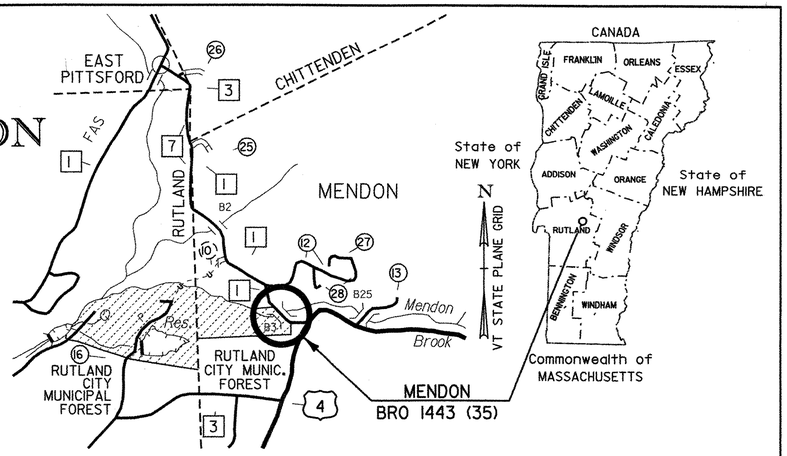
SEE NEXT SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION



NOT TO SCALE

PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF MENDON
COUNTY OF RUTLAND
ROUTE NO: TH#1, CL2 (LOCAL)
BRIDGE NO 3

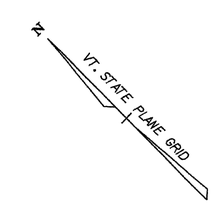
PROJECT LOCATION

LOCATED IN THE COUNTY OF RUTLAND, TOWN OF MENDON ON TH 1, BRIDGE NO. 3 APPROXIMATELY 0.2 KM NORTH WESTERLY FROM THE INTERSECTION OF TH 1 AND US ROUTE 4.

PROJECT DESCRIPTION

THIS PROJECT SHALL CONSIST OF THE REPLACEMENT OF THE EXISTING STRUCTURE WITH RELATED APPROACH AND CHANNEL WORK.

LENGTH OF STRUCTURE :	34.616 METERS	0.035 KILOMETERS
LENGTH OF ROADWAY :	90.384 METERS	0.090 KILOMETERS
LENGTH OF PROJECT :	125.000 METERS	0.125 KILOMETERS





BEGIN APPROACH
STA 2+000.000

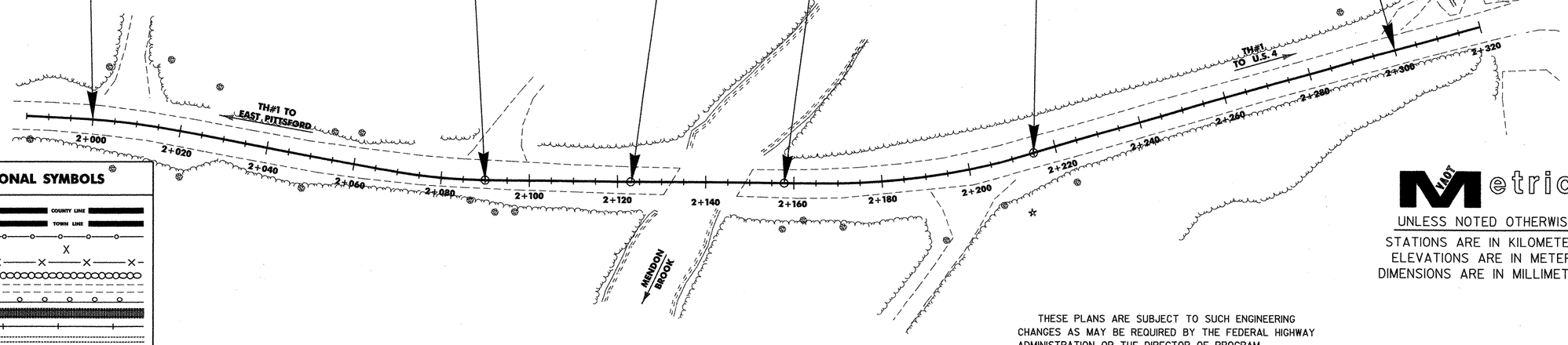
BEGIN PROJECT
STA 2+090.000

BEGIN BRIDGE
STA 2+123.192

END BRIDGE
STA 2+157.808

END PROJECT
STA 2+215.000

END APPROACH
STA 2+300.000



CONVENTIONAL SYMBOLS

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

SURVEYED BY : L. Orvis
SURVEYED DATE : February 1996

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83/92

0 10 20 30
SCALE 1:500

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

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

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

PLOTTED 21-OCT-2005 sj2901tt.i

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED Richard Peterson DATE 10-24-05

PROJECT MANAGER : C. KELLER

PROJECT NAME : MENDON
PROJECT NUMBER : BRO 1443(35)

SHEET 1 OF 94 SHEETS

RECORD PLANS

CONTRACTOR: FW WHITCOMB CONSTRUCTION CORP. – WALPOLE, NH

RESIDENT ENGINEER: JUDY GILMORE

CONSTRUCTION BEGAN: JUNE 7, 2006

CONSTRUCTION COMPLETE: JUNE 26, 2007

RECORD PLANS BY: JUDY GILMORE

I HEREBY CERTIFY THAT ALL THE CONSTUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY Judy Gilmore RESIDENT ENGINEER

DATE 7 JANUARY 2009

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.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET

Metric

LIST OF SHEETS

1. TITLE SHEET
2. PRELIMINARY INFORMATION SHEET
3. TYPICAL SHEET
4-5. QUANTITY SHEETS
6. ITEM DETAIL SHEET
7. DRAINAGE DETAIL SHEET
8. EARTHWORKS SHEET
9-12. R.O.W. DETAIL SHEETS
13. TIE SHEET
14-16. LAYOUT SHEETS
17-19. PROFILE SHEETS
20. TEMPORARY DETOUR SHEET
21. BORING SHEET
22. BORING LOG SHEET
23. PLAN AND ELEVATION SHEET
24-26. EROSION CONTROL NOTES
27-31. EROSION CONTROL DETAILS
32-33. SOILS SHEETS
34-42. EROSION CONTROL SHEETS
43. PAVEMENT MARKINGS
44. GENERAL NOTES
45. BRIDGE TYPICALS & END DETAILS SHEET
46. DECK PLAN SHEET
47. GIRDER ELEVATION & FRAMING PLAN SHEET
48. CROSSFRAME DETAILS
49. MISCELLANEOUS DETAILS SHEET
50 BEARING DETAIL SHEET
51. APPROACH SLAB DETAILS
52. ABUTMENT NO. 1 PLAN AND ELEVATION SHEET
53. ABUTMENT NO. 2 PLAN AND ELEVATION SHEET
54. ABUTMENT NO. 1 AND ABUTMENT NO. 2 REINFORCING
55. WINGWALL NO. 1 AND NO. 2 DETAIL SHEET
56. WINGWALL NO. 3 AND NO. 4 DETAIL SHEET
57-58. EXPANSION JOINT DETAIL
59. HOPPER AND DOWNSPOUT DETAILS
60-61. BRIDGE RAILING DETAILS
62. REINFORCING STEEL SUMMARY SHEET
63. SUPERELEVATION & BANKING DIAGRAM SHEET
64 PIPE SECTION SHEETS
65 SKEWED SECTION SHEET
66-88. MAINLINE SECTION SHEETS
89-94. CHANNEL LINE SHEETS

LIST OF STANDARDS

A-76	STANDARD FOR DEVELOPMENT ROADS	3/3/2003
B-5M	SLOPE GRADING, EMBANKMENTS, MUCK	1/3/2000
B-71	RESIDENTIAL AND COMMERCIAL DRIVES	7/8/2005
C-1M	CURBS, BITUMINOUS CONCRETE SIDEWALKS GRANITE SLOPE EDGING, VERTICAL GRANITE CURB PRECAST REINFORCED CONCRETE CURB CAST IN PLACE CONCRETE CURB BITUMINOUS CONCRETE CURB, TREATED TIMBER CURB	1/3/2000
D-1M	PRECAST RCP DROP INLET REINFORCED CONCRETE PIPE D.I.W/ CAST IRON GRATE REINFORCED CONCRETE PIPE D.I.W/ CONCRETE COVER	6/13/1997
D-2M	C.R.M. HEADWALLS, UNDERDRAIN REINFORCED CONCRETE HEADWALL, UNDERDRAIN & CARRIER PIPE CONSTRUCTION DETAILS	6/13/1997
D-3M	TREATED GUTTERS	6/13/1997
D-6M	REINF. CONCRETE DROP INLET W/GRATE (DITCHES)	6/13/1997
D-8M	REINFORCED CONCRETE DROP INLET WITH PRECAST COVER & GRATE (BOTTOM SECTION) SEE SHEETS D-9,10,11 FOR TOP SECTION	1/3/2000
D-15M	PRECAST REINF. CONC. MANHOLE GRATES (BICYCLE S CAST IRON GRATE WITH FRAME,TYPE D CAST IRON GRATE WITH FRAME,TYPE E	6/13/1997
E-100	CONSTRUCTION APPROACH SIGNS	1/2/2004
E-100A	SIDE ROAD CONSTRUCTION APPROACH SIGNS	1/2/2004
E-102	CONSTRUCTION SIGN DETAILS	6/30/2003
E-102A	CONSTRUCTION SIGN DETAILS	5/1/2004
E-106	TRAFFIC CONTROL - MISCELLANEOUS DETAILS	5/1/2004
E-107	DELINEATION, BARRICADES AND DETOURS FOR U-TURNS ON DIVIDED HIGHWAY	6/30/2003
E-107A	BREAKAWAY BARRICADE DETAILS	8/8/1995
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	8/8/1995
E-134	BRIDGE NUMBER PLAQUE	8/8/1995
E-160	FLANGED CHANNEL STEEL SIGN POST	5/20/1998
E-193	PAVEMENT MARKING DETAILS	8/18/1995
F-2M	CHAIN LINK FENCE (TYPE 1)	1/3/2000
G-1M	STEEL BEAM GUARDRAIL (50 MPH & OVER) HEAVY DUTY STEEL BEAM GUARDRAIL TWISTED END TERMINAL	1/3/2000
G-1DM	STEEL BEAM GUARDRAIL (40 MPH & LESS) HEAVY DUTY STEEL BEAM GUARDRAIL STEEL BEAM MEDIAN BARRIER ANCHOR FOR STEEL BEAM RAIL	1/3/2000

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: 12/07/99

DRAINAGE AREA: 46.8 sq km
CHARACTER OF TERRAIN: Mostly Mountainous and Forested
STREAM CHARACTERISTICS: Perennial Stream
NATURE OF STREAMBED: Gravel, Cobble and Boulder

PEAK FLOW DATA

Q 2.33 =	28.3 cms	Q 50 =	106.2 cms
Q 10 =	63.7 cms	Q 100 =	124.6 cms
Q 25 =	87.8 cms	Q 500 =	164.2 cms

DATE OF FLOOD RECORD: Unknown
ESTIMATED DISCHARGE: N/A
WATER SURFACE ELEV.: N/A
NATURAL STREAM VELOCITY @ Q25 = 3.7 mps
ICE CONDITIONS: Moderate
DEBRIS: Moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes
IS ORDINARY RISE RAPID? Yes
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
IF YES, DESCRIBE:

WATERSHED STORAGE: 1%
HEADWATERS:
UNIFORM: X
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single Span Bridge (Rolled Beam with Concrete Deck)
YEAR BUILT: 1924
CLEAR SPAN(NORMAL TO STREAM): 10.6 m
VERTICAL CLEARANCE ABOVE STREAMBED: 4.3 m
WATERWAY OF FULL OPENING: 41.6 sq m
DISPOSITION OF STRUCTURE: Remove
TYPE OF MATERIAL UNDER SUBSTRUCTURE: Unknown

WATER SURFACE ELEVATIONS AT:

Q2.33 =	298.1 m	VELOCITY=	2.9 mps
Q10 =	297.0 m	"	3.9 mps
Q25 =	297.5 m	"	4.3 mps
Q50 =	297.9 m	"	4.6 mps
Q100 =	298.3 m	"	4.9 mps

LONG TERM STREAMBED CHANGES: Some scour along northern abutment, due to poor channel alignment.

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: Above Q100
RELIEF ELEVATION: 298.6 m
DISCHARGE OVER ROAD @Q100: None

UPSTREAM STRUCTURE

TOWN: Mendon — DISTANCE: 0.8 km +-
HIGHWAY #: TH-13 — STRUCTURE #: Bridge 25
CLEAR SPAN: 8.1 m — CLEAR HEIGHT: 3.1 m
YEAR BUILT: Unknown — FULL WATERWAY: Unknown
STRUCTURE TYPE: Single Span Bridge

DOWNSTREAM STRUCTURE

TOWN: Rutland — DISTANCE: 3.2 km +-
HIGHWAY #: TH-19 — STRUCTURE #: Bridge 9
CLEAR SPAN: 29.3 m — CLEAR HEIGHT: 4.0 m
YEAR BUILT: 1950 — FULL WATERWAY: Unknown
STRUCTURE TYPE: Single Span Bridge

LOAD FACTOR - LOAD RATING (METRIC TONS)

LOADING LEVELS	TRUCK						
	M	MS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY	30	45					
POSTED	42	64	74		61	62	68
OPERATING		76	89	99	73	74	

COMMENTS: SERVICEABILITY CONTROLS

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2001	2610	365	63	2	80
2021	3500	485	63	2	125

20 year ESAL for flexible pavement from 2001 to 2021 : 744,000
40 year ESAL for flexible pavement from 2001 to 2041 : 1,702,000
Design Speed : 60 km/h

PROPOSED STRUCTURE

STRUCTURE TYPE: Single Span Bridge

CLEAR SPAN(NORMAL TO STREAM): 28.6 m
VERTICAL CLEARANCE ABOVE STREAMBED: 4.0 m
WATERWAY OF FULL OPENING: ~~72.3~~ sq m 68.6

WATER SURFACE ELEVATIONS AT:

Q2.33 =	~~295.9~~ m 296	VELOCITY=	2.6 mps
Q10 =	296.5 m	"	~~3.3~~ mps 3.7
Q25 =	296.8 m	"	~~3.6~~ mps 4.0
Q50 =	297.0 m	"	~~3.7~~ mps 3.8
Q100 =	297.2 m	"	3.8 mps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: Over Q100
RELIEF ELEVATION: 299.1 m
DISCHARGE OVER ROAD @Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 298.1 m
VERTICAL CLEARANCE: @ Q100 = 0.9 m (vertical clearance @ northern end = 0.3 m)

SCOUR: Contraction Scour @ Q100 = 0.0 m , @ Q500 = 0.3 m

REQUIRED CHANNEL PROTECTION: Type IV Stone Fill

PERMIT INFORMATION

AVERAGE DAILY FLOW:	1.0 cms	DEPTH OR ELEVATION:
ORDINARY LOW WATER:	0.5 cms	0.3 m
ORDINARY HIGH WATER:	12.2 cms	0.6 m

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Single Span Bridge
CLEAR SPAN (NORMAL TO STREAM): 19.0m (minimum)
VERTICAL CLEARANCE ABOVE STREAMBED: Low Beam Elev. = 297.1 m (min.*)
WATERWAY AREA OF FULL OPENING: 17.0 sq m (minimum)

ADDITIONAL INFORMATION

* Temporary Bridge Low Beam elevation of 297.1 m is based on the temporary bridge being constructed 15 m downstream of the existing structure, and being removed before winter.

DESIGN CRITERIA

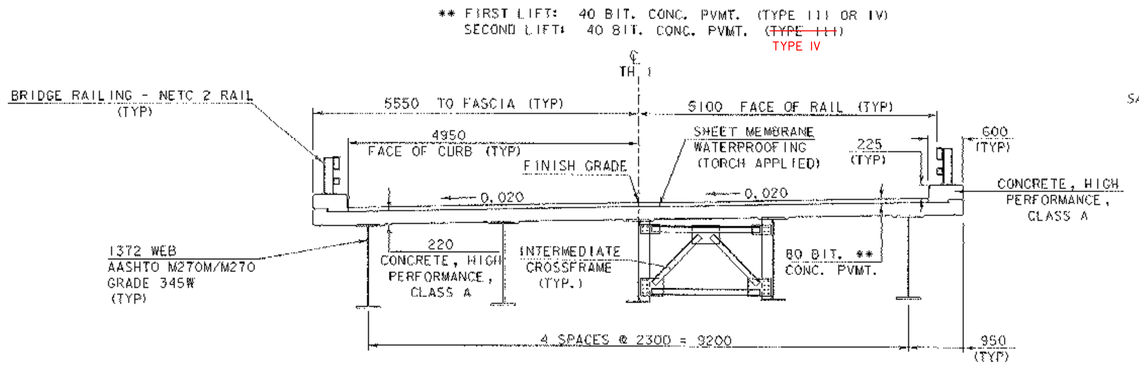
1. DESIGN LIVE LOAD AASHTO MS 22.5
2. DESIGN SPAN 33m CL BRG TO CL BRG
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 380 Mpa
   ON LEDGE N/A
4. ALLOWABLE LOAD FOR PILING N/A
   TYPE N/A
   ESTIMATED LENGTH N/A
5. STRUCTURAL STEEL AASHTO M270/M270 GRADE M270/M270 GRADE 345W
6. REINFORCING STEEL GRADE 420
7. CONCRETE, HIGH PERFORMANCE CLASS A f'c: 30 Mpa
   CONCRETE, HIGH PERFORMANCE CLASS B f'c: 25 Mpa
8. DESIGN SOIL UNIT WEIGHT 22.00 kN/m³
9. DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL 349 Mpa

TRAFFIC MAINTENANCE

1. IS TRAFFIC TO BE MAINTAINED? YES
   IF YES, ON EXISTING STRUCTURE? NO
   OR ON TEMPORARY BRIDGE? YES
   ONE OR TWO-WAY TRAVEL? TWO-WAY
2. TRAFFIC CONTROL SIGNALS REQUIRED? NO
3. ARE SIDEWALKS REQUIRED? NO
   IF SO, ON WHAT SIDE?

PROJECT NAME: MENDON
PROJECT NUMBER: BRO 1443(35)

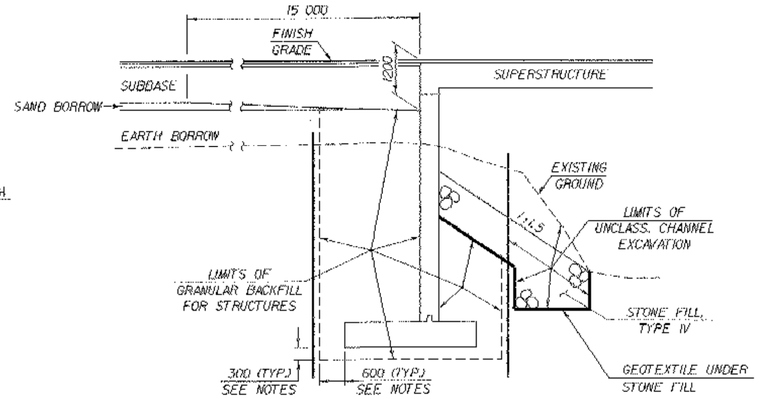
FILE NAME: /str5/95j290/sj290pi.xls — PLOT DATE: 11/28/2005
PROJECT MANAGER: C. KELLER — DRAWN BY: K. RUTTER
DESIGNED BY: M. EVANS-MONGEON — CHECKED BY: T. SUMNER
PRELIMINARY INFORMATION SHEET — SHEET 2 OF 94



BRIDGE TYPICAL

0 1 2 3 4 5

SCALE = 1:50

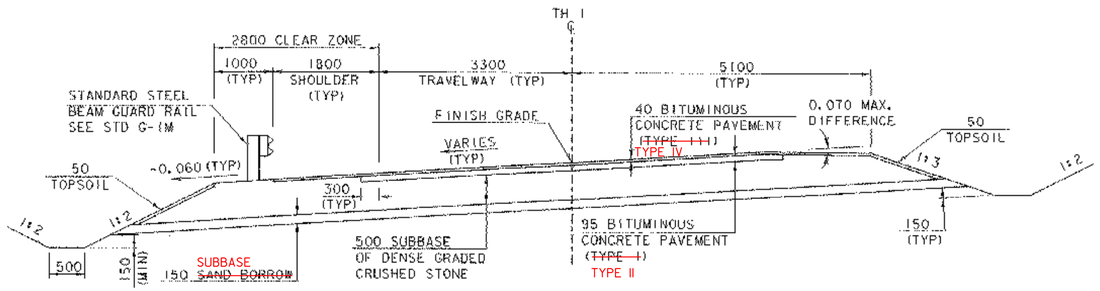


TYPICAL ABUTMENT SECTION

(NOT TO SCALE)

COFFERDAM NOTES

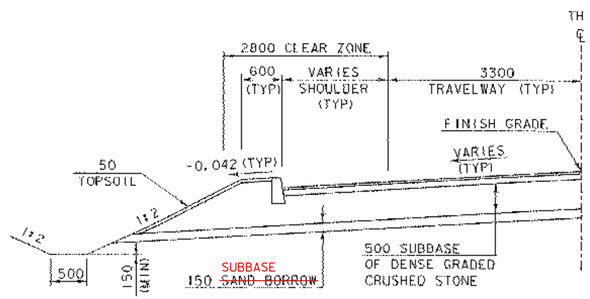
1. COFFERDAM LIMITS TO BE DETERMINED BY THE CONTRACTOR.
2. THE PAY LIMITS OF COFFERDAM EXCAVATION, EARTH" AND "COFFERDAM EXCAVATION, ROCK" SHALL BE 600 OUTSIDE THE PERIMETER OF THE FOOTING, UP TO EXISTING GROUND OR BOTTOM OF SUBBASE, WHICHEVER IS LOWER.
3. 300 UNDERCUT AS DETERMINED NECESSARY BY THE RESIDENT ENGINEER.
4. ALL COFFERDAM EXCAVATION WHICH IS OUTSIDE THE INDICATED COFFERDAM PAY LIMITS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR UNCLASSIFIED CHANNEL EXCAVATION.



ROADWAY TYPICAL

0 1 2 3 4 5

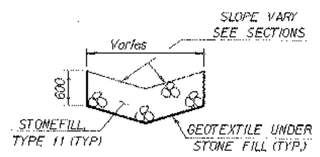
SCALE = 1:50



ROADWAY TYPICAL W/ CURB

0 1 2 3 4 5

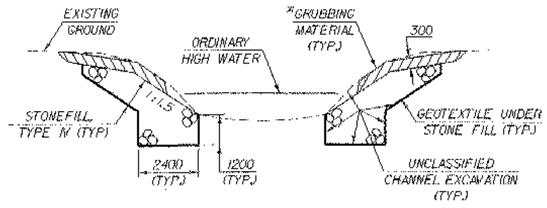
SCALE = 1:50



TYPICAL DITCH SECTION

NOT TO SCALE

STA 2+206 Rt. - STA 2+800 Rt.



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
GRANULAR BORROW	±30 mm

TYPICAL SECTIONS

PROJECT NAME: MENDON
PROJECT NUMBER: BRO 1443(35)

FILE NAME: /str5/95]290/s1290typ.dgn
PROJECT LEADER: C. KELLER
DESIGNED BY: M. EVANS-MONGEON
s1290typ.1

PLOT DATE: 18-NOV-2005
DRAWN BY: G. Shangraw
CHECKED BY: M.E.M.
SHEET 3 OF 94

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

Metric

SUMMARY OF ESTIMATED QUANTITIES

EROSION CONTROL	TRAINING	ROADWAY	FULL E&C	SUPER. STRUC.	APPRO. SLAB #1	APPRO. SLAB #2	ABUT. #1	ABUT. #2	BRIDGE QUANTITY
		1							
		400							
							170	580	750
		350							
		590							
		230							
		2070							
40		270							
							110	120	230
							150	150	300
							65	65	130
							1		1
								1	1
		630							
		990							
		150							
		741		46					45
				102					102
		7			28	28	75	89	220
				1					1
				63610					63610
		220					3215	3910	7125
				16940	1745	1745			20430
				1					1
				1					1
				1					1
				37			14	21	72
				13					13
				13					13
				350					350
				34					34
				80.4					80.4
				1					1
				100					100
				1					1
				10					10
		98							
		98							
		99							
		1							
		1							
		1							
		2							
		2							
		1							
20		4							
		1							
40									
5									

TOTALS

ROUND	GRAND TOTAL	FINAL
	1	
	400	
	750	
	350	
	590	
	230	
	2070	
	280	
	230	
	300	
	130	
	1	
	1	
	630	
	990	
	150	
	786	
	102	
	~~227~~	220
	1	
	63610	
	~~7345~~	7125
	20430	
	1	
	1	
	1	
	72	
	13	
	13	
	350	
	34	
	80.4	
	1	
	100	
	1	
	10	
	98	
	98	
	99	
	1	
	1	
	1	
	2	
	2	
	1	
	24	
	1	
	40	
	5	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER
LS	CLEARING AND GRUBBING (INCL. INDV. TREES & STUMPS)	201.10
CM	COMMON EXCAVATION	203.15
CM	UNCLASSIFIED CHANNEL EXCAVATION	203.27
CM	EXCAVATION OF SURFACES AND PAVEMENTS	203.28
CM	EARTH BORROW	203.30
CM	SAND BORROW	203.31
SM	FINE GRADING-SUBGRADE	203.40
CM	TRENCH EXCAVATION OF EARTH	204.20
CM	GRANULAR BACKFILL FOR STRUCTURES	204.30
CM	COFFERDAM EXCAVATION, EARTH	208.30
CM	COFFERDAM EXCAVATION, ROCK	208.35
LS	COFFERDAM (2+123)	208.40
LS	COFFERDAM (2+158)	208.40
SM	COLD PLANING BIT.PAVEMENT	210.10
CM	SUBBASE OF CRUSHED GRAVEL (COARSE GRADED)	301.25
KG	EMULSIFIED ASPHALT	404.65
T	BITUMINOUS CONCRETE PAVEMENT (PG 58-34)	406.25
CM	CONCRETE, HIGH PERFORMANCE, CLASS A	501.33
CM	CONCRETE, HIGH PERFORMANCE, CLASS B	501.34
LS	SHORING SUPERSTRUCTURE (CHANGE ORDER #4)	502.10
KG	STRUCTURAL STEEL (PLATE GIRDER)	506.55
KG	REINFORCING STEEL	507.15
KG	EPOXY COATED REINFORCING STEEL	507.17
LS	SHEAR CONNECTORS (1110 - 22 x 180)	508.15
LS	STRUCTURAL PAINTING, SHOP APPLIED (5 TONS)	513.25
LS	SURFACE PREPARATION, SHOP (5 TONS)	513.40
L	WATER REPELLENT (MOD. - SILANE)	514.10
M	BRIDGE EXPANSION JOINT (VERMONT)	516.10
M	BRIDGE EXPANSION JOINT (ASPHALTIC PLUG)	516.10
SM	SHEET MEMBRANE WATERPROOFING (MOD. - TORCH APPLIED)	519.20
M	REMOVAL OF EXISTING RAILING	525.10
M	BRIDGE RAILING - NETC 2 RAIL	525.33
LS	TWO-WAY TEMPORARY BRIDGE (MOD) (178 SM - EST)	528.11
SM	REMOVAL OF BRIDGE PAVEMENT	529.10
EACH	PARTIAL REMOVAL OF STRUCTURE (120.6M - EST)	529.20
EACH	BEARING DEVICE ASSEMBLY (ELASTOMERIC)	531.10
	BEGIN OPTION ITEMS	
M	450 mm PCCSP 1.63 mm (68 mm X 12 mm)	601.0415
M	450 mm CAAP 1.52 mm (68 mm X 12 mm)	601.0215
M	450 mm CPEP	601.0915
EACH	450 mm CSPES 1.63 mm (68 mm X 12 mm)	601.6015
EACH	450 mm CAAPES 1.52 mm (68 mm X 12 mm)	601.6215
EACH	450 mm CPEPES	601.7015
	END OPTION ITEMS	
EACH	PRC CURB DROP INLET W/TH CAST IRON GRATE (CHANGE ORDER #1)	604.30
EACH	CAST IRON GRATE WITH FRAME, TYPE D	604.47
EACH	CAST IRON GRATE WITH FRAME, TYPE E	604.48
HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25
T	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15
CM	STONE FILL, TYPE I (MOD. - CHECK DAM)	613.10
CM	STONE FILL, TYPE I (MOD. - INLET PROTECTION)	613.10

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
220	CM	CONCRETE, HIGH PERFORMANCE, CLASS B — SEE CHANGE ORDER #1
7345	KG	REINFORCING STEEL — SEE CHANGE ORDER #1
46	M	BRIDGE EXPANSION JOINT (VERMONT) — CONCRETE BARE DECK, NO PAVEMENT JOG
1	T	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE — NOT USED

PROJECT NAME: MENDON
PROJECT NUMBER: BRO 1443(35)

FILE NAME: /str5/95j290/sj290qs.xls
PROJECT LEADER: C. KELLER
DESIGNED BY: M. EVANS-MONGEON
QUANTITY SHEET #1

PLOT DATE: 10/21/2005
DRAWN BY: R.VH
CHECKED BY: M.E.M.
SHEET 4 OF 94

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

Metric

SUMMARY OF ESTIMATED QUANTITIES

EROSION CONTROL	TRAINING	ROADWAY	FULL E&C	SUPER STRUC.	APPRO. SLAB #1	APPRO. SLAB #2	ABUT. #1	ABUT. #2	BRIDGE QUANTITY
20									
		160							
		50					200	260	460
		~~50~~ 0							
		20							
		8							
		58							
		4							
		10							
675									
		260							
		4							
		4							
		237							
		36.6							
		~~75~~							
		175							
			1						
			1						
			1						
			~~1~~						
	520								
		1							
		1							
		600							
		600							
		320							
		320							
		50							
		~~5~~							
		530					240	355	595
500									
50									
10									
200									
2									
2									
170									
							145	225	370
1									
60									
~~1~~									
5000									
		2							
		2							

ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER
	20		CM	STONE FILL, TYPE I (MOD - CONSTRUCTION ENTRANCE)	613.10
	160		CM	STONE FILL, TYPE I	613.11
	460		CM	STONE FILL, TYPE IV	613.13
	50		M	VERTICAL GRANITE CURB (CHANGE ORDER #2)	616.21
	~~50~~ 0		M	CAST-IN PLACE CEMENT CONCRETE CURB, TYPE B (MOD.)	616.20
	20		M	TREATED TIMBER CURB	616.35
	8		EACH	STEEL MARKER POSTS	619.16
	58		M	CHAIN LINK FENCE, 1.8 M	620.12
	4		EACH	BRACING ASSEMBLY FOR CHAIN-LINK FENCE, 1.8 M	620.21
	10		M	REMOVAL OF EXISTING FENCE	620.55
	675		M	SNOW FENCE (MOD. - PDF)	620.70
	260		M	STEEL BEAM GUARD RAIL (GALVANIZED)	621.20
	4		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60
	4		EACH	GUARD RAIL APPROACH SECTION,NETC 2 RAIL	621.72
	237		M	REMOVAL AND DISPOSAL OF GUARD RAIL	621.80
	36.6		M	TEMPORARY TRAFFIC BARRIER (CHANGE ORDER #3)	621.90
	~~75~~		HR	UNIFORMED TRAFFIC OFFICERS	630.10
	175		HR	FLAGGERS	630.15
	1		LS	FIELD OFFICE-ENGINEERS	631.10
	1		LS	TESTING EQUIPMENT - CONCRETE	631.16
	1		LS	TESTING EQUIPMENT - BITUMINOUS	631.17
	1		LU	FIELD OFFICE - TELEPHONE (N.A.B.I.)	631.25
	520		HR	EMPLOYEE TRAINEESHIP	634.10
	1		LS	MOBILIZATION/DEMOBILIZATION	635.11
	1		LS	TRAFFIC CONTROL	641.10
	600		M	100 mm WHITE LINE	646.20
	600		M	100 mm YELLOW LINE	646.21
	320		M	TEMPORARY 100 mm WHITE LINE (PAINT)	646.60
	320		M	TEMPORARY 100 mm YELLOW LINE (PAINT)	646.61
	50		EACH	LINE STRIPING TARGETS	646.76
	8		SM	REMOVAL OF EXISTING PAVEMENT MARKINGS	646.85
	1125		SM	GEOTEXTILE UNDER STONE FILL	649.31
	500		SM	GEOTEXTILE FOR SILT FENCE	649.51
	50		KG	SEED	651.15
	10		KG	SEED - WINTER RYE	651.17
	200		KG	FERTILIZER	651.18
	2		T	AGRICULTURAL LIMESTONE	651.20
	2		T	HAY MULCH	651.25
	170		CM	TOPSOIL	651.35
	370		SM	GRUBBING MATERIAL	651.40
	1		LS	EROSION PREVENTION & SEDIMENT CONTROL PLAN	652.10
	60		HR	MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN	652.20
	1		LU	FIELD MAINT. OF EROSION PREVENTION & SEDIMENT CONTROL PLAN (N.A.B.I.)	652.30
	5000		SM	EROSION MATTING (STRAW MATTING)	654.10
	2		EACH	REMOVING SIGNS	675.50
	2		EACH	ERECTING SALVAGED SIGNS	675.60

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
SEE CHANGE ORDER #2		
NOT USED		
USED SW CONSTRUCTION OFFICE IN MENDON		
NOT USED		
NOT USED		
SIGNS DELIVERED TO CITY OF RUTLAND WATER TREATMENT PLANT		

PROJECT NAME: MENDON
PROJECT NUMBER: BRO 1443(35)

FILE NAME: /str5/95j290/sj290qs.xls
PROJECT LEADER: C. KELLER
DESIGNED BY: M. EVANS-MONGEON
QUANTITY SHEET #2

PLOT DATE: 10/21/2005
DRAWN BY: R.VH
CHECKED BY: M.E.M.
SHEET 5 OF 94

STATE OF VERMONT
AGENCY OF TRANSPORTATION

ITEM DETAIL SHEET

Metric

CURB

BEGIN STATION km + m	END STATION km + m	POSITION LEFT m	POSITION RIGHT m	REMARKS
2+040	2+087	47		~~Cast in Place Concrete Curb, Type II~~ GRANITE CURB
	TOTAL	47		
2+106	2+126	20		Treated Timber Curb
	TOTAL	20		

SIDEWALK

BEGIN STATION km + m	END STATION km + m	POSITION LEFT m	POSITION RIGHT m	REMARKS

GUARD RAIL

BEGIN STATION km + m	END STATION km + m	POSITION LEFT m	POSITION RIGHT m	END TREATMENT BEGIN m	END TREATMENT END m
2+022.71	2+109.17		86.46		Steel Beam Guardrail
2+026.70	x		0.60		G-1dM Anchor
2+109.17	2+116.79		7.62		Appr. Sec., NETC 2 rail
2+116.79	2+156.97		40.18		Bridge Rail, NETC 2 rail
2+156.97	2+164.59		7.62		Appr. Sec., NETC 2 rail
2+164.59	2+193.08		28.49		Steel Beam Guardrail
2+168.00	x		0.60		G-1dM Anchor
2+100.99	2+115.49	14.50			Steel Beam Guardrail
2+104.80	x	0.60			G-1dM Anchor
2+115.49	2+123.12	7.62			Appr. Sec., NETC 2 rail
2+123.12	2+163.30	40.18			Bridge Rail, NETC 2 rail
2+163.30	2+170.92	7.62			Appr. Sec., NETC 2 rail
2+170.92	2+297.66	126.74			Steel Beam Guardrail
2+294.40	x	0.60			G-1dM Anchor

UNDERDRAIN

BEGIN STATION km + m	END STATION km + m	TYPE	POSITION	DIA mm	LENGTH m	TRENCH EARTH m	TRENCH ROCK m	CLEAN OUTS no.	YD no.	MARKERS no.

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443(35)
FILE NAME:	/str5/95[290/sj290ids.xls
PROJECT LEADER:	C. KELLER
DESIGNED BY:	M. EVANS-MONGEON
ITEM DETAIL SHEET	
PLOT DATE:	9/16/2005
DRAWN BY:	R. VH
CHECKED BY:	M.E.M.
SHEET	8 OF 84

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAINAGE DETAIL SHEET

Metric

STATION km + m	STATION km + m	POS.	ASKEW no. deg.	INLET/OUTLET TYPE INLET	INLET/OUTLET TYPE OUTLET	DITCH IN	DITCH OUT	PIPE ARCH SPAN mm	PIPE ARCH RISE mm	PIPE ARCH L m	PIPE D mm	PIPE L m	ALLOWABLE OPTIONS PCCSP mm	ALLOWABLE OPTIONS CAAP mm	ALLOWABLE OPTIONS RCP CL	ALLOWABLE OPTIONS CSP mm	ALLOWABLE OPTIONS CPEP SL mm	ALLOWABLE OPTIONS PCCSP PI mm	PIPE ELBOW no. deg.	ES ea	CB ea	PROCODE	DEPTH DI mm	CONC H.P. CLASS B m³	REINF STEEL kg	DI GRATE type	CHAN ELEV ea	CRM m³	TRENCH EXCAVATION EARTH m³	TRENCH EXCAVATION ROCK m³	COMM EXC m³	UNC CHAN EXC m³	STRUCT EXCAV m³	GRAN BKFILL STRUCT m³	GRAN BORR m³	EROS MATT m²	STONE FILL m³	STONE FILL type	MARKER POSTS LT ea	MARKER POSTS RT ea	GEOTEX UNDER STONE FILL m²	REMARKS
2+029		CL	110 LT	HDWALL	DITCH	X	X				450	14	1.63	1.52			X							1.3	6.0			26.5								25.3	II	1	1	66	HEADWALL INLET STONE FILL (TYPE I I) OUTLET DITCH W/ GEOTEXTILE FABRIC
2+071		CL	80 LT	HDWALL	DITCH		X				450	31	1.63	1.52			X							1.3	6			60.0								5.0	II	1	1	15	HEADWALL INLET STONE FILL (TYPE I I) OUTLET DITCH W/ GEOTEXTILE FABRIC
2+083	2+105	LT		RCDI	RCDI						450	21	1.63	1.52			X						1350	1.95	94	E		12.1										1			1200 X 1200 RCDI W/ TYPE E GRATE
2+105	2+110	LT		RCDI	DITCH		X				450	8	1.63	1.52			X						1500	2.49	113	D (2)		6.5										1			1200 X 1800 RCDI @ 2+105 LT W/ TWO TYPE D GRATES
2+110	2+136	LT																										43.0								10.4	II			52	STONE FILL DITCH, TYPE I I
2+206		CL	90 LT	ES	DITCH		X				450	24	1.63	1.52			X			1								40.3								8.1	II	1	1	24	END SECTION INLET & STONE PAD (TYPE II) OUTLET
2+206	2+280	RT																										41.3								46.9	II			222	STONE FILL DITCH, TYPE I I
2+240	2+285	LT																										39.0								62.0	II			150	STONE FILL FOR SLOPE STABILIZATION, TYPE I I
											450	98	1.63	1.52			X			1				7.04	219.0	1-E 2-D		268.7								157.7	II	5	3	529	

PROJECT NAME: **MENDON**
PROJECT NUMBER: **BRO 1443 (35)**

FILE NAME: /str5/95j290/sj290dds.xls
PROJECT LEADER: C. KELLER
DESIGNED BY: M. EVANS-MONGEON
DRAINAGE DETAIL SHEET

PLOT DATE: 9/7/2004
DRAWN BY: G. SHANGRAW
CHECKED BY: T. SUMNER
SHEET 7 OF 94

STATE OF VERMONT
AGENCY OF TRANSPORTATION

EARTHWORKS

Metric

STATION km + m	DIST m	TOTAL EXCAVATION EARTH AND ROCK AREA m²	TOTAL EXCAVATION EARTH AND ROCK VOLUME m³	ROCK EXCAVATION AREA m²	ROCK EXCAVATION VOLUME m³	EMBANKMENT AREA m²	EMBANKMENT VOLUME m³	AREA m²	VOLUME m³
2+000		0.0				0.0			
	10		0				0		
2+010		0.0				0.0			
	10		0				5		
2+020		0.0				1.0			
	10		0				63		
2+030		0.0				11.5			
	10		2				59		
2+040		0.4				0.3			
	10		3				6		
2+050		0.2				0.8			
	10		1				48		
2+060		0.0				8.8		CUT	205
	10		4				141	ROCK	0
2+070		0.8				19.4		R.FAC	.495
	10		10				193	FILL	829
2+080		1.1				19.1		F.FAC	1.15
	10		17				141	EX. F	748
2+090		2.2				9.1			
	10		27				81		
2+100		3.2				7.1			
	10		41				62		
2+110		5.0				5.2			
	10		78				30		
2+120		10.6				0.7			
	3		23				2		
2+123		4.7				0.8			
Bridge									
2+158		0.6				3.6			
	2		1				13		
2+160		0.8				9.5			
	10		4				177		
2+170		0.0				25.9			
	10		0				237		
2+180		0.0				21.4			
	10		5				171		
2+190		0.9				12.7			
	10		21				101		
2+200		3.3				7.5			
	10		45				74		
2+210		5.6				7.2			
	5		28				29		
2+215		5.6				4.3		CUT	195
	5		28				14	ROCK	0
2+220		5.6				1.4		R.FAC	.495
	10		46				8	FILL	824
2+230		3.6				0.2		F.FAC	1.15
	10		18				1	EX. F	752
2+240		0.0				0.0			
	10		0				0		
2+250		0.0				0.0			
	10		0				0		
2+260		0.0				0.0			
	10		0				0		
2+270		0.0				0.0			
	10		0				0		
2+280		0.0				0.0			
	10		0				0		
2+290		0.0				0.0			

SUMMARY AND BALANCES

STATION TO STATION km + m		TOT EXC. EARTH & ROCK m²	ROCK EXCAV m³	EMBANK m³	EXCESSES CUT	EXCESSES FILL	ACUMULATIVE EXCESSES CUT	ACUMULATIVE EXCESSES FILL
2+000	2+123	205	0	829		748		
								748
2+157	2+290	195	0	824		752		
								1500
		400	0	1653				

REMARKS

EARTH AND ROCK EXCAVATION	400
SOLID ROCK EXCAVATION	0
EARTH EXCAVATION	400
PLANIMETERED FILL	1653
LESS FACTORED SOLID ROCK	0
LESS DISPLACEMENT OF ANY LARGE STRUCTURES	0
NET PLANIMETERED FILL	1653
FACTOR	1.15
PLANIMETERED FILL INCLUDING FACTOR	1901
MATERIALS AVAILABLE FOR FILLS	
EARTH EXCAVATION (400 x 90%)	360
CHANNEL EXCAVATION (750 x 70%)	525
UNDERDRAIN EXCAVATION (280 X 60%)	168
STRUCTURE EXCAVATION (430 X 60%)	258
TOTAL MATERIAL AVAILABLE FOR FILL	1311
TOTAL FILL INCLUDING FACTOR	1901
TOTAL MATERIAL FOR FILL	1311
BORROW	590
EXCESS EXCAVATION	0

PROJECT NAME: **MENDON**
PROJECT NUMBER: **BRO 1443(35)**

FILE NAME: **/str5/95j290/sj290ews.xls**
PROJECT LEADER: **C. KELLER**
DESIGNED BY: **M. EVANS-MONGEON**
EARTHWORK SHEET

PLOT DATE: **07/09/2003**
DRAWN BY: **G.SHANGRAW**
CHECKED BY: **T. SUMNER**
SHEET **8** OF **94**

Metric

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

TABLE OF PROJECT PROPERTY ACQUISITION

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	REM.	RIGHTS	TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS
1	GULICK, GEORGE S. III	10,11	2+003.5 LT.	2+004.2 LT.			INSTALL (T)	WDOE	01-21-04	MENDON	79	227-	EROSION CONTROL
	& VIVIENNE P.		2+008.0 LT.				DRIVE (T)					229	7.1M (23') PAVED
			2+011.4 LT.	2+013.3 LT.			INSTALL (T)						EROSION CONTROL
			2+022.0 LT.	2+032.0 LT.			CONST. (T) 25 S.M.±						INCL. EROSION CONTROL
													269 S.F.±
			2+027.8 LT.	2+028.7 LT.			DITCH (P) 1 S.M.±						11 S.F.±
			2+049.4 LT.	2+075.1 LT.			UTILITY EASEMENT (P) 137 S.M.±						AERIAL ELEC/TELE
													1,475 S.F.±
			2+058.5 LT.	2+077.3 LT.			CONST. (T) 30 S.M.±						INCL. EROSION CONTROL
													323 S.F.±
			2+065.5 LT.	2+072.8 LT.			SLOPE (T) 8 S.M.±						86 S.F.±
2	MARSHALL, JEFFREY J.	11,12	2+071.3 LT.	2+162.0 LT.			UTILITY EASEMENT (P) 410 S.M.±	WDOE	10-02-03	MENDON	77	581-	AERIAL ELEC/TELE 0.10 A±
			2+071.4 LT.	2+105.0 LT.			SLOPE (T) 130 S.M.±					583	1,399 S.F.±
			2+072.8 LT.	2+139.2 LT.			CONST. (T) 159 S.M.±						INCL. EROSION CONTROL &
													SEDIMENT BASIN 1,712 S.F.±
			2+076.5 LT.	2+078.0 LT.			CULVERT (P)						
			2+094.0 LT.				DRIVE (T)						VARIABLE WIDTH
			2+105.0 LT.	2+136.5 LT.			DIT. & DR. (P) 126 S.M.±						1,356 S.F.±
			2+107.5 LT.	2+110.0 LT.			CULVERT (P)						
			2+125.0 LT.	2+136.3 LT.			CHANNEL (P) 33 S.M.±						355 S.F.±
			2+125.5 LT.	2+129+0 LT.			INSTALL & MAINTAIN (P)						FOOTING & WINGWALL
			2+150.9 LT.	2+169.7 LT.			CONST. (T) 33 S.M.±						INCL. EROSION CONTROL
													355 S.F.±
3	HADEKA, DEBORAH D. &	10	2+051.4 RT.	2+057.9 RT.	1 S.M.±			WDOE	11-19-03	MENDON	78	321-	11 S.F.±
	PETER W.		2+007.1 RT.	2+055.7 RT.			CONST. (T) 140 S.M.±					322	INCL. EROSION CONTROL
													1507 S.F.±
			2+018.6 RT.	2+033.8 RT.			SLOPE (P) 74 S.M.±						INCL. EROSION CONTROL
													797 S.F.±
			2+030.6 RT.	2+036.6 RT.			DITCH & DRAINAGE (P) 27 S.M.±						INCL. EROSION CONTROL
													290 S.F.±
			2+033.8 RT.	2+039.1 RT.			SLOPE (P) 22 S.M.±						INCL. EROSION CONTROL
													237 S.F.±
			2+052.2 RT.	2+057.8 RT.			SLOPE (P) 8 S.M.±						86 S.F.±
4	CITY OF RUTLAND	10,11,	2+057.8 RT.	2+128.2 RT.	58 S.M.±			QCD	12-22-03	MENDON	78	550-	624 S.F.±
		12	2+054.0 RT.	2+118.4 RT.			CONST. (T) 247 S.M.±					552	INCL. EROSION CONTROL
													2,659 S.F.±
			2+055.7 RT.	2+115.5 RT.			SLOPE (P) 345 S.M.±						3,714 S.F.±
			2+061.3 RT.	2+193.4 RT.			DETOUR (T) 0.14 H.A.±						0.35A± (1402 S.M.±)
			2+071.7 RT.	2+074.2 RT.			CUL, DIT. &DR. (P)						
			2+115.5 RT.	2+128.3 RT.			CHANNEL (P) 40 S.M.±						431 S.F.±
			2+117.7 RT.				REMOVE (T)						GUY
			2+131.1 RT.	2+190.0 RT.			CONST. (T) 272 S.M.±						INCL. EROSION CONTROL
													2,928 S.F±
			2+119.5 RT.				INSTALL & MAINTAIN (P)						CONCRETE FOOTING
			2+144.2 RT.	2+158.0 RT.			CHANNEL (P) 39 S.M.±						420 S.F.±
			2+158.0 RT.	2+193.5 RT.			SLOPE (P) 143 S.M.±						1,539 S.F.±
			2+191.8 RT.	2+198.4 RT.			REMOVE & RESET (T)						FENCE
			2+200.0 RT.				DRIVE (T)						VARIABLE WIDTH
			2+192.8 RT.	2+210.8 RT.			CONST. (T) 40 S.M.±						INCL. EROSION CONTROL
													431 S.F.±
			2+205.5 RT.	2+206.0 RT.			DITCH (P) 0.5 S.M.±						5 S.F.±
5	STATE OF VERMONT	11,12	2+141.7± RT.	2+340.1 LT.									QUIT CLAIM TO TOWN OF
													MENDON 0.859HA± (2.12A±)
			2+141.7± RT.	2+340.1 LT.			EXCEPT & RESERVE						UTILITY EASEMENT
			2+328± LT.				EXCEPT & RESERVE						PUMP STATION
6	CENTRAL VERMONT PUBLIC SERVICE												UTILITY
	CORPORATION												
7	VERIZON NEW ENGLAND, INC.												UTILITY

REVISION NO.	SHEET	DESCRIPTION OF REVISION	DATE	MADE BY	APPROVED BY
1	10	PARCEL NO. 3 HADEKA. CHANGE PROPERTY OWNERS FROM GRETCHEN M. SHARP & DEBORAH P. HADEKA TO DEBORAH D. & PETER W. HADEKA. PER C.O. 9301.	05-14-03	G. J. F.	R. P. D.
2	1,10	PARCEL NO. 1 GULICK. REVISE STATIONS FOR INSTALLATION OF SILT FENCES. REVISE 'BEGIN PROJECT' STATION ON LAYOUT AND TITLE SHEET. REVISE LENGTH OF PROJECT ON TITLE SHEET. PER C.O. 9302.	03-10-03	P. J. H.	R. P. D.
		ELECTRONICS IPARMS TO STRUCTURES 1-06-04			

ACCT. mcassidy
IP_PWP:dms03097\rj290cd.dgn
DATE PLOTTED 18-NOV-2005

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

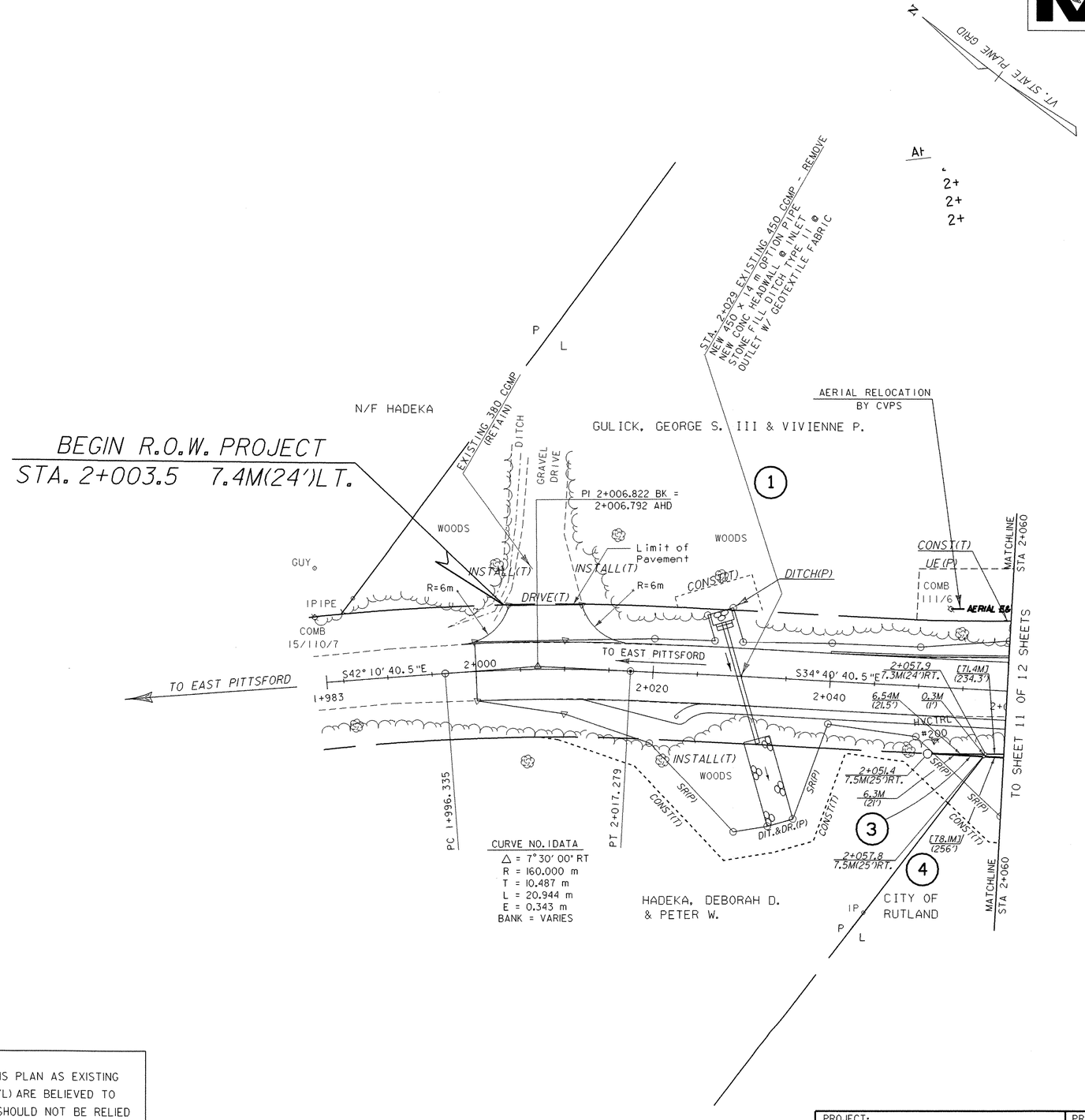
PRESENT R.O.W.
TAKING WITHOUT ACCESS
TAKING WITHOUT ACCESS ALONG PROPERTY LINE
TAKING WITH ACCESS
(P) PERMANENT EASEMENT
(T) TEMPORARY EASEMENT

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

APPROVED: ROGER P. DUMAS DATE: 4-12-01
CHIEF, PLANS & TITLES

R. O. W. PLANS

MENDON
BRO 1443(35)
R.O.W. SHEET 9 OF 12 SHEETS
SHEET 9 OF 94



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 MENDON ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

FOR R.O.W. USE ONLY

DATUM

VERTICAL _____

HORIZONTAL _____

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95J290/sj290bdr.dgn	
IPARM FILE NAME: SJ290LI.i	PLOT DATE: 18-NOV-2005
SURVEYED BY: L. ORVIS	SURVEY DATE: 2/96
SQUAD LEADER: C. KELLER	DRAWN BY: R.H. PELLETT
R. O. W. SHEET 10 OF 12 SHEETS	SHEET 10 OF 94

VAOT Metric

100 mm WHITE LINE
STA 2+000.000 TO 2+300.000 LT & RT

100 mm YELLOW LINES (DOUBLE)
STA 2+000.000 TO 2+300.000 LT & RT

CONSTRUCT DRIVE
STA 2+008 LT
STA. 2+094 LT
STA. 2+200 RT

APPROACH SECTION, NETC 2 RAIL
2+109.17 - 2+116.79 RT.
2+115.50 - 2+123.12 LT.
2+156.97 - 2+164.59 RT.
2+136.32 - 2+170.94 LT.

TREATED TIMBER CURB
STA. 2+105.00 - STA. 2+125.00 LT

CAST IN PLACE CONCRETE CURB, TYPE B (MOD.)
STA. 2+040.00 - STA. 2+087.00 LT

BRIDGE RAIL - N.E.T.C. 2 RAIL
2+116.79 - 2+156.97 RT.
2+123.12 - 2+163.32 LT.

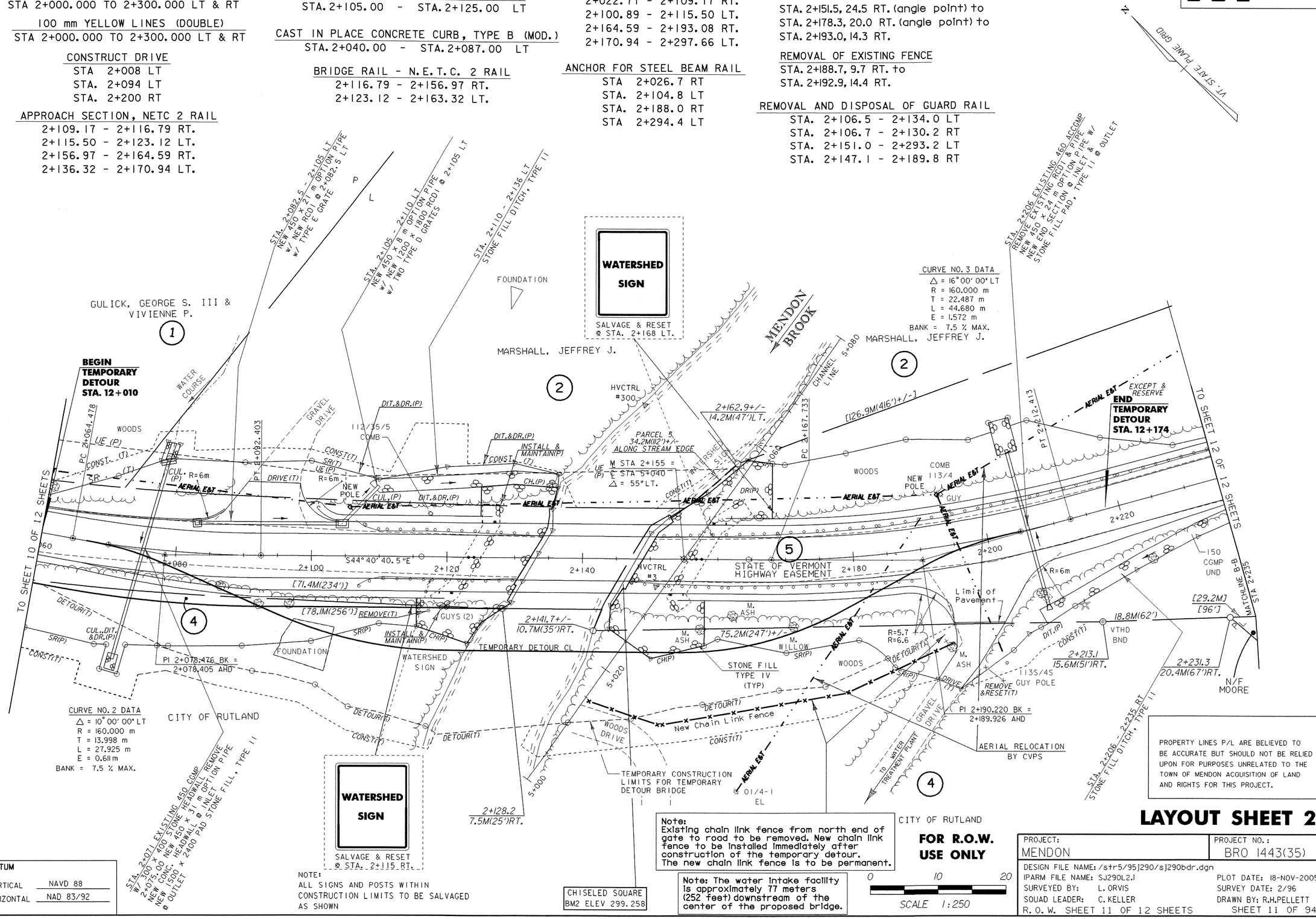
STEEL BEAM GUARD RAIL
2+022.71 - 2+109.17 RT.
2+100.89 - 2+115.50 LT.
2+164.59 - 2+193.08 RT.
2+170.94 - 2+297.66 LT.

ANCHOR FOR STEEL BEAM RAIL
STA 2+026.7 RT
STA. 2+104.8 LT
STA. 2+188.0 RT
STA 2+294.4 LT

CHAIN LINK FENCE, 1.8 M
STA. 2+141.0, 21.0 RT. to
STA. 2+151.5, 24.5 RT. (angle point) to
STA. 2+178.3, 20.0 RT. (angle point) to
STA. 2+193.0, 14.3 RT.

REMOVAL OF EXISTING FENCE
STA. 2+188.7, 9.7 RT. to
STA. 2+192.9, 14.4 RT.

REMOVAL AND DISPOSAL OF GUARD RAIL
STA. 2+106.5 - 2+134.0 LT
STA. 2+106.7 - 2+130.2 RT
STA. 2+151.0 - 2+293.2 LT
STA. 2+147.1 - 2+189.8 RT



PROPERTY LINES P/L ARE BELIEVED TO BE ACCURATE BUT SHOULD NOT BE RELIED UPON FOR PURPOSES UNRELATED TO THE TOWN OF MENDON ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

LAYOUT SHEET 2

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83/92

NOTE:
ALL SIGNS AND POSTS WITHIN CONSTRUCTION LIMITS TO BE SALVAGED AS SHOWN

CHISELED SQUARE
BM2 ELEV 299.258

Note:
Existing chain link fence from north end of gate to road to be removed. New chain link fence to be installed immediately after construction of the temporary detour. The new chain link fence is to be permanent.

Note: The water intake facility is approximately 77 meters (252 feet) downstream of the center of the proposed bridge.

CITY OF RUTLAND
FOR R.O.W. USE ONLY

0 10 20
SCALE 1:250

PROJECT:	PROJECT NO.:
MENDON	BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn	
IPARM FILE NAME: SJ290L2.I	PLOT DATE: 18-NOV-2005
SURVEYED BY: L. ORVIS	SURVEY DATE: 2/96
SQUAD LEADER: C. KELLER	DRAWN BY: R.H.PELLETT
R. O. W. SHEET 11 OF 12 SHEETS	SHEET 11 OF 94

Metric

N

VT. STATE PLANE GRID

STA. 2+240 - 2+285 LT
STONE FILL SLOPE PROTECTION, TYPE II

AERIAL RELOCATION BY CVPS

[126.9M(416')+/-]

MARSHALL, JEFFREY J.

AERIAL E&T

54.8M(180')

2+294.1
30.7M(100.1')LT.

COMB
114/3

WOODS

5

STATE OF VERMONT
HIGHWAY EASEMENT
PROJECT F 76(7)
VOL. 19 PG. 294

SIGN
LEGAL LOAD LIMIT
SPEED LIMIT 35 MPH

EXCEPT & RESERVE

Pole #

74.5M(244')
PROPOSED R.O.W.

Sign

Sewer MH

Wooden Retaining Wall

ALPINE PIPELINE PUMP STATION

Bldg

Gate Valve

Sidewalk

Cone Pad

Hedge

Gravel Drive

Sign

55'

27+70

TO KILLINGTON

END R.O.W. PROJECT
STA. 2+340.1
60.3M (198') LT.
= Highway Project
Mendon F 76(7)
STA. 27+70 55'LT.

Mailbox

U.S. ROUTE 4

Highway Project
Mendon F 76(7)
(Shown In Feet)

TO SHEET 11 OF 12 SHEETS

HVCTRL #100

To U.S. Rte 4

S60° 40' 40.5"E

2+240 2+260 2+280 2+300 2+320 2+328 2+340.1

MATCHLINE B-B
STA. 2+235

WOODS

Fence

VTHD BND

60'

25+50

2+333.2
13.8M(45')RT.
= Highway Project
Mendon F 76(7)
STA. 25+50 60'LT.

74.8M(245')

[29.2M(96')]

2+259.7
27.2M(89')RT.

N/F MOORE

IPIPE

STA. 2+235 - 2+280 RT.
STONE FILL DITCH, TYPE II

CITY OF RUTLAND

N/F MOORE

TO RUTLAND

FOR R.O.W. USE ONLY

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 MENDON ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

0 10 20
SCALE 1:250

LAYOUT SHEET 3

DATUM

VERTICAL NAVD88
HORIZONTAL NAD 83/92

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn	
IPARM FILE NAME: SJ290L3.I	PLOT DATE: 18-NOV-2005
SURVEYED BY: L. ORVIS	SURVEY DATE: 2/96
SQUAD LEADER: C. KELLER	DRAWN BY: R. H. PELLETT
R. O. W. SHEET 12 OF 12 SHEETS	SHEET 12 OF 94

GPS CONTROL POINTS

HVCTRL # 1

Standard Disk Stamped

25-2 Temp
NORTH = 127415.261
EAST = 465368.172
ELEV. =

From the junction of route 7 and route 4 east in Rutland, go east on route 4 for 3.4 miles to its intersection with Park Lane on the left and the mark on the left in the northwest quadrant of the intersection. The mark is a 1m (3ft) rebar, with a drill hole, driven into the ground
12.7 m (41.7ft) south of a gate post (old tel pole)
10.6m (34.8ft) northeast of the end of a metal guardrail on park lane
10.1m (33.1ft) east of a fence corner and conc highway bound
1.4m (4.6ft) west of the west edge of route 4

HVCTRL # 2

Standard Disk Stamped

Mendon
NORTH = 127997.517
EAST = 465501.393
ELEV. = 317.408

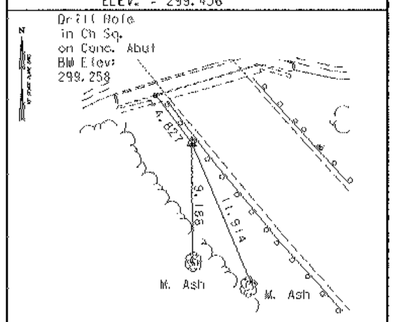
Station Mendon was reported destroyed

* Description provided by Vermont Agency of Transportation Geodetic Survey Unit

TRAVERSE TIES

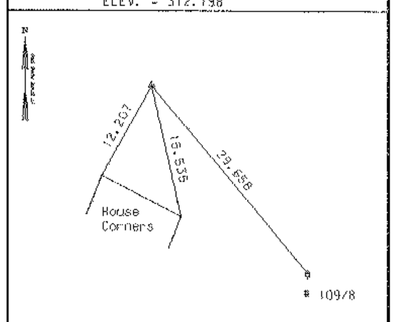
HVCTRL # 3

NORTH = 128081.597
EAST = 465346.894
ELEV. = 299.436



HVCTRL # 4

NORTH = 128282.480
EAST = 465181.721
ELEV. = 312.198

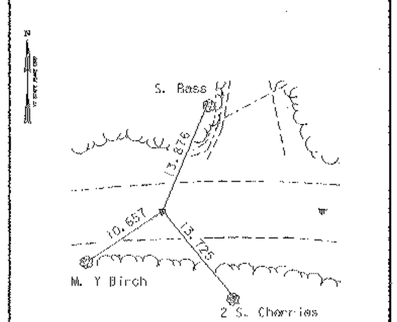


* Main Traverse Completed 01/31/96 by L. Orvis P.C. & R. Bullock

ALIGNMENT TIES

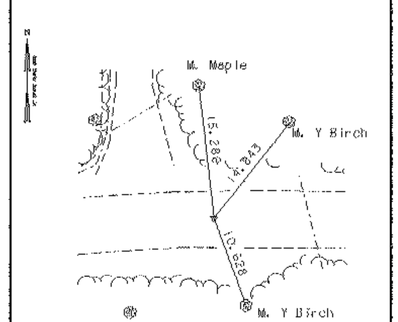
PC 1+996.335

NORTH = 128202.745
EAST = ~~46525.050~~ 465251.050



PT 2+017.279

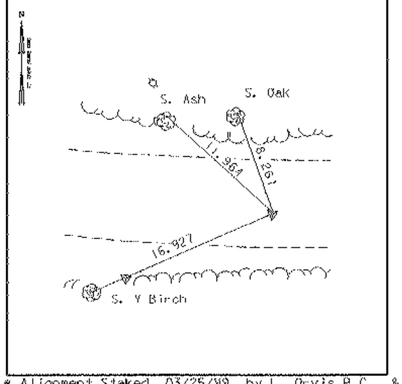
NORTH = 128186.350
EAST = 465264.058



ALIGNMENT TIES

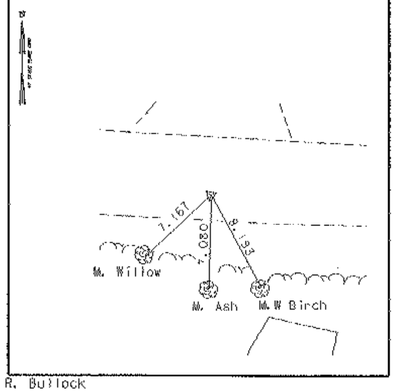
PC 2+064.478

NORTH = 128147.535
EAST = 465290.913



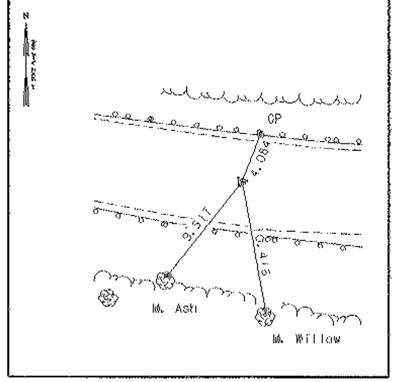
PT 2+092.403

NORTH = 128126.070
EAST = 465308.720



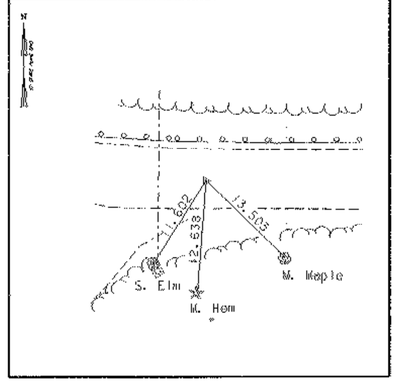
PC 2+167.733

NORTH = 128072.505
EAST = 465361.685



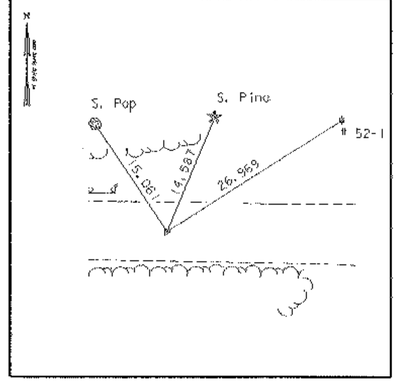
PT 2+212.413

NORTH = 128045.503
EAST = 465397.102



POE 2+300.000

NORTH = 128002.610
EAST = 465473.468



* Alignment Staked 03/25/99 by L. Orvis P.C. & R. Bullock

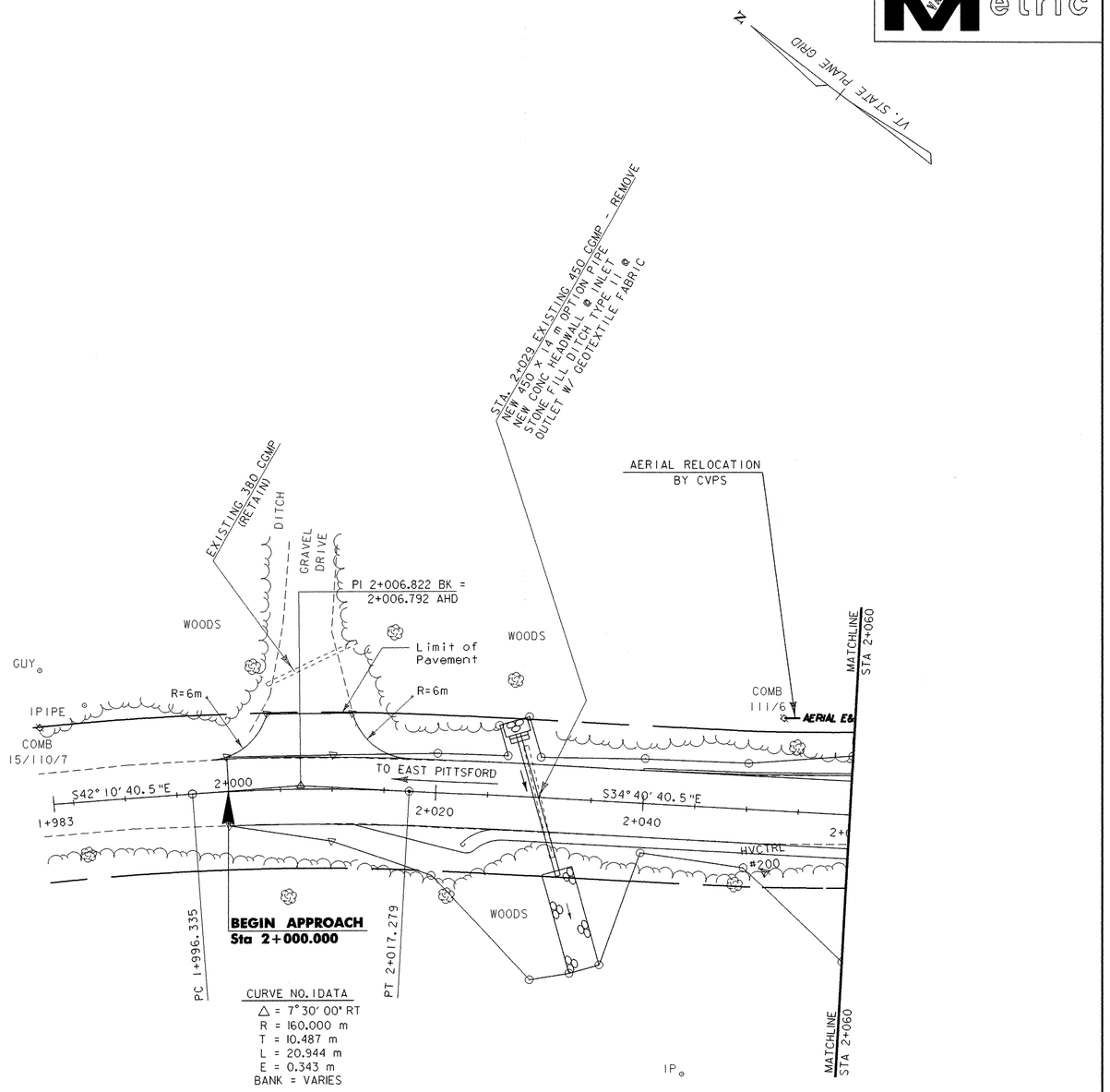
DATUM

VERTICAL NAVD 88
HORIZONTAL NAD 83/92
ADJUSTMENT none

PROJECT NAME: Mendon
PROJECT NUMBER: BRO 1443 (35)

FILE NAME: 95J290/survey/xJ290t1.dgn
PROJECT LEADER: C. KELLER
DESIGNED BY: M. EVANS-MONGEON
sJ290tle.l
PLOT DATE: 18-NOV-2005
DRAWN BY: R. Bullock
CHECKED BY:
SHEET 13 OF 94

VAOT Metric



HVCTRL
#4

29.658
TIE
COMB.
109/8

15.535
TIE
CORNER
OF HOUSE

12.207
TIE
CORNER
OF HOUSE

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83/92

0 10 20

SCALE 1:250

LAYOUT SHEET 1

PROJECT:	PROJECT NO.:
MENDON	BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn	
IPARM FILE NAME: SJ290LI.i	PLOT DATE: 18-NOV-2005
SURVEYED BY: L. ORVIS	SURVEY DATE: 2/96
SQUAD LEADER: C. KELLER	DRAWN BY: R.H.PELLETT
LAYOUT SHEET 1	SHEET: 14 OF 94

Metric

100 mm WHITE LINE
STA 2+000.000 TO 2+300.000 LT & RT

100 mm YELLOW LINES (DOUBLE)
STA 2+000.000 TO 2+300.000 LT & RT

CONSTRUCT DRIVE
STA 2+008 LT
STA. 2+094 LT
STA. 2+200 RT

APPROACH SECTION, NETC 2 RAIL
2+109.17 - 2+116.79 RT.
2+115.50 - 2+123.12 LT.
2+156.97 - 2+164.59 RT.
2+136.32 - 2+170.94 LT.

TREATED TIMBER CURB
STA. 2+105.00 - STA. 2+125.00 LT

GRANITE
~~CAST IN PLACE CONCRETE CURB, TYPE B (MOD.)~~
STA. 2+040.00 - STA. 2+087.00 LT

BRIDGE RAIL - N.E.T.C. 2 RAIL
2+116.79 - 2+156.97 RT.
2+123.12 - 2+163.32 LT.

STEEL BEAM GUARD RAIL
2+022.71 - 2+109.17 RT.
2+100.89 - 2+115.50 LT.
2+164.59 - 2+193.08 RT.
2+170.94 - 2+297.66 LT.

ANCHOR FOR STEEL BEAM RAIL
STA 2+026.7 RT
STA. 2+104.8 LT
STA. 2+188.0 RT
STA 2+294.4 LT

CHAIN LINK FENCE, 1.8 M
STA. 2+141.0, 21.0 RT. to
STA. 2+151.5, 24.5 RT. (angle point) to
STA. 2+178.3, 20.0 RT. (angle point) to
STA. 2+193.0, 14.3 RT.

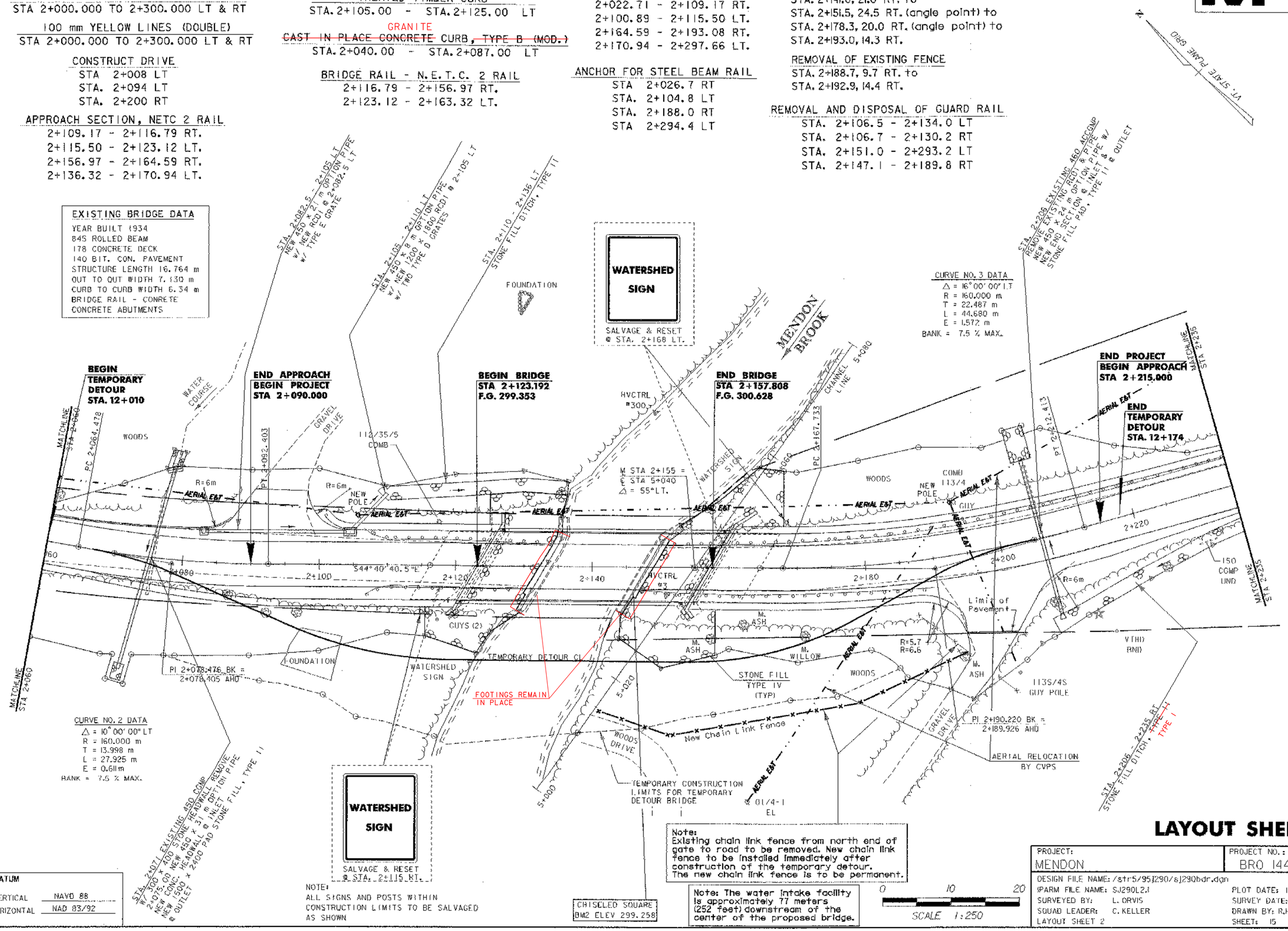
REMOVAL OF EXISTING FENCE
STA. 2+188.7, 9.7 RT. to
STA. 2+192.9, 14.4 RT.

REMOVAL AND DISPOSAL OF GUARD RAIL
STA. 2+106.5 - 2+134.0 LT
STA. 2+106.7 - 2+130.2 RT
STA. 2+151.0 - 2+293.2 LT
STA. 2+147.1 - 2+189.8 RT

EXISTING BRIDGE DATA
YEAR BUILT 1934
845 ROLLED BEAM
178 CONCRETE DECK
140 BIT. CON. PAVEMENT
STRUCTURE LENGTH 16.764 m
OUT TO OUT WIDTH 7.130 m
CURB TO CURB WIDTH 6.34 m
BRIDGE RAIL - CONRETE
CONCRETE ABUTMENTS

CURVE NO. 3 DATA
△ = 16° 00' 00" LT
R = 160.000 m
T = 22.487 m
L = 44.680 m
E = 1.572 m
BANK = 7.5 % MAX.

CURVE NO. 2 DATA
△ = 10° 00' 00" LT
R = 160.000 m
T = 13.998 m
L = 27.925 m
E = 0.611m
BANK = 7.5 % MAX.



