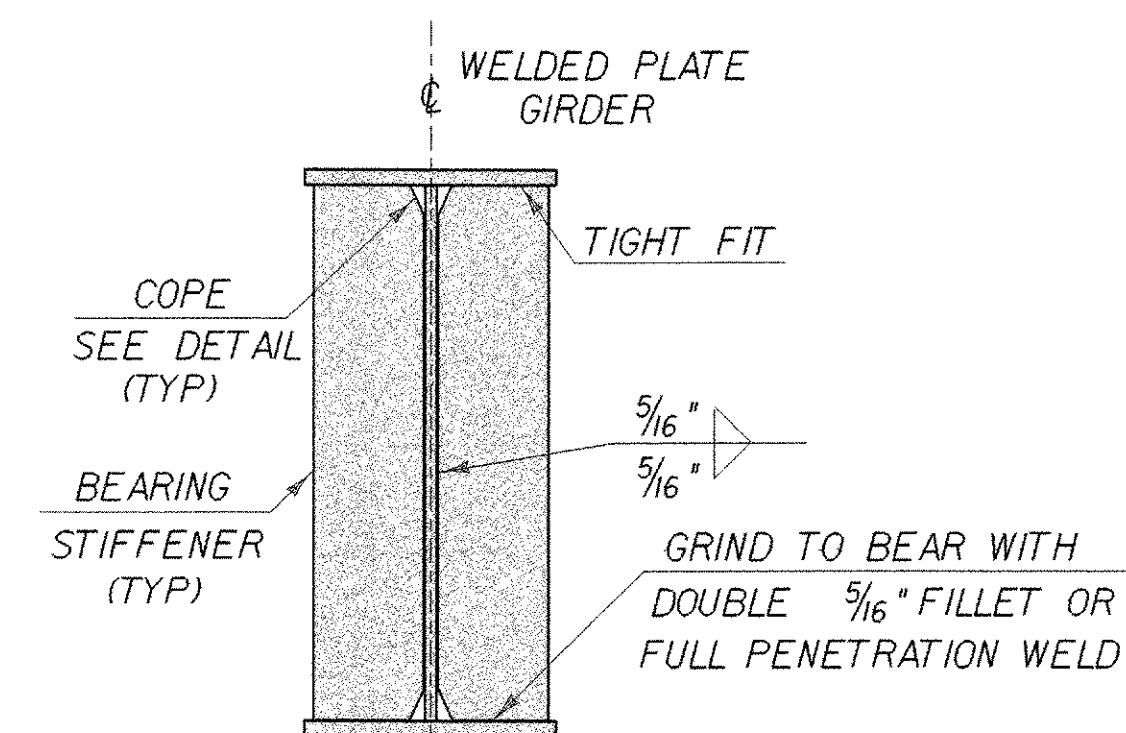
ABUTMENT
BEARING STIFFENERS
FOR WELDED PLATE GIRDERS



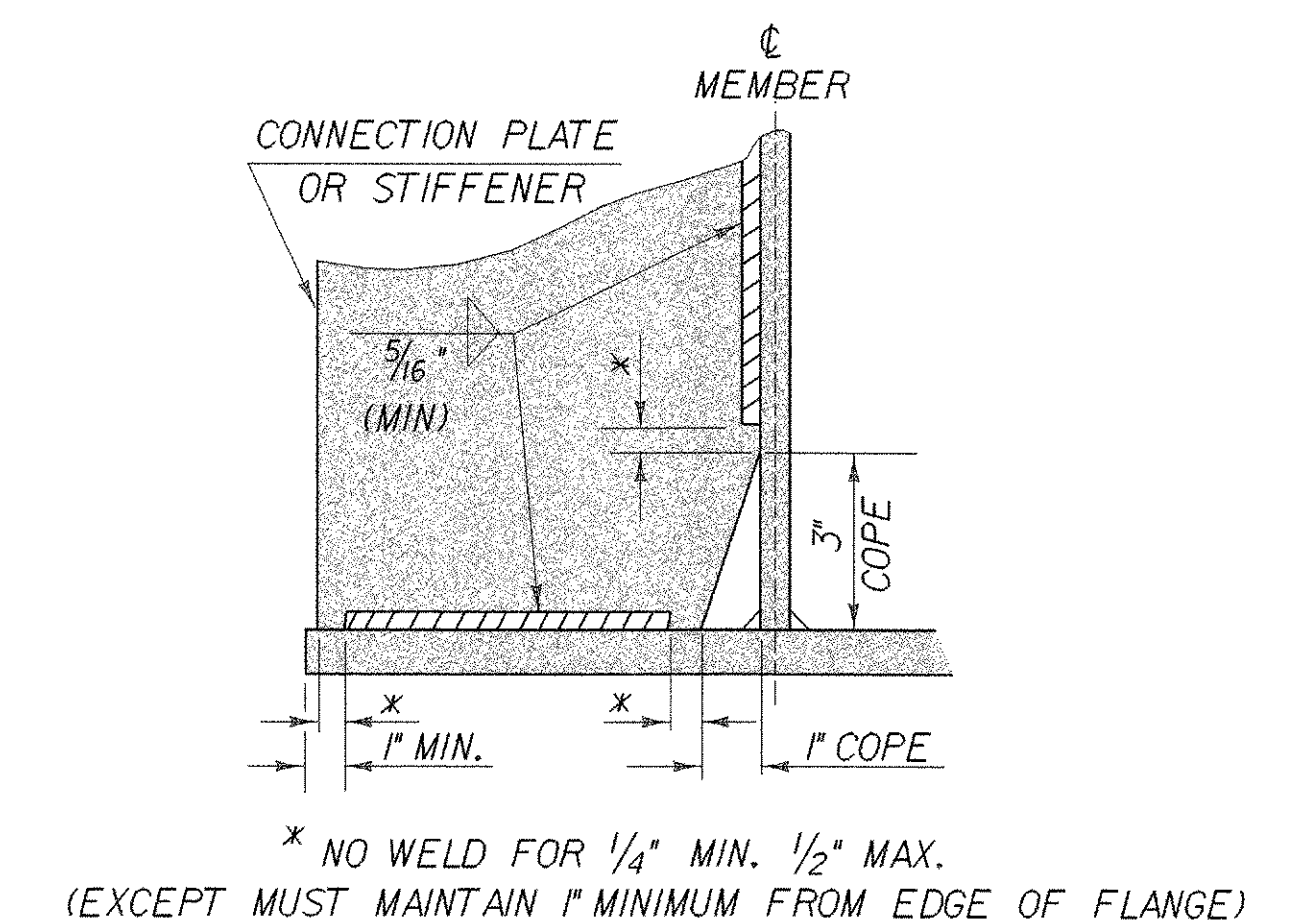
INTERMEDIATE CONNECTION
PLATES AND/OR STIFFENERS
FOR WELDED PLATE GIRDERS



WELD LOCATION DETAIL
AT CROSS FRAMES AND
LATERAL BRACING

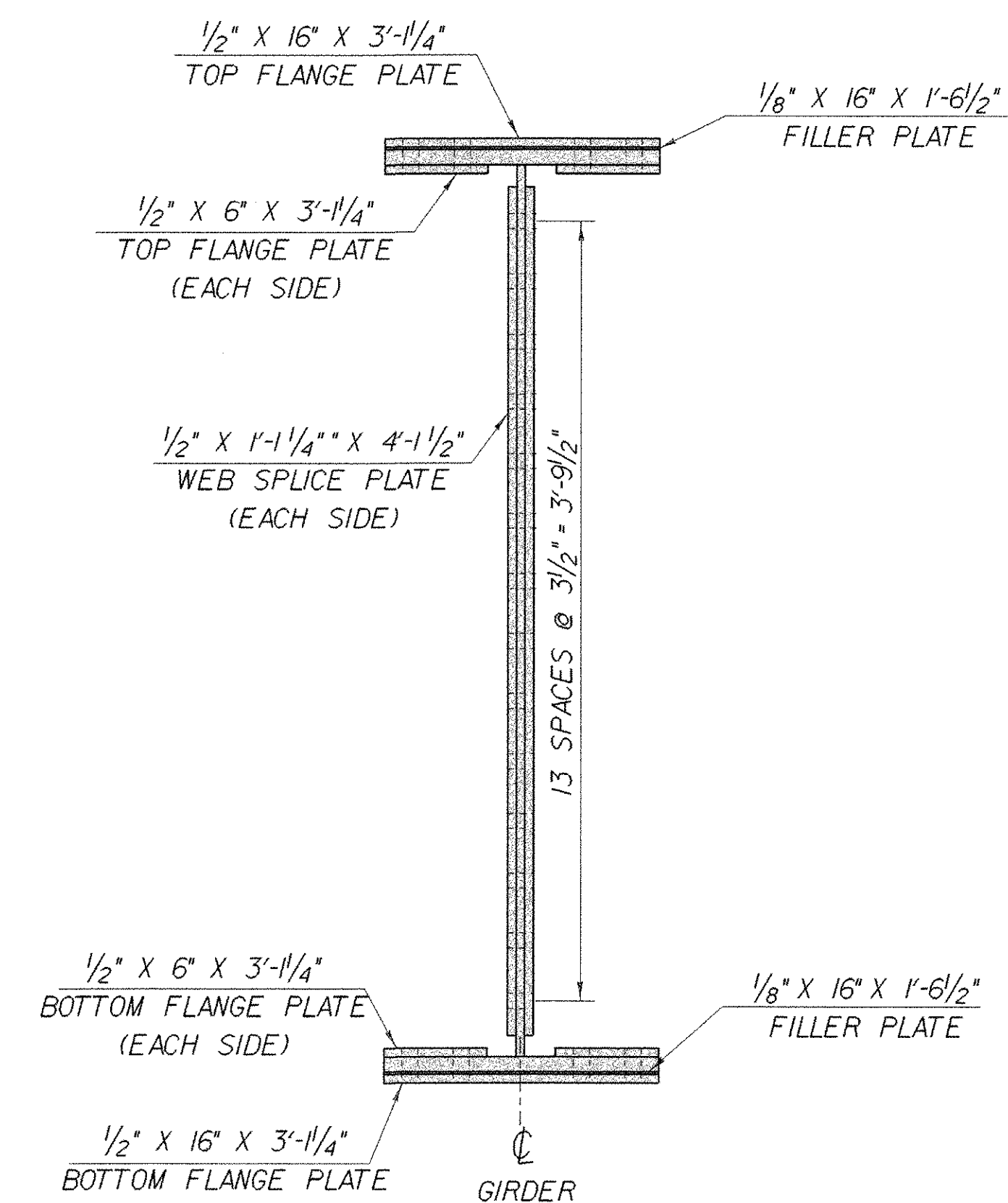
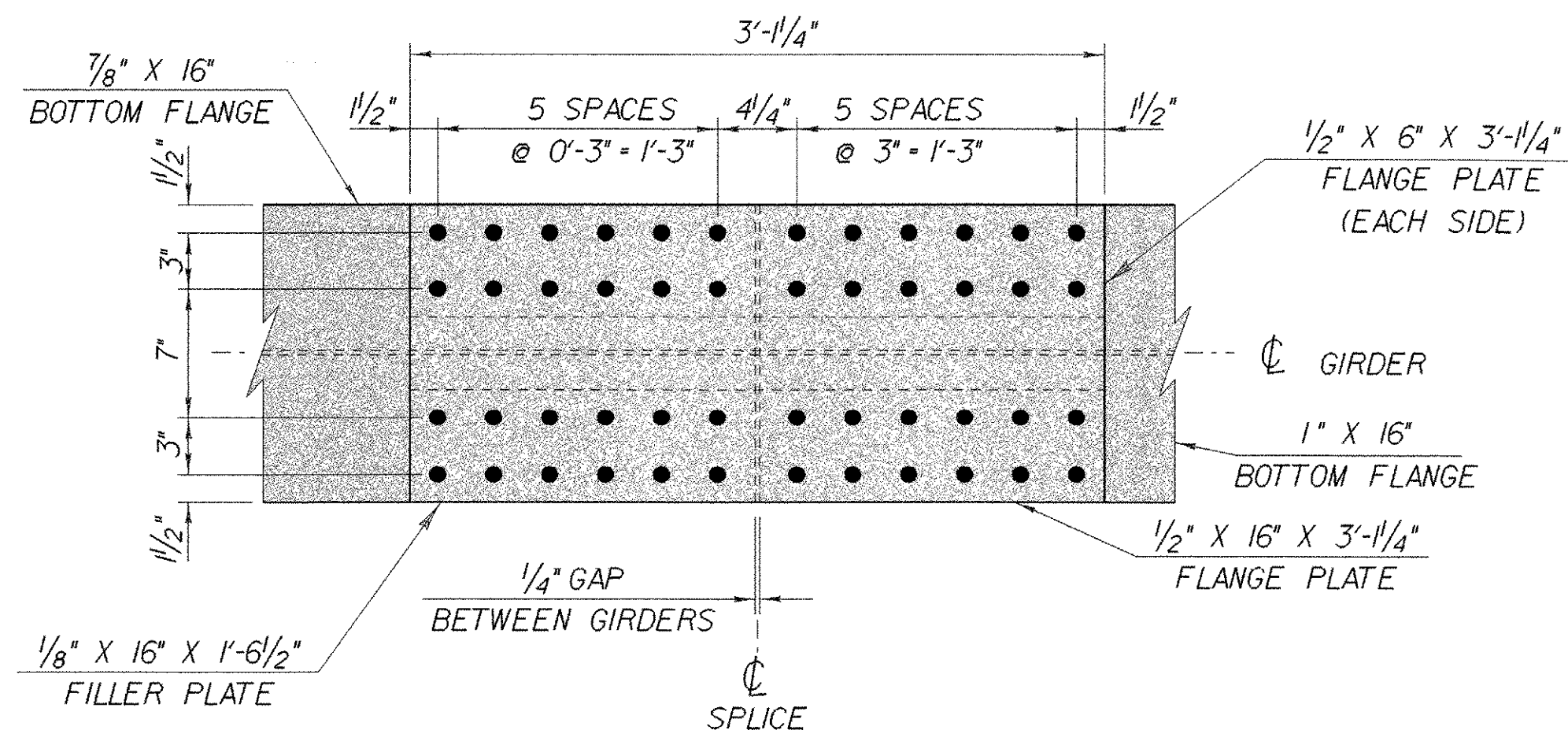
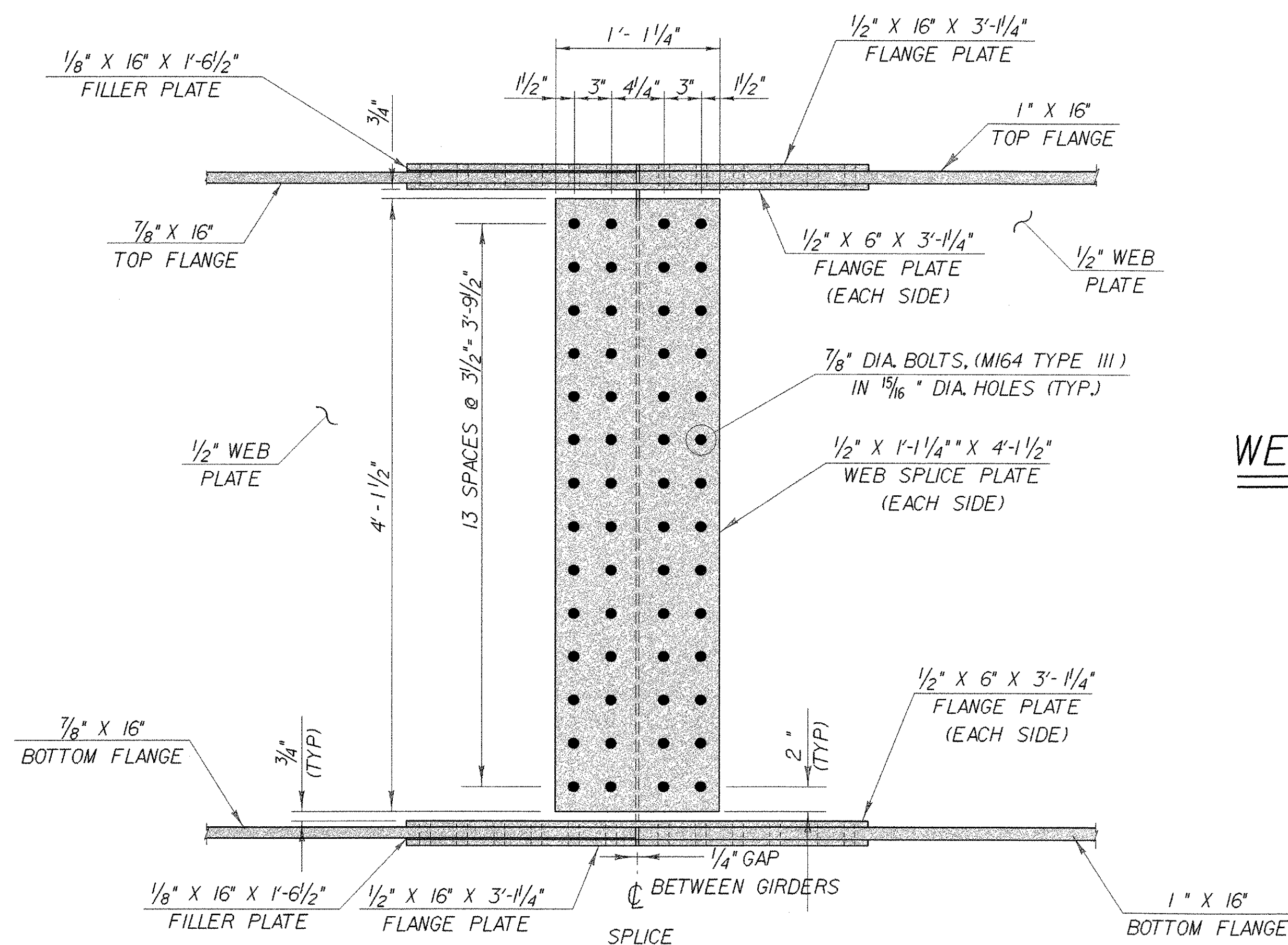
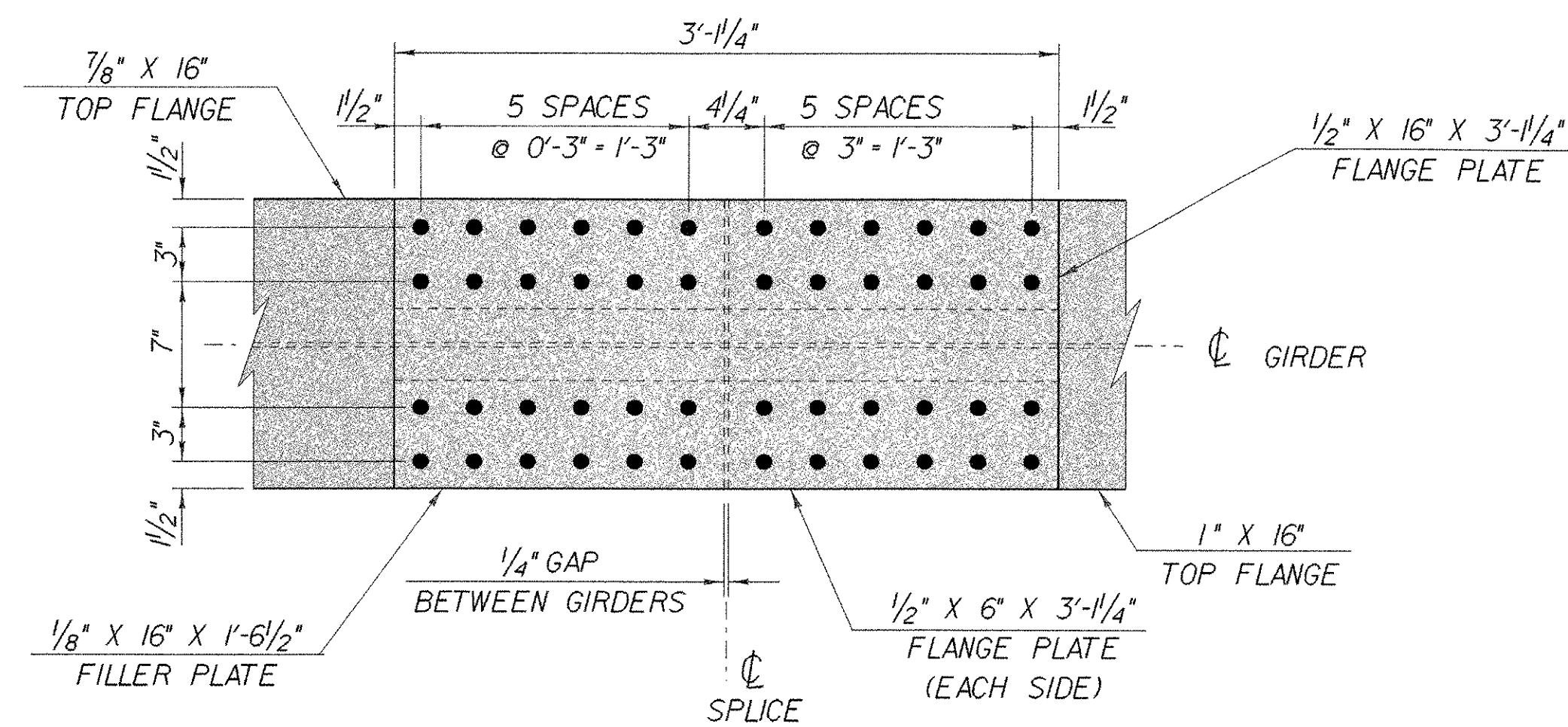


PIER
BEARING STIFFENERS
FOR WELDED PLATE GIRDERS



WELD TERMINATION AND COPING
DETAILS FOR STEEL MEMBERS

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	WOODFORD	Bridge No.	BR 11
Highway No.	VT 9	Log Sta.	
		Surv. Sta.	
VT 9 OVER ROARING BRANCH OF WALLOOMSAC			
MISCELLANEOUS STEEL DETAILS			
Designed By	M. EVANS-MONGEON	Drawn By	R. VANHAMBURG
Checked By	Date	Bridge Design Supervisor	Date
		A. PORTALUPI	
PROJECT	WOODFORD	PROJECT NO.	BHF 010-K(29)
I.G.C. Info.	/846039//structures/se039supdgn		se039msd1
Bridge Sheet No.		Sheet	60 of 106



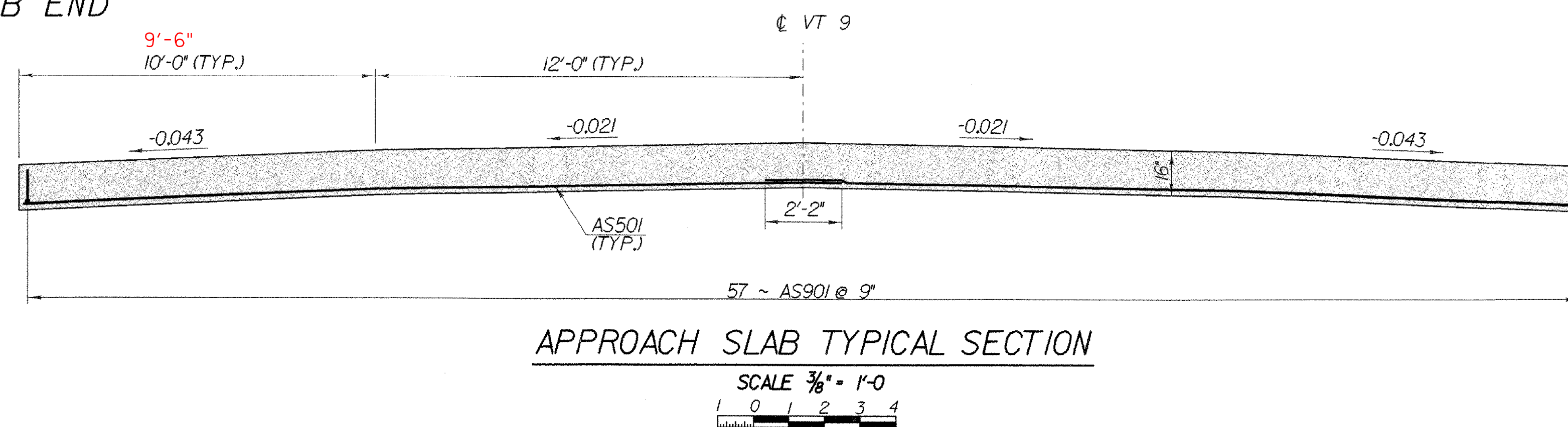
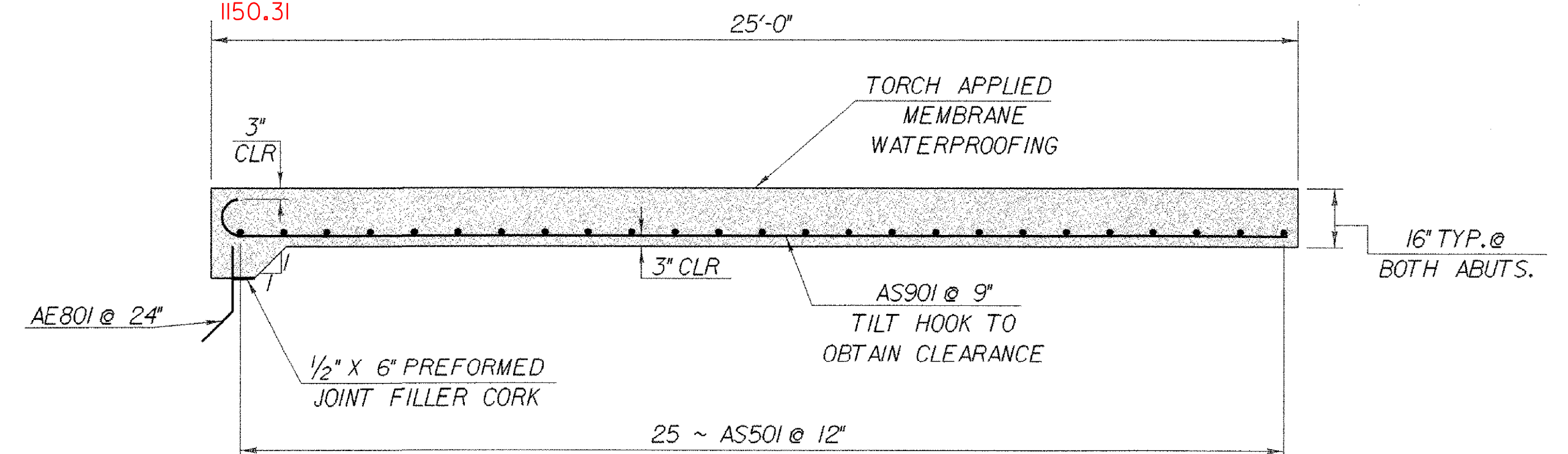
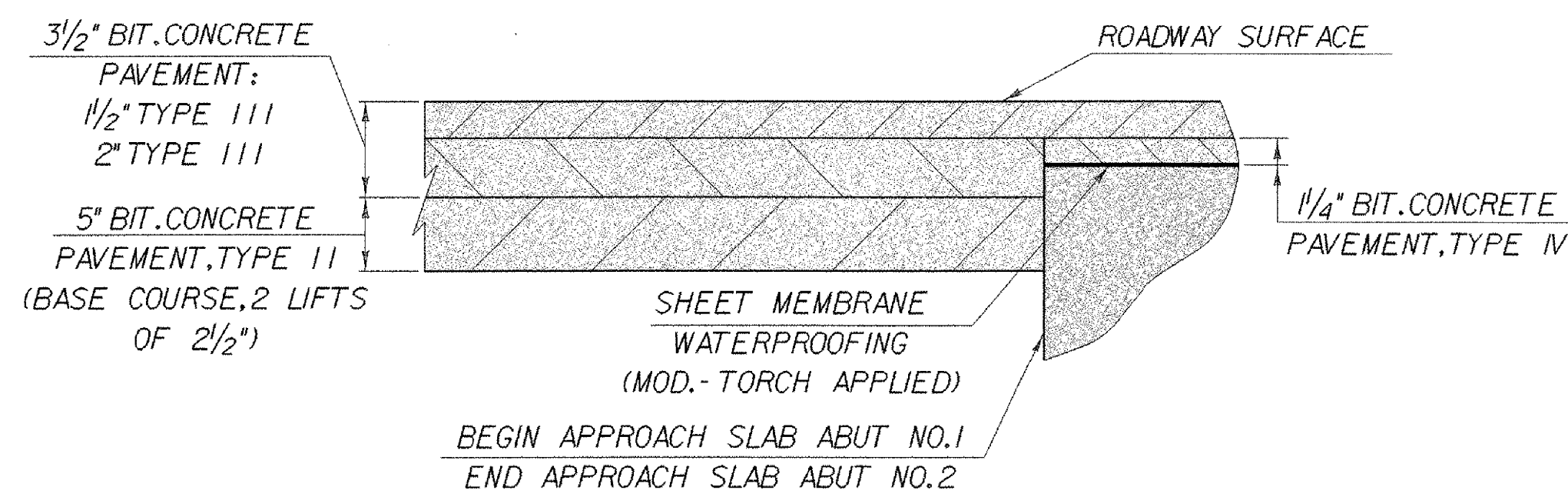
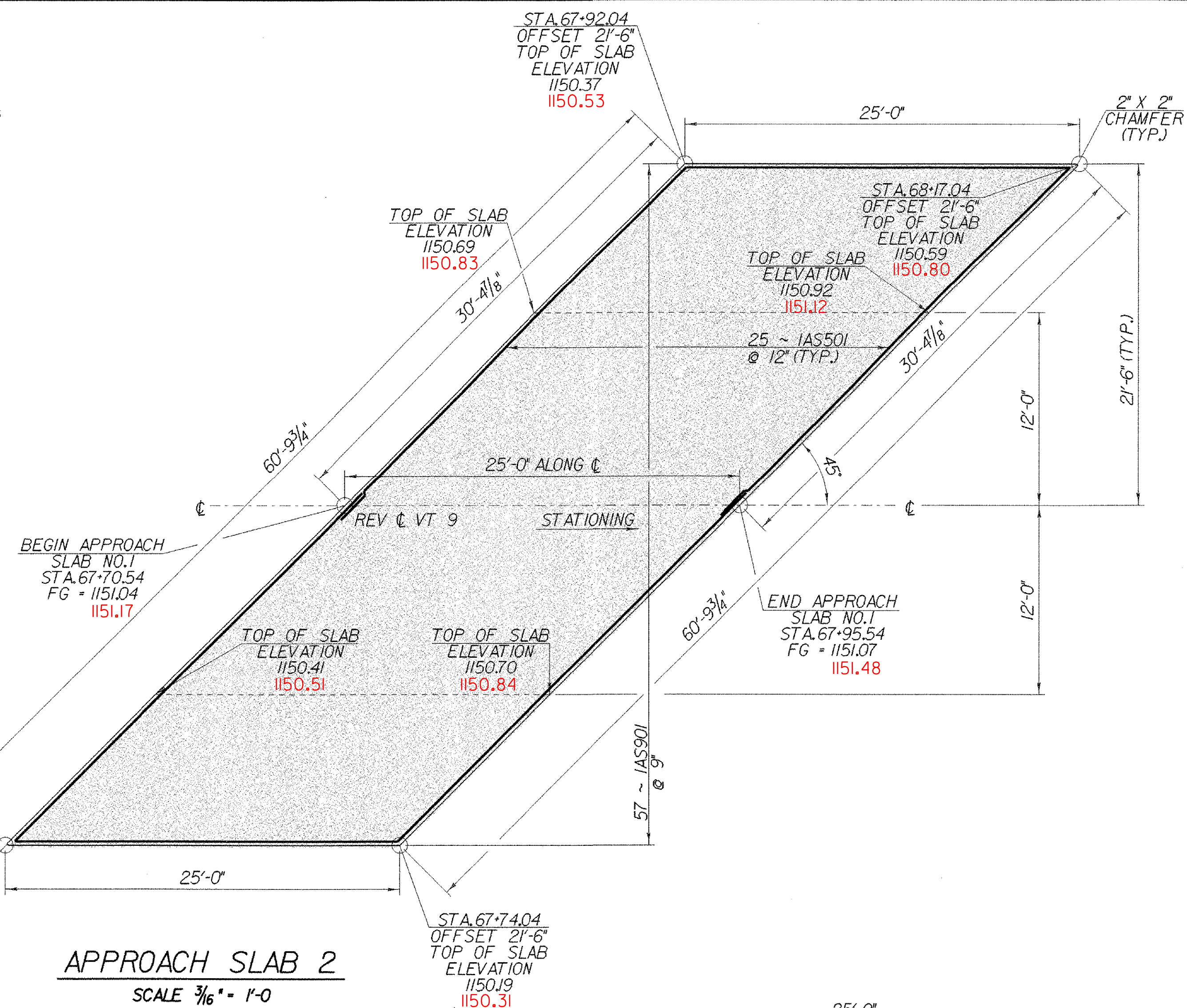
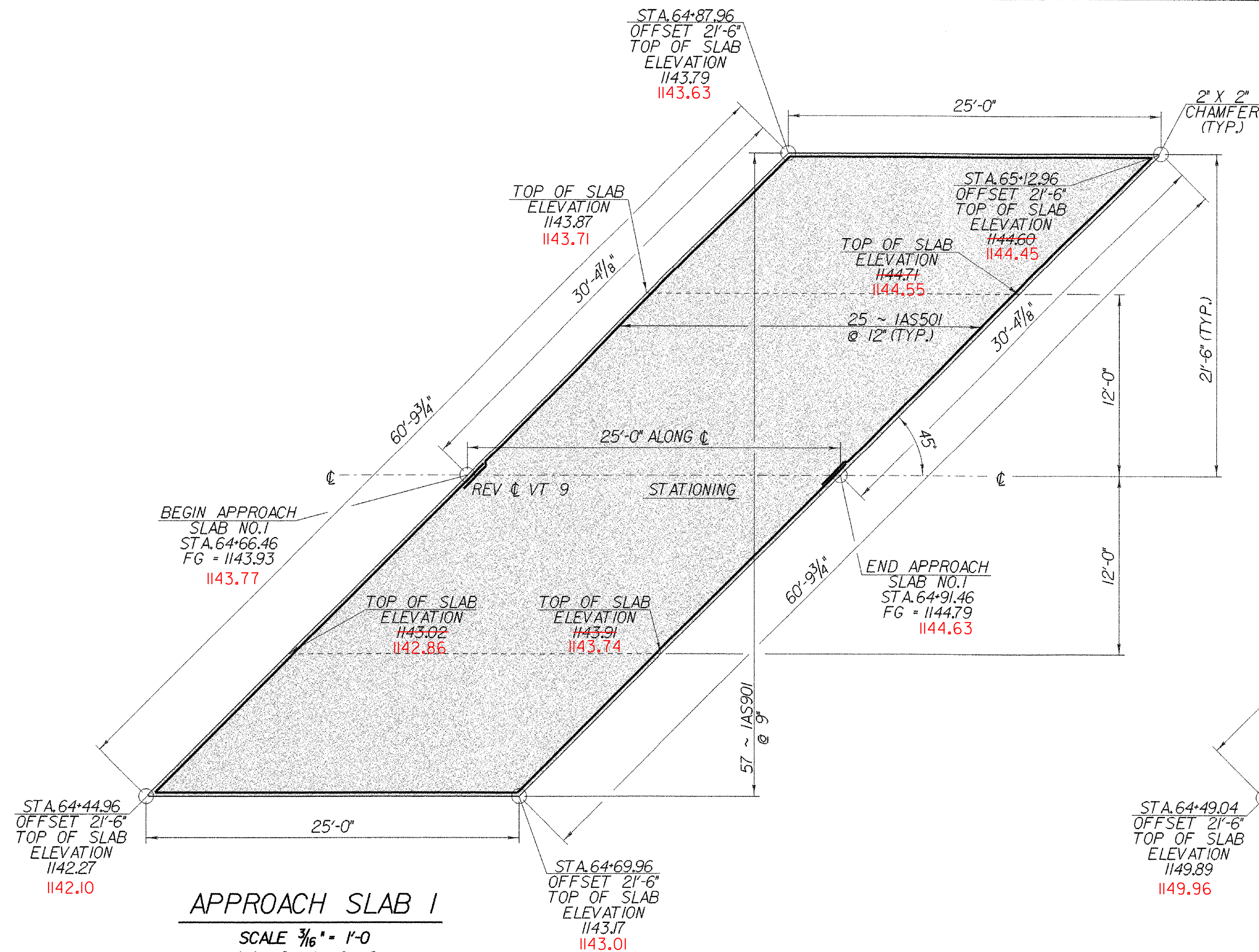
NOTE: ALL SPLICE PLATES WILL BE
CVN TESTED.

WEB SECTION

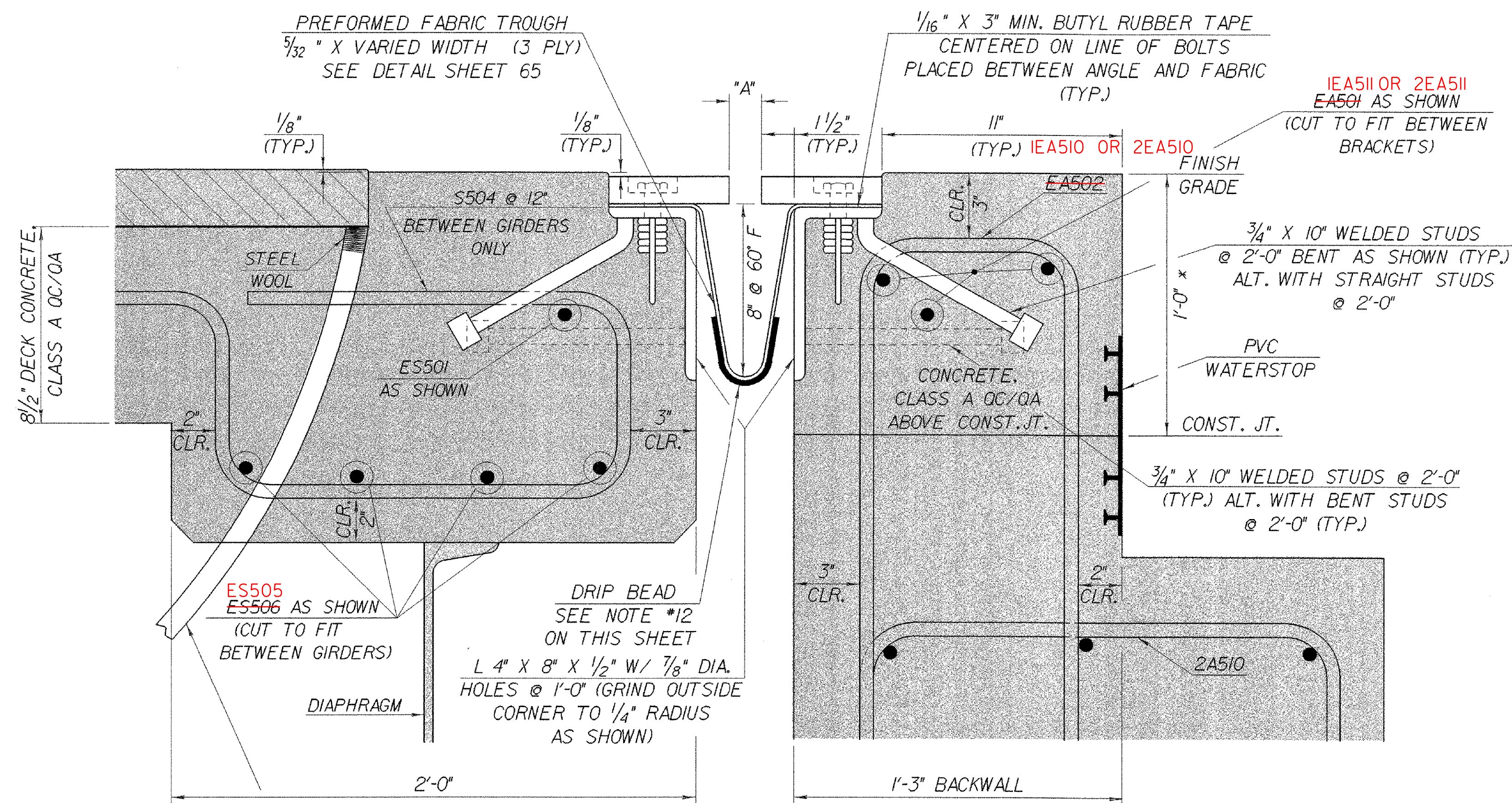
SPLICE DETAIL SHEET

STATE OF VERMONT AGENCY OF TRANSPORTATION		
Town Of	<i>WOODFORD</i>	Bridge No. <i>//</i>
Highway No.	<i>VT.9</i>	Log Sta.
		Surv. Sta.
<i>VT.9 OVER ROARING BRANCH</i>		
<i>SPICE DETAIL SHEET</i>		
Designed By	<i>M.EVANS-MONGEON</i>	Drawn By <i>M.EVANS-MONGEON</i>
Checked By	Date	Bridge Design Supervisor
		<i>A.PORTALUPI</i> Date
PROJECT	<i>WOODFORD</i>	PROJECT NO. <i>BHF 010 -I (29)</i>
I.G.C. Info. <i>/B4e039/structures/se039sup.dgn</i>		<i>se039splI</i>
Bridge Sheet No.	Sheet	<i>61 of 106</i>

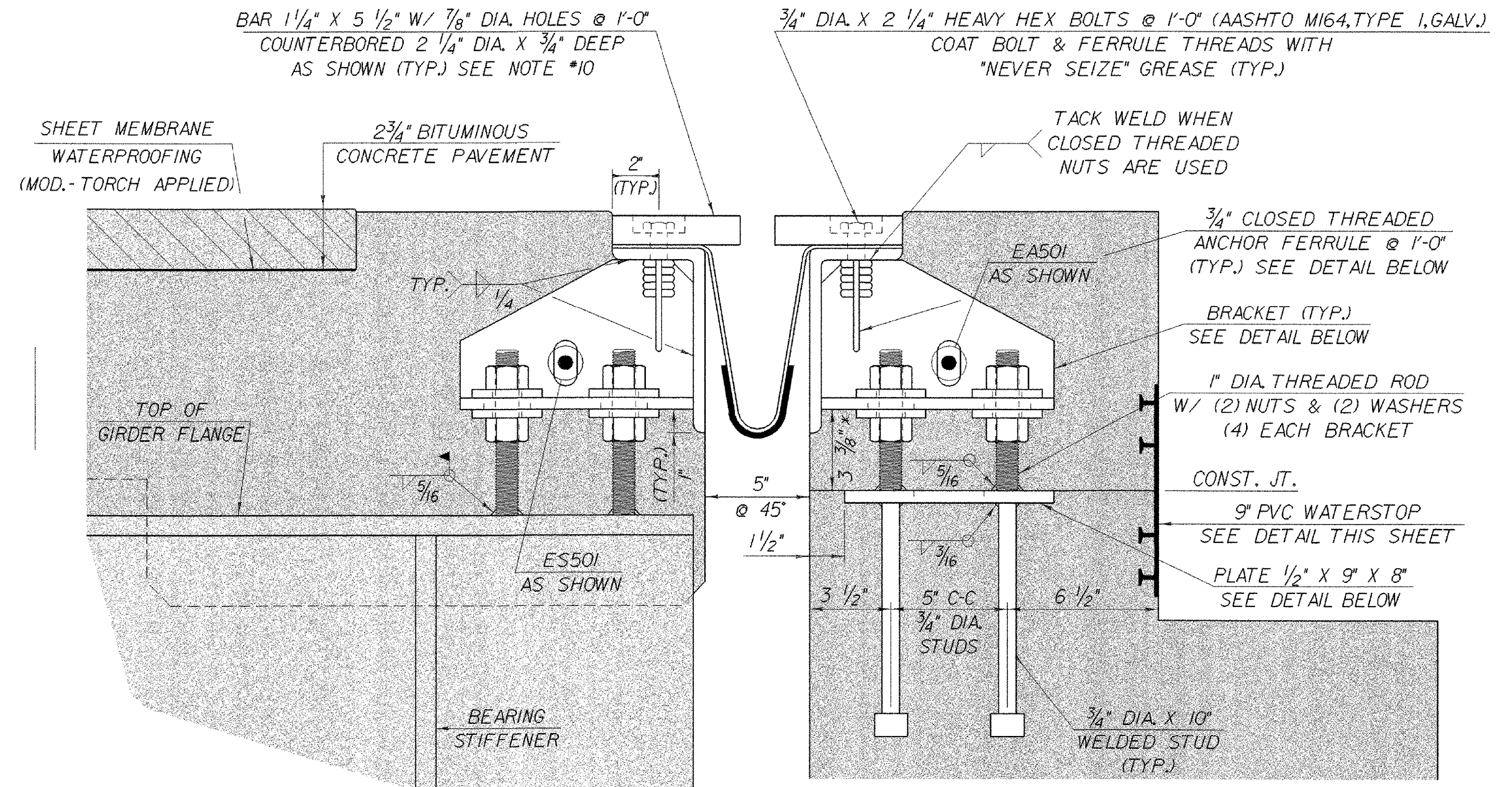
PLOTTED 03-OCT-2005



STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	WOODFORD	Bridge No.	2
Highway No.	VT RTE 9	Log Sta.	
		Surv. Sta.	
VT RTE.9 OVER ROARING BRANCH			
APPROACH SLAB DETAILS			
Designed By	R. PELLETT	Drawn By	R. PELLETT
Checked By	M. EVANS-MONGEON	Bridge Design Supervisor	A. PORTALUPI
PROJECT	WOODFORD	PROJECT NO.	BHF 010-1129
I.G.C. Info.	/846039/structures/se039supdgn	se039aps.1	
Bridge Sheet No.		Sheet	62 of 106



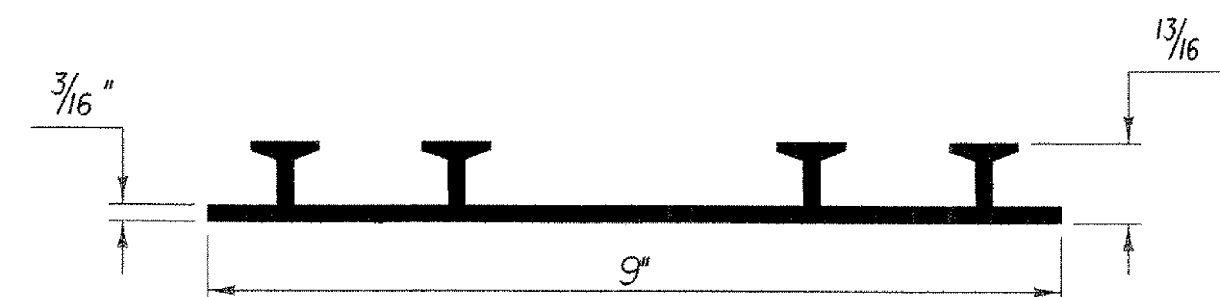
TYPICAL SECTION BETWEEN GIRDERS
SCALE: 3" = 1'-0" (NORMAL TO & BEARING)



TYPICAL SECTION AT GIRDERS
SCALE: 3" = 1'-0" (NORMAL TO & BEARING)

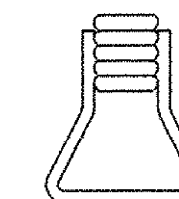
1. DETAILS ON THIS SHEET ARE FOR ITEM 516.10 "BRIDGE EXPANSION JOINT".
2. PREFORMED FABRIC MATERIAL SHALL BE CONTINUOUS AND SHALL CONFORM TO SUBSECTION 707.07 OF THE STANDARD SPECIFICATIONS.
3. BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO SPECIFICATION M-198, TYPE B.
4. THE FINAL FINISH OF THE EXPANSION DEVICE SHALL BE COVERED DURING THE PLACING OF BRIDGE DECK CONCRETE.
5. ALL STEEL COMPONENTS SHALL BE AASHTO M270 GRADE 36, THREADED ROD SHALL CONFORM TO AASHTO AND NUTS SHALL CONFORM TO AASHTO M291, GALVANIZED OR METALIZED AS PER SUBSECTION 506.15 (a) OR (b) OF THE STANDARD SPECIFICATION, AS MODIFIED BY THE GENERAL SPECIAL PROVISIONS UNLESS OTHERWISE SPECIFIED.
6. THE ITEM "BRIDGE EXPANSION JOINT" SHALL INCLUDE THE FABRICATION AND ERECTION OF THE COMPLETE JOINT ASSEMBLY INCLUDING ALL STEEL PLATES, BRACKETS, ANGLES, WELDED STUDS OR RODS, PREFORMED FABRIC DRAIN TROUGH MATERIAL AND PLASTIC DRAIN TUBES, BUTYL RUBBER TAPE AND ANY OTHER MISCELLANEOUS MATERIAL NECESSARY TO INSTALL JOINT.
7. THE 4" X 8" X 1/2" ANGLES SHALL BE FURNISHED AS ONE CONTINUOUS PIECE. THE 1 1/4" X 5 1/2" BARS EACH SIDE OF THE JOINT SHALL BE PROVIDED IN TWO EQUAL LENGTHS.
8. COAT CONCRETE CONTACT SURFACES WITH EPOXY BONDING COMPOUND MEETING THE REQUIREMENTS OF SUBSECTION 719.02 OF THE STANDARD SPECIFICATIONS. PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 516.10 "BRIDGE EXPANSION JOINT".
9. A 1" DIAMETER PLASTIC DRAIN TUBE (PER STD. SPEC. 740.06) SHALL BE INSTALLED AS SHOWN AT THE FACE OF CURB. THE UPPER END IS TO BE PLUGGED WITH STEEL WOOL AND THE LOWER END IS TO EXTEND BELOW THE BOTTOM OF THE ADJACENT GIRDER. THE DRAIN TUBES SHALL BE FASTENED TO THE GIRDERS USING A METHOD APPROVED BY THE ENGINEER.
10. FILL COUNTERBORED HOLES WITH HOT POURED JOINT SEALER (STD. SPEC. 707.04 AS MODIFIED BY THE GENERAL SPECIAL PROVISIONS) AFTER BOLT INSTALLATION. PAYMENT FOR THE WORK SHALL BE SUBSIDIARY TO ITEM 516.10.

11. PAYMENT FOR WATERSTOP SHALL BE SUBSIDIARY TO CONCRETE PAY ITEM.
12. A DRIP BEAD OF 1/4" X 7" STRIP OF PREFORMED MATERIAL SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH USING AN ADHESIVE APPROVED BY THE MANUFACTURER. THE DRIP BEAD SHALL BE APPLIED 1" FROM THE DOWNSPOUT END OF THE TROUGH.
13. FABRIC TROUGH SHALL BE THOROUGHLY CLEANED AND FLUSHED AFTER PAVING OPERATION.
14. THE EXPANSION JOINT SHALL BE SHOP ASSEMBLED AND SHIPPED AS ONE UNIT.



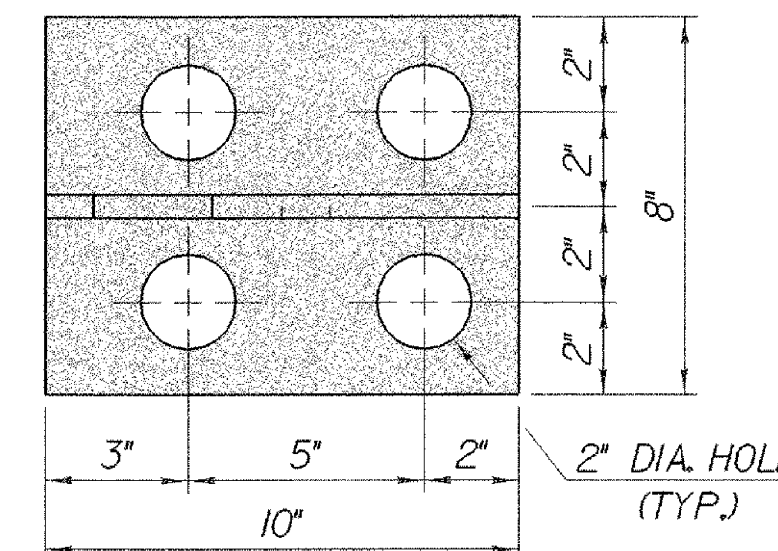
P.V.C. WATERSTOP FOR CONSTRUCTION JOINTS
THE COSTS FOR P.V.C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE. OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER.

DAYTON/RICHMOND TYPE LF,
3/4" DIA. CLOSED FERRULE
OR EQUIVALENT

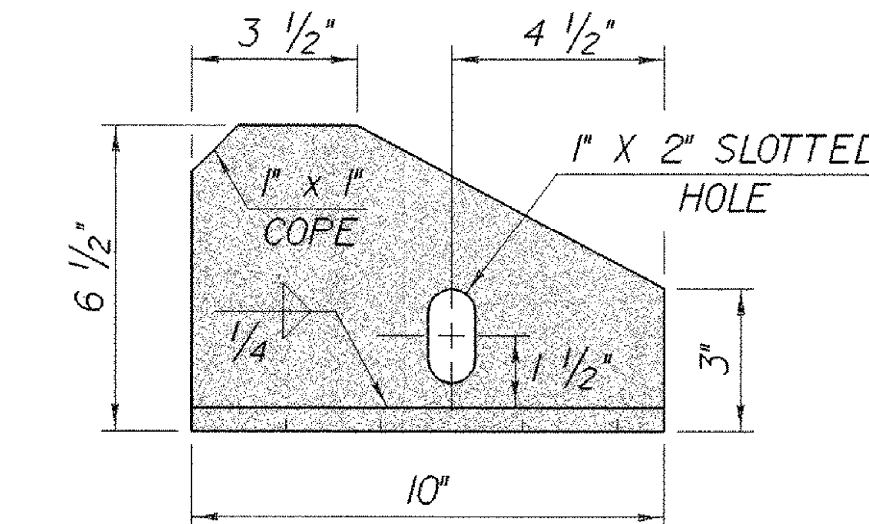


ANCHOR FERRULE DETAIL
SCALE: 3" = 1'-0"

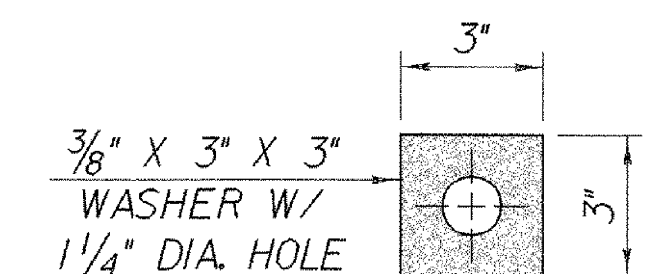
NOTE:
CLOSED THREADED FERRULE NUTS
WITHOUT ANCHOR LOOPS MAY BE USED.



BRACKET PLAN
SCALE: 3" = 1'-0"



BRACKET ELEVATION
SCALE: 3" = 1'-0"



WASHER FOR BRACKET
SCALE: 3" = 1'-0"

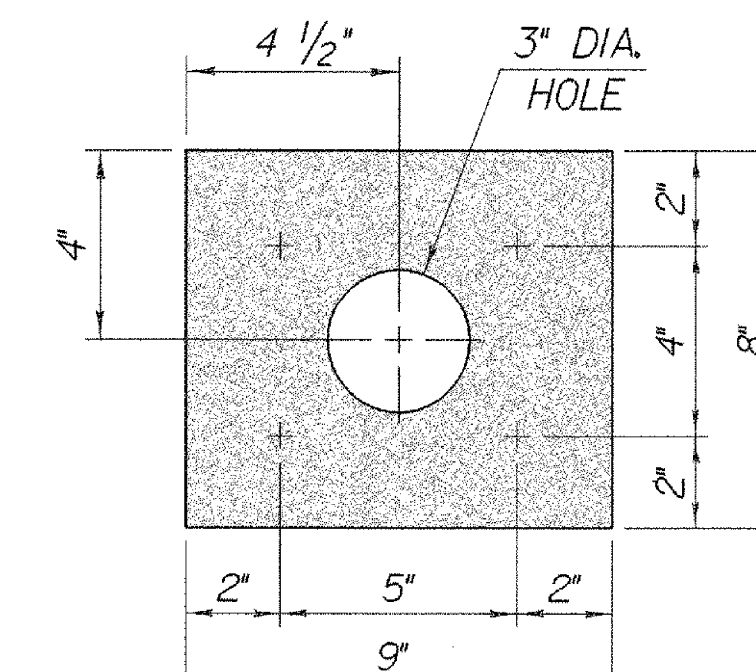
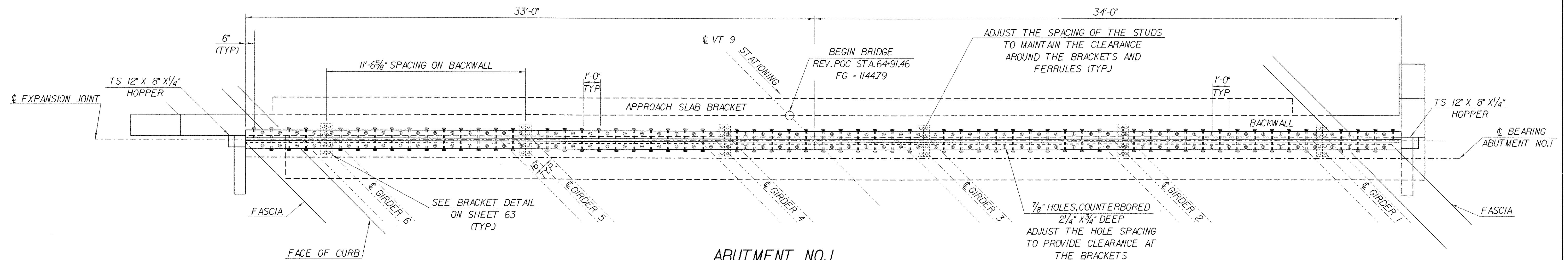


PLATE PLAN
SCALE: 3" = 1'-0"

ALL PLATES 1/2"

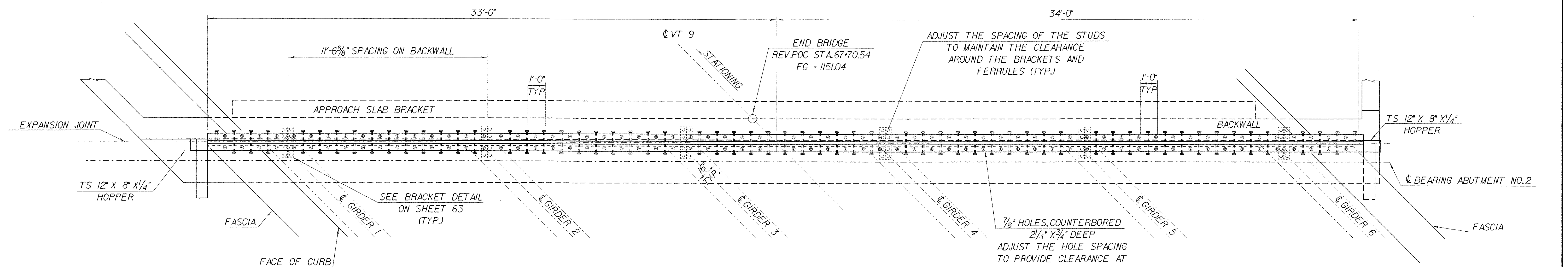
TEMP	*A* DIST	
	ABUT.* 1	ABUT.* 2
0° F	2 3/8"	2 3/4"
15° F	2 1/4"	2 1/2"
30° F	2 1/8"	2 1/4"
45° F	2"	2"
60° F	1 7/8"	1 3/4"
75° F	1 3/4"	1 1/2"
90° F	1 5/8"	1 1/4"
105° F	1 1/2"	1"

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	WOODFORD	Bridge No.	BR 11
Highway No.	VT 9	Log Sta.	
		Surv. Sta.	
VT 9 OVER ROARING BRANCH OF WALLOOMSAC			
EXPANSION JOINT DETAILS			
Designed By	M. EVANS-MONGEON	Drawn By	R. VANHAMBURG
Checked By	Date	Bridge Design Supervisor	
M. EVANS-MONGEON		A. PORTALUPI	Date
PROJECT	WOODFORD	PROJECT NO.	BHF 010-1(29)
I.G.C. Info.	/84e039/se039expdgn	se039expd	
Bridge Sheet No.		Sheet	63 of 106



ABUTMENT NO.1
PLAN VIEW

SCALE 3/8" = 1'-0"
1 0 1 2 3 4



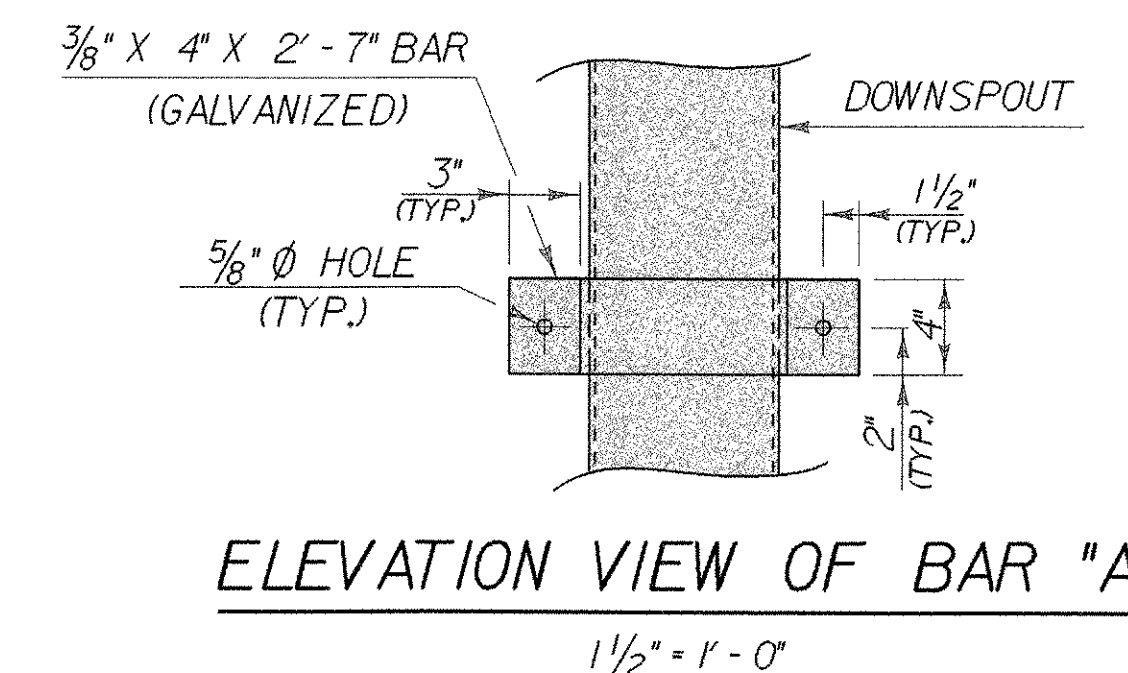
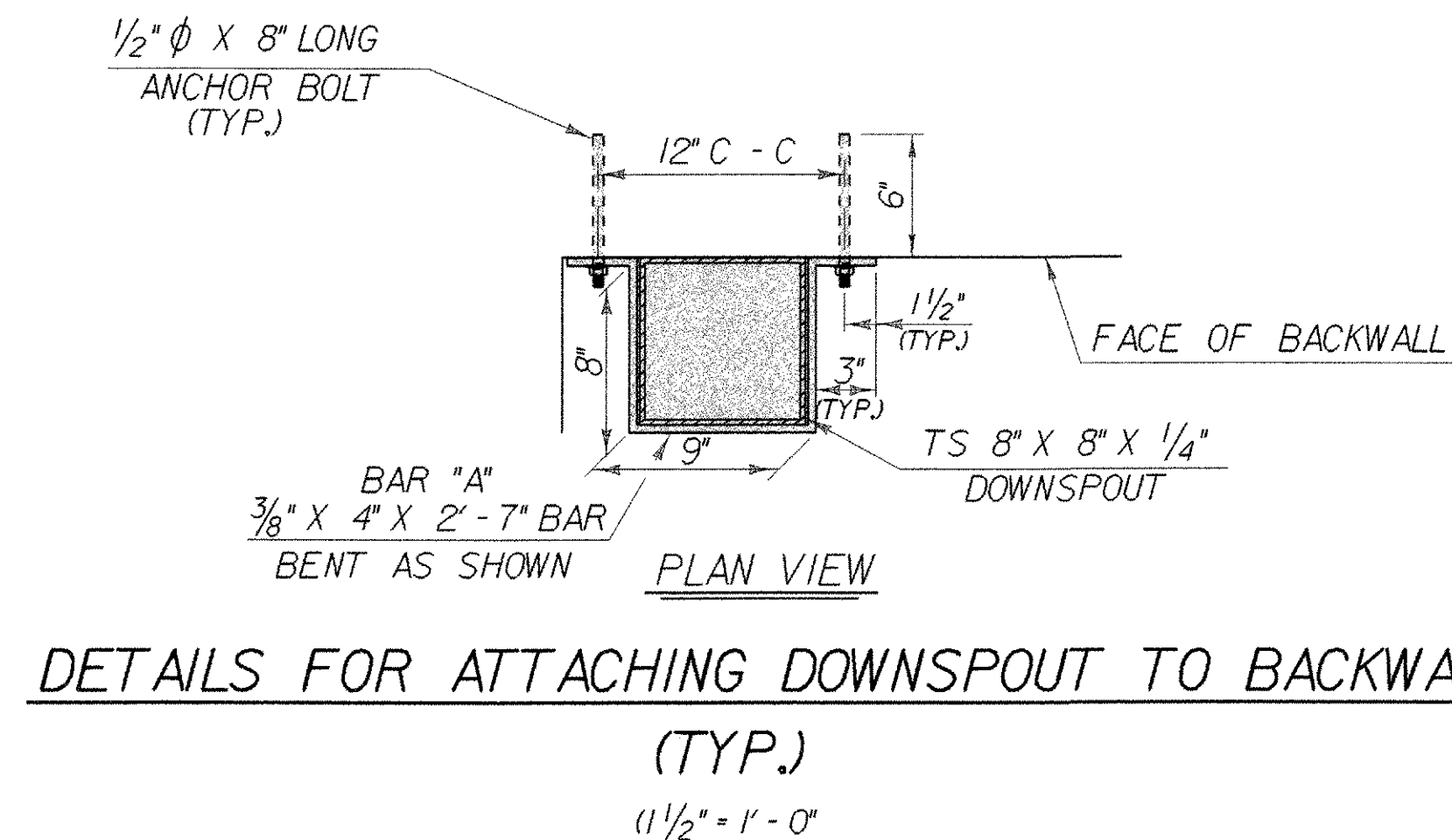
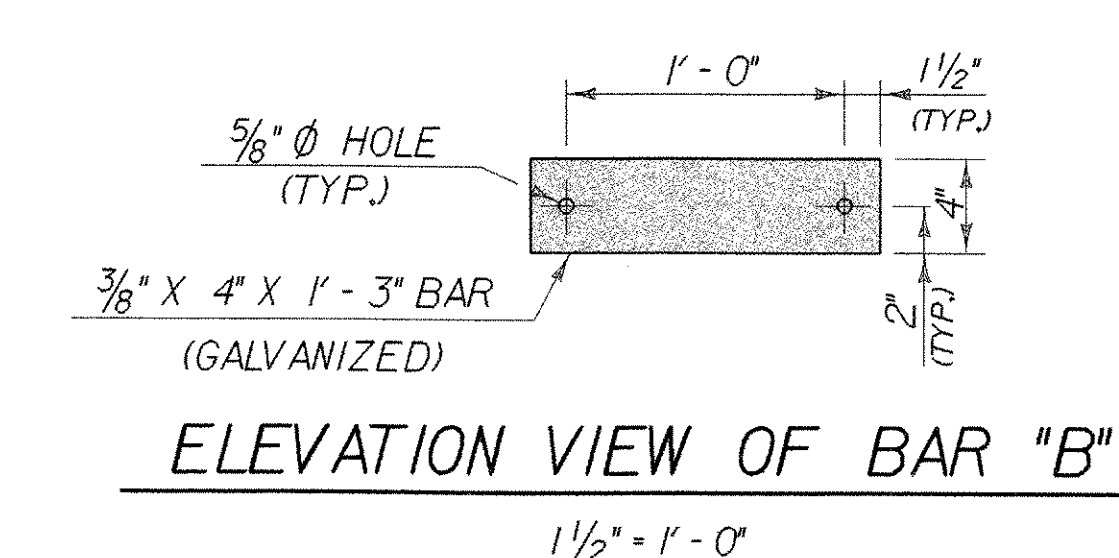
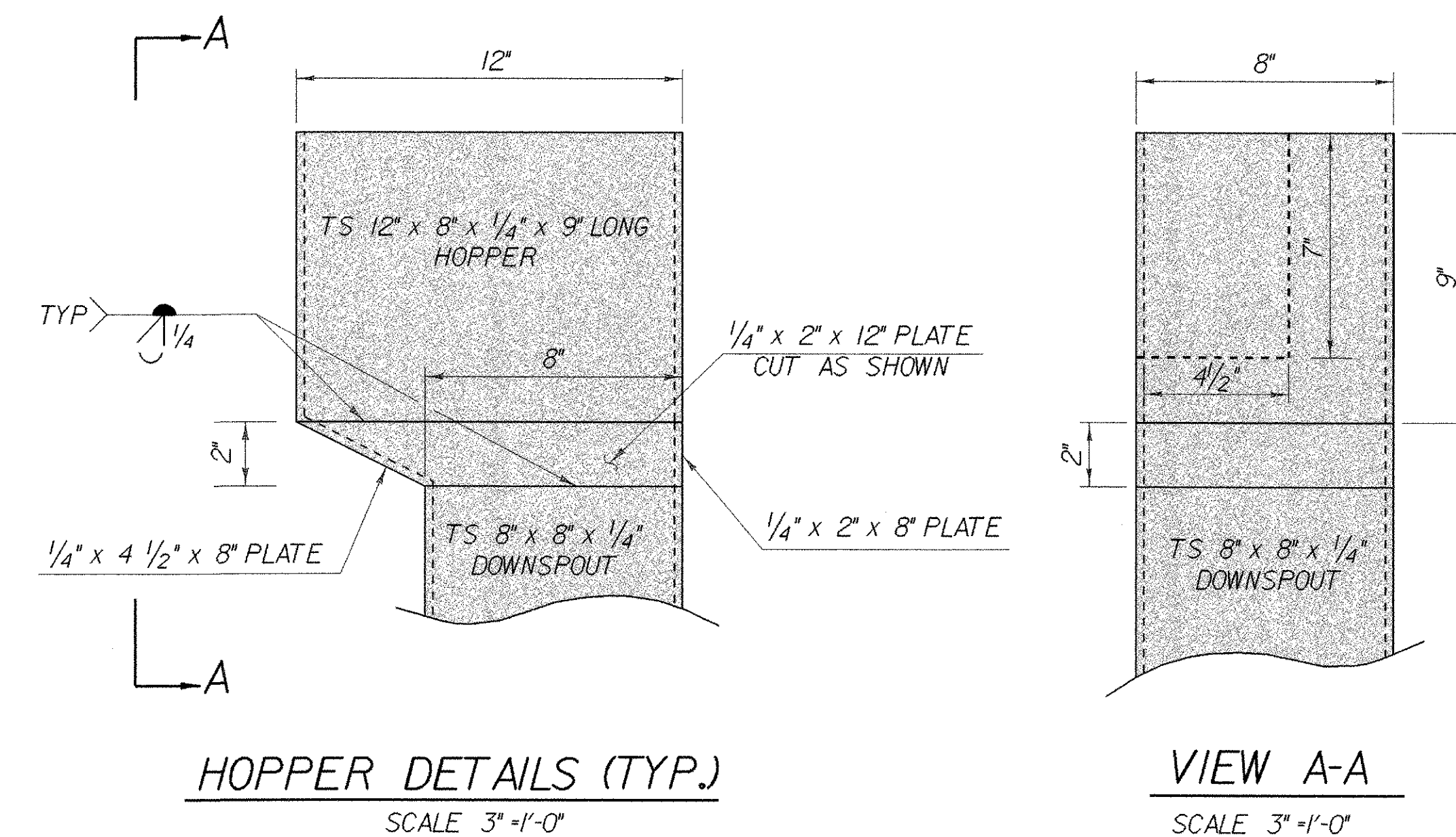
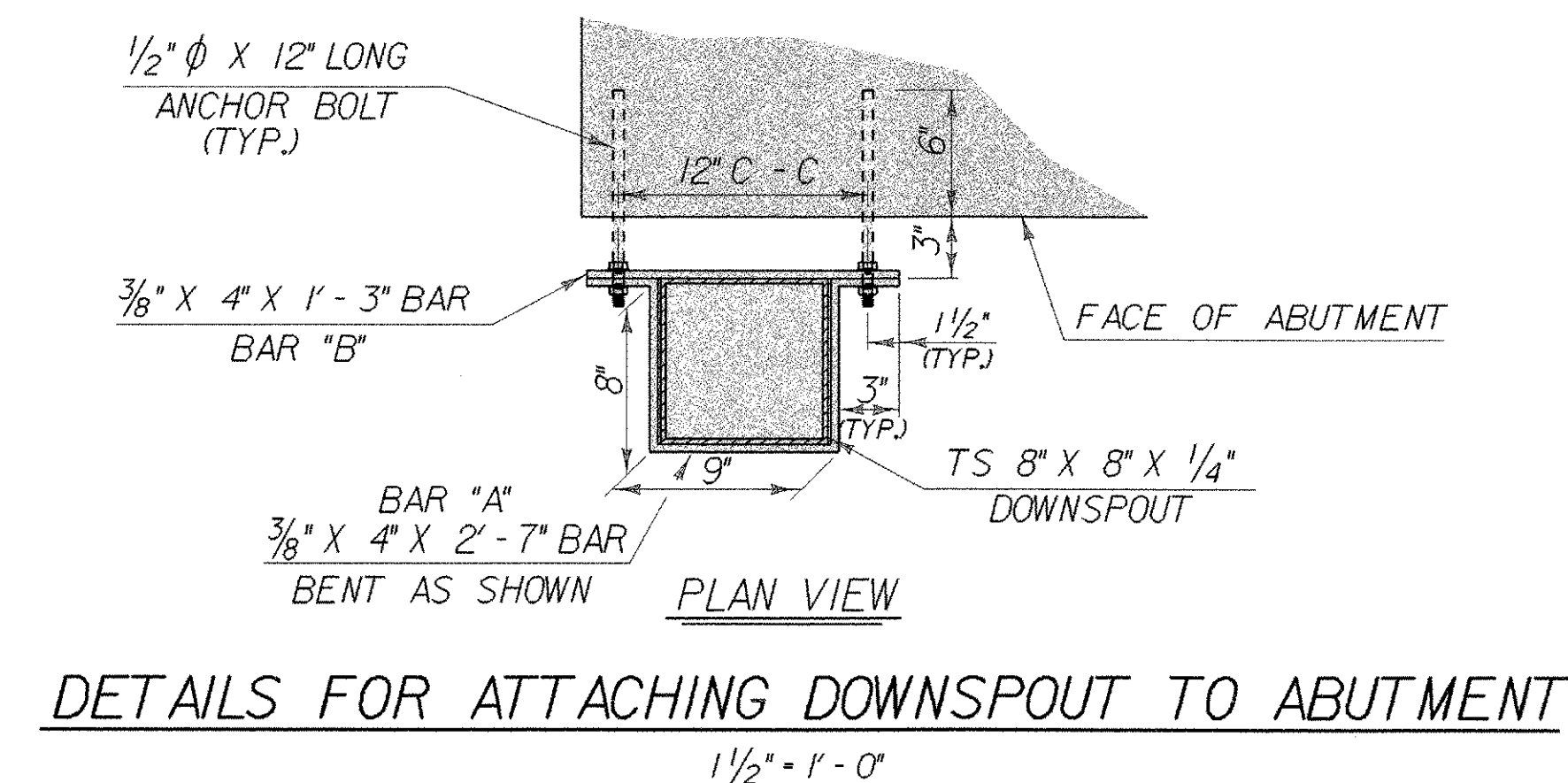
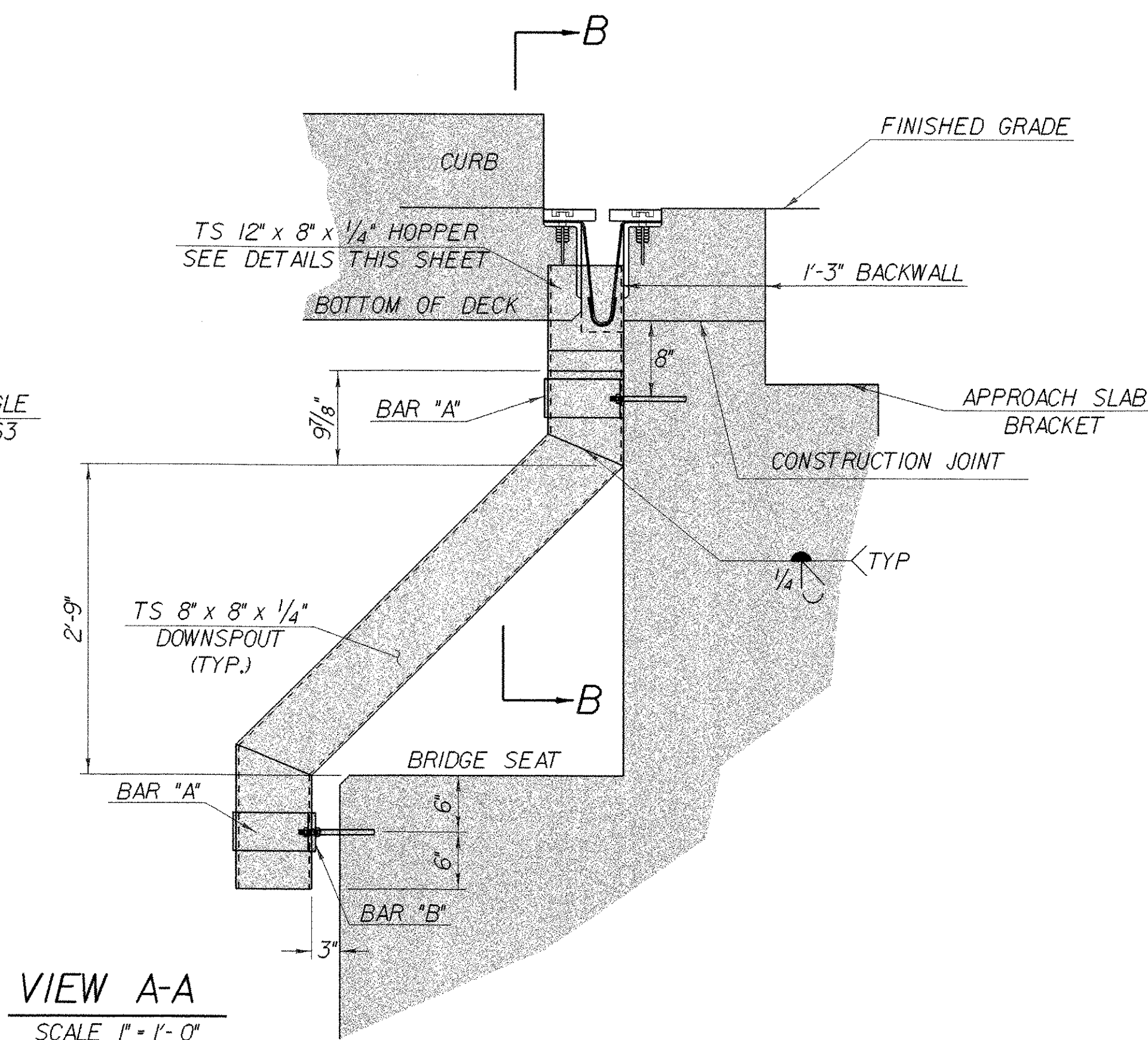
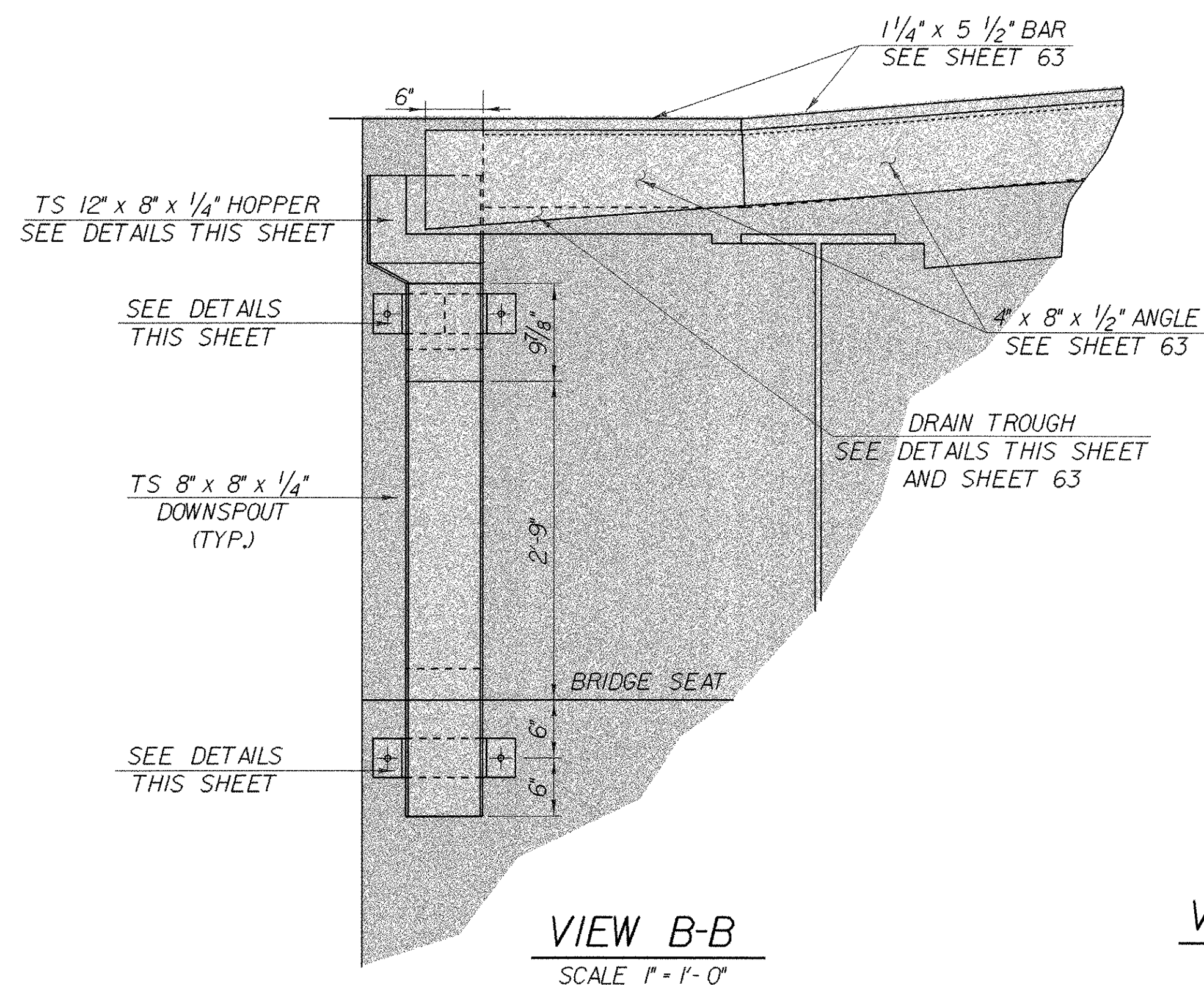
ABUTMENT NO.2
PLAN VIEW

SCALE 3/8" = 1'-0"
1 0 1 2 3 4

STATE OF VERMONT
AGENCY OF TRANSPORTATION

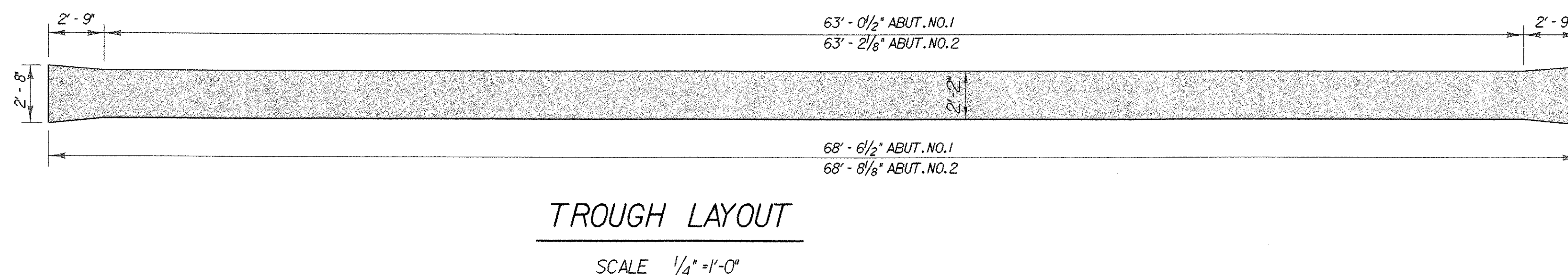
Town Of	WOODFORD	Bridge No.	BR 11
Highway No.	VT 9	Log Sta.	
		Surv. Sta.	
VT 9 OVER ROARING BRANCH OF WALLOOMSAC			
EXPANSION JOINT PLAN VIEWS			
Designed By	M.EVANS-MONGEON	Drawn By	R.VANHAMBURG
Checked By	Date	Bridge Design Supervisor	
M.EVANS-MONGEON		A.PORTALUPI	Date
PROJECT	WOODFORD	PROJECT NO.	BHF 010-K(29)
I.G.C. Info.	/84e039/structures/se03911.dgn		se03911.dgn
Bridge Sheet No.		Sheet	64 of 106

PLOTTED 03-OCT-2005



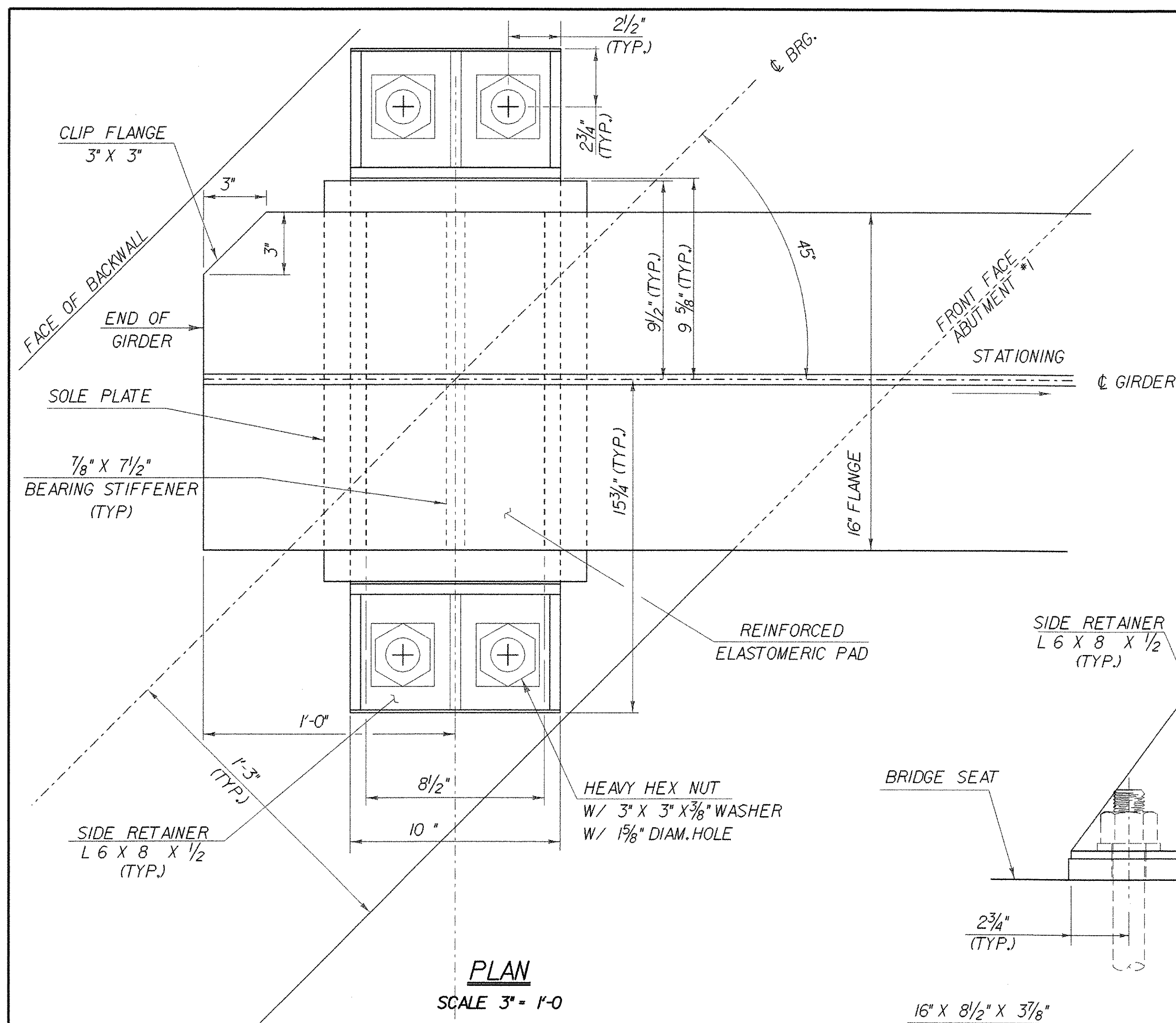
DOWNSPOUT NOTES

1. ALL HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A-500 GR.B.
2. ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO AASHTO M270 / M270 M GR.36.
3. DOWNSPOUT SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 / M111 M AFTER FABRICATION.
4. ALL BOLTS AND RELATED HARDWARE SHALL BE ASTM A-307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153 (AASHTO M232).
5. ANY PLACE WHERE THE GALVANIZED HAS BEEN REMOVED FROM THE DOWNSPOUT EITHER BY CUTTING, BURNING, WELDING, PLACING, OR ANY OTHER MEANS, IT SHALL BE REPAIRED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 513 PAINTING STRUCTURAL STEEL.
6. THE FOUR DOWNSPOUTS AND RELATED HARDWARE FOR EACH SHALL BE PAID FOR UNDER THE ITEM 506.55 "STRUCTURAL STEEL (PLATE GIRDER)".
7. ALL REQUIRED WELDS FOR DOWNSPOUTS SHALL BE DETAILED ON SHOP DRAWINGS WHICH SHALL ALSO INCLUDE ALL APPLICABLE WELDING PROCEDURES.
8. AFTER ALL PAVING AND CONCRETE OPERATIONS THE DOWNSPOUT SHALL BE CLEANED OF ALL CONTAMINATION BY FLUSHING.

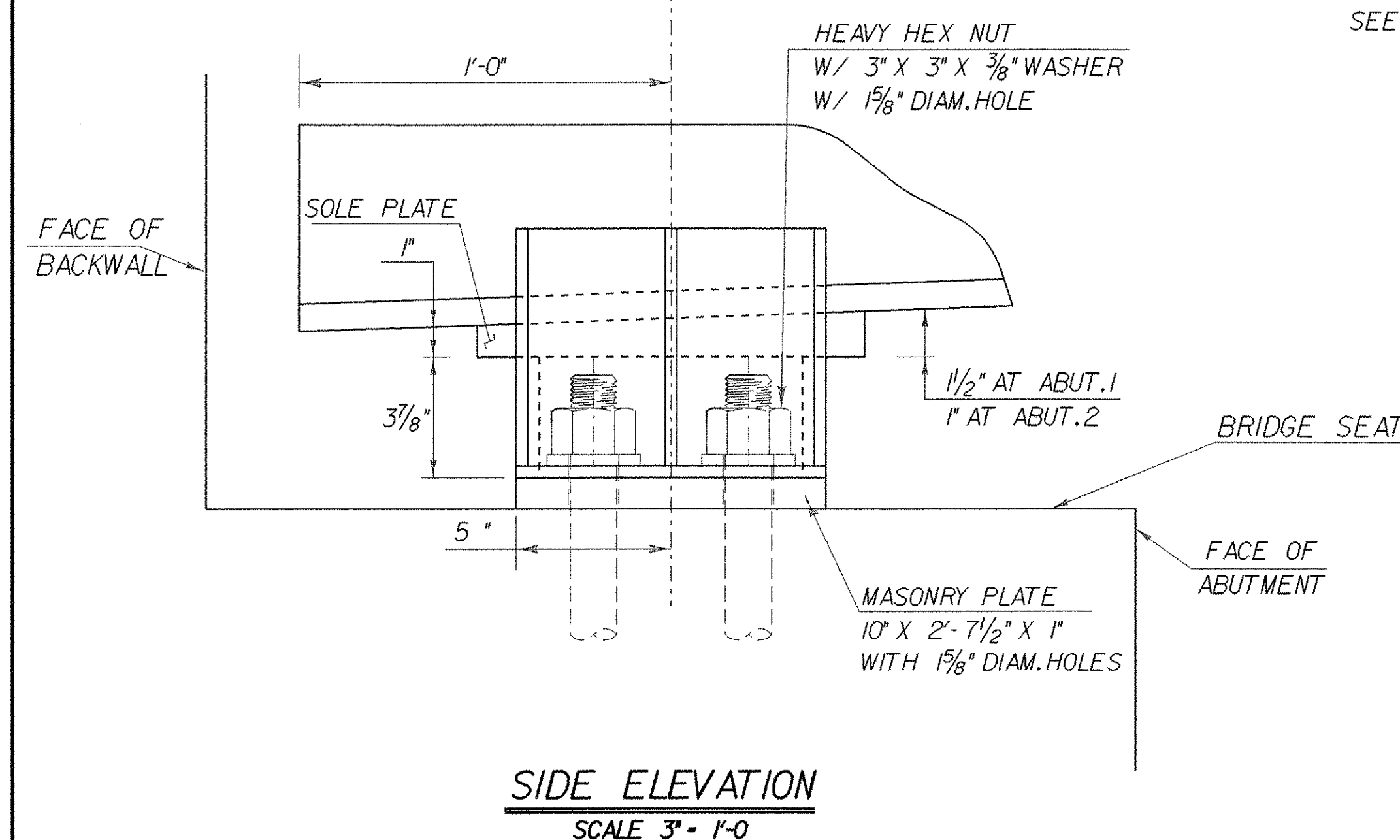


STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	WOODFORD	Bridge No.	BR 11
Highway No.	VT 9	Log Sta.	
		Surv. Sta.	
VT 9 OVER ROARING BRANCH OF WALLOOMSAC			
DOWNSPOUT AND HOPPER DETAILS			
Designed By	M.EVANS-MONGEON	Drawn By	R.VANHAMBURG
Checked By	M.EVANS-MONGEON	Bridge Design Supervisor	A.PORTALUPI
PROJECT	WOODFORD	PROJECT NO.	BHF 010-1(29)
I.G.C. Info.	/84e039/structures/se0391.dgn	se039dsh1	
Bridge Sheet No.		Sheet	65 of 106

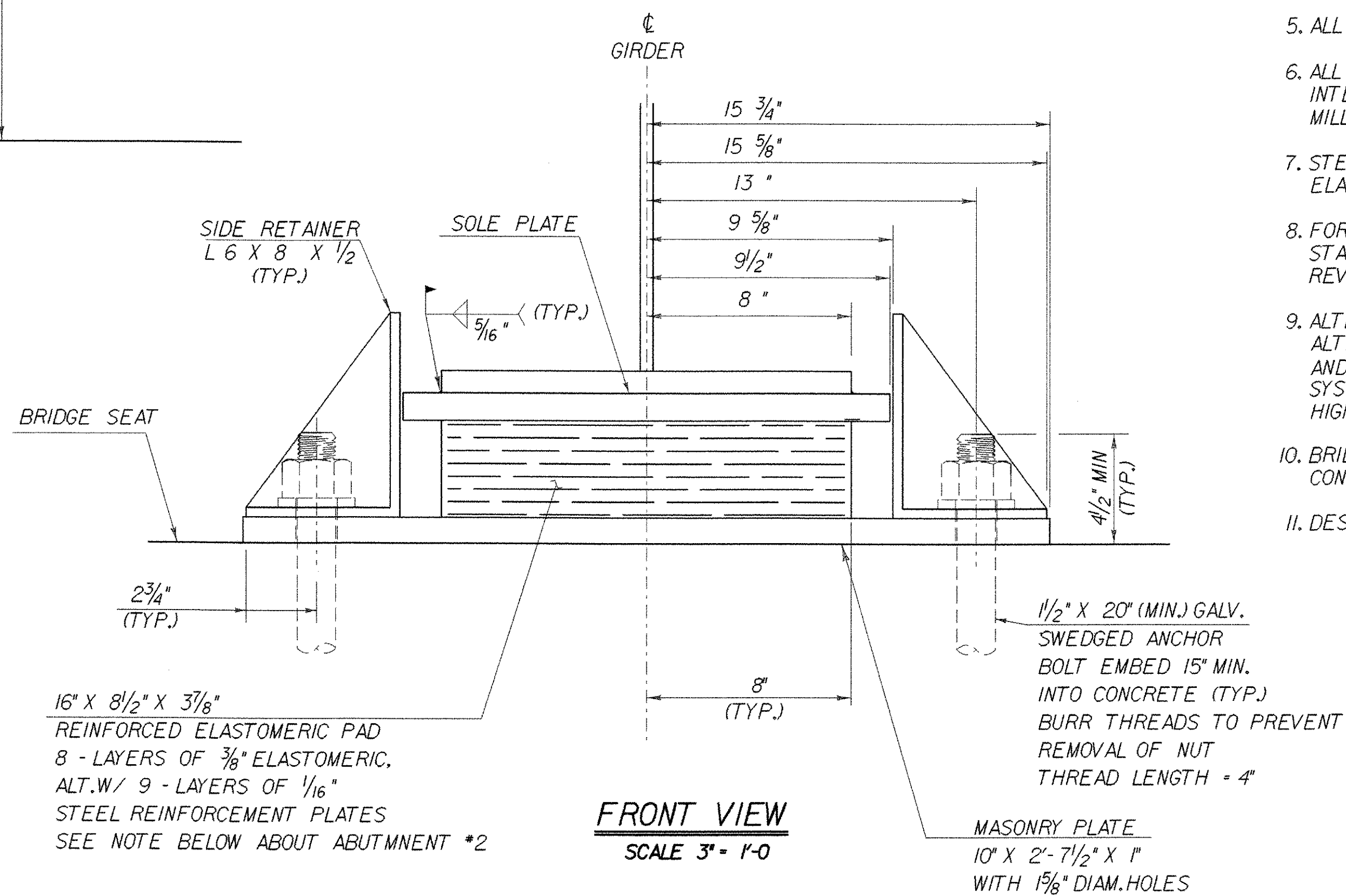
PLOTTED 03-OCT-2005



PLAN
SCALE 3" = 1'-0"



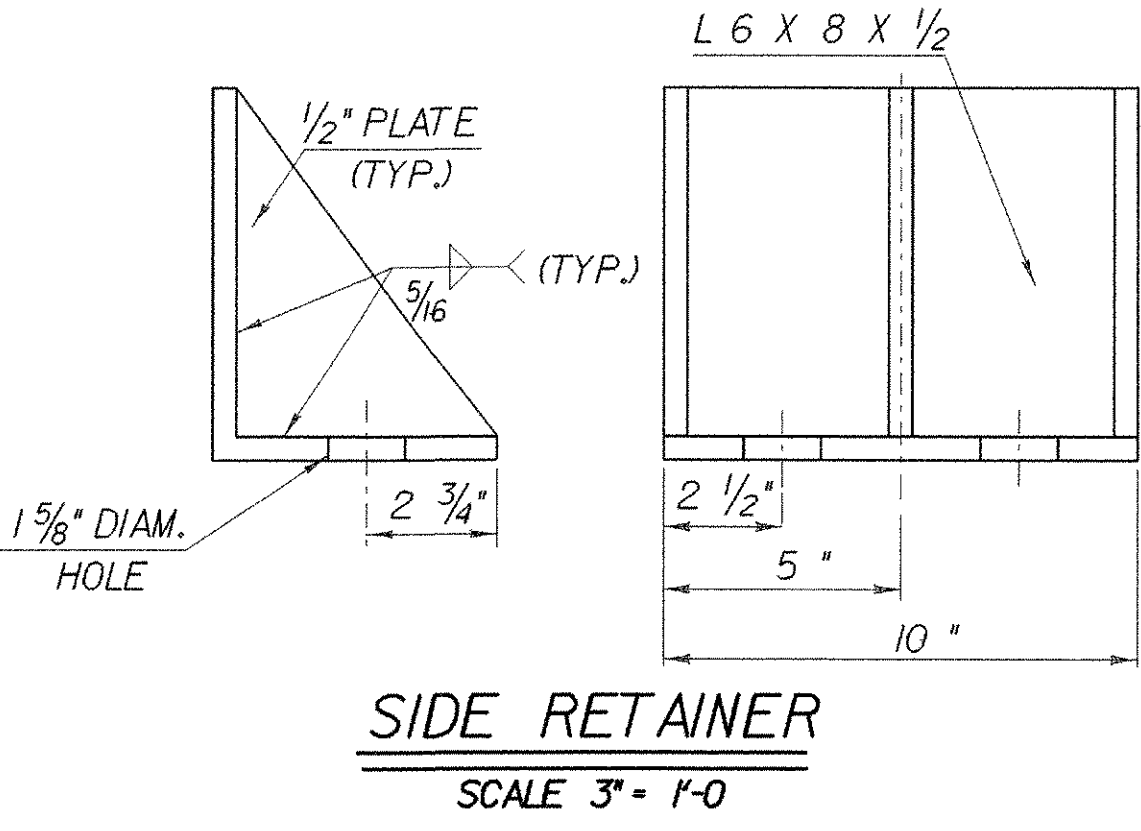
SIDE ELEVATION
SCALE 3" = 1'-0"



FRONT VIEW
SCALE 3" = 1'-0"

NOTE: ABUTMENT NO.1 IS SHOWN, ABUTMENT NO.2 IS SIMILAR EXCEPT REINFORCED ELASTOMERIC PAD FOR ABUTMENT NO.2 IS: 16" X 8 1/2" X 6 1/16" WITH 13 LAYERS OF 3/8" ELASTOMERIC, ALT. W/ 14 LAYERS OF 15 GAGE STEEL REINFORCEMENT PLATES

SCALE 3" = 1'-0"



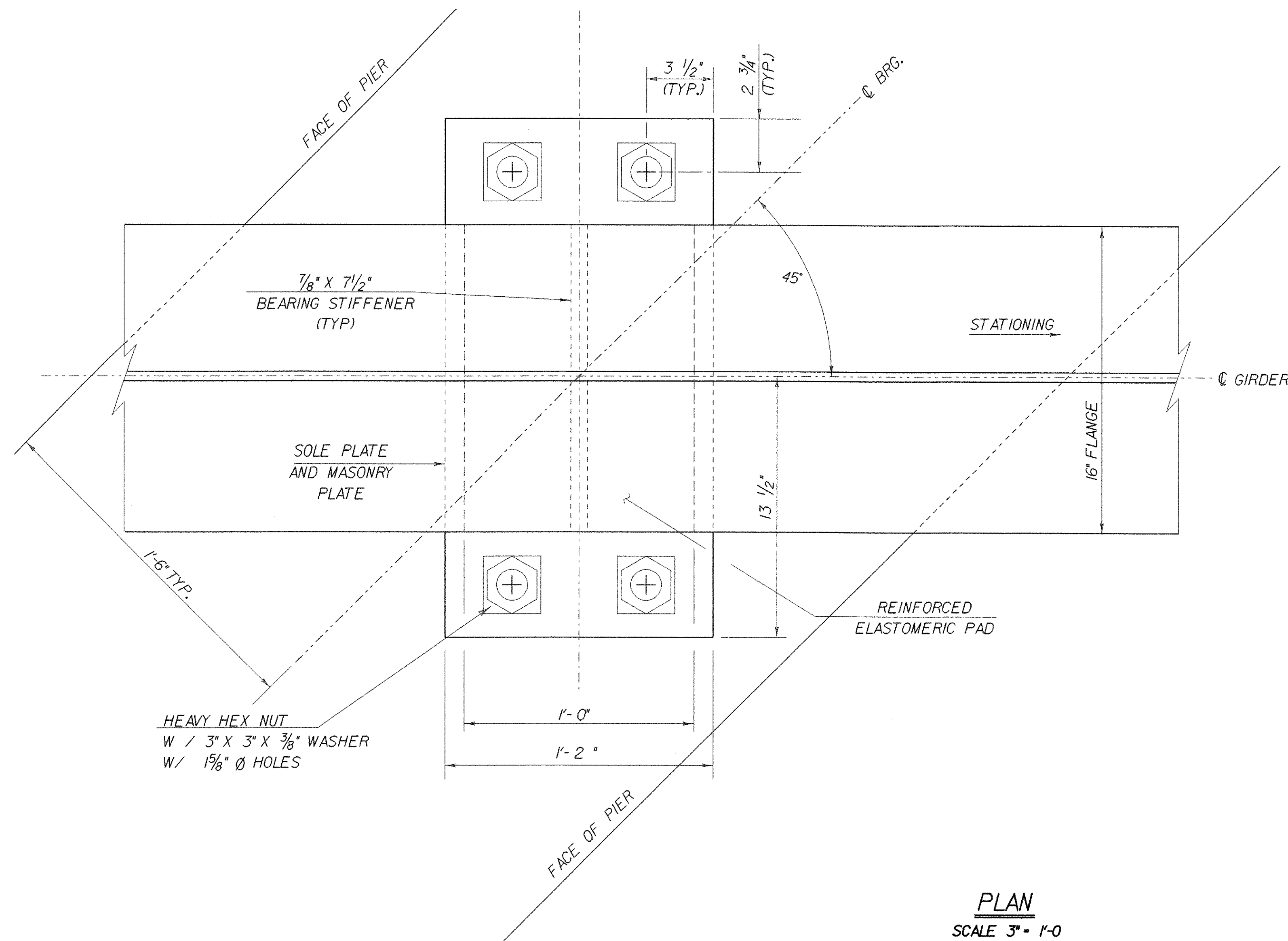
SIDE RETAINER
SCALE 3" = 1'-0"

BEARING DEVICE NOTES

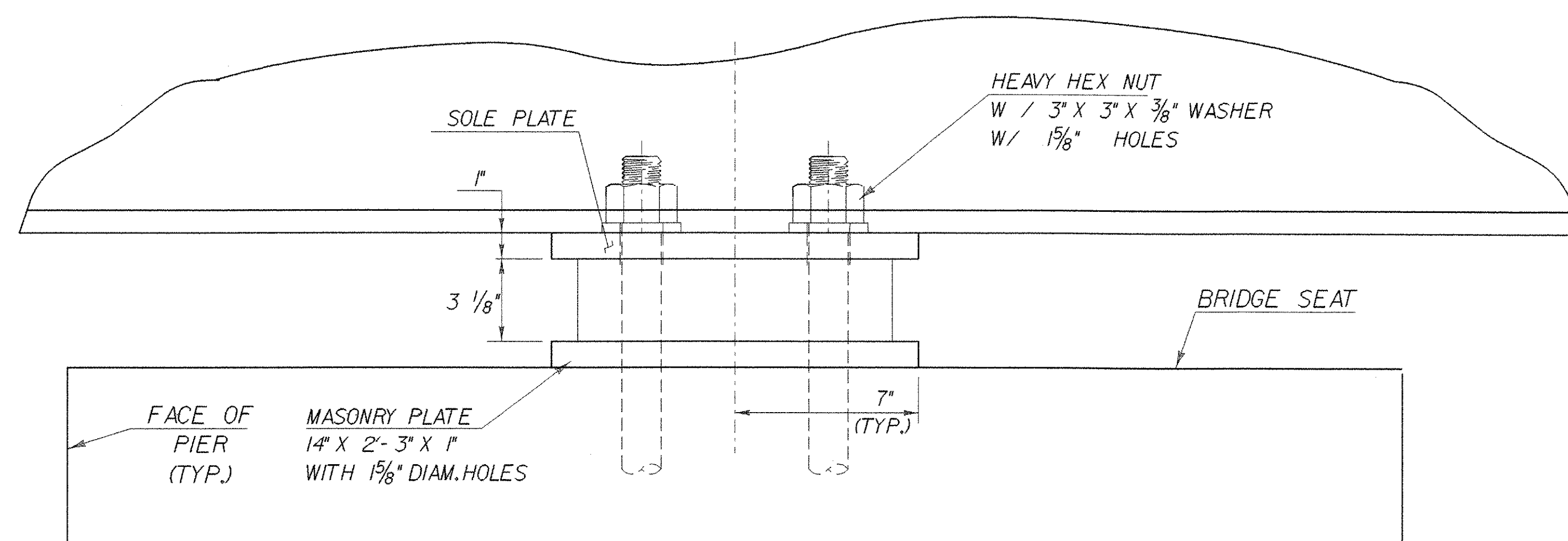
1. BEARINGS SHALL BE PAID FOR UNDER THE ITEM 531.0 "BEARING DEVICE ASSEMBLY" AND SHALL CONFORM TO APPLICABLE SUBSECTIONS OF SECTION 531 AND 731.
2. THE FIELD WELD CONNECTING THE BOTTOM FLANGE WITH THE BEARING DEVICE SHALL BE MADE WITH E7018 RODS. AREAS OF METALIZING DAMAGED BY WELDING AND/OR HANDLING SHALL BE REPAIRED BY METALIZING IN ACCORDANCE WITH ASTM A 760/760M.
3. SHOP DRAWINGS CONFORMING TO SUBSECTION 531.03 SHALL BE SUBMITTED AND INCLUDE ANY NECESSARY WELDING OR BONDING PROCEDURES. THE SHOP DRAWINGS SUBMITTAL SHALL ALSO INCLUDE A TYPE D CERTIFICATION PER SECTION 700.02 (C).
4. ALL STEEL COMPONENTS SHALL BE METALIZED AS PER SECTION 531.04(b) AND 506.15. AFTER THE BEARINGS ARE METALIZED, THEY SHALL BE SEALED WITH AN APPROVED PRIMER AS SPECIFIED IN SUBSECTION 506.15(c). ALL WASHERS SHALL BE 3/8" PLATE MINIMUM. PAYMENT FOR ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR "BEARING DEVICE ASSEMBLY". ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER AASHTO M 232/M 232M.
5. ALL STEEL IN BEARING DEVICES SHALL BE AASHTO M 270/M 270M GRADE 36.
6. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMERIC SHALL BE STEEL ASTM A36. ALL INTERNAL STEEL PLATES SHALL BE SAND BLASTED AND FREE OF COATINGS, RUST, AND MILL SCALE. THE PLATES SHALL BE FREE OF SHARP EDGES AND BURRS.
7. STEEL REINFORCED ELASTOMERIC BEARINGS SHALL HAVE A MINIMUM OF 1/8" EDGE SEAL OF ELASTOMER INTEGRAL WITH THE BEARING OVER ALL INTERNAL PLATES.
8. FOR ELASTOMERIC BEARINGS, ALL MATERIALS AND FABRICATION SHALL BE PER AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, EDITION 2002 AND ITS LATEST REVISIONS AND AASHTO M 251/M 251M.
9. ALTERNATE CONFIGURATIONS FOR BEARINGS MAY BE SUBMITTED FOR APPROVAL. ANY ALTERNATE SUBMITTED SHALL BE DESIGNED AND CERTIFIED TO MEET THE DESIGN LOADS AND CRITERIA SHOWN ON THIS SHEET. THE ALTERNATE SHALL MAINTAIN THE ANCHORAGE SYSTEM SHOWN AND SHALL BE DESIGNED PER AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES 2002 EDITION AND ITS LATEST REVISIONS.
10. BRIDGE SEAT ELEVATIONS MAY BE REVISED TO ACCOMMODATE AN ALTERNATIVE CONFIGURATION.
11. DESIGN CRITERIA:
 - A. DESIGN ROTATION = 0.01 RADIAN
 - B. HORIZONTAL CAPACITY SHALL BE MINIMUM OF 20% VERTICAL LOAD IN ANY RESTRAINED DIRECTION.
 - C. VERTICAL DESIGN LOAD PER BEARING:

ABUTMENT BEARINGS	PIER BEARINGS
RDL = 45.0 Kips	RDL = 117.4 Kips
RLL = 79.0 Kips	RLL = 110.3 Kips
 - D. TEMPERATURE RANGE = -30° TO 120°F
 - E. ELASTOMER SHALL HAVE NOMINAL HARDNESS OF 60 ON SHORE 'A' SCALE. ELASTOMER SHALL HAVE A SHEAR MODULUS BETWEEN 130 AND 175 psi. THE RAW ELASTOMER SHALL BE VIRGIN NEOPRENE CLASSIFIED AS LOW TEMPERATURE GRADE 4 AS DEFINED IN TABLE 18.4.5J-1A OF AASHTO, DIVISION II, SECTION 18.
 - F. NO FABRIC REINFORCEMENT WILL BE ALLOWED IN ELASTOMERIC PADS
12. THE BEARING TOLERANCES SHALL MEET THOSE GIVEN IN AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION DATED 2002 AND ITS LATEST REVISIONS, DIVISION II SECTION 18.
13. THE STEEL SOLE PLATES AND MASONRY PLATES SHALL BE HOT BONDED TO THE REINFORCED ELASTOMERIC PAD DURING THE VULCANIZATION PROCESS. THE STEEL SURFACES TO BE BONDED TO THE PAD SHALL NOT BE METALIZED.
14. THE ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF A 307 GR. C.

