SEE SHEET 2 FOR INDEX OF SHEETS
AND LIST OF STANDARDS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

RECORD PLANS

CONTRACTOR: AUSTIN CONSTRUCTION, INC.- CONCORD, VT

RESIDENT ENGINEER: TOM CHASE

CONSTRUCTION BEGAN: JULU 26, 2010

CONSTRUCTION COMPLETE: OCTOBER 25, 2012

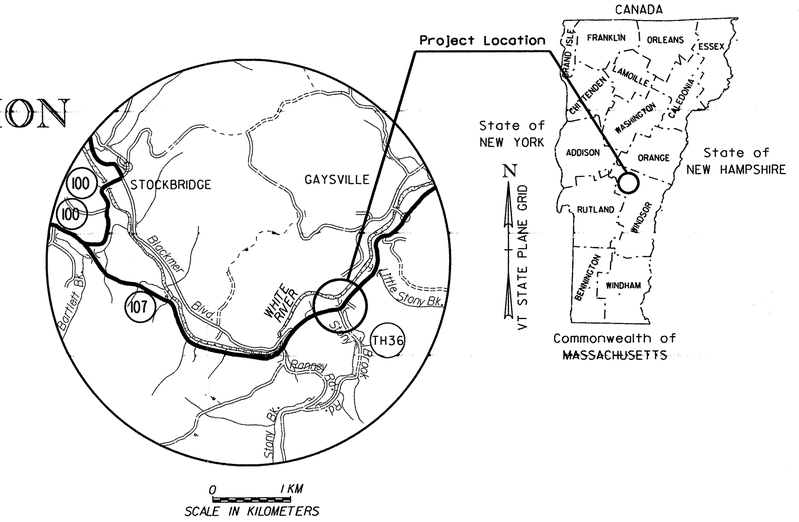
RECORD PLANS BY: TOM CHASE & KATHERINE KREIS

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

BY Thomas A. Chase RESIDENT ENGINEER

DATE 01/10/14

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.

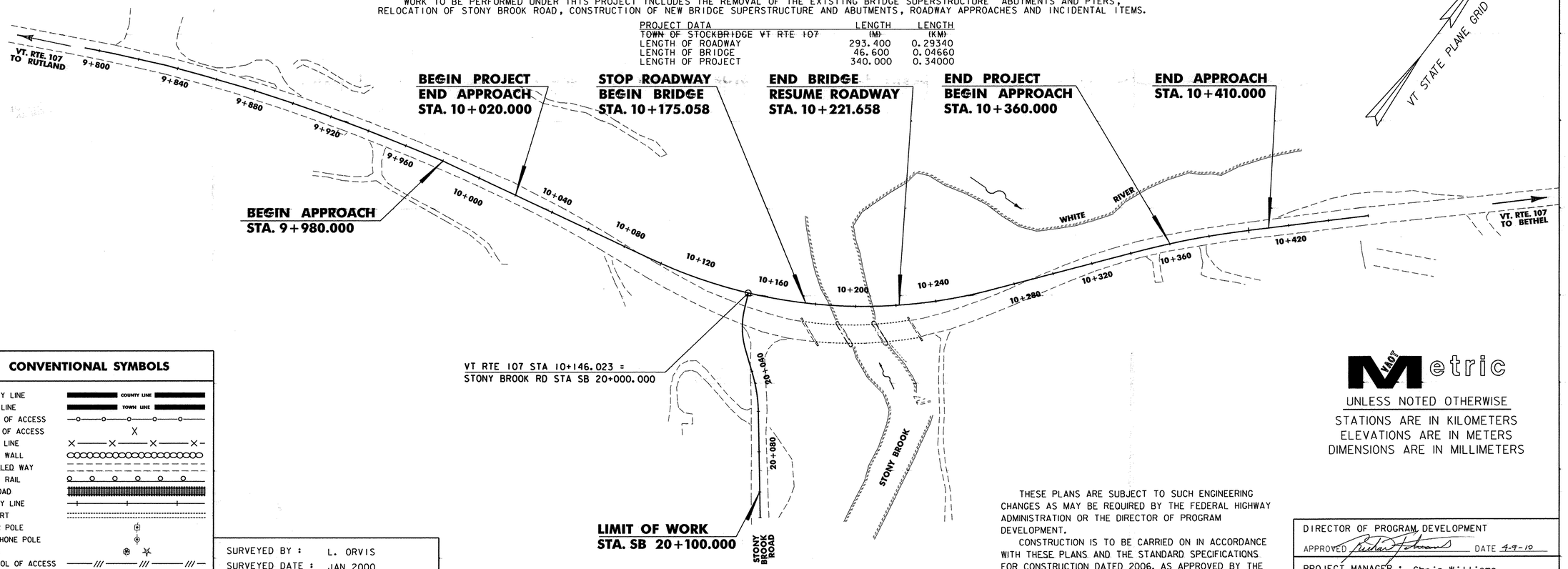


PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF STOCKBRIDGE
COUNTY OF WINDSOR
VT ROUTE 107, BRIDGE 9
MINOR ARTERIAL HIGHWAY

BEGINNING AT A POINT, ON VERMONT ROUTE 107, IN THE TOWN OF STOCKBRIDGE, APPROXIMATELY 5.15 KILOMETERS EAST OF THE VERMONT ROUTE 107/VERMONT ROUTE 100 JUNCTION AND EXTENDING EASTERLY APPROXIMATELY 0.340 KILOMETERS ON VERMONT ROUTE 107.

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES THE REMOVAL OF THE EXISTING BRIDGE SUPERSTRUCTURE ABUTMENTS AND PIERS, RELOCATION OF STONY BROOK ROAD, CONSTRUCTION OF NEW BRIDGE SUPERSTRUCTURE AND ABUTMENTS, ROADWAY APPROACHES AND INCIDENTAL ITEMS.

PROJECT DATA	LENGTH (M)	LENGTH (KM)
TOWN OF STOCKBRIDGE VT RTE 107		
LENGTH OF ROADWAY	293.400	0.29340
LENGTH OF BRIDGE	46.600	0.04660
LENGTH OF PROJECT	340.000	0.34000



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 :	JAN 2000
DATUM	
VERTICAL	NAVD88
HORIZONTAL	NAD83 (96)

VAOT Metric

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

de039tit.i 09-APR-2010

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED Richard Johnson DATE 4-9-10

PROJECT MANAGER : Chris Williams

PROJECT NAME : **STOCKBRIDGE**
PROJECT NUMBER : **BRF 022-1(20)**

SHEET 1 OF 139 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version 09.02.02

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E-107A	BREAKAWAY BARRICADE DETAILS	8-Jun-09
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G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	3-Jan-00
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J-3	MAIL BOX SUPPORT DETAILS	7-Aug-95
L-1	SETTLEMENT PLATFORM | TYPE I STANDPIPE TYPE | TYPE II REMOTE READING TY	9-Mar-95
L-2	GEOTECHNICAL INSTRUMENTATION	24-Jul-95

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2010	3400	380	52	9.5	350
2030	3900	440	52	14.6	610

20 year ESAL for flexible pavement from 2010 to 2030 : 2513000

40 year ESAL for flexible pavement from 2010 to 2050 : 5938000

Design Speed : 50 mph

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: 11-9-04

DRAINAGE AREA : 59.4 sq. km
CHARACTER OF TERRAIN : Rolling to Mountainous with little to narrow flood plain.
STREAM CHARACTERISTICS : Slight meander, channel bend upstream from bridge.
NATURE OF STREAMBED : Gravel, cobbles and boulders

PEAK FLOW DATA

Q 2.33 =	20.0 cms	Q 50 =	100.1 cms
Q 10 =	67.3 cms	Q 100 =	143.8 cms
Q 25 =	94.0 cms	Q 500 =	177.0 cms

DATE OF FLOOD OF RECORD 1927
ESTIMATED DISCHARGE: unknown
WATER SURFACE ELEV.: 205.3 m
NATURAL STREAM VELOCITY : @ Q50 = 2.3 mps (maximum in the vicinity of the bridge)
ICE CONDITIONS : Moderate
DEBRIS: Moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No
IS ORDINARY RISE RAPID? No
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Yes
IF YES, DESCRIBE: Confluence with the White River is located approximately 100 m downstream from the bridge.

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: 3 span concrete T-beam bridge with spill thru abutments
YEAR BUILT: Built in 1930, reconstructed in 1964
CLEAR SPAN(NORMAL TO STREAM): 47 m (with two 1 m wide piers)
VERTICAL CLEARANCE ABOVE STREAMBED: 9 m
WATERWAY OF FULL OPENING: 409 sm
DISPOSITION OF STRUCTURE: To be removed
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See boring logs

WATER SURFACE ELEVATIONS AT:

Q2.33 =	202.9 m	VELOCITY =	2.6 mps
Q10 =	203.8 m	"	3.1 mps
Q25 =	204.4 m	"	2.9 mps
Q50 =	204.5 m	"	2.8 mps
Q100 =	205.0 m	"	3.4 mps

LONG TERM STREAMBED CHANGES: There is some minor local scour at the piers and through the bridge area. Other long term changes are unknown.

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: N/A
RELIEF ELEVATION: N/A
DISCHARGE OVER ROAD @Q100: N/A

UPSTREAM STRUCTURE

TOWN: Stockbridge — DISTANCE: 780 m
HIGHWAY # : T.H. 36 — STRUCTURE #: 5
CLEAR SPAN: 14.6 m — CLEAR HEIGHT: 4.6 m
YEAR BUILT: 1992 — FULL WATERWAY: Unknown
STRUCTURE TYPE: Single span rolled beam bridge

DOWNSTREAM STRUCTURE

TOWN: N/A - Confluence with White River — DISTANCE: N/A
HIGHWAY # : N/A — STRUCTURE #: N/A
CLEAR SPAN: N/A — CLEAR HEIGHT: N/A
YEAR BUILT: N/A — FULL WATERWAY: N/A
STRUCTURE TYPE: N/A

LFD LOAD RATING FACTORS (METRIC TONS)

LOADING LEVELS	TRUCK						
	M	MS	3S2	6 AXLE	3A STR.	4A STR.	5A SEMI
INVENTORY	32	45					
POSTING	46	63	88		51	54	79
OPERATING		75	105	100	61	64	
COMMENTS:							

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span curved steel girder bridge.

CLEAR SPAN(NORMAL TO STREAM): 40.0 m
VERTICAL CLEARANCE ABOVE STREAMBED: 11.8 m
WATERWAY OF FULL OPENING: 386 sm

WATER SURFACE ELEVATIONS AT:

Q2.33 =	202.9 m	VELOCITY=	1.8 m
Q10 =	203.8 m	"	2.9 m
Q25 =	204.4 m	"	2.6 m
Q50 =	204.5 m	"	2.6 m
Q100 =	205.0 m	"	3.0 m

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: N/A
RELIEF ELEVATION: N/A
DISCHARGE OVER ROAD @Q100: N/A

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 213.7 m
VERTICAL CLEARANCE: @ Q50 = 9.2 m

SCOUR: The bridge abutments are above the Q500, so the bridge does not cause scour. There will be some local scour due to the existing piers and the roadway & stone fill constriction.
REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV

PERMIT INFORMATION

AVERAGE DAILY FLOW:	11.0 cms	DEPTH OR ELEVATION:
ORDINARY LOW WATER:	0.6 cms	0.2 m
ORDINARY HIGH WATER:	20.0 cms	0.9 m

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: The existing bridge will be used during construction.
CLEAR SPAN (NORMAL TO STREAM): N/A
VERTICAL CLEARANCE ABOVE STREAMBED: N/A
WATERWAY AREA OF FULL OPENING: N/A

ADDITIONAL INFORMATION

Reported water surface elevations and velocities were obtained using water surface elevation information available from the White River FIS flood profile as a downstream boundary condition. HEC-RAS was run with equal frequency floods on Stony Brook and the White River. Velocities will be higher when the White River is lower.

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TWO-WAY TRAFFIC ON THE EXISTING STRUCTURE.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD		MS-22.5
2. FUTURE PAVEMENT	d_p:	
3. DESIGN SPAN	L:	45 m
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	---
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	f_y:	---
6. PRESTRESSED CONCRETE STRENGTH	f'_c:	---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	---
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f'_c:	---
9. CONCRETE, HIGH PERFORMANCE CLASS A LOW CEMENT	f'_c:	30Mpa
10. CONCRETE, HIGH PERFORMANCE CLASS B	f'_c:	25 Mpa
11. CONCRETE, CLASS C	f'_c:	MS-22.5
12. REINFORCING STEEL GRADE		420
13. STRUCTURAL STEEL AASHTO M 270M/M 270, GRADE 345W		---
14. DESIGN SOIL UNIT WEIGHT		22.00 kN/CM
15. ALLOWABLE BEARING ON SOIL	q_n:	4.0 KSF
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	NA
17. ALLOWABLE BEARING ON ROCK	q_n:	10.0 KSF
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	NA
19. NOMINAL AXIAL PILE RESISTANCE	q_p:	---
20. PILE YIELD STRENGTH ASTM A572	f_y:	---
21. PILE SIZE		---
22. EST. PILE LENGTH	L_p:	
23. PILE RESISTANCE FACTOR	ϕ:	---
24. LATERAL PILE DEFLECTION	Δ:	---
25. BASIC WIND SPEED	V_{3s}:	---
26. MINIMUM GROUND SNOW LOAD	p_g:	---
27. SEISMIC DATA PGA: ---	S_s:	---
	S_1:	---

PROJECT NAME: **STOCKBRIDGE**
PROJECT NUMBER: **BRF 022-1(20)**

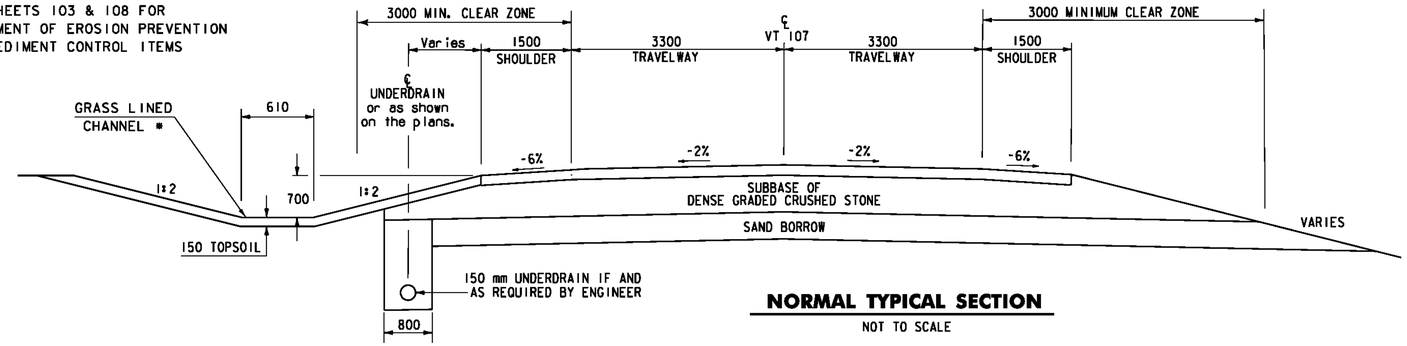
FILE NAME: **M:\85e039\de039pi.dgn**
PROJECT LEADER: **C.P.WILLIAMS**
DESIGNED BY: **R.S.YOUNG**
PRELIMINARY INFORMATION

PLOT DATE: 4/1/2010
DRAWN BY: **M.FESSEL**
CHECKED BY: **R.S.YOUNG**

TYPICAL ROADWAY SECTIONS

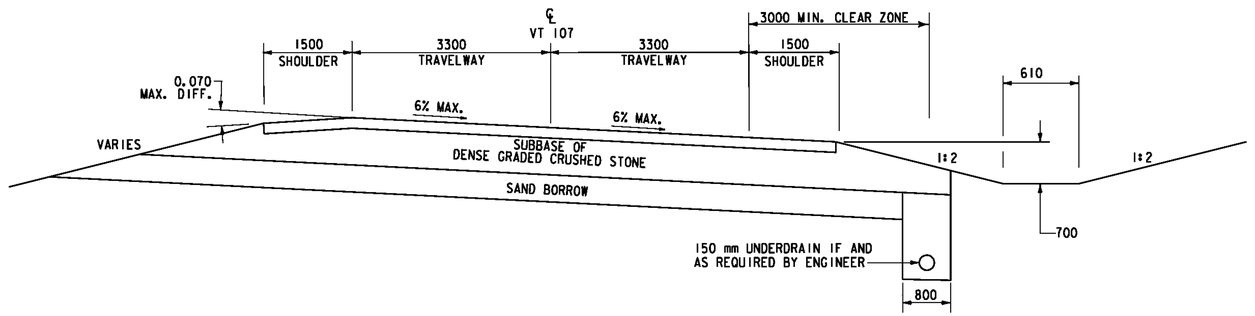
40 mm BITUMINOUS CONCRETE PAVEMENT TYPE IVS
40 mm BITUMINOUS CONCRETE PAVEMENT TYPE IVS
65 mm BITUMINOUS CONCRETE PAVEMENT TYPE IIS
65 mm BITUMINOUS CONCRETE PAVEMENT TYPE IIS
610 mm DENSE GRADED CRUSHED STONE
450 mm SAND BORROW
NOTE: BITUMINOUS CONCRETE PAVEMENT SHALL BE PAID FOR UNDER ITEM 900.680 "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) "

* SEE SHEETS 103 & 108 FOR PLACEMENT OF EROSION PREVENTION AND SEDIMENT CONTROL ITEMS



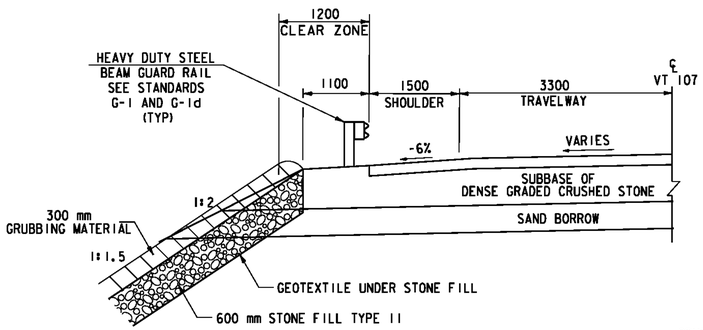
NORMAL TYPICAL SECTION

NOT TO SCALE



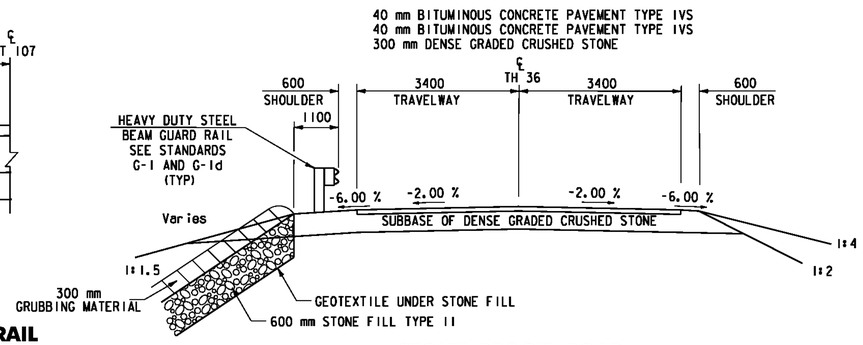
MAXIMUM BANKED SECTION

NOT TO SCALE



HALF SECTION OF VT 107 WITH GUARD RAIL

NOT TO SCALE



STONY BROOK ROAD TYPICAL SECTION

NOT TO SCALE

NOTE: SEE SHEET 130 FOR DRIVE SECTIONS

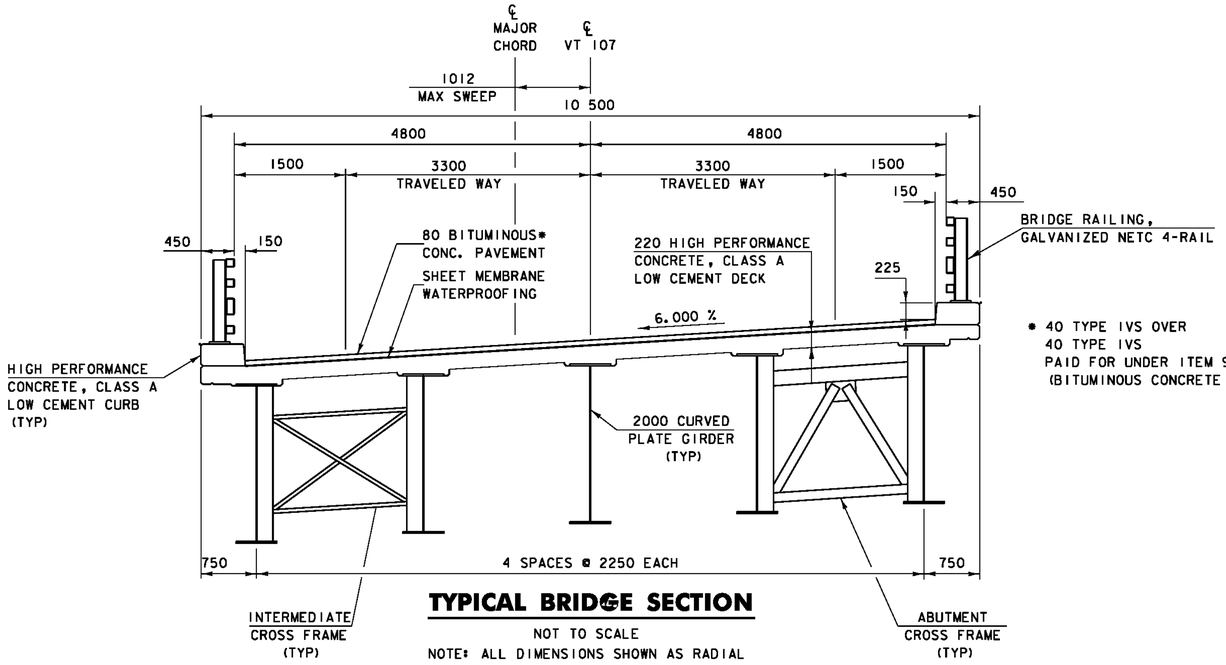
MATERIAL TOLERANCES

(IF USED ON PROJECT)

SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 6 mm
- AGGREGATE SURFACE COURSE	+/- 13 mm
SUBBASE	+/- 25 mm
SAND BORROW	+/- 25 mm

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: str5/85e039/de039typ.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: R.S.YOUNG
TYPICAL ROADWAY SECTIONS
PLOT DATE: 08-APR-2010
DRAWN BY: M DRAPER
CHECKED BY: R.S.YOUNG
SHEET 3 OF 139

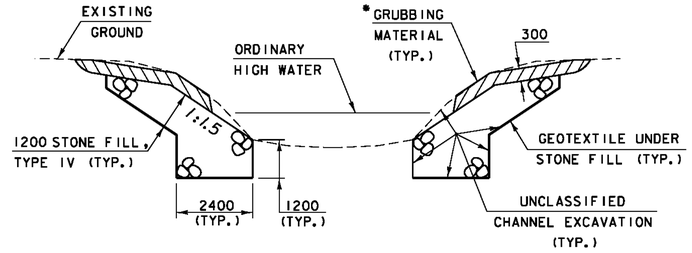


TYPICAL BRIDGE SECTION

NOT TO SCALE

NOTE: ALL DIMENSIONS SHOWN AS RADIAL

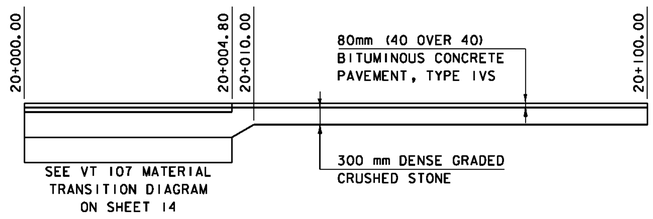
* 40 TYPE IVS OVER
40 TYPE IVS
PAID FOR UNDER ITEM 900.680 "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)"



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.



STONY BROOK ROAD MATERIAL TRANSITION

NOT TO SCALE

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: xe039frm.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: H.SALLS
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S.YOUNG
TYPICAL BRIDGE SECTION	SHEET 4 OF 139

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

Metric

SUMMARY OF ESTIMATED QUANTITIES					TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
1					1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				
4080					4080		CM	COMMON EXCAVATION	203.15				
510					510		CM	UNCLASSIFIED CHANNEL EXCAVATION	203.27				
4840					4840		CM	EARTH BORROW	203.30				
1765					1765		CM	SAND BORROW	203.31				
1340					1340		CM	GRANULAR BORROW	203.32				
320					320		CM	TRENCH EXCAVATION OF EARTH	204.20				
95					95		CM	TRENCH EXCAVATION OF ROCK	204.21				
1					1		CM	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
275					275		SM	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
3040					3040		CM	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35				
23					23		CM	AGGREGATE SURFACE COURSE	401.10				
1					1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
			194		194		CM	CONCRETE, HIGH PERFORMANCE CLASS B	501.34				
			505		505		SM	PERMANENT STEEL SHEET PILING (1620 cm^3/M MIN.)	505.35				
			139700		139700		KG	STRUCTURAL STEEL, CURVED PLATE GIRDER (FPQ)	506.56				
730			5795		6525		KG	REINFORCING STEEL (FPQ)	507.15				
			22890		22890		KG	EPOXY COATED REINFORCING STEEL (FPQ)	507.17				
			1		1		LS	SHEAR CONNECTORS (1510 - 22 X 175)	508.15				
			1		1		LS	STRUCTURAL PAINTING, SHOP APPLIED	513.25				
			1		1		LS	STRUCTURAL PAINTING, SHOP APPLIED	513.25				
			1		1		LS	SURFACE PREPARATION, SHOP	513.40				
			250		250		L	WATER REPELLENT, SILANE	514.10				
			9.3		9.3		M	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG (FPQ)	516.10				
			9.3		9.3		M	BRIDGE EXPANSION JOINT, VERMONT (FPQ)	516.11				
			430		430		SM	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED (FPQ)	519.20				
			94		94		M	BRIDGE RAILING, GALVANIZED NETC 4 RAIL (FPQ)	525.34				
1					1		LS	MAINTENANCE OF STRUCTURES AND APPROACHES	527.10				
			475		475		SM	REMOVAL OF BRIDGE PAVEMENT	529.10				
			1		1		EACH	REMOVAL OF STRUCTURE (450 SM - EST.)	529.15				
			10		10		EACH	BEARING DEVICE ASSEMBLY, POT	531.12				
9					9		CM	CONCRETE, CLASS B	541.25				
								BEGIN OPTION AA					
170					170		M	450 CAAP 1.91 (68 X 12)	601.0216				
170					170		M	450 PCCSP(PI) 1.63 (68 X 12)	601.0615				
170					170		M	450 CPEP	601.0915				
								END OPTION AA					
								BEGIN OPTION BB					
22					22		M	900 CAAP 1.91 (68 X 12)	601.0246				
22					22		M	900 PCCSP(PI) 2.01 (68 x 12)	601.0646				
22					22		M	900 CPEP	601.0930				

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: 35e039/Structures/de039excel.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: R.S.YOUNG
QUANTITY SHEET #1

PLOT DATE: 04/09/2010
DRAWN BY: D.D.BEARD
CHECKED BY: H.I.SALLS
SHEET 5 OF 139

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

Metric

SUMMARY OF ESTIMATED QUANTITIES					TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
								END OPTION BB					
9					9		EACH	PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE	604.18				
204					204		M	150 MM UNDERDRAIN PIPE	605.10				
5					5		M	150 MM UNDERDRAIN CARRIER PIPE	605.20				
5					5		EACH	UNDERDRAIN FLUSHING BASIN	605.95				
10					10		HR	POWER GRADER RENTAL	608.15				
10					10		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25				
2					2		T	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15				
30					30		CM	STONE FILL, TYPE I	613.10				
1070					1070		CM	STONE FILL, TYPE II	613.11				
			535		535		CM	STONE FILL, TYPE IV	613.13				
78					78		M	CAST-IN-PLACE CONCRETE CURB, TYPE B	616.28				
78					78		M	BITUMINOUS CONCRETE CURB, TYPE A	616.305				
9					9		T	BITUMINOUS CONCRETE GUTTERS AND TRAFFIC ISLANDS	616.47				
2					2		EACH	RELOCATE MAILBOX, SINGLE SUPPORT	617.10				
5					5		EACH	YIELDING MARKER POSTS	619.17				
527					527		M	HD STEEL BEAM GUARDRAIL, GALVANIZED	621.21				
77					77		M	HD STEEL BEAM GUARDRAIL, GALVANIZED W/2.4 M POSTS	621.215				
4					4		EACH	MANUFACTURED TERMINAL SECTION, FLARED	621.50				
3					3		EACH	ENERGY ABSORPTION ATTENUATOR	621.56				
2					2		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60				
4					4		EACH	GUARDRAIL APPROACH SECTION, GALVANIZED NETC 4 RAIL	621.73				
300					300		M	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
590					590		M	TEMPORARY TRAFFIC BARRIER	621.90				
430					430		M	REMOVE AND RESET TEMPORARY TRAFFIC BARRIER	621.95				
100					100		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
1000					1000		HR	FLAGGERS	630.15				
				1	1		LS	FIELD OFFICE, ENGINEERS	631.10				
				1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16				
				1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
				4000	4000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
	1040				1040		HR	EMPLOYEE TRAINEESHIP	634.10				
1					1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
1					1		LS	TRAFFIC CONTROL	641.10				
1040					1040		M	DURABLE 100 MM WHITE LINE	646.400				
1020					1020		M	DURABLE 100 MM YELLOW LINE	646.410				
11					11		M	DURABLE 600 MM STOP BAR	646.480				
4					4		EACH	DURABLE LETTER OR SYMBOL	646.490				
1300					1300		M	TEMPORARY 100 MM WHITE LINE	646.600				
1300					1300		M	TEMPORARY 100 MM YELLOW LINE	646.610				

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: 85e039/Structures/de039excel.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: R.S.YOUNG
QUANTITY SHEET #2

PLOT DATE: 04/15/2010
DRAWN BY: D.D.BEARD
CHECKED BY: H.I.SALLS
SHEET 6 OF 139

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 3

Metric

SUMMARY OF ESTIMATED QUANTITIES					TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
11					11		M	TEMPORARY 600 MM STOP BAR	646.680				
520					520		EACH	LINE STRIPING TARGETS	646.76				
480					480		SM	REMOVAL OF EXISTING PAVEMENT MARKINGS	646.85				
2196			624		2820		SM	GEOTEXTILE UNDER STONE FILL	649.31				
		52			52		SM	GEOTEXTILE FOR SILT FENCE	649.51				
		510			510		SM	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515				
		60			60		SM	GEOTEXTILE FOR FILTER CURTAIN	649.61				
		40			40		KG	SEED	651.15				
		40			40		KG	FERTILIZER	651.18				
		3			3		T	AGRICULTURAL LIMESTONE	651.20				
		3			3		T	HAY MULCH	651.25				
		190			190		CM	TOPSOIL	651.35				
		1880			1880		SM	GRUBBING MATERIAL	651.40				
		1			1		LS	EPSC PLAN	652.10				
		70			70		HR	MONITORING EPSC PLAN	652.20				
		1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30				
		2710			2710		SM	TEMPORARY EROSION MATTING	653.20				
		41			41		CM	TEMPORARY STONE CHECK DAM, TYPE I	653.25				
		13			13		CM	VEHICLE TRACKING PAD	653.35				
		12			12		EACH	INLET PROTECTION DEVICE, TYPE I	653.40				
		715			715		M	BARRIER FENCE	653.50				
		370			370		M	PROJECT DEMARCATION FENCE	653.55				
5					5		SM	TRAFFIC SIGNS, TYPE A	675.20				
4					4		M	FLANGED CHANNEL SIGN POST	675.301				
35					35		M	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
21					21		EACH	REMOVING SIGNS	675.50				
1					1		EACH	ERECTING SALVAGED SIGNS	675.60				
1					1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50				
			128		128		CM	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT)(FPO)	900.608				
2					2		EACH	SPECIAL PROVISION (SETTLEMENT PLATFORM, TYPE I)	900.620				
2					2		EACH	SPECIAL PROVISION (SETTLEMENT PLATFORM, TYPE IV)	900.620				
			12		12		M	SPECIAL PROVISION (BRIDGE FIBERGLASS DRAIN SYSTEM)(150 MM)	900.640				
			1		1		LS	SPECIAL PROVISION (SURCHARGING)	900.645				
1					1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY)(N.A.B.I.)	900.650				
1					1		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT, SMALL QUANTITY)(N.A.B.I.)	900.650				
			560		560		SM	SPECIAL PROVISION (MECHANICALLY STABILIZED EARTH RETAINING WALL)	900.675				
655					655		SM	SPECIAL PROVISION (SCARIFYING PAVEMENT)	900.675				
410					410		SM	SPECIAL PROVISION (TEMPORARY STEEL SHEET PILING)	900.675				
1900					1900		T	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: 85e039/Structures/de039excel.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: R.S.YOUNG
QUANTITY SHEET #3

PLOT DATE: 04/09/2010
DRAWN BY: D.D.BEARD
CHECKED BY: H.I.SALLS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE QUANTITY SHEET 1

Metric

SUMMARY OF BRIDGE QUANTITIES					TOTALS	DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES		
APPROACH SLAB #1	APPROACH SLAB #2	SUPERSTRUCTURE	ABUTMENT #1	ABUTMENT #2	BRIDGE TOTAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS
21	22		78	73	194	CM	CONCRETE, HIGH PERFORMANCE CLASS B	501.34			
			267	238	505	SM	PERMANENT STEEL SHEET PILING (1620 cm^3/M MIN.)	505.35			
		139700			139700	KG	STRUCTURAL STEEL, CURVED PLATE GIRDER (FPQ)	506.56			
			3085	2710	5795	KG	REINFORCING STEEL (FPQ)	507.15			
1923	1923	18128	532	384	22890	KG	EPOXY COATED REINFORCING STEEL (FPQ)	507.17			
		1			1	LS	SHEAR CONNECTORS (1510 - 22 X 175)	508.15			
		1			1	LS	STRUCTURAL PAINTING, SHOP APPLIED	513.25			
		1			1	LS	SURFACE PREPARATION, SHOP	513.40			
		48	115	87	250	L	WATER REPELLENT, SILANE	514.10			
		9.3			9.3	M	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG (FPQ)	516.10			
		9.3			9.3	M	BRIDGE EXPANSION JOINT, VERMONT (FPQ)	516.11			
		430			430	SM	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED (FPQ)	519.20			
		94			94	M	BRIDGE RAILING, GALVANIZED NETC 4 RAIL (FPQ)	525.34			
		475			475	SM	REMOVAL OF BRIDGE PAVEMENT	529.10			
		1			1	EACH	REMOVAL OF STRUCTURE (450 SM - EST.)	529.15			
		10			10	EACH	BEARING DEVICE ASSEMBLY, POT	531.12			
			260	275	535	CM	STONE FILL, TYPE IV	613.13			
			297	327	624	SM	GEOTEXTILE UNDER STONE FILL	649.31			
		125	1	2	128	CM	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT)(FPQ)	900.608			
			12		12	M	SPECIAL PROVISION (BRIDGE FIBERGLASS DRAIN SYSTEM)(150 MM)	900.640			
			0.5	0.5	1	LS	SPECIAL PROVISION (SURCHARGING)	900.645			
			328	232	560	SM	SPECIAL PROVISION (MECHANICALLY STABILIZED EARTH RETAINING WALL)	900.675			

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: 85e038/Structures/de039excel.dgn	PLOT DATE: 04/09/2010
PROJECT LEADER: C.P.WILLIAMS	DRAWN BY: D.D.BEARD
DESIGNED BY: R.S.YOUNG	CHECKED BY: H.I.SALLS
BRIDGE QUANTITY SHEET #1	SHEET 8 OF 139

Metric

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION; DATED 2006, AND ITS LATEST REVISIONS, AND UNLESS NOTED OTHERWISE THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES; DATED 2002, AND THE AASHTO GUIDE SPECIFICATIONS FOR HORIZONTALLY CURVED STEEL GIRDER HIGHWAY BRIDGES; DATED 2003.

2. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 20 DEGREES CELCIUS, UNLESS NOTED OTHERWISE.

3. DESIGN IS FOR MS-22.5 LIVE LOADING.

4. EXISTING SIGNS NOT REUSED SHALL REMAIN THE PROPERTY OF THE STATE OF VERMONT. THESE SIGNS SHALL BE STOCKPILED ON THE PROJECT AND THEN LOADED ON A TRUCK SUPPLIED BY THE DISTRICT. CONTACT THE DISTRICT 4 DTA, TAMMY ELLIS AT 295-8888 TO ARRANGE REMOVAL FROM THE PROJECT. PAYMENT WILL BE CONSIDERED INCIDENTAL TO CONTRACT ITEM 675.50 “REMOVING SIGNS”.

5. CAUTION LIGHTS AT STATIONS 9+987 RT AND 10+366 LT ALONG WITH ATTACHED SIGNS SHALL BE REMOVED BY VTRANS OPERATIONS PERSONNEL. THE CONTRACTOR SHALL CONTACT RUSSELL VELANDER AT 828-3535 TO ARRANGE REMOVAL.

6. A PORTION OF THE EXISTING SUBSTRUCTURE AT ABUTMENT NO. 2 SHALL BE REMOVED AS INDICATED ON SHEET 24 UNDER ITEM 529.15 “REMOVAL OF STRUCTURE”. THE REMAINING SUBSTRUCTURES AND SUPERSTRUCTURE SHALL BE REMOVED AFTER THE NEW BRIDGE IS COMPLETE UNDER ITEM 529.15 "REMOVAL OF STRUCTURE". THE PIER AND ABUTMENTS SHALL BE REMOVED DOWN TO THE ELEVATIONS SHOWN ON THE CHANNEL CROSS SECTIONS.

7. THE MAILBOXES AT STATION 10+317 RT AND 20+059 LT SHALL BE MOVED TO A LOCATION DETERMINED BY THE OWNER AND THE RESIDENT ENGINEER. PAYMENT SHALL BE UNDER ITEM 617.10, “RELOCATE MAILBOX, SINGLE SUPPORT.”

EARTHWORK AND RELATED ITEMS

8. PERMANENT SHEET PILING SHALL BE INSTALLED 1.2 METERS OUTSIDE THE PERIMETER OF THE MSE WALL EXCEPT WHERE IT CONFLICTS WITH THE EXISTING ABUTMENTS. THE SHEET PILING SHALL EXTEND 0.5 METERS ABOVE THE BOTTOM OF WALL ELEVATIONS INDICATED ON THE MSE WALL ELEVATION SHEETS. THE SHEETS SHALL BE DRIVEN TO BEDROCK, BUT SHALL NOT EXCEED 6.10 METERS IN LENGTH. THE SHEET PILING SHALL HAVE A MINIMUM SECTION MODULUS OF 1620 cm^3/M.

9. THE TOP ELEVATION OF THE PERMANENT STEEL SHEET PILING MAY BE RAISED TO FACILITATE THE EXCAVATION FOR THE MSE WALL. THE TOP OF THE SHEETS SHALL BE .5 METERS MINIMUM BELOW FINAL GRADE.

10. EXCAVATION FOR PLACEMENT OF STONE FILL, TYPE IV SHALL BE PAID FOR UNDER ITEM 203.27 “UNCLASSIFIED CHANNEL EXCAVATION”. EXCAVATION FOR PLACEMENT OF STONE FILL, TYPE II SHALL BE PAID FOR UNDER ITEM 203.15 “COMMON EXCAVATION.”

11. EXISTING PAVEMENT SHALL BE SCARIFIED IN LOCATIONS UNDER THE PROPOSED EMBANKMENT WHERE IT WOULD NOT OTHERWISE BE REMOVED UNDER THE ITEM 203.15 "COMMON EXCAVATION". SCARIFYING SHALL BE PAID FOR UNDER THE ITEM 900.675, "SPECIAL PROVISION (SCARIFYING PAVEMENT)". ANY PAVEMENT REMAINING OUTSIDE THE PROPOSED EMBANKMENT SHALL BE REMOVED UNDER THE ITEM 203.15 "COMMON EXCAVATION".

STRUCTURAL STEEL

12. UNLESS OTHERWISE NOTED, ALL NEW STRUCTURAL STEEL SHALL CONFORM TO AASHTO M 270M/M 270 GRADE 345W AND SHALL BE PAID FOR UNDER ITEM 506.56, “STRUCTURAL STEEL, CURVED PLATE GIRDER”.

13. UNLESS OTHERWISE NOTED, STRUCTURAL STEEL MEMBERS DESIGNATED “CVN” IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01.

14. BOLTS USED IN FIELD CONNECTIONS SHALL BE M22 X 2.5 AND MEET THE REQUIREMENTS OF SUBSECTION 714.05. HOLE DIAMETERS SHALL BE 24 MM. ANY CONNECTIONS NOT DESIGNATED SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.

15. AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF THE GIRDERS SHALL BE TAKEN AS DIRECTED BY THE RESIDENT ENGINEER FOR USE IN DETERMINING FINISHED GRADES.

16. FLEMING BRACKETS OR SIMILAR FALSEWORK SHALL BE SPACED AS REQUIRED BY DESIGN, BUT SHALL BE LIMITED TO A MAXIMUM SPACING OF 1200 mm. THE DESIGN OF FALSEWORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

17. ANY BOLT HOLES IN THE WEBS OF FASCIA GIRDERS NOT OTHERWISE FILLED SHALL BE FILLED WITH BUTTON HEAD OR HEX HEAD BOLTS. THE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19 OF THE STANDARD SPECIFICATIONS.

18. ENDS OF GIRDERS ARE TO BE VERTICAL IN THEIR FINAL POSITION.

19. THE EXPANSION END OF THE GIRDERS SHALL BE GIVEN A SHOP APPLIED PAINT SYSTEM FOR A DISTANCE EQUAL TO THE DEPTH OF THE GIRDER PER SPECIFICATION 513. THE CROSSFRAMES IN THIS AREA SHALL ALSO BE PAINTED. THE PAINT SHALL BE BROWN, FEDERAL STANDARD 595, COLOR CHIP #20059 IN ACCORDANCE WITH SUBSECTION 708.03. AFTER INSTALLATION THE PAINTED AREAS SHALL BE GREASED.

CONCRETE

20. SUBSTRUCTURE CONCRETE AND APPROACH SLABS SHALL BE IN ACCORDANCE WITH ITEM 501.34, “CONCRETE, HIGH PERFORMANCE CLASS B”. DECK AND CURB CONCRETE SHALL BE IN ACCORDANCE WITH ITEM 900.608, “SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT). “

21. SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL. ALL OTHER AREAS OF BRIDGE SEATS SHALL BE SLOPED 2.0 PERCENT TOWARD MIDSPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE GIVEN A MAGNESIUM FLOAT FINISH.

22. CONCRETE PORTIONS OF ABUTMENTS AND WINGWALLS ABOVE ADJACENT BRIDGE SEAT ELEVATIONS SHALL NOT BE PLACED UNTIL FINISH GRADES HAVE BEEN DETERMINED BY THE RESIDENT ENGINEER.

23. IN ACCORDANCE WITH SUBSECTION 506.23(A) OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION AND AS DIRECTED BY THE RESIDENT ENGINEER, THE CONTRACTOR SHALL TAKE MEASURES NECESSARY TO PROTECT THE MSE WALLS AND ABUTMENTS FROM STAINING DUE TO OXIDE FORMATION ON THE STRUCTURAL STEEL PRIOR TO PLACEMENT OF THE DECK. THESE MEASURES WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO ITEM 506.56, “STRUCTURAL STEEL, CURVED PLATE GIRDER”. ANY SUCH STAINING THAT OCCURS PRIOR TO DECK PLACEMENT SHALL BE REMOVED AT NO ADDITIONAL COST TO THE STATE.

24. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 25 mm X 25 mm.

25. WATER REPELLENT, SILANE, SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES. WATER REPELLENT FOR THE MSE WALL PANELS MAY BE APPLIED ON SITE PRIOR TO ASSEMBLY.

26. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS SHOWN IN THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.

27. ALL SUPERSTRUCTURE REINFORCING STEEL SHALL BE EPOXY COATED AND PAID FOR UNDER ITEM 507.17, "EPOXY COATED REINFORCING STEEL". CUTTING AND REPAIRING DAMAGED AREAS OF COATED REINFORCING STEEL SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 507.04 OF THE STANDARD SPECIFICATIONS.

28. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:

SPACING:	+/- 25 mm
CLEARANCE:	+/- 6 mm

INFILTRATION BASIN NOTES

29. EXCAVATION FOR THE PLUNGE POOL AND INFILTRATION BASIN SHALL BE INCLUDED UNDER ITEM 203.15 “COMMON EXCAVATION.”

30. THE BASIN SHALL NOT BE USED AS A SEDIMENT BASIN PRIOR TO THE ESTABLISHMENT OF VEGETATION AS DETERMINED BY THE RESIDENT ENGINEER.

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039notes.dgn	
IPARM FILE NAME: de039gennotes.i	PLOT DATE: 08-APR-2010
DESIGNED BY: H.I.SALLS	DRAWN BY: H.I.SALLS
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. S. YOUNG
GENERAL NOTES	SHEET: 9 OF 139

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
Vt 107									
9+980.00		0.34							
	20		48.8						
10+000.00		4.54							
	16		164.1						
10+016.00		15.97							
	4		72.3					C.	1845.6
10+020.00		20.17						R.	0.0
	20		413.8					R.Fac.	0.495
10+040.00		21.21						F.	5324.7
	20		391.0					F.Fac	1.15
10+060.00		17.89				0.00		Ex. F.	4277.8
	20		304.2				3.4		
10+080.00		12.52				0.34			
	20		132.7				358.7		
10+100.00		0.75				35.53			
	20		14.8				1026.7		
10+120.00		0.73				67.14			
	20		32.7				1746.6		
10+140.00		2.54				107.52			
	20		33.1				1721.8		
10+160.00		0.77				64.66			
	10		43.7				408.7		
10+170.00		7.97				17.07			
	5.858		107.1				55.8		
10+175.858		28.60				1.98			
	3		87.2				3.0		
10+178.908		28.60				0.00			
END ROAD BRIDGE STARTS END BRIDGE START ROAD									
10+217.808		18.58							
	3.050		56.7						
10+220.858		18.58				2.04			
	9.142		107.3				42.9		
10+230.00		4.90				7.35			
	2.7		8.1				9.9		
10+232.70		1.12				0.00			
	7.3		6.9				113.3		
10+240.00		0.76				31.04			
	20		7.6				400.7		
10+260.00		0.00				9.03			
	20		60.8				90.3		
10+280.00		6.08				0.00		C.	1595.3
	20		179.4					R.	0.0
10+300.00		11.86						R.Fac.	0.495
	9.4		143.8					F.	657.1
10+309.40		18.72						F.Fac	1.15
	10.6		165.0					Ex. C.	839.6
10+320.00		12.42							
	10		147.6						
10+330.00		17.10							
	10		159.2						
10+340.00		14.73							
	5		77.2						
10+345.00		16.12							
	15		228.7						
10+360.00		14.37							
	16		161.1						
10+376.00		5.77							
	4		18.4						
10+380.00		3.41							
	10		35.4						
10+390.00		3.68							
	10		22.6						
10+400.00		0.83							
	20		9.7						
10+420.00		0.14							
Stony Brook Road									
20+005.00		0.000							
	5		0.0						
20+010.00		0.000				84.303			
	10		0.0				718.2		
20+020.00		0.000				59.341			
	10		0.0				535.7		
20+030.00		0.000				47.808		C.	135.2
	10		5.9				388.0	R.	0.00
20+040.00		1.180				29.798		R.Fac.	0.495
	10		16.8				244.0	F.	2094.8
20+050.00		2.186				18.998		F.Fac	1.15
	10		18.6				137.1	Ex. F.	2273.8
20+060.00		1.532				8.427			
	10		13.1				56.9		
20+070.00		1.088				2.953			
	10		18.3				14.8		
20+080.00		2.581				0.007			
	10		28.8				0.05		
20+090.00		3.171				0.003			
	10		33.7						
20+100.00		3.560							

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
Drive 1									
0+007.5		0.000				3.85			
	2.5		0.000				9.6		
0+010.00		0.000				3.852		C.	10.0
	5		0.000				24.5	R.	0.00
0+015.00		0.000				5.959		R.Fac.	0.495
	5		0.000				19.8	F.	59.2
0+020.00		0.000				1.960		F.Fac	1.15
	5		1.150				5.1	Ex. F.	58.1
0+025.00		0.461				0.072			
	5		8.830				0.2		
0+030.00		3.073				0.000			

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

SUMMARY AND BALANCES

STATION TO STATION km + m	STATION km + m	TOT EXC. EARTH & ROCK m³	ROCK EXCAV m³	EMBANK m³	EXCESSES CUT	EXCESSES FILL	ACUMULATIVE EXCESSES CUT	ACUMULATIVE EXCESSES FILL
9+996.00	10+178.908	1845.6	0.000	5324.700		4277.81		4277.81
10+217.808	10+400.00	1595.3	0.000	657.100	839.64			3438.17
10+010.00	20+100.00	135.2	0.000	2094.800		2273.82		5711.99
10+010.00	0+030.00	10.0	0.000	59.200		58.08		5770.07
Infiltration & Plunge	Trench Pool	491.5	0.000	0.000	491.50			
TOTAL		4078		8136				5279

REMARKS

EARTH AND ROCK EXCAVATION	4078
SOLID ROCK EXCAVATION	
EARTH EXCAVATION	4078
PLANIMETERED FILL	8136
LESS FACTORED SOLID ROCK	
LESS DISPLACEMENT OF ANY LARGE STRUCTURES	
NET PLANIMETERED FILL	8136
FACTOR	1.15
PLANIMETERED FILL INCLUDING FACTOR	9356
MATERIALS AVAILABLE FOR FILLS	
EARTH EXCAVATION	4078
UNCLASSIFIED CHANNEL EXCAVATION (510)(.30)	152
UNDERDRAIN EXCAVATION (120)(.90)	146
STRUCTURE EXCAVATION	
TRENCH EXCAVATION(160)(.90)	142
TOTAL MATERIAL AVAILABLE FOR FILL	4517
TOTAL FILL INCLUDING FACTOR	9356
TOTAL MATERIAL FOR FILL	4517
BORROW	4839
EXCESS EXCAVATION	

PROJECT NAME: **STOCKBRIDGE**
PROJECT NUMBER: **BRF 022-1(20)**

FILE NAME: de039excel.dgn
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: H.I. SALLS
EARTHWORK SHEET

PLOT DATE: 4/8/2010
DRAWN BY: H.I. SALLS
CHECKED BY: R.S. YOUNG
SHEET 10 OF 139

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
616.305 : Bituminous Concrete Curb, Type A				
10+085.00	10+163.60	77.90		
	Total	77.90		
616.28 : Cast-in-Place Concrete Curb, Type B				
10+163.60	10+175.05	11.45		
10+163.45	10+175.05		11.60	
10+221.64	10+233.35		11.71	
10+221.67	10+233.85	12.18		
10+310.00	10+327.76		17.40	
10+333.76	10+347.25		13.48	
	Sub-totals	23.63	54.19	
	Total	77.82		

SIDEWALK

BEGIN STATION km + m	END STATION km + m	POSITION LEFT m^2	POSITION RIGHT m^2	REMARKS

GUARD RAIL

BEGIN STATION km + m	END STATION km + m	POSITION LEFT m	POSITION RIGHT m	END TREATMENT BEGIN ea	END TREATMENT END ea
621.215 : HD Steelbeam Guardrail, Galvanized w/ 2.4m Posts					
9+916.20	9+992.30	76.20		MTS	HDSB
	Total	76.20			
621.21 : HD Steelbeam Guardrail, Galvanized					
9+992.30	10+165.10	171.45		HDSB	GAS
10+106.40	20+052.89		80.67	MTS	ROUND
20+066.70	10+165.52		69.24	ROUND	GAS
10+231.62	10+426.00	194.31		GAS	MTS
10+231.21	10+242.40		11.43	GAS	MTS
	Subtotal	365.76	161.34		
	Total	527.10			
621.73 : Guardrail Approach Section, Galvanized, NETC 4-rail					
10+165.10	10+175.04	1 Each		HDSB	NETC 4
10+165.52	10+175.07		1 Each	HDSB	NETC 4
10+221.67	10+231.62	1 Each		NETC 4	HDSB
10+221.64	10+231.21		1 Each	NETC 4	HDSB
	Total	4			
525.34 : Bridge Railing, Galvanized, NETC 4-Rail					
10+175.04	10+221.67	45.735		GAS	GAS
10+175.07	10+221.64		47.464	GAS	GAS
	Total	93.20			
621.50 : Manufactured Terminal Section, Flared					
9+904.75	9+916.20	1			HDSB
10+095.00	10+106.40		1		HDSB
10+426.00	10+437.40	1		HDSB	
10+242.40	10+253.60		1	HDSB	
	Total	4			
621.60 : Anchor for Steel Beam Guardrail					
20+050.00			1		
20+065.00		1			
	Total	2			

UNDERDRAIN

BEGIN STATION km + m	END STATION km + m	TYPE	POSITION	DIA. mm	LENGTH m	TRENCH EARTH m^3	TRENCH ROCK m^3	GRAN BKFILL m^3	FB ea	MKR PST ea
See Drainage Detail Sheet										

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME:	de039det.xls
PROJECT LEADER:	C.P. WILLIAMS
DESIGNED BY:	H.I. SALLS
ITEM DETAIL SHEET	
PLOT DATE:	10/15/09
DRAWN BY:	H.I. SALLS
CHECKED BY:	R.S. YOUNG
SHEET	11 OF 139

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAINAGE DETAIL SHEET

Metric

STATION	STATION	POS.	ASKEW	INLET/OUTLET TYPE		DITCH		PIPE ARCH			PIPE		ALLOWABLE OPTIONS						PIPE ELBOW	ES	CB	PERCOL	DEPTH DI	CONC CLASS B	REINF STEEL	DI GRATE	CHAN ELEV	CRM	TRENCH EXCAVATION		COMM EXC	UNC CHAN EXC	STRUCT EXCAV	GRAN BKFILL STRUCT	GRAN BORR	EROS MATT	STONE FILL		MARKER POSTS		GEOTEXT UNDER STONE FILL SM	PAVED GUTTERS	DRAINAGE FLAGS	REMARKS
km + m	km + m		no. deg.	INLET	OUTLET	IN	OUT	SPAN mm	RISE mm	L m	D mm	L m	PCCSP mm	CAAP mm	RCP CL	CSP mm	CPEP mm	PCCSP PI mm	no. deg.	ea	ea		mm	m^3	kg	type	ea	m^3	EARTH m^3	ROCK m^3	m^3	m^3	m^3	m^3	m^3	m^2	m^3	type	LT ea	RT ea	SM	TON		
VT 107																																											
9+937	9+937	RT-LT		DITCH	DITCH																																					1	DO NOT DISTURB
9+980	10+016	RT		FB	RCDI						150	36																31	5										1			2	NEW UNDERDRAIN WITH FLUSHING BASIN
10+016.2	10+014.6	RT-LT		RCDI	DITCH																								8.6												3	EXISTING PIPE & RCDI REMOVE
10+016.2	10+014.6	RT-LT		RCDI	DITCH						450	16	X	X			X				X		1500			D		5.7								5	II			15.7		3	NEW RCDI & PIPE
10+017	10+120	RT		FB	DITCH						150	106																86	5										2			4	NEW UNDERDRAIN WITH FLUSHING BASIN
10+120	10+160	LT		RCDI	RCDI						450	38.6	X	X			X				X		1500			E															5	NEW RCDI & PIPE (WITHIN NEW ROADWAY FILL)
10+160	10+160	LT-RT		RCDI	DITCH						450	18	X	X			X				X		1500			E										1.58	II			10.8		6	NEW RCDI & PIPE (WITHIN NEW ROADWAY FILL)
10+173	10+175	RT		RCDI	DITCH																								8.6												7	EXISTING PIPE & RCDI REMOVE
10+229	10+227	RT		RCDI	DITCH																								8.6												8	EXISTING PIPE & RCDI REMOVE
10+232.83	10+232.83	LT		RCDI	DITCH						450	3.7	X	X			X				X		1500			E										2.8	II			10.2		9	NEW RCDI & PIPE (WITHIN NEW ROADWAY FILL)
10+302	10+316	RT-LT		RCDI	DITCH																								16.5												10	EXISTING PIPE & RCDI REMOVE
10+302	10+316	RT-LT		RCDI	DITCH						450	24	X	X			X				X		1500			A		21								3	II			10.6		10	NEW RCDI & PIPE
10+310	10+346	RT		FB	RCDI						150	36																30											1			11	NEW UNDERDRAIN WITH FLUSHING BASIN
10+345	10+344	RT-LT		RCDI	DITCH																								10.3												12	EXISTING PIPE & RCDI REMOVE
10+345.85	10+344.44	RT-LT		RCDI	DITCH						450	14.5	X	X			X				X		1950			D		19.1								3	II			10.6		13	NEW RCDI & PIPE
10+346	10+372	RT		FB	RCDI						150	26																16											1			14	NEW UNDERDRAIN WITH FLUSHING BASIN
10+354	10+374	RT		DITCH	RCDI																																				9	15	NEW BITUMINOUS CONCRETE GUTTER
10+372.30	10+390.68	RT		RCDI	RCDI						450	18	X	X			X				X		1500			D		22														16	NEW RCDI & PIPE
10+390.74	10+389.75	RT-LT		RCDI	DITCH																								10.6												17	EXISTING PIPE & RCDI REMOVE
10+390.74	10+389.67	RT-LT		RCDI	DITCH						450	15	X	X			X				X		1500			A		31.2								3	II			10.6		17	NEW RCDI & PIPE
STONY BROOK RD.																																											
20+19.8	20+21.5	RT-LT		DITCH	DITCH						900	22	X	X			X							8.6	726			27.2								14.3	II			37.9		18	NEW PIPE & HEADWALLS
20+024	20+036	RT-LT		DITCH	DITCH																								15.6												19	EXISTING PIPE REMOVE
20+055	20+077	RT																																		12.3	I			72		20	SPECIAL DITCH WITH TYPE I STONE FILL
20+057	20+066	RT		DITCH	DITCH																								5.8												21	EXISTING PIPE REMOVE
20+071.96	20+065.92	RT-LT		RCDI	DITCH						450	21.5	X	X			X						X	1350		A		30.7								3	II			10.6		22	NEW RCDI & PIPE
																	TOTALS			9		8.6	726				319.9	94.6							12.3		5	189.0	9		TOTALS
																	ROUNDING			0		4	4				0.1	0.4							0.7		0	1.0	0		ROUNDING
																	ROUNDED TOTALS			9		9.0	730				320.0	95.0							13.0		5	190.0	9		ROUNDED TOTALS

TYPE I TOTALS	12.3
TYPE I ROUNDING	0.7
TYPE I ROUNDED TOTALS	13.0
TYPE II TOTALS	35.7
TYPE II ROUNDING	0.3
TYPE II ROUNDED TOTALS	36.0

PROJECT NAME:	**STOCKBRIDGE**		
PROJECT NUMBER:	**BRF 022-1(20)**		
FILE NAME:	**85e039excel.dgn**	PLOT DATE:	**4/8/2010**
PROJECT LEADER:	**C.P. WILLIAMS**	DRAWN BY:	**H.I. SALLS**
DESIGNED BY:	**H.I. SALLS**	CHECKED BY:	**R.S. YOUNG**
DRAINAGE DETAIL SHEET		SHEET **12** OF **139**	

GPS CONTROL POINTS

HVCTRL #1

V.T.G.S. SURVEY DISK STAMPED
" GODDARD "
N = 140062.8520
E = 482218.6380
EL. = 240.600

GENERAL LOCATION, STOCKBRIDGE, VT. OWNERSHIP, EDITH GODDARD, 2678 VT RTE 107, STOCKBRIDGE, VT.05772. TO REACH FROM THE INTERSECTION OF VT ROUTES 100 AND 107 GO EAST ALONG VT ROUTE 107 FOR 2.7 MI(4.3 KM) TO THE INTERSECTION OF BLACKMER BOULEVARD LEFT AND A GRAVEL DRIVE RIGHT. TURN RIGHT AND GO SOUTHEAST ALONG THE GRAVEL DRIVE FOR ABOUT 75 M (246.1FT) TO THE SITE OF THE MARK ON THE RIGHT IN THE FRONT LAWN OF THE GODDARD RESIDENCE. THE MARK IS SET FLUSH WITH GROUND SURFACE IN THE TOP OF A ROCK OUTCROP OF WHICH 0.2 M (0.7 FT) IS EXPOSED. IT IS 30.2 M (99.1FT) WEST SOUTHWEST OF AND ABOUT 3.5 M (11.5 FT) HIGHER THAN THE CENTERLINE OF THE GRAVEL DRIVE, 19.4 M (63.6 FT) NORTHWEST OF THE NORTH CORNER OF THE HOUSE, 28.2 M (92.5 FT) NORTH OF THE WEST CORNER OF THE ADDITION ON THE HOUSE, 8.2 M (26.9 FT) SOUTHWEST OF A FLAG POLE, AND 25.2 M (82.7 FT) HEAST OF POLE NO 1C/79-1.

HVCTRL #2

V.T.G.S. SURVEY DISK STAMPED
" GODDARD AZ MK "
N = 140489.2110
E = 482565.4360
EL. = 225.690

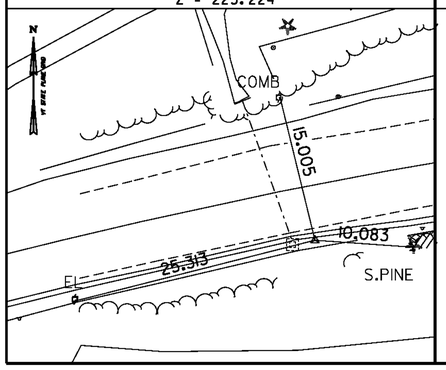
GENERAL LOCATION, STOCKBRIDGE, VT. OWNERSHIP, ELOISE THOMPSON, 3080 VT ROUTE 107, STOCKBRIDGE, VT.05772. TO REACH FROM THE INTERSECTION OF VT ROUTES 100 AND 107 GO EAST ALONG VT ROUTE 107 FOR 3.0 MI(4.8 KM) TO THE SITE OF THE MARK ON THE LEFT IN A LAWN. IT IS JUST EAST OF THE STOCKBRIDGE CENTRAL SCHOOL. THE MARK IS SET FLUSH WITH GROUND SURFACE IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT POURED 1.2 M (3.9 FT) DEEP. IT IS 17.6 M (57.7 FT) NORTH OF AND ABOUT 0.5 M (1.6 FT) LOWER THAN THE NORTH EDGE OF PAVEMENT OF VT ROUTE 107, 43.9 M (144.0 FT) NORTHEAST OF POLE NO 177/3/85, 21.0 M (68.9 FT) SOUTHWEST OF THE SOUTHWEST CORNER OF A FOUR BAY GARAGE, AND 17.6 M (57.7 FT) NORTH NORTHWEST OF POLE NO 176 1/2 /85X AND A FIBERGLASS WITNESS POST.

* DESCRIPTION PROVIDED BY VERMONT AGENCY OF TRANSPORTATION GEODETIC SURVEY UNIT.

TRAVERSE TIES

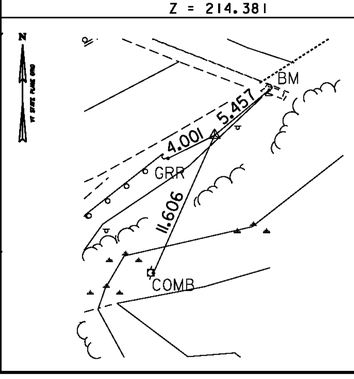
HVCTRL #3

N = 140533.5113
E = 482786.5320
Z = 223.224



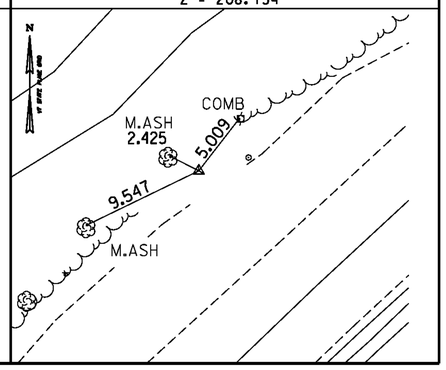
HVCTRL #4

N = 140566.9535
E = 482946.6727
Z = 214.381



HVCTRL #5

N = 140802.8875
E = 483130.8939
Z = 208.134



* MAIN TRAVERSE COMPLETED JAN. 10, 2000. SURVEYED BY L.ORVIS, G.WILSON & J.HULETT

ALIGNMENT DATA

Horizontal Alignment Name: stony final

	STATION	NORTHING	EASTING
POB	20+000.000	140569.9810	482908.6790
PC	20+008.073	140562.5936	482911.9349
PI	20+018.681	140552.8870	482916.2130
Radius:	40.000		
Delta:	29°42'17.17" Left		
Degree of Curvature (Arc):	43°39'34.10"		
Length:	20.738		
Tangent:	10.608		
Chord:	20.506		
Middle Ordinate:	1.336		
External:	1.383		
PT	20+028.811	140546.5758	482924.7389
PC	20+040.741	140539.4781	482934.3273
PI	20+050.830	140533.4750	482942.4370
Radius:	75.000		
Delta:	15°19'26.68" Right		
Degree of Curvature (Arc):	23°17'06.19"		
Length:	20.059		
Tangent:	10.090		
Chord:	19.999		
Middle Ordinate:	0.670		
External:	0.676		
PT	20+060.800	140525.5421	482948.6719
POE	20+112.805	140484.6540	482980.8080

ALIGNMENT DATA

Horizontal Alignment Name: vt107 prop

	STATION	NORTHING	EASTING
POB	9+790.000	140466.6084	482569.1820
PC	9+792.500	140467.7035	482571.4302
PI	9+895.481	140512.8133	482664.0057
Radius:	836.196		
Delta:	14°02'30.22" Right		
Degree of Curvature (Arc):	2°05'18.53"		
Length:	204.930		
Tangent:	102.981		
Chord:	204.418		
Middle Ordinate:	6.270		
External:	6.317		
PT	9+997.430	140534.1137	482764.7598
PC	10+094.338	140554.1578	482859.5715
PI	10+184.726	140572.8535	482948.0052
Radius:	250.000		
Delta:	39°45'18.79" Left		
Degree of Curvature (Arc):	6°59'07.86"		
Length:	173.465		
Tangent:	90.388		
Chord:	170.006		
Middle Ordinate:	14.895		
External:	15.838		
PT	10+267.802	140643.7806	483004.0354
PC	10+344.425	140703.9062	483051.5328
PI	10+370.656	140724.4891	483067.7926

Radius: 400.000
Delta: 7°30'13.46" Right
Degree of Curvature (Arc): 4°21'57.41"
Length: 52.386
Tangent: 26.230
Chord: 52.349
Middle Ordinate: 0.857
External: 0.859

PT	10+396.811	140742.7723	483086.6012
POE	10+460.000	140786.8163	483131.9107

Horizontal Alignment Name: Channel

	STATION	NORTHING	EASTING
POB	30+417.944	140563.2530	483038.9110
POE	30+551.083	140638.0030	482928.7370

Horizontal Alignment Name: drive2

	STATION	NORTHING	EASTING
POB	0+000.000	140637.7900	482999.0380
PC	0+007.884	140632.7776	483005.1231
PC	0+007.884	140632.7776	483005.1231
PI	0+014.384	140628.6450	483010.1400
Radius:	6.500		
Delta:	89°59'55.02" Right		
Degree of Curvature (Arc):	268°40'25.21"		
Length:	10.210		
Tangent:	6.500		
Chord:	9.192		
Middle Ordinate:	1.904		
External:	2.692		
PT	0+018.094	140623.6280	483006.0075
PC	0+025.920	140617.5870	483001.0317
PI	0+030.214	140614.2730	482998.3020
Radius:	6.500		
Delta:	66°53'32.64" Left		
Degree of Curvature (Arc):	268°40'25.21"		
Length:	7.589		
Tangent:	4.293		
Chord:	7.165		
Middle Ordinate:	1.076		
External:	1.290		
PT	0+033.509	140610.4617	483000.2788
POE	0+040.164	140604.5540	483003.3430

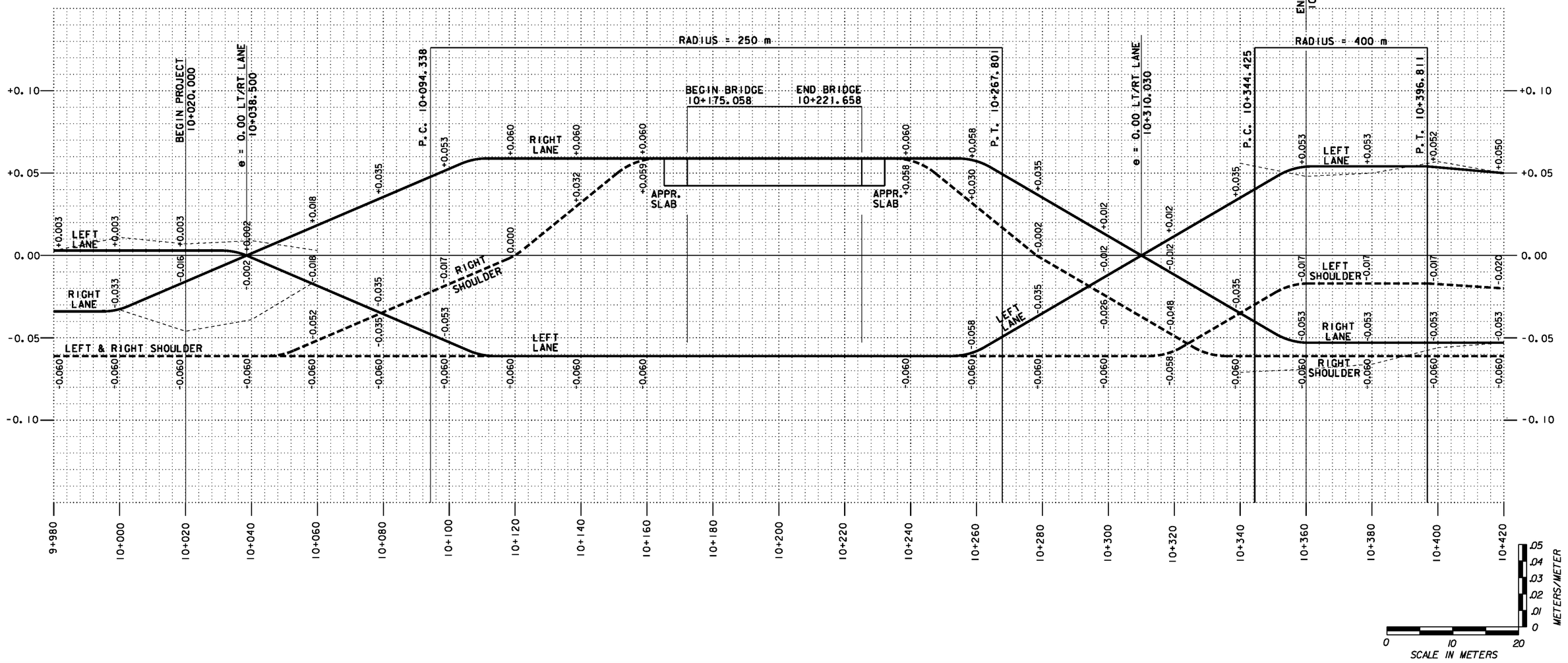
DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD 83/96
ADJUSTMENT	none

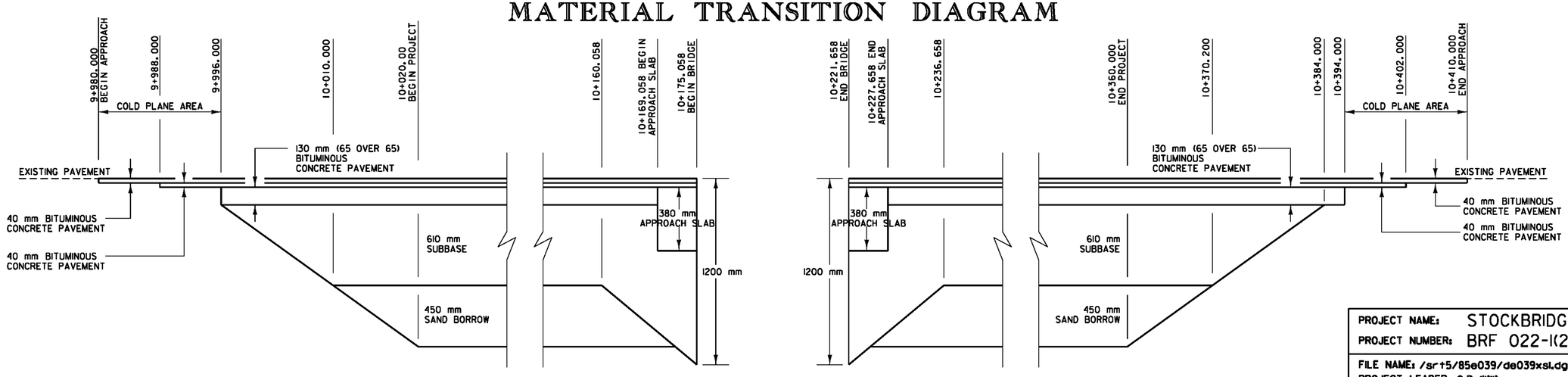
*Alignment Data Current as of 11/19/09

PROJECT NAME:	Stockbridge
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: 85e039/survey/x85e039t1.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: Chris Williams	DRAWN BY: R. Bullock
DESIGNED BY:	CHECKED BY:
Tie Sheet	SHEET 13 OF 139

BANKING DIAGRAM



MATERIAL TRANSITION DIAGRAM



NOT TO SCALE

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /sr15/85e039/de039xsl.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: H.J.SALLS
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S. Young
BANKING & MATERIAL TRANSITION DIAGRAMS	SHEET 14 OF 139

Manufactured Terminal Section, Flared
9+904.75 ~ 9+916.20 Lt.

HD Steel Beam Guardrail, Galvanized w/ 2.4m Posts
9+916.20 ~ 9+970.00 Lt.

Benchmark #2
Goddard Az Mark
Elev. 225.690

N

VT STATE PLANE GRID

PI BK STA = 9+895.481
AHD STA = 9+894.449

EXISTING ROW

GASOLINE PUMP

HOUSE

LUMINAIRE

GARAGE

MAPLE

WETLAND

WOODS DRIVE

BOUNDARY MARKER

WOODS

LILAC

CONC. WALK

GRAVEL DRIVE

CEDAR

POLE #176 86

SIGN

existing overhead utility

N78° 03' 46.38"E

N64° 01' 16.16"E

9+800

9+820

9+840

9+860

9+880

9+900

9+920

9+940

9+960

SIGN

CONC. FOUND.

PC 9+792.500

CURVE DATA
DELTA = 14° 02' 30.2" RT
R = 836.196
T = 102.981
L = 204.930
E = 6.317

DRIVE

GRAVEL DRIVE

BLDG.

MATCHLINE STA. 9+970

SEE DRAINAGE DETAIL SHEET
FOR DRAINAGE FLAG DESCRIPTIONS

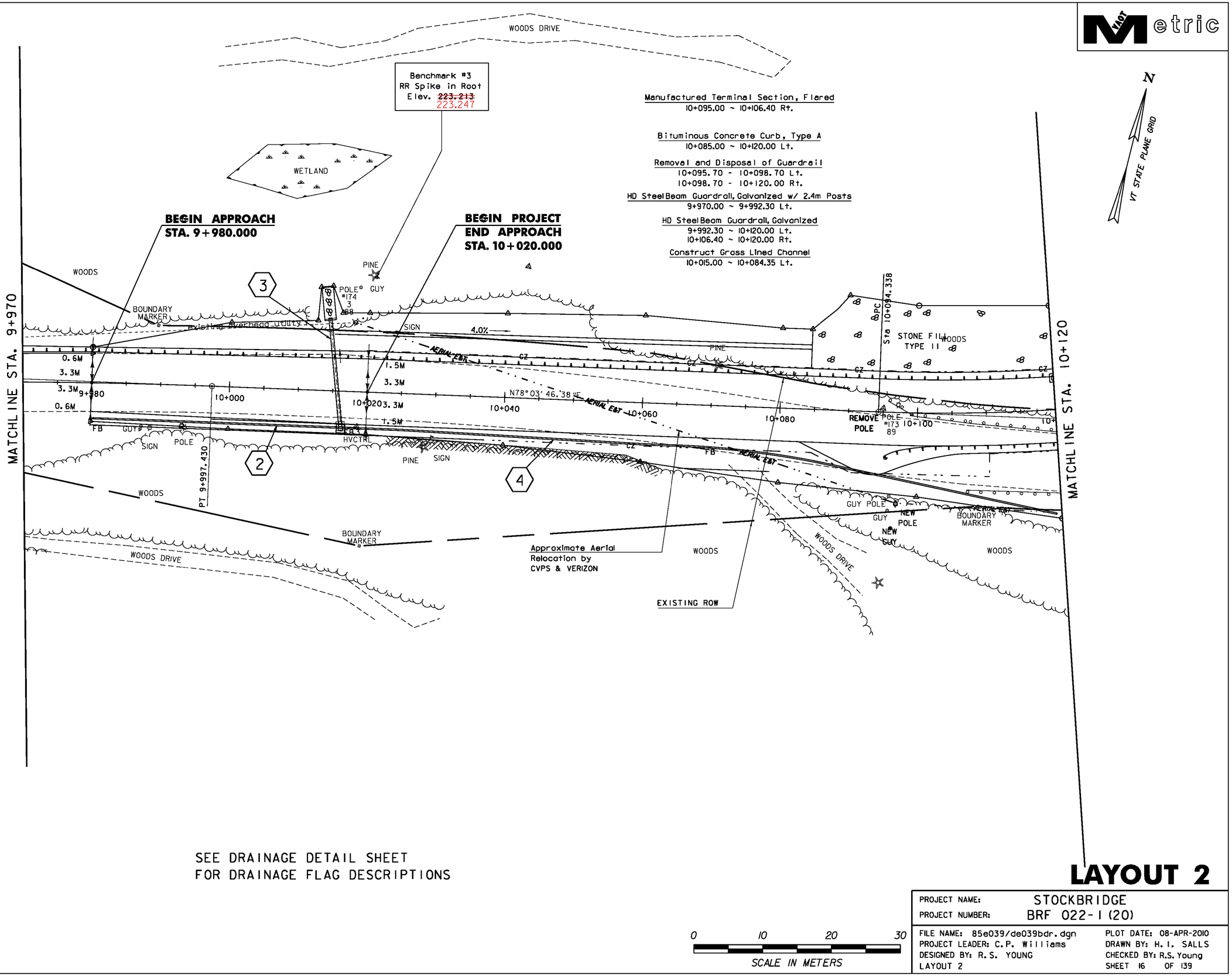
0 10 20 30
SCALE IN METERS

LAYOUT 1

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)

FILE NAME: 85e039/de039bdr.dgn		PLOT DATE:	08-APR-2010
PROJECT LEADER:	C. P. WILLIAMS	DRAWN BY:	H. I. SALLS
DESIGNED BY:	R.S. YOUNG	CHECKED BY:	R. S. YOUNG
LAYOUT 1		SHEET 15	OF 139

VAOT Metric



SEE DRAINAGE DETAIL SHEET
FOR DRAINAGE FLAG DESCRIPTIONS

LAYOUT 2

0 10 20 30
SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)

FILE NAME: 85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: H. I. SALLS
DESIGNED BY: R.S. YOUNG	CHECKED BY: R.S. Young
LAYOUT 2	SHEET 16 OF 139

Bituminous Concrete
Curb, Type A
10+120.00 - 10+163.60 Lt.

Construct Drive
10+260.00 Rt - 35M Gravel,
w/2.0M Paved Apron, 10.6M Wide

Manufactured Terminal Section, Flared
10+242.40 ~ 10+253.60 Rt.

Removal and Disposal of Guardrail
10+120.00 - 10+180.00 Rt.
10+227.00 - 10+243.00 Rt.

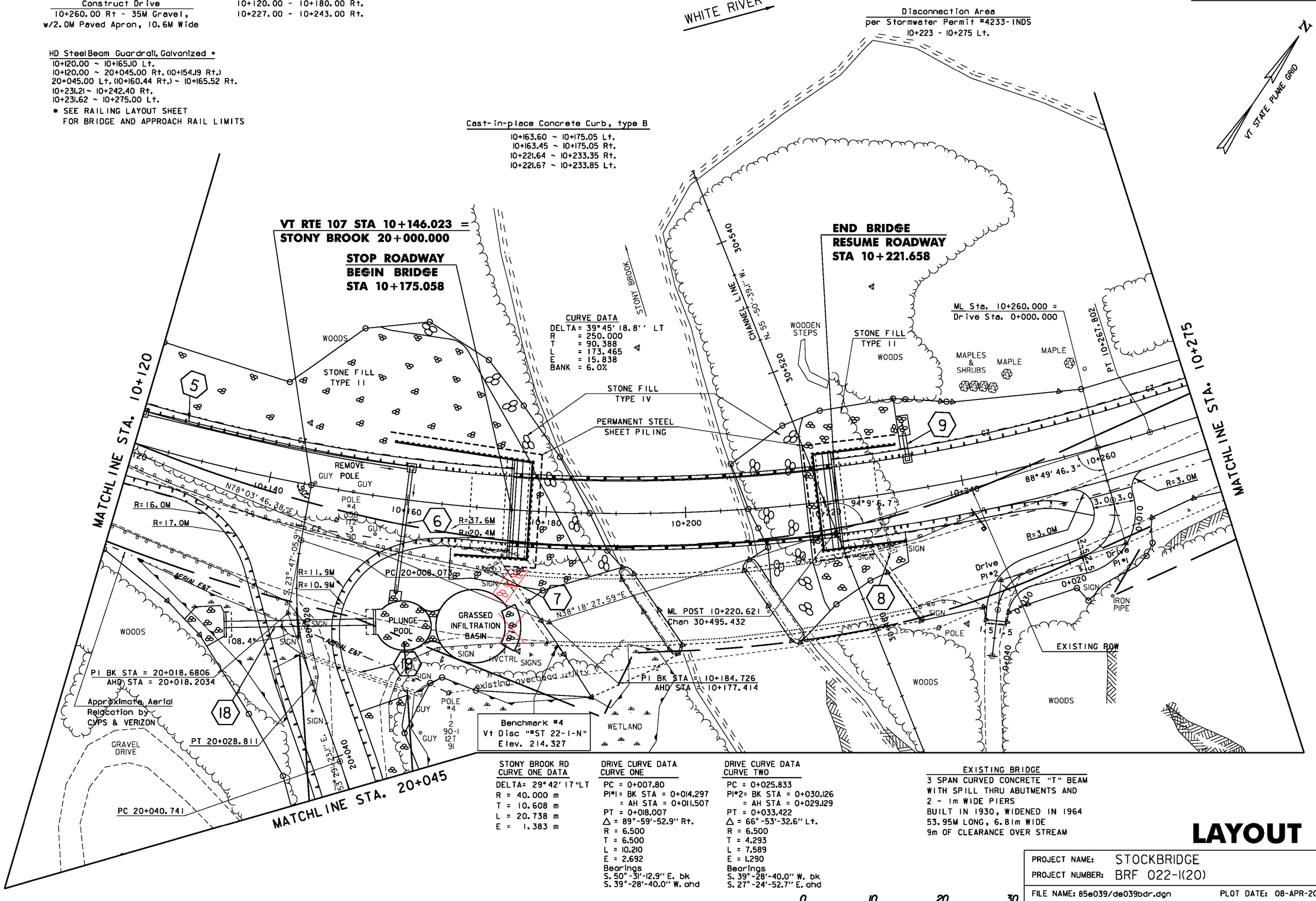
HD Steel Beam Guardrail, Galvanized *
10+120.00 ~ 10+165.10 Lt.
10+120.00 ~ 20+045.00 Rt. (10+154.19 Rt.)
20+045.00 Lt. (10+160.44 Rt.) ~ 10+165.52 Rt.
10+231.21 ~ 10+242.40 Rt.
10+231.62 ~ 10+275.00 Lt.
* SEE RAILING LAYOUT SHEET
FOR BRIDGE AND APPROACH RAIL LIMITS

SEE DRAINAGE DETAIL SHEET
FOR DRAINAGE FLAG DESCRIPTIONS

Construct Infiltration Basin/Plunge Pool
10+170.000 Rt.

Disconnection Area
per Stormwater Permit #4233-INDS
10+223 - 10+275 Lt.

Cast-in-place Concrete Curb, type B
10+163.60 ~ 10+175.05 Lt.
10+163.45 ~ 10+175.05 Rt.
10+221.64 ~ 10+233.35 Rt.
10+221.67 ~ 10+233.85 Lt.



STONY BROOK RD
CURVE ONE DATA
DELTA= 29°42'17"LT
R = 40.000 m
T = 10.608 m
L = 20.738 m
E = 1.383 m

DRIVE CURVE DATA
CURVE ONE
PC = 0+007.80
PI#1= BK STA = 0+014.297
= AH STA = 0+011.507
PT = 0+018.007
Δ = 89°-59'-52.9" Rt.
R = 6.500
T = 6.500
L = 10.210
E = 2.692
Bearings
S. 50°-31'-12.9" E. bk
S. 39°-28'-40.0" W. ahd

DRIVE CURVE DATA
CURVE TWO
PC = 0+025.833
PI#2= BK STA = 0+030.126
= AH STA = 0+029.129
PT = 0+033.422
Δ = 66°-53'-32.6" Lt.
R = 6.500
T = 4.293
L = 7.589
E = 1.290
Bearings
S. 39°-28'-40.0" W. bk
S. 27°-24'-52.7" E. ahd

EXISTING BRIDGE
3 SPAN CURVED CONCRETE "T" BEAM
WITH SPILL THRU ABUTMENTS AND
2 - 1m WIDE PIERS
BUILT IN 1930, WIDENED IN 1964
53.95M LONG, 6.81m WIDE
9m OF CLEARANCE OVER STREAM

0 10 20 30
SCALE IN METERS

LAYOUT 3

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: 85e039/de039bdr.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: R.S. YOUNG
LAYOUT 3
PLOT DATE: 08-APR-2010
DRAWN BY: H.I. SALLS
CHECKED BY: R.S. Young
SHEET 17 OF 139

VAOT Metric

WHITE RIVER

Disconnection Area
per Stormwater Permit #4233-INDS
10+275 - 10+330 Lt.

HD Steel Beam Guardrail, Galvanized
10+275.00 ~ 10+426.00 Lt.

Cast in Place Concrete Curb, Type B
10+310.00 - 10+327.76 Rt.
10+333.76 - 10+347.25 Rt.

Removal and Disposal of Guardrail
10+311.44 - 10+413.47 Lt.

Removal of Stone Wall
(Included under
Item 203.50 "Common Excavation")
10+325 - 10+332 Rt.

Manufactured Terminal Section, Flared
10+426.00 ~ 10+437.40 Lt.

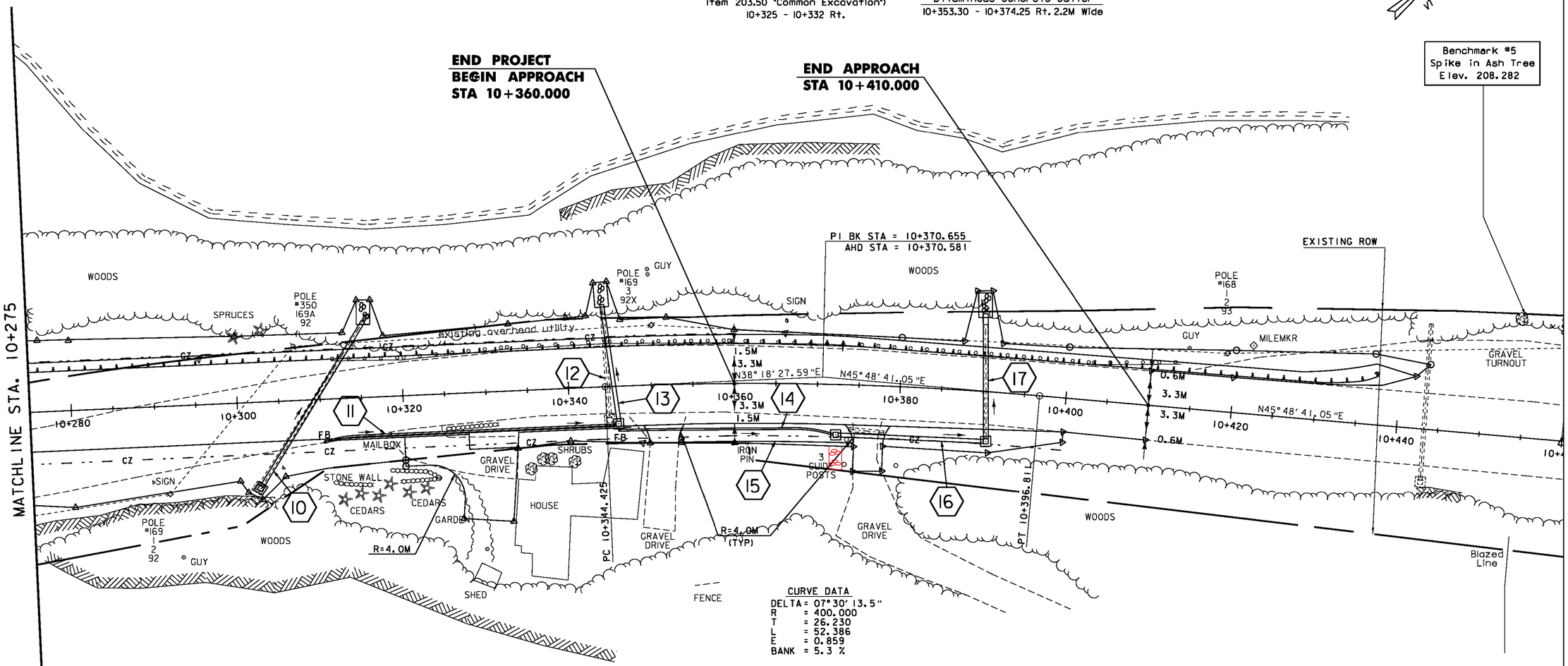
Construct Drives
10+330.000 Rt. - Gravel Drive w/2.0M Paved Apron, 6.0M Wide (See Chart Below)
10+352.000 Rt.- 2.0M Paved Apron, 5.0M Wide
10+376.000 Rt. - 5.0M Gravel Drive, 3.5M Wide w/1.0M Paved Apron, 5.0M Wide

Relocate Mailbox, Single Support
10+317.25 Rt.

Bituminous Concrete Gutter
10+353.30 - 10+374.25 Rt. 2.2M Wide

N
VT STATE PLANE GRID

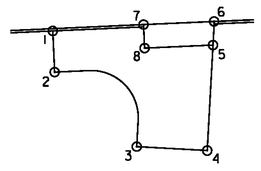
Benchmark #5
Spike in Ash Tree
Elev. 208.282



CURVE DATA
DELTA = 07°30' 13.5"
R = 400.000
T = 26.230
L = 52.386
E = 0.859
BANK = 5.3 %

SEE DRAINAGE DETAIL SHEET
FOR DRAINAGE FLAG DESCRIPTIONS

IRON PIN



*Drive @ STA 10+330.00 Rt

POINT	STA	OFFSET.
1	10+320.00	4.99 Rt
2	10+320.00	8.49 Rt
3	10+326.72	15.13 Rt
4	10+332.69	15.73 Rt
5	10+333.58	6.80 Rt
6	10+333.76	4.80 Rt
7	10+327.76	4.80 Rt
8	10+327.76	6.80 Rt

LAYOUT 4

0 10 20 30
SCALE IN METERS

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: 85e039/de039bdr.dgn
PROJECT LEADER: C. P. WILLIAMS
DESIGNED BY: R. S. YOUNG
LAYOUT 4

PLOT DATE: 08-APR-2010
DRAWN BY: H. I. SALLS
CHECKED BY: R.S. Young
SHEET 18 OF 139

MATCHLINE STA. 20+045

R=5M (TYP)

GRAVEL DRIVE

POLE # 2A

GUY

GRAVEL DRIVE

R=4M (TYP)

R=3M

R=30M

PT 20+060.800

20+060

MAILBOX

STONE FILL TYPE II

WETLAND

PI BK STA = 20+050.8308
AHD STA = 20+050.7102

WOODS

WOODS

WOODS

WOODS

STONE FILL TYPE I

STONY BROOK RD
CURVE TWO DATA

DELTA= 15° 19' 27"RT
R = 75.000 m
T = 10.090 m
L = 20.059 m
E = 0.676 m

20+080

S. 38°-09'-56.4" E.

SIGN

WETLAND

GRAVEL TURNOUT

POLE NO #

GUY

STONY BROOK

CHANNEL LINE

N. 55°-39'-30.3" W.

30+140

30+420

LIMIT OF WORK
STA. SB 20+100.000
EXISTING ROW

Construct Drive
20+060.000 Rt. - 13.5M Gravel Drive, 3.8M Wide w/2.0M Paved Apron, 9.0M Wide

HD Steel Beam Guardrail, Galvanized
20+045.00 ~ 20+052.89 Rt.
20+045.00 ~ 20+066.70 Lt.

Anchor for Steel Beam Rail
20+050.00 Rt.
20+065.00 Lt.

Relocate Mailbox, Single Support
20+059.50 Lt.

SEE DRAINAGE DETAIL SHEET
FOR DRAINAGE FLAG DESCRIPTIONS

VT STATE PLANE GRID

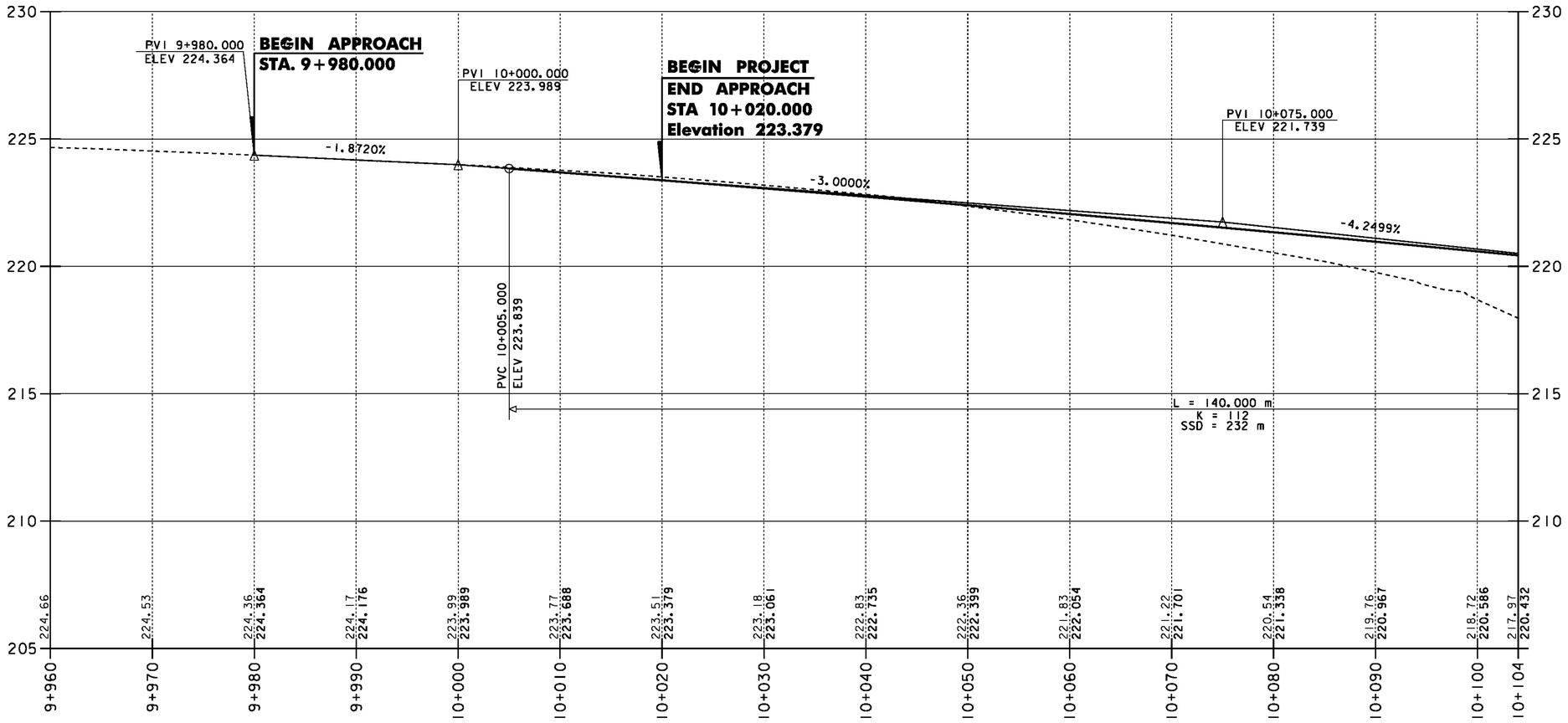
0 10 20 30
SCALE IN METERS

LAYOUT 5

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: 85e039/de039bdr.dgn
PROJECT LEADER: C. P. WILLIAMS
DESIGNED BY: R.S. YOUNG
LAYOUT 5

PLOT DATE: 08-APR-2010
DRAWN BY: H. I. SALLS
CHECKED BY: R.S. Young
SHEET 19 OF 139



GRAPHIC SCALES

0 5 10

VERTICAL SCALE 1:100

0 10 20 30

HORIZONTAL SCALE 1:250

NOTE:
GRADES SHOWN TO THE NEAREST HUNDREDTHS ARE EXISTING GROUND ALONG ℄.

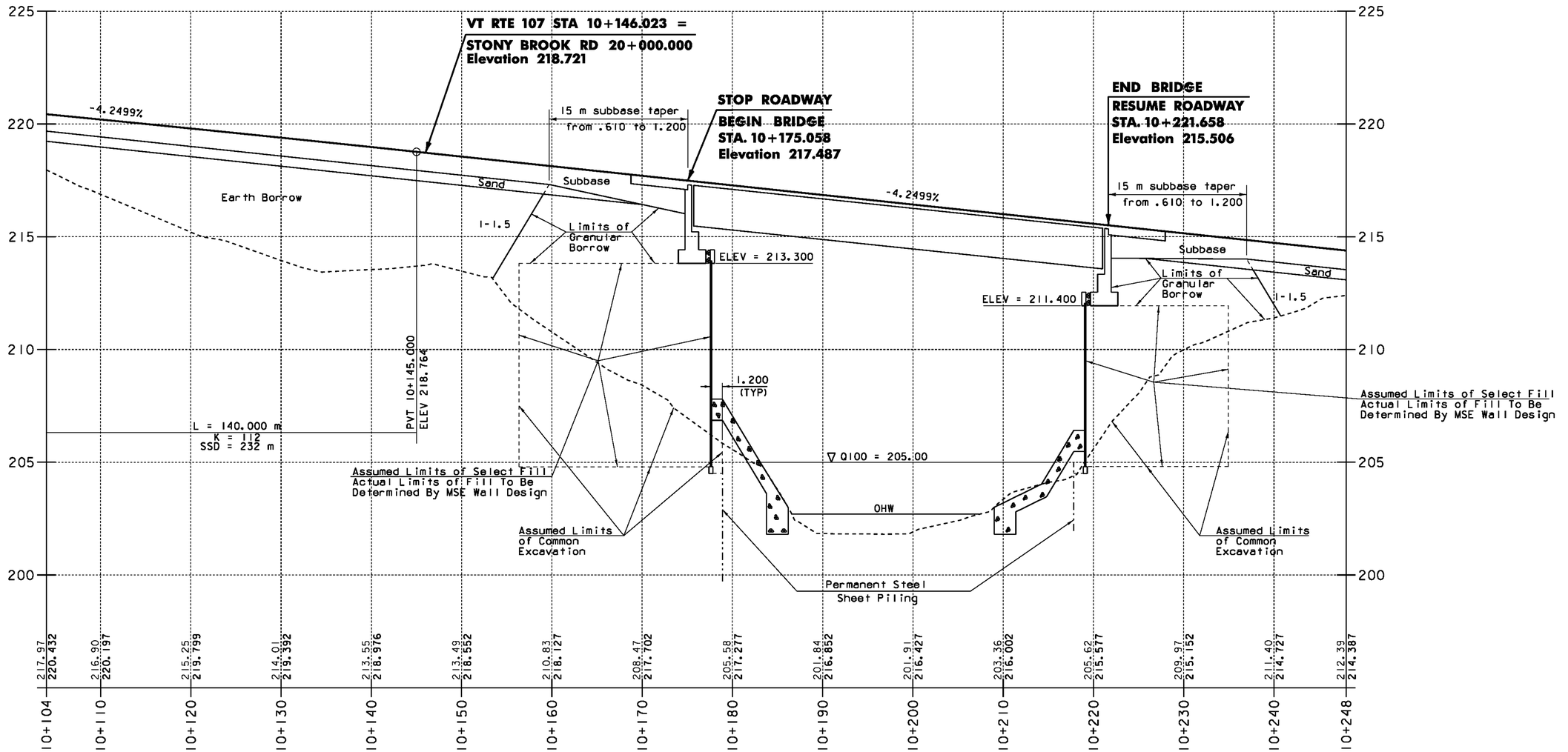
GRADES SHOWN TO THE NEAREST THOUSANDTHS ARE FINISH GRADES ALONG ℄.

PROFILE 1

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: de039pro.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: G. Shangraw
PROFILE 1

PLOT DATE: 08-APR-2010
DRAWN BY: G. Shangraw
CHECKED BY: R.S.YOUNG
SHEET 20 OF 139



GRAPHIC SCALES

0 5 10

VERTICAL SCALE 1:100

0 10 20 30

HORIZONTAL SCALE 1:250

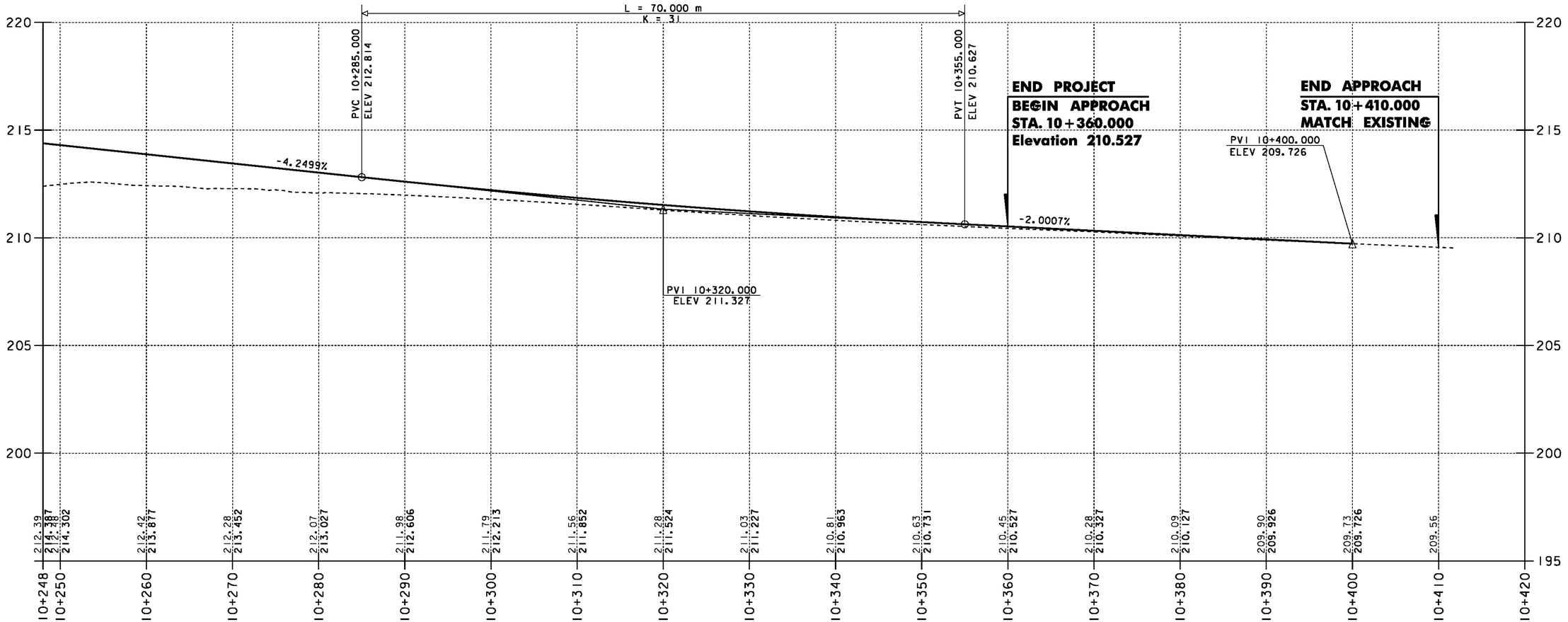
NOTE:
GRADES SHOWN TO THE NEAREST HUNDREDTHS ARE EXISTING GROUND ALONG ℄.

GRADES SHOWN TO THE NEAREST THOUSANDTHS ARE FINISH GRADES ALONG ℄.

PROFILE 2

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)

FILE NAME: de039pro.dgn		PLOT DATE:	08-APR-2010
PROJECT LEADER:	C.P. Williams	DRAWN BY:	H.I.Salls
DESIGNED BY:	H.I.Salls	CHECKED BY:	R. Young
PROFILE 2		SHEET	21 OF 139



GRAPHIC SCALES

0 5 10

VERTICAL SCALE 1:100

0 10 20 30

HORIZONTAL SCALE 1:250

NOTE:
GRADES SHOWN TO THE NEAREST HUNDREDTHS ARE EXISTING GROUND ALONG ℄.

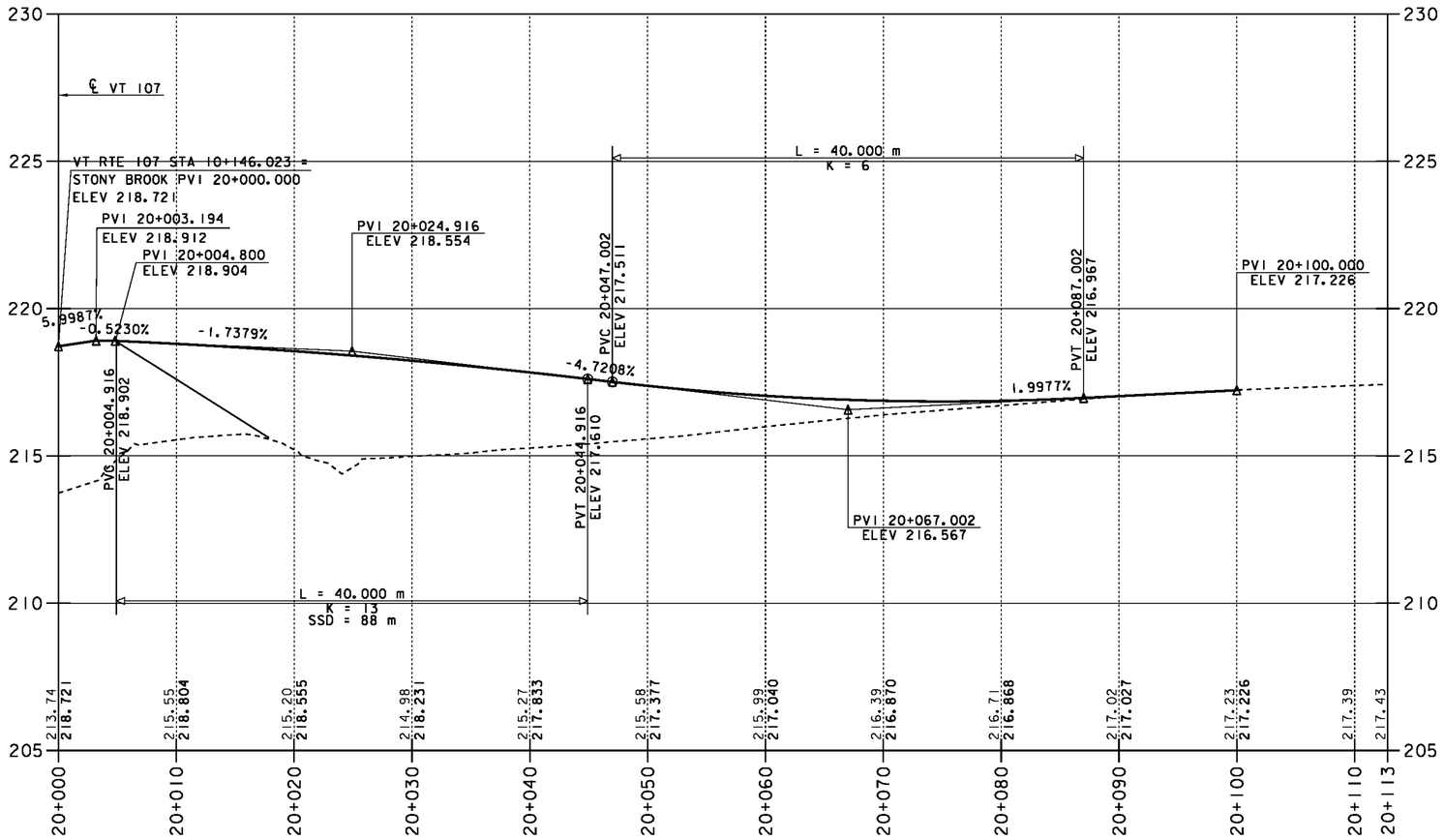
GRADES SHOWN TO THE NEAREST THOUSANDTHS ARE FINISH GRADES ALONG ℄.

PROFILE 3

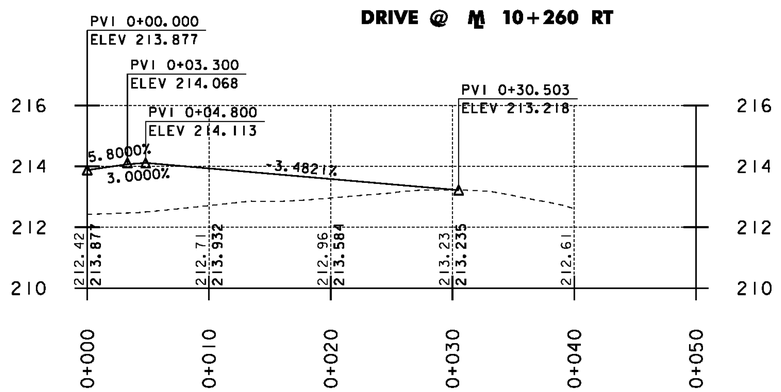
PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)

FILE NAME: de039pro.dgn		PLOT DATE:	08-APR-2010
PROJECT LEADER:	C.P. Williams	DRAWN BY:	G. Shangraw
DESIGNED BY:	G. Shangraw	CHECKED BY:	R.S.YOUNG
PROFILE 3		SHEET	22 OF 139

STONY BROOK RD



DRIVE @ ℳ 10+260 RT



GRAPHIC SCALES

0 5 10

VERTICAL SCALE 1:100

0 10 20 30

HORIZONTAL SCALE 1:250

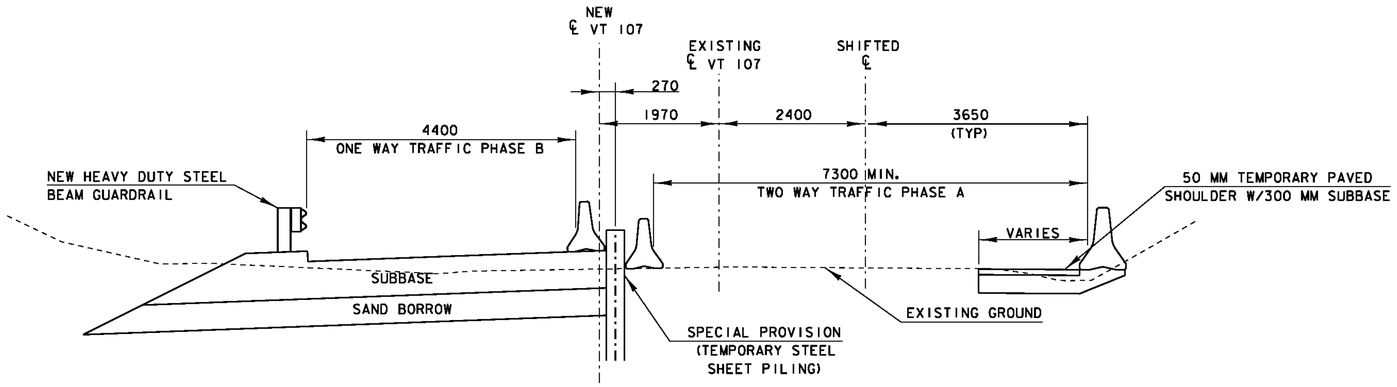
NOTE:
GRADES SHOWN TO THE NEAREST HUNDREDTHS ARE EXISTING GROUND ALONG ℄.

GRADES SHOWN TO THE NEAREST THOUSANDTHS ARE FINISH GRADES ALONG ℄.

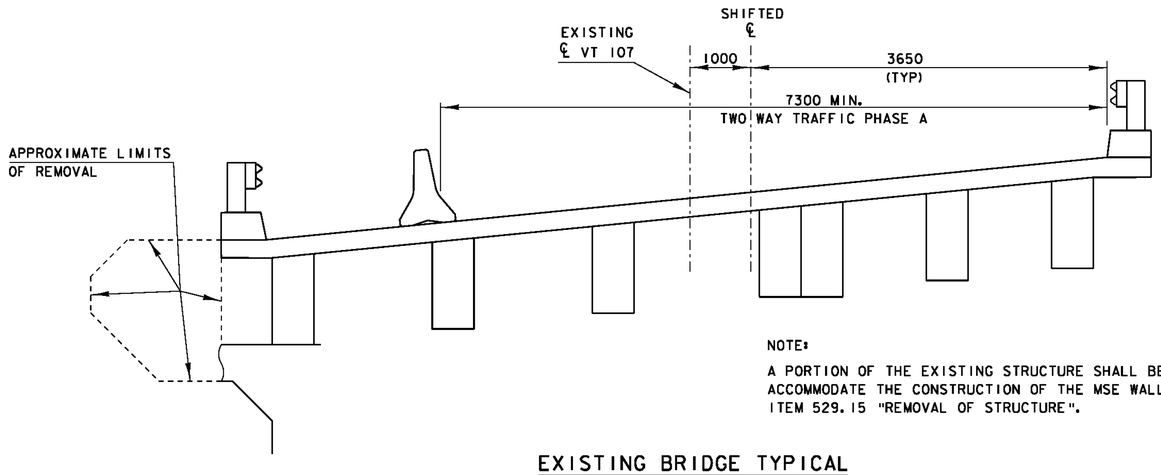
STONY BROOK & DRIVE PROFILE

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)

FILE NAME: de039pro.dgn		PLOT DATE:	08-APR-2010
PROJECT LEADER:	C.P. Williams	DRAWN BY:	G. Shangraw
DESIGNED BY:	G. Shangraw	CHECKED BY:	R.S.YOUNG
PROFILE 4		SHEET	23 OF 139



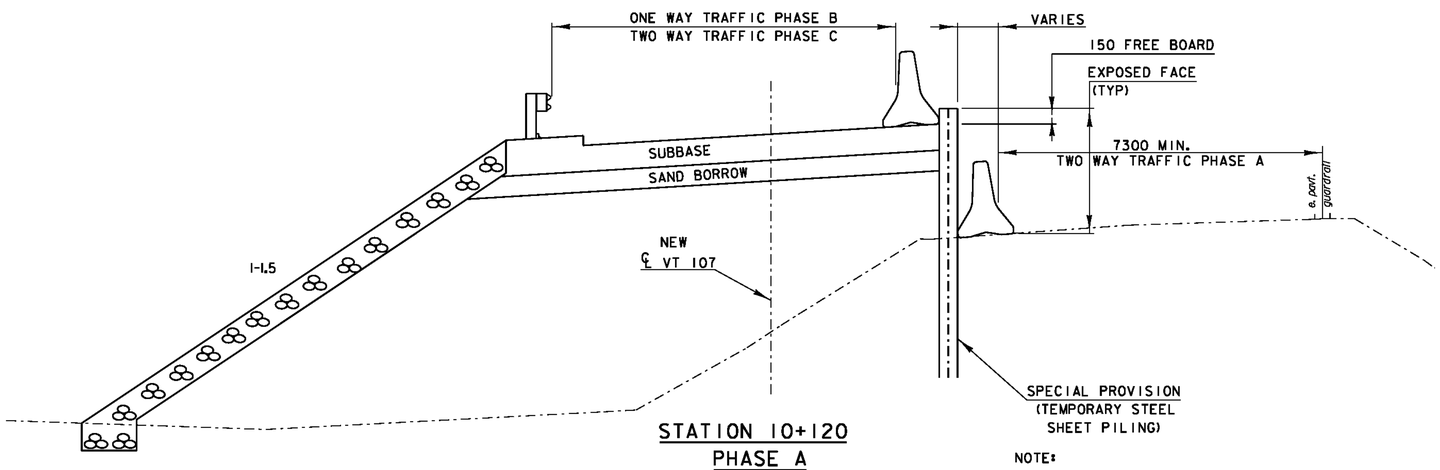
STATION 10+070
PHASE A
NTS



NOTE:

A PORTION OF THE EXISTING STRUCTURE SHALL BE REMOVED AS NECESSARY TO ACCOMMODATE THE CONSTRUCTION OF THE MSE WALL. PAYMENT WILL BE UNDER ITEM 529.15 "REMOVAL OF STRUCTURE".

EXISTING BRIDGE TYPICAL
PHASE A
NTS



STATION 10+120
PHASE A
NTS

NOTE:

1. NO PAVING SHALL BE ALLOWED UNTIL ALL TEMPORARY STEEL SHEET PILING IS REMOVED.

2. ADDITIONAL SUBBASE MATERIAL, GRADING, AND COMPACTION MAY BE REQUIRED AFTER THE TEMPORARY STEEL SHEET PILING IS REMOVED. PAYMENT WILL BE UNDER ITEM 301.35 "SUBBASE OF DENSE GRADED CRUSHED STONE".

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TRAFFIC PHASING NOTES :

1. DURING CONSTRUCTION, TRAFFIC SHALL BE MAINTAINED ON THE EXISTING BRIDGE UNTIL THE NEW BRIDGE AND SUBSTRUCTURES ARE COMPLETED. PHASED CONSTRUCTION WILL BE REQUIRED TO COMPLETE THE REMAINING ROAD WORK.

2. THE TRAFFIC CONTROL SHEETS SHOW ONE METHOD TO MAINTAIN TWO LANES OF TRAFFIC. AN ALTERNATE TRAFFIC CONTROL PLAN MAY BE SUBMITTED PER SUBSECTION 641.02.

3. ALL SIGNS AND BARRICADES AS SHOWN ON THE TRAFFIC CONTROL SHEETS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND PAID FOR UNDER THE ITEM 641.10 "TRAFFIC CONTROL."

4. FULL ACCESS TO ALL DRIVES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. ACCESS TO STONY BROOK ROAD WILL BE MAINTAINED THROUGH AN OFFSITE DETOUR FOR PHASES B AND C. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL."

5. PAVEMENT AND SUBBASE MATERIALS FOR 50 MM TEMPORARY PAVED SHOULDER SHALL MEET THE REQUIREMENTS OF SUBSECTION OF 528.04. FURNISHING AND PLACING PAVEMENT AND SUBBASE MATERIALS FOR 50 MM TEMPORARY PAVED SHOULDER WILL BE INCLUDED IN THE UNIT BID PRICE FOR CONTRACT ITEM 641.10 "TRAFFIC CONTROL".

6. TEMPORARY STEEL SHEET PILING SHALL BE USED AS SHOWN ON THE TRAFFIC CONTROL SHEETS TO MAINTAIN TWO-WAY TRAFFIC ON TWO LANES.

7. THE TEMPORARY STEEL SHEET PILING SHALL NOT DAMAGE DRAINAGE STRUCTURES THAT ARE TO BE LEFT IN PLACE. IF THE STRUCTURES ARE DAMAGED THEY SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.

8. INSTALLED STEEL SHEET PILING USED IN MULTIPLE PHASES SHALL BE PAID FOR ONCE.

9. THE TEMPORARY STEEL SHEET PILING SHALL BE DESIGNED AND DETAILED BY A REGISTERED PROFESSIONAL CIVIL OR STRUCTURAL ENGINEER. UNLESS OTHERWISE NOTED TEMPORARY STEEL SHEET PILING SHALL BE PAID UNDER ITEM 900.670 "SPECIAL PROVISION (TEMPORARY STEEL SHEET PILING)". SEE SPECIAL PROVISIONS FOR MODIFICATION INFORMATION.

10. IN THE AREAS WHERE THE NEW ROADWAY OVERLAPS THE EXISTING ROADWAY AND CONSTRUCTION REQUIRES TRAFFIC TO BE REDUCED TO ONE LANE, A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO THE ENGINEER SHOWING HOW ONE WAY ALTERNATING TRAFFIC WILL BE MAINTAINED ON THE SINGLE LANE. ANY TEMPORARY TRAFFIC BARRIER, TEMPORARY STEEL SHEET PILING, OR FLAGGERS USED FOR THIS WORK SHALL BE INCIDENTAL TO ITEM 641.10 "TRAFFIC CONTROL".

11. TEMPORARY TRAFFIC BARRIER WILL PROTECT THE TRAVELLING PUBLIC FROM TEMPORARY STEEL SHEET PILING AT ALL TIMES. TEMPORARY STEEL SHEET PILING SHALL NOT BE USED AS GUARD RAIL. UNLESS OTHERWISE NOTED TEMPORARY TRAFFIC BARRIER SHALL BE PAID FOR UNDER ITEM 621.90, "TEMPORARY TRAFFIC BARRIER."

12. AN ENERGY ABSORPTION ATTENUATOR SHALL PROTECT THE TERMINATION OF THE TEMPORARY TRAFFIC BARRIER AT STA.10+040 AND 10+315. THE ATTENUATOR SHALL BE PAID UNDER ITEM 621.56 "ENERGY ABSORPTION ATTENUATOR". THE ATTENUATOR SHALL BE DESIGNED AND INSTALLED TO SERVE PHASE B. THE COST FOR EACH ATTENUATOR WILL ONLY BE PAID ONCE.

13. THE ATTENUATOR SHALL MEET THE REQUIREMENTS OF THE 2006 ROADSIDE DESIGN GUIDE AND SHALL BE DESIGNED FOR A 2041 kg (4500 lb) DESIGN VEHICLE AT 60 KPH (40 MPH).

14. THE CONTRACTOR SHALL HAVE, ON THE PROJECT, A SPARE ATTENUATOR FOR THE IMMEDIATE REPLACEMENT OF A DAMAGED ATTENUATOR. THE COST FOR THE SPARE ATTENUATOR AND STORAGE OF SAME SHALL BE IN ACCORDANCE WITH SUBSECTION 621.15.

TRAFFIC PHASE DESCRIPTION :

PHASE A (SEE SHEETS 26 - 30)

TEMPORARILY PAVE A SMALL SECTION OF THE EAST BOUND SHOULDER AND SHIFT TWO WAY TRAFFIC RIGHT OF EXISTING ALIGNMENT. CONSTRUCT THE MSE WALLS, ABUTMENTS, BRIDGE, WEST BOUND LANE AND THE MAJORITY OF THE EAST BOUND LANE.

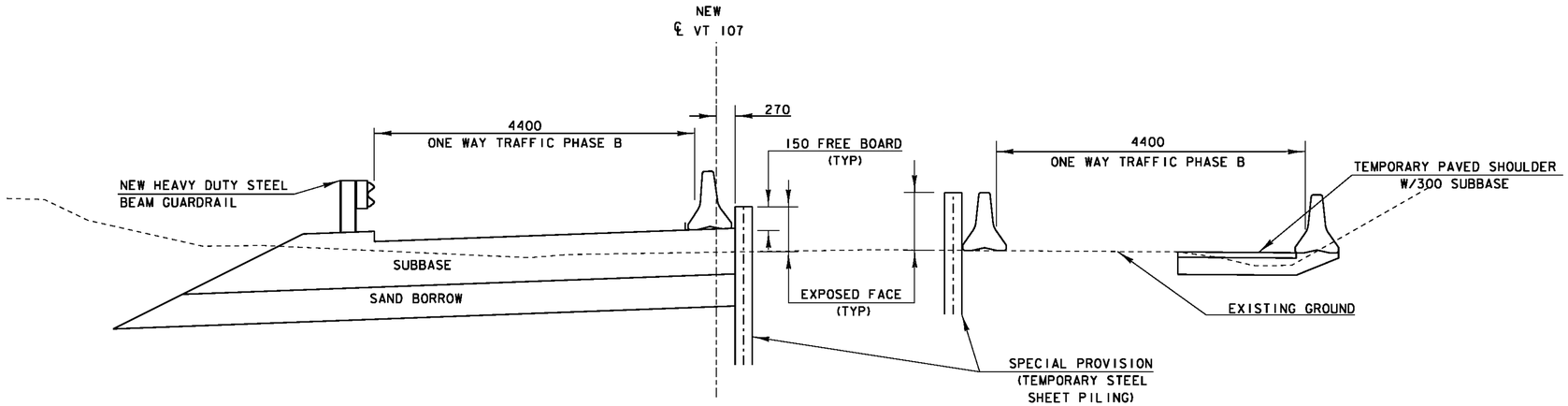
PHASE B: (SEE SHEETS 31 - 36)

SWITCH WEST BOUND TRAFFIC ONTO NEW ALIGNMENT AND CLOSE THE EXISTING WEST BOUND LANE. CONSTRUCT THE ENDS OF THE NEW EAST BOUND LANE. STONY BROOK ROAD TRAFFIC WILL BE DETOURED OFF SITE AND THE DRIVE AT STATION 10+240 RT WILL NOT BE ABLE TO TURN LEFT ONTO VT RTE 107 WEST.

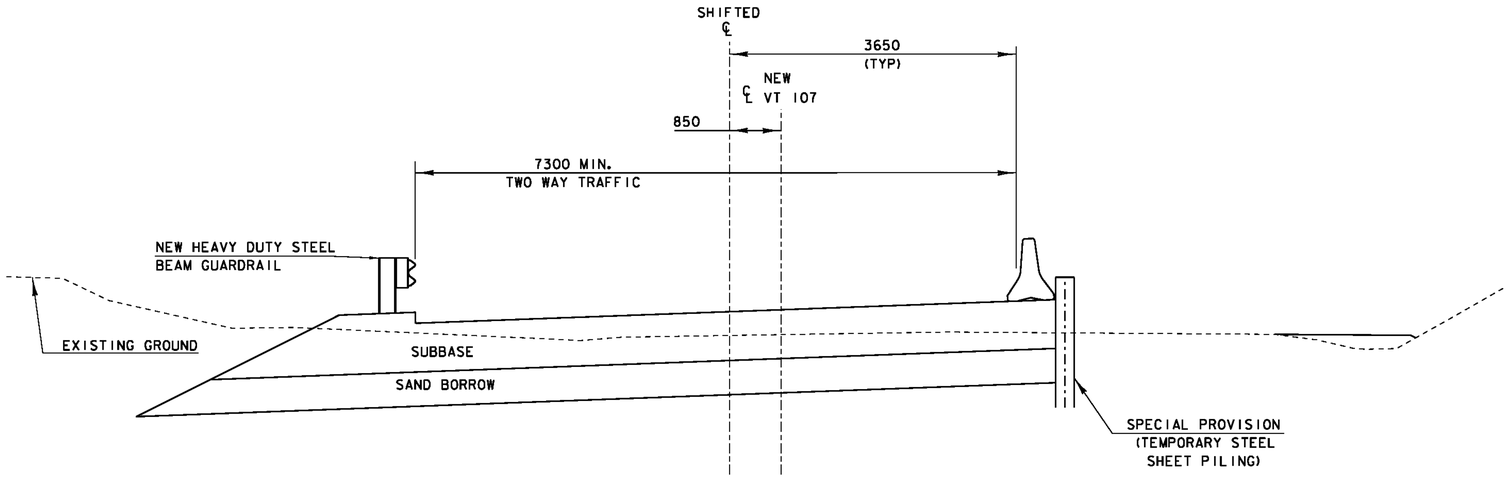
PHASE C: (SEE SHEETS 37 - 41)

SWITCH EAST BOUND TRAFFIC ONTO NEW ALIGNMENT AND CLOSE OFF EXISTING VT 107. CONSTRUCT NEW STONY BROOK ROAD INTERSECTION AND DRIVE @ 10+260 RT.

PROJECT: STOCKBRIDGE	PROJECT NO. : BRF 022-1(20)
DESIGN FILE NAME: 85e039/de039phasing.dgn	
SQUAD LEADER: C.P. WILLIAMS	PLOT DATE: 08-APR-2010
DESIGNED BY: H.I. SALLS	CHECKED BY: R.S. YOUNG
IPARM FILE NAME: de039phase.i	DRAWN BY: H.I. SALLS
PHASED CONSTRUCTION DETAILS #1	SHEET: 24 OF 139



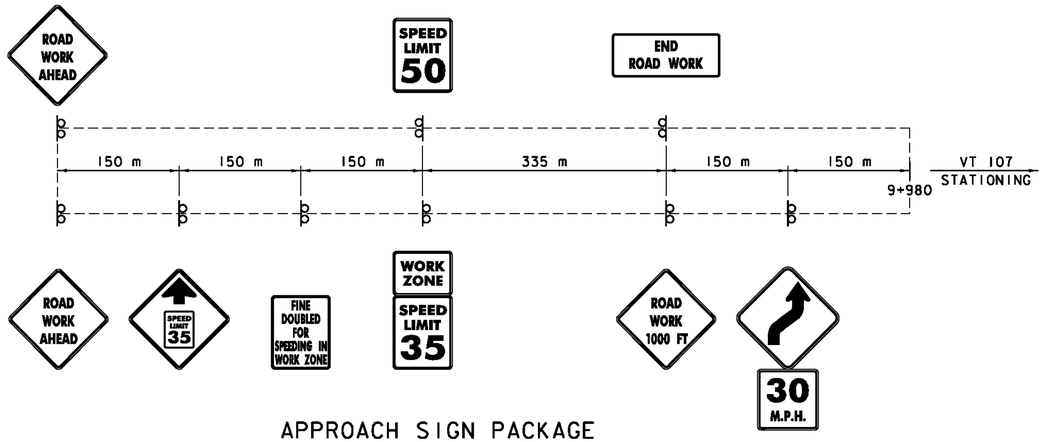
STATION 10+070
PHASE B
NTS



STATION 10+070
PHASE C
NTS

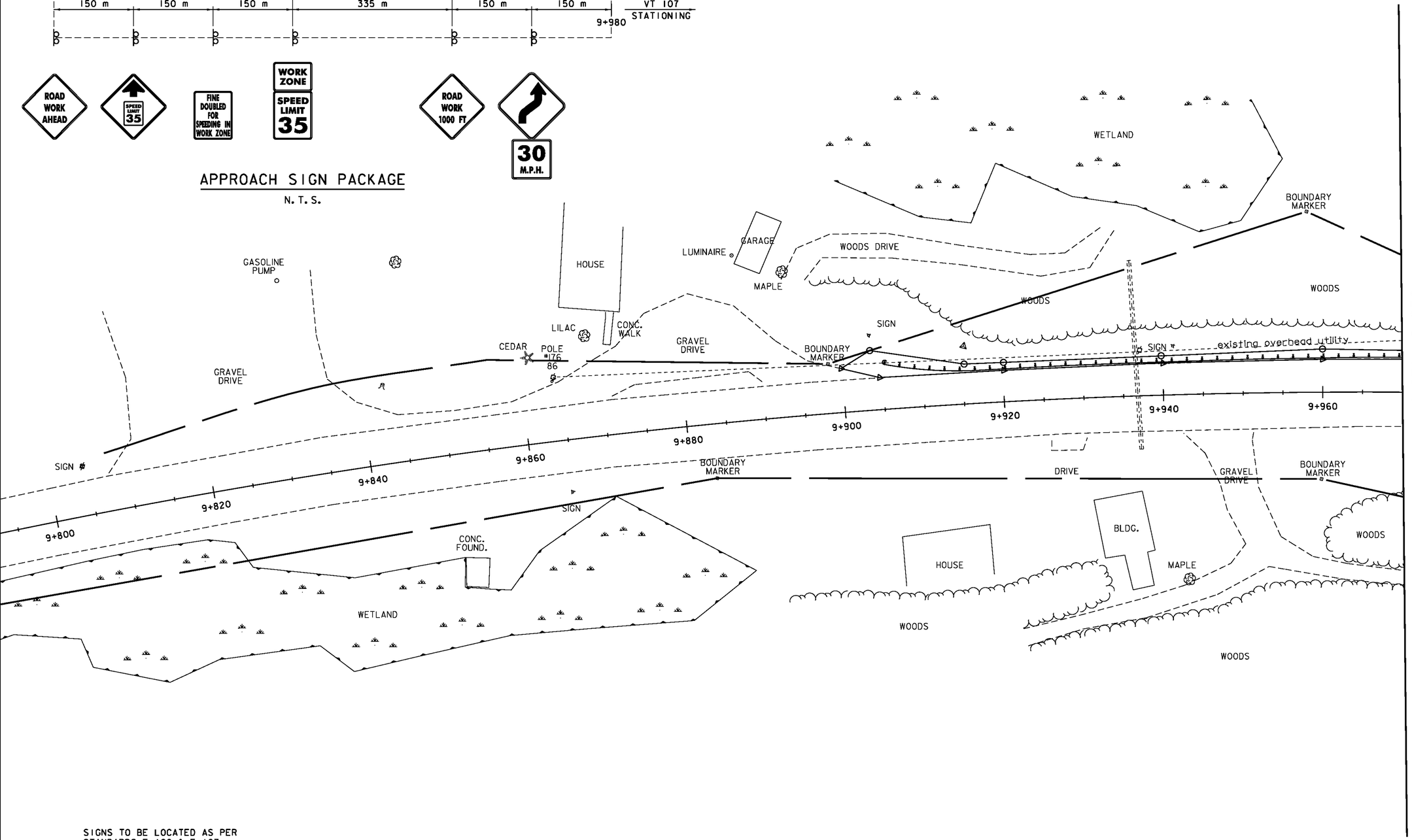
PROJECT: STOCKBRIDGE	PROJECT NO. : BRF 022-1 (20)
DESIGN FILE NAME: 85e039/de039phasing.dgn	
SQUAD LEADER: C.P. WILLIAMS	PLOT DATE: 08-APR-2010
DESIGNED BY: H.I. SALLS	CHECKED BY: R.S. YOUNG
IPARM FILE NAME: de039phase2.i	DRAWN BY: H.I. SALLS
PHASED CONSTRUCTION DETAILS 2	SHEET: 25 OF 139

VAOT Metric



APPROACH SIGN PACKAGE

N. T. S.



SIGNS TO BE LOCATED AS PER STANDARDS E-100 & E-107

LEGEND

- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- RETROREFLECTORIZED BARREL
- TEMPORARY STEEL SHEET PILING
- PAVEMENT MARKING REMOVAL

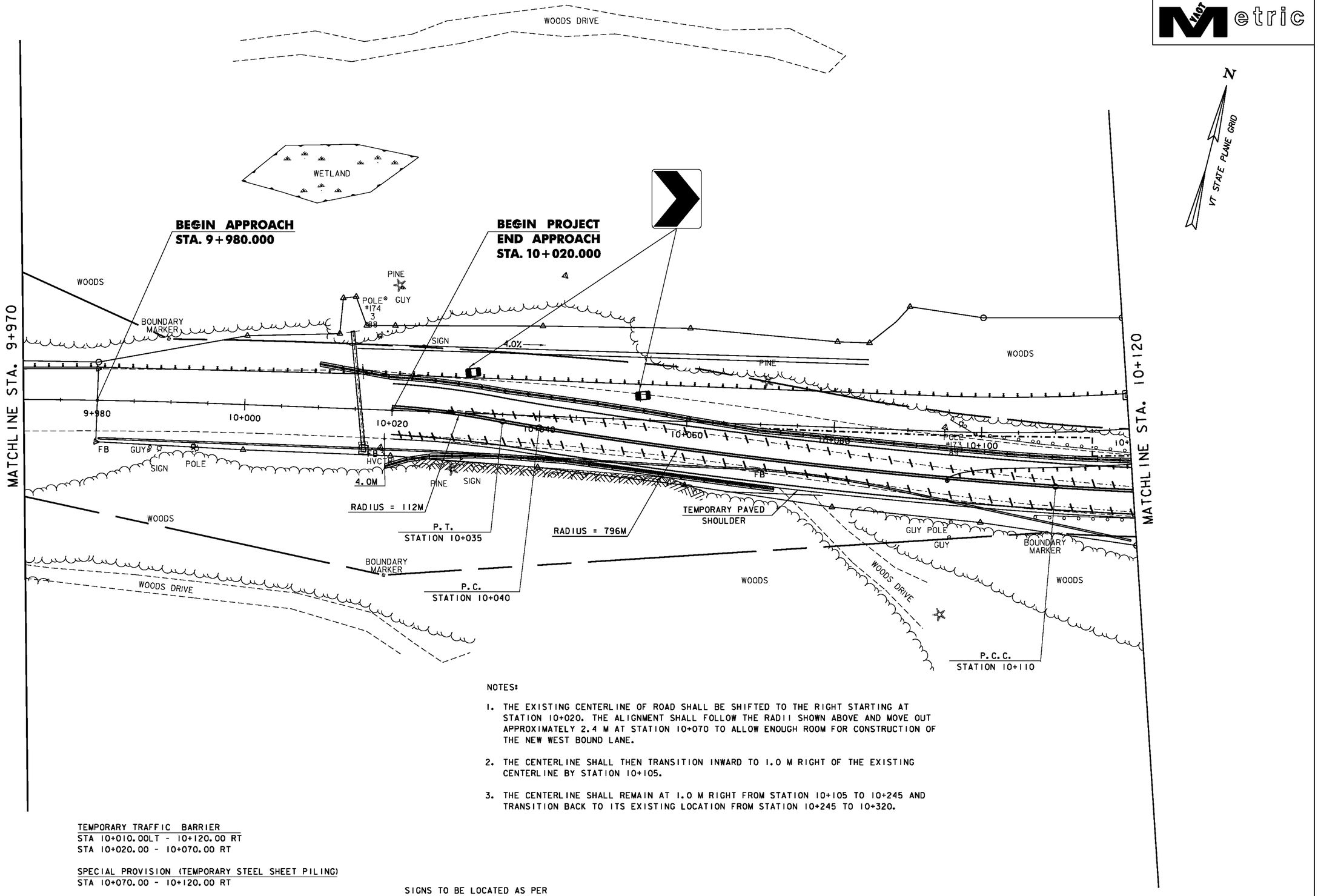
0 10 20 30

SCALE IN METERS

PHASE A
TRAFFIC CONTROL LAYOUT 1

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME:/str4/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. WILLIAMS	DRAWN BY: H.I. SALLS
DESIGNED BY: H. I. SALLS	CHECKED BY: R.S. YOUNG
TRAFFIC CONTROL	SHEET 26 OF 139

VTrans Metric



NOTES:

1. THE EXISTING CENTERLINE OF ROAD SHALL BE SHIFTED TO THE RIGHT STARTING AT STATION 10+020. THE ALIGNMENT SHALL FOLLOW THE RADII SHOWN ABOVE AND MOVE OUT APPROXIMATELY 2.4 M AT STATION 10+070 TO ALLOW ENOUGH ROOM FOR CONSTRUCTION OF THE NEW WEST BOUND LANE.
2. THE CENTERLINE SHALL THEN TRANSITION INWARD TO 1.0 M RIGHT OF THE EXISTING CENTERLINE BY STATION 10+105.
3. THE CENTERLINE SHALL REMAIN AT 1.0 M RIGHT FROM STATION 10+105 TO 10+245 AND TRANSITION BACK TO ITS EXISTING LOCATION FROM STATION 10+245 TO 10+320.