LAYOUT SHEET 2

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83/92

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95J290/sJ290bdr.dgn	
IPARM FILE NAME: SJ290L2.I	PLOT DATE: 18-NOV-2005
SURVEYED BY: L. ORVIS	SURVEY DATE: 2/96
SQUAD LEADER: C. KELLER	DRAWN BY: R.H.PELLETT
LAYOUT SHEET 2	SHEET: 15 OF 94

Metric

N

VT. STATE PLANE GRID

STA. 2+240 - 2+285 LT
STONE FILL SLOPE PROTECTION, TYPE II

AERIAL RELOCATION
BY CVPS

MATCHLINE
STA. 2+235

COMB
114/3

WOODS

END APPROACH
Sta 2+300.000

SIGN
LEGAL LOAD LIMIT
SPEED LIMIT 35 MPH

Wooden Retaining Wall

Concr Pad

Hedge

Gravel Drive

Gate Valve

Bldg

Sidewalk

Date Valve

Pole

Sewer MH

Sign

Mailbox

TO KILLINGTON

U.S. ROUTE 4

TO RUTLAND

To U.S. Rte 4

S60° 40' 40.5" E

2+240 2+260 2+280 2+300 2+320 2+328

Fence

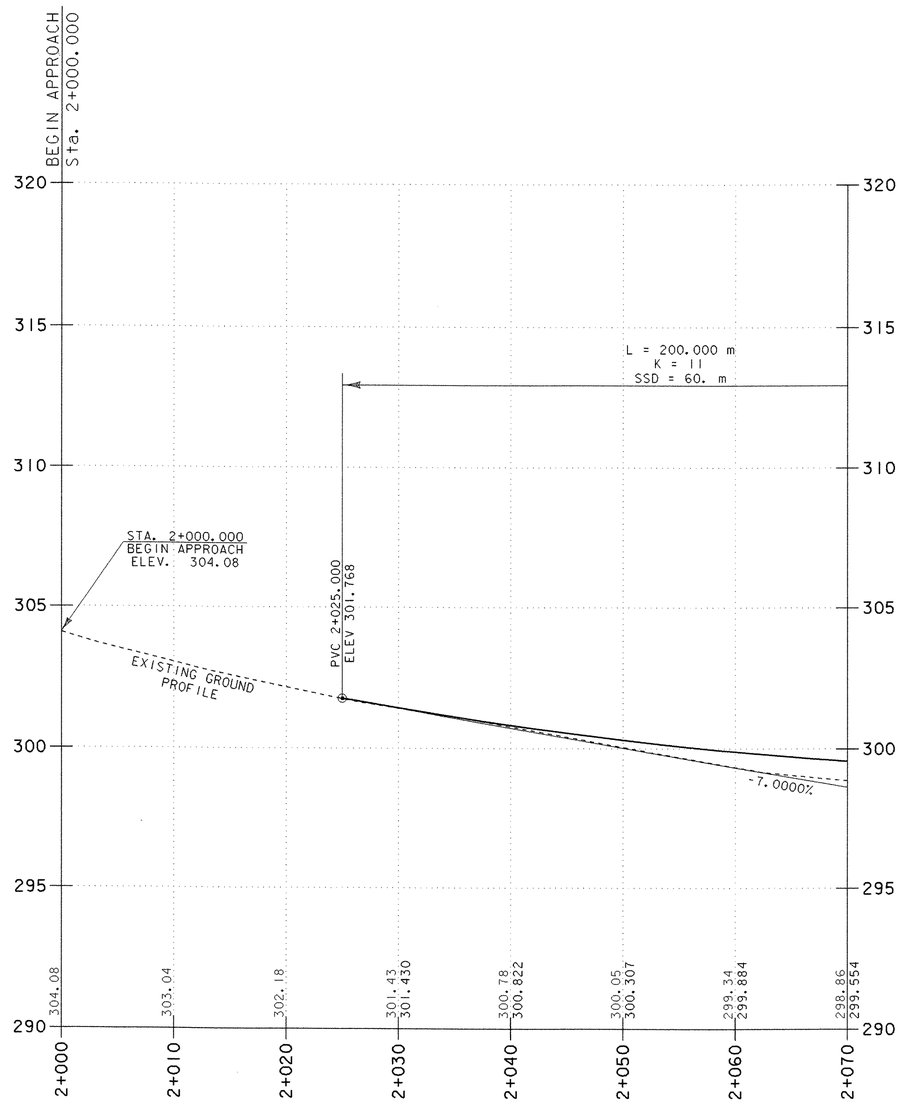
STA. 2+235 - 2+280 RT
STONE FILL DITCH, TYPE I

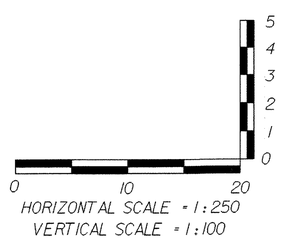
LAYOUT SHEET 3

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 83/92

0 10 20
SCALE 1:250

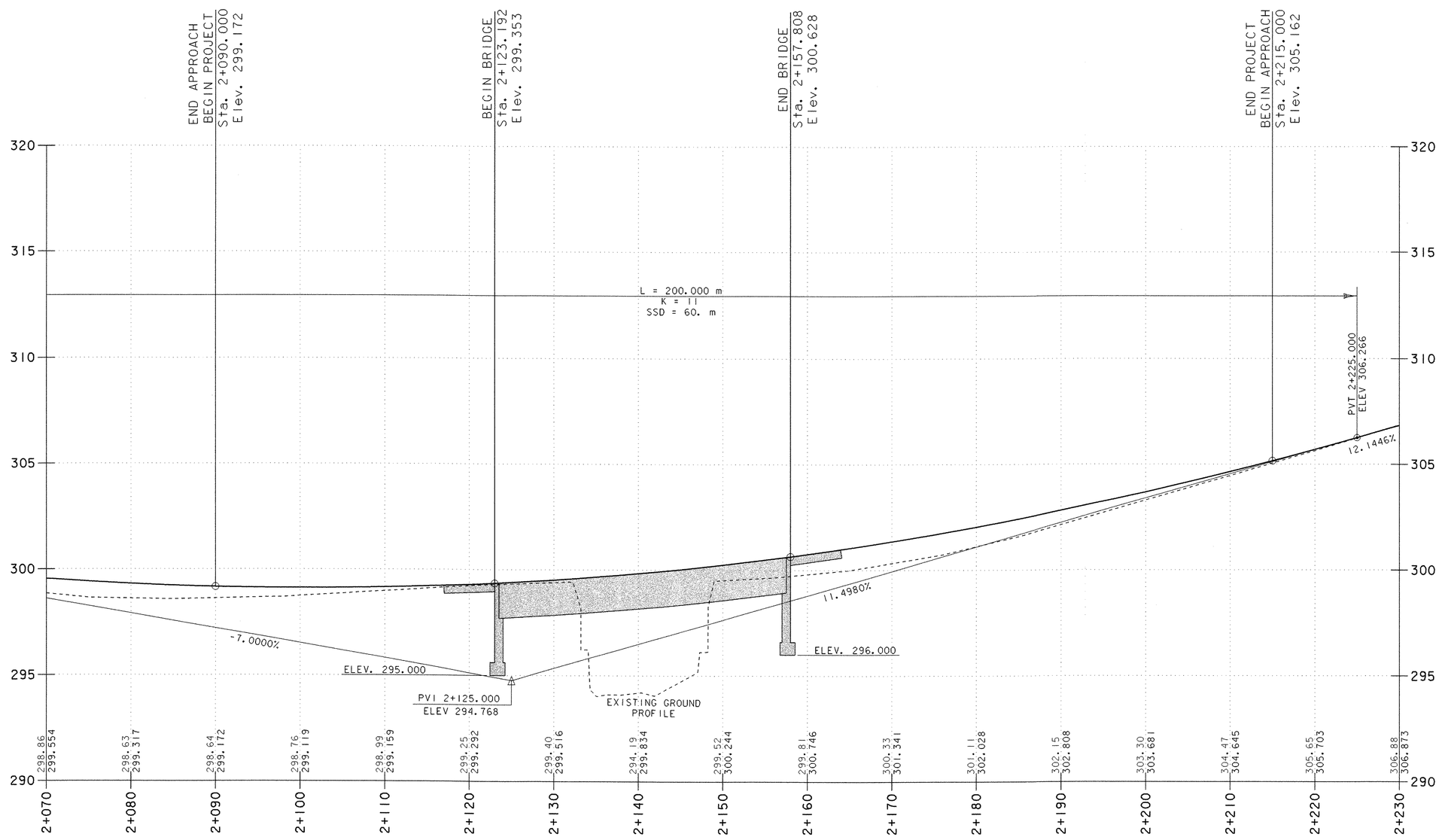
PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str-5/95J290/sJ290bdr.dgn	
IPARM FILE NAME: SJ290L3.1	PLOT DATE: 18-NOV-2005
SURVEYED BY: L. ORVIS	SURVEY DATE: 2/96
SQUAD LEADER: C. KELLER	DRAWN BY: R. H. PELLETT
LAYOUT SHEET 3	SHEET: 16 OF 94

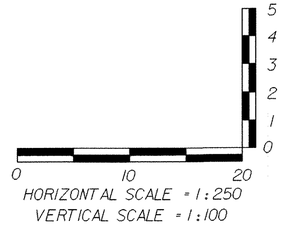




TH#1 PROFILE SHEET 1

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95J290/sJ290xsl.dgn IPARM FILE NAME: SJ290PFI.I	PLOT DATE: 18-NOV-2005
MAINLINE PROFILE	
	SHEET: 17 OF 94

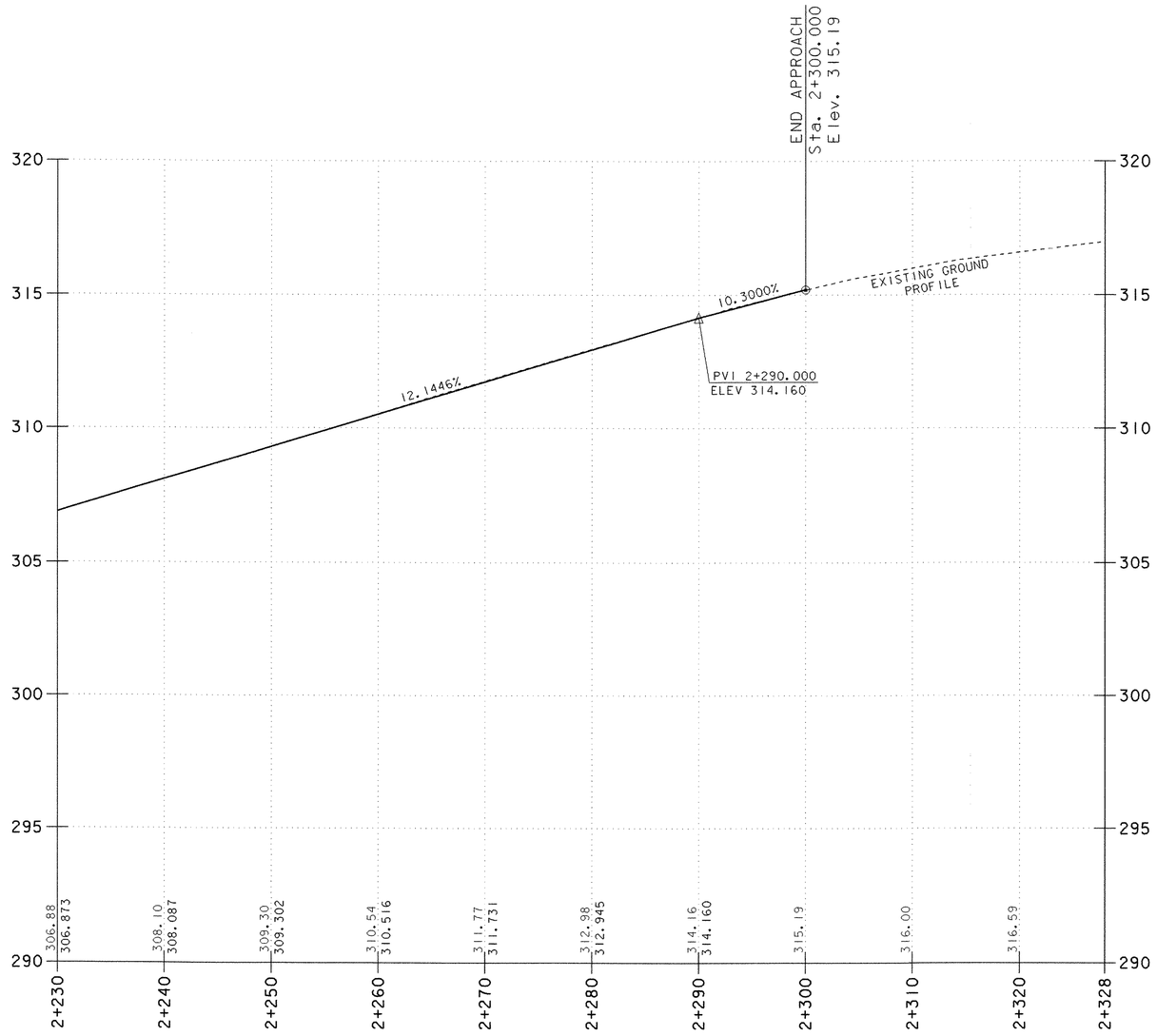


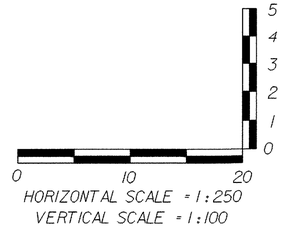


HORIZONTAL SCALE = 1:250
VERTICAL SCALE = 1:100

TH#1 PROFILE SHEET 2

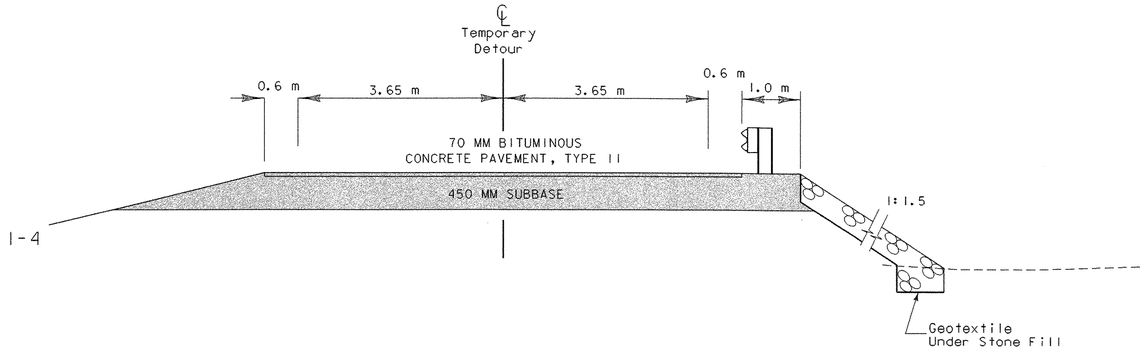
PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95J290/sj290bdr.dgn IPARM FILE NAME: SJ290PF2.i	PLOT DATE: 18-NOV-2005
MAINLINE PROFILE	
	SHEET: 18 OF 94

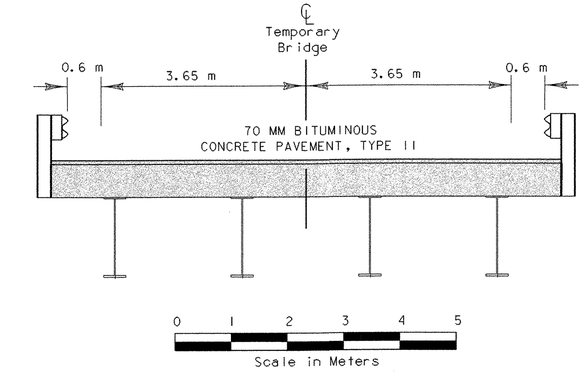




TH#1 PROFILE SHEET 3

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95J290/sJ290xsl.dgn IPARM FILE NAME: SJ290PF3.1	PLOT DATE: 18-NOV-2005
MAINLINE PROFILE	
	SHEET: 19 OF 94



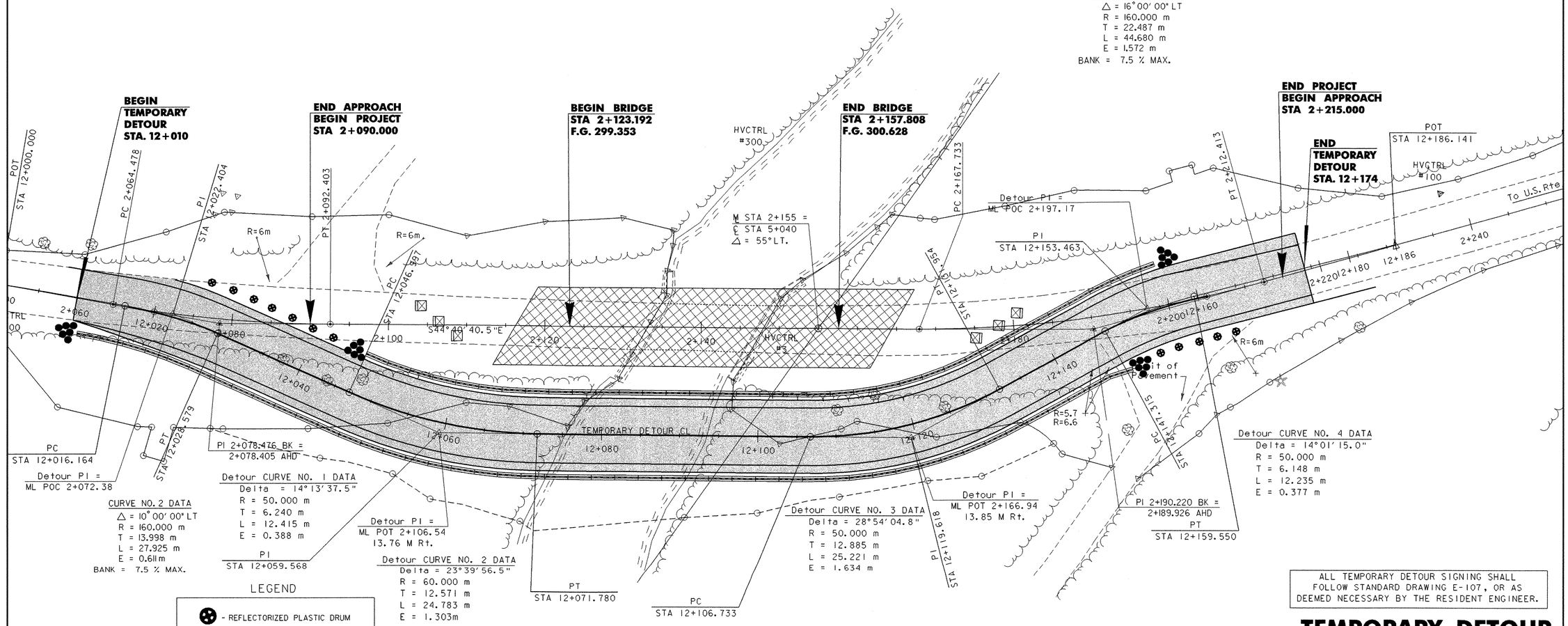


Metric

VT. STATE PLANE GRID N

TEMPORARY DETOUR TYPICALS

CURVE NO. 3 DATA
△ = 16°00' 00" LT
R = 160.000 m
T = 22.487 m
L = 44.680 m
E = 1.572 m
BANK = 7.5 % MAX.



CURVE NO. 2 DATA
△ = 10°00' 00" LT
R = 160.000 m
T = 13.998 m
L = 27.925 m
E = 0.611m
BANK = 7.5 % MAX.

Detour CURVE NO. 1 DATA
Delta = 14°13' 37.5"
R = 50.000 m
T = 6.240 m
L = 12.415 m
E = 0.388 m

Detour CURVE NO. 2 DATA
Delta = 23°39' 56.5"
R = 60.000 m
T = 12.571 m
L = 24.783 m
E = 1.303m

Detour CURVE NO. 3 DATA
Delta = 28°54' 04.8"
R = 50.000 m
T = 12.885 m
L = 25.221 m
E = 1.634 m

Detour CURVE NO. 4 DATA
Delta = 14°01' 15.0"
R = 50.000 m
T = 6.148 m
L = 12.235 m
E = 0.377 m

LEGEND
- REFLECTORIZED PLASTIC DRUM
- SIGN AND POSTS
- WORK AREA
- TYPE III BARRICADES
- TYPE III BARRICADES (MOD)
- TEMP. TRAFFIC BARRIER
- ENERGY ABSORBTION ATTENUATOR (SAND FILLED BARRELS)

ALL TEMPORARY DETOUR SIGNING SHALL FOLLOW STANDARD DRAWING E-107, OR AS DEEMED NECESSARY BY THE RESIDENT ENGINEER.

TEMPORARY DETOUR

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83/92

0 10 20
SCALE 1:250

PROJECT:	PROJECT NO.:
MENDON	BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn	
IPARM FILE NAME: SJ290det.i	PLOT DATE: 18-NOV-2005
SURVEYED BY: L. ORVIS	SURVEY DATE: 2/96
SQUAD LEADER: C. KELLER	DRAWN BY: R.H.PELLETT
TEMPORARY DETOUR SHEET	SHEET: 20 OF 94

SOIL CLASSIFICATION

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

ROCK QUALITY DESIGNATION

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

SHEAR STRENGTH

UNDRAINED SHEAR STRENGTH IN kPa	CONSISTENCY
<12	Very Soft
12-24	Soft
24-48	Med. Stiff
48-96	Stiff
96-192	Very Stiff
>192	Hard

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

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

COMMONLY USED SYMBOLS

▼	Water Elevation
⊕	Standard Penetration Boring
⊕	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per 300 mm For: 50.8 mm O.D. Sampler 35.0 mm I.D. Sampler Hammer Weight Of 63.5 kg. Hammer Fall Of 762 mm
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 30.1mm
BX	Core Size 42.0 mm
NX	Core Size 54.7 mm
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
Si	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	To Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
ROD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)

COLOR

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

DEFINITIONS (AASHTO)

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

BOULDER - A rock fragment with an average dimension > 304.8 mm.

COBBLE - Rock fragments with an average dimension between 76.2 and 304.8 mm.

GRAVEL - Rounded particles of rock < 76.2 mm and > 2 mm (#10 sieve).

SAND - Particles of rock < 2 mm (#10 sieve) and > 75 μm (#200 sieve).

SILT - Soil < 75 μm (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

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

VARVED - Alternate layers of silt and clay.

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

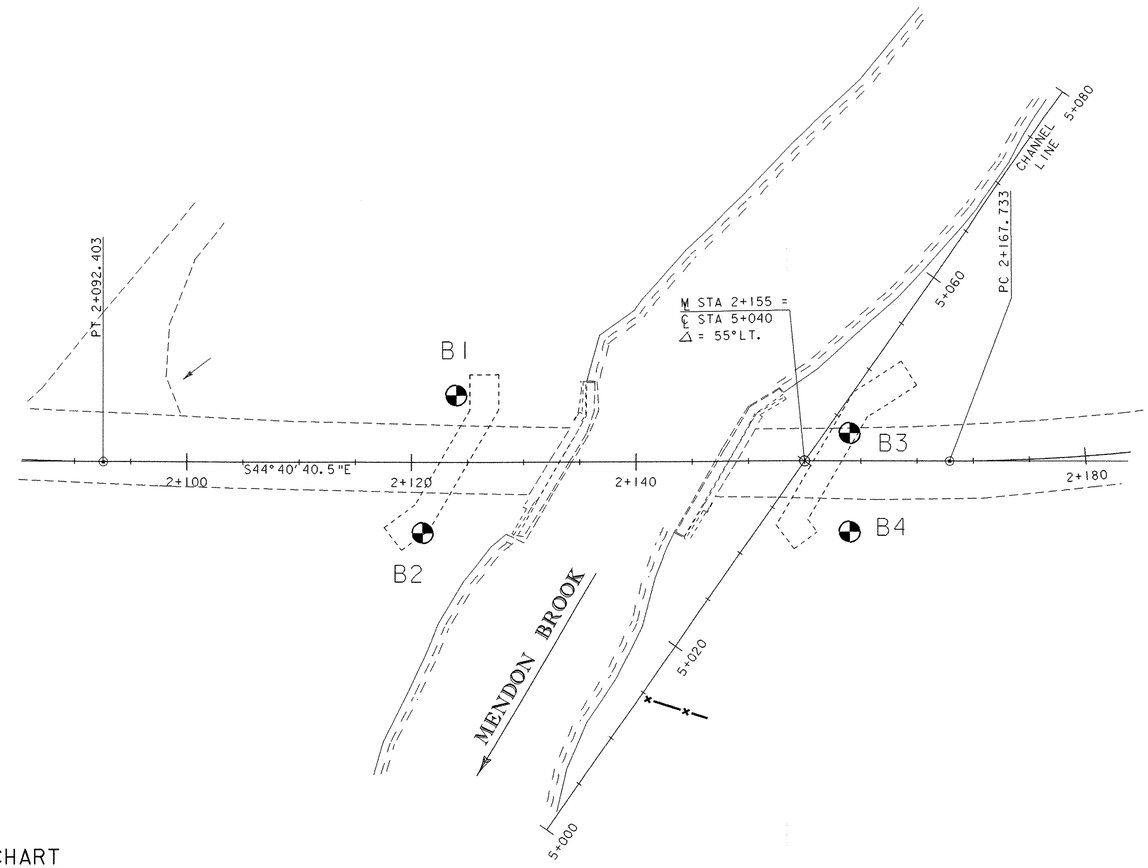
MUCK - Soft organic soil (containing > 10% organic material.

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

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

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

DIP - Inclination of bed with a horizontal plane.



BORING CHART

HOLE NO.	STATION	OFFSET (m)	GROUND ELEV.
B1	2+124	6.0 LT	298.279
B2	2+121	6.3 RT	298.014
B3	2+159	2.5 LT	299.687
B4	2+159	6.3 RT	298.639

GENERAL NOTES

1. The subsurface explorations shown herein were made between 07/08/1999 and 08/05/1999 by the Agency.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
4. Engineering judgement was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgement by the Contractor.
5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.

BORING SHEET

PROJECT: MENDON	PROJECT NO.: BRO 1443 (35)
DESIGN FILE NAME: IPARM FILE NAME: sj290bol.i	PLOT DATE: 18-NOV-2005
BORING INFORMATION SHEET	
	SHEET: 21 OF 94

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B-1
SHEET 1 OF 1
DATE STARTED: 8/3/99
DATE COMPLETED: 8/5/99

PROJECT NAME: MENDON
SITE NAME: BR-3
STATION: 2+124.00
GROUND EL.: 298.279

PROJECT NUMBER: BRO 1443 (35)
SITE NO.: TH-1
OFFSET: -6.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: TALLMAN
DRILLER: RUSSELL
LOGGER: YOUNG
ADDITIONAL CREW:

BORING RIG: SKID RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

BOTTOM OF FOOTING ABUTMENT # 1 ELEVATION 295.000

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
	BXDC, 0.0m-1.5m, Boulders,							
	BXDC, 1.5m-3.6m, Boulders,							
	BXDC, 3.85m-4.30m, Boulders,							
	BXDC, 4.50m-4.90m, Boulders,							
5								
	A-1-b, SaGr, brn, Moist, Rec. = 0.34m	R	11.5	41.9	40.9	17.2		
	BXDC, 7.15m-7.70m, Boulders,							
	BXDC, 8.00m-8.50m, Boulders,							
	BXDC, 8.80m-9.35m, Boulders,							
10								
	BXDC, 9.80m-10.30m, Boulders							
	BXDC, 10.70m-11.10m, Boulders							
	BXDC, 11.40m-12.60m, Note: Casing driven to 11.40m. Unable to penetrate stratum any further due to worn out bit. Cored ahead of casing 1.20m with BXDC core barrel.							

Hole stopped @ 12.60m

GEOLOGISTS REPORT:

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B-2
SHEET 1 OF 1
DATE STARTED: 7/14/99
DATE COMPLETED: 7/15/99

PROJECT NAME: MENDON
SITE NAME: BR-3
STATION: 2+121.00
GROUND EL.: 298.014

PROJECT NUMBER: BRO 1443 (35)
SITE NO.: TH-1
OFFSET: 6.30
G.W. DEPTH:

BORING CREW
CREW CHIEF: TALLMAN
DRILLER: YOUNG
LOGGER:
ADDITIONAL CREW:

BORING RIG: SKID RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

BOTTOM OF FOOTING ABUTMENT # 1 ELEVATION 295.000

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
	1.00m-1.30m, No Rec., Hit Boulder at 1.30m	R						
	BXDC, 1.30m-4.80m, Boulders, Cleaned out casing, Cored ahead to 5.00m.							
5								
	A-1-b, Sa, brn, MTW, Rec. = 0.07m	R	27.3	15	76.4	8.6		
	BXDC, 5.30m-5.90m, Boulders							
	A-1-b, GrSa, brn, Moist, Rec. = 0.34m	65	10	40.4	47.6	12		
	7.00m-7.12m, Broken Rock Rec. = 0.08m	R						
	BXDC, 7.12m-7.65m, Boulders							
	A-1-b, GrSa, brn, Moist, Rec. = 0.12m	79	10.1	39.5	42	18.5		
	8.45m-9.00m, Boulder							
	A-1-b, GrSa, brn, Moist, Rec. = 0.23m	98	12	40.6	42.6	16.8		
10								
	10.00m-10.60m, Boulders							
	BXDC, 11.25m-12.00m, Boulders,							
	A-2-4, SiGrSa, Lt/brn, Moist, Rec. = 0.12m	R	13.7	28.7	44.4	26.9		
	BXDC, 12.30m-13.50m, Boulders Note: Broke bit off core barrel. Lost bit down inside of casing.							

Hole stopped @ 13.50m

GEOLOGISTS REPORT:

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B-3
SHEET 1 OF 1
DATE STARTED: 7/26/99
DATE COMPLETED: 7/27/99

PROJECT NAME: MENDON
SITE NAME: BR-3
STATION: 2+159.00
GROUND EL.: 299.687

PROJECT NUMBER: BRO 1443 (35)
SITE NO.: TH-1
OFFSET: -2.50
G.W. DEPTH:

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER: CHABOT
LOGGER: RUSSELL
ADDITIONAL CREW:

BORING RIG: SKID RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

BOTTOM OF FOOTING ABUTMENT # 2 ELEVATION 294.000

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
	No Rec.	7						
	A-1-a, Gr, brn, Moist, Rec. = 0.12m	R	6.2	78.8	11.9	9.3		
	BXDC, 4.20m-5.76m, Boulders							
5								
	A-1-b, SiSaGr, brn, Moist, Rec. = 0.25m	R	10	49.6	29.9	20.5		
	A-1-b, GrSa, brn, Moist, Rec. = 0.41m	R	12.3	37.8	45	17.2		
	BXDC, 9.00m-10.20m, Boulders							
10								
	BXDC, 10.45m-10.97m, Boulders							
	BXDC, 11.28m-12.50m, Boulders Advanced casing to 11.28m. Cored ahead to 12.50m.							

Hole stopped @ 12.50m

GEOLOGISTS REPORT:

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B-4
SHEET 1 OF 1
DATE STARTED: 7/20/99
DATE COMPLETED: 7/21/99

PROJECT NAME: MENDON
SITE NAME: BR-3
STATION: 2+159.00
GROUND EL.: 298.639

PROJECT NUMBER: BRO 1443 (35)
SITE NO.: TH-1
OFFSET: 6.30
G.W. DEPTH:

BORING CREW
CREW CHIEF: TALLMAN
DRILLER: RUSSELL
LOGGER: YOUNG
ADDITIONAL CREW:

BORING RIG: SKID RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

BOTTOM OF FOOTING ABUTMENT # 2 ELEVATION 294.000

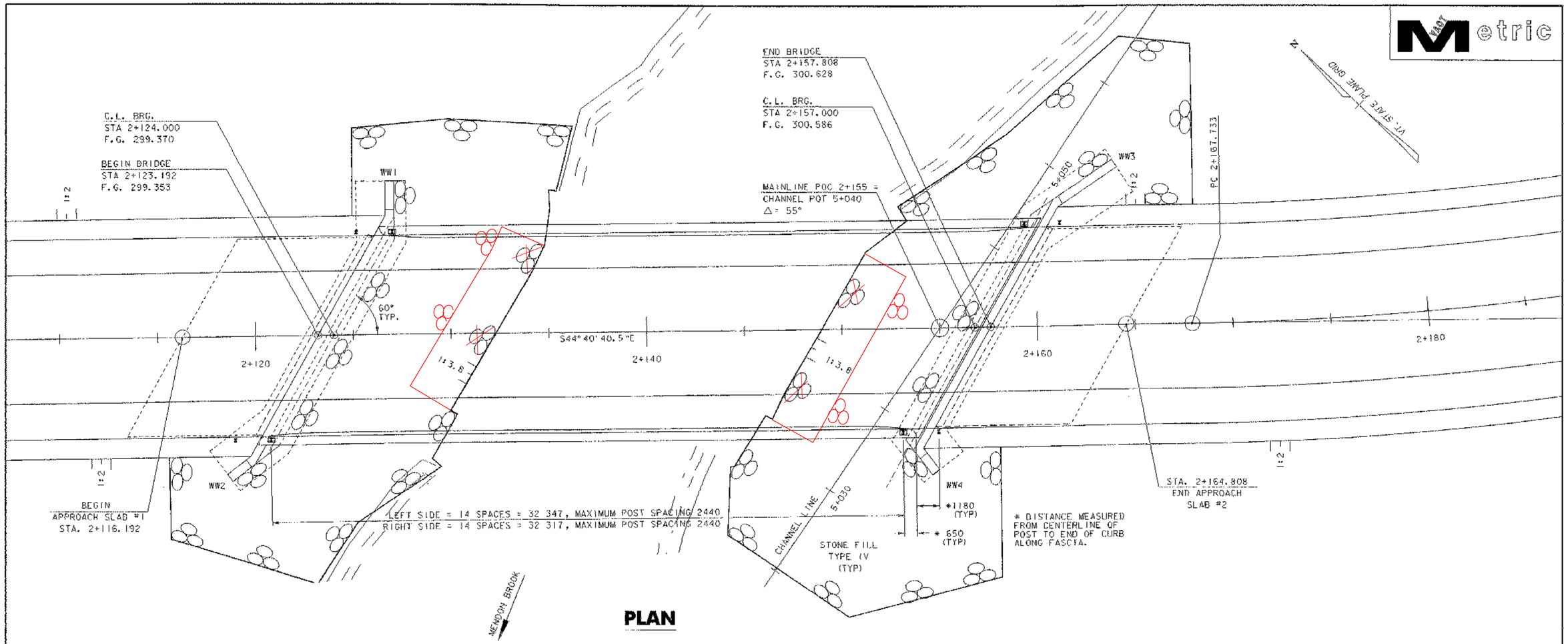
DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
	BXDC, 0.0m-1.30m, Boulders							
	A-2-4, GrSa, brn, MTW, Rec. = 0.05m	2	42.3	21.5	59.2	19.3		
	BXDC, 2.20m-2.65m, Boulders							
	BXDC, 2.75m-3.15m, Boulders							
	BXDC, 3.30m-3.65m, Boulders							
	BXDC, 3.75m-4.50m, Boulders							
	BXDC, 4.50m-4.90m, Cobbles							
5								
	BXDC, 5.20m-5.75m, Boulders							
	A-1-b, Gr, brn, Dry, Rec. = 0.10m	R	8.1	62.9	17.8	19.3		
	6.30m-7.35m, Cobbles							
	BXDC, 7.35m-7.70m, Boulders							
	7.70m-9.00m, Cobbles							
	9.00m-9.30m, Boulder							
10								
	10.60m-11.00m, Cobbles	R						
	BXDC, 11.00m-11.50m, Boulders							
	11.50m-12.00m, Cobbles							
	A-2-4, Sa, brn, Moist, Rec. = 0.20m	R	18.5	18.1	63.4	18.5		

Hole stopped @ 12.45m

GEOLOGISTS REPORT:

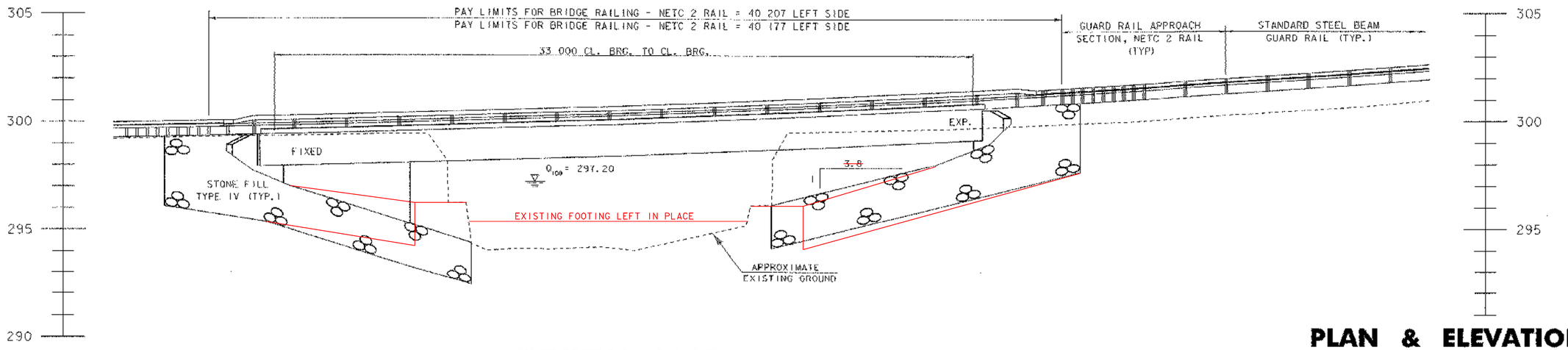
PROJECT NAME: MENDON
PROJECT NUMBER: BRO 1443 (35)

FILE NAME: /matres/95j290/mj290bor.dgn PLOT DATE: 18-NOV-2005
PROJECT LEADER: C.C. BENDA DRAWN BY: J. TOUCHETTE
DESIGNED BY: CHECKED BY:
mj290bor.i SHEET 22 OF 94



PLAN

NOTE: FOR APPROACH RAIL DETAILS SEE SHEETS 60 & 61.



ELEVATION LOOKING UPSTREAM

DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD 83/92

0 2 4 6 8 10
SCALE 1:100

PLAN & ELEVATION SHEET

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/951290/sj290pe.dgn	
IPARM FILE NAME: SJ290PE.I	PLOT DATE: 18-NOV-2005
SURVEYED BY: L. ORVIS	SURVEY DATE: 2/96
SQUAD LEADER: C. KELLER	DRAWN BY: G. SHANGRAW
PLAN & ELEVATION SHEET	SHEET: 23 OF 94

DESCRIPTION OF PROJECT

This project involves reconstruction of bridge #3 over Mendon Brook on Town Highway #1 in the Town of Mendon. Mendon Brook is characterized as a steep watercourse with a streambed of cobbles to large boulders, and has a drainage area of 46.8 square kilometers (18.0 square miles). The total disturbed construction area (excluding waste, borrow, and staging areas) is 0.64 hectares (1.57 acres). The names of the receiving waters are: East Creek & Otter Creek.

Features of concern with respect to erosion control include steep embankments immediately adjacent to the project, and three seasonal watercourses involving pipe replacements. The City of Rutland's Water Intake Facility is located approximately 77 meters (252 feet) downstream of the center of the proposed bridge. The proximity of the Water Intake Facility to the project will result in erosion control practices being a very high priority. A new single span bridge will be constructed on existing alignment. Traffic will be maintained on a two-way temporary bridge to be located downstream of the existing bridge. A significant portion of the project footprint will be impervious, such as the entire detour will be paved. The construction limits do not approach any buildings or any other structures outside the project limits. Overhead utility lines will be relocated as indicated on the project plans.

DESCRIPTION OF EXISTING SOILS

A detailed description of the soil types expected to be encountered in the project area is included in the project plan sheet titled "Soil Narratives." The following data represents the soil "K" values as described in the Soil Conservation Service's Rutland County Soils Book. This data was taken from Table 16, titled "Physical & Chemical Properties of the Soils."

Soil Name	Depth	Erosion Factor (K)	Erosion Factor (T)
13B Hinkley	0 - 150 (0"-6")	0.17	5
13B Hinkley	150 - 580 (6"-23")	0.17	
13B Hinkley	580 - 1500 (23"-60")	0.10	
13E Hinkley	0 - 100 (0"-4")	0.17	5
13E Hinkley	100 - 580 (4"-23")	0.17	
13E Hinkley	580 - 1500 (23"-60")	0.10	
14B Sudbury	0 - 75 (0"-3")	0.24	3
14B Sudbury	75 - 690 (3"-27")	0.24	
14B Sudbury	690 - 1500 (27"-60")	0.10	
31C Paxton	0 - 230 (0"-9")	0.20	5
31C Paxton	230 - 660 (9"-26")	0.32	
31C Paxton	660 - 1500 (26"-60")	0.24	
56B Colton	0 - 150 (0"-6")	0.17	5
56B Colton	150 - 810 (6"-32")	0.17	
56B Colton	810 - 1500 (32"-60")	0.17	
Duxbury	0 - 25 (0"-1")	0.28	2
Duxbury	25 - 460 (1"-18")	0.49	
Duxbury	460 - 1500 (18"-60")	0.17	
Udifluvents	75 - 150 (3"-6")	UNKNOWN	UNKNOWN
Fluvaquents	100 - 255 (4"-10")	UNKNOWN	

The following chart was taken directly from the "Vermont Handbook for Soil & Erosion and Sediment Control on Construction Sites," and describes the level of soil erodability within a given range of "K" values. See Soil Type Narratives on sheet 33.

K Value	Level of Erodability
0.23 and lower	Low erodability
0.23 to 0.36	Moderate erodability
0.37 and higher	Higher erodability

The majority of this project is considered to be "in a fill typical," meaning that the roadway is higher than the surrounding mean ground elevation. Due to engineering requirements for selective fill material depths, much of this fill material will need to be brought in from an outside source. Since we do not know where this source pit will be, we cannot provide a "K" value as to it's erodability properties.

DESCRIPTION OF EXISTING VEGETATIVE COVER

In the immediate vicinity of the Town Highway, the existing ground cover is mostly open and grassy with intermittent deciduous shrubs. As depicted on the plans by the area survey, the wooded areas are mainly outside of the project footprint. The major species of trees found in the open woods include Sugar Maple, Northern Red Oak, with some Eastern White Pine, Red Spruce, Eastern Hemlock, and Balsam Fir.

DESCRIPTION OF SLOPES

The existing shape of the project area can be seen by looking at the erosion control phase I sheet where the existing contours are shown. The contours are shown in two line styles. The Major Contours lines are solid lines (with elevations) at one meter intervals while the Minor Contour Lines are dashed and depict the half meter interval between two Major Contour lines.

EXISTING SLOPES
Generally speaking, the project impacts both flat and steep areas. Beginning at station 2+000 (the point furthest from U.S. Route 4) the existing slopes on the south side of TH#1 are very steep and continue for approximately 80 meters. At this point, station 2+080, the existing slopes flatten out considerably. This is the area where the temporary detour alignment veers south from the existing alignment. These relatively flat area continues across Mendon Brook to station 2+200 where the detour is realigned with TH#1. The access drive to the Water Intake Facility is located at this point on the south side of TH#1. From this point to the intersection of U.S. Route 4, the existing slopes on both the north and south side of TH#1 become very steep. See Roadway Sections (sheets 66 thru 88) for existing slopes (represented by dashed lines), and existing conditions on sheet 32.

Metric

PROPOSED SLOPES
The proposed roadway embankments will have all have relatively steep slopes. The roadway fill slopes on the south side from the beginning of the project to Mendon Brook are all 1-2 slopes (50%) and require the installation of guard rail. The slopes on the north side are flatter due to a portion of this area being in a cut condition. There is a drive being retained on the south side at station 2+095 with guard rail beginning immediately afterwards at station 2+100. The slopes behind the guardrail are 1-2 (50%) and continue until the brook.

The slopes along the channel banks are lined with heavy stone and are at 1-1.5 (67%).

From the east end of the bridge to the Water Intake Facility on the south side, the slopes are 1-2 (50%) behind guardrail. East of this drive towards U.S. Route 4, there is a stone lined ditch for the remainder of the length of the project on the south side. The slopes on the north side are 1-2 (50%) from the bridge to station 2+240 where a stone fill blanket begins. These slopes are 1-1.5 (67%) to the end of the project. The entire north side is behind guardrail.

GENERAL EROSION & SEDIMENT CONTROL GUIDELINES

The Erosion Control plans are intended as a guide for preventing soil erosion and controlling sediment. The work outlined in this narrative consists of applying measures throughout the duration of the project to control erosion and minimizes the sedimentation of the receiving waters.

An alternate temporary erosion control plan may be submitted by the contractor for approval by the Agency of Transportation.

The contractor will use other temporary or permanent erosion control devices as necessitated by the sequence of construction and as directed by the Resident Engineer. See Section 105.23 of the 2001 Vermont Standard Specifications for Construction.

The contractor shall coordinate the installation, use, and removal of erosion and sediment control measures with construction activities to assure economical, effective, and continuous erosion and sediment control. The contractor shall employ temporary stabilization practices in incremental stages as construction activities proceed.

The Resident Engineer may direct the installation of certain erosion control measures in order to forestall or mitigate potential erosion problems, or to respond to storm events or damage by construction operations.

The contractor shall install erosion and sediment control measures as sequenced on the Erosion Control Plan sheets, or as directed by the Resident Engineer. The type, size, and location of any erosion control device shall not be changed unless prior approval is obtained from the Resident Engineer. Any approved changes shall be noted on the Erosion Control plans and discussed in the weekly report. The contractor shall inspect all erosion control measures daily and after each rainfall event. The contractor shall repair all damaged erosion control measures immediately. All erosion control measures that trap sediment, such as sediment basins and silt fences, shall be cleaned out when their capacity reaches 50%.

The Resident Engineer's approval should be obtained prior to installing any erosion controls not specified in the Erosion Control Plans. However, in emergency situations where the Resident Engineer is not immediately available, the contractor should repair or install the erosion controls as they deem necessary and report the incident to the Resident Engineer as soon as practical.

The contractor shall control all sediment-laden runoff generated within the project site. Clean runoff from outside the project site shall be routed through the project site using diversion berms, diversion channels, and temporary or permanent culverts.

Construction equipment will not be allowed to operate on the downhill side of the perimeter control measures.

Construction equipment will not be allowed to cross a flowing stream, or disturb the existing stream banks, unless authorized by the Resident Engineer.

All in-stream construction must take place in a dry channel between June 1st and October 1st.

In general, preserve existing vegetation, shrubs, and trees whenever possible.

Silt fence shall be placed at the toes of all fill slopes and shall be constructed so that flows cannot bypass the ends. Areas directly below (downhill) of the silt fences must be un-disturbed and vegetated.

STRAW Matting will be installed as soon as practical on all temporary detour cut & fill slopes and permanent cut & fill slopes.

As construction progresses, implementation of additional erosion control measures may be required as deemed necessary by the On-Site Coordinator and as approved by the Resident Engineer.

The City of Rutland's potable water intake facility is located approximately 77 meters downstream of the existing bridge. The contact person at Rutland's water treatment facility is Michael Garofano (phone 802-773-0379).

SHEET #1
EROSION CONTROL NOTES

PROJECT:	PROJECT NO.:
MENDON	BRO 1443(35)

DESIGN FILE NAME: /str5/95j290/sj290ecbdr.dgn
IPARM FILE NAME: sj290ecnotes1.i — PLOT DATE: 18-NOV-2005
SURVEYED BY: L. ORVIS — SURVEY DATE: 2/96
SQUAD LEADER: C. KELLER — DRAWN BY: G. SHANGRAW
SHEET: 24 OF 94

INFORMATION REQUIRED BY THE CONTRACTOR

Much of the erosion control information shown on the erosion control plans and described in this narrative is general in nature. More site specific information is not yet available as a contractor has not yet been selected. The following list outlines some of the specific information that is not included in the erosion control plans and described in this narrative;

1. The location of stabilized construction entrances.
2. The location of stockpiles, staging areas, and disposal areas.
3. A specific timetable of construction and earthwork activities.
4. The name, title, qualifications, and contact information for the on-site project coordinator.

SPECIFIC GUIDELINES

Phase 1 - Establish Perimeter Erosion Controls

Prior to any construction activities, the Project Demarcation Fencing shall be placed along the perimeter of the project as shown on the Erosion Control Plans. The installation of the demarcation fencing will be performed such that no vegetation on the outside of the fencing is disturbed.

Prior to any construction or staging, the contractor will install Stabilized Construction Entrances leading to staging areas and the project site to prevent the tracking of silts and sediments offsite. Coarse stone fill over filter fabric should be utilized where an already established stable entrance does not exist. The crushed stone product used for the construction of the Stabilized Construction Entrances shall be monitored for sediment accumulation and replaced as necessary as directed by the Resident Engineer. Stabilized Construction Entrances shall also be established and maintained at all offsite waste and borrow areas. The minimum size of a Stabilized Construction Entrance shall be 4 meters wide by 15 meters long.

Install inlet protection controls at the inlets of all existing culverts.

After the clearing of trees and shrubs, but prior to any grubbing and excavation, construct perimeter controls to ensure that any disturbed sediment does not leave the site. Sediment traps/basins, where water has been adequately treated, may be directed to nearby undisturbed streams or swales.

Install perimeter silt fence in areas of proposed work as shown on the plans prior to grubbing and filling activities. In areas of high exposure, it may be necessary to double up protection with additional silt fencing or placement of hay bales behind the silt fencing. In areas of exposed ledge, stone check dams will be utilized.

During grubbing operations, stone check dam barriers shall be installed at any obvious concentrated flow discharge points, or as directed by the Resident Engineer.

All areas of exposed soils after the grubbing activity shall be temporarily stabilized with mulching & seeding, erosion matting, or STRAW matting as soon as practicable and before any predicted rainfall event. These temporary erosion control measures can be placed in any combination in areas of potential erosion as deemed necessary by the Resident Engineer.

After perimeter controls are in place, and prior to grading operations, construct temporary onsite sediment traps where necessary. Grade disturbed areas to drain towards sediment traps where possible.

All material stockpiles, including but not limited to, grubbing material, sand borrow, earth borrow, granular borrow, topsoil, subbase, and any excavated waste piles shall be mulched and shall also have silt fence installed around the base of the stockpile.

Any off-site areas where borrow or excavated materials will be stockpiled will have two installations of silt fence, 600 mm apart, around the base of each stockpile. Waste disposal sites will also have two installations of silt fence around the base of each stockpile, and immediately after final grading, shall be seeded and mulched. Removal of the silt fences around the waste areas shall be performed only after approval by the Resident Engineer.

Phase 2 - Establish Temporary Detour Erosion Controls

On partially completed fill & cut slopes, all exposed soils will be stabilized with STRAW matting at the end of each working day. In any areas on the detour roadway where concentrated flows may tend to collect, temporary flexible slope pipes will be used to channel the anticipated runoff into settling basins or detention ponds. No roadway runoff will be allowed to be channeled directly into Mendon Brook without being treated for sediment. Once the detour fill slopes are completed, the entire detour, including all fill and cut slopes (except the paved surfaces), shall be entirely covered with STRAW matting.

Phase 3 - Establish Bridge Erosion Controls

It is anticipated that the lower portions of both existing abutments (that are to be retained) can serve as check dams during construction of the new abutments and related stone fill slopes.

New slopes steeper that 50% (1-2 slope) will be constructed with stone fill for slope stabilization as the embankment construction progresses.

The new substructures will be constructed in the dry, and will require the use of cofferdams. The cofferdams will be used as a barrier to prevent sediments from the substructure excavation from entering the stream. Construction of the substructures may require dewatering of the cofferdams. All water pumped from substructure and other excavation areas will be pumped to either a dirt bag silt containment device, or an excavated sediment basin. The first pumping of the excavations will contain the greatest volume of water with the highest sediment load. It may be necessary to construct additional settling structures, or to control the rate of drawdown of the excavations.

After completion of the substructures, all collected sediments should be removed from the settling structures and the ground shaped to its final grade and slope. Dispose of the collected sediments in an upland portion of the project, or in a manner approved by the Resident Engineer that will not result in sediments or pollutants entering the stream.

Phase 4 - Establish Roadway Erosion Controls

New drainage culverts that are being constructed in the same location as existing culverts shall be isolated from the new work by means of damming and pumping into a settling basin, or by installing a temporary pipe of sufficient size to handle expected flows.

Stone fill for channel and slope stabilization at the outlet ends of culverts is to be placed prior to installation of the culverts. All work on new culverts should proceed from the outlet towards the inlet. Silt fence and/or crushed stone check dams are to be installed on undisturbed ground and downstream of the stone fill pads at outlets. Stone fill for ditch stabilization shall be placed during the same working day that the ditch excavation was performed, unless directed otherwise by the Resident Engineer. Install inlet protection controls at the inlets of all new culverts.

On any partially completed permanent cut and fill slopes, all exposed soils will be stabilized with straw matting or seeded and mulched. In areas of concentrated runoff above newly constructed fill slopes, flexible slope pipes or other approved diversion methods will be used to transport runoff down the fill slopes to sediment traps or settling basins.

Any new fill slopes that are designed with stone fill blankets for slope stabilization shall be constructed with the stone fill being placed as the fill slope embankment construction progresses.

The subbase material should be placed as soon as the subgrade has reached its final grade and slope. The temporary traveling surface will be graded to promote sheet flow off the surface onto slopes, or flows will be directed to collection areas and shall be transported down the fill slopes (using flexible slope drains) into sediment traps or settling basins.

All graded areas shall be permanently stabilized following final grading activities.

Phase 5 - Detour Removal & Final Erosion Controls

Remove temporary detour fill material to original ground.

On any partially removed temporary fill slopes, all exposed slopes will be stabilized at the end of each work day.

As the temporary detour fills are removed, all exposed soil surfaces will be stabilized with STRAW matting and/or seed & mulch.

The channel stone fill slopes will be completed, and grubbing material will be applied to stone filled areas around each abutment. The grubbing material shall not be placed beneath the new structure or below the ordinary high water elevation. Refer to the hydraulics information on the Preliminary Information sheet.

The newly placed grubbing material shall be stabilized with STRAW matting and/or seed & mulch as directed by the Resident Engineer.

Removal of silt fence shall commence only after all upslope areas are stabilized and well established, and the Resident Engineers has approved the removal.

Removal of perimeter silt fences and sediment traps only after any toe-of-fill ditches have stabilized and vegetation is well established.

Remove all remaining temporary erosion control measures, regrade any areas if necessary, treat all regraded areas with STRAW matting and/or mulch & seed, and establishment of any final erosion control devices as deemed necessary by the Resident Engineer.

MDOT Metric

SHEET #2
EROSION CONTROL NOTES

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290ecbdr.dgn	
IPARM FILE NAME: sj290ecnotes2.i	PLOT DATE: 18-NOV-2005
SURVEYED BY: L. ORVIS	SURVEY DATE: 2/96
SQUAD LEADER: C. KELLER	DRAWN BY: G. SHANGRAW
	SHEET: 25 OF 94

MAINTENANCE PLAN FOR EROSION AND SEDIMENT CONTROLS

The following maintenance schedule will be followed throughout the duration of the project.

1. An assigned individual who is not permanently associated with the day-to-day operations of the project shall do monitoring of the construction site. The inspector will be familiar with this plan and with erosion & sediment control procedures and with road and bridge construction techniques. Site inspections will be performed at least once every seven calendar days, and after each rain event of more than one half inch (13mm) in a twenty four hour period.

2. A copy of the monitoring report prepared by the site reviewer shall be given to the Resident Engineer after each site visit. The report will be a written report stating the date of the review, a description of the erosion and sediment control measures reviewed. Also included will be the effectiveness of the erosion control measures, any deficiencies, and corrective actions to be undertaken.

3. The plan preparer will be available for on-site consultations with the Resident Engineer within twenty four hours of the request.

4. All silt fences and stone check dams will be inspected each site visit by the designated inspector, as described below;

   a. These controls will be maintained in good condition. Any silt fence or stone check dam that is ineffective will be repaired or replaced immediately.
   b. Sediment deposits will be removed when they reach one-half the height of the sediment control device.
   c. All sediments removed will be deposited in an upland portion of the project site, or disposed off-site in the designated project waste site.

5. All slopes will be checked each site visit and any eroded areas will be immediately repaired. Temporary stabilization methods will be used as necessary until final stabilization measures are in place.

6. Both temporary & permanent seeding & mulching will be checked each site visit for vegetative growth. Any areas requiring re-vegetation will be repaired immediately.

7. Drainage structures will be cleaned as necessary to remove any sediment buildup in the sump of the structures or at the inlet of the structure.

a. Any inlet control found to be ineffective will be replaced as necessary and will be done immediately.
b. All sediments removed will be deposited in an upland portion of the project site, or disposed off-site in the designated project waste site.

8. Temporary construction accesses will be monitored each site visit.

a. Any control found to be ineffective will be promptly replaced.

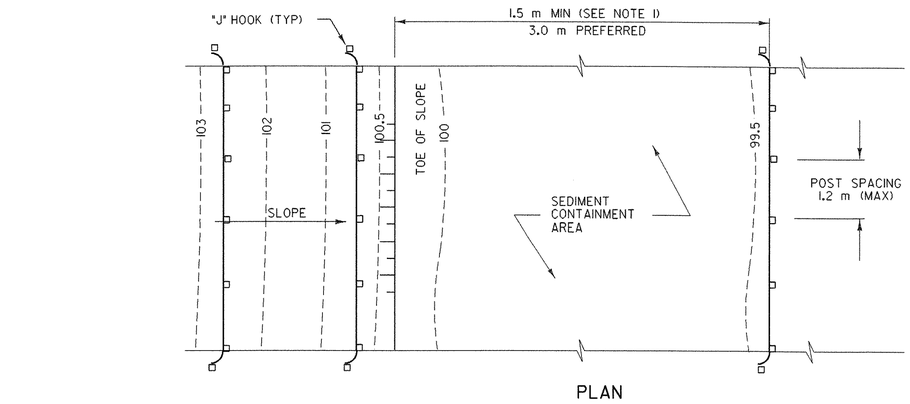
9. All temporary erosion control devices will stay in place until final grass growth has been established and complete stabilization of the areas has occurred.

10. Once stabilization has occurred, all temporary erosion control measures will be removed and all disturbed areas will be stabilized with STRAW matting and/or seed & mulch.

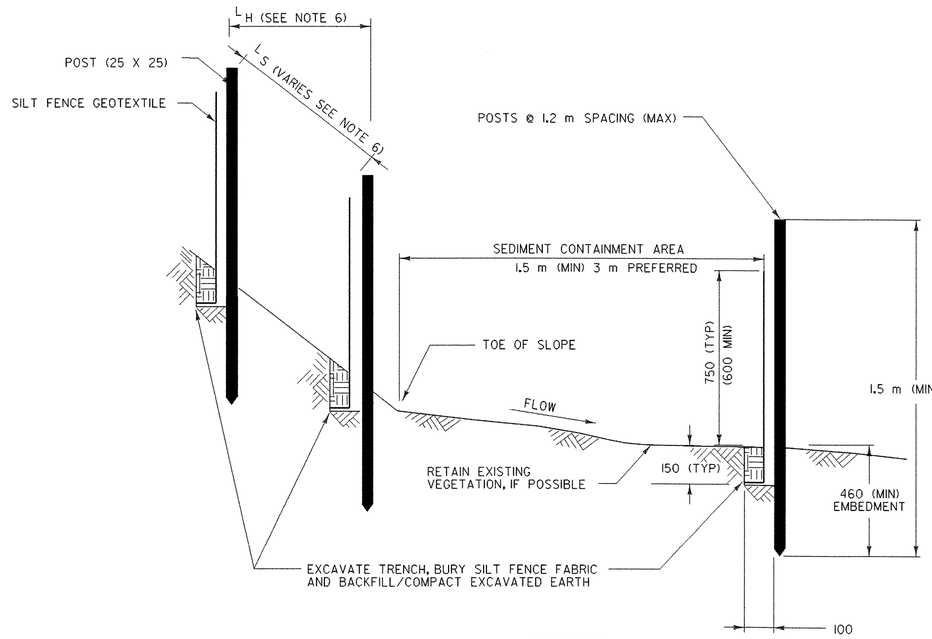
Metric

SHEET #3
EROSION CONTROL NOTES

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95J290/sj290ecbdr.dgn	
IPARM FILE NAME: sj290ecnotesl.i	PLOT DATE: 18-NOV-2005
SURVEYED BY: L. ORVIS	SURVEY DATE: 2/96
SQUAD LEADER: C. KELLER	DRAWN BY: G. SHANGRAW
	SHEET: 26 OF 94



PLAN



SECTION

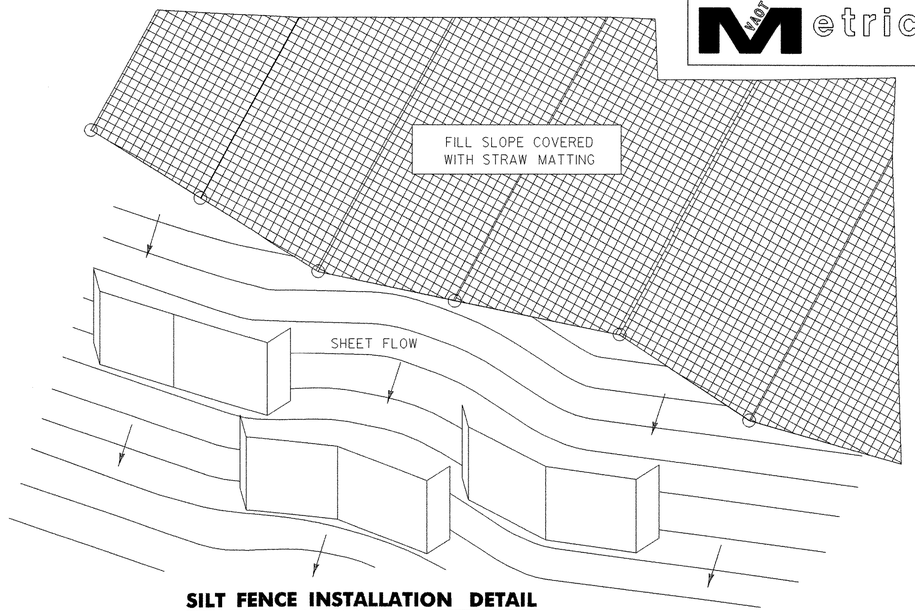
SILT FENCE - TEMPORARY

GENERAL NOTES:

1. SILT FENCE SHALL GENERALLY BE PLACED A MINIMUM OF 1.5 m BEYOND TOE OF SLOPE, 3 m PREFERRED, TO PROVIDE ADEQUATE AREA FOR SEDIMENT STORAGE AND FACILITATE MAINTENANCE OF SEDIMENT CONTAINMENT AREA.
2. ALL ENDS SHALL BE "J" HOOKED TO TRAP SEDIMENT.
3. IN AREAS WITH TWO SLOPES, SILT FENCE SHALL BE USED TO ERECT A DAM AND TRAP SEDIMENT AT THE BASE OF THE STEEPER SLOPE.
4. THE BOTTOM EDGE OF SILT FENCE SHALL BE BURIED A MINIMUM OF 150 mm BELOW GROUND, AND KEYED IN 100 mm. THE FENCE SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC.
5. MAXIMUM DRAINAGE AREA TRIBUTARY TO 30 m OF SILT FENCE SHALL BE 0.1 Ha.
6. THE FOLLOWING TABLE SHOWS MAXIMUM SLOPE LENGTHS FOR THESE MEASURES:
7. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
8. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.

CONSTRUCTED SLOPE	SLOPE LENGTH (LS) m	HORIZONTAL LENGTH (LH) m
1-3	25	24
1-4	40	39
1-5	60	60
flatten than 1-5	80	80

9. SILT FENCE SHALL BE REMOVED WHEN THE AREA HAS BEEN STABILIZED. AT TIME OF REMOVAL OF THE SILT FENCE, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
10. PAYMENT FOR INSTALLATION AND REMOVAL OF SILT FENCE SHALL BE MADE UNDER THE GEOTEXTILE FOR SILT FENCE ITEM.
11. PAYMENT FOR MONITORING SILT FENCE SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
12. PAYMENT FOR MAINTAINING SILT FENCE SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



SILT FENCE INSTALLATION DETAIL

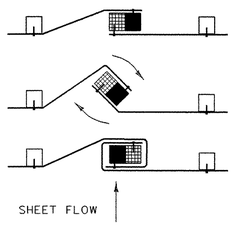
NOTES :
1. EACH SECTION SHALL HAVE BOTH END TURNED UPSLOPE FOR 600mm OVERLAP SECTIONS ON SLOPE TO ASSURE COMPLETE COVERAGE.
2. USE DETAILS AS SHOWN BELOW IN REGARD TO INDIVIDUAL POST & FABRIC INSTALLATION.
3. ALL SILT FENCE INSTALLATIONS MUST BE REMOVED WHEN SOIL IS STABILIZED. SOME RESEEDING & MULCHING MAY BE REQUIRED.
4. THE RESIDENT ENGINEER SHALL DETERMINE THE FINAL CONFIGURATION OF ALL SILT FENCE INSTALLATIONS.

APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF SILT FENCE IS TO REDUCE RUNOFF VELOCITY AND TRAP SEDIMENT. VELOCITY IS REDUCED, WATER IS IMPOUNDED BEHIND THE MEASURE, AND SEDIMENT FALLS OUT OF SUSPENSION.

B. SILT FENCE SHALL BE INSTALLED ON A LINE OF EQUAL ELEVATION (CONTOUR). IT MAY BE INSTALLED AT INTERMEDIATE POINTS UP SLOPES AS WELL AS AT THE BOTTOM, AS SHOWN IN THE DETAIL.

C. SILT FENCE SHALL NOT BE USED ACROSS CONCENTRATED FLOW.



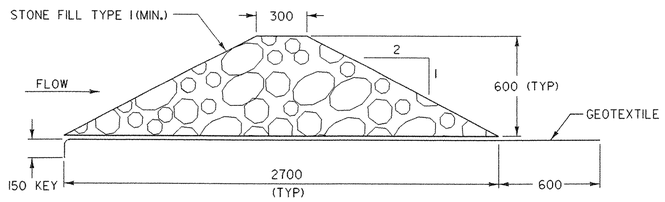
1. PLACE THE END POST OF ONE FENCE INSIDE THE END POST OF THE OTHER FENCE.
2. ROTATE BOTH POSTS AT LEAST 180 DEGREES IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL
3. DRIVE BOTH POSTS 18 INCHES INTO THE GROUND AND BURY THE FLAP IN THE TRENCH.

SPLICING DETAIL

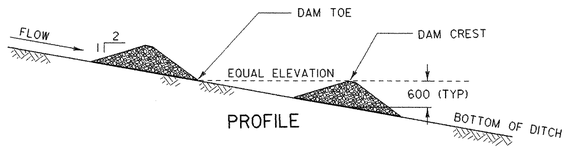
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

SILT FENCE

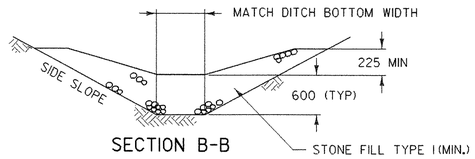
PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443(35)
FILE NAME: /str5/95j290/erosion.dgn	PLOT DATE: 18-NOV-2005
PROJECT LEADER: C. KELLER	DRAWN BY: N. GARBACIK
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: T. SUMNER
sj290slt.1	SHEET 27 OF 94



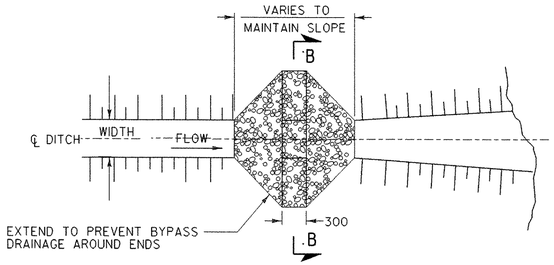
CROSS SECTION



PROFILE



SECTION B-B



PLAN

CHECK DAM - TEMPORARY (STONE)

STONE CHECK DAM PLACEMENT INTERVAL	
DITCH SLOPE	PLACEMENT INTERVAL **
1%	60 m
2 %	30 m
3 %	20 m
4 %	15 m
5 %	12 m
6 %	10 m
8 %	7.5 m
10 %	6 m

** BASED ON 0.6 m TYPICAL HEIGHT

CHECK DAMS

APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF A CHECK DAM IS TO REDUCE EROSION IN A CHANNEL BY REDUCING FLOW VELOCITY.

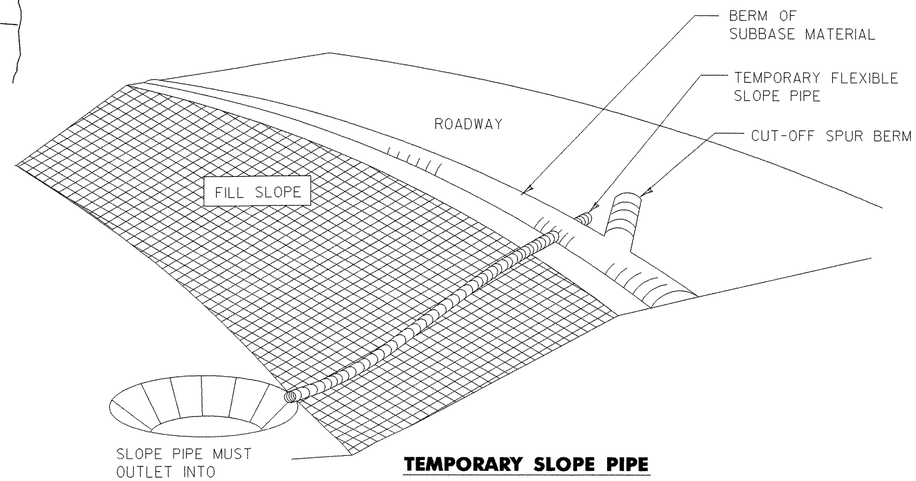
B. CHECK DAMS WILL CAPTURE SEDIMENT THAT FALLS OUT OF SUSPENSION BEHIND THE CHECK DAM DUE TO DECREASED VELOCITY.

C. CHECK DAMS ARE NOT INTENDED TO FILTER SEDIMENT FROM TURBID WATER.

D. DETAILS SHOWN SHALL BE USED FOR TEMPORARY INSTALLATION ONLY.

GENERAL NOTES:

1. GEOTEXTILE SHALL BE INSTALLED UNDER STONE FILL. IT SHALL BE KEYED IN ON THE UP HILL END AND SHALL EXTEND 0.6 m BEYOND THE STONE ON THE DOWN HILL END.
2. CORE MATERIAL FOR THE STONE CHECK DAM SHALL MEET THE GRADATION REQUIREMENTS OF STONE FILL TYPE I (MIN.). STONE SIZE SHOULD BE INCREASED WITH INCREASED SLOPE AND VELOCITY.
3. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
4. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
5. AT TIME OF REMOVAL OF THE CHECK DAMS, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
6. PAYMENT FOR INSTALLATION AND REMOVAL OF CHECK DAMS SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.
7. PAYMENT FOR MONITORING CHECK DAMS SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
8. PAYMENT FOR MAINTAINING CHECK DAMS SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



TEMPORARY SLOPE PIPE

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

CHECK DAMS

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443(35)
FILE NAME: /str5/95j290/erosion.dgn	PLOT DATE: 18-NOV-2005
PROJECT LEADER: C. KELLER	DRAWN BY: N. GARBACIK
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: T. SUMNER
sj290ckd.i	SHEET 28 OF 94

DROP INLET PROTECTION

APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF DRAINAGE STRUCTURE INLET PROTECTION IS TO PREVENT SEDIMENT FROM ENTERING A DRAINAGE SYSTEM BY PONDING WATER WHICH ALLOWS SEDIMENT TO FALL OUT OF SUSPENSION.

B. THESE EXAMPLES OF DROP INLET PROTECTION ARE NOT INTENDED FOR USE ON GRADES. ON GRADE THEY MAY CAUSE WATER TO BYPASS THE STRUCTURE, CREATING ADDITIONAL EROSION OR FLOODING.

C. POSSIBLE MODIFICATIONS FOR USE ON GRADE INCLUDE ADDING A BERM DOWNSTREAM OF THE INLET TO CREATE PONDING. CHECK DAMS MAY ALSO BE USED UPSTREAM OF THE INLET TO SLOW VELOCITIES.

D. PREFABRICATED DROP INLET PROTECTION SPECIFICATIONS SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL PRIOR TO USE.

GENERAL NOTES:

1. THE TOP OF THE INLET PROTECTION SHALL BE SET AT THE MAXIMUM DESIRED WATER LEVEL, BASED ON FIELD LOCATION AND CONDITIONS.

2. SILT FENCE GEOTEXTILE SHALL BE A SINGLE CONTINUOUS PIECE TO ELIMINATE JOINTS.

3. SPACE SILT FENCE POSTS EVENLY AROUND INLET. WIRE MESH MAY BE REQUIRED BEHIND GEOTEXTILE TO PROVIDE SUPPORT.

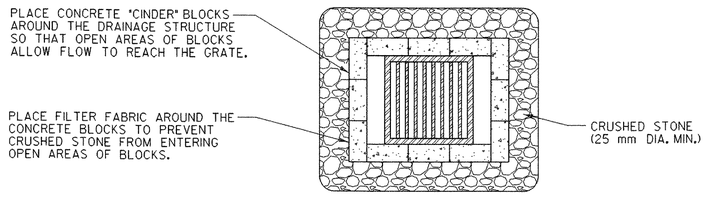
4. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.

5. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED, SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.

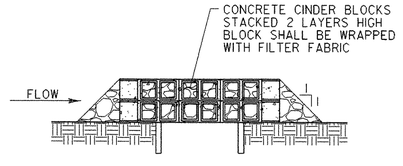
6. PAYMENT OF INLET PROTECTION SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.

7. PAYMENT FOR MONITORING INLET PROTECTION SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.

8. PAYMENT FOR MAINTAINING INLET PROTECTION SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.

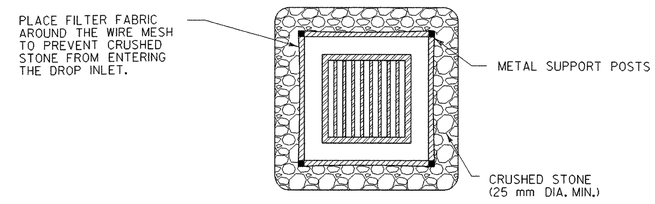


PLAN

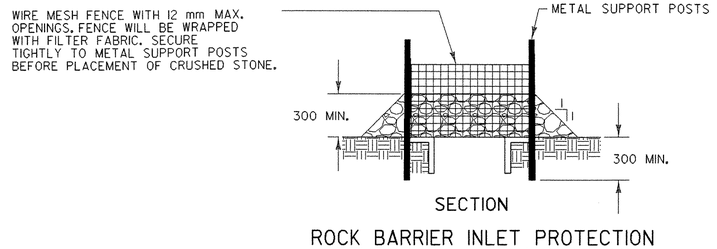


SECTION

ROCK BARRIER DROP INLET PROTECTION
TEMPORARY PAVED AREAS



PLAN



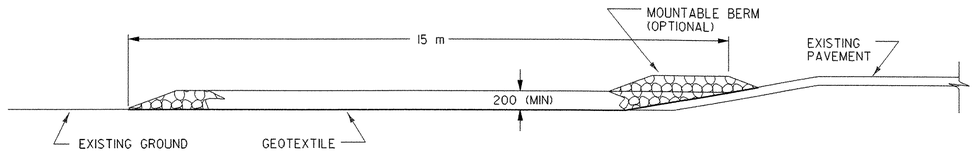
SECTION

ROCK BARRIER INLET PROTECTION
TEMPORARY UNPAVED AREAS

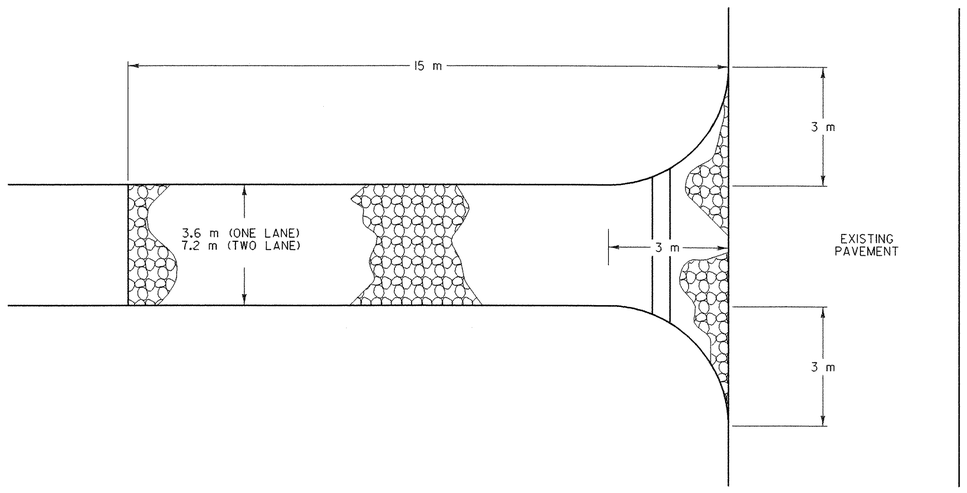
DROP INLET PROTECTION

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443(35)
FILE NAME: /str5/95j290/erosion.dgn	PLOT DATE: 18-NOV-2005
PROJECT LEADER: C. KELLER	DRAWN BY: N. GARBACIK
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: T. SUMNER
sj290dip.i	SHEET 29 OF 94

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.



TYPICAL CONSTRUCTION ENTRANCE PROFILE
(CUT AND DITCH SECTIONS)



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

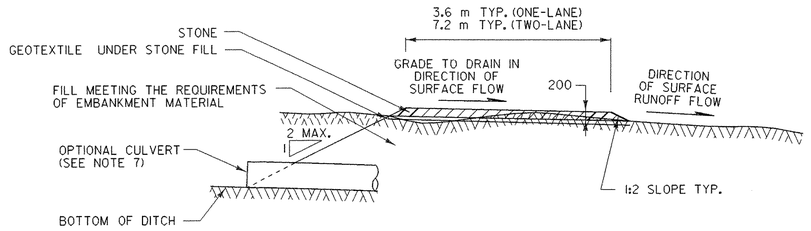
STABILIZED CONSTRUCTION ENTRANCE

APPLICATION NOTES:

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

GENERAL NOTES:

1. STONE SIZE - USE CLEAN STONE WITH GRADATION BETWEEN 50 mm AND 100 mm.
2. LENGTH - 15 m (MIN)
3. THICKNESS - 200 mm (MIN)
4. WIDTH - 3.6 m (MIN)
5. GEOTEXTILE UNDER STONE WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE AS DIRECTED BY THE ENGINEER. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 1-5 SLOPES WILL BE PERMITTED.
7. PROPOSED DRAINAGE PIPES SHALL BE SIZED WITH SUFFICIENT CAPACITY TO CARRY DITCH FLOWS. ALTERNATIVE WAYS OF TRANSPORTING DITCH DRAINAGE ACROSS CONSTRUCTION ENTRANCES MAY BE PROPOSED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER.
8. WHEN WASHING OF VEHICLE IS NECESSARY, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
10. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
11. AT THE TIME OF REMOVAL OF THE STABILIZED CONSTRUCTION ENTRANCE THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
12. PAYMENT OF THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.
13. PAYMENT FOR MONITORING STABILIZED CONSTRUCTION ENTRANCES SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
14. PAYMENT FOR MAINTAINING STABILIZED CONSTRUCTION ENTRANCES SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

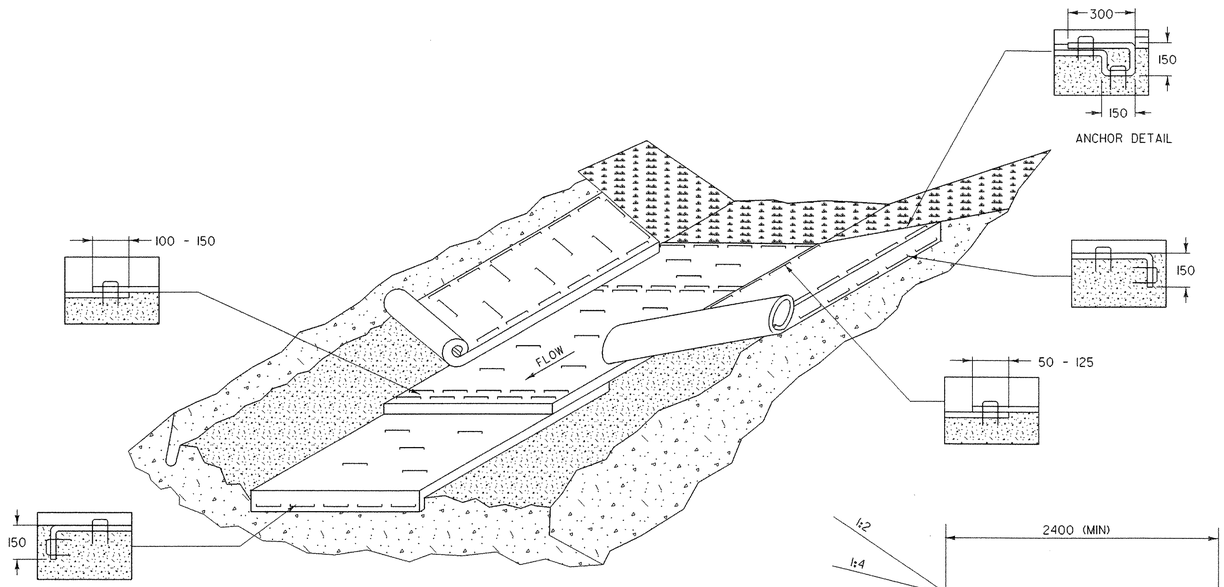


TYPICAL CONSTRUCTION ENTRANCE SECTION

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

CONSTRUCTION ENTRANCE

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443(35)
FILE NAME: /str5/95j290/erosion.dgn	PLOT DATE: 18-NOV-2005
PROJECT LEADER: C. KELLER	DRAWN BY: N. GARBACIK
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: T. SUMNER
sj290ce.i	SHEET 30 OF 94



EROSION PROTECTION FOR DITCHES

APPLICATION NOTES:

A. THE PURPOSE OF LINING THE DITCH WITH EROSION MATTING IS TO REDUCE EROSION AND AID THE ESTABLISHMENT OF VEGETATION AT LOW VELOCITIES.

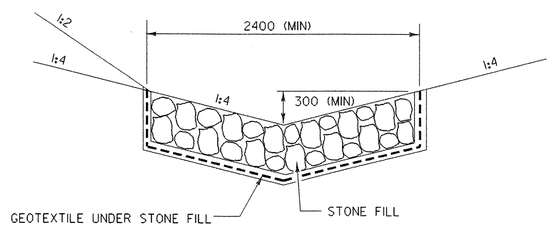
B. THE FOLLOWING CHARTS SHALL BE USED TO DETERMINE THE APPROPRIATE EROSION CONTROL MEASURE:

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

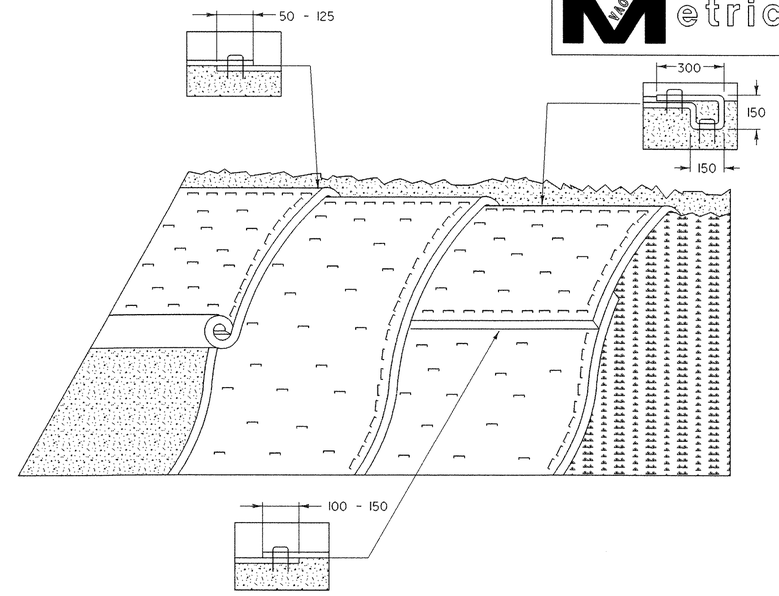
STONE FILL THICKNESS	
STONE FILL TYPE	THICKNESS
TYPE I	0.3 m
TYPE II	0.6 m

GENERAL NOTES:

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



TEMPORARY STONE LINED DITCH



EROSION PREVENTION FOR SIDE SLOPES

APPLICATION NOTES:

A. THE PURPOSE OF MATTING ON SIDE SLOPES IS TO REDUCE EROSION AND AID THE ESTABLISHMENT OF VEGETATION

B. EROSION CONTROL MATTING SHALL BE USED FOR THE FOLLOWING REASONS:

* SIDE SLOPES > 1-3
* AREAS WHERE SEED AND MULCH WILL NOT STAY IN PLACE ALONE
* WHERE SEEDING IS OUTSIDE THE GROWING SEASON.

GENERAL NOTES:

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

DITCH & SIDE SLOPE PROTECTION

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443 (35)

FILE NAME: /str5/95j290/erosion.dgn		PLOT DATE:	18-NOV-2005
PROJECT LEADER:	C. KELLER	DRAWN BY:	N. GARBACIK
DESIGNED BY:	M. EVANS-MONGEON	CHECKED BY:	T. SUMNER
sj290dsp.i		SHEET	31 OF 94

Colton-Duxbury
2 to 8% slopes
Low to High
Erodability

Colton-Duxbury
8 to 15% slopes
Low to High Erodability

Udifuvents and
Fluvaquents
nearly level
Unknown Erodability
(Assume High Erodability)

Duxbury-Colton
complex
2 to 8% slopes
Low to High
Erodability

Hinckley
25 to 40% slopes
Low Erodability

WATER INTAKE FACILITY
FOR THE CITY OF RUTLAND
LOCATED 77 METERS DOWNSTREAM
OF THE CENTER OF THE NEW BRIDGE.

Sudbury
3 to 8% slopes
Low to Moderate
Erodability

Paxton
8 to 15% slopes
Low to Moderate
Erodability

Colton-Duxbury
8 to 15% slopes

Note:
For detailed soil characteristics,
see "Soil Narratives" sheet.

0 10 20 30
SCALE 1:500

EXISTING CONDITIONS

PROJECT NAME: MENDON
PROJECT NUMBER: BRO 1443(35)

FILE NAME: /str5/95j290/soils.dgn
PROJECT LEADER: C. Keller
DESIGNED BY: G. Shangraw
sj290soils.i

PLOT DATE: 18-NOV-2005
DRAWN BY: G. Shangraw
CHECKED BY:
SHEET 32 OF 94

13B-Hinckley gravelly loamy fine sand, 0 to 8 percent slopes.

This soil is very deep, excessively drained, and nearly level and gently sloping. It is on long, narrow terraces and in broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are long and narrow or irregular in shape and range from 5 to 150 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows:

Surface layer.
0 to 6 inches, dark brown gravelly loamy fine sand

Subsoil:
6 to 23 inches, dark yellowish brown gravelly loamy fine sand

Substratum:
23 to 60 inches, dark grayish brown very gravelly coarse sand

Some areas of this unit include soils that have less than 35 percent rock fragments throughout. Some areas include soils that have a redder subsoil.

Included in this unit in mapping are small areas of the well drained Paxton soils, the moderately well drained and somewhat poorly drained Sudbury soils, and the excessively drained Windsor soils. Paxton soils are near the edges of the unit, Sudbury soils are in depressions and drainageways, and Windsor soils are in landscape positions similar to those of the Hinckley soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties
Permeability: Rapid in the subsoil and very rapid in the substratum
Available water capacity: Very low
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of at least 60 inches
Potential for frost action: Low

13E-Hinckley gravelly loamy fine sand, 25 to 40 percent slopes.

This soil is very deep, excessively drained, and steep. It is on the sides of long, narrow terraces and hills that are higher than the adjacent flood plains and at the base of hills and mountains. Areas are long and narrow or irregular in shape and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers in this soil are as follows

Surface layer:
0 to 4 inches, dark brown gravelly loamy fine sand

Subsoil.
4 to 23 inches, dark yellowish brown gravelly loamy fine sand

Substratum:
23 to 60 inches, dark grayish brown very gravelly coarse sand

Some areas of this unit include soils that have less than 35 percent rock fragments throughout. Some areas include soils that have a redder subsoil.

Included in this unit in mapping are small areas of the well drained Paxton soils, the moderately well drained and somewhat poorly drained Sudbury soils, and the excessively drained Windsor soils. Paxton soils are near the edges of the unit, Sudbury soils are in depressions and drainageways, and Windsor soils are in landscape positions similar to those of the Hinckley soil. Included soils make up 15 to 20 percent of the unit.

Important soil properties

Permeability: Rapid in the subsoil and very rapid in the substratum
Available water capacity: Very low
Soil reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to a depth of at least 60 inches
Potential for frost action: Low

31C-Paxton fine sandy loam, 8 to 15 percent slopes, very stony.

This soil is very deep, well drained, and strongly sloping. It is on the top and sides of knolls, hills, and ridges. Areas are irregular in shape and range from 5 to 150 acres in size. Stones cover less than 1percent to 3 percent of the surface and are typically 5 to 25 feet apart.

Typically, this soil is covered by a thin layer of slightly decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows

Surface layer:
0 to 9 inches, dark brown fine sandy loam Subsoil:
9 to 26 inches, yellowish brown fine sandy loam Substratum:
26 to 60 inches, moffled, firm, olive brown fine sandy loam

Some areas of this unit include soils that have mottles in the lower part of the subsoil, soils that are neutral in reaction throughout, or soils that have carbonates between depths of 40 and 60 inches.

Included in this unit in mapping are small areas of the moderately well drained Amenia and Georgia soils and the excessively drained Hinckley soils. Also included, in landscape positions similar to those of the Paxton soil, are soils that have a friable substratum and soils that are more than 35 percent rock fragments throughout. Amenia and Georgia soils are in depressions and drainageways, and Hinckley soils are near the edges of the unit. Included soils make up 15 to 20 percent of this unit.

Important soil properties

Permeability: Moderate in the subsoil and slow or very slow in the substratum
Available water capacity. High
Soil reaction: Very strongly acid to moderately acid throughout the profile
Depth to dense basal till.- 20 to 38 inches
Depth to bedrock: More than 60 inches
Water table: Perched at a depth of 1.5 to 2.5 feet in winter and spring
Root zone: Typically extends to the firm substratum
Potential for frost action: Moderate

Fluvaquents & Udifluvents

Fluvaquents
Fluvaquents consist of very deep, somewhat poorly drained and poorly drained soils. These soils formed in sandy and loamy alluvium on flood plains. Slopes range from 0 to 3 percent.

Fluvaquents in this survey are only in an undifferentiated group with Udifluvents. Fluvaquents are geographically associated with the modern well drained Deerfield soils, the excessively drained Hinkley soils, the poorly drained Limerick soils, the very poorly drained Saco soils, the moderately well drained and somewhat poorly drained Sudbury soils, and Udifluvents. Unlike Deerfield, Hinkley, and Sudbury soils, Fluvaquents are frequently flooded. They are more than 15% rock fragments, whereas Limerick soils have less than 15% rock fragments. Unlike Saco soils, Fluvaquents do not have a surface layer of muck. Unlike Udifluvents, they have mottles within a depth of 20 inches (510 mm).

Because of the variability of Fluvaquents, a typical pendon is not described. These soils have a surface layer that is 4 to 10 inches thick (100 to 250 mm). This is underlain by loamy and sandy stratified material that is distinctly or prominently mottled. The depth to bedrock is more than 60 inches (1500 mm). The content of rock fragments ranges from 15 to 60 percent. Reaction ranges from strongly acid to neutral.

Udifluvents
Udifluvents consists of very deep, moderately well drained to excessively drained soils. These soils formed in sandy and loamy alluvium on flood plains. Slopes range from 0 to 3 percent.