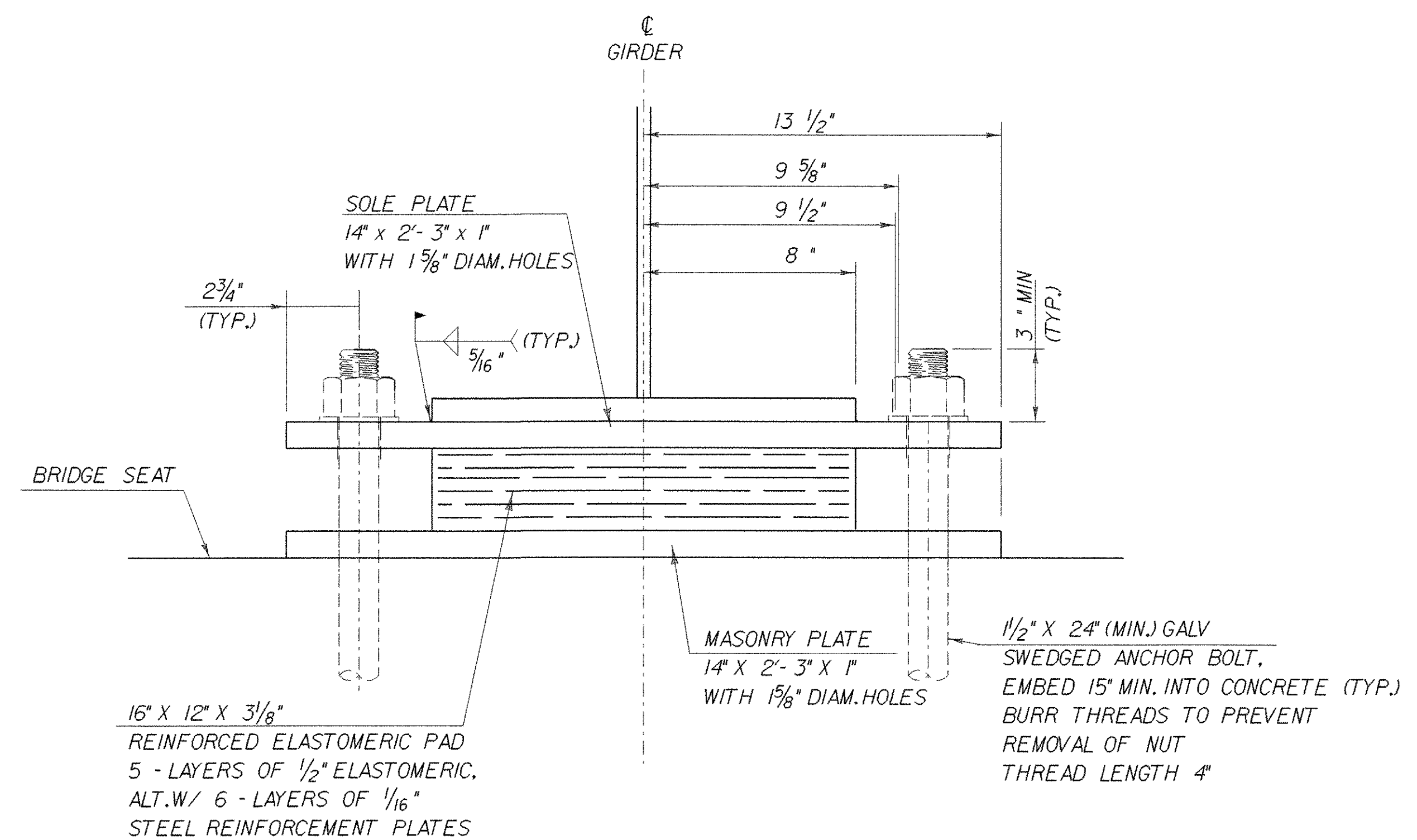
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	WOODFORD	Bridge No.	BR 11
Highway No.	VT 9	Log Sta.	
VT 9 OVER ROARING BRANCH OF WALLOOMSAC		Surv. Sta.	
ABUTMENT BEARINGS AND BEARING NOTES			
Designed By	M. EVANS-MONGEON	Drawn By	R. VANHAMBURG
Checked By	Date	Bridge Design Supervisor	Date
M. EVANS-MONGEON		A. PORTALUPI	
PROJECT	WOODFORD	PROJECT NO.	BHF 010-(29)
I.G.C. Info. /846039/structures/se039supdgn		se039brg1	
Bridge Sheet No.		Sheet 66 of 106	



PLAN
SCALE 3" = 1'-0"



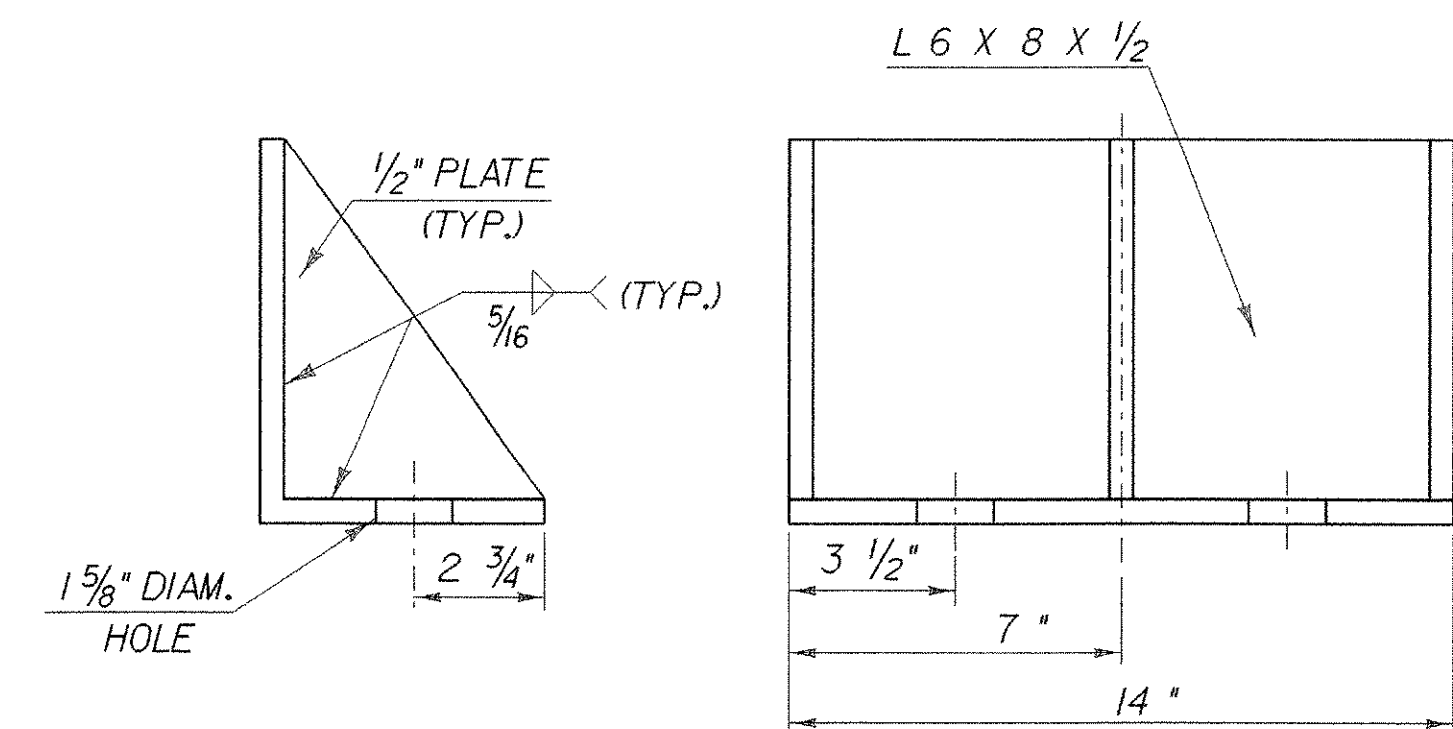
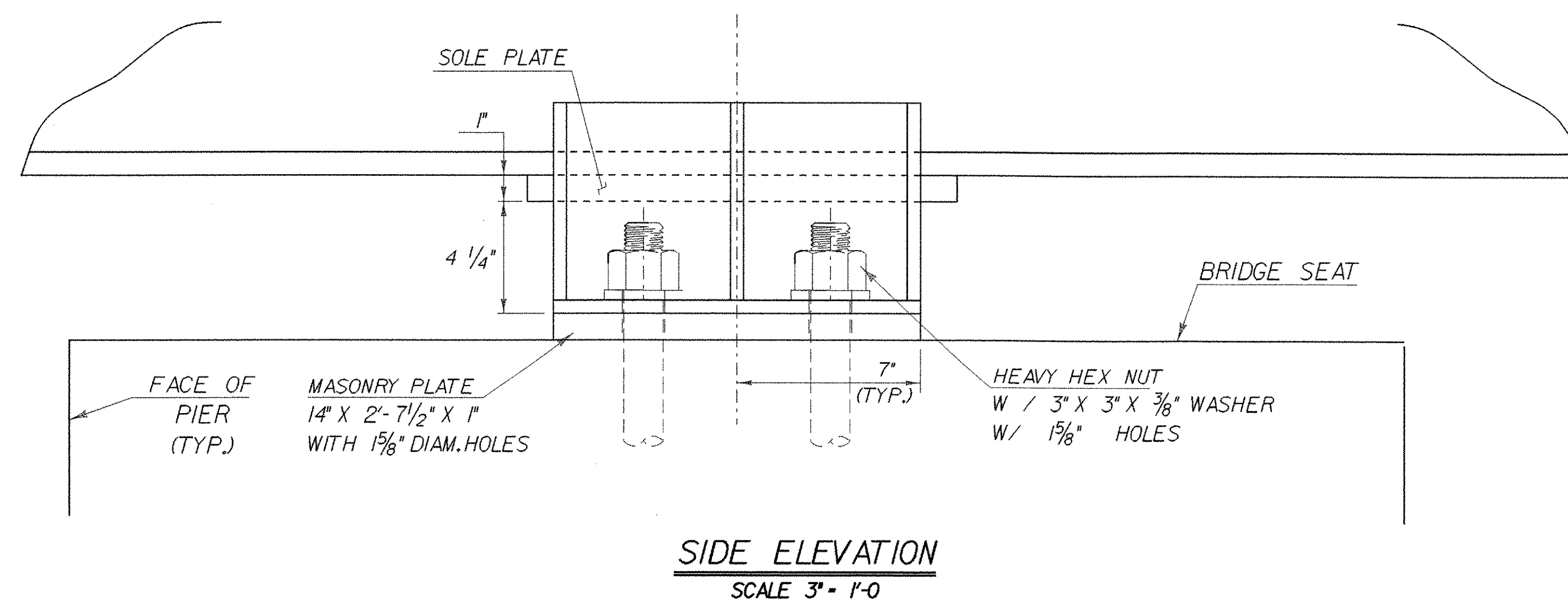
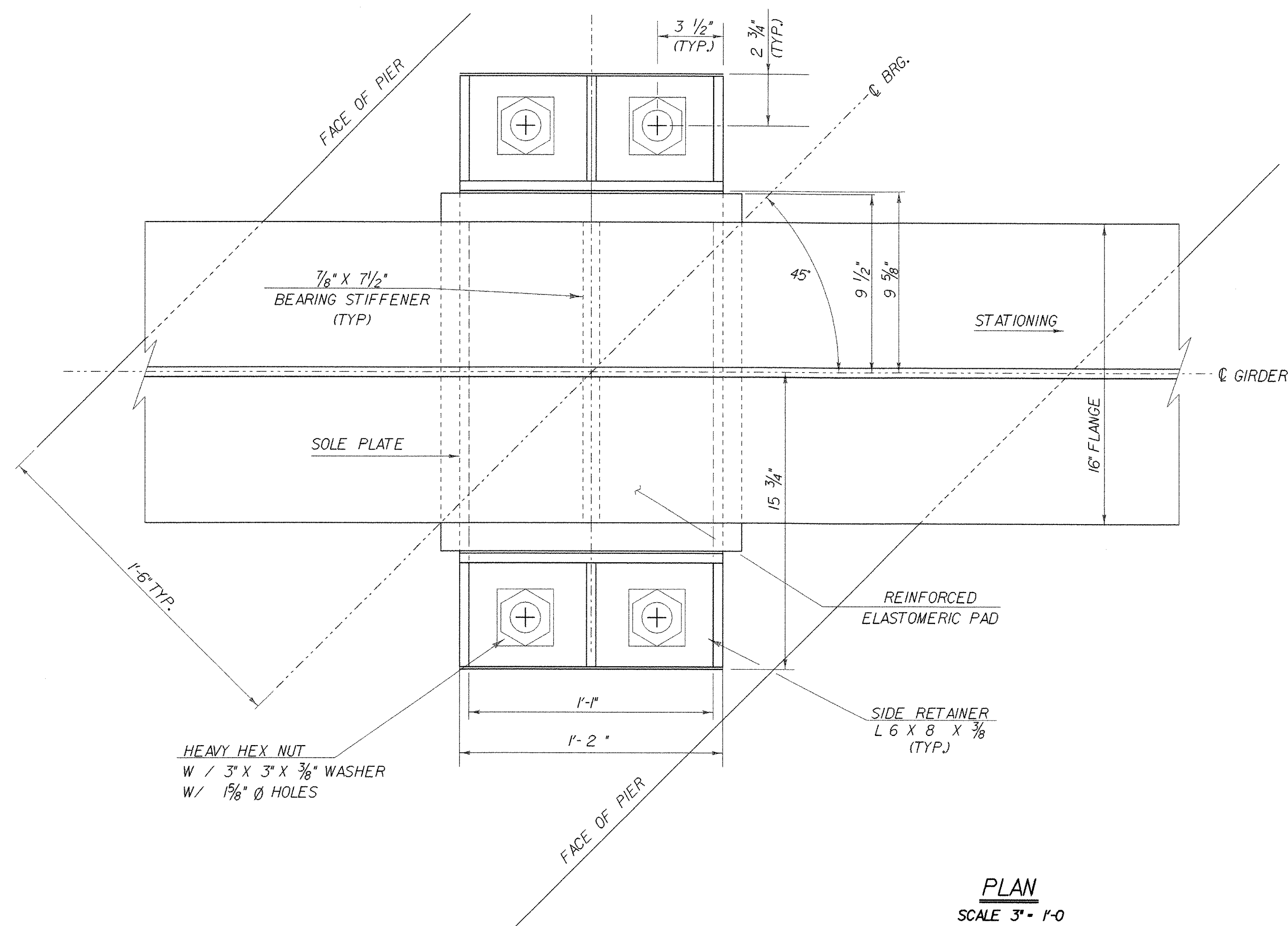
SIDE ELEVATION
SCALE 3" = 1'-0"



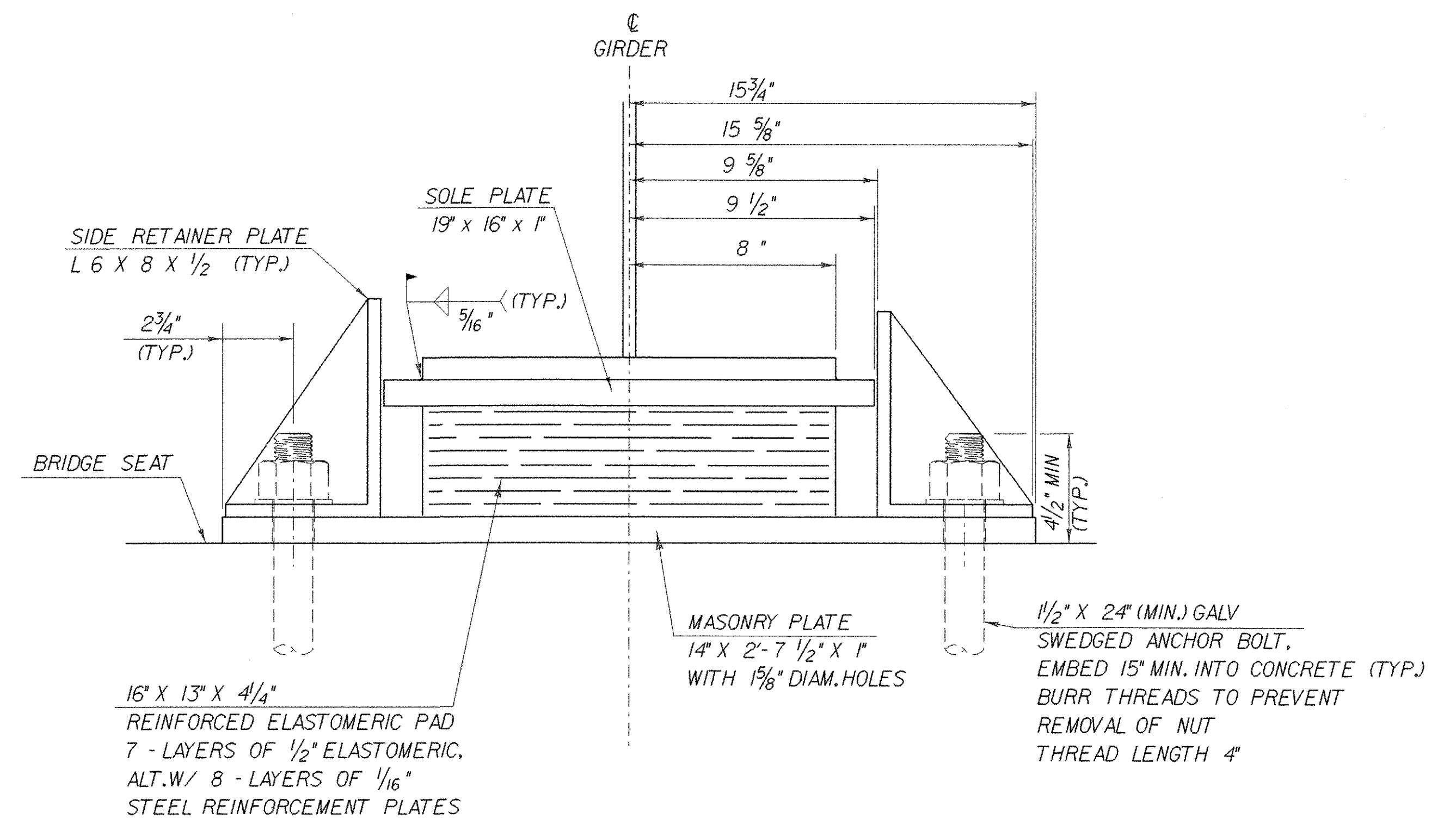
FRONT VIEW

SCALE 3" = 1'-0"

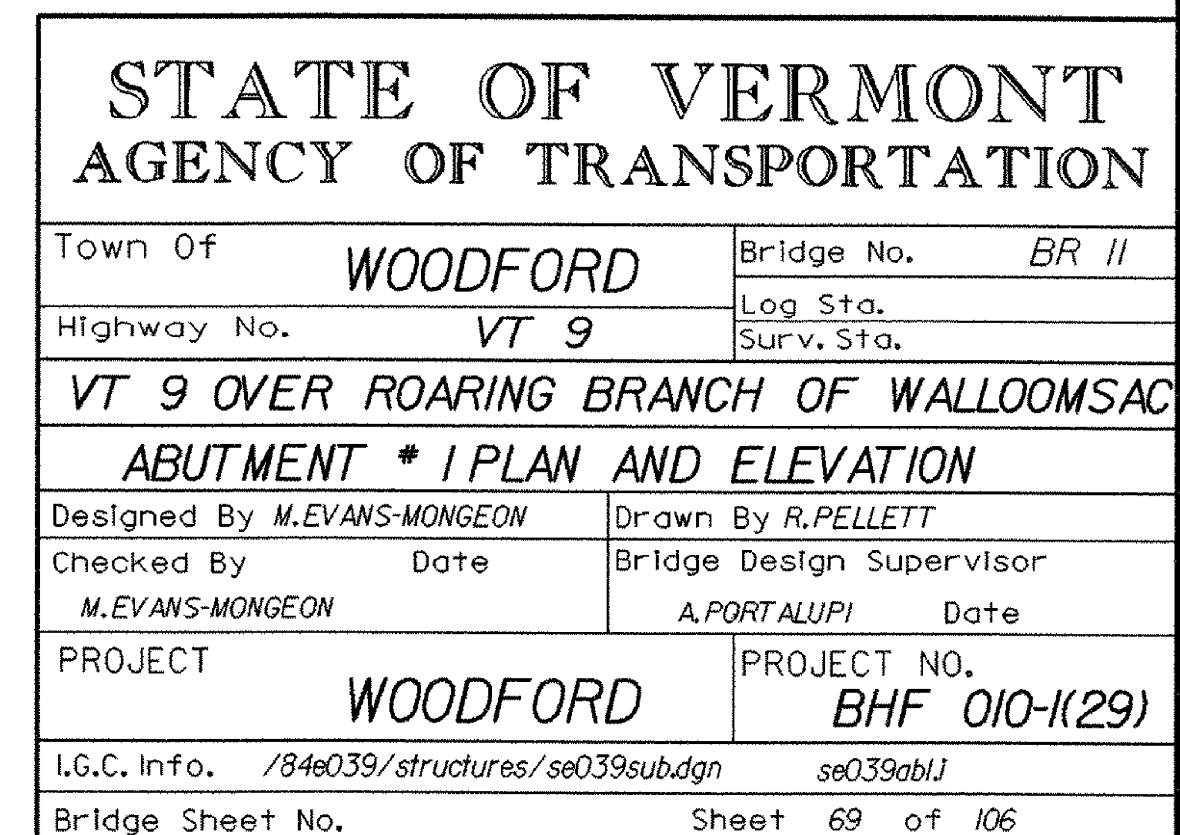
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	WOODFORD	Bridge No.	BR 11
Highway No.	VT 9	Log Sta.	
		Surv. Sta.	
VT 9 OVER ROARING BRANCH OF WALLOOMSAC BEARING DEVICE DETAILS - FIXED PIER 1			
Designed By	M. EVANS-MONGEON	Drawn By	R. VANHAMBURG
Checked By	Date	Bridge Design Supervisor	Date
	M. EVANS-MONGEON		A. PORTALUPI
PROJECT	WOODFORD	PROJECT NO.	BHF 010-1(29)
I.G.C. Info.	/B46039/structures/se039supdgn		se039bglj
Bridge Sheet No.		Sheet	67 of 106

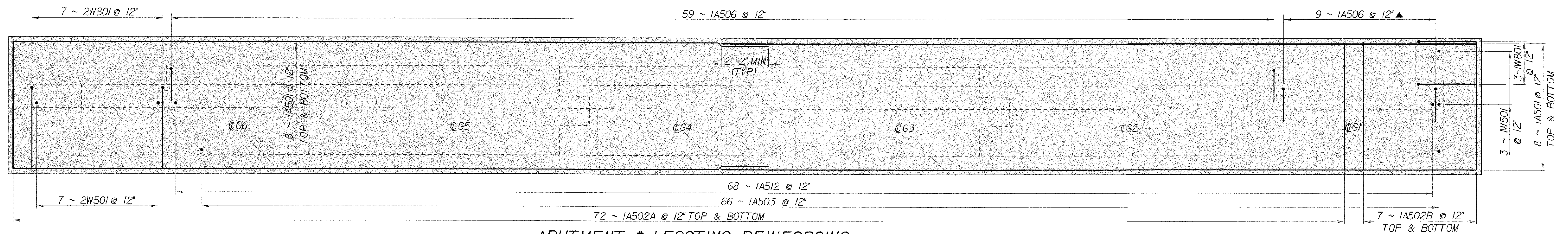


SIDE RETAINER
SCALE 3" = 1'-0"

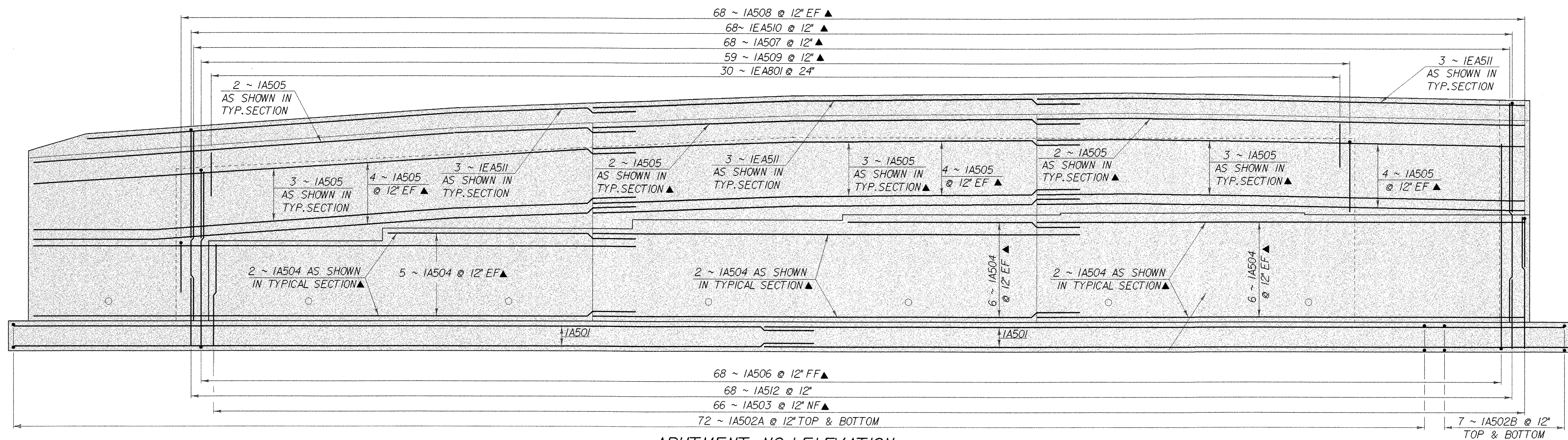


STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	WOODFORD	Bridge No.	BR 11
Highway No.	VT 9	Log Sta.	
		Surv. Sta.	
VT 9 OVER ROARING BRANCH OF WALLOOMSAC			
BEARING DEVICE DETAILS - EXP. PIER 2			
Designed By	M. EVANS-MONGEON	Drawn By	R. VANHAMBURG
Checked By	Date	Bridge Design Supervisor	
M. EVANS-MONGEON		A. PORTALUPI	Date
PROJECT	WOODFORD	PROJECT NO.	BHF 010-K(29)
I.G.C. Info.	/84039/structures/se039supdgn		se039bg2j
Bridge Sheet No.		Sheet	68 of 106





ABUTMENT #1 FOOTING REINFORCING



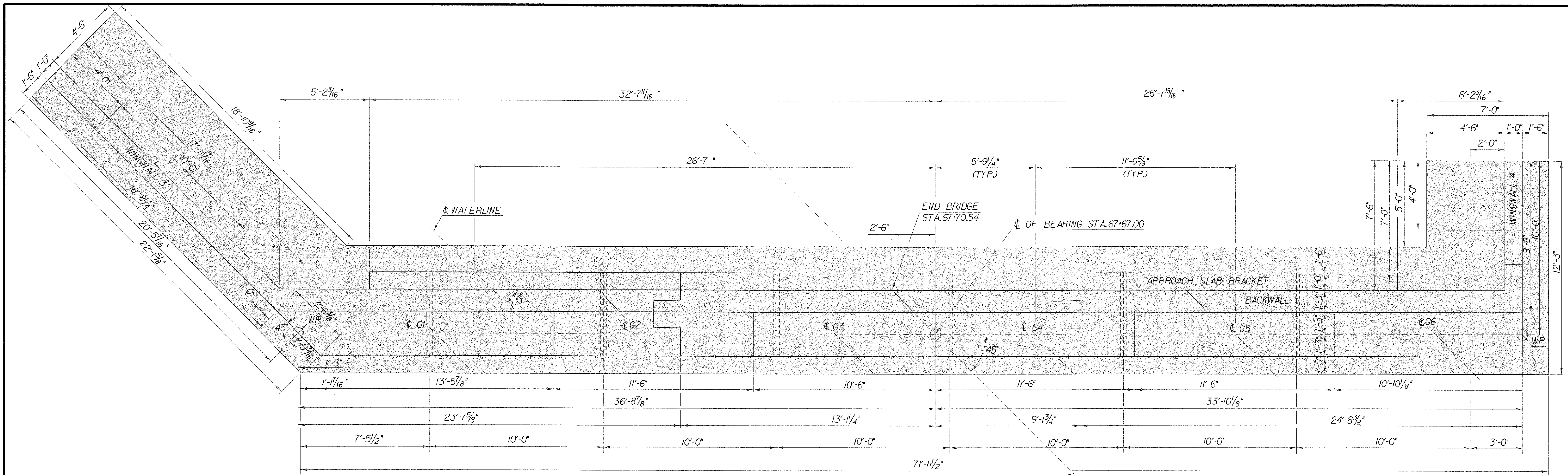
ABUTMENT NO.1 ELEVATION

NOTE:

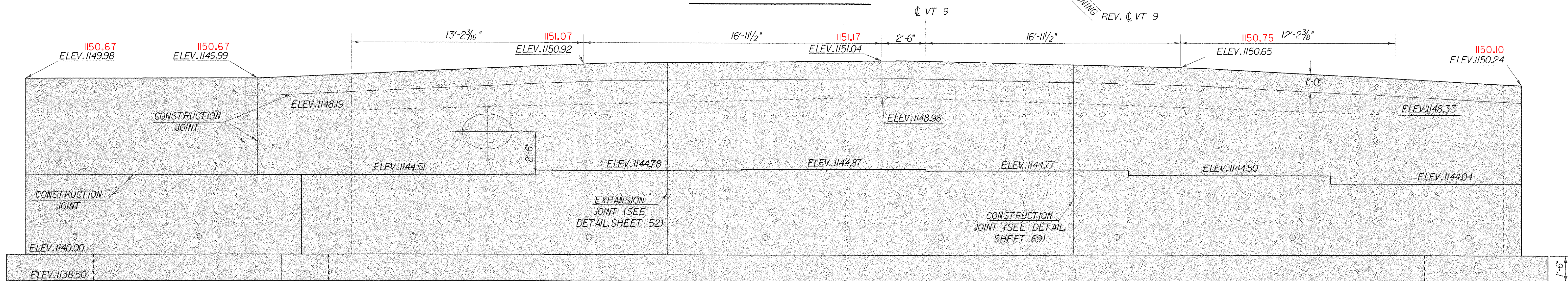
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

SCALE 3/8" = 1'-0"
1 0 1 2 3 4

STATE OF VERMONT		AGENCY OF TRANSPORTATION	
Town Of	WOODFORD	Bridge No.	BR 11
Highway No.	VT 9	Log Sta.	
		Surv. Sta.	
VT 9 OVER ROARING BRANCH OF WALLOOMSAC			
ABUTMENT #1 REINFORCING			
Designed By	M.EVANS-MONGEON	Drawn By	R.PELLETT
Checked By	Date	Bridge Design Supervisor	Date
M.EVANS-MONGEON		A.PORTALUPI	
PROJECT	WOODFORD	PROJECT NO.	BHF 010-1(29)
I.G.C. Info.	/84e039/structures/se039sub.dgn	se039er11	
Bridge Sheet No.		Sheet	70 of 106



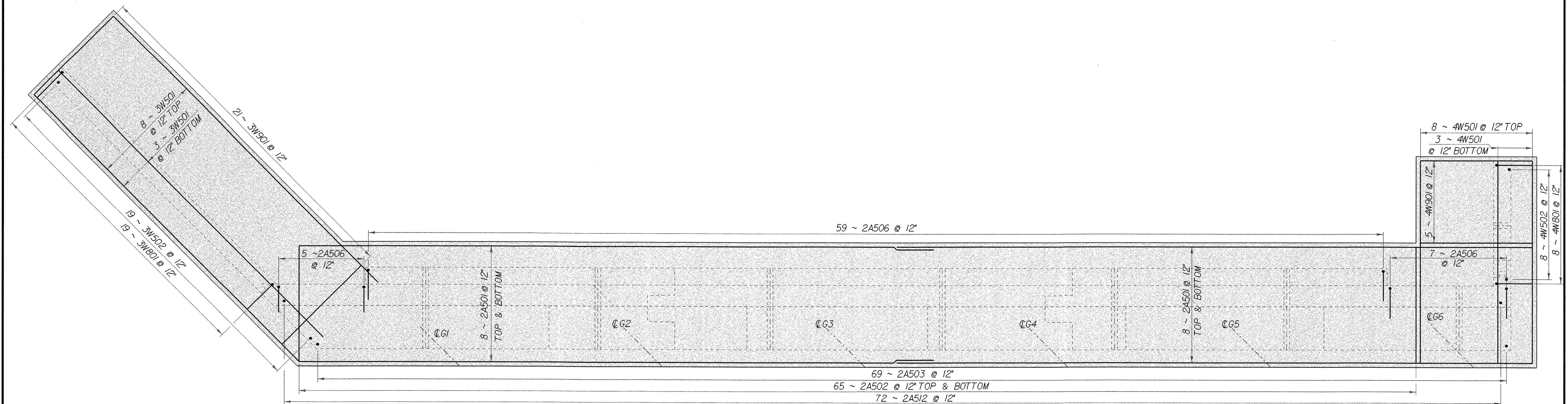
ABUTMENT NO.2 PLAN



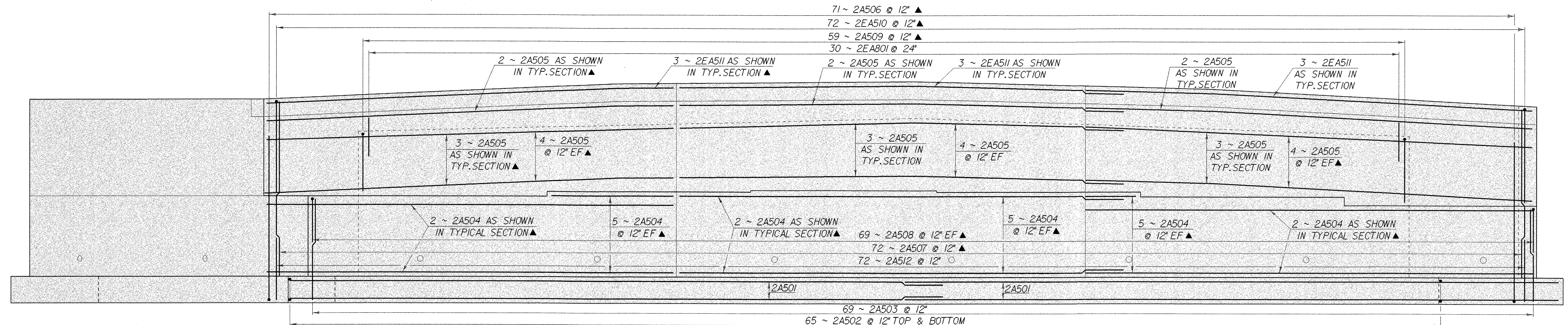
ABUTMENT NO.2 ELEVATION

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of WOODFORD	Bridge No. BR 11
Highway No. VT 9	Log Sta. Surv. Sta.
VT 9 OVER ROARING BRANCH OF WALLOOMSAC	
ABUTMENT * 2 PLAN & ELEVATION	
Designed By M.EVANS-MONGEON	Drawn By R.PELLETT
Checked By M.EVANS-MONGEON	Bridge Design Supervisor A.PORTALUPI
PROJECT WOODFORD	PROJECT NO. BHF 010-1(29)
I.G.C. Info. /84e039/structures/se039subdgn	
Bridge Sheet No.	Sheet 71 of 106

SCALE 3/8" = 1'-0"
1 0 1 2 3 4



ABUTMENT NO.2 REINFORCING PLAN



ABUTMENT NO.2 REINFORCING ELEVATION

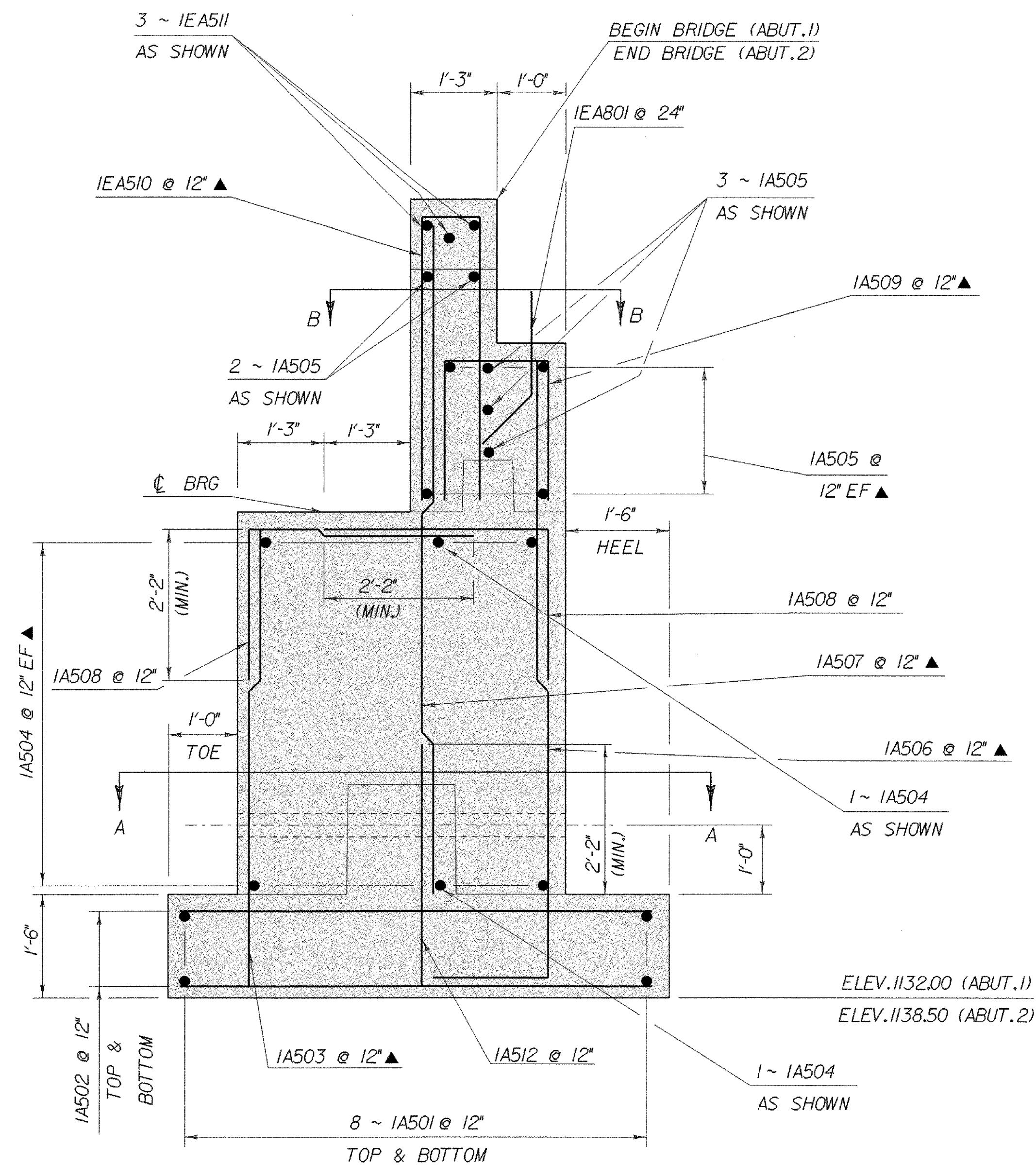
NOTE:

NF = NEAR FACE
 FF = FAR FACE
 EF = EACH FACE
 ▲ = CUT TO FIT IN FIELD
 3\"/>

SCALE 3/8\"/>

**STATE OF VERMONT
 AGENCY OF TRANSPORTATION**

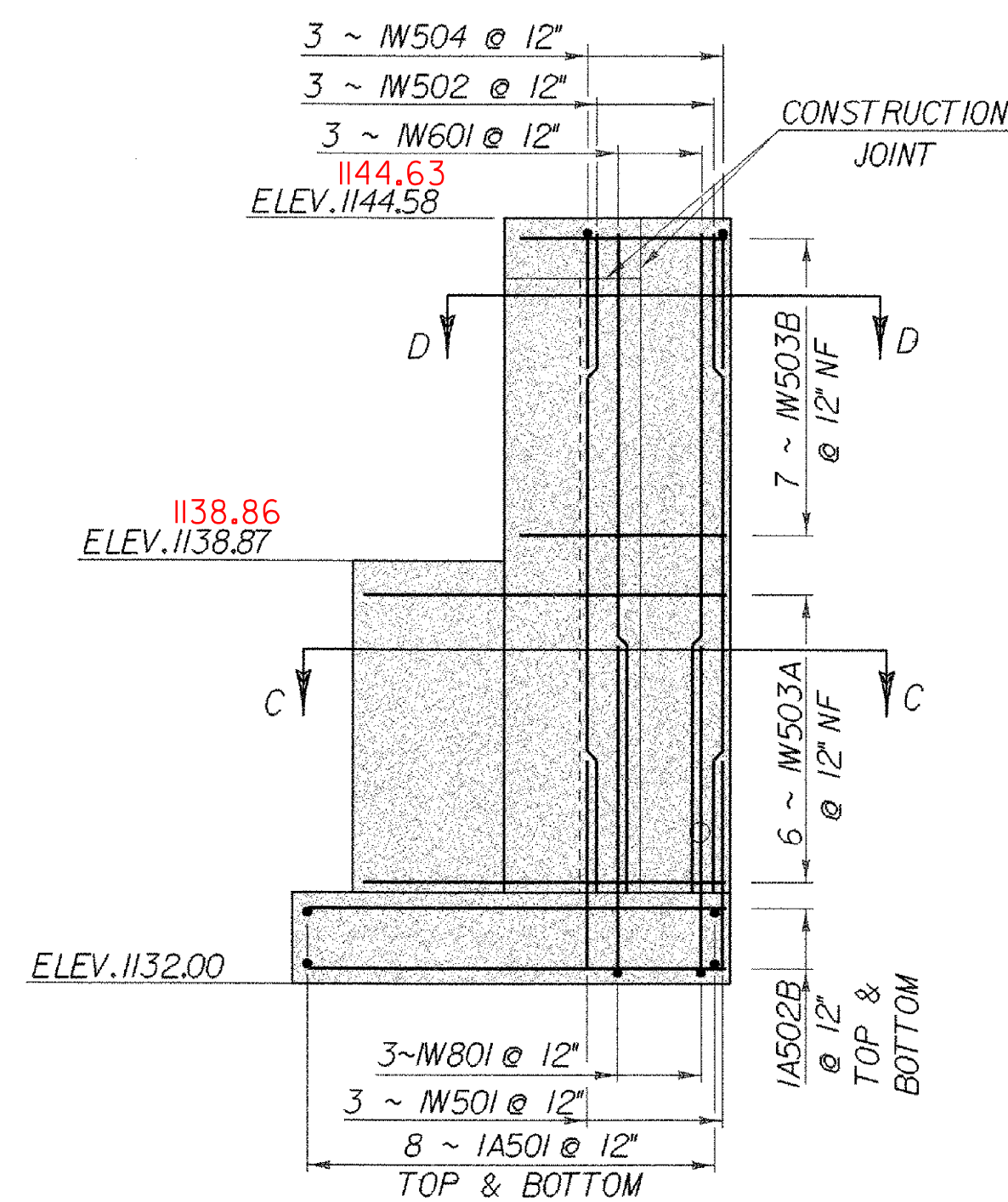
Town Of	WOODFORD	Bridge No.	BR 11
Highway No.	VT 9	Log Sta.	
		Surv. Sta.	
VT 9 OVER ROARING BRANCH OF WALLOOMSAC			
ABUTMENT * 2 REINFORCING			
Designed By	M.EVANS-MONGEON	Drawn By	R.PELLETT
Checked By	Date	Bridge Design Supervisor	
	M.EVANS-MONGEON	A.PORTALUPI	Date
PROJECT	WOODFORD	PROJECT NO.	BHF 010-1(29)
I.G.C. Info.	/846039/structures/se039subdgn	se039ar21	
Bridge Sheet No.		Sheet	72 of 106



ABUTMENT # 1
TYPICAL SECTION
(ABUT.# 2
SIMILAR)

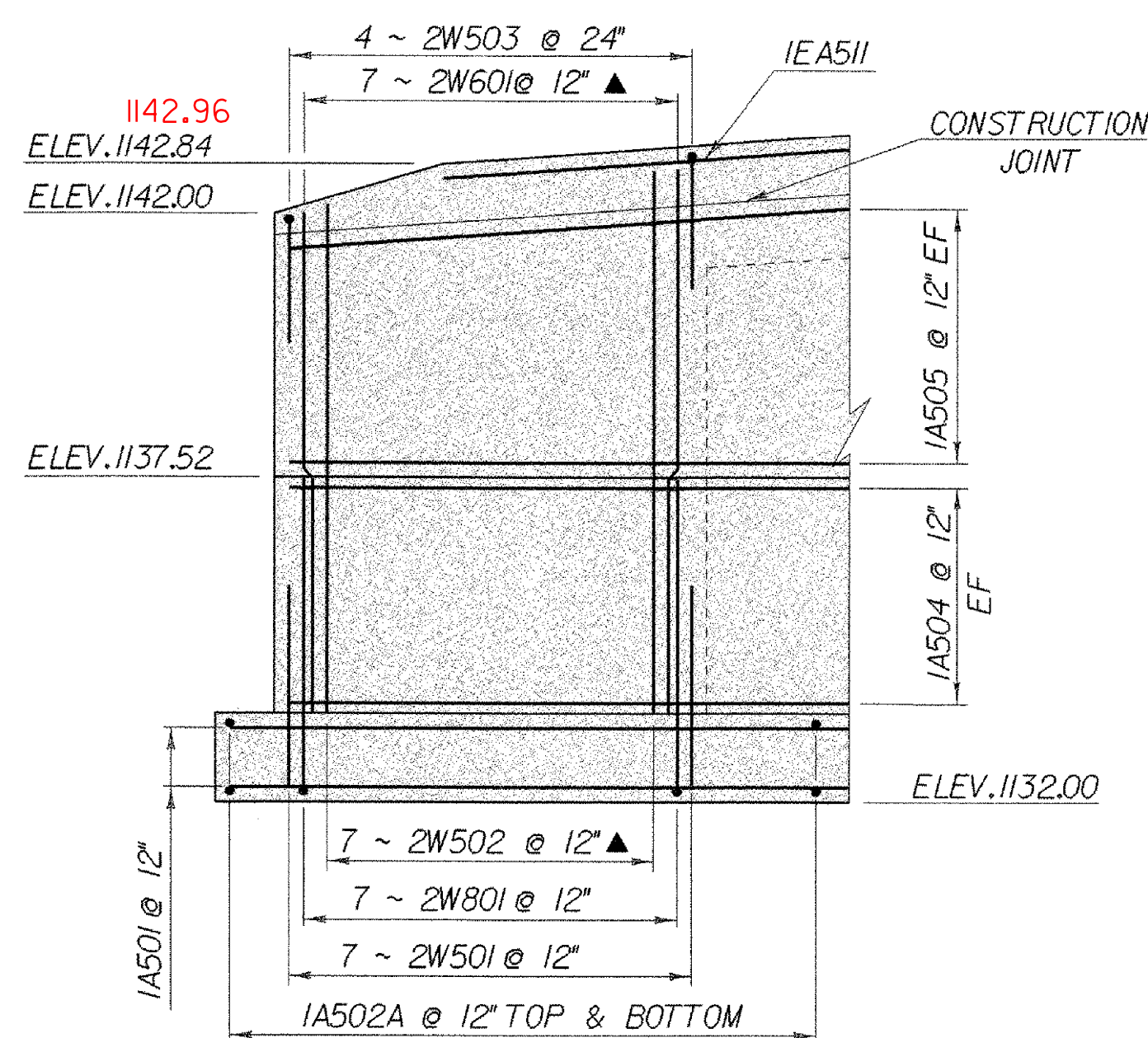
SCALE $\frac{3}{4}" = 1'-0"$

NOTE: FOR SECTION A-A AND SECTION
B-B SEE SHEET 74



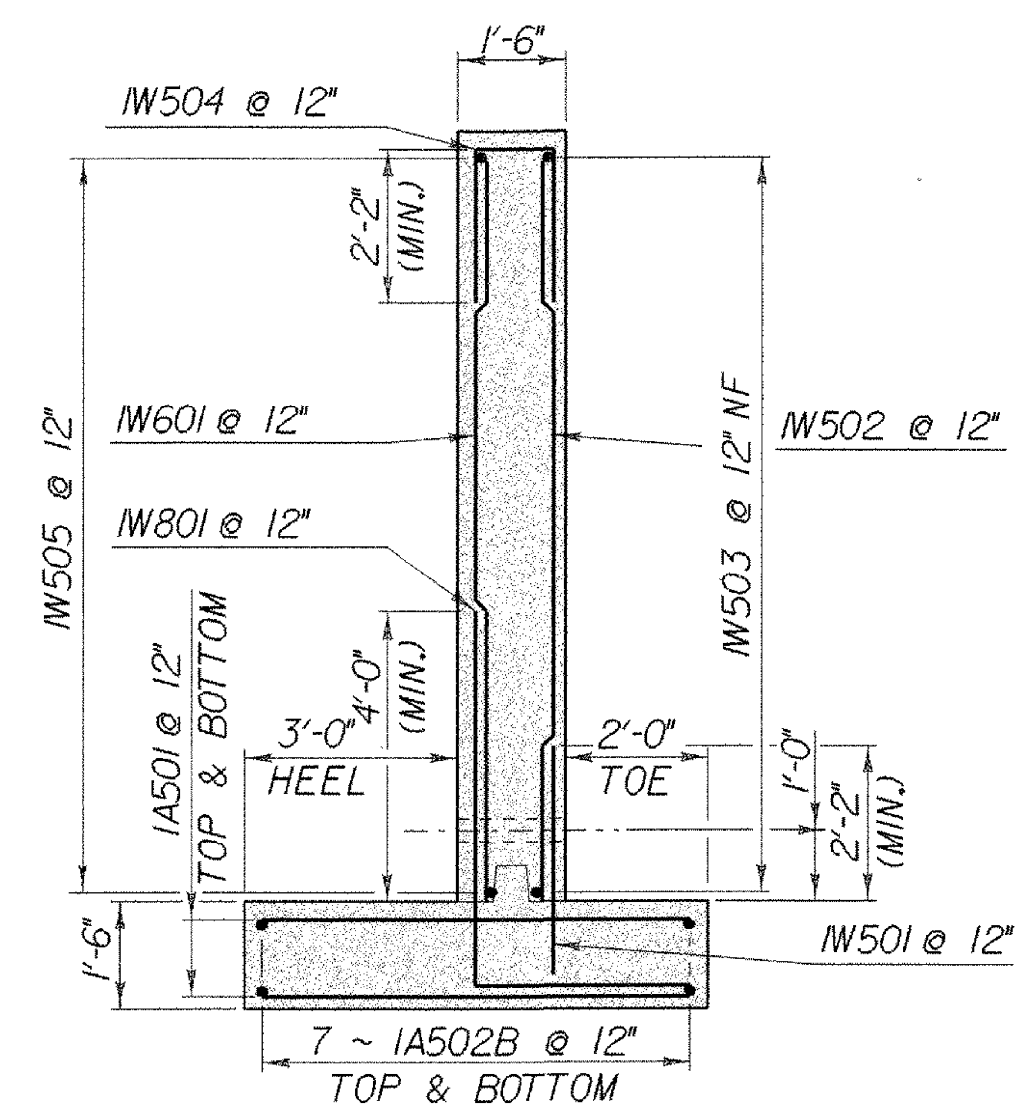
WINGWALL NO. 1 REINFORCING ELEVATION

SCALE $\frac{3}{8}" = 1'-0"$



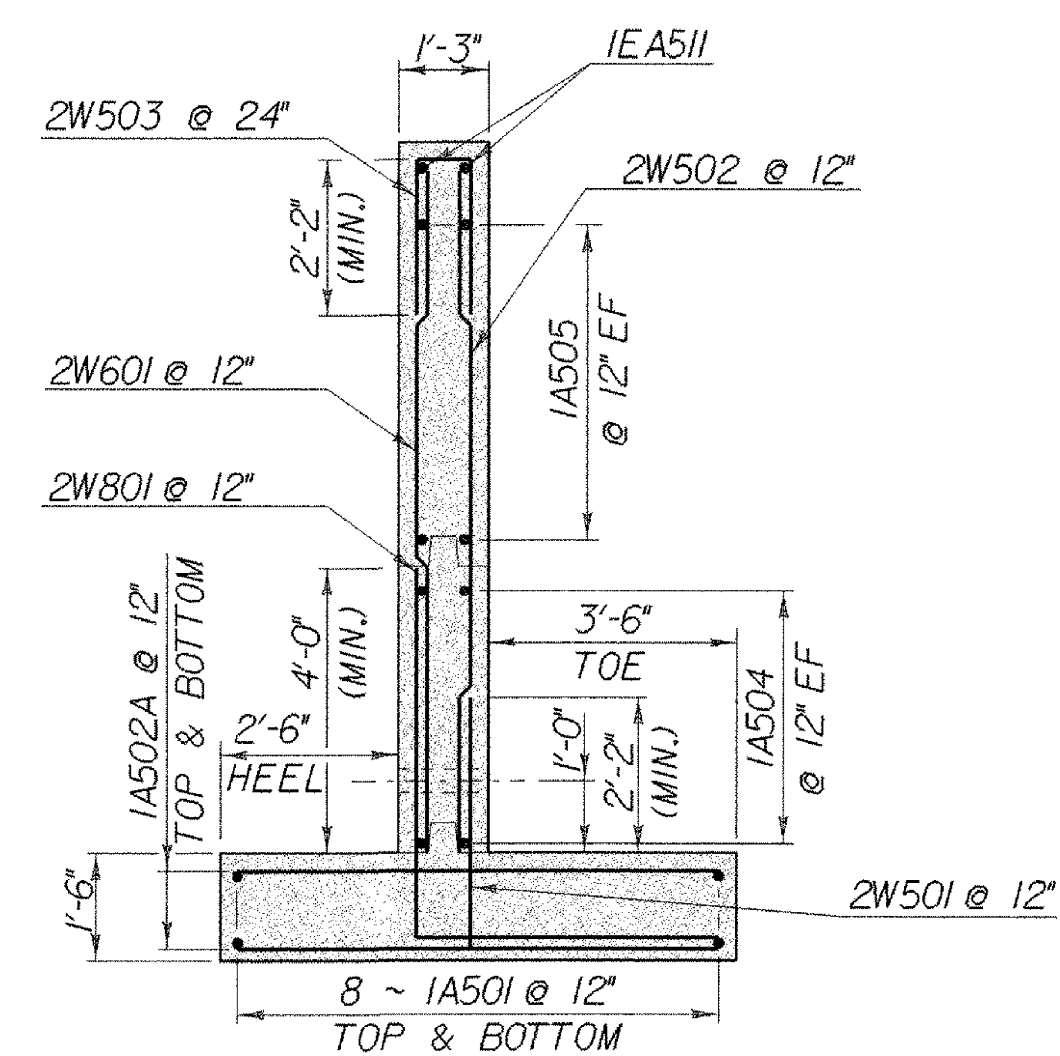
WINGWALL NO. 2 REINFORCING ELEVATION

SCALE $\frac{3}{8}" = 1'-0"$



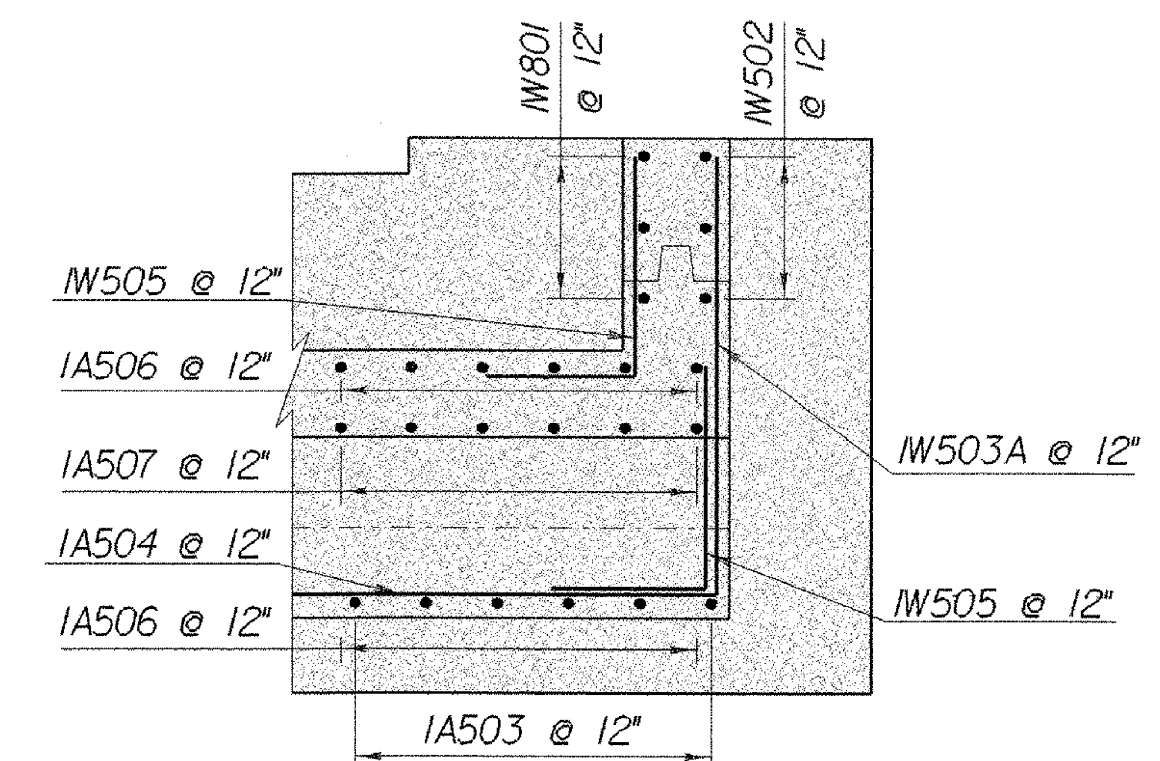
WINGWALL NO. 1 TYPICAL

SCALE $\frac{3}{8}" = 1'-0"$



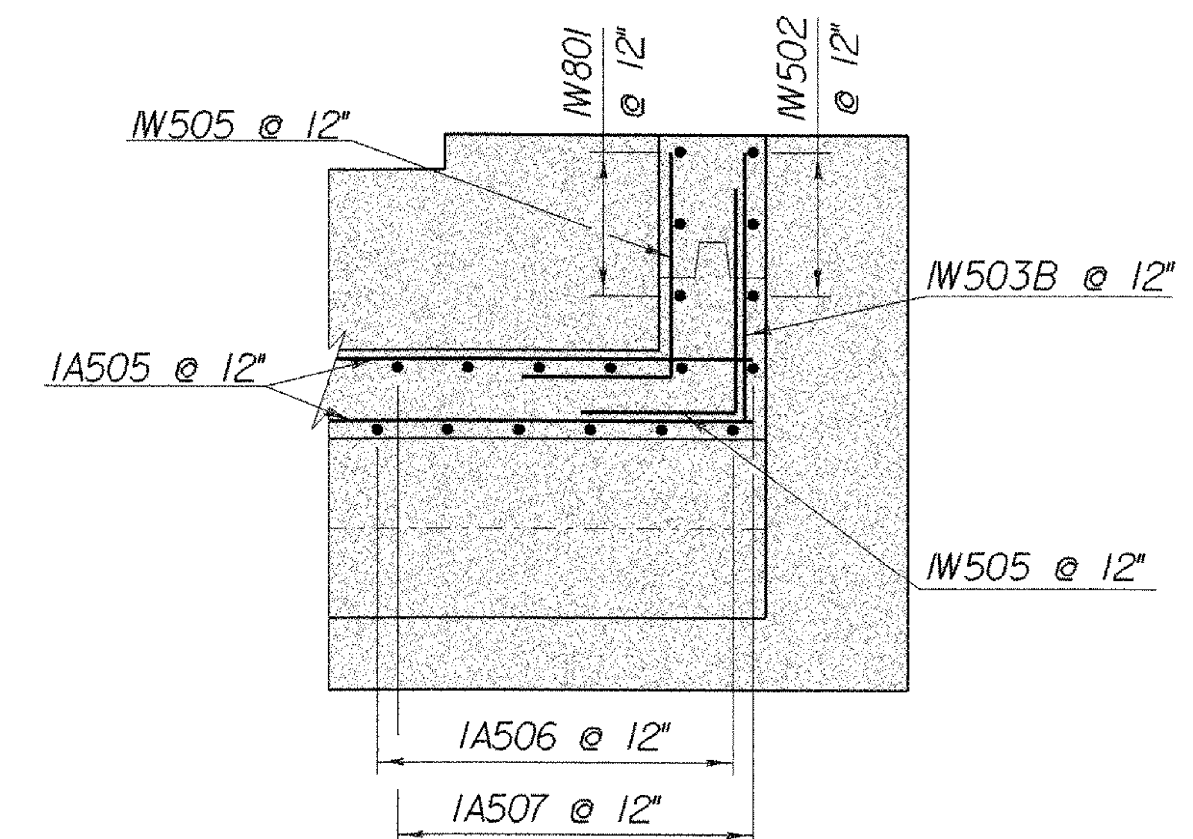
WINGWALL NO. 2 TYPICAL

SCALE $\frac{3}{8}" = 1'-0"$



SECTION C-C
CORNER DETAIL WINGWALL NO. 1

SCALE $\frac{3}{8}" = 1'-0"$

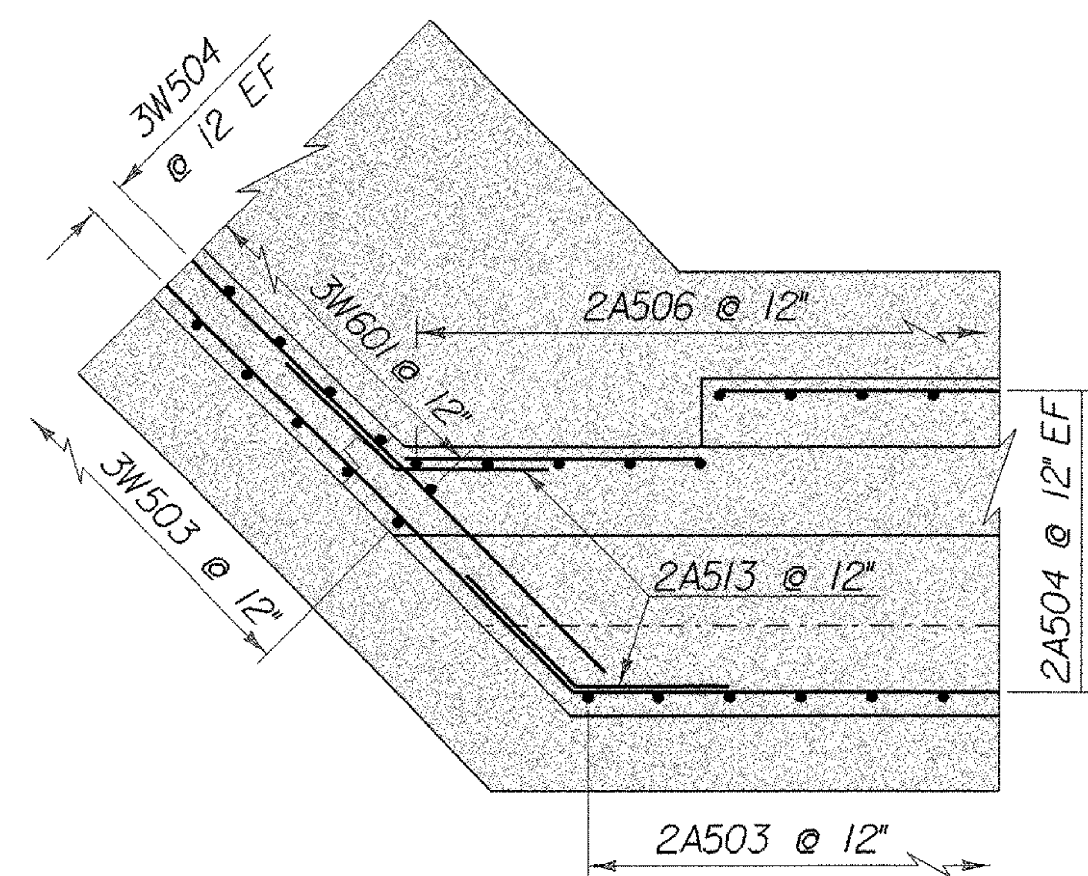


SECTION D-D
CORNER DETAIL WINGWALL NO. 1

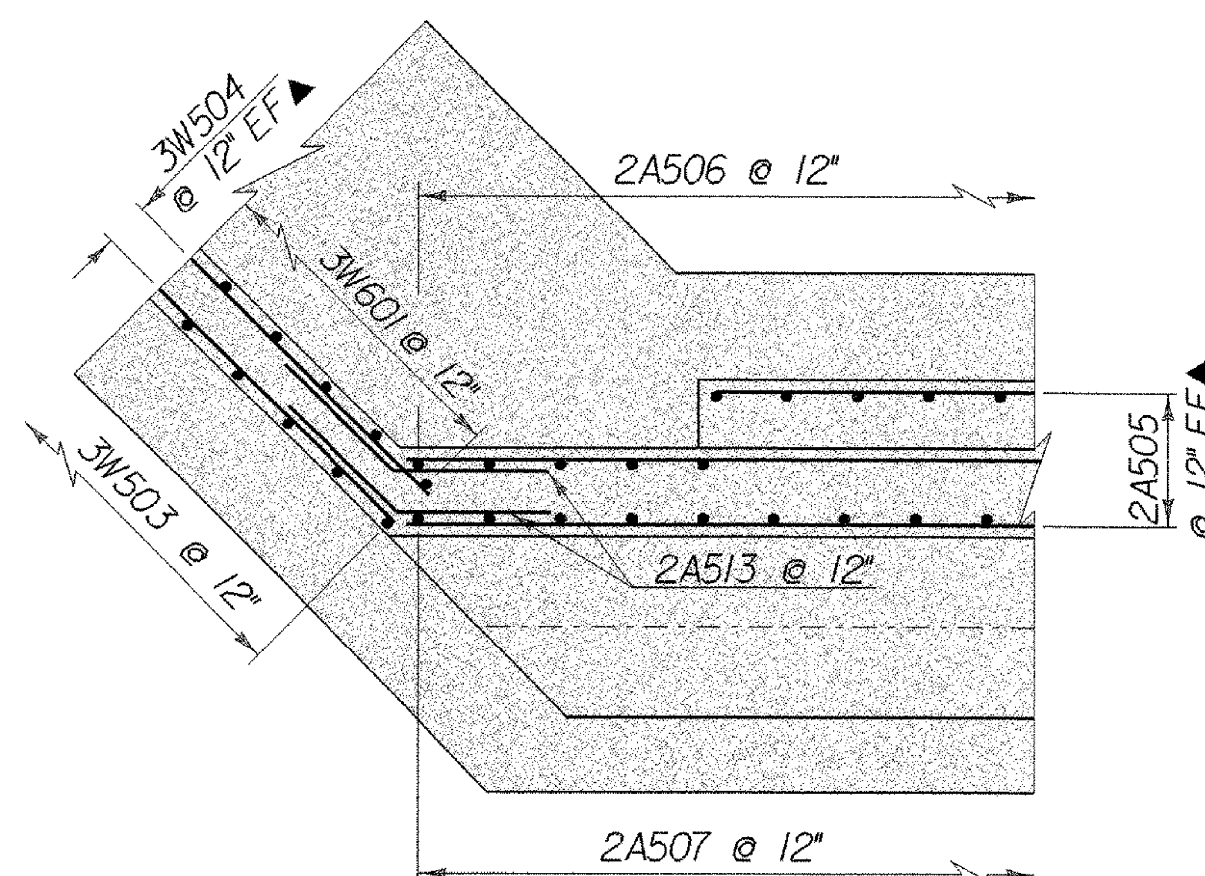
SCALE $\frac{3}{8}" = 1'-0"$

NOTE:
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLR. UNLESS OTHERWISE
SPECIFIED ON THE PLANS.

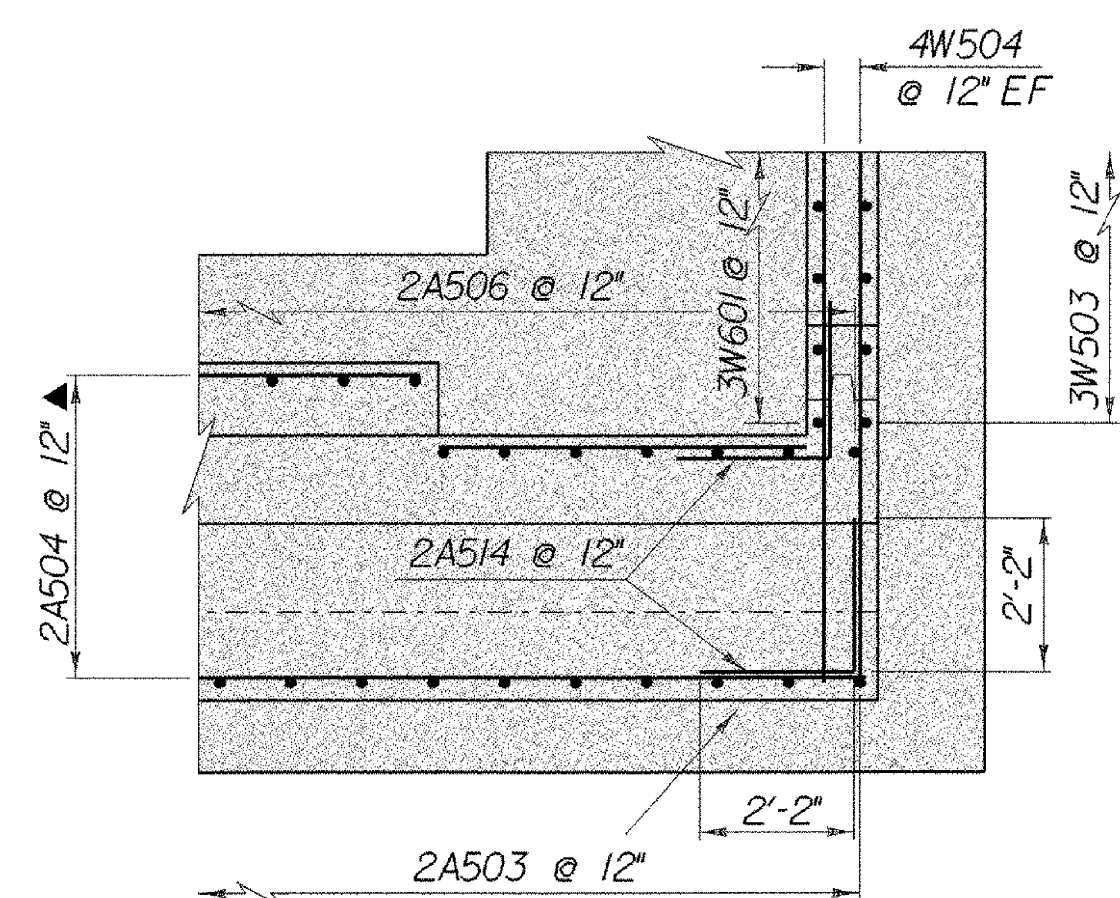
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of WOODFORD		Bridge No. BR 11	
Highway No. VT 9		Log Sta.	
		Surv. Sta.	
VT 9 OVER ROARING BRANCH OF WALLOOMSAC ABUT. TYP. SECTION WINGWALL 1&2 REINFORCING			
Designed By M. EVANS-MONGEON		Drawn By R. PELLETT	
Checked By M. EVANS-MONGEON		Bridge Design Supervisor	
PROJECT WOODFORD		PROJECT NO. BHF 010-1(29)	
I.G.C. Info. /84e039/Structures/se039sub.dgn		se039wrl1	
Bridge Sheet No.		Sheet 73 of 106	



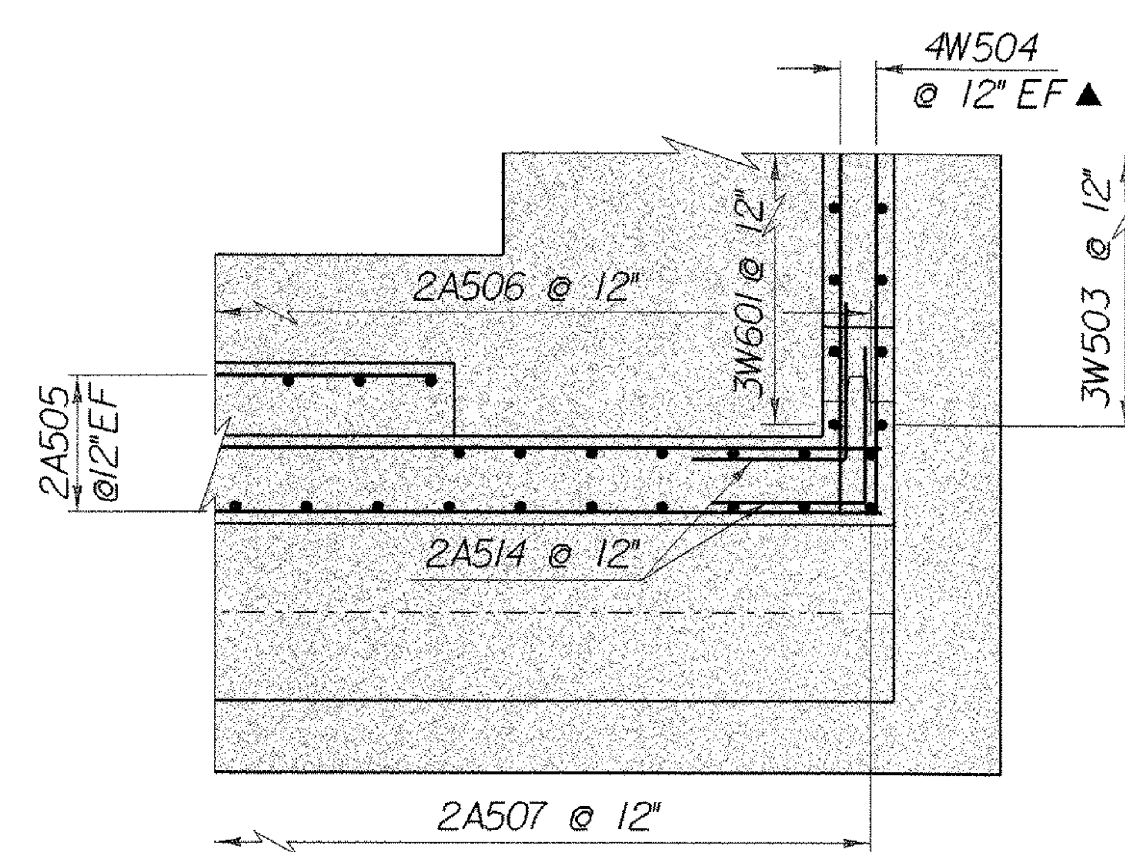
SECTION A-A
CORNER DETAIL WINGWALL NO.3



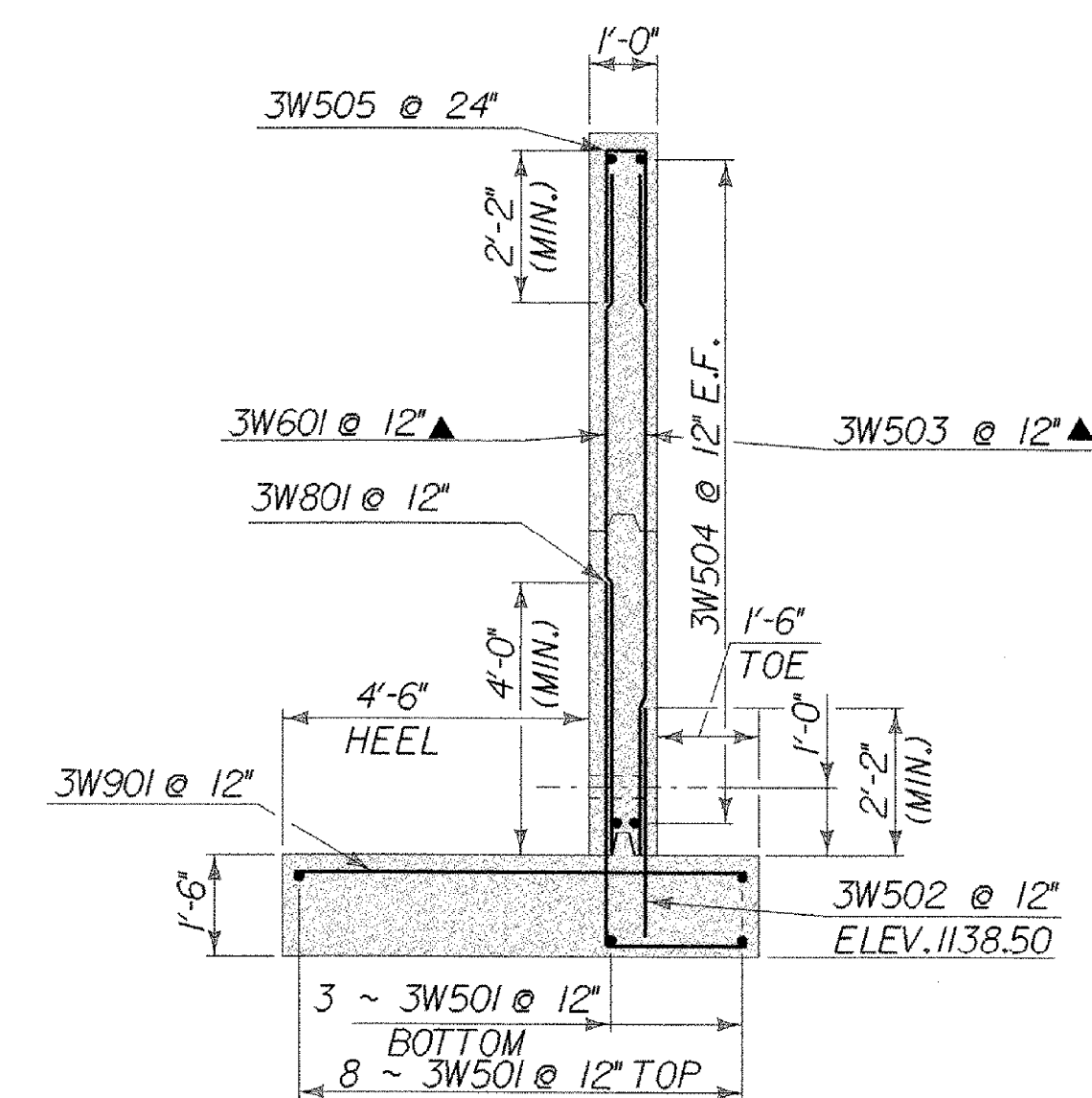
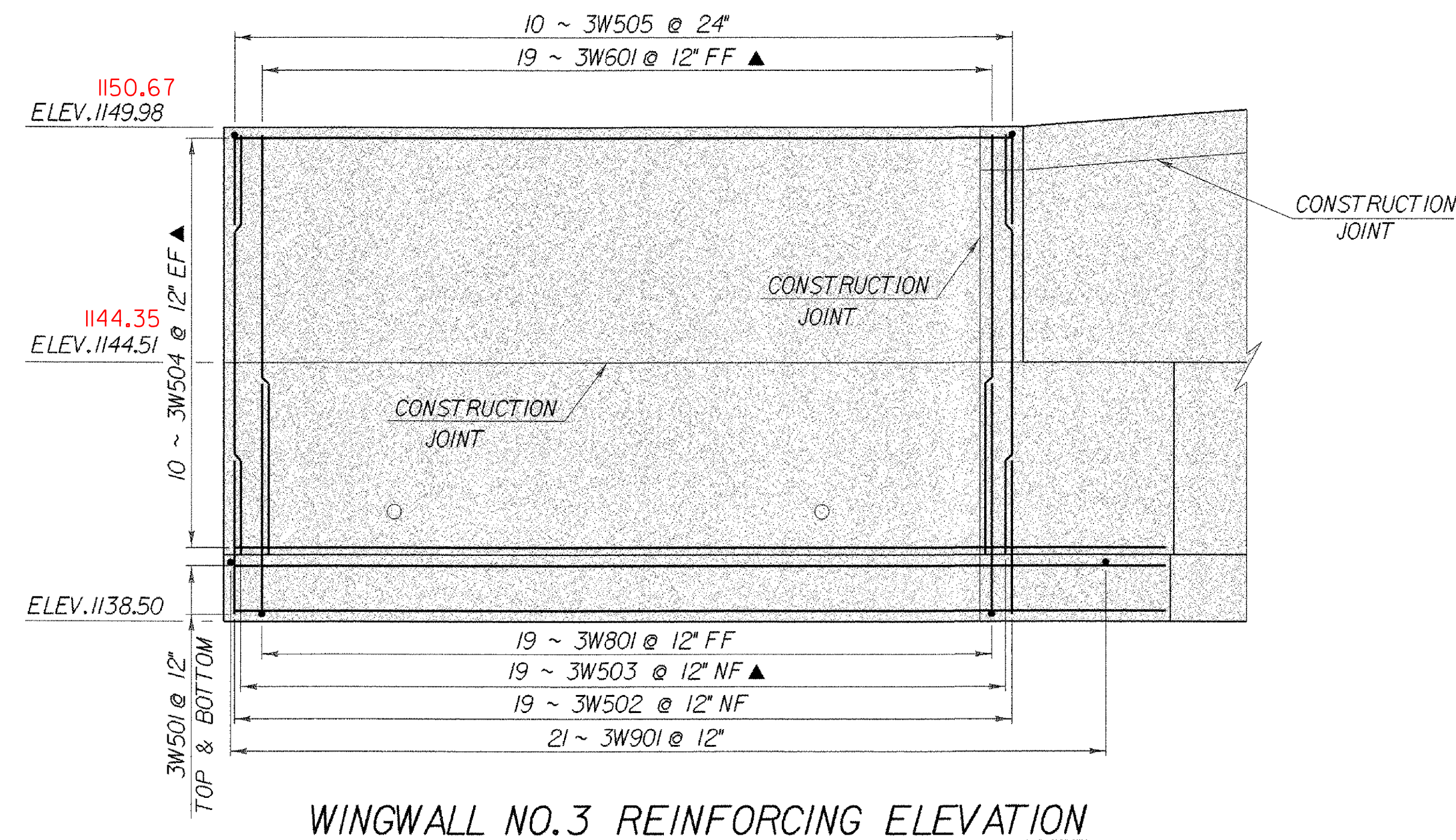
SECTION B-B
CORNER DETAIL WINGWALL NO.3



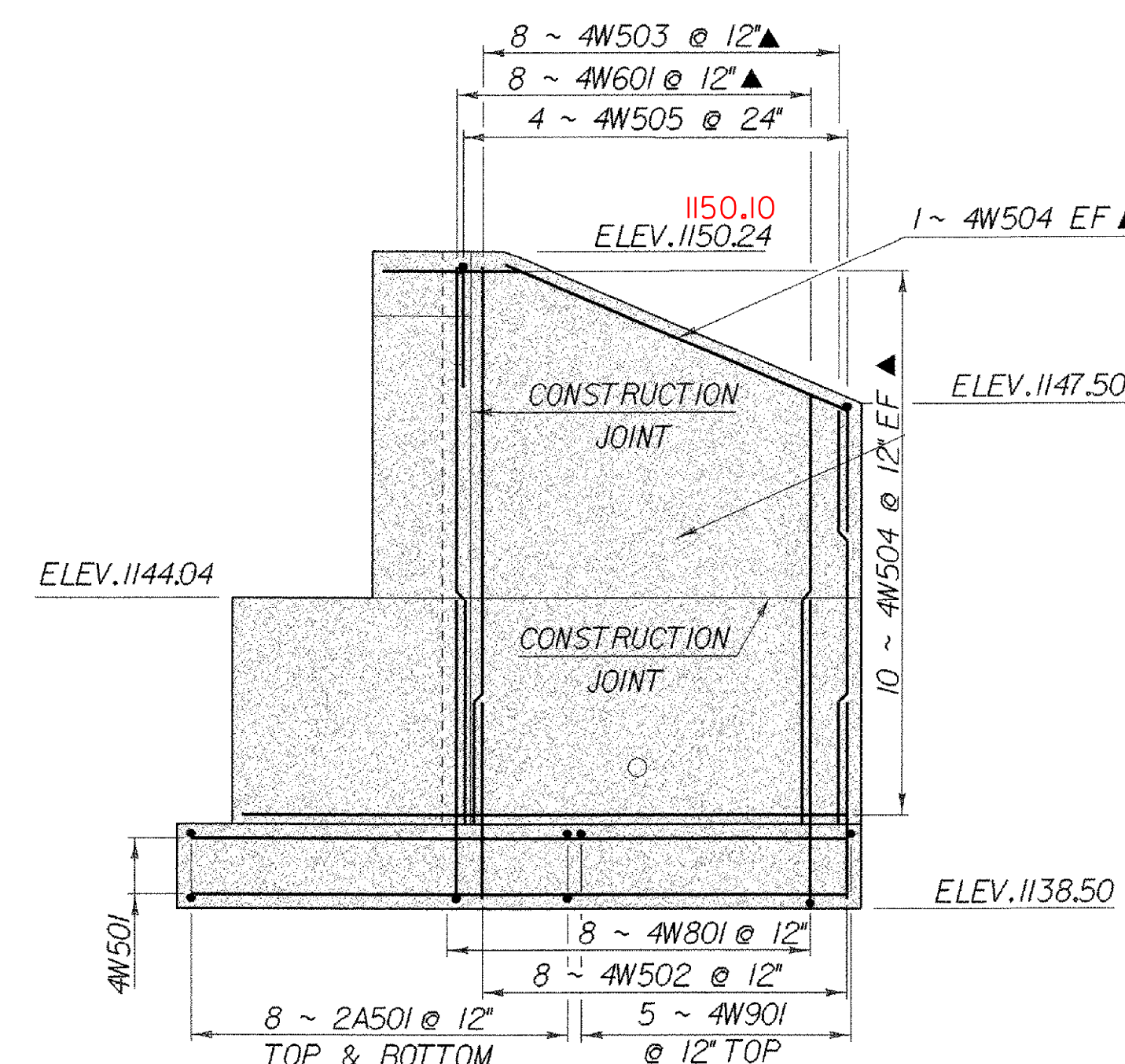
SECTION A-A
CORNER DETAIL WINGWALL NO.4



SECTION B-B
CORNER DETAIL WINGWALL NO.4



WINGWALL NO.3 TYPICAL
(WINGWALL NO.4 SIMILAR)



WINGWALL NO.4 REINFORCING ELEVATION

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLR. UNLESS OTHERWISE
SPECIFIED ON THE PLANS.

SCALE 3/8" = 1'-0"



STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	WOODFORD	Bridge No.	BR 11
Highway No.	VT 9	Log Sta.	
		Surv. Sta.	
VT 9 OVER ROARING BRANCH OF WALLOOMSAC WINGWALL 3&4 REINFORCING & CORNER DETAILS			
Designed By	M.EVANS-MONGEON	Drawn By	R.PELLETT
Checked By	M.EVANS-MONGEON	Bridge Design Supervisor	A.PORTALUPI
PROJECT	WOODFORD	PROJECT NO.	BHF 010-1(29)
I.G.C. Info.	/84e039/structures/se039subdgn		se039wr3j
Bridge Sheet No.		Sheet	74 of 106

CL VT 9

65'-0"

9'-6"

11'-6"

11'-6"

11'-6"

11'-6"

9'-6"

ELEV. 1141.01 ~ PIER 1
ELEV. 1143.39 ~ PIER 2
1143.28

ELEV. 1141.15 ~ PIER 1
ELEV. 1143.60 ~ PIER 2
1143.49

ELEV. 1141.11 ~ PIER 1
ELEV. 1143.64 ~ PIER 2
1143.53

ELEV. 1140.89 ~ PIER 1
ELEV. 1143.49 ~ PIER 2
1143.38

ELEV. 1140.49 ~ PIER 1
ELEV. 1143.16 ~ PIER 2
1143.05

ELEV. 1139.91 ~ PIER 1
ELEV. 1142.66 ~ PIER 2
1142.55

29'-6"

35'-6"

CONSTRUCTION JOINT

ELEV. 1122.00

ELEV. 1119.00

70'-0"

CL VT 9

STA

SCALE 3/8" = 1'-0"

70'-0"

28'-0"

34'-0"

11'-0"

45°

CL01

CL02

CL03

CL04

CL05

CL06

STA. 65+74 ~ PIER 1
STA. 66+88 ~ PIER 2

4'-0"

8'-0"

11'-6"

11'-6"

11'-6"

11'-6"

8'-0"

4'-0"

11'-6 5/8" (TYP.)

5'-9 1/4"

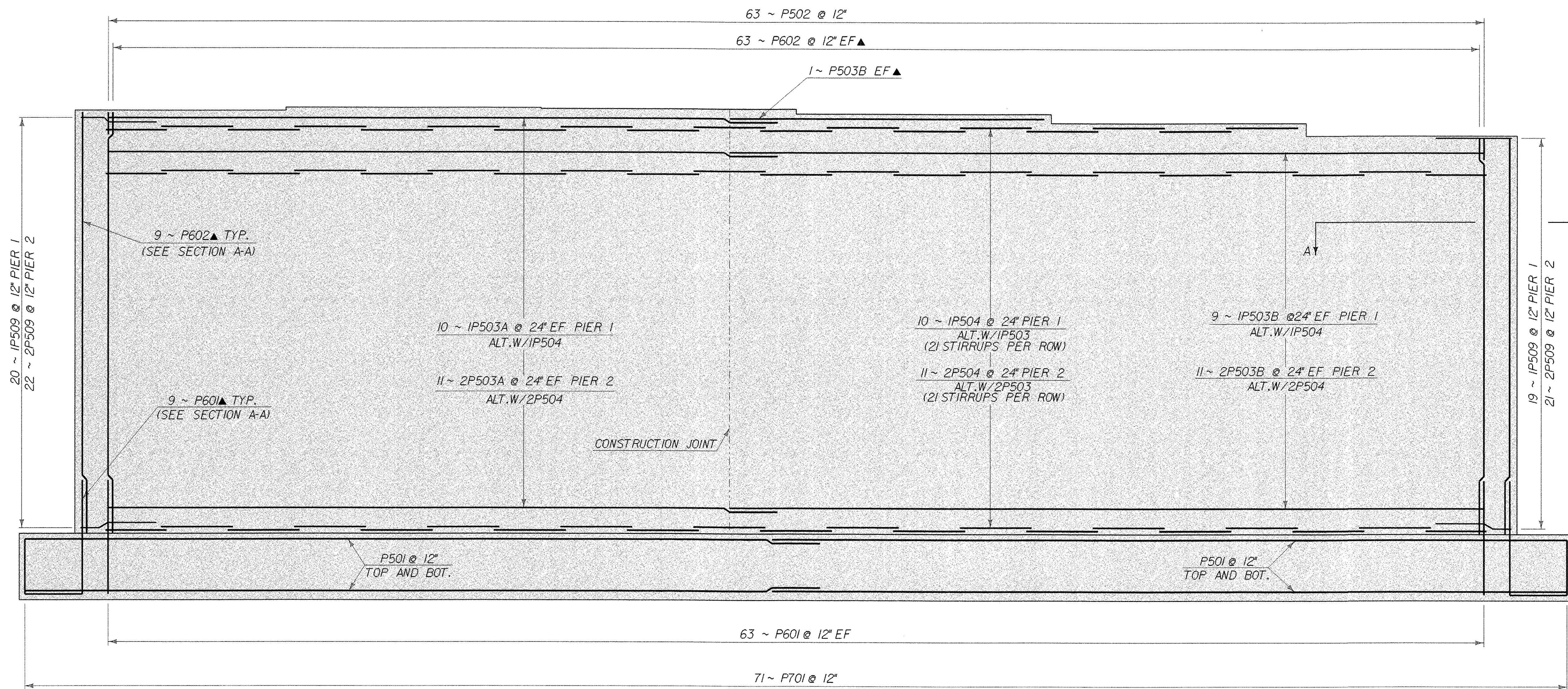
5'-9 1/4"

11'-6 5/8" (TYP.)

SCALE 3/8" = 1'-0"

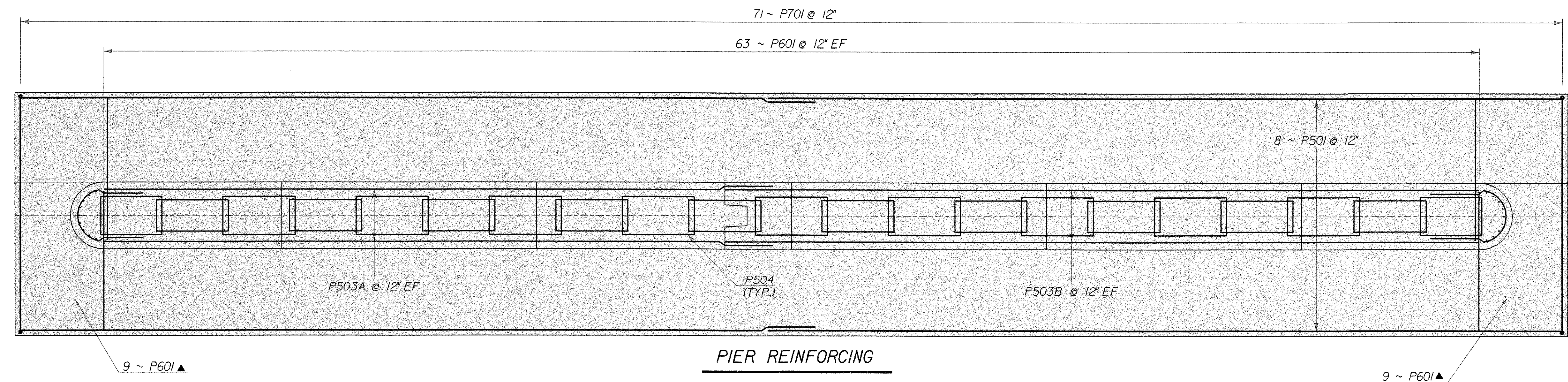
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of WOODFORD		Bridge No. BR 11	
Highway No. VT 9		Log Sta.	
		Surv. Sta.	
VT 9 OVER ROARING BRANCH OF WALLOOMSAC			
PIER PLAN AND ELEVATION			
Designed By M. EVANS-MONGEON	Drawn By R. VANHAMBURG		
Checked By M. EVANS-MONGEON	Date	Bridge Design Supervisor	Date
PROJECT WOODFORD		PROJECT NO. BHF 010-K291	
I.G.C. Info. /B4e039/structures/se039pier.dgn		se039pr11	
Bridge Sheet No.		Sheet	75 of 106

PLOTTED 03-OCT-2005



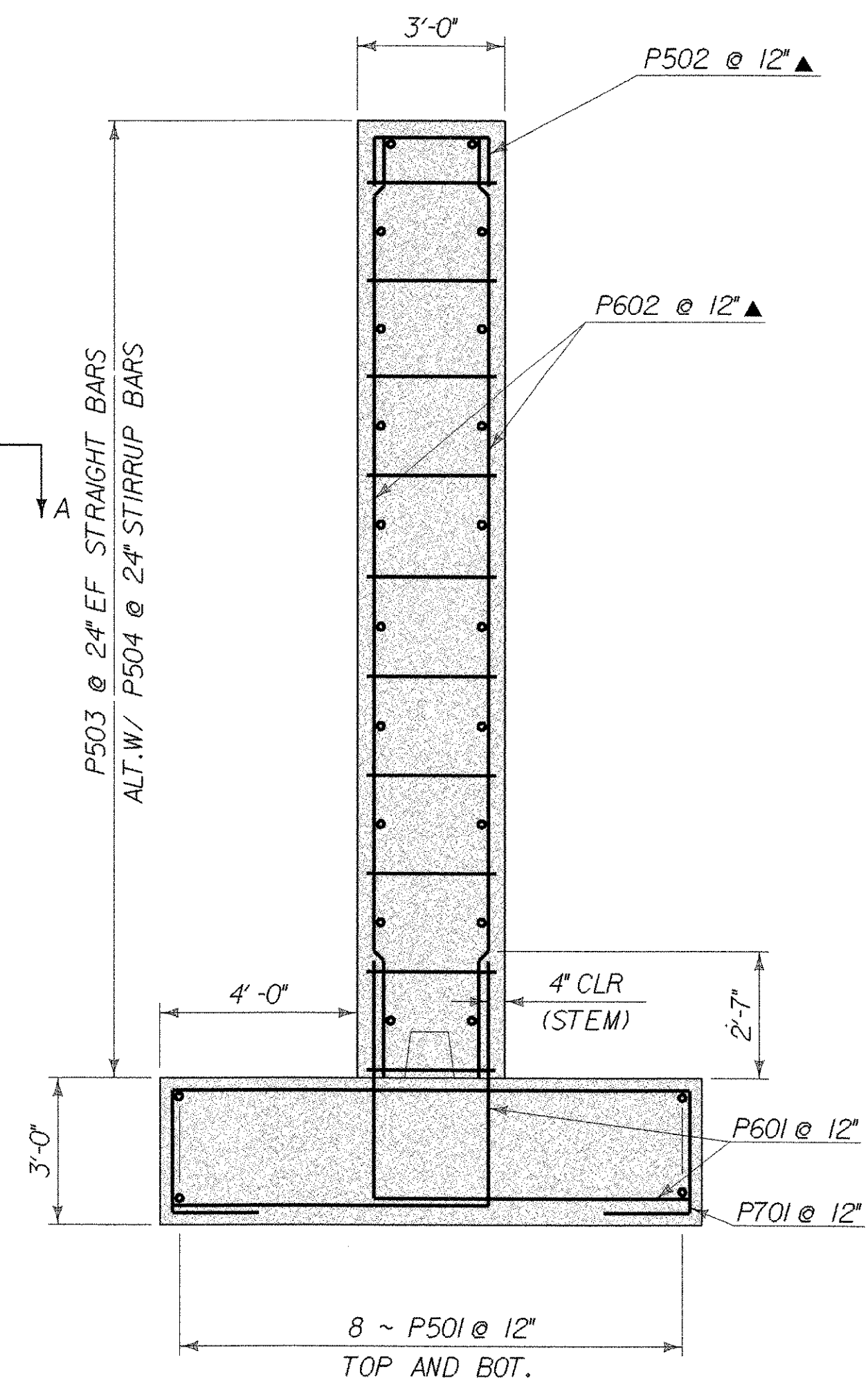
PIER ELEVATION

SCALE $\frac{3}{8}" = 1'-0"$
1 0 1 2 3 4



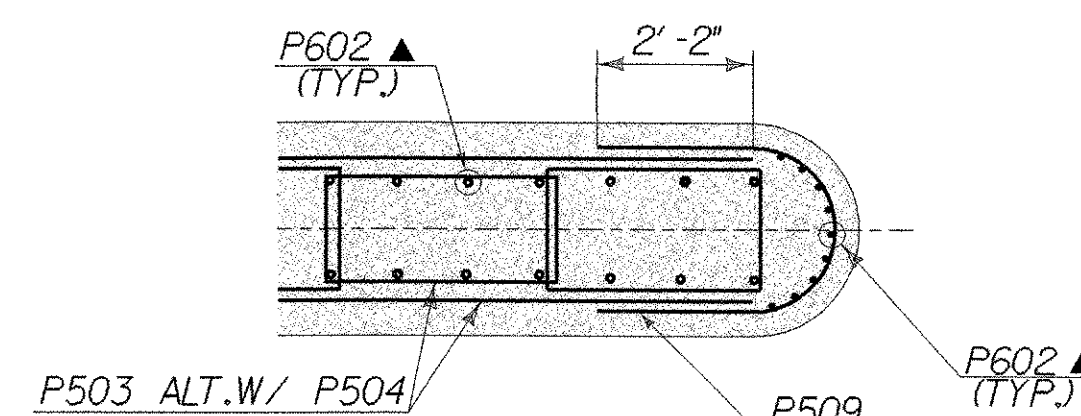
PIER REINFORCING

SCALE $\frac{3}{8}" = 1'-0"$
1 0 1 2 3 4



PIER TYPICAL SECTION

SCALE $\frac{3}{8}" = 1'-0"$
1 0 1 2 3 4



SECTION A-A

SCALE $\frac{3}{8}" = 1'-0"$
1 0 1 2 3 4

STATE OF VERMONT AGENCY OF TRANSPORTATION

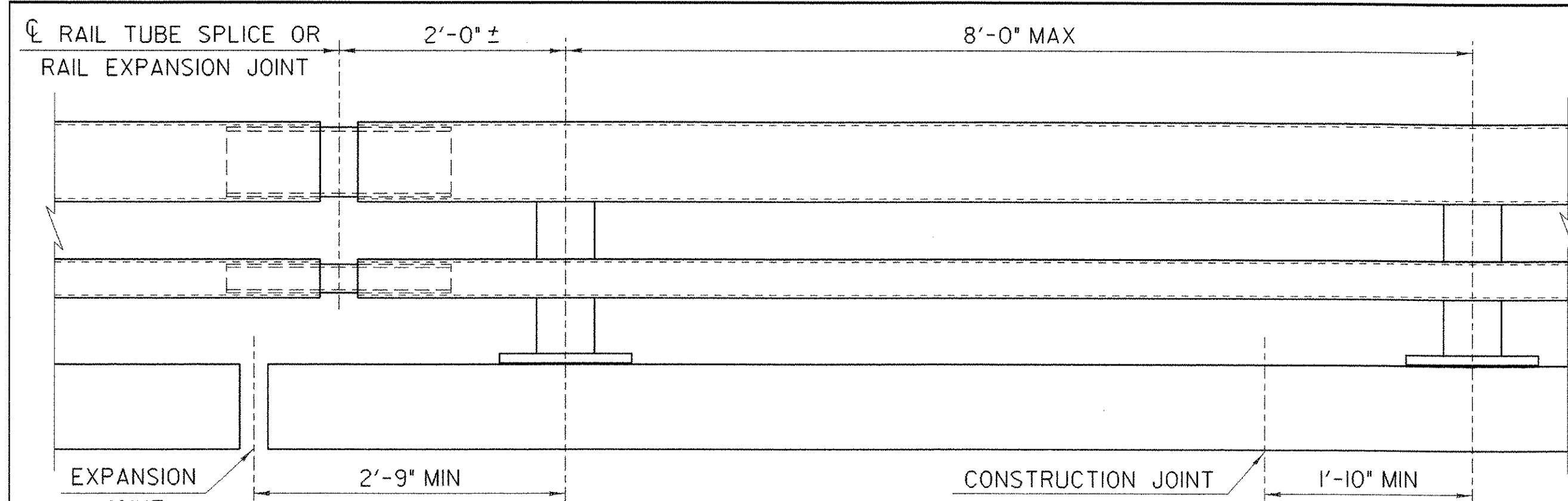
Town Of **WOODFORD** Bridge No. **BR 11**
Highway No. **VT 9** Log Sta.
Surv. Sta.
VT 9 OVER ROARING BRANCH OF WALLOOMSAC

PIER REINFORCING

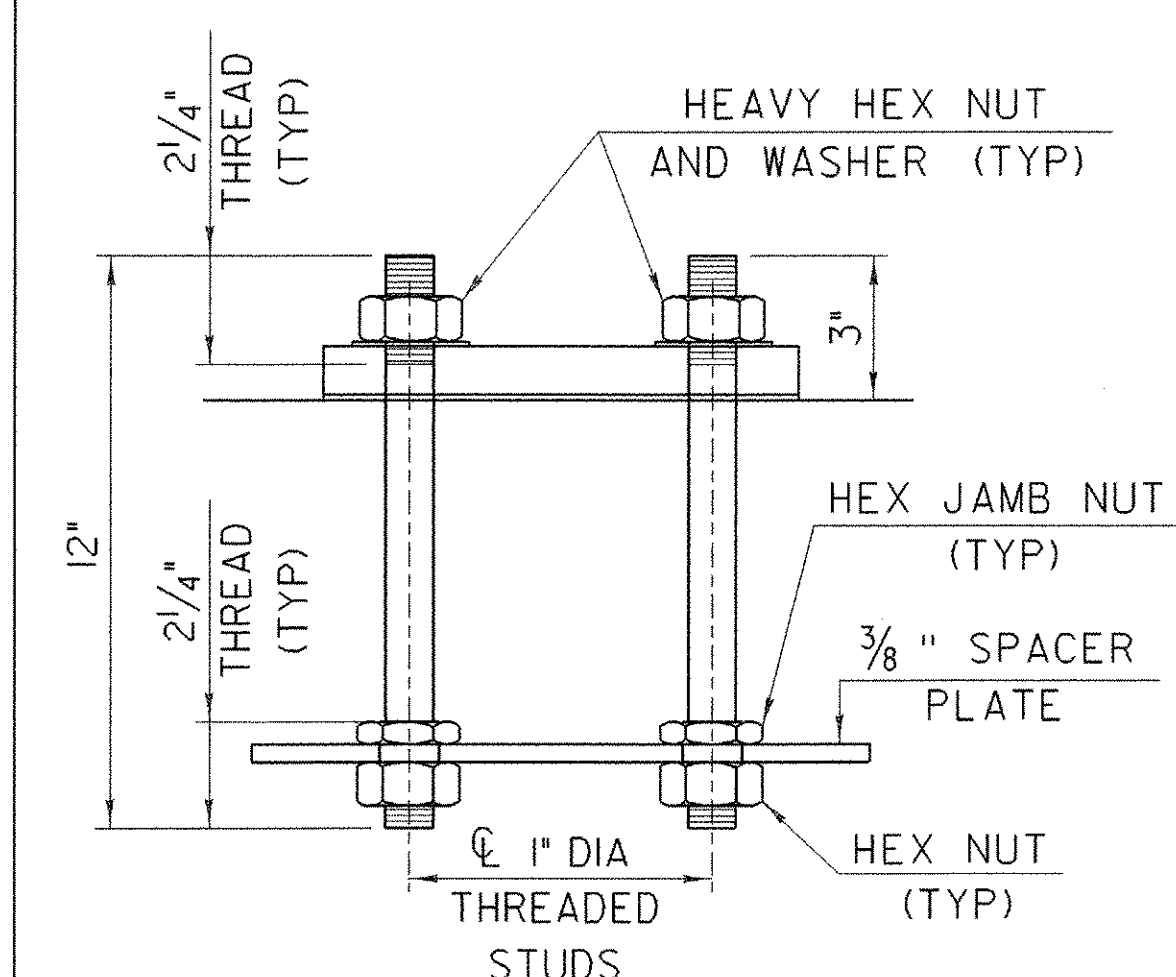
Designed By **M.EVANS-MONGEON** Drawn By **R.VANHAMBURG**
Checked By **M.EVANS-MONGEON** Date **DATE** Bridge Design Supervisor **DATE**
A.PORTALUPI Date

PROJECT **WOODFORD** PROJECT NO. **BHF 010-K(29)**

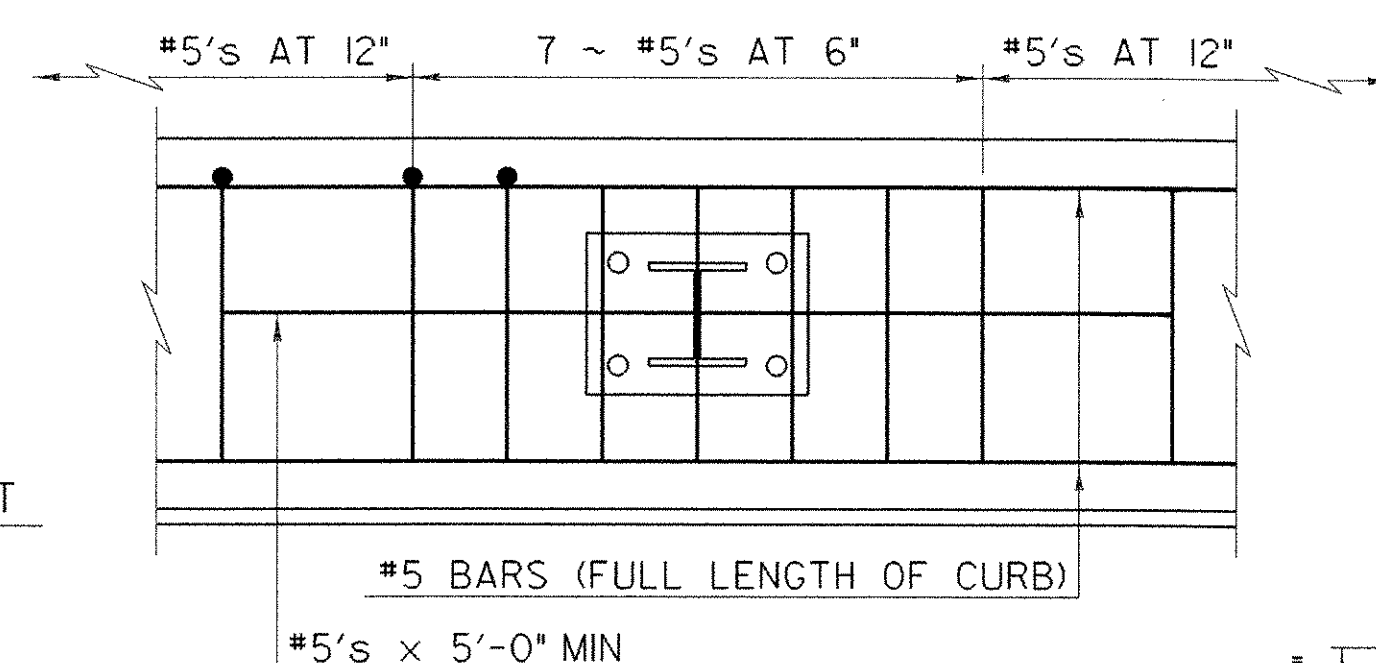
I.G.C. Info. /84e039/structures/se039pier.dgn se039prj
Bridge Sheet No. **76 of 106**



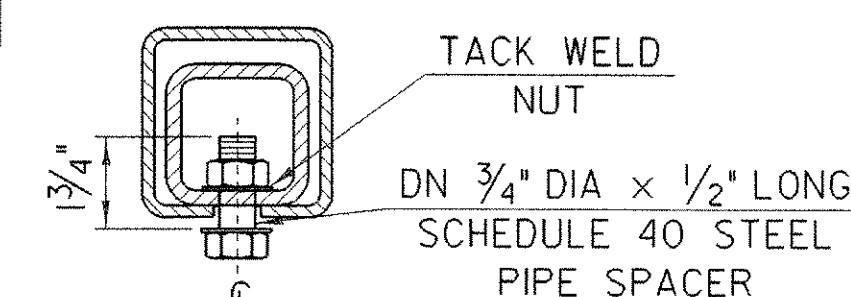
BRIDGE RAILING ELEVATION



RAIL POST ANCHORAGE

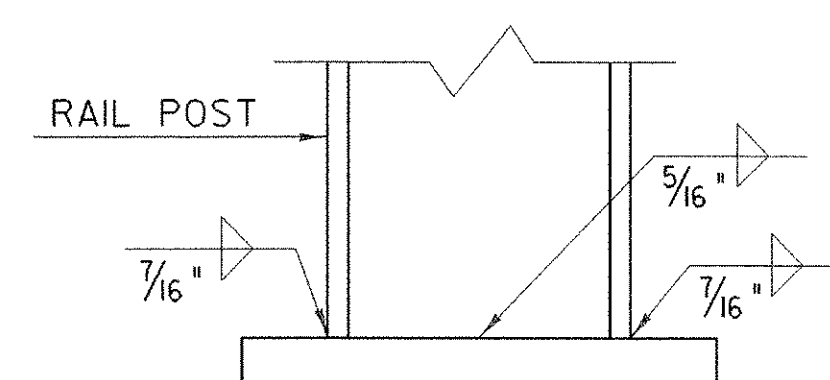


CURB REINFORCING PLAN

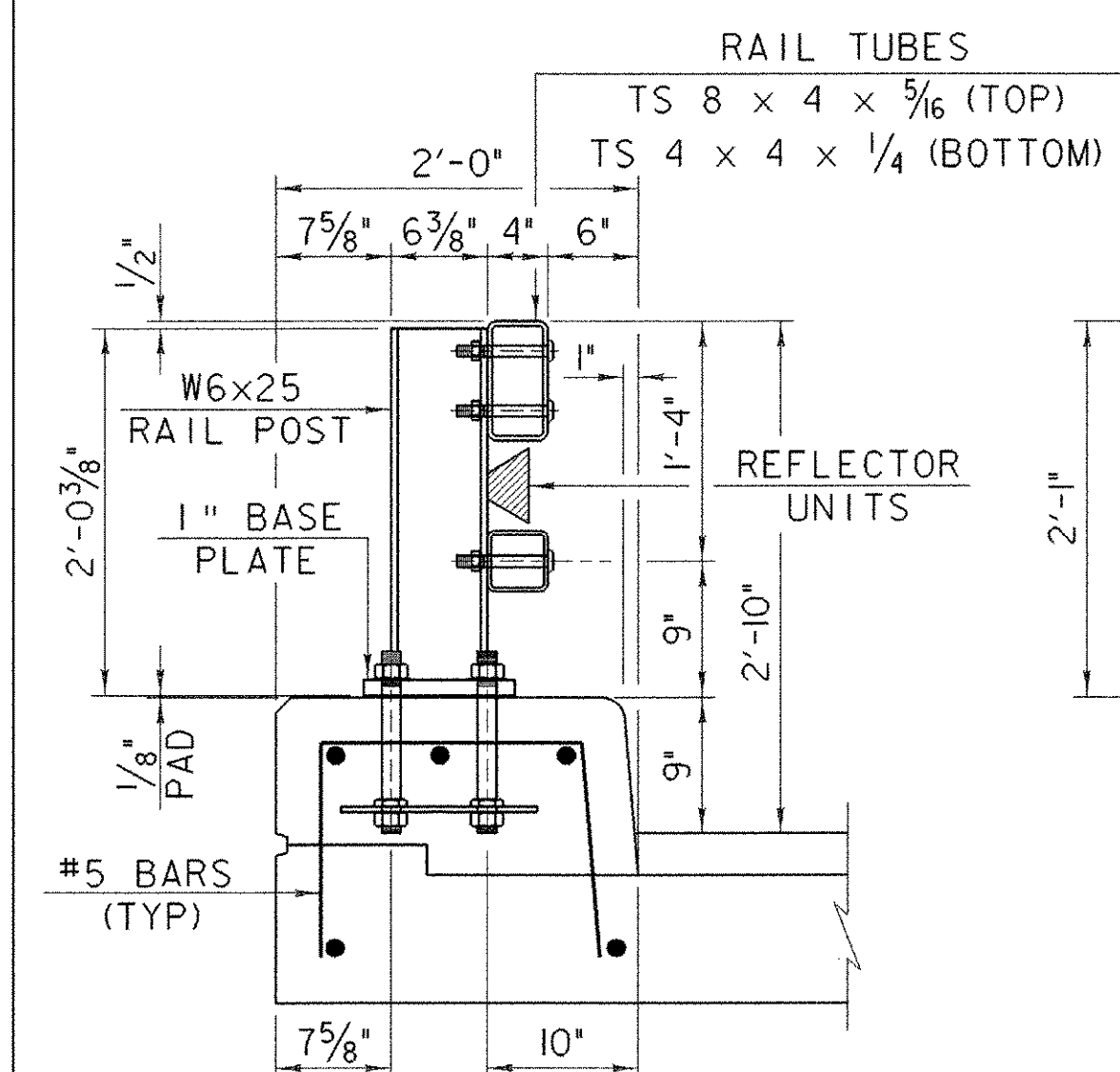


EXPANSION JOINT SECTION

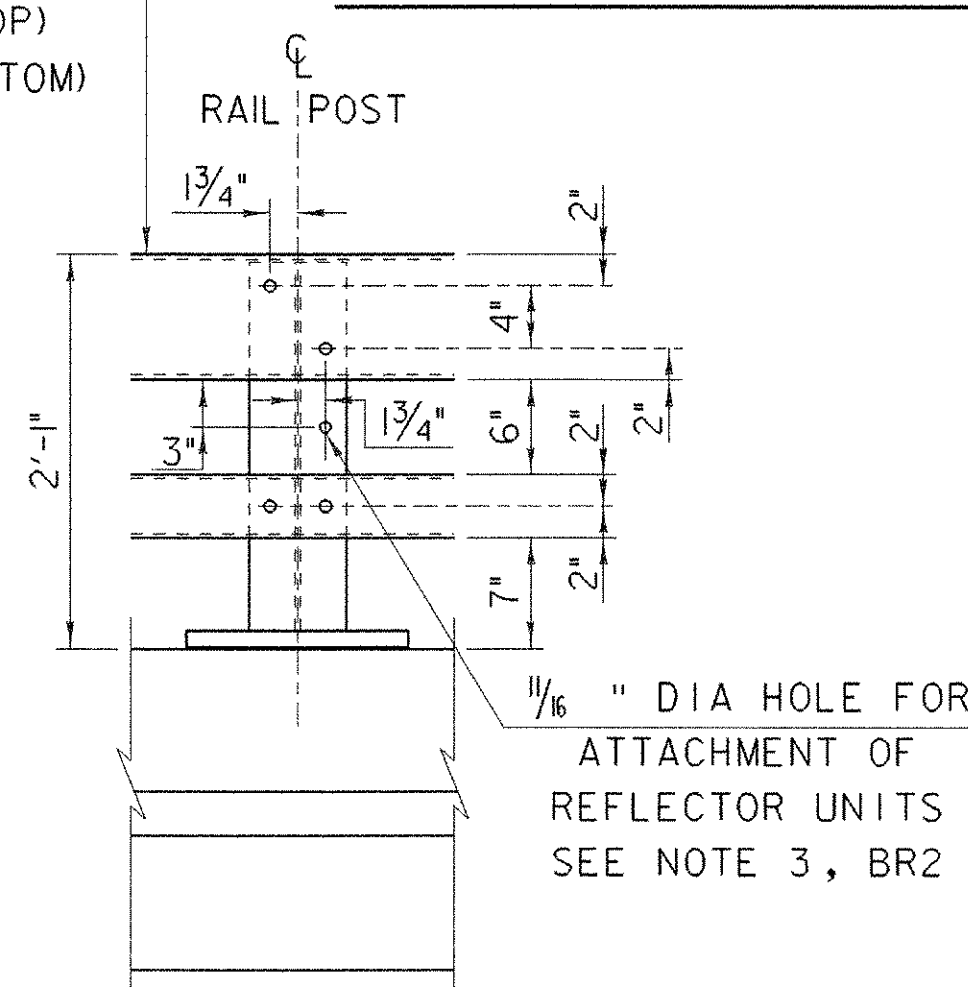
FOR DETAILS NOT SHOWN, SEE "RAIL TUBE SPLICE SECTION."



