

STATE OF VERMONT AGENCY OF TRANSPORTATION



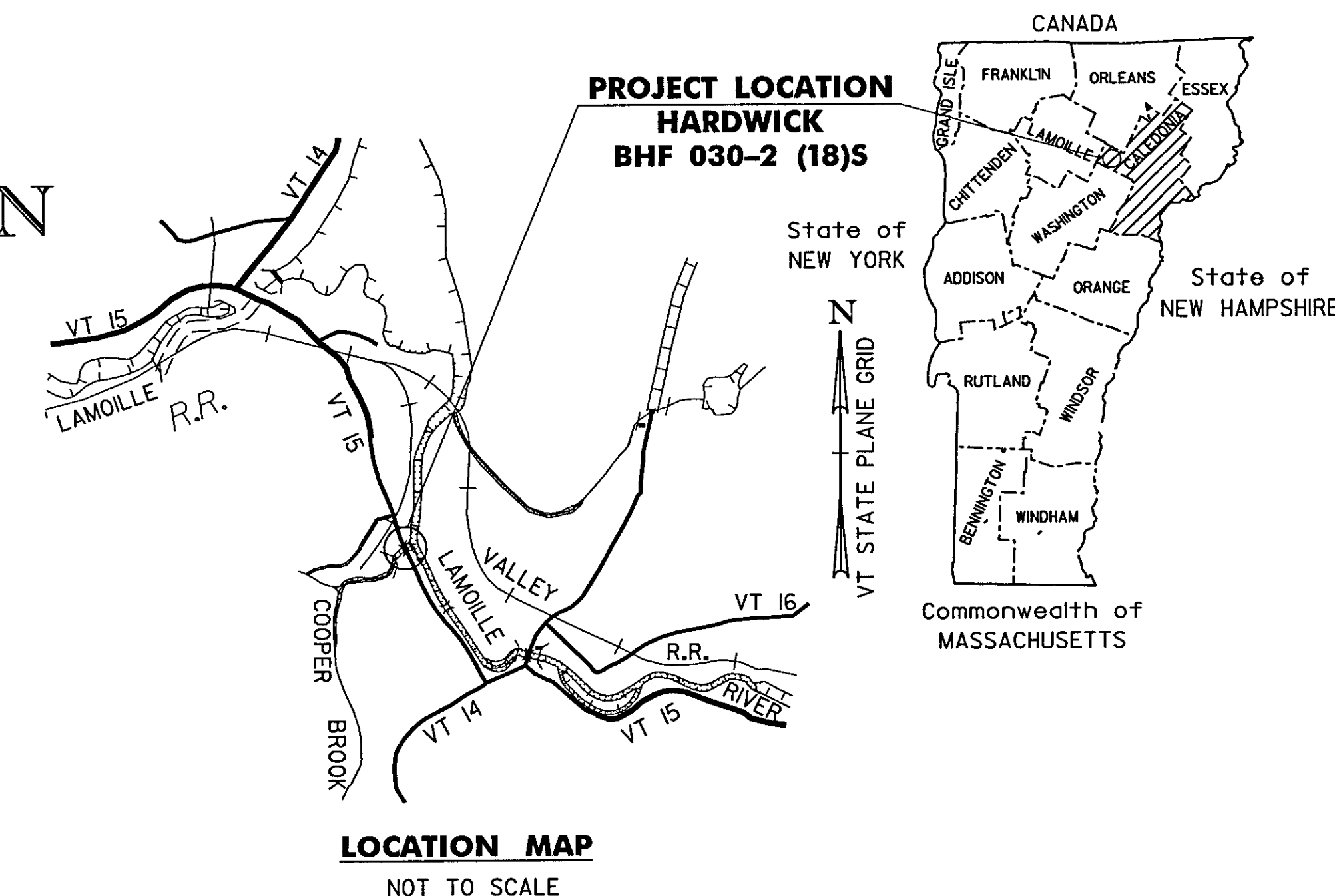
PROPOSED IMPROVEMENT BRIDGE PROJECT TOWN OF HARDWICK COUNTY OF CALEDONIA

ROUTE NO : VT 15 BRIDGE NO : 67
FUNCTIONAL CLASSIFICATION: MINOR ARTERIAL ON
CLASS I TOWN HIGHWAY

PROJECT LOCATION : BEGINNING AT A POINT ON VT 15 APPROXIMATELY 805 METERS NORTH OF THE INTERSECTION WITH VT 14 IN THE VILLAGE OF HARDWICK, AND EXTENDING SOUTHERLY ALONG VT 15 FOR 44.5 METERS

PROJECT DESCRIPTION : REMOVAL OF EXISTING SUPERSTRUCTURE, CONSTRUCTION OF A NEW STEEL BEAM AND CAST-IN-PLACE CONCRETE DECK SUPERSTRUCTURE TO BE PLACED ON EXISTING SUBSTRUCTURES, NEW SIDEWALK AND RELATED APPROACH WORK.

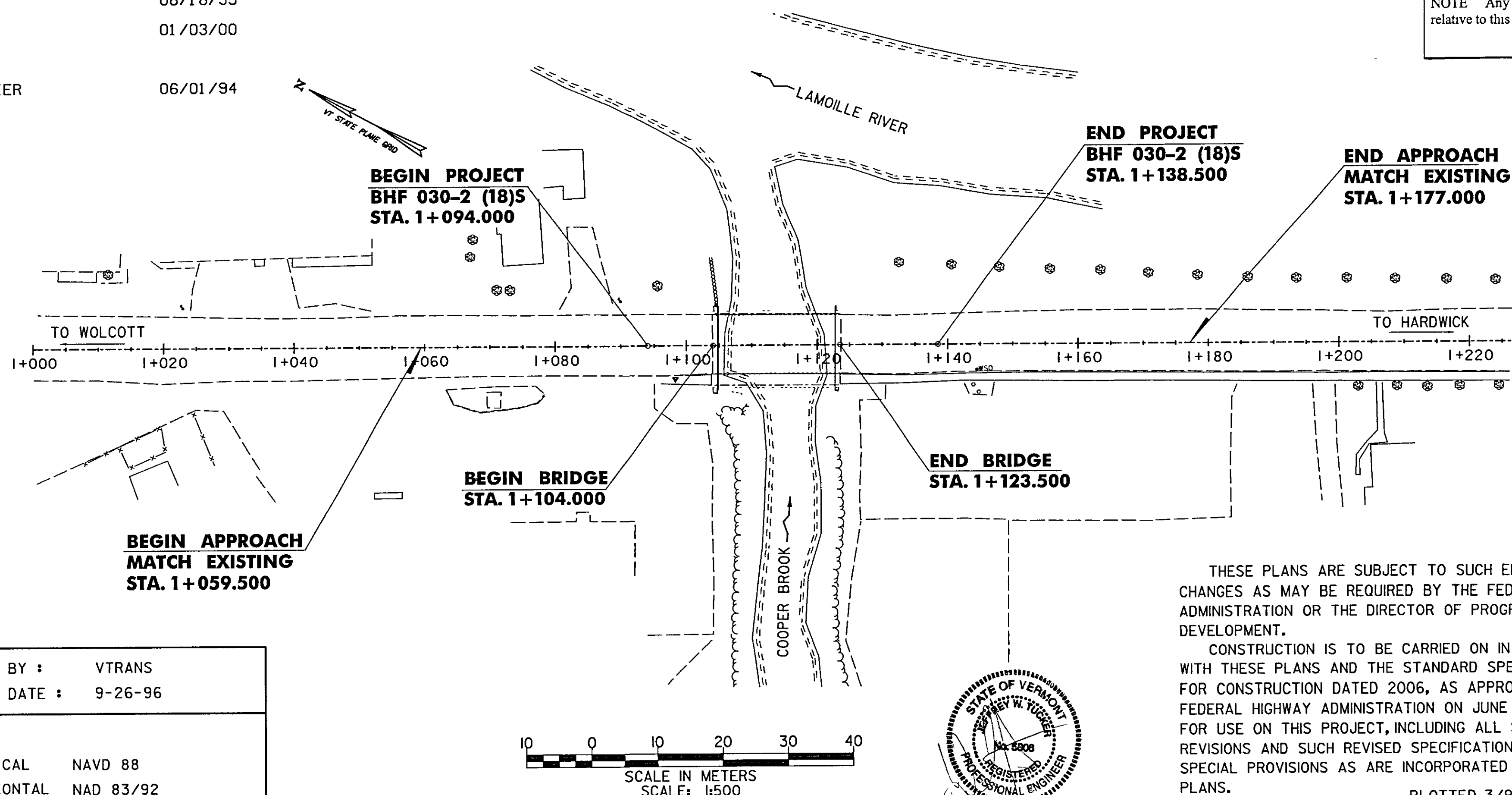
LENGTH OF STRUCTURE : 19.5 METERS
LENGTH OF ROADWAY : 25.0 METERS
LENGTH OF PROJECT : 44.5 METERS



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	CHANNEL CROSS SECTIONS	

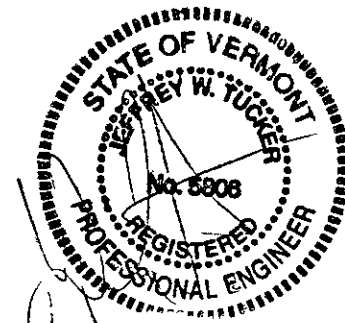
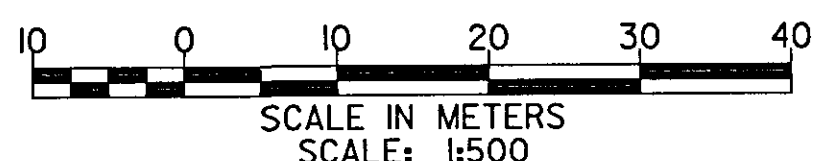
STANDARDS		
B-5	EMBANKMENT ON EARTH SLOPE	06/01/94
B-11	EMBANKMENT ON ROCK SLOPE	
B-71	MUCK EXCAVATION, TYPICAL SLOPE ROUNDING	06/01/94
	STANDARD FOR RESIDENTIAL AND COMMERCIAL DRIVES	07/08/05
C-10	CURBING	02/11/08
C-2A	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCE WITH PRECAST REINFORCED CONCRETE CURB OR CAST-IN-PLACE CONCRETE CURB SIDEWALK RAMPS	10/14/05
C-3A		03/10/08
E-100	CONSTRUCTION APPROACH SIGNS	01/02/04
E-100A	SIDE ROAD CONSTRUCTION - APPROACH SIGNS	01/02/04
E-101	CONSTRUCTION SIGN DETAILS	05/30/03
E-102	CONSTRUCTION SIGN DETAILS	06/30/03
E-102A	CONSTRUCTION SIGN DETAILS	05/01/04
E-106	TRAFFIC CONTROL - MISCELLANEOUS DETAILS	03/01/04
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	06/30/03
E-107A	BREAKAWAY BARRICADES DETAILS	08/08/95
E-108	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS	12/08/08
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08/08/95
E-191	PAVEMENT MARKING DETAILS	02/01/99
E-192	PAVEMENT MARKING DETAILS	10/12/00
E-193	PAVEMENT MARKING DETAILS	08/18/95
G-10	STEEL BEAM GUARDRAIL (40MPH & LESS) HEAVY DUTY STEEL BEAM GUARDRAIL STEEL BEAM MEDIAN BARRIER ANCHOR FOR STEEL BEAM RAIL	01/03/00
G-18	PRECAST CONCRETE TEMPORARY TRAFFIC BARRIER	06/01/94

RECORD PLANS	
CONTRACTOR	BLOW & COTE INC - MORRISVILLE, VT
RESIDENT ENGINEER	CHRIS CRAIG
CONSTRUCTION BEGAN	JUNE 30, 2009
CONSTRUCTION COMPLETE	JULY 14, 2010
RECORD PLANS BY	CHRIS CRAIG & CRAIG PIERCE
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN	
BY	<i>C. Craig</i> RESIDENT ENGINEER
DATE	May 31, 2011
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	



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	

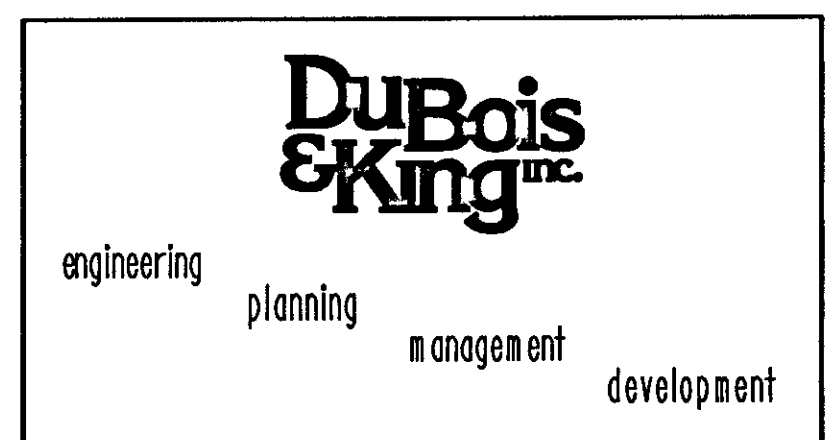
SURVEYED BY :	VTRANS
SURVEYED DATE :	9-26-96
DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83/92



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 2006, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JUNE 15, 2006 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

PLOTTED 3/9/2009



UNLESS NOTED OTHERWISE
STATIONS ARE IN KILOMETERS
ELEVATIONS ARE IN METERS
DIMENSIONS ARE IN MILLIMETERS

DIRECTOR OF PROGRAM DEVELOPMENT	
APPROVED <i>Danny R. Landry</i>	DATE 3-11-09
PROJECT MANAGER : DANNY R. LANDRY	
PROJECT NAME : HARDWICK	
PROJECT NUMBER : BHF 030 - 2 (18)S	
SHEET 1 OF 38 SHEETS	

QUANTITY SHEET 1



SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
					ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
					1					1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				
					730					730		CM	COMMON EXCAVATION	203.15				
					150					150		CM	SOLID ROCK EXCAVATION	203.16				
					100					100		CM	EXCAVATION OF SURFACES AND PAVEMENTS	203.28				
					150					150		CM	SAND BORROW	203.31				
								10		10		CM	STRUCTURE EXCAVATION	204.25				
					200					200		SM	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
					450					450		CM	SUBBASE OF GRAVEL	301.15				
					400					400		KG	EMULSIFIED ASPHALT	404.65				
					590			35		625		T	BITUMINOUS CONCRETE PAVEMENT	406.25				
					1					1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
								85		85		CM	CONCRETE, HIGH PERFORMANCE CLASS A	501.33				
								55		55		CM	CONCRETE, HIGH PERFORMANCE CLASS B	501.34				
								27000		27000		KG	STRUCTURAL STEEL, ROLLED BEAM	506.50				
								230		230		KG	REINFORCING STEEL	507.15				
								40		40		M	DRILLING AND GROUTING DOWELS	507.16				
								13400		13400		KG	EPOXY COATED REINFORCING STEEL	507.17				
								1		1		LS	SHEAR CONNECTORS (870 - 22 x 180)	508.15				
								1		1		LS	STRUCTURAL PAINTING, SHOP APPLIED	513.25				
								1		1		LS	SURFACE PREPARATION, SHOP	513.40				
								39		39		L	WATER REPELLENT, SILANE	514.10				
								24		24		M	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
								180		180		SM	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20				
					1					1		LS	TWO-WAY TEMPORARY BRIDGE (133 SM - EST.)	528.11				
								180		180		SM	REMOVAL OF BRIDGE PAVEMENT	529.10				
								1		1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20				
								10		10		EACH	BEARING DEVICE ASSEMBLY, PREFORMED FABRIC PAD	531.10				
								6		6		SM	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	580.13				
								6		6		SM	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	580.14				
								2		2		CM	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III	580.15				
					2					2		EACH	CHANGING ELEVATION OF SEWER MANHOLE	604.42				
					100					100		CM	DUST CONTROL WITH WATER	609.10				
					10					10		T	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15				
					30					30		M	CAST-IN-PLACE CONCRETE CURB, TYPE B	616.28				
					35					35		SM	PORTLAND CEMENT CONCRETE SIDEWALK, 125 MM	618.10				
					5					5		SM	DETECTABLE WARNING SURFACE	618.30				
					110					110		M	TEMPORARY TRAFFIC BARRIER	621.90				
					1					1		EACH	ADJUST ELEVATION OF VALVE BOX	629.20				
					200					200		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
					600					600		HR	FLAGGERS	630.15				

PROJECT NAME:	HARDWICK		
PROJECT NUMBER:	BHF 030-2(18)S		
FILE NAME:	95306Q8.dgn	PLOT DATE:	04/16/2009
PROJECT LEADER:	D. LANDRY	DRAWN BY:	A. GUYETTE
DESIGNED BY:	A. GUYETTE	CHECKED:	E. DETRICK
QUANTITY SHEET #1		SHEET	3 OF 38

QUANTITY SHEET 2



SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
					ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
									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 TRAINEESHIP	634.10				
					1					1		LS	MOBILIZATION / DEMOBILIZATION	635.11				
					1					1		LS	TRAFFIC CONTROL	641.10				
					240					240		M	100 MM WHITE LINE	646.20				
					240					240		M	100 MM YELLOW LINE	646.21				
							120			120		SM	GEOTEXTILE FOR SILT FENCE	649.51				
							10			10		KG	SEED	651.15				
							60			60		KG	FERTILIZER	651.18				
							0.5			0.5		T	AGRICULTURAL LIMESTONE	651.20				
							0.5			0.5		T	HAY MULCH	651.25				
					20					20		CM	TOPSOIL	651.35				
							1			1		LS	EPSC PLAN	652.10				
							60			60		HR	MONITORING EPSC PLAN	652.20				
							1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30				
							50			50		CM	VEHICLE TRACKING PAD	653.35				
							200			200		M	PROJECT DEMARCATION FENCE	653.55				
					1					1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50				
					33					33		M	SPECIAL PROVISION (ALUMINUM APPROACH RAILING, ANODIZED)	900.640				
								20		20		M	SPECIAL PROVISION (BRIDGE RAILING, ANODIZED 3 RAIL ALUMINUM)	900.640				
								20		20		M	SPECIAL PROVISION (BRIDGE RAILING, ANODIZED ALUMINUM/PEDESTRIAN)	900.640				

RIGHT - OF - WAY DETAIL SHEET



TABLE OF PROPERTY ACQUISITION

PARCEL NO.	PROPERTY OWNER	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKE	REMAINDER	RIGHT			RECORDING DATA				REMARKS	
					AREA ±	AREA ±	TYPE	(T)/(P)	AREA ±	TITLE	DATE	TOWN / CITY	BOOK		PAGE
1	VASILADIS, NICHOLAS & GEORGEADIS, PETER - LESSORS	12	1+063.25 RT.	1+078.54 RT.			REMOVE	(T)	19.60 SM					ISLAND, CURB 211SF + ISLAND, CURB & SHRUBS	
	HARDWICK HOUSE OF PIZZA, INC. - LESSEE		1+063.31 RT.	1+078.57 RT.			REMOVE & RESET	(T)							
			1+071.65 RT.	1+116.32 RT.			CONST	(T)	54.78 SM.						INC.PDF & EROSION CONTROL 590 SF+ 3800 SF +
			1+071.69 RT.	1+116.44 RT.			DETOUR	(T)	353 SM.						98 SF+
			1+095.17 RT.	1+105.33 RT.			SLOPE	(P)	9.11 SM.						LIGHT POLE
			1+099.49 RT.			REMOVE	(T)								
2	PARCEL DELETED													HARDWICK FORMERLY JOHNSON, EDWARD H.	
3	HARDWICK ELECTRIC													UTILITY	
4	TOWN OF HARDWICK (WATER - SEWER)													UTILITY	
5	VERZON NEW ENGLAND, INC.													UTILITY	

TABLE OF REVISIONS

REVISION NO.	SHEET NO.	DESCRIPTION	DATE
1	11.12	PARCEL NO. 2 PARONTO. CHANGE OWNER TO JOHNSON, EDWARD H. PER C.O. 9482 MADE BY: MR APPROVED BY: FM	11/30/2006
2	11.12	PARCEL NO.2 JOHNSON. PULLED P.D.F. INSIDE R.O.W. RIGHTS NO LONGER NEEDED. PARCEL DELETED PER C.O. 9499 COMPLETED BY: JAB APPROVED BY: HP	9/28/2007
3	12	PARCEL NO. 1 PERRY'S OIL SERVICE - LESSEE, REMOVE NAME AS LESSEE. PER C.O. 9541 APPROVED BY: HP	10/8/2008

PLAN LEGEND

	EXISTING RIGHT-OF-WAY		TOE OF SLOPE
	TAKING WITH ACCESS		TOP OF CUT
	TAKING WITHOUT ACCESS		SLOPE RIGHT
	CLEAR ZONE		CONSTRUCTION RIGHT
	PROPERTY LINE		PROJECT DEMARCATION FENCE

EC	-EROSION CONTROL
(P)	-PERMANENT
(T)	-TEMPORARY
DR.	-DRAINAGE RIGHT
DIT.	-DITCHING RIGHT
CH.	-CHANNEL RIGHT
DRIVE	-DRIVE RIGHT
CUL.	-CULVERT RIGHT
C&T	-CLEARING & TRIMMING RIGHT
SR	-SLOPE RIGHT
UE	-UTILITY EASEMENT

APPROVED: HARRY PETROVS DATE: 10-11-06
ACTING CHIEF, PLANS & TITLES

PLOT DATE

10/8/2008

PROJECT NAME:	HARDWICK	FILE NAME:	r95J306DET.XLS	PLOT DATE:	
PROJECT NUMBER:	BHF 030-2(18)S	PROJECT LEADER:	TRIPP	DRAWN BY:	MR
DESIGNED BY:	DUBOIS & KING	CHECKED BY:	BF	ROW SHEET 11 OF 12	SHEET 5 OF 38



100mm WHITE LINE
 STA. I+059.500 LT - STA. I+177.000 RT
 STA. I+059.500 RT - STA. I+177.000 LT

100mm YELLOW LINE
 STA. I+059.500 - STA. I+177.000
 (DOUBLE CENTERLINE)

ALUMINUM APPROACH RAILING (MOD. - ANODIZED BLACK)
 STA. I+096.852 RT - STA. I+104.075 RT
 STA. I+095.900 LT - STA. I+104.075 LT
 STA. I+123.425 RT - STA. I+130.566 RT
 STA. I+123.425 LT - STA. I+130.566 LT

BRIDGE RAILING - 3 RAIL ALUMINUM (MOD. - ANODIZED BLACK)
 STA. I+104.075 LT - STA. I+123.425 LT

BRIDGE RAILING - ALUMINUM/PEDESTRIAN (MOD. - ANODIZED BLACK)
 STA. I+104.075 RT - STA. I+123.425 RT

SIDEWALK RAMP (TYPE 1)
 STA. I+098.116 RT - STA. I+101.116 RT
 STA. I+141.138 RT - STA. I+144.138 RT

PORTLAND CEMENT CONCRETE SIDEWALK 125 mm
 STA. I+095.468 RT - STA. I+104.000 RT
 STA. I+123.500 RT - STA. I+146.796 RT

CAST IN PLACE CONCRETE CURB, TYPE B
 STA. I+098.068 RT - STA. I+104.000 RT
 STA. I+123.500 RT - STA. I+144.138 RT

CONSTRUCT DRIVE
 STA. I+059.500 RT - STA. I+095.114 RT
 STA. I+079.652 LT - STA. I+090.517 LT
 STA. I+146.778 RT - STA. I+177.000 RT

CHANGE ELEVATION OF SEWER MANHOLE
 STA. I+101.210 LT
 STA. I+127.433 LT

ADJUST ELEVATION OF VALVE BOX
 STA. I+144.515 RT

DETECTABLE WARNING SURFACE
 STA. I+095.468 RT - STA. I+098.116 RT
 STA. I+144.138 RT - STA. I+146.796 RT

NOTE:
 EXISTING AERIAL UTILITIES WILL BE TEMPORARILY MOVED BY OTHERS TO ACCOMMODATE THE NECESSARY CONSTRUCTION WORK.

BEGIN R.O.W. PROJECT
BHF 030-2 (18) S
STA. 1+063.25
7.54M (24.75') RT.
N/F KNOWLTON, JEFFERY & MICHELLE

END R.O.W. PROJECT
BHF 030-2 (18) S
STA. 1+177.88
7.54M (24.75') LT.

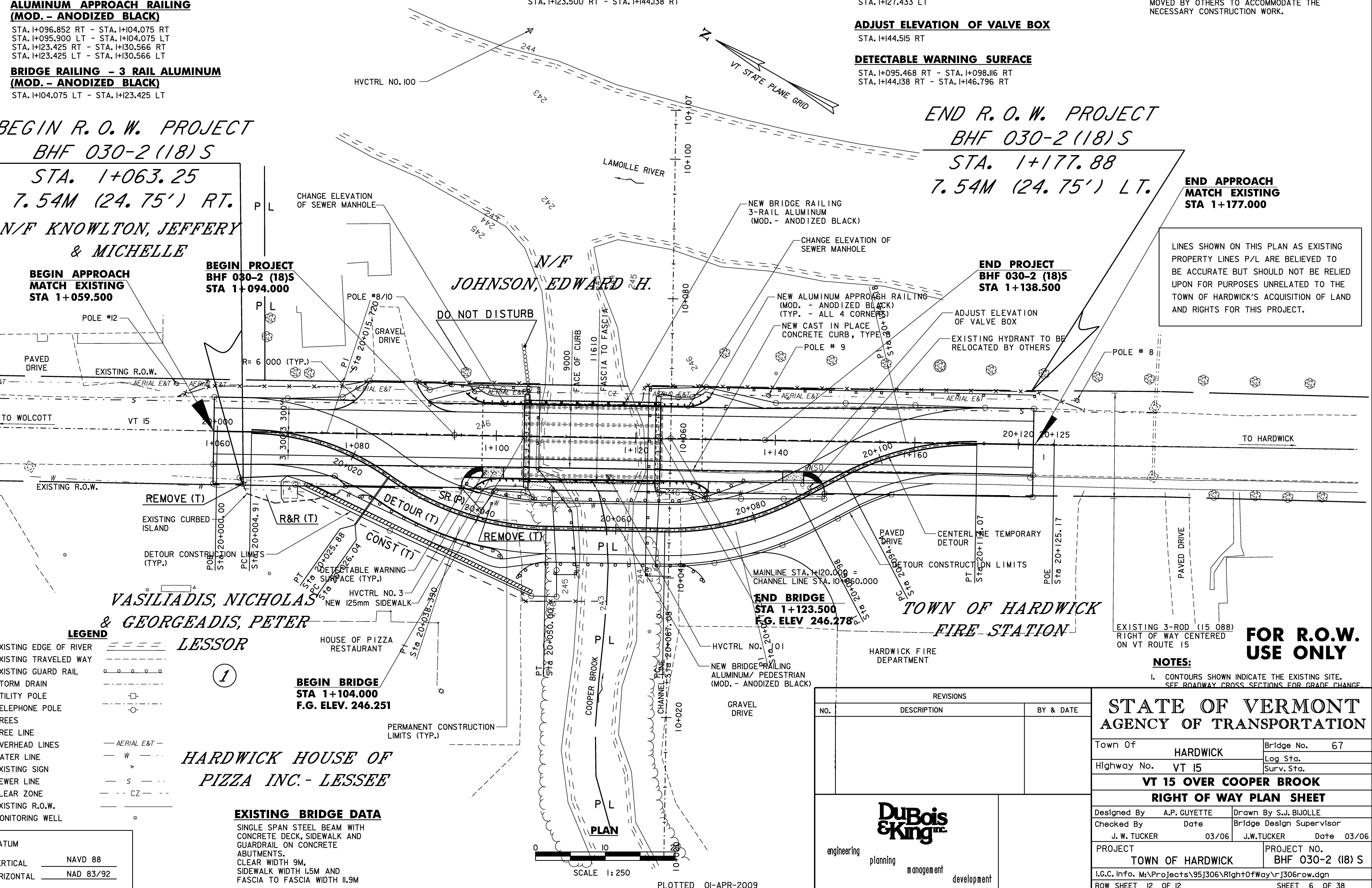
END APPROACH MATCH EXISTING STA 1+177.000

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 TOWN OF HARDWICK'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

BEGIN APPROACH MATCH EXISTING STA 1+059.500

BEGIN PROJECT BHF 030-2 (18) S STA 1+094.000

END PROJECT BHF 030-2 (18) S STA 1+138.500



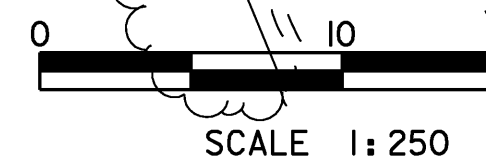
LEGEND

EXISTING EDGE OF RIVER	---
EXISTING TRAVELED WAY	---
EXISTING GUARD RAIL	---
STORM DRAIN	---
UTILITY POLE	---
TELEPHONE POLE	---
TREES	---
TREE LINE	---
OVERHEAD LINES	---
WATER LINE	---
EXISTING SIGN	---
SEWER LINE	---
CLEAR ZONE	---
EXISTING R.O.W.	---
MONITORING WELL	---

1

HARDWICK HOUSE OF PIZZA INC. - LESSEE

EXISTING BRIDGE DATA
 SINGLE SPAN STEEL BEAM WITH CONCRETE DECK, SIDEWALK AND GUARDRAIL ON CONCRETE ABUTMENTS.
 CLEAR WIDTH 9M,
 SIDEWALK WIDTH 1.5M AND FASCIA TO FASCIA WIDTH 11.9M



PLOTTED 01-APR-2009

REVISIONS		
NO.	DESCRIPTION	BY & DATE

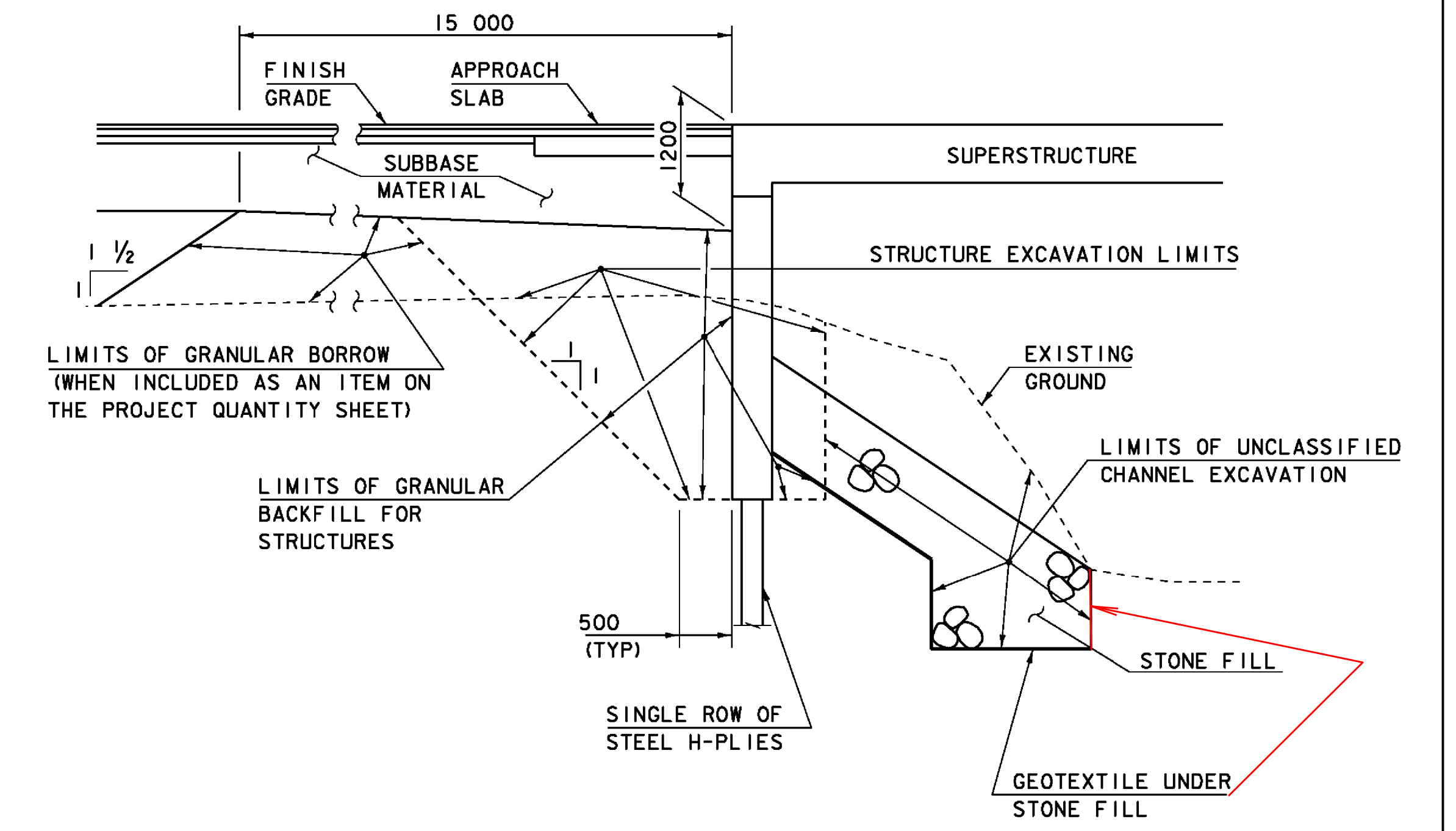
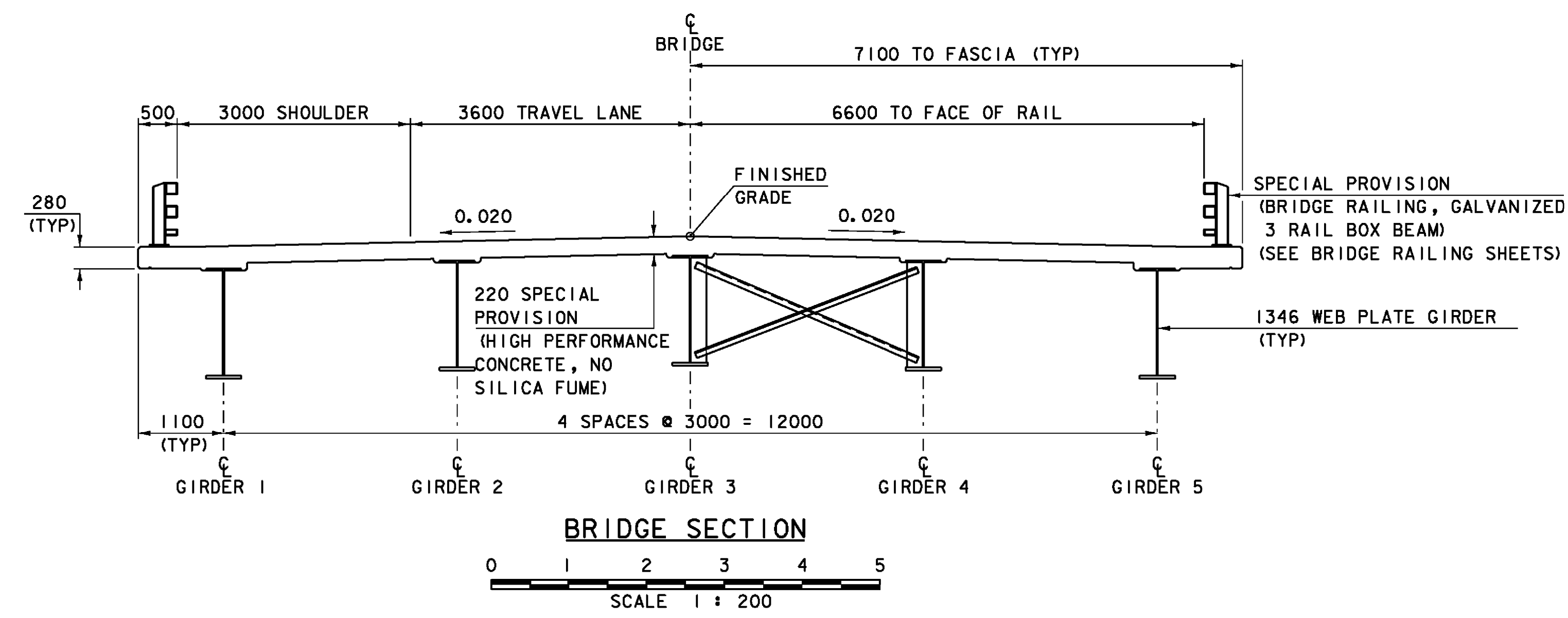


STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK			
RIGHT OF WAY PLAN SHEET			
Designed By	A.P. GUYETTE	Drawn By	S.J. BIJOLLE
Checked By	Date	Bridge Design Supervisor	Date
J. W. TUCKER	03/06	J. W. TUCKER	03/06
PROJECT	TOWN OF HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info.	M:\Projects\95\306\RightOfWay\1306Row.dgn		
ROW SHEET	12 OF 12	SHEET	6 OF 38

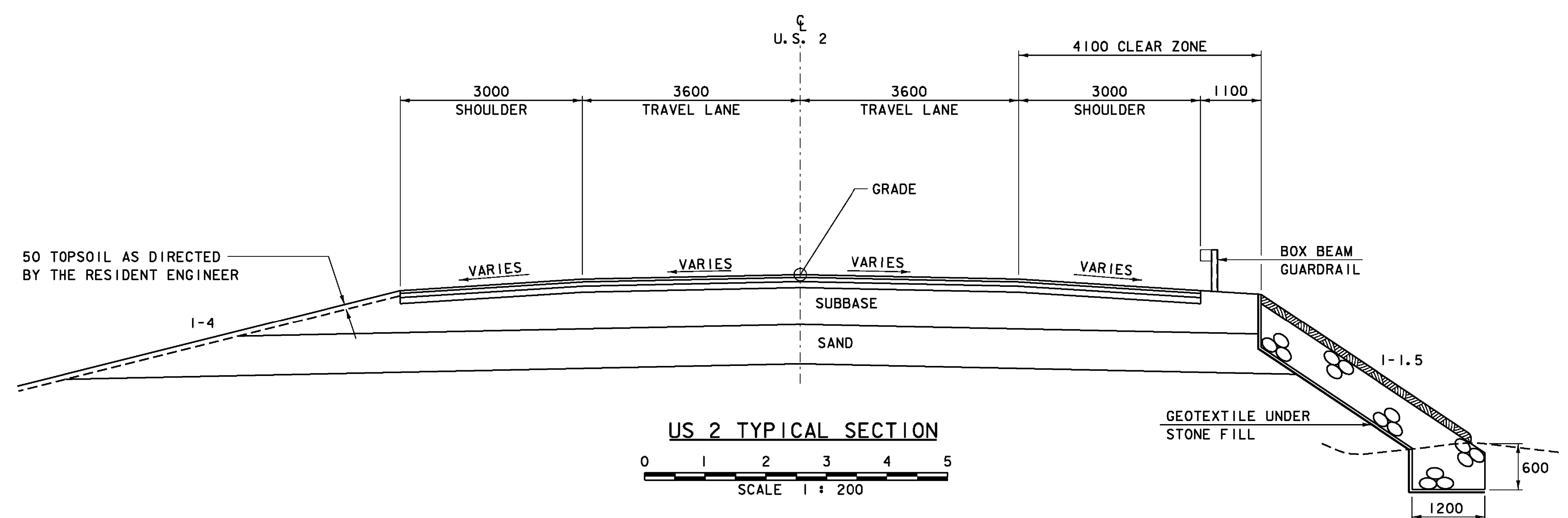
NOTES:
 1. CONTOURS SHOWN INDICATE THE EXISTING SITE. SEE ROADWAY CROSS SECTIONS FOR GRADE CHANGE

FOR R.O.W. USE ONLY



TYPICAL INTEGRAL ABUTMENT SECTION
NOT TO SCALE

ACTUAL LIMITS OF STRUCTURE EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR. HOWEVER, ONLY THE EXCAVATION BETWEEN THE LIMITS SHOWN WILL BE PAID FOR UNDER THE ITEM 204.25 "STRUCTURE EXCAVATION". EXCAVATION BY THE CONTRACTOR OUTSIDE OF THESE LIMITS WILL BE AT THE EXPENSE OF THE CONTRACTOR.



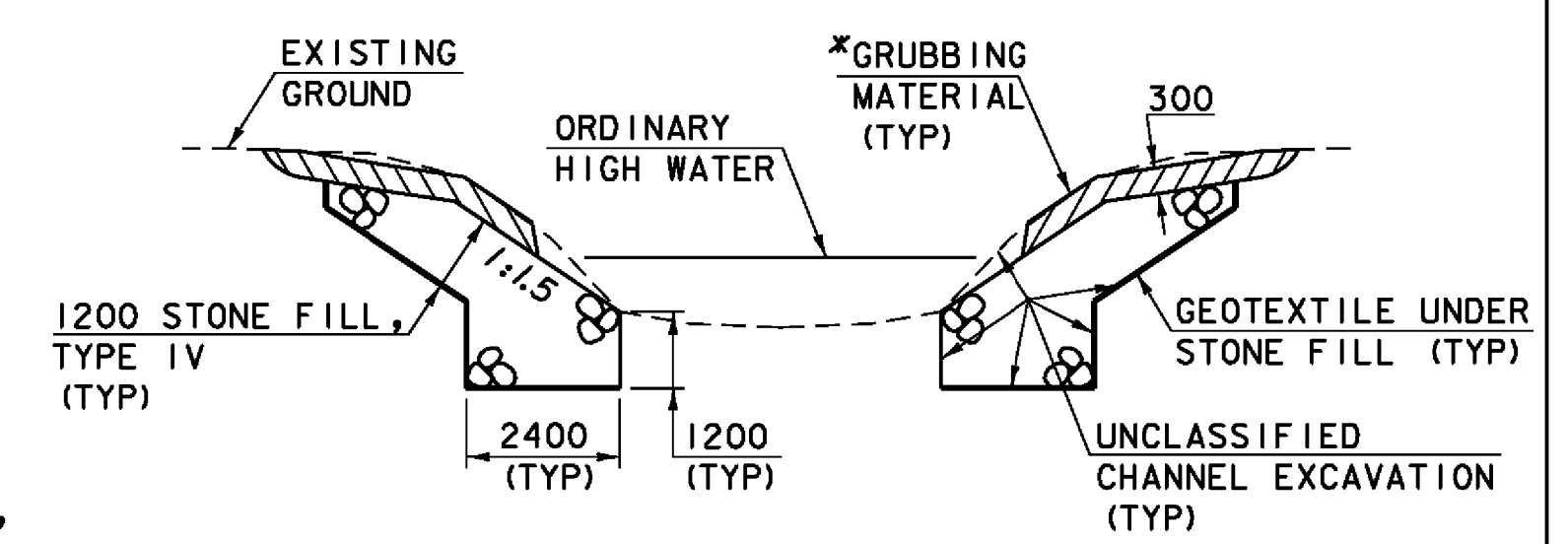
US 2 TYPICAL SECTION
SCALE 1:200

- 45 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (TYPE I11S)
- 75 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (TYPE I1S)
- 85 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (TYPE I1S)
- 600 SUBBASE OF DENSE GRADED CRUSHED STONE
- 500 SAND BORROW

NOTE: NUMBER OF GYRATION (N_{DESIGN}) = 75
FOR PG GRADE SEE SECTION 490 OF THE GENERAL SPECIAL PROVISIONS

ROADWAY BUILT AS DESIGNED

NOTE:
ALL SLOPES STEEPER THAN 1-2 SHALL HAVE A 600 BLANKET OF STONE FILL, TYPE II. THE STONE FILL BLANKET SHALL BE COVERED WITH A 300 LAYER OF GRUBBING MATERIAL, FERTILIZED, LIMESTONED, SEEDED AND MULCHED.



TYPICAL CHANNEL SECTION
(NOT TO SCALE)

*GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.

MATERIAL ITEM	TOLERANCE
PAVEMENT	±5 mm TOTAL THICKNESS
BASE COURSE	±10 mm
SUBBASE	±30 mm
SAND BORROW	±30 mm

PROJECT: EAST MONTPELIER	PROJECT NO. : BRF 028-3(36)
DESIGN FILE NAME: /98b254/str/sb254typ.dgn	PLOT DATE: 13-FEB-2009
IPARM FILE NAME: sb254typ.i	DRAWN BY: R.PELLETT
DESIGNED BY: J.LACROIX	CHECKED BY: J.LACROIX
SQUAD LEADER: K.HIGGINS	SHEET: 7 OF 68
TYPICAL SECTIONS	

100mm WHITE LINE
 STA. 1+059.500 LT - STA. 1+177.000 RT
 STA. 1+059.500 RT - STA. 1+177.000 LT

100mm YELLOW LINE
 STA. 1+059.500 - STA. 1+177.000
 (DOUBLE CENTERLINE)

**SPECIAL PROVISION
 (ALUMINUM APPROACH RAILING,
 ANODIZED)**
 STA. 1+096.852 RT - STA. 1+104.059 RT
 STA. 1+095.582 LT - STA. 1+104.059 LT
 STA. 1+123.449 RT - STA. 1+130.655 RT
 STA. 1+123.449 LT - STA. 1+130.655 LT

**SPECIAL PROVISION
 (BRIDGE RAILING,
 ANODIZED 3 RAIL ALUMINUM)**
 STA. 1+104.059 LT - STA. 1+123.449 LT

**SPECIAL PROVISION
 (BRIDGE RAILING, ANODIZED
 ALUMINUM/PEDESTRIAN)**
 STA. 1+104.059 RT - STA. 1+123.449 RT

SIDEWALK RAMP (TYPE 1)
 STA. 1+098.116 RT - STA. 1+101.116 RT
 STA. 1+141.138 RT - STA. 1+144.138 RT

PORTLAND CEMENT CONCRETE SIDEWALK 125 mm
 STA. 1+095.468 RT - STA. 1+104.000 RT
 STA. 1+123.500 RT - STA. 1+146.796 RT

CAST-IN-PLACE CONCRETE CURB, TYPE B
 STA. 1+098.068 RT - STA. 1+104.000 RT
 STA. 1+123.500 RT - STA. 1+144.138 RT

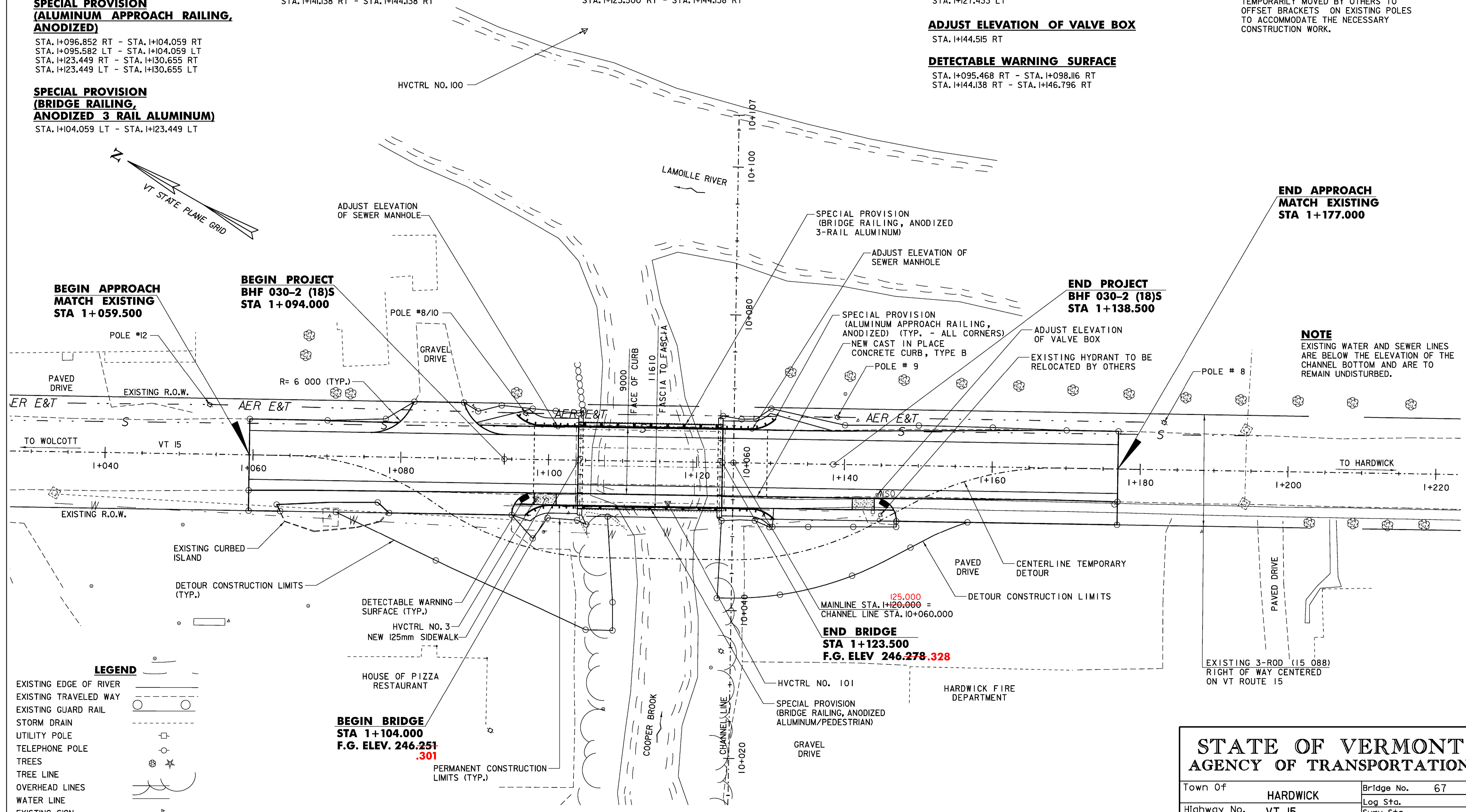
CONSTRUCT DRIVE & PAVED APRON
 STA. 1+059.500 RT - STA. 1+095.114 RT
 STA. 1+079.652 LT - STA. 1+090.517 LT
 STA. 1+146.778 RT - STA. 1+177.000 RT

ADJUST ELEVATION OF SEWER MANHOLE
 STA. 1+101.210 LT
 STA. 1+127.433 LT

ADJUST ELEVATION OF VALVE BOX
 STA. 1+144.515 RT

DETECTABLE WARNING SURFACE
 STA. 1+095.468 RT - STA. 1+098.116 RT
 STA. 1+144.138 RT - STA. 1+146.796 RT

NOTE:
 EXISTING AERIAL UTILITIES WILL BE TEMPORARILY MOVED BY OTHERS TO OFFSET BRACKETS ON EXISTING POLES TO ACCOMMODATE THE NECESSARY CONSTRUCTION WORK.



**END APPROACH
 MATCH EXISTING
 STA 1+177.000**

**END PROJECT
 BHF 030-2 (18)S
 STA 1+138.500**

**BEGIN PROJECT
 BHF 030-2 (18)S
 STA 1+094.000**

**BEGIN APPROACH
 MATCH EXISTING
 STA 1+059.500**

**END BRIDGE
 STA 1+123.500
 F.G. ELEV 246.278.328**

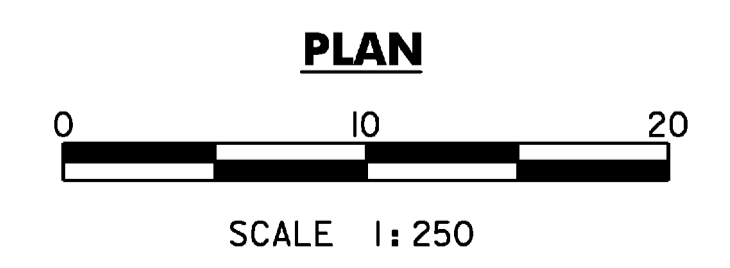
**BEGIN BRIDGE
 STA 1+104.000
 F.G. ELEV. 246.251.301**

NOTE
 EXISTING WATER AND SEWER LINES ARE BELOW THE ELEVATION OF THE CHANNEL BOTTOM AND ARE TO REMAIN UNDISTURBED.

LEGEND

EXISTING EDGE OF RIVER	
EXISTING TRAVELED WAY	
EXISTING GUARD RAIL	
STORM DRAIN	
UTILITY POLE	
TELEPHONE POLE	
TREES	
TREE LINE	
OVERHEAD LINES	
WATER LINE	
EXISTING SIGN	
SEWER LINE	
CLEAR ZONE	
EXISTING R.O.W.	
MONITORING WELL	

EXISTING BRIDGE DATA
 SINGLE SPAN STEEL BEAM WITH CONCRETE DECK, SIDEWALK AND GUARDRAIL ON CONCRETE ABUTMENTS.
 CLEAR WIDTH 9M,
 SIDEWALK WIDTH 1.5M AND FASCIA TO FASCIA WIDTH 11.9M

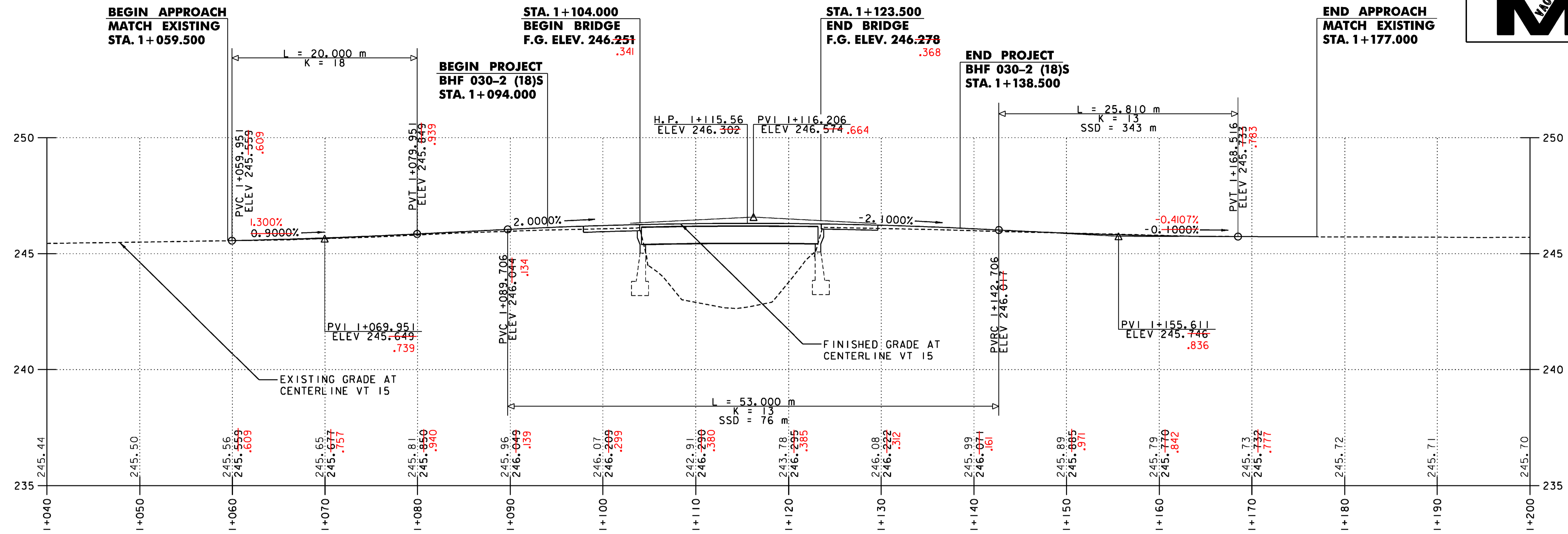


DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD 83/92

DuBois & King
 engineering planning management development

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK			
SITE PLAN			
Designed By	A.P. GUYETTE	Drawn By	S.J. BIJOLLE
Checked By	E. P. DETRICK	Bridge Design Supervisor	J.W. TUCKER
	1/09	Date	1/09
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info. M:\Projects\95J306\Structures\04-13-09 updates\z95J			
Bridge Sheet No.		Sheet 8 of 38	



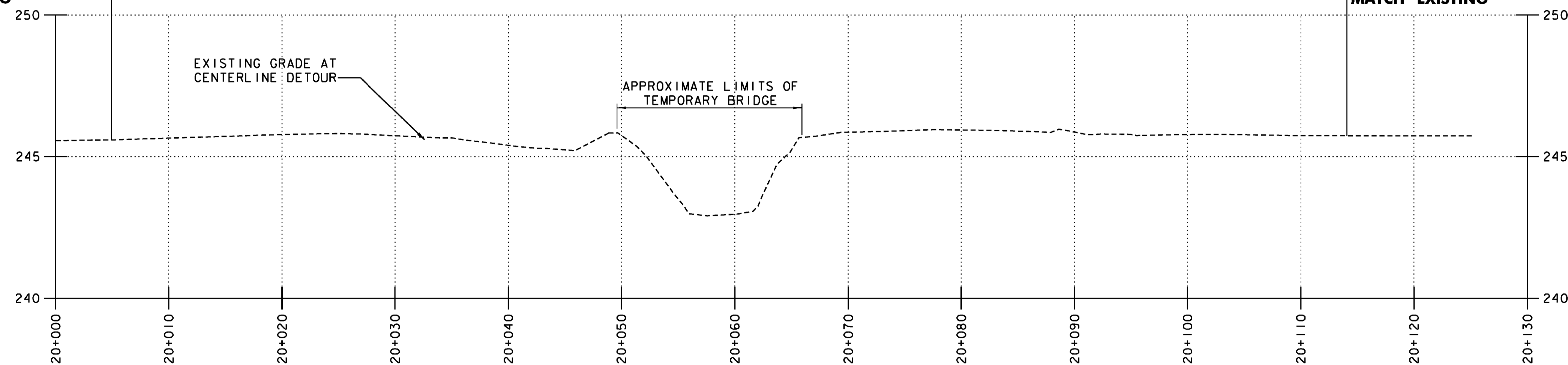
STATION ALONG CENTERLINE VT 15 (KILOMETERS)

CENTERLINE PROFILE

VT 15 STA. 1+064.911
DETOUR STA. 20+004.911
BEGIN DETOUR
MATCH EXISTING

NOTE: GRADES SHOWN TO THE NEAREST HUNDRETH REPRESENT EXISTING GROUND ELEVATION ALONG THE MAINLINE CONSTRUCTION CENTERLINE. GRADES SHOWN TO THE NEAREST THOUSANDTH REPRESENT FINISH GRADE ELEVATION ALONG THE MAINLINE CONSTRUCTION CENTERLINE.

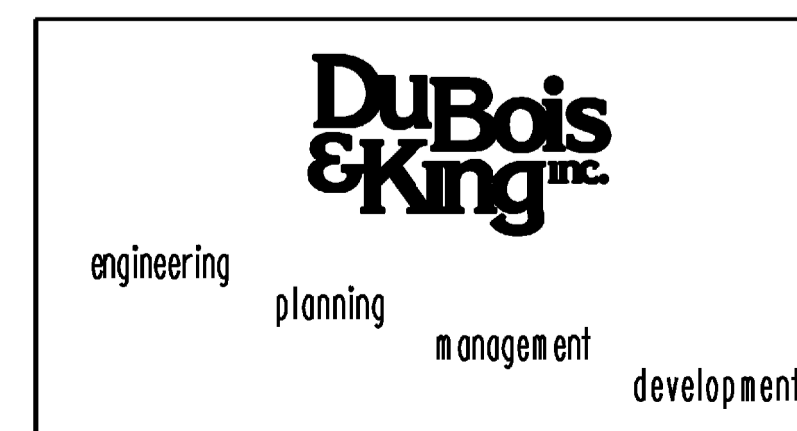
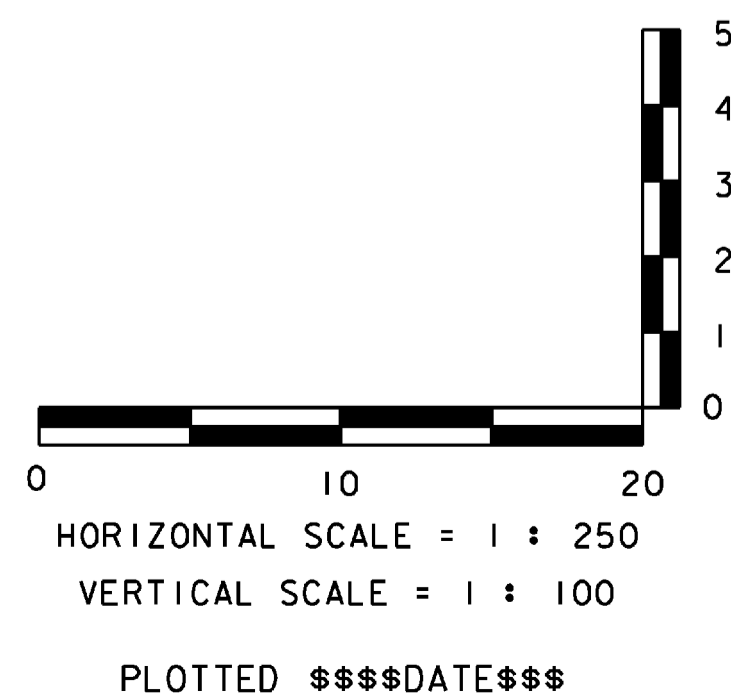
VT 15 STA. 1+168.904
DETOUR STA. 20+114.071
END DETOUR
MATCH EXISTING



STATION ALONG CENTERLINE TEMPORARY DETOUR (KILOMETERS)

EXISTING GROUND - TEMPORARY DETOUR

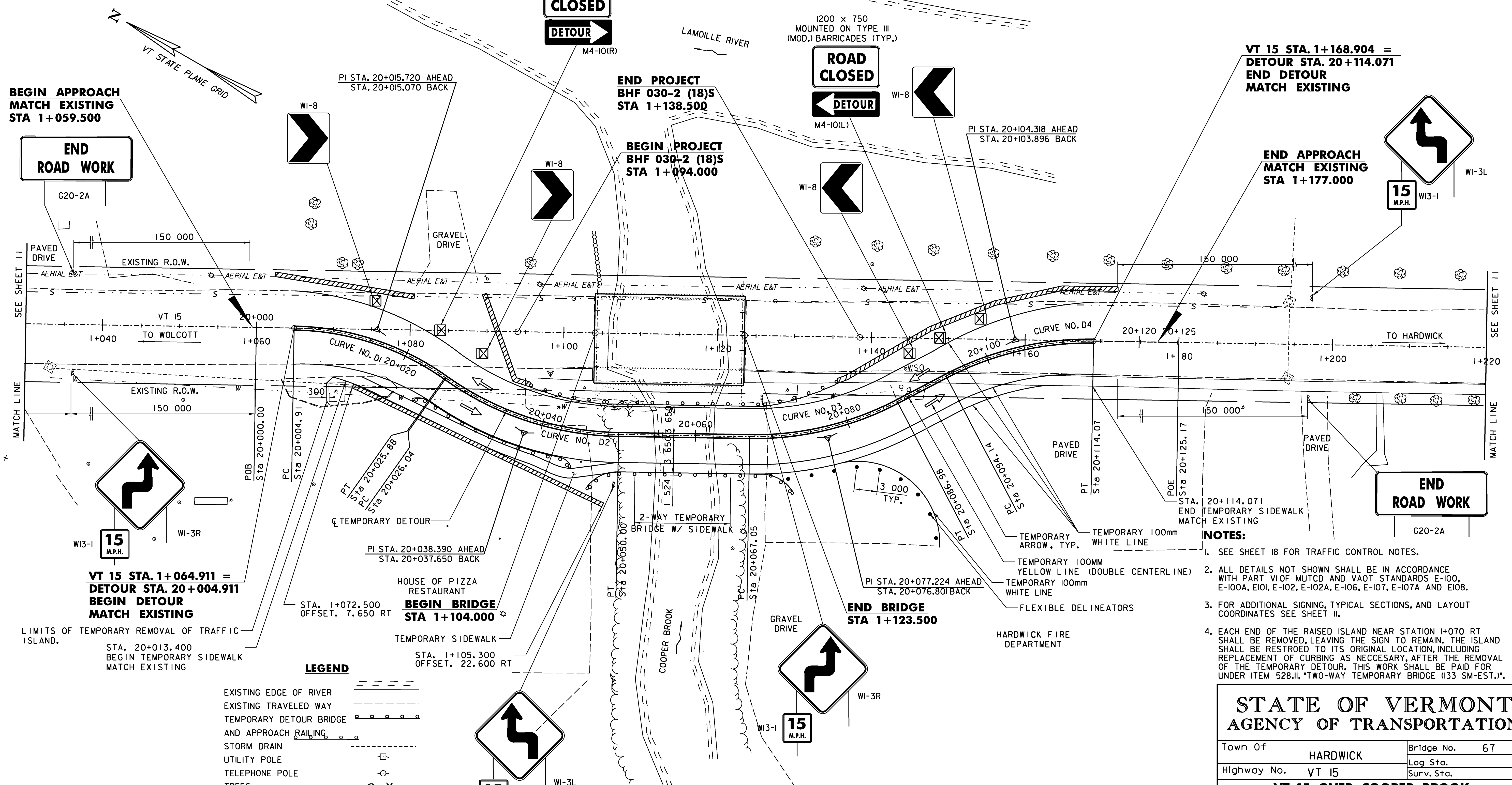
DATUM
 VERTICAL NAVD 88
 HORIZONTAL NAD 83/92



STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK			
PROFILE			
Designed By	A.P. GUYETTE	Drawn By	S.J. BIJOLLE
Checked By	Date	Bridge Design Supervisor	
	E. P. DETRICK 11/08	J.W. TUCKER	Date 11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info.	DGN#SPEC#	Bridge Sheet No.	Sheet 9 of 38

CURVE DATA NO. D1	CURVE DATA NO. D2
Δ = 34° 19' 28.7"	Δ = 34° 19' 28.7"
D = 163° 42' 08.0"	D = 143° 14' 22.0"
R = 35.000	R = 40.000
T = 10.809	T = 12.353
L = 20.968	L = 23.963
E = 1.631	E = 1.864
2T-L = 0.650	2T-L = 0.743

CURVE DATA NO. D3	CURVE DATA NO. D4
Δ = 28° 32' 51.3"	Δ = 28° 32' 51.3"
D = 143° 14' 22.0"	D = 143° 14' 22.0"
R = 40.000	R = 40.000
T = 10.176	T = 10.176
L = 19.930	L = 19.930
E = 1.274	E = 1.274
2T-L = 0.422	2T-L = 0.422



BEGIN APPROACH
MATCH EXISTING
STA 1+059.500

END
ROAD WORK

END PROJECT
BHF 030-2 (18)S
STA 1+138.500

BEGIN PROJECT
BHF 030-2 (18)S
STA 1+094.000

VT 15 STA. 1+168.904 =
DETOUR STA. 20+114.071
END DETOUR
MATCH EXISTING

END APPROACH
MATCH EXISTING
STA 1+177.000

VT 15 STA. 1+064.911 =
DETOUR STA. 20+004.911
BEGIN DETOUR
MATCH EXISTING

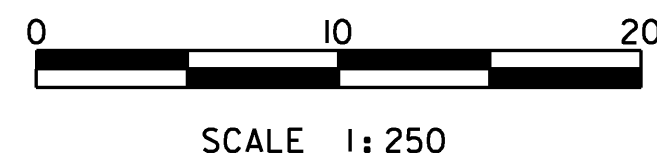
HOUSE OF PIZZA
RESTAURANT
BEGIN BRIDGE
STA 1+104.000

END BRIDGE
STA 1+123.500

- NOTES:**
- SEE SHEET 18 FOR TRAFFIC CONTROL NOTES.
 - ALL DETAILS NOT SHOWN SHALL BE IN ACCORDANCE WITH PART VI OF MUTCD AND VAOT STANDARDS E-100, E-100A, E101, E-102, E-102A, E-106, E-107, E-107A AND E108.
 - FOR ADDITIONAL SIGNING, TYPICAL SECTIONS, AND LAYOUT COORDINATES SEE SHEET 11.
 - EACH END OF THE RAISED ISLAND NEAR STATION 1+070 RT SHALL BE REMOVED, LEAVING THE SIGN TO REMAIN. THE ISLAND SHALL BE RESTORED TO ITS ORIGINAL LOCATION, INCLUDING REPLACEMENT OF CURBING AS NECESSARY, AFTER THE REMOVAL OF THE TEMPORARY DETOUR. THIS WORK SHALL BE PAID FOR UNDER ITEM 528.JI, 'TWO-WAY TEMPORARY BRIDGE (133 SM-EST.)'.

LEGEND

- EXISTING EDGE OF RIVER
- EXISTING TRAVELED WAY
- TEMPORARY DETOUR BRIDGE AND APPROACH RAILING
- STORM DRAIN
- UTILITY POLE
- TELEPHONE POLE
- TREES
- TREE LINE
- OVERHEAD LINES
- WATER LINE
- EXISTING SIGN
- SEWER LINE
- TEMPORARY BARRIER
- TYPE III BARRICADES (MOD.)
- FLEXIBLE DELINEATOR

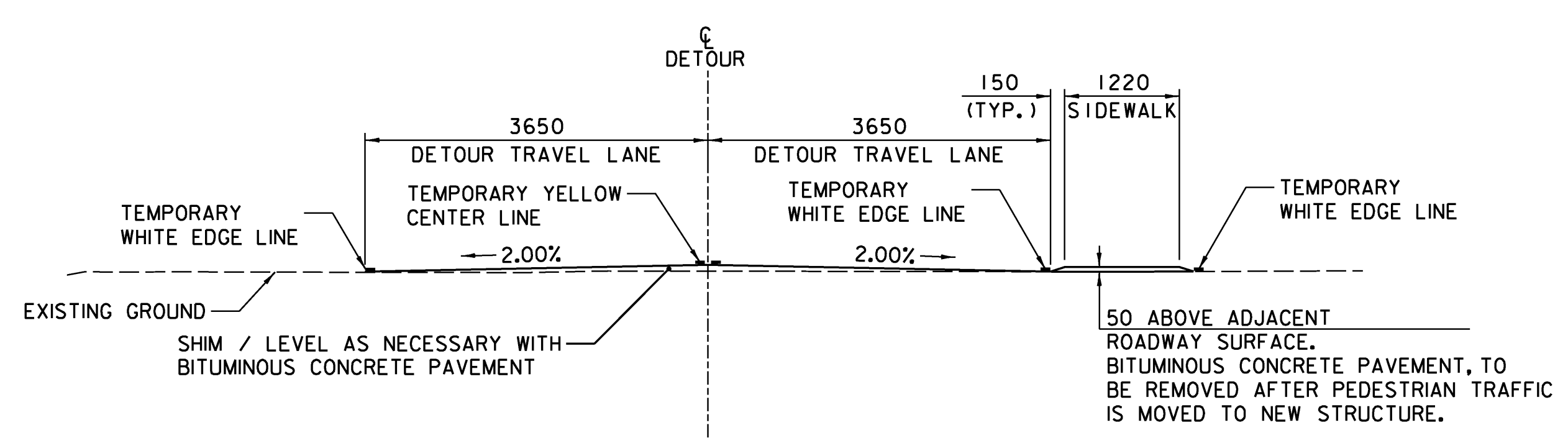
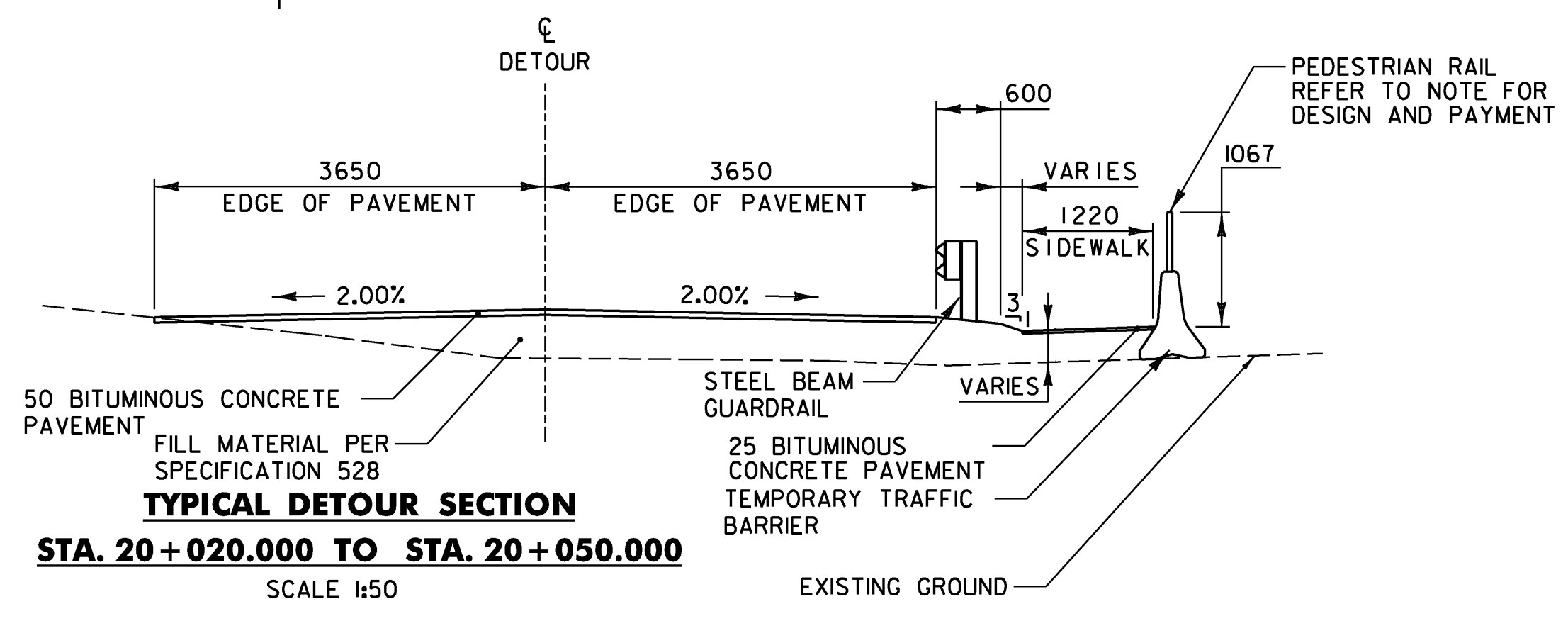
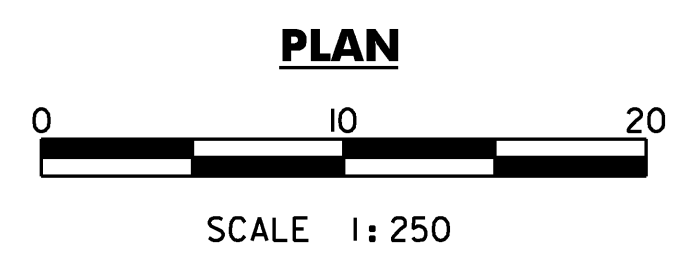
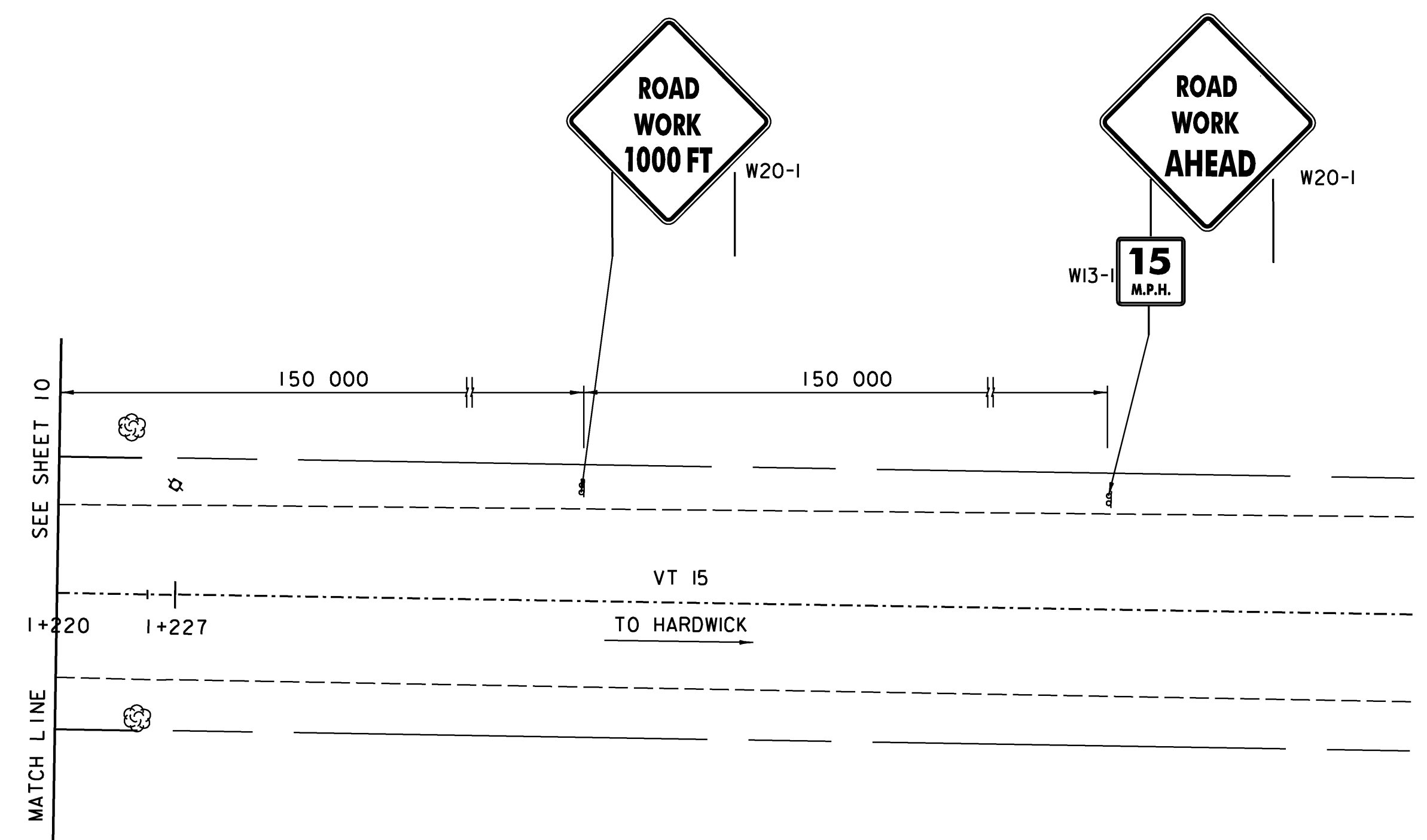
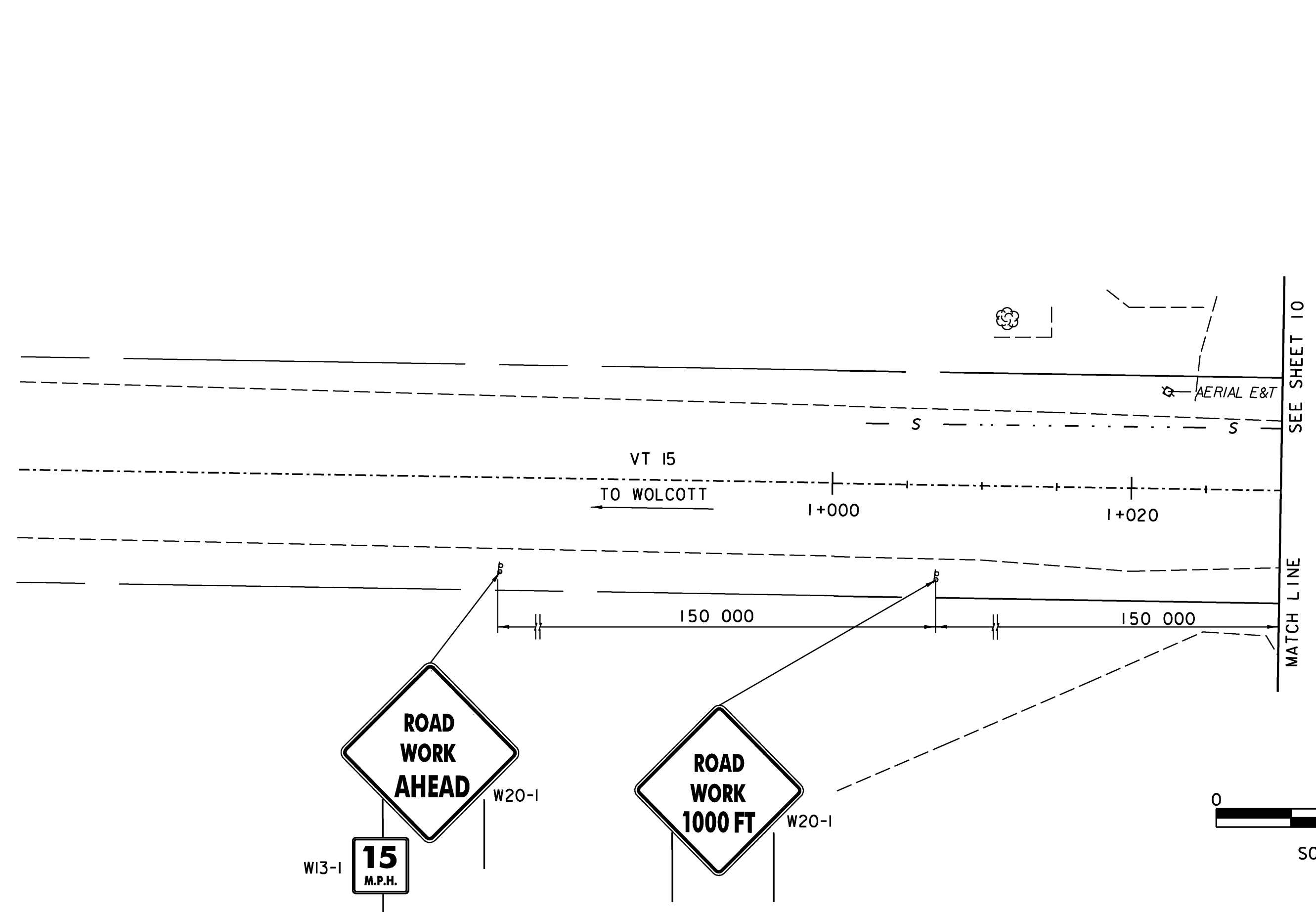


DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD 83/92

engineering planning management development

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of	HARDWICK
Highway No.	VT 15
Bridge No.	67
Log Sta.	
Surv. Sta.	
VT 15 OVER COOPER BROOK TRAFFIC CONTROL SHEET 1	
Designed By	A.P. GUYETTE
Drawn By	S.J. BIJOLLE
Checked By	Date
E.P. DETRICK	11/08
Bridge Design Supervisor	Date
J.W. TUCKER	11/08
PROJECT	HARDWICK
PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info. DGN#SPEC#	
Bridge Sheet No.	Sheet 10 of 38



LEGEND

- EXISTING EDGE OF RIVER
- EXISTING TRAVELED WAY
- GUARD RAIL
- STORM DRAIN
- UTILITY POLE
- TELEPHONE POLE
- TREES
- TREE LINE
- OVERHEAD LINES
- WATER LINE
- EXISTING SIGN
- SEWER LINE
- TEMPORARY BARRIER
- TYPE III BARRICADES (MOD.)
- FLEXIBLE DELINEATOR
- CLEAR ZONE

NOTE:

THE CONTRACTOR SHALL PROVIDE A TEMPORARY PEDESTRIAN RAILING ON TOP OF THE CONCRETE BARRIERS. THE DESIGN OF THE RAILING SHALL BE INCLUDED WITH THE TEMPORARY BRIDGE PLANS SUBMITTAL, AND ALL COSTS SHALL BE INCLUDED IN ITEM 528.11, "TWO-WAY TEMPORARY BRIDGE (133 SM-EST.)."

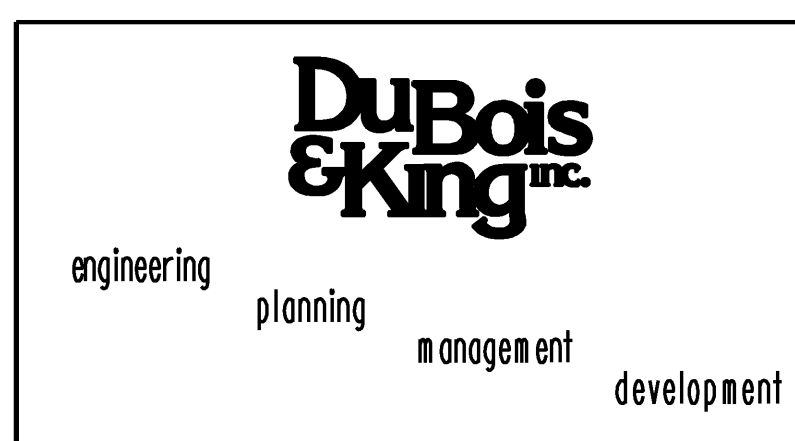
LAYOUT COORDINATES FOR TEMPORARY DETOUR

Station	Point	N	E
STA. 20+000.000	POB	N 223 188.829	E 510 174.757
STA. 20+004.911	PC	N 223 184.536	E 510 177.142
STA. 20+015.720	PI	N 223 175.088	E 510 182.393
STA. 20+025.879	PT	N 223 164.324	E 510 181.401
STA. 20+026.037	PC	N 223 164.167	E 510 181.387
STA. 20+038.390	PI	N 223 151.866	E 510 180.254
STA. 20+050.000	PT	N 223 141.068	E 510 186.255
STA. 20+067.047	PC	N 223 126.167	E 510 194.535
STA. 20+077.224	PI	N 223 117.272	E 510 199.479
STA. 20+086.977	PT	N 223 111.820	E 510 208.072
STA. 20+094.141	PC	N 223 107.983	E 510 214.121
STA. 20+104.318	PI	N 223 102.531	E 510 222.714
STA. 20+114.071	PT	N 223 093.636	E 510 227.658
STA. 20+125.167	POE	N 223 083.937	E 510 233.048

NOTE:

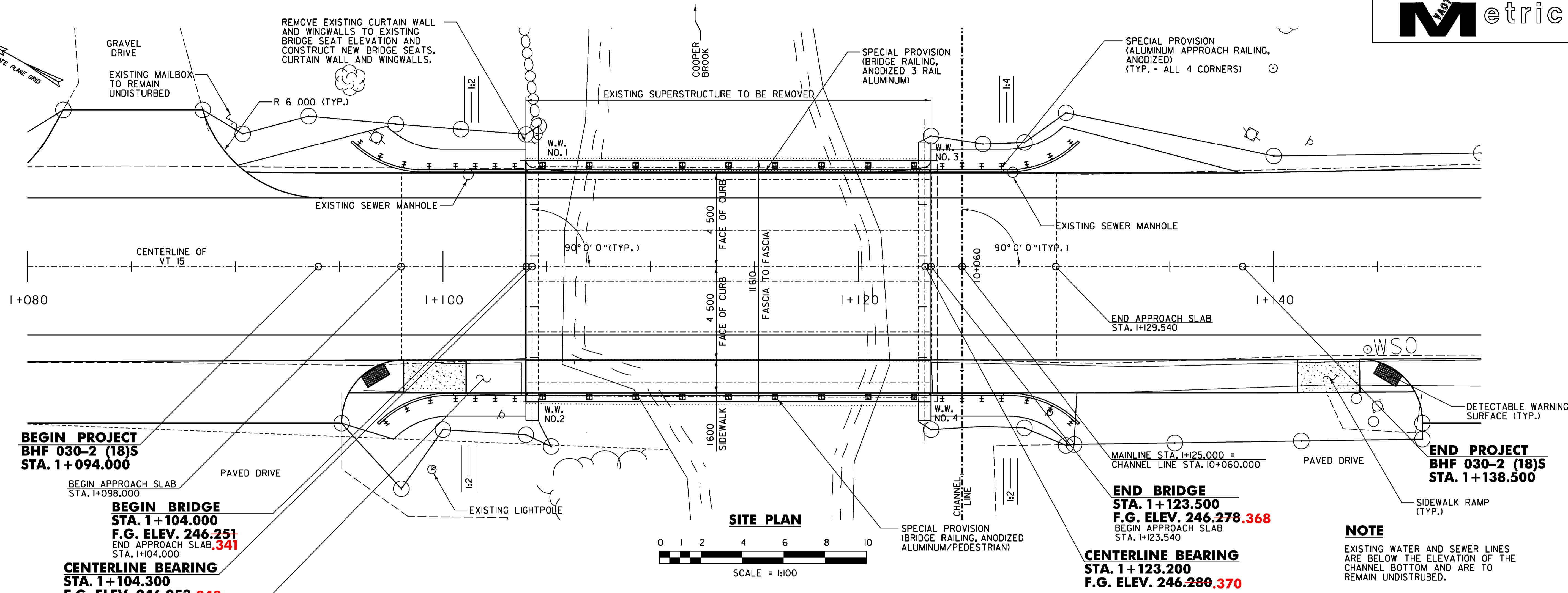
IN AREAS WHERE TEMPORARY BITUMINOUS CONCRETE IS TO BE REMOVED, THE AREA SHALL BE RESTORED TO ITS ORIGINAL CONDITION. THE COSTS FOR THIS WORK SHALL BE INCIDENTAL TO ITEM 528.11, "TWO-WAY TEMPORARY BRIDGE (133 SM-EST.)."

DATUM
 VERTICAL NAVD 88
 HORIZONTAL NAD 83/92



**STATE OF VERMONT
 AGENCY OF TRANSPORTATION**

Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK TRAFFIC CONTROL SHEET 2			
Designed By	A.P. GUYETTE	Drawn By	S.J. BIJOLLE
Checked By	Date	Bridge Design Supervisor	
	E. P. DETRICK 11/08	J.W. TUCKER	Date 11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info. DGN\$SPEC\$		Sheet 11 of 38	
Bridge Sheet No.			



