

STATE OF VERMONT AGENCY OF TRANSPORTATION



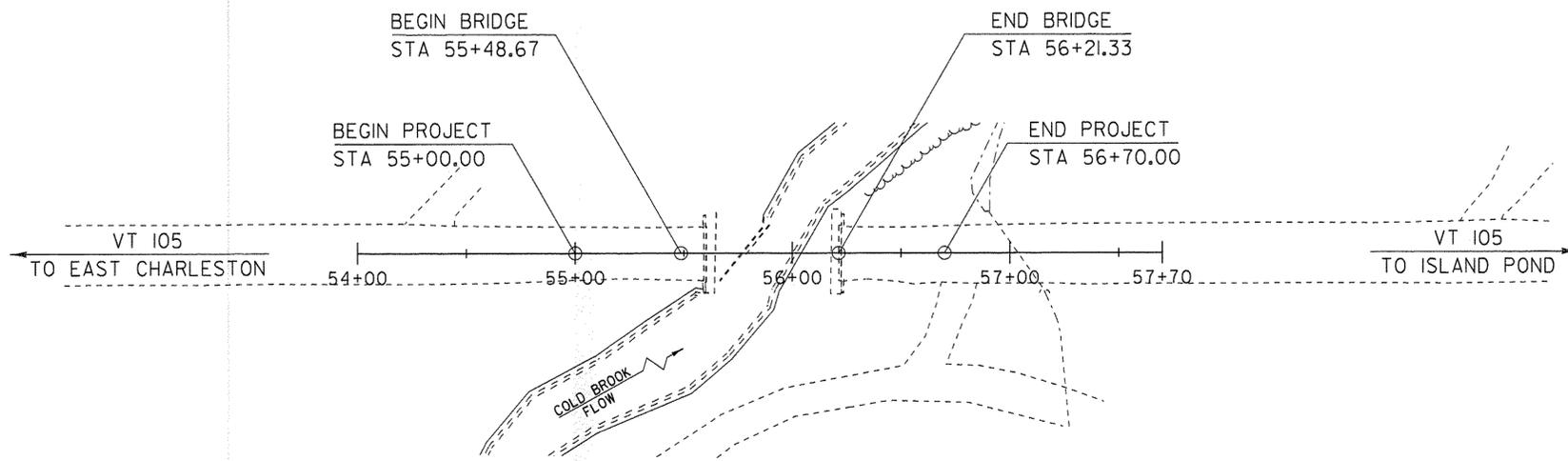
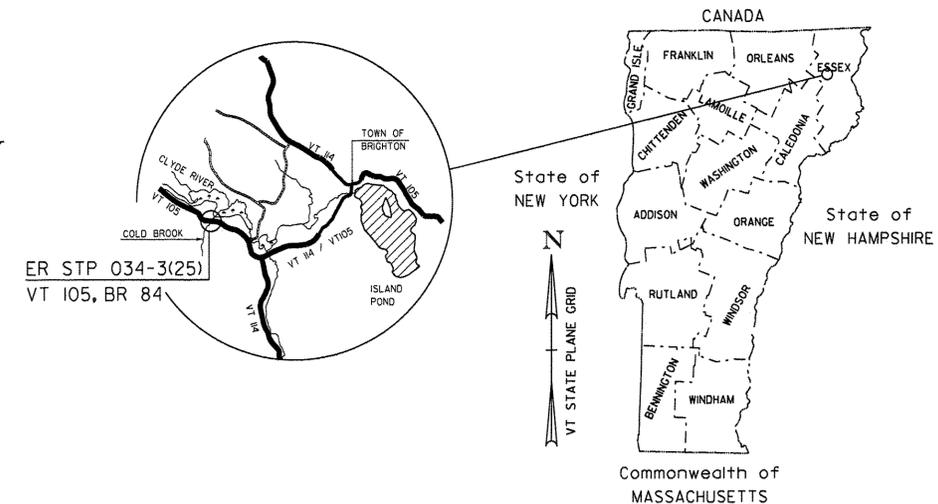
PROPOSED IMPROVEMENT BRIDGE PROJECT