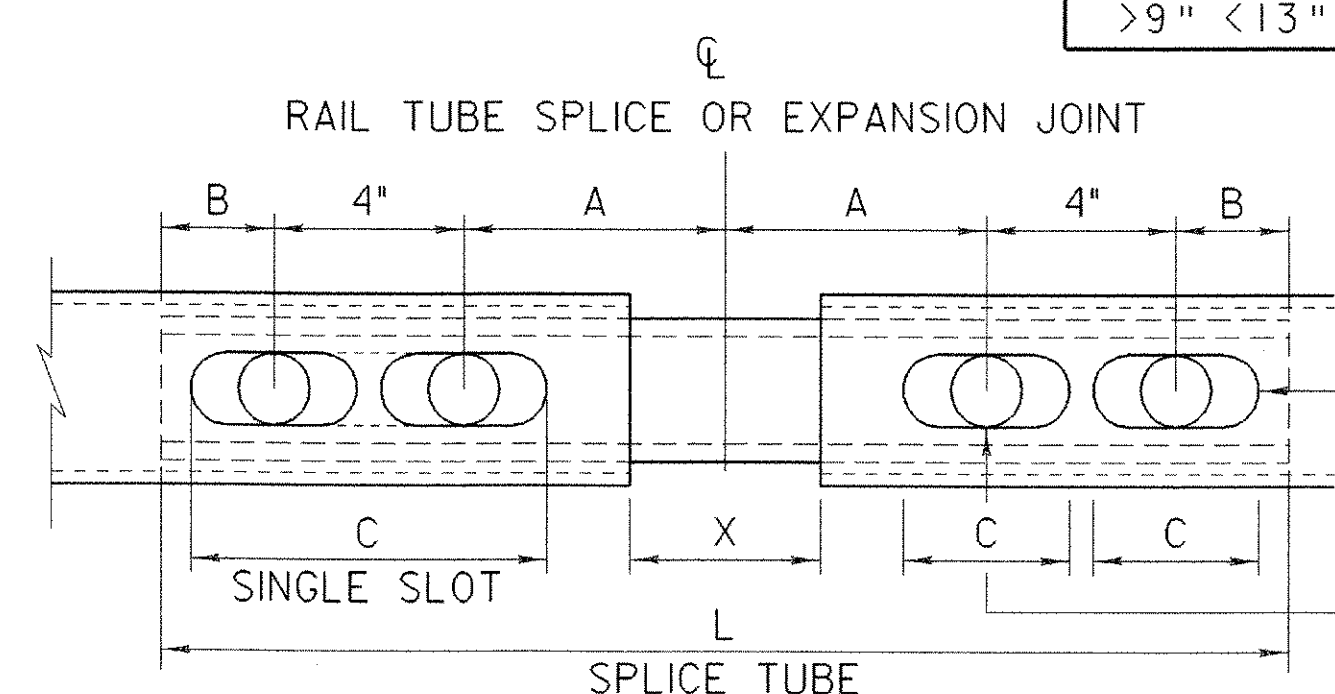
BASE WELD DETAIL



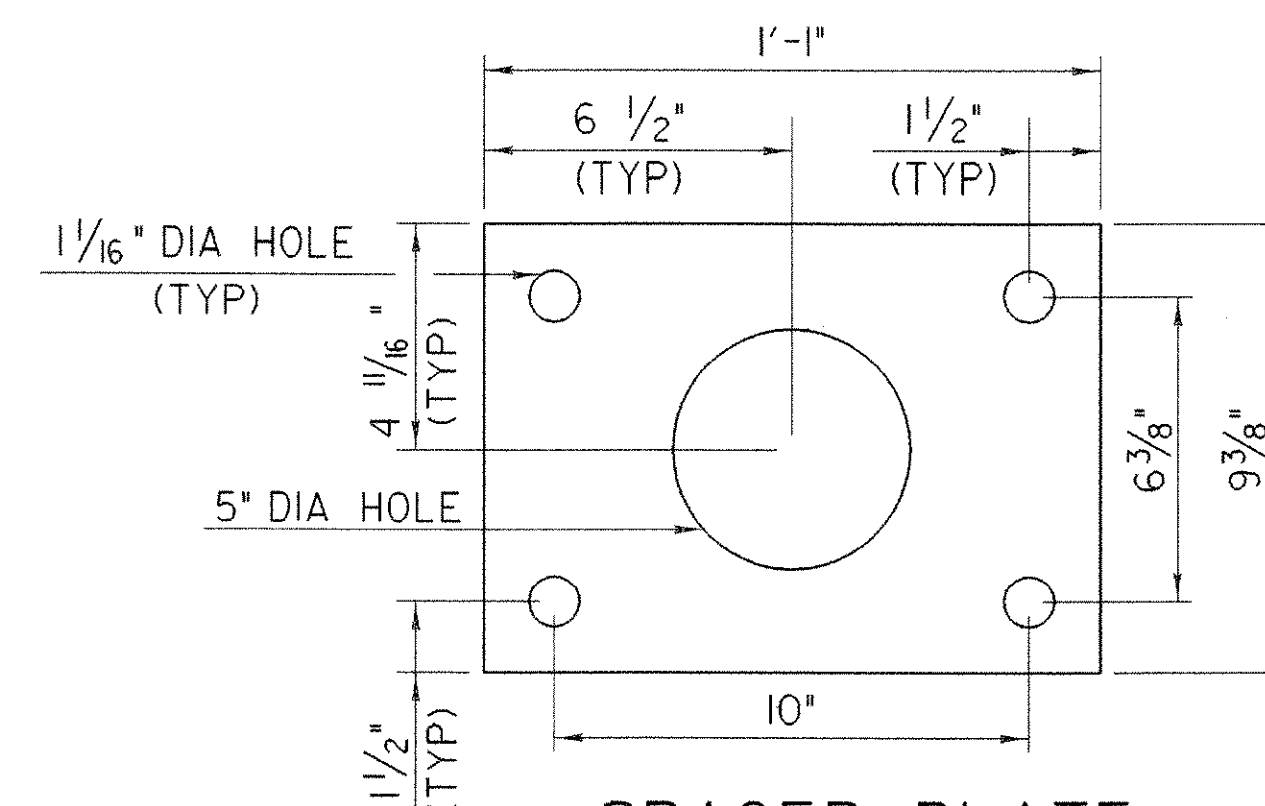
TYPICAL SECTION



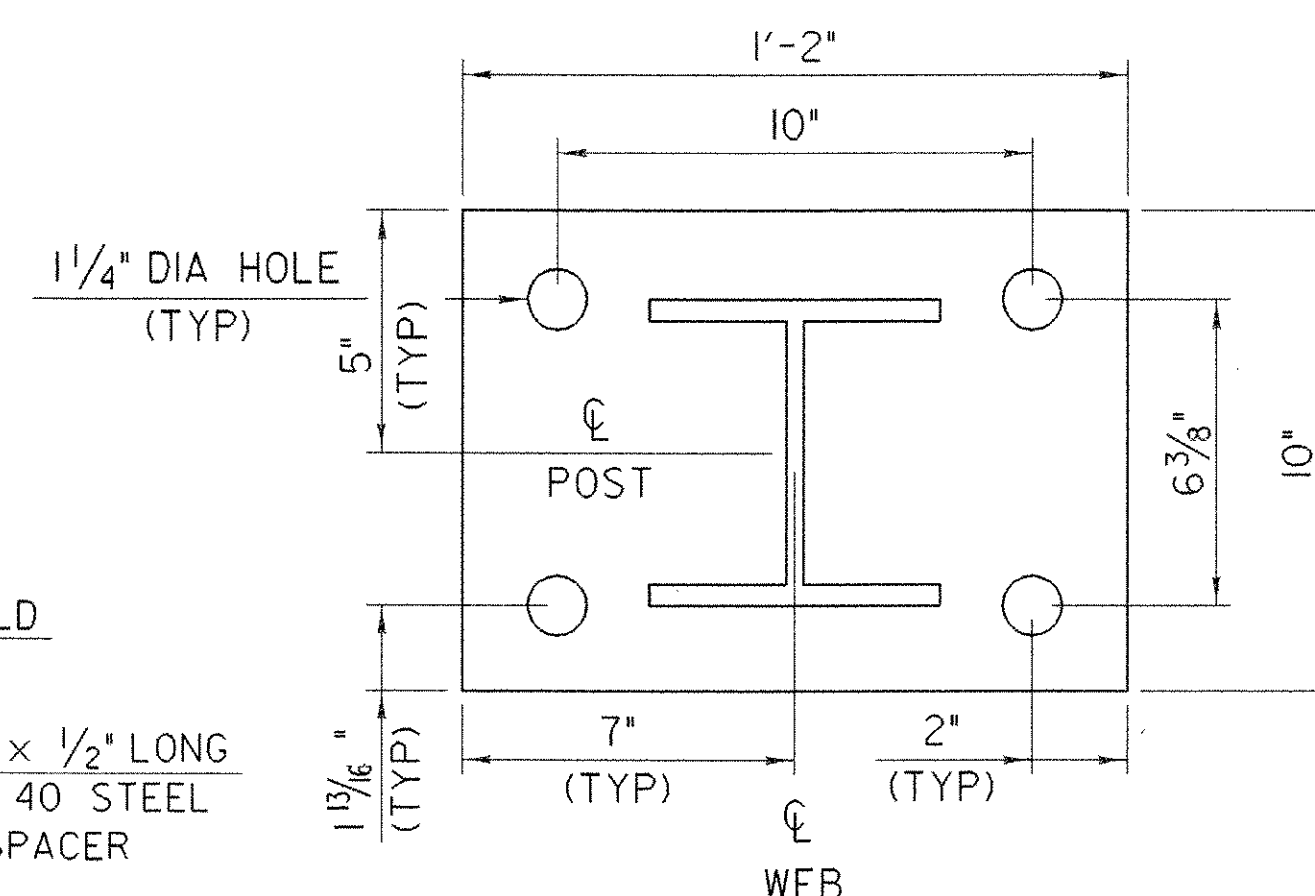
ELEVATION



RAIL TUBE SPLICE AND RAIL EXPANSION JOINT DETAIL (BOTTOM VIEW)



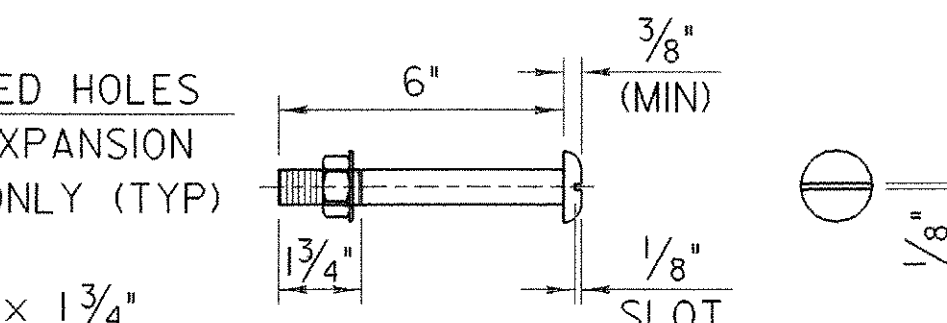
SPACER PLATE



POST AND BASE PLATE

SPLICE TABLE					
T	A	B	C	L	X
N/A	4"	2"	--	20"	3/4"
EXPANSION JOINT TABLE					
<4"	4"	2"	2 1/2"	20"	2 1/2"
>4" <6 1/2"	5 1/2"	2 3/8"	3 1/2"	23 3/4"	4"
>6 1/2" <9"	6 1/2"	3 3/8"	9"*	27 3/4"	5"
>9" <13"	8 1/2"	4 3/8"	11"*	33 3/4"	7"

T = TOTAL MOVEMENT BETWEEN BRIDGE EXPANSION JOINTS. SEE NOTE 6.
* = SINGLE SLOT



3/4" DIA MI64 (TYPE 1) ROUND HEAD BOLT

(WITH WASHER AND PREVAILING TORQUE TYPE LOCK NUT)
(SEE NOTE 9)
ONLY FULL DIAMETER BODY BOLTS WILL BE ALLOWED.

NOTES

- ALL WORK AND MATERIALS SHALL CONFORM TO THE PROVISIONS OF SECTION 525, RAILINGS OF THE STANDARD SPECIFICATION FOR CONSTRUCTION.
- TUBING AND POSTS SHALL MEET THE REQUIREMENTS OF SECTION 732, "RAILING MATERIALS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION" EXCEPT THE DROP-WEIGHT TEAR TEST IN SECTION 732 SHALL NOT APPLY TO THE STRUCTURAL TUBING IN THIS STANDARD.
- ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 1/16" RADIUS AND BE FREE OF BURRS.
- RAIL POSTS SHALL BE SET NORMAL TO GRADE.
- SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO (2) RAIL POSTS AND PREFERABLY TO AT LEAST FOUR (4) POSTS.
- RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING A SUPERSTRUCTURE EXPANSION JOINT. EXPANSION JOINT WIDTH SHALL BE "X" AT 45°F AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
- ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111, EXCEPT THAT HARDWARE SHALL MEET THE REQUIREMENTS OF AASHTO M232.
- RAIL POSTS ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
- RAIL TUBES SHALL BE ATTACHED USING 3/4" FULL DIAMETER BODY AASHTO M164 (TYPE 1) ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE TUBE. HOLES IN POSTS SHALL BE 1/16" LARGER THAN THE BOLT SIZE.
- HOLES IN RAILS FOR RAIL TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.
- IF THERE IS A CONFLICT BETWEEN THESE STANDARD DETAILS AND THE DESIGN, THE REQUIREMENTS OF THE DESIGN DRAWINGS SHALL BE FOLLOWED.
- ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.
- THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH THE PROVISION OF 506.04, SHOP DRAWINGS. ALL WELDING SHALL CONFORM WITH SECTION 506.10.
- RAIL POSTS AND BASE PLATES SHALL BE TESTED FOR IMPACT PROPERTIES IN ACCORDANCE WITH ASTM A-370 CHARPY IMPACT TESTING USING TYPE A SPECIMEN.

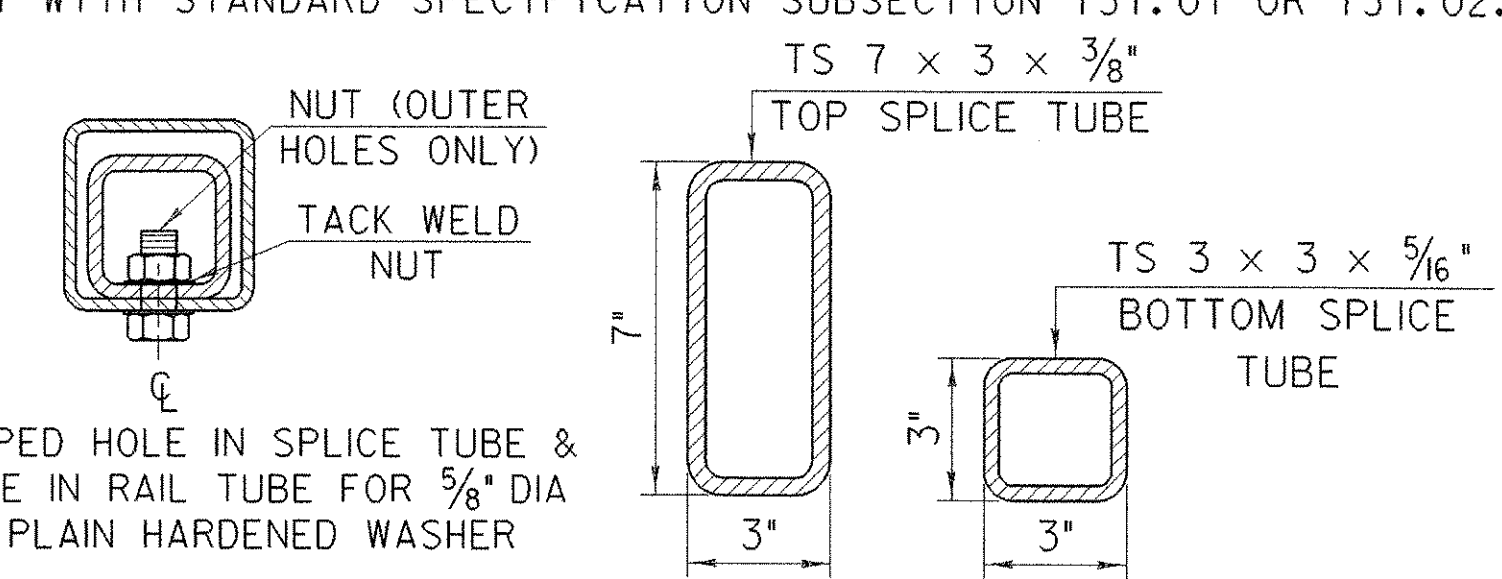
MATERIALS

RAIL TUBES.....ASTM A500, GRADE B OR ASTM A501
RAIL POSTS AND BASE PLATES.....ASTM A709A709M, GRADE 50
ALL OTHER SHAPES AND PLATES.....ASTM A709A709M, GRADE 36
ANCHOR STUDS.....ASTM A449
ALL OTHER BOLTS (UNLESS NOTED).....AASHTO M164, TYPE 1

NUTS FOR AASHTO M164 BOLTS AND FOR ANCHOR STUDS SHALL COMPLY WITH AASHTO M291 (ASTM A563).

WASHERS SHALL COMPLY WITH AASHTO M293 (ASTM F436) SPECIFICATIONS.

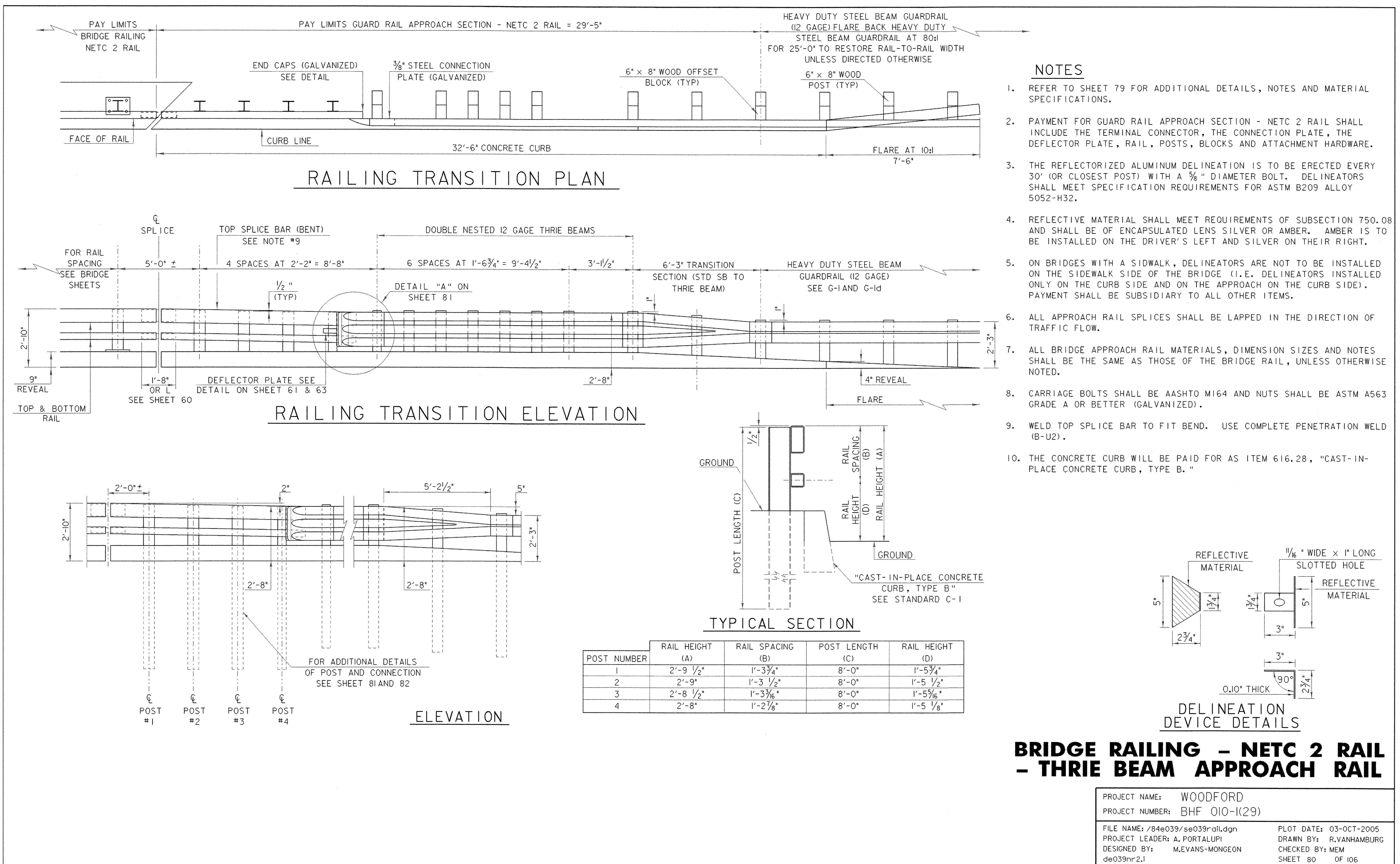
1/8" PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.01 OR 731.02.



RAIL TUBE SPLICE SECTION

BRIDGE RAILING - NETC 2 RAIL

PROJECT NAME:	WOODFORD
PROJECT NUMBER:	BHF 010-I(29)
FILE NAME:	/84e039/se039rail.dgn
PROJECT LEADER:	A. PORTALUPI
DESIGNED BY:	M. EVANS-MONGEON
de039nr1.i	
PLOT DATE:	03-OCT-2005
DRAWN BY:	R.VANHAMBURG
CHECKED BY:	MEM
SHEET	79 OF 106

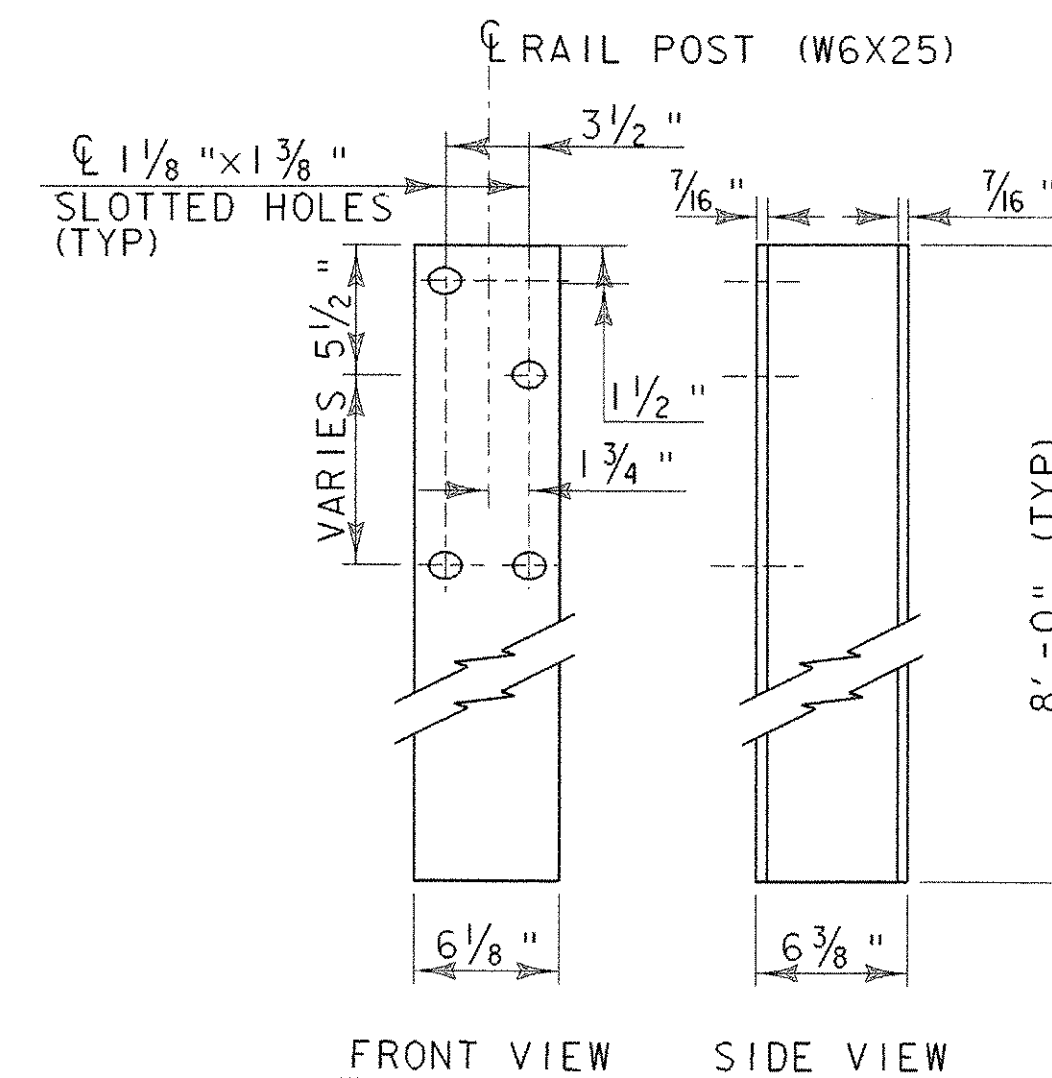
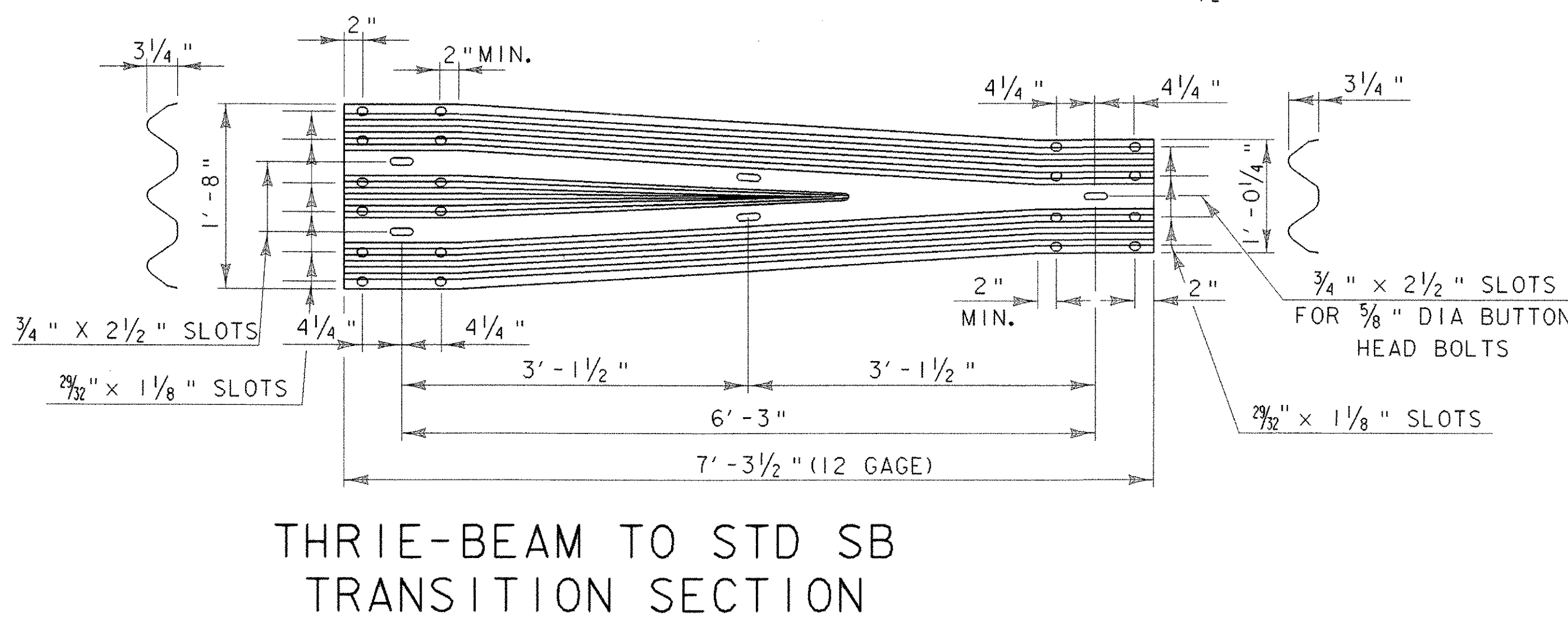
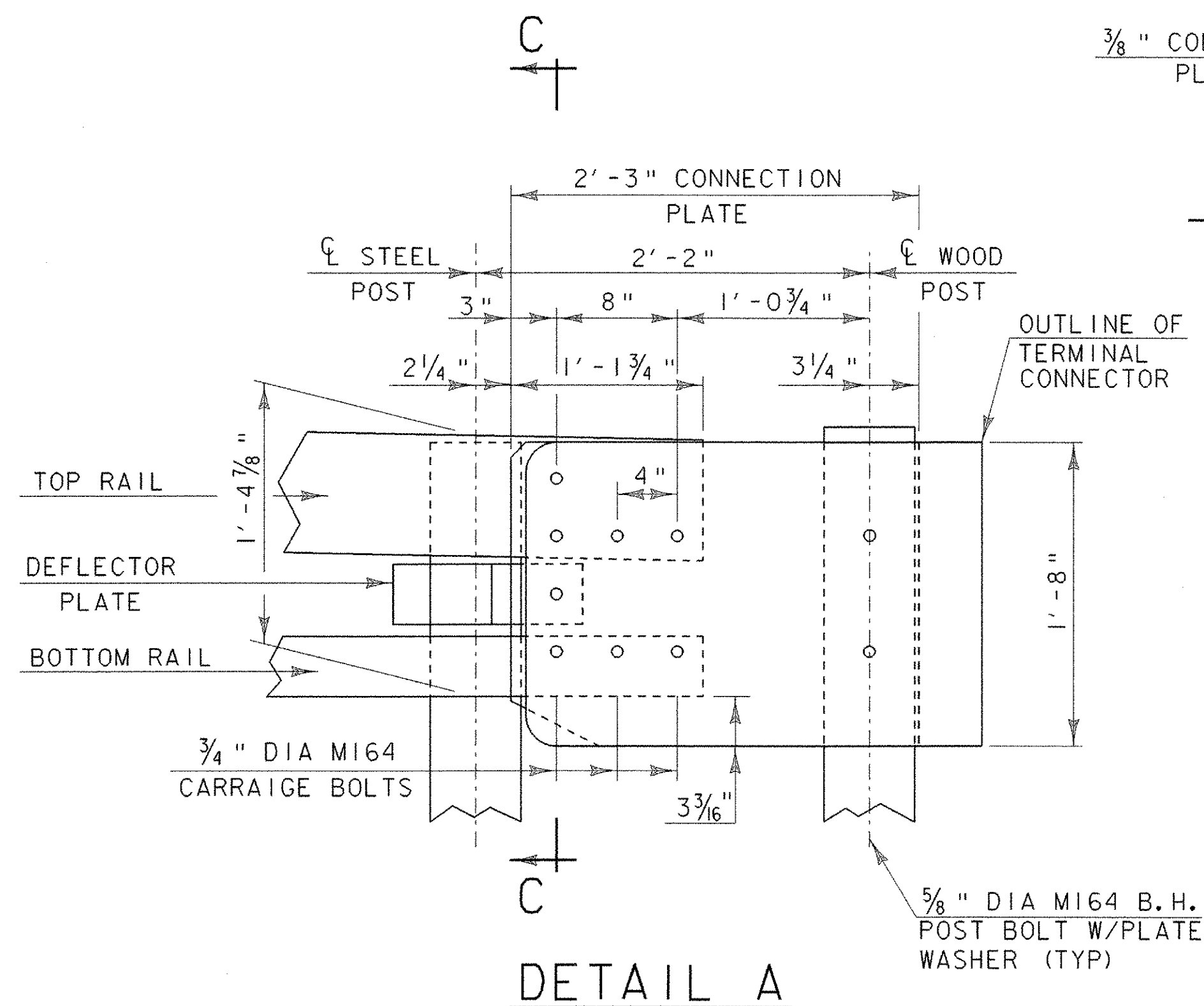
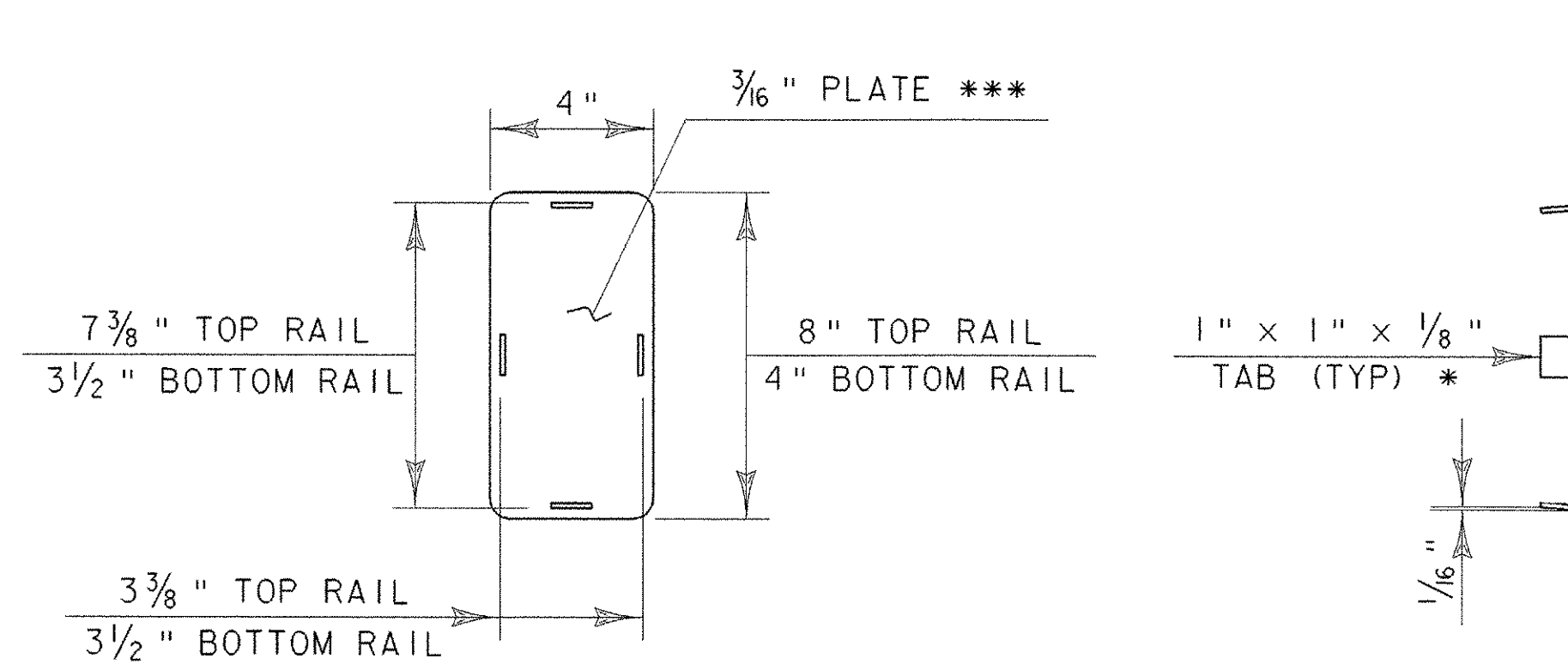
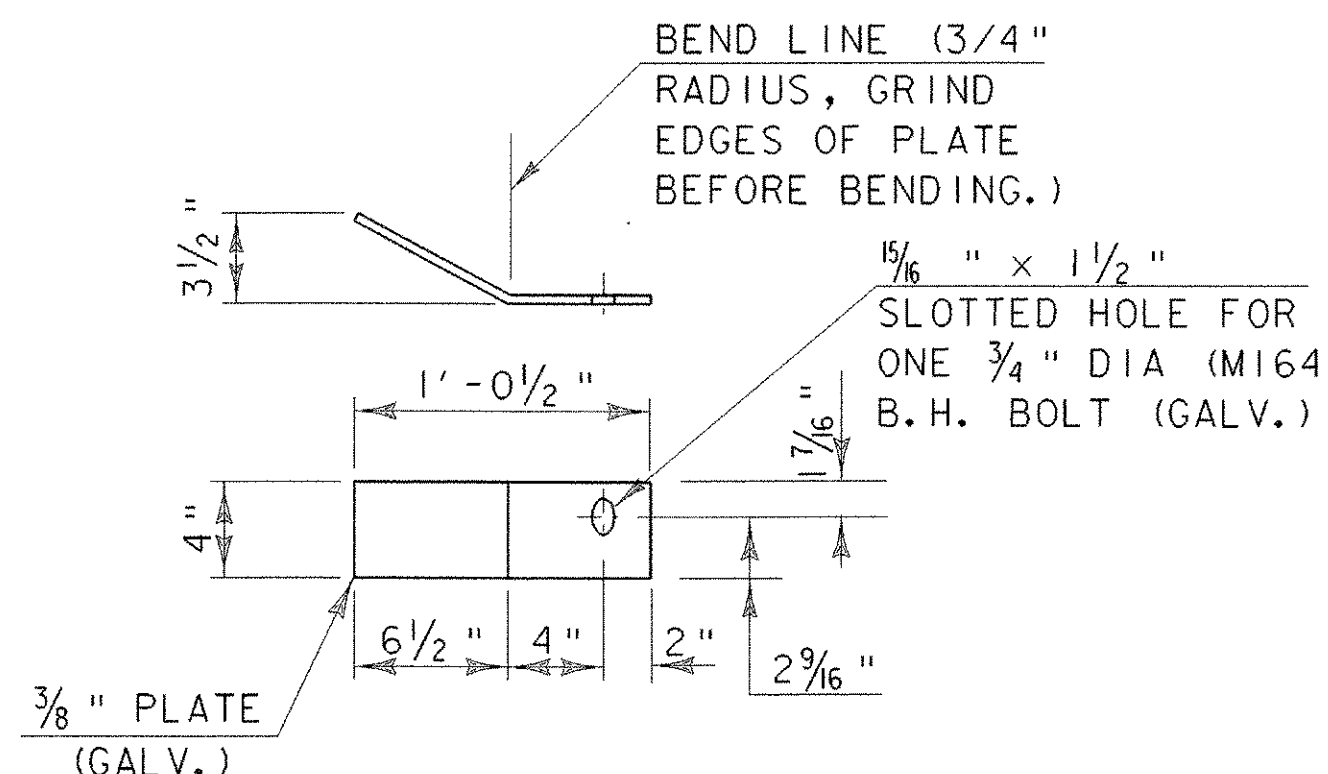
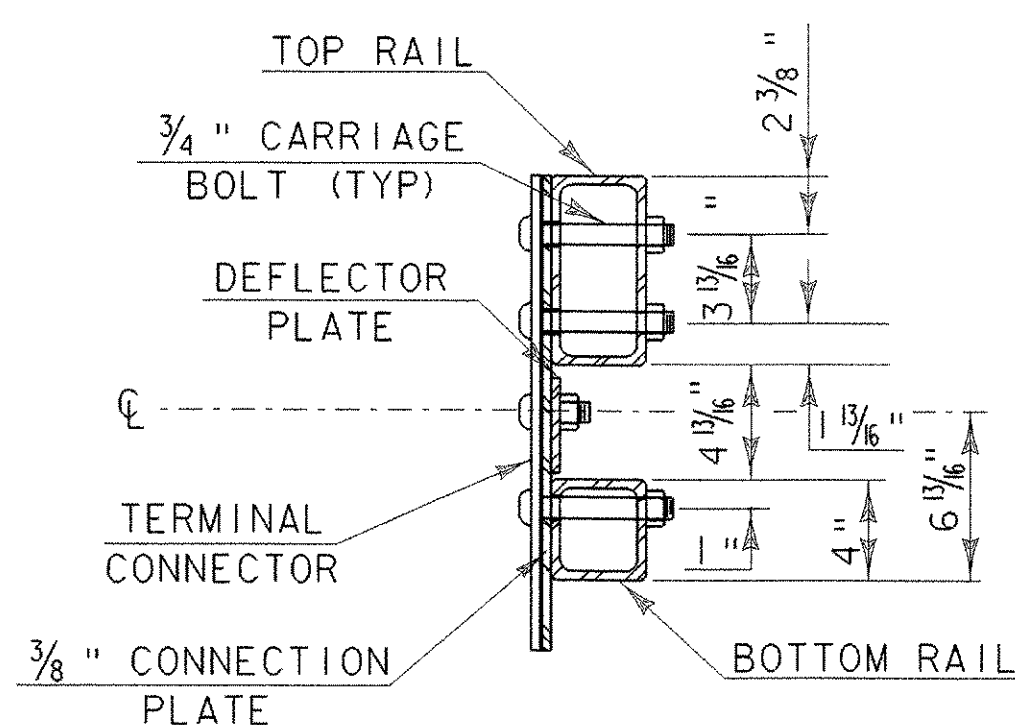
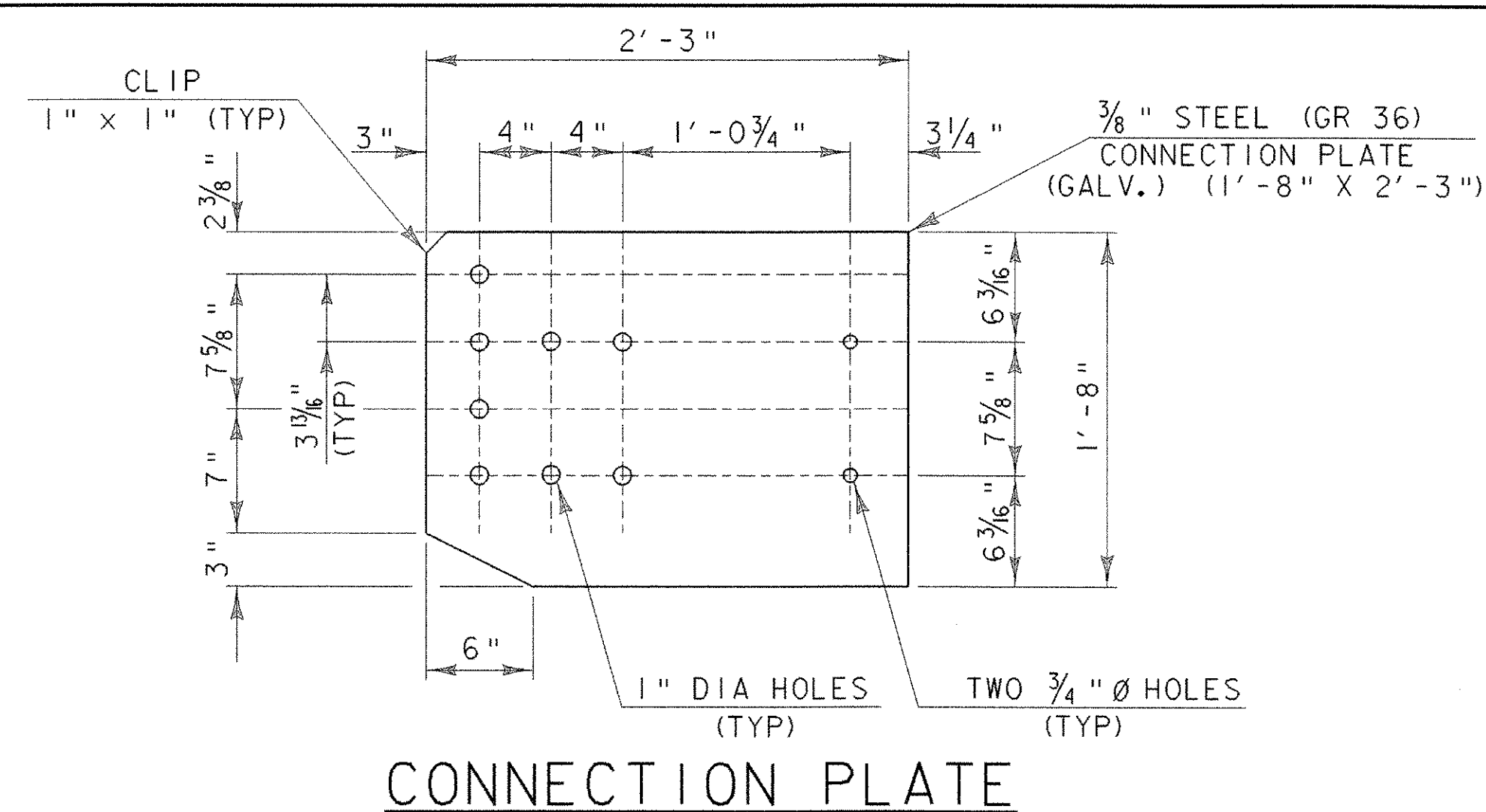
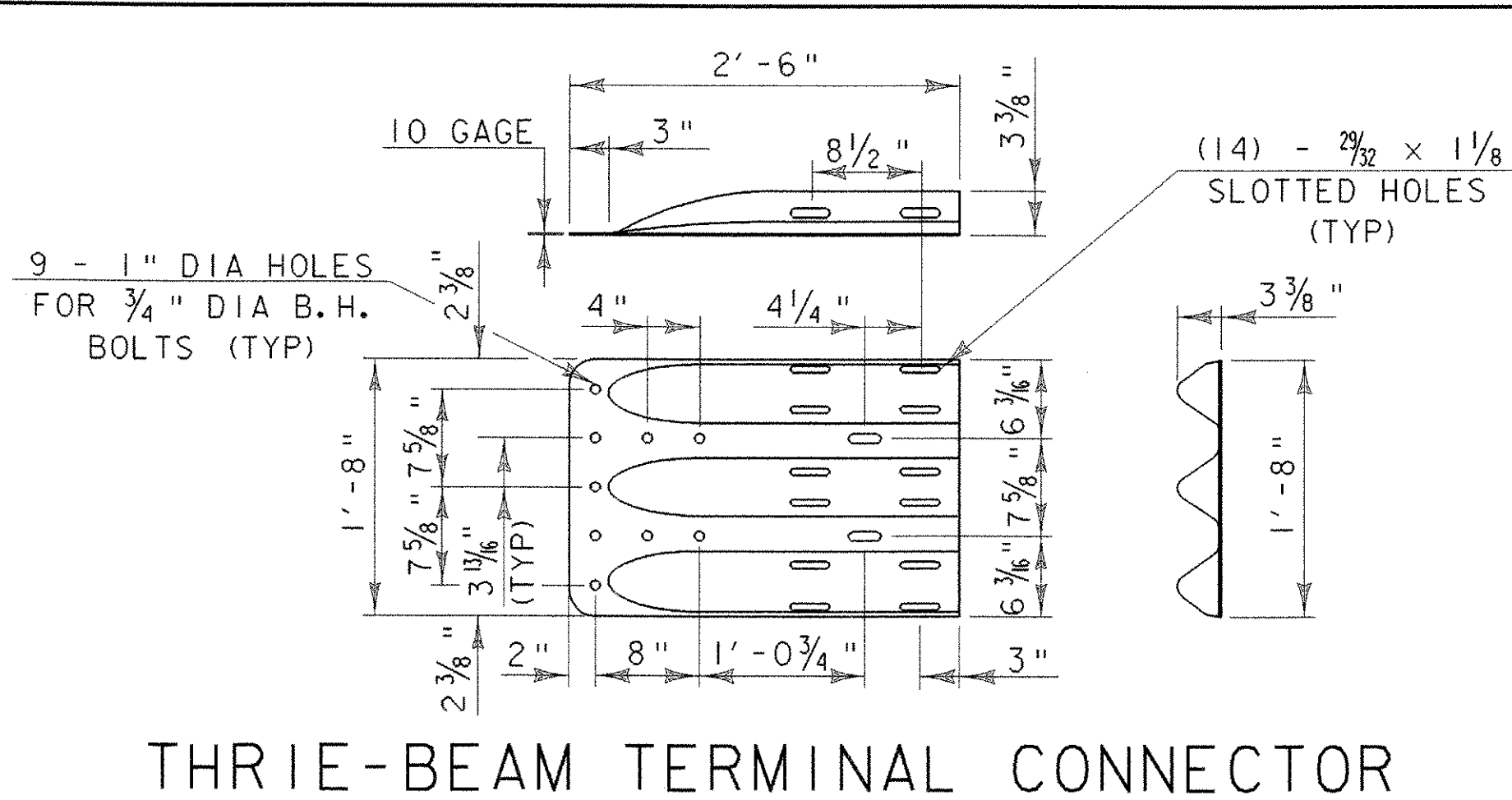
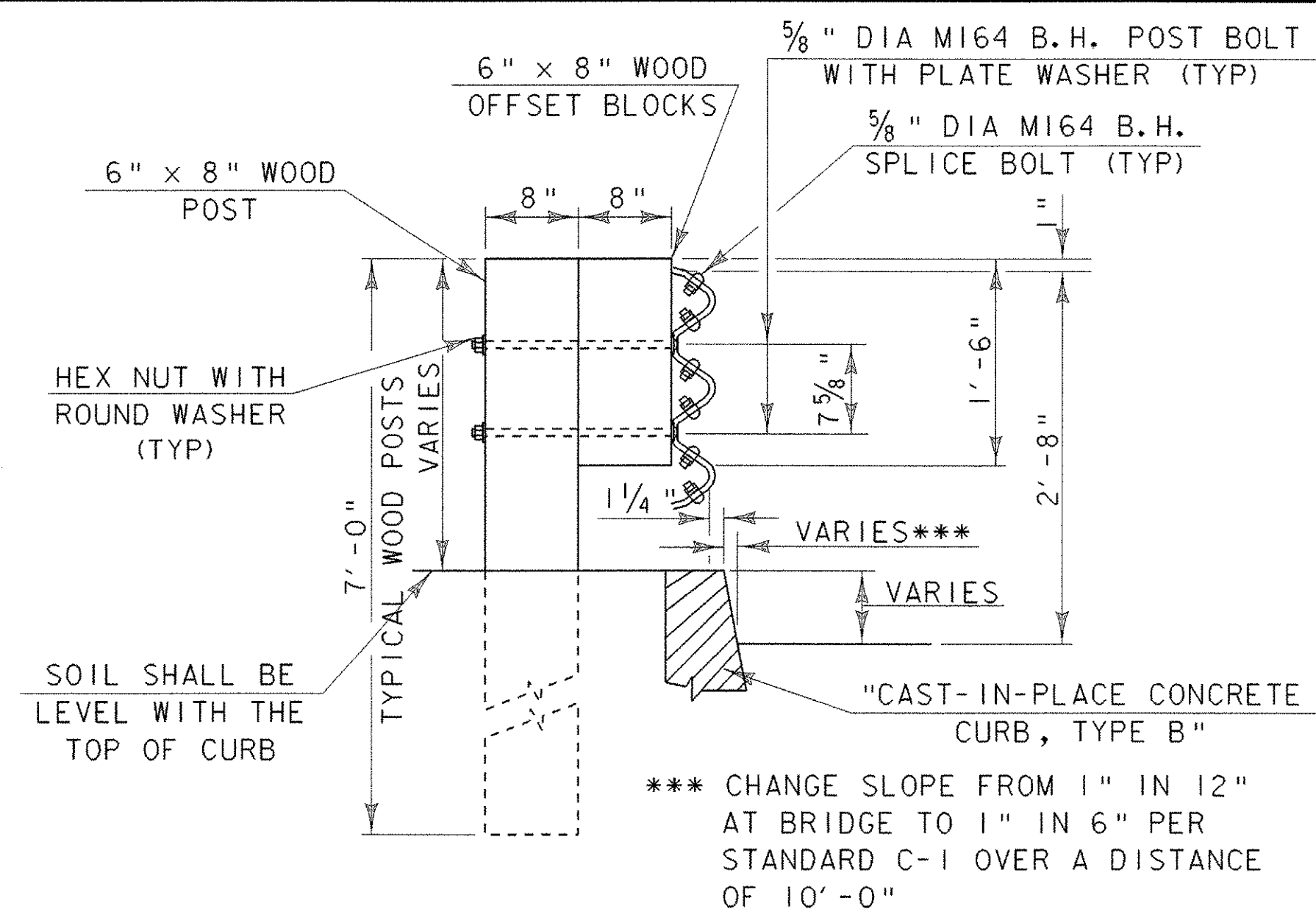


NOTES

1. REFER TO SHEET 79 FOR ADDITIONAL DETAILS, NOTES AND MATERIAL SPECIFICATIONS.
2. PAYMENT FOR GUARD RAIL APPROACH SECTION - NTC 2 RAIL SHALL INCLUDE THE TERMINAL CONNECTOR, THE CONNECTION PLATE, THE DEFLECTOR PLATE, RAIL, POSTS, BLOCKS AND ATTACHMENT HARDWARE.
3. THE REFLECTORIZED ALUMINUM DELINEATION IS TO BE ERECTED EVERY 30' (OR CLOSEST POST) WITH A 5/8" DIAMETER BOLT. DELINEATORS SHALL MEET SPECIFICATION REQUIREMENTS FOR ASTM B209 ALLOY 5052-H32.
4. REFLECTIVE MATERIAL SHALL MEET REQUIREMENTS OF SUBSECTION 750.08 AND SHALL BE OF ENCAPSULATED LENS SILVER OR AMBER. AMBER IS TO BE INSTALLED ON THE DRIVER'S LEFT AND SILVER ON THEIR RIGHT.
5. ON BRIDGES WITH A SIDEWALK, DELINEATORS ARE NOT TO BE INSTALLED ON THE SIDEWALK SIDE OF THE BRIDGE (I.E. DELINEATORS INSTALLED ONLY ON THE CURB SIDE AND ON THE APPROACH ON THE CURB SIDE). PAYMENT SHALL BE SUBSIDIARY TO ALL OTHER ITEMS.
6. ALL APPROACH RAIL SPLICES SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW.
7. ALL BRIDGE APPROACH RAIL MATERIALS, DIMENSION SIZES AND NOTES SHALL BE THE SAME AS THOSE OF THE BRIDGE RAIL, UNLESS OTHERWISE NOTED.
8. CARRIAGE BOLTS SHALL BE AASHTO M164 AND NUTS SHALL BE ASTM A563 GRADE A OR BETTER (GALVANIZED).
9. WELD TOP SPLICE BAR TO FIT BEND. USE COMPLETE PENETRATION WELD (B-U2).
10. THE CONCRETE CURB WILL BE PAID FOR AS ITEM 616.28, "CAST-IN-PLACE CONCRETE CURB, TYPE B."

BRIDGE RAILING - NTC 2 RAIL - THRIE BEAM APPROACH RAIL

PROJECT NAME: WOODFORD	
PROJECT NUMBER: BHF 010-I(29)	
FILE NAME: /84e039/se039rail.dgn	PLOT DATE: 03-OCT-2005
PROJECT LEADER: A.PORTALUPI	DRAWN BY: R.VANHAMBURG
DESIGNED BY: M.EVANS-MONGEON	CHECKED BY: MEM
de039nr2.1	SHEET 80 OF 106

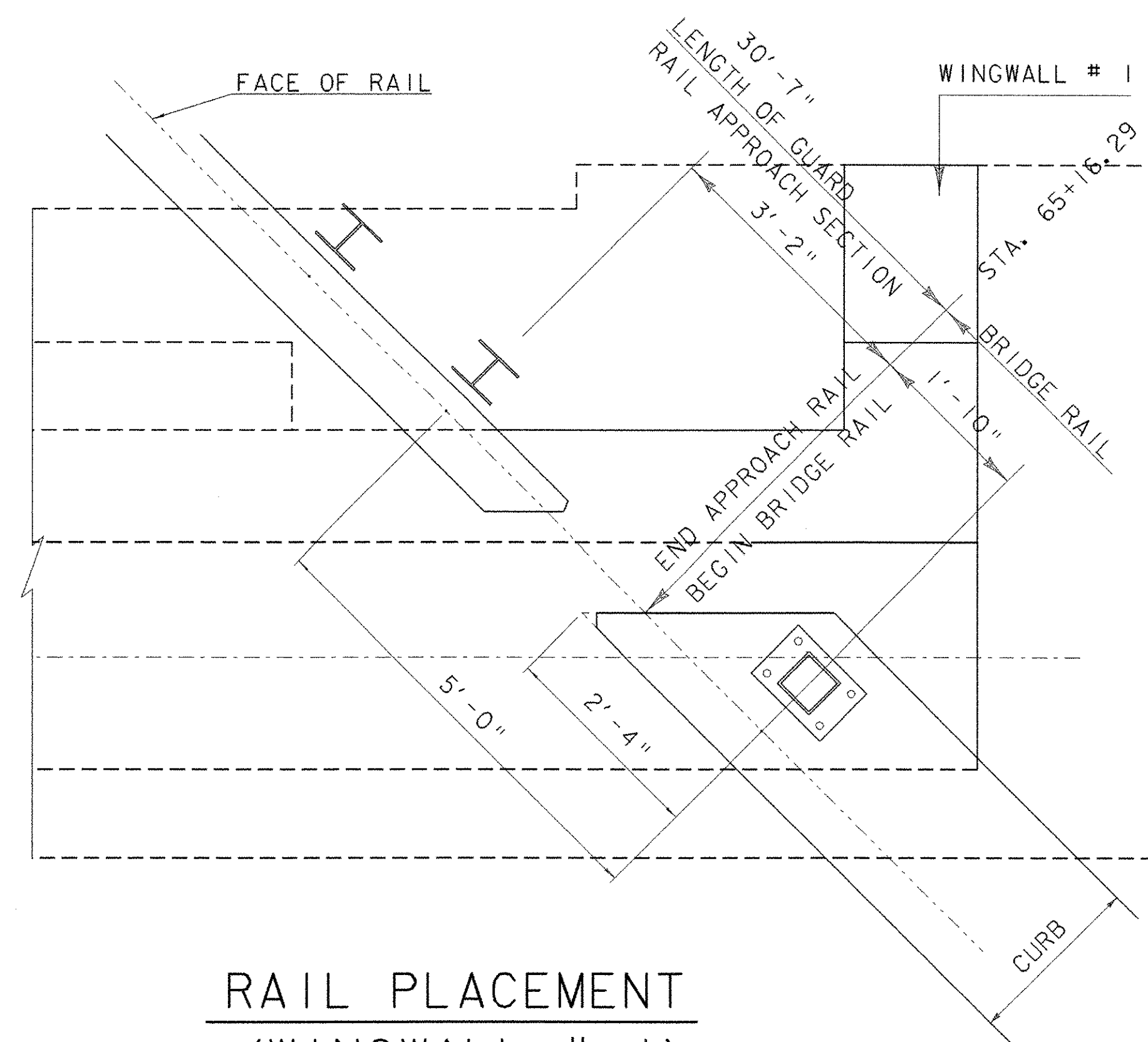


BRIDGE RAILING - NETC 2 RAIL - THRIE BEAM APPROACH RAIL

PROJECT NAME: WOODFORD
PROJECT NUMBER: BHF 010-I(29)

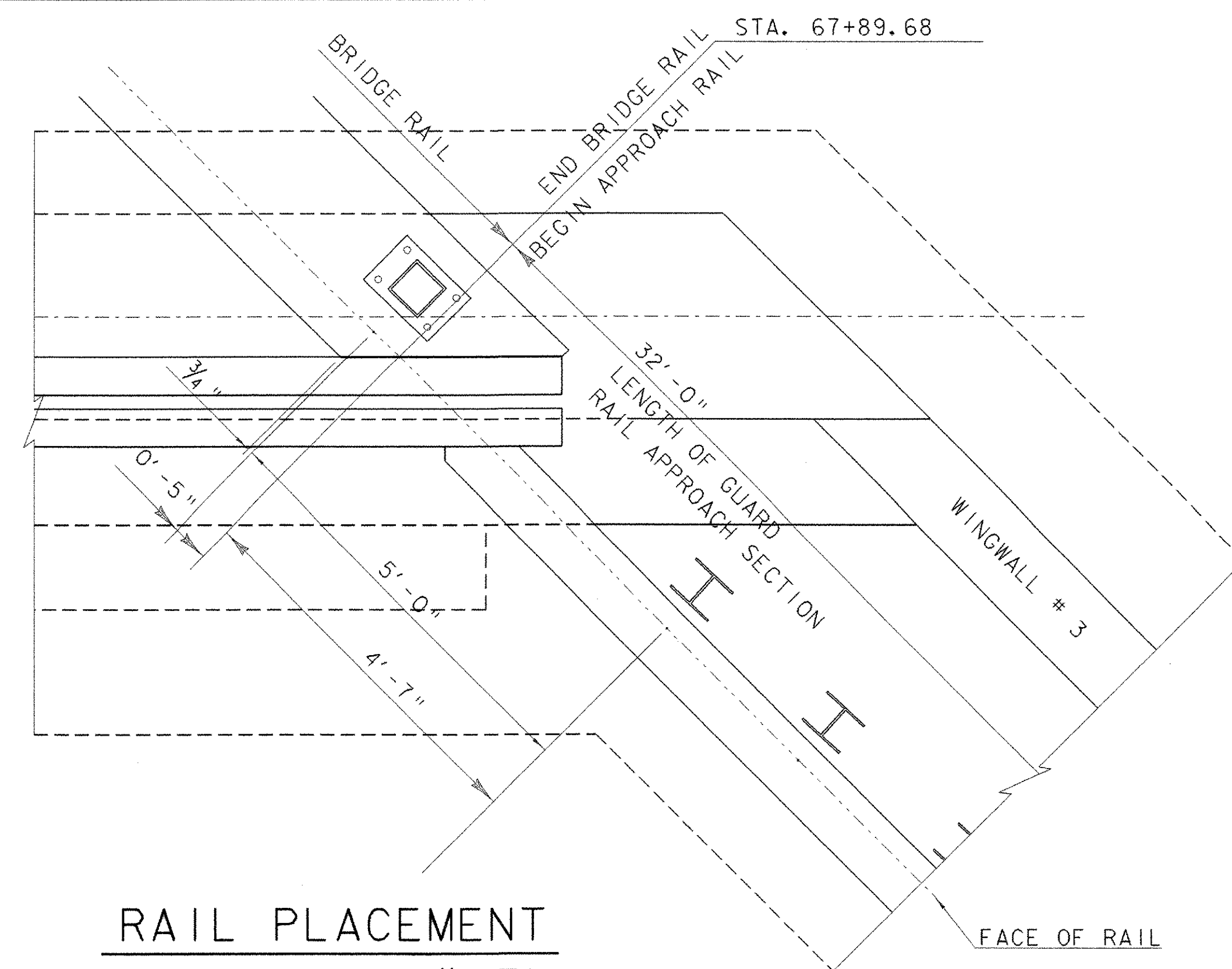
FILE NAME: /84e039/se039rail.dgn
PROJECT LEADER: A. PORTALUPI
DESIGNED BY: M. EVANS-MONGEON
de039nr3.1

PLOT DATE: 03-OCT-2005
DRAWN BY: R. VANHAMBURG
CHECKED BY: MEM
SHEET 81 OF 106



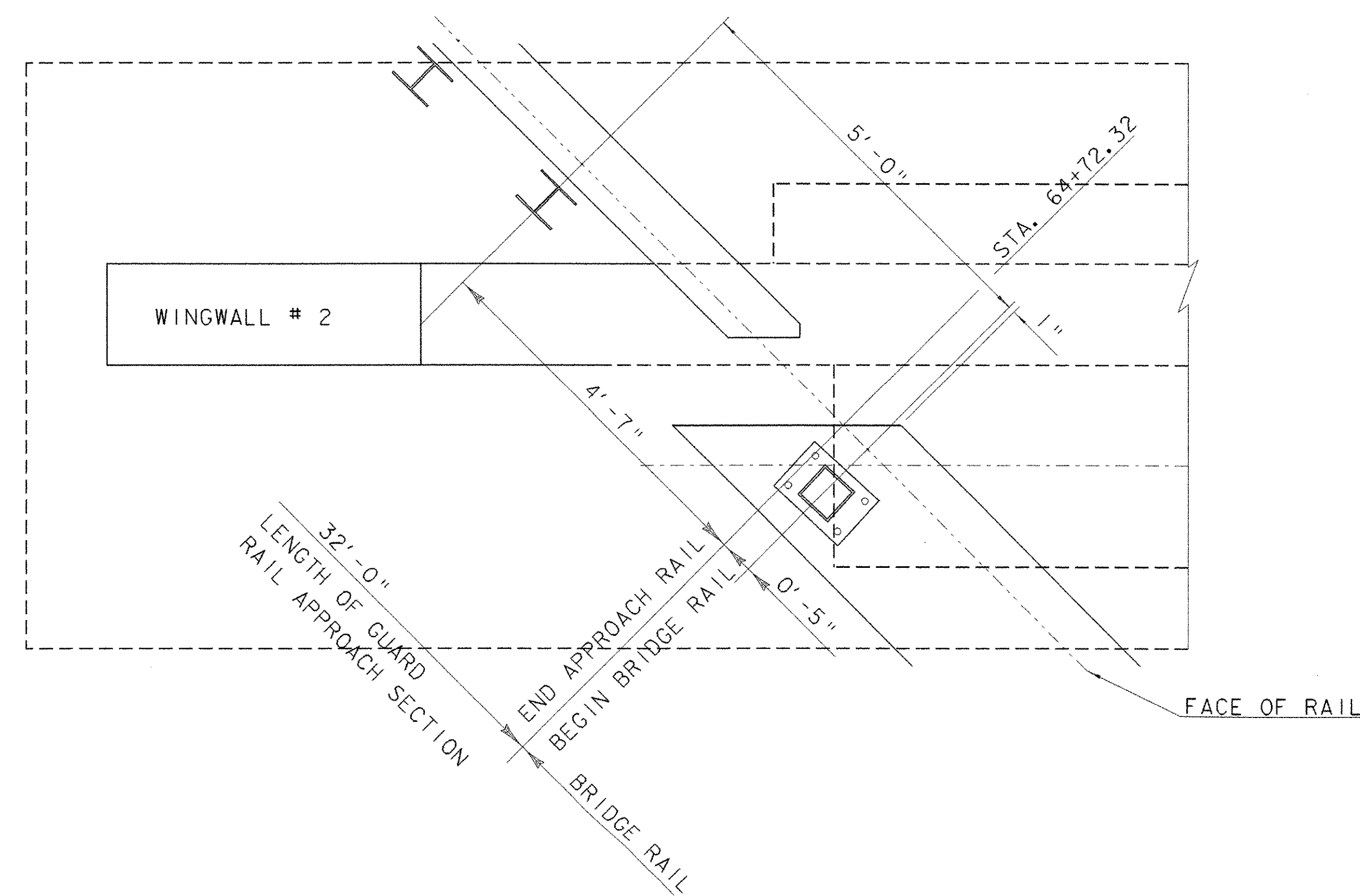
RAIL PLACEMENT
(WINGWALL # 1)

SCALE $\frac{3}{4}" = 1'-0"$



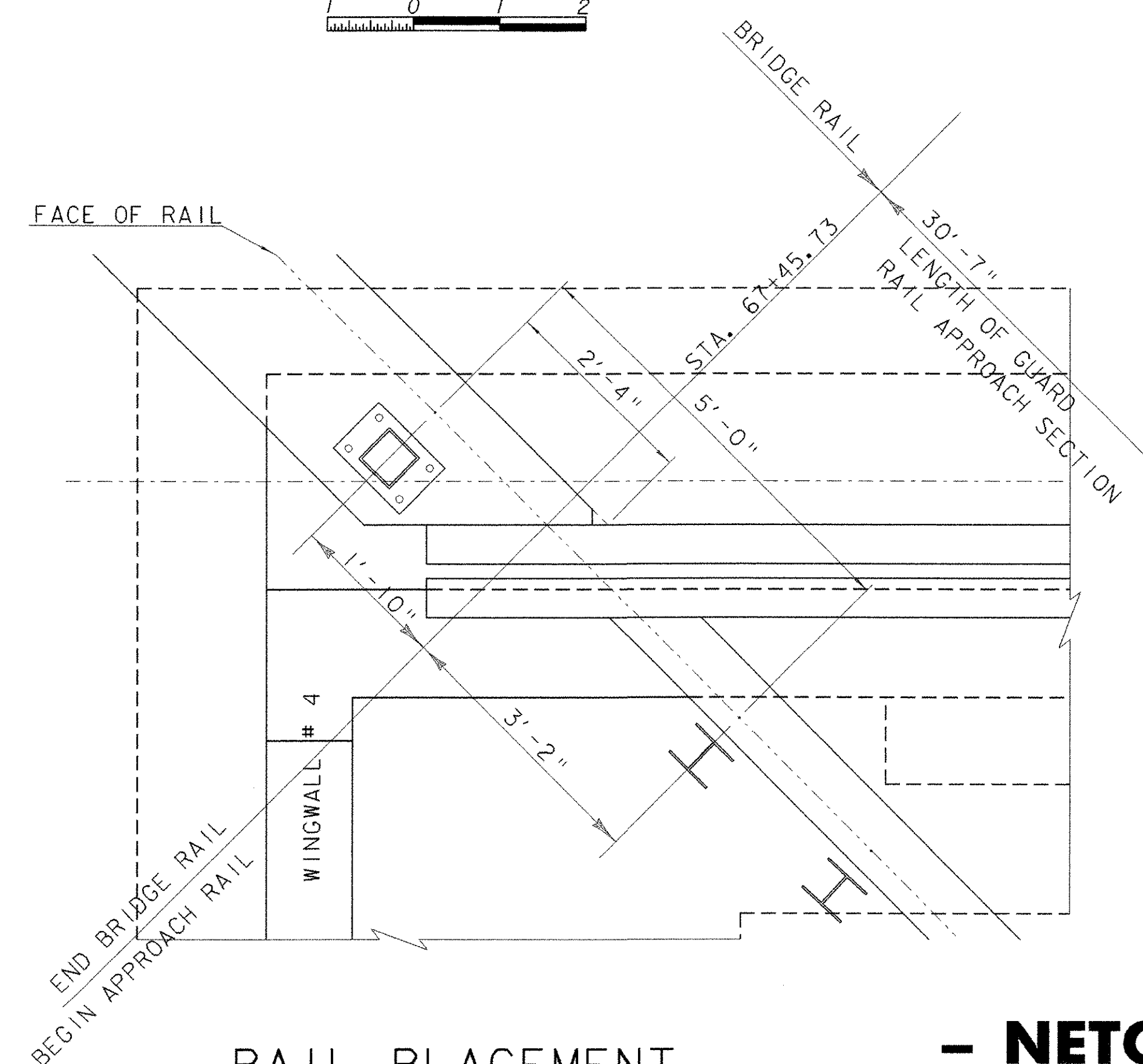
RAIL PLACEMENT
(WINGWALL # 3)

SCALE $\frac{3}{4}" = 1'-0"$



RAIL PLACEMENT
(WINGWALL # 2)

SCALE $\frac{3}{4}" = 1'-0"$



RAIL PLACEMENT
(WINGWALL # 4)

SCALE $\frac{3}{4}" = 1'-0"$

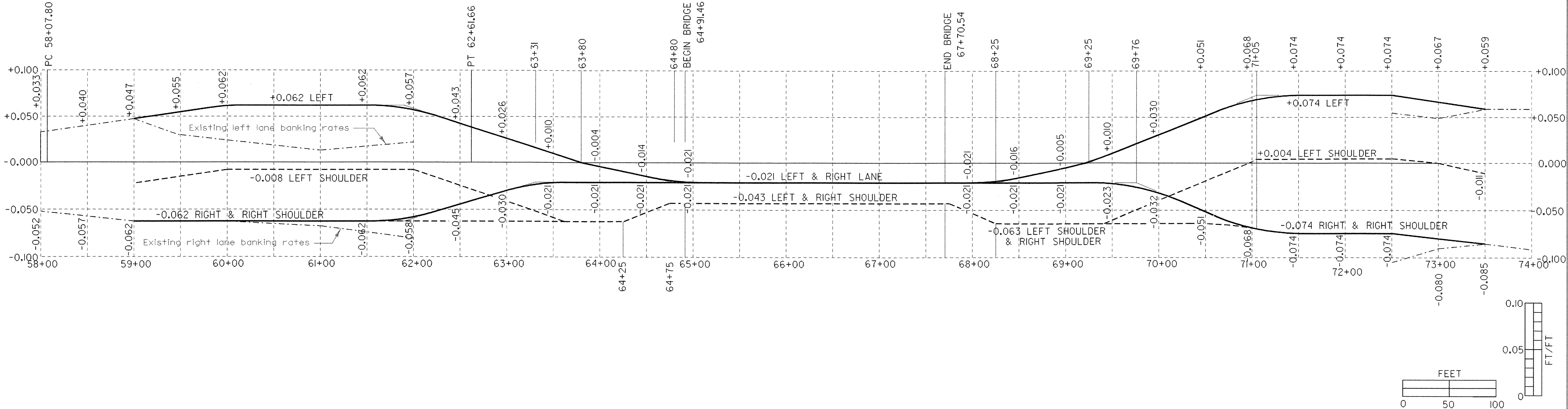
BRIDGE RAILING - NETC 2 RAIL - PLACEMENT

PROJECT NAME: WOODFORD
PROJECT NUMBER: BHF 010-1(29)

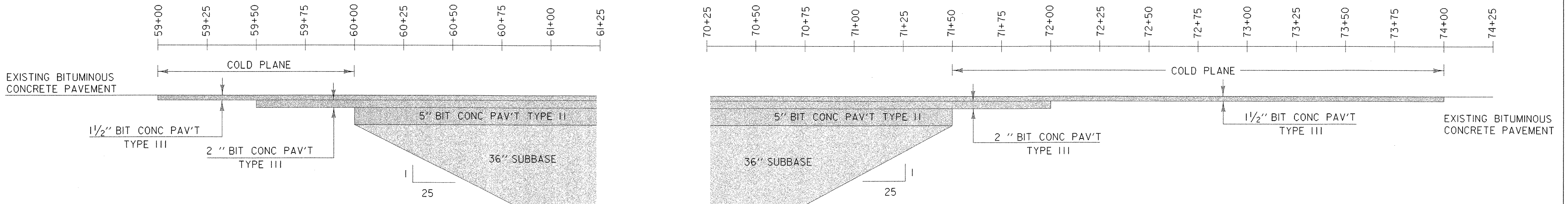
FILE NAME: /84e039/se039rail.dgn
PROJECT LEADER: A. PORTALUPI
DESIGNED BY: M. EVANS-MONGEON
se039nr4.1

PLOT DATE: 03-OCT-2005
DRAWN BY: VAN HAMBURG
CHECKED BY: EVANS-MONGEON
SHEET 82 OF 106

BANKING DIAGRAM



MATERIAL TRANSITION DIAGRAM



NOT TO SCALE

BANKING DIAGRAM AND DEPTH TRANSITIONS

DRAWN BY G. SHANGRAW DATE 4-12-96
SQUAD LEADER A. PORTALUPI
DESIGN FILE NO. 84e039/structures/de039xs.dgn
IPARM de039bnk.i DATE 03-OCT-2005
FILE WOODFORD
PROJ. NAME BHF 010-I(29)
PROJ. NO.
SHEET 83 OF 106 SHEETS

REINFORCING STEEL SCHEDULE

~ NOTES ~

- UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-S). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
- FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
- BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
- ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
- "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
- "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
- WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
- ▲ DENOTES BARS TO BE CUT IN FIELD.
- ★ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
- △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
- "E" IN PREFIX DENOTES EPOXY COATED REINFORCING STEEL.

ASTM STANDARD REINFORCING BARS				
BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER INCHES	AREA INCHES ²	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

PROJECT NAME: **WOODFORD**

PROJECT NUMBER: **BHF 010-1(29)**

FILE NAME: /B4e039/se039rss.xls

PROJECT LEADER: **A. PORTALUPI**

DESIGNED BY: **M. EVANS-MONGEON**

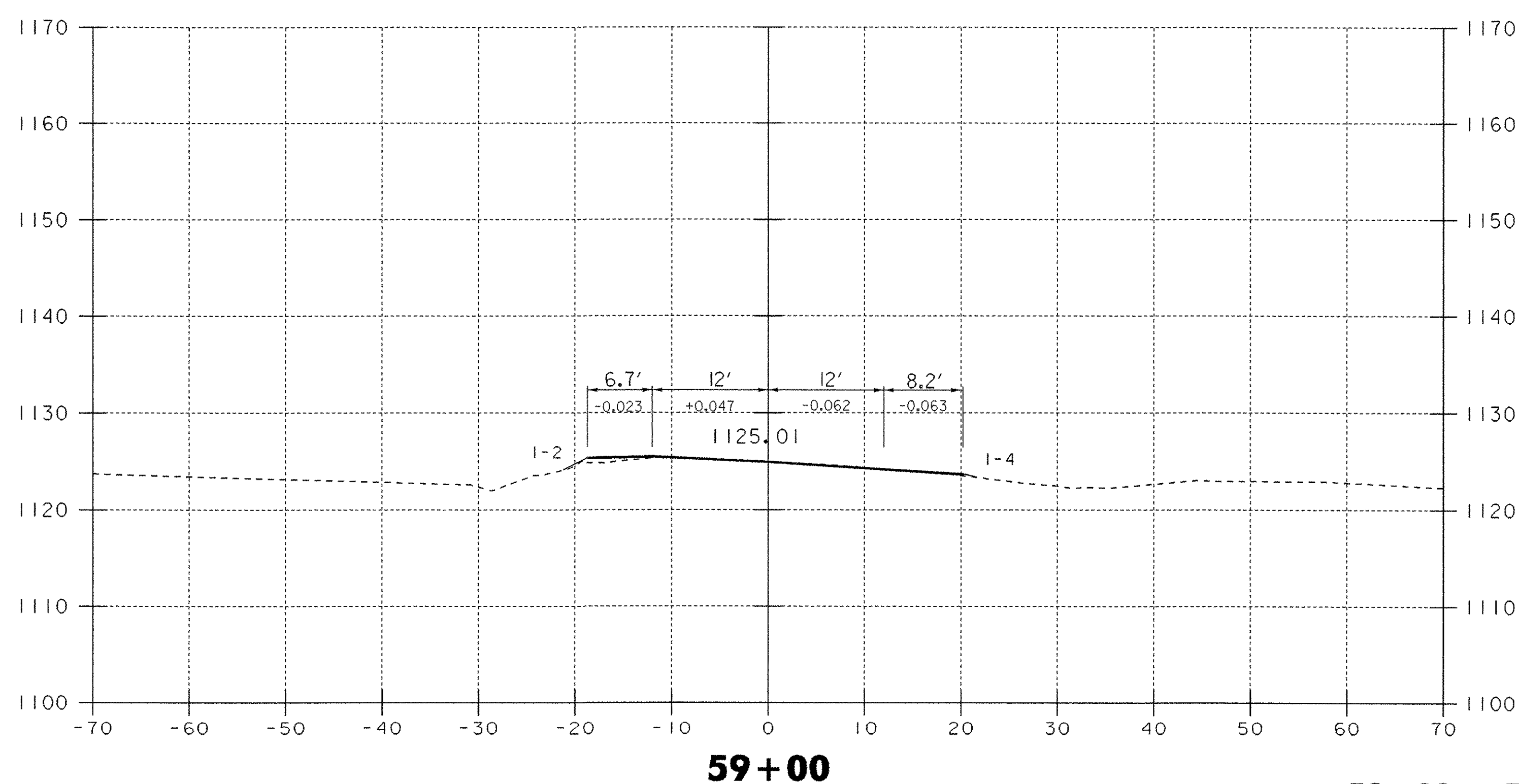
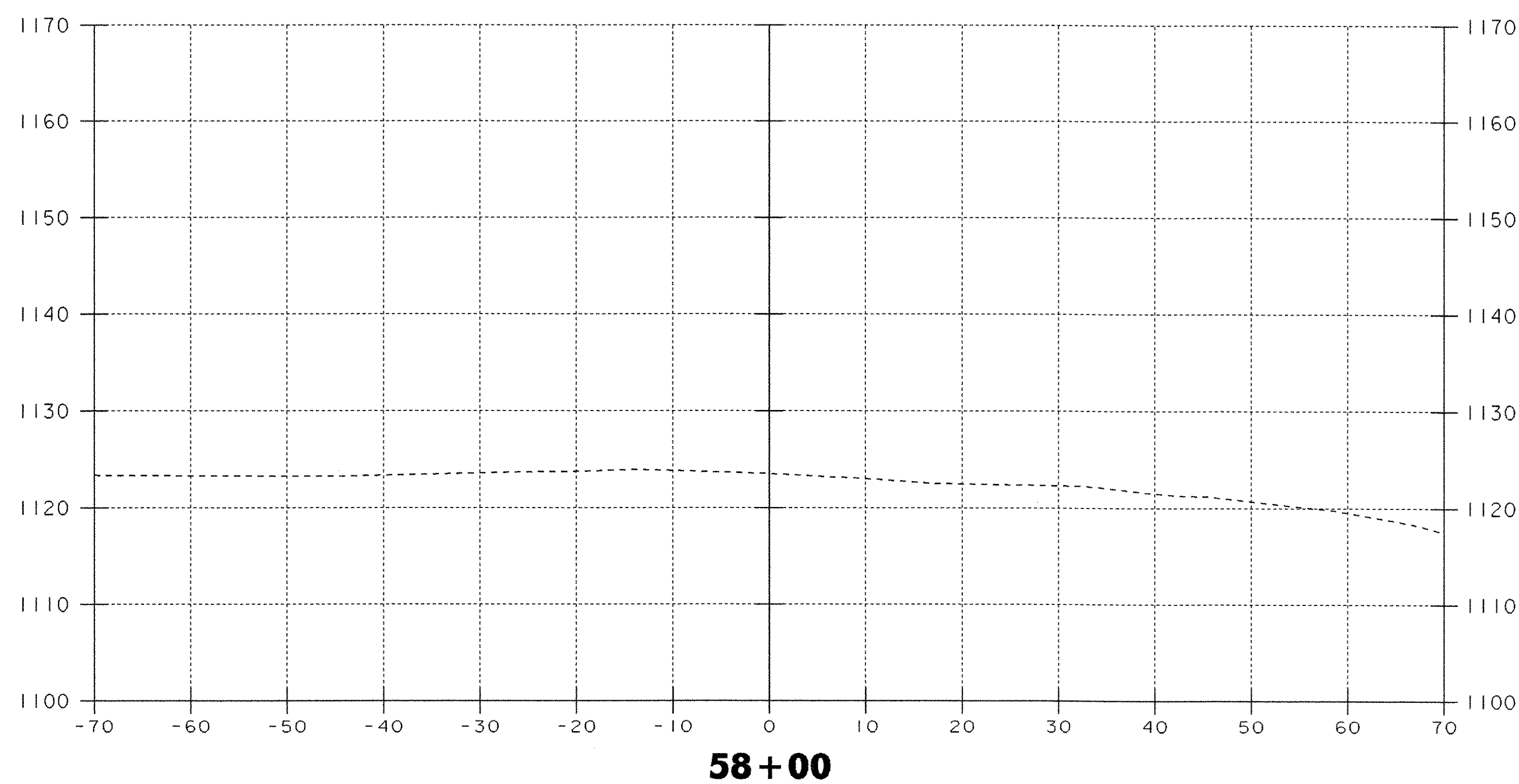
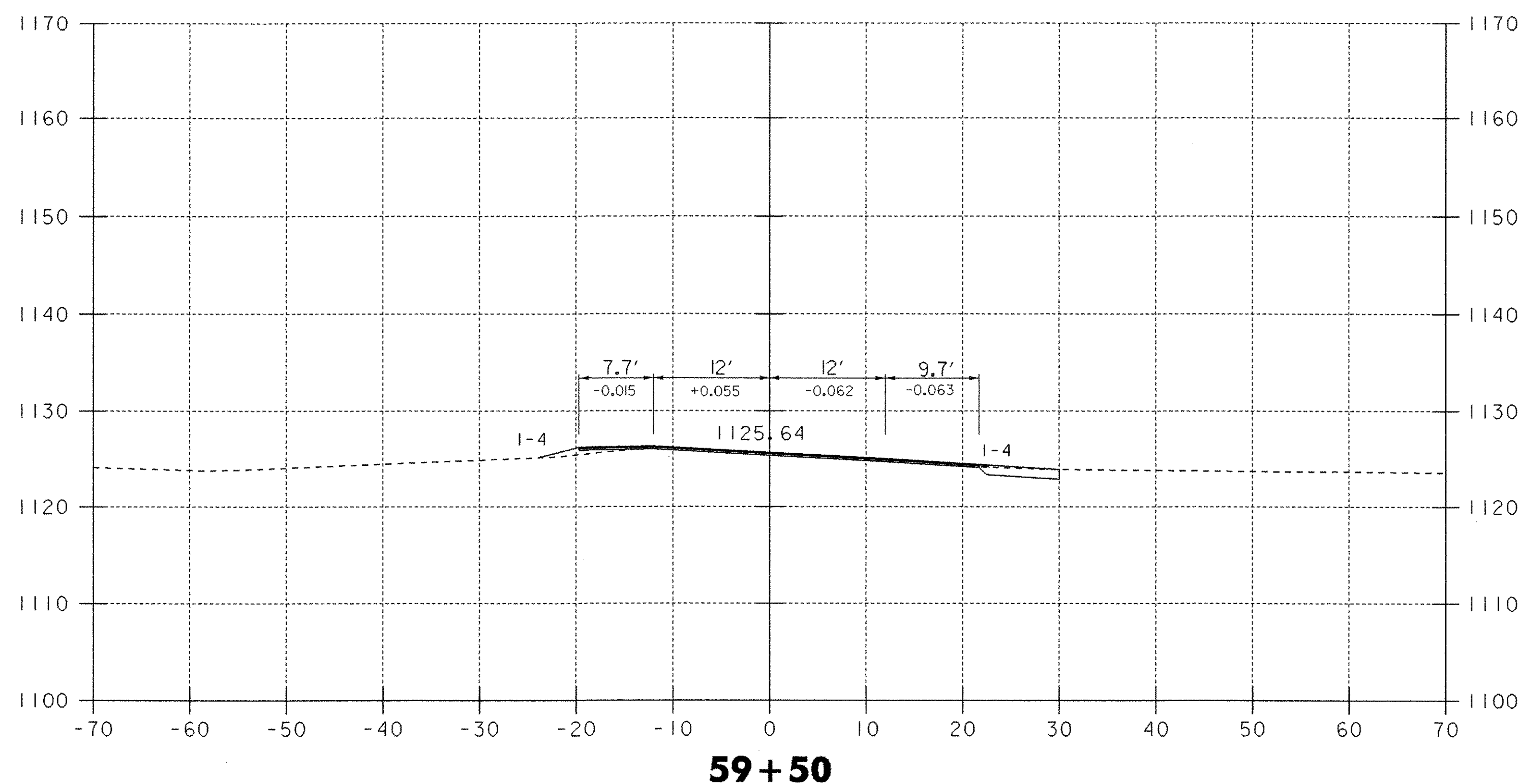
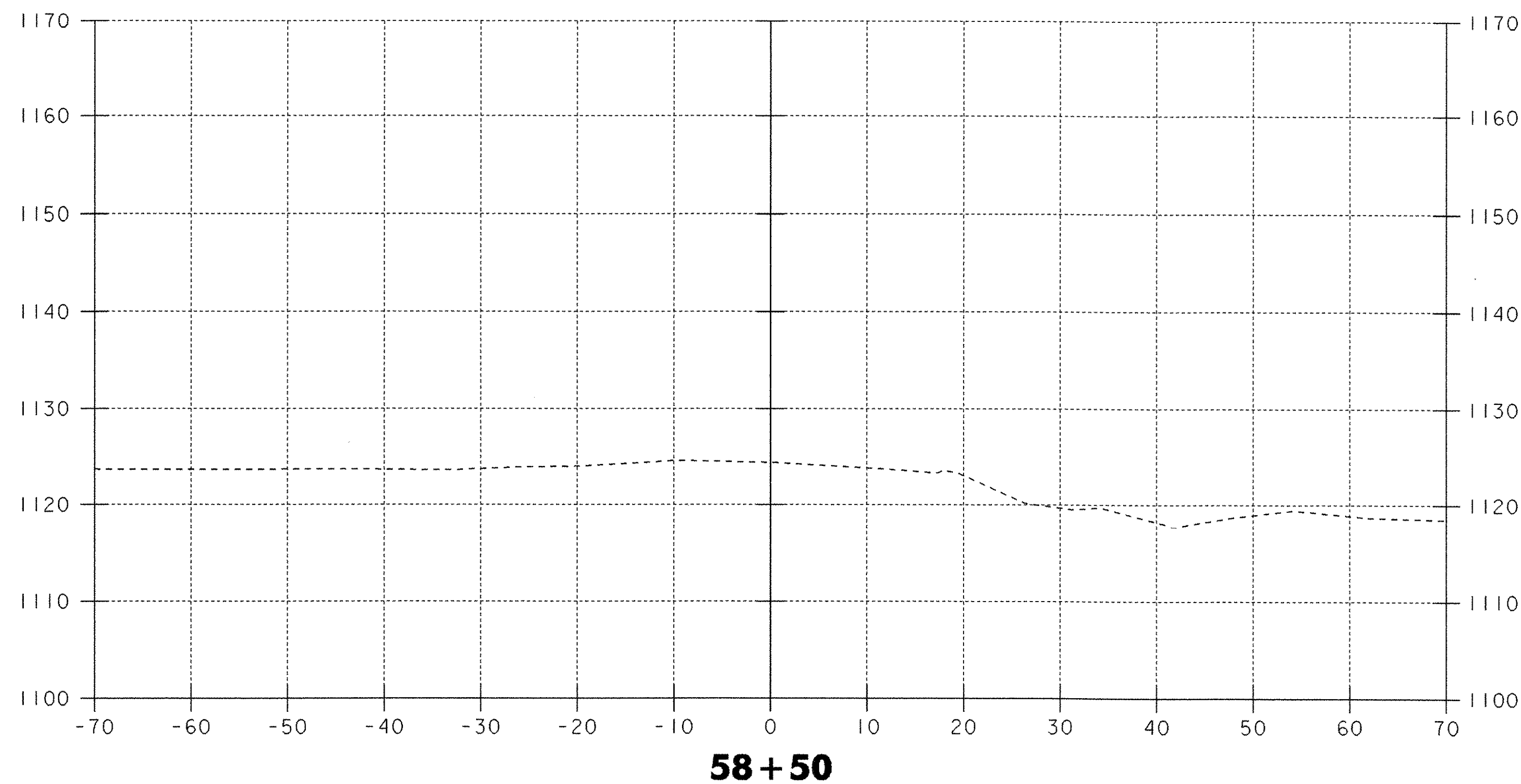
REINFORCING STEEL SCHEDULE SHEET #1

PLOT DATE: 11/20/2002

DRAWN BY: **R. PELLETT**

CHECKED BY: **M.E.M.**

SHEET 84 OF 106



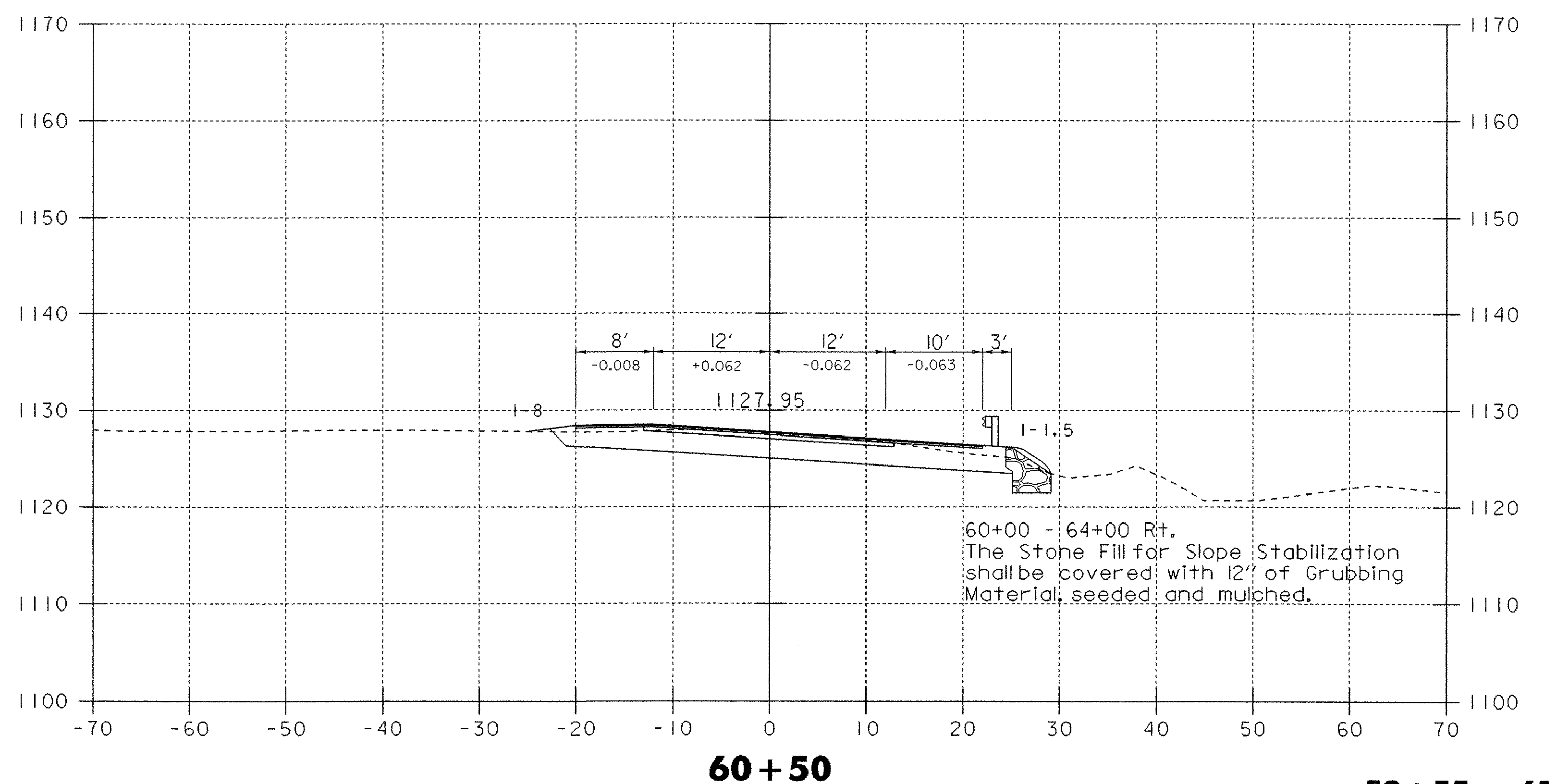
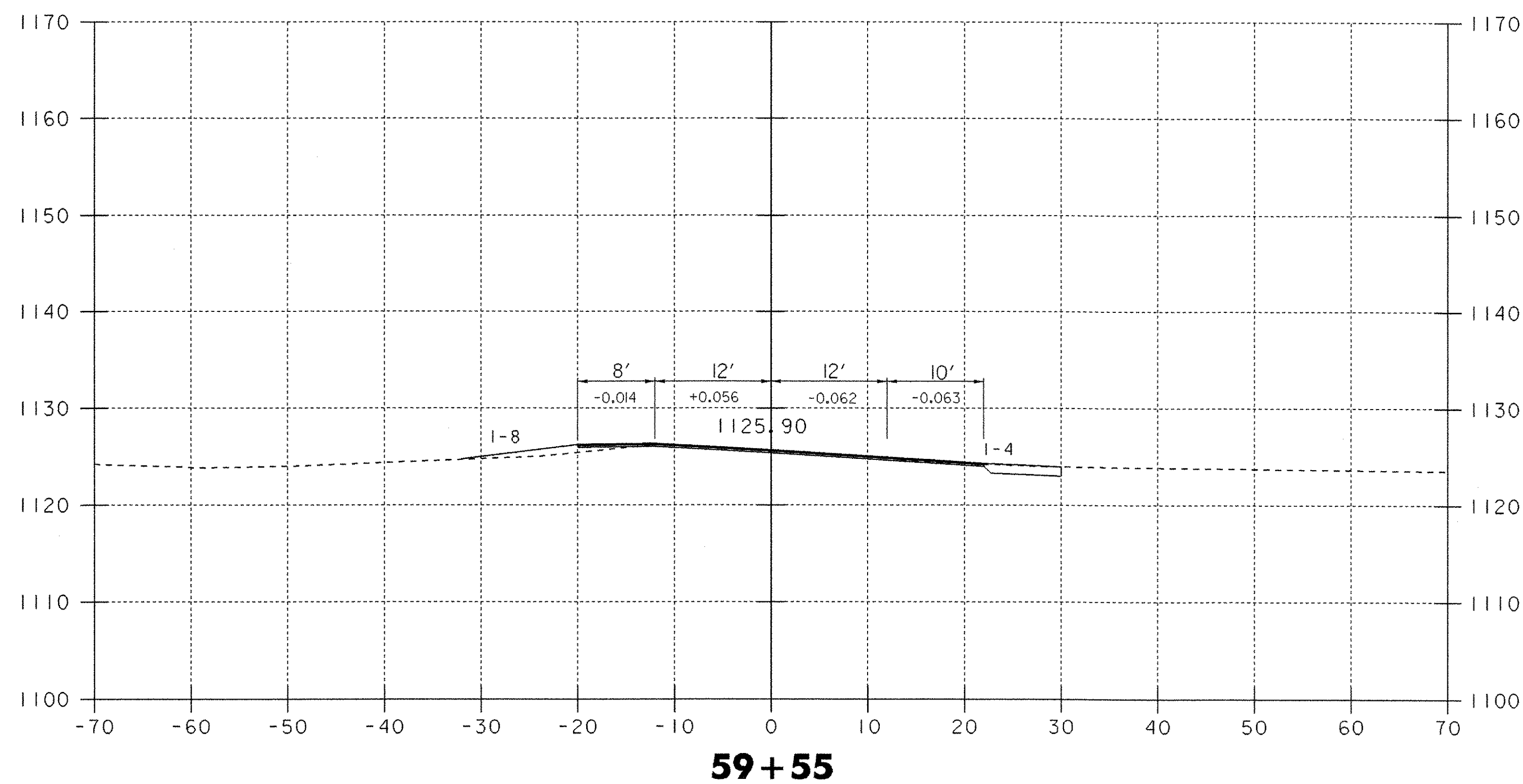
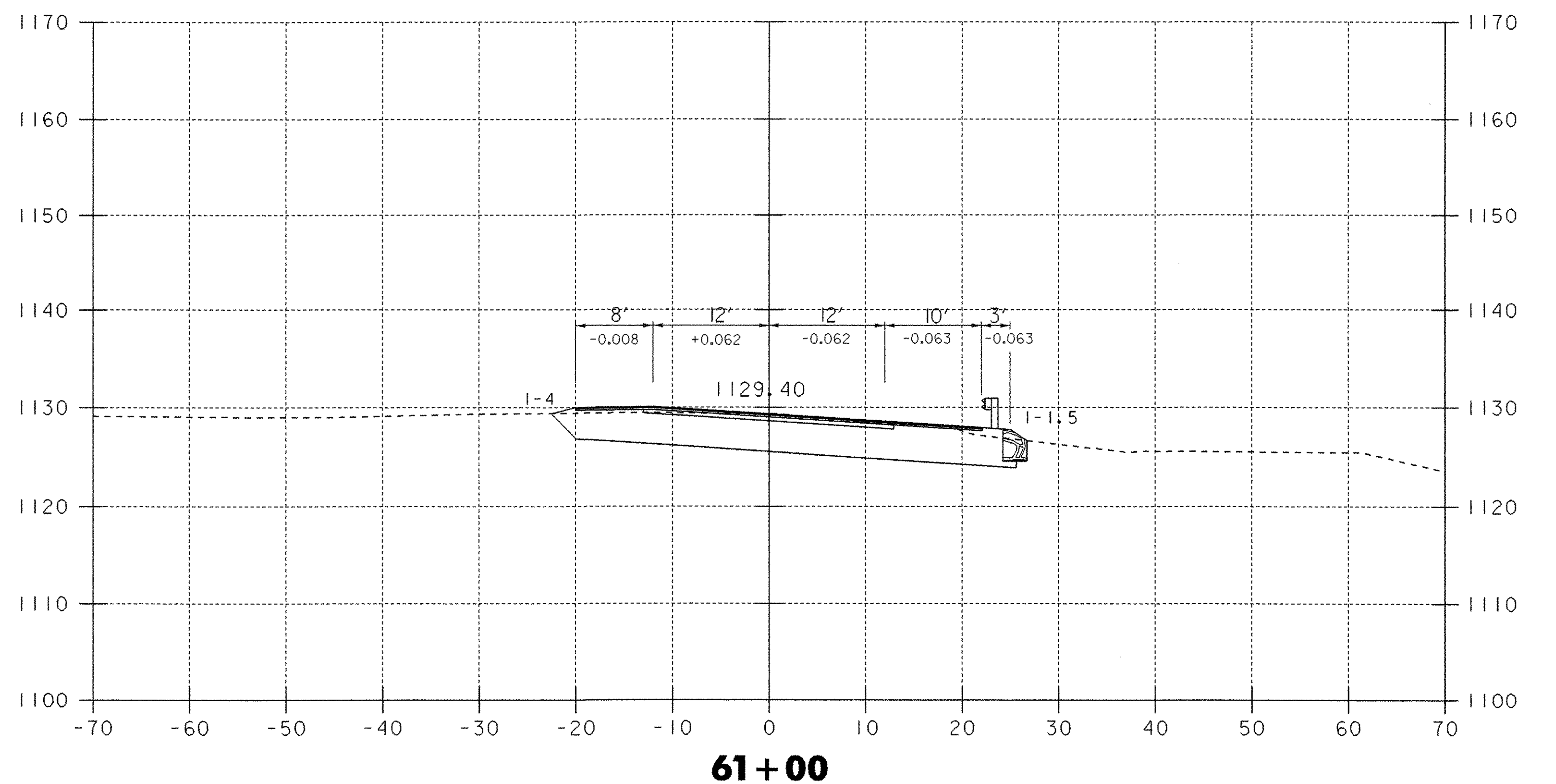
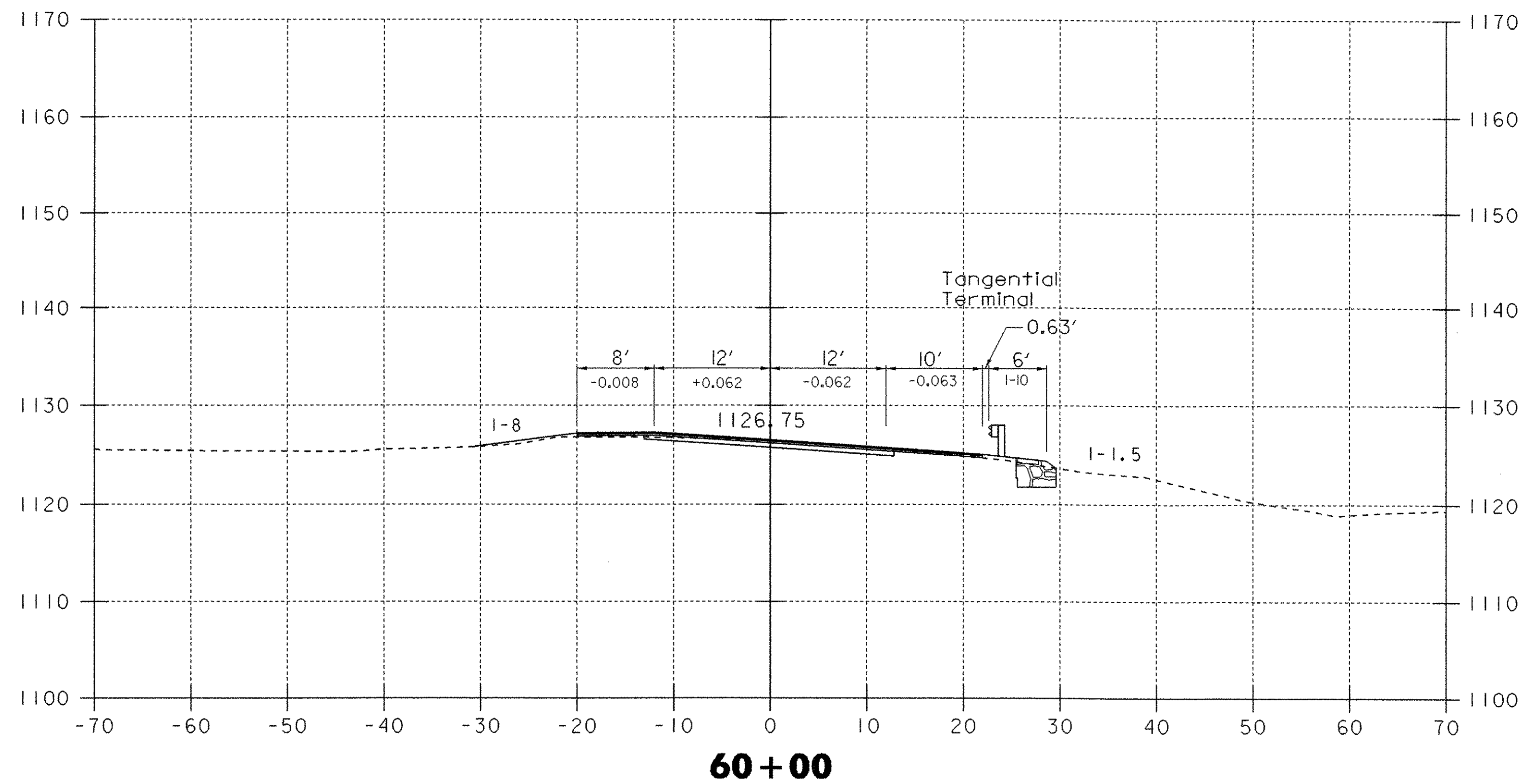
Begin Approach