Udifluvents in this survey are only in an undifferentiated group with Fluvaquents. Udifluvents are geographically associated with the modern well drained Deerfield soils, the excessively drained Hinkley soils, the poorly drained Limerick soils, the very poorly drained Saco soils, the moderately well drained and somewhat poorly drained Sudbury soils, and Fluvaquents. Unlike Deerfield, Hinkley, and Sudbury soils, Fluvaquents are frequently flooded. Unlike Limerick and Saco soils, they are not gray in the subsoil and upper part of the substratum. Unlike Fluvaquents, they do not have mottles within a depth of 20 inches (510 mm).

Because of the variability of Udifluvents, a typical pendon is not described. These soils have a surface layer that is 3 to 6 inches thick (75 to 150 mm) and is underlain by stratified material. The depth to bedrock is more than 60 inches (1500 mm). The content of rock fragments ranges from 15 to 75 percent throughout. Reaction ranges from strongly acid to neutral.

Sudbury Series

The Sudbury series consists of very deep, moderately well drained and somewhat poorly drained soils. These soils formed in loamy glaciofluvial deposits underlain by sandy glaciofluvial deposits on kames, stream terraces, deltas, and valley trains. Permeability is moderately rapid in the solum and rapid in the substratum. Slopes range from 0 to 8 percent. Sudbury soils formed in material similar to that of the moderately well drained Deerfield, Ninigret, and Tisbury soils; the excessively drained Hinckley and Windsor soils; the poorly drained Walpole soils; and Fluvaquents and Udifluvents. Sudbury soils have more rock fragments in the substratum than Deerfield soils. They have more sand in the particle-size control section than Ninigret and Tisbury soils. Unlike Hinckley and Windsor soils. Sudbury soils have gray mottles within a depth of 24 inches. Sudbury soils are less gray in the B horizon than Walpole soils. Fluvaquents and Udifluvents lack any soil development. Typical pedon of Sudbury fine sandy loam, 3 to 8 percent slopes, in a forested area, in the town of Clarendon, 1.2 miles east of U-S, Route 7 on Vermont Route 103 and 0.5 mile east of the Rutland Municipal Airport:

Oi -1 inch to 0; slightly decomposed pine needles.

A-0 to 3 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; very friable; many roots; 7 percent rock fragments; strongly acid; abrupt smooth boundary.

Bw1-3 to 9 inches; dark brown (10YR 4/3) fine sandy loam; moderate fine subangular blocky structure; friable; many roots; 11percent rock fragments; slightly acid; clear Smooth boundary.

Bw2-9 to 19 inches; light olive brown (2.5Y 5/4) sandy loam; common medium prominent olive (10YR 5/6) mottles; weak fine subangular blocky structure; friable; common roots; 10 percent rock fragments; sli htly acid; clear smooth boundary.

BC-19 to 27 inches; light olive brown (2.5Y 5/4) gravelly sandy loam; common medium prominent yellowish brown (10YR 5/6) mottles and common medium prominent grayish brown (10YR 5/2) mottles; weak thin platy structure; friable; few roots; 15 percent rock fragments; slightly acid; abrupt smooth boundary.

2C1-27 to 41 inches; light olive brown (2.5Y 5/4) very gravelly coarse sand, 1-to-2-inch-thick silt lenses; many large prominent yellowish brown (10YR 5/6) mottles and many large prominent light brownish gray (10YR 6/2) mottles in the silt lenses; single grain; loose; 37 percent rock fragments; neutral; clear smooth boundary.

2C2-41 to 60 inches; light olive brown (2.5Y 5/4) very gravelly coarse sand; single grain; loose; 52 percent rock fragments; neutral.

The depth to bedrock is more than 60 inches. The thickness of the solum is 18 to 30 inches. The content of rock fragments ranges from 0 to 30 percent in the solum and 25 to 60 percent in the substratum. Reaction ranges from strongly acid to slightly acid in the solurn and is neutral in the substratum. The A horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4. It is fine sandy loam, sandy loam, or the gravelly analogs of those textures.
The B horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 6. It is fine sandy loam, sandy loam, or the gravelly analogs of those textures.
The BC horizon has hue of 10YR to 2.5Y, value of 4 or 5, and chroma of 2 to 4. It is gravelly or very gravelly sandy loam or fine sandy loam.
The 2C horizon has hue of 10YR to 5Y, value of 4 or 5, and chroma of 2 to 4. It is gravelly or very gravelly sand or coarse sand.

56B-Colton-Duxbury complex, 2 to 8 percent slopes, very stony.

This unit consists of very deep, nearly level and gently sloping soils. It is on long, narrow terraces and broad areas that are slightly higher than the adjacent flood plain and at the base of hills and mountains. Areas are irregular in shape and range from 5 to 150 acres in size. Stones cover less than 1percent to 3 percent of the surface and are typically 5 to 25 feet apart.

This unit is about 50 percent excessively drained Colton soil, 35 percent well drained Duxbury soil, and 15 percent other soils. The Colton and Duxbury soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Colton soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows

Surface layer
0 to 2 inches, black very gravelly fine sandy loam

Subsurface layer
2 to 6 inches, light brownish gray very gravelly sandyloam

Subsoil:
6 to 22 inches, reddish brown extremely gravelly sand
22 to 32 inches, brown extremely gravelly loamy sand

Substratum:
32 to 60 inches, yellowish brown extremely gravelly sand

Typically, the Duxbury soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows

Surface layer.
0 to 1 inch, pinkish gray fine sandy loam

Subsoil:
1 to 2 inches, dark brown fine sandy loam
2 to 10 inches, yellowish red gravelly fine sandy loam
10 to 18 inches, yellowish brown gravelly fine sandy loam

Substratum:
18 to 60 inches, light olive brown very gravelly loamy sand

Some areas of this unit include soils that have a surface layer of silt loam. Other areas include soils that have a less red subsoil. Included in this unit in mapping are small areas of the well drained Adams soils, the well drained Berkshire soils, and the moderately well drained Sheepscot soils. Also included are areas where stones cover more than 3 percent of the surface. Adams soils are in landscape positions similar to those of the Colton and Duxbury soils. Berkshire soils are generally near the edges of the unit, and Sheepscot soils are in depressions and drainageways. Included soils make up about 15 percent of the unit.

Important soil properties-

Permeability: Colton-rapid in the subsoil and very rapid in the substratum; Duxbury-moderately rapid in the subsoil and rapid to very rapid in the substratum
Available water capacity: Colton-very low; Duxbury- moderate
Soil reaction: Colton--extremely acid to very strongly acid in the surface layer and subsurface layer, very strongly acid or strongly acid in the subsoil, and very strongly acid to moderately acid in the substratum; Duxbury-extremely acid to slightly acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Low

NOT Metric

56C-Colton-Duxbury complex, 8 to 15 percent slopes, very stony.

This unit consists of very deep, strongly sloping soils. It is on knolls, long, narrow terraces, and broad areas that are slightly higher than the adjacent flood plain and at the base of mountains. Areas are irregular in shape and range from 5 to 125 acres in size. Stones cover less than 1percent to 3 percent of the surface and are typically 5 to 25 feet apart.

This unit is about 50 percent excessively drained Colton soils, 35 percent well drained Duxbury soils, and 15 percent other soils. The Colton and Duxbury soils are in areas so intermingled that separating them in mapping was not practical.

Typically, the Colton soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows

Surface layer:
0 to 2 inches, black very gravelly fine sandy loam

Subsurface layer.- 2 to 6 inches, light brownish gray very gravelly sandy loam

Subsoil:
6 to 22 inches, reddish brown extremely gravelly sand
22 to 32 inches, brown extremely gravelly loamy sand

Substratum: 32 to 60 inches, yellowish brown extremely gravelly sand

Typically, the Duxbury soil is covered by a thin layer of slightly decomposed and moderately decomposed leaves, needles, and twigs. Under that layer, the typical sequence, depth, and composition of the layers in this soil are as follows

Surface layer.-
0 to 1inch, pinkish gray fine sandy loam

Subsoil.
1 to 2 inches, dark brown fine sandy loam
2 to 10 inches, yellowish red gravelly fine sandy loam
10 to 18 inches, yellowish brown gravelly fine sandy loam

Substratum:
18 to 60 inches, light olive brown very gravelly loamy sand

Some areas of this unit include soils that have a surface layer of silt loam. Other areas include soils that have a less red subsoil.

Included in this unit in mapping are small areas of the well drained and excessively drained Adams soils, the well drained Berkshire soils, and the moderately well drained Sheepscot soils. Also included are areas where stones cover more than 3 percent of the surface. Adams soils are in landscape positions similar to those of the Colton and Duxbury soils. Berkshire soils are generally near the edges of the unit, and Sheepscot soils are in depressions and drainageways. Included soils make up about 15 percent of the unit.

Important soil properties
Permeability: Colton-rapid in the subsoil and very rapid in the substratum; Duxbury-moderately rapid in the subsoil and rapid to very rapid in the substratum
Available water capacity: Colton-very low; Duxbury- moderate
Soil reaction: Colton-extremely acid to very strongly acid in the surface layer and subsurface layer, very strongly acid or strongly acid in the subsoil, and very strongly acid to moderately acid in the substratum; Duxbury-extremely acid to slightly acid in the surface layer andsubsoil and very strongly acid to slightly acid in the substratum
Depth to bedrock: More than 60 inches
Depth to the water table: At least 60 inches
Root zone: Typically extends to the substratum
Potential for frost action: Low

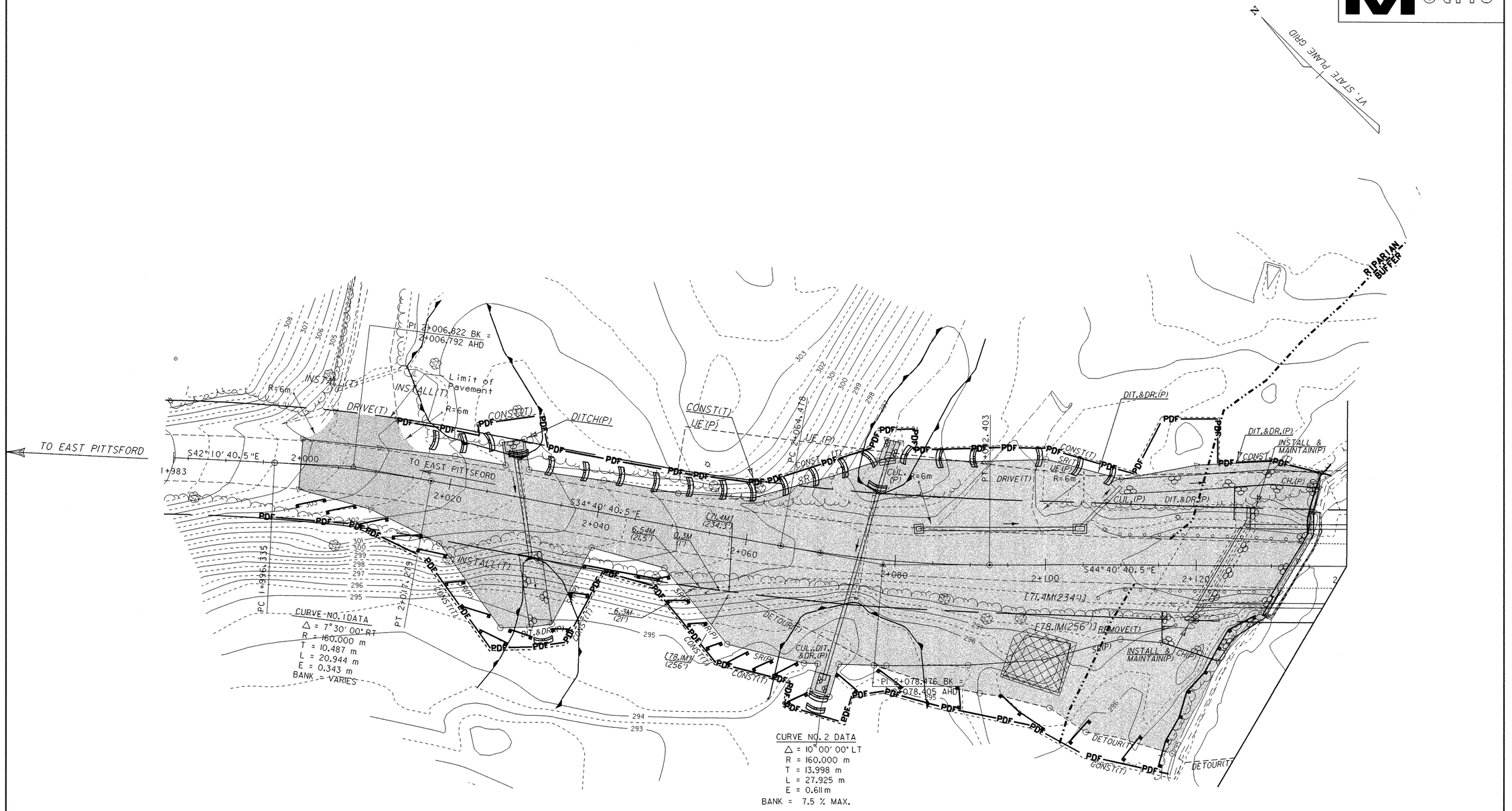
SOIL NARRATIVES

PROJECT NAME: MENDON
PROJECT NUMBER: BRO 1443(35)

FILE NAME: /str5/95j290/soils.dgn
PROJECT LEADER: C. Keller
DESIGNED BY: G. Shangraw
sj290soilnotes.i

PLOT DATE: 18-NOV-2005
DRAWN BY: G. Shangraw
CHECKED BY:
SHEET 33 OF 94

NYSDOT Metric



Note: The gray area shown on this sheet depicts the limits of the cuts and/or fills for the project. The Demarcation fence is the extreme limit for disturbing existing vegetation.

* GEOTEXTILE TO BE LAYERED OVER FOUNDATION WITH SOIL PLACED ON TOP.

LEGEND

- GEOTEXTILE *
- DEMARCATION FENCE
- SILT FENCE
- STONE BERMS

0 10 20

SCALE 1:250

PHASE 1 – ESTABLISH PERIMETER CONTROLS

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83/92

PROJECT:	PROJECT NO.:
MENDON	BRO 1443(35)

DESIGN FILE NAME: /str5/95j290/sj290ecbdr.dgn
IPARM FILE NAME: SJ290ec01.i
SURVEYED BY: L. ORVIS
SQUAD LEADER: C. KELLER
PLOT DATE: 18-NOV-2005
SURVEY DATE: 2/96
DRAWN BY: G. SHANGRAW
SHEET: 34 OF 94

NJDOT Metric

CURVE NO. 3 DATA
△ = 16°00' 00" LT
R = 160.000 m
T = 22.487 m
L = 44.680 m
E = 1.572 m
BANK = 7.5 % MAX.

RIPARIAN BUFFER

PARCEL 5
34.2M(112')+/-
ALONG STREAM EDGE

℄ STA 2+155 =
(P) ℄ STA 5+080
△ = 55°LT

PC +167.733

PT 2+212.413

EXCEPT & RESERVE

AERIAL E&T

[126.9M(416')+/-]

[74.8M(245')]

[29.2M(96')]

18.8M(62')

[29.2M] [96']

To U.S. Rte. 4

S60°40' 40.5"E

75.2M(247')+/-

R=5.7
R=6.6

R=6m

Limit of Pavement

CONSTR(T)

DR(P)

CH(P)

SR(P)

DETOUR(T)

DRIVE(P)

REMOVE &RESET(T)

PI 2+190.220 BK = 2+189.926 AHD

TO WATER PURIFICATION PLANT INTAKE FACILITY

TEMPORARY CONSTRUCTION LIMITS FOR TEMPORARY DETOUR BRIDGE

N

VT. STATE PLANE GRID

EXCEPT & RESERVE

Note: The gray area shown on this sheet depicts the limits of the cuts and/or fills for the project. The Demarcation fence is the extreme limit for disturbing existing vegetation.

LEGEND

PDF PDF DEMARCATION FENCE

SILT FENCE

STONE BERMS

0 10 20

SCALE 1:250

DATUM

VERTICAL NAVD 88

HORIZONTAL NAD 83/92

PHASE 1 – ESTABLISH PERIMETER CONTROLS

PROJECT:	PROJECT NO.:
MENDON	BRO 1443(35)

DESIGN FILE NAME: /str5/95j290/sj290ecbdr.dgn
IPARM FILE NAME: sj290ec02.i
SURVEYED BY: L. ORVIS
SQUAD LEADER: C. KELLER
PLOT DATE: 18-NOV-2005
SURVEY DATE: 2/96
DRAWN BY: G. SHANGRAW
SHEET: 35 OF 94

VAOT Metric

N

VT. STATE PLANE GRID

RIPARIAN BUFFER

CURVE NO. 3 DATA
△ = 16° 00' 00" LT
R = 160.000 m
T = 22.487 m
L = 44.680 m
E = 1.572 m
BANK = 7.5 % MAX.

PC 2+064.478

PI 2+092.403

PC 2+167.733

PT 2+212.413

M STA 2+155 =
℄ STA 5+040
△ = 55° LT

R=6m

S44° 40' 40.5"E

2+040

2+060

2+080

2+100

2+120

2+140

2+160

2+180

2+200

2+220

Limit of Pavement

R=5.7
R=6.6

PI 2+078.476 BK =
2+078.405 AHD

PI 2+190.220 BK =
2+189.926 AHD

CURVE NO. 2 DATA
△ = 10° 00' 00" LT
R = 160.000 m
T = 13.998 m
L = 27.925 m
E = 0.611m
BANK = 7.5 % MAX.

TEMPORARY CONSTRUCTION LIMITS FOR TEMPORARY DETOUR BRIDGE

NOTES
1. PHASE 2 EROSION CONTROL MEASURES SHOWN ON THIS SHEET ARE IN ADDITION TO EROSION CONTROL MEASURES SHOWN FOR PHASE I SHEETS.

2. THE ENTIRE DETOUR TRAVELING SURFACE WILL BE PAVED, AND IS CONSIDERED TO BE NON-ERODABLE.

PHASE 2
ESTABLISH TEMPORARY DETOUR CONTROLS

**WATER INTAKE FACILITY
FOR THE CITY OF RUTLAND
LOCATED 77 METERS DOWNSTREAM
OF THE CENTER OF THE NEW BRIDGE.**

LEGEND
SILT FENCE
STONE BERMS
STRAW MATTING

0 10 20
SCALE 1:250

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83/92

PROJECT:	PROJECT NO.:
MENDON	BRO 1443(35)

DESIGN FILE NAME: /str5/95J290/sj290ecbdr.dgn
IPARM FILE NAME: sj290ec03.i
SURVEYED BY: L. ORVIS
SQUAD LEADER: C. KELLER
PLOT DATE: 18-NOV-2005
SURVEY DATE: 2/96
DRAWN BY: G. SHANGRAW
SHEET: 36 OF 94

VAOT Metric

VT. STATE PLANE GRID N

CURVE NO. 3 DATA
△ = 16° 00' 00" LT
R = 160.000 m
T = 22.487 m
L = 44.680 m
E = 1.572 m
BANK = 7.5 % MAX.

PROPOSED LOCATION FOR SEDIMENT BASIN FOR COFFERDAM DEWATERING

RIPARIAN BUFFER

PARCEL 5
34.2M(112')+/-
ALONG STREAM EDGE

M STA 2+155 =
℄ STA 5+040
△ = 55° LT

EXCEPT & RESERVE

[126.9M(416')+/-]

PC 2+167.733

PT 2+212.413

PT 2+032.403

PI 2+078.476 BK =
2+078.405 AHD

S44° 40' 40.5"E

[71.4M(234')]

[78.1M(256')] REMOVE(T)

75.2M(247')+/-

[29.2M] [96']

18.8M(62')

Limit of Pavement

R=5.7
R=6.6

TEMPORARY CONSTRUCTION LIMITS FOR TEMPORARY DETOUR BRIDGE

TO WATER TREATMENT PLANT INTAKE FACILITY

CURVE NO. 2 DATA
△ = 10° 00' 00" LT
R = 160.000 m
T = 13.998 m
L = 27.925 m
E = 0.611 m
BANK = 7.5 % MAX.

NOTES
1. PHASE 3 EROSION CONTROL MEASURES SHOWN ON THIS SHEET ARE IN ADDITION TO EROSION CONTROL MEASURES SHOWN FOR PHASES 1 & 2.

2. SOME TYPE OF COFFERDAM DEVICE WILL BE NECESSARY TO ALLOW CONSTRUCTION OF THE BRIDGE SUBSTRUCTURE WHILE CONTAINING THE DETOUR FILL SLOPES. THE DETAILS WILL BE PROVIDED BY THE CONTRACTOR.

LEGEND
- SILT FENCE
- STONE BERMS
- STRAW MATTING
- BRIDGE FOOTPRINT

0 10 20
SCALE 1:250

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83/92

PHASE 3
ESTABLISH BRIDGE EROSION CONTROLS

PROJECT:	PROJECT NO.:
MENDON	BRO 1443(35)

DESIGN FILE NAME: /str5/95J290/sJ290ecbdr.dgn
IPARM FILE NAME: sJ290ec04.I
SURVEYED BY: L. ORVIS
SQUAD LEADER: C. KELLER
PLOT DATE: 18-NOV-2005
SURVEY DATE: 2/96
DRAWN BY: G. SHANGRAW
SHEET: 37 OF 94

VAOT Metric

VT. STATE PLANE GRID N

TO EAST PITTSFORD

S42° 10' 40.5"E

1+983

2+000

2+020

2+040

2+060

2+080

2+100

2+120

S34° 40' 40.5"E

S44° 40' 40.5"E

PC 1+996.335

PT 2+017.279

CURVE NO. 1 DATA
Δ = 7° 30' 00" RT
R = 160.000 m
T = 10.487 m
L = 20.944 m
E = 0.343 m
BANK = VARIES

PI 2+006.822 BK = 2+006.792 AHD

PC 2+064.478

PT 2+092.403

CURVE NO. 2 DATA
Δ = 10° 00' 00" LT
R = 160.000 m
T = 13.998 m
L = 27.925 m
E = 0.611 m
BANK = 7.5 % MAX.

PI 2+078.476 BK = 2+078.405 AHD

Limit of Pavement

R=6m

INSTALL(T)

DRIVE(T)

CONST(T)

DITCH(P)

UE(P)

SR(P)

DIT.&DR.(P)

CUL.(P)

CH.(P)

INSTALL & MAINTAIN(P)

REMOVE(T)

DETOUR(T)

6.3M (21')

6.54M (21.5')

0.3M (1')

[71.4M] (234.3')

[78.1M] (256')

[71.4M(234')]

[78.1M(256')]

RIPARIAN BUFFER

NOTES
1. PHASE 4 EROSION CONTROL MEASURES SHOWN ON THIS SHEET ARE IN ADDITION TO EROSION CONTROL MEASURES SHOWN FOR PHASES 1, 2 & 3.

LEGEND

- DROP INLET PROTECTION
- SILT FENCE
- STONE BERMS
- STRAW MATTING

0 10 20

SCALE 1:250

DATUM

VERTICAL NAVD 88
HORIZONTAL NAD 83/92

PHASE 4 ESTABLISH ROADWAY EROSION CONTROLS

PROJECT:	PROJECT NO.:
MENDON	BRO 1443(35)

DESIGN FILE NAME: /str5/95j290/sj290ecbdr.dgn
IPARM FILE NAME: sj290ec06.i
SURVEYED BY: L. ORVIS
SQUAD LEADER: C. KELLER
PLOT DATE: 18-NOV-2005
SURVEY DATE: 2/96
DRAWN BY: G. SHANGRAW
SHEET: 38 OF 94

VAOT Metric

N

VT. STATE PLANE GRID

AERIAL E&T

EXCEPT & RESERVE

[126.9M(416')+/-]

CURVE NO. 3 DATA
Δ = 16°00' 00" LT
R = 160.000 m
T = 22.487 m
L = 44.680 m
E = 1.572 m
BANK = 7.5 % MAX.

RIPARIAN BUFFER

PARCEL 5
34.2M(112')+/-
ALONG STREAM EDGE

1F (P) M STA 2+155 = ℄ STA 5+040
Δ = 55°LT

PC 2+167.733

PT 2+212.413

CONST(T)

DRIP(T)

DITCH

S60° 40' 40.5"E

To U.S. Rte 4

2+140 2+160 2+180 2+200 2+220 2+240 2+260 2+280 2+300 2+320

R=6m

Limit of Pavement

75.2M(247')+/-

R=5.7
R=6.6

CH(P)

SR(P)

DETOUR(T)

DITCH(P)

CONST(T)

18.8M(62')

[29.2M]
[96']

[29.2M(96')]

74.8M(245')

REMOVE &RESET(T)

DRIVE

PI 2+190.220 BK = 2+189.926 AHD

TO WATER INTAKE FACILITY

RIPARIAN BUFFER

TEMPORARY CONSTRUCTION LIMITS FOR TEMPORARY DETOUR BRIDGE

NOTES
1. PHASE 4 EROSION CONTROL MEASURES SHOWN ON THIS SHEET ARE IN ADDITION TO EROSION CONTROL MEASURES SHOWN FOR PHASES 1, 2 & 3.

LEGEND
- SILT FENCE
- STONE BERMS
- STRAW MATTING

0 10 20
SCALE 1:250

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83/92

PHASE 4 ESTABLISH ROADWAY EROSION CONTROLS

PROJECT:	PROJECT NO.:
MENDON	BRO 1443(35)

DESIGN FILE NAME: /str5/95j290/sj290ecbdr.dgn
IPARM FILE NAME: sj290ec07.1
SURVEYED BY: L. ORVIS
SQUAD LEADER: C. KELLER
PLOT DATE: 18-NOV-2005
SURVEY DATE: 2/96
DRAWN BY: G. SHANGRAW
SHEET: 39 OF 94

VAST Metric

N

VT. STATE PLANE GRID

CURVE NO. 3 DATA
△ = 16° 00' 00" LT
R = 160.000 m
T = 22.487 m
L = 44.680 m
E = 1.572 m
BANK = 7.5 % MAX.

CURVE NO. 2 DATA
△ = 10° 00' 00" LT
R = 160.000 m
T = 13.998 m
L = 27.925 m
E = 0.611 m
BANK = 7.5 % MAX.

RIPARIAN BUFFER

PARCEL 5
34.2M(112')+/-
ALONG STREAM EDGE

M STA 2+155 =
℄ STA 5+040
△ = 55° LT

PC 2+064.478

PC 2+092.403

PC 2+167.733

PI 2+212.413

PI 2+078.476 BK =
2+078.405 AHD

PI 2+190.220 BK =
2+189.926 AHD

S44° 40' 40.5"E

[71.4M]
(234.3')

[78.1M(256')] REMOVE(T)

[78.1M]
(256')

[75.2M(247')+/-]

[29.2M]
(96')

18.8M(62')

F126.9M(416')+/-]

CONST(T)
UE(P)
SR(T)
DRIVE(T)
DIT.&DR.(P)
INSTALL & MAINTAIN(P)
CH.(P)
CUL.(P)
R=6m
DR(P)
SR(P)
CUL.DIT. &DR.(P)
DETOUR(T)
REMOVE &RESET(T)
R=5.7
R=6.6
Limit of Pavement
EXCEPT & RESERVE
TEMPORARY CONSTRUCTION LIMITS FOR TEMPORARY DETOUR BRIDGE
TO WATER INTAKE FACILITY
APPROACH TO INTAKE FACILITY

NOTES
1. PHASE 5 EROSION CONTROL MEASURES SHOWN ON THIS SHEET ARE IN ADDITION TO EROSION CONTROL MEASURES SHOWN FOR PHASES 1, 2, 3 & 4.

FOR FINAL CONTOURS
SEE CROSS SECTIONS.

LEGEND
SILT FENCE
STONE BERMS
STRAW MATTING

0 10 20
SCALE 1:250

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83/92

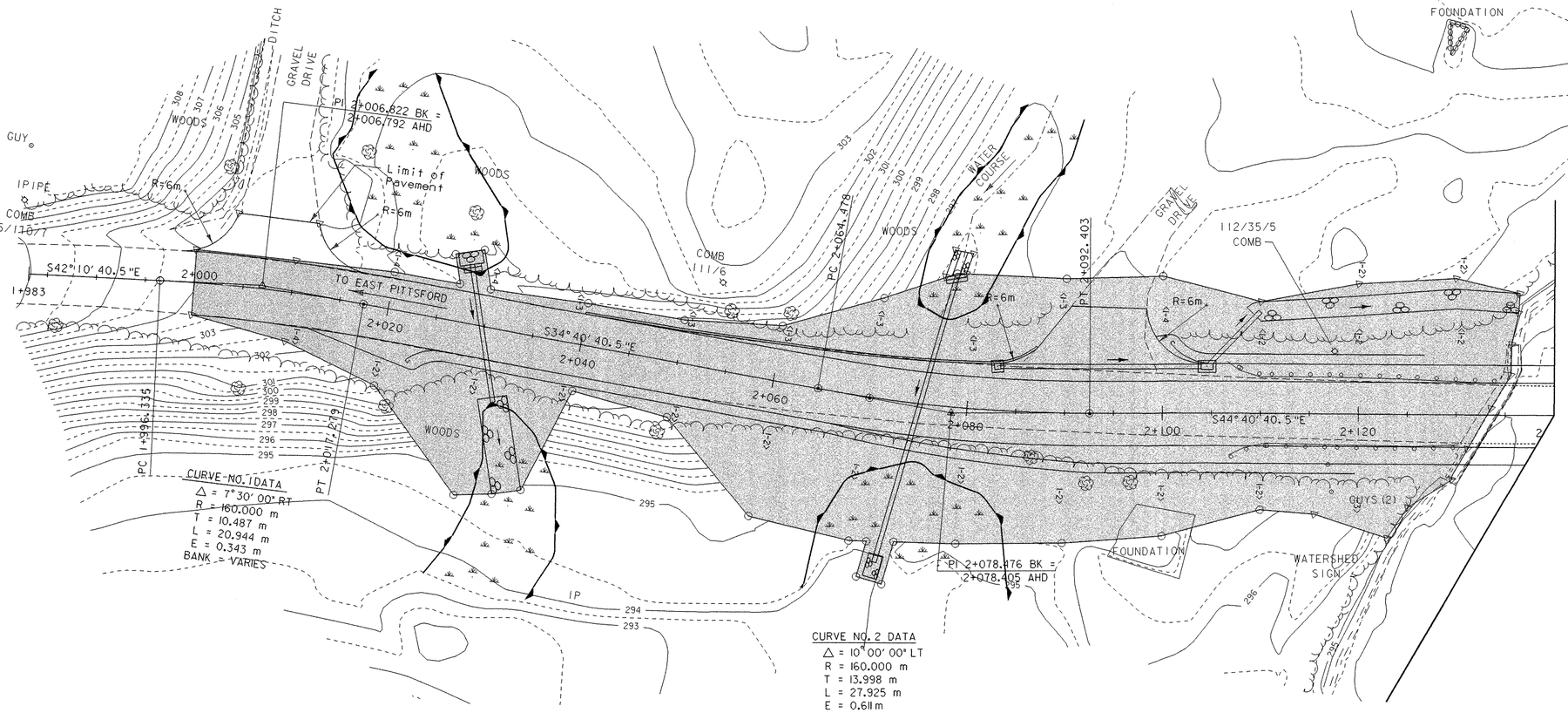
PHASE 5
DETOUR REMOVAL AND FINAL EROSION CONTROLS

PROJECT:	PROJECT NO.:
MENDON	BRO 1443(35)

DESIGN FILE NAME: /str5/95J290/sJ290ecbdr.dgn
IPARM FILE NAME: sJ290ec08.i
SURVEYED BY: L. ORVIS
SQUAD LEADER: C. KELLER
PLOT DATE: 18-NOV-2005
SURVEY DATE: 2/96
DRAWN BY: G. SHANGRAW
SHEET: 40 OF 94

VAOT Metric

VT. STATE PLANE GRID



Note:
This sheet shows the overall impacts to the immediate project area. Final contours lines are not available, so slope indicaters are shown at 20 meter intervals on both sides of the road.

FINAL CONDITIONS

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83/92

0 10 20

SCALE 1:250

PROJECT:	PROJECT NO.:
MENDON	BRO 1443(35)

DESIGN FILE NAME: /str5/95J290/sj290ecbdr.dgn
IPARM FILE NAME: sj290ec09.i
SURVEYED BY: L. ORVIS
SQUAD LEADER: C. KELLER
PLOT DATE: 18-NOV-2005
SURVEY DATE: 2/96
DRAWN BY: G. SHANGRAW
SHEET: 41 OF 94

VTDOT Metric

VT. STATE PLANE GRID N.

CURVE NO. 3 DATA
Δ = 16°00'00" LT
R = 160.000 m
T = 22.487 m
L = 44.680 m
E = 1.572 m
BANK = 7.5 % MAX.

M STA 2+155 = ℄ STA 5+040 △ = 55°LT

PC 2+167.733

PI 2+190.220 BK = 2+189.926 AHD

MENDON BROOK

WATERSHED SIGN

LEGAL LOAD LIMIT SPEED LIMIT 35 MPH SIGN

To U.S. Rte. 4

S60° 40' 40.5"E

Wooden Retaining Wall

Sewer MH

Pole #

Gate Valve

Cone Pad

Hedge

Gravel Drive

Limit of Pavement

R=6m

R=5.7
R=6.6

GUY

J13S/4S BUY POLE

150 COMP UND

VTHD BND

WOODS

COMB 11 3/4

M. ASH

M. WILLOW

WOODS DRIVE

GRAVEL DRIVE

CHISELED SQUARE
BM2 ELEV 299.258

01/4-1 EL

DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD 83/92

Note:
This sheet shows the overall impacts to the immediate project area. Final Contours lines are not available, so slope indicaters are shown at 20 meter intervals on both sides of the road.

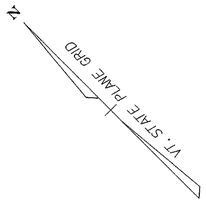
FINAL CONDITIONS

PROJECT:	PROJECT NO.:
MENDON	BRO 1443(35)

DESIGN FILE NAME: /str5/95J290/sj290ecbdr.dgn
IPARM FILE NAME: sj290ecl0.i
SURVEYED BY: L. ORVIS
SQUAD LEADER: C. KELLER
PLOT DATE: 18-NOV-2005
SURVEY DATE: 2/96
DRAWN BY: G. SHANGRAW
SHEET: 42 OF 94

0 10 20
SCALE 1:250

VAOT Metric



TEMPORARY 100 mm WHITE LINE

STA. 2+000.00	-	STA. 2+300.00	LT
STA. 2+000.00	-	STA. 2+300.00	RT

TEMPORARY 100 mm YELLOW LINE

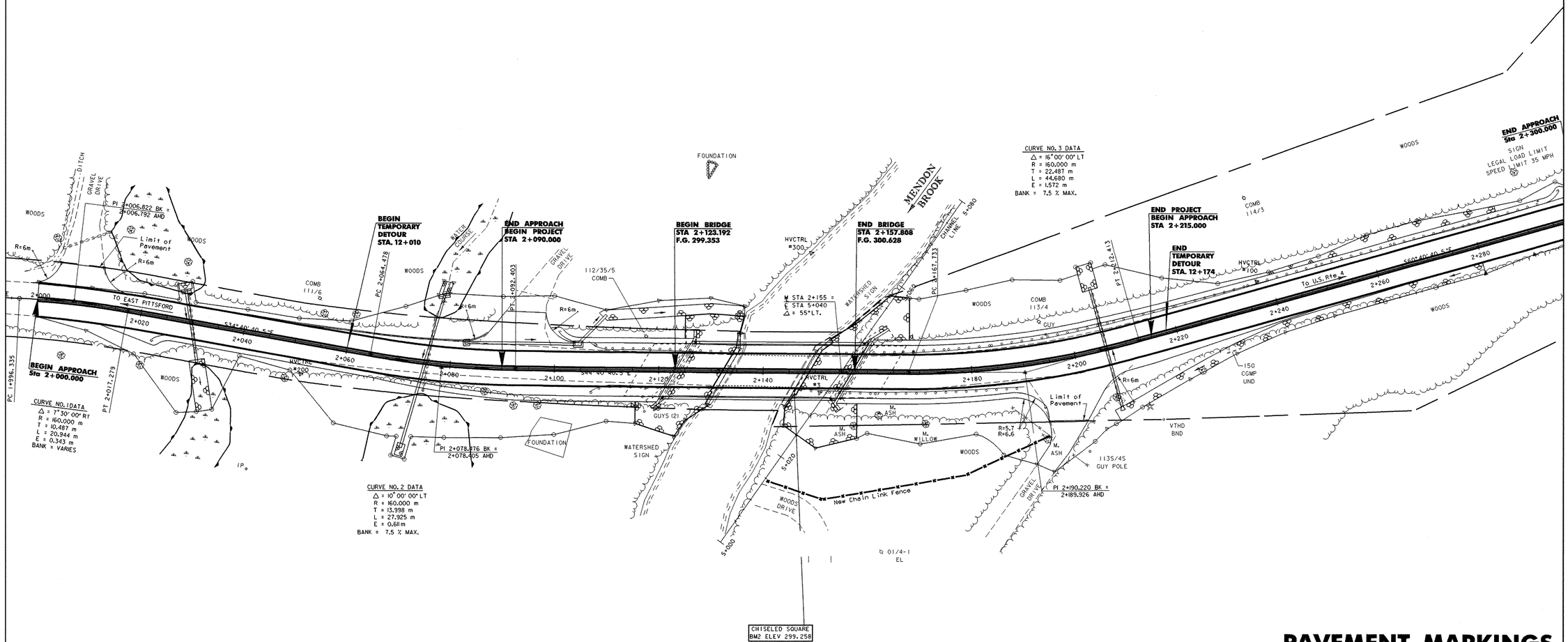
STA. 2+000.00	-	STA. 2+300.00	CL (DBL)

100 mm WHITE LINE

STA. 2+000.00	-	STA. 2+300.00	LT
STA. 2+000.00	-	STA. 2+300.00	RT

100 mm YELLOW LINE

STA. 2+000.00	-	STA. 2+300.00	CL (DBL)



NOT TO SCALE

PAVEMENT MARKINGS

PROJECT NAME: MENDON	
PROJECT NUMBER: BRO 1443(35)	
FILE NAME: /str5/95j290/sj290MRK.dgn	PLOT DATE: 18-NOV-2005
PROJECT LEADER: C. KELLER	DRAWN BY: G. Shangraw
DESIGNED BY: G. Shangraw	CHECKED BY:
SJ290mrk.i	SHEET 43 OF 94

STATE OF VERMONT
AGENCY OF TRANSPORTATION

GENERAL NOTES

Metric

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2001, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SIXTEENTH EDITION, AND ITS LATEST REVISIONS.

2. BRIDGE IS DESIGNED FOR MS 22.5 LIVE LOAD WITH NO ALLOWANCE FOR FUTURE PAVEMENT.

3. IN-STREAM CONSTRUCTION SHALL BE RESTRICTED TO JUNE 1 TO OCTOBER 1, UNLESS THE CONTRACTOR OBTAINS WRITTEN PERMISSION FROM THE AGENCY OF NATURAL RESOURCES TO DO WORK OUTSIDE OF THAT TIME FRAME.

4. THE COST OF INSTALLING, MAINTAINING, AND REMOVING ALL TEMPORARY CONSTRUCTION SIGNING AND BARRICADES, AND ANY ADDITIONAL SIGNS DEEMED NECESSARY BY THE RESIDENT ENGINEER SHALL BE PAID UNDER ITEM 641.10 - TRAFFIC CONTROL.

5. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 20 DEGREES CELSIUS UNLESS OTHERWISE NOTED.

6. A TACK COAT OF EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE OF 0.07 KG PER SQUARE METER BETWEEN SUCCESSIVE COURSES OF PAVEMENT AS DIRECTED BY THE ENGINEER.

REMOVAL OF STRUCTURE

7. ITEM 529.20 "PARTIAL REMOVAL OF STRUCTURE" SHALL BE USED FOR REMOVAL OF THE EXISTING SUPERSTRUCTURE AND PORTIONS OF THE SUBSTRUCTURE. EXISTING SUBSTRUCTURES WILL BE REMOVED DOWN TO THE ELEVATIONS SHOWN ON THE CHANNEL SECTIONS. SPECIAL CARE SHALL BE TAKEN TO INSURE THAT DEBRIS FROM "PARTIAL REMOVAL OF STRUCTURE" DOES NOT FALL INTO MENDON BROOK.

8. THE EXISTING STRUCTURAL STEEL IN THIS PROJECT WAS PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. THE REMOVED STRUCTURAL STEEL IS TO BECOME PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICES AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTORS USE OR DISPOSITION OF THE STRUCTURAL STEEL.

9. THE EXISTING BEAMS THAT REST ON TOP OF THE BRIDGE DECK AT THE FASCIAS WILL REMAIN THE PROPERTY OF DISTRICT 3. THE CONTRACTOR SHALL CONTACT DAVE LATHROP AT 802-786-0029 NO LESS THAN TWO WEEKS PRIOR TO THE REMOVAL OF THESE BEAMS. THE CONTRACTOR SHALL COORDINATE WITH THE DISTRICT AND SHALL LOAD THESE BEAMS ONTO TRUCKS PROVIDED BY THE DISTRICT. THE COST OF THE EQUIPMENT AND LABOR FOR THIS WORK WILL BE INCIDENTAL TO ITEM 529.10, "PARTIAL REMOVAL OF STRUCTURE".

STONE FILL

10. THE STONE FILL, TYPE IV SHALL BE PLACED IN FRONT OF THE ABUTMENTS BEFORE THE DECK IS POURED.

CONCRETE

11. THE HEIGHT OF FILL BEHIND ABUTMENTS WILL BE LIMITED TO THE BRIDGE SEAT ELEVATION UNTIL THE DECK HAS BEEN POURED AND THE CURING PERIOD IS COMPLETED.

12. NO TRAFFIC SHALL BE ALLOWED ON THE NEW DECK UNTIL THE CURE PERIOD IS COMPLETED AND THE 28 DAY DESIGN STRENGTH IS ATTAINED, AS EVIDENCED BY TEST CYLINDERS CURED UNDER FIELD CONDITIONS.

13. THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT, ANY UPWARD KEY SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.

14. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 25 mm BY 25 mm.

15. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

16. SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL. OTHER BRIDGE SEAT AREAS SHALL BE SLOPED 2.0% TOWARDS MID-SPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE SMOOTH STEEL TROWEL FINISHED.

17. FOR BRIDGE DECK POURS, THE MAXIMUM TIME LIMIT FOR ANY COMBINATION OF POURS DONE IN ANY ONE DAY SHALL BE EIGHT HOURS. THERE SHALL BE A MINIMUM OF 96 HOURS BETWEEN THE COMPLETION OF ONE DAY'S POUR AND THE BEGINNING OF OTHER ADJACENT POURS. ALL INDIVIDUAL DECK POURS SHALL START FROM THE LOW END OF THE BRIDGE.

18. WATER REPELLENT (MOD. - SILANE) SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF THE DECK BETWEEN THE DRIP BEADS.

19. NO CONCRETE IN THE ABUTMENTS OR WINGWALLS SHALL BE PLACED ABOVE THE BRIDGE SEAT ELEVATIONS UNTIL THE BEAMS/GIRDERS HAVE BEEN PROFILED AND THE FINISHED GRADE OF THE DECK HAS BEEN DETERMINED.

20. ALL SUBSTRUCTURE CONCRETE SHALL BE CONCRETE, ~~HIGH~~ HIGH PERFORMANCE CLASS B UNLESS OTHERWISE NOTED.

21. THE DECK AND CURBS SHALL BE CONCRETE, HIGH PERFORMANCE CLASS A.

22. WHEN POURING THE DECK, THE CONCRETE SHALL BE DEPOSITED PARALLEL TO THE CENTERLINE OF BEARING SO AS TO LOAD THE GIRDERS EQUALLY.

STRUCTURAL STEEL

23. ANY HOLES IN THE WEBS OF THE FASCIA BEAMS/GIRDERS THAT ARE NOT OTHERWISE FILLED, SHALL BE FILLED WITH EITHER BUTTON HEAD OR HEX HEAD BOLTS. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH VERMONT STANDARD SPECIFICATION 506.19.

24. ALL FIELD CONNECTIONS SHALL BE MADE WITH 22 mm DIAMETER AASHTO DESIGNATION M 164M TYPE III BOLTS IN 24 mm DIAMETER HOLES. EXCEPT FIELD CONNECTIONS AT THE EXPANSION END, WHERE THE GIRDERS AND ABUTMENT CROSS FRAMES ARE PAINTED, WILL BE MADE WITH GALVANIZED M164 TYPE I BOLTS.

25. FLEMING BRACKETS OR SIMILAR FALSE WORK SHALL BE PLACED AT A MAXIMUM SPACING OF 1.2 m.

26. AFTER THE SUPERSTRUCTURE HAS BEEN ERECTED, ELEVATIONS SHALL BE TAKEN ALONG THE TOP OF THE BEAMS/GIRDERS, AS DIRECTED BY THE RESIDENT ENGINEER FOR USE IN DETERMINING THE FINISHED GRADE.

27. ALL STRUCTURAL STEEL WITHIN A DISTANCE OF 2.0 m FROM THE ENDS OF THE GIRDERS AT THE EXPANSION ABUTMENT SHALL BE COATED WITH A PROTECTIVE PAINT SYSTEM AS PER VERMONT STANDARD SPECIFICATION 513. REFER TO PAGE 47 FOR DETAILS ON GREASING OF THE ENDS OF THE GIRDERS AFTER PAINTING.

28. ASPHALTIC PLUG-TYPE JOINT WILL BE PAID FOR AS ITEM 516.10 "BRIDGE EXPANSION JOINT (ASPHALTIC PLUG)."

TEMPORARY BRIDGE

29. TRAFFIC WILL BE MAINTAINED ON A 2-WAY TEMPORARY BRIDGE LOCATED DOWN STREAM OF THE EXISTING STRUCTURE.

30. THE ROADWAY APPROACHES TO THE TEMPORARY BRIDGE WILL BE PAVED.

31. BLANK

32. TEMPORARY BRIDGE ABUTMENTS SHALL BE PLACED IN A MANNER AS TO CAUSE NO FILL IN THE STREAM OR ALONG THE STREAMBANK BELOW ORDINARY HIGH WATER ELEVATION.

33. SPECIAL CARE SHALL BE TAKEN TO INSURE THAT DEBRIS FROM REMOVING THE TEMPORARY BRIDGE DOES NOT FALL INTO MENDON BROOK.

34. TEMPORARY DETOUR FILL WILL BE REMOVED TO ORIGINAL GROUND OR TO THE FINAL GRADES OF TH #1 FILL SLOPES.

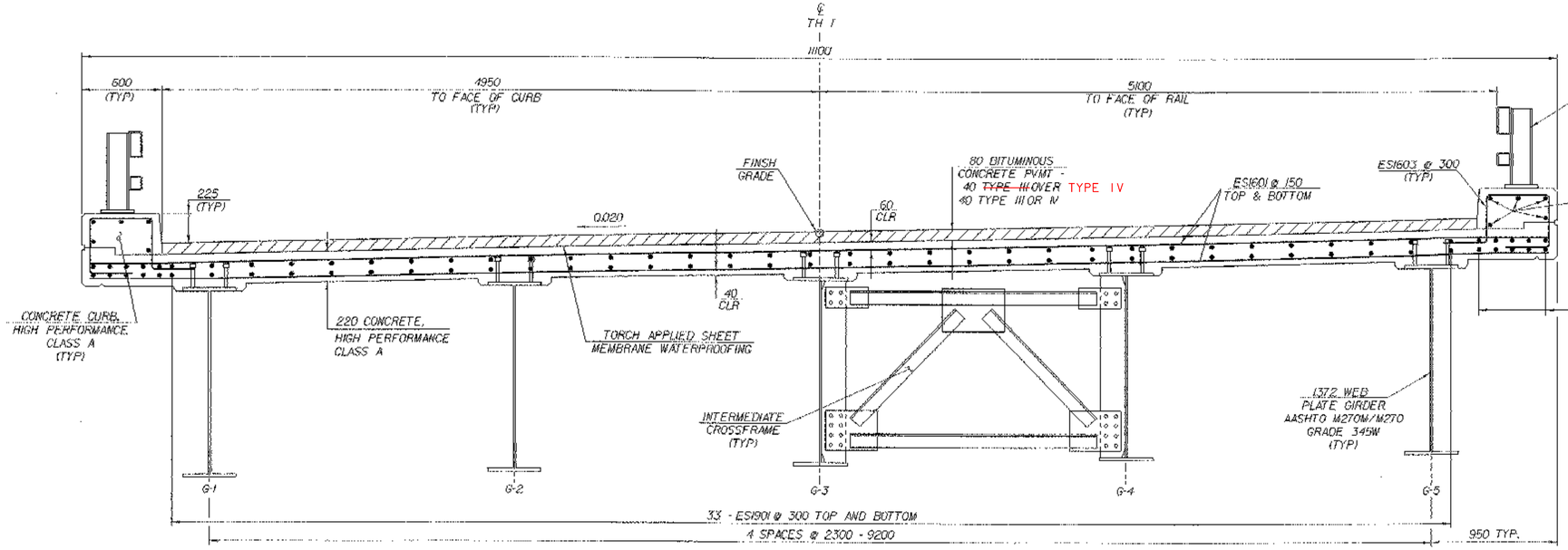
SPECIAL REQUIREMENTS

35. THE CITY OF RUTLAND'S POTABLE WATER INTAKE FACILITY IS APPROXIMATELY 77 METERS DOWNSTREAM OF THE CENTERLINE OF THE PROPOSED NEW BRIDGE. THEREFORE, GREAT CARE SHALL BE TAKEN TO AVOID FILL, SEDIMENT, EROSION, CONSTRUCTION DEBRIS, AND OTHER CONTAMINATES FROM ENTERING MENDON BROOK DURING ALL PHASES OF CONSTRUCTION.

36. IN THE CASE OF AN UNFORESEEN EVENT OR ACCIDENT THAT RESULTS IN SEDIMENT OR CONTAMINANTS ENTERING THE STREAM, IMMEDIATELY CALL MIKE GAROFANO OF THE CITY OF RUTLAND'S WATER TREATMENT FACILITY AT (802)773-0379 SO THAT THE WATER INTAKE CAN BE TEMPORARILY SHUT OFF.

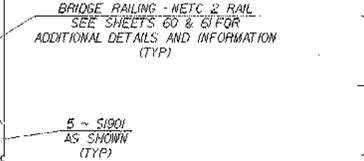
37. IT MAY BE PRUDENT FOR THE CONTRACTOR TO HAVE A REPRESENTATIVE FROM THE CITY OF RUTLAND'S WATER TREATMENT FACILITY ON THE PROJECT DURING CERTAIN CONSTRUCTION ACTIVITIES THAT ARE NEAR OR OVER MENDON BROOK.

PROJECT NAME: MENDON	
PROJECT NUMBER: BRO 1443(35)	
FILE NAME: s:\5\05j280\sj280gen.xls	PLOT DATE: 11/30/2005
PROJECT MANAGER: C. KELLER	DRAWN BY: K. RUTTER
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: T. SUMNER
GENERAL NOTES SHEET	SHEET 44 OF 84

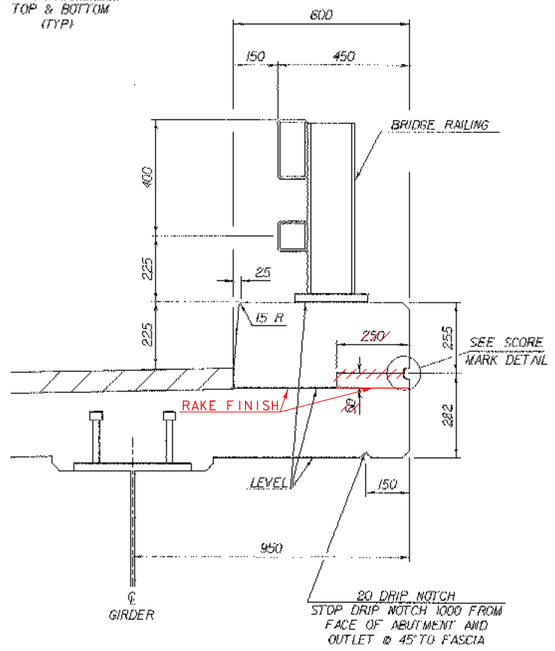


TYPICAL BRIDGE SECTION

SCALE = 1:20

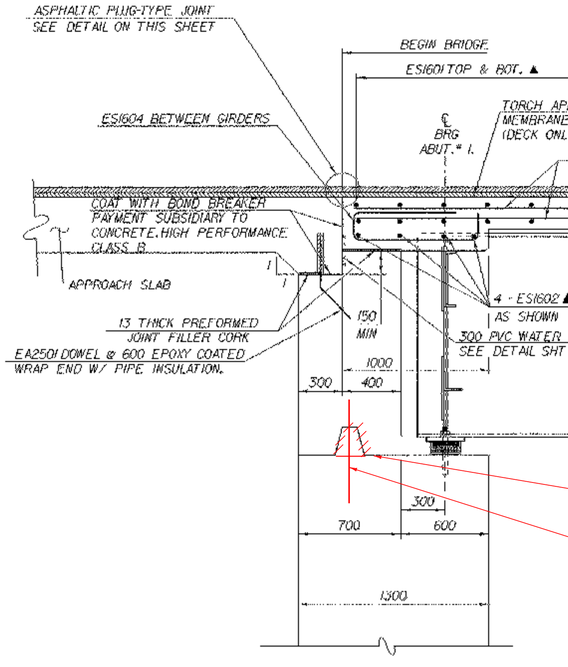


SCORE MARK DETAIL



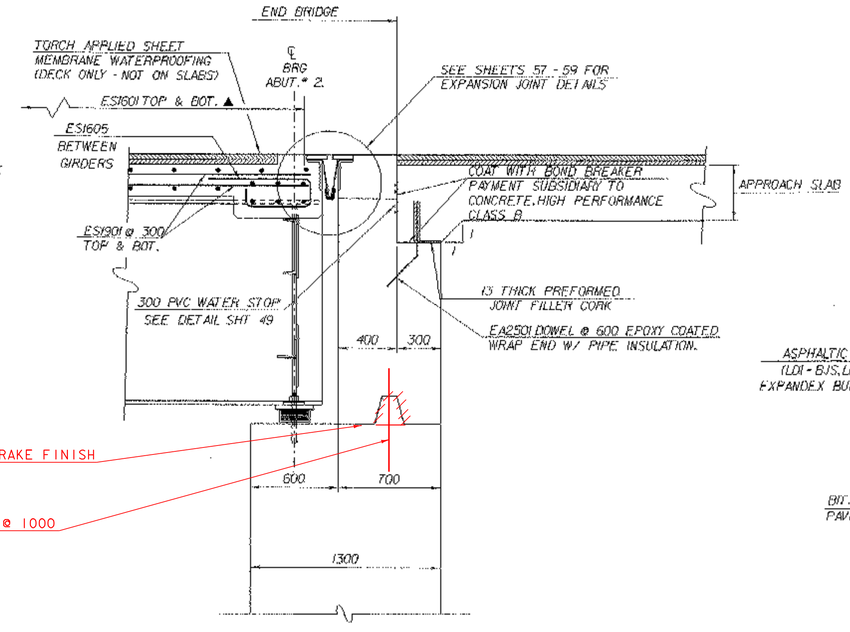
CURB SECTION - TYPICAL FASCIA

SCALE = 1:10



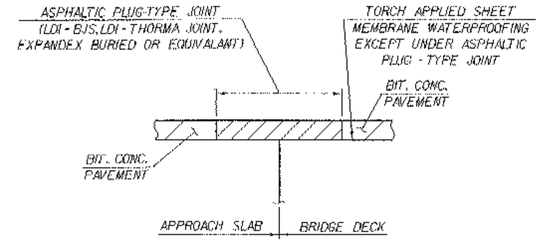
END DETAIL @ ABUTMENT 1 FIXED NORMAL TO ℄ BEARING

SCALE = 1:20



END DETAIL @ ABUTMENT 2 EXPANSION NORMAL TO ℄ BEARING

SCALE = 1:20



ASPHALTIC PLUG-TYPE JOINT DETAIL

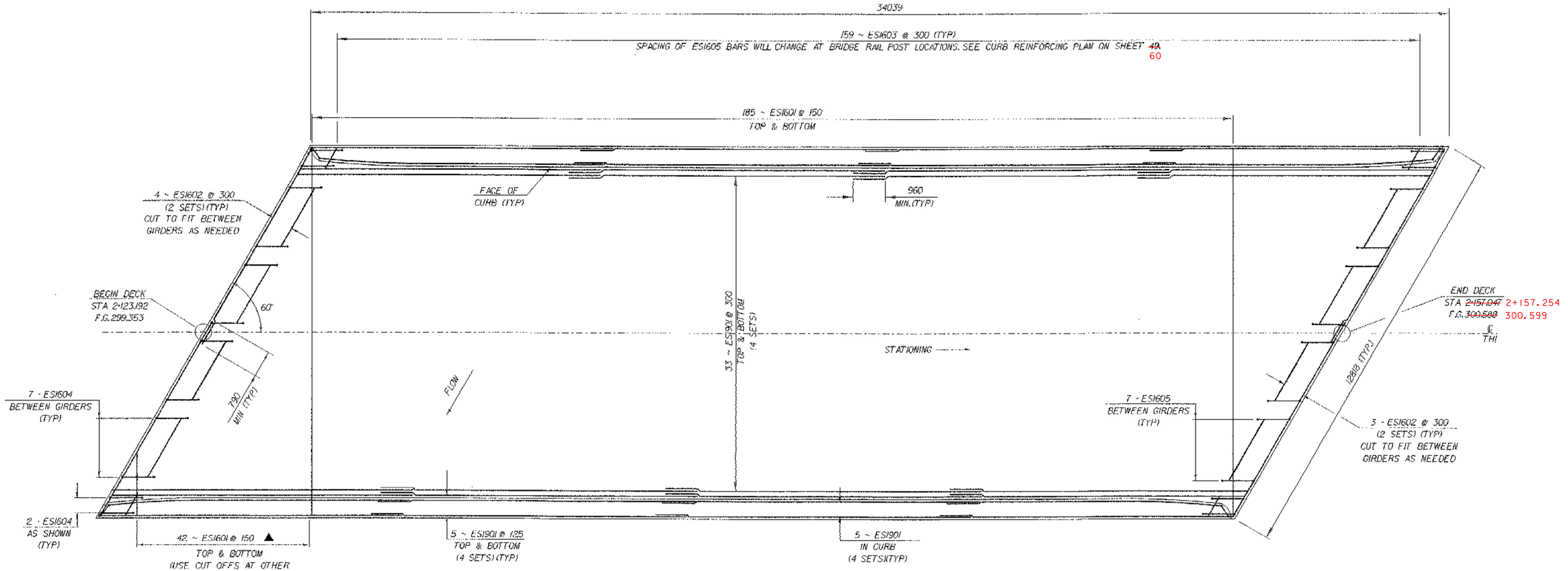
NTS

NOTE:

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

BRIDGE TYPICAL & END DETAILS

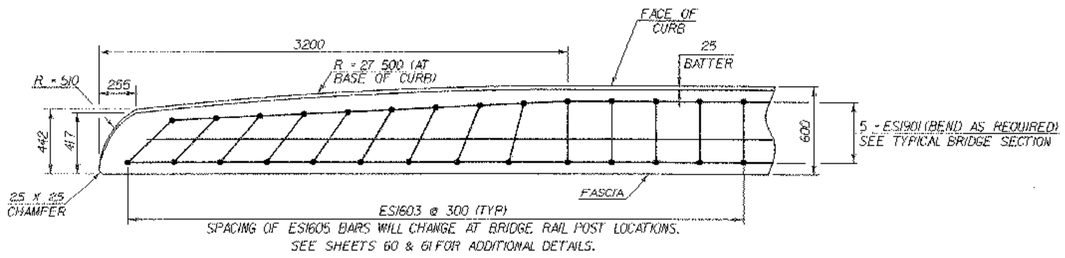
PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443 (35)
FILE NAME: /str5/95]290/s]290sup.dgn	PLOT DATE: 18-NOV-2005
PROJECT LEADER: C. KELLER	DRAWN BY: K. RUTTER
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: T. SUMNER
s]290brgtyp.1	SHEET 45 OF 94



DECK PLAN

0 3000 6000

SCALE = 1:60



CURB END DETAIL

0 1 2

SCALE = 1:20

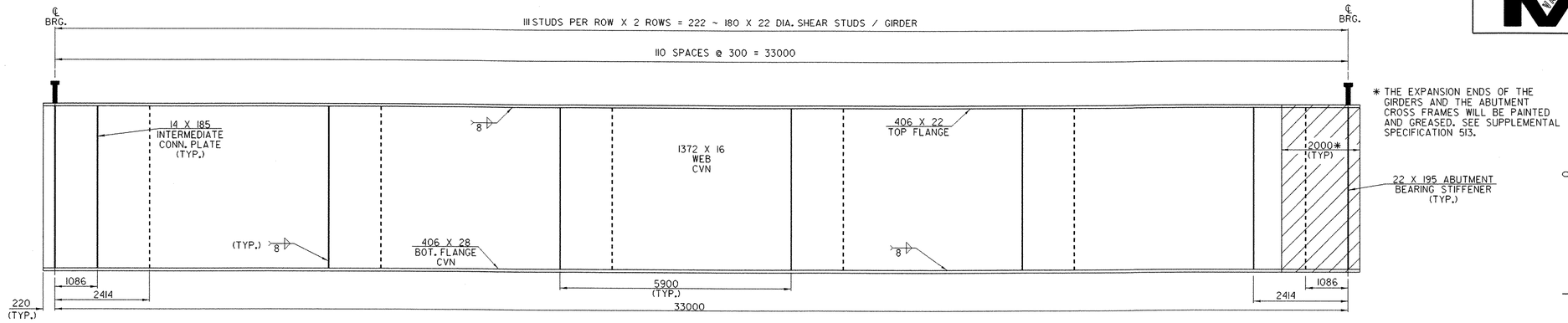
NOTE:

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

DECK PLAN SHEET

PROJECT NAME: MENDON
PROJECT NUMBER: BRO 1443 (35)

FILE NAME: /str5/95.1290/s1290sup.dgn
PROJECT LEADER: C. KELLER
DESIGNED BY: M. EVANS-MONGEON
s1290deck.1
PLOT DATE: 18-NOV-2005
DRAWN BY: K. RUTTER
CHECKED BY: T. SUMNER
SHEET 46 OF 94



* THE EXPANSION ENDS OF THE GIRDERS AND THE ABUTMENT CROSS FRAMES WILL BE PAINTED AND GREASED. SEE SUPPLEMENTAL SPECIFICATION 513.

CVN = CHARPY V-NOTCH TESTING REQUIRED

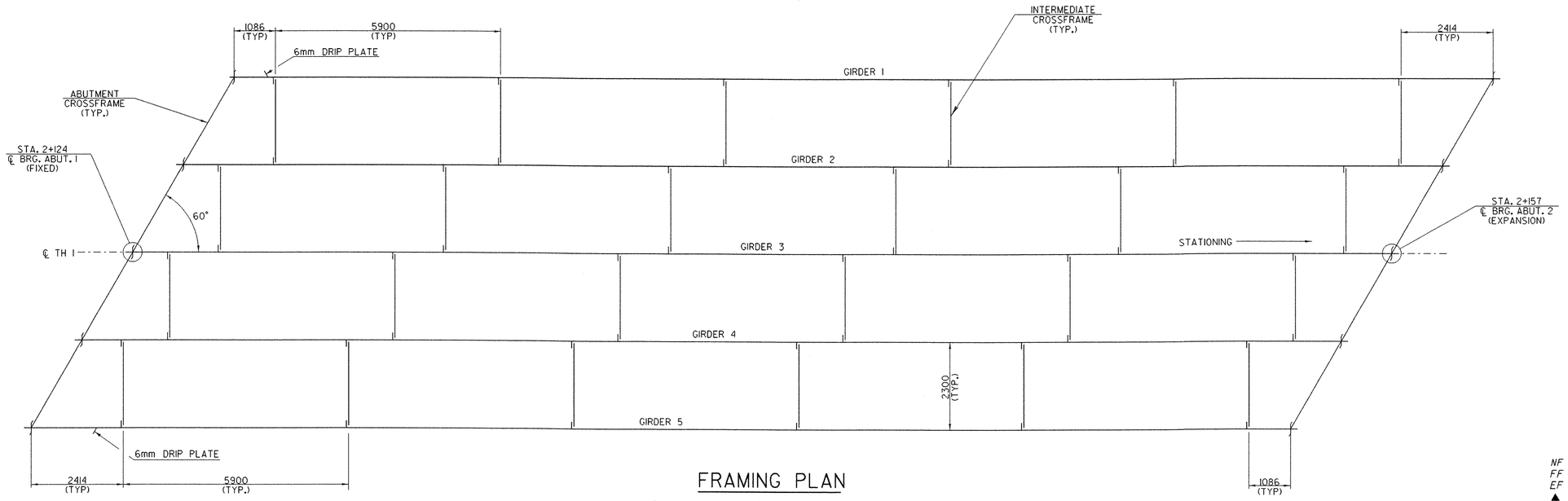
GIRDER ELEVATION

0 3000 6000

HORIZONTAL SCALE = 1:60

0 1 2

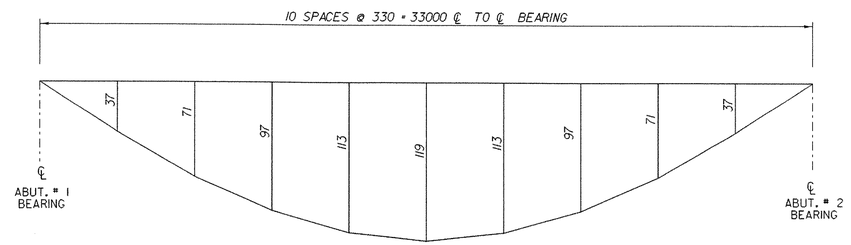
VERTICAL SCALE = 1:20



FRAMING PLAN

0 3000 6000

SCALE = 1:60



DEAD LOAD DEFLECTION DIAGRAM AND FINAL CAMBER DIAGRAM

NOT TO SCALE

NOTE:

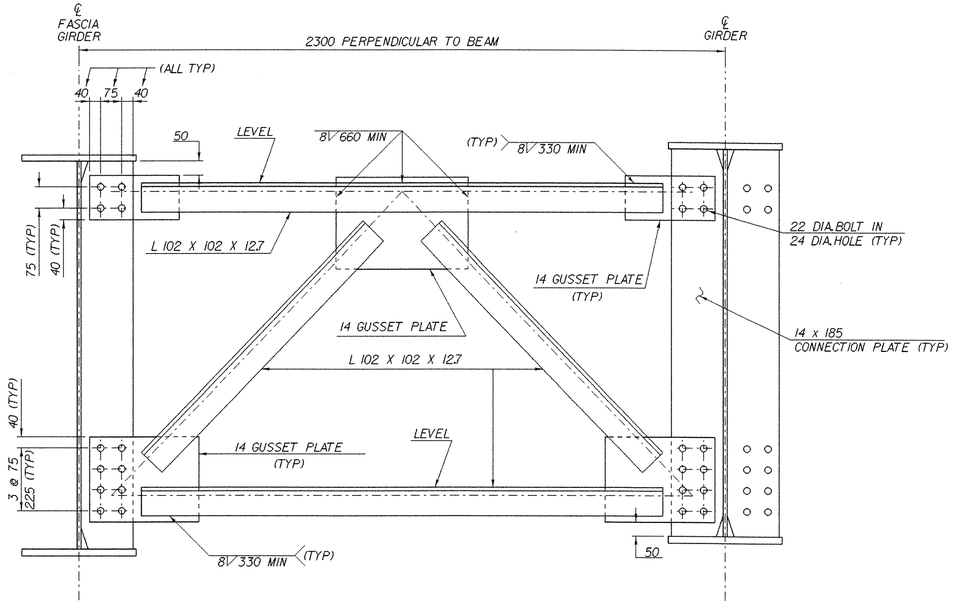
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
75 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

THE GIRDER WEBS SHALL BE CUT STRAIGHT WITH NO CAMBER. THE DEAD LOAD DEFLECTION WILL PROVIDE NEGATIVE CAMBER TO FOLLOW THE VERTICAL ALIGNMENT

GIRDER ELEVATION & FRAMING PLAN

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443(35)

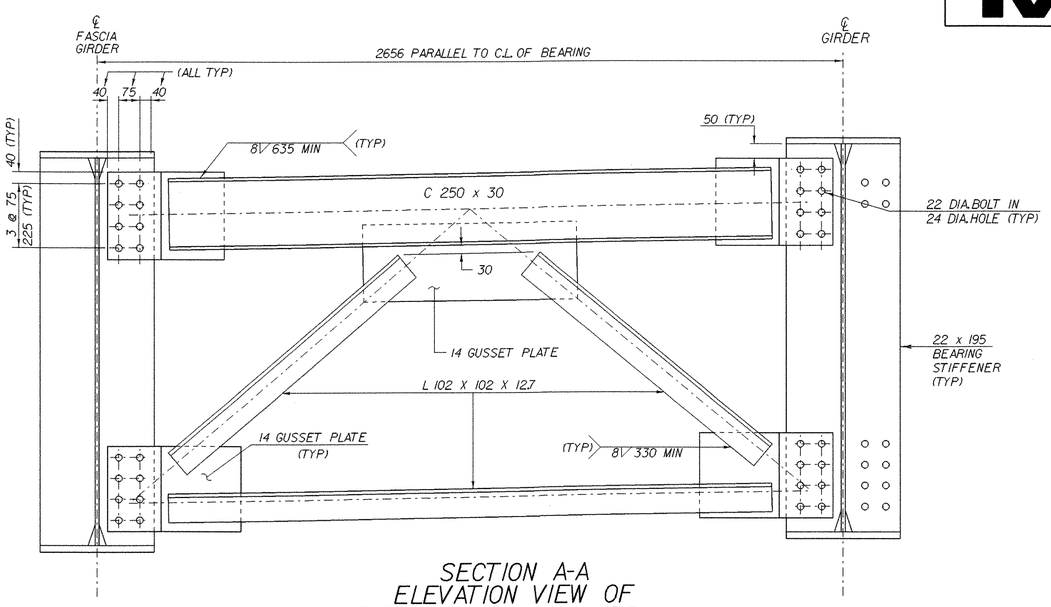
FILE NAME: /str5/95j290/sj290sup.dgn	PLOT DATE: 18-NOV-2005
PROJECT LEADER: C. KELLER	DRAWN BY: K. RUTTER
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: T. SUMNER
sj290frame.i	SHEET 47 OF 94



ELEVATION VIEW OF INTERMEDIATE CROSSFRAME

0 0.5 1

SCALE = 1:10



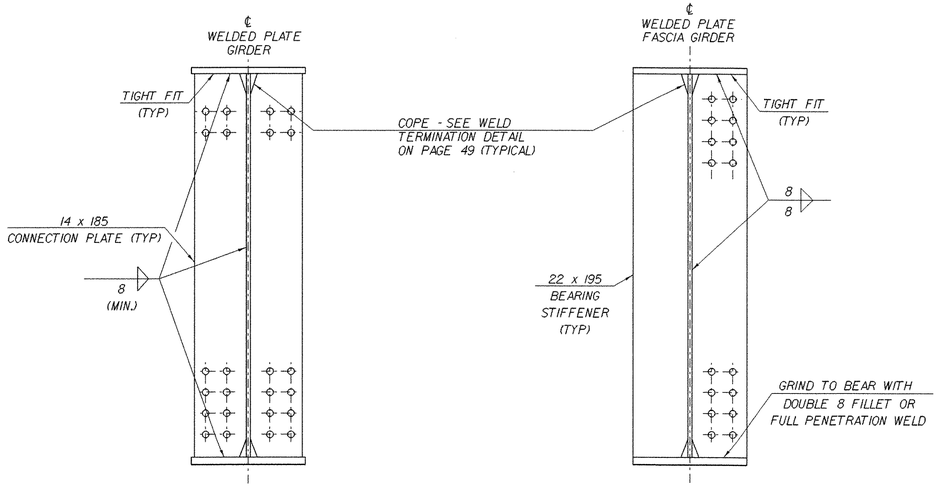
SECTION A-A ELEVATION VIEW OF ABUTMENT NO.1 CROSSFRAME (ABUTMENT NO.2 SIMILAR)

0 0.5 1

SCALE = 1:10

NOTE:

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



INTERMEDIATE CONNECTION PLATES AND/OR STIFFENERS FOR WELDED PLATE GIRDERS

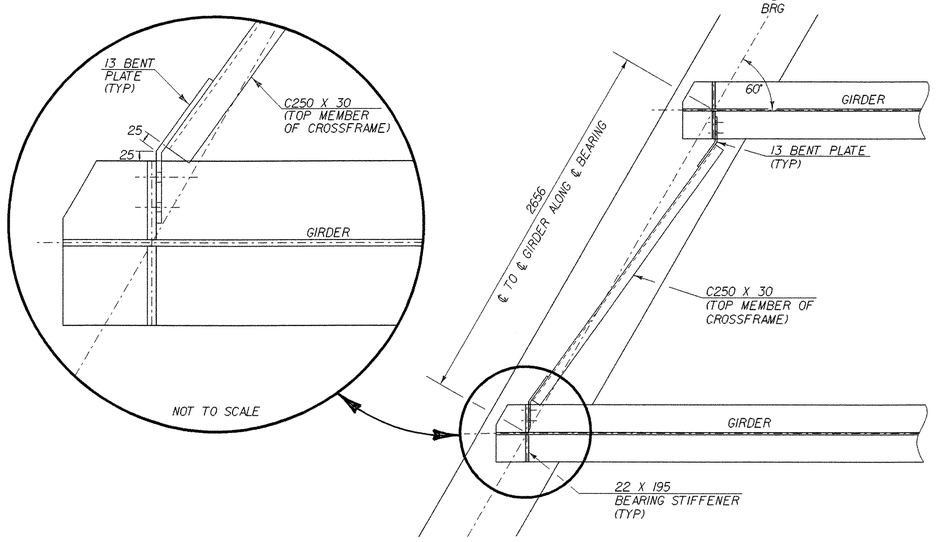
0 0.5 1

SCALE = 1:10

ABUTMENT BEARING STIFFENERS FOR WELDED PLATE GIRDERS

0 0.5 1

SCALE = 1:10



PLAN VIEW OF CROSSFRAME @ ABUT. NO. 1 (ABUT. NO. 2 SIMILAR)

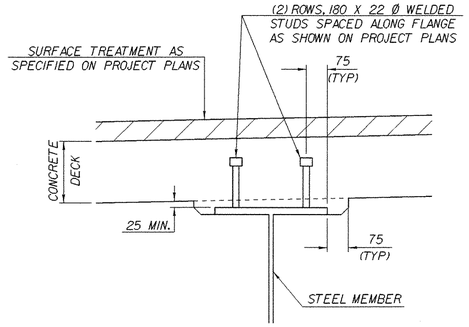
0 1 2

SCALE = 1:20

CROSSFRAME DETAILS

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443 (35)

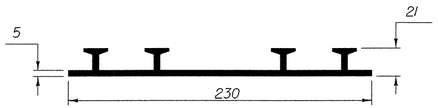
FILE NAME: /str5/95j290/sj290sup.dgn		PLOT DATE:	18-NOV-2005
PROJECT LEADER:	C. KELLER	DRAWN BY:	K. RUTTER
DESIGNED BY:	M. EVANS-MONGEON	CHECKED BY:	T. SUMNER
sj290xbrace.i		SHEET	48 OF 94



HAUNCH AND SHEAR CONNECTOR DETAILS

0 0.5 1

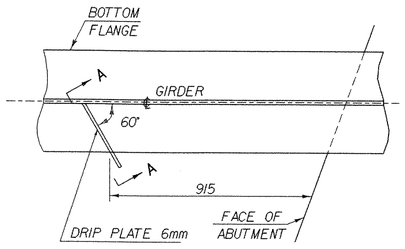
SCALE = 1:10



P.V.C. WATERSTOP FOR CONSTRUCTION JOINTS

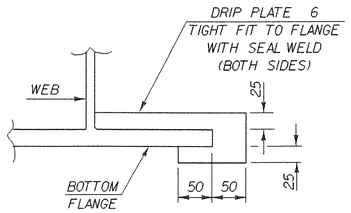
THE COSTS FOR P.V.C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE. OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER.

NOT TO SCALE



DRIP PLATE PLAN

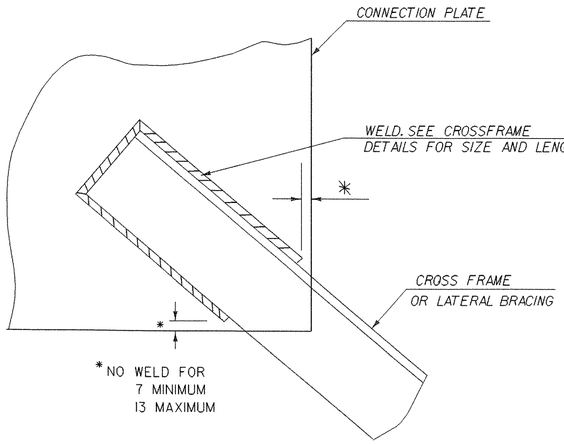
NOT TO SCALE



SECTION A - A

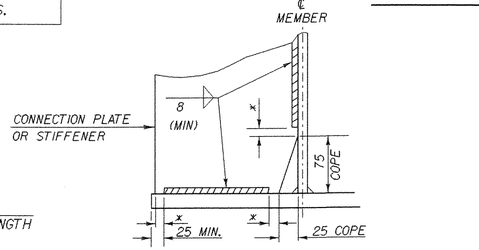
NOT TO SCALE

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



WELD LOCATION DETAIL AT CROSS FRAMES AND LATERAL BRACING

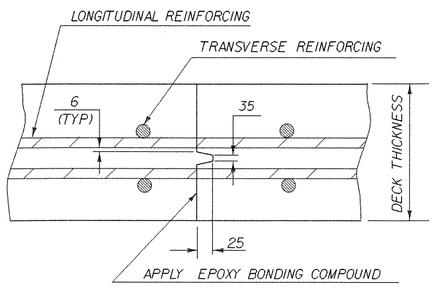
NOT TO SCALE



* NO WELD FOR 7 MIN. 13 MAX. (EXCEPT MUST MAINTAIN 25 MINIMUM FROM EDGE OF FLANGE)

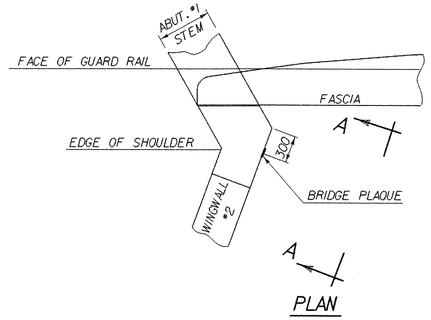
WELD TERMINATION AND COPING DETAILS FOR STEEL MEMBERS

NOT TO SCALE

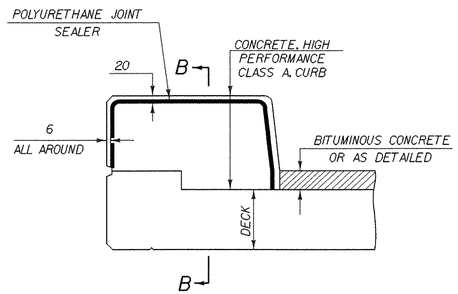


TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS

NOT TO SCALE



PLAN

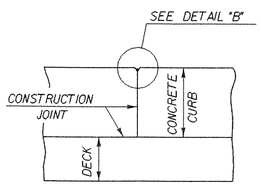


TYPICAL SECTION THROUGH CONCRETE CURB CONSTRUCTION JOINT

NOT TO SCALE

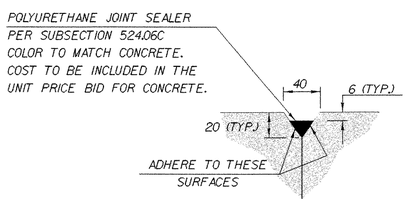
NOTES:

1. CONSTRUCTION JOINTS THROUGH CONCRETE CURBS SHALL BE SPACED MAXIMUM 6000 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.
2. LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CURB CONSTRUCTION JOINTS.



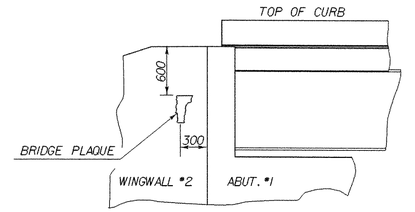
SECTION B - B

NOT TO SCALE



DETAIL "B"

NOT TO SCALE



VIEW "A - A"

LOCATE BRIDGE PLAQUE

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

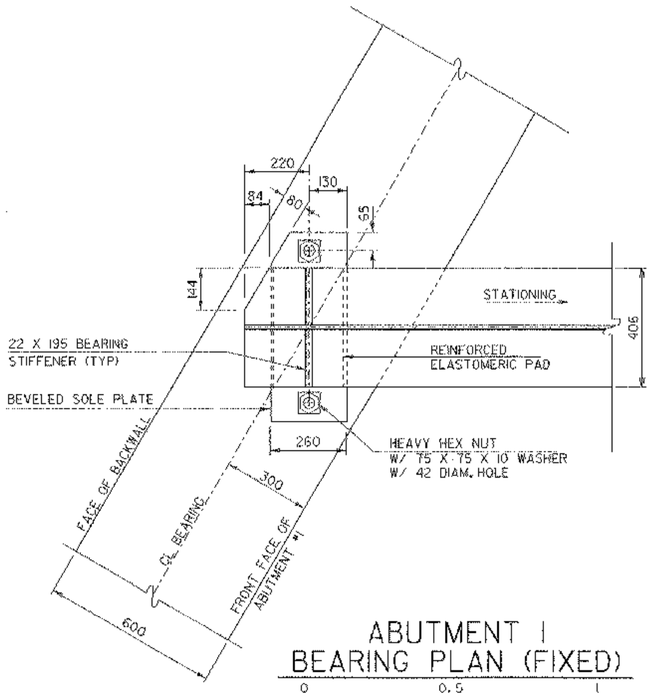
NOTE:

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

MISCELLANEOUS DETAIL SHEET

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443(35)

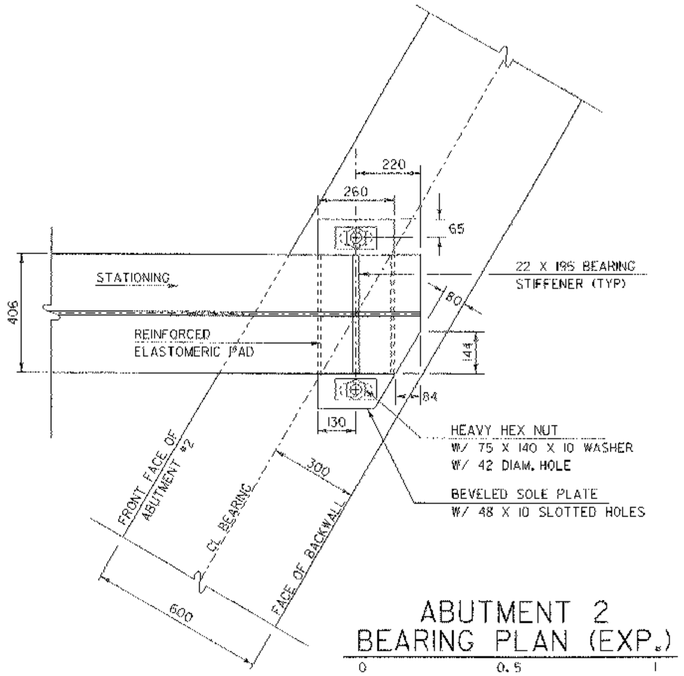
FILE NAME: /str5/95j290/sj290sup.dgn		PLOT DATE:	18-NOV-2005
PROJECT LEADER:	C. KELLER	DRAWN BY:	K. RUTTER
DESIGNED BY:	M. EVANS-MONGEON	CHECKED BY:	T. SUMNER
sj290mlscdet.1		SHEET	49 OF 94



ABUTMENT 1
BEARING PLAN (FIXED)

0 0.5 1

SCALE = 1:10



ABUTMENT 2
BEARING PLAN (EXP.)

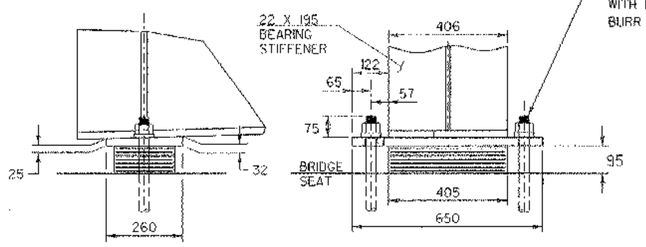
0 0.5 1

SCALE = 1:10

BEARING DEVICE NOTES

1. BEARINGS SHALL BE PAID FOR UNDER THE ITEM 531.10 "BEARING DEVICE ASSEMBLY (ELASTOMERIC)" AND SHALL CONFORM TO APPLICABLE SUBSECTIONS OF SECTION 531 AND 731.
2. AREAS OF GALVANIZED AND METALIZING DAMAGED BY WELDING AND/OR HANDLING SHALL BE REPAIRED BY METALIZING IN ACCORDANCE WITH ASTM A 760/760M.
3. PAYMENT FOR ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR "BEARING DEVICE ASSEMBLY (ELASTOMERIC)". ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER AASHTO M 232/M 232M.
4. ALL STEEL IN BEARING DEVICES SHALL BE AASHTO M 270/M 270M GRADE 345.
5. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMERIC SHALL BE STEEL AASHTO M270/M 270M GRADE 250. ALL INTERNAL STEEL PLATES SHALL BE SAND BLASTED AND FREE OF COATINGS, RUST, AND MILL SCALE. THE PLATES SHALL BE FREE OF SHARP EDGES AND BURRS.
6. STEEL REINFORCED ELASTOMERIC BEARINGS SHALL HAVE A MINIMUM OF 3MM EDGE SEAL OF ELASTOMER INTEGRAL WITH THE BEARING OVER ALL INTERNAL PLATES.
7. FOR ELASTOMERIC BEARINGS, ALL MATERIALS AND FABRICATION SHALL BE PER AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, EDITION 2002 AND ITS LATEST REVISIONS AND AASHTO M 251/M 251M.
8. ALTERNATE CONFIGURATIONS FOR BEARINGS MAY BE SUBMITTED FOR APPROVAL. ANY ALTERNATE SUBMITTED SHALL BE DESIGNED AND CERTIFIED TO MEET THE DESIGN LOADS AND CRITERIA SHOWN ON THIS SHEET. THE ALTERNATE SHALL MAINTAIN THE ANCHORAGE SYSTEM SHOWN AND SHALL BE DESIGNED PER AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES 2002 EDITION AND ITS LATEST REVISIONS.
9. BRIDGE SEAT ELEVATIONS MAY BE REVISED TO ACCOMMODATE AN ALTERNATIVE CONFIGURATION.
10. DESIGN CRITERIA:
    - A. DESIGN ROTATION = 0.015 RADIANS
    - B. BEARING ARE DESIGNED AS PER AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, EDITION 2002 AND ITS LATEST REVISIONS, SECTION 14, METHOD B.
    - C. VERTICAL DESIGN LOAD PER BEARING :

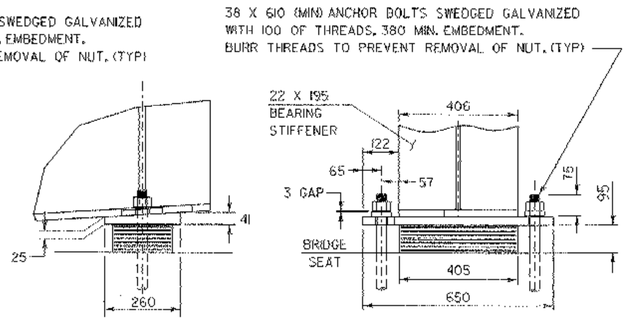
      ABUTMENT BEARINGS
      RDL = 390 KN
      RLL = 345 KN
    - D. TEMPERATURE RANGE = -25°C TO +45°C
    - E. ELASTOMER SHALL HAVE NOMINAL HARDNESS OF 60 ON SHORE 'A' SCALE. ELASTOMER SHALL HAVE A SHEAR MODULUS BETWEEN 0.896 MPa AND 1.172 MPa THE RAW ELASTOMER SHALL BE VIRGIN NEOPRENE CLASSIFIED AS LOW TEMPERATURE GRADE 4 AS DEFINED IN TABLE 18.4.5.1- 1A OF AASHTO, DIVISION II, SECTION 18.
    - F. NO FABRIC REINFORCEMENT WILL BE ALLOWED IN ELASTOMERIC PADS
11. THE STEEL SOLE PLATES SHALL BE HOT BONDED TO THE REINFORCED ELASTOMERIC PAD DURING THE VULCANIZATION PROCESS. THE STEEL SURFACES TO BE BONDED TO THE PAD SHALL NOT BE METALIZED.
12. THE ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F568M CLASS 8.8.