BEGIN PROJECT
BHF 030-2 (18)S
STA. 1+094.000

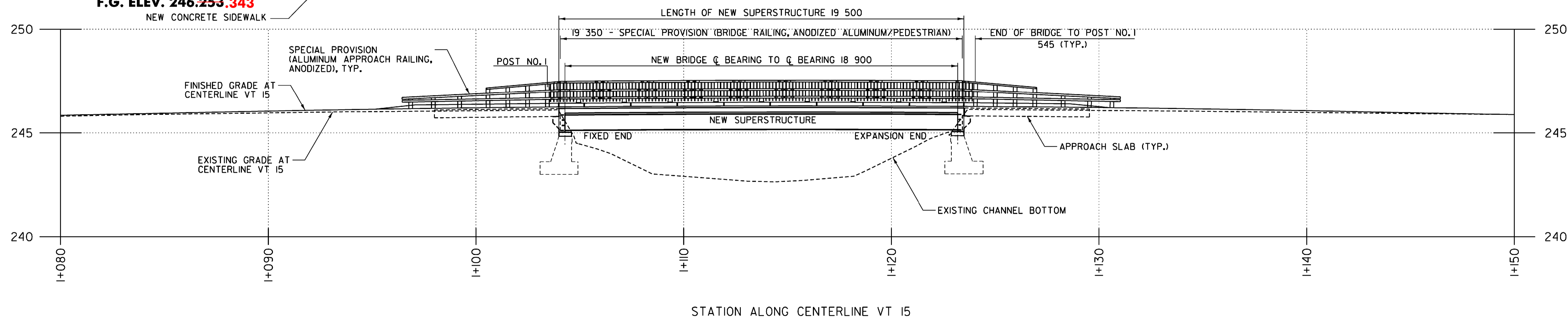
BEGIN BRIDGE
STA. 1+104.000
F.G. ELEV. 246.251
END APPROACH SLAB STA. 1+104.000

CENTERLINE BEARING
STA. 1+104.300
F.G. ELEV. 246.253.343
NEW CONCRETE SIDEWALK

END BRIDGE
STA. 1+123.500
F.G. ELEV. 246.278.368
BEGIN APPROACH SLAB STA. 1+123.540

CENTERLINE BEARING
STA. 1+123.200
F.G. ELEV. 246.280.370

NOTE
 EXISTING WATER AND SEWER LINES ARE BELOW THE ELEVATION OF THE CHANNEL BOTTOM AND ARE TO REMAIN UNDISTURBED.



ELEVATION

SCALE = 1:100

LEGEND

EXISTING EDGE OF RIVER	---
EXISTING TRAVELED WAY	---
EXISTING GUARD RAIL	---
STORM DRAIN	---
UTILITY POLE	□
TELEPHONE POLE	○
TREES	⊗
TREE LINE	⌒
OVERHEAD LINES	— AERIAL E&T —
WATER LINE	— W —
EXISTING SIGN	⊕
SEWER LINE	— S —
CLEAR ZONE	— - - CZ —

DATUM
 VERTICAL NAVD 88
 HORIZONTAL NAD 83/92

DuBois & King
 INC.
 engineering planning management development

STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
Town Of HARDWICK	Bridge No. 67
Highway No. VT 15	Log Sta. _____ Surv. Sta. _____
VT 15 OVER COOPER BROOK	
PLAN AND ELEVATION	
Designed By A.P. GUYETTE	Drawn By S.J. BIJOLLE
Checked By E. P. DETRICK	Bridge Design Supervisor J.W. TUCKER
PROJECT HARDWICK	PROJECT NO. BHF 030-2 (18) S
I.G.C. Info. DGN#SPEC#	
Bridge Sheet No. _____	Sheet 12 of 38

1.1 PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF REPLACEMENT OF THE EXISTING SUPERSTRUCTURE WITH A NEW STEEL BEAM, CAST-IN-PLACE CONCRETE DECK SUPERSTRUCTURE AND CURTAIN WALL TO BE PLACED ON REHABILITATED ABUTMENTS. ADDITIONAL WORK INCLUDES THE INSTALLATION AND REMOVAL OF A TWO-WAY TEMPORARY BRIDGE, INSTALLATION OF NEW SIDEWALK, AND ASSOCIATED APPROACH WORK. THE APPROACH WORK WILL INCLUDE REMOVAL AND REPLACEMENT OF THE EXISTING GUARDRAIL AND RECONSTRUCTION OF THE APPROACH ROADWAY AND SIDE SLOPES ON ITS EXISTING ALIGNMENT.

THE PROJECT IS LOCATED ON VERMONT ROUTE 15, AND BEGINS AT APPROXIMATELY 840 METERS NORTH OF THE JUNCTION WITH VERMONT ROUTE 14 IN THE VILLAGE OF HARDWICK. THE PROJECT SPANS THE COOPER BROOK AND ENDS AT 44.5 m AFTER ITS BEGINNING. THIS PORTION OF VERMONT ROUTE 15 IS A PAVED CLASS I TOWN HIGHWAY IN THE TOWN OF HARDWICK. PRIOR TO CONSTRUCTION, A TEMPORARY DETOUR AND BRIDGE WILL BE INSTALLED UPSTREAM OF THE EXISTING BRIDGE AND WILL BE USED TO MAINTAIN VEHICULAR TRAFFIC DURING CONSTRUCTION. THE TEMPORARY DETOUR WILL BE A TOTAL LENGTH OF APPROXIMATELY 110 METERS AND WILL BE REMOVED UPON COMPLETION OF CONSTRUCTION. THIS PROJECT IS EXPECTED TO LAST ONE CONSTRUCTION SEASON.

THE MATERIAL TO BE EXCAVATED FROM THE SITE WILL INCLUDE EXISTING BITUMINOUS CONCRETE SURFACE AND SUBBASE WITHIN THE EXISTING ROADWAY AS WELL AS EXCAVATION FOR THE PLACEMENT OF THE TEMPORARY ABUTMENTS USED TO SUPPORT THE TEMPORARY BRIDGE. STOCKPILING OF ANY EXCAVATED MATERIAL TO BE REUSED IS EXPECTED TO TAKE PLACE WITHIN THE PROJECT LIMITS. LIKEWISE, STOCKPILING OF ANY NEW MATERIAL TO BE USED IS EXPECTED TO TAKE PLACE WITHIN THE PROJECT LIMITS. THE LIMIT OF CONSTRUCTION AND ASSOCIATED MAXIMUM SOIL DISTURBANCE AREA FOR THE ROADWAY AND BRIDGE CONSTRUCTION IS APPROXIMATELY 0.37 ACRES. ADDITIONALLY THERE WILL BE APPROXIMATELY 0.25 ACRES OF DISTURBED SOIL ASSOCIATED WITH THE CONSTRUCTION, USE AND REMOVAL OF THE TEMPORARY DETOUR. THE TOTAL FOOTPRINT AREA OF DISTURBED SOILS IS CALCULATED TO BE 0.62 ACRES.

THE EXISTING ENVIRONMENTAL RESOURCE ELEMENTS IN THE VICINITY OF THE PROJECT ARE COOPER BROOK AND THE LAMOILLE RIVER. THE BANKS OF COOPER BROOK WITHIN THE PROJECT LIMITS ARE NATURAL SOIL AND ROCK SLOPES EXTENDING FROM THE EXISTING GRADES OR ABUTMENTS TO THE ELEVATION OF THE WATER WITHIN THE BROOK. DISTURBED AREAS ON THE BROOK BANK WILL INCLUDE THE CONSTRUCTION OF THE NEW CURTAIN WALL ON BOTH ABUTMENTS, AND DURING THE CONSTRUCTION OF THE TEMPORARY BRIDGE. ALL PROPOSED CONSTRUCTION IS TO TAKE PLACE IN THE DRY.

1.2 SITE INVENTORY

1.2.1 OFFSITE DRAINAGE CHARACTERISTICS

THIS PROJECT SITE IS LOCATED IN AN RURAL, HIGHLY TRAVELED AREA IN THE TOWN OF HARDWICK. THE AREA SURROUNDING THE PROJECT IS MODERATELY SLOPED WITH ESTABLISHED VEGETATION, INCLUDING GRASSY LAWNS, TREE LINES, AND PAVED AND GRAVEL PARKING LOTS. MUCH OF THE RUNOFF FROM THE SURROUNDING TERRAIN DRAINS DIRECTLY INTO THE COOPER BROOK AND LAMOILLE RIVER.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER

THE PROJECT SPANS COOPER BROOK WITH MAJOR CONSTRUCTION TAKING PLACE ON BOTH SIDES OF THE BROOK. THE PRIMARY OBJECTIVE FOR THIS EROSION PROTECTION AND SEDIMENT CONTROL PLAN WILL BE TO PREVENT THE MOBILIZATION AND TRANSPORT OF SEDIMENT INTO THE COOPER BROOK. ALL WORK SHALL TAKE PLACE ABOVE THE ORDINARY HIGH WATER MARK FOR COOPER BROOK. COOPER BROOK FLOWS INTO THE LAMOILLE RIVER.

1.2.3 TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES

THE TOPOGRAPHY OF THE PROJECT AREA CONSISTS OF MODERATE SLOPES AND ROLLING HILLS. SEVERAL PERMANENT RESIDENCES, BUSINESSES AND THE TOWN OF HARDWICK'S FIRE DEPARTMENT ARE LOCATED WITHIN THE PROJECT LIMITS AND NEAR THE BRIDGE. OVERHEAD AND UNDERGROUND UTILITIES ARE LOCATED ALONG ROUTE 15, INCLUDING WATER, SEWER, ELECTRIC AND TELEPHONE.

1.2.4 VEGETATION

THE PROJECT AREA CONSISTS OF GRASSY LAWNS WITH SCATTERED SMALL AND LARGE TREES. IMPACTS TO VEGETATED AREAS WILL BE LIMITED TO THE SIDE SLOPES OF THE ROAD AND THE AREA OF THE TEMPORARY DETOUR. SEVERAL SMALL TREES WILL BE REMOVED AS PART OF THE CLEARING FOR THE DETOUR LIMITS. FOLLOWING THE COMPLETION OF CONSTRUCTION, THE TEMPORARY DETOUR AND ASSOCIATED FILL WILL BE REMOVED AND THE GRASSY VEGETATION WILL BE REESTABLISHED USING STANDARD SEED AND MULCH PRACTICES.

1.2.5 SOILS

THE SOILS IN THIS AREA ARE URBAN LAND - ADAMS - NICHOLVILLE COMPLEX. THE URBAN LAND IS MOSTLY COVERED BY STREETS, PARKING LOTS, BUILDINGS AND OTHER STRUCTURES OF URBAN AREAS. THE ADAMS SERIES CONSISTS OF VERY DEEP, SOMEWHAT EXCESSIVELY DRAINED SOILS. THESE SOILS FORMED IN SANDY GLACIOFLUVIAL DEPOSITS ON OUTWASH PLAINS AND OUTWASH TERRACES. PERMEABILITY IS RAPID IN THE SOLUM AND VERY RAPID IN THE SUBSTRATUM. THE NICHOLVILLE SERIES CONSISTS VERY DEEP, MODERATELY WELL DRAINED SOILS. THESE SOILS FORMED IN SILTY GLACIOLACUSTRINE DEPOSITS ON LAKE TERRACES. PERMEABILITY IS MODERATE THROUGHOUT THE SOIL.

1.2.6 SENSITIVE RESOURCE AREAS

THE ONLY KNOWN SENSITIVE AREAS THAT NEED TO BE PROTECTED ARE THE COOPER BROOK AND LAMOILLE RIVER. NO THREATENED AND ENDANGERED SPECIES, PRIME AGRICULTURAL SOILS, HISTORICAL OR ARCHEOLOGICAL SITES, OR OTHER CRITICAL HABITATS EXIST WITHIN THE PROJECT AREA.

1.3 RISK EVALUATION

SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT THEN THE SELECTED CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL PERMITTING WITH VANR VIA FILING OF THE APPROPRIATE NOTICE OF INTENT UNDER THE CONSTRUCTION GENERAL PERMIT PROCESS.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

TO MINIMIZE THE POTENTIAL FOR STORM WATER RUNOFF TO TRANSPORT SEDIMENT INTO THE RIVER, SEVERAL KEY EROSION CONTROL DEVICES AND GENERAL PRACTICES WILL BE USED. DETAILS OF THE DEVICES AND THE LOCATION OF THEIR PLACEMENT CAN BE FOUND IN THE EROSION CONTROL PLANS AND DETAILS. ALL EROSION CONTROL MEASURES SHALL BE PLACED IN ACCORDANCE WITH THE EROSION CONTROL DETAILS IN THESE PLANS.

1.4.1 MARK SITE BOUNDARIES

MARKING THE SITE BOUNDARIES WILL HELP TO LIMIT THE AREA OF SOIL DISTURBANCE. THE SITE BOUNDARY SHALL BE MARKED WITH PROJECT DEMARCATION FENCE.

1.4.2 LIMIT DISTURBANCE AREA

LIMITING THE DISTURBANCE AREA WILL HELP TO REDUCE THE POTENTIAL FOR SEDIMENT TRANSPORT FROM THE SITE. THE AREA OF DISTURBANCE SHALL BE LIMITED BY PHASING THE CONSTRUCTION WHEN APPROPRIATE, BY ESTABLISHING VEGETATION IN AREAS IMMEDIATELY FOLLOWING GRADING AND BY MULCHING STOCKPILED EARTHEN MATERIALS. THE EXISTING MAINLINE WILL BE CLOSED DURING CONSTRUCTION; THEREFORE IT CAN BE USED AS A STAGING AND STOCKPILE AREA. THESE AREAS WILL BE COMPLETELY WITHIN THE PROJECT LIMITS AND WILL UTILIZE THE TEMPORARY EROSION CONTROL MEASURES CALLED FOR.

1.4.3 STABILIZE CONSTRUCTION EXIT

A STABILIZED CONSTRUCTION EXIT WILL HELP TO REMOVE EARTHEN MATERIALS FROM CONSTRUCTION EQUIPMENT EXITING THE SITE. A VEHICLE TRACKING PAD SHALL BE CONSTRUCTED AT THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

1.4.4 INSTALL SILT FENCE

SILT FENCE WILL REDUCE THE AMOUNT OF SEDIMENT TRANSFERRED FROM THE SITE THROUGH STORMWATER RUNOFF. SILT FENCE SHALL BE LOCATED ALONG THE TOP OF THE GRANITE WALLS ALONG THE RIVER OR 5 FEET TO 10 FEET DOWN GRADIENT FROM THE TOES OF SLOPE. THE SILT FENCE SHALL BE PLACED PARALLEL TO, OR ALONG, THE CONTOUR, SO THE STORM WATER WILL RUN PERPENDICULAR TO THE SILT FENCE. THE ENDS SHALL BE "J" HOOKED UP GRADIENT TO CREATE A PONDING EFFECT FOR WATER TRYING TO RUN ALONG THE FENCE AND AROUND THE ENDS.

1.4.5 DIVERT UPLAND RUNOFF

DIVERSION OF UPLAND RUNOFF WILL REDUCE THE AMOUNT OF STORM WATER ENTERING THE SITE AND WILL HELP TO REDUCE THE POTENTIAL FOR STORMWATER TO TRANSPORT SEDIMENT FROM THE SITE. UPLAND RUNOFF SHALL BE DIVERTED USING SILT FENCE WHERE APPROPRIATE.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

SLOWING DOWN CHANNELIZED RUNOFF WILL HELP TO ALLOW SEDIMENT TO FALL OUT OF STORMWATER THEREFORE REDUCING THE AMOUNT OF SEDIMENT TRANSPORTED FROM THE SITE.

1.4.7 CONSTRUCT PERMANENT CONTROLS

NOT APPLICABLE

1.4.8 STABILIZE EXPOSED SOILS

STABILIZING THE EXPOSED SOILS WILL HELP TO REDUCE THE POTENTIAL FOR STORMWATER TRANSPORTING SEDIMENT FROM THE SITE. ALL TEMPORARY STOCKPILES SHALL BE MULCHED AND SEEDED AND SHALL HAVE SILT FENCE INSTALLED AT THE TOE OF SLOPE.

1.4.9 WINTER STABILIZATION

SPECIALIZED WINTER EPSC PROCEDURES SHALL BE FOLLOWED DURING WINTER CONSTRUCTION AND DURING ANY WINTER SHUT DOWN.

1.4.10 STABILIZE SOIL AT FINAL GRADE

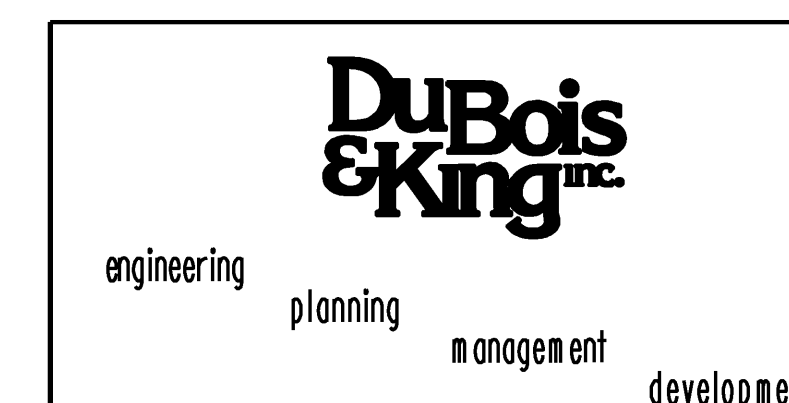
STABILIZING SOIL AT FINAL GRADE WILL HELP TO REDUCE THE AREA OF DISTURBANCE AND WILL THEREFORE REDUCE THE POTENTIAL FOR SEDIMENT TRANSPORT FROM THE SITE. FOLLOWING FINAL GRADING ALL DISTURBED AREAS OUTSIDE OF THE ROADWAY, SIDEWALK AND PARKING AREAS SHALL RECEIVE TOPSOIL, SEED AND MULCH TO REESTABLISH GRASS AND VEGETATION. TOPSOILING, SEEDING AND MULCHING SHALL BE IN ACCORDANCE WITH THE SEEDING FORMULA FOR URBAN AREAS AND ASSOCIATED NOTES AS SHOWN ON THE QUANTITY SHEET.

1.4.11 DEWATERING ACTIVITIES

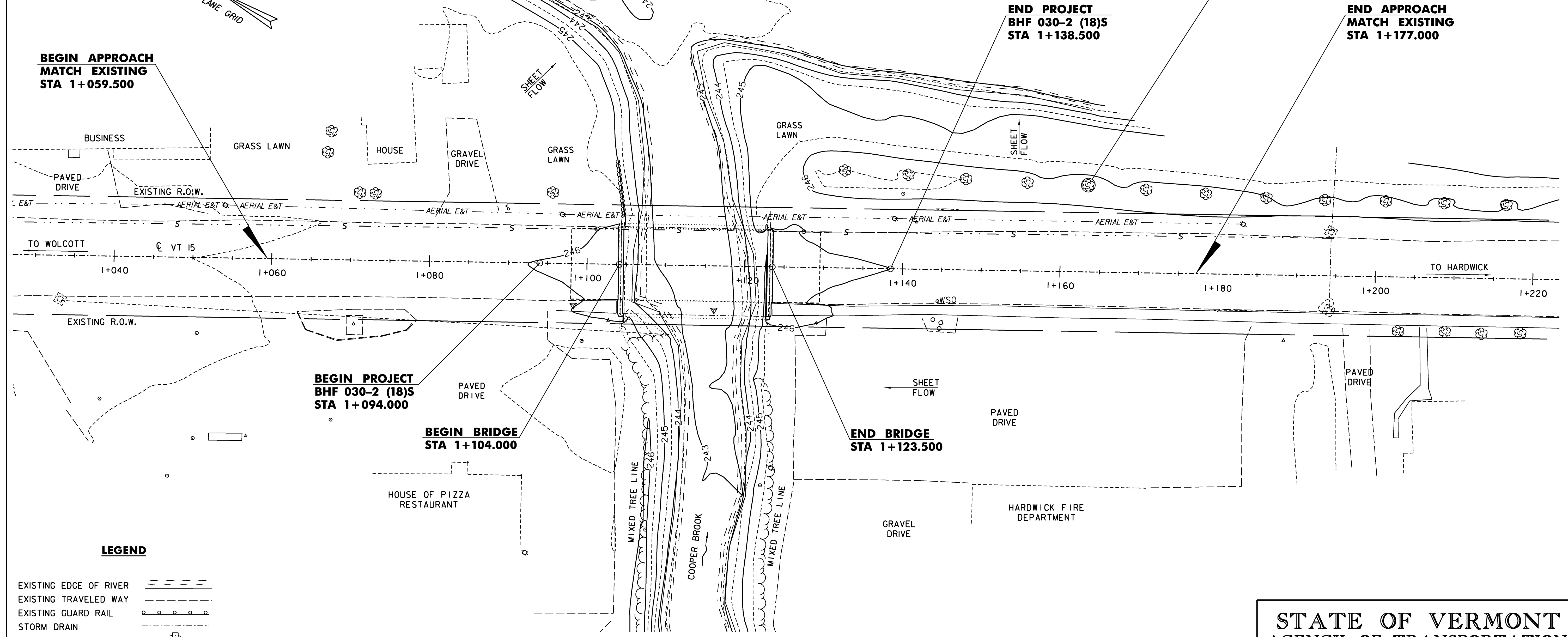
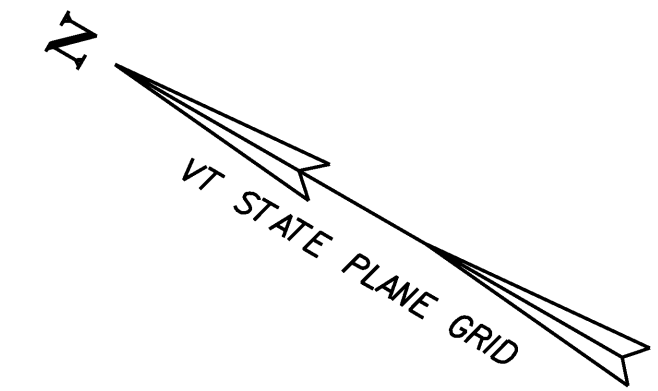
NOT APPLICABLE

1.4.12 INSPECT SITE

THE EROSION CONTROL MEASURES SHALL BE PERIODICALLY INSPECTED AND MAINTAINED ON A REGULAR BASIS. INSPECTION OF THE EROSION CONTROL MEASURES SHALL TAKE PLACE BEFORE AND AFTER MAJOR STORM EVENTS TO INSURE THEY ARE IN GOOD CONDITION AND TO REMOVE EXCESSIVE BUILDUP OF SILT AND DEBRIS AFTER THE STORM EVENTS. A REPORT ON THE EFFECTIVENESS OF THE EROSION CONTROL MEASURES SHALL BE PRESENTED TO THE RESIDENT ENGINEER AND ONSITE COORDINATOR UPON THE COMPLETION OF EACH INSPECTION. MODIFICATIONS OR IMPROVEMENTS TO THE EROSION CONTROL PLAN SHOULD BE COORDINATED WITH THE RESIDENT ENGINEER AND ONSITE COORDINATOR.



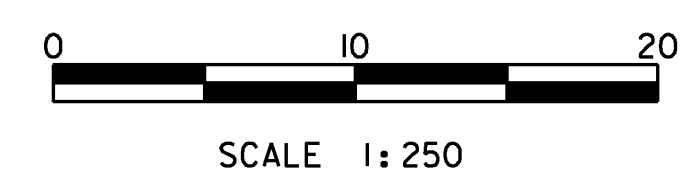
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK			
EPSC NARRATIVE			
Designed By	S.J. BIJOLLE	Drawn By	S.J. BIJOLLE
Checked By	Date	Bridge Design Supervisor	
E. P. DETRICK	11/08	J.W. TUCKER	Date 11/08
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LEGEND

- EXISTING EDGE OF RIVER
- EXISTING TRAVELED WAY
- EXISTING GUARD RAIL
- STORM DRAIN
- UTILITY POLE
- TELEPHONE POLE
- TREES
- TREE LINE
- OVERHEAD LINES
- WATER LINE
- EXISTING SIGN
- SEWER LINE
- CLEAR ZONE

EXISTING CONDITIONS SITE PLAN



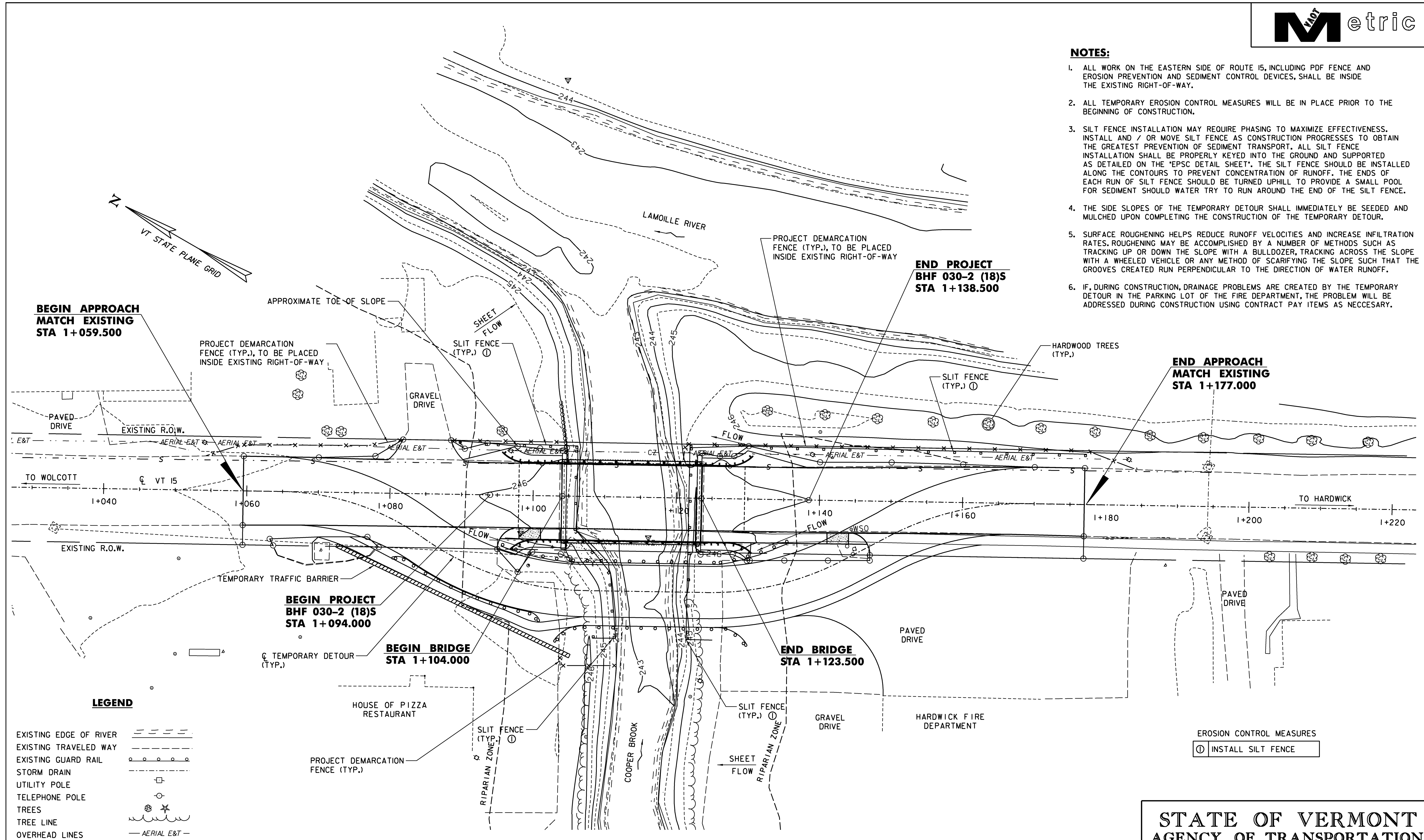
**STATE OF VERMONT
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Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
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E. P. DETRICK	11/08	J.W. TUCKER	11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
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PLOTTED \$\$\$DATE\$\$\$

NOTES:

1. ALL WORK ON THE EASTERN SIDE OF ROUTE 15, INCLUDING PDF FENCE AND EROSION PREVENTION AND SEDIMENT CONTROL DEVICES, SHALL BE INSIDE THE EXISTING RIGHT-OF-WAY.
2. ALL TEMPORARY EROSION CONTROL MEASURES WILL BE IN PLACE PRIOR TO THE BEGINNING OF CONSTRUCTION.
3. SILT FENCE INSTALLATION MAY REQUIRE PHASING TO MAXIMIZE EFFECTIVENESS. INSTALL AND / OR MOVE SILT FENCE AS CONSTRUCTION PROGRESSES TO OBTAIN THE GREATEST PREVENTION OF SEDIMENT TRANSPORT. ALL SILT FENCE INSTALLATION SHALL BE PROPERLY KEYED INTO THE GROUND AND SUPPORTED AS DETAILED ON THE "EPSC DETAIL SHEET". THE SILT FENCE SHOULD BE INSTALLED ALONG THE CONTOURS TO PREVENT CONCENTRATION OF RUNOFF. THE ENDS OF EACH RUN OF SILT FENCE SHOULD BE TURNED UPHILL TO PROVIDE A SMALL POOL FOR SEDIMENT SHOULD WATER TRY TO RUN AROUND THE END OF THE SILT FENCE.
4. THE SIDE SLOPES OF THE TEMPORARY DETOUR SHALL IMMEDIATELY BE SEEDED AND MULCHED UPON COMPLETING THE CONSTRUCTION OF THE TEMPORARY DETOUR.
5. SURFACE ROUGHENING HELPS REDUCE RUNOFF VELOCITIES AND INCREASE INFILTRATION RATES. ROUGHENING MAY BE ACCOMPLISHED BY A NUMBER OF METHODS SUCH AS TRACKING UP OR DOWN THE SLOPE WITH A BULLDOZER, TRACKING ACROSS THE SLOPE WITH A WHEELED VEHICLE OR ANY METHOD OF SCARIFYING THE SLOPE SUCH THAT THE GROOVES CREATED RUN PERPENDICULAR TO THE DIRECTION OF WATER RUNOFF.
6. IF, DURING CONSTRUCTION, DRAINAGE PROBLEMS ARE CREATED BY THE TEMPORARY DETOUR IN THE PARKING LOT OF THE FIRE DEPARTMENT, THE PROBLEM WILL BE ADDRESSED DURING CONSTRUCTION USING CONTRACT PAY ITEMS AS NECESSARY.



LEGEND

- EXISTING EDGE OF RIVER
- EXISTING TRAVELED WAY
- EXISTING GUARD RAIL
- STORM DRAIN
- UTILITY POLE
- TELEPHONE POLE
- TREES
- TREE LINE
- OVERHEAD LINES
- WATER LINE
- EXISTING SIGN
- SEWER LINE
- CLEAR ZONE
- PROJECT DEMARCATION FENCE
- SILT FENCE
- TOE OF SLOPE

EROSION PREVENTION AND SEDIMENT CONTROL PLAN



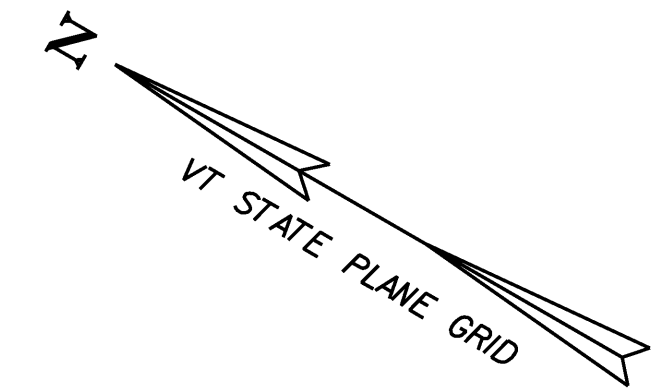
EROSION CONTROL MEASURES
 INSTALL SILT FENCE

**STATE OF VERMONT
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VT 15 OVER COOPER BROOK			
EPSC CONSTRUCTION SITE PLAN			
Designed By	S.J. BIJOLLE	Drawn By	S.J. BIJOLLE
Checked By	Date	Bridge Design Supervisor	
E. P. DETRICK	11/08	J.W. TUCKER	Date 11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
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**BEGIN APPROACH
MATCH EXISTING
STA 1+059.500**

**END PROJECT
BHF 030-2 (18)S
STA 1+138.500**

**END APPROACH
MATCH EXISTING
STA 1+177.000**

**BEGIN PROJECT
BHF 030-2 (18)S
STA 1+094.000**

**END BRIDGE
STA 1+123.500**

**BEGIN BRIDGE
STA 1+104.000**

NOTES:
1. CONTOURS SHOWN INDICATE THE EXISTING SITE.
SEE ROADWAY CROSS SECTIONS FOR GRADE CHANGE.

LEGEND

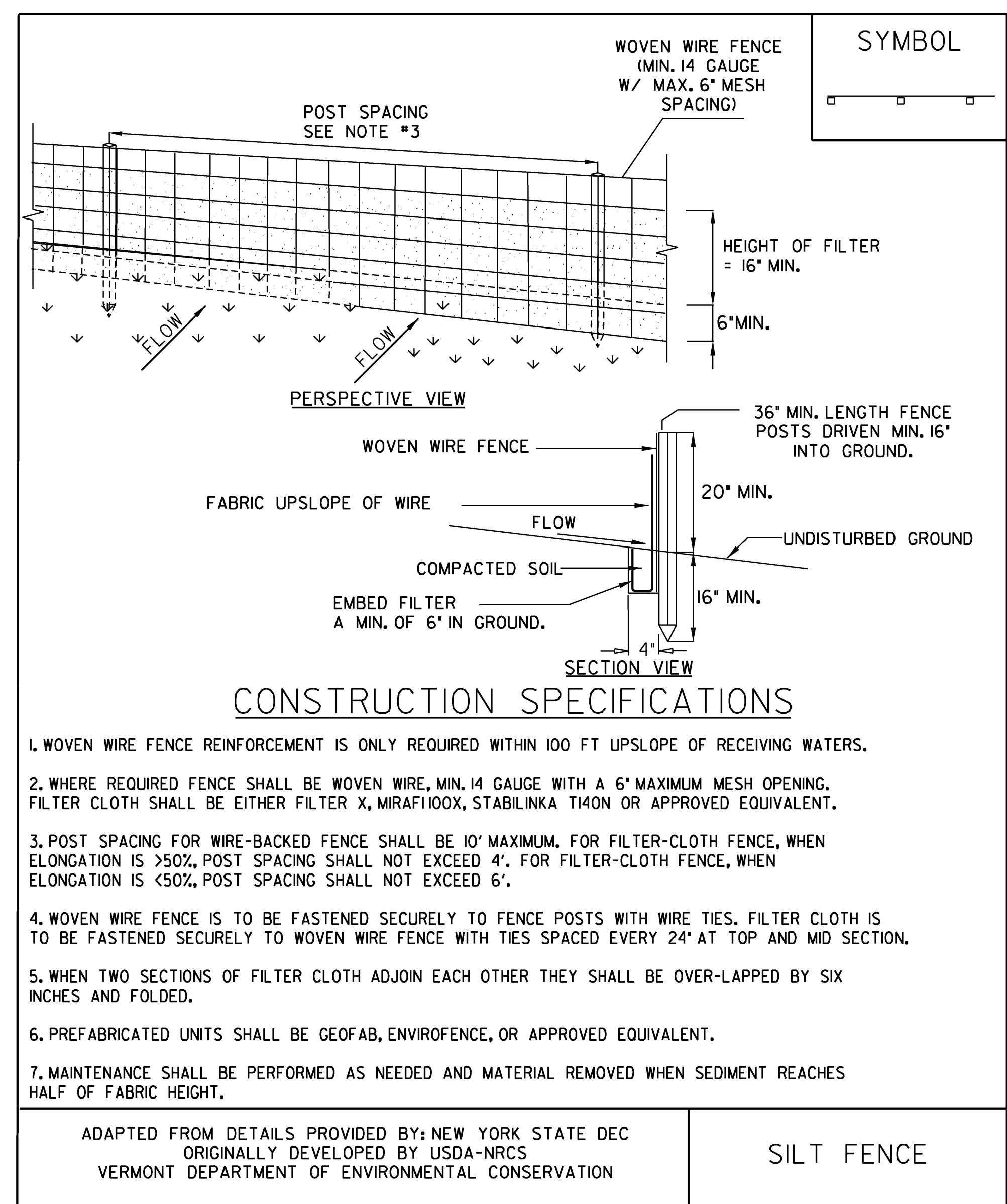
- EXISTING EDGE OF RIVER
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FINAL CONDITIONS SITE PLAN



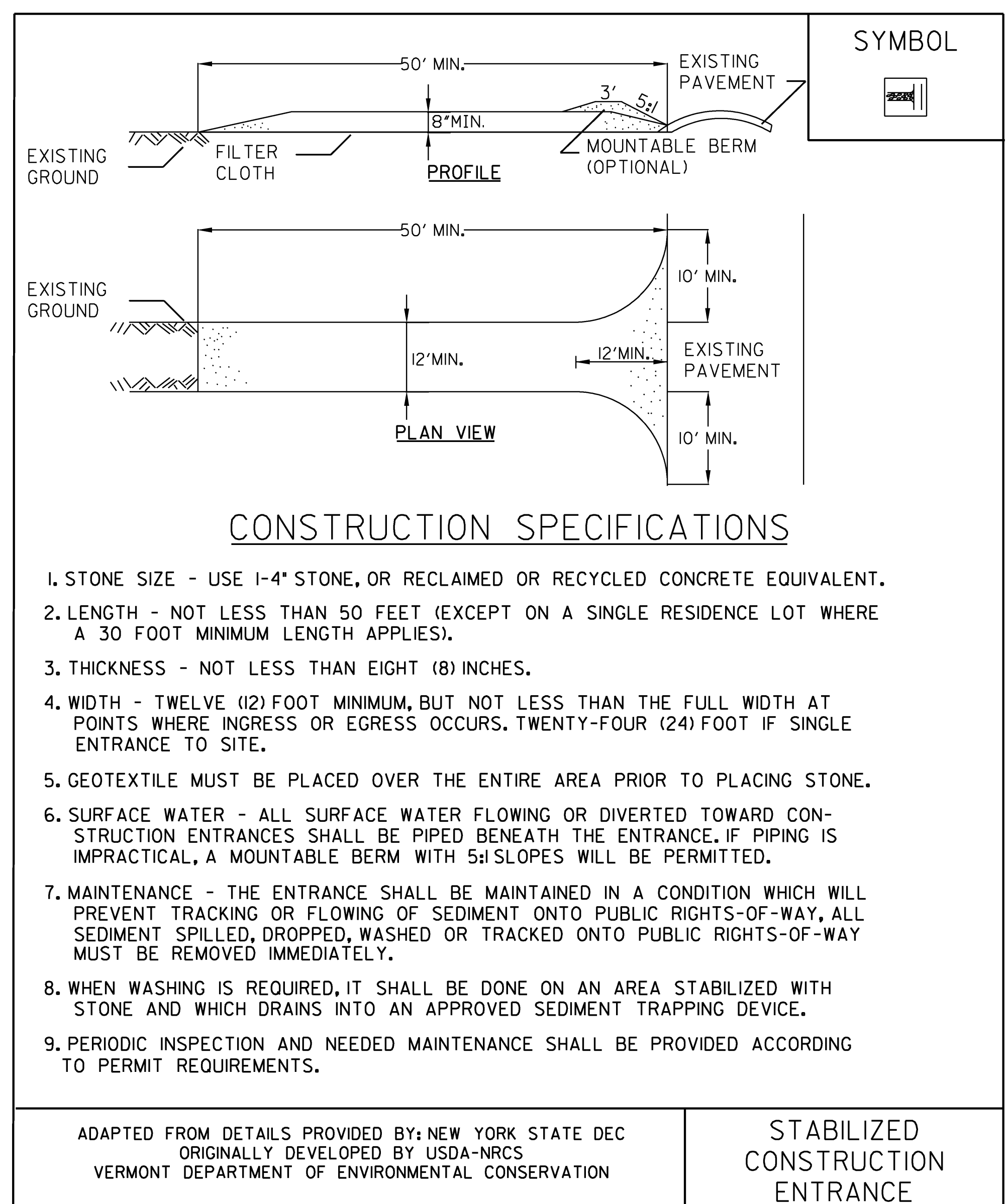
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Town Of HARDWICK	Bridge No. 67
Highway No. VT 15	Log Sta. Surv. Sta.
VT 15 OVER COOPER BROOK EPSC FINAL CONDITIONS SITE PLAN	
Designed By S.J. BIJOLLE	Drawn By S.J. BIJOLLE
Checked By E. P. DETRICK	Bridge Design Supervisor J.W. TUCKER
Date 11/08	Date 11/08
PROJECT HARDWICK	PROJECT NO. BHF 030-2 (18) S
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NOTES:
REFER TO *THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- *FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS ITEM SHALL BE PAID FOR UNDER ITEM
649.51 GEOTEXTILE FOR SILT FENCE OR
649.515 GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED



NOTES:
REFER TO *THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- *FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS ITEM SHALL BE PAID FOR UNDER ITEM
653.35 VEHICLE TRACKING PAD

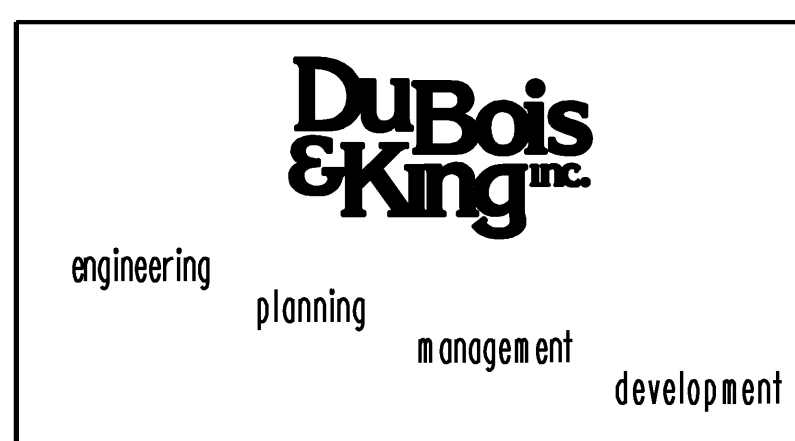
REVISIONS	
FEBRUARY 9, 2007	WHF
MARCH 8, 2007	JMF

**SEEDING FORMULA
URBAN AREAS**

% MASS	kg/ha	NAME	PUR %	GERM %
42.5	38.0	CREEPING RED FESCUE	98	85
10.0	9.0	PERENNIAL RYE GRASS	95	90
42.5	38.0	KENTUCKY BLUE GRASS	85	85
5.0	5.0	ANNUAL RYE GRASS	95	85
100.0	90.0			

GENERAL NOTES

- SEED MIXTURE: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY MASS 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 560 kg/ha. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).
- AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 4500 kg/ha, OR AS DIRECTED BY THE ENGINEER.
- HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 4500 kg/ha, 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 0.07 L/m² BETWEEN SUCCESSIVE COURSES OF PAVEMENT AS DIRECTED BY THE ENGINEER.



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PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
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GENERAL NOTES

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION, DATED 2002, AND ITS LATEST REVISIONS.
- DIMENSIONS, ANGLES, BEARINGS, AND ELEVATIONS OF THE EXISTING BRIDGE SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM LIMITED FIELD INVESTIGATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING STRUCTURE COMPONENTS TO ASSURE CONSISTENCY WITH THE PROPOSED MODIFICATIONS. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER BEFORE ADVANCING THE WORK. WORKING DRAWINGS REQUIRED FOR VARIOUS ITEMS OF WORK SHALL INDICATE THE ACTUAL FIELD MEASUREMENTS AND SHALL BE SO NOTED.
- ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 20 DEGREES CELSIUS, UNLESS NOTED OTHERWISE.

CONSTRUCTION NOTES

- A THOROUGH INSPECTION SHALL BE MADE OF SUBSTRUCTURE AREAS. AREAS OF CONCRETE FOUND TO BE SPALLED, DELAMINATED OR OTHERWISE UNSOUND SHALL BE REPAIRED. THE AREAS THAT NEED TO BE REPAIRED SHALL BE PAID FOR AS ITEM 580J3, *REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I*, ITEM 580J4, *REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II* OR ITEM 580J5, *REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III* IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- NO BACKFILL WILL BE PLACED AGAINST ANY STRUCTURAL ELEMENTS UNTIL THE RESIDENT ENGINEER HAS APPROVED THIS WORK. THE HEIGHT OF BACKFILL BEHIND THE ABUTMENTS SHALL BE LIMITED TO THE BRIDGE SEAT ELEVATIONS UNTIL THE NEW STEEL BEAMS HAVE BEEN SET. THE CONTRACTOR, AT THE EXPENSE OF THE CONTRACTOR, SHALL REPAIR DAMAGE TO CONCRETE WALLS RESULTING FROM IMPROPER BACKFILLING.

REMOVAL NOTES

- ITEM 529.20, *PARTIAL REMOVAL OF STRUCTURE* SHALL INCLUDE:
 - REMOVAL AND DISPOSAL OF EXISTING BRIDGE AND APPROACH RAILING AND POSTS, CONCRETE CURBS, CONCRETE BRIDGE DECK AND CURTAIN WALLS.
 - REMOVAL AND DISPOSAL OF STRUCTURAL STEEL BEAMS AND DIAPHRAGMS.
 - REMOVAL AND DISPOSAL OF BEARING DEVICES.
 - REMOVAL AND DISPOSAL OF PORTIONS OF EXISTING WINGWALLS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
- THE REMOVAL OF THE EXISTING BRIDGE PAVEMENT SHALL BE PAID FOR AS ITEM 529J0, *REMOVAL OF BRIDGE PAVEMENT*.
- LIMITS OF WINGWALL REMOVAL ARE APPROXIMATE. THE ENGINEER SHALL ESTABLISH ACTUAL LIMITS AFTER A COOPERATIVE INSPECTION BY THE CONTRACTOR AND THE ENGINEER. EXISTING ELEVATIONS SHALL BE FIELD VERIFIED TO ENSURE THAT THE REMOVAL LIMITS ARE ADEQUATE TO OBTAIN THE REQUIRED DIMENSIONS AND ELEVATIONS OF THE NEW CONSTRUCTION. ASSOCIATED COSTS SHALL BE INCLUDED IN ITEM 529.20, *PARTIAL REMOVAL OF STRUCTURE*.
- ANY MATERIAL REMOVED AROUND THE EXISTING ABUTMENTS OUTSIDE THE LIMITS OF COMMON EXCAVATION SHALL BE PAID FOR AS ITEM 204.25, *STRUCTURE EXCAVATION*.
- SAWCUTS SHALL BE ONE-INCH DEEP ALONG ALL EXPOSED REMOVAL LINES WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20, *PARTIAL REMOVAL OF STRUCTURE*.
- IT IS ASSUMED THAT THE APPROACHES TO THIS BRIDGE ARE CONSTRUCTED OF PORTLAND CEMENT CONCRETE PAVEMENT, OVERLAID WITH SEVERAL INCHES OF BITUMINOUS CONCRETE PAVEMENT. THE CONTRACTOR SHALL REMOVE THE CEMENT CONCRETE PAVEMENT WITHIN THE LIMITS OF THE SUBBASE WORK, AS DIRECTED BY THE ENGINEER. PAYMENT FOR REMOVAL OF CEMENT CONCRETE PAVEMENT SHALL BE MADE AS ITEM 203J6, *SOLID ROCK EXCAVATION* AND PAYMENT FOR REMOVAL OF BITUMINOUS CONCRETE PAVEMENT SHALL BE MADE AS ITEM 203.28, *EXCAVATION OF SURFACES AND PAVEMENTS*.
- THE EXISTING STRUCTURAL STEEL ON THIS PROJECT WAS PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE STRUCTURAL STEEL.

CONCRETE NOTES

- CONCRETE PAYMENT AND CLASSIFICATION SHALL BE AS FOLLOWS:
 - ITEM 50I.33, CONCRETE, HIGH PERFORMANCE CLASS A (DECK, BRIDGE CURB, BRIDGE SIDEWALK, HAUNCHES, BACKWALLS)
 - ITEM 50I.34, CONCRETE, HIGH PERFORMANCE CLASS B (ABUTMENTS, WINGWALLS, APPROACH SLABS)
- ITEM 514J0, *WATER REPELLENT, SILANE* SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON BRIDGE SUPERSTRUCTURE EXCEPT ON THE BOTTOM OF THE DECK BETWEEN THE DRIP NOTCHES. WATER REPELLENT SHALL ALSO BE APPLIED TO EXPOSED EXISTING AND NEW CONCRETE ON THE SUBSTRUCTURES.
- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 25mm BY 25mm, UNLESS OTHERWISE NOTED. A 13mm RADIUS SHALL BE USED ON THE TOP INSIDE CORNER OF THE CURBS.
- JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
- THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT UNLESS OTHERWISE INDICATED. ANY UPWARD KEY SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.
- THE CONCRETE DECK SHALL BE PLACED IN ONE CONTINUOUS POUR, NOT TO EXCEED 8 HOURS. NO COLD JOINTS WILL BE ALLOWED. IF CIRCUMSTANCES BEYOND THE CONTRACTOR'S CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A CONSTRUCTION JOINT SHALL BE USED. THERE SHALL BE A MINIMUM DELAY PERIOD OF 96 HOURS BETWEEN POURS.

BEARING NOTES

- BEARINGS SHALL CONFORM TO APPLICABLE SUBSECTIONS OF SECTION 53I AND 73I.
- FABRICATION DRAWINGS CONFORMING TO SUBSECTION 53I.03 SHALL INCLUDE WELDING AND BONDING PROCEDURES.
- ALL MATERIALS FOR BEARINGS SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION 53I. PAYMENT FOR ANCHOR BOLTS, NUTS AND WASHERS SHALL BE INCIDENTAL TO ITEM 53I.10.
- DRILL AND SET ANCHOR BOLTS WITH A MINIMUM OF 380mm EMBEDDED INTO CONCRETE. HOLES FOR ANCHOR BOLTS SHALL BE 75mm IN DIAMETER. IF ANCHOR BOLTS ARE TO BE GROUTED WITH MORTAR, TYPE IV AND 63mm IN DIAMETER IF ANCHOR BOLTS ARE TO BE INSTALLED USING EPOXY MORTAR PER STANDARD SPECIFICATION 53I. ALL COSTS SHALL BE INCLUDED IN ITEM 53I.10, *BEARING DEVICE ASSEMBLY*.
- ANCHOR BOLTS SHALL BE SWEDGED WITH 100mm OF THREAD. EXPANSION BEARING NUTS SHALL BE DRAWN UP FINGER TIGHT AND THEN BACKED OFF 3mm. THREADS SHALL BE BURRED ABOVE THE NUT TO PREVENT NUT REMOVAL.
- EXISTING ANCHOR BOLTS SHALL BE CUT FLUSH WITH EXISTING SUBSTRUCTURE SEATS, OR REMOVED AND FILLED WITH MORTAR TYPE IV. COSTS SHALL BE INCIDENTAL TO ITEM 53I.10, *BEARING DEVICE ASSEMBLY, PREFORMED FABRIC PAD*.

STRUCTURAL STEEL NOTES

- ALL STRUCTURAL STEEL SHALL BE PROTECTED WITH AN APPROVED PAINTING SYSTEM FROM THE VTRANS QUALIFIED PRODUCTS LIST FOR PROTECTIVE COATINGS FOR NEW AND 100% BARE EXISTING STEEL FOR BRIDGES, AND SHALL BE PAID FOR AS ITEM 513.25 *STRUCTURAL PAINTING, SHOP APPLIED*. THE PAINT COLOR CHIP NUMBER SHALL BE - NO. 14062.
- THE PAINT SYSTEM USED IN THE FIELD AND THE SHOP APPLIED PAINT SYSTEM SHALL BE COMPATIBLE AND PROVIDED BY THE SAME MANUFACTURER.
- THE CONTRACTOR SHALL FIELD VERIFY THE CENTERLINE TO CENTERLINE LENGTHS AND THE SKEW ANGLE AT EACH ABUTMENT. THAT VERIFIED INFORMATION SHALL BE PROVIDED TO THE ENGINEER AND TO THE FABRICATOR BEFORE FABRICATION DRAWINGS ARE COMPLETED.
- 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).
- ALL BOLTED FIELD CONNECTIONS SHALL BE MADE WITH 22mm DIAMETER HIGH STRENGTH BOLTS IN 24mm DIAMETER HOLES UNLESS OTHERWISE NOTED. BOLTS SHALL CONFORM TO SUBSECTION 714.05.
- STRUCTURAL STEEL CONNECTIONS NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
- ALL WELDS SHALL BE PAINTED TO HAVE THE APPEARANCE AS SPECIFIED FOR THE NEW PAINTED STEEL BEAM.
- ALL WELDING AND DIMENSIONAL TOLERANCES OF WELDED MEMBERS SHALL CONFORM TO THE LATEST ANSI/AASHTO/AWS CODES AND THEIR LATEST REVISIONS.
- SHEAR STUD CONNECTORS SHALL BE FIELD WELDED USING AUTOMATICALLY TIMED STUD WELDING EQUIPMENT AND SHALL BE PAID AS ITEM 508J5, *SHEAR CONNECTORS (870 - 22 X 180)*.
- ANY HOLES IN FASCIA BEAM WEBS NOT OTHERWISE FILLED SHALL BE FILLED WITH BUTTON HEAD OR HEX HEAD BOLTS, TYPE 1 OR TYPE 2 AND SHALL CONFORM TO AASHTO M164M.
- AFTER THE SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF BEAMS SHALL BE TAKEN UNDER DIRECTION OF THE RESIDENT ENGINEER FOR USE IN DETERMINING THE FINAL GRADE AND HAUNCH DEPTHS.
- THE ENDS OF THE BEAMS SHALL BE VERTICAL UNDER FULL DEAD LOAD DEFLECTION.

REINFORCING STEEL NOTES

- ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE *CONCRETE REINFORCING STEEL INSTITUTE (CRSI)*.
- REINFORCING STEEL IN THE DECK, SIDEWALK, RAILING, CURB AND APPROACH SLAB SHALL BE EPOXY COATED.
- MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

ALONG BACK FACES OF WALLS AGAINST EARTH:	50
ALONG TOP SURFACE OF DECK SLAB:	65
ALONG BOTTOM SURFACE OF DECK SLAB:	40
ELSEWHERE UNLESS OTHERWISE INDICATED:	80
- REINFORCEMENT STEEL PLACEMENT TOLERANCES SHALL BE:

SPACING = +/- 25
CLEARANCE = +/- 6
- DRILLING AND GROUTING DOWELS SHALL BE PAID AS ITEM 507J6, *DRILLING AND GROUTING DOWELS*. ALL DRILLED HOLES SHALL HAVE A MINIMUM OF 150 CLEAR COVER.

TRAFFIC CONTROL NOTES

- THE EXISTING BRIDGE IS TO BE CLOSED TO TRAFFIC DURING CONSTRUCTION. THE CONTRACTOR SHALL INSTALL A TEMPORARY TWO-WAY BRIDGE WITH SIDEWALK AND ASSOCIATED DETOUR UPSTREAM OF THE EXISTING BRIDGE AS SHOWN IN THESE PLANS. THE CONTRACTOR SHALL NOTIFY THE TOWN IN WRITING AT LEAST 2 WEEKS PRIOR TO CLOSURE OF THE EXISTING BRIDGE.
- ALL WORK ASSOCIATED WITH THE INSTALLATION AND REMOVAL OF THE TEMPORARY BRIDGE, TEMPORARY SIDEWALK, SUBBASE FOR APPROACHES, PAVEMENT, PAVEMENT MARKINGS, BRIDGE RAILINGS, APPROACH GUARDRAIL, FLEXIBLE DELINEATORS, AND ALL OTHER NECESSARY ITEMS SHALL BE PAID AS ITEM 528J1, *TWO-WAY TEMPORARY BRIDGE (133 SM-EST.)*, EXCEPT FOR ITEM 62I.90, *TEMPORARY TRAFFIC BARRIER*, WHICH SHALL BE PAID FOR SEPARATELY.
- INSTALLATION, MAINTENANCE, AND REMOVAL OF APPROACH RAILING USED IN CONNECTION WITH THE TEMPORARY BRIDGE SHALL BE CONSIDERED INCIDENTAL TO ITEM 528J1, *TWO-WAY TEMPORARY BRIDGE (133 SM-EST.)* APPROACH RAIL SHALL EXTEND 7.65 M FROM EACH CORNER OF TEMPORARY BRIDGE. ADDITIONALLY APPROACH RAIL SHALL EXTEND FROM STA. 20+024 RT TO STA. 20+044 RT.
- CONCRETE BARRIER USED BETWEEN THE TEMPORARY SIDEWALK AND THE HOUSE OF PIZZA PARKING LOT SHALL BE PAID FOR AS ITEM 62I.90, *TEMPORARY TRAFFIC BARRIER*.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVES DURING CONSTRUCTION, EXCEPT ACCESS TO THE HOUSE OF PIZZA IN THE AREA OF THE TEMPORARY DETOUR (STA. 1+078 RT - STA. 1+095 RT). COST SHALL BE PAID AS ITEM 64I.10, *TRAFFIC CONTROL*.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROJECT CONSTRUCTION SIGNING AND BARRICADES. ALL SIGNING AND BARRICADES REQUIRED FOR BRIDGE CLOSURE SHALL BE INSTALLED AND MAINTAINED AS SHOWN ON THE APPLICABLE VTRANS E SERIES STANDARD DRAWINGS AND ON SHEET 10. THE COST OF SIGNING AND BARRICADES REQUIRED SHALL BE PAID FOR AS ITEM 64I.10 *TRAFFIC CONTROL*.
- THE CONTRACTOR SHALL PROVIDE ITEM 62I.90, *TEMPORARY TRAFFIC BARRIER*, AS SHOWN ON SHEET 10 OR AS DIRECTED BY THE ENGINEER DURING CONSTRUCTION.
- AFTER REMOVAL OF THE TEMPORARY BRIDGE APPROACHES FROM THE PAVED PORTIONS OF THE HOUSE OF PIZZA AND THE FIRE STATION PARKING LOTS AND DRIVES THE AREAS SHALL BE INSPECTED BY THE ENGINEER. ANY AREAS OF DAMAGE WILL BE REPAIRED TO ORIGINAL OR BETTER CONDITION, WITH COST TO BE INCIDENTAL TO ITEM 528J1, *TWO-WAY TEMPORARY BRIDGE (133 SM-EST.)*.
- ALL DETAILS NOT SPECIFIED SHALL BE IN ACCORDANCE WITH THE MUTCD AND VTRANS E SERIES STANDARDS.

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

Town Of HARDWICK	Bridge No. 67
Highway No. VT 15	Log Sta.
	Surv. Sta.


VT 15 OVER COOPER BROOK

PROJECT NOTES

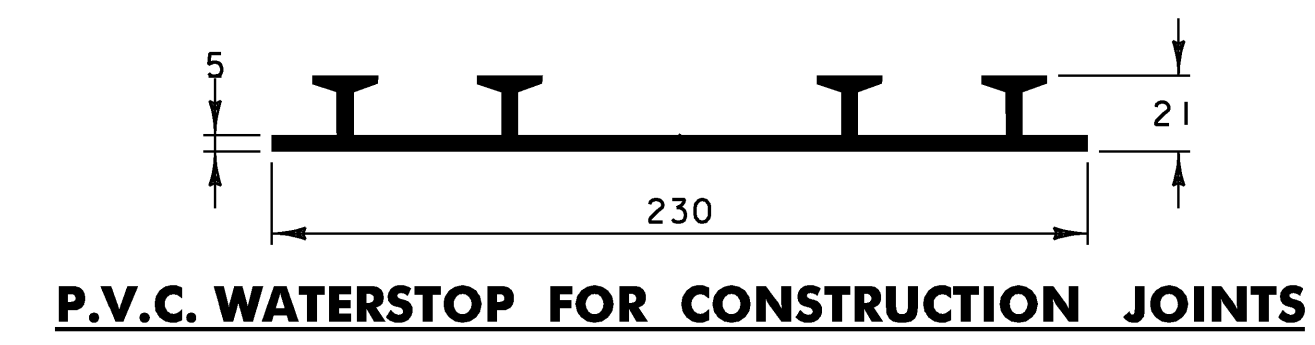
Designed By A.P. GUYETTE	Drawn By A.P. GUYETTE
Checked By Date E. P. DETRICK 1/09	Bridge Design Supervisor Date J.W. TUCKER 1/09

PROJECT HARDWICK	PROJECT NO. BHF 030-2 (18) S
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I.G.C. Info. M:\Projects\95\306\Structures\04-13-09 updates\z95j3	Bridge Sheet No. Sheet 18 of 38
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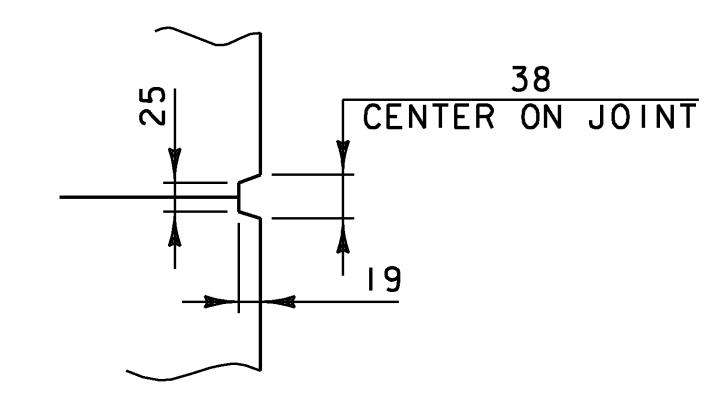
engineering
planning
management
development



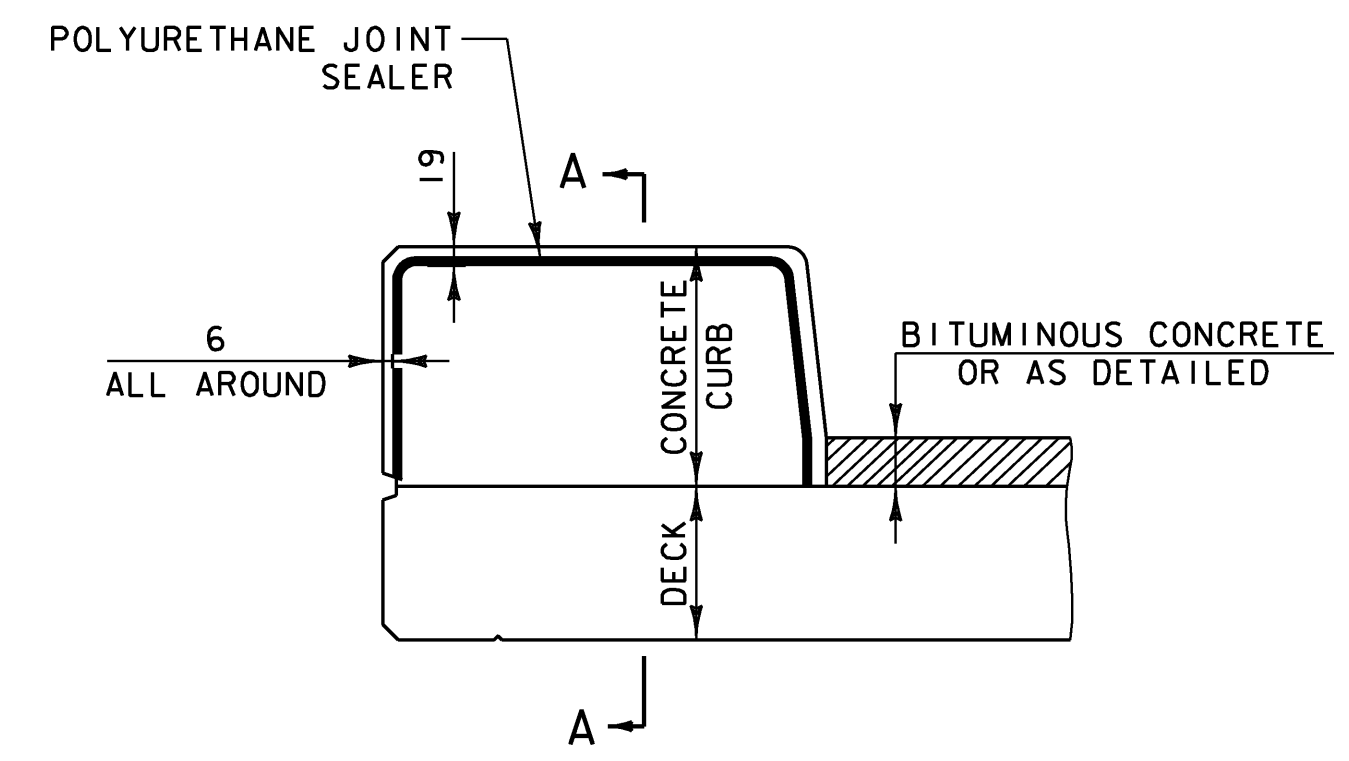
P.V.C. WATERSTOP FOR CONSTRUCTION JOINTS
 THE COSTS FOR P.V.C. WATERSTOP SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE. OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER.
 NOT TO SCALE



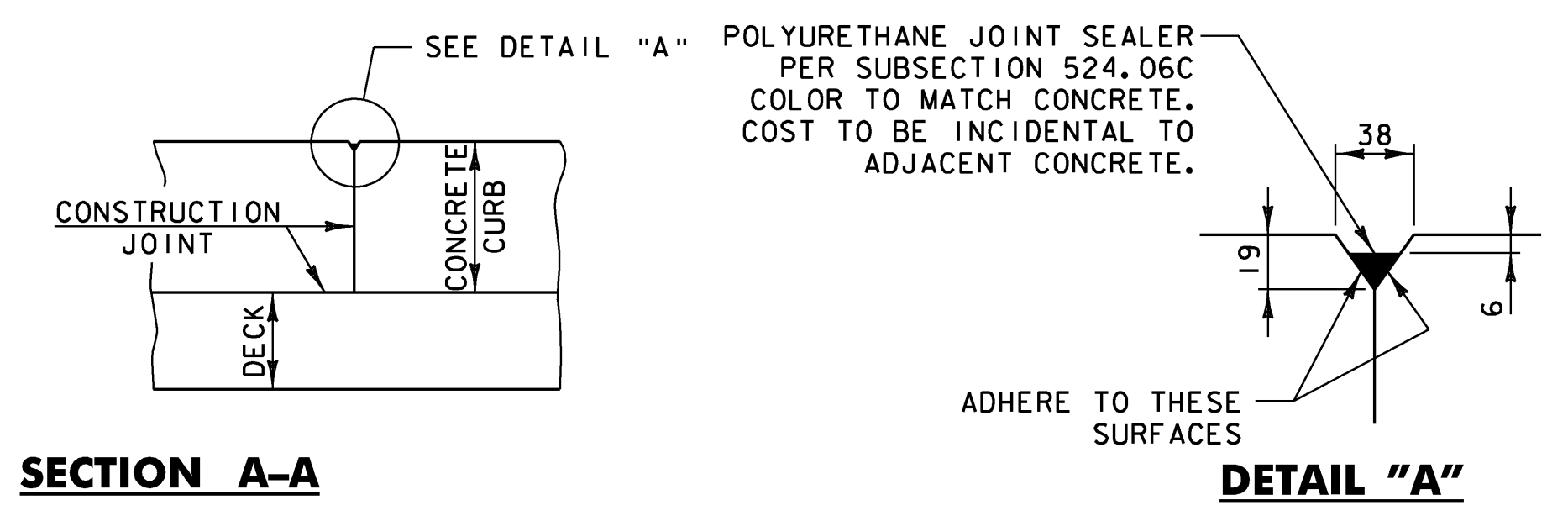
P.V.C. WATERSTOP FOR EXPANSION JOINTS
 THE COSTS FOR P.V.C. WATERSTOP SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE. OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER.
 NOT TO SCALE



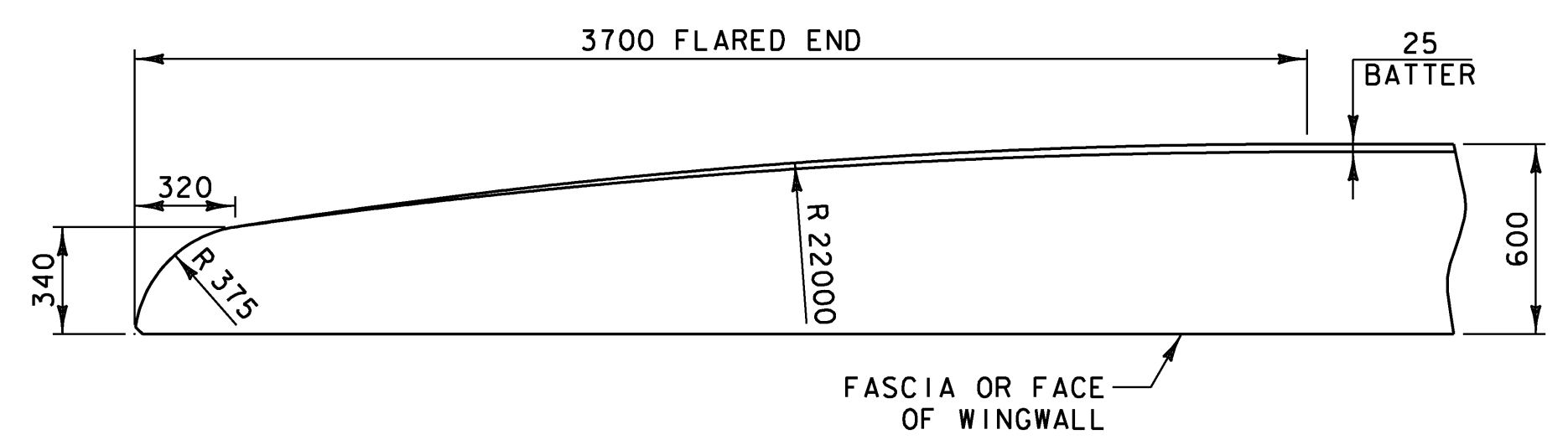
SCORE MARK DETAIL
 NOT TO SCALE



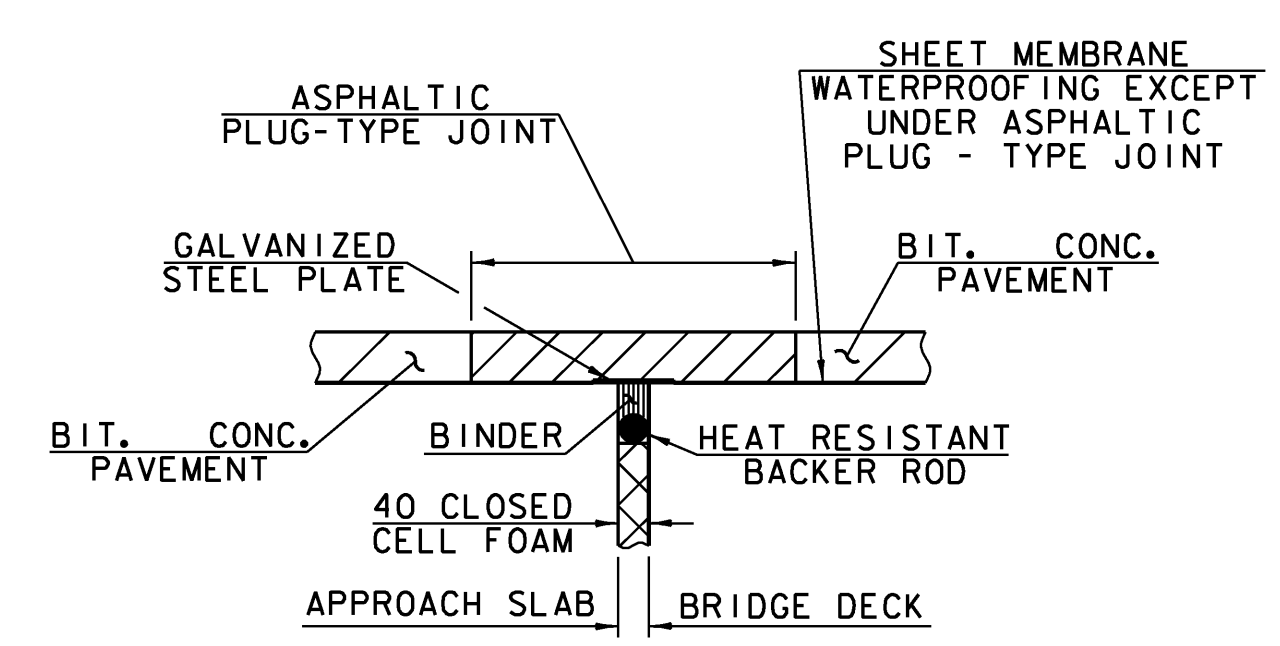
TYPICAL SECTION THROUGH CONCRETE CURB /SIDEWALK CONSTRUCTION JOINT
 NOT TO SCALE



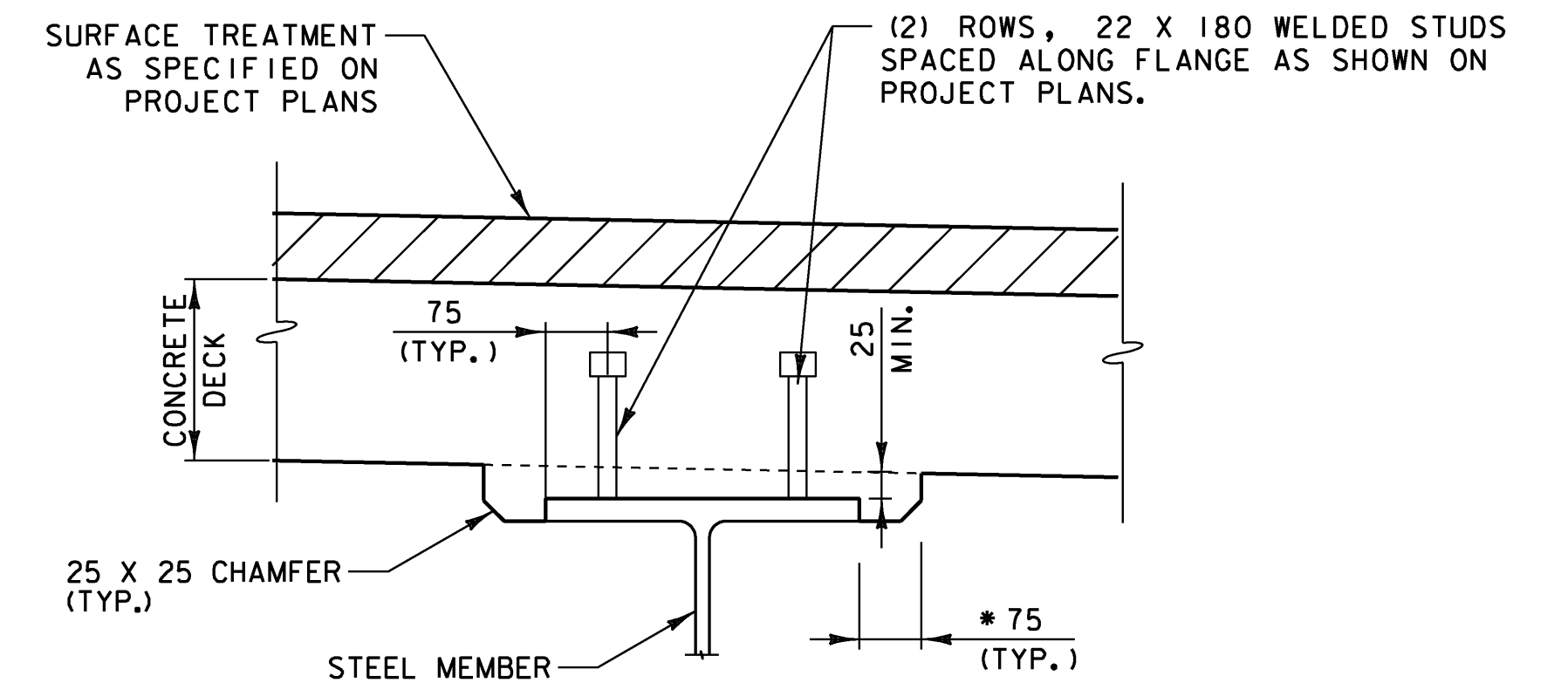
- SECTION A-A**
- NOTES:**
- CONSTRUCTION JOINTS THROUGH CONCRETE CURBS SHALL BE SPACED MAXIMUM 4500 CENTER TO CENTER AND SHALL BE 450 MINIMUM FROM THE CENTER OF THE NEAREST BRIDGE RAIL POST. CONCRETE SHALL BE PLACED IN ALTERNATING SECTIONS WITH A MINIMUM OF 48 HOURS DELAY BETWEEN ADJACENT POURS.
 - LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CURB CONSTRUCTION JOINTS.
 - CONSTRUCTION JOINTS THROUGH SIDEWALKS SHALL BE SIMILAR TO CONCRETE CURB CONSTRUCTION JOINTS.
 - THE CONTRACTOR MAY ELIMINATE THE CURB JOINTS AND MAKE EACH CURB IN ONE PLACEMENT USING AS APPROVED SHRINKAGE REDUCING ADMIXTURE AS NOTED IN THE SPECIAL PROVISIONS. THE COST OF ANY SUCH ADMIXTURE SHALL BE INCIDENTAL TO THE CONCRETE PAY ITEM.



FLARED END FOR 600 CURB
 BARS SHALL BE TURNED AS REQUIRED TO FIT FLARED ENDS
 NOT TO SCALE

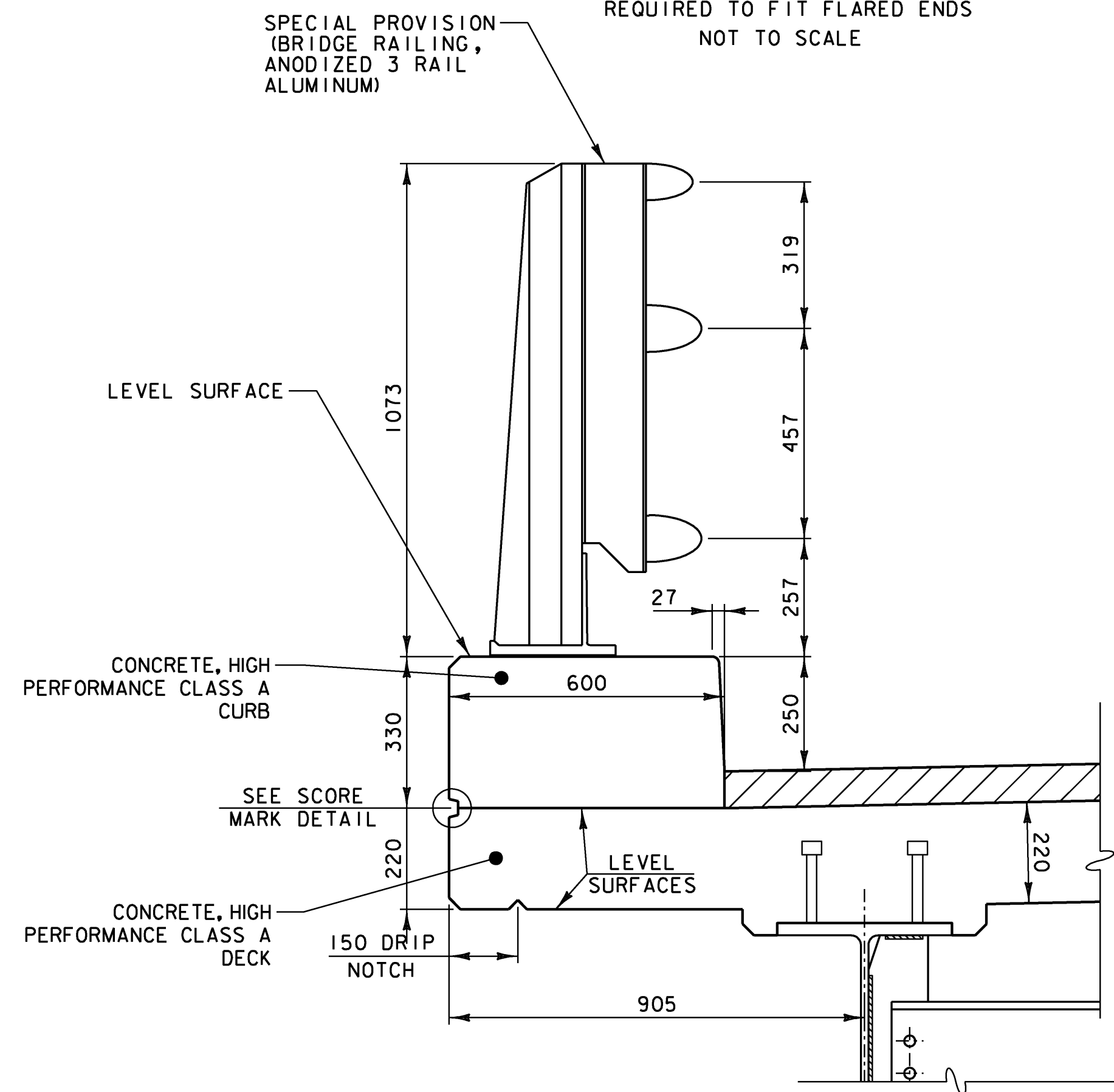


ASPHALTIC PLUG-TYPE JOINT DETAIL
 NTS



HAUNCH AND SHEAR CONNECTOR DETAILS
 NOT TO SCALE

NOTE:
 * - THE 75 HORIZONTAL SECTION MAY BE ELIMINATED FOR FORMING SYSTEMS DESIGNED FOR THE CONSTRUCTION OF VERTICAL HAUNCHES. ANY VOIDS RESULTING FROM FORMING SYSTEM ELEMENTS SHALL FILLED WITH JOINT SEALER, POLYURETHANE MEETING THE REQUIREMENTS OF SECTION 524. THE COST OF THE JOINT SEALER, POLYURETHANE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.



TYPICAL CURB SECTION
 SCALE = 1:10

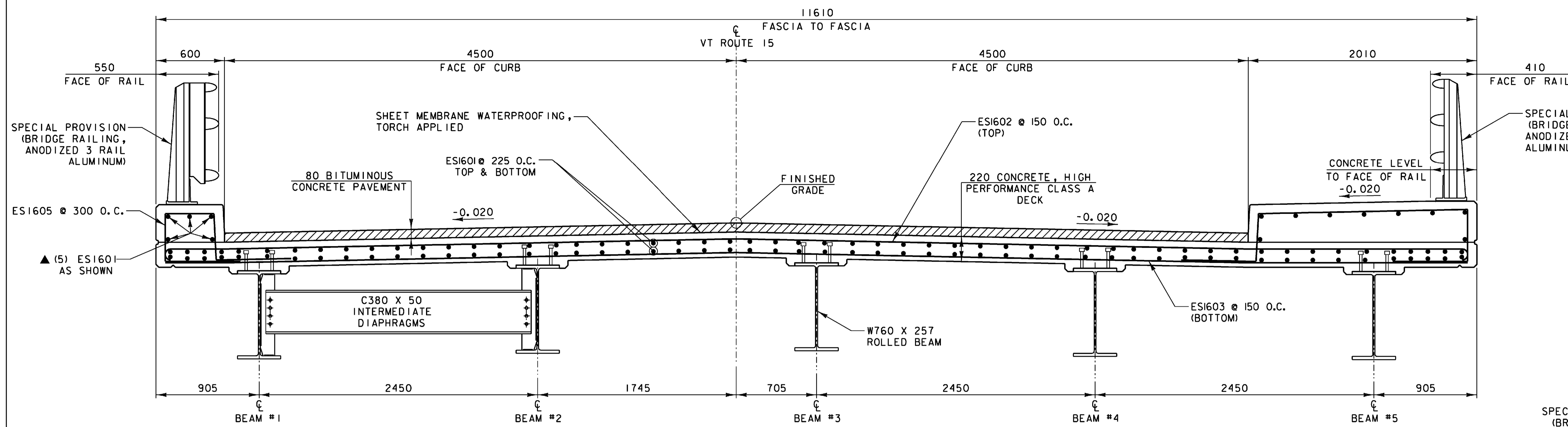
NOTE: SEE SHEET 20 FOR TYPICAL SIDEWALK DETAILS

ASPHALTIC PLUG JOINT NOTES

- INSTALLATION**
 - LOCATE THE JOINT CENTRALLY OVER THE DECK OVERLAY EXPANSION GAP OR FIXED JOINT MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.
 - EXCAVATE THE JOINT AS SHOWN ON THE PLANS WITH SAWS AND PNEUMATIC HAMMER OR A HAMMER AND CHISEL.
 - BLAST CLEAN THE JOINT AREA OF DEBRIS AND ASPHALT. THOROUGHLY DRY THE JOINT AREA WITH HOT COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.
 - REPAIR SPALLED AND DEFECTIVE CONCRETE WITH AN APPROVED MATERIAL AS AGREED UPON BY THE ENGINEER.
 - PLACE PROPERLY SIZED HEAT RESISTANT BACKER ROD IN THE MOVEMENT GAP ALLOWING FOR 25 +/- OF BINDER ABOVE THE ROD.
 - HEAT AND PLACE THE BINDER MATERIAL AS RECOMMENDED BY THE MANUFACTURER.
 - PLACE 6 THICK BY 200 WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRESTAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER. THE STEEL PLATES MAY BE OMITTED WHERE THE APPROACH SLAB IS COVERED WITH A STONE BASE OR BITUMINOUS PAVEMENT AND VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.
 - HEAT AND MIX THE BINDER MATERIAL AND AGGREGATE AS RECOMMENDED BY THE MANUFACTURER.
 - INSTALLATION OF MATERIAL, COMPACTION, AND TOP COATING SHALL BE AS RECOMMENDED BY THE MANUFACTURER.
 - IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.
 - PROTECTED JOINT FROM TRAFFIC UNTIL THE MATERIAL HAS COOLED TO 51 DEG C (125 DEG F) +/-.
- WEATHER LIMITATIONS, (APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL):**
 - THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING.
 - THE ROAD SURFACE IS SUFFICIENTLY DRY.
 - WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.

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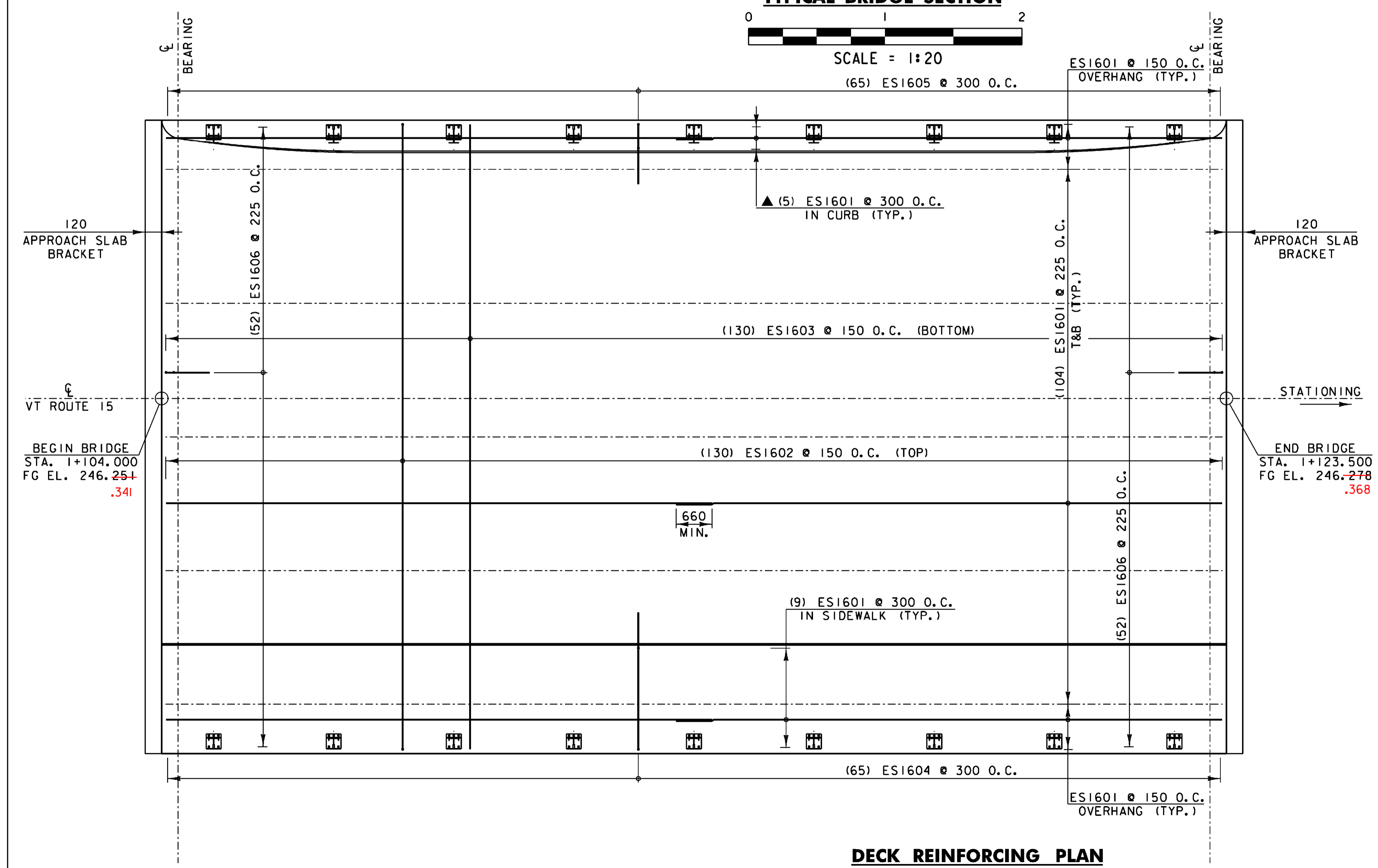
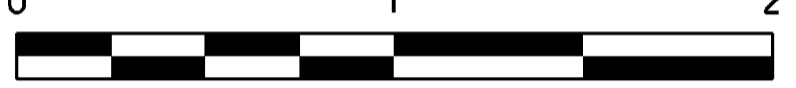
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK DECK DETAILS			
Designed By	A.P. GUYETTE	Drawn By	P.G. JARVIS
Checked By	Date	Bridge Design Supervisor	
E. P. DETRICK	11/08	J.W. TUCKER	Date 11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info.	DGN#SPEC#	Bridge Sheet No.	Sheet 19 of 38



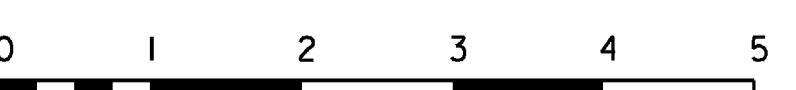
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
▲ = CUT TO FIT IN FIELD 80 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS. MAXIMUM LAP LENGTH NOT DETAILED SHALL BE 660.