58+00 - 59+50

DATUM
 VERTICAL NGVD 1929
 HORIZONTAL N/A

0 10 20
 SCALE IN FEET

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/de039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039x01.i	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 86 OF 106

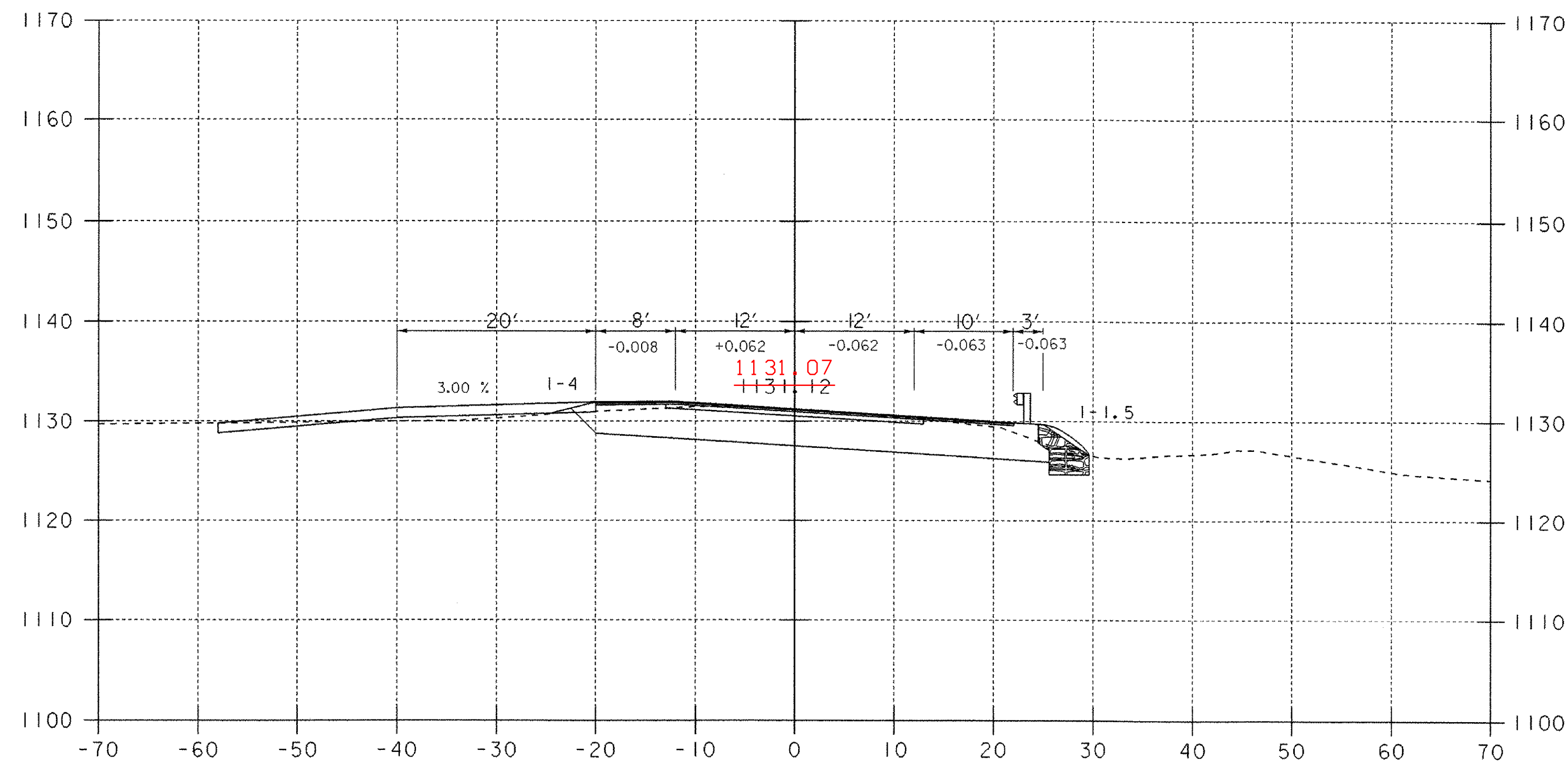


59+55 - 61+00

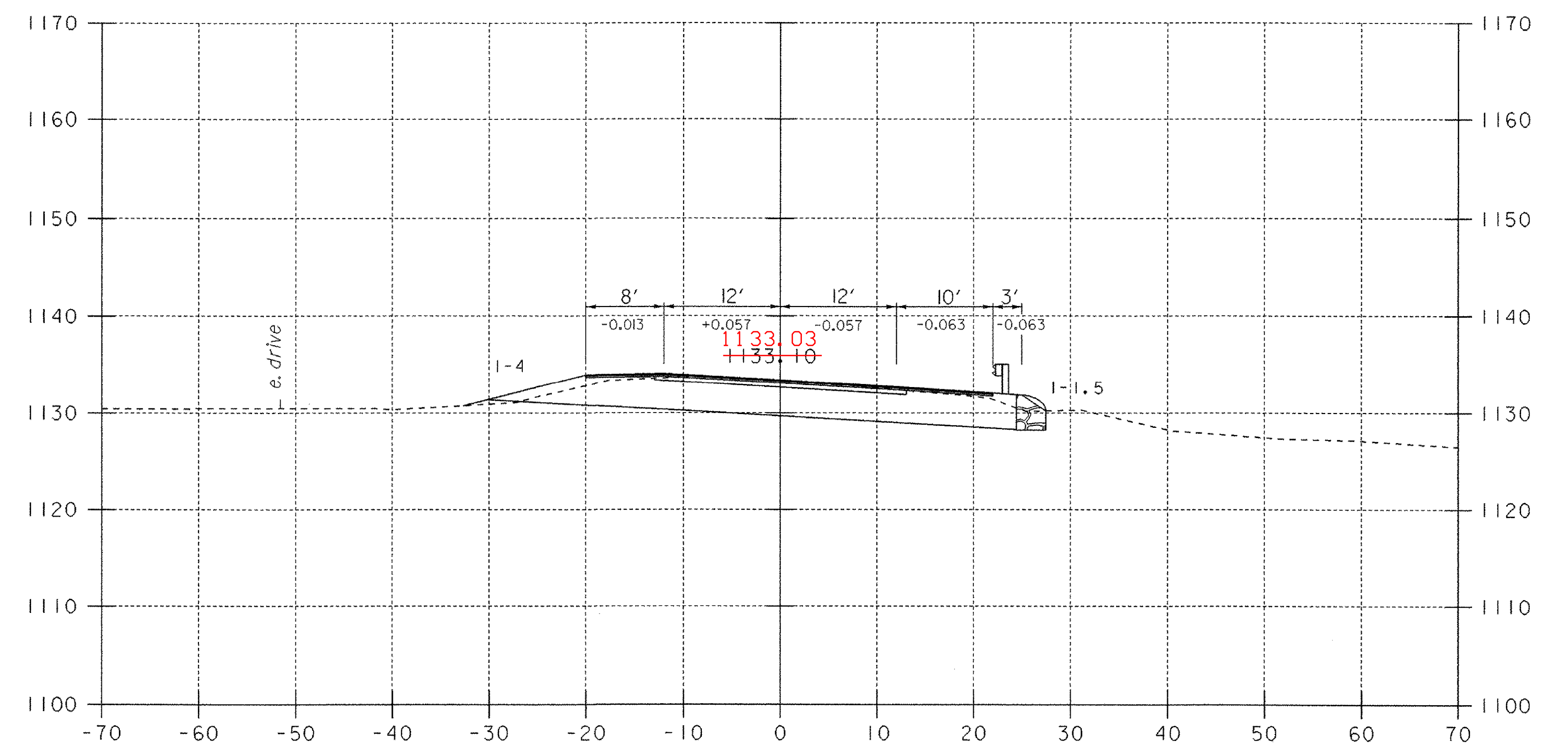
DATUM
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 HORIZONTAL N/A

0 10 20
 SCALE IN FEET

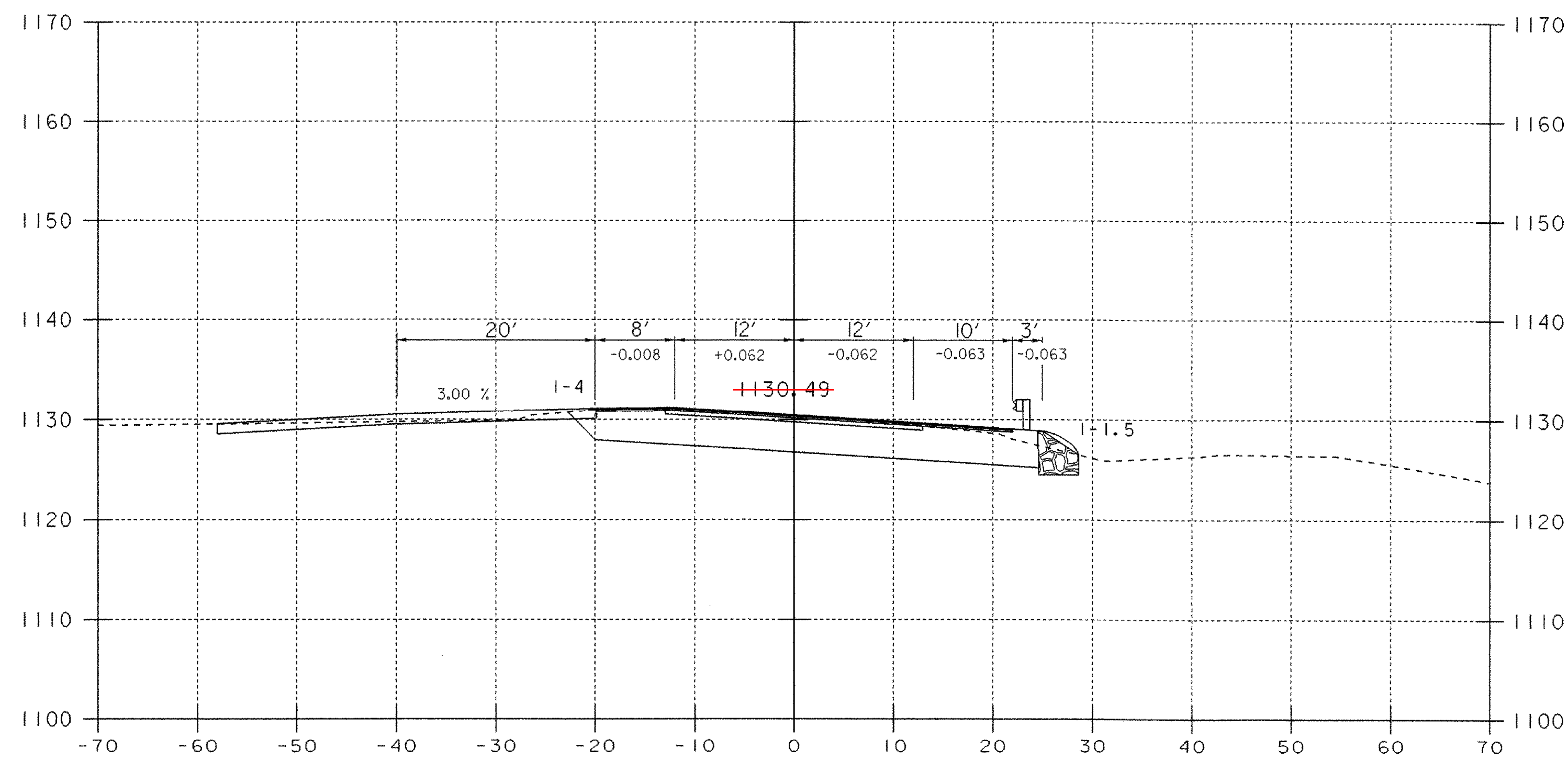
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DESIGN FILE NAME: /84e039/de039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039x02.1	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 87 OF 106



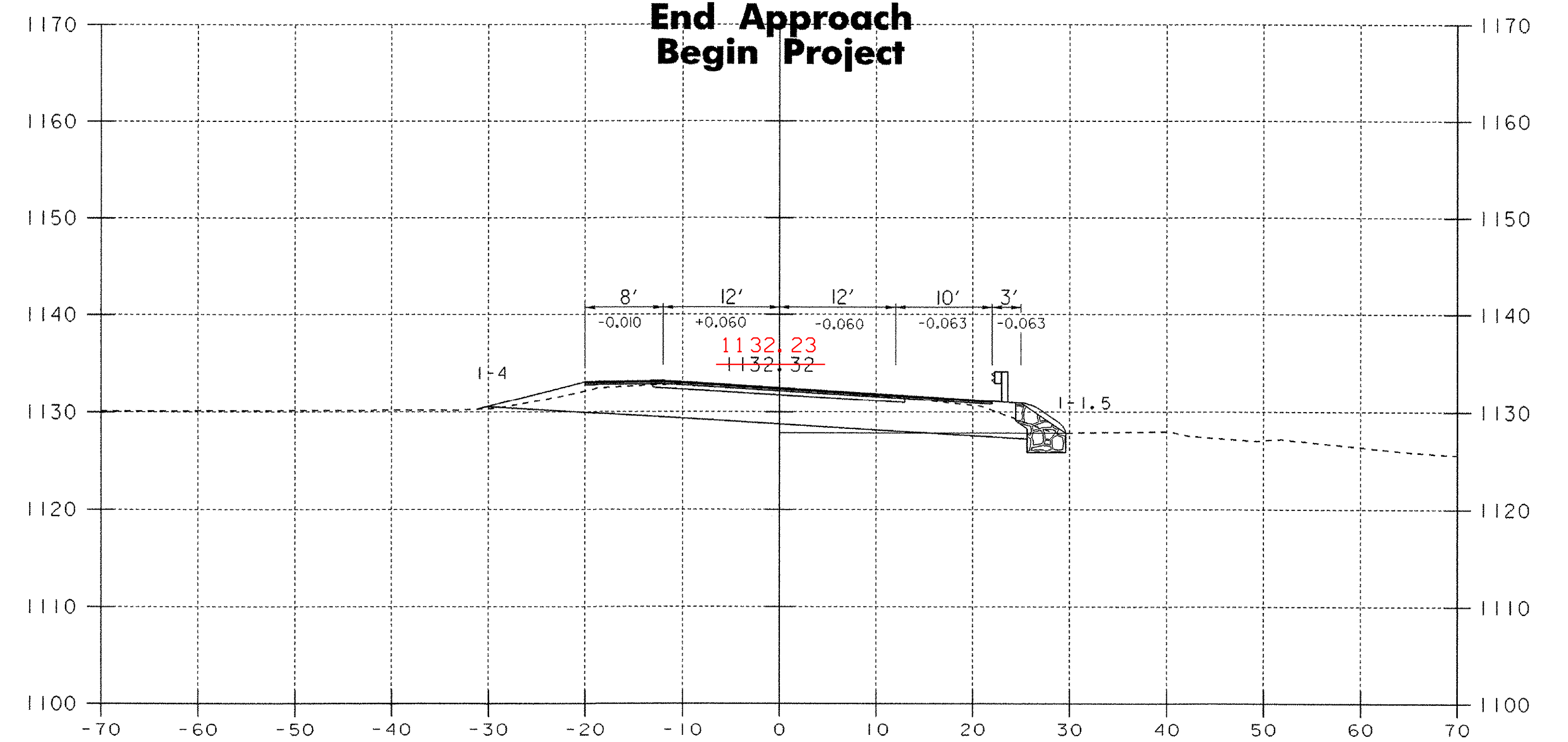
61+50



62+00



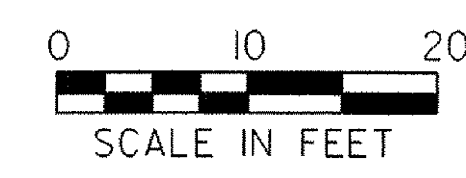
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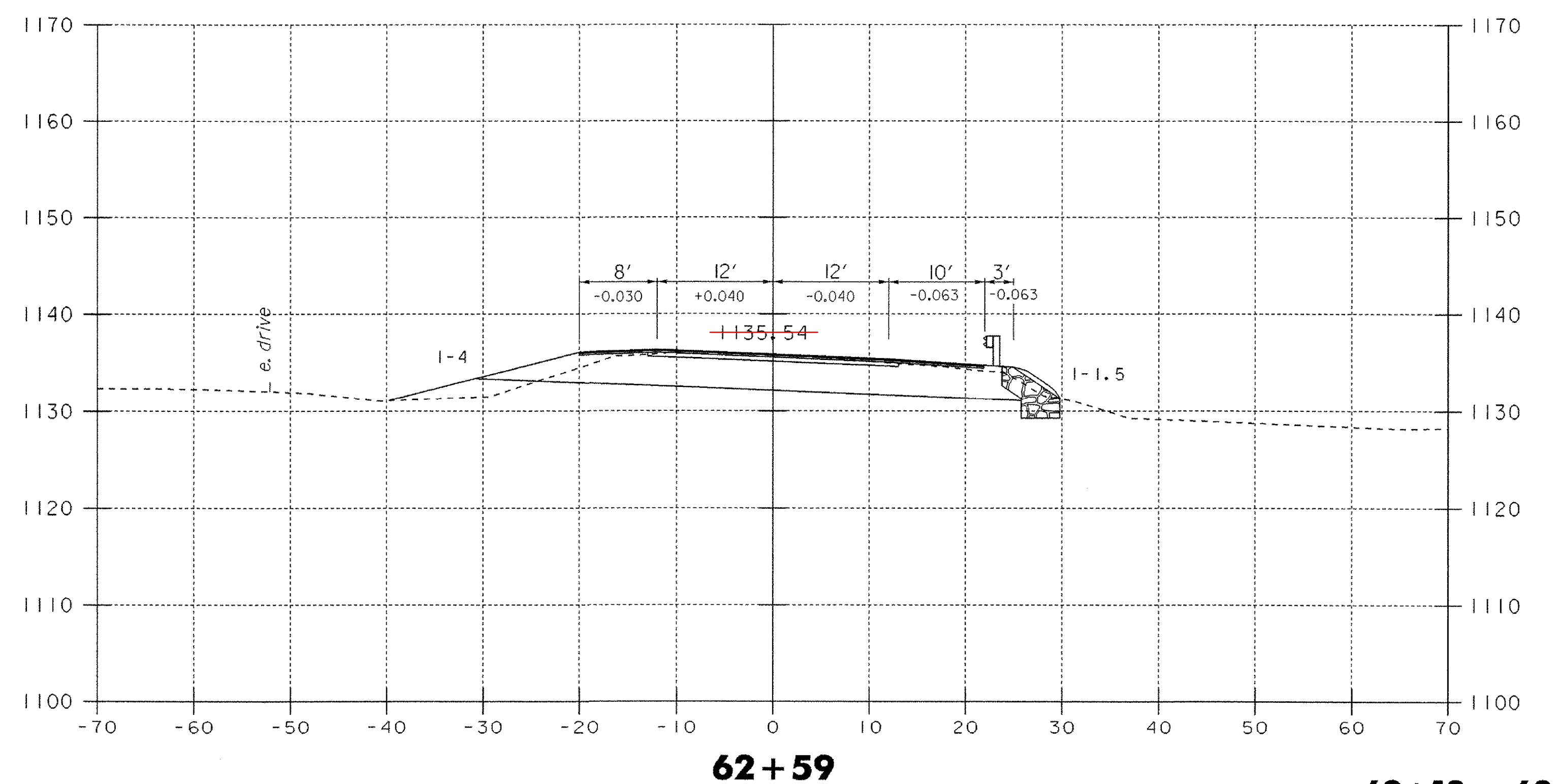
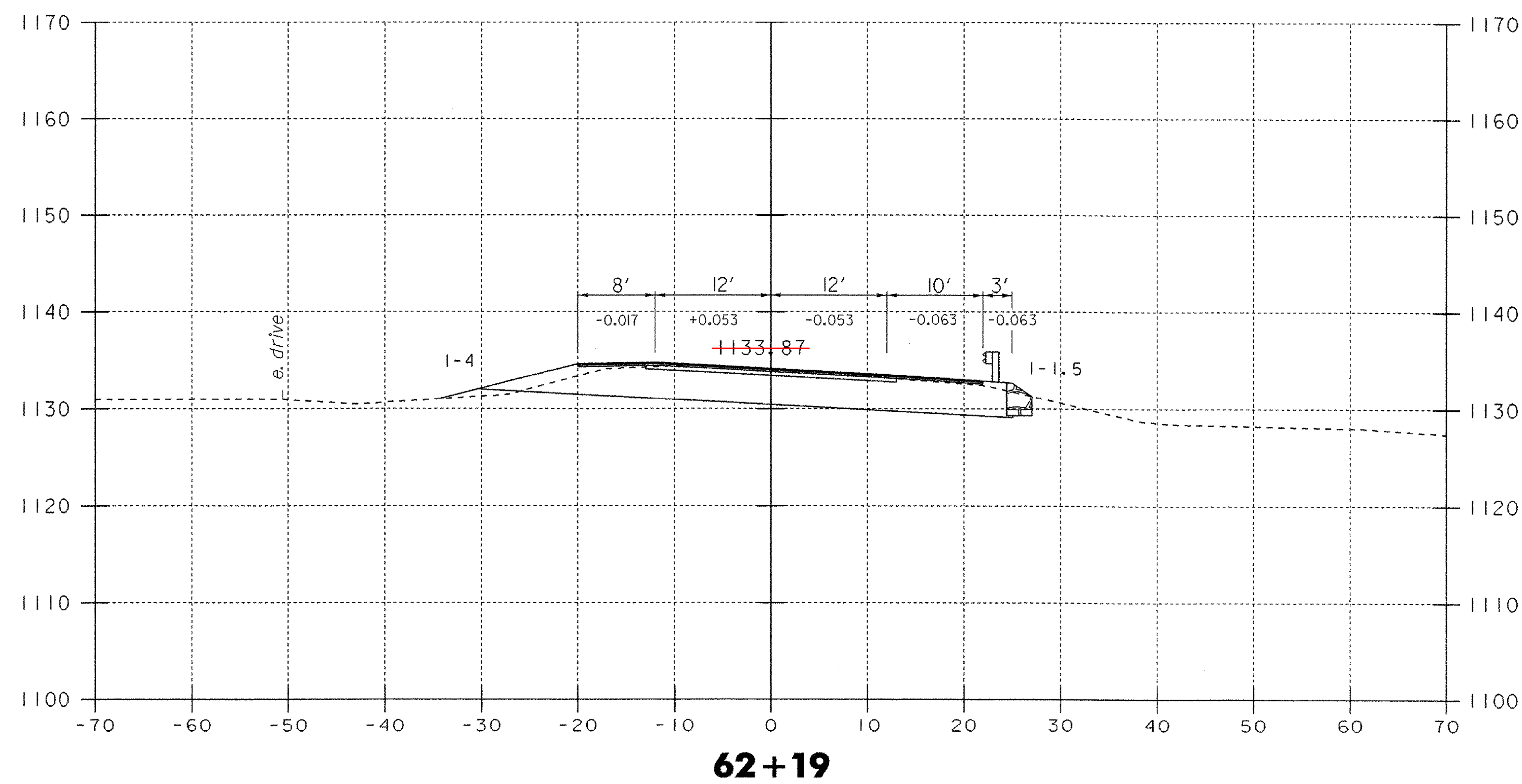
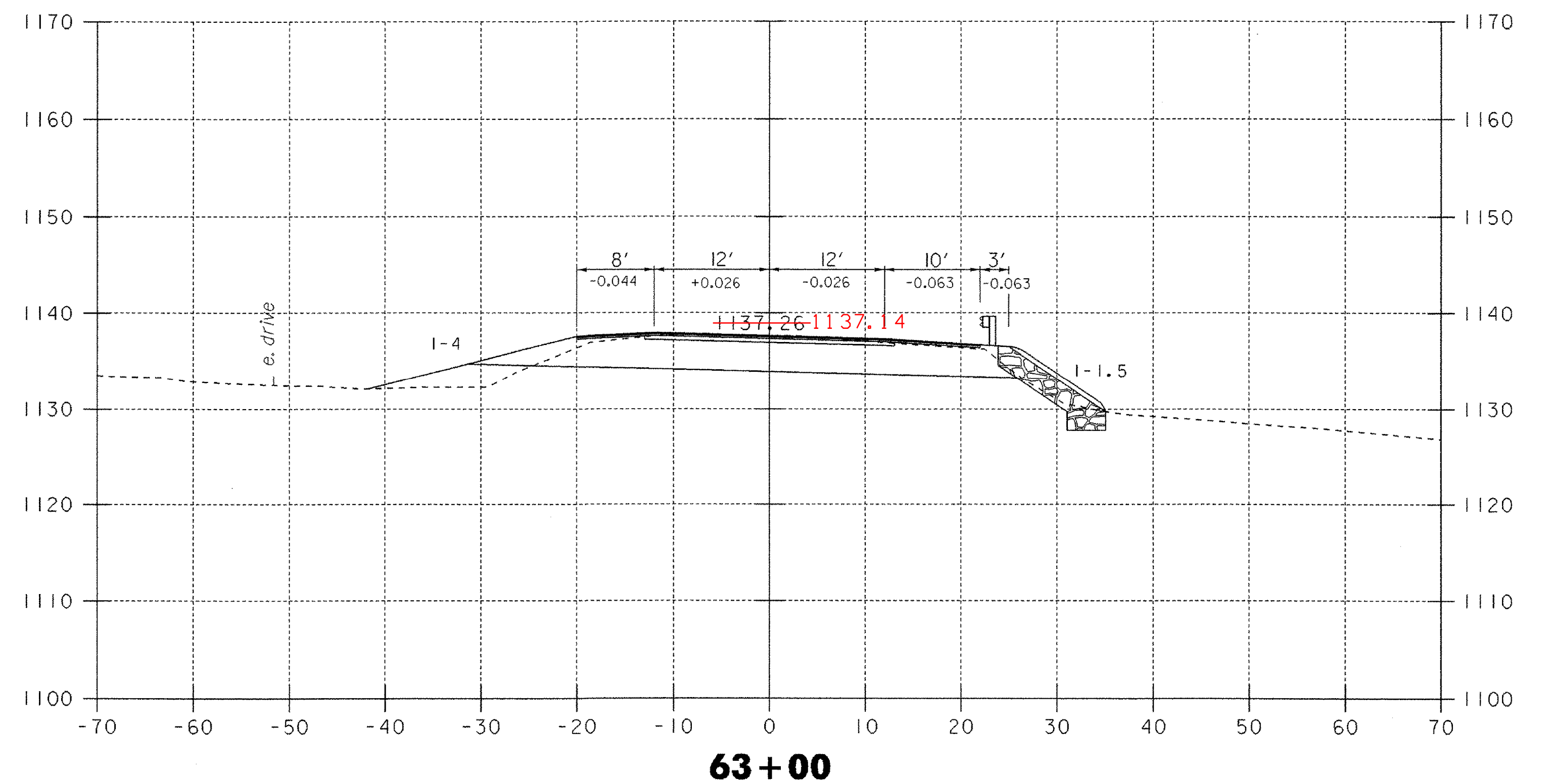
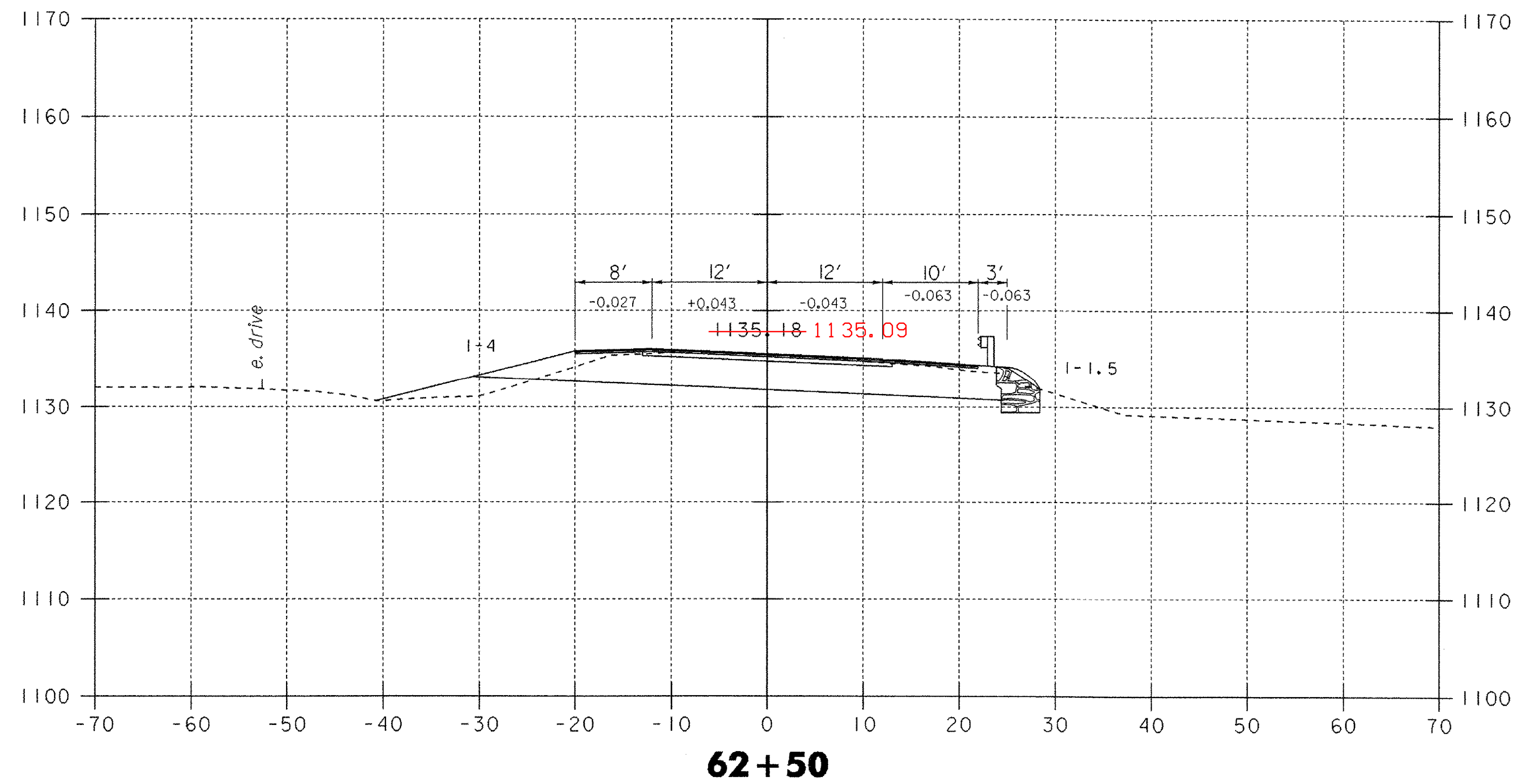
61+80

61+25 - 62+00

DATUM	NGVD 1929
VERTICAL	
HORIZONTAL	N/A



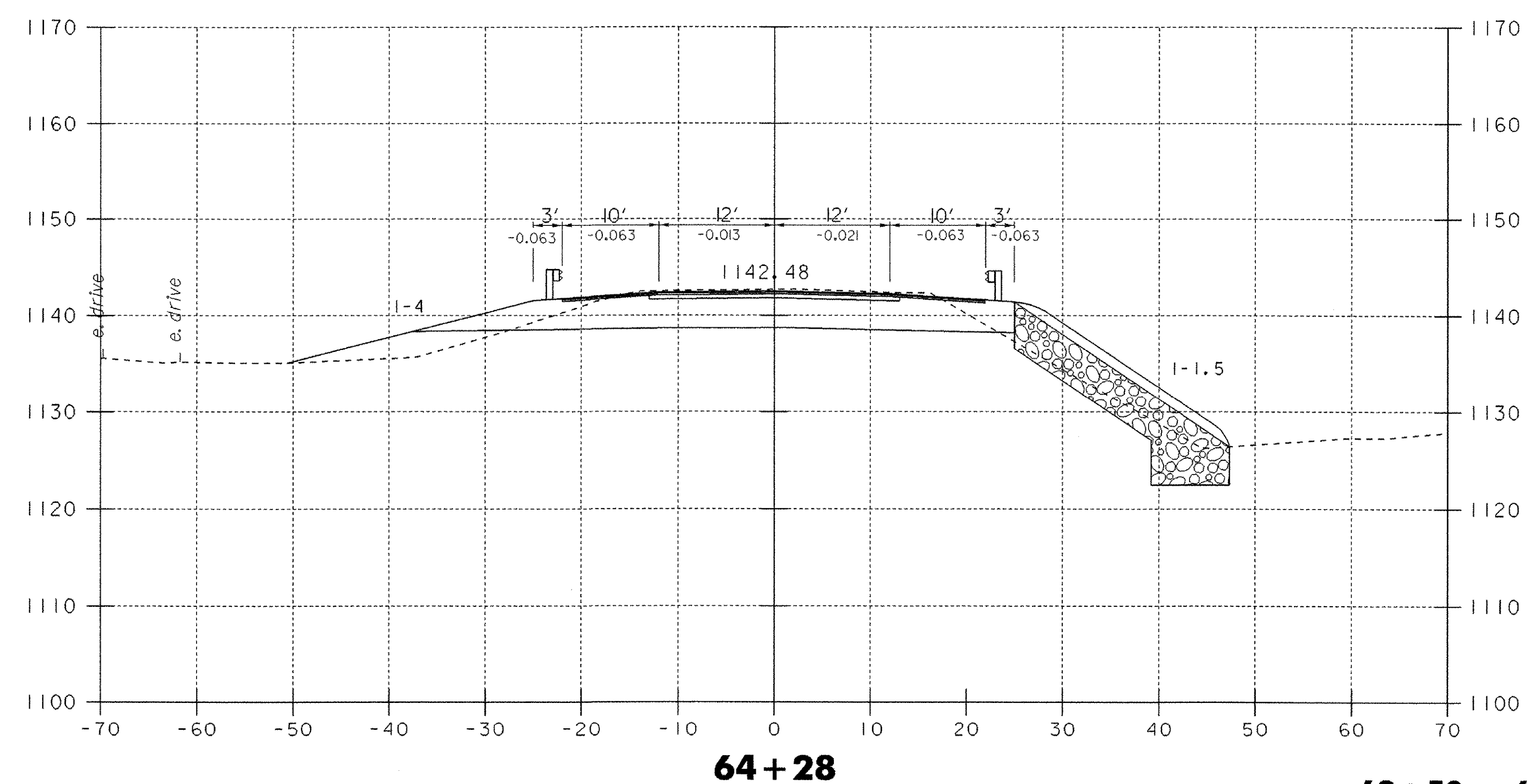
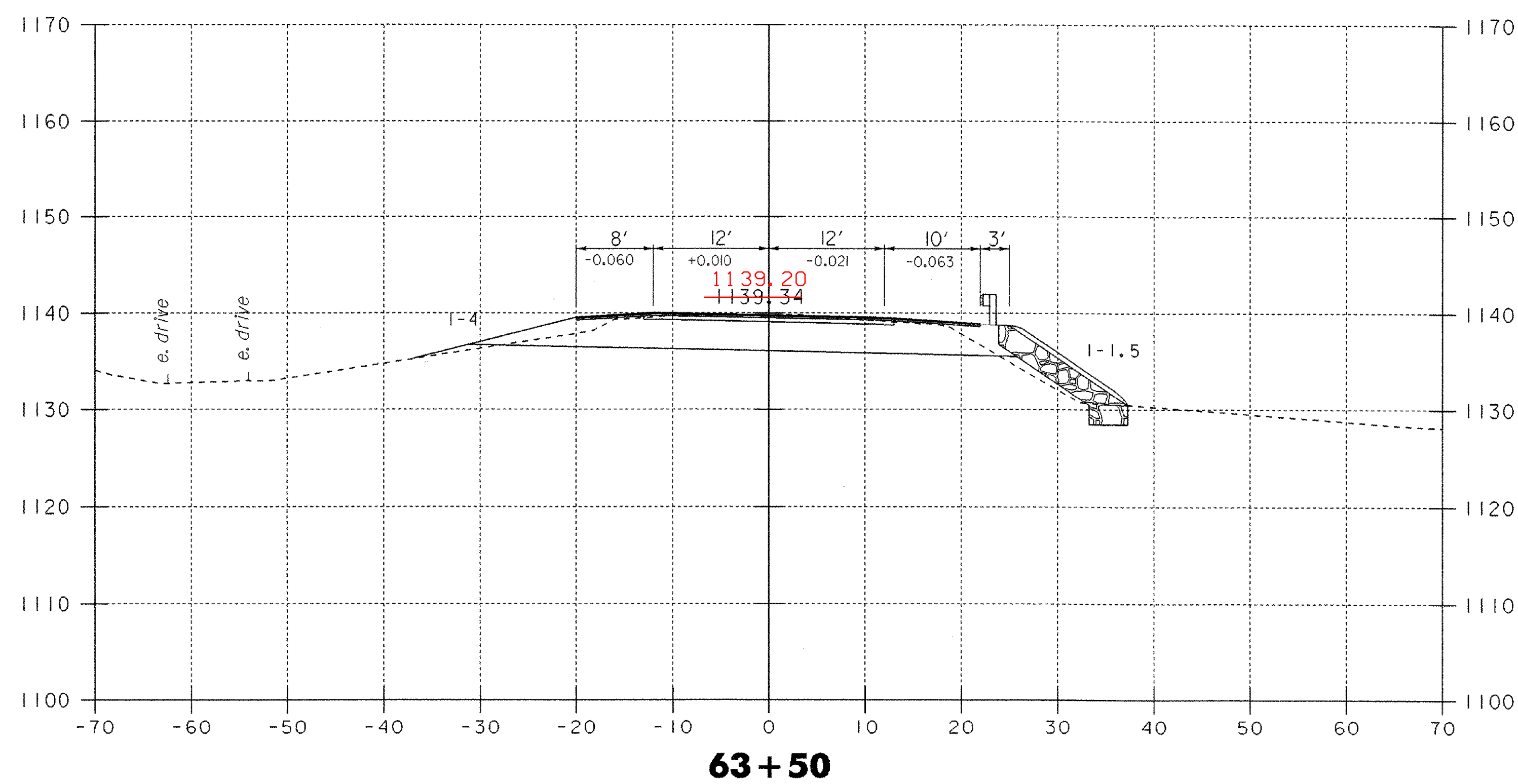
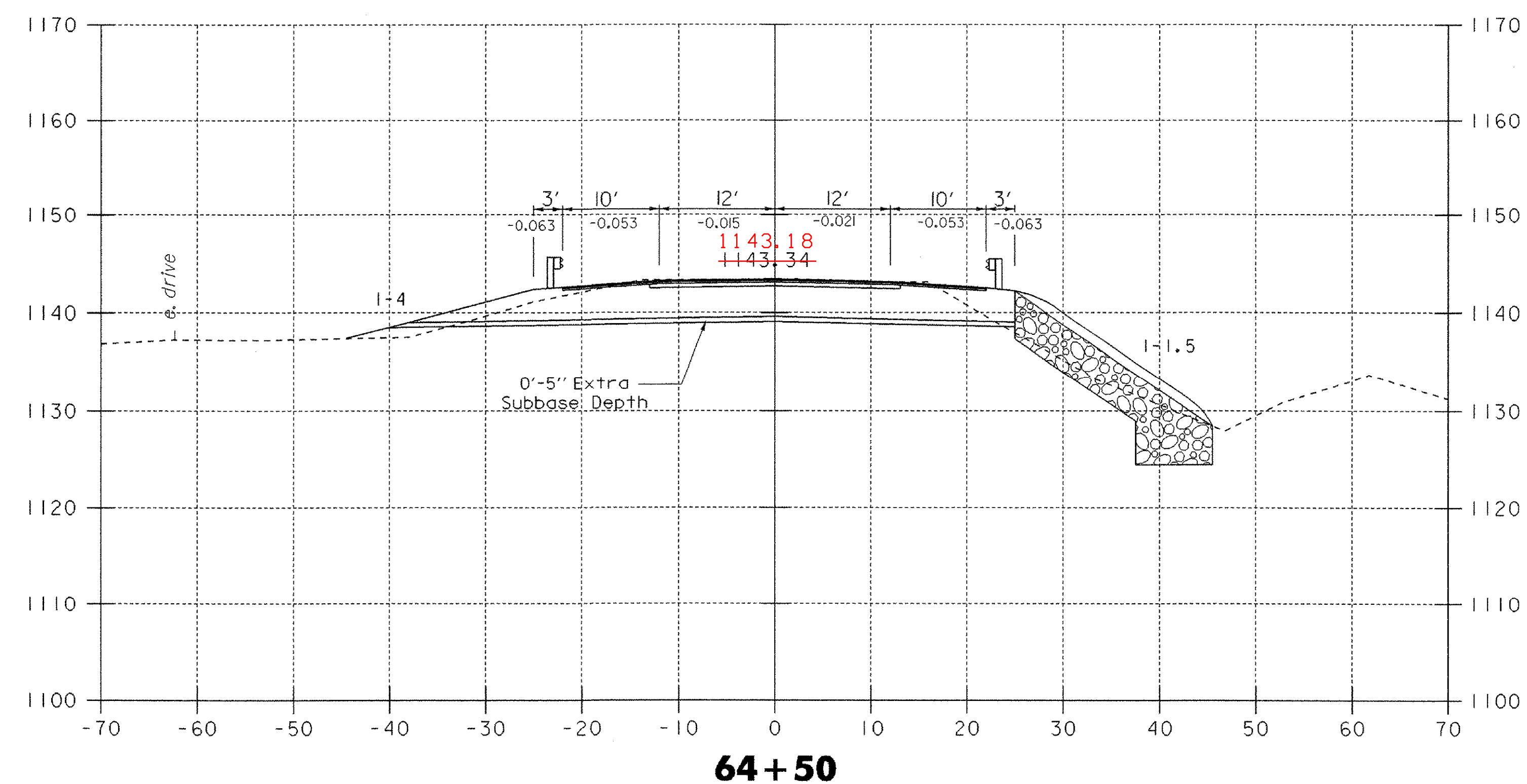
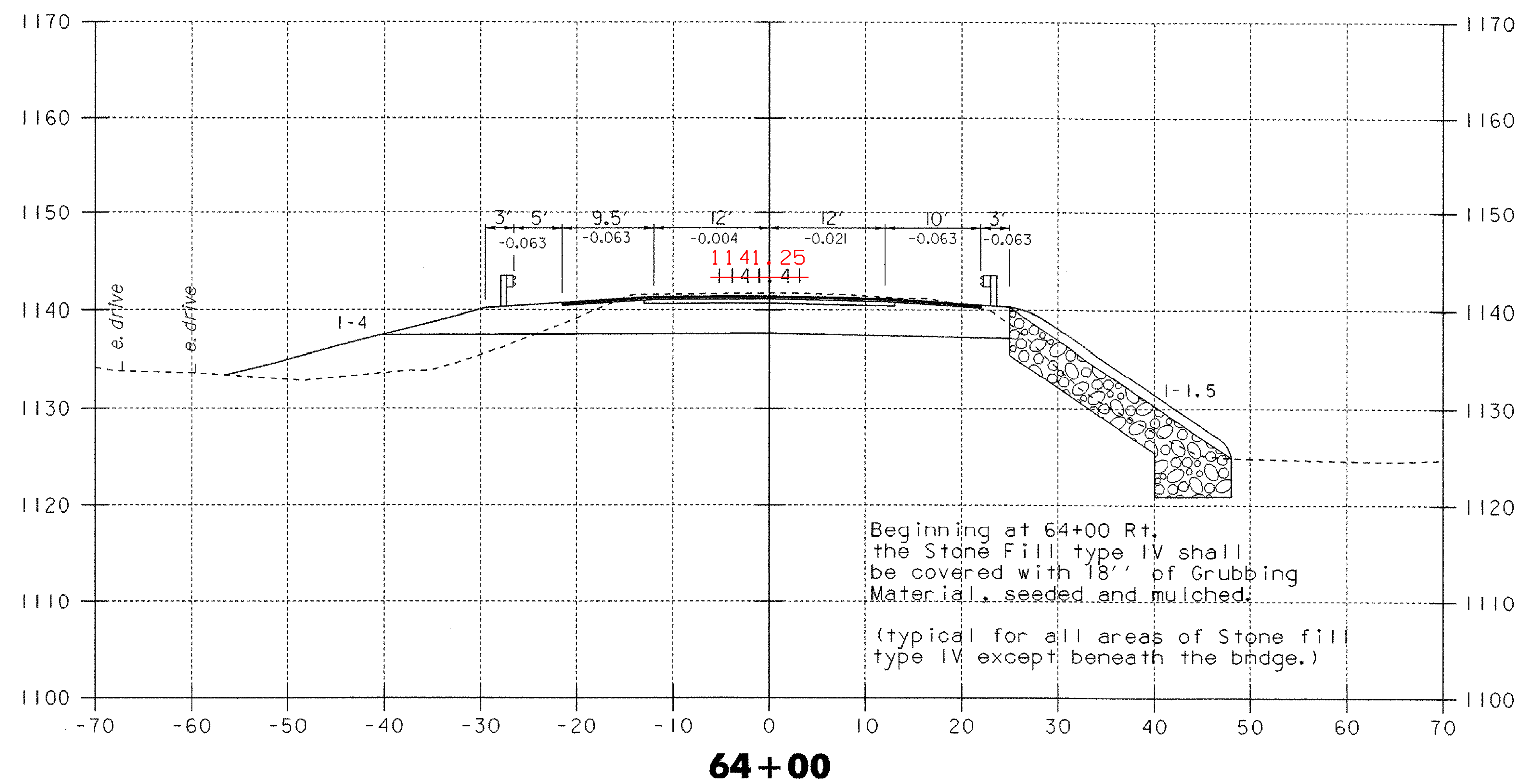
PROJECT:	WOODFORD	PROJECT NO.:	BHF 010-1(29)
DESIGN FILE NAME:	/84e039/de039xs.dgn	PLOT DATE:	03-OCT-2005
IPARM FILE NAME:	de039x03.1	SURVEY DATE:	12-88
SURVEYED BY:	MOREAU	DRAWN BY:	EVANS-MONGEON
SQUAD LEADER:	PORTALUPI	SHEET:	88 OF 106



DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	N/A

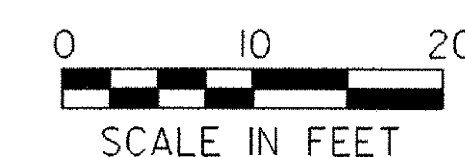


PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/de039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039x04.1	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 89 OF 106

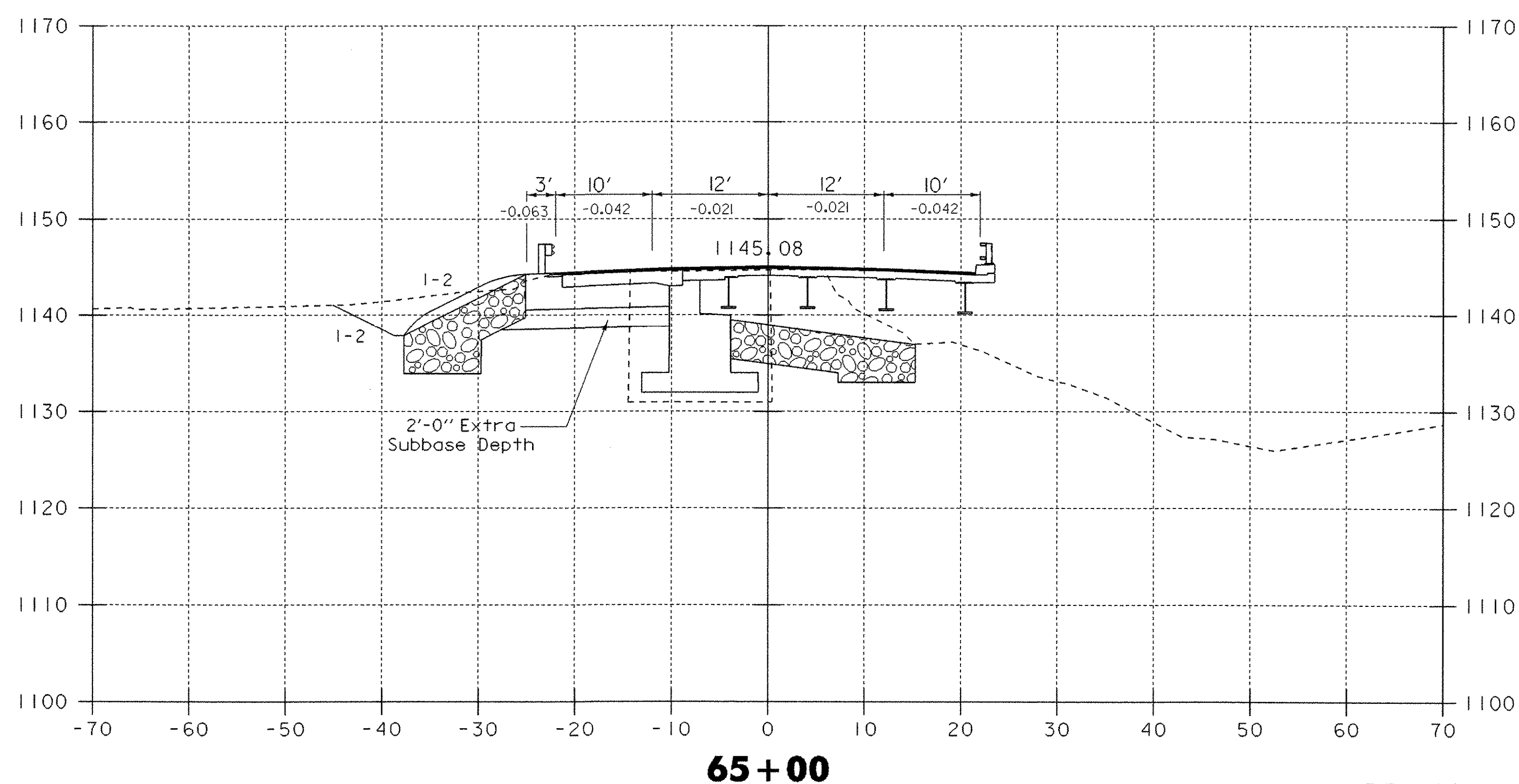
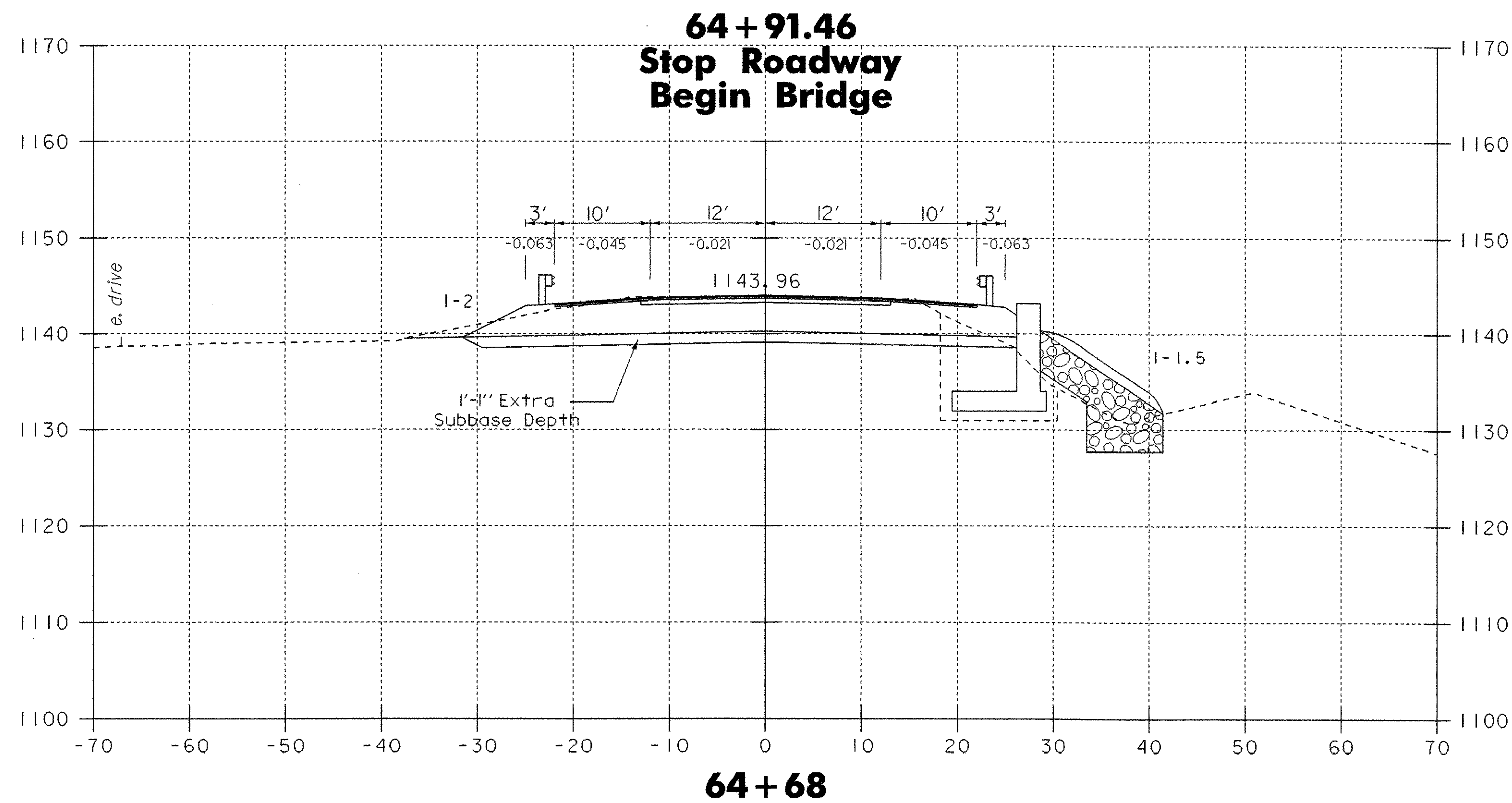
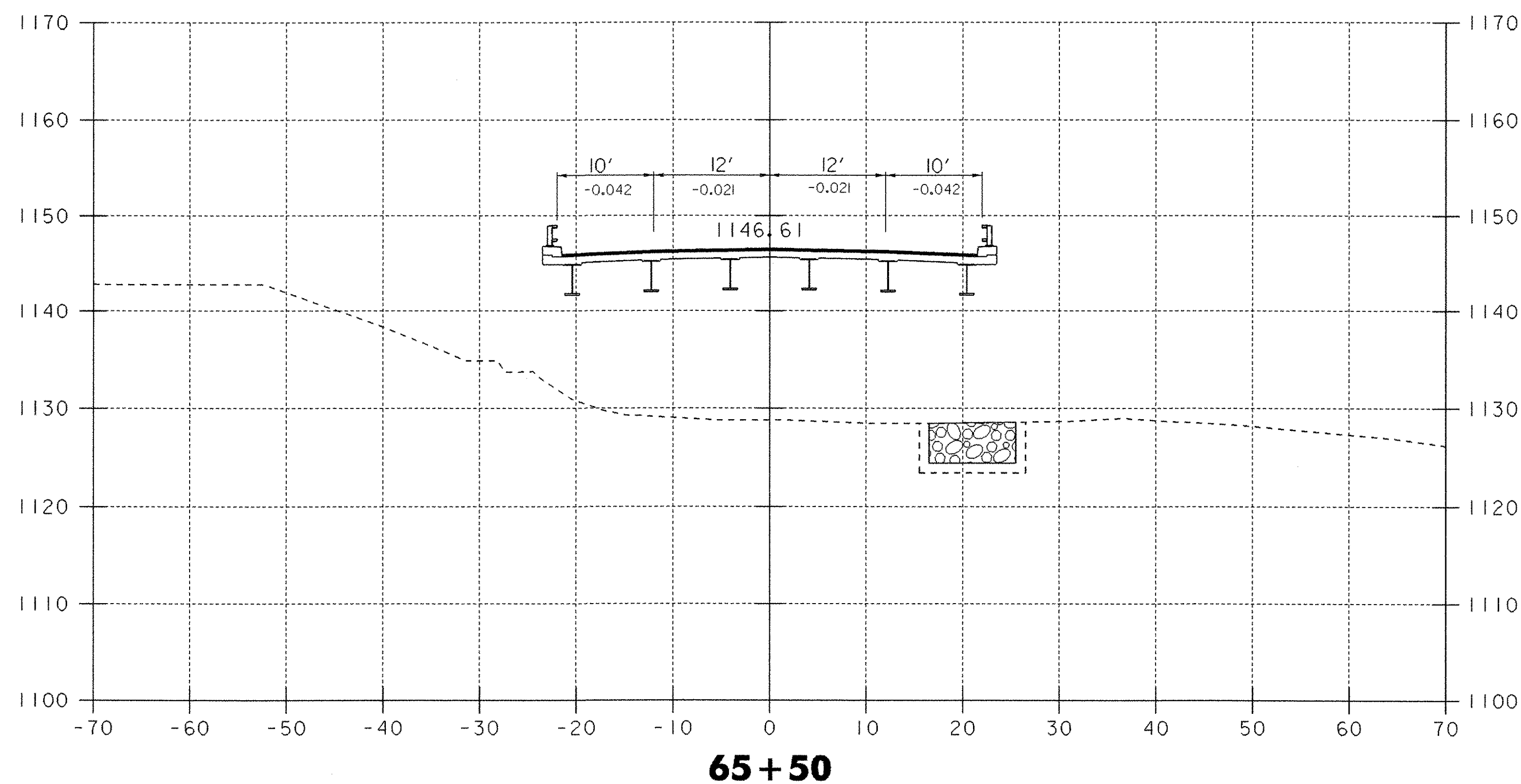
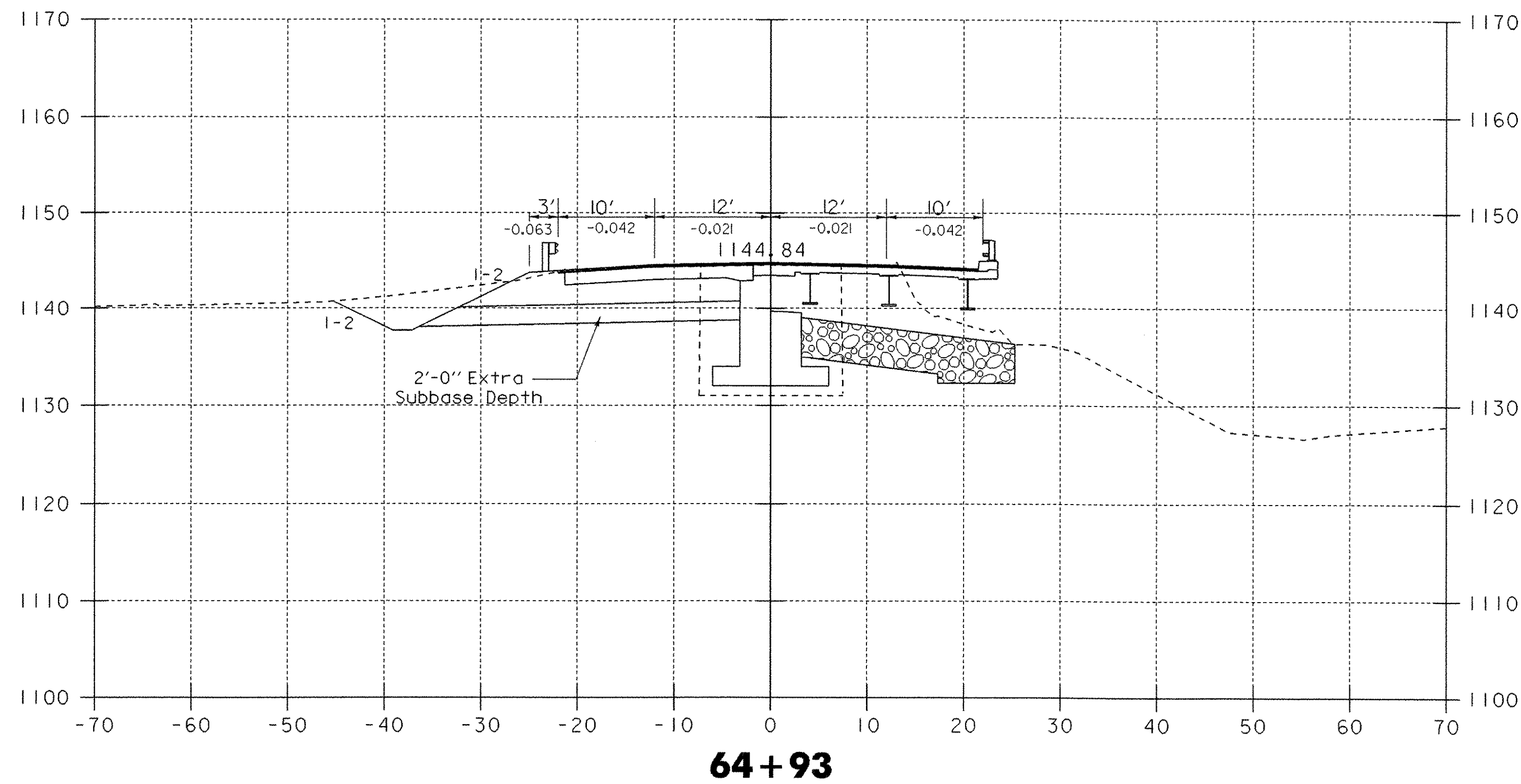


63+50 - 64+50

DATUM	NGVD 1929
VERTICAL	
HORIZONTAL	N/A



PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/de039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039x05.1	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 90 OF 106

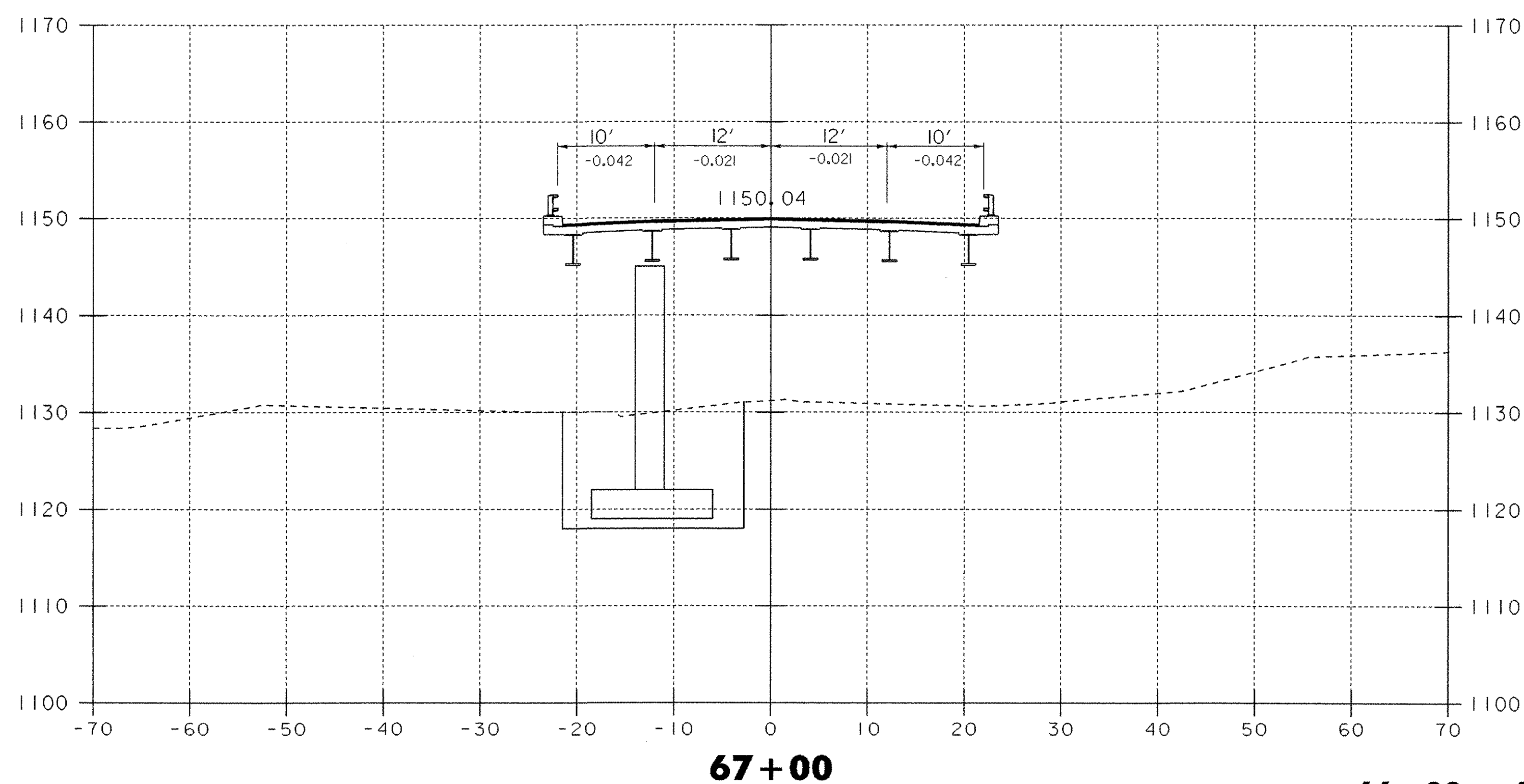
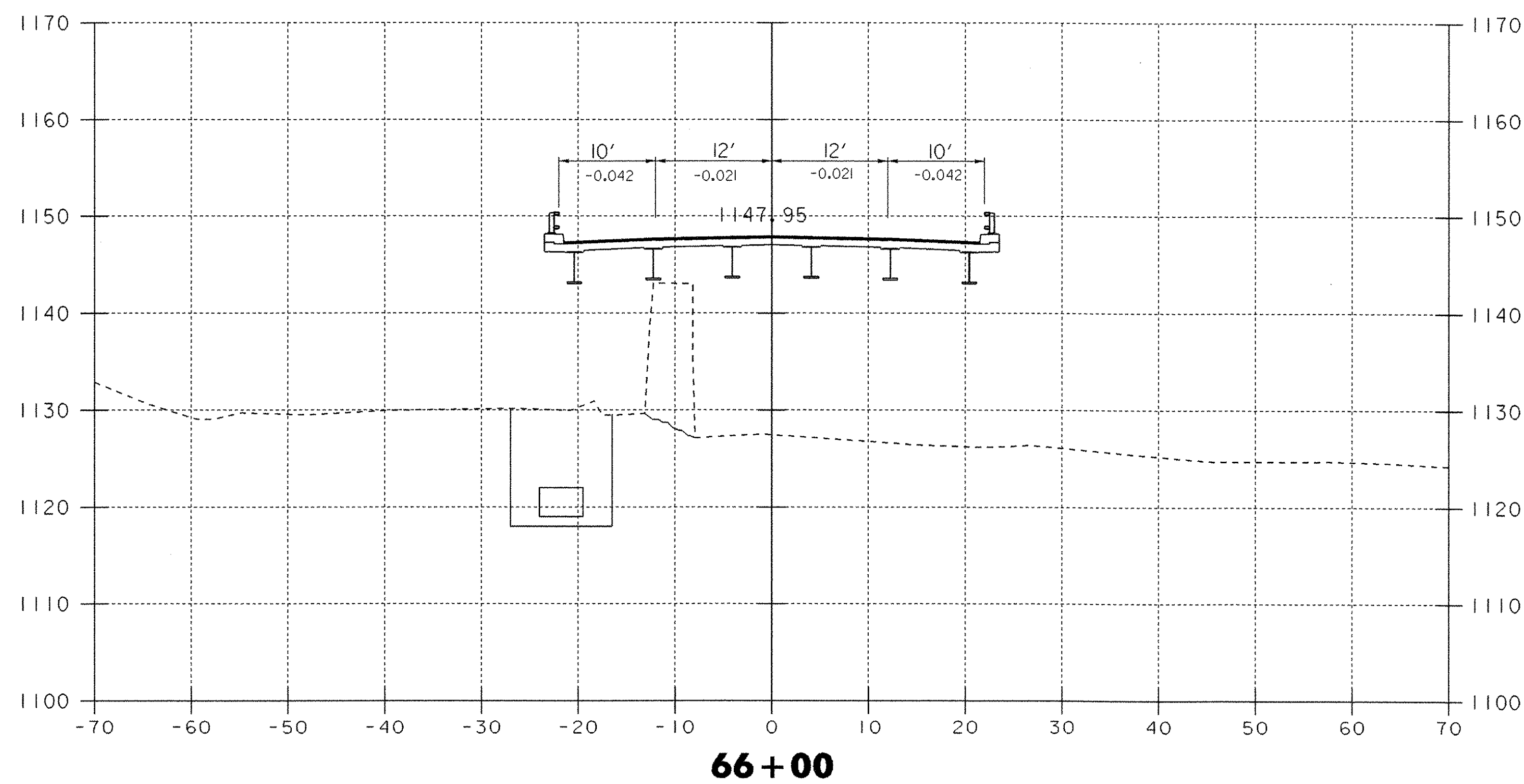
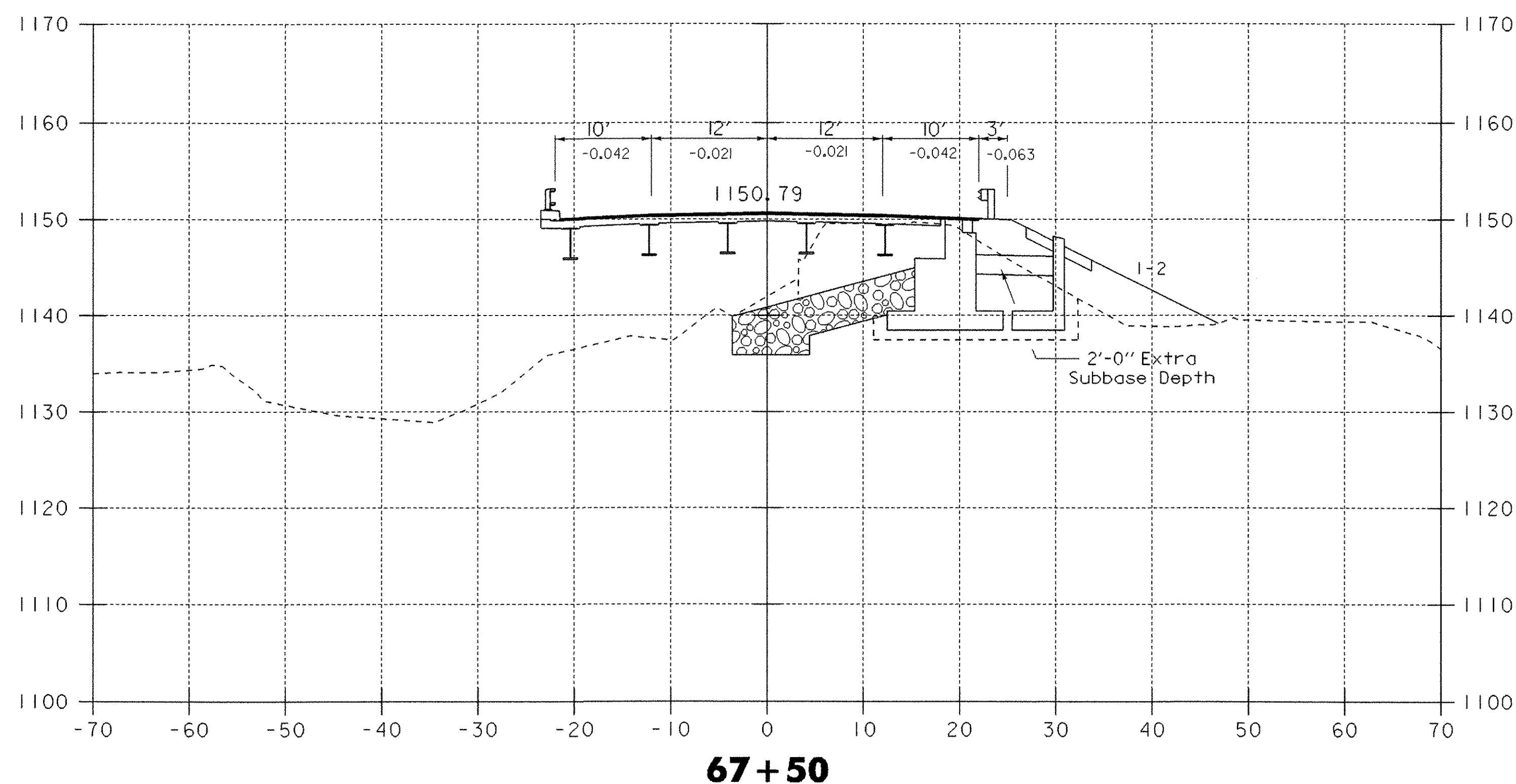
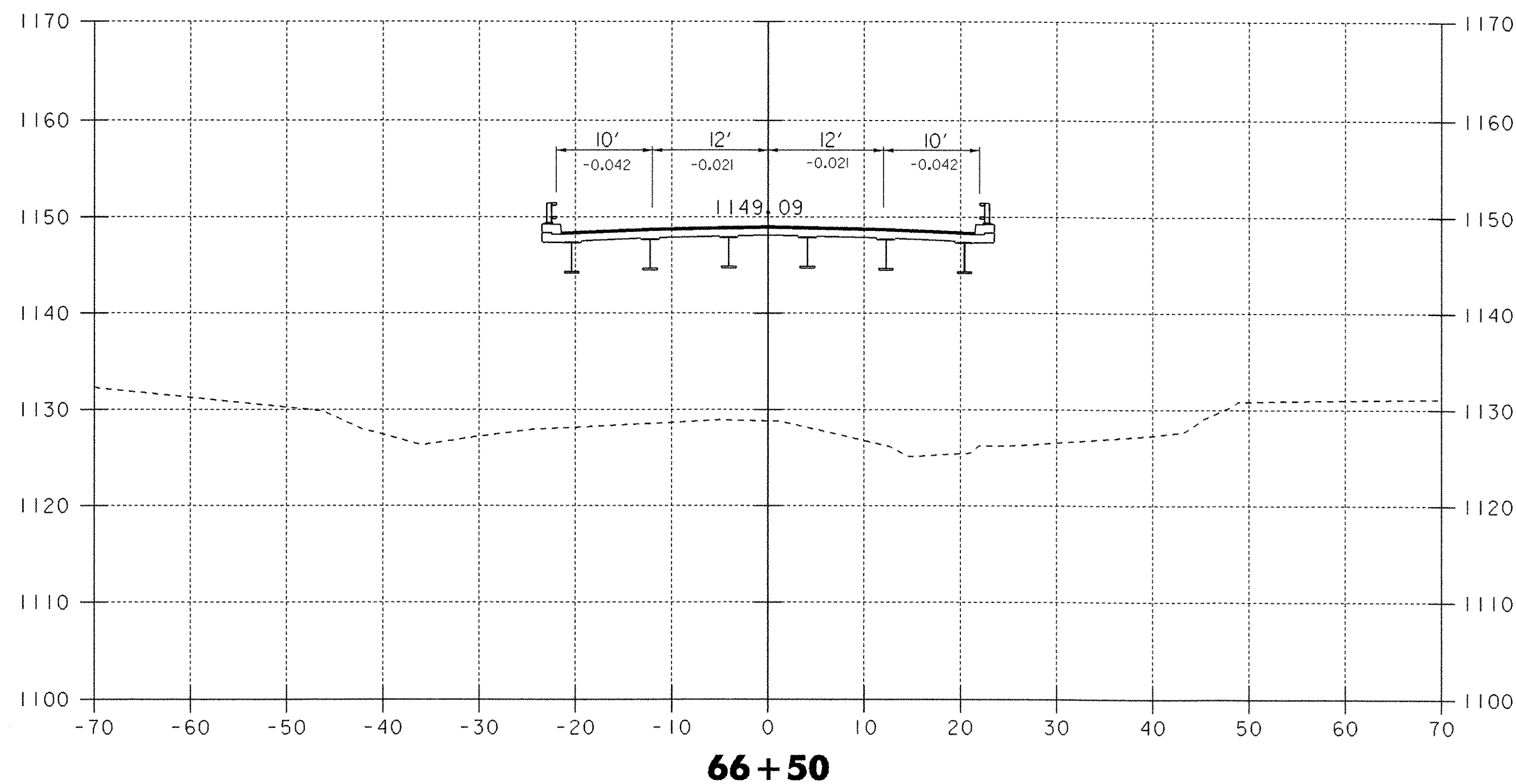


64+68 - 65+50

DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

0 10 20
SCALE IN FEET

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/de039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039x06.1	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 91 OF 106

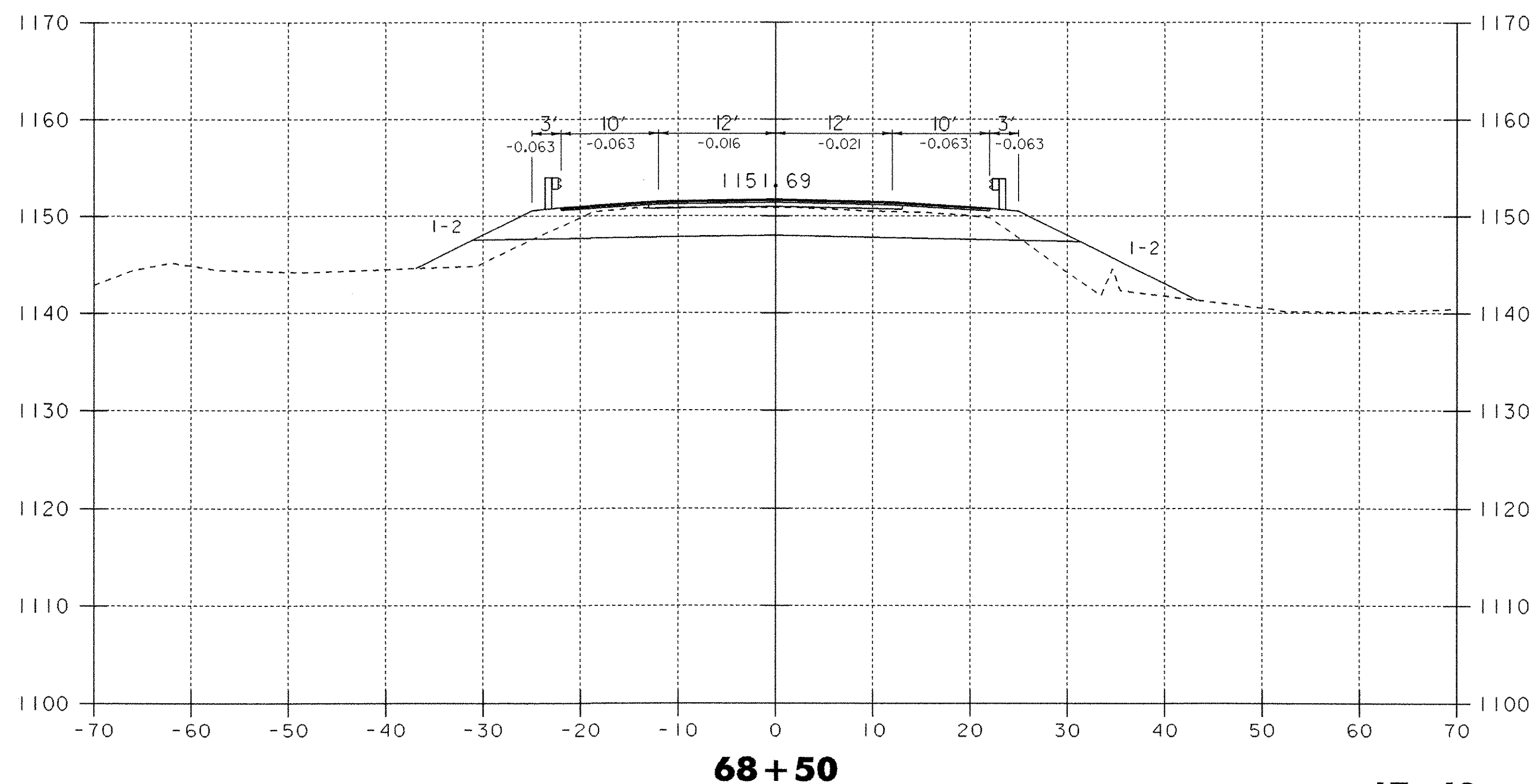
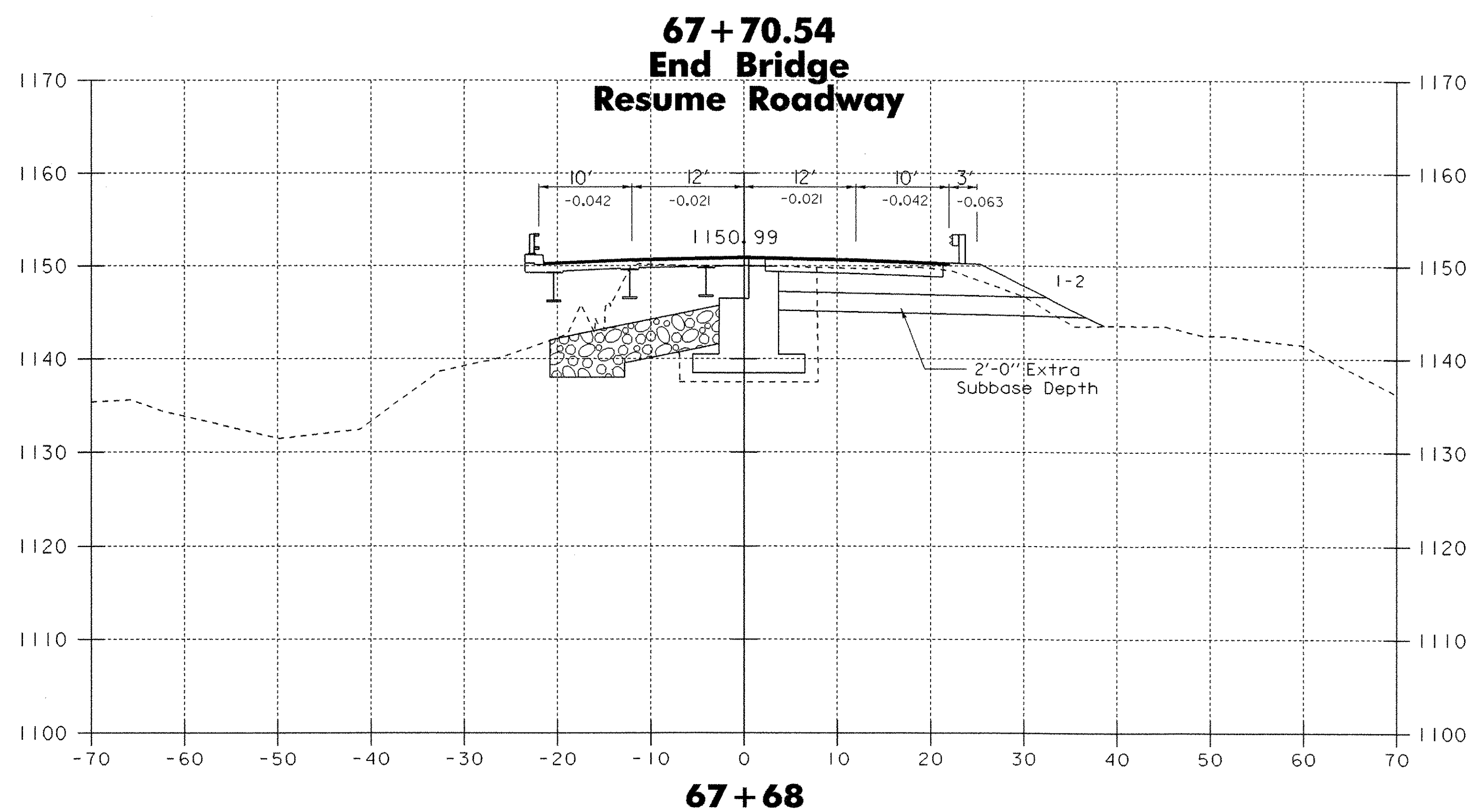
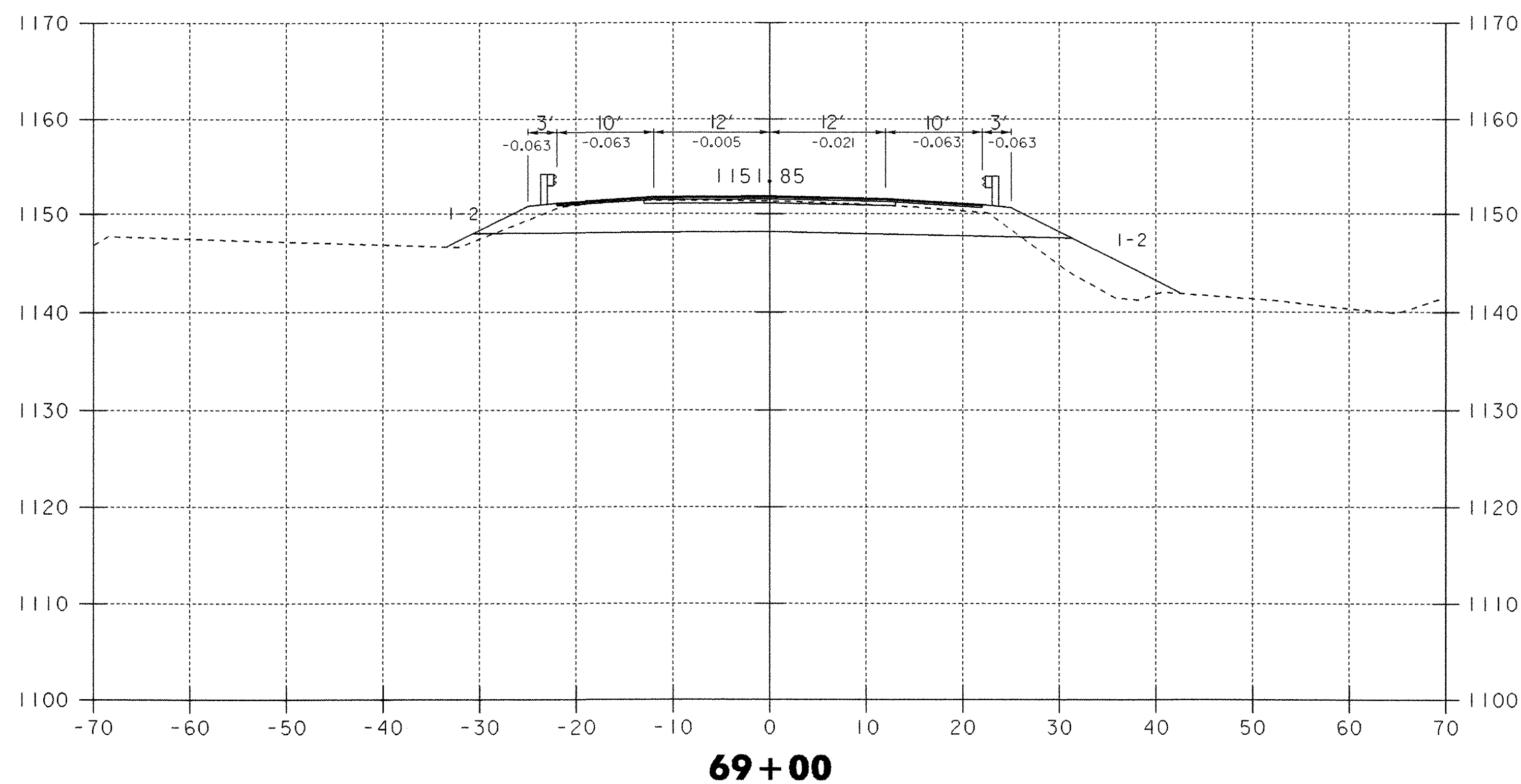
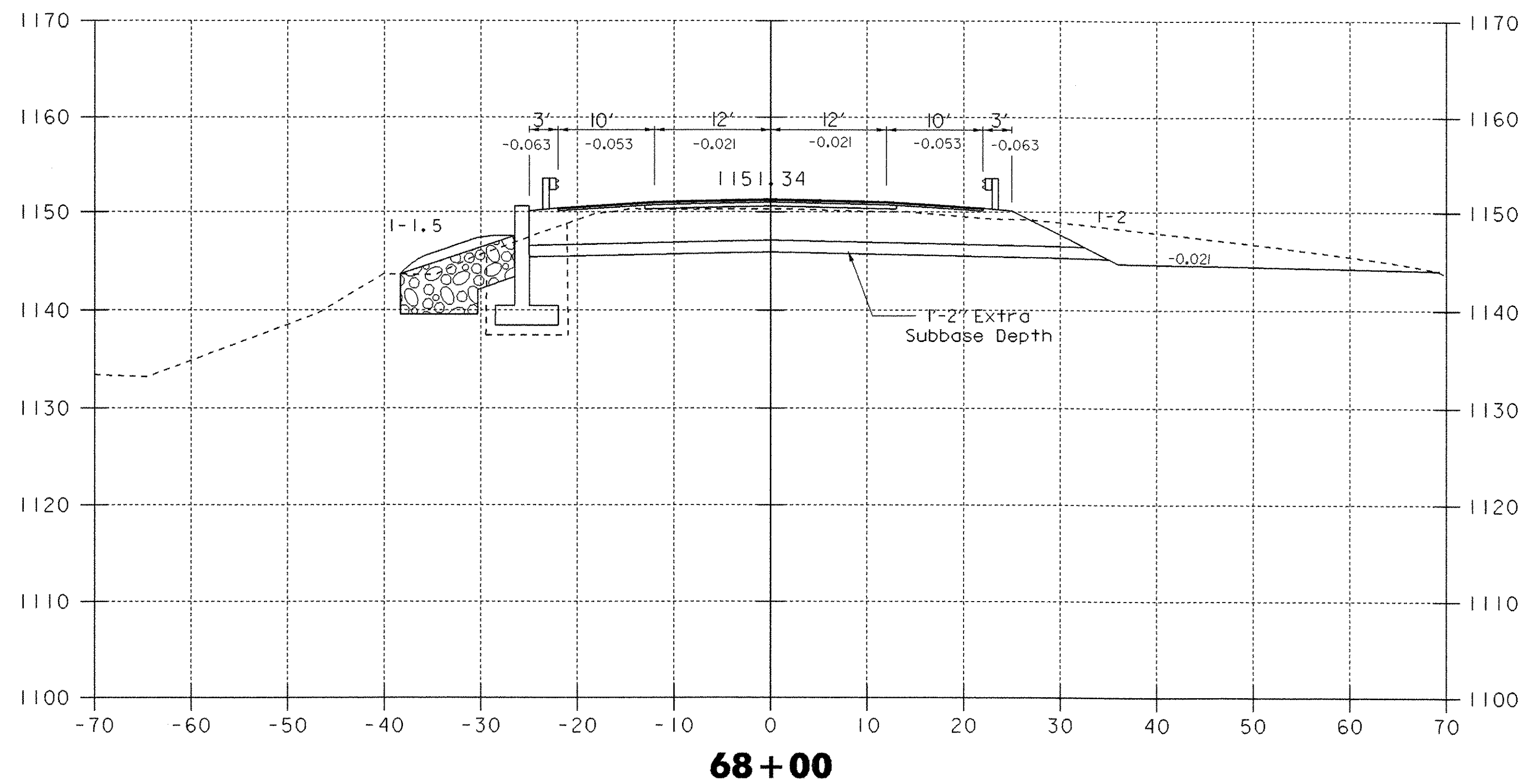


66+00 - 67+50

DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

0 10 20
SCALE IN FEET

PROJECT: WOODFORD	PROJECT NO.: BFH 010-K(29)
DESIGN FILE NAME: /84e039/de039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039x07.i	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 92 OF 106

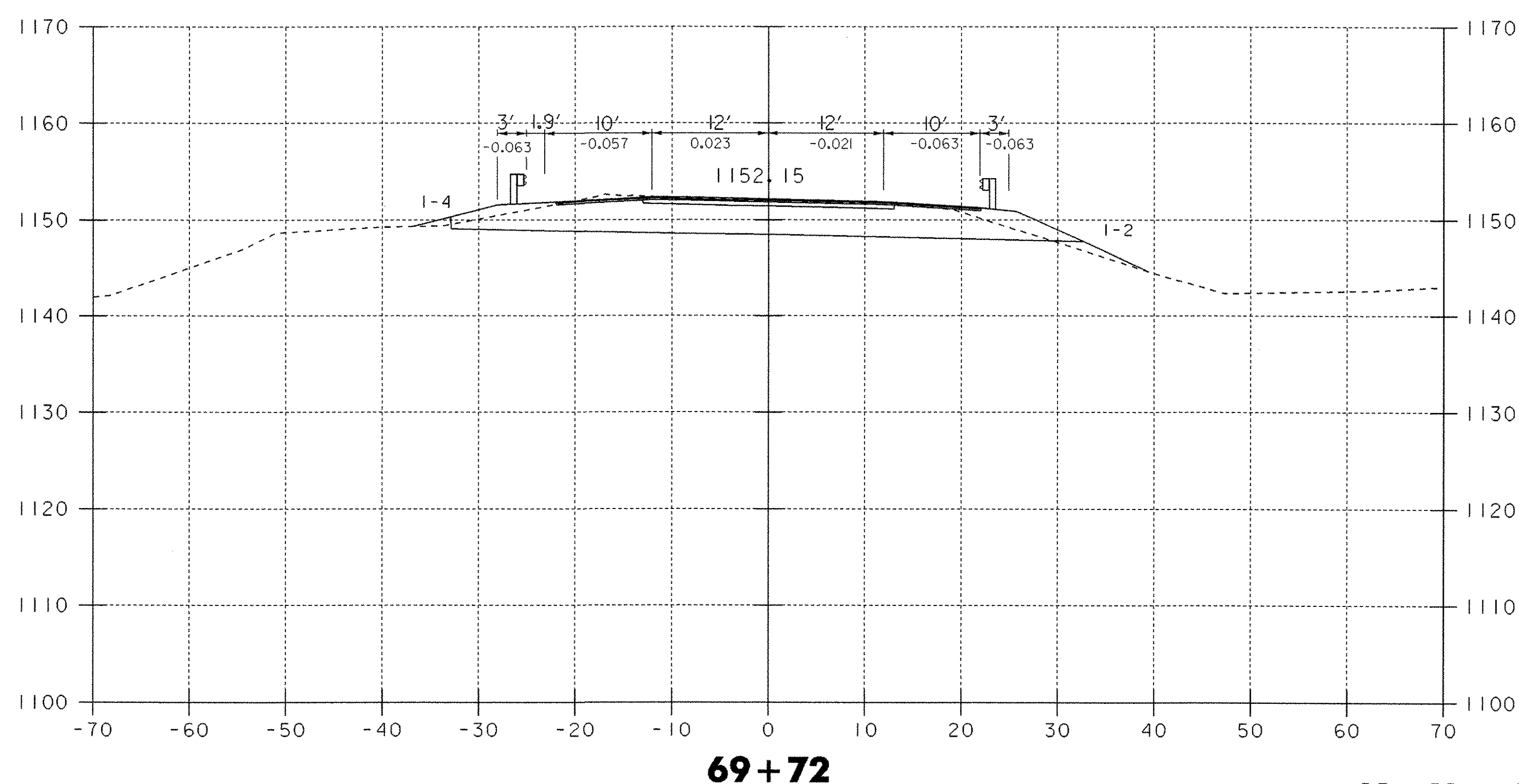
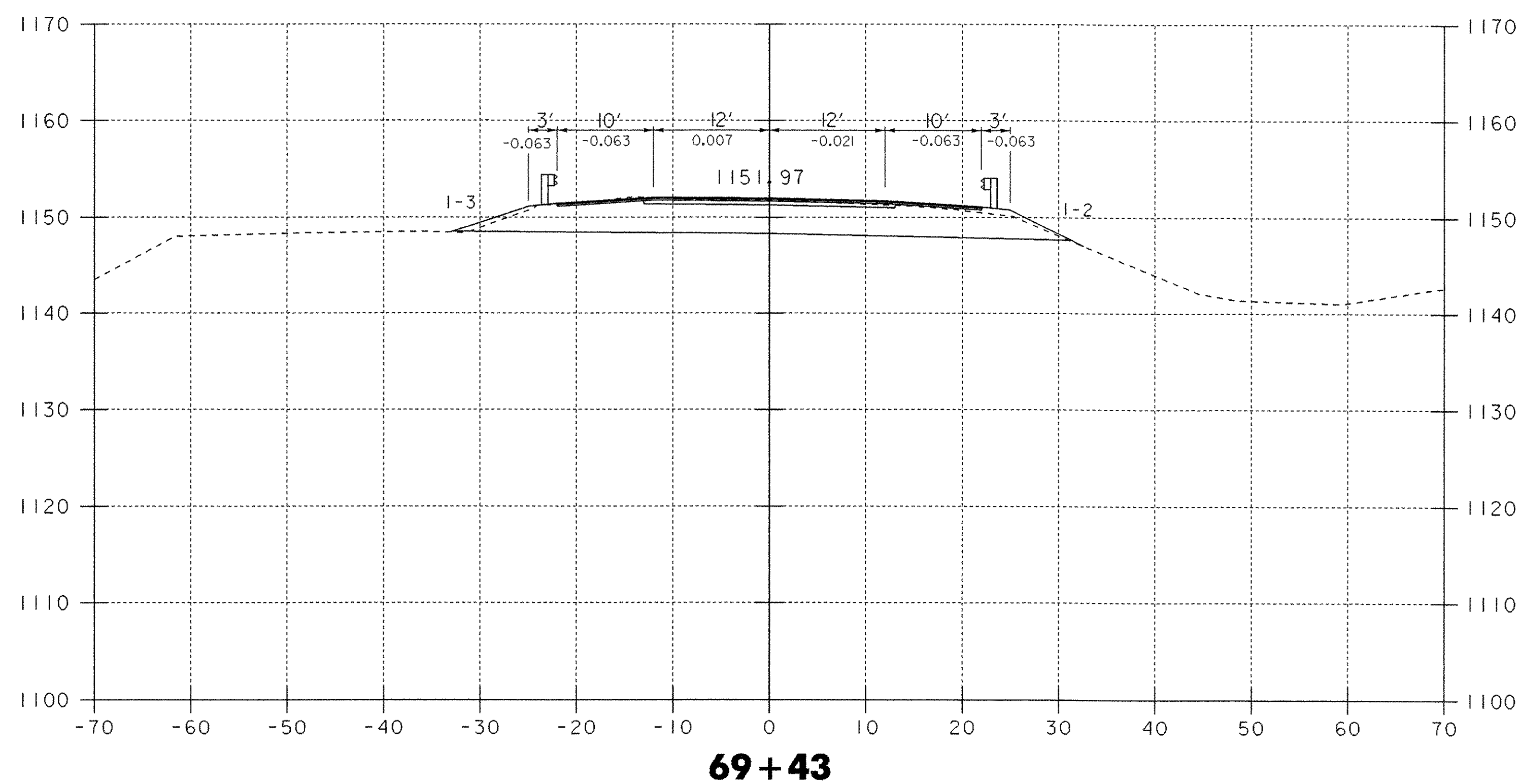
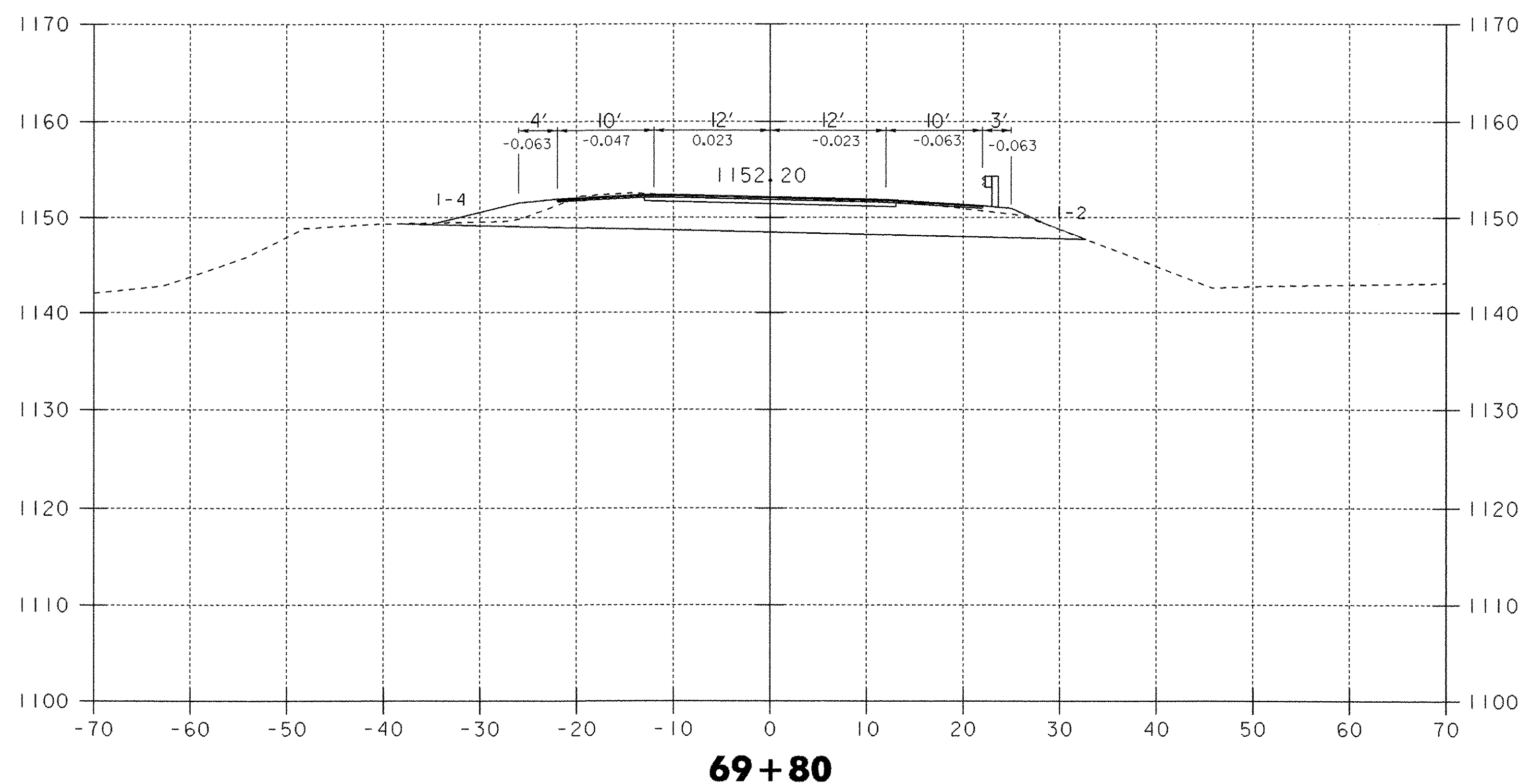
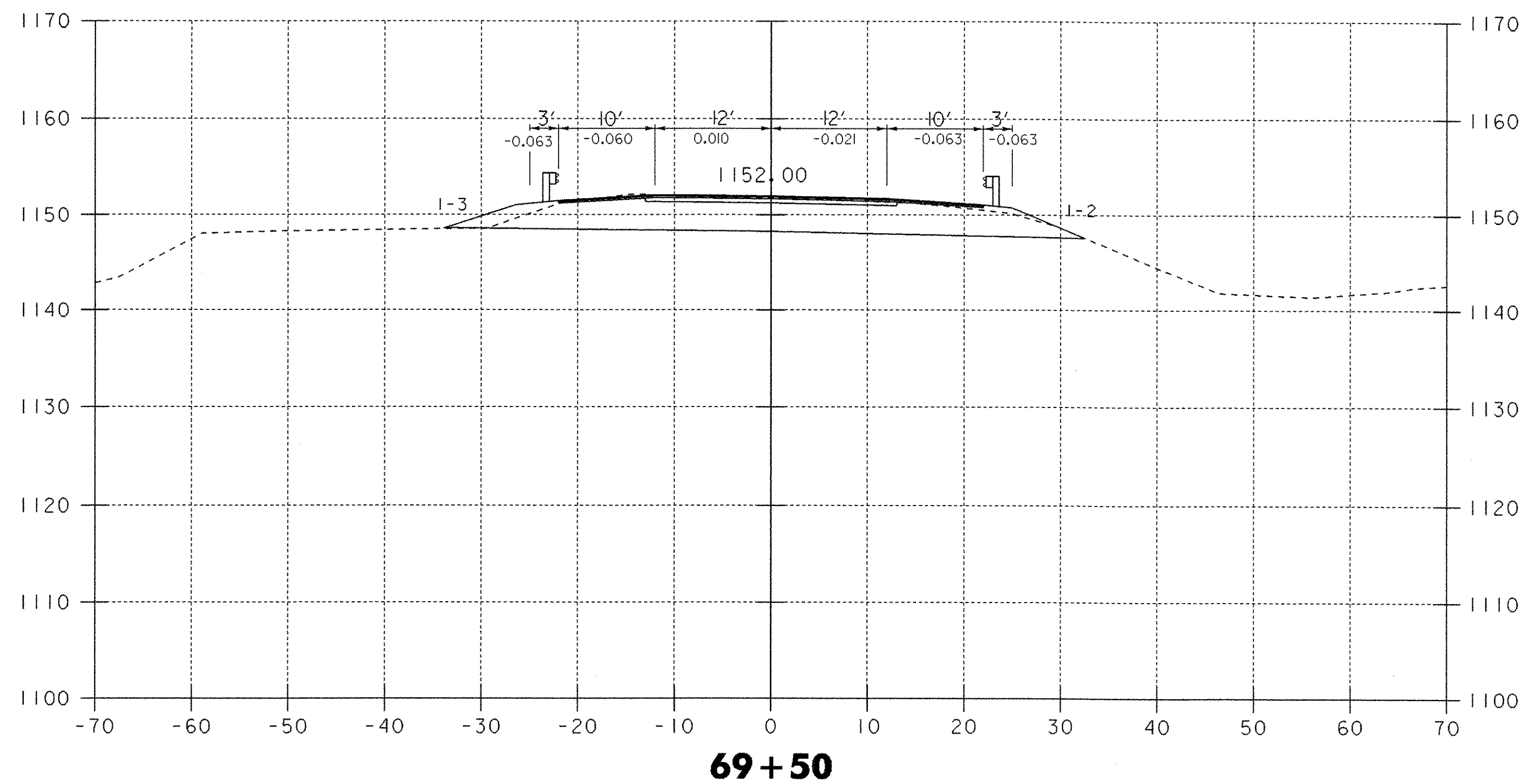