TEMPORARY TRAFFIC BARRIER
STA 10+010.00LT - 10+120.00 RT
STA 10+020.00 - 10+070.00 RT

SPECIAL PROVISION (TEMPORARY STEEL SHEET PILING)
STA 10+070.00 - 10+120.00 RT

REMOVAL OF EXISTING PAVEMENT MARKINGS
STA 10+020.00 - 10+120.00 RT (2)

TEMPORARY 100 mm WHITE LINE
STA 10+020.00 - 10+120.00 LT/RT (2)

TEMPORARY 100 mm YELLOW LINE
STA 10+020.00 - 10+120.00 RT (DBL)

CONSTRUCT PAVED SHOULDER
STA 10+020.00 - 10+120.00 RT

SIGNS TO BE LOCATED AS PER STANDARDS E-100 & E-107

LEGEND

- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- RETROREFLECTORIZED BARREL
- TEMPORARY STEEL SHEET PILING
- PAVEMENT MARKING REMOVAL

PHASE A TRAFFIC CONTROL LAYOUT 2

0 10 20 30

SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1 (20)
FILE NAME: /str4/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: H.I. SALLS
DESIGNED BY: H.I. SALLS	CHECKED BY: R.S. Young
TRAFFIC CONTROL	SHEET 27 OF 139

TEMPORARY TRAFFIC BARRIER
STA 10+120.00 - 10+275.00 RT

SPECIAL PROVISION (TEMPORARY STEEL SHEET PILING)
STA 10+120.00 - 10+174.00 RT
STA 10+227.00 - 10+275.00 RT

REMOVAL OF EXISTING PAVEMENT MARKINGS
STA 10+120.00 - 10+275.00 RT (2)

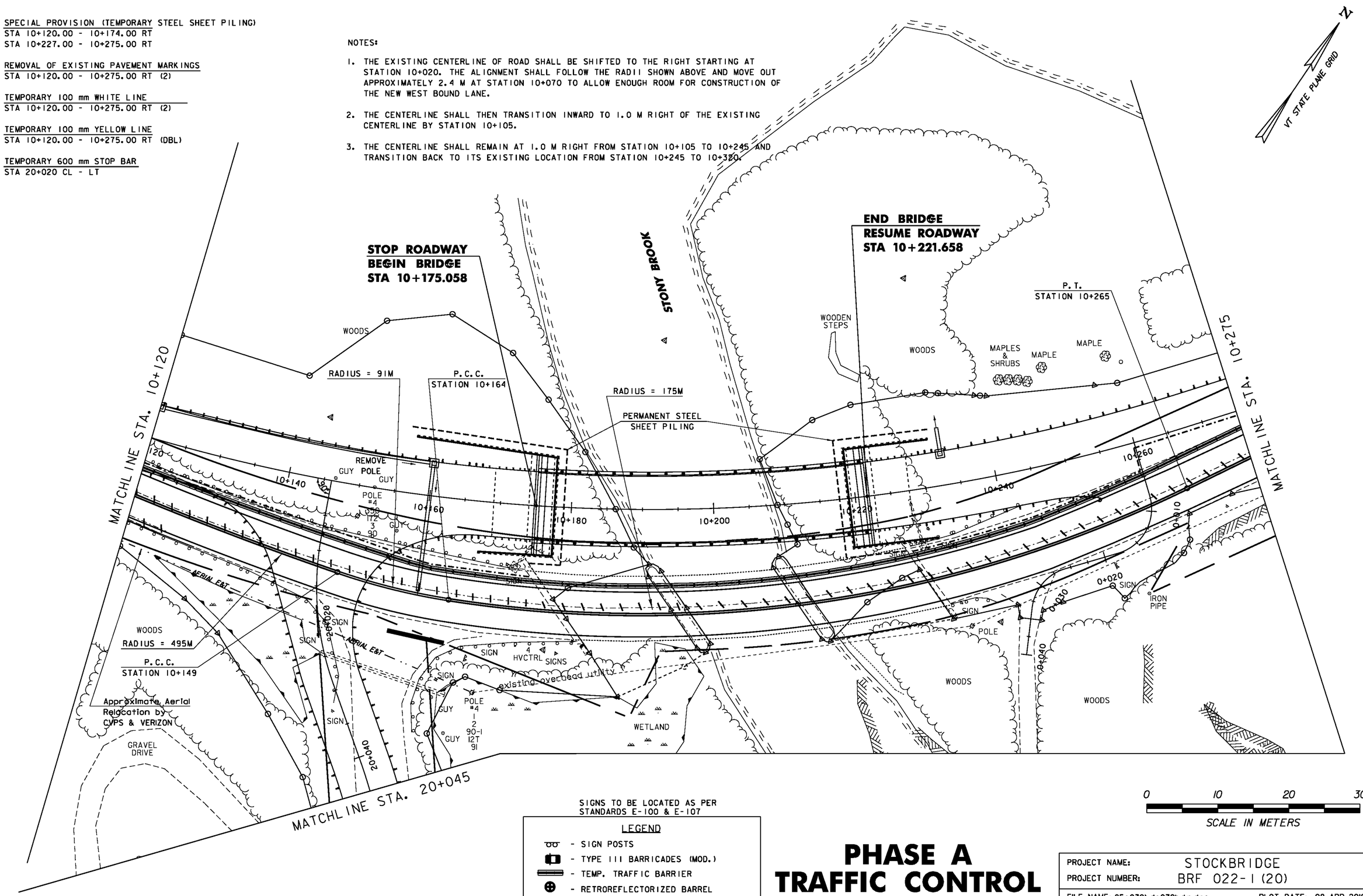
TEMPORARY 100 mm WHITE LINE
STA 10+120.00 - 10+275.00 RT (2)

TEMPORARY 100 mm YELLOW LINE
STA 10+120.00 - 10+275.00 RT (DBL)

TEMPORARY 600 mm STOP BAR
STA 20+020 CL - LT

NOTES:

1. THE EXISTING CENTERLINE OF ROAD SHALL BE SHIFTED TO THE RIGHT STARTING AT STATION 10+020. THE ALIGNMENT SHALL FOLLOW THE RADII SHOWN ABOVE AND MOVE OUT APPROXIMATELY 2.4 M AT STATION 10+070 TO ALLOW ENOUGH ROOM FOR CONSTRUCTION OF THE NEW WEST BOUND LANE.
2. THE CENTERLINE SHALL THEN TRANSITION INWARD TO 1.0 M RIGHT OF THE EXISTING CENTERLINE BY STATION 10+105.
3. THE CENTERLINE SHALL REMAIN AT 1.0 M RIGHT FROM STATION 10+105 TO 10+245 AND TRANSITION BACK TO ITS EXISTING LOCATION FROM STATION 10+245 TO 10+320.



SIGNS TO BE LOCATED AS PER STANDARDS E-100 & E-107

LEGEND

- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- RETROREFLECTORIZED BARREL
- TEMPORARY STEEL SHEET PILING
- PAVEMENT MARKING REMOVAL

0 10 20 30
SCALE IN METERS

PHASE A TRAFFIC CONTROL LAYOUT 3

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: 85e039\de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.. P. WILLIAMS	DRAWN BY: H. I. SALLS
DESIGNED BY: H. I. SALLS	CHECKED BY: R.S. Young
TRAFFIC CONTROL	SHEET 28 OF 139

VTRANS Metric

TEMPORARY TRAFFIC BARRIER
STA 10+275.00 RT - 10+295.00 LT

SPECIAL PROVISION (TEMPORARY STEEL SHEET PILING)
STA 10+275.00 - 10+285.00 RT

REMOVAL OF EXISTING PAVEMENT MARKINGS
STA 10+275.00 - 10+320.00

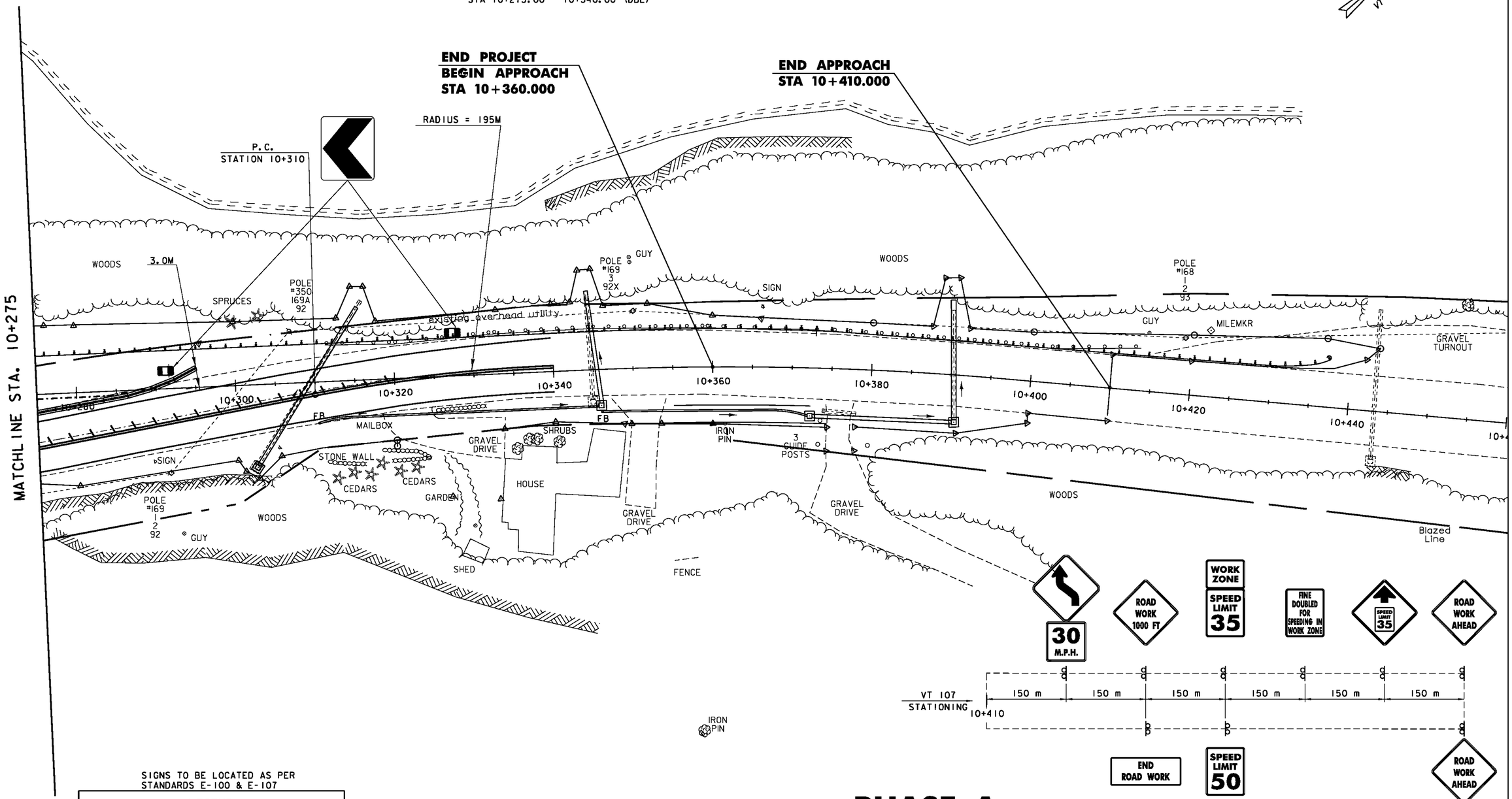
TEMPORARY 100 mm WHITE LINE
STA 10+275.00 - 10+340.00 (2)

TEMPORARY 100 mm YELLOW LINE
STA 10+275.00 - 10+340.00 (DBL)

NOTES:

1. THE EXISTING CENTERLINE OF ROAD SHALL BE SHIFTED TO THE RIGHT STARTING AT STATION 10+020. THE ALIGNMENT SHALL FOLLOW THE RADII SHOWN ABOVE AND MOVE OUT APPROXIMATELY 2.4 M AT STATION 10+070 TO ALLOW ENOUGH ROOM FOR CONSTRUCTION OF THE NEW WEST BOUND LANE.
2. THE CENTERLINE SHALL THEN TRANSITION INWARD TO 1.0 M RIGHT OF THE EXISTING CENTERLINE BY STATION 10+105.
3. THE CENTERLINE SHALL REMAIN AT 1.0 M RIGHT FROM STATION 10+105 TO 10+245 AND TRANSITION BACK TO ITS EXISTING LOCATION FROM STATION 10+245 TO 10+320.

N
VT STATE PLANE GRID



APPROACH SIGN PACKAGE
N. T. S.

SIGNS TO BE LOCATED AS PER STANDARDS E-100 & E-107

LEGEND
- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- RETROREFLECTORIZED BARREL
- TEMPORARY STEEL SHEET PILING
- PAVEMENT MARKING REMOVAL

PHASE A TRAFFIC CONTROL LAYOUT 4

0 10 20 30
SCALE IN METERS

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: /85e039/de039bdr.dgn
PROJECT LEADER: C. P. WILLIAMS
DESIGNED BY: H. I. SALLS
TRAFFIC CONTROL
PLOT DATE: 08-APR-2010
DRAWN BY: H. I. SALLS
CHECKED BY: R.S. Young
SHEET 29 OF 139

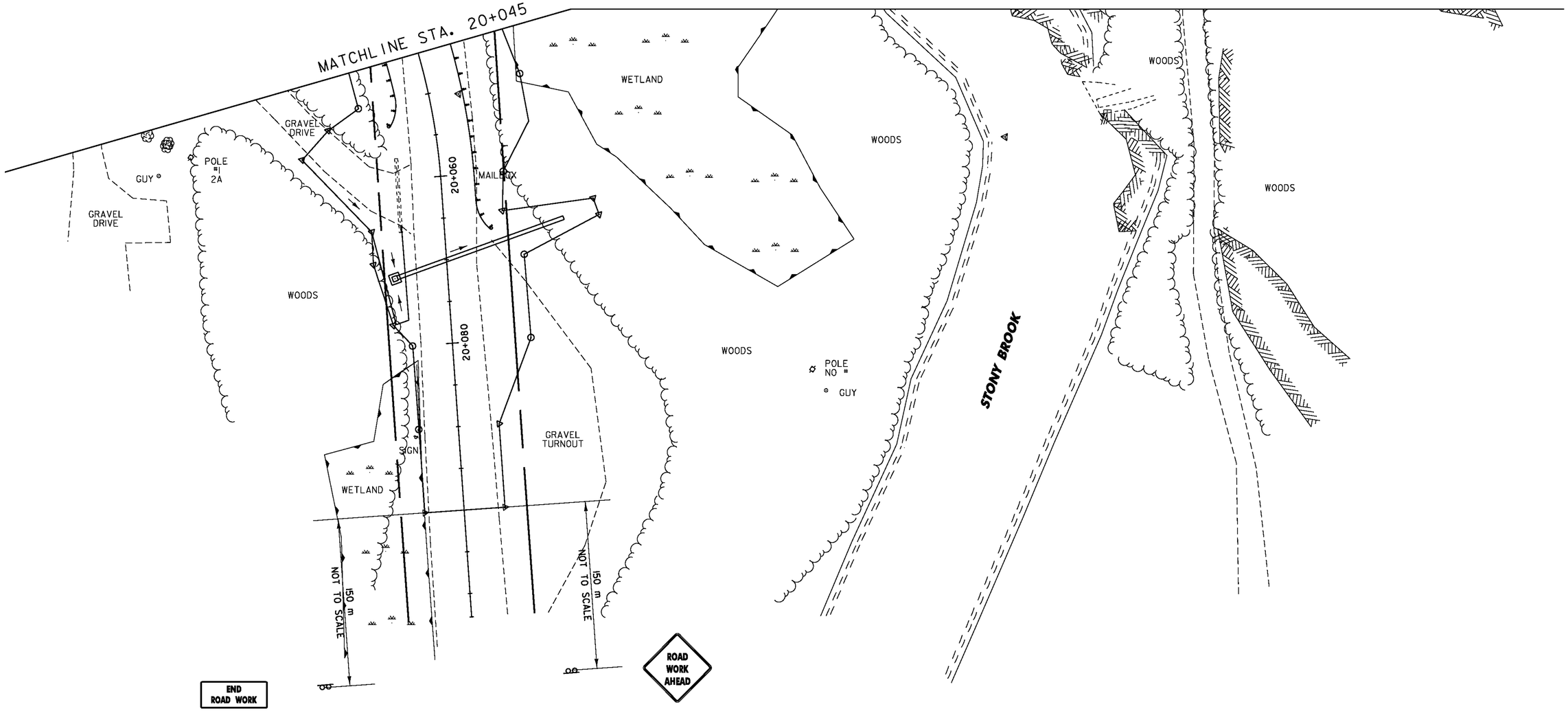
SIGNS TO BE LOCATED AS PER
STANDARDS E-100 & E-107

LEGEND

- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- RETROREFLECTORIZED BARREL
- TEMPORARY STEEL SHEET PILING
- PAVEMENT MARKING REMOVAL

N

VT STATE PLANE GRID



0 10 20 30

SCALE IN METERS

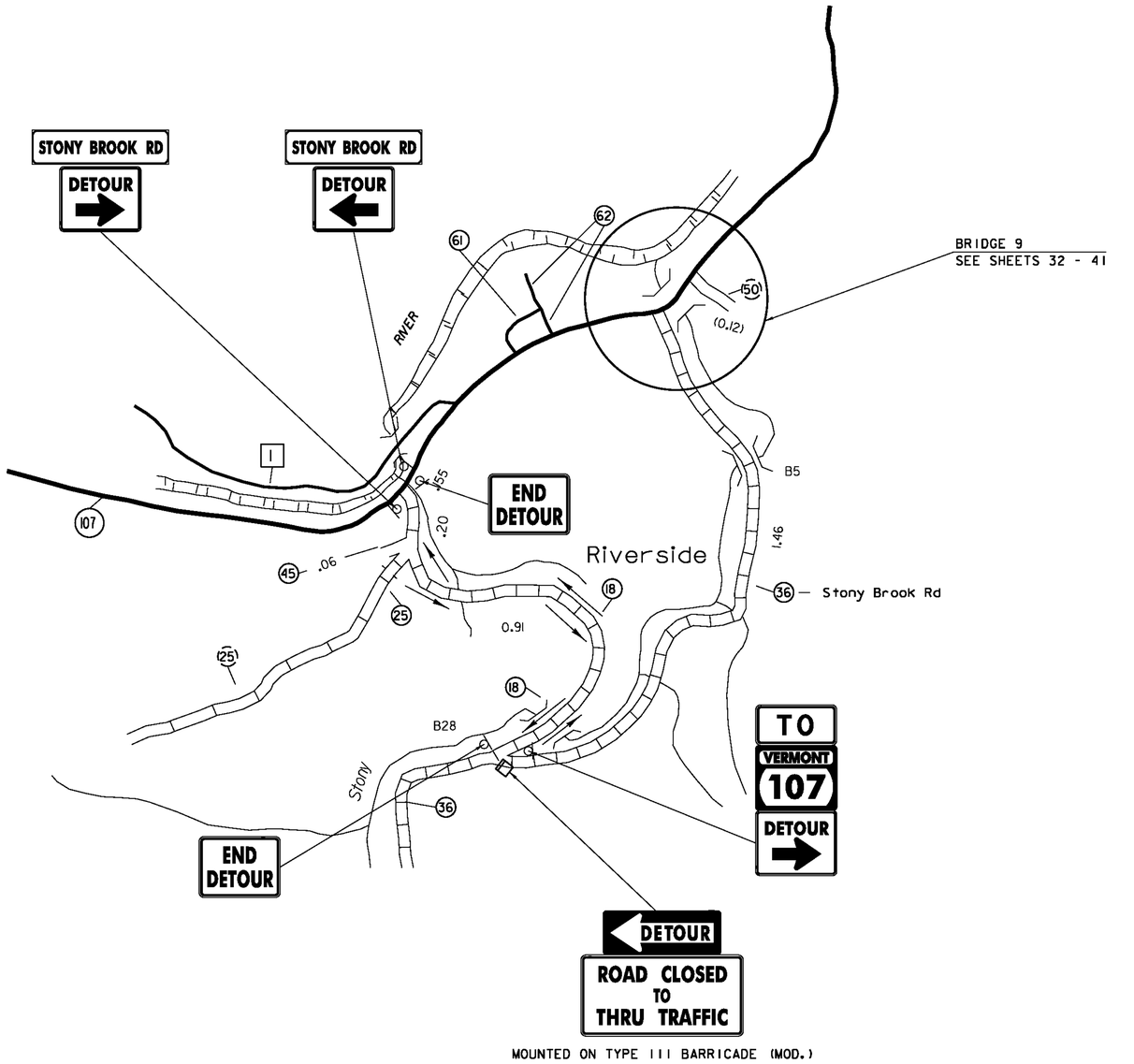
PHASE A TRAFFIC CONTROL LAYOUT 5

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)

FILE NAME: 85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. WILLIAMS	DRAWN BY: H. I. SALLS
DESIGNED BY: H. I. SALLS	CHECKED BY: R.S. Young
TRAFFIC CONTROL	SHEET 30 OF 139

N

MAGNETIC



MOUNTED ON TYPE III BARRICADE (MOD.)

SIGNS TO BE LOCATED AS PER STANDARDS E-100 & E-107

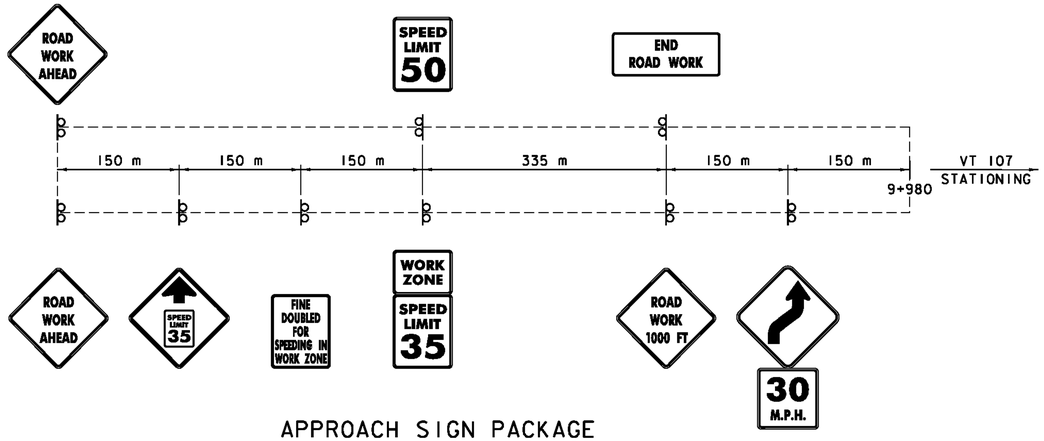
LEGEND

- SIGN POSTS
- TEMP. TRAFFIC BARRIER
- TYPE III BARRICADES (MOD.)

STONY BROOK ROAD DETOUR

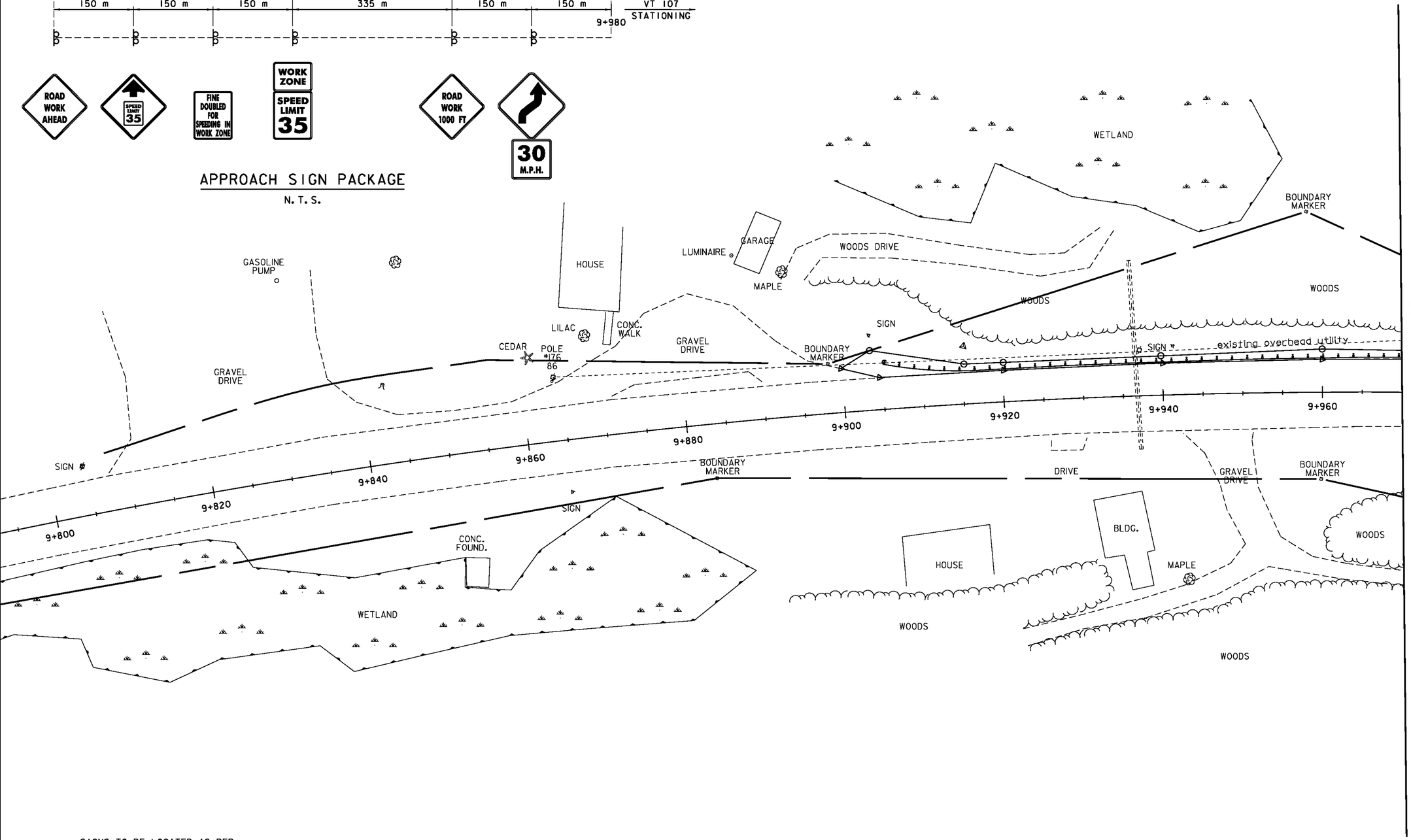
NTS

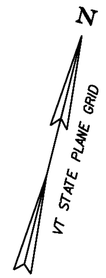
PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME:/str4/85e039/de039detour	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: H.I. SALLS
DESIGNED BY: H.I. SALLS	CHECKED BY: R.S. Young
TRAFFIC CONTROL	SHEET 31 OF 139



APPROACH SIGN PACKAGE

N. T. S.





SIGNS TO BE LOCATED AS PER STANDARDS E-100 & E-107

LEGEND

- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- RETROREFLECTORIZED BARREL
- TEMPORARY STEEL SHEET PILING
- PAVEMENT MARKING REMOVAL

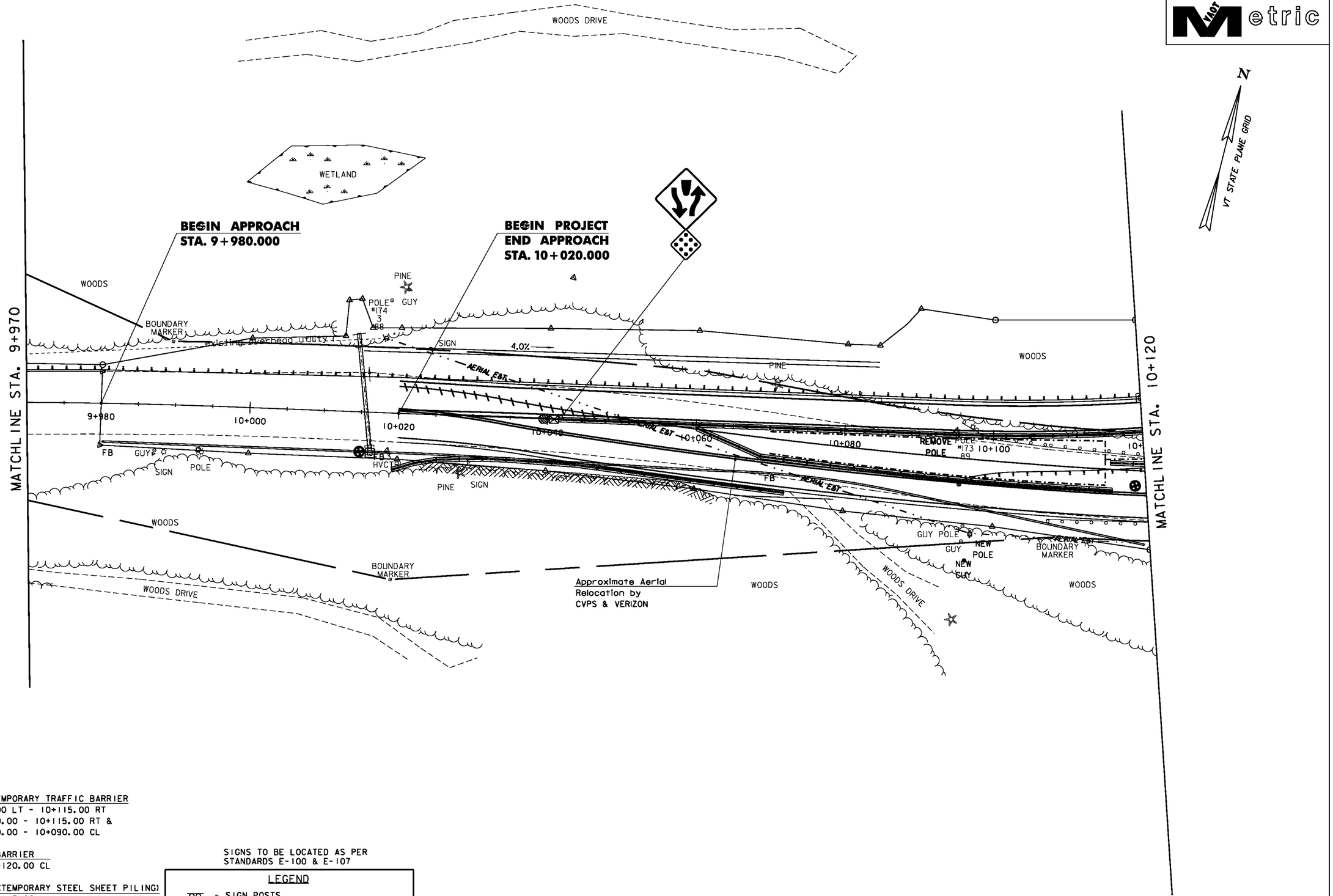
0 10 20 30

SCALE IN METERS

PHASE B
TRAFFIC CONTROL LAYOUT 1

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME:/str4/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. WILLIAMS	DRAWN BY: H.I. SALLS
DESIGNED BY: H. I. SALLS	CHECKED BY: R.S. YOUNG
TRAFFIC CONTROL	SHEET 32 OF 139

VTrans Metric



REMOVE AND RESET TEMPORARY TRAFFIC BARRIER
REMOVE STA 10+010.00 LT - 10+115.00 RT
RESET TO STA 10+060.00 - 10+115.00 RT &
RESET TO STA 10+040.00 - 10+090.00 CL

TEMPORARY TRAFFIC BARRIER
STA 10+090.00 - 10+120.00 CL

SPECIAL PROVISION (TEMPORARY STEEL SHEET PILING)
STA 10+070.00 - 10+115.00

TEMPORARY 100 mm WHITE LINE
STA 10+020.00 - 10+120.00 LT (2)

TEMPORARY 100 mm YELLOW LINE
STA 10+020.00 - 10+120.00 (DBL)

REMOVAL OF EXISTING PAVEMENT MARKINGS
STA 10+020.00 - 10+050.00

ENERGY ABSORPTION ATTENUATOR
STA 10+040

SIGNS TO BE LOCATED AS PER
STANDARDS E-100 & E-107

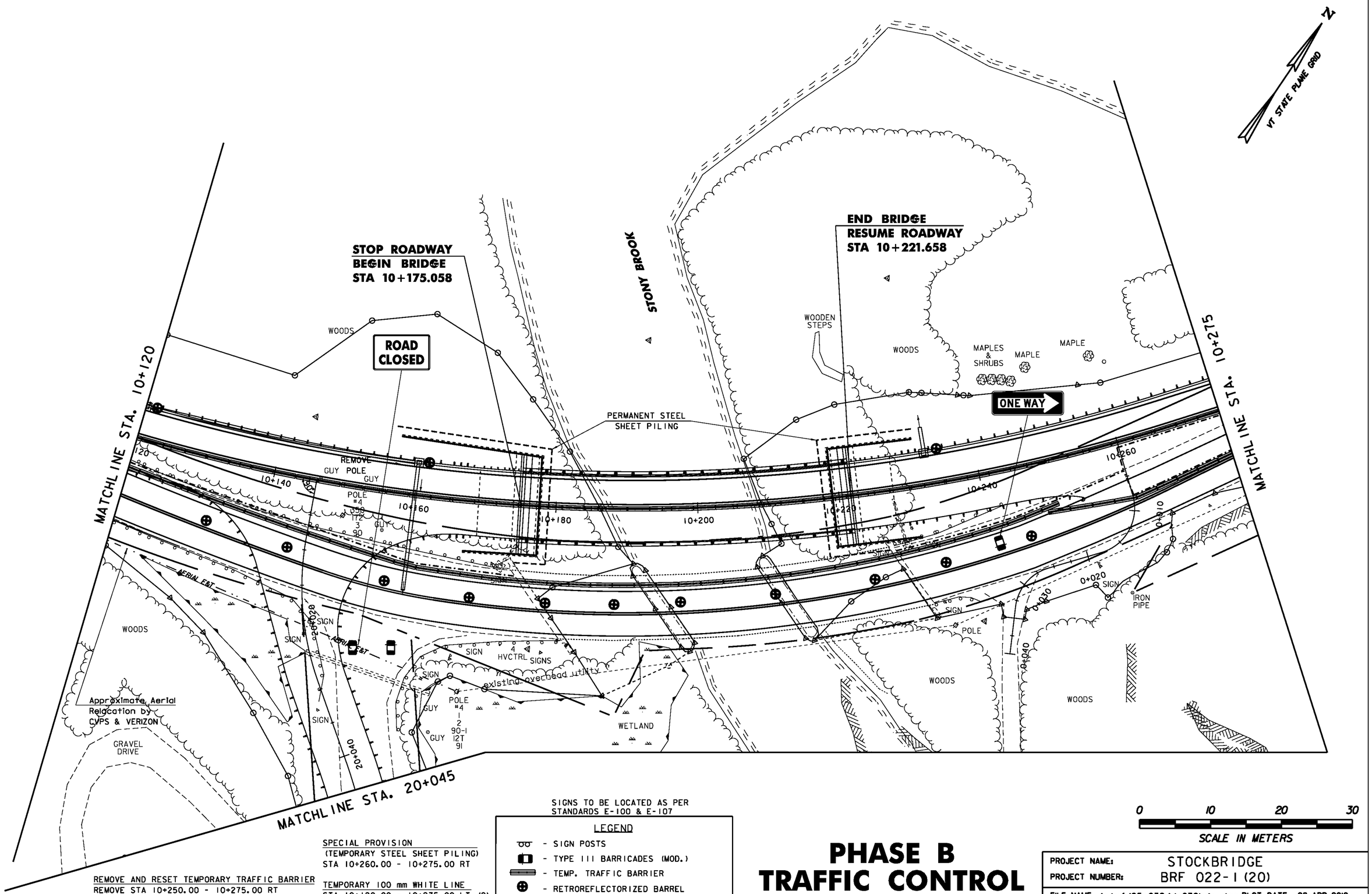
LEGEND

- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- RETROREFLECTORIZED BARREL
- TEMPORARY STEEL SHEET PILING
- PAVEMENT MARKING REMOVAL
- ENERGY ABSORTION ATTENUATER

PHASE B
TRAFFIC CONTROL
LAYOUT 2

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)

FILE NAME: /str4/85e039/de039bdr.dgn PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams DRAWN BY: H.I. SALLS
DESIGNED BY: H.I. SALLS CHECKED BY: R.S. Young
TRAFFIC CONTROL SHEET 33 OF 139



SIGNS TO BE LOCATED AS PER STANDARDS E-100 & E-107

LEGEND

- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- RETROREFLECTORIZED BARREL
- TEMPORARY STEEL SHEET PILING
- PAVEMENT MARKING REMOVAL

SPECIAL PROVISION
(TEMPORARY STEEL SHEET PILING)
STA 10+260.00 - 10+275.00 RT

REMOVE AND RESET TEMPORARY TRAFFIC BARRIER
REMOVE STA 10+250.00 - 10+275.00 RT
RESET TO STA 10+250.00 - 10+275.00 RT

TEMPORARY TRAFFIC BARRIER
STA 10+120.00 - 10+275.00 CL

TEMPORARY 100 mm WHITE LINE
STA 10+120.00 - 10+275.00 LT (2)

TEMPORARY 100 mm YELLOW LINE
STA 10+120.00 - 10+275 LT (DBL)

PHASE B TRAFFIC CONTROL LAYOUT 3

0 10 20 30
SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1 (20)
FILE NAME: /str4/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: H. I. SALLS
DESIGNED BY: H. I. SALLS	CHECKED BY: R.S. Young
TRAFFIC CONTROL	SHEET 34 OF 139

VAOT Metric

N

VT STATE PLANE GRID

MATCHLINE STA. 10+275

END PROJECT
BEGIN APPROACH
STA 10+360.000

END APPROACH
STA 10+410.000

WOODS
SPRUCES
POLE #350 169A 92
POLE #169 3 92X
GUY
existing overhead utility
SIGN
WOODS
POLE #168 1 2 93
GUY
MILEMKR
GRAVEL TURNOUT
10+280
10+300
10+320
10+340
10+360
10+380
10+400
10+420
10+440
FB
MAILBOX
SIGN
STONE WALL
CEDARS
CEDARS
GARDEN
GRAVEL DRIVE
SHRUBS
HOUSE
FB
IRON PIN
3 GUIDE POSTS
POLE #169 1 2 92
GUY
WOODS
SHED
GRAVEL DRIVE
FENCE
GRAVEL DRIVE
WOODS
Blazed Line

STONY BROOK RD
DETOUR

ROAD WORK 1000 FT
WORK ZONE SPEED LIMIT 35
FINE DOUBLED FOR SPEEDING IN WORK ZONE
SPEED LIMIT 35
ROAD WORK AHEAD

VT 107 STATIONING 10+410
300 m
150 m
150 m
150 m
150 m

END ROAD WORK
SPEED LIMIT 50
ROAD WORK AHEAD

REMOVE AND RESET TEMPORARY TRAFFIC BARRIER
REMOVE STA 10+275.00 RT - 10+295.00 LT
RESET TO STA 10+275.00 - 10+295.00 RT

TEMPORARY TRAFFIC BARRIER
STA 10+275.00 - 10+315.00 CL
STA 10+295.00 RT - 10+315.00 CL

TEMPORARY 100 mm WHITE LINE
STA 10+275.00 - 10+340.00 (2)

TEMPORARY 100 mm YELLOW LINE
STA 10+275.00 - 10+340.00 LT (DBL)

REMOVAL OF EXISTING PAVEMENT MARKINGS
STA 10+300.00 - 10+340.00 LT

ENERGY ABSORPTION ATTENUATER
STA 10+315

IRON PIN

SIGNS TO BE LOCATED AS PER STANDARDS E-100 & E-107

LEGEND
- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- RETROREFLECTORIZED BARREL
- TEMPORARY STEEL SHEET PILING
- PAVEMENT MARKING REMOVAL
- ENERGY ABSORTION ATTENUATER

PHASE B TRAFFIC CONTROL LAYOUT 4

0 10 20 30
SCALE IN METERS

APPROACH SIGN PACKAGE
N. T. S.

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1 (20)

FILE NAME:/str4/85e039/de039bdr.dgn PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams DRAWN BY: H. I. Salls
DESIGNED BY: H. I Salls CHECKED BY: R.S. Young
TRAFFIC CONTROL SHEET 35 OF 139

SIGNS TO BE LOCATED AS PER
STANDARDS E-100 & E-107

LEGEND

- SIGN POSTS
- TYPE III BARRICADES
- TEMP. TRAFFIC BARRIER
- RETROREFLECTORIZED BARREL
- TEMPORARY STEEL SHEET PILING
- PAVEMENT MARKING REMOVAL

N

VT STATE PLANE GRID

MATCHLINE STA. 20+045

GRAVEL DRIVE

POLE # 2A

GUY

GRAVEL DRIVE

ROAD CLOSED

WOODS

20+060

MAILBOX

20+080

WETLAND

WOODS

POLE NO #

GUY

SIGN

GRAVEL TURNOUT

WETLAND

WOODS

STONY BROOK

WOODS

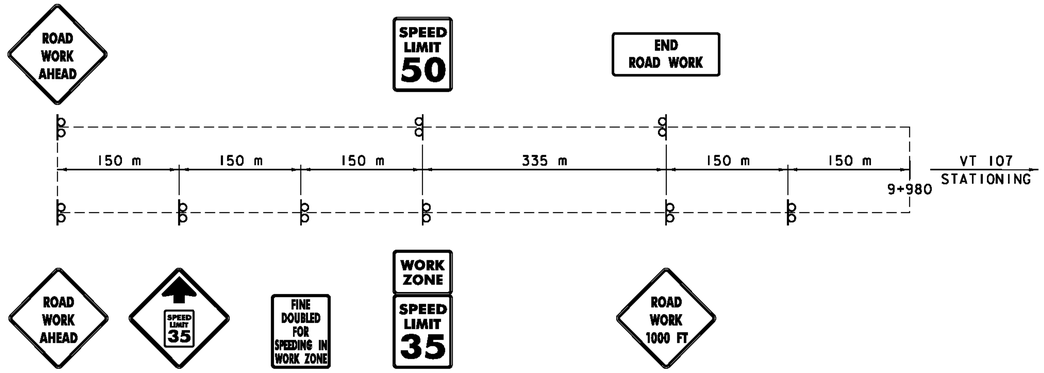
WOODS

0 10 20 30

SCALE IN METERS

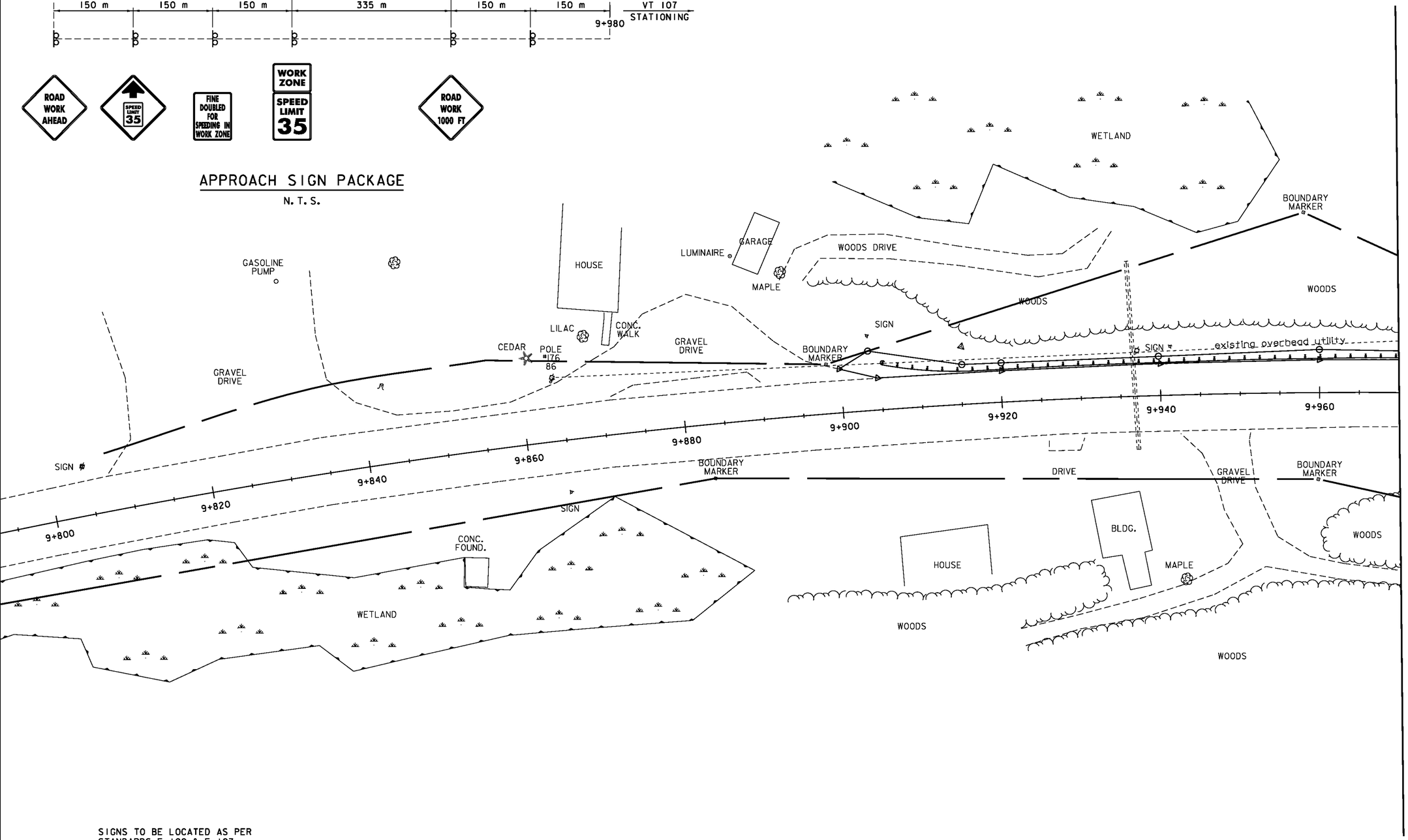
PHASE B
TRAFFIC CONTROL
LAYOUT 5

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /str4/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. WILLIAMS	DRAWN BY: H. I. SALLS
DESIGNED BY: H. I. SALLS	CHECKED BY: R.S. Young
TRAFFIC CONTROL	SHEET 36 OF 139



APPROACH SIGN PACKAGE

N. T. S.



SIGNS TO BE LOCATED AS PER STANDARDS E-100 & E-107

LEGEND

- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- RETROREFLECTORIZED BARREL
- TEMPORARY STEEL SHEET PILING
- PAVEMENT MARKING REMOVAL

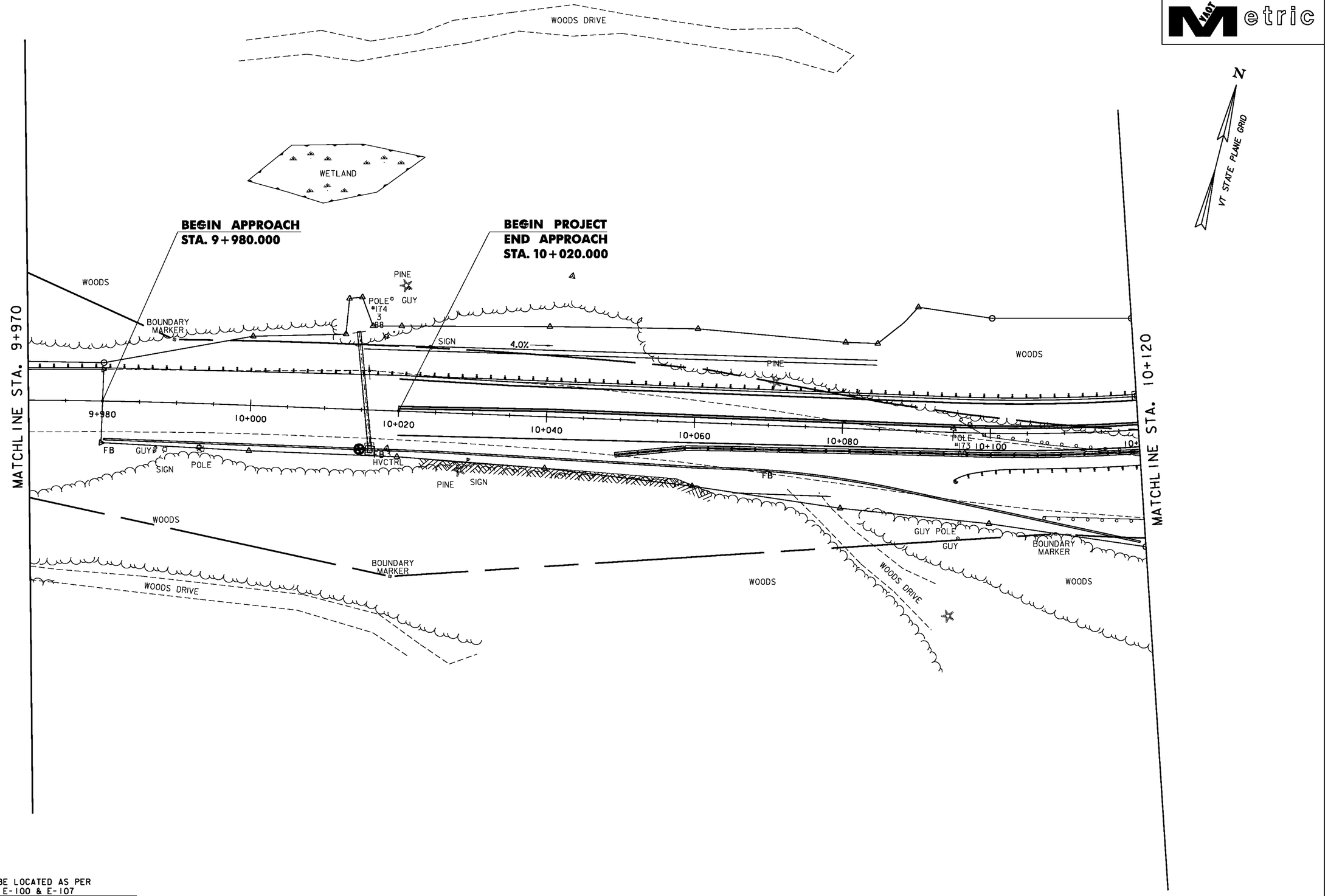
PHASE C
TRAFFIC CONTROL LAYOUT 1

0 10 20 30

SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1 (20)
FILE NAME:/str4/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. WILLIAMS	DRAWN BY: H.I. SALLS
DESIGNED BY: H. I. SALLS	CHECKED BY: R.S. YOUNG
TRAFFIC CONTROL	SHEET 37 OF 139

VTrans Metric



SIGNS TO BE LOCATED AS PER STANDARDS E-100 & E-107

LEGEND

- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- RETROREFLECTORIZED BARREL
- TEMPORARY STEEL SHEET PILING
- PAVEMENT MARKING REMOVAL

REMOVE AND RESET TEMPORARY TRAFFIC BARRIER
REMOVE STA 10+050.00 - 10+120.00 CL
RESET TO STA 10+050.00 - 10+120.00 RT

TEMPORARY 100 mm WHITE LINE
STA 10+020.00 - 10+120.00 (2)

TEMPORARY 100 mm YELLOW LINE
STA 10+020.00 - 10+120.00 (DBL)

PHASE C TRAFFIC CONTROL LAYOUT 2

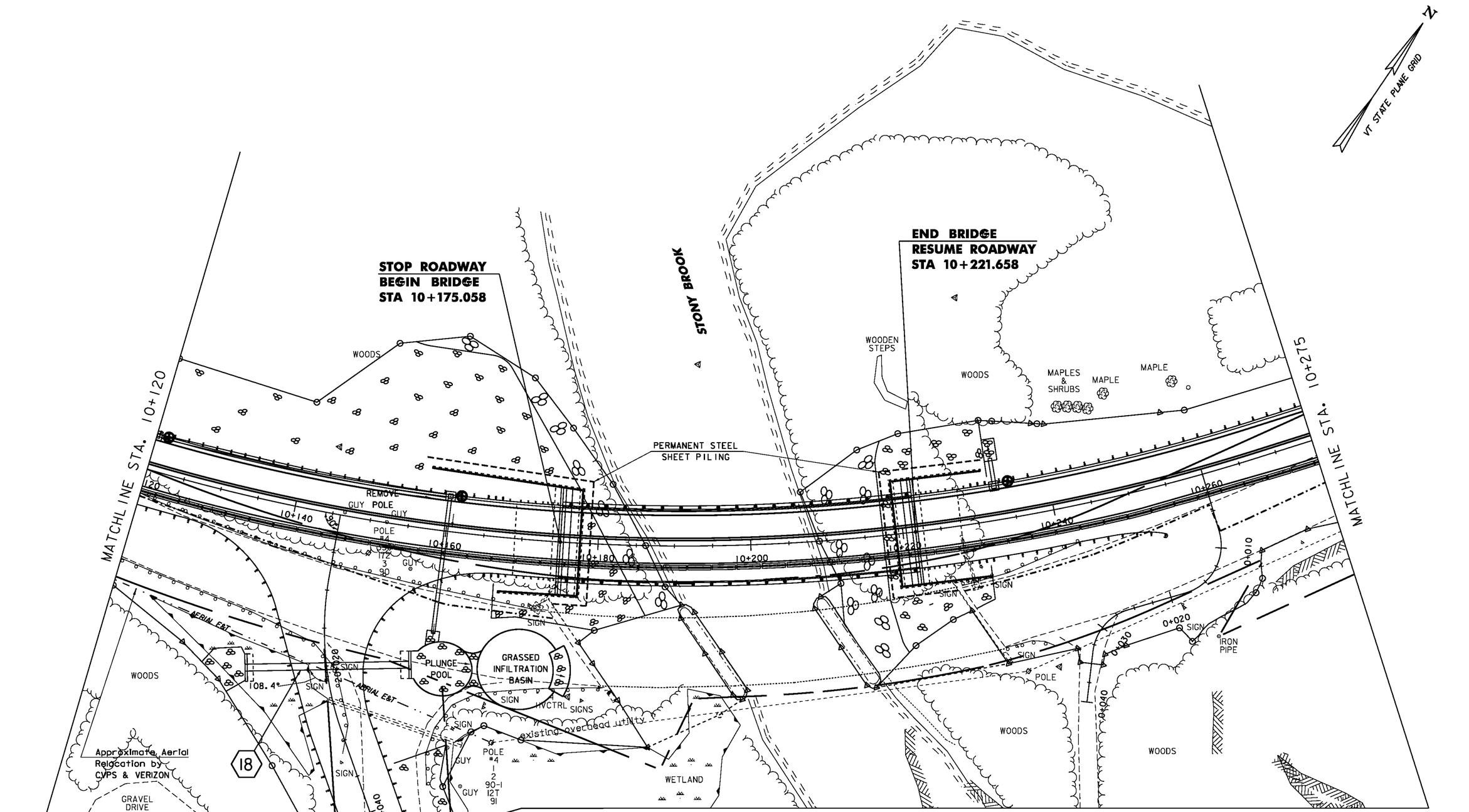
0 10 20 30

SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1 (20)

FILE NAME: /str4/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: H.I. SALLS
DESIGNED BY: H.I. SALLS	CHECKED BY: R.S. Young
TRAFFIC CONTROL	SHEET 38 OF 139

VAOT Metric



SIGNS TO BE LOCATED AS PER STANDARDS E-100 & E-107

REMOVE AND RESET
TEMPORARY TRAFFIC BARRIER
REMOVE STA 10+120.00 - 10+275.00 CL
RESET TO STA 10+120.00 - 10+275.00 RT

TEMPORARY 100 mm WHITE LINE
STA 10+120.00 - 10+275.00 RT

TEMPORARY 100 mm YELLOW LINE
STA10+120.00 - 10+275.00 LT

LEGEND

- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- RETROREFLECTORIZED BARREL
- TEMPORARY STEEL SHEET PILING
- PAVEMENT MARKING REMOVAL

PHASE C TRAFFIC CONTROL LAYOUT 3

0 10 20 30
SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)

FILE NAME: /str4/85e039/de039bdr.dgn PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams DRAWN BY: H. I. SALLS
DESIGNED BY: H. I. SALLS CHECKED BY: R.S. Young
TRAFFIC CONTROL SHEET 39 OF 139

VAOT Metric

N

VT STATE PLANE GRID

MATCHLINE STA. 10+275

END PROJECT
BEGIN APPROACH
STA 10+360.000

END APPROACH
STA 10+410.000

WOODS
SPRUCES
POLE #350 169A 92
POLE #169 3 92X
GUY
existing overhead utility
SIGN
WOODS
POLE #168 1 2 93
GUY
MILEMKR
GRAVEL TURNOUT

10+280 10+300 10+320 10+340 10+360 10+380 10+400 10+420 10+440

FB
MAILBOX
FB
SHRUBS
GRAVEL DRIVE
IRON PIN
3 GUIDE POSTS
SIGN
STONE WALL
CEDARS
CEDARS
GARDEN
HOUSE
GRAVEL DRIVE
GRAVEL DRIVE
WOODS
WOODS
Blazed Line
POLE #169 1 2 92
GUY
SHED
FENCE
IRON PIN

STONY BROOK RD
DETOUR

ROAD WORK 1000 FT
WORK ZONE SPEED LIMIT 35
FINE DOUBLED FOR SPEEDING IN WORK ZONE
SPEED LIMIT 35
ROAD WORK AHEAD

VT 107 STATIONING 10+410
300 m | 150 m | 150 m | 150 m | 150 m

END ROAD WORK
SPEED LIMIT 50
ROAD WORK AHEAD

APPROACH SIGN PACKAGE
N. T. S.

SIGNS TO BE LOCATED AS PER STANDARDS E-100 & E-107

LEGEND
- SIGN POSTS
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- RETROREFLECTORIZED BARREL
- TEMPORARY STEEL SHEET PILING
- PAVEMENT MARKING REMOVAL

REMOVE AND RESET TEMPORARY TRAFFIC BARRIER
REMOVE STA 10+275.00 - 10+320.00 CL
RESET TO STA 10+275.00 - 10+320.00 RT

TEMPORARY 100 mm WHITE LINE
STA 10+275.00 - 10+340.00 (2)

TEMPORARY 100 mm YELLOW LINE
STA 10+275.00 - 10+340.00 (DBL)

PHASE C TRAFFIC CONTROL LAYOUT 4

0 10 20 30
SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME:/str4/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: H. I. Salls
DESIGNED BY: H. I Salls	CHECKED BY: R.S. Young
TRAFFIC CONTROL	SHEET 40 OF 139

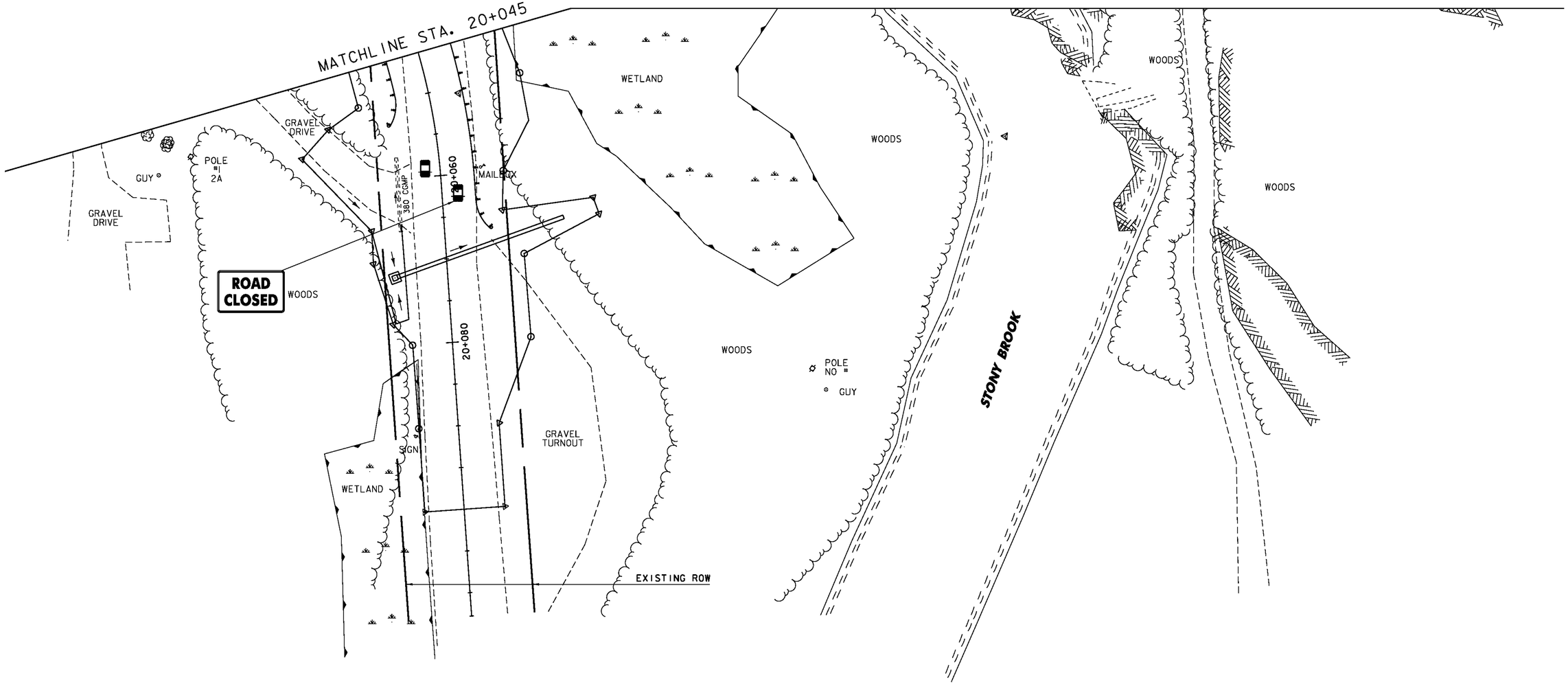
SIGNS TO BE LOCATED AS PER
STANDARDS E-100 & E-107

LEGEND

- SIGN POSTS
- TYPE III BARRICADES
- TEMP. TRAFFIC BARRIER
- RETROREFLECTORIZED BARREL
- TEMPORARY STEEL SHEET PILING
- PAVEMENT MARKING REMOVAL

N

VT STATE PLANE GRID



0 10 20 30

SCALE IN METERS

PHASE C
TRAFFIC CONTROL
LAYOUT 5

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /str4/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: H.I. SALLS
DESIGNED BY: H.I. SALLS	CHECKED BY: R.S. Young
TRAFFIC CONTROL	SHEET 41 OF 139

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

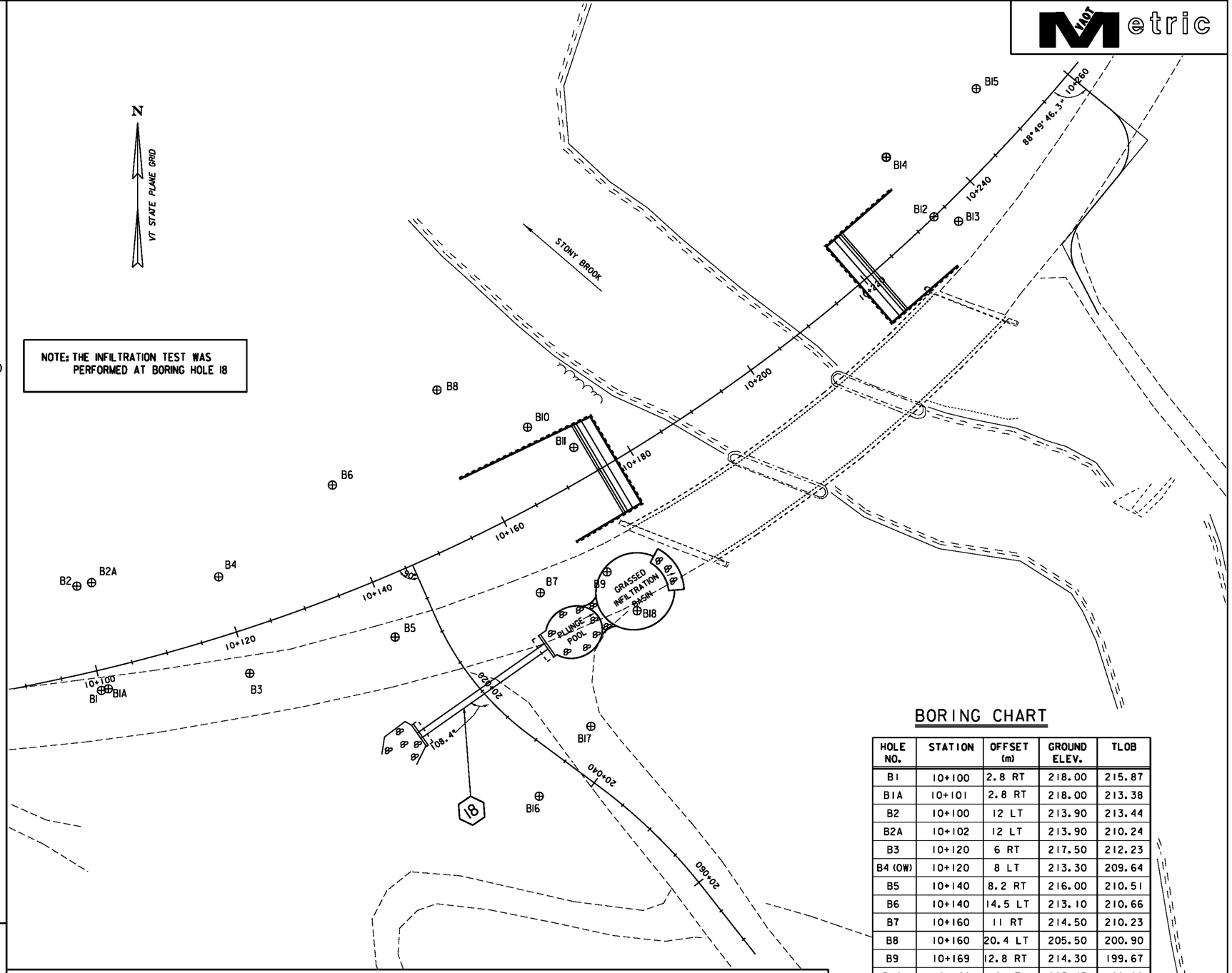
DENSITY (GRANULAR SOILS) N	DENSITY (GRANULAR SOILS) DESCRIPTIVE TERM	CONSISTENCY (COHESIVE SOILS) N	CONSISTENCY (COHESIVE SOILS) DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very 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 30.1 mm
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
RQD	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		



BORING CHART

HOLE NO.	STATION	OFFSET (m)	GROUND ELEV.	TLOB
B1	10+100	2.8 RT	218.00	215.87
B1A	10+101	2.8 RT	218.00	213.38
B2	10+100	12 LT	213.90	213.44
B2A	10+102	12 LT	213.90	210.24
B3	10+120	6 RT	217.50	212.23
B4 (OW)	10+120	8 LT	213.30	209.64
B5	10+140	8.2 RT	216.00	210.51
B6	10+140	14.5 LT	213.10	210.66
B7	10+160	11 RT	214.50	210.23
B8	10+160	20.4 LT	205.50	200.90
B9	10+169	12.8 RT	214.30	199.67
B10	10+169	10 LT	205.45	199.29
B11	10+173.5	4.4 LT	205.90	198.89
B12 (OW)	10+233	CL	210.50	202.88
B13	10+235	2.8 RT	211.40	205.00
B14	10+234	10.5 LT	210.60	203.90
B15	10+249.5	8.2 LT	212.30	
B16	20+035	6 RT	215.20	210.17
B17	20+035	6 LT	214.80	
B18	10+170	19.5 RT		

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.

GENERAL NOTES

1. The subsurface explorations shown herein were made between 2/20/02 and 6/4/03 by GeoEnvironmental, Inc.
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.

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039/structures/s85e039bor.dgn	
IPARM FILE NAME: de039borlayout.i	PLOT DATE: 08-APR-2010
US Rt 107 OVER STONY BROOK	
BORING LAYOUT SHEET	SHEET: 42 OF 139

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-1
Page: 1 of 1
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Seth Currier
Date Start/Finish: 2-20-02 / 2-20-02
Boring Location: 10+100, 2.8m R
GS Elev.: 218.00m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HSA	SS
I.D.:	57 mm	35 mm
Hammer Wt.:		63.5 kg
Hammer Fall:		0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
Not Encountered				

Depth (m)	Sample Information: No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
						Asphalt	ASPHALT 0.30m		No Equipment Installed
	S-1	0.61/ 0.18	0.30- 0.91	10-6 5-7	11	Medium dense, brown, fine to coarse SAND, some Silt, some Gravel. (A-2-4)	FILL		
	S-2	0.61/ 0.15	0.91- 1.52	5-7 11-7	18	Medium dense, brown, fine to coarse SAND, some Silt, some Gravel. (A-2-4)		1	
	S-3	0.58/ 0.18	1.52- 2.08	12-14 11-50/102mm	25	Medium dense, brown, fine to medium SAND, some Silt, some Gravel. (A-2-4)			
						Bottom of boring at 2.13 meters (7 feet) below ground surface. Auger refusal on probable boulder.	2.13m		
5									

REMARKS

1. A grain-size distribution analysis was conducted on sample S-2.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-1

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/13/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-1A
Page: 1 of 1
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Seth Currier
Date Start/Finish: 2-20-02 / 2-20-02
Boring Location: 10+101, 2.8m R
GS Elev.: 218.00m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HSA	SS
I.D.:	57 mm	35 mm
Hammer Wt.:		63.5 kg
Hammer Fall:		0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
Not Encountered				

Depth (m)	Sample Information: No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
						Asphalt	ASPHALT 0.30m		No Equipment Installed
						Refer to Boring B-1 for soil descriptions from 0 to 2.13 meters (0 to 7 feet) below ground surface.	FILL		
	S-1	0.41/ 0.28	3.05- 3.45	14-26 50/102mm	>100	Very dense, brown, fine to medium SAND and Silt, little Gravel. (A-4)	3.45m GLACIAL TILL	1	
5	S-2	0.05/ 0.03	4.57- 4.62	50/51mm	>100	Very dense, gray, Rock fragments. Bottom of boring at 4.62 meters (15.2 feet) below ground surface. Split spoon refusal on probable boulder.	4.62m		

REMARKS

1. Difficult drilling observed at 3.45 meters (11.4 feet) below ground surface.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-1A

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/13/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-2
Page: 1 of 1
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Seth Currier
Date Start/Finish: 2-26-02 / 2-26-02
Boring Location: 10+100, 12m L
GS Elev.: 213.90m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HSA	SS
I.D.:	57 mm	35 mm
Hammer Wt.:		63.5 kg
Hammer Fall:		0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
Not Encountered				

Depth (m)	Sample Information: No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	S-1	0.46/ 0.05	0.00- 0.46	1-1 2-50/0mm	3	Very loose, dark brown, fine SAND, little Silt, trace Organics and root fibers, trace Gravel. (A-2-5)	TOPSOIL 0.46m		No Equipment Installed
						Bottom of boring at 0.46 meters (1.5 feet) below ground surface. Auger and split spoon refusal on probable boulder.			
5									

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-2

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/13/04

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039/structures/s85e039bor.dgn	
IPARM FILE NAME: de039bor1.i	PLOT DATE: 08-APR-2010
DESIGNED BY: JUSTIN WHITE	DRAWN BY: JUSTIN WHITE
SQUAD LEADER: C.P. WILLIAMS	CHECKED BY: R.S. YOUNG
BORING LOGS	SHEET: 43 OF 139

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-2A
Page: 1 of 1
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Seth Currier
Date Start/Finish: 2-26-02 / 2-26-02
Boring Location: 10+102, 12m L
GS Elev.: 213.90m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HW	SS
I.D.:	102 mm	35 mm
Hammer Wt.:	136.1 kg	63.5 kg
Hammer Fall:	0.61 m	0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
Not Encountered				

Depth (m)	Sample Info: No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
						Refer to Boring B-2 for soil descriptions from 0 to 0.46 meters (0 to 1.5 feet) below ground surface.			No Equipment Installed
	S-1	0.61/ 0.30	1.52- 2.13	10-18 18-22	36	Dense, brown, fine to medium SAND, some Silt, little Gravel. (A-2-4)	SILTY SAND		
	S-2	0.38/ 0.18	2.74- 3.12	9-30 50/76mm	>100	Very dense, gray-brown, fine to medium SAND, some Gravel, some Silt. (A-2-4)	2.74m GLACIAL TILL		
						Bottom of boring at 3.86m meters (12 feet) below ground surface. Roller bit refusal on probable bedrock or boulder.	3.86m		
5								1	

REMARKS
1. Auger refusal at 2.74 meters (9 feet) below ground surface. Switched over to drive and wash technique using roller bit and HW casing.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-2A

SOIL BL WELL BRF022(SH) GZA_MA.GDT 1/12/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-3
Page: 1 of 1
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Seth Currier
Date Start/Finish: 2-20-02 / 2-20-02
Boring Location: 10+120, 6m R
GS Elev.: 217.50m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HSA	SS
I.D.:	57 mm	35 mm
Hammer Wt.:		63.5 kg
Hammer Fall:		0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
Not Encountered				

Depth (m)	Sample Info: No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
						Asphalt	ASPHALT 0.30m		No Equipment Installed
	S-1	0.61/ 0.43	0.30- 0.91	22-25 52-51	77	Very dense, brown, fine to medium SAND, some Gravel, little Silt. (A-2-4)			
	S-2	0.61/ 0.23	1.22- 1.83	17-11 11-8	22	Medium dense, brown, fine to medium SAND and Silt, trace Gravel. (A-4)	FILL		
	S-3	0.61/ 0.00	2.74- 3.35	2-2 3-6	5	No recovery.			
	S-4A/B	0.61/ 0.28	4.27- 4.88	7-5 10-30	15	S-4A: Medium dense, dark brown, fine SAND, little Silt, trace Organics. (A-2-5) S-4B: Medium dense, gray, Rock fragment.	4.27m SAND 4.42m GLACIAL TILL	1	
						Bottom of boring at 5.27 meters (17.3 feet) below ground surface. Auger refusal on probable boulder or bedrock.	5.27m		
5									

REMARKS
1. Sample S-4A was tested for organic content.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-3

SOIL BL WELL BRF022(SH) GZA_MA.GDT 1/12/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-4(OW)
Page: 1 of 2
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Seth Currier
Date Start/Finish: 2-27-02 / 2-27-02
Boring Location: 10+120, 8m L
GS Elev.: 213.30m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HW	SS
I.D.:	102 mm	35 mm
Hammer Wt.:	136.1 kg	63.5 kg
Hammer Fall:	0.61 m	0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
2/27/02	0930	3.28m	PVC	18 hrs.
3/01/02	1300	3.27m	PVC	33.5 hrs.
3/05/02	1130	3.24m	PVC	94.5 hrs.
6/6/03		3.72m	PVC	484 days

Depth (m)	Sample Info: No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	S-1	0.61/ 0.23	0.00- 0.61	WOH-WOH 1-1		Very loose, dark brown, SILT, little fine Sand, trace Gravel, trace Organics and root fibers. (A-4)	TOPSOIL 0.61m	1 2	Protective Standpipe; Filter Sand; 0.61m Bentonite Seal 0.92m; 51mm ID Solid Sch 40 PVC Well Riser; Drill Cuttings; 2.13m; 51mm ID Slotted Sch 40 PVC Well Screen (0.3mm Slot); Filter Sand
	S-2	0.61/ 0.23	1.22- 1.83	40-36 14-15	50	Very dense, gray-brown, fine to coarse SAND, some Gravel, little Silt. (A-2-4)	GLACIAL TILL 2.90m		
						Top of rock at 2.90 meters (9.5 feet). Refer to Core Boring Report pg 2.			
5									

REMARKS
1. WOH = weight of hammer
2. Groundwater observation well installed in completed borehole. PVC stickup 0.83 meters (2.71 feet) above ground surface.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-4(OW)

SOIL BL WELL BRF022(SH) GZA_MA.GDT 1/12/04

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039/structures/s85e039bor.dgn	
IPARM FILE NAME: de039bor1.i	PLOT DATE: 08-APR-2010
DESIGNED BY: JUSTIN WHITE	DRAWN BY: JUSTIN WHITE
SQUAD LEADER: C.P. WILLIAMS	CHECKED BY: R.S. YOUNG
BORING LOGS	SHEET: 44 OF 139

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-4(OW)
Page: 2 of 2
File No.: 22721.4
Check: DGL/JLH

CORE BORING REPORT

Depth (m)	Run No.	Depth (m)	Drilling Rate (min/ 0.30m)	Rec./ RQD (m)	Rec./ RQD (%)	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
5	C-1	3.66-5.18	2.5 2.5 3.5 3 2.5	1.52/ 1.12	100/ 73	Hard, slightly weathered, grayish blue, fine-grained SCHIST, slightly fractured.	SCHIST		Filter Sand
10						Bottom of boring at 5.18 meters (17 feet) below ground surface.	5.18m		5.18m

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-4(OW)

CORE BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-5
Page: 1 of 1
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Seth Currier
Date Start/Finish: 2-21-02 / 2-21-02
Boring Location: 10+140, 8.2m R
GS Elev.: 216.00m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HSA	SS
I.D.:	57 mm	35 mm
Hammer Wt.:		63.5 kg
Hammer Fall:		0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
Not Encountered				

Depth (m)	No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
							ASPHALT		
	S-1	0.61/ 0.38	0.30-0.91	42-46 56-41	102	Very dense, brown, fine to coarse SAND, little Gravel, little Silt. (A-2-4)	0.30m FILL		No Equipment Installed
	S-2	0.61/ 0.00	0.91-1.52	14-11 12-14	23	No recovery.			
	S-3	0.61/ 0.28	1.52-2.13	2-2 3-4	5	Loose, brown, fine to medium SAND, some Gravel, little Silt. (A-2-4)		1	
	S-4	0.61/ 0.30	3.05-3.66	3-3 3-4	6	Loose, brown, SILT, some fine Sand, trace Organics. (A-2-4)	2.74m SILT		
5	S-5	0.61/ 0.30	4.57-5.18	3-8 7-13	15	Medium dense, brown, GRAVEL and fine to coarse Sand, trace Silt. (A-1-a)	3.66m GLACIAL TILL	1	
						Bottom of boring at 5.49 meters (18 feet) below ground surface. Auger refusal on probable boulders or bedrock.	5.49m		

REMARKS

1. A grain-size distribution analysis was conducted on sample S-3 and S-5.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-5

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-6
Page: 1 of 1
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Seth Currier
Date Start/Finish: 2-28-02 / 2-28-02
Boring Location: 10+140, 14.5m L
GS Elev.: 213.10m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HW	SS
I.D.:	102 mm	35 mm
Hammer Wt.:	136.1 kg	63.5 kg
Hammer Fall:	0.61 m	0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
No Measurements Taken				

Depth (m)	No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	S-1	0.61/ 0.23	0.00-0.61	2-2 3-3	5	Loose, dark brown, fine SAND, some Silt, trace Gravel, trace Organics and roots. (A-2-5)	TOPSOIL 0.30m		No Equipment Installed
	S-2	0.61/ 0.23	1.22-1.83	11-19 24-23	43	Dense, brown, fine to coarse SAND, some Gravel, some Silt. (A-2-4)	GLACIAL TILL		
						Advanced roller bit from 2.44 to 3.05 meters (8 to 10 feet) below ground surface into probable boulder or bedrock.	2.44m Probable BEDROCK		
5						Bottom of boring at 3.05 meters (10 feet) below ground surface. Roller bit refusal on probable bedrock.	3.05m		

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-6

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039/structures/s85e039bor.dgn	
IPARM FILE NAME: de039bor1.i	PLOT DATE: 08-APR-2010
DESIGNED BY: JUSTIN WHITE	DRAWN BY: JUSTIN WHITE
SQUAD LEADER: C.P. WILLIAMS	CHECKED BY: R.S.YOUNG
BORING LOGS	SHEET: 45 OF 139

Metric

Stockbridge BRF 022-1(20) SC — Stockbridge, Vermont

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Boring No.: B-7
Page: 1 of 1
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Seth Currier
Date Start/Finish: 3-5-02 / 3-5-02
Boring Location: 10+160, 11m R
GS Elev.: 214.50m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HSA	SS
I.D.:	57 mm	35 mm
Hammer Wt.:		63.5 kg
Hammer Fall:		0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
Not Encountered				

Depth (m)	Sample No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	S-1	0.61/ 0.41	0.30- 0.91	19-37 35-34	72	Very dense, brown, fine to medium SAND, little Gravel, little Silt. (A-2-4)	ASPHALT 0.27m FILL		No Equipment Installed
	S-2	0.61/ 0.46	1.52- 2.13	2-7 4-4	11	Medium dense, brown, fine SAND, little Silt, trace Organics. (A-2-5)	1.52m SAND		
	S-3A/B	0.61/ 0.41	2.13- 2.74	5-8 7-6	15	S-3A: Medium dense, brown, fine SAND, little Silt. (A-2-5) S-3B: Medium dense, brown, fine to coarse SAND, some Gravel, trace Silt. (A-2-4)	2.44m		
	S-4	0.61/ 0.25	2.74- 3.35	36-26 23-20	49	Very dense, brown, fine to coarse SAND, some Gravel, little Silt. (A-2-4)	GLACIAL TILL		
5						Bottom of boring at 4.27 meters (14 feet) below ground surface. Auger refusal on probable boulders or bedrock.	4.27m		

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-7

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

Stockbridge BRF 022-1(20) SC — Stockbridge, Vermont

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Boring No.: B-8
Page: 1 of 1
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Seth Currier
Date Start/Finish: 2-28-02 / 2-28-02
Boring Location: 10+160, 20.4m L
GS Elev.: 205.50m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HW	SS
I.D.:	102 mm	35 mm
Hammer Wt.:	136.1 kg	63.5 kg
Hammer Fall:	0.76 m	0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
03/01/02	0900	0.53m		5 min.

Depth (m)	Sample No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	S-1	0.61/ 0.15	0.00- 0.61	1-2 2-2	4	Loose, brown, fine SAND, some Silt with root fibers. (A-2-5)	TOPSOIL 0.15m SAND	1	No Equipment Installed
	S-2	0.61/ 0.23	1.52- 2.13	2-2 2-2	4	Loose, brown, fine SAND and Silt, trace Clay, trace Gravel. (A-4)		1	
	S-3A/B	0.61/ 0.33	3.05- 3.66	7-6 8-12	14	S-3A: Medium dense, fine SAND, little Silt. S-3B: Stiff, brown, Clayey SILT, trace fine Sand. (A-4)	3.35m SILT & CLAY	1	
	S-4	0.03/ 0.03	4.57- 4.60	50/25mm	>100	Very dense, grayish blue, weathered ROCK.	4.60m Probable BEDROCK		
5						Bottom of boring at 5.18 meters (17 feet) below ground surface. Roller bit refusal.	5.18m		

REMARKS

1. A grain-size distribution analysis and Atterberg limit tests were conducted on samples S-2 and S-3B.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-8

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

Stockbridge BRF 022-1(20) SC — Stockbridge, Vermont

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Boring No.: B-9
Page: 1 of 3
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Seth Currier
Date Start/Finish: 2-21-02 / 2-21-02
Boring Location: 10+169, 12.8m R
GS Elev.: 214.30m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HW	SS
I.D.:	102 mm	35 mm
Hammer Wt.:		63.5 kg
Hammer Fall:		0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
02/22/02	0730	1.11m		15 hrs.

Depth (m)	Sample No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	S-1	0.56/ 0.23	0.30- 0.86	12-20 22-50/102mm	42	Dense, brown, GRAVEL and fine to medium Sand, little Silt. (A-1-b)	ASPHALT 0.30m FILL	1	No Equipment Installed
	S-2	0.56/ 0.00	1.22- 1.78	6-6 6-4	12	No recovery.			
	S-3	0.61/ 0.23	2.74- 3.35	14-10 11-12	21	Medium dense, grey, fine SAND and GRAVEL, trace Silt. (A-2-4)	3.66m	2	
5						Advanced borehole through nestled cobbles and boulders from 4.57 to 6.10 meters (15 to 20 feet) below ground surface using roller bit.	BOULDERS		
	S-4	0.61/ 0.00	6.10- 6.71	12-11 16-26	27	No recovery.	7.32m		
	S-5	0.61/ 0.38	7.62- 8.23	15-14 9-16	23	Very stiff, gray, SILT & CLAY, trace Gravel, trace fine Sand. (A-4)	SILT & CLAY		
	S-6A/B	0.61/ 0.18	9.14- 9.75	10-28 35-23	63	S-6A: Hard, gray, Clayey SILT, some fine Sand, trace Gravel. (A-4) S-6B: Very dense, dark brown, fine to coarse SAND, some Silt, trace Gravel. (A-2-4)		3	

REMARKS

1. A grain size distribution analysis was conducted on samples S-1, S-6A, and S-8. Atterberg limit tests were conducted on samples S-6A and S-8.
2. Sample S-3 was tested for electrochemical properties.
3. Sample S-6B was tested for organic content.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-9

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039/structures/s85e039bor.dgn	
IPARM FILE NAME: de039bor1.i	PLOT DATE: 08-APR-2010
DESIGNED BY: JUSTIN WHITE	DRAWN BY: JUSTIN WHITE
SQUAD LEADER: C.P. WILLIAMS	CHECKED BY: R.S. YOUNG
BORING LOGS	SHEET: 46 OF 139

Metric

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-9
Page: 2 of 3
File No.: 22721.4
Check: DGL/JLH

Depth (m)	Sample Information: No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	S-7	0.61/ 0.53	10.67- 11.28	8-12 16-20	28	Very stiff, gray, varved SILT & CLAY, trace fine Sand. (A-4)	SILT & CLAY		
	S-8	0.61/ 0.61	12.19- 12.80	19-27 29-20	56	Hard, gray, varved Clayey SILT, trace fine Sand. (A-4)			
15	S-9A/B	0.61/ 0.20	13.72- 14.33	21-21 20-50/127mm	41	S-9A: Dense, brown, fine to coarse SAND, little Gravel, little Silt. (A-2-4) S-9B: Dense, gray, SILT and fine Sand. (A-4)	13.72m SAND 14.63m		
						Top of rock at 14.63 meters (48 feet). Refer to Core Boring Report pg 3.			
20									

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-9

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/13/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-9
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File No.: 22721.4
Check: DGL/JLH

CORE BORING REPORT

Depth (m)	Sample Information: Run No.	Depth (m)	Drilling Rate (min/ 0.30m)	Rec./ RQD (m)	Rec./ RQD (%)	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	C-1	15.24- 16.76	3 2 3 2.5 2	1.50/ 1.27	98/ 83	Hard, slightly weathered, grayish blue, fine-grained SCHIST, slightly fractured to massive.	SCHIST		
	C-2	16.76- 18.34	4 4 3 4 3	1.57/ 1.52	100/ 97	Hard, fresh, grayish blue, fine-grained SCHIST, slightly fractured to massive.			
20						Bottom of boring at 18.29 meters (60 feet) below ground surface.	18.29m		
25									

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-9

CORE BL WELL BRF022.GPJ GZA_NH.GDT 1/13/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-10
Page: 1 of 2
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Gerskie
Logged by: Seth Currier
Date Start/Finish: 3-1-02 / 3-1-02
Boring Location: 10+169, 10m L
GS Elev.: 205.45m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HW	SS
I.D.:	102 mm	35 mm
Hammer Wt.:	136.1 kg	63.5 kg
Hammer Fall:	0.61 m	0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
No Measurements Taken				

Depth (m)	Sample Information: No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	S-2	0.61/ 0.25	1.52- 2.13	15-9 8-6	17	Medium dense, brown, fine to coarse SAND, some Gravel, little Silt. (A-2-4)	SAND AND GRAVEL	1	No Equipment Installed
	S-3	0.61/ 0.13	3.05- 3.66	6-10 12-10	22	Very stiff, gray, SILT & CLAY, some Gravel. (A-4)	3.05m		
5	S-4	0.61/ 0.58	4.57- 5.18	5-11 18-19	27	Very stiff, gray, Clayey SILT. (A-4)	SILT & CLAY	2	
	S-5	0.05/ 0.05	6.10- 6.15	50/51mm	>100	Hard, gray, SILT & CLAY, trace weathered Rock. (A-4) Top of rock at 6.16 meters (20.2 feet). Refer to Core Boring Report pg 2.	6.16m		

REMARKS

1. Sample S-2 was tested for electrochemical properties.
2. A grain-size distribution analysis and Atterberg limit tests were conducted on sample S-4.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-10

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/13/04

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039/structures/s85e039bor.dgn	
IPARM FILE NAME: de039bor1.i	PLOT DATE: 08-APR-2010
DESIGNED BY: JUSTIN WHITE	DRAWN BY: JUSTIN WHITE
SQUAD LEADER: C.P. WILLIAMS	CHECKED BY: R.S.YOUNG
BORING LOGS	SHEET: 47 OF 139

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-10
Page: 2 of 2
File No.: 22721.4
Check: DGL/JLH

CORE BORING REPORT

Depth (m)	Sample Information: Run No.	Depth (m)	Drilling Rate (min/ 0.30m)	Rec./ RQD (m)	Rec./ RQD (%)	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	C-1	6.25-7.77	2 2.5 2 3 2	1.52/ 1.27	100/ 83	Hard, fresh, grayish blue, fine-grained SCHIST, slightly fractured to massive.	SCHIST		
10						Bottom of boring at 7.77 meters (25.5 feet) below ground surface.	7.77m		
15									

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-10

CORE BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-11
Page: 1 of 2
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Seth Currier
Date Start/Finish: 3-4-02 / 3-4-02
Boring Location: 10+173.5, 4.4m L
GS Elev.: 205.90m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HW	SS
I.D.:	102 mm	35 mm
Hammer Wt.:	136.1 kg	63.5 kg
Hammer Fall:	0.61 m	0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
No Measurements Taken				

CORE BORING REPORT

Depth (m)	Sample Information: No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	S-1	0.61/ 0.10	0.00-0.61	WOH-1 2-2	3	Very loose, dark brown, fine to medium SAND, little Silt, trace Gravel, trace Organics and root fibers. (A-2-4)	TOPSOIL 0.61m	1	No Equipment Installed
	S-2A/B	0.61/ 0.18	1.22-1.83	4-7 4-6	11	S-2A: Medium dense, brown, fine SAND, little Silt, trace Gravel. (A-2-5) S-2B: Stiff, gray, Clayey SILT, trace fine Sand. (A-4)	Fine SAND 1.52m	2	
						Encountered a 0.61 meters (2 feet) boulder from 3.41 to 3.60 meters (9.8 to 11.8 feet). No sample was taken from 3.05 to 3.66 meters (10 to 12 feet).			
5	S-3	0.61/ 0.36	4.57-5.18	4-4 7-8	11	Stiff, gray, SILT & CLAY. (A-4)	SILT & CLAY	3	
	S-4	0.61/ 0.36	6.10-6.71	4-5 5-7	10	Stiff, gray, Clayey SILT. (A-4)			
						Top of rock at 7.01 meters (23 feet). Refer to Core Boring Report pg 2.	7.01m		
10									

REMARKS

1. WOH = weight of hammer
2. Sample S-2A was tested for electrochemical properties.
3. Grain-size distribution and Atterberg limit tests were conducted on samples S2-B and S-4.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-11

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-11
Page: 2 of 2
File No.: 22721.4
Check: DGL/JLH

CORE BORING REPORT

Depth (m)	Sample Information: Run No.	Depth (m)	Drilling Rate (min/ 0.30m)	Rec./ RQD (m)	Rec./ RQD (%)	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	C-1	7.01-8.53	1 1 5 3 3	1.50/ 1.12	98/ 73	Hard, fresh, grayish blue, fine-grained SCHIST, slightly fractured.	7.01m		
	C-2	8.53-10.06	3.5 3.5 3 2.5 2	1.50/ 1.40	98/ 92	Hard, fresh, grayish blue, fine-grained SCHIST, slightly fractured to massive.	SCHIST		
10						Bottom of boring at 10.06 meters (33 feet) below ground surface.	10.06m		
15									

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-11

CORE BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039/structures/s85e039bor.dgn	
IPARM FILE NAME: de039bor1.i	PLOT DATE: 08-APR-2010
DESIGNED BY: JUSTIN WHITE	DRAWN BY: JUSTIN WHITE
SQUAD LEADER: C.P. WILLIAMS	CHECKED BY: R.S. YOUNG
BORING LOGS	SHEET: 48 OF 139

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-12(OW)
Page: 1 of 2
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Rebecca Burhnam
Date Start/Finish: 6-2-03 / 6-3-03
Boring Location: 10+233, CL
GS Elev.: 210.50m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HW	SS
I.D.:	102 mm	35 mm
Hammer Wt.:	136.1 kg	63.5 kg
Hammer Fall:	0.61 m	0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
6/3/03	1320	8.66m	PVC	30 hrs.
6/6/03		8.66m	PVC	4 days

Depth (m)	Sample Info: No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	S-1	0.61/ 0.33	0.00- 0.61	1-2 2-3	4	Very loose, brown, fine to medium SAND, some Silt, trace Organics and root fibers, trace Gravel. Dry. (A-2-5)	TOPSOIL		Protective Standpipe
	S-2A/B	0.61/ 0.30	1.52- 2.13	5-12 15-22	27	Top 0.10 meters: Same as above. S-2A (Middle 0.05 meters): Medium dense, gray and black, fine to coarse SAND, little Gravel, little Silt. Dry. (A-2-4) S-2B (Bottom 0.15 meters): Dense, light gray to light brown, fine to coarse SAND, some Silt, little Gravel. Dry. (A-2-4)	1.68m SAND	1 2	51mm ID Solid Sch 40 PVC Well Riser; Filter Sand
	S-3A/B	0.61/ 0.41	3.05- 3.66	3-5 11-14	16	Top 0.05 meters: Loose, brown, fine to coarse SAND, little Clay & Silt. Moist. (A-2-4) Bottom 0.36 meters: Very stiff, gray, CLAY & SILT. Dry. (A-6)	3.05m	3	3.66m
5	S-4	0.61/ 0.46	4.57- 5.18	3-7 11-14	18	Very stiff, gray, SILT & CLAY. Dry. (A-6)	CLAY & SILT	4	Bentonite Seal; 5.99m
	S-5A/ B/C	0.61/ 0.48	6.10- 6.71	3-21 18-14	39	Top 0.18 meters: Dense, brown, fine to coarse SAND and SILT, little Gravel. Dry. (A-4) Middle 0.23 meters: Dense, gray, fine to coarse SAND and SILT, little Gravel, little weathered Rock. Dry. (A-4) Bottom 0.07 meters: Hard, gray, SILT & CLAY, trace fine to medium Sand. Dry. (A-4)	6.40m SAND AND SILT 6.71m SILT & CLAY		6.45m; 51mm ID Slotted Sch 40 PVC Well Screen (0.3mm Slot)
	S-6	0.00/ 0.00	7.62- 7.62	50/0"	>100	Split spoon refusal. Advanced roller bit 7.01 meters to 8.69 meters below ground surface into bedrock. Top of rock at 7.62 meters. Refer to Core Boring Report pg 2.	7.62m	5	Filter Sand

REMARKS
1. Petroleum odor in S-2A.
2. Sample S-2B was tested for electrochemical properties.
3. Augered through septic leaching field.
4. Atterberg limit tests were conducted on sample S-4.
5. Groundwater observation well installed in completed borehole. Casing stickup 0.86 meters.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-12(OW)

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-12(OW)
Page: 2 of 2
File No.: 22721.4
Check: DGL/JLH

CORE BORING REPORT

Depth (m)	Sample Info: Run No.	Depth (m)	Drilling Rate (min/ 0.30m)	Rec./ RQD (m)	Rec./ RQD (%)	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
10	C-1	8.69- 9.30	3.5 1.5	0.25/ 0.25	42/ 42	Moderately hard, slightly weathered, grayish blue, fine-grained SCHIST, highly fractured. Advanced roller bit 9.3 meters to 9.5 meters.	SCHIST	6	Filter Sand; 11.02m
	C-2	9.50- 11.02	1.5 1.5 1.5 2.25 1.75	1.22/ 0.69	80/ 45	Moderately hard, slightly weathered, grayish blue, fine-grained SCHIST, moderately fractured.			
						Bottom of boring at approximately 11.02 meters below ground surface.	11.02m		
15									

REMARKS
6. Rapid advancement of core barrel from 8.99 meters to 9.30 meters below ground surface.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-12(OW)

CORE BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-13
Page: 1 of 2
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Rebecca Burhnam
Date Start/Finish: 6-3-03 / 6-3-03
Boring Location: 10+235, 2.8m R
GS Elev.: 211.40m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HW	SS
I.D.:	102 mm	35 mm
Hammer Wt.:	136.1 kg	63.5 kg
Hammer Fall:	0.61 m	0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
Not Encountered				

Depth (m)	Sample Info: No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	S-1A/B	0.61/ 0.30	0.00- 0.61	10-3 2-2	5	Top 0.15 meters: Loose, dark brown, fine to medium SAND, some Silt, trace Gravel. Bottom 0.15 meters: Stone in tip of spoon. (A-2-4)	TOPSOIL 0.15m		No Equipment Installed
	S-2	0.61/ 0.05	1.22- 1.83	2-2 4-3	6	Loose, brown, GRAVEL and fine to coarse SAND, little Silt. (A-2-4)	SAND AND GRAVEL		
	S-3A/B	0.61/ 0.30	2.74- 3.35	3-12 17-24	29	Top 0.13 meters: Medium dense, brown, fine to coarse SAND, little Silt, little Gravel. Dry. (A-2-4) Bottom 0.18 meters: Dense, gray, GRAVEL, little fine to coarse Sand, trace Silt. Dry. (A-1-a)	3.99m		
5	S-4	0.61/ 0.38	4.27- 4.88	2-7 10-14	17	Very stiff, brown, stratified SILT & CLAY. Dry. (A-4)	SILT & CLAY		
	S-5	0.13/ 0.13	5.79- 5.92	50/127mm	>100	Very dense, grayish brown, fine to coarse SAND, little Gravel. Dry. (A-3) Advanced roller bit from 6.40 meters to 7.32 meters below ground surface. Top of rock at 6.40 meters. Refer to Core Boring Report pg 2.	6.40m		
10									

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-13

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039/structures/s85e039bor.dgn	
IPARM FILE NAME: de039bor1.i	PLOT DATE: 08-APR-2010
DESIGNED BY: JUSTIN WHITE	DRAWN BY: JUSTIN WHITE
SQUAD LEADER: C.P. WILLIAMS	CHECKED BY: R.S. YOUNG
BORING LOGS	SHEET: 49 OF 139

VTrans Metric

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-13
Page: 2 of 2
File No.: 22721.4
Check: DGL/JLH

CORE BORING REPORT

Depth (m)	Run No.	Depth (m)	Drilling Rate (min/ 0.30m)	Rec./ RQD (m)	Rec./ RQD (%)	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
10	C-1	7.32-8.84	1 1.25 1.75 1.25 3.25	0.23/ 0.23	15/ 15	Hard, fresh, grayish blue, fine-grained SCHIST, very highly fractured.	SCHIST		
	C-2	8.84-10.36	3.0 4.0 3.25 3.0 3.0	1.45/ 1.32	95/ 87	Hard, fresh, grayish blue, fine-grained SCHIST, slightly fractured to massive.			
						Bottom of boring at approximately 10.36 meters below ground surface.	10.36m		
15									

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-13

CORE BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-14
Page: 1 of 2
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Rebecca Buthman
Date Start/Finish: 6-4-03 / 6-4-03
Boring Location: 10+234, 10.5m L
GS Elev.: 210.60m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HW	SS
I.D.:	4"	35 mm
Hammer Wt.:	136.1 kg	63.5 kg
Hammer Fall:	0.81 m	0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
Not Encountered				

Depth (m)	Sample Information No.	Pen./ Rec. (m)	Depth (m)	Blows (0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	S-1	0.61/ 0.20	0.00-0.61	1-1 1-1	2	Very loose, dark brown, fine to medium SAND and SILT, trace Organics, root fibers and grass. Moist. (A-2-5)	TOPSOIL		No Equipment Installed
	S-2A/B	0.61/ 0.28	1.22-1.83	13-19 21-27	40	Top 0.03 m: Same as above. S-2A (Middle 0.08 m): Very dense, brown, fine to medium SAND, some Silt, trace Gravel. Dry. (A-2-4) S-2B (Bottom 0.18 m): Very dense, gray, fine to coarse SAND, some Gravel, little Silt, weathered rock. Dry. (A-2-4)	1.31m SAND		
	S-3	0.61/ 0.53	2.74-3.35	4-9 10-13	19	Very stiff, gray, CLAY & SILT. Dry. (A-6)	2.74m		
5	S-4	0.61/ 0.48	4.27-4.88	4-4 6-7	10	Stiff, gray, SILT & CLAY. Dry. (A-6)	CLAY & SILT	1	
	S-5A/B	0.61/ 0.53	5.79-6.40	15-19 21-26	40	Top 0.35m: Very stiff, CLAY & SILT, little fine to medium SAND. Dry. (A-6) Bottom 0.18m: Dense, gray and brown, fine to coarse SAND, some disintegrated rock, some Silt & Clay. Dry. (A-2-4) Advanced roller bit from 6.40 meters to 7.01 meters below ground surface. Top of rock at 6.70 meters. Refer to Core Boring Report pg 2.	6.70m		

REMARKS

1. Atterberg limit tests were conducted on Sample S-4.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-14

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-14
Page: 2 of 2
File No.: 22721.4
Check: DGL/JLH

CORE BORING REPORT

Depth (m)	Run No.	Depth (m)	Drilling Rate (min/ 0.30m)	Rec./ RQD (m)	Rec./ RQD (%)	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
10	C-1	7.01-8.53	2.75 3.0 2.0 3.25 3.0	1.22/ 1.22	80/ 80	Moderately hard, fresh, grayish-blue, fine-grained, SCHIST, slightly fractured to massive.	SCHIST		
						Bottom of boring at approximately 8.53 meters below ground surface.	8.53m		
15									

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-14

CORE BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039/structures/s85e039bor.dgn	
IPARM FILE NAME: de039bor1.i	PLOT DATE: 08-APR-2010
DESIGNED BY: JUSTIN WHITE	DRAWN BY: JUSTIN WHITE
SQUAD LEADER: C.P. WILLIAMS	CHECKED BY: R.S. YOUNG
BORING LOGS	SHEET: 50 OF 139

Metric

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-15
Page: 1 of 1
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Rebecca Burhnam
Date Start/Finish: 6-4-03 / 6-4-03
Boring Location: 10+249.5, 8.2m L
GS Elev.: 212.30m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HW	SS
I.D.:	4"	35 mm
Hammer Wt.:	136.1 kg	63.5 kg
Hammer Fall:	0.81 m	0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
Not Encountered				

Depth (m)	Sample Info: No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	S-A/B	0.61/ 0.15	0.00- 0.61	WH-WH 2-6		Very loose, dark brown, SILT and fine to medium Sand, trace Organics, grass and root fibers. Stone lodged in tip of spoon. (A-4)	TOPSOIL 0.15m	1	No Equipment Installed
	S-2A/ B/C	0.58/ 0.30	1.52- 2.11	14-28 31-50/5"	59	Top 0.18m: Medium dense, gray, fine to coarse SAND, some Gravel, little Silt. Dry. (A-2-4) Middle 0.08m: Dense, gray, quartzite fragments and rock flour. Bottom 0.13m: Very dense, gray, fine to coarse SAND, some Gravel, little Silt. Dry. Stone in tip of spoon. (A-2-4)	SAND 1.96m GLACIAL TILL		
	S-3	0.61/ 0.28	2.74- 3.35	19-26 29-31	55	Dense, gray, fine to coarse SAND and GRAVEL, little Silt. Dry. (A-2-4)			
5						Bottom of boring at approximately 3.86 meters below ground surface.	3.66m		

REMARKS
1. WH = weight of hammer

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-15

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-16
Page: 1 of 1
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Seth Currier
Date Start/Finish: 2-20-02 / 2-20-02
Boring Location: 20+035, 6m R
GS Elev.: 215.20m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HSA	SS
I.D.:	57 mm	35 mm
Hammer Wt.:		63.5 kg
Hammer Fall:		0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
Not Encountered				

Depth (m)	Sample Info: No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	S-1	0.61/ 0.48	0.00- 0.61	14-16 30-10	46	Dense, brown, fine SAND and Silt, little Gravel, trace Organics. (A-4)			No Equipment Installed
	S-2	0.61/ 0.25	1.52- 2.13	3-2 2-3	4	Loose, brown, fine SAND, some Silt, trace Gravel. (A-2-5)	SILTY SAND		
	S-3A/B	0.61/ 0.41	3.05- 3.66	7-12 11-12	23	S-3A: Medium dense, gray, fine SAND, some Silt. (A-2-5) S-3B: Medium dense, brown, fine to coarse SAND, some Gravel, little Silt. (A-2-4)	3.20m GLACIAL TILL		
5	S-4	0.41/ 0.18	4.57- 4.98	16-42 50/102mm	>100	Very dense, gray, Rock fragments.			
						Bottom of boring at 5.03 meters (16.5 feet) below ground surface. Split spoon refusal on probable boulder or bedrock.	5.03m		

REMARKS

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-16

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

Stockbridge BRF 022-1(20) SC
Stockbridge, Vermont

Boring No.: B-17
Page: 1 of 1
File No.: 22721.4
Check: DGL/JLH

Contractor: New Hampshire Boring
Foreman: S. Garside
Logged by: Seth Currier
Date Start/Finish: 2-20-02 / 2-20-02
Boring Location: 20+035, 6m L
GS Elev.: 214.80m Datum: NAVD

	Auger/ Casing	Sampler
Type:	HSA	SS
I.D.:	57 mm	35 mm
Hammer Wt.:		63.5 kg
Hammer Fall:		0.76 m
Rig Type:	CME 550 ATV	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
Not Encountered				

Depth (m)	Sample Info: No.	Pen./ Rec. (m)	Depth (m)	Blows (/0.15m)	N Value	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	S-1	0.61/ 0.25	0.00- 0.61	9-12 10-6	22	Medium dense, gray, fine SAND and Silt, little Gravel. (A-4)	FILL		No Equipment Installed
	S-2	0.61/ 0.30	1.52- 2.13	2-2 2-2	4	Loose, gray, SILT, little fine Sand, trace Gravel, trace Organics. (A-4)	1.50m SILTY SAND	1	
	S-3A/B	0.61/ 0.30	3.05- 3.66	2-5 6-5	11	S-3A: Medium dense, gray, fine SAND and Silt, trace Organics. (A-4) S-3B: Medium dense, gray, fine SAND and Gravel, little Silt. (A-2-4)	3.35m GLACIAL TILL	2	
5	S-4	0.61/ 0.25	4.57- 5.18	10-12 20-19	32	Dense, brown, fine to coarse SAND, some Gravel, little Silt. (A-2-4)			
						Bottom of boring at 5.18 meters (17 feet) below ground surface. No refusal.	5.18m		

REMARKS
1. A grain-size distribution analysis was conducted on sample S-2.
2. Sample S-3A was tested for organic content.

All depth measurements are approximate. Stratification lines represent approximate boundary between soil types, transitions may be gradual.
Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: B-17

SOIL BL WELL BRF022.GPJ GZA_NH.GDT 1/12/04

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039/structures/s85e039bor.dgn	
IPARM FILE NAME: de039bor1.i	PLOT DATE: 08-APR-2010
DESIGNED BY: JUSTIN WHITE	DRAWN BY: JUSTIN WHITE
SQUAD LEADER: C.P. WILLIAMS	CHECKED BY: R.S. YOUNG
BORING LOGS	SHEET: 51 OF 139

VTrans Metric

STONE FILL TYPE IV

STONY BROOK

N

VT STATE PLANE GRID

STONE FILL TYPE II

END APPROACH SLAB
STA 10+227.658

1:1.5

30+510

BEGIN APPROACH SLAB
STA 10+169.058

℄ BEARING
STA 10+175.858
FG = 217.453

84°50'36"

10+160

MAJOR CHORD (℄ BEARING - ℄ BEARING)

10+180

10+200

END APPROACH SLAB
BEGIN BRIDGE
STA 10+175.058
FG = 217.487

84°50'36"

℄ BEARING
STA 10+220.858
FG = 215.540

ML POC 10+220.000 =
CHAN 30+500.000

10+220

END BRIDGE
BEGIN APPROACH SLAB
STA 10+221.658
FG = 215.506

1:1.5

1:2

30+490

STONE FILL TYPE II

STONE FILL TYPE IV

PLAN

0 1 2 4 6 8 10

SCALE = 1:100

225

220

215

210

205

200

HD STEEL BEAM GUARDRAIL, GALVANIZED
(TYP)

GUARDRAIL APPROACH
SECTION, GALVANIZED
NETC 4 RAIL
(TYP)

BRIDGE RAILING, GALVANIZED NETC 4 RAIL
PAY LENGTH BRIDGE RAIL: 47464 RIGHT, 45735 LEFT
SEE RAILING LAYOUT

EXPANSION

FIXED

STONE FILL TYPE II
(TYP)

STONE FILL TRANSITION
ELEV. = 206.000

STONE FILL TYPE IV
(TYP)

Q_{100} = 205.000

SPECIAL PROVISION (MECHANICALLY
STABILIZED EARTH RETAINING WALL)
(TYP)

ELEVATION LOOKING DOWNSTREAM

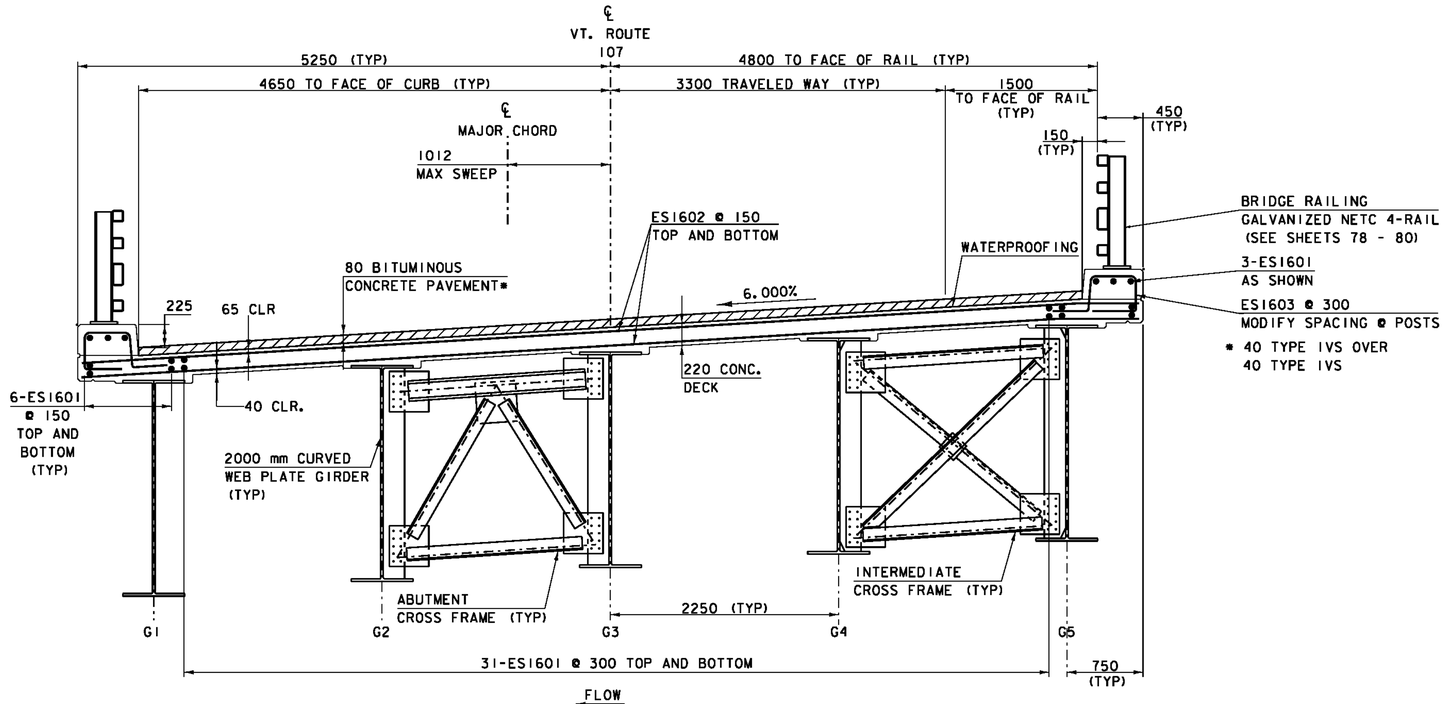
0 1 2 4 6 8 10

SCALE = 1:100

PLAN & ELEVATION SHEET

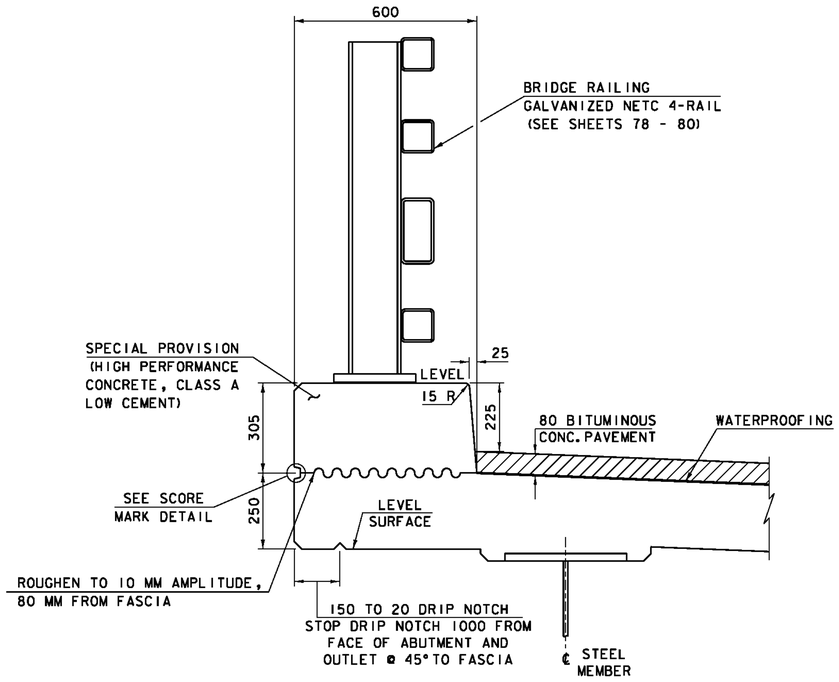
PROJECT:	PROJECT NO.:
STOCKBRIDGE	BRF 022-1(20)

DESIGN FILE NAME: 85e039\Structures\de039pe.dgn
IPARM FILE NAME: de039pe.i
PLOT DATE: 09-APR-2010
DESIGNED BY: H. I. SALLS
DRAWN BY: H. I. SALLS
SQUAD LEADER: C. P. WILLIAMS
CHECKED BY: R. S. YOUNG
PLAN AND ELEVATION
SHEET: 52 OF 139



TYPICAL BRIDGE SECTION

SCALE = 1:30
NOTE: ALL DIMENSIONS ARE RADIAL



TYPICAL 600 MM CURB DETAIL

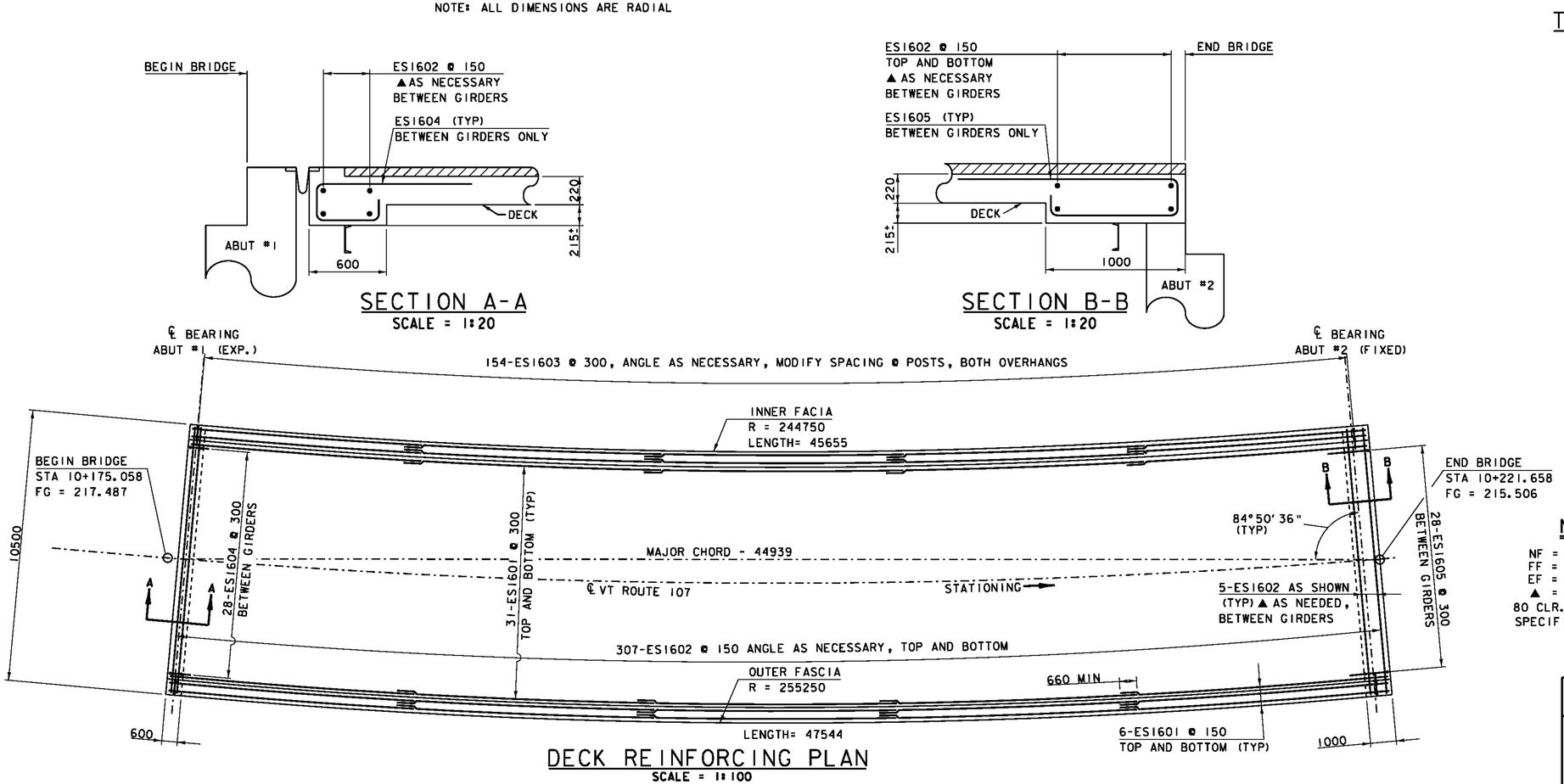
SCALE = 1:10

SECTION A-A

SCALE = 1:20

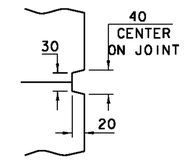
SECTION B-B

SCALE = 1:20



DECK REINFORCING PLAN

SCALE = 1:100



SCORE MARK DETAIL (TYP.)

NOT TO SCALE

0 0.5 1
SCALE = 1:10

0 1 2
SCALE = 1:20

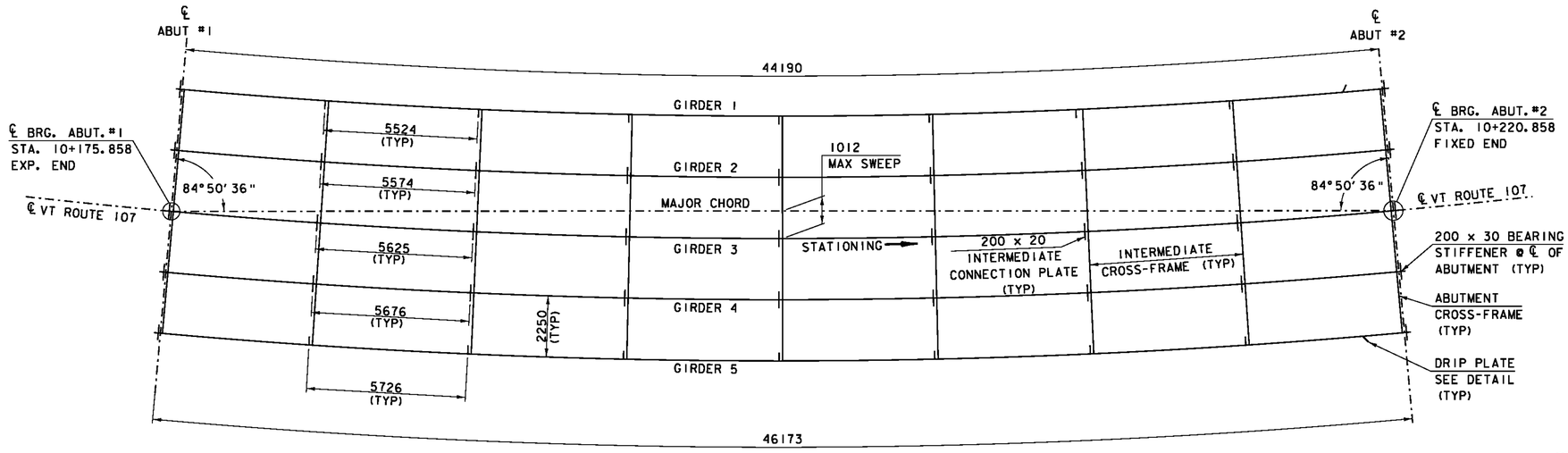
0 1 2 3
SCALE = 1:30

0 1 2 4 6 8 10
SCALE = 1:100

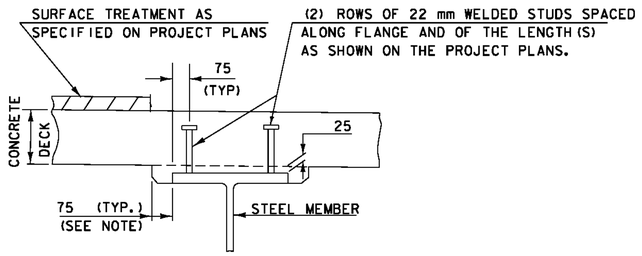
NOTE:

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

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039/Structures/de039sup.dgn	
IPARM FILE NAME: de039dck.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R. S. YOUNG	DRAWN BY: D. D. BEARD
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: H. SALLS
DECK DETAILS AND REINFORCING	SHEET: 53 OF 139

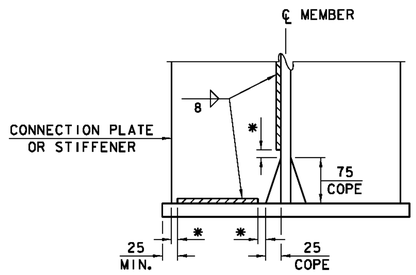


FRAMING PLAN
SCALE = 1:100



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

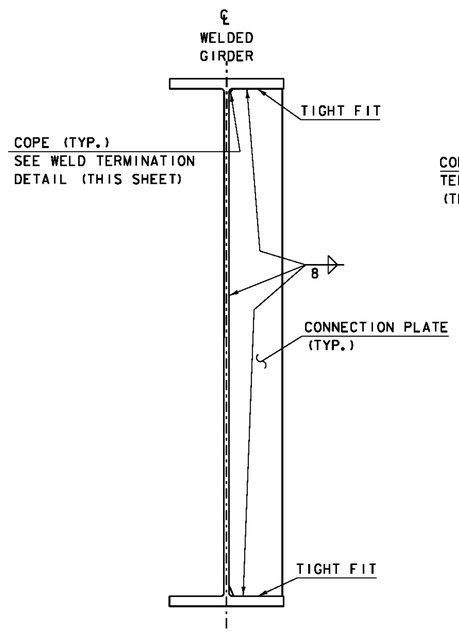
HAUNCH AND SHEAR CONNECTOR DETAIL
(NOT TO SCALE)



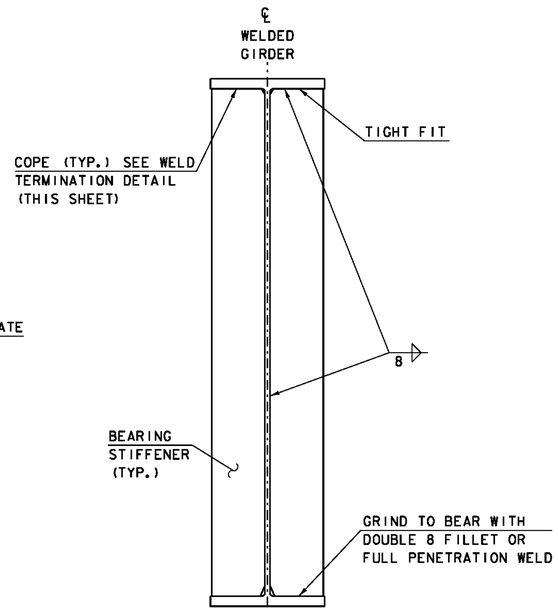
WELD TERMINATION AND COPING DETAIL FOR STEEL MEMBERS

* NO WELD FOR 10 MIN., 22 MAX. (EXCEPT MUST MAINTAIN 25 MIN. FROM EDGE OF FLANGE)

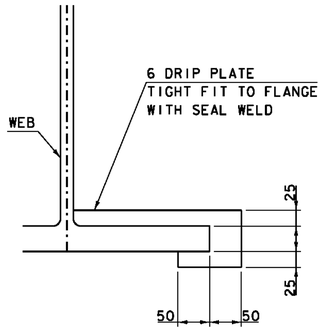
N.T.S.



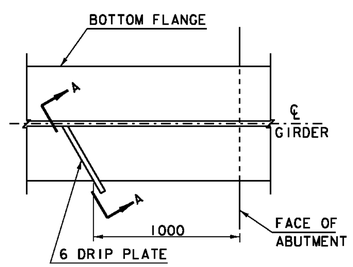
INTERMEDIATE CONNECTION PLATES AND/OR STIFFENERS FOR WELDED PLATE GIRDERS
N.T.S.



ABUTMENT BEARING STIFFENERS FOR WELDED PLATE GIRDERS
N.T.S.



SECTION A-A
N.T.S.



DRIP PLATE PLAN VIEW
N.T.S.

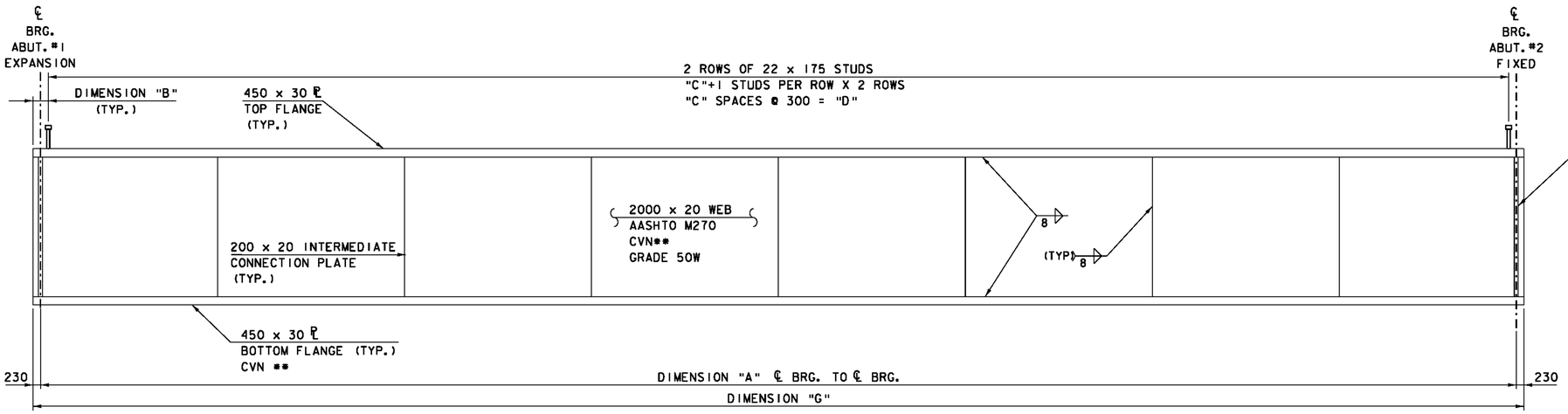
0 1 2 4 6 8 10
SCALE = 1:100

NOTES:

1: INTERMEDIATE CROSS FRAMES ARE ON RADIAL LINES FROM THE CENTER OF CURVE

2: CONNECTION PLATES AT INTERMEDIATE CROSS FRAMES SHALL BE PERPENDICULAR TO FLANGES

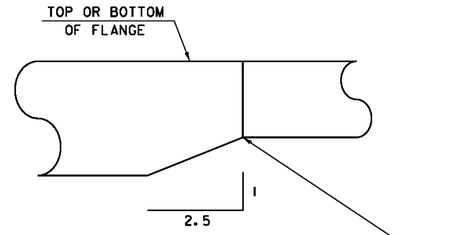
PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039sup.dgn	
IPARM FILE NAME: de039frm.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R. S. YOUNG	DRAWN BY: D. D. BEARD
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. S. YOUNG
FRAMING PLAN	SHEET: 54 OF 139



GIRDERS 1, 2, & 3; ELEVATION

SCALE: HORIZ = 1:80
VERT: 1:40

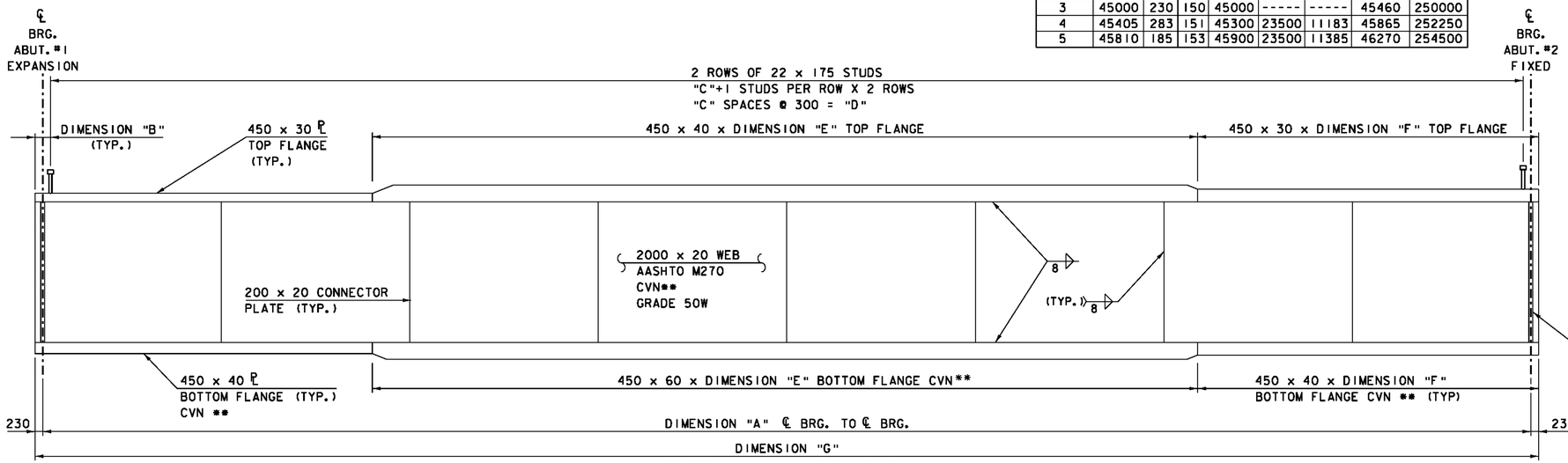
GIRDER NUMBER	"A"	"B"	"C"	"D"	"E"	"F"	"G"	RADIUS
1	44190	275	147	44100	-----	-----	44650	245500
2	44595	178	149	44700	-----	-----	45055	247750
3	45000	230	150	45000	-----	-----	45460	250000
4	45405	283	151	45300	23500	11183	45865	252250
5	45810	185	153	45900	23500	11385	46270	254500



FULL PENETRATION GROOVE WELD
TO BE GROUND SMOOTH AND FLUSH IN LONGITUDINAL DIRECTION OF GIRDER.

FLANGE BUTT SPLICE DETAIL

NOT TO SCALE

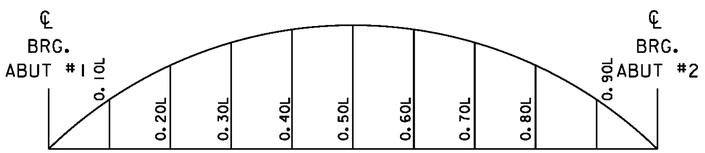


GIRDERS 4, & 5; ELEVATION

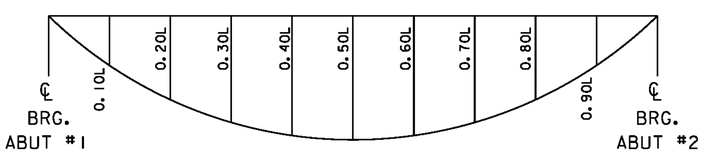
SCALE: HORIZ = 1:80
VERT: 1:40

NOTES:

1. DIMENSIONS SHOWN ARE ALONG THE ARC OF THE ℄ OF THE GIRDER.
2. ENDS OF THE GIRDERS SHALL BE FABRICATED SO THAT THEY WILL BE PLUMB UNDER FULL DEAD LOAD.
3. BEARING STIFFENERS SHALL BE PLUMB AND PERPENDICULAR TO THE WEB IN THEIR FINAL CONDITION.
4. ** DENOTES THAT CHARPY V-NOTCH TESTING IS REQUIRED.
5. THE FABRICATOR CAN EXTEND THE THICKER PLATE ON THE TOP FLANGE, BUT WILL NOT BE COMPENSATED FOR MATERIAL IN EXCESS OF SHOWN DESIGN.