TOWN OF BRIGHTON, ESSEX COUNTY
ROUTE NO : VT 105 (MINOR ARTERIAL) BRIDGE 84

PROJECT LOCATION: BEGINNING AT A POINT ON VT. ROUTE 105 APPROXIMATELY 1.058 MILES SOUTH EASTERLY OF THE CHARLESTON / BRIGHTON TOWN LINE AND EXTENDING EASTERLY 0.031 MILES.

PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE 84 WITH A NEW CONCRETE STRUCTURE ON NEW ABUTMENTS, INCLUDING RELATED APPROACH AND CHANNEL WORK.

LENGTH OF STRUCTURE : 72.66 FEET
LENGTH OF ROADWAY : 97.34 FEET
LENGTH OF PROJECT : 170.00 FEET



QUALITY ASSURANCE PROGRAM: LEVEL 2

CONVENTIONAL SYMBOLS

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

SURVEYED BY : R. GILMAN
SURVEYED DATE : 10/14/11

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (07)

SCALE 1" = 40'-0"

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 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

DIRECTOR OF PROGRAM DEVELOPMENT	APPROVED	DATE 9-12-12
PROJECT MANAGER : K. HIGGINS		
PROJECT NAME : BRIGHTON		
PROJECT NUMBER : ER STP 034-3(25)		
SHEET 1 OF 36 SHEETS		

PRELIMINARY INFORMATION SHEET (BRIDGE)