ABUTMENT 1
BEARING ELEVATION (FIXED)

0 0.5 1

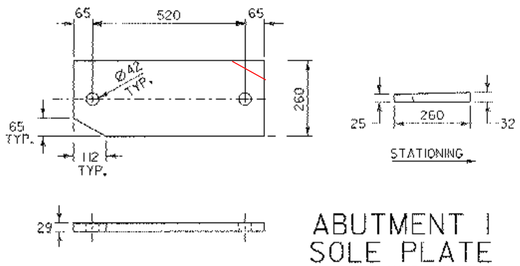
SCALE = 1:10



ABUTMENT 2
BEARING ELEVATION (EXP.)

0 0.5 1

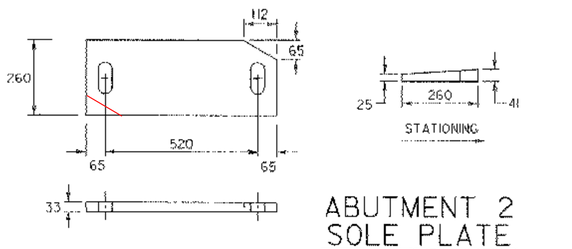
SCALE = 1:10



ABUTMENT 1
SOLE PLATE

0 0.5 1

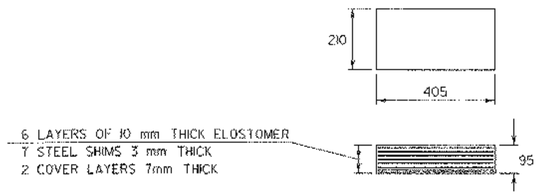
SCALE = 1:10



ABUTMENT 2
SOLE PLATE

0 0.5 1

SCALE = 1:10



REINFORCED
ELASTOMERIC PAD

0 0.5 1

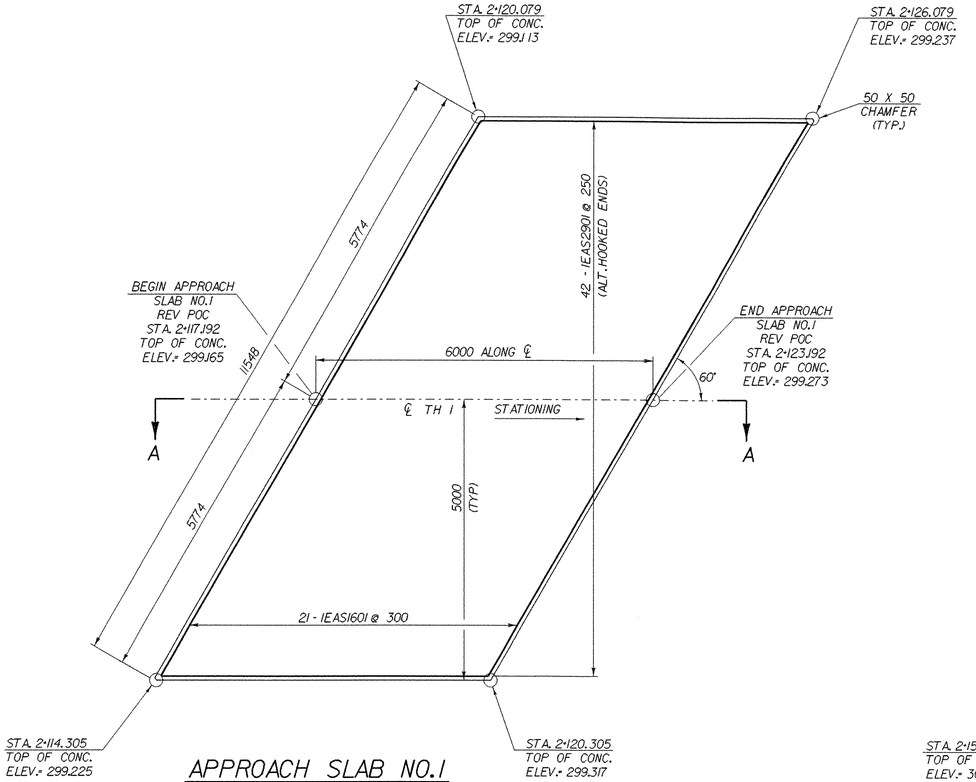
SCALE = 1:10

BEARING DETAIL SHEET

PROJECT NAME: MENDON
PROJECT NUMBER: BRO 1443(35)

FILE NAME: /str5/951290/sj290brg.dgn
PROJECT MANAGER: C. KELLER
DESIGNED BY: J. GEORGE
sj290brg.i

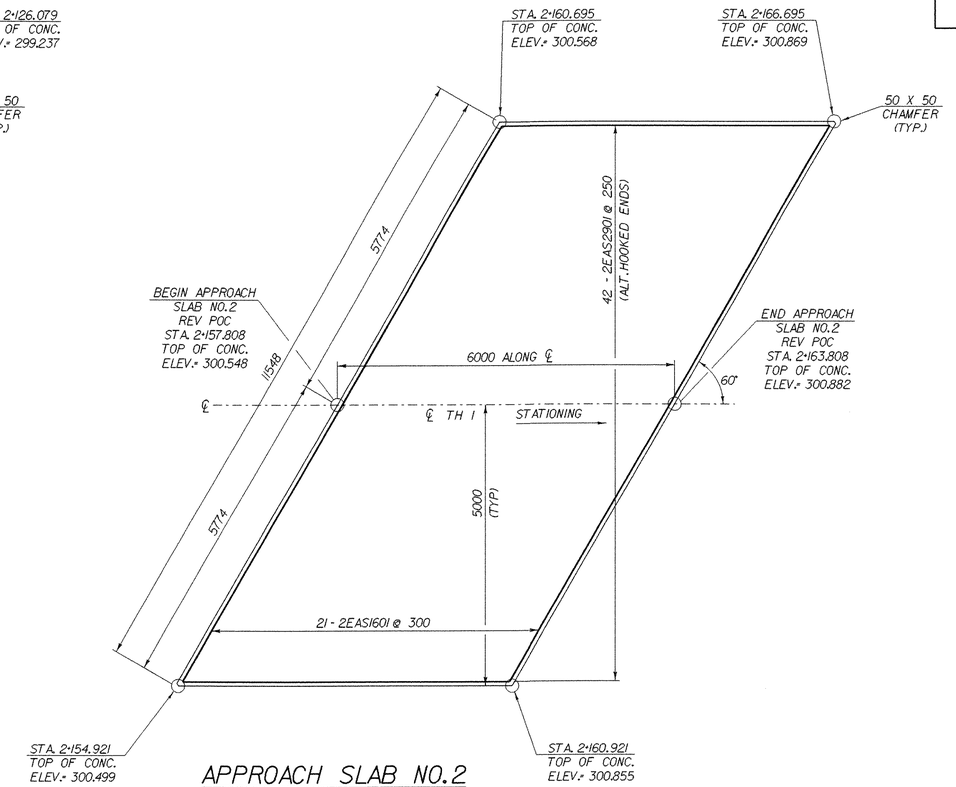
PLOT DATE: 18-NOV-2005
DRAWN BY: K. RUTTER
CHECKED BY: T.A. SUMNER
SHEET 50 OF 94



APPROACH SLAB NO.1

0 1 2 3 4 5

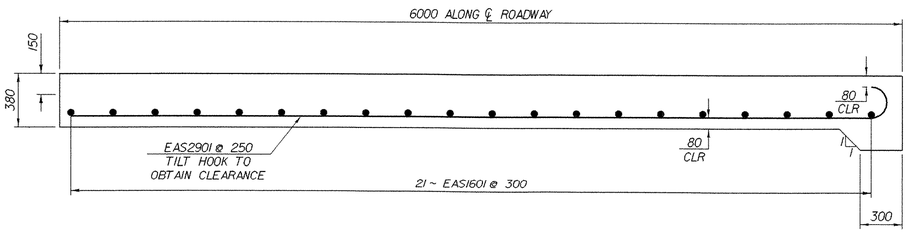
SCALE = 1:50



APPROACH SLAB NO.2

0 1 2 3 4 5

SCALE = 1:50



SECTION A-A

(APPROACH SLAB NO.2 SIMILAR)

0 1 2

SCALE = 1:20

NOTE:

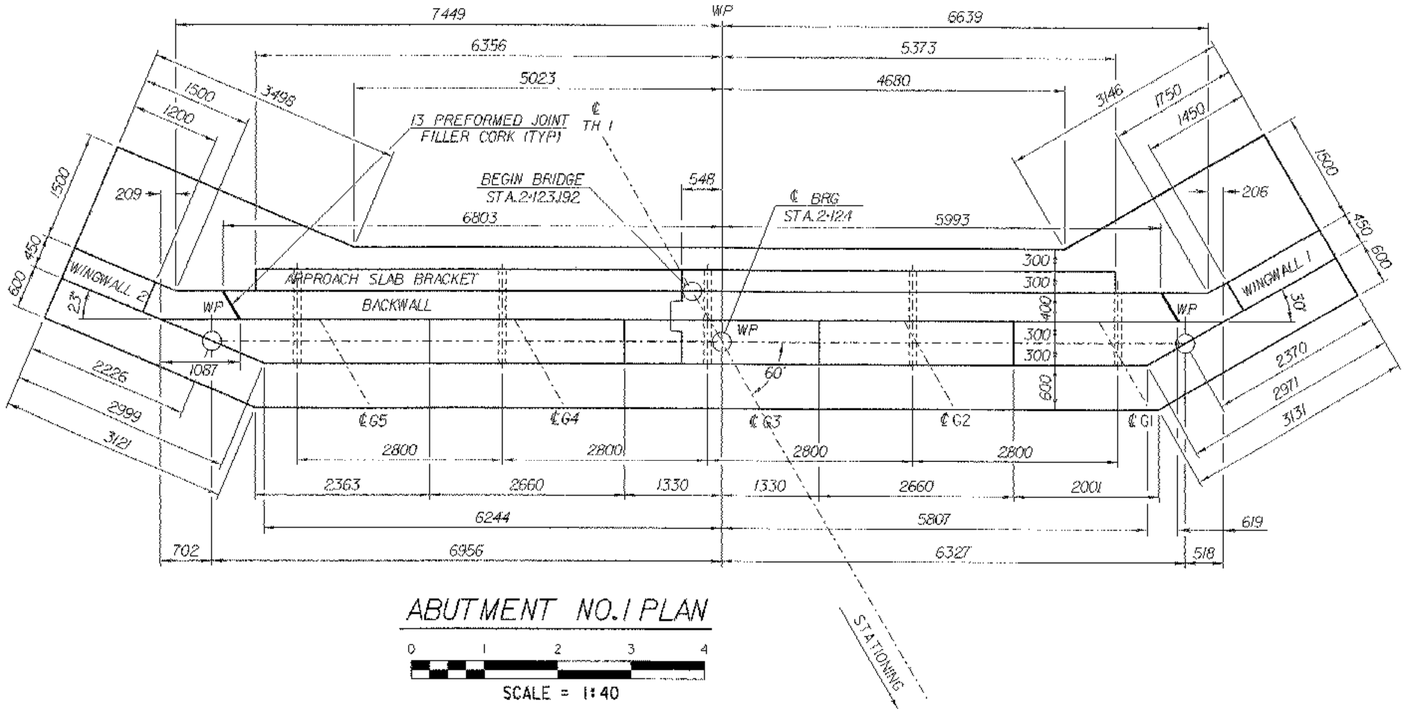
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
75 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

APPROACH SLAB DETAILS

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443(35)

FILE NAME: /str5/95j290/sj290sup.dgn	PLOT DATE: 18-NOV-2005
PROJECT LEADER: C. KELLER	DRAWN BY: K. RUTTER
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: T. SUMNER
sj290as.i	SHEET 51 OF 94

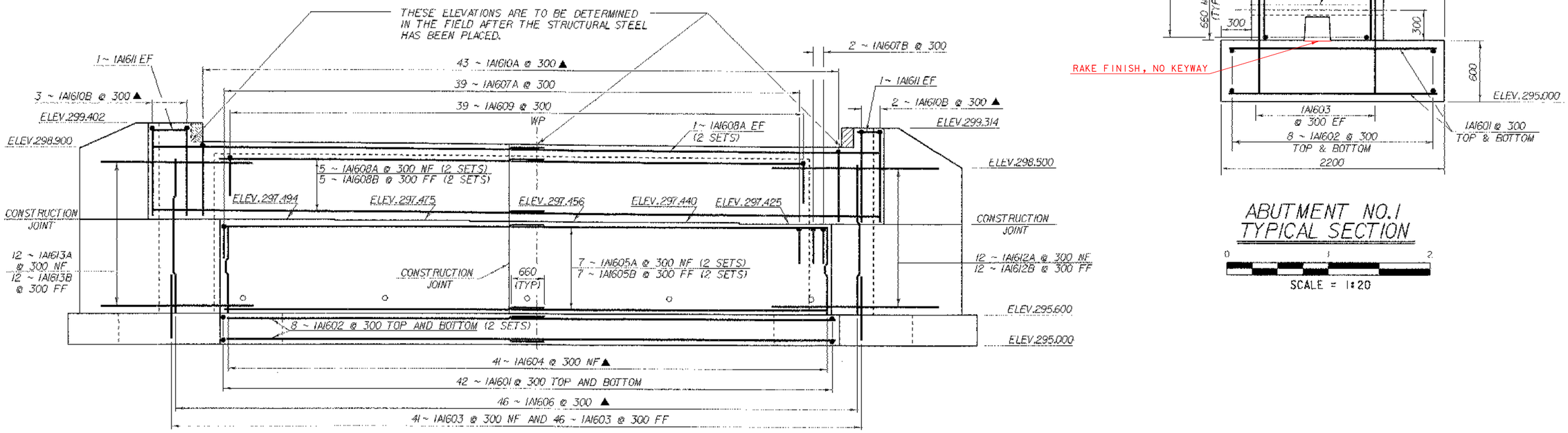
Metric



ABUTMENT NO.1 PLAN

0 1 2 3 4

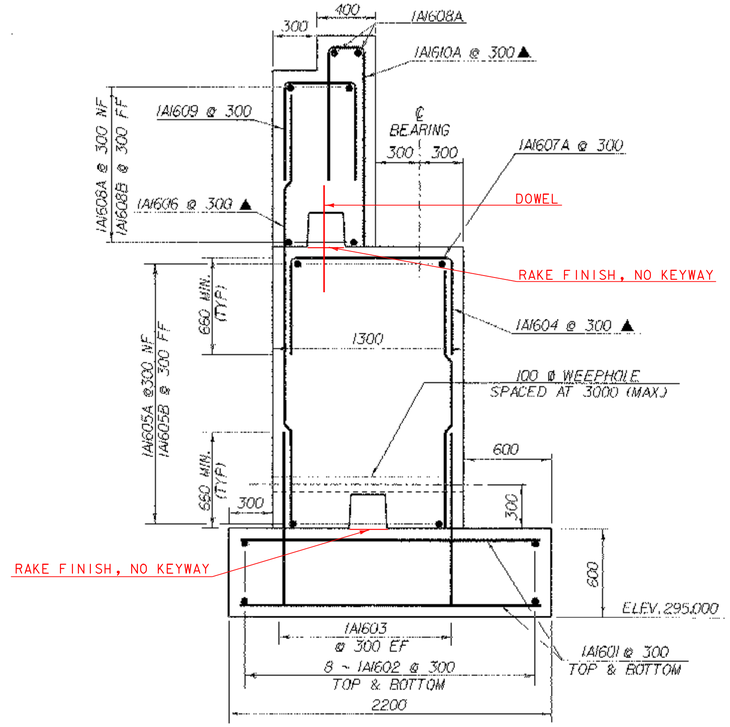
SCALE = 1:40



ABUTMENT NO.1 ELEVATION

0 1 2 3 4

SCALE = 1:40



ABUTMENT NO.1 TYPICAL SECTION

0 1 2

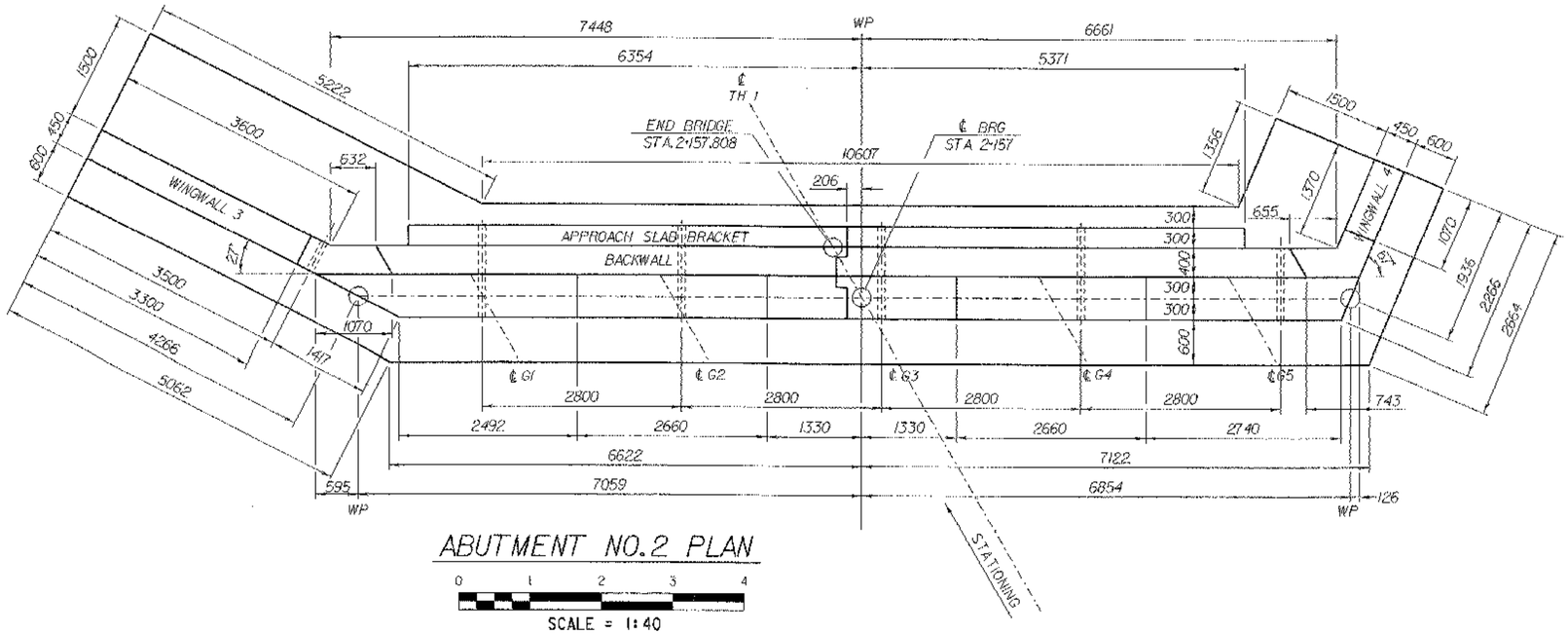
SCALE = 1:20

NOTE:

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EF = EACH FACE
▲ = CUT TO FIT IN FIELD
75 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

ABUTMENT NO. 1 PLAN AND ELEVATION

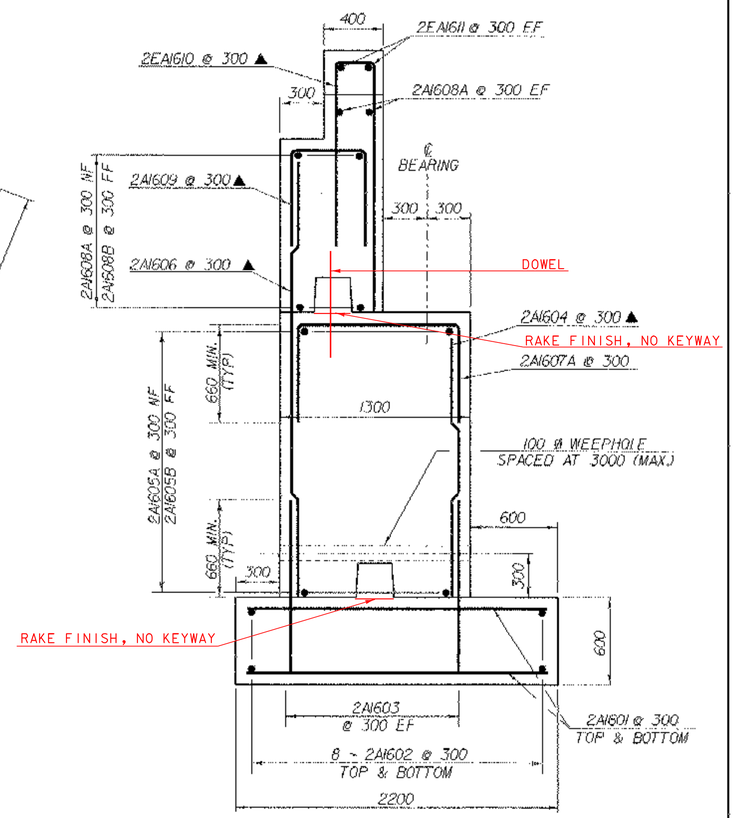
PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443 (35)
FILE NAME: /str5/95j290/sj290sub.dgn	PLOT DATE: 18-NOV-2005
PROJECT LEADER: C. KELLER	DRAWN BY: K. RUTTER
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: T. SUMNER
sj290ab1.1	SHEET 52 OF 94



ABUTMENT NO.2 PLAN

0 1 2 3 4

SCALE = 1:40

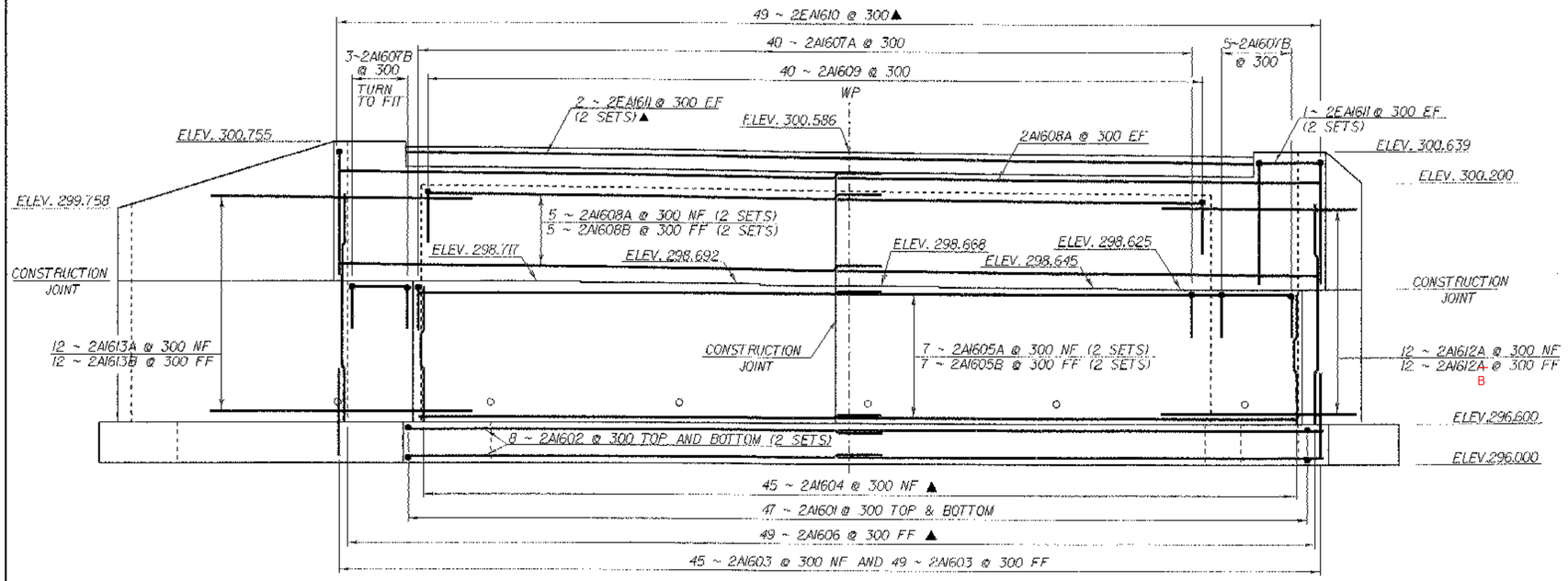


ABUTMENT NO.2 TYPICAL SECTION

0 1 2

SCALE = 1:20

NOTE:
FOR ABUTMENT NO.2 TYPICAL SECTION OUTSIDE APPROACH SLAB, SEE NEXT SHEET



ABUTMENT NO.2 ELEVATION

0 1 2 3 4

SCALE = 1:40

NOTE:

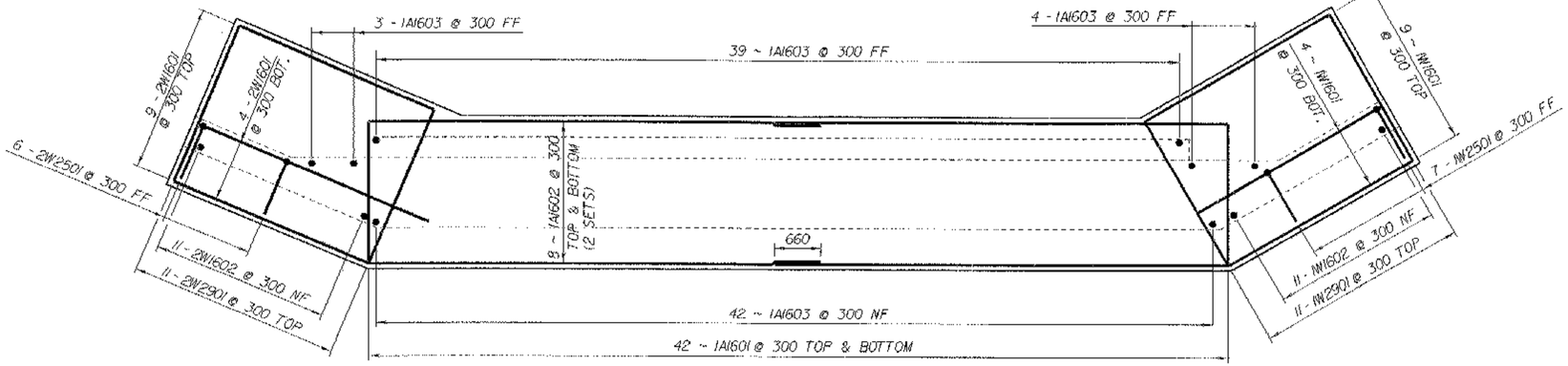
NF = NEAR FACE
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75 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

ABUTMENT NO. 2 PLAN AND ELEVATION

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443(35)

FILE NAME: /str5/95j290/sj290sub.dgn		PLOT DATE:	18-NOV-2005
PROJECT LEADER:	C. KELLER	DRAWN BY:	K. RUTTER
DESIGNED BY:	M. EVANS-MONGEON	CHECKED BY:	T. SUMNER
sj290ab2.1		SHEET	53 OF 94

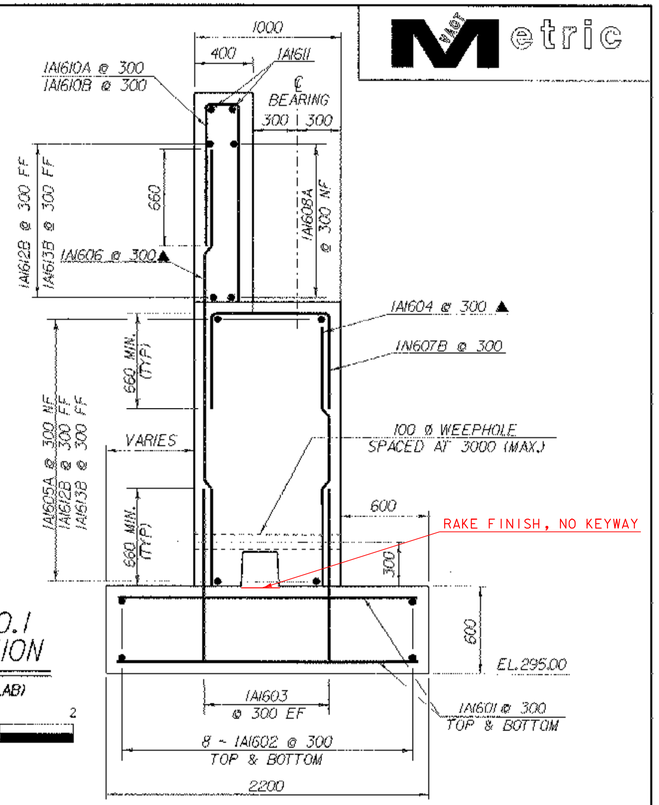
Metric



ABUTMENT NO.1 FOOTING REINFORCING PLAN

0 1 2 3 4

SCALE = 1:40

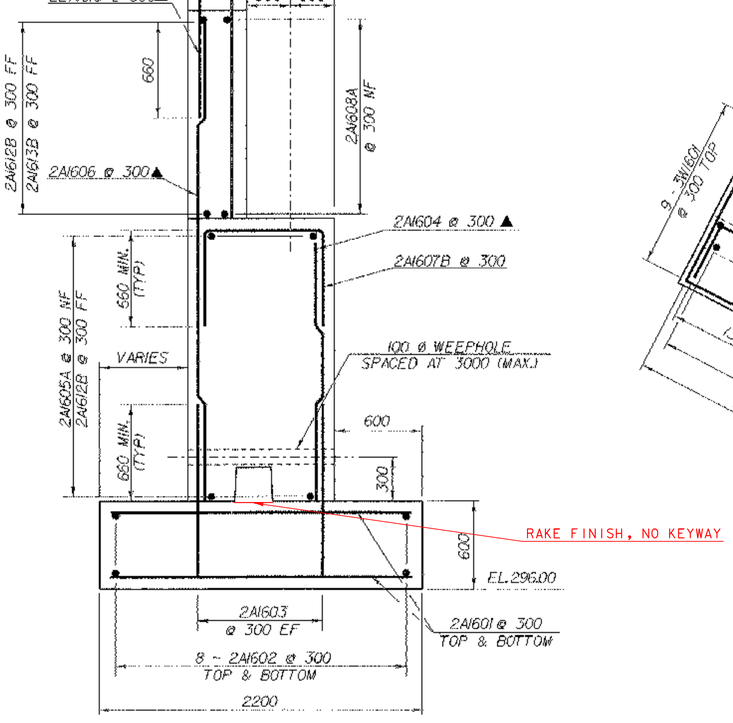


ABUTMENT NO.1 TYPICAL SECTION

(OUTSIDE APPROACH SLAB)

0 1 2

SCALE = 1:20

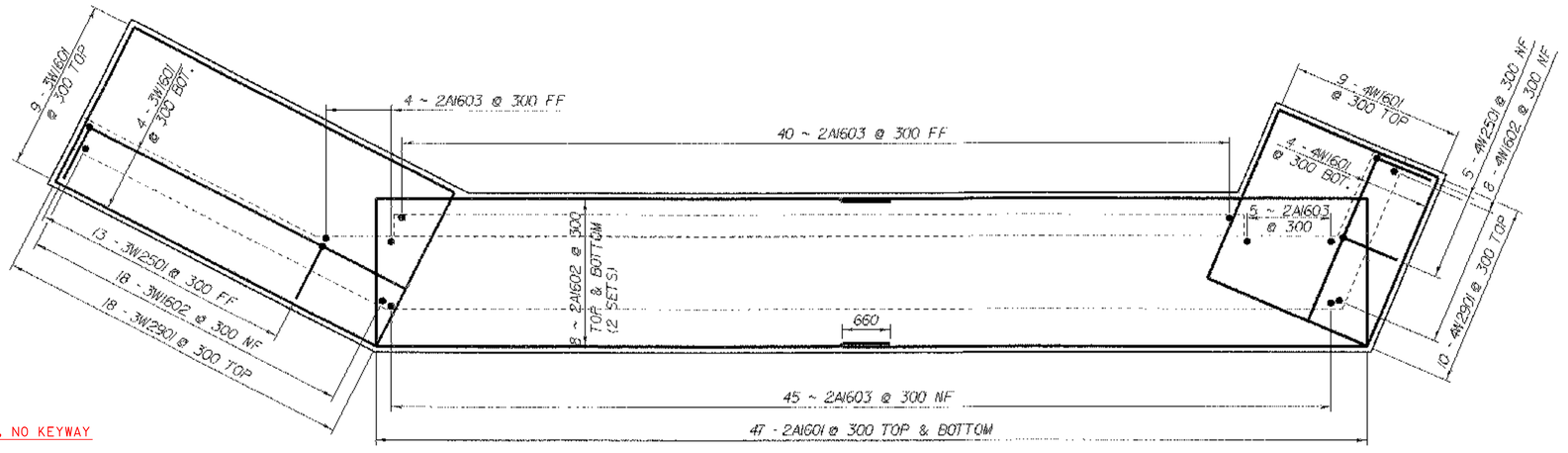


ABUTMENT NO.2 TYPICAL SECTION

(OUTSIDE APPROACH SLAB)

0 1 2

SCALE = 1:20



ABUTMENT NO.2 FOOTING REINFORCING PLAN

0 1 2 3 4

SCALE = 1:40

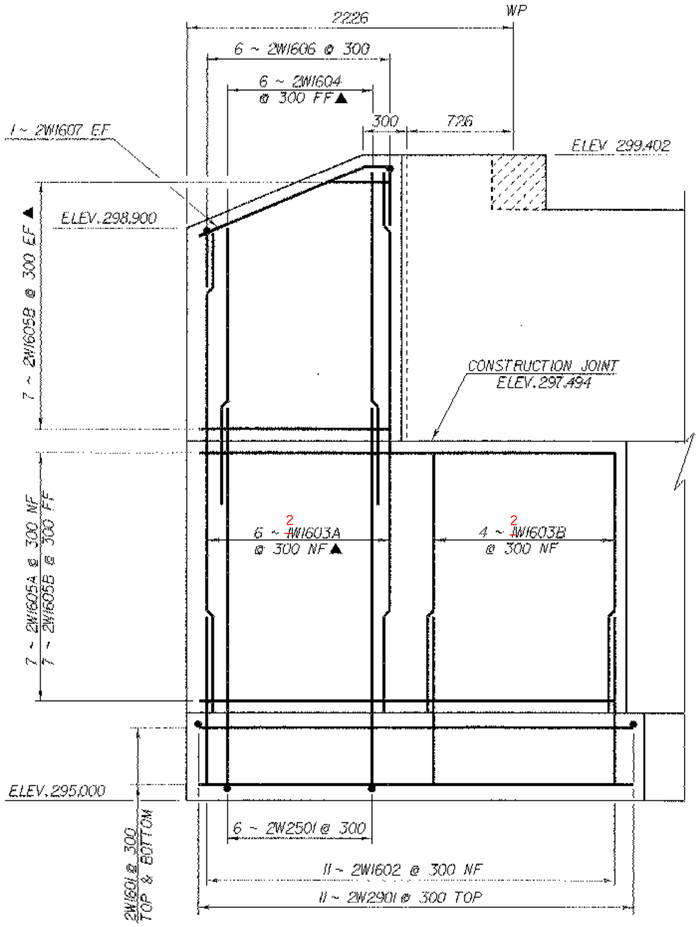
NOTE:

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EF = EACH FACE
▲ = CUT TO FIT IN FIELD
75 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

ABUTMENT NO. 1 AND ABUTMENT NO. 2 REINFORCING

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443 (35)
FILE NAME: /str5/95j290/sj290sub.dgn	PLOT DATE: 18-NOV-2005
PROJECT LEADER: C. KELLER	DRAWN BY: K. RUTTER
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: T. SUMNER
sj290abr.1	SHEET 54 OF 94

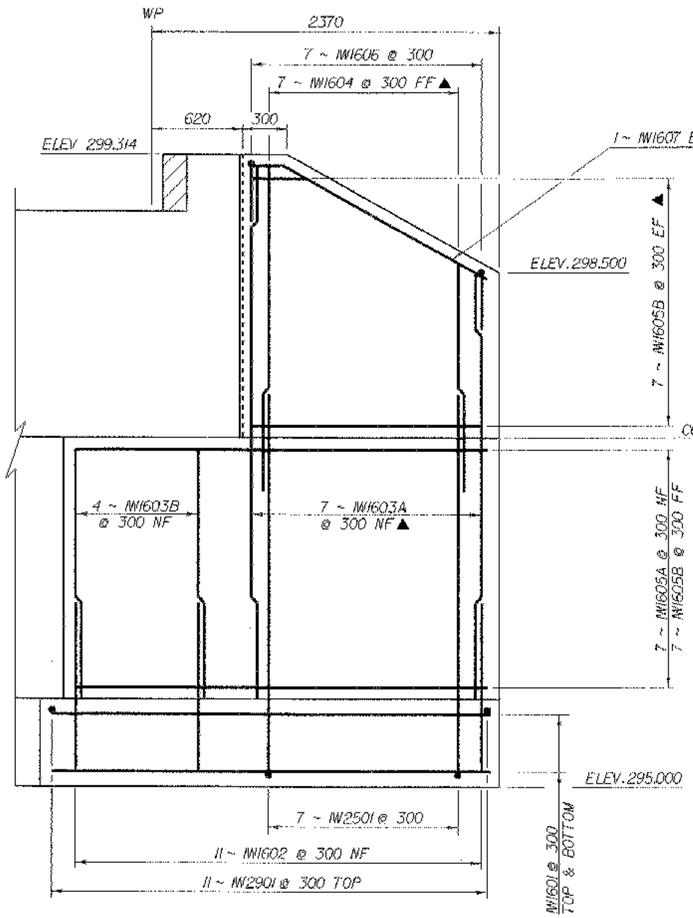
Metric



WINGWALL NO.2 ELEVATION

0 1 2

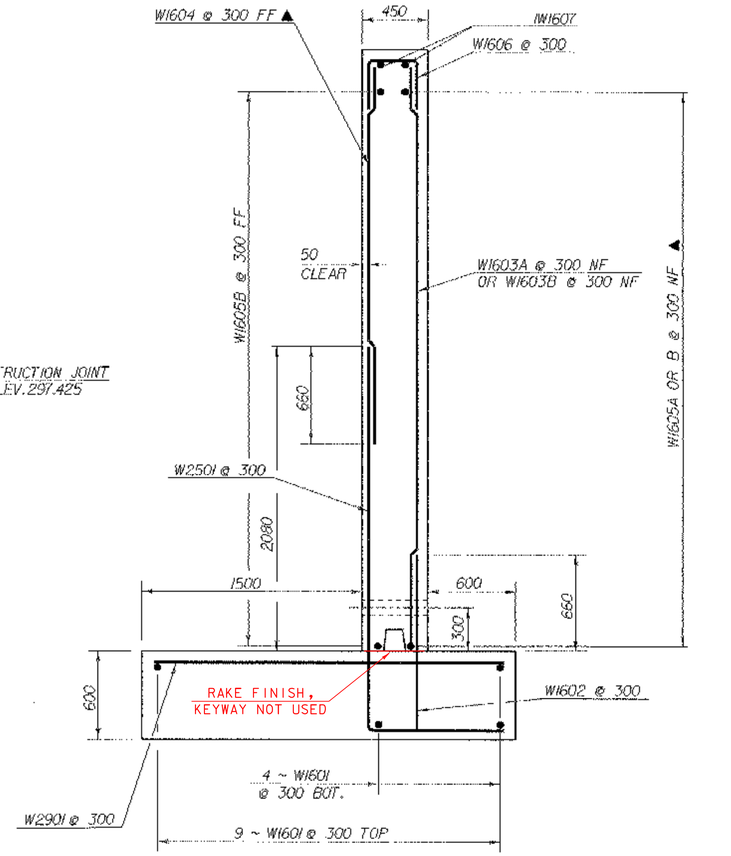
SCALE = 1:20



WINGWALL NO.1 ELEVATION

0 1 2

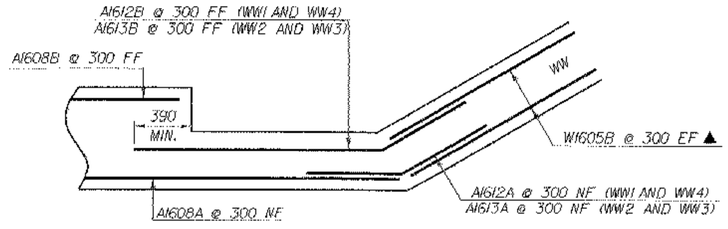
SCALE = 1:20



WINGWALL TYPICAL SECTION

0 1 2

SCALE = 1:20



ABOVE BRIDGE SEAT CORNER DETAIL

0 1 2

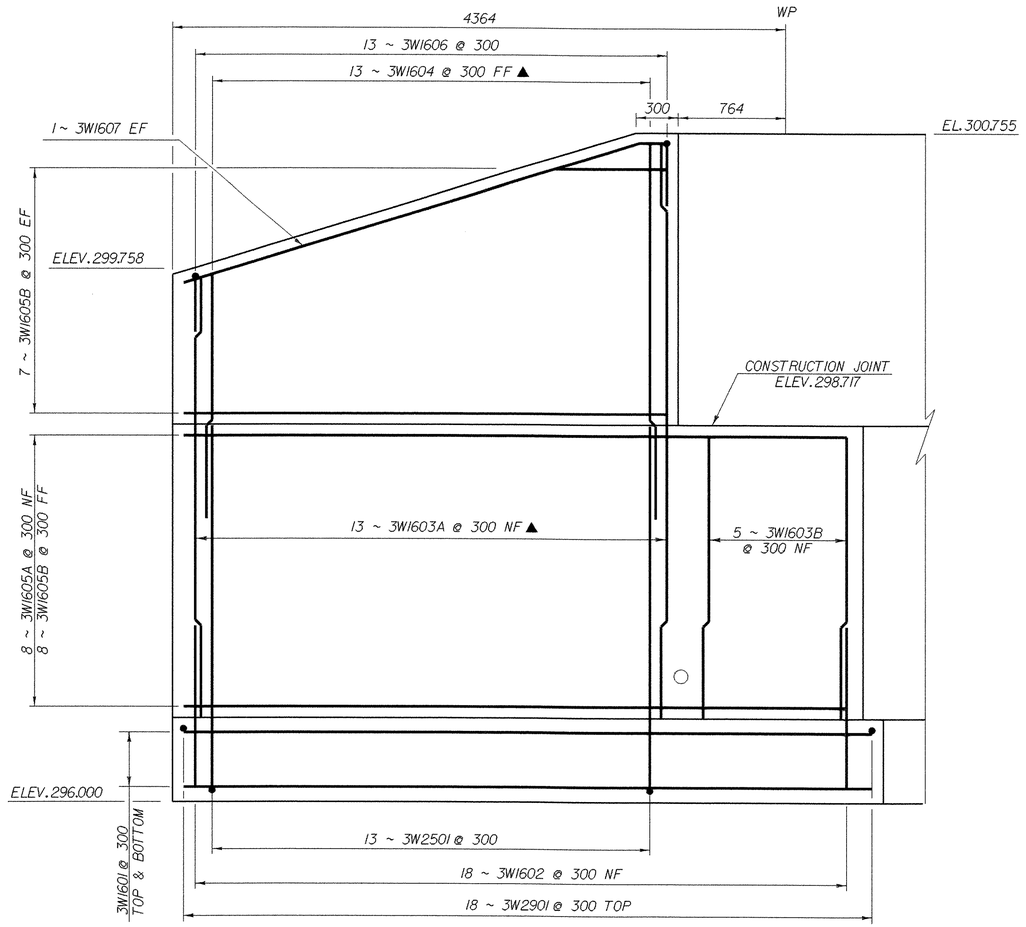
SCALE = 1:20

NOTE:

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

WINGWALL NO. 1 AND NO. 2 DETAILS

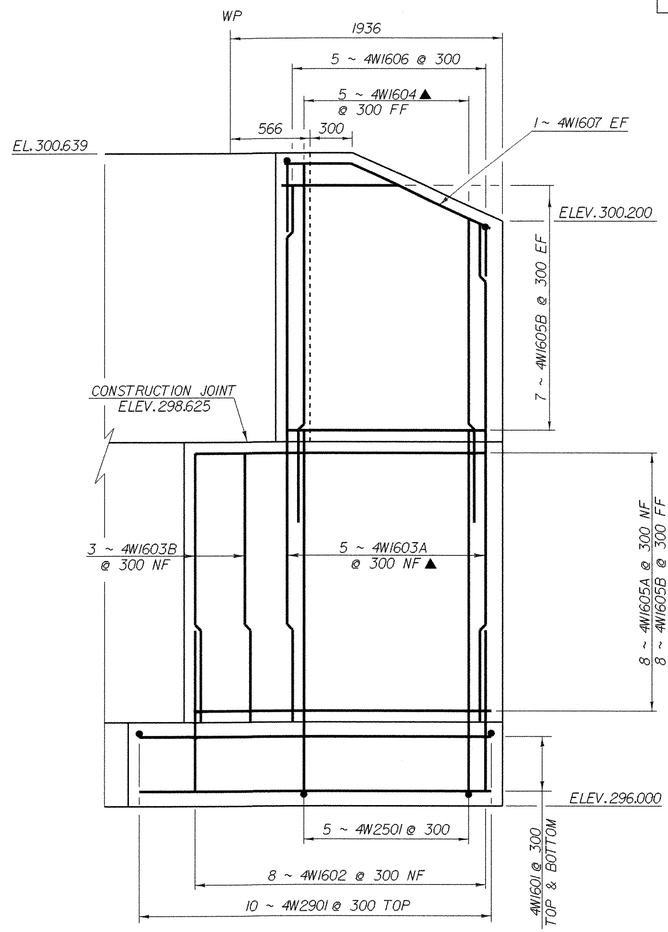
PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443 (35)
FILE NAME: /str5/95j290/sj290sub.dgn	PLOT DATE: 18-NOV-2005
PROJECT LEADER: C. KELLER	DRAWN BY: K. RUTTER
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: T. SUMNER
sj290ww1	SHEET 55 OF 94



WINGWALL NO. 3 ELEVATION

0 1 2

SCALE = 1:20



WINGWALL NO. 4 ELEVATION

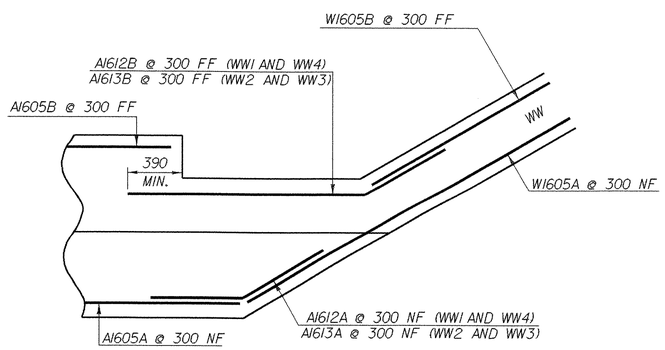
0 1 2

SCALE = 1:20

BELOW BRIDGE SEAT CORNER DETAIL

0 1 2

SCALE = 1:20



NOTE:

NF = NEAR FACE
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EF = EACH FACE
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75 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

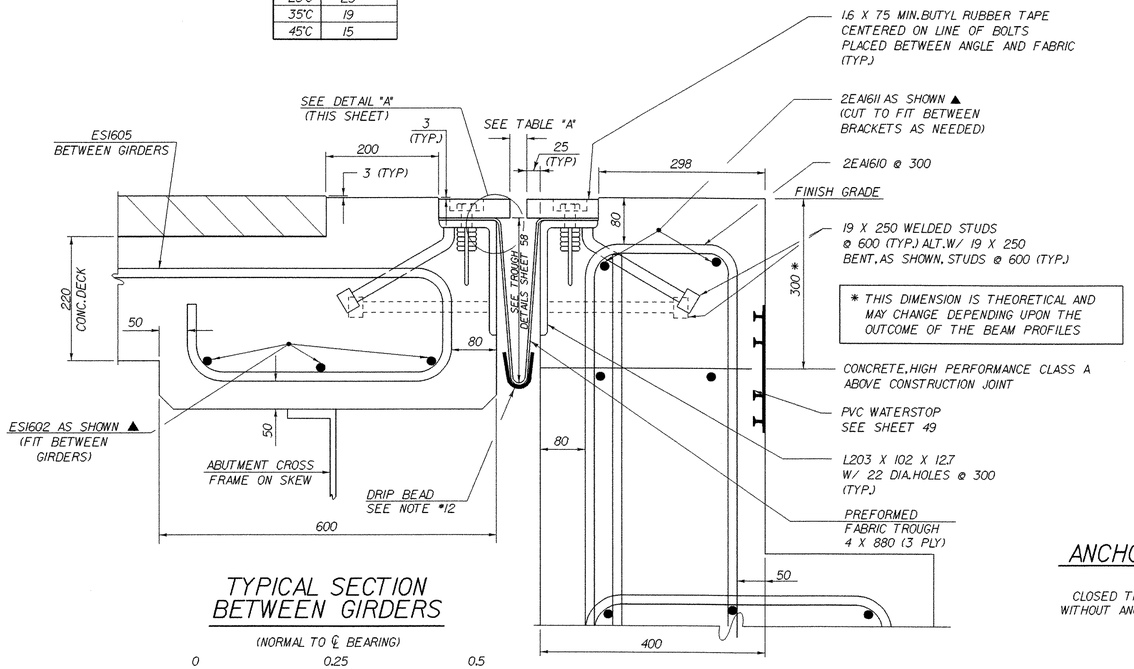
WINGWALL NO. 3 AND NO. 4 DETAILS

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443 (35)
FILE NAME: /str5/95j290/sj290sub.dgn	PLOT DATE: 18-NOV-2005
PROJECT LEADER: C. KELLER	DRAWN BY: K. RUTTER
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: T. SUMNER
sj290ww2.i	SHEET 56 OF 94

TABLE "A"

TEMP	"A" DIST.
-25°C	42
-15°C	38
-5°C	34
5°C	30
15°C	27
25°C	23
35°C	19
45°C	15

"A" IS THE SETTING BEFORE ANY DEAD LOADS ARE IN PLACE.

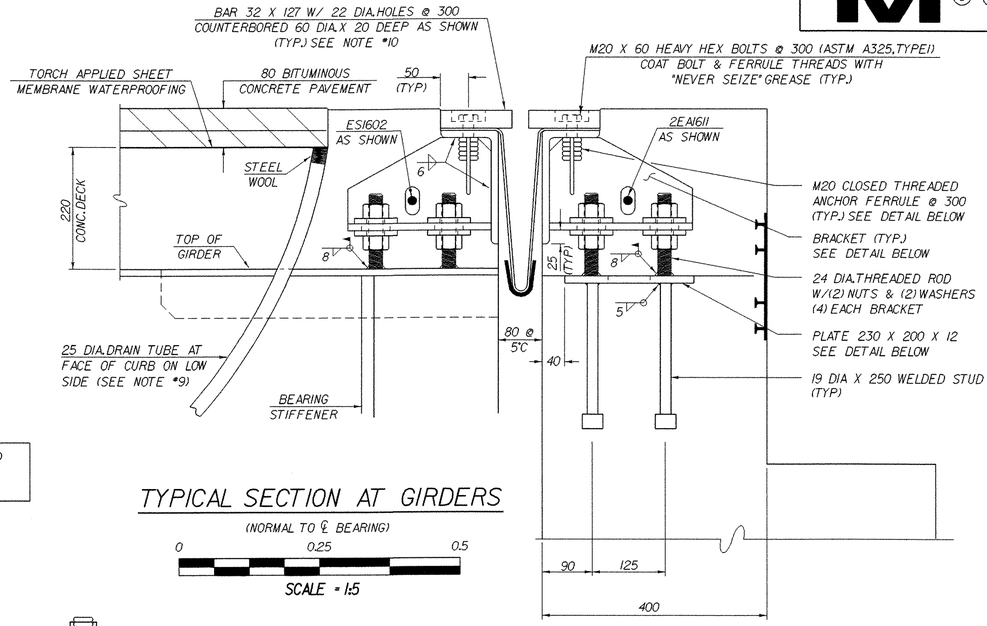


TYPICAL SECTION BETWEEN GIRDERS

(NORMAL TO ℄ BEARING)

0 0.25 0.5

SCALE = 1:5



TYPICAL SECTION AT GIRDERS

(NORMAL TO ℄ BEARING)

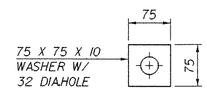
0 0.25 0.5

SCALE = 1:5

ANCHOR FERRULE

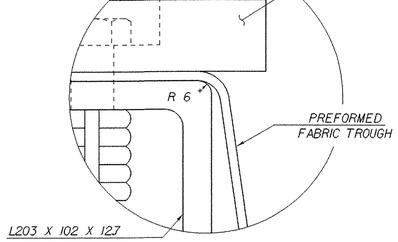
SCALE 1:5

CLOSED THREADED FERRULE NUTS WITHOUT ANCHOR LOOPS MAY BE USED.



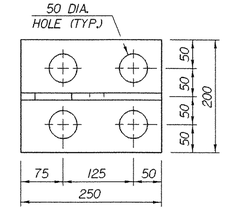
WASHER FOR BRACKET

SCALE = 1:5



DETAIL "A"

NOT TO SCALE



BRACKET PLAN

SCALE = 1:5

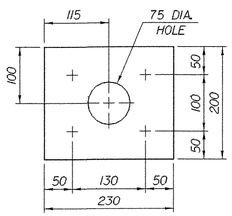
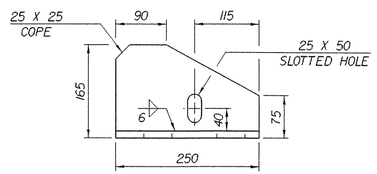


PLATE PLAN

SCALE = 1:5

(NO GALVANIZING REQUIRED)



BRACKET ELEVATION

SCALE = 1:5

EXPANSION JOINT NOTES

1. DETAILS ON THIS SHEET ARE FOR ITEM 516.10 "BRIDGE EXPANSION JOINT (VERMONT)".
2. PREFORMED FABRIC MATERIAL SHALL BE CONTINUOUS AND SHALL CONFORM TO SUBSECTION 707.07
3. BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO SPECIFICATION M-198, TYPE II.
4. THE FINAL FINISH OF THE EXPANSION DEVICE SHALL BE COVERED DURING THE PLACING OF BRIDGE DECK CONCRETE.
5. ALL STEEL COMPONENTS SHALL BE AASHTO M270/M270M GRADE 250 GALVANIZED OR METALIZED AS PER SUBSECTION 506.15 (a) OR (b) UNLESS OTHERWISED SPECIFIED.
6. THE ITEM "BRIDGE EXPANSION JOINT (VERMONT)" SHALL INCLUDE THE FABRICATION AND ERECTION OF THE COMPLETE JOINT ASSEMBLY INCLUDING ALL STEEL PLATES, BRACKETS, ANGLES, WELDED STUDS OR RODS, PREFORMED FABRIC DRAIN TROUGH MATERIAL AND PLASTIC DRAIN TUBES, BUTYL RUBBER TAPE AND ANY OTHER MISCELLANEOUS MATERIAL NECESSARY TO INSTALL THE JOINT.
7. THE 203 X 102 X 12.7 ANGLES SHALL BE FURNISHED AS ONE CONTINUOUS PIECE. THE 32 X 127 BARS EACH SIDE OF THE JOINT SHALL BE PROVIDED IN TWO EQUAL LENGTHS.
8. COAT CONCRETE CONTACT SURFACES WITH EPOXY BONDING COMPOUND MEETING THE REQUIREMENTS OF SUBSECTION 719.02. PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 516.10 "BRIDGE EXPANSION JOINT (VERMONT)".
9. A 25 DIAMETER PLASTIC DRAIN TUBE SHALL BE INSTALLED AS SHOWN AT THE FACE OF CURB. THE UPPER END IS TO BE PLUGGED WITH STEEL WOOL AND THE LOWER END IS TO EXTEND BELOW THE BOTTOM OF THE ADJACENT STRINGER. THE DRAIN TUBES SHALL BE FASTENED TO THE STRINGERS USING A METHOD APPROVED BY THE ENGINEER. THE PLASTIC DRAIN TUBE SHALL MEET THE REQUIREMENTS OF SECTION 740.01.
10. FILL COUNTERBORED HOLES WITH HOT POURED JOINT SEALER AFTER BOLT INSTALLATION. PAYMENT FOR THE WORK SHALL BE SUBSIDIARY TO ITEM 516.10.
11. PAYMENT FOR WATERSTOP SHALL BE SUBSIDIARY TO CONCRETE PAY ITEM.
12. A DRIP BEAD OF 6 X 180 STRIP OF PREFORMED MATERIAL SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH USING AN ADHESIVE APPROVED BY THE MANFACTURER. THE DRIP BEAD SHALL BE APPILED 25 FROM THE DOWNSPOUT END OF THE TROUGH.
13. FABRIC TROUGH SHALL BE THOROUGHLY CLEANED AND FLUSHED AFTER PAVING OPERATIONS.
14. THE EXPANSION JOINT SHALL BE SHOP ASSEMBLED AND SHIPPED AS ONE UNIT.
15. THE THREADED RODS SHALL MEET THE REQUIREMENTS OF A 307, GR.C.

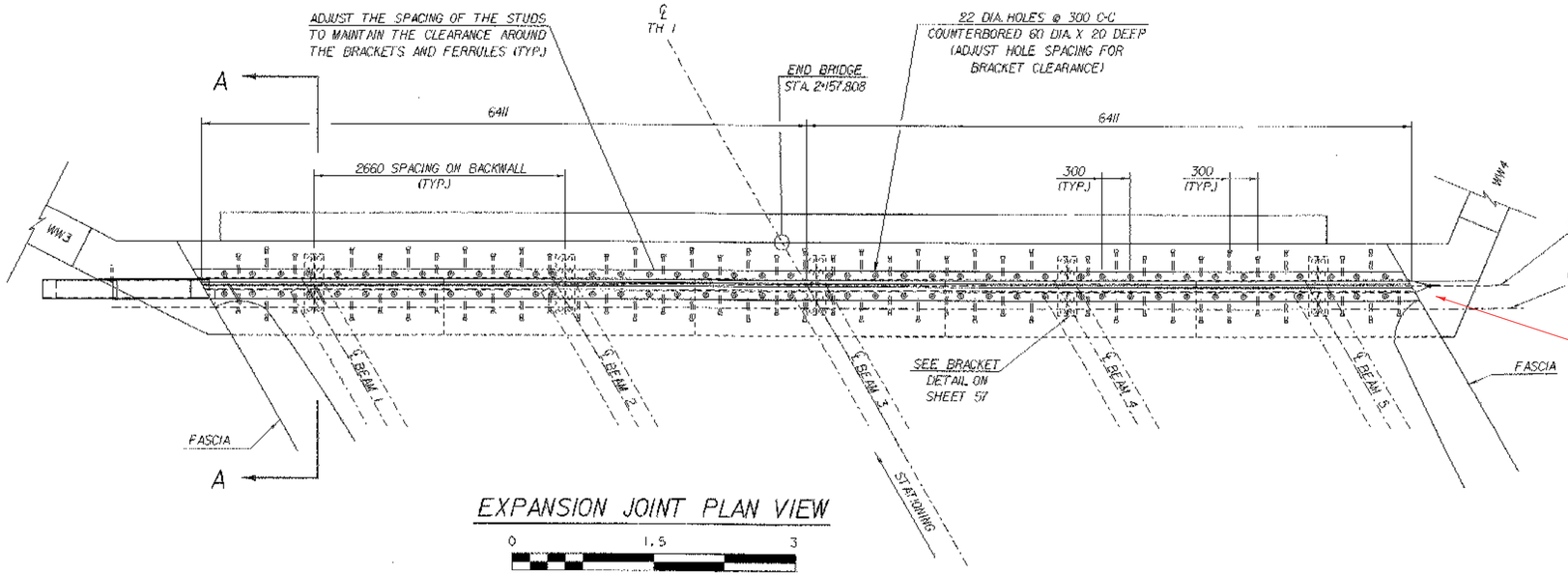
ALL PLATES 12 THICK UNLESS OTHERWISE NOTED

EXPANSION JOINT TYPICAL SECTION

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443 (35)

FILE NAME: /str5/95j290/sj290exp.dgn		PLOT DATE:	18-NOV-2005
PROJECT LEADER:	C. KELLER	DRAWN BY:	K. RUTTER
DESIGNED BY:	M. EVANS-MONGEON	CHECKED BY:	T. SUMNER
sj290ejt.i		SHEET	57 OF 94

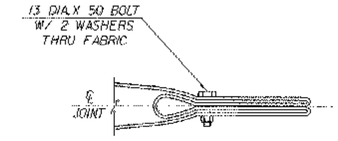
Metric



EXPANSION JOINT PLAN VIEW

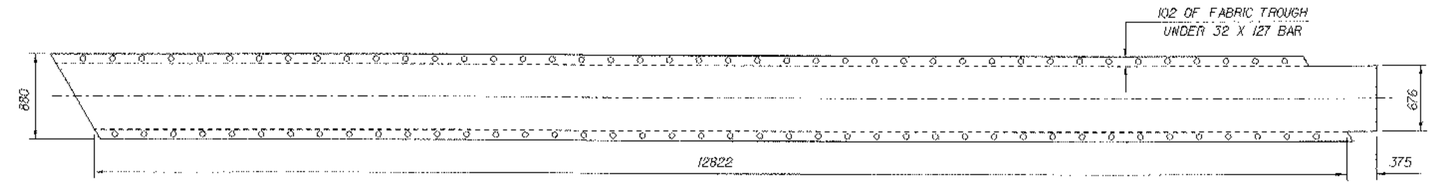
0 1.5 3

SCALE = 1:30



PLAN FOLDED TROUGH DETAIL

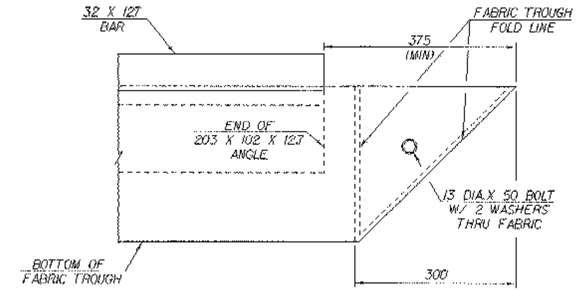
nts



TROUGH PLAN VIEW

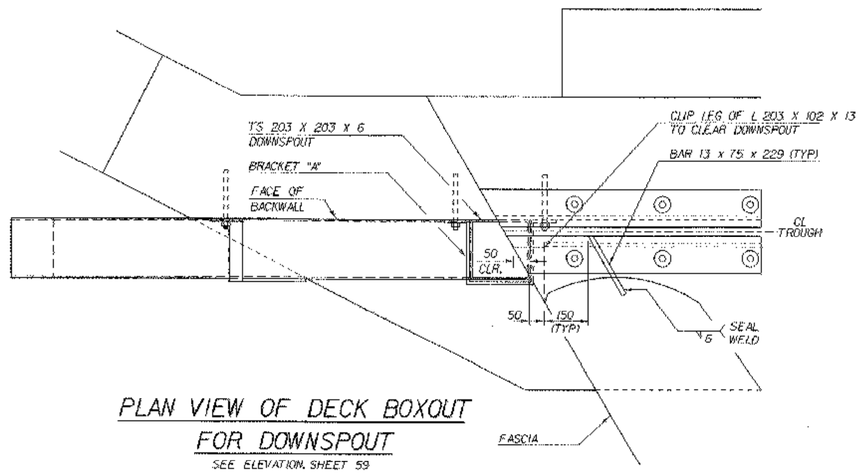
0 1.5 3

SCALE = 1:30



ELEVATION FOLDED TROUGH END DETAIL

nts

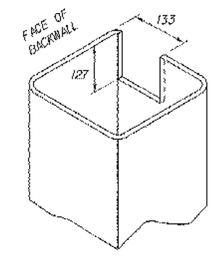


PLAN VIEW OF DECK BOXOUT FOR DOWNSPOUT

SEE ELEVATION, SHEET 59

0 0.5 1

SCALE = 1:10



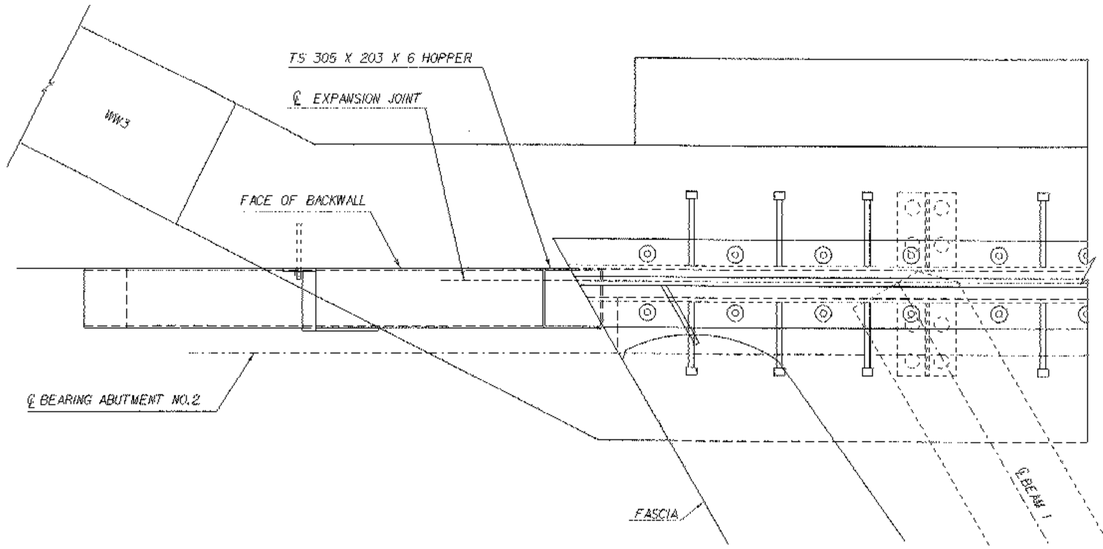
DOWNSPOUT CUTOUT FOR TROUGH

nts

JOINT PLAN

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443 (35)

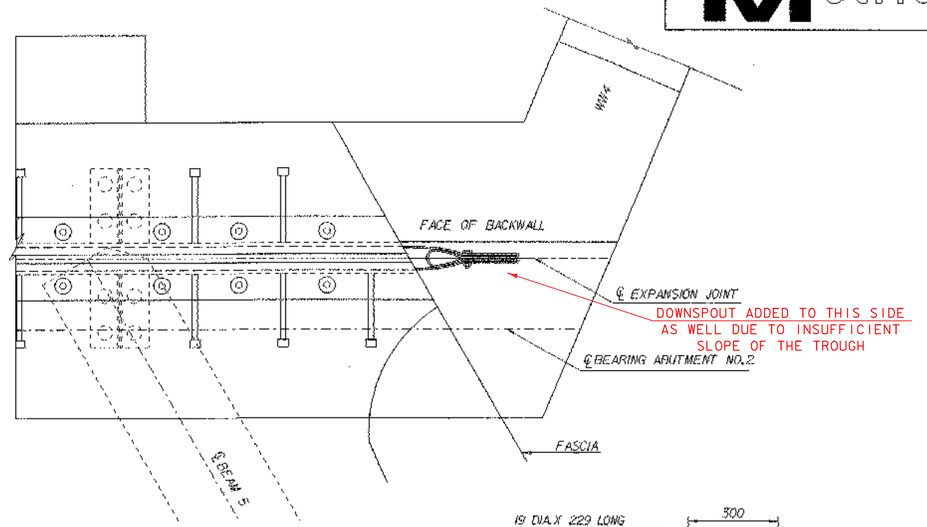
FILE NAME: /str5/95j290/sj290exp.dgn	PLOT DATE: 18-NOV-2005
PROJECT LEADER: C. KELLER	DRAWN BY: K. RUTTER
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: T. SUMNER
sj290jtp.f	SHEET 58 OF 94

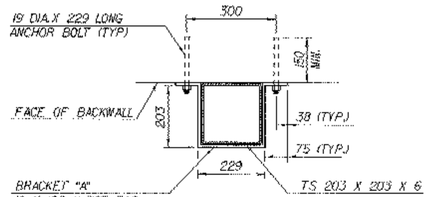


EXPANSION JOINT PLAN

0 0.5 1

SCALE = 1:10

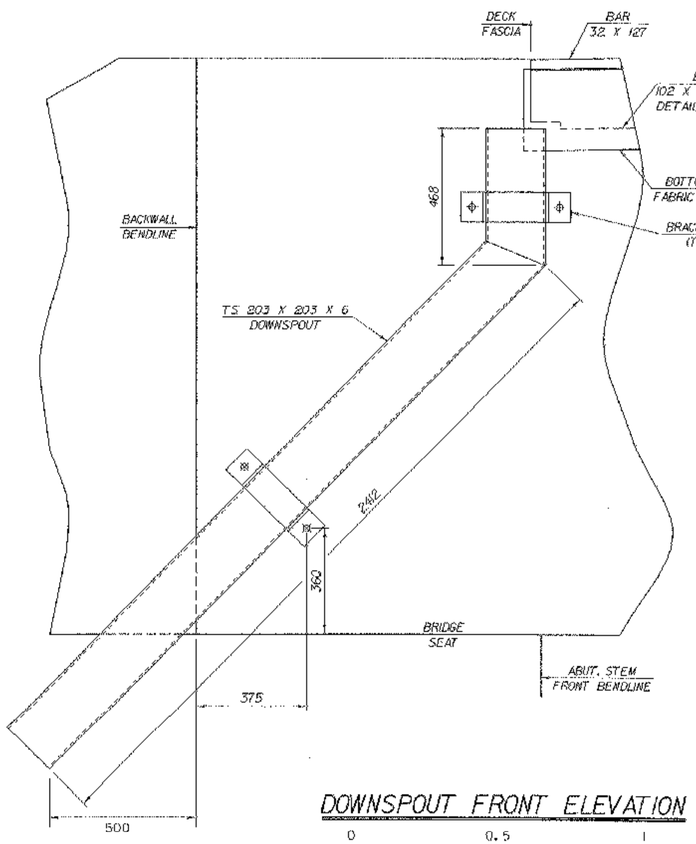




DETAILS FOR ATTACHING DOWNSPOUT TO BACKWALL

0 0.5 1

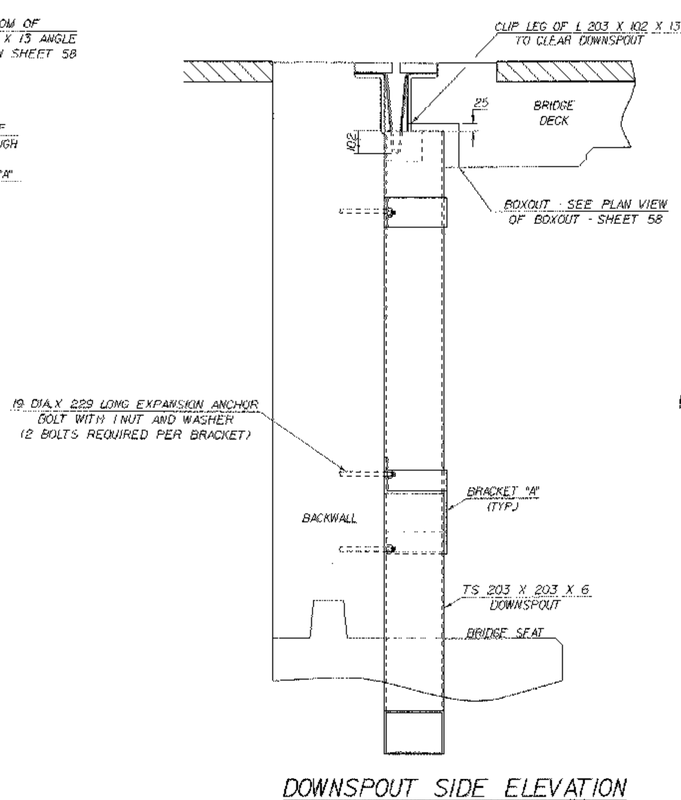
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DOWNSPOUT FRONT ELEVATION

0 0.5 1

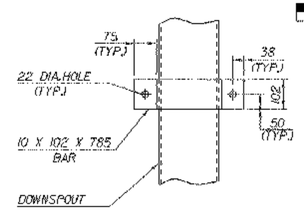
SCALE = 1:10



DOWNSPOUT SIDE ELEVATION

0 0.5 1

SCALE = 1:10



ELEVATION VIEW OF BRACKET "A"

0 0.5 1

SCALE = 1:10

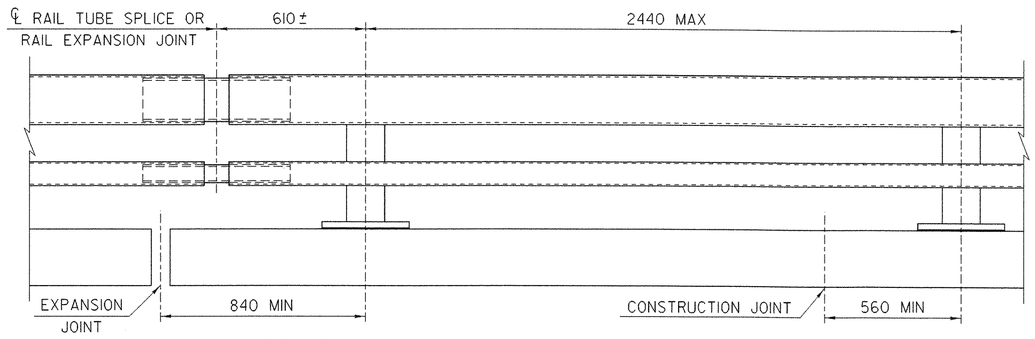
DOWNSPOUT NOTES

1. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A-500 OR ASTM A-501.
2. ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO ASTM A709/A709M, GRADE 250.
3. ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111, EXCEPT THAT HARDWARE MEET REQUIREMENTS OF AASHTO M232M.
4. ANY PLACE WHERE THE GALVANIZING HAS BEEN REMOVED FROM THE DOWNSPOUT EITHER BY CUTTING, BURNING, WELDING, PLACING, OR ANY OTHER MEANS, IT SHALL BE REPAIRED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 513.06(f).
5. DOWNSPOUT AND ALL ANCHOR BOLTS WITH RELATED HARDWARE SHALL BE PAID FOR UNDER THE ITEM 506.55 "STRUCTURAL STEEL (PLATE GIRDER)".

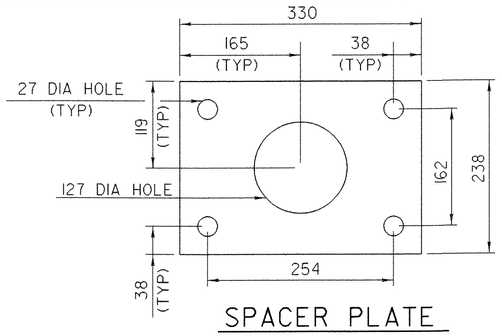
HOPPER & DOWNSPOUT DETAILS

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443(35)

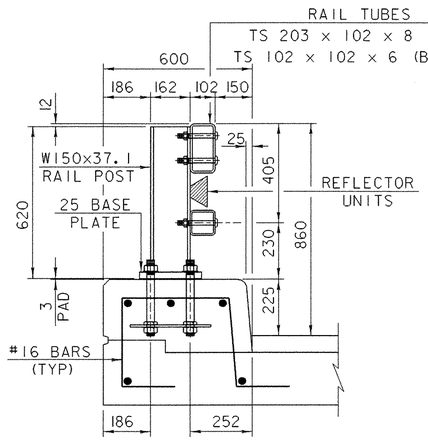
FILE NAME: /str5/95J290/sJ290exp.dgn		PLOT DATE:	18-NOV-2005
PROJECT LEADER:	C. KELLER	DRAWN BY:	K. RUTTER
DESIGNED BY:	M. EVANS-MONGEON	CHECKED BY:	T. SUMNER
sJ290hdd.1		SHEET	59 OF 94



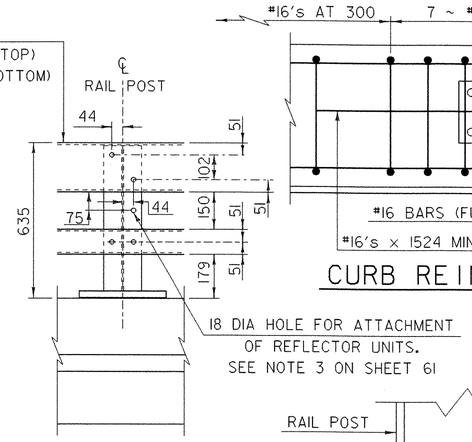
BRIDGE RAILING ELEVATION



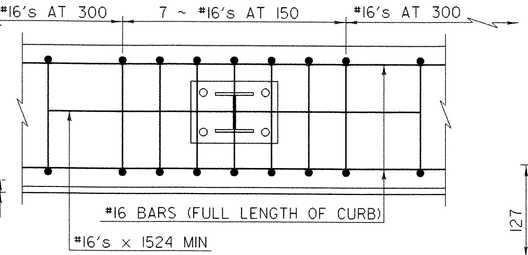
SPACER PLATE



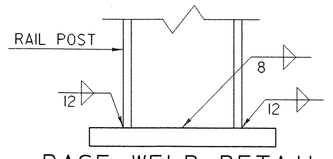
TYPICAL SECTION



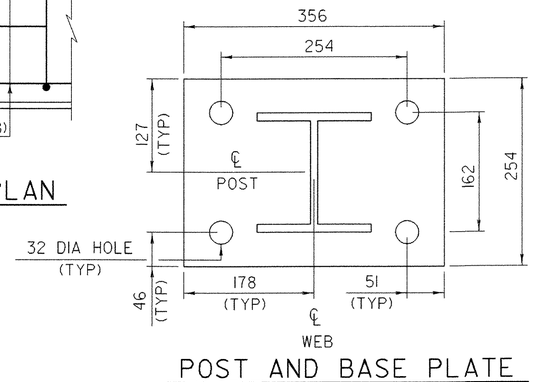
ELEVATION



CURB REINFORCING PLAN



BASE WELD DETAIL



POST AND BASE PLATE

NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE PROVISIONS OF SECTION 525, "RAILINGS OF THE STANDARD SPECIFICATION FOR CONSTRUCTION."
2. TUBING AND POSTS SHALL MEET THE REQUIREMENTS OF SECTION 732, "RAILING MATERIALS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION," EXCEPT THAT THE DROP-WEIGHT TEAR TEST IN SECTION 732 SHALL NOT APPLY TO THE STRUCTURAL TUBING IN THIS STANDARD.
3. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 2mm RADIUS AND BE FREE OF BURRS.
4. RAIL POSTS SHALL BE SET NORMAL TO GRADE.
5. SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO (2) RAIL POSTS AND PREFERABLY TO AT LEAST FOUR (4) POSTS.
6. RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING A SUPERSTRUCTURE EXPANSION JOINT. EXPANSION JOINT WIDTH SHALL BE "X" AT 7°CELSIUS AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES. SEE EXPANSION TABLE THIS SHEET.
7. ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111, EXCEPT THAT HARDWARE SHALL MEET THE REQUIREMENTS OF AASHTO M232M.
8. RAIL POSTS ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
9. RAIL TUBES SHALL BE ATTACHED USING M20 FULL DIAMETER BODY AASHTO M164 (TYPE 1) ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE TUBE. HOLES HOLES IN POSTS SHALL BE 2mm LARGER THAN THE BOLT SIZE.
10. HOLES IN RAILS FOR RAIL TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.
11. IF THERE IS A CONFLICT BETWEEN THESE STANDARD DETAILS AND THE DESIGN, THE REQUIREMENTS OF THE DESIGN DRAWINGS SHALL BE FOLLOWED.
12. ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.
13. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH THE PROVISION OF 506.04, SHOP DRAWINGS. ALL WELDING SHALL CONFORM WITH SECTION 506.10.
14. RAIL POST AND BASE PLATES SHALL BE TESTED FOR IMPACT PROPERTIES IN ACCORDANCE WITH ASTM A370 CHARPY IMPACT TESTING USING TYPE A SPECIMENS.

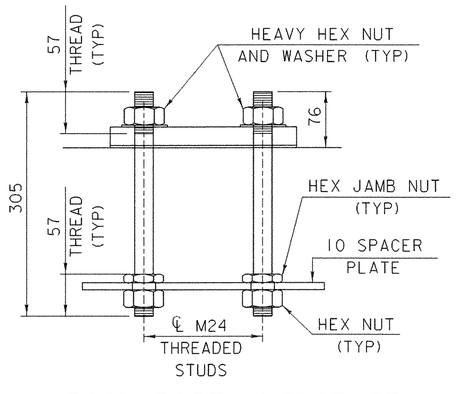
MATERIALS

RAIL TUBES.....ASTM A500, GRADE B OR ASTM A501
RAIL POSTS AND BASE PLATE.....ASTM A709/A709M, GRADE 345
ALL OTHER SHAPES AND PLATES....ASTM A709/A709M, GRADE 250
ANCHOR STUDS.....ASTM FS68M CLASS 8.8
ALL OTHER BOLTS (UNLESS NOTED).....AASHTO M164M, TYPE 1

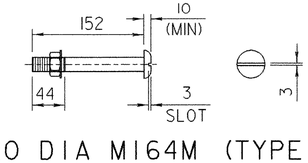
NUTS FOR AASHTO M164M (ASTM A325M) BOLTS AND ANCHOR STUDS SHALL COMPLY WITH AASHTO M291M (ASTM A563M).

WASHERS SHALL COMPLY WITH AASHTO M293M (ASTM F436M) SPECIFICATIONS.

3mm PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.01 OR 731.02.

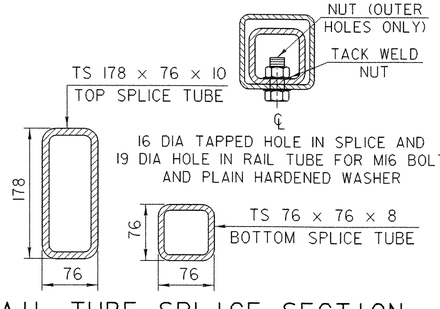


RAIL POST ANCHORAGE

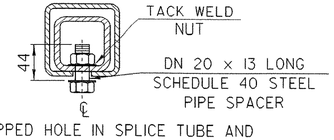


M20 DIA M164M (TYPE 1) ROUND HEAD BOLT

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



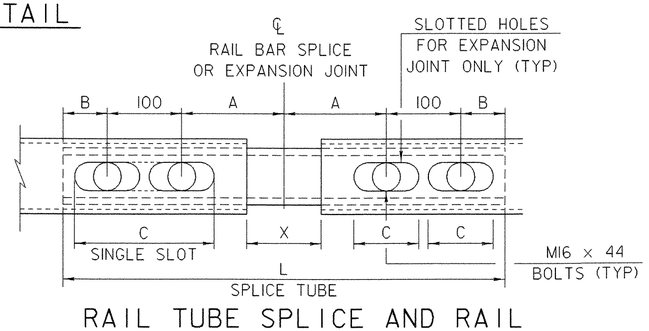
RAIL TUBE SPLICE SECTION



16 DIA TAPPED HOLE IN SPLICE TUBE AND
29 x 'C' SLOT IN RAIL TUBE FOR M16
BOLT AND PLAIN HARDENED WASHER

EXPANSION JOINT SECTION

FOR DETAILS NOT SHOWN
SEE "RAIL TUBE SPLICE SECTION"



RAIL TUBE SPLICE AND RAIL EXPANSION JOINT DETAIL

(BOTTOM VIEW)

SPLICE TABLE					
T	A	B	C	L	X
NA	100	50	--	510	20
EXPANSION JOINT TABLE					
<100	100	50	65	510	65
~~>100 <165~~	~~140~~	~~60~~	~~90~~	~~605~~	~~105~~
~~>165 <230~~	~~165~~	~~85~~	~~230*~~	~~705~~	~~130~~
~~>230 <330~~	~~215~~	~~110~~	~~280*~~	~~860~~	~~180~~

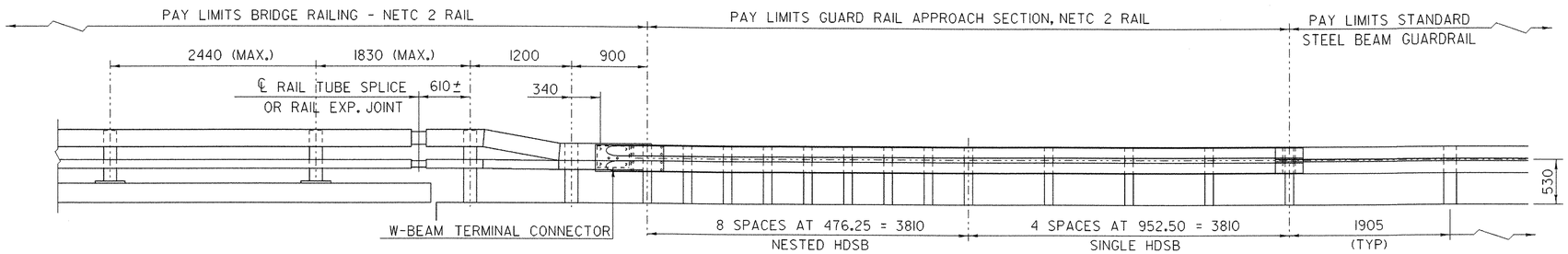
T = TOTAL MOVEMENT BETWEEN BRIDGE EXPANSION JOINTS. SEE NOTE 6
* = SINGLE SLOT

DETAILS ARE NOT TO SCALE.