CAMBER DIAGRAM
SEE TABLES AT RIGHT



DEAD LOAD DEFLECTION DIAGRAM
SEE TABLES AT RIGHT

GIRDER 1	.10L	.20L	.30L	.40L	.50L	.60L	.70L	.80L	.90L
STEEL DEFLECTION	-7	-14	-19	-22	-23	-22	-19	-14	-8
SLAB & SUPER DEFLECTION	-22	-41	-56	-66	-69	-66	-56	-41	-22
TOTAL DEFLECTION	-29	-55	-75	-88	-92	-88	-75	-55	-29
RESIDUAL CAMBER	18	32	42	48	50	48	42	32	18
TOTAL CAMBER	47	87	117	136	142	136	117	87	47

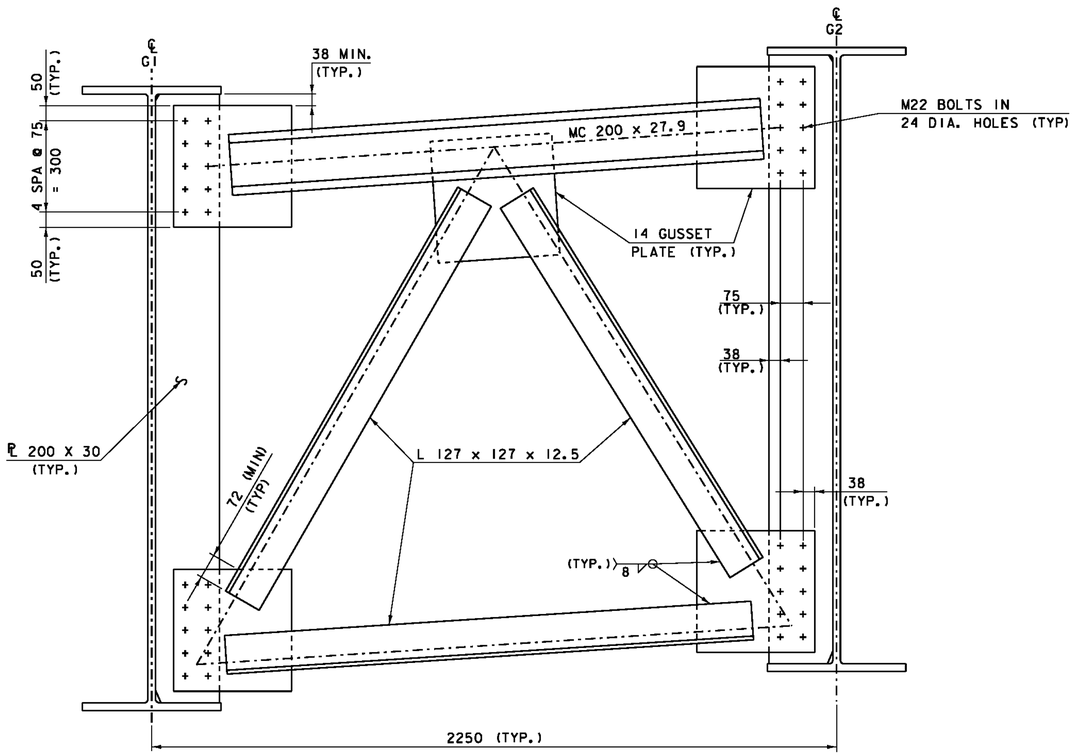
GIRDER 2	.10L	.20L	.30L	.40L	.50L	.60L	.70L	.80L	.90L
STEEL DEFLECTION	-9	-17	-24	-28	-29	-28	-24	-17	-9
SLAB & SUPER DEFLECTION	-25	-48	-65	-76	-80	-76	-65	-48	-25
TOTAL DEFLECTION	-34	-65	-89	-104	-109	-104	-89	-65	-34
RESIDUAL CAMBER	18	32	42	48	50	48	42	32	18
TOTAL CAMBER	52	97	131	152	159	152	131	97	52

GIRDER 3	.10L	.20L	.30L	.40L	.50L	.60L	.70L	.80L	.90L
STEEL DEFLECTION	-11	-21	-28	-33	-35	-33	-28	-21	-11
SLAB & SUPER DEFLECTION	-29	-54	-74	-86	-90	-86	-74	-54	-29
TOTAL DEFLECTION	-40	-75	-102	-119	-125	-116	-102	-75	-40
RESIDUAL CAMBER	18	32	42	48	50	48	42	32	18
TOTAL CAMBER	58	107	144	167	175	167	144	107	58

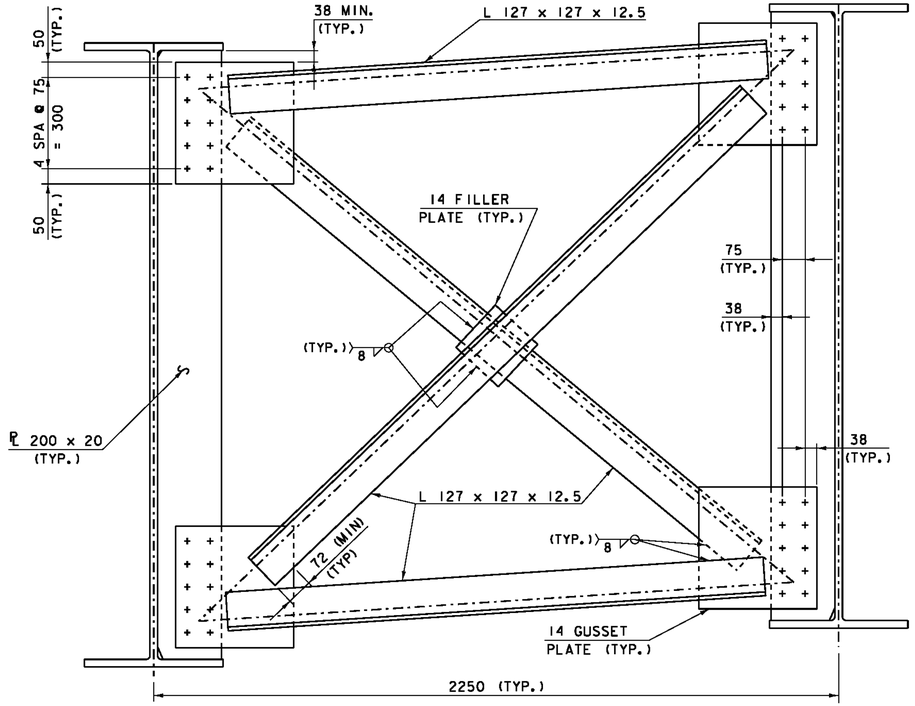
GIRDER 4	.10L	.20L	.30L	.40L	.50L	.60L	.70L	.80L	.90L
STEEL DEFLECTION	-13	-24	-33	-39	-40	-39	-33	-24	-13
SLAB & SUPER DEFLECTION	-33	-61	-82	-96	-100	-96	-82	-61	-33
TOTAL DEFLECTION	-46	-85	-115	-134	-141	-134	-115	-85	-46
RESIDUAL CAMBER	18	32	42	48	50	48	42	32	18
TOTAL CAMBER	64	117	157	182	191	182	157	117	64

GIRDER 5	.10L	.20L	.30L	.40L	.50L	.60L	.70L	.80L	.90L
STEEL DEFLECTION	-15	-28	-38	-44	-46	-44	-38	-28	-15
SLAB & SUPER DEFLECTION	-36	-68	-91	-106	-111	-106	-91	-68	-36
TOTAL DEFLECTION	-51	-96	-129	-150	-158	-150	-129	-96	-51
RESIDUAL CAMBER	18	32	42	48	50	48	42	32	18
TOTAL CAMBER	69	128	171	198	208	198	171	128	69

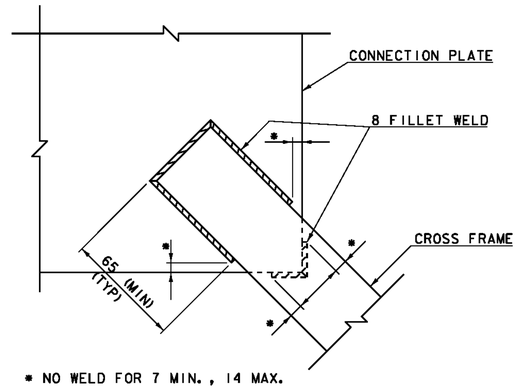
PROJECT:	PROJECT NO.:
STOCKBRIDGE	BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039sup.dgn	
IPARM FILE NAME: de039gdt.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R. S. YOUNG	DRAWN BY: D. D. BEARD
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: H. SALLS
GIRDER DETAILS	SHEET: 55 OF 139



ABUTMENT CROSS FRAME
SCALE = 1:10



INTERMEDIATE CROSS FRAME
SCALE = 1:10



* NO WELD FOR 7 MIN., 14 MAX.

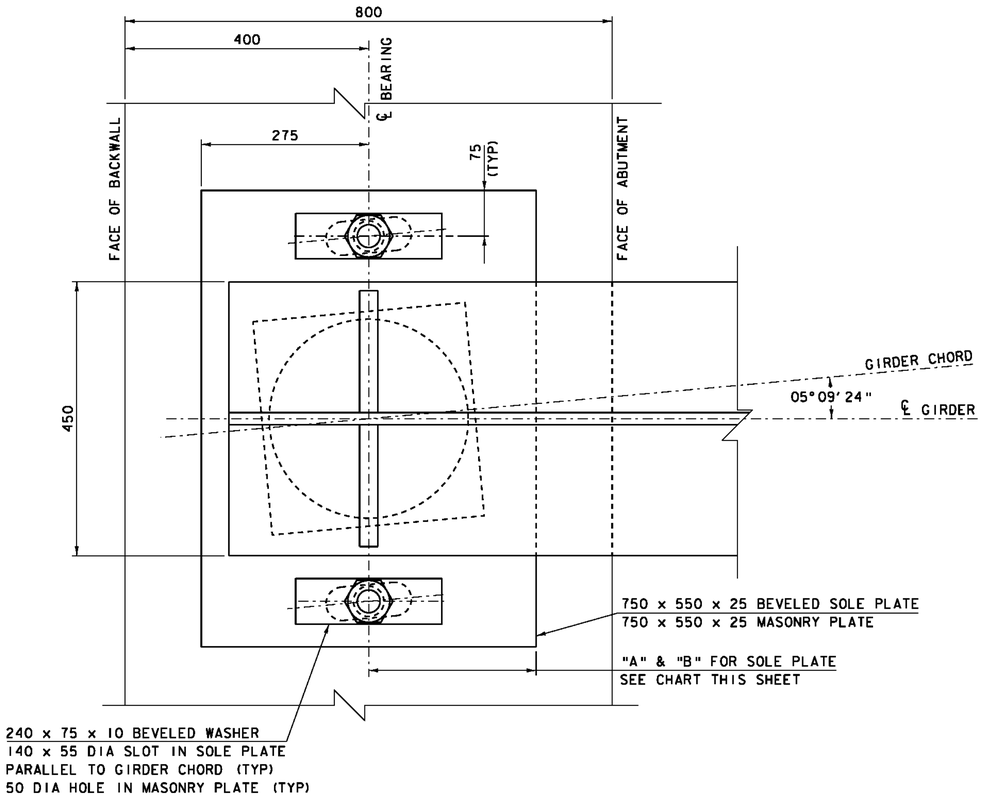
WELD LOCATION DETAIL

NOTE:

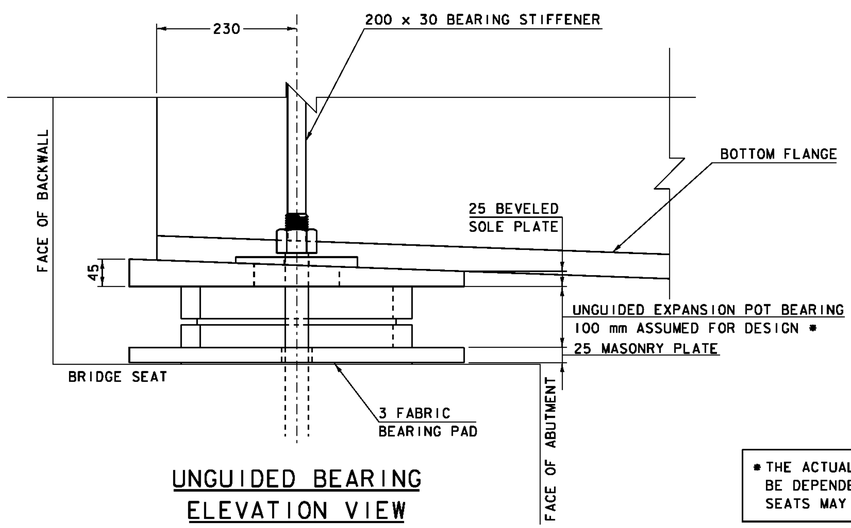
ALL CROSS FRAMES SHALL HAVE "CHARPY V-NOTCH TEST" PERFORMED AS SPECIFIED IN SUBSECTION 714.01.

0 0.5 1
SCALE = 1:10

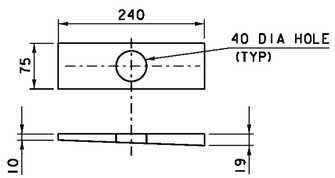
PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039sup.dgn	
IPARM FILE NAME: de039xframe.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R. YOUNG	DRAWN BY: D. D. BEARD
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. YOUNG
CROSS FRAME DETAILS	SHEET: 56 OF 139



UNGUIDED BEARING
PLAN VIEW
SCALE = 1:5

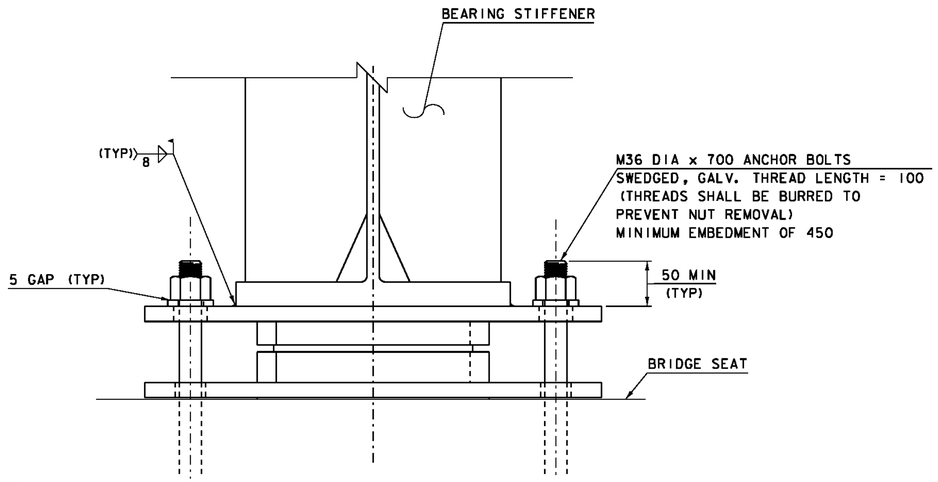


UNGUIDED BEARING
ELEVATION VIEW
SCALE = 1:5



BEVELED WASHERS
SCALE = 1:5

* THE ACTUAL CONFIGURATION OF THE COMPONENTS WILL BE DEPENDENT UPON THE BEARING FABRICATOR. BRIDGE SEATS MAY NEED ADJUSTMENT.



UNGUIDED BEARING
TYPICAL SECTION
SCALE = 1:5

0 0.25 0.5
SCALE = 1:5

SOLE PLATE NOTES

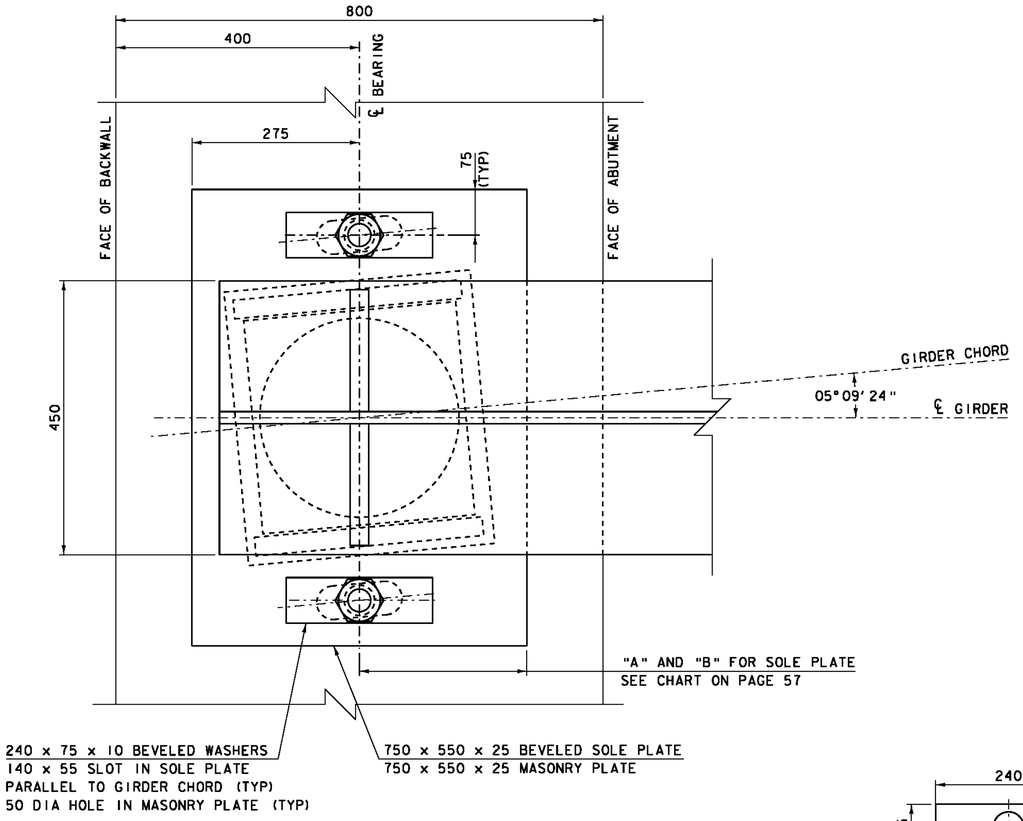
1. "A" IS THE DISTANCE AFTER THE STRUCTURAL STEEL IS ERECTED AND BEFORE THE CONCRETE DECK IS POURED.
2. "B" IS THE DISTANCE AFTER THE CONCRETE SLAB, CURB, PAVEMENT AND BRIDGE RAIL ARE PLACED.
3. THE DIFFERENCE BETWEEN "A" AND "B" IS THE THEORETICAL MOVEMENT OF THE BOTTOM FLANGE DUE TO DEAD LOAD DEFLECTION.
4. ATTAIN THE "B" DISTANCE WITHIN 3 MM.

ABUTMENT 1
SOLE PLATE SETTINGS

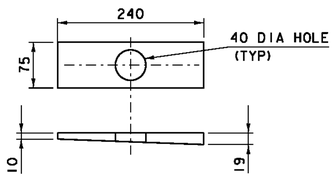
TEMP	INITIAL DISTANCE "A"					FINAL DISTANCE "B"
	GIRDER 1	GIRDER 2	GIRDER 3	GIRDER 4	GIRDER 5	ALL
°C	MM	MM	MM	MM	MM	MM
+50	267	269	270	272	274	254
+40	272	274	275	277	279	259
+30	278	280	281	283	285	265
+20	283	285	286	288	290	270
+10	288	290	291	293	295	275
0	293	295	296	298	300	280
-10	299	301	302	304	306	286
-20	304	306	307	309	311	291
-30	309	311	312	314	316	296

UNGUIDED BEARINGS
FOR GIRDERS 1, 2, & 5
ON ABUTMENT #1

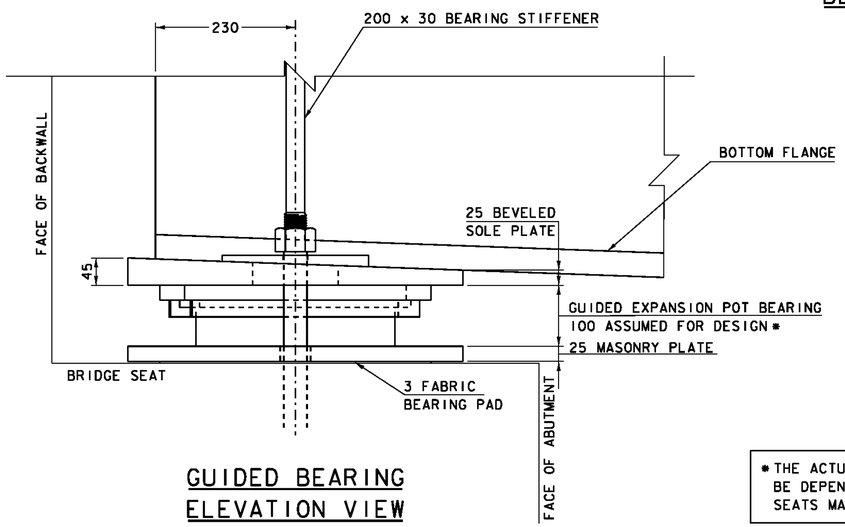
PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039bearing.dgn	
IPARM FILE NAME: de039bear1.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R. YOUNG	DRAWN BY: D. D. BEARD
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. YOUNG
UNGUIDED BEARINGS ABUT #1	SHEET: 57 OF 139



GUIDED BEARING
PLAN VIEW
SCALE = 1:5



BEVELED WASHERS
SCALE = 1:5

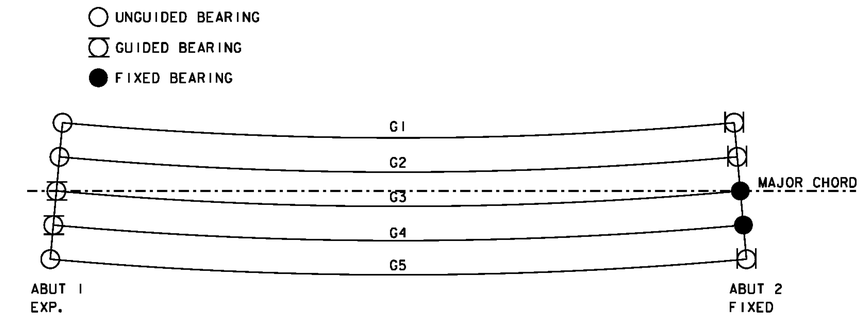


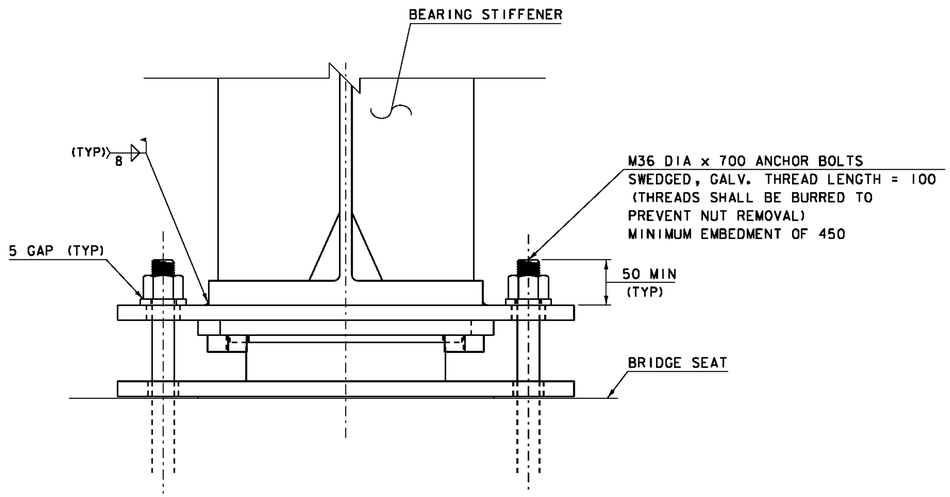
GUIDED BEARING
ELEVATION VIEW
SCALE = 1:5

* THE ACTUAL CONFIGURATION OF THE COMPONENTS WILL BE DEPENDENT UPON THE BEARING FABRICATOR. BRIDGE SEATS MAY NEED ADJUSTMENT.

BEARING NOTES

1. BEARINGS SHALL CONFORM TO THE CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
2. PAYMENT FOR BEARINGS SHALL BE UNDER ITEM 531.12 "BEARING DEVICE ASSEMBLY, POT", AND SHALL CONFORM TO SECTIONS 531 AND 731, AS APPLICABLE.
3. ANCHOR BOLTS SHALL BE A-449 AND CONFORM TO SUBSECTION 714.08. STEEL SHALL BE AASHTO M270M/M 270, GRADE 345.
4. STEEL PLATES AND POT SHALL BE METALIZED AS PER SUBSECTIONS 531.04(b) AND 506.15(b). ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED PER SUBSECTION 531.04(b). THE INSIDE OF THE POTS SHALL NOT BE METALIZED. AREAS OF METALIZING DAMAGED BY FIELD WELDING OR HANDLING SHALL BE PAINTED WITH A ZINC RICH PAINT IN ACCORDANCE WITH SECTION 513.
5. CONNECTIONS BETWEEN THE POT AND THE SOLE PLATE AND MASONRY PLATE SHALL BE DESIGNED BY THE BEARING SUPPLIER. THE MASONRY PLATE SHALL BE A MINIMUM OF 25 mm THICK.
6. THE CONCRETE SURFACE UNDER THE BEARING DEVICE SHALL BE LEVEL.
7. DESIGN CRITERIA;
   A. MASONRY PLATE TO CONCRETE DESIGN PRESSURE = 6.9 MPA MAXIMUM.
   B. MINIMUM ALLOWABLE DESIGN ROTATION = 0.015 RADIANS.
   C. HORIZONTAL CAPACITY SHALL BE A MINIMUM OF 20% OF THE VERTICAL LOAD.
   D. VERTICAL DESIGN LOAD PER BEARING SHALL BE ACCORDING TO THE DESIGN LOAD TABLE ON SHEET 60.
8. THE CONTRACTOR MAY SUBMIT DESIGNS FOR ALTERNATE BEARINGS FOR APPROVAL.
9. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND VISIBLE AFTER THE BEARING IS INSTALLED.



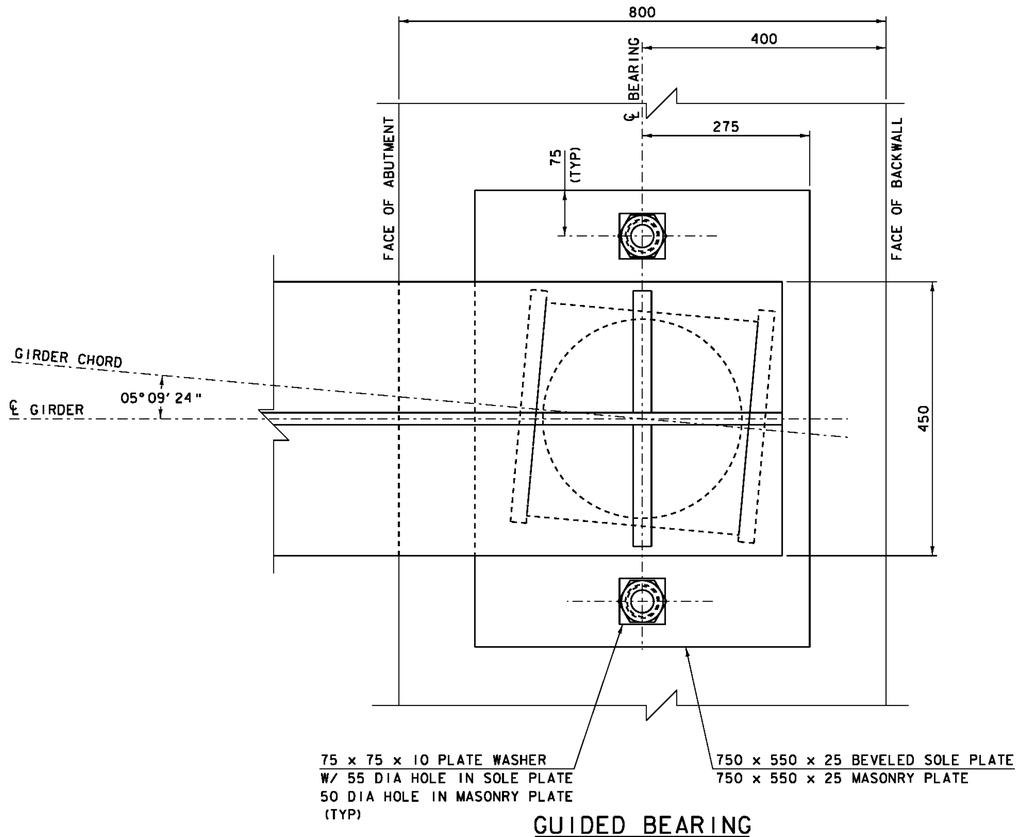


GUIDED BEARING
TYPICAL SECTION
SCALE = 1:5

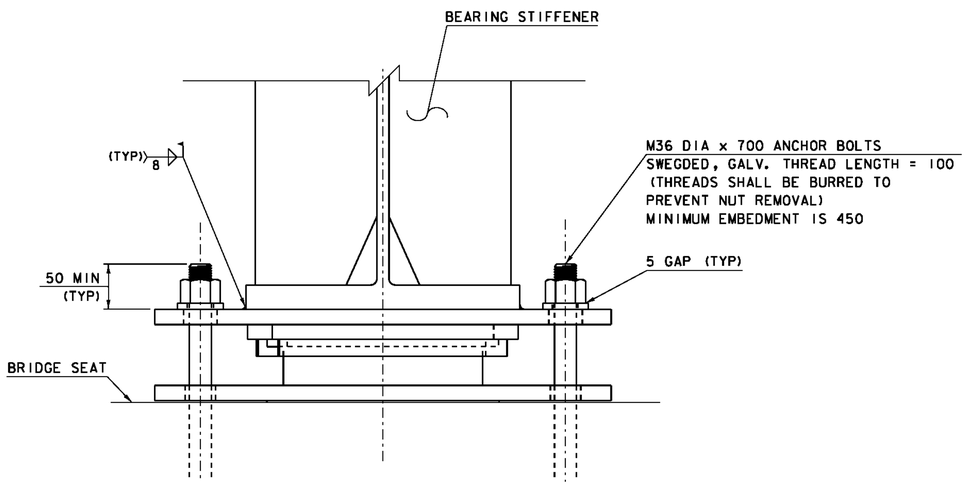
0 0.25 0.5
SCALE = 1:5

GUIDED BEARINGS
FOR GIRDERS 3 & 4 ON ABUTMENT #1

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039bearing.dgn	
IPARM FILE NAME: de039bear2.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R. YOUNG	DRAWN BY: D. D. BEARD
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. YOUNG
GUIDED BEARINGS ABUT #1	SHEET: 58 OF 139

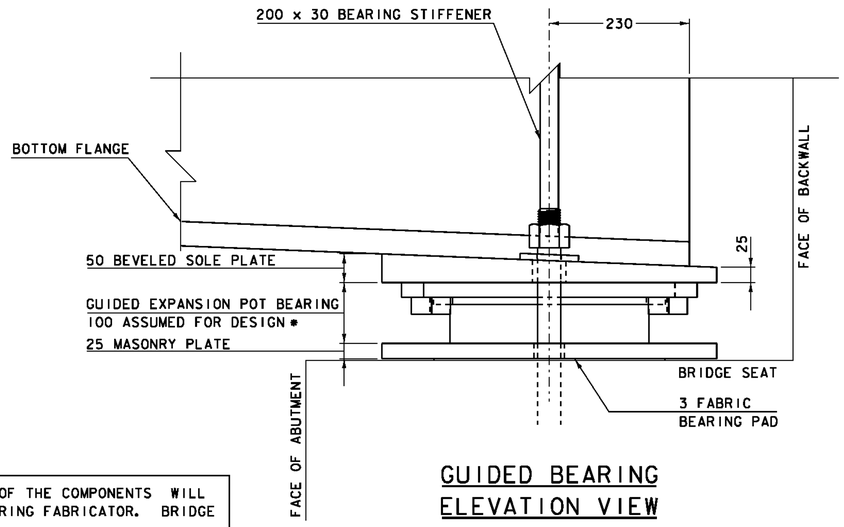


GUIDED BEARING
PLAN VIEW
SCALE = 1:5



GUIDED BEARING
TYPICAL SECTION
SCALE = 1:5

* THE ACTUAL CONFIGURATION OF THE COMPONENTS WILL BE DEPENDENT UPON THE BEARING FABRICATOR. BRIDGE SEATS MAY NEED ADJUSTMENT.



GUIDED BEARING
ELEVATION VIEW
SCALE = 1:5

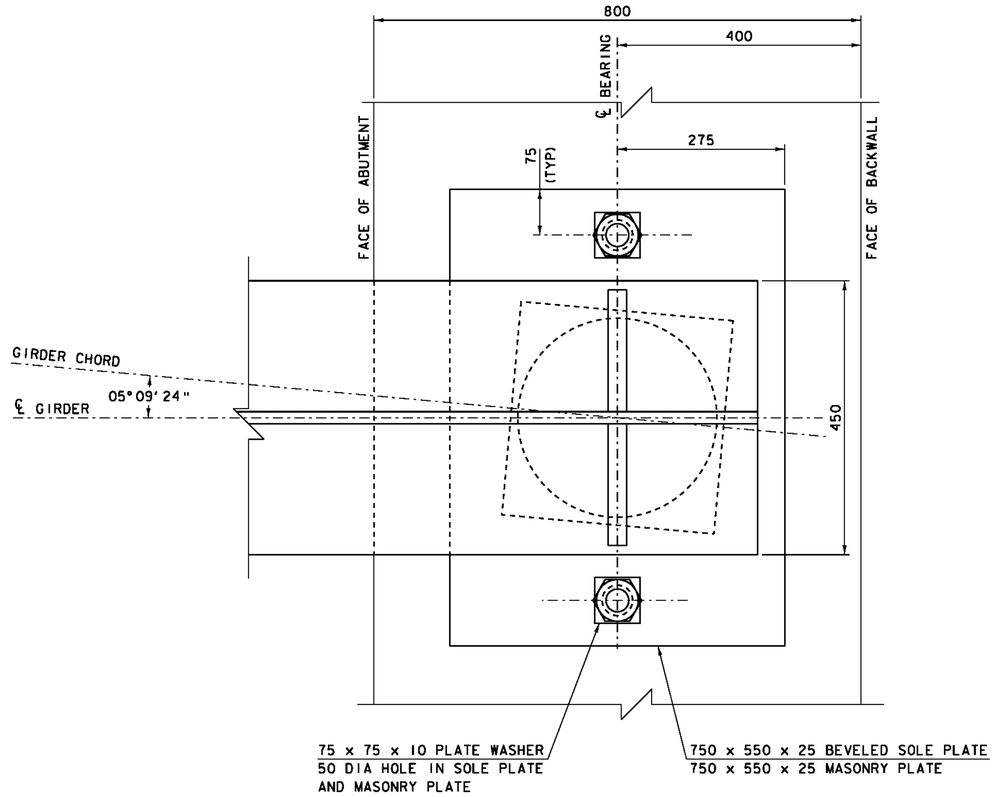
0 0.25 0.5

SCALE = 1:5

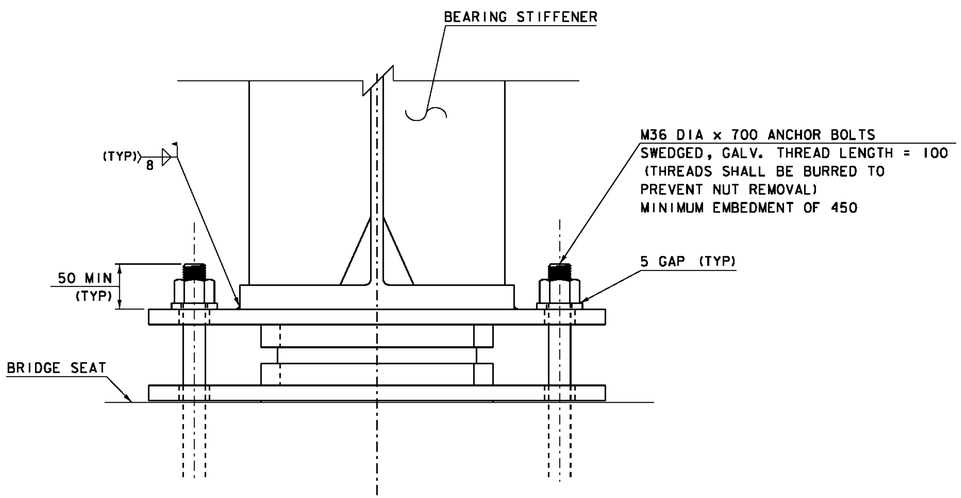
GUIDED BEARINGS
FOR GIRDERS 1, 2, & 5
ON ABUTMENT #2

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039bearing.dgn	
IPARM FILE NAME: de039bear3.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R. YOUNG	DRAWN BY: D. D. BEARD
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. YOUNG
GUIDED BEARINGS ABUT #2	SHEET: 59 OF 139

DESIGN LOADS				
ABUTMENT	GIRDER	BEARING TYPE	UNFACTORED VERTICAL LOAD	
			DEAD	LIVE
			kN	kN
1	1	UNGUIDED	355.4	183.8
1	2	UNGUIDED	429.4	293.4
1	3	GUIDED	486.9	271.9
1	4	GUIDED	622.3	291.9
1	5	UNGUIDED	698.2	365.3
2	1	GUIDED	355.3	183.8
2	2	GUIDED	429.3	293.4
2	3	FIXED	486.7	271.9
2	4	FIXED	623.0	292.0
2	5	GUIDED	697.8	365.2

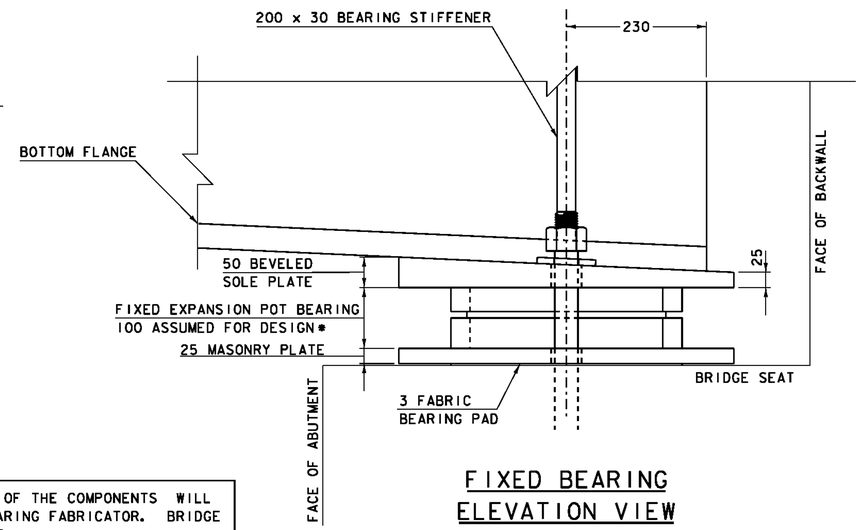


FIXED BEARING
PLAN VIEW
SCALE = 1:5



FIXED BEARING
TYPICAL SECTION
SCALE = 1:5

* THE ACTUAL CONFIGURATION OF THE COMPONENTS WILL BE DEPENDENT UPON THE BEARING FABRICATOR. BRIDGE SEATS MAY NEED ADJUSTMENT.



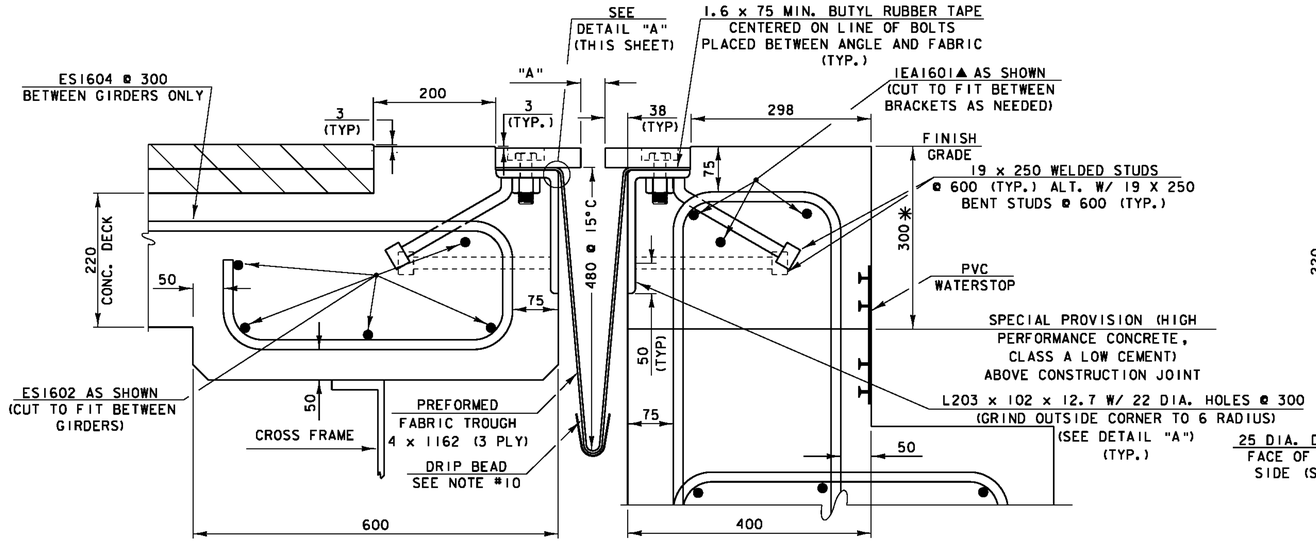
FIXED BEARING
ELEVATION VIEW
SCALE = 1:5

0 0.25 0.5
SCALE = 1:5

FIXED BEARINGS
FOR GIRDERS 3 & 4
ON ABUTMENT #2

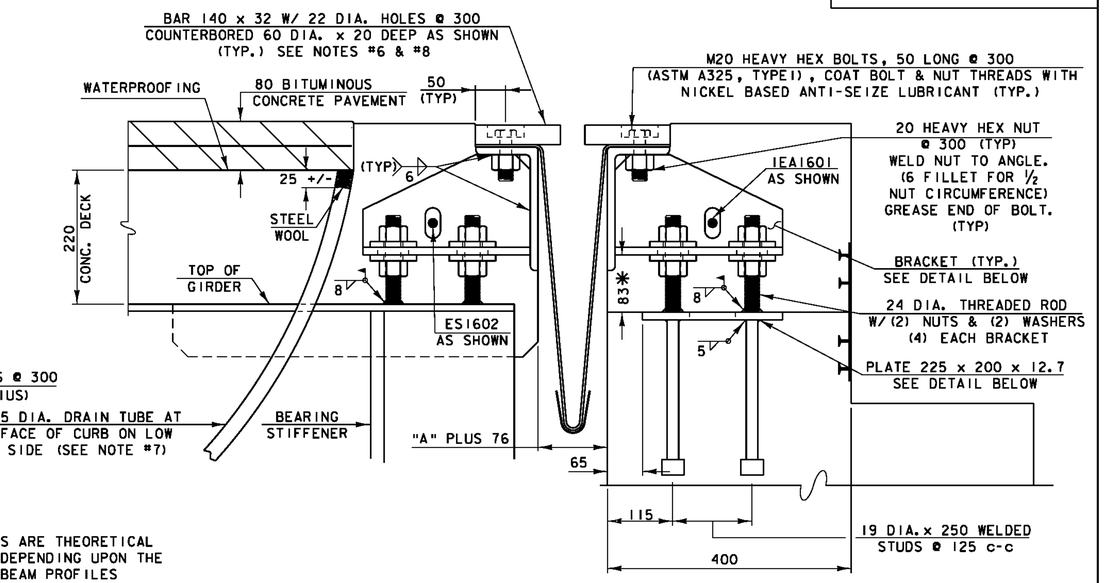
PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039bearing.dgn	
IPARM FILE NAME: de039bear4.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R. YOUNG	DRAWN BY: D. D. BEARD
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. YOUNG
FIXED BEARINGS ABUT #2	SHEET: 60 OF 139

Metric



TYPICAL SECTION BETWEEN GIRDERS

(NORMAL TO ℄ BEARING)
SCALE 1 : 5



* THESE DIMENSIONS ARE THEORETICAL AND MAY CHANGE DEPENDING UPON THE OUTCOME OF THE BEAM PROFILES

TYPICAL SECTION AT GIRDERS

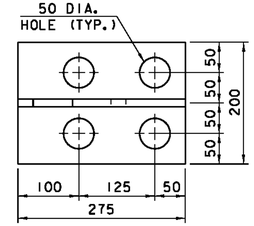
(NORMAL TO ℄ BEARING)
SCALE 1 : 5

P.V.C. WATERSTOP FOR CONSTRUCTION JOINTS

NOT TO SCALE

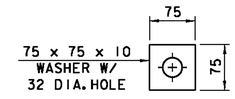
DETAIL "A"

NOT TO SCALE



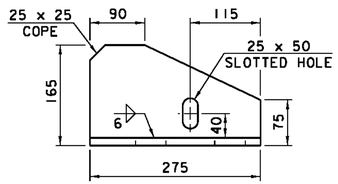
BRACKET PLAN

SCALE = 1 : 5



WASHER FOR BRACKET

SCALE = 1 : 5



BRACKET ELEVATION

SCALE = 1 : 5

ALL PLATES 12 mm THICK

TEMP	"A" DIST.
-15°C	57
- 5°C	51
5°C	46
15°C	41
25°C	36
35°C	30
45°C	25

"A" IS THE FINAL SETTING AFTER ALL DEAD LOADS ARE IN PLACE.

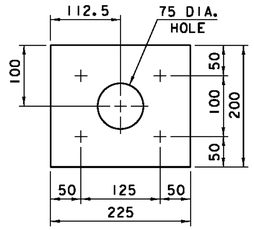


PLATE PLAN

SCALE = 1 : 5
(GALVANIZING OR METALIZING NOT REQUIRED)

SCALE = 1:5

EXPANSION JOINT NOTES

1. DETAILS ON THIS SHEET ARE FOR ITEM 516.11 "BRIDGE EXPANSION JOINT, VERMONT"
2. PREFORMED FABRIC MATERIAL SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE JOINT.
3. THE FINAL FINISH OF THE EXPANSION DEVICE SHALL BE COVERED DURING THE PLACING OF BRIDGE DECK CONCRETE.
4. ALL STEEL COMPONENTS SHALL BE GALVANIZED OR METALIZED AND MEET THE REQUIREMENTS OF SUBSECTION 516.02. THREADED RODS SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 714.04. THE 225 x 200 x 12.7 ANCHOR PLATE AND WELDED STUD ASSEMBLY MAY BE SUPPLIED WITHOUT GALVANIZING OR METALIZING.
5. 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 JOINT.
6. THE 203 x 102 x 12.7 ANGLES SHALL BE FURNISHED AS ONE CONTINUOUS PIECE. THE 140 x 32 BARS EACH SIDE OF THE JOINT SHALL BE PROVIDED IN TWO EQUAL LENGTHS.
7. A 25 DIAMETER PLASTIC DRAIN TUBE (SUBSECTION 740.01) 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 BEAM. STEEL WOOL MATERIAL WILL BE APPROVED BY THE ENGINEER. THE DRAIN TUBES SHALL BE FASTENED TO THE BEAMS USING A METHOD APPROVED BY THE ENGINEER.
8. FILL COUNTERBORED HOLES WITH HOT POURED JOINT SEALER (SUBSECTION 707.04) AFTER BOLT INSTALLATION. PAYMENT FOR THE WORK SHALL BE INCIDENTAL TO ITEM 516.11 "BRIDGE EXPANSION JOINT, VERMONT".
9. PAYMENT FOR THE P.V.C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CONCRETE CLASS B". OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL BY THE STRUCTURES ENGINEER.
10. A DRIP BEAD OF 6 x 180 STRIP OF PREFORMED FABRIC MATERIAL SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH USING AN ADHESIVE APPROVED BY THE MANUFACTURER. THE DRIP BEAD SHALL BE APPLIED 25 FROM THE DOWNSPOUT END OF THE TROUGH.
11. THE FABRIC TROUGH SHALL BE THOROUGHLY CLEANED AND FLUSHED AFTER PAVING OPERATION.
12. PRIOR TO GALVANIZING OR METALIZING, ALL CORNERS AND EDGES OF STEEL PLATES, SHAPES, ETC., SHALL BE GROUND TO A 1.6 RADIUS.
13. TEMPORARY SHIPPING ATTACHMENTS SHALL BE ATTACHED BY BOLTING: WELDING WILL NOT BE PERMITTED.
14. PROJECTING THREADS OF THE M20 BOLTS IN THE JOINT SHALL BE GREASED BY THE CONTRACTOR PRIOR TO PLACING ADJACENT CONCRETE. THIS WILL FACILITATE BOLT REMOVAL IF REQUIRED IN THE FUTURE.

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039joint.dgn	
IPARM FILE NAME: de039jointi.i	PLOT DATE: 08-APR-2010
DESIGNED BY: W. B. SYMONDS	DRAWN BY: W. B. SYMONDS
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. S. YOUNG
EXPANSION JOINT TYPICAL SECTION	SHEET: 61 OF 139

Metric

STATIONING
VT 107

CAST-IN-PLACE CONCRETE CURB, TYPE B (TYP)

19 DIA. x 250 STUDS WELDED @ 600 c-c ALT. W/ 20 DIA. BENT STUDS WELDED @ 600 c-c (TYP)

~ APPROACH SLAB ~

2250 ℄ — ℄ (TYP)

19 DIA. x 250 STUDS SPACED @ 300 AS SHOWN (TYP)

SEE DETAIL "A"

BRACKET (TYP) SEE SHEET 61 FOR DETAILS

TROUGH TO EXTEND 1000 FROM END OF JOINT (THIS END ONLY)

~ APPROACH SLAB BRACKET ~

~ BACKWALL ~

MSE WALL

℄ JOINT

℄ BEARING

~ ABUTMENT #1 ~

1000

300 X 450 SPECIAL HOPPER (THIS END ONLY)

SEE FOLDED TROUGH DETAIL THIS SHEET (THIS END ONLY)

G5 G4 G3 G2 G1

~ BRIDGE DECK ~

FASCIA

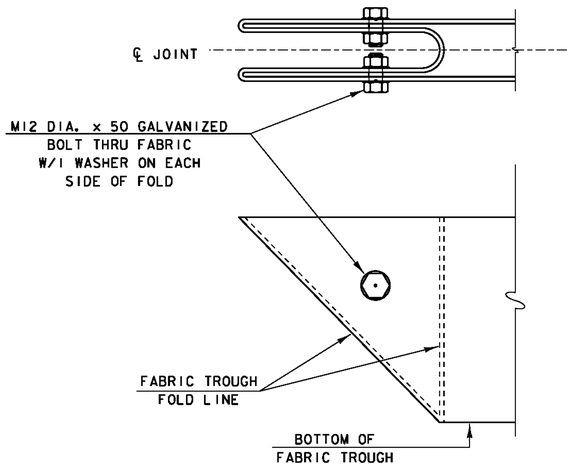
22 DIA. HOLES @ 300 c-c COUNTERBORED 60 DIA. x 20 DEEP (ADJUST HOLE SPACING FOR BRACKET CLEARANCE)

FACE OF CURB

EXPANSION JOINT @ ABUTMENT #1

0 1 2

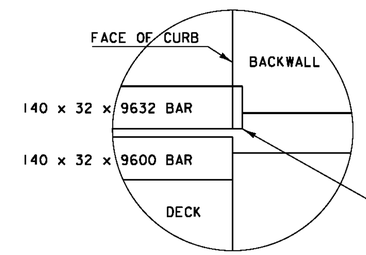
SCALE = 1:20



FOLDED TROUGH END DETAILS

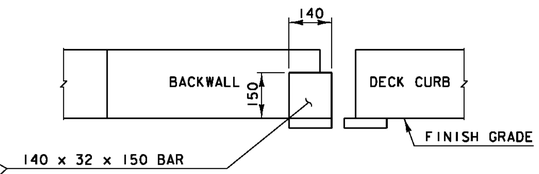
NOT TO SCALE

NOTE: TROUGH FOLDED ON HIGH SIDE OF BRIDGE ONLY



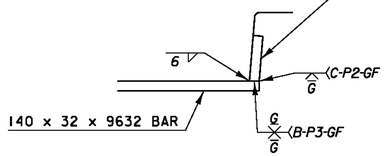
DETAIL "A"

N. T. S.



VIEW "A-A"

N. T. S.

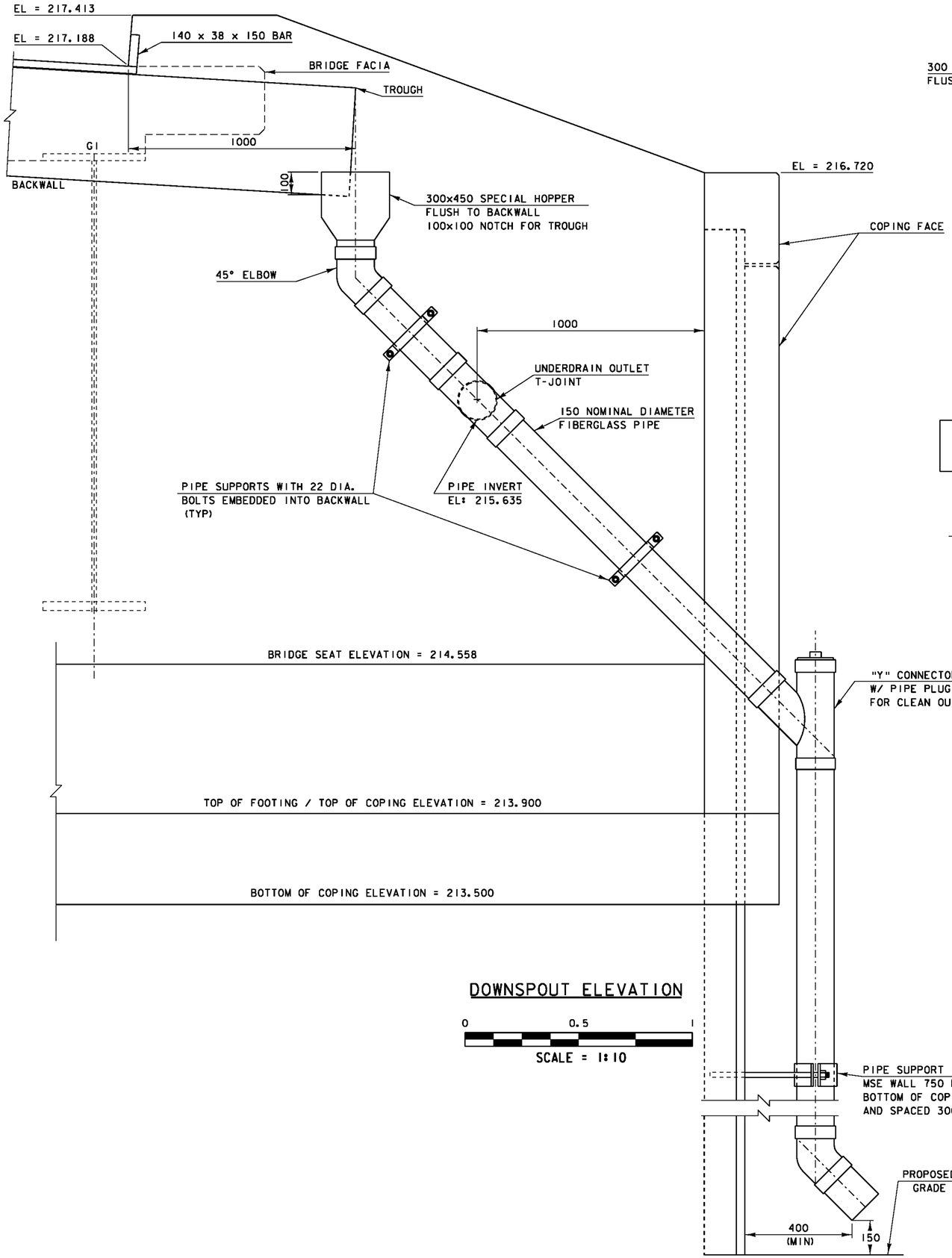


END BAR DETAIL

N. T. S.

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039joint.dgn	
IPARM FILE NAME: de039joint2.i	PLOT DATE: 08-APR-2010
DESIGNED BY: W. B. SYMONDS	DRAWN BY: T. G. ANDERSON
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. S. YOUNG
EXPANSION JOINT LAYOUT	SHEET: 62 OF 139

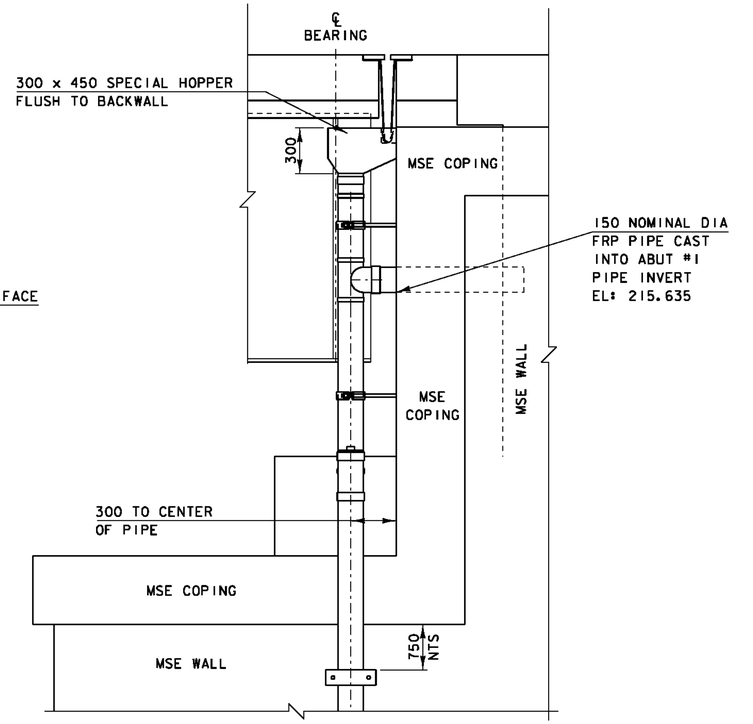
Metric



DOWNSPOUT ELEVATION

0 0.5 1

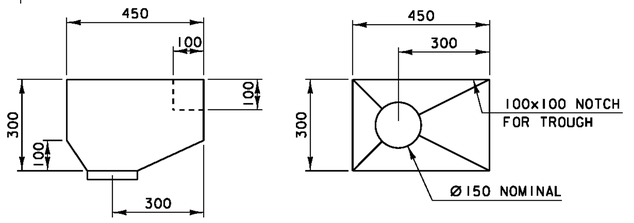
SCALE = 1:10



END SECTION

0 1 2

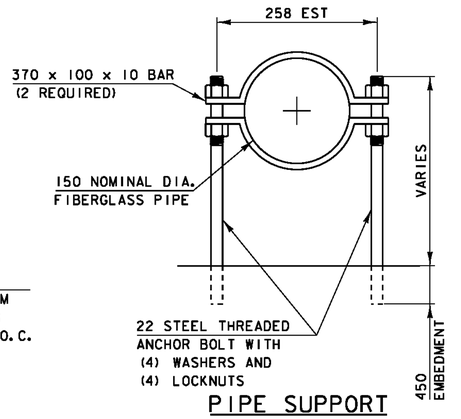
SCALE = 1:20



SPECIAL HOPPER DETAIL

0 0.5 1

SCALE = 1:10



PIPE SUPPORT EXTENDED ATTACHMENT

0 0.25 0.5

SCALE = 1:5

DOWNSPOUT NOTES

1. ALL PLATES, BARS. AND ANGLES SHALL CONFORM TO AASHTO M 270M/M 270 GRADE 250 AND SHALL BE GALVANIZED PER AASHTO M 111M/M 111.

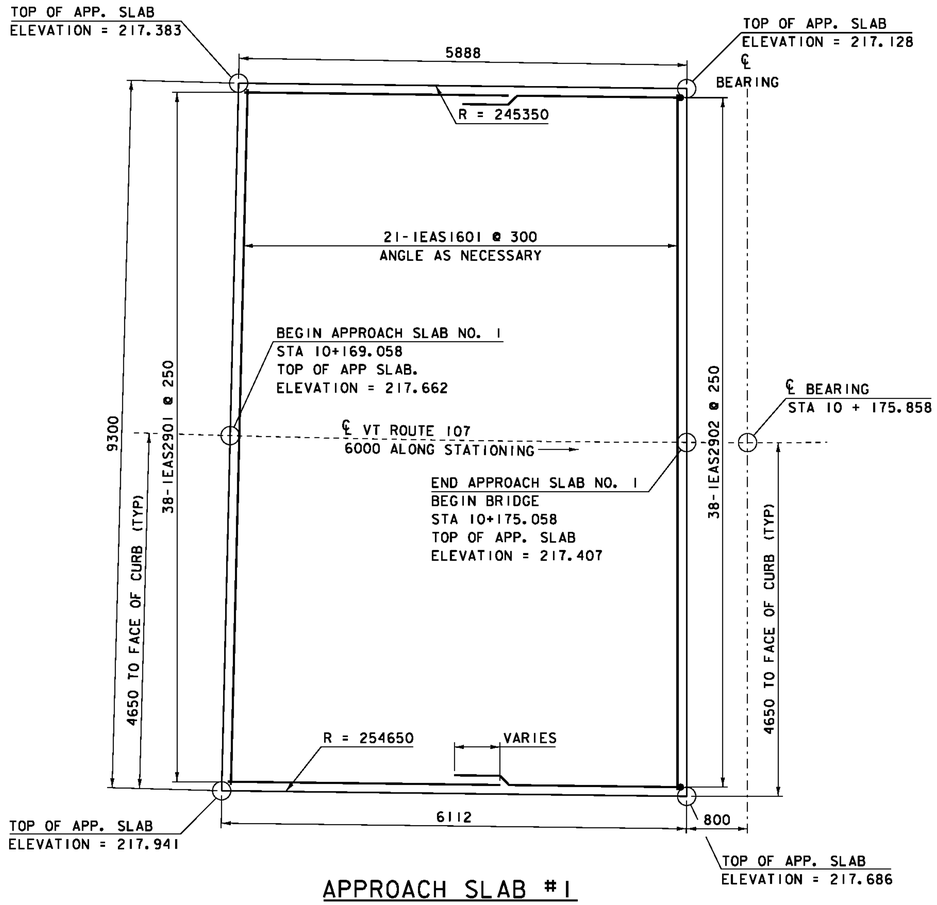
2. ALL BOLTS AND RELATED HARDWARE SHALL BE ASTM A-307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232M/M 232.

3. SPECIAL HOPPER, PIPE, BARS, ANCHOR BOLTS, AND PIPE JOINTS SHALL BE PAID FOR UNDER THE ITEM 900.640 "SPECIAL PROVISION (BRIDGE FIBERGLASS DRAIN SYSTEM)"

4. REINFORCING STEEL IN MSE WALL PANELS SHALL BE LOCATED BEFORE INSTALLING EXPANSION ANCHORS FOR PIPE, ANCHORS SHALL BE LOCATED 25 MIN FROM PANEL REINFORCEMENT.

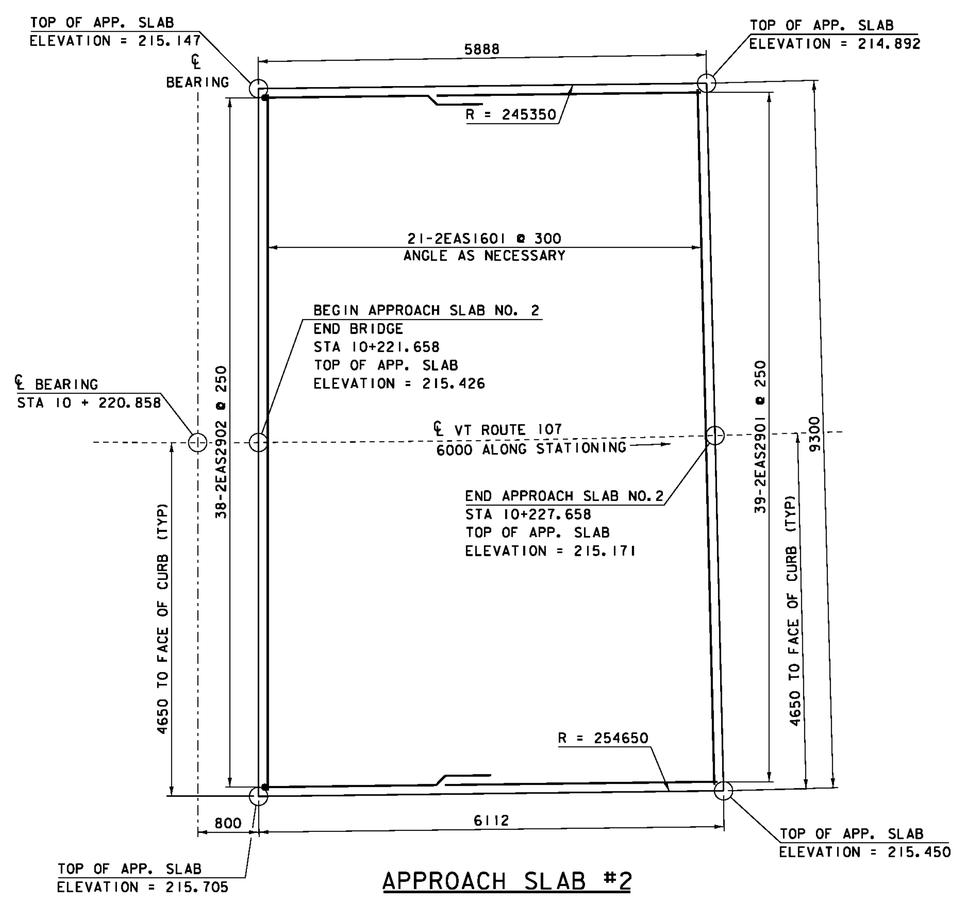
5. SEE SPECIAL PROVISIONS FOR MORE INFORMATION.

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039dsd.dgn	
IPARM FILE NAME: de039dsd.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R. S. YOUNG	DRAWN BY: D. D. BEARD
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. S. YOUNG
DOWNSPOUT DETAILS	SHEET: 63 OF 139



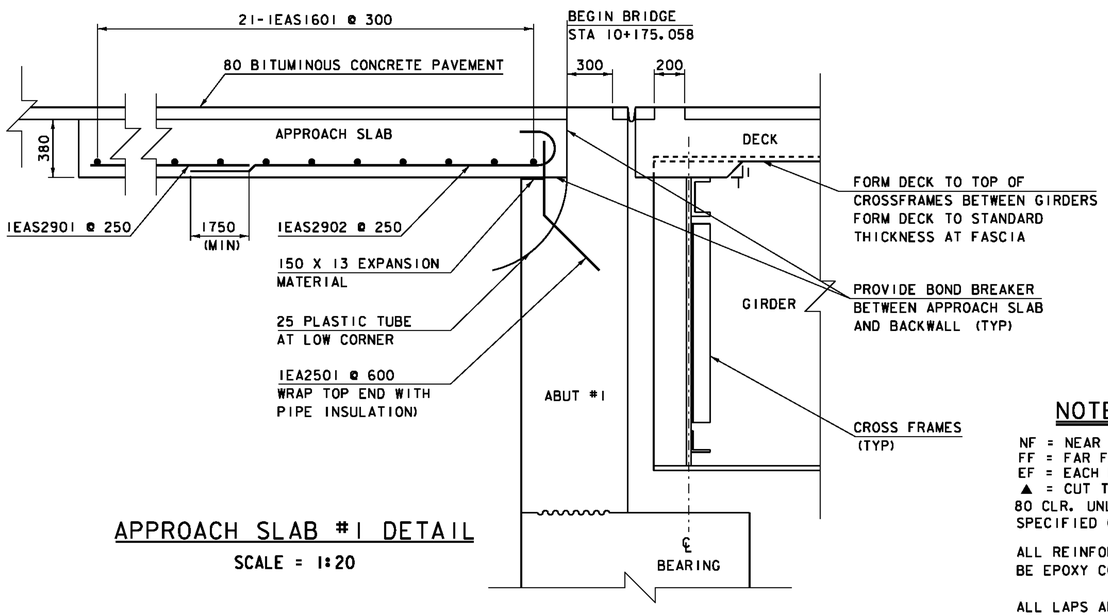
APPROACH SLAB #1

SCALE = 1:40



APPROACH SLAB #2

SCALE = 1:40



APPROACH SLAB #1 DETAIL

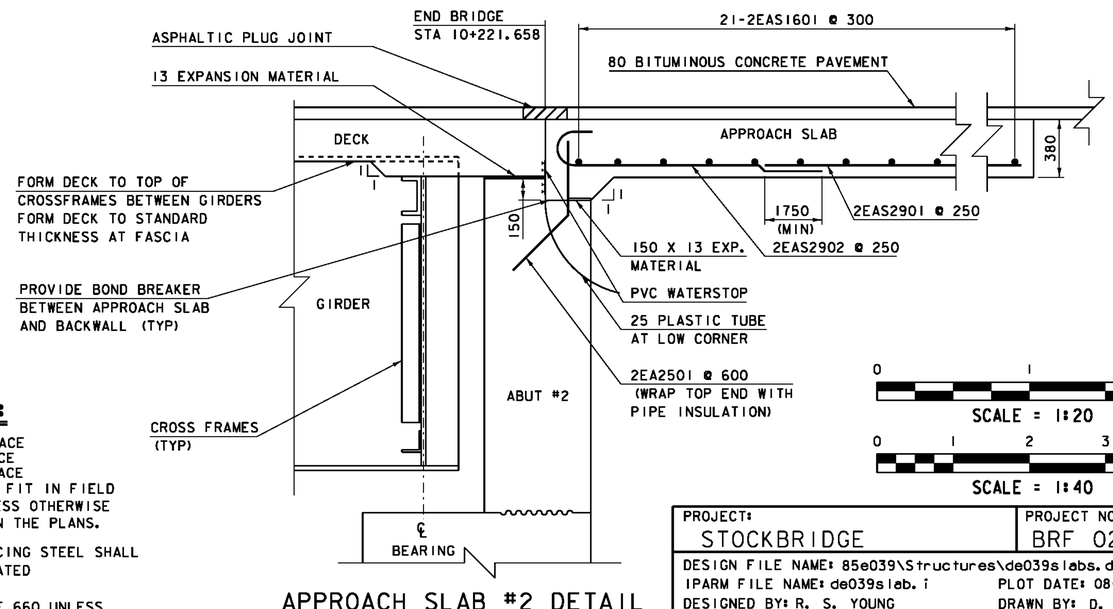
SCALE = 1:20

NOTE:

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

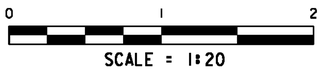
ALL REINFORCING STEEL SHALL BE EPOXY COATED

ALL LAPS ARE 660 UNLESS OTHERWISE SPECIFIED BY PLANS

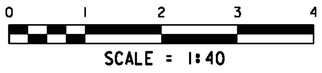


APPROACH SLAB #2 DETAIL

SCALE = 1:20



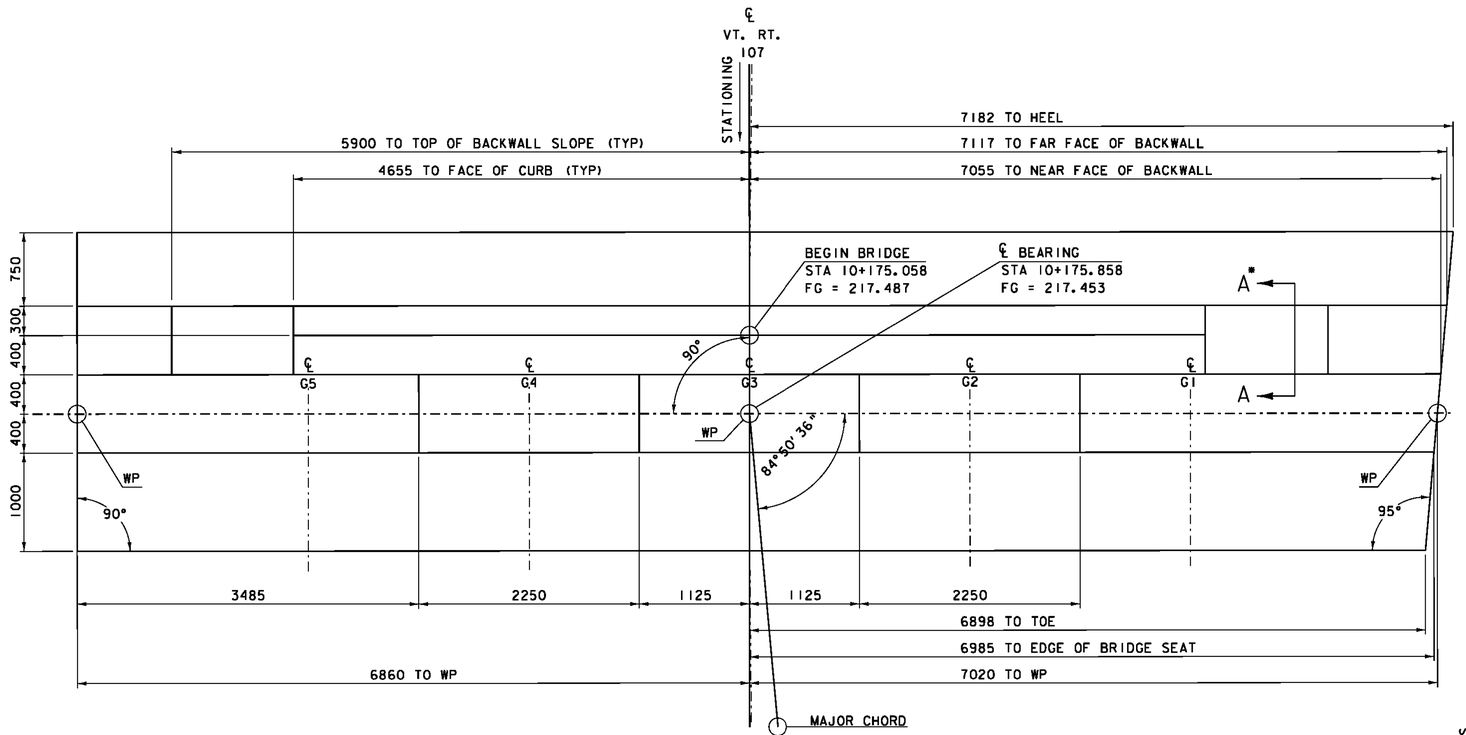
SCALE = 1:20



SCALE = 1:40

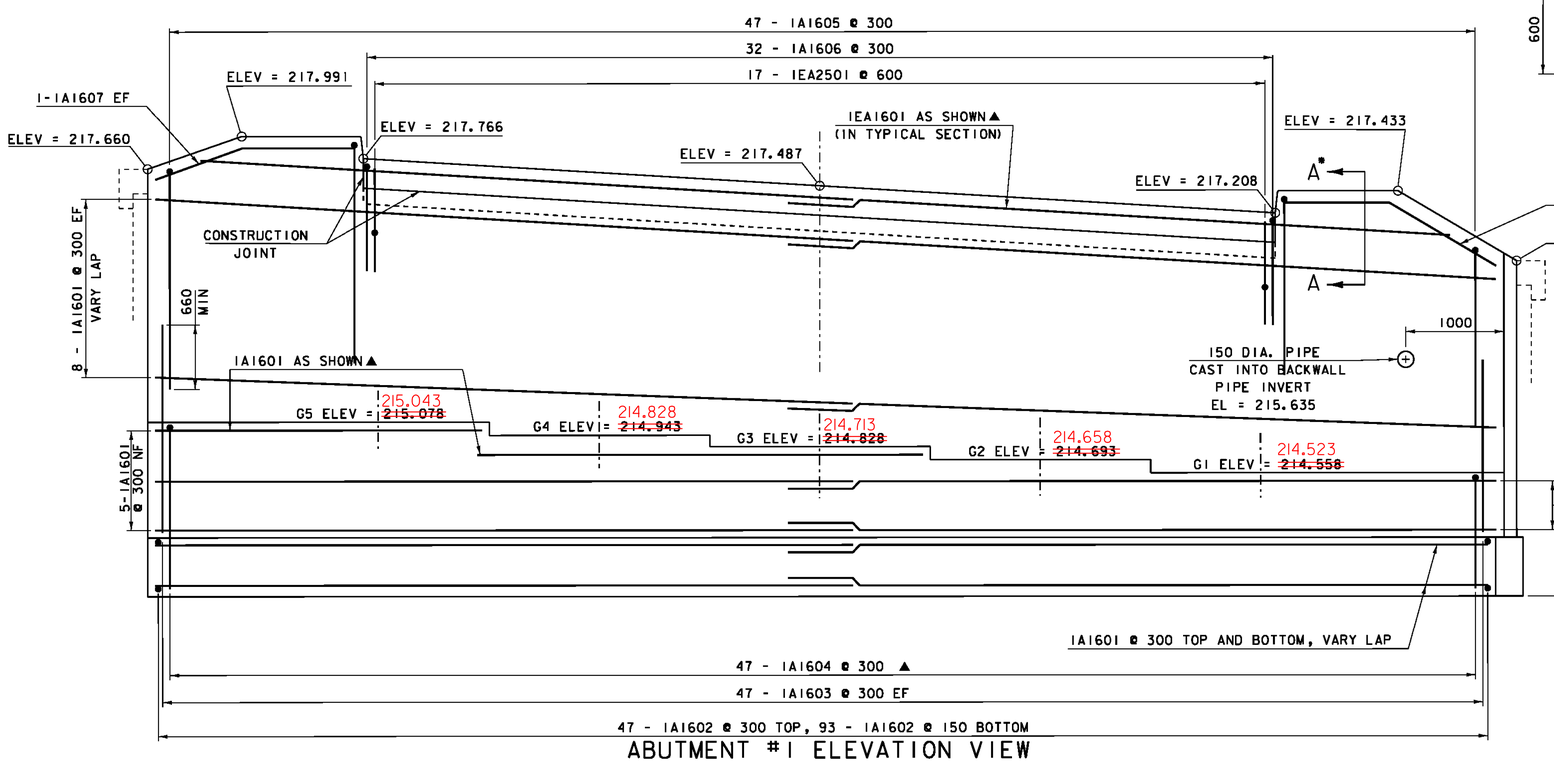
PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039slabs.dgn	
IPARM FILE NAME: de039slab.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R. S. YOUNG	DRAWN BY: D. D. BEARD
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. S. YOUNG
APPROACH SLAB DETAILS	SHEET: 64 OF 139

Metric



ABUTMENT #1 PLAN VIEW

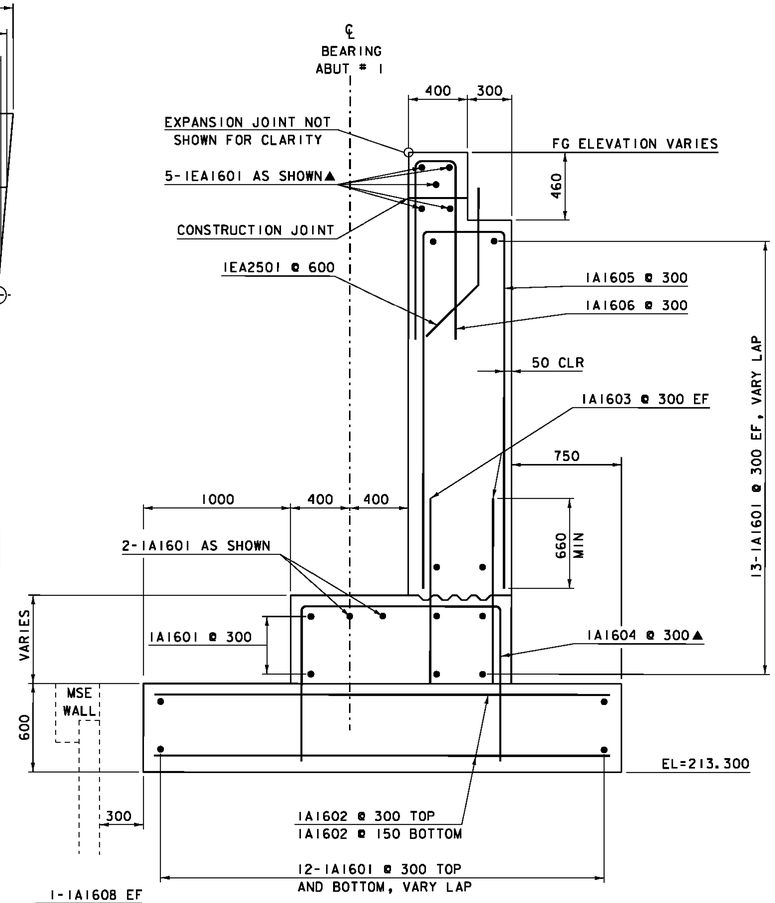
SCALE = 1:30



ABUTMENT #1 ELEVATION VIEW

SCALE = 1:30

* SECTION A - A IS SHOWN ON FOOTING PLAN SHEET 67



ABUTMENT #1 TYPICAL SECTION VIEW

SCALE = 1:20

NOTE:

BRIDGE SEAT ELEVATIONS ARE BASED ON AN ASSUMED DEPTH OF THE BEARING DEVICE. THESE ELEVATIONS SHALL BE CONFIRMED ONCE FABRICATION DRAWINGS ARE APPROVED AND PRIOR TO PLACING CONCRETE ABOVE THE TOP OF FOOTING ELEVATION.

0 1 2

SCALE = 1:20

0 1 2 3

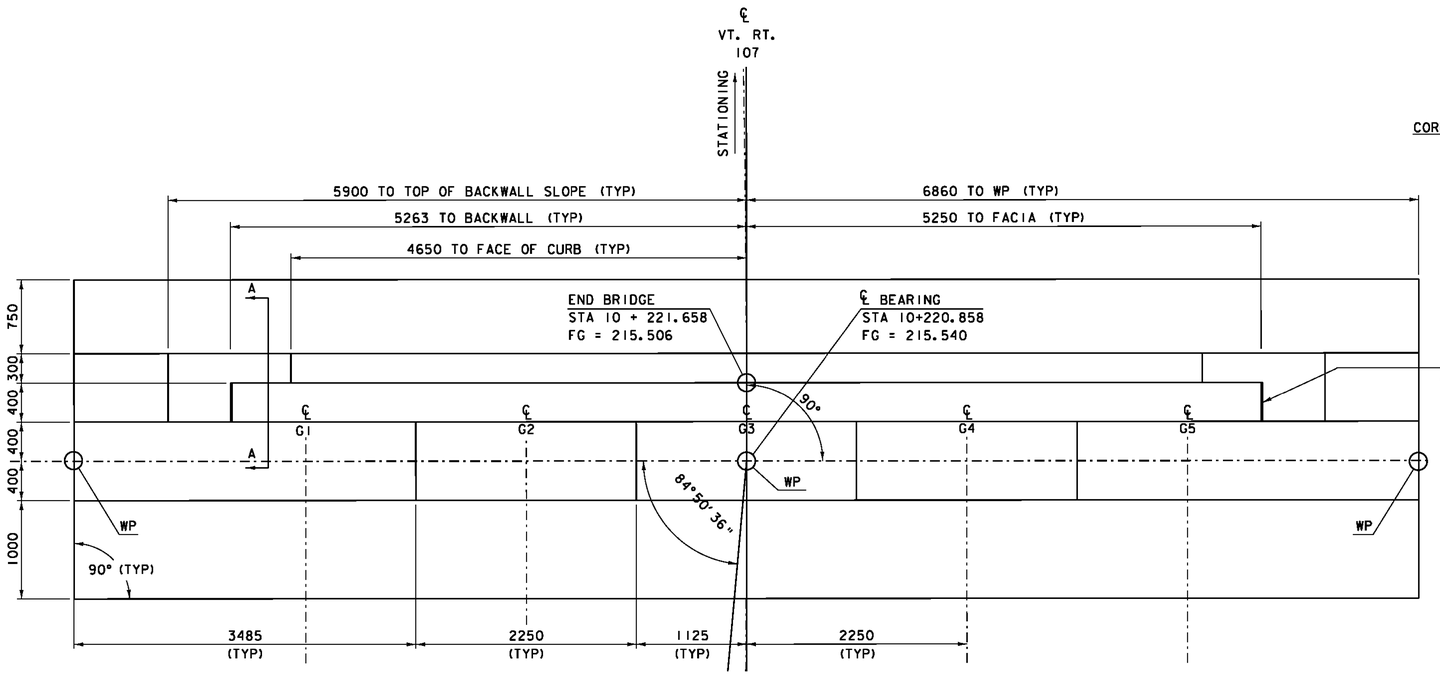
SCALE = 1:30

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
80 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS
ALL LAPS SHALL BE 660 UNLESS OTHERWISE NOTED

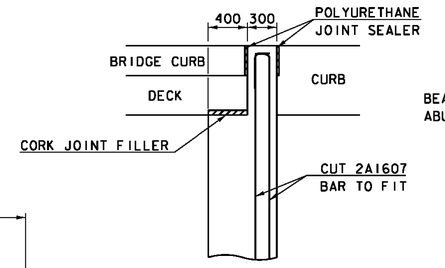
PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1 (20)
DESIGN FILE NAME: 85e039\Structures\de039_sub.dgn	
IPARM FILE NAME: de039abut1.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R. YOUNG	DRAWN BY: D. D. BEARD
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. YOUNG
ABUTMENT # 1	SHEET: 65 OF 139

Metric



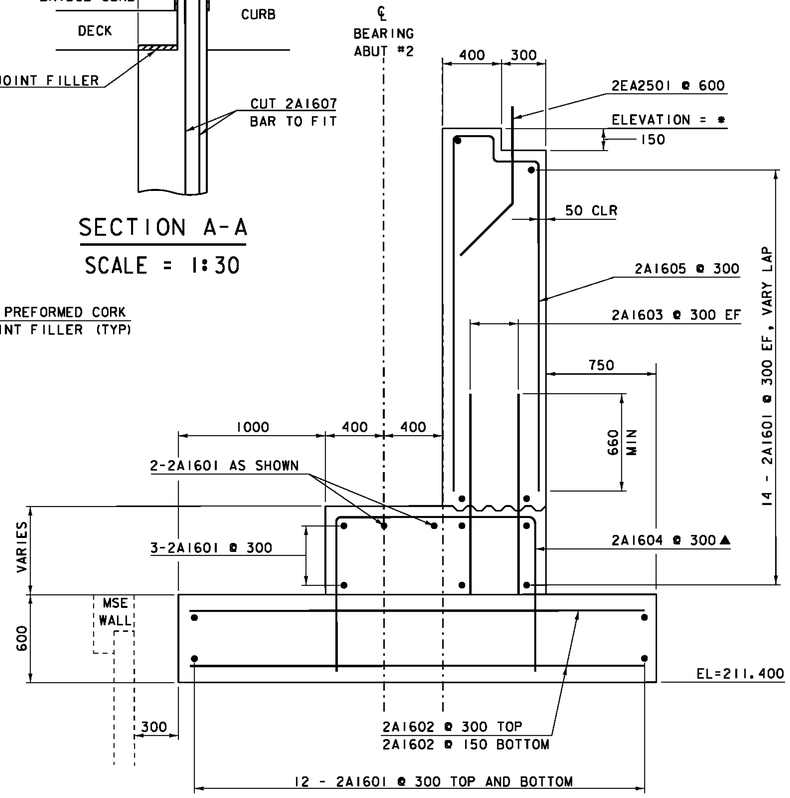
ABUTMENT #2 PLAN VIEW

SCALE = 1:30



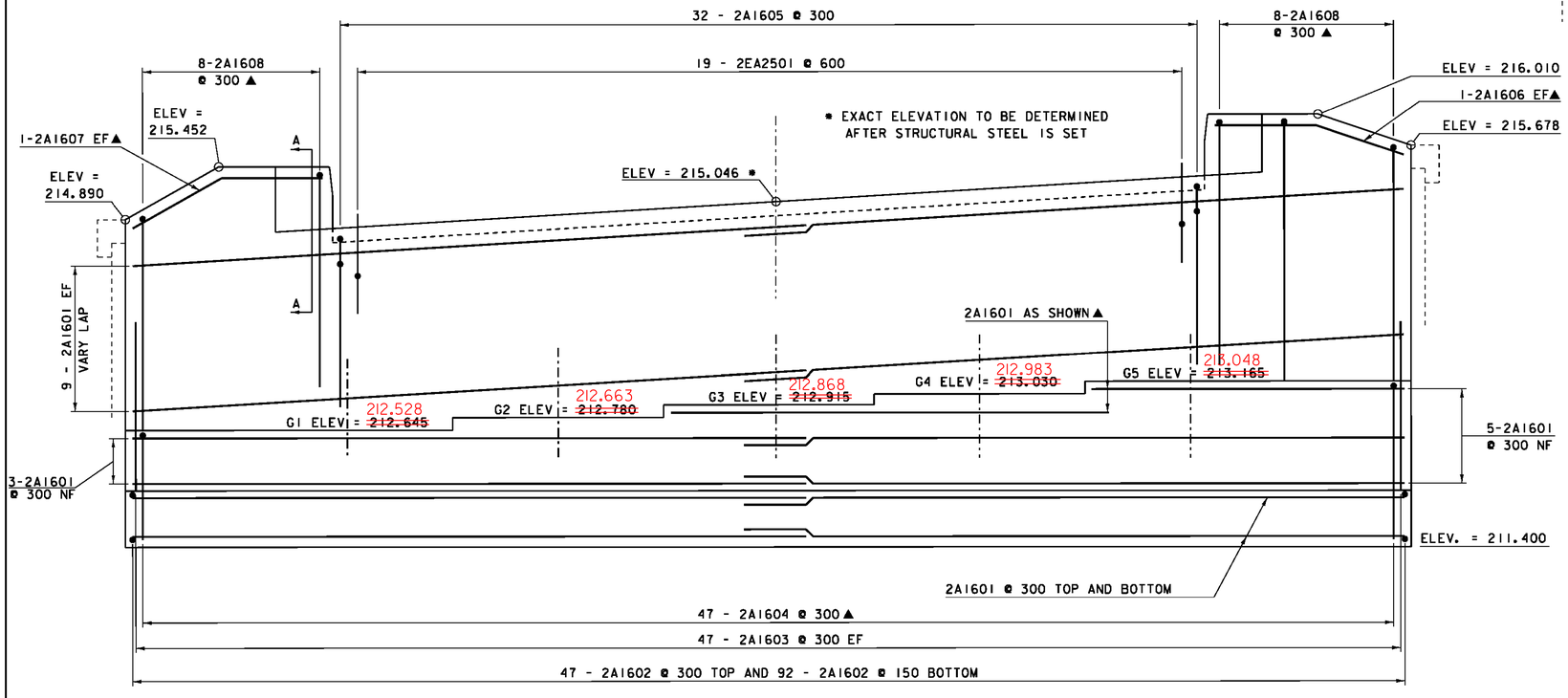
SECTION A-A

SCALE = 1:30



ABUTMENT #2 TYPICAL SECTION VIEW

SCALE = 1:20



ABUTMENT #2 ELEVATION VIEW

SCALE = 1:30

NOTE:

BRIDGE SEAT ELEVATIONS ARE BASED ON AN ASSUMED DEPTH OF THE BEARING DEVICE. THESE ELEVATIONS SHALL BE CONFIRMED ONCE FABRICATION DRAWINGS ARE APPROVED AND PRIOR TO PLACING CONCRETE ABOVE THE TOP OF FOOTING ELEVATION.

0 1 2

SCALE = 1:20

0 1 2 3

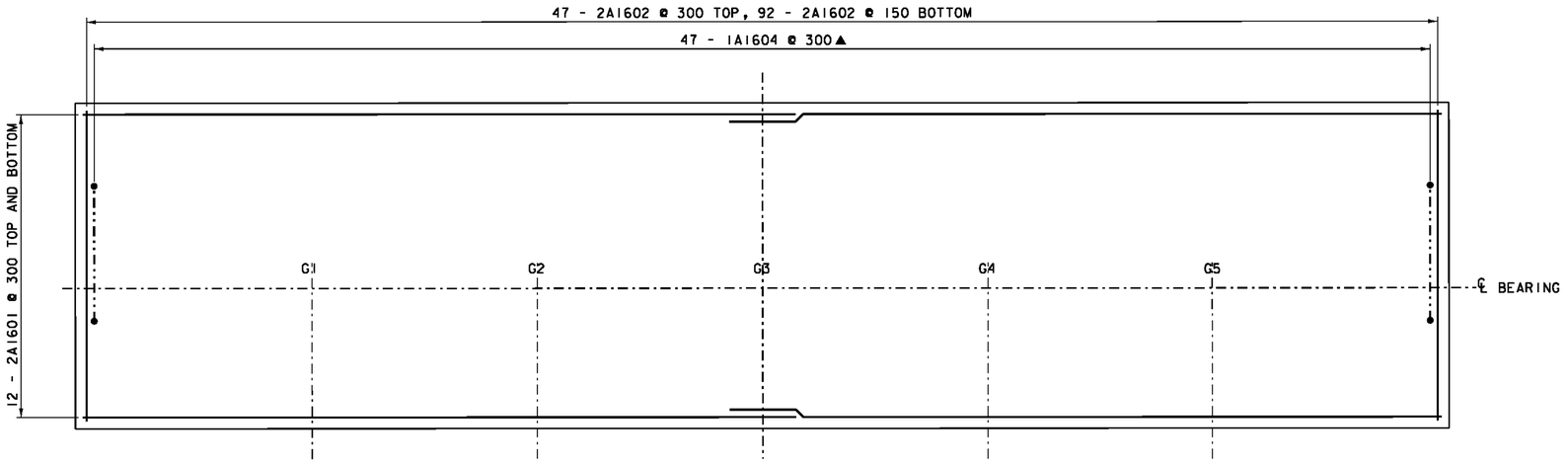
SCALE = 1:30

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
80 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS
ALL LAPS SHALL BE 660 UNLESS OTHERWISE NOTED

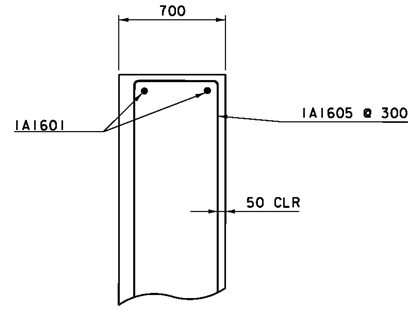
PROJECT:	PROJECT NO.:
STOCKBRIDGE	BRF 022-1 (20)

DESIGN FILE NAME: 85e039\Structures\de039.sub.dgn
IPARM FILE NAME: de039abut2.i — PLOT DATE: 08-APR-2010
DESIGNED BY: R. YOUNG — DRAWN BY: D. D. BEARD
SQUAD LEADER: C. P. WILLIAMS — CHECKED BY: R. YOUNG
ABUTMENT # 2 — SHEET: 66 OF 139



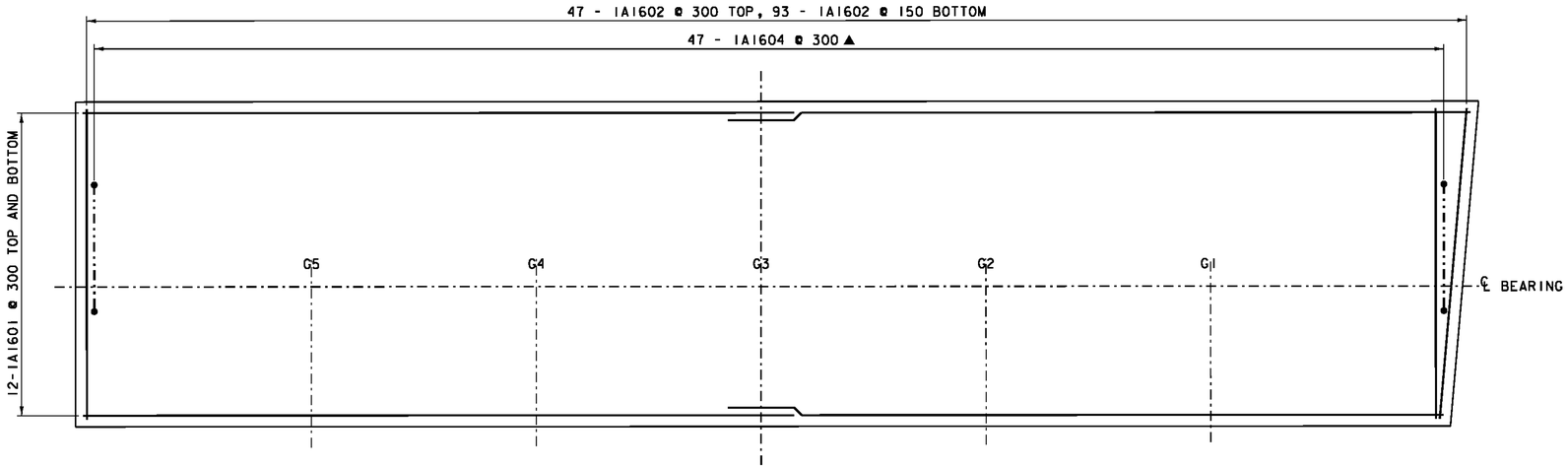
PLAN VIEW ABUTMENT #2 FOOTING

SCALE = 1:30



SECTION A-A

SCALE = 1:20



PLAN VIEW ABUTMENT #1 FOOTING

SCALE = 1:30

0 1 2

SCALE = 1:20

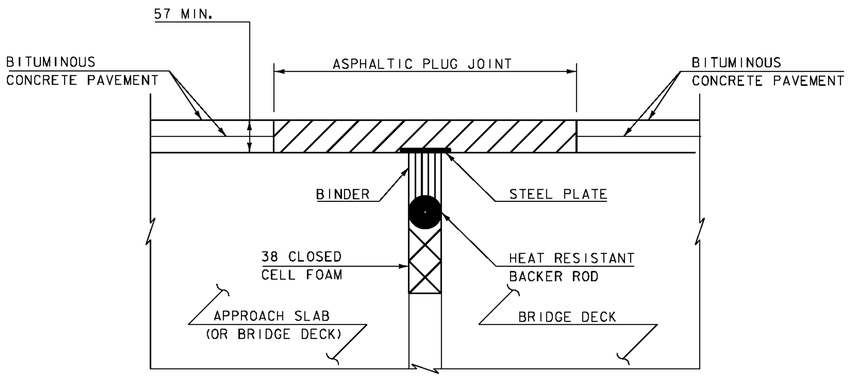
0 1 2 3

SCALE = 1:30

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
80 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS
ALL LAPS SHALL BE 660 UNLESS OTHERWISE NOTED

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039.sub.dgn	
IPARM FILE NAME: de039footing.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R. YOUNG	DRAWN BY: D. D. BEARD
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. YOUNG
FOOTING PLAN	SHEET: 67 OF 139



ASPHALTIC PLUG-TYPE JOINT DETAIL

(NOT TO SCALE)

ASPHALTIC PLUG JOINT NOTES

INSTALLATION

A. LOCATE THE JOINT CENTRALLY OVER THE DECK OVERLAY EXPANSION GAP OR FIXED JOINT MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.

B. REMOVE THE BITUMINOUS CONCRETE PAVEMENT FULL DEPTH AS SHOWN ON THE PLANS. THE PAVEMENT SHALL BE DRY AND SAW CUT TO THE LIMITS REQUIRED TO PLACE THE JOINT. A PNEUMATIC HAMMER AND CHISEL MAY BE USED ADJACENT TO THE CURB ONLY WHEN SAW CUTTING IS NOT POSSIBLE.

C. BLAST CLEAN THE JOINT AREA OF DEBRIS, ASPHALT AND SHEET MEMBRANE. THOROUGHLY DRY THE JOINT AREA WITH COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.

D. REPAIR SPALLED AND DEFECTIVE CONCRETE WITH AN APPROVED MATERIAL AS AGREED UPON BY THE ENGINEER.

E. THE STEEL PLATE, BINDER, BACKER ROD, AND CLOSED CELL FOAM MAY BE ELIMINATED WHEN LOCATED AT A FIXED JOINT.

F. PLACE PROPERLY SIZED HEAT RESISTANT BACKER ROD IN THE MOVEMENT GAP ALLOWING FOR 1"(25) +/- OF BINDER ABOVE THE ROD.

G. HEAT AND PLACE THE BINDER MATERIAL AS RECOMMENDED BY THE MANUFACTURER.

H. PLACE 1/4"(6) THICK BY 8"(200) WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER. THE STEEL PLATES MAY BE OMITTED WHERE THE ENGINEER DETERMINES THAT THE APPROACH SLAB OR BRIDGE DECK WILL PROVIDE INADEQUATE SUPPORT AND WHERE VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.

I. HEAT AND MIX THE BINDER MATERIAL AND AGGREGATE AS RECOMMENDED BY THE MANUFACTURER.

J. INSTALLATION OF MATERIAL, COMPACTION, AND TOP COATING SHALL BE AS RECOMMENDED BY THE MANUFACTURER.

K. IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.

L. ONCE THE JOINT REACHES 82 DEG C(180 DEG F)+/-, WATER MAY BE USED TO EXPEDITE THE COOLING PROCESS.

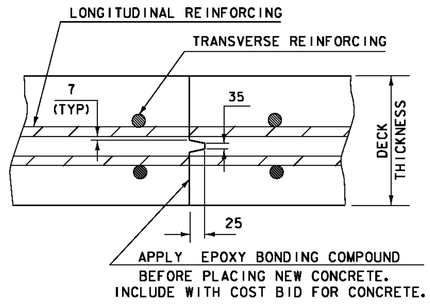
M. PROTECT JOINT FROM TRAFFIC UNTIL THE MATERIAL HAS COOLED TO 51 DEG C (125 DEG F) +/-.

WEATHER LIMITATIONS. (APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL OR AS RECOMMENDED BY THE MANUFACTURER):

A. THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING.

B. THE ROAD SURFACE IS DRY.

C. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.



TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS

CONCRETE CURB JOINT NOTES

1. CONCRETE CURBS MAY BE PLACED IN ONE CONTINUOUS OPERATION. IF AN APPROVED SHRINKAGE REDUCING ADMIXTURE LISTED IN THE SPECIAL PROVISIONS IS USED WITH THE CONCRETE MIX DESIGN. PAYMENT FOR THE SHRINKAGE REDUCING ADMIXTURE WILL BE INCIDENTAL TO THE BRIDGE CURB CONCRETE ITEM.

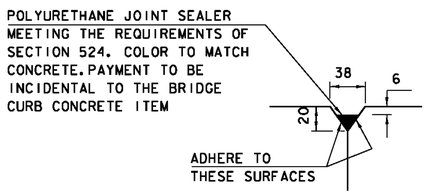
2. IF THE CONTRACTOR CHOOSES NOT TO USE AN APPROVED SHRINKAGE REDUCING ADMIXTURE, THE CURBS SHALL BE CONSTRUCTED WITH CONSTRUCTION JOINTS SPACED AT A MAXIMUM OF 4500 MM CENTER TO CENTER AND 600 MM MINIMUM FROM THE CENTER OF NEAREST BRIDGE RAILING POST.

3. ON MULTI-SPAN CONTINUOUS SUPERSTRUCTURES, REGARDLESS OF WHETHER APPROVED SHRINKAGE REDUCING ADMIXTURE IS USED, CURB JOINTS SHALL BE LOCATED OVER THE CENTERLINE OF PIERS AND 2100 EACH SIDE OF THE CENTERLINE OF EACH PIER.

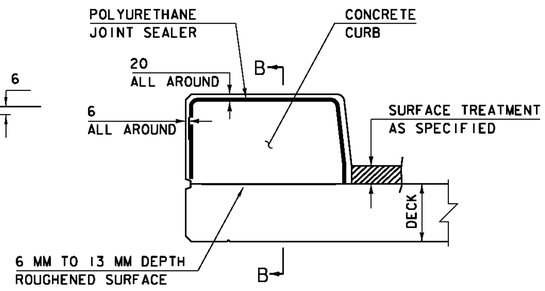
4. WHEN CURB JOINTS ARE USED THE CURBS SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOUR DELAY BETWEEN ADJACENT PLACEMENTS.

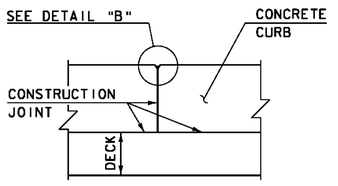
5. LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THROUGH CURB CONSTRUCTION JOINTS. CURB STIRRUP BARS SHALL BE TURNED AS NECESSARY TO MAINTAIN COVER IN THE FLARED CURB ENDS.

6. THE JOINT SPACING AND DETAILS SHOWN SHALL APPLY TO SIDEWALKS WHEN SHOWN IN THE PLANS.



DETAIL "B"
NOT TO SCALE



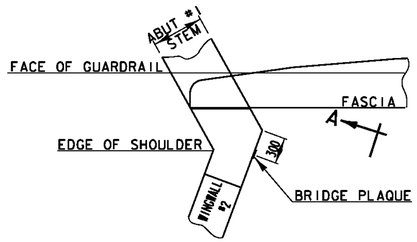


SECTION B - B
NOT TO SCALE

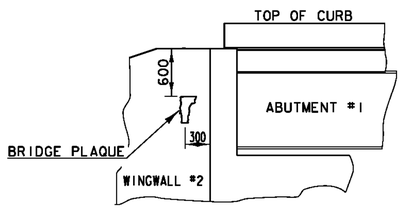
CONCRETE CURB JOINT SECTION

NOT TO SCALE

1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION



PLAN

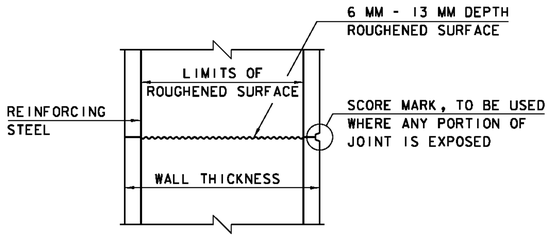


VIEW "A - A"

LOCATE BRIDGE PLAQUE

(NOT TO SCALE)

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.

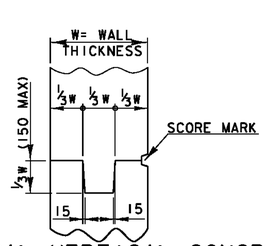


TYPICAL HORIZONTAL CONSTRUCTION JOINT

(NOT TO SCALE)

1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.

2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



TYPICAL VERTICAL CONCRETE CONSTRUCTION JOINT

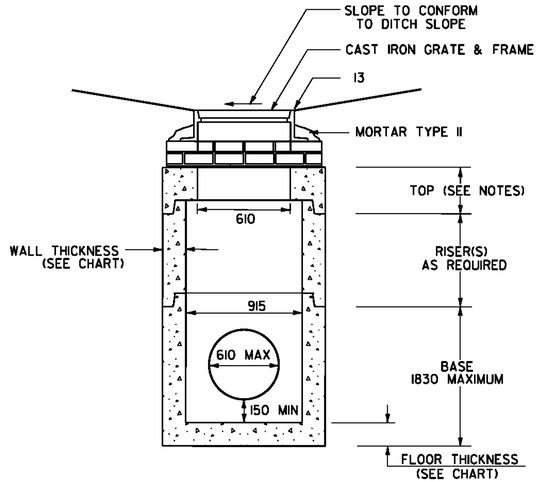
(NOT TO SCALE)

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039joint.dgn	
IPARM FILE NAME: de039mscjntdet.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R. YOUNG	DRAWN BY: D.D.BEARD
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R.S.YOUNG
MISC. DETAIL SHEET	SHEET: 68 OF 139

Metric

SIZING CHART

DIAMETER	WALL THICKNESS	FLOOR THICKNESS
1220 OR SMALLER	130	150
1520	150	200
1830	175	200
2130	200	250
2440	230	250



PRECAST DROP INLET IN DITCH

N. T. S.

NOTES

1. ALL PRECAST CONCRETE DROP INLETS AND CATCH BASINS SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH SUBSECTION 705.04.

2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL INVERT ELEVATIONS, PIPE SIZES AND LOCATIONS SHOWN PRIOR TO ORDERING THE PRECAST COMPONENTS.

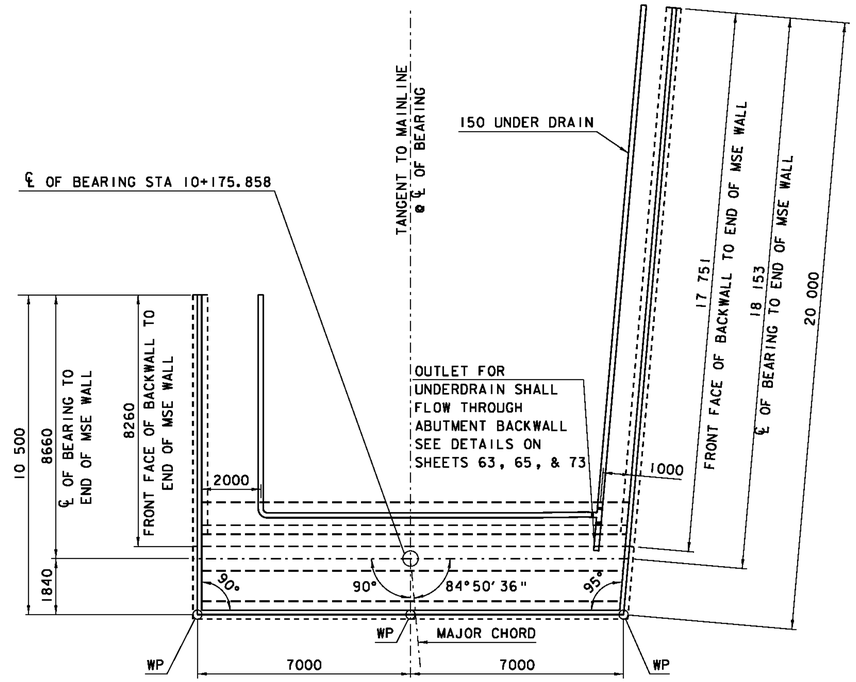
3. SEE STANDARD D-16 FOR CAST IRON FRAME AND GRATE DETAILS.

4. THE TOP SECTIONS MAY BE EITHER THE FLAT TOPS AS SHOWN OR CONE SECTIONS. IF CONE SECTIONS ARE USED THEY MAY EITHER BE CONCENTRIC OR ECCENTRIC. PIPES ARE NOT TO ENTER CONE SECTIONS.

5. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT 100 mm HIGH AT AN ANGLE OF 11 DEGREES CENTERED IN THE WIDTH OF THE JOINT. ALL SECTIONS SHALL BE ASSEMBLED USING AN APPROVED FLEXIBLE SEALANT.

6. ALL SECTIONS WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 300 OF OUTSIDE SURFACE BETWEEN HOLES. NO MORE THAN 75% OF A HORIZONTAL CROSS SECTION SHALL BE HOLES. HOLES SHALL BE NO CLOSER THAN 75 TO A JOINT.

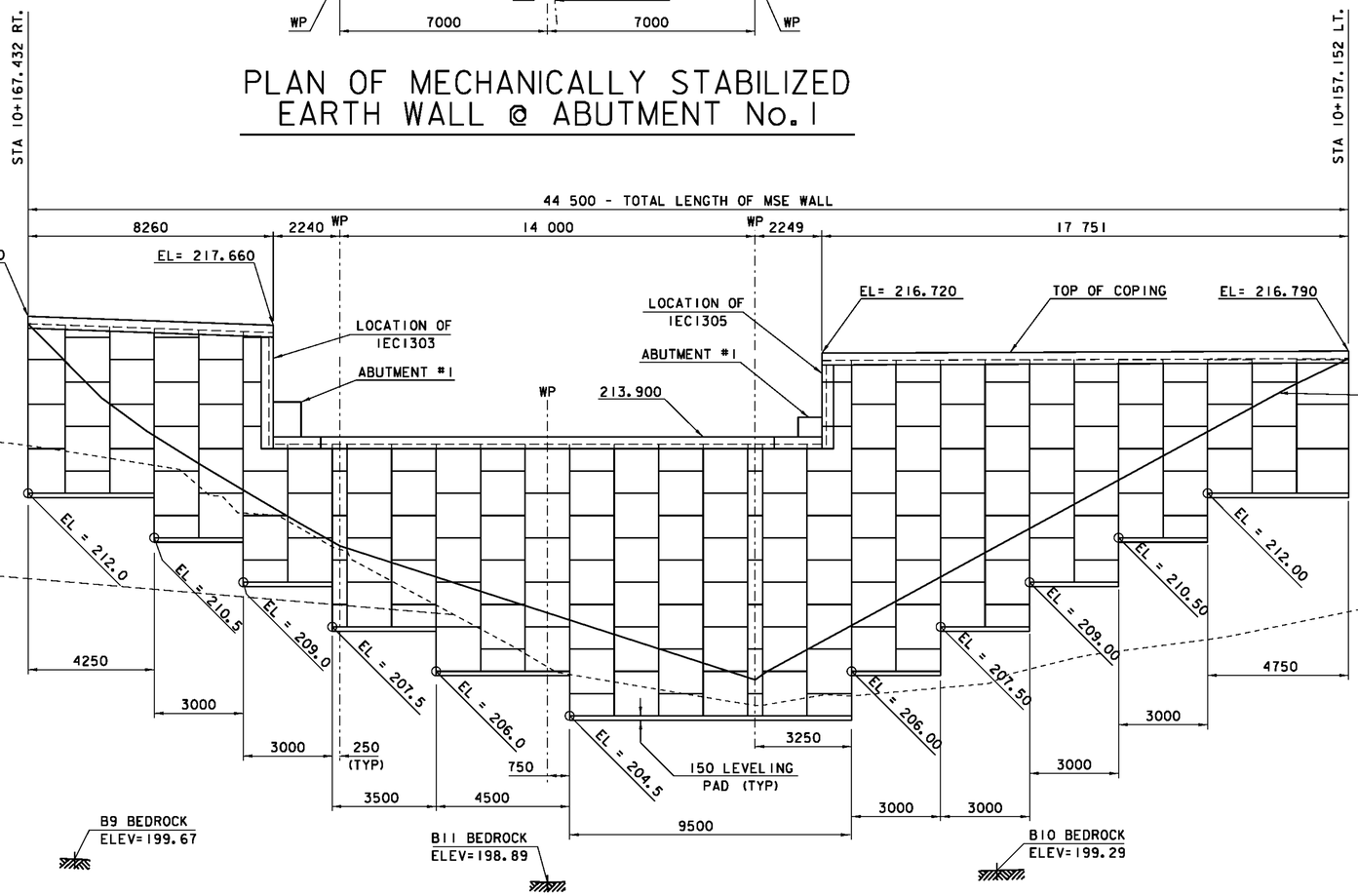
PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1 (20)
DESIGN FILE NAME: 85e039\Structures\de039dsd.dgn	
IPARM FILE NAME: de039scupper.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R.S. YOUNG	DRAWN BY: R.S. YOUNG
SQUAD LEADER: C.P. WILLIAMS	CHECKED BY:
PRECAST DROP INLET DETAILS	SHEET: 69 OF 139



PLAN OF MECHANICALLY STABILIZED EARTH WALL @ ABUTMENT No. 1

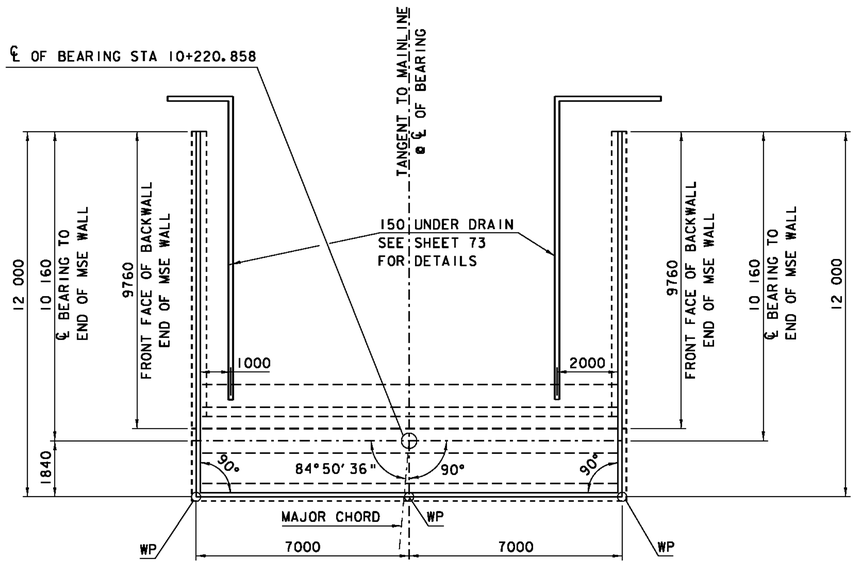
NOTES

1. THE ELEVATIONS SHOWN ARE TO THE TOP OF THE LEVELING PAD AND THE BOTTOM OF THE MSE WALL. THE LEVELING PAD SHALL BE INSTALLED LEVEL.
2. MSE WALL PANELS ARE SHOWN NOMINALLY SIZED AT 1500 X 1500.
3. SLIP JOINTS ARE NOT SHOWN ON THE ELEVATION, BUT ARE REQUIRED AT ALL WALL INTERSECTIONS THAT FORM ANGLES. ADDITIONAL SLIP JOINTS SHALL BE PLACED AS REQUIRED BY THE MSE WALL SUPPLIER.
4. WP INDICATES MSE WALL WORKING POINTS ALONG FRONT FACE OF MSE WALL. ABUTMENT WORKING POINTS ARE NOT SHOWN ON THIS SHEET.



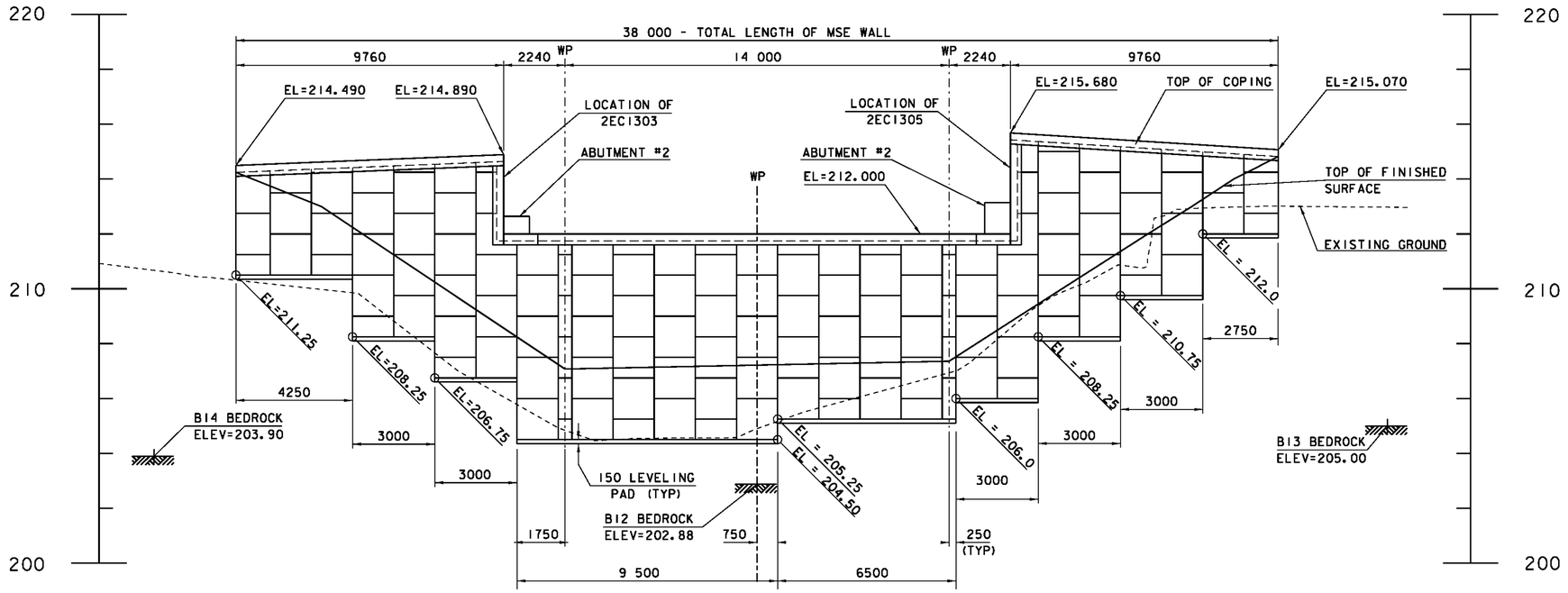
ELEVATION ALONG FACE OF MECHANICALLY STABILIZED EARTH WALL @ ABUTMENT NO. 1

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039mse.dgn	
IPARM FILE NAME: de039mseabut1.i	PLOT DATE: 08-APR-2010
DESIGNED BY: H. I. SALLS	DRAWN BY: H. I. SALLS
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. S. YOUNG
MSE WALL AT ABUTMENT 1	SHEET: 70 OF 139



PLAN OF MECHANICALLY STABILIZED EARTH WALL @ ABUTMENT NO. 2

0 2 4 6 8 10
SCALE 1 : 100



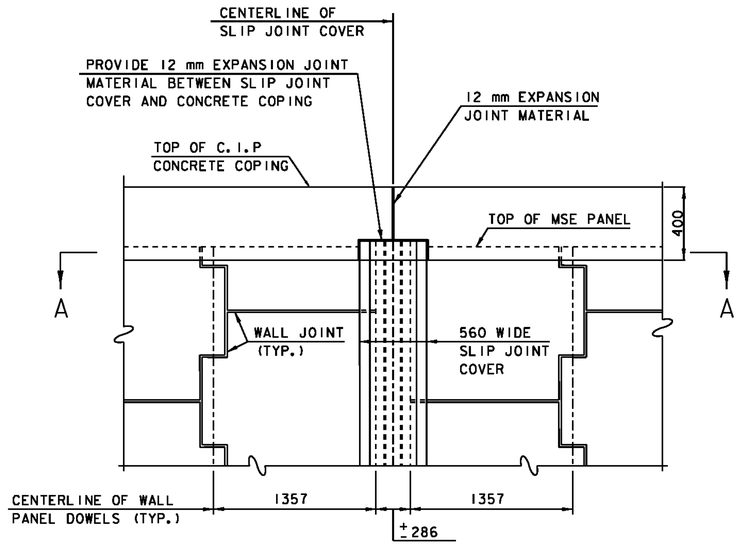
ELEVATION ALONG FACE OF MECHANICALLY STABILIZED EARTH WALL @ ABUTMENT NO. 2

0 2 4 6 8 10
SCALE 1 : 100

NOTES

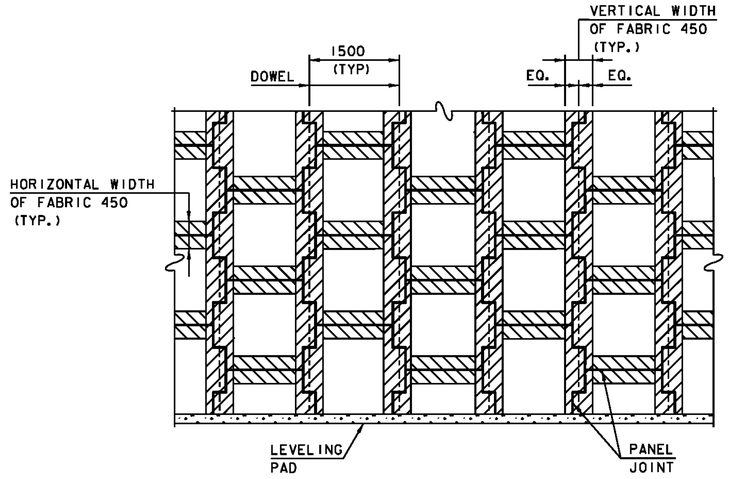
1. THE ELEVATIONS SHOWN ARE TO THE TOP OF THE LEVELING PAD AND THE BOTTOM OF THE MSE WALL. THE LEVELING PAD SHALL BE INSTALLED LEVEL.
2. MSE WALL PANELS ARE SHOWN NOMINALLY SIZED AT 1500 X 1500.
3. SLIP JOINTS ARE NOT SHOWN ON THE ELEVATION, BUT ARE REQUIRED AT ALL WALL INTERSECTIONS THAT FORM ANGLES. ADDITIONAL SLIP JOINTS SHALL BE PLACED AS REQUIRED BY THE MSE WALL SUPPLIER.
4. WP INDICATES MSE WALL WORKING POINTS ALONG FRONT FACE OF MSE WALL. ABUTMENT WORKING POINTS ARE NOT SHOWN ON THIS SHEET.

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039mse.dgn	
IPARM FILE NAME: de039mseabut2.i	PLOT DATE: 08-APR-2010
DESIGNED BY: H. I. SALLS	DRAWN BY: H. I. SALLS
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. S. YOUNG
MSE WALL AT ABUTMENT 2	SHEET: 71 OF 139



PARTIAL ELEVATION - FRONT FACE

NTS



FILTER FABRIC DETAIL

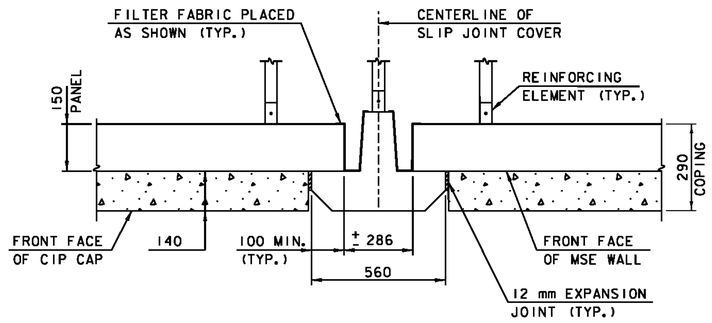
PARTIAL ELEVATION - BACK FACE

NTS

NOTES:

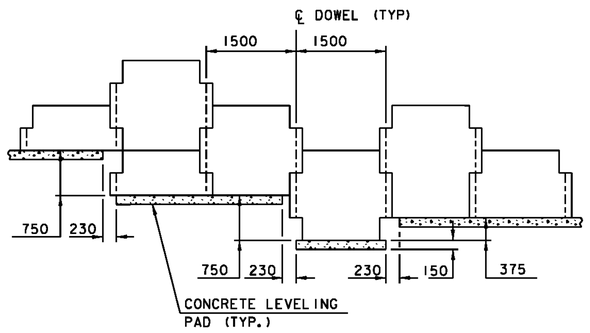
1. STRIPS OF FILTER FABRIC, MEETING SECTION 720 FOR GEOTEXTILE UNDER STONE FILL, SHALL BE PLACED ON BACK FACE OF PANEL OVER PANEL JOINTS. FILTER CLOTH SHALL BE ADHERED TO BACK FACE OF PANELS USING AN ADHESIVE COMPOUND SUPPLIED BY THE MANUFACTURER AND APPROVED BY THE PROJECT MANAGER.

2. THE CONTRACTOR SHALL PROVIDE THE RESIDENT ENGINEER WITH THE MANUFACTURER'S TECHNICAL DATA SHEET AND APPLICATION INSTRUCTIONS FOR THE ADHESIVE COMPOUND.



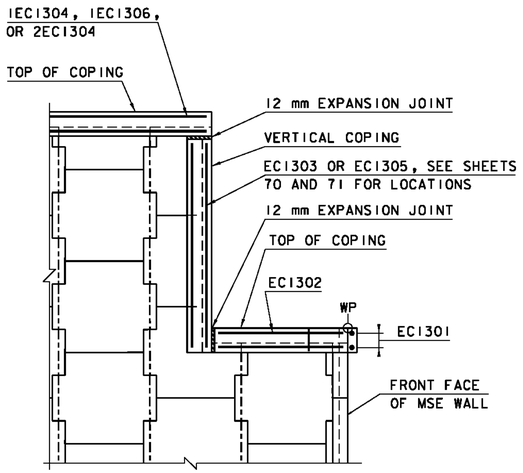
SLIP JOINT COVER PLAN VIEW A-A

NTS



TYPICAL LEVELING PAD STEP DETAIL

NTS

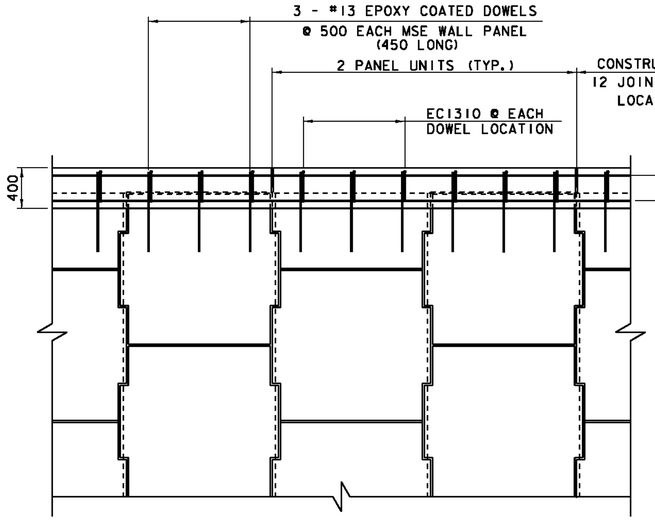


CAST-IN-PLACE VERTICAL COPING

PARTIAL ELEVATION AT ABUTMENT

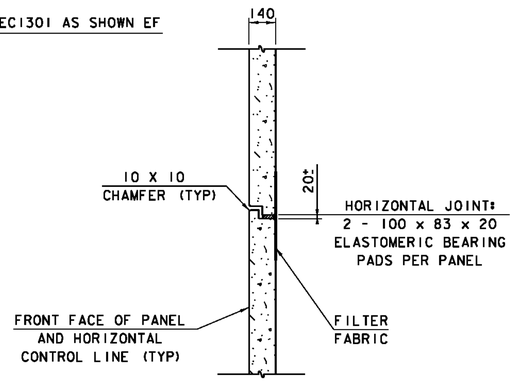
NTS

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: str4/85e039mse.dgn	
IPARM FILE NAME: de039msedet1.i	PLOT DATE: 08-APR-2010
DESIGNED BY: M. GAGULIC	DRAWN BY: M. GAGULIC
SQUAD LEADER: C.P. WILLIAMS	CHECKED BY: R.S. YOUNG
MSE WALL DETAILS 1	SHEET: 72 OF 139



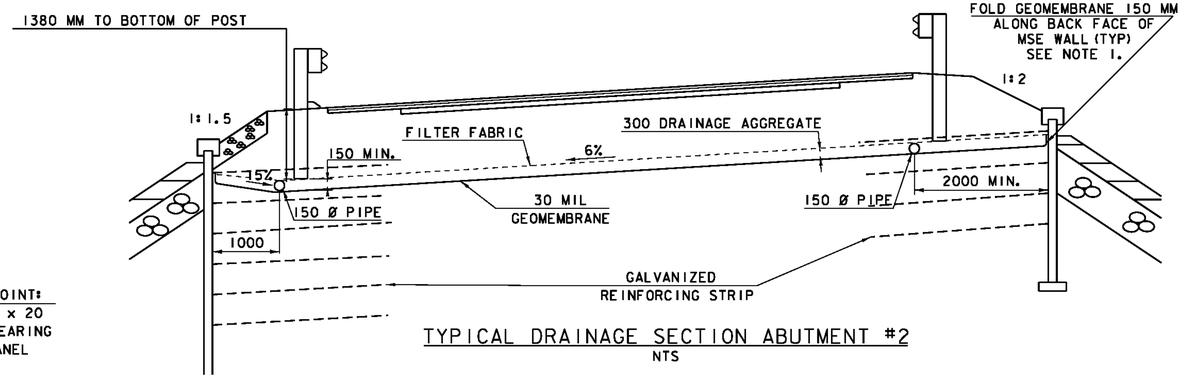
C. I. P. CONCRETE COPING
PARTIAL ELEVATION - FRONT FACE

NTS



SECTION C-C

NTS



TYPICAL DRAINAGE SECTION ABUTMENT #2

NTS

NOTES:

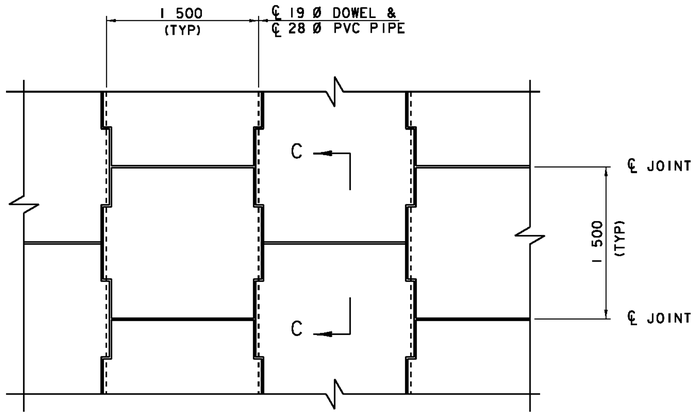
1. A 30 MIL GEOTEXTILE MEMBRANE SHALL BE INSTALLED ON TOP OF THE SELECT FILL. THE MEMBRANE SHALL SLOPE BACK FROM THE MSE WALLS AND THE BACKWALL AS SHOWN ABOVE TO CONVEY WATER TO A PVC PIPE LOCATED IN THE BACKWALL OF THE ABUTMENT. A 150 MM FOLD OF MEMBRANE SHALL BE ATTACHED TO THE BACK FACE OF THE MSE WALL WITH AN ADHEASIVE. THE MEMBRANE AND ADHEASIVE SHALL MEET THE REQUIREMENTS OF THE MSE WALL MANUFACTURER. GEOTEXTILE MEMBRANE, ADHEASIVE, AND ANY EQUIPMENT NECESSARY FOR INSTALLATION SHALL BE INCLUDED UNDER ITEM 900.675 "SPECIAL PROVISION (MECHANICALLY STABILIZED EARTH RETAINING WALL)".

2. THE PIPES SHALL BE 150 MM DIAMETER, PERFORATED, MEET THE REQUIREMENTS OF SUBSECTION 710.06 AND PLACED IN A 150 MM LAYER OF DRAINAGE AGGREGATE COVERED BY FILTER FABRIC. THE PIPE AND ANY ADDITIONAL PVC PIPE FITTINGS, ADHESIVES DEEMED NECESSARY BY THE RESIDENT ENGINEER TO CONNECT UNDERDRAIN TO THE OUTLET FRP PIPE SHALL BE PAID FOR UNDER ITEM 900.675 SPECIAL PROVISION (MECHANICALLY STABILIZED EARTH RETAINING WALL).

3. THE DRAINAGE AGGREGATE SHALL MEET THE REQUIREMENTS OF SUBSECTION 704.16. THE FILTER FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 720. PAYMENT FOR THE DRAINAGE AGGREGATE AND FILTER FABRIC SHALL BE INCLUDED UNDER ITEM 900.675 "SPECIAL PROVISION (MECHANICALLY STABILIZED EARTH RETAINING WALL)".

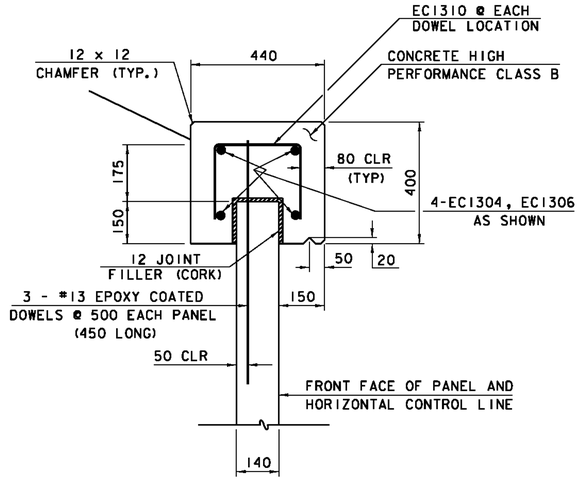
NOTE:

JOINTS IN C. I. P CONCRETE COPING SHALL BE AT 2 PANEL INTERVALS AND COINCIDE APPROXIMATELY WITH PANEL JOINTS. REINFORCING STEEL SHALL BE STOPPED 80 mm SHORT OF EITHER SIDE OF CONSTRUCTION AND EXPANSION JOINTS. JOINT FILLER (CORK) BOND BREAKER MATERIAL SHALL BE PLACED BETWEEN THE PANELS AND THE COPING TO PREVENT CRACKING.