LRFD

INDEX OF SHEETS						FINAL HYDRAULIC REPORT																																																																																																																																										
PLAN SHEETS						STANDARDS LIST						HYDROLOGIC DATA						PROPOSED STRUCTURE																																																																																																																														
<p>1 TITLE SHEET</p> <p>2 PRELIMINARY INFORMATION SHEET</p> <p>3 GENERAL NOTES</p> <p>4 - 5 QUANTITY SHEETS 1-2</p> <p>6 - 7 TYPICAL SECTIONS 1-2</p> <p>8 TIE SHEET</p> <p>9 LAYOUT SHEET</p> <p>10 MAINLINE PROFILE</p> <p>11 RAIL LAYOUT SHEET</p> <p>12 BORING LAYOUT SHEET</p> <p>13 - 14 BORING LOGS</p> <p>15 FRAMING PLAN</p> <p>16 NEXT BEAM TYPICAL SECTION</p> <p>17 BEARING DETAILS</p> <p>18 APPROACH SLAB DETAILS</p> <p>19 ABUTMENT PLAN</p> <p>20 ABUTMENT REINFORCING</p> <p>21 DECK CLOSURE POUR DETAILS</p> <p>22 WINGWALL DETAILS</p> <p>23 - 24 DETOUR PLAN 1-2</p> <p>25 EPSC NARRATIVE</p> <p>26 EPSC PLAN</p> <p>27 - 28 EPSC DETAILS</p> <p>29 - 33 MAINLINE SECTIONS</p> <p>34 - 36 CHANNEL SECTIONS</p>						<p>E-100 CONSTRUCTION APPROACH SIGNS 01-02-2004</p> <p>E-101 CONSTRUCTION SIGN DETAILS 05-30-2003</p> <p>E-102 CONSTRUCTION SIGN DETAILS 06-30-2003</p> <p>E-102A CONSTRUCTION SIGN DETAILS 05-01-2004</p> <p>E-108 CONSTRUCTION ZONE LONGITUDINAL DROP OFFS 08-08-2009</p> <p>E-134 BRIDGE NUMBER PLAQUE 08-08-1995</p> <p>E-164 SQUARE STEEL SIGN POST 06-08-2009</p> <p>E-193 PAVEMENT MARKING DETAILS 08-18-1995</p> <p>G-1B BOX BEAM GUARDRAIL 06-01-1994</p> <p>S-364A BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM 04-23-2012</p> <p>S-364B GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM 04-23-2012</p> <p>S-364C GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM 04-23-2012</p> <p>S-364D GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM 04-23-2012</p>						<p>Date: March 2012</p> <p>DRAINAGE AREA : 5.0 sq. mi.</p> <p>CHARACTER OF TERRAIN : Hilly to mountainous, mostly forested land cover</p> <p>STREAM CHARACTERISTICS : Sinuous, alluvial, bend coming into the bridge</p> <p>NATURE OF STREAMBED : Sand, gravel and cobbles</p>						<p>STRUCTURE TYPE: Single span prestressed concrete beam bridge</p> <p>CLEAR SPAN(NORMAL TO STREAM): 54' max., 30' min. effective</p> <p>VERTICAL CLEARANCE ABOVE STREAMBED: 6.5'</p> <p>WATERWAY OF FULL OPENING: 180 sq. ft.</p>																																																																																																																														
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<p>SD-501.00 CONCRETE DETAILS AND NOTES 05-07-2010</p> <p>SD-502.00 CONCRETE DETAILS AND NOTES 06-04-2010</p> <p>SD-516.10 BRIDGE JOINT ASPHALTIC PLUG 05-07-2010</p>						<p>Q 2.33 = 190 cfs Q 50 = 675 cfs</p> <p>Q 10 = 420 cfs Q 100 = 825 cfs</p> <p>Q 25 = 560 cfs Q 500 = 1150 cfs</p>						<p>Q2.33 = 1168.6' VELOCITY= 5.3 fps</p> <p>Q10 = 1170.0' " 7.4 fps</p> <p>Q25 = 1170.7' " 8.4 fps</p> <p>Q50 = 1171.2' " 9.1 fps</p> <p>Q100 = 1171.8' " 10.0 fps</p>																																																																																																																																				
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						<p>STRUCTURE TYPE: Single span concrete slab bridge</p> <p>YEAR BUILT: Built 1928, reconstructed 1972</p> <p>CLEAR SPAN(NORMAL TO STREAM): Approximately 20' *</p> <p>VERTICAL CLEARANCE ABOVE STREAMBED: Approximately 3.5' *</p> <p>WATERWAY OF FULL OPENING: Unknown *</p> <p>DISPOSITION OF STRUCTURE: It has already been removed.</p> <p>TYPE OF MATERIAL UNDER SUBSTRUCTURE: See boring logs</p>						<p>IS THE ROADWAY OVERTOPPED BELOW Q100: No</p> <p>FREQUENCY: Above Q100</p> <p>RELIEF ELEVATION: 1173.5'</p> <p>DISCHARGE OVER ROAD @Q100: None</p>																																																																																																																																				
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GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE VERMONT AGENCY OF TRANSPORTATION 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE 2007 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, AND THEIR LATEST REVISIONS.
2. ALL PRECAST CONCRETE ELEMENTS TO BE FABRICATED TO THE SPECIFIED DIMENSIONS WITHIN THE TOLERANCES DICTATED IN THE PRECAST/PRESTRESSED CONCRETE INSTITUTE TOLERANCE MANUAL FOR PRECAST AND PRESTRESSED CONCRETE CONSTRUCTION, MNL 135-00, AND ITS LATEST REVISIONS.
3. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
4. NO ADJUSTMENTS TO THE BITUMINOUS WEARING SURFACE ON THE BRIDGE SHALL BE MADE TO ACCOUNT FOR THE DIFFERENCE BETWEEN BEAM CAMBER AND THE THEORETICAL ROADWAY PROFILE. THE WEARING SURFACE SHALL BE SHIMMED TRANSVERSELY AS NECESSARY TO ACCOUNT FOR POTENTIAL DIFFERENTIAL CAMBER OF THE ADJACENT BEAMS.
5. THERE ARE AERIAL ELECTRIC AND TELEPHONE LINES THAT RUN PARALLEL TO VT 105 ON THE NORTH SIDE OF THE PROJECT. NO PROVISION HAS BEEN MADE TO RELOCATE THESE LINES. THE CONTRACTOR SHALL WORK AROUND AND PROTECT THESE LINES. SEE UTILITY SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
6. NO SUBSTITUTION FOR PRECAST CONCRETE WILL BE PERMITTED.