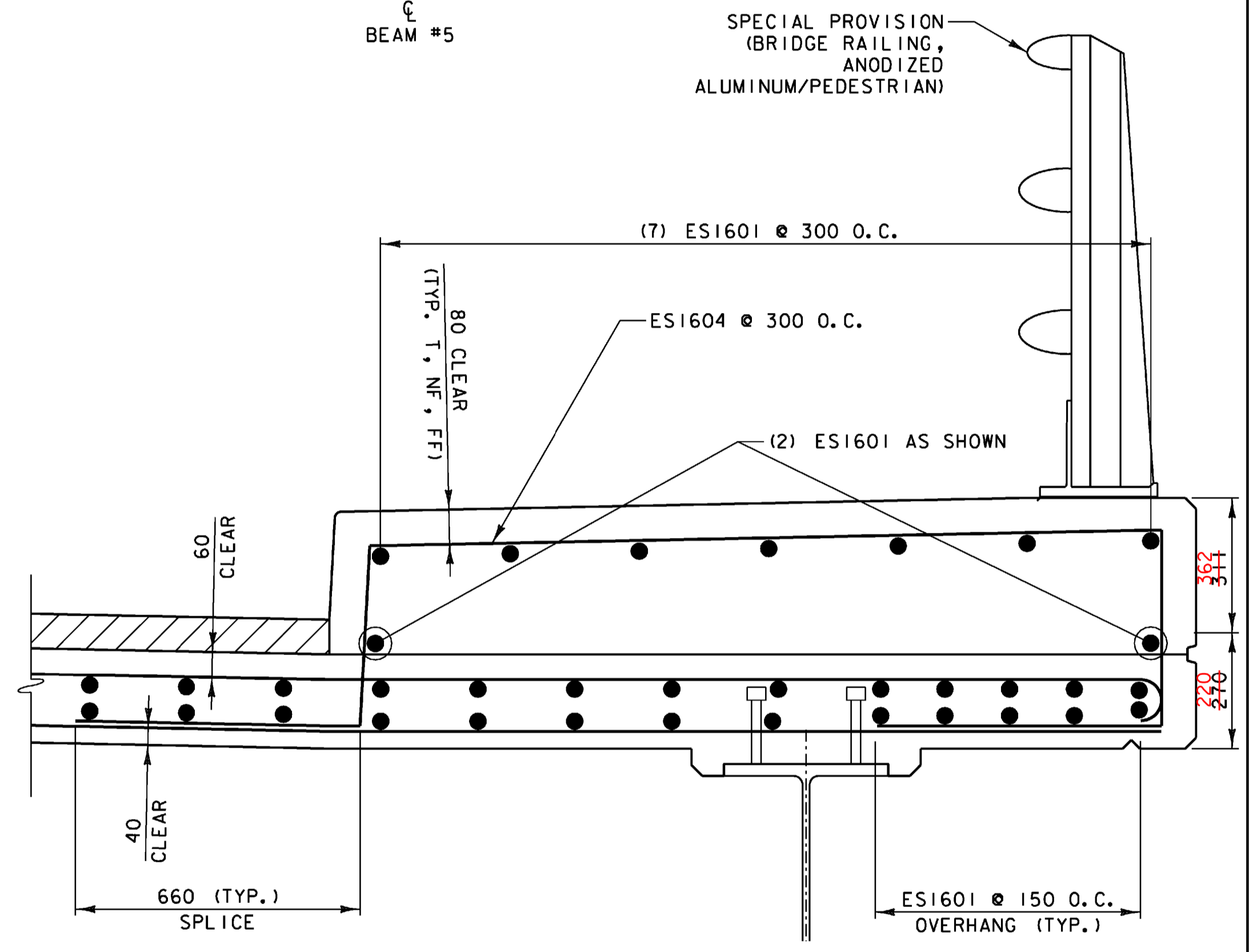
TYPICAL BRIDGE SECTION



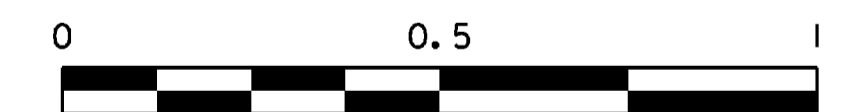
DECK REINFORCING PLAN



- NOTES:**
1. A MAXIMUM OF ONE SPLICE FOR DECK LONGITUDINAL REINFORCING STEEL (TOP AND BOTTOM) SHALL BE ALLOWED.
 2. NO SPLICES FOR DECK TRANSVERSE REINFORCEMENT SHALL BE ALLOWED.
 3. SEE SHEET 21 FOR ADDITIONAL REINFORCING DETAILS OF THE DECK ENDS.
 4. SEE SHEET 27 FOR BRIDGE RAIL POST SPACING.



TYPICAL CURB/SIDEWALK AND EDGE OF DECK REINFORCING



STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	

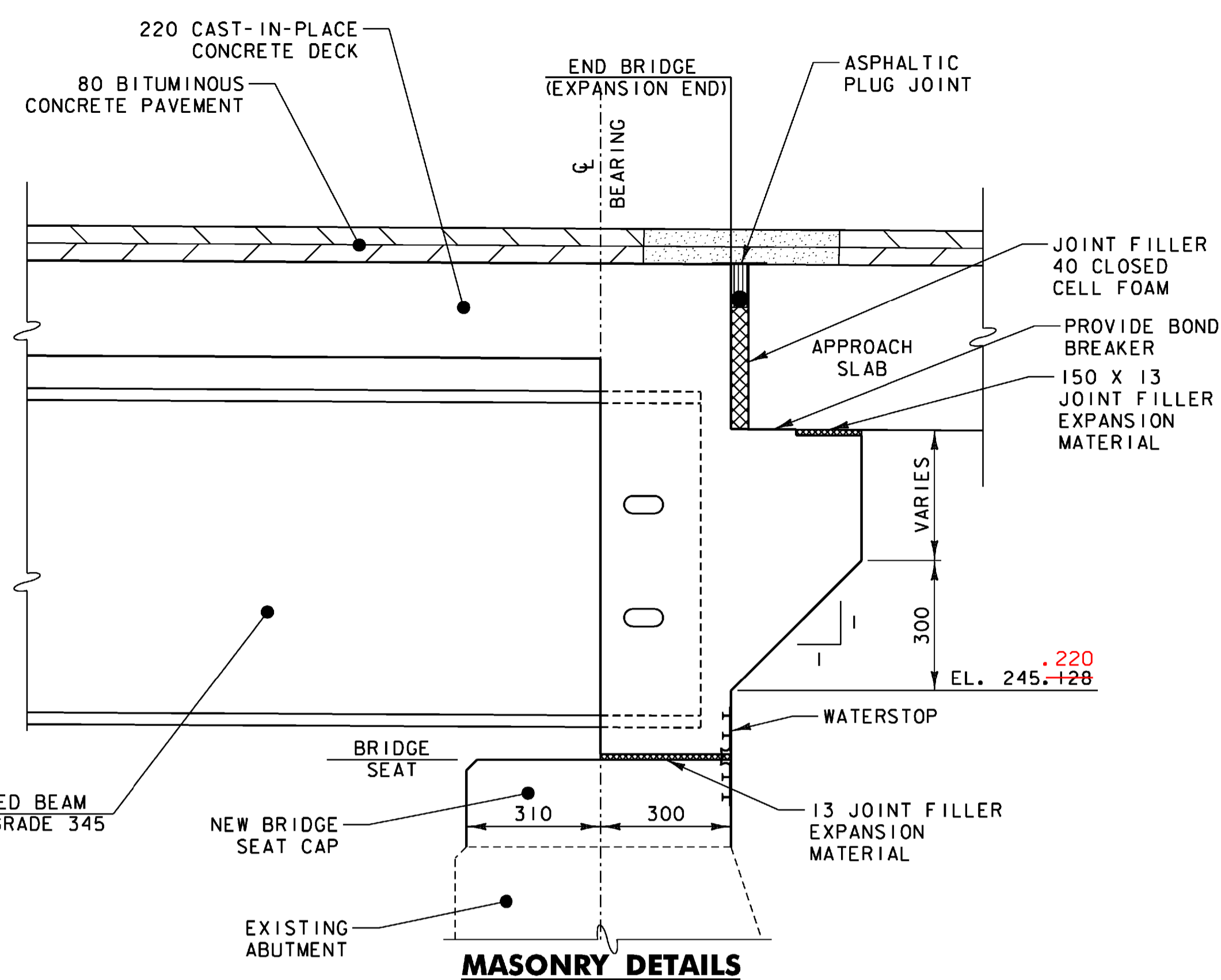
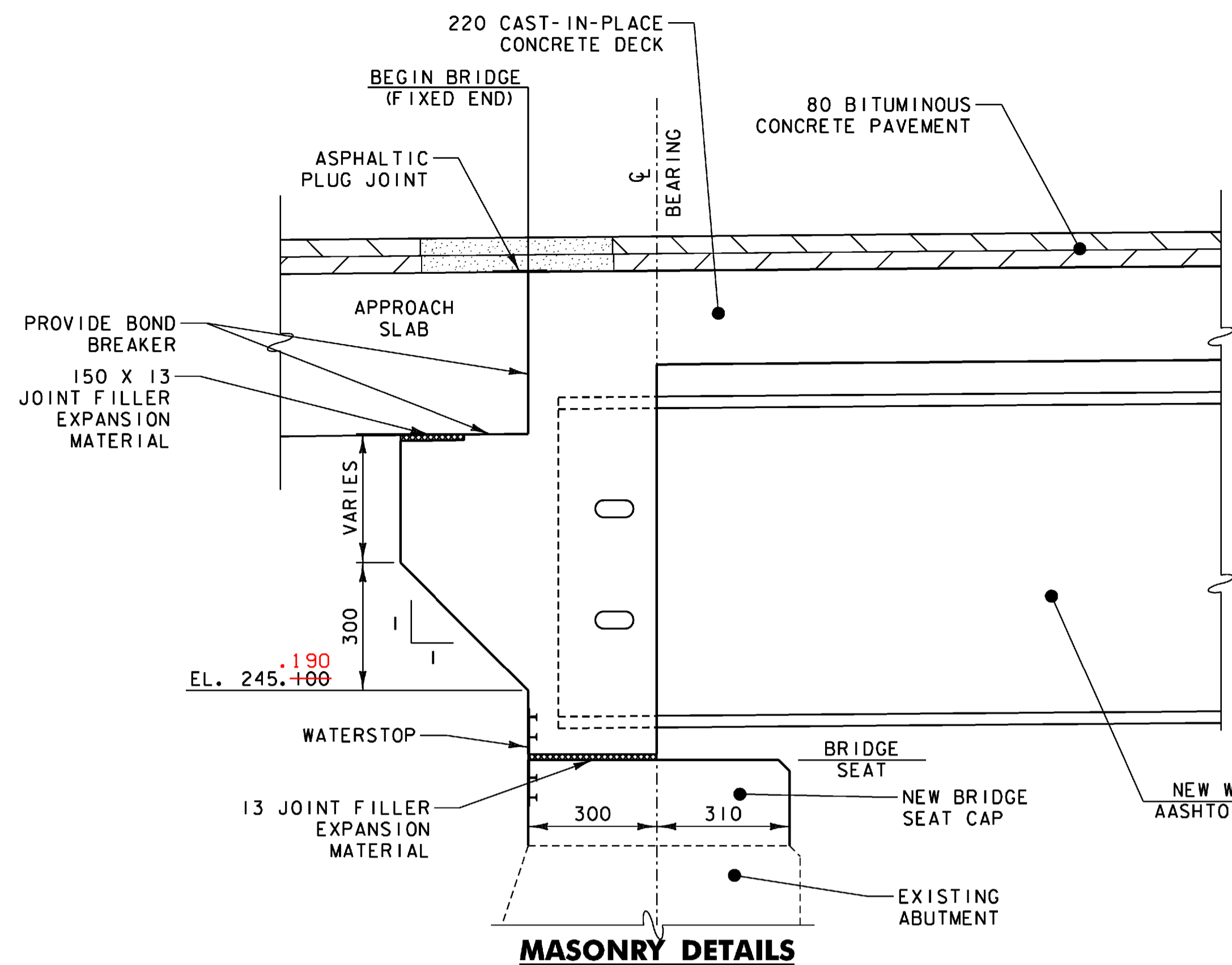
VT 15 OVER COOPER BROOK DECK REINFORCING DETAILS

Designed By	A.P. GUYETTE	Drawn By	P.G. JARVIS
Checked By	Date	Bridge Design Supervisor	
	E. P. DETRICK	J.W. TUCKER	Date 11/08

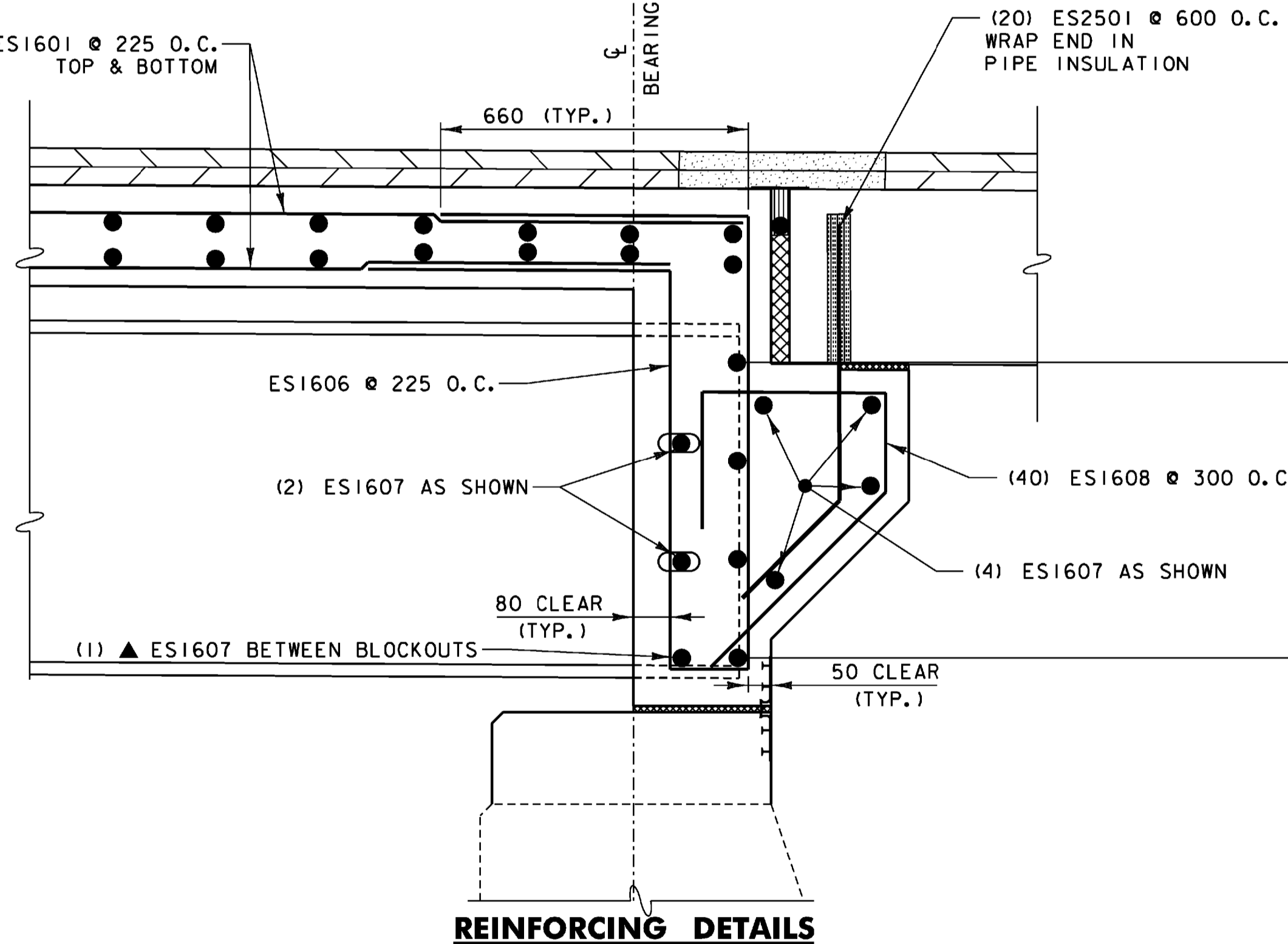
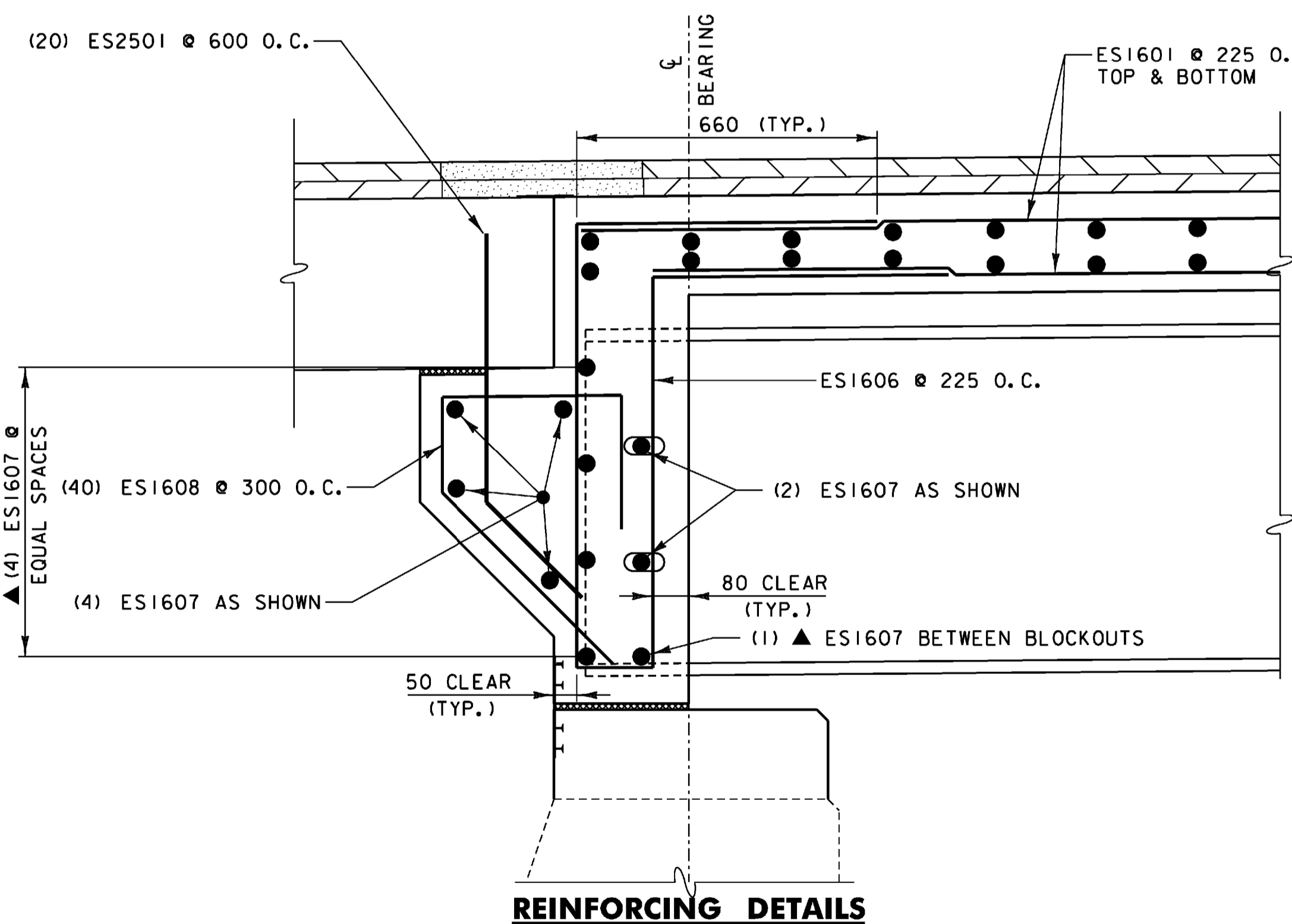
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
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I.G.C. Info. DGN#SPEC#		Bridge Sheet No.	Sheet 20 of 38
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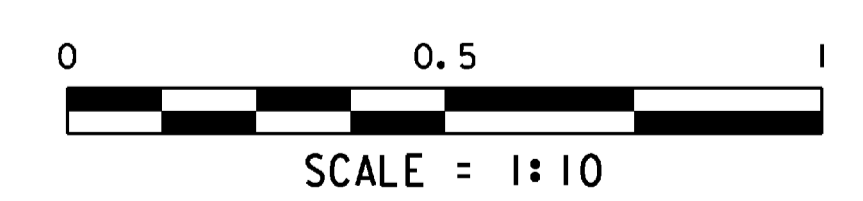


NOTE:
PAYMENT FOR BOND BREAKER, EXPANSION MATERIAL, PIPE INSULATION, AND WATERSTOP SHALL BE INCIDENTAL TO ADJACENT CONCRETE.

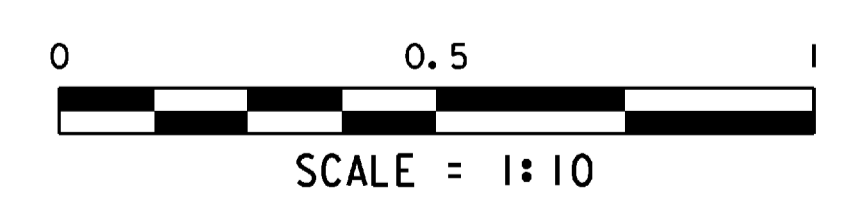


NOTE:
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
▲ = CUT TO FIT IN FIELD
80 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.
MAXIMUM LAP LENGTH NOT DETAILED SHALL BE 660.

ABUTMENT #1 DECK END DETAIL (FIXED END)



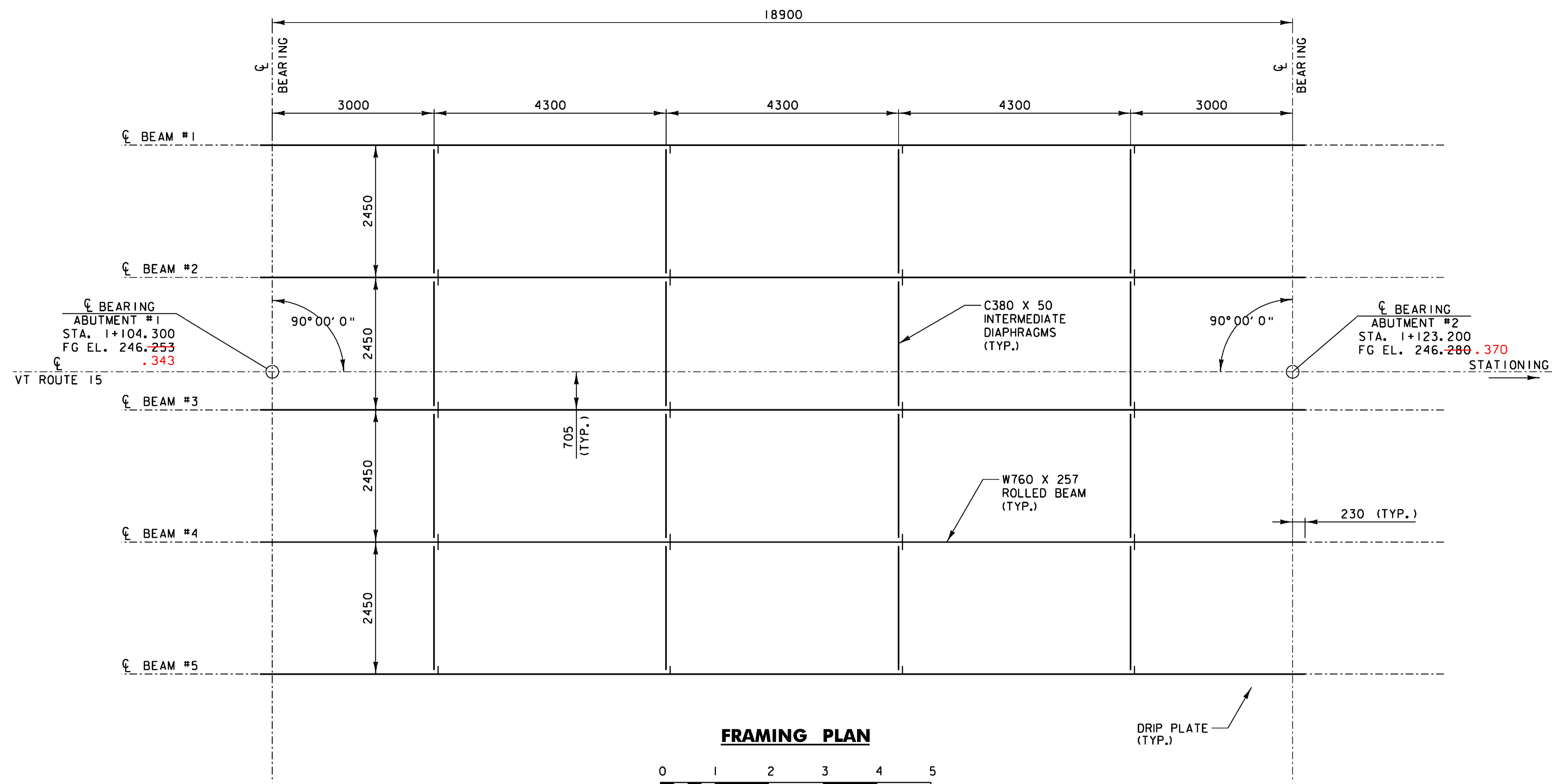
ABUTMENT #2 DECK END DETAIL (EXPANSION END)



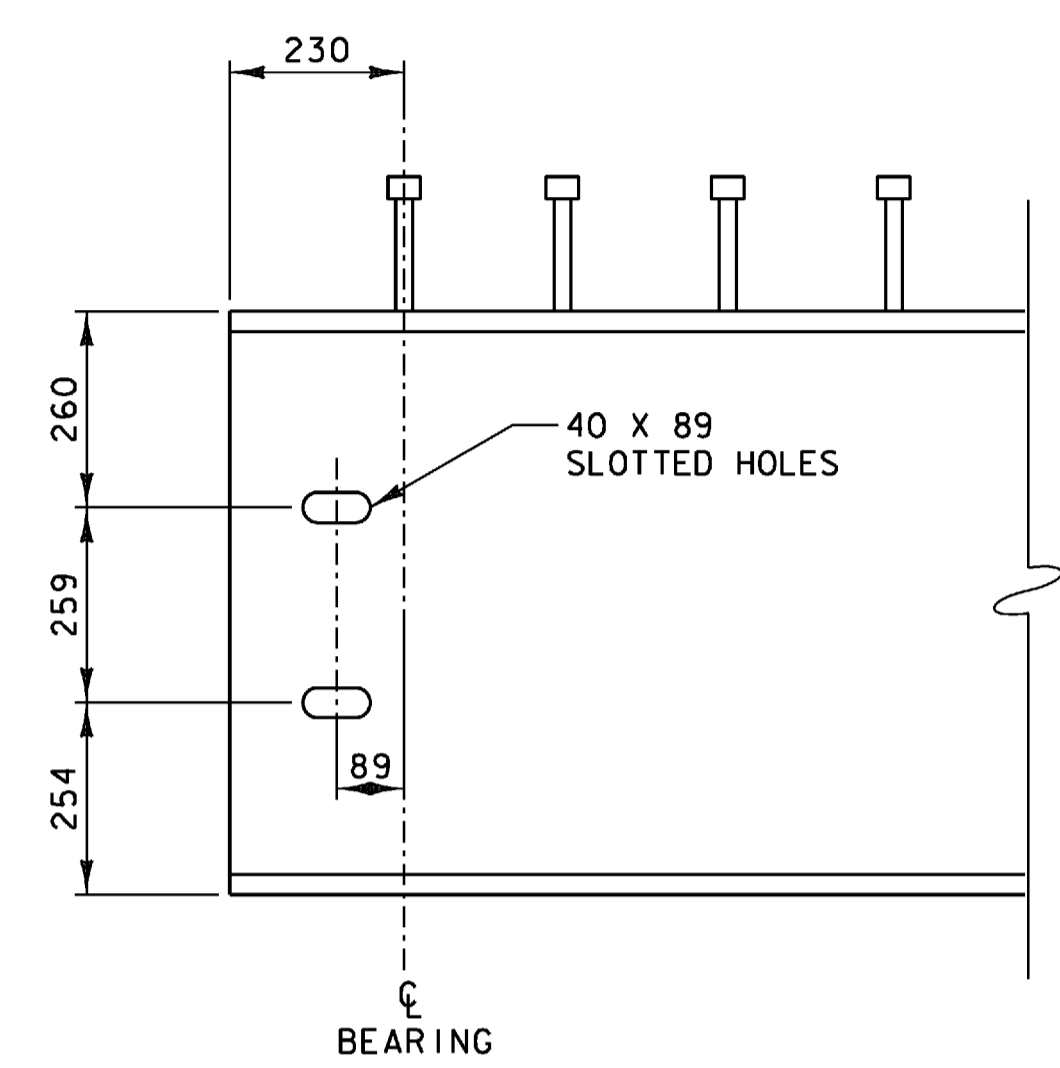
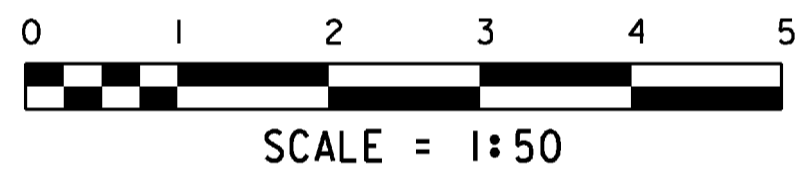
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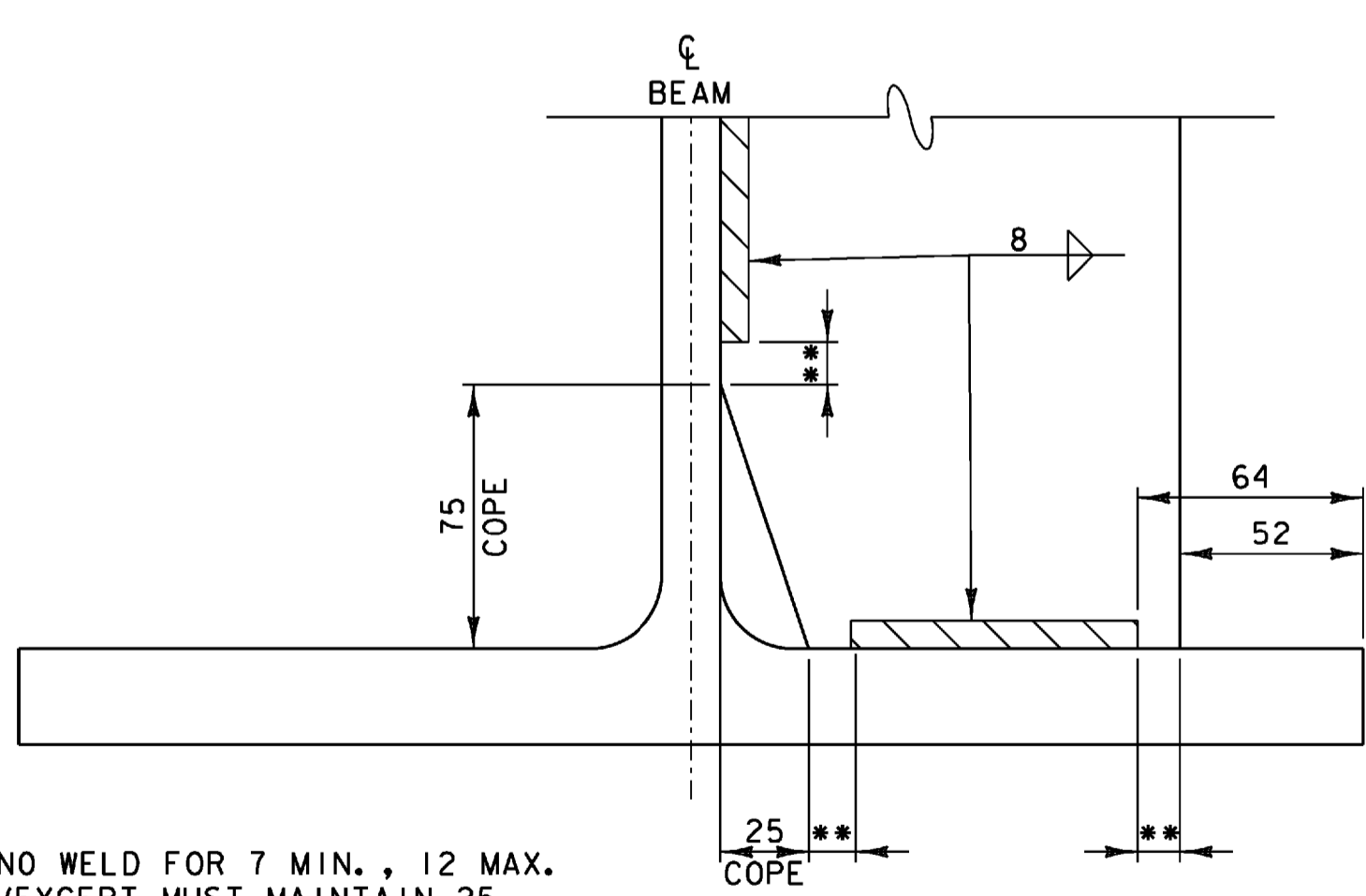
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK DECK END DETAILS			
Designed By	A.P. GUYETTE	Drawn By	P.G. JARVIS
Checked By	Date	Bridge Design Supervisor	
	E. P. DETRICK	J.W. TUCKER	Date 11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info.	DGN#SPEC#		
Bridge Sheet No.		Sheet	21 of 38



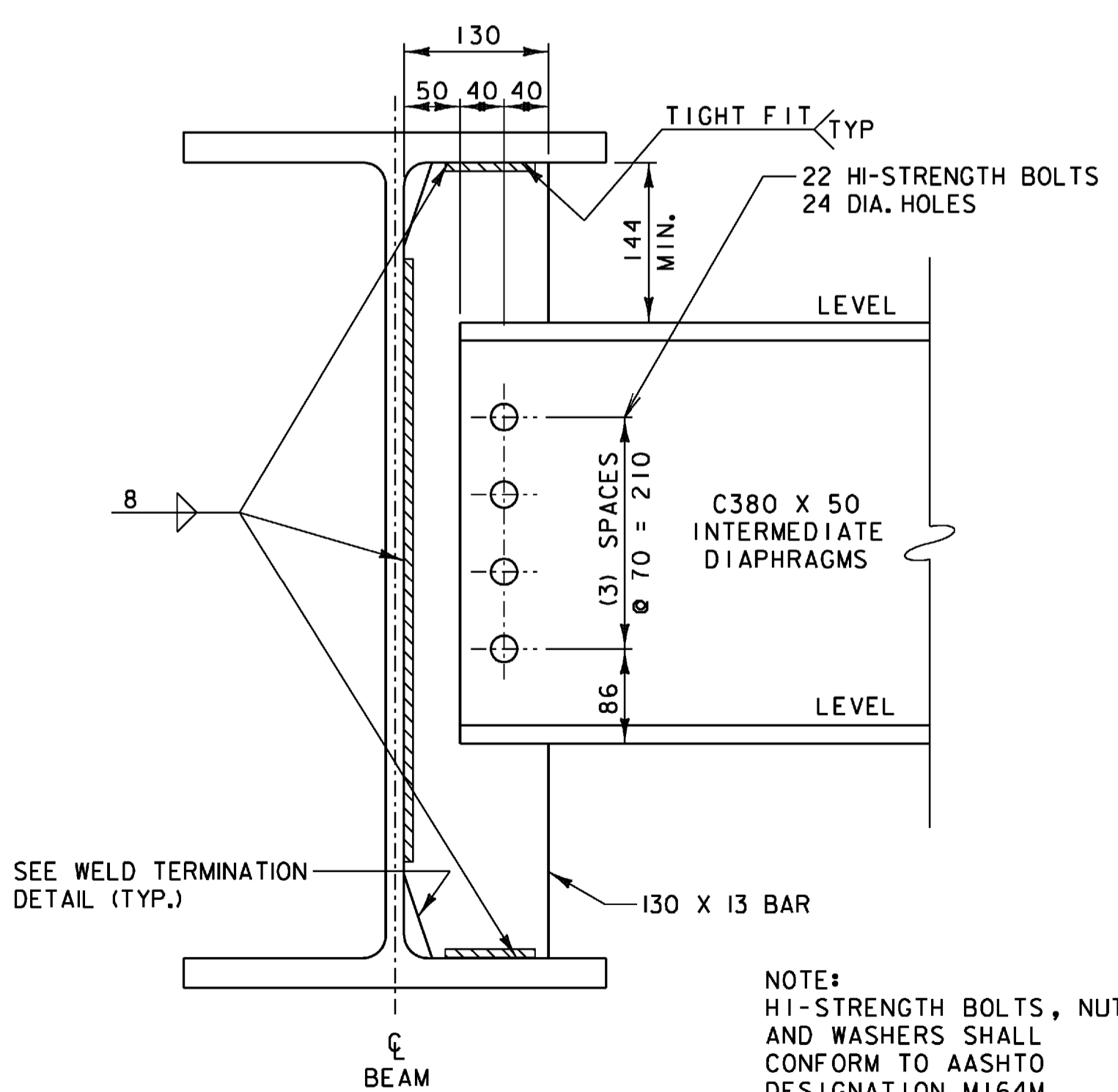
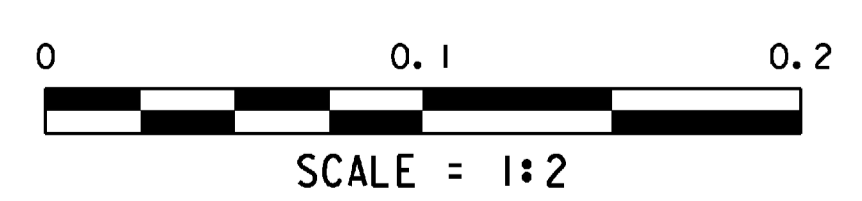
FRAMING PLAN



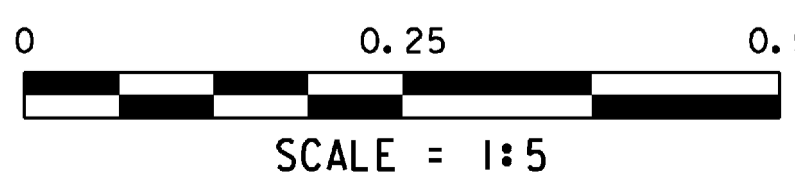
ELEVATION - END OF BEAM



** NO WELD FOR 7 MIN. , 12 MAX.
(EXCEPT MUST MAINTAIN 25
MINIMUM FROM EDGE OF FLANGE)
**WELD TERMINATION AND COPING
DETAILS FOR STEEL BEAMS**



INTERMEDIATE DIAPHRAGMS



NOTE:
HI-STRENGTH BOLTS, NUTS
AND WASHERS SHALL
CONFORM TO AASHTO
DESIGNATION M164M.

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

Town Of	HARDWICK	Bridge No.	67
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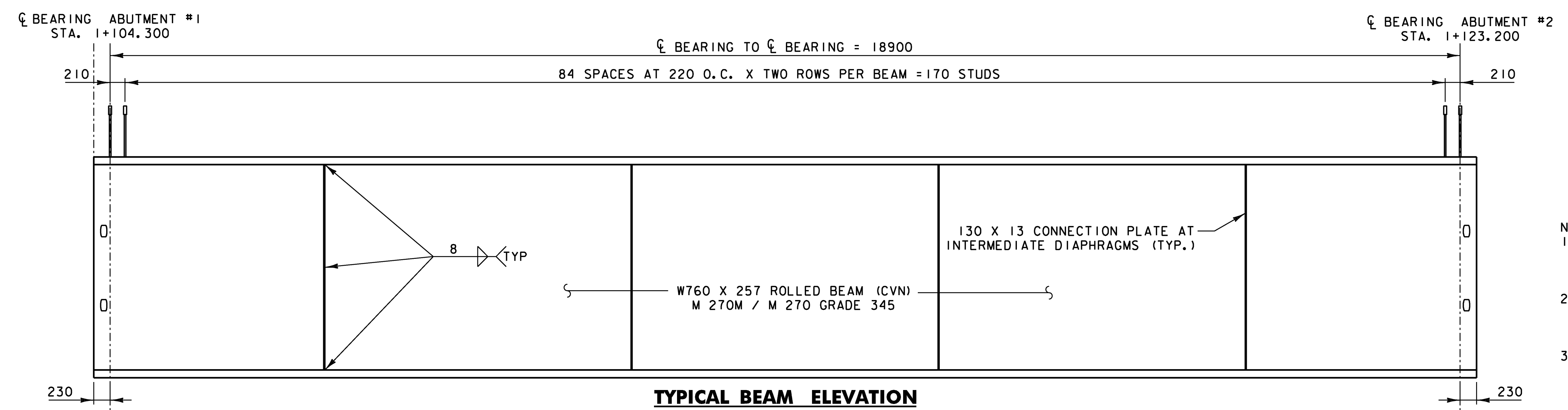
VT 15 OVER COOPER BROOK

FRAMING PLAN & DETAILS

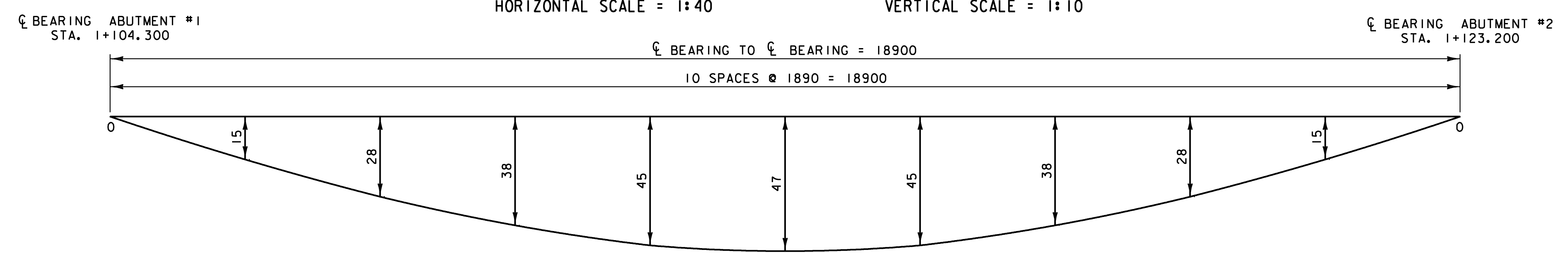
Designed By	A.P. GUYETTE	Drawn By	P.G. JARVIS
Checked By	Date	Bridge Design Supervisor	
	E. P. DETRICK	J.W. TUCKER	Date 11/08

PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info.	DGN#SPEC#		

Bridge Sheet No.	Sheet 22 of 38
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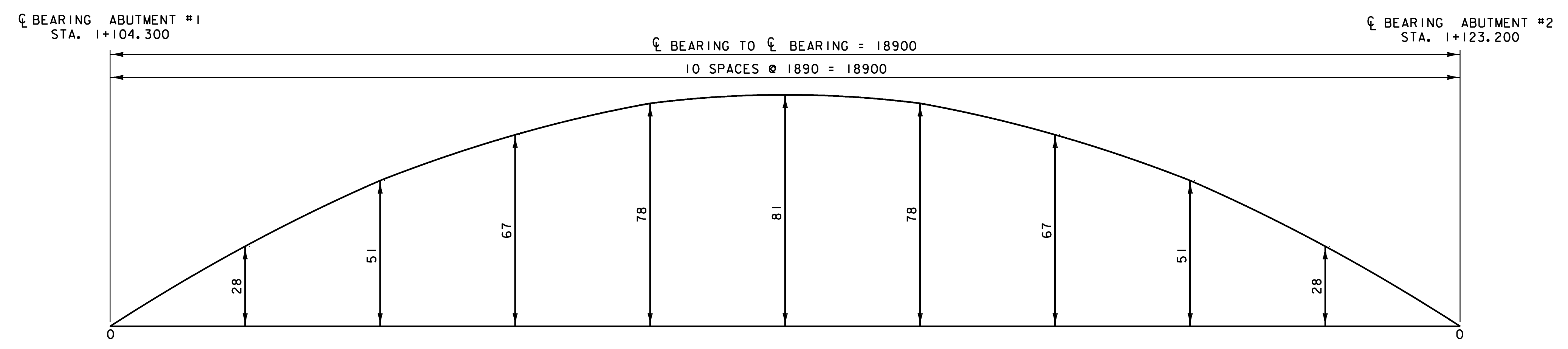
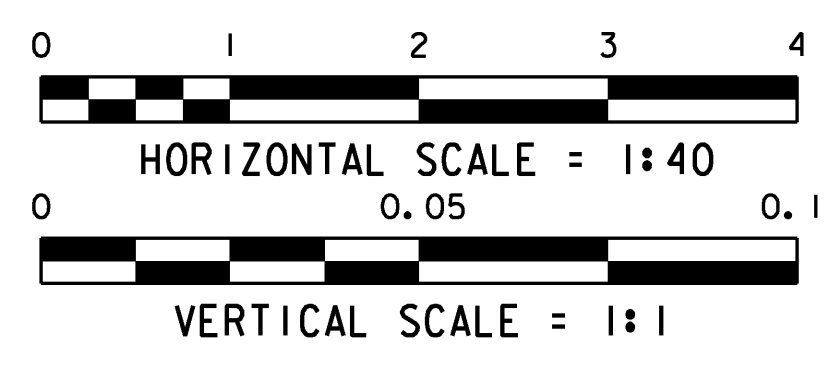


- NOTES:
1. CONNECTION PLATES SHALL BE PERPENDICULAR TO THE FLANGES AND THE WEBS UNDER FULL DEAD LOAD.
 2. ENDS OF THE BEAMS SHALL BE FABRICATED SO THAT THEY WILL BE PLUMB UNDER FULL DEAD LOAD.
 3. CVN = CHARPY V-NOTCH REQUIRED PER SPECIFICATION.

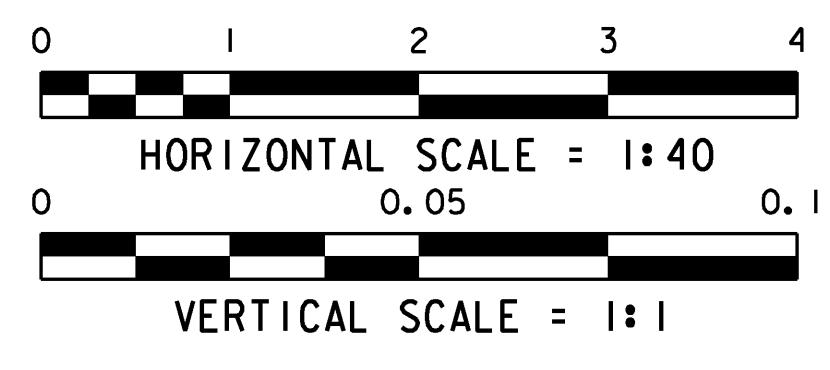


NOTE:
DEAD LOAD DEFLECTIONS INCLUDE ALL DEAD LOADS AND SUPERIMPOSED DEAD LOADS INCLUDING BEAM AND DIAPHRAGM WEIGHTS.

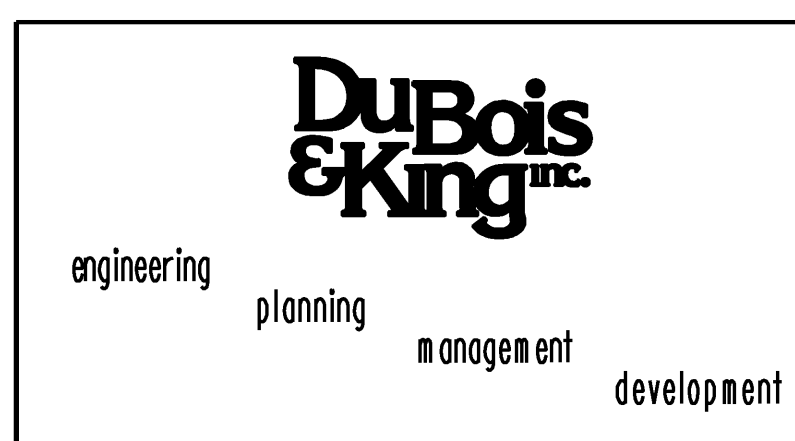
DEAD LOAD DEFLECTION DIAGRAM



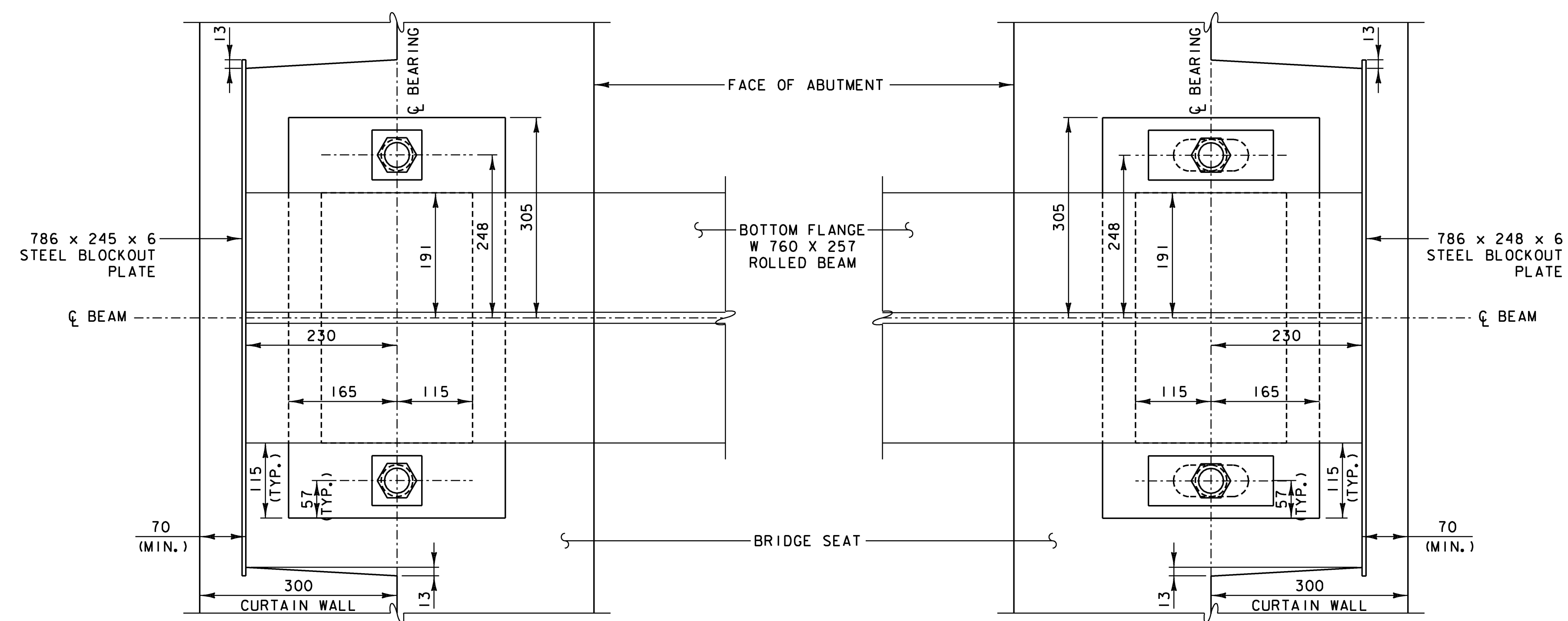
CAMBER DIAGRAM



STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK BEAM ELEVATION & DETAILS			
Designed By	A.P. GUYETTE	Drawn By	P.G. JARVIS
Checked By	Date	Bridge Design Supervisor	
E. P. DETRICK	11/08	J.W. TUCKER	Date 11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info. DGN\$SPEC\$			
Bridge Sheet No.	Sheet 23 of 38		

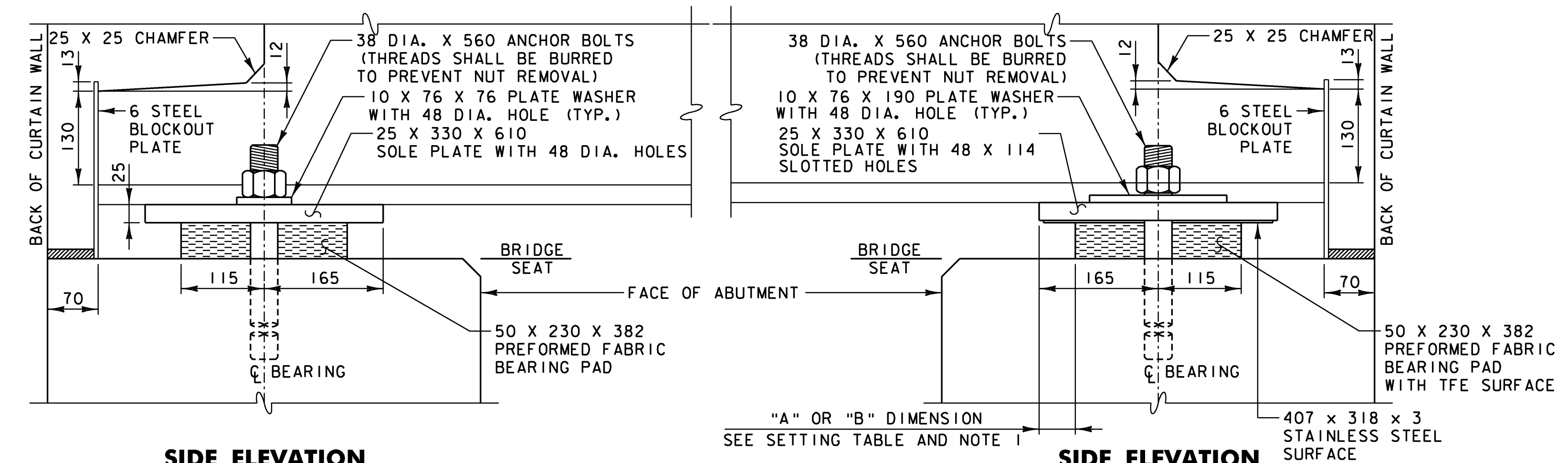


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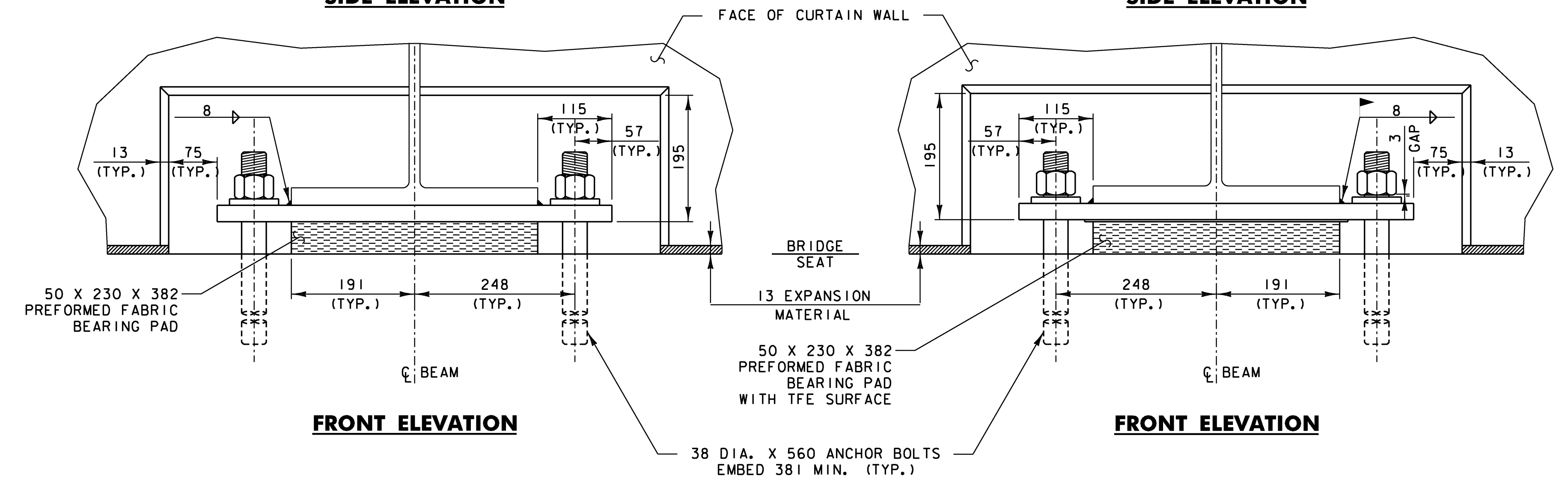
PLAN

PLAN



SIDE ELEVATION

SIDE ELEVATION

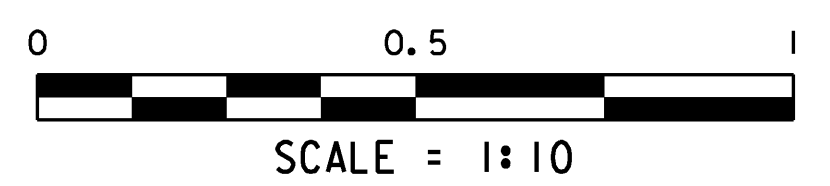


FRONT ELEVATION

FRONT ELEVATION

BEARING DETAILS ABUT. NO. 1 (FIXED)

BEARING DETAILS ABUT. NO. 2 (EXPANSION)



NOTES:

- THE "A" DISTANCE IS THE SOLE PLATE ADJUSTMENT TO BE USED AFTER THE DECK SYSTEM, CURB, PAVEMENT, AND BRIDGE RAIL ARE PLACED. THE "B" DISTANCE IS THE SOLE PLATE ADJUSTMENT TO BE USED BEFORE DEAD LOAD IS ADDED TO THE BEAM SELFWEIGHT. THE FINAL "A" DISTANCE, AS SHOWN IN THE SETTING TABLE BELOW, MUST BE ATTAINED TO WITHIN 3 MM.
- DESIGN CRITERIA:
 - ALLOWABLE BEARING PRESSURE ON CONCRETE = 7 MPa
 - MINIMUM ALLOWABLE DESIGN ROTATION = 0.015 RADIAN
 - HORIZONTAL CAPACITY SHALL BE 6% OF THE VERTICAL LOAD
 - DESIGN LOAD PER BEARING = 58.8 Mg (DEAD LOAD + LIVE LOAD)
- ALL STEEL IN BEARING DEVICES (EXCEPT STAINLESS) SHALL BE AASHTO M270, GRADE 250 AND GALVANIZED PER SPECIFICATION.
- ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. ALL WASHERS SHALL BE 10 MM PLATE (MINIMUM). PAYMENT FOR ANCHOR BOLTS, NUTS AND WASHERS SHALL BE INCIDENTAL TO ITEM 531.10.
- SEE SHEET 18 FOR ADDITIONAL BEARING NOTES.

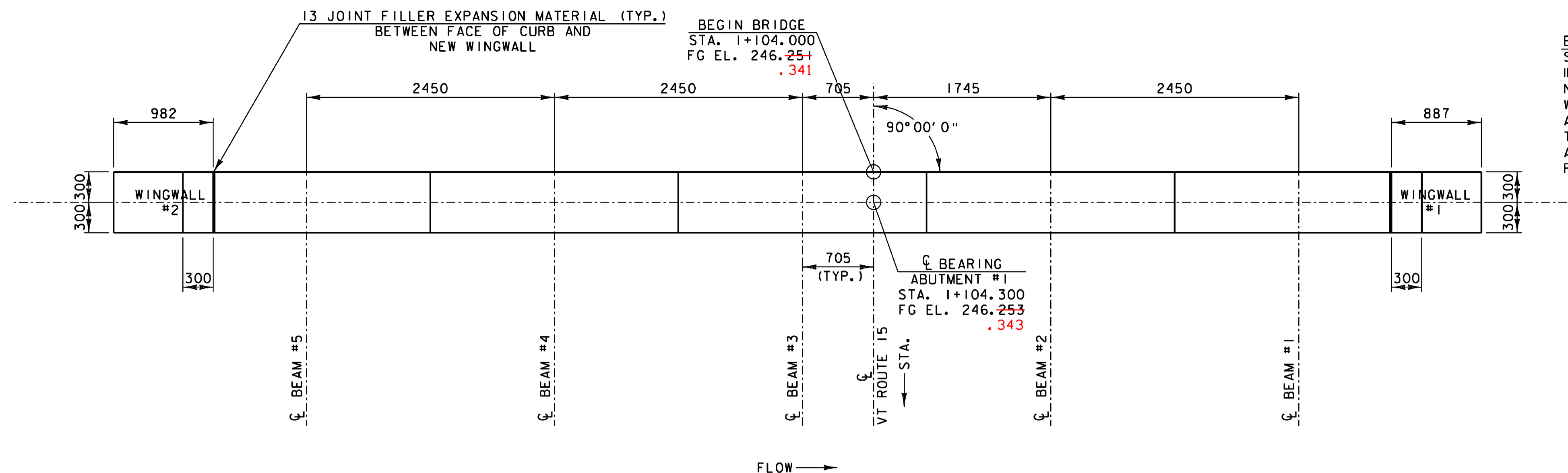
TEMP (C)	"A" DIST. (MM)	"B" DIST. (MM)
49	43	51
41	44	52
32	46	54
24	48	56
16	49	57
7	51	59
-1	52	60
-9	54	62
-18	56	64
-26	57	65
-34	59	67

SETTING TABLE

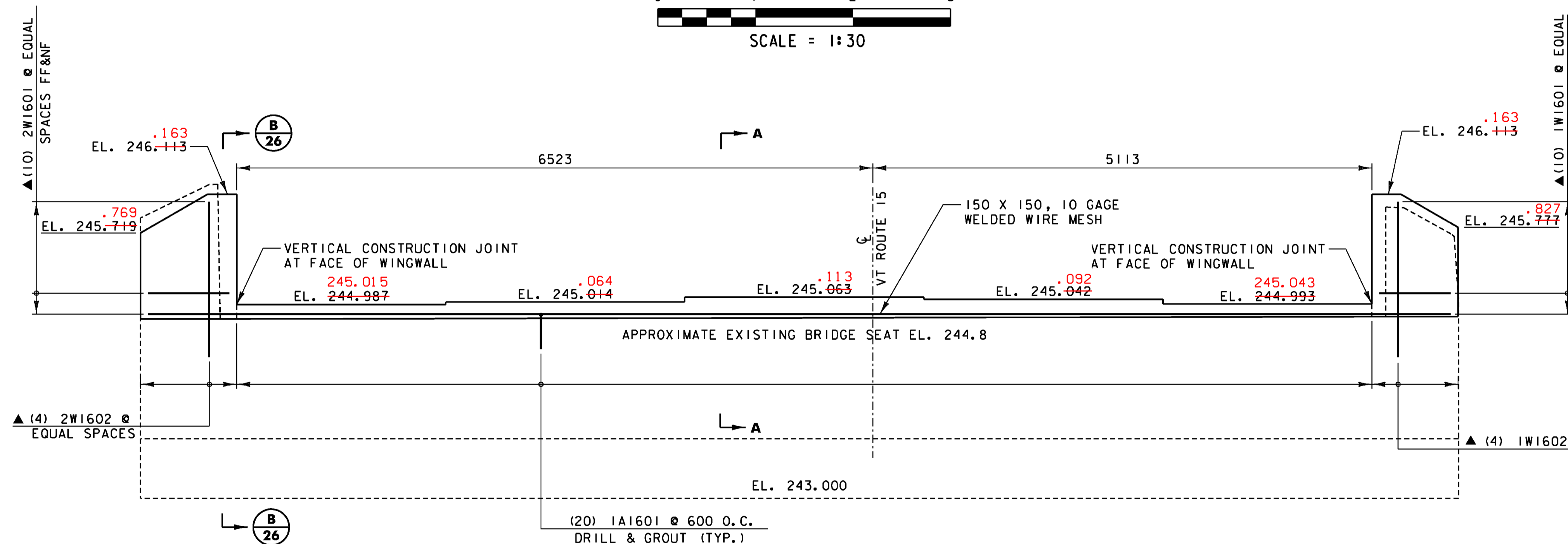
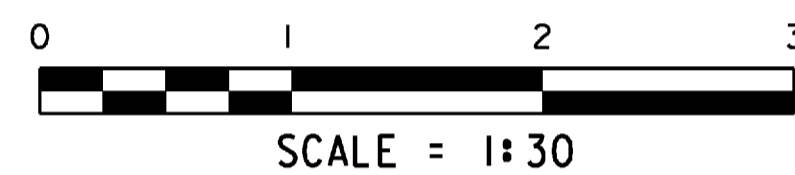
STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK			
BEARING DETAILS			
Designed By	A.P. GUYETTE	Drawn By	A.P. GUYETTE
Checked By	Date	Bridge Design Supervisor	
E. P. DETRICK	11/08	J.W. TUCKER	Date 11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info. DGN#SPEC#			
Bridge Sheet No.	Sheet 24 of 38		

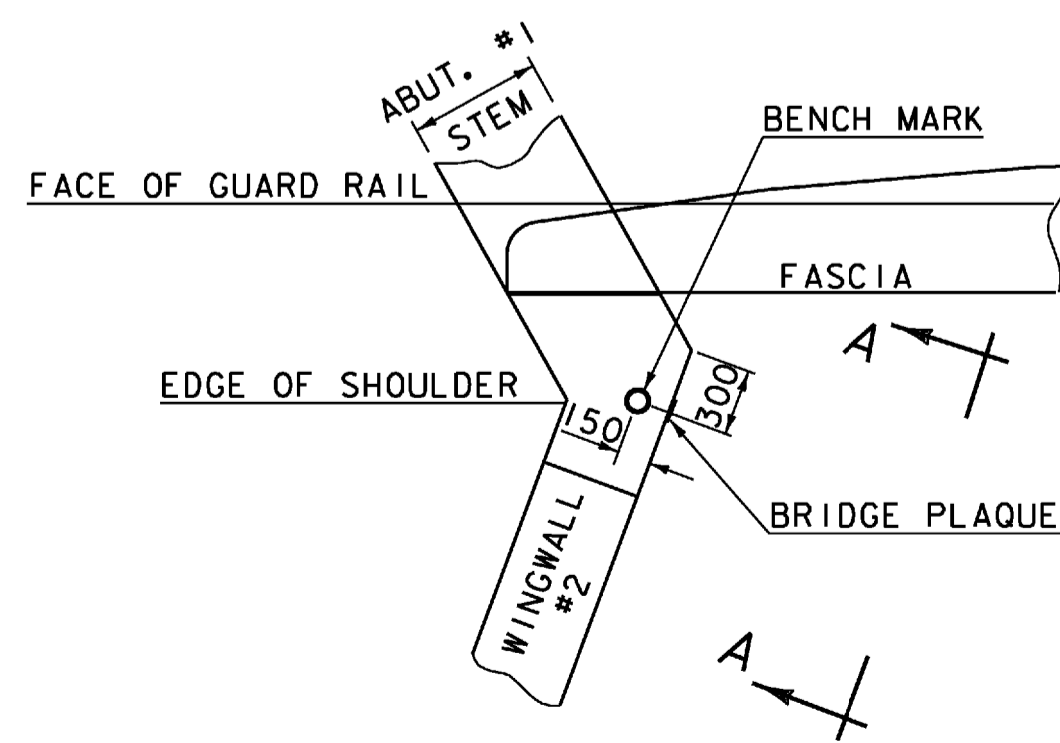
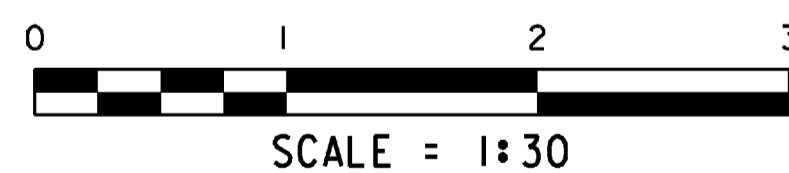
engineering planning management development



ABUTMENT #1 PLAN

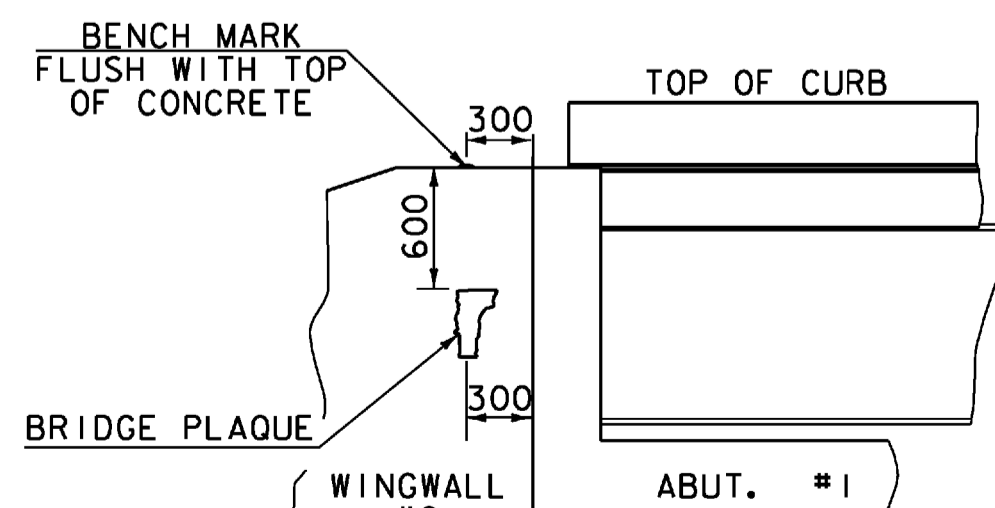


ABUTMENT #1 ELEVATION



PLAN

LOCATE BENCH MARK AND BRIDGE PLAQUE



VIEW "A - A"

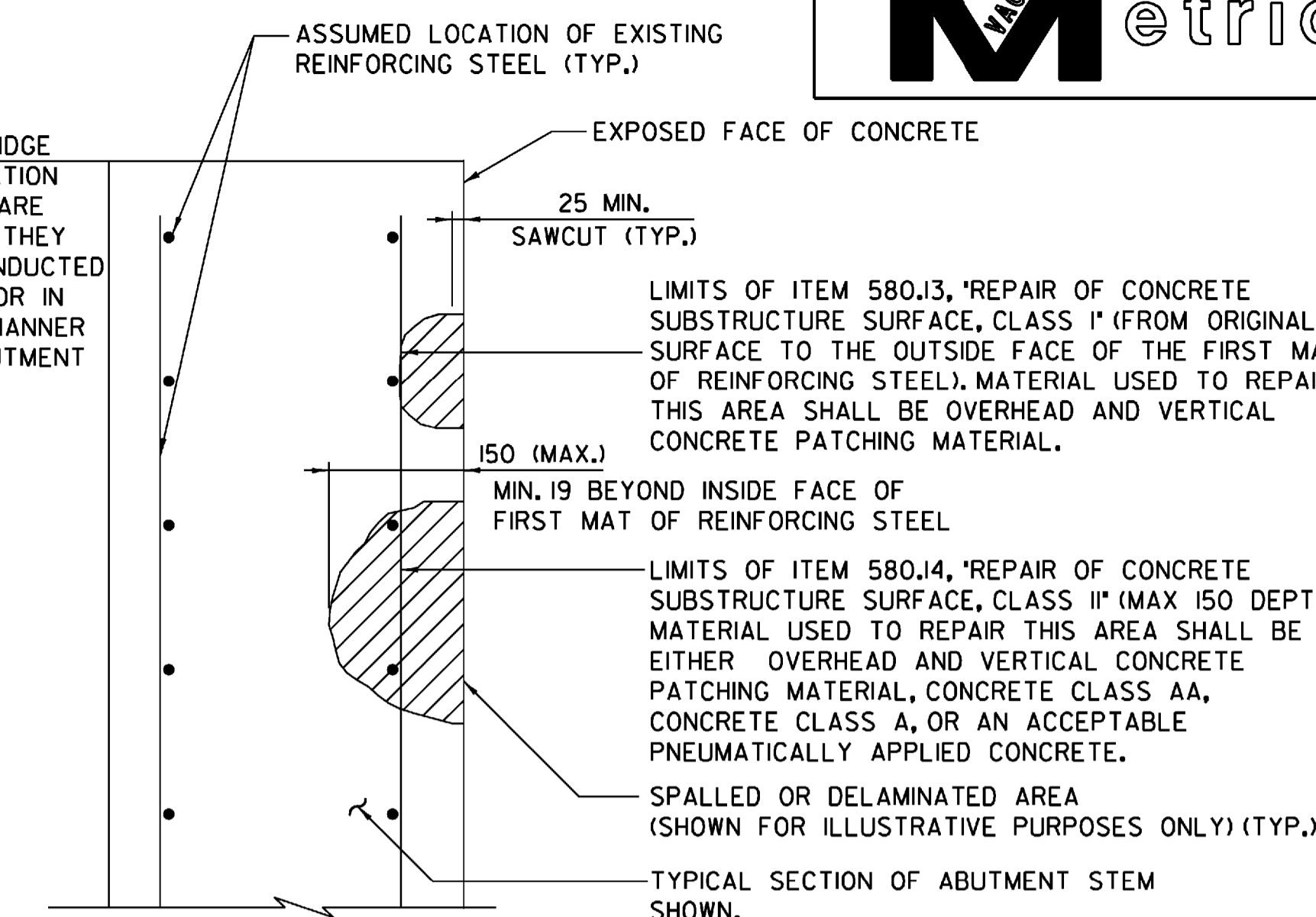
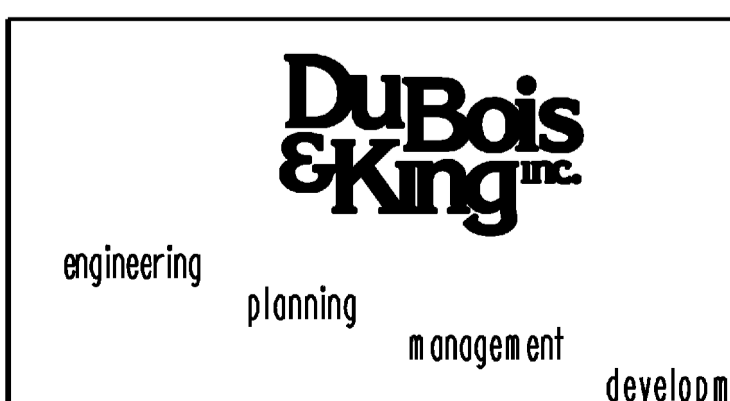
THE BENCH MARK AND BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AT ABUTMENT #1 ON THE RIGHT SIDE AS SHOWN OR AS DIRECTED BY THE ENGINEER.

NOTES

- FOLLOWING REMOVAL OF THE SUPERSTRUCTURE, EACH OF THE FOUR (4) EXISTING WINGWALLS SHALL BE REMOVED TO THE EXISTING BRIDGE SEAT ELEVATION.
- CONCRETE SURFACES SHALL THEN BE INSPECTED AND REPAIRED AS DESCRIBED IN CONSTRUCTION NOTE 1 ON SHEET 18.
- THE CONCRETE FOR THE WINGWALLS SHALL NOT BE PLACED UNTIL THE BEAMS HAVE BEEN SET AND PROFILED AND THE FINISHED GRADE HAS BEEN ESTABLISHED.
- THE WELDED WIRE MESH FOR THE NEW CAPS ON THE ABUTMENTS SHALL BE COATED, GALVANIZED OR EPOXY, AND SHALL BE PAID FOR AS ITEM 507.15, "REINFORCING STEEL".

NOTE:

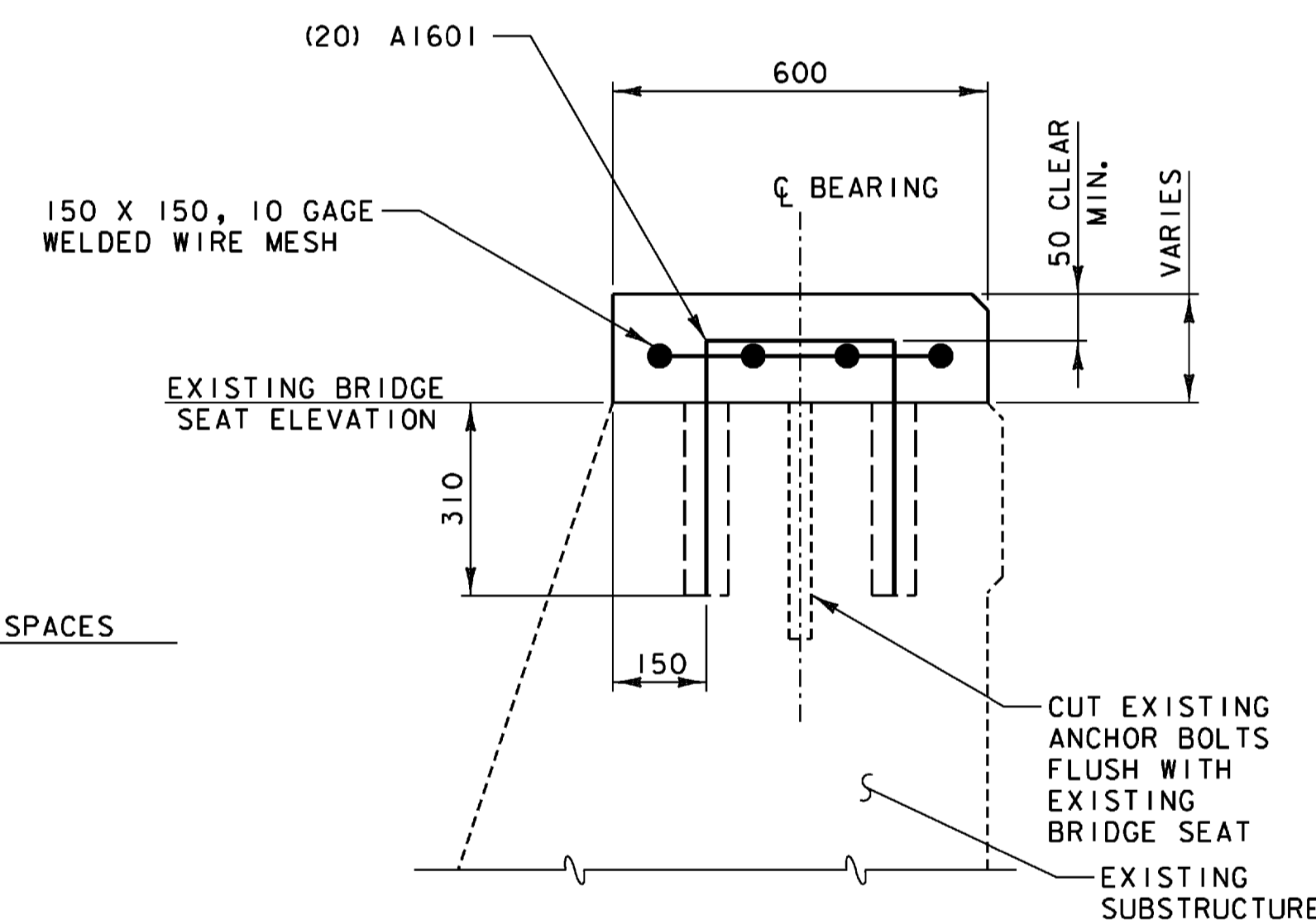
NF = NEAR FACE
 FF = FAR FACE
 EF = EACH FACE
 T&B = TOP AND BOTTOM
 ▲ = CUT TO FIT IN FIELD
 75 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.
 MAXIMUM LAP LENGTH NOT DETAILED SHALL BE 660.



REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS I OR CLASS II

N.T.S. DENOTES LIMITS OF REMOVAL

NOTE:
 REPAIRS MADE BEYOND WHAT IS SPECIFIED FOR CLASS II SHALL BE PAID FOR UNDER REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III AND SHALL INCLUDE REMOVAL FROM THE FACE OF THE EXISTING CONCRETE SURFACE TO A DEPTH GREATER THAN 150.

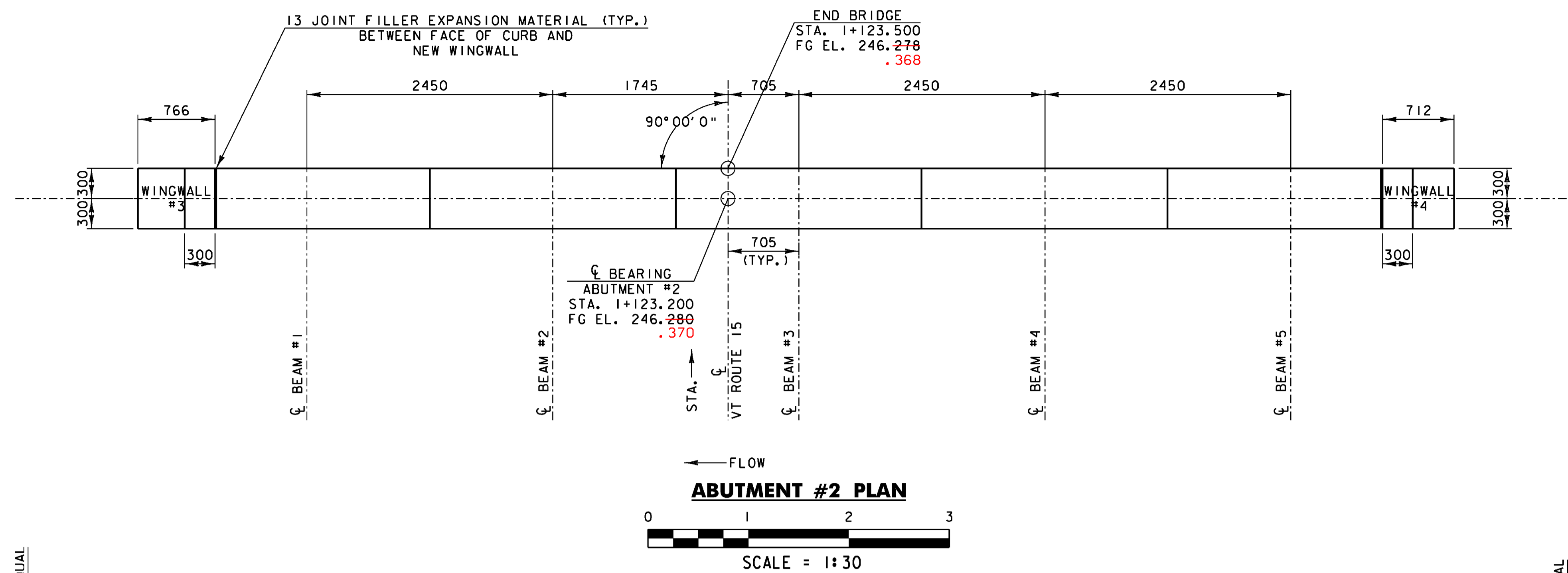


SECTION A-A

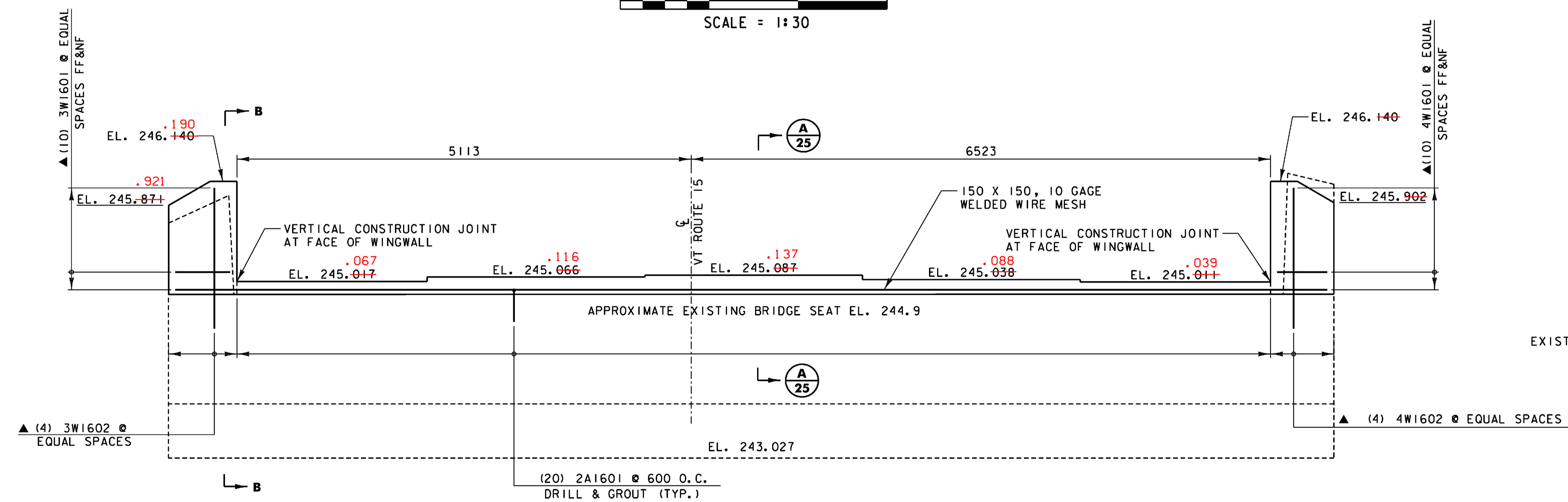
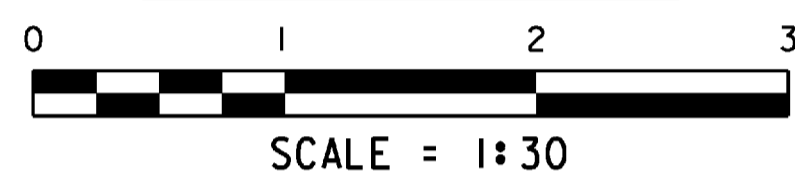


STATE OF VERMONT AGENCY OF TRANSPORTATION

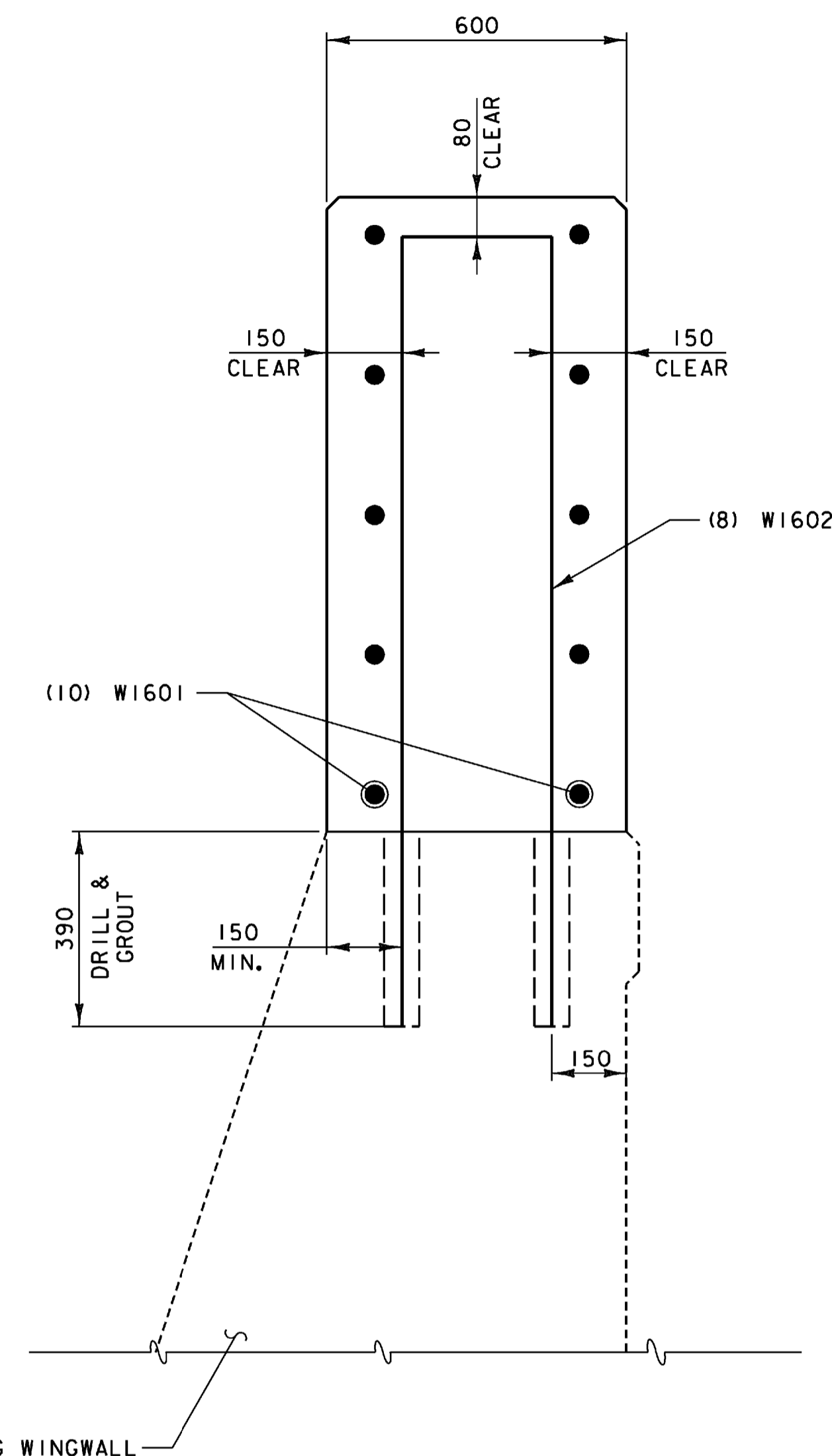
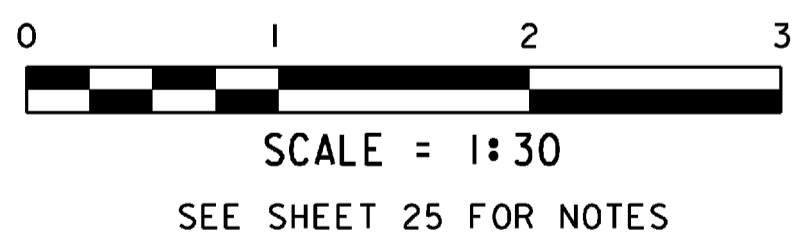
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK			
ABUTMENT NO. 1 MODIFICATIONS			
Designed By	A.P. GUYETTE	Drawn By	R.H. BARNES
Checked By	Date	Bridge Design Supervisor	
	E. P. DETRICK	11/08	J.W. TUCKER Date 11/08
PROJECT	HARDWICK		PROJECT NO. BHF 030-2 (18) S
I.G.C. Info. DGN#SPEC#			
Bridge Sheet No.	Sheet 25 of 38		



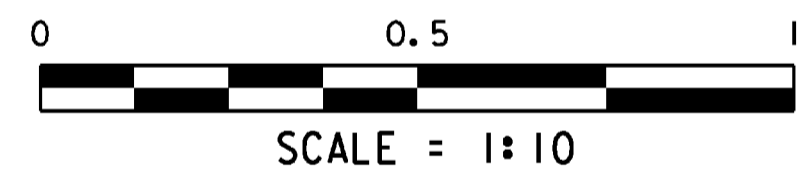
ABUTMENT #2 PLAN



ABUTMENT #2 ELEVATION

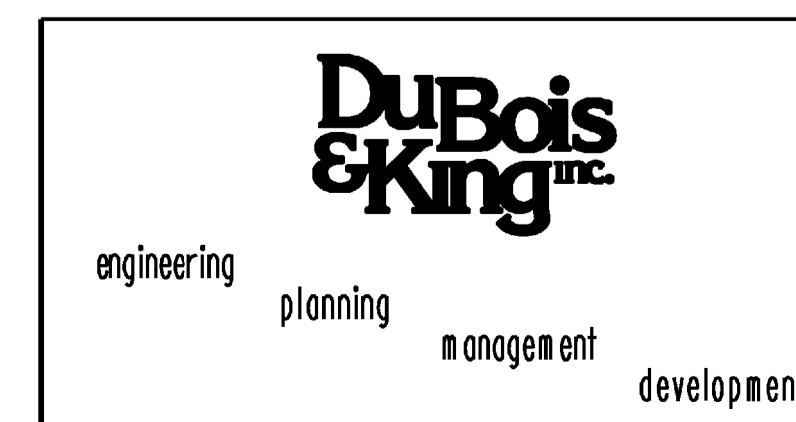


SECTION B-B



NOTE:
 NF = NEAR FACE
 FF = FAR FACE
 EF = EACH FACE
 T&B = TOP AND BOTTOM
 ▲ = CUT TO FIT IN FIELD
 75 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.
 MAXIMUM LAP LENGTH NOT DETAILED SHALL BE 660.