TYPICAL PANEL LAYOUT
PARTIAL ELEVATION - FRONT FACE

NTS



CAST-IN-PLACE CONCRETE COPING *

NTS

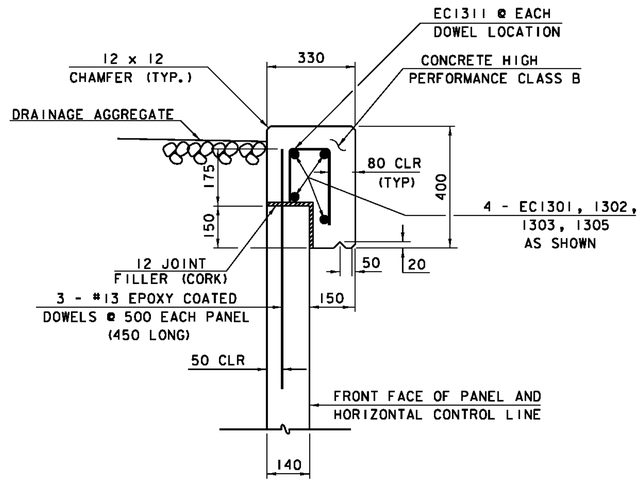
* USE THIS DETAIL FROM END OF MSE WALL TO BEGIN/END BRIDGE
USE ABUTMENT COPING SECTION AROUND ABUTMENTS

NOTES:

1. THE #13 DOWELS SHALL BE CAST INTO THE PRECAST MSE WALL PANELS. THE DOWELS SHALL BE GRADE 420 EPOXY COATED REINFORCING STEEL.

2. THE CONTRACTOR SHALL EXERCISE CARE NOT TO STAIN THE MSE WALL PANELS WHEN PLACING CAST-IN-PLACE CONCRETE. ANY STAINING AS A RESULT OF CONCRETE PLACEMENT SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE.

3. THE DRILLING OF HOLES IN THE PRECAST MSE WALL PANELS FOR THE PURPOSE OF FORMING SHALL NOT BE ALLOWED.



ABUTMENT COPING SECTION

NTS

NOTE:

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

DETAILS ON THIS SHEET ARE NOT TO SCALE

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: str4/85e039mse.dgn	
IPARM FILE NAME: de039msedet2.i	PLOT DATE: 08-APR-2010
DESIGNED BY: M. GAGULIC	DRAWN BY: M. GAGULIC
SQUAD LEADER: C.P. WILLIAMS	CHECKED BY: R.S. YOUNG
MSE WALL DETAILS 2	SHEET: 73 OF 139

MECHANICALLY STABILIZED EARTH WALL NOTES

Metric

WALL DESIGN

1. FINAL DRAWINGS SHOWING PROPOSED PANEL SIZE, THE REQUIRED NUMBER OF REINFORCEMENT ELEMENTS PER PANEL, THE REINFORCEMENT ELEMENT LENGTHS, REINFORCEMENT ELEMENT LAYOUT, CONCRETE PANEL REINFORCEMENT DETAILS, PANEL TIE-IN DETAILS WITH COPING AND LEVELING PAD SHALL ALL BE PREPARED BY THE FABRICATOR AND SUBMITTED TO THE PROJECT MANAGER FOR APPROVAL. ALL MATERIALS WITHIN THE MECHANICALLY STABILIZED EARTH (MSE) VOLUME, METHODS OF CONSTRUCTION, AND THE QUALITY OF PREFABRICATED MATERIALS SHALL MEET THE REQUIREMENTS OF THE SPECIAL PROVISIONS FOR THIS PROJECT.

2. DESIGN CRITERIA:

SOIL PARAMETERS FOR DESIGN OF MSE WALLS:

GRANULAR BORROW - SUBSECTION 703.04

EXISTING IN-SITU SOILS - SILT & CLAY DEPOSITS

NOMINAL BEARING RESISTANCE, qn:	600 kPa
DENSITY:	--.- kN/m^3
INTERNAL SOIL FRICTION ANGLE, ϕ :	20°
COHESION, C :	27.0 kPA

SELECT FILL MATERIAL FOR MSE WALLS AND ABUTMENTS:

NOMINAL BEARING RESISTANCE, qn:	600 kPa
DENSITY:	22.0 kN/m^3
INTERNAL SOIL FRICTION ANGLE, :	34°
ACTIVE EARTH PRESSURE COEFFICIENT, Ka:	0.28

ABUTMENT DESIGN LOADS (PER METER ALONG WALL) (UNFACTORED) :

VERTICAL LOADS

DEAD LOAD FROM SUPERSTRUCTURE:	225.39 kN/M
DEAD LOAD FROM APPROACH SLAB:	27.30 kN/M
LIVE LOAD FROM SUPERSTRUCTURE:	122.30 kN/M

HORIZONTAL LOADS

LONGITUDINAL FORCES:	2.38 kN/M
R+S+T:	44.40 kN/M

(NOTE: THE HORIZONTAL FORCES ACT PARALLEL TO THE MAJOR CHORD.)

3. AFTER THE MSE WALLS HAVE BEEN CONSTRUCTED TO THE BOTTOM OF FOOTING ELEVATION OF ABUTMENT NO. 1 AND NO. 2. A SURCHARGE LOAD SHALL BE APPLIED. THE MSE WALL DESIGN SHALL ACCOUNT FOR THE SURCHARGE LOADING, A DIFFERENTIAL SETTLEMENT OF 100 mm ALONG THE FACE OF ABUTMENT NO. 1 AND NO. 2, AND ANY ROTATION AS A RESULT OF THE DIFFERENTIAL SETTLEMENT. SEE SHEET 75 FOR DETAILS.

WALL CONSTRUCTION

4. ANY UNSUITABLE FOUNDATION MATERIAL BELOW THE MSE VOLUME, AS DETERMINED BY THE ENGINEER, SHALL BE EXCAVATED AND REPLACED WITH GRANULAR BORROW OR OTHERWISE STABILIZED AS DIRECTED BY THE ENGINEER.

5. BACKFILL MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS FOR MSE WALLS TO A LEVEL OF THE CENTER OF THE REINFORCEMENT ELEMENT CONNECTIONS +/- 50. INSTALLATION OF REINFORCING ELEMENTS SHALL BE PERMITTED ONLY AFTER PLACEMENT AND COMPACTION OF THE BACKFILL MATERIAL HAS REACHED THE REQUIRED LEVEL.

6. BACKFILL COMPACTION AND EQUIPMENT OPERATION SHALL BE KEPT TO A MINIMUM FOR A DISTANCE OF 1 METER FROM THE BACK FACE OF THE MSE PANELS. COMPACTION WITHIN 1 METER OF THE PANELS SHALL BE ACHIEVED WITH A MINIMUM OF THREE PASSES OF A LIGHTWEIGHT MECHANICAL TAMPER, ROLLER OR VIBRATORY SYSTEM APPROVED BY THE RESIDENT ENGINEER.

7. THE CONTRACTOR SHALL ACCOMMODATE ANY PIPES, GEOMEMBRANE LINER, DRAINAGE STRUCTURES, FOUNDATIONS, RAILING POSTS, AND ANY OTHER SUCH APPURTENANCES THAT ARE WITHIN THE DESIGNED MSE VOLUME.

8. TOP PANELS SHALL HAVE #13 DOWELS PROTRUDING FROM THE TOP EDGE INTO THE CAST IN PLACE COPING ONLY. THE DOWELS SHALL BE CAST INTEGRALLY WITH THE TOP PANELS. THE COST OF THE DOWELS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE ITEM 900.675, "SPECIAL PROVISION (MECHANICALLY STABILIZED EARTH RETAINING WALL)".

9. THE CONTRACTOR IS RESPONSIBLE FOR GRADUALLY DEFLECTING UPPER REINFORCING ELEMENTS DOWNWARD TO AVOID CONFLICTS WITH APPROACH SLAB SUBGRADE PREPARATION. THE CONTRACTOR'S ATTENTION IS DIRECTED ESPECIALLY TO THE EFFECTS OF SUPERELEVATION.

10. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING THE STORM WATER DRAINAGE IN THE VICINITY OF THE WALL DURING CONSTRUCTION. STORM WATER RUNOFF IS TO BE COLLECTED AND DISCHARGED AWAY FROM THE WALL AND THE REINFORCED BACKFILL.

11. THE REQUIRED HORIZONTAL LIMIT OF SELECT GRANULAR BACKFILL SHALL EXCEED THE NOMINAL REINFORCEMENT ELEMENT LENGTH BY 300 MM.

MATERIAL NOTES

12. THE DRAINAGE AGGREGATE USED BETWEEN THE MSE WALL AND THE ABUTMENT FOOTING SHALL MEET THE REQUIREMENTS OF SECTION 704.16. PAYMENT SHALL BE PAID FOR UNDER THE ITEM 900.675, "SPECIAL PROVISION (MECHANICALLY STABILIZED EARTH RETAINING WALL)".

13. THE PRECAST PANELS FOR THIS PROJECT SHALL MEET THE REQUIREMENTS OF SECTION 540. THE PANELS SHALL HAVE A GEOMETRIC SHAPE WITH MORE THAN FOUR SIDES AND NO ARCHITECTURAL FINISH IS REQUIRED.

14. CONCRETE FOR BOTH THE CAST-IN-PLACE COPING AND THE LEVELING PADS SHALL MEET THE REQUIREMENTS OF CONCRETE, HIGH PERFORMANCE CLASS B. CONCRETE FOR THE COPING SHALL BE PAID FOR UNDER ITEM 501.34 "CONCRETE, HIGH PERFORMANCE CLASS B". REINFORCEMENT IN THE COPING SHALL BE PAID FOR UNDER ITEM 507.17 "EPOXY COATED REINFORCING STEEL". THE COST OF MATERIALS AND INSTALLATION OF THE LEVELING PADS SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 900.675, "SPECIAL PROVISION (MECHANICALLY STABILIZED EARTH RETAINING WALL)".

15. ANY WALL REINFORCING STRIPS LOCATED ABOVE THE GEOMEMBRANE SHALL HAVE A DESIGN LIFE OF 125 YEARS USING THE CORROSION RATES GIVEN IN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR NON-AGGRESSIVE SOIL.

NOTE TO CONTRACTORS

16. THE FOLLOWING MATERIALS SHALL BE SUPPLIED BY THE MSE WALL SYSTEM MANUFACTURER UNDER THE ITEM 900.675, "SPECIAL PROVISION (MECHANICALLY STABILIZED EARTH RETAINING WALL)".

PRECAST CONCRETE FACING
PANEL REINFORCING ELEMENTS
ANY NECESSARY HARDWARE FOR ATTACHING PRECAST PANELS TO REINFORCING ELEMENTS
BEARING BLOCKS
RUBBER SHIMS
FILTER FABRIC AND ADHESIVE FOR PANEL JOINTS

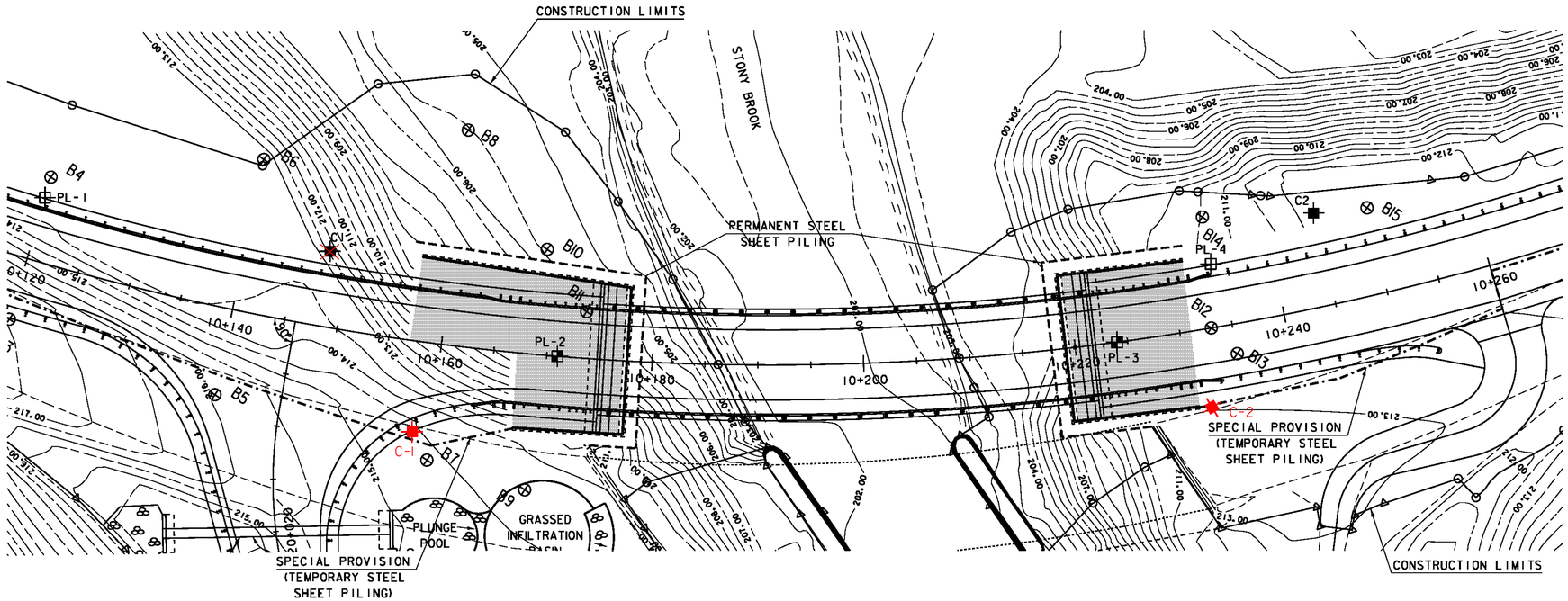
17. OTHER MSE WALL MATERIALS SPECIFIED IN THE CONTRACT PLANS SHALL BE SUPPLIED BY THE CONTRACTOR. THIS MAY INCLUDE, BUT IS NOT LIMITED TO, ANY JOINT MATERIAL SHOWN AT THE INTERFACE OF PRECAST PANELS AND CAST-IN-PLACE CONCRETE ELEMENTS, SANDBLASTING, SEALERS OR OTHER SPECIAL APPLIED COATINGS, FILTER FABRIC OVER UNDERDRAIN PIPE, AND 30 mil GEOTEXTILE MEMBRANE. ALL MATERIALS SHALL BE PAID FOR UNDER ITEM 900.675, "SPECIAL PROVISION (MECHANICALLY STABILIZED EARTH RETAINING WALL)."

18. THE MSE RETAINING WALL SYSTEM MANUFACTURER SHALL BE RESPONSIBLE FOR DESIGNING AND DETAILING ANY NECESSARY ATTACHMENTS OR REINFORCEMENTS AROUND THE DROP INLET AT STATION 10+160.000. SEE PIPE PROFILE ON SHEET 120. THE COST OF DESIGNING, DETAILING, SUPPLY AND INSTALLATION OF THE MODIFIED REINFORCEMENT WILL BE CONSIDERED INCIDENTAL TO THE ITEM 900.675, "SPECIAL PROVISION (MECHANICALLY STABILIZED EARTH RETAINING WALL)".

PROJECT:	PROJECT NO.:
STOCKBRIDGE	BRF 022-1(20)

DESIGN FILE NAME: 85e039\Structures\de039mse.dgn
IPARM FILE NAME: de039msenotes.i — PLOT DATE: 08-APR-2010
DESIGNED BY: H. I. SALLS — DRAWN BY: H. I. SALLS
SQUAD LEADER: C. P. WILLIAMS — CHECKED BY: R. S. YOUNG
MSE WALL NOTES — SHEET: 74 OF 139

Metric



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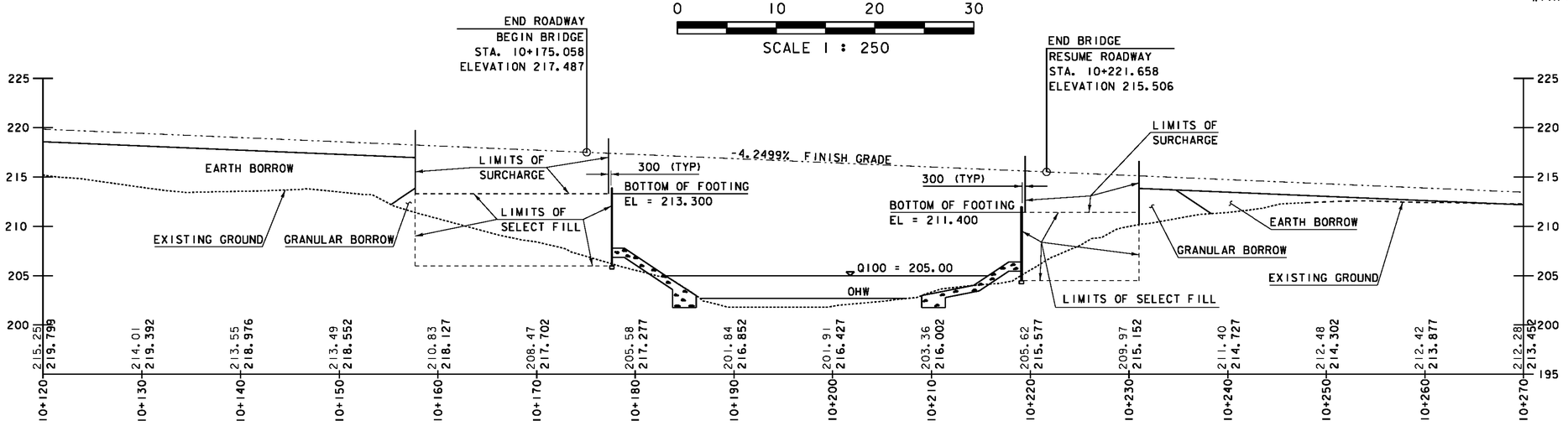
SCALE 1 : 250



THE CONTRACTOR SHALL INSTALL SETTLEMENT PLATFORMS AT THE FOLLOWING LOCATIONS:

	STATION	OFFSET
PL-1	10+120.00	6.0 M LT
PL-2	10+171.00	0.0 M CL
PL-3	10+224.00	0.0 M CL
PL-4	10+234.00	6.0 M LT
C-1	10+157.70	9.6 M RT
C-2	10+232.50	7.2 M RT

	ULTIMATE SETTLEMENT DUE TO MSE FILL/EMBANKMENT	TIME TO 90% CONSOLIDATION WITH SURCHARGE
ABUT 1	.21 M	65 DAYS
ABUT 2	.21 M	100 DAYS
EMBANKMENT	.11 M	NA

- LIMITS OF SURCHARGE
- SOIL BORING LOCATION
- SETTLEMENT PLATFORM TYPE I
- SETTLEMENT PLATFORM TYPE IV, VIBRATING WIRE
- TYPE IV PLATFORM READOUT BOX LOCATION (FIELD CONTROL STATION) *

*THE EXACT LOCATION OF THE READOUT BOX WILL BE DETERMINED BY THE CONTRACTOR WITH APPROVAL OF THE RESIDENT ENGINEER.

NOTE:
GRADES SHOWN TO THE NEAREST HUNDREDTHS ARE EXISTING GROUND ALONG ℄.

GRADES SHOWN TO THE NEAREST THOUSANDTHS ARE FINISH GRADES ALONG ℄.

1. THE SETTLEMENT OF THE FOUNDATION WILL BE MONITORED DURING THE SURCHARGE TREATMENT USING TYPE I AND TYPE IV SETTLEMENT PLATFORMS INSTALLED AT THE LOCATIONS SHOWN ABOVE. BOTH TYPE I AND TYPE IV SETTLEMENT PLATFORMS SHALL MEET THE GUIDELINES SPECIFIED IN STANDARD SHEET L-1, DETAIL SHEET 76, AND SECTION 900 OF THE SPECIAL PROVISIONS.

2. THE MONITORING INSTRUMENTATION SHALL BE PAID FOR UNDER ITEMS 900.620 SPECIAL PROVISION (SETTLEMENT PLATFORM, TYPE I) AND 900.620 SPECIAL PROVISION (SETTLEMENT PLATFORM, TYPE IV). ALL OF THE OTHER WORK REQUIRED FOR SURCHARGING THE ROADWAY, INCLUDING FURNISHING THE LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THE WORK SHALL BE PAID FOR UNDER ITEM 900.645 SPECIAL PROVISION (SURCHARGING).

3. A SURCHARGE LOAD SHALL BE APPLIED WITHIN THE LIMITS INDICATED ON THIS SHEET. THE SURCHARGE SHALL HAVE A LOAD OF 142 KPA AT THE BOTTOM OF FOOTING ELEVATION OF ABUT. NO 1, AND 125 KPA AT THE BOTTOM OF FOOTING ELEVATION OF ABUT. NO 2.

4. THE SURCHARGE SHALL NOT BE REMOVED UNTIL 200 mm OF SETTLEMENT HAS OCCURRED, THE ESTIMATED TIME TO 90% CONSOLIDATION HAS ELAPSED, OR APPROVAL BY THE RESIDENT ENGINEER. SEE SPECIAL PROVISIONS

5. ABUTMENTS SHALL NOT BE CONSTRUCTED UNTIL THE REQUIREMENTS GIVEN IN NOTE 4 HAVE BEEN MET.

6. THE FOLLOWING SETTLEMENT PLATFORM READINGS SHALL BE RECORDED AND PROVIDED TO THE ENGINEER: (FILL ELEVATIONS SHALL BE RECORDED WHENEVER READINGS ARE TAKEN)

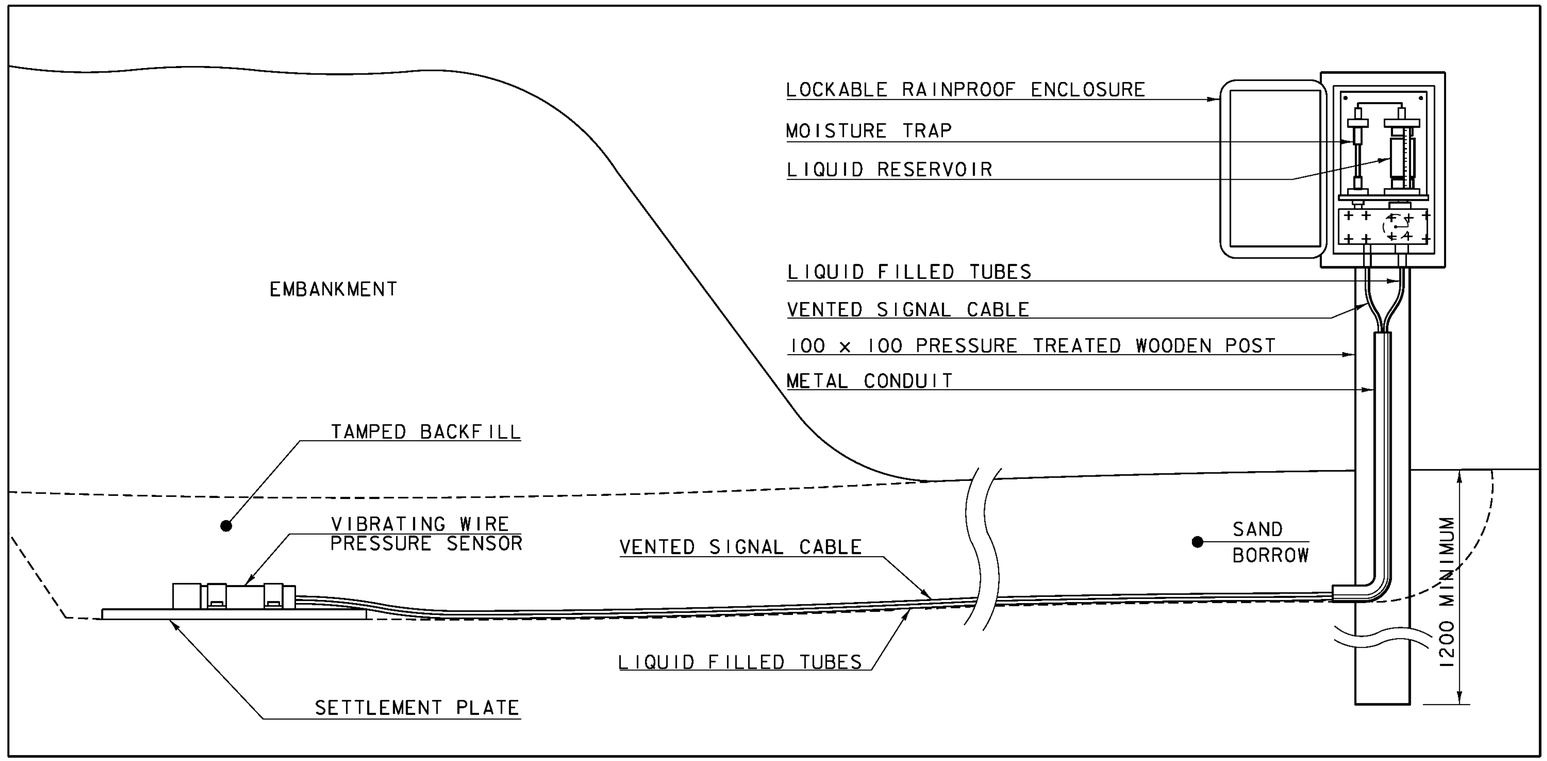
   A. INITIAL READINGS SHALL BE TAKEN AT ALL SETTLEMENT PLATFORMS BEFORE ANY SURCHARGE LOAD IS APPLIED.

   B. IF THE SURCHARGE LOAD IS PLACED INCREMENTALLY, READINGS SHALL BE TAKEN FOR EVERY 16.8 Kpa OF SURCHARGE PRESSURE PLACED.

   C. UPON COMPLETION OF SURCHARGE PLACEMENT OPERATIONS, SETTLEMENT PLATFORM READINGS SHALL BE TAKEN ONCE EVERY OTHER DAY FOR THE DURATION OF THE SURCHARGE TREATMENT.

7. AFTER SUBBASE IS CONSTRUCTED THE CONTRACTOR SHALL WAIT A MINIMUM OF 90 DAYS BEFORE PAVING. THE CONTRACTOR SHALL ALSO WAIT 90 DAYS BEFORE DRAINAGE PIPES ARE INSTALLED IN FILL AREAS. THE WAIT PERIOD MAY BE REDUCED WITH THE APPROVAL OF THE RESIDENT ENGINEER BASED ON SETTLEMENT READINGS.

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039surcharge.dgn	
IPARM FILE NAME: de039surcharge.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R. S. YOUNG	DRAWN BY: D. D. BEARD
SQUAD LEADER:	CHECKED BY: R. S. YOUNG
SURCHARGE DETAILS	SHEET: 75 OF 139



TYPICAL INSTALLATION FOR SETTLEMENT PLATFORM, TYPE IV

NOT TO SCALE

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039surcharge.dgn	
IPARM FILE NAME: de039surcharge.i	PLOT DATE: 08-APR-2010
DESIGNED BY: R. S. YOUNG	DRAWN BY: D. D. BEARD
SQUAD LEADER: C.P.WILLIAMS	CHECKED BY: R. S. YOUNG
SETTLEMENT PLATFORM DETAILS	SHEET: 76 OF 139

Guardrail Approach Section, Galvanized NETC 4 Rail
10+165.10 ~ 10+175.04 Lt.
(SB 20+004.72) ML 10+165.52 ~ 10+175.07 Rt.
10+221.67 ~ 10+231.62 Lt.
10+221.64 ~ 10+231.21 Rt.

Bridge Railing, Galvanized NETC 4 Rail
10+175.04 ~ 10+221.67 Lt.
10+175.07 ~ 10+221.64 Rt.

VTrans Metric

N
VT STATE PLANE GRID

℄ Bearing Abutment 1

℄ Bearing Abutment 2

PAY LIMITS HD STEEL BEAM GUARDRAIL, GALVANIZED

PAY LIMITS GUARD RAIL APPROACH SECTION, GALVANIZED NETC 4 RAIL

1700

1100

45 735 PAY LIMITS BRIDGE RAILING, GALVANIZED NETC 4 RAIL

610

1220

PAY LIMITS HD STEEL BEAM GUARDRAIL, GALVANIZED

PAY LIMITS GUARD RAIL APPROACH SECTION, GALVANIZED NETC 4 RAIL

℄ BEARING
STA 10+175.858

BEGIN BRIDGE
STA 10+175.058

10+160

10+180

10+200

10+220

4800
STA: 10+167.380

4650 FOR FACE OF CURB (TYP)

4800 FOR FACE OF RAIL (TYP)

R=245200
FACE OF RAIL

R=254800
FACE OF RAIL

END BRIDGE
STA 10+221.658

℄ BEARING
STA 10+220.858

R=20400

POINT OF CURVATURE

POINT OF CURVATURE
AT FACE OF RAIL
STA 10+156.87 RT 8.135

PAY LIMITS HD STEEL BEAM GUARDRAIL, GALVANIZED

PAY LIMITS GUARD RAIL APPROACH SECTION, GALVANIZED NETC 4 RAIL

1700

1100

47 464 PAY LIMITS BRIDGE RAILING, GALVANIZED NETC 4 RAIL

610

1220

PAY LIMITS HD STEEL BEAM GUARD RAIL, GALVANIZED

PAY LIMITS GUARD RAIL APPROACH SECTION, GALVANIZED NETC 4 RAIL

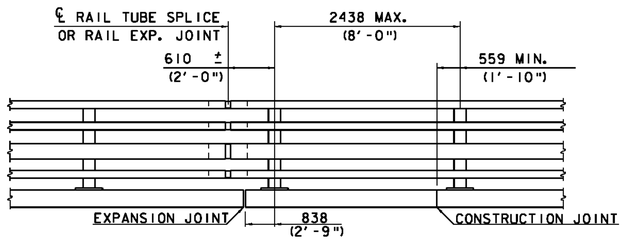
PLAN

0 1 2 4 6 8 10

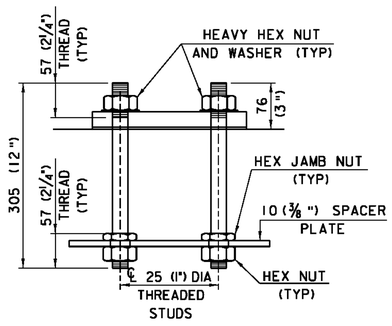
SCALE = 1:100

RAILING LAYOUT

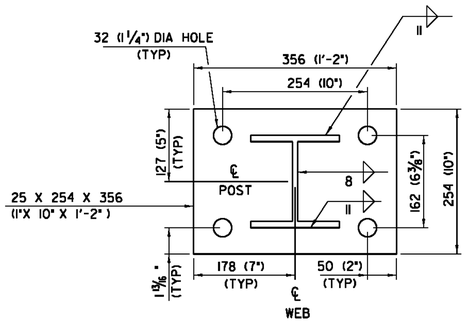
PROJECT:	PROJECT NO.:
STOCKBRIDGE	BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039rail.dgn	
IPARM FILE NAME: de039raillayout.i	PLOT DATE: 08-APR-2010
DESIGNED BY: H. I. SALLS	DRAWN BY: H. I. SALLS
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. S. YOUNG
RAILING LAYOUT	SHEET: 77 OF 139



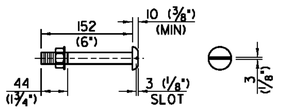
BRIDGE RAILING ELEVATION



RAIL POST ANCHORAGE

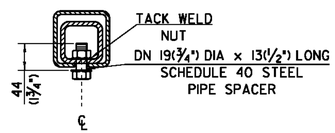


POST AND BASE PLATE



19 (¾") DIA M164 (TYPE I)
ROUND HEAD BOLT

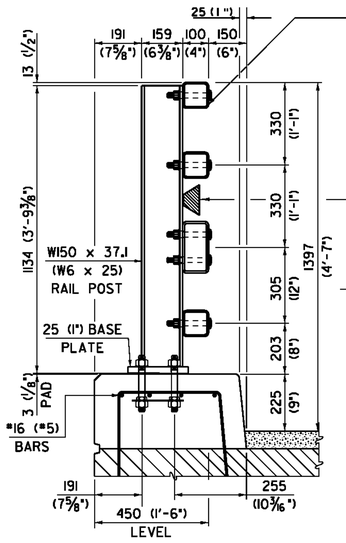
(WITH WASHER AND PREVAILING TORQUE TYPE LOCK NUT)
(SEE NOTE *8)
ONLY FULL DIAMETER BODY BOLTS WILL BE ALLOWED.



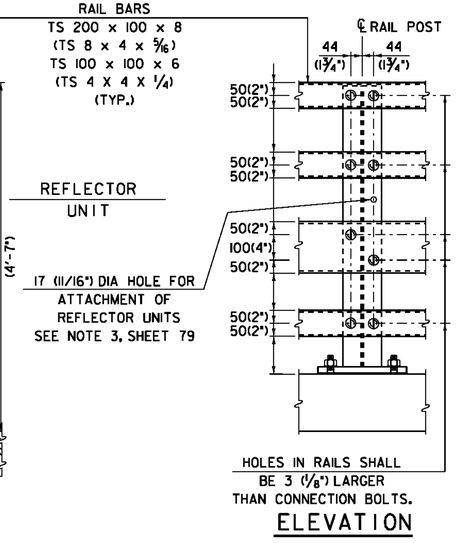
16(⅝") DIA TAPPED HOLE IN SPLICE TUBE AND
29(1⅛") x 'C' SLOT IN RAIL TUBE FOR 16(⅝") DIA
BOLT AND PLAIN HARDENED WASHER

EXPANSION JOINT SECTION

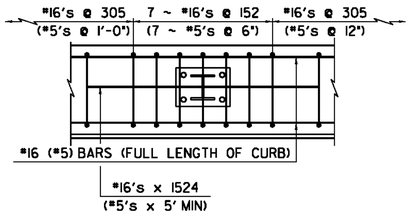
FOR DETAILS NOT SHOWN,
SEE "RAIL TUBE SPLICE SECTION."



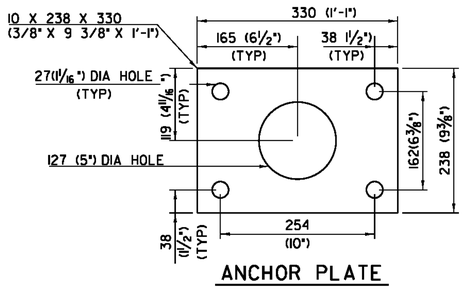
TYPICAL SECTION



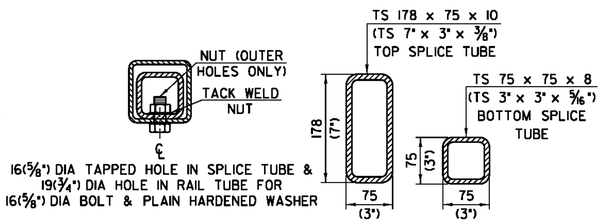
ELEVATION



CURB REINFORCING PLAN

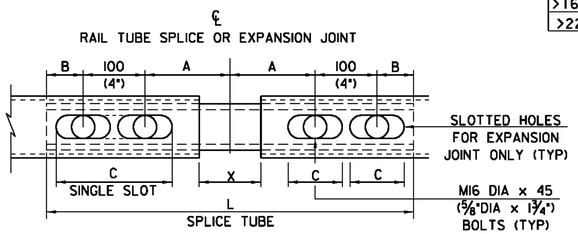


ANCHOR PLATE



16(⅝") DIA TAPPED HOLE IN SPLICE TUBE &
19(¾") DIA HOLE IN RAIL TUBE FOR
16(⅝") DIA BOLT & PLAIN HARDENED WASHER

RAIL TUBE SPLICE SECTION



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

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.
3. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 2 mm (1/16") 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°C (45°F) AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
7. RAIL POSTS ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
8. RAIL TUBES SHALL BE ATTACHED USING 75 mm (3") FULL DIAMETER BODY AASHTO M164M (TYPE 1) ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE TUBE. HOLES IN POSTS SHALL BE 2 mm (1/16") LARGER THAN THE BOLT SIZE.
9. HOLES IN RAILS FOR RAIL TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.
10. ANY BENDING OF RAIL SHALL BE DONE AT A FABRICATOR PLANT, ACCORDING TO A PROCEDURE PROVIDED BY THE FABRICATOR.
11. THE FABRICATOR SHALL SUBMIT FABRICATION DRAWINGS INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH SECTION 105.

MATERIALS

3 mm (⅛") PAD SHALL COMPLY WITH SUBSECTION 731.01 OR 731.02.

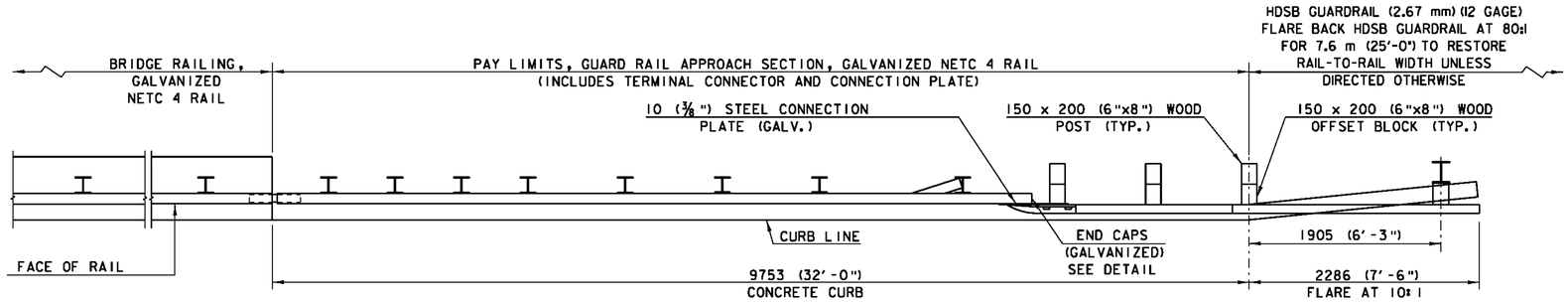
SPLICE TABLE					
T	A	B	C	L	X
N/A	100 (4")	50 (2")	--	508 (20")	19 (¾")
EXPANSION JOINT TABLE					
<100 (4")	100 (4")	50 (2")	64 (2½")	508 (20")	64 (2½")
>100 (4") <165 (6½")	140 (5½")	60 (2⅜")	89 (3½")	603 (23¾")	100 (4")
>165 (6½") <229 (9")	163 (6½")	86 (3⅜")	229 (9") *	705 (27¾")	127 (5")
>229 (9") <330 (13")	216 (8½")	111 (4⅜")	279 (11") *	857 (33¾")	179 (7")

T = TOTAL MOVEMENT AT RAIL EXPANSION JOINT
AS SHOWN ON THE CONTRACT PLANS. SEE NOTE 6.
* = SINGLE SLOT

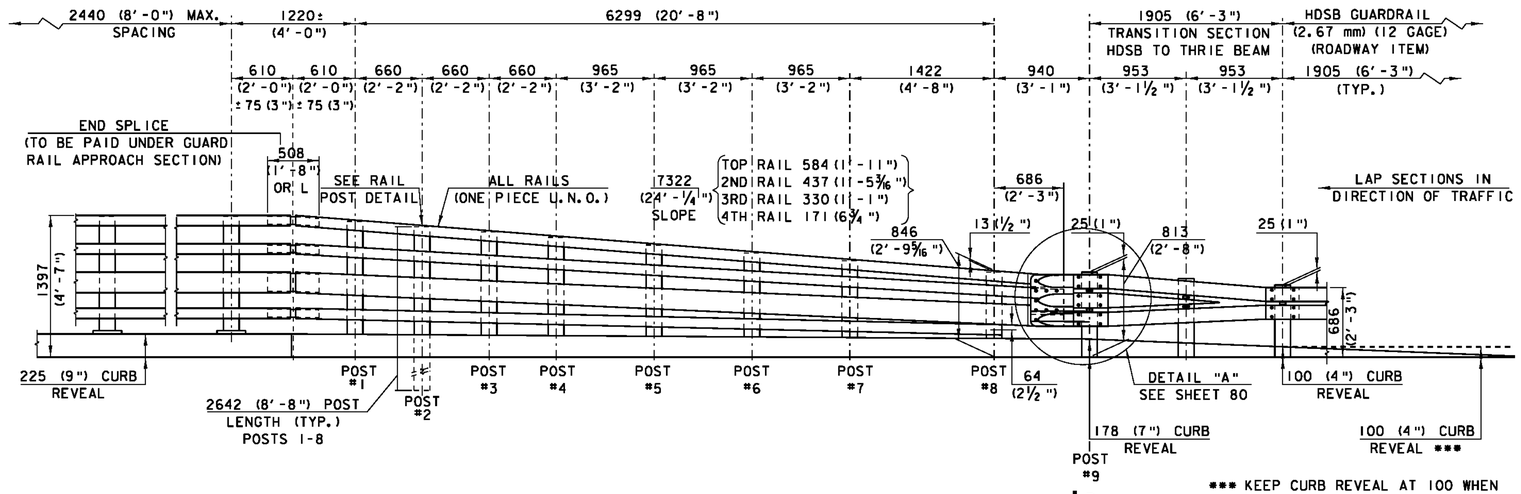
ALL DETAILS NOT TO SCALE

PROJECT:	PROJECT NO.:
STOCKBRIDGE	BRF 022-1(20)

DESIGN FILE NAME: 85e039\Structures\de039rail.dgn
IPARM FILE NAME: de039rail2m.i — PLOT DATE: 08-APR-2010
DESIGNED BY: H. I. SALLS — DRAWN BY: H. I. SALLS
SQUAD LEADER: C. P. WILLIAMS — CHECKED BY: R. S. YOUNG
RAILING DETAIL 1 — SHEET: 78 OF 139



PLAN VIEW - APPROACH RAIL

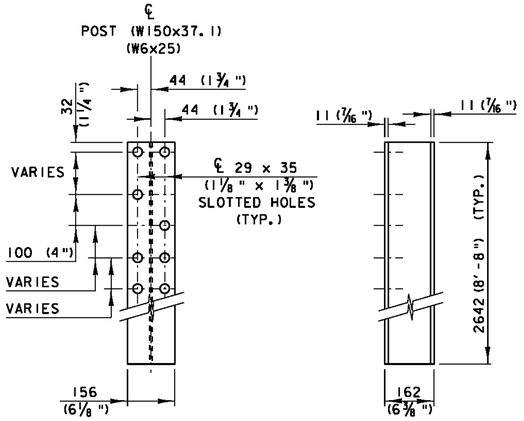


ELEVATION VIEW - APPROACH RAIL

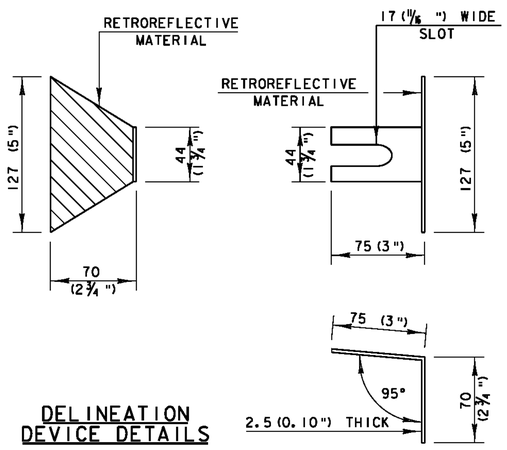
*** KEEP CURB REVEAL AT 100 WHEN MATCHING INTO BITUMINOUS CONCRETE CURB

NOTES

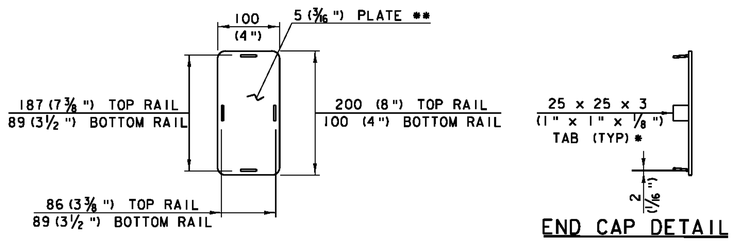
1. REFER TO SHEET 78 FOR ADDITIONAL DETAILS, NOTES AND MATERIAL SPECIFICATIONS.
2. PAYMENT FOR GUARD RAIL APPROACH SECTION, GALVANIZED NETC 4 RAIL SHALL INCLUDE THE TERMINAL CONNECTOR, THE CONNECTION PLATE, RAIL, POSTS, BLOCKS AND ATTACHMENT HARDWARE.
3. RETROREFLECTIVE MATERIAL SHALL MEET REQUIREMENTS OF SUBSECTION 750.08 AND SHALL BE OF ENCAPSULATED LENS SILVER INSTALLED ON DRIVER'S RIGHT.
4. ALL APPROACH RAIL SPLICES SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW.
5. ALL BRIDGE APPROACH RAIL MATERIALS, DIMENSION SIZES AND NOTES SHALL BE THE SAME AS THOSE OF THE BRIDGE RAIL, UNLESS OTHERWISE NOTED.
6. APPROACH RAIL BOLTS SHALL BE ASTM A307 GRADE A AND NUTS SHALL BE AASHTO M291M (ASTM A563 GRADE A OR BETTER) (GALVANIZED). WASHERS SHALL BE ASTM F844.
7. WELD SPLICE BARS TO FIT BEND. USE COMPLETE PENETRATION WELD (B-U2).
8. THE CONCRETE CURB WILL BE PAID FOR AS ITEM 616.28, "CAST-IN-PLACE CONCRETE CURB, TYPE B."



RAIL POST



DELINEATION DEVICE DETAILS

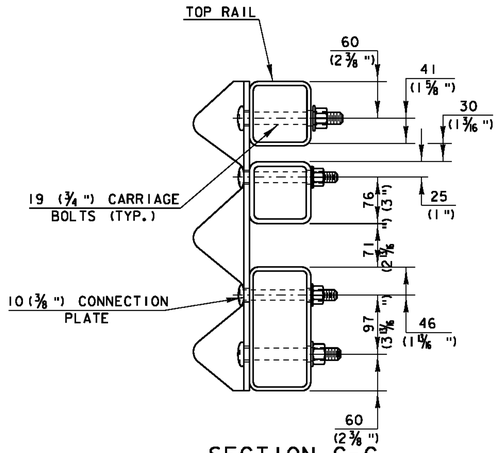


END CAP DETAIL

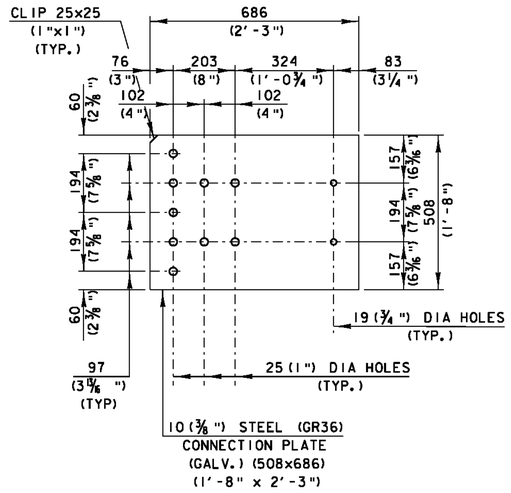
* WELD TABS TO END CAP PLATE IN TAPERED POSITION SO CAP CAN BE JAMMED INTO END OF RAIL TUBE.
** ROUND CORNERS 13 (½") RADIUS (TYP)

ALL DETAILS NOT TO SCALE

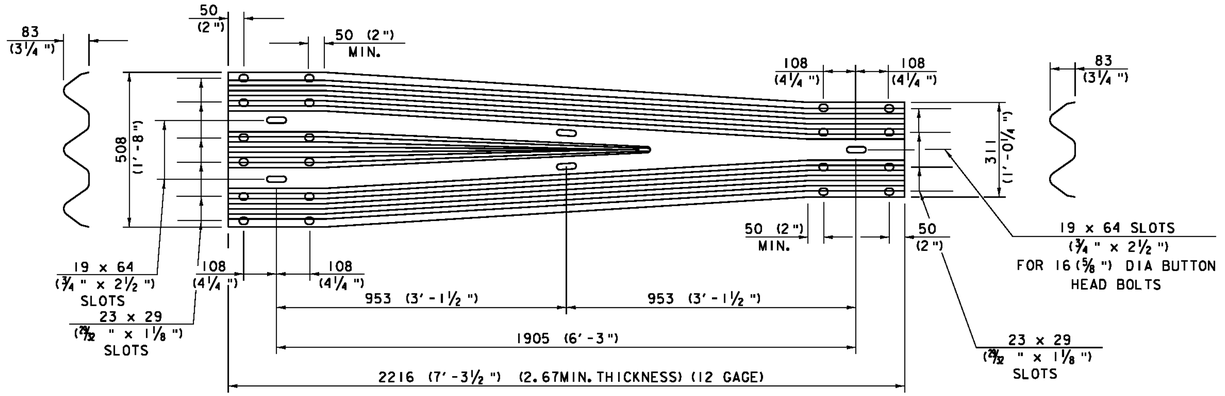
PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039rail.dgn	
IPARM FILE NAME: de039railm.i	PLOT DATE: 08-APR-2010
DESIGNED BY: H. I. SALLS	DRAWN BY: H. I. SALLS
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. S. YOUNG
RAILING DETAIL 2	SHEET: 79 OF 139



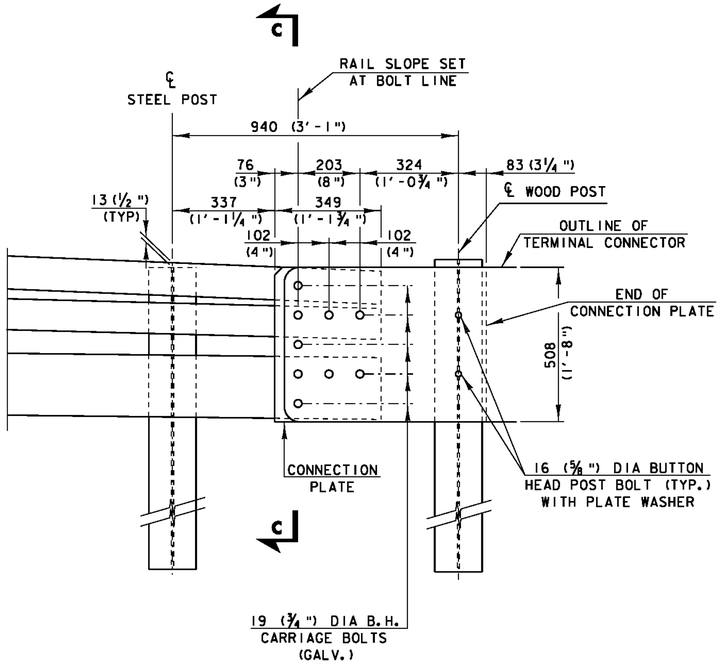
SECTION C-C
(CONNECTION PLATE)



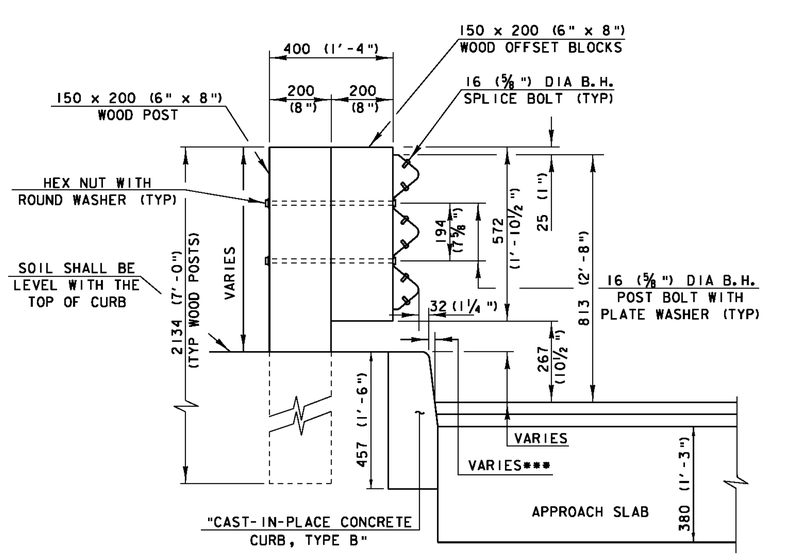
CONNECTION PLATE



THRIE-BEAM TO HDSB
TRANSITION SECTION
(HM-TF-13/RE-69)

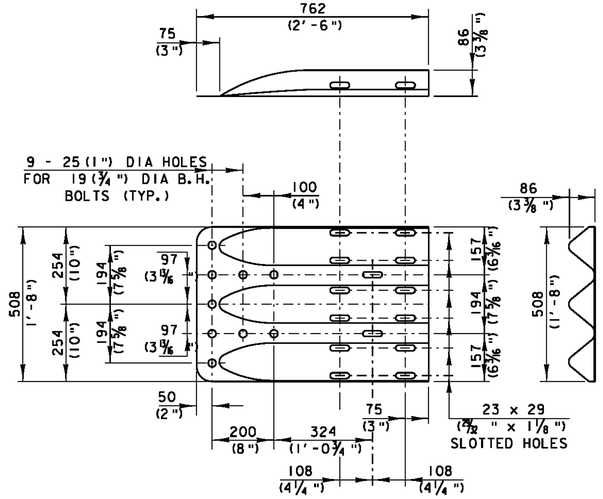


DETAIL A



*** CHANGE SLOPE FROM 25 (1") IN 300 (12") AT BRIDGE TO 25 (1") IN 150 (6") PER STANDARD C-10 OVER A DISTANCE OF 3050 (10'-0")

SECTION B-B (POST RAIL ASSEMBLY)



THRIE-BEAM TERMINAL CONNECTOR
(HM-TF-13/RE-67)

ALL DETAILS NOT TO SCALE

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039\Structures\de039rail.dgn	
IPARM FILE NAME: de039rail3m.i	PLOT DATE: 08-APR-2010
DESIGNED BY: H. I. SALLS	DRAWN BY: H. I. SALLS
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. S. YOUNG
RAILING DETAIL 3	SHEET: 80 OF 139

Benchmark #2
Goddard Az Mark
Elev. 225.690

SURVEY MARKER
RET

Removing Signs
STA 9+865.000 (2)

MAPLE SYRUP SOLD HERE
RET

RET

N

VT STATE PLANE GRID

PI BK STA = 9+895.481
AHD STA = 9+894.449

EXISTING ROW

GASOLINE PUMP

HOUSE

LUMINAIRE

GARAGE

MAPLE

WETLAND

WOODS DRIVE

BOUNDARY MARKER

WOODS

LILAC

CONC. WALK

CEDAR

POLE #176 86

GRAVEL DRIVE

SIGN

BOUNDARY MARKER

existing overhead utility

N78° 03' 46.38"E

460' COMP PAIR

9+940

9+960

GRAVEL DRIVE

N64° 01' 16.16"E °

9+800

9+820

9+840

9+860

9+880

9+900

9+920

BOUNDARY MARKER

DRIVE

GRAVEL DRIVE

BOUNDARY MARKER

MATCHLINE STA. 9+970

CURVE DATA
DELTA = 14° 02' 30.2" RT
R = 836.196
T = 102.981
L = 204.930
E = 6.317

CONC. FOUND.

SIGN

PC 9+692.500

WETLAND

HOUSE

BLDG.

MAPLE

WOODS

WOODS

WOODS

R
40 M.P.H.
R
R

SIGN LEGEND

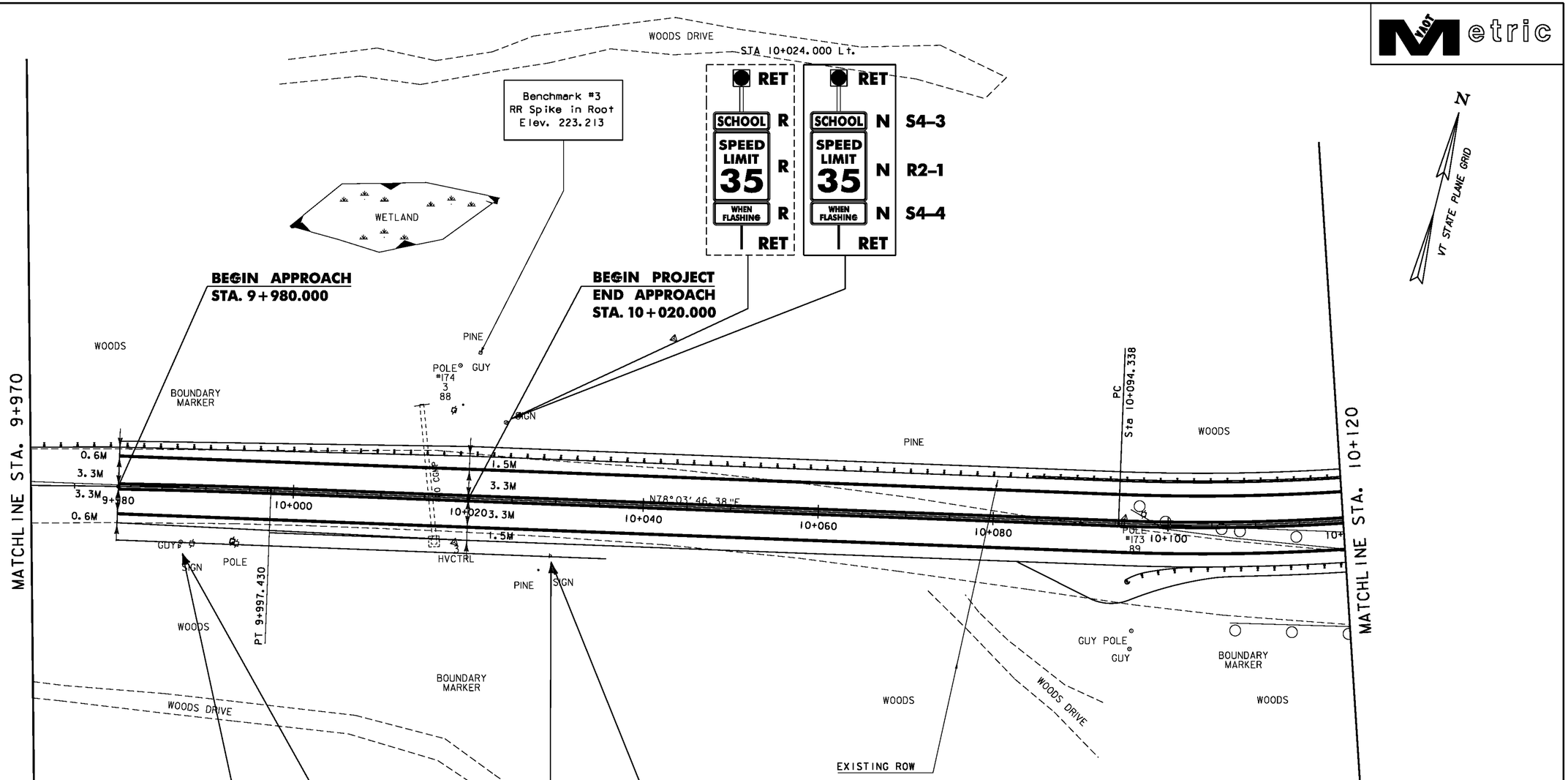
R = Remove
N = New
S = Salvage sign
RET = Retain sign
R&S = Remove & Salvage
B-B = Back to Back

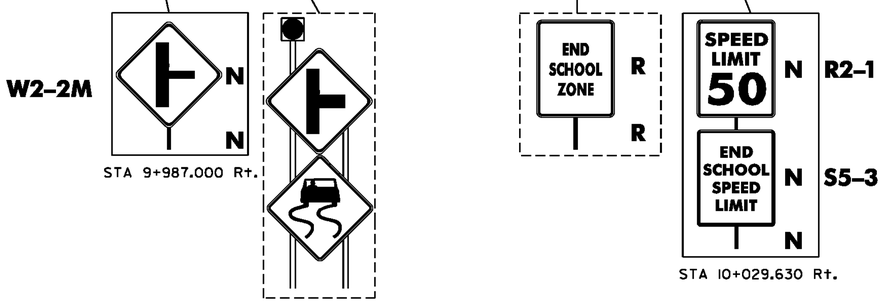
0 10 20 30
SCALE IN METERS

Traffic Signs and Lines Layout 1

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: 85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. WILLIAMS	DRAWN BY: H. I. SALLS
DESIGNED BY: R. S. YOUNG	CHECKED BY: R.S. Young
TRAFFIC SIGNS AND LINES LAYOUT 1	SHEET 81 OF 139

VDOT Metric





Remove Light & Signs
(See General Notes)
STA 9+987.000 Rt.

Removing Signs
STA 10+024.000 Lt. (3)
STA 10+029.630 Rt.

Durable 100 mm White Line
9+980 - 10+120 Lt.
9+980 - 10+120 Rt.

Durable 100 mm Yellow Line
9+980 - 10+120 CL (DBL)

SIGN LEGEND

R = Remove
N = New
S = Salvage sign
RET = Retain sign
R&S = Remove & Salvage
B-B = Back to Back

Traffic Signs and Lines Layout 2

0 10 20 30
SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. WILLIAMS	DRAWN BY: H.J. SALLS
DESIGNED BY: H. I. SALLS	CHECKED BY: R.S.Young
TRAFFIC SIGNS AND LINES LAYOUT 2	SHEET 82 OF 139

Removing Signs
STA 10+148.200 RT
STA 10+151.400 RT
STA 10+164.000 RT (3)
STA 10+167.300 RT
STA 10+171.300 RT
STA 10+181.000 RT
STA 10+178.700 RT
STA 10+227.500 RT
STA 10+229.400 RT
STA 10+232.400 RT
STA 10+253.620 RT

ERECTING SALVAGED SIGNS
STA 10+134.300 Rt.

Durable 600 mm Stop Bar
20+006 CL - Lt.

Durable Letter or Symbol
20+009 Lt. - "STOP"

Durable 100 mm White Line
10+120 - 10+275 Lt.
10+120 - 10+155 Rt.
20+006 - 20+045 Lt.
20+006 - 20+045 Rt.

Durable 100 mm Yellow Line
10+120 - 10+140 CL (DBL)
10+155 - 10+275 CL (DBL)
20+006 - 20+045 CL (DBL)

SIGN LEGEND
R = Remove
N = New
S = Salavge sign on new post
RET = Retain sign
R&S = Remove & Salvage
B–B = Back to Back

VT STATE PLANE GRID

B—B
VR-017 LEGAL LOAD LIMIT 24,000 POUNDS N N
STA 10+140.000 Rt.
R1-1 STOP N N
STA 10+154.300 Rt.
VD-700 1070 1419 0325 N
VD-701 BRIDGE 9 VT107 N N
STA 10+174.000 Rt.
VD-701 BRIDGE 9 VT107 N N
STA 10+223.000 Lt.
BRIDGE 9 VT107 R R
STONY BROOK RD S
STA 10+134.300 Rt.

CURVE DATA
DELTA = 39°45'18.8'' LT
R = 250.000
T = 90.388
L = 173.465
E = 15.838
BANK = 6.0%

ML Sta. 10+260.000 =
Drive Sta. 0+000.000

MATCHLINE STA. 10+120
MATCHLINE STA. 10+275
MATCHLINE STA. 20+045

REMOVE GUY POLE
POLE #4 350 172 5
N78°03'46.38"E
N23°47'05.94"E
N38°18'27.59"E
88°49'46.3" 10+260
208.282
PC 20+008.073
PT 20+028.811
PC 20+040.741
PI BK STA = 20+018.6806
AHD STA = 20+018.2034
PI BK STA = 10+184.726
AHD STA = 10+177.414
108.4'
Approximate Aerial Relocation by CVPS & VERIZON
PLUNGE POOL
GRASSED INFILTRATION BASIN
HVCTRL
existing overhead utility
Benchmark #4
Vt Disc "#ST 22-1-N"
Elev. 214.327
WETLAND
STONY BROOK
WOODEN STEPS
WOODS
MAPLES & SHRUBS
MAPLE
IRON PIPE
POLE
GRAVEL DRIVE
Drive PI#1
Drive PI#2
3.0@3.0
12.5 12.5 12.5 12.5
1.5 1.5 1.5
0+010
0+020
0+030
0+040
10+120
10+140
10+160
10+180
10+200
10+220
10+240
SIGN
GUY
STOP
18

R&S STONY BROOK RD
R STOP
R 1070 1419 0325
R LEGAL LOAD LIMIT 24,000 POUNDS

0 10 20 30
SCALE IN METERS

Traffic Signs and Lines Layout 3

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: 85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. WILLIAMS	DRAWN BY: H. I. SALLS
DESIGNED BY: H.I. SALLS	CHECKED BY: R.S. Young
TRAFFIC SIGNS AND LINES LAYOUT 3	SHEET 83 OF 139

WHITE RIVER

VTrans Metric

SIGN LEGEND

R = Remove
N = New
S = Salvage sign
RET = Retain sign
R&S = Remove & Salvage
B-B = Back to Back

W2-2M

STA 10+366.000 Lt.

END PROJECT
BEGIN APPROACH
STA 10+360.000

END APPROACH
STA 10+410.000

VT STATE PLANE GRID

Benchmark #5
Spike in Ash Tree
Elev. 208.282

EXISTING ROW

PI BK STA = 10+370.655
AHD STA = 10+370.581

MATCHLINE STA. 10+275

WOODS
SPRUCES
POLE #350 169A 92
POLE #169 3 92X
GUY
existing overhead utility
SIGN
POLE #168 2 92
MILEMKR
GRAVEL TURNOUT
60 ACP
460 CP
460 RCP
380 CCMP
GOOD
10+280
10+300
10+320
10+340
10+360
10+380
10+400
10+420
10+440
.5M
3.3M
1.5M
0.6M
N38° 18' 27.59"E
N45° 48' 41.05"E
MAILBOX
STONE WALL
CEDARS
GRAVEL DRIVE
SHRUBS
HOUSE
GARDEN
SHED
IRON PIN
3 GUIDE POSTS
PC 10+344.425
PT 10+396.811
FENCE
Blazed Line

CURVE DATA
DELTA = 07°30' 13.5"
R = 400.000
T = 26.230
L = 52.386
E = 0.859
BANK = 5.3 %

SPEED LIMIT 50 N N **R2-1**
STA 10+307.000 Rt.

Removing Signs
10+422.000 Lt. (2)

Removing Light & Signs
(See General Notes)
10+366 Lt.

Durable 100 mm White Line
10+275 - 10+410 Lt.
10+275 - 10+410 Rt.

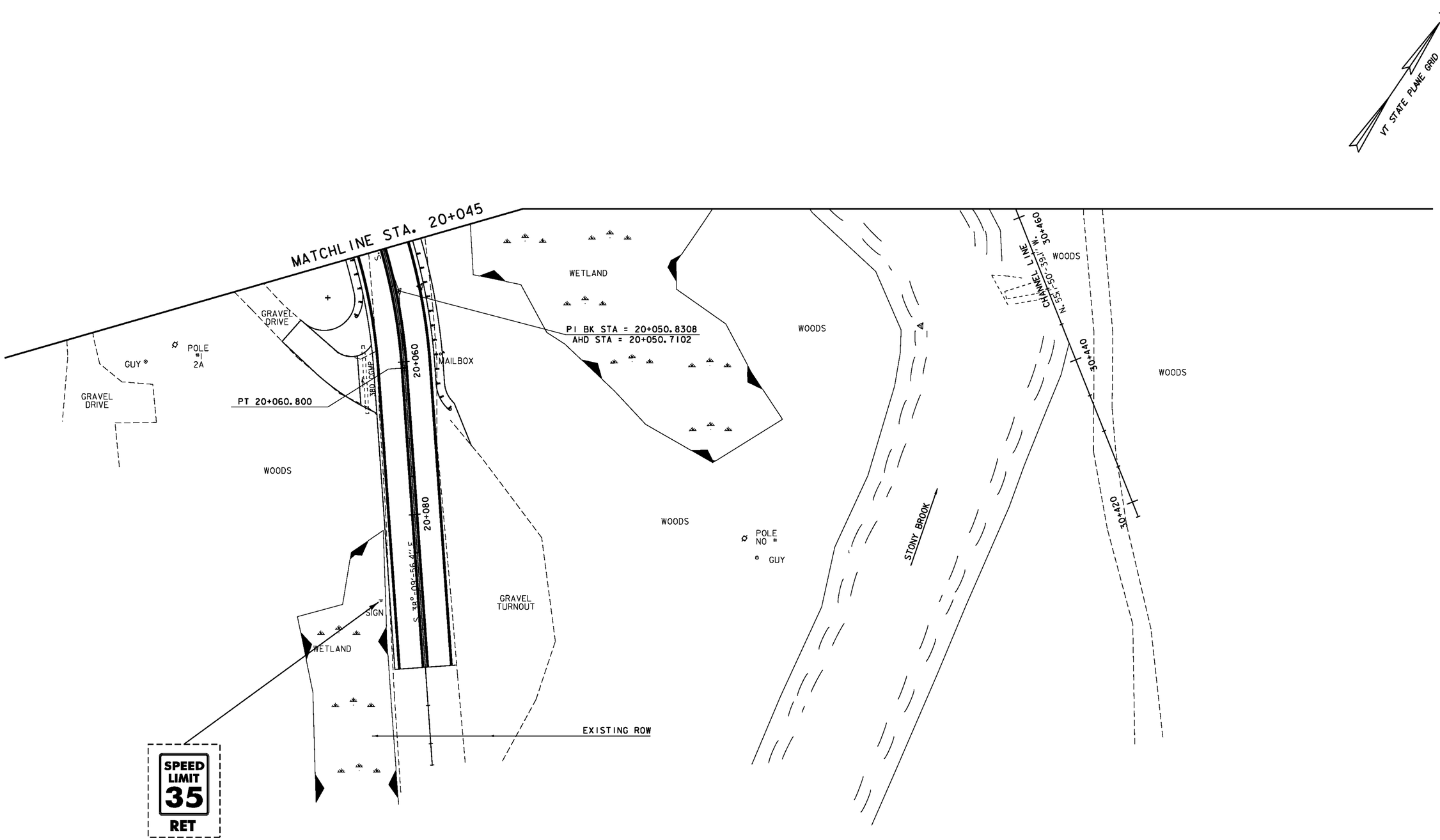
Durable 100 mm Yellow Line
10+275 - 10+410 CL (DBL)

Traffic Signs and Lines Layout 4

0 10 20 30
SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: 85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. WILLIAMS	DRAWN BY: H. I. SALLS
DESIGNED BY: H.I. SALLS	CHECKED BY: R.S. Young
TRAFFIC SIGNS AND LINES LAYOUT 4	SHEET 84 OF 139

VAOT Metric



SIGN LEGEND

R = Remove
N = New
S = Salvage sign
RET = Retain sign
R&S = Remove & Salvage
B-B = Back to Back

Durable 100 mm White Line
20+045 - 20+100 Lt.
20+045 - 20+100 Rt.

Durable 100 mm Yellow Line
20+045 - 20+100 CL (DBL)

0 10 20 30
SCALE IN METERS

Traffic Signs and Lines Layout 5

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

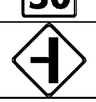
FILE NAME: 85e039/de039bdr.dgn
PROJECT LEADER: C. P. WILLIAMS
DESIGNED BY: H.I. SALLS
TRAFFIC SIGNS AND LINES LAYOUT 5

PLOT DATE: 08-APR-2010
DRAWN BY: H.I. SALLS
CHECKED BY: R.S. Young
SHEET 85 OF 139

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

MUTCD Metric

KILOMETER MARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS EA	WIDTH (mm)	HEIGHT (mm)	NEW & SALVAGED SIGNS "A"	"B"	SALV SIGN	SALV TIS	EXIST POST RETAIN	EXIST POST SALVAGE	NEW SIGN POSTS NO. OF POSTS	FLANGED CHANNEL kg/m 1.7	3.0	4.5	SQUARE STEEL (mm) 44 kg/m 3.4	50 kg/m 3.9	63 kg/m 5.0	ANCHOR	SLEEVE	TUBULAR ALUMINUM Ø (mm) 75 kg/m 1.9	100 kg/m 2.5	100 MOD kg/m 2.5	TUBULAR STEEL Ø (mm) FOUNDATION	75 kg/m 11.3	89 kg/m 13.4	100 kg/m 16.1	125 kg/m 21.7	W-SHAPE STEEL FTG. SIZE 600 mm	750 mm	WEIGHT	POST SIZE	SIGN FRAME REQUIRED	REMARKS	SIGN DETAIL DETAIL IN SHS	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
												OPTION ITEMS																										
9+987.0 Rt.		1	750	750	0.563						1					X																		W2-2M			E-155
10+024.0 LT		1	600	250	0.150				X																								S4-3P FLUORESCENT YELLOW GREEN SHEETING	X		
10+024.0 Lt.		1	600	750	0.450				X																								R2-1	X		
10+024.0 LT		1	600	200	0.120				X																								S4-4P	X		
10+029.6 Rt.		1	600	750	0.450						1					X																		R2-1	X		
10+029.6 Rt.		1	600	750	0.450																													S5-3	X		
10+134.3 RT		1					1				1					X																		ERECT SALVAGED SIGN ON NEW POST			
10+140.0 RT		1	600	750	0.450						1					X																		VR-017			E-141
10+154.3 RT		1	750	750	0.563						1					X																		RI-1	X		
10+154.3 RT		1	150	200	0.030																													VD-700			E-138
10+174.0 Rt.		1	150	200	0.030						1	X																						VD-701			E-134
10+223.0 LT		1	150	200	0.030						1	X																						VD-701			E-134
10+307.0 Rt.		1	600	750	0.450						1					X																		R2-1	X		
10+366.0 Lt.		1	750	750	0.563						1					X																		W2-2M			E-155

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE VTRANS "SIGN POST DESIGN GUIDELINE."
"SHS" = STANDARD HIGHWAY SIGNS

		m	m	m	m	m	m		EA	kg	kg	kg		kg	kg	kg	kg																			
		4				35																															
TOTALS		m^2 4.3	m^2	EA. 1	m^2		m 4		m 35		kg		EA.	kg				EA.	EA.	kg																	

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: str5/85e039/de039trf.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. WILLIAMS	DRAWN BY: H.I. Sails
DESIGNED BY: H.I. Sails	CHECKED BY: R.S. Young
TRAFFIC SIGN SUMMARY SHEET	SHEET 86 OF 139

STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

Metric

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
SPAN 1																	
✳	451	16	9990	ES1601	STR												
▲	610	16	10340	ES1602	STR												
	458	16	1580	ES1603	S5	200	435	415	305			200					
	28	16	2070	ES1604	S5	1200	275	440	150								
✳	29	16	2970	ES1605	S5	1700	275	840	150								
APPROACH SLAB 1																	
△	23	16	9140	1EAS1601	STR												
✳	39	29	4730	1EAS2901	STR												
✳	39	29	3355	1EAS2902	1	375	2980							300			
APPROACH SLAB 2																	
△	23	16	9140	2EAS1601	STR												
✳	39	29	4730	2EAS2901	STR												
✳	39	29	3355	2EAS2902	1	375	2980							300			
ABUT # 1																	
▲	108	16	7250	1A1601	STR												
✳	141	16	3090	1A1602	STR												
✳	95	16	2590	1A1603	STR												
▲	47	16	4580	1A1604	S10		1620	1340	1620								
	47	16	4730	1A1605	S10		2080	570	2080								
	32	16	2320	1A1606	S10		1040	240	1040								
	2	16	2090	1A1607	19		920	1170					250		880		
	2	16	2420	1A1608	19		1250	1170					630		1080		
△	12	16	7250	1EA1601	STR												
△	19	25	1620	1EA2501	19		660	960									
ABUT # 2																	
▲	86	16	7110	2A1601	STR												
✳	140	16	3090	2A1602	STR												
✳	95	16	2690	2A1603	STR												
▲	47	16	4580	2A1604	S10		1620	1340	1620								
	32	16	4500	2A1605	23		1980	240	150	300	1830		---		300		
	2	16	2000	2A1606	19		910	1090					250		880		
	2	16	2090	2A1607	19		1000	1090					480		880		
	16	16	4880	2A1608	S10		2170	540	2170								
△	19	25	1770	2EA2501	19		660	1110									

COPING (ABUT #1)

ITEM	EACH	SIZE	LENGTH	MARK	TYPE
	8	13	7400	1EC1301	STR
✳	9	13	2150	1EC1302	STR
	4	13	3600	1EC1303	STR
	4	13	8100	1EC1304	STR
✳	5	13	2660	1EC1305	STR
	8	13	9125	1EC1306	STR

COPING (ABUT #2)

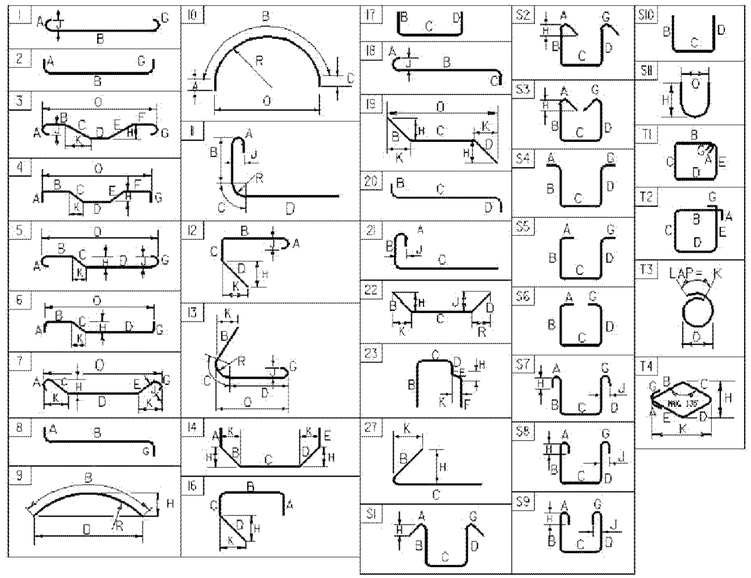
ITEM	EACH	SIZE	LENGTH	MARK	TYPE
	8	13	7400	2EC1301	STR
✳	9	13	2150	2EC1302	STR
✳	5	13	2730	2EC1303	STR
	8	13	9610	2EC1304	STR
	4	13	3520	2EC1305	STR

COPING BOTH ABUT

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D
	90	13	800	EC1310	S10		240	320	240
	103	13	560	EC1311	S10		240	150	170

~ 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 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: **STOCKBRIDGE**
PROJECT NUMBER: **BRF 022-1(20)**

FILE NAME: **85e039rss.xls**
PROJECT MANAGER: **C. P. WILLIAMS**
DESIGNED BY: **ROB YOUNG**
REINFORCING STEEL SCHEDULE

PLOT DATE: **2/23/2010**
DRAWN BY: **D. D. BEARD**
CHECKED BY: **H. I. SALLS**
SHEET **87** OF **139**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

RIGHT - OF - WAY DETAIL SHEET

Metric

TABLE OF PROPERTY ACQUISITION

PARCEL NO.	PROPERTY OWNER	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKE	REMAINDER	RIGHT			RECORDING DATA					REMARKS
					AREA ±	AREA ±	TYPE	(T)/(P)	AREA ±	TITLE	DATE	TOWN / CITY	BOOK	PAGE	
1A	STATE OF VERMONT	30, 31	10+209.450 RT.	10+305.382 LT.	0.44HA	0				WD	1/2/2003	STOCKBRIDGE	60	575-	FORMERLY WALKER, TOTAL TAKING
		32												576	1.09A±
	Note: Parcel #1 is required for stormwater		10+252.819 LT.	10+303.034 RT.			ALL R.T. & I.								WATERLINE
	treatment per Vermont Stormwater		10+303.034 RT.				EXCEPT & RESERVE								SPRING
	Discharge Permit #4233-INDS														
1B		32	10+305.093 LT.	10+453.991 LT.	0.08HA										0.20A±
			10+316.125 LT.				DRAINAGE	(P)							
			10+344.434 LT.				DRAINAGE	(P)							
			10+389.598 LT.				DRAINAGE	(P)							
1C		31, 32	10+209.450 RT.	10+305.671 RT.			ALL R.T.& I.		0.09HA						HWY. EASE. VT. RTE. 107; 0.22A±
1D		32	10+305.382 LT.	10+454.671 RT.			ALL R.T.& I.		0.26HA						HWY. EASE. VT. RTE. 107; 0.64A±
1E		31, 32	10+202.098 RT.	10+304.890 LT.			ALL R.T.& I.								STONY BROOK, WHITE RIVER & VT. RTE. 107, AREA UNDEFINED
1F		31, 32	10+256.576 RT.	10+294.952 RT.			ALL R.T. & I.		399.66SM						HWY. EASE. VT. RTE. 107; 4,302 SF±
1G		32	10+377.000 RT.				DRIVE	(T)							4.2M (14') GRAVEL MM 0337
2A	ELOISE J. THOMPSON, TRUSTEE OF THE ELOISE THOMPSON FAMILY TRUST	29	9+885.33 LT.	9+903.76 LT.	11.71 SM					TRUSTEE	12/18/2009	STOCKBRIDGE	74	6-Apr	126 SF±
2B		29	9+872.87 RT.	9+890.72 RT.	6.73 SM										72 SF±
2C		30, 31	9+989.47 LT.	10+199.891 RT.	0.29 HA										0.73A±
			9+989.47 LT.	10+090.00 LT.			CONST.	(T)	70.3 SM						INCLUDES PDF & EC; 756 SF±
			10+012.53 LT.	10+015.70 LT.			DITCH & DRAINAGE	(P)	7.36 SM						79 SF±
2D		31, 33	10+161.80 RT.	10+188.44 RT.	142.06 SM										1,529 SF±
			10+163.39 RT.	TH 36 20+038.94 LT.			SLOPE	(P)	1.81 SM						19 SF±
			TH 36 20+036.97 LT.	TH 36 20+087.83 LT.			CONST.	(T)	92.44 SM						INCLUDES PDF & EC; 995 SF±
			TH 36 20+042.35 LT.	TH 36 20+060.00 LT.			SLOPE	(P)	39.40 SM±						424SF±
			TH 36 20+063.95 LT.	TH 36 20+070.00 LT.			CUL. DIT. & DR.	(P)	42.71 SM±						460 SF±
			TH 36 20+070.00 LT.	TH 36 20+084.19 LT.			SLOPE	(P)	22.22 SM±						239 SF±
			10+188.44 RT.	10+200.00 RT.			CONST.	(T)	56.25 SM						INCLUDES PDF & EC; 605 SF±
			10+198.29 RT.				REMOVE	(T)							OLD BRIDGE ABUTMENT
2E		29, 30	9+872.87 CL.	10+207.54 RT.	0.59 HA		ALL R.T. & I.								VT. RTE. 107; TH 36 & STONY BROOK
		31													1.47A±

TABLE OF REVISIONS

REVISION NO.	SHEET NO.	DESCRIPTION	DATE
1	30,31	PARCEL NO. 3C BURCHYNS - ADDED NEW PARCEL 3C	09/11/09
		WITH UE(P) 252 SM± (2,712 SF±). ADDED STATIONS	
		10+088.51 RT. TO 10+141.49 RT. 4.5 m (15') PARALLEL	
		TO UTILITY LINE.	
		PER C.O. 9565	
		COMPLETED BY: MT APPROVED BY: HP	
		ELECTRONIC FILES TO STRUCTURES	12/22/09

PLAN LEGEND

EXISTING RIGHT-OF-WAY	TOE OF SLOPE	EC	-EROSION CONTROL
TAKING WITH ACCESS	TOP OF CUT	(P)	-PERMANENT
TAKING WITHOUT ACCESS	SLOPE RIGHT	(T)	-TEMPORARY
CLEAR ZONE	CONSTRUCTION RIGHT	DR.	-DRAINAGE RIGHT
PROPERTY LINE	PROJECT DEMARCATION FENCE	DIT.	-DITCHING RIGHT
		CH.	-CHANNEL RIGHT
		DRIVE	-DRIVE RIGHT
		CUL.	-CULVERT RIGHT
		C&T	-CLEARING & TRIMMING RIGHT
		SR	-SLOPE RIGHT
		UE	-UTILITY EASEMENT

PLOT DATE 03/01/10

APPROVED: HARRY PETROVS DATE: 03-26-08
CHIEF, PLANS & TITLES

PROJECT NAME: **STOCKBRIDGE**
PROJECT NUMBER: **BRF 022-1(20)**

FILE NAME: **85E039.XLS**
PROJECT LEADER: **C. WILLIAMS**
DESIGNED BY: **R. YOUNG**
R.O.W. SHEET 27 OF 33

PLOT DATE: **12/9/98**
DRAWN BY: **MR**
CHECKED BY: **FM**
SHEET **88** OF **139**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

RIGHT - OF - WAY DETAIL SHEET

Metric

TABLE OF PROPERTY ACQUISITION

PARCEL NO.	PROPERTY OWNER	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKE	REMAINDER	RIGHT			RECORDING DATA					REMARKS
					AREA ±	AREA ±	TYPE	(T)/(P)	AREA ±	TITLE	DATE	TOWN / CITY	BOOK	PAGE	
3A	BURCHYNS, RAYMOND C. & PRISCILLA T.	30,31,33	10+139.62 RT.	TH 36 20+060.80 RT.	168.37 SM					WD	8/12/2009	STOCKBRIDGE	73	324-326	1812 SF±
			10+106.38 RT.	TH 36 20+052.15 RT.			CONST.	(T)	85.39 SM						INCLUDES PDF & EC; 919 SF±
			10+109.71 RT.	TH 36 20+040.00 RT.			SLOPE	(P)	184.26 SM						1983 SF±
			10+116.18 RT.	10+137.93 RT.			CUL., DIT. & DR.	(P)							
			10+136.74 RT.	10+140.09 RT.			CULVERT	(P)							INCLUDES HEADWALL
			TH 36 20+040.00 RT.	TH 36 20+052.15 RT.			SLOPE	(T)	15.07 SM						162 SF±
			TH 36 20+056.35 RT.	TH 36 20+072.04 RT.			DITCH	(T)	20.33 SM						219 SF±
			TH 36 20+060.00 RT.				DRIVE	(T)							3.7M. (12') GRAVEL
			TH 36 20+066.08 RT.	TH 36 20+074.77 RT.			SLOPE	(T)	4.13 SM						44 SF±
			TH 36 20+056.35 RT.	TH 36 20+074.77 RT.			INSTALL	(T)	17.25 SM						PDF & EC; 186 SF±
3B		30, 31	10+037.69 RT.	10+162.27 RT.	0.14HA		ALL R.T. & I.								VT. RTE. 107 & TH 36; 0.34A±
3C		30,31	10+088.51 RT.	10+141.49 RT.			UE	(P)	252	WD	9/15/2009	STOCKBRIDGE	73	429-430	INCLUDES GUY WIRE; 2,712 SF
4	FALLON, STEPHEN & JILL D.	31,33	10+202.098 RT.	10+264.722 RT.	381.74 SM		ALL R.T. & I.			WD	2/9/2010	STOCKBRIDGE	74	79-80	VT. RTE. 107; 4109 SF±
	LUISE B. ELDRIDGE-LIFE ESTATE		10+212.36 RT.	10+240.00 RT.			CONST.	(T)	66.63 SM						INCLUDES PDF & EC; 717 SF±
			10+214.26 RT.				REMOVE	(T)							OLD BRIDGE ABUTMENT
			10+260.00 RT.				DRIVE	(T)							3M (10'); GRAVEL; MM 0330
			10+242.21 RT.	10+259.09 RT.			INSTALL	(T)	30.0 SM						PDF & EC;323 SF±
5A	GROTH, SYLVAN L. & JARVIS, PATRICK G.	32	10+323.17 RT.	10+361.77 RT.	21.39 SM					WD	10/16/2009	STOCKBRIDGE	73	552-553	230 SF±
			10+330.00 RT.												MONITOR WELL
			10+330.00 RT.				DRIVE	(T)							6M (20') PAVED; MM 0334
			10+352.00 RT.												DRIVE GRAVEL 3.6M (12') ; MM 0336
5B		32	10+294.396 RT.	10+361.693 RT.	0.05 HA		ALL R.T. & I.								0.13A±; VT. RTE. 107
6	TOWN OF STOCKBRIDGE	31,33	10+147.50 RT.	10+162.27 RT.	91.70 SM		ALL R.T. & I.			QCD	8/19/2009	STOCKBRIDGE	73	341-342	987 SF±;VT. RTE. 107
			TH36 20+017.9 CL	TH36 20+100.000 CL			APPROACH	(T)							TH #36
			TH 36 20+020.00 CL				CULVERT & DITCH	(P)							INCLUDES HEADWALL
7	CENTRAL VERMONT PUBLIC SERVICE CORPORATION														UTILITY
8	TELEPHONE OPERATING COMPANY OF VERMONT, LLC														UTILITY
9	COMCAST of CONNECTICUT/GEORGIA/ MASSACHUSETTS/NEW HAMPSHIRE/ NEW YORK/NORTH CAROLINA/VERMONT, LLC														UTILITY
	MAINTENANCE AGREEMENT ZONE #1	31	TH 36 20+003.28 CL	TH 36 20+017.09 CL											TH 36 LENGTH 13.81M (45.3')
	RELINQUISHMENT AREA NO. I	31,33	10+139.62 RT.	TH 36 20+060.80 RT.											168.37SM (1812 SF ±)

TABLE OF REVISIONS

REVISION NO.	SHEET NO.	DESCRIPTION	DATE

PLOT DATE 03/01/10

PLAN LEGEND

- EXISTING RIGHT-OF-WAY
- TAKING WITH ACCESS
- TAKING WITHOUT ACCESS
- CLEAR ZONE (CZ)
- PROPERTY LINE (P / L)
- TOE OF SLOPE
- TOP OF CUT
- SLOPE RIGHT (SR (P))
- CONSTRUCTION RIGHT (CONST. (T))
- PROJECT DEMARCATION FENCE (PDF)

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

APPROVED: HARRY PETROVS DATE: 03-26-08
CHIEF, PLANS & TITLES

PROJECT NAME: **STOCKBRIDGE**
PROJECT NUMBER: **BRF 022-1(20)**

FILE NAME: **85E039.XLS**
PROJECT LEADER: **C. WILLIAMS**
DESIGNED BY: **R. YOUNG**
R.O.W. SHEET 28 OF 33

PLOT DATE: **04/21/09**
DRAWN BY: **MR**
CHECKED BY: **FM**
SHEET **89** OF **139**

VAOT Metric

Benchmark #2
Goddard Az Mark
Elev. 225.690

N

VT STATE PLANE GRID

BEGIN R.O.W. PROJECT
BRF 022-1(20)
9+872.87 ℄

EXISTING ROW

ELOISE THOMPSON FAMILY TRUST

GASOLINE PUMP

GRAVEL DRIVE

SIGN #

CEDAR

POLE #176 86

HOUSE

LILAC

CONC. 9+885.33
7.54M(24.7') LT

GARAGE

LUMINAIRE

MAPLE

PI BK STA = 9+895.481
AHD STA = 9+894.449

9+898.28
6.24M(20.5') LT

WETLAND

9+958.15
22.71M(74.5') LT

BOUNDARY MARKER

(34.91M (114.5'))

ELOISE THOMPSON FAMILY TRUST

WOODS DRIVE

57.40M (188.3')

9+903.76
7.54M(24.7') LT

WOODS

2E

2A

SIGN

BOUNDARY MARKER

18.43M (60.5')

13.12M 43.0'

5.68M (18.6')

BF

aviation overhead utility

N78°03'46.38"E

7.5M (24.75')

9+885.33

12.46M 40.9'

9+940

9+960

9+900

9+920

9+880

2E

9+890.72
7.54M(24.7') RT

9+959.77
10.90M(35.8') RT

2E

BOUNDARY MARKER

7.53M (24.7')

10.23M (33.6')

17.69M 58.0'

DRIVE

68.35M 224.2'

(60.37M (198.1'))

CURVE DATA
DELTA= 14°02'30.2" RT
R = 836.196
T = 102.981
L = 204.930
E = 6.317

9+860

9+840

9+820

9+800

SIGN

9+872.87
7.54M(24.75') RT

2B

9+883.16
6.82M(22.4') RT

CONC. FOUND.

BLDG.

HOUSE

MAPLE

WOODS

WETLAND

WOODS

WOODS

PC 9+772.500

ELOISE THOMPSON FAMILY TRUST

ELOISE THOMPSON FAMILY TRUST

MATCHLINE STA. 9+970
TO ROW SHEET 30 OF 33 SHEETS

LEGEND

- SEED AND MULCH
- EROSION CONTROL MATTING
- SILT FENCE
- FILTER CURTAIN
- PDF FENCE
- BARRIER FENCE
- DI PROTECTION
- TEMPORARY STONE CHECK DAM

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

SEE DRAINAGE DETAIL SHEET
FOR DRAINAGE FLAG DESCRIPTIONS

FOR EROSION CONTROL
SEE SHEET 14-22 OF 33

FOR R.O.W. USE ONLY

0 10 20 30
SCALE IN METERS

R.O.W. LAYOUT 1

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: 85e039/de039bdr.dgn
PROJECT LEADER: C. P. WILLIAMS
DESIGNED BY: R.S. YOUNG
ROW SHEET 29 OF 33

PLOT DATE: 08-APR-2010
DRAWN BY: H. I. SALLS
CHECKED BY: R. S. YOUNG
SHEET 90 OF 139

VTrans Metric

TO SHEET 29 OF 33 SHEETS
MATCHLINE STA. 9+970

MATCHLINE STA. 10+120
TO SHEET 31 OF 33 SHEETS

WOODS DRIVE

ELOISE THOMPSON FAMILY TRUST

Benchmark #3
RR Spike in Root
Elev. 223.213

WETLAND

10+020.00
13.01M(42.7') LT

BEGIN APPROACH
STA. 9+980.000

BEGIN PROJECT
END APPROACH
STA. 10+020.000

Manufactured Terminal Section, Flared
10+095.00 ~ 10+106.40 Rt.

Bituminous Concrete Curb, Type A
10+085.00 ~ 10+120.00 Lt.

Removal and Disposal of Guardrail
10+095.70 - 10+098.70 Lt.
10+098.70 - 10+120.00 Rt.

HD Steel Beam Guardrail, Galvanized w/ 2.4m Posts
9+970.00 ~ 9+992.30 Lt.

HD Steel Beam Guardrail, Galvanized
9+992.30 ~ 10+120.00 Lt.
10+106.40 ~ 10+120.00 Rt.

Construct Grass Lined Channel
10+084.30 ~ 10+084.35 Lt.

10+084.30
13.00M(42.6') LT

10+090.00
18.19M(59.7') LT

ELOISE THOMPSON FAMILY TRUST

N
VT STATE PLANE GRID

WOODS [34.91M 114.5']
9+989.47
8.53M(28.0') LT
STONE FILL, TYPE II
DIT & DR. (P) CONST. (T)
CONST. (T)
30.90M(101.4')
BOUNDARY MARKER
PINE
POLE
GUY
CONST(T)
64.36M(211.2')
7.71M(25.3')
[46.69M 153.2']
[212.08M 695.8']
4.0%
SIGN
0.6M
3.3M
1.5M
9+980
10+000
10+020
10+040
10+060
10+080
N78°03'46.38"E
REMOVE POLE #173
NEW POLE
GUY POLE
FLOW
[33.02M 108.3']
10+108.59
13.59M(44.6') RT
SR (P) DR (P) & CUL-DIT & CONST. (T)
UE(P)
WOODS
BOUNDARY MARKER
10+037.69
SIGN
10+019.70
22.37M(73.4') RT
[60.37M 198.1']
[18.07M 59.3']
72.04M(236.4')
10+037.69
20.51M(67.3') RT
Approximate Aerial Relocation by CVPS & VERIZON
EXISTING ROW
WOODS DRIVE
PT 9+997.430
BURCHYNS, RAYMOND C. & PRISCILLA T.

2E 2C 3B 3A 3C 2 4

P L

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

SEE DRAINAGE DETAIL SHEET
FOR DRAINAGE FLAG DESCRIPTIONS

FOR R.O.W. USE ONLY

FOR EROSION CONTROL
SEE SHEET 14-23 OF 33

0 10 20 30
SCALE IN METERS

R.O.W. LAYOUT 2

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)

FILE NAME: 85e039/de039bdr.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: R.S. YOUNG
ROW SHEET 30 OF 33

PLOT DATE: 08-APR-2010
DRAWN BY: H.I. SALLS
CHECKED BY: R.S. Young
SHEET 91 OF 139

Bituminous Concrete Curb, Type A
10+120.00 - 10+163.60 Lt.

Construct Drive
10+260.00 Rt - 35M Gravel, 12.0M Paved Apron, 10.6M Wide

Beam Guardrail, Galvanized *
10+165.10 Lt.
10+045.00 Rt. (10+154.19 Rt.) - 10+160.44 Rt.) - 10+165.52 Rt.
Rt.
Lt.
SHEET
TH RAIL LIMITS

Manufactured Terminal Section, Flared
10+242.40 - 10+253.60 Rt.

Removal and Disposal of Guardrail
10+120.00 - 10+180.00 Rt.
10+227.00 - 10+243.00 Rt.

SEE DRAINAGE DETAIL SHEET
FOR DRAINAGE FLAG DESCRIPTIONS

Cast-in-place Concrete Curb, type B
10+163.60 - 10+175.05 Lt.
10+163.45 - 10+175.05 Rt.
10+221.64 - 10+233.35 Rt.
10+221.67 - 10+233.85 Lt.

Construct Infiltration Basin/Plunge Pool
10+170.000 Rt.

Disconnection Area
per Stormwater Permit #4233-INDS
10+223 - 10+275 Lt.

WHITE RIVER

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

NOTE: PARCEL 1 IS REQUIRED FOR STORMWATER TREATMENT PER VERMONT STORMWATER DISCHARGE PERMIT #4233-INDS

ELOISE THOMPSON FAMILY TRUST
VT RTE 107 STA 10+146.023 =
STONY BROOK 20+000.000
STOP ROADWAY
BEGIN BRIDGE
STA 10+175.058

END BRIDGE
RESUME ROADWAY
STA 10+221.658

STATE OF VERMONT

FOR EROSION CONTROL
SEE SHEET 14-24 OF 33

ML Sta. 10+260.000 =
Drive Sta. 0+000.000

10+140.00
17.29M (56.7') LT
[46.69M (153.2')]
12.99M (42.6')
32.93M (108.0')
10+186.97
29.64M (97.2') LT

CURVE DATA
DELTA = 39°45'18.8" LT
R = 250.000
T = 90.328
L = 173.465
E = 15.838
BANK = 6.0%

10+150.00
26.52M (87.0') LT
10+199.891
4.72M (15.49') RT.
PERMANENT STEEL SHEET PILING
10+209.450
4.54M (14.86') RT.

BEGIN MAZ. #1
TH 36 20+003.28
CL
END MAZ #1
TH 36 20+017.09
CL
LENGTH 13.81M (45.3')
[212.08M (695.8')]
10+147.50
11.45M (37.6') RT
10+162.27
13.19M (43.3') RT
10+161.80
19.68M (64.6') RT
10+192.45
20.01M (65.6') RT
10+154.52
17.69M (58.0') RT
10+163.39
29.30M (96.1') RT
10+188.44
29.30M (96.1') RT.
[97.00M (318.24')]
8.70M (28.54')
10.12M (33.20')
8.32M (27.3')
11.70M (38.39')
54.77M (179.69')
[30.64M (100.52')]
5.38M (17.65')
[29.09M (128.25')]
10+264.722
7.50M 24.61') RT.
10+264.558
12.90M (42.32') RT.
10+256.576
20.92M (68.64') RT.
10+212.526
12.55M (41.17') RT.
10+207.54
19.69M (64.6') RT.
10+202.098
12.99M (42.62') RT.

BEGIN REL. #1
10+139.62
16.41M (53.8') RT
PI BK STA = 20+018.680
AHD STA = 20+018.203
PT 20+028.81
TH36 20+028.81
7.54M (24.75') RT
TH36 20+040.74
7.54M (24.75') RT
[18.04M 59.2')]
PC 20+040.741

Approximate Aerial Relocation by
XXXX & VERIZZZZ

BURCHYNS, RAYMOND C. & PRISCILLA T.

ELOISE THOMPSON FAMILY TRUST

WOODEN STEPS
STONE FILL TYPE II
WOODS
MAPLES & SHRUBS
MAPLE
STONE FILL TYPE IV
DRY WELL
TANK
GRASSED INFILTRATION BASIN
CHANNEL LINE N. 55°-50'-39" W.
30+520
10+280.28
EXISTING ROW
WOODS
FALLON, STEPHEN & JILL D.-ET AL
WALKER, E. JOHN JR. & WALKER, ROBERT A.
Benchmark #4
Vt Disc "ST 22-1-N"
ELOISE THOMPSON FAMILY TRUST

TO R.O.W. SHEET 30 OF 33
MATCHLINE STA. 10+120

MATCHLINE STA. 20+045
TO ROW SHEET 33 OF 33

TO R.O.W. SHEET 32 OF 33
MATCHLINE STA. 10+275

VT STATE PLANE GRID

STONY BROOK RD CURVE ONE DATA
DELTA= 29°42'17"LT
R = 40.000 m
T = 10.608 m
L = 20.738 m
E = 1.383 m

DRIVE CURVE DATA CURVE ONE
PC = 0+007.80
PI#1= BK STA = 0+014.297
= AH STA = 0+011.507
PT = 0+018.007
Δ = 89°-59'-52.9" Rt.
R = 6.500
T = 6.500
L = 10.210
E = 2.692
Bearings
S. 50°-31'-12.9" E. bk
S. 39°-28'-40.0" W. ahd

DRIVE CURVE DATA CURVE TWO
PC = 0+025.833
PI#2= BK STA = 0+030.126
= AH STA = 0+029.129
PT = 0+033.422
Δ = 66°-53'-32.6" Lt.
R = 6.500
T = 4.293
L = 7.589
E = 1.290
Bearings
S. 39°-28'-40.0" W. bk
S. 27°-24'-52.7" E. ahd

EXISTING BRIDGE
3 SPAN CURVED CONCRETE "T" BEAM WITH SPILL THRU ABUTMENTS AND 2 - Im WIDE PIERS
BUILT IN 1930, WIDENED IN 1964
53.95M LONG, 6.8Im WIDE
9m OF CLEARANCE OVER STREAM

0 10 20 30
SCALE IN METERS

FOR R.O.W. USE ONLY

R.O.W. LAYOUT 3

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: 85e039/de039bdr.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: R.S. YOUNG
ROW SHEET 31 OF 33

PLOT DATE: 08-APR-2010
DRAWN BY: H.I. SALLS
CHECKED BY: R.S. Young
SHEET 92 OF 139

Metric

WHITE RIVER

Plunge Pool

Disconnection Area
per Stormwater Permit #4233-INDS
10+275 - 10+330 Lt.

HD Steel Beam Guardrail, Galvanized
10+275.00 ~ 10+426.00 Lt.

Cast in Place Concrete Curb, Type B
10+310.00 - 10+327.76 Rt.
10+333.76 - 10+347.25 Rt.

Removal and Disposal of Guardrail
10+311.44 - 10+413.47 Lt.

Removal of Stone Wall
(Included under
Item 203.50 "Common Excavation")
10+325 - 10+332 Rt.

Manufactured Terminal Section, Flared
10+426.00 ~ 10+437.40 Lt.

Construct Drives
10+330.000 Rt.- Gravel Drive w/2.0M Paved Apron, 6.0M Wide (See Chart Below)
10+352.000 Rt.- 2.0M Paved Apron, 5.0M wide
10+376.000 Rt. - 5.0M Gravel Drive, 3.5M Wide w/1.0M Paved Apron, 5.0M Wide

Relocate Mailbox, Single Support
10+317.25 Rt.

Bituminous Concrete Gutter
10+353.30 - 10+374.25 Rt. 2.2M Wide

NOTE: PARCEL 1 IS REQUIRED FOR STORMWATER TREATMENT PER VERMONT STORMWATER DISCHARGE PERMIT #4233-INDS

VT STATE PLANE GRID

Benchmark #5
Spike in Ash Tree
Elev. 208.282

WHITE RIVER

END PROJECT
BEGIN APPROACH
STA 10+360.000

END APPROACH
STA 10+410.000

TO R.O.W. SHEET 31 OF 33
MATCHLINE STA. 10+275

10+304.890
21.50M(70.54')LT.

10+305.093
15.24M(50.00' LT.)

WALKER, E. JOHN JR. &
WALKER, ROBERT A.

STATE OF VERMONT

10+305.382
6.26M(20.54')LT.

PI BK STA = 10+370.655
AHD STA = 10+370.581

150.89M(495.05')

10+361.698
.50M(1.64')LT.

150.11M(492.49')

WALKER, E. JOHN JR. &
WALKER, ROBERT A.

10+453.991
15.24M(50.00')LT.

0.24M
(0.79')

10+453.991
15.00M(49.21')LT.

97.00M(318.24')

56.18M(184.32')

38.10M(125.0')

16.71M(54.8')

91.93M(301.60')

10+454.671
13.52M(44.36')RT.

30.64M(100.52')

10.82M
(35.50')

12.62M(41.4')

21.56M(70.7')

10+310.58
8.31M(27.3')RT.

10+323.17
7.54M(24.75')RT.

10+305.671
1.69M(5.54')RT.

10+300.00
14.82M(48.6')RT.

10+344.74
7.38M(24.2')RT.

10+361.77
7.54M(24.75')RT.

10+361.938
9.17M(30.09')RT.

10+294.396
15.60M(51.18')RT.

10+294.952
3.10M(10.17')RT.

10+361.693
7.17M(23.52')RT.

39.09M(128.25')

12.45M(40.8')

5.63M
(18.5')

0.46M
(1.5')

2.01M
(6.59')

7.67M
(25.16')

CURVE DATA
DELTA = 07°30'13.5"
R = 400.000
T = 26.230
L = 52.386
E = 0.859
BANK = 5.3 %

GROTH, SYLVAN L.
JARVIS, PATRICK G.

EXCEPT & RESERVE SPRING

TO SPRING

WALKER, E. JOHN JR. &
WALKER, ROBERT A.

WALKER, E. JOHN JR. &
WALKER, ROBERT A.

SEE DRAINAGE DETAIL SHEET
FOR DRAINAGE FLAG DESCRIPTIONS

END R.O.W. PROJECT
BRF 022-1(20)
10+454.971
13.52M(44.36')RT.

*Drive @ STA 10+330.00 Rt

POINT	STA	OFFSET
1	10+320.00	4.99 Rt
2	10+320.00	8.49 Rt
3	10+326.72	15.13 Rt
4	10+332.69	15.73 Rt
5	10+333.58	6.80 Rt
6	10+333.76	4.80 Rt
7	10+327.76	4.80 Rt
8	10+327.76	6.80 Rt

FOR EROSION CONTROL
SEE SHEET 14-25 OF 33

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 STATE OF VERMONT'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

0 10 20 30
SCALE IN METERS

R.O.W. LAYOUT 4

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: 85e039/de039bdr.dgn
PROJECT LEADER: C. P. WILLIAMS
DESIGNED BY: R. S. YOUNG
ROW SHEET 32 OF 33

PLOT DATE: 08-APR-2010
DRAWN BY: H. I. SALLS
CHECKED BY: R.S. Young
SHEET 93 OF 139

Metric

TO ROW SHEET 31 OF 33
MATCHLINE STA. 20+045

N

VT STATE PLANE GRID

P L WALKER, E. JOHN JR.
& WALKER, ROBERT A.

FALLON, STEPHEN &
JILL D. -ET AL

N 30°-39'-55" E
CHAMPLEIN LINE

WOODS

P
L

STONY BROOK

WETLAND

STONE FILL
TYPE II

P.I. BK STA = 20+050.8308
AHD STA = 20+050.7102

WOODS

CONST (T)

CUL.DIT & DR (P)

2D

SR (P)

CONST (T)

20+060

20+080

S.38°-09'-56.4" E.

GRAVEL TURNOUT

RIPARIAN BUFFER

ELOISE THOMPSON FAMILY TRUST

POLE NO #

GUY

WOODS

STONE FILL

BURCHYNS, RAYMOND C. &
PRISCILLA T.

3A

WETLAND

APPROACH (T)

6

LIMIT OF WORK
STA. SB 20+100.000
EXISTING ROW

TOWN OF
STOCKBRIDGE

R=5M

SR (T)

CONST. (T)

DRIVE(T)

3A

GRAVEL DRIVE

POLE # 2A

GUY

R=4M (TYP)

R=3M

R=30M

DITCH(T)

PT 20+060.800

GRAVEL DRIVE

END REL. # I
TH36 20+060.80
7.54M(24.75') RT
TH #36

INSTALL(T)

SR(T)

21

20

4

2D

Construct Drive
20+060.000 Rt. - 13.5M Gravel Drive, 3.8M Wide
w/2.0M Paved Apron, 9.0M Wide

HD SteelBeam Guardrail, Galvanized
20+045.00 ~ 20+052.89 Rt.
20+045.00 ~ 20+066.70 Lt.

Anchor for SteelBeam Rail
20+050.00 Rt.
20+065.00 Lt.

Relocate Mailbox, Single Support
20+059.50 Lt.

SEE DRAINAGE DETAIL SHEET
FOR DRAINAGE FLAG DESCRIPTIONS

FOR EROSION CONTROL
SEE SHEET 14-26 OF 33

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

FOR R.O.W. USE ONLY

0 10 20 30
SCALE IN METERS

R.O.W. LAYOUT 5

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: 85e039/de039bdr.dgn
PROJECT LEADER: C. P. WILLIAMS
DESIGNED BY: R.S. YOUNG
ROW SHEET 33 OF 33

PLOT DATE: 08-APR-2010
DRAWN BY: H. I. SALLS
CHECKED BY: R.S. Young
SHEET 94 OF 139

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL OF BRIDGE #9 ALONG WITH ITS PIERS AND ABUTMENTS. BRIDGE #9 WILL THEN BE RELOCATED AND REPLACED BY A NEW STEEL GIRDER WITH CONCRETE SLAB BRIDGE ON NEW ABUTMENTS AND A NEW ALIGNMENT. THE NEW BRIDGE WILL BE RELOCATED APPROXIMATELY 14.5 METERS DOWNSTREAM FROM ITS CURRENT LOCATION. BRIDGE #9 IS LOCATED IN THE TOWN OF STOCK BRIDGE ON VT ROUTE 107 AT THE INTERSECTION OF ROUTE 107 AND STONY BROOK ROAD. THE NEW BRIDGE WILL BE 50.4 METERS LONG, SPANNING STONY BROOK. THIS PROJECT WILL ALSO INVOLVE THE CONSTRUCTION OF 267 METERS OF NEW APPROACHES. THERE ARE A NUMBER OF OVERHEAD UTILITIES THAT WILL BE RELOCATED AS A RESULT OF THIS PROJECT. THERE ARE ALSO A NUMBER OF DROP INLETS THAT WILL BE REMOVED WITH SEVERAL NEW DROP INLETS BEING INSTALLED.

TOTAL AREA OF EARTH DISTURBANCE IS APPROXIMATELY 0.997 HECTARES (2.46 ACRES).

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST TWO CONSTRUCTION SEASONS.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE PROPERTY SURROUNDING THE PROJECT SITE CONSISTS OF STEEP SLOPES COVERED WITH TREES. THE ROAD SIDES ARE STEEP, WITH GRASS AND A FEW TREES. DUE TO THE NATURE OF THE SURROUNDING TERRAIN THE PROJECT SITE WILL SEE VERY LITTLE RUNOFF ONTO IT. THE SLOPES IN THE PROJECT VICINITY RANGE FROM 0-18%.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

STONY BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE BROOK IS CLASSIFIED AS SLIGHTLY MEANDERING WITH A STREAMBED MADE UP OF GRAVEL, COBBLES, AND BOULDERS. THE TRIBUTARY AREA AT THE BRIDGE CROSSING IS 59.41 SQUARE KILOMETERS. THERE ARE A NUMBER OF DROP INLETS ON SITE TO HELP DRAIN WATER FROM THE ROADWAY.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF TREES AND SOME GRASS. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REMOVAL OF BRIDGE #9 ALONG WITH ITS PIERS AND ABUTMENTS AND THE BLENDING OF THE OLD APPROACHES TO MATCH INTO THE SURROUNDING TERRAIN, ALONG WITH THE CONSTRUCTION OF THE NEW BRIDGE, ABUTMENTS, AND APPROACHES. AFTER PROJECT COMPLETION, VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF WINDSOR, VERMONT. SOILS ON THE PROJECT SITE ARE CROGHAN LOAMY FINE SAND AND SHEEPSCOTT FINE SANDY LOAM, 0 TO 18% SLOPES, "K FACTOR" = 0.17.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:
0.0-0.23 = LOW EROSION POTENTIAL
0.24-0.36 = MODERATE EROSION POTENTIAL
0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: NO
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: STONY BROOK
WETLANDS: YES. IT IS ANTICIPATED THAT 104.1 SQUARE METERS OF CLASS III WETLANDS WILL BE AFFECTED BY THIS PROJECT. THESE AREAS ARE DELINEATED ON THE PLANS.

1.3 RISK EVALUATION

THIS PROJECT FALLS UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES FOR LOW RISK PROJECTS. ANY MODIFICATIONS TO THE PROJECT THAT INCREASE THE RISK TO ENVIRONMENTAL RESOURCES SHALL BE EVALUATED IN ACCORDANCE WITH THE PERMIT REQUIREMENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED.

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES. BECAUSE THIS PROJECT FALLS UNDER THE CGP 3-9020, BARRIER FENCE SHALL BE USED INSTEAD OF PROJECT DEMARCATION FENCE WITHIN 100 FEET OF A WATER RESOURCE (STREAM, BROOK, LAKE, POND, WETLAND, ETC).

1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTORS PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED PER DETAIL SHEET INCLUDED WITH PLANS. CONTRACTOR TO PROPOSE LOCATION.

1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN. BECAUSE THIS PROJECT FALLS UNDER THE CGP 3-9020, WOVEN WIRE REINFORCED SILT FENCE SHALL BE USED INSTEAD OF SILT FENCE WITHIN 100 FEET UPSLOPE OF RECEIVING WATERS.

FILTER CURTAIN WILL BE INSTALLED AND MAINTAINED AS PROPOSED ON THE EPSC PLAN AND DETAIL SHEET.

DROP INLET PROTECTION WILL BE UTILIZED AS SHOWN ON THE EPSC PLAN AND DETAIL SHEET.

1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

IT IS ANTICPATED THAT DIVERSION MEASURES WILL NOT BE NECESSARY.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

STONE CHECK DAMS WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND DETAIL SHEET.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

STREAM BANKS WILL BE ARMORED WITH STONE FILL TYPE IV AS SPECIFIED BY VTRANS ON THE PROJECT PLANS.

STONE FILL TYPE II WILL BE UTILIZED AT CULVERT OUTLETS TO DISSIPATE WATER VELOCITIES AND REDUCE EROSION POTENTIAL.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

1.4.11 DE-WATERING ACTIVITIES

THE USE OF COFFERDAMS IS NOT ANTICIPATED.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

1.5 SEQUENCE AND STAGING

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

1.5.1 CONSTRUCTION SEQUENCE

1.5.2 OFF-SITE ACTIVITIES

IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SUBSECTIONS 105.25-105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

1.5.3 UPDATES

THE OPERATIONAL STORMWATER DISCHARGE PERMIT NO. 4233-INDS WILL EXPIRE ON 11/14/2011

THE CGP 3-9020 NOI WILL EXPIRE ON 4/22/2011

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-I(20)

FILE NAME: 85e039/Str/epscnarr.dgn		PLOT DATE:	09-APR-2010
PROJECT LEADER:	C.P.WILLIAMS	DRAWN BY:	M.FESSEL
DESIGNED BY:	R.S.YOUNG	CHECKED BY:	R.S.YOUNG
EPSC NARRATIVE		SHEET	95 OF 139

EROSION AND SEDIMENT CONTROL NOTES:

1. THE AREA OF DISTURBANCE IS .997 HA (2.46 ACRES).
2. AN UPGRADED TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL PLAN SHALL BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL BY THE AGENCY OF TRANSPORTATION.
3. TIME ALL GRADING TO MINIMIZE SOIL EXPOSURE.
4. AT THE END OF EACH DAY'S GRADING OPERATIONS, SHAPE EARTHWORK TO MINIMIZE THE EROSION FROM STORM RUNOFF.
5. RETAIN EXISTING VEGETATION WHENEVER FEASIBLE.
6. TEMPORARILY MULCH AND SURFACE ROUGHEN ALL DISTURBED AREAS WHICH WILL NOT RECEIVE FURTHER DISTURBANCE FOR A PERIOD OF 7 DAYS
7. TEMPORARILY SEED AND MULCH ALL DISTURBED AREAS WHICH WILL NOT RECEIVE FURTHER DISTURBANCE FOR A PERIOD OF 30 DAYS OR MORE.
8. FINAL SEED AND COVER SHALL BE APPLIED WITHIN 48 HOURS OF FINAL GRADING.
9. KEEP RUNOFF VELOCITIES LOW, CONSTRUCT CHECK DAMS AS REQUIRED.
10. PREPARE TEMPORARY DRAINAGE WAYS TO HANDLE CONCENTRATED FLOW UNTIL PERMANENT DRAINAGE IS CONSTRUCTED AND STABILIZED.
11. ALL DISTURBED AREAS WITH SLOPES GREATER THAN 1:3 WILL REQUIRE EROSION MATTING (SEE SHEET 138).
12. CLEAN SEDIMENT CONTROL MEASURES (SEDIMENT TRAPS, SILT FENCE, ETC.) WHEN HALF FULL OF SEDIMENT.
13. AFTER COMPLETION OF THE SUBSTRUCTURE, THE SEDIMENT IN THE TRAPS SHALL BE REMOVED AND THE GROUND RESTORED TO ITS ORIGINAL SLOPES OR GRADED AS SHOWN THE CONSTRUCTION DRAWINGS.
14. THE CONTRACTOR WILL USE TEMPORARY OR PERMANENT EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION AND AS DIRECTED BY THE RESIDENT ENGINEER. SEE SECTION 105.23 OF THE VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006.
15. MONITOR AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES DAILY AND AFTER EACH RAIN STORM.
16. ANY CHANGES MADE TO THE EROSION PREVENTION AND SEDIMENT CONTROL PLAN SHALL BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL BY THE AGENCY OF TRANSPORTATION.
17. ASK FOR ASSISTANCE AND RECOMMENDATIONS AS NEEDED.

PERIMETER CONTROL NOTES:

1. IDENTIFY SENSITIVE AREAS AND AREAS PRONE TO EROSION BASED ON SITE EVALUATION.
2. CLEARLY DEMARCATE SENSITIVE AREA TO AVOID DISTURBANCE USING BRIGHTLY COLORED BARRIER FENCE, MIN 8" WIDE FLAGGING OR SIMILAR.
3. PROTECT ALL SENSITIVE AREAS AND WATER FEATURES FROM SEDIMENT.
4. DIVERT OR OTHERWISE KEEP ALL CONCENTRATED OFF-SITE "RUN-ON" FROM AREAS TO BE DISTURBED.
5. PERIMETER CONTROLS (SILT FENCE, TURBIDITY CURTAIN, ETC.) TO BE INSTALLED PRIOR TO SOIL DISTURBANCE AND MAINTAINED UNTIL SITE IS PERMANENTLY STABILIZED TO THE SATISFACTION OF THE ENGINEER AND ON-SITE COORDINATOR.
6. SEEDING AND MULCH SHALL BE APPLIED IMMEDIATELY TO ALL LAWNS DISTURBED BEYOND THE WORK AREA DELINEATED ON THESE PLANS.
7. PREVENT SEDIMENT FROM LEAVING THE SITE BY MAINTAINING AND MODIFYING PERIMETER CONTROLS AS NEEDED.

GENERAL NOTES:

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE THE FOLLOWING ADDITIONAL INFORMATION FOR APPROVAL AND INCLUSION IN THE COMPLETE EROSION AND SEDIMENT CONTROL PLANS:
   - LOCATION OF WASTE, BORROW AND STAGING AREAS, MATERIAL STOCKPILES, REFUELING AND MAINTENANCE AREAS AND CONCRETE TRUCK WASHOUT LOCATION (ATTACH MAP IF NECESSARY). A DISCUSSION AND ADDITIONAL DETAILS NEEDED FOR PROTECTION AND STABILIZATION OF THESE AREAS SHALL BE INCLUDED AS WELL.
   - MODIFICATIONS REQUIRED TO THESE EROSION PREVENTION AND SEDIMENT CONTROL PLANS.
   - GRADING PLAN / CONSTRUCTION SEQUENCE (INCLUDING PROPOSED DATES ASSOCIATED WITH JOB MILESTONES AS INDICATED ON THE SEQUENCE CONSISTENT WITH PROJECT CRITICAL PATH METHOD SCHEDULE.)
   - REVISED NARRATIVE MATCHING THE GRADING PLAN AND CONSTRUCTION SEQUENCE (RE: TEMPORARY SEEDING AND MULCHING / STABILIZATION).
   - NAME, ADDRESS, PHONE NUMBER AND BASIC QUALIFICATIONS OF "ON-SITE COORDINATOR".
2. WORK SHALL BE GENERALLY CONSISTENT WITH GUIDANCE PROVIDED IN THE LATEST REVISION OF THE VERMONT HANDBOOK FOR SOIL EROSION AND SEDIMENT CONTROL ON CONSTRUCTION SITES AND THE ASSOCIATED GENERAL CONTRACTORS OF VERMONT FIELD HANDBOOK.

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: /STR4/85e039/de039ero.dgn	
IPARM FILE NAME: SJ039ecnotes.i	PLOT DATE: 08-APR-2010
SURVEYED BY: L. ORVIS	SURVEY DATE: JAN 2000
SQUAD LEADER: C. P. WILLIAMS	DRAWN BY: M.FESSEL
EPSC NOTES	SHEET: 96 OF 139

Benchmark #2
Goddard Az Mark
Elev. 225.690

N

VT STATE PLANE GRID

MATCHLINE STA. 9+970

PI BK STA = 9+895.481
AHD STA = 9+894.449

EXISTING ROW

GASOLINE PUMP

HOUSE

LUMINAIRE

GARAGE

WOODS DRIVE

MAPLE

CEDAR

POLE #176 86

LILAC

CONC. WALK

GRAVEL DRIVE

SIGN

BOUNDARY MARKER

WETLAND

WOODS

SIGN #

CURVE DATA
DELTA = 14°02'30.2" RT
R = 836.196
T = 102.981
L = 204.930
E = 6.317

PC 9+792.1500

CONC. FOUND.

BLDG.

DRIVE

GRAVEL DRIVE

COMP PAR 460

9+800 9+820 9+840 9+860 9+880 9+900 9+920 9+940 9+960

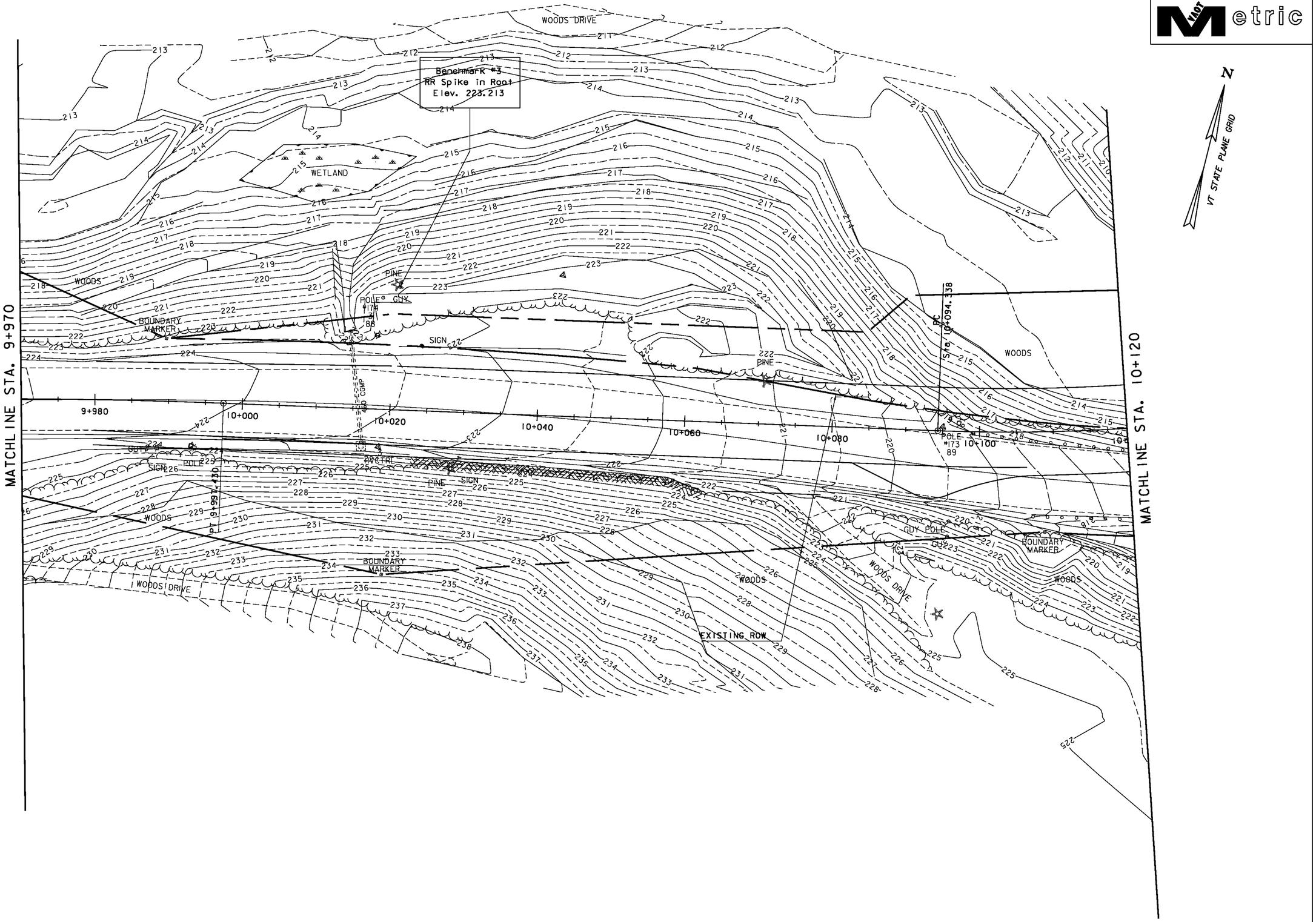
EXISTING CONDITIONS - LAYOUT 1

0 10 20 30
SCALE IN METERS

LEGEND
WETLANDS BOUNDARY

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /str5/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. Williams	DRAWN BY: H.I. SALLS
DESIGNED BY: H.I. SALLS	CHECKED BY: R.S. Young
EXISTING CONDITIONS - LAYOUT 1	SHEET 97 OF 139

VTrans Metric



EXISTING CONDITIONS - LAYOUT 2

0 10 20 30

SCALE IN METERS

LEGEND

WETLANDS BOUNDARY

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /str5/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. Williams	DRAWN BY: H.I. SALLS
DESIGNED BY: H. I. SALLS	CHECKED BY: R.S. Young
EXISTING CONDITIONS - LAYOUT 2	SHEET 98 OF 139

VAOT Metric

N

VT STATE PLANE GRID

MATCHLINE STA. 10+120

MATCHLINE STA. 10+275

MATCHLINE STA. 20+045

CURVE DATA
DELTA = 39°45'08.8" LT
R = 250.000
T = 90.388
L = 173.465
E = 15.838
BANK = 6.0%

RIPARIAN BUFFER

RIPARIAN BUFFER

ML Sta. 10+260.000 =
Drive Sta. 0+000.000

PC 20+008.073

PI BK STA = 20+018.6806
AHD STA = 20+018.2034

PT 20+028.611

PC 20+040.741

PI BK STA = 10+184.726
AHD STA = 10+177.414

Benchmark #4
Vt Disc "ST 22-1-N"
Elev. 214.327

WOODS

WOODEN STEPS

MAPLES & SHRUBS

MAPLE

WETLAND

GRAVEL DRIVE

EXISTING ROW

IRON PIPE

POLE #4

POLE #2

HVCTSL SIGNS

SIGN

GUY

Drive PI #1

Drive PI #2

LEGEND

WETLANDS BOUNDARY

RIPARIAN BUFFER

EXISTING CONDITIONS - LAYOUT 3

0 10 20 30

SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /str5/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. Williams	DRAWN BY: H.I. SALLS
DESIGNED BY: H.I. SALLS	CHECKED BY: R.S. Young
EXISTING CONDITIONS - LAYOUT 3	SHEET 99 OF 139

VTrans Metric

N
VT STATE PLANE GRID

Benchmark #5
Spike in Ash Tree
Elev. 208.282

MATCHLINE STA. 10+275

PI BK STA = 10+370.655
AHD 574 = 10+370.581

EXISTING ROW
RIPARIAN BUFFER

WOODS
SPRUCES
POLE #150
POLE #169
POLE #168
GUY
SIGN
MILEMKR
GRAVEL TURNOUT
460 ACCMP
460 RCP
380 CMP
600
MAILBOX
GRAVEL DRIVE
SHRUBS
IRON PIN
3 GUIDE POSTS
STONE WALL
CEDARS
GARDEN
HOUSE
PC 10+344.425
PT 10+396.81
Blazed Line
SHED
FENCE
IRON PIN

CURVE DATA
DELTA = 07°30' 13.5"
R = 400.000
T = 26.230
L = 52.386
E = 0.859
BANK = 5.3 %

10+280 10+300 10+320 10+340 10+360 10+380 10+400 10+420 10+440

EXISTING CONDITIONS - LAYOUT 4

LEGEND
RIPARIAN BUFFER

0 10 20 30
SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1 (20)
FILE NAME: /str5/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. Williams	DRAWN BY: H.I. SALLS
DESIGNED BY: H.I. SALLS	CHECKED BY: R.S. Young
EXISTING CONDITIONS - LAYOUT 4	SHEET 100 OF 139

VAOT Metric

N

VT STATE PLANE GRID

MATCHLINE STA. 20+045

PI BK STA = 20+050.8308
AHD STA = 20+050.7102

RT 20+060.800

20+060

20+080

S. 38° 09'-56.4" E.

WETLAND

WOODS

GRAVEL DRIVE

POLE 2A

GUY

MAILBOX

SIGN

GRAVEL TURNOUT

POLE NO.

RIPARIAN BUFFER

EXISTING ROW

LEGEND

WETLANDS BOUNDARY

RIPARIAN BUFFER

EXISTING CONDITIONS - LAYOUT 5

0 10 20 30

SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME:/str5/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. Williams	DRAWN BY: H. I. SALLS
DESIGNED BY: H. I. SALLS	CHECKED BY: R.S. Young
EXISTING CONDITIONS - LAYOUT 5	SHEET 101 OF 139

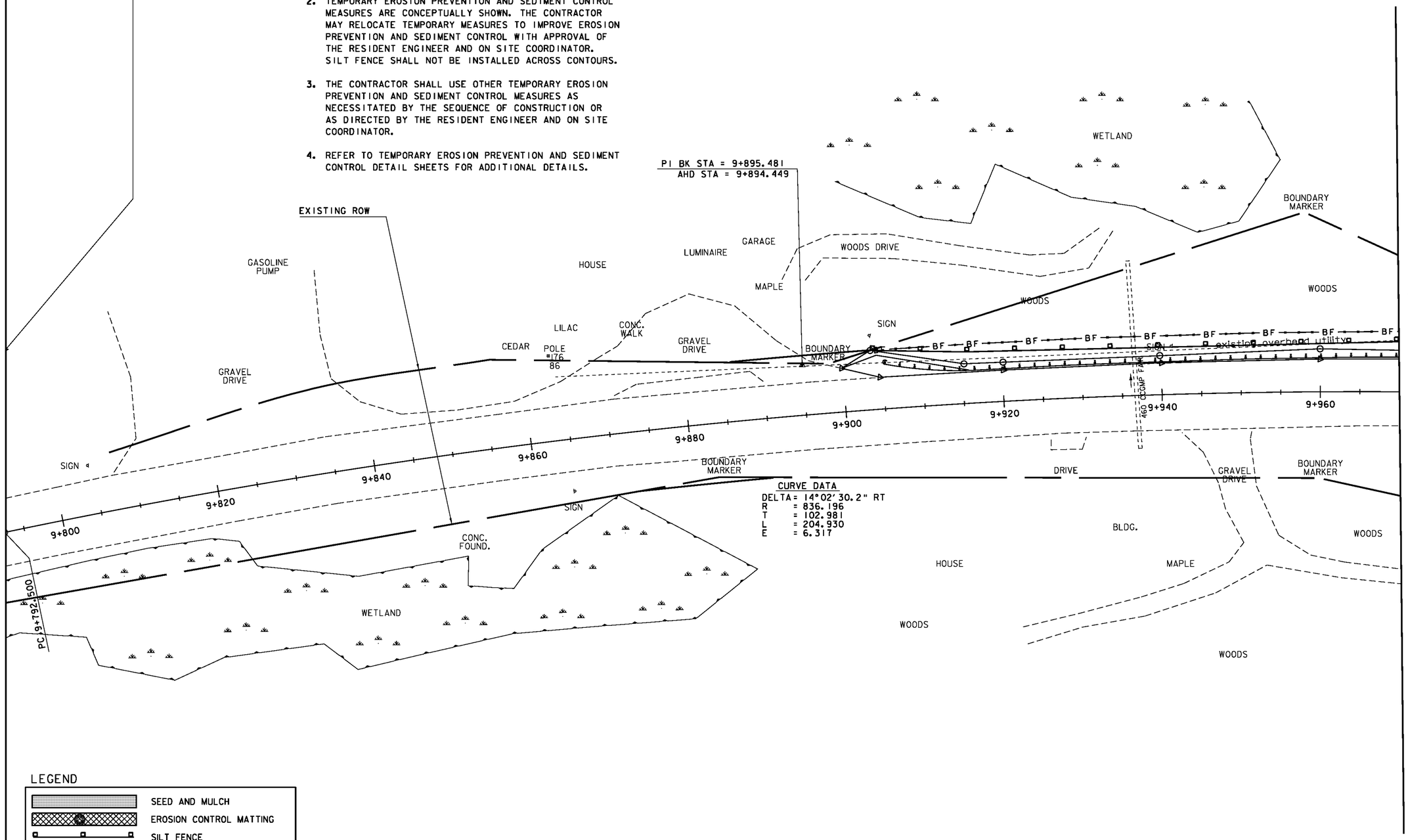
Benchmark #2
Goddard Az Mark
Elev. 225.690

NOTES:

1. THESE PLANS SHOW A CONCEPTUAL EROSION PREVENTION AND SEDIMENT CONTROL PLAN, THE CONTRACTOR MUST SUBMIT A TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL PLAN FOR APPROVAL.
2. TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION PREVENTION AND SEDIMENT CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER AND ON SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON SITE COORDINATOR.
4. REFER TO TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL DETAIL SHEETS FOR ADDITIONAL DETAILS.