TRAFFIC CONTROL

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING THE LOCAL TRAFFIC CONTROL PACKAGE IDENTIFYING THE CONSTRUCTION PROJECT BEFORE, DURING, AND AFTER THE BRIDGE CLOSURE PERIOD. THE CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC CONTROL PLAN TO THE RESIDENT ENGINEER FOR ALL STAGES OF CONSTRUCTION, FOR APPROVAL PER SUBSECTION 105.03. ALL COSTS SHALL BE INCLUDED IN ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE). SEE SPECIAL PROVISIONS.
8. ALL SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD. WHERE CONFLICTS EXIST, THE MUTCD SHALL GOVERN. FOR ADDITIONAL SIGNING INSTRUCTIONS SEE THE E SERIES OF THE STANDARDS.
9. ALL ITEMS REQUIRED TO IMPLEMENT THE CONTRACTOR'S TRAFFIC CONTROL PLAN WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED INCLUDED IN THE BID PRICE FOR ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).

EARTHWORK

10. REMOVAL OF THE EXISTING, FAILED STRUCTURE SHALL BE UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE". THIS WORK SHALL INCLUDE REMOVAL OF ANY PORTIONS OF THE EXISTING ABUTMENTS THAT FALL OUTSIDE THE LIMITS OF STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION.
11. EXCAVATION OF SOILS TO THE LIMITS SHOWN ON THE TYPICAL ABUTMENT SECTION SHALL BE PAID FOR UNDER ITEM 204.25, "STRUCTURE EXCAVATION". ALL NECESSARY EXCAVATION OUTSIDE OF THESE LIMITS SHALL BE PAID FOR UNDER ITEM 203.27, "UNCLASSIFIED CHANNEL EXCAVATION".
12. THE "STONE FILL, TYPE III" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW BEAMS ARE SET.

CONCRETE

13. ITEM 514.10, "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON THE BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE, WITH THE EXCEPTION OF THE BOTTOM OF THE PRECAST NEXT BEAMS BETWEEN THE DRIP NOTCHES.
14. ALL CONCRETE PLACED INTEGRALLY WITH THE SUPERSTRUCTURE SHALL BE ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)". ALL PRECAST SUBSTRUCTURE AND APPROACH SLAB CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 540 - PRECAST CONCRETE.
15. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".

-  16. ALL REINFORCING STEEL SHALL MEET THE REQUIREMENTS FOR REINFORCING STEEL, LEVEL 1, EPOXY COATED.