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK ABUTMENT NO. 2 MODIFICATIONS			
Designed By	A.P. GUYETTE	Drawn By	R.H. BARNES
Checked By	Date	Bridge Design Supervisor	
	E. P. DETRICK	J.W. TUCKER	Date 11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info.	DGN#SPEC#		
Bridge Sheet No.		Sheet	26 of 38



**SPECIAL PROVISION
(ALUMINUM APPROACH RAILING,
ANODIZED)**

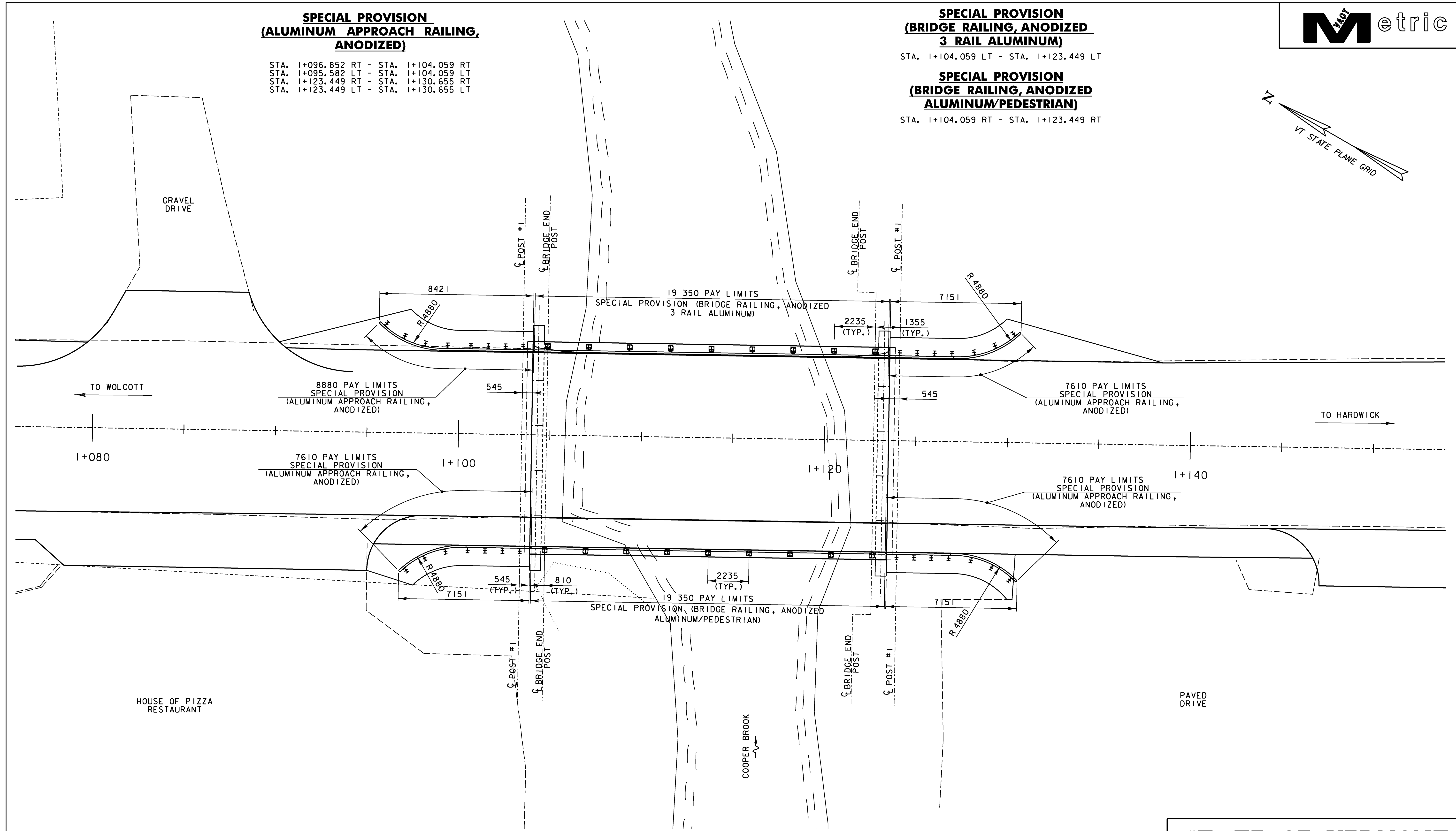
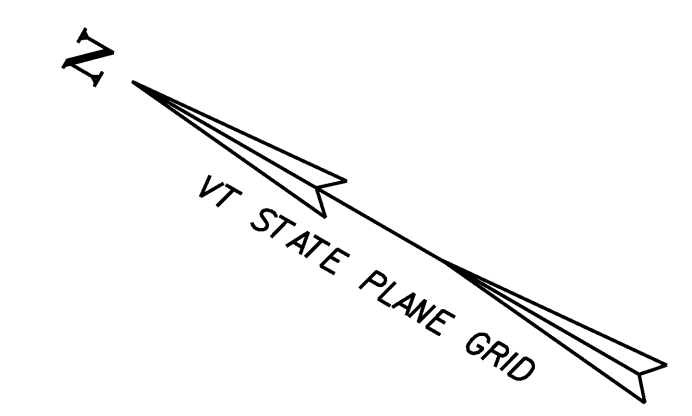
STA. 1+096.852 RT - STA. 1+104.059 RT
 STA. 1+095.582 LT - STA. 1+104.059 LT
 STA. 1+123.449 RT - STA. 1+130.655 RT
 STA. 1+123.449 LT - STA. 1+130.655 LT

**SPECIAL PROVISION
(BRIDGE RAILING, ANODIZED
3 RAIL ALUMINUM)**

STA. 1+104.059 LT - STA. 1+123.449 LT

**SPECIAL PROVISION
(BRIDGE RAILING, ANODIZED
ALUMINUM/PEDESTRIAN)**

STA. 1+104.059 RT - STA. 1+123.449 RT



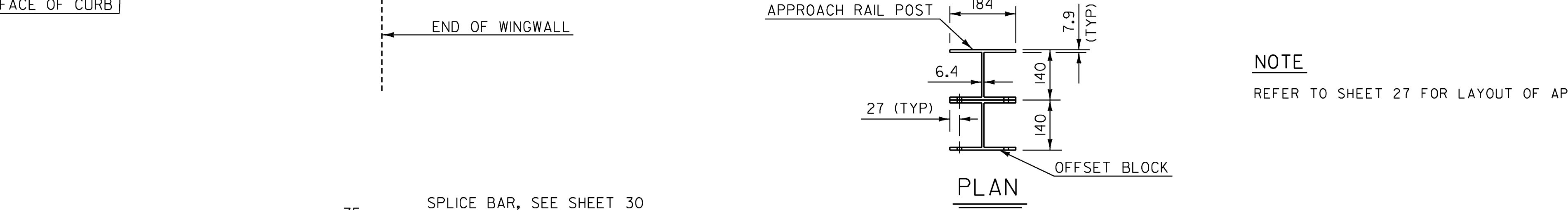
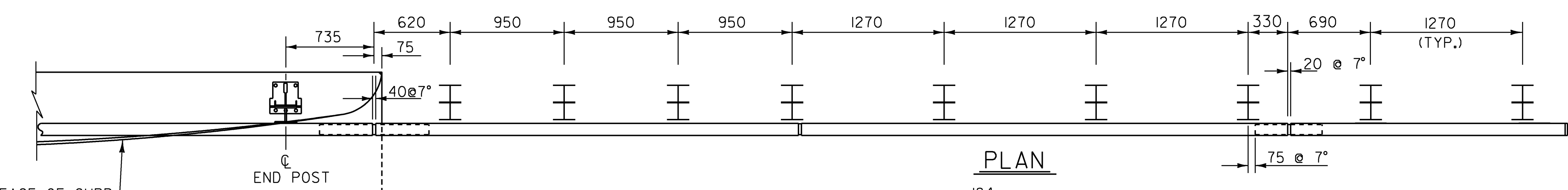
RAILING LAYOUT PLAN



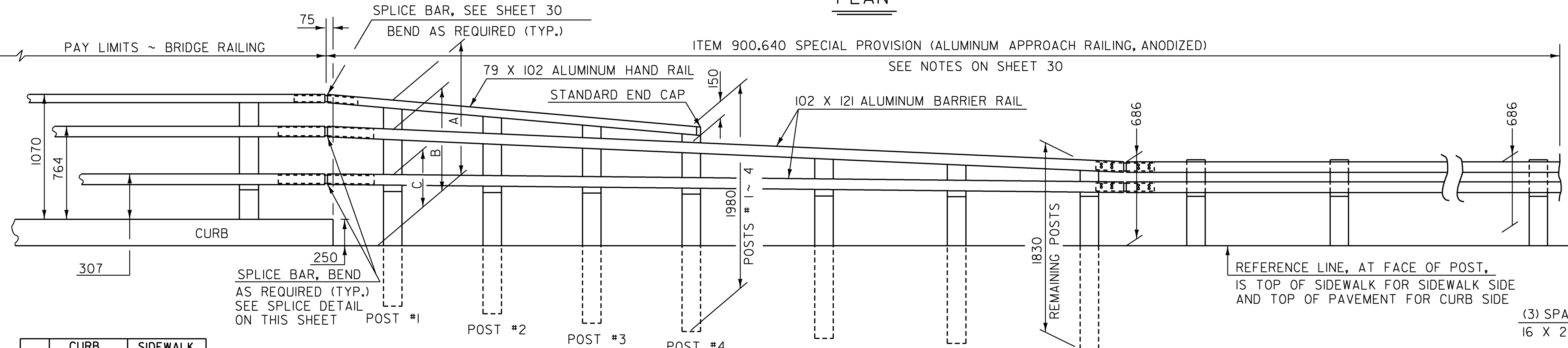
NOTE:
SEE SHEETS 28-30 FOR BRIDGE AND APPROACH
RAIL DETAILS.

PLOTTED \$\$\$DATE\$\$\$

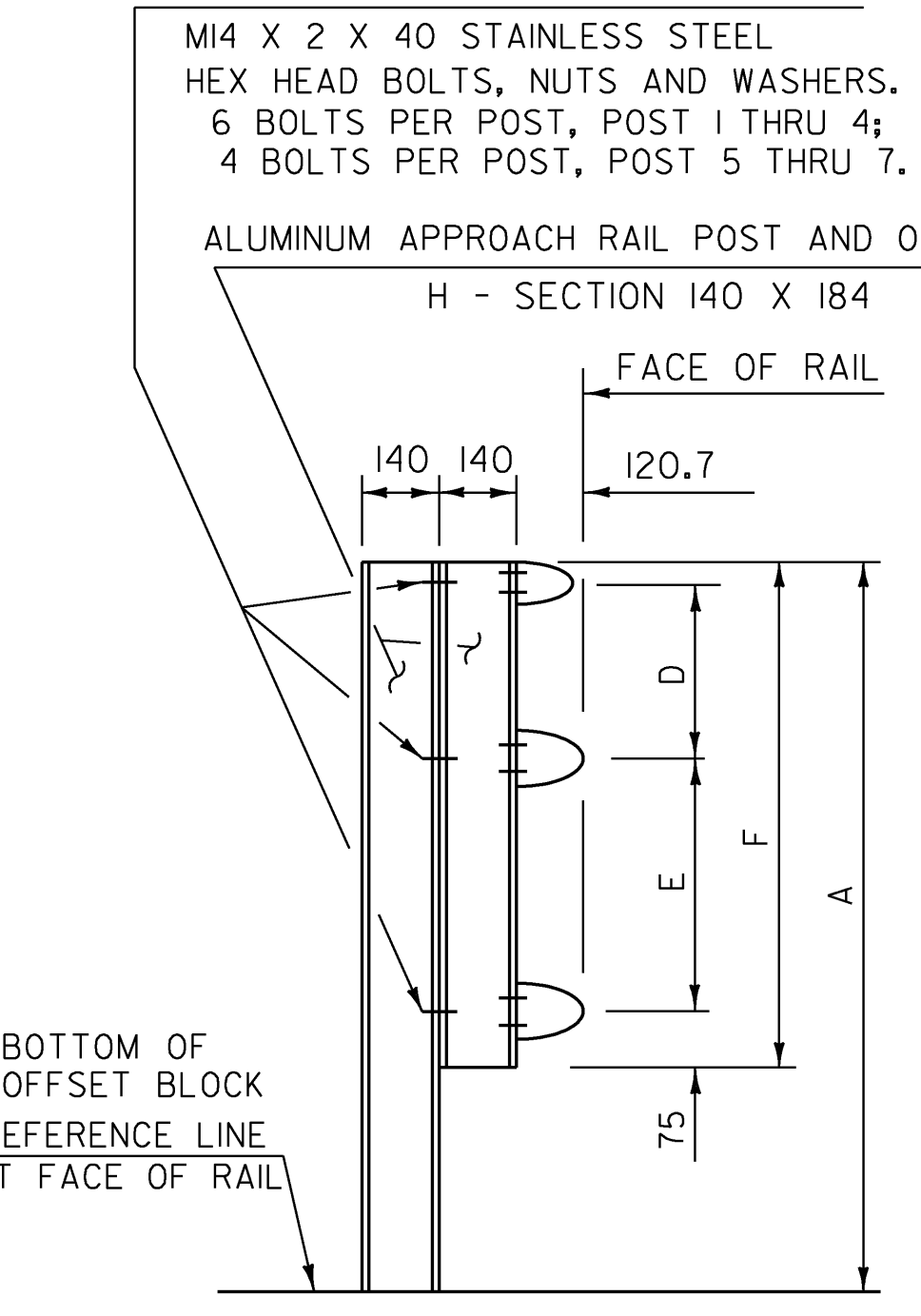
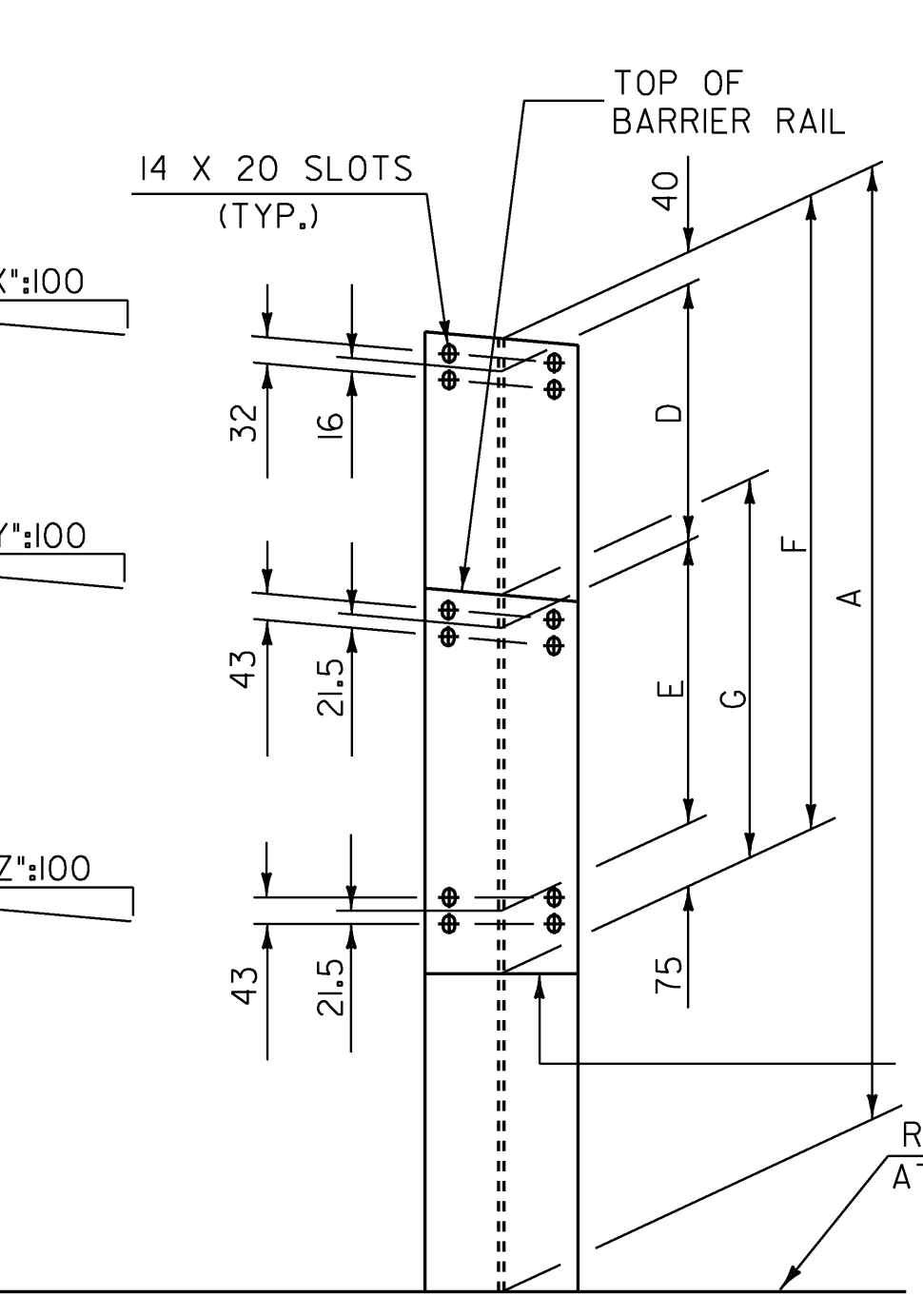
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK RAILING LAYOUT PLAN			
Designed By	A.P. GUYETTE	Drawn By	P.G. JARVIS
Checked By	Date	Bridge Design Supervisor	
	E. P. DETRICK	J.W. TUCKER	Date 11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info. DGN\$SPEC\$			
Bridge Sheet No.	Sheet 27 of 38		



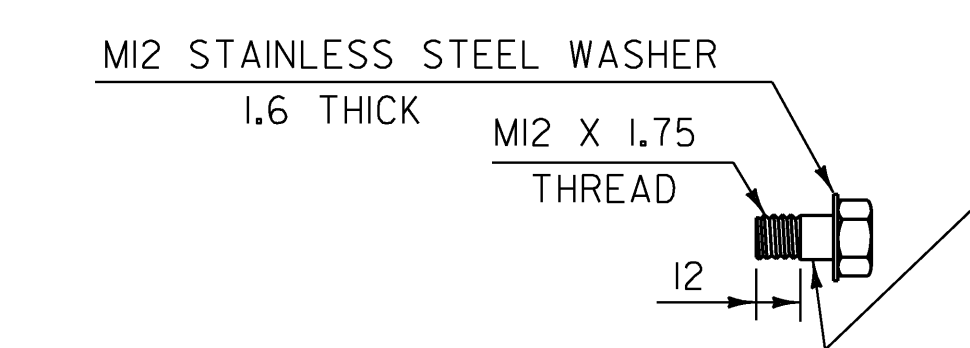
NOTE
REFER TO SHEET 27 FOR LAYOUT OF APPROACH RAILING



	CURB SIDE	SIDEWALK SIDE
X	8.8	5.8
Y	4.7	1.0
Z	2.5	0.5



APPROACH RAIL DETAILS



STAINLESS STEEL BOLT DETAILS
(FOR SPLICE BARS)

ALUMINUM APPROACH RAIL RAIL DIMENSIONS FOR A CURB CONDITION

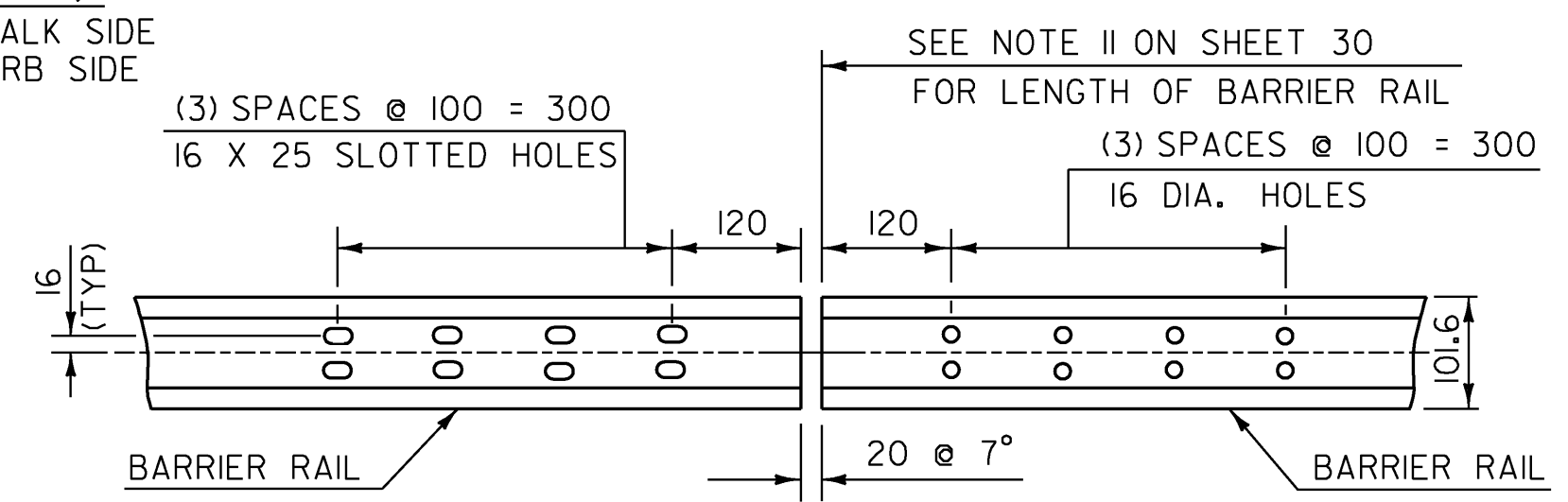
POST NO.	RAIL HEIGHT DIMENSIONS			OFFSET BLOCK DIMENSIONS			
	A	B	C	D	E	F	G
1	1268	989	543	330	446	902	
2	1184	948	519	287	429	842	
3	1099	906	495	244	411	781	
4	1016	865	471	202	394	722	
5		810	440		370		623
6		756	408		348		525
7		700	376		324		501

ALL REMAINING POSTS ARE TO HAVE THE SAME DIMENSIONS AS POST NO. 7

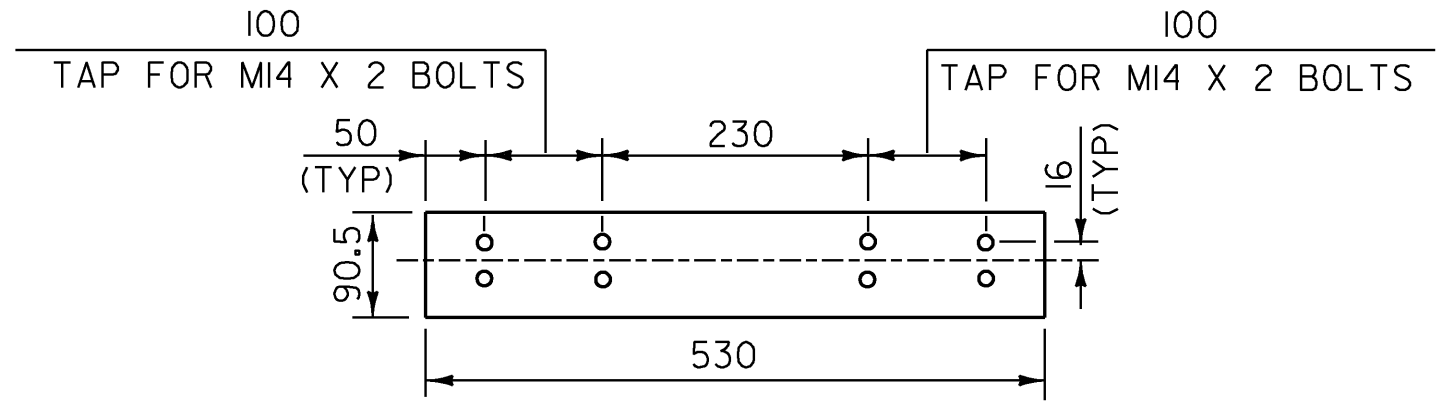
ALUMINUM APPROACH RAIL RAIL DIMENSIONS FOR A SIDEWALK CONDITION

POST NO.	RAIL HEIGHT DIMENSIONS			OFFSET BLOCK DIMENSIONS			
	A	B	C	D	E	F	G
1	1034	756	428	291	226	731	
2	979	747	423	245	222	682	
3	924	737	419	200	216	631	
4	869	728	414	154	212	581	
5		715	408		205		432
6		702	401		199		427
7		690	395		193		421

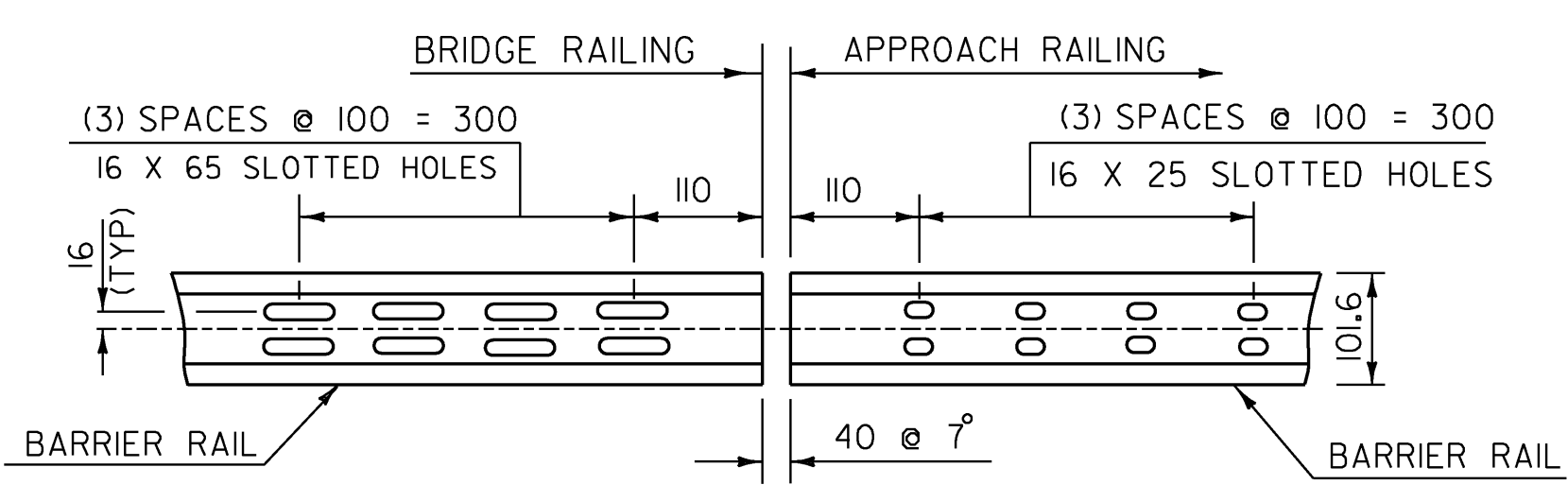
ALL REMAINING POSTS ARE TO HAVE THE SAME DIMENSIONS AS POST NO. 7



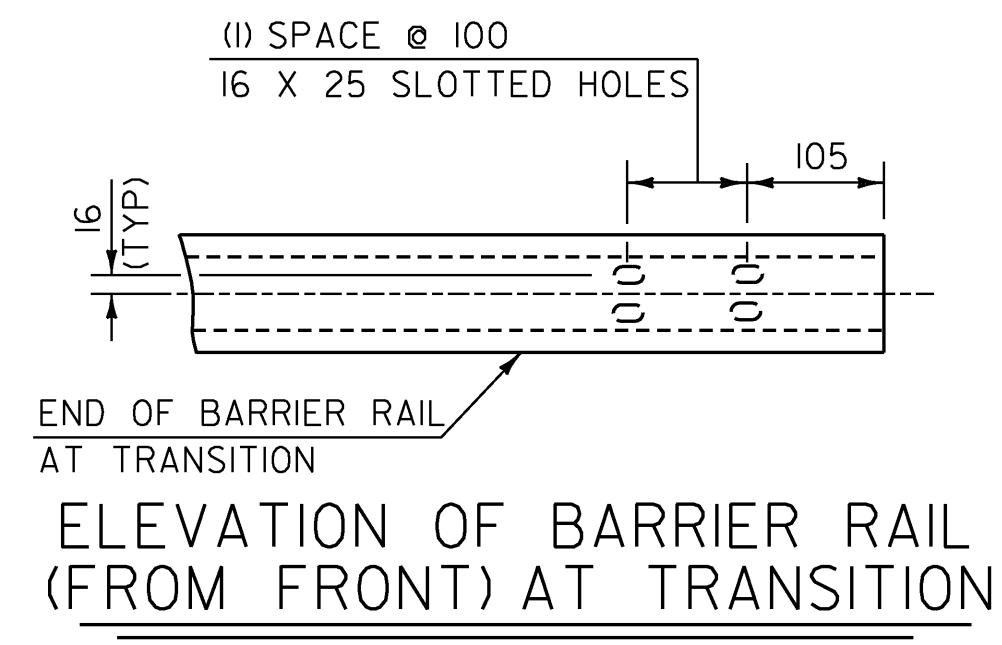
ELEVATION OF BARRIER RAIL (FROM BACK) AT ALL INTERMEDIATE RAIL SPLICES



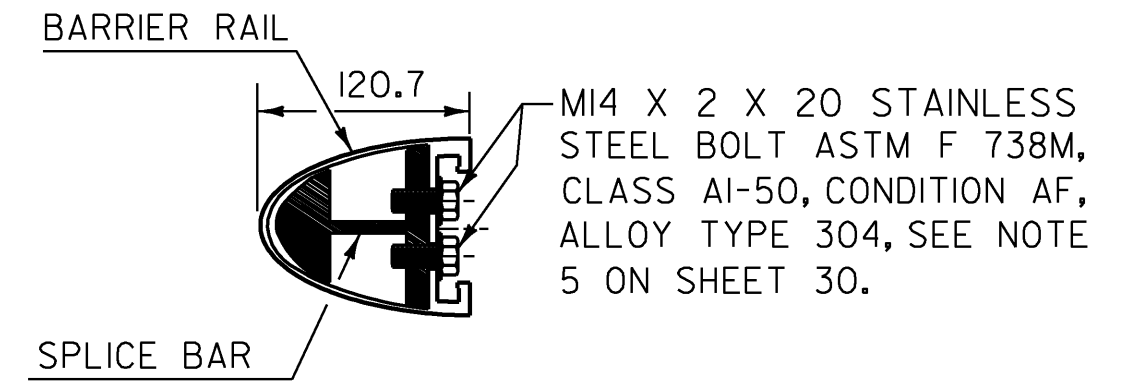
ELEVATION OF BARRIER RAIL SPLICE BAR TO BE USED AT TRANSITION BETWEEN APPROACH RAIL & GUARD RAIL (FROM BACK)



ELEVATION OF BARRIER RAIL (FROM BACK)



ELEVATION OF BARRIER RAIL (FROM FRONT) AT TRANSITION



TYPICAL SECTION THROUGH BARRIER RAIL SPLICE

NOTES

- POST 1 THROUGH 7 SHALL BE EXTRUDED ALUMINUM.
- ALL STRUCTURAL STEEL SHALL BE AASHTO M 270/M 270M GRADE 250 GALVANIZED AFTER FABRICATION.
- ALL ITEMS NOT OTHERWISE INDICATED SHALL MEET THE SPECIFICATION REQUIREMENTS OF THE STANDARD SHEETS ON WHICH THEY ARE DETAILED.
- SEE SHEETS 29 & 30 FOR ALUMINUM BRIDGE RAILING DETAILS.
- DETAILS ARE SHOWN FOR TRANSITION TO A 3 RAIL ALUMINUM BRIDGE RAILING.
- DIMENSIONS SHOWN ARE FROM A REFERENCE LINE AT THE FACE OF POST FOR A NORMAL CROWNED SECTION. APPROPRIATE CORRECTIONS SHALL BE MADE FOR CROSS SLOPES OTHER THAN A NORMAL SECTION.

STATE OF VERMONT AGENCY OF TRANSPORTATION

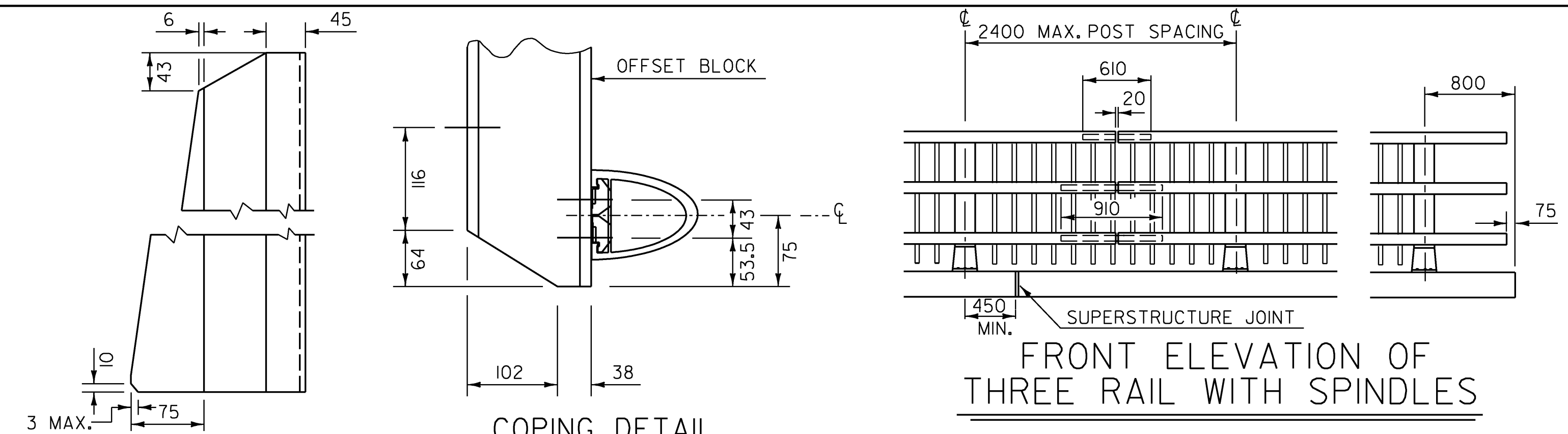
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK			
ALUMINUM RAILING DETAILS 1			
Designed By	A.P. GUYETTE	Drawn By	P.G. JARVIS
Checked By	Date	Bridge Design Supervisor	
E. P. DETRICK	11/08	J.W. TUCKER	Date 11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info. DGN\$SPEC\$			
Bridge Sheet No.	Sheet 28 of 38		

THIS REFLECTORIZED ALUMINUM DELINEATOR IS TO BE ERECTED EVERY 9 m (OR CLOSEST POST) WITH 2 M4 X 0.7 X 20 SET SCREWS.

DELINEATORS SHALL MEET SPECIFICATION REQUIREMENTS FOR ASTM B 209M ALLOY 5052-H32.

REFLECTIVE MATERIAL SHALL MEET THE 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.

PAYMENT SHALL BE INCLUDED IN COST OF BRIDGE RAILING.

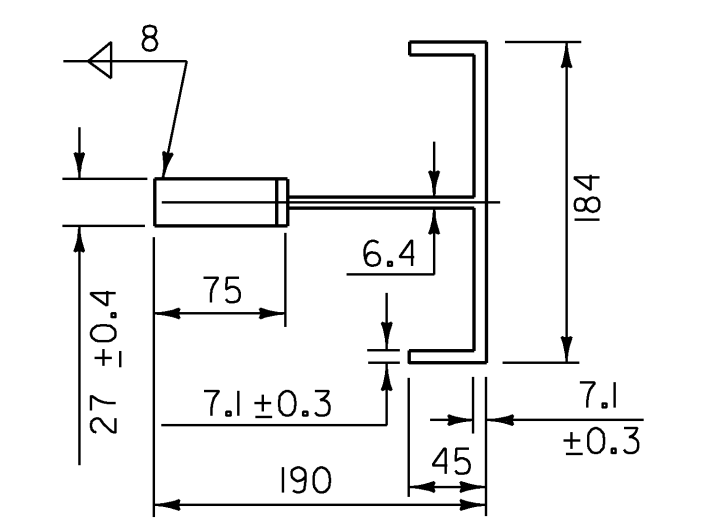


FRONT ELEVATION OF THREE RAIL WITH SPINDLES

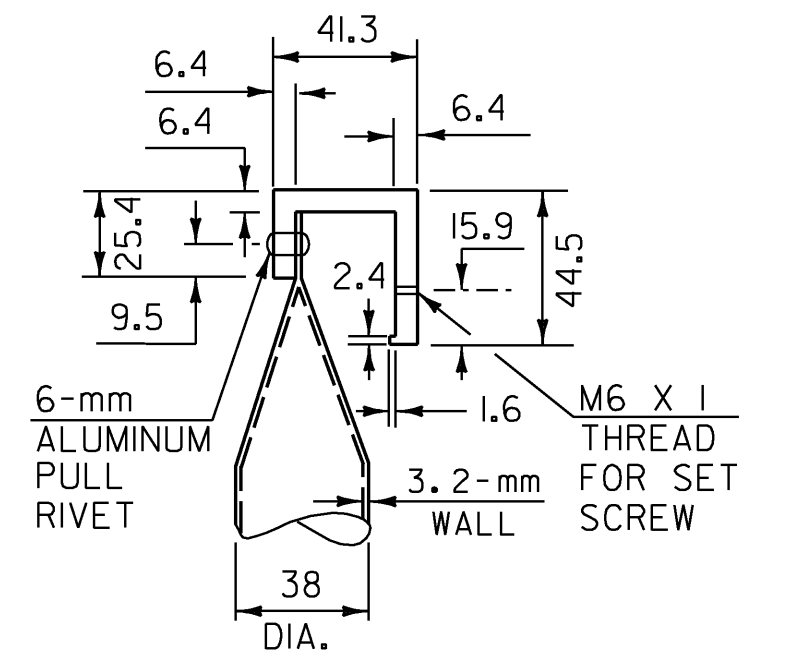
NOTE : RAIL POSTS ARE TO BE SET NORMAL TO GRADE UNLESS OTHERWISE DESIGNATED ON BRIDGE PLANS. ALL DIMENSIONS ARE TYPICAL UNLESS OTHERWISE DESIGNATED ON BRIDGE PLANS.

POST SIDE VIEW

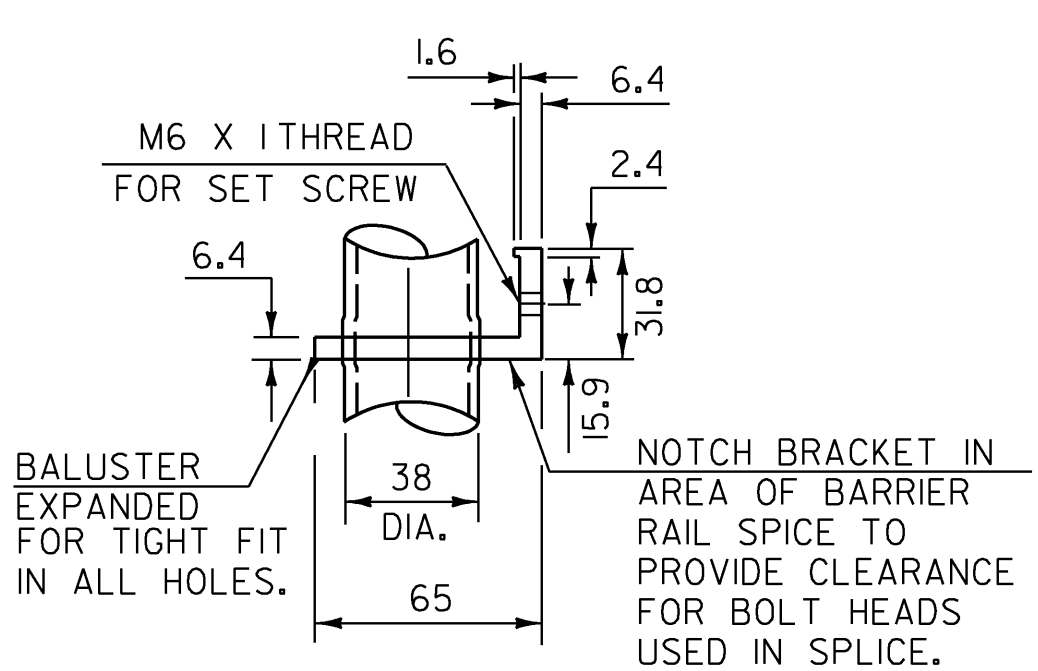
COPING DETAIL



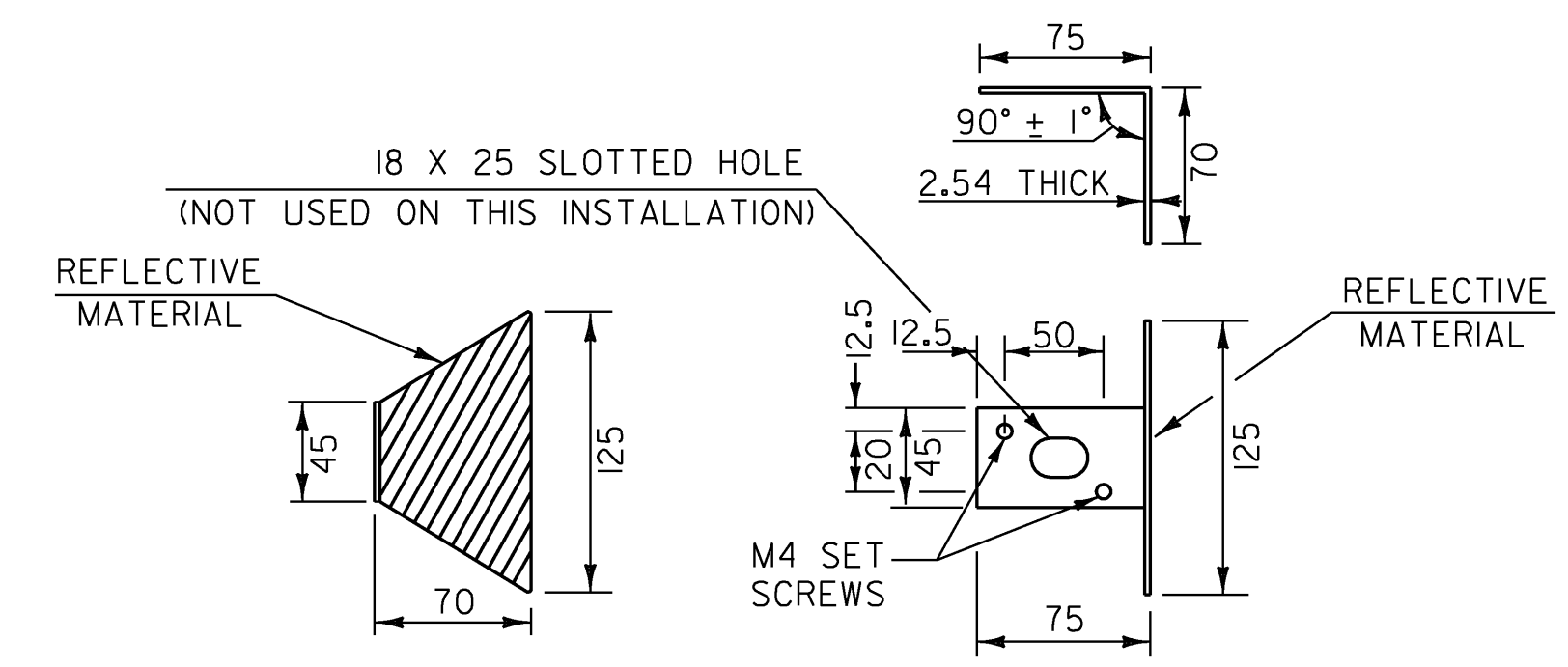
POST PLAN VIEW



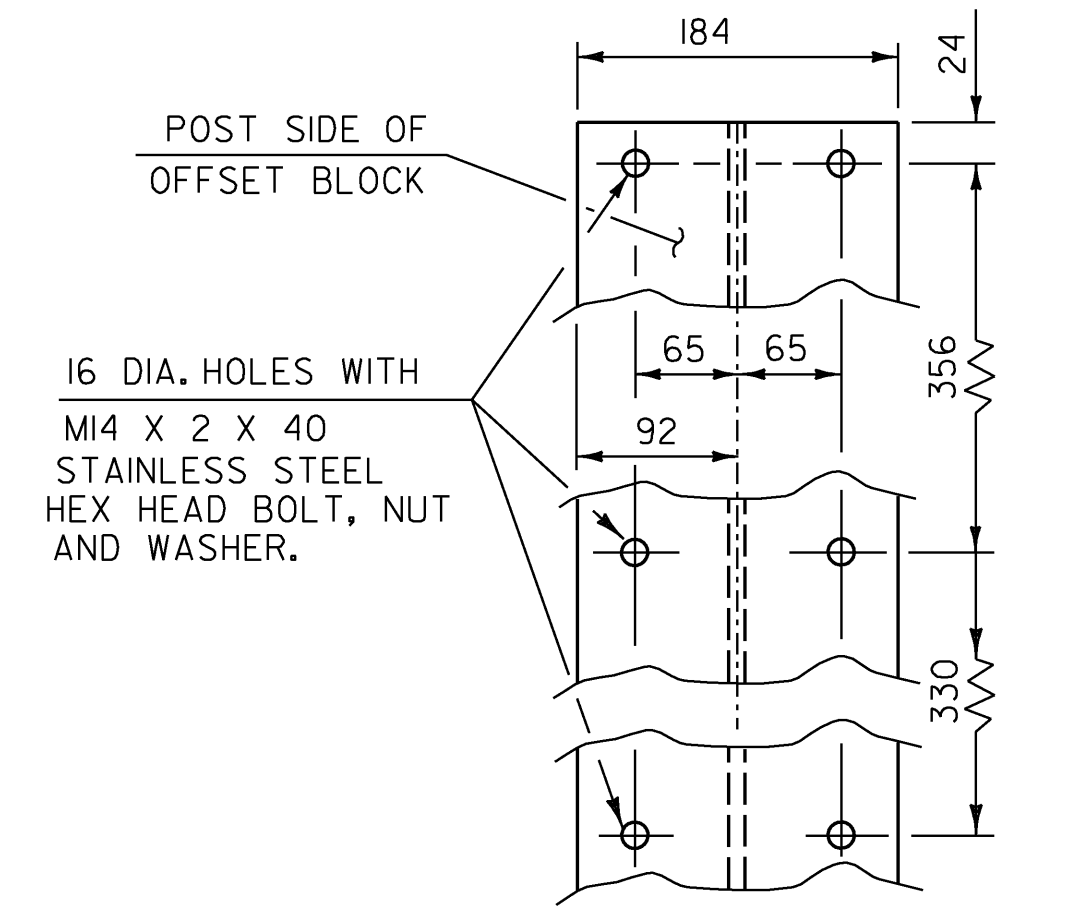
DETAIL A



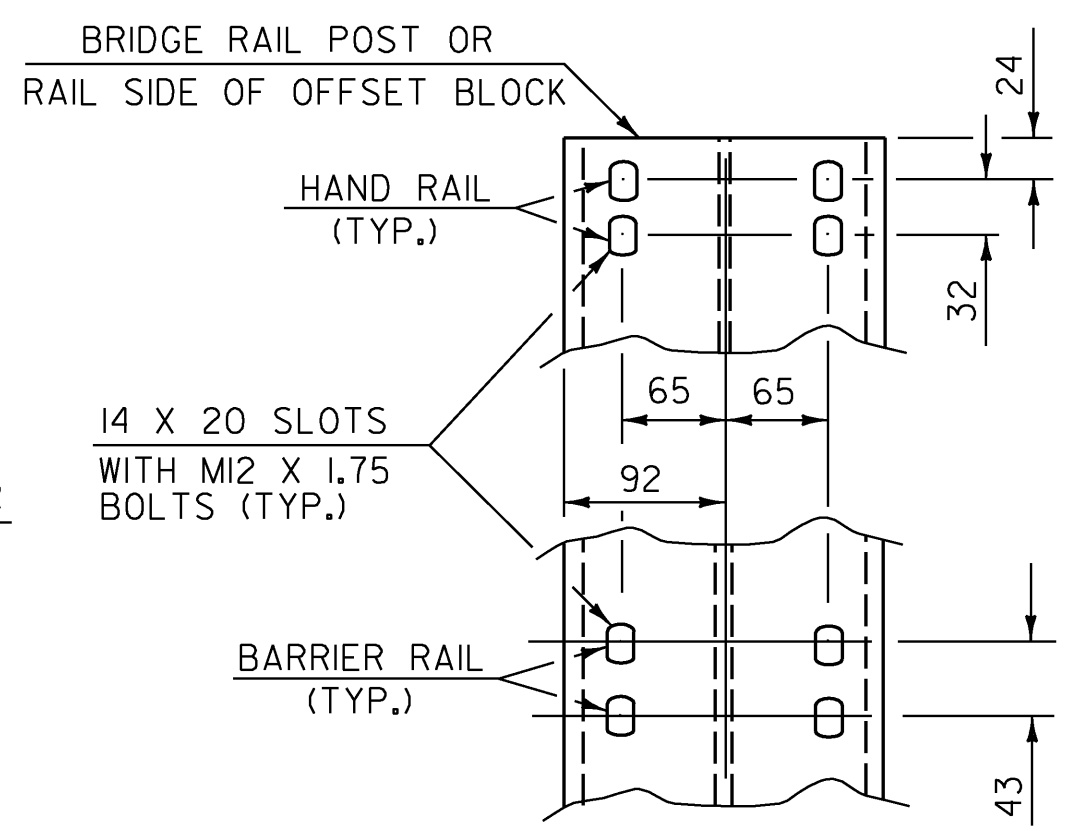
DETAIL B



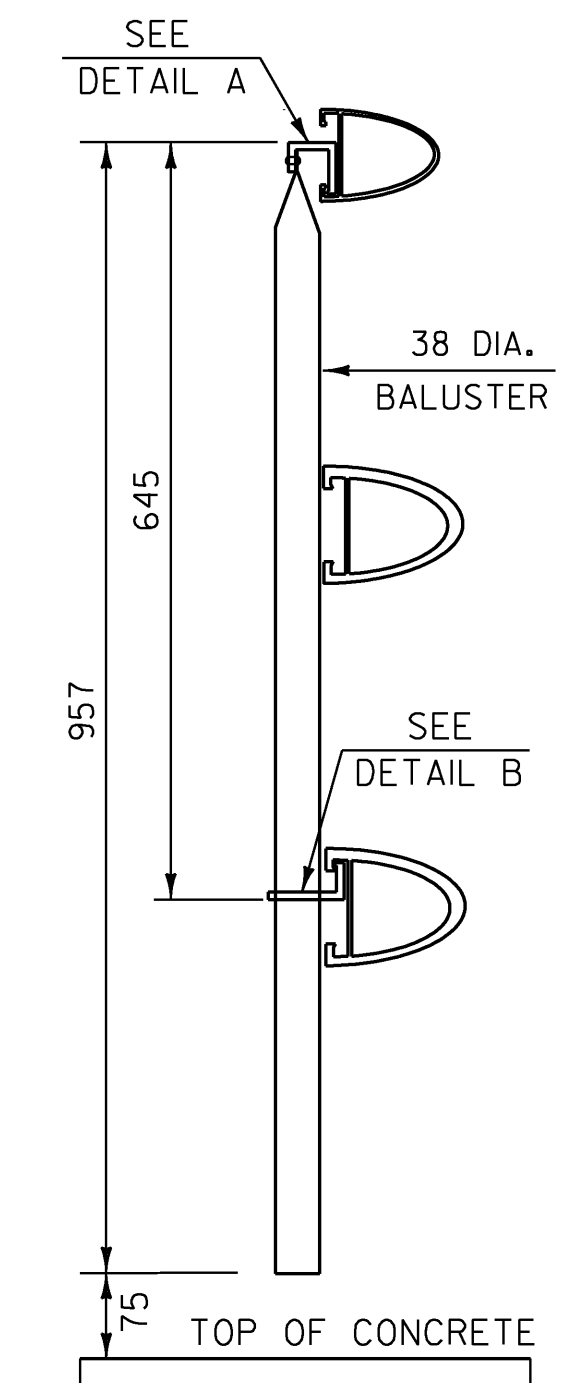
REFLECTOR DETAILS



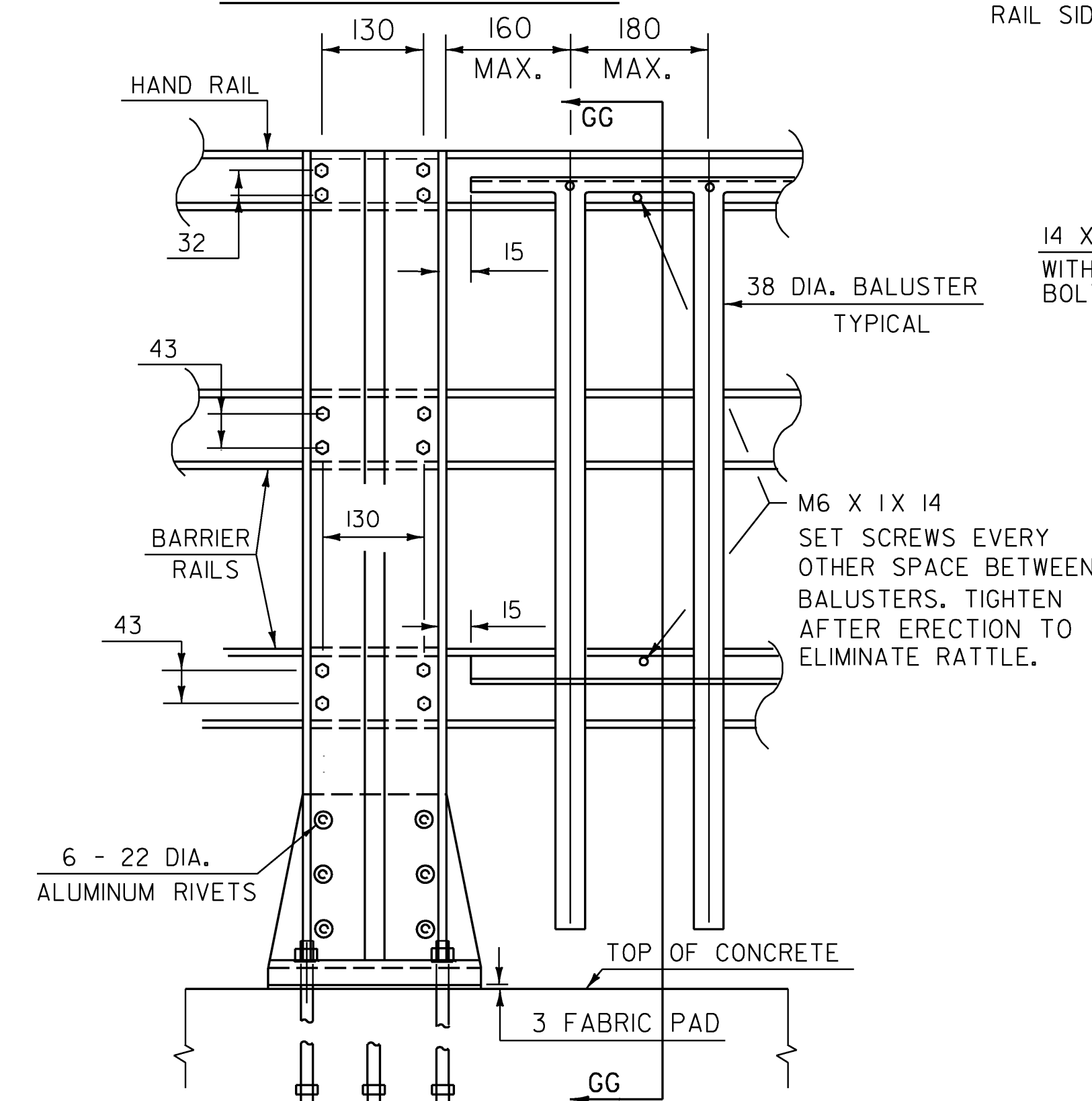
OFFSET BLOCK CONNECTION



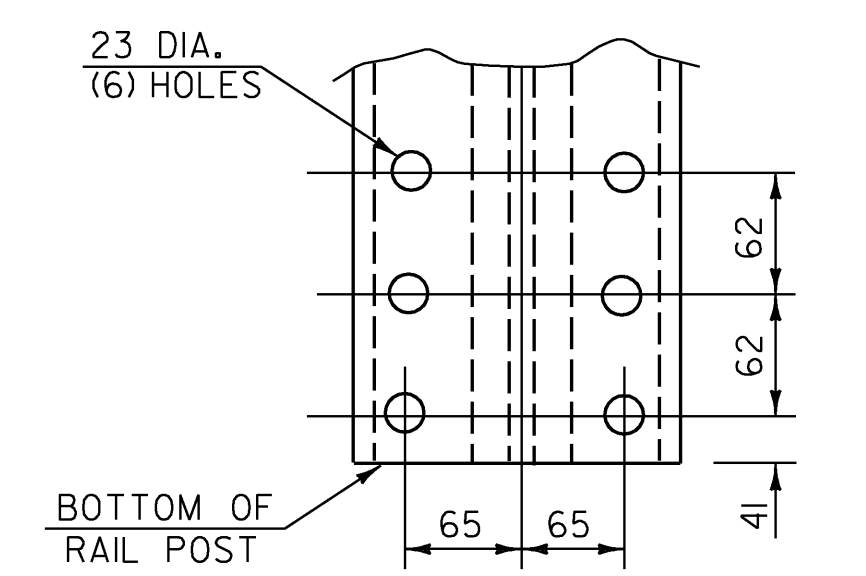
RAIL CONNECTION



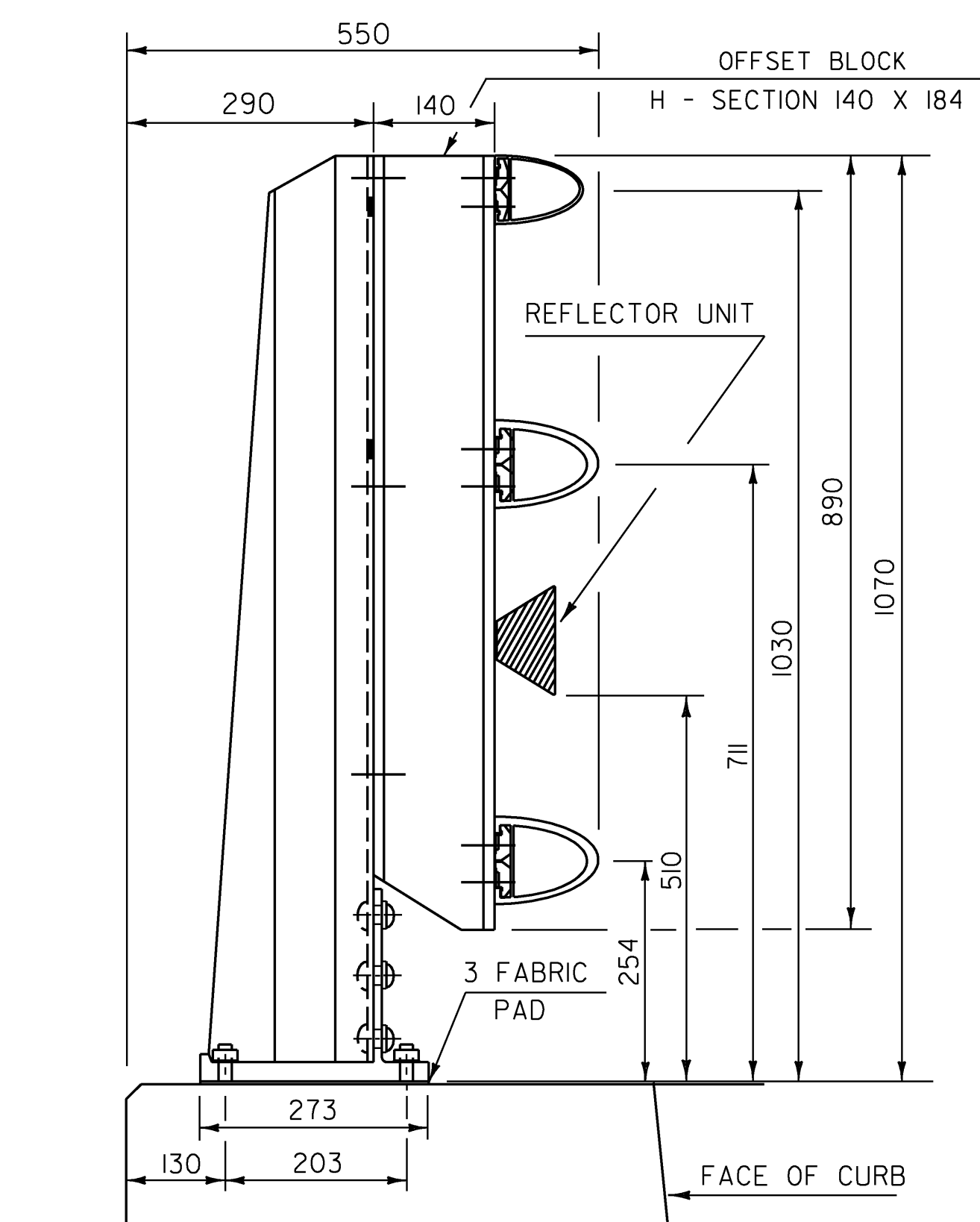
SECTION GG-GG



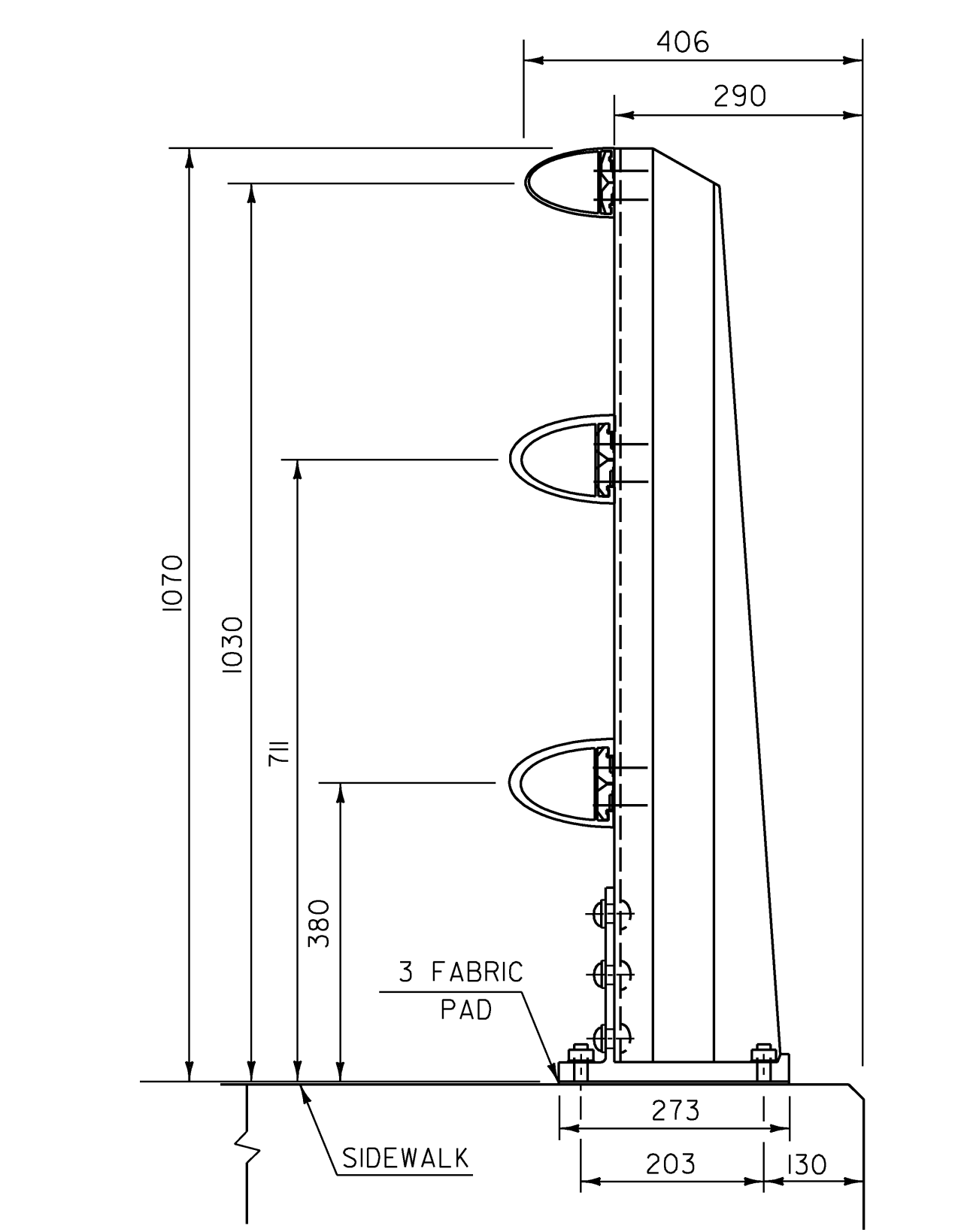
OUTSIDE ELEVATION OF THREE RAIL POST & SPINDLES



POST BASE BOLT HOLE DETAILS



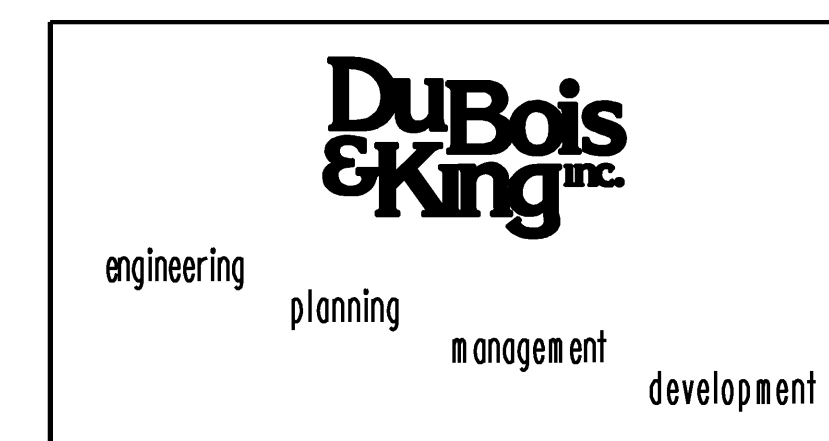
SIDE ELEVATION OF THREE RAIL TO BE USED ON CURB SIDE



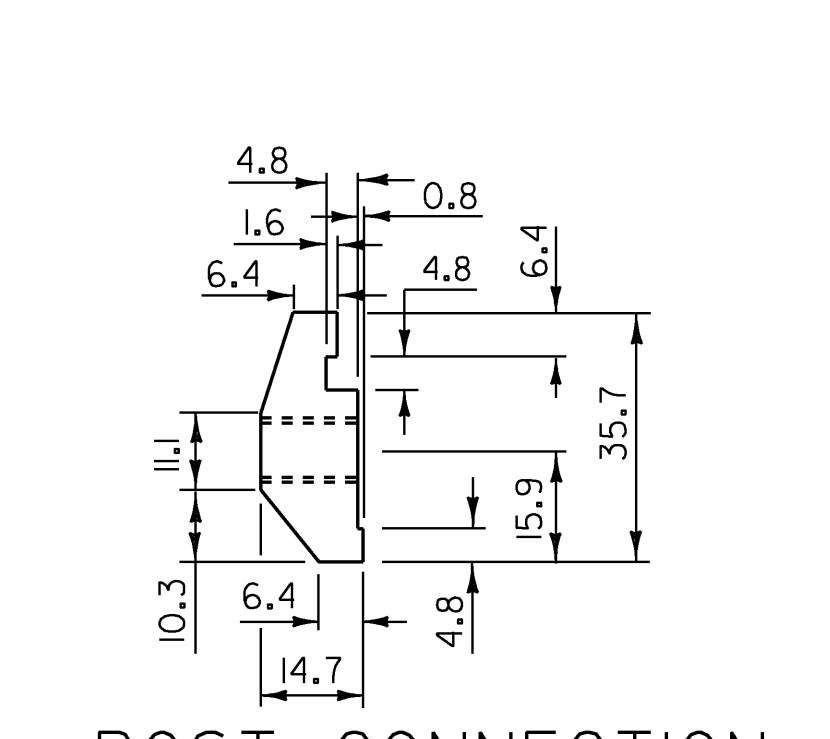
SIDE ELEVATION OF THREE RAIL TO BE USED ON SIDEWALK SIDE

RAIL POST DETAILS ON SUPERSTRUCTURE

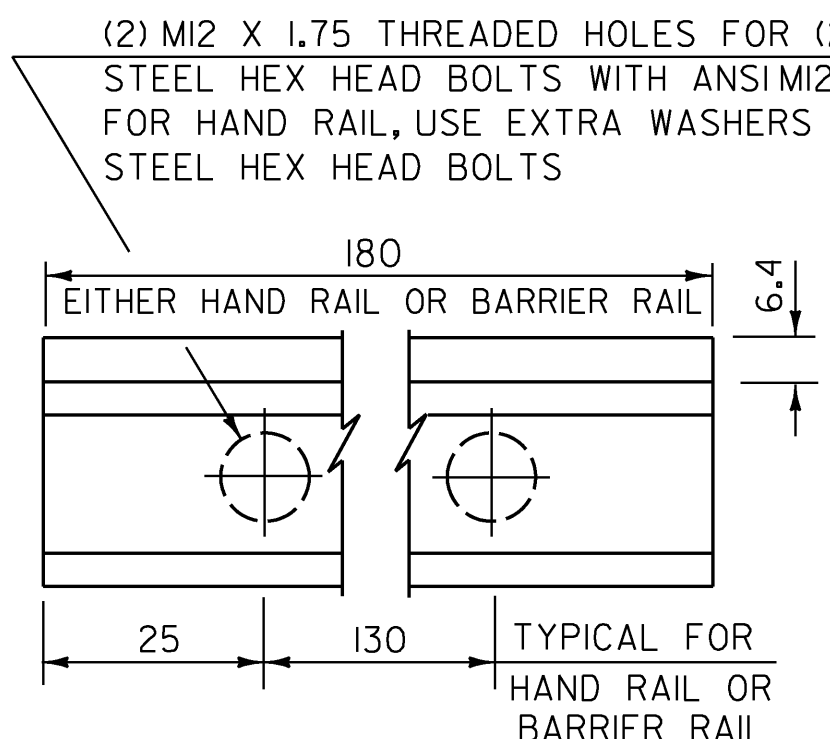
DETAILS OF SPINDLES FOR ALUMINUM RAILING



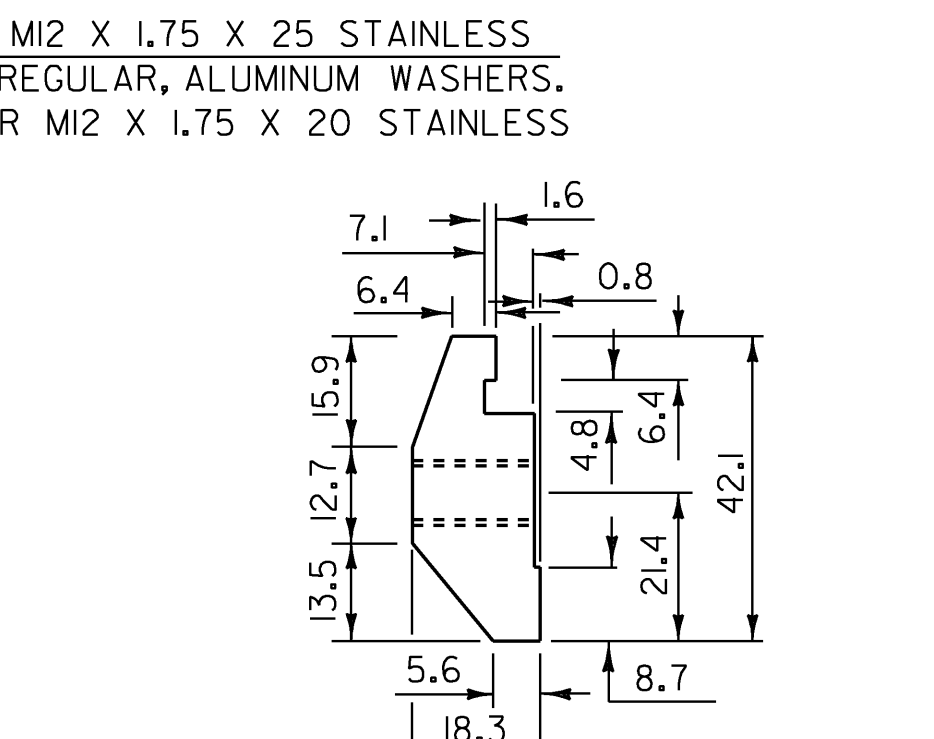
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK			
ALUMINUM RAILING DETAILS 2			
Designed By	A.P. GUYETTE	Drawn By	P.G. JARVIS
Checked By	Date	Bridge Design Supervisor	
E. P. DETRICK	11/08	J.W. TUCKER	Date 11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info. DGN#SPEC#			
Bridge Sheet No.		Sheet 29 of 38	



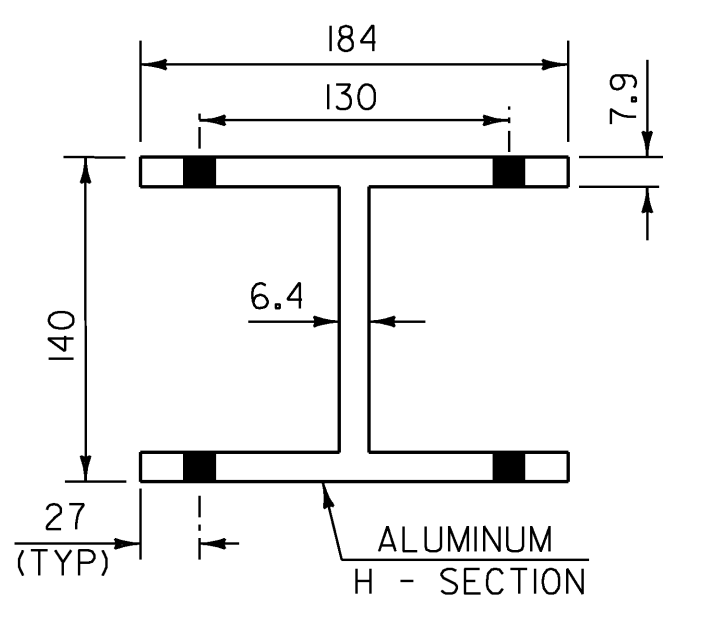
POST CONNECTION
HAND RAIL SECTION



POST CONNECTION
ELEVATION

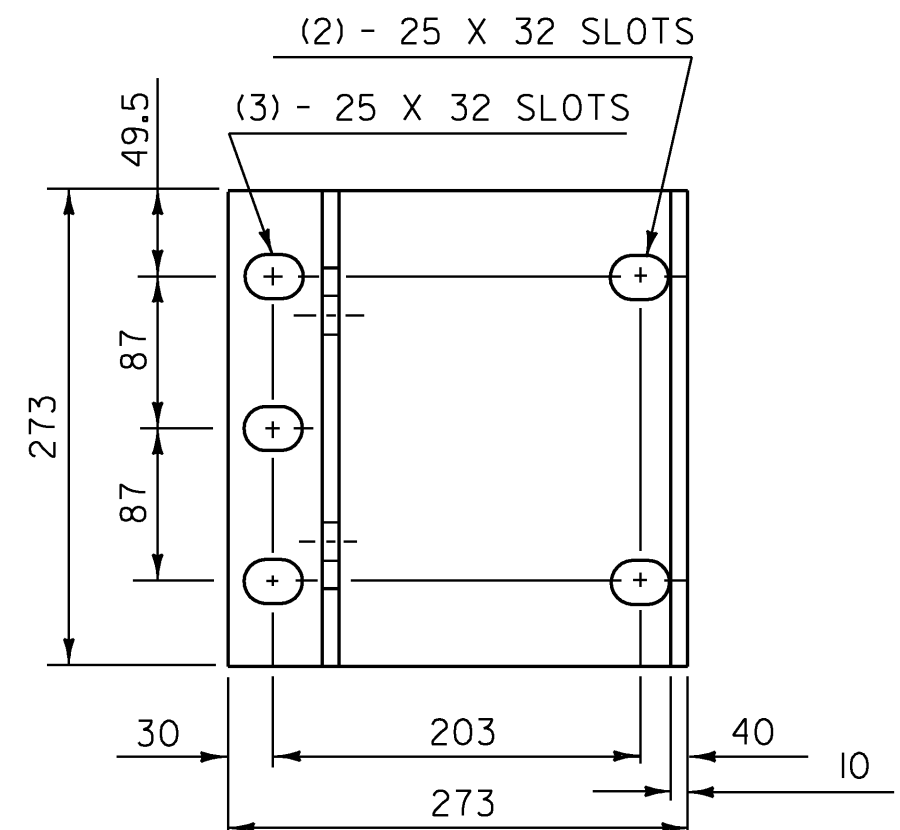


POST CONNECTION
BARRIER RAIL SECTION



PLAN VIEW OF
OFFSET BLOCK

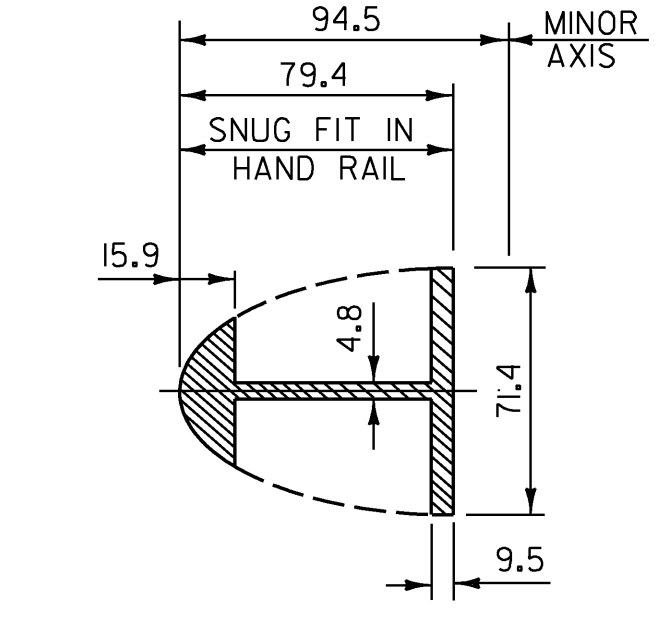
(TO BE USED ON
SUPERSTRUCTURE
ON CURB SIDE)



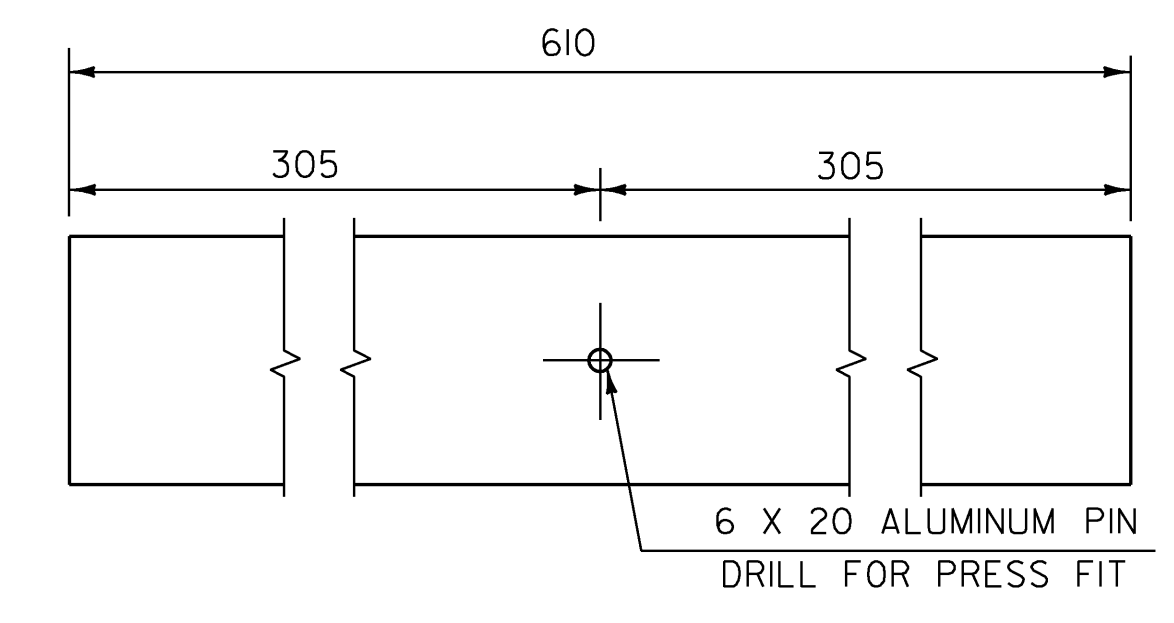
POST BASE
PLAN

NOTES

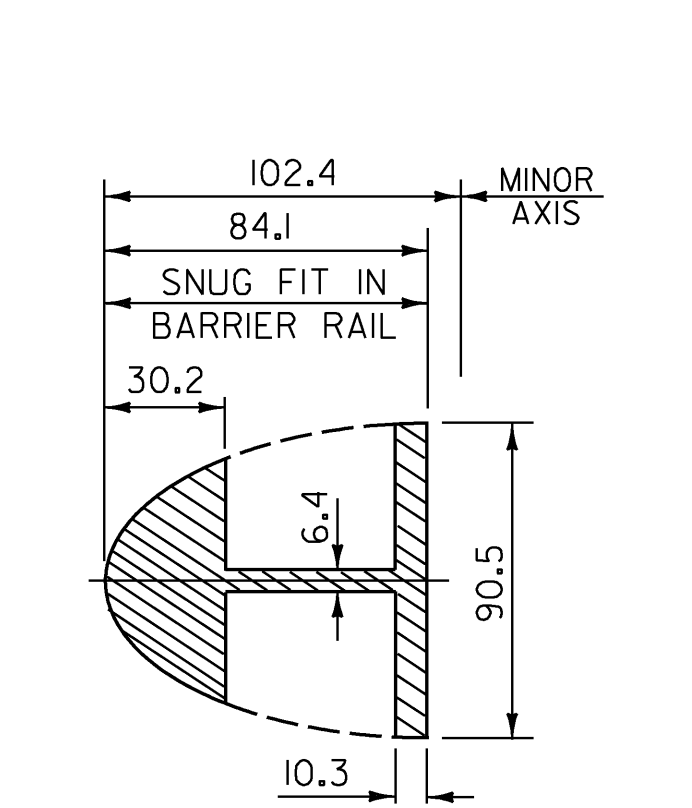
- ANCHOR BOLTS, WASHERS & HEAVY HEXAGONAL NUTS MAY BE ANY OF THE FOLLOWING:
 - ASTM F 568M, CLASS 8.8 GALVANIZED.
 - AASHTO M 164M GALVANIZED, OR
 - BOLTS AND WASHERS OF STAINLESS STEEL ASTM F 738M, CLASS A1-70, CONDITION CW, ALLOY TYPE 304 WITH STAINLESS STEEL NUTS OF ASTM F 836M, CLASS A1-70, CONDITION CW, ALLOY TYPE 304.
- ALUMINUM POSTS, POST BASES, SPLICE BARS, CONNECTION BARS, RAILS AND BALUSTER FRAMES SHALL CONFORM TO ASTM B 221M ALLOY 6061-T6 OR ALLOY 6351-T5. MINIMUM YIELD STRNTH $F_y = 240$ MPa.
- ALUMINUM BALUSTER TUBES SHALL CONFORM TO ASTM B 210M ALLOY 6061-T5 OR 6063-T5.
- ALUMINUM RAIL AND CAPS SHALL CONFORM TO ASTM B 26/B 26M ALLOY 356-T6.
- THE POST, RAIL AND OFFSET CONNECTION BOLTS AND WASHERS SHALL CONFORM TO ASTM F 738M, CLASS A1-50, CONDITION AF, ALLOY TYPE 304. NUTS FOR THESE BOLTS SHALL CONFORM TO ASTM 836M, CLASS A1-50, CONDITION AF, ALLOY TYPE 304.
- SET SCREWS FOR ATTACHING BALUSTERS TO RAILING SHALL CONFORM TO ASTM F 880M, CLASS A1-70, CONDITION CW, ALLOY TYPE 304.
- RIVETS SHALL BE COLD DRIVEN HIGH BUTTON HEAD "CONE POINT", CONFORMING TO ASTM B 316/B 316M ALLOY 6061-T6.
- THE ANCHOR PLATE FOR THE POST ANCHOR ASSEMBLY SHALL BE AASHTO M 183M/M 183 STRUCTURAL STEEL.
- WELDING SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 506.10 USING THE GMAW-INERT GAS PROCESS AND AWS ER 5356 ELECTRODE WIRE.
- UNLESS OTHERWISE SPECIFIED, ANCHOR BOLTS SHALL BE CAST INTO THE CONCRETE AS DETAILED.
- WHENEVER FEASIBLE, BARRIER RAIL AND HAND RAIL SECTIONS SHALL BE FULL LENGTH SECTIONS (12 m ±) AND WHEN PRACTICAL SHALL BE ATTACHED TO THREE POSTS. RAILS SHALL BE SPLICED AT EACH DECK JOINT AND INTERMITTENTLY AS REQUIRED. SPLICES SHALL OCCUR WITHIN THE SAME PANEL.
- ENDS OF RAILS SHALL BE CUT SQUARE AND GROUND FREE OF BURRS OR RAGGED EDGES. EXPOSED ENDS SHALL BE CAPPED.
- THE CONCRETE CONTACT SURFACE AT THE POST BASE SHALL BE BUSH HAMMERED AND/OR SHIMMED AS REQUIRED FOR PROPER POST ALIGNMENT. POST HEIGHT ADJUSTMENTS LESS THAN 6 mm SHALL BE WITH 2-mm AND 3-mm SHIMS. CORRECTIONS EXCEEDING 6 mm SHALL BE WITH EPOXY MORTAR CONFORMING WITH SECTION 525. FABRIC BEARING PADS AND ANY REQUIRED SHIMS OR EPOXY MORTAR ARE INCIDENTAL TO THE UNIT PRICE BID FOR THE RAILING.
- SHIMS AND 3-mm FABRIC BEARING PADS SHALL BE 273 mm SQUARE WITH SLOTTED HOLES SIZED AND LOCATED THE SAME AS THE POST BASE DETAIL. FABRIC BEARING PADS SHALL CONFORM TO SUBSECTION 731.01 OR 731.02, SHIM MATERIAL SHALL BE ASTM B 209M ALLOY 1100-0.
- EXTRUDED SECTIONS ARE DETAILED TO COMPLY WITH CURRENT AASHTO-AGC-ARTBA STANDARDS. MINOR VARIATIONS OF THE DETAILS SHOWN MAY BE CONSIDERED PROVIDING THEY DO NOT REDUCE THE STRENGTH CAPACITY OF THE RAIL SYSTEM.
- ALUMINUM WASHERS SHALL BE ASTM B209M ALLOY ACLAD 2024-T4.
- OFFSET BLOCKS AND ALUMINUM APPROACH RAIL POSTS SHALL CONFORM TO ASTM SPECIFICATION B 308/ B 308M.