VTrans Metric

N
VT STATE PLANE GRID



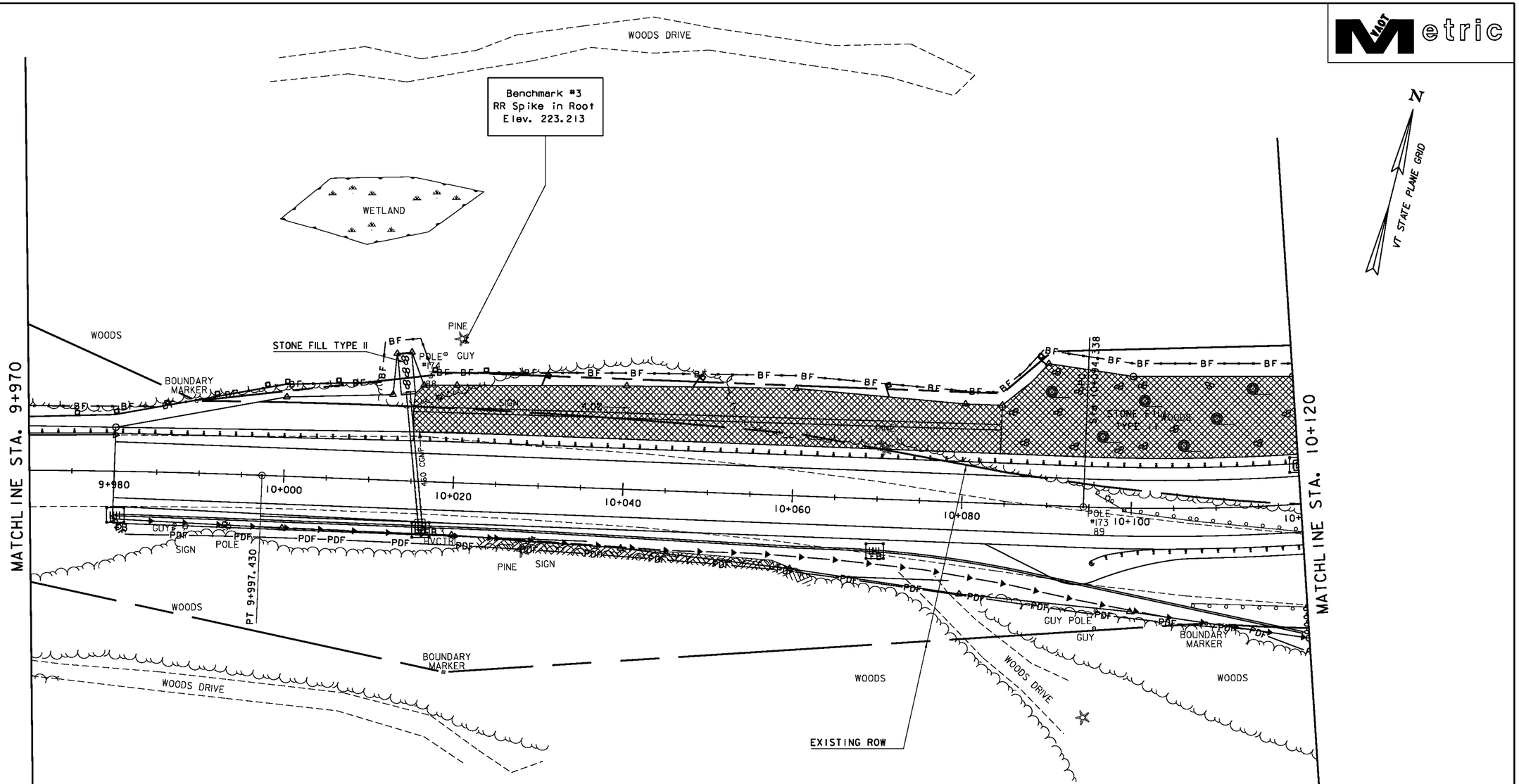
LEGEND

- SEED AND MULCH
- EROSION CONTROL MATTING
- SILT FENCE
- FILTER CURTAIN
- PDF — PDF — PDF FENCE
- BF — BF — BARRIER FENCE
- DI PROTECTION
- TEMPORARY STONE CHECK DAM

EROSION PREVENTION & SEDIMENT CONTROL PLAN - 1

0 10 20 30
SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /str5/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. Williams	DRAWN BY: M.FESSEL
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S. Young
EROSION CONTROL PLAN - LAYOUT 1	SHEET: 102 OF 139



NOTES:

1. THESE PLANS SHOW A CONCEPTUAL EROSION PREVENTION AND SEDIMENT CONTROL PLAN, THE CONTRACTOR MUST SUBMIT A TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL PLAN FOR APPROVAL.
2. TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION PREVENTION AND SEDIMENT CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER AND ON SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON SITE COORDINATOR.
4. REFER TO TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL DETAIL SHEETS FOR ADDITIONAL DETAILS.

LEGEND

- SEED AND MULCH
- EROSION CONTROL MATTING
- SILT FENCE
- FILTER CURTAIN
- PDF FENCE
- BARRIER FENCE
- DI PROTECTION
- TEMPORARY STONE CHECK DAM
- STONE FILL TYPE II
- STONE FILL TYPE IV

EROSION PREVENTION & SEDIMENT CONTROL PLAN - 2

0 10 20 30

SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /str5/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. Williams	DRAWN BY: M.FESSEL
DESIGNED BY: R. S. YOUNG	CHECKED BY: R.S. Young
EROSION CONTROL PLAN - LAYOUT 2	SHEET 103 OF 139

LEGEND

- SEED AND MULCH
- EROSION CONTROL MATTING
- SILT FENCE
- FILTER CURTAIN
- PDF FENCE
- BF BARRIER FENCE
- RIPARIAN BUFFER ZONE
- DI PROTECTION
- TEMPORARY STONE CHECK DAM
- STONE FILL TYPE II
- STONE FILL TYPE IV

NOTES:

1. THESE PLANS SHOW A CONCEPTUAL EROSION PREVENTION AND SEDIMENT CONTROL PLAN, THE CONTRACTOR MUST SUBMIT A TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL PLAN FOR APPROVAL.
2. TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION PREVENTION AND SEDIMENT CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER AND ON SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON SITE COORDINATOR.
4. REFER TO TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL DETAIL SHEETS FOR ADDITIONAL DETAILS.

VT STATE PLANE GRID

CURVE DATA
DELTA = 39°45'18.8'' LT
R = 250.000
T = 90.388
L = 173.465
E = 15.838
BANK = 6.0%

PERMANENT STEEL SHEET PILING

PI BK STA = 20+018.6806
AHD STA = 20+018.2034

PT 20+028.811

PC 20+040.741

PI BK STA = 10+184.726
AHD STA = 10+177.414

ML Sta. 10+260.000 =
Drive Sta. 0+000.000

Benchmark #4
Vt Disc "*ST 22-1-N"
Elev. 214.327

MATCHLINE STA. 10+120

MATCHLINE STA. 20+045

MATCHLINE STA. 10+275

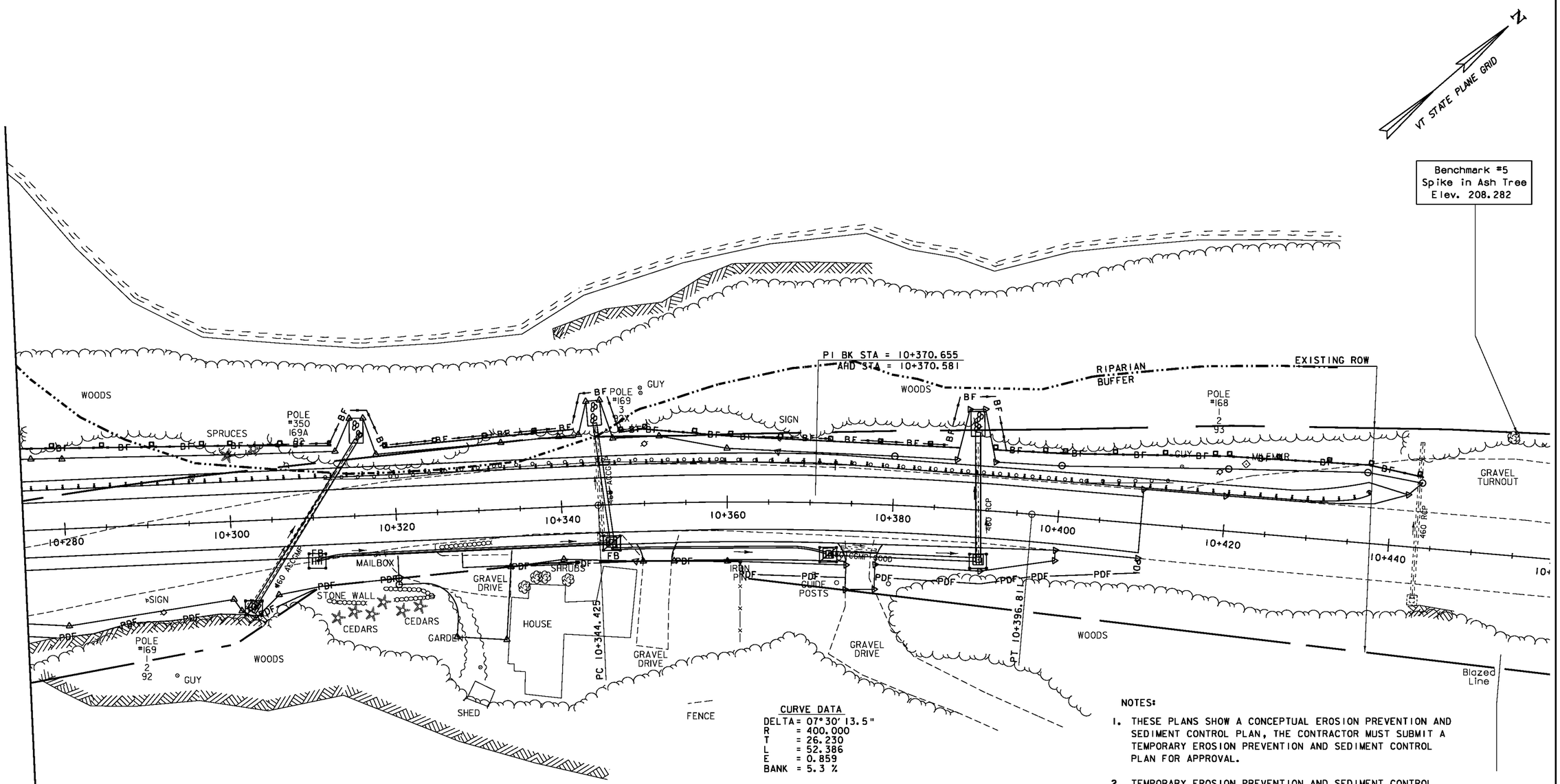
EROSION PREVENTION & SEDIMENT CONTROL PLAN - 3

0 10 20 30

SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /str5/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: M.FESSEL
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S. Young
EROSION CONTROL PLAN - LAYOUT 3	SHEET 104 OF 139

VAOT Metric



CURVE DATA
DELTA = 07°30'13.5"
R = 400.000
T = 26.230
L = 52.386
E = 0.859
BANK = 5.3 %

NOTES:

1. THESE PLANS SHOW A CONCEPTUAL EROSION PREVENTION AND SEDIMENT CONTROL PLAN, THE CONTRACTOR MUST SUBMIT A TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL PLAN FOR APPROVAL.
2. TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION PREVENTION AND SEDIMENT CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER AND ON SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON SITE COORDINATOR.
4. REFER TO TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL DETAIL SHEETS FOR ADDITIONAL DETAILS.

LEGEND

- SEED AND MULCH
- EROSION CONTROL MATTING
- SILT FENCE
- FILTER CURTAIN
- PDF FENCE
- BARRIER FENCE
- RIPARIAN BUFFER ZONE
- DI PROTECTION
- TEMPORARY STONE CHECK DAM
- STONE FILL TYPE II
- STONE FILL TYPE IV

EROSION PREVENTION & SEDIMENT CONTROL PLAN - 4

0 10 20 30
SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /str5/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: M.FESSEL
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S. Young
EROSION CONTROL PLAN - LAYOUT 4	SHEET 105 OF 139

NOTES:

1. THESE PLANS SHOW A CONCEPTUAL EROSION PREVENTION AND SEDIMENT CONTROL PLAN, THE CONTRACTOR MUST SUBMIT A TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL PLAN FOR APPROVAL.

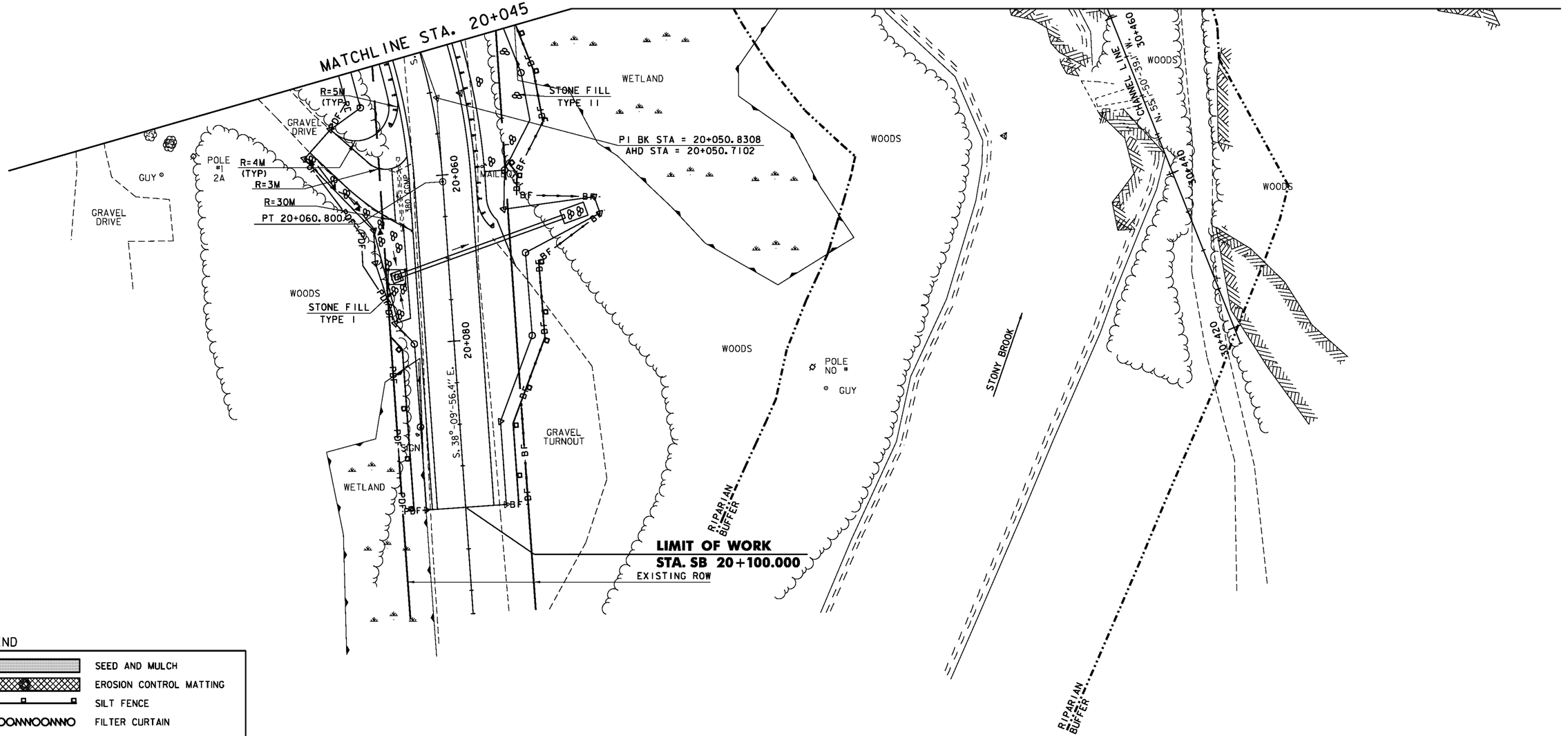
2. TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION PREVENTION AND SEDIMENT CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER AND ON SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.

3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON SITE COORDINATOR.

4. REFER TO TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL DETAIL SHEETS FOR ADDITIONAL DETAILS.

VAOT Metric

N
VT STATE PLANE GRID



LEGEND

- SEED AND MULCH
- EROSION CONTROL MATTING
- SILT FENCE
- FILTER CURTAIN
- PDF PDF — PDF FENCE
- BF BF — BARRIER FENCE
- RIPARIAN BUFFER ZONE
- DI PROTECTION
- TEMPORARY STONE CHECK DAM
- STONE FILL TYPE II
- STONE FILL TYPE IV

EROSION PREVENTION & SEDIMENT CONTROL PLAN - 5

0 10 20 30

SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1 (20)
FILE NAME: /str5/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. Williams	DRAWN BY: M. FESSEL
DESIGNED BY: R. S. YOUNG	CHECKED BY: R.S. Young
EROSION CONTROL PLAN - LAYOUT 5	SHEET 106 OF 139

Benchmark #2
Goddard Az Mark
Elev. 225.690

N

VT STATE PLANE GRID

PI BK STA = 9+895.481
AHD STA = 9+894.449

EXISTING ROW

GASOLINE PUMP

HOUSE

LUMINAIRE

GARAGE

MAPLE

WOODS DRIVE

WETLAND

BOUNDARY MARKER

WOODS

SIGN

existing overhead utility

LILAC

CONC. WALK

CEDAR

POLE #176 86

GRAVEL DRIVE

BOUNDARY MARKER

460' COMP. PARA.

9+940

9+960

9+900

9+920

9+880

9+860

9+840

9+820

9+800

SIGN

BOUNDARY MARKER

225 m

DRIVE

GRAVEL DRIVE

BOUNDARY MARKER

CURVE DATA
DELTA = 14°02'30.2" RT
R = 836.196
T = 102.981
L = 204.930
E = 6.317

SIGN

BLDG.

CONC. FOUND.

HOUSE

MAPLE

WOODS

WETLAND

225 m

226 m

227 m

228 m

WOODS

WOODS

PC 9+792.1500

MATCHLINE STA. 9+970

FINAL CONDITIONS - LAYOUT 1

0 10 20 30

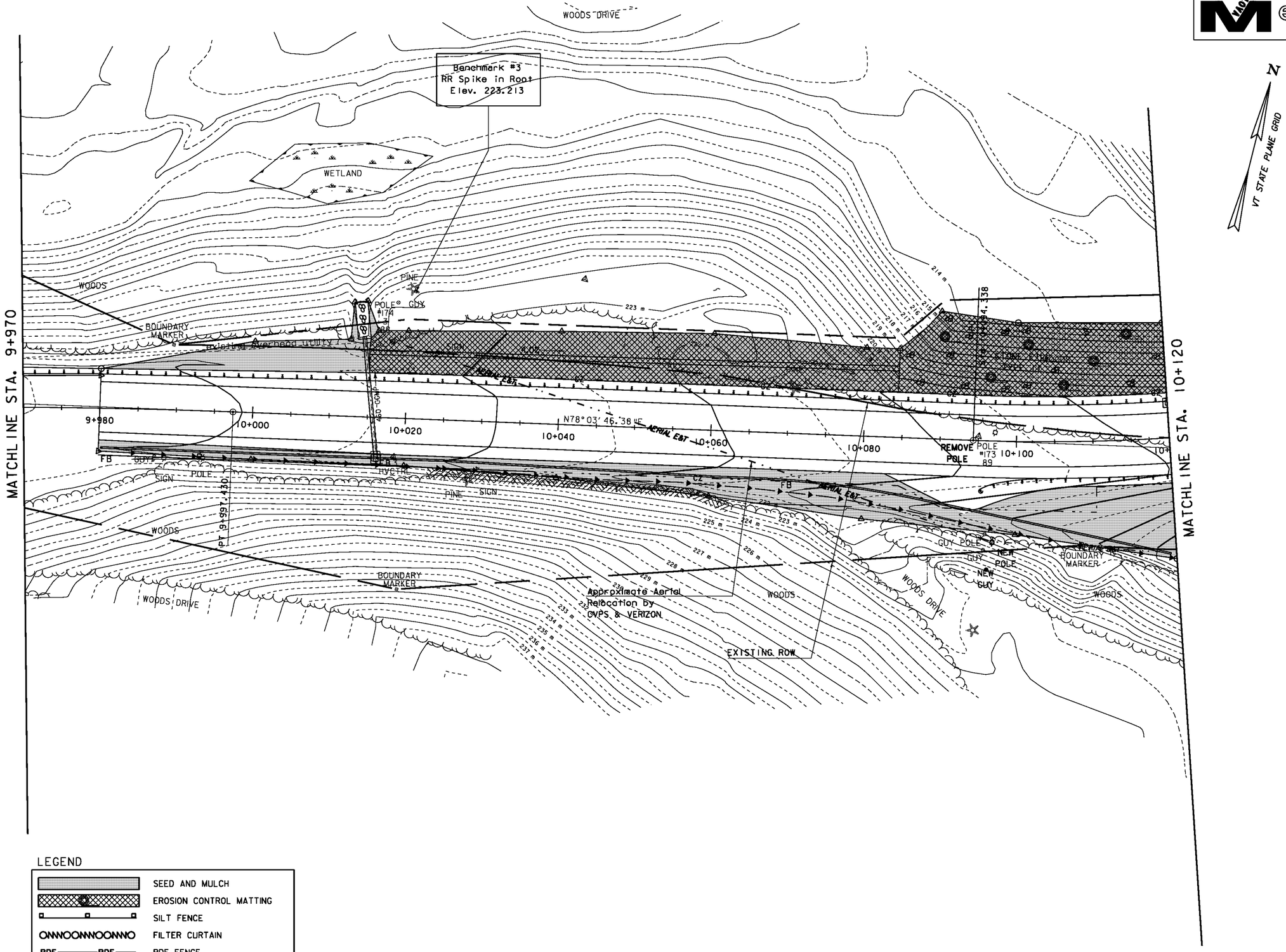
SCALE IN METERS

LEGEND

WETLANDS BOUNDARY

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /str5/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. Williams	DRAWN BY: M.FESSEL
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S. Young
FINAL CONDITIONS - LAYOUT 1	SHEET 107 OF 139

VAOT Metric



LEGEND

- SEED AND MULCH
- EROSION CONTROL MATTING
- SILT FENCE
- FILTER CURTAIN
- PDF FENCE
- BARRIER FENCE
- DI PROTECTION
- TEMPORARY STONE CHECK DAM
- STONE FILL TYPE II
- STONE FILL TYPE IV

FINAL CONDITIONS - LAYOUT 2

0 10 20 30

SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /str5/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. Williams	DRAWN BY: M.FESSEL
DESIGNED BY: R. S. YOUNG	CHECKED BY: R.S. Young
FINAL CONDITIONS - LAYOUT 2	SHEET 108 OF 139

LEGEND

- SEED AND MULCH
- EROSION CONTROL MATTING
- SILT FENCE
- FILTER CURTAIN
- PDF FENCE
- BARRIER FENCE
- RIPARIAN BUFFER ZONE
- DI PROTECTION
- TEMPORARY STONE CHECK DAM
- STONE FILL TYPE II
- STONE FILL TYPE IV

VT STATE PLANE GRID

MATCHLINE STA. 10+120

MATCHLINE STA. 10+275

MATCHLINE STA. 20+045

RIPARIAN BUFFER

RIPARIAN BUFFER

STONY BROOK

CURVE DATA
DELTA = 39° 45' 18.8'' LT
R = 250.000
T = 90.388
L = 173.465
E = 15.838
BANK = 6.0%

PERMANENT STEEL SHEET PILING

ML Sta. 10+260.000 =
Drive Sta. 0+000.000

PI BK STA = 20+018.6800
AHD STA = 20+018.2034

PT 20+028.811

PC 20+040.741

PI BK STA = 10+184.726
AHD STA = 10+177.414

Benchmark #4
Vt Disc "#ST 22-1-N"
Elev. 214.327

PLUNGE POOL

GRASSED INFILTRATION BASIN

WETLAND

WOODS

WOODEN STEPS

MAPLES & SHRUBS

MAPLE

GRAVEL DRIVE

EXISTING ROW

IRON PIPE

SIGN

POLE

GUY

Drive Pl#1

Drive Pl#2

88° 49' 46.3"

S 23°-47'-05.9" E

FINAL CONDITIONS - LAYOUT 3

0 10 20 30

SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /str5/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C. P. Williams	DRAWN BY: M.FESSEL
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S. Young
FINAL CONDITIONS - LAYOUT 3	SHEET 109 OF 139

VTrans Metric

N

VT STATE PLANE GRID

Benchmark #5
Spike in Ash Tree
Elev. 208.282

MATCHLINE STA. 10+275

P.I. BK STA = 10+370.655
AHD 374 = 10+370.581

RIPARIAN BUFFER

EXISTING ROW

WOODS

POLE #169

6 GUY

92X

SIGN

SPRUCES

POLE #350 169A 92

POLE #168 2 93

GUY

MILEMKR

GRAVEL TURNOUT

CZ

FB

MAILBOX

460 RCP

10+280 10+300 10+320 10+340 10+360 10+380 10+400 10+420 10+440

STONE WALL

CEDARS

GARDEN

HOUSE

GRAVEL DRIVE

SHRUBS

IRON PIN

3 GUIDE POSTS

PC 10+344.429

PT 10+396.815

WOODS

Blazed Line

SHED

FENCE

CURVE DATA
DELTA = 07° 30' 13.5"
R = 400.000
T = 26.230
L = 52.386
E = 0.859
BANK = 5.3 %

IRON PIN

LEGEND

- SEED AND MULCH
- EROSION CONTROL MATTING
- SILT FENCE
- FILTER CURTAIN
- PDF FENCE
- BARRIER FENCE
- RIPARIAN BUFFER ZONE
- DI PROTECTION
- TEMPORARY STONE CHECK DAM
- STONE FILL TYPE II
- STONE FILL TYPE IV

FINAL CONDITIONS - LAYOUT 4

0 10 20 30

SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME:/str5/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: M.FESSEL
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S. Young
FINAL CONDITIONS - LAYOUT 4	SHEET 110 OF 139

VAOT Metric

N
VT STATE PLANE GRID

MATCHLINE STA. 20+045

R=5M (TYP.)
GRAVEL DRIVE
POLE #2
GUY
R=4M (TYP.)
R=3M
R=30M
RT. 20+060.800
GRAVEL DRIVE
20+060
20+080
MAILBOX
STONE FILL TYPE II
WETLAND
PI BK STA = 20+050.8308
AHD STA = 20+050.7102
WOODS
STONE FILL TYPE I
WOODS
S. 38° 09'-56.4" E.
GRAVEL TURNOUT
GUY
WETLAND
WOODS
POLE NO. 8
GUY
RIPARIAN BUFFER
EXISTING ROW
STONY BROOK
N. 52° 39'-50.6" E.
20+120
20+140
RIPARIAN BUFFER

LEGEND

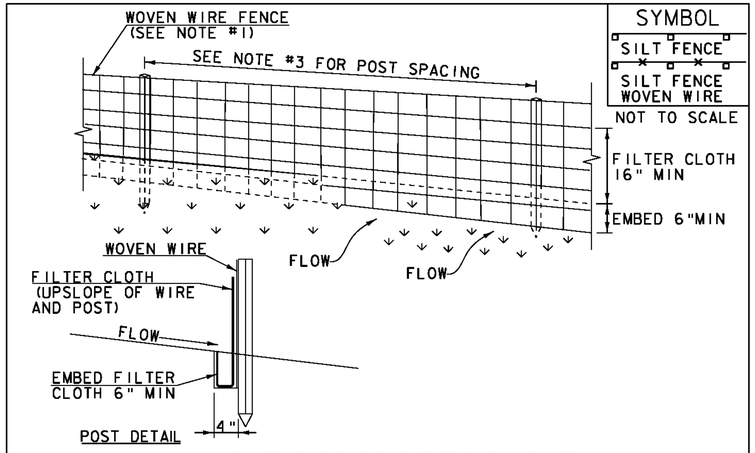
- SEED AND MULCH
- EROSION CONTROL MATTING
- SILT FENCE
- FILTER CURTAIN
- PDF FENCE
- BARRIER FENCE
- RIPARIAN BUFFER ZONE
- DI PROTECTION
- TEMPORARY STONE CHECK DAM
- STONE FILL TYPE II
- STONE FILL TYPE IV

FINAL CONDITIONS - LAYOUT 5

0 10 20 30
SCALE IN METERS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)

FILE NAME: /str5/85e039/de039bdr.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: M. FESSEL
DESIGNED BY: R.S. YOUNG	CHECKED BY: R.S. Young
FINAL CONDITIONS - LAYOUT 5	SHEET III OF 139



SYMBOL

SILT FENCE

SILT FENCE WOVEN WIRE

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

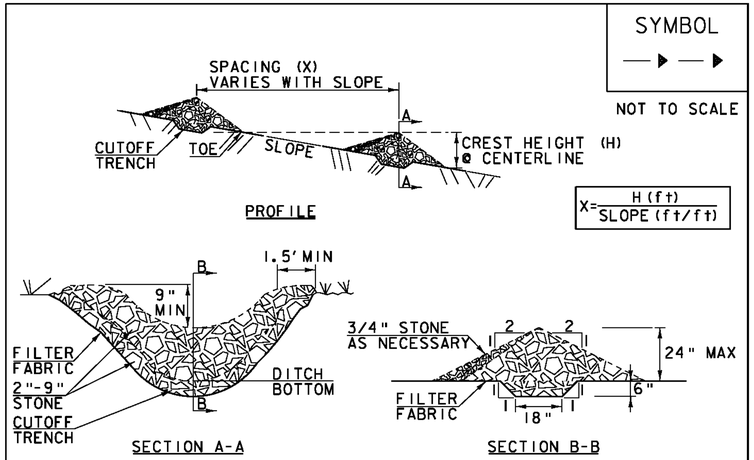
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51) OR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

REVISIONS		
MARCH 21, 2008		WHF
DECEMBER 11, 2008		WHF
JANUARY 13, 2009		WHF



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION.
2. CHECK DAMS SHALL BE SPACED SO THAT THE ELEVATION OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM DAM.
3. 3/4" FILTERING STONE MAY BE ADDED TO THE FACE OF THE CHECK DAM AS NECESSARY.
4. EXTEND THE STONE A MINIMUM OF 1.5' BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
5. PROTECT CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
6. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
7. MAXIMUM DRAINAGE AREA 2 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

CHECK DAM

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR TEMPORARY STONE CHECK DAM, TYPE I (PAY ITEM 653.25)

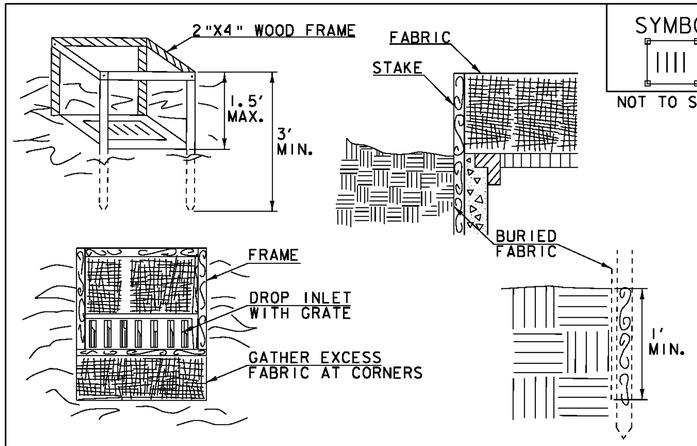
REVISIONS		
MARCH 21, 2008		WHF
JANUARY 8, 2009		WHF

EROSION PREVENTION & SEDIMENT CONTROL DETAILS SILT FENCE AND CHECK DAMS

PROJECT:	PROJECT NO.:
STOCKBRIDGE	BRF 022-1(20)

DESIGN FILE NAME: /str4/85e039/de039ero.dgn
IPARM FILE NAME: sj039epsclm.i
SURVEYED BY: L. ORVIS
SQUAD LEADER: C. P. WILLIAMS
SILT FENCE & CHECK DAMS

PLOT DATE: 08-APR-2010
SURVEY DATE: JAN 2000
DRAWN BY:
SHEET: 112 OF 139



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN APPARENT OPENING SIZE OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2"x 4" WOOD OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3'.
4. SPACE STAKES EVENLY AROUND INLET 3' APART AND DRIVE A MINIMUM 18" DEEP. SPANS GREATER THAN 3' MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1' MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.
7. MAXIMUM DRAINAGE AREA 1 ACRE

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FILTER FABRIC DROP INLET PROTECTION

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR INLET PROTECTION DEVICE, TYPE I (PAY ITEM 653.40).

REVISIONS	
MARCH 7, 2008	WHF
JANUARY 13, 2009	WHF

EROSION PREVENTION & SEDIMENT CONTROL DETAILS DROP INLET PROTECTION

PROJECT:	PROJECT NO.:
STOCKBRIDGE	BRF 022-1(20)
DESIGN FILE NAME: /str4/85e039/de039ero.dgn	
IPARM FILE NAME: sJ039epsc2m.i	PLOT DATE: 08-APR-2010
SURVEYED BY: L. ORVIS	SURVEY DATE: JAN 2000
SQUAD LEADER: C. P. WILLIAMS	DRAWN BY:
DROP INLET PROTECTION	SHEET: 113 OF 139

VAOT RURAL AREA MIX					
	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
37.5%	22.5	45	CREEPING RED FESCUE	85%	98%
37.5%	22.5	45	TALL FESCUE	90%	95%
5.0%	3	6	RED TOP	90%	95%
15.0%	9	18	BIRDSFOOT TREFOIL	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	85%	95%
100%	60	120			

VAOT URBAN AREA MIX					
	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
42.5%	34	68	CREEPING RED FESCUE	85%	98%
10.0%	8	16	PERENNIAL RYE GRASS	90%	95%
42.5%	34	68	KENTUCKY BLUE GRASS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	85%	95%
100%	80	160			

GENERAL GUIDANCE			
FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10-20-10	19-19-19	PELLETIZED	LIQUID
500 LBS/AC		2 TONS/AC	4.4 GAL/AC

CONSTRUCTION GUIDANCE

1. RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
2. URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
7. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED
8. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

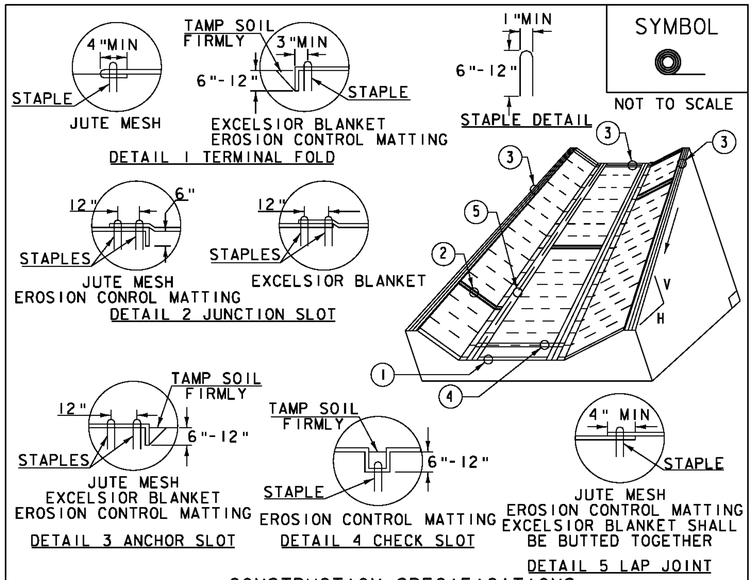
ADAPTED FROM VTRANS TECHNICAL LANSCAPE MAUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

REVISIONS	
JUNE 23, 2009	WHF
JANUARY 15, 2010	WHF

EROSION PREVENTION & SEDIMENT CONTROL DETAILS SEED

PROJECT:	PROJECT NO.:
STOCKBRIDGE	BRF 022-1(20)
DESIGN FILE NAME: /str4/85e039/de039ero.dgn	
IPARM FILE NAME: sj039epsc3m.i	PLOT DATE: 08-APR-2010
SURVEYED BY: L. ORVIS	SURVEY DATE: JAN 2000
SQUAD LEADER: C. P. WILLIAMS	DRAWN BY:
SEED	SHEET: 114 OF 139



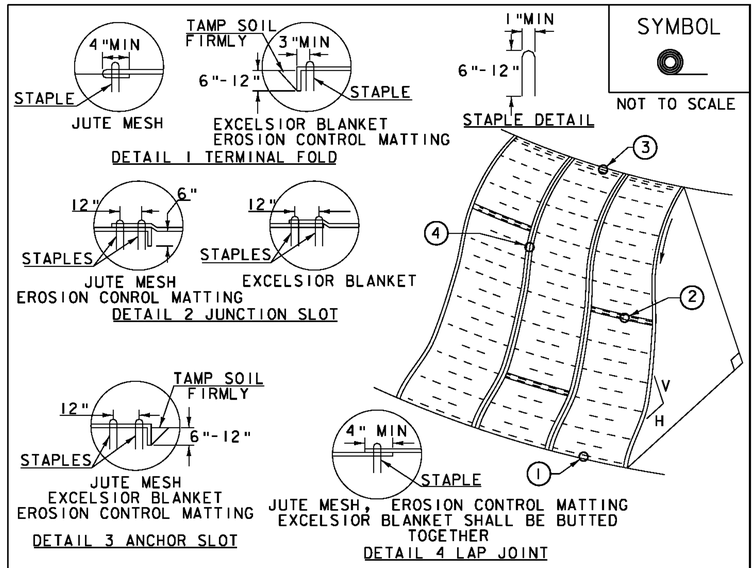
CONSTRUCTION SPECIFICATIONS

1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	ROLLED EROSION CONTROL PRODUCT (RECP) DITCH

NOTES:
REFER TO 'THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- ' FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

REVISIONS		
MARCH 8, 2007	JMF
APRIL 16, 2007	WHF
JANUARY 13, 2009	WHF



CONSTRUCTION SPECIFICATIONS

1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

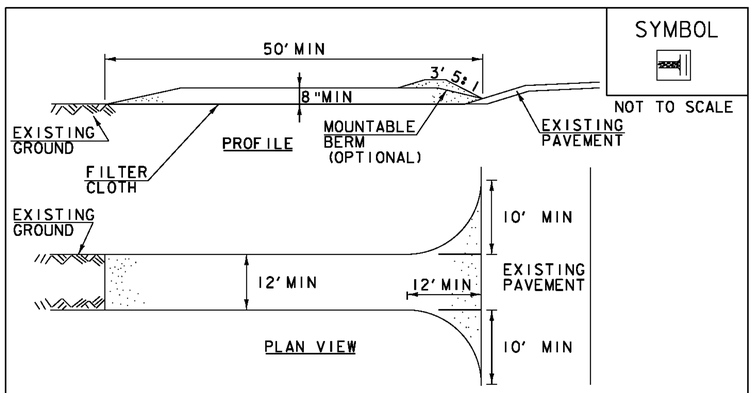
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

NOTES:
REFER TO 'THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- ' FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

REVISIONS		
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF

EROSION PREVENTION & SEDIMENT CONTROL DETAILS DITCH & SIDE SLOPE PROTECTION

PROJECT: STOCKBRIDGE	PROJECT NO.: BRF 022-1(20)
DESIGN FILE NAME: 85e039/Structures/de039ero.dgn	
IPARM FILE NAME: sj039epsc5m.i	PLOT DATE: 08-APR-2010
SURVEYED BY: L. ORVIS	SURVEY DATE: JAN 2000
SQUAD LEADER: C. P. WILLIAMS	DRAWN BY:
DITCH & SIDE SLOPE PROTECTION	SHEET: 115 OF 139



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE- USE 1-4" STONE, RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
3. THICKNESS- NOT LESS THAN 8".
4. WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
6. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. 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.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

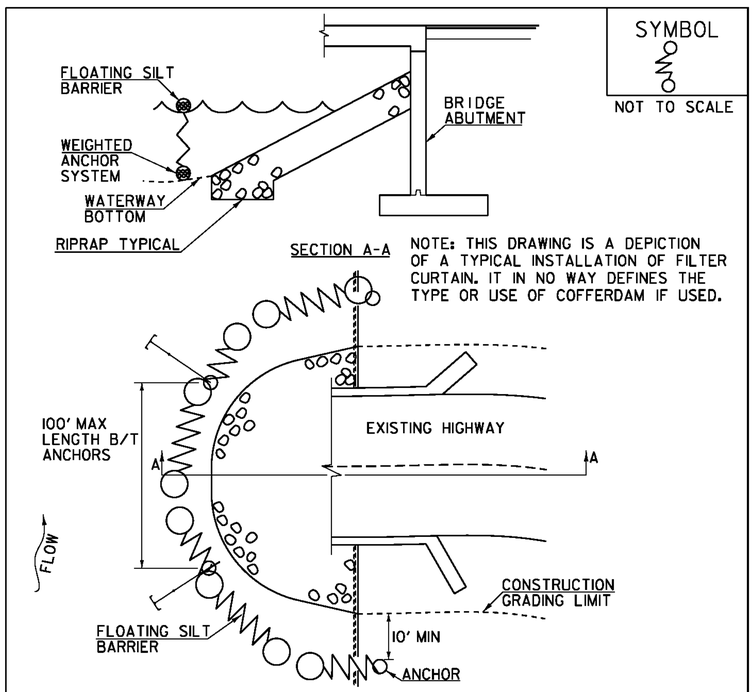
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STABILIZED CONSTRUCTION ENTRANCE

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR VEHICLE TRACKING PAD (PAY ITEM 653.35) OR AS SPECIFIED IN THE CONTRACT.

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF



CONSTRUCTION SPECIFICATIONS

1. FILTER CURTAIN SHALL NOT BE PLACED ACROSS A FLOWING WATERWAY, OR IN A WATERWAY WITH STREAM VELOCITIES GREATER THAN 1.5 FEET/SECOND.
2. MAXIMUM 100' LENGTH BETWEEN ANCHORS.
3. LAST SECTION SHALL TERMINATE A MINIMUM OF 10' BEYOND LIMIT OF DISTURBANCE.
4. THE WEIGHTED ANCHOR SYSTEM SHALL BE A TYPE WHICH ALLOWS THE CURTAIN TO CONFORM TO THE BOTTOM OF THE WATERWAY.
5. THE CURTAIN SHALL BE REMOVED BY SLOWLY PULLING TOWARD THE SHORE MINIMIZING THE ESCAPE OF SEDIMENTS INTO WATERWAY.

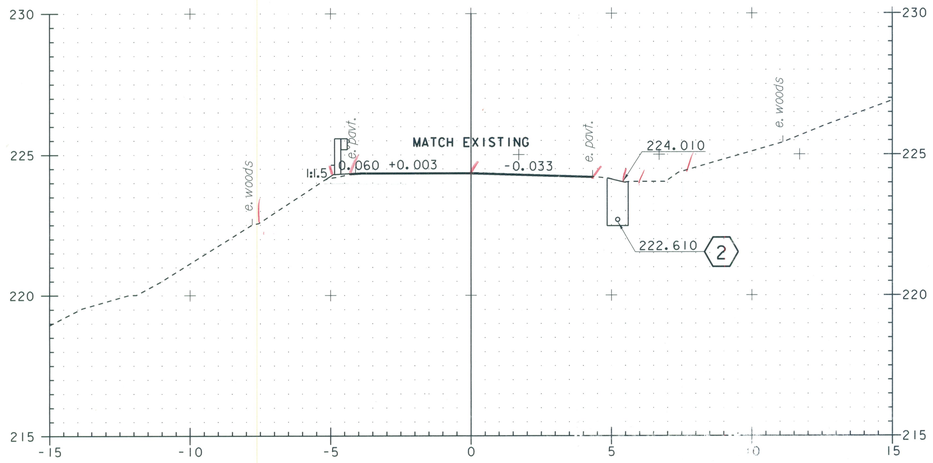
FILTER CURTAIN

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.61).

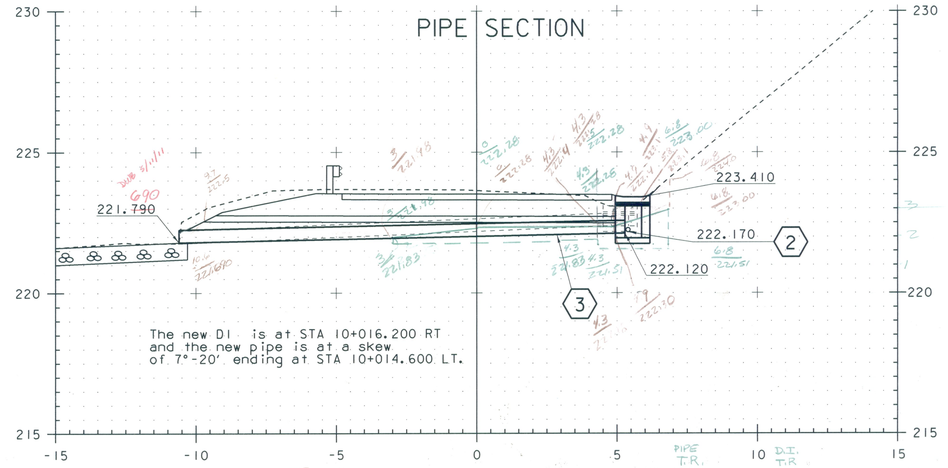
REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF
SEPTEMBER 4, 2009	WHF

EROSION PREVENTION & SEDIMENT CONTROL DETAILS FILTER CURTAIN & CONSTRUCTION ENTRANCE

PROJECT:	PROJECT NO.:
STOCKBRIDGE	BRF 022-1(20)
DESIGN FILE NAME: /str4/85e039/de039ero.dgn	
IPARM FILE NAME: sj039epsc6m.i	PLOT DATE: 08-APR-2010
SURVEYED BY: L. ORVIS	SURVEY DATE: JAN 2000
SQUAD LEADER: C. P. WILLIAMS	DRAWN BY:
FILTER CURTAIN & CONSTRUCTION ENTRANCE	SHEET: 116 OF 139



9+980
Begin Approach



10+016

DI - TE

4.1 222.4
4.1 222.1
5.8 222.1
5.8 223.1
6.8 224.0
6.8 223.0
4.9 222.1
4.9 221.0
4.3 222.4

PIPE T.E.

-10.16 221.69
- 9.7 222
4.2 222.4
4.2 222.28
0 222.28
-3 221.98
- 10.6 221.640

PIPE T.R.

-3 222.28
0 222.28
4.3 222.28
4.3 222.83
-8 221.83
-3 221.98

DI. T.R.

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0 222.28
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6.8 221.51
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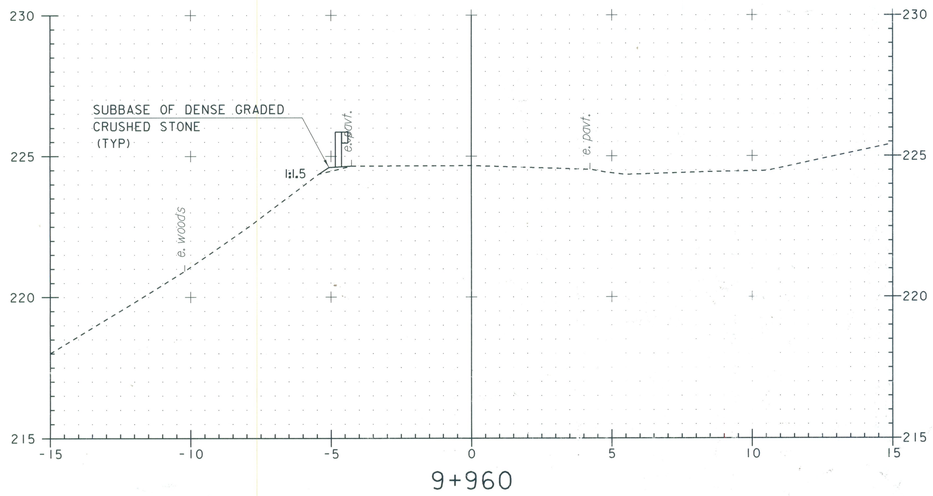
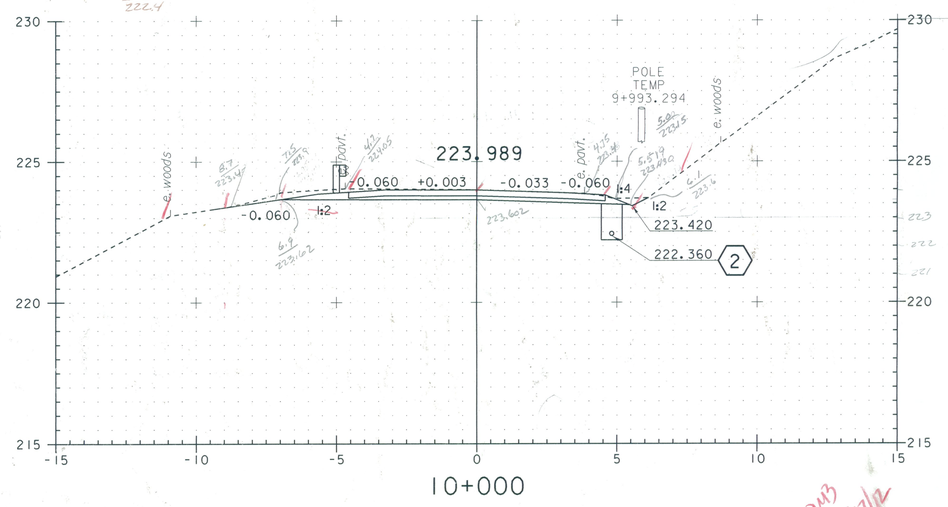
4.3 222.28



9+960



10+000

COLD PLANING ENDS AT 9+996.000
ZERO SUBBASE MATERIAL

SEE SHEET 12 FOR DRAINAGE FLAG DESCRIPTIONS

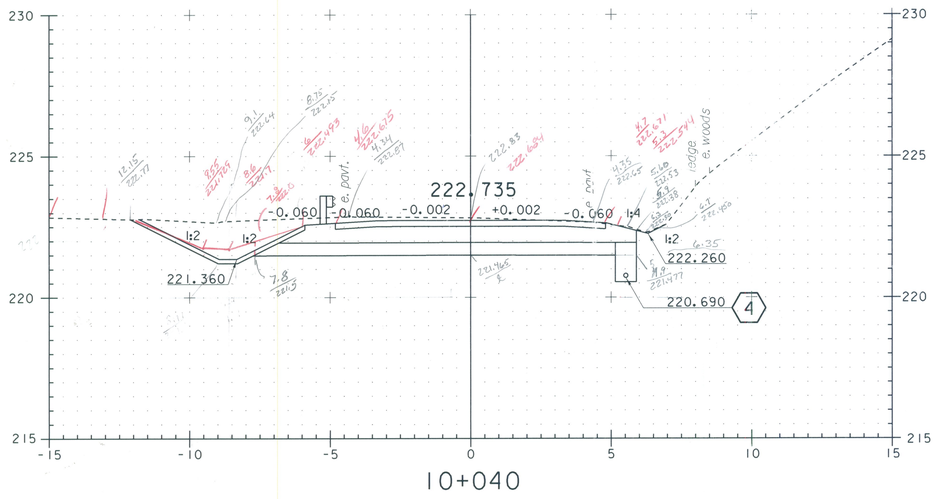
0 5 10
GRAPHIC SCALE 1:100

STA 9+960 TO 10+016

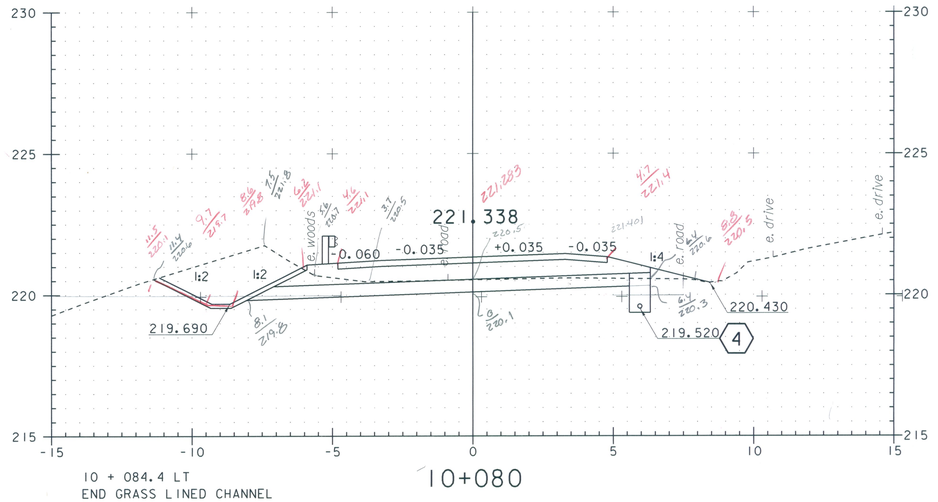
PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: /sr15/85e039/de039xsl.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: G. Shangraw
MAINLINE CROSS SECTIONS 1

PLOT DATE: 08-APR-2010
DRAWN BY: G. Shangraw
CHECKED BY: R.S. Young
SHEET 117 OF 139

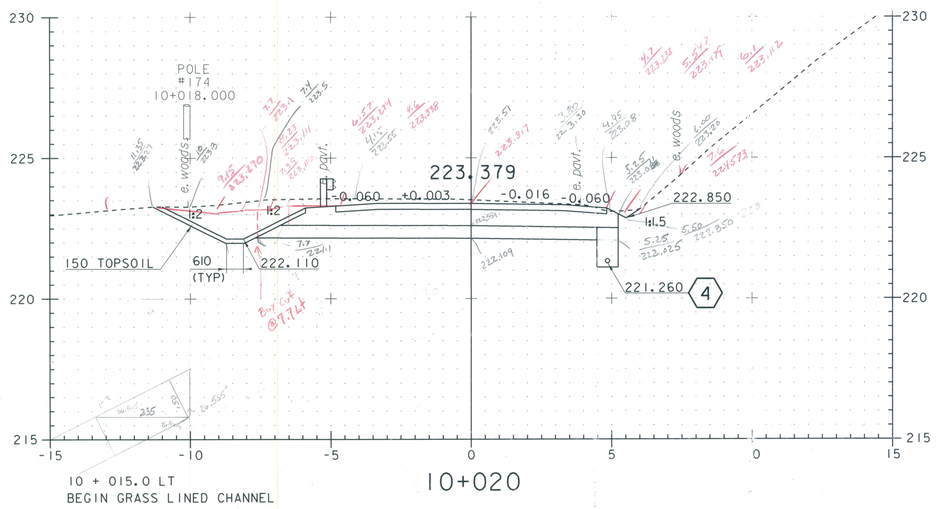


10+040



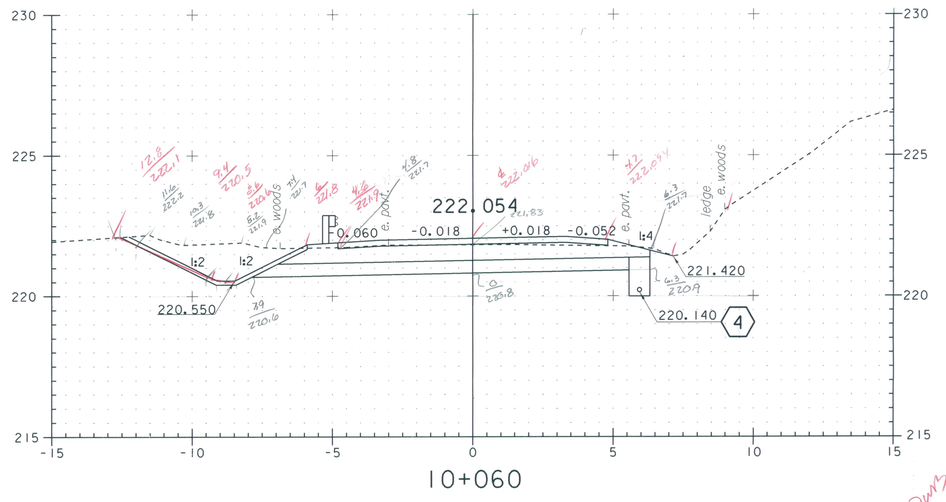
10 + 084.4 LT
END GRASS LINED CHANNEL

10+080



10 + 015.0 LT
BEGIN GRASS LINED CHANNEL

10+020



10+060

10+020.000
End Approach
Begin Project

SEE SHEET 12 FOR DRAINAGE FLAG DESCRIPTIONS

0 5 10
GRAPHIC SCALE 1:100

STA 10+020 TO 10+080

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

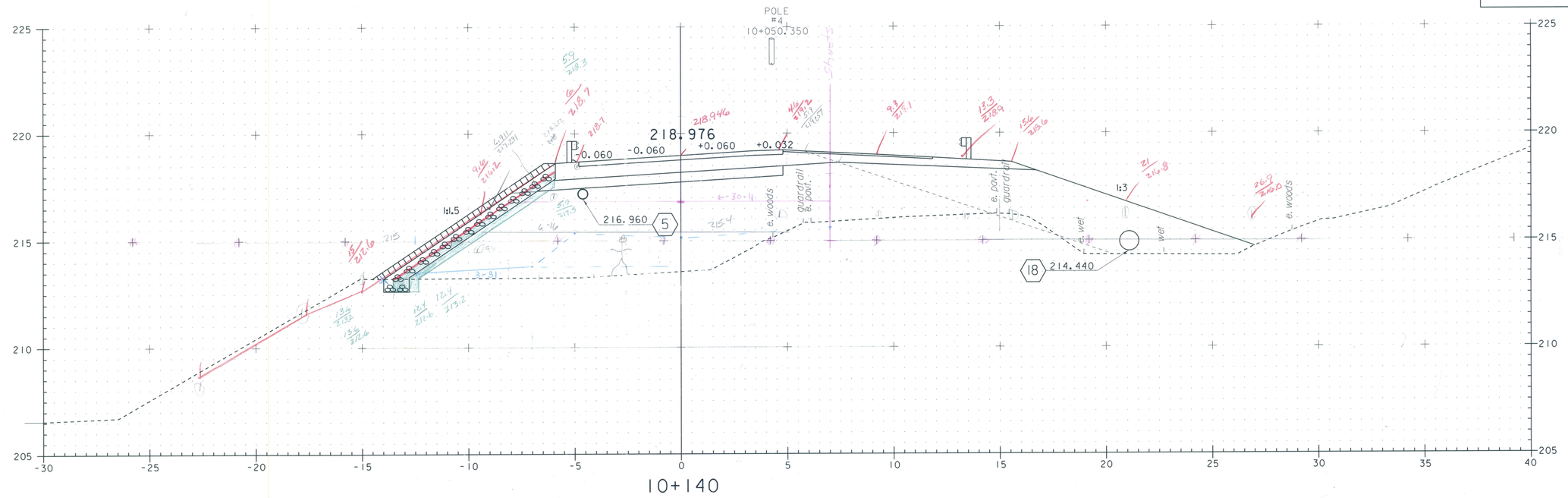
FILE NAME: /srt5/85e039/de039xsl.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: G. Shangraw
MAINLINE CROSS SECTIONS 2

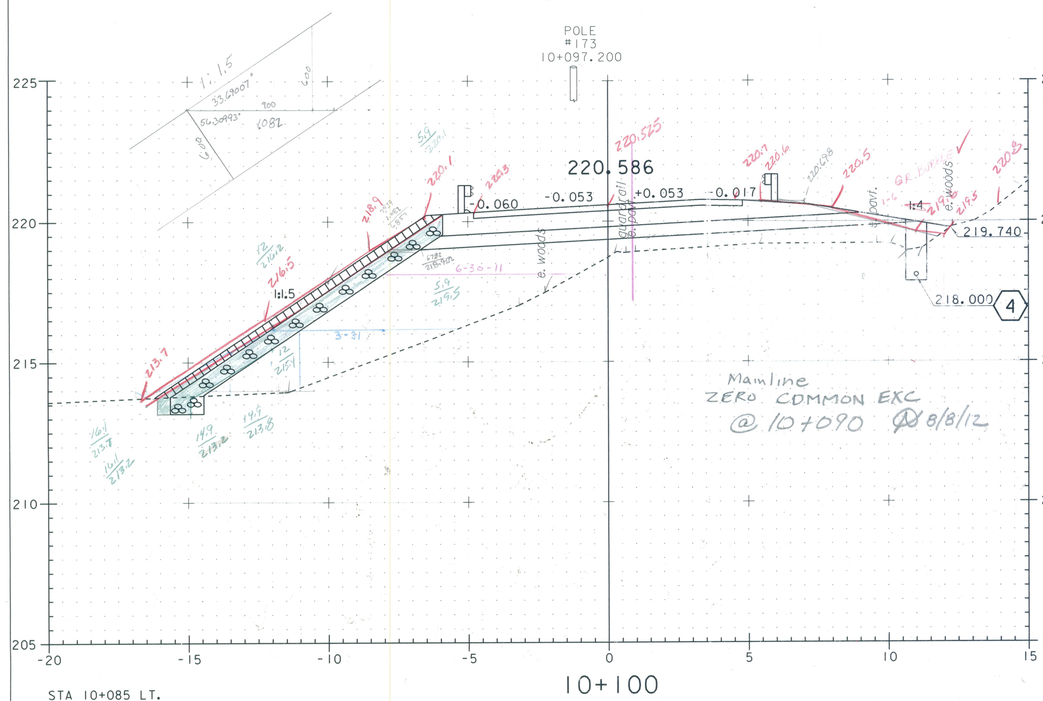
PLOT DATE: 08-APR-2010
DRAWN BY: G. Shangraw
CHECKED BY: R.S. Young
SHEET 118 OF 139

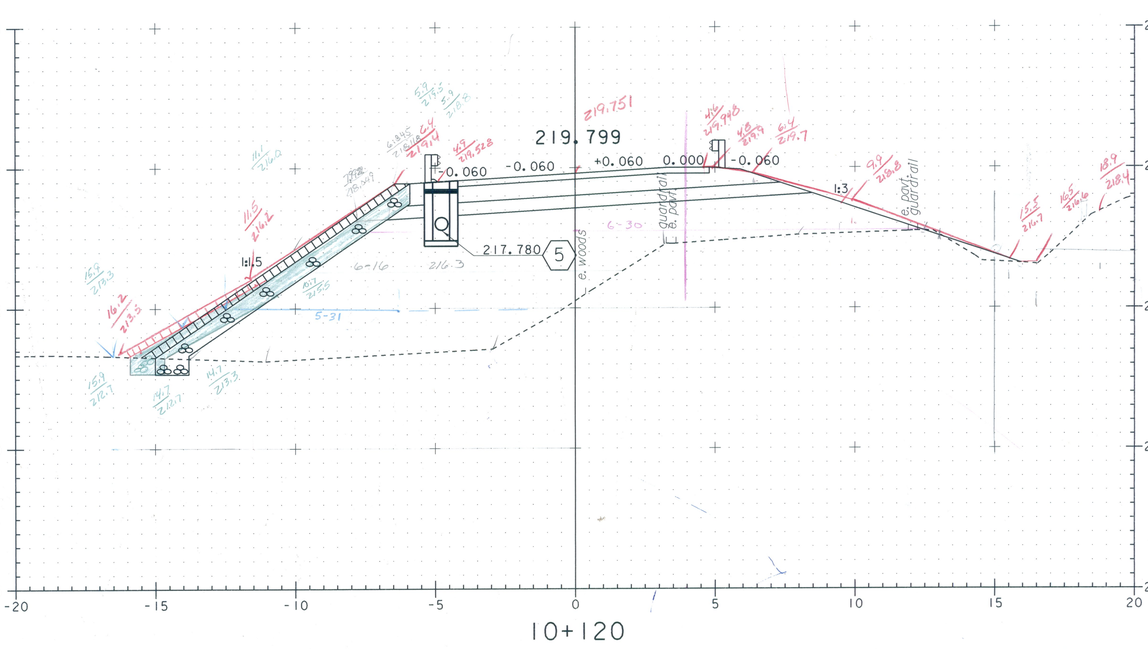
1.270

1.5 x 0.060 = 0.09
1.5 x 0.032 = 0.048

Metric







STA 10+085 LT.
BEGIN BITUMINOUS CONCRETE CURB
BEGIN STONE FILL TYPE II
BEGIN GRUBBING MATERIAL
BEGIN GEOTEXTILE UNDER STONE FILL

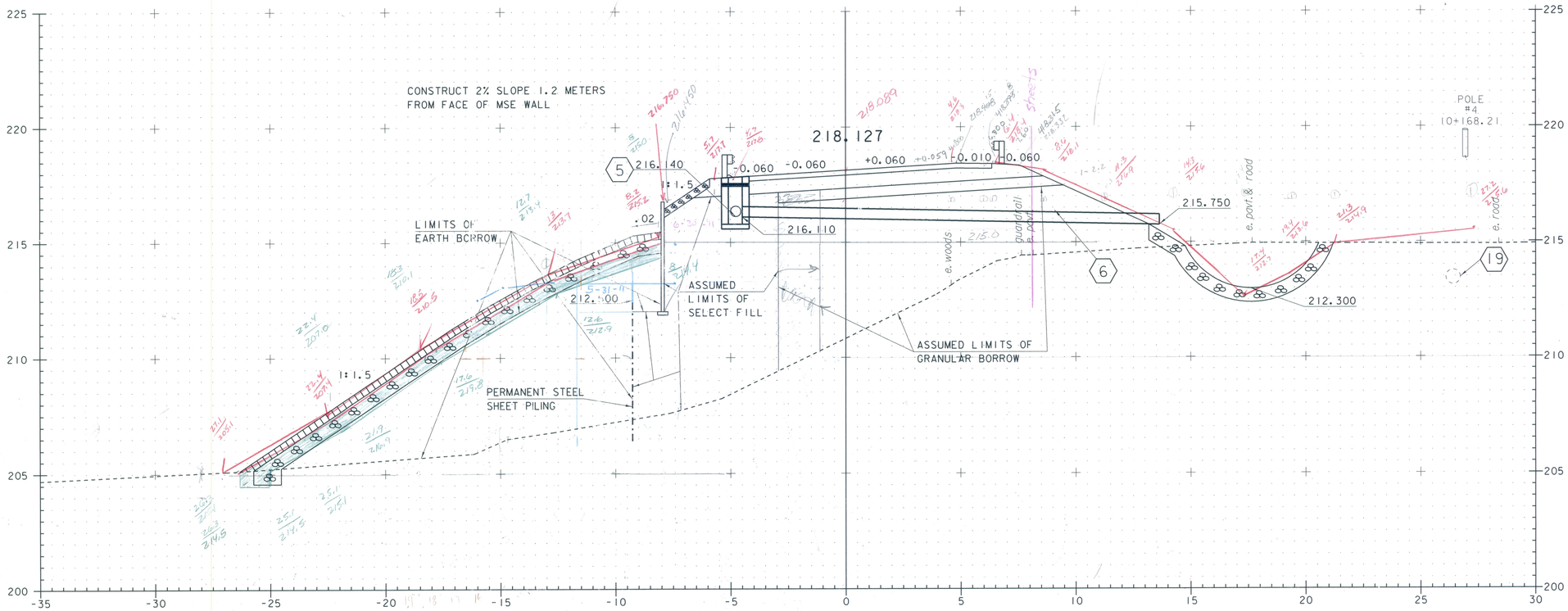
SEE SHEET 12 FOR DRAINAGE FLAG DESCRIPTIONS

DWB 8/08/12

0 5 10
GRAPHIC SCALE 1:100

STA 10+100 TO 10+040

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /sr15/85e039/de039xsl.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: G. Shangraw
DESIGNED BY: G. Shangraw	CHECKED BY: R.S. Young
MAINLINE CROSS SECTIONS 3	SHEET 119 OF 139



STA 10+152.3 LT.
BEGIN STONE FILL TYPE IV

STA 10+160.100
℄ OF DROP INLET AND PIPE

STA 10+166.500 RT.
BEGIN STONE FILL TYPE II
BEGIN GEOTEXTILE UNDER STONE FILL

SEE MSE WALL #1 FOR STA 10+157.154
URS 7-14-11

SEE SHEET 12 FOR DRAINAGE FLAG DESCRIPTIONS

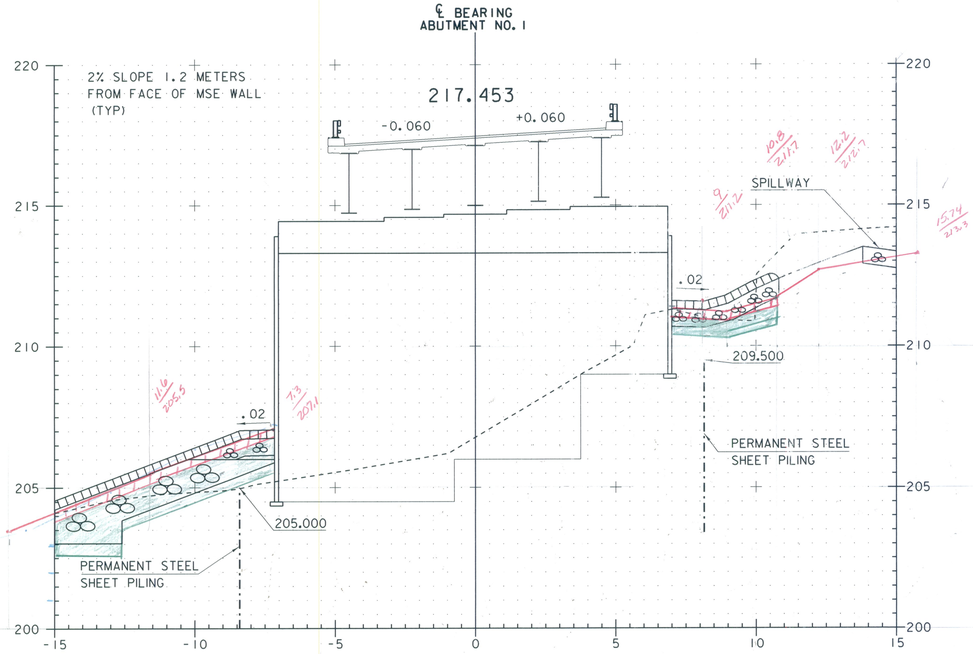
0 5 10
GRAPHIC SCALE 1:100

STA 10+160

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: /sr+5/85e039/de039xsl.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: G. Shangraw
MAINLINE CROSS SECTIONS 4

PLOT DATE: 08-APR-2010
DRAWN BY: G. Shangraw
CHECKED BY: R.S. Young
SHEET 120 OF 139

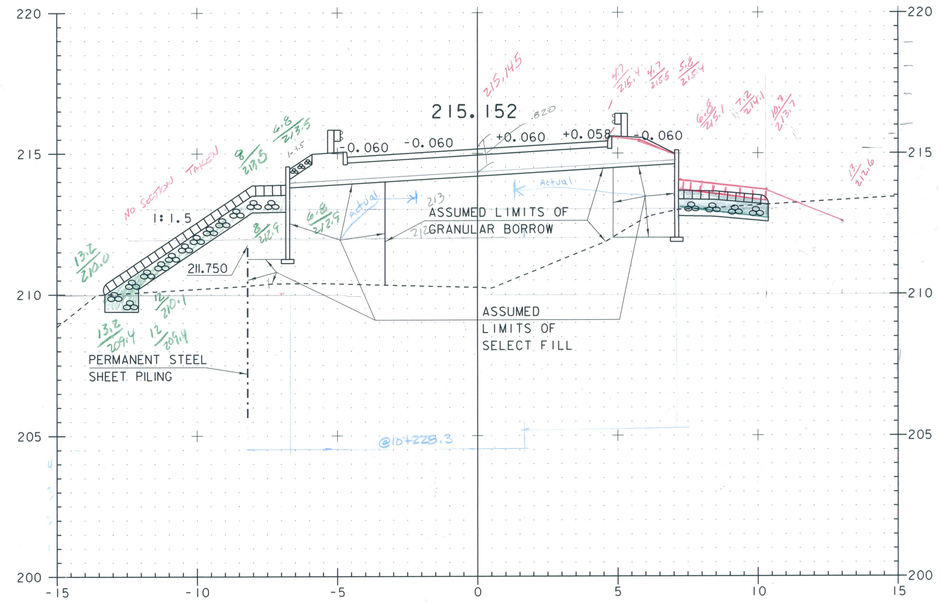


STA 10+177.3 LT.
END STONE FILL TYPE II

10+175.858
BEGIN BRIDGE
STA 10+175.058

STA 10+186.3 RT.
END STONE FILL TYPE II

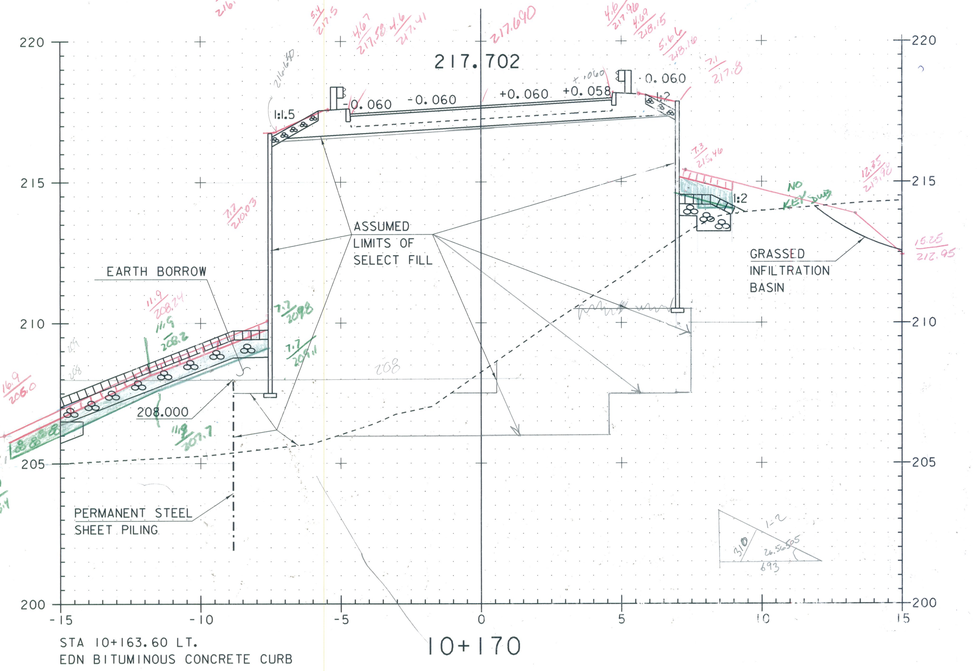
STA 10+190.9 RT.
END STONE FILL TYPE IV
END GRUBBING MATERIAL
END GEOTEXTILE UNDER STONE FILL



STA 10+232.1 LT.
END STONE FILL TYPE II
END GRUBBING MATERIAL
END GEOTEXTILE UNDER STONE FILL

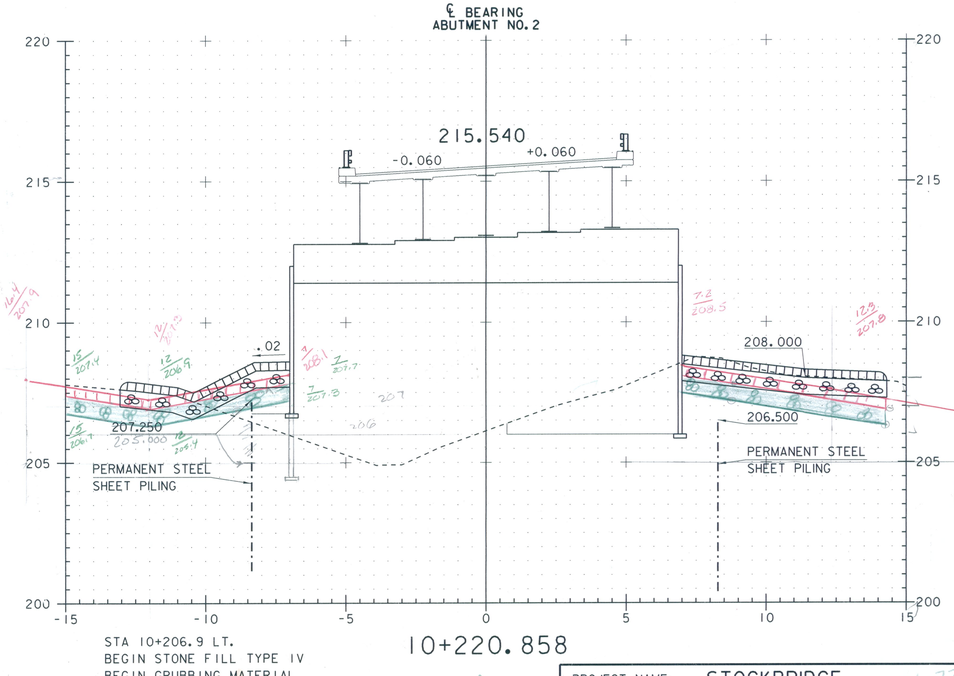
10+230
END BRIDGE
STA 10+221.658

STA 10+230.6 RT.
END STONE FILL TYPE II
END GRUBBING MATERIAL
END GEOTEXTILE UNDER STONE FILL



STA 10+163.60 LT.
EDN BITUMINOUS CONCRETE CURB

10+170



STA 10+206.9 LT.
BEGIN STONE FILL TYPE IV
BEGIN GRUBBING MATERIAL
BEGIN GEOTEXTILE UNDER STONE FILL
STA 10+217.4 LT/RT.
END STONE FILL TYPE IV
BEGIN STONE FILL TYPE II

10+220.858

0 5 10
GRAPHIC SCALE 1:100

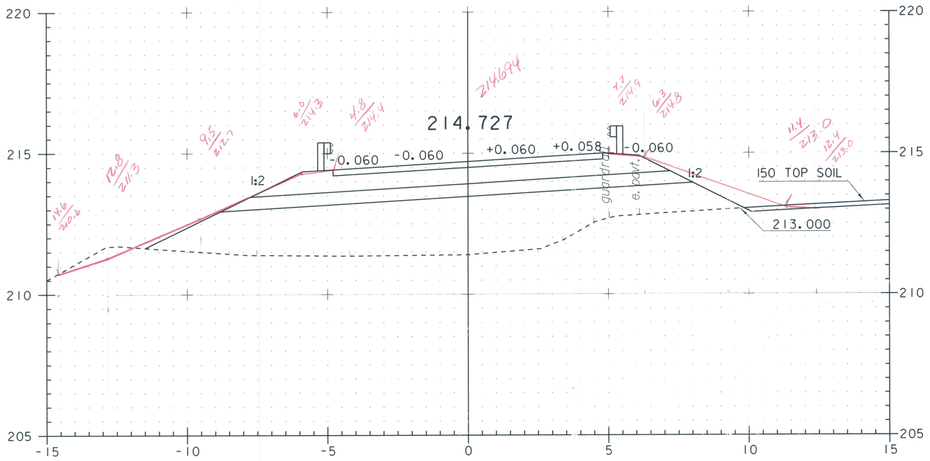
SEE SHEET 12 FOR DRAINAGE FLAG DESCRIPTIONS

STA 10+170 TO 10+230

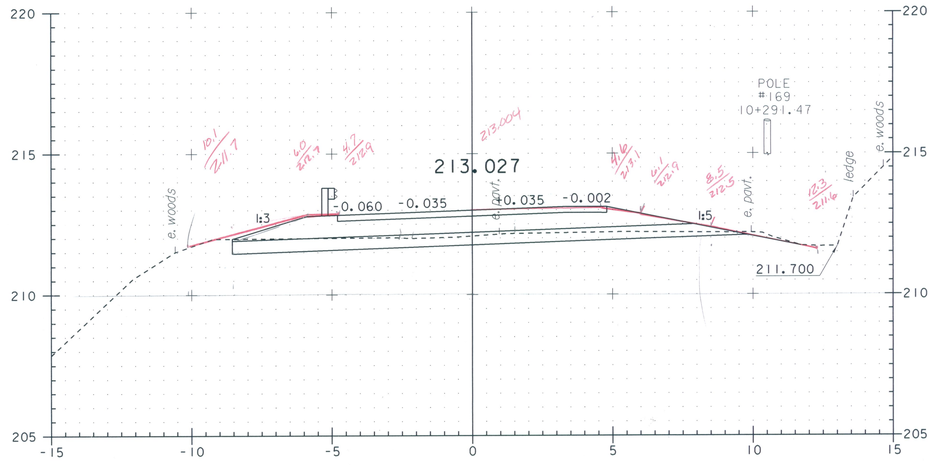
PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: /sr+5/85e039/de039xsl.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: G. Shangraw
MAINLINE CROSS SECTIONS 5

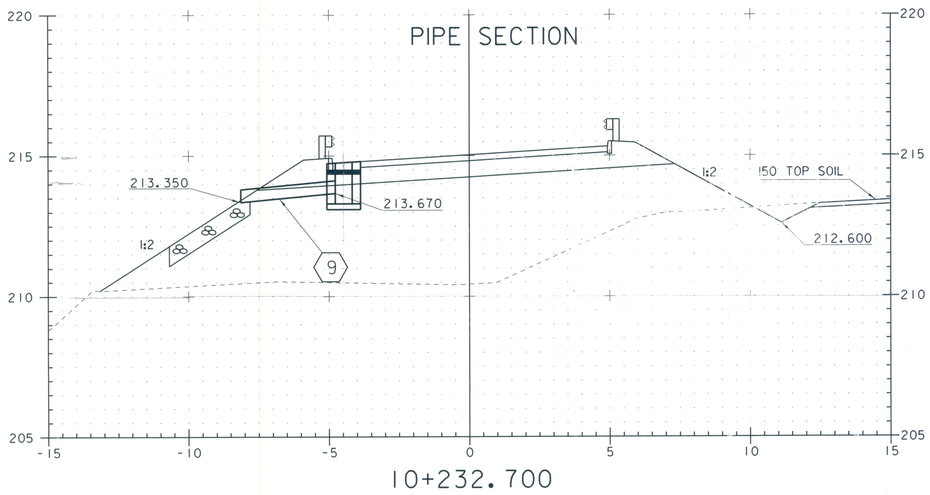
PLOT DATE: 08-APR-2010
DRAWN BY: G. Shangraw
CHECKED BY: R.S. Young
SHEET 121 OF



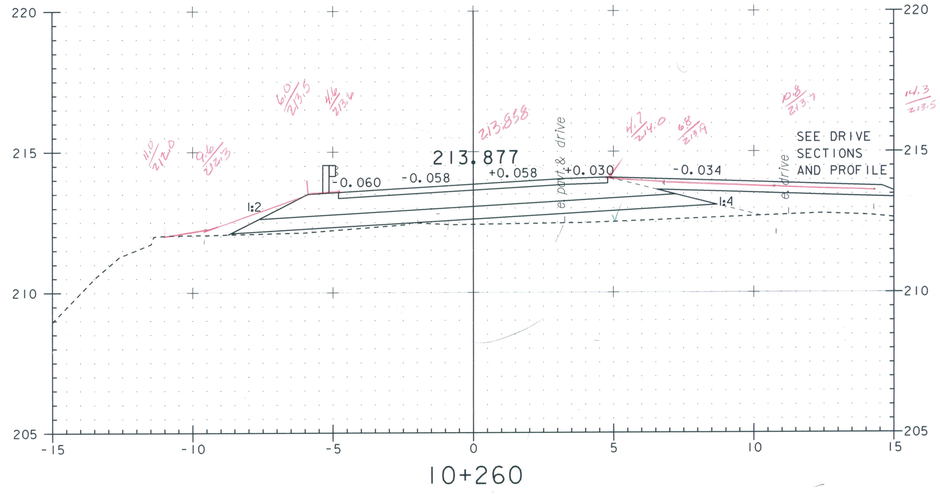
10+240



10+280



10+232.700



10+260

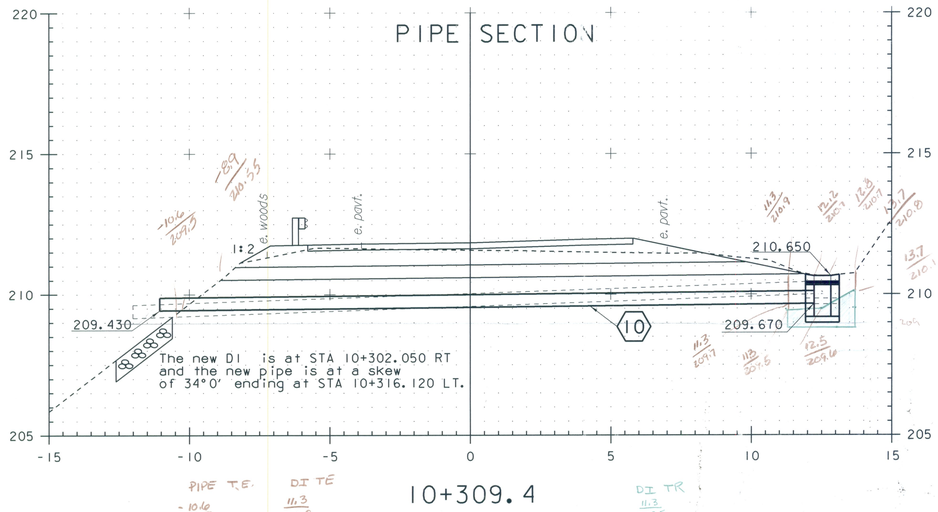
0 5 10

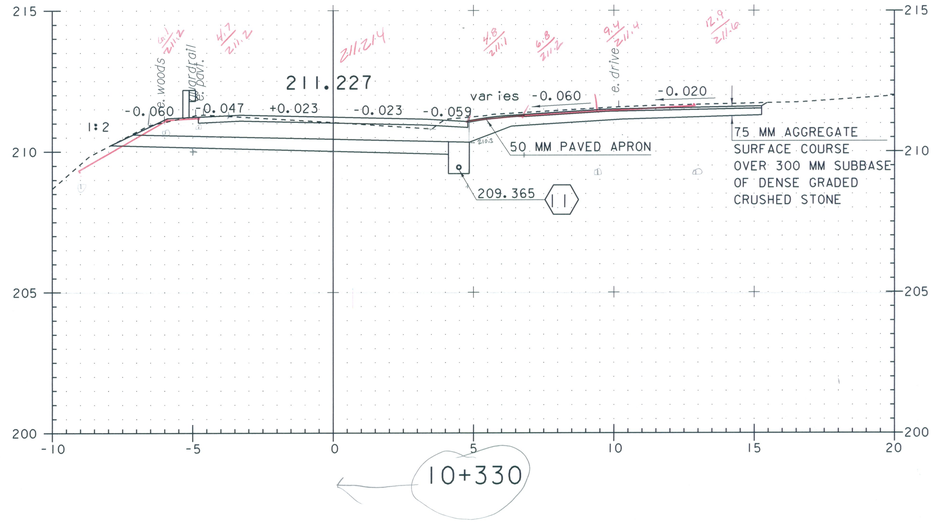
GRAPHIC SCALE 1:100

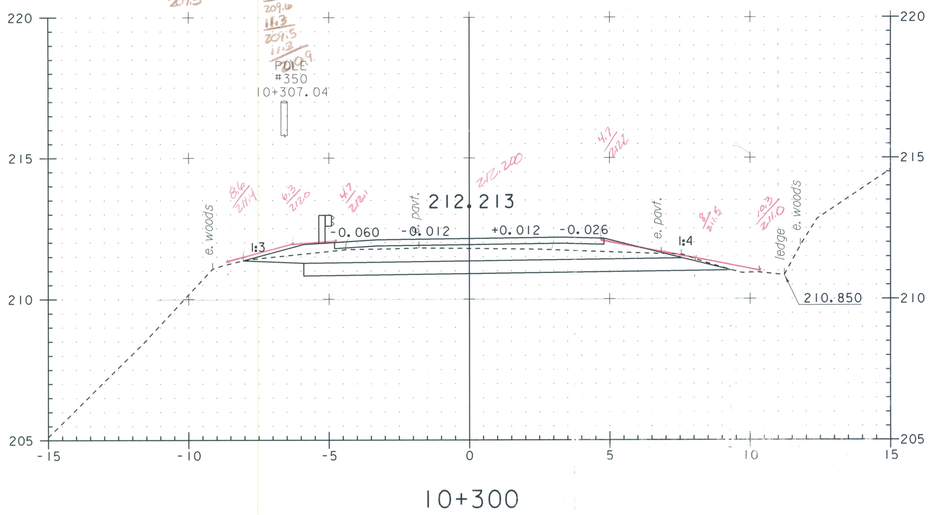
STA 10+232 TO 10+280

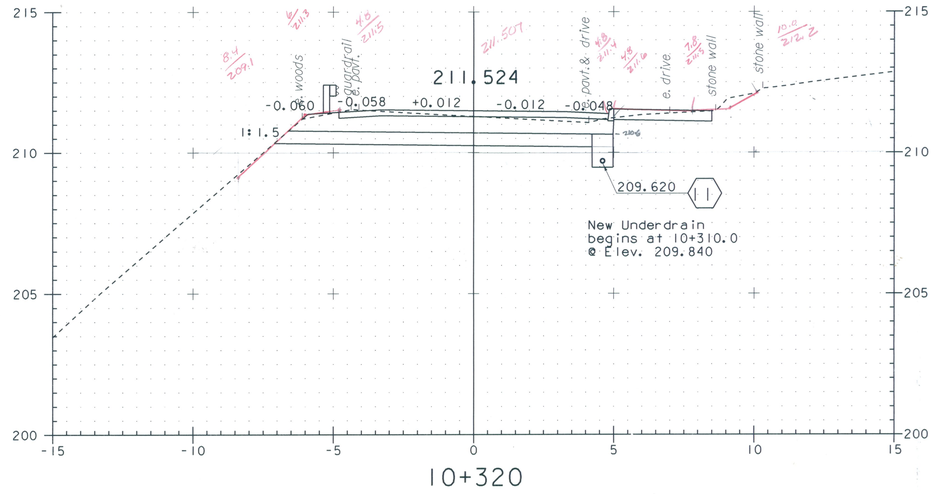
SEE SHEET 12 FOR DRAINAGE FLAG DESCRIPTIONS

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /srt5/85e039/de039xsl.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: G. Shangraw
DESIGNED BY: G. Shangraw	CHECKED BY: R.S. Young
MAINLINE CROSS SECTIONS 6	SHEET 122 OF 139









SEE SHEET 12 FOR DRAINAGE FLAG DESCRIPTIONS

0 5 10

GRAPHIC SCALE 1:100

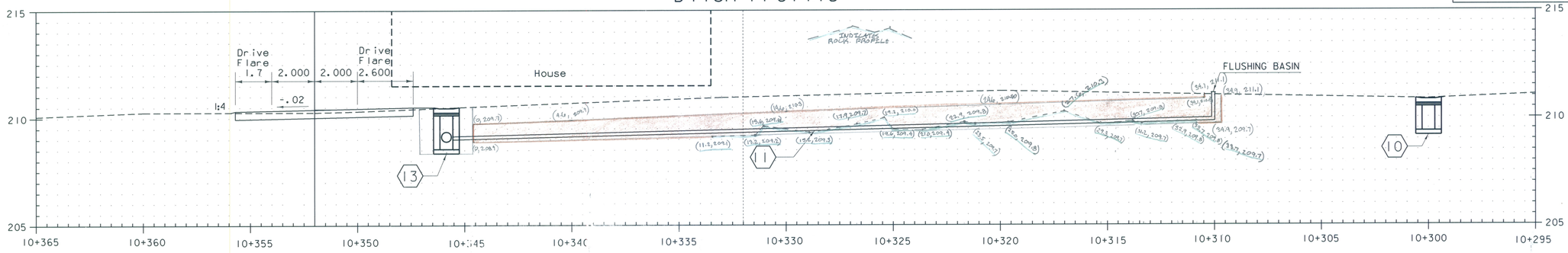
STA 10+300 TO 10+330

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

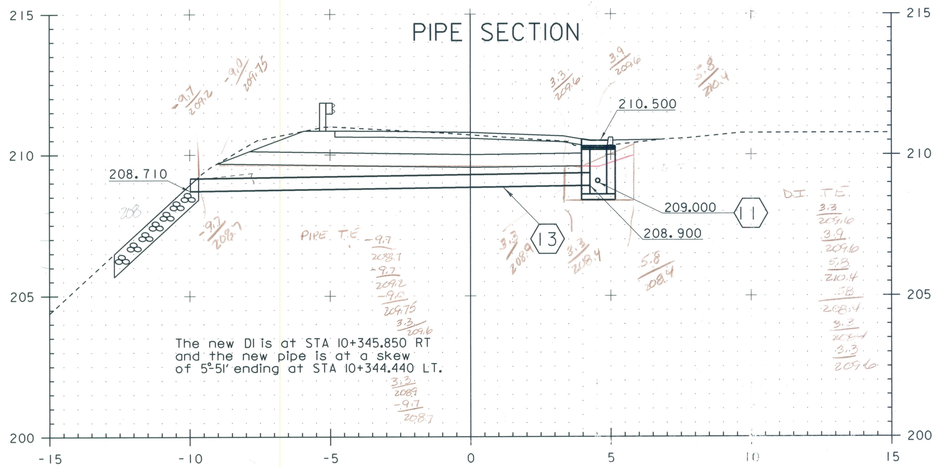
FILE NAME: /srt5/85e039/de039xsl.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: G. Shangraw
MAINLINE CROSS SECTIONS 7

PLOT DATE: 08-APR-2010
DRAWN BY: G. Shangraw
CHECKED BY: R.S. Young
SHEET 123 OF 139

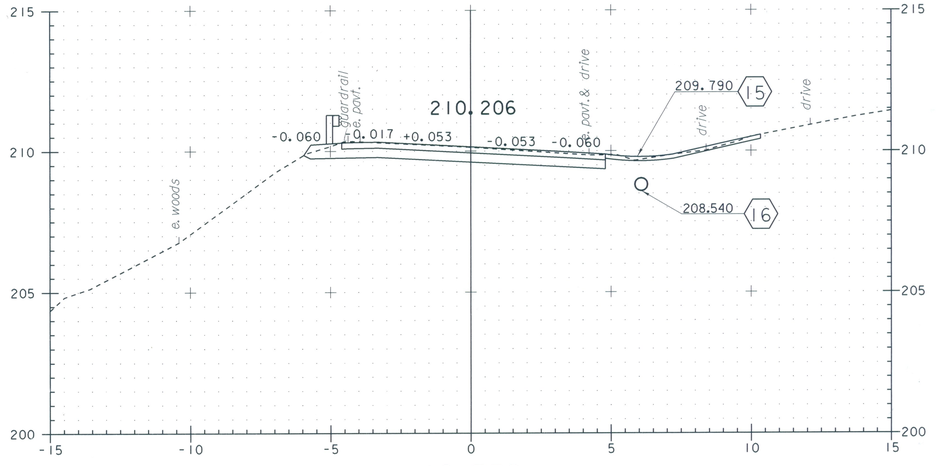
Ditch Profile



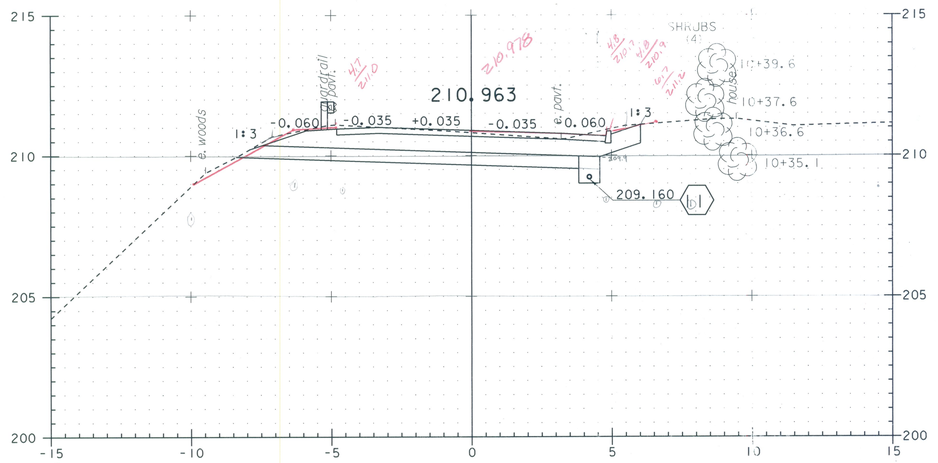
PIPE SECTION



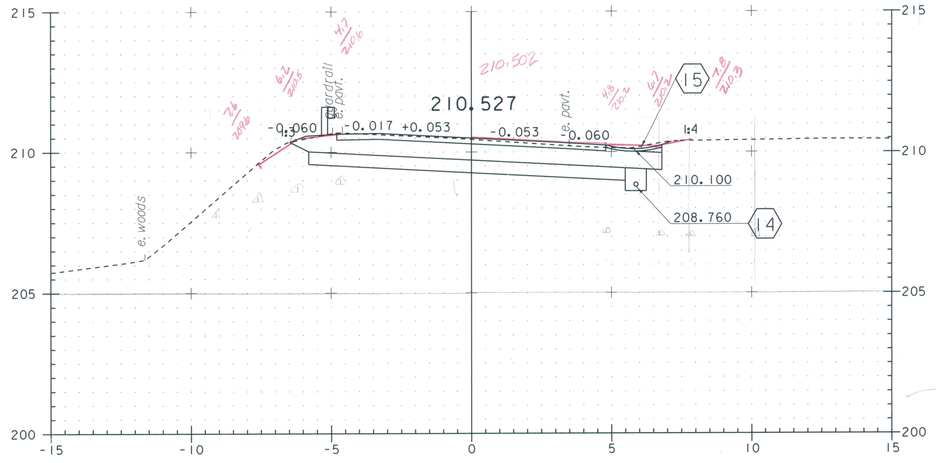
10+345



10+376



10+340



10+360

End Project
Begin Approach
STA 10+360.00

0 5 10

GRAPHIC SCALE 1:100

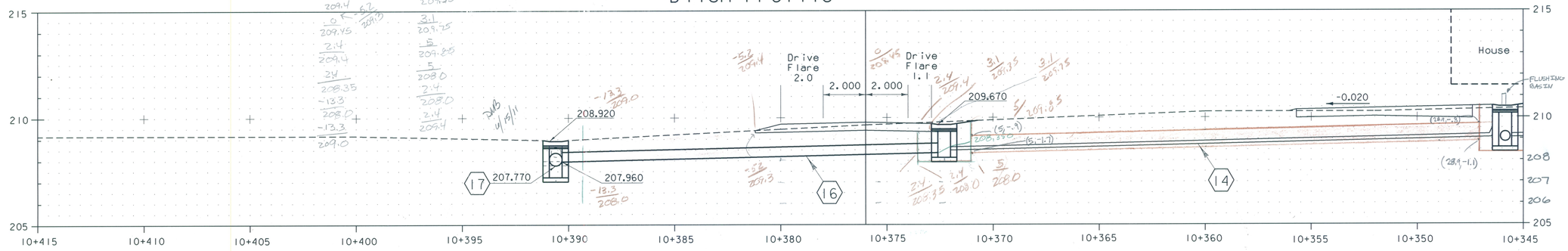
STA 10+340 TO 10+376

SEE SHEET 12 FOR DRAINAGE FLAG DESCRIPTIONS

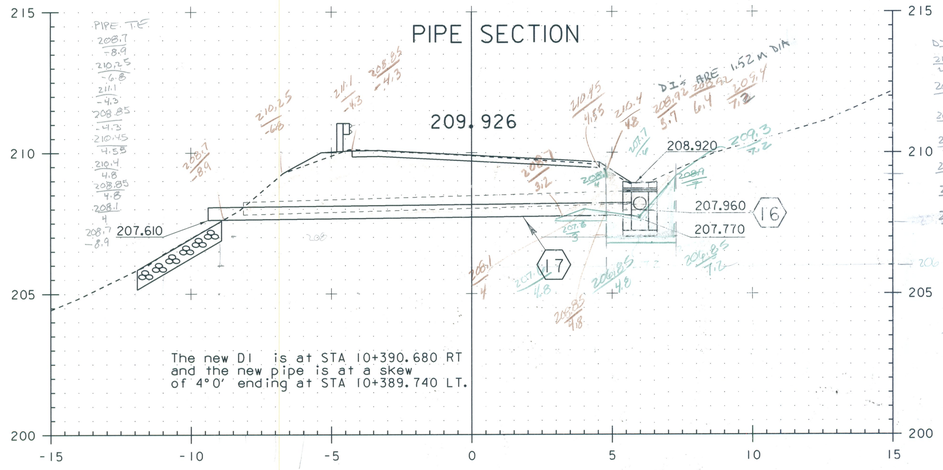
PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /srt5/85e039/de039xsl.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: G. Shangraw
DESIGNED BY: G. Shangraw	CHECKED BY: R.S. Young
MAINLINE CROSS SECTIONS 8	SHEET 124 OF 139

MDOT Metric

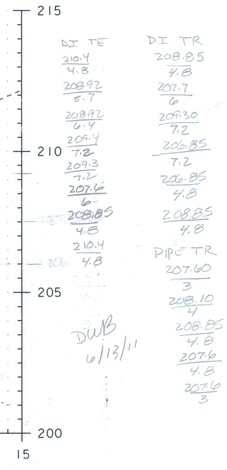
Ditch Profile

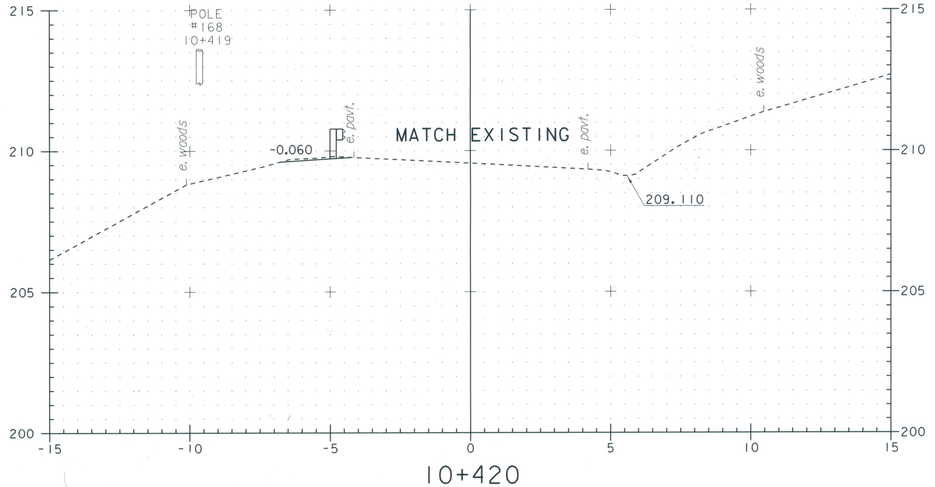


PIPE SECTION



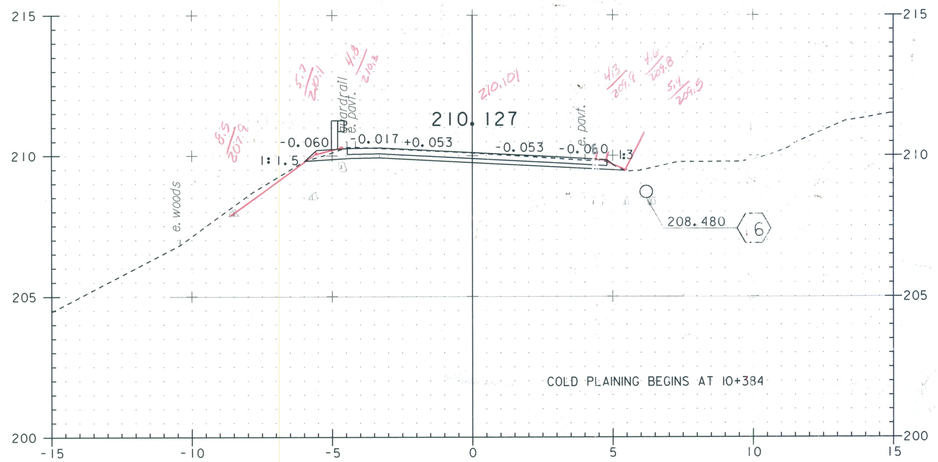
10+390



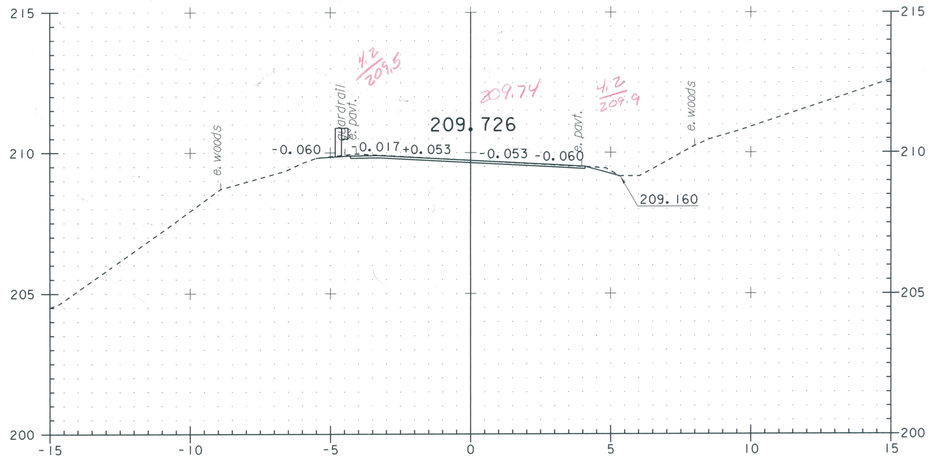


10+420

End Approach STA 10+410.00



10+380



COLD PLANING BEGINS AT 10+394.00

10+400

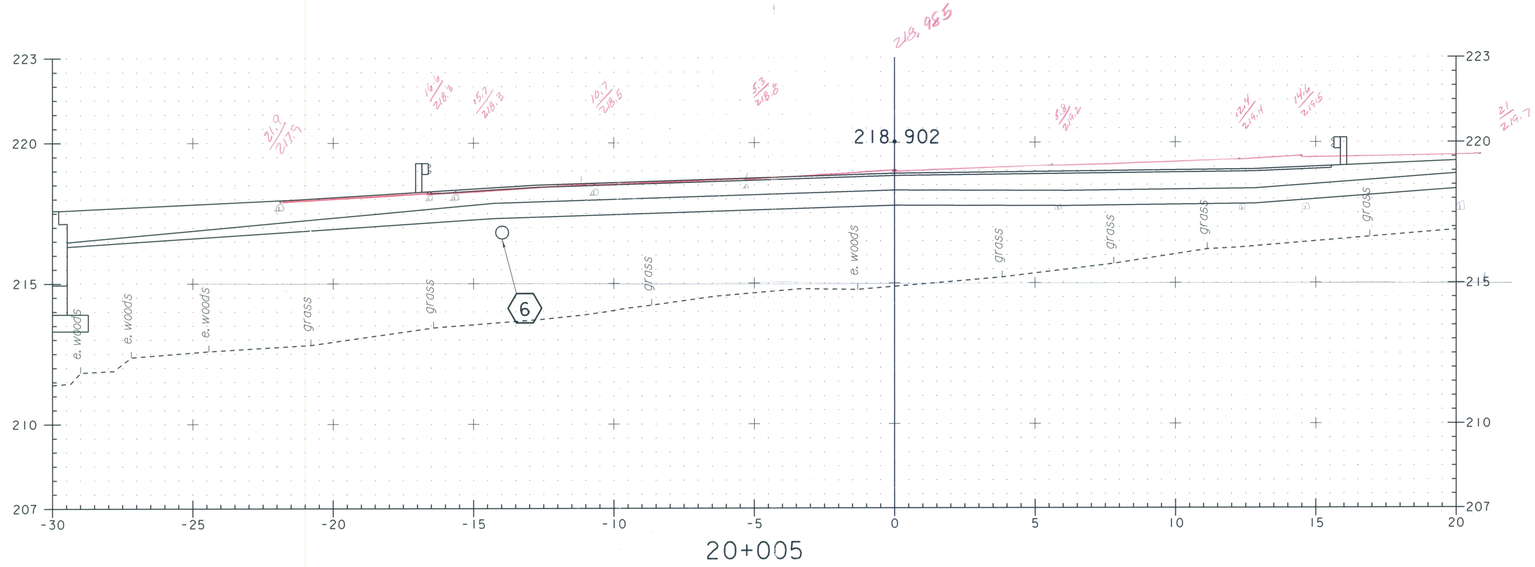
SEE SHEET 12 FOR DRAINAGE FLAG DESCRIPTIONS

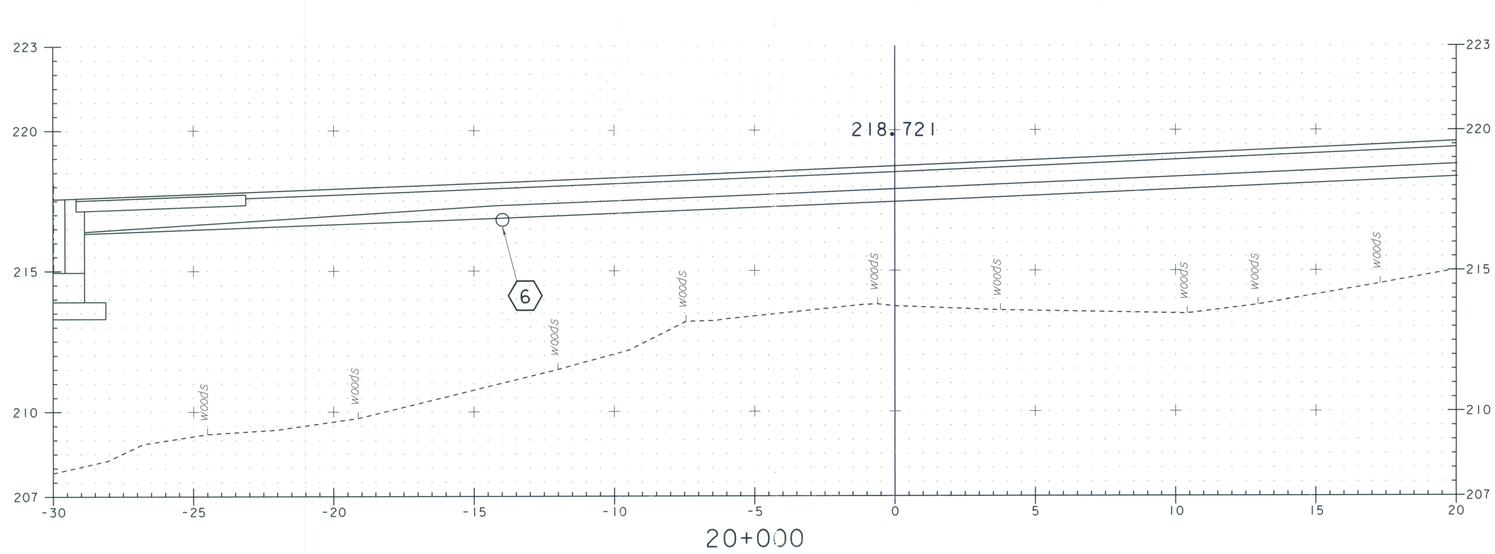
0 5 10

GRAPHIC SCALE 1:100

STA 10+380 TO 10+420

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /sr15/85e039/de039xsl.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: G. Shangraw
DESIGNED BY: G. Shangraw	CHECKED BY: R.S. Young
MAINLINE CROSS SECTIONS 9	SHEET 125 OF 139





SEE SHEET 12 FOR DRAINAGE FLAG DESCRIPTIONS

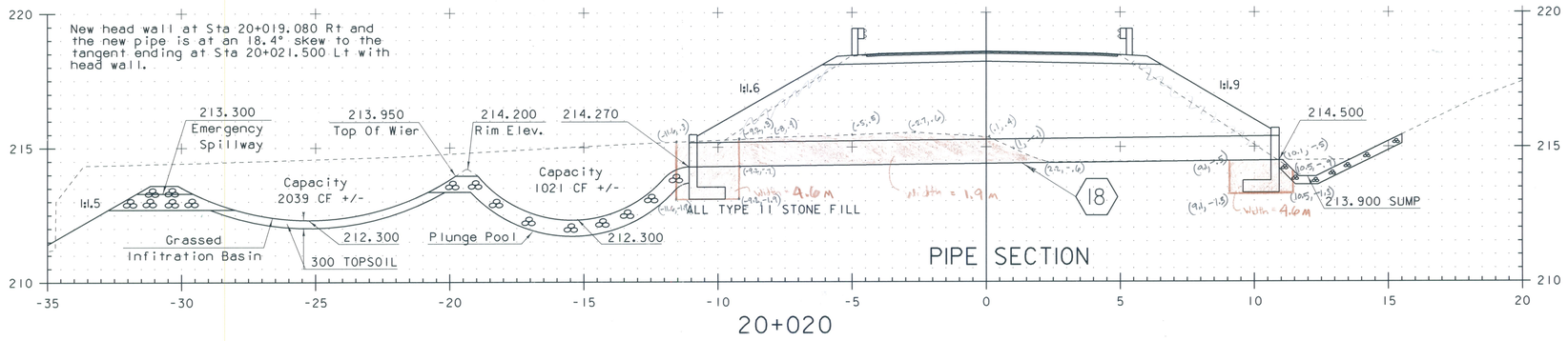
0 5 10

GRAPHIC SCALE 1:100

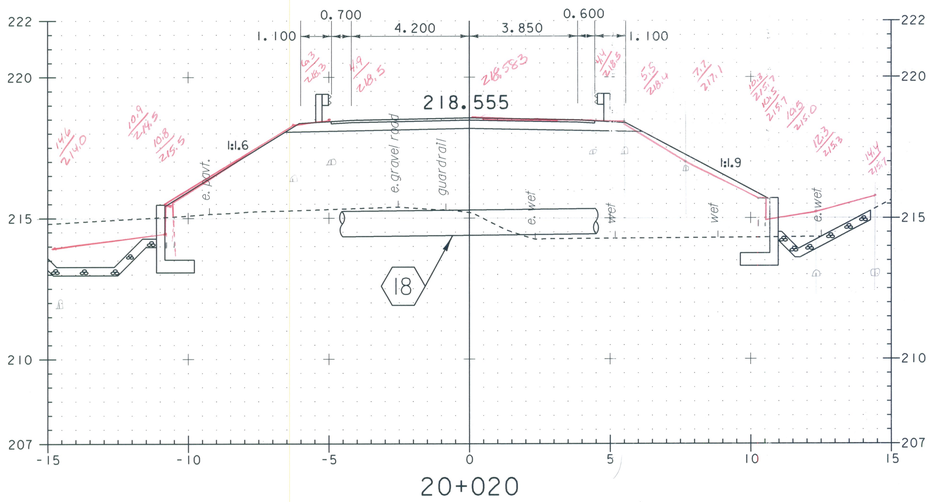
STA 20+000 TO 20+005

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /srt5/85e039/de039xsl.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: G. Shangraw
DESIGNED BY: G. Shangraw	CHECKED BY: R.S. Young
STONY BROOK ROAD CROSS SECTIONS 1	SHEET 126 OF 139

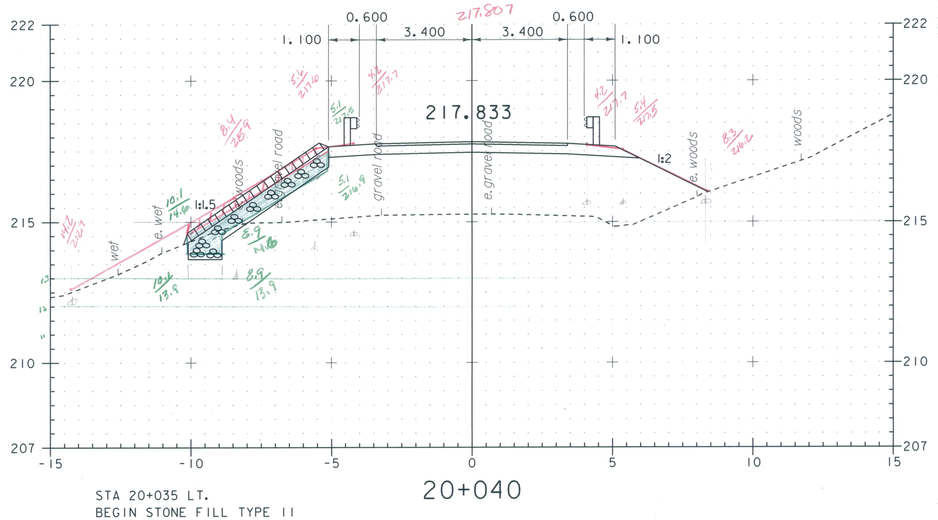
New head wall at Sta 20+019.080 Rt and the new pipe is at an 18.4° skew to the tangent ending at Sta 20+021.500 Lt with head wall.



20+020

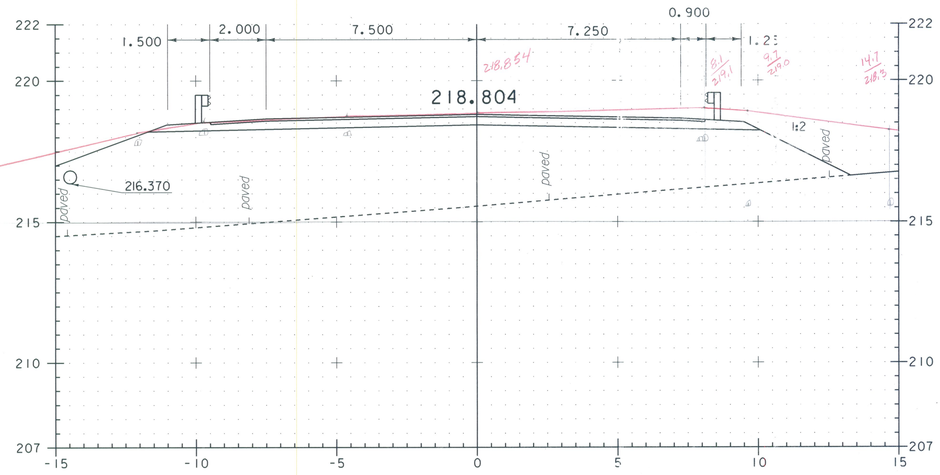


20+020

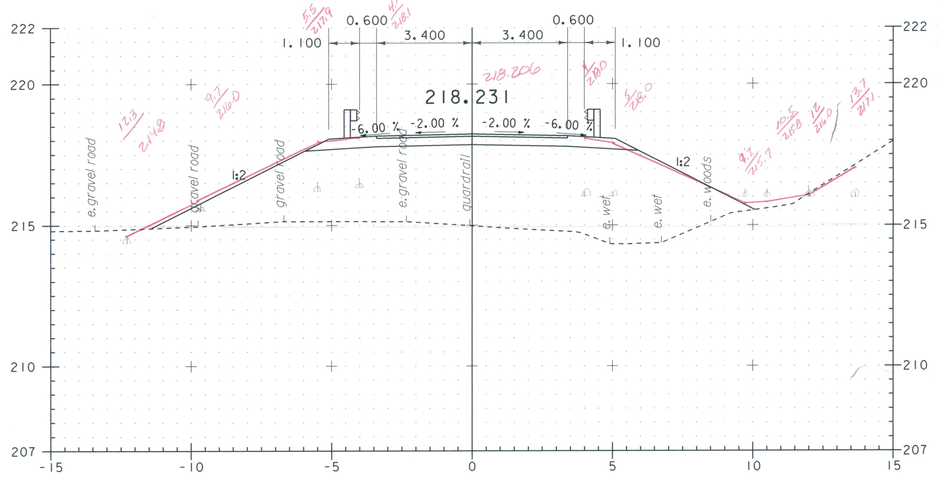


20+040

STA 20+035 LT.
BEGIN STONE FILL TYPE II
BEGIN GEOTEXTILE FOR STONE FILL
BEGIN GRUBBING MATERIAL



20+010



20+030

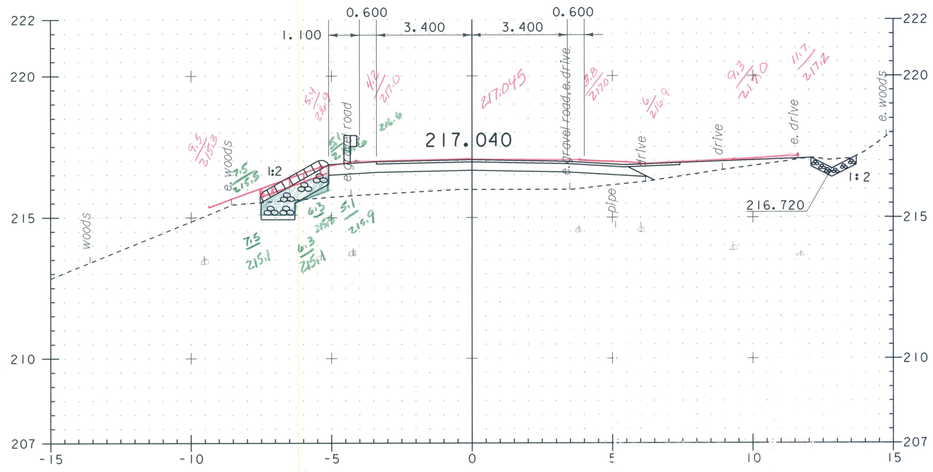
0 5 10

GRAPHIC SCALE 1:100

STA 20+010 TO 20+040

SEE SHEET 12 FOR DRAINAGE FLAG DESCRIPTIONS

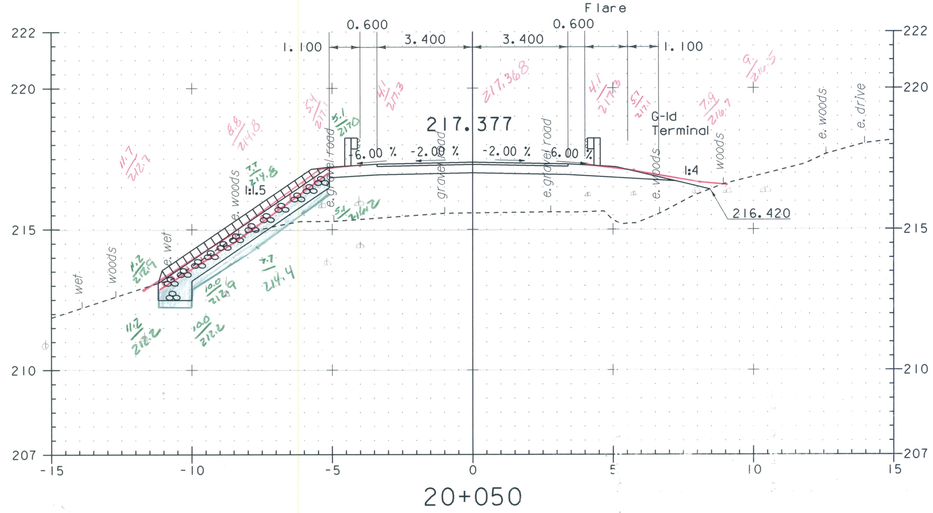
PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /srt5/85e039/de039xsl.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: G. Shangraw
DESIGNED BY: G. Shangraw	CHECKED BY: R.S. Young
STONY BROOK ROAD CROSS SECTIONS 2	SHEET 127 OF 139



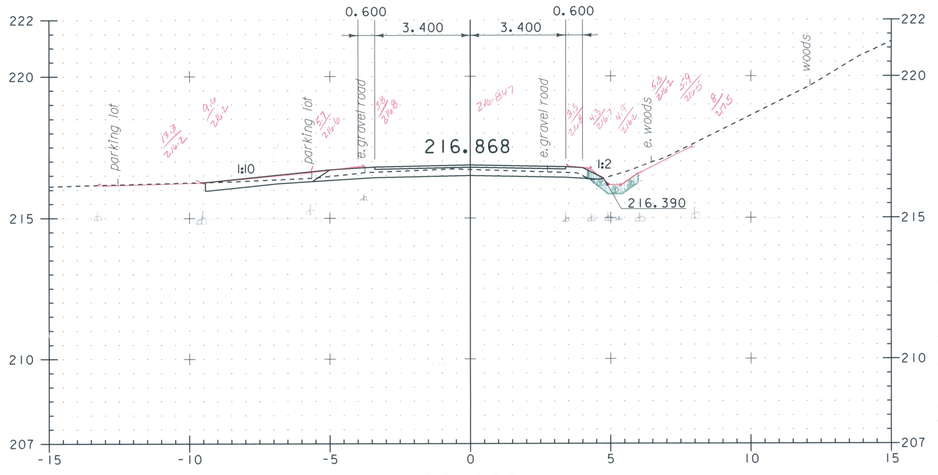
20+060

STA 20+060 LT.
END STONE FILL TYPE II
END GEOTEXTILE FOR STONE FILL
END GRUBBING MATERIAL

STA 20+055 RT.
BEGIN STONE FILL TYPE I
BEGIN GEOTEXTILE FOR STONE FILL
BEGIN GRUBBING MATERIAL

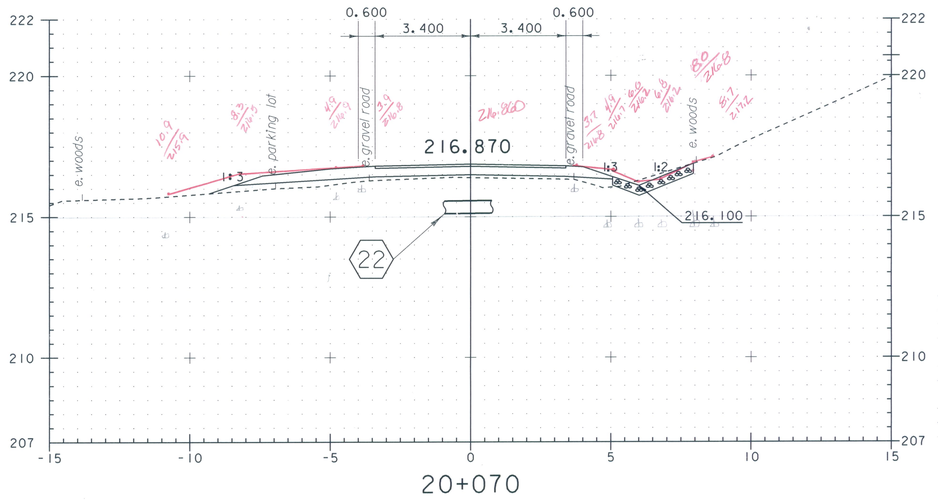


20+050



20+080

STA 20+077 RT.
END STONE FILL TYPE I
END GEOTEXTILE FOR STONE FILL
END GRUBBING MATERIAL



20+070

SEE SHEET 12 FOR DRAINAGE FLAG DESCRIPTIONS

0 5 10

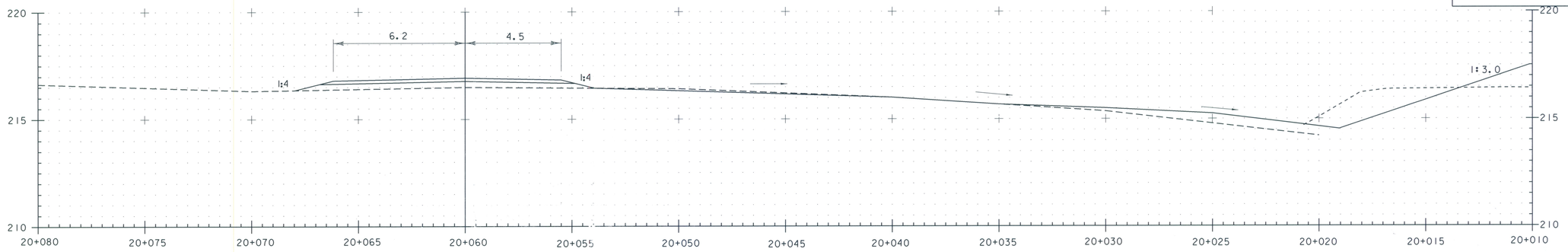
GRAPHIC SCALE 1:100

STA 20+050 TO 20+080

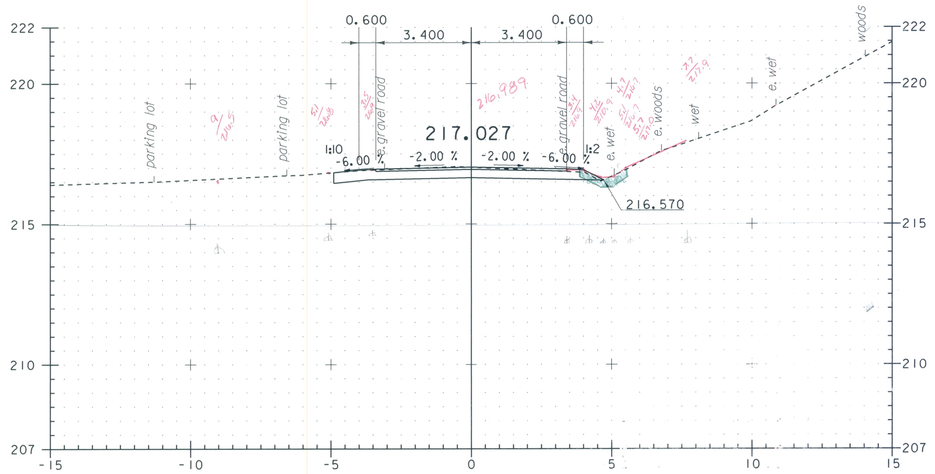
PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: /sr+5/85e039/de039xsl.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: G. Shangraw
STONY BROOK ROAD CROSS SECTIONS 3

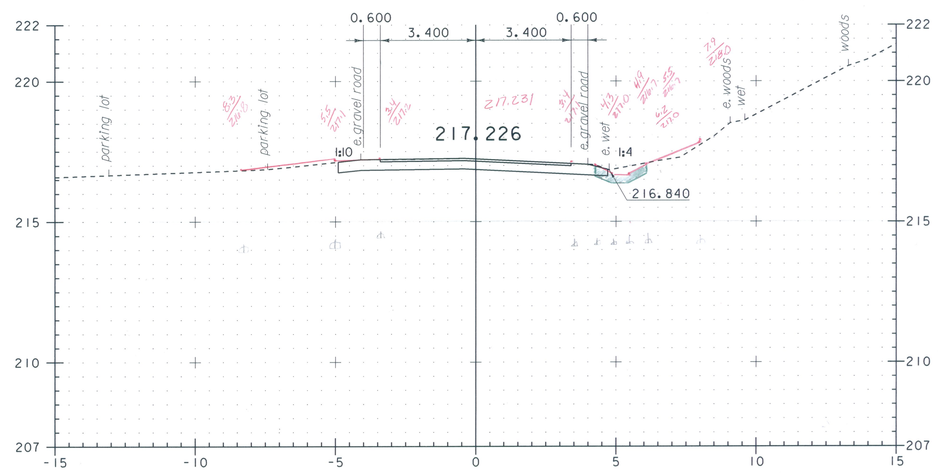
PLOT DATE: 08-APR-2010
DRAWN BY: G. Shangraw
CHECKED BY: R.S. Young
SHEET 128 OF 139



Ditch Profile

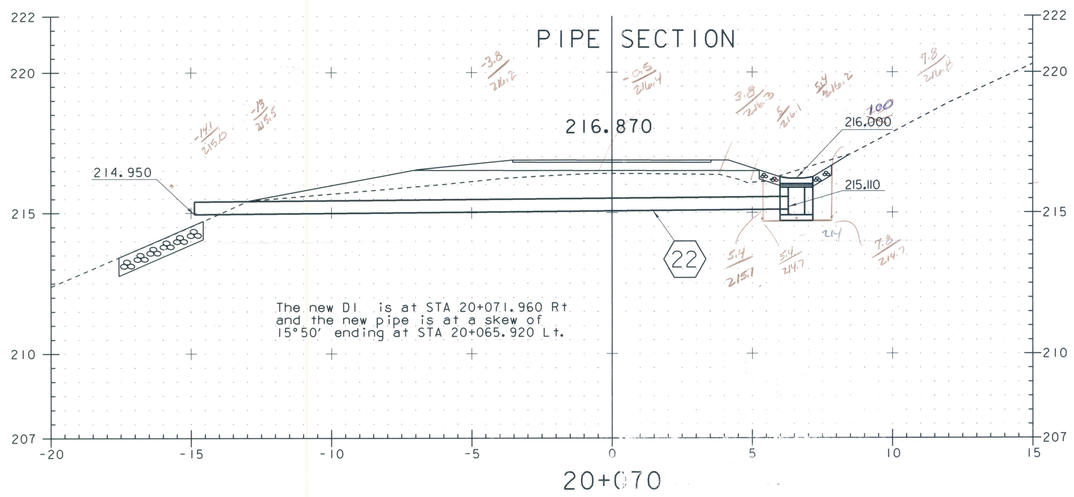


20+090



20+100

LIMIT OF WORK



20+070

TE PIPE
-14.1
215.0
-1.8
215.5
-3.8
216.2
-0.5
216.4
3.8
216.3
5
216.1
5.4
216.2
5.4
215.1
-14.1
215.0

TE DI
5.4
216.2
7.8
216.8
7.8
214.7
5.4
214.7
5.4
216.2

0 5 10

GRAPHIC SCALE 1:100

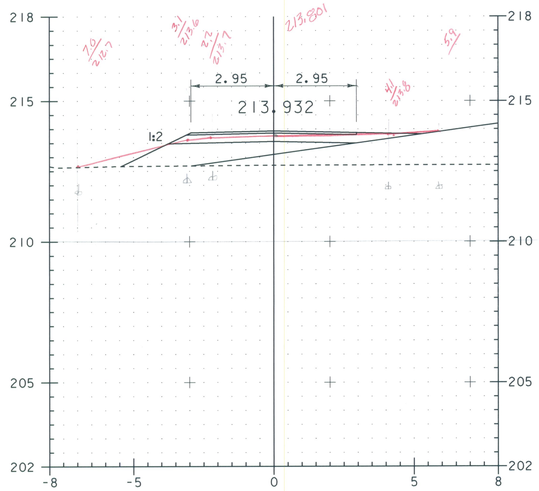
STA 20+070 TO 20+100

SEE SHEET 12 FOR DRAINAGE FLAG DESCRIPTIONS

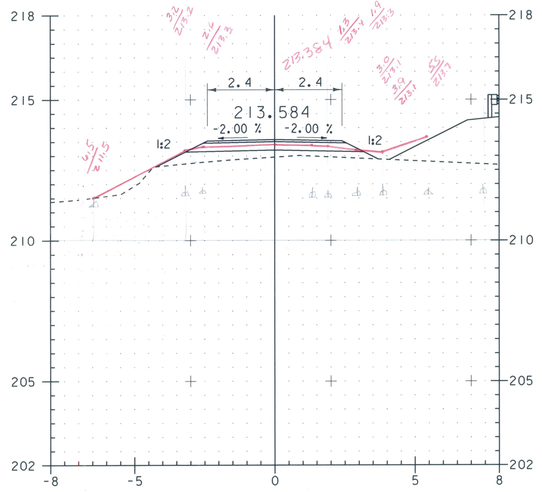
PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: /sr+5/85e039/de039xsl.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: G. Shangraw
STONY BROOK ROAD CROSS SECTIONS 4

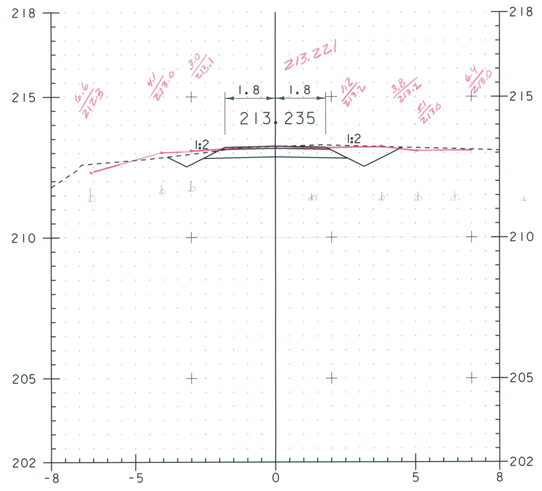
PLOT DATE: 08-APR-2010
DRAWN BY: G. Shangraw
CHECKED BY: R.S. Young
SHEET 129 OF 139