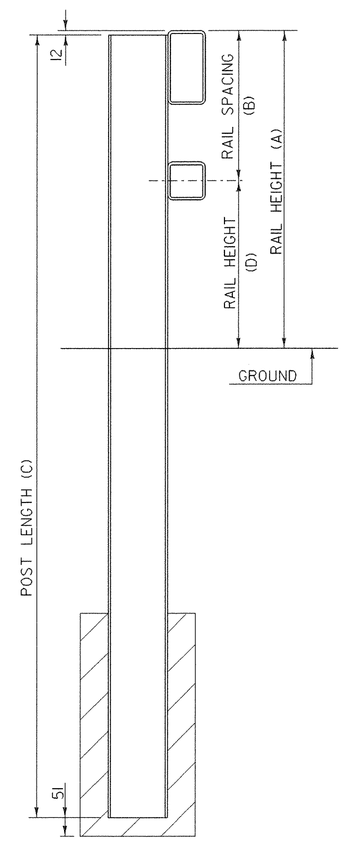
N.E.T.C. BRIDGE RAIL DETAILS

PROJECT NAME: MENDON
PROJECT NUMBER: BRO 1443(35)

FILE NAME: /str5/95j290/sj290ral.dgn
PROJECT LEADER: C. KELLER
DESIGNED BY: M. EVANS-MONGEON
sj290ral.i
PLOT DATE: 18-NOV-2005
DRAWN BY: J. GILMORE
CHECKED BY: T. SUMNER
SHEET 60 OF 94

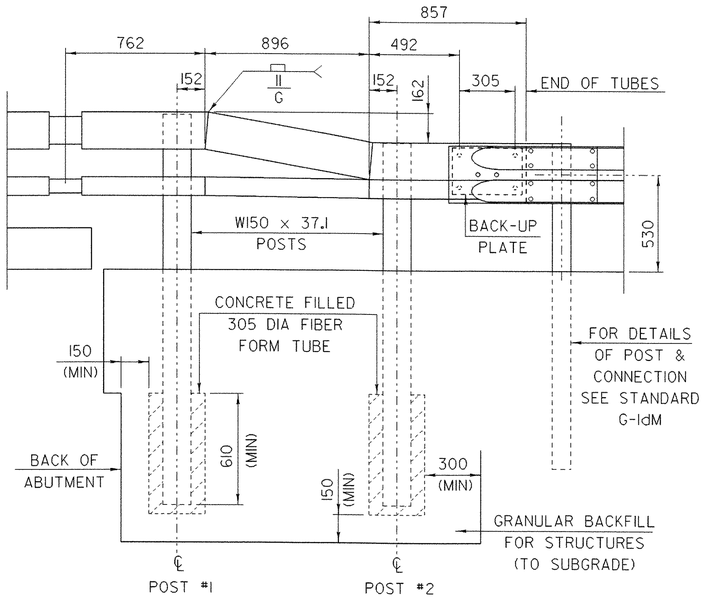


RAILING TRANSITION ELEVATION

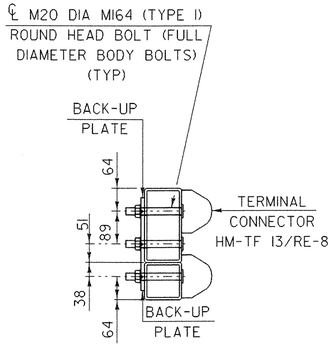


TYPICAL SECTION

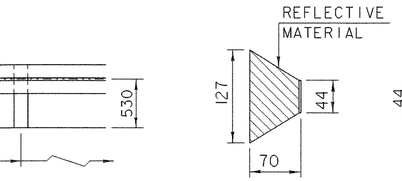
POST NUMBER	RAIL HEIGHT (A)	RAIL SPACING (B)	POST LENGTH (C)	RAIL HEIGHT (D)
1	860	405	2134	455
2	702	254	1956	448



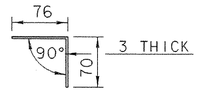
ELEVATION



SECTION THROUGH GUARD RAIL CONNECTION AT TERMINAL CONNECTOR

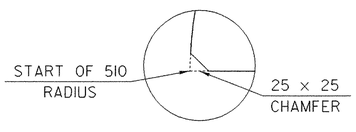


DELINEATION DEVICE DETAILS

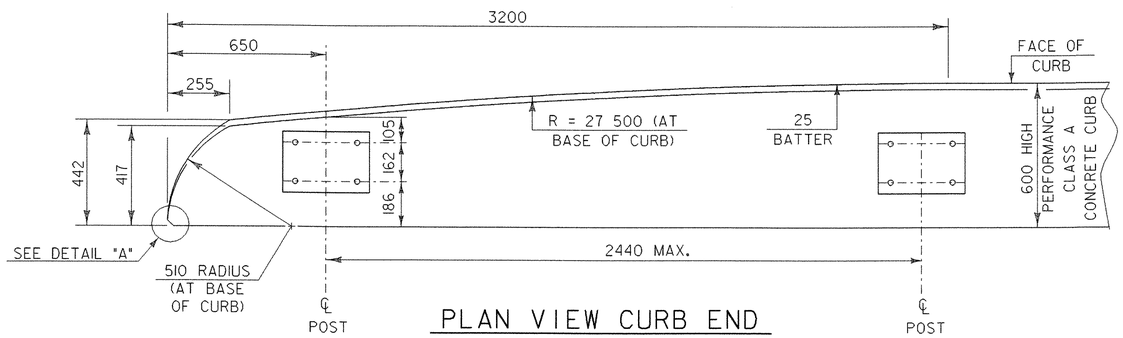


NOTES:

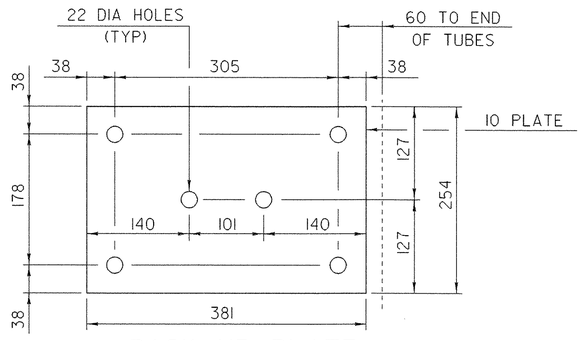
1. REFER TO SHEET 60 FOR ADDITIONAL DETAILS, NOTES AND MATERIAL SPECIFICATIONS.
2. TO FACILITATE FIELD FIT - UP OF THE TRANSITION RAILING, POSTS SHALL BE SET LOOSELY INTO FIBER FORM TUBES WHILE TRANSITION PARTS ARE BEING ASSEMBLED. POST HOLES SHALL BE BACKFILLED WITH A CONCRETE MIX APPROVED BY THE ENGINEER. PAYMENT FOR COMPONENTS, INCLUDING BACKUP PLATE AND END TERMINAL CONNECTOR FOR GUARD RAIL, AUGERING, FIBER FORM TUBES AND CONCRETE, AND INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO BRIDGE RAILING, N.E.T.C. 2 RAIL.
3. THE REFLECTORIZED ALUMINUM DELINEATION IS TO BE ERECTED EVERY 9m (OR CLOSEST POST) WITH A M16 BOLT. DELINEATORS SHALL MEET SPECIFICATION REQUIREMENTS FOR ASTM B209 ALLOY 5052-H32.
4. REFLECTIVE MATERIAL SHALL MEET REQUIREMENTS OF SUBSECTION 750.08 AND SHALL BE OF ENCAPSULATED LENS SILVER OR AMBER. AMBER IS TO BE INSTALLED ON THE DRIVER'S LEFT AND SILVER ON THEIR RIGHT.
5. ALL APPROACH RAIL SPLICES SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW.
6. SEE STANDARD G-1M AND G-1dM FOR ADDITIONAL INFORMATION.



DETAIL "A"



PLAN VIEW CURB END



BACK-UP PLATE

DETAILS ARE NOT TO SCALE.

N.E.T.C. BRIDGE RAIL DETAILS

PROJECT NAME:	MENDON
PROJECT NUMBER:	BRO 1443(35)

FILE NAME: /str5/95j290/sj290ral.dgn
PROJECT LEADER: C. KELLER
DESIGNED BY: M. EVANS-MONGEON
sj290ra2.1
PLOT DATE: 18-NOV-2005
DRAWN BY: J. GILMORE
CHECKED BY: T. SUMNER
SHEET 61 OF 94

STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

Metric

ABUTMENT # 1

	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
★	85	16	2040	1A1601	STR												
	32	16	6420	1A1602	STR												
	88	16	1180	1A1603	STR												
▲	41	16	1810	1A1604	STR												
	14	16	6356	1A1605A	STR												
	14	16	6393	1A1605B	STR												
▲	46	16	3080	1A1606	STR												
	39	16	2460	1A1607A	S10		660	1140	660								
	2	16	2160	1A1607B	S10		660	840	660								
	10	16	7700	1A1608A	STR												
	10	16	6393	1A1608B	STR												
	39	16	1860	1A1609	S10		660	540	660								
▲	43	16	2760	1A1610A	S10		1060	240	1460								
▲	5	16	3560	1A1610B	S10		1460	240	1860								
▲	4	16	900	1A1611	STR												
	12	16	1320	1A1612A	19		660	660					330		572		1232
	12	16	2320	1A1612B	19		660	1660					330		572		2232
	12	16	1320	1A1613A	19		660	660					258		608		1268
	12	16	2145	1A1613B	19		660	1485					258		608		2093

ABUTMENT # 2

	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	94	16	2040	2A1601	STR												
★	33	16	7130	2A1602	STR												
	94	16	1190	2A1603	STR												
▲	45	16	2035	2A1604	STR												
	14	16	6860	2A1605A	STR												
	14	16	6733	2A1605B	STR												
▲	49	16	3470	2A1606	STR												
	40	16	2460	2A1607A	S10		660	1140	660								
	8	16	2170	2A1607B	S10		660	850	660								
	12	16	8000	2A1608A	STR												
	10	16	6733	2A1608B	STR												
	40	16	1860	2A1609	S10		660	540	660								
▲	49	16	3660	2EA1610	S10		1460	240	1960								
	4	16	8000	2EA1611	STR												
	12	16	1320	2A1612A	19		660	660					608		258		918
	12	16	2340	2A1612B	19		660	1680					608		258		1938
	12	16	1320	2A1613A	19		660	660					300		588		1248
	12	16	2145	2A1613B	19		660	1485					300		588		1683

WINGWALL # 1

	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	13	16	2970	1W1601	STR												
	11	16	1190	1W1602	STR												
★▲	9	16	3640	1W1603A	STR												
	4	16	1750	1W1603B	STR												
▲	7	16	2230	1W1604	STR												
	7	16	2810	1W1605A	STR												
▲	22	16	1590	1W1605B	STR												
	7	16	1225	1W1606	S10		450	325	450								
	2	16	1815	1W1607	19		1595	220					781		1390		1610
	8	25	3530	1W2501	17			920	2610								
★	12	29	2390	1W2901	STR												

WINGWALL # 2

	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
★	14	16	2970	2W1601	STR												
	11	16	1190	2W1602	STR												
	6	16	3720	2W1603A	STR												
	4	16	1810	2W1603B	STR												
▲	6	16	2300	2W1604	STR												
	7	16	2840	2W1605A	STR												
	21	16	1340	2W1605B	STR												
	6	16	1225	2W1606	S10		450	325	450								
	2	16	1440	2W1607	19		1220	220					471		1125		1345
★	7	25	3530	2W2501	17			920	2610								
★	12	29	2390	2W2901	STR	2390											

WINGWALL # 3

	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	13	16	4900	3W1601	STR												
	18	16	1190	3W1602	STR												
▲	13	16	4080	3W1603A	STR												
★	6	16	2040	3W1603B	STR												
▲	13	16	2660	3W1604	STR												
	8	16	4760	3W1605A	STR												
	22	16	3440	3W1605B	STR												
	13	16	1225	3W1606	S10		450	325	450								
	2	16	3570	3W1607	19		3350	220					902		3226		3446
★	14	25	3530	3W2501	17			920	2610								
★	19	29	2390	3W2901	STR												

WINGWALL # 4

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
★	14	16	2500	4W1601	STR												
	8	16	1190	4W1602	STR												
▲	5	16	3965	4W1603A	STR												
	3	16	1945	4W1603B	STR												
▲	5	16	2545	4W1604	STR												
	8	16	2105	4W4605A	STR												
	22	16	1450	4W1605B	STR												
	5	16	1225	4W1606	S10			450	325	450							
	2	16	1350	4W1607	19			1130	220				364		1070		1290
★	6	25	3530	4W2501	17				920	2610							
★	11	29	2390	4W2901	STR												

DECK

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
★ ▲	455	16	10940	ES1601	STR												
▲	14	16	12650	ES1602	STR												
	318	16	1720	ES1603	S5	300	375	440	305			300					
	32	16	1960	ES1604	S5	660	190	920	190								
	32	16	1490	ES1605	S5	660	190	450	190								
★	385	19	9200	ES1901	STR	9200											

APPROACH SLAB # 1

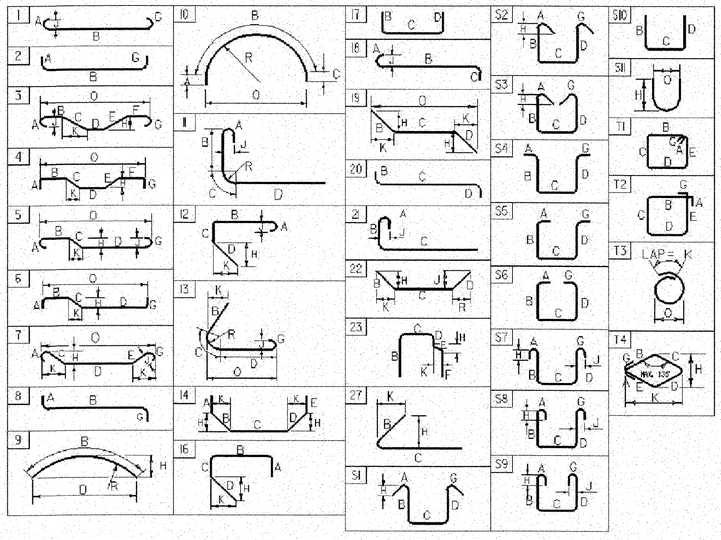
ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
★	22	16	11388	EAS160	STR												
★	43	29	6225	EAS290	1	375	5850							300			

APPROACH SLAB # 2

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
★	22	16	11388	EAS160	STR												
★	43	29	6225	EAS290	1	375	5850							300			

~ NOTES ~

1. 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-SI). ALL BARS SHALL BE GRADE 420, UNLESS OTHERWISE DESIGNATED.
2. 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".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ★ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. ● DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. "E" IN PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

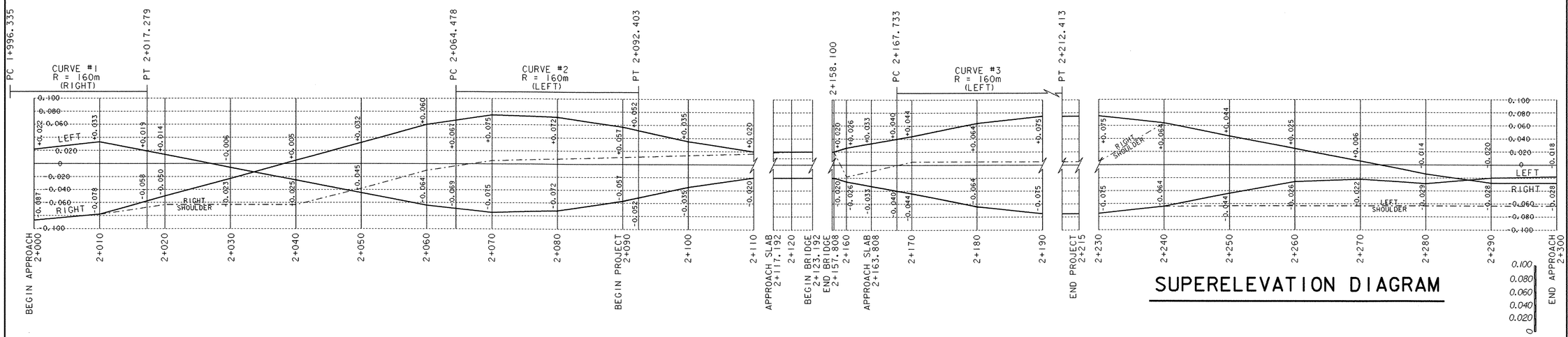
BAR SIZE	NOMINAL MASS (Kg/m)	NOMINAL DIMENSIONS ROUND SECTION DIAMETER (mm)	CROSS SECTIONAL AREA (mm²)	PERIMETER (mm)
#10	0.560	9.5	71	29.84
#13	0.994	12.7	129	39.90
#16	1.552	15.9	199	49.95
#19	2.235	19.1	284	60.00
#22	3.042	22.2	387	69.74
#25	3.973	25.4	510	79.80
#29	5.060	28.7	645	90.16
#32	6.404	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: **MENDON**
PROJECT NUMBER: **BRO 1443 (35)**

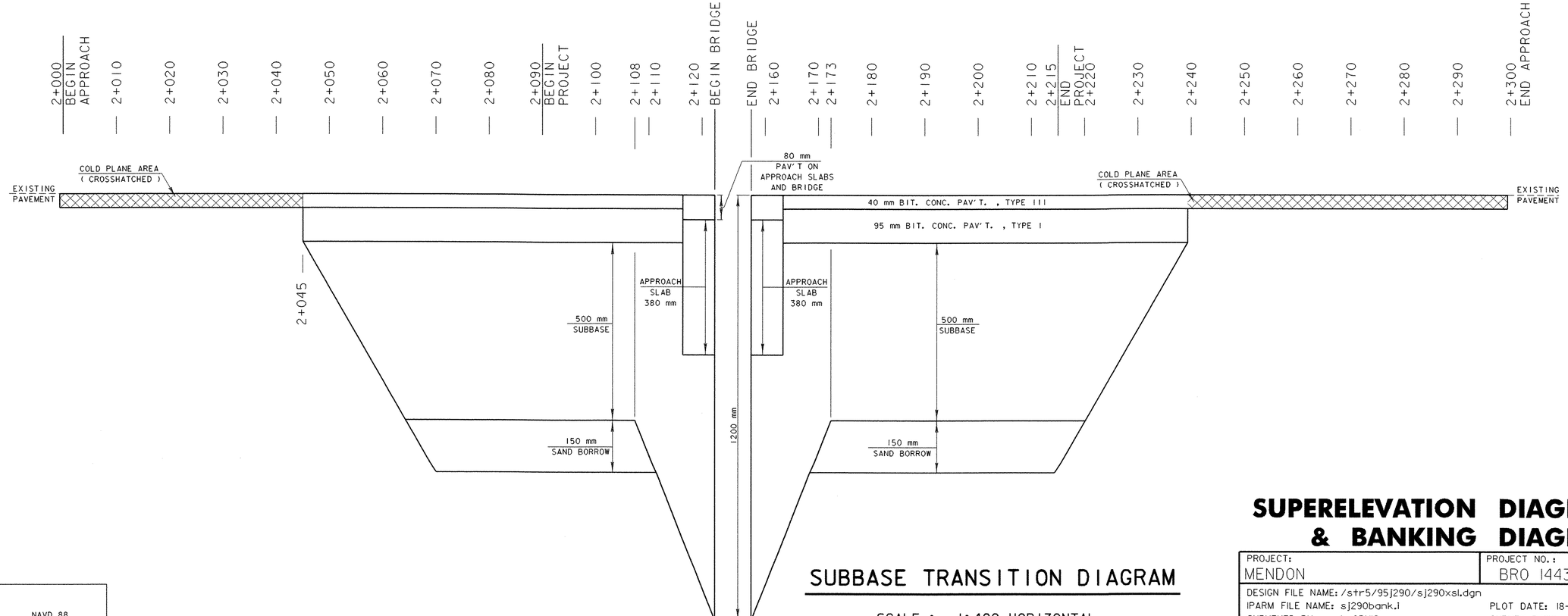
FILE NAME: /str5/95j290/sj290rss.xls
PROJECT LEADER: CRAIG KELLER
DESIGNED BY: K. RUTTER
REINFORCING STEEL SCHEDULE SHEET

PLOT DATE: 10/13/2005
DRAWN BY: K. RUTTER
CHECKED BY: 0
SHEET 62 OF 94

Metric



SUPERELEVATION DIAGRAM



SUBBASE TRANSITION DIAGRAM

SCALE : 1:400 HORIZONTAL
1:6 VERTICAL

DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD 83/92

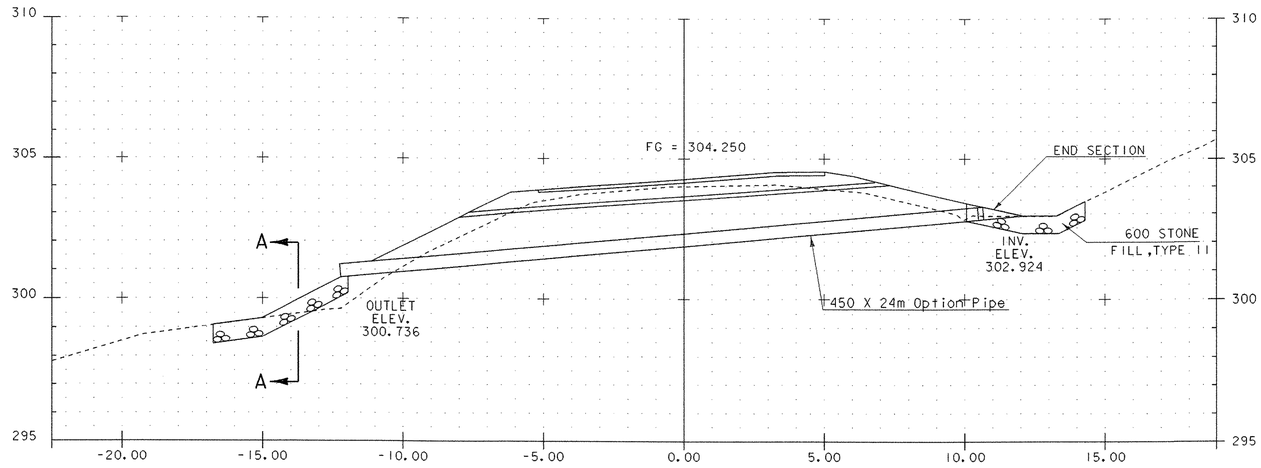
SUPERELEVATION DIAGRAM & BANKING DIAGRAM

PROJECT:	PROJECT NO.:
MENDON	BRO 1443(35)

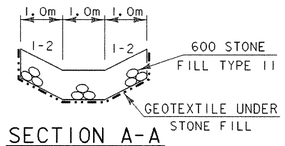
DESIGN FILE NAME: /str5/95j290/sj290xsl.dgn
IPARM FILE NAME: sj290bank.i
SURVEYED BY: L. ORVIS
SQUAD LEADER: C. KELLER
BANKING DIAGRAM & MATERIAL TRANSITIONS

PLOT DATE: 18-NOV-2005
SURVEY DATE: 2/96
DRAWN BY: R. H. PELLETT
SHEET: 63 OF 94

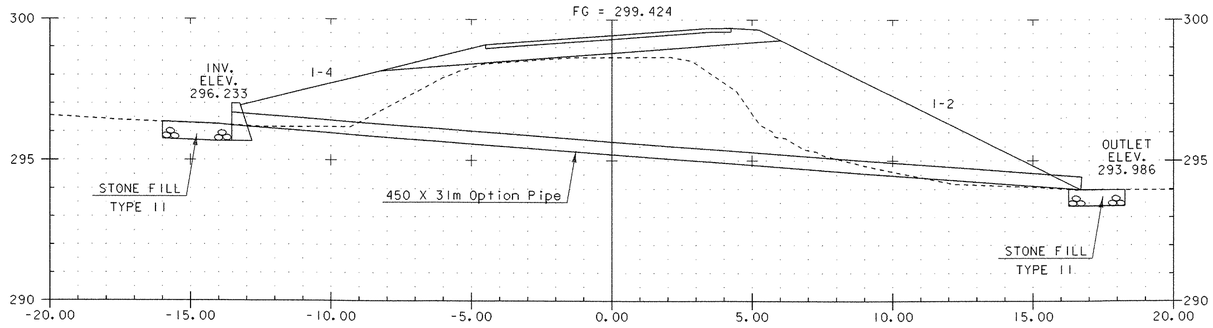
Metric



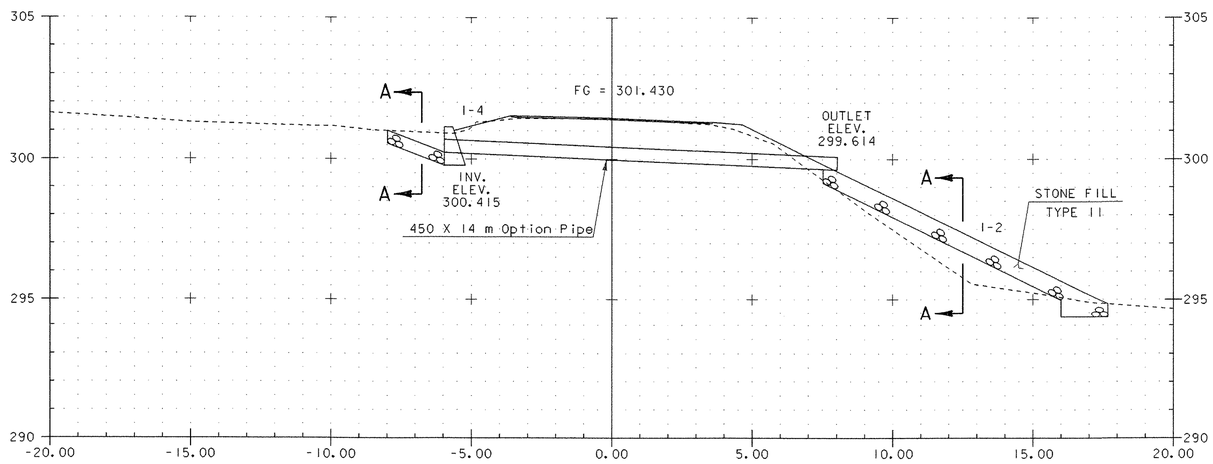
2+206
ASKEW 90°



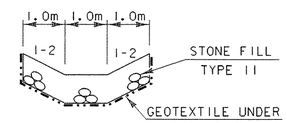
SECTION A-A



2+071
ASKEW 80°



2+029
ASKEW 110°

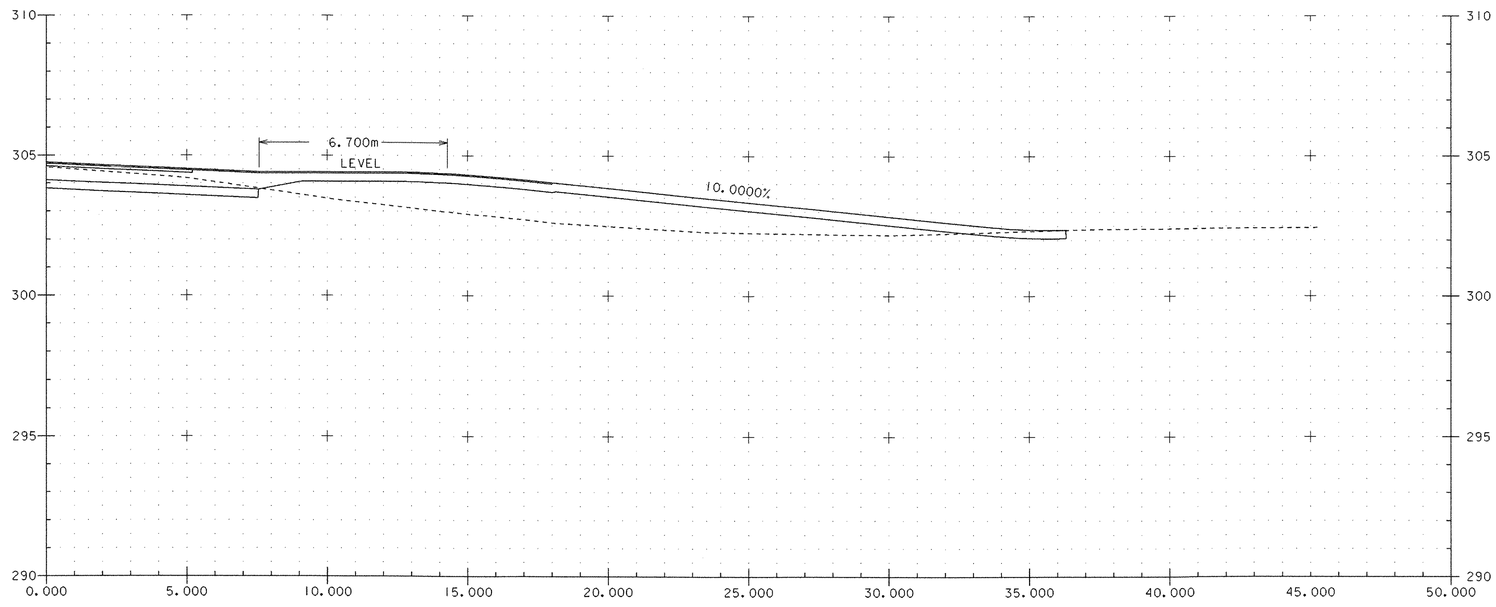


SECTION A-A



PIPE SECTIONS

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95J290/sj290bdr.dgn IPARM FILE NAME: SJ290PX1.I	PLOT DATE: 18-NOV-2005
PIPE SECTIONS	SHEET: 64 OF 94

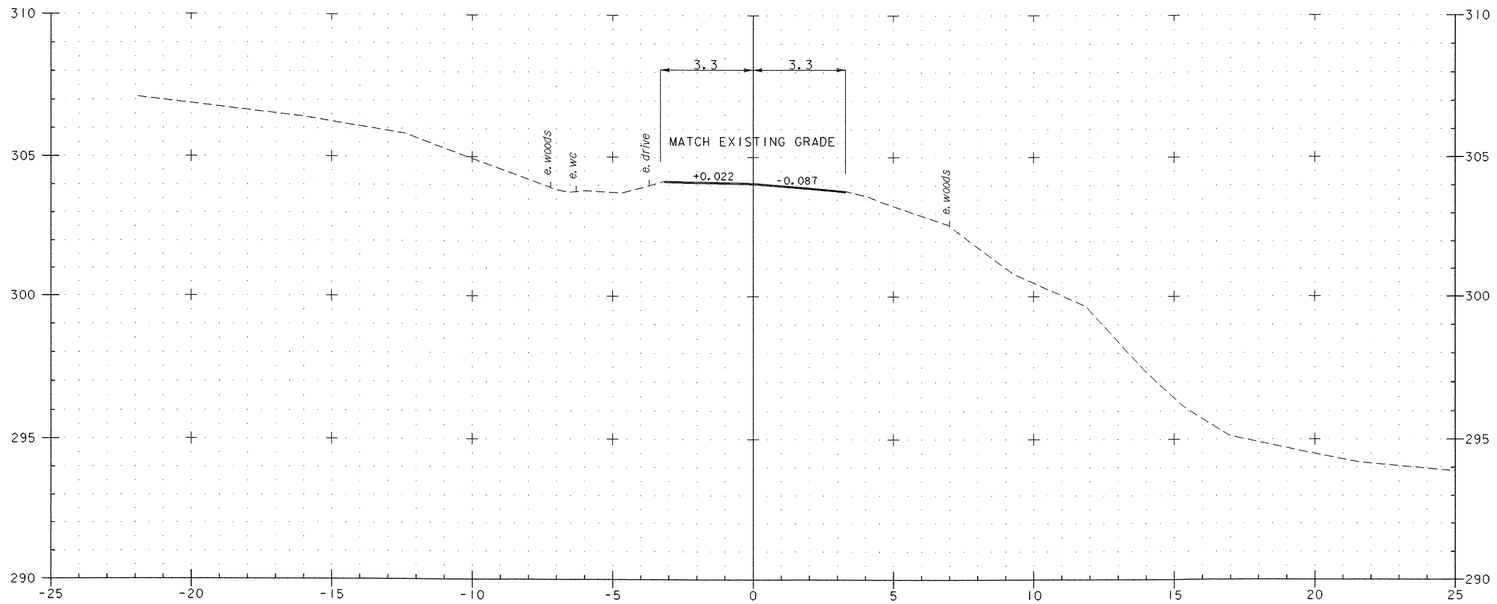


2+210.000 RIGHT
SKEWED 140° Rt.

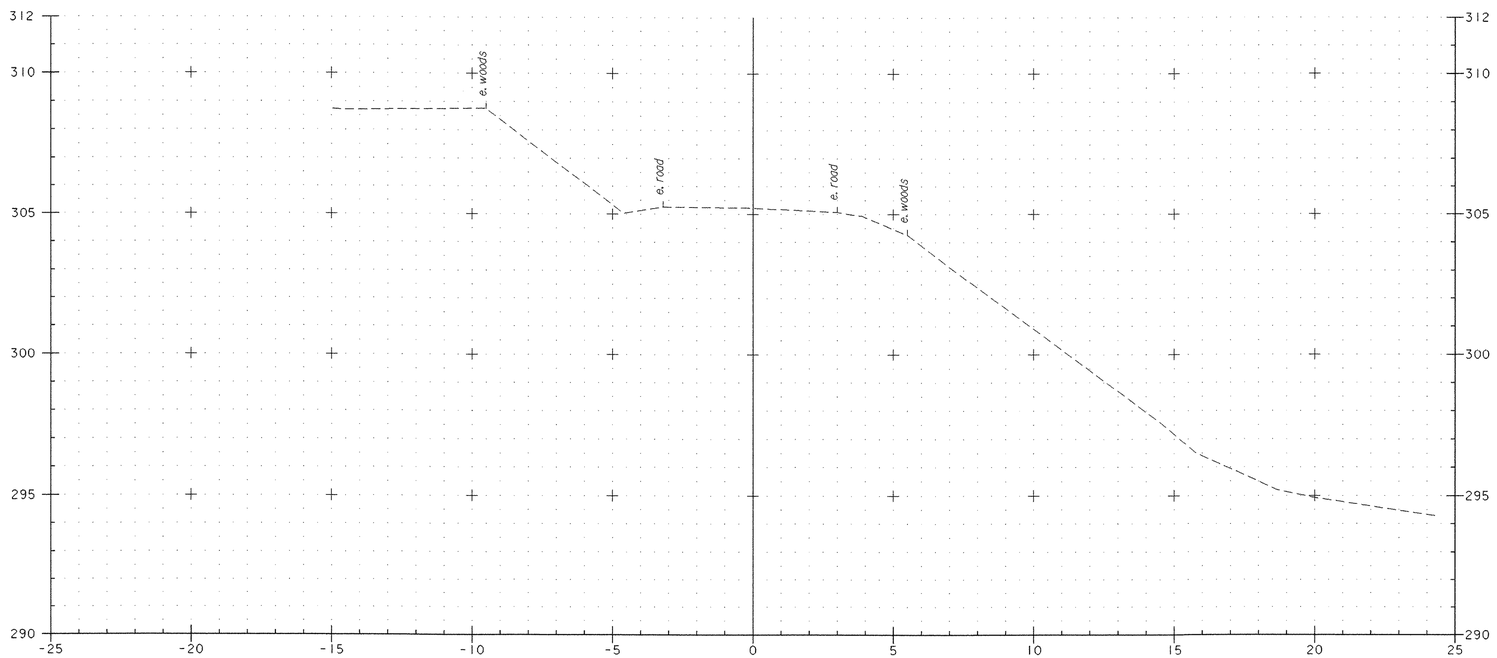
DRIVE SECTION AT WATER PLANT

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290xsl.dgn IPARM FILE NAME: SJ290SXS.I	PLOT DATE: 18-NOV-2005
SKEWED CROSS SECTION AT 2+210.000	
	SHEET: 65 OF 94



2+000
BEGIN APPROACH

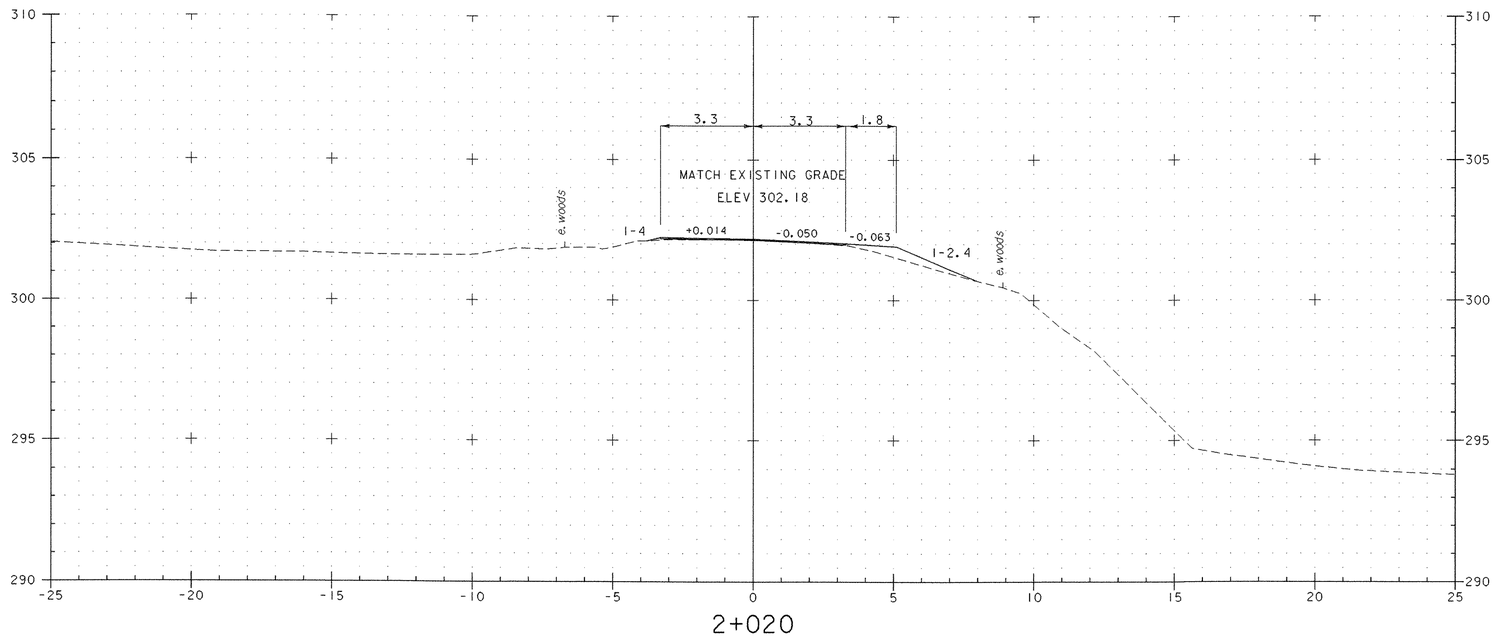


1+990

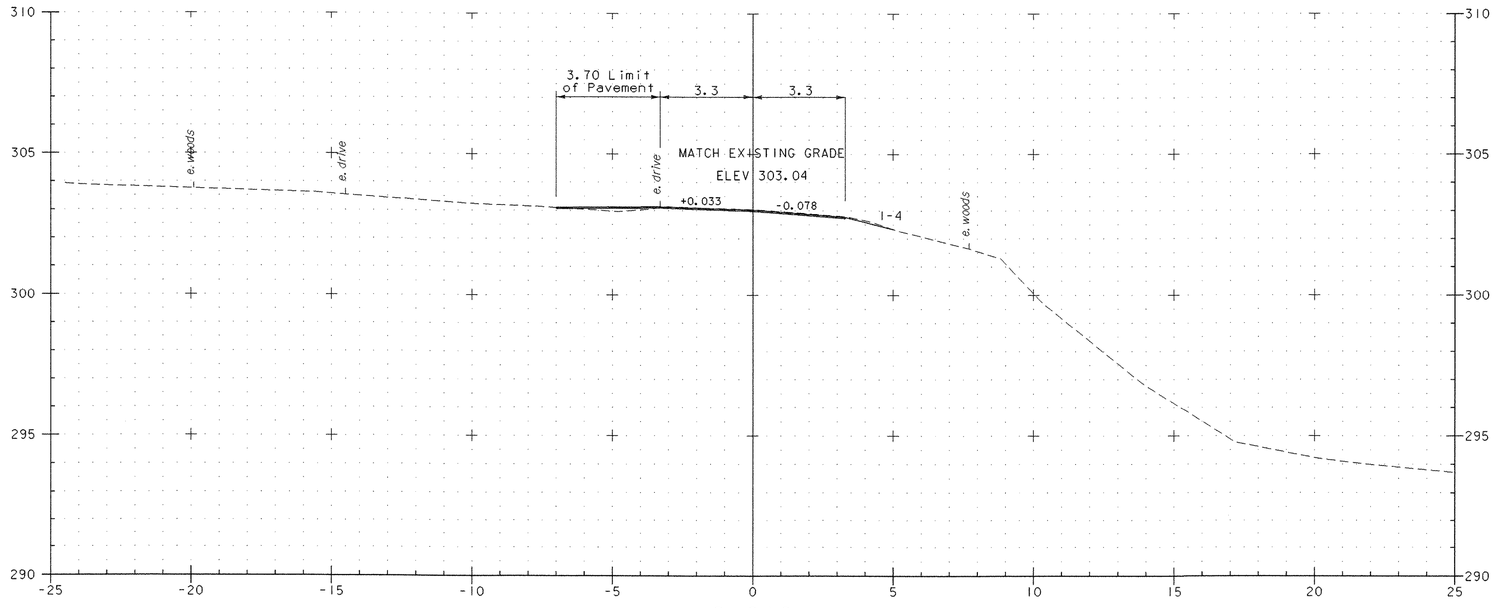
Mainline 2+000

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290M02.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 66 OF 94



2+020

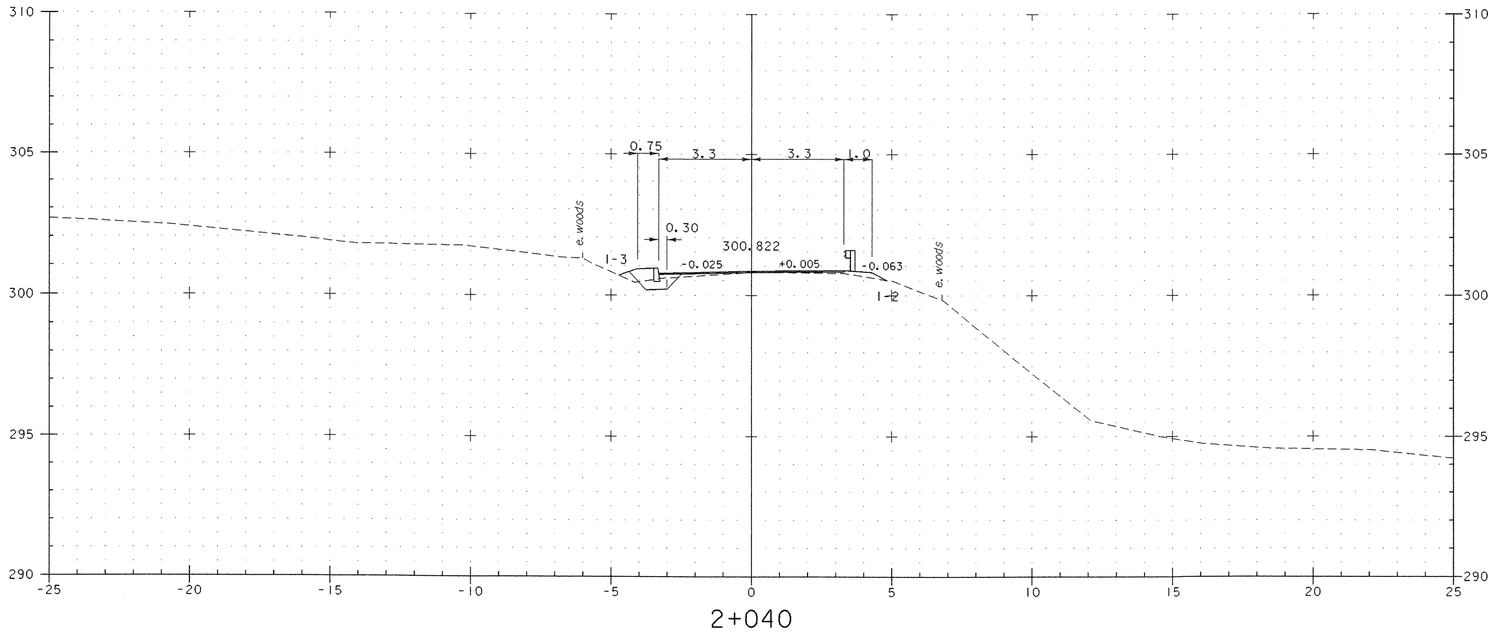


2+010

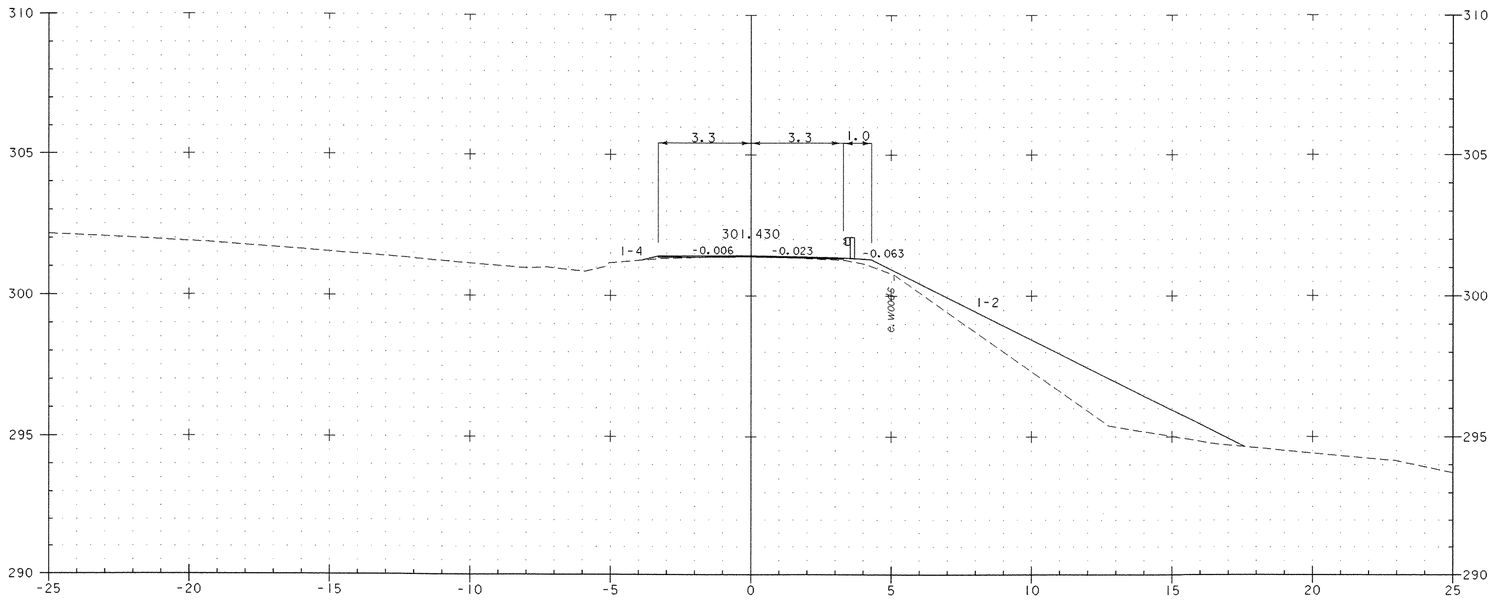
Mainline 2+010 - Mainline 2+020

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290M03.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 67 OF 94



2+040



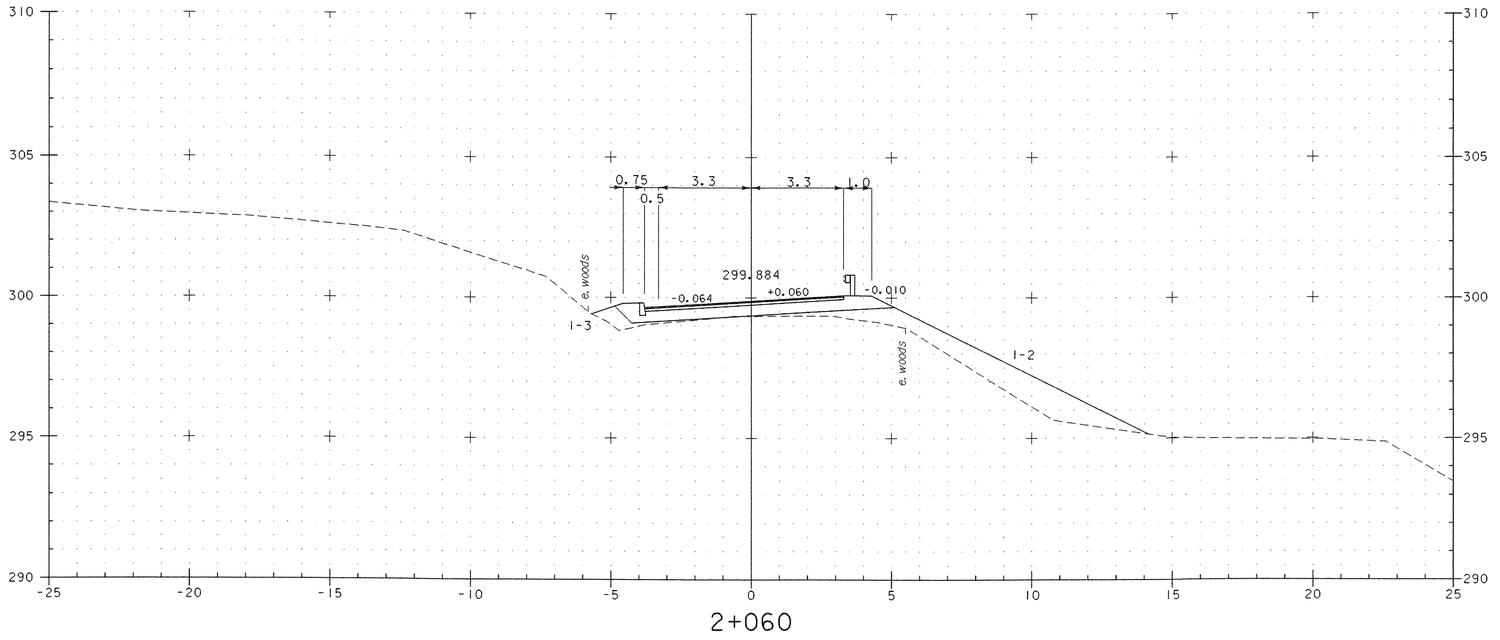
2+030

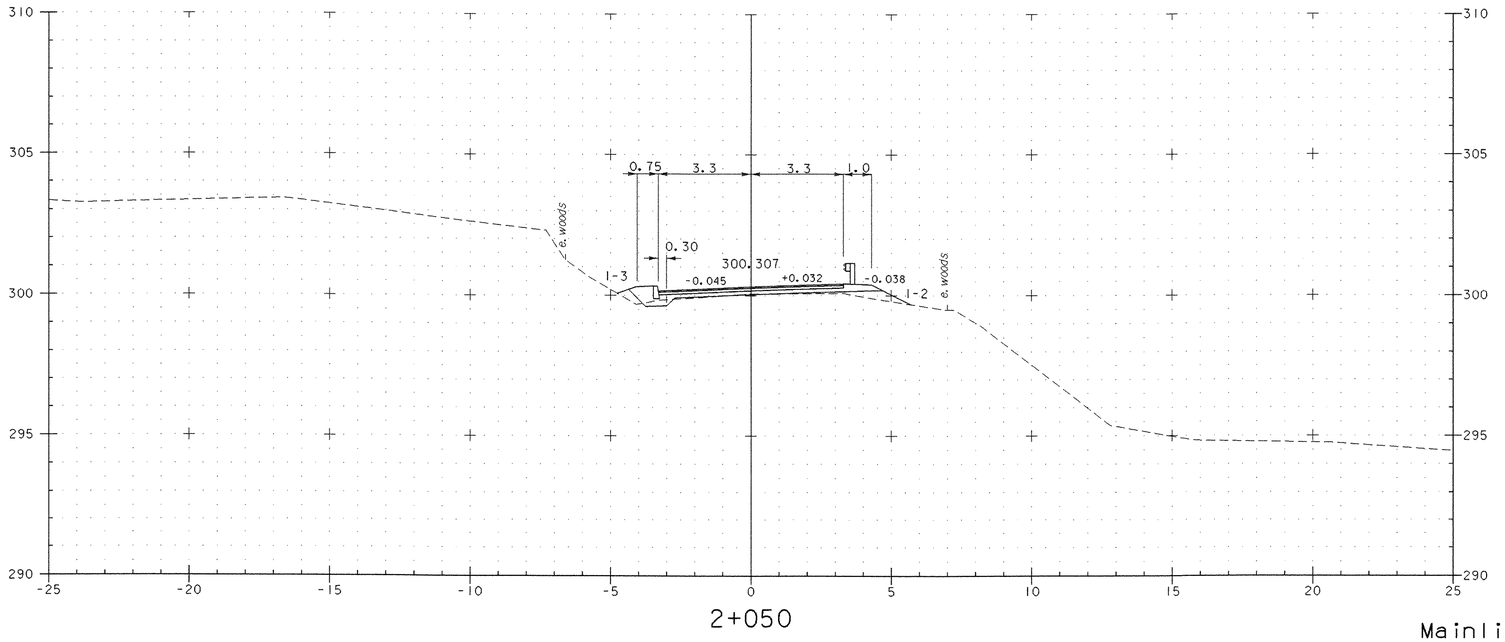
Mainline 2+030 - Mainline 2+040

0 2 4 6 8 10

SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290M04.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 68 OF 94

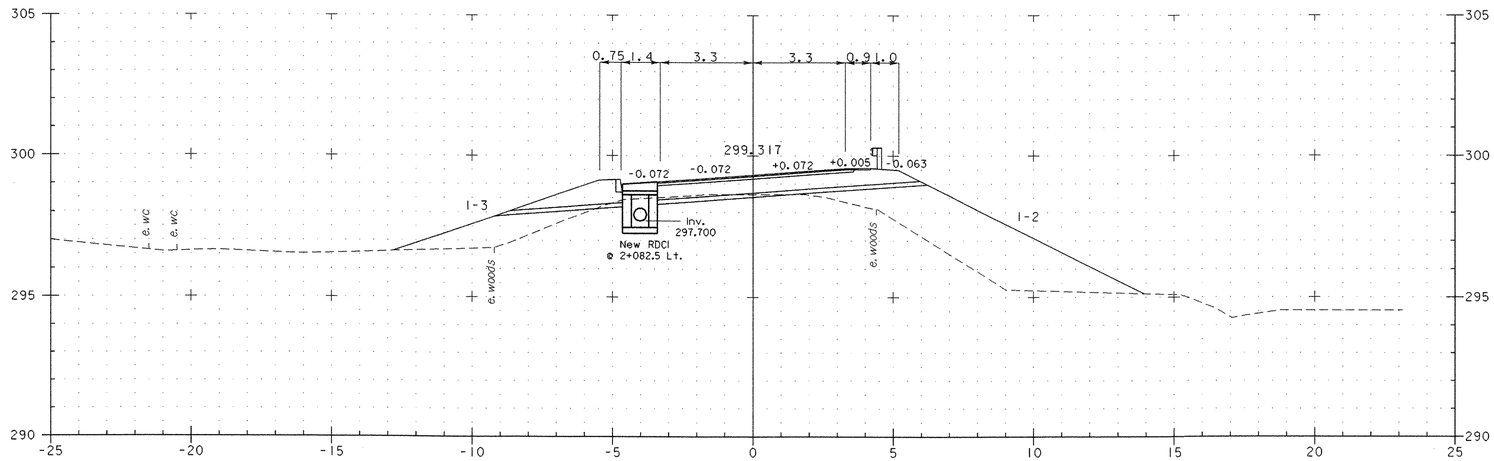




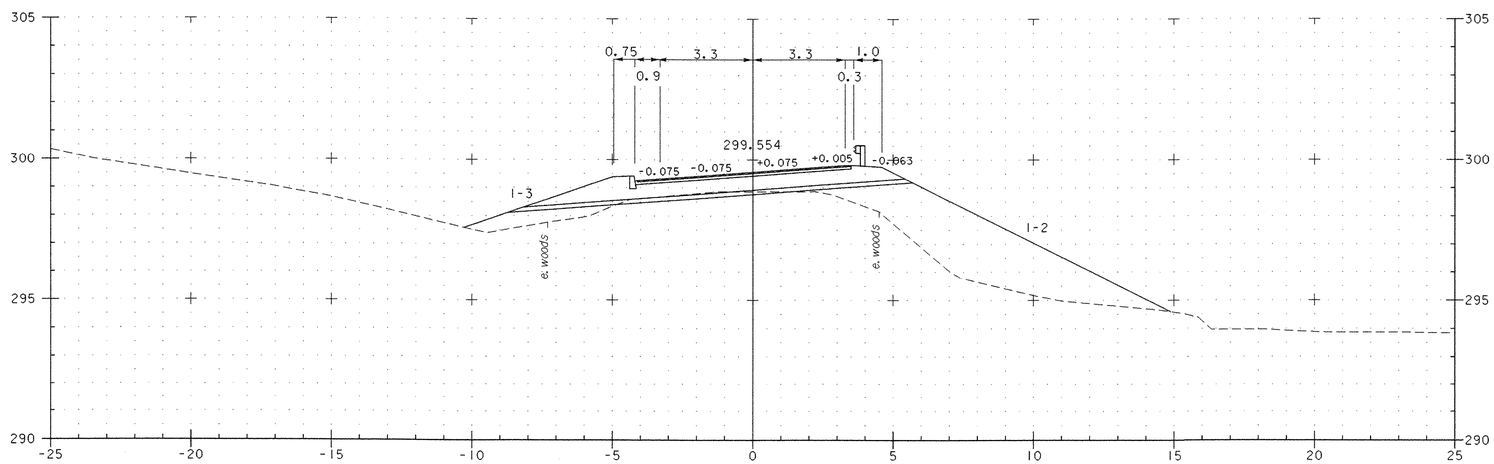
Mainline 2+050 - Mainline 2+060

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290M05.i	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 69 OF 94



2+080



2+070

END APPROACH

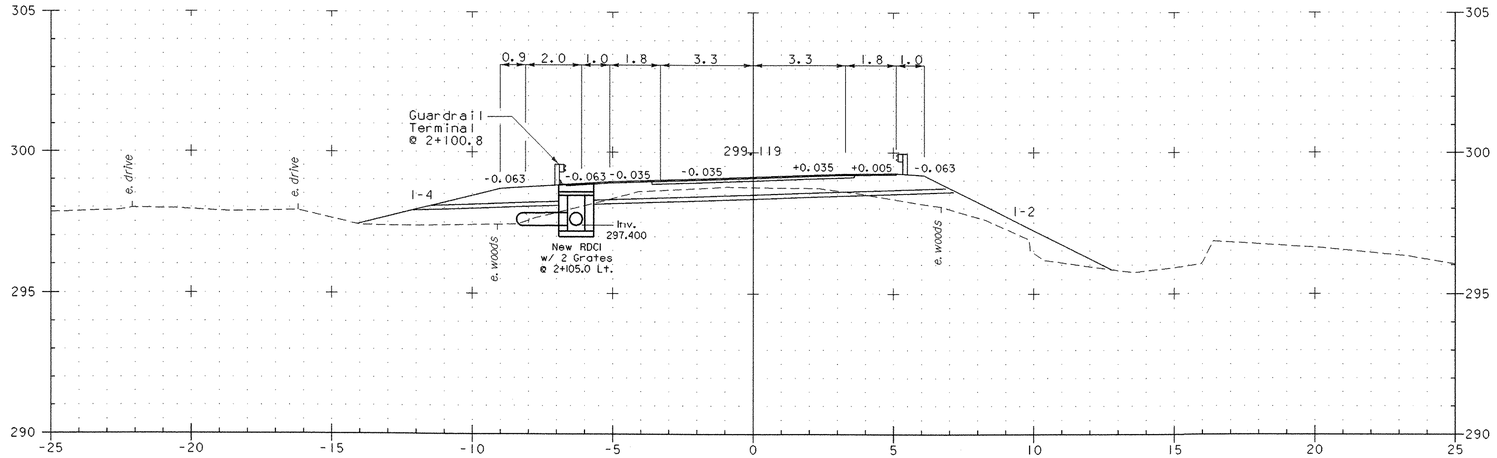
BEGIN PROJECT

Mainline 2+070 - Mainline 2+080

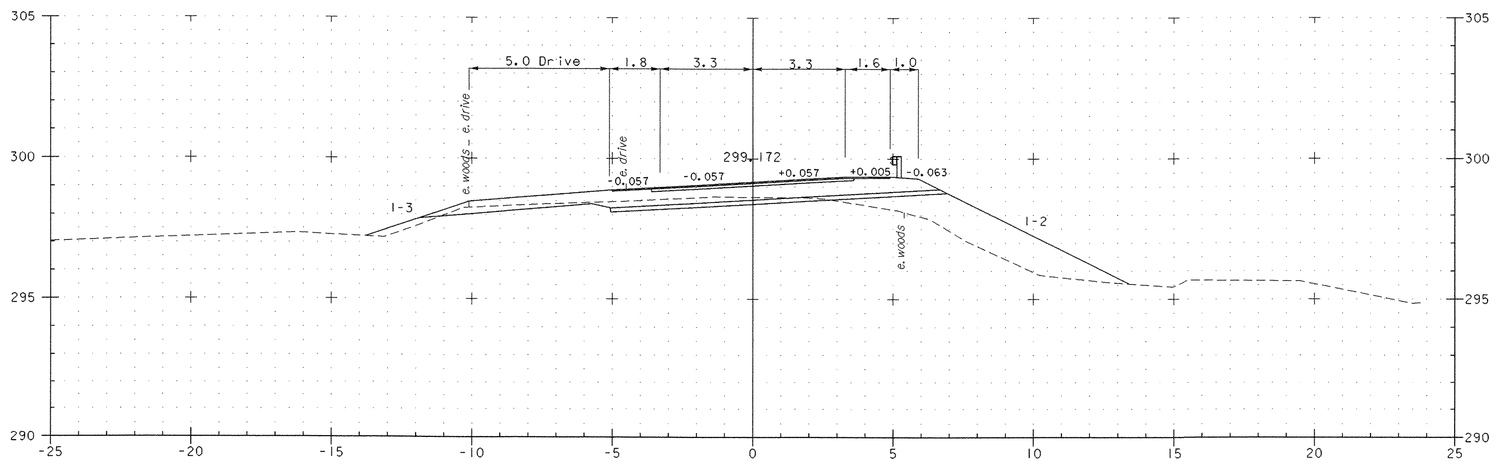
0 2 4 6 8 10

SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95js90/sj290xsl.dgn IPARM FILE NAME: SJ290M06.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 70 OF 94



2+100



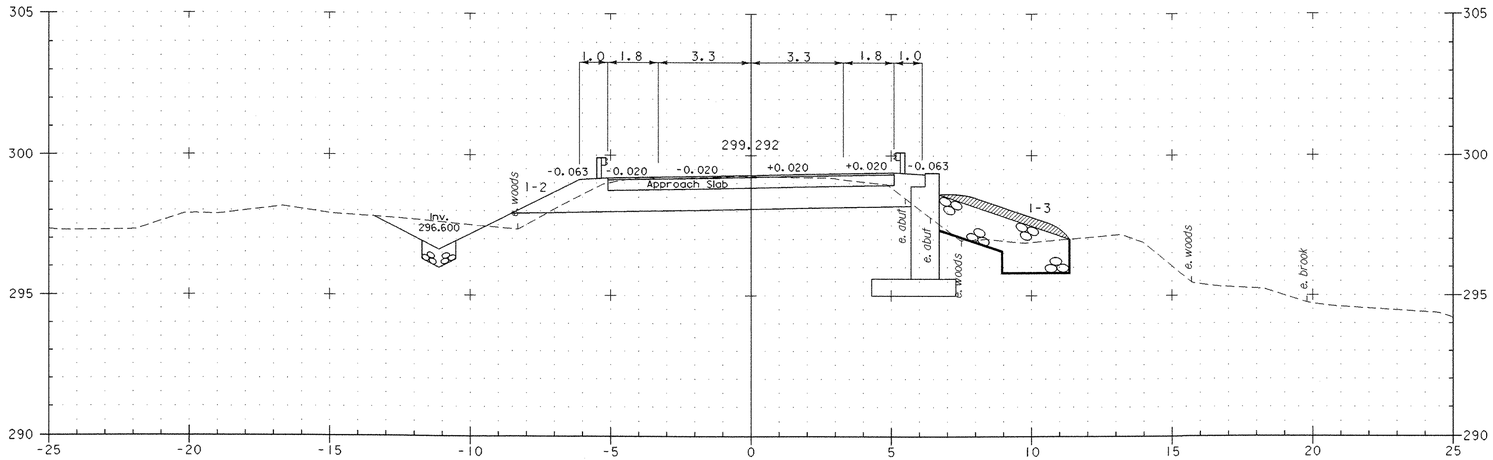
2+090

Mainline 2+090 - Mainline 2+100

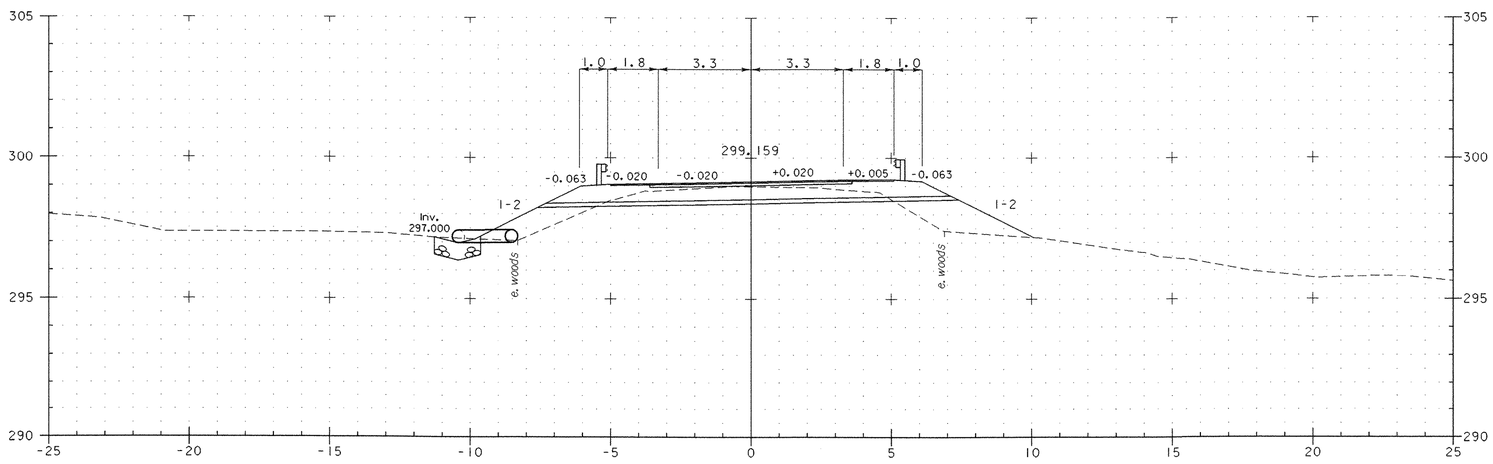
0 2 4 6 8 10

SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290M07.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 71 OF 94



2+120

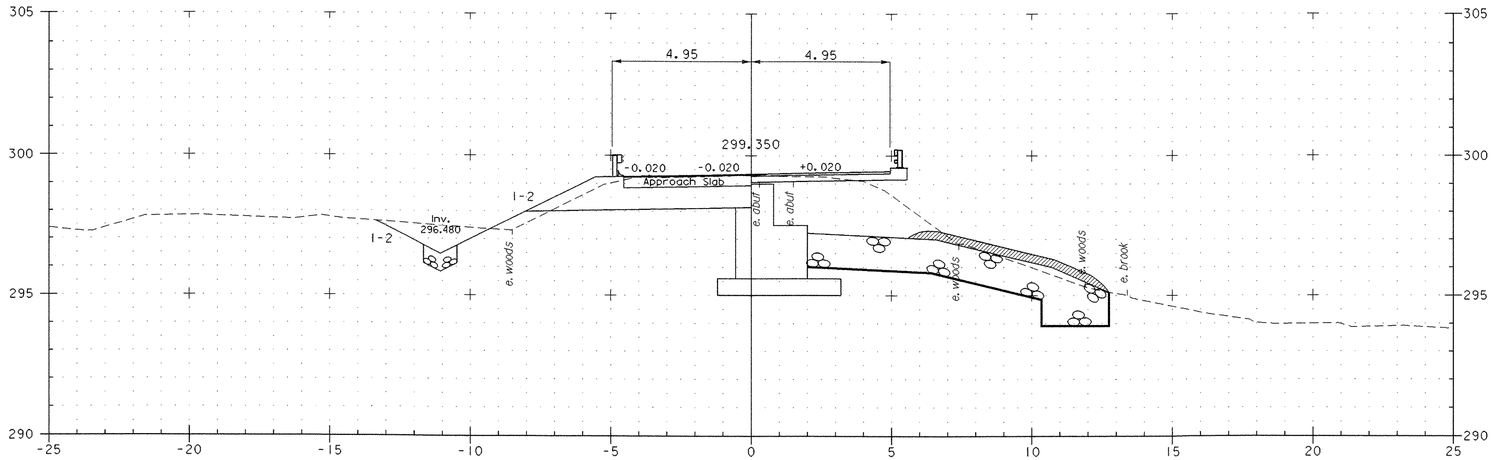


2+110

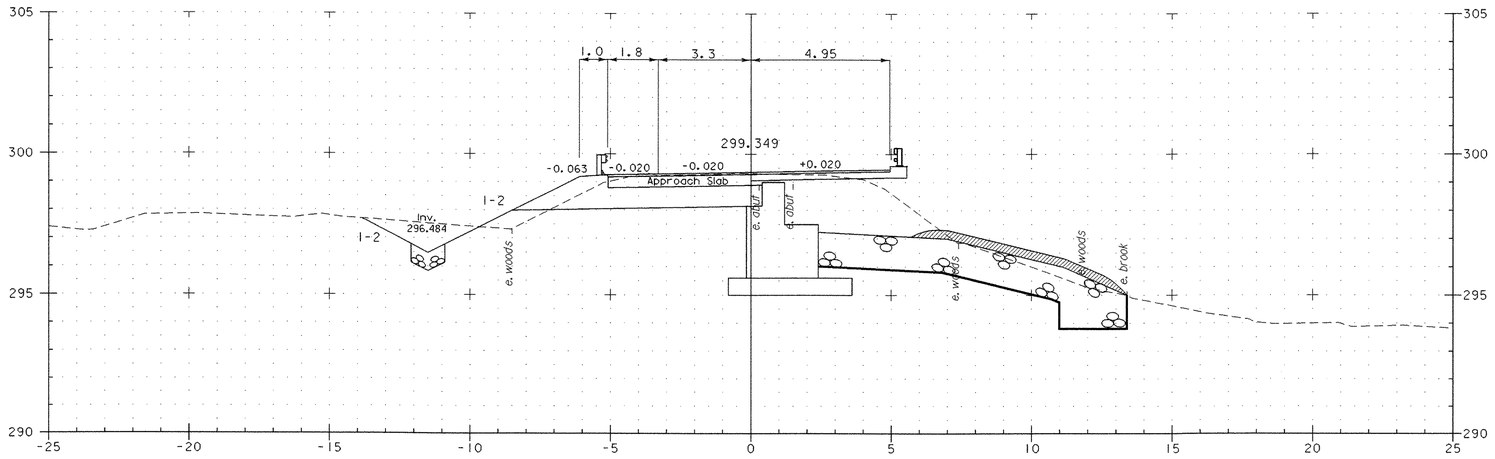
Mainline 2+110 - Mainline 2+120

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290M08.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 72 OF 94



2+123.192
BEGIN BRIDGE

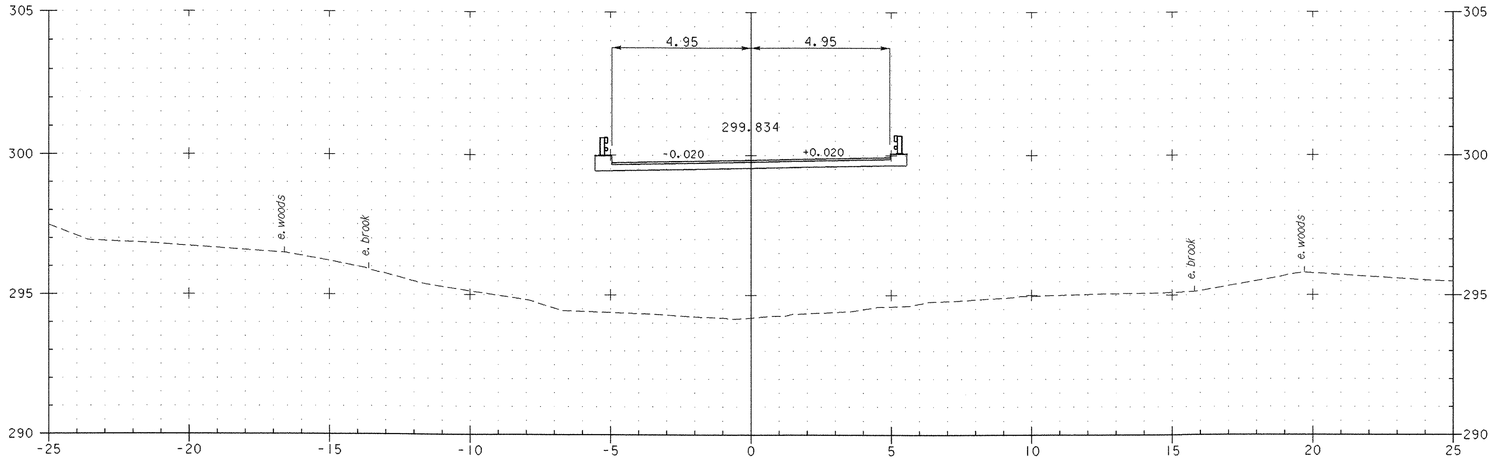


2+122.9

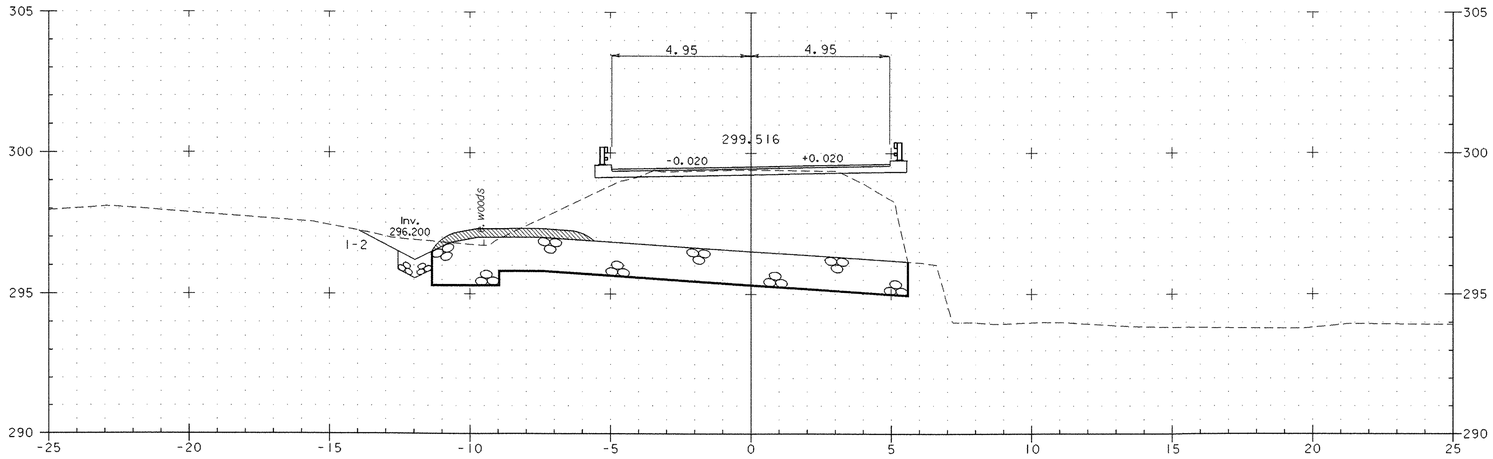
Mainline 2+122.9 - Mainline 2+123.0

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290M09.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 73 OF 94



2+140

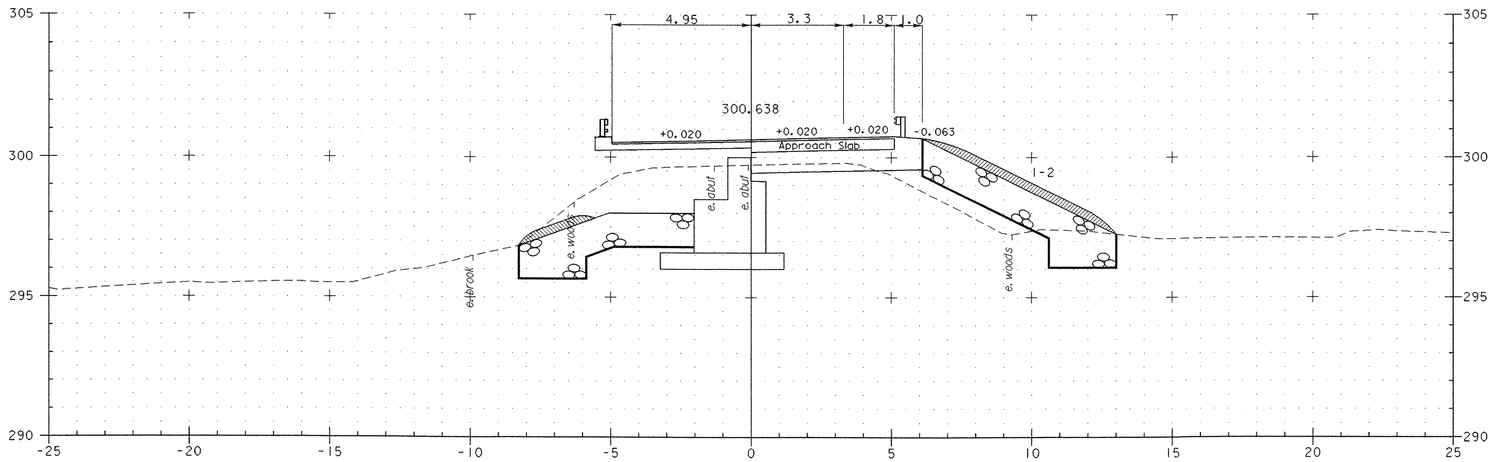


2+130

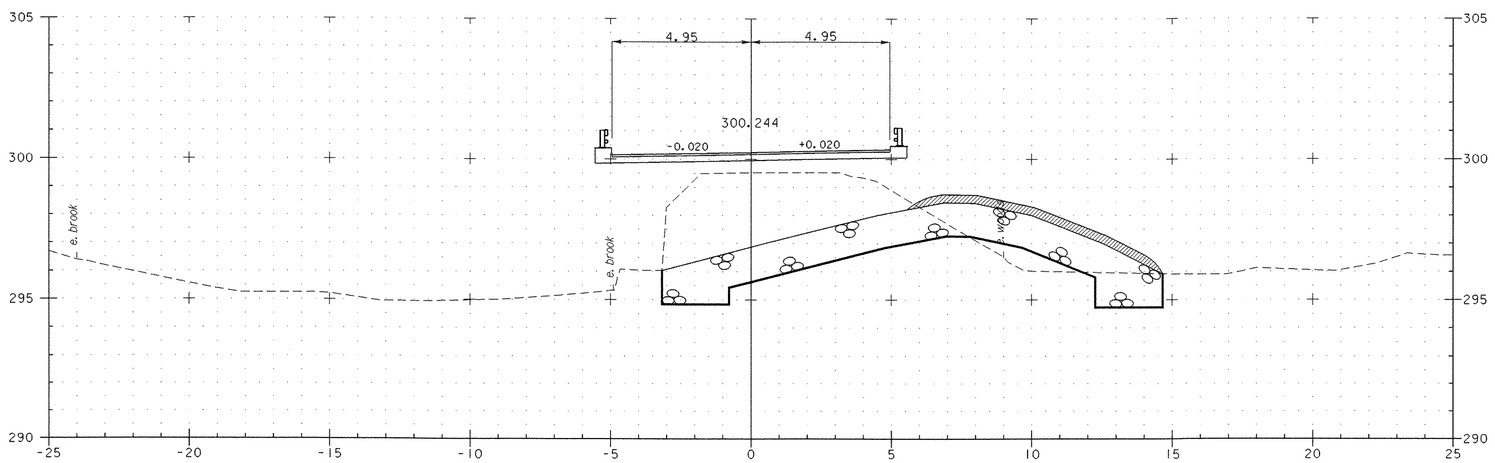
Mainline 2+130 - Mainline 2+140

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290MI0.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 74 OF 94



2+157.808
END BRIDGE

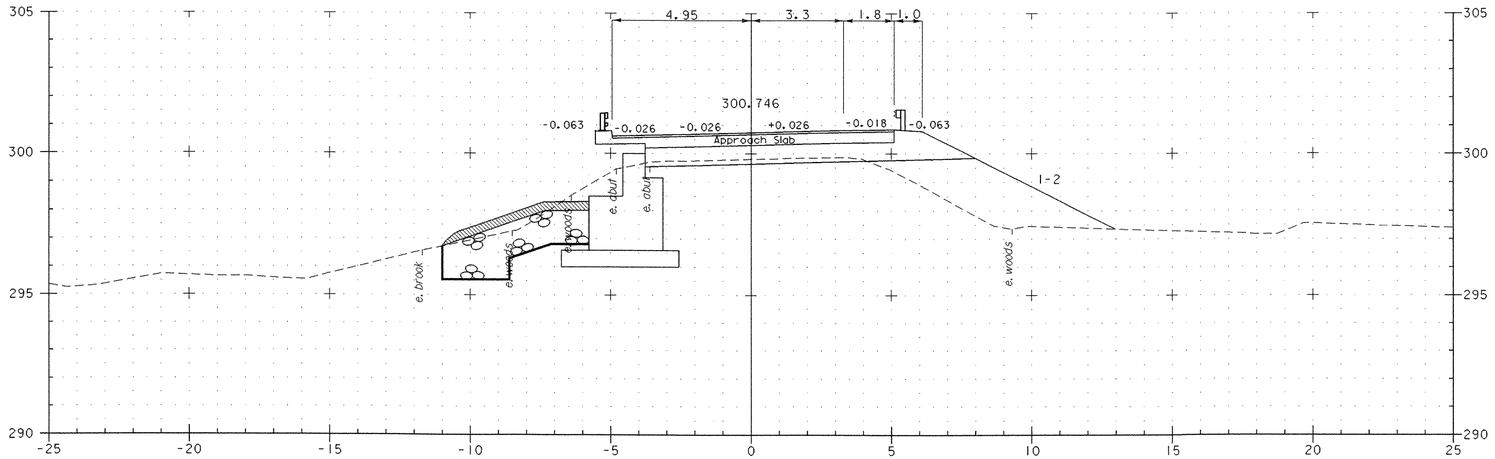


2+150

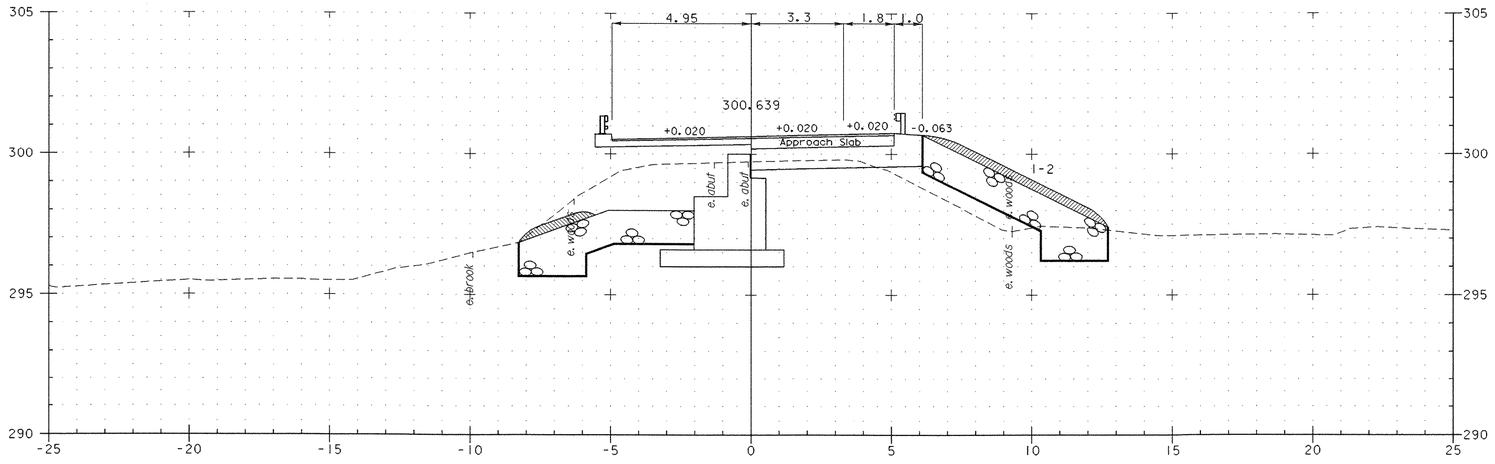
Mainline 2+150 - Mainline 2+158

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290MII.i	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 75 OF 94