HAND RAIL
SPLICE SECTION

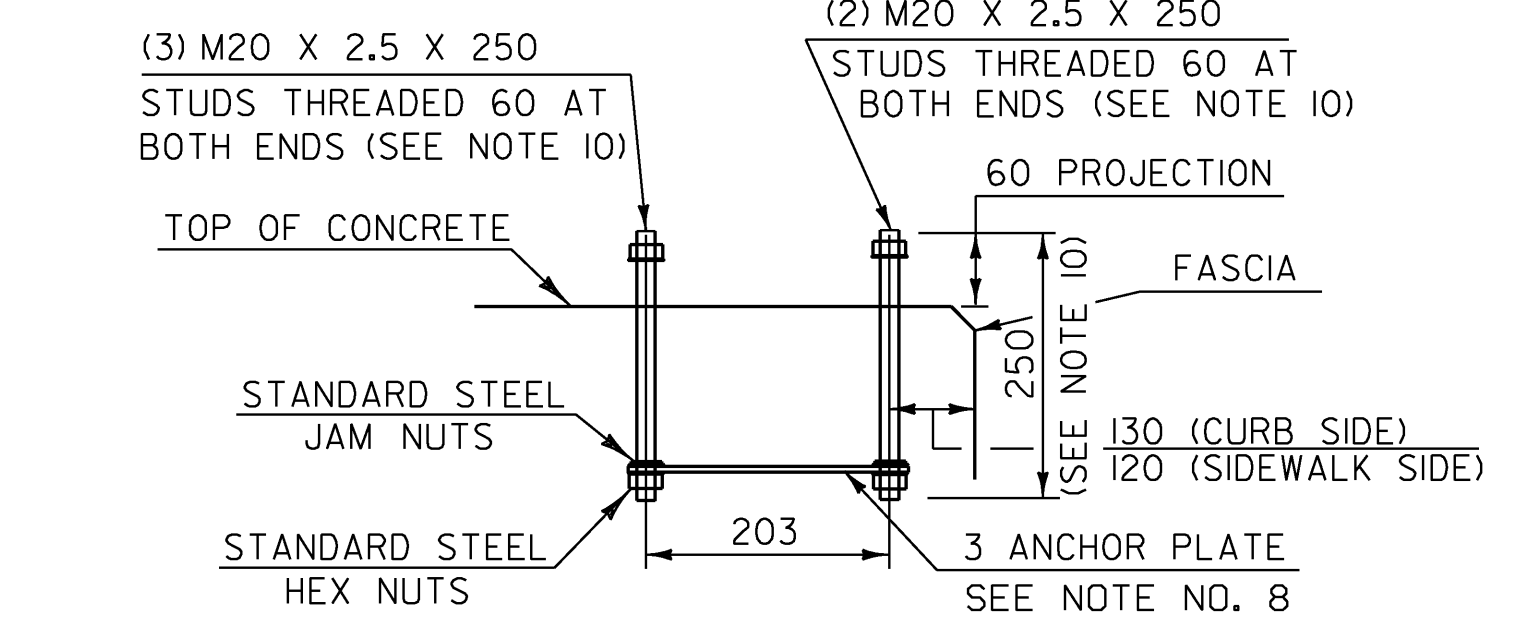


ELEVATION OF
HAND RAIL SPLICE BAR

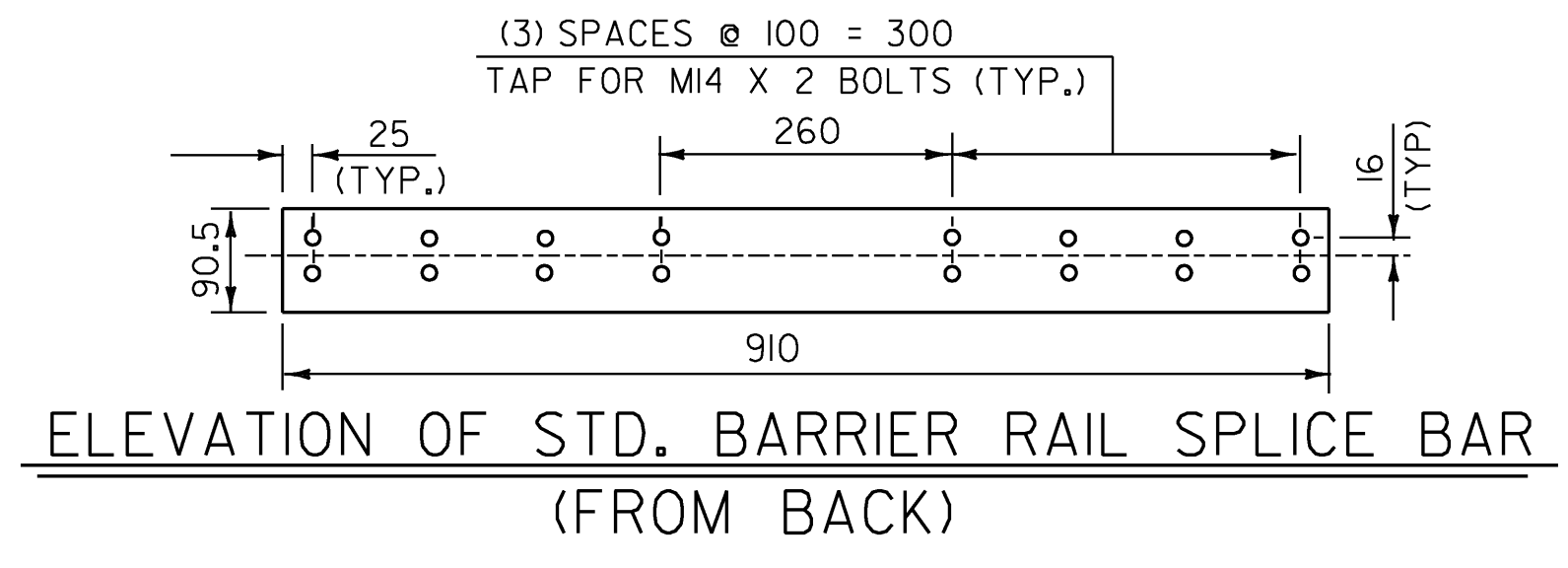


BARRIER RAIL
SPLICE SECTION

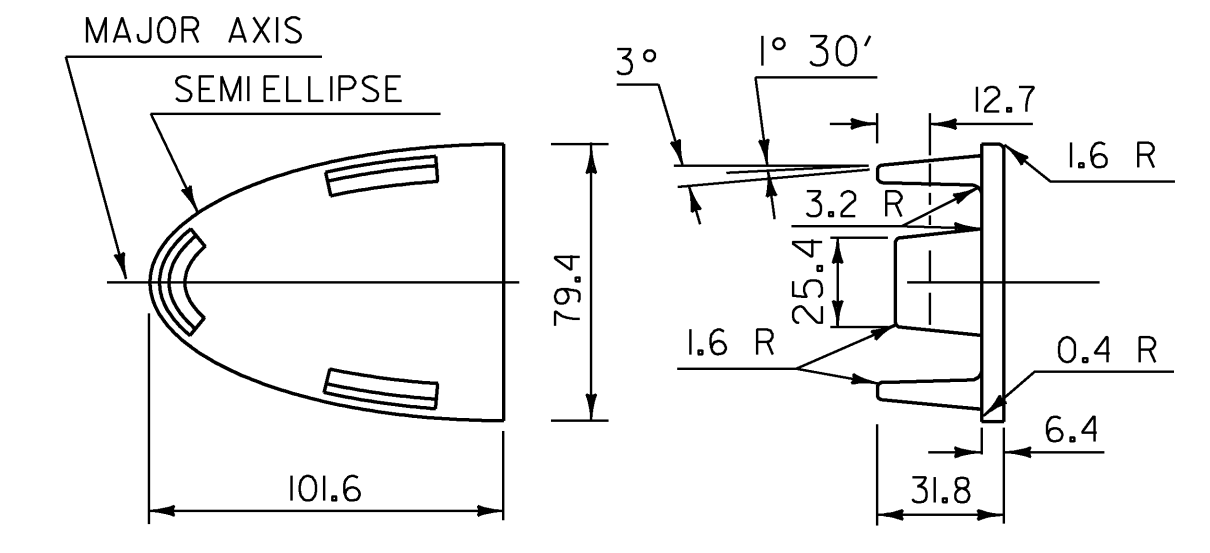
(SEE SHEET 28 FOR ELEVATION
OF BARRIER RAIL SPLICE BAR)



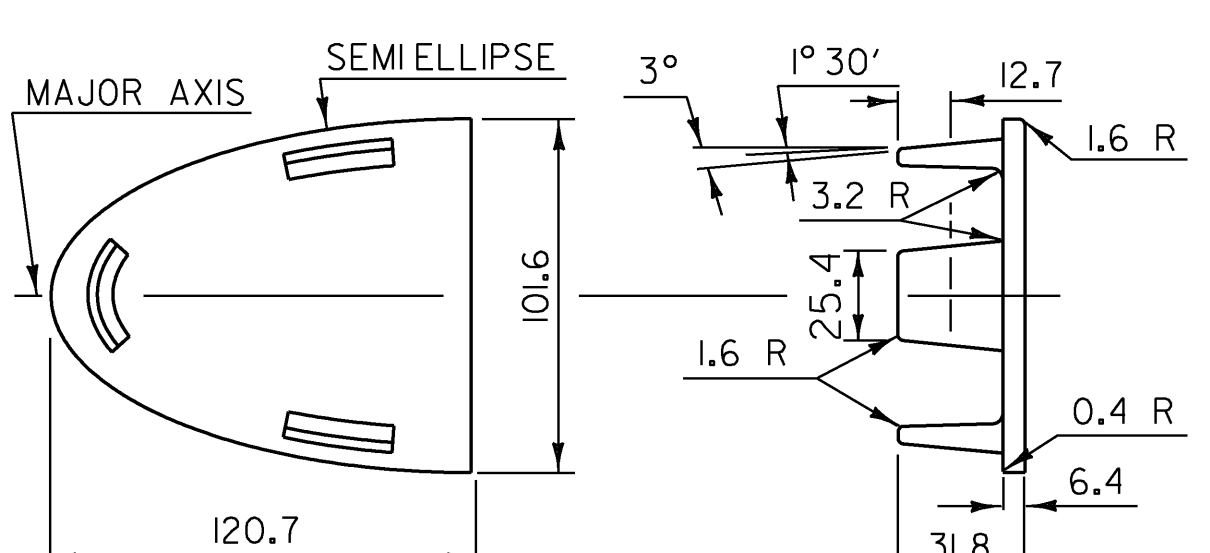
POST ANCHOR ASSEMBLY



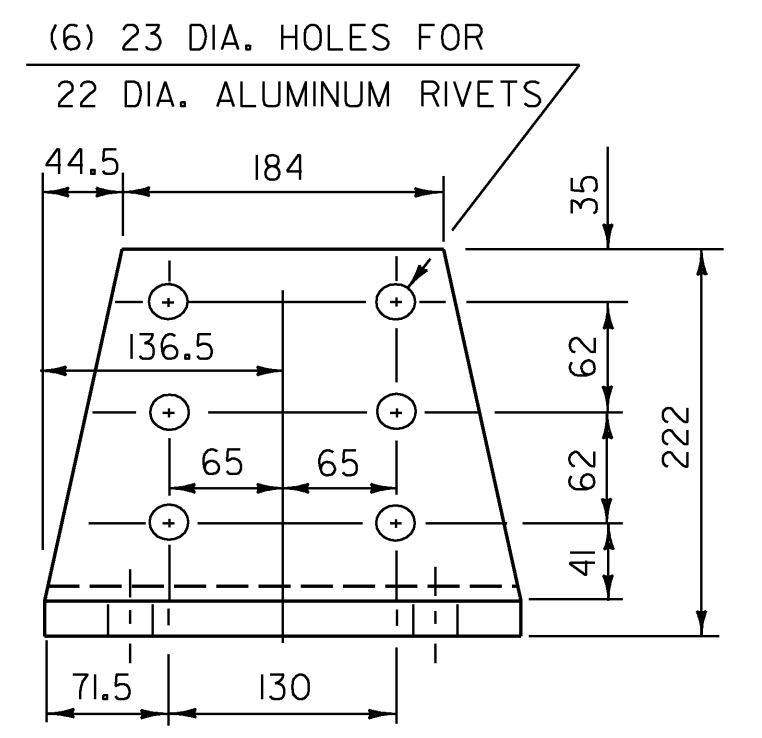
ELEVATION OF STD. BARRIER RAIL SPLICE BAR
(FROM BACK)



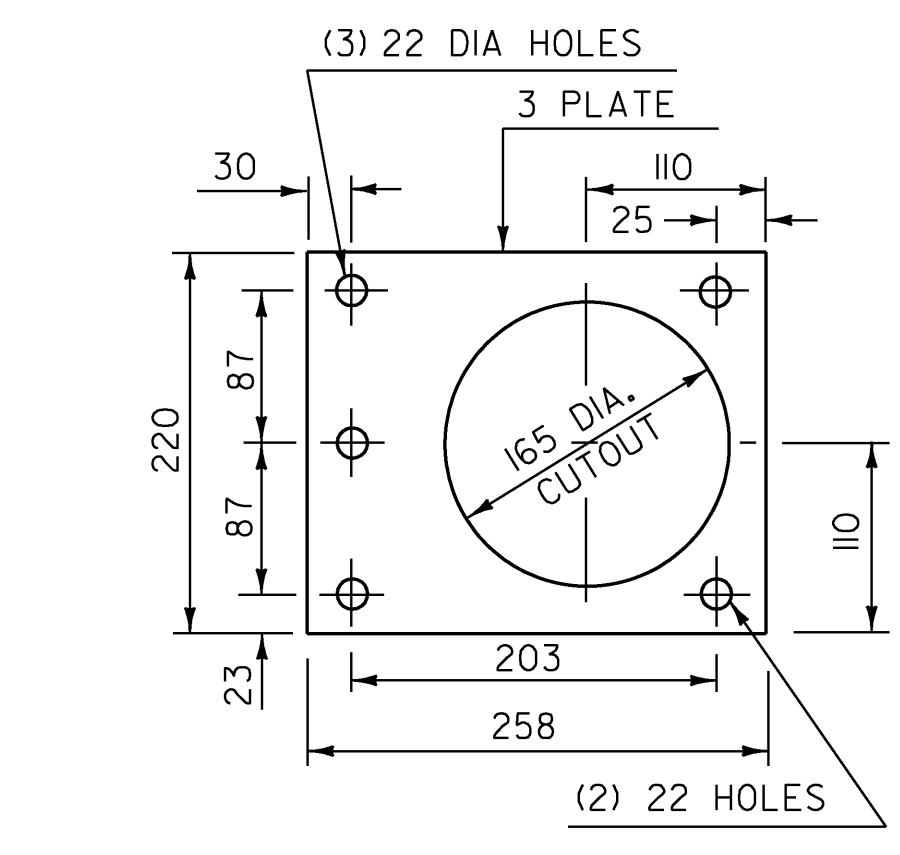
HAND RAIL END CAP



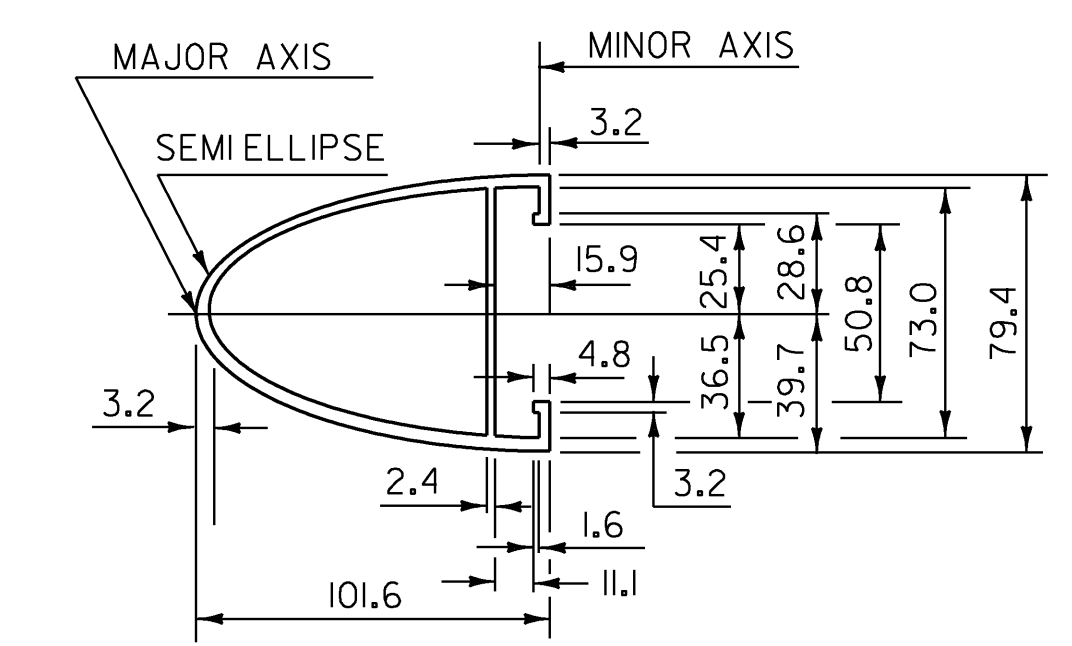
BARRIER RAIL END CAP



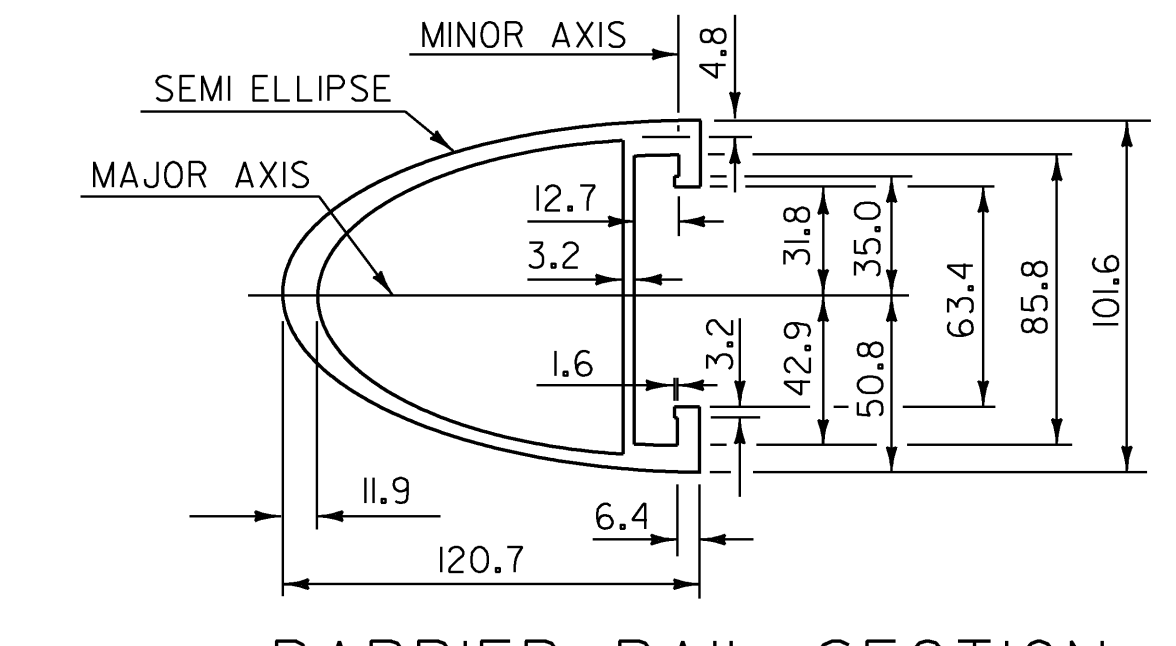
POST BASE
FRONT ELEVATION



ANCHOR PLATE

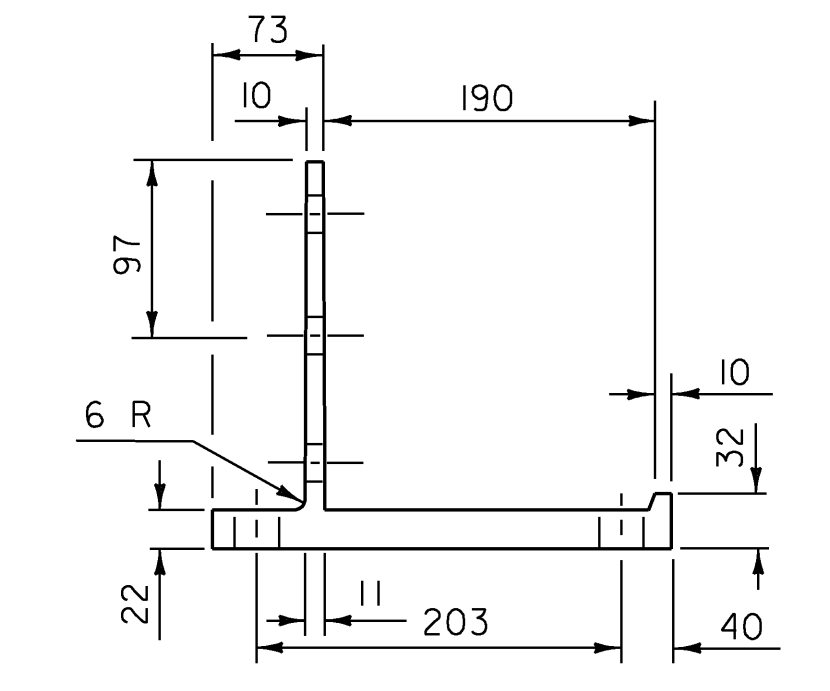


HAND RAIL SECTION



BARRIER RAIL SECTION

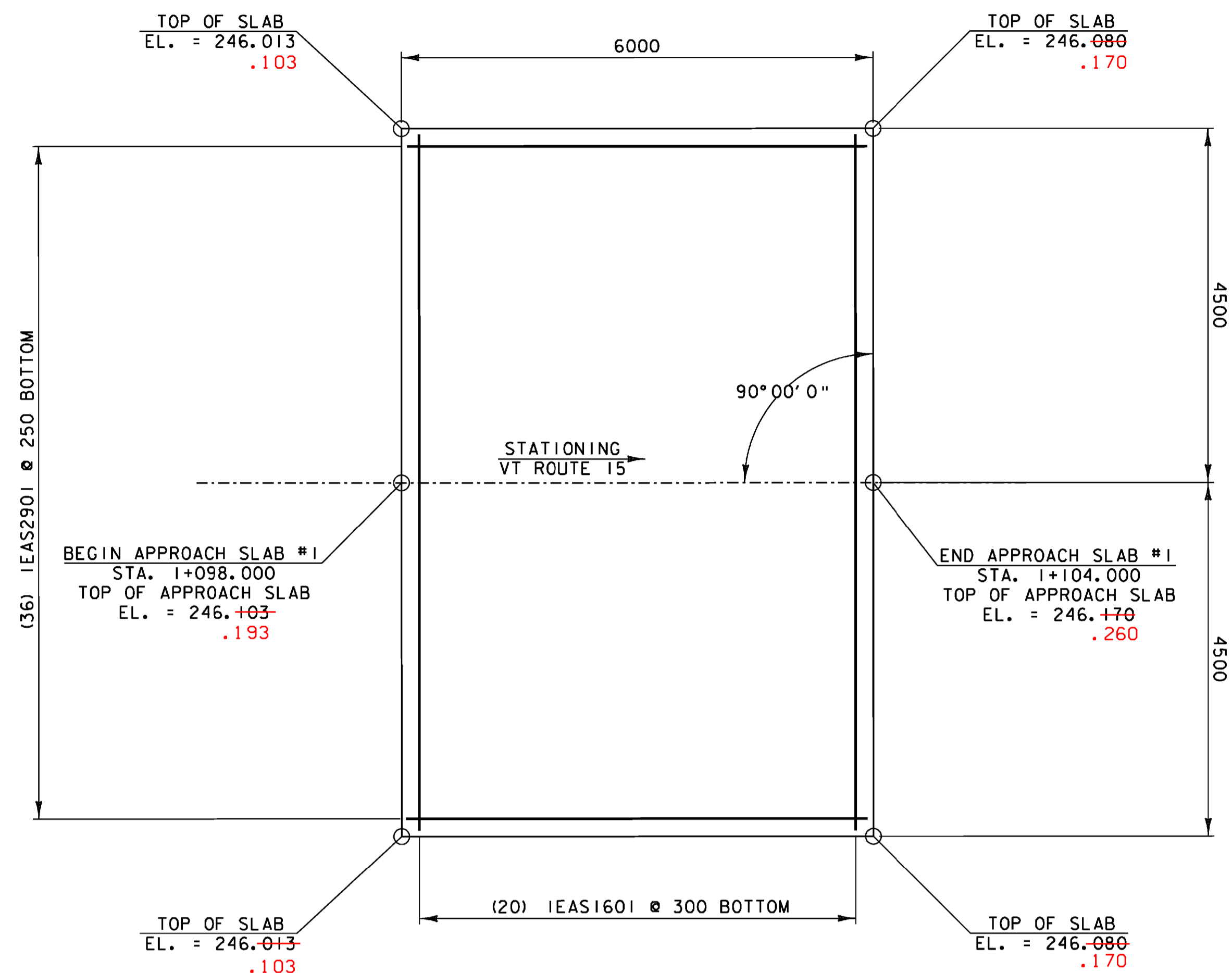
(SEE SHEET 28 FOR ELEVATION
OF BARRIER RAIL)



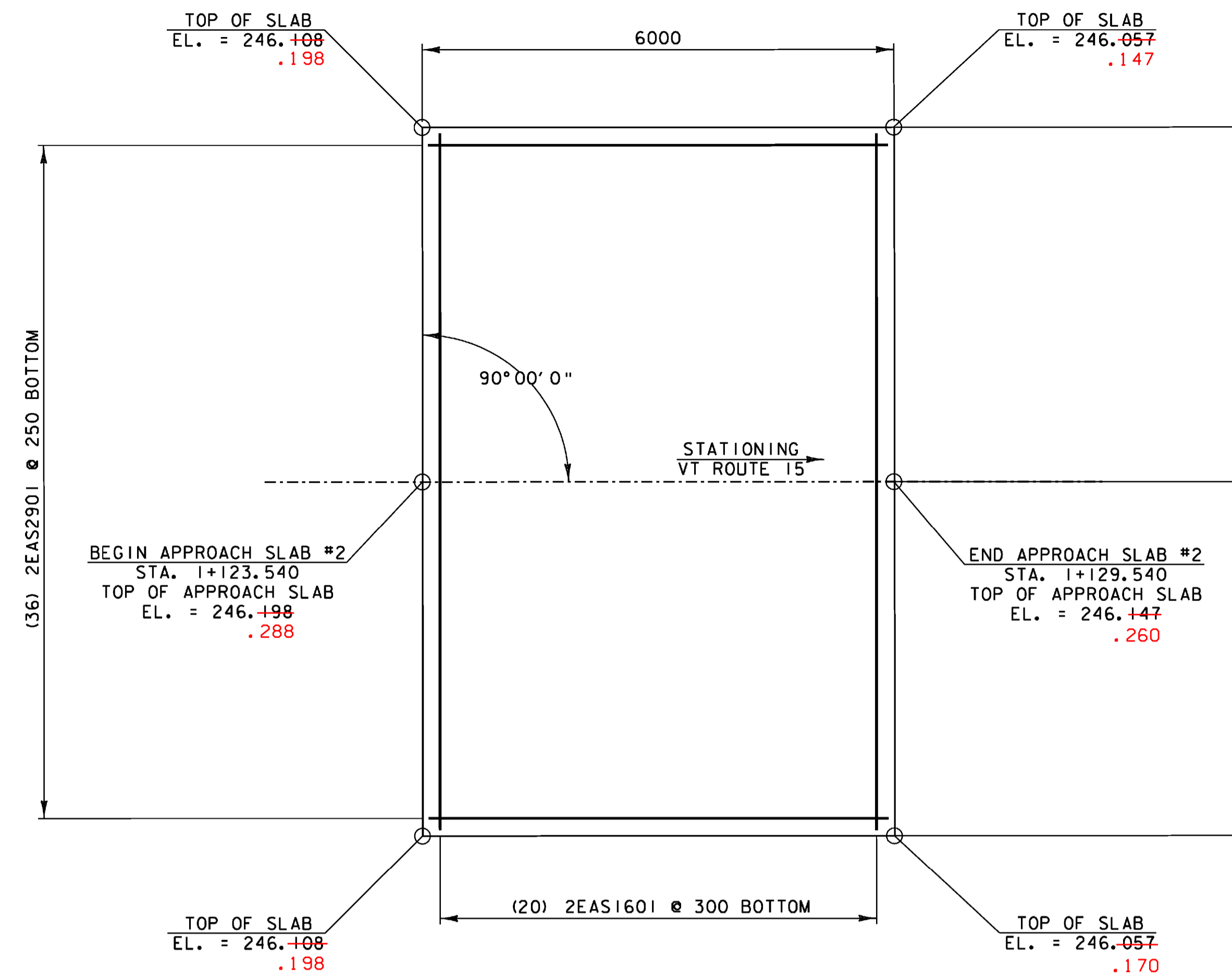
POST BASE
SECTION

engineering planning management development

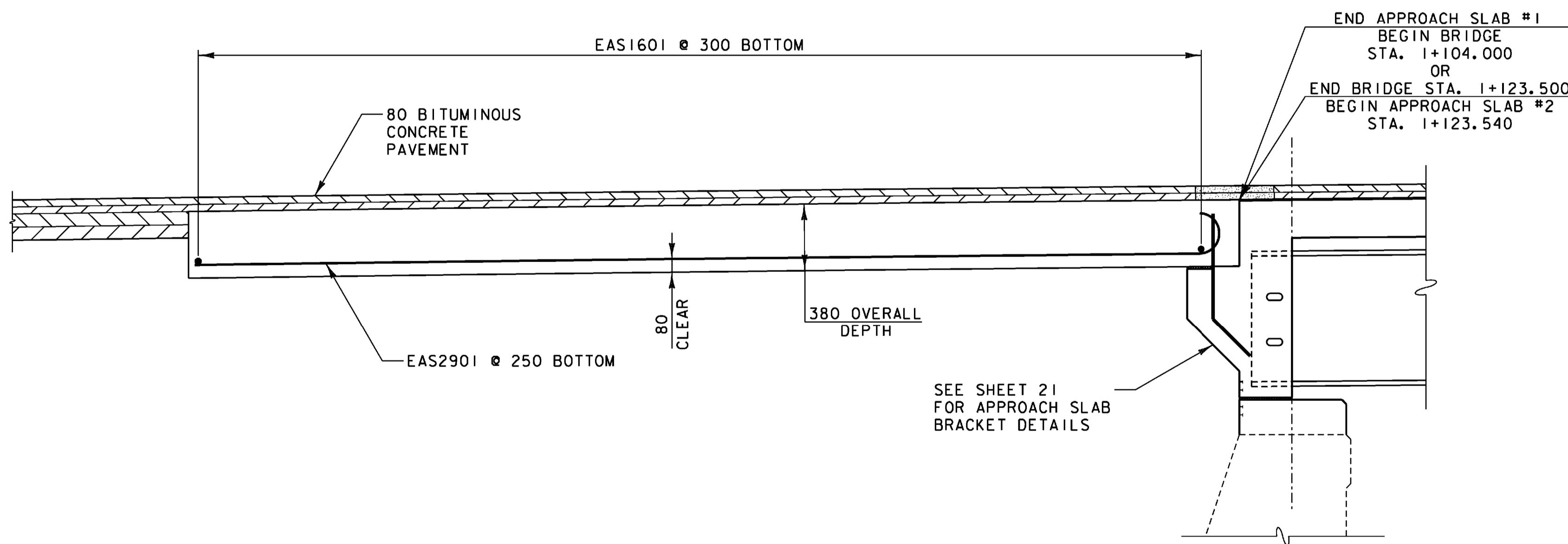
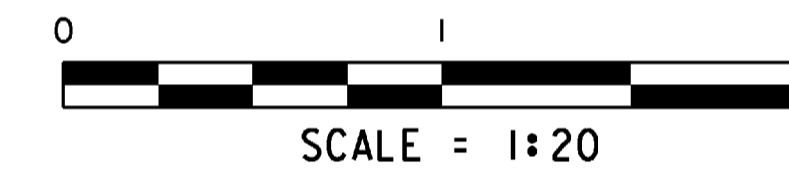
STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of	HARDWICK
Highway No.	VT 15
Bridge No.	67
Log Sta.	
Surv. Sta.	
VT 15 OVER COOPER BROOK	
ALUMINUM RAILING DETAILS 3	
Designed By	A.P. GUYETTE
Drawn By	P.G. JARVIS
Checked By	Date
E. P. DETRICK	11/08
Bridge Design Supervisor	Date
J.W. TUCKER	11/08
PROJECT	HARDWICK
PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info. DGN\$SPEC\$	
Bridge Sheet No.	Sheet 30 of 38



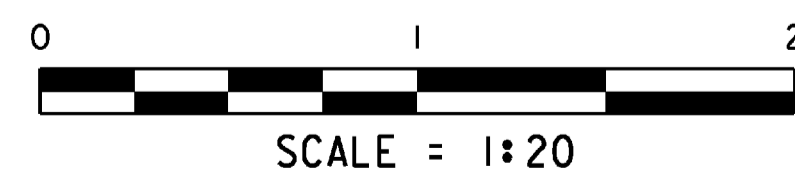
APPROACH SLAB #1 PLAN



APPROACH SLAB #2 PLAN



TYPICAL APPROACH SLAB SECTION



NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
T&B = TOP AND BOTTOM
▲ = CUT TO FIT IN FIELD
75 CLR. UNLESS OTHERWISE
SPECIFIED ON THE PLANS.
MAXIMUM LAP LENGTH NOT
DETAILED SHALL BE 660.

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	

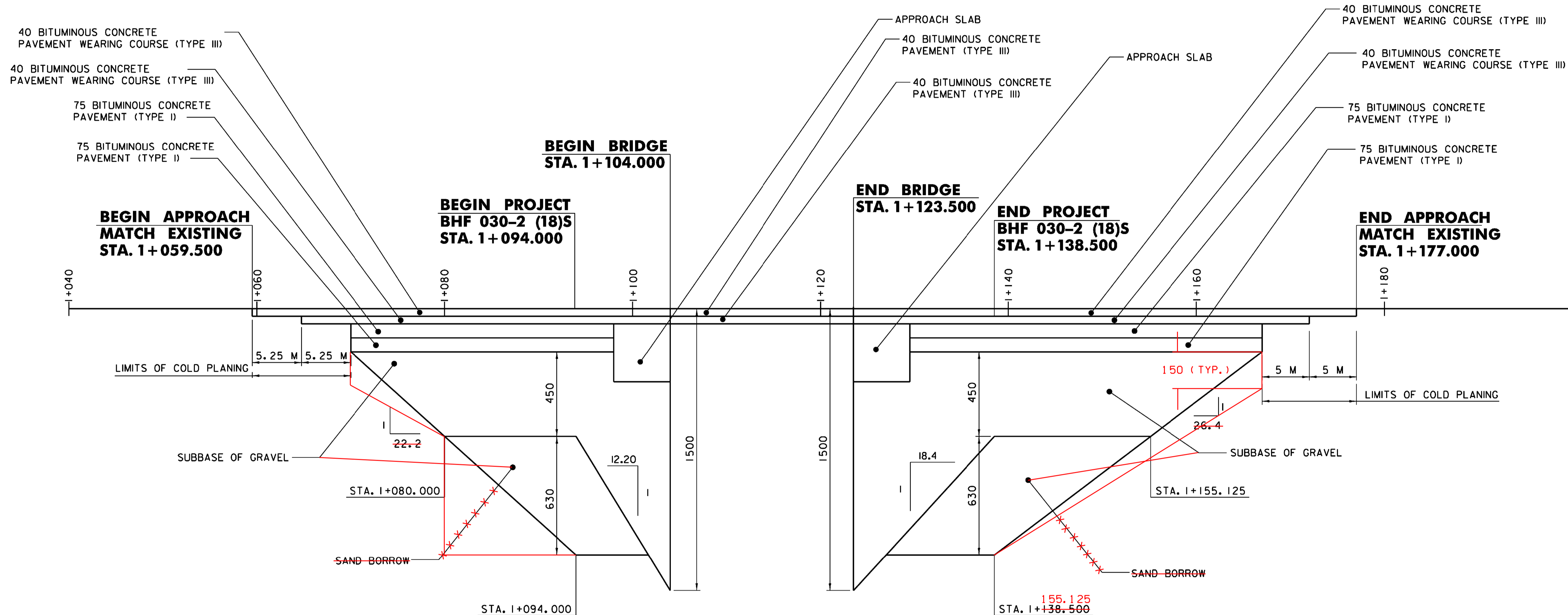
VT 15 OVER COOPER BROOK

APPROACH SLAB DETAILS

Designed By	A.P. GUYETTE	Drawn By	P.G. JARVIS
Checked By	Date	Bridge Design Supervisor	
	E. P. DETRICK	J.W. TUCKER	Date 11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info.	DGN#SPEC#		
Bridge Sheet No.		Sheet	31 of 38

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INC.

engineering
planning
management
development



SUBBASE TRANSITION DETAIL
NOT TO SCALE

NOTE:
THE BEGIN AND END OF THE SUBBASE WORK SHALL BE ADJUSTED IN THE FIELD TO MATCH WITH A JOINT IN THE PORTLAND CEMENT CONCRETE PAVEMENT, AS DIRECTED BY THE ENGINEER.

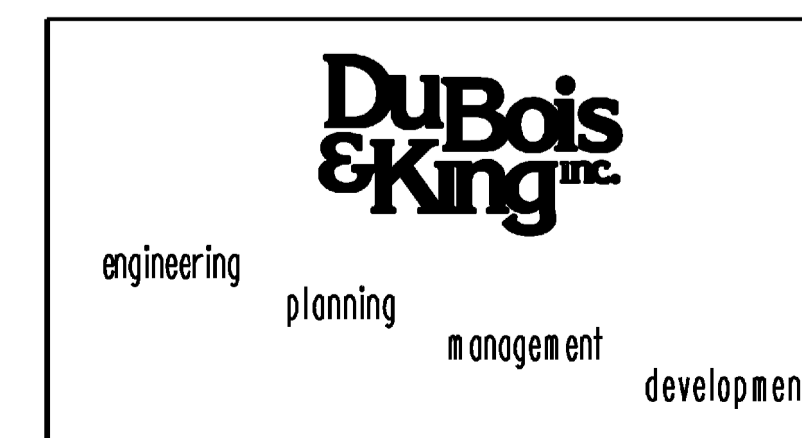
**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	

VT 15 OVER COOPER BROOK

MATERIAL TRANSITION DETAIL

Designed By	A.P. GUYETTE	Drawn By	S.J. BIJOLLE
Checked By	Date	Bridge Design Supervisor	
E. P. DETRICK	11/08	J.W. TUCKER	Date 11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info.	DGN#SPEC#	Bridge Sheet No.	Sheet 32 of 38

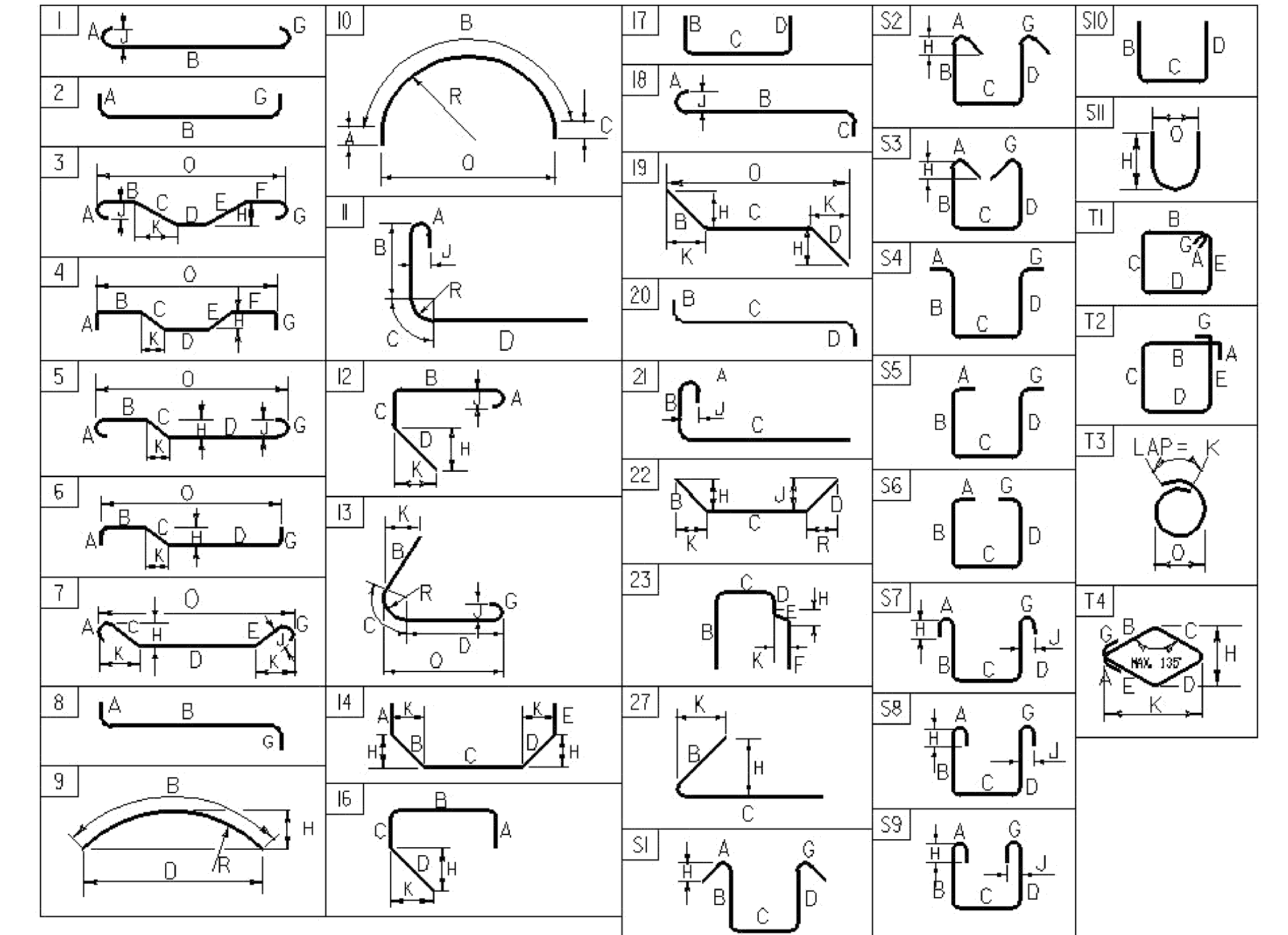


REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O	ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O					
SUPERSTRUCTURE																																								
▲	236	16	10000	ES1601	STR																																			
*	131	16	11450	ES1603	STR																																			
▲	22	16	11450	ES1607	STR																																			
	130	16	11726	ES1602	1	188	11350					188																												
	65	16	4025	ES1604	S5	660	450	1825	430			660																												
	65	16	2595	ES1605	S5	660	430	415	430			660																												
	104	16	3350	ES1606	S5	660	990	170	870			660																												
	80	16	1505	ES1608	16	300	450	215	540																															
	40	25	1085	ES2501	22		410	675	---																															
ABUTMENT NO. 1																																								
	20	16	1250	1A1601	S10		475	300	475																															
	1	10g	13350	1AWWF	WWF																																			
ABUTMENT NO. 2																																								
	20	16	1250	2A1601	S10		475	300	475																															
	1	10g	12965	2AWWF	WWF																																			
WINGWALL NO. 1																																								
▲	10	16	732	1W1601	STR																																			
▲	4	16	3470	1W1602	S10		1585	300	1585																															
WINGWALL NO. 2																																								
▲	10	16	832	2W1601	STR																																			
▲	4	16	3470	2W1602	S10		1585	300	1585																															
WINGWALL NO. 3																																								
▲	10	16	616	3W1601	STR																																			
▲	4	16	3470	3W1602	S10		1585	300	1585																															
WINGWALL NO. 4																																								
▲	10	16	563	4W1601	STR																																			
▲	4	16	3470	4W1602	S10		1585	300	1585																															
APPROACH SLAB NO. 1																																								
*	21	16	8840	EAS1601	STR																																			
*	37	29	6177	EAS2901	1	377	5800																																	
APPROACH SLAB NO. 2																																								
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*	37	29	6177	EAS2901	1	377	5800																																	

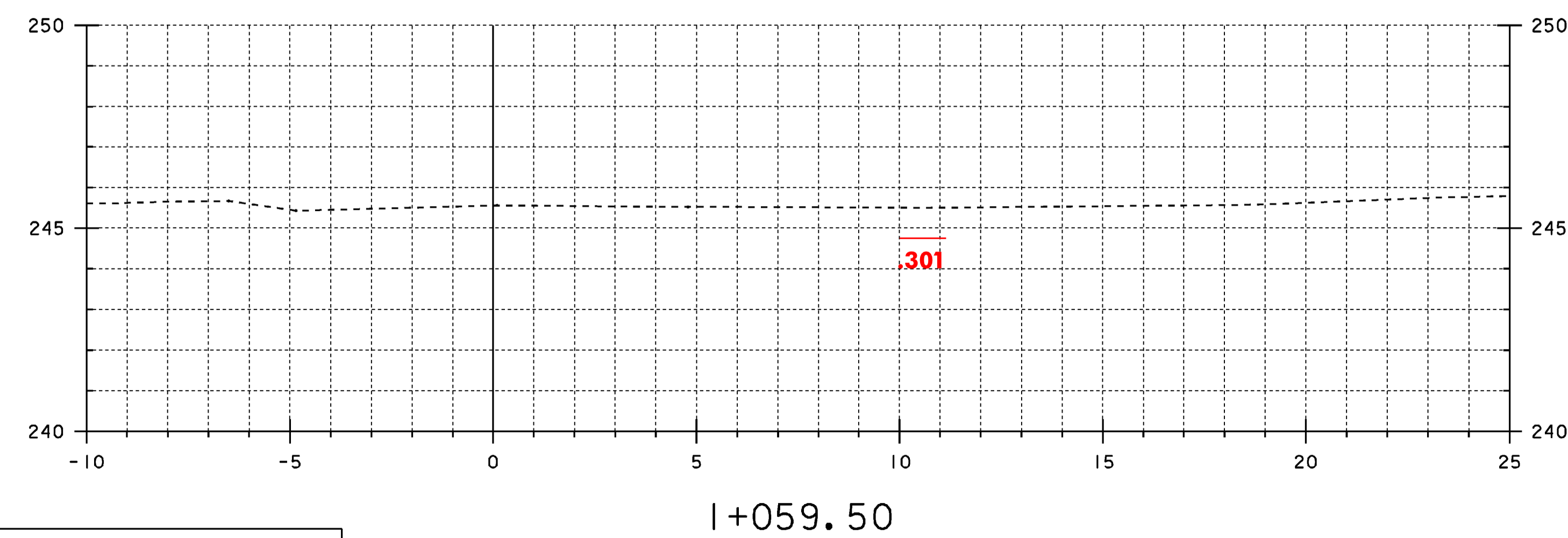
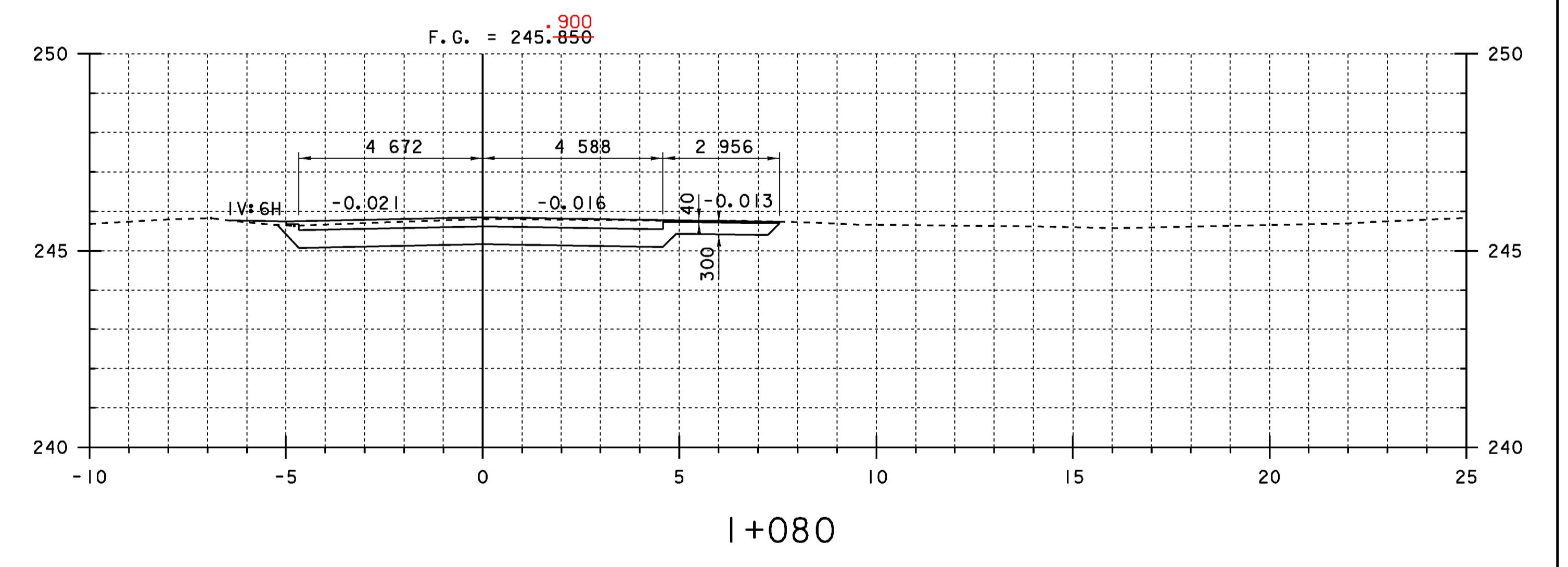
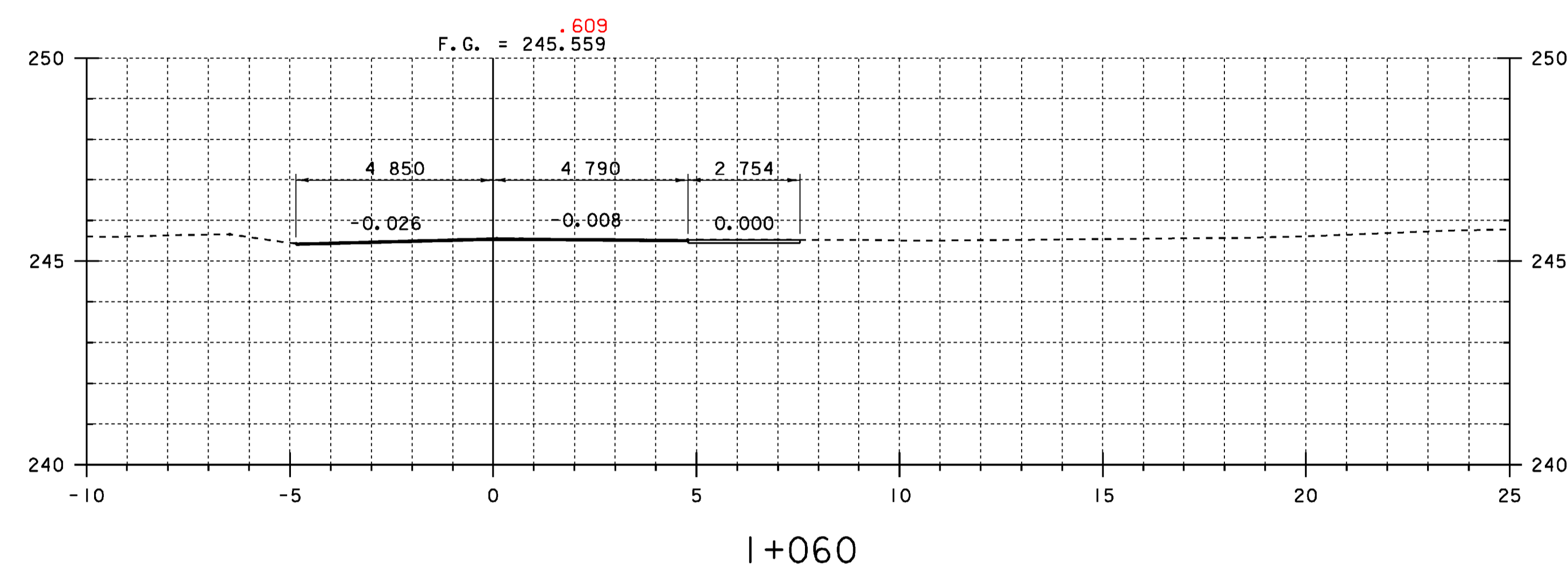
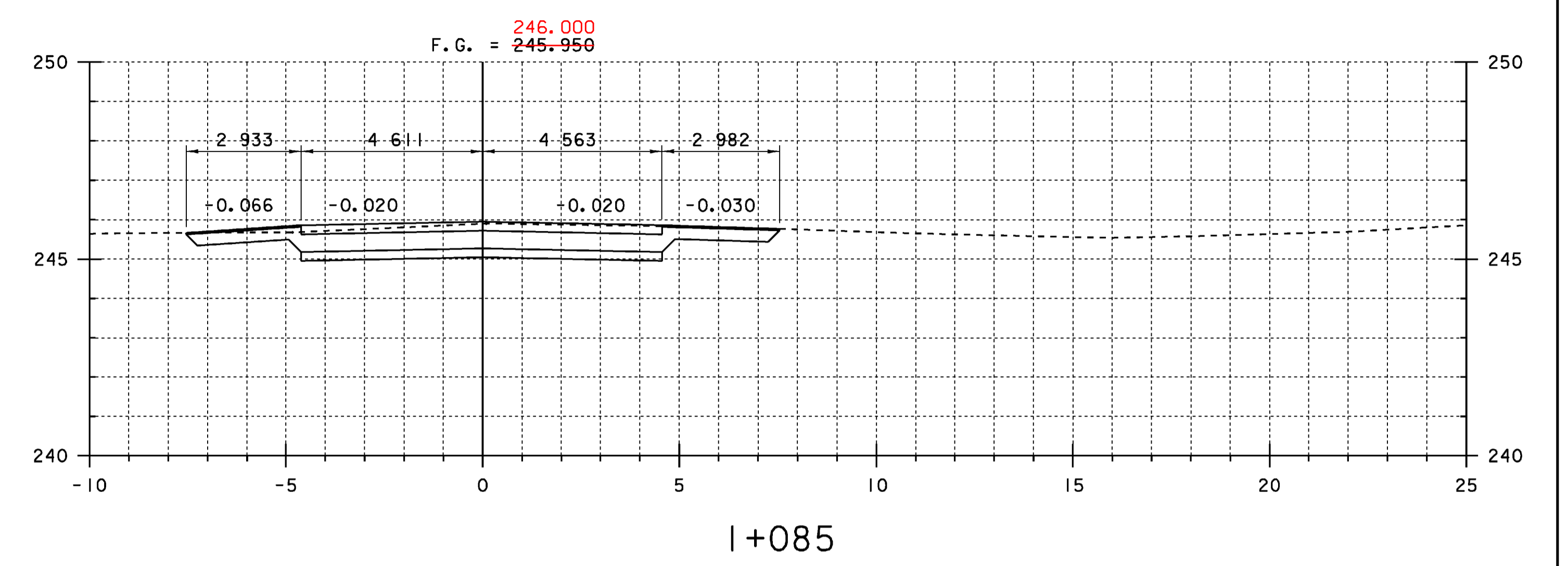
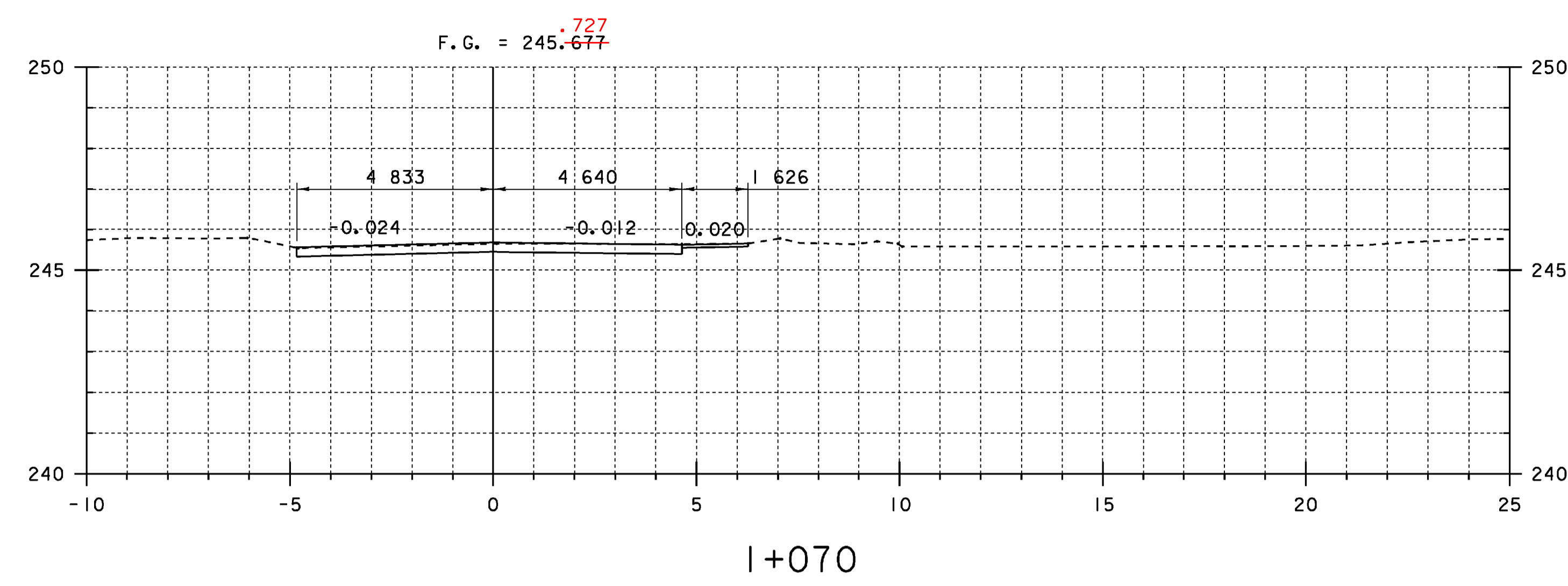
~ NOTES ~

- UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING 55M SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31M (ASTM A 615M-S1). ALL BARS SHALL BE GRADE 420, 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 BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



BAR SIZE	NOMINAL MASS (Kg/m)	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER (mm)	CROSS-SECTIONAL AREA (mm²)	PERIMETER (mm)
#10	0.560	9.5	71	29.84
#13	0.994	12.7	129	39.90
#16	1.552	15.9	199	49.95
#19	2.235	19.1	284	60.00
#22	3.042	22.2	387	69.74
#25	3.973	25.4	510	79.80
#29	5.060	28.7	645	90.16
#32	6.404	32.3	819	101.47
#36	7.907	35.8	1006	112.47
#43	11.380	43.0	1452	135.09
#57	20.240	57.3	2581	180.01

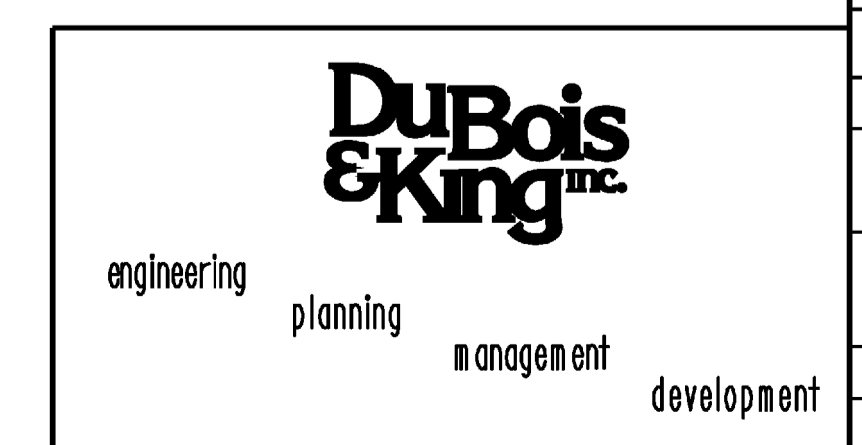
PROJECT NAME: **HARDWICK**
PROJECT NUMBER: **BHF 030 - 2 (18) S**
FILE NAME: **z95j306rss.dgn** PLOT DATE: **11/24/2008**
PROJECT MANAGER: **J. W. TUCKER** DRAWN BY: **R. H. BARNES**
DESIGNED BY: **A. P. GUYETTE** CHECKED BY: **E. P. DETRICK**
REINFORCING STEEL SCHEDULE SHEET **33** OF **38**



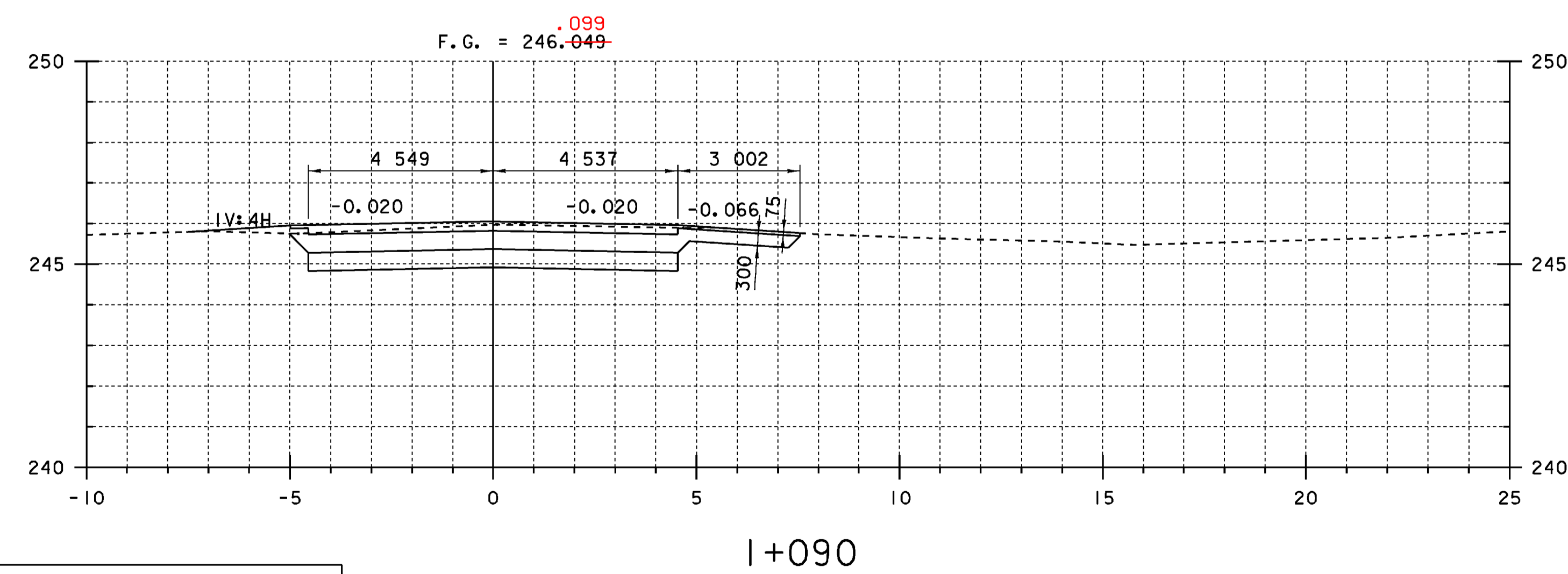
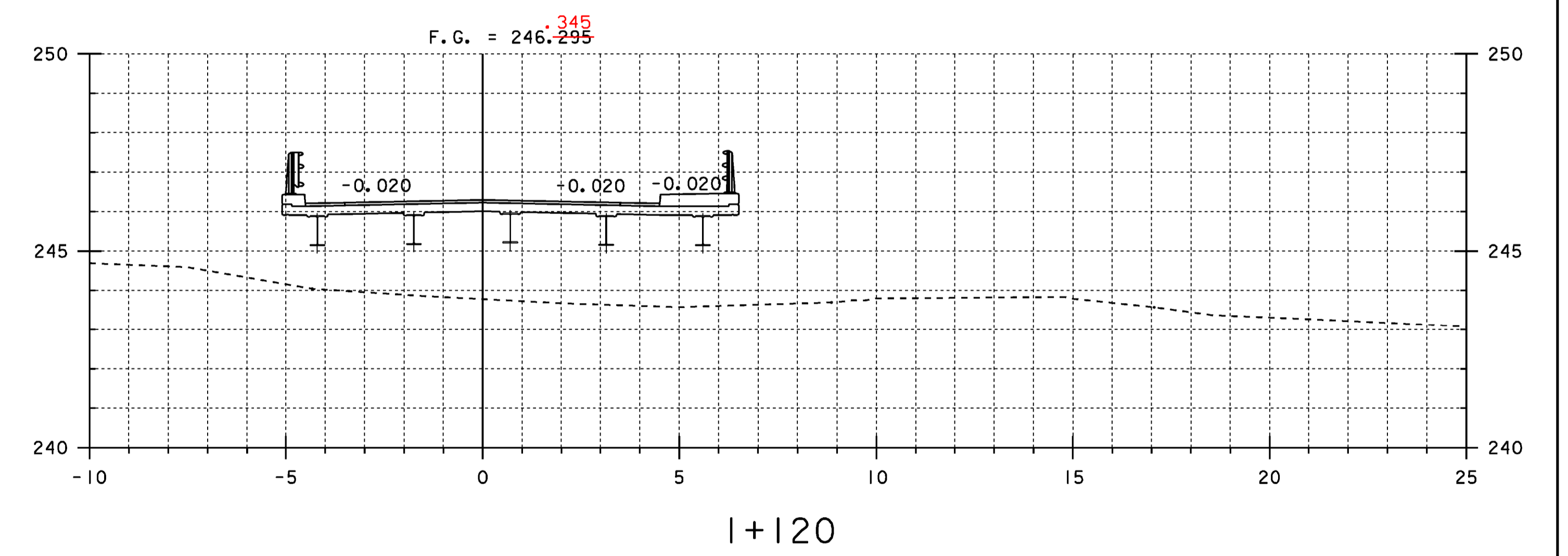
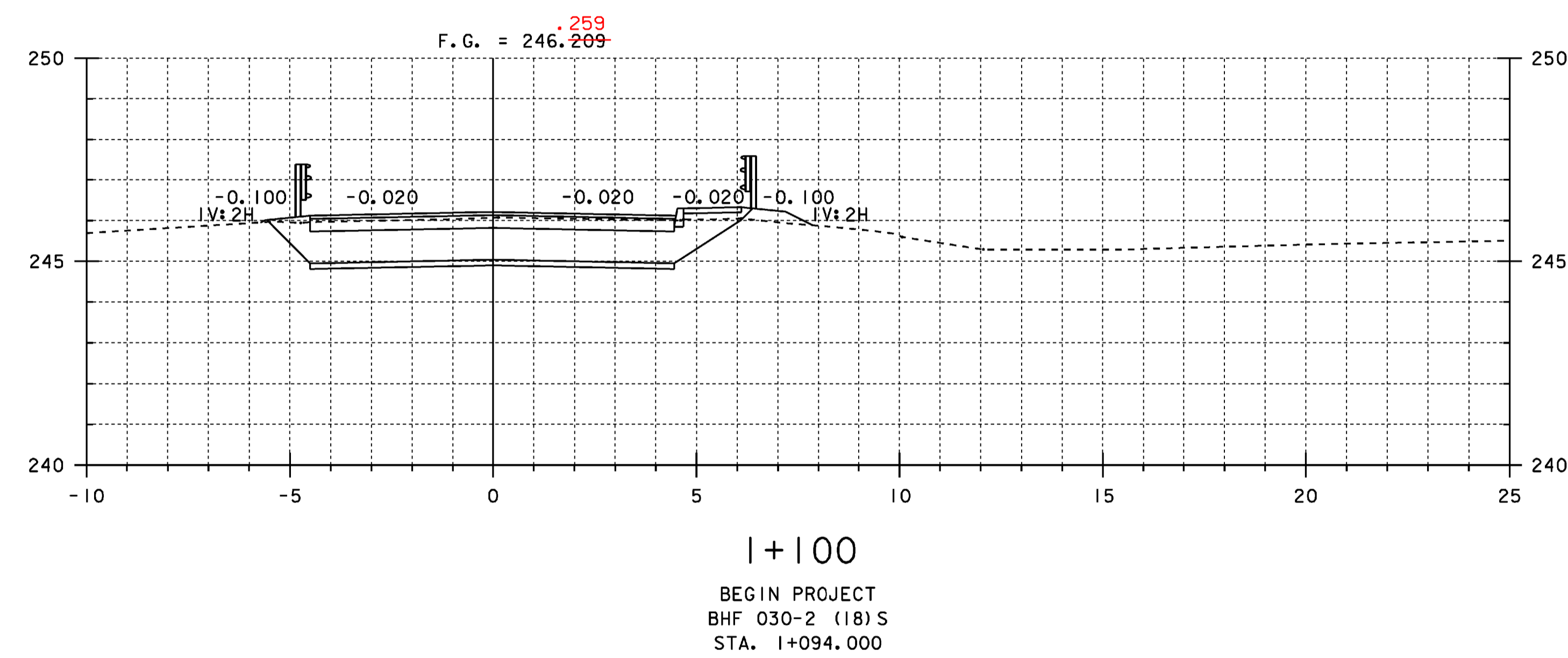
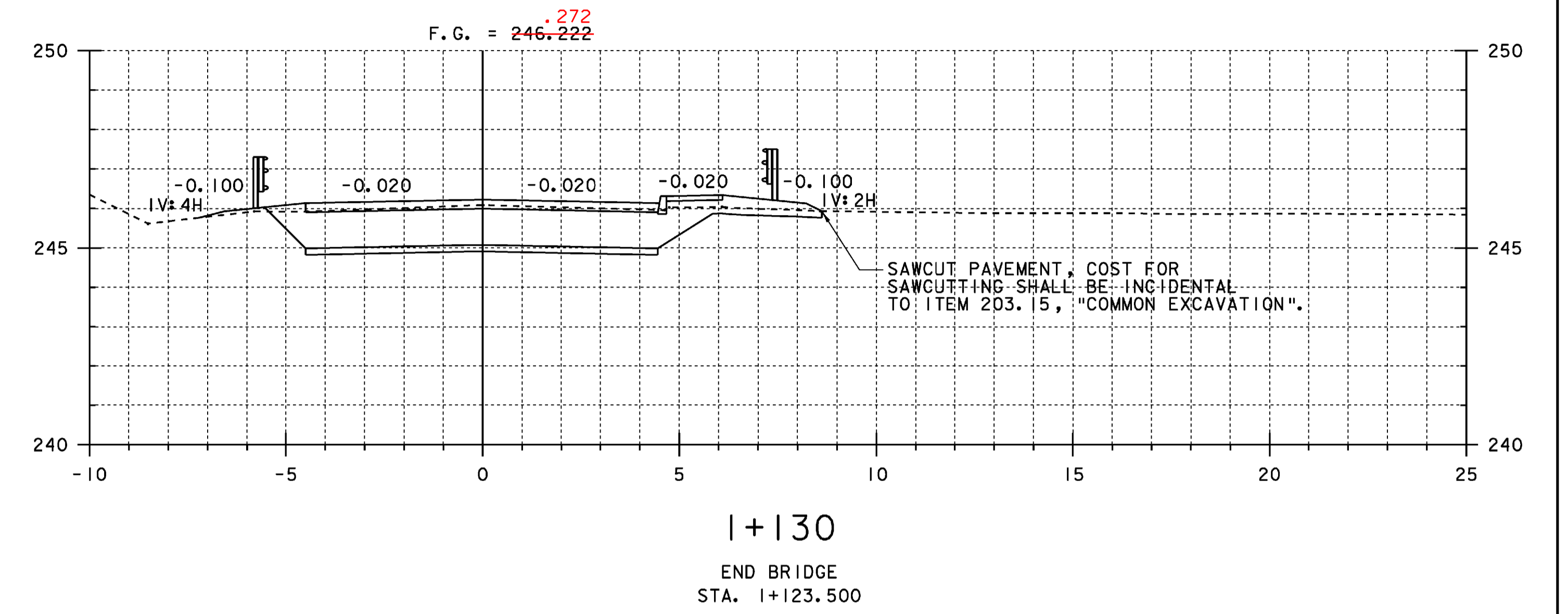
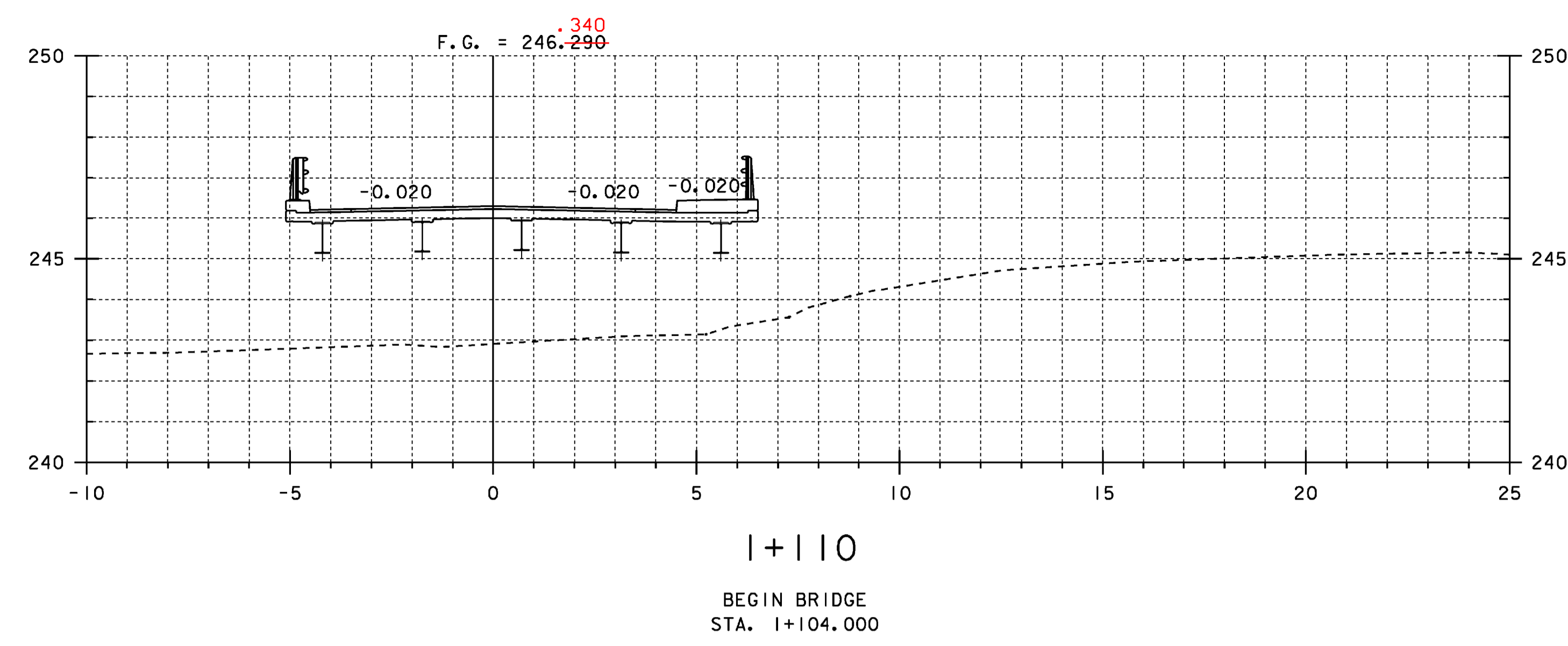
NOTE:
 THE LOCATIONS OF THE WATER AND SEWER LINES HAVE NOT BEEN SHOWN ON THE CROSS SECTIONS. THE CONTRACTOR SHALL CONSULT WITH THE TOWN OF HARDWICK TOWN MANAGER BEFORE MAKING ANY EXCAVATIONS THAT COULD AFFECT THESE LINES.

DATUM
 VERTICAL NAVD 88
 HORIZONTAL NAD 83/92

I+059.50
 BEGIN APPROACH
 MATCH EXISTING
 STA. I+059.500



STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK ROADWAY CROSS SECTIONS 1			
Designed By	A.P. GUYETTE	Drawn By	B.C. AUSTIN
Checked By	E. P. DETRICK	Date	1/09
		Bridge Design Supervisor	J.W. TUCKER Date 1/09
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info. M:\Projects\95J306\Structures\04-13-09 updates\z95J		Sheet 34 of 38	
Bridge Sheet No.			

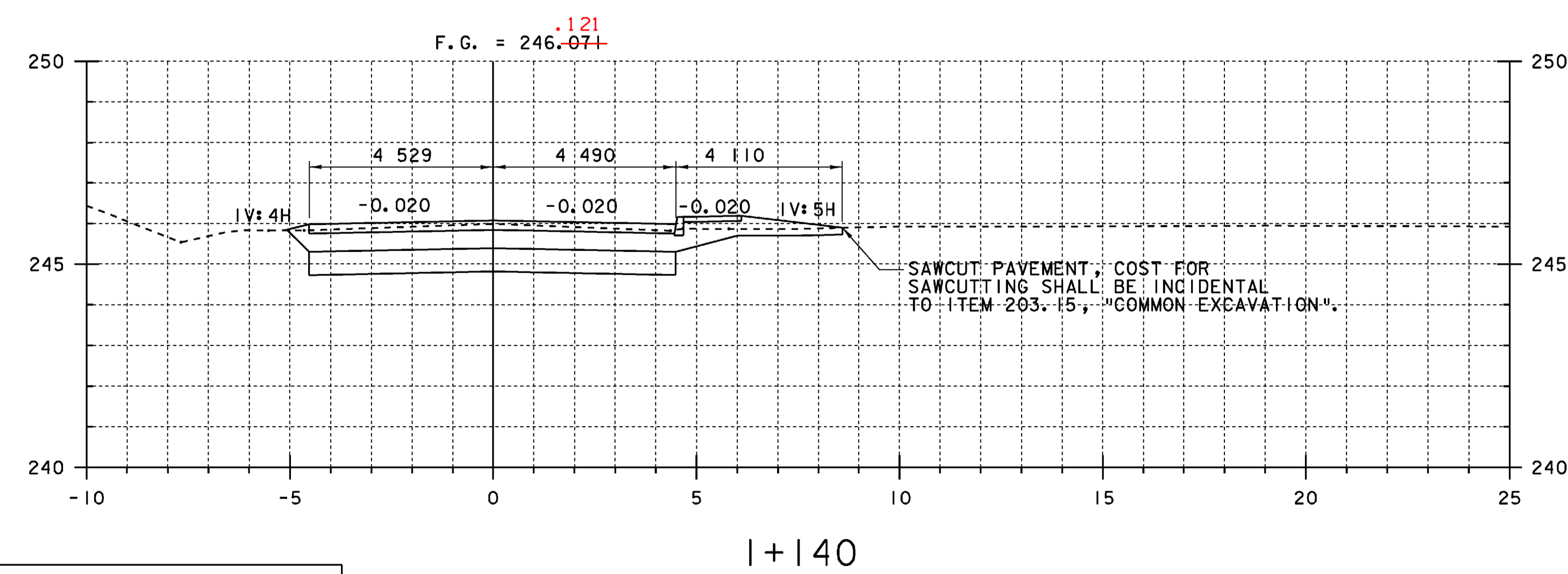
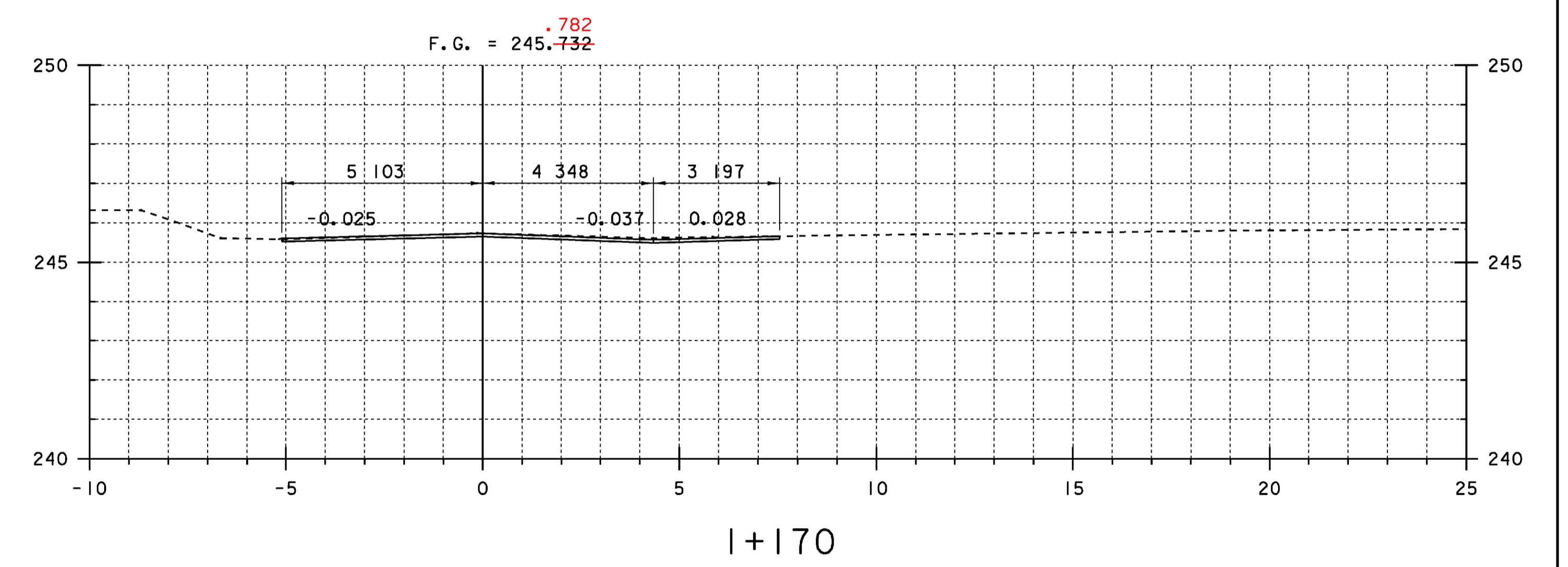
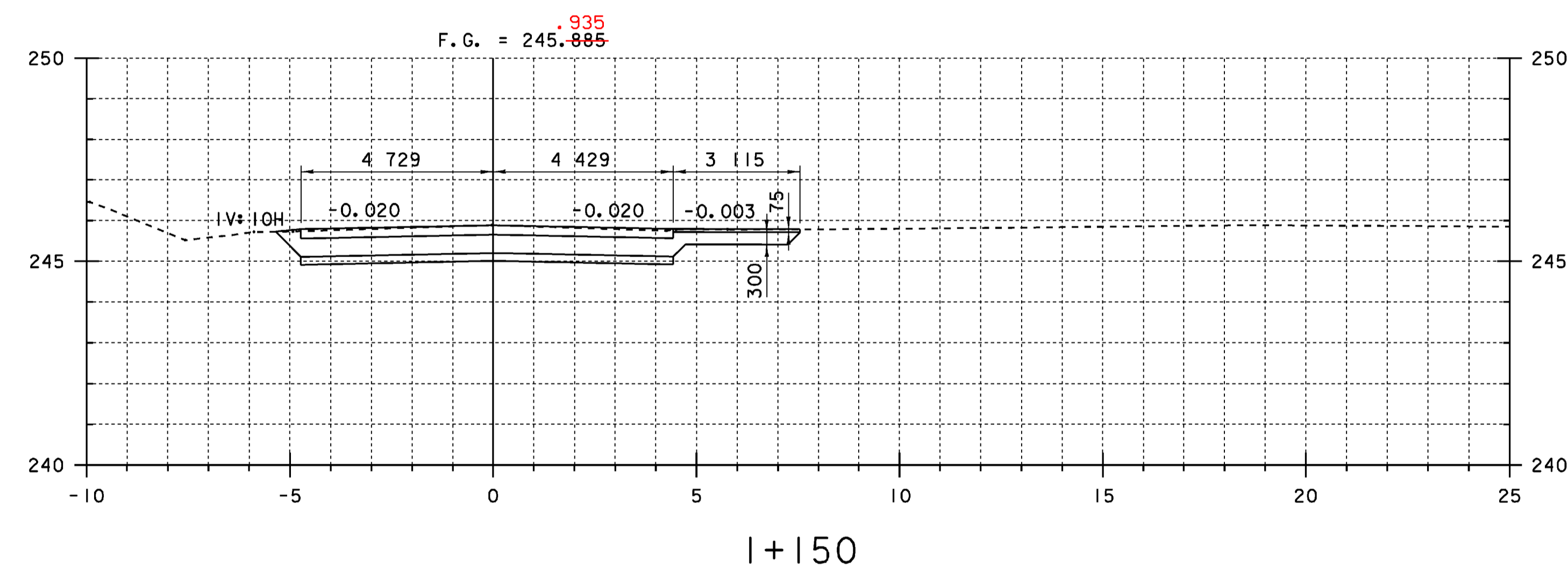
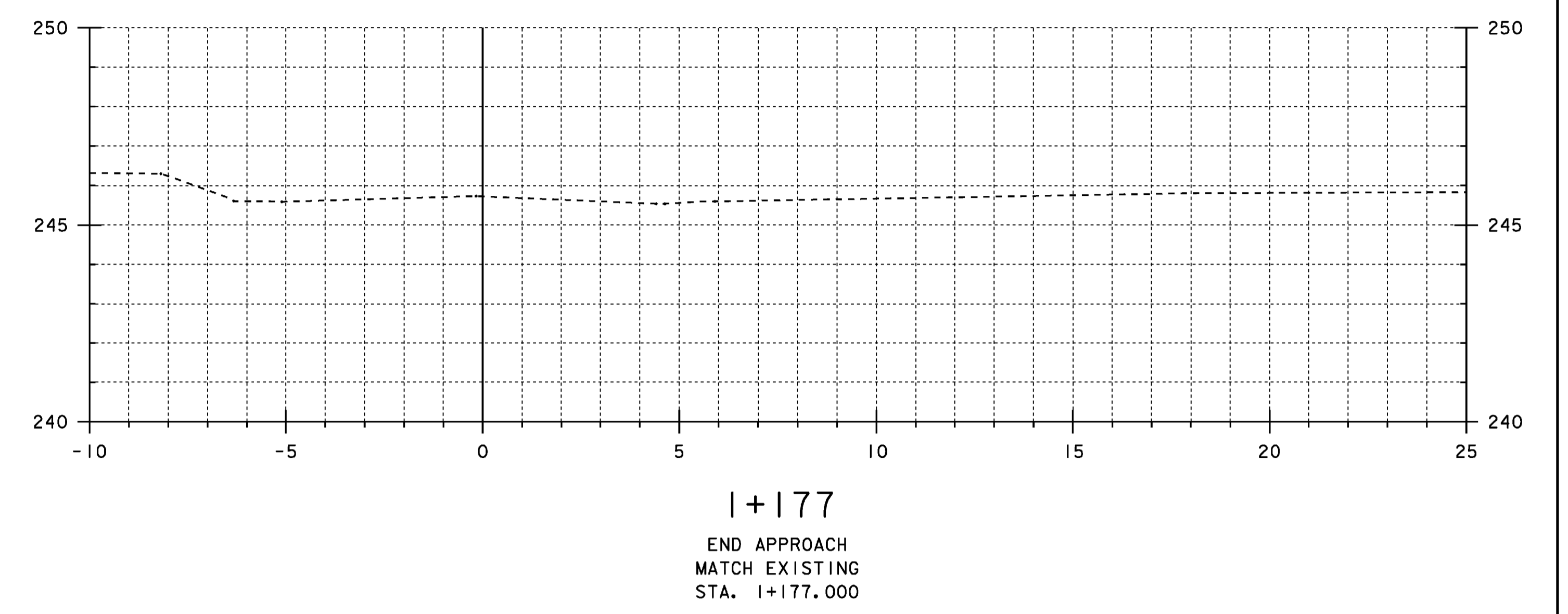
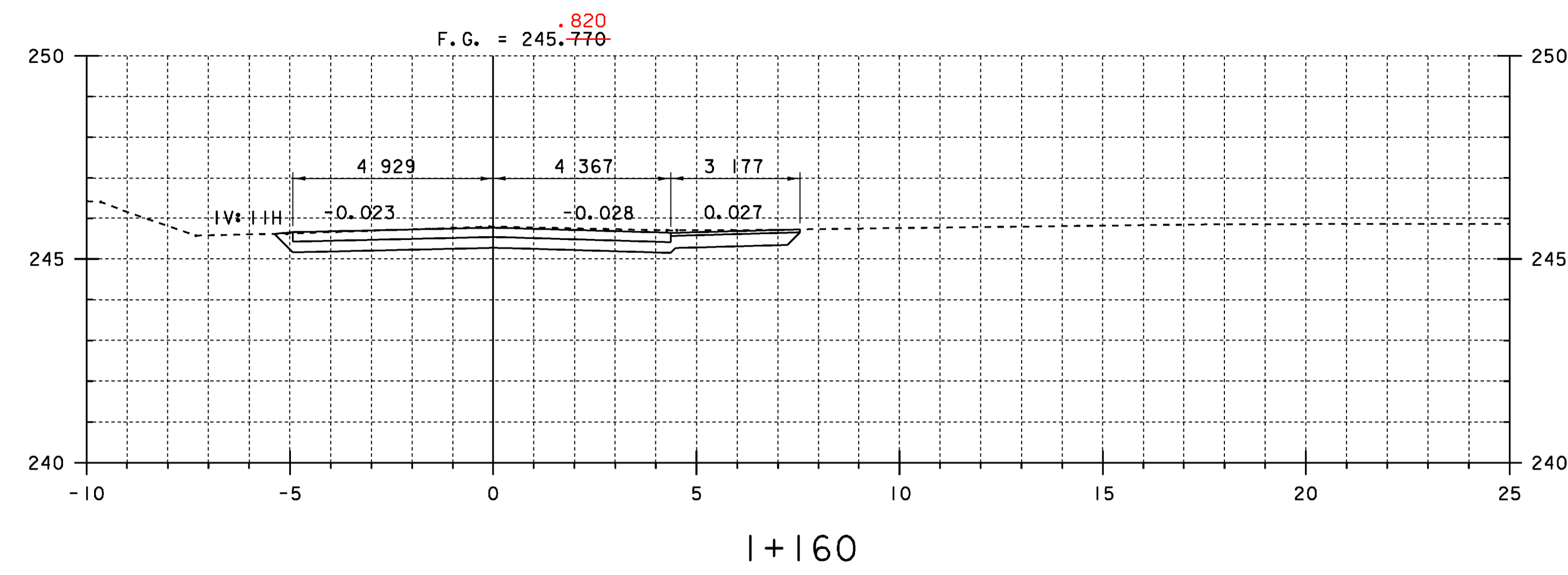


NOTE:
THE LOCATIONS OF THE WATER AND SEWER LINES HAVE NOT BEEN SHOWN ON THE CROSS SECTIONS. THE CONTRACTOR SHALL CONSULT WITH THE TOWN OF HARDWICK TOWN MANAGER BEFORE MAKING ANY EXCAVATIONS THAT COULD AFFECT THESE LINES.