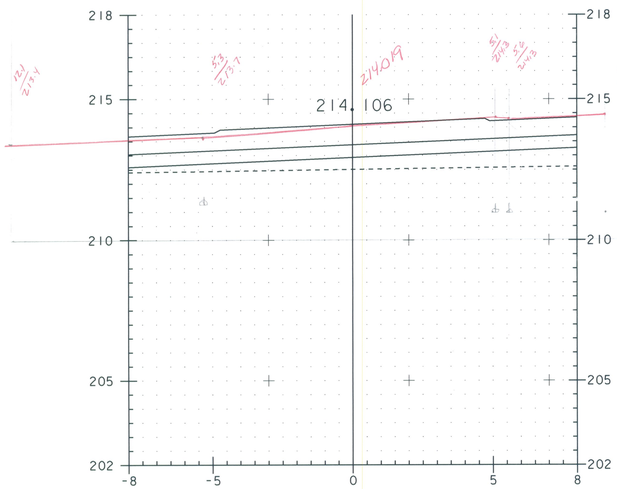
0+010



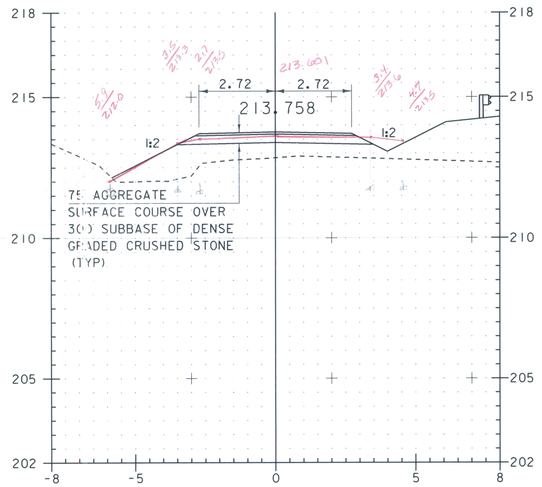
0+020



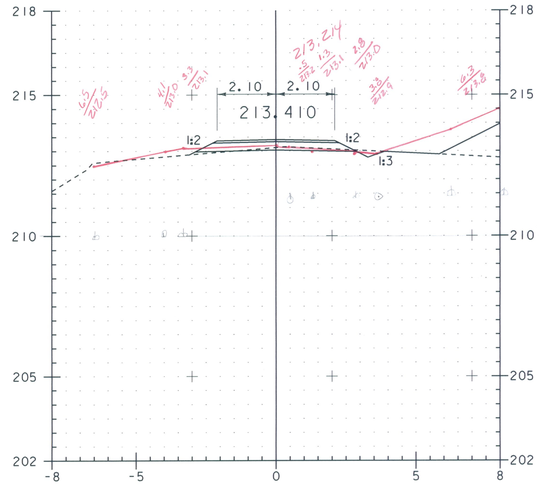
0+030



0+005



0+015



0+025

0 5 10

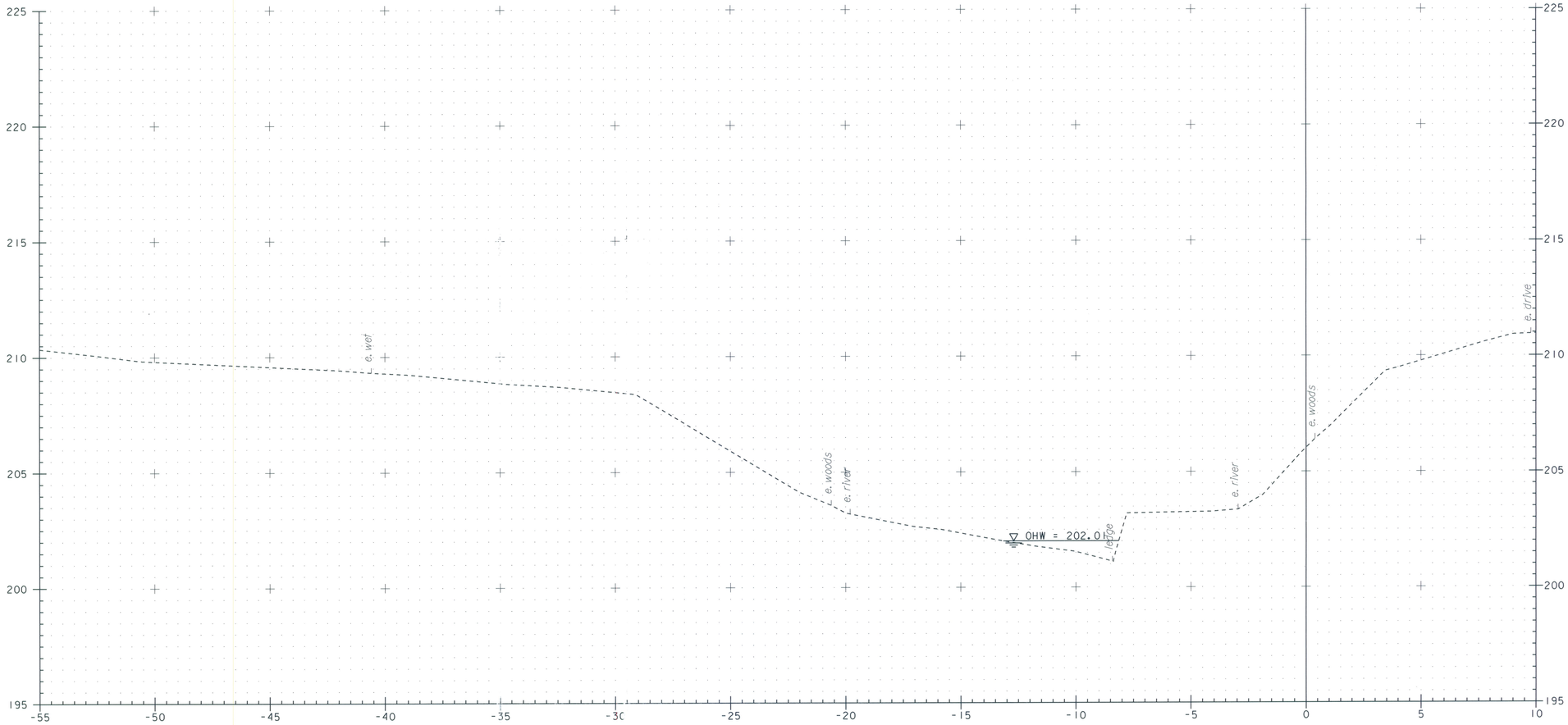
GRAPHIC SCALE 1:100

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: /sr+5/85e039/de039xs1.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: G. Shangraw
DRIVE CROSS SECTIONS

PLOT DATE: 08-APR-2010
DRAWN BY: G. Shangraw
CHECKED BY: R.S. Young
SHEET 130 OF 139

Metric



30+460

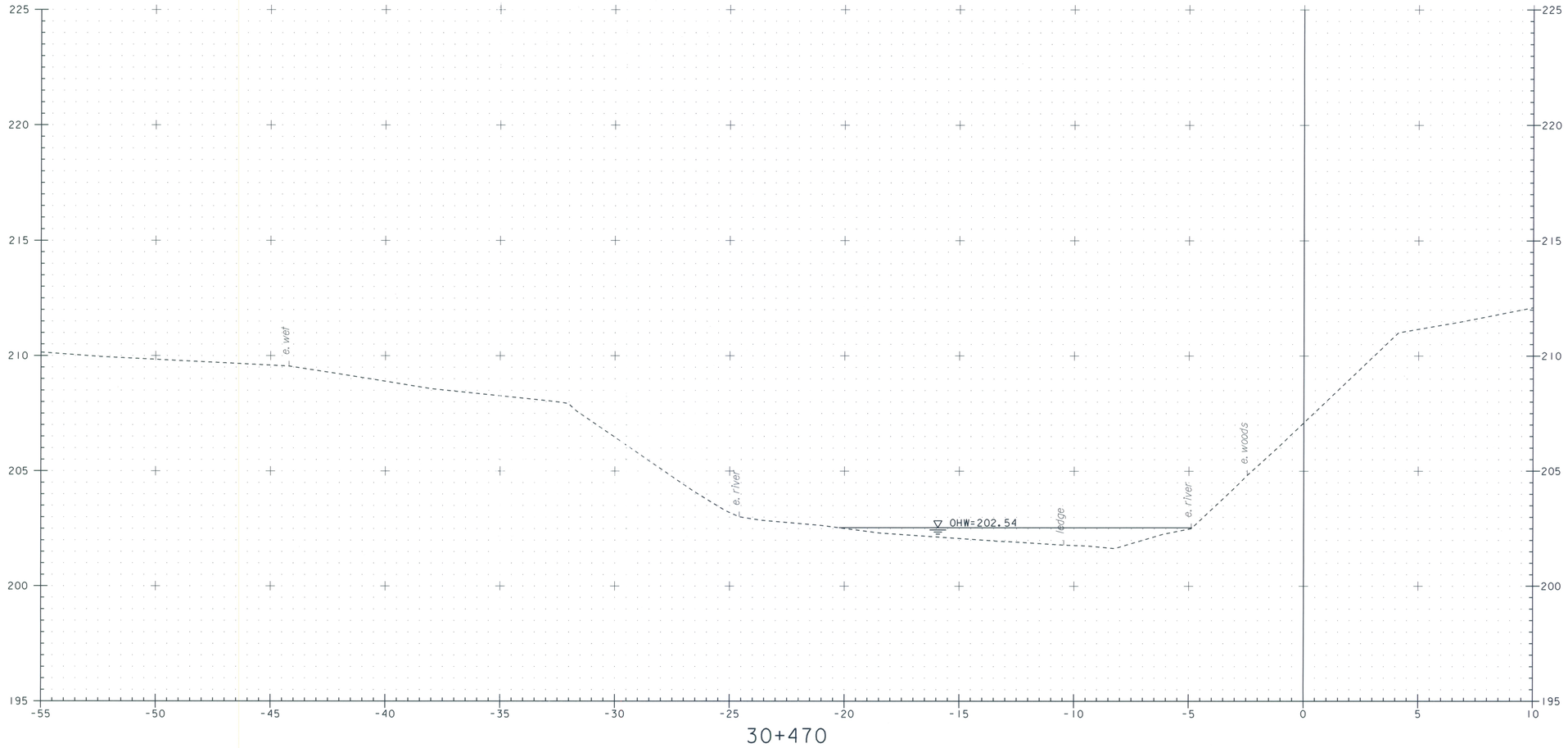
0 5 10

GRAPHIC SCALE 1:100

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: /sr15/85e039/de039xsl.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: G. Shangraw
CHANNEL CROSS SECTIONS 1

PLOT DATE: 08-APR-2010
DRAWN BY: G. Shangraw
CHECKED BY: R.S. Young
SHEET 131 OF 139

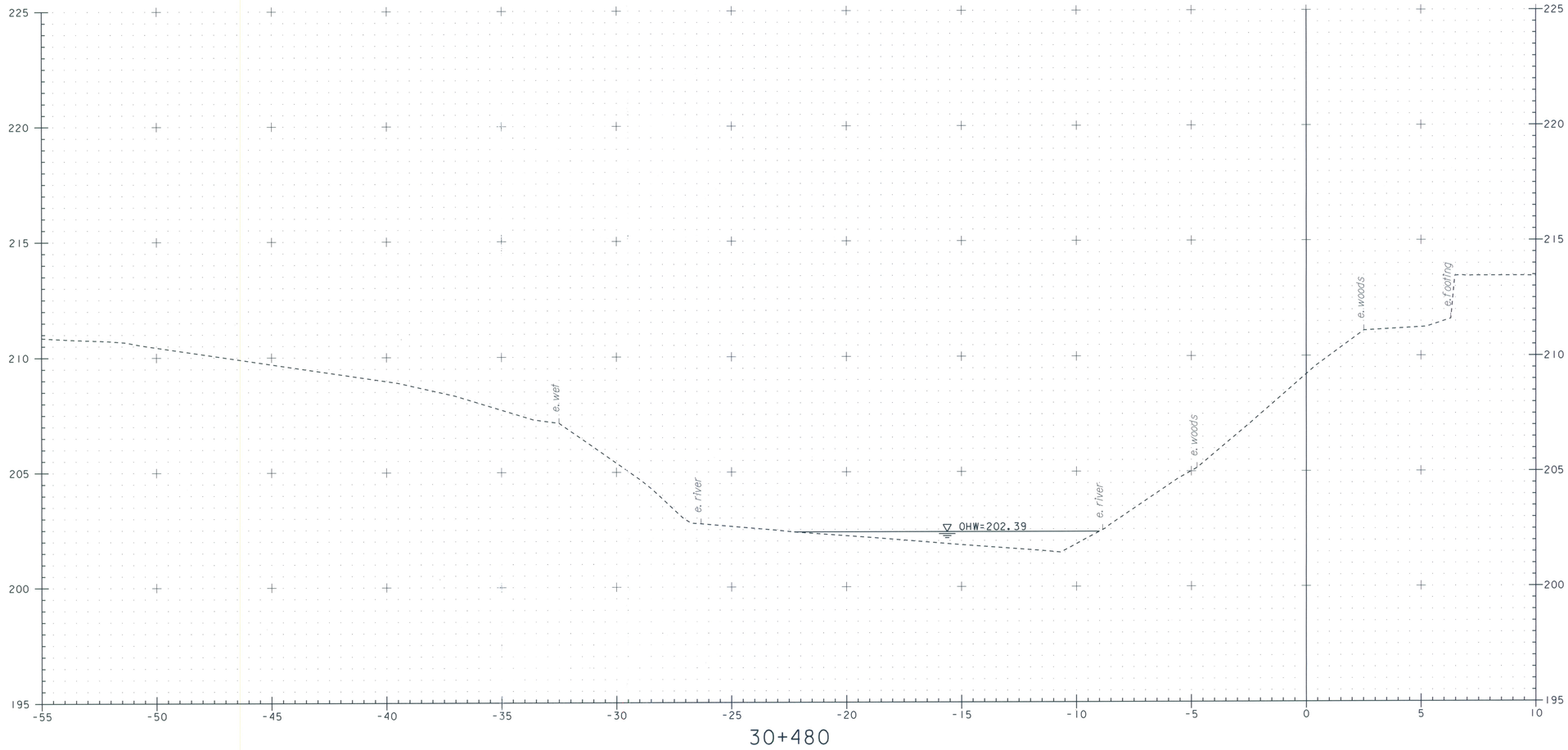


30+470

0 5 10

GRAPHIC SCALE 1:100

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /sr15/85e039/de039xsl.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: G. Shangraw
DESIGNED BY: G. Shangraw	CHECKED BY: R.S. Young
CHANNEL CROSS SECTIONS 2	SHEET 132 OF 139



30+480

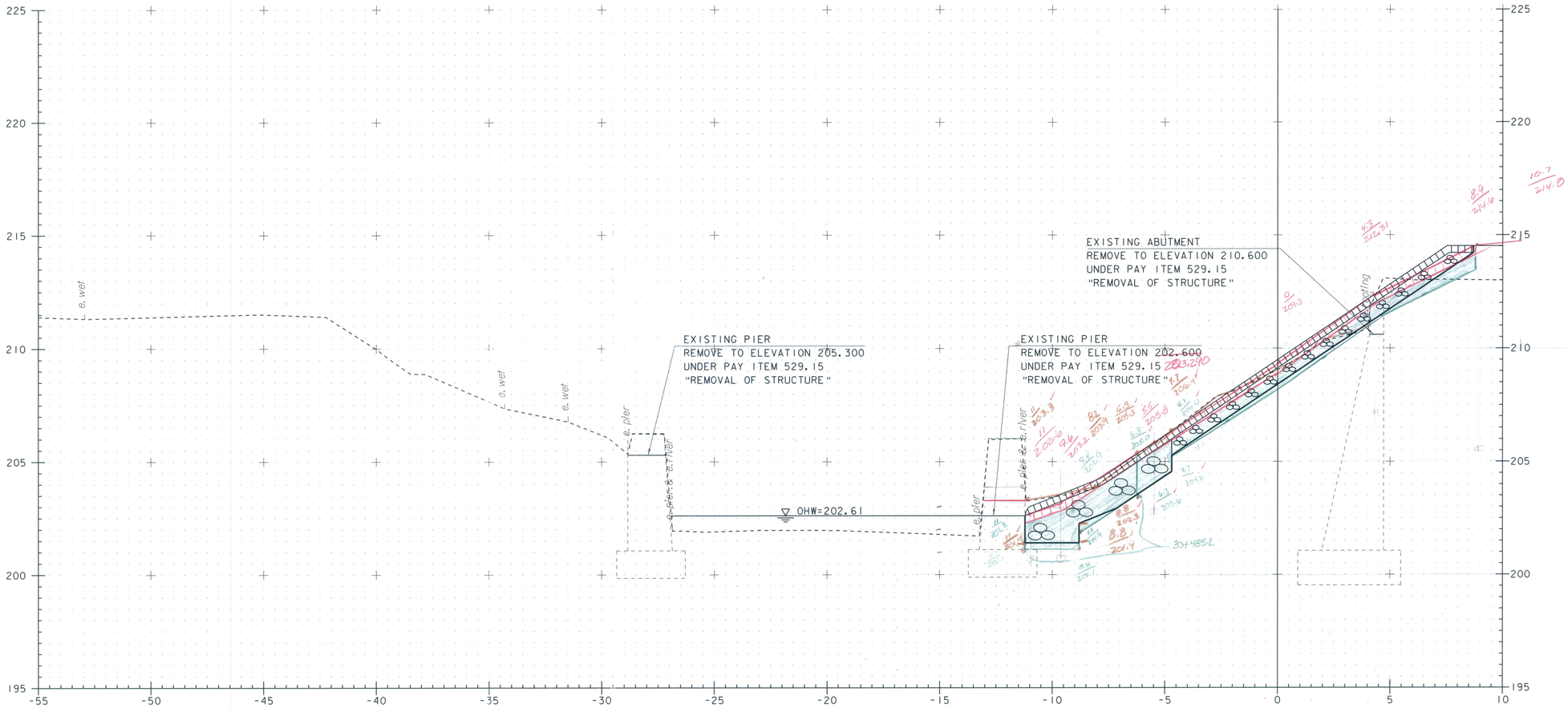
0 5 10

GRAPHIC SCALE 1:100

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: /sr15/85e039/de039xsl.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: G. Shangraw
CHANNEL CROSS SECTIONS 3

PLOT DATE: 08-APR-2010
DRAWN BY: G. Shangraw
CHECKED BY: R.S. Young
SHEET 133 OF 139



30+483.0 LT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE FILL TYPE IV
BEGIN GRUBBING MATERIAL

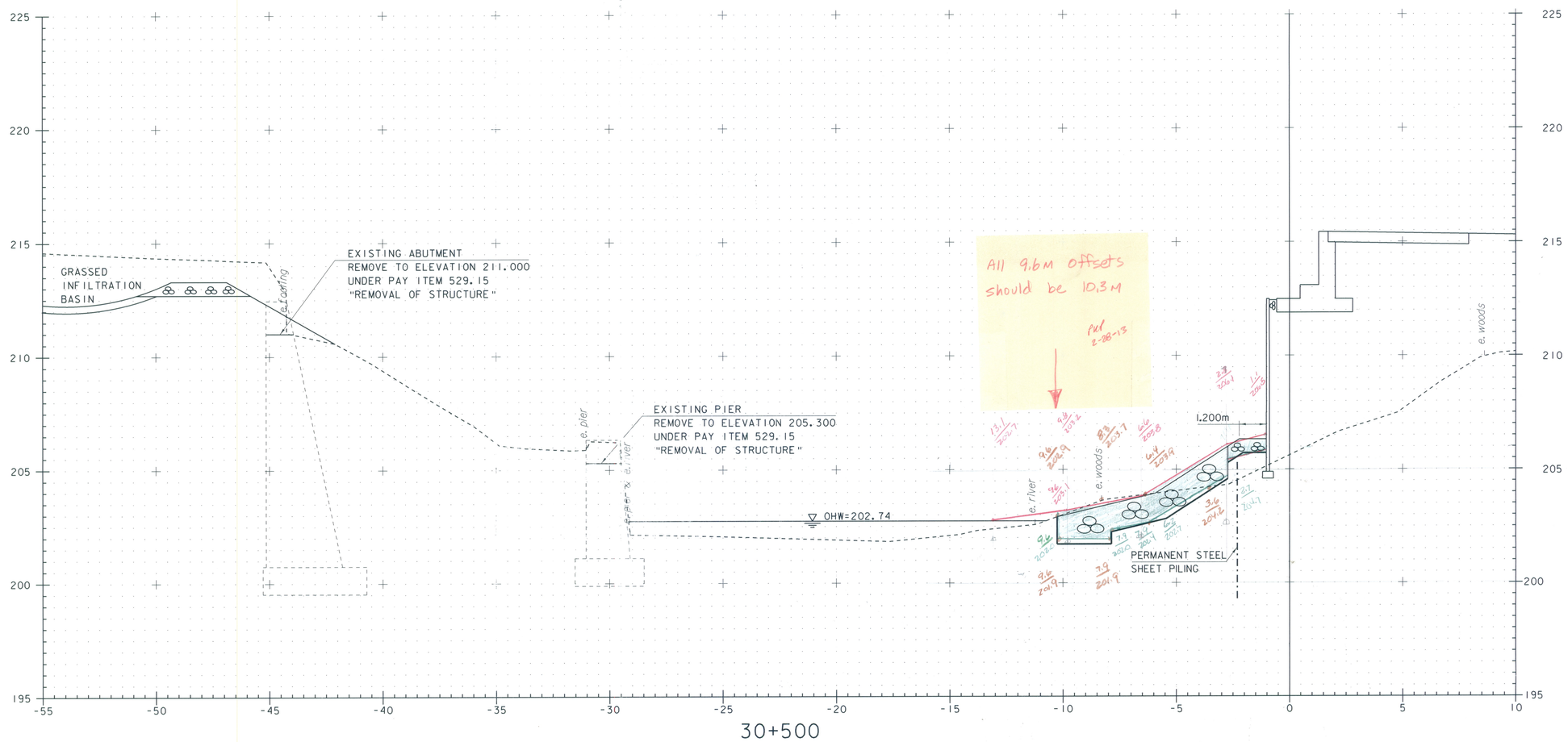
30+485.2 LT
BEGIN STONE FILL TYPE II

0 5 10
GRAPHIC SCALE 1:100

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: /sr15/85e039/de039xsl.dgn
PROJECT LEADER: C.P.Williams
DESIGNED BY: G. Shangraw
CHANNEL CROSS SECTIONS 4

PLOT DATE: 08-APR-2010
DRAWN BY: G. Shangraw
CHECKED BY: R.S. Young
SHEET 134 OF 139



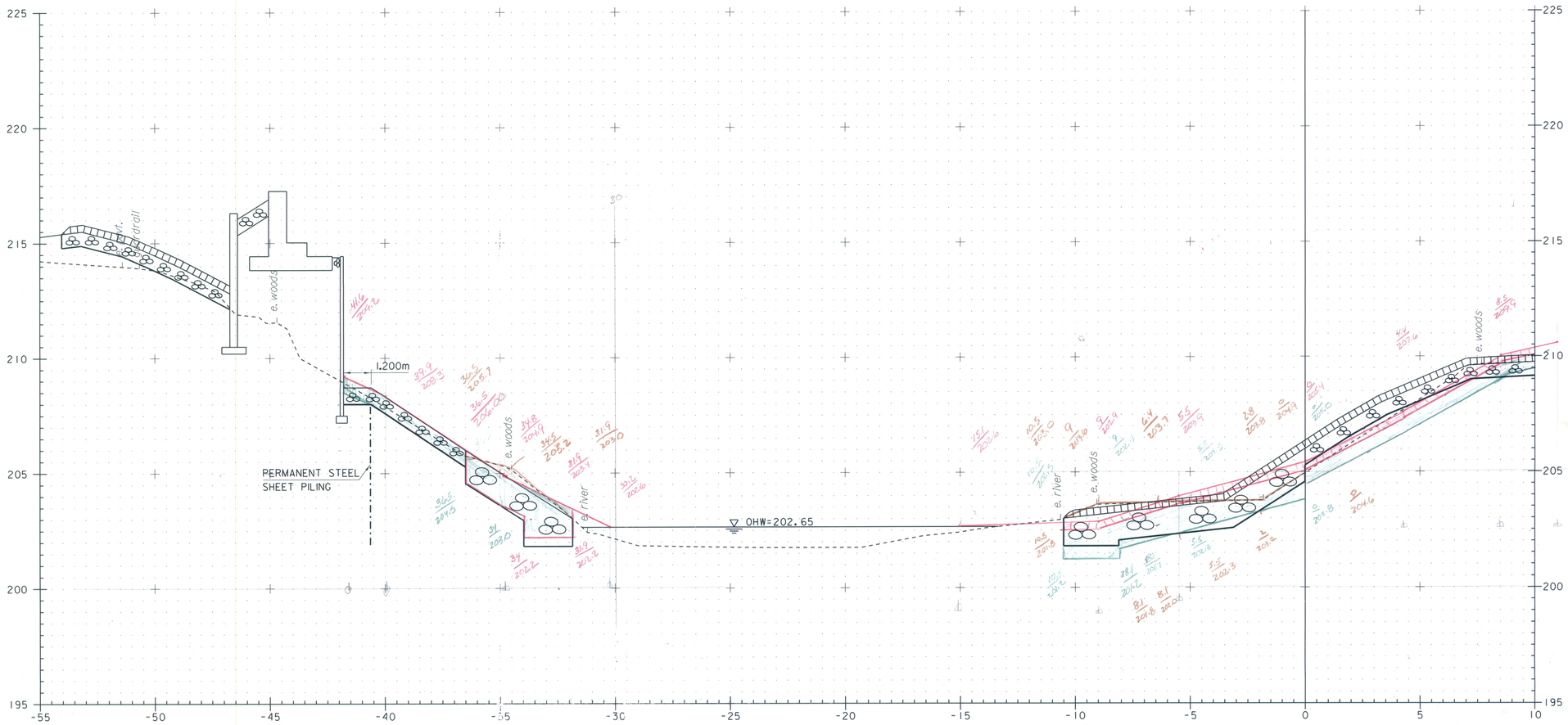
30+500

Note: No grubbing material shall be placed under the bridge.

0 5 10

GRAPHIC SCALE 1:100

PROJECT NAME:	STOCKBRIDGE
PROJECT NUMBER:	BRF 022-1(20)
FILE NAME: /sr+5/85e039/de039xsl.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: G. Shangraw
DESIGNED BY: G. Shangraw	CHECKED BY: R.S. Young
CHANNEL CROSS SECTIONS 5	SHEET 135 OF 139



30+510

30+502.0 LT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE FILL TYPE II
BEGIN GRUBBING MATERIAL

30+502.5 LT
BEGIN STONE FILL TYPE IV

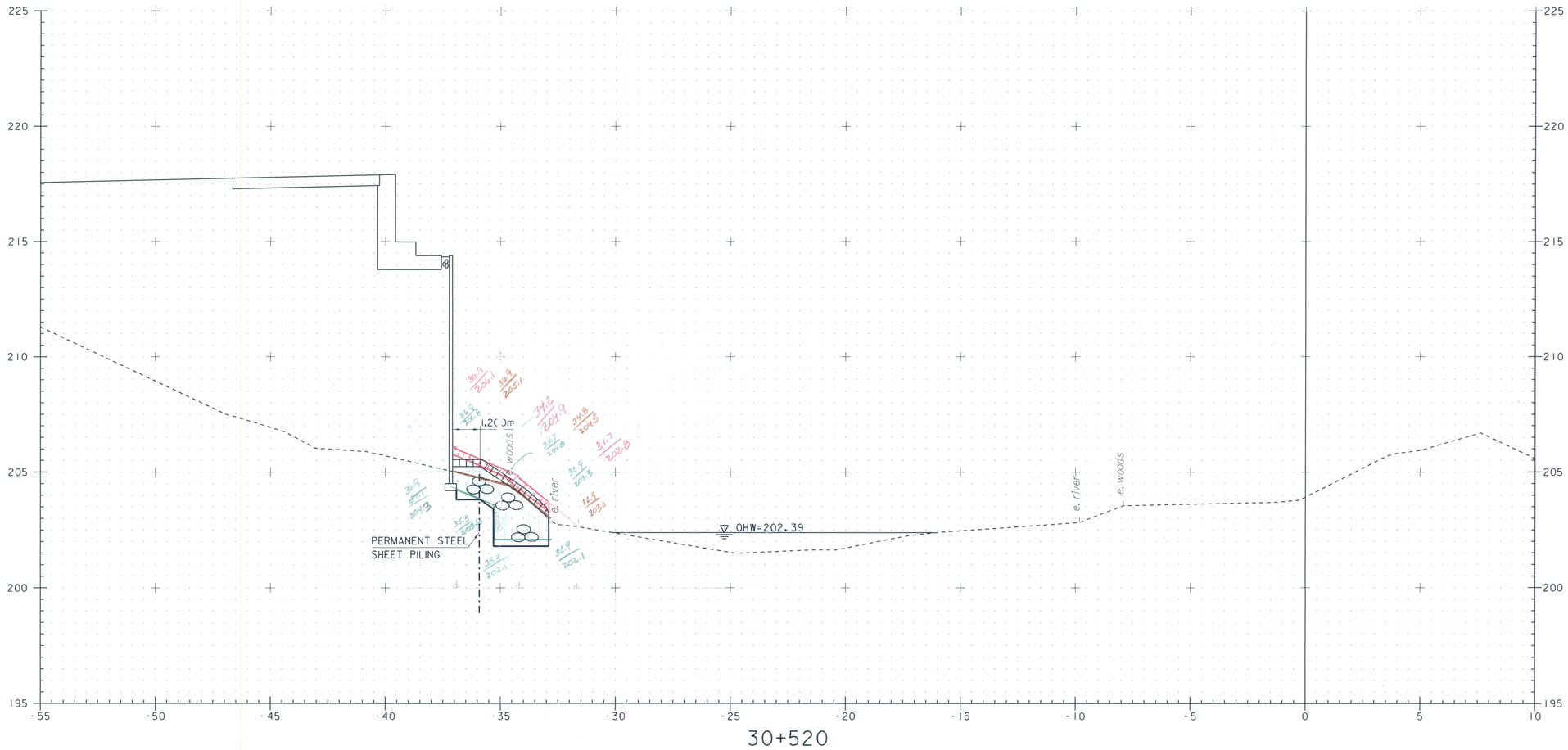
30+512.4 RT
END UNCLASSIFIED CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END STONE FILL TYPE II
END STONE FILL TYPE IV
END GRUBBING MATERIAL

0 5 10
GRAPHIC SCALE 1:100

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: /sr+5/85e039/de039xsl.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: G. Shangraw
CHANNEL CROSS SECTIONS 6

PLOT DATE: 08-APR-2010
DRAWN BY: G. Shangraw
CHECKED BY: R.S. Young
SHEET 136 OF 139



30+520

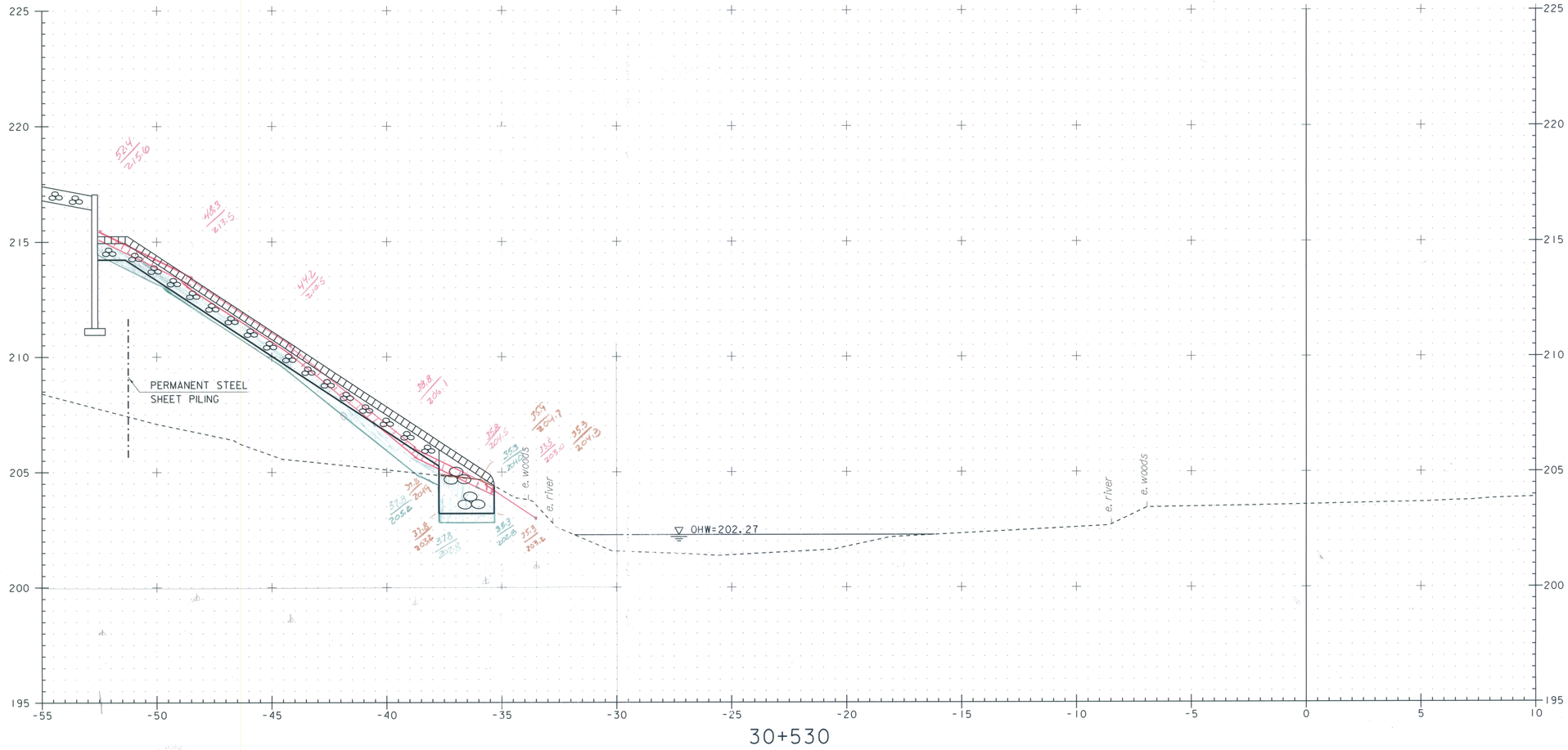
0 5 10

GRAPHIC SCALE 1:100

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

FILE NAME: /srt5/85e039/de039xsl.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: G. Shangraw
CHANNEL CROSS SECTIONS 7

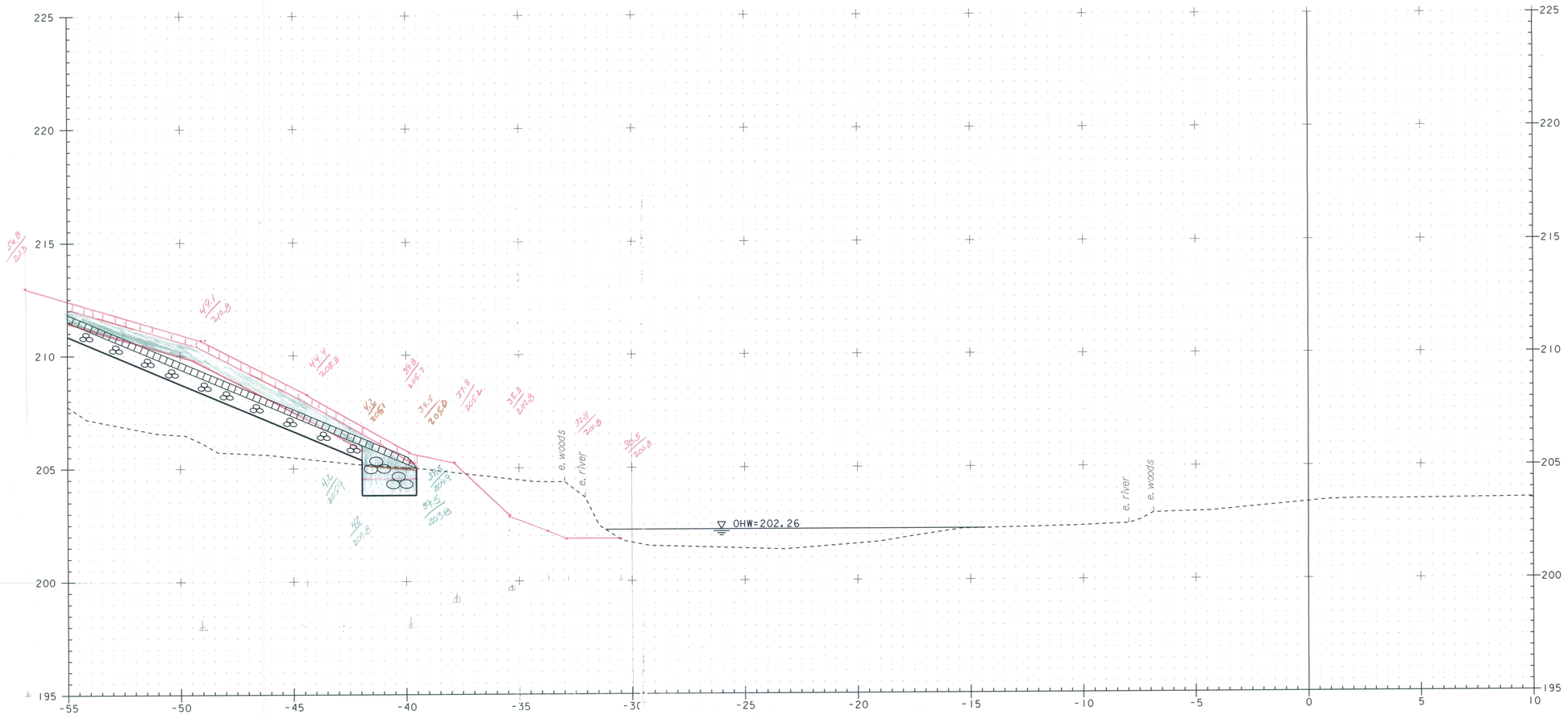
PLOT DATE: 08-APR-2010
DRAWN BY: G. Shangraw
CHECKED BY: R.S. Young
SHEET 137 OF 139



0 5 10

GRAPHIC SCALE 1:100

PROJECT NAME: STOCKBRIDGE	
PROJECT NUMBER: BRF 022-1(20)	
FILE NAME: /sr15/85e039/de039xsl.dgn	PLOT DATE: 08-APR-2010
PROJECT LEADER: C.P. Williams	DRAWN BY: G. Shangraw
DESIGNED BY: G. Shangraw	CHECKED BY: R.S. Young
CHANNEL CROSS SECTIONS 8	SHEET 138 OF 139



30+540

30+547.5 LT
END UNCLASSIFIED CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END STONE FILL TYPE II
END GRUBBING MATERIAL

30+547.0 LT
END STONE FILL TYPE IV

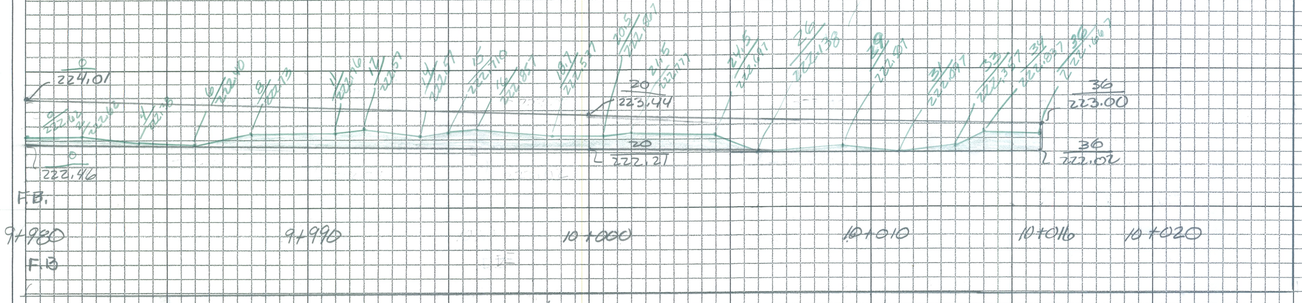
0 5 10
GRAPHIC SCALE 1:100

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1(20)

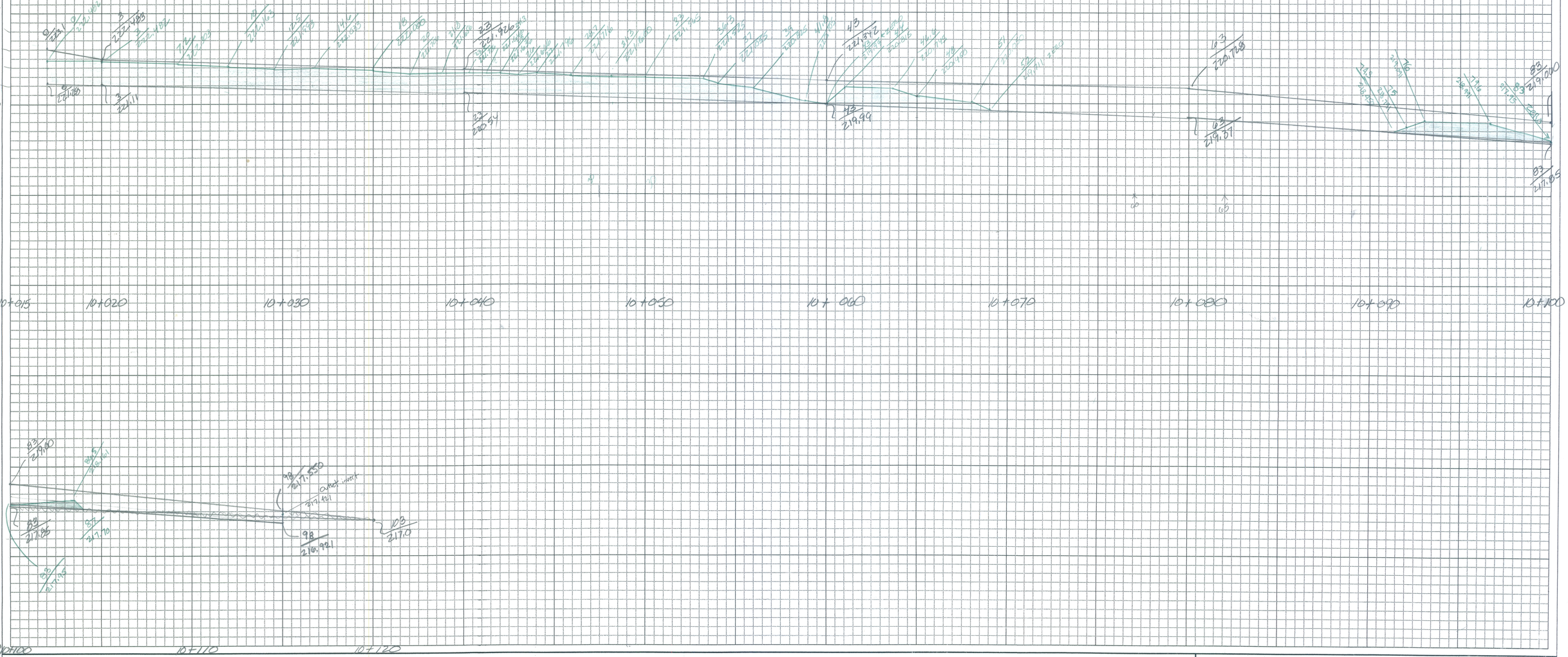
FILE NAME: /sr15/85e039/de039xsl.dgn
PROJECT LEADER: C.P. Williams
DESIGNED BY: G. Shangraw
CHANNEL CROSS SECTIONS 9

PLOT DATE: 08-APR-2010
DRAWN BY: G. Shangraw
CHECKED BY: R.S. Young
SHEET 139 OF 139

D-2 9+980 ~ 10+016 RT



D-4 10+017 ~ 10+120 RT



CROSS SECTION SHEET

PROJECT NAME: STOCKBRIDGE
PROJECT NUMBER: BRF 022-1 (20)
FILE NAME:
PROJECT LEADER:
DESIGNED BY:
const: g:/common/cadd/m-xsection.dgn
PLOT DATE: 07-JUN-2000 13:
DRAWN BY: D BREER
CHECKED BY:
SHEET 1 OF

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAINAGE DETAIL SHEET

VAOT Metric

DRAINAGE STRUCTURES

STATION km + m	STATION km + m	POS.	ASKEW	INLET/OUTLET TYPE		PIPE D mm	PIPE L m	UNDERDRAIN D mm	UNDERDRAIN L m	PIPE D mm	PIPE L m	ALLOWABLE OPTIONS PCCSP mm	CAAP mm	RCP CL	CSP mm	CPEP SL mm	PCCSP PI mm	PIPE ELBOW NO. DEG	ES EA	CB EA	PRCCDI	DEPTH DI mm	CONC CL 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 m³	STONE FILL m³	STONE FILL TYPE	MARKER POSTS LT ea	MARKER POSTS RT ea	GEOTEX UNDER STONE FILL SM	DRAINAGE No.	REMARKS
VT 107																																										
9+980	10+016	RT		FB	RCDI			150																				24.447	12.528												D-2	NEW UNDERDRAIN W/ FLUSHING BASIN
10+016.2	10+014.6	RT-LT		RCDI	DITCH					450	15.97					X					1				D			11.44	13.00							2.03	II			6.75	D-3	REMOVE EXISTING PIPE & RCDI NEW RCDI & PIPE
10+017	10+120	RT		FB	DITCH																																				D-4	NEW UNDERDRAIN W/ FLUSHING BASIN
10+120	10+160	LT		RCDI	RCDI					450	39.74					X					1				E																D-5	NEW RCDI & PIPE
10+160		LT-RT		RCDI	DITCH					450	19.29										1																				D-6	NEW RCDI & PIPE
10+173	10+175	RT		RCDI	DITCH																								.927												D-7	REMOVE EXISTING RCDI
10+229	10+227	RT		RCDI	DITCH																								.927												D-8	REMOVE EXISTING RCDI
10+232.83	10+232.83	LT		RCDI	DITCH					450	3.5					X					1				E												11.25	II			21.75	D-9	NEW RCDI & PIPE
10+302	10+316	RT-LT		RCDI	DITCH					450	23.37					X					1				A			43.19	8.03							2.8	II			9.8	D-10	NEW RCDI & PIPE REMOVE EXISTING
10+310	10+346	RT		FB	RCDI																																				D-11	NEW UNDERDRAIN W/ FLUSHING BASIN
10+345		RT		RCDI	DITCH																								2.72												D-12	REMOVE EXISTING RCDI
10+345.85	10+344.44	RT-LT		RCDI	DITCH					450	14.50					X					1				D			27.32								2.88	II			10.5	D-13	NEW RCDI & PIPE
10+348	10+372	R		FB	RCDI																																				D-14	NEW UNDERDRAIN W/ FLUSHING BASIN
																																									D-15	NEW BITUMINOUS CONCRETE GUTTER
10+372.3	10+390.68	RT		RCDI	RCDI					450	17.60					X					1				D			36.47													D-16	NEW RCDI & PIPE
10+390.74	10+389.167	RT-LT		RCDI	DITCH					450	15.55					X					1				A			40.17	11.47							3	II			10.4	D-17	NEW RCDI & PIPE REMOVE EXISTING RCDI
STONY	BROOK RD																																									
20+19.8	20+21.5	RT-LT		DITCH	DITCH																																				D-18	NEW PIPE & HEADWALLS
20+024	20+036	RT-LT		DITCH	DITCH																																				D-19	EXISTING PIPE REMOVE
20+055	20+077	RT																																							D-20	SPECIAL DITCH W/ TYPE I STONE FILL
20+057	20+066	RT		DITCH	DITCH																																				D-21	EXISTING PIPE REMOVE
20+071.96	20+065.92	RT-LT		RCDI	DITCH					450	21.51					X					1				A											3.6	II			12.0	D-22	NEW RCDI & PIPE
TOTALS																																										

PROJECT NAME :	PROJECT NO. :
DESIGN FILE NAME:	
IPARM FILE NAME:	PLOT DATE: 04-FEB-2005
SURVEYED BY:	SURVEY DATE:
SQUAD LEADER:	DRAWN BY:
	SHEET: OF

REINFORCED EARTH®

8614 Westwood Center Drive, Vienna, VA 22182 (703)821-1175

MECHANICALLY STABILIZED EARTH RETAINING WALLS

GENERAL NOTES

DESIGN CRITERIA

1. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE REINFORCED EARTH VOLUME, METHODS OF CONSTRUCTION AND QUALITY OF PREFABRICATED MATERIALS SHALL CONFORM TO PROJECT SPECIAL PROVISIONS FOR REINFORCED EARTH WALLS.

2. SOILS CHARACTERISTICS FOR DESIGN AS PER CONTRACT SPECIFICATIONS ITEM# 800.675.

   SELECT GRANULAR BACKFILL
   θ = 34 degrees, c = 0 p.s.f., γ = 22 kN/m^3

   RANDOM BACKFILL
   θ = 30 degrees, c = 0 p.s.f., γ = 20 kN/m^3

   FOUNDATION MATERIAL
   θ = 20° degrees, c = 2710 p

   *EQUIVALENT PHI ANGLE OF 21.8° FOR SPECIFIED C VALUE USED IN CALCULATIONS.

3. THE MAXIMUM FACTORED BEARING PRESSURE AT THE FOUNDATION LEVEL IS AS SHOWN ON THE WALL ELEVATIONS FOR EACH DESIGN CASE. IT IS THE RESPONSIBILITY OF THE OWNER'S GEOTECHNICAL ENGINEER (INDEPENDENT OF THE REINFORCED EARTH COMPANY) TO DETERMINE IF THE FACTORED BEARING PRESSURE SHOWN IS ALLOWABLE FOR THAT LOCATION.

4. THE FOUNDATION MATERIAL BELOW THE REINFORCED EARTH STRUCTURE SHALL BE PROOF ROLLED PER THE PROJECT SPECIFICATIONS AND, ANY UNSUITABLE FOUNDATION MATERIAL BELOW THE REINFORCED EARTH VOLUME AS DETERMINED BY THE OWNER'S GEOTECHNICAL REPRESENTATIVE (INDEPENDENT OF THE REINFORCED EARTH COMPANY) SHALL BE EXCAVATED AND REPLACED WITH SUITABLE MATERIAL COMPACTED IN LIFTS TO A MINIMUM OF 95% STD PROCTOR DENSITY OR OTHERWISE STABILIZED AS DIRECTED BY THE OWNER'S GEOTECHNICAL REPRESENTATIVE.

5. REINFORCING STRIPS SHALL BE RIBBED, 50mm WIDE AND 4mm THICK, AND SHALL CONFORM TO THE PHYSICAL AND MECHANICAL PROPERTIES OF ASTM A-572 GRADE 450. GALVANIZATION SHALL BE APPLIED IN ACCORDANCE WITH ASTM A-123 OR AASHTO M111 (610 g/m^2).

WALL CONSTRUCTION

6. STATIONS & OFFSETS SHOWN ARE ALONG FRONT FACE OF WALL ALIGNED C/L OF VT RTE 107. SEE PLAN VIEW FOR ADDITIONAL INFORMATION.

7. NOTE NOT USED.

8. FOR LOCATION AND ALIGNMENT OF REINFORCED EARTH WALLS. SEE PLAN VIEW – SHEET Nos. 3 & 4 AND CONTRACT PLANS FOR ANY ADDITIONAL LAYOUT INFORMATION.

9. IF MANHOLES AND/OR DROP INLETS ARE LOCATED WITHIN THE REINFORCED EARTH VOLUME AND SPECIFIC DETAILS ARE NOT INCLUDED HEREIN, PLEASE CONTACT THE REINFORCED EARTH COMPANY FOR APPROPRIATE DETAILS FOR PLACEMENT OF REINFORCING STRIPS AROUND OBSTRUCTIONS.

10. IF PILES ARE LOCATED WITHIN THE REINFORCED EARTH VOLUME, THEY SHALL BE DRIVEN PRIOR TO CONSTRUCTION OF THE REINFORCED EARTH WALL UNLESS A METHOD TO PROTECT THE STRUCTURE, WHICH IS ACCEPTABLE TO THE OWNER'S GEOTECHNICAL REPRESENTATIVE OR ON-SITE ENGINEER AND THE REINFORCED EARTH COMPANY, IS PROPOSED AND APPROVED IN WRITING.

11. NOTE NOT USED.

12. BACKFILL MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS FOR REINFORCED EARTH WALLS TO A LEVEL OF 50mm(2") ABOVE THE TIE STRIPS EMBEDDED IN THE PANELS. INSTALLATION OF REINFORCING STRIPS SHALL BE PERMITTED ONLY AFTER PLACEMENT AND COMPACTION OF THE BACKFILL MATERIAL HAS REACHED THE REQUIRED LEVEL.

WALL CONSTRUCTION (CONT.)

13. COMPACTION AND OPERATION EQUIPMENT SHALL BE KEPT A MINIMUM DISTANCE OF 1.0M FROM THE BACK FACE OF THE REINFORCED EARTH PANELS. COMPACTION WITHIN 5M OF THE REINFORCED EARTH PANELS SHALL BE ACHIEVED WITH AT LEAST THREE (3) PASSES OF A LIGHTWEIGHT MECHANICAL TAMPER, ROLLER OR VIBRATORY SYSTEM. NO COMPACTION DENSITY TESTS SHALL BE TAKEN WITHIN THE 1.0M ZONE.

14. MSE STRUCTURAL BACKFILL SHALL BE COMPACTED TO A MINIMUM DENSITY OF 95% STANDARD PROCTOR (ASTM D-698) AT A MOISTURE CONTENT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. THE OWNER'S GEOTECHNICAL REPRESENTATIVE OR ON-SITE ENGINEER (INDEPENDENT OF THE REINFORCED EARTH COMPANY) SHALL DETERMINE IF A HIGHER MINIMUM DENSITY IS REQUIRED IN THE VICINITY OF THE ABUTMENT FOUNDATIONS.

15. IF STRUCTURES IN EXCESS OF 6M IN HEIGHT OCCUR, THE FINISHED GRADE IN FRONT OF THE WALL SHALL BE PLACED AND COMPACTED BEFORE WALL CONSTRUCTION EXCEEDS A HEIGHT OF 6M. FINISHED GRADE BACKFILL SHALL BE COMPACTED TO 95% OF ASTM D-698, METHODS 'C' OR 'D', UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

16. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION OF ANY GUARDRAIL POSTS BEHIND THE REINFORCED EARTH PANELS. PRIOR TO PLACEMENT OF THE TOP LAYERS OF REINFORCING STRIPS, INDIVIDUAL STRIPS MAY BE SKEWED TO AVOID THE POST LOCATIONS IF AUTHORIZED BY THE REINFORCED EARTH COMPANY. ANY DAMAGE DONE TO THE REINFORCING STRIPS DUE TO THE INSTALLATION OF THE GUARDRAIL SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

17. IF EXISTING OR FUTURE STRUCTURES, PIPES, FOUNDATIONS OR GUARDRAIL POSTS WHICH ARE WITHIN THE REINFORCED EARTH VOLUME INTERFERE WITH THE NORMAL PLACEMENT OF REINFORCING STRIPS AND SPECIFIC DIRECTION HAS NOT BEEN PROVIDED ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE REINFORCED EARTH COMPANY TO DETERMINE WHAT COURSE OF ACTION SHOULD BE TAKEN.

18. ALL DETAILING AND CHECKING OF REINFORCING STEEL FOR ANY C.I.P. CONCRETE WORK IS THE RESPONSIBILITY OF THE CONTRACTOR.

19. TOP PANELS BENEATH COPING SHALL HAVE (3)–ø13 DOWELS PER STANDARD 1.5M PANEL PROTRUDING FROM TOP EDGE.

20. THE CONTRACTOR IS RESPONSIBLE FOR GRADUALLY DEFLECTING UPPER REINFORCING STRIPS DOWNWARD TO AVOID CONFLICTS WITH PAVING AND SUBGRADE PREPARATION. THE CONTRACTOR'S ATTENTION IS DIRECTED ESPECIALLY TO SITUATIONS WHERE ROADWAY SUPERELEVATION AND/OR SIDE SLOPES ARE ANTICIPATED. SPECIAL ATTENTION SHOULD BE DIRECTED TO ABUTMENT FOUNDATIONS AREAS AND UNDERGROUND UTILITIES.

21. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING STORM WATER DRAINAGE IN THE VICINITY OF THE WALL DURING CONSTRUCTION. STORM WATER RUNOFF IS TO BE COLLECTED AND DISCHARGED AWAY FROM THE WALL AND REINFORCED BACKFILL. MSE WALL BACKFILL SHALL NOT BE PLACED ON FROZEN OR UPON WHEN SATURATED. BACKFILL SHALL BE RE-WORKED OR ALLOWED TO DRY WHEN THE MOISTURE CONTENT EXCEEDS OPTIMUM BY 2% OR MORE.

22. NOTE NOT USED.

23. FOR OTHER INFORMATION PERTAINING TO WALL CONSTRUCTION PLEASE REFER TO THE REINFORCED EARTH CONSTRUCTION MANUAL.

MATERIALS NOTES

24. NOMINAL STRIP LENGTHS

THE REINFORCING STRIP LENGTHS SHOWN ON THE PLANS, MEASURED FROM BACK FACE OF PANEL, ARE THE NOMINAL LENGTHS REQUIRED BY CALCULATION. THE ACTUAL FABRICATED STRIP LENGTHS ARE OFTEN LONGER (UP TO 75mm) DUE TO MANUFACTURING TOLERANCES. THE REQUIRED HORIZONTAL LIMIT OF GRANULAR BACKFILL IS EQUAL TO THE NOMINAL STRIP LENGTHS. ADDITIONAL GRANULAR BACKFILL BEYOND THE NOMINAL STRIP LENGTHS IS NOT REQUIRED BY CALCULATION.

MATERIALS NOTES (CONT.)

25. SELECT BACKFILL QUANTITY

THE SELECT BACKFILL QUANTITY, IF INDICATED BY THE REINFORCED EARTH COMPANY, IS CALCULATED BY MULTIPLYING THE NOMINAL STRIP LENGTHS SHOWN ON THE PLANS BY THEIR TRIBUTARY WALL SURFACE AREA AND CONVERTING THE RESULT TO A NEATLINE CUBIC YARD QUANTITY. THIS INFORMATION IS FURNISHED FOR THE CONTRACTOR'S INFORMATION ONLY AND IS NOT INTENDED TO REPRESENT THE ACTUAL QUANTITIES REQUIRED FOR THE PROJECT. THE CONTRACTOR MUST CALCULATE HIS OWN EXCAVATION AND BACKFILL QUANTITIES BASED UPON THE SPECIFIC CONDITIONS OF THE PROJECT.

26. PANEL FINISH

PRECAST PANELS AND CORNER ELEMENTS FOR REINFORCED EARTH WALLS SHALL HAVE A SMOOTH FORM FINISH. PRECAST COPING UNITS SHALL HAVE A PLAIN FINISH.

27. NOTE TO CONTRACTORS

ONLY THE FOLLOWING MATERIALS ARE SUPPLIED BY THE REINFORCED EARTH COMPANY:

- PRECAST CONCRETE FACING PANELS
- REINFORCING STRIPS
- BOLT SETS (FOR ATTACHING PANELS TO THE REINFORCING STRIPS)
- NYLON WASHERS
- RUBBER GASKETS
- FILTER CLOTH AND ADHESIVE (FOR PANEL JOINTS ONLY)
- PRECAST COPING UNITS

ANY OTHER MATERIALS CALLED FOR IN THE CONTRACT PLANS OR SPECIFICATIONS ARE TO BE SUPPLIED BY THE CONTRACTOR. ANY JOINT MATERIALS SHOWN AT THE INTERFACE OF PRECAST PANELS AND CAST-IN-PLACE CONCRETE STRUCTURES ARE TO BE SUPPLIED BY THE ERECTION CONTRACTOR. ANY CONCRETE SURFACE REPAIR OR FINISHING OF EXPOSED APPLIED COATINGS ARE ALSO SUPPLIED/INSTALLED BY THE CONTRACTOR IN THE FIELD FOLLOWING PANEL ERECTION.

28. THE REINFORCED EARTH COMPANY SUPPLIES PRECAST CONCRETE FACING PANELS AND ACCESSORIES TO BE USED IN CONJUNCTION WITH OTHER MATERIALS IN THE CONSTRUCTION OF THE REINFORCED EARTH® RETAINING WALLS DETAILED HEREIN. THE CONSTRUCTION AND QUALITY CONTROL PROCEDURES MANUAL FURNISHED BY THE REINFORCED EARTH COMPANY IS INTENDED TO PROVIDE A GENERAL EXPLANATION OF THIS SYSTEM. IT IS THE CONTRACTOR'S OBLIGATION TO DEVISE AND EXECUTE A PROJECT SPECIFIC ERECTION SEQUENCE, PANEL UNLOADING, HANDLING AND BRACING SYSTEM, AND TO PROVIDE SAFE ACCESS FOR ALL WORKERS. THE CONSTRUCTION AND QUALITY CONTROL PROCEDURES MANUAL IS GENERAL IN NATURE AND DOES NOT ACCOUNT FOR PROJECT SPECIFIC CRITERIA. COMPLIANCE WITH THE GUIDELINES IN THIS MANUAL DOES NOT RELIEVE THE CONTRACTOR OF ITS RESPONSIBILITY TO ADHERE TO THE PROJECT PLANS, SPECIFICATIONS AND CONTRACT DOCUMENTS OR COMPLIANCE WITH ALL FALL PROTECTION, SAFETY, LAWS, STANDARDS AND PROCEDURES AT THE JOBSITE. CONTRACTORS SHOULD TAKE SPECIAL PRECAUTIONS TO PREVENT THE PANELS FROM SHIFTING OR FALLING DURING THE ERECTION PROCESS.

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4	PLAN VIEW – PRECAST MSE WALL
5	ELEVATION VIEW – ABUTMENT No. 1
6	ELEVATION VIEW – ABUTMENT No. 2
7	ELEVATION VIEW – TEMPORARY SURCHARGE WALL AT ABUTMENT No. 1
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9	WIRE WALL PLACEMENT DIAGRAMS
10	TYPICAL MSE WALL SECTIONS
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12	TYPICAL MSE WALL COPING DETAILS
13	TYPICAL TEMPORARY SURCHARGE WALL SECTION AND DETAILS
14	TYPICAL WIRE FACE DETAILS
15	WIRE WALL CONSTRUCTION PROCEDURE DETAILS
16	STANDARD PANEL DETAILS

Structure's Copy

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BY CPW DATE 8/26/10

CERTIFIED WITH RESPECT TO THE EXTERNAL STABILITY OF REINFORCED EARTH STRUCTURES ONLY
STATE OF VERMONT — PROFESSIONAL ENGINEER — 8/26/10

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REINFORCED EARTH
8614 Westwood Center Drive, Vienna, VA 22182 (703)821-1175

"REINFORCED EARTH" is the registered trademark of The Reinforced Earth Company.

DESIGNED BY:					PROJECT NAME	VT ROUTE 107, BRIDGE 9	DATE 07/16/2010
MS							
PROJECT ENGR.					LOCATION	STOCKBRIDGE, VERMONT	CONTRACT NO. RE-14697
LY							
CHECKED BY:					OWNER	VERMONT AGENCY OF TRANSPORTATION	DRAWING NO. 1 OF 16
LY	1	8/16/10	REVISED SHEETS 2, 3, 5, 6, 7, 8, 12, & 16				
	REV.	DATE	DESCRIPTION		DRAWING COVERS	GENERAL NOTES (1 OF 2)	SCALE AS SHOWN

R:\RE14697_DEV_VT_Stockbridge\Proj\FINAL\FINAL PACKAGE – ALL WALLS Revised.dwg

A TEMPORARY GEOTREL/WIRE-FACED MSE WALL SYSTEM

(CONT. GENERAL NOTES)

DESIGN CRITERIA

1. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE REINFORCED EARTH VOLUME, METHODS OF CONSTRUCTION AND QUALITY OF PREFABRICATED MATERIALS SHALL CONFORM TO THE CONTRACTING AGENCY'S TECHNICAL SPECIFICATIONS FOR REINFORCED EARTH WALLS AND APPLICABLE AASHTO STANDARDS.

2. SOIL PARAMETERS (TEMPORARY SURCHARGE WALLS):

   SELECT GRANULAR BACKFILL
   Φ = 34 degrees, c = 0 , γ= 22 KN/m³

   RANDOM BACKFILL (SURCHARGE ZONE)
   Φ = 30 degrees, c = 0 , γ= 20 KN/m³

3. THE MAXIMUM FACTORED BEARING PRESSURE AT THE FOUNDATION LEVEL IS AS SHOWN ON THE WALL ELEVATIONS FOR EACH DESIGN CASE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THAT THIS FACTORED BEARING PRESSURE IS ALLOWABLE FOR THAT LOCATION.

4. ANY UNSUITABLE FOUNDATION MATERIAL BELOW THE REINFORCED EARTH VOLUME, AS DETERMINED BY THE ENGINEER, SHALL BE EXCAVATED AND REPLACED WITH SUITABLE MATERIAL OR OTHERWISE STABILIZED AS DIRECTED BY THE ENGINEER.

5. REINFORCING GEOSTRAPS FOR REINFORCED EARTH WALLS SHALL BE 47mm WIDE AND 3mm THICK, AND SHALL CONFORM TO THE PHYSICAL PROPERTIES OF GRI-GG1&B AND MECHANICAL PROPERTIES OF ASTM D 6637.

6. WIRE FACINGS SHALL BE SHOP FABRICATED WELDED WIRE GRIDS. WIRE CONFORMING TO THE MINIMUM REQUIREMENTS OF AASHTO A-82 (AASHTO M 32) AND WELDED INTO THE FINISHED CONFIGURATION IN ACCORDANCE WITH ASTM A-185 (AASHTO M55).

7. THE REINFORCED EARTH WALL IS DESIGNED ASSUMING NO HYDROSTATIC PRESSURE. THE CONTRACTOR IS RESPONSIBLE TO DESIGN A PROPER DRAINAGE COLLECTION SYSTEM AROUND THE MSE STRUCTURE TO AVOID SEEPAGE INTO MSE STRUCTURE AND EROSION OF SOIL.

8. NOT USED.

WALL CONSTRUCTION

9. REINFORCED EARTH WALLS IN CURVES WILL FORM A SERIES OF SHORT CHORDS OF 3m EACH TO MATCH DESIRED WALL ALIGNMENT.

10. FOR LOCATION AND ALIGNMENT OF REINFORCED EARTH WALLS. SEE PLAN VIEW - SHEET Nos. 3 & 4 AND CONTRACT PLANS FOR ANY ADDITIONAL LAYOUT INFORMATION.

11. IF MANHOLES AND DROP INLETS ARE PRESENT, THEY SHALL BE LOCATED AS SHOWN ON WALL ELEVATIONS.

12. IF PILES ARE LOCATED WITHIN THE REINFORCED EARTH VOLUME, THEY SHALL BE DRIVEN PRIOR TO CONSTRUCTION OF THE REINFORCED EARTH WALL UNLESS A METHOD TO PROTECT THE STRUCTURE, WHICH IS ACCEPTABLE TO THE ENGINEER AND THE REINFORCED EARTH COMPANY, AND IS PROPOSED AND APPROVED IN WRITING.

13. BACKFILL MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS FOR REINFORCED EARTH WALLS. GEOSTRAPS SHOULD LIE FLAT (UNTWISTED) ON THE COMPACTED GROUND SURFACE AND PULLED & ANCHORED TAUT BEFORE THE NEXT LIFT IS PLACED. 75mm MIN. OF BACKFILL REQUIRED BETWEEN GEOSTRAPS AND ANY CONSTRUCTION EQUIPMENT.

14. COMPACTION AND SPREADER EQUIPMENT SHALL BE KEPT A MINIMUM DISTANCE OF 1m FROM THE BACK FACE OF THE WIRE FACINGS. COMPACTION WITHIN 1m OF THE WIRE FACINGS SHALL BE ACHIEVED WITH AT LEAST THREE (3) PASSES OF A LIGHTWEIGHT MECHANICAL TAMPER, ROLLER OR VIBRATORY SYSTEM. THE MAXIMUM LIFT THICKNESS AFTER COMPACTION SHALL NOT EXCEED 250mm. NO DENSITY TESTS ARE REQUIRED IN THIS ZONE.

15. IF EXISTING OR FUTURE STRUCTURES, PIPES, FOUNDATIONS OR GUARDRAIL POSTS WHICH ARE WITHIN THE REINFORCED EARTH VOLUME INTERFERE WITH THE NORMAL PLACEMENT OF SOIL REINFORCEMENTS AND SPECIFIC DIRECTION HAS NOT BEEN PROVIDED ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO DETERMINE WHAT COURSE OF ACTION SHOULD BE TAKEN.

16. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING STORM WATER DRAINAGE IN THE VICINITY OF THE WALL DURING CONSTRUCTION. STORM WATER RUNOFF IS TO BE COLLECTED AND DISCHARGED AWAY FROM THE WALL AND REINFORCED BACKFILL.

MATERIALS NOTES

17. NOTE TO CONTRACTORS:

    ONLY THE FOLLOWING MATERIALS ARE SUPPLIED BY THE REINFORCED EARTH COMPANY:

    - PREFABRICATED TYPE "L" WIRE FACIA (BLACK)
    - GEOSTRAP® REINFORCEMENTS
    - WIRE STRUTS (BLACK)
    - SOIL RETENTION FABRIC

    ANY OTHER MATERIALS CALLED FOR IN THE CONTRACT PLANS OR SPECIFICATIONS ARE TO BE SUPPLIED BY THE CONTRACTOR.

18. THE REINFORCED EARTH COMPANY SUPPLIES WIRE FACIAS AND ACCESSORIES TO BE USED IN CONJUNCTION WITH OTHER MATERIALS IN THE CONSTRUCTION OF THE REINFORCED EARTH® RETAINING WALLS DETAILED HEREIN. THE WALL CONSTRUCTION PROCEDURES FURNISHED BY THE REINFORCED EARTH COMPANY IN ITS SPECIFICATIONS ARE INTENDED TO PROVIDE A GENERAL EXPLANATION OF THE SYSTEM. IT IS THE CONTRACTOR'S OBLIGATION TO DESIGN AND EXECUTE A PROJECT SPECIFIC ERECTION SEQUENCE, FACING UNLOADING, HANDLING SYSTEM, AND FALL PROTECTION SYSTEM. COMPLIANCE WITH THE GUIDELINES IN THE SPECIFICATIONS DOES NOT RELIEVE THE CONTRACTOR OF ITS RESPONSIBILITY TO ADHERE TO THE PROJECT PLANS, SPECIFICATIONS AND CONTRACT DOCUMENTS OR COMPLIANCE WITH ALL FALL PROTECTION, SAFETY, LAWS, STANDARDS AND PROCEDURES AT HIS JOB SITE. CONTRACTORS SHOULD TAKE SPECIAL PRECAUTIONS TO PREVENT THE FACINGS FROM SHIFTING OR FALLING DURING THE ERECTION PROCESS.

19. THE DESIGN CONTAINED ON THESE DRAWINGS IS BASED ON INFORMATION PROVIDED BY THE CONTRACTOR. ON THE BASIS OF THIS INFORMATION, THE REINFORCED EARTH COMPANY IS RESPONSIBLE FOR INTERNAL STABILITY OF THE STRUCTURE ONLY. EXTERNAL STABILITY DESIGN INCLUDING FOUNDATION AND SLOPE STABILITY IS THE RESPONSIBILITY OF CONTRACTOR.

20. THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO THE REINFORCED EARTH COMPANY AND IS BEING FURNISHED FOR THE USE IN CONNECTION WITH THIS WADT PROJECT ONLY, AND THE INFORMATION CONTAINED HEREIN IS NOT TO BE TRANSMITTED TO ANY OTHER ORGANIZATION UNLESS SPECIFICALLY AUTHORIZED IN WRITING BY THE REINFORCED EARTH COMPANY. THE REINFORCED EARTH COMPANY IS EXCLUSIVE LICENSEE OF THE VIDAL PATENTS IN THE UNITED STATES. ANY SALE, GIFT, LOAN AND THE FURNISHING OF THIS DRAWING DOES NOT CONSTITUTE AN EXPRESSED OR IMPLIED LICENSE UNDER THE VIDAL PATENTS.

⚠1

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BY CPW DATE 8/26/10

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STATE OF VERMONT — FEDERAL HIGHWAYS WITH — PROFESSIONAL ENGINEER

8/19/10

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REINFORCED EARTH
8614 Westwood Center Drive, Vienna, VA 22182 (703)573-1115

"REINFORCED EARTH" is the registered trademark of The Reinforced Earth Company.

REV.	DATE	DESCRIPTION
1	8/16/10	REVISED NOTE REFERENCE

DESIGNED BY: MS
PROJECT ENGR.: LY
CHECKED BY: LY

PROJECT NAME	VT ROUTE 107, BRIDGE 9
LOCATION	STOCKBRIDGE, VERMONT
OWNER	VERMONT AGENCY OF TRANSPORTATION
DRAWING COVERS	GENERAL NOTES (2 OF 2)
DATE	07/16/2010
CONTRACT NO.	RE-16997
DRAWING NO.	2 OF 16
SCALE	AS SHOWN

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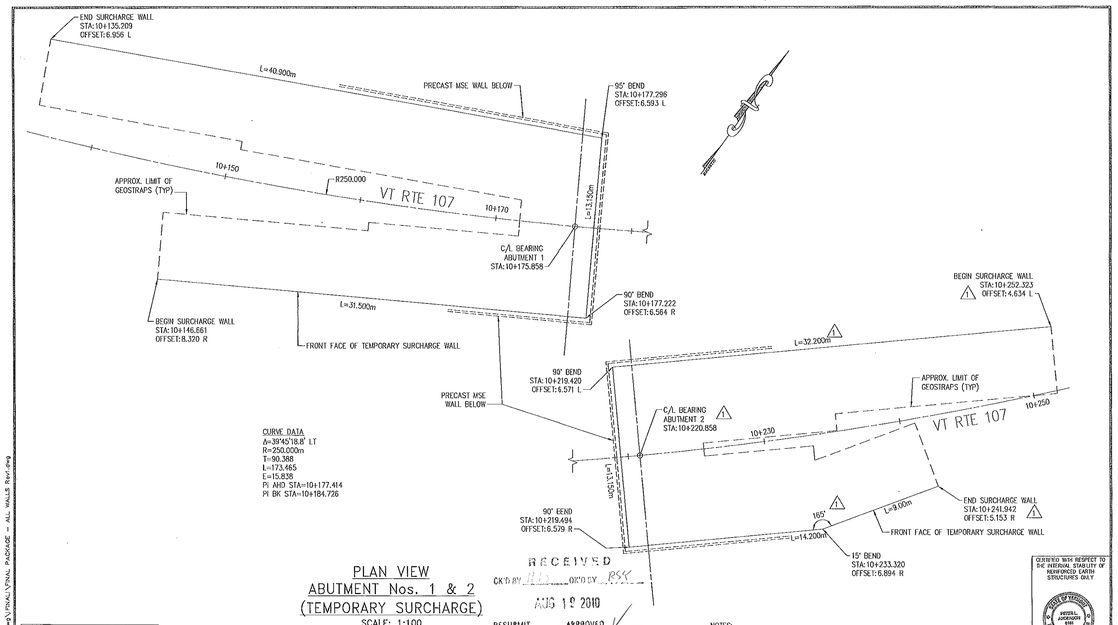

PLAN VIEW
ABUTMENT Nos. 1 & 2
(TEMPORARY SURCHARGE)

SCALE: 1:100

ALL DIMENSIONS ARE IN METERS
UNLESS NOTED OTHERWISE

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CK'D BY JLL ORG'D BY RSK

NOTES:
1. STATIONS & OFFSETS GIVEN AT FRONT FACE OF MSE WIRE FACING.
2. MSE WALL LAYOUT INFORMATION WERE BASED ON CONTRACT SHEET Nos. 70 & 71 OF 139.
3. CONTRACTOR TO VERIFY ALL WORKING POINTS.

CERTIFIED WITH RESPECT TO THE INTERNAL STABILITY OF REINFORCED EARTH STRUCTURES ONLY

STATE OF VERMONT
JOSEPH ARTHUR KOS
No. 10,000
REGISTERED PROFESSIONAL ENGINEER
8/31/10

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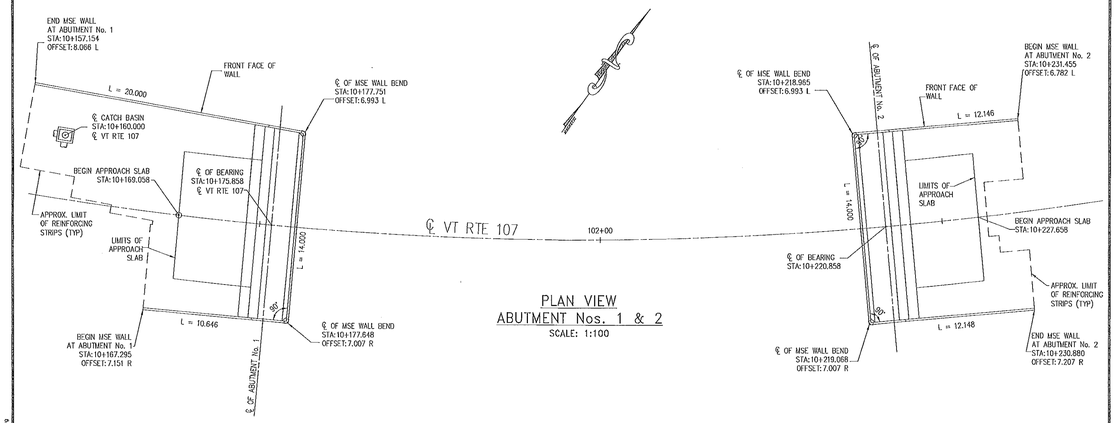
REINFORCED EARTH
8614 Westwood Center Drive, Vienna, VA 22182 (703)821-1175

DESIGNED BY: MS				PROJECT NAME: VT ROUTE 107, BRIDGE 9 — DATE: 07/16/2010
PROJECT ENGR: LY				LOCATION: STOCKBRIDGE, VERMONT — CONTRACT NO.: RE-14697
CHECKED BY: LY	1	8/16/10	BEND TEMPORARY WALL ADJUST WALL LENGTH	OWNER: VERMONT AGENCY OF TRANSPORTATION — DRAWING NO.: 3 OF 16
	REV.	DATE	DESCRIPTION	DRAWING COVERS: PLAN VIEW TEMPORARY SURCHARGE — SCALE: AS SHOWN

P:\RE14697_VTRte107_Stockbridge\Vidal\FINAL PACKAGE - ALL WALLS Rev1.dwg



PLAN VIEW
ABUTMENT Nos. 1 & 2
SCALE: 1:100

NOTES:
1. STATIONS & OFFSETS GIVEN AT FRONT FACE OF MSE WALL PANELS.
2. MSE WALL LAYOUT INFORMATION WERE BASED ON CONTRACT SHEET Nos. 70 & 71 OF 139.
3. CONTRACTOR TO VERIFY ALL WORKING POINTS.

CURVE DATA
Δ=39°45'18.8" LT
R=250.000m
T=90.388
L=173.465
E=15.838
PI AHD STA=10+177.414
PI BK STA=10+184.726

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STATE OF VERMONT
KRISTA L. ANDERSON 9610
8/19/10

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ReinforcedEarth
8614 Westwood Center Drive, Vienna, VA 22182 (703)821-1175

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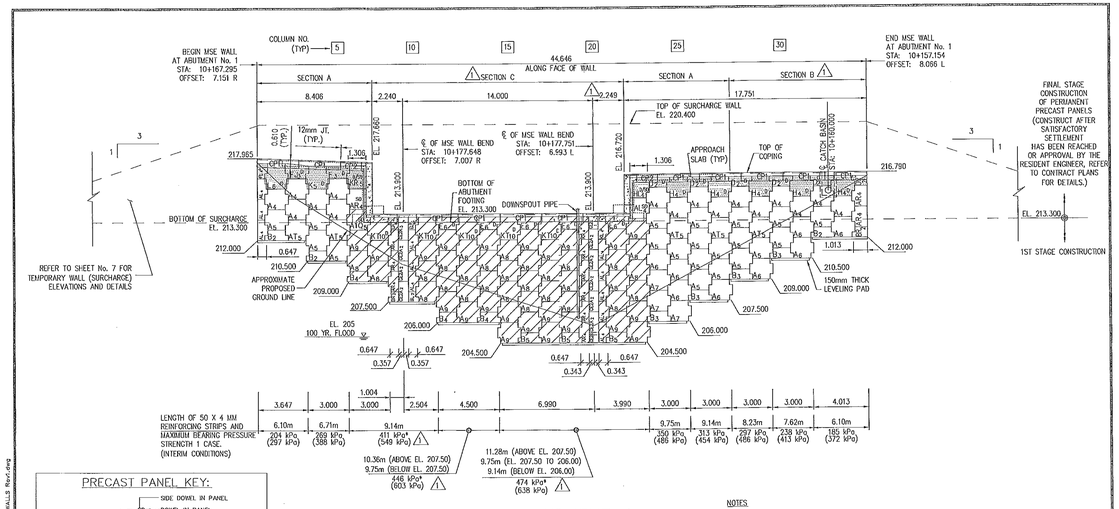
DESIGNED BY: MS			PROJECT NAME	VT ROUTE 107, BRIDGE 9
PROJECT ENGR: LY			LOCATION	STOCKBRIDGE, VERMONT
CHECKED BY: LY			OWNER	VERMONT AGENCY OF TRANSPORTATION
	REV.	DATE	DESCRIPTION	DRAWING TITLE: PLAN VIEW PRECAST MSE WALL

DATE 07/16/2010
CONTRACT NO. RE-14697
DRAWING NO. 4 OF 16
SCALE AS SHOWN

R:\RE14697_VERM_VT_Stockbridge\dwg\FINAL\FINAL PACKAGE - ALL WALLS Rev1.dwg



ELEVATION – ABUTMENT 1

SCALE = 1 : 100

PRECAST PANEL KEY:

- SD — SIDE DOWEL IN PANEL
- D — DOWEL IN PANEL
- AR6 — REQUIRED PANEL TYPE (TYP.)
- No. OF REQUIRED TIE STRIPS REQUIRED OUT EDGE OF PANEL (R) = RIGHT SIDE (L) = LEFT SIDE
- C.I.P. COPING — CP1 = 3.048m – 11 PCS; CP2 = 1.509m – 2 PCS
- WALL TO BE SURVEYED AFTER SETTLEMENT BEFORE CASTING AND PLACEMENT OF TOP COURSE OF PANELS.
- R7 PANEL REINFORCEMENT (FACING PANELS ARE R6 UNLESS OTHERWISE NOTED)

ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE

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BY CPW DATE 8/26/10

NOTES:

1. LENGTH OF LEVELING PAD IS BASED ON INDIVIDUAL PANEL WIDTHS OF ℄ OF PANEL JOINT TO ℄ OF PANEL JOINT. USE STEP DETAIL ON SHEET No. 11 TO DETERMINE THE ACTUAL LEVELING PAD STEP LOCATION.
2. FOR TYPICAL SECTIONS THROUGH WALL, SEE SHEET No. 10.
3. FINISHED GRADE SHOWN ON ELEVATIONS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR.
4. TOP OF WALL ELEVATIONS ARE SHOWN TO TOP OF COPING.
5. ALL STATIONS AND OFFSETS ARE GIVEN TO FRONT FACE OF MSE WALL.
6. SEE CONTRACT PLANS FOR DRAINAGE STRUCTURE DETAILS.

*BEARING PRESSURE OF 390 kPa EXCEEDED.

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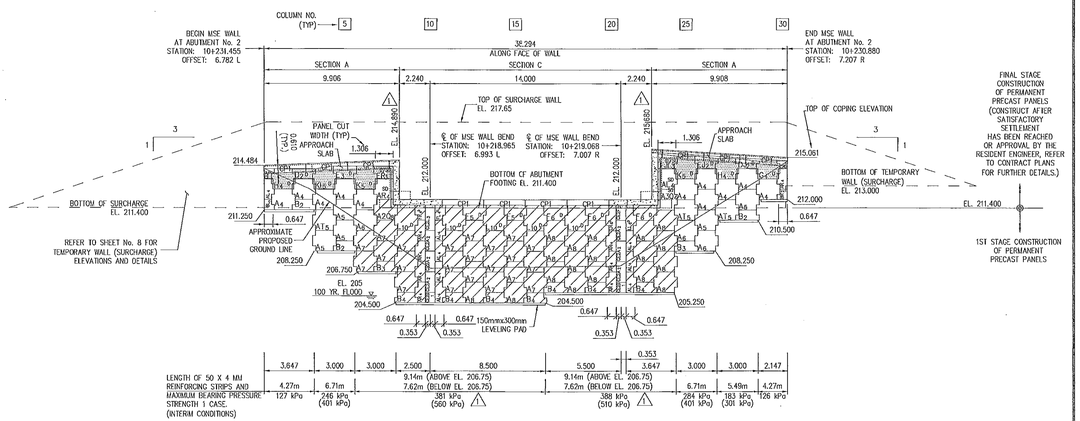
REINFORCED EARTH
8614 Westwood Center Drive, Vienna, VA 22182 (703)191-1175

DESIGNED BY: MS				PROJECT NAME	VT ROUTE 107, BRIDGE 9	DATE 07/16/2010
PROJECT ENGR: LY				LOCATION	STOCKBRIDGE, VERMONT	CONTRACT NO. RE-14697
CHECKED BY: LY	1	8/16/10	REVISED STRIP LENGTHS AND LABELING	OWNER	VERMONT AGENCY OF TRANSPORTATION	DRAWING NO. 5 OF 16
	REV.	DATE	DESCRIPTION	DRAWING CONTENTS	ELEVATION VIEW ABUTMENT No. 1	SCALE AS SHOWN

P:\RE14697_RTE_VT_STOCKBRIDGE\Drawings\VERTICALLY WALLS\ABUTMENT 1 - ALL WALLS.dwg



ELEVATION – ABUTMENT 2

SCALE = 1 : 100

PRECAST PANEL KEY:

AR6 — SIDE DOWEL IN PANEL; 50 — DOWEL IN PANEL; REQUIRED PANEL TYPE (TYP.); No. OF REQUIRED TIE STRIPS; REQUIRED CUT EDGE OF PANEL (R) = RIGHT SIDE (L) = LEFT SIDE

C.I.P. COPING — CPI = 3.048m - 10 PCS

WALL TO BE SURVEYED AFTER SETTLEMENT BEFORE CASTING AND PLACEMENT OF TOP COURSE OF PANELS.

R7 PANEL REINFORCEMENT (RADIUS PANELS ARE AS UNLESS OTHERWISE NOTED)

ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE

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AUG 19 2010
RESUBMIT ____ APPROVED ✓
BY CPW DATE 8/26/10

NOTES

1. LENGTH OF LEVELING PAD IS BASED ON INDIVIDUAL PANEL WIDTHS. ℄ OF PANEL JOINT TO ℄ OF PANEL JOINT. USE STEP DETAIL ON SHEET No. 11 TO DETERMINE THE ACTUAL LEVELING PAD STEP LOCATION.
2. FOR TYPICAL SECTIONS THROUGH WALL, SEE SHEET No. 10.
3. FINISHED GRADE SHOWN ON ELEVATIONS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR.
4. TOP OF WALL ELEVATIONS ARE SHOWN TO TOP OF COPING..
5. ALL STATIONS AND OFFSETS ARE GIVEN TO FRONT FACE OF MSE WALL.

CERTIFIED WITH RESPECT TO THE INTERNAL STABILITY OF REINFORCED EARTH STRUCTURES ONLY

STATE OF VERMONT — PATRICK L. MCDONNELL — 10 — 8/26/10

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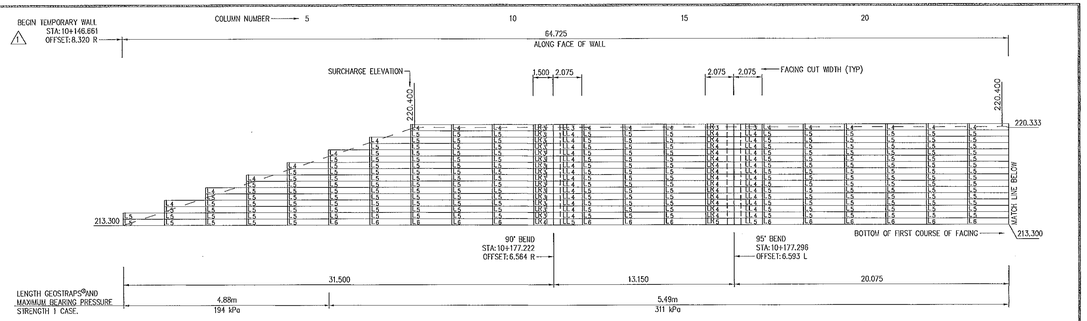
REINFORCED EARTH
8614 Westwood Center Drive, Vienna, VA 22182 (703)821-1175

"REINFORCED EARTH" is the registered trademark of The Reinforced Earth Company.

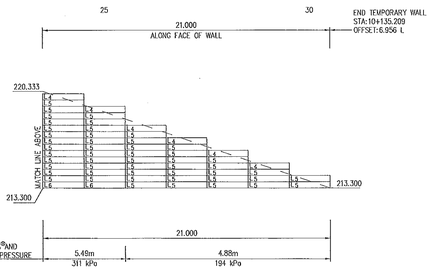
DESIGNED BY: MS				PROJECT NAME	VT ROUTE 107, BRIDGE 9	DATE 07/16/2010
PROJECT MGR: LY				LOCATION	STOCKBRIDGE, VERMONT	CONTRACT NO. RC-14697
CHECKED BY: LY	1	8/16/10	REVISED STRIP LENGTHS	OWNER	VERMONT AGENCY OF TRANSPORTATION	DRAWING NO. 6 OF 16
	REV.	DATE	DESCRIPTION	DRAWING COVERS	ELEVATION VIEW ABUTMENT No. 2	SCALE AS SHOWN

R:\RE14697_BEW_VT_Stockbridge\DWG\FINAL\FINAL PACKAGE - ALL WALLS Revf.dwg



ELEVATION – TEMPORARY SURCHARGE WALL @ ABUTMENT 1

SCALE = 1 : 100



NOTES:
A. FOR TYPICAL WALL SECTION SEE SHEET 13.
B. FOR PLAN VIEW, SEE SHT. 2 OF THIS PACKAGE AND CONTRACT PLANS.
C. STATIONS AND OFFSETS ARE TO FRONT FACE OF WIRE FACING.
D. SEE REINFORCING STRIP PLACEMENT DIAGRAMS ON SHEET 9.
E. ALL STATIONS AND OFFSETS ARE FROM BASELINE VT ROUTE 107.

KEY – MSE WIRE FACING UNIT

LR 4
PANEL TYPE — No. OF GEOSTRAPS

INDICATES FIELD MODIFICATION OF PANEL REQUIRED BY CONTRACTOR

RECEIVED
CK'D BY ____ ORD BY ____
AUG 19 2010
RESUBMIT ____ APPROVED ✓
BY CPW DATE 8/26/10

ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

CERTIFIED WITH RESPECT TO THE INTERNAL STABILITY OF REINFORCED EARTH STRUCTURES ONLY

STATE OF VERMONT — HENRI VIDAL — 10/10

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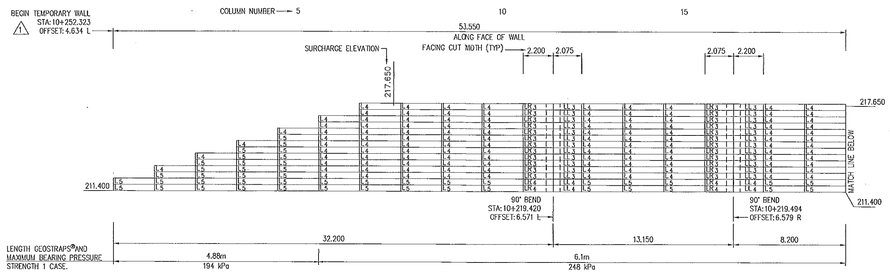
REINFORCED EARTH
8614 Westwood Center Drive, Vienna, VA 22182 (703)821-1175

DESIGNED BY:	REV.	DATE	DESCRIPTION
MS			
PROJECT ENGR: LY			
CHECKED BY: LY	1	8/16/10	REVISED STATION

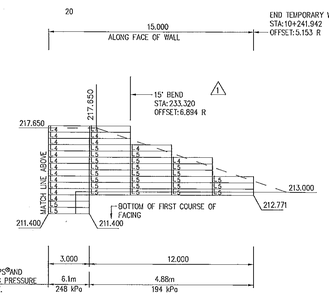
PROJECT NAME	VT ROUTE 107, BRIDGE 9
LOCATION	STOCKBRIDGE, VERMONT
OWNER	VERMONT AGENCY OF TRANSPORTATION
DRAWING COVERS	ELEVATION VIEW – TEMPORARY SURCHARGE WALL AT ABUTMENT No. 1
DATE	07/10/2010
CONTRACT NO.	RE-14697
DRAWING NO.	7 OF 16
SCALE	AS SHOWN

N:\RE\14697_BDG\VT_Stockbridge\Shop\Final\Final Package - All Walls Ref.dwg



ELEVATION – TEMPORARY SURCHARGE WALL @ ABUTMENT 2

SCALE = 1 : 100



NOTES:
A. FOR TYPICAL WALL SECTION SEE SHEET 13.
B. FOR PLAN VIEW, SEE SHT. 2 OF THIS PACKAGE AND CONTRACT PLANS.
C. STATIONS AND OFFSETS ARE TO FRONT FACE OF WIRE FACING.
D. SEE REINFORCING STRIP PLACEMENT DIAGRAMS ON SHEET 9.
E. ALL STATIONS AND OFFSETS ARE FROM BASELINE VT ROUTE 107.

KEY – MSE WIRE FACING UNIT

LR 4
PANEL TYPE
No. OF GEOSTRAPS
INDICATES FIELD MODIFICATION OF PANEL REQUIRED BY CONTRACTOR

RECEIVED
AUG 19 2010
CK'D BY ____ ORD BY ____
RESUBMIT ____ APPROVED ____
BY CPW DATE 8/26/10
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CERTIFIED WITH RESPECT TO THE INTERNAL STABILITY OF REINFORCED EARTH STRUCTURES ONLY
STATE OF VERMONT HENRY ARBOGAST 9191 PROFESSIONAL ENGINEER
8/19/10

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REINFORCED EARTH
8614 Westwood Center Drive, Vienna, VA 22182 (703)821-1133

"REINFORCED EARTH" is the registered trademark of The Reinforced Earth Company.

REV.	DATE	DESCRIPTION
1	8/16/10	REVISED WALL LENGTHS AND STATIONS

DESIGNED BY: MS
PROJECT ENGR.: LY
CHECKED BY: LY

PROJECT NAME	VT ROUTE 107, BRIDGE 9
LOCATION	STOCKBRIDGE, VERMONT
OWNER	VERMONT AGENCY OF TRANSPORTATION
DRAWING COVERS	ELEVATION VIEW – TEMPORARY SURCHARGE WALL AT ABUTMENT No. 2
DATE	07/16/2010
CONTRACT NO.	RE-14697
DRAWING NO.	8 OF 16
SCALE	AS SHOWN

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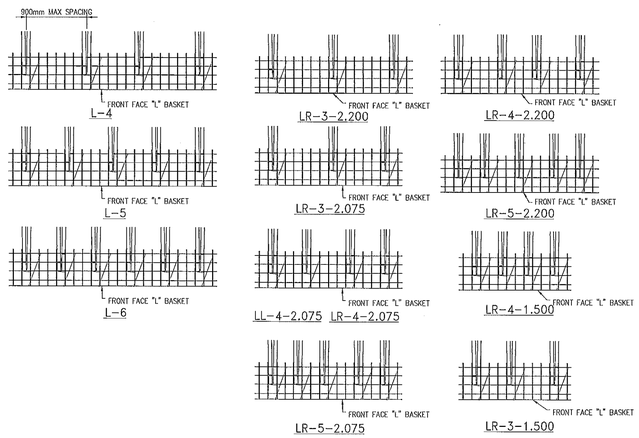

PLACEMENT DIAGRAMS OF STRUTS AND GEOSTRAPS - PLAN VIEW

NOT TO SCALE

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RESUBMIT ____ APPROVED ✓
BY OPW DATE 8/26/10

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STATE OF VERMONT FEDERAL HIGHWAY ADMINISTRATION 1956

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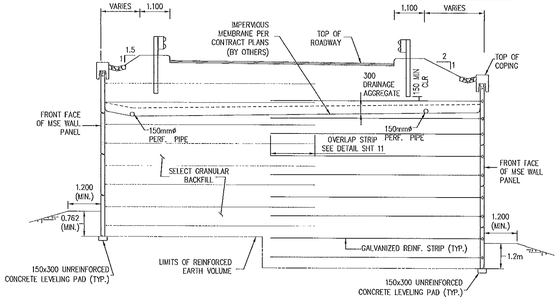
REINFORCED EARTH
1914 Eastwood Drive, Vienna, VA 22182 (703)255-3535

"REINFORCED EARTH" is the registered trademark of The Reinforced Earth Company.

DESIGNED BY: MS			PROJECT NAME	VT ROUTE 107, BRIDGE 9
PROJECT ENGR: LY			LOCATION	STOCKBRIDGE, VERMONT
CHECKED BY: LY			OWNER	VERMONT AGENCY OF TRANSPORTATION
REV.	DATE	DESCRIPTION	DRAWING COVERS	WIRE WALL PLACEMENT DETAILS

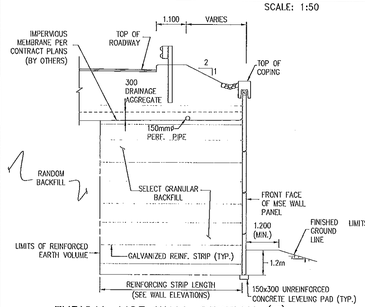
DATE	07/16/2010
CONTRACT NO.	RE-14697
DRAWING NO.	9 OF 18
SCALE	AS SHOWN

R:\RE14697_BDG_VT_Stockbridge\Corel\VTWALL\PVAL PACKAGE - ALL WALLS Rev1.dwg



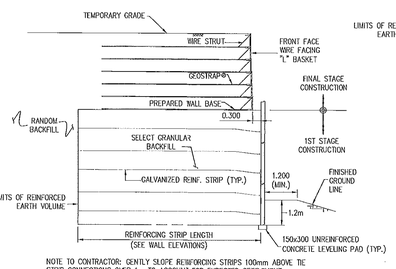
TYPICAL MSE WALL SECTION (A)

SCALE: 1:50



TYPICAL MSE WALL SECTION (B)

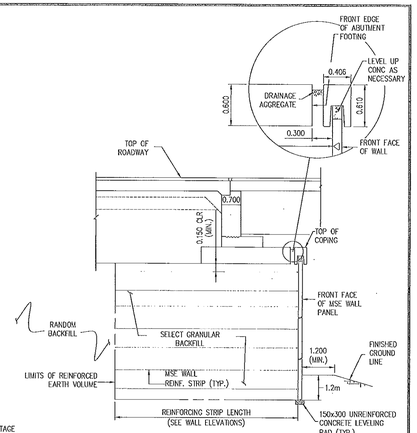
SCALE: 1:50



NOTE TO CONTRACTOR: GENTLY SLOPE REINFORCING STRIPS 100mm ABOVE TIE STRIP CONNECTIONS OVER 1m TO ACCOUNT FOR EXPECTED SETTLEMENT.

TYPICAL MSE WALL DURING TEMPORARY SURCHARGE

SCALE: 1:50



TYPICAL MSE WALL SECTION (C)

SCALE: 1:50

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AUG 19 2010
RESUBMIT _____ APPROVED ✓
BY OPW DATE 8/26/10

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STATE OF VERMONT — FETZEL ANDREW J. — 8556 — REGISTERED PROFESSIONAL ENGINEER

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REINFORCED EARTH
8614 Westwood Center Drive, Vienna, VA 22182 (703)205-1339

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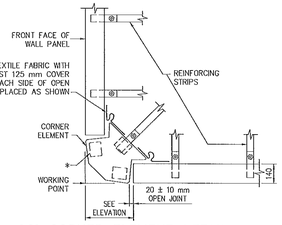
DESIGNED BY: MS				PROJECT NAME	VT ROUTE 107, BRIDGE 9	DATE 07/16/2010
PROJECT ENGR. LY				LOCATION	STOCKBRIDGE, VERMONT	CONTRACT NO. RE-14697
CHECKED BY: LY				OWNER	VERMONT AGENCY OF TRANSPORTATION	DRAWING NO. 10 OF 16
	REV.	DATE	DESCRIPTION	DRAWING COVERS	TYPICAL MSE WALL SECTIONS	SCALE AS SHOWN

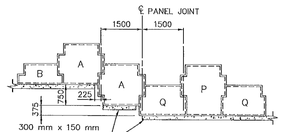
R:\RE-14697_BTM_VT_Stockbridge\dwg\FINAL\FINAL PACKAGE - ALL WALLS Rev1.dwg



90° CORNER ELEMENT DETAIL

SCALE: 1:10

* THREE FLAT BEARING PADS PER UNIT. FRONT PADS SHALL BE PLACED ON INSIDE EDGE OF UP.



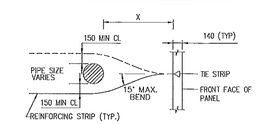
TYPICAL LEVELING PAD STEP DETAIL

SCALE 1:50

REINFORCING STRIP "OVERLAP" PLAN VIEW

SCALE: 1:10

REINFORCING STRIPS WHICH OVERLAP SHALL BE PLACED SIDE TO SIDE

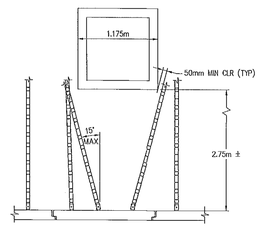


TYPICAL REINFORCING STRIP DEFLECTION DETAIL AT PROPOSED PIPES OR OTHER UTILITIES

SCALE 1:20

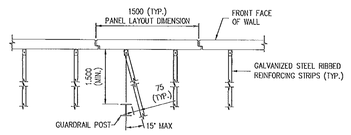
NOTE: BEND TO BE AS GRADUAL AS POSSIBLE. PLACE ONE REINFORCING STRIP PER TIE STRIP CONNECTION, EITHER ABOVE OR BELOW PIPE, WHICHEVER CREATES MINIMUM ANGLE OF SKEW

REINFORCING STRIPS SHALL BE PLACED ON COMPACTED GRANULAR FILL WHETHER THE STRIP MUST PAST BELOW OR ABOVE PIPE



TYPICAL REINFORCING STRIP HORIZONTAL DEFLECTION DETAIL AT CATCH BASIN

SCALE 1:20

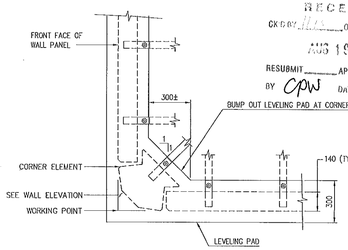


GUARDRAIL BEHIND WALL

SCALE: 1:20

NOTE:
PRIOR TO PLACING FENCE POST AND GUIDERAIL FOUNDATIONS, CONTRACTOR SHALL MARK LOCATION ON BACK-FACE OF WALL AND SKEW REINFORCING STRIPS TO AVOID THE OBSTRUCTION OR PLACE SONOTUBE/PVC PIPE FOR FUTURE GUIDERAIL PLACEMENT, SUCH THAT PLACEMENT OF REINFORCING STRIPS IS NOT OBSTRUCTED.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION OF GUARDRAIL AND CHAINLINK FENCE POSTS BEHIND THE REINFORCED EARTH PANELS PRIOR TO PLACEMENT OF THE TOP TWO LEVELS OF REINFORCING STRIPS. ANY DAMAGE DONE TO THE REINFORCING STRIPS OR IMPERVIOUS MEMBRANE DUE TO THE INSTALLATION OF GUARD RAIL SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.



LEVELING PAD AT CORNER

SCALE: 1:10

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CK'D BY ... CK'D BY KSC
AUG 18 2010
RESUBMIT ... APPROVED
BY CPW DATE 8/26/10

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PATRICK ANDERSON BASS — 08/17/10

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REINFORCED EARTH
8614 Westwood Center Drive, Vienna, VA 22182 (703)821-1101

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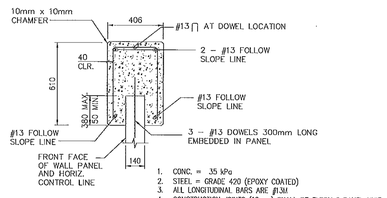
DESIGNED BY:				
MS				
PROJECT ENGR:				
LY				
DRAFTED BY:				
LY				

REV.	DATE	DESCRIPTION

PROJECT NAME	VT ROUTE 107, BRIDGE 9
LOCATION	STOCKBRIDGE, VERMONT
OWNER	VERMONT AGENCY OF TRANSPORTATION
DRAWING COVERS	TYPICAL MSE WALL DETAILS

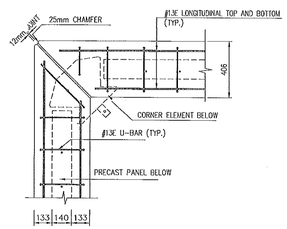
DATE	07/16/2010
CONTRACT NO.	RE-14697
DRAWING NO.	11 OF 16
SCALE	AS SHOWN

R:\RE\14697_BTH_VT_Stockbridge\Final\Final_PACKAGE - ALL WALLS Rev1.dwg



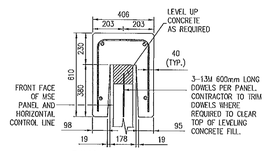
C.I.P. CONCRETE COPING SECTION TO MATCH PRECAST COPING

SCALE: 1:10



C.I.P. COPING – PARTIAL PLAN AT CORNERS

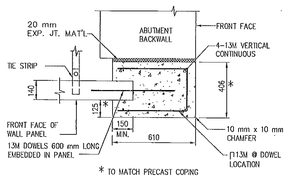
SCALE 1:10



PRECAST COPING

SCALE: 1:10

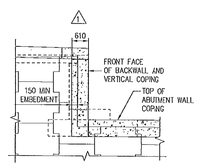
STANDARD COPING UNIT IS 3048mm WITH SQUARE ENDS.



* TO MATCH PRECAST COPING

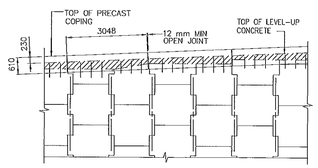
C.I.P. CONCRETE VERTICAL COPING DETAIL

SCALE: 1:10



C.I.P. CONCRETE VERTICAL COPING ELEVATION

SCALE: 1:50



PRECAST COPING – PARTIAL ELEVATION

SCALE: 1:50

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RESUBMIT _____ APPROVED ✓
BY CPW DATE 8/24/10

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CERTIFIED WITH RESPECT TO THE INTERNAL STABILITY OF REINFORCED EARTH STRUCTURES ONLY

STATE OF VERMONT — FEDERAL HIGHWAY ADMINISTRATION — REGISTERED PROFESSIONAL ENGINEER — 08/16/10

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REINFORCED EARTH
8614 Westwood Center Drive, Vienna, VA 22182 (703)821-1170

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DESIGNED BY	MS
PROJECT ENGR.	LY
CHECKED BY	LY

REV.	DATE	DESCRIPTION
1	8/16/10	REVISE DIMENSION

PROJECT NAME	VT ROUTE 107, BRIDGE 9
LOCATION	STOCKBRIDGE, VERMONT
OWNER	VERMONT AGENCY OF TRANSPORTATION
DRAWING COVERS	TYPICAL MSE WALL COPING DETAILS

DATE	07/16/2010
CONTRACT NO.	RL-14697
DRAWING NO.	12 OF 16
SCALE	AS SHOWN

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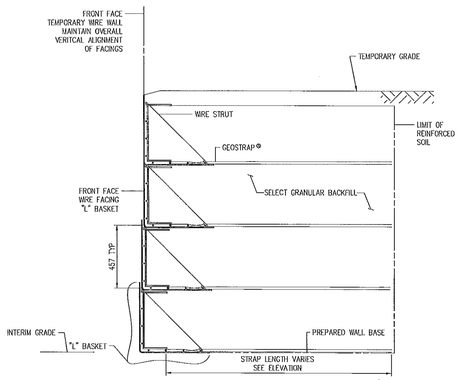
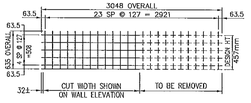
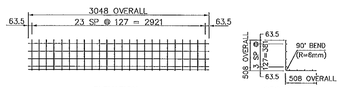


TYPICAL TEMPORARY WIRE FACING WALL
SCALE: 1:10



ELEVATION – TYPICAL "LL" &
"LR" CUT PANEL TYPES

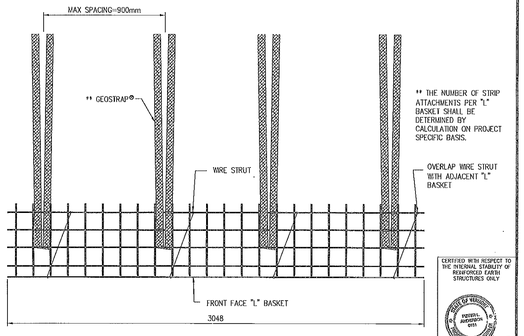


127 x 127 –W5xW5 WIRE MESH

NOTES FOR WIRE FACINGS AND BASE

1) WIRE FACINGS AND BASE SHALL BE SHOP FABRICATED OF COLD DRAWN STEEL WIRE CONFORMING TO THE MINIMUM REQUIREMENTS OF ASTM A-82 (AASHTO M 32) AND WELDED INTO THE FINISHED CONFIGURATION IN ACCORDANCE WITH ASTM A-185 (AASHTO M55).
2) DIMENSIONAL TOLERANCE = ±6mm.
3) DESIGN LENGTH = 3 M (FACINGS & BASE OVERLAPPED 50mm).
4) DESIGN HEIGHT AS SHOWN (FACINGS OVERLAPPED 254mm or 2-127mm SQUARES.)

ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS NOTED OTHERWISE



PARTIAL PLAN

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REINFORCED EARTH
8614 Tyrone Cove Drive, Vienna, VA 22182 (703)573-1333

"REINFORCED EARTH" is the registered trademark of The Reinforced Earth Company.

REV.	DATE	DESCRIPTION

DESIGNED BY: MS
PROJECT ENGR.: LY
CHECKED BY: LY

PROJECT NAME	VT ROUTE 107, BRIDGE 9
LOCATION	STOCKBRIDGE, VERMONT
OWNER	VERMONT AGENCY OF TRANSPORTATION
DRAWING COVERS	TYPICAL TEMPORARY SURCHARGE WALL SECTION AND DETAILS
DATE	07/16/2010
CONTRACT NO.	RE-14697
DRAWING NO.	13 OF 16
SCALE	AS SHOWN

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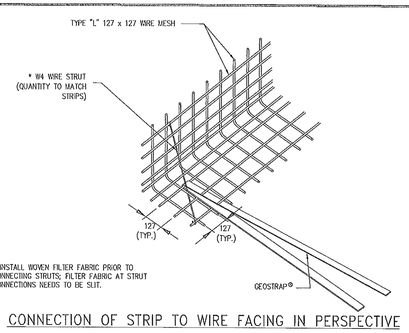
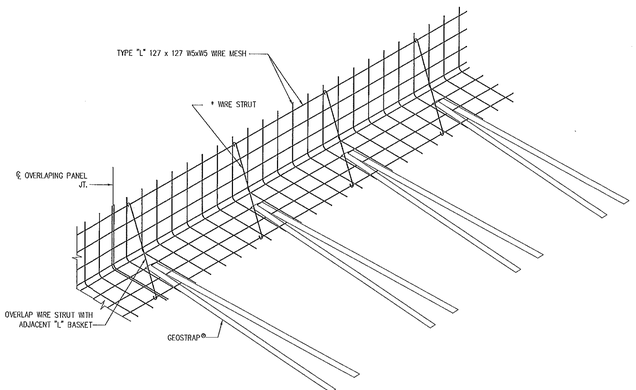
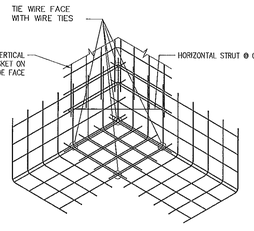


* INSTALL WOVEN FILTER FABRIC PRIOR TO CONNECTING STRUTS; FILTER FABRIC AT STRUT CONNECTIONS NEEDS TO BE SLIT.

CONNECTION OF STRIP TO WIRE FACING IN PERSPECTIVE

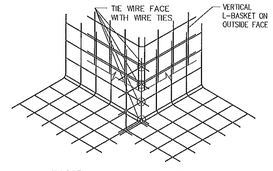


WIRE FACING IN PERSPECTIVE



OUTSIDE CORNER DETAIL

NOTE:
BEND OR CUT BASKETS TO FIT FIELD CONDITIONS AND ENSURE THAT GEOTEXTILE FILTER FABRIC OVERLAPS 25mm MIN.



INSIDE CORNER DETAIL
(INVERTED BEND)

NOTE:
BEND OR CUT BASKETS TO FIT FIELD CONDITIONS AND ENSURE THAT GEOTEXTILE FILTER FABRIC OVERLAPS 25mm MIN.

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STATE OF VERMONT — MATERIAL & RESEARCH UNIT

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REINFORCED EARTH
1864 Vanwall Corer Drive, Vienna, VA 22182 (703)821-1175

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DESIGNED BY: MS				PROJECT NAME	VT ROUTE 107, BRIDGE 9	DATE 07/16/2010
PROJECT ENGR: LY				LOCATION	STOCKBRIDGE, VERMONT	CONTRACT NO. RE-14697
CHECKED BY: LY				OWNER	VERMONT AGENCY OF TRANSPORTATION	DRAWING NO. 14 OF 16
	REV.	DATE	DESCRIPTION	DRAFTED COVERS	TYPICAL WIRE FACE DETAILS	SCALE AS SHOWN

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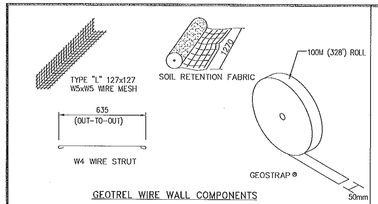
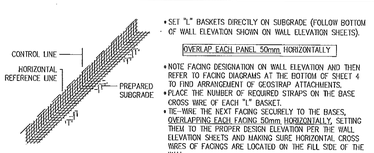


GEOTREL WIRE WALL COMPONENTS



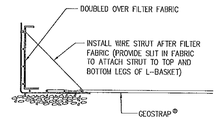
- SET "L" BASKETS DIRECTLY ON SUBGRADE (FOLLOW BOTTOM OF WALL ELEVATION SHOWN ON WALL ELEVATION SHEETS).

OVERLAP EACH PANEL 50mm HORIZONTALLY

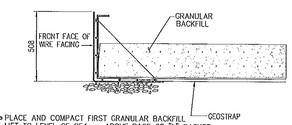
- NOTE FACING DESIGNATION ON WALL ELEVATION AND THEN REFER TO FACING DIAGRAMS AT THE BOTTOM OF SHEET 4 TO FIND ARRANGEMENT OF GEOSTRAP ATTACHMENTS.
- PLACE THE NUMBER OF REQUIRED STRAPS ON THE BASE CROSS WIRE OF EACH "L" BASKET.
- TIE-WIRE THE NEXT FACING SECURELY TO THE BASES, OVERLAPPING EACH FACING 50mm HORIZONTALLY, SETTING THEM TO THE PROPER DESIGN ELEVATION PER THE WALL ELEVATION SHEETS AND MAKING SURE HORIZONTAL CROSS WIRES OF FACINGS ARE LOCATED ON THE FILL SIDE OF THE WALL.

STEP 1: INSTALLATION OF 1st. WIRE MESH FACINGS

- FIRMLY PULL AND ANCHOR EACH STRAP
- PLACE DOUBLED OVER GEOTEXTILE FABRIC AS SHOWN.
- INSTALL WIRE STRUT TO FACING AND BOTTOM LEG OF "L" BASKET THE STRUT SHOULD CROSS 1 GRID SPACE. SEE PERSPECTIVE. (FACING TO BE TIGHT AND VERTICAL)

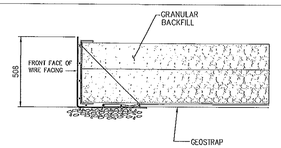


STEP 2: INSTALLATION OF 1st. GEOSTRAP® COURSE



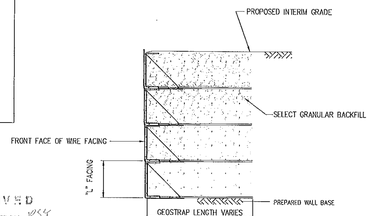
- PLACE AND COMPACT FIRST GRANULAR BACKFILL LIFT TO LEVEL OF 254mm ABOVE BASE OF "L" BASKET
- SUCCEEDING FILL LIFTS SHALL BE NO GREATER THAN 254.

STEP 3: 1st. BACKFILL LIFT



- BACKFILL LIFT SHALL BE NO GREATER THAN 254mm THICK.

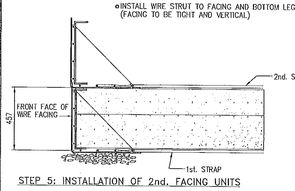
STEP 4: 2nd. BACKFILL LIFT



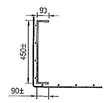
COMPLETED WIRE WALL SECTION

- REPEAT "STEP 5" UNTIL WALL IS TOPPED OUT AS SHOWN.

- PLACE AND SECURE 2nd PANEL COURSE WITH TIE WIRES (OVERLAP LOWER FACING BY 50)
- FIRMLY PULL AND ANCHOR EACH GEOSTRAP
- PLACE DOUBLED OVER RETENTION FABRIC AS SHOWN.
- INSTALL WIRE STRUT TO FACING AND BOTTOM LEG OF "L" BASKET (FACING TO BE TIGHT AND VERTICAL)



STEP 5: INSTALLATION OF 2nd. FACING UNITS



FOLDED OVER RETENTION FABRIC
SOIL RETENTION FABRIC

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BY CPW DATE 8/26/10

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STATE OF VERMONT — MICHAEL ANDREW BUSS — 15107 — REGISTERED PROFESSIONAL ENGINEER

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REINFORCED EARTH
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DESIGNED BY:	REV.	DATE	DESCRIPTION
MS			
PROJECT ENGR.			
LY			
CHECKED BY:			
LY			

PROJECT NAME	VT ROUTE 107, BRIDGE 9
LOCATION	STOCKBRIDGE, VERMONT
OWNER	VERMONT AGENCY OF TRANSPORTATION
DRAWING COVERS	WIRE WALL CONSTRUCTION PROCEDURE DETAILS
DATE	07/16/2010
CONTRACT NO.	RC-14697
DRAWING NO.	15 OF 16
SCALE	AS SHOWN

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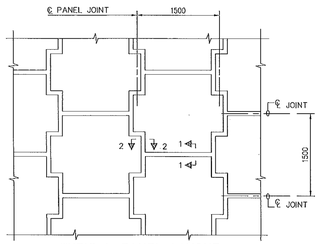
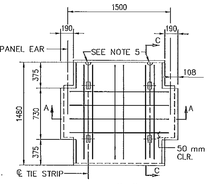
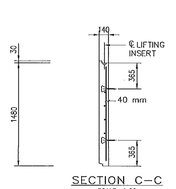


TYPICAL PANEL LAYOUT
PARTIAL ELEVATION
FRONT FACE
SCALE: 1:25



PANEL TYPE "A" WITH R6
REINFORCEMENT
BACK FACE VIEW
SCALE: 1:20

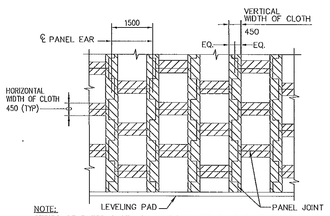


SECTION C–C
SCALE: 1:20

PANEL THICKNESS (SEE NOTE 6 BELOW)	REINFORCEMENT DESIGNATION	PANEL REINFORCEMENT (EPOXY COATED)	MAXIMUM FACTORED HORIZONTAL STRESS AT FACING (KPa)
140	R6	6–10M(#3) ø VERT. 4–13M(#4) ø HORIZ.	103 kPa
140	R7 ⚠1	6–13M(#4) ø VERT. 4–19M(#6) ø HORIZ.	165 kPa

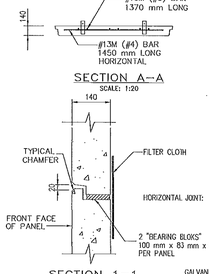
NOTES:

1. REINFORCING STEEL TO BE A615M GRADE 420. EPOXY COATED IN ACCORDANCE WITH SECTIONS 507 & 723.
2. 28 DAY COMPRESSIVE STRENGTH OF CONCRETE = 35 MPa
3. 10 mm x 10 mm CHAMFER SHALL BE PROVIDED ON ALL EXPOSED EDGES (FRONT FACE ONLY).
4. ALL PANEL TYPES AND OTHER RELATED ELEMENTS WILL BE DETAILED ON SHOP DRAWINGS.
5. ALL PANELS SHALL HAVE TWO LIFTING INSERTS OF ONE–TON CAPACITY EACH.
6. PANEL DESIGN THICKNESS IS 140 mm. PANELS & CORNER ELEMENTS SHALL HAVE A SMOOTH FORM FINISH.
7. BEARING BLOKS SHALL BE EPDM RUBBER PADS WITH DUROMETER HARDNESS OF 80±5, CONFORMING TO ASTM D2000.
8. SHIMS SHALL BE EPDM RUBBER PADS WITH DUROMETER HARDNESS OF 80±5, CONFORMING TO ASTM D2000. NOMINAL DIMENSION OF SHIM IS 50mm X 85mm X 5mm THICK.
9. SEE REINFORCED EARTH COMPANY CONSTRUCTION MANUAL FOR ADDITIONAL INFORMATION.
10. TIE STRIPS SHALL BE 10 GAUGE x 50mm, ASTM A1011 SS, GRADE 345 FORMERLY (ASTM A–570.), AND GALVANIZED IN ACCORDANCE WITH ASTM A123.
11. REINFORCING STRIPS SHALL BE 50mm x 4mm RIBBED, A–572, GRADE 450, AND GALVANIZED IN ACCORDANCE WITH ASTM A123.
12. BEARING BLOKS SHALL BE EPDM RUBBER PADS WITH DUROMETER HARDNESS OF 80±5, CONFORMING TO ASTM D2000.
13. FILTER CLOTH SHALL BE NON–WOVEN MEETING THE REQUIREMENTS FOR CLASS 3 FOR NON–WOVEN GEOTEXTILES UNDER AASHTO M288 SPECIFICATIONS.

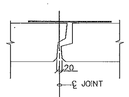


NOTE:
STRIPS OF FILTER CLOTH SHALL BE PLACED ON BACK FACE OF PANEL, OVER PANEL JOINTS. FILTER CLOTH SHALL BE ADHERED TO BACK FACE OF PANELS USING AN ADHESIVE COMPOUND SUPPLIED BY THE REINFORCED EARTH COMPANY.

FILTER CLOTH DETAIL
PARTIAL ELEVATION
BACK FACE
SCALE: 1:50

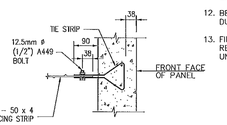


SECTION A–A
SCALE: 1:20

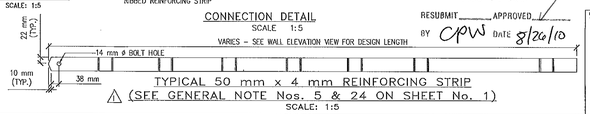


SECTION 2–2
SCALE: 1:5

SECTION 1–1
SCALE: 1:5



CONNECTION DETAIL
SCALE 1:5



TYPICAL 50 mm x 4 mm REINFORCING STRIP
⚠1 (SEE GENERAL NOTE Nos. 5 & 24 ON SHEET No. 1)
SCALE: 1:5

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AUG 18 2010
RESUBMIT ____ APPROVED ✓
BY CPW DATE 8/26/10

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STATE OF VERMONT
STEVEN L. ADDISON
3247
REGISTERED PROFESSIONAL ENGINEER

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8614 Westwood Center Drive, Vienna, VA 22182 (703)-821-1410

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DESIGNED BY	REV.	DATE	DESCRIPTION
MS			
PROJECT ENGR. LY			
CHECKED BY LY	⚠1	8/16/10	REVISED NOTE REFERENCE

PROJECT NAME	VT ROUTE 107, BRIDGE 9
LOCATION	STOCKBRIDGE, VERMONT
OWNER	VERMONT AGENCY OF TRANSPORTATION
DRAWING COVERS	STANDARD PANEL DETAILS

DATE	07/16/2010
CONTRACT NO.	RE–14697
DRAWING NO.	16 OF 16
SCALE	AS SHOWN

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VERMONT

State of Vermont
PDD/Structures Design Section
One National Life Drive
Montpelier, VT 05633-5001
www.aot.state.vt.us

Agency of Transportation

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

August 26, 2010

Austin Construction, Inc.
1149 Main Street
Concord, VT 05824

Re: **Stockbridge BRF 022-1(20) VT 107, Bridge 9** – MSE Wall Submittal

Dear Mr. Austin:

We have reviewed the revised calculations and plans for the MSE wall that were received via email on 8/19/10. We find this information adequately addresses our concerns conveyed to you in my email to you dated 8/5/10 and have approved these drawings.

The approved drawings are attached for your use and information.

Please note that the nominal bearing capacity based on the new design information for the final condition is acceptable, i.e. post surcharge application. However, the applied factored bearing pressure during surcharging exceeds the factored bearing resistance when using a resistance factor of 0.65. Because the surcharging is temporary and it is the contractor's responsibility to ensure stability of the structure during construction, we felt that it was appropriate for you to be aware of this and discuss this with the MSE wall designer if you feel it is necessary.

If you have any questions, please let me know.

Sincerely,

Christopher P. Williams, P.E.
Project Manager

Attachments

cc: Tom Chase, Resident Engineer
Chris Benda, Geotechnical Engineer
Lauren Yip, Reinforced Earth Co.
CPW

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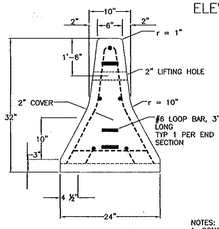
C O R P O R A T I O N

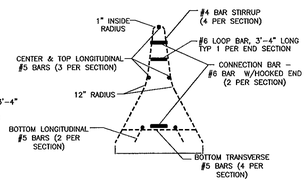
NHDOT TEMPORARY BARRIER - 10'-0" LENGTHS

PLAN VIEW

ELEVATION VIEW



TYPICAL SECTION



TYPICAL REINFORCING SECTION

NOTES:
1. CONCRETE: 4,000 PSI @ 28 DAYS. CEMENT TO BE TYPE III PER ASTM C-150
2. REINFORCING SHALL BE PER ASTM A-615, GRADE 60 DEFORMED BLACK BARS AND HAVE MINIMUM 2" COVER.
3. BARRIER TO BE MANUFACTURED PER NHDOT SPECIFICATIONS STANDARD PLATE NO. GR-4 (7-26-95).
4. ALL EXPOSED EDGES OF CONCRETE SHALL BE HAVE A 1" RADIUS EXCEPT AS SHOWN.
5. THIS BARRIER AND CONNECTIONS MATCHES NHDOT STANDARDS WHICH MEET OR EXCEED NCHRP REPORT 350 @ TL-3.

REINFORCED EARTH®

8614 Westwood Center Drive, Vienna, VA 22182 (703)821-1175

STRUCTURE COPY

PRECAST PANEL SHOP DRAWINGS

PANEL GENERAL NOTES

1. ALL PRECAST WORK SHALL BE DONE IN ACCORDANCE WITH VDOT STANDARD SPECIFICATION SECTION 540.
2. 28 DAY COMPRESSIVE STRENGTH f_c' = 35 MPa. MINIMUM LIFTING STRENGTH SHALL BE f_c = 25 MPa
3. PRECAST FACING PANELS, CORNER ELEMENTS, AND PRECAST COPING UNITS SHALL HAVE A SMOOTH FORM FINISH.
4. REINFORCING BARS SHALL BE STEEL ASTM A615 GRADE 420 EPOXY COATED PER SPECIFICATION SECTION 540.
5. TIE STRIPS SHALL BE STEEL ASTM A1011 (FORMERLY ASTM A570) GRADE 345, 10 GAGE. (GALVANIZED PER ASTM A-123 = STANDARD SPECIFICATION 719-01, TYPE I) SEE SHEET S3 – DETAIL J.
6. ALL STANDARD FACING PANELS SHALL HAVE TWO (2) LIFTING INSERTS OF 1-TON CAPACITY EACH. LIFTING INSERTS SHALL BE BURKE SPREAD ANCHOR 79050 OR EQUAL. SEE DETAIL "LIFTING INSERT" SHEET S3 ALL LIFTING INSERTS SHALL BE GALVANIZED
7. ALL FRONT EDGES OF REW PANELS, EXCEPT THE BOTTOM EDGE OF THE BOTTOM PANEL COURSE, SHALL HAVE A 10MM CHAMFER.
8. DESIGN THICKNESS IS 140mm.
9. DIMENSIONS SPECIFIED ON INDIVIDUAL FABRICATION DRAWINGS SUPERSEDE THOSE CALLED OUT ON THE STANDARD SECTIONS AND DETAILS (SHEETS S1 – S5).
10. VERTICAL REINFORCING BARS SHALL BE PLACED 40mm MIN (50 mm TYP.). CLEAR FROM THE BACK FACE OF THE PANEL. CLEARANCE SHALL BE MAINTAINED BY THE USE OF PLASTIC REBAR HANGERS WHICH HANG OFF THE TIE STRIPS ON THE BACK FACE OF PANEL.
11. ALL REINFORCING BARS SHALL BE STOPPED 50mm MIN CLEAR FROM ANY EDGE OF PANEL UNLESS NOTED ON INDIVIDUAL FABRICATION DRAWING OR AS INDICATED IN NOTE #12 AND SECTION A-A OF THIS SHEET.
12. IN ALL SLOPED PANELS THE TWO (2) VERTICAL REINFORCING BARS ADJACENT TO A COMMON TIE STRIP SHALL BE OF THE SAME LENGTH.
13. ALL INDIVIDUAL FABRICATION DRAWINGS ARE SHOWN BACK FACE.

PANEL GENERAL NOTES (CONT.)

14. REINFORCING BARS IN A STANDARD "A" PANEL SHALL BE AS FOLLOWS:

PANEL REINFORCEMENT

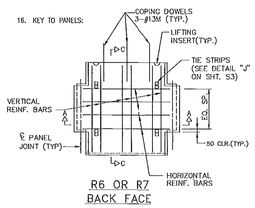
	PIECE MARK	HORIZONTAL BARS	VERTICAL BARS
REW	XX-XX-R6	4-13M (#4) (EPOXY COATED)	6-10M (#3) (EPOXY COATED)
	XX-XX-R7	4-13M (#6) (EPOXY COATED)	6-13M (#4) (EPOXY COATED)

HORIZONTAL REINFORCEMENT IN THE OTHER PANEL TYPES IS PROPORTIONAL TO THEIR RELATIVE HEIGHT.

15. KEY TO PIECE MARK: AL-4--R6-1355mm D

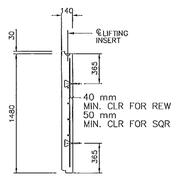
- PANEL TYPE
- MODIFICATION (ONE OR MORE)
- NUMBER OF TIE STRIPS
- PANEL REINFORCEMENT TYPE
- MODIFICATION DIMENSION (PANEL WIDTH)
- COPING DOWEL

16. KEY TO PANELS:

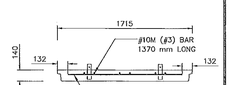


R6 OR R7 BACK FACE

SHEET #	DESCRIPTION
S1	PANEL CASTING NOTES
S2	PANEL SECTIONS
S3	REW PANEL DETAILS
S4	REW PANEL CROSS SECTIONS
S5	REW PANEL CROSS SECTIONS
S6	PANEL CASTING DRAWINGS
S7	PANEL CASTING DRAWINGS
S8	PANEL CASTING DRAWINGS
S9	PANEL CASTING DRAWINGS
S10	CORNER ELEMENT "CE2" DRAWINGS



SECTION C-C



SECTION A-A

RECEIVED
CK'D BY _____ CK'D BY PSM
AUG 19 2010
RESUBMIT _____ APPROVED ✓
BY CPW DATE 8/26/10

CHECKED WITH RESPECT TO THE INTERNAL STABILITY OF REINFORCED EARTH STRUCTURES ONLY

COMMONWEALTH OF VIRGINIA CHRISTOPHER P. WILLIAMS 39151 REGISTERED PROFESSIONAL ENGINEER

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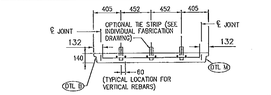
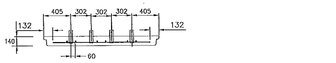
REINFORCED EARTH 8614 Westwood Center Drive, Vienna, VA 22182 (703)821-1175

DESIGNED BY	REV.	DATE	DESCRIPTION	PROJECT NAME	VT ROUTE 107, BRIDGE 9	DATE
LY						07/16/2010
PROJECT ENGR. LY				LOCATION	STOCKBRIDGE, VERMONT	CONTRACT NO. RE-14697
CHECKED BY PLA	1	8/16/10	NEW PANELS ON S6, S7, S8, & S9	OWNER	VERMONT AGENCY OF TRANSPORTATION	DRAWING NO. S1 OF S10
				DRAWING COVERS	PANEL CASTING NOTES	SCALE AS SHOWN

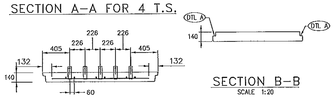
S:\RE\14697_VERMONT_Bridge 9\drawings\14697_Shop Drawings



SECTION A–A FOR 2 OR 3 T.S. PER LEVEL
SCALE 1:20

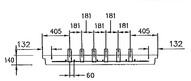


SECTION A–A FOR 4 T.S.

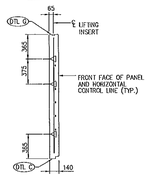


SECTION B–B
SCALE 1:20

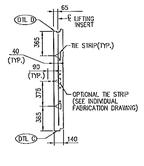
SECTION A–A FOR 5 T.S.



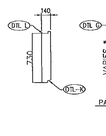
SECTION A–A FOR 6 T.S.



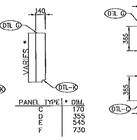
SECTION J–J
SCALE 1:20



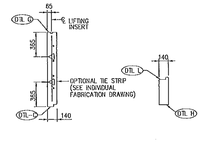
SECTION C–C
SCALE 1:20



SECTION D–D
SCALE 1:20

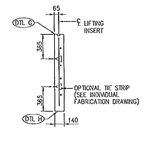


SECTION E–E
SCALE 1:20

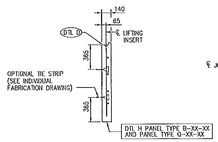


SECTION F–F
SCALE 1:20
DETAIL APPLIES TO PANEL TYPES: C,D,E,F,G,H & K

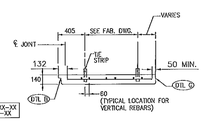
SECTION G–G
SCALE 1:20
DETAIL APPLIES TO PANEL TYPES: D & LH



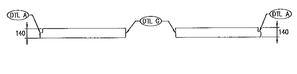
SECTION H–H
SCALE 1:20



SECTION K–K
SCALE 1:20

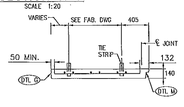


SECTION L–L
SCALE 1:20



SECTION M–M
SCALE 1:20

SECTION P–P
SCALE 1:20



SECTION R–R
SCALE 1:20

FOR DETAILS A,B,C,D,G,H,K,L, & M SEE SHEET S3 OF THESE PLANS.

SEE INDIVIDUAL FABRICATION DRAWING FOR PLACEMENT OF REBAR.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED

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CK'D BY _____ OK'D BY RSP
AUG 19 2010
RESUBMIT _____ APPROVED ✓
BY GPW DATE 8/26/10

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REINFORCED EARTH
11864 Elkwood Circle Dulles, Virginia, VA 20152 (703)378-1110

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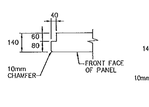
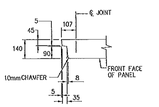
DESIGNED BY: LY			
PROJECT ENGR: LY			
CHECKED BY: PLA			
REV.	DATE	DESCRIPTION	DRAWING COVERS

PROJECT NAME	VT ROUTE 107, BRIDGE 9	DATE	07/16/2010
LOCATION	STOCKBRIDGE, VERMONT	CONTRACT NO.	RE-14697
OWNER	VERMONT AGENCY OF TRANSPORTATION	DRAWING NO.	S2 OF S10
DRAWING COVERS	PANEL SECTIONS	SCALE	AS SHOWN

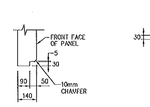
S:\RE\14697_Rte107_VT_Stockbridge\shop\14697 S02 Drawing



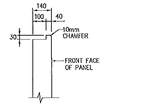
DETAIL "A"
SCALE: 1:10



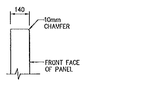
DETAIL "B"
SCALE: 1:10



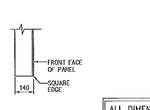
DETAIL "C"
SCALE: 1:10



DETAIL "D"
SCALE: 1:10

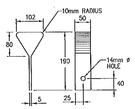


DETAIL "G"
SCALE: 1:10

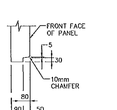


DETAIL "H"
SCALE: 1:10

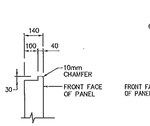
ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED



DETAIL "J"
SCALE: NONE
(GENERAL NOTE No. 5)
SHEET S1
SEE S1B FOR ADDITIONAL DETAIL



DETAIL "K"
SCALE: 1:10



DETAIL "L"
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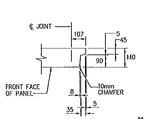
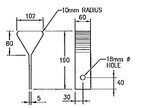
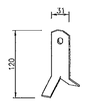


DETAIL "M"
SCALE: 1:10

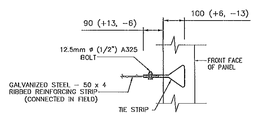


FOR USE ON "2" DESIGNATED PANELS ONLY

DETAIL "N"
SCALE: NONE
(GENERAL NOTE No. 5)
SEE S1B FOR ADDITIONAL DETAIL

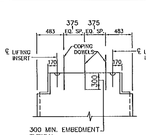


LIFTING INSERT DETAIL
SCALE: 1:5
LIFTING INSRT SHALL BE BURKE SPREAD ANCHOR 79050 OR EQUAL
LIFTING INSERT SHALL BE GALVANIZED
PLASTIC RECESS FOR USE WITH LIFTING INSERT SHALL BE BURKE 79051 OR EQUAL.