2+160

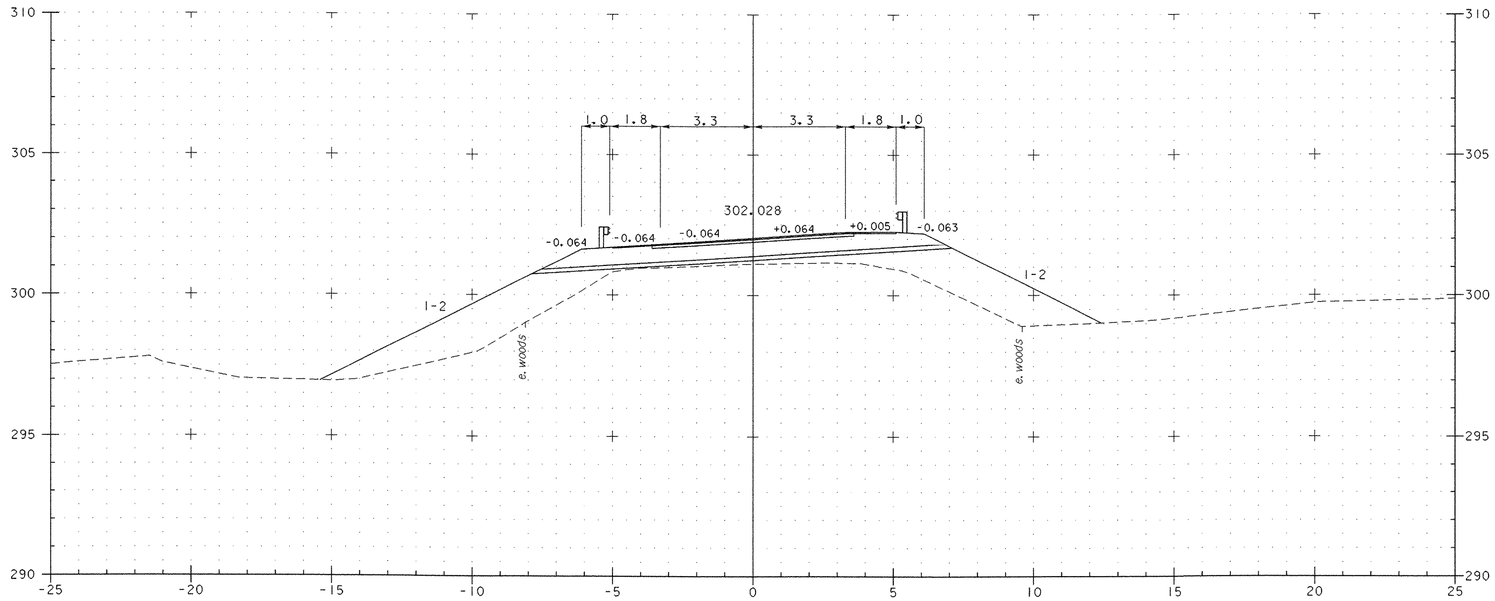


2+158.1

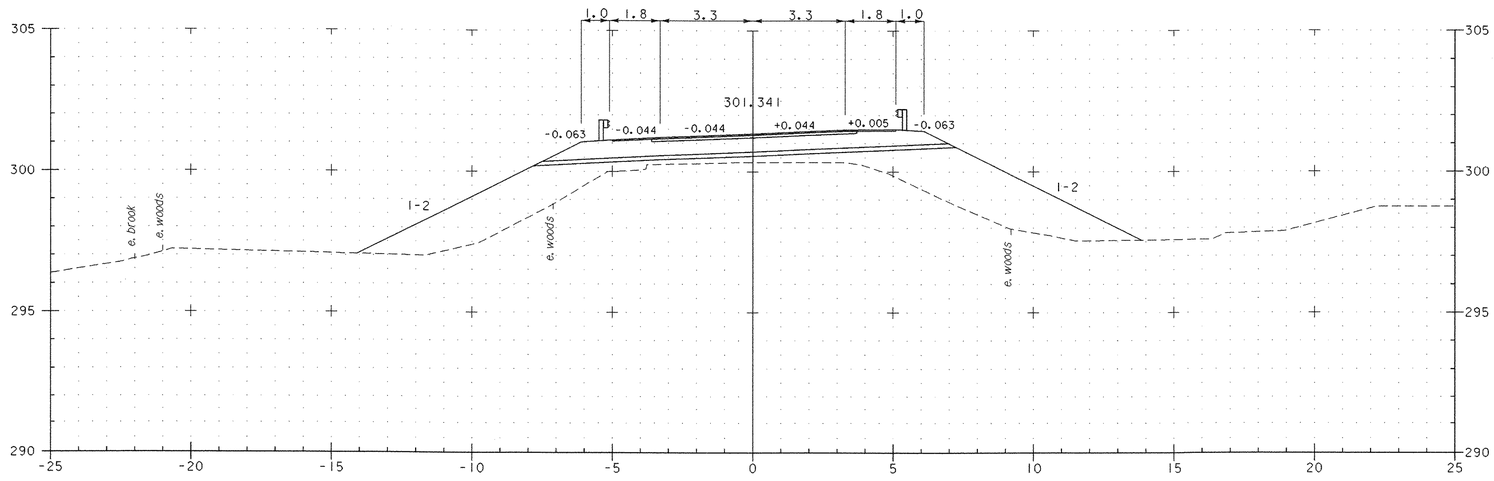
Mainline 2+158.1 - Mainline 2+160

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290MI2.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 76 OF 94



2+180

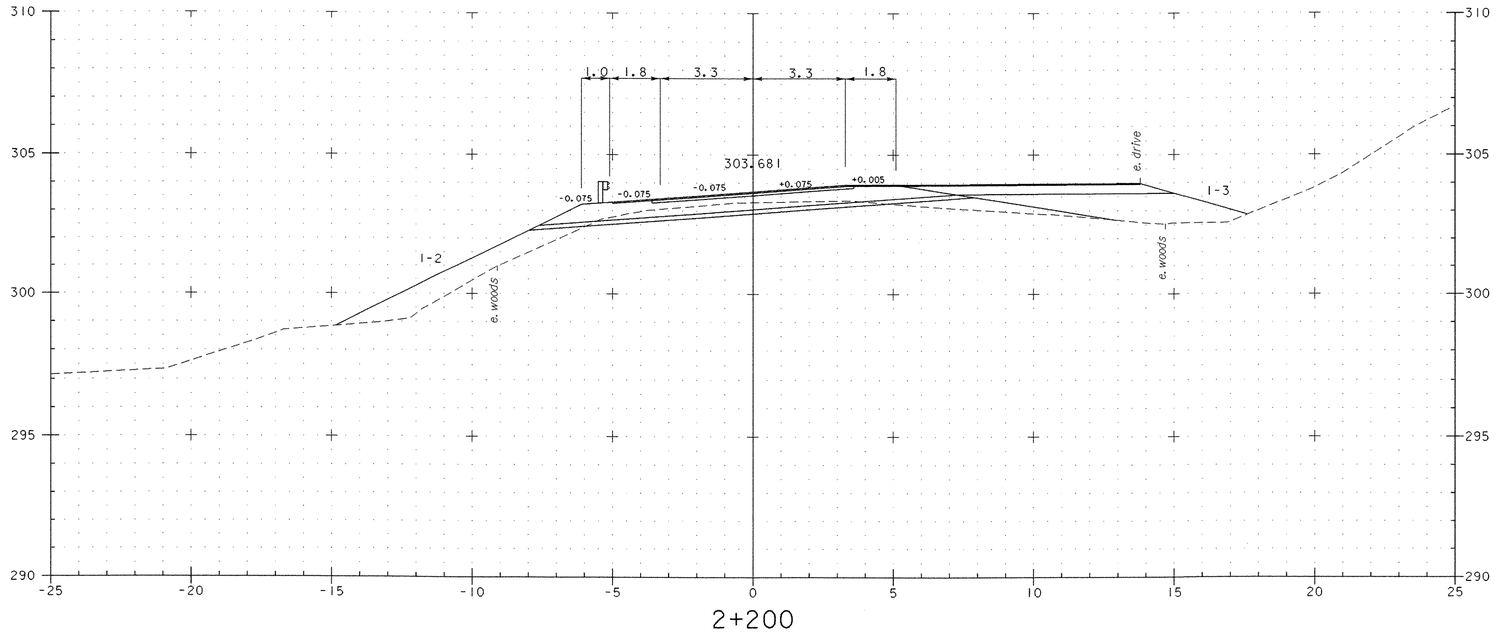


2+170

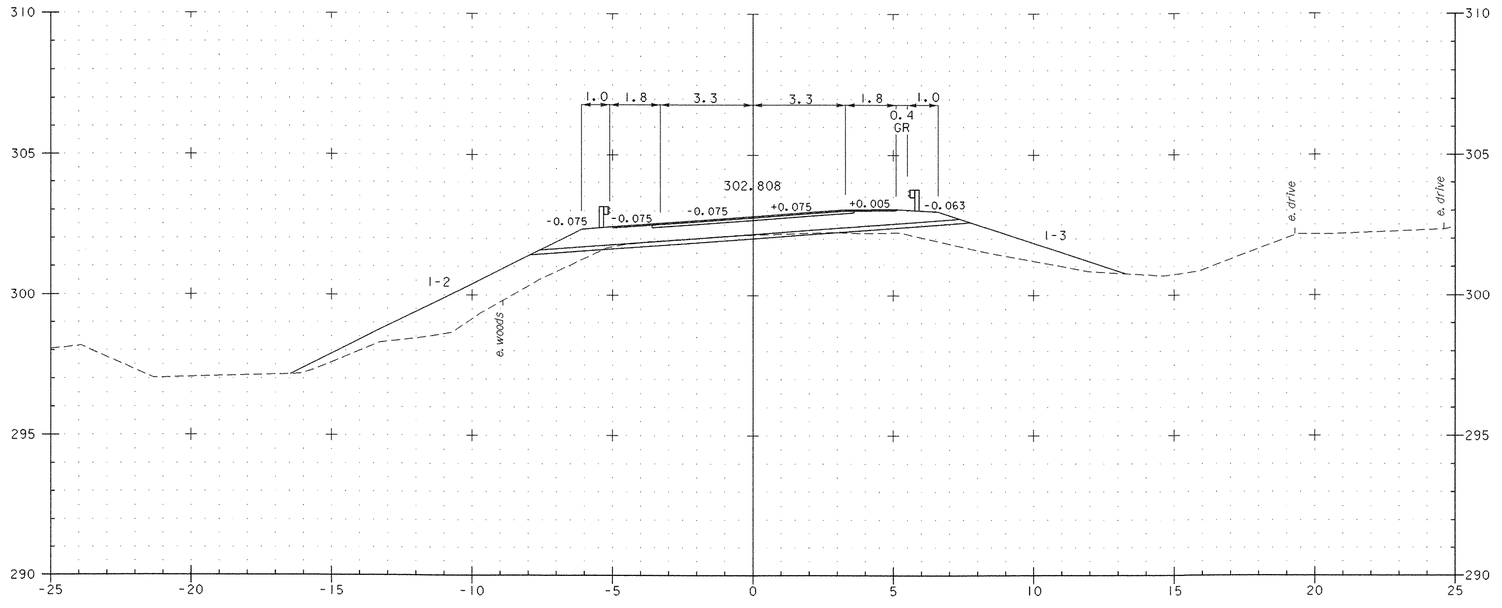
Mainline 2+170 - Mainline 2+180

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn	
IPARM FILE NAME: SJ290MI3.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 77 OF 94



2+200



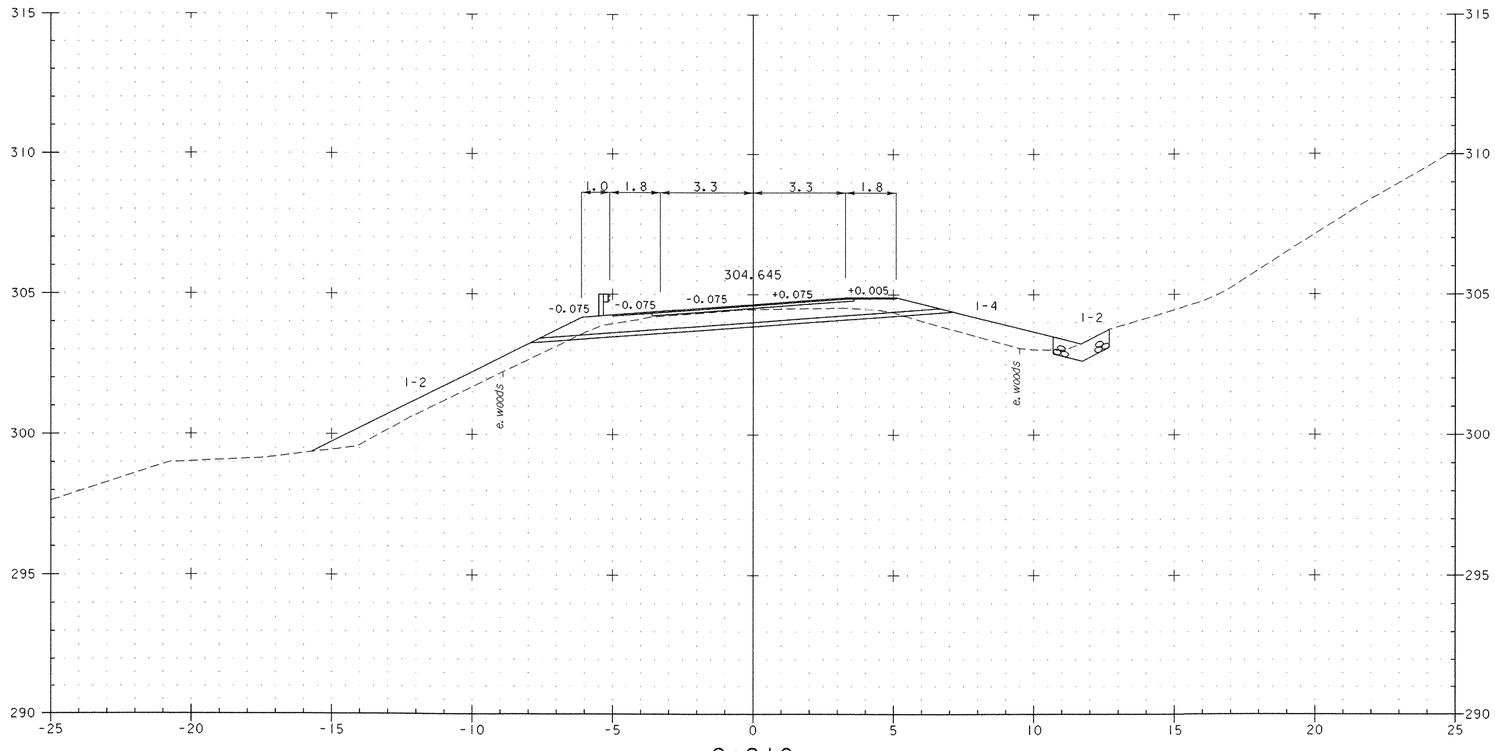
2+190

Mainline 2+190 - Mainline 2+200

0 2 4 6 8 10

SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290MI4.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 78 OF 94



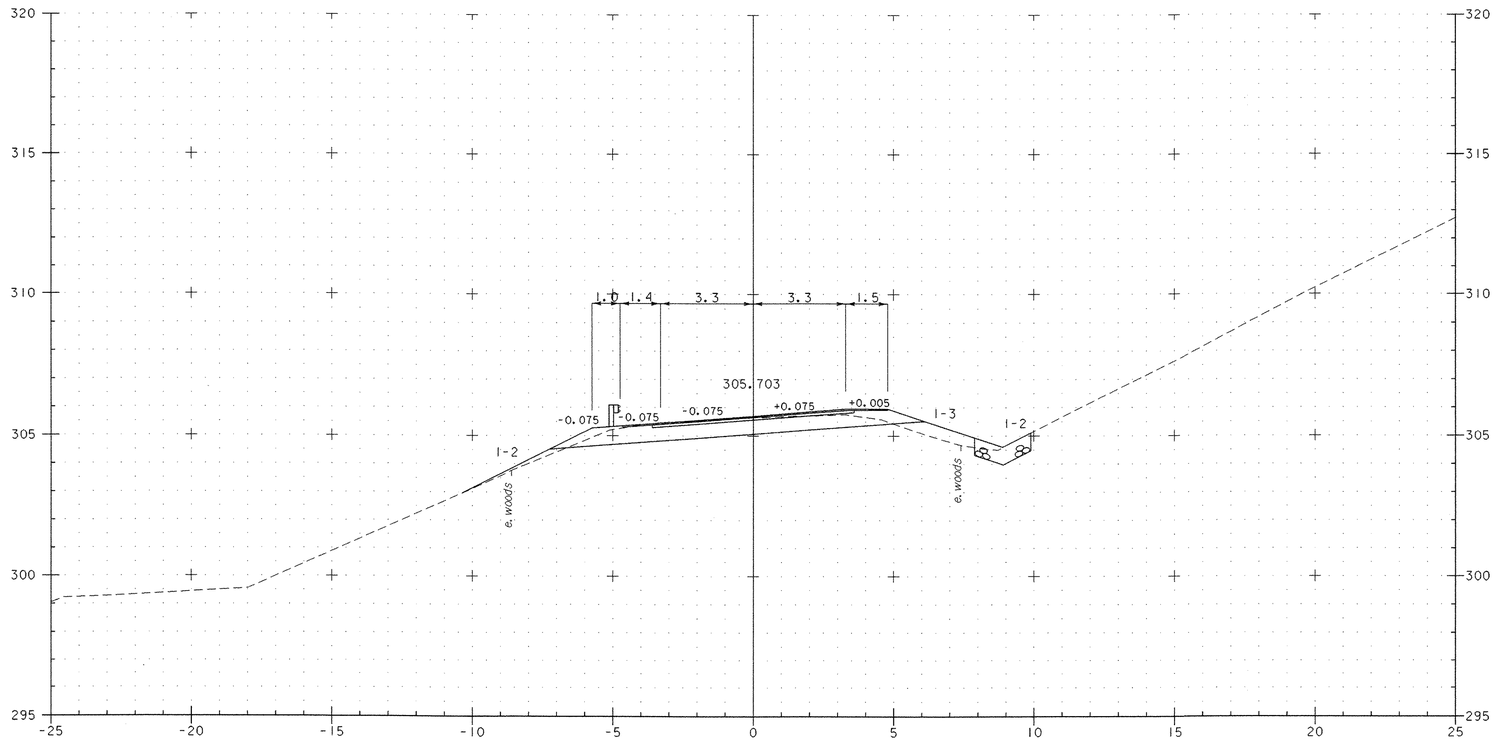
2+210

Mainline 2+210

0 2 4 6 8 10

SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290MI5.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 79 OF 94



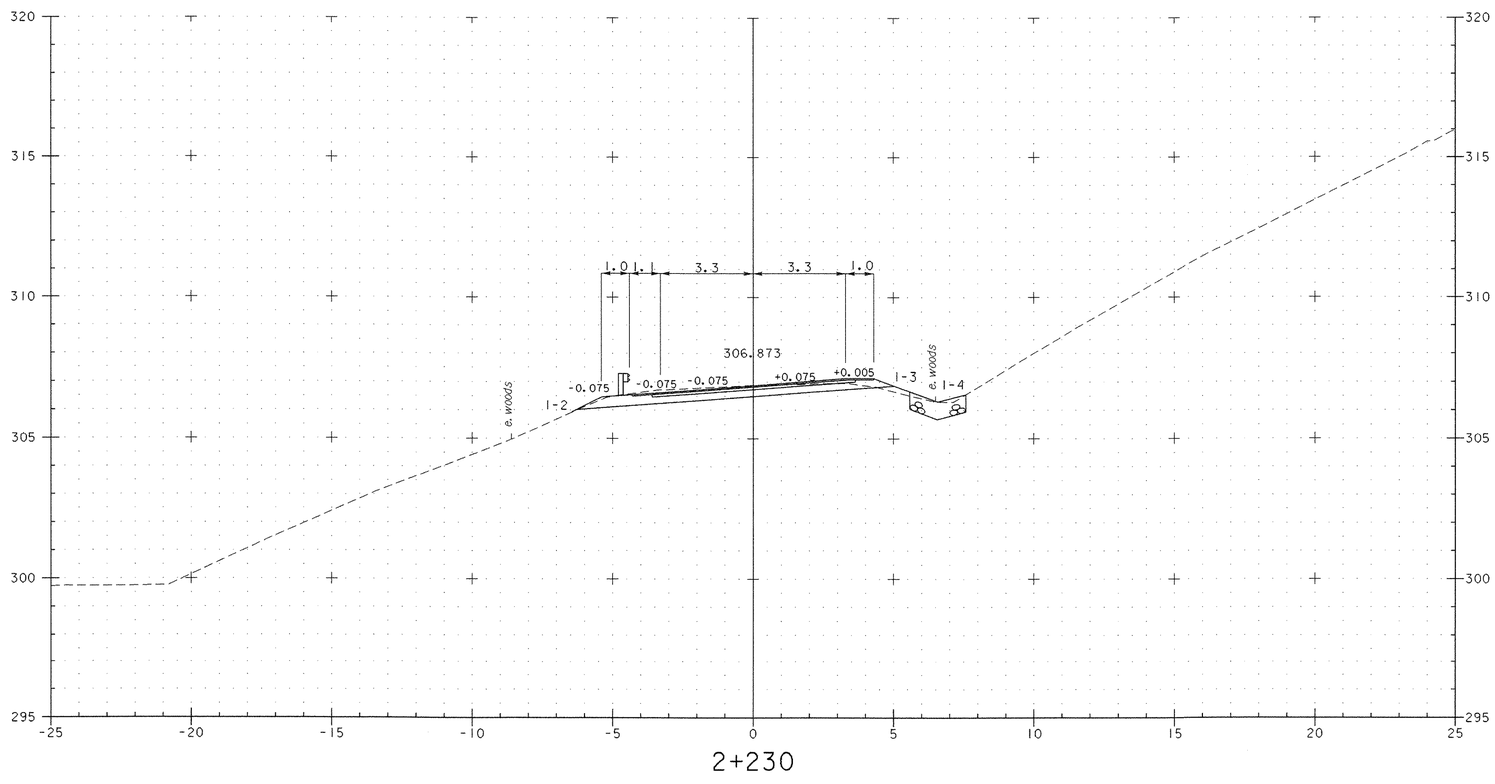
2+220

2+215
END PROJECT
BEGIN APPROACH

0 2 4 6 8 10
SCALE 1:100

Mainline 2+220

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290MI6.i	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 80 OF 94



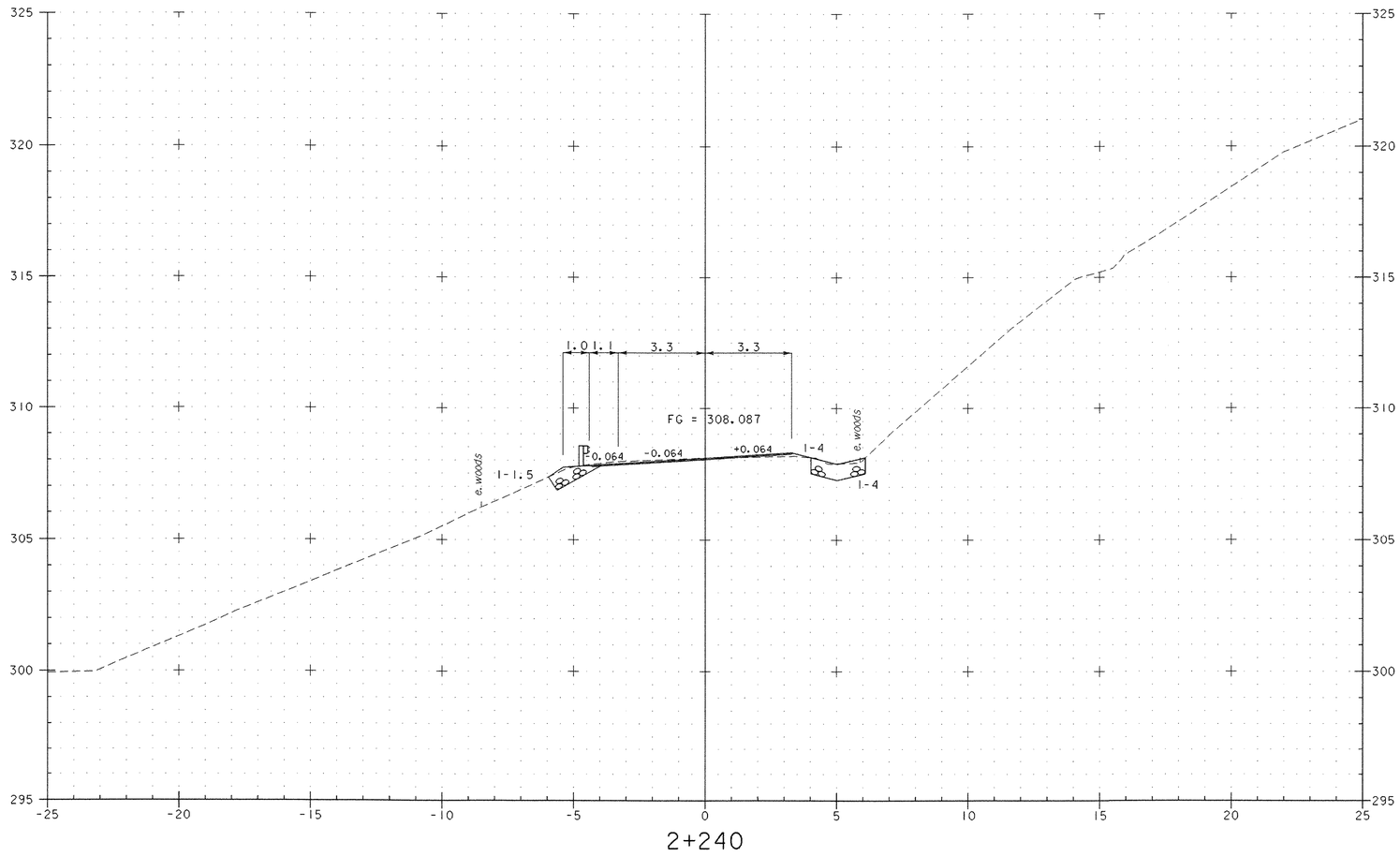
2+230

0 2 4 6 8 10

SCALE 1:100

Mainline 2+230

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290MI7.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 81 OF 94

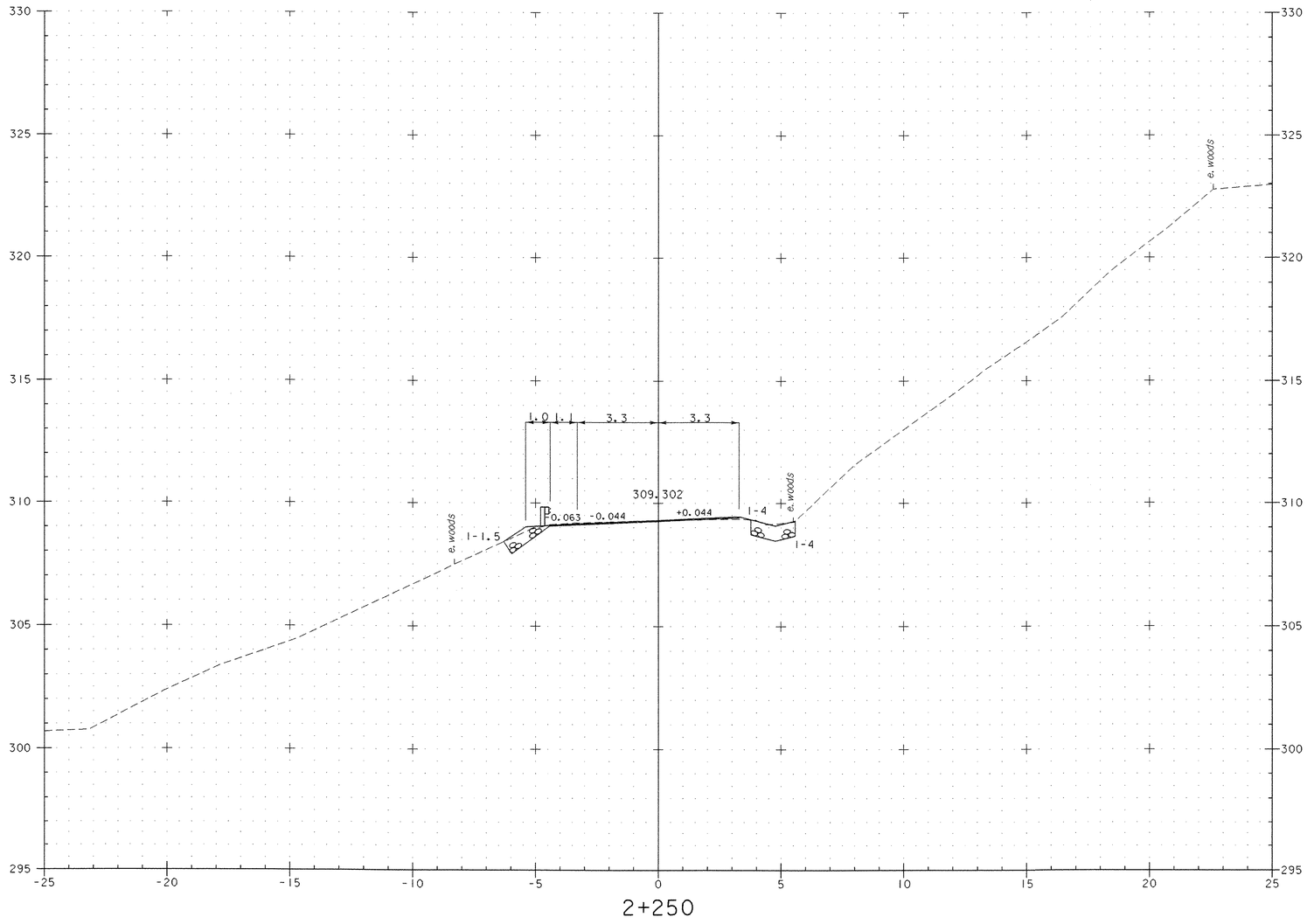


2+240

Mainline 2+240

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290MI8.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 82 OF 94



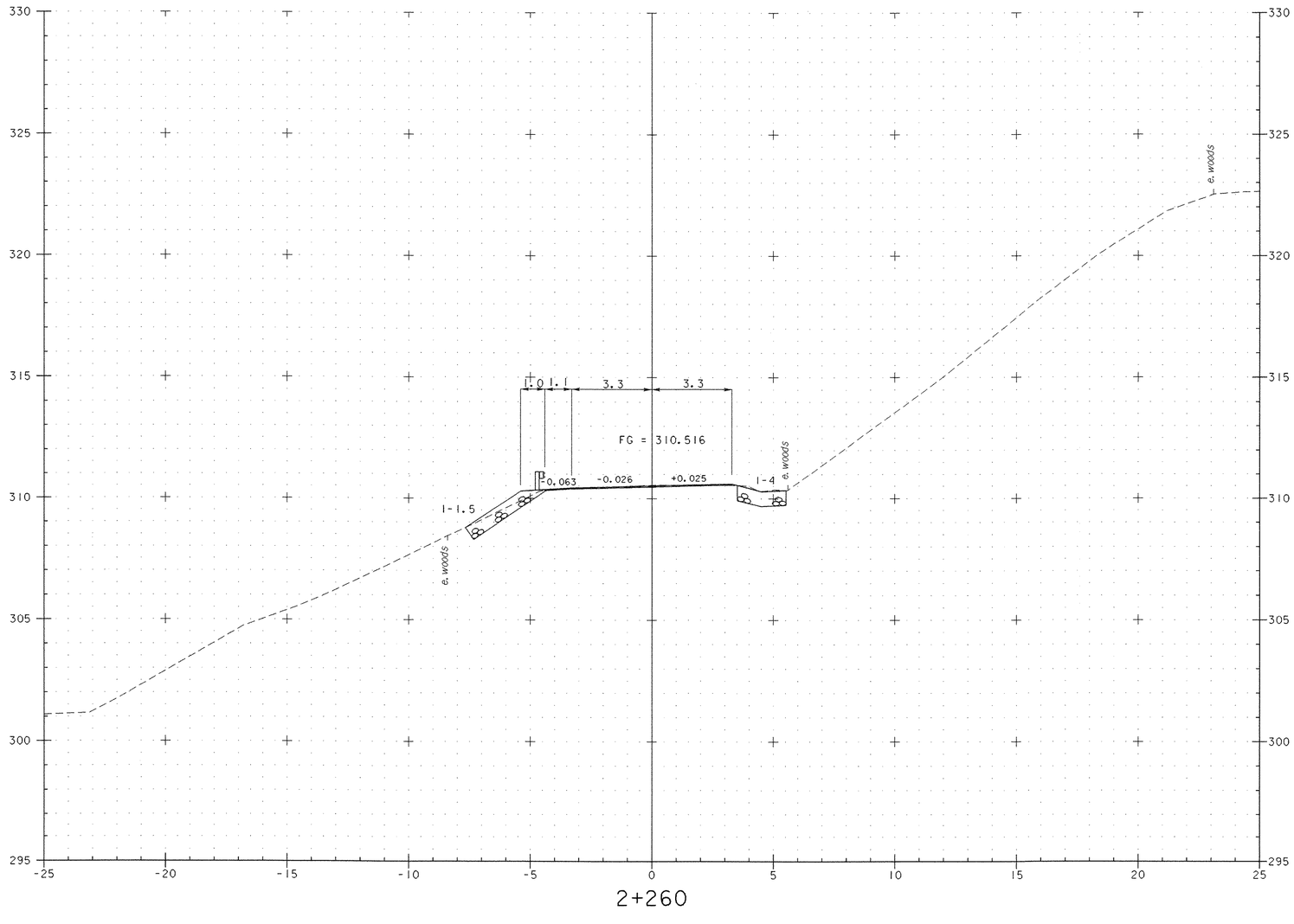
2+250

Mainline 2+250

0 2 4 6 8 10

SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290MI9.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 83 OF 94



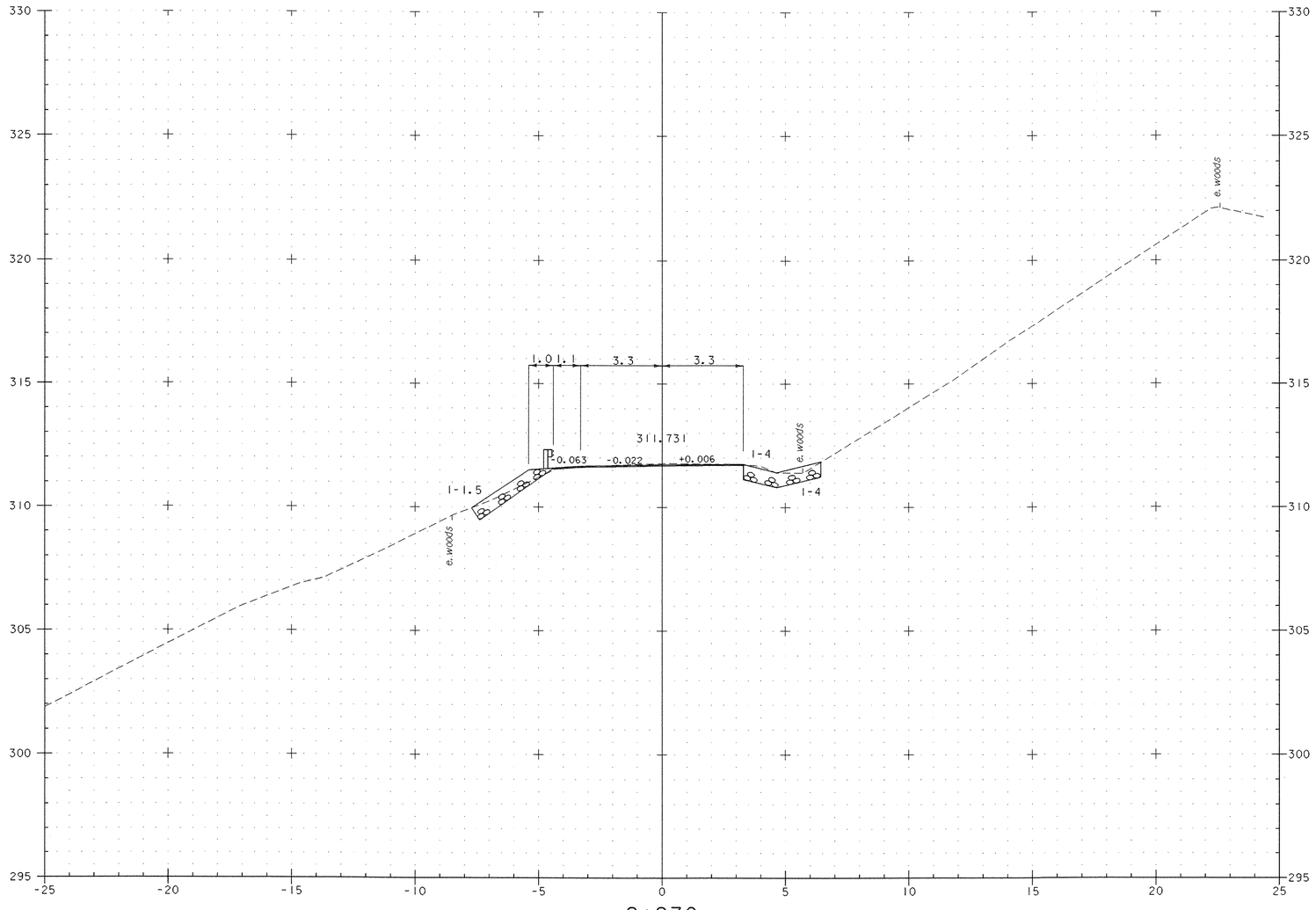
2+260

Mainline 2+260

0 2 4 6 8 10

SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290M20.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 84 OF 94



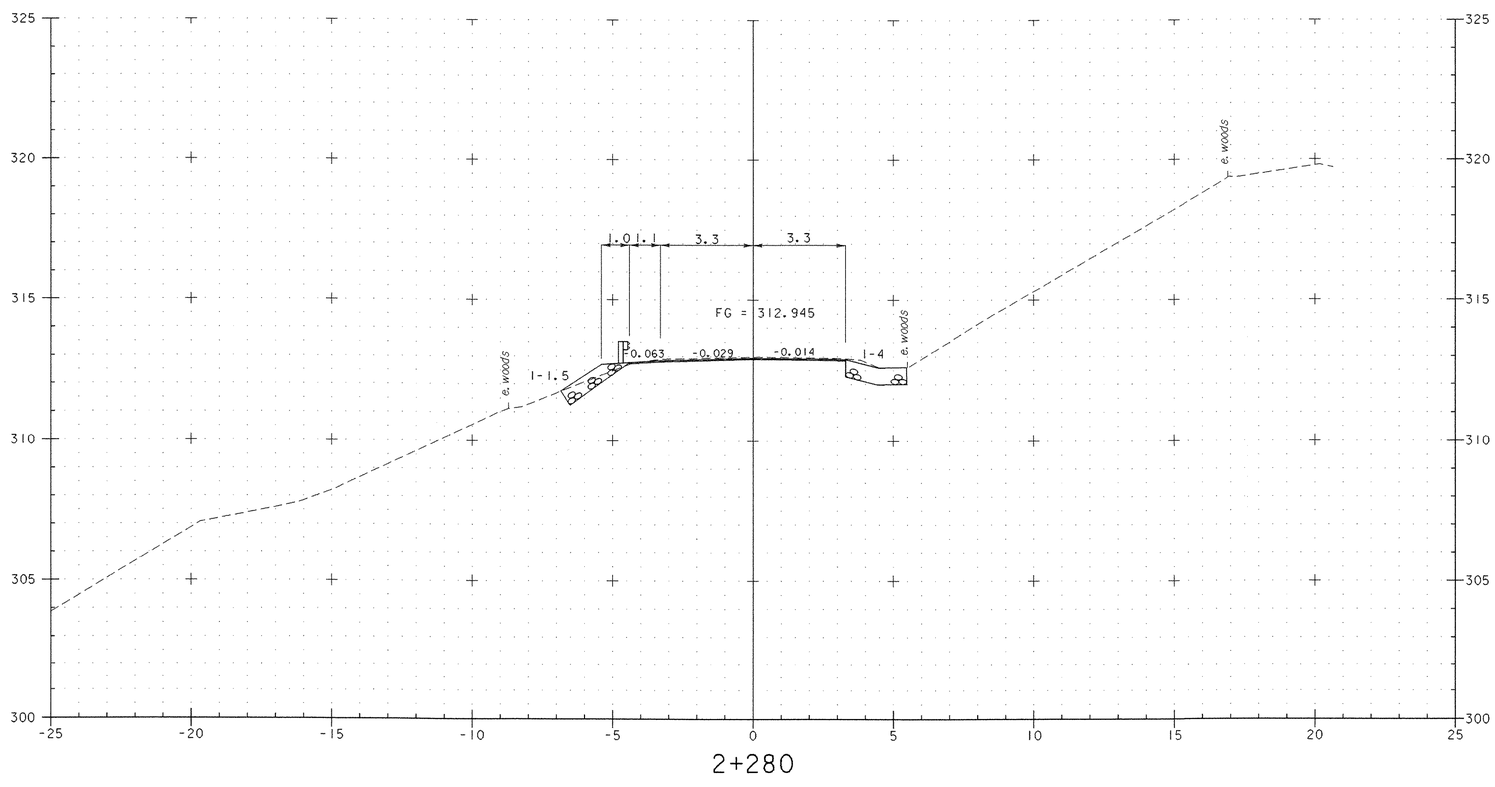
2+270

Mainline 2+270

0 2 4 6 8 10

SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290M21.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 85 OF 94



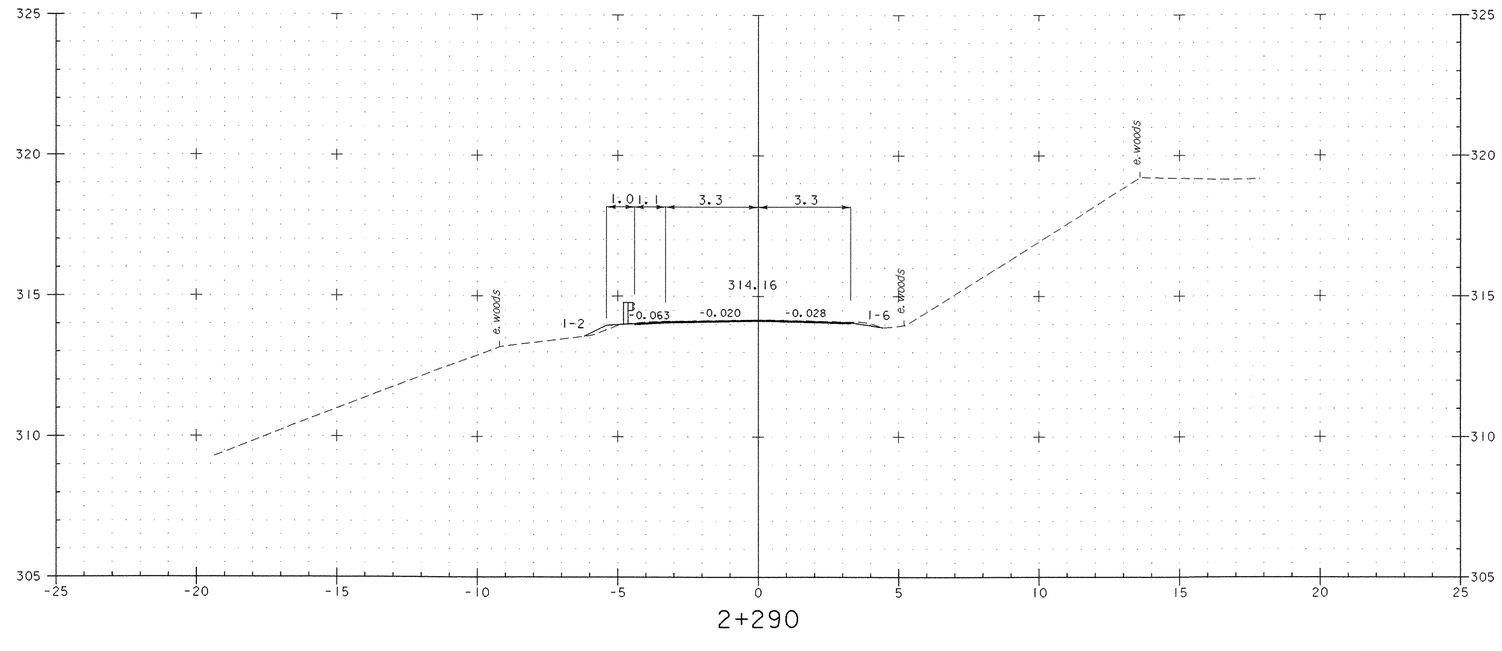
2+280

Mainline 2+280

0 2 4 6 8 10

SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290M22.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 86 OF 94



2+290

Mainline 2+290

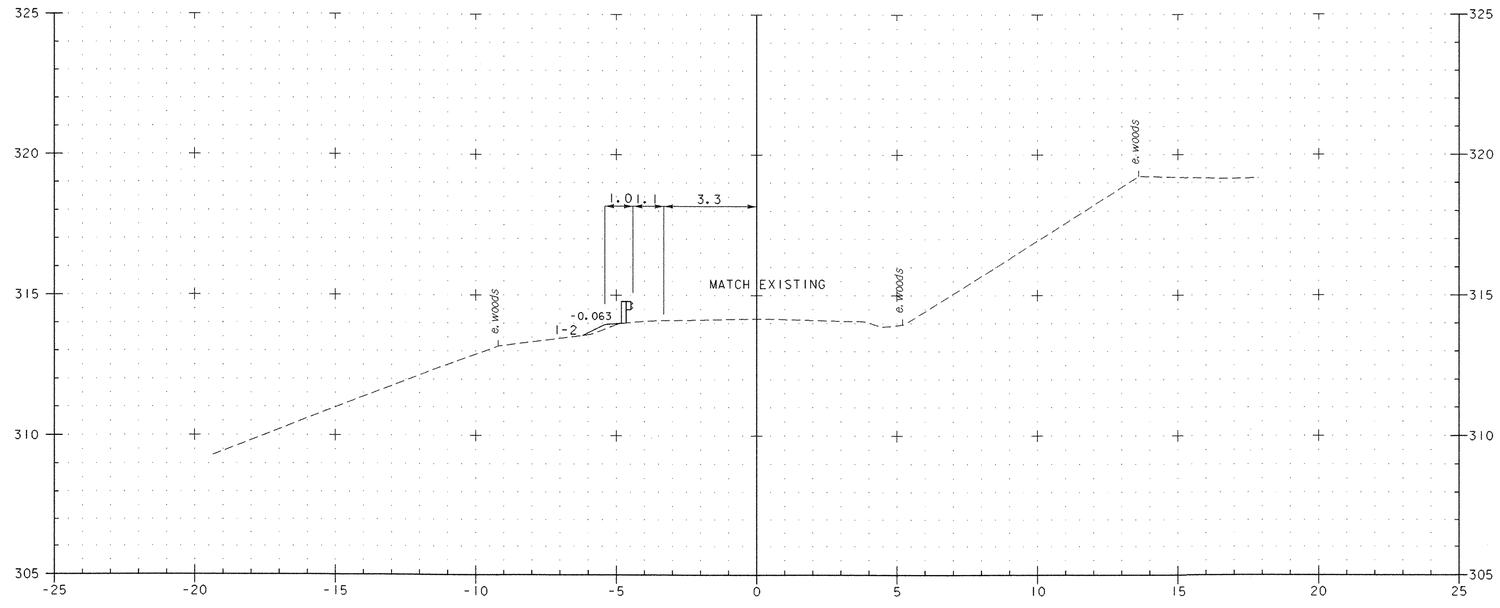
0 2 4 6 8 10

SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290M23.i	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 87 OF 94

Metric

2+305
END GUARDRAIL

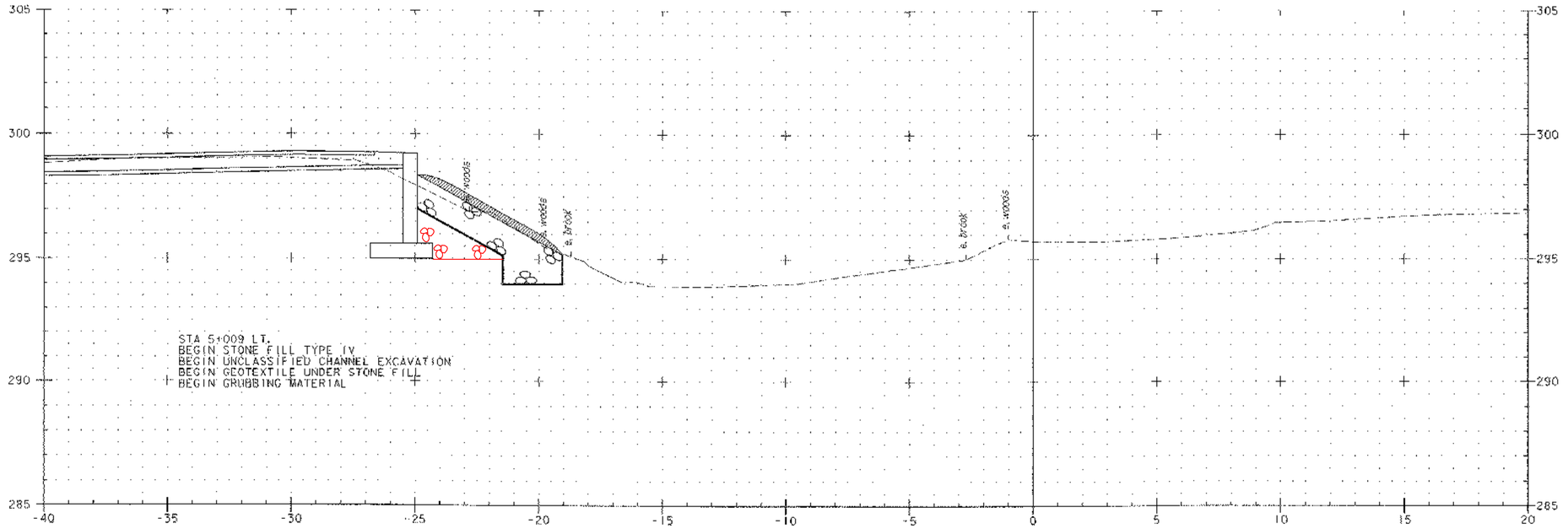


2+300
END APPROACH

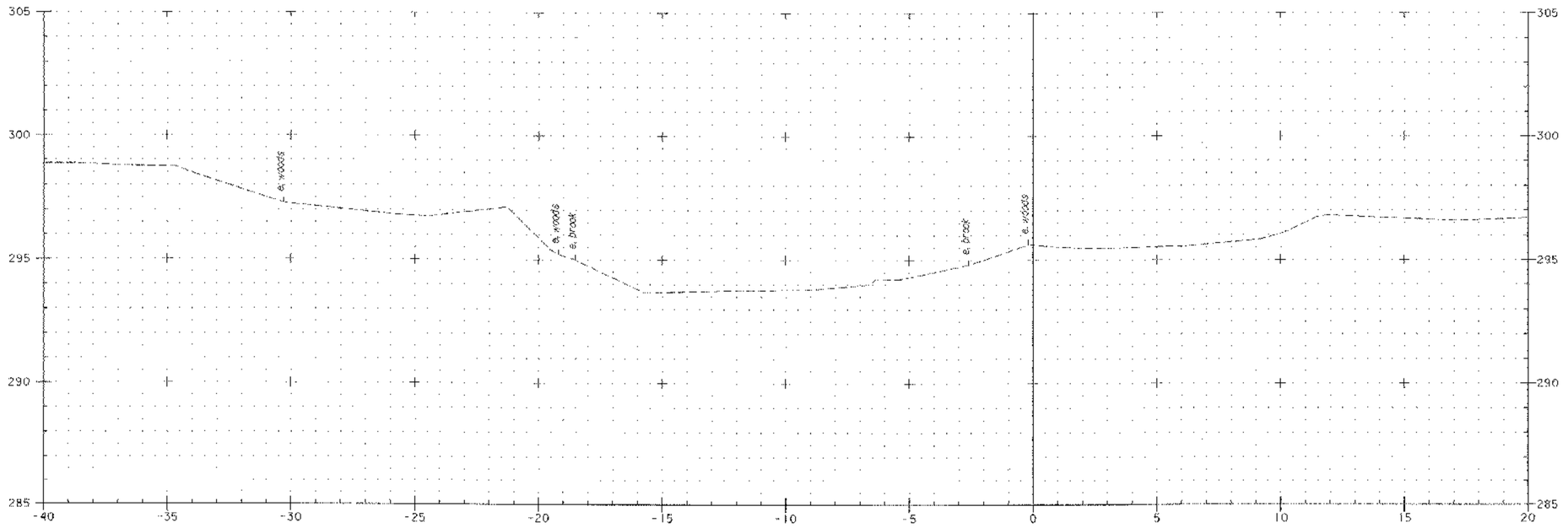
Mainline 2+300

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95J290/sJ290bdr.dgn IPARM FILE NAME: SJ290M24.I	PLOT DATE: 18-NOV-2005
MAINLINE CROSS SECTIONS	
	SHEET: 88 OF 94



5+015

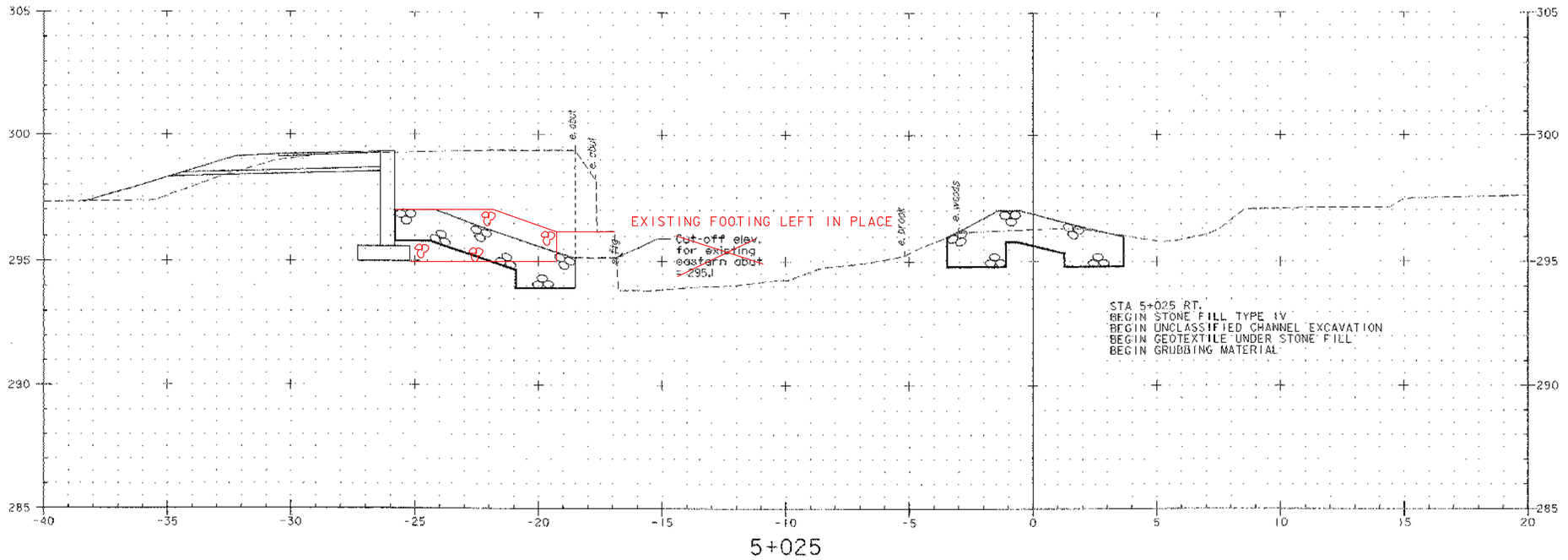


5+010

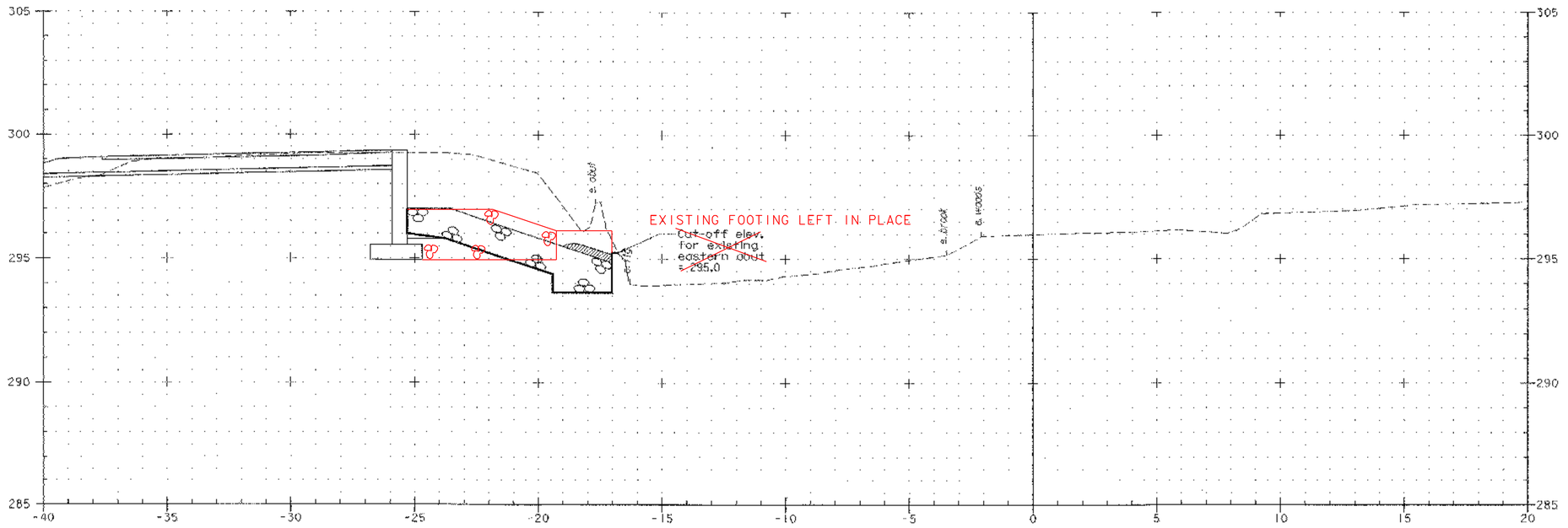
CHANNEL 5+010 - 5+015

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290CH2.I	PLOT DATE: 18-NOV-2005
CHANNEL CROSS SECTIONS	
	SHEET: 89 OF 94



5+025

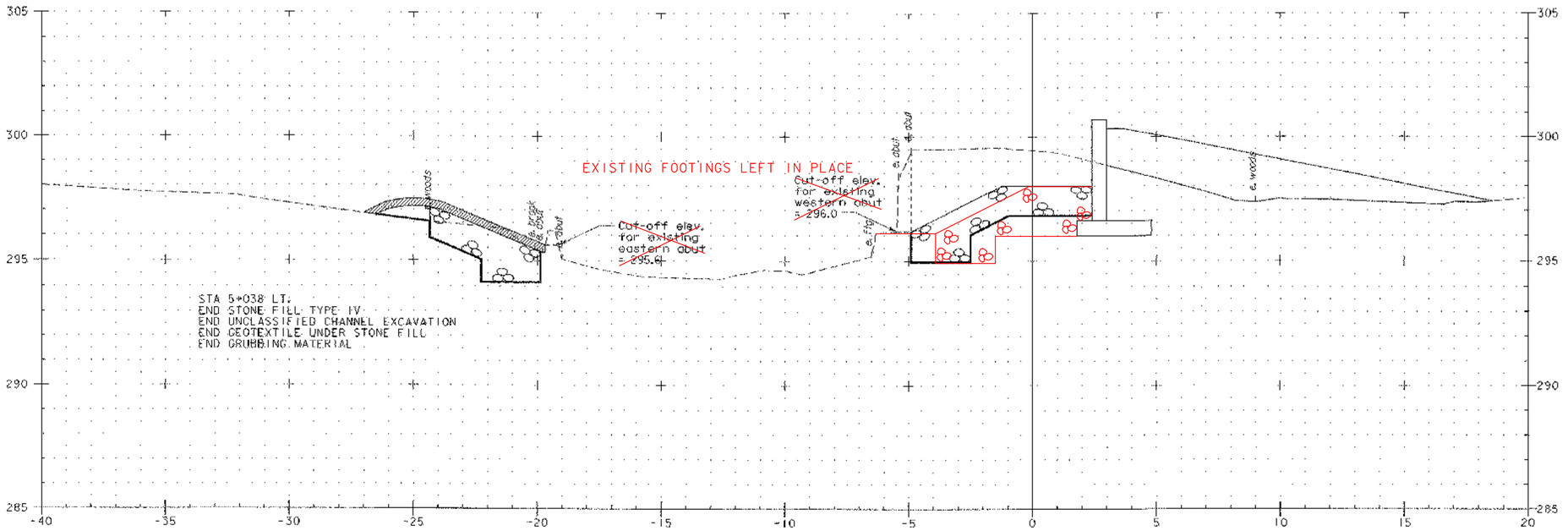


5+020

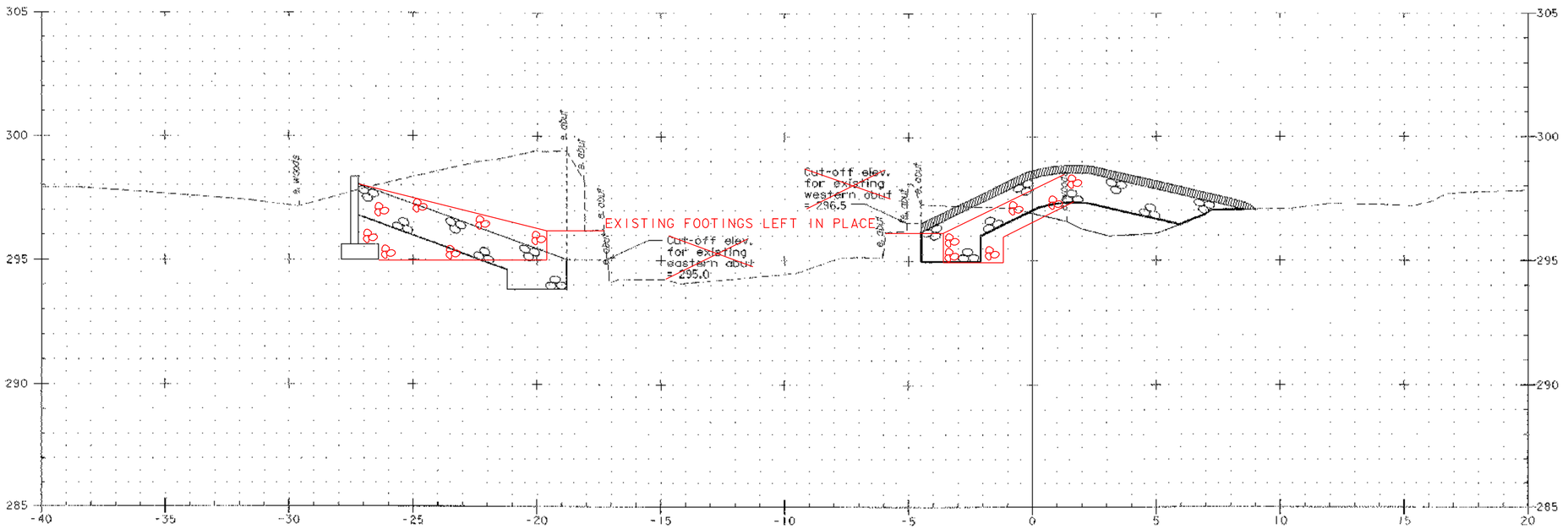
CHANNEL 5+020 - 5+025

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/951290/sl290bdr.dgn IPARM FILE NAME: SL290CH3.i	PLOT DATE: 18-NOV-2005
CHANNEL CROSS SECTIONS	
	SHEET: 90 OF 94



5+035



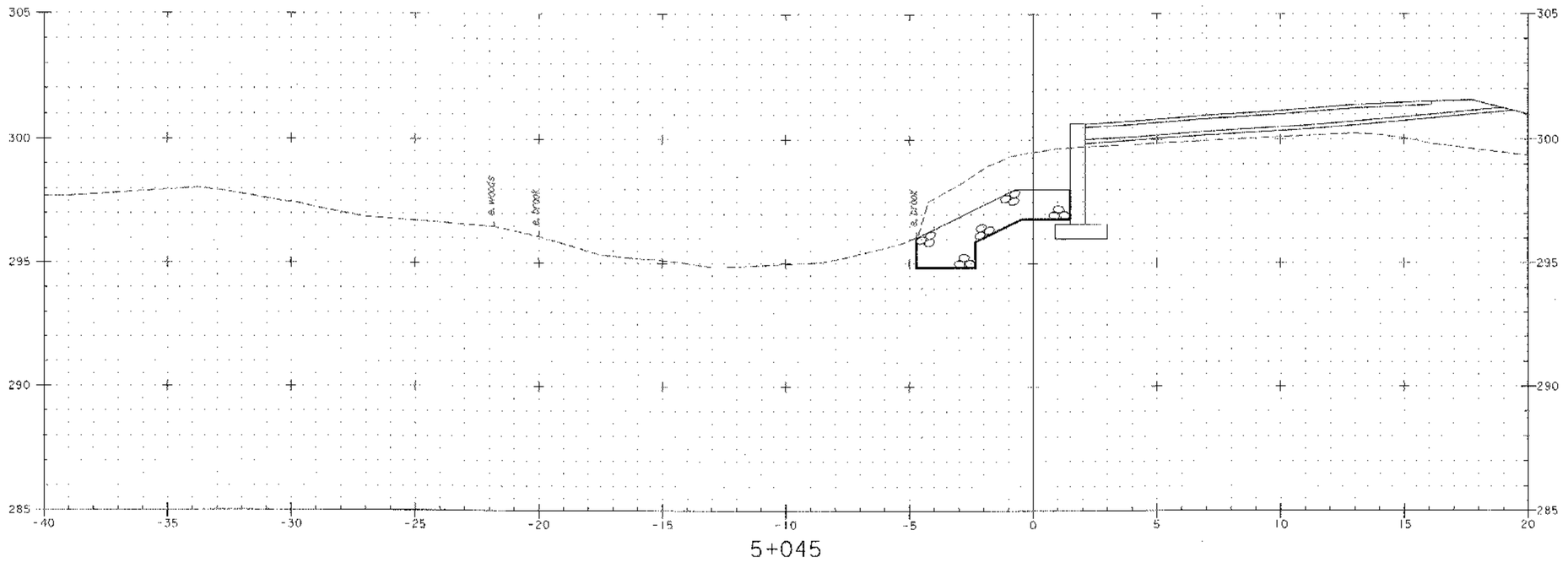
5+030

CHANNEL 5+030 - 5+035

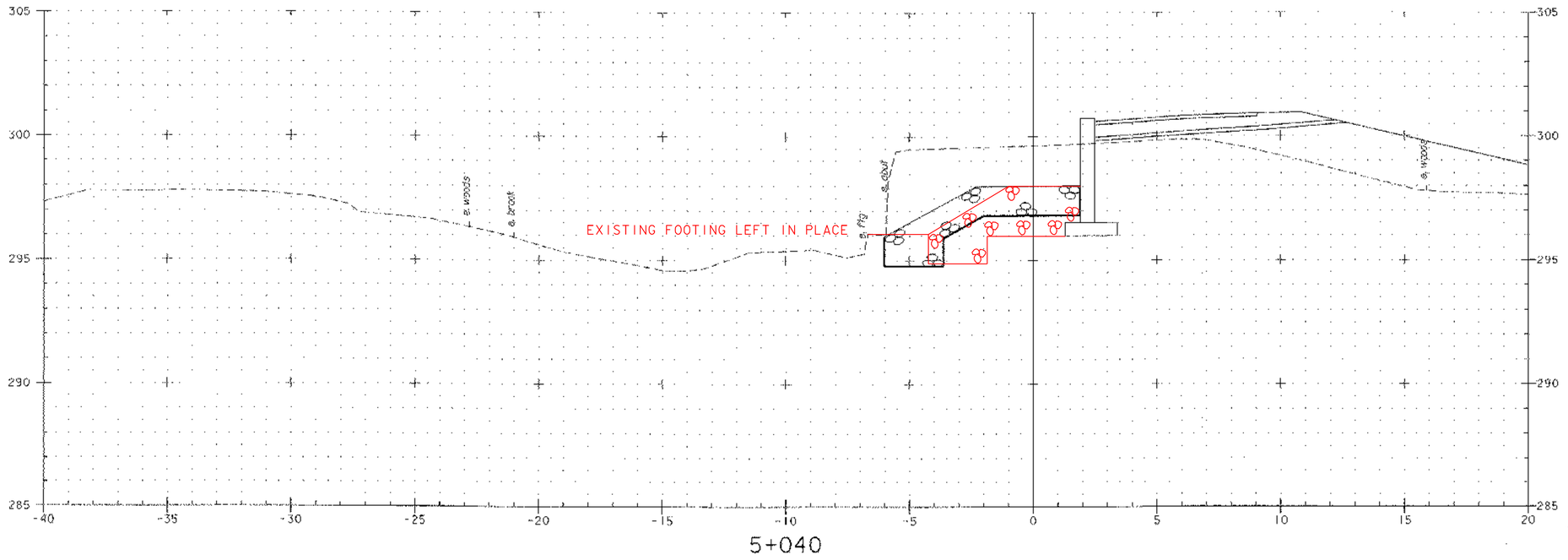
0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95/290/s5290bdr.dgn IPARM FILE NAME: SJ290CH4.I	PLOT DATE: 18-NOV-2005
CHANNEL CROSS SECTIONS	SHEET: 91 OF 94

Metric



5+045

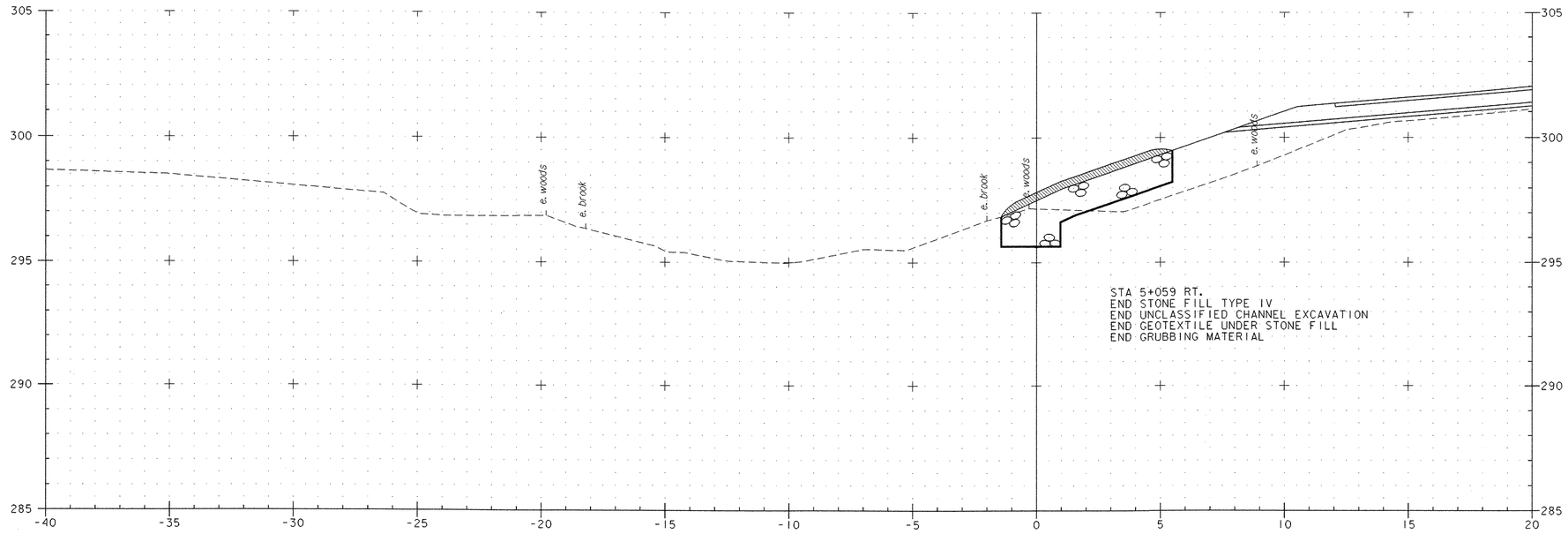


5+040

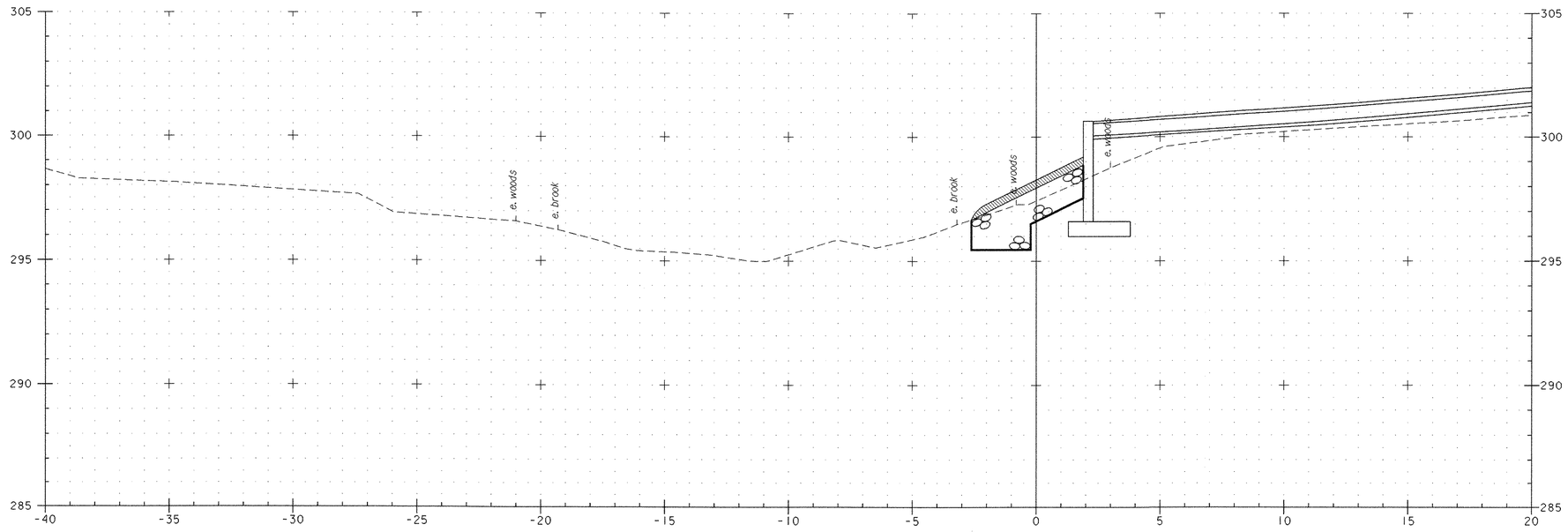
CHANNEL 5+040 - 5+045

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290CH5.i	PLOT DATE: 18-NOV-2005
CHANNEL CROSS SECTIONS	
	SHEET: 92 OF 94



5+055

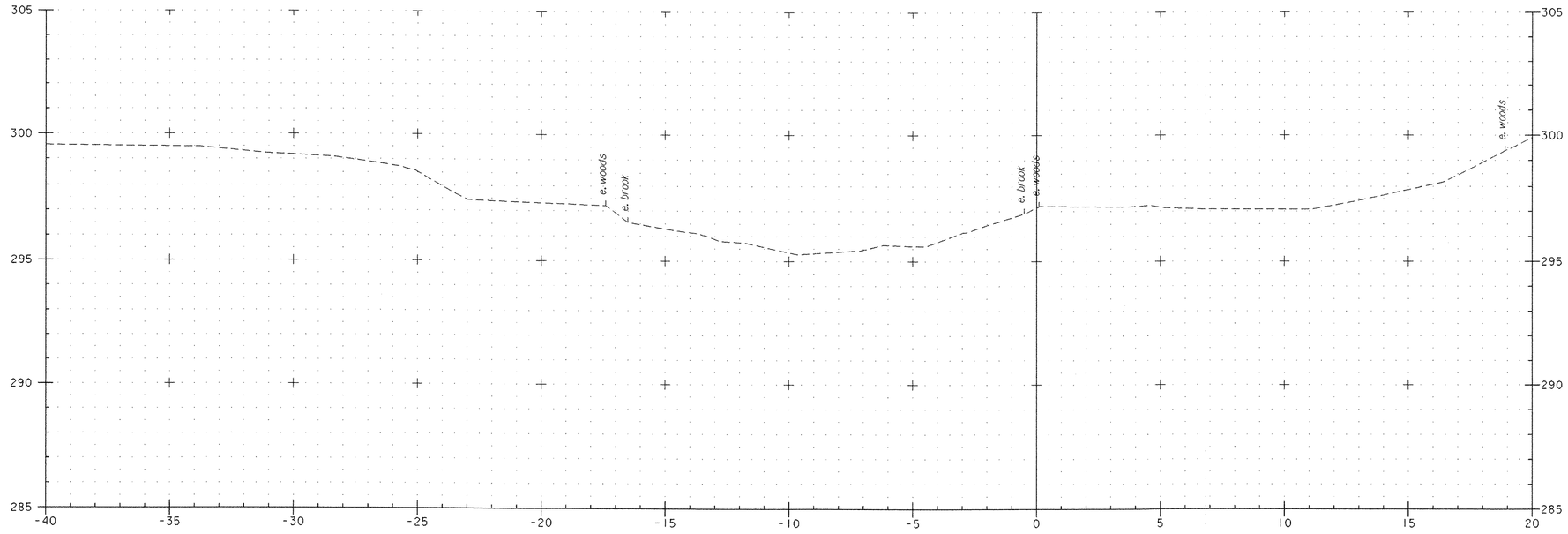


5+050

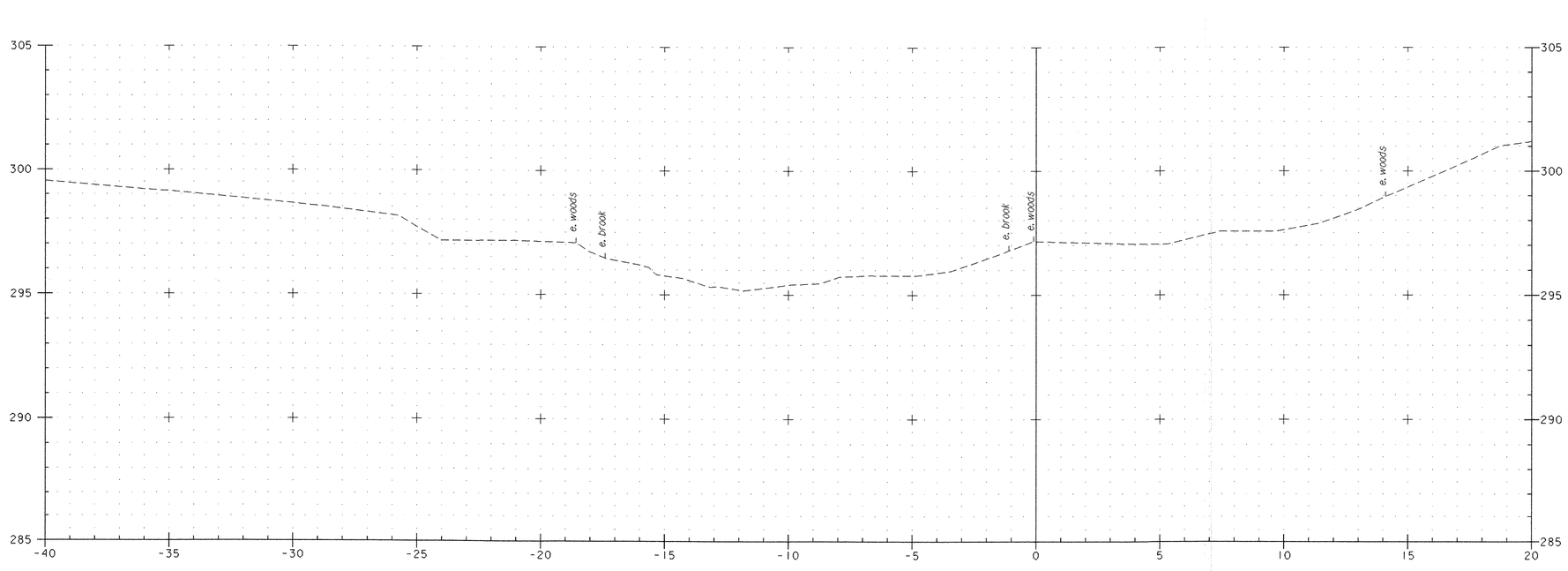
CHANNEL 5+050 - 5+055

0 2 4 6 8 10
SCALE 1:100

PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290CH7.I	PLOT DATE: 18-NOV-2005
CHANNEL CROSS SECTIONS	
	SHEET: 93 OF 94



5+065



5+060

CHANNEL 5+060 - 5+065

0 2 4 6 8 10

SCALE 1:100

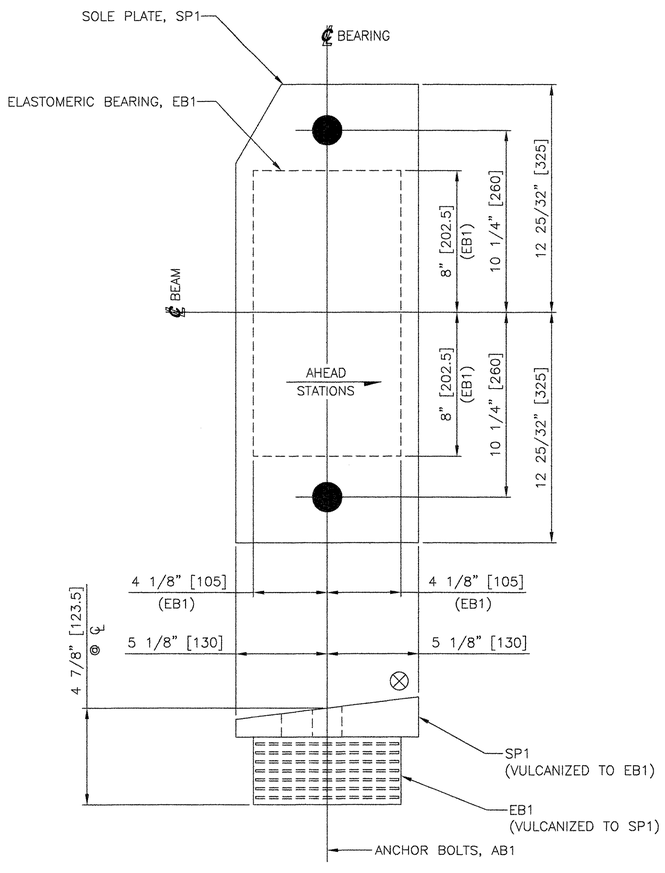
PROJECT: MENDON	PROJECT NO.: BRO 1443(35)
DESIGN FILE NAME: /str5/95j290/sj290bdr.dgn IPARM FILE NAME: SJ290CH7.I	PLOT DATE: 18-NOV-2005
CHANNEL CROSS SECTIONS	
	SHEET: 94 OF 94

MARK	QTY	DESCRIPTION	IN	16ths	FAB MARK	MILL MARK	WEIGHT
FBA-1	5	FIXED BEARING ASSEMBLIES					
SP1	5	PL1 1/4" [32] x 10 1/4" [260]	25 [650]	9	·	METALIZED	290
EB1	5	LAM. ELAST. PAD 3 3/4" [95] x 8 1/4" [210]	16 [405]	0	·	60 DURO. GR. 4 NEOPRENE	245
						TOTAL =	535

ENGLISH EQUIVALENT MATERIAL FURNISHED.
METRIC EQUIVALENT IN PARENTHESIS.