67+68 - 69+00

DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

0 10 20
SCALE IN FEET

PROJECT: WOODFORD	PROJECT NO.: BHF 010-K(29)
DESIGN FILE NAME: /84e039/de039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039x08.1	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 93 OF 106

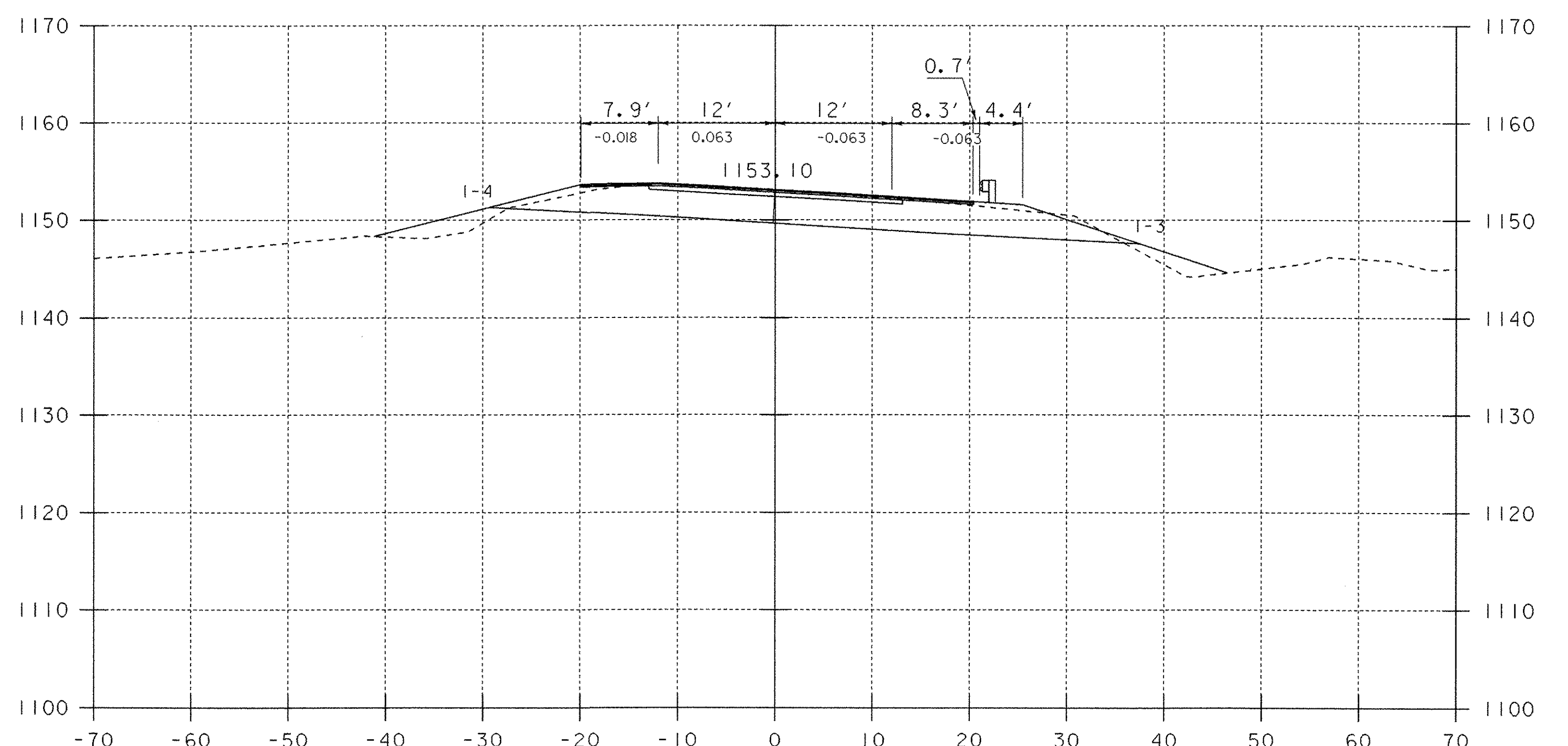
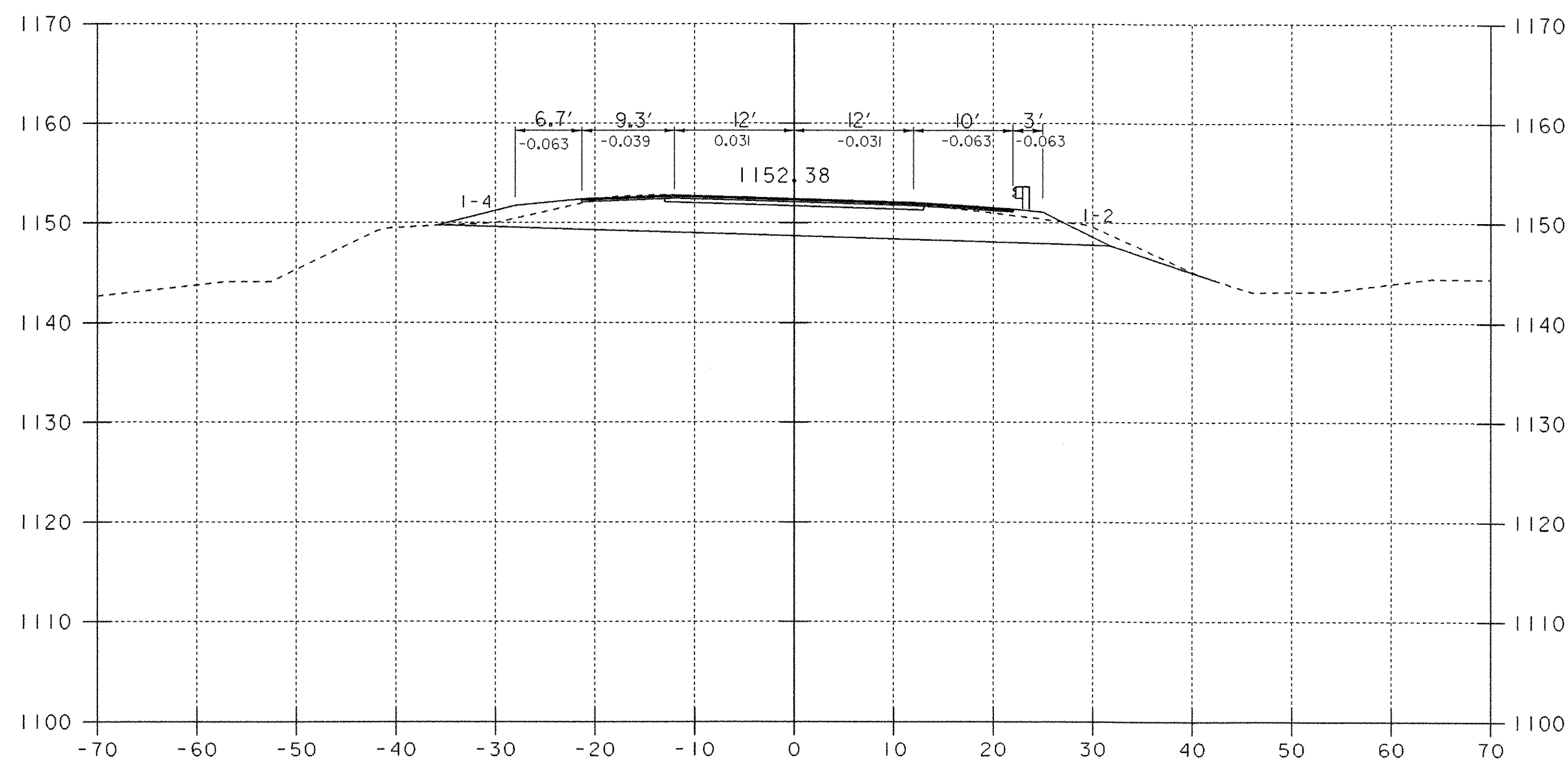
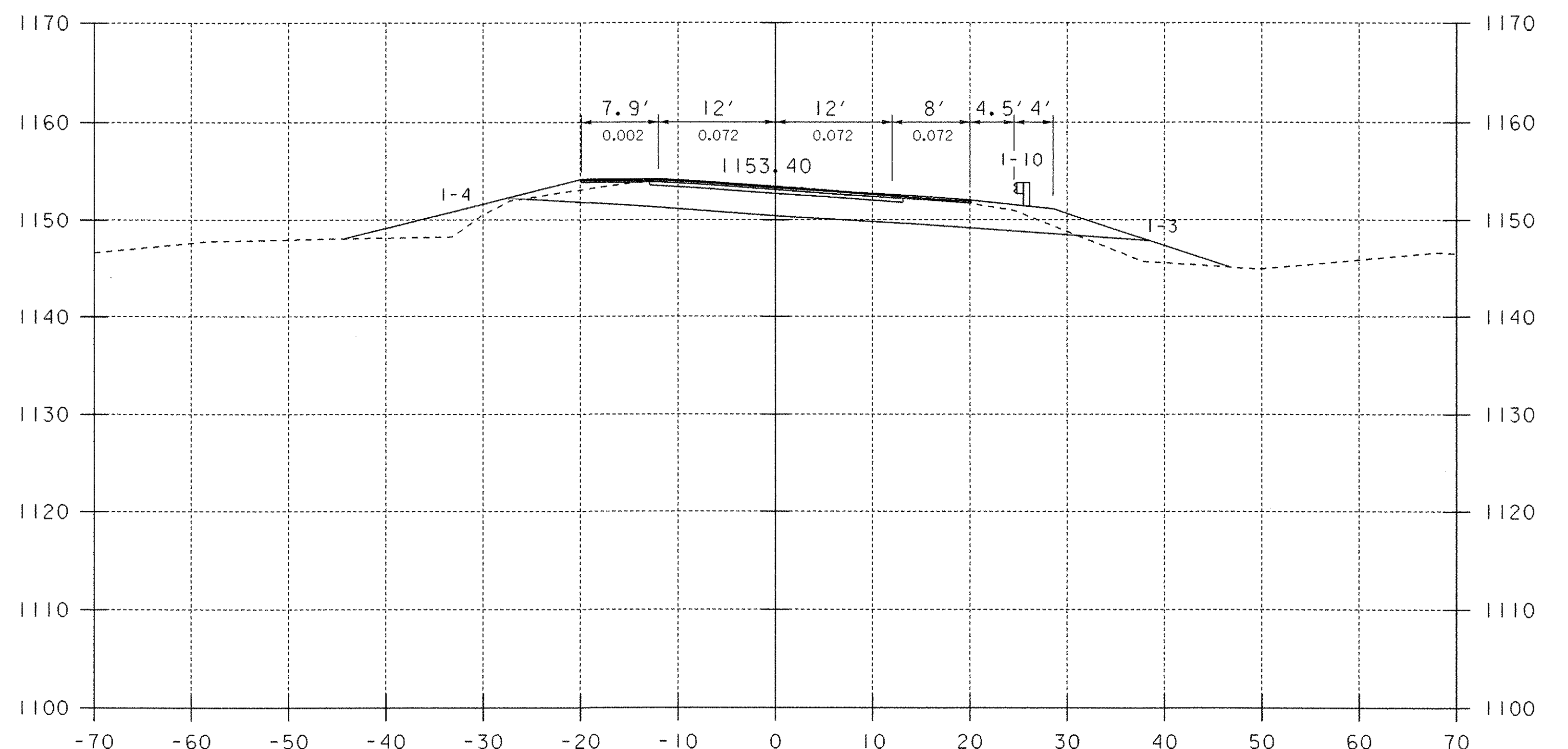
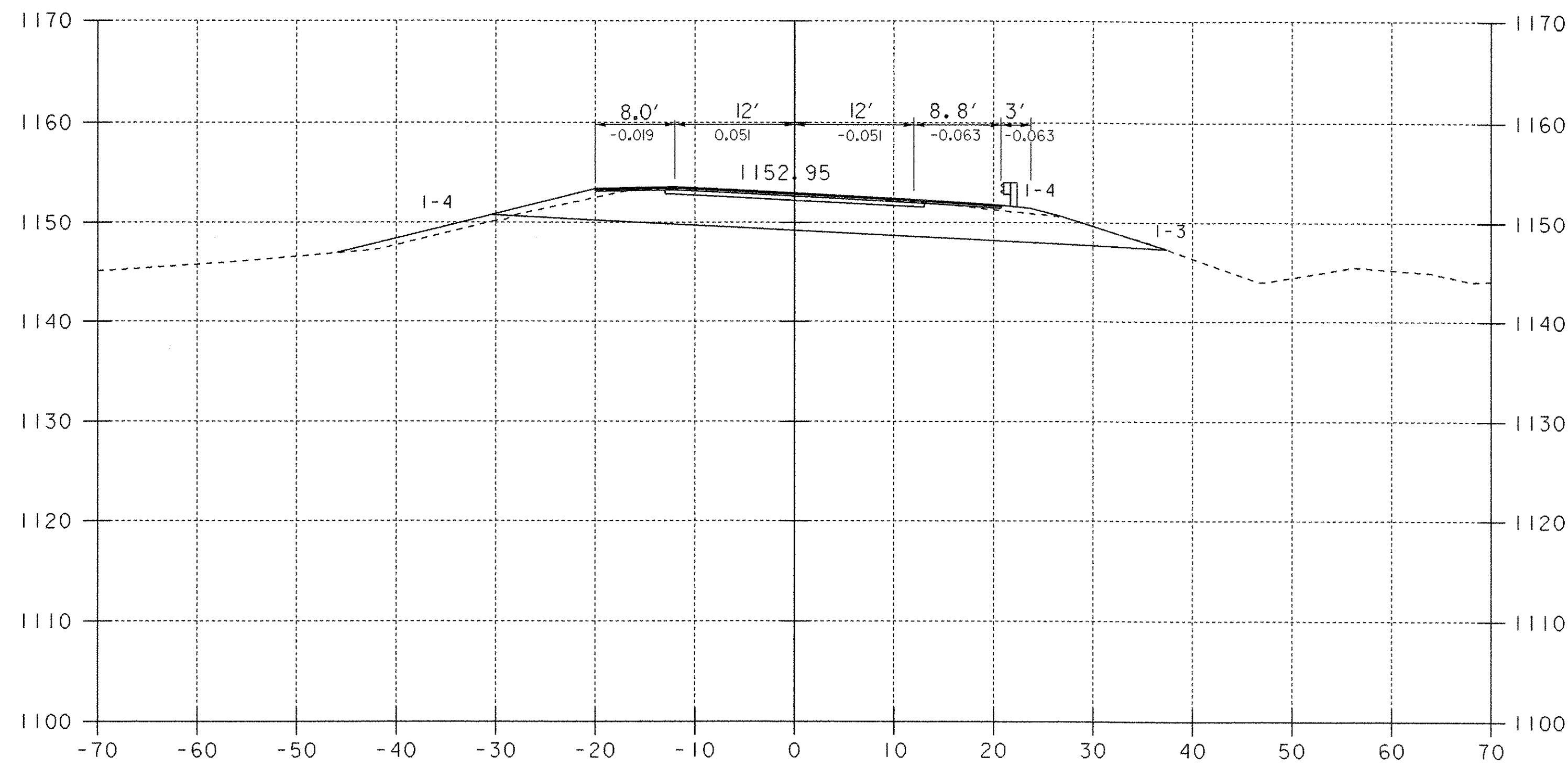


69+43 - 69+80

DATUM
 VERTICAL NGVD 1929
 HORIZONTAL N/A

0 10 20
 SCALE IN FEET

PROJECT: WOODFORD	PROJECT NO.: BHF 010-K(29)
DESIGN FILE NAME: /84e039/de039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039x09.1	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 94 OF 106

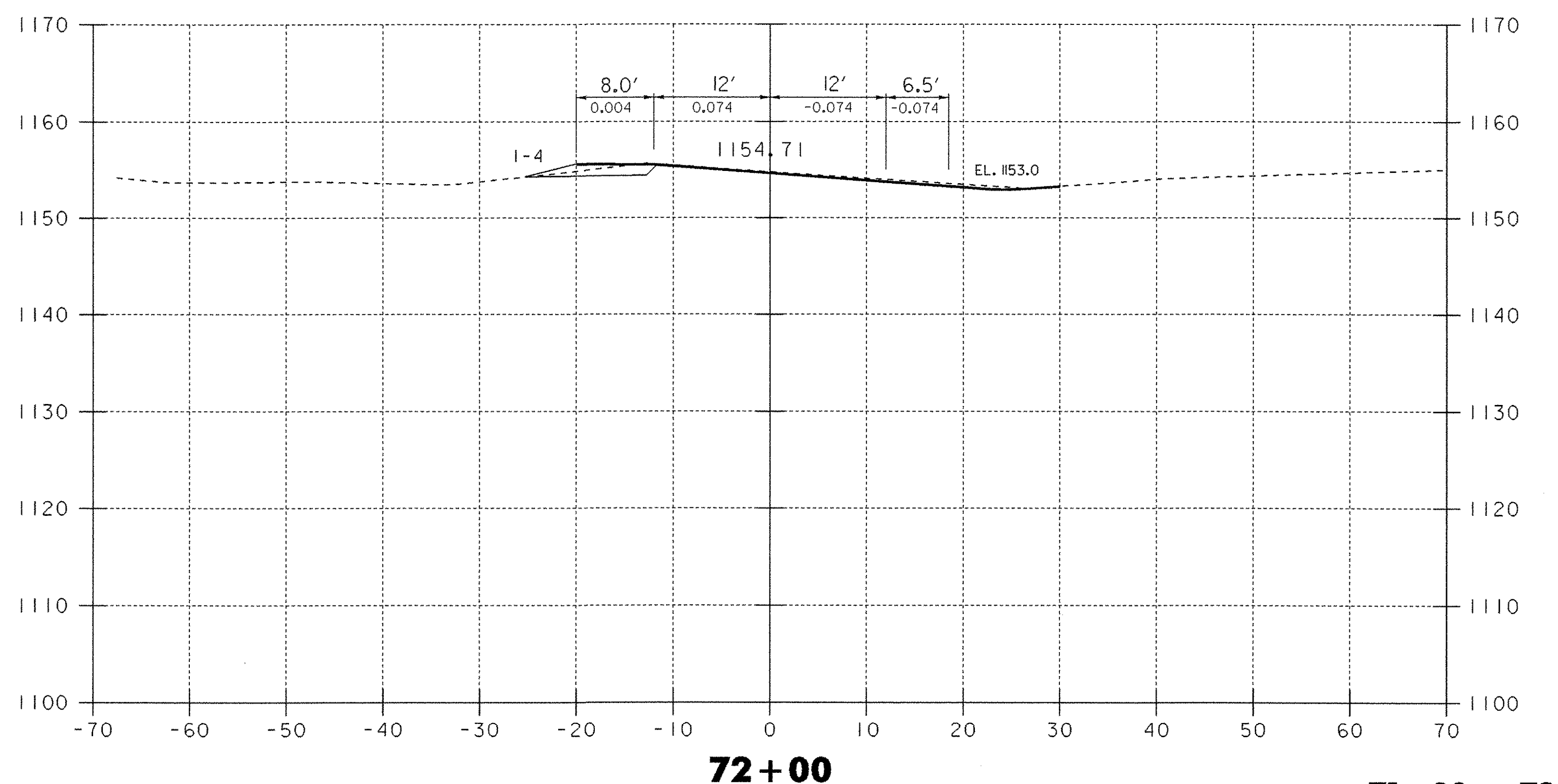
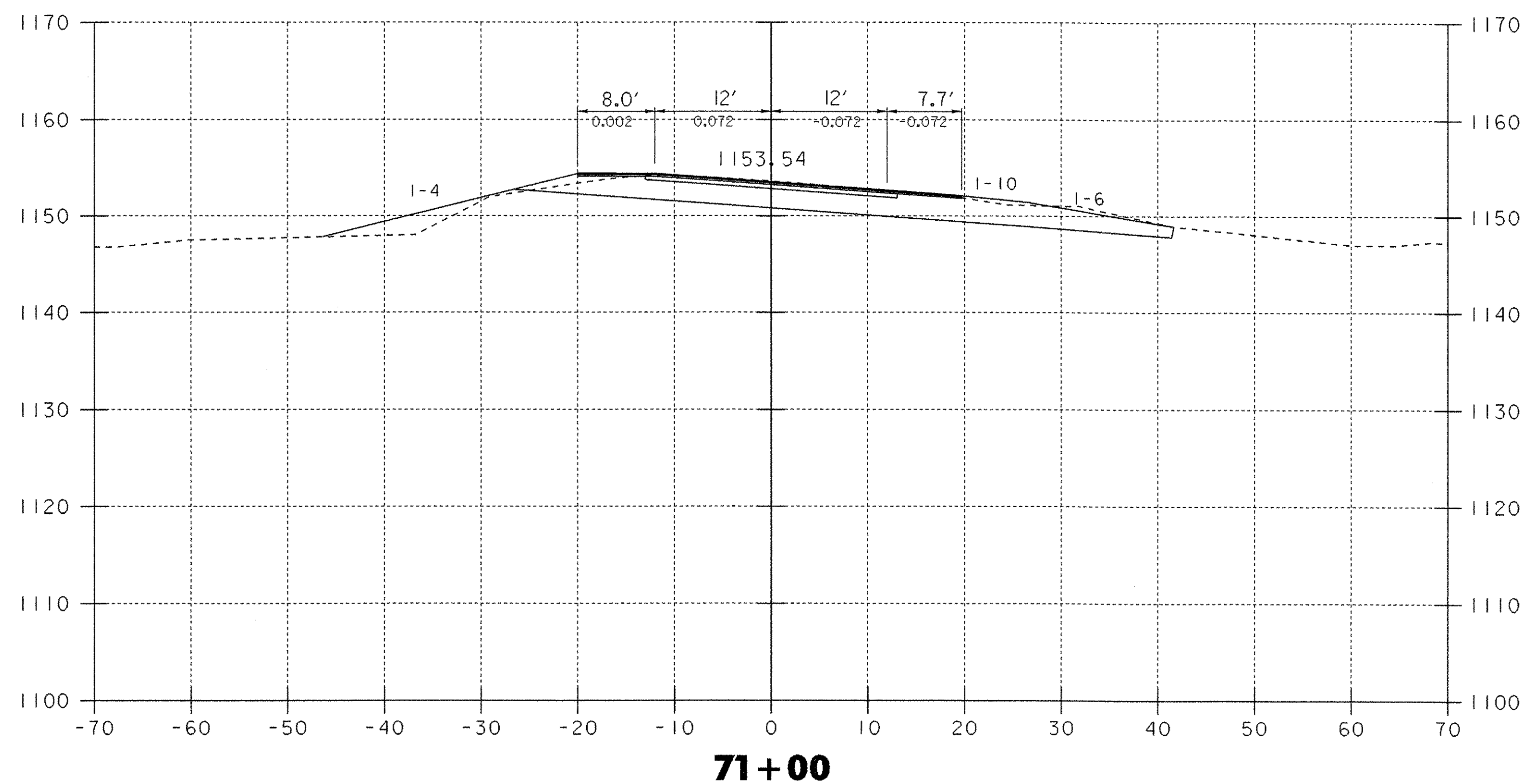
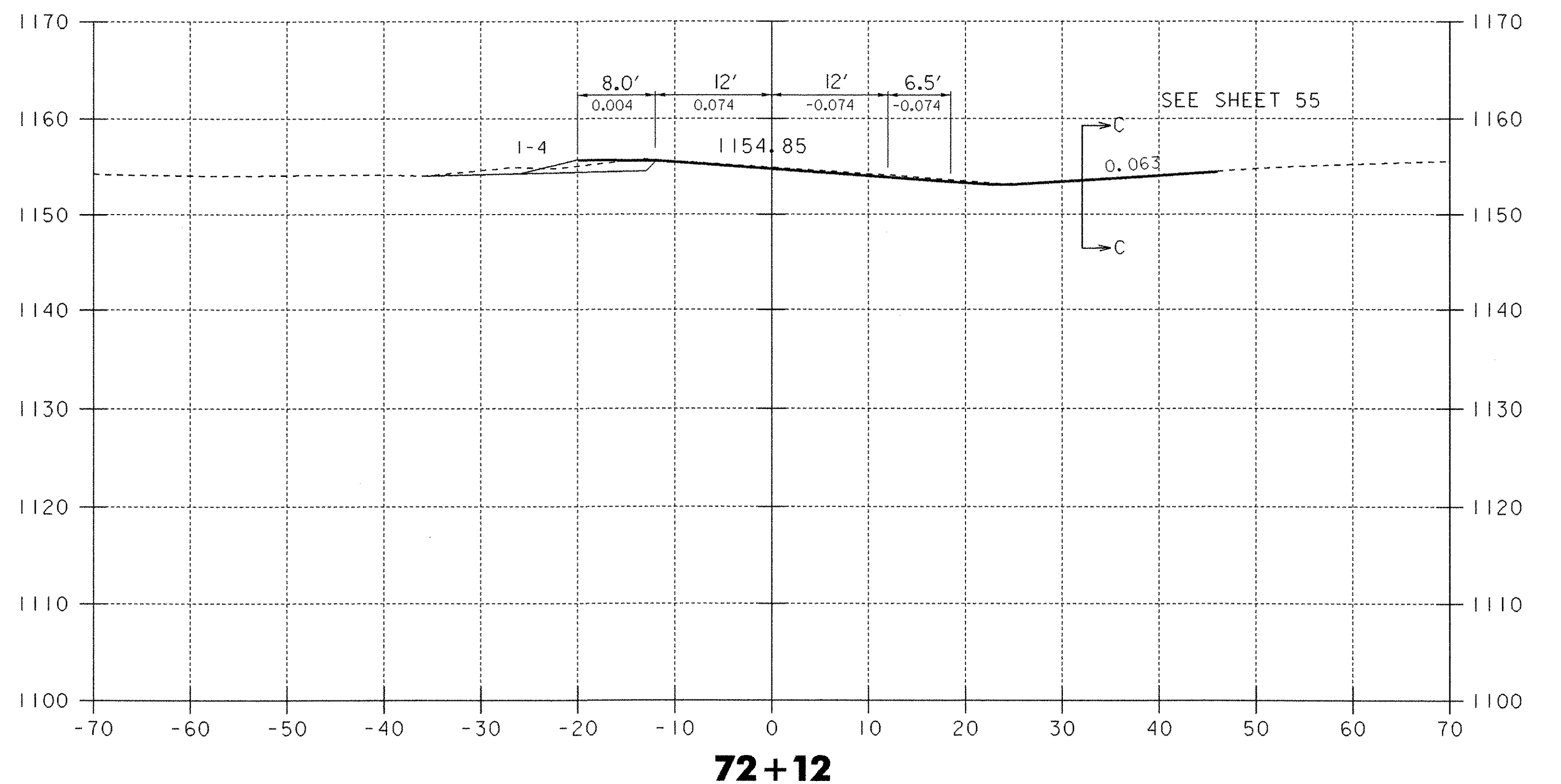
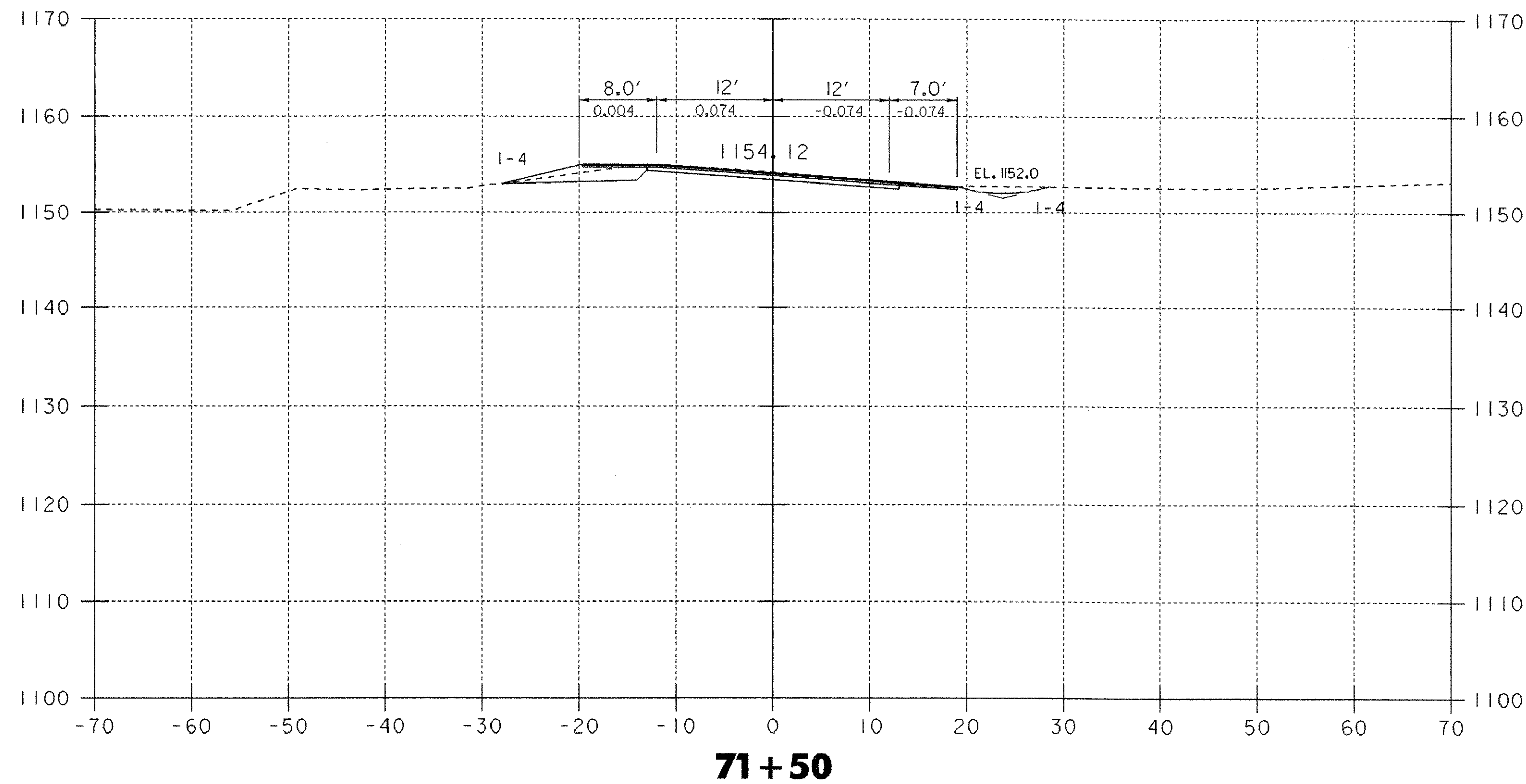


70+00 - 70+50

DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

0 10 20
SCALE IN FEET

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/de039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039x10.1	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 95 OF 106

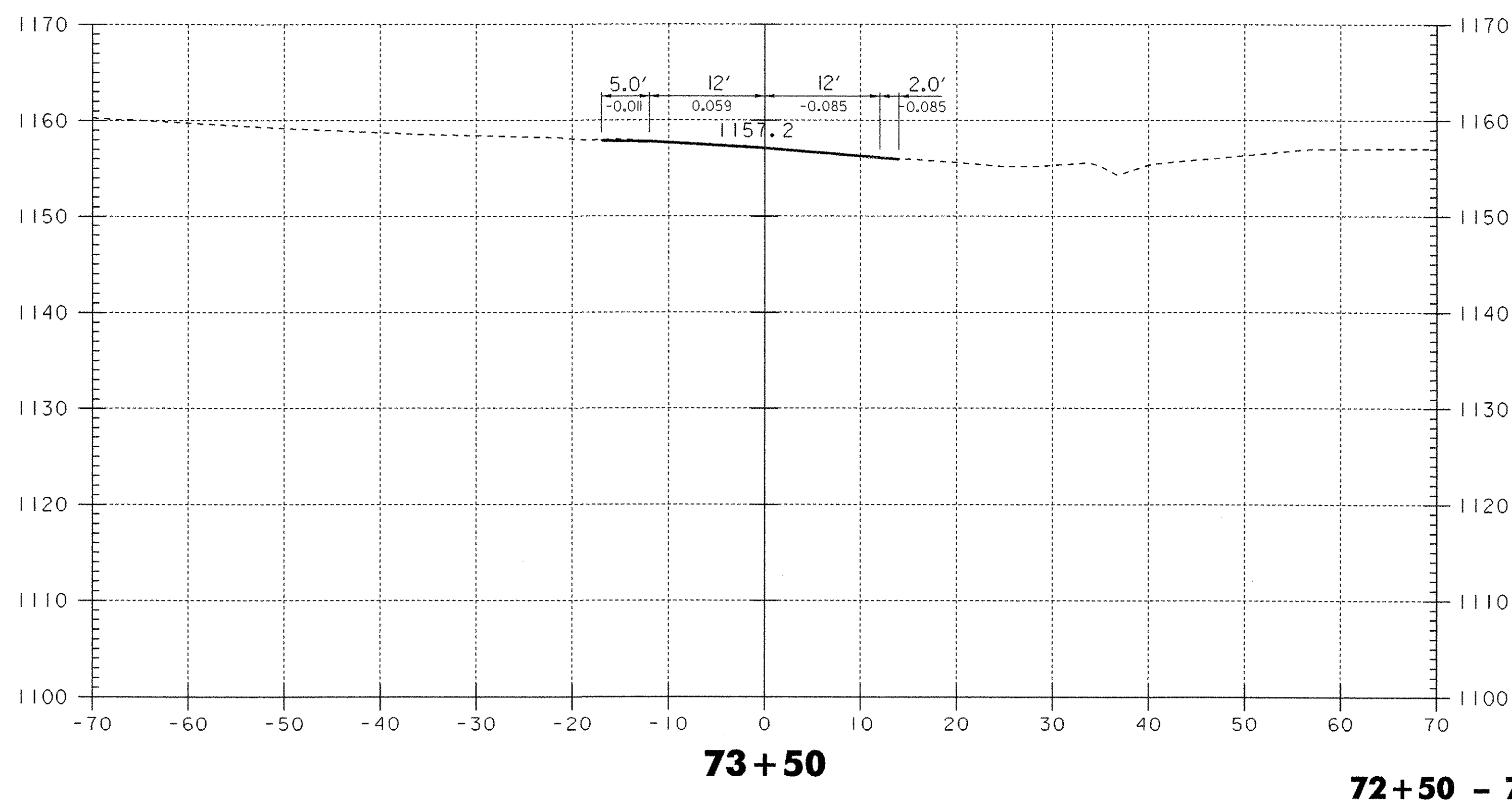
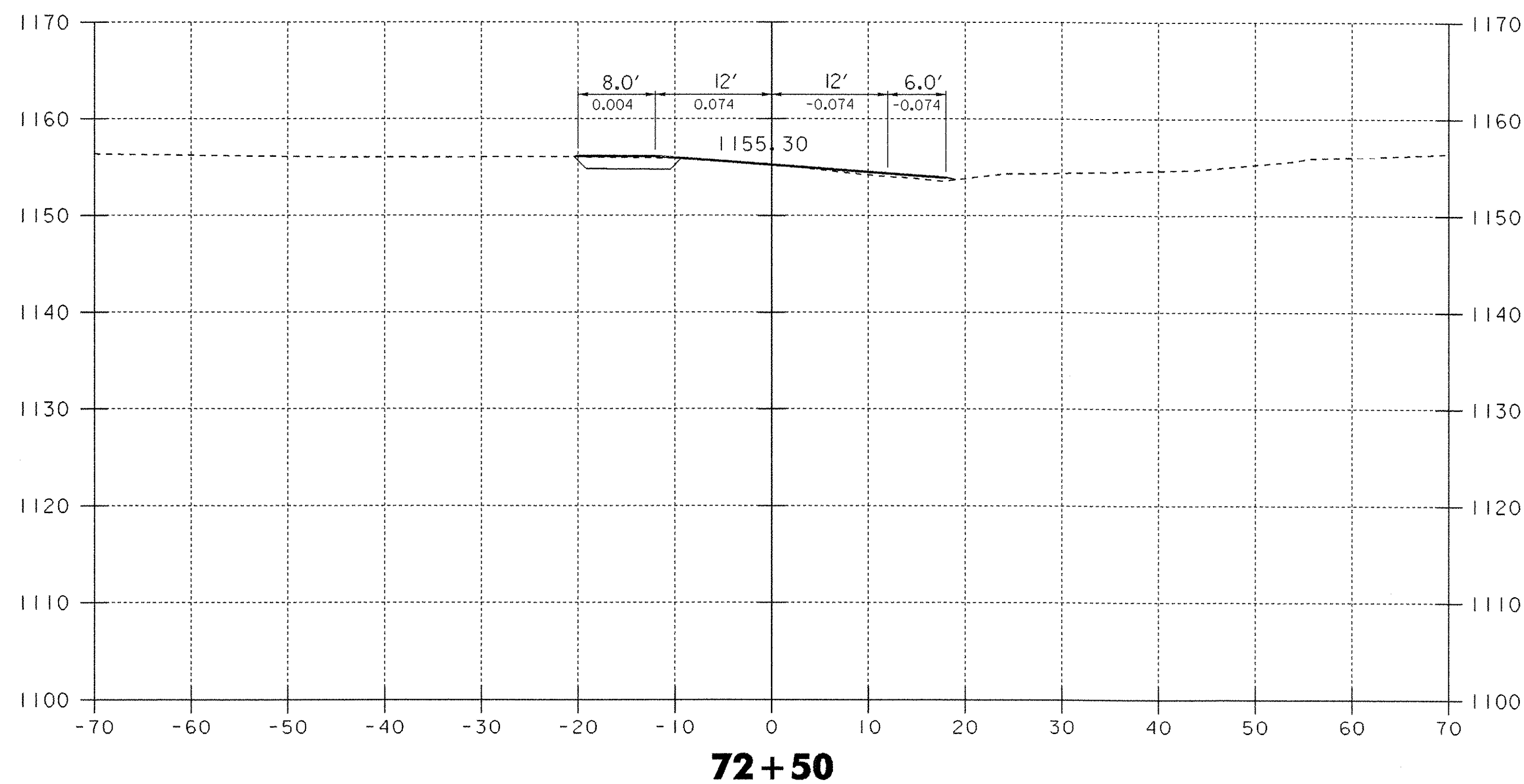
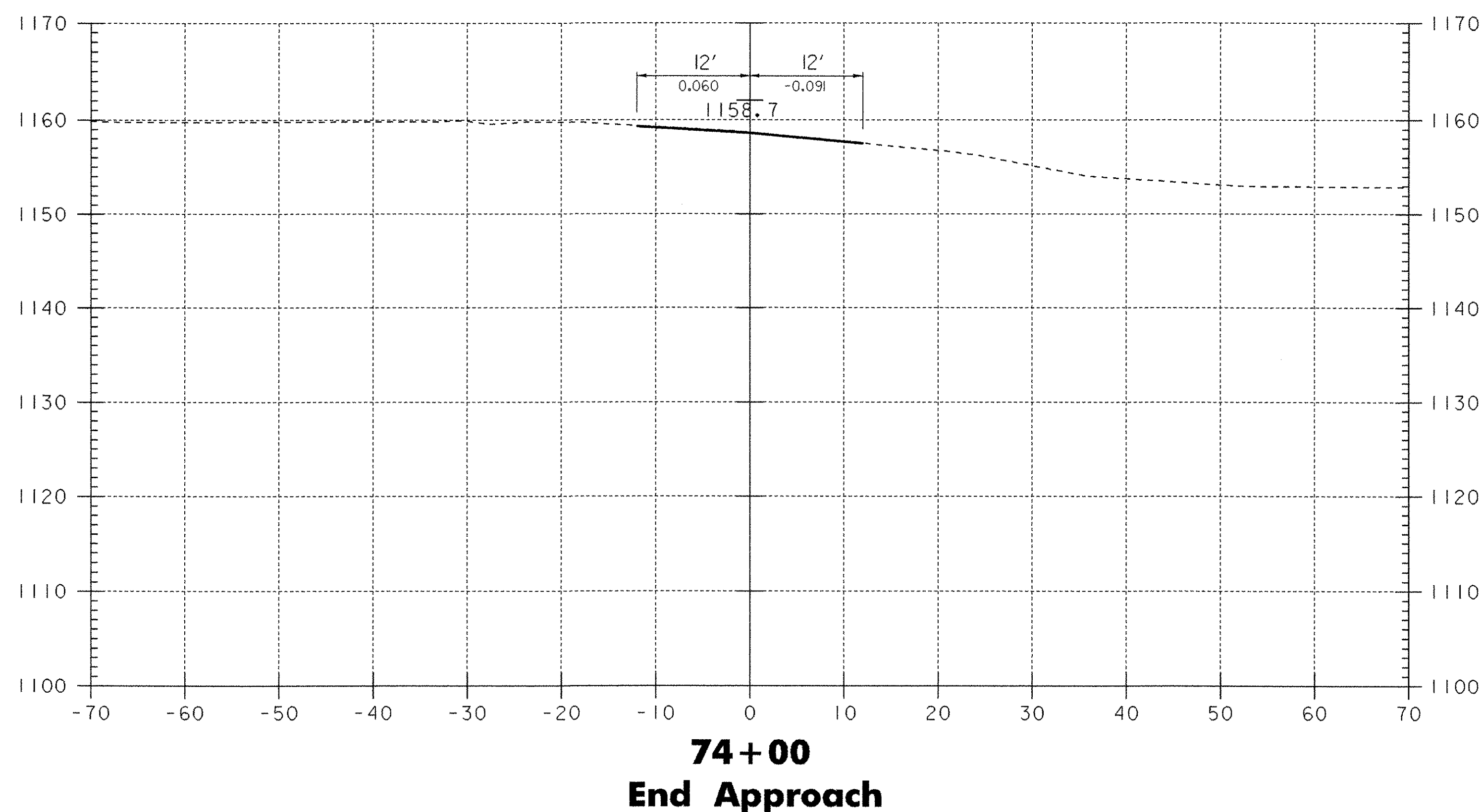
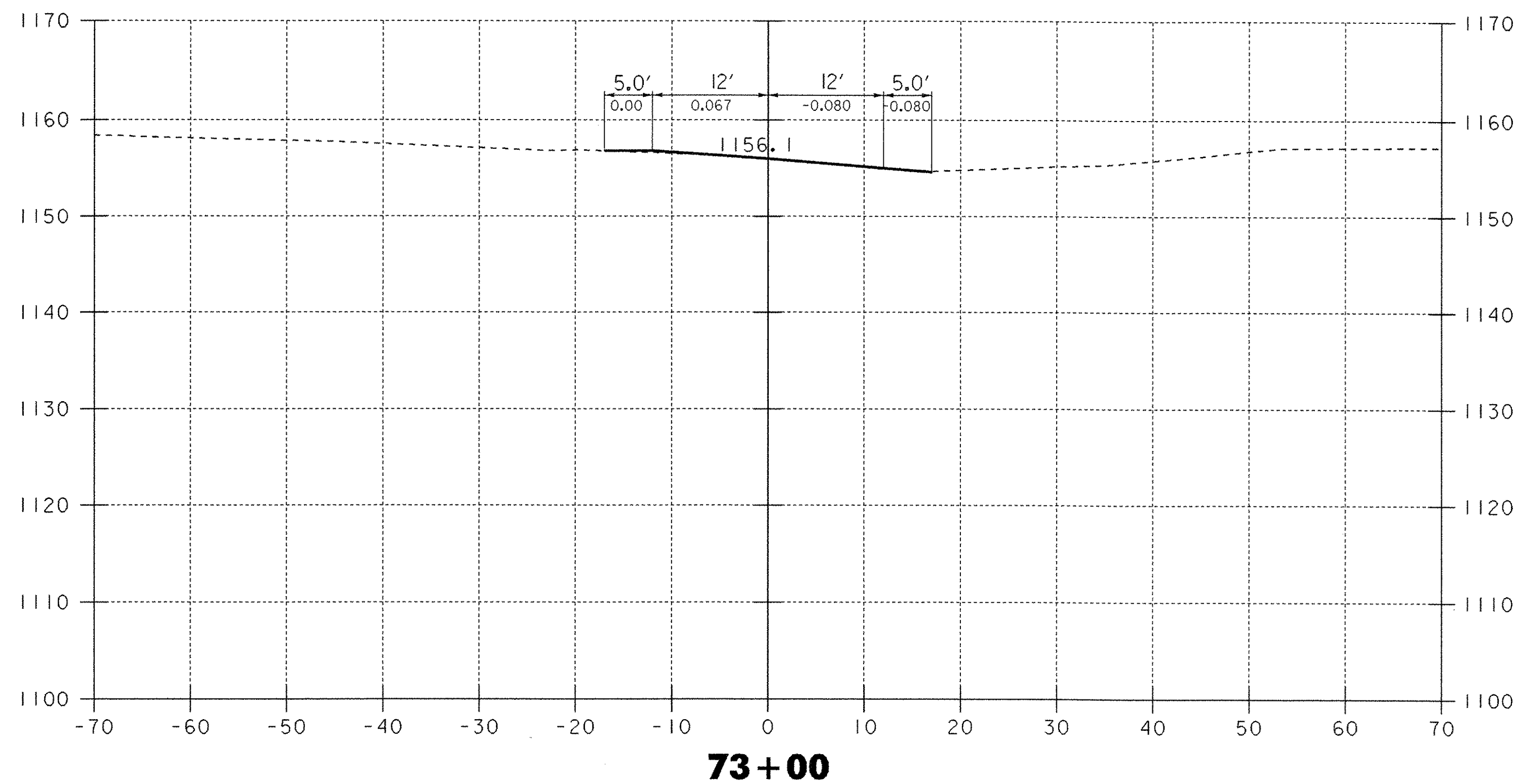


71+00 - 72+12

DATUM
 VERTICAL NGVD 1929
 HORIZONTAL N/A

0 10 20
 SCALE IN FEET

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/de039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039x11.1	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 96 OF 106



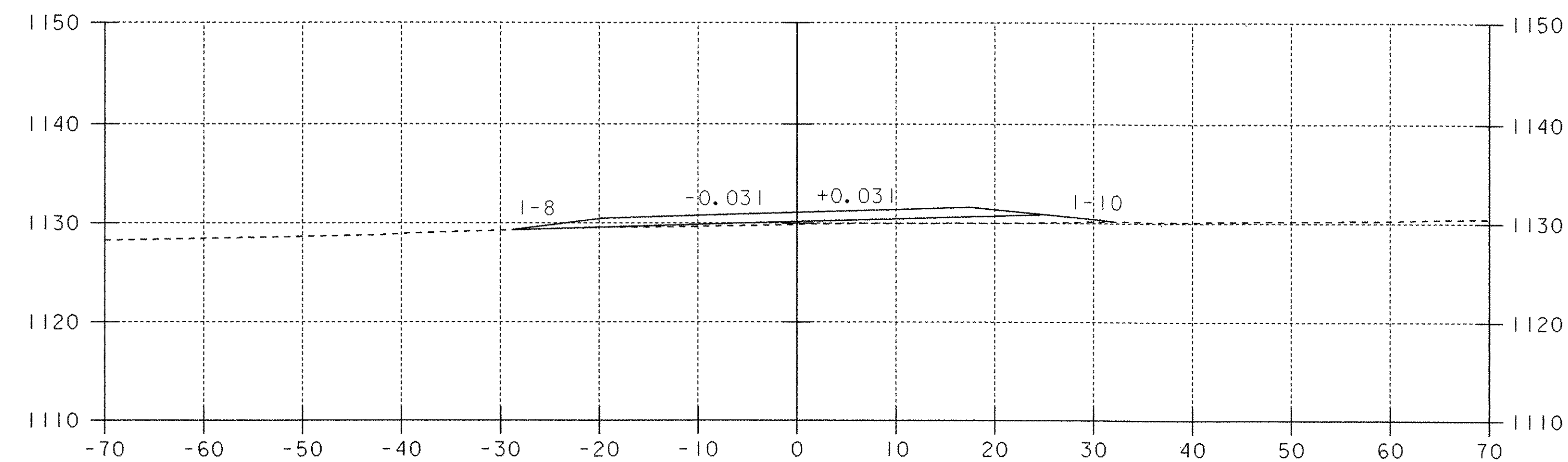
72+50 - 73+00

DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

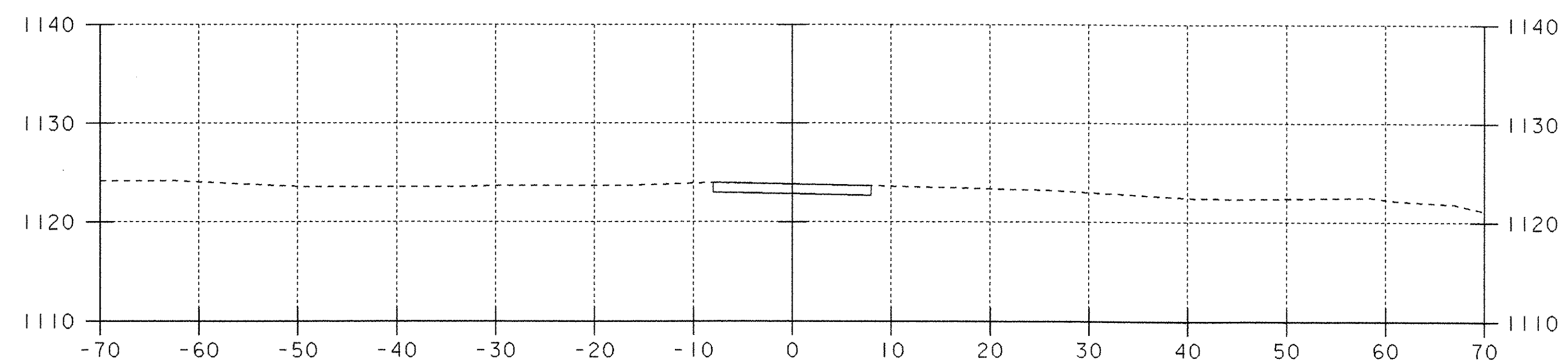
0 10 20
SCALE IN FEET

PROJECT: WOODFORD	PROJECT NO.: BHF 010-K(29)
DESIGN FILE NAME: /84e039/de039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039x12.i	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 97 OF 106

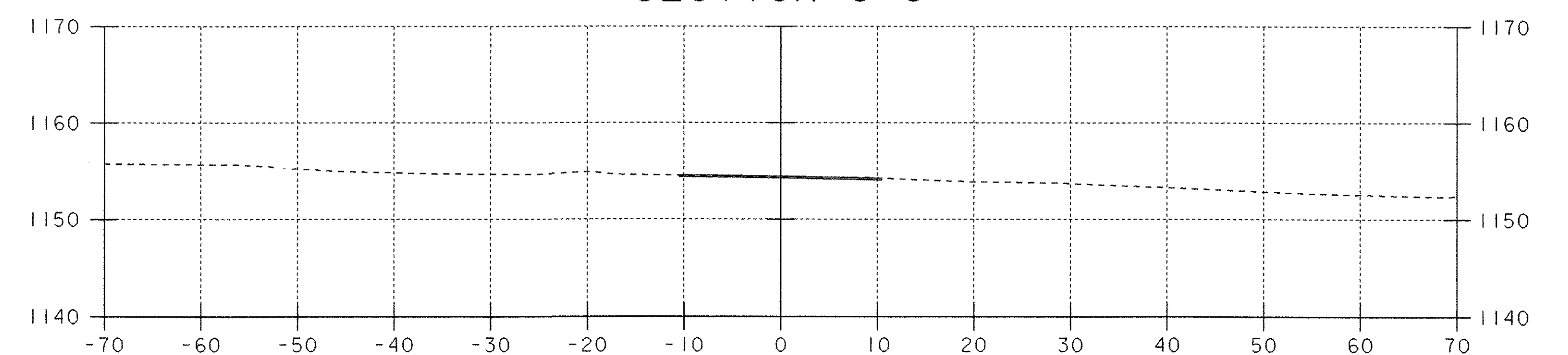
SECTION B-B



SECTION A-A



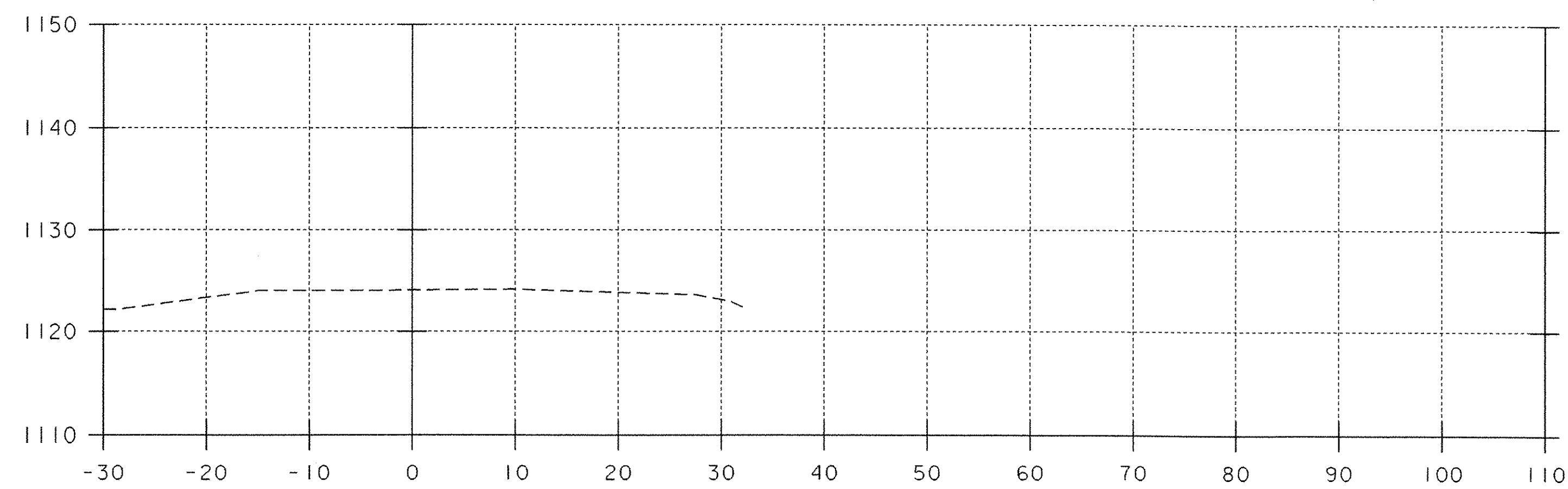
SECTION C-C



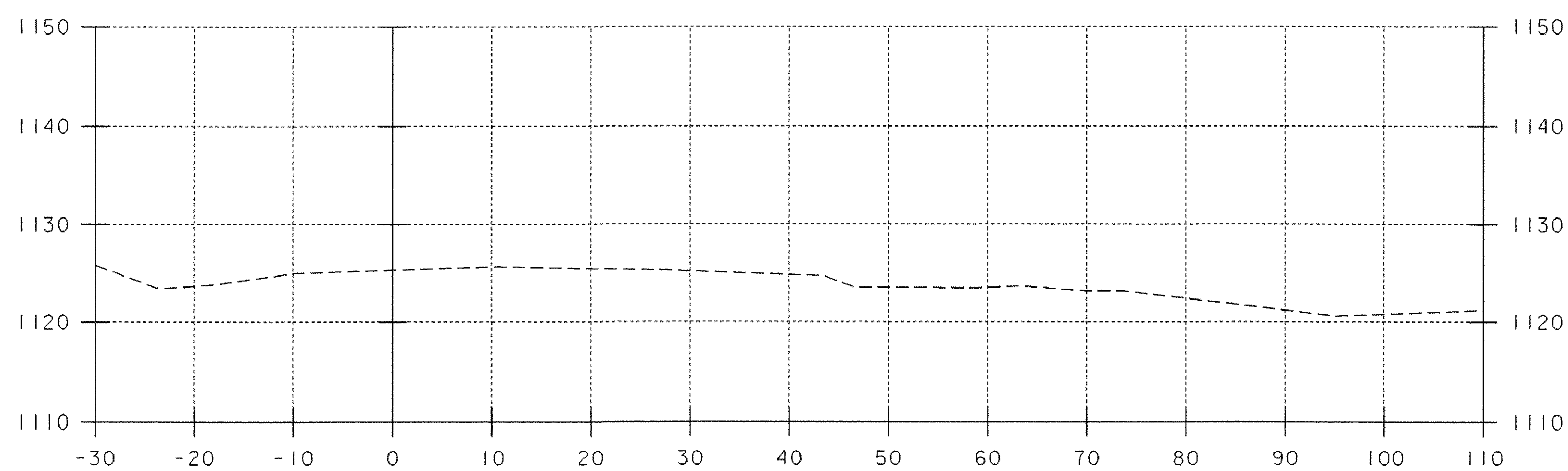
DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

0 10 20
SCALE IN FEET

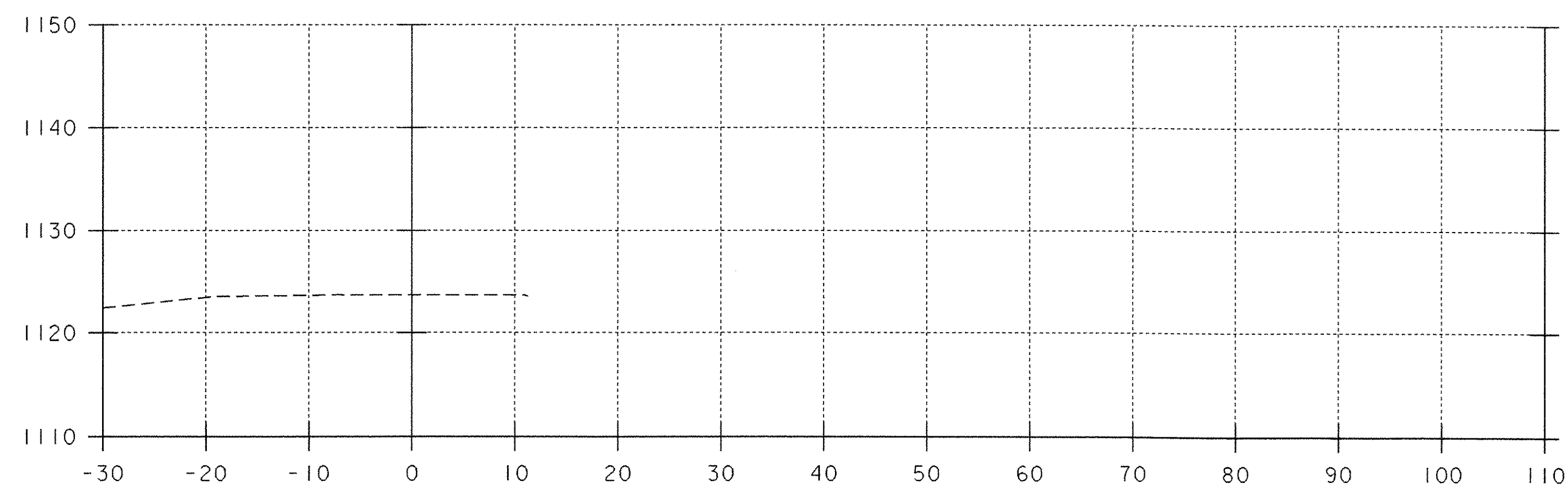
PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/de039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: de039x12.1	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: PORTALUPI	SHEET: 98 OF 106



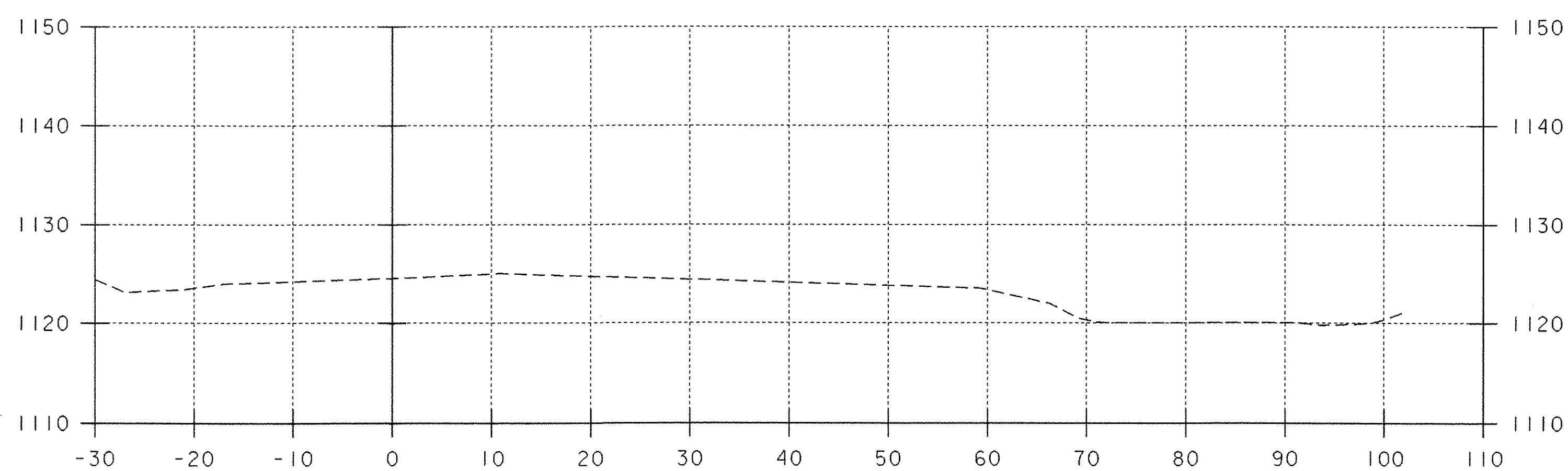
0+40



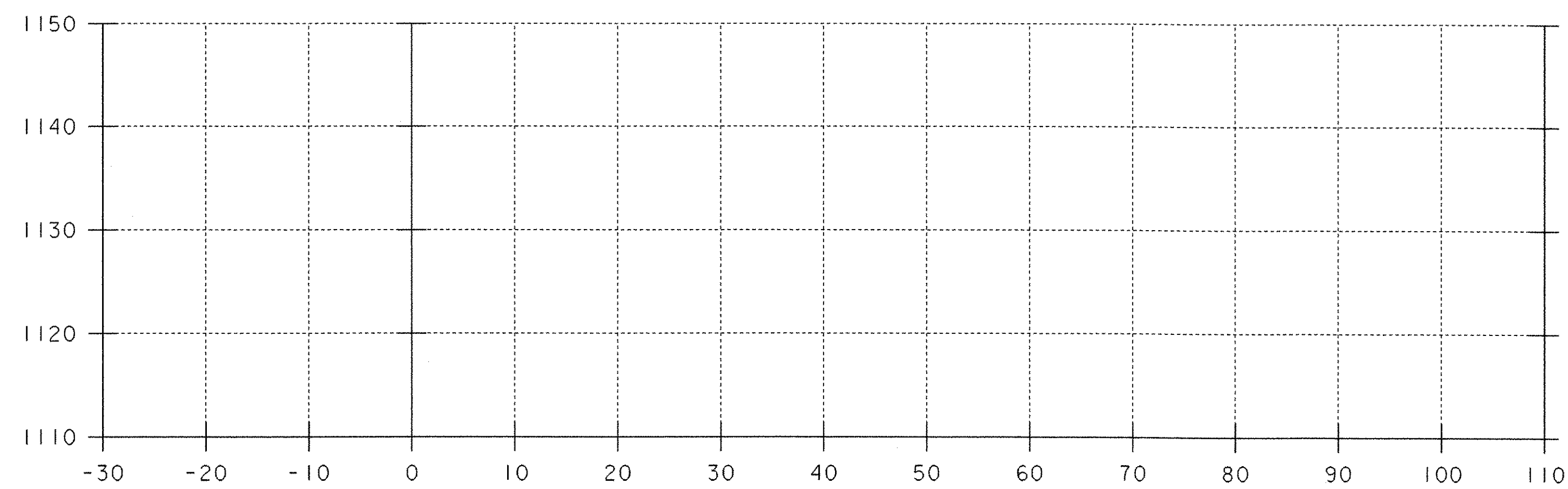
1+00



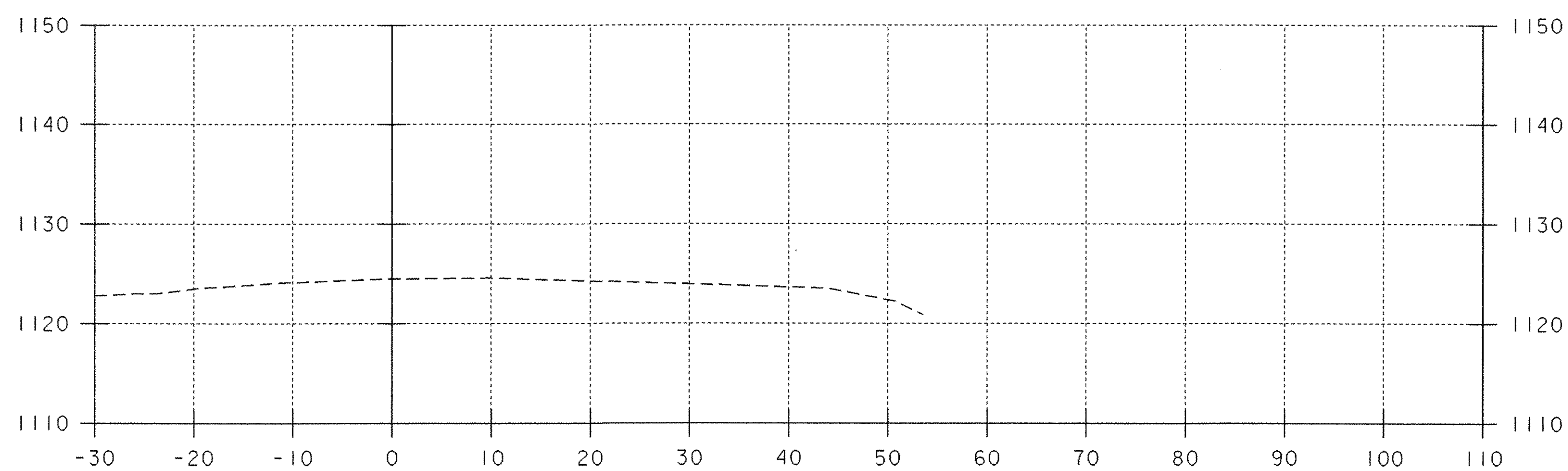
0+20



0+80



0+00



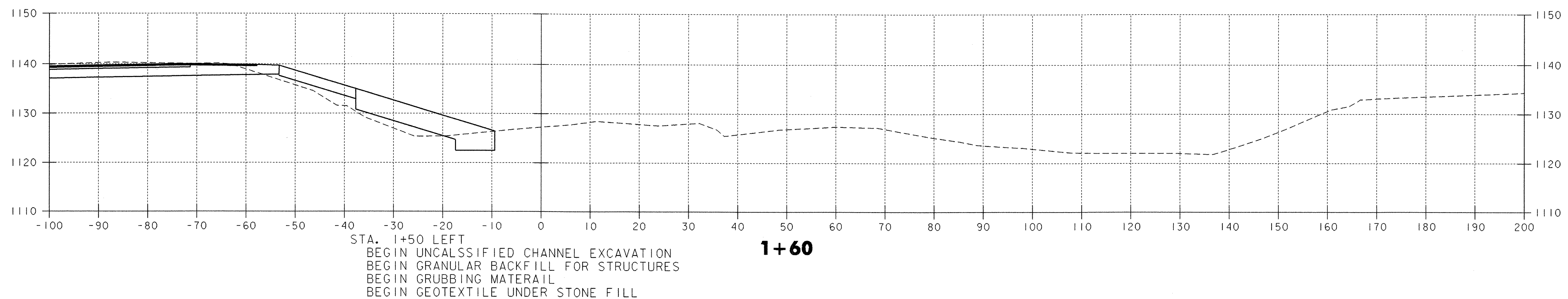
0+60

CHANNEL CROSS SECTIONS 0+00 ~ 1+00

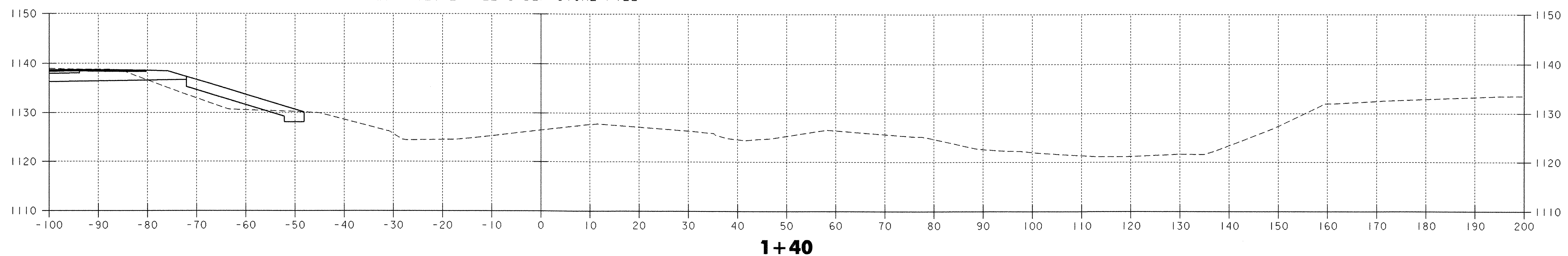
DATUM	NGVD 1929
VERTICAL	
HORIZONTAL	N/A



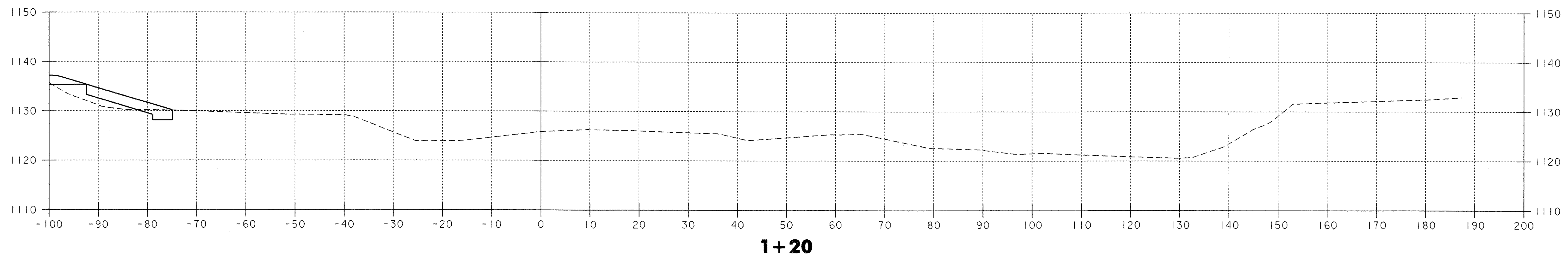
PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/se039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: se039cxl1	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: A. PORTALUPI	SHEET: 99 OF 106



1+60



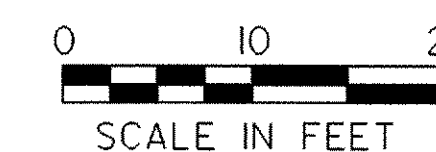
1+40



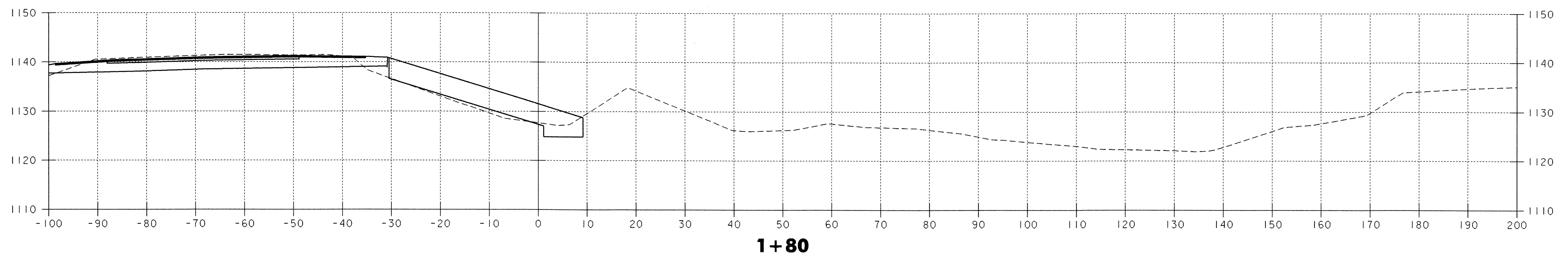
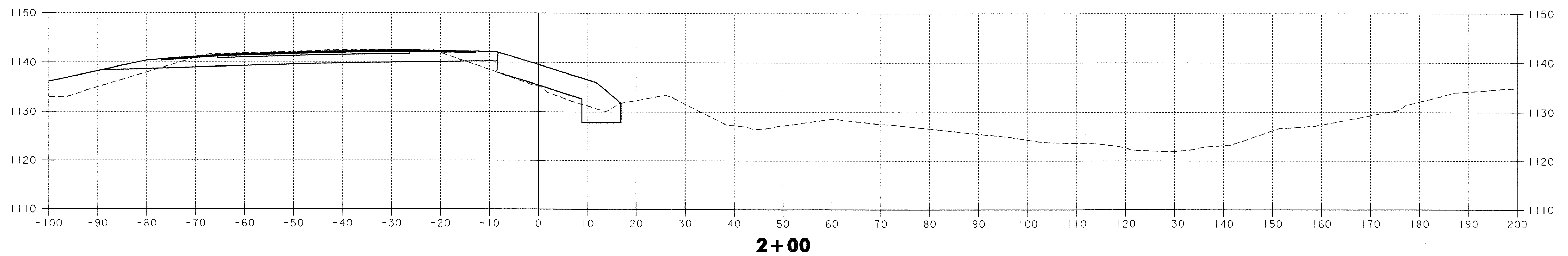
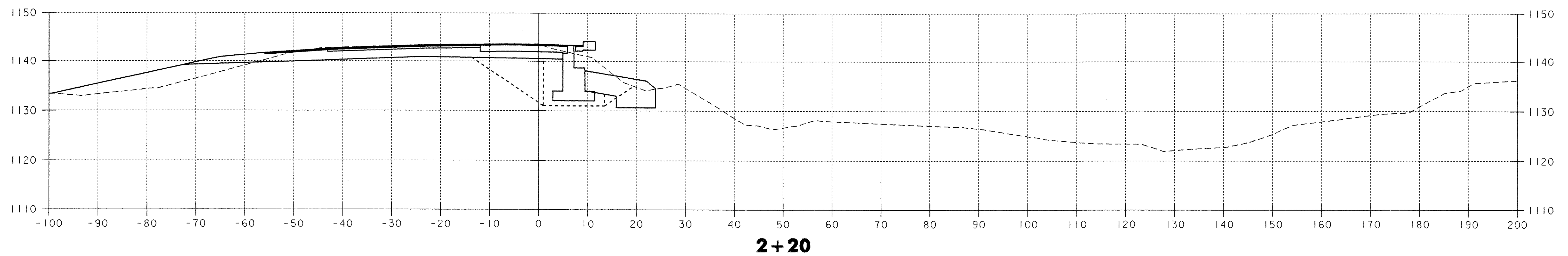
1+20

CHANNEL CROSS SECTIONS 1+20 ~ 1+60

DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	N/A



PROJECT: WOODFORD		PROJECT NO.: BHF 010-(K29)
DESIGN FILE NAME:	/84e039/se039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME:	se039cx2.i	SURVEY DATE: 12-88
SURVEYED BY:	MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER:	A. PORTALUPI	SHEET: 100 OF 106

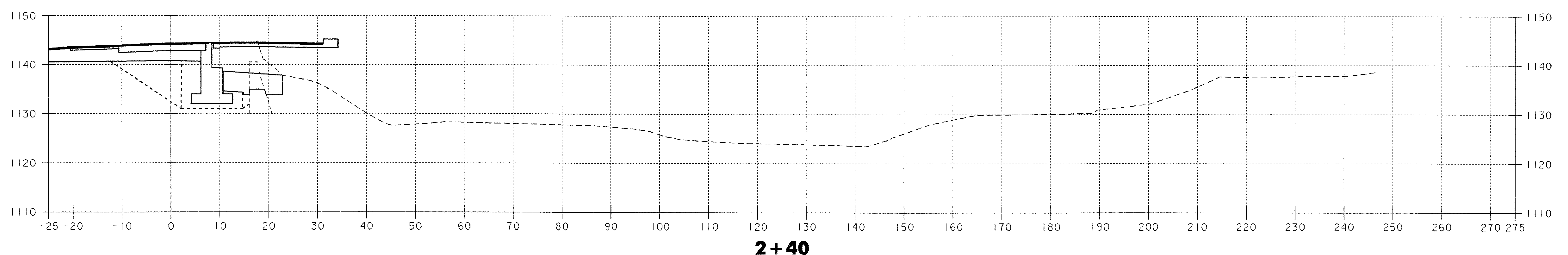
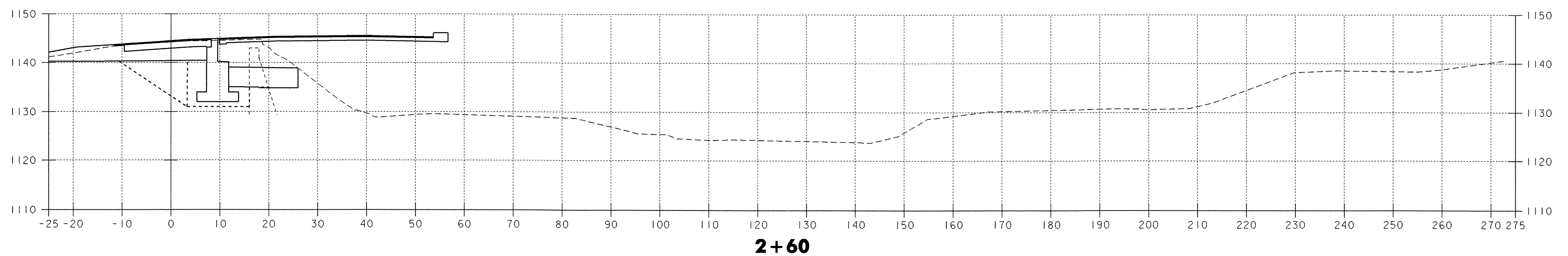
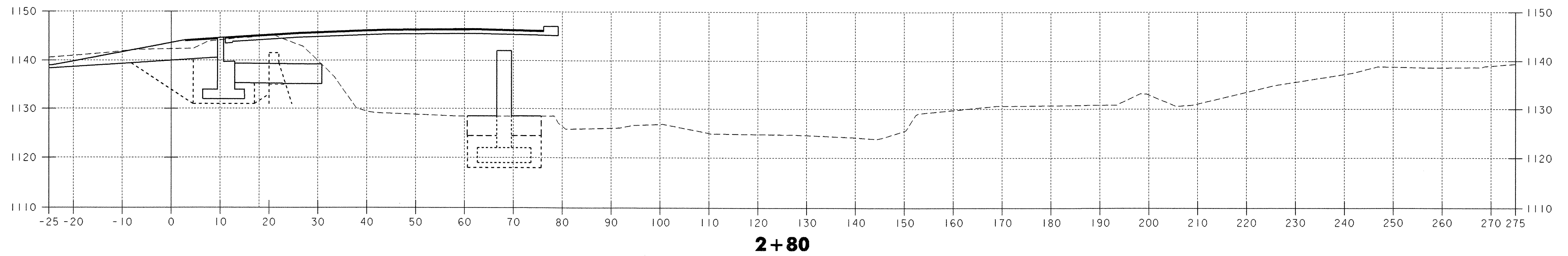


CHANNEL CROSS SECTIONS 1+80 ~ 2+20

DATUM	
VERTICAL	NGVD 1929
HORIZONTAL	N/A

0 10 20
SCALE IN FEET

PROJECT: WOODFORD	PROJECT NO.: BHF 010-(K29)
DESIGN FILE NAME: /84e039/se039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: se039cx3.i	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: A. PORTALUP	SHEET: 101 OF 106

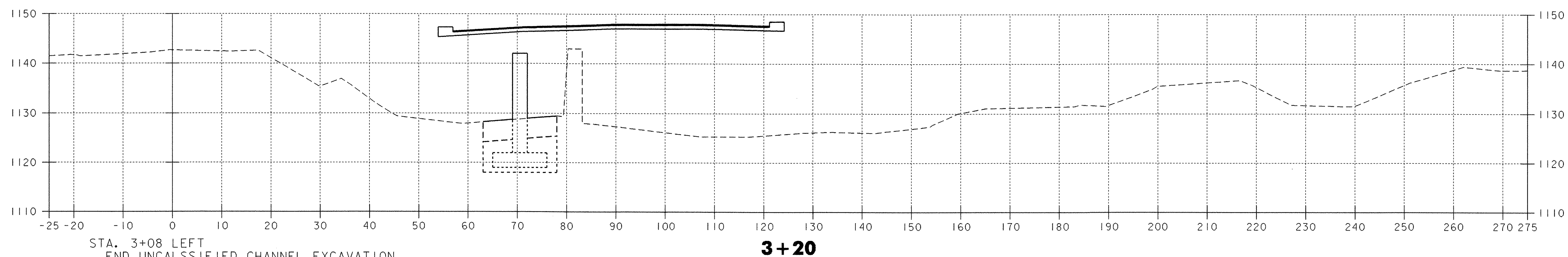
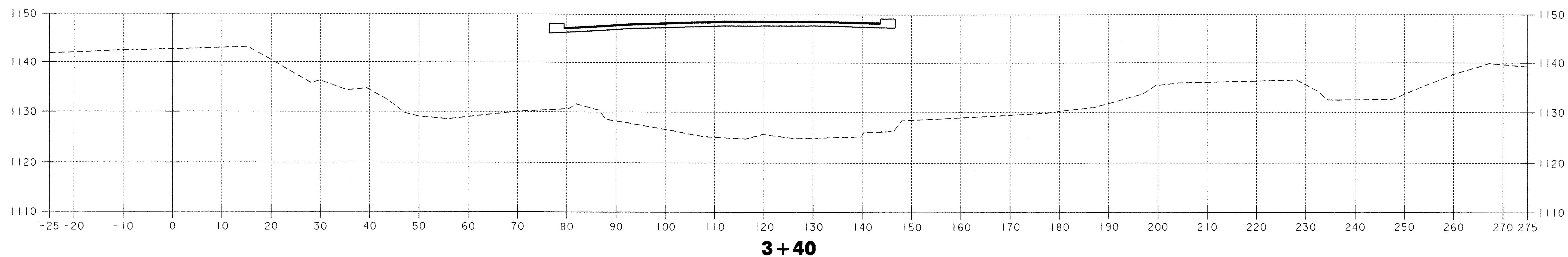


CHANNEL CROSS SECTIONS 2+40 ~ 2+80

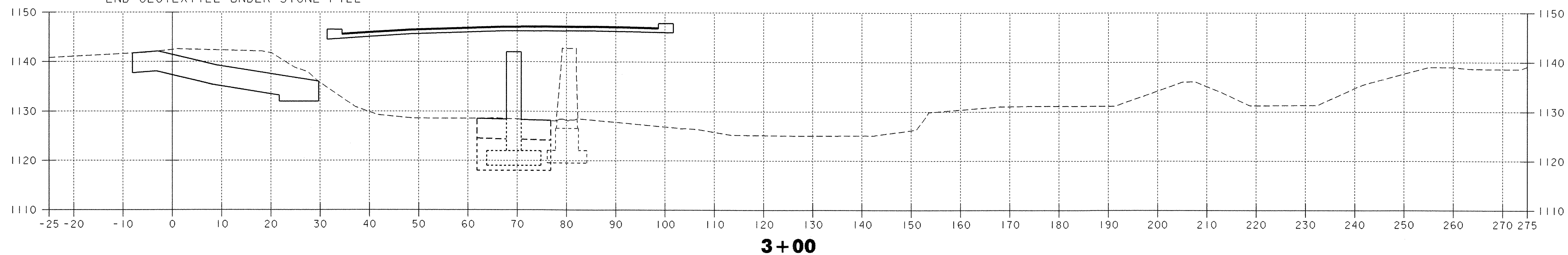
DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

0 10 20
SCALE IN FEET

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/se039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: se039cx4.i	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: A. PORTALUPI	SHEET: 102 OF 106



STA. 3+08 LEFT
 END UNCLASSIFIED CHANNEL EXCAVATION
 END GRANULAR BACKFILL FOR STRUCTURES
 END GRUBBING MATERIAL
 END GEOTEXTILE UNDER STONE FILL

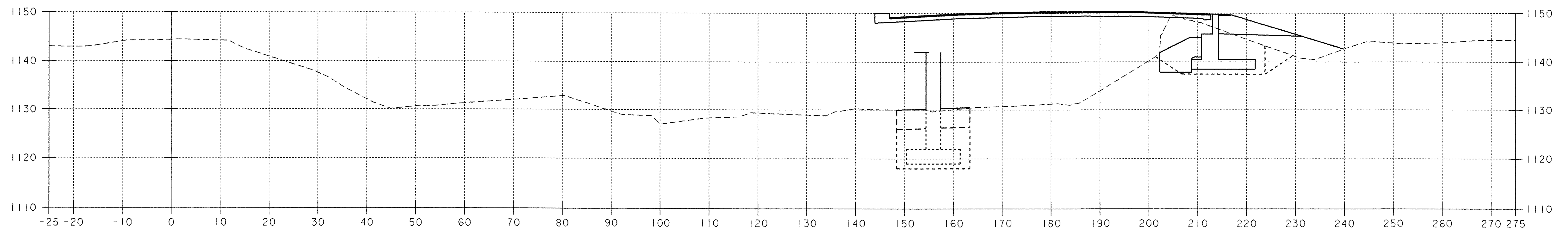


CHANNEL CROSS SECTIONS 3+00 ~ 3+40

DATUM
 VERTICAL NGVD 1929
 HORIZONTAL N/A

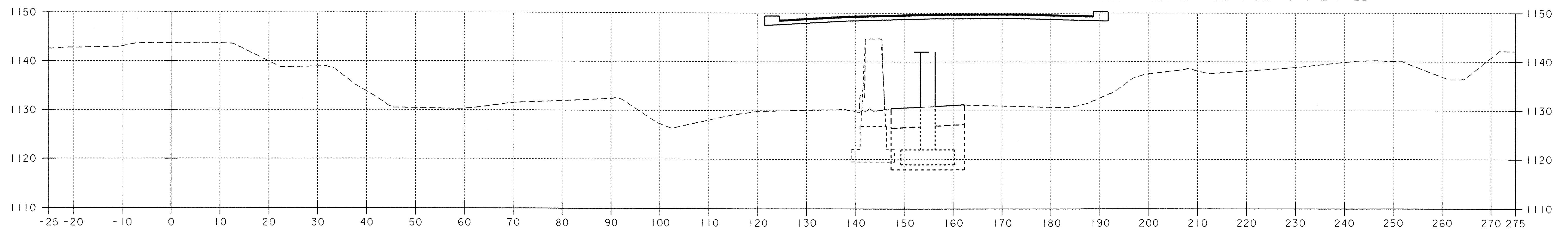
0 10 20
 SCALE IN FEET

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/se039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: se039cx5.i	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: A. PORTALUP	SHEET: 103 OF 106

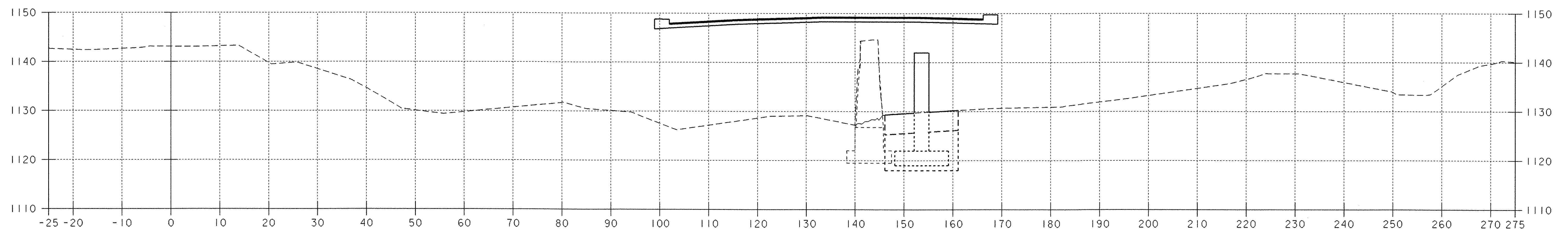


4+00

STA. 3+85 RIGHT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN GRANULAR BACKFILL FOR STRUCTURES
BEGIN GRUBBING MATERIAL
BEGIN GEOTEXTILE UNDER STONE FILL



3+80



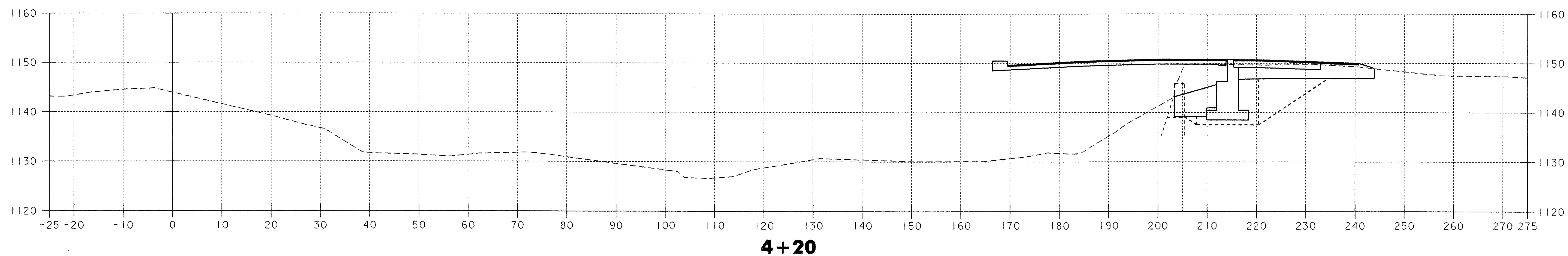
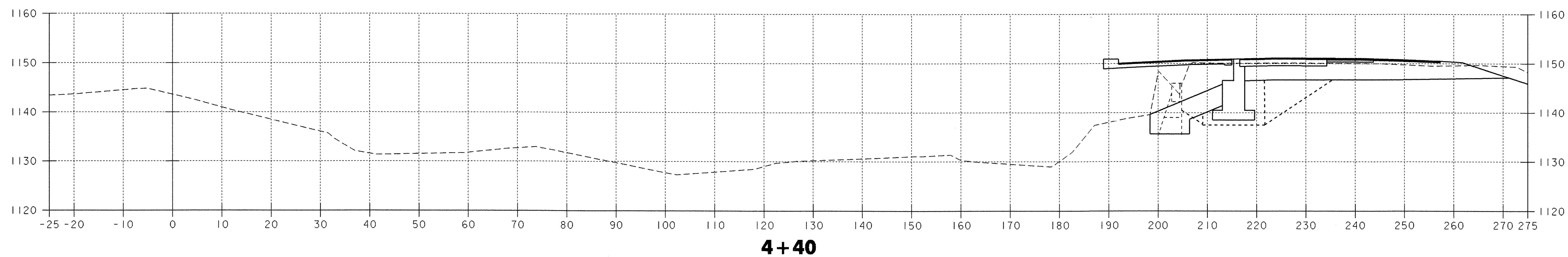
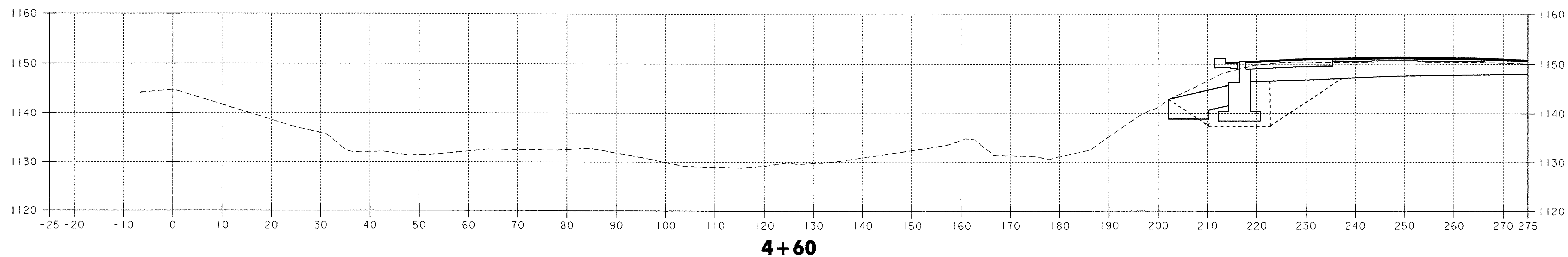
3+60

CHANNEL CROSS SECTIONS 3+60 ~ 4+00

DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

0 10 20
SCALE IN FEET

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/se039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: se039cx6.1	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: A. PORTALUP	SHEET: 104 OF 106

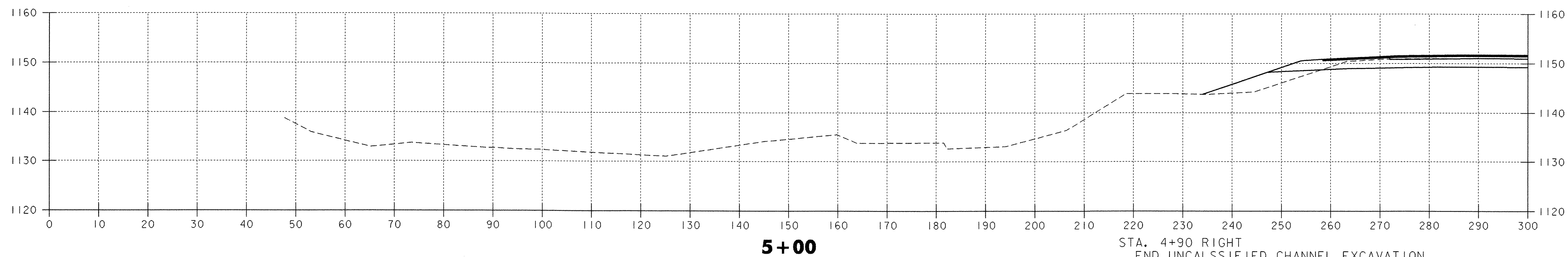


CHANNEL CROSS SECTIONS 4+20 ~ 4+60

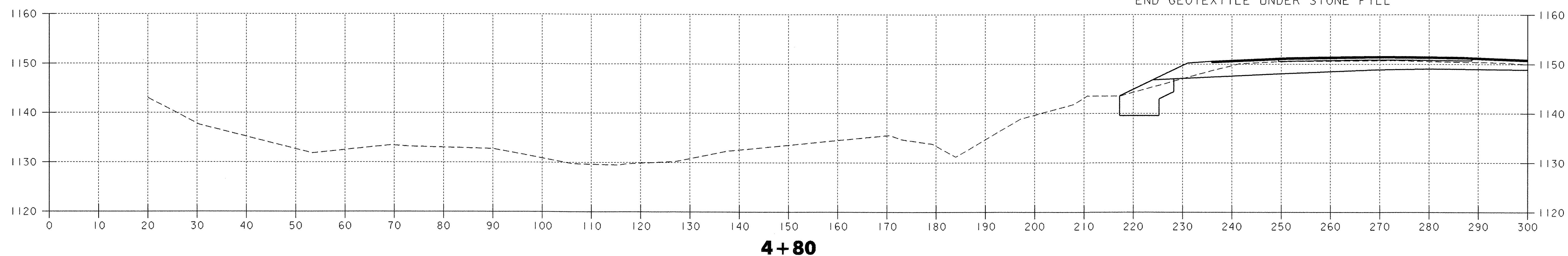
DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

0 10 20
SCALE IN FEET

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/se039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: se039cx7.1	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: A. PORTALUPI	SHEET: 105 OF 106



STA. 4+90 RIGHT
 END UNCLASSIFIED CHANNEL EXCAVATION
 END GRANULAR BACKFILL FOR STRUCTURES
 END GRUBBING MATERIAL
 END GEOTEXTILE UNDER STONE FILL



CHANNEL CROSS SECTIONS 4+80 ~ 5+00

DATUM
 VERTICAL NGVD 1929
 HORIZONTAL N/A

0 10 20
 SCALE IN FEET

PROJECT: WOODFORD	PROJECT NO.: BHF 010-1(29)
DESIGN FILE NAME: /84e039/se039xs.dgn	PLOT DATE: 03-OCT-2005
IPARM FILE NAME: se039cx8.i	SURVEY DATE: 12-88
SURVEYED BY: MOREAU	DRAWN BY: EVANS-MONGEON
SQUAD LEADER: A. PORTALUPI	SHEET: 106 OF 106



ate of Vermont
PDD/Structures Design Section
National Life Building – Drawer 33
Montpelier, VT 05633-5001
www.aot.state.vt.us

Agency of Transportation
[phone] 802-828-2621
[fax] 802-828-3566
[toll] 800-253-0191

Pete Somogyi, General Manager
Amscot Structural Products
241 E. Blackwell St.
Dover, NJ 07801

April 26, 2006

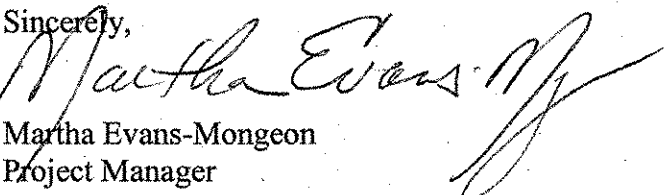
Project Name: WOODFORD Project #: BHF 010-1(29)

Structure Identification: Bridge No. 11

The following Bearing Details [Item #531.10, (Bearing Device Assembly (Elastomeric) (Abutment and Pier))] for the above project (Vendor's Job #2212) transmitted with your letter dated 04/04/06 have been reviewed and are being returned herewith.

Sheets: 1-4 of 4 are “approved”.

Upon receipt of these approved plans, please submit white prints for our use in the record plans for this project. You must provide written notice to this office as to the date fabrication represented by these drawings will begin. That notice must be received at least seven days prior to that date, as per Specification 506.03. Any material fabricated prior to the notification date is subject to rejection without further cause.

Sincerely,

Martha Evans-Mongeon
Project Manager

Attachments
cc: [X] Resident Engineer – with prints Ron Lamaire
[X] Shop Inspector – with prints Jeff Clark
[X] Contractor – with prints Mike Renaud
[] Subcontractor –
[X] Construction Division – letter only
[X] Materials & Research Section (C&IA Unit) – letter only
[X] Files (Structures & Central)



REVISIONS			
DATE	DESCRIPTION	APPROVED	BY
4/2/06	PER ENGINEER'S MARKS	C.A.M.	

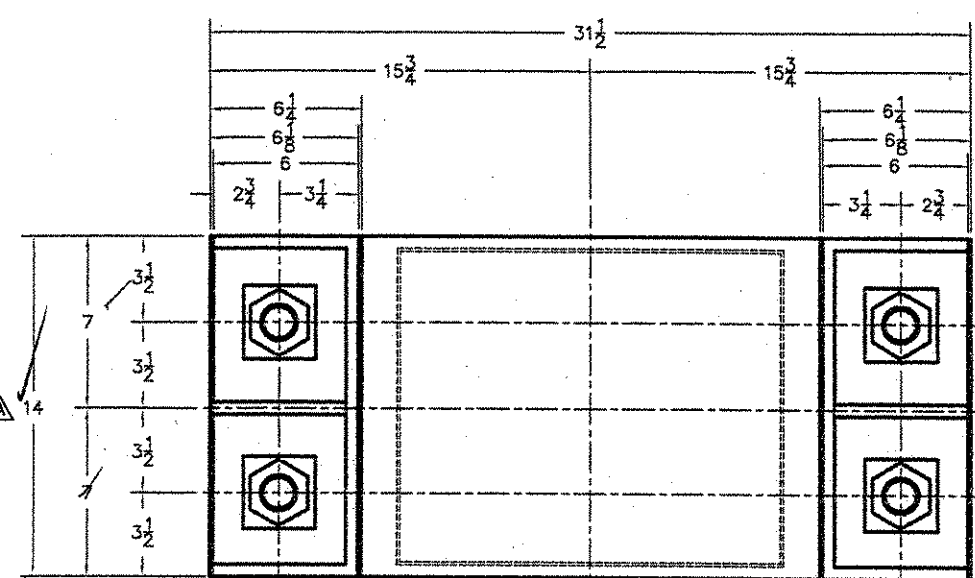
NOTES:

1. BEARINGS TO BE MANUFACTURED ACCORDING TO AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION, 2002.
2. THE BEARINGS ARE DESIGNED SO THAT THE SUPERSTRUCTURE MAY BE ERECTED WHEN THE AMBIENT AIR TEMPERATURE IS WITHIN THE RANGE OF 4 DEG. C. TO 32 DEG. C.
3. ALL STEEL IN BEARINGS SHALL BE AASHTO M270 GRADE 36, UALD.
4. NEOPRENE SHALL BE AASHTO M2.40 DIAPHRAGM +/- 5, OR 4.
5. ALL STEEL PRODUCED IN THE U.S.A.
6. CONTACT PETER SOMICH, COORDINATOR.
7. TOLERANCES: THICKNESS -0.11/0
PLATE -0.11/0
8. MANUFACTURING FACILITY LOCATION:
AASHTO STRUCTURAL PRODUCTS INC.
101 EAST BLANDFORD STREET
DOVER, NJ 07801
9. ALL DIMENSIONS ARE IN INCHES.
10. ALL BEARING DEVICES SHALL BE METALLIZED AS PER STANDARD SPECIFICATIONS FOR BRIDGES AND STRUCTURES. IF THE BEARINGS ARE METALLIZED, THEY SHALL BE SEALED WITH AN APPROVED SEALER AS SPECIFIED IN STANDARD SPECIFICATION 506.15.
11. ALL ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER AASHTO M222.
12. PRIOR TO METALLIZING, ALL CORNERS AND EDGES OF STEEL PLATES, SHAPES, ETC. SHALL BE GROUNDED TO A 1/16" RADIUS (TYP.).
13. A MINIMUM THICKNESS OF 6 MILS SHALL BE APPLIED TO METALLIZED SURFACES (TYP.).
14. EXTERIOR SURFACES SHALL BE SEALED WITH AN APPROVED SEALANT CONFORMING TO THE RECOMMENDATIONS OF THE THERMAL SPRAY SUPPLIER (TYP.).
15. BEARING DEVICE ASSEMBLY ITEM NO. 533.10
16. THE STEEL SOLE PLATES AND MASONRY PLATES SHALL BE HOT BONDED TO THE REINFORCED ELASTOMERIC PAD DURING THE VULCANIZATION PROCESS. THE STEEL SURFACES TO BE BONDED TO THE PAD SHALL NOT BE METALLIZED.

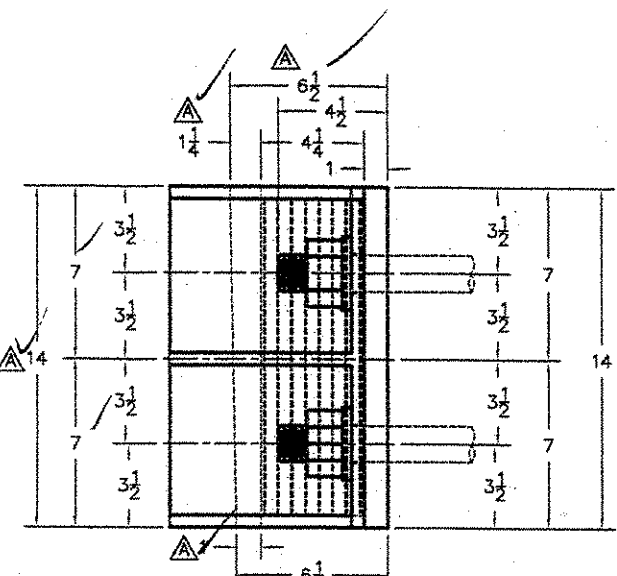
BRIDGE NO. 11 PROJECT NO.:
BHF 010-1 (29) JOB NO. 2212

EXPANSION BEARING DETAILS
PIER NO. 2
HWY. NO. VT 9 OVER ROARING BRANCH OF
WALLOOMSACH, TOWN OF WOODFORD

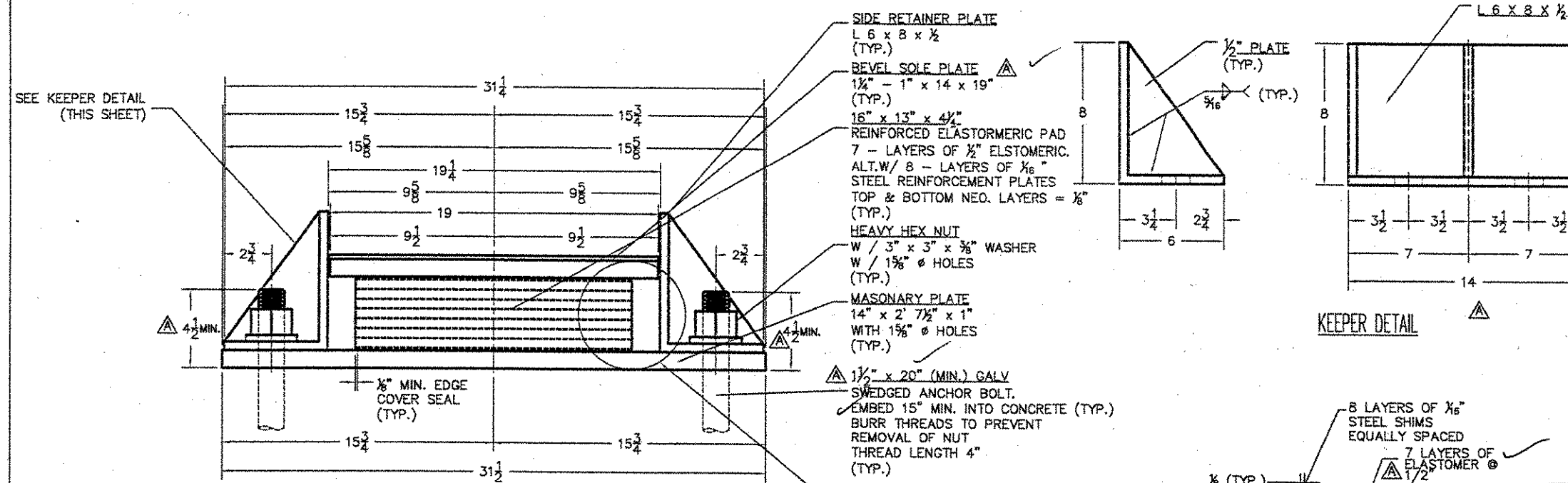
PRIME CONTRACTOR: REMAID BROS. INC. SCALE = N.T.S.
FABRICATOR: AASHTO STRUCTURAL PRODUCTS CORP.
DWG. NO.: R20541RA SHEET NO. 1 OF 4



PLAN VIEW EXPANSION BEARING @ PIER 2

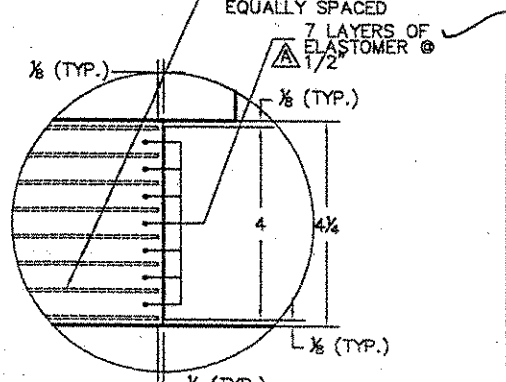


SIDE VIEW

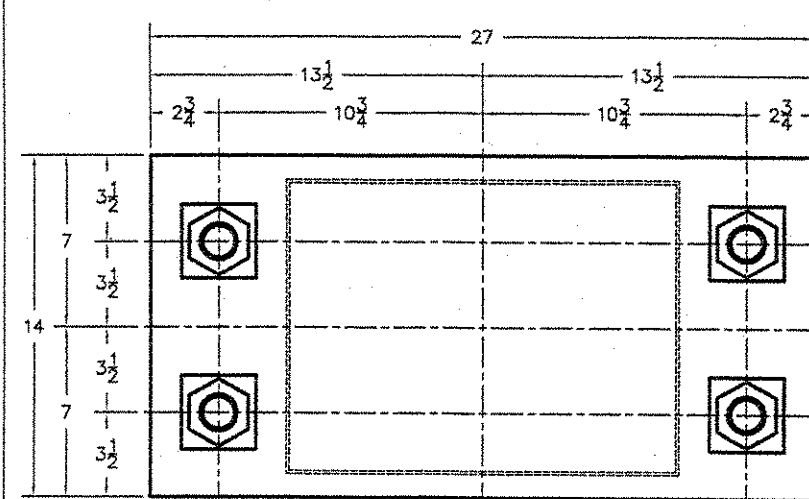


ELEVATION VIEW
(QTY. REQ'D = 6 ASSY.)