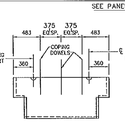


CONNECTION DETAIL

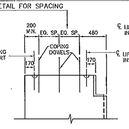
SEE PANEL DETAIL FOR SPACING



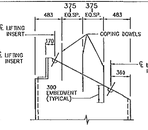
DETAIL "N"
SCALE: 1:20



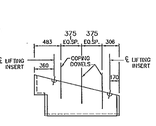
DETAIL "O"
SCALE: 1:20



DETAIL "P"
SCALE: 1:20



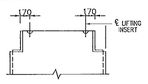
DETAIL "Q"
SCALE: 1:20



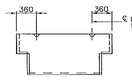
DETAIL "R"
SCALE: 1:20

NOTE: FOR PANELS WITH DOWELS

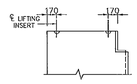
NOTE: COPING DOWELS SHALL BE 13M (#4) –EPOXY COATED LENGTH = 600mm , EMBED 300mm INTO PANEL TYP.



DETAIL "N"
SCALE: 1:20



DETAIL "O"
SCALE: 1:20



DETAIL "P"
SCALE: 1:20

NOTE: FOR PANELS WITHOUT DOWELS

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AUG 19 2010
RESUBMIT ____ APPROVED ✓
BY OPW DATE 8/26/10

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REINFORCED EARTH
8614 Westwood Center Drive, Vienna, VA 22182 (703)821-1175

"REINFORCED EARTH" is the registered trademark of The Reinforced Earth Company.

DESIGNED BY:					PROJECT NAME	VT ROUTE 107, BRIDGE 9	DATE 07/16/2010
LY							
PROJECT ENGR: LY					LOCATION	STOCKBRIDGE, VERMONT	CONTRACT NO. RE-14697
CHECKED BY: PLA					OWNER	VERMONT AGENCY OF TRANSPORTATION	DRAWING NO. S3 OF S10
					DRAWING CONTENTS	REW PANEL DETAILS	SCALE AS SHOWN
	REV.	DATE	DESCRIPTION				

S:\Stockbridge_VT\Rt_107_Bridge#9\Drawings\Detail\REW Detailing

THE PANEL DRAWINGS ON THIS SHEET ARE NOT PROJECT SPECIFIC. THESE DRAWINGS ARE INCLUDED TO DETAIL REBAR SIZES AND PLACEMENT FOR STANDARD PANELS.. SEE INDIVIDUAL PANEL DRAWINGS FOR PROJECT SPECIFIC PANEL DIMENSIONS AND TIE STRIP LOCATIONS.

ALL PANELS SHOWN BACKFACE.

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RESUBMIT ____ APPROVED ____
BY OPW DATE 8/26/10

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REINFORCED EARTH
8614 Westwood Center Drive, Vienna, VA 22182 (703)883-2153

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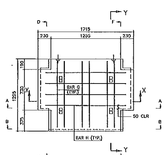
DESIGNED BY: LY			
PRODUCT MGR: LY			
CHECKED BY: PLA			
REV.	DATE	DESCRIPTION	

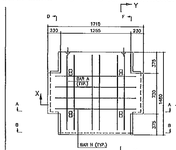
PROJECT NAME	VT ROUTE 107, BRIDGE 9
LOCATION	STOCKBRIDGE, VERMONT
OWNER	VERMONT AGENCY OF TRANSPORTATION
DRAWING CONTENTS	REW PANEL CROSS SECTIONS
DATE	07/16/2010
CONTRACT NO.	RE-14697
DRAWING NO.	S4 OF S10
SCALE	AS SHOWN

D:\VDOT\REW_VDOT_STOCKBRIDGE\PANEL\REW Std Shts.dwg

THE PANEL DRAWINGS ON THIS SHEET ARE NOT PROJECT SPECIFIC. THESE DRAWINGS ARE INCLUDED TO DETAIL REBAR SIZES AND PLACEMENT FOR STANDARD PANELS..
SEE INDIVIDUAL PANEL DRAWINGS FOR PROJECT SPECIFIC PANEL DIMENSIONS AND TIE STRIP LOCATIONS.



PANEL TYPE "G"
SCALE 1:25



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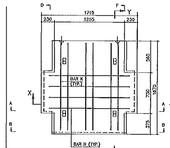
SCALE 1:25



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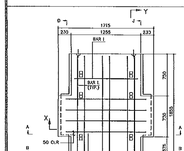
SCALE 1:25



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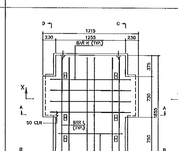
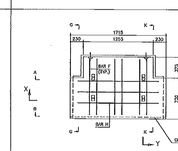
SCALE 1:25



PANEL TYPE "P"
SCALE 1:25



PANEL TYPE "Q"
SCALE 1:25

ALL PANELS SHOWN BACKFACE

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BY CPW DATE 8/26/10

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REINFORCED EARTH
8614 Westwood Center Drive, Vienna, VA 22183 (703)821-1175

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DESIGNED BY:	REV.	DATE	DESCRIPTION
LY			
PROJECT ENGR: LY			
CHECKED BY: PLA			

PROJECT NAME	VT ROUTE 107, BRIDGE 9
LOCATION	STOCKBRIDGE, VERMONT
OWNER	VERMONT AGENCY OF TRANSPORTATION
DRAWING CONTENTS	REW PANEL CROSS SECTIONS

DATE	07/16/2010
CONTRACT NO.	RC-14697
DRAWING NO.	SS OF S10
SCALE	AS SHOWN

RC14697 REW "C" Stockbridge.mod 8/2007 Bill Ottone.dwg

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BY CJW DATE 8/26/10

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DESIGNED BY:				
LY				
PROJECT ENGR				
LY				
CHECKED BY:				
PLA	1	8/16/10	ADD DOWELS	
	REV.	DATE	DESCRIPTION	

PROJECT NAME	VT ROUTE 107, BRIDGE 9
LOCATION	STOCKBRIDGE, VERMONT
OWNER	VERMONT AGENCY OF TRANSPORTATION
DRAWING COVERS	PANEL CASTING DRAWING
DATE	07/16/2010
CONTRACT NO.	RE-14697
DRAWING NO.	S6 OF S10
SCALE	AS SHOWN

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8614 Westwood Center Drive, Vienna, VA 22182 (703)821-1175

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DESIGNED BY: LY			
PROJECT ENGR: LY			
CHECKED BY: PLA	1	8/16/10	NEW PANEL
	REV.	DATE	DESCRIPTION

PROJECT NAME	VT ROUTE 107, BRIDGE 9
LOCATION	STOCKBRIDGE, VERMONT
OWNER	VERMONT AGENCY OF TRANSPORTATION
DRAWING COVERS	PANEL CASTING DRAWING
DATE	07/16/2010
CONTRACT NO.	RE-14697
DRAWING NO.	S7 OF S10
SCALE	AS SHOWN

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DESIGNED BY:				PROJECT NAME	VT ROUTE 107, BRIDGE 9	DATE 07/16/2010
LY						
PROJECT ENGR. LY				LOCATION	STOCKBRIDGE, VERMONT	CONTRACT NO. RE-14697
CHECKED BY: PLA	1	8/16/10	NEW PANEL	OWNER	VERMONT AGENCY OF TRANSPORTATION	DRAWING NO. SB OF S10
	REV.	DATE	DESCRIPTION	DRAWING COVERS	PANEL CASTING DRAWING	SCALE AS SHOWN

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BY: CPW

RESUBMIT
APPROVED
DATE 8/26/10
BY: CPW

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RESUBMIT APPROVED
BY CPW DATE 8/26/10

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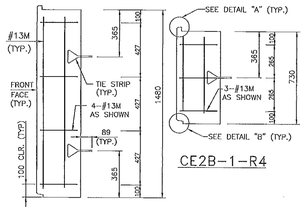
DESIGNED BY:				
LY				
PROJECT ENGR.				
LY				
CHECKED BY:				
FLA	1	8/16/10	NEW PANEL	
	REV.	DATE	DESCRIPTION	

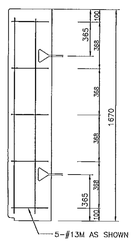
PROJECT NAME	VT ROUTE 107, BRIDGE 9	DATE	07/16/2010
LOCATION	STOCKBRIDGE, VERMONT	CONTRACT NO.	RE-14697
OWNER	VERMONT AGENCY OF TRANSPORTATION	DRAWING NO.	S9 OF S10
DRAWING COVERS	PANEL CASTING DRAWING	SCALE	AS SHOWN

R:\RE\14697_AT\Fig_7_Stockbridge\Furnish\14697-cross.dwg

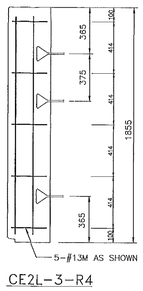


CE2A-2-R4

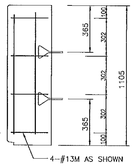
CE2B-1-R4



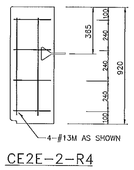
CE2K-2-R4



CE2L-3-R4



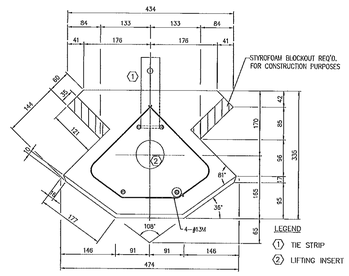
CE2F-2-R4



CE2E-2-R4

CORNER ELEMENT TYPICAL SECTIONS

SCALE: 1"=1'-0"



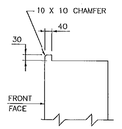
CORNER ELEMENT TYPE 2 90°± – 118°±

SCALE: 1:5

KEY TO PIECE MARK

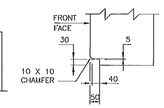
CE2A-2-R4

- PANEL REINFORCEMENT
- NO. OF TIE STRIPS
- PANEL HEIGHT
- TYPE
- CORNER ELEMENT



DETAIL "A"

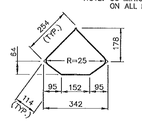
SCALE: 1:20



DETAIL "B"

SCALE: 1:20

NOTE: 38 MIN.CLR. ON ALL REBAR.



BAR DETAIL

SCALE: 1:20

(DIMENSIONS SHOWN ARE OUT TO OUT)

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BY CPW DATE 8/26/10

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REINFORCED EARTH
1924 Tysons Corner Blvd., Vienna, VA 22182 (703)891-1370

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REV.	DATE	DESCRIPTION

DESIGNED BY: LY
PROJECT ENGR: LY
DRAWN BY: PLA

PROJECT NAME	VT ROUTE 107, BRIDGE 9
LOCATION	STOCKBRIDGE, VERMONT
OWNER	VERMONT AGENCY OF TRANSPORTATION
DRAWINGS COVERS	CORNER ELEMENT "CE2" DRAWING
DATE	07/16/2010
CONTRACT NO.	RE-14697
DRAWING NO.	S10 OF S10
SCALE	AS SHOWN

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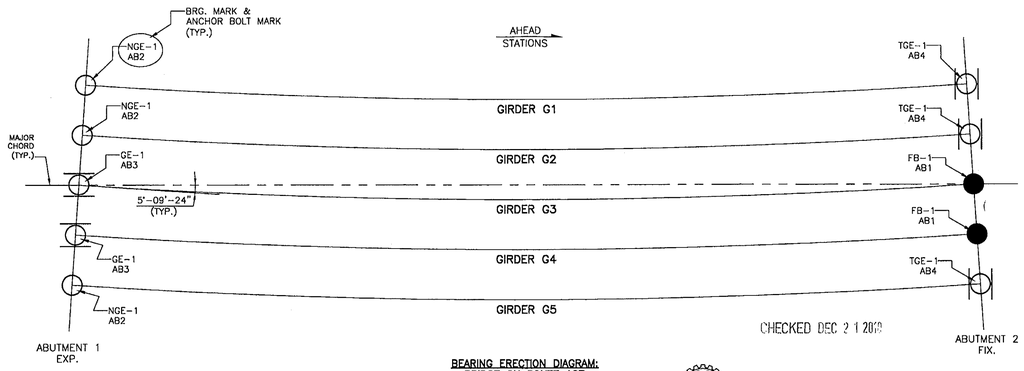

CHECKED DEC 2 1 2010

BEARING ERECTION DIAGRAM:
BRIDGE ON ROUTE 107
(SEE GENERAL INSTALLATION NOTES ON SHEET GN1)

○ – DESIGNATES NON-GUIDED EXP. BEARING (NGE)

⊖ – DESIGNATES GUIDED EXP. BEARING (GE) (GUIDE DIRECTION SHOWN)

● – DESIGNATES FIXED BEARING (FB)

Roaring Brook Consultants, Inc.
ENGINEERING A BETTER FUTURE
15 STRALL ROAD, SOUTH BERWICK, MAINE 03908
525 CLEMATIS STREET, SUITE 107, WEST PALM BEACH, FL 33401
PHONE: (877) 722-8643 FAX: (207) 384-5383

SEE SHEET GN1 FOR GENERAL INSTALLATION NOTES

SEE SHEETS 1 THRU 5 FOR BEARING ASSEMBLY DETAILS

SEE SHEET 6 FOR ANCHOR BOLT ASSEMBLY DETAILS

STRUCTURES COPY

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DEC 23 2010
RESUBMIT ____ APPROVED ✓
BY CPW DATE 12/30/10

STATE OF VERMONT
KEITH J. KALISZ No. 3724 REGISTERED PROFESSIONAL ENGINEER

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE ON ROUTE 107
TOWN OF STOCKBRIDGE, VT

STATE	COUNTY	B.A.N.
VT	WINDSOR	N/A

PROJ. NO.: BRF 022-1(20)

COSMEC, INC.
POT BEARING ASSEMBLIES

Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

SCALE: NONE | DRAWN BY: JR DATE: 11/2/10 | CHECKED BY: RB DATE: 11/18/10

SHEET E1 OF 1 JOB NO.: 10716

REV.	DESCRIPTION	BY	DATE	CK'D	DATE
1					

SUBMITTED: AUSTIN CONSTRUCTION CO. | DRAWING NUMBER: 10716-E1 | REV.: 0

GENERAL SHOP NOTES:

1. BEARING IS TO BE MARKED FOR IDENTIFICATION AND HAVE MATCH MARKS INDICATING CENTER LINES OF BEARING. MARKS SHALL INCLUDE LOCATION ON THE BRIDGE AND SHALL BE PERMANENT AND VISABLE AFTER THE BEARING IS INSTALLED.
2. ⊗ SOLE PLATES TO BE MARKED AS TO HIGH SIDE AND TO BE MARKED WITH AHEAD STATION ARROW AS SHOWN.
3. BEARING IS TO BE PROTECTED FROM MOISTURE AND DUST DURING SHIPMENT, STORAGE AND ERECTION.
4. ALL BEARING COMPONENTS SHALL BE BLAST CLEANED TO AWS/SSPC SP 10-63 THEN ZINC METALIZED AS PER VAOT STD. SPEC. SUBSECTIONS 501.04(b) & 506.15(b). INTERNAL SURFACES OF COMPONENTS, STAINLESS STEEL AND PTFE DO NOT REQUIRE METALIZING. ALL EXTERIOR SURFACES SHALL BE SEALED WITH AN APPROVED SEALANT.
5. ALL FREE EDGES OF PLATES TO BE COATED SHALL BE ROUNDED TO A 1/16 IN. RADIUS OR SHALL HAVE THE EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE.
6. STAINLESS STEEL TO BE WELDED AROUND ENTIRE PERIMETER OF THE PLATES USING THE GAS TUNGSTEN ARC WELDING (GTAW) PROCESS.
7. POT BEARINGS TO BE IN ACCORDANCE WITH VAOT STD. SPECIFICATIONS SECTIONS 831 AND SECTION 731 AS APPLICABLE. BEARING TESTING TO BE IN ACCORDANCE WITH SECTION 831.
8. DRAWING IN ENGLISH (IMPERIAL) UNITS. METRIC EQUIVALENTS SHOWN IN BRACKETS "[ ]" WHERE REQUIRED.

GENERAL INSTALLATION NOTES:

1. BEARING ASSEMBLIES SHALL NOT BE LIFTED BY THEIR SOLE PLATES. ANY HANDLING SHALL SUPPORT THE BEARING UNIT FROM THE UNDERSIDE.
2. PROTECT SLIDING SURFACES FROM WELD SPATTER, DIRT, AND OTHER FOREIGN MATTER. AVOID EXCESSIVE EXPOSURE OF THE TFE SURFACES TO DIRECT SUNLIGHT AT ALL TIMES.
3. REMOVE KEEPER DEVICES (BANDS) AFTER THE BEARING HAS BEEN POSITIONED AT IT'S PERMANENT LOCATION PRIOR TO ERECTION OF THE SUPERSTRUCTURE.

CONTRACTOR NOTE ⇒ 4. WHEN WELDING THE SOLE PLATE TO THE GIRDER FLANGE, USE TEMPERATURE INDICATING WAX PEN OR OTHER SUITABLE MEANS TO INSURE THAT THE TEMPERATURE OF THE BEARING DOES NOT EXCEED 250°F. TEMPERATURE ABOVE THIS MAY DAMAGE THE PTFE OR THE ELASTOMER.

CONTRACTOR NOTE ⇒ 5. DO NOT ALLOW WELDING CURRENT TO PASS THRU THE INTERNAL COMPONENTS OF THE BEARING. MAKE SURE GROUNDING LEADS ARE POSITIONED FOR FIELD WELDING TO PREVENT THIS. CURRENT THRU INTERNAL COMPONENTS WILL DAMAGE THE BEARING.

6. FIELD WELDING TO THE BEARING UNIT DURING THE INSTALLATION PHASE SHALL BE PERFORMED BY QUALIFIED WELDERS USING APPROVED PROCEDURES AND WELDING ELECTRODES.

CONTRACTOR NOTE ⇒ 7. DISASSEMBLY OF BEARING UNITS SHALL NOT BE DONE WITHOUT WRITTEN AUTHORIZATION FROM THE MANUFACTURER. UNAUTHORIZED DISASSEMBLY COULD RESULT IN FAILURE OF THE BEARING UNIT.

CONTRACTOR NOTE ⇒ 8. THE CONTRACTOR SHALL ROTATE THE TOP PLATES OF THE BEARINGS AS REQUIRED IN THE FIELD SUCH THAT THE ALIGNMENT IS AS REQUIRED ON THE DESIGN PLANS.

CONTRACTOR NOTE ⇒ 9. IF THE OVERALL HEIGHT OF THE BEARING UNITS HAVE BEEN CHANGED FROM THE HEIGHTS SHOWN ON THE DESIGN PLANS, BEARING SEAT ELEVATIONS MUST BE ADJUSTED BY THE CONTRACTOR TO COORDINATE WITH THESE APPROVED SHOP DRAWINGS.

CONTRACTOR NOTE ⇒ 10. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE CORRECT ANCHOR BOLT SETTING AND BEARING SEAT ELEVATIONS. CONTRACTOR TO SET AND INSTALL ANCHOR BOLTS AS PER DESIGN PLANS. CONTRACTOR TO CALCULATE NEW BEARING SEAT ELEVATIONS AS REQ'D.

CONTRACTOR NOTE ⇒ 11. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE FIELD TOUCH-UP OF DAMAGED METALIZING AND SEAL COAT DUE TO FIELD WELDING AND BEARING INSTALLATION.

12. COSMEC, INC. REPRESENTATIVE – DEBBIE PLANTE: (508) 455-3280

CHECKED DEC 2 1 2010

MATERIALS	SPECIFICATIONS
STRUCTURAL STEEL	ASTM A709 GR.50 [A709M GR.345]
STAINLESS STEEL	11 GA. ASTM A240 TYPE 304 POLISHED #8 MIRROR FINISH
PTFE	AASHTO 3/16" VIRGIN UNFILLED CONFORMING TO ASTM D4894 & VAOT STD. SPEC. 731.04
ELASTOMER	AASHTO GRADE NEOPRENE WITH A HARDNESS OF 50-DUROMETER MEETING SPECIFICATION M-251 & VAOT STD. SPEC. 731.03
BRASS	ASTM B-36, 1/2 HARD TEMPER
ANCHOR BOLTS	ASTM A449 – GALV. NUTS: ASTM A563-DH, GALV. PLATE WASHERS: ASTM A709 GR.50 GALVANIZED
BEARING PADS	PER VAOT STD. SPECIFICATION SECTION 731.01

CAPACITY CHART

		228 KIPS [1014 kN] DOWEL BEARINGS LOCATE @ ABUTMENT 2	267 KIPS [1187 kN] EXPANSION BEARINGS ● LOCATE @ ABUTMENT 1	267 KIPS [1187 kN] EXPANSION BEARINGS ● LOCATE @ ABUTMENTS 1 & 2
DESIGN VERTICAL LOAD (MAX)		228 KIPS [1014 kN]	267 KIPS [1187 kN]	267 KIPS [1187 kN]
DESIGN LATERAL LOAD (MAX)		46 KIPS [204 kN]	54 KIPS [240 kN]	54 KIPS [240 kN]
DESIGN MOVEMENT	LONGITUDINAL	± 0 In.	± 1.125 In.	± 1.125 In.
	TRANSVERSE	± 0 In.	± 1/16 In.	± 1/32 In.
DESIGN ROTATION (RADS)		0.030 RADS	0.030 RAD	0.030 RAD
DESIGN COEFFICIENT OF FRICTION		N/A	4% MAX.	4% MAX.
CONFINED ELASTOMER	THICKNESS	1 In.	1 In.	1 In.
	PLAN AREA	65.47 sq. In.	76.67 sq. In.	76.67 sq. In.
COMPRESSIVE STRESS ON PTFE ● DESIGN CAPACITY		N/A	3.50 ksi (MAX.)	3.50 ksi (MAX.)
COMPRESSIVE STRESS ON ELASTOMER ● DESIGN CAPACITY		3.48 ksi	3.48 ksi	3.48 ksi

RECEIVED
CK'D BY JSS CK'D BY RKV
DEC 23 2010
RESUBMIT _____ APPROVED ✓
BY CPW DATE 12/30/10

Roaring Brook Consultants, Inc.
ENGINEERING A BETTER FUTURE
15 STEVENS ROAD, SOUTH BERWICK, MAINE 03908
806 CLEMATIS STREET, SUITE 107, WEST PALM BEACH, FL 33401
PHONE: (877) 722-2643 FAX: (207) 384-5383

SEE SHEETS 1 THRU 6 FOR BEARING ASSEMBLY DETAILS

P.E. SEAL

STATE OF VERMONT
KEITH J. KALLOCH
No. 3924
REGISTERED PROFESSIONAL ENGINEER

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE ON ROUTE 107
TOWN OF STOCKBRIDGE, VT

STATE	COUNTY	B.A.N.
VT	WINDSOR	N/A

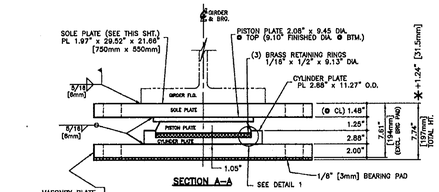
PROJ. NO.: BRF 022-1(20)

COSMEC, INC.
POT BEARING ASSEMBLIES

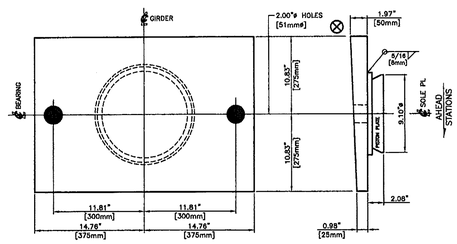
Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

REV.	DESCRIPTION	BY	DATE	CK'D	DATE
⚠	REVISED NOTE PER APPROVER	JR	12/14/10	DRP	12/14/10

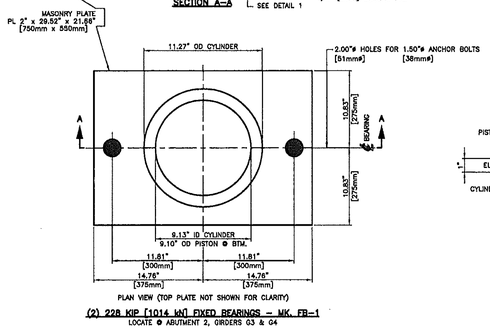
SCALE: NONE | DRAWN BY: JR DATE: 11/9/10 | CHECKED BY: TB DATE: 11/10/10
SHEET GN1 OF 1 | JOB NO.: 10716
CONTRACTOR: AUSTIN CONSTRUCTION CO.
DRAWING NUMBER: 10716-GN1 | REV. 1



SECTION A–A

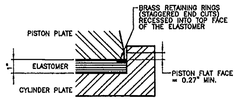


(2) SOLE PLATES FOR 228 KIP [1014 kN] FIXED BRGS.
PL 1.97" x 29.52" x 21.66"
[750mm x 550mm]



PLAN VIEW (TOP PLATE NOT SHOWN FOR CLARITY)

(2) 228 KIP [1014 kN] FIXED BEARINGS – MK. FB–1
LOCATE @ ABUTMENT 2, GIRDERS G3 & G4



DETAIL 1
SHOWING THE ASSEMBLY OF THE PISTON, RETAINING RINGS AND ELASTOMER IN THE CYLINDER
NOTE: ELASTOMER TO BE LUBRICATED ON ALL SIDES WITH A MEDIUM CONSISTENCY SILICONE GREASE

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BY CPW DATE 12/30/10

Roaring Brook Consultants, Inc.
ENGINEERING A BETTER FUTURE
16 STEVALL ROAD, SOUTH BERWICK, MAINE 03908
525 CLEMATIS STREET, SUITE 107, WEST PALM BEACH, FL 33401
PHONE: (877) 702-2543 FAX: (207) 384-5583

SEE NOTES ON SHEET GN1

STATE OF VERMONT
KEITH T. KILLEEN
NO. 3826
REGISTERED
PROFESSIONAL ENGINEER

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE ON ROUTE 107
TOWN OF STOCKBRIDGE, VT

STATE	COUNTY	B.I.N.
VT	WINDSOR	N/A

PROJ. NO.: BRF 022-1(20)

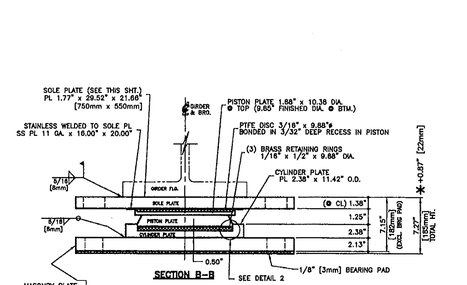
COSMEC, INC.
POT BEARING ASSEMBLIES

Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2158
ATHENS, TEXAS 75751

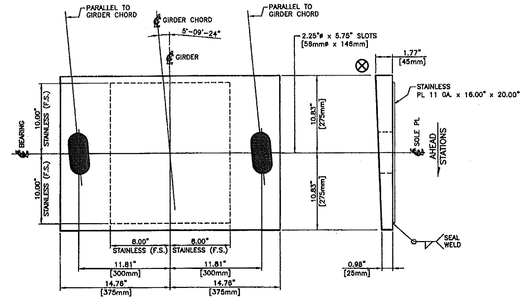
SCALE: NONE	DRAWN BY: JR DATE: 11/1/10	CHECKED BY: MS DATE: 11/19/10
SHEET 1 of 6	JOB NO.: 10716	

REV.	DESCRIPTION	BY	DATE	CK'D	DATE
1					

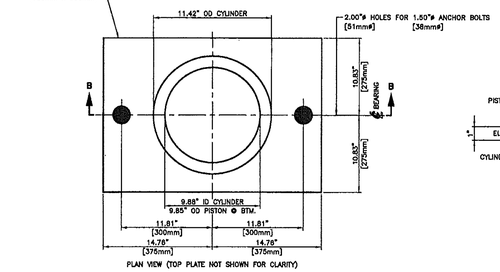
CUSTOMER: AUSTIN CONSTRUCTION CO.
DRAWING NUMBER: 10716-D11
REV. 0



SECTION B–B

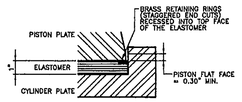


(3) SOLE PLATES FOR 287 KIP [1187 kN] NON-GUIDED EXP. BRGS.
PL 1.77" x 29.52" x 21.66"
[750mm x 550mm]



PLAN VIEW (TOP PLATE NOT SHOWN FOR CLARITY)

(3) 287 KIP [1187 kN] NON-GUIDED EXP. BEARINGS – MK. NGE–1
LOCATE @ ABUTMENT 1, GIRDERS G1, G2 & G5



DETAIL 2
SHOWING THE ASSEMBLY OF THE PISTON, RETAINING RINGS AND ELASTOMER IN THE CYLINDER
NOTE: ELASTOMER TO BE LUBRICATED ON ALL SIDES WITH A MEDIUM CONSISTENCY SILICONE GREASE

CHECKED DEC 2 1 2010

Roaring Brook Consultants, Inc.
ENGINEERING A BETTER FUTURE
10 SEWALL ROAD, SOUTH BERWICK, MAINE 03908
625 CLEMATIS STREET, SUITE 107, WEST PALM BEACH, FL 33401
PHONE: (877) 722-8543 FAX: (207) 384-5383

SEE NOTES ON SHEET GN1

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE ON ROUTE 107
TOWN OF STOCKBRIDGE, VT

STATE	COUNTY	B.I.N.
VT	WINDSOR	N/A

PROJ. NO.: BRF 022-1(20)

COSMEC, INC.
POT BEARING ASSEMBLIES

Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

SCALE: NONE	DRAWN BY: JR DATE: 11/1/10	CHECKED BY: RB DATE: 11/19/10
SHEET 2 OF 6	JOB NO.: 10716	
CUSTOMER: AUSTIN CONSTRUCTION CO.		DRAWING NUMBER/ REV.: 10716-D2 0

STATE OF VERMONT
KEITH J. KALLBERG
No. 3424
REGISTERED PROFESSIONAL ENGINEER

REV.	DESCRIPTION	BY	DATE	CK'D	DATE
0					

RECEIVED
CK'D BY JAS ORD BY KJK
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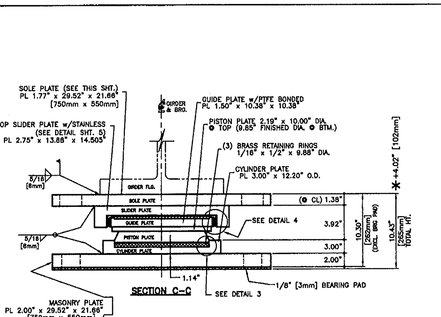
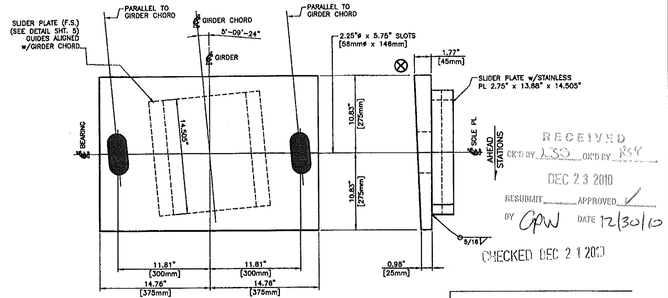
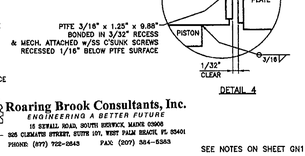
RESUBMIT ____ APPROVED ✓
BY CPW DATE 12/30/10

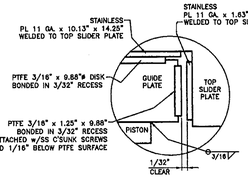




(2) SOLE PLATES FOR 287 KIP [1187 kN] GUIDED EXP. BRGS.
PL 1.77" x 29.52" x 21.66"
[750mm x 550mm]



DETAIL 3
SHOWING THE ASSEMBLY OF THE PISTON, RETAINING RINGS AND ELASTOMER IN THE CYLINDER
NOTE: ELASTOMER TO BE LUBRICATED ON ALL SIDES WITH A MEDIUM CONSISTENCY SILICONE GREASE



DETAIL 4

Roaring Brook Consultants, Inc.
ENGINEERING A BETTER FUTURE
15 SEWALL ROAD, SOUTH BERWICK, MAINE 03908
505 CLEMATIS STREET, SUITE 101, WEST PALM BEACH, FL 33401
PHONE (877) 722-0843 FAX (207) 384-5383

SEE NOTES ON SHEET GN1

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CK'D BY LSS CK'D BY RSK
DEC 23 2010
RESUBMIT APPROVED
BY GPW DATE 12/30/10
CHECKED DEC 21 2010

KEITH E. KALLBERG No. 3723 REGISTERED PROFESSIONAL ENGINEER
STATE OF VERMONT

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE ON ROUTE 107
TOWN OF STOCKBRIDGE, VT

STATE	COUNTY	B.I.N.
VT	WINDSOR	N/A

PROJ. NO.: BRF 022-1(20)

COSMEC, INC.
POT BEARING ASSEMBLIES

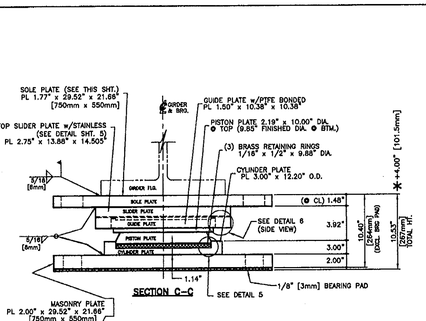
Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

ROAD: NONE	DRAWN BY: JR	CHECKED BY: RB
	DATE: 11/3/10	DATE: 11/18/10

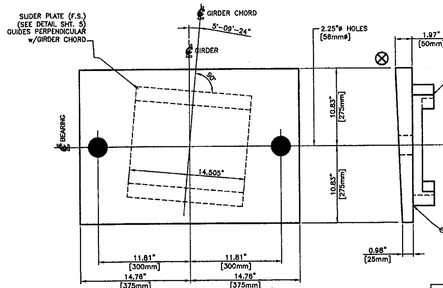
SHEET 3 OF 6 JOB NO.: 10716

CUSTOMER: AUSTIN CONSTRUCTION CO.
DRAWING NUMBER: 10716-03 REV: 0

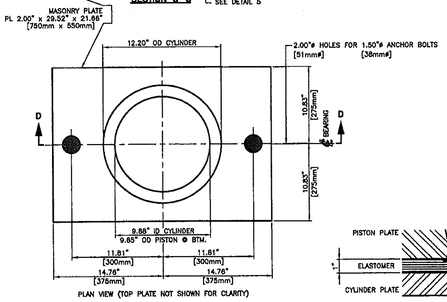
REV.	DESCRIPTION	BY	DATE	CK'D	DATE
1					



SECTION C–C

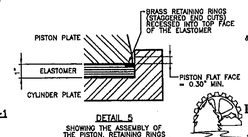


(2) SOLE PLATES FOR 267 KIP [1187 kN] GUIDED EXP. BRGS.
PL 1.97" x 29.52" x 21.66"
[750mm x 550mm]

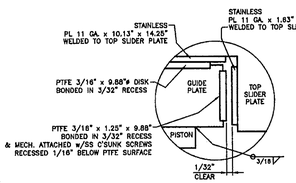


PLAN VIEW (TOP PLATE NOT SHOWN FOR CLARITY)

(2) 267 KIP [1187 kN] TRANSVERSE GUIDED EXP. BEARINGS – MK. TGE–1
LOCATE ℄ ABUTMENT 2, GIRDERS G1, G2 & G5



DETAIL 5
SHOWING THE ASSEMBLY OF THE PISTON, RETAINING RINGS AND ELASTOMER IN THE CYLINDER
NOTE: ELASTOMER TO BE LUBRICATED ON ALL SIDES WITH A MEDIUM CONSISTENCY SILICONE GREASE



DETAIL 6
(SIDE VIEW SHOWN)

Roaring Brook Consultants, Inc.
ENGINEERING A BETTER FUTURE
18 STEELE ROAD, SOUTH BERWICK, MAINE 03908
525 CLEMATIS STREET, SUITE 107, WEST PALM BEACH, FL 33401
PHONE: (877) 722-2643 FAX: (207) 384-5383

SEE NOTES ON SHEET GN1

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ON MAY 2010 ORIG BY
DEC 23 2010
RESUBMIT APPROVED
BY CPW DATE 12/30/10
CHECKED DEC 21 2010

KEITH T. KAUSRUD No. 5274 REGISTERED PROFESSIONAL ENGINEER STATE OF VERMONT

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE ON ROUTE 107
TOWN OF STOCKBRIDGE, VT

STATE	COUNTY	B.I.N.
VT	WINDSOR	N/A

PROJ. NO.: BRF 022-1(20)

COSMEC, INC.
POT BEARING ASSEMBLIES

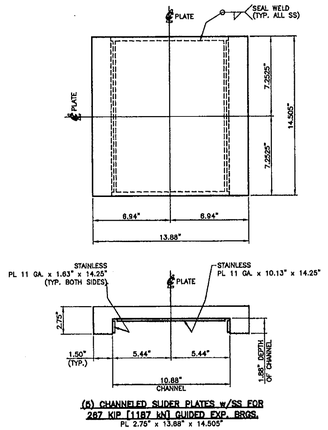
Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

SCALE: NONE	DRAWN BY: JR DATE: 11/2/10	CHECKED BY: RG DATE: 11/18/10
SHEET 4 OF 6	JOB NO.: 10716	

REV.	DESCRIPTION	BY	DATE	CK'D	DATE
1					

CONTRACTOR: AUSTIN CONSTRUCTION CO.

DRAWING NUMBER: 10716-04 REV: 0



(5) CHANNELED SLIDER PLATES w/SS FOR 267 KIP [1187 kN] GUIDED EXP. BRGS.
PL 2.75" x 13.88" x 14.505"

RECEIVED
OKT-BY 159 OKTOBY RH

CHECKED DEC 21 2010

DEC 23 2010
RESUBMIT____ APPROVED ✓
BY OPW DATE 12/30/10

Roaring Brook Consultants, Inc.
ENGINEERING A BETTER FUTURE
15 ESTALL ROAD, SOUTH BERWICK, MAINE 03908
525 CLEMATIS STREET, SUITE 107, WEST PALM BEACH, FL 33401
PHONE: (877) 722-2545 FAX: (207) 384-5363

SEE NOTES ON SHEET GN1

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE ON ROUTE 107
TOWN OF STOCKBRIDGE, VT

STATE	COUNTY	B.I.N.
VT	WINDSOR	N/A

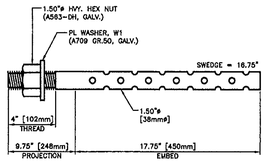
PROJ. NO.: BRF 022-1(20)

COSMEC, INC.
POT BEARING ASSEMBLIES

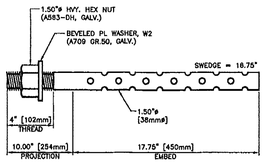
Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

ROAD: NONE	DRAWN BY: JB DATE: 11/5/10	CHECKED BY: RS DATE: 11/10/10
SHEET 5 of 6	JOB NO.: 10716	
CONTRACTOR: AUSTIN CONSTRUCTION CO.		DRAWING NUMBER: 10716-D5 REV. 0

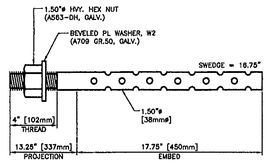
REV.	DESCRIPTION	BY	DATE	CK'D	DATE
1					



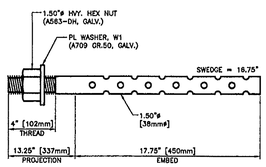
ANCHOR BOLTS FOR FB-1 BRG. ASS'YS
MK. AB1
RD 1.50"ø x 27.50"
4 REQ'D
ASTM A449 (GALV.)



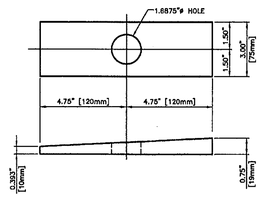
ANCHOR BOLTS FOR NGF-1 BRG. ASS'YS
MK. AB2
RD 1.50"ø x 27.75"
6 REQ'D
ASTM A449 (GALV.)



ANCHOR BOLTS FOR GF-1 BRG. ASS'YS
MK. AB3
RD 1.50"ø x 31.00"
4 REQ'D
ASTM A449 (GALV.)



ANCHOR BOLTS FOR TGF-1 BRG. ASS'YS
MK. AB4
RD 1.50"ø x 31.00"
6 REQ'D
ASTM A449 (GALV.)



BEVELED PLATE WASHER, MK. W2
10 REQ'D
PL 0.75" x 3.00" X 9.50"
[PL 19mm x 76mm x 240mm]
(ASTM A709 GR.50, GALV.)

CHECKED DEC 2 1 2010

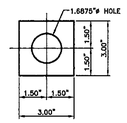


PLATE WASHER, MK. W1
10 REQ'D
PL 0.375" x 3.00" X 3.00"
[PL 10mm x 76mm x 76mm]
(ASTM A709 GR.50, GALV.)

RECEIVED
CKD BY LSD CKD BY RSH
DEC 23 2010
RESUBMIT ____ APPROVED ✓
BY CPW DATE 12/30/10

SEE NOTES ON SHEET GN1

Roaring Brook Consultants, Inc.
ENGINEERING A BETTER FUTURE
15 STEVENS ROAD, SOUTH BERWICK, MAINE 03908
525 CLEMATIS STREET, SUITE 107, WEST PALM BEACH, FL 33401
PHONE: (877) 722-0843 FAX: (207) 384-5303

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE ON ROUTE 107
TOWN OF STOCKBRIDGE, VT

STATE	COUNTY	B.I.N.
VT	WINDSOR	N/A

PROJ. NO.: BRF 022-1(20)

COSMEC, INC.
POT BEARING ASSEMBLIES

Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

SCALE: NONE | DRAWN BY: JR DATE: 11/3/10 | CHECKED BY: RB DATE: 11/18/10

SHEET 6 OF 6 | JOB NO.: 10716

CUSTOMER: AUSTIN CONSTRUCTION CO. | DRAWING NUMBER/ REV.: 10716-D6 0

REV.	DESCRIPTION	BY	DATE	CK'D	DATE
1					

VTrans
RECEIVED
JAN 20 2011

OK'D BY _____ OK'D BY Jue

RESUBMIT _____ APPROVED _____

BY _____ DATE 02/01/11

WELDING PROCEDURE SPECIFICATION (WPS) YES (X)

PREQUALIFIED __X__ QUALIFIED BY TESTING _____

or PROCEDURE QUALIFICATION RECORD (PQR) YES ( )

Company Name ARC Enterprises, Inc.
Welding Process(es) GMAW
Supporting PQR No.(s) _____

Identification # ARC WPS SVH
Revision 5 Date 1/6/2011 By SVH
Authorized by STEVE HOWARD Date 12-5-05
Type - Manual _____ Semi - Automatic (X)
Machine ( ) Automatic ( )

AWS D1.1 2008

JOINT DESIGN USED

Type Fillet
Single X Double Weld ( )
Backing ( ) NO (X)
Backing Material _____
Root Opening 0 Root Face Dimension NA
Groove Angle NA Radius (J-U) NA
Back Gouging YES( ) NO ( ) Method NA

BASE METALS

Material Spec A709
Type or Grade 50
Thickness Groove _____ Fillet UNLIMITED
Diameter (Pipe) _____

FILLER METALS

AWS Specification A5.18
AWS Classification ER70S-6 ESAB SPOOLARC 86

SHIELDING

Flux _____ Gas 98%ARGON 2%O2
Electrode - Flux (Class) Composition _____
Flow Rate 25-35 cfh
Gas Cup Size 5/8

preheat up to 3/4" - 32 degrees F; 3/4" - 1 1/2" - 50 degrees F
1 1/2" - 2 1/2" - 150 degrees F
over 2 1/2" - 225 degrees F
(when steel temp < 30F, minimum 70F.

POSITION

Position of Groove _____ Fillet 1F 2F
Vertical Progression ( )

ELECTRICAL CHARACTERISTICS

Transfer Mode (GMAW) Short Circuiting ( )
Globular ( ) Spray (X)
Current AC ( ) DCEP (X) DCEN ( )
Pulsed ( )
OTHER :

TECHNIQUE

Stringer or Weave Bead STRINGER
Multi-pass or Single Pass (per side) SINGLE/MULTI
Number of Electrodes _____
Electrode Spacing Longitudinal NA
Lateral NA
Angle NA
Contact Tube to Work Distance 5/8" - 3/4"
Peening NA
Interpass Cleaning : HANDIPOWER TOOLS

POSTWELD HEAT TREATMENT

Temp NA
Time NA

WELDING PROCEDURE

Passes or Weld Layer(s)	Filler Metals S	Class	Diameter	Type & Polarity	Current Amps or Wire Feed Speed	Volts	Joint Details Travel Speed
1 1	3/16"	ER70S-6	.035"	DCEP	160-220	25-27	7-9 ipm
1 1	1/4"	"	"	"	160-220	25-27	6-6
1 1	5/16"	"	"	"	"	25-27	4-5
1 1	3/8"	"	.035"	"	"	"	3-4
1 2	7/16"	"	"	"	"	"	2-3

George / Chris,

In reference to the StockBridge VT project noted above, we are unsuccessful in finding any of the MC18 x 18.7 (MC200 x 27.9) in stock anywhere and they need a minimum order of 100 tons to roll at the mill.

Casco Bay Steel Structures request that this be changed to either a C8 x 18.75 (2-1/2" flange in lieu of a 3" flange) or a MC8 x 21.4 (has a 3-1/2" flange in lieu of 3" flange)

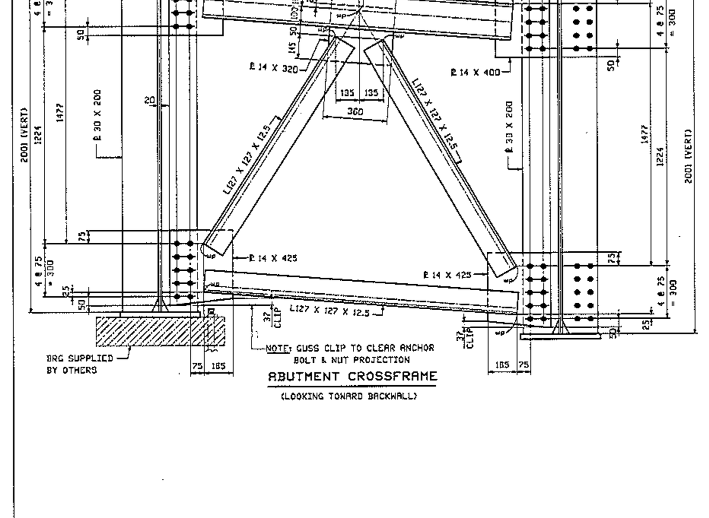
This would be at no additional cost to the State.

Please advise which size channel is acceptable to procure.

Brian C. Tupper
General Manager
Chief Estimator/Project Manager

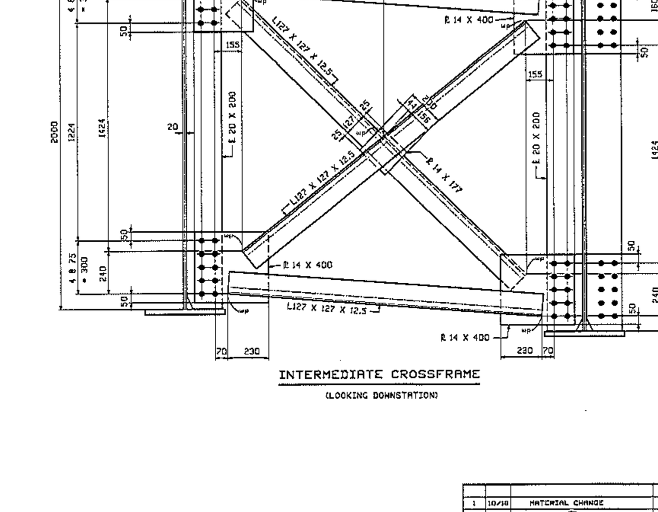
Casco Bay Steel Structures
75 Spring Hill Road
Saco, ME 04072
(P) 207-282-7360
(Cell) 207-415-4787
(F) 207-282-1179

E-mail: btupper@cascobaysteel.com



ABUTMENT CROSSFRAME

(LOOKING TOWARD BACKWALL)

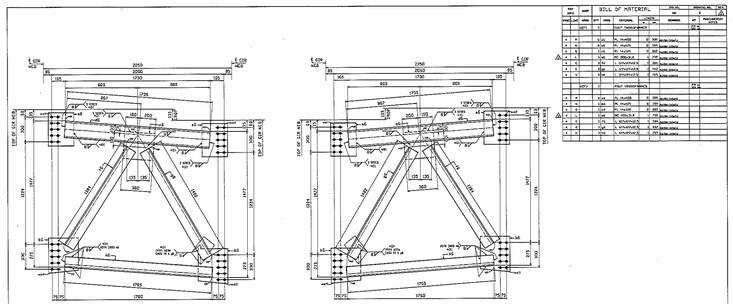


INTERMEDIATE CROSSFRAME

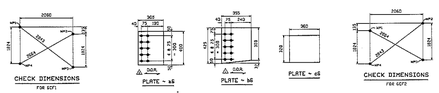
(LOOKING DOWNSTATION)

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

1	10/10	MATERIAL CHANGE	TG	WL		
0						
REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
MATERIAL: M270M-345WT2		SURFACE PREP. & PAINT: SEE SHT GN1	HOLES: 24mm		SHOP BOLTS:	
DESCRIPTION: TYPICAL LAYOUTS						
CASCO BAY STEEL STRUCTURES, INC. 75 SPRING HILL ROAD SACO, MAINE 04072 PHONE (207) 282-7360 FAX. (207) 282-1179						
STRUCTURE: VT RTE 107 over STONEY BROOK BRIDGE 9 STOCKBRIDGE, VT COUNTY of WINDSOR				DRAWN: TG	DATE: 08/05	
				CHKD: SF	DATE: 08/23/10	
LOCATION: STOCKBRIDGE, VT				JOB NO.	DWG NO.	
PROJ NO. BRF 022-1(20)				461	TD1	
CUSTOMER: AUSTIN CONSTRUCTION					REV. 1	



PART MARK	QUAN UNIT	QUAN MEM	QUAN PIECE	SIZE	MATERIAL	WEIGHT (LBS)	REMARKS	PAINTING SYSTEM	ZONE
					UNIT 1 (NONSYMMETRIC)				
*	*			PL1/4	PL 14X858	47.185	BASE STEEL		
*	*			PL1/4	PL 14X696	38.260	BASE STEEL		
*	*			PL1/4	PL 14X378	20.781	BASE STEEL		
*	*			PL1/4	MC 6X5.4 X	2.917	BASE STEEL		
*	*			L3/4	L 3X3X1/4 X	2.813	BASE STEEL		
*	*			PL3/8	L 3X3X1/4 X	2.109	BASE STEEL		
*	*			PL3/8	L 3X3X1/4 X	2.109	BASE STEEL		
					UNIT 2 (NONSYMMETRIC)				
*	*			PL1/4	PL 14X858	47.185	BASE STEEL		
*	*			PL1/4	PL 14X696	38.260	BASE STEEL		
*	*			PL1/4	PL 14X378	20.781	BASE STEEL		
*	*			PL1/4	MC 6X5.4 X	2.917	BASE STEEL		
*	*			L3/4	L 3X3X1/4 X	2.813	BASE STEEL		
*	*			PL3/8	L 3X3X1/4 X	2.109	BASE STEEL		
*	*			PL3/8	L 3X3X1/4 X	2.109	BASE STEEL		



#	ID/DC	HISTORICAL Comment	TS	ML
*	DR/DG	MINERAL COMMENTS	ENG	TS
*			ENG	TS

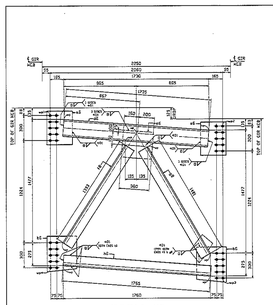
NO.	DATE	REVISIONS	BY	CHK'D	APVL	GROUP
ALL		GENERAL NOTE'S MODIFIED				

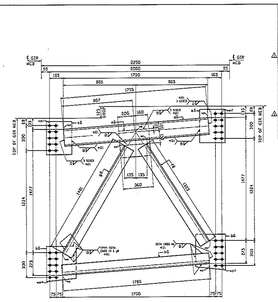
PROJECT		DRAWING	DWG
40930-34547.2	SEE SHT 006	7444	SHOP DETAIL

DESCRIPTION: ELECTRICAL CERTIFICATE ECF1 & ECF2

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD, NEW GLOUCESTER, MAINE 04260
PHONE (207) 926-7363 FAX (207) 353-5179

STRUCTURE: VT RTE 107 over STRAFFORD BRANCH BRIDGE 3 STRAFFORD, VT COUNTY OF NORFOLK	DRAWN: TS	08/10
	CHK'D: SF	08/23/10
LOCATION: STRAFFORD,VT,	FED NO.	DWG NO.
PROJ NO. BRF 020-4(33)		5
CONTRACT: MASTIN CONSTRUCTION	491	REV. 1





PIECE MARK	SIZE	QUAN	GRADE	BILL OF MATERIAL MATERIAL	CUT LENGTH	WEIGHT EA	WEIGHT TOT	REMARKS	SHOP PROCESSING BY
	DEPTH	-		PRINT DRAWDOWNS			22 ℄		
A	W	1	A36	PL PLATE	41.75	328.0 LBS			
A	W	1	A36	PL PLATE	41.75	328.0 LBS			
A	L	1	A36	WT STRUCT	6.75	36.0 LBS			
A	L	1	A36	WT STRUCT	6.75	36.0 LBS			
A	L	1	C36	L STRUCTURAL	6.75	36.0 LBS			
A	L	1	C36	L STRUCTURAL	6.48	36.0 LBS			
A	L	1	C36	L STRUCTURAL	6.75	36.0 LBS			
	DEPT	-		PRINT DRAWDOWNS			22 ℄		
A	W	1	A36	PL PLATE	41.75	328.0 LBS			
A	W	1	A36	PL PLATE	41.75	328.0 LBS			
A	L	1	A36	WT STRUCT	6.75	36.0 LBS			
A	L	1	C36	L STRUCTURAL	6.75	36.0 LBS			
A	L	1	C36	L STRUCTURAL	6.48	36.0 LBS			
A	L	1	C36	L STRUCTURAL	6.75	36.0 LBS			

NO.	DATE	DESCRIPTION	BY	CHK
1	05/17	MATERIAL CHANGE	TG	NL

NO.	DATE	REVISIONS	BAR/CHK	REVL	SHOP
PROJECT		CAPE FEAR'S END, PHASE		SHOP BOLTS	
P2018-0143-S12		SCE DOT GAS			

DESCRIPTION: FRACTURE CRITICAL BCF1 & BCF2

GASCO BAY STEEL STRUCTURES, INC.
74 SPRING HILL ROAD, MAINE 04972
PHONE (207) 232-7100 FAX. (207) 282-1173

STRUCTURE:	VT RTE 289 over STRAIT BRIDGE BRIDGE 8 MIDDLEBURY, VT COUNTY of ADDISON	DRAWN TG	DATE 05/17
		CHKD SF	DATE 06/23/17
CARTON:	STANDISHING, VT	208 NO.	SHT NO.
PAGE NO.	SMF 202-0301	481	⊘
CUSTOMER:	AUSTIN CONSTRUCTION		REVL

Chase, Tom

From: Brian Tupper [btupper@cascobaysteel.com]
Sent: Wednesday, October 20, 2010 2:59 PM
To: Williams, Chris; AUSTIN CONSTRUCTION, INC.
Cc: Chase, Tom; Young, Rob
Subject: RE: StockBridge VT - BRF-022-1(20) VT 107, Bridge 9
Attachments: 3012tr6.pdf

Here is a pdf copy of the drawings reflecting the changed MC8 as we discussed

Brian C. Tupper
General Manager
Chief Estimator/Project Manager

Casco Bay Steel Structures
75 Spring Hill Road
Saco, ME 04072
(P) 207-282-7360
(Cell) 207-415-4787
(F) 207-282-1179

E-mail: btupper@cascobaysteel.com

From: Williams, Chris [mailto:chris.williams@state.vt.us]
Sent: Monday, October 18, 2010 10:36 AM
To: Brian Tupper; AUSTIN CONSTRUCTION, INC.
Cc: Chase, Tom; Young, Rob
Subject: RE: StockBridge VT - BRF-022-1(20) VT 107, Bridge 9

Brian,

First, we assume that you meant that you could not find the MC8x18.7 not an MC18x18.7 as you stated below (highlighted). With this assumption we will allow substitution with a MC8x21.4 with the following conditions:

- No additional cost to the State as a result of this substitution
- Any conflicts with other bridge components that arise will be resolved by the Contractor and/or Casco Bay Steel Structures at no additional cost to the State.
- The change is reflected in the fabrication drawings that were previously approved

Once we receive confirmation that these conditions are acceptable, you may proceed with the substitution.

Thanks,
chris

From: Brian Tupper [mailto:btupper@cascobaysteel.com]
Sent: Friday, October 15, 2010 11:58 AM
To: AUSTIN CONSTRUCTION, INC.; Williams, Chris
Subject: StockBridge VT - BRF-022-1(20) VT 107, Bridge 9

GENERAL NOTES

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

CONSTRUCTION SPECIFICATIONS

1) ALL MATERIAL AND WORKMANSHIP TO BE IN ACCORDANCE WITH THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006 WITH LATEST REVISIONS AND THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS FOR HIGHWAY BRIDGES DATED 2002 AND ITS LATEST REVISIONS, AND THE AASHTO GUIDE SPECIFICATIONS FOR HORIZONTALLY CURVED STELL GIRDER HIGHWAY BRIDGES DATED 2003.

MATERIAL SPECIFICATIONS

1) UNLESS OTHERWISE NOTED, ALL STEEL TO BE UNPAINTED AASHTO M270M GRADE 345W.

2) MATERIAL NOTED "CVN" OR "T2" ON DETAIL DRAWINGS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF VERMONT STANDARD SPECIFICATIONS SECTION 714.01.

3) HIGH STRENGTH BOLTS: ASTM A325 (AASHTO M164) 7/8" DIA., TYPE 3. NUTS SHALL BE A563 (TYPE 3) GRADE C3. IN PAINTED AREAS USE ASTM A325 (AASHTO M164) TYPE 1 GALVANIZED (PER AASHTO M298) BOLTS, NUTS, AND WASHERS.

   BOLTS & NUTS SHALL BE ROTATIONAL CAPACITY TESTED. DO NOT MIX NUTS & BOLTS FROM DIFFERENT CONTAINERS UNLESS ALL BOLTS & NUTS HAVE THE SAME LOT NUMBER.

FABRICATION

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

WELDING

1) THE CONFIGURATION OF THE WELD JOINTS AND ALL WELDING PROCEDURES SHALL BE IN ACCORDANCE WITH AASHTO/AWS D1.5-08 BRIDGE WELDING CODE AND IN ADDITION TO SPECIFICATIONS SHOWN ABOVE. ALL WELDING WILL BE DETAILED TO PRE-QUALIFIED JOINTS, UNLESS PROHIBITED BY THE DESIGNER.

2) WELDING OF MAIN LOAD CARRYING MEMBERS AND ATTACHMENTS SHALL BE PERFORMED USING THE AUTOMATIC SUBMERGED ARC & SHIELDED METAL ARC PROCESSES. ALL WELDS ARE CONTINUOUS U.N.

3) NON DESTRUCTIVE TESTING OF WELDS SHALL BE IN ACCORDANCE WITH THE REFERENCED SPECIFICATION.

4) SEE DETAIL "WS1" & "WS2" ON THIS DRAWING FOR WELD TERMINATION DETAIL.

FIELD CONNECTIONS

1) ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH STRENGTH A-325 BOLTS (UN), INSTALLED PER SECTION 506.19(c). SEE DWG E1 FOR FIELD BOLT SIZES.

2) BOLTS SHALL HAVE HEAVY HEX NUT, HEAVY HEX HEAD, AND AT LEAST ONE FLAT WASHER EACH. WASHER TO BE PLACED UNDER TURNED ELEMENT.

3) PIECE MARKS WILL BE LOCATED AS SHOWN ON ERECTION DRAWINGS.

CLEANING

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

PAINTING

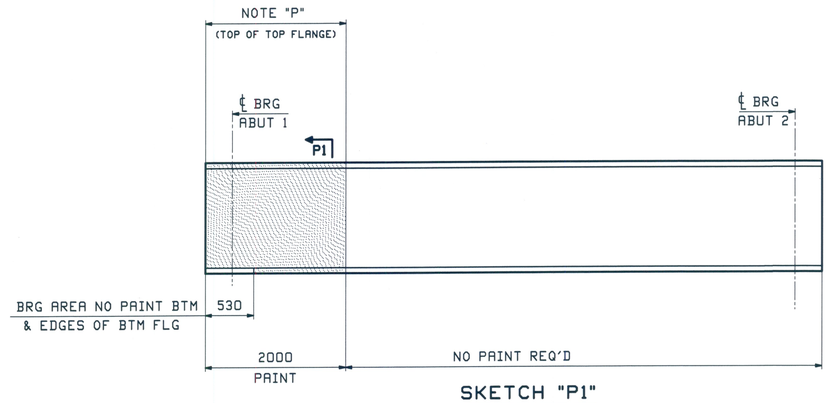
1) THE GIRDER ENDS & ABUTMENT DIAPHRAGMS WITHIN 2M OF THE ENDS OF STEEL AT ABUT 1 SHALL BE PAINTED, EXCEPT AS NOTED (SEE SKETCH "P1").

2) THE PAINT SYSTEM AND ITS APPLICATION SHALL CONFORM TO SECTION 513 OF THE STANDARD SPECIFICATIONS.

   THE PAINT SYSTEM SHALL BE AS FOLLOWS:
   PRIMER: CARBOLINE 859 ORGANIC ZINC RICH PRIMER ~ 3.0 - 5.0 MILS DFT.
   INTERMEDIATE: CARBOLINE 888 EPOXY ~ 4.0 - 6.0 MILS DFT.
   TOPCOAT: CARBOLINE 133 HB ALIPHATIC POLYURETHANE ~ 2.0 - 4.0 MILS DFT.

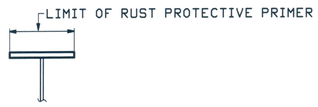
   TOP COAT COLOR: BROWN FED STD 595, COLOR CHIP #20059

3) PRIME COAT ONLY WITHIN 3" OF ALL HOLES WITHIN THE PAINTED AREA.

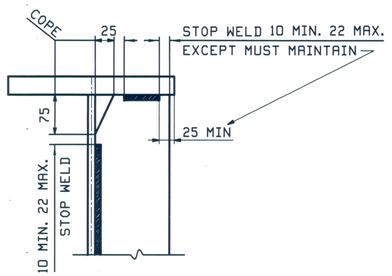


SKETCH "P1"

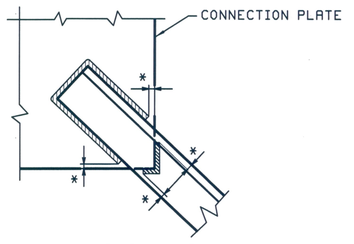
NOTE "P"
PAINT WITH A LIGHT RUST-PREVENTATIVE COAT OF PRIMER (SEE SECTION "P1")



TYPICAL SECTION "P1"



DETAIL "WS1"



* NO WELD 7 MIN, 14 MAX.

DETAIL "WS2"

TYP. CROSSFRAME WELD TERMINATION

Structures Copy

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OK'D BY MFC ORIG'D BY ASK
SEP 02 2010
RESUBMIT ____ APPROVED As Noted
BY CPW DATE 9/29/10

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					AUG 30 2010	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:

DESCRIPTION: GENERAL NOTES

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179
TENSOR 3012

STRUCTURE: VT RTE 107 over STONEY BROOK BRIDGE 9 STOCKBRIDGE, VT COUNTY of WINDSOR	DRAWN: TG	DATE: 08/06
	CHKD: SF	DATE: 08/23/10
LOCATION: STOCKBRIDGE, VT	JOB NO.	DWG NO.
PROJ NO. BRF 022-1(20)	461	GN1
CUSTOMER: AUSTIN CONSTRUCTION		REV. △

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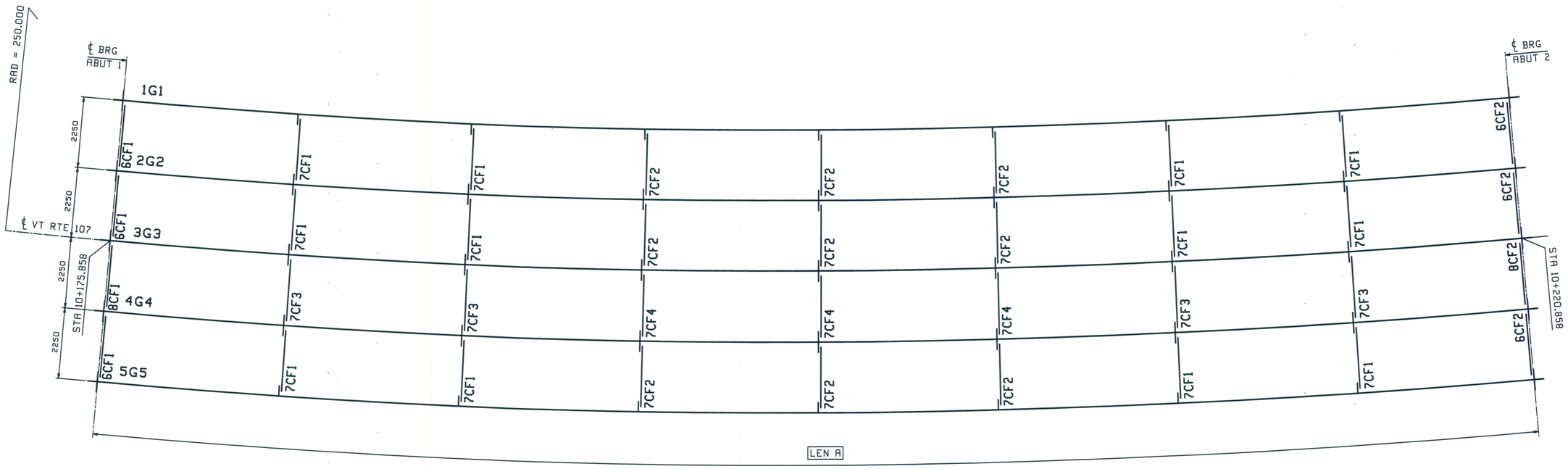

FRAMING PLAN

FIELD BOLT LIST							A325-1(GALV) BOLTS							VTE RTE 107
LINE	NO REQ'D.	BOLT DIAM.	BOLT LEN.	BOLTS /CONN.	# OF CONN.	GRIP	THICKNESS OF PCS. CONNECTED						WASH CODE	PIECES CONNECTED AND REMARKS
1														
2	160	7/8	3 1/4	20	8	44	14	30					1	ABUTMENT 1 CF TO STIFF
3														
WASHER CODES														
1: 1 Hard Flat Washer														

FIELD BOLT LIST							A325 Type 3 BOLTS							VTE RTE 107
LINE	NO REQ'D.	BOLT DIAM.	BOLT LEN.	BOLTS /CONN.	# OF CONN.	GRIP	THICKNESS OF PCS. CONNECTED						WASH CODE	PIECES CONNECTED AND REMARKS
4														
5	160	7/8	3 1/4	20	8	44	14	30					1	ABUTMENT 2 CF TO STIFF
6														
7	1120	7/8	2 3/4	20	56	34	14	20					1	INTERMEDIATE CF TO STIFF
8														
WASHER CODES														
1: 1 Hard Flat Washer														

NOTES:
1. ALL BOLT DIAMETERS AND LENGTHS ARE SHOWN IN INCHES.
2. ALL GRIP VALUES ARE SHOWN IN METRIC UNITS.

Line	LEN A
1	44 218
2	44 621
3	45 024
4	45 424
5	45 825

FIELD BOLT SUMMARY			EXACT COUNT - NONE EXTRA		VTE RTE 107
LINE	NO. OF BOLTS	BOLT DIAM.	TYPE	BOLT LEN	ACTUAL COUNT	REMARKS
1	1120	7/8	A325 Type 3	2 3/4	1120	
2	160	7/8		3 1/4	160	
3						
4	1280 Hard Flat Washers for 7/8 ø BOLT					F436-3
5						
6						
7	160	7/8	A325-1(GALV)	3 1/4	160	
8						
9	160 Hard Flat Washers for 7/8 ø BOLT					F436 (GALV)
10						
11						
12						

RECEIVED
CK'D BY HIS DWN BY RSY
SEP 02 2010
RESUBMIT ____ APPROVED ✓
BY OPW DATE 9/29/10

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					AUG 30 2010	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:

DESCRIPTION: FRAMING PLAN

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179
TENSOR 3012

STRUCTURE:	DRAWN:	DATE:
VT RTE 107 over STONEY BROOK BRIDGE 9 STOCKBRIDGE, VT COUNTY of WINDSOR	TG	08/04
	CHKD: SF	DATE: 08/23/10
LOCATION: STOCKBRIDGE, VT	JOB NO.	DWG NO.
PROJ NO. BRF 022-1(20)	461	E1
CUSTOMER: AUSTIN CONSTRUCTION		REV. △

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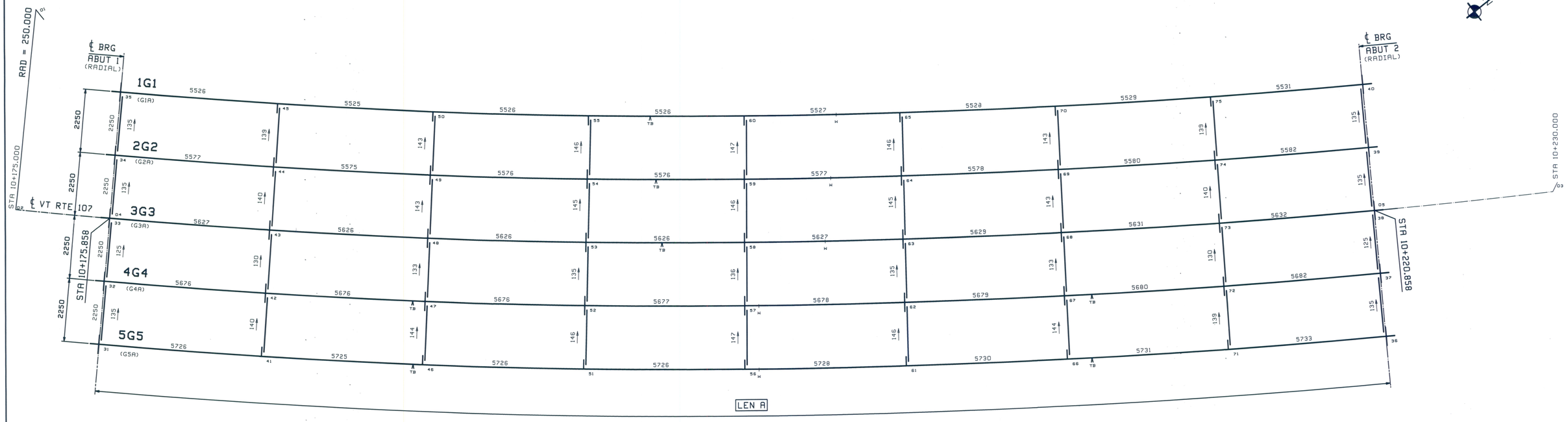


CALCULATION PLAN

NOTES
1. LONGITUDINAL DIMENSIONS ARE SLOPING ALONG BOTT OF WEB WITH CORRECTIONS MADE FOR RESIDUAL CAMBER, GRADE & DL CAMBER (UN).
2. TRANSVERSE DIMENSIONS ARE IN A HORIZ. PLANE (UN).
3. DROP ARROW POINTS TOWARDS LOW END OF MEMBER.
4. ENDS OF GIRDERS AND BRG. STIFF'S ARE VERTICAL AFTER DL ROTATION.
5. CF STIFF ARE NORMAL TO GRADE.
6. BOTT PT NUMBERS =TOP PT NUMBERS + 100.
7. FOR LAYOUTS SEE "TD" SHEETS.
8. COMBINE INT. CROSSFRAMES FOR DIFF IN DROPS OF +/- 3mm
9. CROSSFRAME DROPS ARE CALCULATED IN THE 70% CAMBERED SHAPE OF THE BRIDGE.

Line	LEN A	GRADE ABUT 1	GRADE ABUT 2
1	44 218	-.0389	-.0477
2	44 621	-.0385	-.0473
3	45 024	-.0382	-.0468
4	45 424	-.0378	-.0464
5	45 825	-.0375	-.0460

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

RECEIVED
CK'D BY HJC DWG BY RSY
SEP 02 2010
RESUBMIT ____ APPROVED ✓
BY OPW DATE 9/29/10

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					AUG 30 2010	

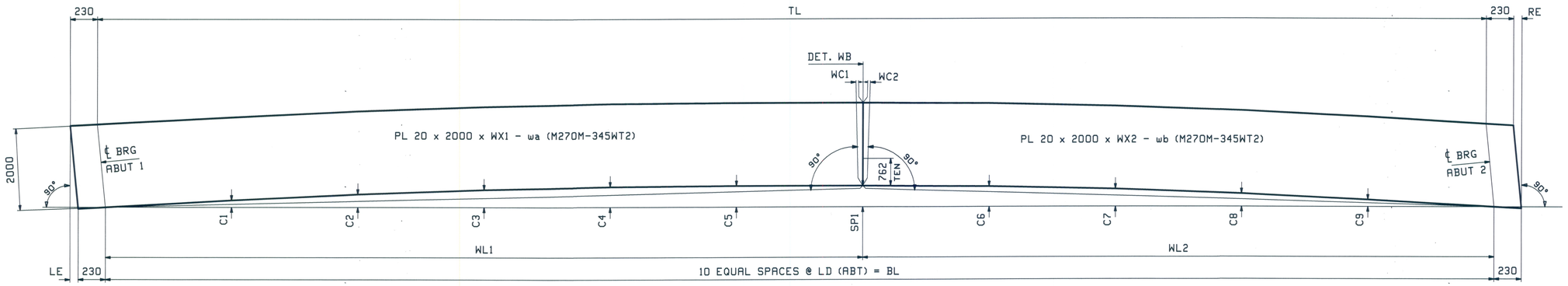
MATERIAL: | SURFACE PREP. & PAINT: | HOLES: | SHOP BOLTS:

DESCRIPTION: CALCUATION PLAN

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179
TENSOR 3D12

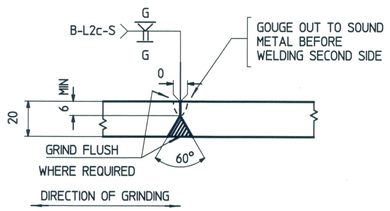
STRUCTURE: VT RTE 107 over STONEY BROOK BRIDGE 9 STOCKBRIDGE, VT COUNTY of WINDSOR	DRAWN: TG	DATE: 08/04
	CHK'D: SF	DATE: 08/23/10
LOCATION: STOCKBRIDGE, VT	JOB NO. 461	DWG NO. WS1
PROJ NO. BRF 022-1(20)		REV. △
CUSTOMER: AUSTIN CONSTRUCTION		

Wed, Aug 25, 2010 08:39:48 AM /users/jobs/2012/461 Rev0 SDB



CAMBER DIAGRAM FOR 1G1 THRU 5G5

MARK	TL	BL	LE	RE	WL1	WL2	WX1	WX2	SP1	WC1	WC2	LD	C1	C2	C3	C4	C5	C6	C7	C8	C9	PG/LINE	PG/LINE
1G1	44 245	44 218	100	73	25 374	18 844	25 704	19 089	137	11	15	4422	47	87	117	136	142	136	117	87	47	2/ C	2/ N
2G2	44 652	44 621	101	70	25 374	19 247	25 705	19 494	154	12	16	4462	52	97	131	152	159	152	131	97	52	2/ A	2/ L
3G3	45 060	45 024	103	67	25 374	19 650	25 708	19 898	170	13	17	4502	58	107	144	167	175	167	144	107	58	2/ A	2/ J
4G4	45 466	45 424	105	63	25 374	20 050	25 710	20 299	186	15	19	4542	64	117	157	182	191	182	157	117	64	2/ A	2/ G
5G5	45 872	45 825	107	60	25 374	20 451	25 712	20 702	203	16	20	4583	69	127	171	198	208	198	171	127	69	2/ A	2/ E



WEB PLATE SPLICE DETAIL "WB"

RECEIVED
CK'D BY HZF ORIG BY RSY
SEP 02 2010
RESUBMIT ____ APPROVED ✓
BY OPW DATE 9/29/10

FOR GENERAL NOTES SEE SHEET GN1

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					AUG 30 2010	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270M-345WT2	SEE SHT GN1		

DESCRIPTION: CAMBER DIAGRAMS

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

TENSOR 3012

STRUCTURE: VT RTE 107 over STONEY BROOK BRIDGE 9 STOCKBRIDGE, VT COUNTY of WINDSOR		DRAWN: TG	DATE: 08/04
		CHK'D: SF	DATE: 08/23/10
LOCATION: STOCKBRIDGE, VT		JOB NO.	DWG NO.
PROJ NO. BRF 022-1(20)		461	C1
CUSTOMER: AUSTIN CONSTRUCTION			REV. △

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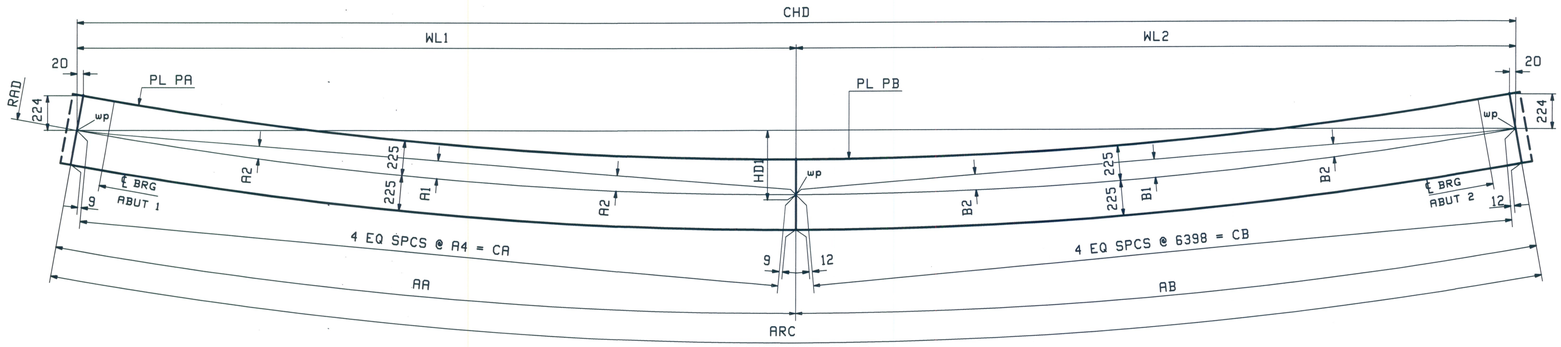
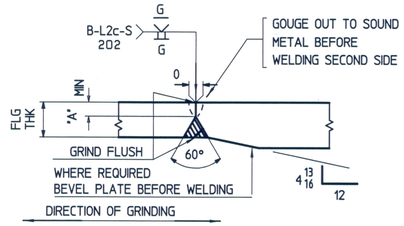


SECTION A-A

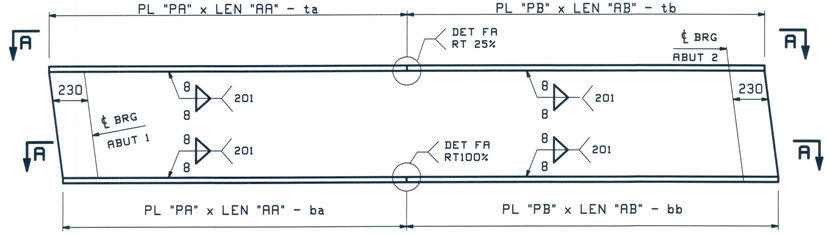
LOCATION	RAD	ARC	CHD	AA	AB	A1	A2	A4	CA	B1	B2	CB	WL1	WL2	HD1
1G1 TOP FLG	245 500	44 705	44 644	19 101	25 604	185	139	4774	19 096	333	250	25 593	19 070	25 574	993
1G1 BTM FLG	245 500	44 678	44 617	19 075	25 603	185	139	4768	19 070	333	250	25 591	19 045	25 572	992
2G2 TOP FLG	247 750	45 112	45 050	19 508	25 604	192	144	4876	19 503	330	247	25 593	19 477	25 573	1005
2G2 BTM FLG	247 750	45 081	45 019	19 478	25 603	191	143	4868	19 473	330	247	25 592	19 447	25 572	1004
3G3 TOP FLG	250 000	45 520	45 457	19 915	25 605	198	148	4977	19 910	327	245	25 594	19 884	25 573	1017
3G3 BTM FLG	250 000	45 484	45 421	19 880	25 604	197	148	4969	19 875	327	245	25 593	19 849	25 572	1015

FLG THK	'A'
30	10



FLANGE PLATE SPLICE DETAIL 'FA'

LOCATION	PL PA (M270M-345WT2)	PL PB (M270M-345WT2)
1G1 TOP FLG	PL 30 x 450-ta (1/Q)	PL 30 x 450-tb (1/J)
1G1 BTM FLG	PL 30 x 450-ba (1/Q)	PL 30 x 450-bb (1/J)
2G2 TOP FLG	PL 30 x 450-ta (1/N)	PL 30 x 450-tb (1/J)
2G2 BTM FLG	PL 30 x 450-ba (1/N)	PL 30 x 450-bb (1/J)
3G3 TOP FLG	PL 30 x 450-ta (1/L)	PL 30 x 450-tb (1/J)
3G3 BTM FLG	PL 30 x 450-ba (1/L)	PL 30 x 450-bb (1/J)



FLANGE DIAGRAM FOR 1G1 THRU 3G3

RECEIVED
CK'D BY HJC DRN BY RSY
SEP 02 2010
RESUBMIT ____ APPROVED ✓
BY CPW DATE 9/29/10

FOR GENERAL NOTES SEE SHEET GN1

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					AUG 30 2010	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270M-345WT2	SEE SHT GN1		

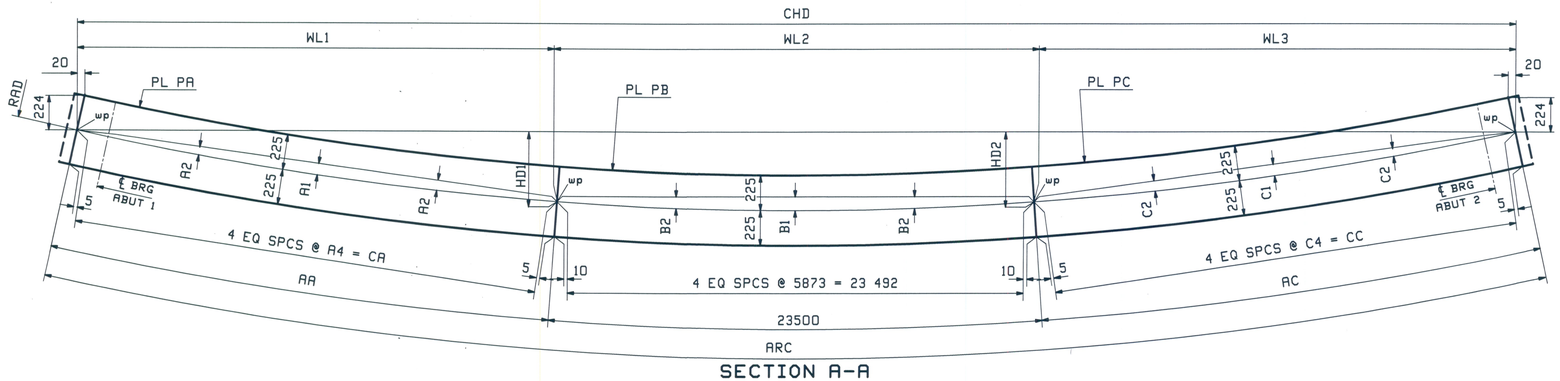
DESCRIPTION: 1G1 - 3G3 FLANGE DIAGRAMS

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

TENSOR 3012

STRUCTURE: VT RTE 107 over STONEY BROOK BRIDGE 9 STOCKBRIDGE, VT COUNTY of WINDSOR	DRAWN: TG	DATE: 08/06
	CHK'D: SF	DATE: 08/23/10
LOCATION: STOCKBRIDGE, VT	JOB NO. 461	DWG NO. F1
PROJ NO. BRF 022-1(20)		
CUSTOMER: AUSTIN CONSTRUCTION		REV. △

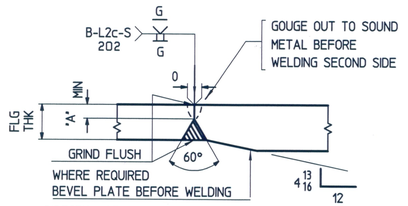
Wed, Aug 25, 2010 08:59:52 AM J:\revit\jobs\2012\21 | Rev0



SECTION A-A

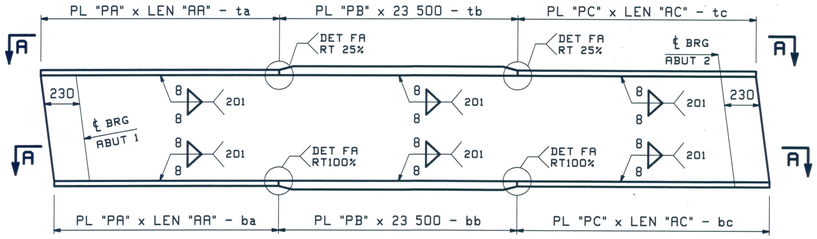
LOCATION	RAD	ARC	CHD	AA	AC	A1	A2	A4	CA	B1	B2	C1	C2	C4	CC	WL1	WL2	WL3	HD1	HD2
4G4 TOP FLG	252 250	45 926	45 863	11 243	11 183	63	47	2811	11 243	273	205	62	46	2795	11 182	11 217	23 491	11 155	771	768
4G4 BTM FLG	252 250	45 884	45 821	11 203	11 181	62	47	2801	11 202	273	205	62	46	2795	11 180	11 175	23 492	11 154	768	767
5G5 TOP FLG	254 500	46 332	46 268	11 448	11 384	64	48	2862	11 447	271	203	64	48	2846	11 383	11 420	23 492	11 356	783	780
5G5 BTM FLG	254 500	46 285	46 221	11 404	11 381	64	48	2851	11 403	271	203	63	48	2845	11 380	11 376	23 492	11 353	779	778

FLG THK	"A"
30	10
40	12

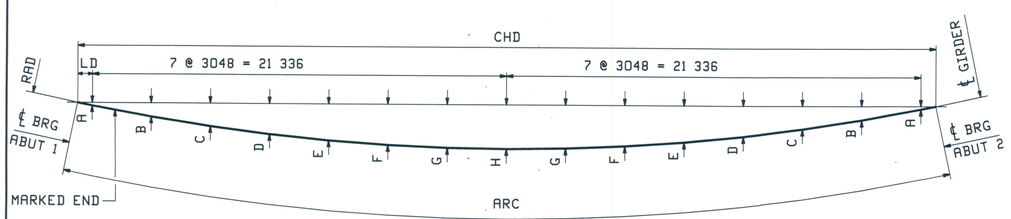


FLANGE PLATE SPLICE DETAIL "FA"

LOCATION	PL PA (M270M-345WT2)	PL PB (M270M-345WT2)	PL PC (M270M-345WT2)
4G4 TOP FLG	PL 30 x 450-ta (1/W)	PL 40 x 450-tb (1/C)	PL 30 x 450-tc (1/Y)
4G4 BTM FLG	PL 40 x 450-ba (1/G)	PL 60 x 450-bb (1/A)	PL 40 x 450-bc (1/G)
5G5 TOP FLG	PL 30 x 450-ta (1/S)	PL 40 x 450-tb (1/C)	PL 30 x 450-tc (1/U)
5G5 BTM FLG	PL 40 x 450-ba (1/E)	PL 60 x 450-bb (1/A)	PL 40 x 450-bc (1/E)



FLANGE DIAGRAM FOR 4G4 & 5G5



MARK	ARC	CHD	RAD	LD	A	B	C	D	E	F	G	H
1G1	44 218	44 158	245 500	743	68	313	521	691	824	918	975	994
2G2	44 621	44 561	247 750	944	86	328	534	703	834	928	984	1003
3G3	45 024	44 963	250 000	1146	103	343	548	715	845	938	993	1012
4G4	45 424	45 363	252 250	1345	120	358	561	727	855	947	1003	1021
5G5	45 825	45 763	254 500	1546	137	373	574	738	866	957	1012	1030

HEAT CURVE DIAGRAM FOR 1G1 THRU 5G5

RECEIVED
OKDBY HIS DMBY RSY
SEP 02 2010
RESUBMIT APPROVED
BY CPW DATE 9/29/10

FOR GENERAL NOTES SEE SHEET GN1

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
D	AUG 30 2010					

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270M-345WT2	SEE SHT GN1		

DESCRIPTION: 4G4 & 5G5 FLANGE DIAGRAMS

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

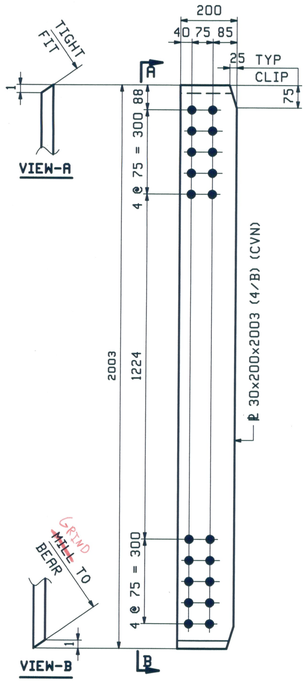
TENSOR 3012

STRUCTURE: VT RTE 107 over STONEY BROOK
BRIDGE 9
STOCKBRIDGE, VT
COUNTY of WINDSOR

DRAWN:	DATE:
TG	08/05
CHKD:	DATE:
SF	08/23/10

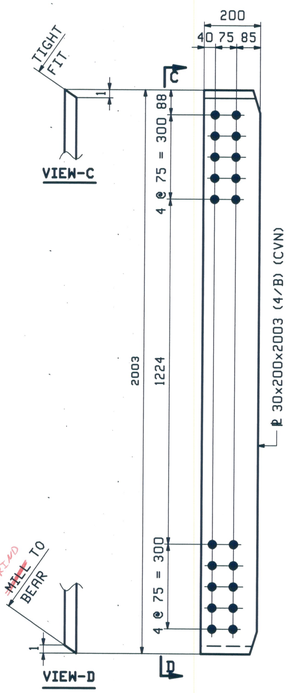
LOCATION:	STOCKBRIDGE, VT	JOB NO.	DWG NO.
PROJ NO.	BRF 022-1(20)	461	F2
CUSTOMER:	AUSTIN CONSTRUCTION		REV. △

Wed, Aug 25, 2010 09:59:59 AM J:\data\jobs\2010\F2 | Rev0



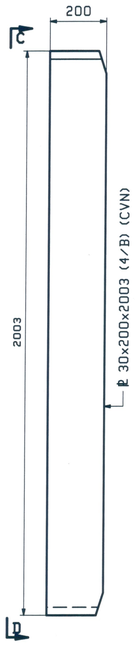
8 ~ BRG/CONN. STIFF ~ x1a

(FS @ ABUT 1 & ABUT 2)



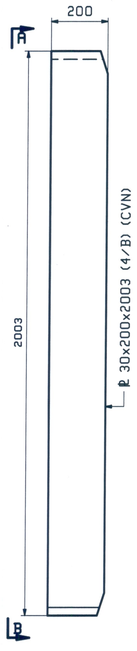
8 ~ BRG/CONN. STIFF ~ x1b

(NS @ ABUT 1 & ABUT 2)



2 ~ BRG STIFF ~ x1c

(NS @ ABUT 1 & ABUT 2)

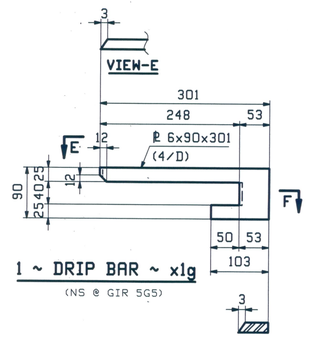


2 ~ BRG STIFF ~ x1d

(FS @ ABUT 1 & ABUT 2)

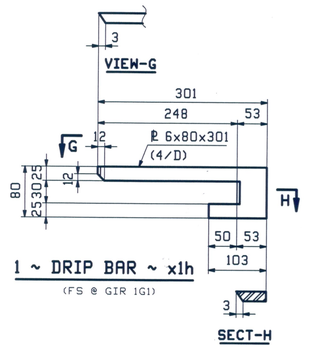
56 ~ CONN. STIFF ~ x1f

(INTERMEDIATE CROSSFRAME)



1 ~ DRIP BAR ~ x1g

(NS @ GIR 5G5)



1 ~ DRIP BAR ~ x1h

(FS @ GIR 1G1)

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RESUBMIT ____ APPROVED As Noted
BY CPW DATE 9/29/10

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					AUG 30 2010	

MATERIAL: (U.N.)	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270M-345W	SEE SHT GN1	24mm	

DESCRIPTION: GIRDER STANDARDS

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

TENSOR 3012

STRUCTURE: VT RTE 107 over STONEY BROOK BRIDGE 9 STOCKBRIDGE, VT COUNTY of WINDSOR		DRAWN: TG	DATE: 08/09
		CHK'D: SF	DATE: 08/23/10
LOCATION: STOCKBRIDGE, VT		JOB NO.	DWG NO.
PROJ NO. BRF 022-1(20)		461	X1
CUSTOMER: AUSTIN CONSTRUCTION			REV. △

508 Wed, Aug 25, 2010 08:55:55 AM /user/jobs/2010/21.1 Rev0

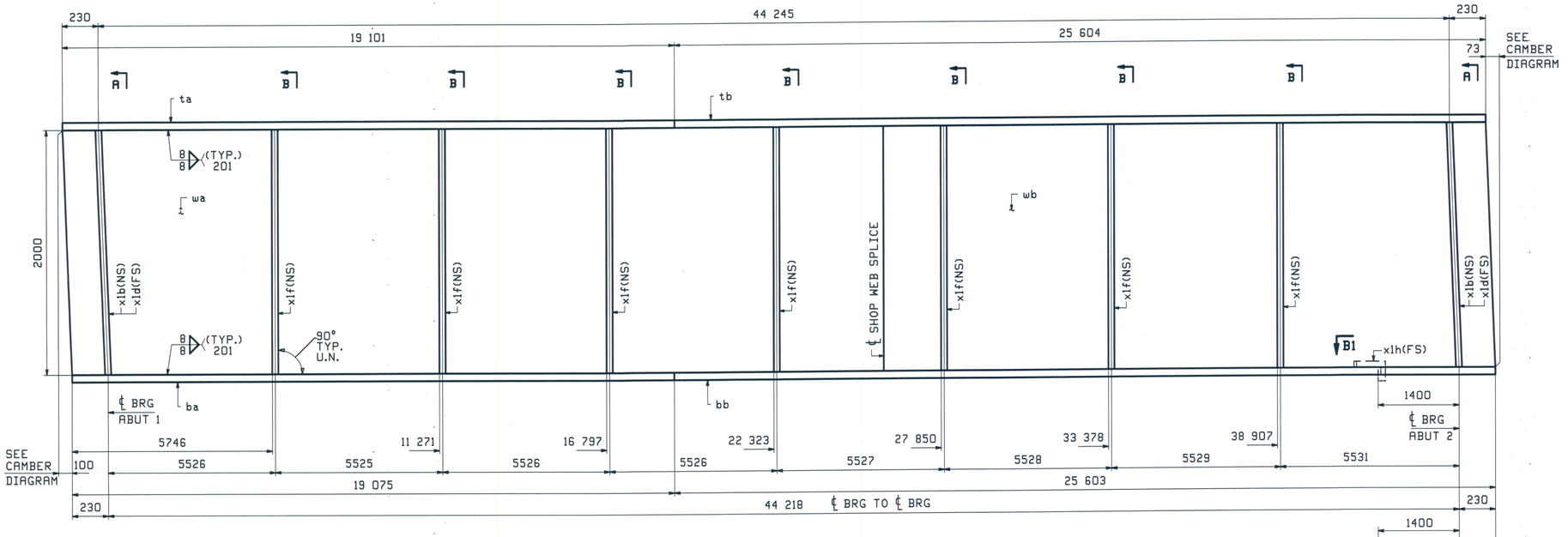
ABM INFO PAGE	ABM INFO LINE	SHIP MARK	QTY	MARK	MATERIAL	LENGTH m	LENGTH mm	REMARKS	WT	PROCUREMENT NOTES
-		1G1	1		GIRDER				24355 kg 53693 lbs	
2	C		1	wa	PL 20x2000	25	704	M270M-345WT2		
2	N		1	wb	PL 20x2000	19	089	M270M-345WT2		
1	Q		1	ta	PL 30x450	19	101	M270M-345WT2		
1	J		1	tb	PL 30x450	25	604	M270M-345WT2		
1	Q		1	ba	PL 30x450	19	075	M270M-345WT2		
1	J		1	bb	PL 30x450	25	603	M270M-345WT2		
4	B		2	x1b	PL 30x200	2	003	M270M-345WT2		
4	B		2	x1d	PL 30x200	2	003	M270M-345WT2		
4	C		7	x1f	PL 20x200	2	000	M270M-345WT2		
4	D		1	x1h	PL 6x80	0	301			

BILL OF MATERIAL

JOB NO. 461

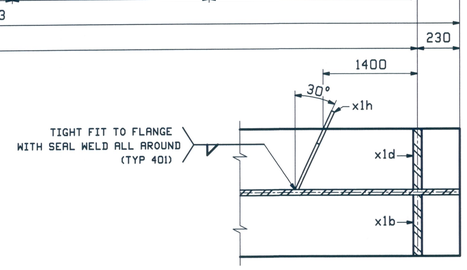
DRAWING NO. 1

REV.



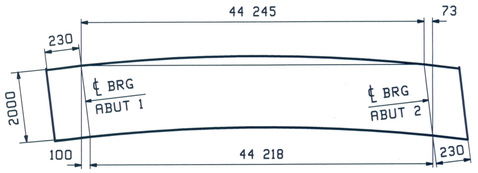
ONE - GIRDER - 1G1 (DEV)

SEE DRAWING GN1 FOR GENERAL NOTES
SEE DRAWING F1 FOR FLANGE DIAGRAM
SEE DRAWING C1 FOR CAMBER DIAGRAM
SEE X1 DRAWING FOR GIRDER STANDARDS

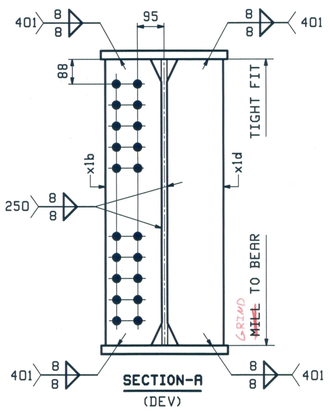


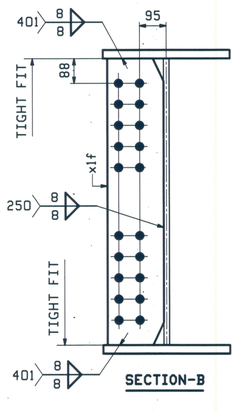
SECTION-B1

PLAN VIEW



DEV. ORIENTATION DIAGRAM





REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0	AUG 30 2010					

MATERIAL: (U.N.)	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270M-345W	SEE SHT GN1	24 mm	

DESCRIPTION: GIRDER 1G1

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

TENSOR 3012

STRUCTURE: VT RTE 107 over STONEY BROOK BRIDGE 9 STOCKBRIDGE, VT COUNTY of WINDSOR	DRAWN: TG	DATE: 08/09
	CHKD: SF	DATE: 08/23/10
LOCATION: STOCKBRIDGE, VT	JOB NO. 461	DWG NO. 1
PROJ NO. BRF 022-1(20)		REV. △
CUSTOMER: AUSTIN CONSTRUCTION		

RECEIVED
CK'D BY HEL COPIES RSY
SEP 02 2010
RESUBMIT ____ APPROVED As Noted
BY CPW DATE 9/29/10

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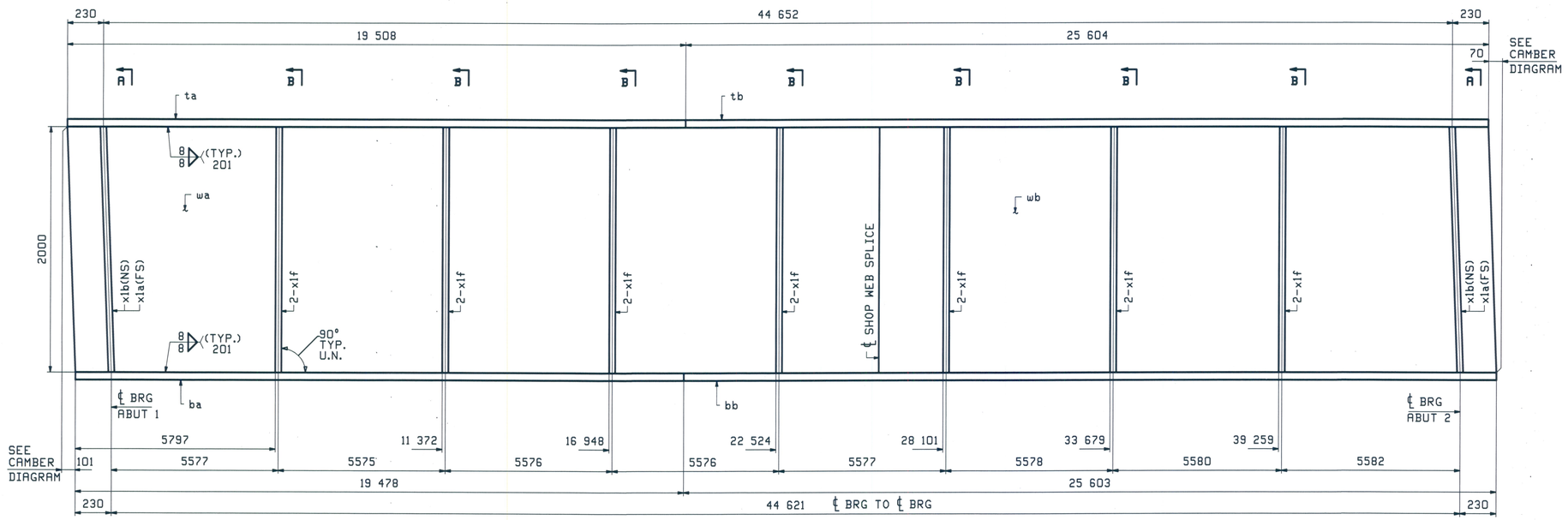
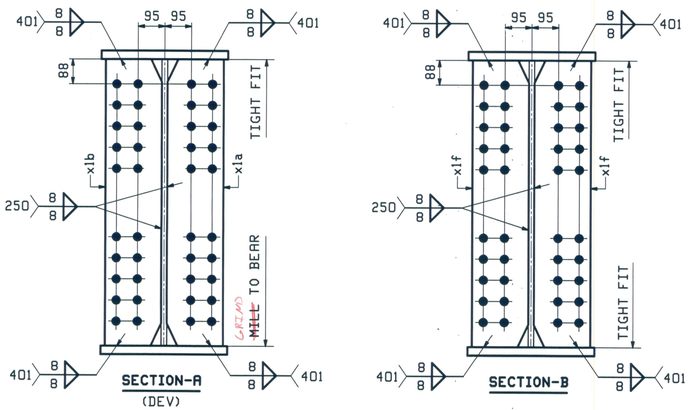
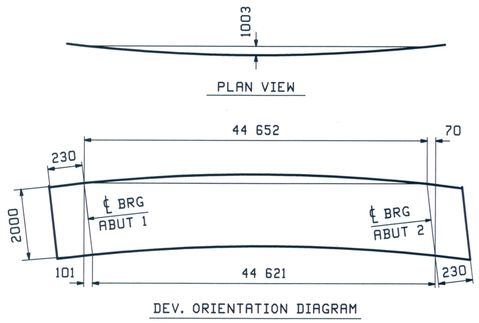


ONE - GIRDER - 2G2 (DEV)

SEE DRAWING GN1 FOR GENERAL NOTES
SEE DRAWING F1 FOR FLANGE DIAGRAM
SEE DRAWING C1 FOR CAMBER DIAGRAM
SEE X1 DRAWING FOR GIRDER STANDARDS

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								461	2	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH m	LENGTH mm	REMARKS	WT	PROCUREMENT NOTES
		2G2	1		GIRDER				25007 kg 55130 lbs	
2	A		1	wa	PL 20x2000	25	705	M270M-345WT2		
2	L		1	wb	PL 20x2000	19	494	M270M-345WT2		
1	N		1	ta	PL 30x450	19	508	M270M-345WT2		
1	J		1	tb	PL 30x450	25	604	M270M-345WT2		
1	N		1	ba	PL 30x450	19	478	M270M-345WT2		
1	J		1	bb	PL 30x450	25	603	M270M-345WT2		
4	B		2	x1a	PL 30x200	2	003	M270M-345WT2		
4	B		2	x1b	PL 30x200	2	003	M270M-345WT2		
4	C		14	x1f	PL 20x200	2	000	M270M-345WT2		





DEV. ORIENTATION DIAGRAM

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0	AUG 30 2010					

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270M-345WT2	SEE SHT GN1	24 mm	

DESCRIPTION: GIRDER 2G2

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

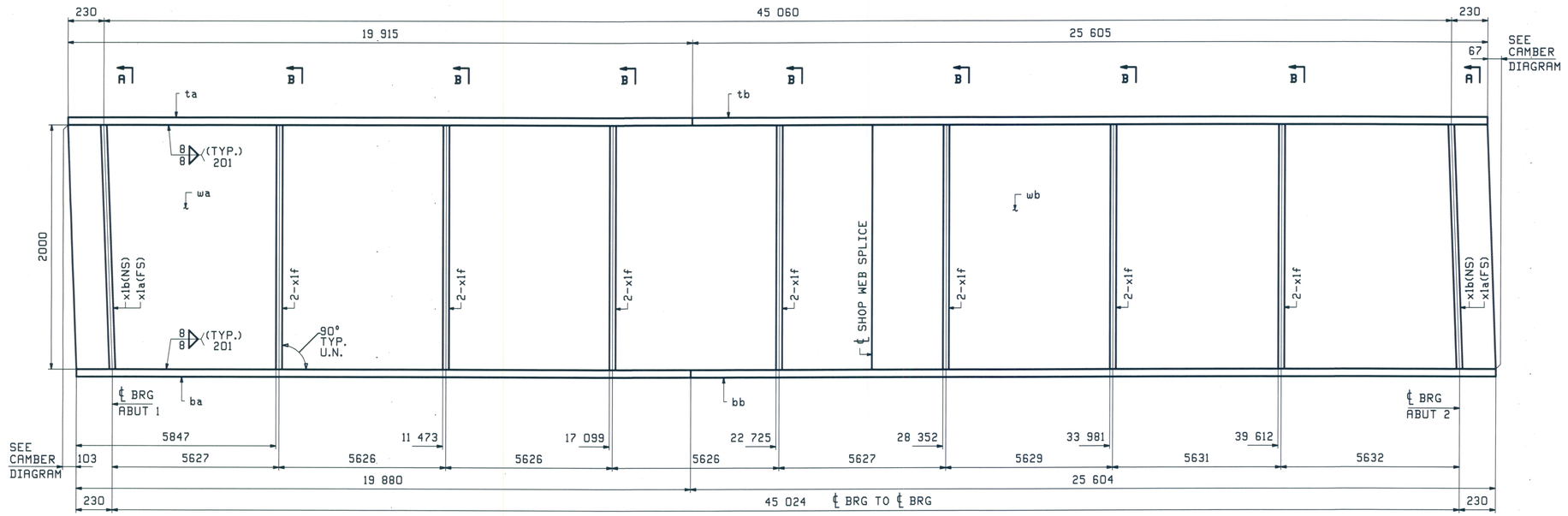
TENSOR 2012

STRUCTURE:	DRAWN:	DATE:
VT RTE 107 over STONEY BROOK BRIDGE 9 STOCKBRIDGE, VT COUNTY of WINDSOR	TG	08/10
	CHKD: SF	DATE: 08/23/10
LOCATION: STOCKBRIDGE, VT	JOB NO.	DWG NO.
PROJ NO. BRF 022-1(20)	461	2
CUSTOMER: AUSTIN CONSTRUCTION		REV. △

RECEIVED
CK'D'BY HJC ORIG'BY RSY
SEP 02 2010
RESUBMIT ____ APPROVED As Noted
BY CPW DATE 9/29/10

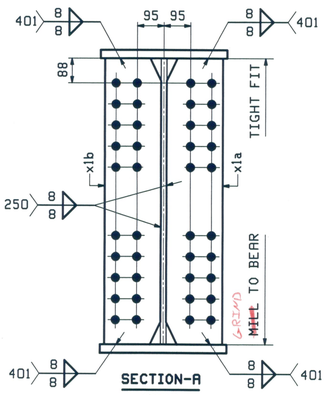
SDB Wed, Aug 25, 2010 08:39:37 AM /users/jobs/3032/2.1 Rev:0

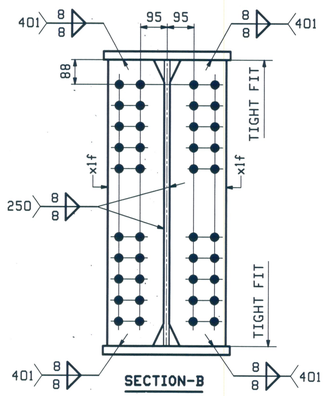
ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								461	3	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH m	LENGTH mm	REMARKS	WT	PROCUREMENT NOTES
		3G3	1		GIRDER				25221 kg 55602 lbs	
2	A		1	wa	PL 20x2000	25	708	M270M-345WT2		
2	J		1	wb	PL 20x2000	19	898	M270M-345WT2		
1	L		1	ta	PL 30x450	19	915	M270M-345WT2		
1	J		1	tb	PL 30x450	25	605	M270M-345WT2		
1	L		1	ba	PL 30x450	19	880	M270M-345WT2		
1	J		1	bb	PL 30x450	25	604	M270M-345WT2		
4	B		2	x1a	PL 30x200	2	003	M270M-345WT2		
4	B		2	x1b	PL 30x200	2	003	M270M-345WT2		
4	C		14	x1f	PL 20x200	2	000	M270M-345WT2		



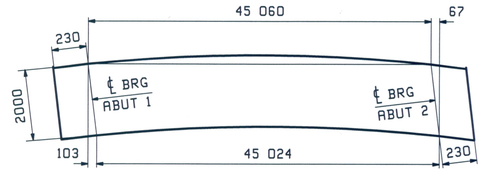
ONE - GIRDER - 3G3 (DEV)

SEE DRAWING GN1 FOR GENERAL NOTES
SEE DRAWING F1 FOR FLANGE DIAGRAM
SEE DRAWING C1 FOR CAMBER DIAGRAM
SEE X1 DRAWING FOR GIRDER STANDARDS





PLAN VIEW



DEV. ORIENTATION DIAGRAM

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					AUG 30 2010	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270M-345WT2	SEE SHT GN1	24mm	

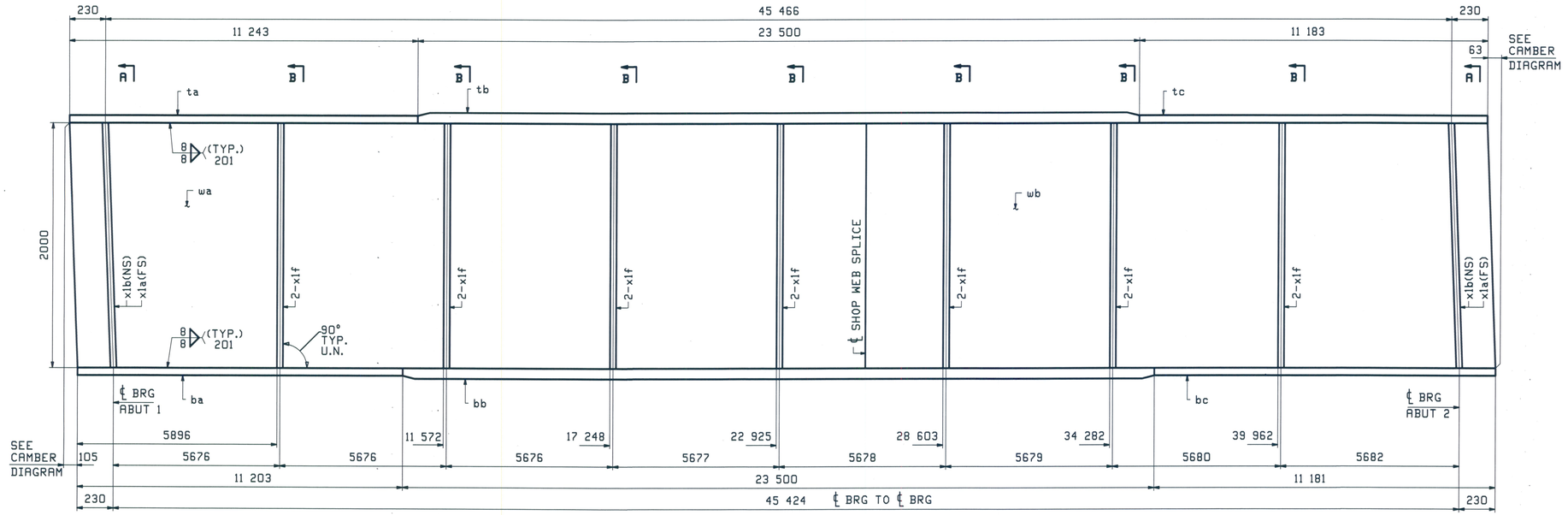
DESCRIPTION: GIRDER 3G3

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179
TENSOR 3012

STRUCTURE:	DRAWN:	DATE:
VT RTE 107 over STONEY BROOK BRIDGE 9 STOCKBRIDGE, VT COUNTY of WINDSOR	TG	08/10
	CHKD: SF	DATE: 08/23/10
LOCATION: STOCKBRIDGE, VT	JOB NO. 461	DWG NO. 3
PROJ NO. BRF 022-1(20)		
CUSTOMER: AUSTIN CONSTRUCTION		REV. △

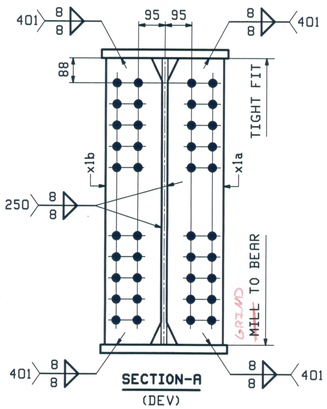
RECEIVED
CK'D BY HIC ORDER R54
SEP 02 2010
RESUBMIT ____ APPROVED As Noted
BY GPW DATE 9/2/10

Wed, Aug 25, 2010 08:59:59 AM /users/jobs/2012/3 - Rev0

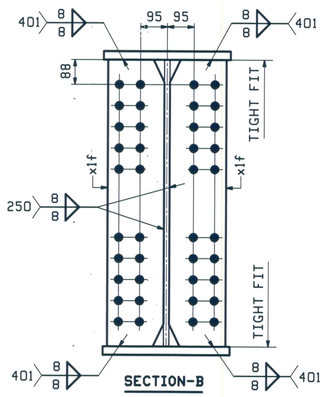


ONE - GIRDER - 4G4 (DEV)

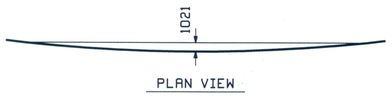
SEE DRAWING GN1 FOR GENERAL NOTES
SEE DRAWING F2 FOR FLANGE DIAGRAM
SEE DRAWING C1 FOR CAMBER DIAGRAM
SEE X1 DRAWING FOR GIRDER STANDARDS



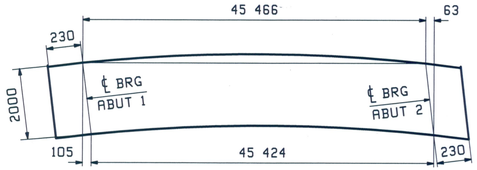
SECTION-A
(DEV)



SECTION-B



PLAN VIEW



DEV. ORIENTATION DIAGRAM

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								461	4	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH m	LENGTH mm	REMARKS	WT	PROCUREMENT NOTES
		4G4	1		GIRDER				29544 kg 65133 lbs	
2	A		1	wa	PL 20x2000	25	710	M270M-345WT2		
2	G		1	wb	PL 20x2000	20	299	M270M-345WT2		
1	W		1	ta	PL 30x450	11	243	M270M-345WT2		
1	C		1	tb	PL 40x450	23	500	M270M-345WT2		
1	Y		1	tc	PL 30x450	11	183	M270M-345WT2		
1	G		1	ba	PL 40x450	11	203	M270M-345WT2		
1	A		1	bb	PL 60x450	23	500	M270M-345WT2		
1	G		1	bc	PL 40x450	11	181	M270M-345WT2		
4	B		2	x1a	PL 30x200	2	003	M270M-345WT2		
4	B		2	x1b	PL 30x200	2	003	M270M-345WT2		
4	C		14	x1f	PL 20x200	2	000	M270M-345WT2		

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					AUG 30 2010	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270M-345WT2	SEE SHT GN1	24mm	

DESCRIPTION: GIRDER 4G4

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

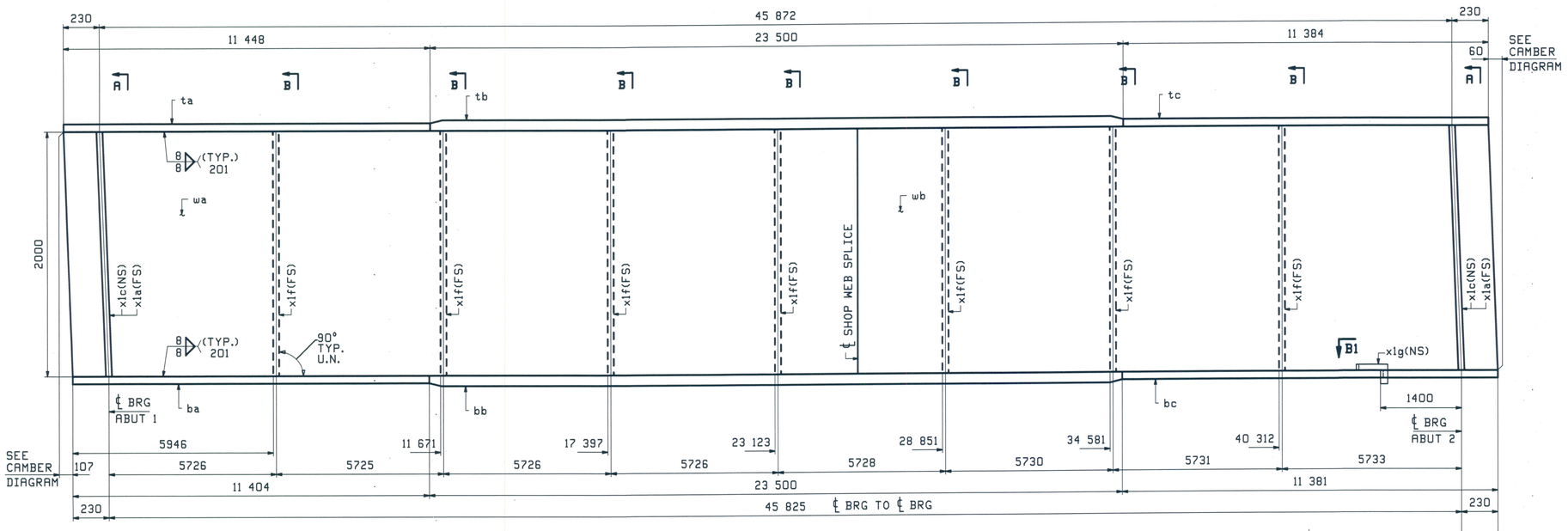
TENSOR 3012

STRUCTURE: VT RTE 107 over STONEY BROOK BRIDGE 9 STOCKBRIDGE, VT COUNTY of WINDSOR		DRAWN: TG	DATE: 08/10
		CHKD: SF	DATE: 08/23/10
LOCATION: STOCKBRIDGE, VT		JOB NO.	DWG NO.
PROJ NO.	BRF 022-1(20)	461	4
CUSTOMER:	AUSTIN CONSTRUCTION		REV. △

RECEIVED
CKBRK HJS CHRGY RSY
SEP 02 2010
RESUBMIT APPROVED As Noted
BY CPW DATE 9/29/10

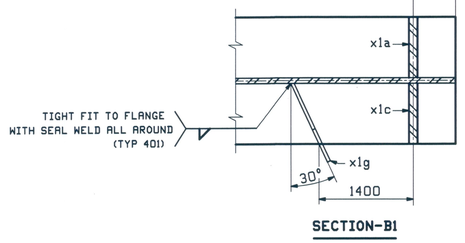
Wed, Aug 25, 2010 08:39:59 PM /users/jake/2012-1 Rev0

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								461	5	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH m	LENGTH mm	REMARKS	WT	PROCUREMENT NOTES
		SG5	1		GIRDER				29333 kg 64668 lbs	
2	A		1	wa	PL 20x2000	25	712	M270M-345WT2		
2	E		1	wb	PL 20x2000	20	702	M270M-345WT2		
1	S		1	ta	PL 30x450	11	448	M270M-345WT2		
1	C		1	tb	PL 40x450	23	500	M270M-345WT2		
1	U		1	tc	PL 30x450	11	384	M270M-345WT2		
1	E		1	ba	PL 40x450	11	404	M270M-345WT2		
1	A		1	bb	PL 60x450	23	500	M270M-345WT2		
1	E		1	bc	PL 40x450	11	381	M270M-345WT2		
4	B		2	x1a	PL 30x200	2	003	M270M-345WT2		
4	B		2	x1c	PL 30x200	2	003	M270M-345WT2		
4	C		7	x1f	PL 20x200	2	000	M270M-345WT2		
4	D		1	x1g	PL 6x90	0	301			

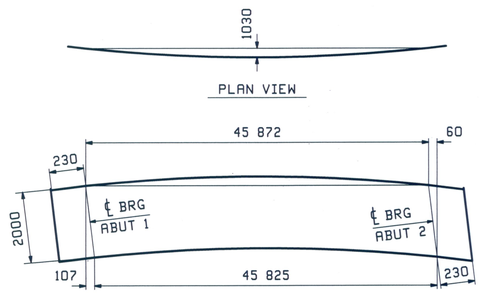


ONE - GIRDER - 5G5 (DEV)

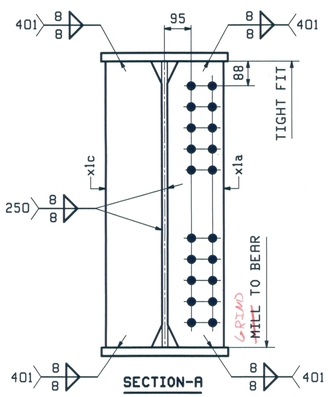
SEE DRAWING GN1 FOR GENERAL NOTES
SEE DRAWING F2 FOR FLANGE DIAGRAM
SEE DRAWING C1 FOR CAMBER DIAGRAM
SEE X1 DRAWING FOR GIRDER STANDARDS



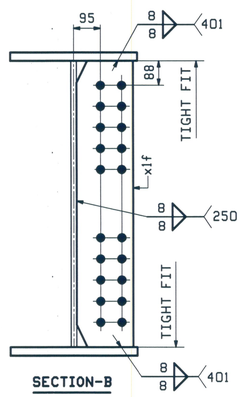
SECTION-B1



DEV. ORIENTATION DIAGRAM



SECTION-A
(DEV)



SECTION-B

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					AUG 30 2010	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270M-345W	SEE SHT GN1	24mm	

DESCRIPTION: GIRDER 5G5

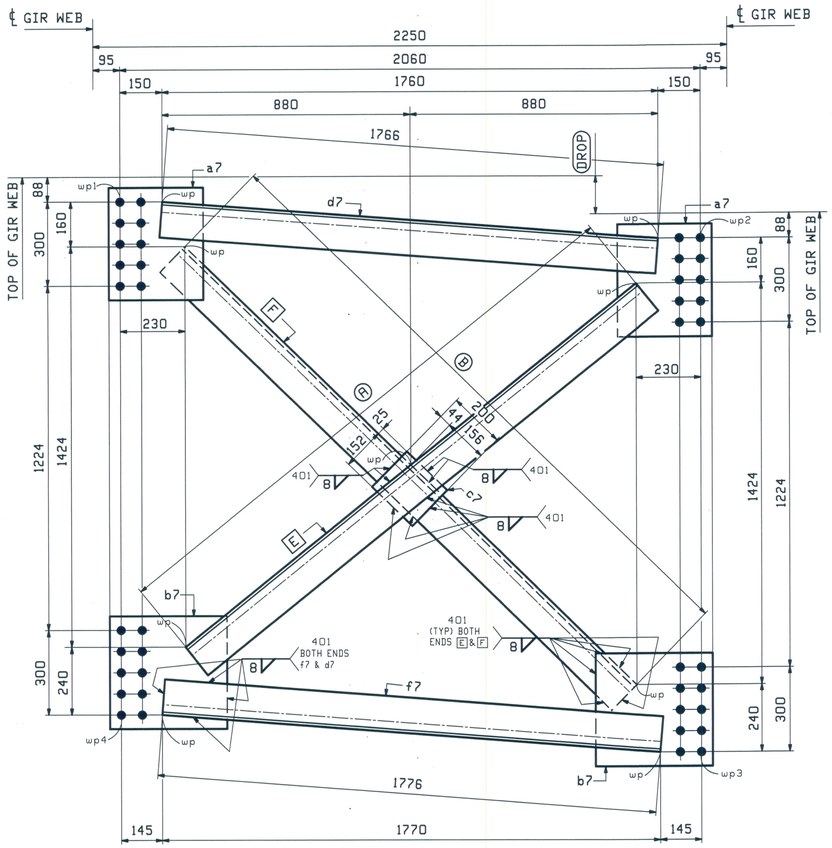
CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

TENSOR 3012

STRUCTURE:	DRAWN:	DATE:
VT RTE 107 over STONEY BROOK BRIDGE 9 STOCKBRIDGE, VT COUNTY of WINDSOR	TG	08/10
	CHKD: SF	DATE: 08/23/10
LOCATION: STOCKBRIDGE, VT	JOB NO. 461	DWG NO. 5
PROJ NO. BRF 022-1(20)		REV. △
CUSTOMER: AUSTIN CONSTRUCTION		

RECEIVED
CK'D BY HIF APPROV'D RSY
SEP 02 2010
RESUBMIT APPROVED As Noted
BY CPW DATE 9/29/10

308 Wed, Aug 25, 2010 09:50:01 PM //corsair/jobs/2010/23_1/dwg/5.dwg



QTY ~ INT CROSSFRAMES ~ MARK

MARK	QTY	DROP	A	B	C	D	E	F
7CF1	12	141	2051	2238	2660	2847	g7	k7
7CF2	9	146	2048	2242	2657	2850	h7	m7
7CF3	4	132	2057	2232	2666	2841	n7	p7
7CF4	3	136	2054	2235	2663	2843	s7	t7

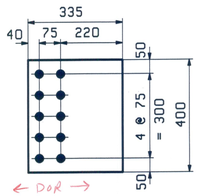


PLATE ~ a7

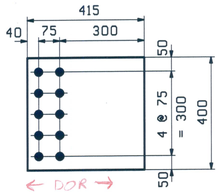


PLATE ~ b7

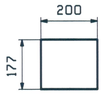
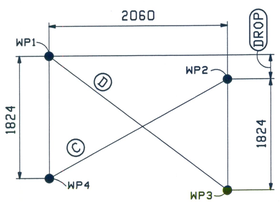


PLATE ~ c7



CHECK DIMENSIONS

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH m	LENGTH mm	REMARKS	WT	PROCUREMENT NOTES
		7CF1	12		INT CROSSFRAMES				259 kg 570 lbs	
4	M		24	a7	PL 14x400	0	335	M270M-345WT2		
4	P		24	b7	PL 14x400	0	415	M270M-345WT2		
4	R		12	c7	PL 14x177	0	200	M270M-345WT2		
4	H		12	d7	L 127x127x12.5	1	766	M270M-345WT2		
4	H		12	f7	L 127x127x12.5	1	776	M270M-345WT2		
4	J		12	g7	L 127x127x12.5	2	051	M270M-345WT2		
4	K		12	k7	L 127x127x12.5	2	238	M270M-345WT2		
		7CF2	9		INT CROSSFRAMES				259 kg 570 lbs	
4	M		18	a7	PL 14x400	0	335	M270M-345WT2		
4	P		18	b7	PL 14x400	0	415	M270M-345WT2		
4	R		9	c7	PL 14x177	0	200	M270M-345WT2		
4	H		9	d7	L 127x127x12.5	1	766	M270M-345WT2		
4	H		9	f7	L 127x127x12.5	1	776	M270M-345WT2		
4	J		9	h7	L 127x127x12.5	2	048	M270M-345WT2		
4	K		9	m7	L 127x127x12.5	2	242	M270M-345WT2		
		7CF3	4		INT CROSSFRAMES				259 kg 570 lbs	
4	M		8	a7	PL 14x400	0	335	M270M-345WT2		
4	P		8	b7	PL 14x400	0	415	M270M-345WT2		
4	R		4	c7	PL 14x177	0	200	M270M-345WT2		
4	H		4	d7	L 127x127x12.5	1	766	M270M-345WT2		
4	H		4	f7	L 127x127x12.5	1	776	M270M-345WT2		
4	J		4	n7	L 127x127x12.5	2	057	M270M-345WT2		
4	K		4	p7	L 127x127x12.5	2	232	M270M-345WT2		
		7CF4	3		INT CROSSFRAMES				259 kg 570 lbs	
4	M		6	a7	PL 14x400	0	335	M270M-345WT2		
4	P		6	b7	PL 14x400	0	415	M270M-345WT2		
4	R		3	c7	PL 14x177	0	200	M270M-345WT2		
4	H		3	d7	L 127x127x12.5	1	766	M270M-345WT2		
4	H		3	f7	L 127x127x12.5	1	776	M270M-345WT2		
4	J		3	s7	L 127x127x12.5	2	054	M270M-345WT2		
4	K		3	t7	L 127x127x12.5	2	235	M270M-345WT2		

RECEIVED
CK'D BY HJS ORIG BY RSS
SEP 02 2010
RESUBMIT APPROVED As Noted
BY CPW DATE 9/29/10

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					AUG 30 2010	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270M-345WT2	SEE SHT GN1	24mm	

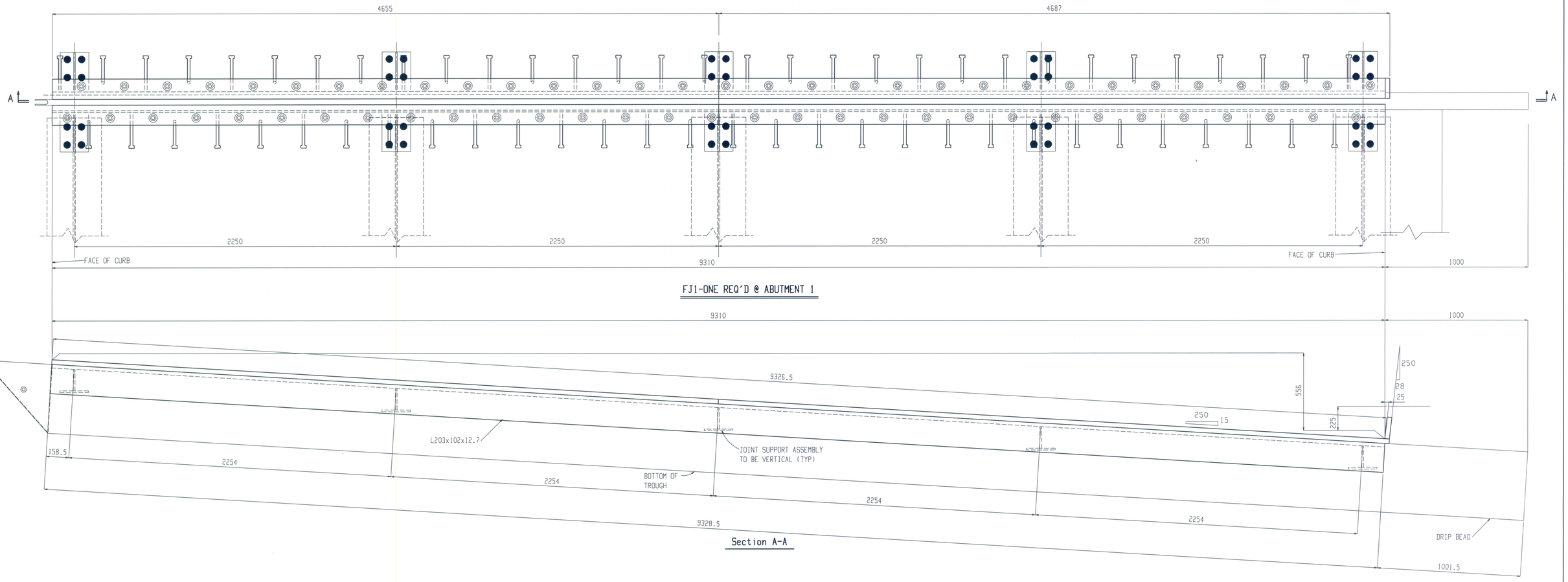
DESCRIPTION: INTERIOR CROSSFRAMES

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

TENSOR 3012

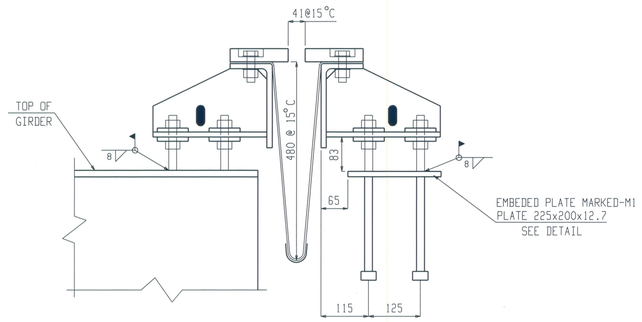
STRUCTURE:	VT RTE 107 over STONEY BROOK BRIDGE 9 STOCKBRIDGE, VT COUNTY of WINDSOR	DRAWN: TG	DATE: 08/10
		CHK'D: SF	DATE: 08/23/10
LOCATION:	STOCKBRIDGE, VT	JOB NO. 461	DWG NO. 7
PROJ NO.	BRF 022-1(20)		
CUSTOMER:	AUSTIN CONSTRUCTION		REV. △

308 Wed, Aug 25, 2010 09:08:07 AM J:\steel\jobs\2010\7 | Rev:0



FJ1-ONE REQ'D @ ABUTMENT 1

Section A-A



TYPICAL SECTION AT GIRDERS

RECEIVED
OK'D BY JSS OK'D BY RSY
MAR 08 2011
RESUBMIT APPROVED ✓
BY CPW DATE 3/23/11

Structures
Copy

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.
	OUT FOR APPROVAL	01-05	PD	PD		
	OUT FOR APPROVAL	02-28	PD	PD		
	ISSUED TO SHOP					
	FIELD & OFFICE					

NO.	DIA.	LGT	TYPE	WASHER

PROJECT NO. STATE PROJECT NO. BRF 022-1(20)

MATERIAL : ASTM A709-GR50W | ELECTRODES : SEE PROC | HOLES : AS NOTED | SHOP BOLTS : ϕ

SURFACE PREPN & PAINT :

DESCRIPTION : EXPANSION JOINT -ABUTMENT 1

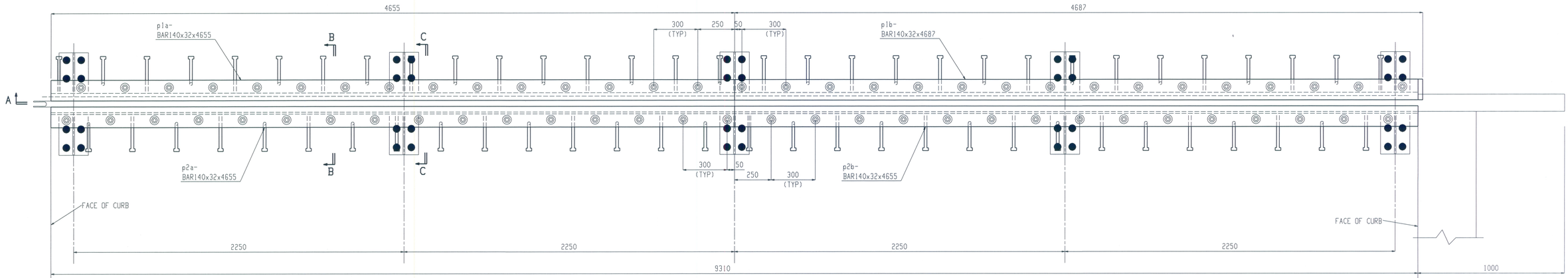
JOB : VT RTE 107 OVER STONEY BROOK
BRIDGE 9
STOCKBRIDGE, VT
COUNTY OF WINDSOR

CUSTOMER : AUSTIN CONSTRUCTION

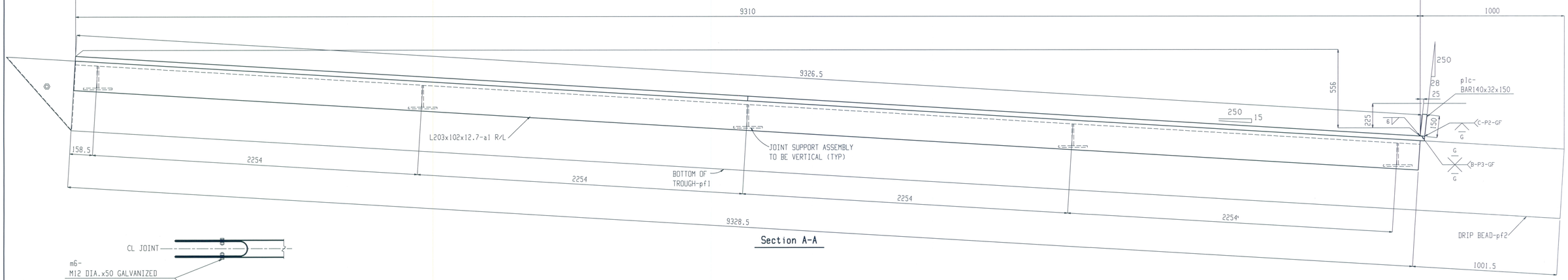
DRAWN BY	DATE
LCL	JAN 2011
CHECKED BY	DATE
PD	JAN 2011
APPROVED BY	DATE
Q. A.	DATE
JOB NO.	DRG. NO.
461	JE1
Fab: Job:	REV.