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83/92

engineering planning management development

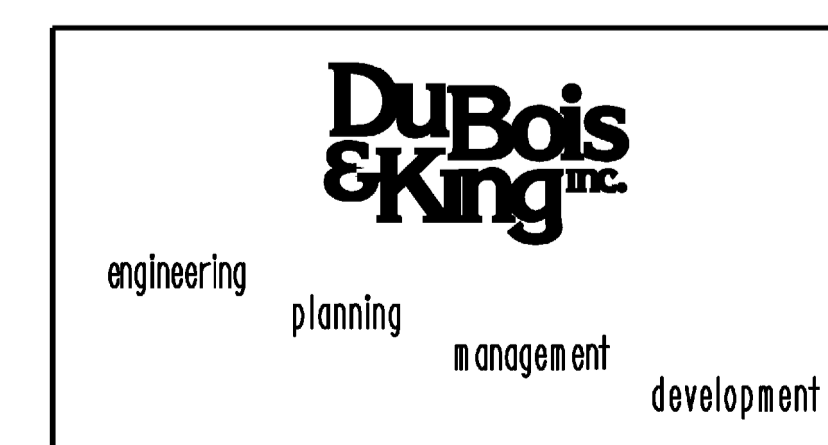
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK ROADWAY CROSS SECTIONS 2			
Designed By	A.P. GUYETTE	Drawn By	B.C. AUSTIN
Checked By	E. P. DETRICK	Bridge Design Supervisor	J.W. TUCKER
	1/09	Date	1/09
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info. M:\Projects\95J306\Structures\04-13-09 updates\z95J		Sheet 35 of 38	
Bridge Sheet No.			



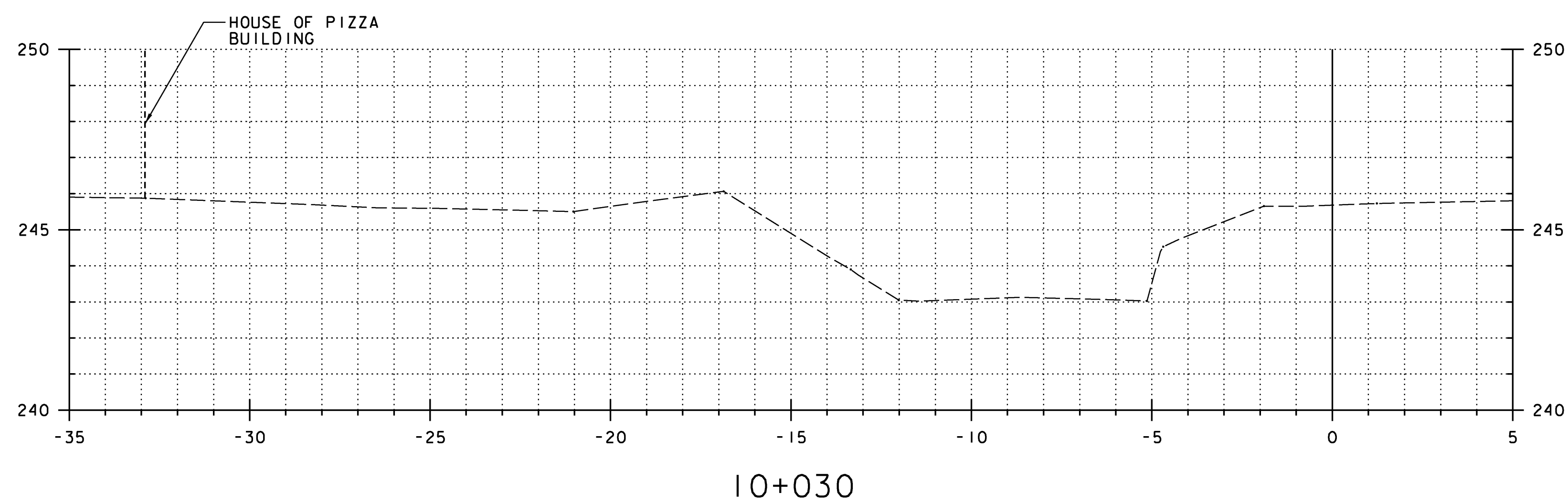
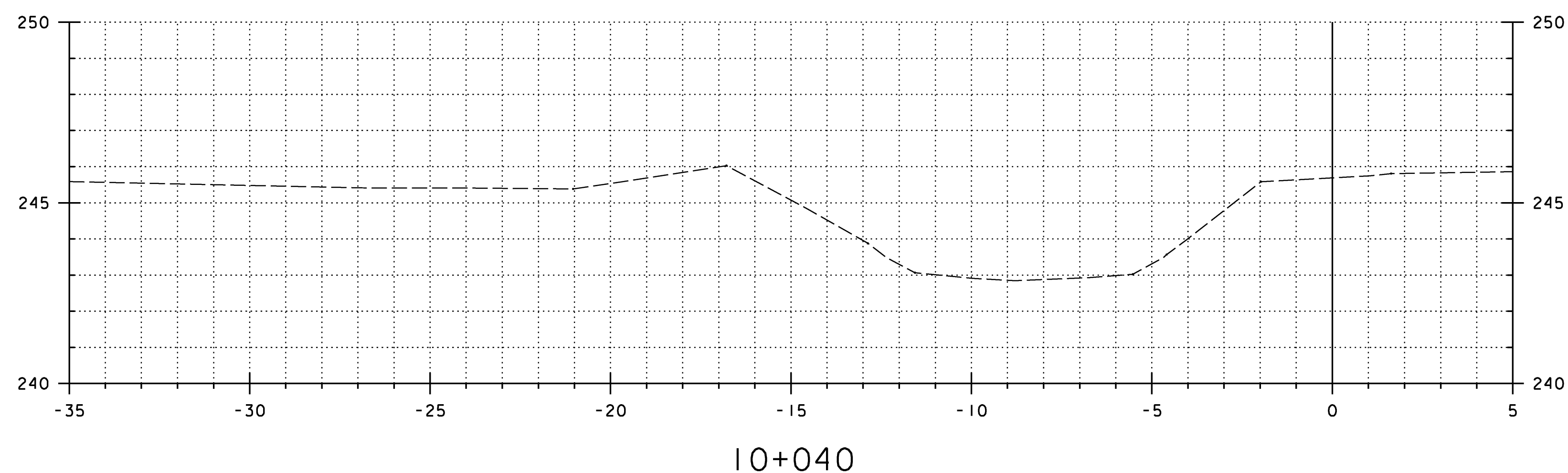
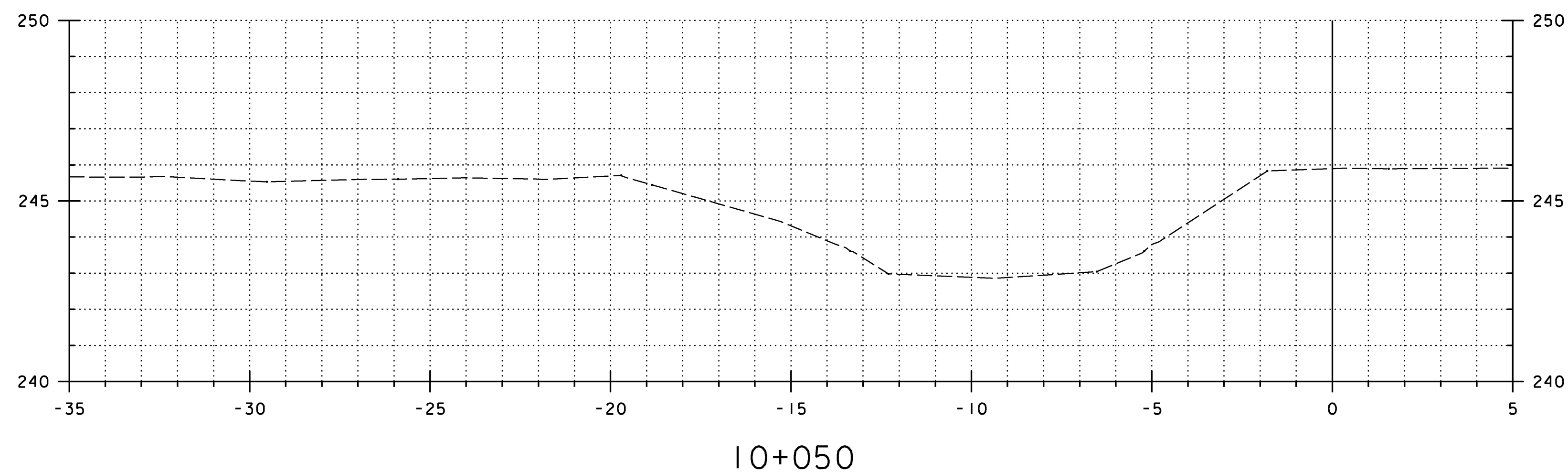
NOTE:
THE LOCATIONS OF THE WATER AND SEWER LINES HAVE NOT BEEN SHOWN ON THE CROSS SECTIONS. THE CONTRACTOR SHALL CONSULT WITH THE TOWN OF HARDWICK TOWN MANAGER BEFORE MAKING ANY EXCAVATIONS THAT COULD AFFECT THESE LINES.

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83/92

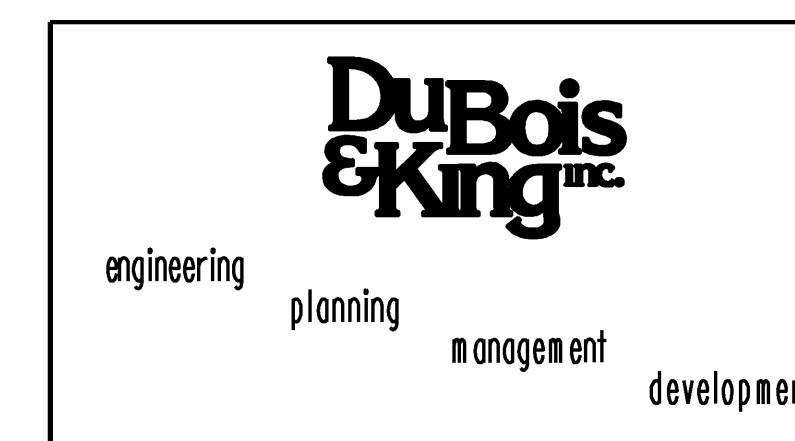
END PROJECT
BHF 030-2 (18) S
STA. I+138.500



STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK ROADWAY CROSS SECTIONS 3			
Designed By	A.P. GUYETTE	Drawn By	B.C. AUSTIN
Checked By	E. P. DETRICK	Bridge Design Supervisor	J.W. TUCKER
	1/09	Date	1/09
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info. M:\Projects\95J306\Structures\04-13-09 updates\z95J			
Bridge Sheet No.		Sheet	36 of 38

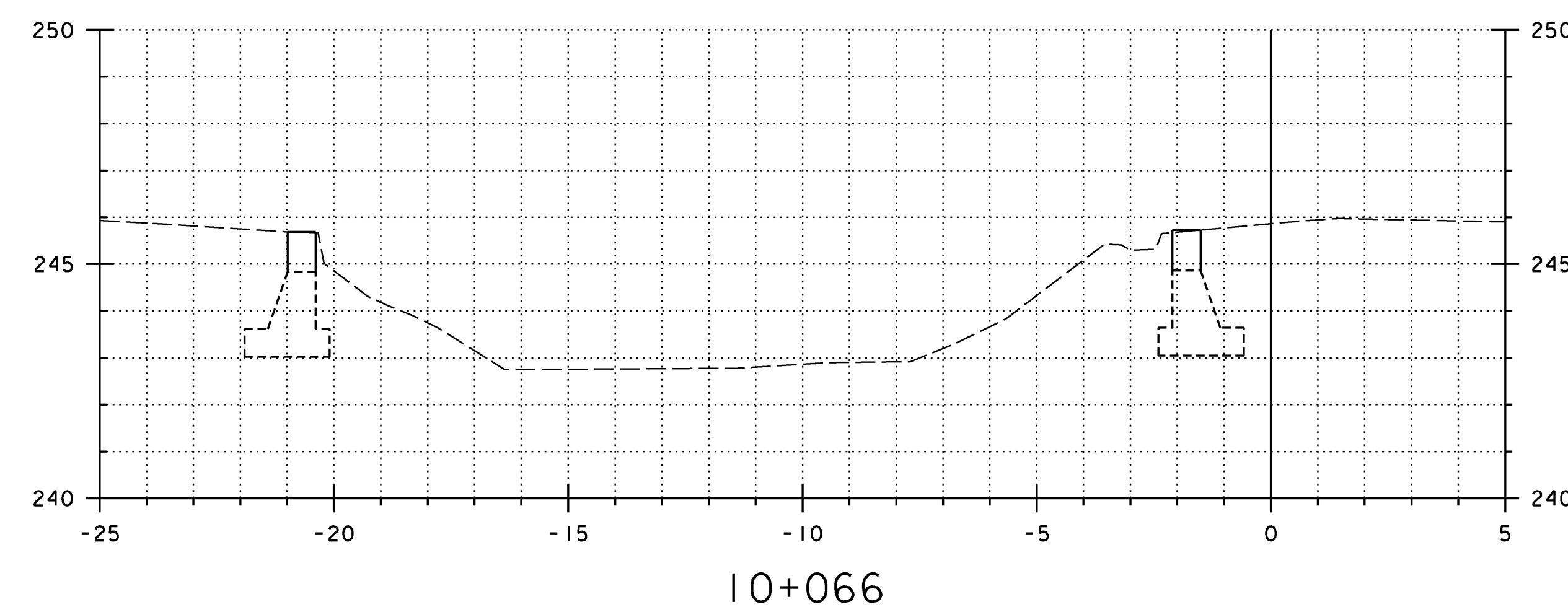
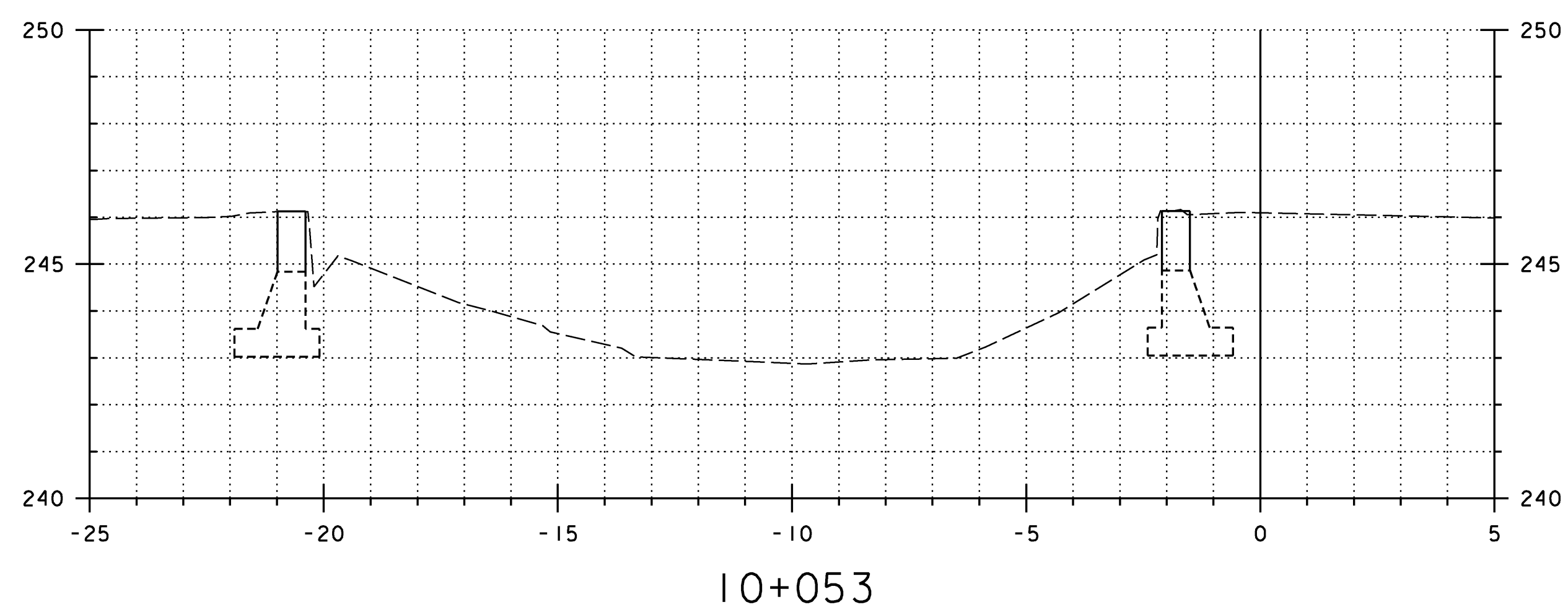
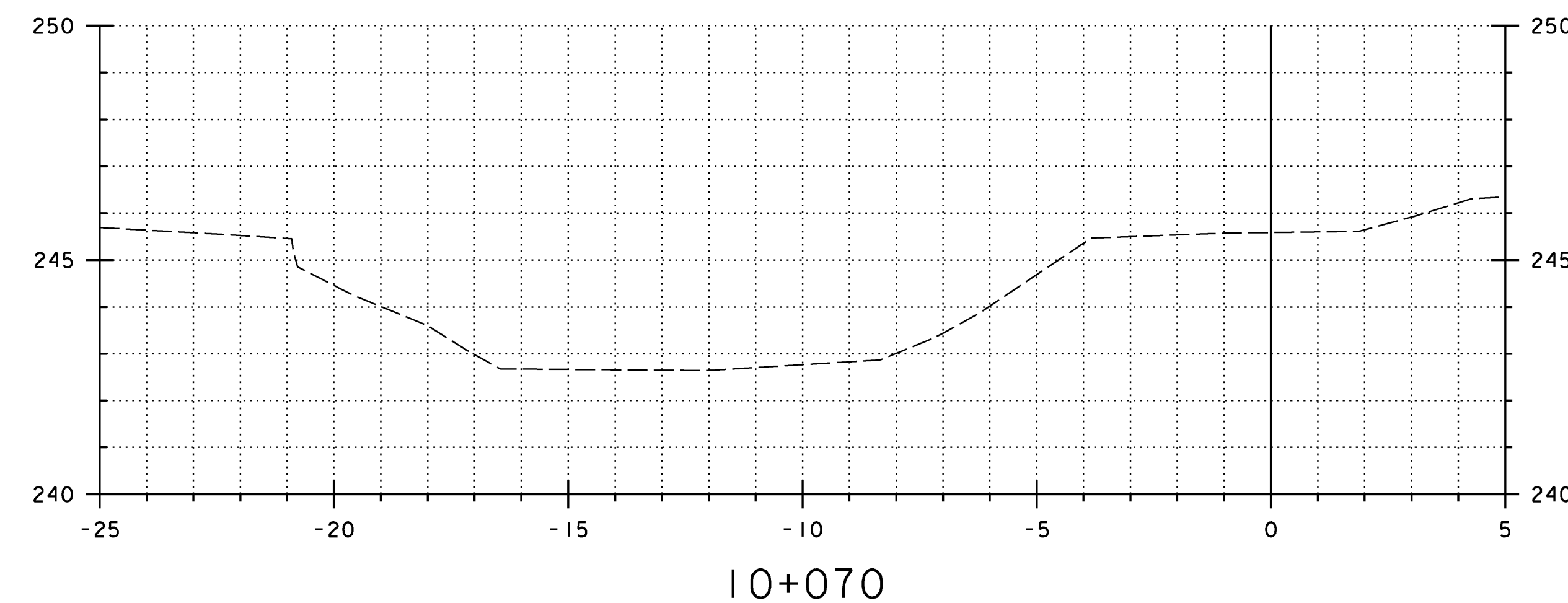
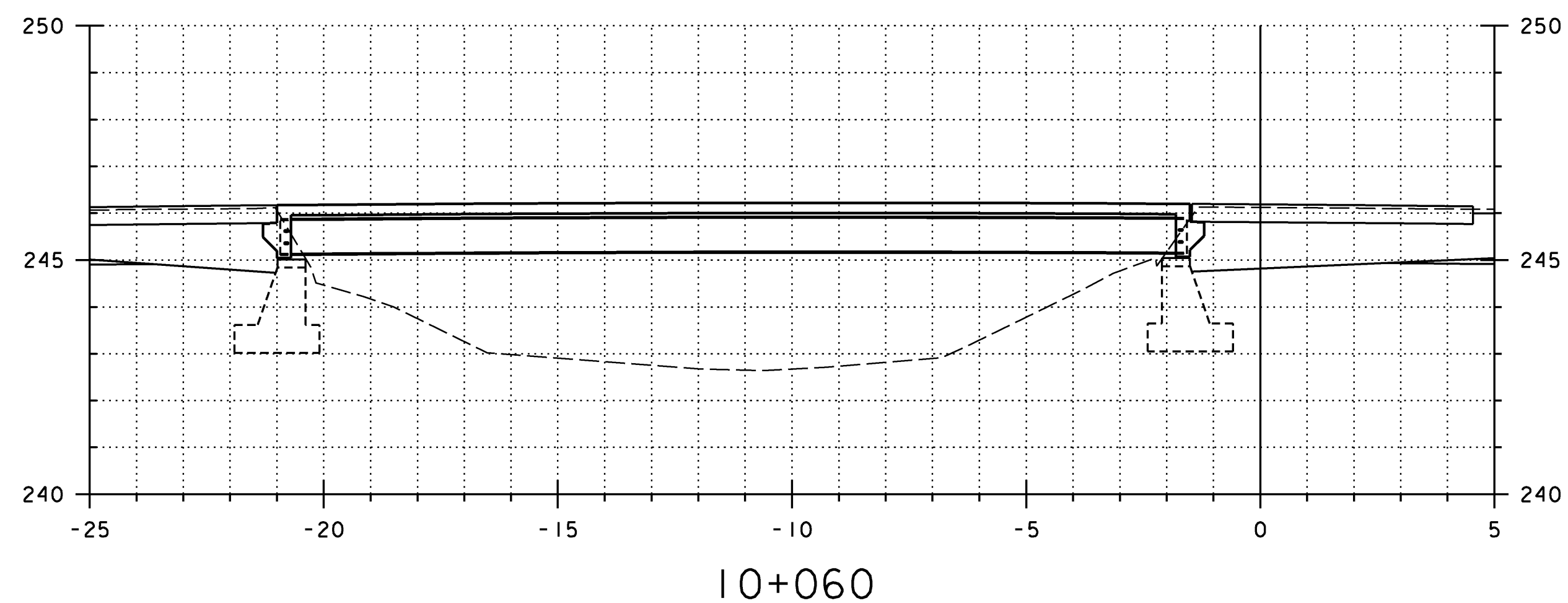


DATUM
 VERTICAL NAVD 88
 HORIZONTAL NAD 83/92

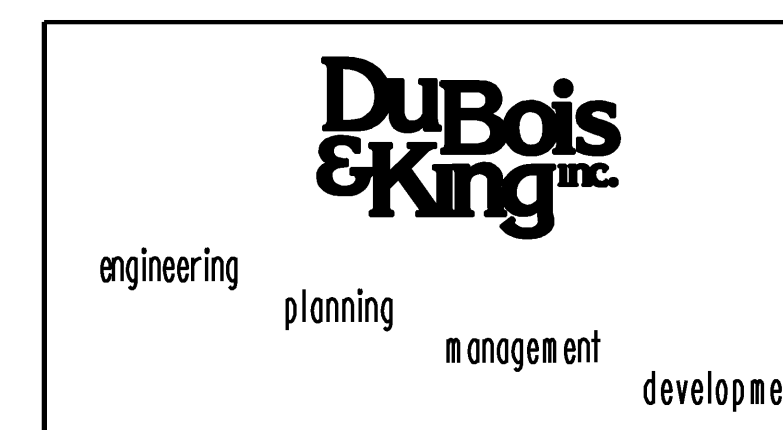


PLOTTED \$\$\$DATE\$\$\$

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK CHANNEL CROSS SECTIONS 1			
Designed By	A.P. GUYETTE	Drawn By	S.J. BIJOLLE
Checked By	Date	Bridge Design Supervisor	
	E. P. DETRICK 11/08	J.W. TUCKER	Date 11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info. DGN\$SPEC\$			
Bridge Sheet No.	Sheet 37 of 38		



DATUM
 VERTICAL NAVD 88
 HORIZONTAL NAD 83/92



STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	HARDWICK	Bridge No.	67
Highway No.	VT 15	Log Sta.	
		Surv. Sta.	
VT 15 OVER COOPER BROOK CHANNEL CROSS SECTIONS 2			
Designed By	A.P. GUYETTE	Drawn By	
Checked By	Date	Bridge Design Supervisor	
E. P. DETRICK	11/08	J.W. TUCKER	Date 11/08
PROJECT	HARDWICK	PROJECT NO.	BHF 030-2 (18) S
I.G.C. Info. DGN\$SPEC\$			
Bridge Sheet No.		Sheet 38 of 38	

PLOTTED \$\$\$DATE\$\$\$

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS

- 1). ALL MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006 AND IT'S LATEST REVISIONS AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION, DATED 2002, AND IT'S LATEST REVISIONS.

MATERIAL SPECIFICATIONS

- 1). UNLESS OTHERWISE NOTED, ALL STEEL TO BE AASHTO M270M (ASTM A709M) GRADE 345.
- 2). MATERIAL NOTED "CVN" OR "H2-3" ON DETAIL DRAWINGS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF VERMONT STANDARD SPECIFICATIONS SECTION 714.01.
- 3). HIGH STRENGTH BOLTS: $\frac{7}{8}$ " ϕ ASTM A325 (AASHTO M164) TYPE 1 IN $\frac{15}{16}$ " ϕ HOLES. NUTS SHALL BE A563 (AASHTO M291) GRADE C. BOLTS & NUTS SHALL BE ROTATIONAL CAPACITY TESTED. DO NOT MIX NUTS & BOLTS FROM DIFFERENT CONTAINERS UNLESS ALL BOLTS & NUTS HAVE THE SAME LOT NUMBER.
ALL BOLT NUTS TO BE GALVANNEAL PER AASHTO M164, CONFORM TO TYPE 1.

FABRICATION

- 1). ALL HOLES SHALL BE PUNCHED OR DRILLED FULL SIZE (UN).

WELDING

- 1). THE CONFIGURATION OF THE WELD JOINTS AND ALL WELDING PROCEDURES SHALL BE IN ACCORDANCE WITH AASHTO/AWS D1.5-02 BRIDGE WELDING CODE AND IN ADDITION TO SPECIFICATIONS SHOWN ABOVE. ALL WELDING WILL BE DETAILED TO PRE-QUALIFIED JOINTS, UNLESS PROHIBITED BY THE DESIGNER.
- 2). WELDING OF MAIN LOAD CARRYING MEMBERS AND ATTACHMENTS SHALL BE PERFORMED USING THE AUTOMATIC SUBMERGED ARC & SHIELDED METAL ARC PROCESSES. ALL WELDS ARE CONTINUOUS U.N.
- 3). NON DESTRUCTIVE TESTING OF WELDS SHALL BE IN ACCORDANCE WITH THE REFERENCED SPECIFICATION.
- 4). SEE DETAIL "WS1" ON THIS DRAWING FOR WELD TERMINATION DETAIL.

CLEANING

1. ALL STEEL SHALL BE BLAST CLEANED IN ACCORDANCE WITH SSPC SP-10.

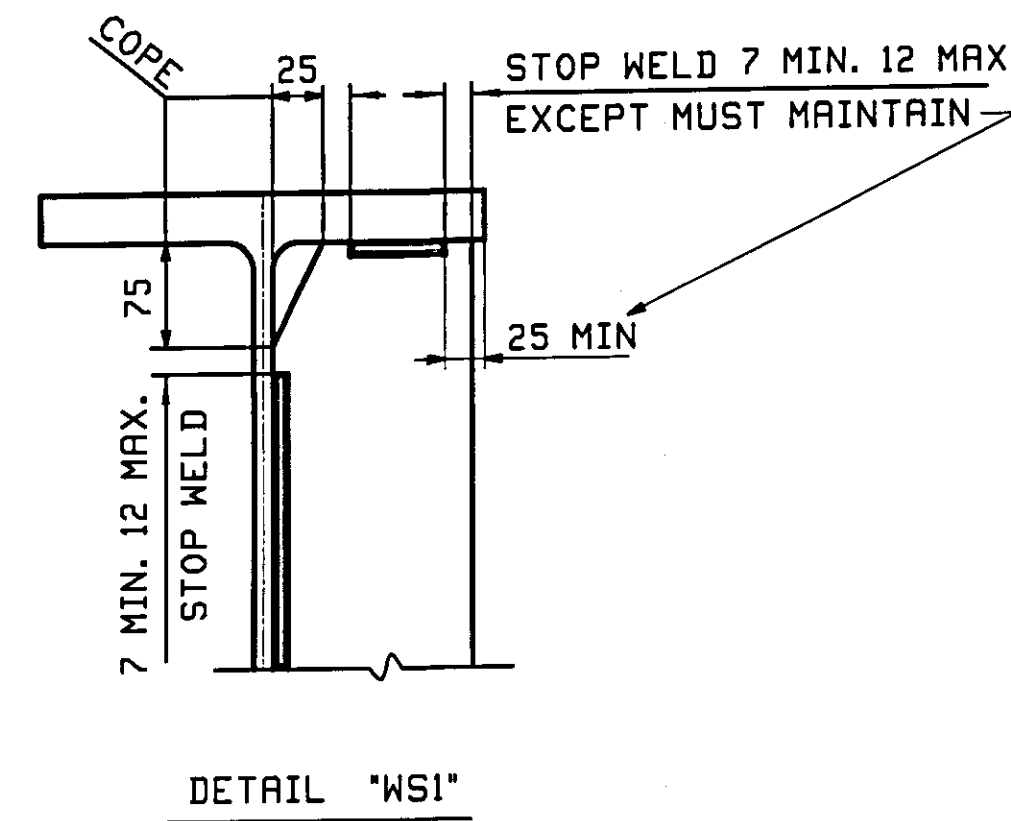
PAINTING:

- 1). ALL STRUCTURAL STEEL SHALL BE PAINTED PER SUPPLEMENTAL SPECIFICATION 513. ALL FIELD CONTACT SURFACES AND THE TOP OF THE TOP FLANGE SHALL RECEIVE ONE COAT OF PRIMER ONLY. MASK ALL AREAS WITHIN 3" OF OPEN HOLES AFTER PRIME COAT HAS BEEN APPLIED. TOP COAT PER FEDERAL STANDARD 595 - COLOR CHIP NO. 14062 (DARK GREEN)

	DFT (MILS)	
	MIN.	MAX.
MANUFACTURER: CARBOLINE		
P CARBOLINE 859 ORGANIC ZINC RICH PRIMER	3.0	5.0
I CARBOLINE 888 EPOXY	4.0	6.0
T CARBOLINE 133 HB ALIPHATIC POLYURETHANE	2.0	4.0

FIELD CONNECTIONS

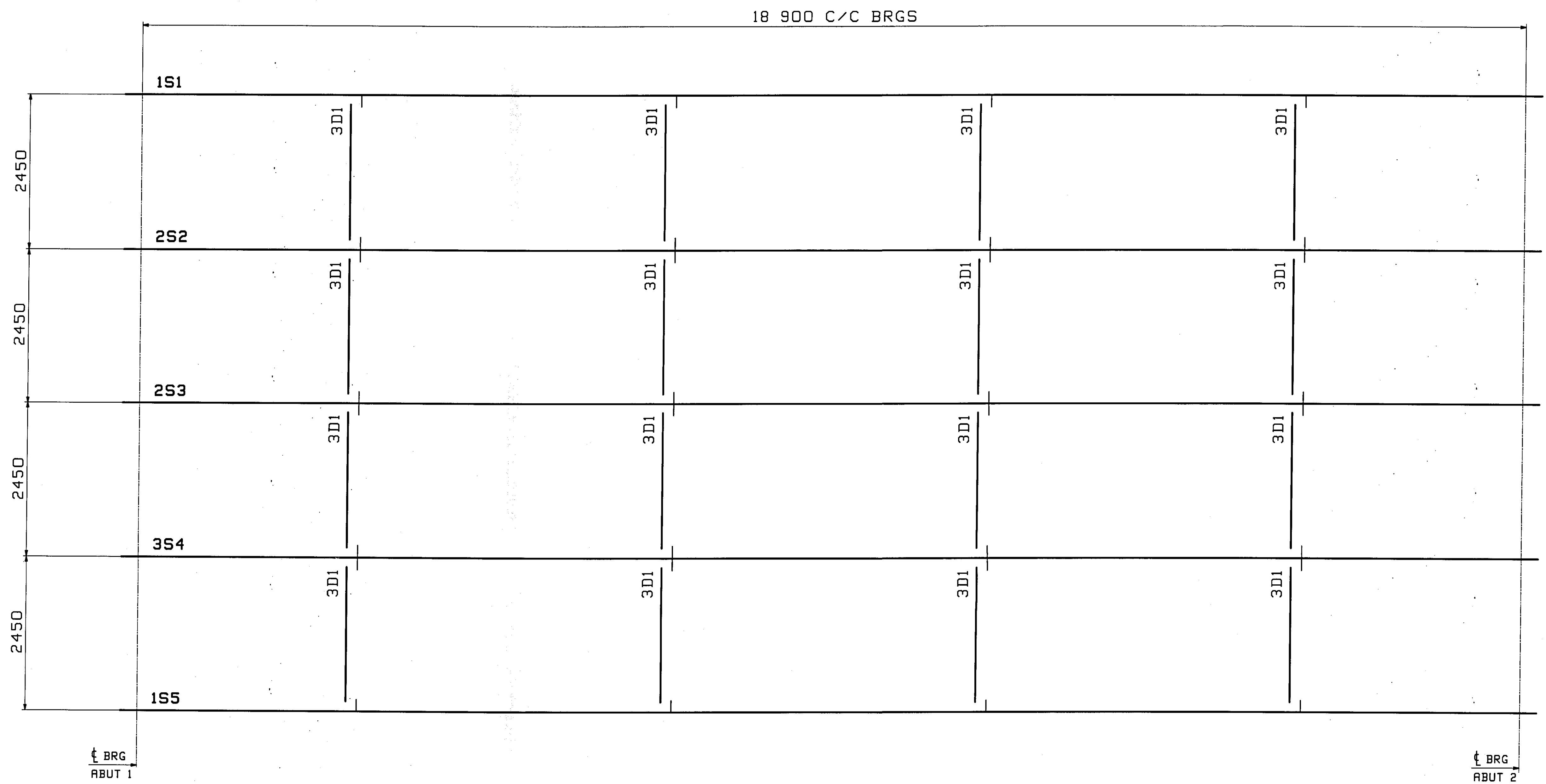
- 1). ALL FIELD CONNECTIONS SHALL BE MADE WITH $\frac{7}{8}$ " DIAMETER HIGH STRENGTH A-325 TYPE 1 BOLTS (UN), INSTALLED PER SECTION 506.19(c). SEE DWG E1 FOR FIELD BOLT SIZES.
- 2). BOLTS SHALL HAVE HEAVY HEX NUT, HEAVY HEX HEAD, AND AT LEAST ONE FLAT WASHER EACH. WASHER TO BE PLACED UNDER TURNED ELEMENT.
- 3). PIECE MARKS WILL BE LOCATED AS SHOWN ON ERECTION DRAWINGS.



RECEIVED
 CND BY: *Dik* OK'D BY: _____
 JUN 15 2009
 APPROVED: *As. N. Hall*
 BY: *WJ* DATE: 7/12/09

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

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0						
		MATERIAL:		SURFACE PREP. & PAINT:		HOLES:
				SHOP BOLTS:		
DESCRIPTION: GENERAL NOTES						
CASCO BAY STEEL STRUCTURES, INC. 75 SPRING HILL ROAD SACO, MAINE 04072 PHONE (207) 282-7360 FAX. (207) 282-1179						
STRUCTURE: ROUTE NO: VT 15 BRIDGE NO: BR 67 COUNTY OF CALEDONIA				DRAWN: VWJ	DATE: 06/02	
				CHKD: PCP	DATE: 06/06 2009	
LOCATION: TOWN OF HARDWICK				JOB NO.	DMG NO.	
PROJ NO. BHF 030 - 2 (18)S				407	GN1	
CUSTOMER: BLOW & COTE, INC.					REV. Δ	



FIELD BOLT LIST										A325 Type 1 BOLTS		PIECES CONNECTED AND REMARKS	
LINE	NO. REQ'D.	BOLT DIAM.	BOLT LEN.	BOLTS /CONN.	# OF CONN.	GRIP	THICKNESS OF PCS. CONNECTED		WASH. CODE				
1										INT. DIAPHRAGMS			
2	128	7/8	2 1/4	4	32	23	10	13		1	DIAPHRAGM WEB TO CONN. PL.		
3										WASHER CODES			

1: 1 Hard Flat Washer

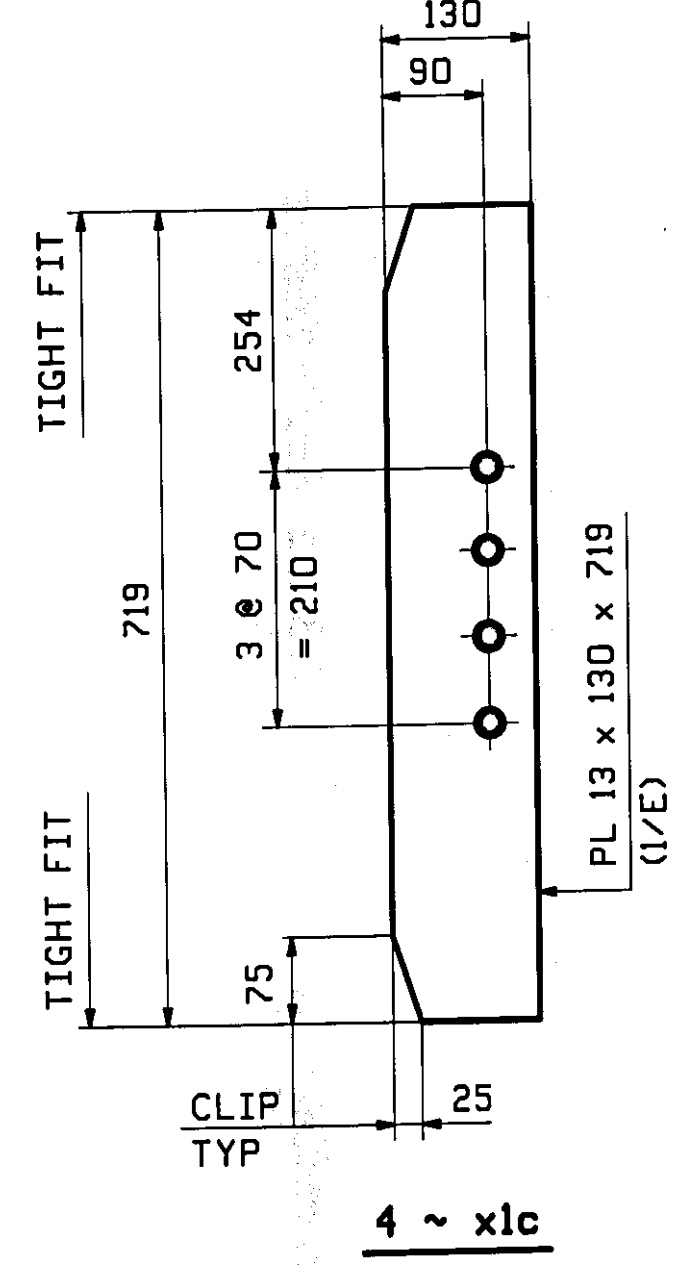
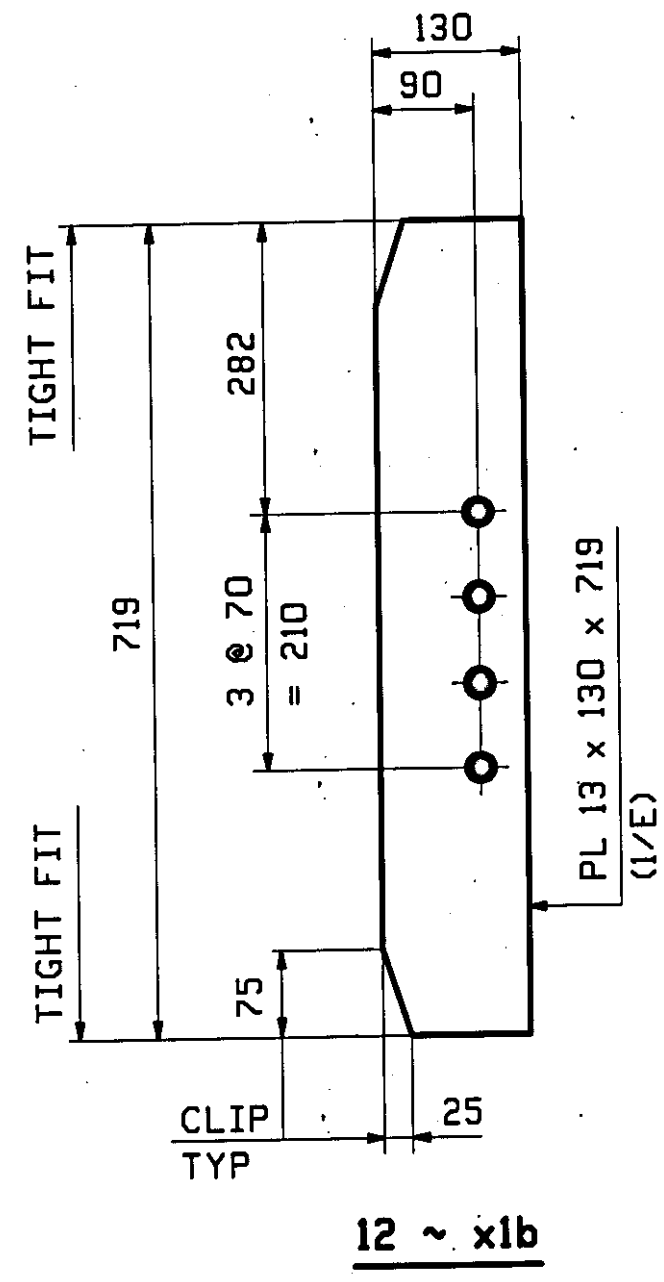
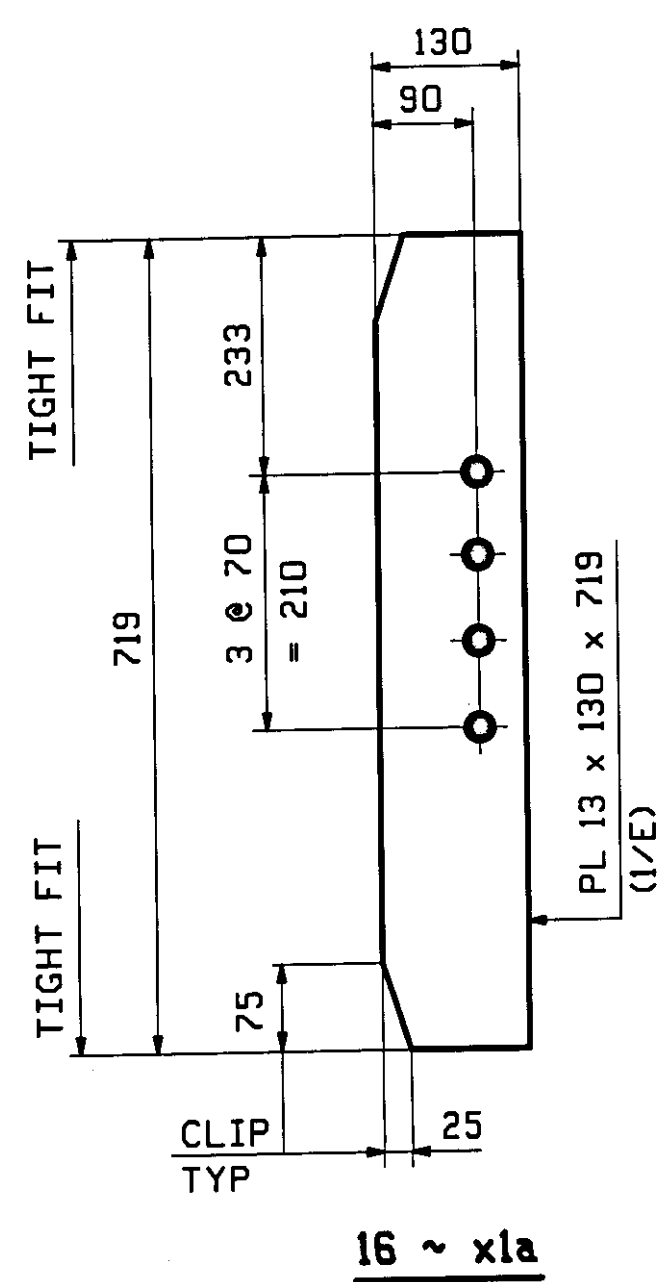
FIELD BOLT SUMMARY				EXACT COUNT - NONE EXTRA			REMARKS
LINE	NO. OF BOLTS	BOLT DIAM.	TYPE	BOLT LEN.	ACTUAL COUNT		
1	128	7/8	A325 Type 1	2 1/4	128		
2							
3	128		Hard Flat Washers for 7/8" BOLT		F436		
4							
5							
6							

NOTE:
FOR GENERAL NOTES SEE DRAWING GNI.

REV. DATE		REMARKS		DNW	CHK	APVL	SHOP
MATERIAL:		SURFACE PREP. & PAINT:		HOLES:		SHOP BOLTS:	
DESCRIPTION: FRAMING PLAN & FIELD BOLTS							
CASCO BAY STEEL STRUCTURES, INC.							
75 SPRING HILL ROAD				SACO, MAINE 04072			
PHONE (207) 282-7360				FAX. (207) 282-1179			
STRUCTURE: ROUTE NO: VT 15		BRIDGE NO: BR 67		COUNTY OF CALEDONIA		DRAWN: VWJ	DATE: 06/02
LOCATION: TOWN OF HARDWICK		JOB NO. 407		DNG NO. E1		CHKD: PCP	DATE: 06/06 2009
PROJ NO. BHF 030 - 2 (18)S		CUSTOMER: BLOW & COTE, INC.		REV.			

RECEIVED
 JUN 15 2009
 BY: *WJ* DATE: 7/22/09

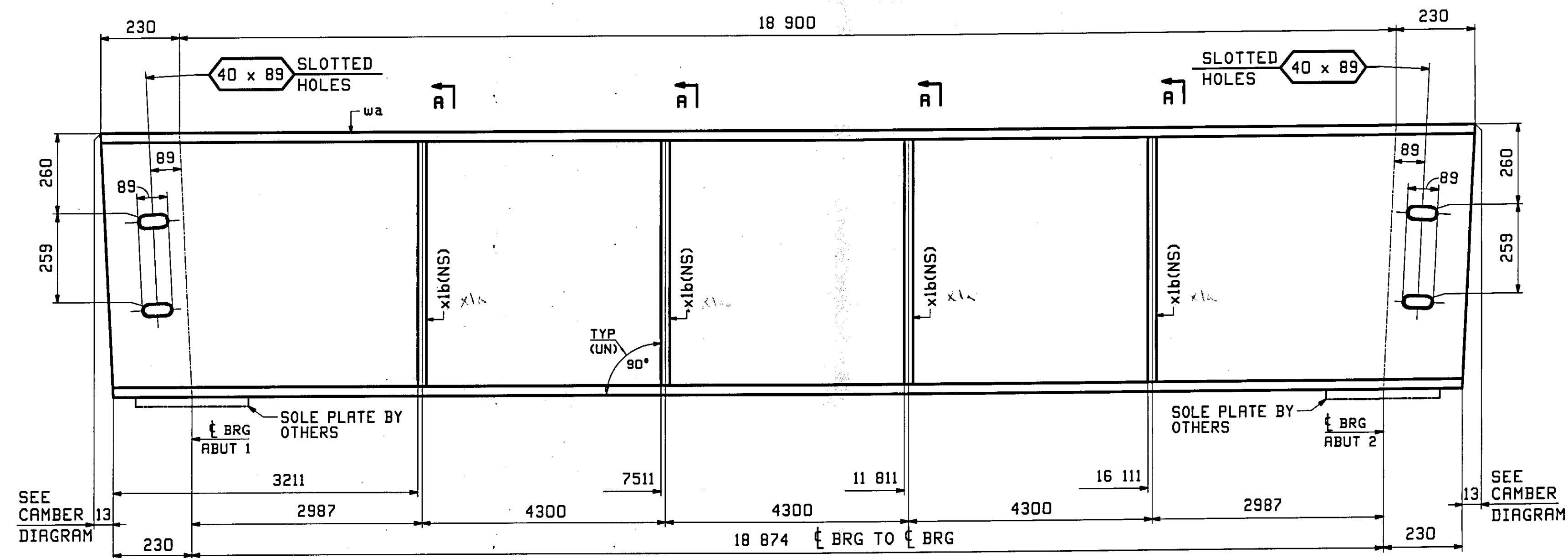
WJ SAT JUN 6 2009 09:27:57 AM /s/PCP/280/DEL 1 Rev D



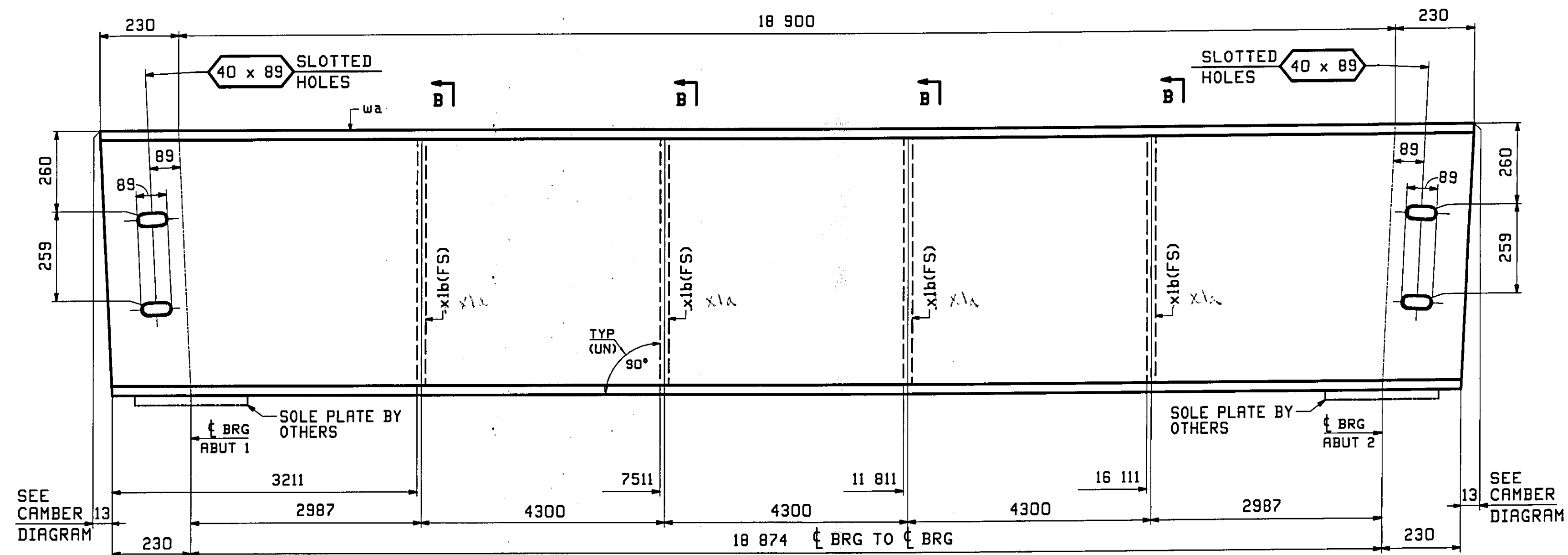
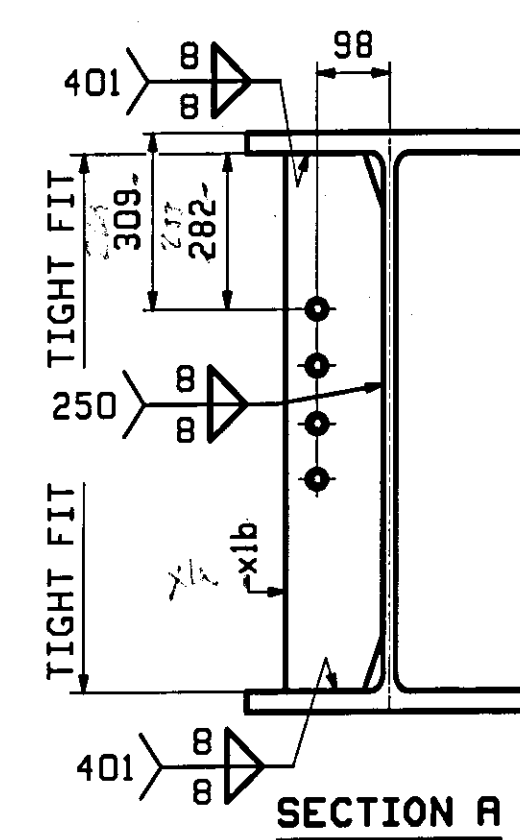
NOTES:
 ALL MATERIAL SHALL BE M270M-345.
 ALL BOLT HOLES SHALL BE $\frac{15}{16}\phi$ FOR $\frac{7}{8}\phi$ HSB.
 FOR GENERAL NOTES SEE DRAWING GNI.

0					JUN 11 2009				
REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP			
MATERIAL:		SURFACE PREP. & PAINT:		HOLES:		SHOP BOLTS:			
		SEE GNI							
DESCRIPTION: STRINGER STANDARDS									
CASCO BAY STEEL STRUCTURES, INC. 75 SPRING HILL ROAD SACO, MAINE 04072 PHONE (207) 282-7360 FAX. (207) 282-1179									
STRUCTURE: ROUTE NO: VT 15 BRIDGE NO: BR 67 COUNTY OF CALEDONIA						DRAWN:	DATE:		
						VWJ	06/02		
						CHKD:	DATE:		
						PCP	06/06 2009		
LOCATION: TOWN OF HARDWICK						JOB NO.	DWG NO.		
PROJ NO. BHF 030 - 2 (18)S						407	X1		
CUSTOMER: BLOW & COTE, INC.						REV.			

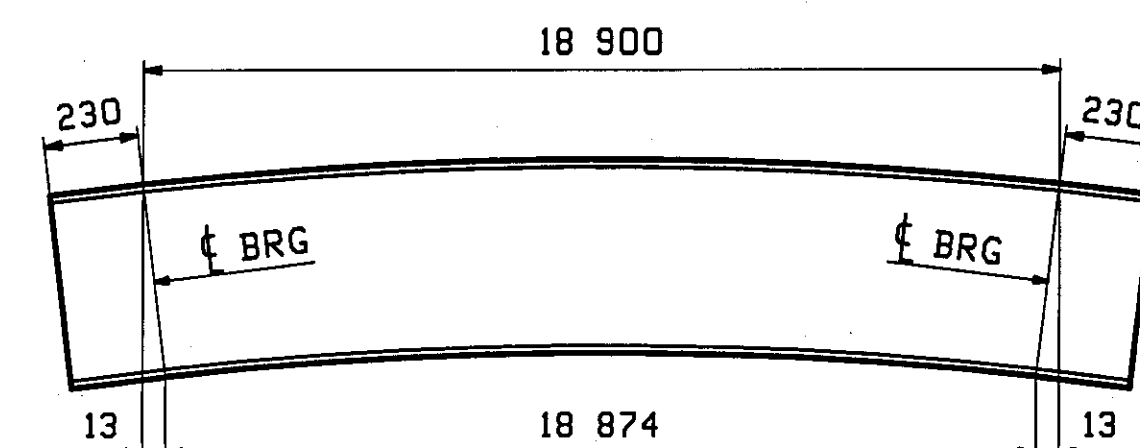
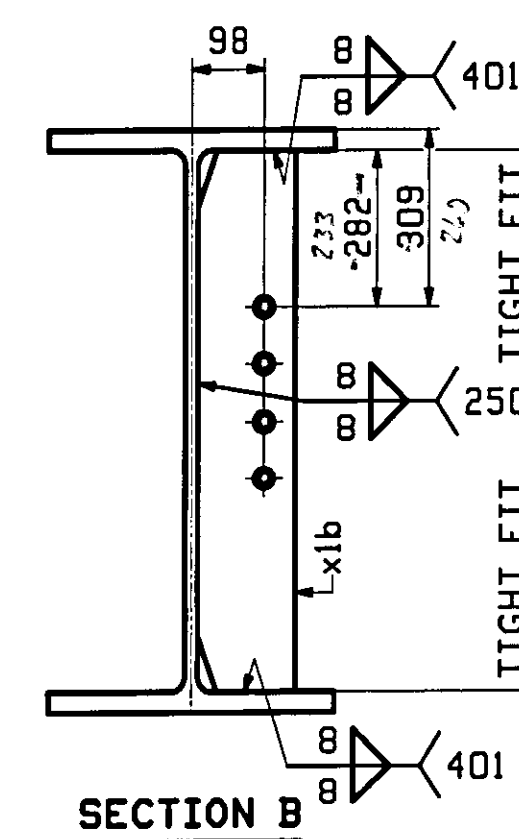
RECEIVED
 OK'D BY DJK OK'D BY _____
 JUN 15 2009
 APPROVED BY WJ DATE 7/22/09



ONE - STRINGER - 1S1



ONE - STRINGER - 1S5



ORIENTATION DIAGRAM - 1S1 & 1S5
FOR CAMBER SEE DWG C1

ABM INFO		SHIP		BILL OF MATERIAL				JOB NO.	DRAWING NO.	REV.
								407	1	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH		REMARKS	MT	PROCUREMENT NOTES
						m	mm			
		1S1	1		STRINGER					5014 kg (1093 lb)
		1S5	1		STRINGER					5014 kg (1093 lb)
1	B		2	wa	W 760x257	19	360	M270M-345T2 (H2-3)		
1	E		8	x1b	PL 13x130	0	719			

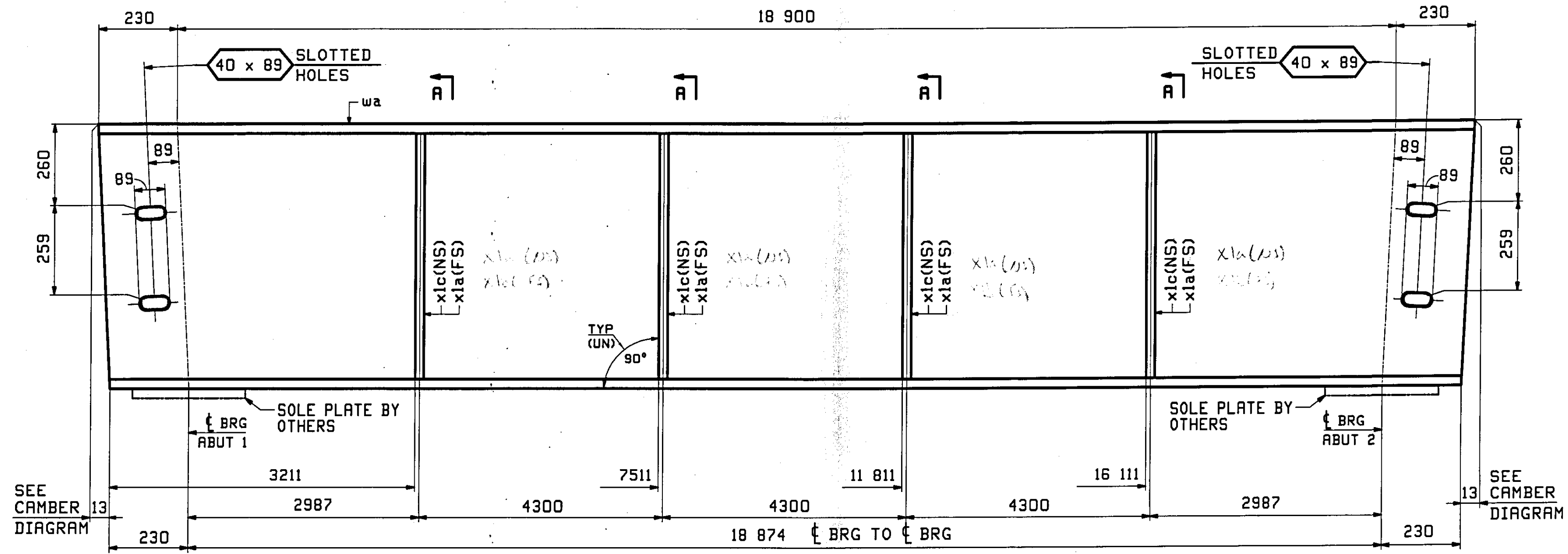
ALL MATERIALS NOT CHECKED OR CONFIRMED

RECEIVED
 OK'D BY *DK* OK'D BY _____
 JUN 15 2009
 APPROVED BY *As. Nald*
 BY *Syd* DATE 7/12/09

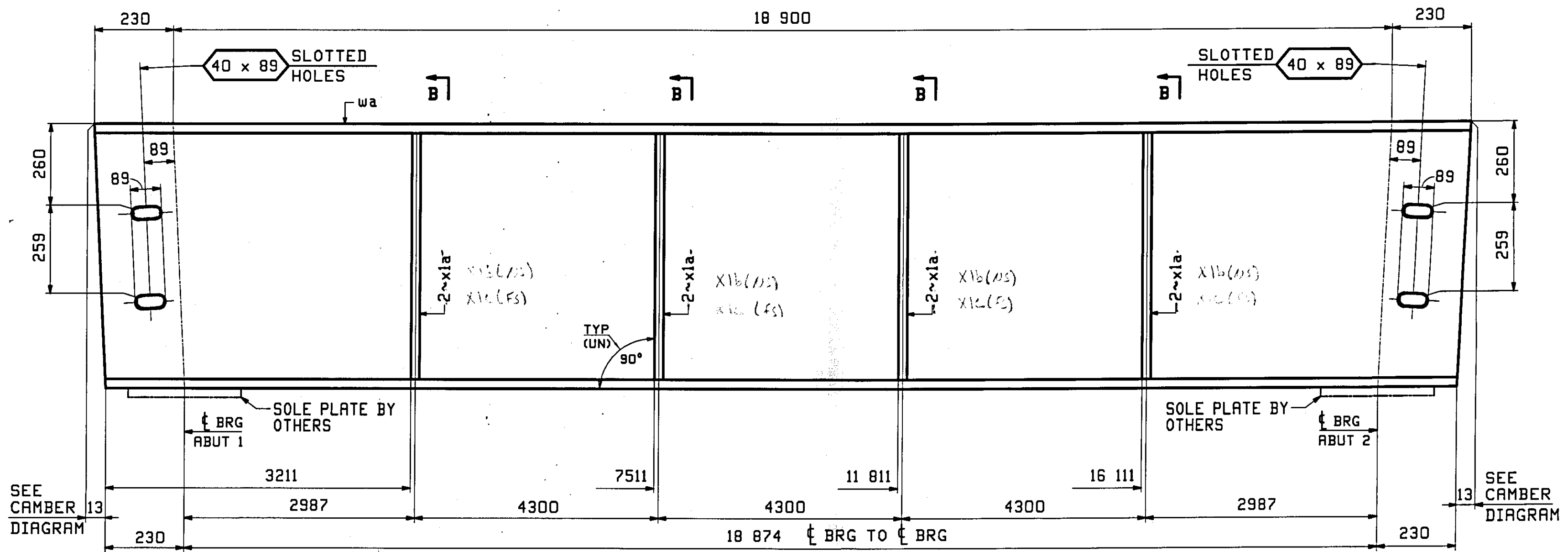
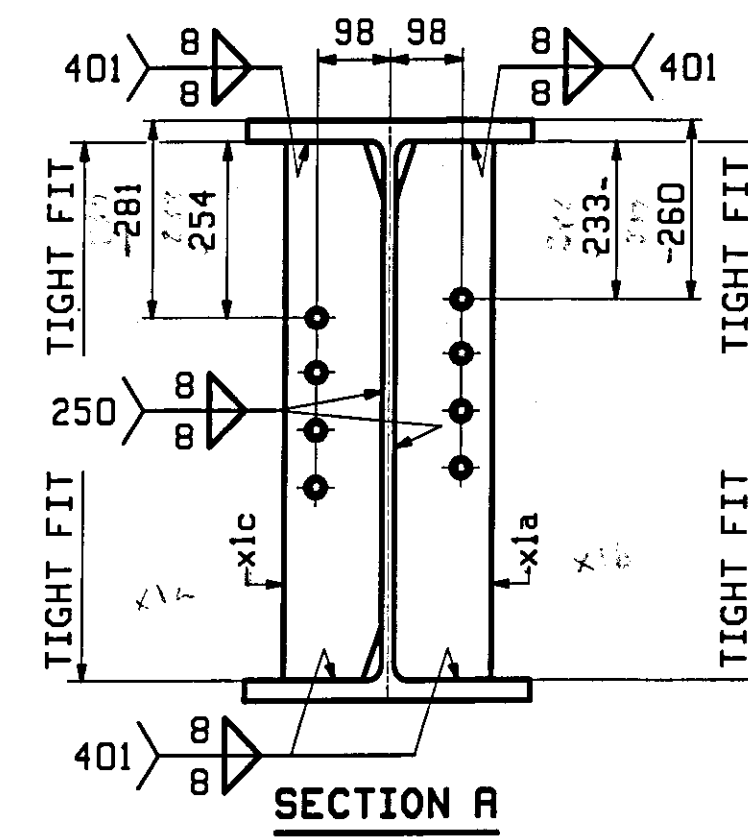
NOTES:
 FOR STRINGER STANDARDS SEE DRAWINGS XI.
 FOR CAMBER DIAGRAM SEE DRAWING C1.
 FOR GENERAL NOTES & WELD PROCEDURES SEE DRAWING GNI.
 H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

JUN 11 2009						
REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
MATERIAL: M270M-345 (UN)		SURFACE PREP. & PAINT: AS NOTED ON GNI		HOLES: 15 16Ø (UN)		SHOP BOLTS: NONE
DESCRIPTION: STRINGERS - 1S1 & 1S5						
CASCO BAY STEEL STRUCTURES, INC. 75 SPRING HILL ROAD SACO, MAINE 04072 PHONE (207) 282-7360 FAX. (207) 282-1179						
STRUCTURE: ROUTE NO: VT 15 BRIDGE NO: BR 67 COUNTY OF CALEDONIA			DRAWN: VNJ CHKD: PCP		DATE: 06/02 06/06 2009	
LOCATION: TOWN OF HARDWICK			JOB NO. 407		DWG NO. 1	
PROJ. NO. BHF 030 - 2 (1B)S			CUSTOMER: BLOW & COTE, INC.		REV. 1	

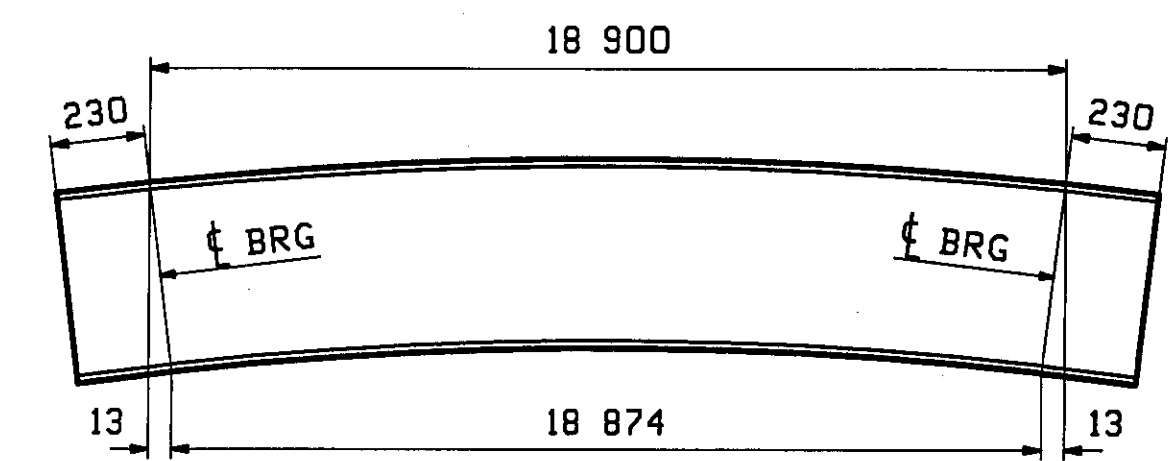
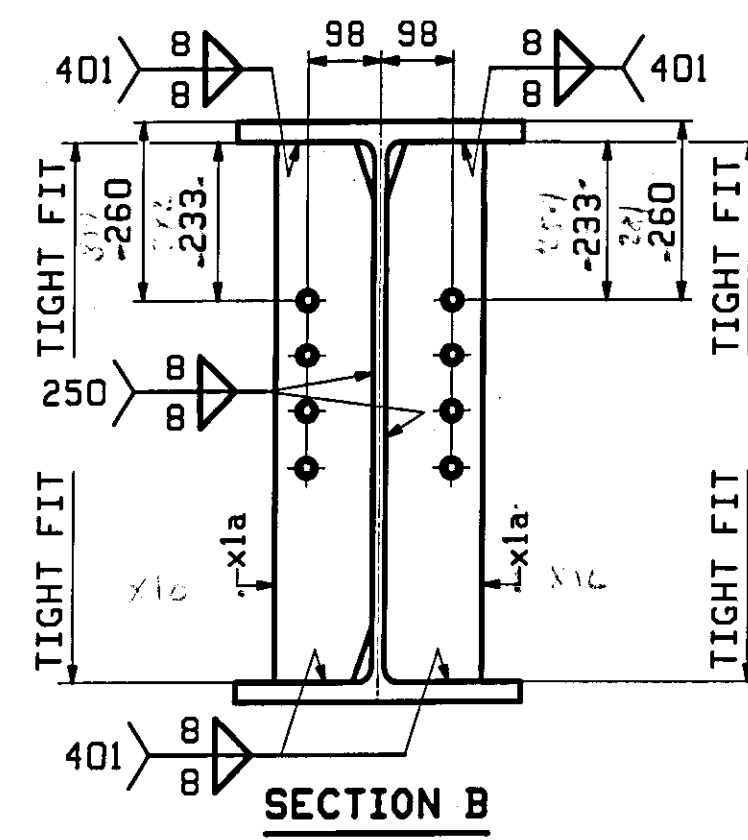
WJF - 5/11/09 - 5:00 PM - 07/28/09 - 11:00 AM - 07/28/09 - 11:00 AM - 07/28/09 - 11:00 AM



ONE - STRINGER - 2S2



ONE - STRINGER - 2S3



ORIENTATION DIAGRAM - 2S2 & 2S3 FOR CAMBER SEE DWG C1

ABM INFO		BILL OF MATERIAL				JOB NO.	DRAWING NO.	REV.						
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH	REMARKS	HT	PROCUREMENT NOTES					
1	252	B	1	wa	W 760x257	19 360	M270M-345T2 (H2-3)							
1	E		4	x1a	PL 13x130	0 719								
1	E		4	x1c	PL 13x130	0 719								
						253								
						1	STRINGER		5052 & 1137 lbs					
						1	B	1	wa	W 760x257	19 360	M270M-345T2 (H2-3)		
						1	E		4	x1a	PL 13x130	0 719		

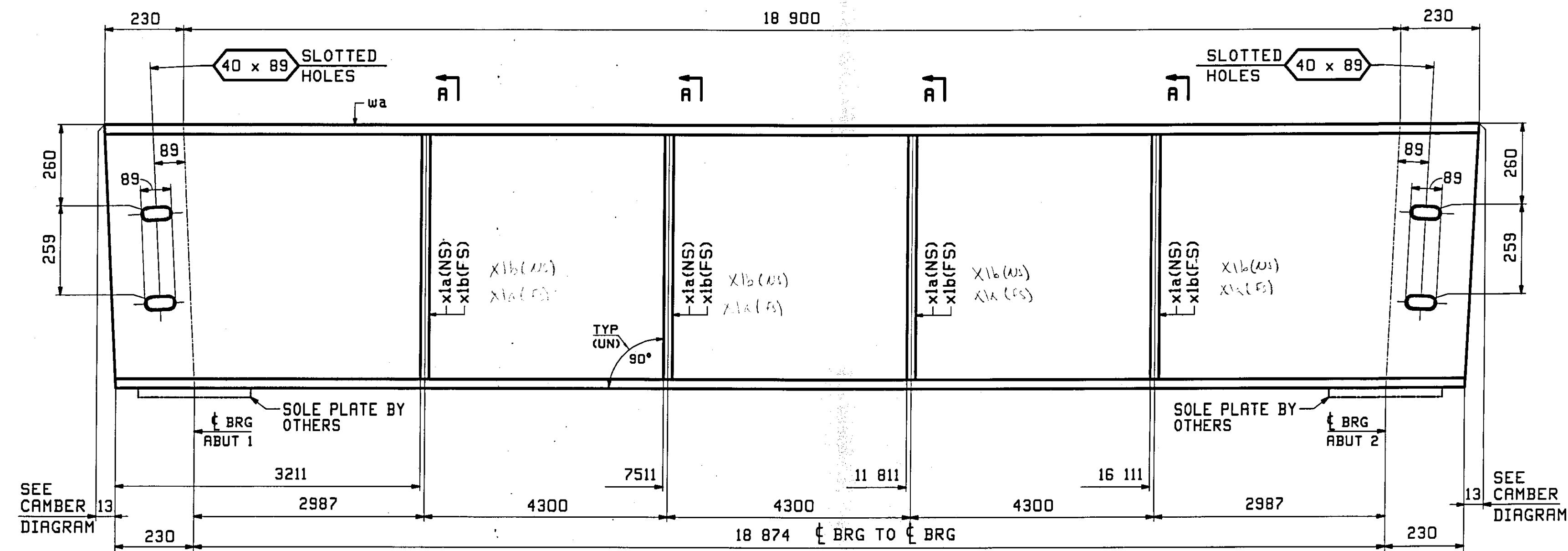
BILL OF MATERIALS NOT CHECKED BY CONTRACTOR

RECEIVED
 OK'D BY: *Dik* OK'D BY: _____
 JUN 15 2009
 BY: *WJ* DATE: 7/1/09

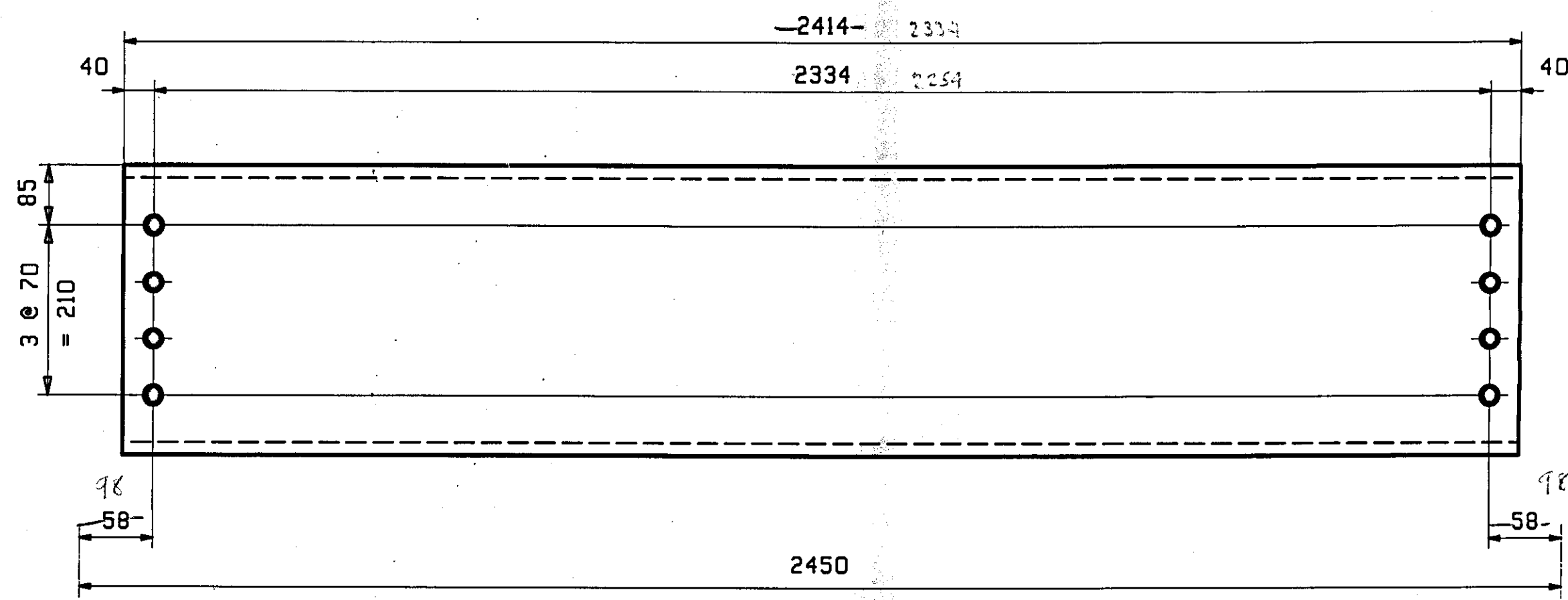
NOTES:
 FOR STRINGER STANDARDS SEE DRAWINGS XI.
 FOR CAMBER DIAGRAM SEE DRAWING C1.
 FOR GENERAL NOTES & WELD PROCEDURES SEE DRAWING GNI.
 H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

JUN 11 2009						
REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
MATERIAL:		SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:		
M270M-345 (UN)		AS NOTED ON GNI	15 16 (UN)	NONE		
DESCRIPTION: STRINGERS - 2S2 & 2S3						
CASCO BAY STEEL STRUCTURES, INC. 75 SPRING HILL ROAD SACO, MAINE 04072 PHONE (207) 282-7360 FAX. (207) 282-1179						
STRUCTURE: ROUTE NO: VT 15 BRIDGE NO: BR 67 COUNTY OF CALEDONIA			DRAWN:	DATE:		
			VWJ	06/02		
			CHKD:	DATE:		
			PCP	06/06 2009		
LOCATION: TOWN OF HARDWICK			JOB NO.		DWG NO.	
PROJ NO. BHF 030 - 2 (18)S			407		2	
CUSTOMER: BLOW & COTE, INC.			REV. Δ			

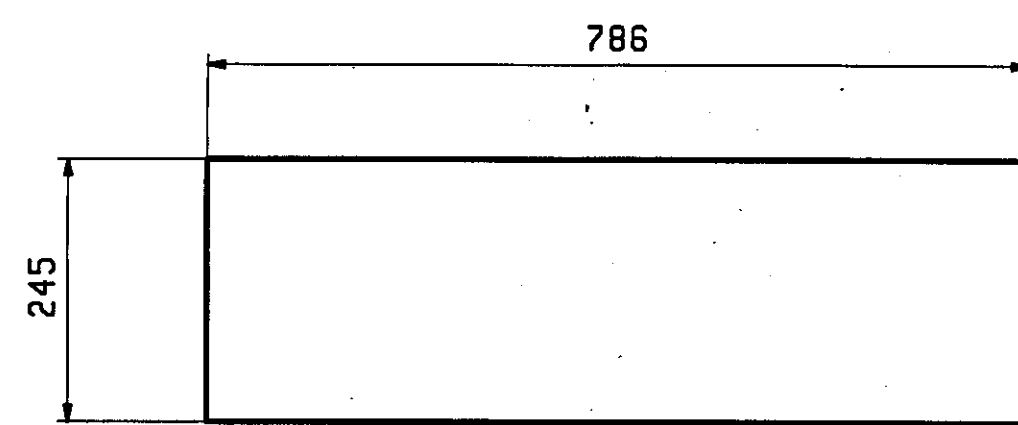
VWJ 5/11/09 11:20 AM



ONE - STRINGER - 3S3 354

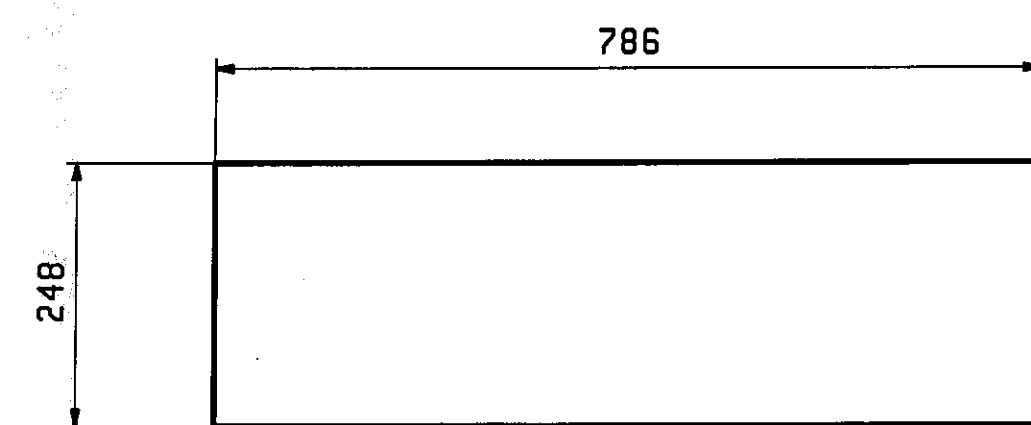


16 ~ INT. DIAPHRAGMS - 3D1



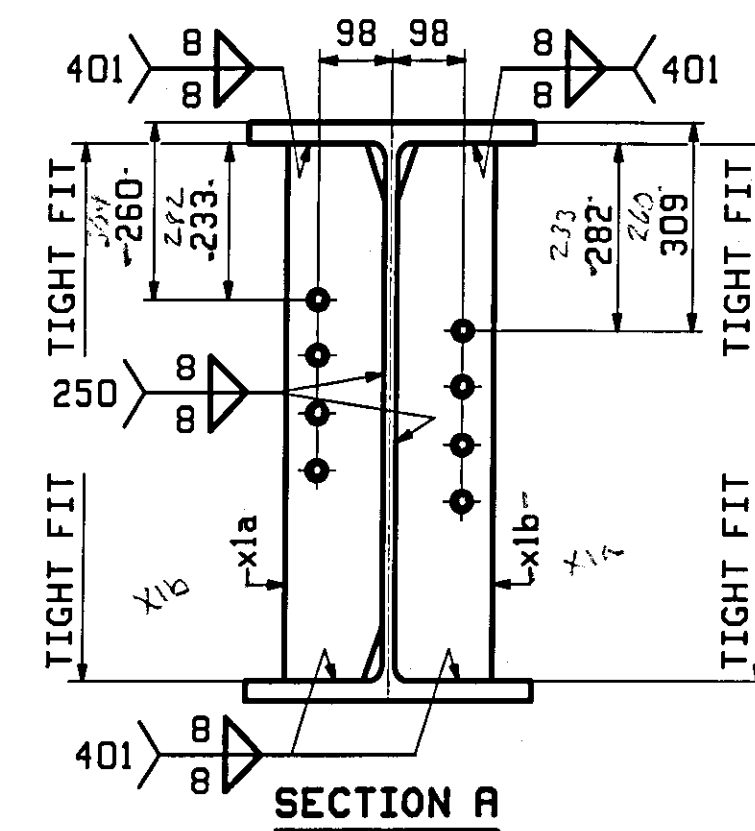
5 ~ BLOCKOUT PLATE - 3M1

@ ABUT 1



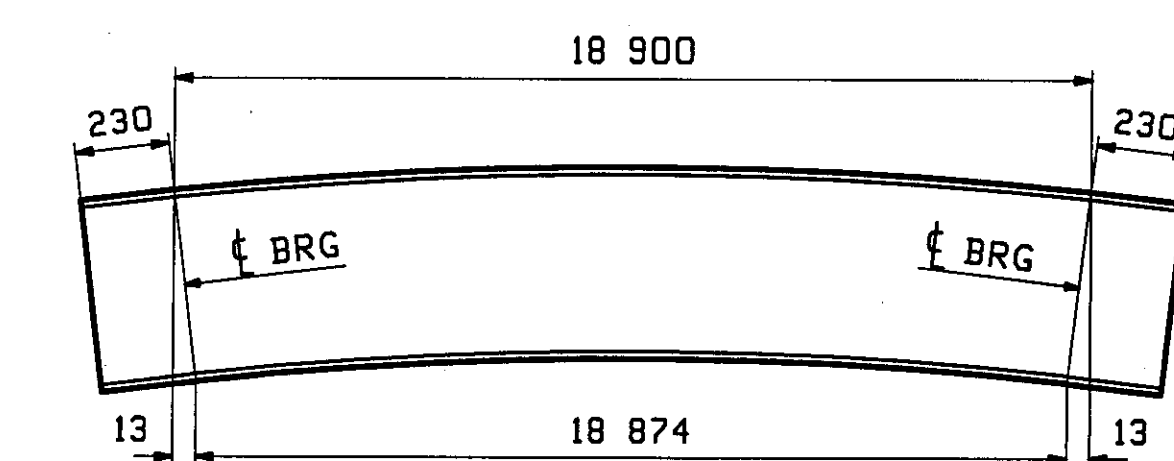
5 ~ BLOCKOUT PLATE - 3M2

@ ABUT 2



ABM INFO		SHIP	BILL OF MATERIAL				JOB NO.	DRAWING NO.	REV.
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH	REMARKS	MT	PROCUREMENT NOTES
		353	1	wa	STRINGER				7050 LBS
1	B					19 360	M270M-345T2 (H2-3)		
1	E		4	x1a	PL 13x130	0 719			
1	E		4	x1b	PL 13x130	0 719			
1	J		16	3D1	C 380x50.4	2 414			
1	M		5	3M1	PL 6x245	0 786			
1	M		5	3M2	PL 6x248	0 786			

BILL OF MATERIALS LIST CREATED BY AUTOCAD



ORIENTATION DIAGRAM - 252-&-253- 354
FOR CAMBER SEE DWG C1

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0						
MATERIAL: M270M-345 (UN)						
SURFACE PREP. & PAINT: AS NOTED ON GNI			HOLES: 15 16Ø (UN)		SHOP BOLTS: NONE	
DESCRIPTION: STRINGER - 3S4 & DIAPH 3D1						
CASCO BAY STEEL STRUCTURES, INC. 75 SPRING HILL ROAD SACO, MAINE 04072 PHONE (207) 282-7360 FAX. (207) 282-1179						
STRUCTURE: ROUTE NO: VT 15 BRIDGE NO: BR 67 COUNTY OF CALEDONIA					DRAWN: VWJ	DATE: 06/02
					CHKD: PCP	DATE: 06/06 2009
LOCATION: TOWN OF HARDWICK						JOB NO. 407
PROJ NO. BHF 030 - 2 (18)S						DWG NO. 3
CUSTOMER: BLOW & COTE, INC.						REV. 1

RECEIVED
OK'D BY: *dk*
DATE: JUN 15 2009
BY: *WY* DATE: 7/16/09

NOTES:
FOR STRINGER STANDARDS SEE DRAWINGS XI.
FOR CAMBER DIAGRAM SEE DRAWING C1.
FOR GENERAL NOTES & WELD PROCEDURES SEE DRAWING GNI.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

WJ 5/11/09 8:00 AM 01/13/09 11:00 AM



State of Vermont
PDD/Structures Design Section
National Life Building – Drawer 33
Montpelier, VT 05633-5001
www.not.state.vt.us

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

Agency of Transportation

DATE: October 16, 2009

Project Name: Hardwick Project #: BHF 030 – 2(18)S

Structure Identification: VT 15 B 67

The following Aluminum Bridge & Approach Railing details Item 900.64, Special Provision Aluminum Approach Railing, Anodized, Bridge Railing, Anodized 3 Rail Aluminum, Bridge railing, Anodized Aluminum/Pedestrian for the above project. Vendor's Job # AB07010 – 1001 transmitted with your letter dated 09/24/09 have been reviewed and are being returned herewith.

Sheets: E 1, E 2, F 1, F 3, F 4, F 5, F 6 and welding procedures are approved.

Sheets: E 3, E 4 & F 2 approved "as noted".

Upon receipt of these "as noted" plans, please make appropriate changes and submit white prints for our use in the record plans for this project.

You must provide notice to our fabrication inspector, Jeff Clark, as to the date fabrication represented by these drawings will begin. That notice must be received and acknowledged at least seven days prior to that date, as per Specification 506.03. Jeff may be contacted by phone at (802)828-0044 or email at jeff.clark@state.vt.us. Any material fabricated prior to the notification date is subject to rejection without further cause.