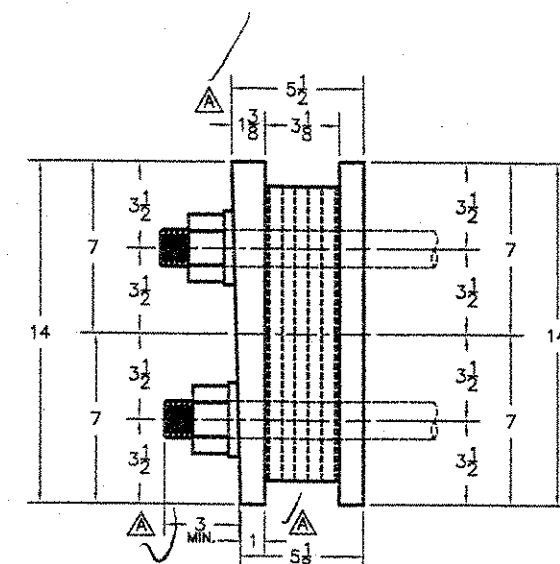
RECEIVED
CHK'D BY WJF OK'D BY _____
APR 14 2006
RESUBMIT _____ APPROVED X
BY _____ DATE 04/24/06



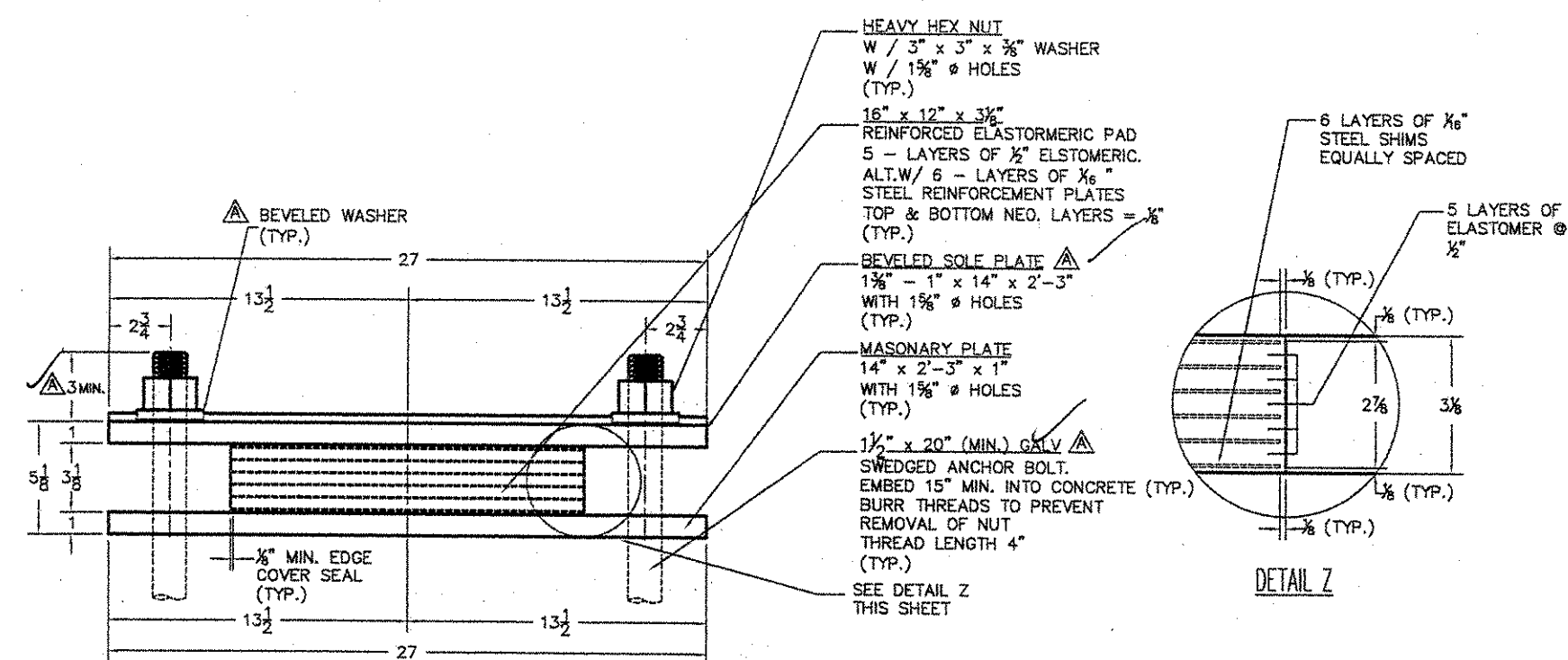
DETAIL Z



PLAN VIEW FIXED BEARING @ PIER 1



SIDE VIEW



ELEVATION VIEW
(QTY. REQ'D = 6 ASSY.)

REVISIONS			
ZONE	REV	DESCRIPTION	DATE
MSDC	A	PER ENGINEER'S MARKS	4/3/08

NOTES:

1. BEARINGS TO BE MANUFACTURED ACCORDING TO AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17th EDITION, 2002.
2. THE BEARINGS ARE DESIGNED SO THAT THE SUPERSTRUCTURE MAY BE ERECTED WHEN THE AMBIENT AIR TEMPERATURE IS WITHIN THE RANGE OF 4 DEG. C. TO 32 DEG. C.
3. ALL STEEL IN BEARINGS SHALL BE AASHTO M220 GRADE 36, U.S.A.
4. NEOPRENE SHALL BE AASHTO OR, 90 DUROMETER +/- 5, GR. 4
5. ALL STEEL PRODUCED IN THE U.S.A.
6. CONTACT PETER SOMICH, COORDINATOR.
7. TOLERANCES: THICKNESS - ± 0.010
PLAN ± 0.010
8. MANUFACTURING FACILITY LOCATION:
AMSCOT STRUCTURAL PRODUCTS INC.
245 EAST BLANDWELL STREET
DUNEL, NJ 07821
9. ALL DIMENSIONS ARE IN INCHES.
10. ALL BEARING DEVICES SHALL BE METALLIZED AS PER STANDARD SPECIFICATIONS 506.15 AND 531.04(6). IF THE BEARINGS ARE METALLIZED, THEY SHALL BE SEALED WITH AN APPROVED SEALER AS SPECIFIED IN STANDARD SPECIFICATION 506.15.
11. ALL ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER AASHTO M232.
12. PRIOR TO METALLIZING, ALL CORNERS AND EDGES
OF STEEL PLATES, SHIMMS, ETC. SHALL BE BOUND TO A 1/16" RADIUS (TYP.).
13. A MINIMUM THICKNESS OF 8 MILS SHALL BE APPLIED TO METALLIZED SURFACES (TYP.).
14. EXTERIOR SURFACES SHALL BE SEALED WITH AN APPROVED SEALANT CONFORMING TO THE RECOMMENDATIONS OF THE THERMAL SPRAY SUPPLIER (TYP.).
15. BEARING REMEDY ASSEMBLY ITEM NO. 531.10
16. THE STEEL SIDE PLATES AND MASONRY PLATES SHALL BE NOT BONDED TO THE REINFORCED ELASTOMERIC PAD DURING THE VULCANIZATION PROCESS. THE STEEL SURFACES TO BE BONDED TO THE PAD SHALL NOT BE METALLIZED.

BRIDGE NO. 11	PROJECT NO.: BHF 010-1 (29)
	JOB NO. 2212
FIXED BEARING DETAILS PIER NO. 1	
HWY. NO. VT 9 OVER ROARING BRANCH OF WALLOOMSACH, TOWN OF WOODFORD	
PRIME CONTRACTOR: RENAUD BROS., INC.	SCALE = N.T.S.
FABRICATOR: AMSCOT STRUCTURAL PRODUCTS CORP.	
DWG. NO.: RBO042RA	SHEET NO. 2 OF 4

PLAN VIEW EXPANSION BEARING @ ABUTMENT 2

SIDE VIEW

KEEPER DETAIL

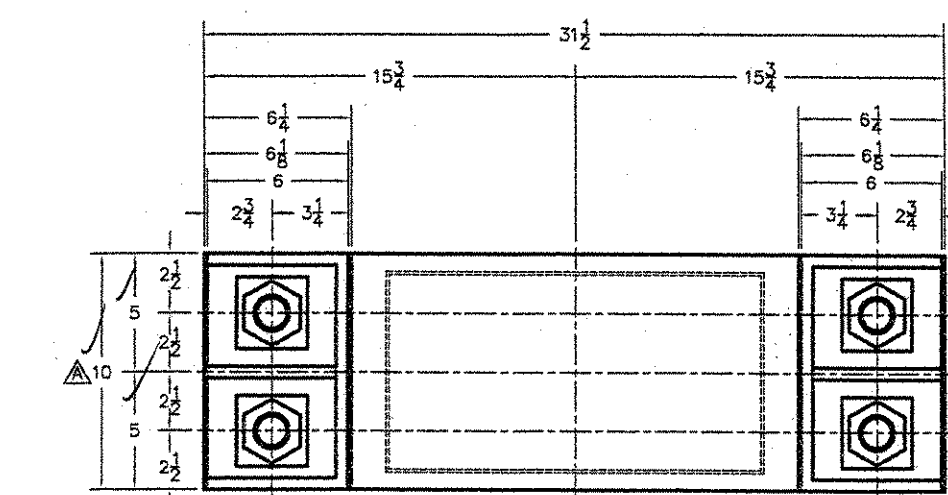
DETAIL 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
MISC.	A	PER ENGINEER'S MARKS	4/3/06	C.A.M.

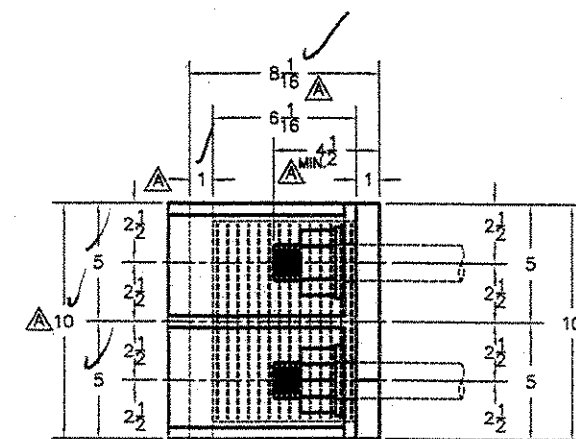
NOTES:

1. BEARINGS TO BE MANUFACTURED ACCORDING TO AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION, 2002.
2. THE BEARINGS ARE DESIGNED SO THAT THE SUPERSTRUCTURE MAY BE ERECTED WHEN THE AMBIENT AIR TEMPERATURE IS WITHIN THE RANGE OF 4 DEG. C. TO 32 DEG. C.
3. ALL STEEL IN BEARINGS SHALL BE AASHTO WEAR GRADE S355. UNCL.
4. NEXPRENE SHALL BE AASHTO GR. 60 DIRMETER +/- .5, GR. 4
5. ALL STEEL PRODUCTS IN THE U.S.A.
6. CONTACT PETER SODOSKY, COORDINATOR.
7. TOLERANCES: THICKNESS -+1/8" PLAN -+1/8"
8. MANUFACTURER/FACILITY LOCATION:
AASHTO STRUCTURAL PRODUCTS INC.
401 EAST BROADVIEW, STREET
DOWR, NJ 07008
9. ALL DIMENSIONS ARE IN INCHES.
10. ALL BEARING DEVICES SHALL BE METALLIZED AS PER STANDARD SPECIFICATIONS S355 AND S355Q(4). IF THE BEARINGS ARE METALLIZED, THEY SHALL BE SEALED WITH AN APPROVED SEALER AS SPECIFIED IN STANDARD SPECIFICATION S355L.
11. ALL ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER AASHTO S355.
12. PRIOR TO METALLIZING, ALL CORNERS AND EDGES OF STEEL PLATES, SHAPES, ETC. SHALL BE GROUNDED TO A 1/16" RADIUS (R16).
13. A MINIMUM THICKNESS OF 6 MILS SHALL BE APPLIED TO METALLIZED SURFACES (TYP).
14. EXTERIOR SURFACES SHALL BE SEALED WITH AN APPROVED SEALANT CONFORMING TO THE RECOMMENDATIONS OF THE THERMAL SPALL TREATMENT (TAPT).
15. BEARING DECK ASSEMBLY (TYP) MIN. S351.0
16. THE STEEL SHEET PILES AND MAXIMUM PILES SHALL BE HOT DUNED TO THE REINFORCED CONCREMENT PAD DURING THE METALLIZATION PROCESS. THE STEEL SURFACES TO BE DUNED TO THE PAD SHALL NOT BE METALLIZED.

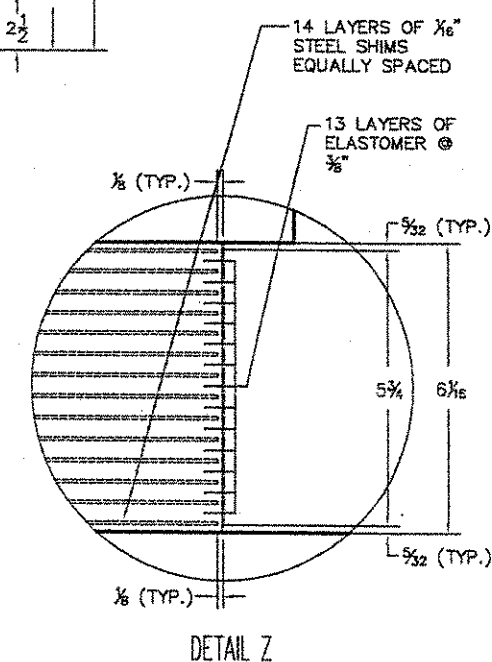
BRIDGE NO. 11	PROJECT NO. BHF 010-1 (29)
JOB NO. 2212	
EXPANSION BEARING DETAILS ABUTMENT NO. 1 	
HWY. NO. VT 9 OVER ROARING BRANCH OF WALLOOMS SACK, TOWN OF WOODFORD	
PRIME CONTRACTOR: RENAUD BROS., INC.	SCALE = N.T.S.
FABRICATOR: AMSCOT STRUCTURAL PRODUCTS CORP.	
DWG. NO.: R06GAJRA	SHEET NO. 3 OF 4



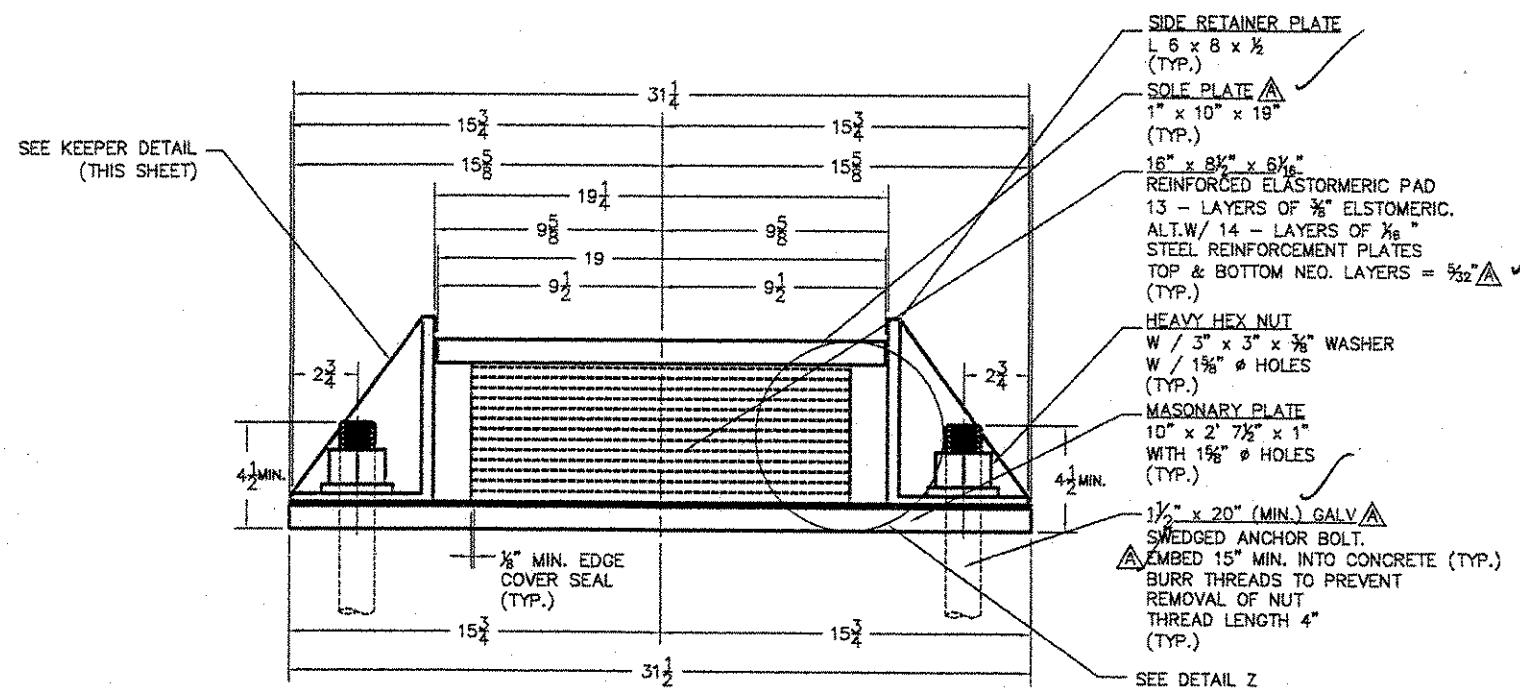
PLAN VIEW EXPANSION BEARING @ ABUTMENT 1



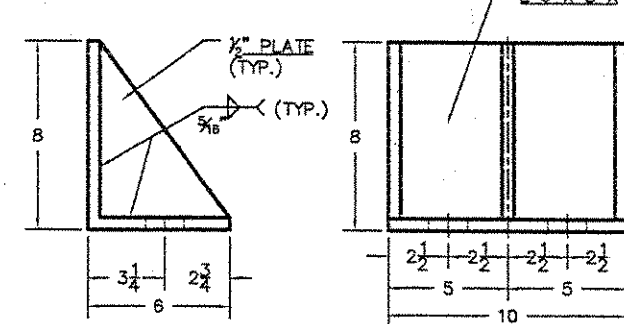
SIDE VIEW



DETAIL Z



ELEVATION VIEW
(QTY. REQ'D = 6 ASSY.)



KEEPER DETAIL

ZONE	REV	DESCRIPTION	DATE	APPROVED
MISC.	A	FOR ENGINEER'S MARKS	4/2/06	C.A.M.

NOTES

1. BEARINGS TO BE MANUFACTURED ACCORDING TO AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17th EDITION, 2002.
2. THE BEARINGS ARE DESIGNED SO THAT THE SUPERSTRUCTURE MAY BE ERECTED WHEN THE AMBIENT AIR TEMPERATURE IS WITHIN THE RANGE OF 4 DEG. C. TO 32 DEG. C.
3. ALL STEEL IN BEARINGS SHALL BE AASHTO M270 GRADE 50, U.L.C.
4. NEOPRENE SHALL BE AASHTO OR 60 DUROMETER +/- 5, OR 4.
5. ALL STEEL PRODUCED IN THE U.S.A.
6. CONTACT PETER SOMMER, COORDINATOR.
7. TOLERANCES: THICKNESS: -0.1/0
PLAN: -0.1/0
8. MANUFACTURING FACILITY LOCATION:
AMSCOT STRUCTURAL PRODUCTS INC.
241 EAST BLACKWELL STREET
DORSET, MA 01920
9. ALL DIMENSIONS ARE IN INCHES.
10. ALL BEARING DEVICES SHALL BE METALLIZED AS PER STANDARD SPECIFICATIONS (S6.15 AND S6.16). IF THE BEARINGS ARE METALLIZED, THEY SHALL BE SEALED WITH AN APPROVED SEALER AS SPECIFIED IN STANDARD SPECIFICATION S6.15.
11. ALL ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER AASHTO M232.
12. PRIOR TO METALLIZING, ALL CORNERS AND EDGES OF STEEL PLATES, SHAPES, ETC. SHALL BE ROUNDED TO A 1/16" RADIUS (TYP.).
13. A MINIMUM THICKNESS OF 6 MILS SHALL BE APPLIED TO METALLIZED SURFACES (TYP.).
14. EXTERIOR SURFACES SHALL BE SEALED WITH AN APPROVED SEALANT CONFORMING TO THE RECOMMENDATIONS OF THE THERMAL SPRAY SUPPLIER (TYP.).
15. BEARING DEVICE ASSEMBLY ITEM NO. 531.10.
16. THE STEEL SIDE PLATES AND MASONRY PLATES SHALL BE HOT BONDED TO THE REINFORCED ELASTOMERIC PAD DURING THE VACUUMATION PROCESS. THE STEEL SURFACES TO BE BONDED TO THE PAD SHALL NOT BE METALLIZED.

BRIDGE NO. 11	PROJECT NO.: BHF 010-1 (2B)
	JOB NO. 2212
EXPANSION BEARING DETAILS ABUTMENT NO. 2	
HWY. NO. VT 9 OVER ROARING BRANCH OF WALLOOMSACH, TOWN OF WOODFORD	
PRIME CONTRACTOR: RENAUD BROS., INC.	SCALE: N.T.S.
FABRICATOR: AMSCOT STRUCTURAL PRODUCTS CORP.	
DWG. NO.: RB06A4RA	SHEET NO. 4 OF 4

CONSTRUCTION SPECIFICATIONS

CONSTRUCTION SPECIFICATIONS

- ## DESIGN SPECIFICATIONS

- ## MATERIAL SPECIFICATIONS

- ## FABRICATION

- FIELD CONNECTIONS

- WELDING

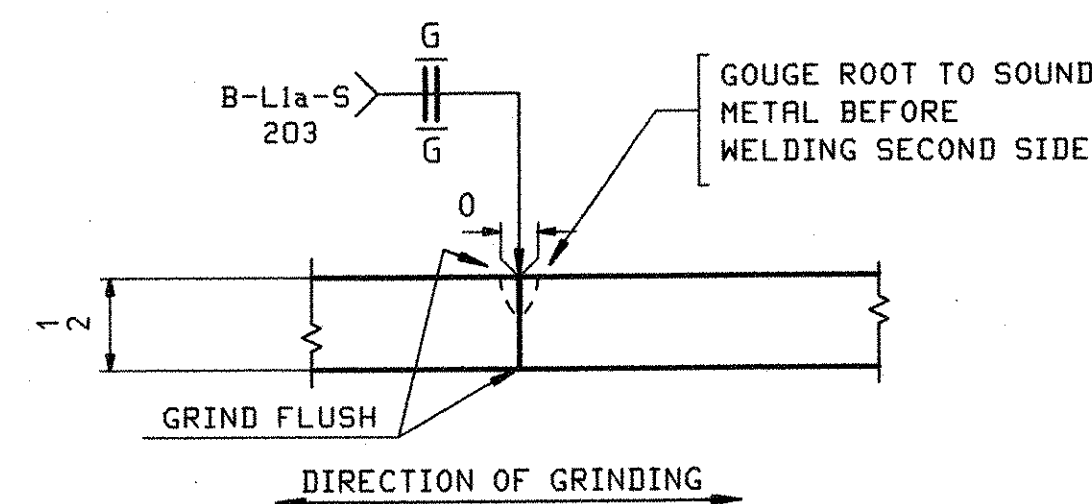
- CLEANING:

- PAINTING

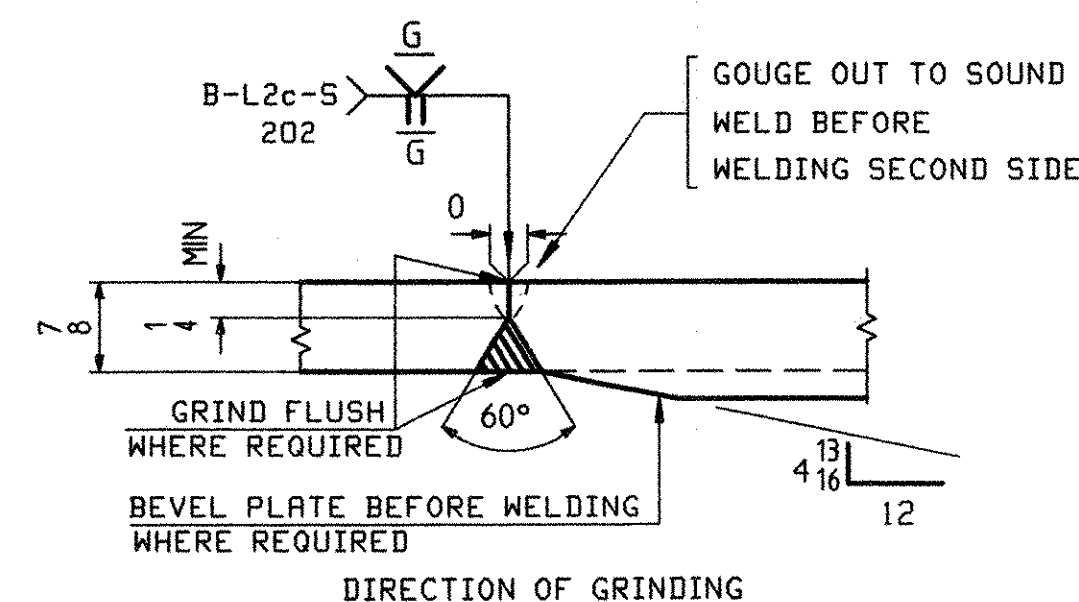
- DRY FILM
THICKNESS
(in MILS)

[illegible]

SKETCH "P1"



1 WEB PLATE SPLICE DETAIL 'WA'

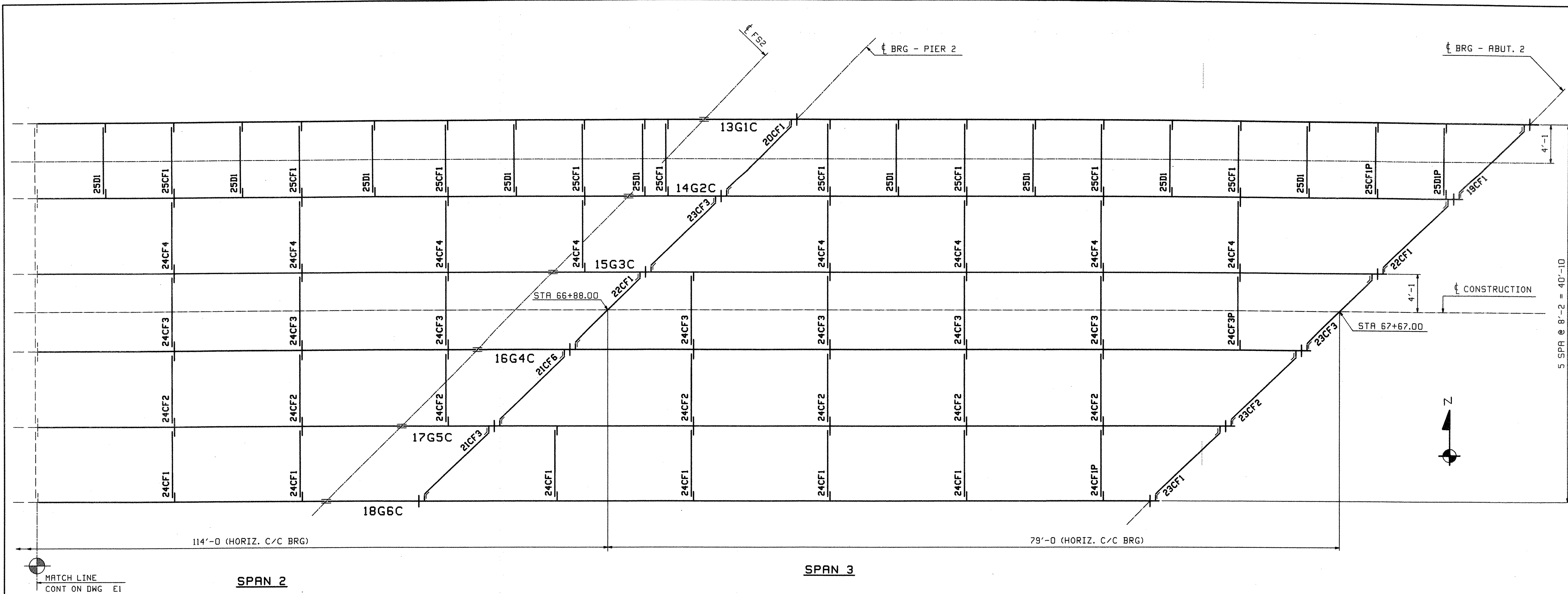


 FLANGE PLATE SPLICE DETAIL 'FA'

RECEIVED
OK'D BY _____ OK'D BY mem
JUL 26 2006
RESUBMIT _____ APPROVED ✓
BY _____ DATE 7/28/06

NOTE TO ENGINEER:
THESE NOTES ARE NOT INTENDED TO BE ALL INCLUSIVE AND
COMPLIANCE WITH RELEVANT SPECIFICATIONS REMAIN UNCHANGED.

OUT FOR APPROVAL		Final 7-17-26																				
OUT FOR APPROVAL																						
ISSUED TO SHOP																						
FIELD & OFFICE																						
 APPROVAL COMMENTS		7/10	WL	PCP																		
 ADD DETAILS "WB" & "FB"			JTB	PCP																		
REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER											
MATERIAL:		ELECTRODES:			HOLES:			SHOP BOLTS:														
SURFACE PREP. & PAINT:																						
DESCRIPTION: JOB: RTE 9 OVER ROARING BRANCH OF WALLOOMSAC RIVER BRIDGE NO. BR 11  WOODFORD, VT. BENNINGTON COUNTY						GENERAL NOTES						DRAWN BY		DATE								
												WL		02/17								
												CHKD BY										
												PCP		02/22								
												APPROV BY										
						SUPERVISOR		W. J. GATTI														
PROJ NO. BHF 010-I(29)						Q.A.																
CUSTOMER: RENAUD BROTHERS, INC.																						
CASCO BAY STEEL STRUCTURES, INC. 75 SPRING HILL ROAD PHONE (207) 282-7360								JOB NO.		DRG. NO.												
								290		GN1												
										REV. / 												
FAX. (207) 282-1179																						

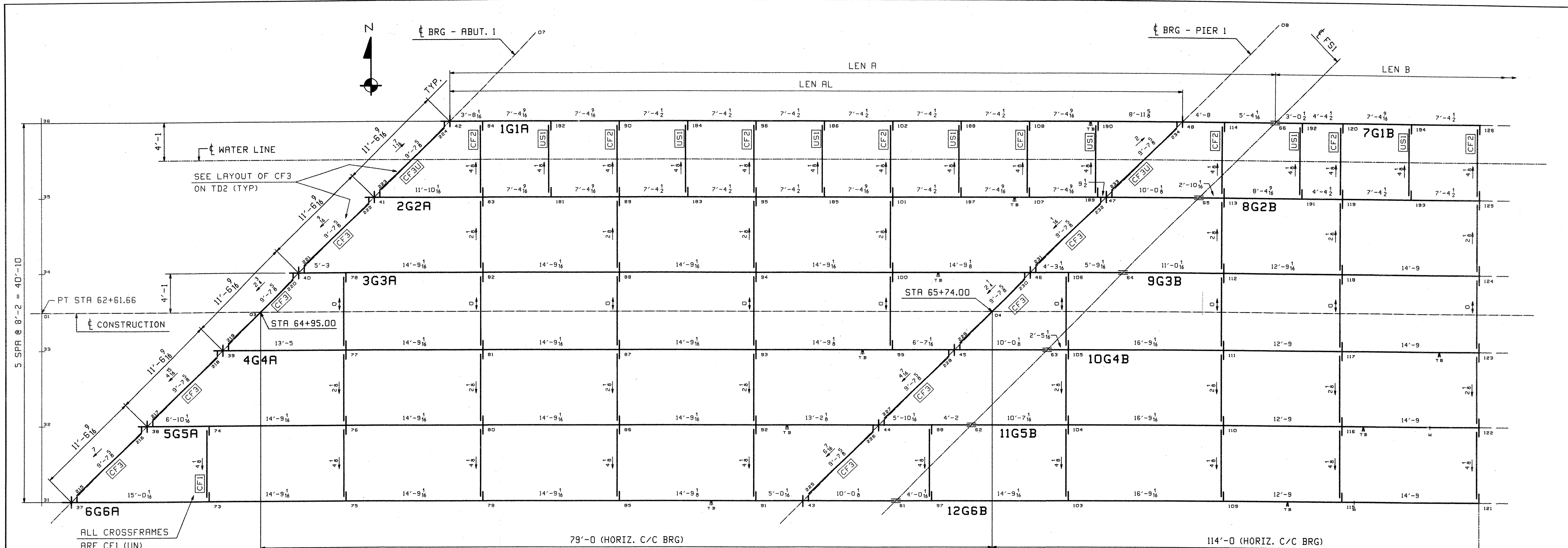


FRAMING PLAN

OUT FOR APPROVAL	Final 7-17-06																		
OUT FOR APPROVAL																			
ISSUED TO SHOP																			
FIELD & OFFICE																			
REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER								
MATERIAL:		ELECTRODES:		HOLES:		SHOP BOLTS:													
SURFACE PREP. & PAINT:																			
DESCRIPTION: FRAMING PLAN												DRAWN BY		DATE					
JOB: RTE 9 OVER ROARING BRANCH OF WALLLOOMSAC RIVER												JTB		02/26					
BRIDGE No. BR 11												CHKD BY							
WOODFORD, VT. BENNINGTON COUNTY												PCP		03/06					
												APPROV BY							
												SUPERVISOR		W. J. GATTI					
PROJ NO. BHF 010-1(29)												Q.A.							
CUSTOMER: RENAUD BROTHERS, INC.																			
CASCO BAY STEEL STRUCTURES, INC.												JOB NO.		DRG. NO.					
75 SPRING HILL ROAD												290		E2					
PHONE (207) 282-7360												SACO, MAINE 04072		REV.					
												FAX. (207) 282-1179							

RECEIVED
 CK'D BY _____ OK'D BY *MGM*
 JUL 26 2006
 RESUBMIT _____ APPROVED _____
 BY _____ DATE 7/28/06

WORK THIS DRAWING WITH DRAWING E1



5 SPA @ 8'-2" = 40'-10"

Rev 22 08/01/04 EST 0008 /user/john/2004/EST 1 Rev 0

Line	DEV. LENGTHS ALONG BOTTOM OF WEB			SLOPE	
	LEN AL	LEN A	LEN B	ABUT 1	Pier 1
1	79'-0 3/8	89'-0 7/16	94'-0 1/16	.0313	.0253
2	79'-0 3/8	89'-0 1/2	94'-0 1/8	.0320	.0259
3	79'-0 3/8	89'-0 1/2	94'-0 1/8	.0326	.0266
4	79'-0 3/8	89'-0 1/2	94'-0 1/8	.0333	.0272
5	79'-0 7/16	89'-0 1/2	94'-0 1/8	.0339	.0278
6	79'-0 7/16	89'-0 9/16	94'-0 3/16	.0346	.0285

SPAN 1

SPAN 2

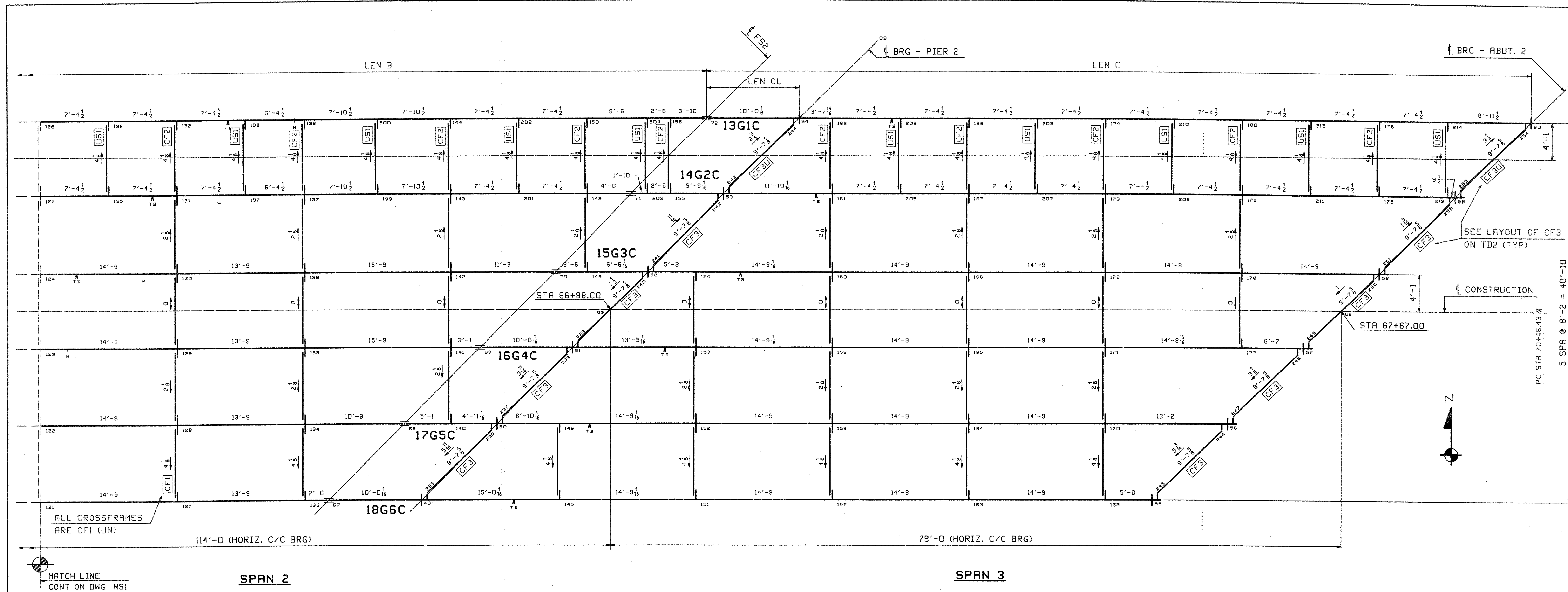
CALCULATION PLAN

**** NOTE ****
 THE PURPOSE OF THIS DRAWING IS TO COORDINATE GEOMETRIC CONTROL INFORMATION. THIS DWG IS SUBMITTED FOR INFORMATION ONLY AND IS NOT INTENDED FOR SHOP FABRICATION.

- NOTES
1. LONGITUDINAL DIMENSIONS ARE SLOPING ALONG BOTTM OF WEB WITH CORRECTIONS MADE FOR VERTICAL CURVE, GRADE & DL CAMBER (UN).
 2. TRANSVERSE DIMENSIONS ARE IN A HORIZ. PLANE (UN).
 3. DROP ARROW POINTS TOWARDS LOW END OF MEMBER.
 4. ENDS OF GIRDERS AND BRG. STIFF'S ARE VERTICAL AFTER DL ROTATION.
 5. CF STIFF, INT STIFF & FIELD SPLICES ARE NORMAL TO GRADE.
 6. BOTM PT NUMBERS = TOP PT NUMBERS + 300.
 7. FOR LAYOUTS SEE "TD" SHEETS.
 8. COMBINE INT. CROSSFRAMES FOR DIFF IN DROPS OF +/- 3/16
 9. CROSSFRAME DROPS ARE CALCULATED IN THEIR FINAL POSITION.

RECEIVED
 OK'D BY: *[Signature]*
 JUL 26 2006
 RESUBMIT: ☒ APPROVED: ☒
 DATE: 7/28/06

OUT FOR APPROVAL	Final 7-17-06									
OUT FOR APPROVAL										
ISSUED TO SHOP										
FIELD & OFFICE										
REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT TYPE	WASHER
MATERIAL:	ELECTRODES:	HOLES:	SHOP BOLTS:							
SURFACE PREP. & PAINT:										
DESCRIPTION: CALCULATION PLAN										
JOB:	RTE 9 OVER ROARING BRANCH OF WALLOOMSAC RIVER							WL	02/16	
BRIDGE No. BR 11										
WOODFORD, VT. BENNINGTON COUNTY										
DRAWN BY: <i>[Signature]</i>										
CHKD BY: <i>[Signature]</i>										
PCP 02/22										
APPROV BY: <i>[Signature]</i>										
SUPERVISOR: W. J. GATTI										
PROJ NO. BHF 010-1(29)										
CUSTOMER: RENAUD BROTHERS, INC.										
CASCO BAY STEEL STRUCTURES, INC.										
75 SPRING HILL ROAD SACO, MAINE 04072										
PHONE (207) 282-7360 FAX. (207) 282-1179										
JOB NO.	290		DRG. NO.	WS1						
REV.	1									



CALCULATION PLAN

DEV. LENGTHS ALONG BOTTOM OF WEB				SLOPE	
Line	LEN B	LEN CL	LEN C	Pier 2	Abut 2
1	94'-0 1/16	10'-0 1/8	89'-0 1/16	.0163	.0102
2	94'-0 1/8	10'-0 1/16	89'-0 1/8	.0169	.0108
3	94'-0 1/8	10'-0 1/16	89'-0 1/8	.0176	.0115
4	94'-0 1/8	10'-0 1/16	89'-0 1/8	.0182	.0121
5	94'-0 1/8	10'-0 1/16	89'-0 3/16	.0188	.0128
6	94'-0 3/16	10'-0 1/16	89'-0 3/16	.0195	.0134

**** NOTE ****
THE PURPOSE OF THIS DRAWING IS TO COORDINATE GEOMETRIC CONTROL INFORMATION. THIS DWG IS SUBMITTED FOR INFORMATION ONLY AND IS NOT INTENDED FOR SHOP FABRICATION.

- NOTES
1. LONGITUDINAL DIMENSIONS ARE SLOPING ALONG BOTT OF WEB WITH CORRECTIONS MADE FOR VERTICAL CURVE, GRADE & DL CAMBER (UN).
 2. TRANSVERSE DIMENSIONS ARE IN A HORIZ. PLANE (UN).
 3. DROP ARROW POINTS TOWARDS LOW END OF MEMBER.
 4. ENDS OF GIRDERS AND BRG. STIFF'S ARE VERTICAL AFTER DL ROTATION.
 5. CF STIFF, INT STIFF & FIELD SPLICES ARE NORMAL TO GRADE.
 6. BOTT PT NUMBERS = TOP PT NUMBERS + 300.
 7. FOR LAYOUTS SEE "TD" SHEETS.
 8. COMBINE INT. CROSSFRAMES FOR DIFF IN DROPS OF +/- 3/16
 9. CROSSFRAME DROPS ARE CALCULATED IN THEIR FINAL POSITION.

OUT FOR APPROVAL	Final 7-17-06																		
OUT FOR APPROVAL																			
ISSUED TO SHOP																			
FIELD & OFFICE																			
REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER								
MATERIAL:	ELECTRODES:																		
SURFACE PREP. & PAINT:																			
DESCRIPTION: CALCULATION PLAN												DRAWN BY		DATE					
JOB: RTE 9 OVER ROARING BRANCH OF WALLOOMSAC RIVER												WL		02/16					
BRIDGE No. BR 11												CHKD BY							
WOODFORD, VT. BENNINGTON COUNTY												PCP		02/22					
PROJ NO. BHF 010-1(29)												Q.A.							
CUSTOMER: RENAUD BROTHERS, INC.																			
CASCO BAY STEEL STRUCTURES, INC.												JOB NO.		DRG. NO.					
75 SPRING HILL ROAD												290		WS2					
PHONE (207) 282-7360												FAX. (207) 282-1179		REV.					



**** NOTE ****
THE PURPOSE OF THIS DRAWING IS TO COORDINATE GEOMETRIC CONTROL INFORMATION AND CONNECTION SPACING. THIS DWG IS SUBMITTED FOR INFORMATION ONLY & IS NOT INTENDED FOR SHOP FABRICATION. DETAIL DWGS WILL SHOW ALL WELDING AND DIMENSIONS REQ'D FOR FABRICATION.

[illegible]

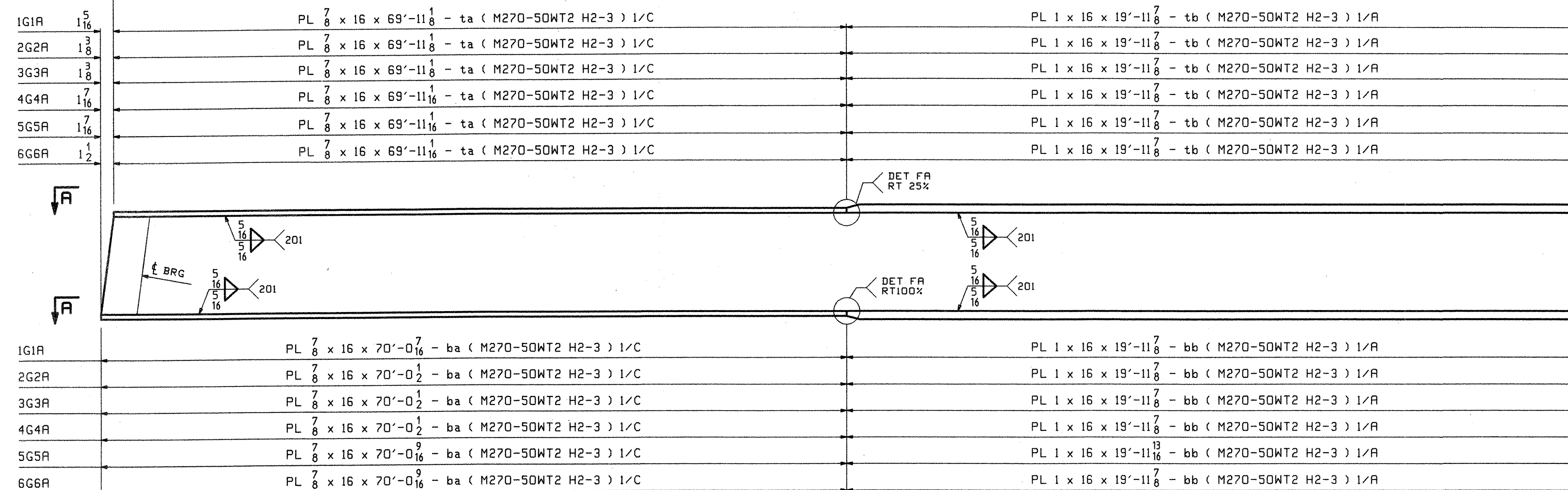


Diagram showing the camber profile for IG1A thru 6G6A. The diagram includes the following details:

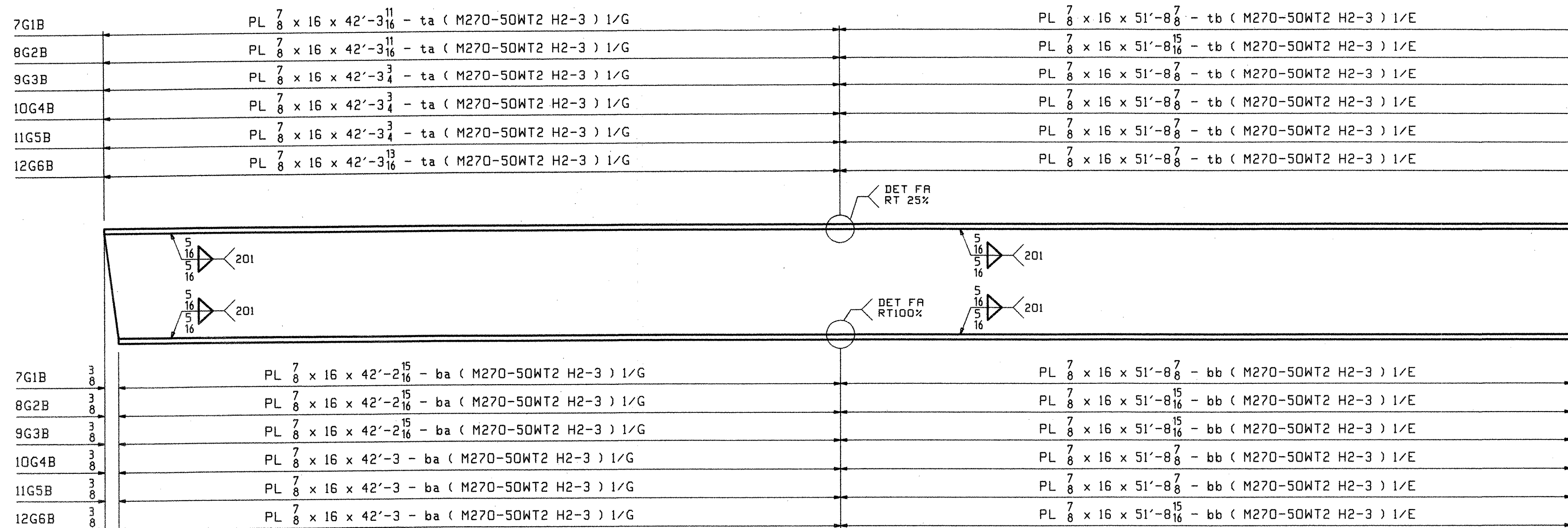
- Profile Line:** A curved line representing the camber profile, with a vertical offset of 4'-4" at the left end.
- Reference Lines:**
 - CL BRG (Center Line Bridge Grade)
 - CL FS (Center Line Finish)
- Dimensions and Spacing:**
 - 10 EQUAL SPACES @ $8'-10\frac{7}{8}"$ (ABT) = BL
 - Dimensions along the profile: 9 $\frac{1}{16}$, 15 $\frac{1}{16}$, 3 $\frac{1}{16}$, 1 $\frac{1}{4}$, 1 $\frac{1}{8}$, 7 $\frac{1}{8}$, 5 $\frac{1}{8}$, 1 $\frac{1}{4}$, 0.
 - Overall dimensions: 1'-0" (left), 43'-5 $\frac{7}{8}"$ (right), 1'-0" (right).
- Structural Details:**
 - PL $\frac{1}{2} \times 52 \times \text{WX1}$ - wa (M270-50WT2 H2-3) (1/Q)
 - PL $\frac{1}{2} \times 52 \times 43'-6$ wb (M270-50WT2 H2-3) (1/S)
 - DET. WA (Detailed Water)
 - Angles: 90° (multiple locations)
 - Labels: TEN (Tension), BBL (Bottom Bridge Line), BBR (Bottom Bridge Right), WL1 (Water Line 1), TBL (Top Bridge Line), TBR (Top Bridge Right), LE (Left End), TL (Top Line), TBL (Top Bridge Line), TBR (Top Bridge Right).

MARK	TL	BL	LE	WL1 $\triangle$	WX1 $\triangle$	TBL	TBR	BBL	BBR
1G1A	88'-11	89'-0 $\frac{5}{16}$	1 $\frac{1}{16}$	45'-6 $\frac{7}{16}$	46'-6 $\frac{9}{16}$	79'-0 $\frac{7}{16}$	9'-10 $\frac{9}{16}$	79'-0 $\frac{3}{8}$	9'-11 $\frac{15}{16}$
2G2A	88'-11	89'-0 $\frac{3}{8}$	1 $\frac{3}{8}$	45'-6 $\frac{1}{2}$	46'-6 $\frac{5}{8}$	79'-0 $\frac{7}{16}$	9'-10 $\frac{9}{16}$	79'-0 $\frac{3}{8}$	10'-0
3G3A	88'-11	89'-0 $\frac{3}{8}$	1 $\frac{3}{8}$	45'-6 $\frac{1}{2}$	46'-6 $\frac{5}{8}$	79'-0 $\frac{7}{16}$	9'-10 $\frac{9}{16}$	79'-0 $\frac{3}{8}$	10'-0
4G4A	88'-10 $\frac{15}{16}$	89'-0 $\frac{3}{8}$	1 $\frac{7}{16}$	45'-6 $\frac{1}{2}$	46'-6 $\frac{5}{8}$	79'-0 $\frac{7}{16}$	9'-10 $\frac{1}{2}$	79'-0 $\frac{3}{8}$	10'-0
5G5A	88'-10 $\frac{15}{16}$	89'-0 $\frac{3}{8}$	1 $\frac{7}{16}$	45'-6 $\frac{1}{2}$	46'-6 $\frac{5}{8}$	79'-0 $\frac{1}{2}$	9'-10 $\frac{7}{16}$	79'-0 $\frac{7}{16}$	9'-11 $\frac{15}{16}$
6G6A	88'-10 $\frac{15}{16}$	89'-0 $\frac{7}{16}$	1 $\frac{1}{2}$	45'-6 $\frac{9}{16}$	46'-6 $\frac{11}{16}$	79'-0 $\frac{1}{2}$	9'-10 $\frac{7}{16}$	79'-0 $\frac{7}{16}$	10'-0

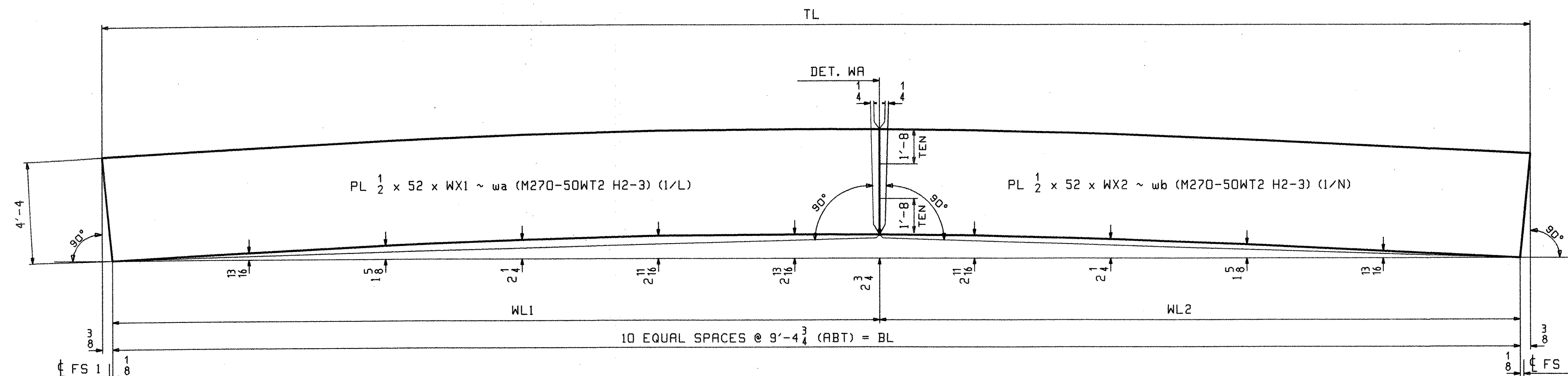
[illegible]

DESCRIPTION:		BASIC GIRDER		DRAWN BY		DATE	
 TENSOR 2608		JOB#: RTE 9 OVER ROARING BRANCH OF WALLOOMSAC RIVER BRIDGE No. BR 11 WOODFORD, VT. BENNINGTON COUNTY		WL		02/17	
				CHKD BY			
				PCP		02/22	
				APPROV BY			
PROJ NO. BHF 010-1(29)				SUPERVISOR		W. J. GATTI	
CUSTOMER: RENAUD BROTHERS, INC.				Q.R.			
CASCO BAY STEEL STRUCTURES, INC. 75 SPRING HILL ROAD SACO, MAINE 04072 PHONE (207) 282-7360 FAX. (207) 282-1179				JOB NO.		DRG. NO.	
				290		C1	
				REV.		⚠	

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RESUBMIT _____ APPROVED 1
BY _____ DATE 7/28/06



FLANGE DIAGRAM FOR 7G1B THRU 12G6B



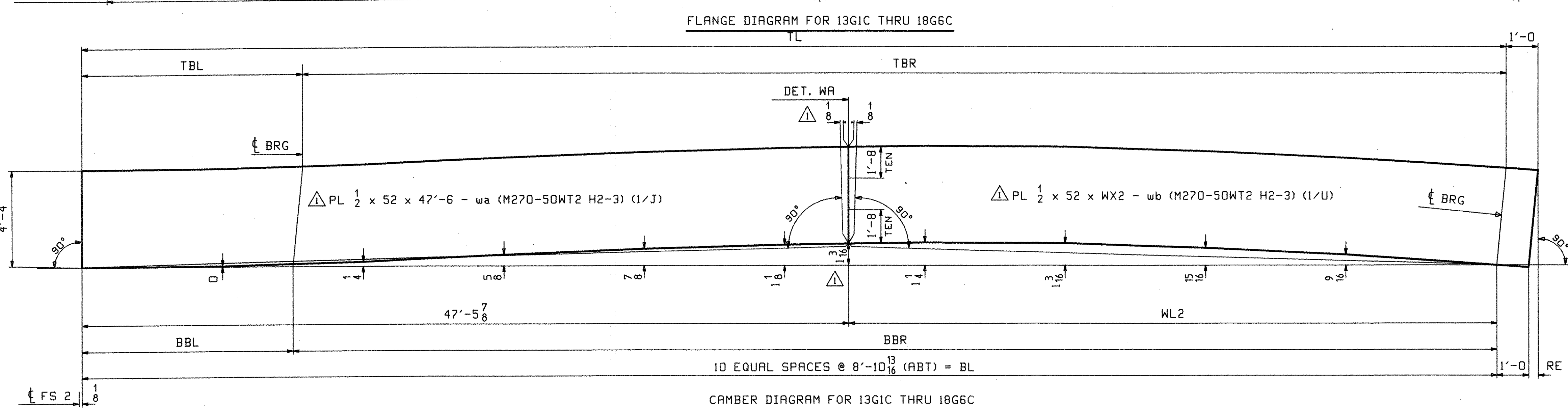
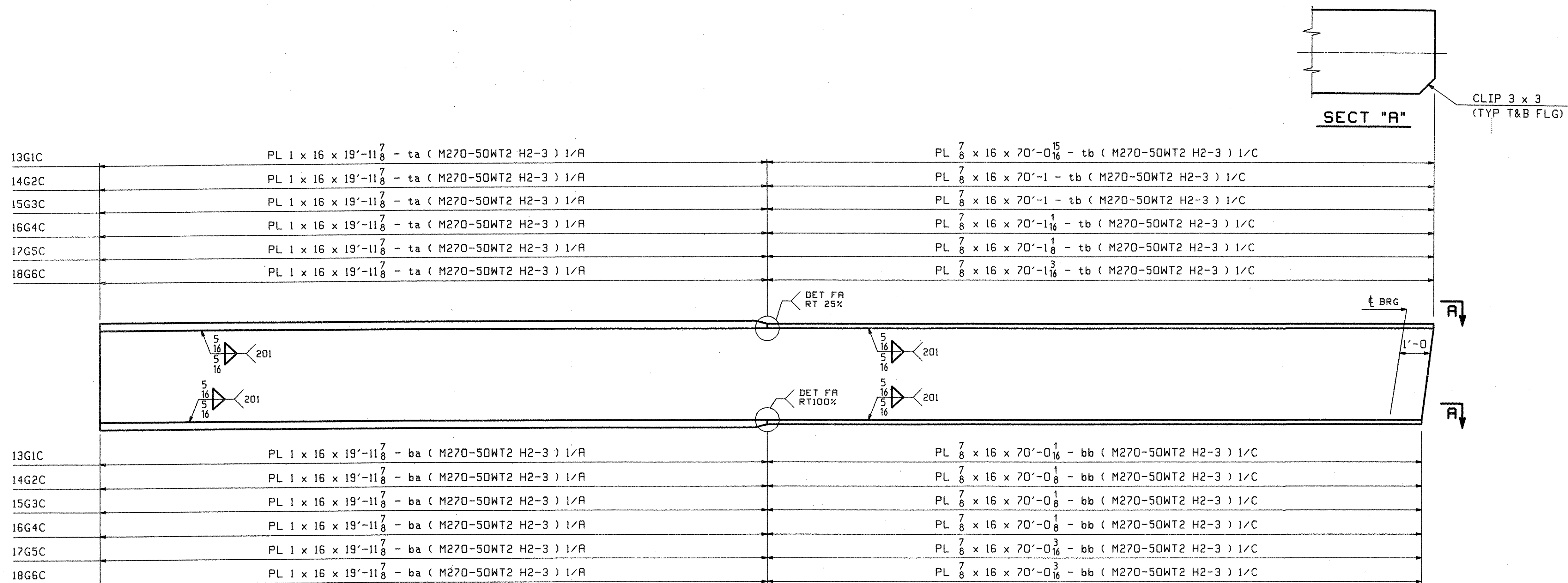
CAMBER DIAGRAM FOR 7G1B THRU 12G6B

MARK	TL	BL	WL1	WL2	WX1	WX2
7G1B	94'-0 $\frac{9}{16}$	93'-11 $\frac{13}{16}$	49'-5 $\frac{7}{8}$	44'-5 $\frac{15}{16}$	49'-6 $\frac{1}{4}$	44'-6 $\frac{5}{16}$
8G2B	94'-0 $\frac{5}{8}$	93'-11 $\frac{7}{8}$	49'-5 $\frac{7}{8}$	44'-6	49'-6 $\frac{1}{4}$	44'-6 $\frac{3}{8}$
9G3B	94'-0 $\frac{5}{8}$	93'-11 $\frac{7}{8}$	49'-5 $\frac{7}{8}$	44'-6	49'-6 $\frac{1}{4}$	44'-6 $\frac{3}{8}$
10G4B	94'-0 $\frac{5}{8}$	93'-11 $\frac{7}{8}$	49'-5 $\frac{7}{8}$	44'-6	49'-6 $\frac{1}{4}$	44'-6 $\frac{3}{8}$
11G5B	94'-0 $\frac{5}{8}$	93'-11 $\frac{7}{8}$	49'-5 $\frac{7}{8}$	44'-6	49'-6 $\frac{1}{4}$	44'-6 $\frac{3}{8}$
12G6B	94'-0 $\frac{11}{16}$	93'-11 $\frac{15}{16}$	49'-5 $\frac{7}{8}$	44'-6 $\frac{1}{16}$	49'-6 $\frac{1}{4}$	44'-6 $\frac{7}{16}$

- NOTES:
- ALL MATERIAL IS M270-50WT2 (CVN).
 - FOR GENERAL NOTES AND DETAILS "FA" & "WA" SEE DWG GNL.

OUT FOR APPROVAL	Final 7-17-06																		
OUT FOR APPROVAL																			
ISSUED TO SHOP																			
FIELD & OFFICE																			
REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER								
MATERIAL:	ELECTRODES:	HOLES:																	
SURFACE PREP. & PAINT:																			
DESCRIPTION: BASIC GIRDER												DRAWN BY		DATE					
JOB: RTE 9 OVER ROARING BRANCH OF WALLOOMSAC RIVER												WL		02/17					
BRIDGE No. BR 11												CHKD BY							
WOODFORD, VT. BENNINGTON COUNTY												PCP		02/22					
												APPROV BY							
												SUPERVISOR		W. J. GATTI					
PROJ NO. BHF 010-1(29)												Q.A.							
CUSTOMER: RENAUD BROTHERS, INC.																			
CASCO BAY STEEL STRUCTURES, INC.												JOB NO.		DRG. NO.					
75 SPRING HILL ROAD												290		C2					
PHONE (207) 282-7360												FAX (207) 282-1179		REV. Δ					

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 JUL 26 2006
 RESUBMIT: _____ APPROVED: *✓*
 BY: _____ DATE: 7/28/06



MARK	TL	BL	RE	WL2	WX2	TBL	TBR	BBL	BBR
13G1C	89'-0 ¹³ / ₁₆	88'-11 ¹⁵ / ₁₆	⁷ / ₈	41'-6 ¹ / ₁₆	42'-6 ¹⁵ / ₁₆	10'-0 ³ / ₄	79'-0 ¹ / ₁₆	10'-0	78'-11 ¹⁵ / ₁₆
14G2C	89'-0 ⁷ / ₈	89'-0	⁷ / ₈	41'-6 ¹ / ₈	42'-7	10'-0 ³ / ₄	79'-0 ¹ / ₈	9'-11 ¹⁵ / ₁₆	79'-0 ¹ / ₁₆
15G3C	89'-0 ⁷ / ₈	89'-0	⁷ / ₈	41'-6 ¹ / ₈	42'-7	10'-0 ¹³ / ₁₆	79'-0 ¹ / ₁₆	9'-11 ¹⁵ / ₁₆	79'-0 ¹ / ₁₆
16G4C	89'-0 ¹⁵ / ₁₆	89'-0	¹⁵ / ₁₆	41'-6 ¹ / ₁₆	42'-7 ¹ / ₁₆	10'-0 ¹³ / ₁₆	79'-0 ¹ / ₈	9'-11 ¹⁵ / ₁₆	79'-0 ¹ / ₁₆
17G5C	89'-1	89'-0 ¹ / ₁₆	¹⁵ / ₁₆	41'-6 ³ / ₁₆	42'-7 ¹ / ₈	10'-0 ⁷ / ₈	79'-0 ¹ / ₈	9'-11 ¹⁵ / ₁₆	79'-0 ¹ / ₈
18G6C	89'-1 ¹ / ₁₆	89'-0 ¹ / ₁₆	1	41'-6 ³ / ₁₆	42'-7 ³ / ₁₆	10'-0 ⁷ / ₈	79'-0 ¹ / ₁₆	9'-11 ¹⁵ / ₁₆	79'-0 ¹ / ₈

- NOTES:
- ALL MATERIAL IS M270-50WT2 (CVN).
 - FOR GENERAL NOTES AND DETAIL "FA" SEE DWG GNI.

OUT FOR APPROVAL	DATE	BY	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
OUT FOR APPROVAL	7-17-04									
ISSUED TO SHOP										
FIELD & OFFICE										
ADD WEB SPLICE	JTB	PCP								
REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE
MATERIAL:	ELECTRODES:	HOLES:	SHOP BOLTS:							
SURFACE PREP. & PAINT:										
DESCRIPTION: BASIC GIRDER										
JOB: RTE 9 OVER ROARING BRANCH OF WALLOOMSAC RIVER										
BRIDGE No. BR 11										
WOODFORD, VT. BENNINGTON COUNTY										
PROJ NO. BHF 010-1(29)										
CUSTOMER: RENAUD BROTHERS, INC.										
CASCO BAY STEEL STRUCTURES, INC.										
75 SPRING HILL ROAD SACO, MAINE 04072										
PHONE (207) 282-7360 FAX. (207) 282-1179										
JOB NO. 290										
DRG. NO. C3										
REV. 1										

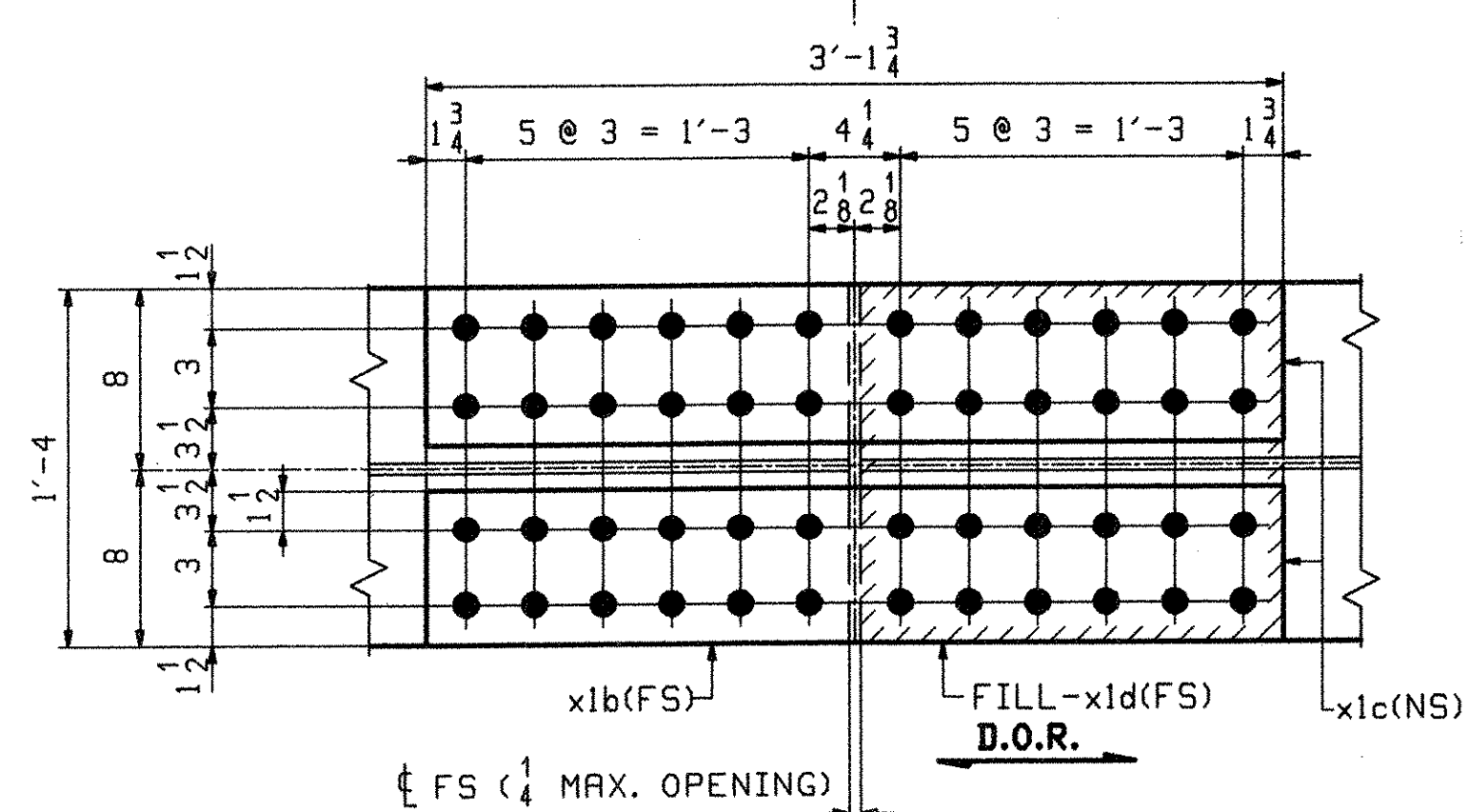


LINE	BL	BB1	BB2	BB3	BL1	BL2	BL3	BCF1	V1	"A"	"B"	"C"
1	272'-0 $\frac{9}{8}$	89'-0 $\frac{7}{16}$	94'-0	89'-0 $\frac{1}{8}$	79'-0 $\frac{5}{16}$	114'-0 $\frac{3}{16}$	79'-0 $\frac{1}{16}$	50'-8 $\frac{1}{8}$	10 $\frac{7}{8}$	1G1A	7G1B	13G1C
2	272'-0 $\frac{5}{8}$	89'-0 $\frac{7}{16}$	94'-0 $\frac{1}{16}$	89'-0 $\frac{1}{8}$	79'-0 $\frac{3}{8}$	114'-0 $\frac{3}{16}$	79'-0 $\frac{1}{16}$	45'-1 $\frac{1}{8}$	10 $\frac{7}{8}$	2G2A	8G2B	14G2C
3	272'-0 $\frac{5}{8}$	89'-0 $\frac{7}{16}$	94'-0 $\frac{1}{8}$	89'-0 $\frac{1}{16}$	79'-0 $\frac{3}{8}$	114'-0 $\frac{1}{4}$	79'-0	53'-3 $\frac{1}{8}$	10 $\frac{13}{16}$	3G3A	9G3B	15G3C
4	272'-0 $\frac{11}{16}$	89'-0 $\frac{1}{2}$	94'-0 $\frac{1}{16}$	89'-0 $\frac{1}{8}$	79'-0 $\frac{3}{8}$	114'-0 $\frac{1}{4}$	79'-0 $\frac{1}{16}$	46'-8 $\frac{1}{8}$	10 $\frac{7}{8}$	4G4A	10G4B	16G4C
5	272'-0 $\frac{3}{4}$	89'-0 $\frac{1}{2}$	94'-0 $\frac{1}{8}$	89'-0 $\frac{1}{8}$	79'-0 $\frac{3}{8}$	114'-0 $\frac{5}{16}$	79'-0 $\frac{1}{16}$	40'-1 $\frac{1}{8}$	10 $\frac{13}{16}$	5G5A	11G5B	17G5C
6	272'-0 $\frac{13}{16}$	89'-0 $\frac{9}{16}$	94'-0 $\frac{1}{8}$	89'-0 $\frac{1}{8}$	79'-0 $\frac{7}{16}$	114'-0 $\frac{5}{16}$	79'-0 $\frac{1}{16}$	48'-3 $\frac{1}{8}$	10 $\frac{7}{8}$	6G6A	12G6B	18G6C

FOR GENERAL NOTES SEE DWG GNI
ALL DIMENSIONS GIVEN AT BOTTOM OF WEB.

OUT FOR APPROVAL		<i>Funk 7-17-26</i>											
OUT FOR APPROVAL													
ISSUED TO SHOP													
FIELD & OFFICE													
		REVISE VARIABLES	07/10	JTB	PCP								
REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER		
MATERIAL:		ELECTRODES:			HOLES:			SHOP BOLTS:					
SURFACE PREP. & PAINT:													
DESCRIPTION: SHOP DRILLING DIAGRAM								DRAWN BY		DATE			
JOB: RTE 9 OVER ROARING BRANCH OF WALLOONSARC RIVER								JTB		02/26			
BRIDGE No. BR 11								CHKD BY					
WOODFORD, VT. BENNINGTON COUNTY								PCP		03/06			
 TENSOR 250B								APPROV BY					
								SUPERVISOR		M. J. GATTI			
PROJ NO. BH# 010-1(29)								Q.A.					
CUSTOMER: BERNAUD BROTHERS, INC.													
CASCO BAY STEEL STRUCTURES, INC.								JOB NO.		DRG. NO.			
75 SPRING HILL ROAD								290		SA1			
PHONE (207) 282-7360								FAX. (207) 282-1179		REV. /			

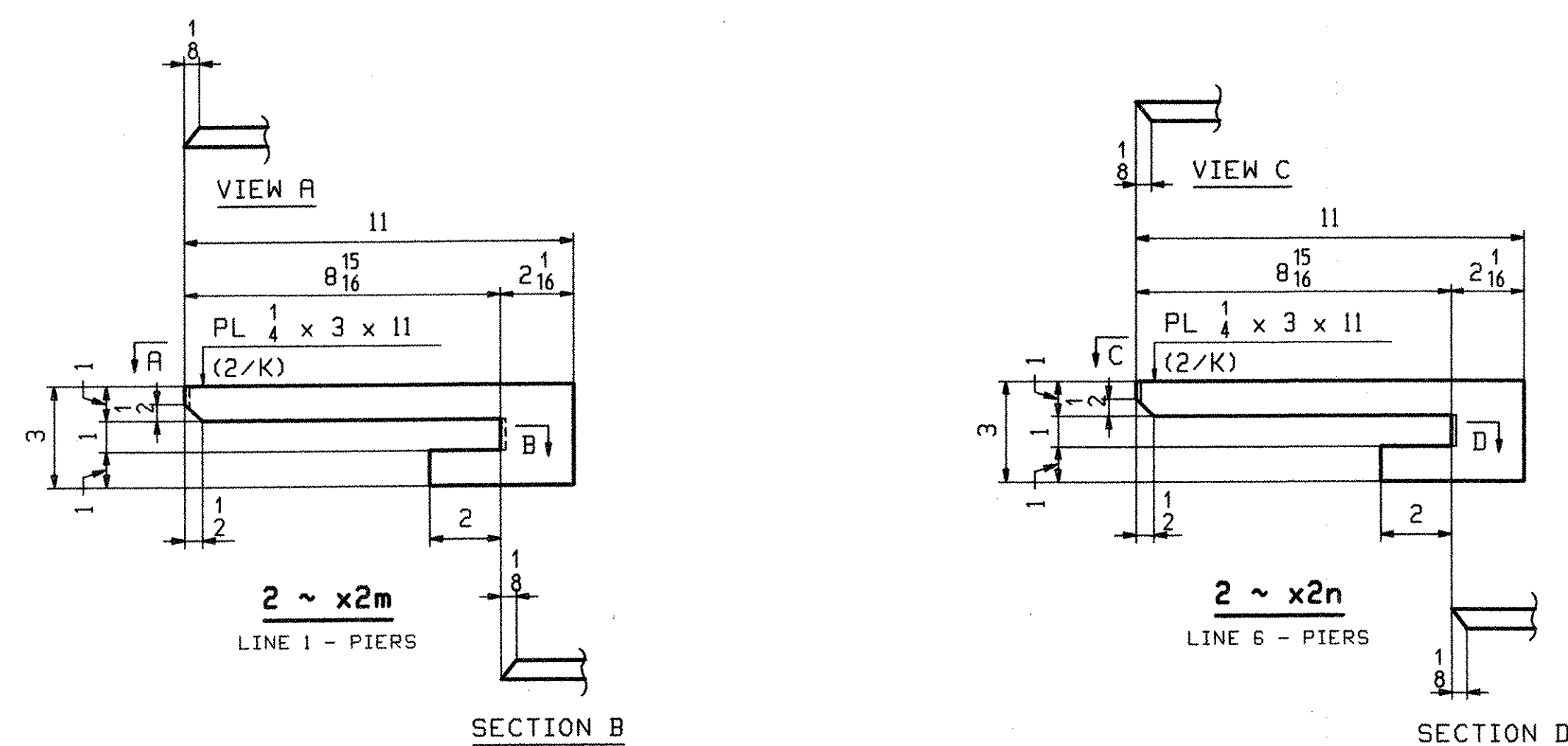
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BY _____ DATE 7/28/06



FIELD SPLICE 2 - ROTATE 180°

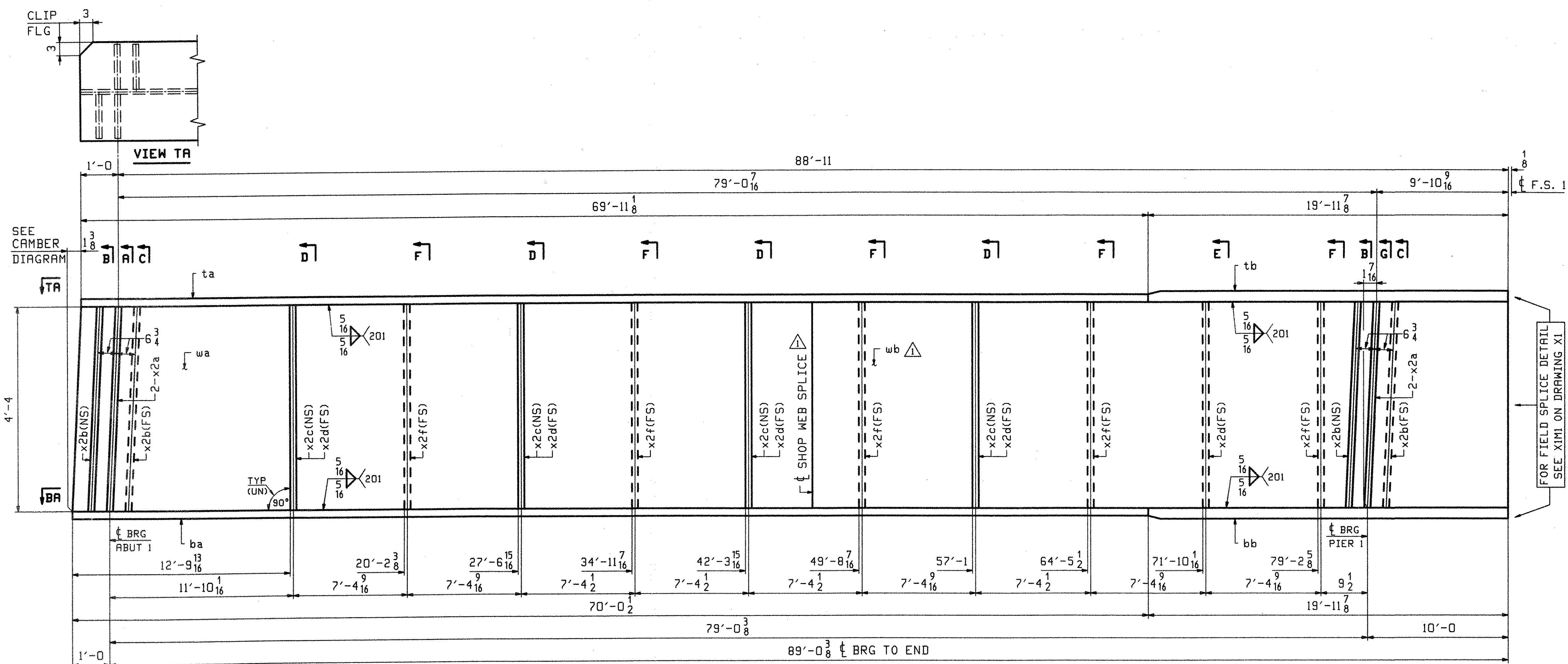
CASCO BAY STEEL STRUCTURES, INC.		JOB NO.	DRG. NO.
75 SPRING HILL ROAD		290	X1
SACO, MAINE 04072			
PHONE (207) 282-7360	FAX. (207) 282-1179	REV.	△

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JUL 26 2006
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BY _____ DATE 7/28/06



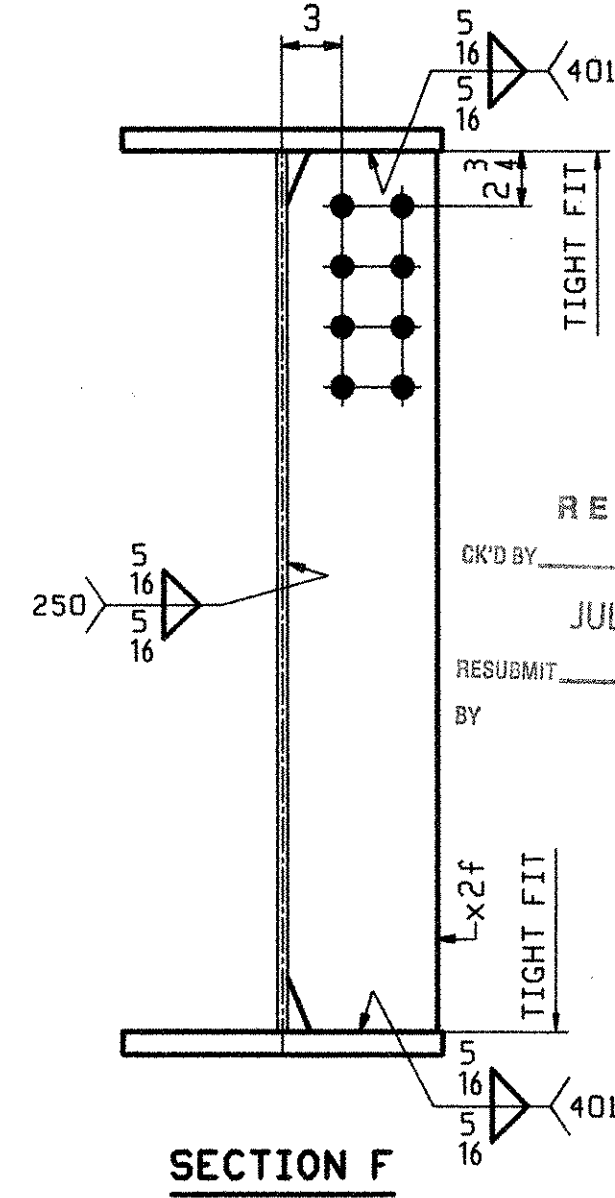
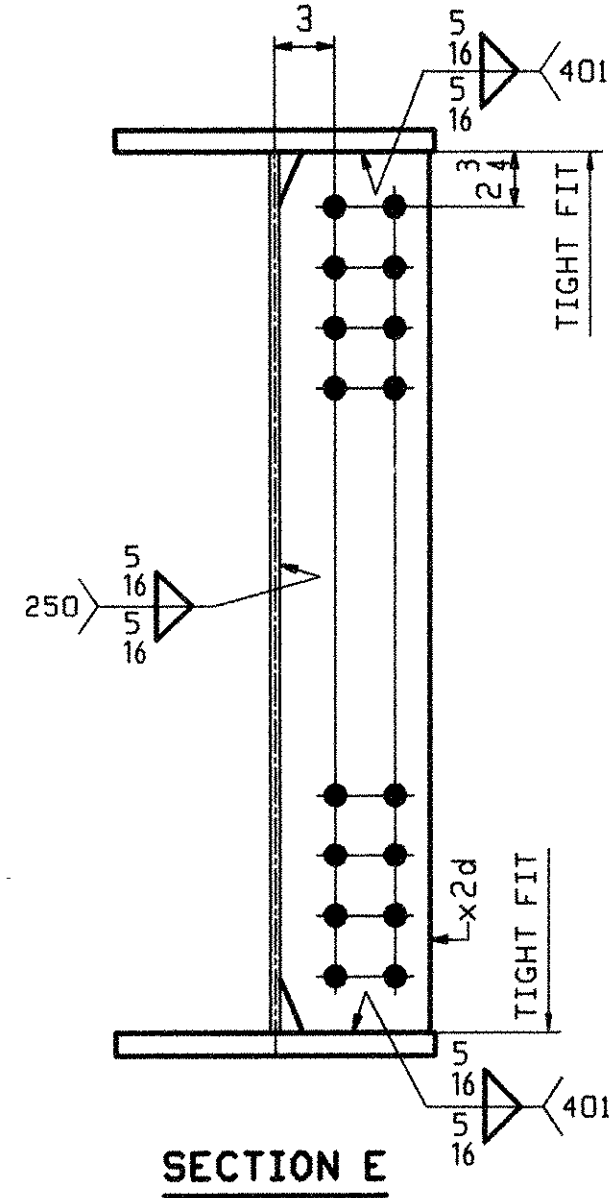
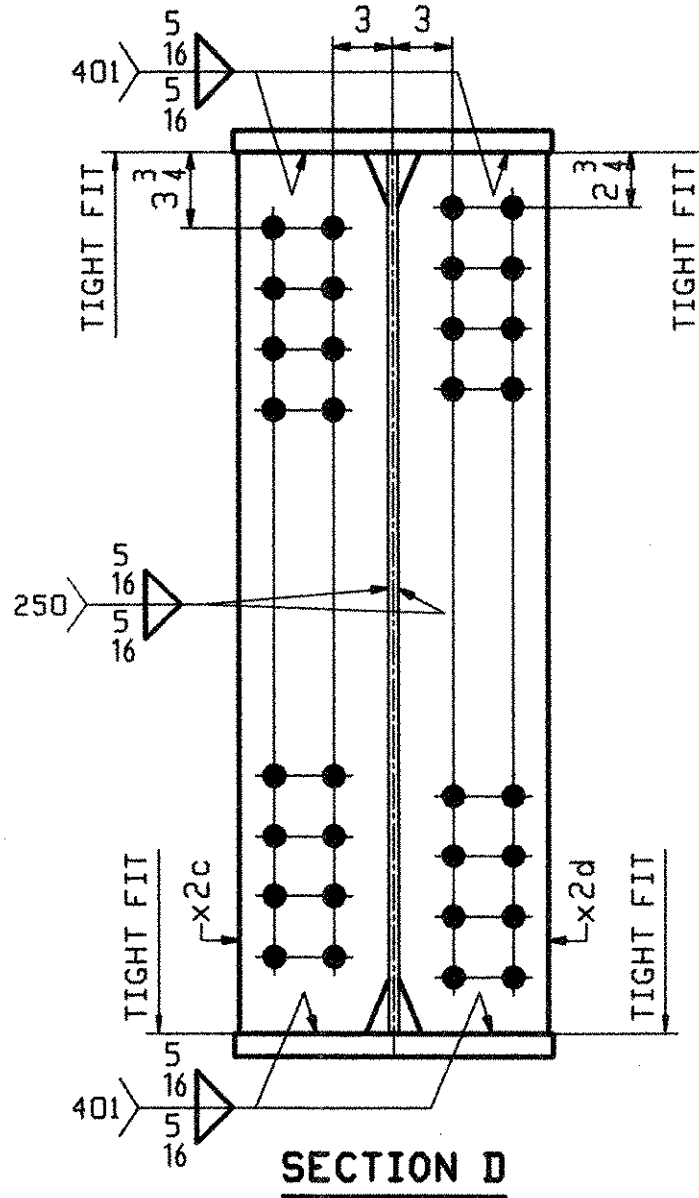
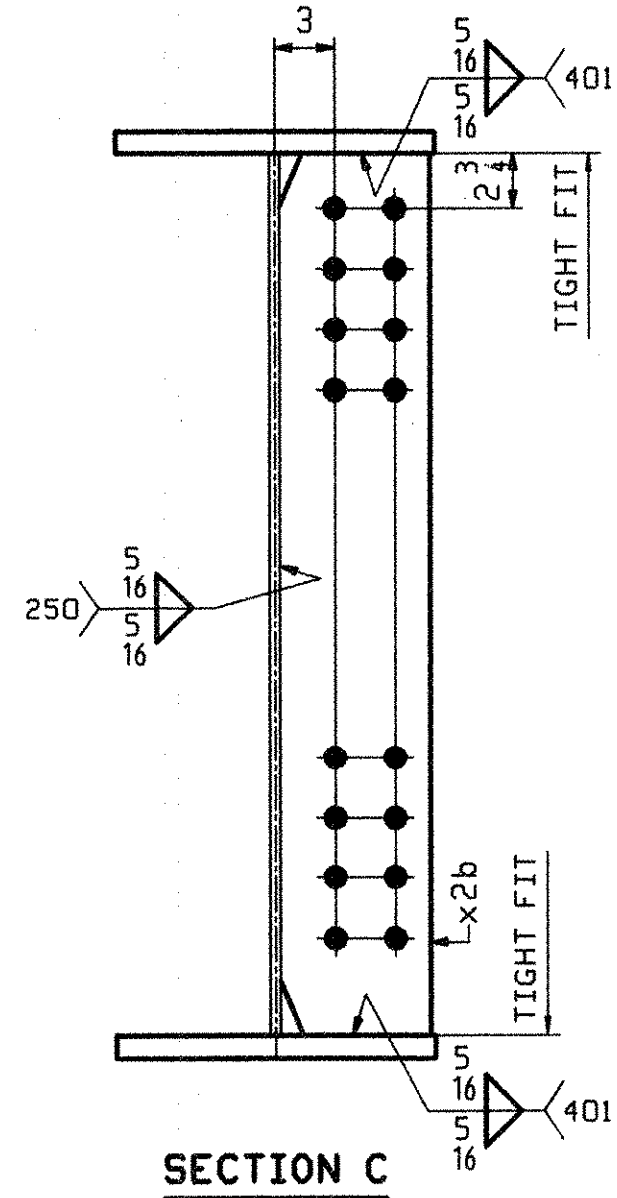
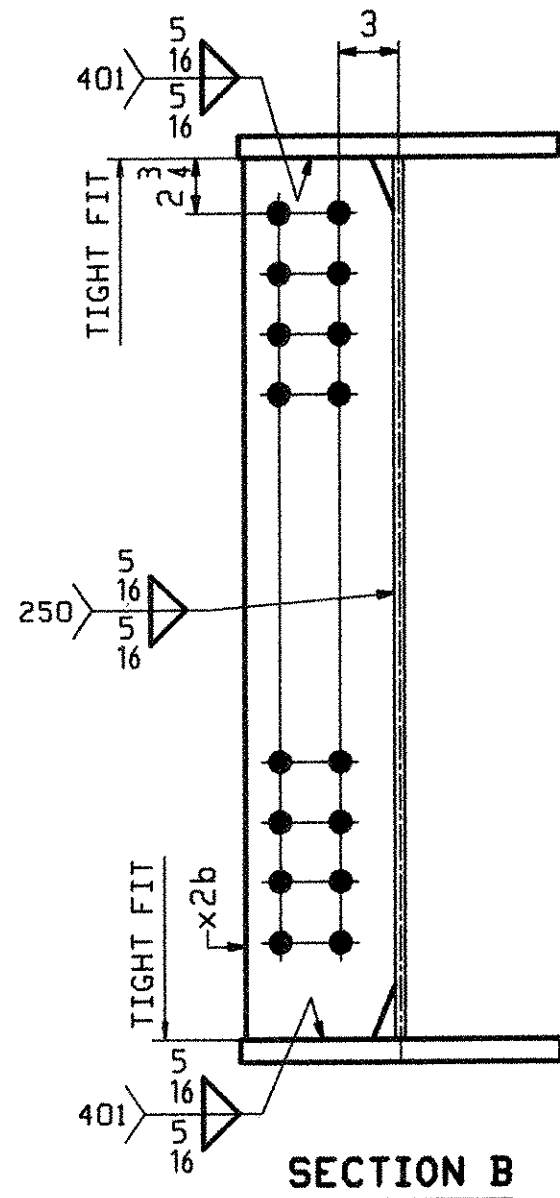
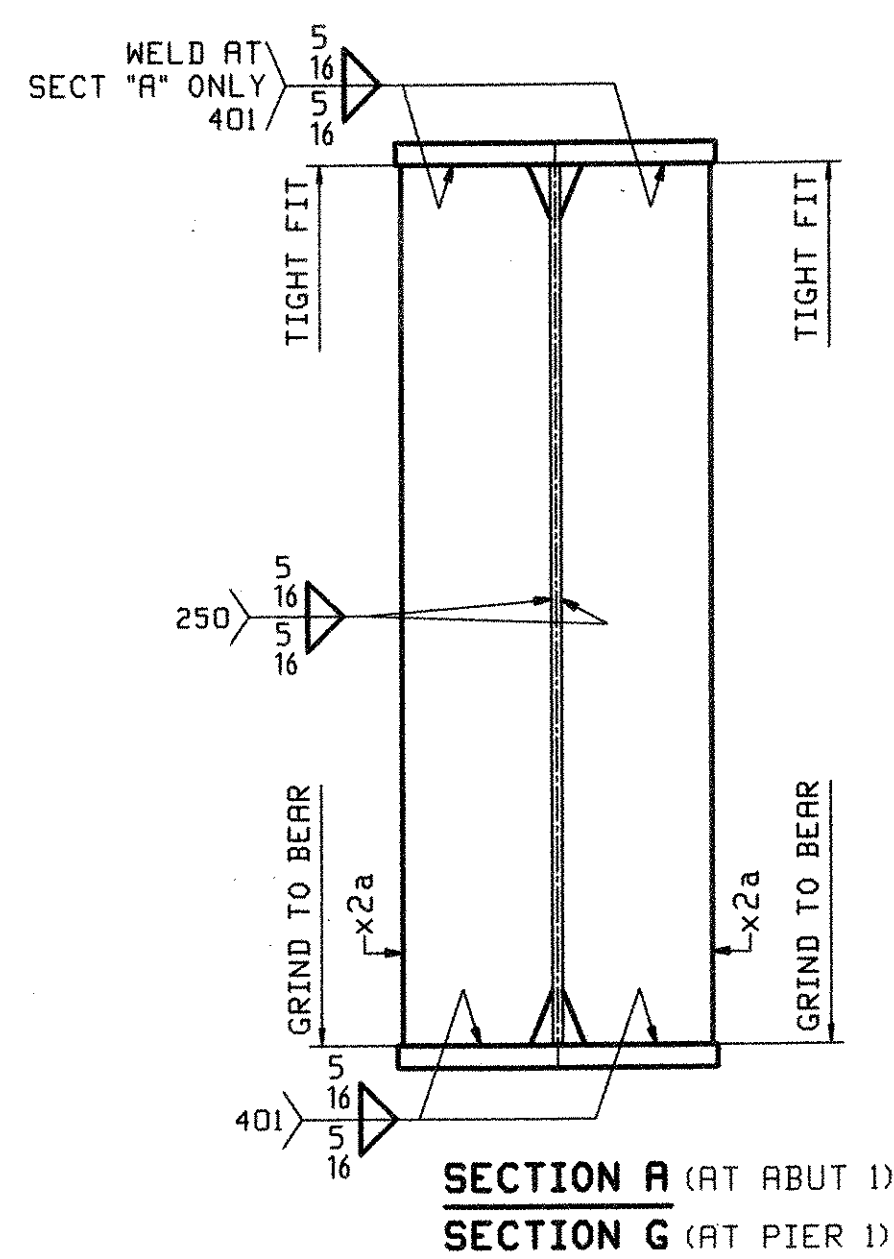
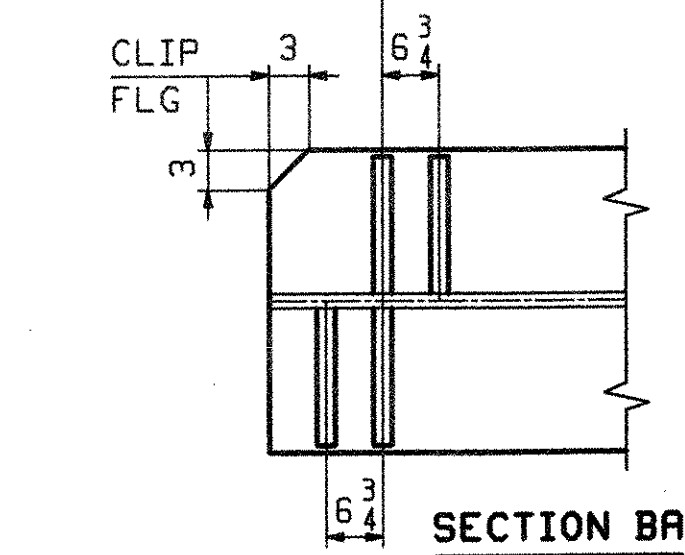
CUSTOMER: RENAUD BROTHERS, INC.			
CASCO BAY STEEL STRUCTURES, INC.		JOB NO.	DRG. NO.
75 SPRING HILL ROAD		290	X2
SACO, MAINE 04072			
PHONE (207) 282-7360		FAX. (207) 282-1179	REV. 

RECEIVED
CK'D BY _____ OK'D BY MEM
JUL 26 2006
RESUBMIT _____ APPROVED ✓
BY _____ DATE 7/28/06

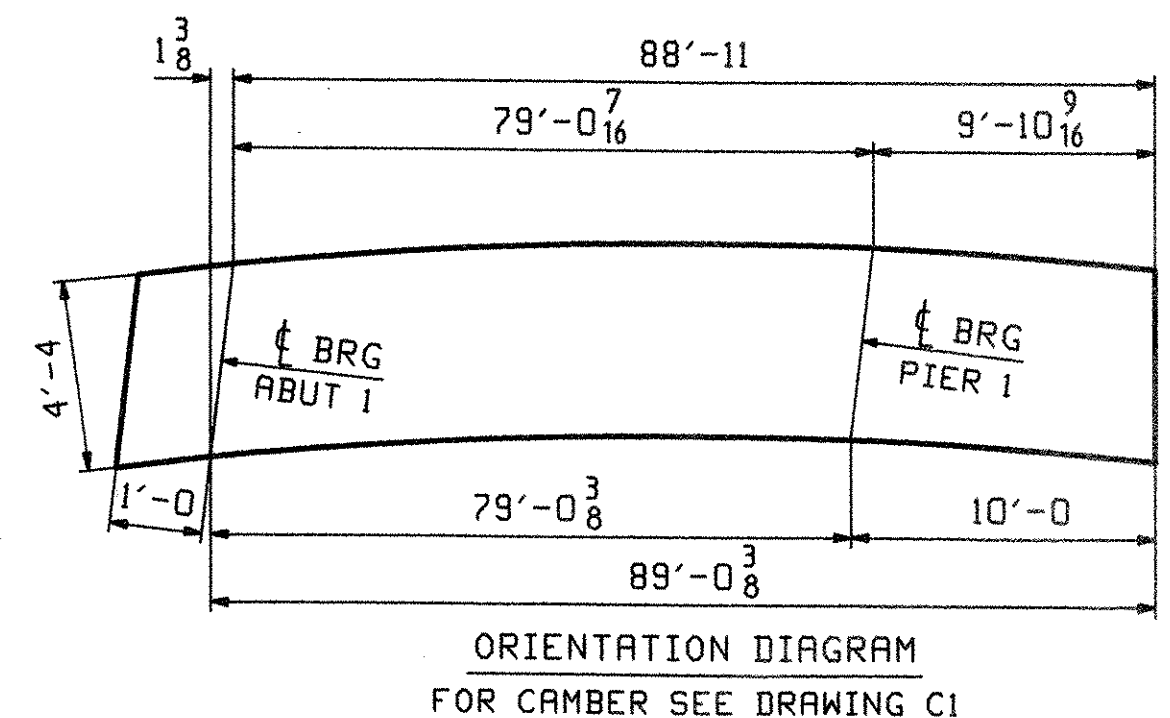


ONE - GIRDER - 2G2A

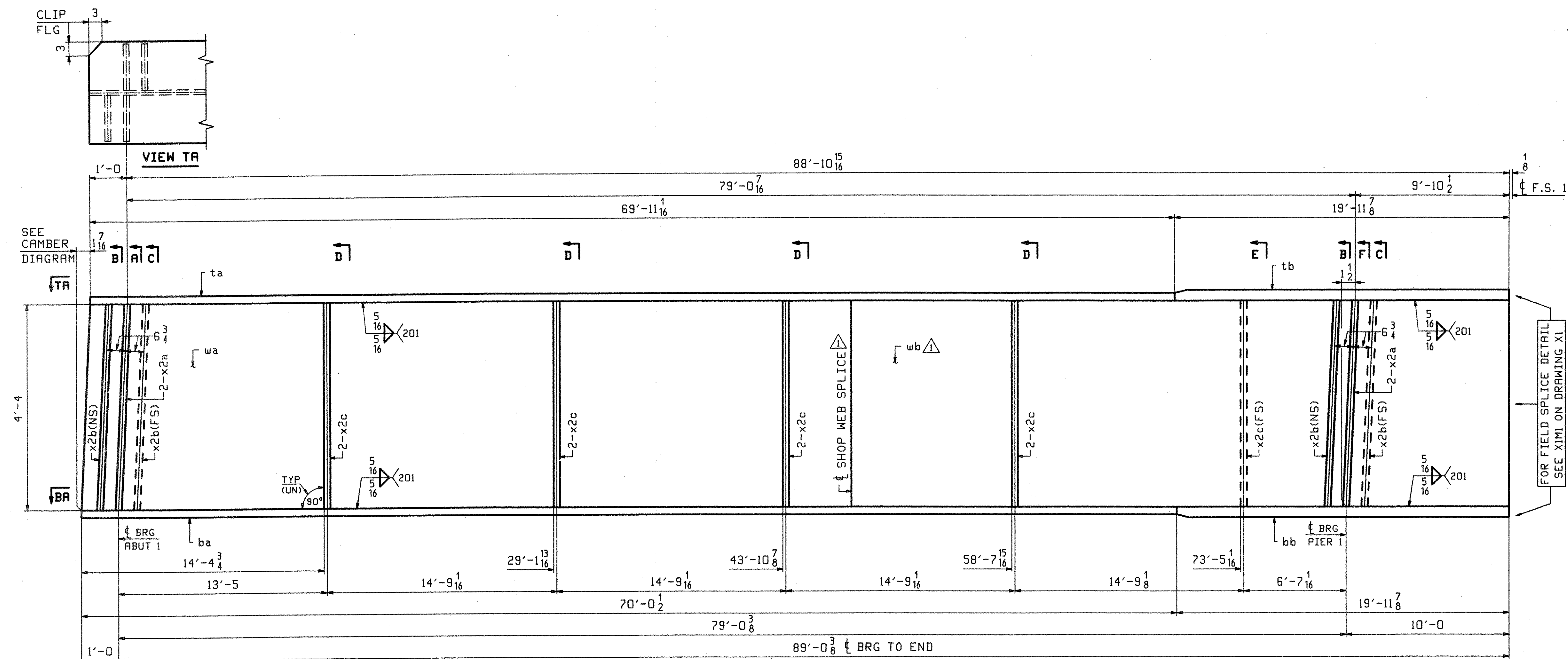
FOR FIELD SPLICE DETAILS SEE DRAWING XI.
FOR GIRDER STANDARD DETAILS SEE DRAWING X2.
FOR CAMBER & FLANGE DIAGRAMS SEE DRAWING C1.
FOR GENERAL NOTES SEE DRAWING GNI.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.