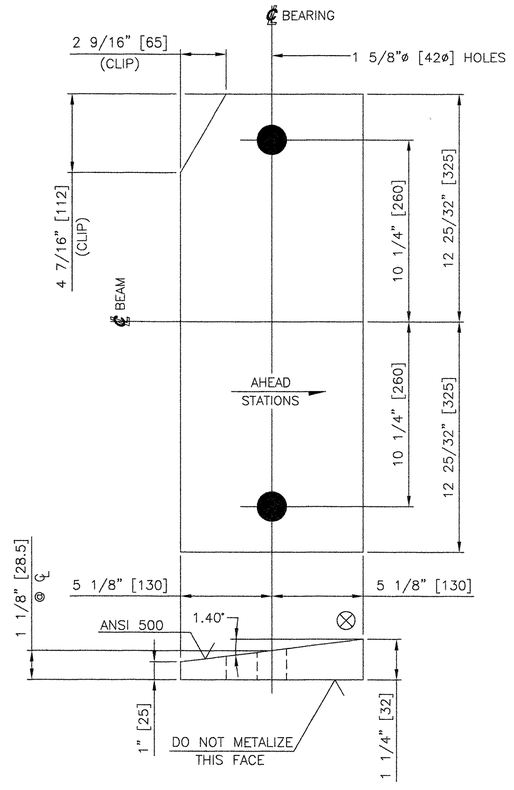
SHOP NOTES:

1. SOLE PLATES: M270, GR. 345.
2. ELASTOMER: 60 DUROMETER, GRADE 4 NEOPRENE WITH A SHEAR MODULUS BETWEEN 0.895 MPa AND 1.172 MPa.
3. SHIMS: ASSHTO M270, GR. 250 OR EQUIVALENT.
4. ANCHOR BOLTS: F1554, GR. 55, GALVANIZED.
5. PLATE WASHERS: M270 GR. 345 OR EQUIVALENT, GALVANIZED.
6. MATERIAL NOTED AS M270, GR. 345 MAY BE AASHTO M270, GR. 345, ASTM A709, GR. 50, ~~OR ASTM A572, GR. 50.~~
7. SOLE PLATES SHALL BE VULCANIZED TO ELASTOMERIC BEARINGS.
8. ALL FREE EDGES OF PLATES TO BE METALIZED SHALL BE ROUNDED TO 1/16" RADIUS.
9. SOLE PLATES SHALL BE BLAST CLEANED TO SSPC-SP5, "WHITE METAL" AND METALIZED IN ACCORDANCE WITH AWS C 2.18, TO A MINIMUM THICKNESS OF 6 MILS WITH 99.9% PURE ZINC AND SEALED WITH #90290 METCO ALS.
10. COSMEC, INC. WILL BLAST THE MATERIAL AND APPLY THE REQUIRED COATING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH ALL APPLICABLE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS. COSMEC, INC. WILL PACKAGE AND LOAD THE BEARINGS FOR SHIPMENT IN SUCH A MANNER AS TO INSURE NO DAMAGE IS DONE TO THE COATING. ANY DAMAGE TO THE COATING IN THE FIELD IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND IS TO BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
11. MATERIAL NOTED AS GALVANIZED SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 (ASTM A123) OR AASHTO M232 (ASTM A153) AS APPLICABLE.
12. FABRICATION TOLERANCES SHALL BE IN ACCORDANCE WITH SECTION 531.04.d OF THE 2001 VERMONT STANDARD SPECIFICATION FOR CONSTRUCTION.
13. ALL SURFACES OF PLATES SHALL BE SMOOTH AND STRAIGHT.
14. ⊗ SHOP TO MARK HIGH SIDE OF PLATE.
15. COSMEC, INC. REPRESENTATIVE: MR. MATT McANDREWS (508) 668-6600



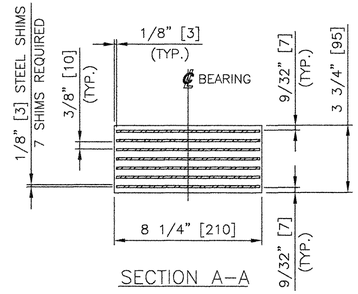
5 FIXED BEARING ASSEMBLIES, FBA-1

LOCATE AT
ABUTMENT 1
GIRDERS 1 THRU 5

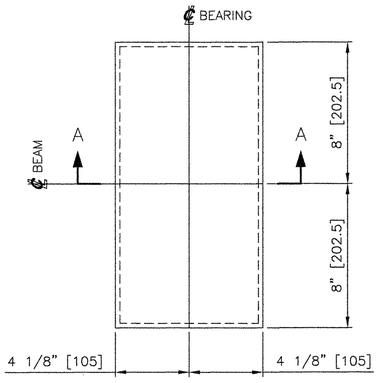


5 FIXED SOLE PLATES, SP1

PL 1 1/4" [32] X 10 1/4" [260] X 25 9/16" [650]
(METALIZED)
VULCANIZED TO ELASTOMERIC BEARING, EB1
USE WITH
FIXED BEARING ASSEMBLY, FBA-1



SECTION A-A



5 ELASTOMERIC BEARINGS, EB1

LAMINATED ELASTOMERIC PAD 3 3/4" [95] x 8 1/4" [210] x 16" [405]
ELASTOMER - 60 DUROMETER, GRADE 4 NEOPRENE
WITH A SHEAR MODULUS BETWEEN
0.895 MPa AND 1.172 MPa
(129.81 psi and 169.98 psi)
SHIMS - M270, GR. 250 OR EQUIVALENT
VULCANIZED TO SOLE PLATE, SP1
USE WITH
FIXED BEARING ASSEMBLY, FBA-1

STRUCTURE'S COPY

RECEIVED
OK'D BY: JTK OK'D BY:
MAR 09 2006
RESUBMIT APPROVED:
BY: DATE: 3/24/06

REV.		BY:	DATE	OK'D BY:	DATE
-		---	---	---	---

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROJECT NAME: MENDON
PROJECT NO. BRO 1443(35)
FWW JOB NO. 61000

COSMEC, INC. — 70 SOUTH STREET WALPOLE, MA. 02081

SCALE: NONE	DRAWN BY: JEP	CHECKED BY: PJM
SHEET 1 OF 3	DATE: 03/06	DATE: 03/06

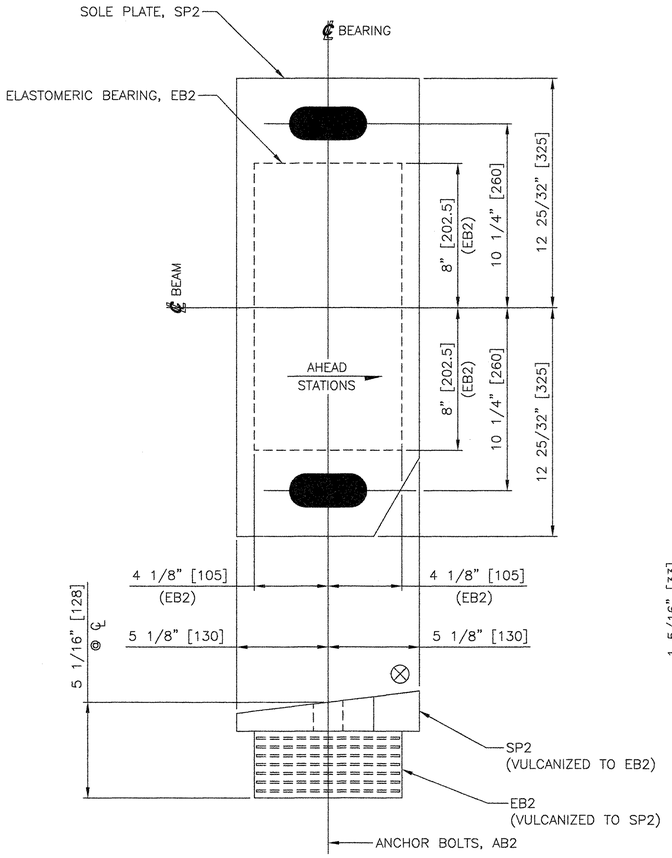
COSMEC BEARING

CUSTOMER: FRANK W. WHITCOMB CONSTRUCTION CORPORATION	S.O. NUMBER 60520	DRAWING NUMBER 4674	REV. 0

0956b

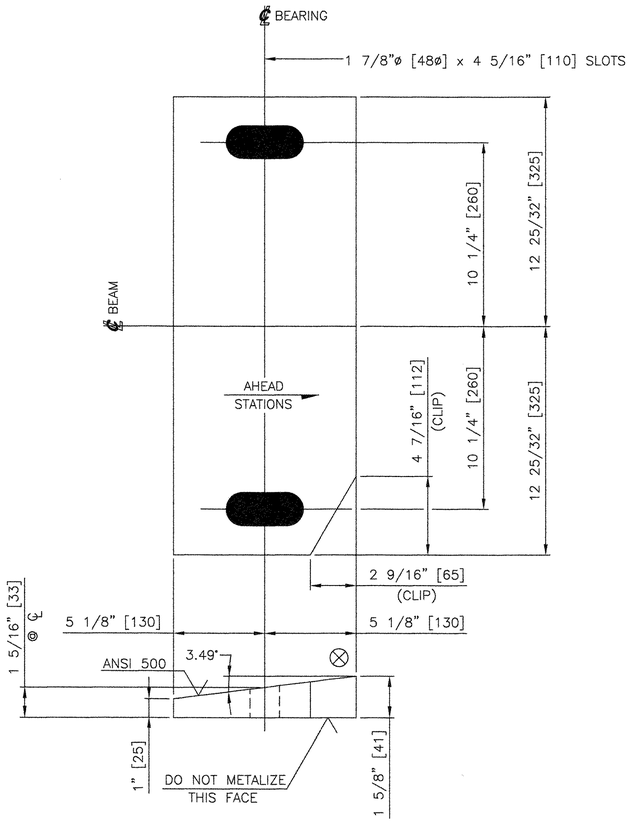
MARK	QTY	DESCRIPTION	IN	16ths	FAB MARK	MILL MARK	WEIGHT
EBA–1	5	EXPANSION BEARING ASSEMBLIES					
SP2	5	PL 1 5/8" [41] x 10 1/4" [260]	25 [650]	9	·	METALIZED	290
EB2	5	LAM. ELAST. PAD 3 3/4" [95] x 8 1/4" [210]	16 [405]	0	·	60 DURO. GR. 4 NEOPRENE	245
						TOTAL =	535

ENGLISH EQUIVALENT MATERIAL FURNISHED.
METRIC EQUIVALENT IN PARENTHESIS.



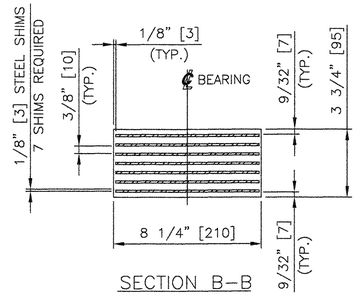
5 EXPANSION BEARING ASSEMBLIES, EBA–1

LOCATE AT
ABUTMENT 2
GIRDERS 1 THRU 5

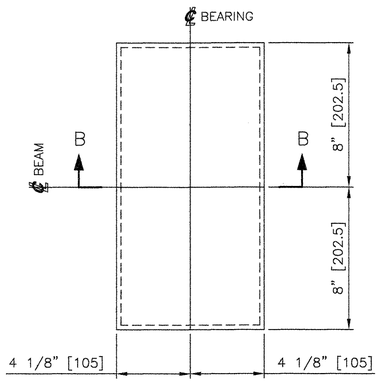


5 FIXED SOLE PLATES, SP2

PL 1 5/8" [41] X 10 1/4" [260] X 25 9/16" [650]
(METALIZED)
VULCANIZED TO ELASTOMERIC BEARING, EB2
USE WITH
EXPANSION BEARING ASSEMBLY, EBA–1



SECTION B–B



5 ELASTOMERIC BEARINGS, EB2

LAMINATED ELASTOMERIC PAD 3 3/4" [95] x 8 1/4" [210] x 16" [405]
ELASTOMER – 60 DUROMETER, GRADE 4 NEOPRENE
WITH A SHEAR MODULUS BETWEEN
0.895 MPa AND 1.172 MPa
(129.81 psi and 169.98 psi)
SHIMS – M270, GR. 250 OR EQUIVALENT
VULCANIZED TO SOLE PLATE, SP2
USE WITH
EXPANSION BEARING ASSEMBLY, EBA–1

SEE SHEET 1 FOR SHOP NOTES.

RECEIVED
CK'D BY JTK OK'D BY
MAR 09 2006
RESUBMIT APPROVED
BY DATE 3/24/06

REV.		BY:	DATE	CK'D BY:	DATE
–		---	---	---	---

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROJECT NAME: MENDON
PROJECT NO. BRO 1443(35)
FWW JOB NO. 61000

COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

SCALE: NONE	DRAWN BY: JEP	CHECKED BY: PJM
SHEET 2 OF 3	DATE: 03/06	DATE: 03/06

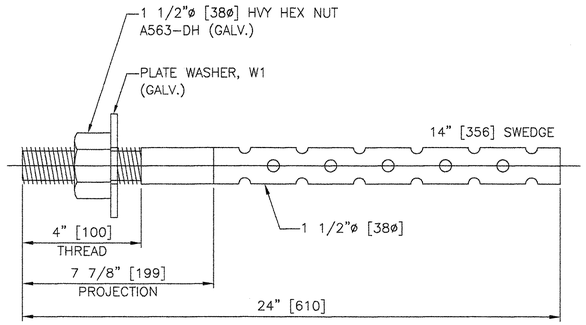
COSMEC BEARING

CUSTOMER: FRANK W. WHITCOMB CONSTRUCTION CORPORATION	S.O. NUMBER 60520	DRAWING NUMBER 4675	REV. 0

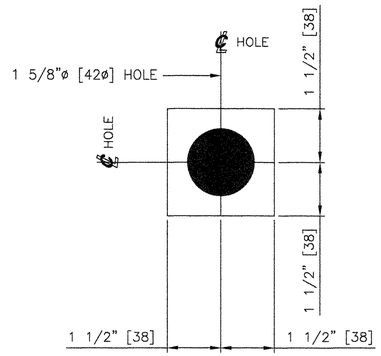
09666

MARK	QTY	DESCRIPTION	IN	16ths	FAB MARK	MILL MARK	WEIGHT
AB1	10	RD 1 1/2"ø [38ø]	24 [610]	0	GALV.	F1554 GR. 55	120
W1	10	PL 3/8" [10] x 3" [75]	3 [75]	0	GALV.	·	10
AB2	10	RD 1 1/2"ø [38ø]	24 [610]	0	GALV.	F1554 GR. 55	120
W2	10	PL 3/8" [10] x 3" [75]	5 [140]	8	GALV.	·	18
·	20	1 1/2"ø [38ø] HVY HEX NUTS	·	·	GALV.	A563-DH	19

TOTAL WEIGHT IN LBS = 387

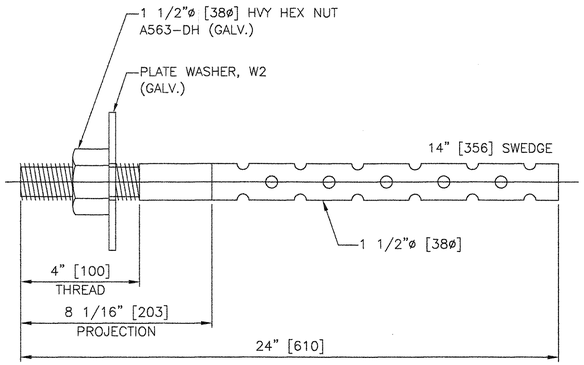


10 ANCHOR BOLTS, AB1
RD 1 1/2"ø [38ø] x 24" [610]
F1554 GR. 55 (GALV.)
MIN EMBED: 15" [380]
LOCATE AT
ABUTMENT 1

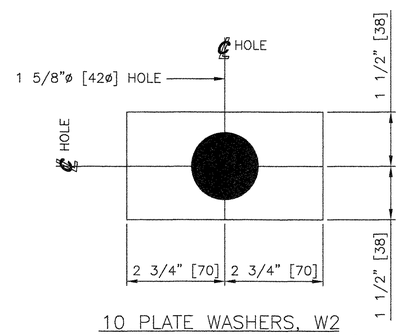


10 PLATE WASHERS, W1
PL 3/8" [10] x 3" [75] x 3" [75]
(GALV.)
USE WITH
ANCHOR BOLT, AB1

ENGLISH EQUIVALENT MATERIAL FURNISHED.
METRIC EQUIVALENT IN PARENTHESIS.



10 ANCHOR BOLTS, AB2
RD 1 1/2"ø [38ø] x 24" [610]
F1554 GR. 55 (GALV.)
MIN EMBED: 15" [380]
LOCATE AT
ABUTMENT 2



10 PLATE WASHERS, W2
PL 3/8" [10] x 3" [75] x 5 1/2" [140]
(GALV.)
USE WITH
ANCHOR BOLT, AB2

SEE SHEET 1 FOR SHOP NOTES.

RECEIVED
CK'D BY JTR OK'D BY
MAR 09 2006
RESUBMIT APPROVED
BY SJS DATE 3/24/06

REV.		BY:	DATE	CK'D BY:	DATE
–		---	---	---	---

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROJECT NAME: MENDON
PROJECT NO. BRO 1443(35)
FWW JOB NO. 61000

COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

SCALE: NONE	DRAWN BY: JEP	CHECKED BY: PJM
SHEET 3 OF 3	DATE: 03/06	DATE: 03/06

COSMEC BEARING

CUSTOMER: FRANK W. WHITCOMB CONSTRUCTION CORPORATION	S.O. NUMBER 60520	DRAWING NUMBER 4676	REV. 0

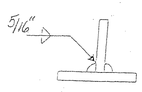
09766

EASTERN BRIDGE, LLC
WELDING PROCEDURE SPECIFICATION

WPS NUMBER:SMAW PL#00-02	ISSUE DATE:5/15/08
PROJECT:VT AOT BRO 1443(35)	EB JOB NO.:6085
BASE METAL:A709 GR 50W	
WELDING PROCESS:SMAW	
FILLER METAL SPEC.:A5.5 , LINCOLN E8018 C3	
FLUX / SHIELDING GAS:N/A	
CURRENT AND POLARITY:DCEP	ELEC STICKOUT:N/A
WELDING POSITION:2F	
PREHEAT AND INTERPASS TEMP.:AWS D1.5 TABLE 4.4	WPS QUALIFICATION:PREQUALIFIED
HEAT INPUT:29.04 - 137.7 KILOJOULES	SUPPORTING PQR#:N/A

ELECTRODE SIZE	WELDING AMPS	CURRENT VOLTS	TRAVEL SPEED
1/8"	110-130	22-26	3-5 IPM
5/32"	130-170	22-26	3-5 IPM
3/16"	170-255	24-27	3-5 IPM

5/16" FILLET



VTRANS
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MAY 13 2008

CHD BY ____ DWN BY JWC

NOTES:
FOR WELDING
GR 50W TO GR 50W

RESUBMIT ____ APPROVED ✓
BY ____ DATE 6-2-08

MAY 13 2008
ENGINEERING SERVICES

MIMUM PREHEAT AND INTERPASS TEMPERATURES SHALL BE AS FOLLOWS:
MAXIMUM INTERPASS TEMPERATURE SHALL BE 450F

THICKNESS OF THICKEST PART AT POINT OF WELDING	TEMPERATURE, F ASTM A709 GR 50W STEEL
UP TO 3/4"	50F
3/4" TO 1 1/2"	125F
1 1/2" TO 2 1/2"	175F
OVER 2 1/2"	225F

THIS PROCEDURE MAY VARY DUE TO FABRICATION SEQUENCE, FIT UP, PASS SIZE, ETC. WITHIN THE LIMITS PROVIDED IN THE CONTRACT DOCUMENTS AND THE AWS D1.5 BRIDGE WELDING CODE.

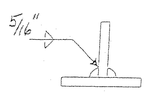
09B SS

EASTERN BRIDGE, LLC
WELDING PROCEDURE SPECIFICATION

WPS NUMBER: 2005-3-2	ISSUE DATE:5/15/06
PROJECT: VT AOT BRO 1443(35)	EB JOB NO.:6085
BASE METAL: ASTM A709 GR 50W	
WELDING PROCESS: SUBMERGED ARC WELDING	
FILLER METAL SPEC.:AWS A5.23 LINCOLN LA75	
FLUX / SHIELDING GAS:LINCOLN 960	
CURRENT AND POLARITY:DCEP	ELEC STICKOUT:1" +/- 1/4"
WELDING POSITION:2F	
PREHEAT AND INTERPASS TEMP.:AWS D1.5 TABLE 4.4	WPS QUALIFICATION:AWS D1.5 / 5.13
HEAT INPUT:50.68 - 73.92 KILOJOULES	SUPPORTING PQR#: 2005-3

ELECTRODE SIZE	WELDING AMPS	CURRENT VOLTS	TRAVEL SPEED
3/32"	396 - 440	28.8 - 31.5	11.25 - 13.5

5/16" FILLET



NOTES:
FOR WELDING
GR 50W TO 50W

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CK'D BY _____ OK'D BY JTC
MAY 19 2006
RESUBMIT _____ APPROVED V
BY _____ DATE 6-2-06

MIMUM PREHEAT AND INTERPASS TEMPERATURES SHALL BE AS FOLLOWS:
MAXIMUM INTERPASS TEMPERATURE SHALL BE 450F

THICKNESS OF THICKEST PART AT POINT OF WELDING	TEMPERATURE, F ASTM A709 GR 50W STEEL
UP TO 3/4"	50F
3/4" TO 1 1/2"	125F
1 1/2" TO 2 1/2"	175F
OVER 2 1/2"	225F

THIS PROCEDURE MAY VARY DUE TO FABRICATION SEQUENCE, FIT UP, PASS SIZE, ETC. WITHIN THE LIMITS PROVIDED IN THE CONTRACT DOCUMENTS AND THE AWS D1.5 BRIDGE WELDING CODE

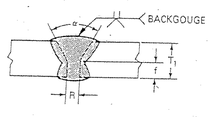
099 SS

EASTERN BRIDGE, LLC
WELDING PROCEDURE SPECIFICATION

WPS NUMBER: 2005-3-1	ISSUE DATE: 5/15/06
PROJECT: VT AOT BRF 1443(35)	EB JOB NO.: 6085
BASE METAL: ASTM A709 GR50W	
WELDING PROCESS: SUBMERGED ARC WELDING	
FILLER METAL SPEC.:AWS A5.23 LINCOLN LA75	
FLUX / SHIELDING GAS:LINCOLN 960	
CURRENT AND POLARITY:DCEP	ELEC STICKOUT:1" +/- 1/4"
WELDING POSITION:1G	
PREHEAT AND INTERPASS TEMP.:AWS TABLE 4.4	WPS QUALIFICATION:AWS D1.5 / 5.13
HEAT INPUT:50.68 - 73.92 KILOJOULES	SUPPORTING PQR#: 2005-3

ELECTRODE SIZE	WELDING AMPS	CURRENT VOLTS	TRAVEL SPEED
3/32"	396 - 440	28.8 - 31.5	11.25 - 13.5

JOINT DETAIL AND AWS NUMBER: BL2c-S



NOTES:GROOVE WELDING

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MAY 13 2006

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RESUBMIT _____ APPROVED ✓
BY _____ DATE 6-2-06

MIMUM PREHEAT AND INTERPASS TEMPERATURES SHALL BE AS FOLLOWS:
MAXIMUM INTERPASS TEMPERATURE SHALL BE 450F

THICKNESS OF THICKEST PART AT POINT OF WELDING	TEMPERATURE, F ASTM A709 GR 345W STEEL
UP TO 3/4"	50F
3/4" TO 1 1/2"	70F
1 1/2" TO 2 1/2"	150F
OVER 2 1/2"	225F

THIS PROCEDURE MAY VARY DUE TO FABRICATION SEQUENCE, FIT UP, PASS SIZE, ETC. WITHIN THE LIMITS PROVIDED IN THE CONTRACT DOCUMENTS AND THE AWS D1.5 BRIDGE WELDING CODE

100 SS

EASTERN BRIDGE, LLC
RR 2, BOX 302
CLAREMONT, NH 03743

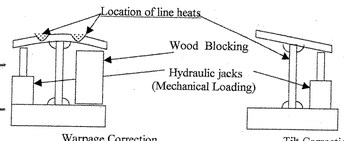
PHONE (603) 542-5202 FAX (603) 542-5317

Warpage and Tilt of Flange Correction Procedure

SCOPE: This procedure is to be used to correct unacceptable amounts of warpage, (deviation from flatness) or flange tilt, (deviation of flanges from a line normal to the centerline of the web) in fabricated girders or rolled beams. Correction shall be achieved through the use of line heating on the girder web, or flanges, or both, in combination with the use of moderate mechanical loading if needed.

1. The area to be heated shall be determined by the correction required, see sketch below. Warpage shall be corrected through the use of line heats on the flanges. Flange tilt shall be corrected through the use of line heats on the appropriate surface of the web.

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BY ____ DATE 6-2-06



2. Heating shall be performed using appropriate sized rosebud style heating torches. Heating shall be confined to areas described in step 3 and shall be performed so as to bring the steel in those areas to a temperature between 1,000 F and 1,100 F as rapidly as possible without overheating the steel.
3. Heating patterns shall be marked on the steel prior to heating. Line heats shall be marked so as to avoid the areas of high restraint directly opposite fillet welds. The line heat length shall be determined by the amount of flange tilt or flange warpage requiring correction.
4. Heating shall begin at one end of the line and not proceed to the other end until the initial area is brought up to a temperature between 1,000 F and 1,100 F. The torch operator shall have 1,000 F, 1,100 F, & 1,150 F temperature indicating crayons. The steel surface temperature shall be monitored frequently during the heating process, and the temperature shall be controlled so as to achieve 1,100 F and not to exceed 1,150 F.
5. Apply mechanical loading until the bottom flange moves, but no more than ¼". The force applied shall be a minimum to maintain and support position during the heating process. Mechanical loading shall be achieved using hydraulic jacks in the locations shown for the two types of correction being performed.
6. The QA representative for the state shall be notified prior to implementation of this procedure.

101 SS

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BY DATE 6-2-06

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CLAREMONT, NH 03743
PHONE (603) 542-5202
FAX (603) 542-5317

HEAT CURVING AND SWEEP CORRECTION PROCEDURE
STRIP HEAT METHOD

1. Support girder, with web in horizontal position, at girder ends and at intermediate points as necessary to produce a uniform curvature in the member.
2. Intermediate safety catch blocks shall be maintained at mid distance between supports of the member and not more than 2" below the flanges at all times.
3. Heating shall be performed using large (1") rosebud style MAPP gas heating torches. Heating shall be confined to areas described in Step 4 and shall be performed so as to bring the steel in these areas to a temperature between 1,000 F and 1,150 F as rapidly as possible without overheating the steel.
4. Heat shall be applied to those edges of the girder flanges, which shall be on the concave side after completion.
5. Heating shall be done beginning at the center of the girder and working out to either end. Care shall be taken to heat both top and bottom flange edges at the same time.
6. If heating torches are mounted on an automatic Bug-O type carriage; the torch head proximity and travel speed shall be set to achieve 1,000 F as measured on the flange edge at a distance of 6" behind the torch head. The steel temperature shall be checked frequently to see that the temperature achieves 1,000 F and does not exceed 1,150 F.
7. If heating is done manually, care shall be taken to ensure that the heating is done in a consistent manner to achieve predictable results. The torch operators shall monitor the steel temperature frequently to see that the temperature reaches 1000 F and does not exceed 1,150 F. The rate of progression along the flange edge shall likewise be carefully controlled.
8. Edge heats may be done continuously or intermittently, depending on the amount of final horizontal curvature required. If heats are done intermittently, the individual heats shall be allowed to cool below 200F before beginning the next heating cycle.
9. The heated areas shall be allowed to cool to below 600 F in ambient conditions. After which time, the areas may be cooled in an accelerated manner using dry, compressed air
10. The intermediate safety catch blocks under the girder shall be monitored to maintain a space of no more than 2" during the heating process. It will be necessary to substitute different thickness catch blocks to maintain this space as the girder begins to contract and move.
11. The member being heated shall not be moved until the steel has reached ambient temperature.
12. The QA representative for the state shall be notified prior to implementation of this procedure.

102 SS

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MAY 18 2006
BY

EASTERN BRIDGE, LLC
RR 2, BOX 302
CLAREMONT, NH 03743
PHONE (603) 542-5202
FAX (603) 542-5317

CK'D BY_____ OK'D BY JMK
RESUBMIT_____ APPROVED ✓
DATE 6-2-06

HEAT CAMBERING AND CORRECTIVE HEAT CAMBERING PROCEDURE

1. Support girder, with web in vertical position, at girder ends and at intermediate points as necessary to produce a uniform curvature in the member.
2. Intermediate safety catch blocks shall be maintained at mid distance between supports of the member and not more than 2" below the flanges at all times.
3. The beam being cambered shall be supported or braced to prevent deflection laterally and overturning during the heating process.
4. Heating shall be performed using a properly sized rosebud style heating tip. Heating shall be confined to areas described in Step 5 and shall be performed so as to bring the steel in these areas to a temperature not exceeding 1,150F as rapidly as possible without overheating the steel.
5. Heating patterns shall be marked on the girders prior to heating. Heat patterns will be located at even distances in a quantity sufficient to produce the desired camber. Whenever possible heating patterns shall be centered on stiffener locations. Additional blank stiffeners may be required at panel midpoints to provide sufficient heating sites in an effort to prevent or reduce web distortion. Patterns shall be truncated triangles with the base of the triangle being that flange which shall be concave in the finished girder. The apex of the triangle shall be located in the web at a point not less than 75% of the depth of the beam from the base of the triangle. The total included angle of the triangle shall not exceed 20 degrees and the base of the triangle shall not exceed 10".
6. Heating shall begin at the apex of the triangle and not proceed toward the base until the truncated area is brought up to a temperature not exceeding 1,150F. Once heating begins to progress towards the base of the triangle it shall not return to the apex. The torch operator shall have 1,000 F, 1,100 F, and 1,150 F temperature indicating crayons. The steel surface temperature shall be monitored frequently during the heating process.
7. No weight shall be applied without prior approval of the state.
8. After application of heating patterns the member being cambered shall stay in the vertical position until the heated areas cool to below 200F, to check and record results.
9. The heated areas shall be allowed to cool to below 600F in ambient conditions. After which time, the areas may be cooled in an accelerated manner using dry, compressed air.
10. The QA representative for the state shall be notified prior to implementation of this procedure.

10355

GENERAL SHOP NOTES

SPECIFICATIONS

1. MATERIAL AND WORKMANSHIP TO BE IN ACCORDANCE WITH THE STATE OF VERMONT, AGENCY OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001, GENERAL SPECIAL PROVISIONS, AND THE LATEST EDITION OF AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

MATERIAL

1. MATERIAL SHALL CONFORM TO AASHTO M270M, GRADE 345W (UN).
2. MATERIAL NOTED (M270M-345WT2) ON DETAIL DRAWINGS SHALL REQUIRE CHARPY V-NOTCH TESTING (ZONE 2).
3. HIGH STRENGTH BOLTS SHALL CONFORM TO AASHTO M164 TYPE 3 WITH ONE AASHTO M291 HVY. HEX NUT & ONE AASHTO M293 TYPE 3 WASHER (UNLESS NOTED OTHERWISE).

   HIGH STRENGTH BOLTS IN PAINTED AREAS SHALL CONFORM TO AASHTO M164 TYPE 1, WITH ONE AASHTO M291 HVY. HEX NUT & ONE AASHTO M293 TYPE 1 WASHER. BOLTS, NUTS & WASHERS SHALL BE GALVANIZED PER AASHTO M298 CLASS 50, TYPE 1.

FABRICATION & WORKMANSHIP

1. "BEARING AREA" AS NOTED ON GIRDER DETAILS, INDICATES AREA THAT MUST BE FLAT AND TRUE TO RECEIVE SOLE PLATE.
2. RE-ENTRANT CUTS TO HAVE A 25 MILLIMETER MIN. RADIUS.

SHOP WELDING AND TESTING NOTES:

1. WELDING AND NON-DESTRUCTIVE TESTING SHALL BE IN ACCORDANCE WITH ANSI/AASHTO/AWS BRIDGE WELDING CODE, D1.5.
2. FOR WELDING CONNECTION PLATES TO GIRDERS SEE "TYP. WELD TERMINATION DETAIL".

NON-DESTRUCTIVE TESTING:

1. ALL SHOP GROOVE WELDS IN THE GIRDER WEB AND FLANGES SHALL BE INSPECTED BY RADIOGRAPHIC TESTING AS FOLLOWS:

— FLANGE SPLICES SUBJECT TO TENSION SHALL BE INSPECTED 100%.
TENSION SPLICES SHALL BE NOTED "t" ON THE DETAILS.

— FLANGE SPLICES SUBJECT TO COMPRESSION SHALL BE INSPECTED 25%.
COMPRESSION SPLICES SHALL BE NOTED "c" ON THE DETAILS.

— WEB SPLICES SHALL BE TESTED 100% FOR 1/6 THE WEB DEPTH BEGINNING AT THE POINT OF TENSION AND 25% FOR THE REMAINDER OF THE WEB DEPTH AS INDICATED ON DETAILS.

2. MAGNETIC PARTICLE INSPECTION WILL BE REQUIRED ON GIRDER FILLET WELDS AS FOLLOWS:
   a. WEB TO FLG - 300MM OF EVERY 3 METERS LENGTH OF WELD.
   b. BEARING STIFFENERS & CROSSFRAME CONNECTION PLATES TO WEB - 300MM OF EACH WELD LESS THAN 3 METERS IN LENGTH.
   c. BEARING STIFFENERS AND CROSSFRAME CONNECTION PLATES TO FLANGES - 10% OF EACH WELD.

   IF UNACCEPTABLE DISCONTINUITIES ARE FOUND IN ANY TEST LENGTH OF WELD, THE FULL LENGTH OF THE WELD, OR 1.5 METERS ON BOTH SIDES OF THE TEST LENGTH, WHICHEVER IS LESS, SHALL BE TESTED.

DRAWING REFERENCE:

GIRDER JOB STANDARDS - PREFIXED "X"
CROSSFRAME JOB STANDARDS - PREFIXED "M"

SHOP CLEANING NOTES:

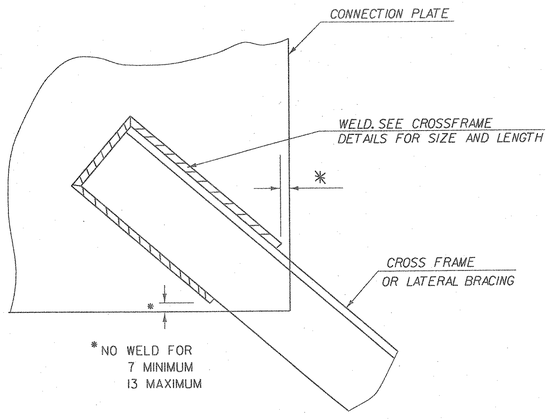
1. BLAST CLEAN ALL STEEL TO SSPC-SP10 (NEAR WHITE) AFTER FABRICATION . BLAST CLEANING PROFILE TO BE FROM 1.5 TO 2.5 MILS DEEP.

SHOP PAINTING NOTES:

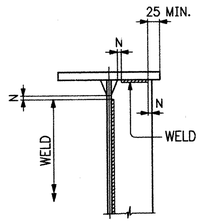
1. AREAS TO BE PAINTED (NOTED ON DETAIL DWGS.) SHALL BE PAINTED WITH A 3 - COAT SHOP APPLIED SYSTEM (UN) CONSISTING OF:

-- PRIME COAT - CARBOZINC 859 ORGANIC ZINC-RICH EPOXY - ~~3-5~~ 3-6 MILS. DFT
-- INTERMEDIATE COAT - CARBOGUARD 888 EPOXY POLYAMIDE - ~~3-5~~ 3-10 MILS. DFT
-- FINISH COAT - CARBOTHANE 133HB ALIPHATIC ACRYLIC-POLYESTER POLYURETHANE 3-5 MILS DFT. FED. STANDARD 595 COLOR CHIP NO. 14062 GREEN.
-- GREASE COATING - BY OTHERS / FIELD APPLIED.

2. INTERMEDIATE AND TOP COATS SHALL BE STAGGERED A MIN. OF 12MM FROM THE FAYING SURFACES AND EACH OTHER.
3. PRIME COAT TO BE APPLIED WITHIN 8 HRS. OF BLAST CLEANING.
4. STRIPE COAT ALL EDGES OF PLATES, ANGLES OR OTHER SHAPES, BOLTS AND NUTS PRIOR TO THE APPLICATION OF THE PRIME COAT.
5. FIELD BOLTED CONTACT SURFACES WITHIN THE AREAS TO BE PAINTED SHALL RECEIVE THE PRIME COAT ONLY WITHIN 75MM OF OPEN HOLES.
6. SURFACES IN CONTACT WITH CONCRETE WITHIN THE AREAS TO BE PAINTED SHALL RECEIVE A LIGHT RUST PREVENTIVE COAT OF PRIMER, NOT TO EXCEED 1.5 MILS DFT. THESE SURFACES ARE NOTED ON THE DETAIL DRAWINGS.
7. TOP FLANGE OF GIRDER AS SHOWN IN SECTION-P SHALL RECEIVE A LIGHT RUST PREVENTIVE COAT OF PRIMER, NOT TO EXCEED 1.5 MILS DFT.

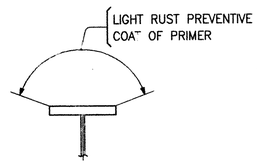


WELD LOCATION DETAIL AT CROSS FRAMES AND LATERAL BRACING
NOT TO SCALE



N = 7 MIN., 13 MAX.
(EXCEPT MUST MAINTAIN 25 FROM TOP FLANGE)

TYP. WELD TERMINATION DETAIL



SECTION-P

RECEIVED
CK'D BY 6/15/06 CK'D BY
MAY 18 2006
RESUBMIT APPROVED As Noted
BY MS DATE 6/9/06

REV.	DATE	DESCRIPTION
1		

QTY.	DATE	ISSUED TO	FOR
8	5/15/06	FW WHITCOMB	APPROVAL

EBLLC

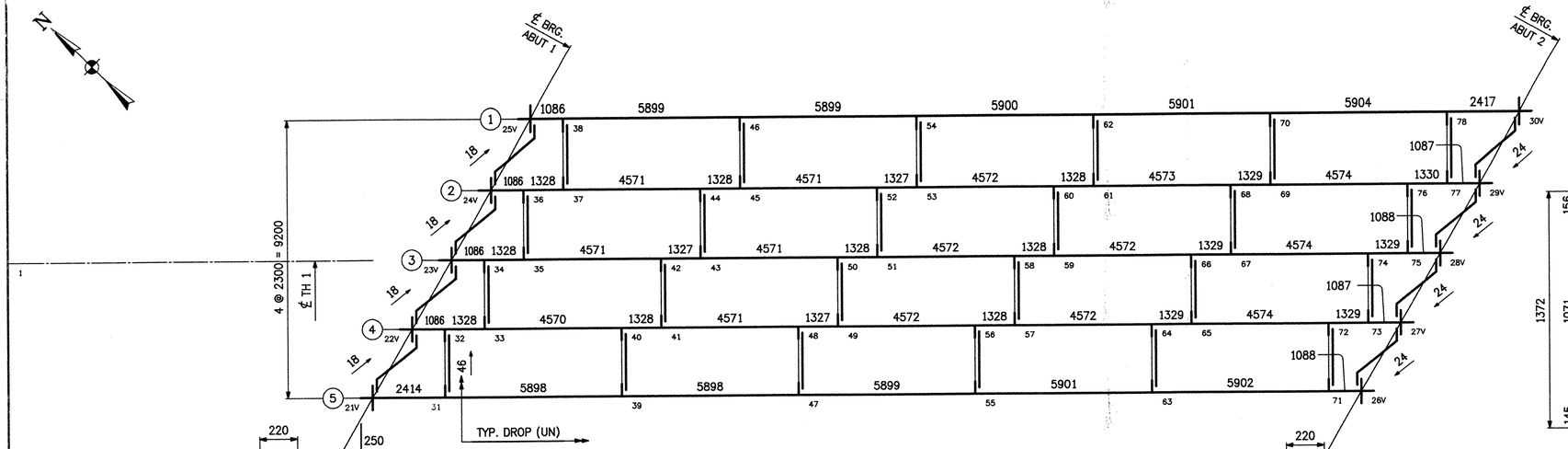
EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

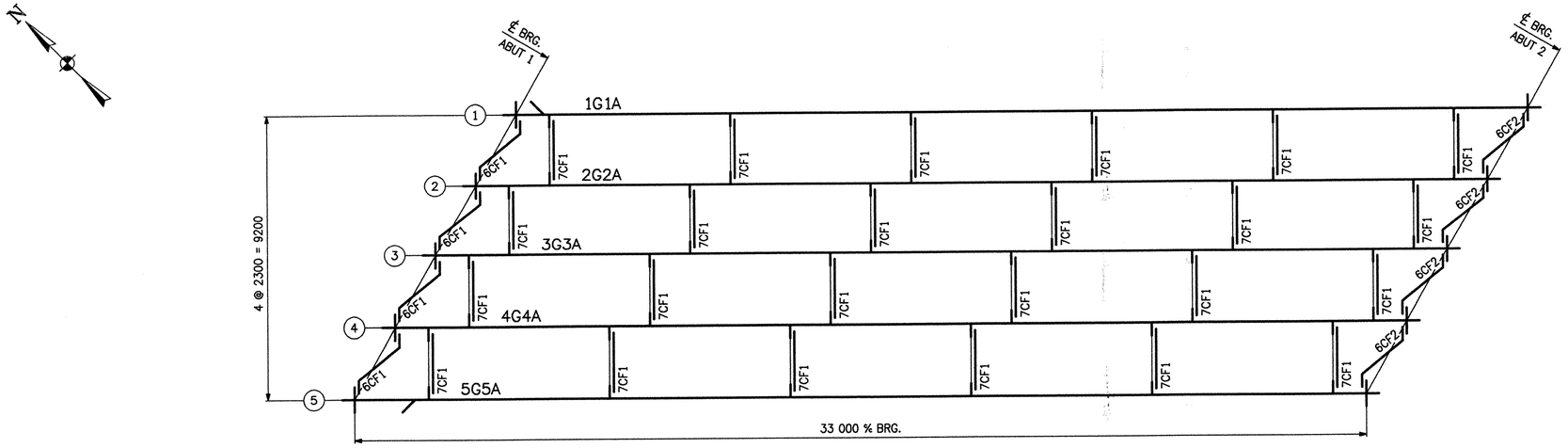
PROJECT:	T.H.1 OVER MENDON BROOK (BRIDGE NO. 3)
LOCATION:	TOWN OF MENDON COUNTY OF RUTLAND
ENGINEER:	STATE OF VERMONT AGENCY OF TRANSPORTATION
CUSTOMER:	FRANK W WHITCOMB CONSTRUCTION
DRAWING TITLE:	GENERAL NOTES
DRAWN BY: WCG 4-21-06	JOB NUMBER: 6055
CHECKED BY: FM 5-3-06	SHEET NUMBER: GN1

826-22

10455

GN825


N
℄ BRG. ABUT 1
℄ BRG. ABUT 2
4 @ 2300 = 9200
℄ TH 1
TYP. DROP (UN)
1086
5899
5899
5900
5901
5904
2417
1087
1088
1328
4571
4572
1329
4573
4574
1330
2414
5898
5901
5902
1327
4570
1086 1328
1087
1088
1329
1087
1088
1329
1088
1329
1088
1329



ERECTION PLAN

FIELD BOLT SUMMARY					2% ADDED, MIN 2 EXTRA	
LINE	NO. OF BOLTS	BOLT DIAM.	TYPE	BOLT LENGTH	ACTUAL COUNT	REMARKS
1	588	7/8	AASHTO M164-3	2 1/2	576	w/1 M291-3 GR. C3 HVY. HEX NUT
2	131	7/8	AASHTO M164-3	2 3/4	128	w/1 M291-3 GR. C3 HVY. HEX NUT
3	719		HARD, FLAT WASHERS FOR 7/8ø BOLT			M293-3
4						
5	131	7/8	AASHTO M164-1	2 3/4	128	w/1 M291-1 GR. DH HVY. HEX NUT (GALV. PER AASHTO M298, CLASS 50)
6	131		HARD, FLAT WASHERS FOR 7/8ø BOLT			M293-1 (GALV. PER AASHTO M298, CLASS 50)
7						
8						
9						
10						

	FIELD BOLT LIST						AS NOTED					
LINE	ACTUAL No. REQ'D.	BOLT DIAM.	BOLT LENGTH	BOLTS /CONN.	# OF CONNS.	GRIP	THICKNESS OF PCS. CONNECTED				WASHER CODE	PIECES CONNECTED AND REMARKS
1												
2	128	7/8	2 3/4	32	4	1 7/16	14	22			1	ABUT-1 CROSSFRAMES TO GIRDERS (M164 TYPE 3 BOLTS)
3												
4	576	7/8	2 1/2	24	24	1 1/8	14	14			1	INT. CROSSFRAMES TO GIRDERS (M164 TYPE 3 BOLTS)
5												
6	128	7/8	2 3/4	32	4	1 7/16	14	22			1	ABUT-2 CROSSFRAMES TO GIRDERS (M164 TYPE 1 BOLTS)
7												
8												
9												
10												
11												
12												
13												
14												
15												

WASHER CODES

1: 1 HARD FLAT WASHER

RECEIVED
CK'D BY wms CK'D BY
MAY 18 2006
RESUBMIT APPROVED ✓
BY DATE 6/9/06

REV.	DATE	DESCRIPTION
⚠		

QTY.	DATE	ISSUED TO	FOR
8	5/15/06	F W Whitcomb	Approval

EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

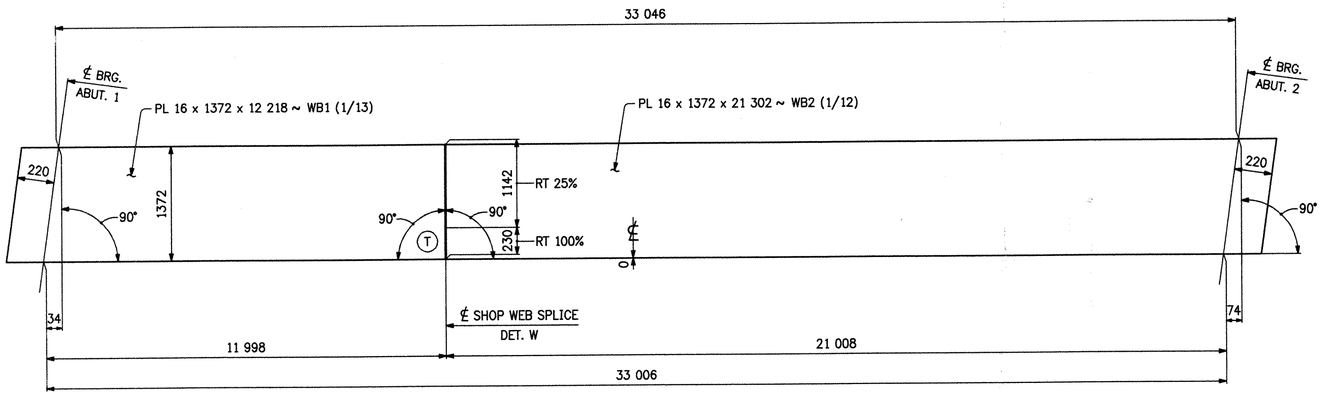
PROJECT:	T.H.1 OVER MENDON BROOK (BRIDGE NO. 3)
LOCATION:	TOWN OF MENDON, COUNTY OF RUTLAND
ENGINEER:	STATE OF VERMONT AGENCY OF TRANSPORTATION
CUSTOMER:	FRANK W WHITCOMB CONSTRUCTION
DRAWING TITLE:	ERECTION PLAN / FIELD BOLTS
DRAWN BY: JF 4-13-06	JOB NUMBER: 6085
CHECKED BY: FM 5-3-06	SHEET NUMBER: E1

826-1

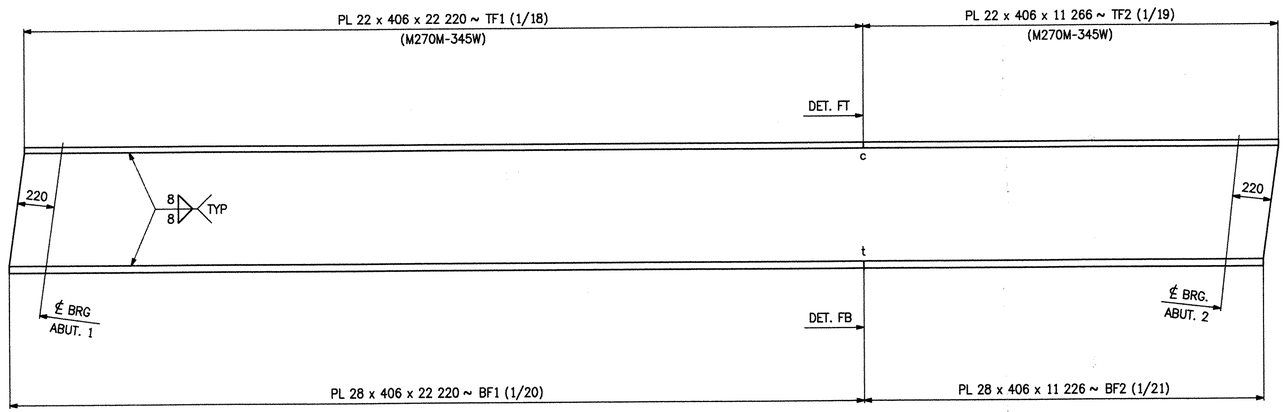
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EPLN E2

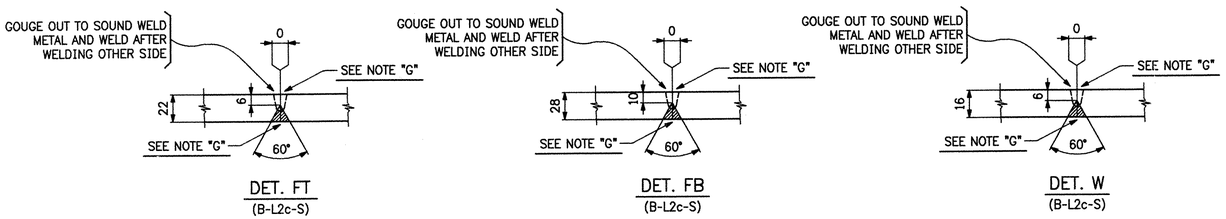
Sheet E1 - Plotted: 05/04/2006 @ 10:33 (HEATHER)



CAMBER DIAGRAM FOR ~ 1G1A



FLANGE DIAGRAM FOR ~ 1G1A



NOTE "G"

GRIND THE WELDS SMOOTH IN THE AREAS TO BE TESTED AND FOR THE FULL DEPTH OF WEB. ALL OTHER WELDS MAY HAVE A MAXIMUM REINFORCEMENT OF 3mm ($\frac{1}{8}$).

NOTES:

1. MATERIAL TO BE M270M-345WT2 (UN).
2. FOR GENERAL NOTES SEE SHT. GN1
3. THE LETTERS "t" & "c" AT FLANGE SPLICES INDICATE TENSION AND COMPRESSION SPLICES RESPECTIVELY.
4. (T) DENOTES TENSION AREA AT WEB SPLICE.

RECEIVED
CK'D BY ws OK'D BY
MAY 18 2006
RESUBMIT APPROVED ✓
BY WS/D DATE 6/9/06

REV.	DATE	DESCRIPTION
1		

QTY.	DATE	ISSUED TO	FOR
8	5/15/06	F W Whitcomb	Approval

EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

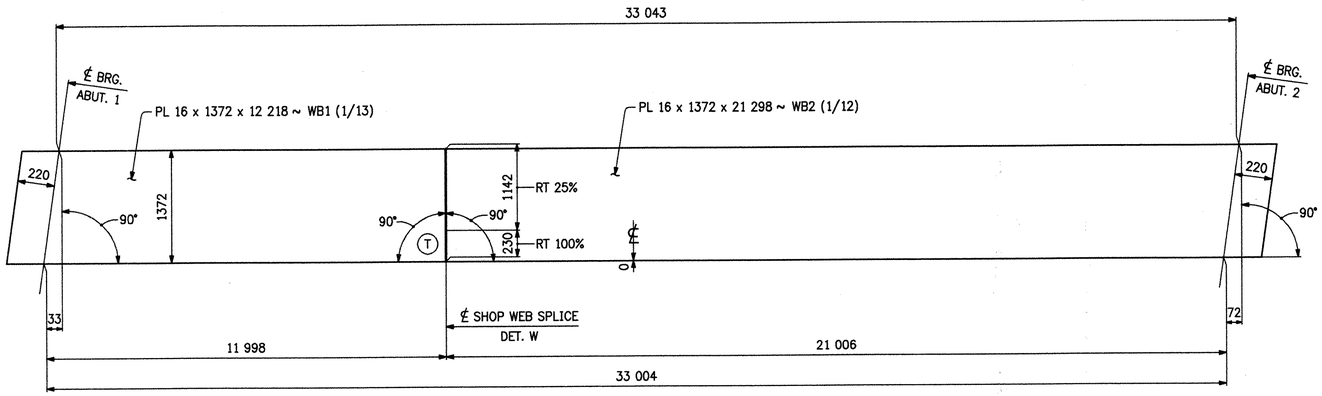
PROJECT:	T.H.1 OVER MENDON BROOK (BRIDGE NO. 3)
LOCATION:	TOWN OF MENDON, COUNTY OF RUTLAND
ENGINEER:	STATE OF VERMONT AGENCY OF TRANSPORTATION
CUSTOMER:	FRANK W WHITCOMB CONSTRUCTION
DRAWING TITLE:	WEB CAMBER & FLANGE DIAGRAMS
DRAWN BY: MAY 4-13-06	JOB NUMBER: 6085
CHECKED BY: FM 5-1-06	SHEET NUMBER: WC1

826-4

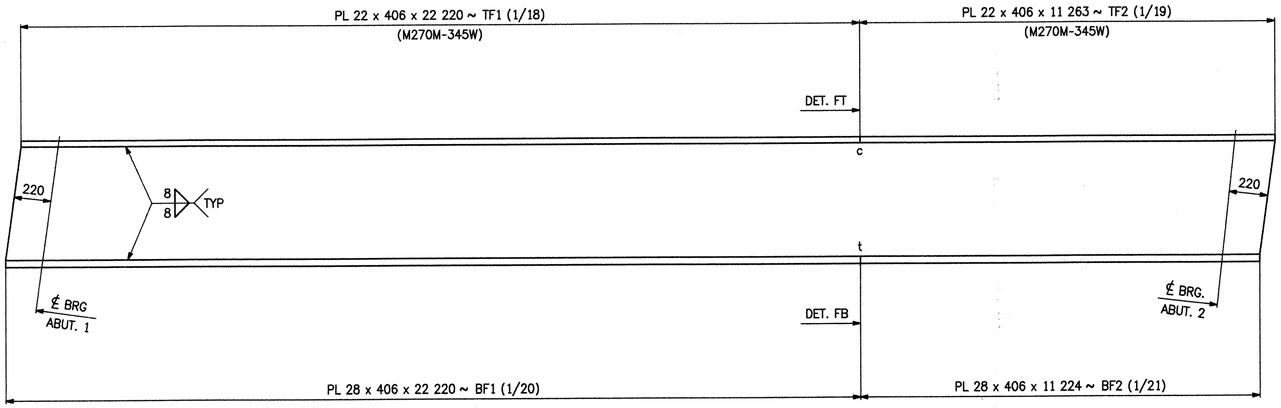
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WC826A

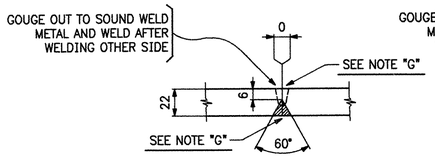
Sheet WC1 - Plotted: 05/04/2006 @ 10:34 (HEATHER)



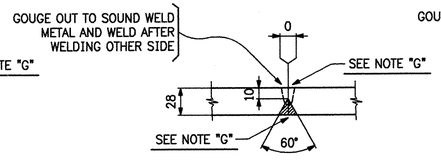
CAMBER DIAGRAM FOR ~ 2G2A



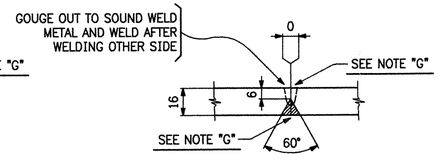
FLANGE DIAGRAM FOR ~ 2G2A



DET. FT
(B-L2c-S)



DET. FB
(B-L2c-S)



DET. W
(B-L2c-S)

NOTE "G"

GRIND THE WELDS SMOOTH IN THE AREAS TO BE TESTED AND FOR THE FULL DEPTH OF WEB. ALL OTHER WELDS MAY HAVE A MAXIMUM REINFORCEMENT OF 3mm ($\frac{1}{8}$).

NOTES:

1. MATERIAL TO BE M270M-345WT2 (UN).
2. FOR GENERAL NOTES SEE SHT. GN1
3. THE LETTERS "t" & "c" AT FLANGE SPLICES INDICATE TENSION AND COMPRESSION SPLICES RESPECTIVELY.
4. (T) DENOTES TENSION AREA AT WEB SPLICE.

RECEIVED
CK'D BY WS OK'D BY
MAY 18 2006
RESUBMIT APPROVED
BY WS DATE 6/9/06

REV.	DATE	DESCRIPTION
1		

QTY.	DATE	ISSUED TO	FOR
8	5/15/06	F.W. Whitcomb	Approval

EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

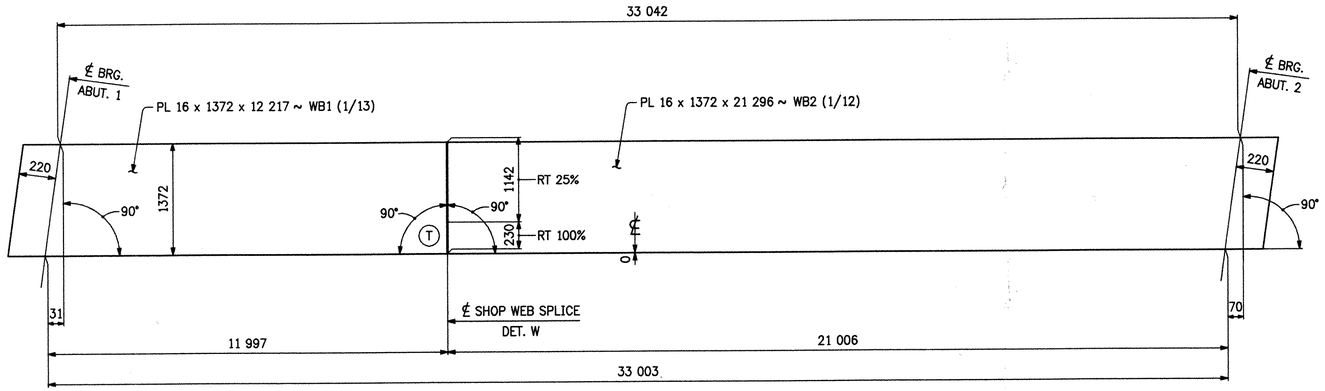
PROJECT:	T.H.1 OVER MENDON BROOK (BRIDGE NO. 3)
LOCATION:	TOWN OF MENDON, COUNTY OF RUTLAND
ENGINEER:	STATE OF VERMONT AGENCY OF TRANSPORTATION
CUSTOMER:	FRANK W WHITCOMB CONSTRUCTION
DRAWING TITLE:	WEB CAMBER & FLANGE DIAGRAMS
DRAWN BY:	MAY 4-13-06
CHECKED BY:	FM 5-1-06
JOB NUMBER:	6085
SHEET NUMBER:	WC2

826-4

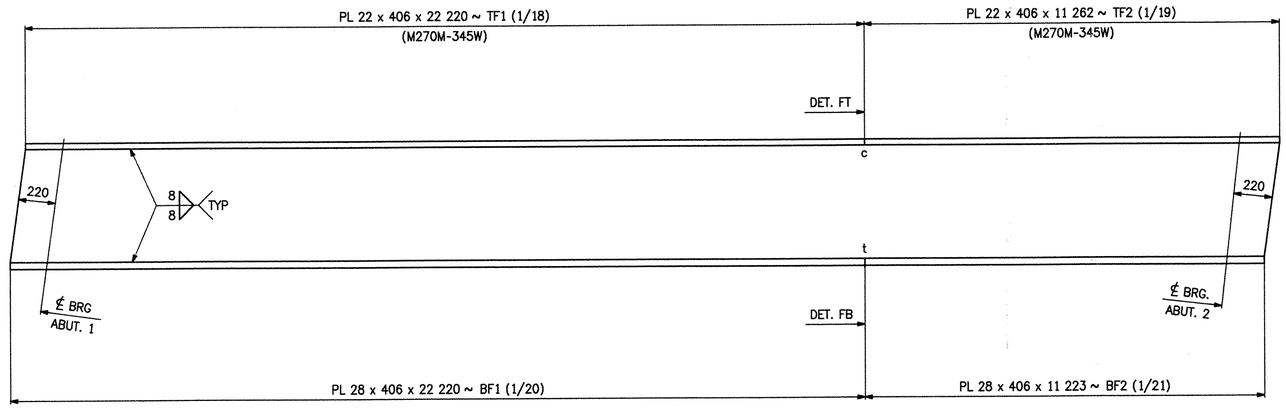
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WC826B

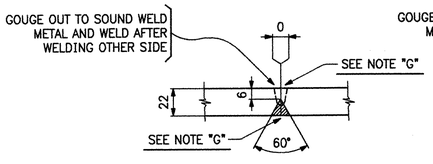
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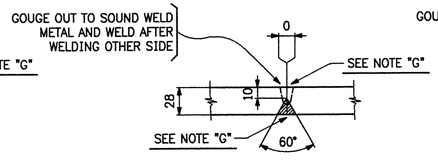
CAMBER DIAGRAM FOR ~ 3G3A



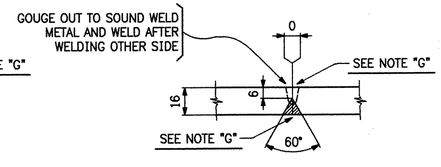
FLANGE DIAGRAM FOR ~ 3G3A



DET. FT
(B-L2c-S)



DET. FB
(B-L2c-S)



DET. W
(B-L2c-S)

NOTE "G"

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NOTES:

1. MATERIAL TO BE M270M-345WT2 (UN).
2. FOR GENERAL NOTES SEE SHT. GN1
3. THE LETTERS "t" ℄ "c" AT FLANGE SPLICES INDICATE TENSION AND COMPRESSION SPLICES RESPECTIVELY.
4. (T) DENOTES TENSION AREA AT WEB SPLICE.

RECEIVED
CK'D BY WJS CK'D BY
MAY 18 2006
RESUBMIT APPROVED
BY VV SF DATE 6/9/06

REV.	DATE	DESCRIPTION
1		

QTY.	DATE	ISSUED TO	FOR
8	5/15/06	F W Whitcomb	Approval

EB LLC

EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

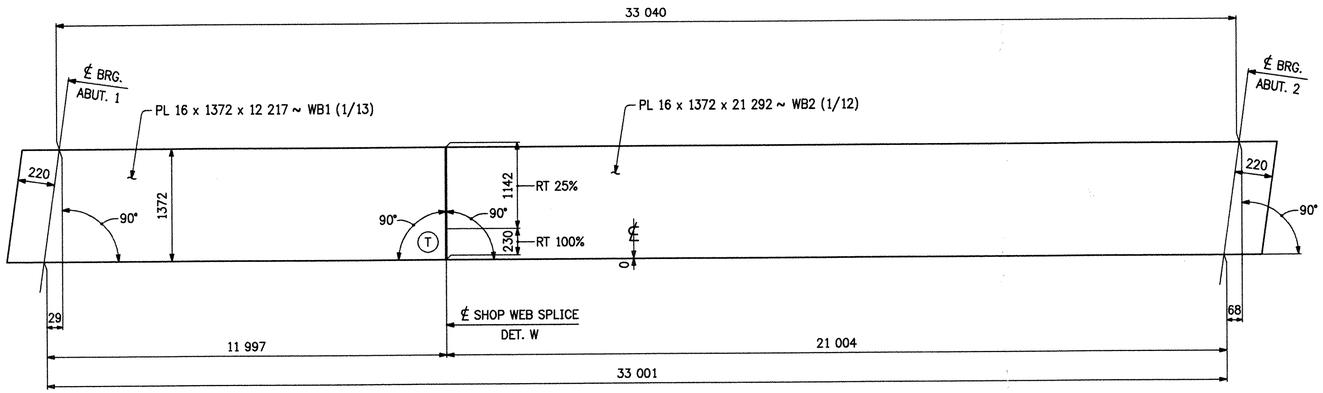
PROJECT:	T.H.1 OVER MENDON BROOK (BRIDGE NO. 3)
LOCATION:	TOWN OF MENDON, COUNTY OF RUTLAND
ENGINEER:	STATE OF VERMONT AGENCY OF TRANSPORTATION
CUSTOMER:	FRANK W WHITCOMB CONSTRUCTION
DRAWING TITLE:	WEB CAMBER ℄ FLANGE DIAGRAMS
DRAWN BY: MAY 4-13-06	JOB NUMBER: 6085
CHECKED BY: FM 5-1-06	SHEET NUMBER: WC3

826-4

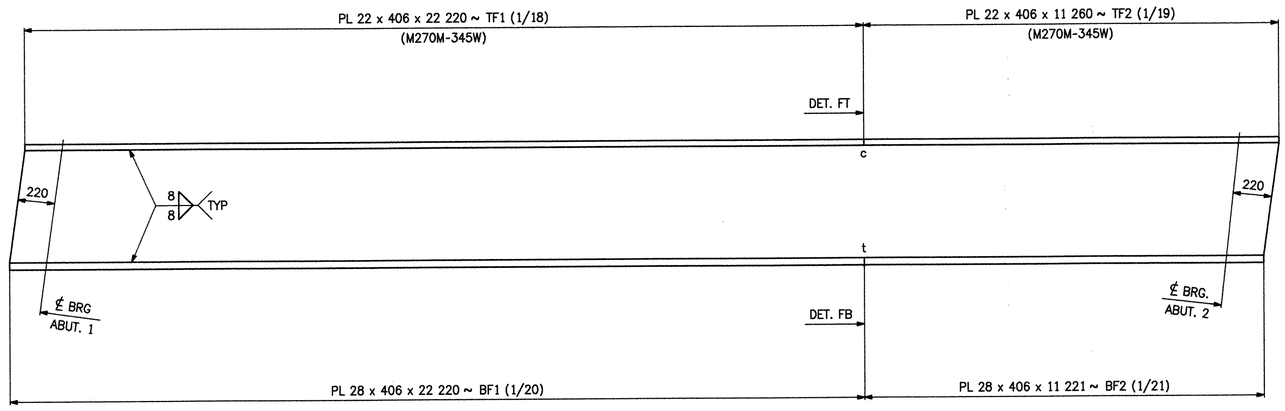
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WC826

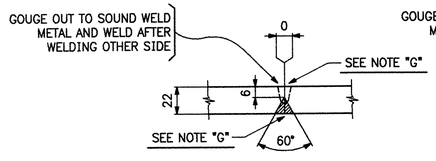
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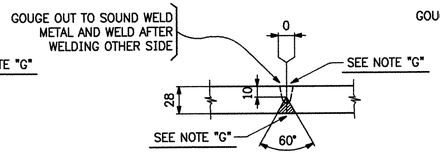
CAMBER DIAGRAM FOR ~ 4G4A



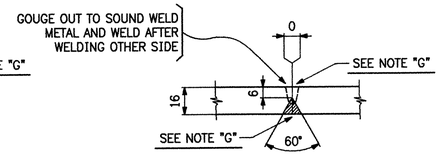
FLANGE DIAGRAM FOR ~ 4G4A



DET. FT
(B-L2c-S)



DET. FB
(B-L2c-S)



DET. W
(B-L2c-S)

NOTE "G"

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NOTES:

1. MATERIAL TO BE M270M-345WT2 (UN).
2. FOR GENERAL NOTES SEE SHT. GN1
3. THE LETTERS "t" & "c" AT FLANGE SPLICES INDICATE TENSION AND COMPRESSION SPLICES RESPECTIVELY.
4. (T) DENOTES TENSION AREA AT WEB SPLICE.

RECEIVED
CK'D BY_____ OK'D BY WS
MAY 18 2006
RESUBMIT_____ APPROVED ✓
BY VKS DATE 6/9/06

REV.	DATE	DESCRIPTION
⚠		

QTY.	DATE	ISSUED TO	FOR
8	5/15/06	F W Whitcomb	Approval

EBLLC

EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

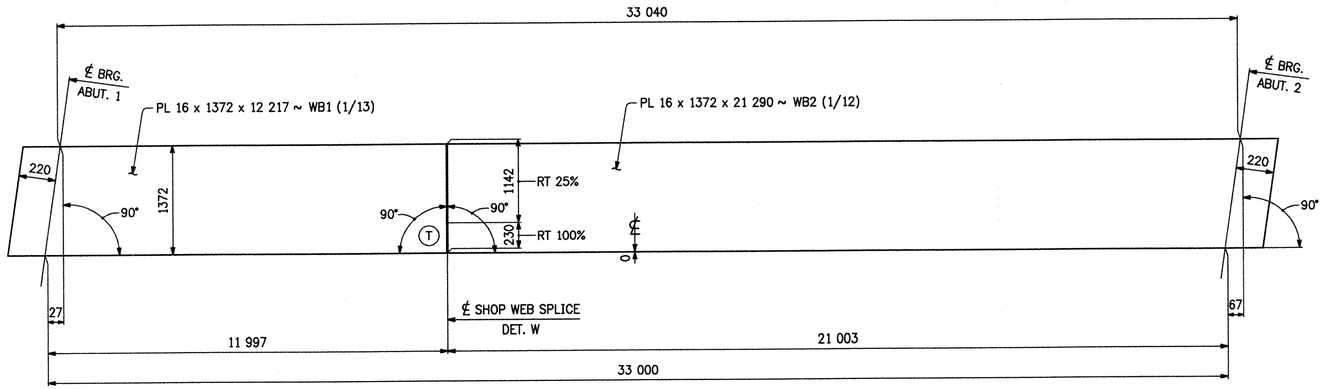
PROJECT:	T.H.1 OVER MENDON BROOK (BRIDGE NO. 3)
LOCATION:	TOWN OF MENDON, COUNTY OF RUTLAND
ENGINEER:	STATE OF VERMONT AGENCY OF TRANSPORTATION
CUSTOMER:	FRANK W WHITCOMB CONSTRUCTION
DRAWING TITLE:	WEB CAMBER & FLANGE DIAGRAMS
DRAWN BY: MAY 4-13-06	JOB NUMBER: 6085
CHECKED BY: FM 5-1-06	SHEET NUMBER: WC4

826-4

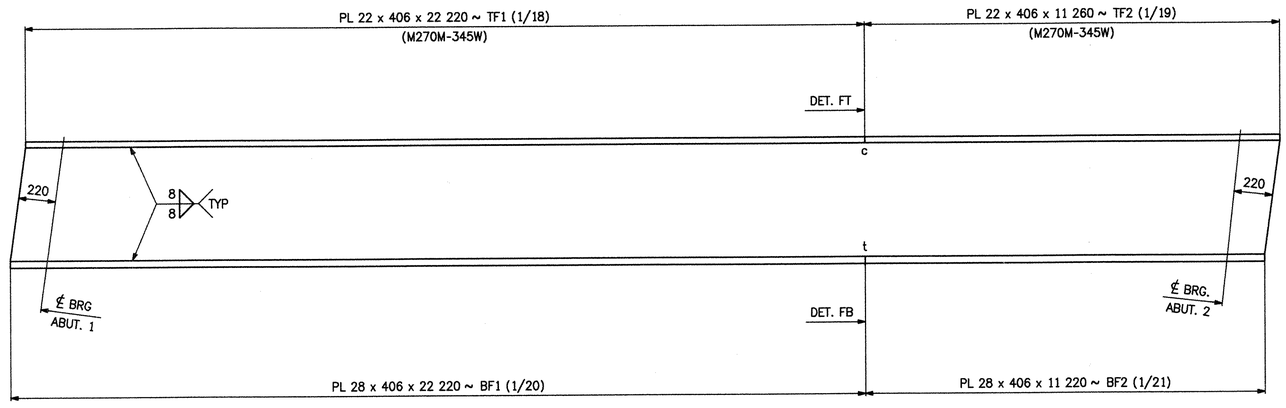
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WC826D

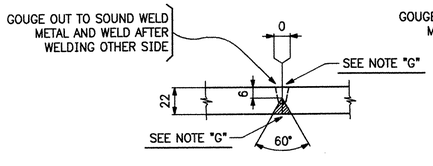
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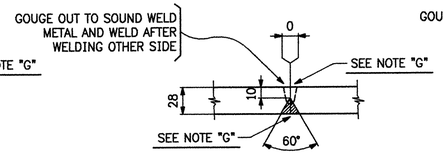
CAMBER DIAGRAM FOR ~ 5G5A



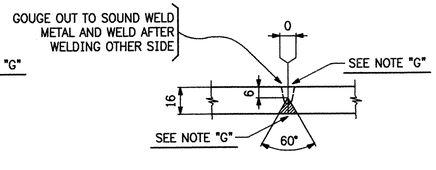
FLANGE DIAGRAM FOR ~ 5G5A



DET. FT
(B-L2c-S)



DET. FB
(B-L2c-S)



DET. W
(B-L2c-S)

NOTE "G"

GRIND THE WELDS SMOOTH IN THE AREAS TO BE TESTED AND FOR THE FULL DEPTH OF WEB. ALL OTHER WELDS MAY HAVE A MAXIMUM REINFORCEMENT OF 3mm ($\frac{1}{8}$).

NOTES:

1. MATERIAL TO BE M270M-345WT2 (UN).
2. FOR GENERAL NOTES SEE SHT. GN1
3. THE LETTERS "t" ℄ "c" AT FLANGE SPLICES INDICATE TENSION AND COMPRESSION SPLICES RESPECTIVELY.
4. (T) DENOTES TENSION AREA AT WEB SPLICE.

RECEIVED
CK'D BY WBJ CK'D BY
MAY 18 2006
RESUBMIT APPROVED ✓
BY WBJ DATE 6/9/06

REV.	DATE	DESCRIPTION
⚠		

QTY.	DATE	ISSUED TO	FOR
8	5/15/06	F.W. Whitcomb	Approval

EB LLC

EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

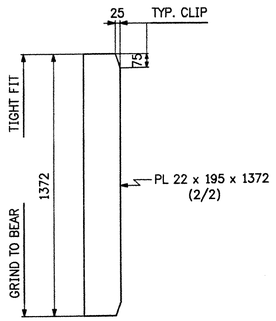
PROJECT:	T.H.1 OVER MENDON BROOK (BRIDGE NO. 3)
LOCATION:	TOWN OF MENDON, COUNTY OF RUTLAND
ENGINEER:	STATE OF VERMONT AGENCY OF TRANSPORTATION
CUSTOMER:	FRANK W WHITCOMB CONSTRUCTION
DRAWING TITLE:	WEB CAMBER ℄ FLANGE DIAGRAMS
DRAWN BY: MAY 4-13-06	JOB NUMBER: 6085
CHECKED BY: FM 5-1-06	SHEET NUMBER: WC5

826-4

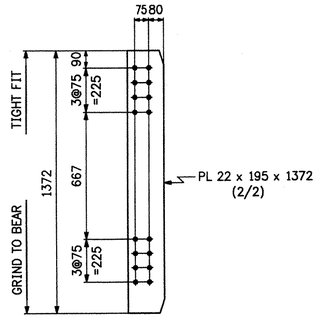
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WC826E

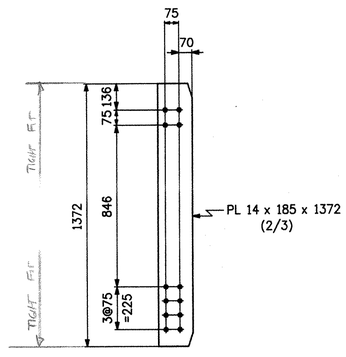
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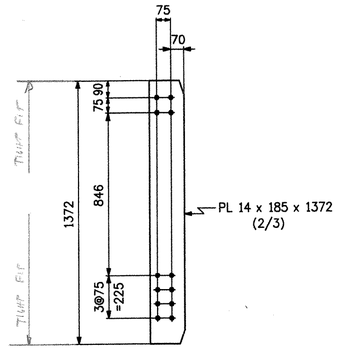
2 ~ x1a
(ABUT. 1 FASCIA)



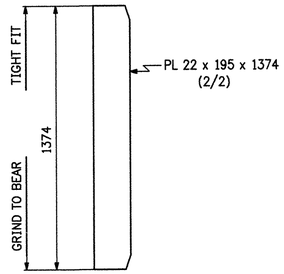
8 ~ x1b
(ABUT. 1)



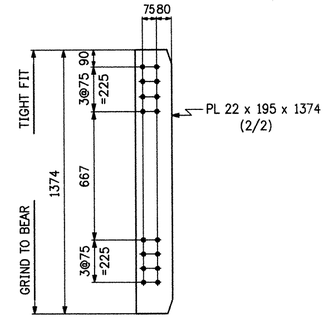
24 ~ x1c
(INT. HIGH)



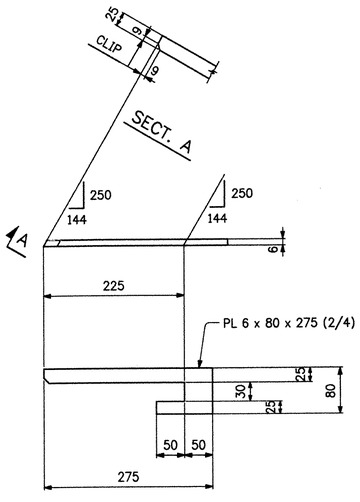
24 ~ x1d
(INT. LOW)



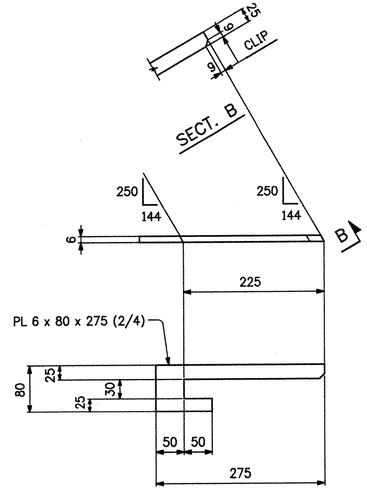
2 ~ x1h
(ABUT. 2)



8 ~ x1m
(ABUT. 2)



1 ~ x1f
(LINE 1)



1 ~ x1g
(LINE 5)

NOTES:

HOLES: $\frac{15}{16}\varnothing$
BOLTS: NONE
MAT'L: M270M-345W
PAINT: NONE

RECEIVED
CK'D BY WAS OK'D BY
MAY 18 2006
RESUBMIT APPROVED As Noted
BY WJS DATE 4/9/06

REV.	DATE	DESCRIPTION
1		

QTY.	DATE	ISSUED TO	FCR
8	5/15/06	F W Whitcomb	Approved

EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

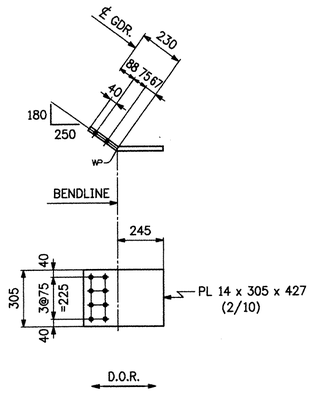
PROJECT:	T.H.1 OVER MENDON BROOK (BRIDGE NO. 3)		
LOCATION:	TOWN OF MENDON, COUNTY OF RUTLAND		
ENGINEER:	STATE OF VERMONT AGENCY OF TRANSPORTATION		
CUSTOMER:	FRANK W WHITCOMB CONSTRUCTION		
DRAWING TITLE:	GIRDER STANDARDS		
DRAWN BY: JF 4-17-06		JOB NUMBER: 6085	SHEET NUMBER: X1
CHECKED BY: FM 5-1-06			

826-9

112 SS

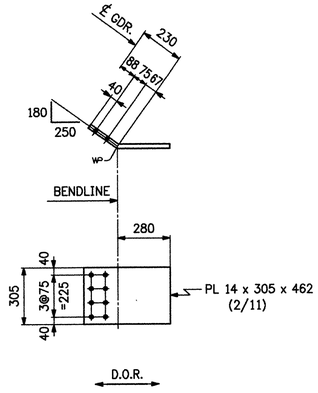
STD-826

Sheet: X1 - Plotted: 05/04/2006 @ 10:34 (HEA-HER)



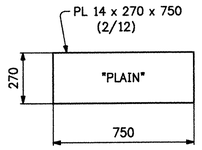
16 ~ m1a

(END CF TOP GUSSET)



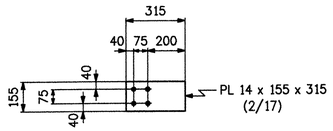
16 ~ m1b

(END CF BOTTOM GUSSET)



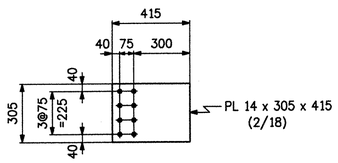
8 ~ m1c

(END CF TOP GUSSET)



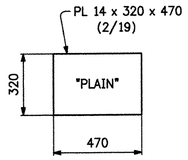
48 ~ m1d

(INT CF TOP GUSSET)



48 ~ m1f

(INT CF BOTTOM GUSSET)



24 ~ m1g

(INT CF TOP GUSSET)

NOTES:

HOLES: $\frac{15}{16}$ø
BOLTS: NONE
MAT'L: M709M-345W
PAINT: NONE

D.O.R. ◄► DENOTES DIRECTION OF ROLLING.