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

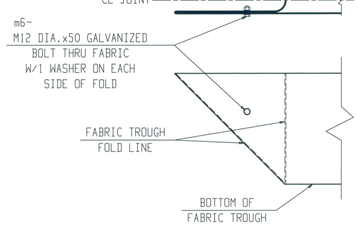
JOB NO.	DRG NO.
461	E1



FJ1-ONE REQ'D @ ABUTMENT 1



Section A-A



FOLDED TROUGH END DETAIL

APPROVER NOTE:

1. DETAIL "A" ON SHEET 62 OF 139 NOTES THE BAR LENGTHS AS 9600 AND 9632, ACCORDING TO THE ABUTMENT # 1 PLAN VIEW ON SHEET 65 OF 139 THE DIMENSION FROM FACE OF CURB TO FACE OF CURB IS 9310. PLEASE CONFIRM THE TOTAL BAR LENGTHS NOTED IN DETAIL "A" SHOULD BE 9327 AND 9359.

RECEIVED
OK'D BY KSS OK'D BY RSY
MAR 08 2011
RESUBMIT____ APPROVED____/
BY CPW DATE 3/23/11

WORK THIS DWG
WITH J2

BILL OF MATERIAL

BLOCK QTY.	BLOCK NO.		MARK	NO. PCS.	SHAPE	LENGTH	C.S. NO.	CUT FROM NO.	CUT FROM FT. IN.	PROC. PG - LN	REMARKS	PAY ITEM
		1										
		2	FJ1	1	EXPANSION JOINT							
		3	a1 R/L	2	L203x102x12.7	9328.5						
		4										
		5	p1a	1	PL 32x140	4663.5						
		6	p1b	1	PL 32x140	4695.5						
		7	p1c	1	PL 32x140	150						
		8	p2a	1	PL 32x140	4663.5						
		9	p2b	1	PL 32x140	4663.5						
		10										
		11	p3	10	PL12x153	275						
		12	p4	10	PL12x200	275						
		13	p5	40	PL10x75	75						
		14	m1	31	19 Dia STUD	250						
		15	m2	30	19 Dia STUD	250					BENT	
		16	m3	62	M20 Dia GALV BOLTS	50					W/NUT-2 WASH	
		17	m4	40	24 DIA THRD ROD	140					W/2-NUTS	
		18										
		19	pf1	1	3 PLY PRE FABx4	10810					TROUGH	
		20	pf2	1	PREFORM FABRIC	6x180					DRIP BEAD	
		21	m5	2	1.6x75 TAPE						BUTYL RUBBER AASHTO M198-B	
		22	m6	2	M12 Dia GALV BOLTS	50					W/NUT-2 WASH	
		23										

BILL OF MATERIAL

BLOCK QTY.	BLOCK NO.		MARK	NO. PCS.	SHAPE	LENGTH	C.S. NO.	CUT FROM NO.	CUT FROM FT. IN.	PROC. PG - LN	REMARKS	PAY ITEM
		24										
		25	M1	5	EMBEDED PLATE							
		26	p6	5	PL12x200	225						
		27	m1	20	19 Dia STUD	250						
		28										
		29										
		30										
		31										
		32										
		33										
		34										
		35										
		36										
		37										
		38										
		39										
		40										
		41										
		42										
		43										
		44										
		45										
		46										

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.
	OUT FOR APPROVAL	01-05	PD	PD		
	OUT FOR APPROVAL	02-28	PD	PD		
	ISSUED TO SHOP					
	FIELD & OFFICE					

NO.	DIA.	LGT	TYPE	WASHER

PROJECT NO. STATE PROJECT NO. BRF 022-1(20)

MATERIAL : ASTM A709-GR50W | ELECTRODES : SEE PROC | HOLES : AS NOTED | SHOP BOLTS : ϕ

SURFACE PREPN & PAINT : GALVANIZED AFTER FABRICATION ASTM A123

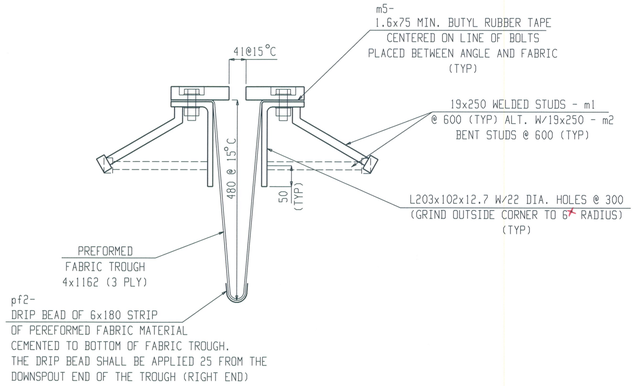
DESCRIPTION : EXPANSION JOINT -ABUTMENT 1

JOB : VT RTE 107 OVER STONEY BROOK
BRIDGE 9
STOCKBRIDGE, VT
COUNTY OF WINDSOR

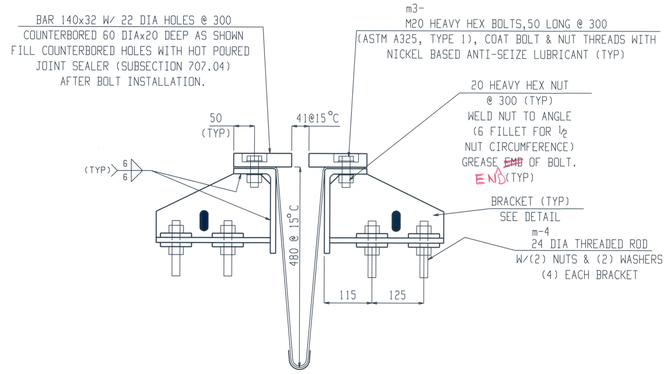
CUSTOMER : AUSTIN CONSTRUCTION

DRAWN BY	DATE
LCL	JAN 2011
CHECKED BY	DATE
PD	JAN 2011
APPROVED BY	DATE
Q. A.	DATE
JOB NO.	DRG. NO.
461	J1
Fab: Job:	REV.

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179



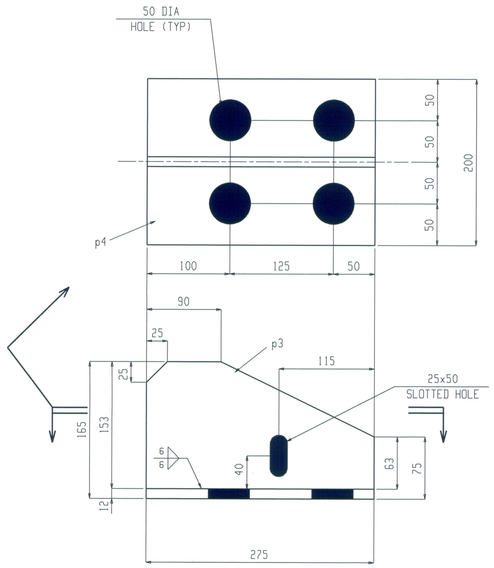
SECTION B-B
TYPICAL SECTION BETWEEN GIRDERS



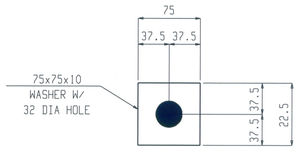
SECTION C-C
TYPICAL SECTION AT GIRDERS

EXPANSION JOINT NOTES

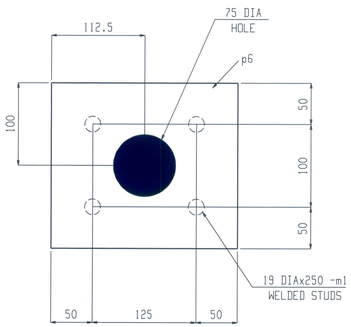
1. PRIOR TO GALVANIZING OR METALIZING, ALL CORNERS AND EDGES OF STEEL PLATES, SHAPES, ETC. , SHALL BE GROUND TO A 1.6 RADIUS.



BRACKET DETAIL



WASHER PLATE-p5



EMBEDED PLATE M1

RECEIVED
O.K'D BY LJS O.K'D BY RSY
MAR 08 2011
RESUBMIT APPROVED As Noted
BY CPW DATE 3/23/11

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.
	OUT FOR APPROVAL	01-05	PD	PD		
	OUT FOR APPROVAL	02-28	PD	PD		
	ISSUED TO SHOP					
	FIELD & OFFICE					

NO.	DIA.	LGT	TYPE	WASHER

PROJECT NO. STATE PROJECT NO. BRF 022-1(20)

MATERIAL : ASTM A709-GR50W | ELECTRODES : SEE PROC | HOLES : AS NOTED | SHOP BOLTS : ϕ

SURFACE PREPN & PAINT : GALVANIZED AFTER FABRICATION ASTM A123

DESCRIPTION : EXPANSION JOINT -ABUTMENT 1

JOB : VT RTE 107 OVER STONEY BROOK
BRIDGE 9
STOCKBRIDGE, VT
COUNTY OF WINDSOR

CUSTOMER : AUSTIN CONSTRUCTION

DRAWN BY	DATE
LCL	JAN 2011
CHECKED BY	DATE
PD	JAN 2011
APPROVED BY	DATE
Q. A.	DATE

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

JOB NO.	DRG. NO.
461	J2

Fab:
Job: REV.

WORK THIS DWG
WITH J1

JOB NO.	DRG NO.
461	J2

VERMONT

State of Vermont
PDD/Structures Design Section
One National Life Drive
Montpelier, VT 05633-5001
www.aot.state.vt.us

Agency of Transportation

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

December 30, 2010

Cosmec Inc./Dynamic Rubber
P.O. Box 2159
1501 Ricky Ridge Road
Athens, TX 75751

Re: Stockbridge BRF 022-1(20) VT 107, Bridge 9

The following Pot Bearing details [Item #531.12, Bearing Device Assembly, Pot] , welding/bonding procedures and calculations for the above project (Vendor's Job #10716) dated 12/23/10 and received in this office via email on 12/28/10 have been reviewed and are being returned herewith.

All drawings and weld procedures are Approved. The calculations have also been reviewed and are acceptable.

Note that the bearing dimensions on the plans were assumed and that the bridge seat elevations may need to be adjusted based on the actual dimensions, as stated in the note on sheets 57-60 of the contract plans. **It will be the responsibility of the contractor to determine the actual bridge seat elevations based on the bearing configuration in the approved drawings. This work should be coordinated with the Resident Engineer and provided to the Structures section prior to commencing with this work.**

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

Sincerely,

Christopher P. Williams, P.E.
Structures Project Manager

Attachments
cc: Tom Chase - Resident Engineer - via email
Jeff Clark - Shop Inspector - via email
Austin Construction. - Contractor - via email
Materials & Research (C&IA Unit) - letter only - via email
Construction Division - letter only - via email
Files (CPW)

VTrans Working to Get You There

VERMONT

State of Vermont
PDD/Structures Design Section
One National Life Drive
Montpelier, VT 05633-5001
www.aot.state.vt.us

Agency of Transportation

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

March 23, 2011

ARC Enterprises, Inc.
PO Box 120
Kingfield, ME 04947

Re: Stockbridge BRF 022-1(20) VT 107, Bridge 9

We have reviewed the Bridge Railing details [Item #525.34, Bridge Railing, Galvanized NETC 4 Rail] for the above project (Vendor's Job #10-163) sent to us via email on 2/25/11. We have also reviewed the welding procedures that were sent via email on 1/20/11.

All drawings and welding procedures are Approved.

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

Please let me know if you have questions.

Sincerely,

Christopher P. Williams, P.E.
Structures Project Manager

Attachments
cc: [X] Resident Engineer – Tom Chase
[X] Shop Inspector – Jeff Clark
[X] Contractor – Austin Construction
[X] Materials & Research (C&IA Unit) - letter only
[X] Construction Division - letter only
[X] Files (CPW)

VTrans Working to Get You There!

PLAN VIEW
BRIDGE OVER SIGNAY BROOK

* ALIGNMENT HAS BEEN MADE FOR BRIDGE CURVE
** SEE SHEET 5 FOR APPROACH RAIL DETAILS

SECTION A–A

VIEW B–B

RECEIVED
CTO'D BY: WES CTO'D BY: DSV
FEB 25 2011
REQUIRMENT _____ APPROVED ✓
BY CPN DATE 3/23/11

NOTES:
1. ALL POST CORE HOLES IN RAILS TO BE FIELD DRILLED.
2. POST SPACING IS MEASURED ALONG ℄ OF POSTS

DESIGN	CCK, YCP, DTR, MST					
DRAWN	DB, BWN, SWEN					
CHECKED						
QA/QC	KSW/LHR					
APPROVED	BWN/MPK					

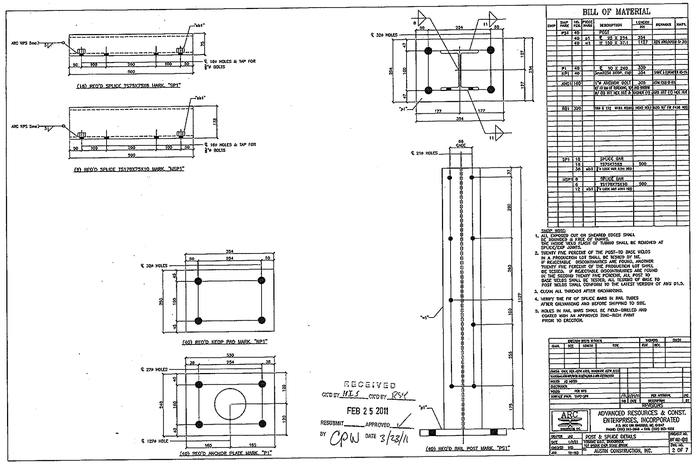
DO NOT SCALE DRAWINGS

ARC ENGINEERING

ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 609 CENTRAL, SC 29630
PHONE: (864) 654-1234 FAX: (864) 654-4900

1	POST AND RAIL LAYOUT		
NO.	DESCRIPTION	BY	DATE
DRAWN	KTH	GROUP SAC DRAWING	
CHECKED	YCP	SAC GROUP NO.	
JOB	09-022	SAC GROUP NO.	

JOB NO. 09-022
SHEET NO. 1 OF 7



RECEIVED
CITY OF HLL CITY OF RW
FEB 25 2011
RESIDENT APPROVED
BY CPW DATE 3/23/11

BILL OF MATERIAL

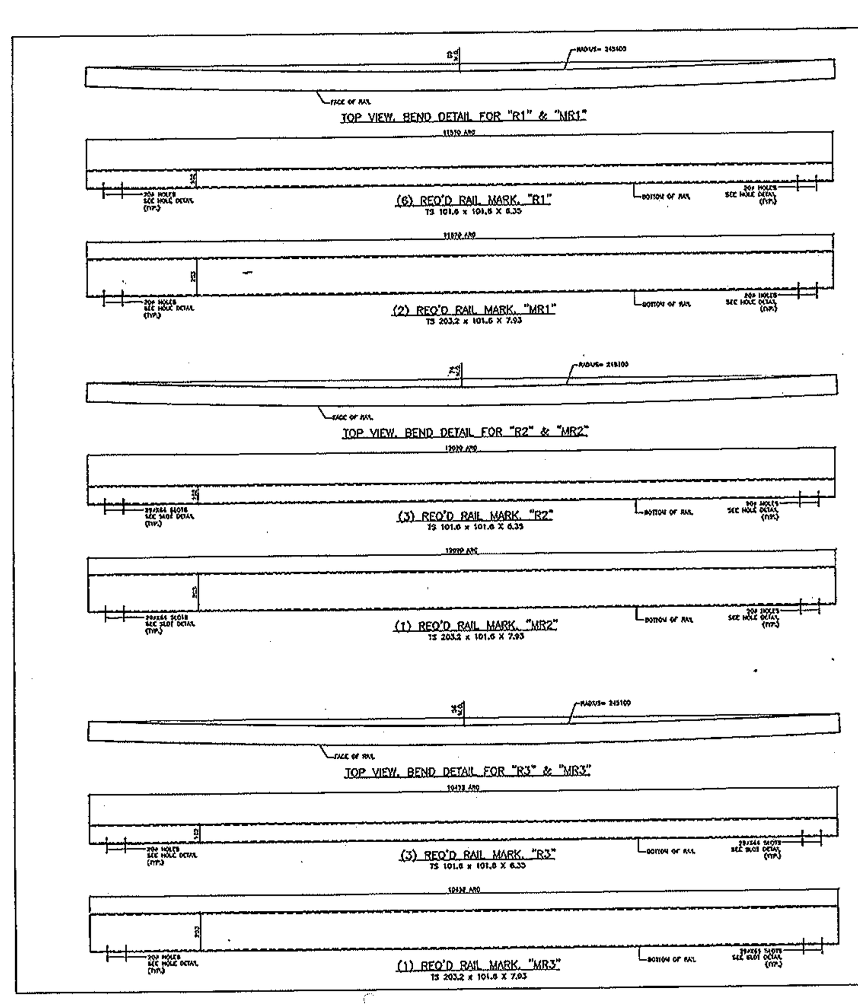
ITEM	SIZE THICK	LBS/FOOT LBS/EACH	DESCRIPTION	LENGTH IN	REMARKS	SHAPE
	#25	25	POST			
		#25	#5	6 - 25 5.375	214	
		#8	#5	8 120 5.375	1717	SEE DRAWING SP-P1
	#1	38	6" W. 50 LB BAR		300	
	.375	40	3000SQ IN HSSR 1500		324	HAC LIGHTWEIGHT
	#SQ	100	4"W. WEDGE BOLT W/ 6 HEX NUT&WASHER, 1/4 SET SCREW W/ 1/2 HEX NUT&WASHER, 1/4 SET SCREW		400	GALVANIZED
	REB	220	180 D STL #4 BAR	2@24 .4@12	240 .8@12	2@24 .4@12
	3/4	15	SPOOL SIDE TENSIONER		300	
		24	#3@12 24 HOOK NOT SHOWN			
	HDPE W		SPLICE SLEEVE W/ TENSIONER		300	
		6				
		16	#3@12 16 HOOK NOT SHOWN			

GENERAL NOTES:

1. ALL EXPOSED CUT-ON JACKARED EDGES SHALL BE ROUNDED A RADIUS OF 1/8INCH. ALL BURRS SHALL BE REMOVED AT SPLICE/TOP JOINTS.
2. TWENTY FIVE PERCENT OF THE POST-TO BASE HOLES SHALL BE DRILLED IN THE FIELD. METHOD OF IN SITU DRILLING, ENVIRONMENTS ARE FOUND, ACCORD TWENTY FIVE PERCENT OF THE FOUNDATIONS WERE FOUND TO BE UNSUITABLE FOR DRILLING OR CONSTRUCTION. IN THE SECOND TWENTY FIVE PERCENT, ALL POST AND TO POST WELDS SHALL CONFORM TO THE LATEST VERSION OF AWS D1.3.
3. CLOVE ALL THROUGH AFTER GALVANIZING.
4. VERIFY THE FIT OF SPLICE BARS IN RAIL TUBES AFTER GALVANIZING AND BEFORE SHIPPING TO SITE.
5. HOLES IN RAIL ENDS SHALL BE FIELD-DRILLED AND PAINTED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.

ORDERING NOTES STOCK				SHAPES	SHEETS
DIAM	WALL	LENGTH	TOTAL	REF REV.	

ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED			
1000 Bee Ridge Road, Suite 100, Sarasota, Florida 34239 Phone: (941) 923-4484 • FAX: (941) 923-4485			
DRAWN AC	POST & SPLICE DETAILS		SCALE 1/2"=1'-0"
JOB 10-150	SHEET NO. SP-P1		REF NO. 4X6
DESIGN AC	12' HIGH CLR ROAD SIGN		DWG NO.
JOB 10-150	AUSTIN CONSTRUCTION, INC.		2 OF 7

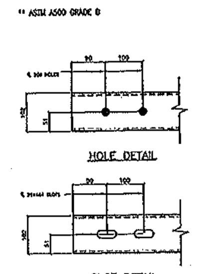


BILL OF MATERIAL

SHIP	SHIP MARK	NO. PCS.	PIECE MARK	DESCRIPTION	LENGTH	REMARKS	MAT'L
	R1	6		101.6X101.6X6.35	11570	*	**
	MR1	2		203.2X101.6X7.93	11570	*	**
	R2	3		101.6X101.6X6.35	12020	*	**
	MR2	1		203.2X101.6X7.93	12020	*	**
	R3	3		101.6X101.6X6.35	10432	*	**
	MR3	1		203.2X101.6X7.93	10432	*	**
	FB1	96		[illegible]	[illegible]		

* TUBING CVN REQUIREMENT OF 20 N.M. @ −18°C OR PROPORTIONAL VALUE OF SUBSIZE SPECIMEN TESTING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH ASTM A673. THE "H" FREQUENCY SHALL BE USED

** ASTM A500 GRADE B



SHOP NOTE:

1. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED & FREE OF BURRS.
2. TWENTY FIVE PERCENT OF THE POST-TO BASE WELDS IN A PRODUCTION LOT SHALL BE TESTED BY MT. IF REJECTABLE DISCONTINUITIES ARE FOUND, ANOTHER TWENTY FIVE PERCENT OF THE PRODUCTION LOT SHALL BE TESTED. IF REJECTABLE DISCONTINUITIES ARE FOUND IN THE SECOND TWENTY FIVE PERCENT, ALL POST TO BASE WELDS SHALL BE TESTED. ALL TESTING OF BASE TO POST WELDS SHALL CONFORM TO THE LATEST VERSION OF AWS D1.5.
3. CLEAN ALL THREADS AFTER GALVANIZING.
4. HOLES IN RAIL BARS SHALL BE FIELD-DRILLED AND COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.
5. TUBING SHALL MEET THE LONGITUDINAL CVN MINIMUM REQUIREMENTS OF 20 JOULES AT −18°C OR PROPORTIONAL VALUES OF SUBSIZE SPECIMENS. TESTING SHALL BE DONE IN ACCORDANCE WITH ASTM A673. THE "H" FREQUENCY SHALL BE USED AND THE MATERIAL SHALL BE AS-ROLLED.

RECEIVED
OK'D BY HIS OK'D BY RSY
FEB 2 5 2011
RESUBMIT ____ APPROVED ✓
BY CPW DATE 3/23/11

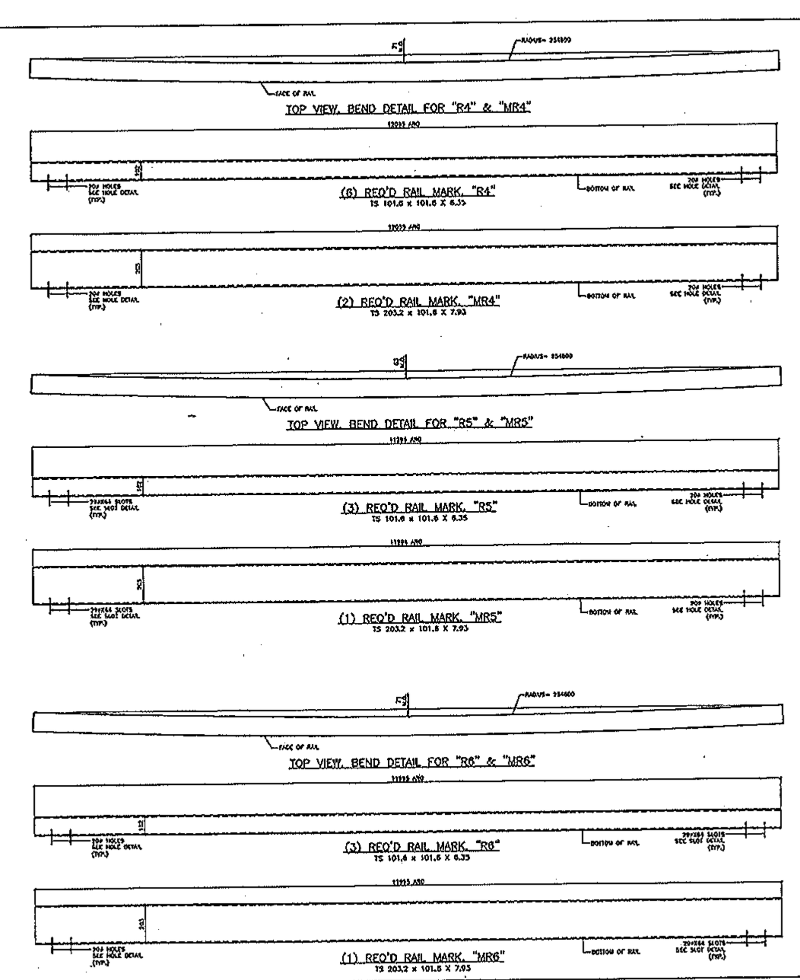
FINISH	GALV. PER ASTM A123, HARDWARE ASTM A153
MATERIAL	ASTM A500/A500M GR. B *
HOLES	AS NOTED
ELECTRODES	
WELDS	[illegible]
SURFACE PREP	SSPC-SP6

NO	DATE	DESCRIPTION	NO	DATE	DESCRIPTION

REVISIONS

ARC
ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 120 KNOWFIELD, ME. 04917
PHONE (207) 265-2616 – FAX (207) 265-4054

DRAWN	JAC	RAIL DETAILS	PROJECT NO. BRF 022-1(20)
DATE	1/7/11	[illegible], STOCKWOOD; 107 BRIDGE OVER STONY BROOK	DWG. NO.
CHECKED	MTP	AUSTIN CONSTRUCTION, INC.	3 OF 7
JOB	10-163		



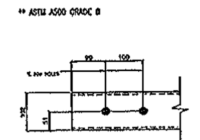
RECEIVED
CK'D BY HJS OK'D BY RSY
FEB 2 5 2011
RESUBMIT____ APPROVED ✓
BY CPW DATE 3/23/11

BILL OF MATERIAL

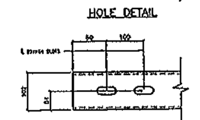
SHIP	SHIP MARK	NO. PCS.	PIECE MARK	DESCRIPTION	LENGTH	REMARKS	MAT'L
	R4	6		101.6X101.6X6.35	12035	*	**
	MR4	2		203.2X101.6X7.93	12035	*	**
	R5	3		101.6X101.6X6.35	11294	*	**
	MR5	1		203.2X101.6X7.93	11294	*	**
	R6	3		101.6X101.6X6.35	11995	*	**
	MR6	1		203.2X101.6X7.93	11995	*	**

* TUBING CVN REQUIREMENT OF 20 N.M. @ -18°C OR PROPORTIONAL VALUE OF SUBSIZE SPECIMEN
TESTING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH ASTM A673. THE "H" FREQUENCY SHALL BE USED

** ASTM A500 GRADE B



HOLE DETAIL



SLOT DETAIL

SHOP NOTE:

1. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED & FREE OF BURRS.
2. TWENTY FIVE PERCENT OF THE POST-TO BASE WELDS IN A PRODUCTION LOT SHALL BE TESTED BY MT. IF REJECTABLE DISCONTINUITIES ARE FOUND, ANOTHER TWENTY FIVE PERCENT OF THE PRODUCTION LOT SHALL BE TESTED. IF REJECTABLE DISCONTINUITIES ARE FOUND IN THE SECOND TWENTY FIVE PERCENT, ALL POST TO BASE WELDS SHALL BE TESTED, ALL TESTING OF BASE TO POST WELDS SHALL CONFORM TO THE LATEST VERSION OF AWS D1.5.
3. CLEAN ALL THREADS AFTER GALVANIZING.
4. HOLES IN RAIL BARS SHALL BE FIELD-DRILLED AND COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.
5. TUBING SHALL MEET THE LONGITUDINAL CVN MINIMUM REQUIREMENTS OF 20 JOULES AT -18°C OR PROPORTIONAL VALUES OF SUBSIZE SPECIMENS. TESTING SHALL BE DONE IN ACCORDANCE WITH ASTM A673. THE "H" FREQUENCY SHALL BE USED AND THE MATERIAL SHALL BE AS-ROLLED.

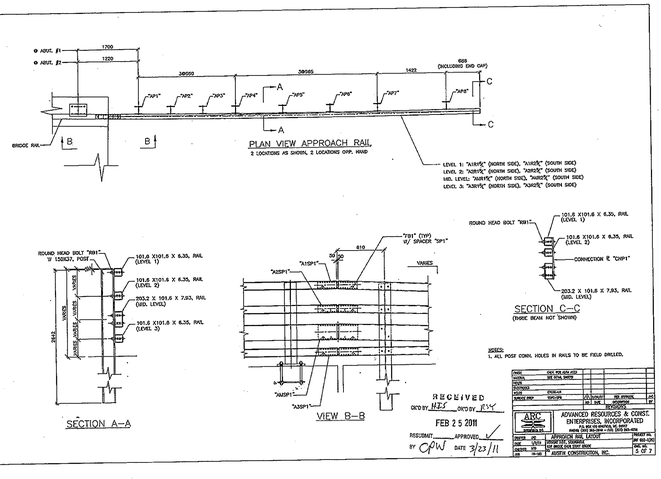
FINISH	GALV. FOR ASTM A123, HARDWARE ASTM A153
MATERIAL	ASTM A500/A500M GR. B *
HOLES	AS NOTED
ELECTRODES	
WELDS	FOR WPS
SURFACE PREP	SSPC-SP6

REVISIONS

NO	DATE	DESCRIPTION	NO	DATE	DESCRIPTION

ARC
ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 120 KNOTTED, ME 04947
PHONE (207) 265-2644 – FAX (207) 265-4054

DRAFTER	MC	RAIL DETAILS	PROJECT NO. STP 072-1(20)
DATE	1/2/11	VERMONT D.O.T., STOCKBRIDGE VT ROUTE 107 BRIDGE OVER STONY BROOK	DWG. NO.
CHECKED	MD		
JOB	10-161	AUSTIN CONSTRUCTION, INC.	4 OF 7



PLAN VIEW APPROACH RAIL

2 LOCATIONS AS SHOWN, 2 LOCATIONS OPP. HAND

SECTION A–A

VIEW B–B

SECTION C–C

(THESE BEAMS NOT SHOWN)

NOTES:

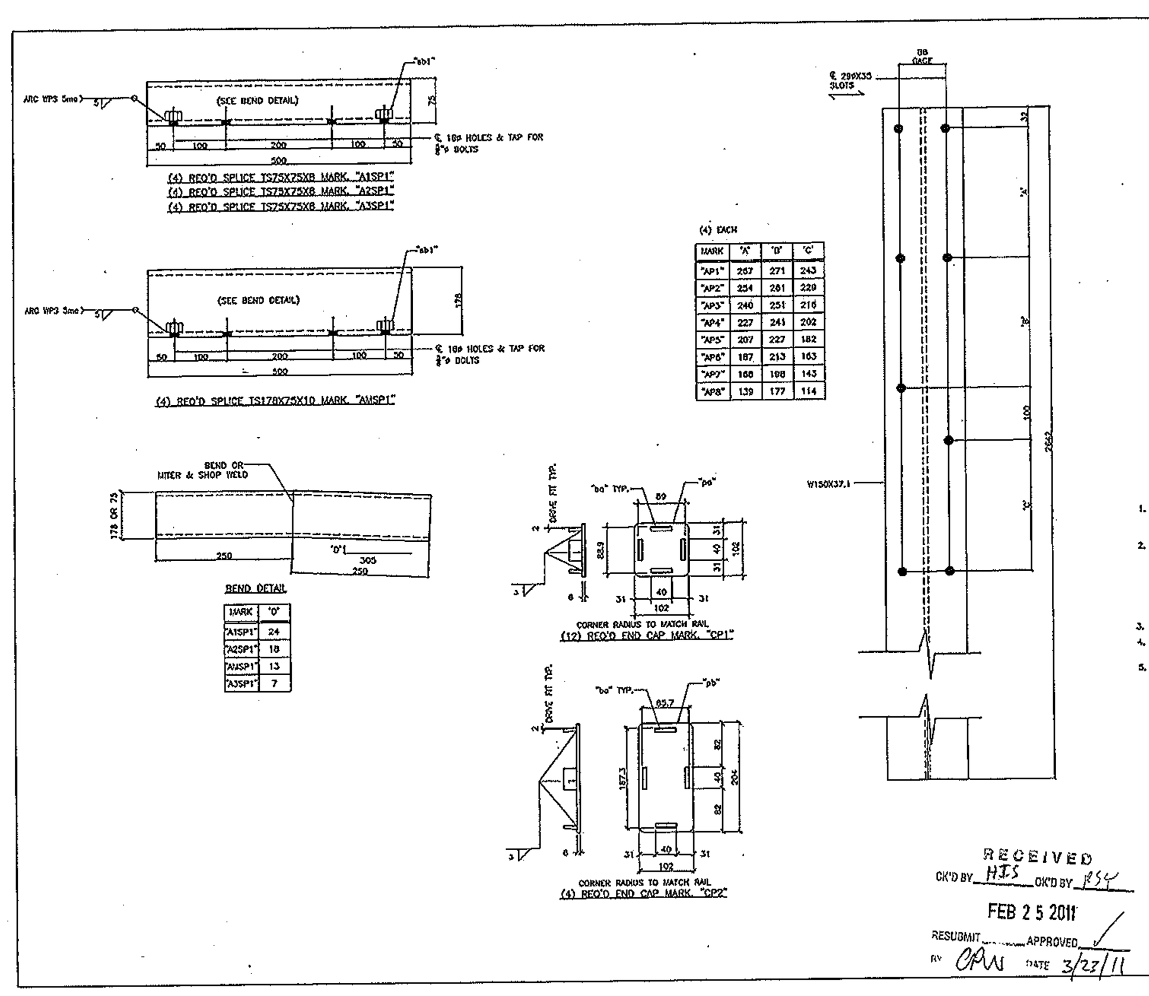
1. ALL POST CONN. HOLES IN RAILS TO BE FIELD DRILLED.

RECEIVED
DIST BY NBS DIST BY RW
FEB 25 2011
RESIDENT APPROVED
BY CPW DATE 3/23/11

CHKD.	DSN PM DRF EST				
DSGN.	BR DSN. BRGS.				
DETAILS					
QUAN.	DSN/LM				
LOADS RAT.	DSN/LRFR	03/2009	SEE APPROV.		01
		08/1 SOC	SHEETS		01
		REVISIONS			

ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
CONSULTING ENGINEERS
8400 W. 14th Ave., Suite 100, Lakewood, CO 80215 (303) 233-4700

CHECK	JW	APPROACH RAIL LAYOUT	PROJECT NO.
DATE	1/2/11	DESIGNATION: STRUCTURE NUMBER	SH 83-20
DRAWN	KB	SH 83 OVER BIG DRY CREEK	SHEET NO.
DATE	10-08	AURORA CONSTRUCTION, INC.	2 OF 2



BILL OF MATERIAL

SHIP	SHIP MARK	NO. PCS.	PIECE MARK	DESCRIPTION	LENGTH MM	REMARKS	MAT'L
AP1 THRU AP8		32		POST			
		32		W 150 X 37.1	2642	ASTM A709/A709M Gr 345	
	RB1	256		19φ X 152 M164 ROUND HEAD BOLT		W/ FW F436	
	CP1	12		END CAP			
		12	pa	℄ 6X102	102		
		48	bo	BAR 6 X 25	40		
	CP2	4		END CAP			
		4	pb	℄ 6X102	204		
		16	bo	BAR 6 X 25	40		
A1SP1	THRU A3SP1	12		SPLICE BAR			
		12		TS75X75X8	500		
		24	ab1	⅝"φ LOCK NUT A194 HOO			
	AMSP1	4		SPLICE BAR			
		4		TS178X75X10	500		
		8	ab1	⅝"φ LOCK NUT A194 HOO			

SHOP NOTES

1. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED & FREE OF BURRS. THE INSIDE WELD FLASH OF TUBING SHALL BE REMOVED AT SPLICE/EXP JOINTS.
2. TWENTY FIVE PERCENT OF THE POST-TO BASE WELDS IN A PRODUCTION LOT SHALL BE TESTED BY MT. IF REJECTABLE DISCONTINUITIES ARE FOUND, ANOTHER TWENTY FIVE PERCENT OF THE PRODUCTION LOT SHALL BE TESTED. IF REJECTABLE DISCONTINUITIES ARE FOUND IN THE SECOND TWENTY FIVE PERCENT, ALL POST TO BASE WELDS SHALL BE TESTED. ALL TESTING OF BASE TO POST WELDS SHALL CONFORM TO THE LATEST VERSION OF AWS D1.5.
3. CLEAN ALL THREADS AFTER GALVANIZING.
4. VERIFY THE FIT OF SPLICE BARS IN RAIL TUBES AFTER GALVANIZING AND BEFORE SHIPPING TO SITE.
5. HOLES IN RAIL BARS SHALL BE FIELD-DRILLED AND COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.

ERECTION BOLTS W/NUTS				WASHERS		FINISH
QUAL	SIZE	LENGTH	TYPE	FLAT	BEV.	

FINISH: GALV. PER ASTM A123, HARDWARE ASTM A153
HOLES: AS NOTED
ELECTRODES:
WELDS: PER WPS
SURFACE PREP: SSPC-SP6

REVISIONS

NO	DATE	DESCRIPTION	BY
1	2/24/11	PER APPROVAL	JAQ

ARC

ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED

APPROACH POST & SPLICE DETAILS

AUSTIN CONSTRUCTION, INC.

6 OF 7

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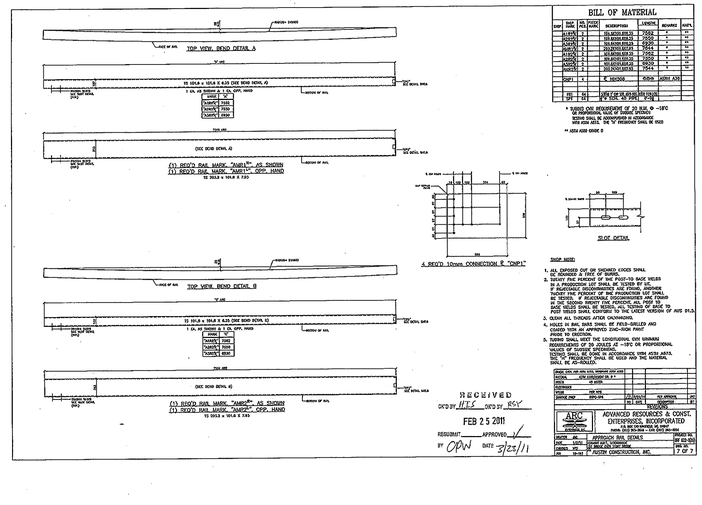
FEB 2 5 2011
RESUBMIT ____ APPROVED ✓
BY CRW DATE 3/23/11



BILL OF MATERIAL

ITEM	DWG SIZE	NO. REQ'D	WEIGHT (KG)	DESCRIPTION	MATERIAL	REMARKS	GRADE
	A1&A2	2		10.5x300.0X8.0L	350W	*	'G'
	A3&A4	2		10.5x300.0X8.0L	350W	*	'G'
	A5&A6	2		10.5x300.0X8.0L	350W	*	'G'
	A7&A8	2		10.5x300.0X8.0L	350W	*	'G'
	AM01A	1		6.0x300.0X8.0L	350W	*	'G'
	AM02A	1		6.0x300.0X8.0L	350W	*	'G'
	AM01	1		6.0x300.0X8.0L	350W	*	'G'
	AM02	1		6.0x300.0X8.0L	350W	*	'G'
	CNP1	4		C 150X50	300W	ASTM A36	
	PIP	10		PIPE 1.25 IN SCH 80 STEEL			
	SPP	10		PIPE CAP 1.25 IN SCH 80 STEEL			

* WELDED AND WEATHERING OF 20 N/M, @ -18°C OR PROFESSIONAL ENGINEER CERTIFIED MATERIAL SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM A572. THE 'G' PREFIXED SHALL BE YES

** ASTM A500 GRADE B

SHOP NOTE:

1. ALL EXPOSED CUT AND SHEARED EDGES SHALL BE SMOOTH AND FREE OF BURRS.
2. THE/ANY FINE RUBBING OF THE PLATE-TO-SHOP MEMS IN A PRODUCTION LOT SHALL BE TESTED BY MT. IF ONE PRODUCTION MEMBER IS FOUND TO BE UNDER THE SPECIFIED MINIMUM THICKNESS, THE ENTIRE PRODUCTION LOT SHALL BE REJECTED. 4" REASONABLE DISCONTINUITIES AND TOWER SHALL BE REPAIRED BY GRINDING OR WELDING. ALL BUTT WELDS SHALL BE MADE ALL FLUSH. NO MORE TO POST WELDS SHALL CONFORM TO THE LATEST VERSION OF AWS D1.1.
3. CLEAN ALL THREADS AFTER GALVANIZING.
4. HOLES IN BAR, BARS SHALL BE FIELD-DRILLED AND REAMED TO 1.25 IN. UNLESS APPROVED 2ND-HOLE FIRST PRIOR TO CALIBRATION.
5. TUBING SHALL MEET THE LONGITUDINAL IZOD MINIMUM REQUIREMENTS OF 20 J/CM/CM AT -18°C OR PROFESSIONAL ENGINEER CERTIFIED MATERIAL.
TUBING SHALL BE DONE IN ACCORDANCE WITH ASTM A572, GRADE 50. ALL WELDS SHALL BE SOLID AND THE WELDING SHALL BE RE-REQUIRED.

MARK	DATE	DESCRIPTION	BY
ORIGINAL ISSUE	03/23/11	ISSUED FOR APPROVAL	JPC

ARC ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
#1000, 10117 - 101 STREET, EDMONTON, ALBERTA, T5J 3G1
PHONE: (780) 990-9660 • FAX: (780) 990-9664

DRAWN BY:	JPC	ARRIVUCH RVR. DETAILS	DRAWING NO:
CHK'D BY:	OPN	STRUCTURAL STEEL DETAILS	2010-023
APP'D BY:	OPN	FOR USE AS NOTED	SHEET NO:
CHKD. BY:		FOR USE AS CONSTRUCTED	7 OF 7
JOB:	10-23	CUSTOM CONSTRUCTION, INC.	

RECEIVED
DKD'D BY ITEF DKD'D BY MCC
FEB 25 2011
REGULATORY APPROVED
BY OPN DATE 3/23/11

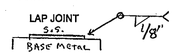
COSMEC INC.

WELDING PROCEDURE SPECIFICATION

SPECIFICATIONS AND CODE: D1.6 (D1.3)
MATERIAL SPECIFICATION: ASTM A240 TYPE 304 TO ASTM A709 GR 50W
WELDING PROCESS——— GTAW
MANUAL OR MACHINE——— MANUAL
POSITION OF WELDING—— 1F & 2F
FILLER METAL SPECIFICAT ION N/A — CLASSIFICATION: N/A
MANUFACTURER: — TRADENAME:
FLUX—— INTERNAL
SHIELDING GAS———— ARGON — FLOW RATE 45 CFH
SINGLE OR MULTIPLE PASS S SINGLE
SINGLE OR MULTIPLE ARC· SINGLE
WELDING CURRENT——— DC
POLARITY : REVERSE (EN)
WELDING PROGRESSION———————————————————
ROOT TREATMENT———— CLEANED & PREPARED BRIGHT METAL
PREHEAT AND INTERPASS TEMPERATURE———— SEE BELOW
POSTHEAT TEMPERATURE N/A
HEAT IMPUT MIN.———————— MAX.——

WELDING PROCEDURE

PASS NO.	ELECTRODE SIZE	WELDING CURRENT AMPERES	VOLTS	TRAVEL SPEED	JOINT DETAIL
ALL	3/32"	130–155 16 GA THRU 7 GA BM THICKNESS	14-17	11-12 IPM	LAP JOINT



PREHEAT TEMPS. ***PREHEAT UNTIL NO MOSITURE PRESENT

THICKNESS	TI TEMP.
UP TO 3/4"	100 DEG.
OVER 3/4" TO 1 1/2"	100 DEG.
OVER 1 1/2" TO 2 1/2"	100 DEG.
OVER 2 1/2"	100 DEG.

THIS PROCEURE MAY VARY DUE TO FABRICATION SEQUENCE, FIT-UP, PASS SIZE, ETC.
WITHIN THE LIMITATION OF VARIABLES GIVEN IN SECTION 5.
SUPPORTING PQR: GTAW-WOF-05
PROCEDURE NO. GTAW-WOF — CONTRACTOR: COSMEC INC.
AUTHORIZED BY: DONALD VOSE
REVISION NO. 2 — CWI#:01100651
DATE:—— 2/19/2010

Donald F Vose
CWI 01100651
QC1 EXP. 10/1/2013

VTRANS
RECEIVED
OK'D BY JTUC
DEC 06 2010
RESIDENT APPROVED
BY DATE 12/06/10

STRUCTURES COPY

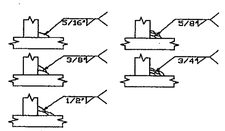
COSMEC INC.

WELDING PROCEDURE SPECIFICATION

SPECIFICATIONS AND CODE: AASHTO–AWS D1.5
MATERIAL SPECIFICATION- ASTM A709 GR 50W, GR 50, GR 36
WELDING PROCESS——— FCAW-G
MANUAL OR MACHINE——— SEMI-AUTOMATIC
POSITION OF WELDING—— 1F & 2F
FILLER METAL SPECIFICAT ION AWS 5.20 CLASSIFICATION: E71T
MANUFACTURER: LINCOLN ELECTRIC TRADENAME: E71T OUTERSHIELD
FLUX—— INTERNAL
SHIELDING GAS———— CO2 FLOW RATE 45 CFH
SINGLE OR MULTIPLE PASS MULTIPLE
SINGLE OR MULTIPLE ARC SINGLE
WELDING CURRENT——— DC
POLARITY: REVERSE (EP)
WELDING PROGRESSION———————————————————————————
ROOT TREATMENT——— CLEANED & PREPARED BRIGHT METAL
PREHEAT AND INTERPASS TEMPERATURE———— SEE BELOW
POSTHEAT TEMPERATURE N/A
HEAT IMPUT MIN.———————— MAX.——

WELDING PROCEDURE

PASS NO.	ELECTRODE SIZE	WELDING CURRENT AMPERES	VOLTS	TRAVEL SPEED	JOINT DETAIL
ALL	0.045	190-230	27-29	8-9	



PREHEAT TEMPS.

THICKNESS	TI TEMP.
UP TO 3/4"	50 DEG. F
OVER 3/4" TO 1 1/2"	70 DEG. F
OVER 1 1/2" TO 2 1/2"	150 DEG. F
OVER 2 1/2"	225 DEG. F
INTERPASS TEMP:	400 DEG. F

THIS PROCEURE MAY VARY DUE TO FABRICATION SEQUENCE, FIT-UP, PASS SIZE, ETC.
WITHIN THE LIMITATION OF VARIABLES GIVEN IN SECTION 5.

PROCEDURE NO. FCAW-FILLET
SUPPORTING PQR: FCAW-1.0-05
REVISION NO.

CONTRACTOR: COSMEC INC.
AUTHORIZED BY:DONALD VOSE

DONALD F. VOSE
CWI 91100651
QC1 EXP. 10/04/10

DATE:—— 12/28/2009

VTRANS
RECEIVED
OK'D BY: OK'D BY Jsw
DEC 16 2010
RESUBMIT APPROVED
BY DATE 12/06/10

EMS-QC-110

COSMEC, INC.

VTRANS
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CKD BY _____ DKD BY JWR

DEC 06 2010

RESUBMIT _____ APPROVED √
BY _____ DATE 12/06/10

ENGINEERING AND MANUFACTURING STANDARD
PTFE FACING AND STEEL
OR PREFORMED FABRIC SUBSTRATE
SURFACE PREPARATION AND ADHESIVE PROCEDURE

The PTFE facing shall be prepared for bonding to a substrate material by chemically etching the face to be bonded using the sodium ammonia process.

The mating surface of the substrate shall be prepared for bonding using a three-step process as follows:

1. preliminary degrease using methyl ethyl ketone.
2. mechanically roughen to approx. 125 RMS and thoroughly brush and clean for final degreasing.
3. final degrease using methyl ethyl ketone

The PTFE and substrate mating surfaces shall be clean and dry with final degreasing performed within 30 minutes of bonding. Adhesive shall consist of a two-part epoxy adhesive system conforming to Military Specification MMM-A-134

The adhesive shall be applied to the full area of the contact surface in an even manner so as to establish a glue line not less than .002 inch nor more than .010 inch thick. Surfaces being bonded are to be assembled immediately with open assembly time not to exceed 20 minutes.

The PTFE material shall be greater in width and length than the substrate material by at least ½ inch when bonded. The PTFE shall be applied with contact starting at one edge and with contact progressing across entire bonded surface to eliminate air entrapment. The PTFE is to be in full contact with the steel or preformed fabric substrate. Curing of the bond shall be done under pressure of approx. 2-100 psi for 10-12 hours at approx. 70°F or other schedules as established by the manufacturer of the adhesive.

The PTFE shall be carefully trimmed to the same size as the substrate after bond curing and all bonds shall be visually inspected for bond retention.

VTRANS
RECEIVED
JAN 20 2011

CK'D BY _____ OK'D BY Jmc

RESUBMIT _____ APPROVED ✓ WELDING PROCEDURE SPECIFICATION (WPS) YES (X)

BY _____ DATE 02/01/11 PREQUALIFIED ___ QUALIFIED BY TESTING ___

or PROCEDURE QUALIFICATION RECORD (PQR) YES ( )

Company Name ARC Enterprises, Inc.
Welding Process(es) GMAW
Supporting PQR No.(s) _____

Identification # ARC WPS 5M2A
Revision 5 Date 1/8/2011 By SVH
Authorized by STEVE HOWARD Date 12-5-05
Type - Manual ___ Semi - Automatic (X)
Machine ( ) Automatic ( )

AWS D1.1 2008

JOINT DESIGN USED
Type Fillet
Single X Double Weld ( )
Backing ( ) NO (X)
Backing Material _____
Root Opening 0 Root Face Dimension N/A
Groove Angle N/A Radius (J-U) N/A
Back Gouging YES( ) NO ( ) Method N/A

BASE METALS
Material Spec A709
Type or Grade 50
Thickness Groove _____ Fillet UNLIMITED
Diameter (Pipe) _____

FILLER METALS
AWS Specification A5.18
AWS Classification ER70S-6 ESAB SPOOLARC 66

SHIELDING
Flux _____ Gas 98%ARGON 2%O2
Composition _____
Electrode - Flux (Class) Flow Rate 25-35 cfh
Gas Cup Size 5/8

preheat up to 3/4" - 32 degrees F 3/4" - 1 1/2" - 50 degrees F
1 1/2" - 2 1/ 2" - 150 degrees F
over 2 1/2" - 225 degrees F
(when steel temp < 30F, minimum 70F.

POSITION
Position of Groove _____ Fillet 1F 2F
Vertical Progression ( )

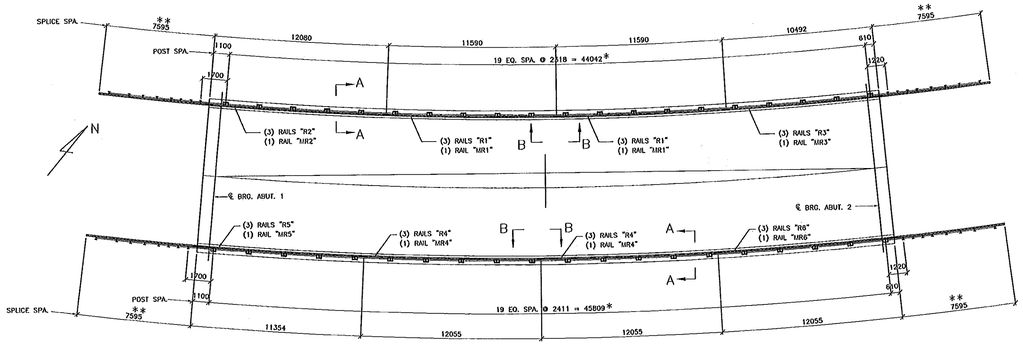
ELECTRICAL CHARACTERISTICS
Transfer Mode (FCAW) _____ Short Circuiting ( )
Globular ( ) Spray (X)
Current : AC ( ) DCEP (X) DCEN ( )
Pulsed ( )
OTHER : _____

TECHNIQUE
Stringer or Weave Bead STRINGER
Multi-pass or Single Pass (per side) SINGLE/MULTI
Number of Electrodes _____
Electrode Spacing Longitudinal NA
Lateral NA
Angle NA
Contact Tube to Work Distance 5/8" - 3/4"
Peening NA
Interpass Cleaning : HAND/POWER TOOLS

POSTWELD HEAT TREATMENT
Temp NA
Time NA

WELDING PROCEDURE

Passes or Weld Layer(s)		Filler Metals		Current			Travel Speed	Joint Details
	S	Class	Diameter	Type & Polarity	Amps or Wire Feed Speed	Volts		
1 1	3/16"	ER70S-6	.035"	DCEP	180-220	25-27	7-9 ipm	
1 1	1/4"	"	"	"	180-220	25-27	5-6	
1 1	5/16"	"	"	"	"	25-27	4-5	
1 1	3/8"	"	.035"	"	"	"	3-4	
1 2	7/16"	"	"	"	"	"	2-3	

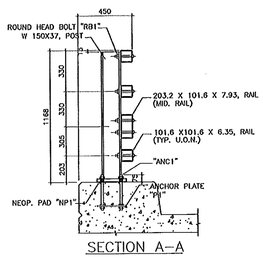


PLAN VIEW

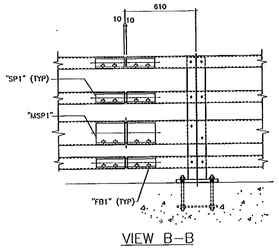
BRIDGE OVER STONY BROOK

* ALLOWANCE HAS BEEN MADE FOR BRIDGE GRADE

** SEE SHEET 5 FOR APPROACH RAIL DETAILS



SECTION A–A



VIEW B–B

Structures Copy

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OK'D BY HTS OK'D BY RSY
FEB 25 2011
RESUBMIT ____ APPROVED ✓
BY CPN DATE 3/23/11

NOTES:
1. ALL POST CONN. HOLES IN RAILS TO BE FIELD DRILLED.
2. POST SPACING IS MEASURED ALONG ℄ OF POSTS

FINISH	GALV. PER ASTM A123
MARKING	SEE DETAIL SHEETS
NOTES	
ELECTRODES	E70XX-LH
WELDS	SSPC-SP6
SURFACE PREP	SSPC-SP6

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
REVISIONS					

ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 130 WAYNESVILLE, ME. 04057
PHONE: (207) 293-2616 – FAX: (207) 293-4954

DRAWN BY	JAC
DATE	1/3/11
CHECKED	WD
JOB	10-183

POST AND RAIL LAYOUT
VERSION BOLT, 1900MM/PCH
1ST BRIDGE OVER STONY BROOK
AUSTIN CONSTRUCTION, INC.

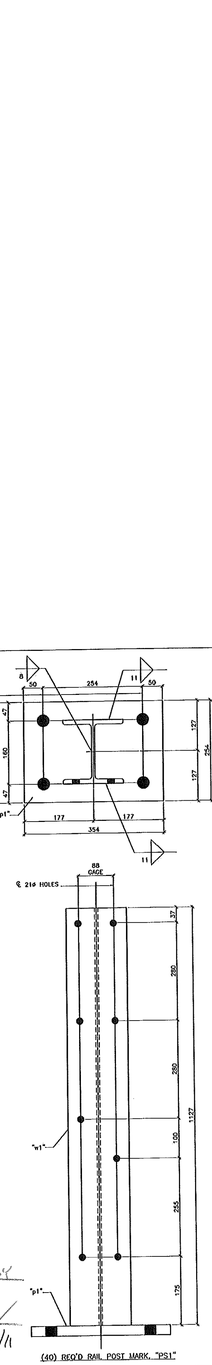
PROJECT NO. BRF 002-1(90)
DWG. NO. 1 OF 7

(18) REQ'D SPLICE TS75X75X8 MARK. "SP1"

(6) REQ'D SPLICE TS170X75X10 MARK. "MSP1"

(40) REQ'D NEOP. PAD MARK. "NP1"

(40) REQ'D ANCHOR PLATE MARK. "P1"



(40) REQ'D RAIL POST MARK. "PS1"

RECEIVED
CK'D BY HLS CK'D BY KSK
FEB 2 5 2011
RESUBMIT APPROVED
BY CPW DATE 3/23/11

BILL OF MATERIAL

SHOP	SHIP MARK	NO. PCS	PIECE MARK	DESCRIPTION	LENGTH PER	REMARKS	WT.
	PS1	40		POST			
		40	p1	℄ 25 X 254	354		
		40	w1	W 150 X 37.1	1127	ASTM A500/A500 GR 355	
	P1	40		℄ 10 X 240	330		
	HP1	40		5mmX254 HEOP. PAD	354	SHORE A DURMETER 65-75	
	ANC1	160		1"ø ANCHOR BOLT W/ 6" OF THREADS, NUT AND BUSHN W/ (1) HVY HEX NUT & WASHER (1)	305	ASTM F568 GR 8.8	
	RB1	320		159 X 152 M164 ROUND HEAD BOLT	300	W/ FW F436 HDG	
	SP1	18		SPLICE BAR			
		18		TS75X75X8	500		
		36	sb1	⅜ LOCK NUT A194 HDG			
	MSP1	8		SPLICE BAR			
		8		TS170X75X10	500		
		12	sb1	⅜ LOCK NUT A194 HDG			

SHOP NOTES:
1. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED & FREE OF BURRS. THE INSIDE WELD FLASH OF TUBING SHALL BE REMOVED AT SPLICE/EXP JOINTS.
2. TWENTY FIVE PERCENT OF THE POST-TO BASE WELDS IN A PRODUCTION LOT SHALL BE TESTED BY MT. IF REJECTABLE DISCONTINUITIES ARE FOUND, ANOTHER TWENTY FIVE PERCENT OF THE PRODUCTION LOT SHALL BE TESTED. IF REJECTABLE DISCONTINUITIES ARE FOUND IN THE SECOND TWENTY FIVE PERCENT, ALL POST TO BASE WELDS SHALL BE TESTED. ALL TESTING OF BASE TO POST WELDS SHALL CONFORM TO THE LATEST VERSION OF AWS D1.5.
3. CLEAN ALL THREADS AFTER GALVANIZING.
4. VERIFY THE FIT OF SPLICE BARS IN RAIL TUBES AFTER GALVANIZING AND BEFORE SHIPPING TO SITE.
5. HOLES IN RAIL BARS SHALL BE FIELD-DRILLED AND COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.

ERECTION BOLTS MARK	DIAM.	SIZE	LENGTH	TYPE	WASHERS FLAT	WASHERS BEV.	FINISH

FINISH: GALV. PER ASTM A123, HARDWARE ASTM A153
MATERIAL: AS NOTED ON PLANS & AS NOTED
FAYING: AS NOTED
ELECTRODES:
WELDS: PER WPS
SURFACE PREP.: SSPC-SP6

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

ARC
ENGINEERING, INC.

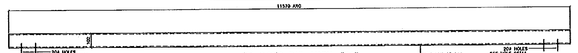
ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 130 KINGWOOD, WV. 26537
PHONE: (304) 329-3818 - FAX: (877) 203-1056

DRAWN BY	JAG
DATE	1/7/11
CHECKED BY	KSB
JOB	10-151

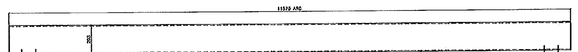
POST & SPLICE DETAILS
TEMPORARY COUNTY BRIDGE#BROOK
1ST BROOK OVER STONY BROOK
AUSTIN CONSTRUCTION, INC.

PROJECT NO. BRF 032-(06)
DWG NO. 2 OF 7

TOP VIEW, BEND DETAIL FOR "R1" & "MR1"

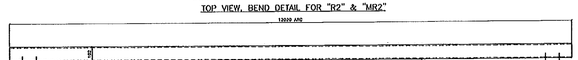


(6) REQ'D RAIL MARK, "R1"
TS 101.6 x 101.6 X 6.35

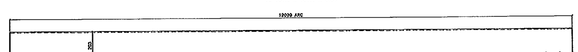


(2) REQ'D RAIL MARK, "MR1"
TS 203.2 x 101.6 X 7.93

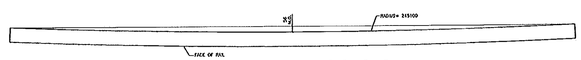
TOP VIEW, BEND DETAIL FOR "R2" & "MR2"



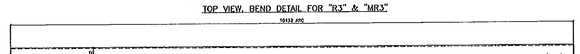
(3) REQ'D RAIL MARK, "R2"
TS 101.6 x 101.6 X 6.35



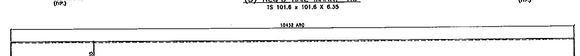
(1) REQ'D RAIL MARK, "MR2"
TS 203.2 x 101.6 X 7.93



TOP VIEW, BEND DETAIL FOR "R3" & "MR3"



(3) REQ'D RAIL MARK, "R3"
TS 101.6 x 101.6 X 6.35



(1) REQ'D RAIL MARK, "MR3"
TS 203.2 x 101.6 X 7.93

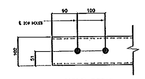
RECEIVED
CK'D BY HJS CK'D BY RSY
FEB 25 2011
RESUBMIT ____ APPROVED ✓
BY OPW DATE 3/23/11

BILL OF MATERIAL

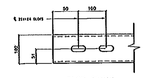
SHOP	SHOP MARK	QTY. PCS.	PIECE MARK	DESCRIPTION	LENGTH	REMARKS	MAT'L
	R1	6		101.6X101.6X6.35	11570	*	**
	MR1	2		203.2X101.6X7.93	11570	*	**
	R2	3		101.6X101.6X6.35	12020	*	**
	MR2	1		203.2X101.6X7.93	12020	*	**
	R3	3		101.6X101.6X6.35	10432	*	**
	MR3	1		203.2X101.6X7.93	10432	*	**
	FB1	98		4"W X 7"DP SPL A36 HS W/4# PER HS			

* TUBING CVN REQUIREMENT OF 20 N.M. @ -18°C OR PROPORTIONAL VALUE OF SUBSIZE SPECIMEN
TESTING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH ASTM A673. THE "H" FREQUENCY SHALL BE USED

** ASTM A500 GRADE B



HOLE DETAIL



SLOT DETAIL

SHOP NOTE:

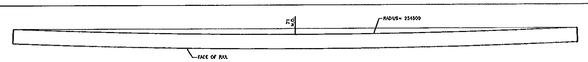
1. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED & FREE OF BURRS.
2. TWENTY FIVE PERCENT OF THE POST-TO BASE WELDS IN A PRODUCTION LOT SHALL BE TESTED BY MT. IF REJECTABLE DISCONTINUITIES ARE FOUND, ANOTHER TWENTY FIVE PERCENT OF THE PRODUCTION LOT SHALL BE TESTED. IF REJECTABLE DISCONTINUITIES ARE FOUND IN THE SECOND TWENTY FIVE PERCENT, ALL POST TO BASE WELDS SHALL BE TESTED. ALL TESTING OF BASE TO POST WELDS SHALL CONFORM TO THE LATEST VERSION OF AWS D1.5.
3. CLEAN ALL THREADS AFTER GALVANIZING.
4. HOLES IN RAIL BMS SHALL BE FIELD-DRILLED AND COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.
5. TUBING SHALL MEET THE LONGITUDINAL CVN MINIMUM REQUIREMENTS OF 20 JOULES AT -18°C OR PROPORTIONAL VALUES OF SUBSIZE SPECIMENS. TESTING SHALL BE DONE IN ACCORDANCE WITH ASTM A673. THE "H" FREQUENCY SHALL BE USED AND THE MATERIAL SHALL BE AS-ROLLED.

FINISH: QUICK, PER ASTM A123, EXPOSURE ASTM A143						
MATERIAL	ASTM A500/A500M GR. B *					
HOLES	AS NOTED					
ELEVATIONS	PER NPS					
WELDS	SMAW					
SURFACE PREP	SSPC-SP6					
		NO	DATE	DESCRIPTION	NO	DATE DESCRIPTION
		REVISIONS				

ARC
ENGINEERING, INC.

ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 120 SHERWOOD, OR. 97140
PHONE: (503) 342-3418 • FAX: (503) 353-4056

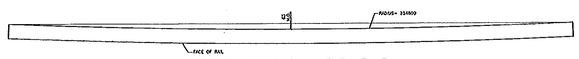
DRAFTER JHC	RAIL DETAILS	PROJECT NO. DOT 001-1(10)
DATE 1/7/11	KINGOOT BLVD. WOODBURN/OR	
CHECKED MD	1ST BRIDGE OVER DOGIE BROOK	DWG NO.
JOB 10-163	AUSTIN CONSTRUCTION, INC.	3 OF 7



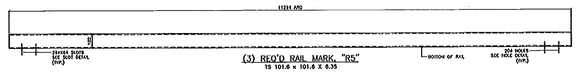
TOP VIEW, BEND DETAIL FOR "R4" & "MR4"

(6) REQ'D RAIL MARK, "R4"
TS 101.6 x 101.6 X 6.35

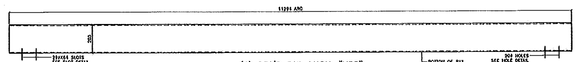
(2) REQ'D RAIL MARK, "MR4"
TS 203.2 x 101.6 X 7.93



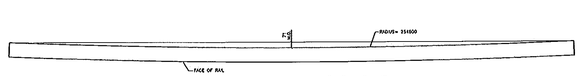
TOP VIEW, BEND DETAIL FOR "R5" & "MR5"



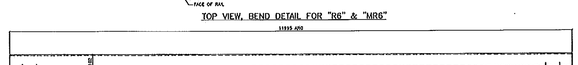
(3) REQ'D RAIL MARK, "R5"
TS 101.6 x 101.6 X 8.35



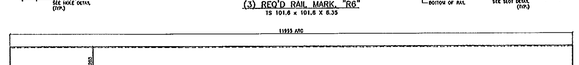
(1) REQ'D RAIL MARK, "MR5"
TS 203.2 x 101.6 X 7.93



TOP VIEW, BEND DETAIL FOR "R6" & "MR6"



(3) REQ'D RAIL MARK, "R6"
TS 101.6 x 101.6 X 8.35



(1) REQ'D RAIL MARK, "MR6"
TS 203.2 x 101.6 X 7.93

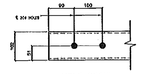
RECEIVED
CK'D BY HFS OK'D BY RSY
FEB 25 2011
RESUBMIT APPROVED
BY CPW DATE 3/23/11

BILL OF MATERIAL

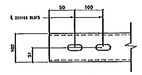
SHAP	SHOP MARK	NO. PCS	PIECE MARK	DESCRIPTION	LENGTH	REMARKS	MAT'L
	R4	6		101.6X101.6X8.35	13035	*	**
	MR4	2		203.2X101.6X7.93	13035	*	**
	R5	3		101.6X101.6X8.35	11284	*	**
	MR5	1		203.2X101.6X7.93	11284	*	**
	R6	3		101.6X101.6X8.35	11955	*	**
	MR6	1		203.2X101.6X7.93	11955	*	**

* TURBINO CVN REQUIREMENT OF 20 N.M. @ -18°C OR PROPORTIONAL VALUE OF SUBSIZE SPECIMEN
TESTING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH ASTM A673. THE "H" FREQUENCY SHALL BE USED

** ASTM A500 GRADE B



HOLE DETAIL



SLOT DETAIL

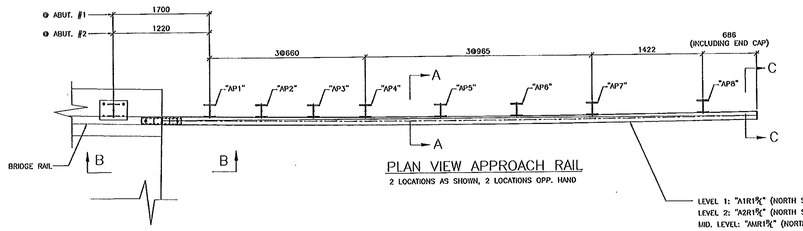
SHOP NOTE:

1. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED & FREE OF BURRS.
2. TWENTY FIVE PERCENT OF THE POST-TO BASE WELDS IN A PRODUCTION LOT SHALL BE TESTED BY MT. IF REJECTABLE DISCONTINUITIES ARE FOUND, ANOTHER TWENTY FIVE PERCENT OF THE PRODUCTION LOT SHALL BE TESTED. IF REJECTABLE DISCONTINUITIES ARE FOUND IN THE SECOND TWENTY FIVE PERCENT, ALL POST TO BASE WELDS SHALL BE TESTED. ALL TESTING OF BASE TO POST WELDS SHALL CONFORM TO THE LATEST VERSION OF AWS D1.5.
3. CLEAN ALL THREADS AFTER GALVANIZING.
4. HOLES IN RAIL BARS SHALL BE FIELD-DRILLED AND COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.
5. TURBINO SHALL MEET THE LONGITUDINAL CVN MINIMUM REQUIREMENTS OF 20 JOULES AT -18°C OR PROPORTIONAL VALUES OF SUBSIZE SPECIMENS. TESTING SHALL BE DONE IN ACCORDANCE WITH ASTM A673. THE "H" FREQUENCY SHALL BE USED AND THE MATERIAL SHALL BE AS-ROLLED.

FINISH: SHOP, PER ASTM A123, UNPAINTED ASTM A153						
MATERIAL: ASTM A500/A500M GR. B *						
BOLTS: AS NOTED						
ELECTRODES:						
WELDS: PER WPS						
SURFACE PREP: SSPC-SP6						
	NO	DATE	DESCRIPTION	NO	DATE	DESCRIPTION
	REVISIONS					

ARC
ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 120 UNITY, ME. 04988
PHONE: (207) 255-3618 - FAX: (207) 255-1054

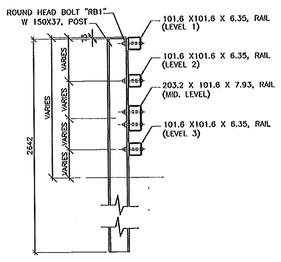
DRAWN BY	JAG	RAIL DETAILS	PROJECT NO. DOT 027-(04)
DATE	1/1/11	ADVANCE DATE DESCRIPTION	
CHECKED BY	WD	1ST BRIDGE OVER STONY BROOK	CONT. NO.
JOB	10-161	AUSTIN CONSTRUCTION, INC.	4 OF 7



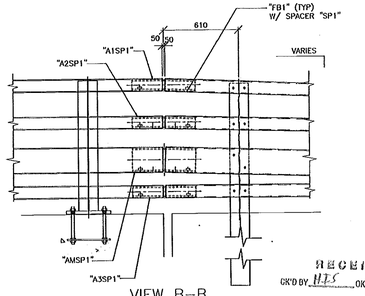
PLAN VIEW APPROACH RAIL

2 LOCATIONS AS SHOWN, 2 LOCATIONS OPP. HAND

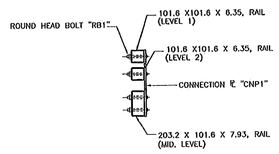
LEVEL 1: "A1R1⅝" (NORTH SIDE), "A1R2⅝" (SOUTH SIDE)
LEVEL 2: "A2R1⅝" (NORTH SIDE), "A2R2⅝" (SOUTH SIDE)
MID. LEVEL: "AMR1⅝" (NORTH SIDE), "AMR2⅝" (SOUTH SIDE)
LEVEL 3: "A3R1⅝" (NORTH SIDE), "A3R2⅝" (SOUTH SIDE)



SECTION A–A



VIEW B–B



SECTION C–C

(THRIE BEAM NOT SHOWN)

NOTES:
1. ALL POST CONN. HOLES IN RAILS TO BE FIELD DRILLED.

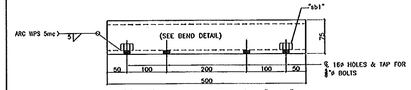
RECEIVED
GK'D BY NTS OK'D BY RSY
FEB 25 2011
RESUBMIT ____ APPROVED ____
BY CPW DATE 3/23/11

FINISH	GALV. PER ASTM A123			
MATERIAL	SEE DETAIL SHEETS			
HOLES				
ELECTRODES				
WELDS	E70XX-LH			
SURFACE PREP	SSPC-SP6	3/24/11	FOR APPROVAL	JMC
		NO	DATE DESCRIPTION	BY
		REVISIONS		

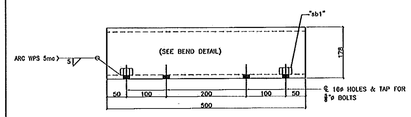
ARC ENGINEERING, INC.

ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 135 MILFORD, NJ 08848
PHONE: (908) 995-9616 • FAX: (908) 995-4054

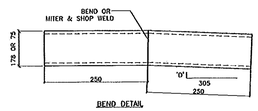
DRAFTER	JMC	APPROACH RAIL LAYOUT	PROJECT NO. SHF 002-1(20)
DATE	1/7/11	HIGHWAY DIST. STOCKBRIDGE	
CHECKED	MTD	1ST BRIDGE OVER STONY BROOK	DWG. NO. 5 OF 7
JOB	10-163	AUSTIN CONSTRUCTION, INC.	



(4) REQ'D SPLICE TS75X75X8 MARK, "A1SP1"
(4) REQ'D SPLICE TS75X75X8 MARK, "A2SP1"
(4) REQ'D SPLICE TS75X75X8 MARK, "A3SP1"



(4) REQ'D SPLICE TS178X75X10 MARK, "ANSP1"

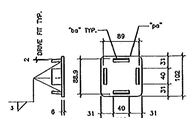


BEND DETAIL

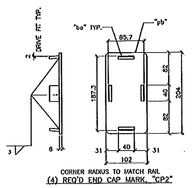
MARK	"D"
A1SP1	24
A2SP1	18
ANSP1	13
A3SP1	7

(4) EACH

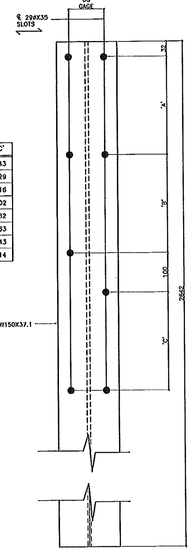
MARK	"A"	"B"	"C"
"AP1"	267	271	243
"AP2"	254	261	229
"AP3"	240	251	216
"AP4"	227	241	202
"AP5"	207	227	182
"AP6"	187	213	163
"AP7"	165	198	143
"AP8"	139	177	114



CORNER RADIUS TO MATCH RAIL
(12) REQ'D END CAP MARK, "CP1"



CORNER RADIUS TO MATCH RAIL
(4) REQ'D END CAP MARK, "CP2"



RECEIVED
OK'D BY HJS OK'D BY RSV
FEB 25 2011
RESUBMIT APPROVED
BY ORM DATE 3/23/11

BILL OF MATERIAL

SHOP	SHOP MARK	NO. PCS	PIECE MARK	DESCRIPTION	LENGTH mm	REMARKS	WT'S
AP1	thru AP8	32		POST			
		32		W 150 X 37.1	2642	ASTM A992/A992M Gr 345	
	RB1	256		159 X 152 M164 (HX8M) HEAD BOLT		HDG W/ FW & NUTS HDG	
	CP1	12		END CAP			
		12	pb	℄ 6X102	102		
		48	ba	BAR 6 X 25	40		
	CP2	4		END CAP			
		4	pb	℄ 6X102	204		
		16	ba	BAR 6 X 25	40		
A1SP1	thru A3SP1	12		SPLICE BAR			
		12		TS75X75X8	500		
		24	ab1	⅝ LOOK NAR ASTM 1852			
	ANSP1	4		SPLICE BAR			
		4		TS178X75X10	500		
		8	ab1	⅝ LOOK NAR ASTM 1852			

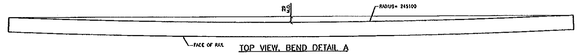
SHOP NOTE:
1. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED & FREE OF BURRS. THE INSIDE WELD FLASH OF TUBING SHALL BE REMOVED AT SPLICE/EXP JOINTS.
2. TWENTY FIVE PERCENT OF THE POST-TO BASE WELDS IN A PRODUCTION LOT SHALL BE TESTED BY MT. IF REJECTABLE DISCONTINUITIES ARE FOUND, ANOTHER TWENTY FIVE PERCENT OF THE PRODUCTION LOT SHALL BE TESTED. IF REJECTABLE DISCONTINUITIES ARE FOUND IN THE SECOND TWENTY FIVE PERCENT, ALL POST TO BASE WELDS SHALL BE TESTED. ALL TESTING OF BASE TO POST WELDS SHALL CONFORM TO THE LATEST VERSION OF AWS D1.5.
3. CLEAN ALL THREADS AFTER GALVANIZING.
4. VERIFY THE FIT OF SPLICE BARS IN RAIL TUBES AFTER GALVANIZING AND BEFORE SHIPPING TO SITE.
5. HOLES IN RAIL BARS SHALL BE FIELD-DRILLED AND COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.

ERECTION BOLTS W/NUTS				WASHERS		FINISH
QUAN.	SIZE	LENGTH	TYPE	FLAT	BEV.	
FINISH: GALV. PER ASTM A153, HARDWARE ASTM A153						
WASHERS ARE REQUIRED UNDER NUTS AND HEADS						
HOLES AS NOTED						
ELECTRODES						
WELDS PER AWS						
SURFACE PREP. SSPC-SP6						

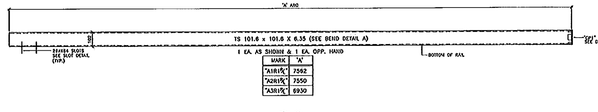
NO	DATE	REVISIONS DESCRIPTION	BY
1	2/24/11	PER APPROVAL	ARC

ARC
ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 120 KINGFIELD, ME. 04947
PHONE: (207) 265-2618 ~ FAX: (207) 265-1054

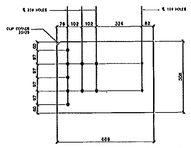
DRAWN BY	JAG	APPROACH POST & SPLICE DETAILS	PROJECT NO. BF 021-100
DATE	1/21/11	VASSALBORO, TOWNSHIP	
CHECKED	MJD	LOT BROOK OVER LOST BROOK	DWG NO.
JOB	10-183	AUSTIN CONSTRUCTION, INC.	6 OF 7

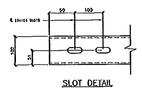


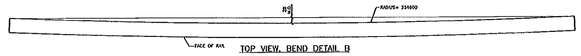
TOP VIEW, BEND DETAIL A



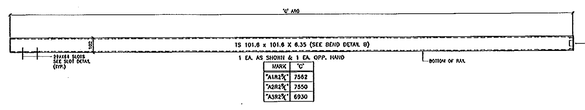
(1) REQ'D RAIL MARK, "AMR1^{R*}" AS SHOWN
(1) REQ'D RAIL MARK, "AMR1^{LS*}" OPP. HAND
TS 203.2 x 101.6 X 7.93







TOP VIEW, BEND DETAIL B



(1) REQ'D RAIL MARK, "AMR2^{R*}" AS SHOWN
(1) REQ'D RAIL MARK, "AMR2^{LS*}" OPP. HAND
TS 203.2 x 101.6 X 7.93

RECEIVED
CK'D BY IIIS OK'D BY RGY
FEB 25 2011
RESUBMIT _____ APPROVED _____
BY OPW DATE 3/23/11

BILL OF MATERIAL

SHOP	SHOP MARK	NO. PCS	PIECE MARK	DESCRIPTION	LENGTH	REMARKS	MAT'L
	A1R1^{R*}	2		101.6X101.6X6.35	7562	*	**
	A2R1^{R*}	2		101.6X101.6X6.35	7550	*	**
	A3R1^{R*}	2		101.6X101.6X6.35	6930	*	**
	AMR1^{R*}	2		203.2X101.6X7.93	7544	*	**
	A1R2^{R*}	2		101.6X101.6X6.35	7562	*	**
	A2R2^{R*}	2		101.6X101.6X6.35	7550	*	**
	A3R2^{R*}	2		101.6X101.6X6.35	6930	*	**
	AMR2^{R*}	2		203.2X101.6X7.93	7544	*	**
	CNP1	4		PL 10X508	650	ASTM A36	
	FB1	64		1.00"ø GR 304 AISI HEX BAR (VB) SCC			
	SP1	64		1.0" ø SCH. 40 PIPE	0-6		

* TUBING CVN REQUIREMENT OF 20 W.M. @ -18°C OR PROPORTIONAL VALUE OF SUBSIZE SPECIMEN
TESTING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH ASTM A673. THE 'H' FREQUENCY SHALL BE USED

** ASTM A500 GRADE B

SHOP NOTES

1. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED & FREE OF BURRS.
2. TWENTY FIVE PERCENT OF THE POST-TO BASE WELDS IN A PRODUCTION LOT SHALL BE TESTED BY MT. IF REJECTABLE DISCONTINUITIES ARE FOUND, ANOTHER TWENTY FIVE PERCENT OF THE PRODUCTION LOT SHALL BE TESTED. IF REJECTABLE DISCONTINUITIES ARE FOUND IN THE SECOND TWENTY FIVE PERCENT, ALL POST TO BASE WELDS SHALL BE TESTED. ALL TESTING OF BASE TO POST WELDS SHALL CONFORM TO THE LATEST VERSION OF AWS D1.5.
3. CLEAN ALL THREADS AFTER GALVANIZING.
4. HOLES IN RAIL BARS SHALL BE FIELD-DRILLED AND COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.
5. TUBING SHALL MEET THE LONGITUDINAL CVN MINIMUM REQUIREMENTS OF 20 JOULES AT -18°C OR PROPORTIONAL VALUES OF SUBSIZE SPECIMENS. TESTING SHALL BE DONE IN ACCORDANCE WITH ASTM A673. THE 'H' FREQUENCY SHALL BE USED AND THE MATERIAL SHALL BE AS-ROLLED.

FINISH GMAC PER ASTM A123, HARDWARE ASTM A153				
BUILDING	ASTM A500/A500M GR. B *			
PAINT	AS NOTED			
ELECTRODES				
WELDS	PER WPS			
SURFACE PREP	SSPC-SP6	3/22/11	PER APPROVAL	JMC
		NO. DATE	DESCRIPTION	BY
		REVISIONS		

ARC BUILDERS, INC.

ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED
P.O. BOX 128 SHOREHAM, VT. 05770
PHONE: (802) 265-3616 ~ FAX: (802) 265-1056

DRAFTER	JMC	APPROACH RAIL DETAILS	PROJECT NO. BRF 022-1(20)
DATE	1/31/11	42"GMAX RAIL, 8"GGMAX POST, 8"GGMAX SLEEVE, 102"GMAX SWAY STEEL BRIDGE	
CHECKED	WEB		CWSL NO.
JOB	10-103	AUSTIN CONSTRUCTION, INC.	7 OF 7

Casco Bay Steel Structures, Inc.

5 Industry Road
South Portland, Maine 04106

Phone: (207) 772-2533 Fax: (207) 772-0580

STRUCTURES COPY

WELDING PROCEDURE SPECIFICATION

Material specification ASTM 709-Gr 36-50-50W (250-345-345W)
Welding process Shielded Metal Arc Welding (SMAW)
Manual or machine Manual
Position of welding Fleet (1F), Horizontal (2F) VT PRANS
Filler metal specification ANSI/AWS A5.1 - A5.5 RECEIVED
Filler metal classification E7018 - 8018 C3G3 - 7028 CKD BY SKD BY JWC
Flux N.A.
Shielding gas N.A. Flow rate N.A. SEP 0 2 2010
Single or multiple pass Single and multiple RESUBMIT APPROVED
Single or multiple arc Single BY DATE 9/1/10
Welding current AC / DC
Polarity Straight / Reverse
Welding progression
Post treatment meet AWS specification
Preheat and interpass temperature To 3/4(19) 50°(10°) 3/4(19) To 1½(38) 70°(20°) 1½(38) To 2½(63.5) 150°(65°) over 2½(63.5) 225°(110°)
Postheat temperature N.A.
Heat Input Min N.A. Max N.A.

Vermont AOT
Br. No. 9 - Proj No. BRF 0221(20)
Stockbridge - CBSS 461

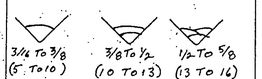
(metric)

WELDING PROCEDURE

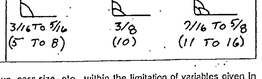
Pass no.	Electrode size	Welding current: Amperes	Welding current: Volts	Travel speed
	7018			
	1/8 (3.2)	70-170	22-26	
AS.	5/32 (3.9)	120-225	22-26	AS
	3/16 (4.8)	170-300	24-27	
REQ.	8018			REQ
	1/8 (3.2)	90-160	22-26	
	5/32 (3.9)	120-225	22-26	
	3/16 (4.8)	180-290	24-27	
	7028			
	5/32 (3.9)	170-290	22-26	
	3/16 (4.8)	210-330	24-27	

AWS D1.5 Joint detail Fillet

1F



2F



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

Procedure no. 401
Revision no.

NHDOT QC 1 PAUL & GRANDALE DISTRICT CBSS

Contractor Casco Bay Steel
Authorized By Paul E. Hardale
Date 8/28/10

Form III-2

Casco Bay Steel Structures, Inc.

WELDING PROCEDURE SPECIFICATION

Material specification ASTM 709 Gr 50-50W
Welding process Submerged Arc Welding
Manual or machine Machine
Position of welding Flat
Filler metal specification AWS A5.23
Filler metal classification F8A2-EM1K-N1-H8 Lincoln
Flux LINCOLN 960 with LA-75 Elec
Shielding gas N/A Flow rate N/A
Single or multiple pass Multiple
Single or multiple arc Single
Welding current DC
Polarity DCEP
Welding progression See Detail
Root treatment Wirebrush, area Tobe Free of Loose Scale, Slag, Rust, Weld
Preheat and interpass temperature See Table
Postheat temperature N/A
Heat Input Min 99.96 KJ/in Max 421.5 KJ/in P.Q.R FCM #14 -56.8 KJ/in

Minimum Preheat and Interpass Temperature, °C (°F)

Welding Process (Base Metal)	To 20 mm [3/4 in] Incl.	Over 20 mm [3/4 in] to 40 mm [1-1/2 in] Incl.	Over 40 mm [1-1/2 in] to 65 mm [2-1/2 in] Incl.	Over 65 mm [2-1/2 in]
Thickness of Thicker Part at Point of Welding, mm [in]				
SAW; GMAW; FCAW; SMAW (M270M [M270] [50W], [HPS 345W (HPS 50W)])	10 [50]	30 [70]	65 [150]	110 [225]
SAW; GMAW; FCAW; SMAW (M270M [M270] [50W], [HPS 485W (HPS 70W)])	10 [50]	50 [125]	80 [175]	110 [225]

Vermont AOT
RE: NO. 9 - Proj No. BRF-0021(20)
Stockbridge - CAS5 461

VTRANS RECEIVED
SEP 02 2010

CK'D BY _____ OK'D BY JCM
RESUBMIT _____ APPROVED ✓
BY _____ DATE 9/9/10

WELDING PROCEDURE

Pass no.	Electrode size	Welding current Amperes	Welding current Volts	Travel speed
AS	5/32	600	30	19
RFQ		567	28	17
		To	To	To
		627	31	21

Sec. 5-13
AWS D1-5 Joint detail B-U3c-S

For B-U3c-S only		
T_1		S_1
Over	to	
2	2-1/2	1-3/4
2-1/2	3	1-3/4
3	3-5/8	2-1/8
3-5/8	4	2-1/2
4	4-3/4	2-3/4
4-3/4	5-1/2	3
5-1/2	6-1/4	3-3/4

For T_1 > 6-1/4 or T_1 ≤ 2
S_1 = 2/3 (T_1 − 1/4)

MAX Interpass Temp. 450°F

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

Procedure no. 206 - ST of VT
Revision no. 1 - 9-3-10

Contractor Casco Bay Steel
Authorized By Paul C Goodale
Date 4-13-09

PAUL S. GOODALE
CWI 05100201
QC1 EXP. 10/01/10

Casco Bay Steel Structures, Inc.
75 Spring Hill Road
Saco, Maine 04072
Phone: (207) 282-7360 Fax: (207) 282-1176

WELDING PROCEDURE SPECIFICATION

Material specification ASTM 709 Gr 250 -345-345W
Welding process Submerged Arc Welding (SAW)
Manual or machine Machine
Position of welding Flat 1F - Horizontal 2F
Filler metal specification AWS A5-23
Filler metal classification Lincoln LA 75, F8A2-EA1-A1
Flux Lincoln 960 Elec. EX 1/8 ± 3/4
Shielding gas N/A Flow rate N/A
Single or multiple pass Single and multiple pass
Single or multiple arc Single
Welding current AC
Polarity DCEN
Welding progression See Joint Details
Root treatment To meet AWS specification
Preheat and interpass temperature To 3/4-50, +3/4 TO 1 1/2 -70°, 1 1/2 TO 2 1/2-150° over 2 1/2 225
Postheat temperature N/A
Heat Input Min 30 KJ/in Max 47.1 KJ/in PQR-FCM #9 42.8 KJ/in

WELDING PROCEDURE

Vermont AOT
Br. No 9 - Proj No BRF-022(60)
Stockbridge - CASS 46

Pass no.	Electrode size	Welding current Amperes	Welding current Volts	Travel speed
		293	32	13 IPM
1	3/32	264 TO 322	30 TO 34	11 TO 15

AWS D1-5 Joint detail Fillet

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BY DATE 9/1/10

AWS QC 1 PAUL E. GOODALE #11002201 EXPIRES

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

Procedure no. 250
Revision no. 1 new PQR
Form III-2

Contractor Casco Bay Steel
Authorized By Paul E. Goodale
Date 11-1-06

Casco Bay Steel Structures, Inc.

75 Spring Hill Road
Saco, Maine 04072

Phone: (207) 282-7360 Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

Material specification ASTM-709-Gr36-50-50W / A709M Gr 250-345-345W
Welding process Flux Cored Arc welding (FCAW)
Manual or machine Semi AUTO
Position of welding Flat - Horizontal
Filler metal specification AWS A5-29
Filler metal classification E81T1-Ni1-H4 ESAB
Flux NA
Shielding gas 75%AR-25%CO2 Flow rate 35 CFH +8-4
Single or multiple pass Single / Multiple Elec Ex 5/16 ± 1/4
Single or multiple arc Single
Welding current DC
Polarity DCEP
Welding progression See detail
Root treatment Wire brush - grind To bare Free of Loose Scale, Slag, rust & Moisture
Preheat and interpass temperature To 20°(34) 10(50), 80°(36°) TO 40(1/4) 200(90), 40°(1/4) To 60(2/4) 65°C150 over 60(2 1/4) 110(225)
Postheat temperature NA
Heat Input Min 27.7 KJ/in Max 43.6 KJ/in PQR FCM#8 39.6 KJ/in

WELDING PROCEDURE

Vermont A&T
Bldg - Proj No. BRF-022160(60)
Stockbridge : CBSS 461

AWS 5-13
AWS D1-5 Joint detail Fillet

Pass No.	Electrode size	Welding current Amperes	Welding current Volts	Travel speed
		287	29	13
	1/16	258 TO 315	26.8 TO 31	11.4 TO 19

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AWS QC 1 PHILIP L. GOODALE 98100020 CWI

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

Procedure no. 101
Revision no.
Form III-2

Contractor Casco Bay Steel
Authorized By Phil Goodale
Date 12-6-06

Casco Bay Steel Structures, Inc.

WELDING PROCEDURE SPECIFICATION

Material specification ASTM 709 - Gr 36-50-50W
Welding process Submerged Arc Welding
Manual or machine Machine
Position of welding Flat + Horizontal
Filler metal specification A5-23
Filler metal classification F8A2-EN1K-Ni1-H8
Flux Lincoln 960 - Electrode LA-95
Shielding gas NA Flow rate NA
Single or multiple pass Both
Single or multiple arc Single
Welding current DC
Polarity DCEP
Welding progression See Detail
Root treatment Grind-wirebrush-Free of Mill scale, Slag-RUST & MOISTURE
Preheat and interpass temperature See Table
Postheat temperature AS REQ
Heat Input Min 39.8 Max 62.5 FCM 14-56.8 KJ/in

Minimum Preheat and interpass Temperature, °C [°F]

Welding Process (Base Metal)	To 20 mm [3/4 in] incl.	Thickness of Thickest Part at Point of Welding, mm [in] Over 20 mm [3/4 in] to 40 mm [1-1/2 in] incl.	Over 40 mm [1-1/2 in] to 65 mm [2-1/2 in] incl.	Over 65 mm [2-1/2 in]
SAW; GMAW; FCAW; SMAW (M270M [M270] [A 709M (A 709)] Gr. 250 [36], 345 [50], 345W [50W], HPS 345W (HPS 50W))	10 [50]	20 [70]	65 [150]	110 [225]
SAW; GMAW; FCAW; SMAW (M270M [M270] [A 709M (A 709)] Gr. HPS 485W (HPS 70W), 690 [100], 690W (100W))	10 [50]	50 [125]	80 [175]	110 [225]

Vermont AOT
By No. 9 - Project BRF-0224(60)
Stockbridge - CBSS 461

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OK'D BY _____ OK'D BY _____

RESUBMIT _____ APPROVED ✓

BY _____ DATE 9/1/10

WELDING PROCEDURE

Pass no.	Electrode size	Welding current Amperes	Welding current Volts	Travel speed
AS REQ	5/32	600	30	19
		640 TO 560	32 TO 28	21 TO 17

Sec. 5-13
AWS D1-5
Joint detail Fillet

2F
1F
5/16
5/16
5/16
5/16

PAUL E. GOODALE
CWI 83100201

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

Procedure no. 201-A
Revision no. _____

Contractor Casco Bay Steel
Authorized By Paul E. Goodale
Date 1-11-10

Casco Bay Steel Structures, Inc.

WELDING PROCEDURE SPECIFICATION

Material specification ASTM 709 - Gr 50 - 50W
Welding process Submerged Arc welding (Power wave)
Manual or machine Machine
Position of welding Flat
Filler metal specification AS - 23
Filler metal classification F8A2 - EN1 - Ni1 - HA
Flux Lincoln 880 - Flux LAST
Shielding gas N.A. Flow rate N.A
Single or multiple pass Single / Multiple
Single or multiple arc Single
Welding current Alternating
Polarity AC
Welding progression See details
Root treatment Grind - wire brush - To be Free of Slag - RUST - Moisture
Preheat and interpass temperature See Table
Postheat temperature As Req.
Heat Input Min 47.1 KJ/in Max 74.0 KJ/in P.Q.R - PW #1 - 67.3 KJ/in

Minimum Preheat and Interpass Temperature, °C (°F)

Welding Process (Base Metal)	To 20 mm [3/4 in] Incl.	Over 20 mm [3/4 in] to 40 mm [1-1/2 in] Incl.	Over 40 mm [1-1/2 in] to 65 mm [2-1/2 in] Incl.	Over 65 mm [2-1/2 in]
SAW; GMAW; FCAW; GMAW (M23M [M270] [A 709M/A 709] Gr. 250 [36], 345 [50], 345W [50W], 345S, 345W DUPX 2507)	10 [50]	20 [70]	65 [150]	110 [225]
SAW; GMAW; FCAW; GMAW (M23M [M270] [A 709M/A 709] Gr. 485 [70], 485W DUPX 2507), 690 [100], 690W [100W])	10 [50]	50 [125]	80 [175]	110 [225]

Thickness of Thicker Part at Point of Welding, mm [in]

Vermont A&T
P.W. No. 9 - Proj. No. ARF-0031(6)
Stockbridge - CASS 461
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RESUBMIT ____ APPROVED ✓
BY ____ DATE 9/1/10

WELDING PROCEDURE

Pass no.	Electrode size	Welding current: Amperes	Welding current: Volts	Travel speed
		827	38	28 IPM
AS	5/32	910	41	32
REQ		TO	TO	TO
		744	35	24

Sec 5.13
AWS-D1.5 Joint detail B-L1a-S
SIDE-1
Backgouge SIDE-2
MAX 9/16"
SIDE-2
MAX INTERPASS TEMP 450°F

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

Procedure no. #3 - PW - STOP.VT
Revision no. 1 - 8-3-10

Contractor Casco Bay Steel
Authorized By Paul E. Goodale
Date Jan 4 2010 PAUL E. GOODALE
CWI 83100209
QCI EXP. 10/01/12

Casco Bay Steel Structures, Inc.

WELDING PROCEDURE SPECIFICATION

Material specification ASTM 709 - Gr 50 50W
Welding process Submerged Arc welding (Power Wave)
Manual or machine Machine
Position of welding Flat
Filler metal specification A5-23
Filler metal classification F8A2-EN1-Ni1-HA
Flux Lincoln 980 - Elec. LA75
Shielding gas n/a Flow rate N/A
Single or multiple pass Single / Multiple
Single or multiple arc Single
Welding current Alternating
Polarity AC
Welding progression See detail
Root treatment Grind - wire brush - To be Free of Slag - RUST - Moisture
Preheat and interpass temperature See Table
Postheat temperature As Req.
Heat Input Min 47.1 KJ/in Max 74.0 KJ/in P.Q.R - Pw #1 - 67.3 KJ/in

Minimum Preheat and Interpass Temperature, °C [°F]

Welding Process (base Metal)	To 20 mm [3/4 in] Incl.	Thickness of Thicker Part at Point of Welding, mm [in] Over 20 mm [3/4 in] to 40 mm [1-1/2 in] Incl.	Over 40 mm [1-1/2 in] to 65 mm [2-1/2 in] Incl.	Over 65 mm [2-1/2 in]
SAW; GMAW; FCAW; SMAW (M270M [M270]) [A 709M (A 709) Gr. 250 [35], 345 [50], 345W [50W], HPS 345W (HPS 50W)]	10 [50]	20 [70]	65 [150]	110 [225]
SAW; GMAW; FCAW; SMAW (M270M [M270]) [A 709M (A 709) Gr. HPS 485W (HPS 70W)], 690 [100], 690W [100W]]*	10 [50]	50 [125]	80 [175]	110 [225]

For ECW-100 F: 150°F, 200F, 300F

Vertical A01
Ref. WPS 9 - PW #1 BRF-MM16
Stockbridge - CBSS HA1
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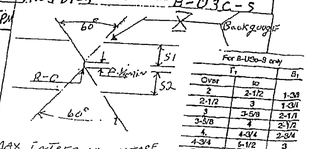
OK'd BY JW
SEP 0 2 2010
RESUBMIT ____ APPROVED ✓
BY ____ DATE 9/9/10

WELDING PROCEDURE

Pass no.	Electrode size	Welding current: Amperes	Welding current: Volts	Travel speed
		827	38	28 IPM
As Req	5/32	910 To 744	41 To 35	32 To 24

Sec 5.13
AWS D1-5 Joint detail B-U3C-S



For B-U3C-S only

Over	T_1 to	B_1
2	2-1/2	1-3/4
2-1/2	3	1-3/4
3	3-5/8	2-1/4
3-5/8	4	2-1/2
4	4-3/4	2-3/4
4-3/4	5-1/2	3
5-1/2	6-1/4	3-3/4

For $T_1 > 6\text{-}1/4$ or $T_1 \times 2$
$S_1 = 2/3\ (T_1 - 1/4)$

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

Procedure no. #1 - PW - STOPVT
Revision no. 1 - 8-3-10

Contractor Casco Bay Steel
Authorized By Paul E. Goodale
Date Jan 4 - 2010 PAUL E. GOODALE
CWI 83100201
QC1 EXP. 10/01/16

Casco Bay Steel Structures, Inc.

WELDING PROCEDURE SPECIFICATION

Material specification ASTM 709 Gr 50 - 50W
Welding process Submerged Arc Welding
Manual or machine Machine
Position of welding Flat
Filler metal specification AWS A5-23
Filler metal classification F8A2-EN1K-N1-H8 Lincoln
Flux LINCOLN 960 with LA-75 Etc
Shielding gas NA
Single or multiple pass MULTIPLE Flow rate NA
Single or multiple arc SINGLE
Welding current DC
Polarity DCEP
Welding progression See Detail
Root treatment Wirebrush, area To be Free of loose Scale, Slag, RUST
Preheat and interpass temperature See Table
Postheat temperature NA
Heat Input Min 39.96 KJ/in Max 62.15 KJ/in P.Q.R FCM#114-56.8 KJ/in

Minimum Preheat and Interpass Temperature, °C (°F)

Welding Process (Base Metal)	To 30 mm [3/4 in] Incl.	Thickness of Thickest Part at Point of Welding, mm (in) Over 20 mm [3/4 in] to 40 mm [1-1/2 in] Incl.	Over 40 mm [1-1/2 in] to 65 mm [2-1/2 in] Incl.	Over 65 mm [2-1/2 in]
S.A.W; GMA W; FCA W; SMA W (M270M [M270M (A 709M (A 709)] Gr. 250 [36], 345 [50], 345W [50W], HPS 345W (HPS 50W))	10 [50]	30 [70]	65 [150]	110 [225]
S.A.W; GMA W; FCA W; SMA W (M270M [M270M (A 709M (A 709)] Gr. HPS 485W (HPS 70W), 690 [100], 690W [100W])	10 [50]	50 [125]	80 [175]	110 [225]

Vermont AOT
Br. No. 9 - Proj No. BRF-022H(6)
Rockbridge - ORS 4161

VTRANS
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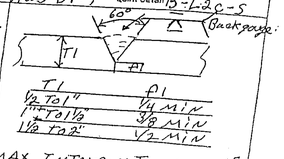
SEP 0 2 2010

OK'D BY _____ OK'D BY JWK
RESUBMIT _____ APPROVED _____
BY _____ DATE 9/1/10

WELDING PROCEDURE

Pass no.	Electrode size	Welding current Amperes	Welding current Volts	Travel speed
		600	30	19
AS	5/32	569	27	19
		TO	TO	TO
REQ.		629	31	21

SEC. 5.13
AWS D1-5 Joint detail B-L2c-S



T1	A1
1/2 To 1"	1/4 MIN
1" To 1 1/2	3/8 MIN
1 1/2 To 2"	1/2 MIN

MAX Interpass Temp. 450°F

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

Procedure no. 202-ST OF VT
Revision no. 1-89-10

Contractor Casco Bay Steel
Authorized By Paul E. Goodale
Date 4-13-09

PAUL E. GOODALE
CWI 83502001
QCI EXP. 10/01/10

VERMONT

State of Vermont
PDD/Structures Design Section
One National Life Drive
Montpelier, VT 05633-5001
www.not.state.vt.us

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

Agency of Transportation

September 29, 2010

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

Re: Stockbridge BRF 022-1(20) VT 107, Bridge 9

The following Structural Steel details [Item #506.55, Structural Steel , Plate Girder] and welding procedures for the above project (Vendor's Job #461) received in this office on September 2 have been reviewed and are being returned herewith.

All sheets and weld procedures are either Approved or Approved As Noted. Please note comments in red.

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

Sincerely,

Christopher P. Williams, P.E.
Structures Project Manager

Attachments
cc: Tom Chase - Resident Engineer
Jeff Clark - Shop Inspector
Austin Construction. - Contractor
Materials & Research (C&IA Unit) - letter only
Construction Division - letter only
Files (CPW)

VTrans Working to Get You There

Casco Bay Steel Structures, Inc.
5 Industry Road
South Portland, Maine 04106
Fax: (207) 772-0580

WELDING PROCEDURE SPECIFICATION

Material specification ASTM A709-Gr 36-50-50W (250-345-345W)
Welding process Shielded Metal Arc Welding (SMAW)
Manual or machine Manual
Position of welding Flat (1F), Horizontal (2F)
Filler metal specification AWS A5.1 - A5.5
Filler metal classification E7018 - 8018 C1/C3 - 7028
Flux N.A.
Shielding gas N.A. Flow rate N.A.
Single or multiple pass Single and multiple
Single or multiple arc Single
Welding current AC / DC
Polarity Straight / Reverse
Welding progression
Post treatment Meet AWS SPECIFICATION
Preheat and interpass temperature To 3/4(19) 50°(10°C) 3/4(19) To 1 1/2(38) 70°(30°C) 1 1/2(38) To 2 1/2(63.5) 150°(65°C) over 2 1/2(63.5) 225°(110°C)
Postheat temperature N.A.
Heat Input Min N.A. Max N.A.

RECEIVED
SEP 0 2 2010
REVISED ____ APPROVED ✓
BY ____ DATE 9/1/10

Vermont AST
Bk. No. 9 - Proj No. BRF-022-1(60)
Stockbridge - CBSS #61

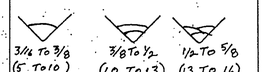
(metric)

WELDING PROCEDURE

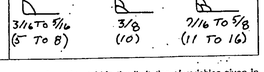
Pass no.	Electrode size	Welding current: Amperes	Welding current: Volts	Travel speed
	7018			
	1/8 (3.2)	70-170	22-26	
AS.	5/32 (3.9)	120-225	22-26	AS
	3/16 (4.8)	170-300	24-27	
REQ.	8018			REQ
	1/8 (3.2)	90-160	22-26	
	5/32 (3.9)	120-225	22-26	
	3/16 (4.8)	180-290	24-27	
	7028			
	5/32 (3.9)	170-290	22-26	
	3/16 (4.8)	210-330	24-27	

AWS D1.5 Joint detail: Fillet

1F



2F



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

Procedure no. 401
Revision no. ____
Form III-2

AWS QC 1 PAUL E. HOODALE 03/19/2007 CWI

Contractor Casco Bay Steel
Authorized By Paul E. Hoodale
Date 8/28/10

Casco Bay Steel Structures, Inc.

WELDING PROCEDURE SPECIFICATION

Material specification: AST M 709 Gr 50 - 50W
Welding process: Submerged Arc Welding
Manual or machine: Machine
Position of welding: Flat
Filler metal specification: AWS A5.23
Filler metal classification: F8A2-EM1K-N1-H8 Lincoln
Flux: LINCOLN 960 with LA-75 Elec
Shielding gas: NA Flow rate: NA
Single or multiple pass: Multiple
Single or multiple arc: Single
Welding current: DC
Polarity: DCEP
Welding progression: See Detail
Root treatment: W/wirebrush, over Tape Free of Loose Scale, Slag, Rust & Melt
Preheat and interpass temperature: See Table
Postheat temperature: NA
Heat Input Min 39.96 kJ/in Max 62.15 kJ/in PQR FCM#14 - 56.8 kJ/in

Minimum Preheat and Interpass Temperature, °C [°F]

Welding Process (Base Metal)	To 20 mm [3/4 in] Incl.	Over 20 mm [3/4 in] to 40 mm [1-1/2 in] Incl.	Over 40 mm [1-1/2 in] to 65 mm [2-1/2 in] Incl.	Over 65 mm [2-1/2 in]
	Thickness of Thicker Part at Point of Welding, mm [in]			
SAW; GMAW; FCAW; SMAW (M220M [M270M] [A 709M (A 709)] Gr. 250 [36], 345 [50], 345W [50W], HPS 345W (HPS 50W))	10 [50]	20 [70]	65 [120]	110 [225]
SAW; GMAW; FCAW; SMAW (M270M [M270] [A 709M (A 709)] Gr. HPS 485W (HPS 70W), 690 [100], 690W [100W])	10 [50]	50 [125]	80 [175]	110 [225]

Vermont AOT
By WO 9 - Proj No. BRF 0224 (60)
Stockbridge - CASS 4167

VTRANS RECEIVED
SEP 02 2010

SKD BY _____ ORD BY JSW
RESUBMIT _____ APPROVED ✓
BY _____ DATE 9/1/10

WELDING PROCEDURE

Pass no.	Electrode size	Welding current: Amperes	Welding current: Volts	Travel speed
AS	5/32	600	30	19
REQ		567	28	17
		TO	TO	TO
		627	31	21

Sec. 5-13
AWS D1-5 Joint detail B-U3c-S
60°
Backgouge
t/2
A-O
R VARIES
t/2
60°
For B-U3c-S only

Over	To	S_1
2	2-1/2	1-5/8
2-1/2	3	1-3/4
3	3-5/8	2-1/8
3-5/8	4	2-1/2
4	4-3/4	2-3/4
4-3/4	5-1/2	3
5-1/2	8-1/4	3-3/4

For $T_1 > 8\text{-}1/4$ or $T_1 \leq 2$
$S_1 = 2/3\ (T_1 - 1/4)$

MAX INTERPASS Temp: 450°F

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

Procedure no. 206 - 5T of VT
Revision no. 1 - 8-3-10

Contractor Casco Bay Steel
Authorized By Paul C Goodale
Date 4-13-09

PAUL C. GOODALE
CWI 83100201
QC1 EXP. 12/01/10

Casco Bay Steel Structures, Inc.
75 Spring Hill Road
Saco, Maine 04072
Phone: (207) 282-7360 Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

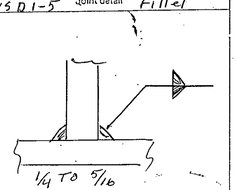
Material specification ASTM 709 Gr 250 -345-345W
Welding process Submerged Arc Welding (SAW)
Manual or machine Machine
Position of welding Flat 1F - Horizontal 2F
Filler metal specification AWS A5-23
Filler metal classification Lincoln LA 75 , F8A2-EA1T-A1
Flux Lincoln 960 , Elec: EX 1/8 ± 3/4
Shielding gas N/A Flow rate N/A
Single or multiple pass Single and Multiple Pass
Single or multiple arc Single
Welding current DC
Polarity D.C.E.N
Welding progression See Joint Details
Root treatment To meet AWS specification
Preheat and interpass temperature To 3/4-50 , +3/4 To 1 1/2-70° , 1 1/2 To 2 1/2-150° over 2 1/2 225
Postheat temperature N/A
Heat Input Min 30 KJ/in Max 47.11 KJ/in PQR-FCM #9 42.18 KJ/in

Vermont AST
BR-WA 9-Proj No BRF-022A(60)
Stockbridge: CR55 461

WELDING PROCEDURE

Pass no.	Electrode size	Welding current Amperes	Welding current Volts	Travel speed
		293	32	13IPM
1	3/32	264 To 322	30 To 34	11 To 15

AWS D1-5 Joint detail Fillet



VTRANS RECEIVED SEP 02 2010 OK'D BY JDC

RESUBMIT APPROVED ✓ BY DATE 9/9/10

AWS QC 1 PAUL E. GOODALE EXPIRES: 2008

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

Procedure no. 250
Revision no. 1 new PQR

Contractor Casco Bay Steel
Authorized By Paul E. Goodale
Date 11-1-06

Form III-2

Casco Bay Steel Structures, Inc.
75 Spring Hill Road
Saco, Maine 04072
Phone: (207) 282-7360 Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

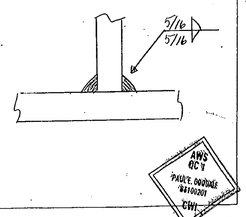
Material specification ASTM-709-Gr36-50-50W / A709M Gr 250-345-345W
Welding process Flux Cored Arc Welding (FCAW)
Manual or machine Semi AUTO
Position of welding Flat - Horizonal
Filler metal specification AWS A5-29
Filler metal classification E81T1-Ni1-H4 ESAB
Flux NA
Shielding gas 75%AR-25%CO2 Flow rate 35CFH +5 -4
Single or multiple pass Single / Multiple Elec Ex 5/32 = 1/4
Single or multiple arc Single
Welding current DC
Polarity DCEP
Welding progression See detail
Root treatment wire brush - area To be Free of Loose Scale, Slag, Rust & Moisture
Preheat and interpass temperature To 20°C(70) 10(50), 20°(36) TO 40(104) 2000, 40(104) TO 60(225) 65C(150)
Postheat temperature NA over 60(140) 110(225)
Heat Input Min 27.7 KJ/in Max 43.6 KJ/in PQR FCM #8 39.6 KJ/in

WELDING PROCEDURE

Vermont A&T
Bl. No. 9 - Proj No. BRF-022H(60)
Stockbridge: CBSS HBI

AWS 5-13
AWS D1-5 Joint detail Fillet

Pass no.	Electrode size	Welding current: Amperes	Welding current: Volts	Travel speed
		287	29	13
	1/16	258 TO 315	26.8 TO 31	11.4 TO 19



VTRANS RECEIVED SEP 02 2010

OK'D BY ____ OK'D BY Jeff
RESUBMIT ____ APPROVED ✓
BY ____ DATE 9/1/10

AWS QC 1 PAUL E. GOUDALE 98100201 CWI

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

Procedure no. 101
Revision no. ____
Form III-2

Contractor Casco Bay Steel
Authorized By Paul E. Goudale
Date 12-6-06

Casco Bay Steel Structures, Inc.

WELDING PROCEDURE SPECIFICATION

Material specification ASTM 709 - Gr 36-50-50W
Welding process Submerged Arc welding
Manual or machine Machine
Position of welding Flat + Horizontal
Filler metal specification A5.23
Filler metal classification EBA2-ENIK-Nil-HR
Flux Lincoln 960 - ElecTrode LA-95
Shielding gas N/A Flow rate N/A
Single or multiple pass Both
Single or multiple arc Single
Welding current DC
Polarity DCEP
Welding progression See Detail
Root treatment grind-wirebrush - Free of Mill scale, Slag-RUST & MoisTure
Preheat and interpass temperature See Table
Postheat temperature AS REQ
Heat Input Min 39.8 Max 62.5 FCM 14 - 56.8 KJ/in

Minimum Preheat and Interpass Temperature, °C [°F]

Welding Process (Base Metal)	To 20 mm [3/4 in] Incl.	Thickness of Thickest Part at Point of Welding, mm [in] Over 20 mm [3/4 in] to 40 mm [1-1/2 in] Incl.	Over 40 mm [1-1/2 in] to 65 mm [2-1/2 in] Incl.	Over 65 mm [2-1/2 in]
SAW; GMAW; FCAW; SMAW (M270M [M270] [A 709M (A 709)] Gr. 250 [36], 345 [50], 345W [50W], HPS 345W [HPS 50W])	10 [50]	20 [70]	65 [150]	110 [225]
SAW; GMAW; FCAW; SMAW (M270M [M270] [A 709M (A 709)] Gr. HPS 485W [HPS 70W], 690 [100], 690W [100W])[a]	10 [50]	50 [125]	80 [175]	110 [225]

Vermont AOT
Br. No. 9 - Proj. No. BRF-022N(60)
Stockbridge. CRSS 461

VTRANS RECEIVED
SEP 02 2010

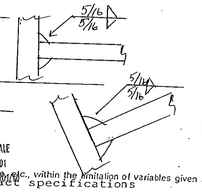
CK'D BY OK'D BY
RESUBMIT APPROVED
BY DATE 9/17/10

WELDING PROCEDURE

Pass no.	Electrode size	Welding current: Amperes	Welding current: Volts	Travel speed
AS REQ	5/32	600	30	19
		640 TO 560	32 TO 28	21 TO 17

Sec. 5-13
AWS D1-5 Joint detail Fillet

2F



1F

PAUL E. GOODALE
CWI 83100201
QC Inspector

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

Procedure no. 201-A
Revision no.

Contractor Casco Bay Steel
Authorized By Paul E. Goodale
Date 1-11-10

Casco Bay Steel Structures, Inc.

WELDING PROCEDURE SPECIFICATION

Material specification ASTM 709 - Gr 50 - 50W
Welding process Submerged Arc welding (Power wave)
Manual or machine machine
Position of welding Flat
Filler metal specification A5-23
Filler metal classification F8A2-EN1-N1-HA
Flux Lincolon 980 - Elec. LA75
Shielding gas n/a Flow rate NA
Single or multiple pass Single / Multiple
Single or multiple arc Single
Welding current Alternating
Polarity AC
Welding progression See detail
Root treatment Grind - wire brush - To be Free of Slag - Rust - Moisture
Preheat and interpass temperature See Table
Postheat temperature As Req.
Heat Input Min 47.1 KJ/in Max 74.0 KJ/in P.Q.R - PW 21 - 67.3 KJ/in

Minimum Preheat and Interpass Temperature, °C [°F]

Welding Process (Base Metal)	To 20 mm [3/4 in] Incl.	Thickness of Thickest Part at Point of Welding, mm [in] Over 20 mm [3/4 in] to 40 mm [1-1/2 in] Incl.	Over 40 mm [1-1/2 in] to 65 mm [2-1/2 in] Incl.	Over 65 mm [2-1/2 in]
SAW; GMAW; FCAW; SMAW (M270M [M270]) [A 709M/EA 709] Gr. 250 [50], 345 [50], 345W [50W], HPS 345W [HPS 50W]	10 [50]	20 [70]	65 [150]	110 [225]
SAW; GMAW; FCAW; SMAW (M270M [M270]) [A 709M (A 709)] Gr. HPS 485W [HPS 70W], 690 [100], 690W [100W]	10 [50]	50 [125]	80 [175]	110 [225]

For ECA-100F: 50F, 80F, 100F

Verkmeyer AGT
Br. No. 9 - Project BRF-022H(60
Stockbridge - CASS 46
TRANS
RECEIVED
SEP 02 2010
OK'D BY OK'D BY JOC
RESUBMIT APPROVED
BY DATE 9/1/10

WELDING PROCEDURE

Pass no.	Electrode size	Welding current: Amperes	Welding current: Volts	Travel speed
		827	38	28 IPM
AS REQ	5/32	910 To 744	41 To 35	32 To 24

Sec 5.13
AWS-D1-5 Joint detail B-L1a-5
Side-1
Backgouge Side-2
MAX 5/8"
Side-2
MAX INTERPASS TEMP 450°F

This procedure may vary due to fabrication sequence, fit-up, joint configuration, or simulation of variables given in applicable A.W.S. codes or contract specifications

Procedure no. 3-PW-STOP.VT
Revision no. 1-8-3-10

Contractor Casco Bay Steel
Authorized By Paul E. Goodale
Date Jan 4 - 2010

PAUL E. GOODALE
CWI 83100291
CCI EXP. 10/01/10

Casco Bay Steel Structures, Inc.

WELDING PROCEDURE SPECIFICATION

Material specification ASTM 709 - Gr 50 50W
Welding process Submerged Arc welding (Power Wave)
Manual or machine Machine
Position of welding Flat
Filler metal specification AS-23
Filler metal classification F8A2-EN1-N1-H8
Flux Lincoln 780 - Elec. LA75
Shielding gas N/A Flow rate N/A
Single or multiple pass Single / Multiple
Single or multiple arc Single
Welding current Alternating
Polarity AC
Welding progression See details
Root treatment Grind - wire brush - To be Free of Slag - Rust - Moisture
Preheat and interpass temperature See Table
Postheat temperature AS REQ
Heat Input Min 47.1 KJ/in Max 140 KJ/in P.Q.R. - PW#1 - 67.3 KJ/in

Minimum Preheat and Interpass Temperature, °C [°F]

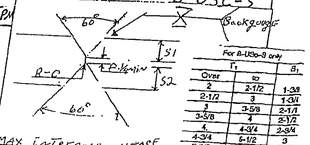
Welding Process (Base Metal)	To 20 mm [3/4 in] Incl.	Thickness of Thickest Part at Point of Welding, mm [in] Over 20 mm [3/4 in] to 40 mm [1-1/2 in] Incl.	Over 40 mm [1-1/2 in] to 65 mm [2-1/2 in] Incl.	Over 65 mm [2-1/2 in]
SAW; GMAW; FCAW; SMAW (M220M (M220)) [A 709M(A 709)] Gr. 250 [36], 345 [50], 345W [50W], HPS 345W (HPS 50W))	10 [50] For ECM-100 F	20 [70] 170°	65 [150] 200F	110 [225] 400F
SAW; GMAW; FCAW; SMAW (M220M (M220)) [A 709M (A 709)] Gr. HPS 485W (HPS 70W), 690 [100], 890W [100W])	10 [50]	50 [125]	80 [175]	110 [225]

VERIFIED AGT
PJ. NO. 9 - PROJ NO. BRF-NH160
STOCKYARD - CASS HILL
VT 05091
RECEIVED
SEP 0 2 2010
CK'D BY JWC DK'D BY JWC
RESUBMIT APPROVED
BY DATE 9/9/10

WELDING PROCEDURE

Pass no.	Electrode size	Welding current Amperes	Volts	Travel speed
		827	38	28IPM
AS	5/32	910	41	32
REQ		TO	TO	TO
		744	35	24

See 8.13
AWS D1-5 Joint detail B-U3C-S



MAX INTERPASS 450°F

For B-U3a-S only

T_1 Over	T_1 to	B_1
2	2-1/2	1-3/8
2-1/2	3	1-5/8
3	3-5/8	2-1/4
3-5/8	4	2-1/2
4	4-3/4	2-3/4
4-3/4	5-1/2	3
5-1/2	6-1/4	3-3/4

For $T_2 \geq 6\text{-}1/4$ or $T_1 \pm 2$
$S_1 = 2/3\ (T_1 - 1/4)$

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

Procedure no. #1 - PW - STOPVT
Revision no. 1 - 8-3-10

Contractor Casco Bay Steel
Authorized By Paul E. Goodale
Date Jan 4 - 2010 PAUL E. GOODALE
CWI 83100201
QCI EXP. 10/01/18

Casco Bay Steel Structures, Inc.

WELDING PROCEDURE SPECIFICATION

Material specification: AST M 709 Gr 50 - 50W
Welding process: Submerged Arc Welding
Manual or machine: Machine
Position of welding: Flat
Filler metal specification: AWS A5-23
Filler metal classification: F8A2-EM1K-N11-H8 Lincoln
Flux: Lincoln 960 with LA-75 Elec
Shielding gas: N/A Flow rate: N/A
Single or multiple pass: Multiple
Single or multiple arc: Single
Welding current: DC
Polarity: DCEP
Welding progression: See Detail
Root treatment: Wirebrush area to be free of loose scale, slag, rust & moist
Preheat and interpass temperature: See Table
Posheat temperature: N/A
Heat Input: Min 39.96 KJ/in Max 62.15 KJ/in PQR FCM #14 - 56.8 KJ/in

Minimum Preheat and Interpass Temperature, °C [°F]

Welding Process (Base Metal)	To 20 mm [3/4 in] Incl.	Thickness of Thickest Part at Point of Welding, mm [in] Over 20 mm [3/4 in] to 40 mm [1-1/2 in] Incl.	Over 40 mm [1-1/2 in] to 65 mm [2-1/2 in] Incl.	Over 65 mm [2-1/2 in]
SAW; GMAW; FCAW; SMAW (M270M (M270) [A 709M(A 709)] Gr. 250 [36], 345 [50], 345W [50W], HPS 345W (HPS 70W))	10 [50]	20 [70]	65 [150]	110 [225]
SAW; GMAW; FCAW; SMAW (M270M (M270) [A 709M (A 709)] Gr. HPS 485W (HPS 70W), 690 [100], 690W [100W])	10 [50]	50 [125]	80 [175]	110 [225]

Vermont AOT
By: No. 9 - Proj No. BRF-022(60)
Stockbridge: CASS 4&1

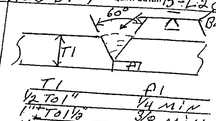
VTRANS RECEIVED
SEP 02 2010

CKD BY _____ OKD BY _____
RESUBMIT _____ APPROVED _____
BY _____ DATE 9/1/10

WELDING PROCEDURE

Pass no.	Electrode size	Welding current Amperes	Welding current Volts	Travel speed
		600	30	19
AS	5/32	567	27	17
REQ.		TO 629	TO 31	TO 21

Sec. 5.13
AWS D1-5 Joint detail B-L2c-S



Backgouge:

T1	R1
1/2 TO 1"	1/4 MIN
1" TO 1 1/2	3/8 MIN
1 1/2 TO 2"	1/2 MIN

MAX Interpass Temp. 450°F

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

Procedure no. 202 - ST OF VT
Revision no. 1 - 8-9-10

Contractor: Casco Bay Steel
Authorized By: Paul E. Goodale
Date: 4-13-09

PAUL E. GOODALE
CWI 83100201
QC1 EXP. 10/01/10

Casco Bay Steel Structures, Inc.

75 Spring Hill Road
Saco, Maine 04072

Phone: (207) 282-7360 Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

Material specification ASTM A709/A709M-Grade 36(250) 50(345) 50W(345W)
Welding process Flux Cored Arc welding (FCAW)
Manual or machine Semi AUTO
Position of welding Flat (1F) Horizontal (2F)
Filler metal specification AWS A5.20
Filler metal classification E71T-1
Flux NA
Shielding gas 75% AR 25% CO2 Flow rate 40CFH ±5
Single or multiple pass Single and MULTIPLE - ElecTrode ExTension 5/8 ±1/4 (15.87 ± 6.35)
Single or multiple arc Single
Welding current DC
Polarity Reverse
Welding progression
Root treatment To meet AWS specification
Preheat and interpass temperature To 3/4 (19): 50°(10°) - 3/4 (19+) To 1 1/2 (38): 70°(20) - 1 1/2 (38) To 2 1/2 (63) 150°(65)
Postheat temperature NA over 2 1/2 (63) = 225° (110°)
Heat Input Min NA Max NA

VT DOT
STOCKbridge
Brno 9 Expan.
CBSS 461

(METRIC) WELDING PROCEDURE

AWS D1-5 Joint detail Fillet

Pass no.	Electrode size	Welding current Amperes	Welding current Volts	Travel speed
	1/16	275 247.5 TO 302.5	28.8 26.8 TO 30.8	11.6 10.4 TO 12.8
		(METRIC)		
	1.6	275 247.5 TO 302.5	28.8 26.8 TO 30.8	294.6 264.2 TO 325.12

1F

To 1/2 (12.7)

2F

To 3/8 (9.5)

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RESUBMIT APPROVED ✓
BY DATE 02/15/11

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

Procedure no. 101
Revision no.
Form III-2

AWS QC 1 PAUL E. GOODALE 05102011 CWI

Contractor Casco Bay Steel
Authorized By Paul E. Goodale
Date 3/23/00

Casco Bay Steel Structures, Inc.

5 Industry Road
South Portland, Maine 04106

hone: (207) 772-2533 Fax: (207) 772-0580

WELDING PROCEDURE SPECIFICATION

Material specification ASTM 709-Gr 36-50-50W (250-345-345W)
Welding process Shielded Metal Arc welding (SMAW)
Manual or machine Manual
Position of welding Flat (1F), Horizontal (2F)
Filler metal specification ANSI/AWS A5.1 - A5.5
Filler metal classification E7018 - 8018 C1/C3 - 7028
Flux N A
Shielding gas N A Flow rate N A
Single or multiple pass Single and multiple
Single or multiple arc single
Welding current AC / DC
Polarity STraight / Reverse
Welding progression
Root treatment Meet AWS specification
Preheat and interpass temperature To 3/4(19) 50°F(10°C) 3/4(19) To 1 1/2(38) 70°F(30°C) 1 1/2(38) To 2 1/2(63.5) 150°F(65°C) over 2 1/2(63.5) 225°F(110°C)
Postheat temperature N A
Heat Input Min N A Max N A

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BY DATE 02/15/11

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Brno 9 Expan.
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(metric) WELDING PROCEDURE

Pass no.	Electrode size	Welding current Amperes	Welding current Volts	Travel speed
	7018			
	1/8 (3.2)	70-170	22-26	
AS	5/32 (3.9)	120-225	22-26	AS
	3/16 (4.8)	170-300	24-27	
REQ.	8018			REQ.
	1/8 (3.2)	90-160	22-26	
	5/32 (3.9)	120-225	22-26	
	3/16 (4.8)	180-290	24-27	
	7028			
	5/32 (3.9)	170-290	22-26	
	3/16 (4.8)	210-330	24-27	

AWS D1.5 Joint detail Fillet

1F

2F

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

AWS QC 1 PAUL E. HOODALE 05100301 CWI

Procedure no. 401
Revision no.
Form III-2

Contractor Casco Bay Steel
Authorized By Paul E. Hoodale
Date 3/2/00

Casco Bay Steel Structures, Inc.

75 Spring Hill Road
Saco, Maine 04072

Phone: (207) 282-7360 Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

Material specification ASTM A709/A709M-Grade 36(250) 50(345) 50W(345W)
Welding process Flux Cored Arc welding (FCAW)
Manual or machine Semi AUTO
Position of welding Flat (1G) Horizontal (2G)
Filler metal specification AWS A5.20
Filler metal classification E71T-1
Flux NA
Shielding gas 75% AR 25% CO2 Flow rate 40CFH ±5
Single or multiple pass Single and Multiple - Electrode Extension 5/8 ±1/4 (15.87 ± 6.35)
Single or multiple arc Single
Welding current DC
Polarity Reverse
Welding progression See Joint Detail
Root treatment To meet AWS specification
Preheat and interpass temperature To 3/4 (19): 50°(10°) - 3/4" (19") To 1 1/2 (38) = 70°(20) - 1 1/2 (38) To 2 1/2 (63) 150°(65) over 2 1/2 (63) = 225° (110°)
Postheat temperature NA
Heat Input Min ____ Max ____

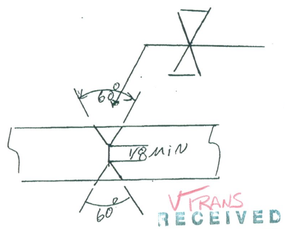
VT DOT
Stockbridge
Brno 9 Expan.
CBSS 461

WELDING PROCEDURE

(METRIC)

Pass no.	Electrode size	Welding current: Amperes	Welding current: Volts	Travel speed
	1/16	275	28.8	11.6
		247.5 To 302.5	26.8 To 30.8	10.4 To 12.8
		(METRIC)		
	1.6	275	28.8	294.6
		247.5 To 302.5	26.8 To 30.8	264.2 To 325.12

AWS D1-5 Joint detail BP3-F



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BY DATE 02/15/11

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Procedure no. 105
Revision no. ____

Contractor Casco Bay Steel
Authorized By Paul E. Goodale
Date 1-31-11

Form III-2

Casco Bay Steel Structures, Inc.

5 Industry Road
South Portland, Maine 04106

Phone: (207) 772-2533 Fax: (207) 772-0580

WELDING PROCEDURE SPECIFICATION

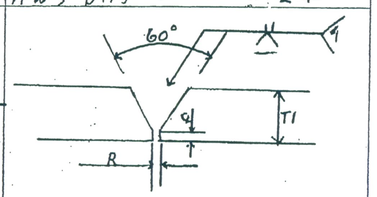
Material specification A36-A572-A588 (ASTM 709 Gr 36-50-50W
Welding process Flux Cored Arc welding (FCAW)
Manual or machine Semi-Auto
Position of welding Flat - 1G
Filler metal specification AWS A5-20
Filler metal classification E71T-1
Flux NA
Shielding gas 75% AR 25% CO^2 Flow rate 40 ±5
Single or multiple pass Both Electrode Stick out 3/4 ±1/4
Single or multiple arc Single
Welding current Direct current
Polarity Reverse Electrode positive
Welding progression See Detail
Root treatment weld side #1, backgouge side #2 + grind - then weld
Preheat and interpass temperature To 3/4-50°F (10-10°) +3/4 To 1 1/2-70°F (+19 To 38-20°)
Postheat temperature NA
Heat Input Min NA Max NA

VT DOT
Stockbridge
Br No 9 Expan.
CBSS 461

WELDING PROCEDURE

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

AWS D1.5 Joint detail # 2-F



T1 - UNLIMITED
f - 0 To 1/8 / 0 To 3.2mm
R - 0 To 1/8 / 0 To 3.2mm

1 - Grind as required

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Procedure no. 104
Revision no. ____
Form III-2

AWS - QC1
Paul E. Goodale
83100201
C.W.I.

Contractor Casco Bay Steel
Authorized By Paul E. Goodale
Date 2/2/99

Casco Bay Steel Structures, Inc.

75 Spring Hill Road
Saco, Maine 04072

Phone: (207) 282-7360 Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

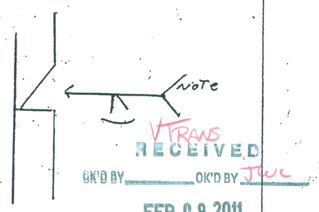
Material specification ASTM A709/A709M - Grade 36(250) 50(345) 50W(345W)
Welding process Flux Cored Arc welding (FCAW)
Manual or machine Semi AUTO
Position of welding Flat (1G) Horizontal (2G)
Filler metal specification AWS A5.20
Filler metal classification E71T-1
Flux NA
Shielding gas 75% AR 25% CO2 Flow rate 40CFH ±5
Single or multiple pass Single and MULTIPLE - ELECTRODE EXTENSION 5/8 ± 1/4 (15.87 ± 6.35)
Single or multiple arc Single
Welding current DC
Polarity Reverse
Welding progression See Joint Detail
Root treatment To meet AWS specification
Preheat and interpass temperature To 3/4 (19): 50°(10°) - 3/4 (19") To 1 1/2 (38): 70°(20) - 1 1/2 (38) To 2 1/2 (63) 150°(65)
Postheat temperature NA over 2 1/2 (63) = 225° (110°)
Heat Input Min _____ Max _____

VT DOT
STOCKbridge
Br No 9 Expan.
CBSS 461

(METRIC) WELDING PROCEDURE

Pass no.	Electrode size	Welding current: Amperes	Welding current: Volts	Travel speed
	1/16	275 247.5 To 302.5	28.8 26.8 To 30.8	11.6 10.4 To 12.8
		(METRIC)		
	1.6	275 247.5 To 302.5	28.8 26.8 To 30.8	294.6 264.2 To 325.12

Joint detail AWS D1.5 TCP4-F



NOTE! Grind Flush as Req

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BY _____ DATE 02/15/11

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Procedure no. 103
Revision no. _____
Form III-2

AWS QC-1 PAUL E. GOODALE 08/10/2011 CWI

Contractor Casco Bay Steel
Authorized By Paul E. Goodale
Date 3/23/00