ABH INFO		SHIP		BILL OF MATERIAL		JOB NO.		DRAWING NO.		REV.
PAGE		LINE		MARK		290		2		1
MARK	QTY	MARK	MATERIAL	LENGTH FT	INCHES	REMARKS	WT	PROCUREMENT NOTES		
2G2A	1		GIRDER				18194			
1	Q	1	wa	PL 1/2 x 52	46 6 5/8	(M270-50WT2) (H2-3)				
1	S	1	wb	PL 1/2 x 52	43 6 5/8	(M270-50WT2) (H2-3)				
1	C	1	ta	PL 7/8 x 16	69 11 7/8	(M270-50WT2) (H2-3)				
1	A	1	tb	PL 1 x 16	19 11 7/8	(M270-50WT2) (H2-3)				
1	C	1	ba	PL 7/8 x 16	70 0 1/2	(M270-50WT2) (H2-3)				
1	A	1	bb	PL 1 x 16	19 11 7/8	(M270-50WT2) (H2-3)				
2	H	4	x2a	PL 1/2 x 7 1/2	4 4	MIE				
2	J	4	x2b	PL 1/2 x 7 1/2	4 4					
2	J	4	x2c	PL 1/2 x 7 1/2	4 4					
2	J	5	x2d	PL 1/2 x 7 1/2	4 4					
2	J	5	x2f	PL 1/2 x 7 1/2	4 4					

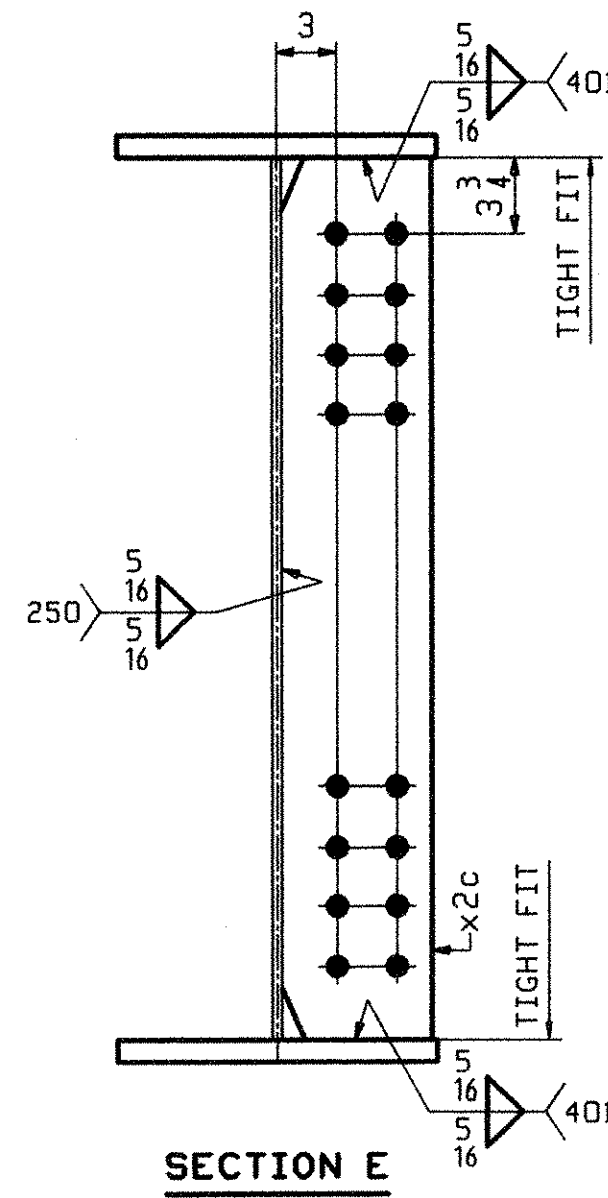
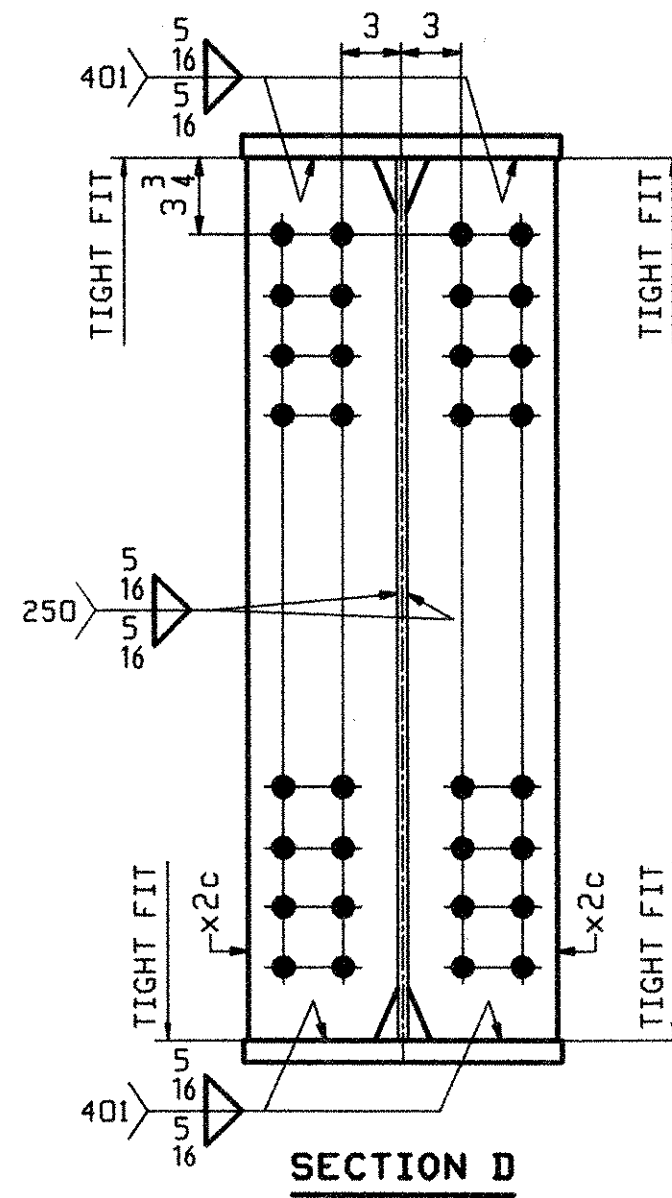
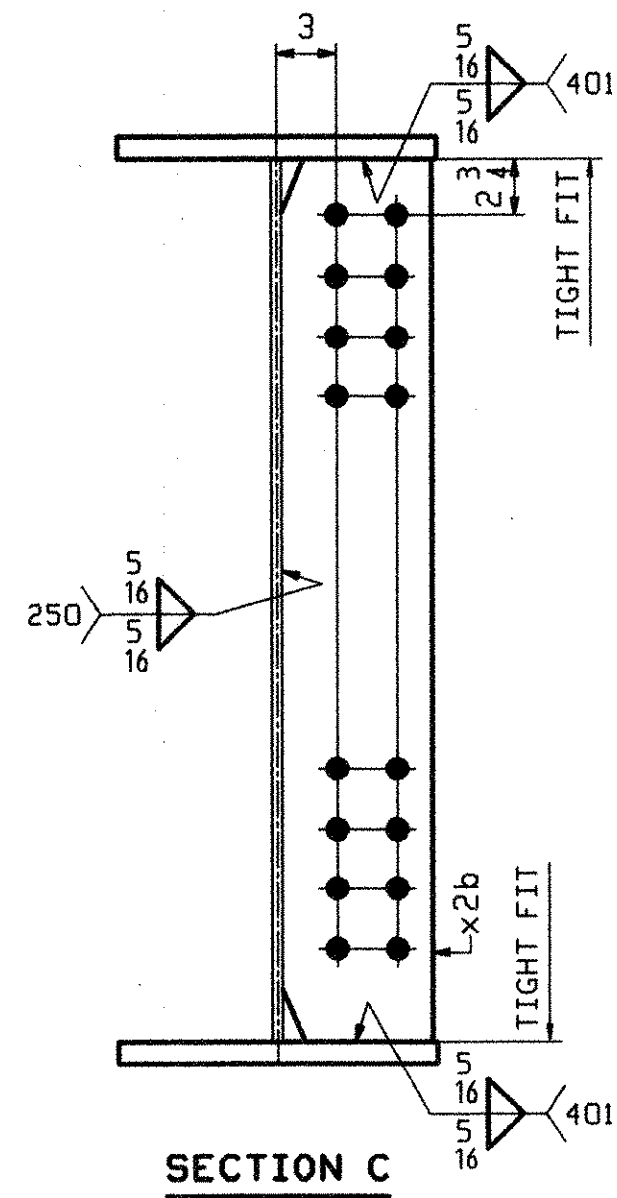
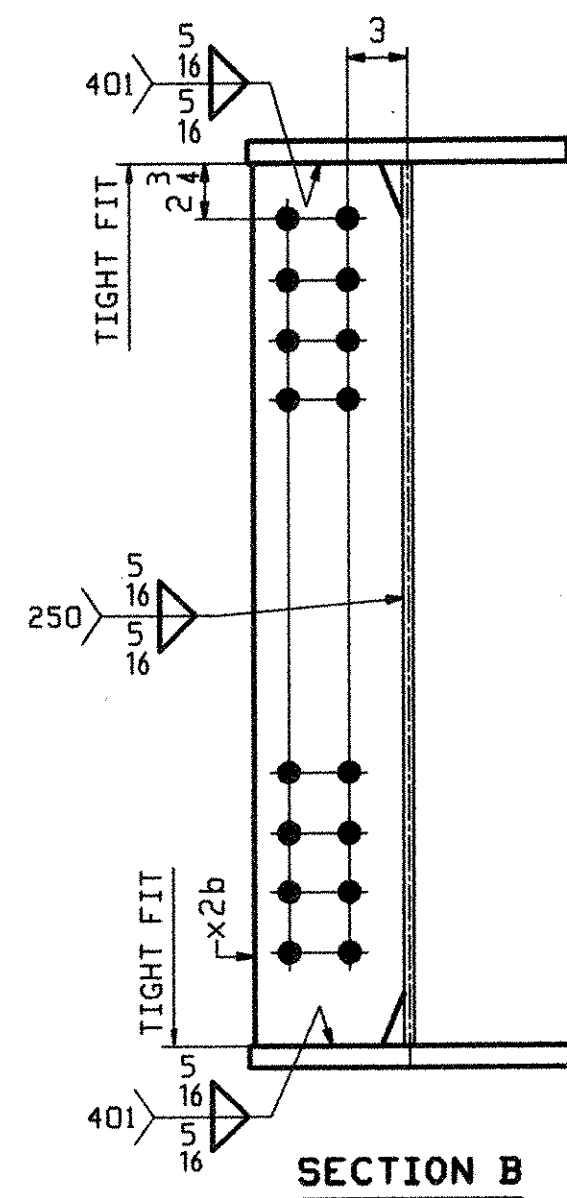
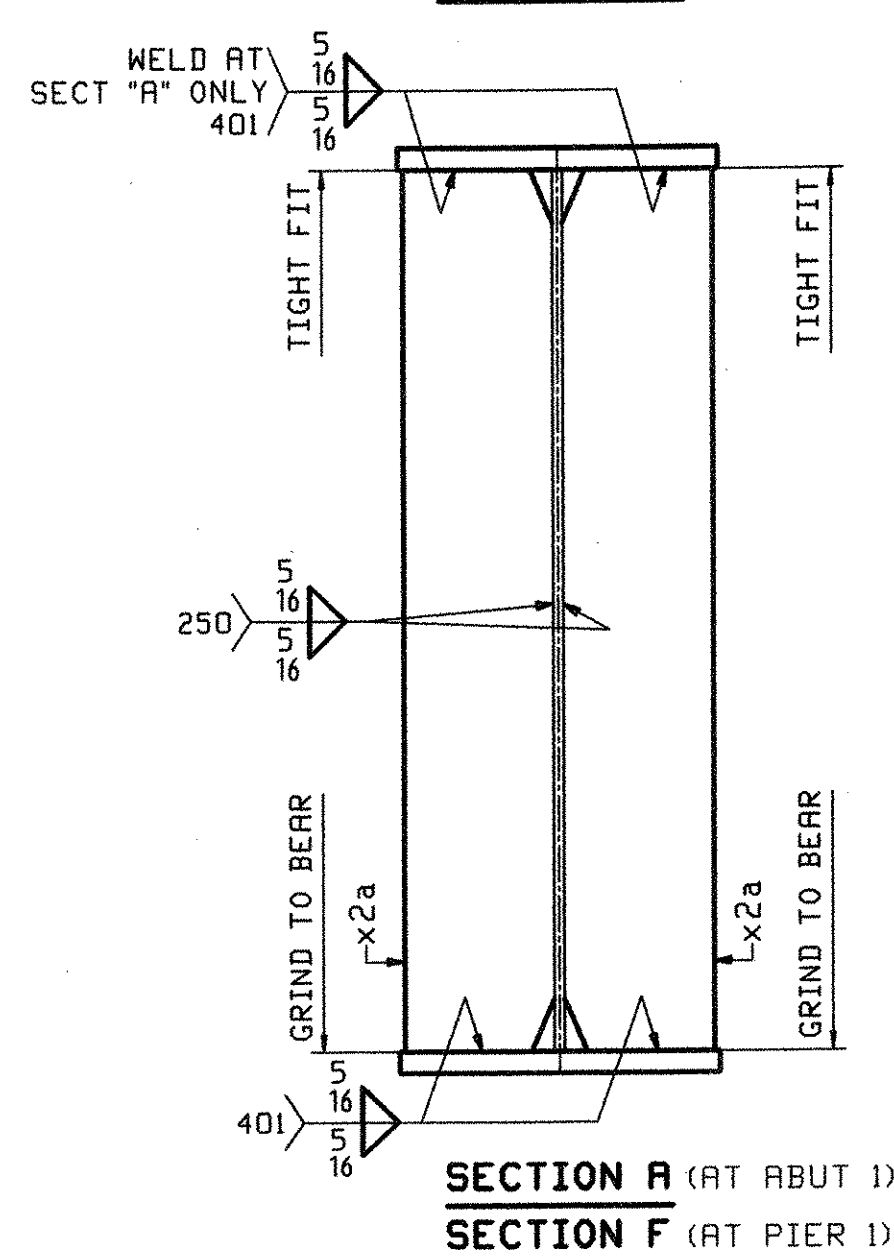
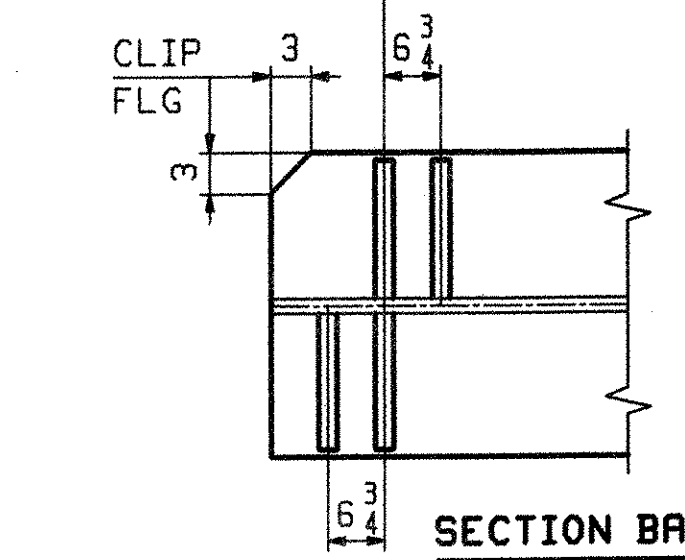


OUT FOR APPROVAL		OUT FOR APPROVAL		ISSUED TO SHOP		FIELD & OFFICE					

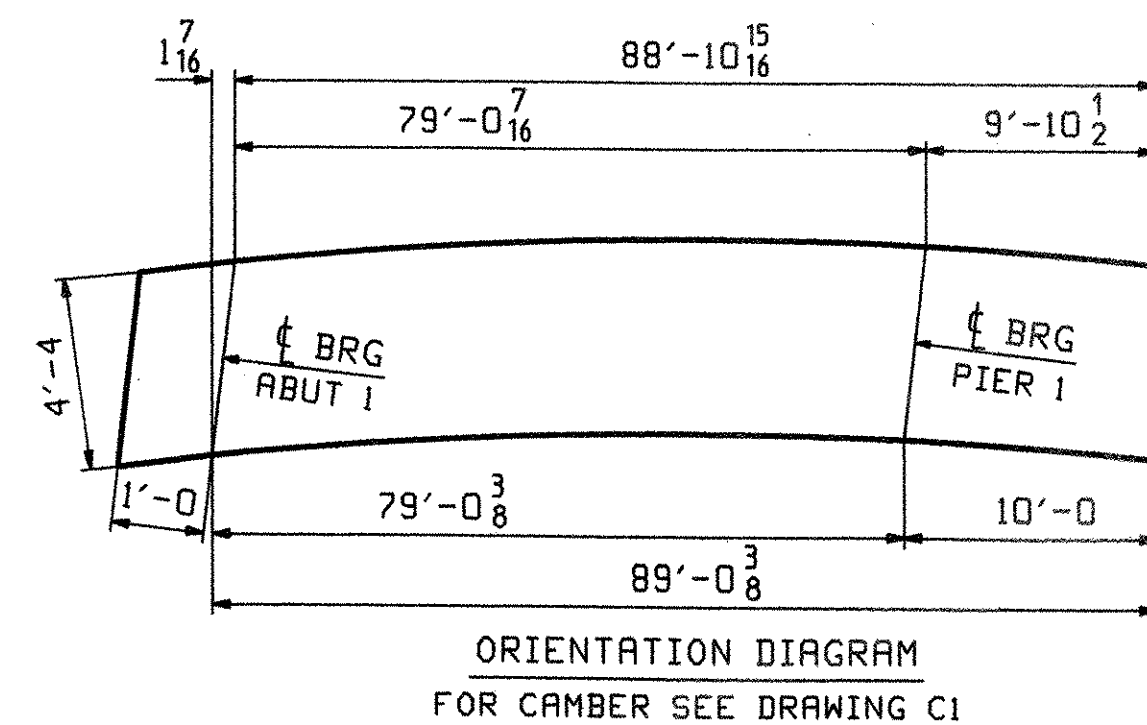


ONE - GIRDER - 4G4A

FOR FIELD SPlice DETAILS SEE DRAWING X1.
FOR GIRDER STANDARD DETAILS SEE DRAWING X2.
FOR CAMBER & FLANGE DIAGRAMS SEE DRAWING C1.
FOR GENERAL NOTES SEE DRAWING GNI.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

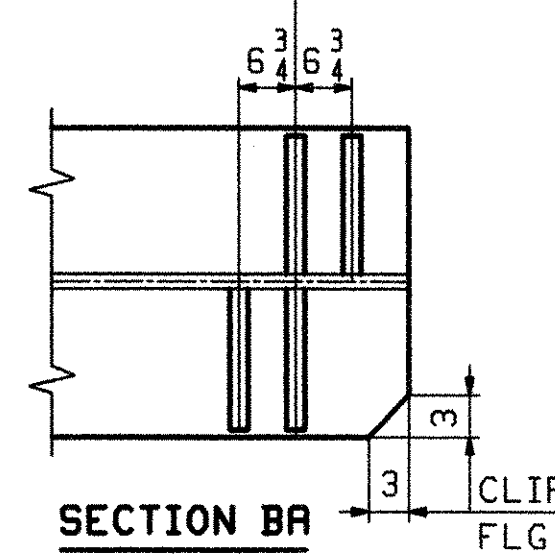


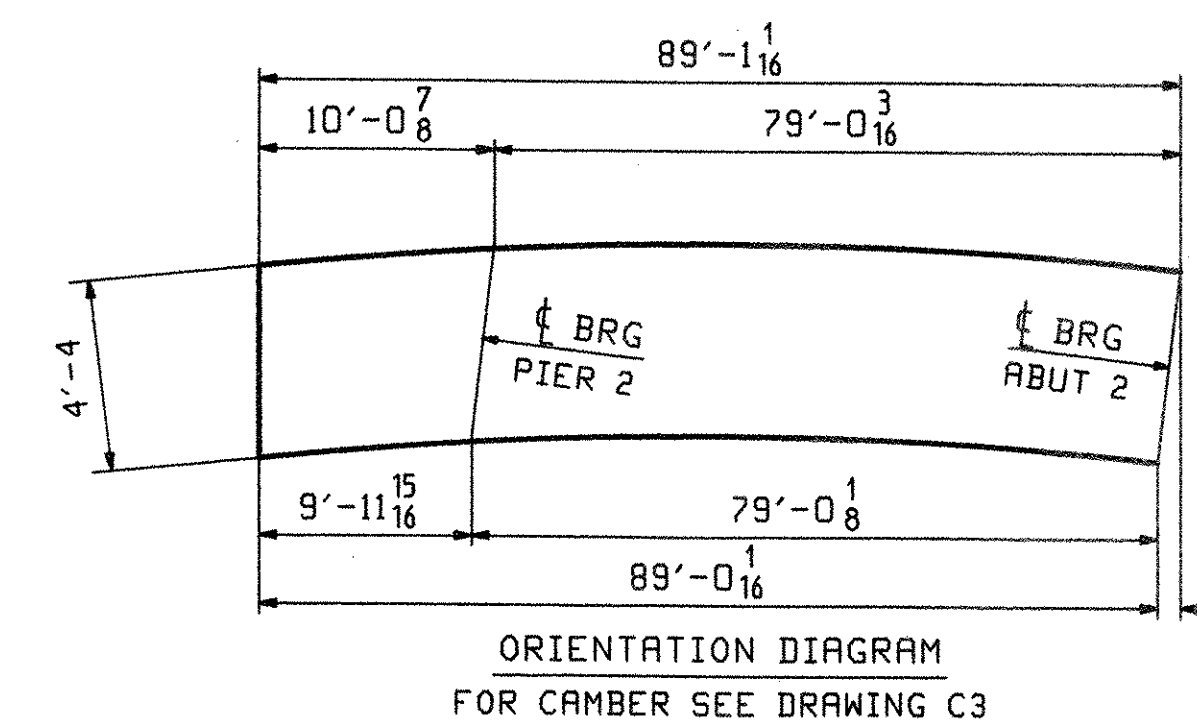
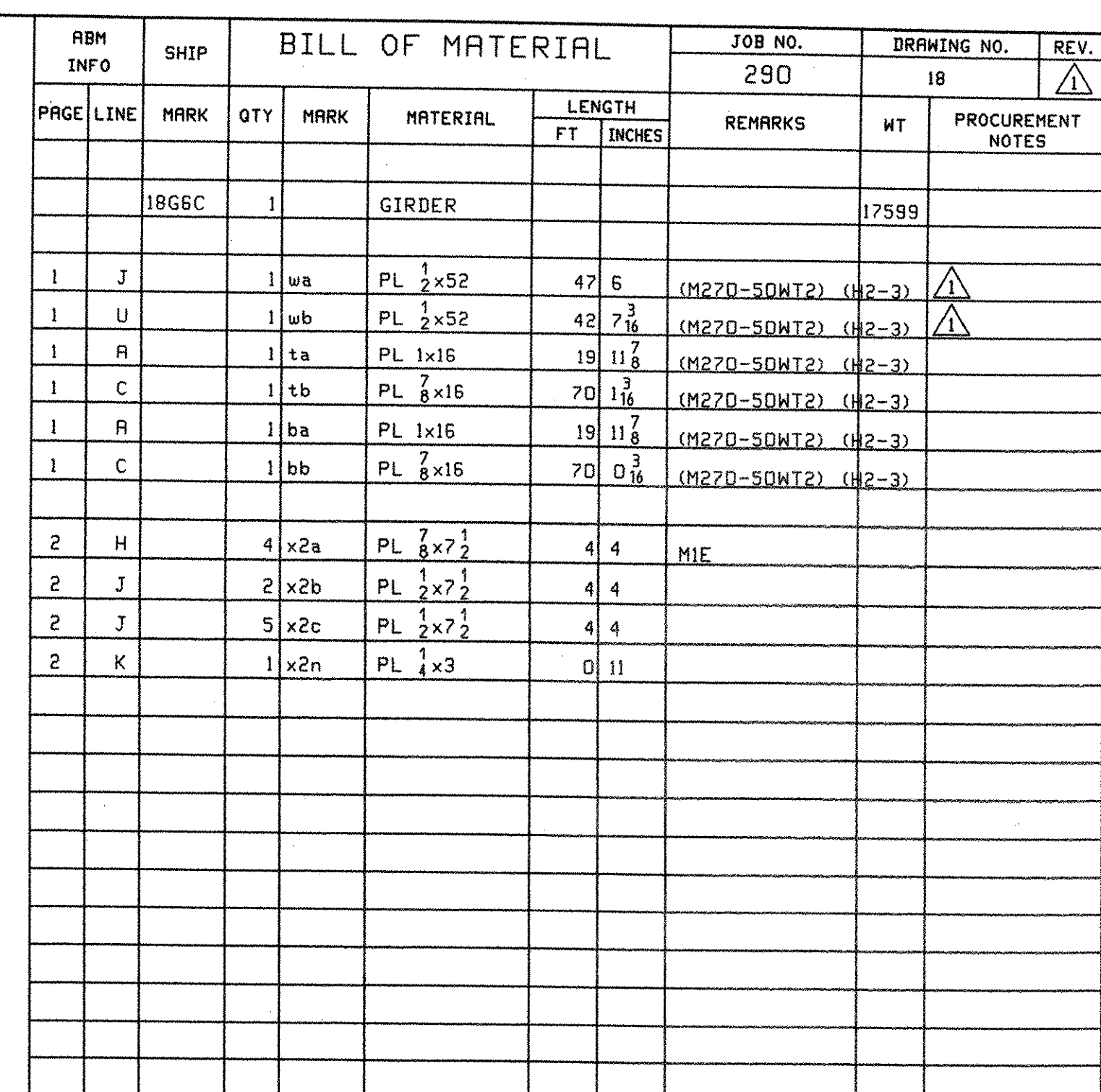
ABM INFO		SHIP		BILL OF MATERIAL		JOB NO.	DRAWING NO.	REV.
PAGE		LINE		MARK		290	4	1
		QTY		MATERIAL		REMARKS	WT	PROCUREMENT NOTES
		4G4A		1		GIRDER	17917	
1	Q	1	wa	PL 1/2 x 52	46 5/8	(M270-50WT2) (H2-3)		
1	S	1	wb	PL 1/2 x 52	43 6	(M270-50WT2) (H2-3)		
1	C	1	ta	PL 1/2 x 16	69 11 1/16	(M270-50WT2) (H2-3)		
1	A	1	tb	PL 1/2 x 16	19 11 7/8	(M270-50WT2) (H2-3)		
1	C	1	ba	PL 1/2 x 16	70 0 1/2	(M270-50WT2) (H2-3)		
1	A	1	bb	PL 1/2 x 16	19 11 7/8	(M270-50WT2) (H2-3)		
2	H	4	x2a	PL 1/2 x 7 1/2	4 4	MJE		
2	J	4	x2b	PL 1/2 x 7 1/2	4 4			
2	J	9	x2c	PL 1/2 x 7 1/2	4 4			



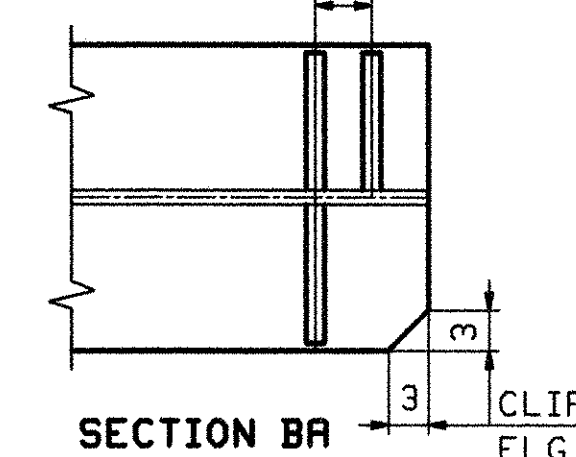
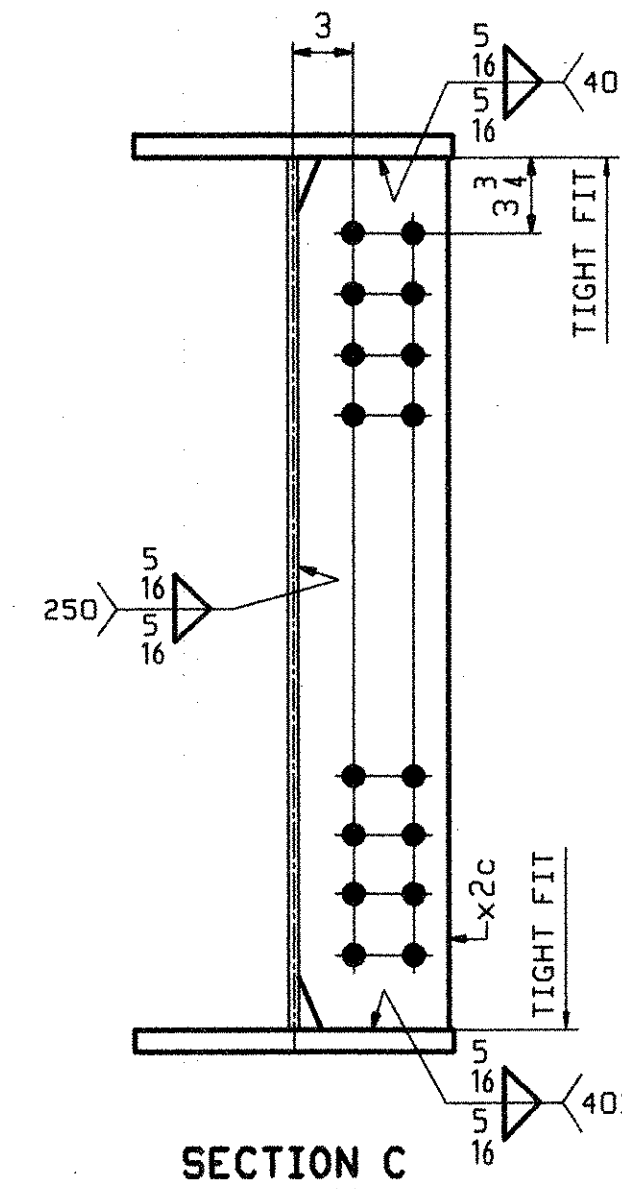
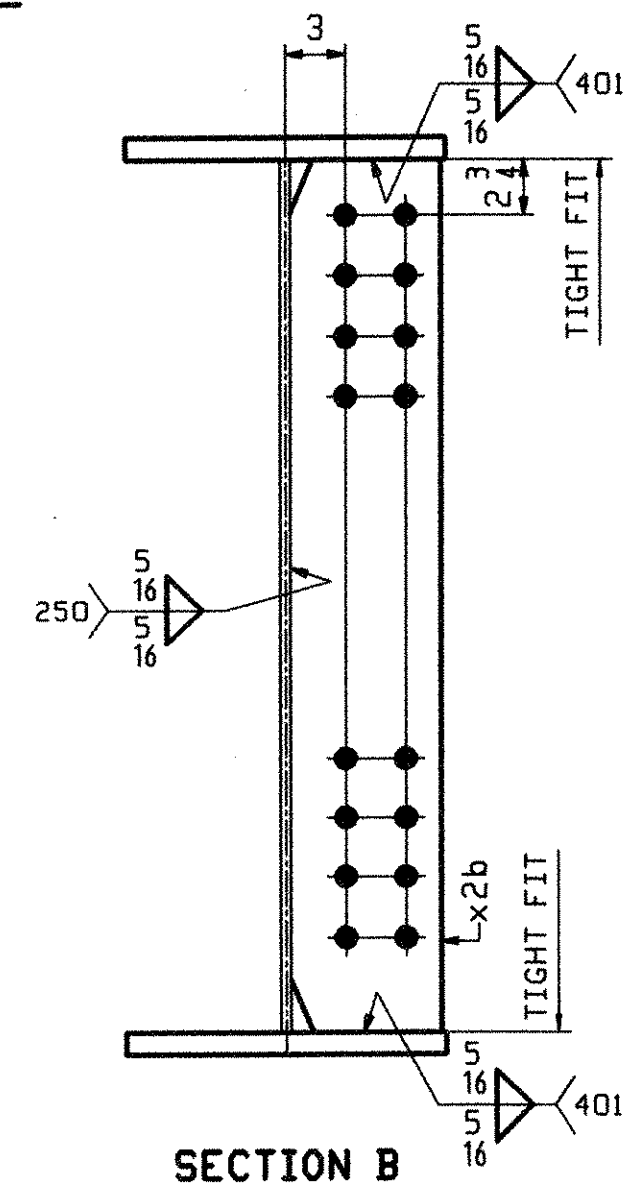
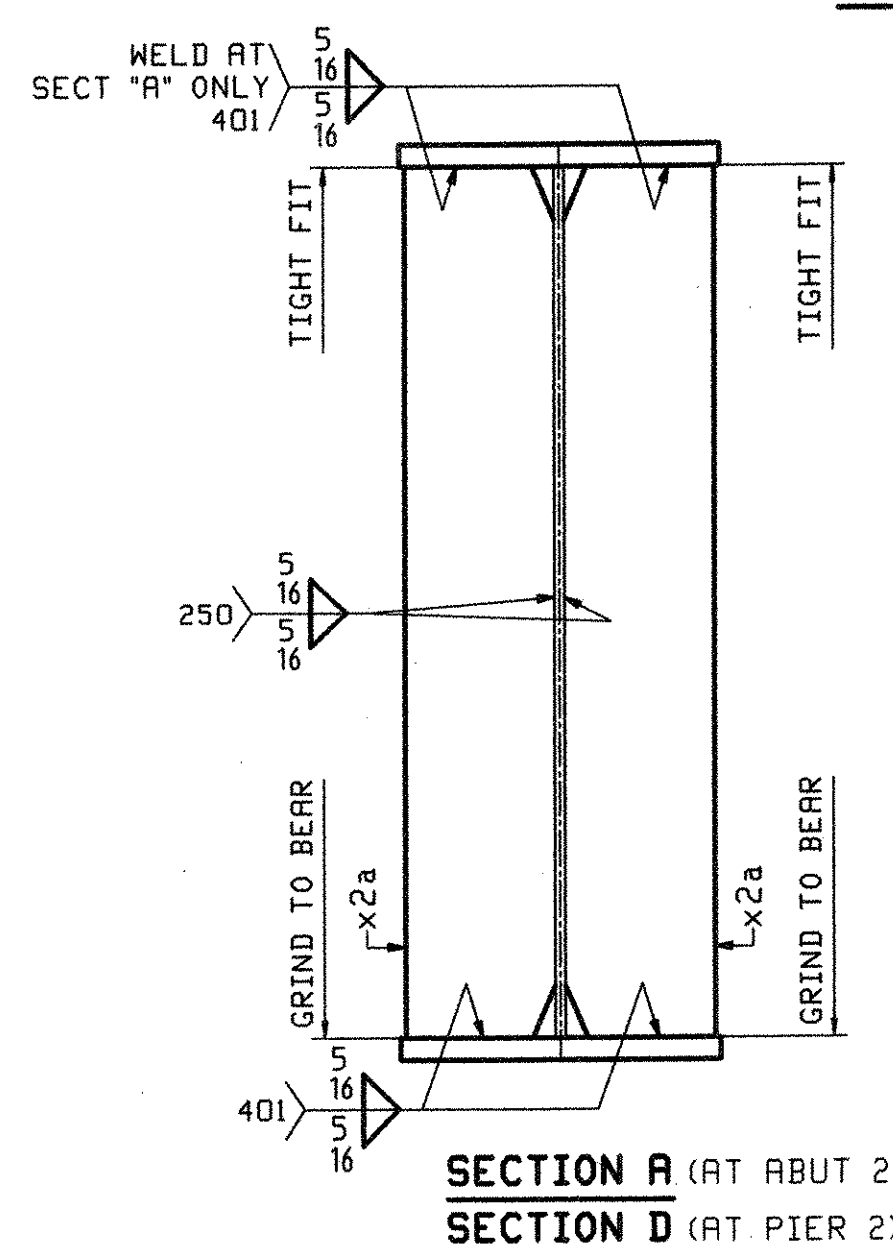
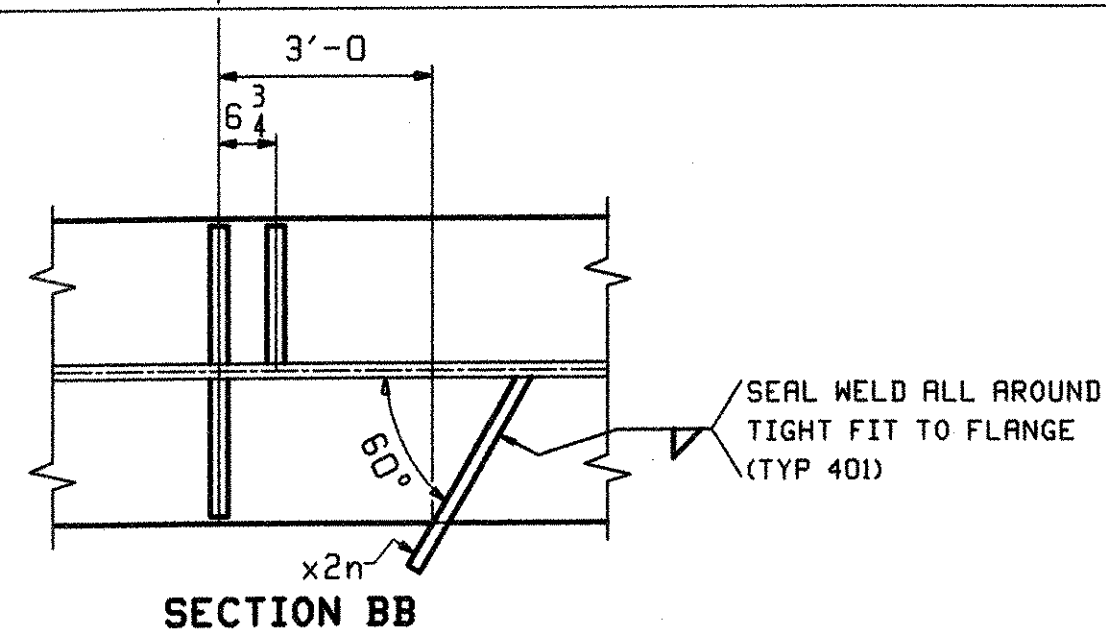
OUT FOR APPROVAL	Final 7-17-06								
OUT FOR APPROVAL									
ISSUED TO SHOP									
FIELD & OFFICE									
	ADD WEB SPlice	JTB	PCP						
REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT TYPE WASHER
MATERIAL:		ELECTRODES:				HOLES:			SHOP BOLTS:
M270-50W (UN)						15 16" ϕ			NONE
SURFACE PREP. & PAINT:									
SEE DRAWING GNI									
DESCRIPTION: GIRDER - 4G4A							DRAWN BY	DATE	
JOB:	RTE 9 OVER ROARING BRANCH OF WALLOOMSAC RIVER						JTB	02/22	
	BRIDGE No. BR 11						CHKD BY		
	WOODFORD, VT. BENNINGTON COUNTY						PCP	03/06	
							APPROV BY		
							SUPERVISOR	W. J. GATTI	
PROJ NO.	BHF 010-1(29)						Q.A.		
CUSTOMER: RENAUD BROTHERS, INC.									
CASCO BAY STEEL STRUCTURES, INC.							JOB NO.	DRG. NO.	
75 SPRING HILL ROAD							290	4	
SACO, MAINE 04072									
PHONE (207) 282-7360							FAX. (207) 282-1179	REV.	

RECEIVED
CK'D BY: _____ OK'D BY: *MJE*
JUL 26 2006
RESUBMIT: _____ APPROVED: *[Signature]*
BY: _____ DATE: 7/28/06



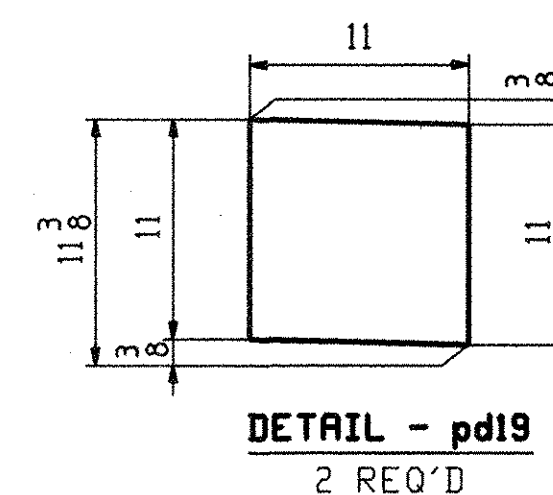


FOR FIELD SPLICE DETAILS SEE DRAWING X1.
FOR GIRDER STANDARD DETAILS SEE DRAWING X2.
FOR CAMBER & FLANGE DIAGRAMS SEE DRAWING C3.
FOR GENERAL NOTES SEE DRAWING GNI.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

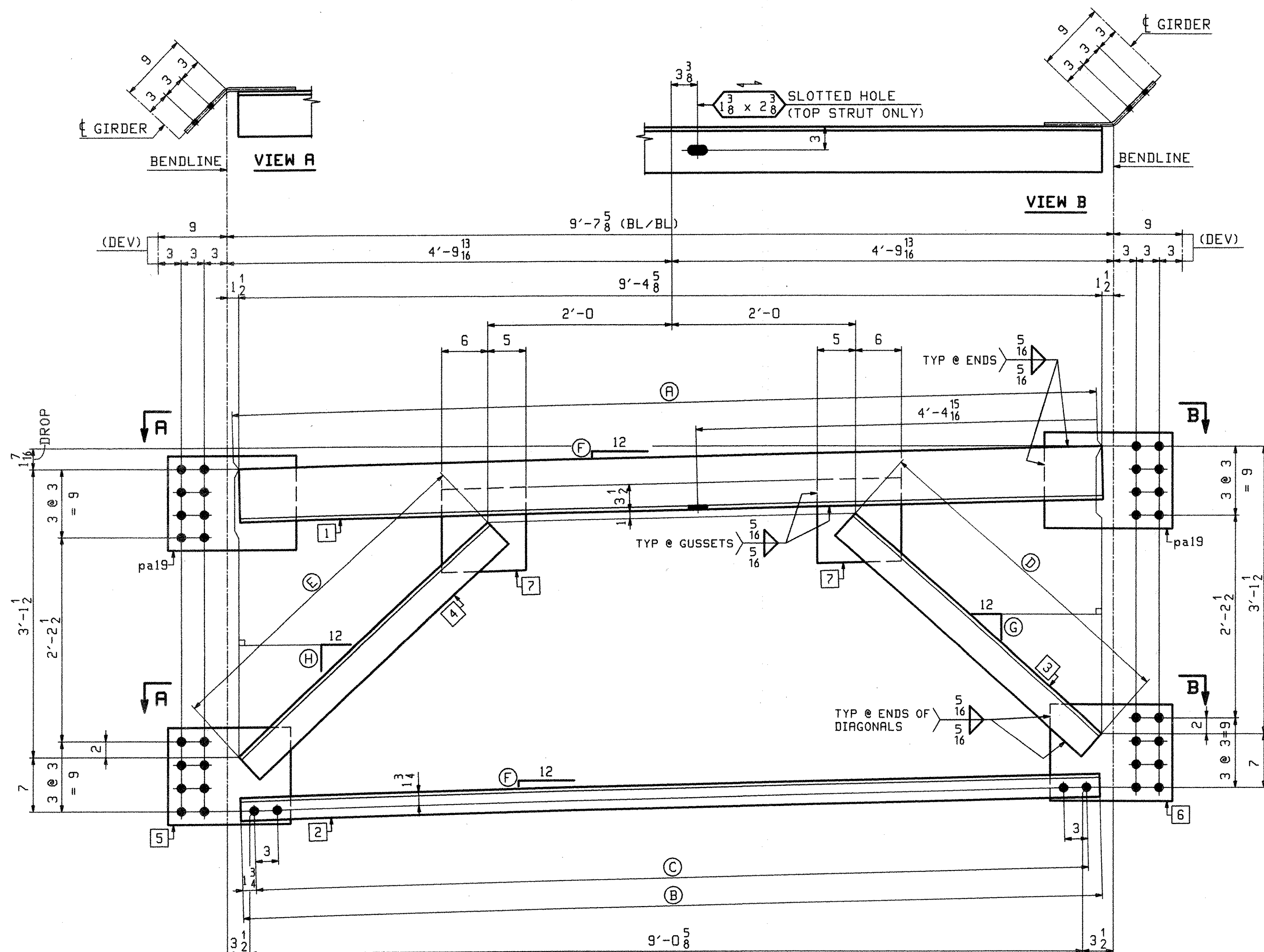


OUT FOR APPROVAL	From 7-17-06									
OUT FOR APPROVAL										
ISSUED TO SHOP										
FIELD & OFFICE										
 ADD WEB SPLICE	JTB	PCP								
REV. REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
MATERIAL:	ELECTRODES:				HOLES:			SHOP BOLTS:		
M270-50W (UN)					15 16 Ø			NONE		
SURFACE PREP. & PAINT:										
SEE DRAWING GNI										
DESCRIPTION: GIRDER - 18G6C						DRAWN BY		DATE		
JOB: RTE 9 OVER ROARING BRANCH OF WALLOOMSAC RIVER BRIDGE No. BR 11  WOLFORD, VT. BENNINGTON COUNTY						JTB		02/22		
						CHKD BY				
						PCP		03/06		
						APPROV BY				
PROJ NO. BHF 010-1(29)						Q.A.				
CUSTOMER: RENAUD BROTHERS, INC.										
CASCO BAY STEEL STRUCTURES, INC.						JOB NO.		DRG. NO.		
						290		18		
						REV.				
75 SPRING HILL ROAD						SACO, MAINE 04072				
PHONE (207) 282-7360						FAX. (207) 282-1179				

CP Mon Mar 27 09:57:11 EST 2006 /users/jobs/2008/10 : Rev1



OUT FOR APPROVAL	FORM 7-12-06																				
OUT FOR APPROVAL																					
ISSUED TO SHOP																					
FIELD & OFFICE																					
REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER										
MATERIAL:	ELECTRODES:				HOLES:				SHOP BOLTS:												
M270-SOW (UN)					15 16"Ø				NONE												
SURFACE PREP. & PAINT:																					
PAINTED - SEE DRAWING GNI																					
DESCRIPTION: CROSSFRAMES												DRAWN BY		DATE							
JOB:	RTE 9 OVER ROARING BRANCH OF WALLOOMSAC RIVER											JTB		02/23							
	BRIDGE No. BR 11											CHKD BY									
	WOLFORD, VT. BENNINGTON COUNTY											PCP		03/06							
												APPROV BY									
												SUPERVISOR		W. J. GATTI							
PROJ NO. BHF 010-1(29)												Q.A.									
CUSTOMER: REAUD BROTHERS, INC.																					
CASCO BAY STEEL STRUCTURES, INC.												JOB NO.		DRG. NO.							
75 SPRING HILL ROAD SACO, MAINE 04072												290		19							
PHONE (207) 282-7360 FAX. (207) 282-1179														REV.		△					



BRG CROSSFRAME - MARK "A"

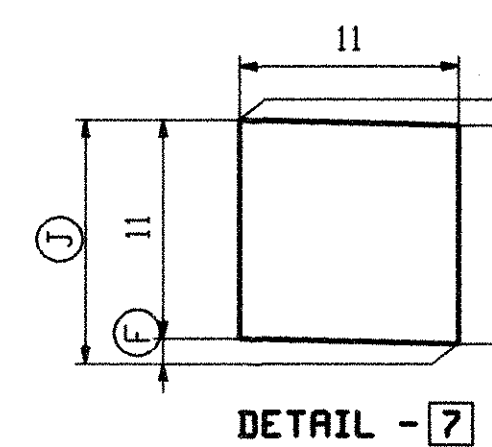
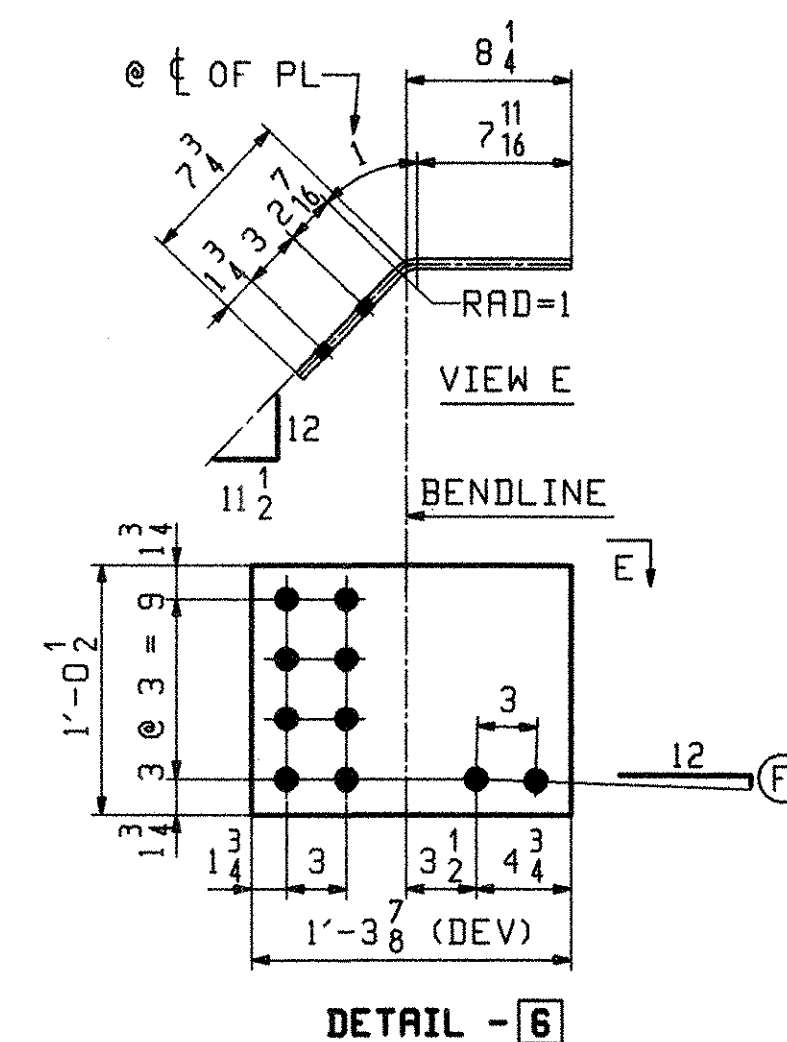
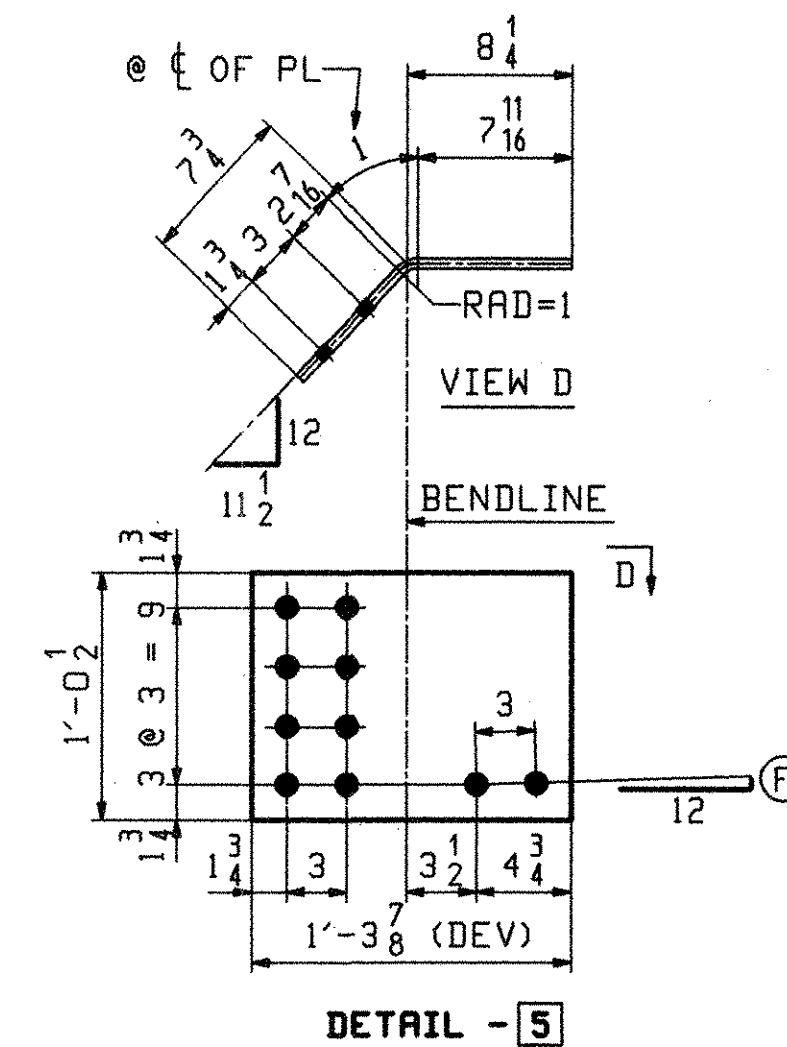
SHOP NOTE:
BOLT/WIRE BOTTOM STRUT FOR SHIPPING

MARK "A"	QTY	DROP	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(J)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
20CF1	1	2 3/4	9'-4 11/16	9'-4 3/16	9'-0 11/16	3'-7 7/8	3'-9	5 1/8	11 1/16	11 5/8	11 5/16	a20	b20	c20	d20	pa20	pb20	pc20
20CF2	1	2	9'-4 5/8	9'-4 1/8	9'-0 5/8	3'-8 1/16	3'-8 13/16	3 1/8	11 1/8	11 9/16	11 3/16	f20	g20	k20	m20	pd20	pf20	pg20
20CF3	1	1 7/16	9'-4 5/8	9'-4 1/8	9'-0 5/8	3'-8 1/8	3'-8 3/4	1 8	11 3/16	11 1/2	11 1/8	f20	g20	n20	p20	pk20	pm20	pn20

PIER 2 LINES 1-2

PIER 1 LINES 1-2

ABUT 1 LINES 1-2



ABM INFO		SHIP	BILL OF MATERIAL				JOB NO.		DRAWING NO.		REV.
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH FT INCHES	290		20		
							REMARKS	WT	PROCUREMENT NOTES		
		20CF1	1		END CROSSFRAME			560			
3	G		1	a20	L 6x6x 5/8	9 4 1/16					
3	B		1	b20	L 3x3x 1/2	9 4 1/16					
3	D		1	c20	L 4x4x 1/2	3 7/8					
3	D		1	d20	L 4x4x 1/2	3 9					
3	F		2	pa19	PL 2x12 1/2	1 4 5/8	BENT				
3	F		1	pa20	PL 2x12 1/2	1 3 3/8	BENT				
3	F		1	pb20	PL 2x12 1/2	1 3 3/8	BENT				
3	E		2	pc20	PL 2x11	0 11 5/16					
		20CF2	1		END CROSSFRAME			559			
3	G		1	f20	L 6x6x 5/8	9 4 5/8					
3	B		1	g20	L 3x3x 1/2	9 4 5/8					
3	D		1	k20	L 4x4x 1/2	3 8 1/8					
3	D		1	m20	L 4x4x 1/2	3 8 1/8					
3	F		2	pa19	PL 2x12 1/2	1 4 5/8	BENT				
3	F		1	pd20	PL 2x12 1/2	1 3 3/8	BENT				
3	F		1	pf20	PL 2x12 1/2	1 3 3/8	BENT				
3	E		2	pg20	PL 2x11	0 11 5/16					
		20CF3	1		END CROSSFRAME			559			
3	G		1	f20	L 6x6x 5/8	9 4 5/8					
3	B		1	g20	L 3x3x 1/2	9 4 5/8					
3	D		1	n20	L 4x4x 1/2	3 8 1/8					
3	D		1	p20	L 4x4x 1/2	3 8 1/8					
3	F		2	pa19	PL 2x12 1/2	1 4 5/8	BENT				
3	F		1	pk20	PL 2x12 1/2	1 3 3/8	BENT				
3	F		1	pm20	PL 2x12 1/2	1 3 3/8	BENT				
3	E		2	pn20	PL 2x11	0 11 5/16					

OUT FOR APPROVAL	Final 7/17/06																		
OUT FOR APPROVAL																			
ISSUED TO SHOP																			
FIELD & OFFICE																			
REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER								
MATERIAL:	M270-50W (UN)	ELECTRODES:																	
		HOLES:																	
SURFACE PREP. & PAINT:										PAINTED - SEE DRAWING GNI									
DESCRIPTION: CROSSFRAMES										DRAWN BY		DATE							
JOB: RTE 9 OVER ROARING BRANCH OF WALLOOMSAC RIVER										JTB		02/26							
BRIDGE No. BR 11										CHKD BY									
WOODFORD, VT. BENNINGTON COUNTY										PCP		03/06							
PROJ NO. BHF 010-1(29)										Q.A.									
CUSTOMER: RENAUD BROTHERS, INC.																			
CASCO BAY STEEL STRUCTURES, INC.										JOB NO.		DRG. NO.							
75 SPRING HILL ROAD										290		20							
PHONE (207) 282-7360										FAX. (207) 282-1179									

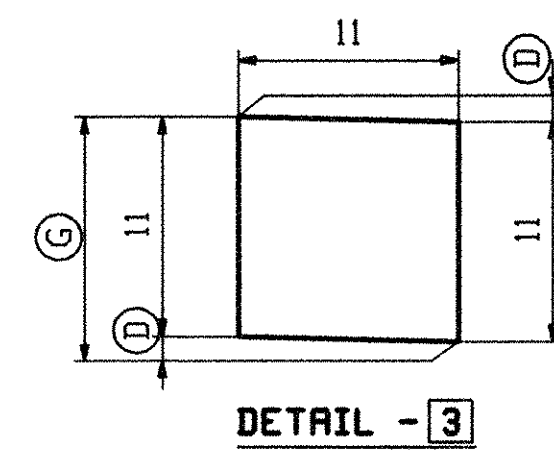


ABUT 1 LINES 5-6
PIER 1 LINES 5-6
PIER 2 LINES 5-6
ABUT 1 LINES 4-5
PIER 1 LINES 4-5
PIER 2 LINES 4-5
ABUT 1 LINES 3-4
PIER 1 LINES 3-4

ABH INFO		SHIP		BILL OF MATERIAL				JOB NO. 290		DRAWING NO. 21		REV. 
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH FT INCHES		REMARKS	WT	PROCUREMENT NOTES		
		2ICF1	1		END CROSSFRAME				581			
3	A	1 a21	MC 8x22.8		9	4	7/8					
3	C	1 b21	L 4x4x 1/2		9	4	7/8					
3	D	1 c21	L 4x4x 1/2		3	5	3/4					
3	D	1 d21	L 4x4x 1/2		3	8	7/16					
3	F	4 pa19	PL 2x12		1	4	5/8	BENT				
3	E	2 pa21	PL 2x11		0	11	3/4					
		2ICF2	1		END CROSSFRAME				580			
3	A	1 f21	MC 8x22.8		9	4	13/16					
3	C	1 g21	L 4x4x 1/2		9	4	13/16					
3	D	1 k21	L 4x4x 1/2		3	5	6/8					
3	D	1 m21	L 4x4x 1/2		3	8	5/16					
3	F	4 pa19	PL 2x12		1	4	5/8	BENT				
3	E	2 pb21	PL 2x11		0	11	11/16					
		2ICF3	1		END CROSSFRAME				580			
3	A	1 f21	MC 8x22.8		9	4	13/16					
3	C	1 g21	L 4x4x 1/2		9	4	13/16					
3	D	1 n21	L 4x4x 1/2		3	6						
3	D	1 p21	L 4x4x 1/2		3	8	3/16					
3	F	4 pa19	PL 2x12		1	4	5/8	BENT				
3	E	2 pc21	PL 2x11		0	11	5/8					
		2ICF4	1		END CROSSFRAME				580			
3	A	1 t21	MC 8x22.8		9	4	3/4					
3	C	1 v21	L 4x4x 1/2		9	4	3/4					
3	D	1 w21	L 4x4x 1/2		3	6	13/16					
3	D	1 y21	L 4x4x 1/2		3	8	1/16					
3	F	4 pa19	PL 2x12		1	4	5/8	BENT				
3	E	2 pd21	PL 2x11		0	11	1/2					

[illegible]

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MARK "A"	QTY	DROP	(B) $\triangle$	(C) $\triangle$	(D)	(E) $\triangle$	(F) $\triangle$	(G)	[1]	[2]	[3]
22CF1	2	1 $\frac{3}{8}$	3'-6 $\frac{13}{16}$	3'-7 $\frac{3}{8}$	1 $\frac{1}{8}$	10 $\frac{7}{16}$	10 $\frac{3}{4}$	11 $\frac{1}{8}$	c22	d22	pa22
22CF2	1	$\frac{9}{16}$	3'-7	3'-7 $\frac{3}{16}$	$\frac{1}{16}$	10 $\frac{1}{2}$	10 $\frac{5}{8}$	11 $\frac{1}{16}$	f22	g22	pb22
22CF3	1	$\frac{1}{16}$	3'-7 $\frac{1}{16}$	3'-7 $\frac{1}{16}$	0	10 $\frac{9}{16}$	10 $\frac{9}{16}$	11	k22	k22	pc22

ABM INFO		SHIP		BILL OF MATERIAL				JOB NO.		DRAWING NO.		REV.	
								290		22			
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH		REMARKS		WT		PROCUREMENT NOTES	
						FT	INCHES						
		22CF1	2		END CROSSFRAME						578		
3	A		2	a22	MC 8x22.8 	9	4 ⁵ / ₈						
3	C		2	b22	L 4x4 x ¹ / ₂	9	4 ⁵ / ₈						
3	D		2	c22	L 4x4 x ¹ / ₂	3	6 ¹³ / ₁₆						
3	D		2	d22	L 4x4 x ¹ / ₂	3	7 ¹ / ₁₆						
3	F		8	pa19	PL ¹ / ₂ x12 ¹ / ₂	1	4 ⁵ / ₈		BENT				
3	E		4	pa22	PL ¹ / ₂ x11	0	11 ¹ / ₈						
		22CF2	1		END CROSSFRAME						578		
3	A		1	a22	MC 8x22.8 	9	4 ⁵ / ₈						
3	C		1	b22	L 4x4 x ¹ / ₂	9	4 ⁵ / ₈						
3	D		1	f22	L 4x4 x ¹ / ₂	3	7						
3	D		1	g22	L 4x4 x ¹ / ₂	3	7 ¹ / ₁₆						
3	F		4	pa19	PL ¹ / ₂ x12 ¹ / ₂	1	4 ⁵ / ₈		BENT				
3	E		2	pb22	PL ¹ / ₂ x11	0	11 ¹ / ₈						
		22CF3	1		END CROSSFRAME						577		
3	A		1	a22	MC 8x22.8 	9	4 ⁵ / ₈						
3	C		1	b22	L 4x4 x ¹ / ₂	9	4 ⁵ / ₈						
3	D		2	k22	L 4x4 x ¹ / ₂	3	7 ¹ / ₁₆						
3	F		4	pa19	PL ¹ / ₂ x12 ¹ / ₂	1	4 ⁵ / ₈		BENT				
3	E		2	pc22	PL ¹ / ₂ x11	0	11						

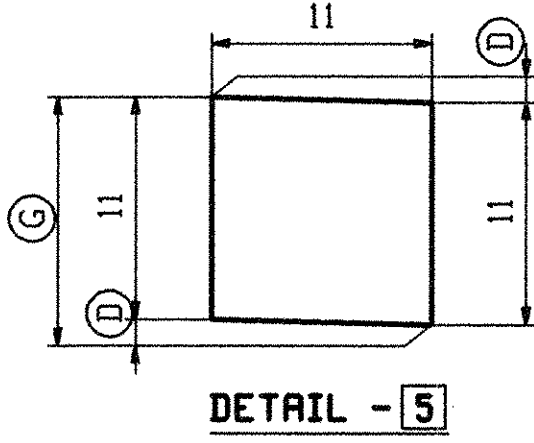
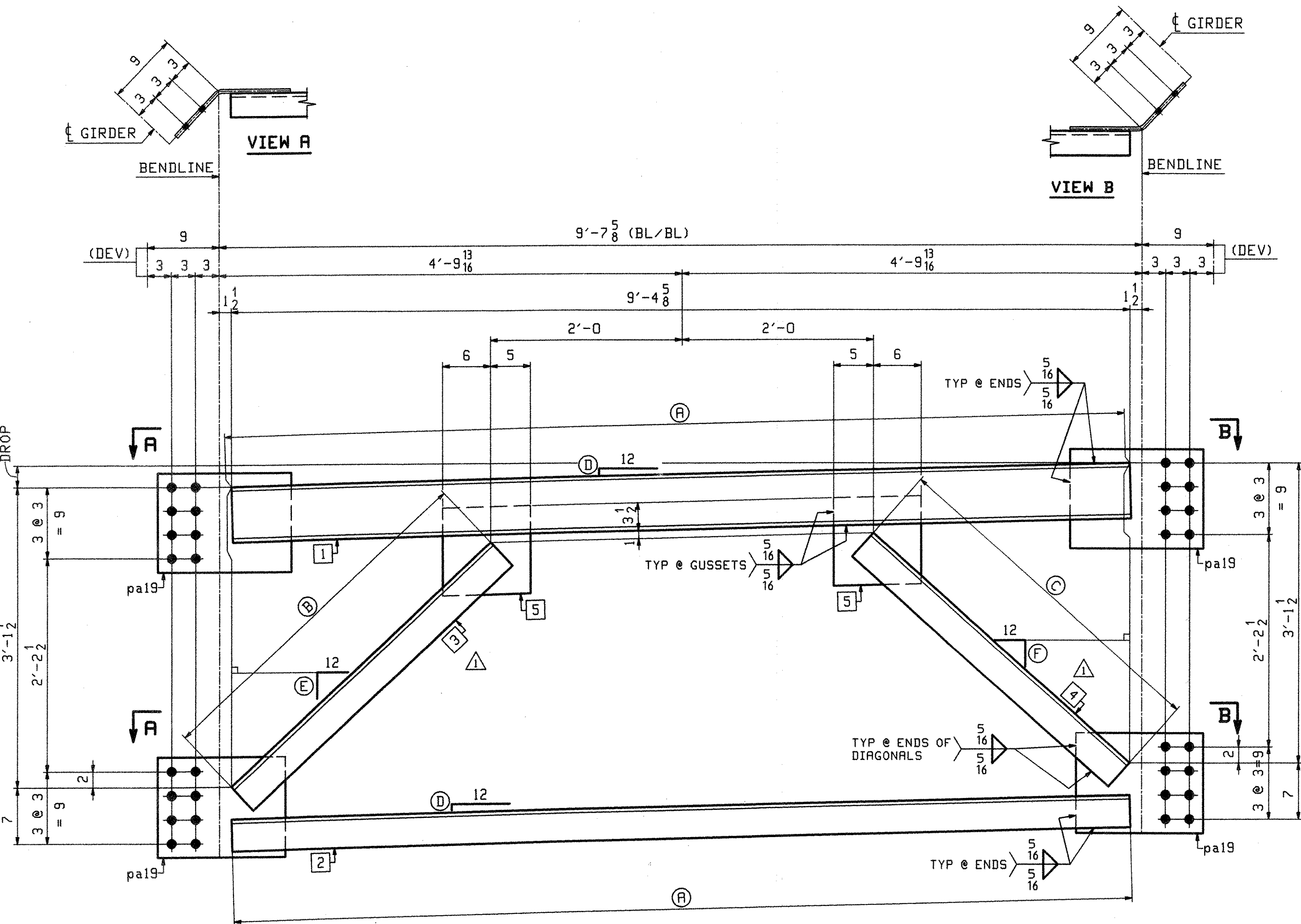
OUT FOR APPROVAL		Frm 7-17-86													
OUT FOR APPROVAL															
ISSUED TO SHOP															
FIELD & OFFICE															
 CHS MC27-22.7 TO MC8x22.8		07/10	JTB	PCP											
REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER				
MATERIAL:		ELECTRODES:			HOLES:			SHOP BOLTS:							
M270-50W (UN)					15 16 ∅						NONE				
SURFACE PREP. & PAINT:															
PAINTED - SEE DRAWING GNI															
DESCRIPTION: CROSSFRAMES									DRAWN BY		DATE				
JOB: RTE 9 OVER ROARING BRANCH OF WALLOOMSAC RIVER									JTB		02/26				
BRIDGE No. BR 11									CHKD BY						
WOODFORD, VT. BENNINGTON COUNTY									PCP		03/06				
									APPROV BY						
									SUPERVISOR		W. J. GATTI				
PROJ NO. BHF 010-(129)									Q.A.						
CUSTOMER: RENAUD BROTHERS, INC.															
CASCO BAY STEEL STRUCTURES, INC.									JOB NO.		DRG. NO.				
75 SPRING HILL ROAD SACO, MAINE 04072									290		22				
PHONE (207) 282-7360 FAX. (207) 282-1179											REV. 				

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CP      Thu Jul 13 11:57:09 EDT 2006      /users/jobs/2608/22 : Rev1

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ABM INFO		SHIP		BILL OF MATERIAL				JOB NO.		DRAWING NO.		REV.
								290		23		1
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH		REMARKS	WT	PROCUREMENT NOTES		
						FT	INCHES					
		23CF1	1		END CROSSFRAME				580			
3	A		1	a23	MC 8x22.8	9	4 3/4					
3	C		1	b23	L 4x4x 1/2	9	4 3/4					
3	D		1	c23	L 4x4x 1/2	3	8 1/2					
3	D		1	d23	L 4x4x 1/2	3	6 1/2					
3	F		4	pa19	PL 1/2x12	1	4 8/8	BENT				
3	E		2	pa23	PL 1/2x11	0	11 1/8					
		23CF2	1		END CROSSFRAME				579			
3	A		1	f23	MC 8x22.8	9	4 1/8					
3	C		1	g23	L 4x4x 1/2	9	4 1/8					
3	D		1	k23	L 4x4x 1/2	3	7 1/8					
3	D		1	m23	L 4x4x 1/2	3	6 1/2					
3	F		4	pa19	PL 1/2x12	1	4 8/8	BENT				
3	E		2	pa23	PL 1/2x11	0	11 1/8					
		23CF3	2		END CROSSFRAME				578			
3	A		2	n23	MC 8x22.8	9	4 8/8					
3	C		2	p23	L 4x4x 1/2	9	4 8/8					
3	D		2	t23	L 4x4x 1/2	3	7 1/8					
3	D		2	v23	L 4x4x 1/2	3	6 1/2					
3	F		8	pa19	PL 1/2x12	1	4 8/8	BENT				
3	E		4	pc23	PL 1/2x11	0	11 1/8					



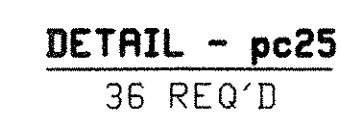
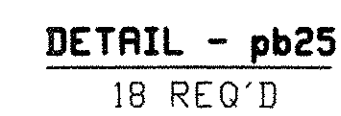
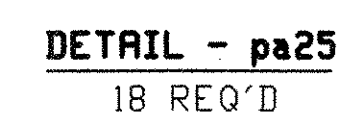
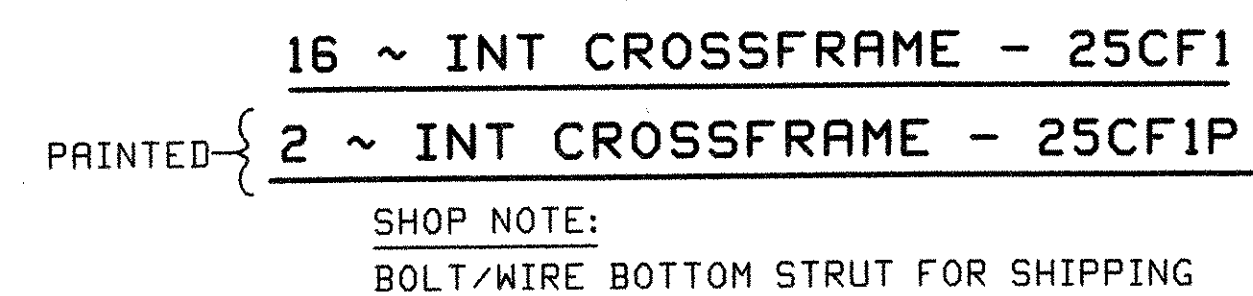
BRG CROSSFRAME - MARK "A"

MARK "A"	QTY	DROP	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(1)	(2)	(3)	(4)	(5)
23CF1	1	5 3/16	9'-4 3/4	3'-8 1/16	3'-6 1/8	9 1/8	11 1/8	10	11 1/8	a23	b23	c23	d23	pa23
23CF2	1	3 1/8	9'-4 11/16	3'-7 11/16	3'-6 1/2	5 1/8	10 15/16	10 1/4	11 5/8	f23	g23	k23	m23	pb23
23CF3	2	7 8/8	9'-4 5/8	3'-7 1/4	3'-6 15/16	1 1/8	10 11/16	10 1/2	11 1/8	n23	p23	t23	v23	pc23

ABUT 2 LINES 5-6
ABUT 2 LINES 4-5
ABUT 2 LINES 3-4
PIER 2 LINES 2-3

OUT FOR APPROVAL		Fina 7-17-06												
OUT FOR APPROVAL														
ISSUED TO SHOP														
FIELD & OFFICE														
CHG MC7x22.7 TO MC8x22.8		07/10	JTB	PCP										
REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER			
	MATERIAL:	ELECTRODES:			HOLES:			SHOP BOLTS:						
	M270-50W (UN)				15 16" Ø			NONE						
SURFACE PREP. & PAINT:														
PAINTED - SEE DRAWING GNI														
DESCRIPTION: CROSSFRAMES														
JOB: RTE 9 OVER ROARING BRANCH OF WALLOOMSAC RIVER														
BRIDGE No. BR 11														
WOODFORD, VT. BENNINGTON COUNTY														
DRAWN BY JTB DATE 02/26														
CHKD BY PCP DATE 03/06														
APPROV BY SUPERVISOR W. J. GATTI														
PROJ NO. BHF 010-1(29) Q.A.														
CUSTOMER: RENAUD BROTHERS, INC.														
CASCO BAY STEEL STRUCTURES, INC.														
75 SPRING HILL ROAD SACO, MAINE 04072														
PHONE (207) 282-7360 FAX. (207) 282-1179														
JOB NO. 290 DRG. NO. 23														
REV. 1														

RECEIVED
JUL 26 2006
BY DATE 7/28/06

[illegible]

OUT FOR APPROVAL		<i>Eva 7-17-02</i>													
OUT FOR APPROVAL															
ISSUED TO SHOP															
FIELD & OFFICE															
⚠ REV pb25 DETAIL		D7/10	JTB	PCP											
REV.	REMARKS	DATE	OWN	CHK	APP	G.A.	NO.	DIA.	LGT	TYPE	WASHER				
MATERIAL:		ELECTRODES:			HOLES: 15" 16" Ø			SHOP BOLTS: NONE							
M270-SOW (UN)															
SURFACE PREP. & PAINT:															
SEE DRAWING GNI															
DESCRIPTION: INT CROSSFRAMES								DRAWN BY		DATE					
JOB: RTE 9 OVER ROARING BRANCH OF WALLLOOMSAC RIVER BRIDGE No. BR 11 WOODFORD, VT. BENNINGTON COUNTY  TENSOR 2608								JTB		02/26					
								CHKD BY							
								PCP		03/06					
								APPROV BY							
								SUPERVISOR		W. J. GATTI					
PROJ NO. BHF 010-1(29)								G.A.							
CUSTOMER: RENAUD BROTHERS, INC.															
CASCO BAY STEEL STRUCTURES, INC.								JOB NO.		DRG. NO.					
75 SPRING HILL ROAD								290		25					
PHONE (207) 282-7360										FAX. (207) 282-1179					
										REV. ⬆					

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CP Thu Jul 13 11:46:23 EDT 2006 /users/ jobs/2508/25 : Rev1

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VERMONT

State of Vermont
PDD/Structures Design Section
National Life Building – Drawer 33
Montpelier, VT 05633-5001
www.aot.state.vt.us

(phone) 802-828-2621
(fax) 802-828-3566
(tdd) 800-253-0191

Agency of Transportation

Casco Bay Steel Structures, Inc.
75 Spring Hill Road
Saco, Maine 04072

DATE: Oct. 12, 2006

Project Name: Woodford Project #: BHF 010 -1 (29)

Structure Identification: Bridge # 11 on VT 9 over the Roaring Branch

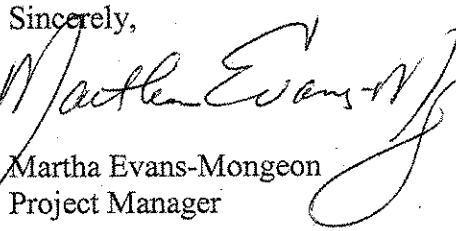
The following expansion joint details, Item #516.10, Bridge Expansion Joint (Vermont), for the above project (Vendor's Job # 290) transmitted with Renaud Brother's letter dated October 10, 2006 have been reviewed and are being returned herewith.

Sheet: **J1 and J2 and D1 are approved**

The welding procedures are approved and a copy of these approved welding procedures is also attached.

You must provide written notice to this office as to the date fabrication represented by these drawings will begin. That notice must be received at least seven days prior to that date, as per Specification 506.03. Any material fabricated prior to the notification date is subject to rejection without further cause.

Sincerely,


Martha Evans-Mongeon
Project Manager

Attachments
cc: [X] Resident Engineer, Ron Lemaire
 [X] Shop Inspector, Jeff Clark
 [X] Contractor, Renaud Brothers
 [] Subcontractor – letter only _____
 [X] Construction Divison – letter only
 [X] Materials & Research Section (C&IA Unit) – letter only
 [X] Files (Structures & Central)

13 of 3

Casco Bay Steel Structures, Inc.

5 Industry Road
South Portland, Maine 04106

Phone: (207) 772-2533

Fax: (207) 772-0580

WELDING PROCEDURE SPECIFICATION

Material specification A36-A572-A588 (ASTM 709 Gr 36-50-50w)
Welding process Flux Cored Arc welding (FCAW)
Manual or machine Semi-AUTO
Position of welding Flat
Filler metal specification AWS E 71T-1
Filler metal classification E 71T-1
Flux NA
Shielding gas 75% AR 25% CO₂ Flow rate 40 F5
Single or multiple pass Single Electrode stick out 3/4 ± 1/4
Single or multiple arc Single
Welding current Direct current
Polarity Reverse Electrode Positive
Welding progression see detail
Root treatment see detail
Preheat and interpass temperature 0 to 34-50° (19-10°) + 34 to 142-70° (19 to 38-20°)
Postheat temperature NA
Heat Input Min NA Max NA

WELDING PROCEDURE

Pass no.	Electrode size	Welding current		Travel speed	AWS D1-5
		Amperes	Volts		
	1/16	280 ± 28	25 ± 1.7	17 IPM ± 1.7	Filler 1 Square groove joint detail BUTT
	1/8	280 ± 28	25 ± 1.7	1432 ± 43.2	
RECEIVED					
BY JWC					
AUG 1 2006					
BY					

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable A.W.S. codes or contract specifications

Procedure no. 105 Contractor Casco Bay Steel
Revision no. AWS-D1 Authorized By Paul E. Goodale
Form III-2 Paul E. Goodale Date 2/2/99
83100201
C.W.I.

Casco Bay Steel Structures, Inc.

75 Spring Hill Road
Saco, Maine 04072

Phone: (207) 282-7360

Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

Material specification ASTM A709/A709M-Grade 36(250) 50(345) 50W(345W)
Welding process Flux Cored Arc welding (FCAW)
Manual or machine Semi Auto
Position of welding Flat (1G) Horizontal (2G)
Filler metal specification AWS A5-20
Filler metal classification E71T-1
Flux NA
Shielding gas 75% Ar 25% CO2 Flow rate 40 CFH ± 5
Single or multiple pass Single and Multiple - Electrode Extension 3/8" ± 4 (5.875-6.35)
Single or multiple arc Single
Welding current DC
Polarity Reverse
Welding progression See Joint Detail
Root treatment See AWS Specification
Preheat and interpass temperature 234 (19) 50 (10) 34 (04) To 1 1/2 (68) 1 1/2 (68) To 2 1/2 (13) 150 (65)
Postheat temperature NA over 2 1/2 (63) = 225 (110)
Heat input Min _____ Max _____

WELDING PROCEDURE

Pass no.	Electrode size	Welding current		Travel speed
		Amperes	Volts	
	<u>1/16</u>	<u>27.5</u>	<u>28.8</u>	<u>11.6</u>
		<u>247.5</u>	<u>26.8</u>	<u>10.4</u>
		<u>TO</u>	<u>TO</u>	<u>TO</u>
		<u>302.5</u>	<u>30.8</u>	<u>12.8</u>
	<u>1.6</u>	<u>27.5</u>	<u>28.8</u>	<u>294.6</u>
		<u>247.5</u>	<u>26.8</u>	<u>264.2</u>
		<u>TO</u>	<u>TO</u>	<u>TO</u>
		<u>302.5</u>	<u>30.8</u>	<u>325.12</u>

(METRIC)

Welding current

Travel speed

Joint detail

TC P4-F

NOTE: Grind Flush as Req

RECEIVED

APR 14 2008

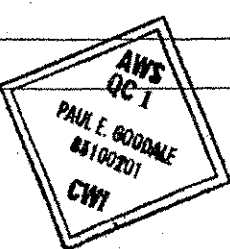
APPROVED

BY

DATE 9-12-06

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable A.W.S. codes or contract specifications

Procedure no. 103
Revision no. _____
Form III-2
Contractor Casco Bay Steel
Authorized By P.O. Hood
Date 3/23/00



Casco Bay Steel Structures, Inc.

5 Industry Road
South Portland, Maine 04106

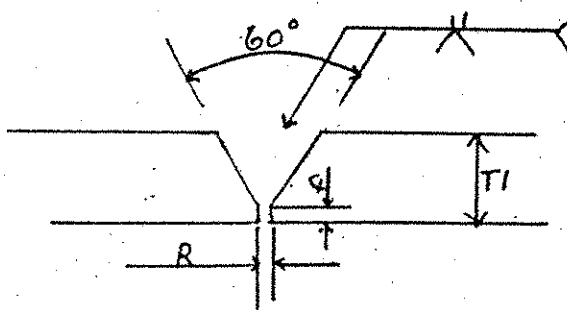
Phone: (207) 772-2533

Fax: (207) 772-0580

WELDING PROCEDURE SPECIFICATION

Material specification A36-A572-A588 (ASTM A36 Gr 36-50-50w)
Welding process Flux Cored Arc welding (FCAW)
Manual or machine Semi-Auto
Position of welding Flat-1G
Filler metal specification AWS A5-20
Filler metal classification E71T-1
Flux NA
Shielding gas 75% AR 25% CO₂ Flow rate 40 F5
Single or multiple pass Both Electrode Stick out 3/4" ± 1/4"
Single or multiple arc Single
Welding current Direct current
Polarity Reverse Electrode positive
Welding progression See Detail
Root treatment weld side #1, backgauge side #2 grind - then weld
Preheat and interpass temperature To 34-50° (19-10°) + 34 to 1/2-70° (+19 to 38-20°)
Postheat temperature NA
Heat Input Min NA Max NA

WELDING PROCEDURE

Pass no.	Electrode size	Welding current		Travel speed	Joint detail
		Amperes	Volts		
1/16	280	±28	25 ±1.7	11 ±1.1	
1.6	280	±28	25 ±1.7	280 ±28	

TRANS RECEIVED

OK'D BY: AW DATE: 9-12-96

RESUBMIT: AW APPROVED: AW DATE: 9-12-96

1-Grind as required

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable A.W.S. codes or contract specifications

Procedure no. 104 Contractor Casco Bay Steel
Revision no. _____ Authorized By Paul E. Goodale
Form III-2 AWS-QC1 Paul E. Goodale 83100201 C.W.I. Date 2/2/99

Casco Bay Steel Structures, Inc.

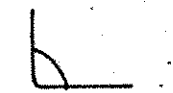
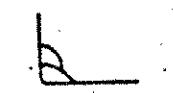
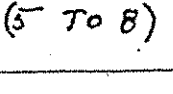
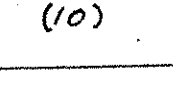
5 Industry Road
South Portland, Maine 04106

Fax: (207) 772-0580

WELDING PROCEDURE SPECIFICATION

Material specification ASTM A109 Gr 36-50-50W (250-345-345W)
Welding process Shielded Metal Arc Welding (SMAW)
Manual or machine Manual
Position of welding Flat (1F), Horizontal (2F)
Filler metal specification AWS/AWS A5.1 - A5.5
Filler metal classification E7018 - R01B C63 - 7028
Flux NA
Shielding gas NA Flow rate NA
Single or multiple pass Single and multiple
Single or multiple arc Single
Welding current AC/DC
Polarity Straight/Reverse
Welding progression By
Root treatment Meets AWS Specification
Preheat and interpass temperature To 3/4 (192.50) (100) 3/4 (192) To 1 1/2 (38) 70 (160) 1 1/2 (38) To 2 1/2 (63.5) 150 (60.9) over 2 1/2 (63.5) 225 (110.9)
Postheat temperature NA
Heat input Min NA Max NA

WELDING PROCEDURE

Pass no.	Electrode size	Welding current		Travel speed	Joint detail
		Amperes	Volts		
	<u>7018</u>				<u>AWs D1.5</u> Joint detail <u>Filet</u>
	<u>1/8 (3.2)</u>	<u>70-170</u>	<u>22-26</u>		<u>1F</u>
<u>AS</u>	<u>5/32 (3.9)</u>	<u>120-225</u>	<u>22-26</u>	<u>AS</u>	
	<u>3/16 (4.8)</u>	<u>170-300</u>	<u>24-27</u>		
<u>REQ</u>	<u>7018</u>				<u>2F</u>
	<u>1/8 (3.2)</u>	<u>90-160</u>	<u>22-26</u>		
	<u>5/32 (3.9)</u>	<u>120-225</u>	<u>22-26</u>		
	<u>3/16 (4.8)</u>	<u>180-290</u>	<u>24-27</u>		
	<u>7018</u>				<u>3/16 to 5/8 (5 to 16)</u>
	<u>5/32 (3.9)</u>	<u>170-270</u>	<u>22-26</u>		
	<u>3/16 (4.8)</u>	<u>210-330</u>	<u>24-27</u>		

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable AWS codes or contract specifications.

Procedure no. 401
Revision no. 1
Contractor Casco Bay Steel
Authorized By Paul E. Hordale
Date 3/2/00

Casco Bay Steel Structures, Inc.

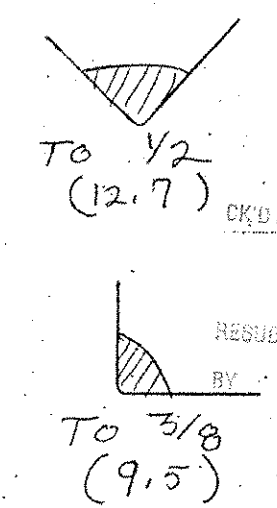
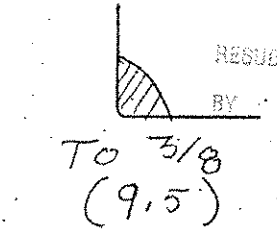
75 Spring Hill Road
Saco, Maine 04072

Phone: (207) 282-7360

Fax: (207) 282-1179

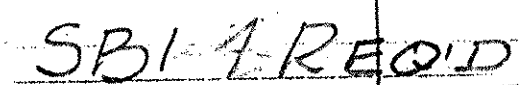
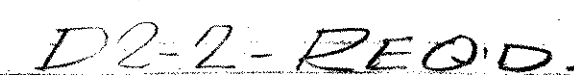
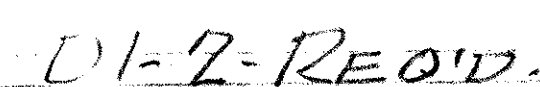
WELDING PROCEDURE SPECIFICATION

Material specification ASTM A709/A709M Gr 36 (250) - 50W (345W)
Welding process Flux Cored Arc welding
Manual or machine Semi-Auto
Position of welding Flat (F) - Horizontal (2F)
Filler metal specification AWS A5-29
Filler metal classification E81T1-A11
Flux LA
Shielding gas 75% AR / 25% CO₂ Flow rate 35 CFH ± 8.6
Single or multiple pass Single and Multiple
Single or multiple arc Single
Welding current Direct
Polarity Reverse Electrode Positive
Welding progression
Root treatment To Meet AWS D1.5 Specifications
Preheat and interpass temperature To 34 (9) 50° (10) 24° (9°) To 142 70° (10) 123 (38) To 212 (64) 150° (65°)
Postheat temperature over 212 (64) 225° (110°)
Heat Input Min 2.8 kJ/in Max 4.0 kJ/in PQR # 2 = 40.9 (14.5%)

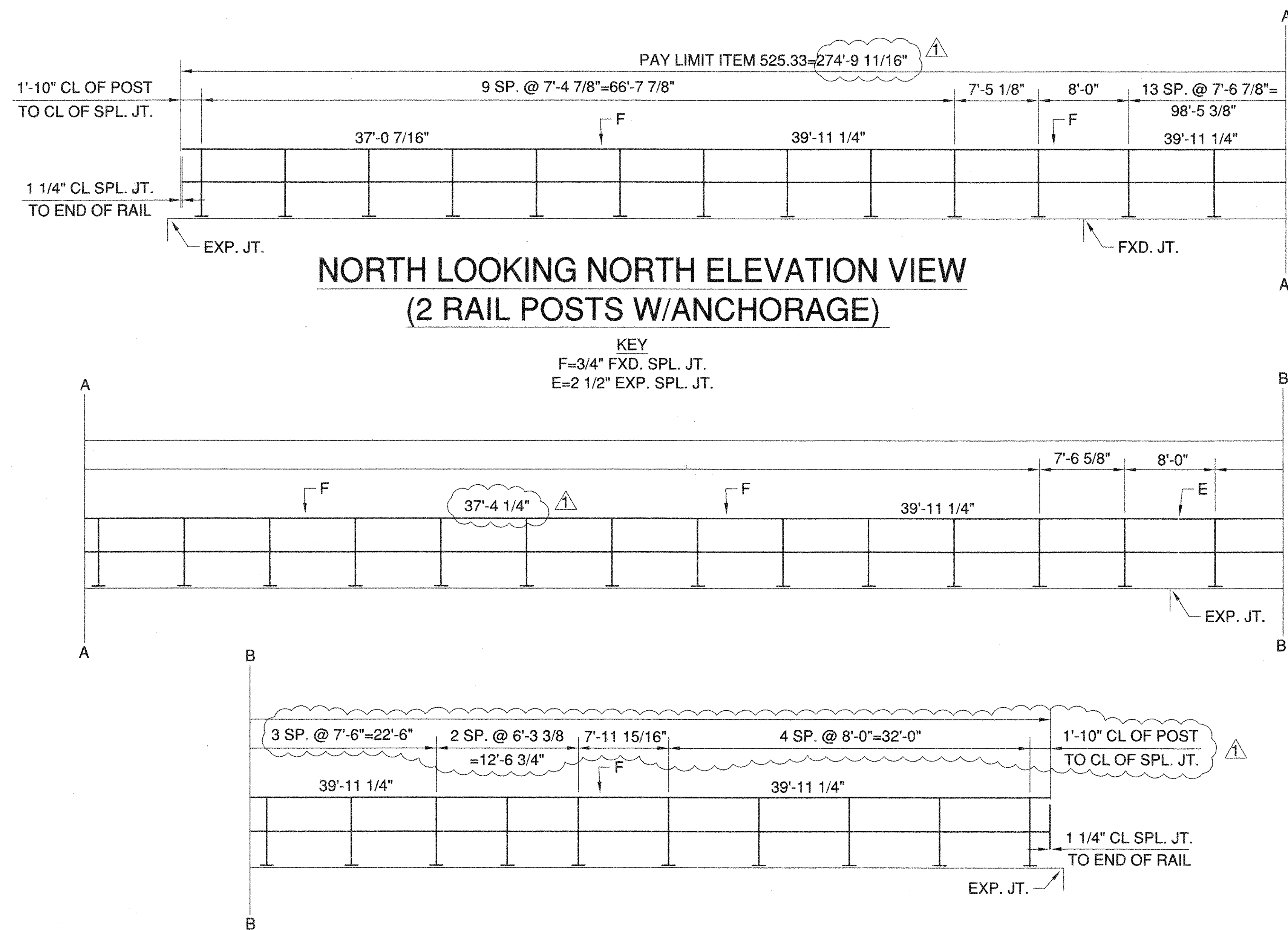
(Metric) WELDING PROCEDURE					Travel speed	Joint detail
Pass no.	Electrode size	Amperes	Volts	Welding current		
AS Req	1/16	27.5	28.8	11.6	1F	
		24.7	26.8	10.4		
		30.2	30.8	12.8		
	(Metric)	27.5	28.8	29.6		
1/8	1.6	24.7	26.8	26.4	2F	
		30.2	30.8	32.5		
		30.2	30.8	32.5		

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable A.W.S. codes or contract specifications

Procedure no. 101-A
Revision no. 1
Form III-2
Contract Casco Bay Steel
Authorized CE Woodil
Date 9/2002



CASCO BAY STEEL STRUCTURES, INC.		JOB NO.	DRG. NO.
75 SPRING HILL ROAD	SACO, MAINE 04072	290	01
PHONE (207) 282-7360	FAX. (207) 282-1179		REV. ☐



BILL OF MATERIAL						
LBS. EACH	MARK OR USE	QTY.	SHAPE (AMERICAN)	SHAPE		REMARKS
				FT.	IN.	
ITEM NO. 525.33						
932.1	RAIL	4	T.S. 8"x4"x5/16" WALL	39	11 1/4	A500 GR B
932.1	RAIL	6	T.S. 8"x4"x5/16" WALL	39	11 1/4	A500 GR B W/EXP. SLOTS @ 1 END.
871.9	RAIL	2	T.S. 8"x4"x5/16" WALL	37	4 1/4	A500 GR B
864.9	RAIL	1	T.S. 8"x4"x5/16" WALL	37	0 11/16	A500 GR B W/EXP. SLOTS @ 1 END.
864.4	RAIL	1	T.S. 8"x4"x5/16" WALL	37	0 7/16	A500 GR B W/EXP. SLOTS @ 1 END.
37.31	SPLICE	16	T.S. 7"x3"x3/8" WALL	1	8	A500 GR B W/2-5/8" H.S. NUTS
.29	FXD. SPL. BOLT	40	5/8"Ø HEX BOLT		1 3/4	A325-1 W/FW
.34	EXP. SPL. BOLT	24	5/8"Ø HEX BOLT		1 3/4	A325-1 W/FW
						W/3/4"Ø NOM. SCH. STD. PIPE X 1/2" LG. A53
487.6	RAIL	4	T.S. 4"x4"x1/4" WALL	39	11 1/4	A500 GR B
487.6	RAIL	6	T.S. 4"x4"x1/4" WALL	39	11 1/4	A500 GR B W/EXP. SLOTS @ 1 END.
456.1	RAIL	2	T.S. 4"x4"x1/4" WALL	37	4 1/4	A500 GR B
452.5	RAIL	1	T.S. 4"x4"x1/4" WALL	37	0 11/16	A500 GR B W/EXP. SLOTS @ 1 END.
452.2	RAIL	1	T.S. 4"x4"x1/4" WALL	37	0 7/16	A500 GR B W/EXP. SLOTS @ 1 END.
17.68	SPLICE	16	T.S. 3"x3"x5/16" WALL	1	8	A500 GR B W/2-5/8"Ø H.S. NUTS
.29	FXD. SPL. BOLT	40	5/8"Ø HEX BOLT		1 3/4	A325-1 W/FW
.34	EXP. SPL. BOLT	24	5/8"Ø HEX BOLT		1 3/4	A325-1 W/FW
						W/3/4"Ø NOM. SCH. STD. PIPE X 1/2" LG. A53
1.0	RAIL POST BOLT	296	3/4"Ø ROUND HEAD SLOTTED BOLT		6	A325-1 W/ FW&PREVAILING TORQUE NUT
88.4	POST	74	W6X25X1'-11 3/8"	2	0 3/8	A572 GR 50 W/PL1"x10"x 14" CVN
13.0	SPACER PLATE	74	PL3/8"x9 3/8"	1	1	A36
.67	FABCO PAD	74	1/8"x10"	1	2	
3.5	ANCHOR STUD	296	1"Ø FULLY THREADED	1	0	A449 W/3N,1FW
.13	SILVER DELIN.	16	.10"x5"		5 3/4	B209 ALLOY 5052-H32, REFLECTIVE D4956
.3	BOLT	16	5/8"Ø HEX HEAD		1 1/2"	A325-1 W/N, LW

RECEIVED
 MAY 11 2006
 APPROVED
 DATE 05/10/06

ALL DIMENSIONS MUST BE FIELD VERIFIED
 PRIOR TO FABRICATION BY CONTRACTOR

PAY LIMIT FOR 2 RAIL= 549.6354FT. (APPROX.)

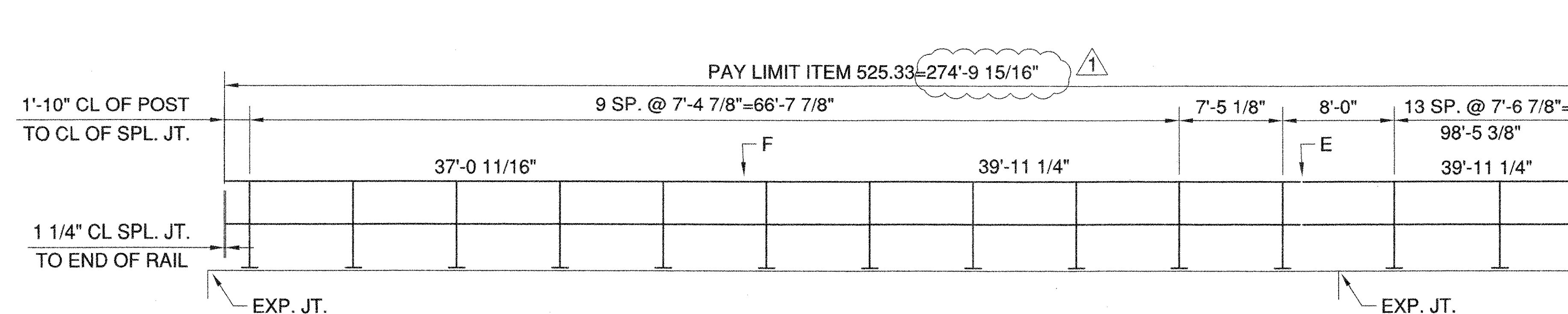
DRAWN BY: THW DATE: 2/6/06 CHECKED BY: DCK SHEET NO. 1 OF 3

BRIDGE RAILING LAYOUT
 STATE OF VERMONT AGENCY OF TRANSPORTATION
 VT. 9 (BR. 11) OVER ROARING BRANCH
 IN THE TOWN OF WOODFORD

CONT. NO. BHF010-1(29)
 GEN. CONT. RENAUD BROTHERS, INC.
 ERECTOR: RENAUD BROTHERS, INC.

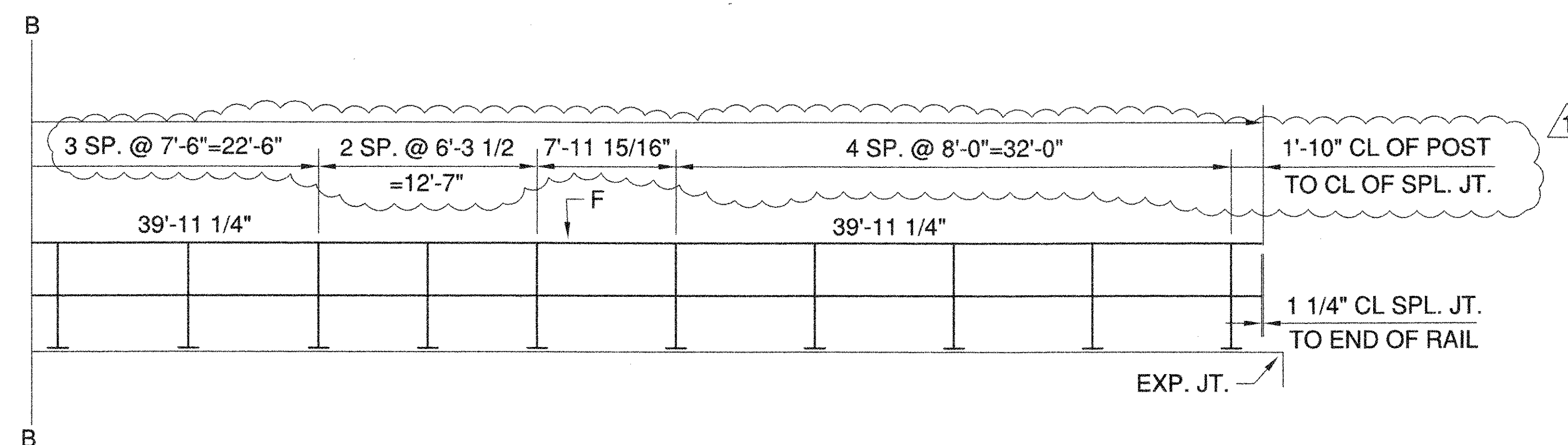
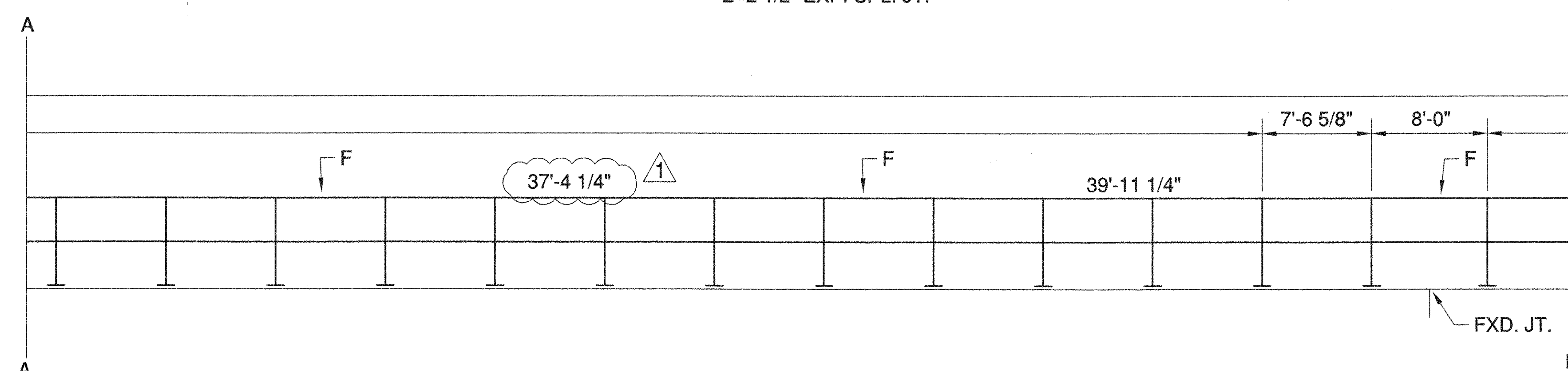
FABRICATOR: PH. (315)736-8312
 DI HIGHWAY SIGN & STRUCTURE CORPORATION
 P.O. BOX 123(40 GREENMAN AVE.) NEW YORK MILLS, N.Y. 13417

JOB NO. B15-02



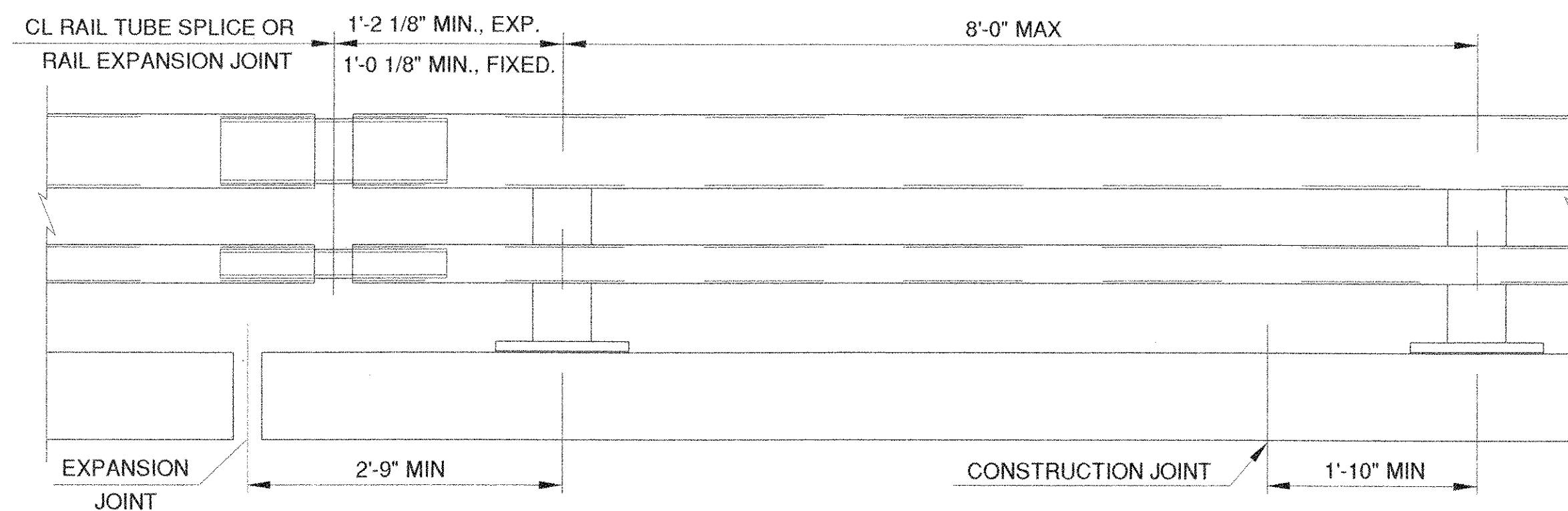
SOUTH LOOKING SOUTH ELEVATION VIEW (2 RAIL POSTS W/ANCHORAGE)

KEY
F=3/4" FXD. SPL. JT.
E=2 1/2" EXP. SPL. JT.

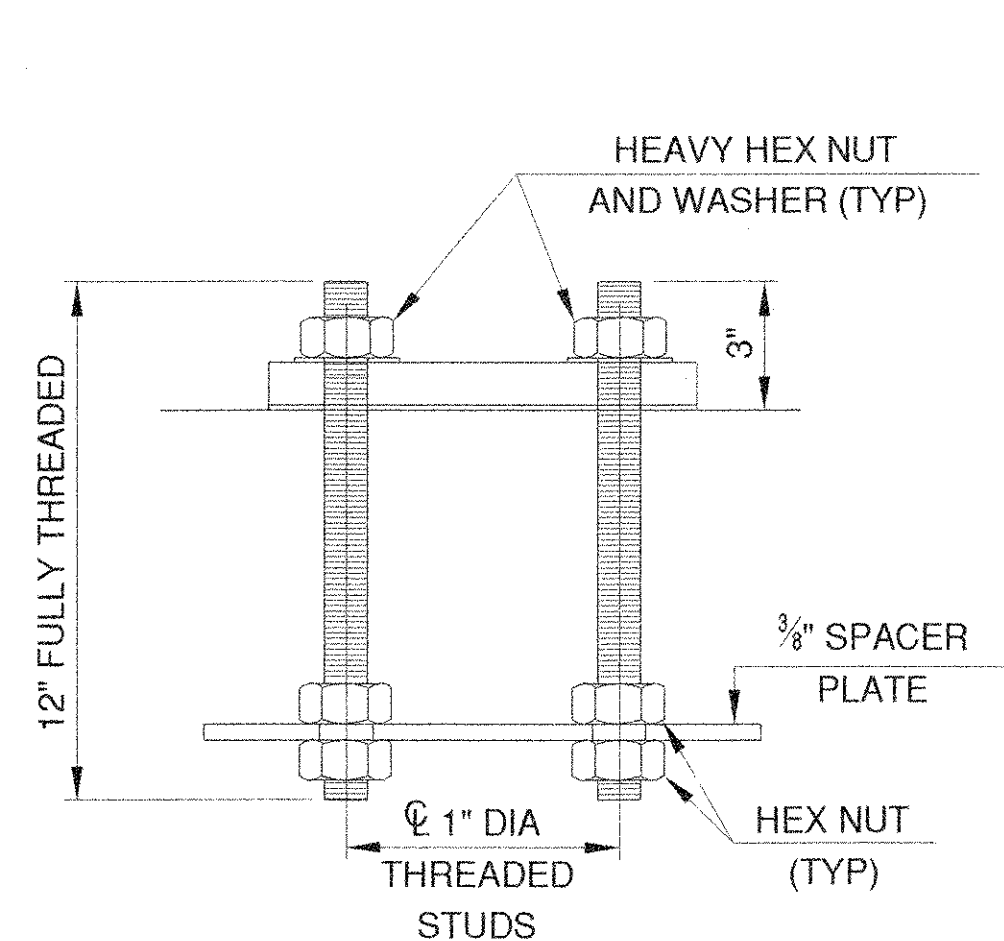


RECEIVED
OK'D BY: *WME*
MAY 11 2006
RESUBMIT: _____
BY: _____ DATE: 05/11/06

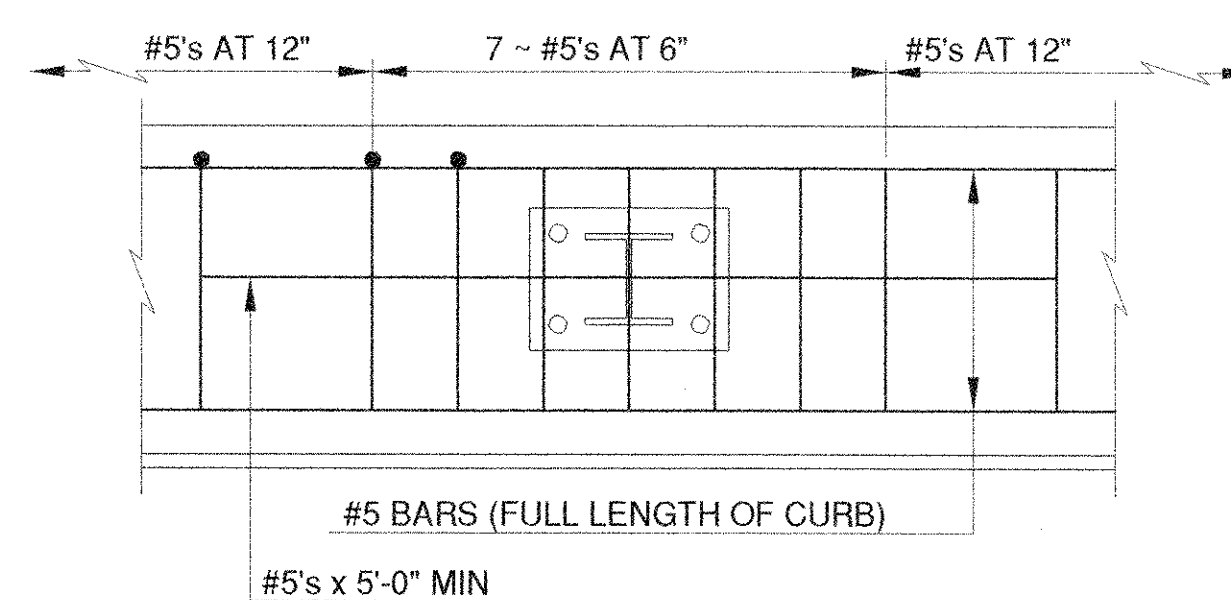
REVISED PER PHONE CONVERSATION W/MARTHA EVANS-MONGEON 3/24/06	DRAWN BY: THW		DATE 2/6/06	CHECKED BY: DCK	SHEET NO. 2 OF 3
	BRIDGE RAILING LAYOUT STATE OF VERMONT AGENCY OF TRANSPORTATION VT. 9(BR. 11) OVER ROARING BRANCH IN THE TOWN OF WOODFORD				
	CONT. NO. BHF010-1(29)				
	GEN. CONT. RENAUD BROTHERS, INC. ERECTOR: RENAUD BROTHERS, INC.				
3/24/06	DATE:	FABRICATOR:			JOB NO.
△	REV.	PH. (315)736-8312 DI HIGHWAY SIGN & STRUCTURE CORPORATION P.O. BOX 123(40 GREENMAN AVE.) NEW YORK MILLS, N.Y. 13417			R15-02



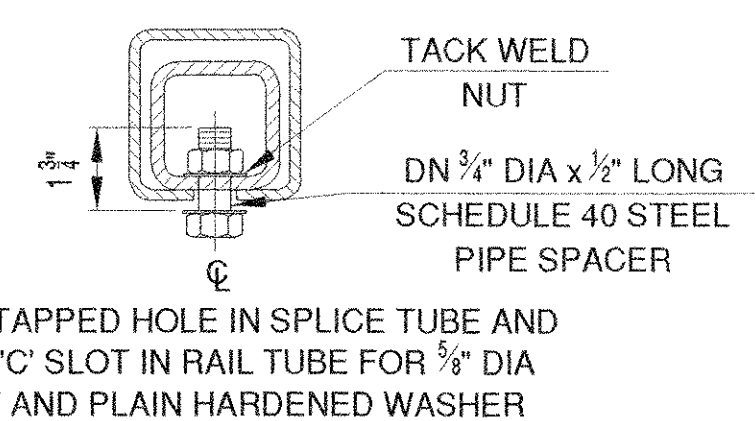
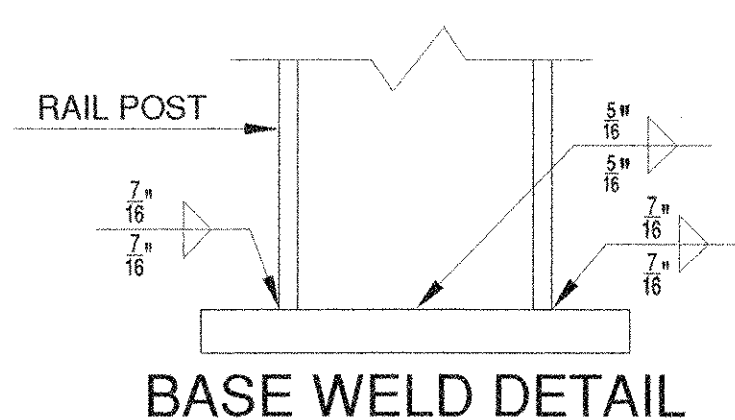
BRIDGE RAILING ELEVATION



RAIL POST ANCHORAGE

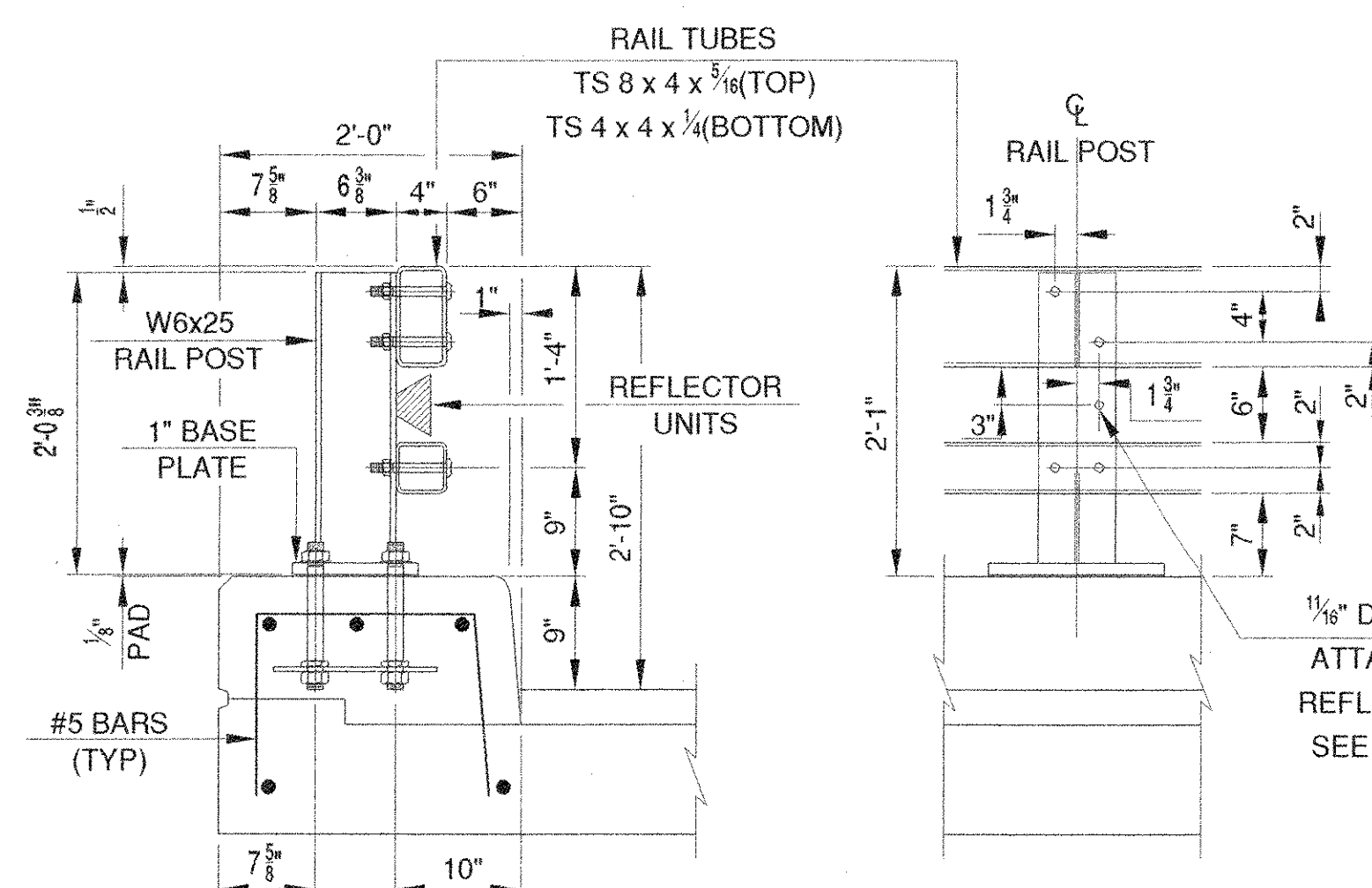


CURB REINFORCING PLAN



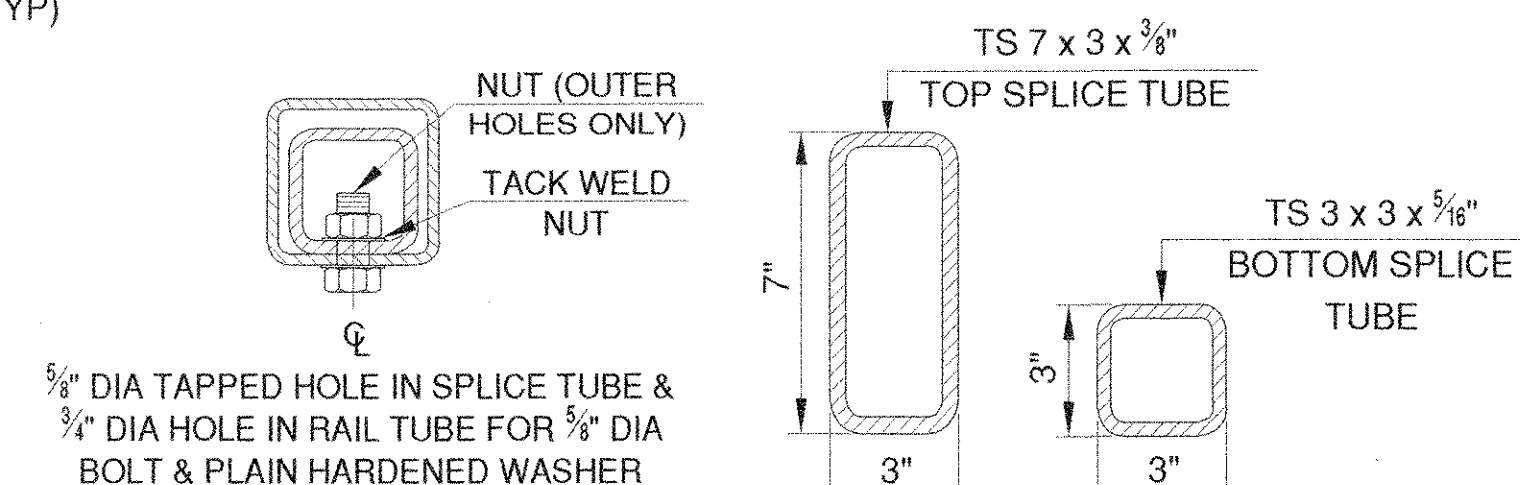
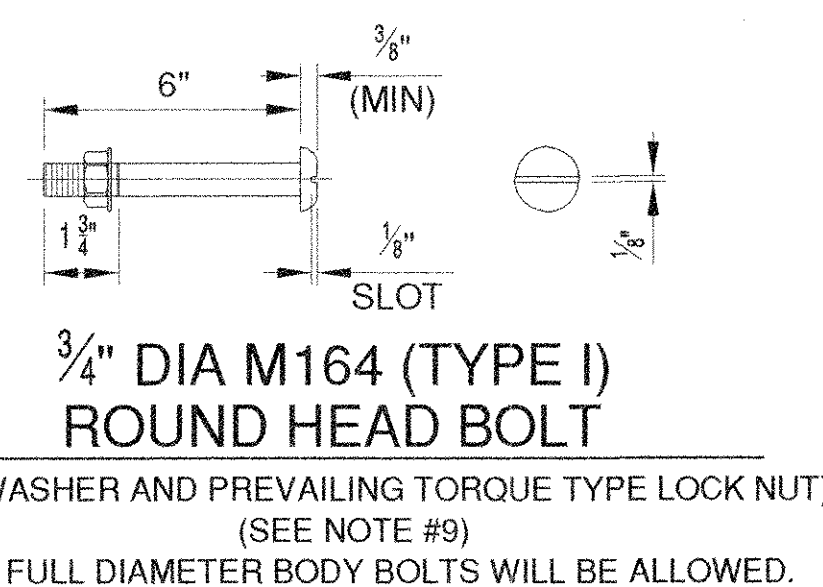
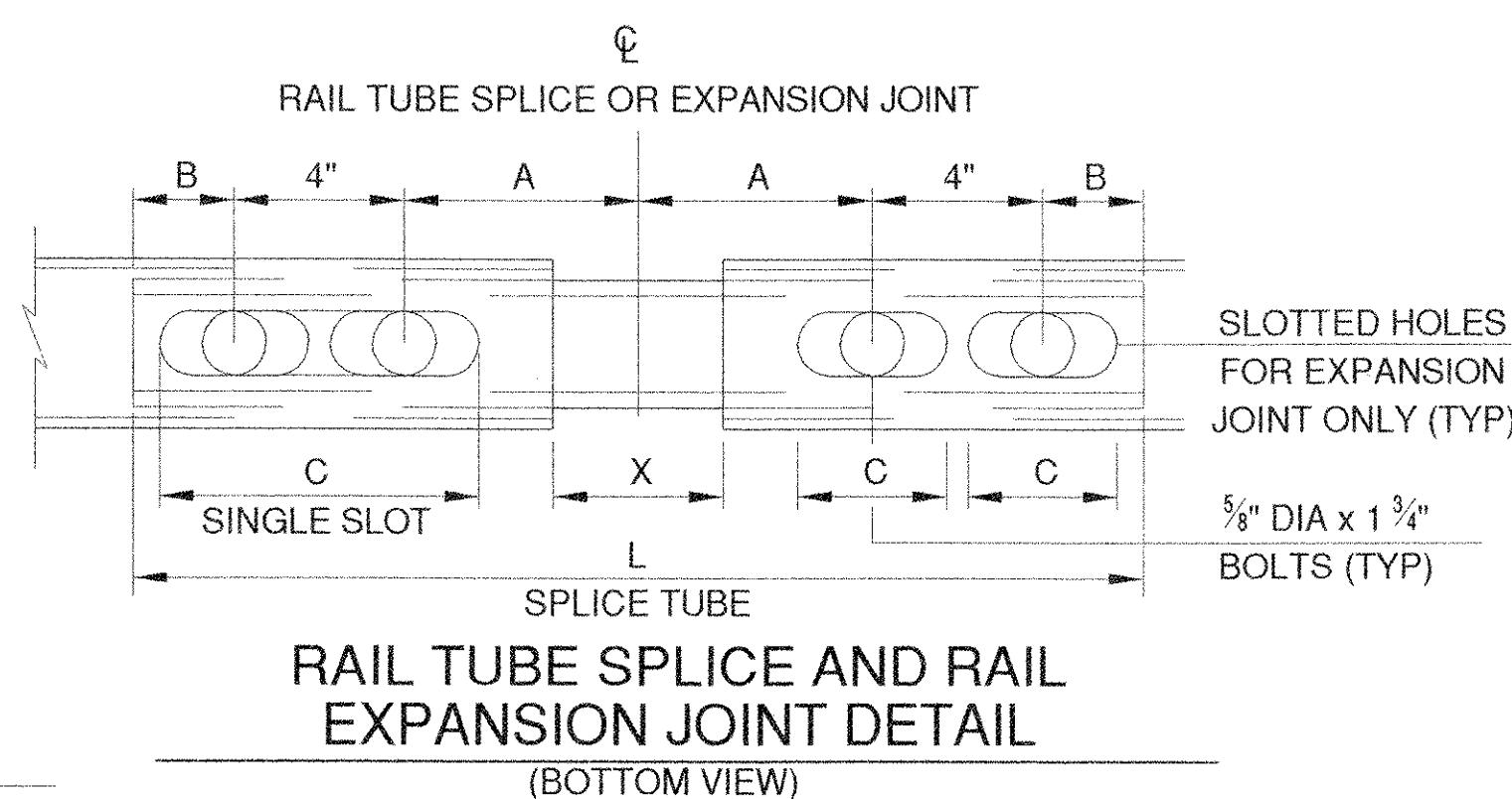
EXPANSION JOINT SECTION

FOR DETAILS NOT SHOWN, SEE "RAIL TUBE SPLICE SECTION."