RECEIVED
CK'D BY WDS OK'D BY
MAY 18 2006
RESUBMIT APPROVED ✓
BY WJS DATE 6/8/06

REV.	DATE	DESCRIPTION
⚠		

QTY.	DATE	ISSUED TO	FOR
8	5/15/06	F W Whitcomb	Approval

EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

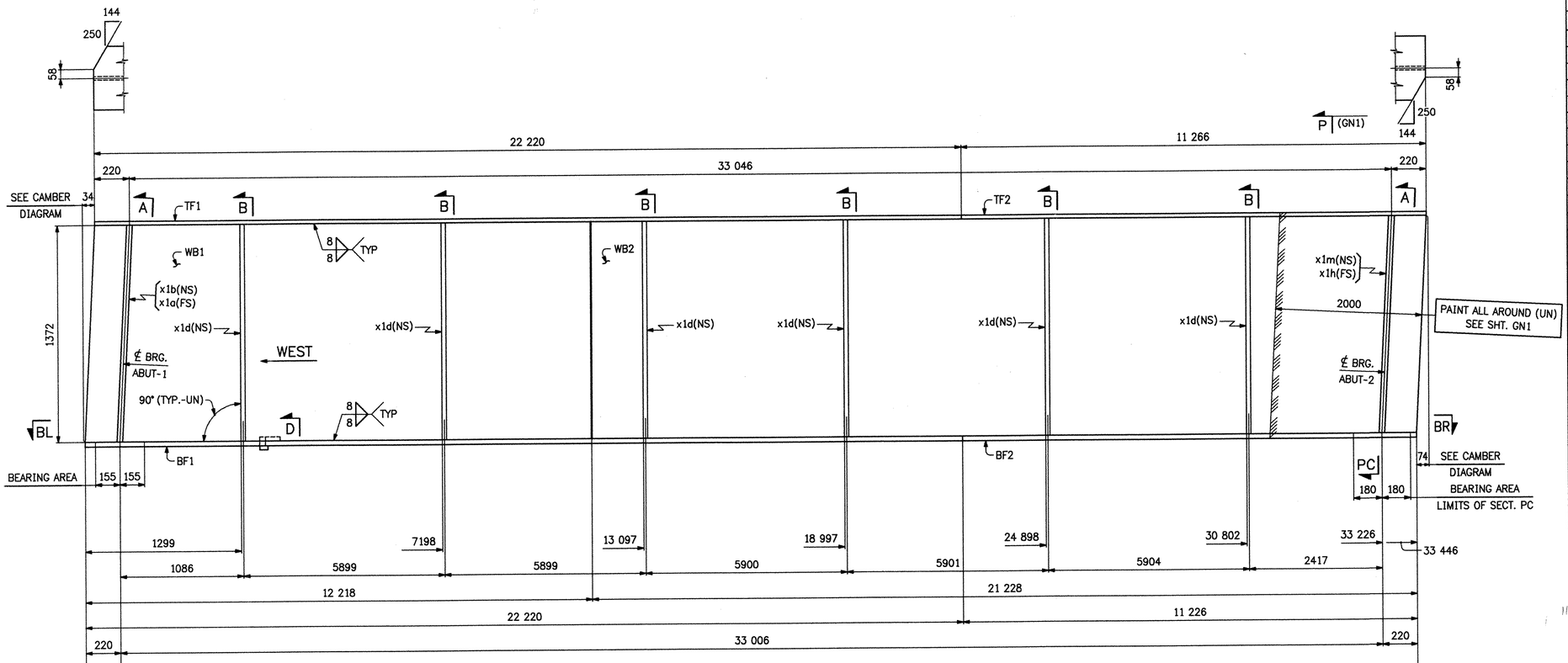
PROJECT:	T.H.1 OVER MENDON BROOK (BRIDGE NO. 3)
LOCATION:	TOWN OF MENDON, COUNTY OF RUTLAND
ENGINEER:	STATE OF VERMONT AGENCY OF TRANSPORTATION
CUSTOMER:	FRANK W WHITCOMB CONSTRUCTION
DRAWING TITLE:	CROSSFRAME STANDARDS
DRAWN BY: JF 4-12-06	JOB NUMBER: 6085
CHECKED BY: FM 5-2-06	SHEET NUMBER: M1

826-13

11 3 55

CF-STD826

Sheet M1 - Fabtec 05/04/2006 @ 10:33 (HEATHER)



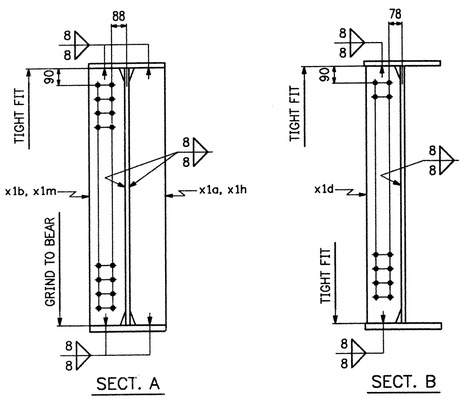
SECT. BL

SECT. D

SECT. BR

ONE ~ GIRDER ~ 1G1A

FOR GDR. STANDARD DETAILS, SEE SHT. X1
FOR WEB CAMBER ℄ FLANGE DIAGRAM SEE SHT. WC1.
FOR GENERAL NOTES ℄ TYPICAL DETAILS SEE SHT. GN1



SECT. A

SECT. B

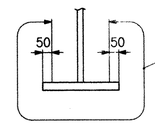
NOTES:

HOLES: $\frac{15}{18}\varnothing$
BOLTS: NONE
MAT'L: M270M-345W (UN).
PAINT: AS NOTED

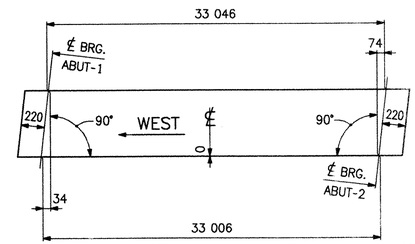
3 Teams
5 on Each
11:15-11:30
~15 students
16 vests

ABM INFO		SHIP	BILL OF MATERIAL						JOB No. 6085	REV.
PAGE	LINE	MARK	QTY.	MARK	MATERIAL	LENGTH MILLIMETERS	REMARKS	WEIGHT	PROCUREMENT NOTES	
		1G1A	ONE		GIRDER			11 462 kg		
1	13		1	WB1	PL 16 x 1372	12 218	M270M-345WT2			
1	12		1	WB2	PL 16 x 1372	21 290	M270M-345WT2			
1	18		1	TF1	PL 22 x 406	22 220				
1	19		1	TF2	PL 22 x 406	11 266				
1	20		1	BF1	PL 28 x 406	22 220	M270M-345WT2			
1	21		1	BF2	PL 28 x 406	11 226	M270M-345WT2			
2	2		1	x1a	PL 22 x 195	1372				
2	2		1	x1b	PL 22 x 195	1372				
2	2		1	x1h	PL 22 x 195	1374				
2	2		1	x1m	PL 22 x 195	1374				
2	3		6	x1d	PL 14 x 185	1372				
2	4		1	x1f	PL 6 x 80	275				

11,462 kg



SECT. PC
(STIFFS. NOT SHOWN)



CAMBER DIAGRAM

RECEIVED
CK'D BY WH CK'D BY
MAY 18 2006
RESUBMIT APPROVED ✓
BY WH DATE 4/9/06

REV.	DATE	DESCRIPTION
⚠		

QTY.	DATE	ISSUED TO	FOR
8	5/15/06	F W Whitcomb	Approval

EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5201

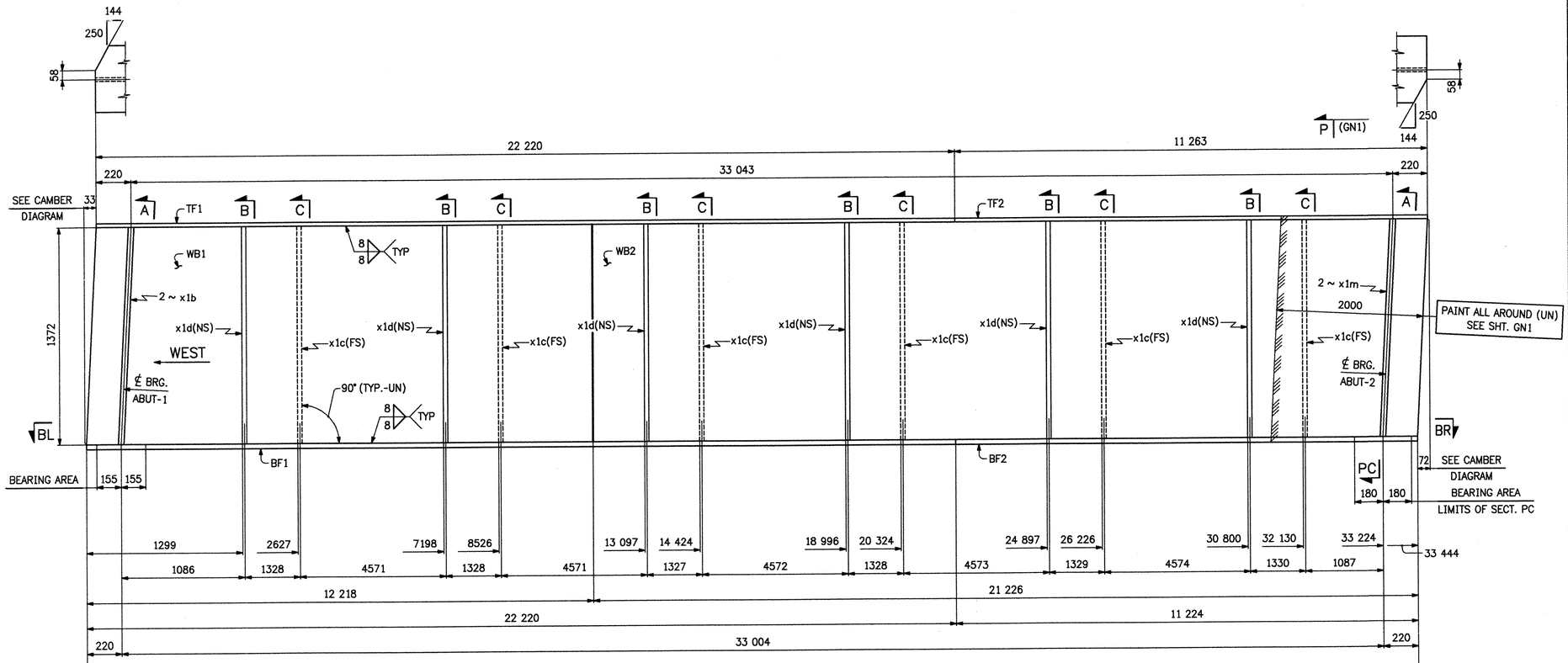
PROJECT:	T.H.1 OVER MENDON BROOK (BRIDGE NO. 3)		
LOCATION:	TOWN OF MENDON, COUNTY OF RUTLAND		
ENGINEER:	STATE OF VERMONT AGENCY OF TRANSPORTATION		
CUSTOMER:	FRANK W WHITCOMB CONSTRUCTION		
DRAWING TITLE:	GIRDER ~ 1G1A		
DRAWN BY: JF 4-18-06	JOB NUMBER: 6085	SHEET NUMBER: 1	
CHECKED BY: FM 5-2-06			

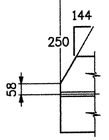
826-9

114 SS

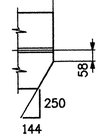
21-826

Sheet 1 - Plotted: 05/04/2006 @ 10:34 (HEGNER)





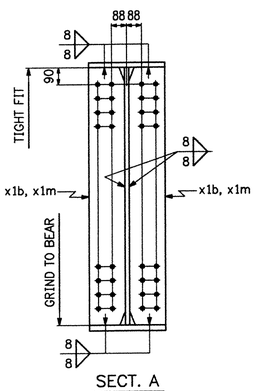
SECT. BL



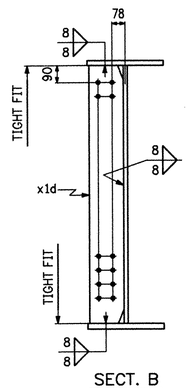
SECT. BR

ONE ~ GIRDER ~ 2G2A

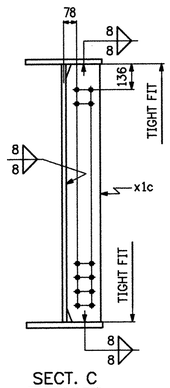
FOR GDR. STANDARD DETAILS, SEE SHT. X1
FOR WEB CAMBER ℄ FLANGE DIAGRAM SEE SHT. WC2.
FOR GENERAL NOTES ℄ TYPICAL DETAILS SEE SHT. GN1



SECT. A



SECT. B

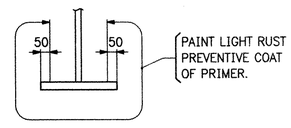


SECT. C

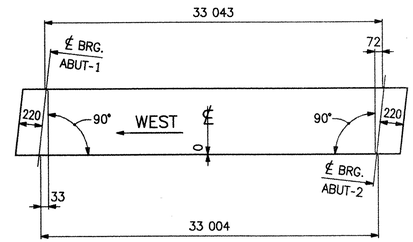
NOTES:

HOLES: $\frac{15}{16}\varnothing$
BOLTS: NONE
MAT'L: M270M-345W (UN).
PAINT: AS NOTED

ASM INFO		SHIP	BILL OF MATERIAL					JOB No. 6085	REV.
PAGE	LINE	MARK	QTY.	MARK	MATERIAL	LENGTH MILLIMETERS	REMARKS	WEIGHT	PROCUREMENT NOTES
		2G2A	ONE		GIRDER			11 627 kg	
1	13		1	WB1	PL 16 x 1372	12 218	M270M-345WT2		
1	12		1	WB2	PL 16 x 1372	21 298	M270M-345WT2		
1	18		1	TF1	PL 22 x 406	22 220			
1	19		1	TF2	PL 22 x 406	11 263			
1	20		1	BF1	PL 28 x 406	22 220	M270M-345WT2		
1	21		1	BF2	PL 28 x 406	11 224	M270M-345WT2		
2	2		2	x1b	PL 22 x 195	1372			
2	2		2	x1m	PL 22 x 195	1374			
2	3		6	x1c	PL 14 x 185	1372			
2	3		6	x1d	PL 14 x 185	1372			



SECT. PC
(STIFFS. NOT SHOWN)



CAMBER DIAGRAM

RECEIVED
CK'D BY WD CK'D BY
MAY 18 2006
RESUBMIT APPROVED
BY WJ DATE 6/16/06

REV.	DATE	DESCRIPTION
1		

QTY.	DATE	ISSUED TO	FOR
8	5/15/06	F W Whitcomb	Approval

EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

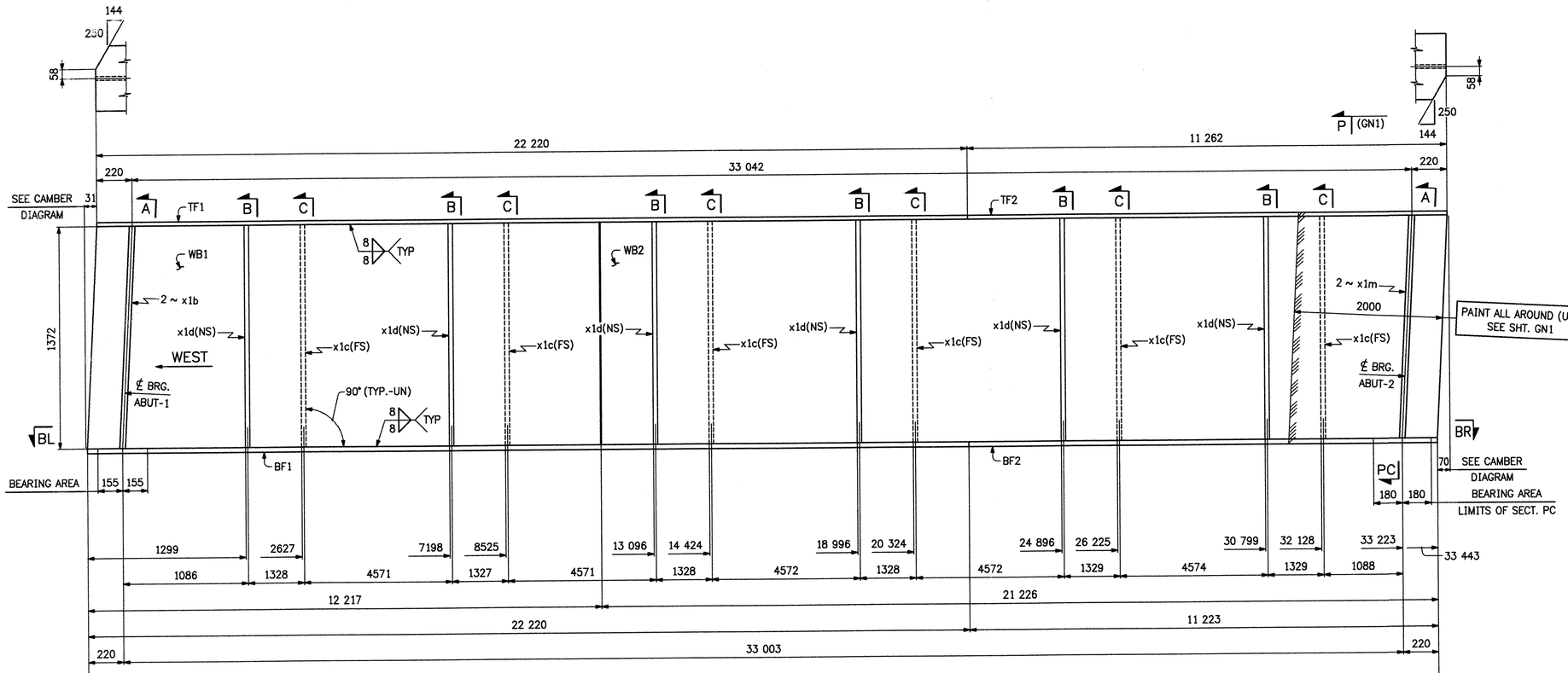
PROJECT:	T.H.1 OVER MENDON BROOK (BRIDGE NO. 3)		
LOCATION:	TOWN OF MENDON, COUNTY OF RUTLAND		
ENGINEER:	STATE OF VERMONT AGENCY OF TRANSPORTATION		
CUSTOMER:	FRANK W WHITCOMB CONSTRUCTION		
DRAWING TITLE:	GIRDER ~ 2G2A		
DRAWN BY: JF 4-18-06	JOB NUMBER: 6085	SHEET NUMBER: 2	
CHECKED BY: FM 5-3-06			

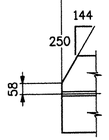
826-9

115-55

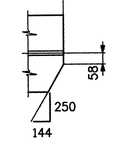
G2-826

Sheet 2 - Plotted: 05/04/2006 @ 10:35 (HEATHER)





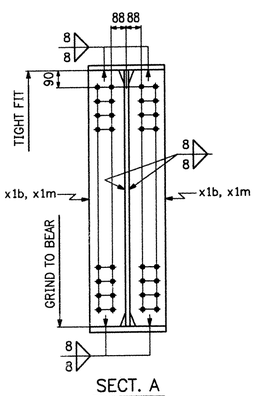
SECT. BL



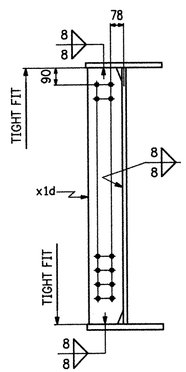
SECT. BR

ONE ~ GIRDER ~ 3G3A

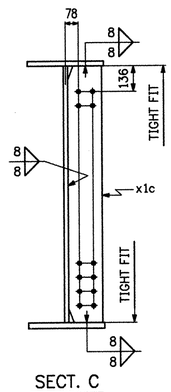
FOR GDR. STANDARD DETAILS, SEE SHT. X1
FOR WEB CAMBER ℄ FLANGE DIAGRAM SEE SHT. WC3.
FOR GENERAL NOTES ℄ TYPICAL DETAILS SEE SHT. GN1



SECT. A



SECT. B

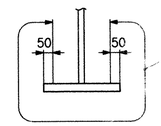


SECT. C

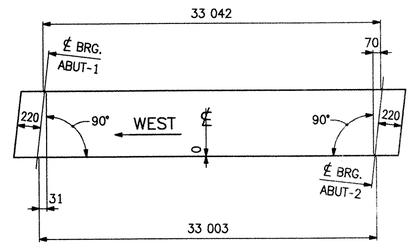
NOTES:

HOLES: $\frac{15}{16}$ø
BOLTS: NONE
MAT'L: M270M-345W (UN).
PAINT: AS NOTED

ABM INFO		SHIP	BILL OF MATERIAL					JOB No. 6085 REV.	
PAGE	LINE	MARK	QTY.	MARK	MATERIAL	LENGTH IN MILLIMETERS	REMARKS	WEIGHT	PROCUREMENT NOTES
		3G3A	ONE		GIRDER			11 628 kg	
1	13		1	WB1	PL 16 x 1372	12 217	M270M-345WT2		
1	12		1	WB2	PL 16 x 1372	21 296	M270M-345WT2		
1	18		1	TF1	PL 22 x 406	22 220			
1	19		1	TF2	PL 22 x 406	11 262			
1	20		1	BF1	PL 28 x 406	22 220	M270M-345WT2		
1	21		1	BF2	PL 28 x 406	11 223	M270M-345WT2		
2	2		2	x1b	PL 22 x 195	1372			
2	2		2	x1m	PL 22 x 195	1374			
2	3		6	x1c	PL 14 x 185	1372			
2	3		6	x1d	PL 14 x 185	1372			



SECT. PC
(STIFFS. NOT SHOWN)



CAMBER DIAGRAM

RECEIVED
CK'D BY LM OK'D BY
MAY 18 2006
RESUBMIT APPROVED ✓
BY DATE 6/9/06

REV.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
⚠		

QTY.	DATE	ISSUED TO	FOR
8	5/15/06	F W Whitcomb	Approval

EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

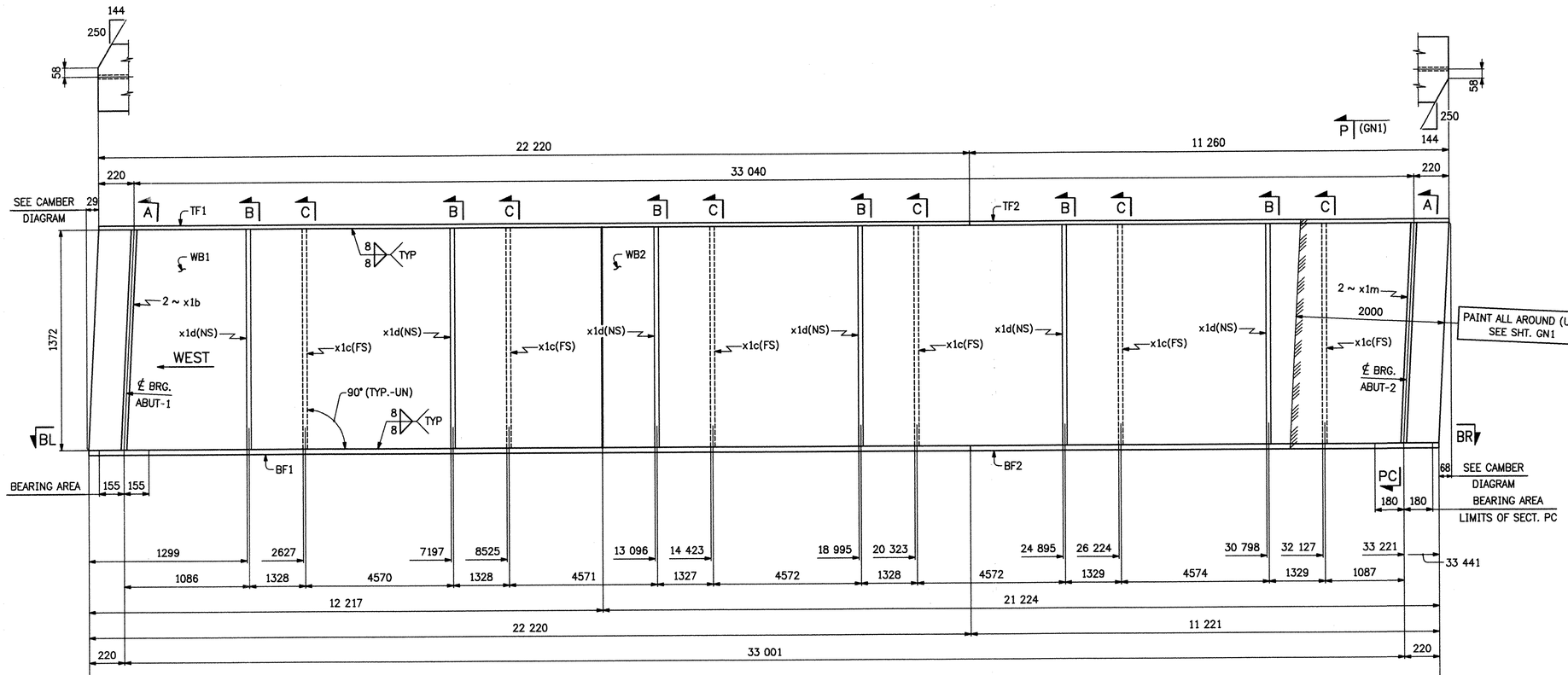
PROJECT:	T.H.1 OVER MENDON BROOK (BRIDGE NO. 3)		
LOCATION:	TOWN OF MENDON, COUNTY OF RUTLAND		
ENGINEER:	STATE OF VERMONT AGENCY OF TRANSPORTATION		
CUSTOMER:	FRANK W WHITCOMB CONSTRUCTION		
DRAWING TITLE:	GIRDER ~ 3G3A		
DRAWN BY:	JF 4-18-06	JOB NUMBER:	SHEET NUMBER:
CHECKED BY:	FM 5-3-06	6085	3

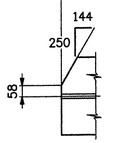
826-9

11635

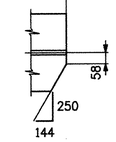
G3-826

Sheet 3 - Plotted: 05/04/2006 @ 10:35 (HEAHER)





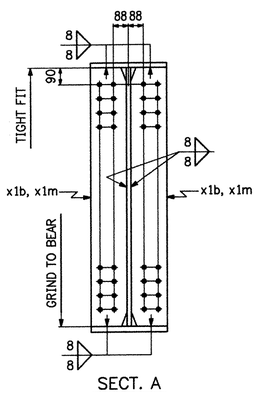
SECT. BL



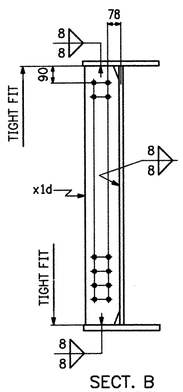
SECT. BR

ONE ~ GIRDER ~ 4G4A

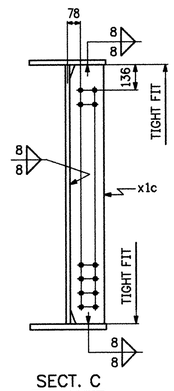
FOR GDR. STANDARD DETAILS, SEE SHT. X1
FOR WEB CAMBER ℄ FLANGE DIAGRAM SEE SHT. WC4.
FOR GENERAL NOTES ℄ TYPICAL DETAILS SEE SHT. GN1



SECT. A



SECT. B

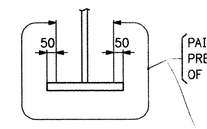


SECT. C

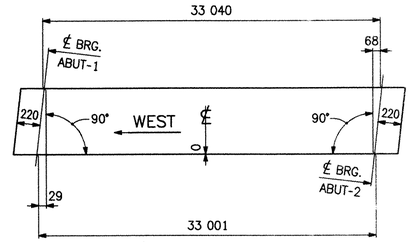
NOTES:

HOLES: $\frac{15}{16}$ø
BOLTS: NONE
MAT'L: M270M-345W (UN).
PAINT: AS NOTED

ABM INFO		SHIP	BILL OF MATERIAL					JOB No. 6085	REV.
PAGE	LINE	MARK	QTY.	MARK	MATERIAL	LENGTH (MILLIMETERS)	REMARKS	WEIGHT	PROCUREMENT NOTES
		4G4A	ONE		GIRDER			11 626 kg	
1	13		1	WB1	PL 16 x 1372	12 217	M270M-345WT2		
1	12		1	WB2	PL 16 x 1372	21 224	M270M-345WT2		
1	18		1	TF1	PL 22 x 406	22 22[illegible]			
1	19		1	TF2	PL 22 x 406	11 260			
1	20		1	BF1	PL 28 x 406	22 220	M270M-345WT2		
1	21		1	BF2	PL 28 x 406	11 221	M270M-345WT2		
2	2		2	x1b	PL 22 x 195	1372			
2	2		2	x1m	PL 22 x 195	1374			
2	3		6	x1c	PL 14 x 185	1372			
2	3		6	x1d	PL 14 x 185	1372			



SECT. PC
(STIFFS. NOT SHOWN)



CAMBER DIAGRAM

RECEIVED
CK'D BY WA CK'D BY
MAY 18 2006
RESUBMIT APPROVED ✓
BY WJS DATE 6/19/06

REV.	DATE	DESCRIPTION
⚠		

QTY.	DATE	ISSUED TO	FOR
8	5/15/06	F W Whitcomb	Approval

EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5201

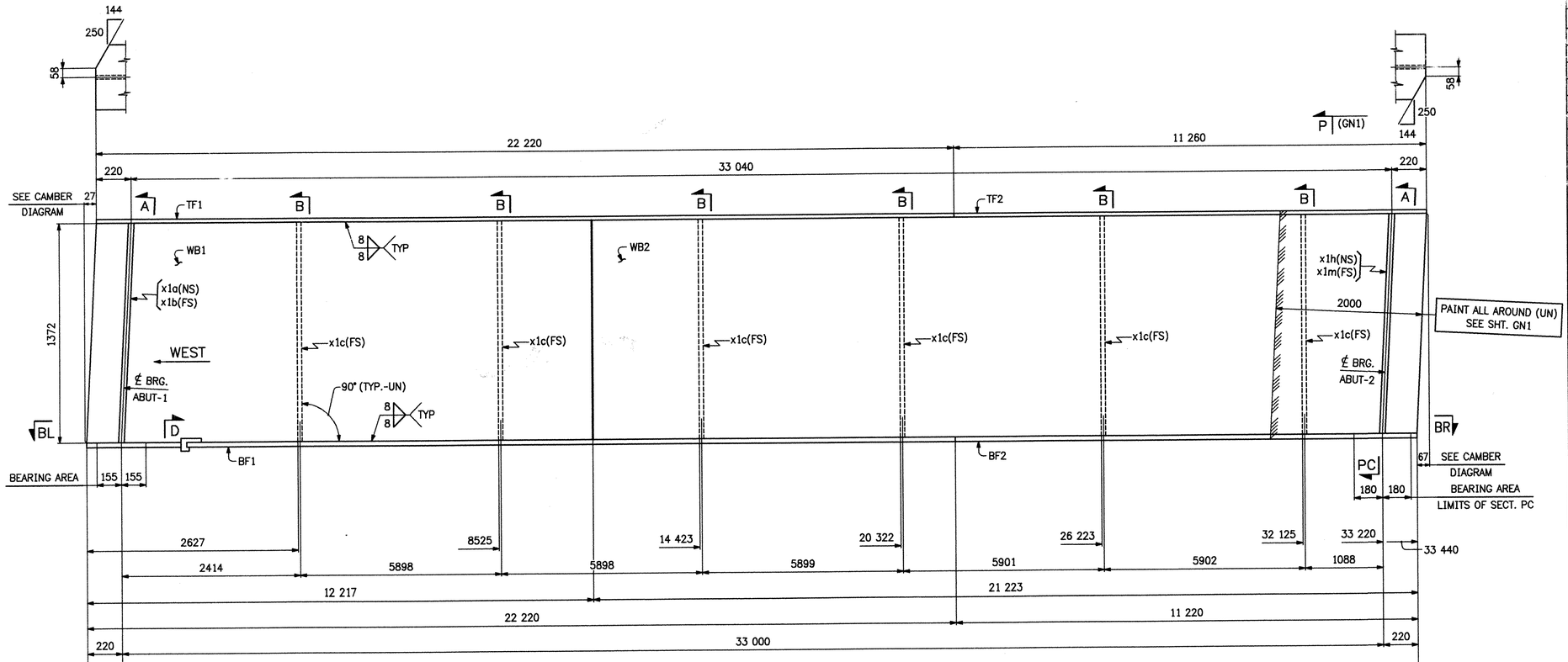
PROJECT:	T.H.1 OVER MENDON BROOK (BRIDGE NO. 3)
LOCATION:	TOWN OF MENDON, COUNTY OF RUTLAND
ENGINEER:	STATE OF VERMONT AGENCY OF TRANSPORTATION
CUSTOMER:	FRANK W WHITCOMB CONSTRUCTION
DRAWING TITLE:	GIRDER ~ 4G4A
DRAWN BY: JF 4-18-06	JOB NUMBER: 6085
CHECKED BY: FM 5-3-06	SHEET NUMBER: 4

826-9

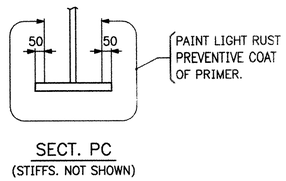
11755

G4-82

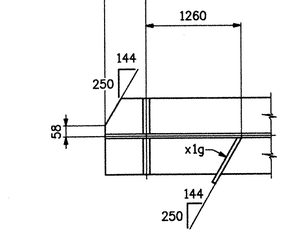
Sheet 4 - Plotted: 05/04/2006 @ 10:35 (NEWHER)



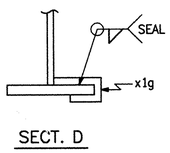
ABM INFO		SHIP	BILL OF MATERIAL					JOB No. 6085	
PAGE	LINE	MARK	QTY.	MARK	MATERIAL	LENGTH MILLIMETRES	REMARKS	WEIGHT	PROCUREMENT NOTES
		5G5A	ONE		GIRDER			11 459 kg	
1	13		1	WB1	PL 16 x 1372	12 217	M270M-345WT2		
1	12		1	WB2	PL 16 x 1372	21 299	M270M-345WT2		
1	18		1	TF1	PL 22 x 406	22 220			
1	19		1	TF2	PL 22 x 406	11 260			
1	20		1	BF1	PL 28 x 406	22 220	M270M-345WT2		
1	21		1	BF2	PL 28 x 406	11 220	M270M-345WT2		
2	2		1	x1a	PL 22 x 195	1372			
2	2		1	x1b	PL 22 x 195	1372			
2	2		1	x1h	PL 22 x 195	1374			
2	2		1	x1m	PL 22 x 195	1374			
2	3		6	x1c	PL 14 x 185	1372			
2	4		1	x1g	PL 6 x 80	275			



SECT. PC
(STIFFS. NOT SHOWN)



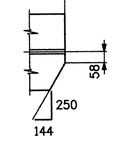
SECT. BL



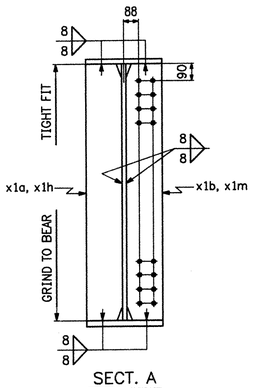
SECT. D

ONE ~ GIRDER ~ 5G5A

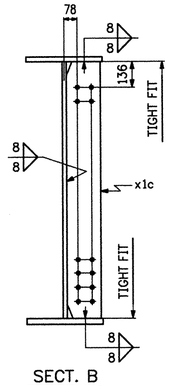
FOR GDR. STANDARD DETAILS, SEE SHT. X1
FOR WEB CAMBER ℄ FLANGE DIAGRAM SEE SHT. WC5.
FOR GENERAL NOTES ℄ TYPICAL DETAILS SEE SHT. GN1



SECT. BR



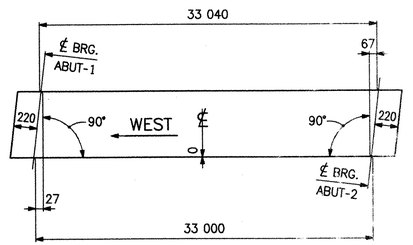
SECT. A



SECT. B

NOTES:

HOLES: $\frac{15}{16}\varnothing$
BOLTS: NONE
MAT'L: M270M-345W (UN).
PAINT: AS NOTED



CAMBER DIAGRAM

RECEIVED
CK'D BY WB3 OK'D BY
MAY 18 2006
RESUBMIT APPROVED ✓
BY WJS DATE 6/9/06

REV.	DATE	DESCRIPTION
⚠		

QTY.	DATE	ISSUED TO	FOR
8	5/15/06	F W Wh. frame	Approval

EASTERN BRIDGE LLC
RURAL RTE 2, BOX [illegible]
CLAREMONT, NH [illegible]
603-542-5202

PROJECT:	T.H.1 OVER MENDON BROOK (BRIDGE NO. 3)
LOCATION:	TOWN OF MENDON, COUNTY OF RUTLAND
ENGINEER:	STATE OF VERMONT AGENCY OF TRANSPORTATION
CUSTOMER:	FRANK W WHITCOMB CONSTRUCTION
DRAWING TITLE:	GIRDER ~ 5G5A
DRAWN BY: JF 4-18-06	JOB NUMBER: 6085
CHECKED BY: FM 5-3-06	SHEET NUMBER: 5

826-9

1185

G5-875

Sheet 5 - Plotted: 05/04/2006 @ 10:35 (NEAHER)

PROJECT NAME

QUALIFIED JOINT WELDING PROCEDURE PROJECT NUMBER
PROCEDURE SPECIFICATION

Material specification A36;A572;65AR
Welding process FCAW
Manual or machine SEMI-AUTOMATIC
Position of welding FLAT for groove welds' Horizontal for fillet welds 1G; 2F
Filler metal specification AWS 5.20
Filler metal classification ALLOY RODS DUAL SHIELD 71 71 ULTRA (E71T-1)
Flux N/A
Shielding gas CO_2 Flow rate 35 CFH
Single or multiple pass SINGLE AND MULTIPLE
Single or multiple arc SINGLE ELECTRICAL STICK-OUT 3/8"-3/5"
Welding current DC
Polarity REVERSE
Welding progression N/A
Root treatment NONE
Preheat and interpass temperature 50° to 3/8"THCL ;70°to1"THCL ;150°to 2" THCL
Postheat treatment NONE
Supported by PQR 007 and 008

WELDING PROCEDURE

Pass no.	Electrode size	Welding current Amperes	Welding current Volts	Travel speed I.P.M.	Weld Size (e)	Joint detail
		GROOVE WELDS				
1	.045	220-240	26-28	16-18	3/16"	
1	.045	220-240	26-28	10-12	1/4"	
all	.045	220-240	26-28	14-16	5/16"	
		FILLET WELDS				
FILLET WELDS SHALL EQUAL 1/4 OF t BUT NOT MORE THAN 3/8"						
SEE PROCEDURE DS-16 FOR PARAMETERS OF FILLET WELDS.						

TC-PB-GF

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in Section 5.

Procedure no. DS-13 VTRANS
Revision no. CK'D BY CK'D BY
Form E-2

RECEIVED
APR 13 2006
RESUBMIT APPROVED
BY DATE 5-3-06

Contractor Merrimack Sheet Metal, Inc.
Authorized by Scott Blanchette
Date 1/26/01

119 67

PROJECT NAME

PREQUALIFIED JOINT WELDING PROCEDURE PROJECT NUMBER
PROCEDURE SPECIFICATION

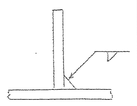
Material specification A36:A572:A588
Welding process FCAW
Manual or machine SEMI-AUTOMATIC
Position of welding FLAT OR HORIZONTAL
Filler metal specification AWS 5.20
Filler metal classification ALLOY RODS DUAL SHIELD II 71 ULTRA (E71T-1)
Flux N/A
Shielding gas CO_2 Flow rate 35 CFH
Single or multiple pass SINGLE AND MULTIPLE
Single or multiple arc SINGLE ELECTRICAL STICK-OUT 3/8"-3/4"
Welding current DC
Polarity REVERSE
Welding progression N/A
Post treatment NONE
Preheat and interpass temperature 50° to 3/8"THCL -70° to 1"THCL -150° to 2"+ THCL
Posthest treatment NONE
Supported by WPS 007 and 008

VTRANS
RECEIVED
APR 13 2006

WELDING PROCEDURE

CK'D BY ____ CK'D BY JWC
Joint details RESUBMIT ____ APPROVED ✓
BY DATE 5-3-06

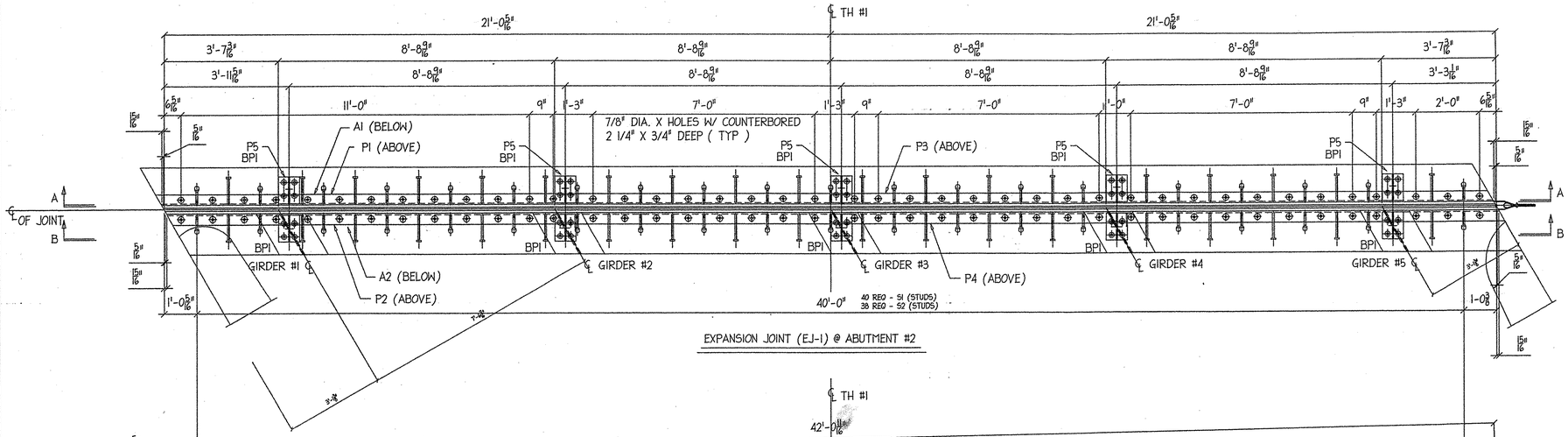
Pass no.	Electrode size	Welding current: Amperes	Welding current: Volts	Travel speed (I.P.M.)	Weld Size (E)
1	.045	220-240	26-28	16-18	3/16"
1	.045	220-240	26-28	12-13	1/4"
All	.045	210-230	25-27	9-10	5/16"
1	.045	220-240	26-28	16-18	
2	.045	220-240	26-28	16-18	3/8" (3 passes)
3	.045	220-240	26-28	16-18	
1	.045	210-230	25-27	9-11	
2	.045	210-230	25-27	9-11	7/16" (3 passes)
3	.045	210-230	25-27	9-11	

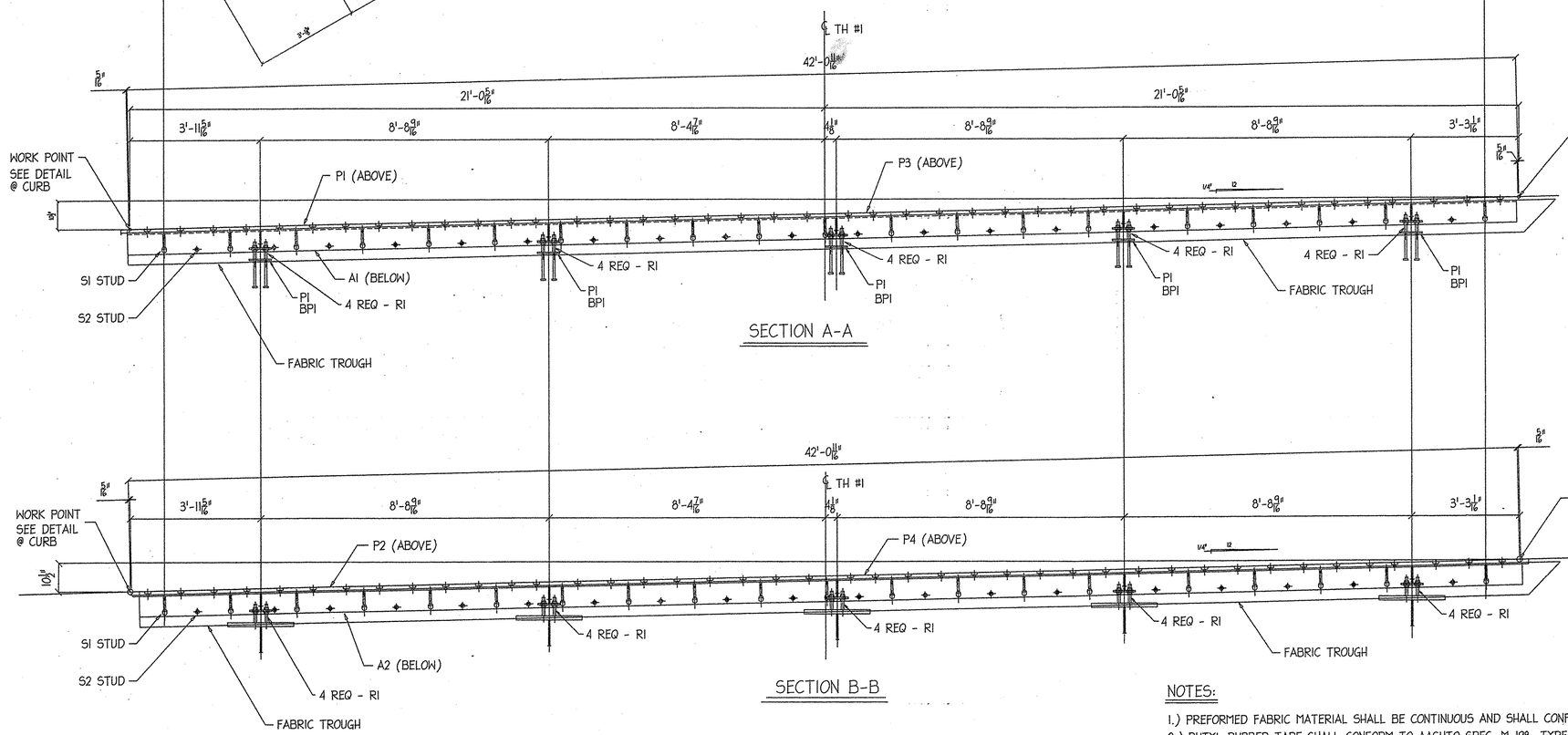


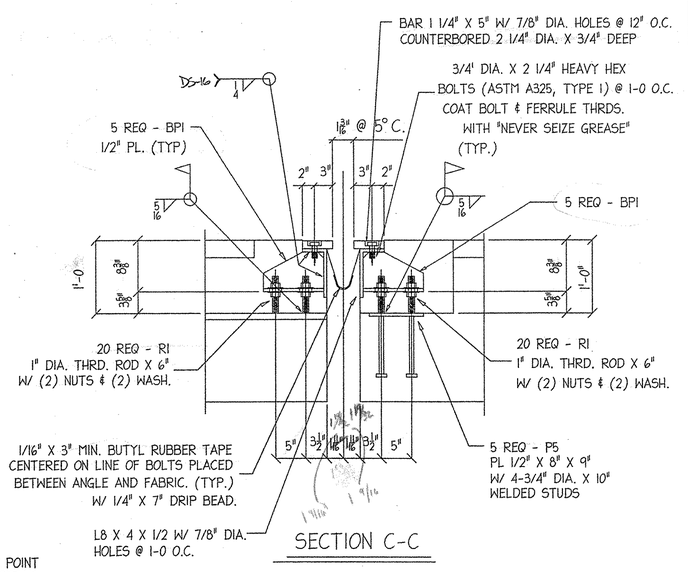
This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in Section 5.

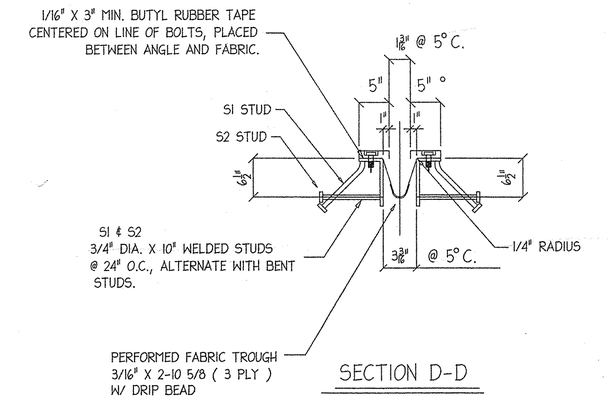
Procedure no. DS-16
Revision

Contractor Merrimack Sheet Metal, Inc.
Authorized by Scott Bianchetta
Date 11/26/07 120 bj

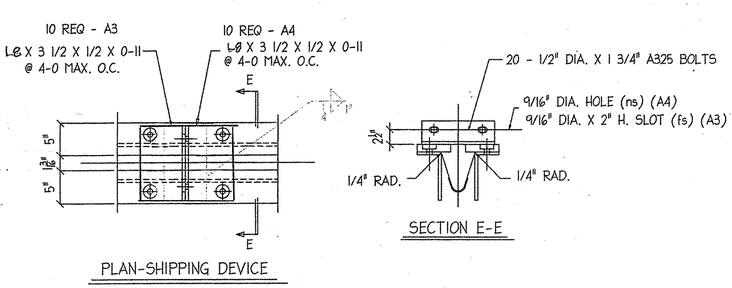


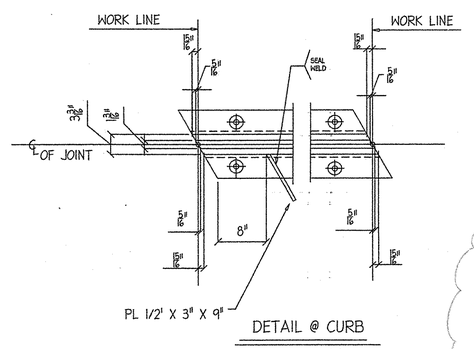






TEMP	"A" DISTANCE
-25°C	1 5/8"
-15°C	1 1/2"
-5°C	1 5/16"
+5°C	1 3/16"
+15°C	1 1/16"
+25°C	7/8"
+35°C	3/4"
+45°C	9/16"





NOTES:

1.) PREFORMED FABRIC MATERIAL SHALL BE CONTINUOUS AND SHALL CONFORM TO SUBSECTION 707.07.
2.) BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO SPEC. M-198, TYPE II.
3.) ALL STEEL COMPONENTS SHALL BE AASHTO M270[M270M, GRADE 250, GALVANIZED OR METALIZED AS PER SUBSECTION 506.15 (a) OR (b) UNLESS OTHERWISE NOTED.
4.) THE L8 X 4 X 1/2 ANGLES SHALL BE FURNISHED AS ONE CONTINUOUS PIECE. THE 1 1/4" X 5" W/ 1/2" BARS EACH SIDE OF THE JOINT SHALLBE PROVIDED IN TWO EQUAL LENGTHS .
5.) A DRIP BEAD OF 1/4" X 7" STRIP OF PREFORMED MATERIAL SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH USING AN ADHESIVE APPROVED BY THE MANUFACTURER. THE DRIP BEAD SHALL BE APPLIED 1" FROM THE DOWNSPOUT END OF THE TROUGH.
6.) THE EXPANSION JOINT SHALL BE SHOP ASSEMBLED AND SHIPPED AS ONE UNIT.

REVIEWER NOTE:
UNIT CONVERSION FROM METRIC CURRENT PLANS TO ENGLISH UNITS ON THESE FABRICATION DRAWINGS HAS NOT VERIFIED FABRICATOR IS RESPONSIBLE FOR THESE DIMENSIONAL CONVERSION.

RECEIVED
OK'D BY _____ OK'D BY _____
APR 13 2006
RESUBMIT _____ APPROVED As Noted
BY WY DATE 4/17/06

REV. NO.	DATE	DESCRIPTION
HOLES: 13/16"ø (U.N.O.)	DATE: 3-25-06	
PAINT:		

EXPANSION JOINT (EJ-1) @ ABUTMENT #2

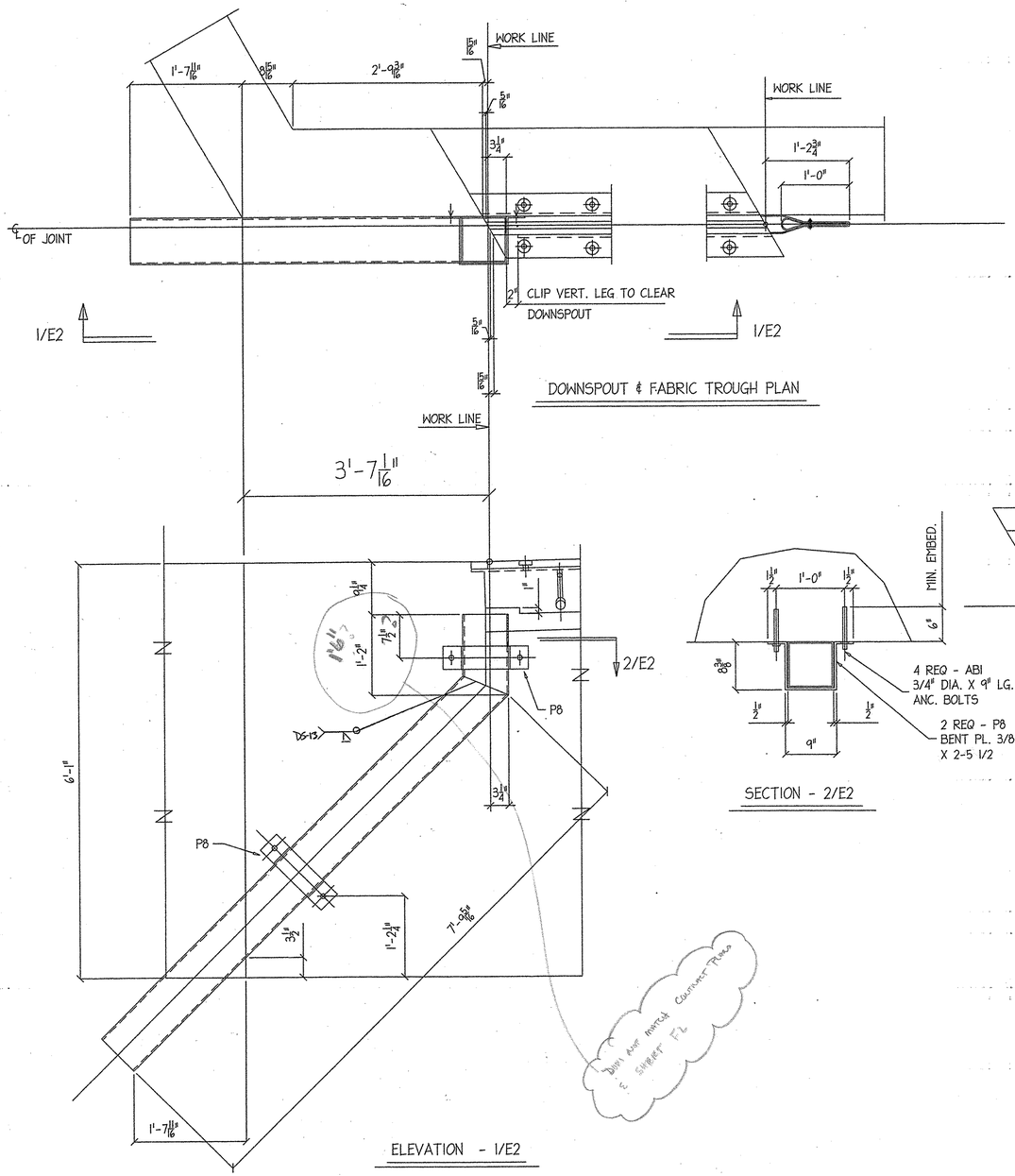
DATE SUB.	PROJECT	MENDON VT. BRIDGE
		RT. # TH#1, CL2
	LOCATION	MENDON, VT.
	ARCHITECT	
DATE APP.	ENGINEER	STATE OF VERMONT , AGENCY OF TRANSPROTATION
DATE DIST.	CUSTOMER	F.W. WHITCOMB CONST.

MERRIMACK
MISCELLANEOUS IRON STRUCTURAL STEEL FABRICATORS

MERRIMACK SHEET METAL
119 HALL ST.
CONCORD, N.H., 03301
TEL. (603) 224-7766
FAX. (603) 224-7925

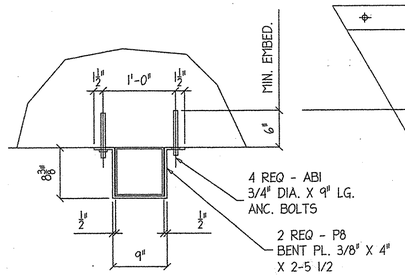
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REV BY	
JOB NO.	0727
DWG NO.	E1

12154

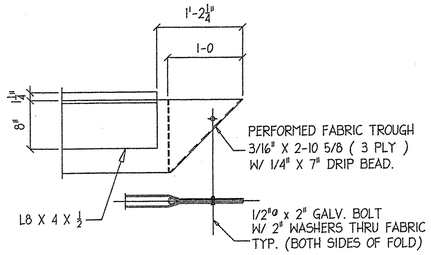


DOWNSPOUT & FABRIC TROUGH PLAN

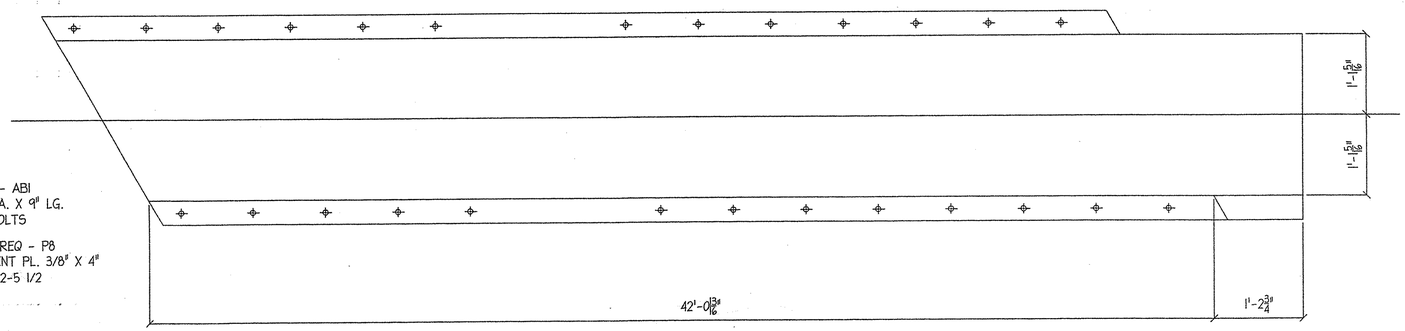
ELEVATION - 1/E2



SECTION - 2/E2



FOLDED FABRIC TROUGH END DETAIL



FABRIC TROUGH

1/4" X 2-10 5/8 X 42-0 13/16

1.) MATCH BOLT HOLES TO 1 1/4" PL. (P1 to P4)

NOTES:

1.) HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO A-500 OR A-501.
2.) ALL PLATES, BAR, AND ANGLES SHALL CONFORM TO AASHTO A709/A709M.
3.) DOWNSPOUT SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 AFTER FABRICATION.
4.) ALL BOLTS AND RELATED HARDWARE SHALL BE ASTM A-307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153 (AASHTO M232).

RECEIVED
CK'D BY _____ CK'D BY _____
APR 13 2006
RESUBMIT _____ APPROVED As Noted
BY WJY SyD DATE 5/17/06

REV. NO.	DATE	DESCRIPTION
HOLES: 13/16"ø (U.N.O.)		DATE: 3-25-06
PAINT:		

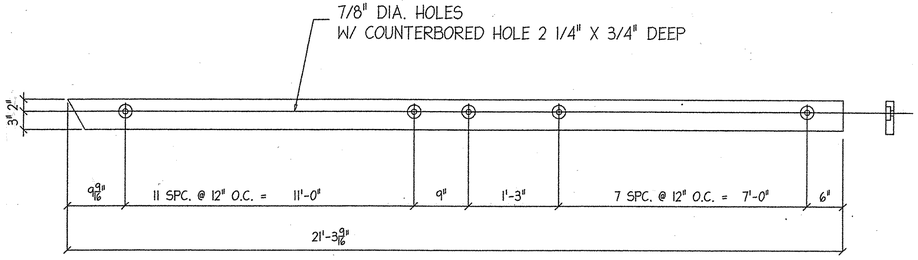
DOWNSPOUT & FABRIC TROUGH PLANS

DATE SUB.	PROJECT	MENDON VT. BRIDGE
		RT. # TH#1, CL2
	LOCATION	MENDON, VT.
	ARCHITECT	
DATE APP.	ENGINEER	STATE OF VERMONT , AGENCY OF TRANSPROTATION
DATE DIST.	CUSTOMER	F.W. WHITCOMB CONST.

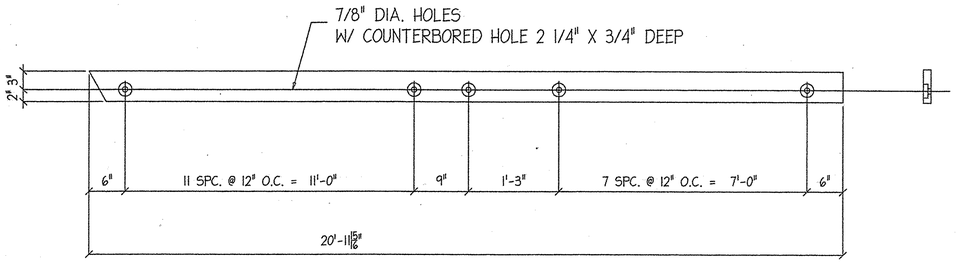
MERRIMACK
MISCELLANEOUS IRON STRUCTURAL STEEL FABRICATORS
MERRIMACK SHEET METAL
119 HALL ST.
CONCORD, N.H., 03301
TEL. (603) 224-7766
FAX. (603) 224-7925

DR BY	KJM
REV BY	
JOB NO.	0727
DWG NO.	E2

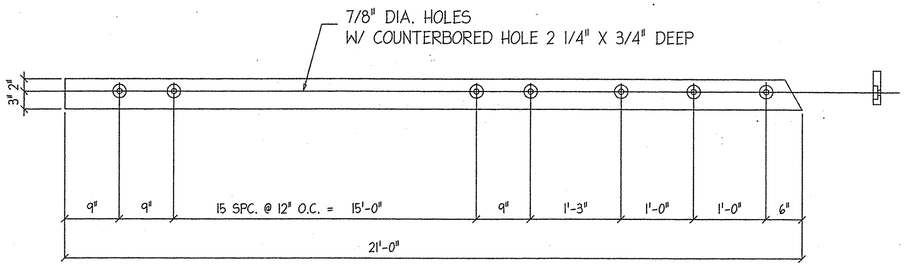
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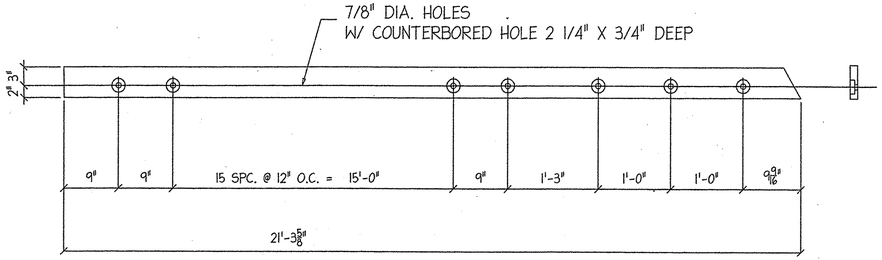
ONE REQ - P1



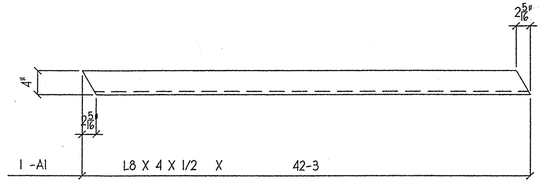
ONE REQ - P2

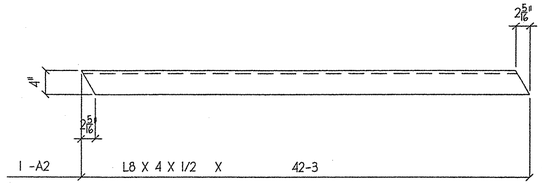


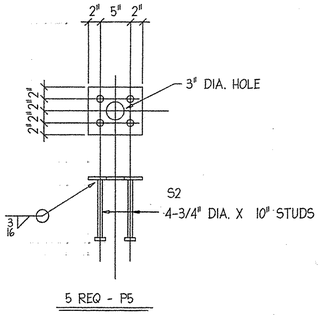
ONE REQ - P3



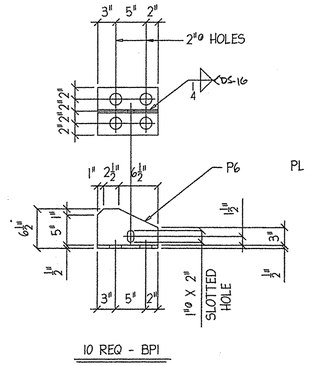
ONE REQ - P4



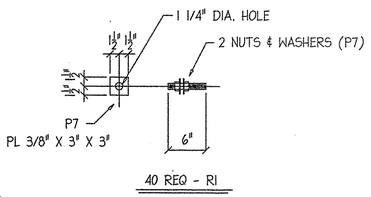




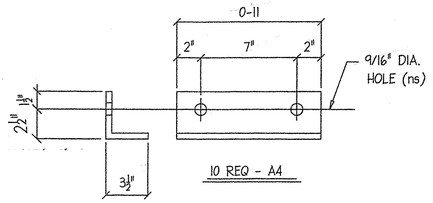
5 REQ - P5



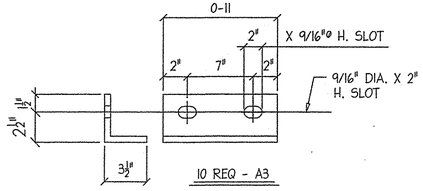
10 REQ - BP1



40 REQ - R1



10 REQ - A4



10 REQ - A3



40 REQ - S1

3/4" BENT STUD X 10"



58 REQ - S2

3/4" STUD X 10"

BILL OF MATERIAL

QTY	MARK	SHAPE	LENGTH		REMARKS
1	P1	PL 1 1/4" X 5"	21	3 9/16	
1	P2	PL 1 1/4" X 5"	20	11 15/16	
1	P3	PL 1 1/4" X 5"	21	0	
1	P4	PL 1 1/4" X 5"	21	3 5/8	
1	A1	L 8 X 4 X 1/2	42	3	
1	A2	L 8 X 4 X 1/2	42	3	
5	P5	PL 1/2" X 8"	0	9	
20	S2	3/4" DIA. STUDS	0	10	
10	BP1	PL 1/2' X 8"	0	10	
10	P6	PL 1/2' X 6"	0	10	
40	R1	1" DIA. THRD. ROD	0	6	
80	P7	PL 3/8" X 3"	0	3	W/ 2 NUTS
10	A3	L4 X 3 1/2 X 1/2	0	11	
10	A4	L4 X 3 1/2 X 1/2	0	11	
40	S1	3/4"ø STUD	0	10	BENT
58	S2	3/4"ø STUD	0	10	STR.

RECEIVED
CK'D BY_____ OK'D BY_____
APR 13 2006
RESUBMIT_____ APPROVED As Noted
BY WJ RSJ DATE 5/17/06

REV. NO.	DATE	DESCRIPTION
HOLES:	13/16"ø (U.N.O.)	DATE: 3-25-06
PAINT:	GALVANIZED	

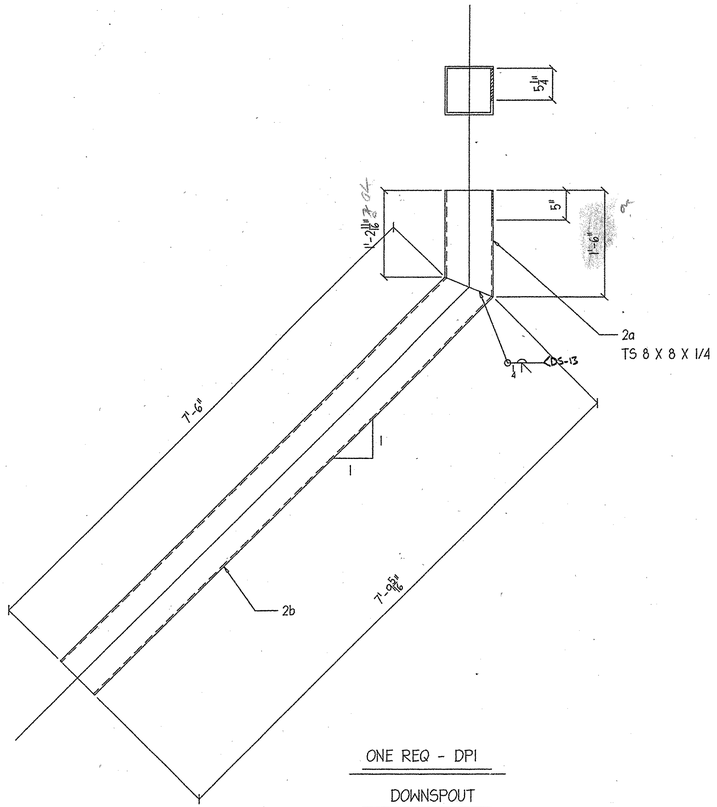
EXPANSION JOINT (EJ-1) FAB. DETAILS

DATE SUB.	PROJECT	MENDON VT. BRIDGE
		RT. # TH#1, CL2
	LOCATION	MENDON, VT.
	ARCHITECT	
DATE APP.	ENGINEER	STATE OF VERMONT , AGENCY OF TRANSPROTATION
DATE DIST.	CUSTOMER	F.W. WHITCOMB CONST.

MERRIMACK
MISCELLANEOUS IRON STRUCTURAL STEEL FABRICATORS
MERRIMACK SHEET METAL
119 HALL ST.
CONCORD, N.H., 03301
TEL. (603) 224-7766
FAX. (603) 224-7925

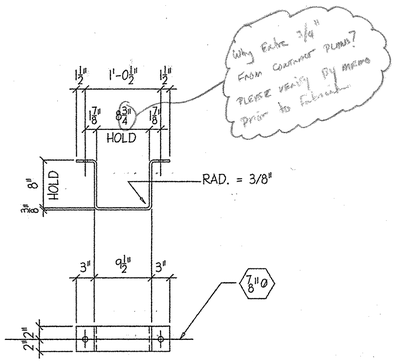
DR BY	KJM
REV BY	
JOB NO.	0727
DWG NO.	F1

1235j



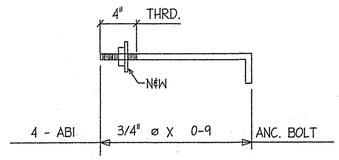
ONE REQ - DPI

DOWNSPOUT



2 REQ - P8

BENT PL. 3/8" X 4" X 2-6



BILL OF MATERIAL

QTY	MARK	SHAPE	LENGTH		REMARKS
1	DPI	DOWNSPOUT			
1	2a	TS 8 X 8 X 1/4	1	6	
1	2b	TS 8 X 8 X 1/4	7	9 5/16	
1	P8	BENT PL. 3/8" X 4"	2	5 1/2	
4	ABI	3/4" DIA. ANC. BOLTS	0	9	
		FIELD BOLTS			
88 -	3/4" DIA. X 2 1/4" HEAVY HEX BOLTS (ASTM A325, TYPE 1) @ 1-0 O.C.				@ TOP PLATES
20 -	1/2" DIA. X 1 3/4" A325 BOLTS				@ SHIPPING DEVICE

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CK'D BY JL OK'D BY
APR 13 2006
RESUBMIT APPROVED As Noted
BY WPRY DATE 5/17/06

REV. NO.	DATE	DESCRIPTION
HOLES:	13/16ø (U.N.O.)	DATE: 3-25-06
PAINT:	GALVANIZED	

DOWNSPOUT FAB. DETAILS

DATE SUB.	PROJECT	MENDON VT. BRIDGE RT. # TH#1, CL2
	LOCATION	MENDON, VT.
	ARCHITECT	
DATE APP.	ENGINEER	STATE OF VERMONT , AGENCY OF TRANSPROTATION
DATE DIST.	CUSTOMER	F.W. WHITCOMB CONST.

MERRIMACK
MISCELLANEOUS IRON STRUCTURAL STEEL FABRICATORS
MERRIMACK SHEET METAL
119 HALL ST.
CONCORD, N.H., 03301
TEL. (603) 224-7766
FAX. (603) 224-7925

DR BY	KJM
REV BY	
JOB NO.	0727
DWG NO.	F2

12 of 15

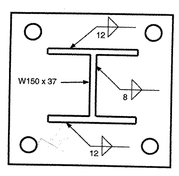
Highway Safety Corporation

Glastonbury, CT

Welding Procedure Specification

Material specification **A572 gr 50, A709 Gr 50**
Welding process **Gas Metal Arc Welding (GMAW)**
Manual, semi-automatic, or automatic **Semi-Automatic**
Position of welding **Flat (1F) or Horizontal (2F)**
Filler metal specification **AWS A5.18**
Filler metal classification **ER70S-3**
Electrode and manufacturer **Lincoln Electric Lincoln Weld L-50**
Flux and manufacturer **N/A**
Shielding gas **85% Argon / 15% CO2** Flow rate **19-27 L / min**
Single or multiple pass **Single or Multiple**
Single or multiple arc **Single or Multiple**
Welding current **DCEP**
Polarity **Reverse - electrode positive**
Welding progression **Stringers**
Root treatment **clean base metal**
Preheat and interpass temperature **base metal up to 3/4" (50ºF) ; over 3/4 thru 1-1/2" (150ºF) : over 1-1/2" thru 2-1/2" (225ºF)**
Postheat treatment **None**
Electrode extension **3/4" ± 1/4"**

WELDING PROCEDURE

Weld size	Pass no.	Electrode size	Welding parameters Amperes	Welding parameters Volts	Travel speed	Joint detail
8mm	**1**	**2 mm**	**275 A ± 25**	**25 V ± 2**	**200-250 mm / min**	
5/16"	**1**	**0.062"**			**8-10 ipm**	
12 mm	**1 & 2**	**2 mm**			**200-250 mm / min**	
7/16"	**1 & 2**	**0.062"**			**8-10 ipm**	

CK'D BY _____ OK'D BY _____
RESUBMIT _____ APPROVED _____
BY _____ DATE 7-11-06

VTRANS RECEIVED JUN 26 2006

This procedure may vary due to fabrication sequence, fit-up, pass size, etc. within the limitation of variables given in section 5 of latest edition AWS D1.5

125 bR

WPS no. **W-1552a**
Revision no. **0**
Supporting PQR no. **Pre-Qualified**
Project Name **Mendon, Vermont**

Fabricator **Highway Safety Corporation**
Authorized by **Paul Radice**
Date **6/8/06**
Project Number **BRO 1443(35)**

CWI PAUL A RADICE 98078221 AWS QC 1

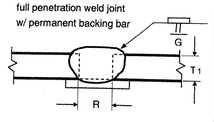
Highway Safety Corporation

Glastonbury, CT

Welding Procedure Specification

Material specification **ASTM A500 Gr B**
Welding process **Shielded Metal Arc Welding (SMAW)**
Manual, semi-automatic, or automatic **Manual**
Position of welding **Flat (1G)**
Filler metal specification **AWS A5.1**
Filler metal classification **ER7018**
Electrode and manufacturer **Lincoln Electric Jet LH 78 MR**
Flux and manufacturer **N/A**
Shielding gas **N/A** Flow rate **N/A**
Single or multiple pass **Multiple**
Single or multiple arc **Single**
Welding current **AC**
Polarity **N/A**
Welding progression **Stringers**
Root treatment **clean base metal**
Preheat and interpass temperature **50ºF (min)**
Postheat treatment **None**
Electrode extension **N/A**

WELDING PROCEDURE

Weld size	Pass no.	Electrode size	Welding parameters Amperes	Volts	Travel speed	Joint detail
	ALL	**5/32"**	**150 A to 220 A**		**VARIES**	B-LIa full penetration weld joint w/ permanent backing bar  **T 1 = 1/4" (max)** **R = T 1**

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JUN 26 2006

CK'D BY _____ OK'D BY JWC
RESUBMIT _____ APPROVED ✓
BY _____ DATE 7-17-06

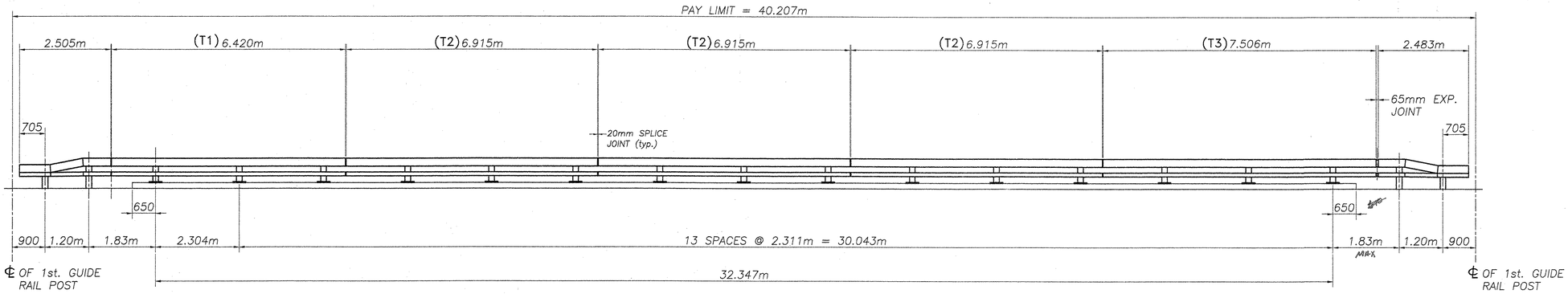
This procedure may vary due to fabrication sequence, fit-up, pass size, etc. within the limitation of variables given in section 5 of latest edition AWS D1.1

WPS no. **W-1552b**
Revision no. **0**
Supporting PQR no. **Pre-Qualified**
Project Name **Mendon, Vermont**

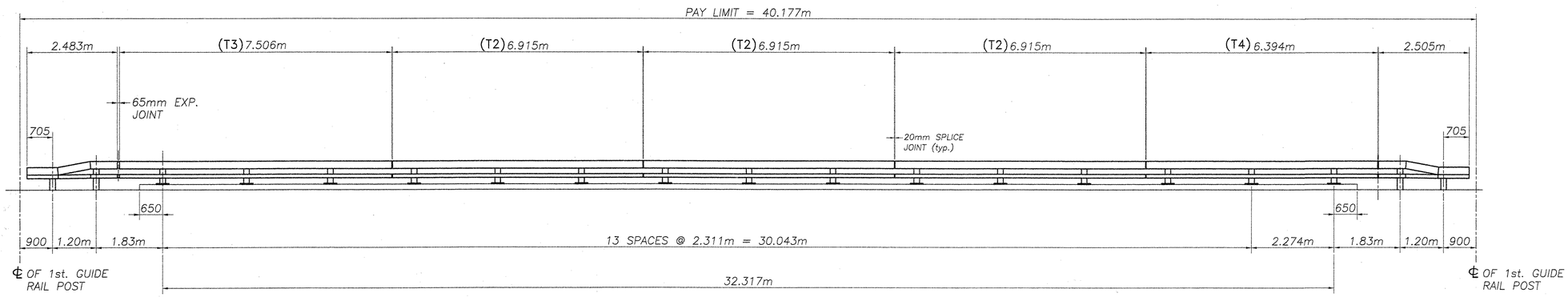
Fabricator **Highway Safety Corporation**
Authorized by **Paul Radice**
Date **6/8/06**
Project Number **BRO 1443(35)**

AWS QC 1 PAUL A. RADICE 96012621 CWI

126bR



LEFT SIDE RAIL ELEVATION



RIGHT SIDE RAIL ELEVATION

BILL OF MATERIAL (BOTH SIDES OF BRIDGE)		
Mk.	Qty.	Description
	30	W150x37.1 POST W/BASEPLATE (620mm) OAL
	4	W150x37.1 DRIVEN POST (2.134m) OAL
	4	W150x37.1 DRIVEN POST (1.956m) OAL
T1	1	TS 203 x 102 x 8 (6.420m) OAL
	1	TS 102 x 102 x 6 (6.420m) OAL
T2	6	TS 203 x 102 x 8 (6.915m) OAL
	6	TS 102 x 102 x 6 (6.915m) OAL
T3	2	TS 203 x 102 x 8 (7.506m) OAL
	2	TS 102 x 102 x 6 (7.506m) OAL
T4	1	TS 203 x 102 x 8 (6.394m) OAL
	1	TS 102 x 102 x 6 (6.394m) OAL
	2	TS 203 x 102 x 8 (2.483m) UPPER DROP END TUBE
	2	TS 203 x 102 x 8 (2.505m) UPPER DROP END TUBE
	2	TS 102 x 102 x 6 (2.483m) LOWER DROP END TUBE
	2	TS 102 x 102 x 6 (2.505m) LOWER DROP END TUBE
	12	TS 178 x 76 x 10 SPLICE TUBE 510 LG.
	12	TS 76 x 76 x 8 SPLICE TUBE 510 LG.
	96	M16 NUT WELDED TO SPLICE TUBE (4 EACH)
	30	3mm BEARING PAD
	4	BACK UP PLATE 381x254x10
	4	TERMINAL CONNECTOR
	176	M20 ROUND HEAD BOLT, 152 LONG W/NUT AND WASHER
	96	M16 SPLICE BOLT, 44 LONG W/PLAIN HARDENED WASHER
	*120	M24 ANCHOR STUD, 305 LG. W/(2) HEX NUTS/(1) JAMB NUT/(1) WASHER
	*30	SPACER PLATE 330 x 238 x 10
	64	M20 x 13 SCH. 40 PIPE SPACER

ITEMS MARKED "*" ARE NOT SUPPLIED BY HIGHWAY SAFETY CORPORATION, AND THEY ARE SHOWN ONLY FOR REFERENCE.

TOTAL ITEM 525.33 (BOTH SIDES OF BRIDGE) = 80.4m

STRUCTURES COPY

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JUN 2 6 2006
RESUBMIT ____ APPROVED ✓
BY VTS DATE 7/17/06

VTrans - PDD
JUN 2 6 2006
Structures Design Section

REVISIONS		
No.	Remarks	Date
0	Initial submittal	

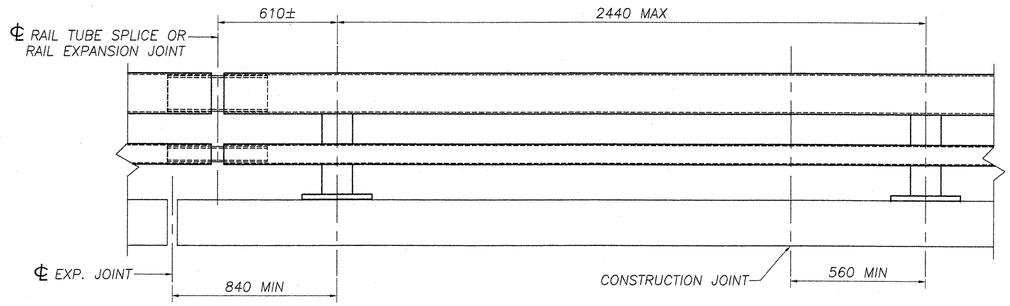
HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 525.33 – BRIDGE RAILING–NETC 2 RAIL
PROJECT No. BRO 1443(35)
TOWN OF MENDON Br. No. 3
RUTLAND CO., RTE. NO: TH#1, CL2 (LOCAL)

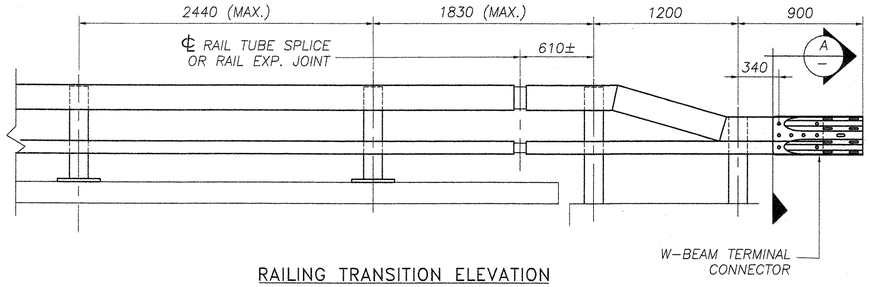
GENERAL CONTRACTOR

SUB CONTRACTOR F.R. LAFAYETTE, INC. 12760

DRAWN MHM
CHECKED
DATE 5-30-06
SCALE NONE
HSC REFERENCE NO. 1552
SIZE D REVISION 0
SHEET NO. 1 of 2



BRIDGE RAILING ELEVATION



RAILING TRANSITION ELEVATION
(BOTH ENDS OF BRIDGE)

NOTES:

1. ALL RAILINGS AND MATERIALS SHALL CONFORM TO THE PROVISION OF SECTION 525, "RAILINGS OF THE STANDARD SPECIFICATION FOR CONSTRUCTION".

2. TUBING AND POSTS SHALL MEET THE REQUIREMENTS OF SECTION 732, "RAILING MATERIALS OF THE STANDARD SPECIFICATION FOR CONSTRUCTION," EXCEPT THAT THE DROP-WEIGHT TEAR TEST IN SECTION 732 SHALL NOT APPLY TO THE STRUCTURAL TUBING SHOWN ON THIS SHEET.

3. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 2mm RADIUS AND BE FREE OF BURRS.

4. RAIL POSTS SHALL BE SET NORMAL TO GRADE.

5. SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO (2) RAIL POSTS AND PREFERABLY TO AT LEAST FOUR (4) POSTS.

6. RAIL TUBE EXPANSION JOINT SHALL BE PROVIDED IN ANY RAIL BAY SPANNING A SUPERSTRUCTURE EXPANSION JOINT. EXPANSION JOINT WIDTH SHALL BE "X" AT 7°C AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES. SEE EXPANSION DETAILS

7. ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111, EXCEPT HARDWARE, WHICH SHALL MEET THE REQUIREMENTS OF AASHTO M232M.

8. RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.

9. RAIL TUBES SHALL BE ATTACHED USING M20 FULL DIAMETER BODY AASHTO M164 (TYPE 1) ROUND HEAD BOLT INSERTED THOUGH THE FACE OF THE TUBE. HOLES IN POSTS SHALL BE 2mm LARGER THAN THE BOLT SIZE.

10. HOLES IN RAILS FOR RAIL TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.

11. IF THERE IS A CONFLICT BETWEEN THE DETAILS SHOWN ON THIS SHEET AND THE DESIGN, THE REQUIREMENTS OF THE DESIGN DRAWINGS SHALL BE FOLLOWED.

12. ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.

13. THE FABICATOR SHALL SUBMIT SHOP DRAWINGS, INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH THE PROVISION OF 506.04, SHOP DRAWINGS. ALL WELDING SHALL CONFORM WITH SECTION 506.10.

14. RAIL POSTS AND BASE PLATES SHALL BE TESTED FOR IMPACT PROPERTIES IN ACCORDANCE WITH ASTM A370 CHARPY IMPACT TESTING USING TYPE A SPECIMENS.

15. TO FACILITATE FIELD FIT – UP OF THE TRANSITION RAILING, POSTS SHALL BE SET LOOSELY INTO FIBER FORM TUBES WHILE TRANSITION PARTS ARE BEING ASSEMBLED. POST HOLES SHALL BE BACKFILLED WITH A CONCRETE MIX APPROVED BY THE ENGINEER. PAYMENT FOR COMPONENTS, INCLUDING BACKUP PLATE AND END TERMINAL CONNECTOR FOR GUARD RAIL, AUGERING, FIBER FORM TUBES AND CONCRETE , AND INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 525.33, "BRIDGE RAILING – NETC 2 RAILING".

16. ALL APPROACH RAIL SPLICES SHALL BE LAPPED ON THE DIRECTION OF TRAFFIC FLOW.

ADDITIONAL NOTES

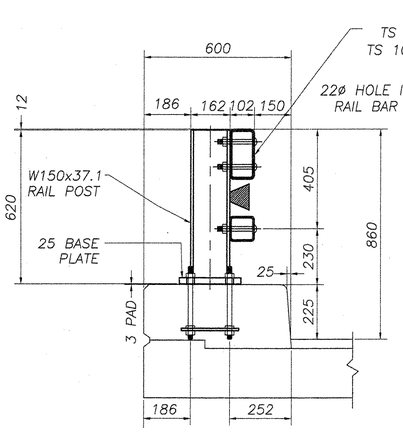
MATERIALS

RAIL TUBES	ASTM A500, GRADE B OR ASTM A501
RAIL POSTS AND BASE PLATES	ASTM A709/A709M, GRADE 345
ALL OTHER SHAPRE AND PLATES	ASTM A709/A709M, GARDE 250 GRADE
ANCHOR STUDS	ASTM FS68M CLASS 8.8
ALL OTHER BOLTS (UNLESS NOTED)	AASHTO M164M, TYPE1

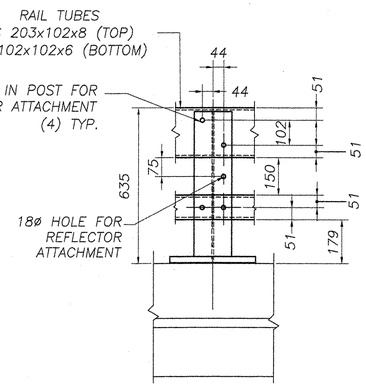
NUTS FOR AASHTO M164M (ASTM A325M) BOLTS AND ANCHOR STUDS SHALL COMPLY WITH AASTHO M291M (ASTM A563M).

WASHERS SHALL COMPLY WITH AASHTO M293M (ASTM F436M) SPECIFCATIONS.

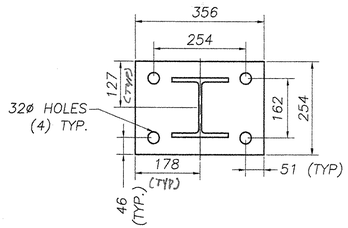
3mm PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.01 OR 731.02.



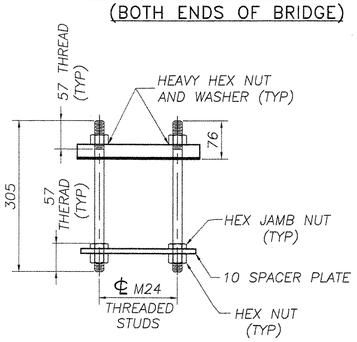
TYPICAL SECTION



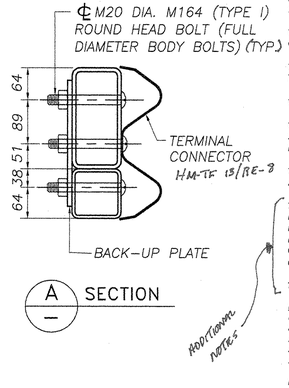
ELEVATION



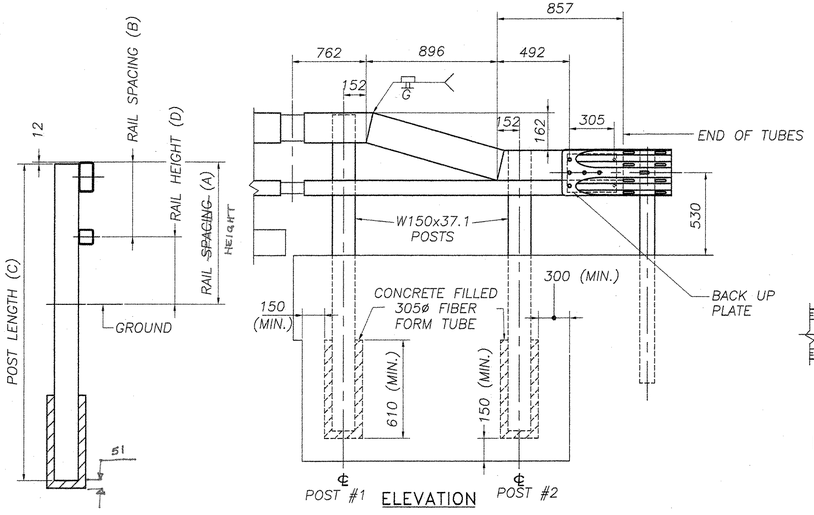
POST AND BASE PLATE



RAIL POST ANCHORAGE
(BY OTHERS)

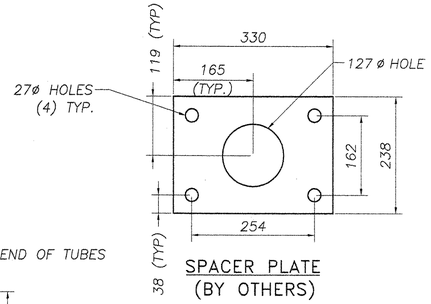


A SECTION
— A —

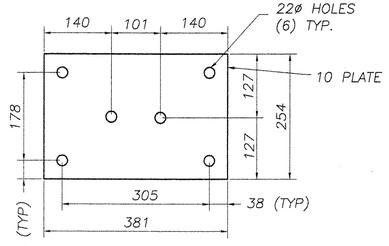


TYPICAL SECTION

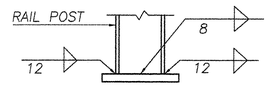
ELEVATION



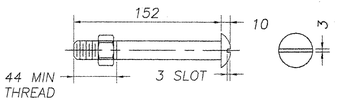
SPACER PLATE
(BY OTHERS)



BACK-UP PLATE

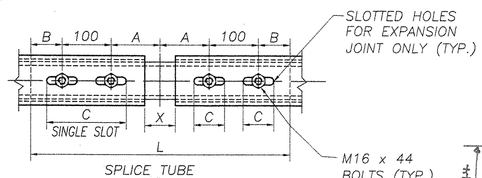


BASE WELD DETAIL

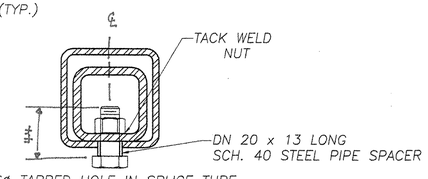


M20 DIA. M164M (TYPE 1)
ROUND HEAD BOLT

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



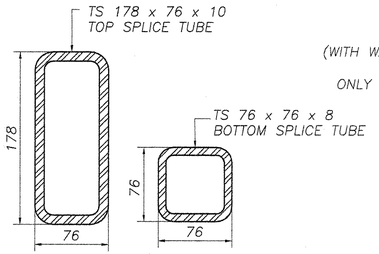
RAIL TUBE SPLICE AND RAIL
EXPANSION JOINT DETAIL



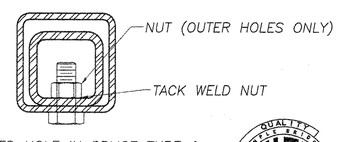
16ø TAPPED HOLE IN SPLICE TUBE AND 29 x 'C' SLOT IN RAIL TUBE FOR M16 BOLT AND PLAIN HARDENED WASHER

EXPANSION JOINT SECTION

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



RAIL TUBE SPLICE SECTION



16ø TAPPED HOLE IN SPLICE TUBE &
19ø HOLE IN RAIL TUBE FOR M16
BOLT & PLAIN HARDENED WASHER

POST NUMBER	RAIL HEIGHT (A)	RAIL SPACING (B)	POST LENGTH (C)	RAIL HEIGHT (D)
1	860	405	2134	455
2	702	254	1956	448

SPLICE TABLE					
T	A	B	C	L	X
N/A	100	50	--	510	20
EXPANSION JOINT TABLE					
<100	100	50	65	510	65

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

* = SINGLE SLOT

REVISIONS		
No.	Remarks	Date
0	Initial submittal	

VTrans - PDD

JUN 26 2006

Structures Design Section

RECEIVED
CK'D BY JTS OK'D BY JL
JUN 26 2006
RESUBMIT ____ APPROVED As Noted
BY WJ BSJ DATE 7/17/06

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 525.33 – BRIDGE RAILING-NETC 2 RAIL
PROJECT No. BRO 1443(35)
TOWN OF MENDON Br. No. 3
RUTLAN CO., RTE. NO: TH#1, CL2 (LOCAL)

GENERAL CONTRACTOR

SUB CONTRACTOR F.R. LAFAYETTE, INC. 12862

DRAWN	MHM
CHECKED	
DATE	5-30-06
SCALE	NONE
HSC REFERENCE NO.	1552
SIZE	D
REVISION	0
SHEET NO.	2 of 2