Sincerely,

Danny R. Landry
Project Manager

Attachments

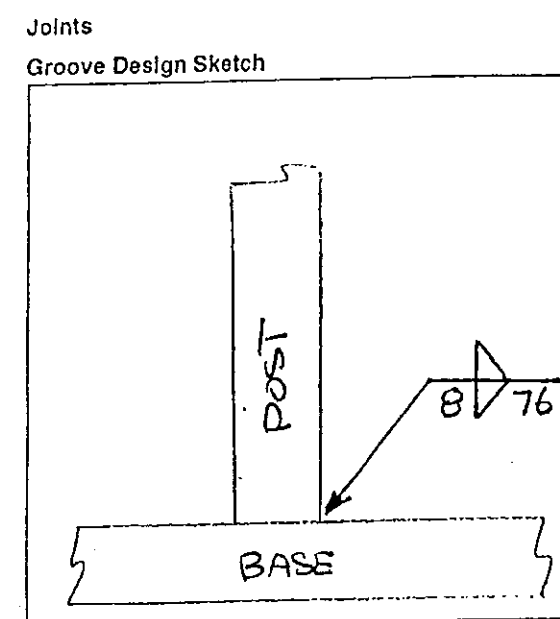
- cc: Resident Engineer w/prints Chris Craig
 Shop Inspector w/prints Jeff Clark
 Contractor w/prints Blow & Cote, Inc.
 Subcontractor – letter w/prints F. R. Lafayette, Inc.
 Construction Division – letter only
 Materials & Research Section (C&IA Unit) – letter only
 Files Structures



WELDING PROCEDURE SPECIFICATION (WPS)

Welding Procedure Specification No. 2009-01 Date 8/13/2009 Approved Philippe Lefebvre
Revisions _____ Date _____ Approved _____

Supporting PQR Numbers 40



Filler Metal
F-No. 23 AWS No. ER 5356
Size of electrode 3/64"
Type of electrode ALUMINUM
Other _____

Shielding Gas
Shielding gas(es) HELIUM - ARGON
Percent composition 75% - 25%
Flow rate 40 TO 75 CFH
Other _____

Backing
Type N/A
Permanent -
Removed -
Other -

Position
Position of groove FILLET - 2F
Welding progression FOREHAND
Other _____

Base Metals
M No. 23 Thickness 3mm to 25mm
Alloy and Temper 6061-T6

Preheat
Preheat temperature 150° F
Interpass temperature -

Form E1a
RECEIVED
CK'D BY _____
DATE SEP 29 2009
APPROVED BY [Signature] DATE 8/13/09
RECEIVED
CK'D BY [Signature] DATE AUG 24 2009
APPROVED BY [Signature] DATE 8/13/09
BY [Signature] DATE 10/14/09

AUCIELLO IRON WORKS INC.

MISCELLANEOUS METALS FABRICATOR

WELDING PROCEDURE SPECIFICATION (WPS) 2009-01

Cleaning
Initial cleaning oxide SS WIRE BRUSH
Initial cleaning oil and dirt SOLVENT
Interpass cleaning ---

Postweld Heat Treatment
Original temper _____
Final temper _____
Temperature _____
Time _____
Quench _____

Process(es)
Process GMAW Type SEMI-AUTO
Process _____ Type _____
Electrode (GTAW) _____

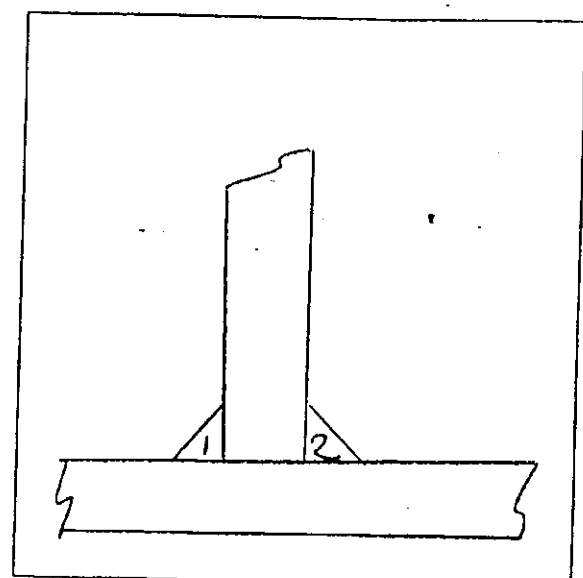
Technique
Stringer or weave bead STRINGER
Orifice or gas cup size 5/8"
Oscillation _____
Contact tube to work distance 1/2"
Single pass or multipass SINGLE per side
Tungsten extension _____
Method of backgouging _____
Other _____

*Manual, automatic, polarity, pulse, etc.

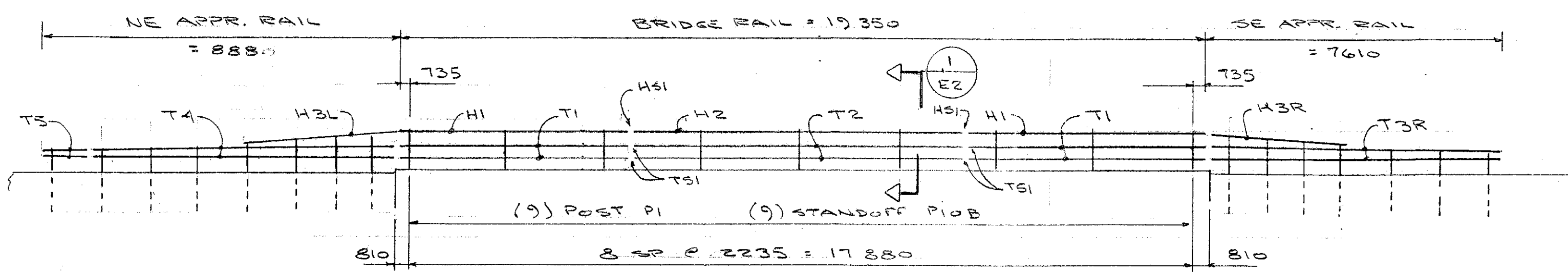
Pass No.	Welding Process	Amps	Volts	Travel Speed
<u>ALL</u>	<u>GMAW</u>	<u>148-200</u>	<u>22-30</u>	<u>24-36</u>

VIRAK
RECEIVED
CK'D BY _____ OK'D BY JAC

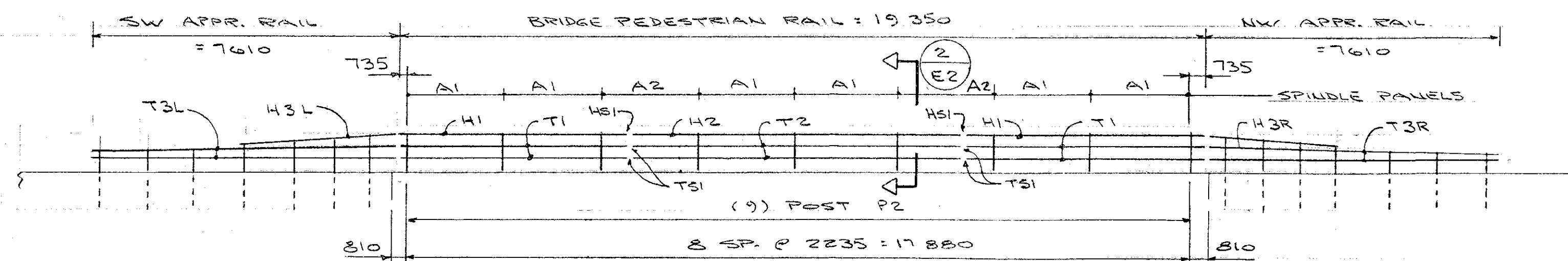
AUG 24 2003
REVIEWED _____ APPROVED ✓
BY Virak DATE 8/25/03



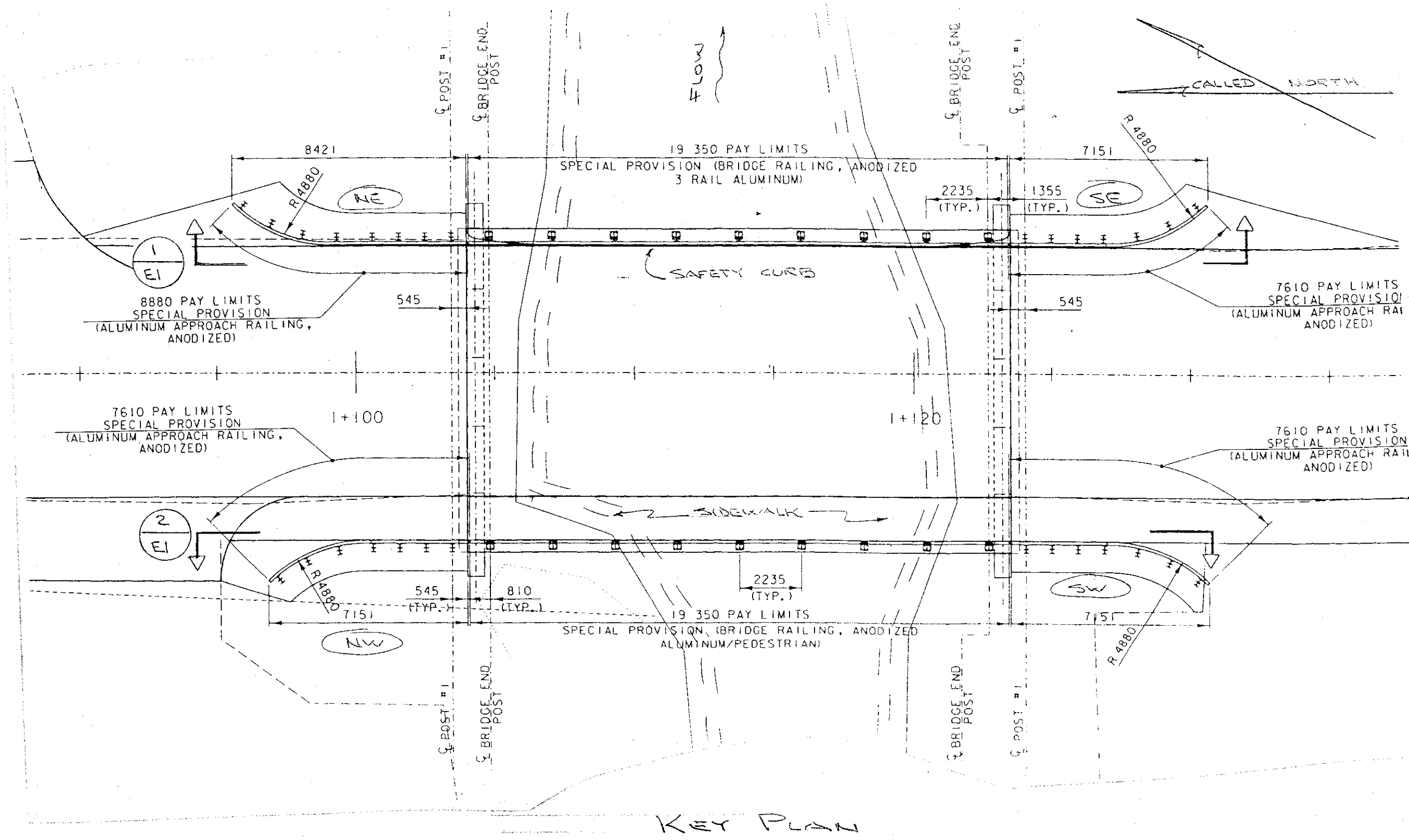
Sketch of Welding Sequence



ELEV. $\frac{1}{11}$
SAFETY CURB



ELEV. $\frac{2}{11}$
SIDEWALK



KEY PLAN

JOB # AB07010

QUAN	MK	DESCRIPTION	QUAN	MK	DESCRIPTION	HANDRAIL		
1	A11L	STANDOFF	1	11L	APPROACH POST	QUAN	MK	LGTH
1	A12L		1	12L		4	H1	6120
1	A13L		1	13L		2	H2	7070
1	A14L		1	14L		2	H3R	3572
1	A15L		1	15L		2	H3L	3580
1	A16L		1	16L		TRAFFIC RAIL		
1	A17L		1	17L		QUAN	MK	LGTH
1	A11R		1	11R		8	T1	6120
1	A12R		1	12R		4	T2	7070
1	A13R		1	13R		4	T3R	7604
1	A14R		1	14R		2	T3L	7604
1	A15R		1	15R		2	T4	7610
1	A16R		1	16R		2	T5	1244
1	A17R		1	17R				
1	A18R		1	18R				
1	A21L		1	A21L		18		ANCHOR BOLT ASSY
1	A22L		1	22L		90		M20 X 2.5 GALV HEX NUT
1	A23L		1	23L		90		M20 GALV. FLAT WASHER
1	A24L		1	24L		68		#4 CLAMP BAR
1	A25L		1	25L		188		#1 CLAMP BAR
1	A26L		1	26L		216		M13 X 2 X 20 S.S. HEX HD CAP SCREW
1	A27L		1	27L		376		M13 X 2 X 25 S.S. HEX HD CAP SCREW
1	A21R		1	21R		256		M13 X 2 X 38 S.S. HEX HD CAP SCREW
1	A22R		1	22R		256		M13 X 2 S.S. HEX NUT
1	A23R		1	23R		208		M13 S.S. FLAT WASHER
1	A24R		1	24R		348		M13 ALUM. FLAT WASHER
1	A25R		1	25R		208		"L" BOLT
1	A26R		1	26R		18		POST PAD
1	A27R		1	27R		80		M 6 X 1 X 19 S.S. SET SCREW
9	P10B		9	P1	BRIDGE POST			
8	TS1	TRAFFIC RAIL SPLICE	9	P2	BRIDGE POST			
2	TS2							
2	TS3		6	A1	SPLIDLE PANEL			
1	TS4		2	A2	SPLIDLE PANEL			
2	TS5							
2	TS6							
1	TS7							
4	HS1	HANDRAIL SPLICE						
2	HS2							
2	HS3							

Revised 10-21-01 CFS

DRG BY: _____ OKD BY: _____
 DATE: 9/24/09
 10/14/09

AUCIELLO IRON WORKS INC
 560 MAIN ST. HUDSON, MA (978) 568-8382

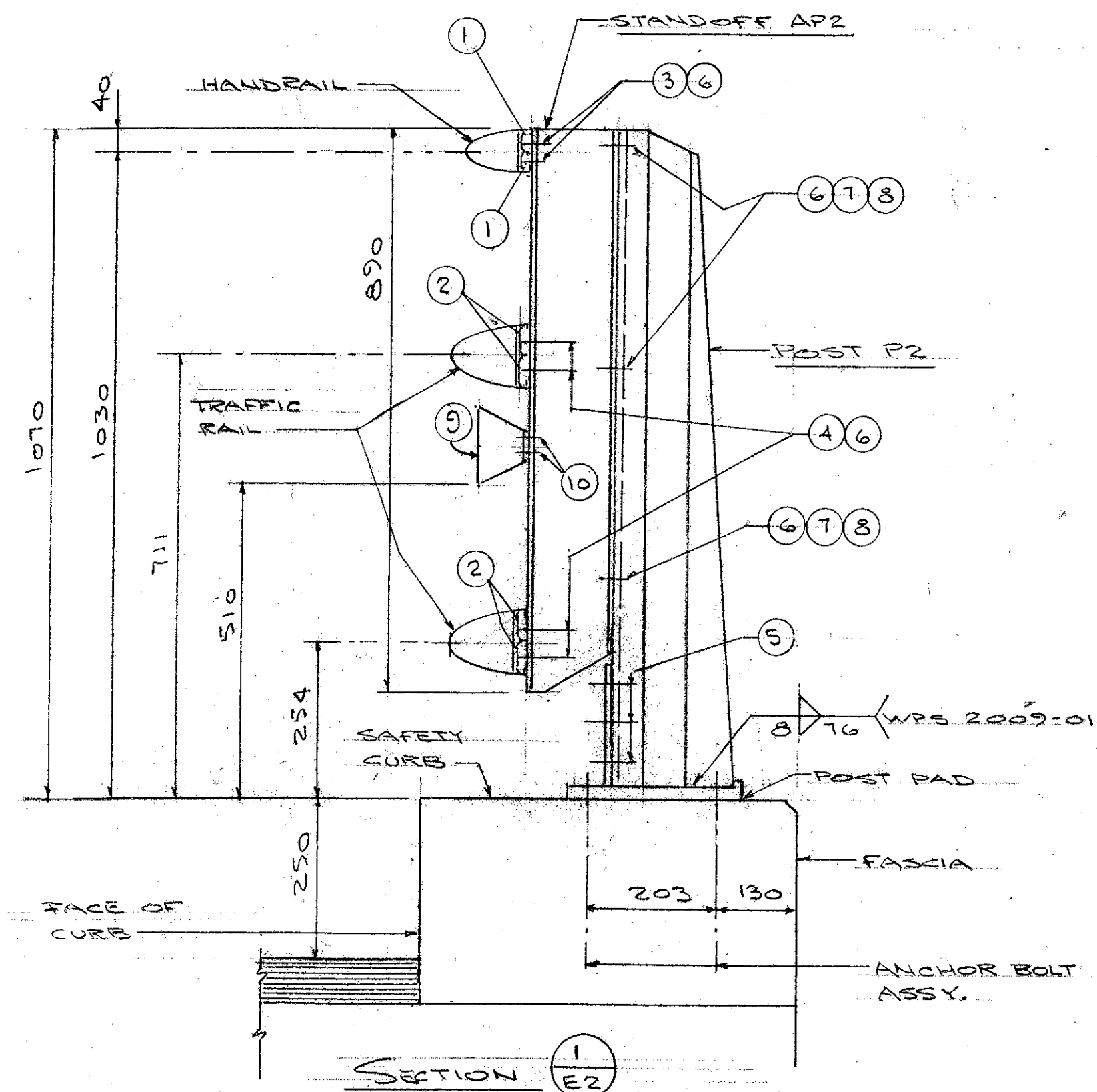
VT. AGENCY OF TRANSPORTATION
 HARDWICK #BHF 030-2 (18)S
 BRIDGE #67
 VT. 15' OVER COOPER BROOK

ALUM. BRIDGE & APPROACH RAILING
 SURFACE PREP: NONE FINISH: BLACK ANODIZE
 FOR: F.R. LAFAYETTE, INC.

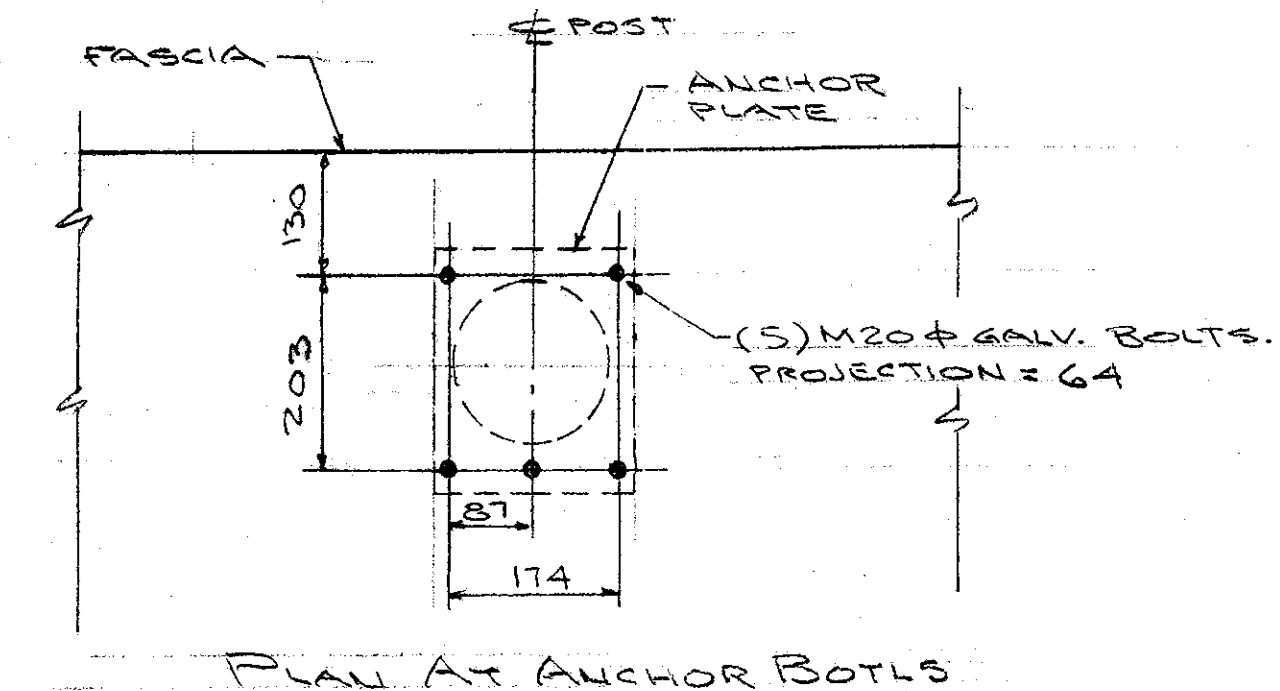
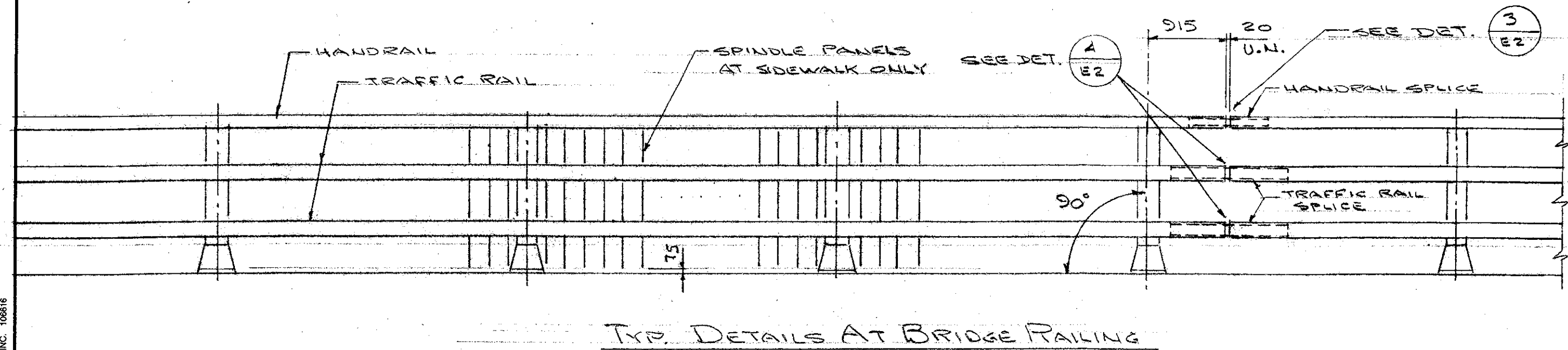
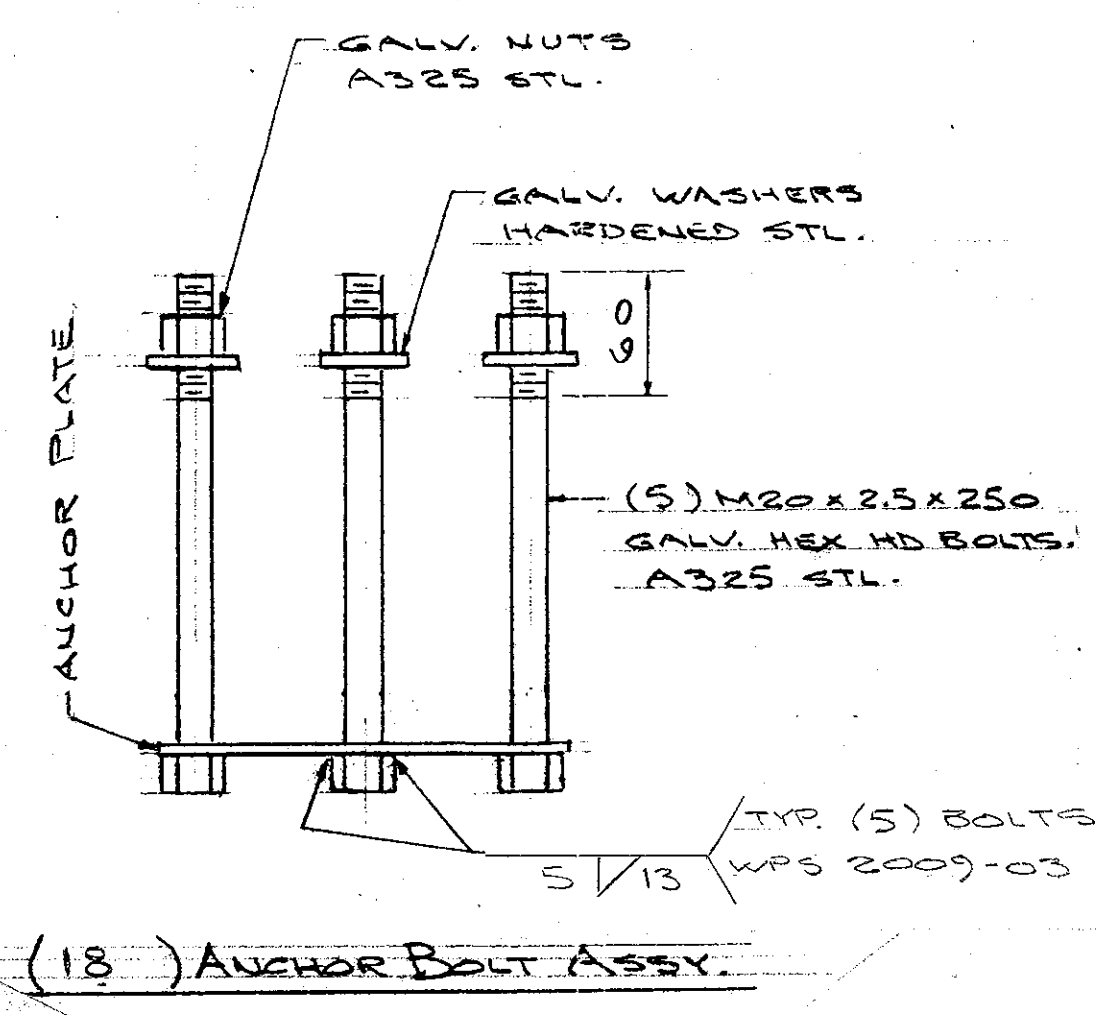
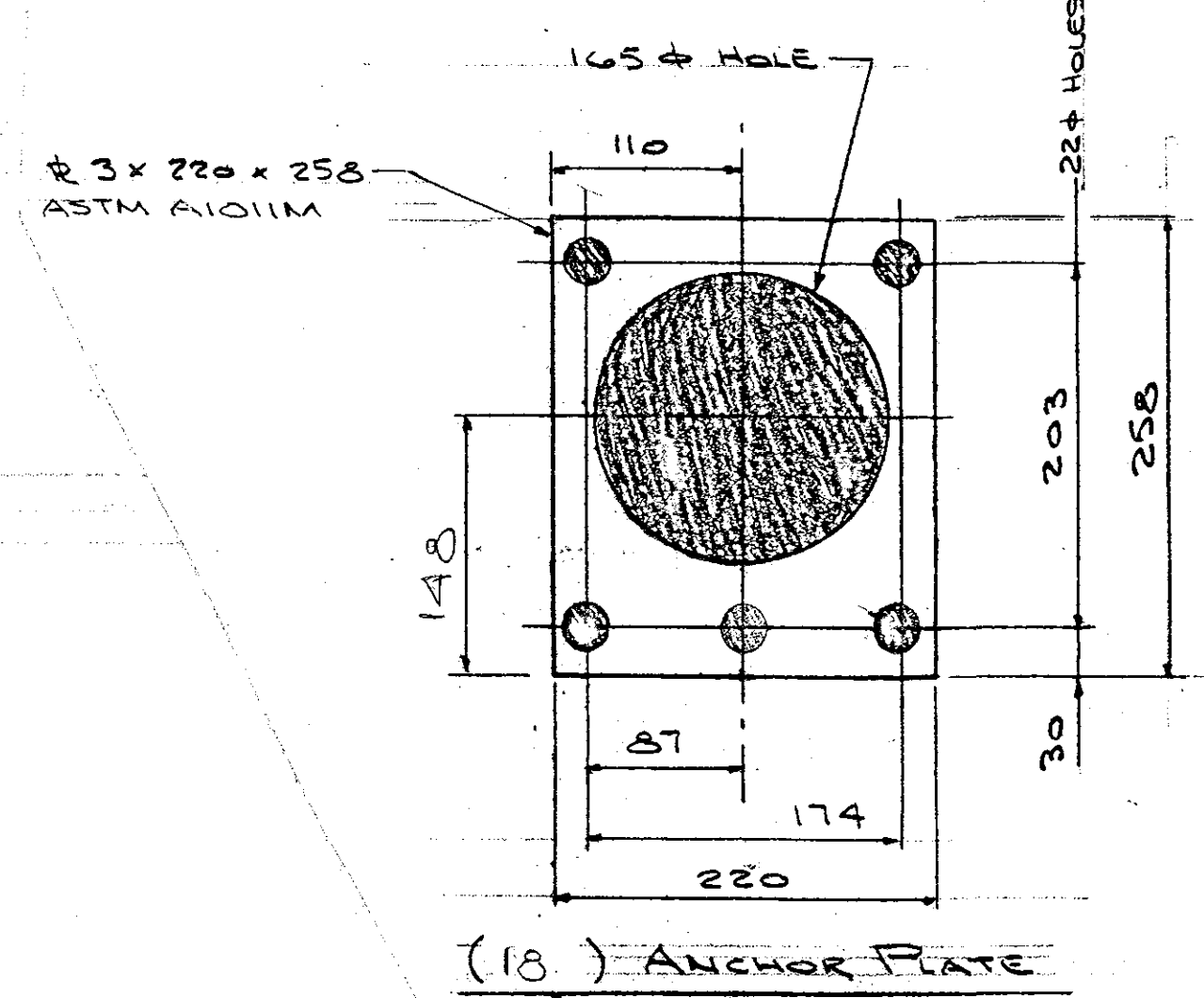
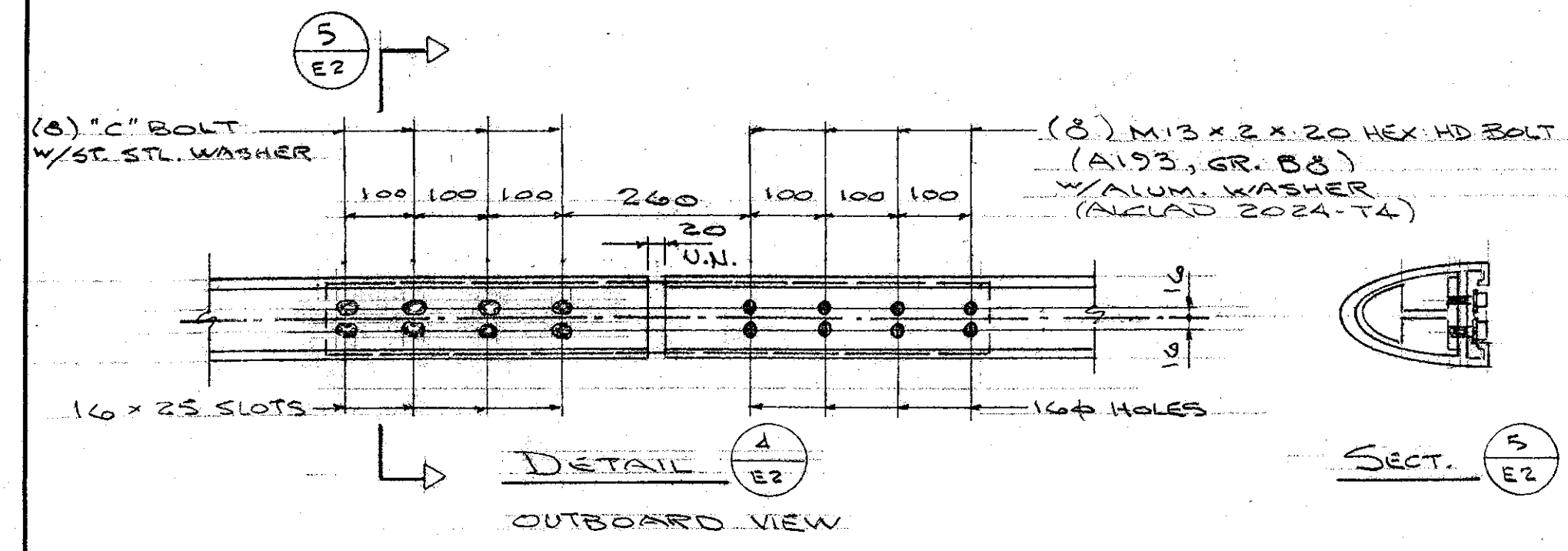
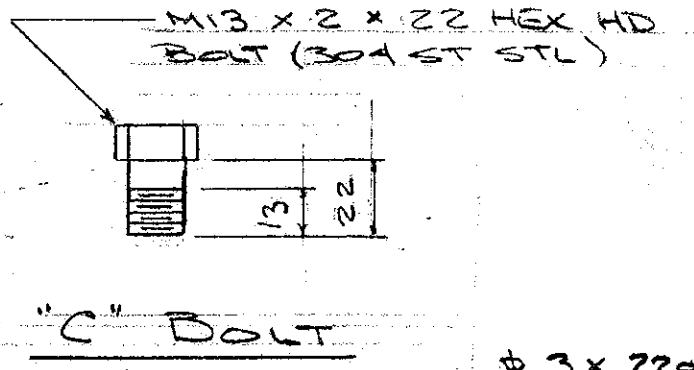
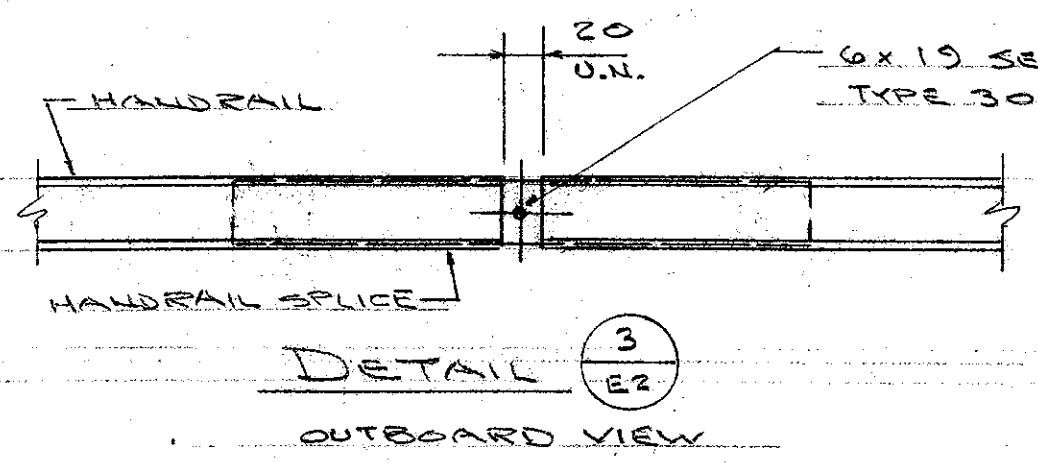
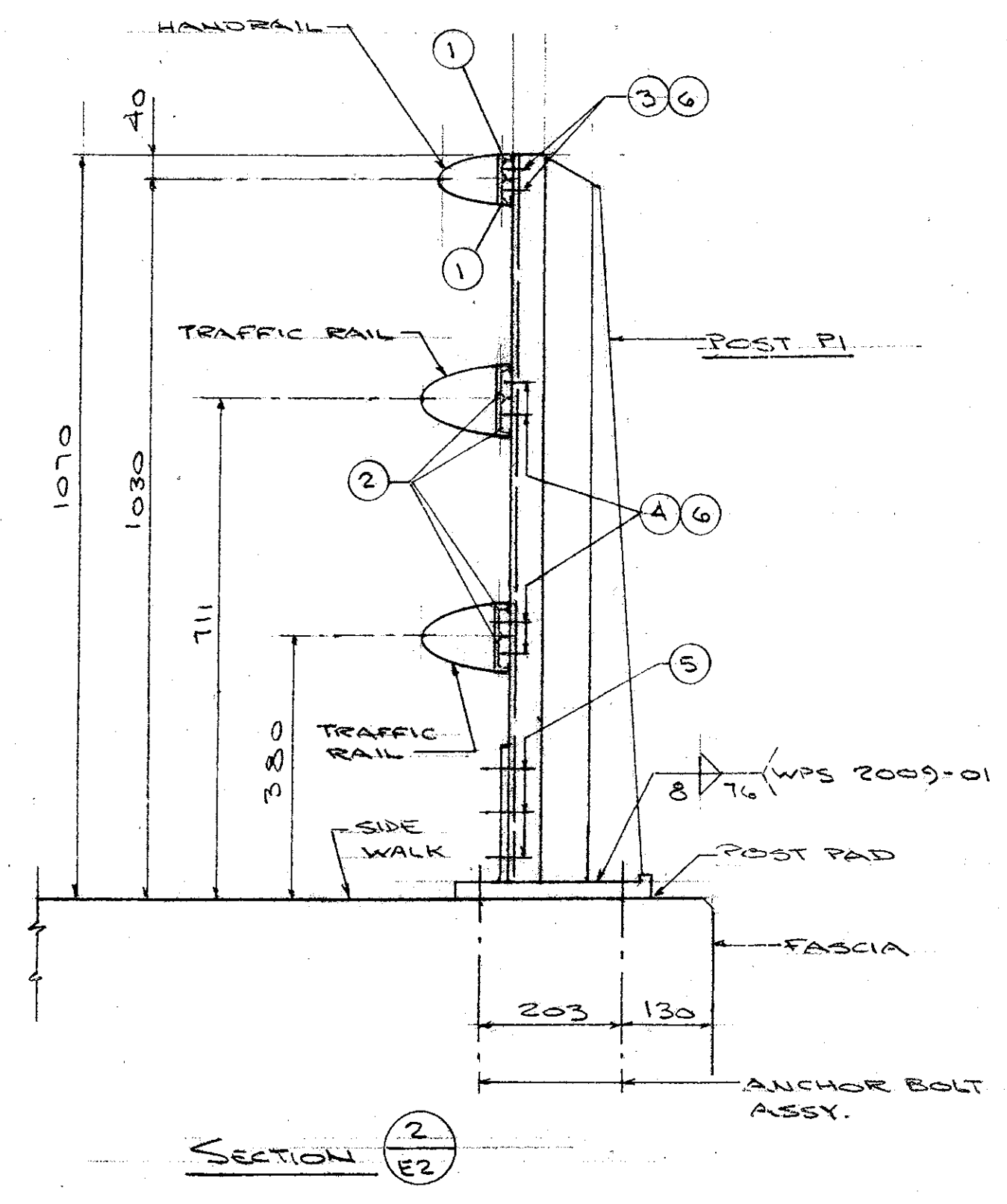
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1	9/14/09	FOR APPROVAL	B

ISSUE DATE DESCRIPTION BY

DR. LUM 9-3-09
 CHK. E 9-4-09
 JOB NO. AB07010-1001
 DWG. NO. BR-2965
 SHEET E1 OF 4



- 1 #4 CLAMP BAR
- 2 #1 CLAMP BAR
- 3 M13 x 2 x 20 HEX HD CAP SCREW (A193, GRADE B8)
- 4 M13 x 2 x 25 HEX HD CAP SCREW (A193, GRADE B8)
- 5 22 DIA. ALUM. RIVET (6061-T6), BUTTON HD., CONE POINT, COLD DRIVEN.
- 6 ALUM. WASHER 27 O.D. x 14 I.D. x 2.3 THK. (ALCLAD 2024-T4)
- 7 M13 x 2 x 38 HEX HD CAP SCREW (304 ST. STL.)
- 8 M13 x 2 HEX NUT (304 ST. STL.)
- 9 REFLECTORIZED DELINEATOR (WHITE) PER SPECS. LOCATE EVERY 9M, OR CLOSEST POST. TYPICAL AT BRIDGE RAIL & APPROACH RAIL
- 10 #8 x 19 ST STL SELF-TAPPING SCREW. DRILL POSTS IN FIELD.



RECEIVED
 ORDER BY: _____
 DATE: 10/14/09

DIM'S. ARE GIVEN IN MILLIMETERS

AUCIELLO IRON WORKS INC
 560 MAIN ST. HUDSON, MA (978) 568-8382

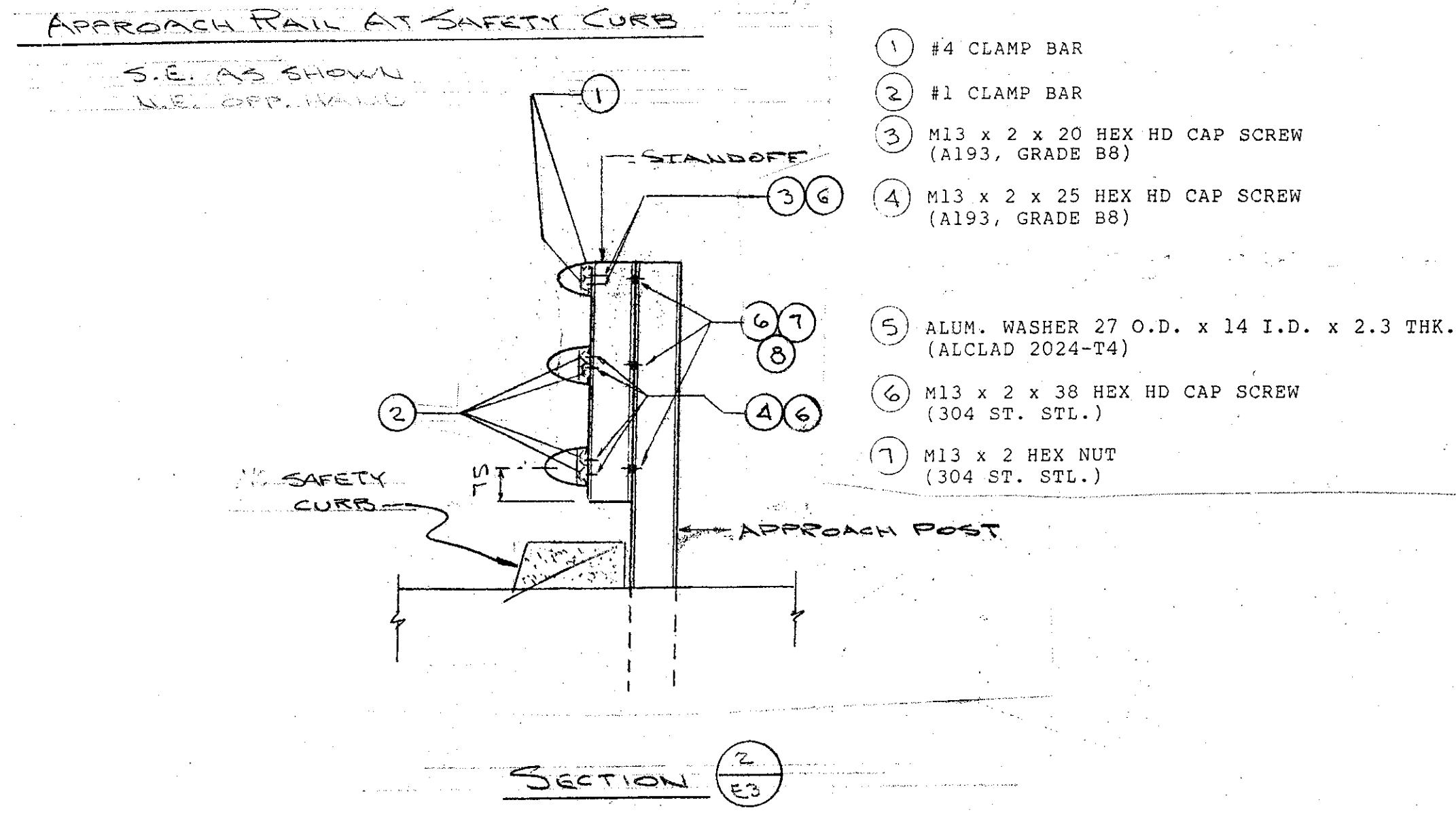
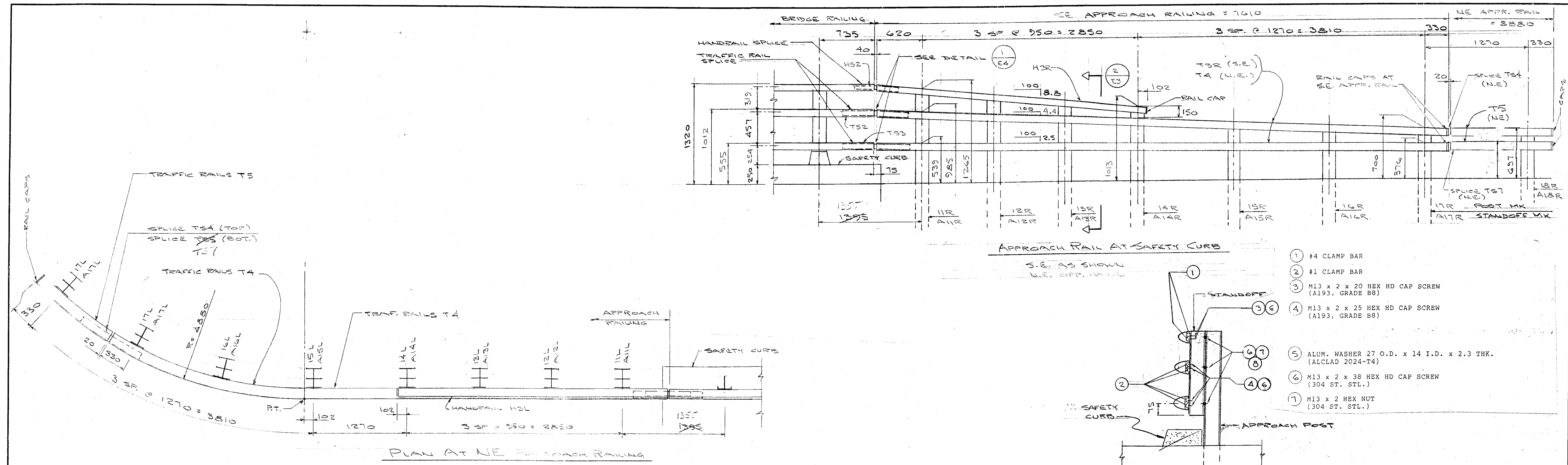
VT. AGENCY OF TRANSPORTATION
 HARDWARE # SHF 030-2(18)S
 BRIDGE # 67
 VT. 15 OVER COOPER BROOK

ALUM. BRIDGE RAILING

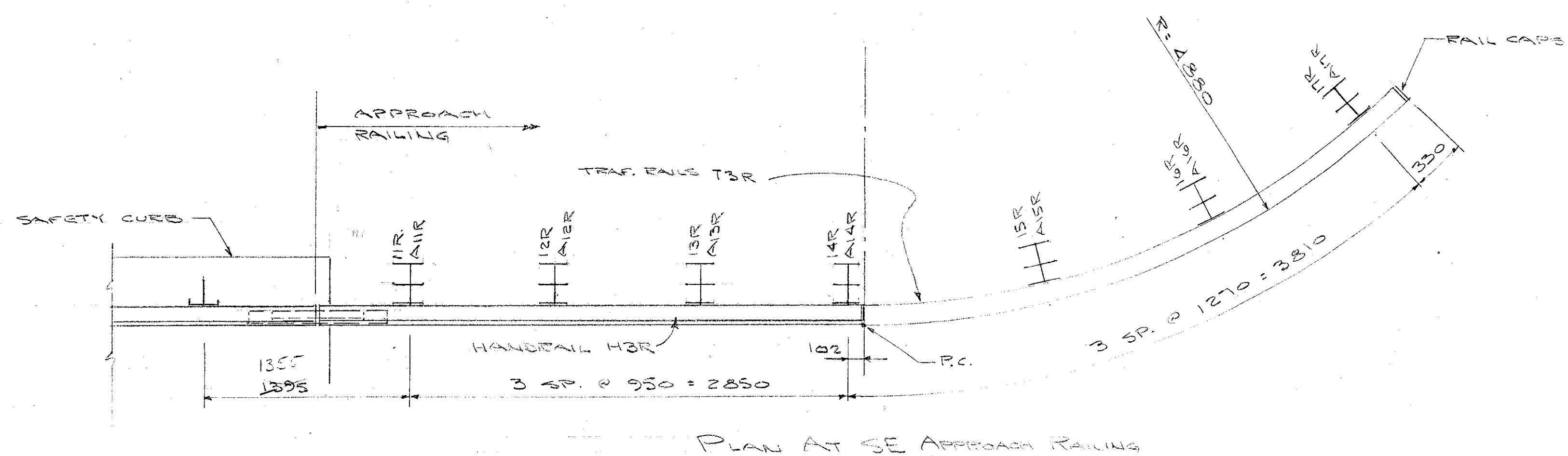
SURFACE PREP: NONE FINISH: BLACK ANODIZE

FOR: F.R. LAFAYETTE, INC.
 DR: WM 9-3-09 DWG. NO.
 CHK: B 9-4-09 BR-2965
 JOB NO.
 AS07010-1001 SHEET E2 OF 4

ISSUE	DATE	DESCRIPTION	BY
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1	9/1/09	FOR APPROVAL	

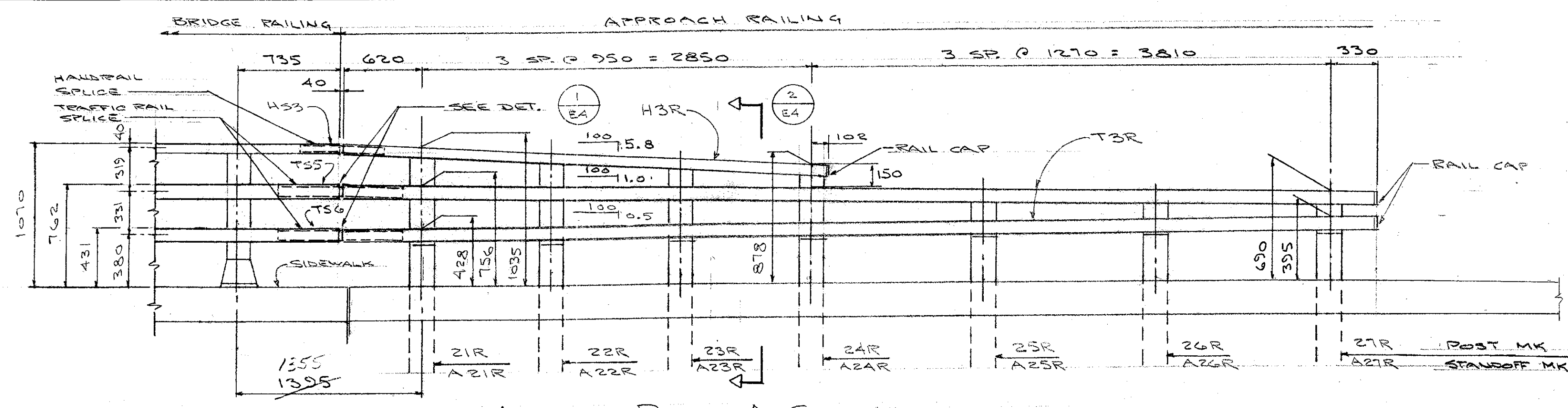


NOTE
DIM'S ARE GIVEN ALONG
NOSE OF TRAFFIC RAIL



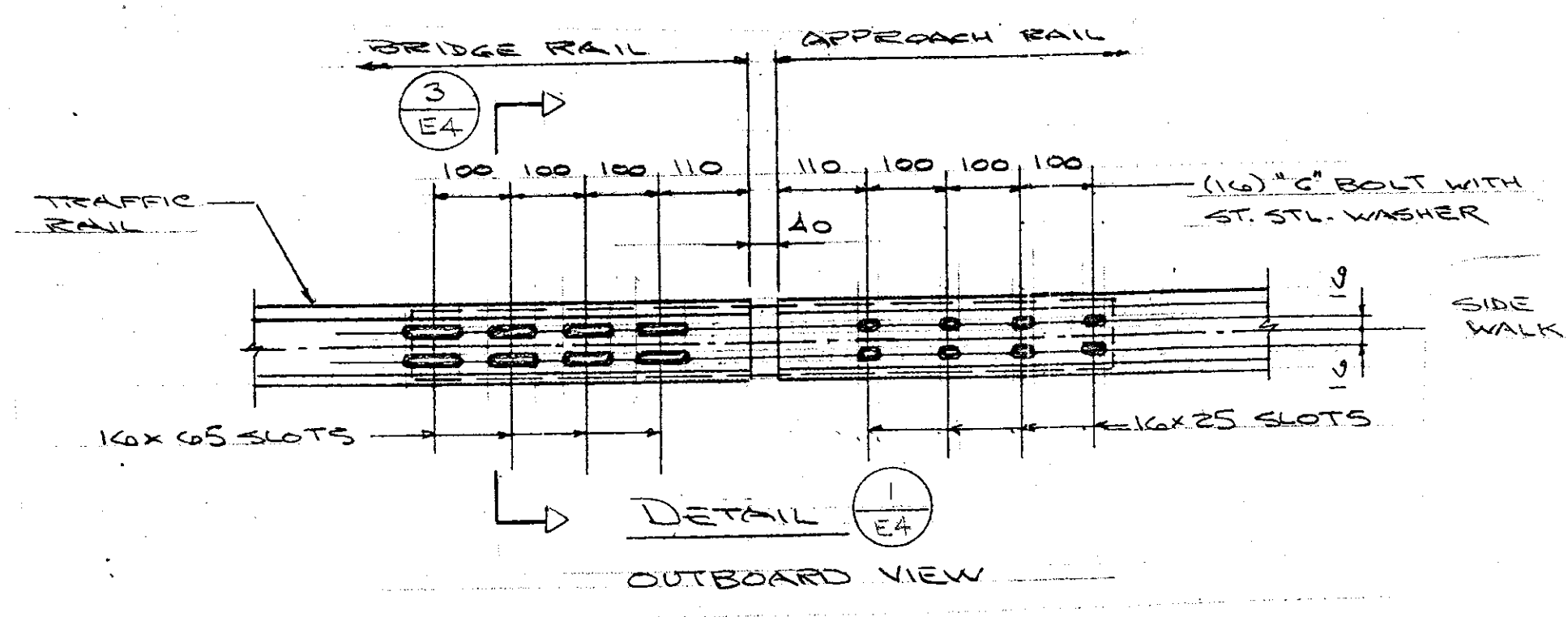
REVISIONS
 1. 02/22/09
 2. 02/22/09
 3. 02/22/09
 4. 02/22/09
 5. 02/22/09
 6. 02/22/09
 7. 02/22/09
 8. 02/22/09
 9. 02/22/09
 10. 02/22/09

DIM'S ARE GIVEN IN MILLIMETERS	
AUCIELLO IRON WORKS INC 560 MAIN ST. HUDSON, MA (978) 568-8382	
VT AGENCY OF TRANSPORTATION HARDWICK # BHP 030-2(18)S BRIDGE # 67	
VT 15 OVER COOPER BROOK	
APPROACH RAIL AT SAFTY CURB	
SURFACE PREP: NONE	FINISH: BLACK ANODIZE
FOR: F. R. LAFAYETTE, INC.	
DR: WM 9.9.09	DWG. NO. BR-2965
CHK:	JOB NO. A6010-1001
1 9/25/09 FOR APPROVAL	BY: [Signature]
ISSUE DATE DESCRIPTION	SHEET E3 OF 4



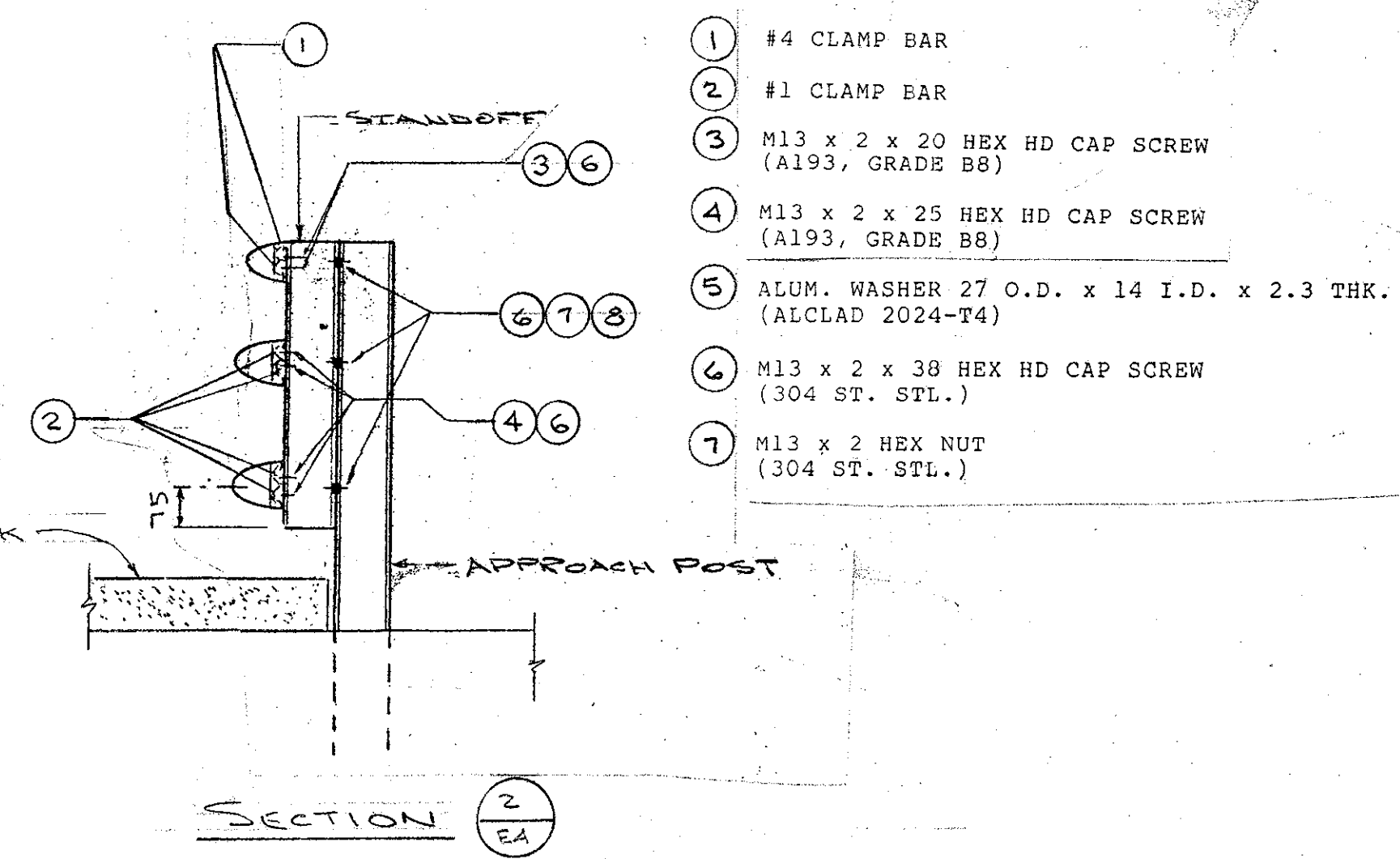
APPROACH RAILING AT SIDEWALK

NW AS SHOWN
SW OPP. HAND



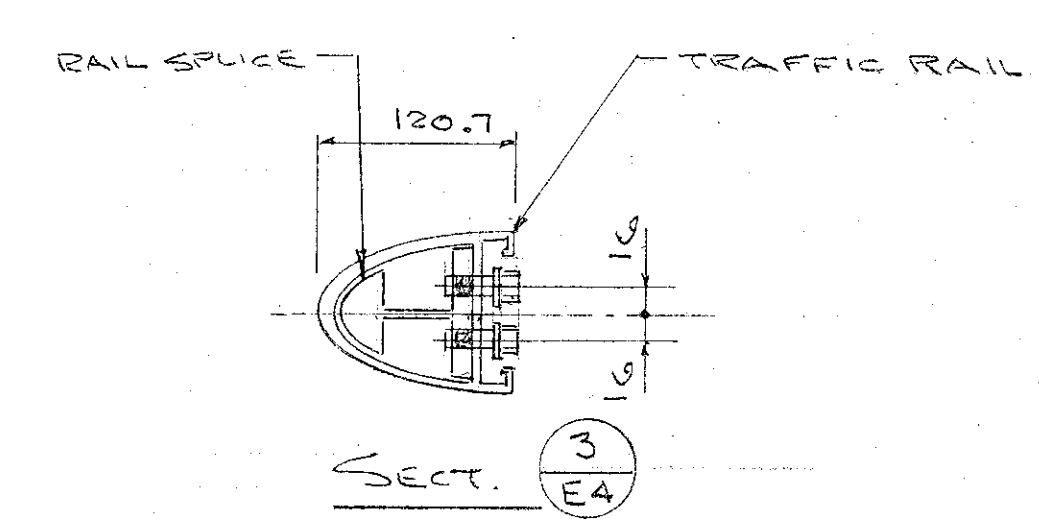
DETAIL 3 EA

OUTBOARD VIEW



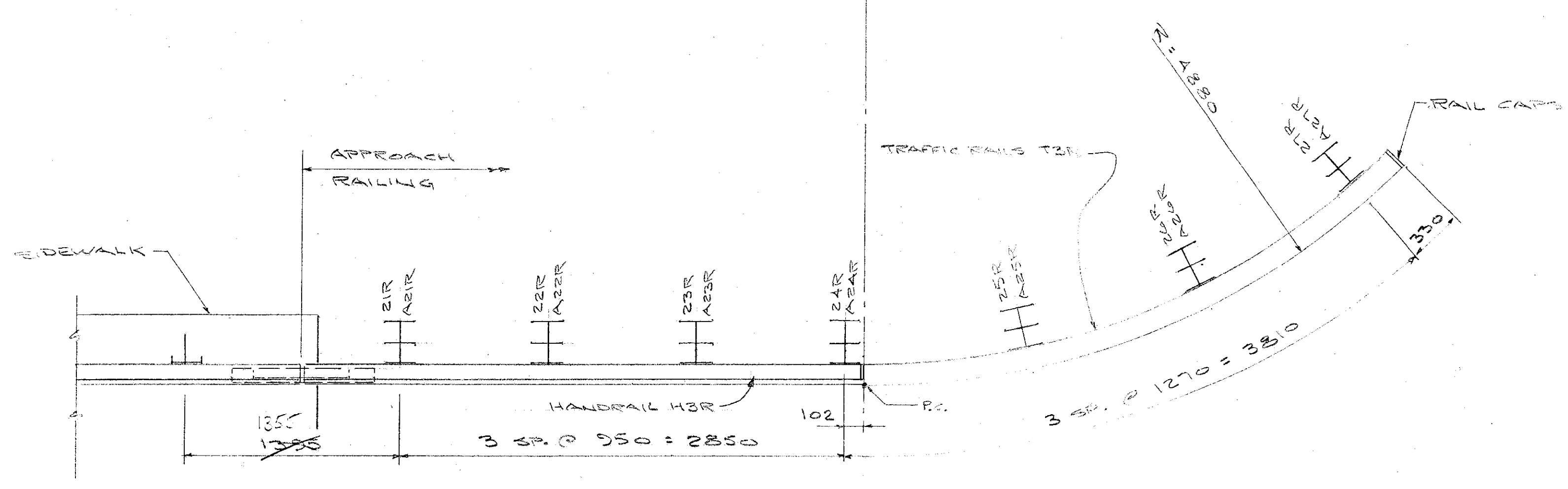
SECTION 2 EA

- 1 #4 CLAMP BAR
- 2 #1 CLAMP BAR
- 3 M13 x 2 x 20 HEX HD CAP SCREW (A193, GRADE B8)
- 4 M13 x 2 x 25 HEX HD CAP SCREW (A193, GRADE B8)
- 5 ALUM. WASHER 27 O.D. x 14 I.D. x 2.3 THK. (ALCLAD 2024-T4)
- 6 M13 x 2 x 38 HEX HD CAP SCREW (304 ST. STL.)
- 7 M13 x 2 HEX NUT (304 ST. STL.)



SECT. 3 EA

NOTE
DIM'S. ARE GIVEN ALONG NOSE OF TRAFFIC RAIL



PLAN AT NW APPROACH RAIL (AS SHOWN)
PLAN AT SW APPROACH RAIL (OPP. HAND)

DESIGNED BY _____
CHECKED BY _____
DATE _____

DIM'S ARE GIVEN IN MILLIMETERS

AUCIELLO IRON WORKS INC
560 MAIN ST. HUDSON, MA (978) 568-8382

VT. AGENCY OF TRANSPORTATION
HARDWICK #BWF 030-2(18)S
BRIDGE # 67
VT IS OVER COOPER BROOK

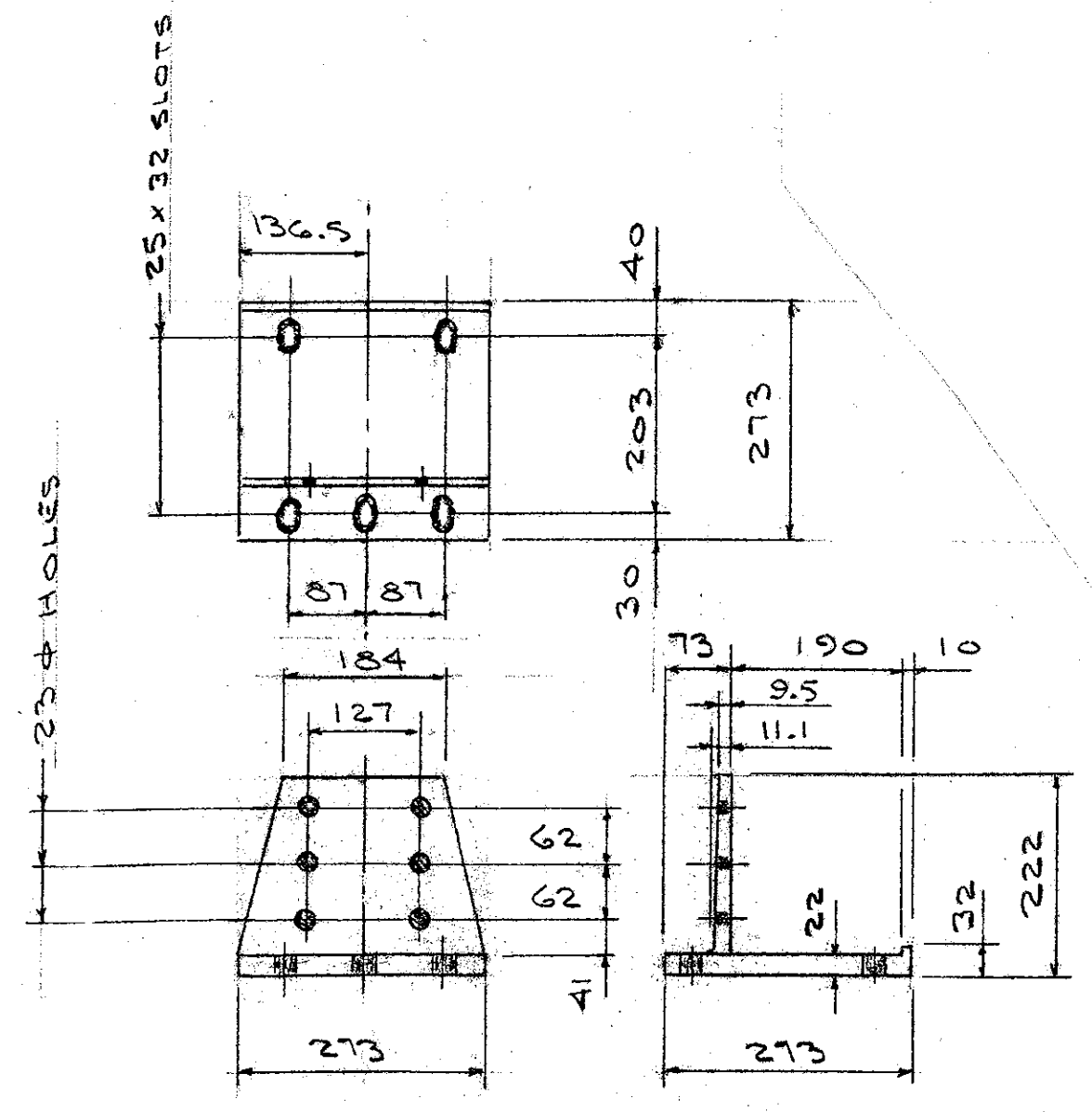
APPROACH RAIL AT SIDEWALK

SURFACE PREP: NONE FINISH: BLACK ANODIZE

FOR: F.R. LAFAYETTE, INC

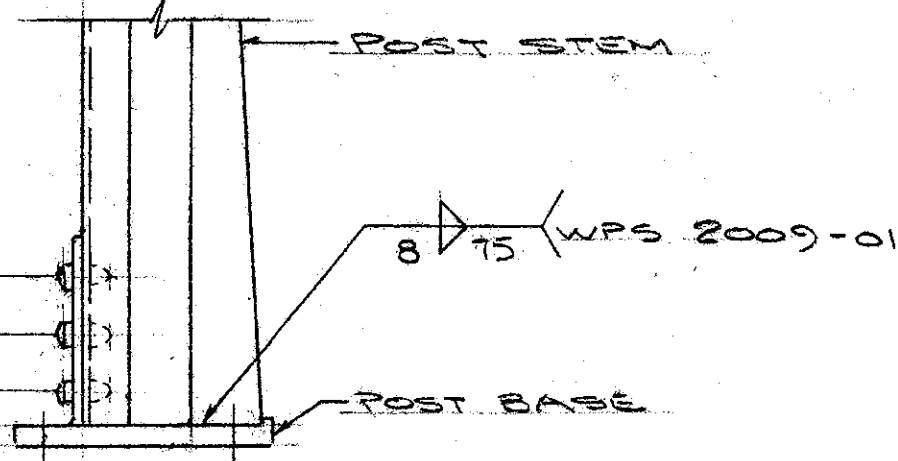
DR: WM 9-9-09 DWG. NO.
CHK: 9-24-09 BR-2965
JOB NO.
AS07010-1001 SHEET E4 OF 4

ISSUE	DATE	DESCRIPTION	BY
1	9-24-09	FOR APPROVAL	

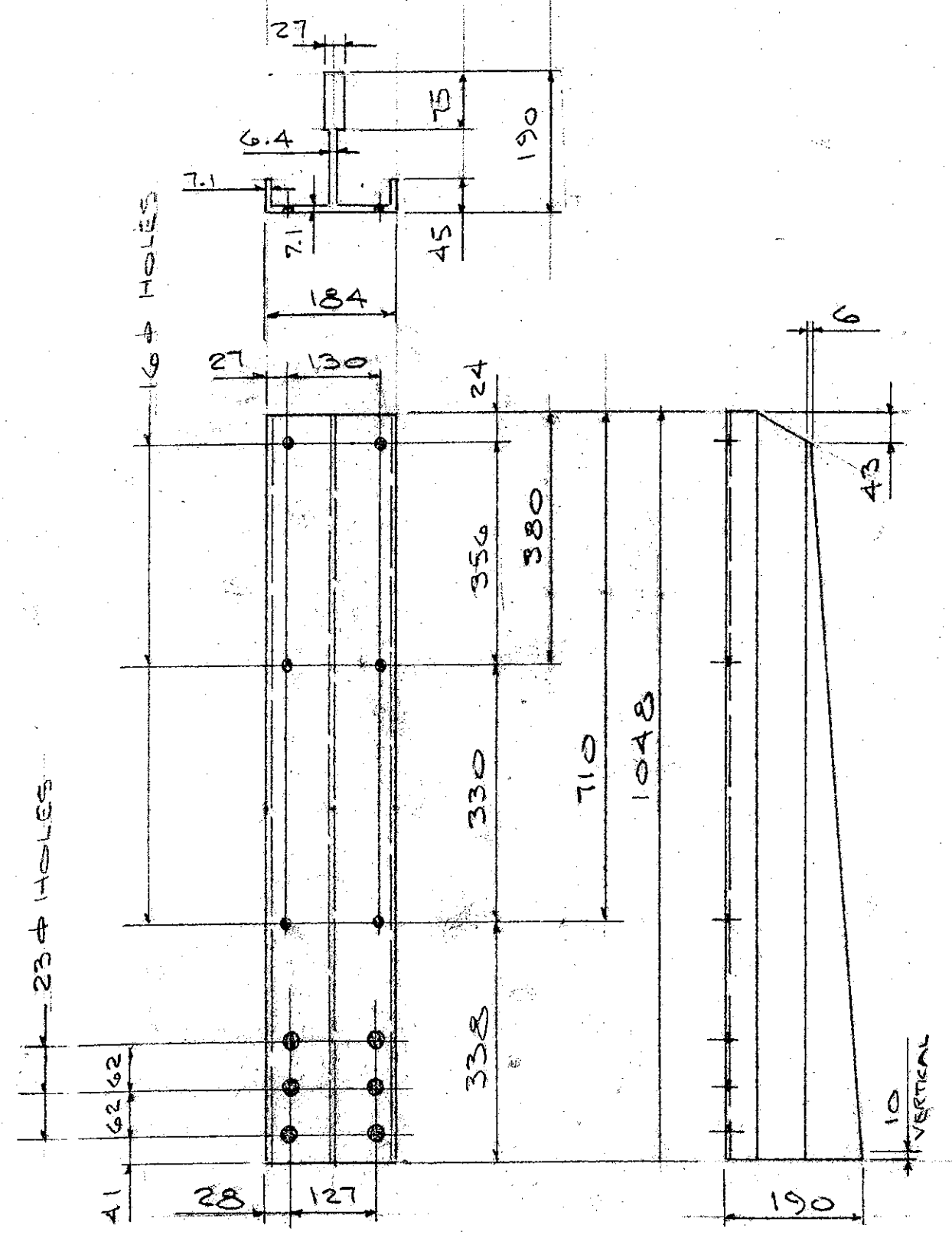


(18) POST BASE
ALLOY 6061-T6

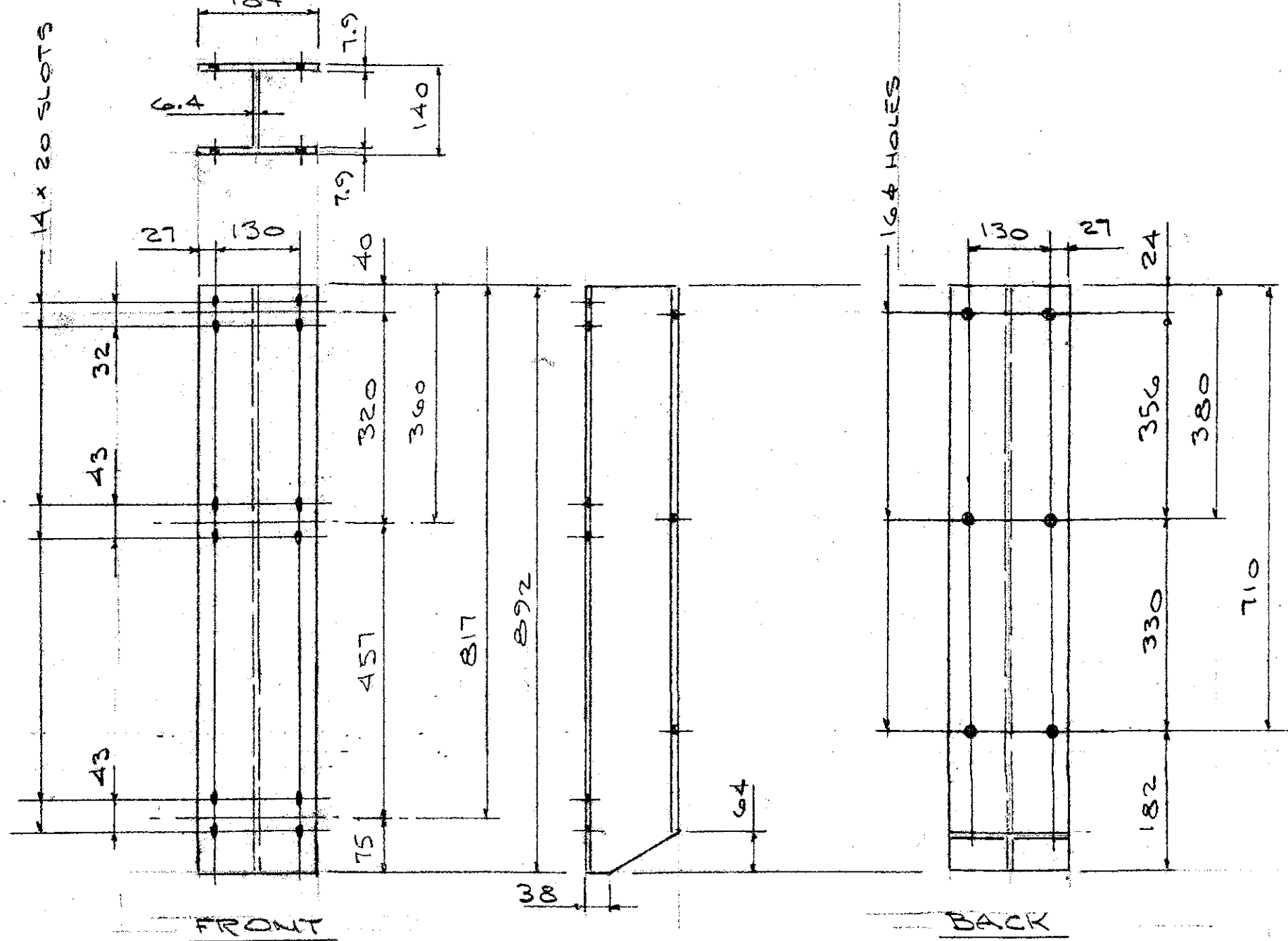
(6) .22# ALUM. RIVETS
ALLOY 6061-T6
COLD DRIVEN



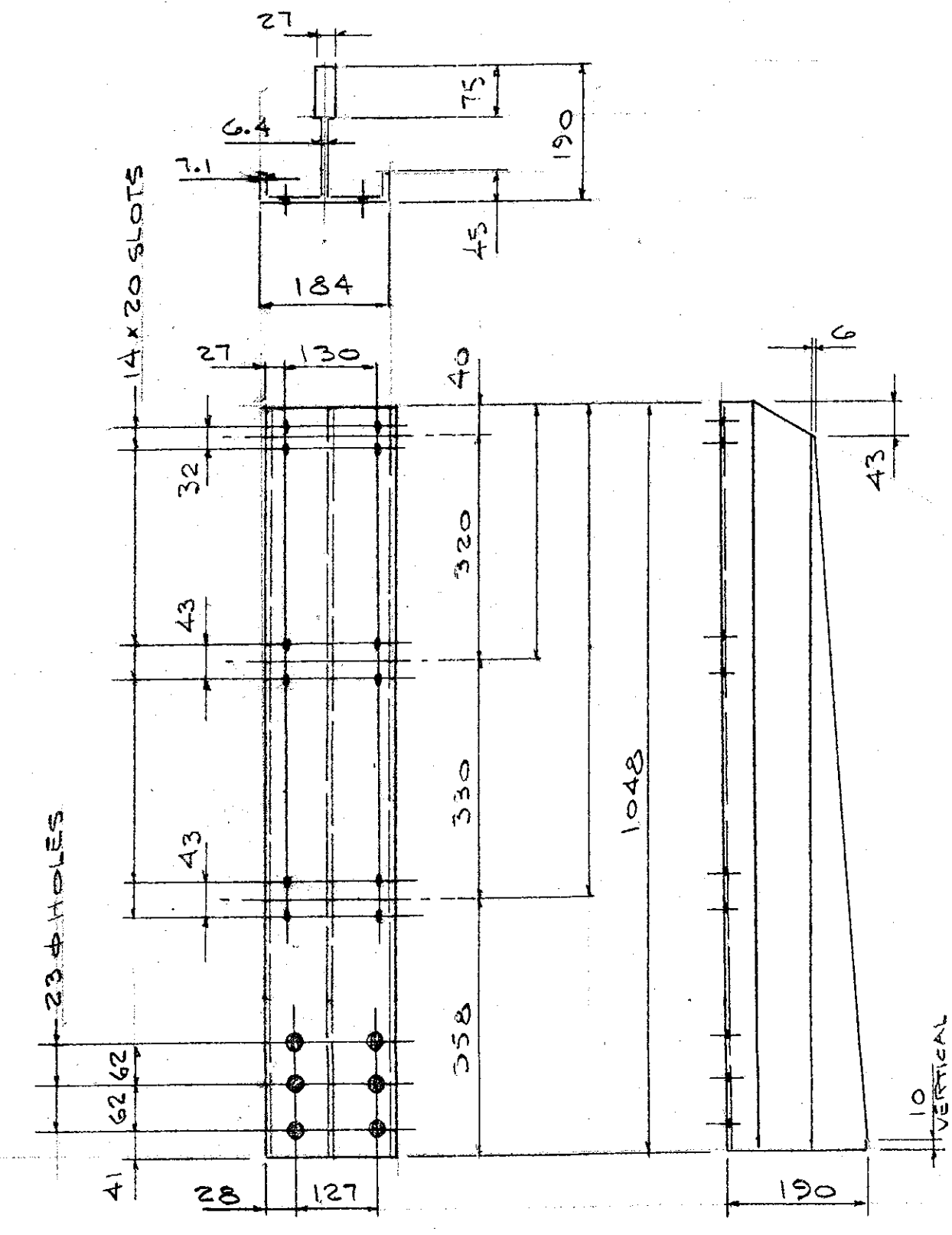
POST ASSEMBLY



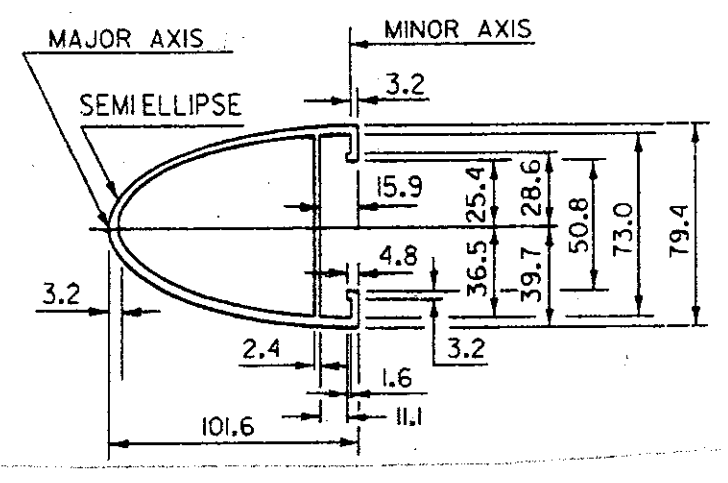
(9) POST STEM P1
ALLOY 6061-T6



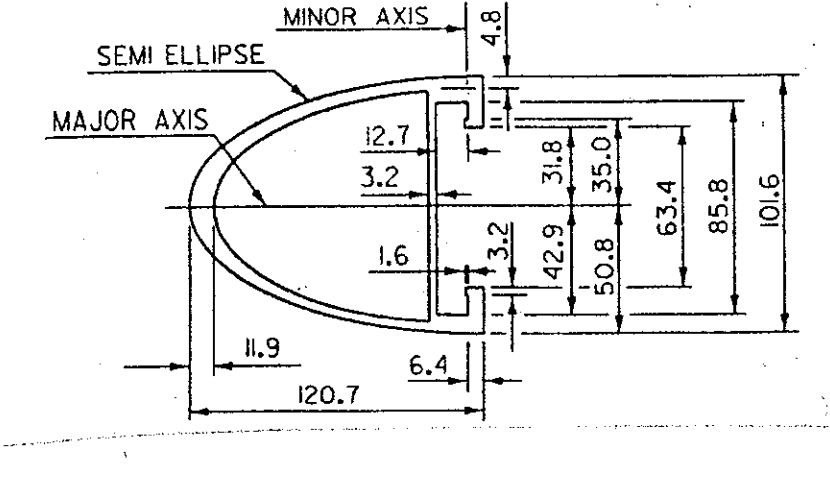
(9) STANDOFF P10B
ALLOY 6061-T6



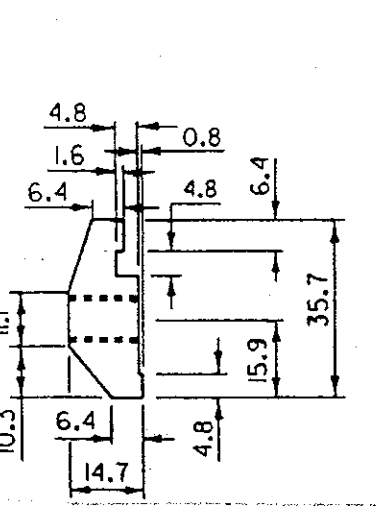
(9) POST STEM P2
ALLOY 6061-T6



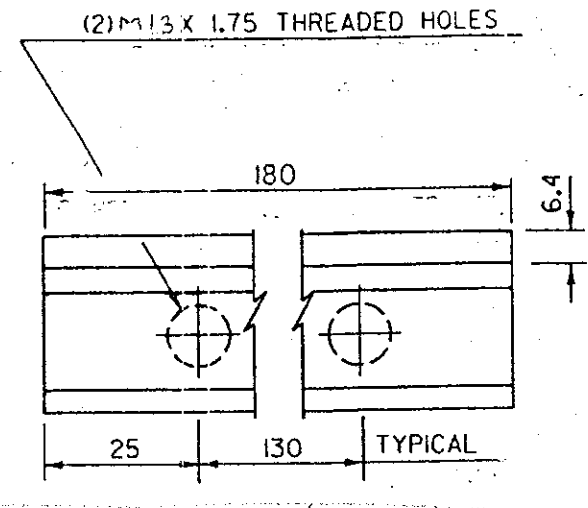
HANDRAIL EXTRUSION
ALLOY 6061-T6



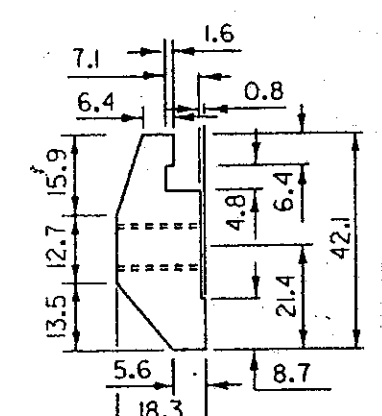
TRAFFIC RAIL EXTRUSION
ALLOY 6061-T6



(68) #4 CLAMP BAR



TYP. CLAMP BAR
DETAIL
ALLOY 6061-T6

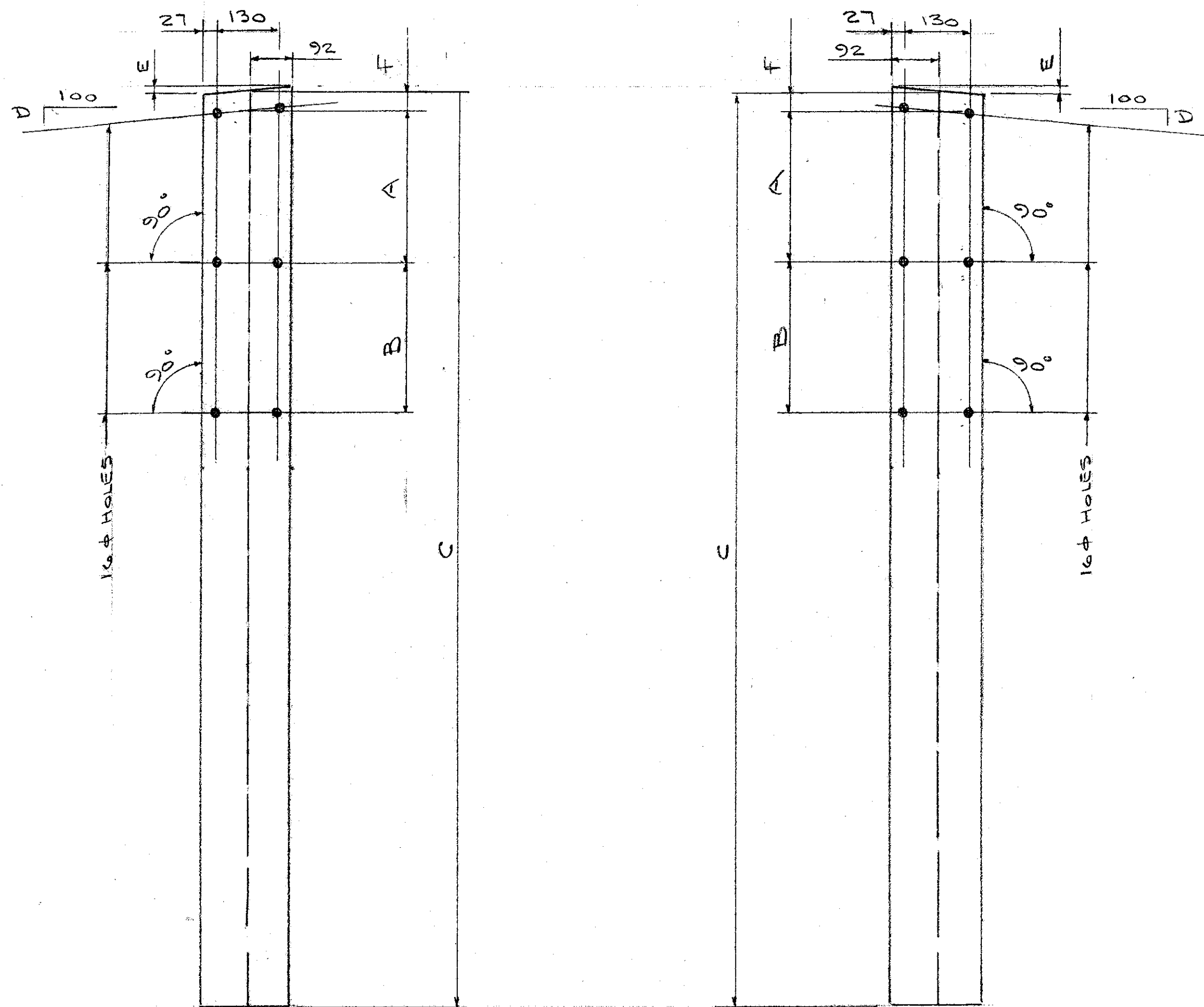
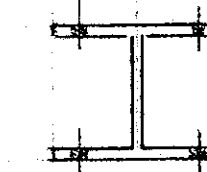
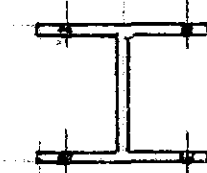
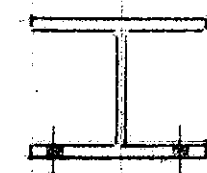
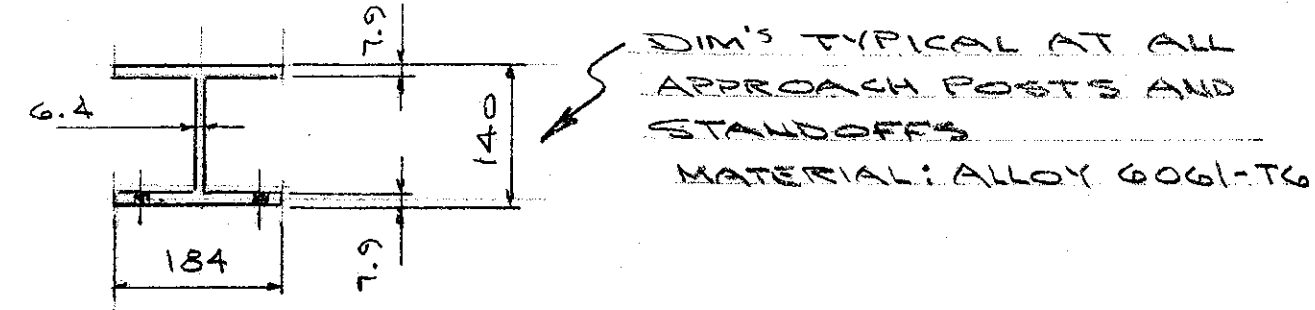