TYPICAL SECTION

ELEVATION



RAIL TUBE SPLICE SECTION

BRIDGE RAILING - NETC 2 RAIL

NOTES

- ALL WORK AND MATERIALS SHALL CONFORM TO THE PROVISIONS OF SECTION 525, RAILINGS OF THE STANDARD SPECIFICATION FOR CONSTRUCTION.
- TUBING AND POSTS SHALL MEET THE REQUIREMENTS OF SECTION 732, "RAILING MATERIALS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION" EXCEPT THE DROP-WEIGHT TEAR TEST IN SECTION 732 SHALL NOT APPLY TO THE STRUCTURAL TUBING IN THIS STANDARD.
- ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 1/8" RADIUS AND BE FREE OF BURRS.
- RAIL POSTS SHALL BE SET NORMAL TO GRADE.
- SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO (2) RAIL POSTS AND PREFERABLY TO AT LEAST FOUR (4) POSTS.
- RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING A SUPERSTRUCTURE EXPANSION JOINT. EXPANSION JOINT WIDTH SHALL BE "X" AT 45°F AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
- ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111(A123), EXCEPT THAT HARDWARE SHALL MEET THE REQUIREMENTS OF AASHTO M232(A153).
- RAIL POSTS ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
- RAIL TUBES SHALL BE ATTACHED USING 3/4" FULL DIAMETER BODY AASHTO M164 (TYPE I)(A325-1)ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE TUBE. HOLES IN POSTS SHALL BE 1/8" LARGER THAN THE BOLT SIZE.
- HOLES IN RAILS FOR RAIL TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.
- IF THERE IS A CONFLICT BETWEEN THESE STANDARD DETAILS AND THE DESIGN, THE REQUIREMENTS OF THE DESIGN DRAWINGS SHALL BE FOLLOWED.
- ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.
- THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH THE PROVISION OF 506.04, SHOP DRAWINGS. ALL WELDING SHALL CONFORM WITH SECTION 506.10.
- RAIL POSTS AND BASE PLATES SHALL BE TESTED FOR IMPACT PROPERTIES IN ACCORDANCE WITH ASTM A-370 CHARPY IMPACT TESTING USING TYPE A SPECIMEN.

MATERIALS

RAIL TUBES.....ASTM A500, GRADE B OR ASTM A501
RAIL POSTS AND BASE PLATES.....ASTM A709A709M, GRADE 50
ALL OTHER SHAPES AND PLATES.....ASTM A709/A709M, GRADE 36
ANCHOR STUDS.....ASTM A449
ALL OTHER BOLTS (UNLESS NOTED).....AASHTO M164, TYPE I(A325-1)

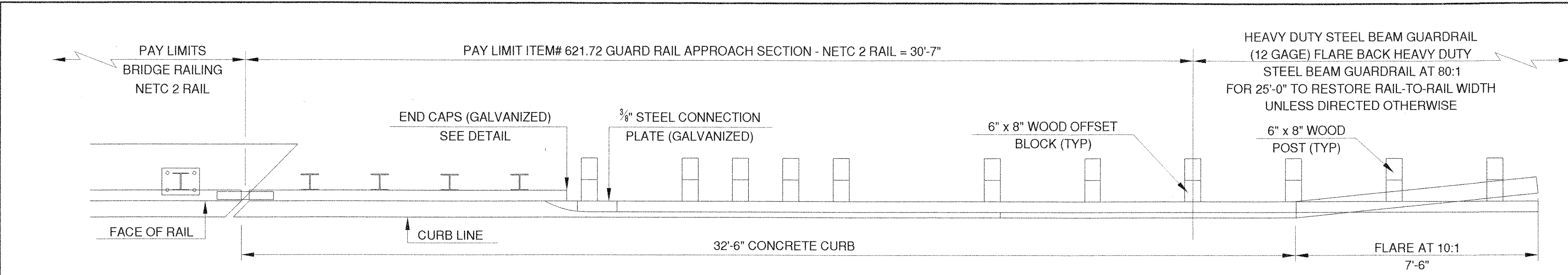
NUTS FOR AASHTO M164(A325)BOLTS AND FOR ANCHOR STUDS SHALL COMPLY WITH AASHTO M291 (ASTM A563).

WASHERS SHALL COMPLY WITH AASHTO M293 (ASTM F436) SPECIFICATIONS.

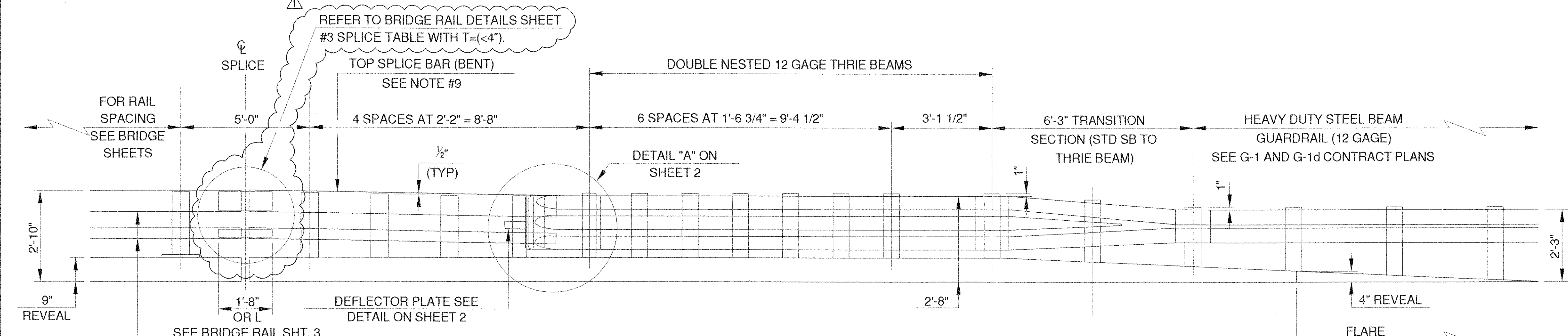
1/8" PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.01 OR 731.02.

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CK'D BY: WTF CK'D BY: WTF
MAY 11 2006
RESUBMIT: APPROVED: X
BY: DATE: 05/10/06

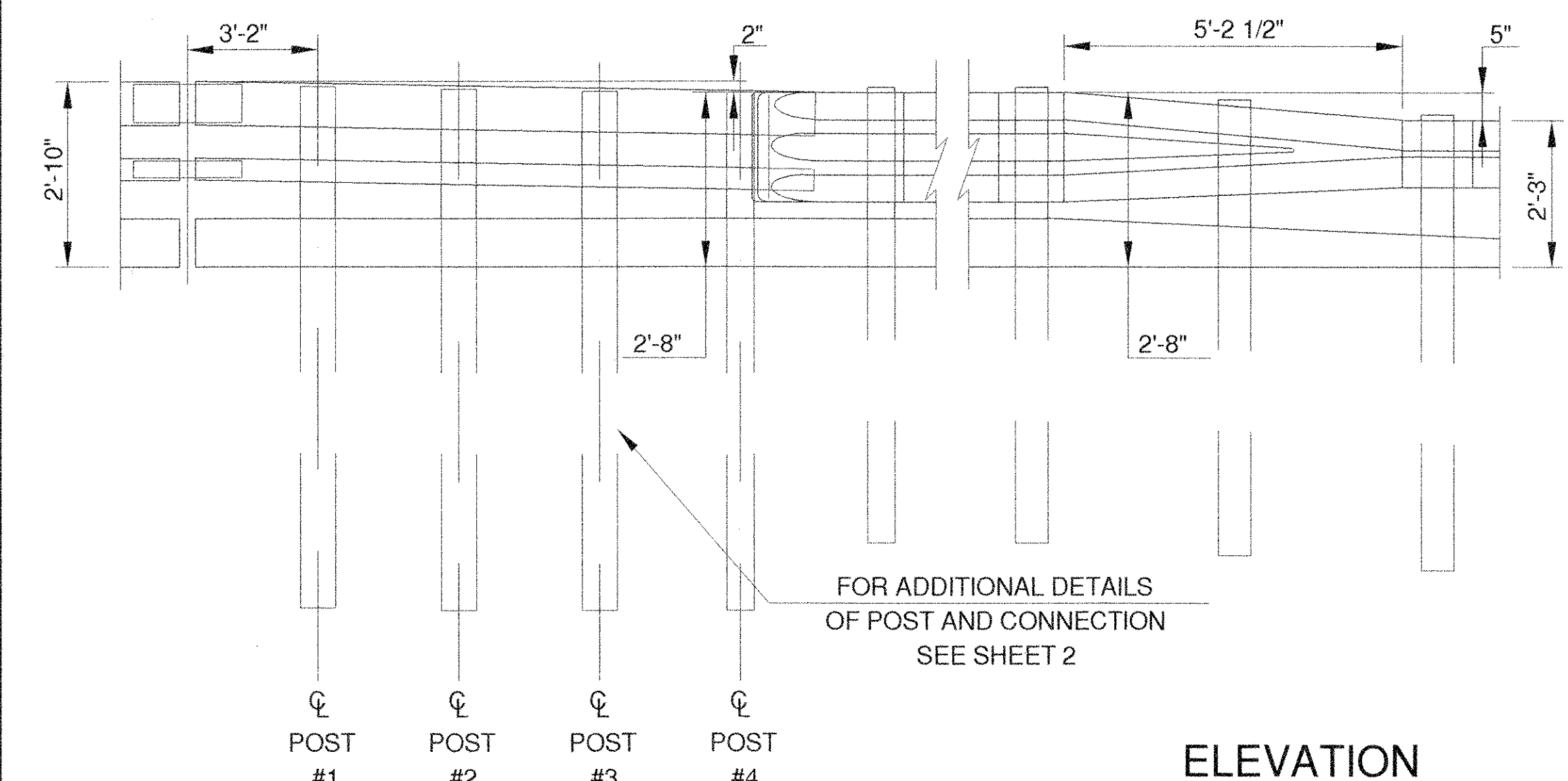
REV.	DATE	DESCRIPTION	DRAWN BY:	DATE	CHECKED BY:	SHEET NO.
			THW	2/6/06	DKK	3 OF 3
			BRIDGE RAILING DETAILS			
			STATE OF VERMONT AGENCY OF TRANSPORTATION			
			VT. 9 (BR. 11) OVER ROARING BRANCH			
			IN THE TOWN OF WOODFORD			
			CONT. NO. BHF010-1(29)			
			GEN. CONT. RENAUD BROTHERS, INC.			
			ERECTOR: RENAUD BROTHERS, INC.			
			FABRICATOR: PH. (315)736-8312			
			DI HIGHWAY SIGN & STRUCTURE CORPORATION			
			P.O. BOX 123(40 GREENMAN AVE.)NEW YORK MILLS, N.Y. 13417			
			JOB NO.			
			R15-02			



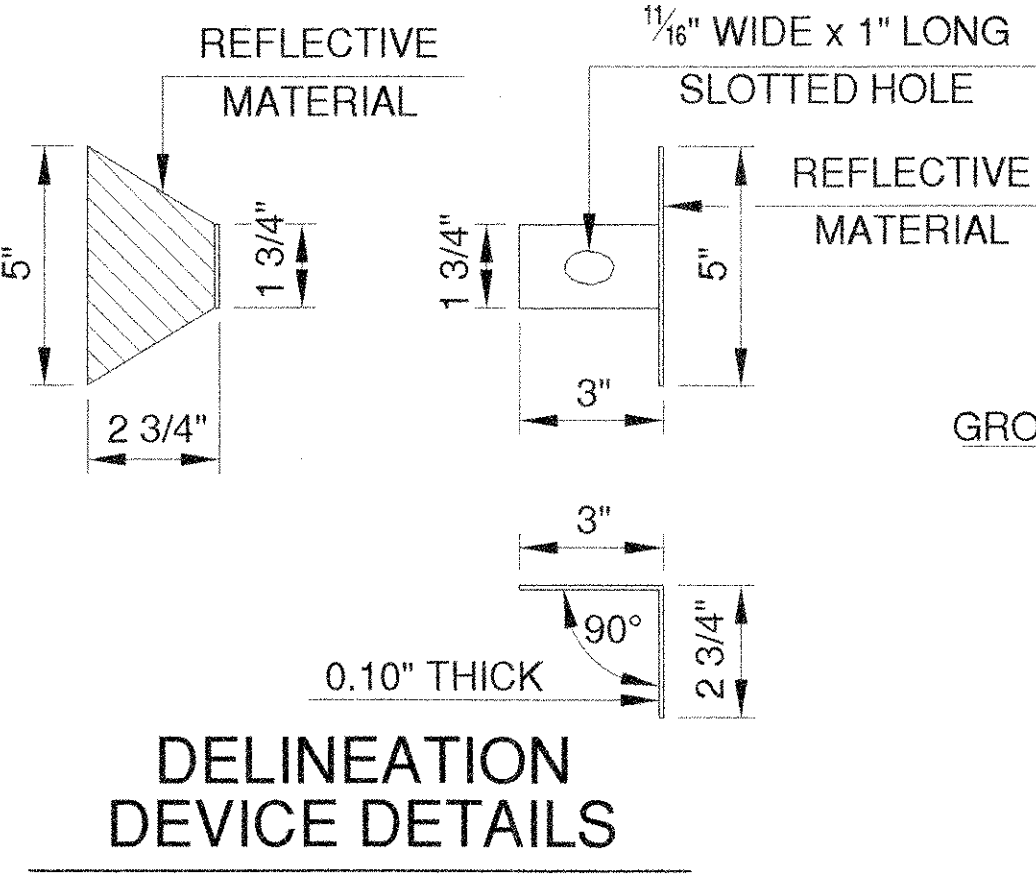
RAILING TRANSITION PLAN



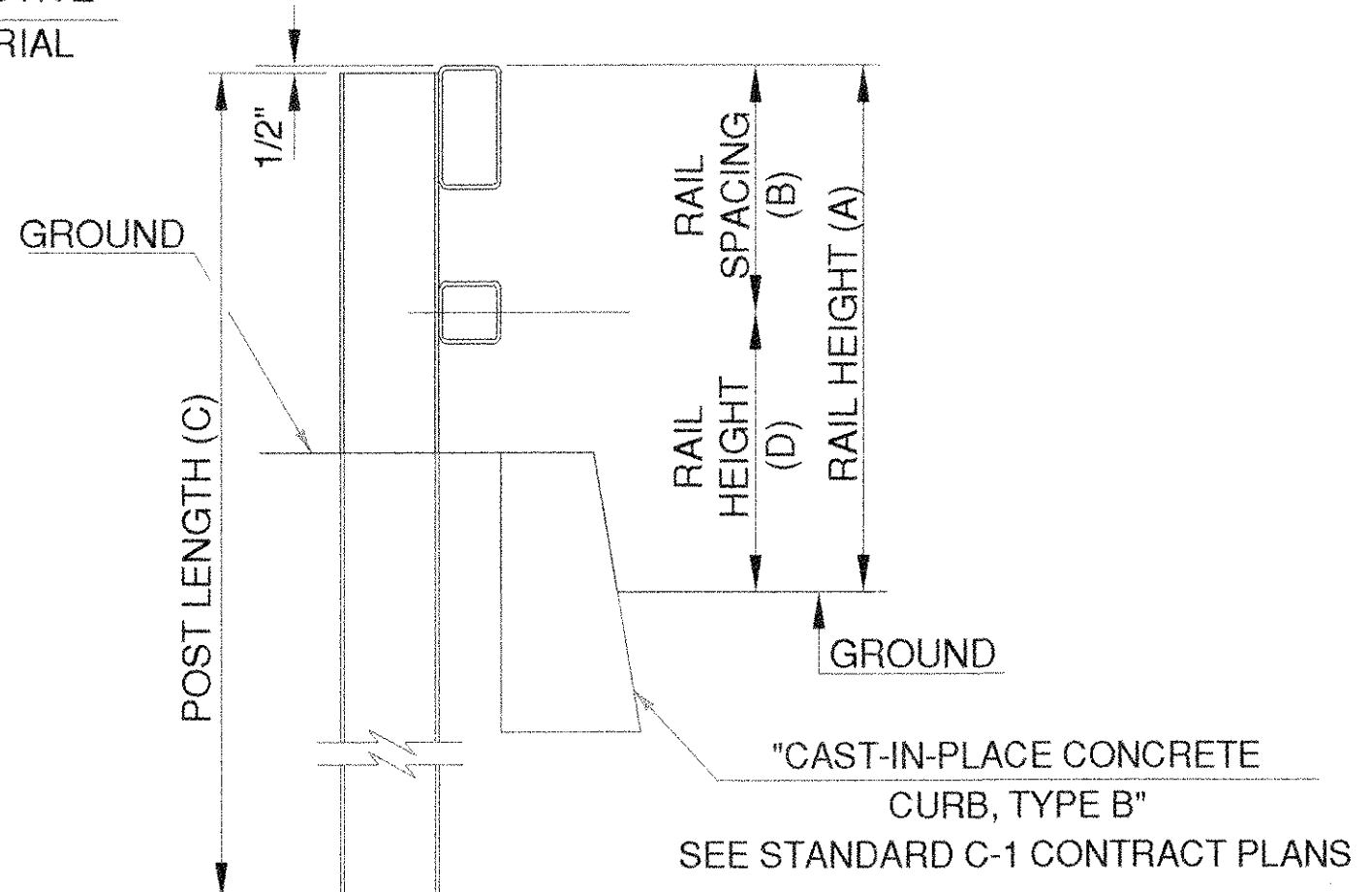
RAILING TRANSITION ELEVATION



ELEVATION



DELINEATION DEVICE DETAILS



TYPICAL SECTION

POST NUMBER	RAIL HEIGHT (A)	RAIL SPACING (B)	POST LENGTH (C)	RAIL HEIGHT (D)
1	2'-9 1/2"	1'-3 3/4"	8'-0"	1'-5 3/4"
2	2'-9"	1'-3 1/2"	8'-0"	1'-5 1/2"
3	2'-8 1/2"	1'-3 1/8"	8'-0"	1'-5 1/8"
4	2'-8"	1'-2 7/8"	8'-0"	1'-5 1/8"

BRIDGE RAILING - NETC 2 RAIL - THRIE BEAM APPROACH RAIL

BILL OF MATERIAL

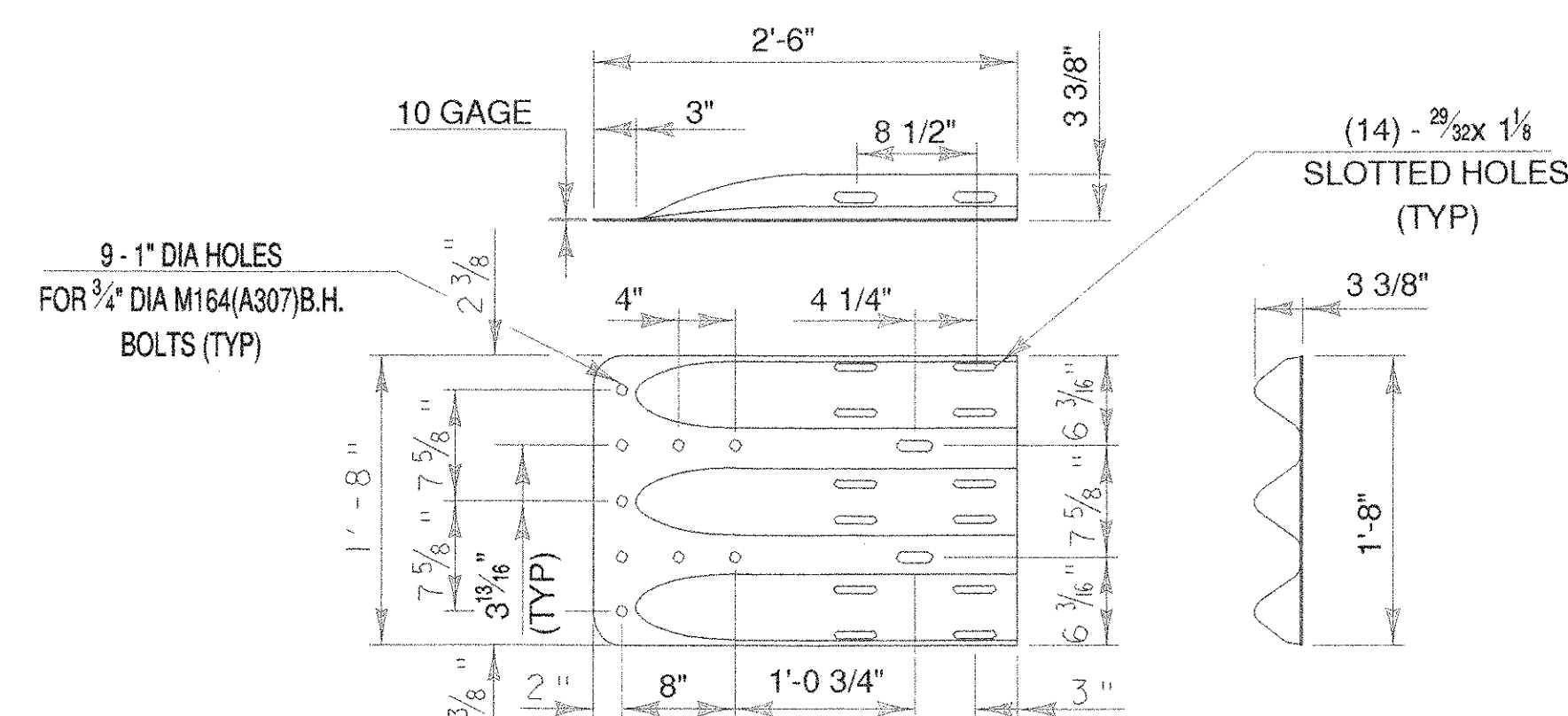
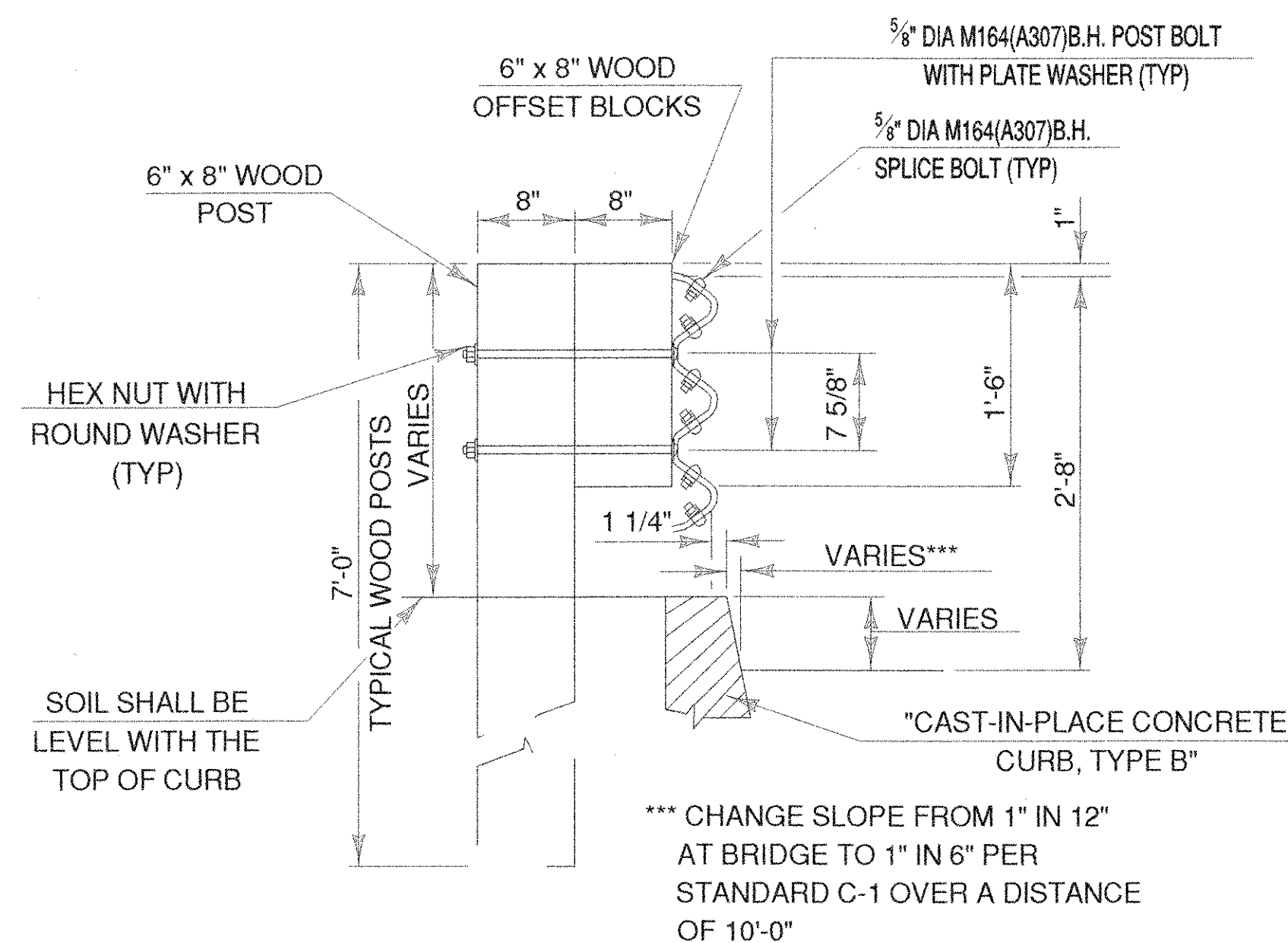
MARK OR USE	QTY.	SHAPE (AMERICAN)	SHAPE		REMARKS
			FT.	IN.	
ITEM NO. 621.72					
POST	16	W6X25	8	0	M270 GR.250(A36)
WOOD POST	36	6"x8"	7	0	728.01(a)SO. PINE
OFFSET BLOCK	36	6"x8"	1	6	728.01(a)SO. PINE
RAIL	4	T.S. 8"x4"x5/16" WALL	10	10 3/4	A500 GR. B/WEXP. SLOTS @ 1 END ONLY.
RAIL	4	T.S. 4"x4"x1/4" WALL	10	10 3/4	A500 GR. B/WEXP. SLOTS @ 1 END ONLY.
TOP DRIVE CAPS	4	PL. 1/4"x4"		8	A36 W/4 PL. 1/4"x1"x1"
BTM DRIVE CAPS	4	PL. 1/4"x4"		4	A36 W/4 PL. 1/4"x1"x1"
TRANS. RAIL	8	12 GA. THRIE BEAM	13	6 1/2	M180 CL. A TYPE II
TRANS. RAIL	4	12 GA. THRIE BEAM	7	3 1/2	M180 CL. A TYPE II
END SHOE	4	10 GA. THRIE BEAM	2	6	M180 CL. A TYPE II
BACKUP PL.	4	PL. 3/8"x20"	2	3	A36
DEFLECTOR PL.	4	PL. 3/8"x4"	1	0 1/2	A36
SILVER DELIN.	4	.10"x5"		5 3/4	B209 ALLOY 5052-H32 REFLECTIVE D4956
BOLT	4	3/4"Ø BTN. HEADED BOLT		1 1/2	A307 W/N, FW
BOLT	92	3/4"Ø CGE. BOLT		6	A307 W/N, LW
BOLT	72	5/8"Ø BTN. HEADED BOLT	1	5	A307 W/N, PLATE WASHER
CORR. SPL. BOLT	96	5/8"Ø CORR. SPL. BOLT		2	A307 W/N
CORR. SPL. BOLT	32	5/8"Ø CORR. SPL. BOLT		1 1/4	A307 W/N
BOLT	4	5/8"Ø HEX HEAD		1 1/2	A325-1 W/N, LW

NOTES

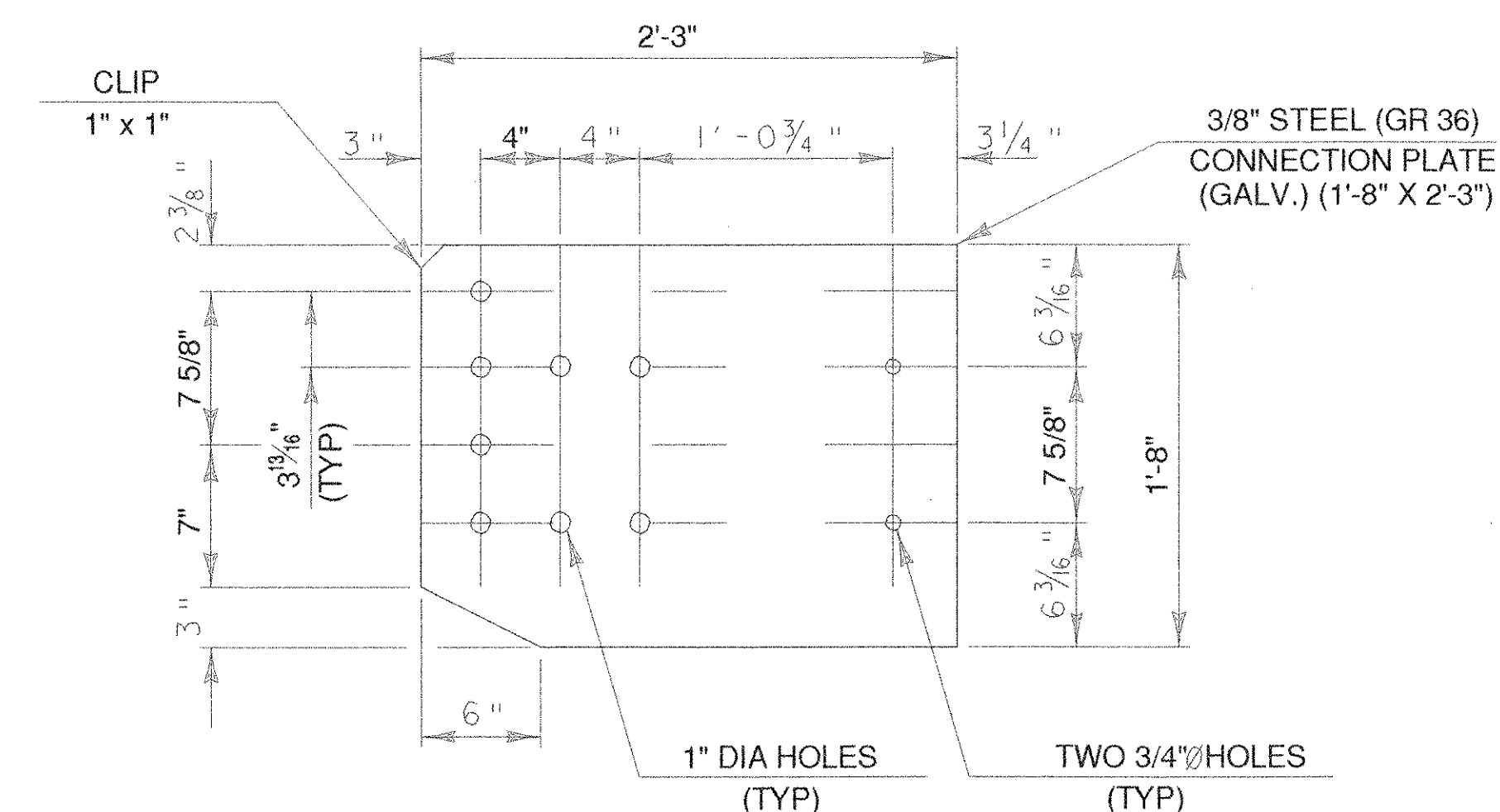
- REFER TO BRIDGE RAIL SHEET 3 FOR ADDITIONAL DETAILS, NOTES AND MATERIAL SPECIFICATIONS.
- PAYMENT FOR GUARD RAIL APPROACH SECTION - NETC 2 RAIL SHALL INCLUDE THE TERMINAL CONNECTOR, THE CONNECTION PLATE, THE DEFLECTOR PLATE, RAIL, POSTS, BLOCKS AND ATTACHMENT HARDWARE.
- THE REFLECTORIZED ALUMINUM DELINEATION IS TO BE ERECTED EVERY 30'(OR CLOSEST POST) WITH A 5/8" DIAMETER BOLT. DELINEATORS SHALL MEET SPECIFICATION REQUIREMENTS FOR ASTM B209 ALLOY 5052-H32.
- REFLECTIVE MATERIAL SHALL MEET REQUIREMENTS OF SUBSECTION 750.08 AND SHALL BE OF ENCAPSULATED LENS SILVER OR AMBER. AMBER IS TO BE INSTALLED ON THE DRIVER'S LEFT AND SILVER ON THEIR RIGHT.
- ON BRIDGES WITH A SIDEWALK, DELINEATORS ARE NOT TO BE INSTALLED ON THE SIDEWALK SIDE OF THE BRIDGE (I.E. DELINEATORS INSTALLED ONLY ON THE CURB SIDE AND ON THE APPROACH ON THE CURB SIDE). PAYMENT SHALL BE SUBSIDIARY TO ALL OTHER ITEMS.
- ALL APPROACH RAIL SPLICES SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW.
- ALL BRIDGE APPROACH RAIL MATERIALS, DIMENSION SIZES AND NOTES SHALL BE THE SAME AS THOSE OF THE BRIDGE RAIL, UNLESS OTHERWISE NOTED.
- CARRIAGE BOLTS SHALL BE AASHTO M164(A325-1)AND NUTS SHALL BE ASTM A563 GRADE A OR BETTER (GALVANIZED).
- WELD TOP SPLICE BAR TO FIT BEND, IF REQ'D. USE COMPLETE PENETRATION WELD (B-U2).
- THE CONCRETE CURB WILL BE PAID FOR AS ITEM 616.28, "CAST-IN-PLACE CONCRETE CURB, TYPE B." PAY LIMIT FOR 2 RAIL= 122.3333FT. (APPROX.)

REVISED 5/3/06 PER PROJECT MANAGER COMMENTS.	DATE: 3/28/06	CHECKED BY: DCK	SHEET NO. 1 OF 2
DRAWN BY: THW			
TRANSITION RAILING LAYOUT			
STATE OF VERMONT AGENCY OF TRANSPORTATION VT. 9 (BR. 11) OVER ROARING BRANCH IN THE TOWN OF WOODFORD			
CONT. NO. BHF010-1(29)			
GEN. CONT. RENAUD BROTHERS, INC.			
ERECTOR: RENAUD BROTHERS, INC.			
FABRICATOR: PH. (315)736-8312 DI HIGHWAY SIGN & STRUCTURE CORPORATION P.O. BOX 123(40 GREENMAN AVE.)NEW YORK MILLS, N.Y. 13417			
JOB NO. R15-02			

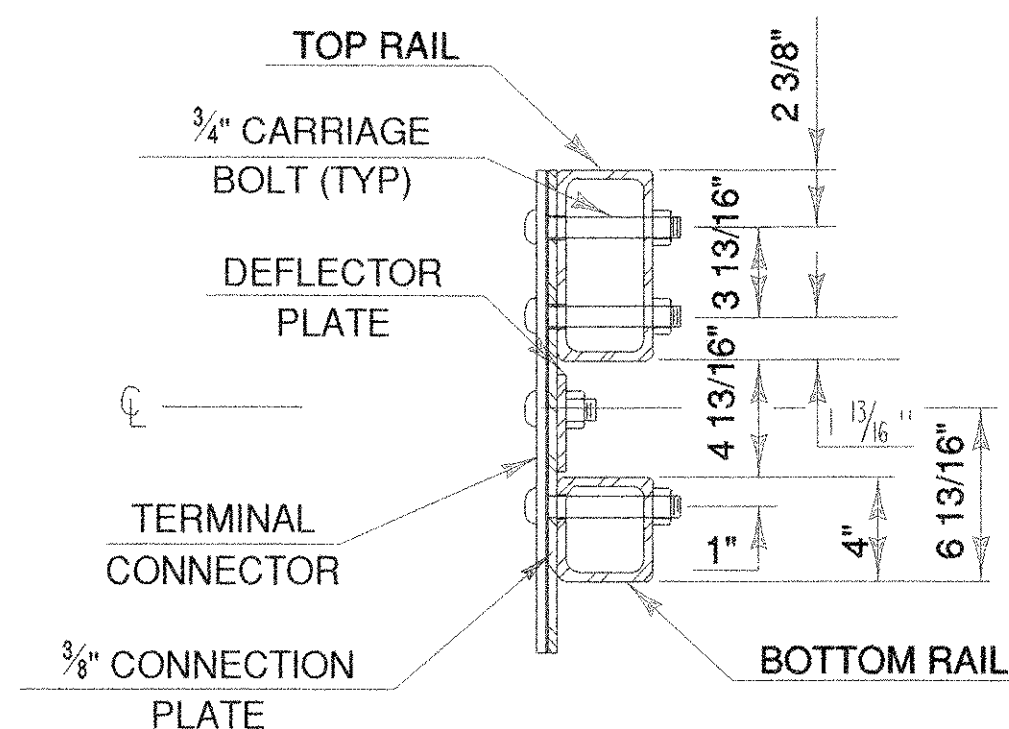
ALL DIMENSIONS MUST BE FIELD VERIFIED PRIOR TO FABRICATION BY CONTRACTOR



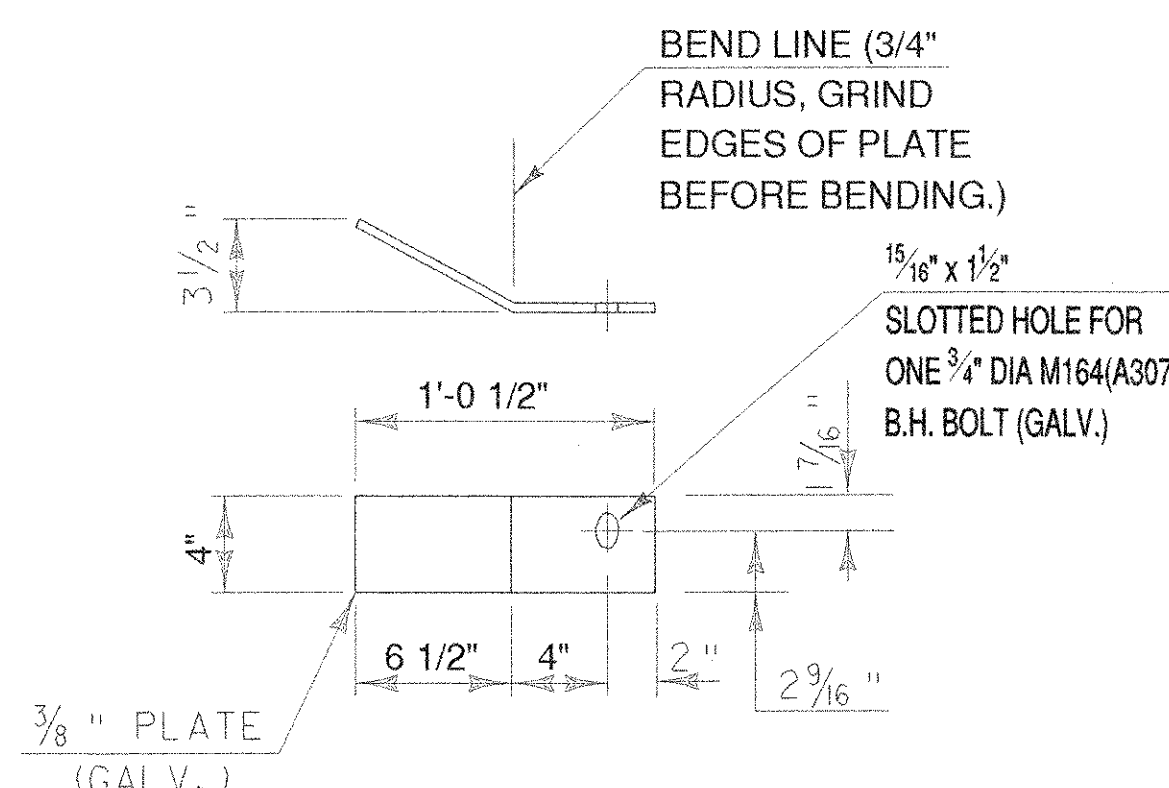
THRIE-BEAM TERMINAL CONNECTOR



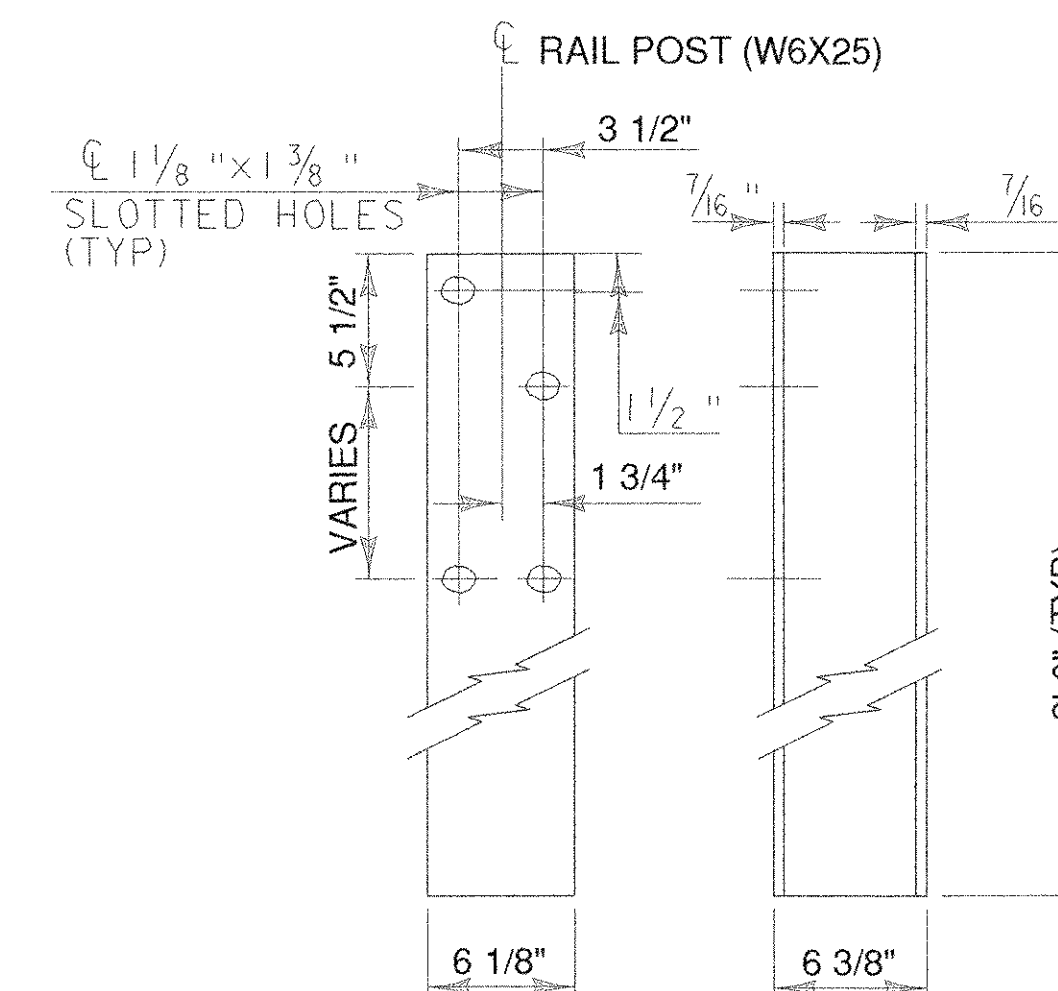
CONNECTION PLATE



SECTION C-C
(CONNECTION PLATE)

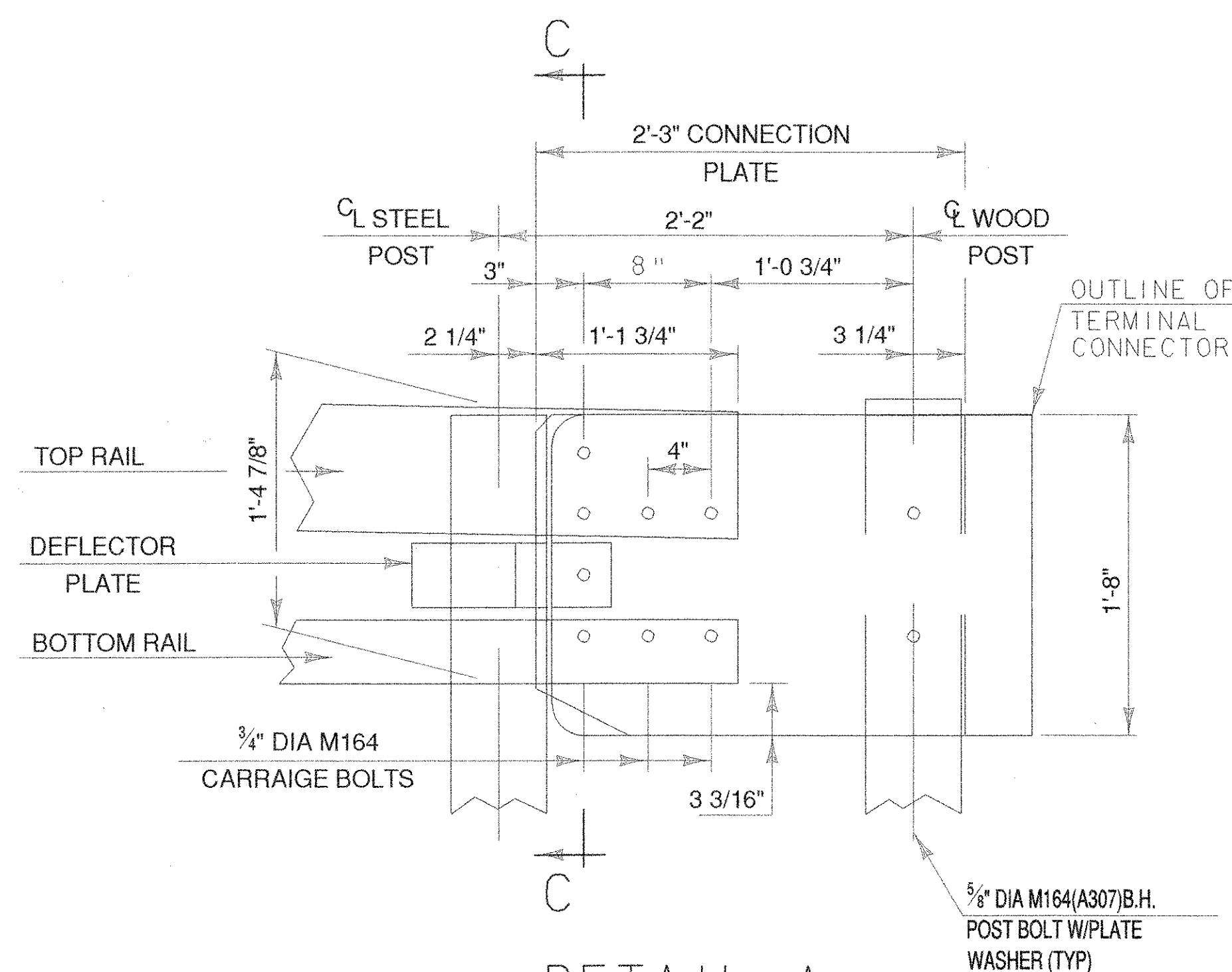


DEFLECTOR
PLATE DETAIL

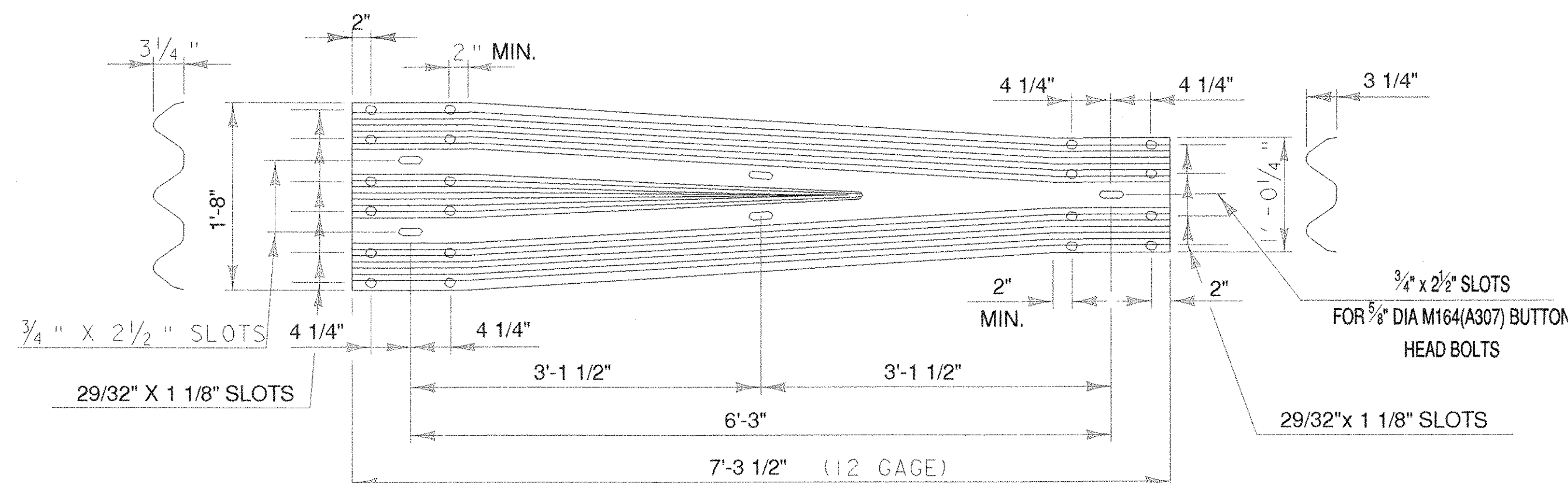


FRONT VIEW SIDE VIEW

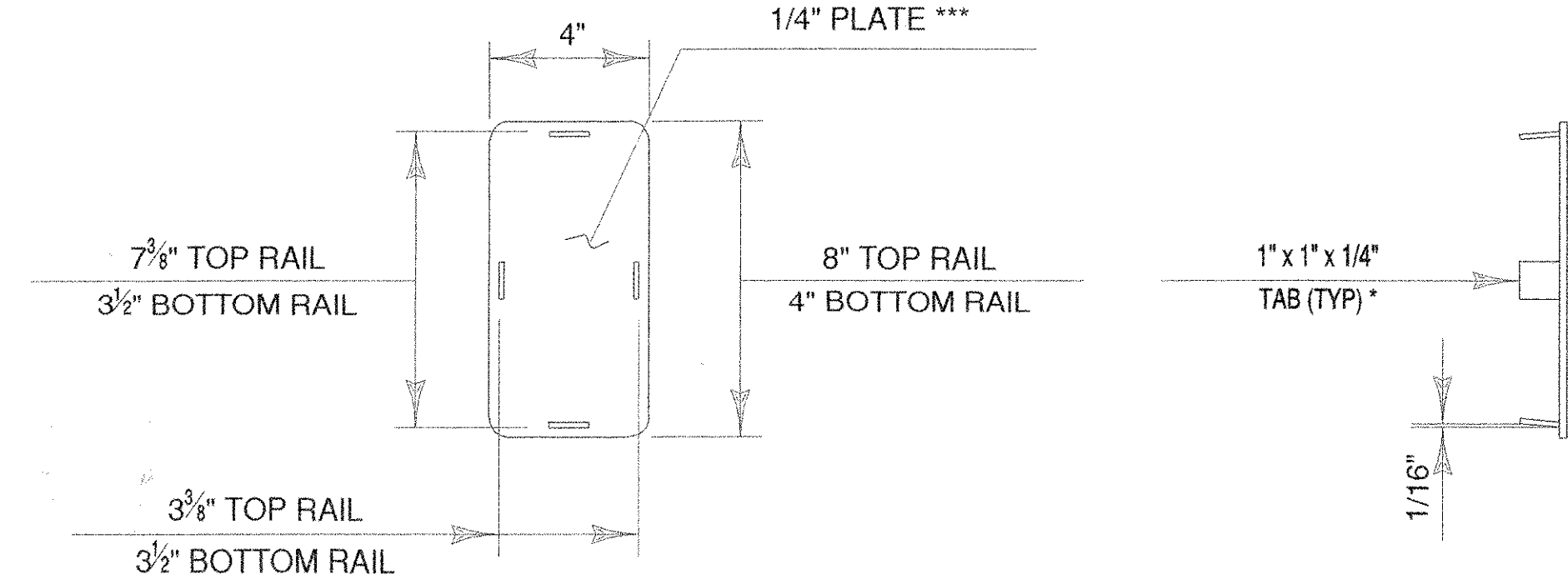
RAIL POST



DETAIL A



THRIE-BEAM TO STD SB
TRANSITION SECTION



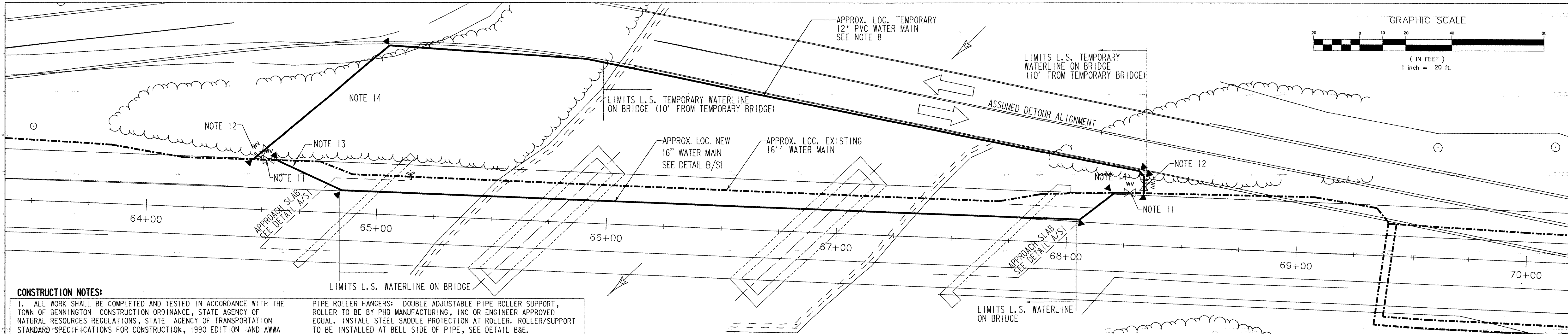
END CAP DETAIL

- * WELD TABS TO END CAP PLATE IN TAPERED POSITION SO CAP CAN BE JAMMED INTO END OF RAIL TUBE.
- ** ROUND CORNERS 1/2" RADIUS (TYP)

RECEIVED
CKD BY *WDF* CKD BY
MAY 11 2006
RESUBMIT APPROVED *X*
BY DATE 05/10/06

ALL DIMENSIONS MUST BE FIELD VERIFIED
PRIOR TO FABRICATION BY CONTRACTOR

REV.	DATE	DESCRIPTION	DRAWN BY:	DATE	CHECKED BY:	SHEET NO.
			THW	3/28/06	DKK	2 OF 2
TRANSITION RAILING DETAILS STATE OF VERMONT AGENCY OF TRANSPORTATION VT. 9 (BR. 11) OVER ROARING BRANCH IN THE TOWN OF WOODFORD						
CONT. NO. BHF010-1(29) GEN. CONT. RENAUD BROTHERS, INC. ERECTOR: RENAUD BROTHERS, INC.						
FABRICATOR: PH. (315) 736-8312 DI HIGHWAY SIGN & STRUCTURE CORPORATION P.O. BOX 123(40 GREENMAN AVE.) NEW YORK MILLS, N.Y. 13417						JOB NO. R15-02



CONSTRUCTION NOTES:

- ALL WORK SHALL BE COMPLETED AND TESTED IN ACCORDANCE WITH THE TOWN OF BENNINGTON CONSTRUCTION ORDINANCE, STATE AGENCY OF NATURAL RESOURCES REGULATIONS, STATE AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, 1990 EDITION AND AWWA WATERLINE CONSTRUCTION STANDARDS C600 AND C652.
- EXISTING UTILITIES ARE APPROXIMATE ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY ALL UTILITY CONFLICTS PRIOR TO THE PLACEMENT OF PIPE. ALL DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER. THE CONTRACTOR SHALL CONTACT "DIG SAFE" (800.225.4977) PRIOR TO ANY CONSTRUCTION.
- THE CONTRACTOR SHALL PROTECT AND SUPPORT EXISTING UTILITIES (i.e. POWER POLES, SEWER LINES, ETC.) AS NECESSARY DURING CONSTRUCTION. UTILITY COMPANIES SHALL BE CONTACTED BY THE CONTRACTOR WHEN CONSTRUCTION IS INITIATED IN THE VICINITY OF THEIR UTILITIES. THE CONTRACTOR SHALL COMPACT ALL MATERIAL UNDER EXISTING UTILITIES TO PREVENT SETTLEMENT. SPECIAL CARE AND COORDINATION SHALL BE OBSERVED WHILE WORKING NEAR POWER POLE. CONTRACTOR TO COORDINATE AND PAY FOR ANY NECESSARY UTILITY COMPANY CHARGES FOR TEMPORARY BRACING OF POLE.
- THE CONTRACTOR SHALL MAINTAIN AND PROTECT ALL FOUNDATIONS, ROADS, TREES AND VEGETATION DURING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR/RESTORE ALL DAMAGE TO EXISTING UTILITIES, ROADS/DRIVES, WALKWAYS AND WALLS AS A DIRECT OR INDIRECT RESULT OF THE CONSTRUCTION AT NO COST TO THE OWNER.
- INSTALL EXPANSION JOINT NEAR BRIDGE WEST END ABUTMENT TO ALLOW FOR MAINTENANCE ACCESS. JOINT TO BE "EX-TEND 200" SINGLE BALL TYPE AS MANUFACTURED BY EBAA IRON SALES (817-629-1731) OR ENGINEER APPROVED EQUAL. SUPPORT JOINT TO MANUFACTURER'S INSTALLATION RECOMMENDATIONS.
- PIPING MATERIALS TO BE ATLANTIC STATES OR APPROVED EQUAL, CLASS 52 MECHANICAL JOINT DUCTILE IRON PIPE WITH MEGALUG RESTRAINTS. ALL PIPE TO BE MECHANICALLY RESTRAINED AT JOINTS.

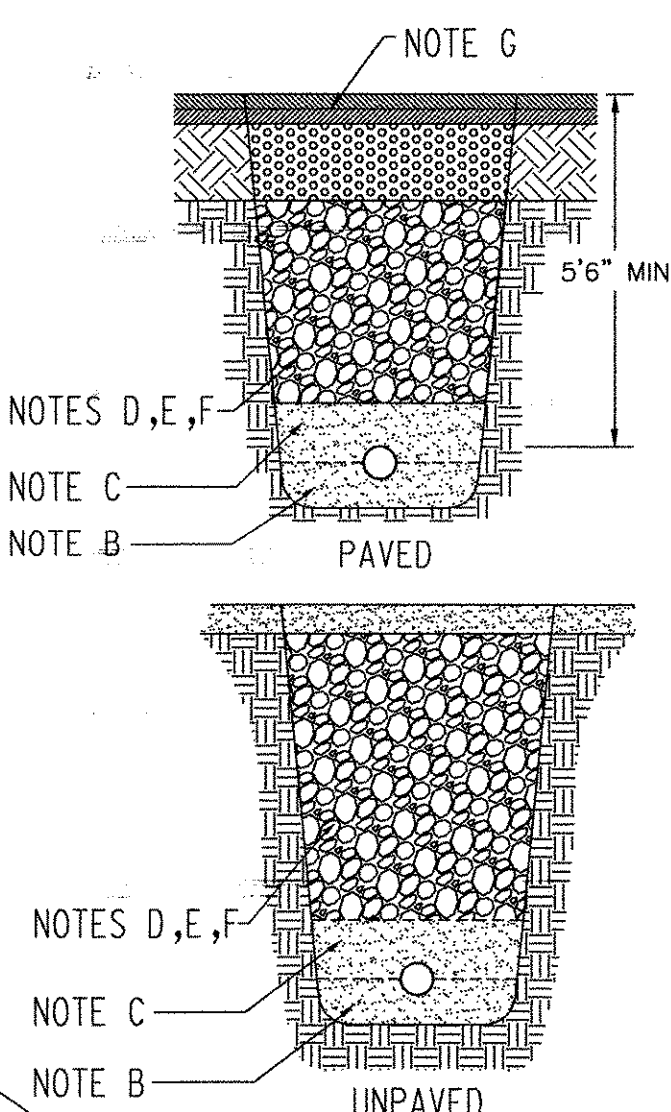
PIPE INSULATION: 2" THICKNESS POLYISOCYANURATE, 'TRYMER 2000'

PIPE INSULATION JACKET: 'PERMA-JAC SX' PVC JACKET ON MAIN PIPE AND CORRUGATED ALUMINUM JACKET AT BRIDGE DIAPHRAGM LOCATIONS.

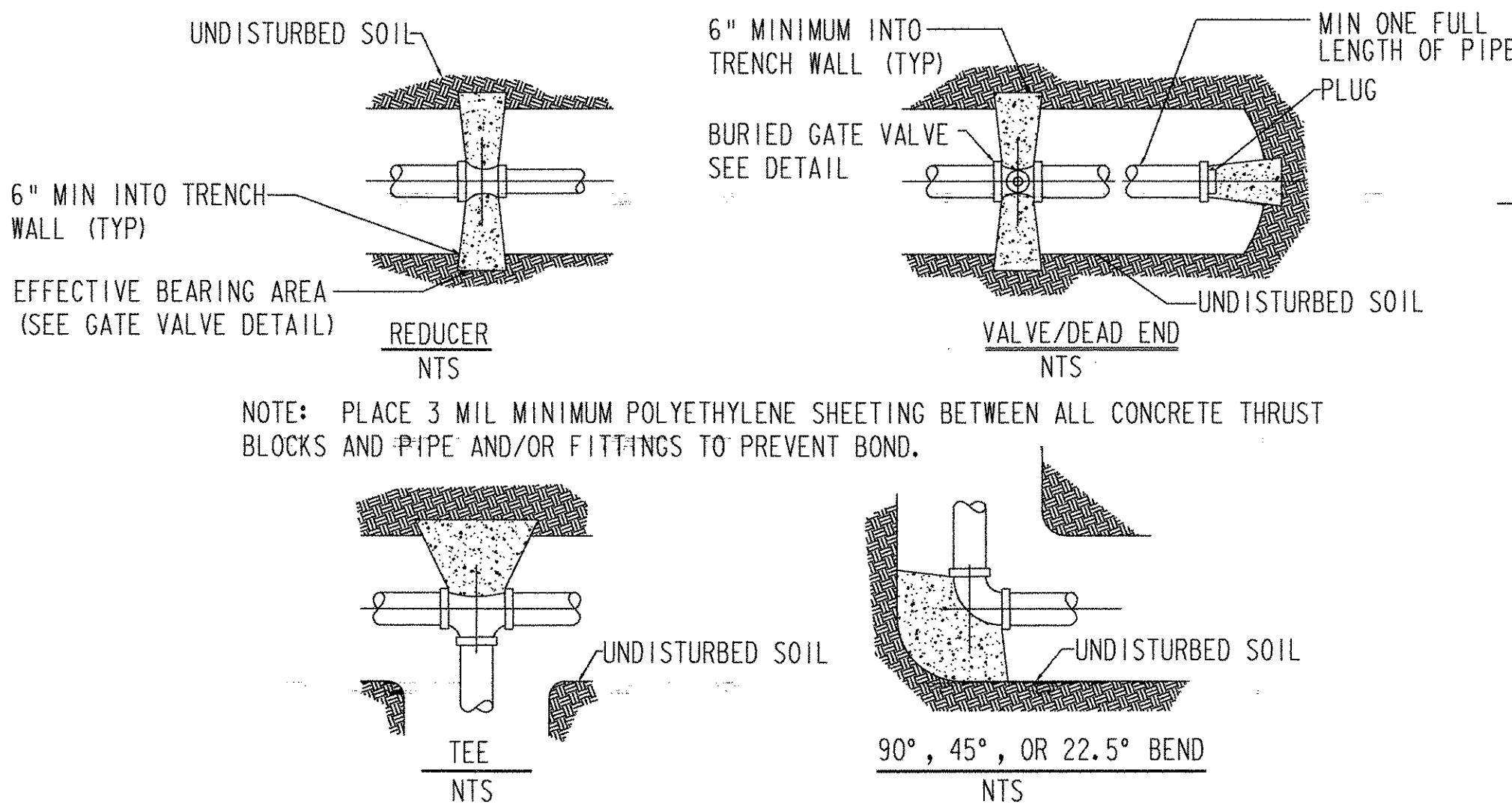
- PIPE ROLLER HANGERS: DOUBLE ADJUSTABLE PIPE ROLLER SUPPORT, ROLLER TO BE BY PHD MANUFACTURING, INC OR ENGINEER APPROVED EQUAL. INSTALL STEEL SADDLE PROTECTION AT ROLLER. ROLLER/SUPPORT TO BE INSTALLED AT BELL SIDE OF PIPE, SEE DETAIL B&E.
- IF THERE ARE ANY CONFLICTS OR INCONSISTENCIES WITH THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR VERIFICATION BEFORE WORK CONTINUES ON THE ITEM IN QUESTION.
- CONTRACTOR TO DESIGN PVC WATERLINE AS PART OF TEMPORARY BRIDGE PROJECT. DESIGN WILL BE IN ACCORDANCE WITH TOWN OF BENNINGTON STATE AGENCY OF NATURAL RESOURCES AND AMERICAN WATER WORKS ASSOCIATION STANDARDS. TOWN ENGINEER TO APPROVE DESIGN PRIOR TO CONSTRUCTION. TEMPORARY WATERLINE TO BE INSULATED IF CONTRACTOR INTENDS TO MAINTAIN WATERLINE OVER WINTER. LUMP SUMP FOR WATERLINE ON BRIDGE TO START AND STOP 10' OFF TEMPORARY BRIDGE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE TOWN OF BENNINGTON OF ALL WORK WITHIN THE STREET RIGHT-OF-WAY. THE CONTRACTOR SHALL COORDINATE WITH THE TOWN FOR ALL STREET EXCAVATIONS AND WATER LINE CONNECTIONS. STATE-CERTIFIED FLAG PERSONS SHALL BE UTILIZED AT ALL TIMES WHENEVER WORK IS TO BE PERFORMED WITHIN ROADWAY LIMITS.
- CONTRACTOR SHALL CHLORINATE AND PRESSURE TEST NEW SEGMENT OF WATER PIPE PRIOR TO FINAL CONNECTION OF SYSTEM. TESTING SHALL BE IN ACCORDANCE WITH AWWA STANDARDS C600 AND C652.
- INSTALL IN LINE VALVE. INSTALLATION TO BE DONE LIVE. CONTRACTOR TO INSTALL ALL NEW PIPING FROM NEW IN LINE VALVE.
- INSTALL STAINLESS STEEL TAPPING SLEEVE AND 12" VALVE. NEW SLEEVE TO BE MODEL 3490AS BY POWER SEAL OR ENGINEER APPROVED EQUAL. AFTER PROJECT IS COMPLETED/TESTED/APPROVED BY TOWN CONTRACTOR TO INSTALL CAP ON VALVE AND ROD BACK TO SLEEVE/VALVE ASSEMBLY AND CLOSE VALVE.
- INSTALL "T" AND VALVE FOR FLUSHING. AFTER COMPLETION OF TESTING AND ACCEPTANCE BY TOWN/STATE CAP AND THRUST BLOCK "T".
- INSTALL TAPS FOR TESTING AND CHLORINATION AS REQUIRED. REVIEW LOCATIONS WITH TOWN PRIOR TO INSTALLATION.

INSTALLATION SPECIFICATIONS:

- MINIMUM BURIAL DEPTH 5'6" (4'-0" FOR SEWER) IF CONDITIONS PREVENT MINIMUM BURIAL DEPTH, ALL SECTIONS OF LINE LESS THAN MIN. DEPTH SHALL BE INSULATED WITH 1" THICKNESS RIGID FOAM INSULATION PER FOOT LESS THAN MINIMUM.
- BED PIPE IN 6" OF CRUSHED STONE (PASSING 1/2" BUT RETAINED ON #4 SIEVE) IF IN WET CONDITIONS. PIPE SHALL NOT BE LAID IN UNCOMPACTED SOIL OR IN WATER. IF IN LEDGE CONDITIONS, BED PIPE IN A MINIMUM OF 6" OF CLEAN SAND. DO NOT REST PIPE ON LEDGE ROCK.
- BACKFILL OVER PIPE W/ 12" MINIMUM SAND, COMPACTED ENTIRE WIDTH OF TRENCH. BACKFILL WITH BEDDING STONE TO 12" DEPTH IF IN WATER.
- REMAINDER OF BACKFILL TO BE SELECT EARTH OR BANK RUN GRAVEL NOT GREATER THAN 6" IN LARGEST DIMENSION. BACKFILL TO BE COMPACTED IN 6" LIFTS UNDER ROADS AND PAVED AREAS.
- BACKFILL SHALL CONSIST OF SUITABLE MATERIAL REMOVED FROM EXCAVATION, AND SHALL BE FREE OF CLODS, DEBRIS, FROZEN CHUNKS, PAVEMENT PIECES, LARGE STONES, ORGANIC MATERIAL OR ANY OTHER MATERIAL DEEMED UNSUITABLE BY THE ENGINEER.
- BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY IN ALL TRENCH EXCAVATIONS.
- EDGES OF PAVEMENT SHALL BE CUT PRIOR TO EXCAVATION TO PREVENT LIFTING OF REMAINING PAVEMENT, AND FOLLOWING EXCAVATION PRIOR TO PAVEMENT PATCHING. PAVEMENT PATCH TO CONSIST OF 2" BASE, 1" TOPCOAT OVER COMPACTED BACKFILL.



TYPICAL TRENCH DETAILS
NTS



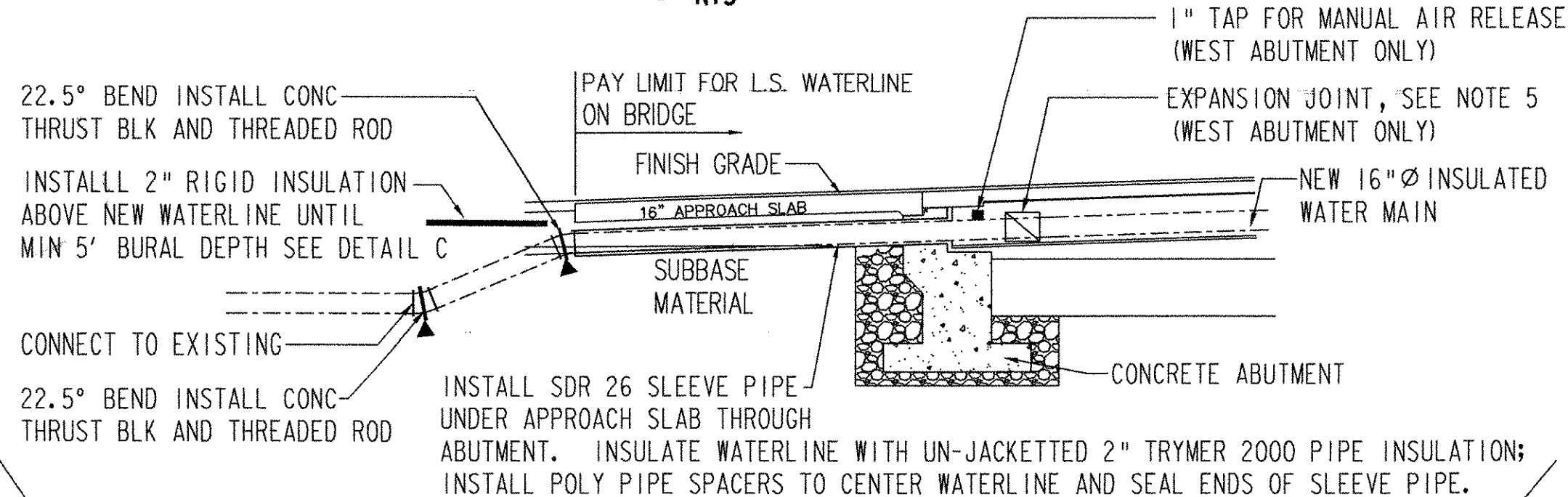
NOTE: PLACE 3 MIL MINIMUM POLYETHYLENE SHEETING BETWEEN ALL CONCRETE THRUST BLOCKS AND PIPE AND/OR FITTINGS TO PREVENT BOND.

MINIMUM BEARING SURFACE AREA OF CONCRETE THRUST BLOCKS (IN SQUARE FEET)

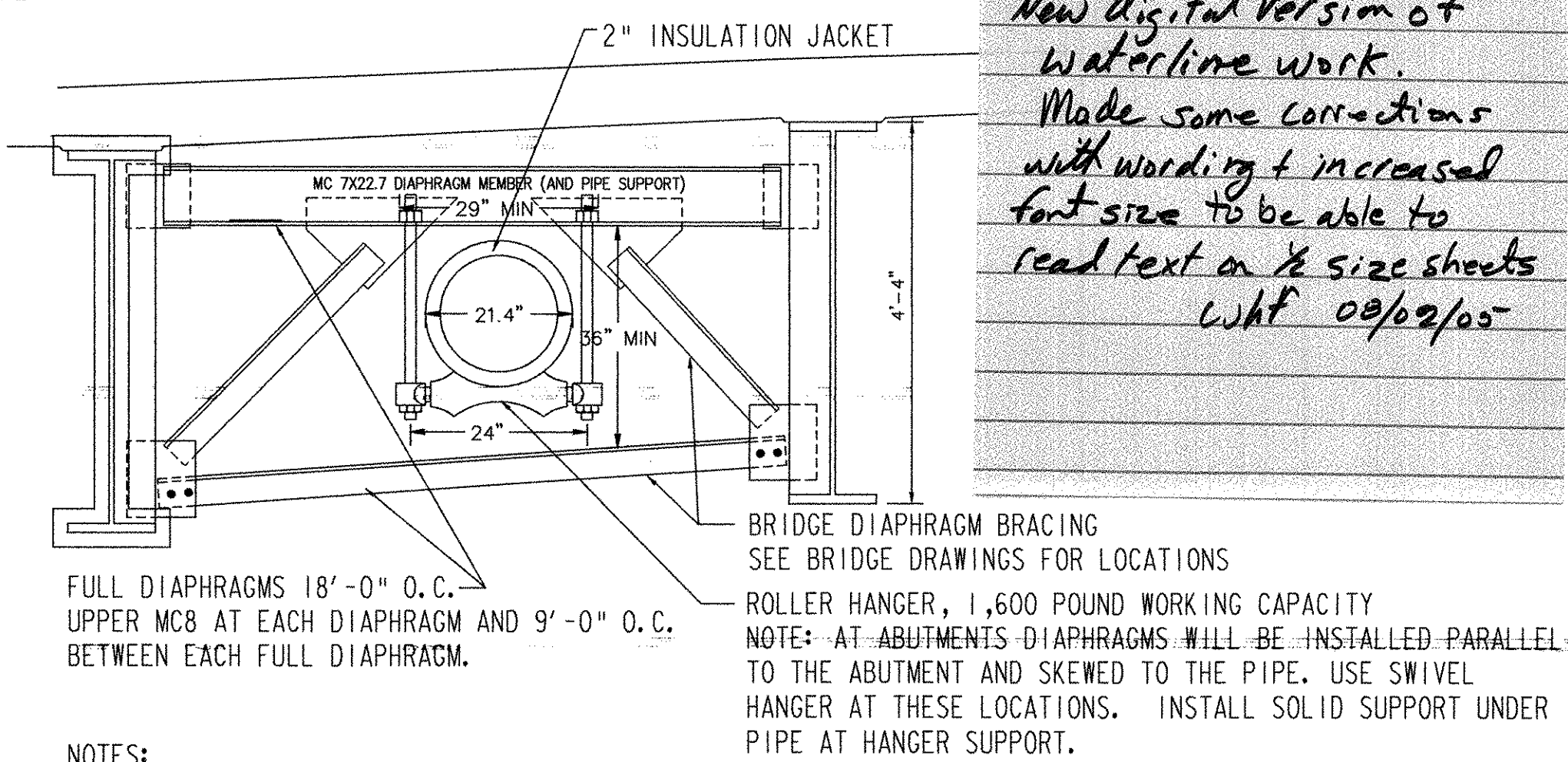
4"				6"				8"				12"				SOIL CONDITION	SAFE BEARING LOAD (PSF)
ENDS & TEES	90° ELB	45° ELB	225° ELB	ENDS & TEES	90° ELB	45° ELB	225° ELB	ENDS & TEES	90° ELB	45° ELB	225° ELB	ENDS & TEES	90° ELB	45° ELB	225° ELB		
0.5	1.0	0.5	0.5	1.0	1.5	1.0	0.5	2.0	2.5	1.5	1.0	4.0	5.5	3.0	1.5	SOUND SHALE	10000
1.5	2.0	1.0	0.5	3.0	4.0	2.0	1.0	4.5	6.5	3.5	2.0	10.0	14.0	7.5	2.0	CEMENTED GRAVEL AND SAND	4000
2.0	2.5	1.5	1.0	3.5	5.0	3.0	1.5	6.0	8.5	5.0	2.5	13.0	18.5	10.0	5.0	COARSE AND FINE COMPACT SAND	3000
2.5	3.5	2.0	1.0	5.5	7.5	4.0	2.0	9.0	13.0	7.0	3.5	20.0	27.5	15.0	8.0	MEDIUM CLAY (CAN BE SPADED)	2000
5.0	7.0	4.0	2.0	10.5	15.0	8.0	4.0	18.0	25.0	14.0	7.0	39.0	55.0	30.0	15.0	SOFT CLAY	1000

MAX WATER PRESSURE 300 PSI NOTE: REDUCER BEARING AREA = 45° BEND, ONE SIZE LARGER PIPE

TYPICAL THRUST BLOCK DETAILS



WATER MAIN THROUGH ABUTMENT SECTION
NTS



NOTES:

- PROVIDE MC7X22.7 PIPE SUPPORT BEAMS AND ROLLER HANGERS 9'-0" ON CENTER. DIAPHRAGM AND INTERMEDIATE MC8X20 LOCATIONS WILL BE INDICATED ON THE BRIDGE SHOP DRAWINGS. SUBMIT BRIDGE SHOP DRAWINGS TO MSK ENGINEERING. FOR FINAL COORDINATION OF PIPE SUPPORTS.
- THE BRIDGE DIAPHRAGM BRACING WILL ALLOW CLEARANCE FOR A 24" OVERALL PIPE AND JACKET DIMENSION. COORDINATE THE FINAL LOCATION OF THE PIPE WITH THE BRIDGE DIAPHRAGM BRACING. REMOVE AND RE-INSTALL THE BOTTOM DIAPHRAGM MEMBER AS REQUIRED TO INSTALL THE PIPE.

SECTION - PIPE SUPPORT

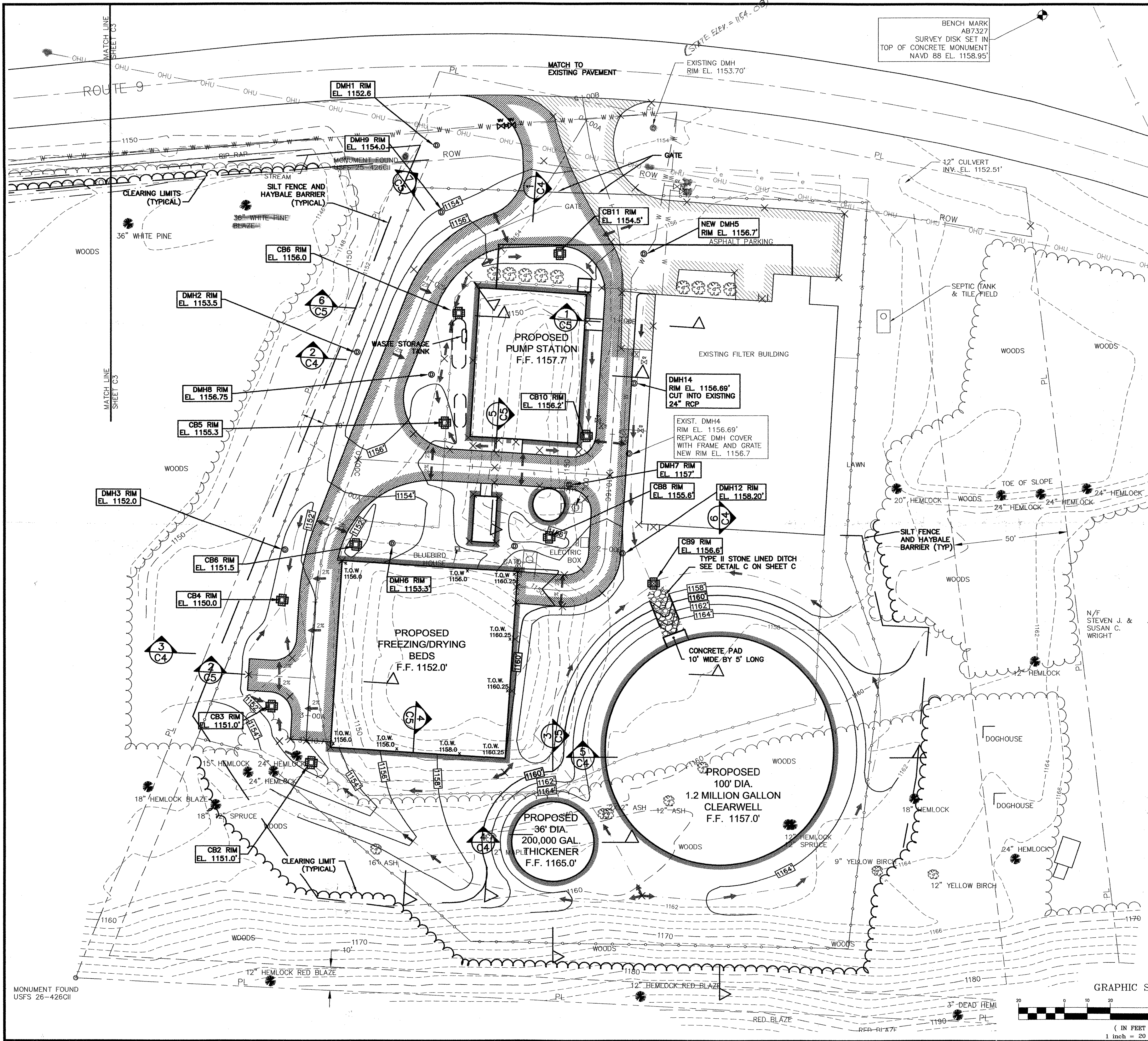
LEGEND:

- RESILIENT-WEDGE VALVE, 'OPEN-RIGHT' KENNEDY OR APPROVED EQUAL WITH MUELLER CURB SERVICE BOX ROD TYPE, TWO HOLE COVER.
- NOTE: SEE CONSTRUCTION NOTES 11&12

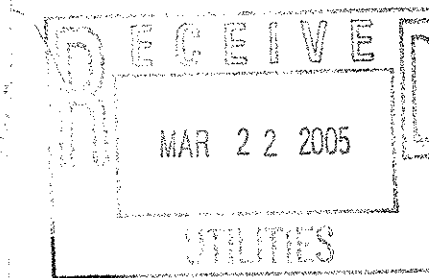
APPROXIMATE LOCATION CONCRETE THRUST BLOCKS

REVISED SECTION B/S1 BASED ON AOT COMMENTS	JMD	07/22/02
REVISED PER STATE AOT COMMENTS	JMD	07/15/2002
DESCRIPTION	BY	DATE
MSK ENGINEERING AND DESIGN, INC. P.O. BOX 168, HARWOOD HILL BENNINGTON, VT 05201 PH: (802) 447-3340 FAX: (802) 447-0702		
WOODFORD WATER LINE BRIDGE CROSSING AT TREATMENT PLANT WOODFORD, VERMONT	DRAWN BY: JFE	CHECKED BY: JRS
	SCALE: 1" = 20'	
	DATE: 11-13-00	
DESCRIPTION: WATERLINE PLAN	rt9water.dwg	SHEET 57 OF 106
		S-1

New digital version of waterline work. Made some corrections with wording & increased font size to be able to read text on 1/2 size sheets wht 08/02/05



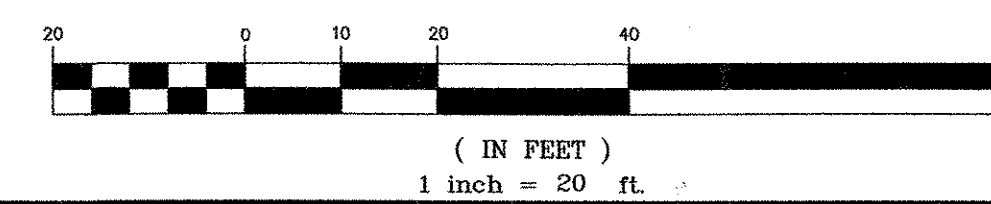
- EXISTING**
- MAJOR CONTOURS
 - MINOR CONTOURS
 - PL --- PROPERTY LINE
 - ROW --- RIGHT OF WAY
 - SETBACK LINES
 - WETLAND BUFFER
 - UNDERGROUND TELEPHONE
 - OHU --- OVERHEAD UTILITY LINES
 - UNDERGROUND ELECTRIC
 - CHAIN LINK FENCE
 - TREE LINE
 - WETLAND AREA
 - BUILDING
 - UTILITY POLE
 - MONUMENT
 - HYDRANT
 - GATE VALVE
 - STORM DRAIN MANHOLE
 - TREES
- PROPOSED**
- 1160 --- MAJOR CONTOURS
 - 1154 --- MINOR CONTOURS
 - CLEARING LIMITS
 - x 1157.7 --- SPOT ELEVATIONS
 - CHAIN LINK FENCE
 - SILT FENCE
 - STORM DRAIN MANHOLE
 - CATCH BASIN
 - HYDRANT
 - BUILDING
 - SURFACE WATER FLOW DIRECTION
 - HAY BALE DIKE
 - NO MOW STRIP



NOTES:

1. REFER TO GENERAL CONSTRUCTION NOTES AND ABBREVIATIONS ON SHEET G1.
2. REFER TO SHEET C13 FOR TYPICAL PAVEMENT SECTION.
3. REFER TO SHEET C12 FOR STORM DRAINAGE DETAILS.
4. THE EROSION CONTROL PLANS IS TO BE USED AS A GUIDELINE ONLY. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS. CONTRACTOR IS RESPONSIBLE FOR ALL MAINTENANCE AND REPAIRS OF SILT FENCES AND HAY BALE DIKES AS NECESSARY. REFER TO SHEET C 13 FOR EROSION CONTROL DETAILS.
5. HAY BALE DIKES TO BE INSTALLED AT ALL CATCH BASINS.
6. REMOVE ALL SILT FENCES AND HAY BALE DIKES PRIOR TO SUBSTANTIAL COMPLETION.
7. CLEAR, GRUB, FINE GRADE AND RESTORE TO CLASS A ALL AREAS WITHIN THE CLEARING LIMITS SHOWN WHETHER DISTURBED OR NOT. RESTORE AREAS NOT SHOWN OTHERWISE TO CLASS A.
8. PROVIDE "NO MOW STRIP" AS SHOWN ON SHEET C13 BELOW ALL FENCING, AND ADJACENT TO ALL STRUCTURES AND CONCRETE PADS.
9. ALL SLOPES STEEPER THAN 2H:1V TO HAVE EROSION CONTROL FABRIC DURING ESTABLISHMENT OF GROWTH.
10. SEE SITE SECTIONS AND ACCESS ROAD CENTER LINE PROFILE ON SHEET C5.
11. ALL TOP SOIL ON SITE SHALL BE SCREENED AND STORED ON SITE AND USED TO RESTORE THE SITE. ADDITIONAL TOP SOIL IS ALSO REQUIRED TO RESTORE SITE.
12. STRIP ALL EXISTING GROWTH AND TOP SOIL (6" MIN) UNDER ALL AREAS REQUIRING GRADE MODIFICATIONS.
13. PROPOSED GRADE TO MATCH EXISTING GRADE IN RIGHT-OF-WAY AREA BETWEEN MATCH LINE AND WEST PROPERTY LINE.

GRAPHIC SCALE



**BID
DOCUMENTS**
DO NOT REVISE



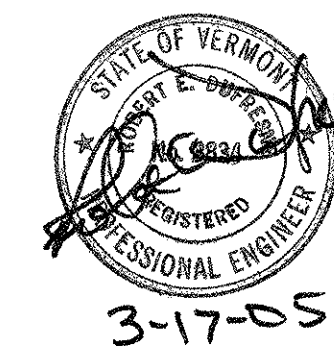
Dufresne & Associates, P.C.
54 Main Street, P.O. Box B
Windsor, Vermont 05089
Tel: (802) 674-2004 Fax: (802) 674-2913
E-mail: dufresne@vermont.net
Home page: http://www.dufresneassociates.com

Project #	413007
Project Mgr.	RAW
Design	RAW
Drawn	EAE
Checked by	JRP
Date	DEC. 10, 2004
Scale	1" = 20'-0"
Approved by	RED

Revisions:

THE DRAWINGS FOR THIS PROJECT SHALL NOT BE REUSED OR ALTERED IN ANY WAY WITHOUT THE WRITTEN APPROVAL AND AUTHORITY OF DUFRESNE & ASSOCIATES, P.C. ANY REVISIONS SHALL BE MADE BY THE ENGINEER.

Dufresne & Associates, P.C.



WATER TREATMENT FACILITY AND INTAKE
UPGRADES

**SITE GRADING, DRAINAGE
AND ROAD LAYOUT**

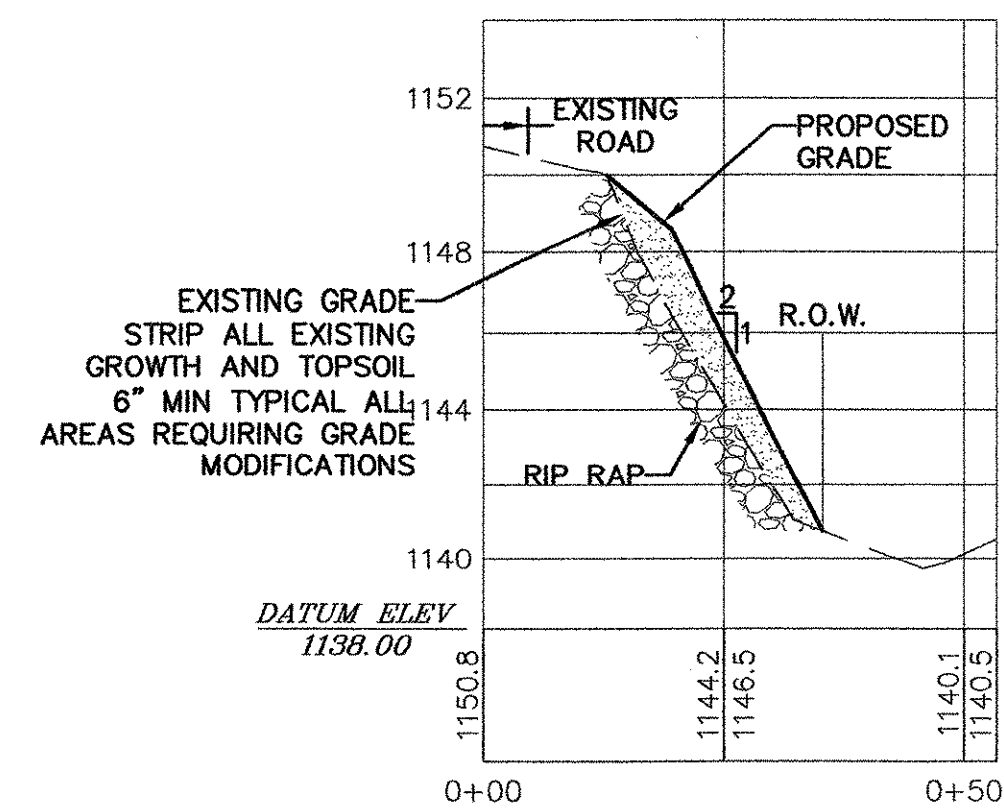
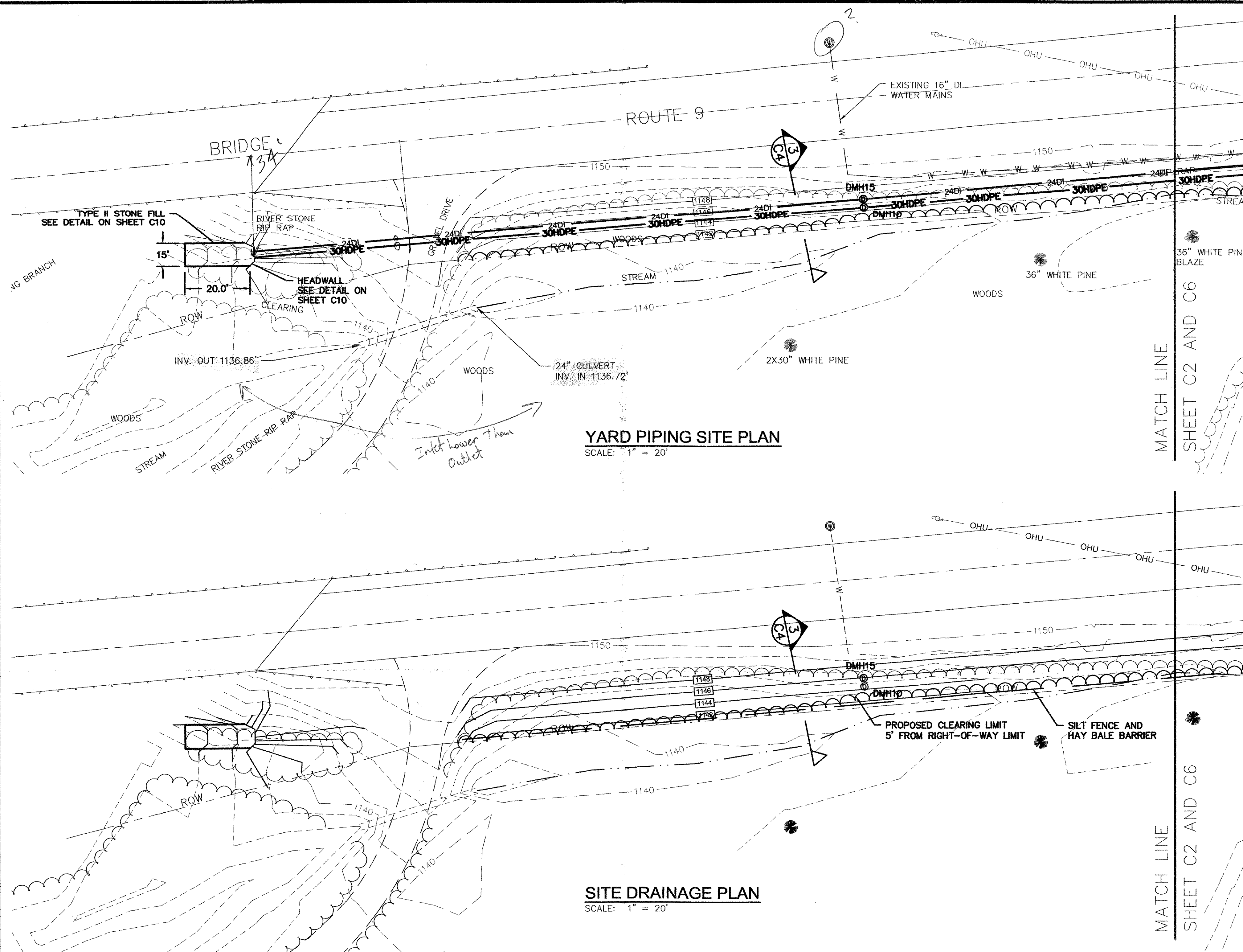
BENNINGTON, VERMONT

C2

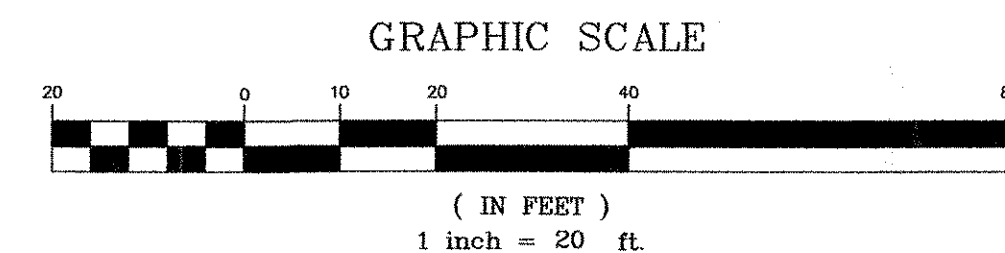
DWG. NO. 413007-C2

SHEET 3 OF 99

FILE: C:\Projects\Bennington\CON\413007C3-C6-YARD PIPING.DWG Mar 17, 2005 - 8:53am



1
C3
SECTION
HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 5'-0"



NOTES:

1. REFER TO GENERAL CONSTRUCTION NOTES AND ABBREVIATIONS ON SHEET C1.
2. REFER TO SHEET C12 FOR STORM DRAINAGE DETAILS.
3. CLEAR, GRUB, FINE GRADE AND RESTORE TO CLASS A ALL AREAS WITHIN THE CLEARING LIMITS SHOWN WHETHER DISTURBED OR NOT. RESTORE AREAS NOT SHOWN OTHERWISE TO CLASS A.
4. FILL SLOPES TO HAVE EROSION CONTROL FABRIC DURING ESTABLISHMENT OF GROWTH.
5. REFER TO UTILITY PROFILE ON SHEET C10.
6. STRIP ALL EXISTING GROWTH AND TOPSOIL (6" MIN) UNDER ALL AREAS REQUIRING GRADE MODIFICATIONS.
7. ALL EXISTING TOPSOIL ON SITE SHALL BE SCREENED AND STORED ON SITE FOR SITE RESTORATION. ADDITIONAL TOPSOIL WILL ALSO BE REQUIRED.

BID
DOCUMENTS
DO NOT REVISE

EXISTING	
	MAJOR CONTOURS
	MINOR CONTOURS
	EDGE OF ROAD
	PROPERTY LINE
	RIGHT OF WAY
	SETBACK LINES
	WETLAND BUFFER
	UNDERGROUND TELEPHONE
	OVERHEAD UTILITY LINES
	UNDERGROUND ELECTRIC
	WATER MAIN
	DRAIN
	EDGE OF ACCESS ROAD
	CHAIN LINK FENCE
	STREAM
	TREE LINE
	BUILDING
	UTILITY POLE
	MONUMENT
	HYDRANT
	GATE VALVE
	STORM DRAIN MANHOLE
	TREES
PROPOSED	
	MAJOR CONTOURS
	MINOR CONTOURS
	CLEARING LIMITS
	EDGE OF ACCESS ROAD
	24" DUCTILE IRON PIPE
	30" HIGH DENSITY POLYETHYLENE
	SILT FENCE
	STORM DRAIN MANHOLE

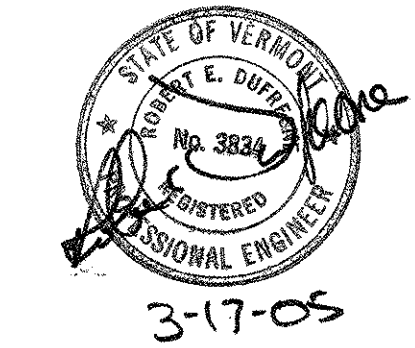
Dufresne & Associates, P.C.
54 Main Street, P.O. Box B
Windsor, Vermont 05089
Tel: (802) 674-2904 Fax: (802) 674-2913
E-mail: dufresne@vermont.net
Home page: http://www.dufresneassociates.com

Project #	413007
Project Mgr.	RAW
Design	RAW
Drawn	DAL
Checked by	JRP
Date	DEC. 10, 2004
Scale	1" = 20'-0"
Approved by	RED

Revisions:

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Dufresne & Associates, P.C.



WATER TREATMENT FACILITY AND INTAKE
UPGRADES

**SITE GRADING PLAN AND
YARD PIPING PLAN
ROUTE 9 WEST**

BENNINGTON, VERMONT

C3

DWG. NO. 413007C3-C6

SHEET 4 OF 99



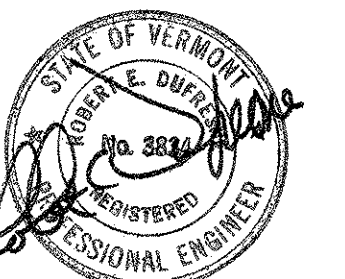
Dufresne & Associates, P.C.
54 Main Street, P.O. Box B
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Project #	413007
Project Mgr.	RAW
Design	RAW
Drawn	EAE
Checked by	JRP
Date	DEC. 10, 2004
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WATER TREATMENT FACILITY AND INTAKE
UPGRADES

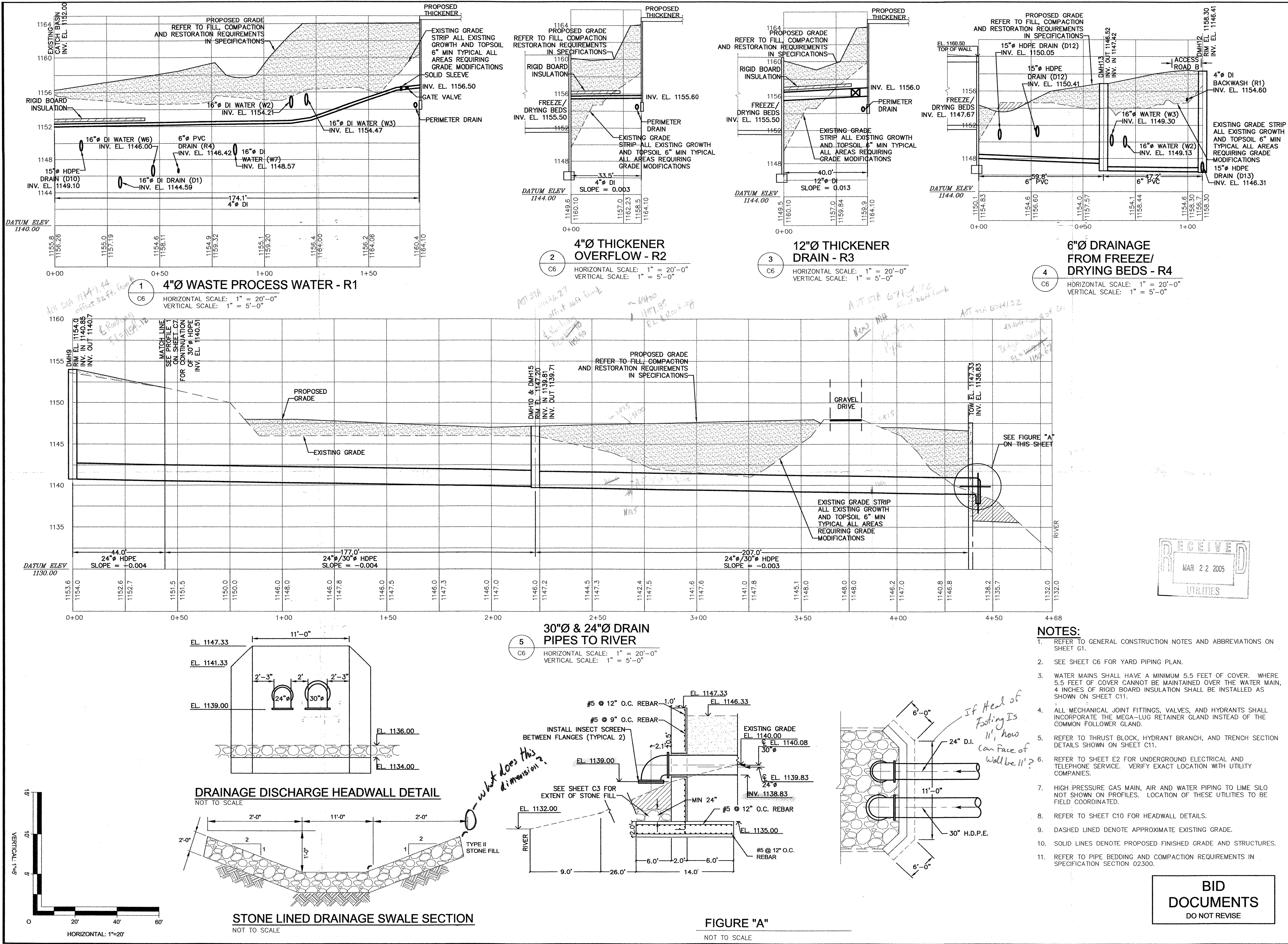
UTILITY PROFILES

BENNINGTON, VERMONT

C10

DWG. NO. 413007C7,8,9,10

SHEET 11 OF 99



FILE: C:\Projects\Bennington\DWG\413007C7,8,9,10.dwg Mar 17, 2005 - 8:54am