(188) #1 CLAMP BAR

RECEIVED
OK'D BY _____
SEP 29 2009
REQUEST APPROVED
BY DATE

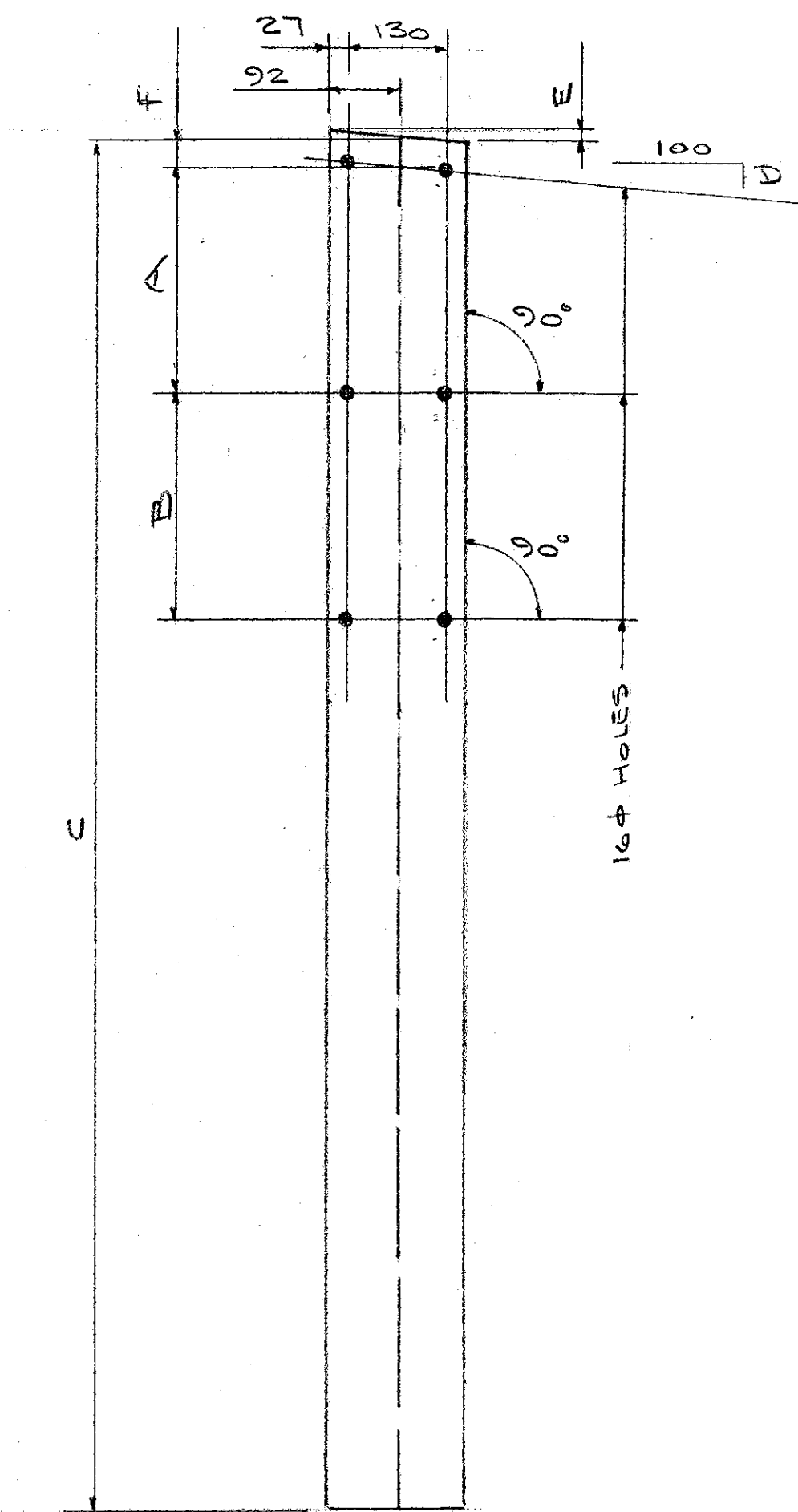
RECEIVED
OK'D BY _____
SEP 26 2009
REQUEST APPROVED
BY DATE

DIM'S ARE GIVEN IN MILLIMETERS	
AUCIELLO IRON WORKS INC 560 MAIN ST. HUDSON, MA (978) 568-8382	
VT. AGENCY OF TRANSPORTATION HARDWICK # BHT 030-2(18)S BRIDGE # 67	
VT. 15 OVER COOPER BROOK	
ALUM. BRIDGE RAILING	
SURFACE PREP: NONE	FINISH: BLACK ANODIZE
FOR: FIELAFAYETTE, INC	
DR: WM 9-10-09	DWG. NO. BR-2965
CHK: AS07010-1001	JOB NO. SHEET F1 OF 6
1 ISSUE	9/26/09 FOR APPROVAL
DATE	DESCRIPTION
BY	DATE



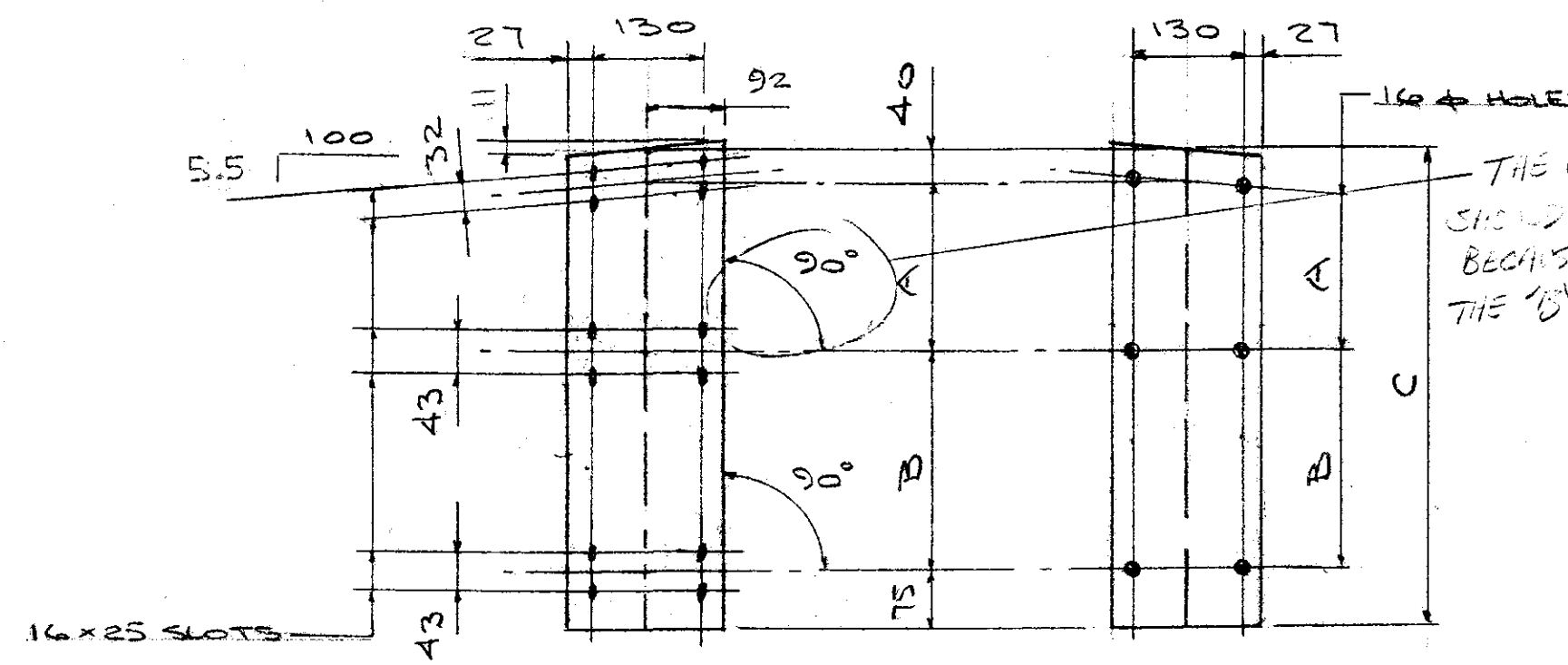
APPROACH POSTS

QUAN	MK	A	B	C	D	E	F
1	21L	290	328	1980	5.5	11	40
1	22L	248	323	1980	5.5	11	40
1	23L	204	319	1980	5.5	11	40
1	24L	161	315	1980	5.5	11	40
1	25L	308	0	1830	1.0	2	51
1	26L	302	0	1830	1.0	2	51
1	27L	295	0	1830	1.0	2	51



APPROACH POSTS

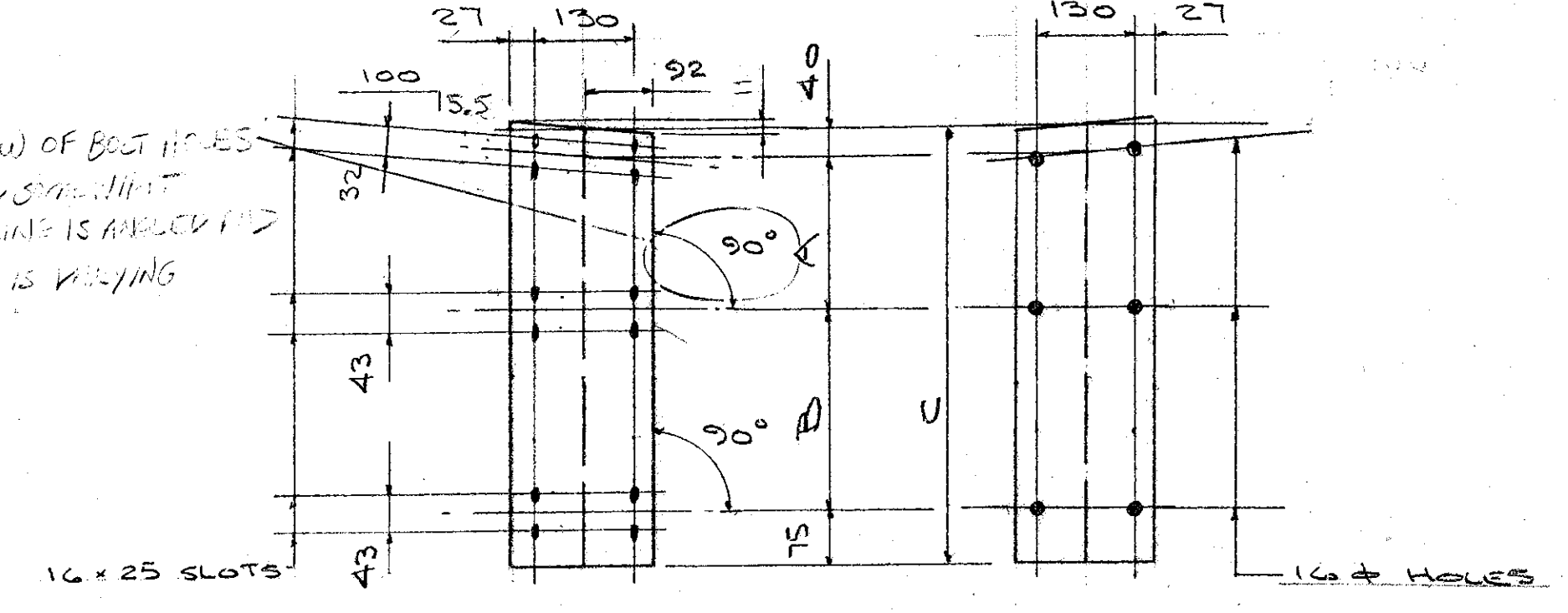
QUAN	MK	A	B	C	D	E	F
1	21R	290	328	1980	5.5	11	40
1	22R	248	323	1980	5.5	11	40
1	23R	204	319	1980	5.5	11	40
1	24R	161	315	1980	5.5	11	40
1	25R	308	0	1830	1.0	2	51
1	26R	302	0	1830	1.0	2	51
1	27R	295	0	1830	1.0	2	51



FRONT BACK

STANDOFFS

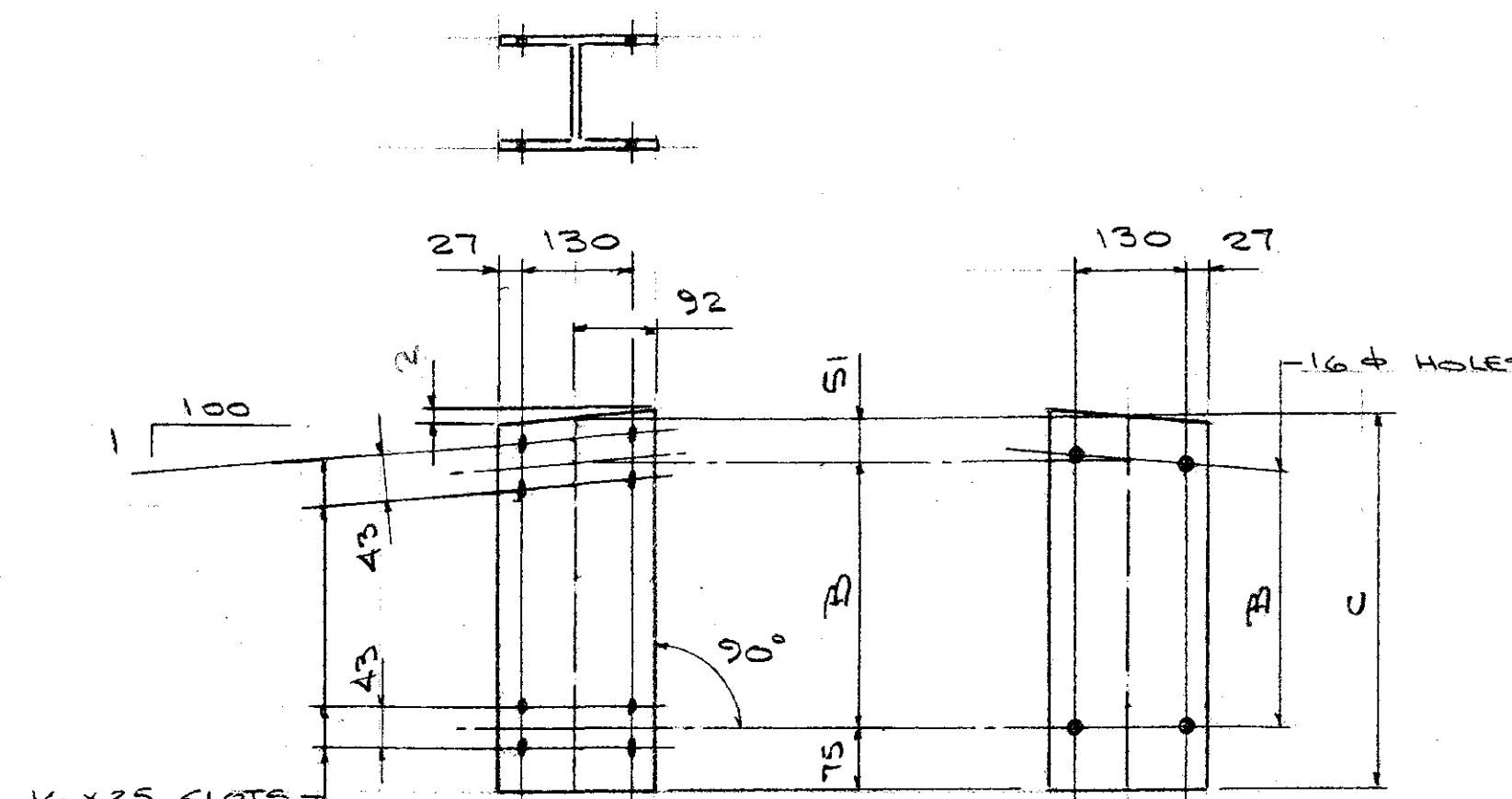
QUAN	MK	A	B	C
1	A21L	290	328	733
1	A22L	248	323	686
1	A23L	204	319	638
1	A24L	161	315	591



FRONT BACK

STANDOFFS

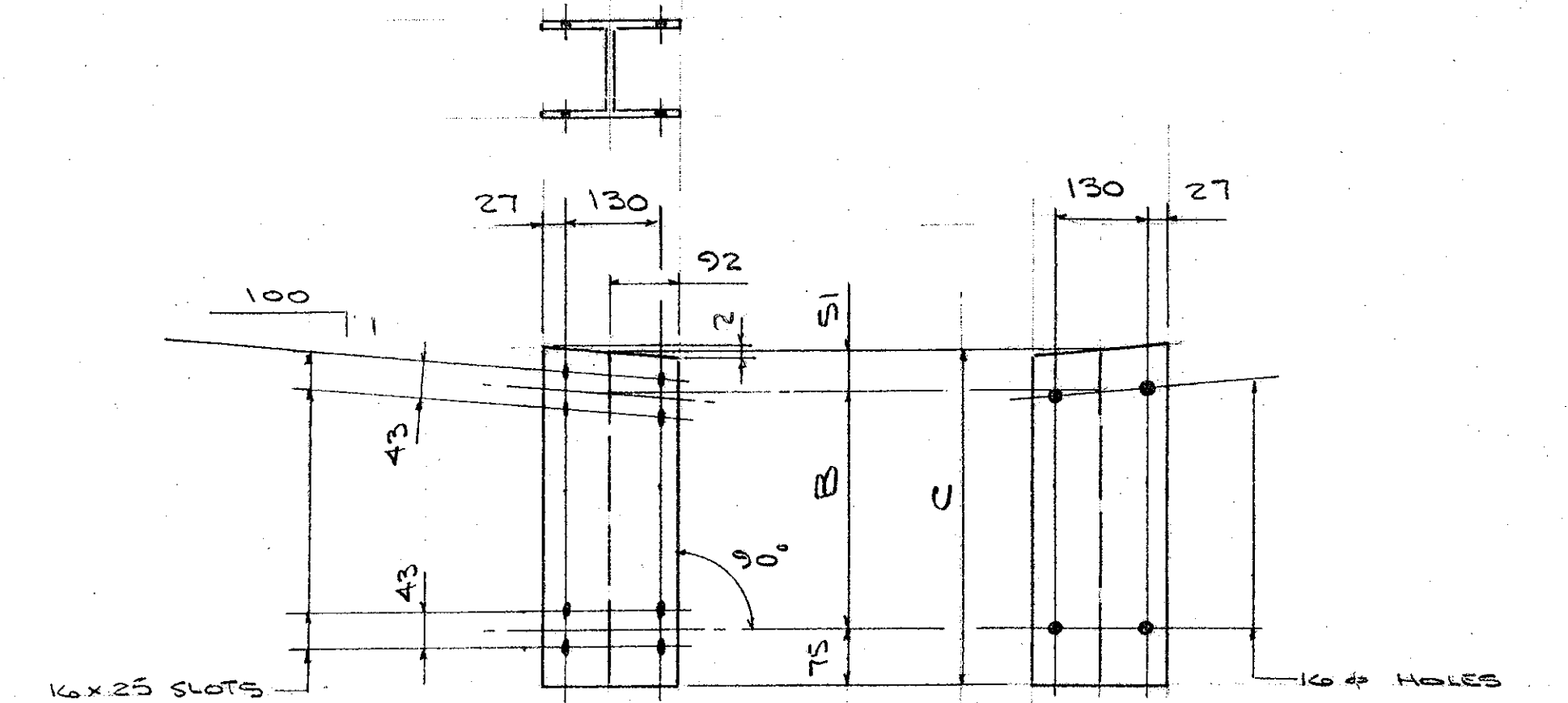
QUAN	MK	A	B	C
1	A21R	290	328	733
1	A22R	248	323	686
1	A23R	204	319	638
1	A24R	161	315	591



FRONT BACK

STANDOFFS

QUAN	MK	B	C
1	A25L	308	434
1	A26L	302	428
1	A27L	295	421



FRONT BACK

STANDOFFS

QUAN	MK	B	C
1	A25R	308	434
1	A26R	302	428
1	A27R	295	421

RECEIVED
 ORDER
 5/2/09
 11:00 AM
 11/11/09

AUCIELLO IRON WORKS INC
 560 MAIN ST. HUDSON, MA (978) 568-8382

VT. AGENCY OF TRANSPORTATION
 HARDWICK # B4F 030-2(18)S
 BRIDGE # 67
 VT15 OVER COOPER BROOK

APPROACH POSTS AT SIDEWALK

SURFACE PREP: NONE FINISH: BLACK ANODIZE

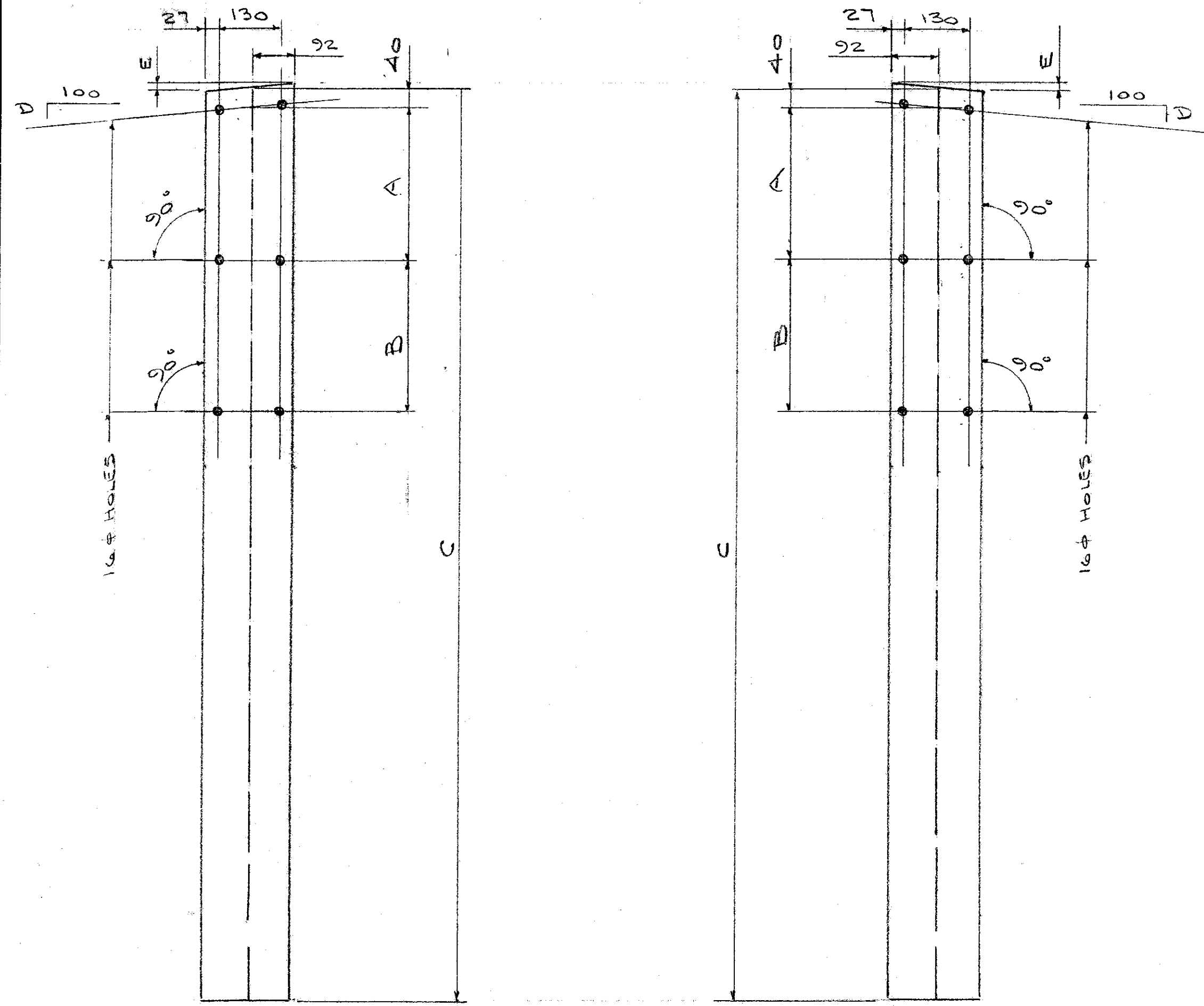
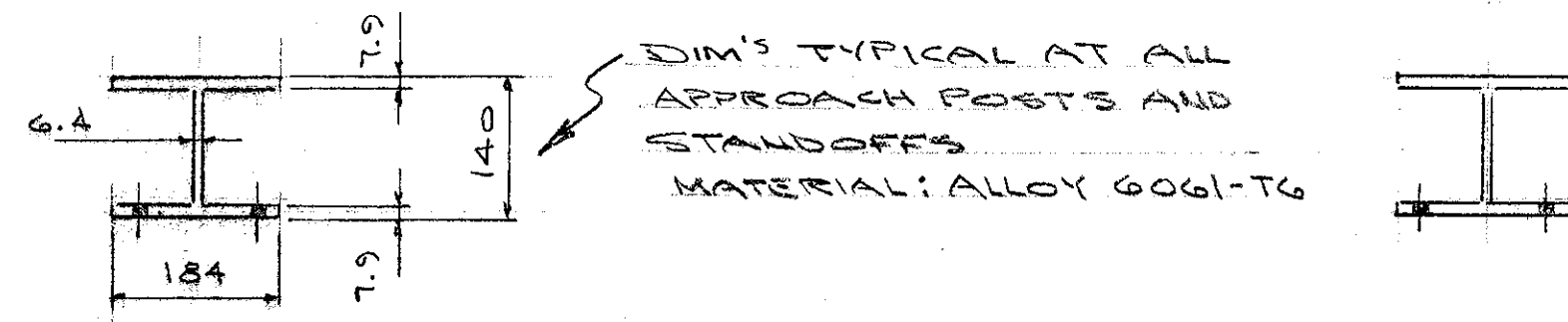
FOR: F.R. LAFAYETTE, INC.

DR: WM 9-24-09 DWG. NO. BR-2965

CHKD: 9-24-09 JOB NO. A807010-1001 SHEET F2 OF 6

ISSUE	DATE	DESCRIPTION	BY
1	9/24/09	FOR APPROVAL	

DIM'S ARE GIVEN IN MILLIMETERS

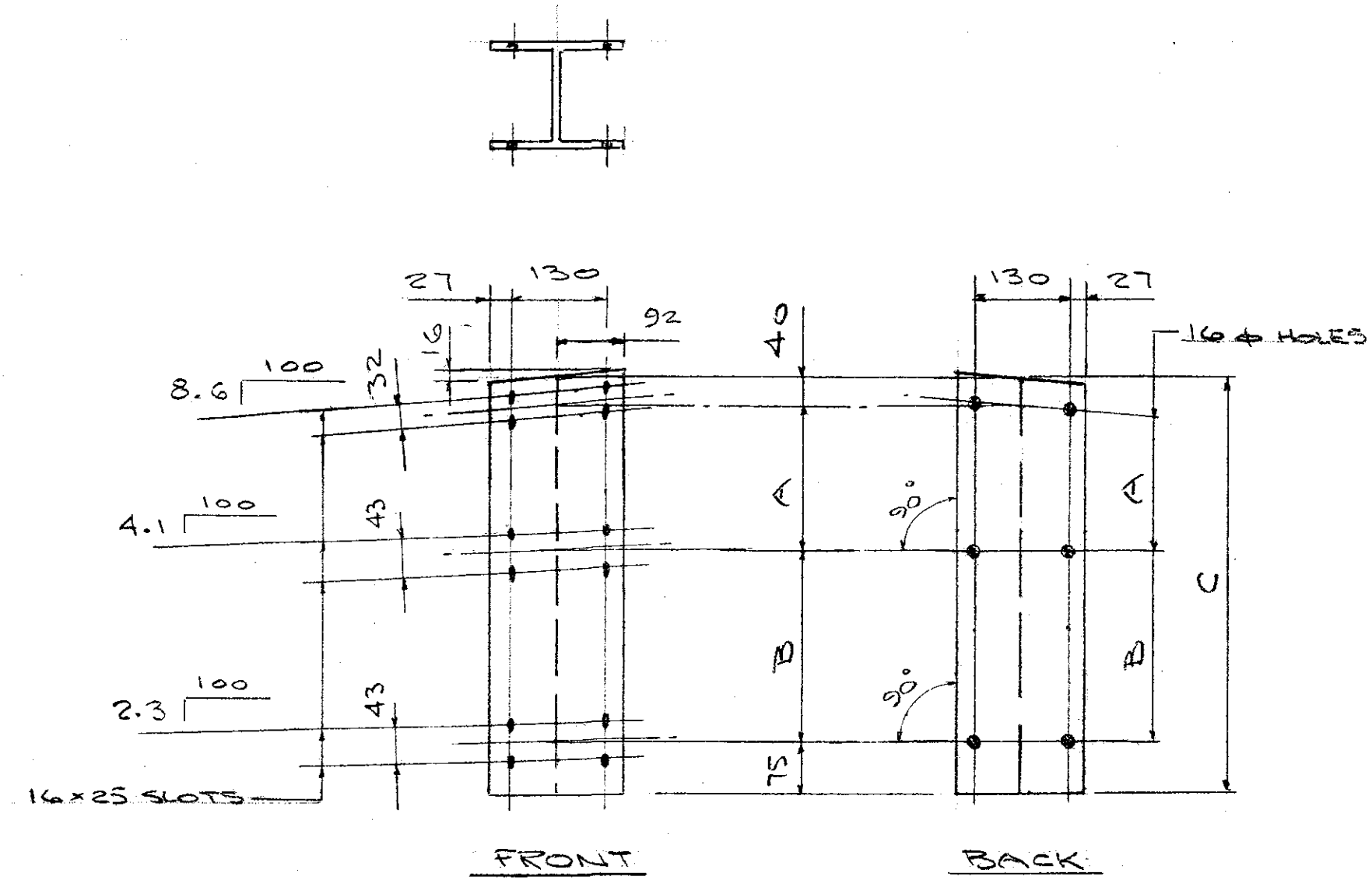


APPROACH POSTS

QUAN	MK	A	B	C	D	E
1	11L	291	446	1980	8.6	16
1	12L	248	428	1980	8.6	16
1	13L	205	410	1980	8.6	16
1	14L	161	394	1980	8.6	16
1	15L	370	0	1830	4.1	9
1	16L	346	0	1830	4.1	9
1	17L	324	0	1830	4.1	9

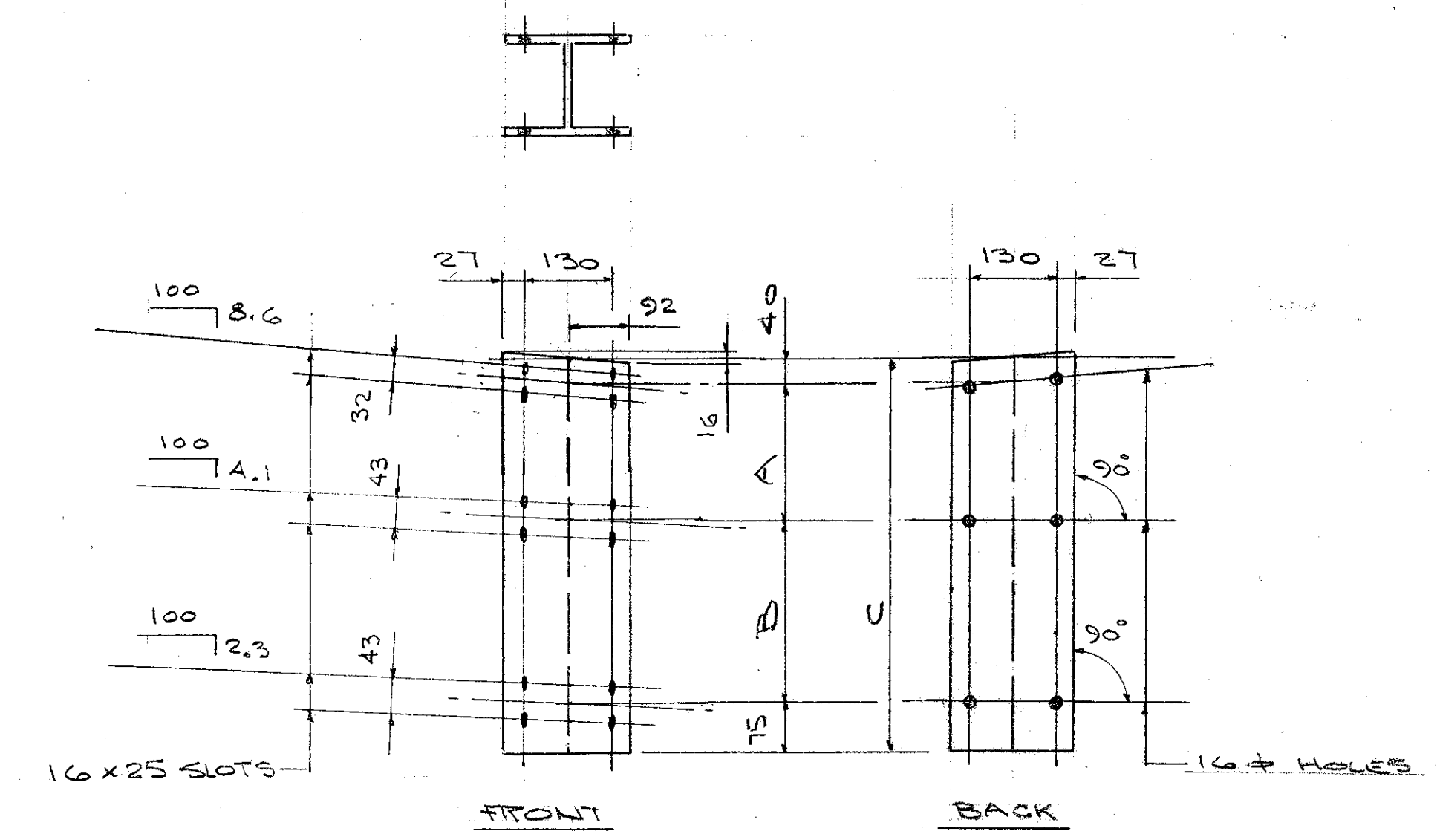
APPROACH POSTS

QUAN	MK	A	B	C	D	E
1	11R	291	446	1980	8.6	16
1	12R	248	428	1980	8.6	16
1	13R	205	410	1980	8.6	16
1	14R	161	394	1980	8.6	16
1	15R	370	0	1830	4.1	9
1	16R	346	0	1830	4.1	9
1	17R	324	0	1830	4.1	9
1	18R	321	0	1830	0	0



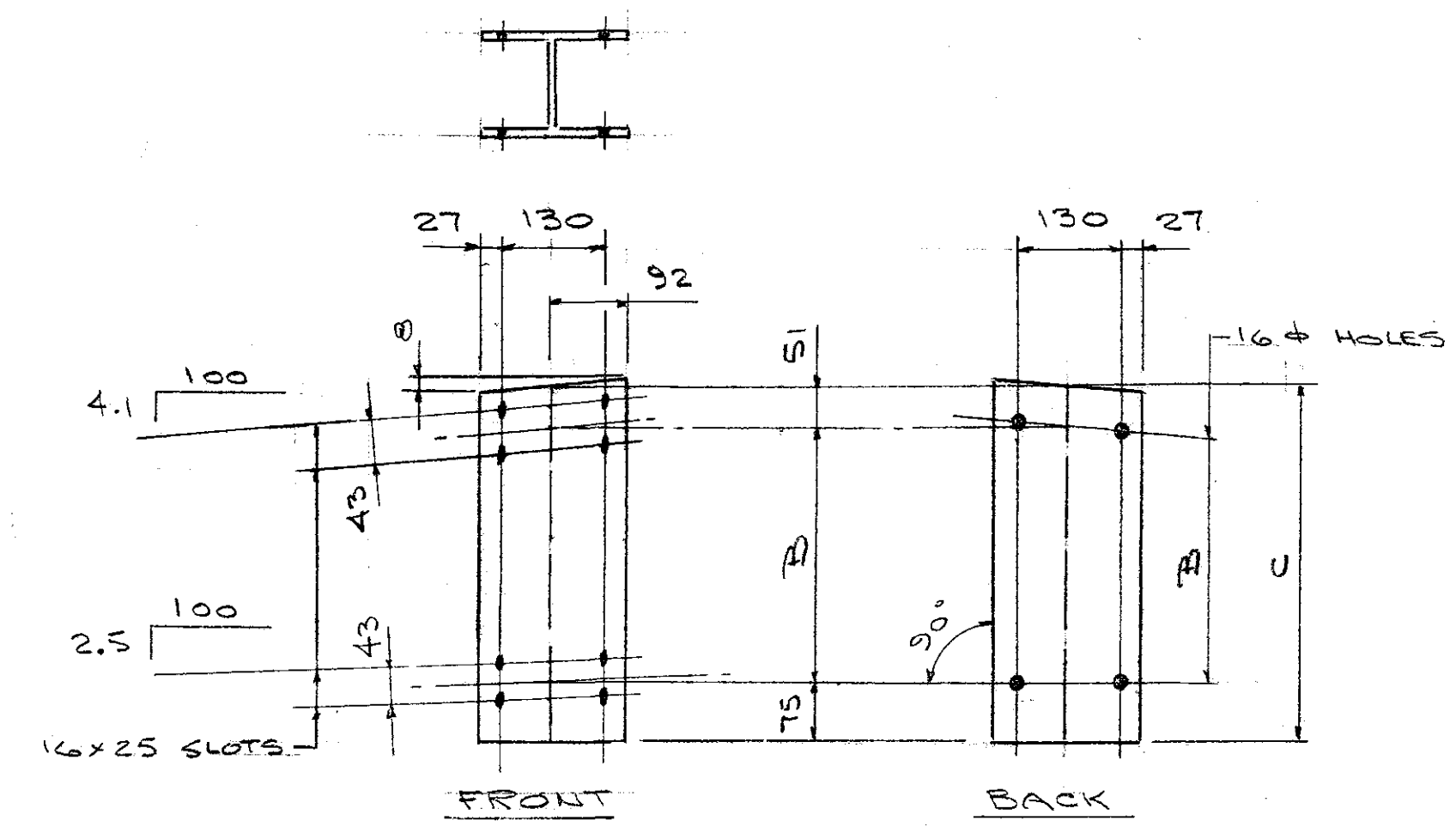
STANDOFFS

QUAN	MK	A	B	C
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1	A12L	248	428	791
1	A13L	205	410	730
1	A14L	161	394	670



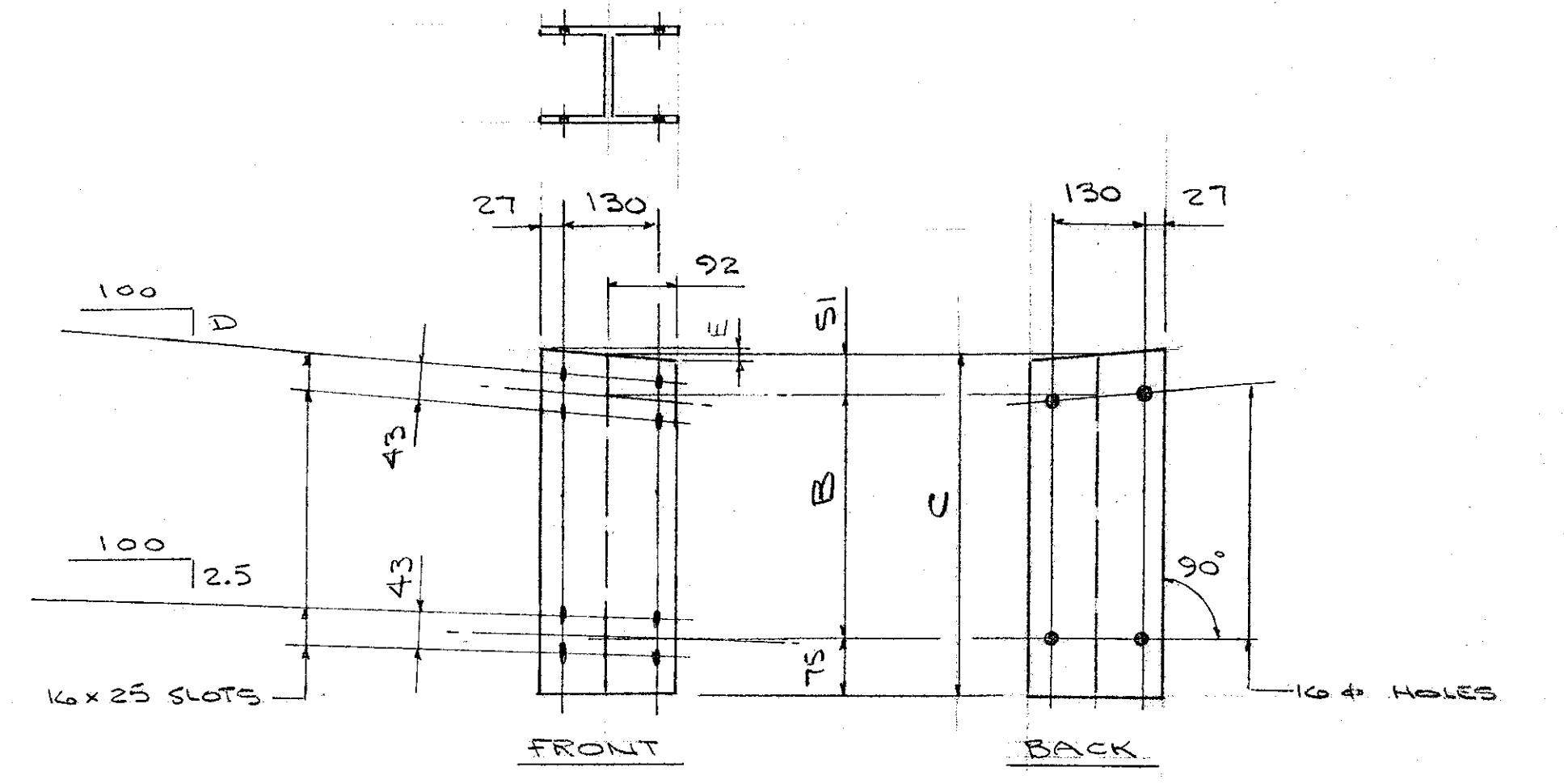
STANDOFFS

QUAN	MK	A	B	C
1	A11R	291	446	852
1	A12R	248	428	791
1	A13R	205	410	730
1	A14R	161	394	670



STANDOFFS

QUAN	MK	B	C
1	A15L	370	496
1	A16L	346	472
1	A17L	324	450



STANDOFFS

QUAN	MK	B	C	D	E
1	A15R	370	496	4.1	8
1	A16R	346	472	4.1	8
1	A17R	324	450	4.1	8
1	A18R	321	447	0	0

RECEIVED
 DESIGNED BY _____
 DRAWN BY _____
 CHECKED BY _____
 DIM'S ARE GIVEN IN MILLIMETERS

AUCIELLO IRON WORKS INC
 560 MAIN ST. HUDSON, MA (978) 568-8382

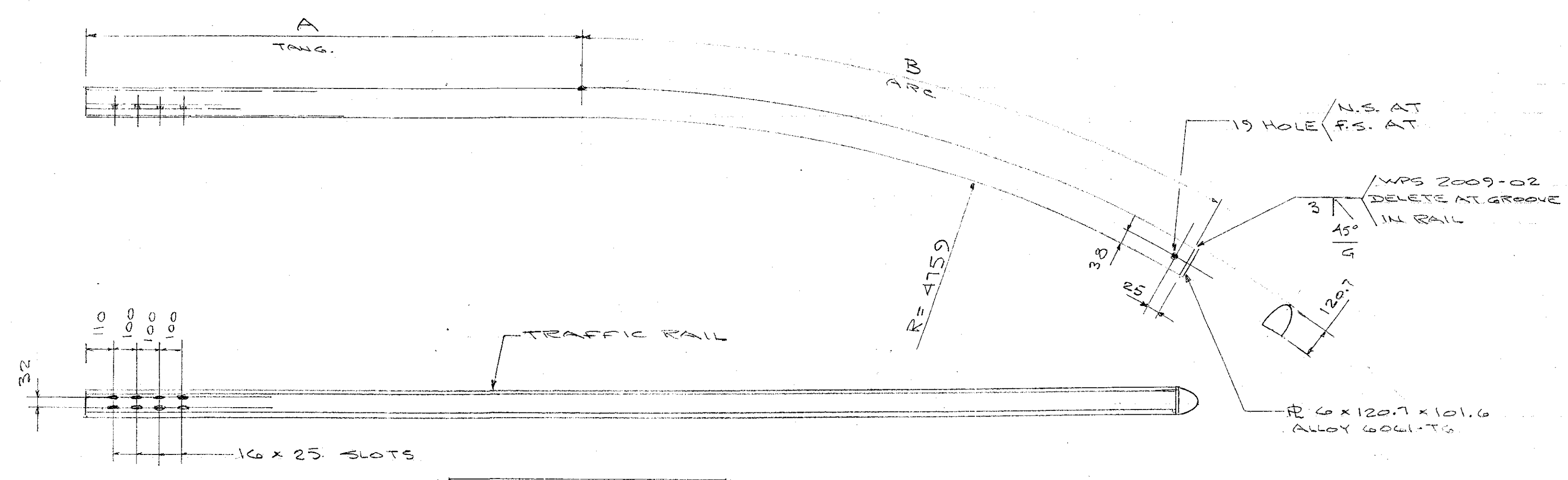
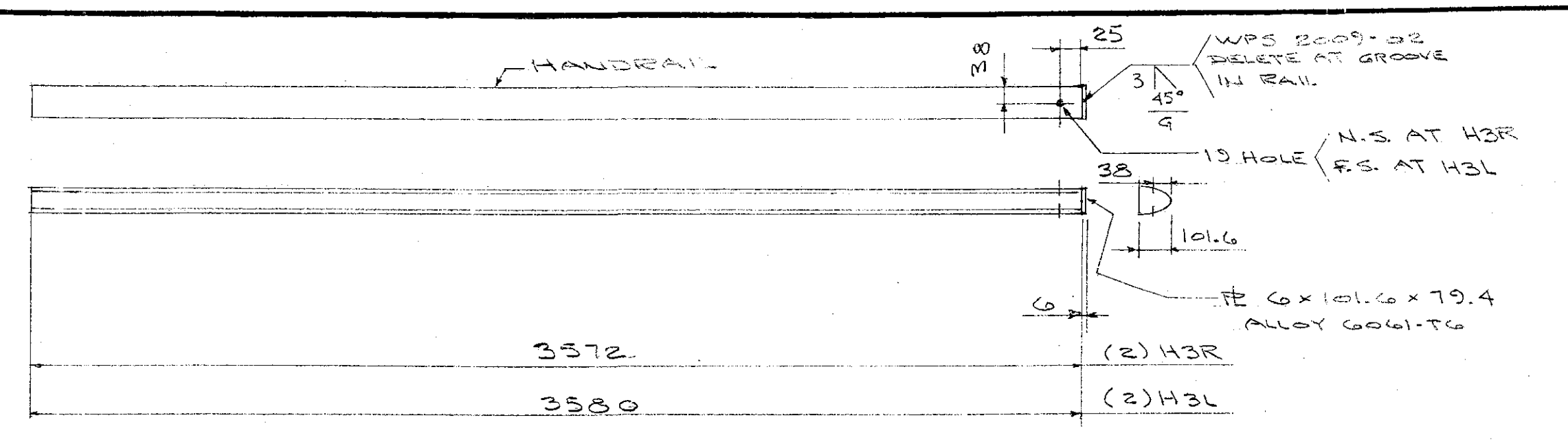
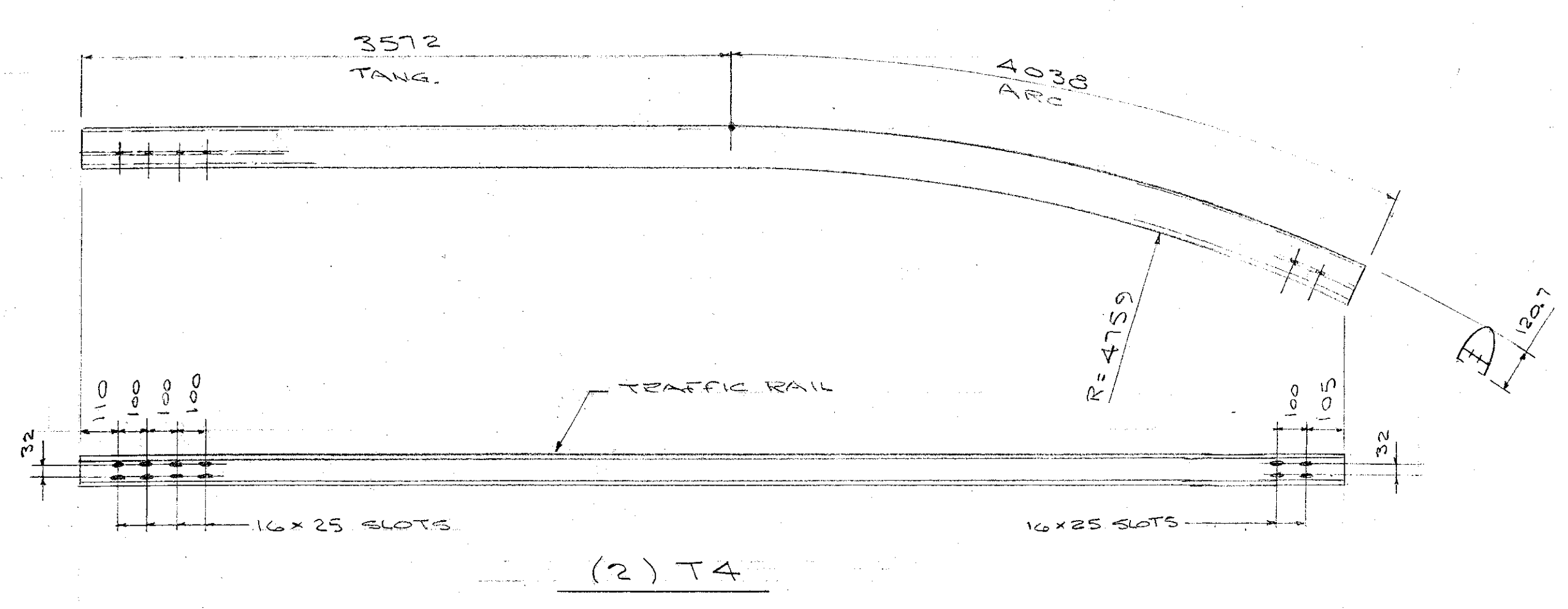
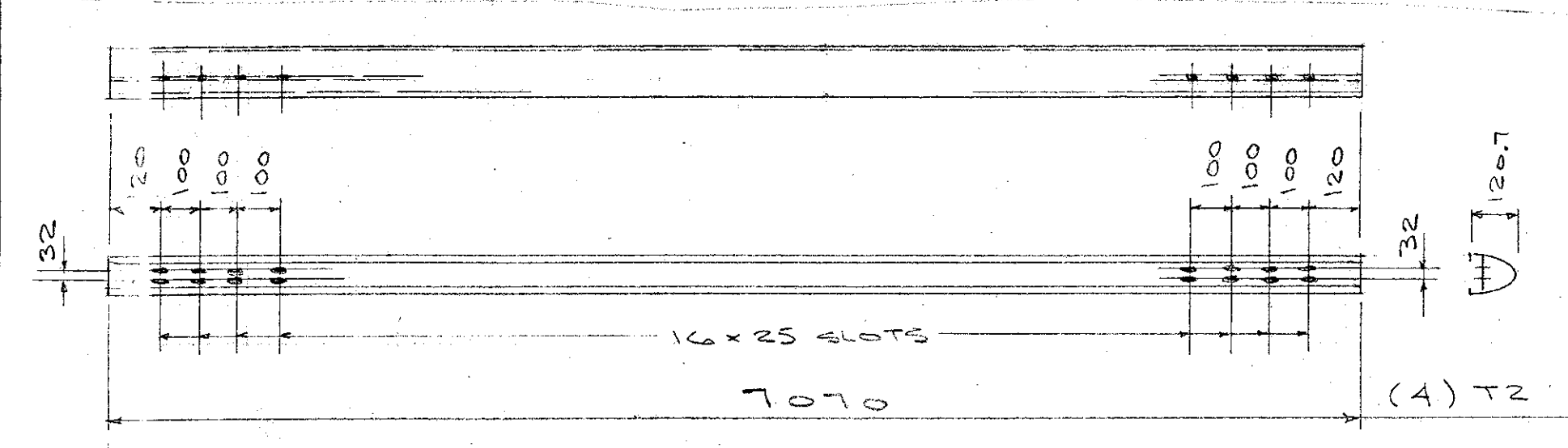
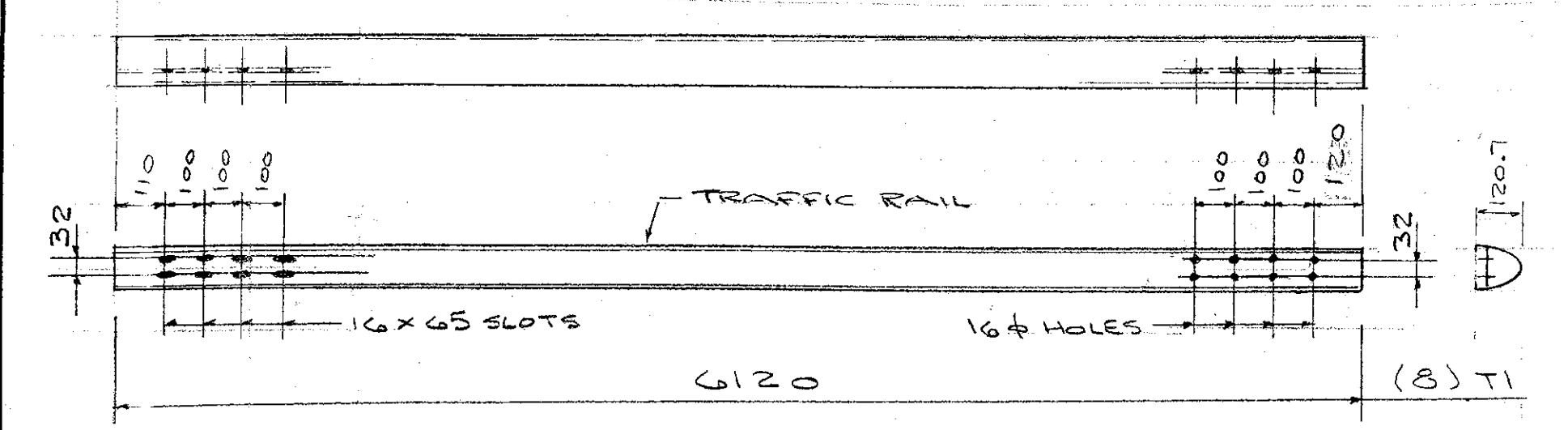
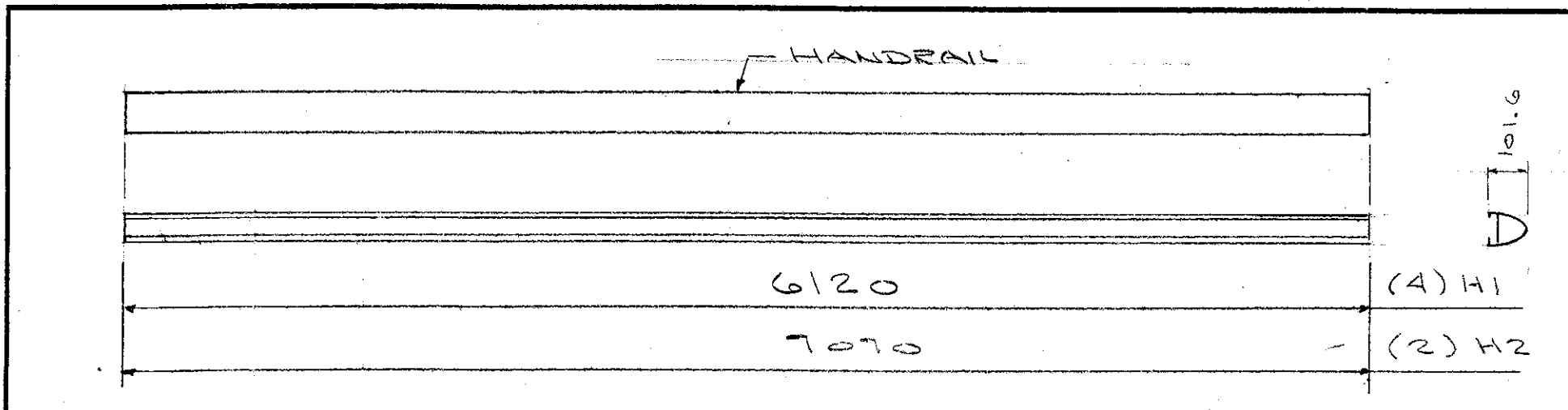
VT. AGENCY OF TRANSPORTATION
 HARDWICK #BHF 030-2(18)S
 BRIDGE #27

INSTALL OVER COOPER BROOK
 APPROACH RAIL AT SAFETY CURB

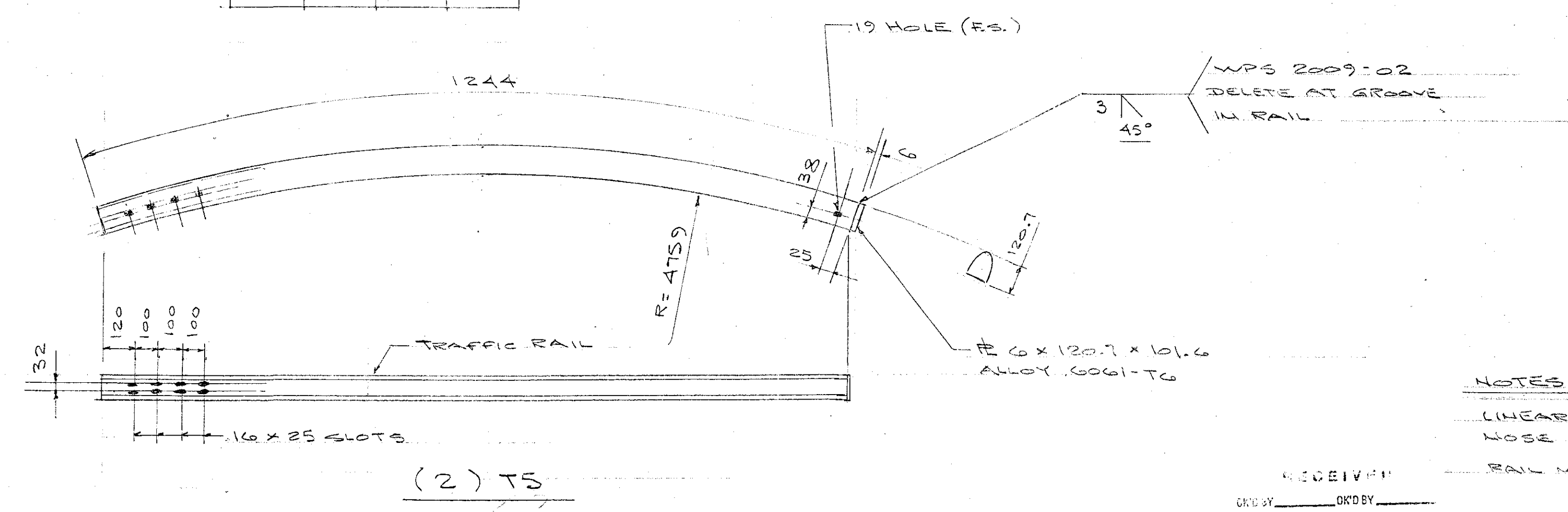
SURFACE PREP: _____ FINISH: _____
 FOR: F.R. LAFAYETTE, INC
 DR. WM 9-24-09 DWG. NO.
 CHK. 9-24-09

ISSUE	DATE	DESCRIPTION	BY
1	9/22/09	FOR APPROVAL	TS
AR01010-1001			

BR-2965
 SHEET F3 OF 6



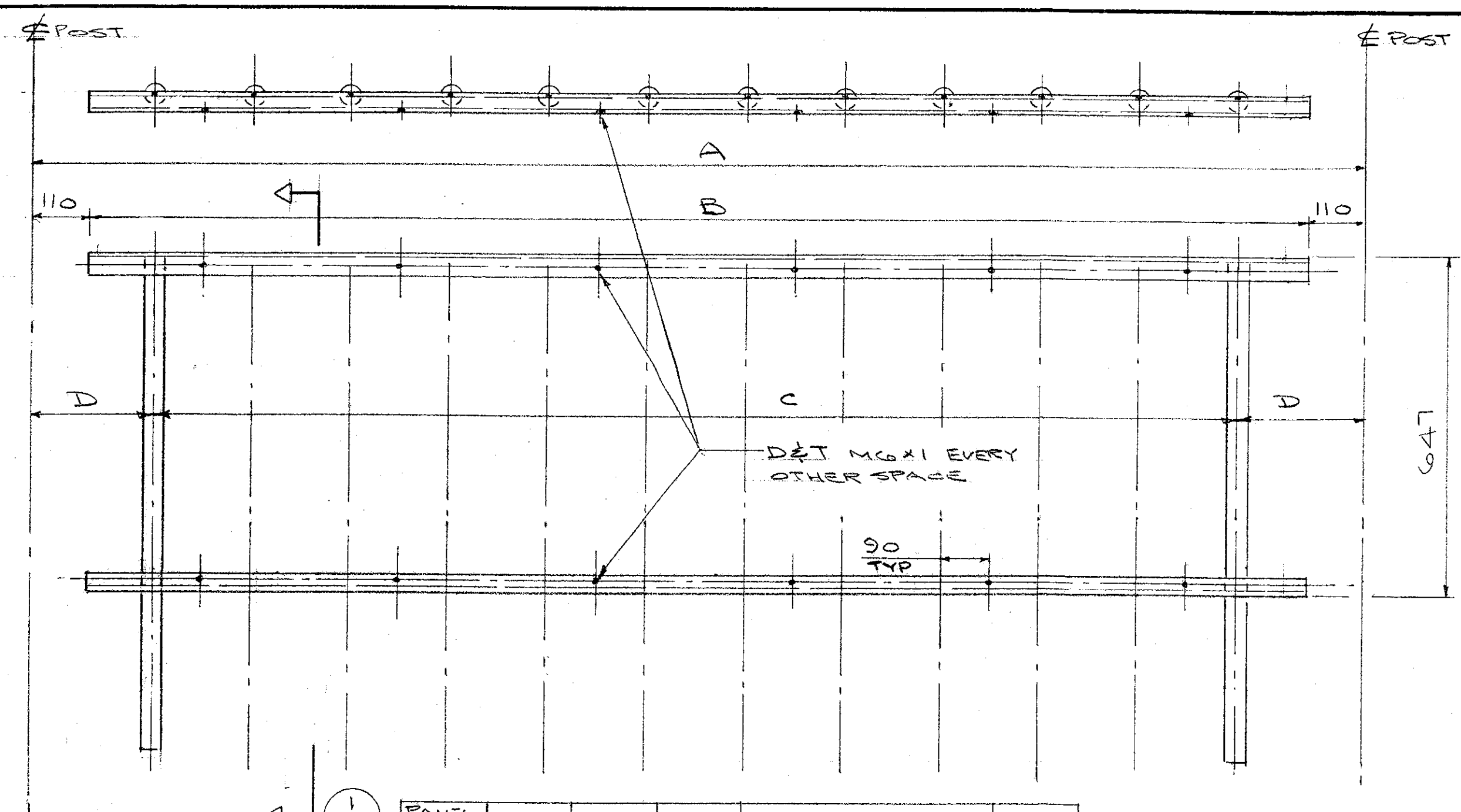
QUAN	MK	A	B
4	T3R	3572	4032
2	T3L	3572	4032



NOTES
 (LINEAR DIM'S ARE GIVEN ALONG NOSE OF RAIL.)
 RAIL MAIL: ALLOY 6061-T6.

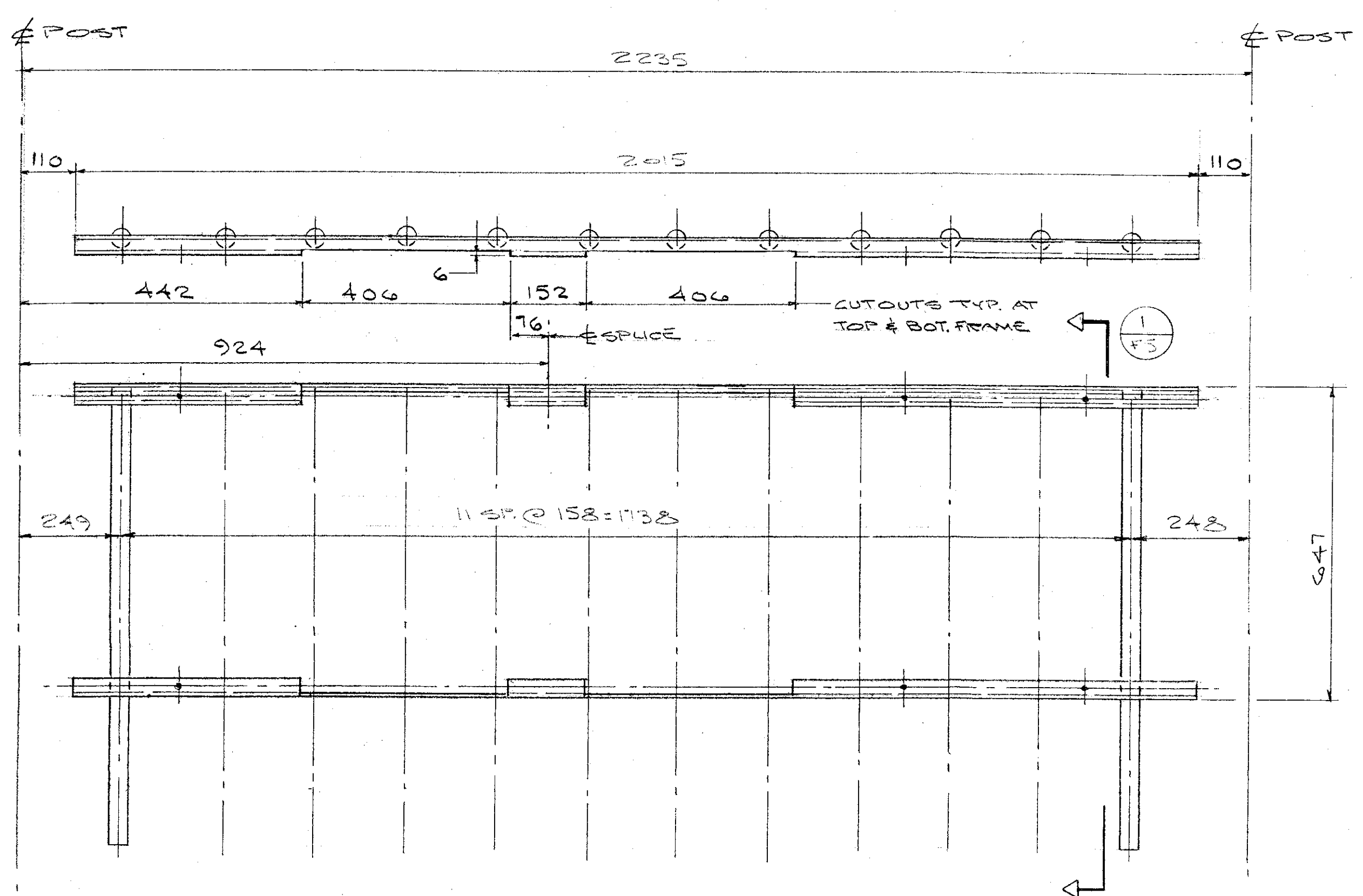
RECEIVED
 ORDER BY _____
 ORDER NO. _____
 PROJECT NO. _____
 DATE _____

DIM'S ARE GIVEN IN MILLIMETERS			
AUCIELLO IRON WORKS INC			
580 MAIN ST. HUDSON, MA (978) 568-8382			
VT. AGENCY OF TRANSPORTATION WARDWICK #BHP-030-2(18)S BRIDGE #67 VT15 OVER COOPER BROOK			
AL. BRIDGE & APPROACH RAILING			
SURFACE PREP: NONE		FINISH: BLACK ANODIZE	
FOR: F. R. LAFAYETTE, INC.			
DR: J. W. 9-12-09	DWG. NO. BR-2965		
CHK:	JOB NO.		
ISSUE 1	DATE 9/24/09	DESCRIPTION FOR APPROVAL	BY B
2			
4307010.1001			SHEET F4 OF 6

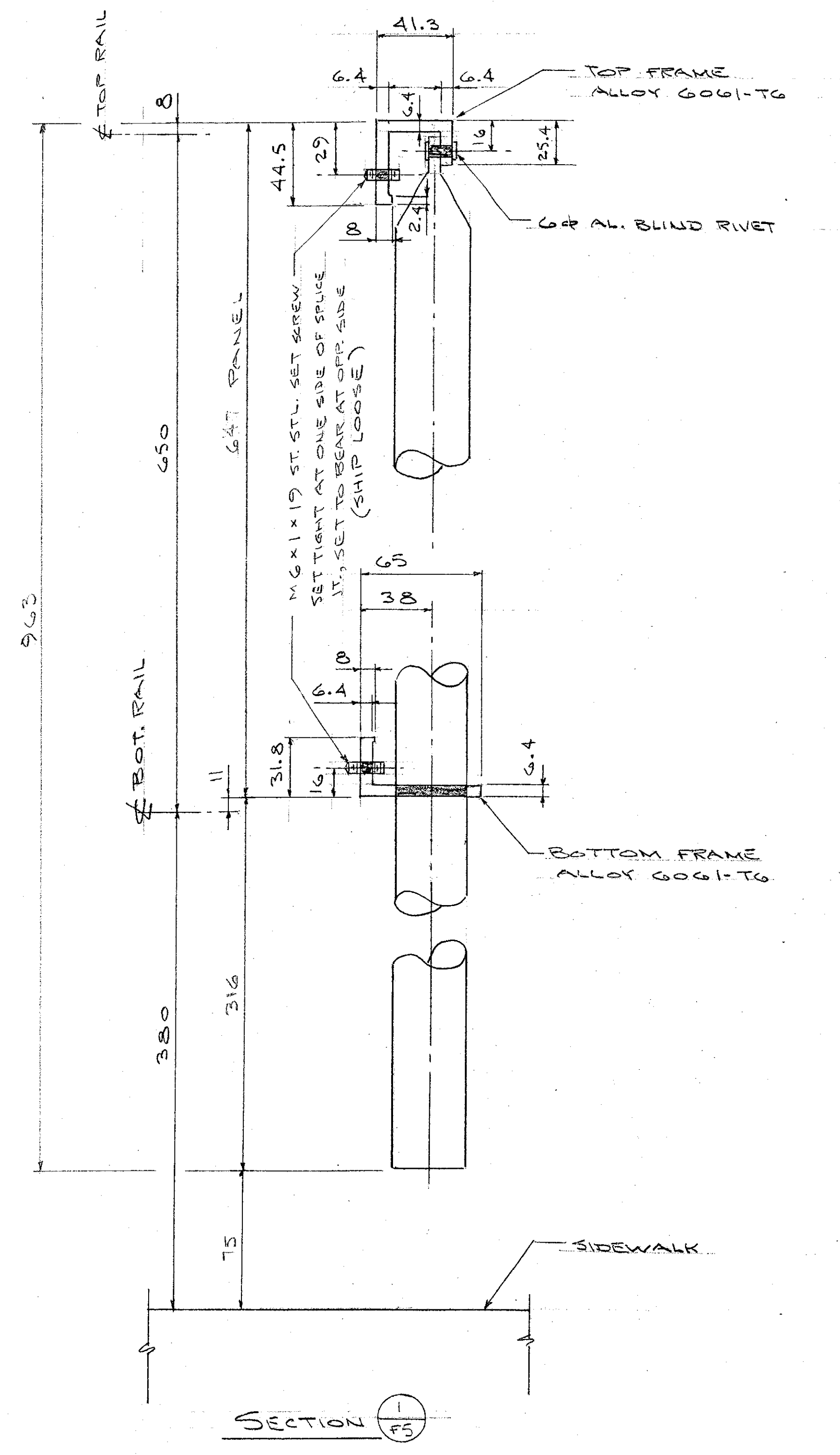


PANEL NO.	QUAN	A	B	C	D
A1	6	2235	2015	11 SP. @ 158 = 1738	249

SPINDLE PANELS



(2) SPINDLE PANEL A2



SECTION 1/F5

DIM'S ARE GIVEN IN MILLIMETERS

AUCIELLO IRON WORKS INC
560 MAIN ST. HUDSON, MA (978) 568-8382

VT. AGENCY OF TRANSPORTATION
HARDWICK BRIDGE # 67
VT. 15 OVER COOPER BROOK

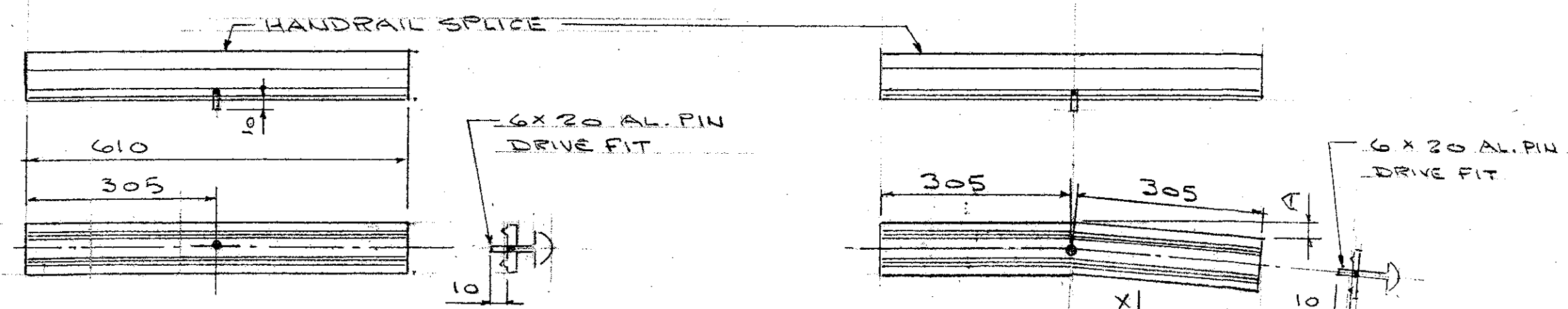
AL. BRIDGE & APPROACH RAILING

SURFACE PREP: NONE FINISH: BLACK ALUOZIE

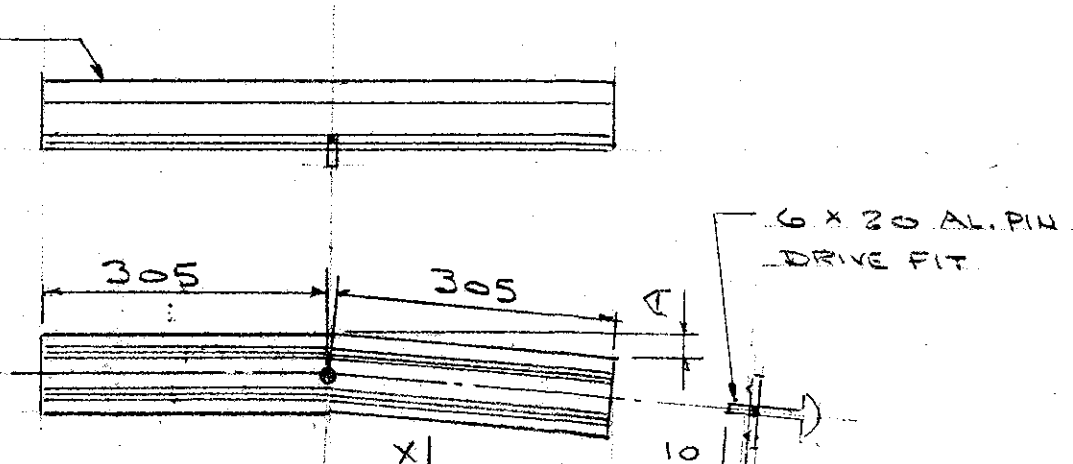
FOR: F.R. LAFAYETTE, INC.
DR: W. 5-14-09 DWG. NO.
CHK: BR-29.65

JOB NO. 0007010-1001 SHEET F5 OF 6

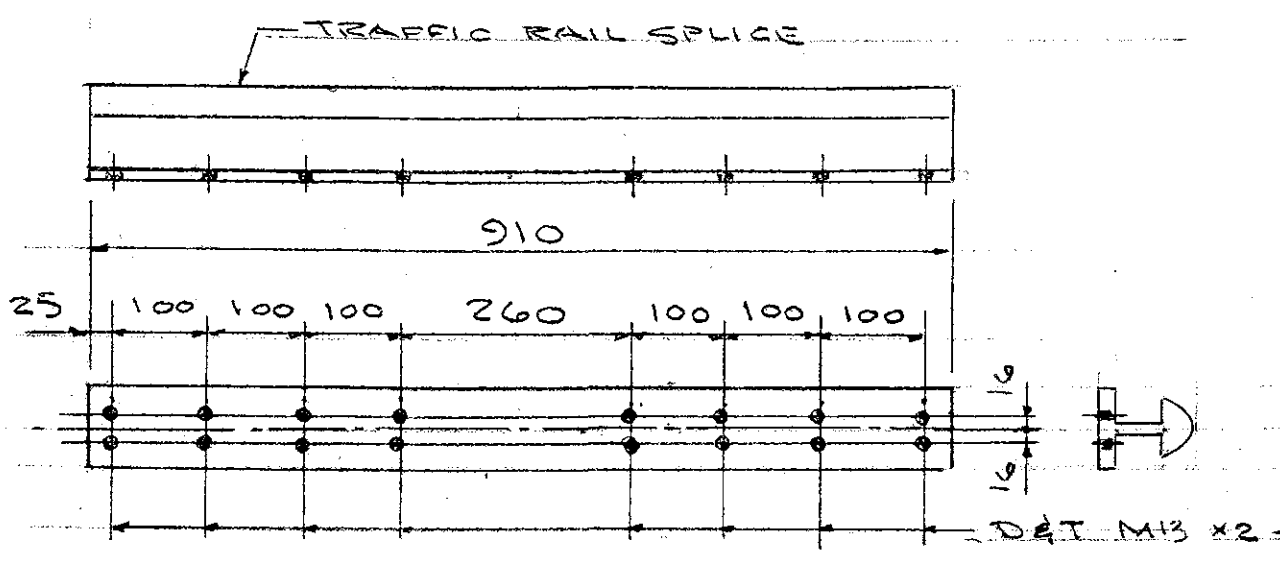
ISSUE	DATE	DESCRIPTION	BY
1	5/21/09	FOR APPROVAL	EB



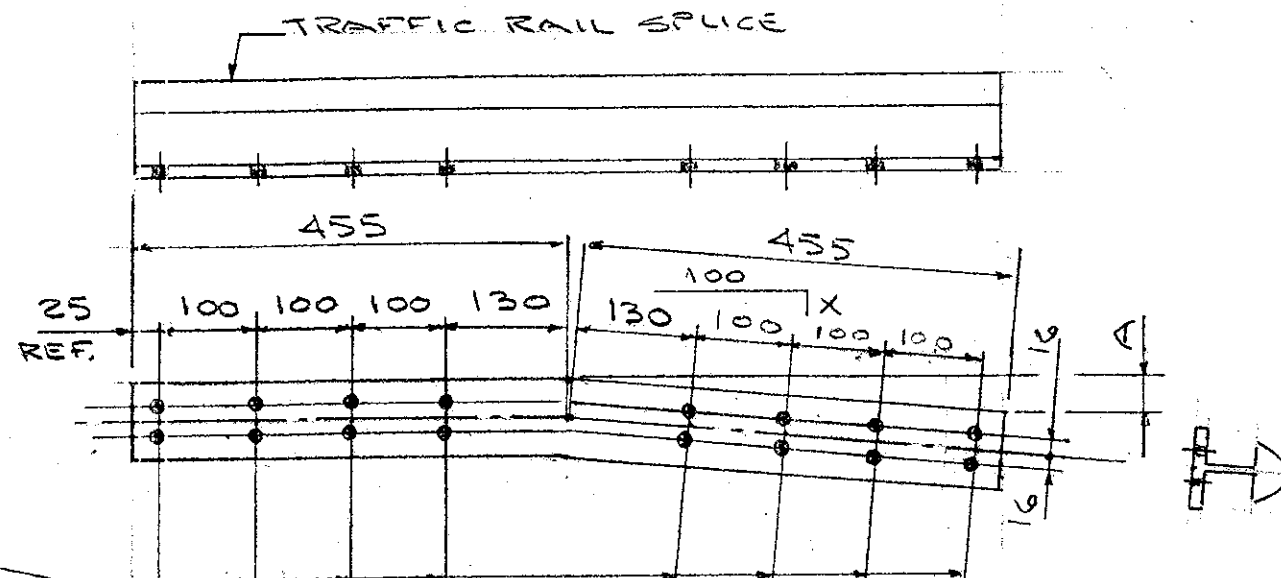
(4) SPLICE HST



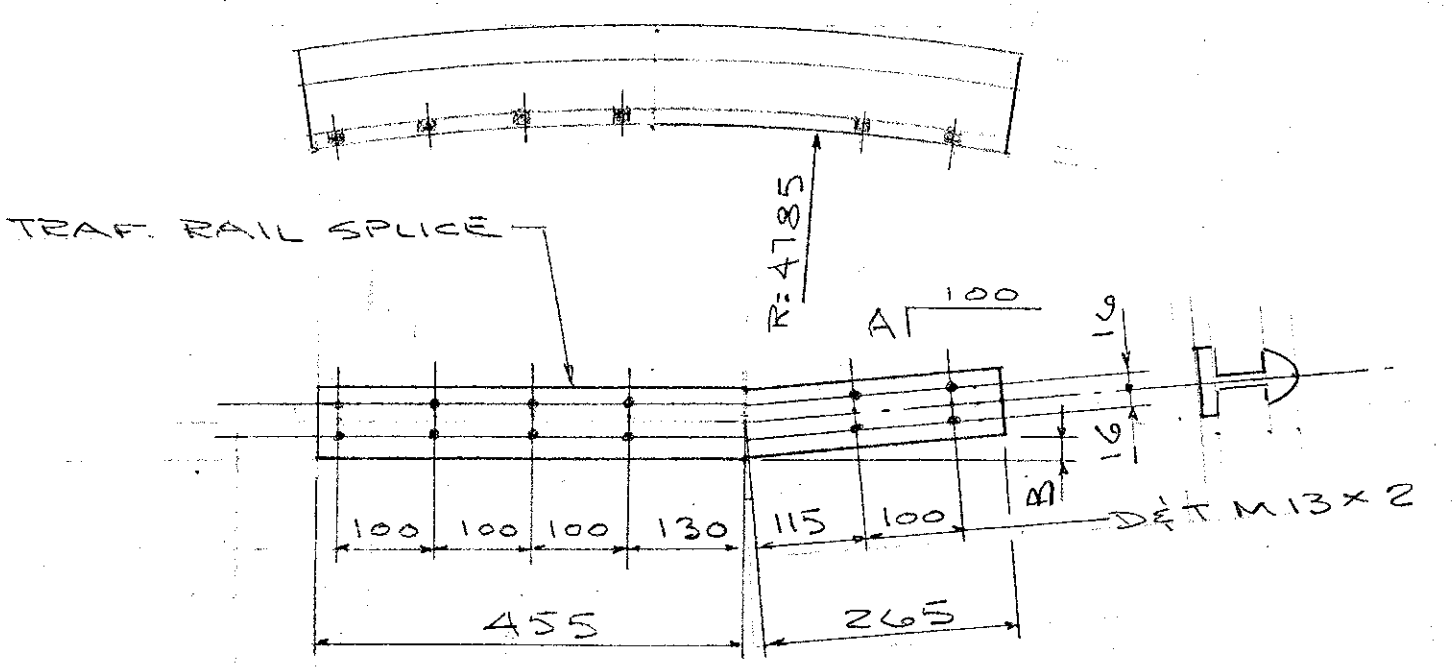
QUAN	MK	X	A
2	H52	8.8	27
2	H53	5.8	18



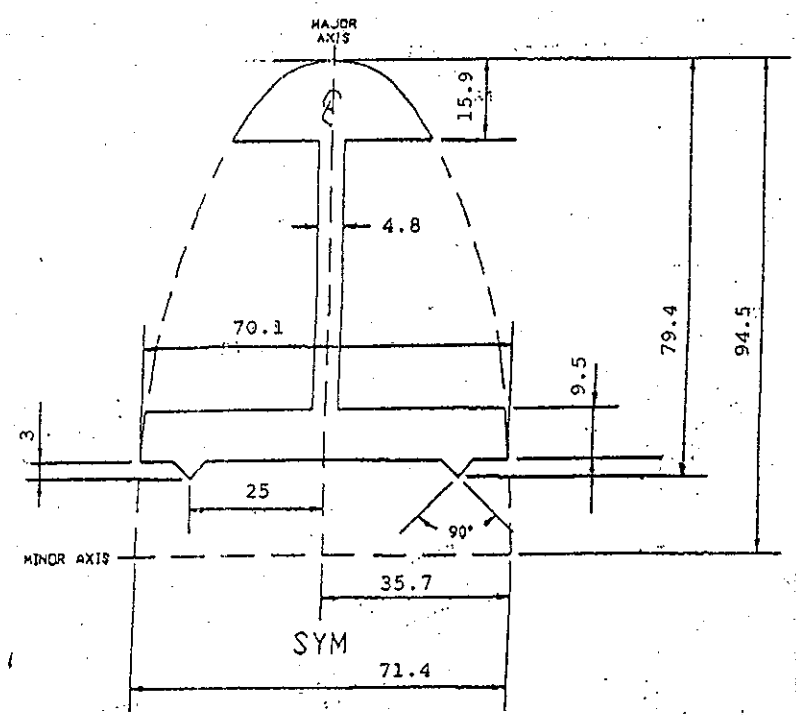
(8) SPLICE T51



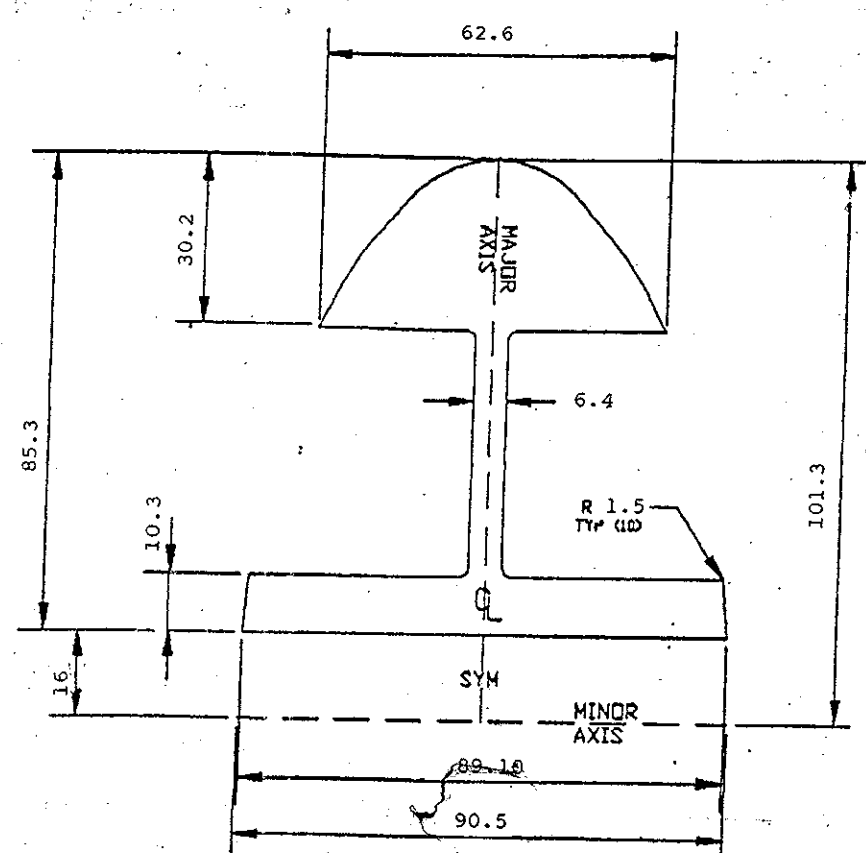
QUAN	MK	X	A
2	T52	4.4	20
2	T53	2.5	11
2	T55	1.0	5
2	T56	0.5	2



QUAN	MK	A	B
1	T54	4.4	12
1	T57	2.5	7



HANDRAIL SPLICE
EXTRUSION
ALLOY 6061-T6



TRAFFIC RAIL SPLICE
EXTRUSION
ALLOY 6061-T6

DIM'S ARE GIVEN IN MILLIMETERS

AUCIELLO IRON WORKS INC 560 MAIN ST. HUDSON, MA (978) 568-8382	
VT. AGENCY OF TRANSPORTATION HARDYCK # BNF 030-2(18)S BRIDGE # 67 VT15 OVER COOPER BROOK	
AL. BRIDGE & APPROACH RAILING	
SURFACE PREP: NONE	FINISH: BLACK ANODIZE
FOR: F.R. LAFAYETTE, INC.	
DR: WM 9-15-09	DWG. NO.
CHK:	BR-2965
JOB NO. AB07010-1001	SHEET F6 OF 6

1	9/24/09	FOR APPROVAL	BY	
ISSUE	DATE	DESCRIPTION	BY	