PRECAST ABUTMENTS AND POST-TENSIONING

17. IF VERTICAL CONSTRUCTION JOINTS ARE REQUIRED BY THE CONTRACTOR FOR SHIPMENT OF THE ABUTMENTS, THEN THE SECTIONS SHALL BE KEYPED AND MATCH CAST. A JOINT DETAIL SHALL BE SHOWN ON THE FABRICATION DRAWINGS.
18. POST-TENSIONING AND ASSOCIATED ITEMS ARE ONLY REQUIRED IF THE PILE CAP IS CONSTRUCTED OF MORE THAN ONE UNIT. ANY POST-TENSIONING STRANDS AND CONDUIT SHALL ADHERE TO THE REQUIREMENTS OF SECTION 510 - PRESTRESSED CONCRETE, GALVANIZED ANCHOR ASSEMBLIES, CONDUIT, AND POST-TENSIONING STRANDS SHALL BE INCLUDED UNDER ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT #1) AND/OR "PRECAST CONCRETE STRUCTURE (ABUTMENT #2)" AS APPROPRIATE. POST-TENSIONING STRANDS SHALL BE COVERED WITH SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF THE STRAND, EXCEPT AT ANCHORAGE LOCATIONS.
19. GALVANIZE ANCHOR ASSEMBLIES AFTER FABRICATION ACCORDING TO AASHTO M232M/M232.
20. DESIGN VALUES
 - a. CONCRETE COMPRESSIVE STRENGTH: $f'_c = 5000$ PSI.
 - b. POST-TENSIONING STRANDS: 0.5 INCH DIAMETER, 270 KSI, LOW RELAXATION 7-WIRE STRANDS.
 - c. ASSUMED MODULUS OF ELASTICITY IS 28,500 KSI.
 - d. THERE SHALL BE 2 STRANDS PER CONDUIT.
 - e. THE JACKING FORCE PER STRAND = 32 KIPS
21. THE CONCRETE FOR THE ABUTMENT #1 AND ABUTMENT #2 PILE CAVITIES SHALL MEET THE REQUIREMENTS OF ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)".
22. THE CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF SUBSECTION 711.01. ALL COSTS ASSOCIATED WITH PLACING THE CORRUGATED STEEL PIPE, SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT #1)" AND ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT #2)".
23. PROPOSED SEQUENCE OF CONSTRUCTION:
 - a. PREPARE AND GRADE FOUNDATION TO REQUIRED ELEVATION.
 - b. DRIVE PILES.
 - c. PLACE PRECAST ABUTMENTS AND INSTALL TRANSVERSE STRANDS (IF MORE THAN ONE UNIT).
 - d. APPLY EPOXY TO MATCH CAST FACES OF VERTICAL CONSTRUCTION JOINT.
 - e. USE A CALIBRATED JACK TO TENSION TO 3 KIPS TO REMOVE SAG IN STRANDS.
 - f. CHECK ALIGNMENT OF PILE CAP ELEMENTS.
 - g. STRESS POST-TENSIONING STRANDS USING A CALIBRATED JACK OPERATED BY QUALIFIED PERSONNEL WHO HAVE PREVIOUS EXPERIENCE IN POST-TENSIONING.
 - h. FILL PILE CAVITIES WITH ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)".
 - i. PLACE PRECAST WINGWALLS AND GROUT SPLICE CONNECTORS.
 - j. BACKFILL MAY BE COMPLETED AFTER SPLICE CONNECTOR GROUT HAS REACHED 85% OF 5,000 PSI.
24. ALTERNATE SEQUENCE OF CONSTRUCTION MAY BE SUBMITTED FOR APPROVAL BY THE PROJECT MANAGER.

NEXT D BEAMS

25. NEXT D BEAMS ARE A NON-PROPRIETARY SHAPE DEVELOPED BY PCINORTHEAST (PCINE). STANDARDIZED SECTION PROPERTIES AND DETAILS MAY BE FOUND AT <http://www.pcine.org>.
26. DESIGN VALUES
 - a. CONCRETE COMPRESSIVE STRENGTH: $f'_c = 10,000$ PSI.
 - b. CONCRETE COMPRESSIVE STRENGTH AT RELEASE: $f'_{ci} = 8,000$ PSI
 - c. PRESTRESSING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW-RELAXATION 7-WIRE STRANDS
 - d. ASSUMED MODULUS OF ELASTICITY = 28,500 KSI.
 - e. THE JACKING FORCE PER STRAND = 47 KIPS
 - f. SERVICE LOADS

MEMBER MOMENT	857 K-FT
SUPERIMPOSED DEAD LOAD MOMENT	341 K-FT
LIVE LOAD AND IMPACT MOMENT	1,320 K-FT
DEAD LOAD REACTION	72 KIPS
LIVE LOAD AND IMPACT REACTION	98 KIPS
TOTAL REACTION	170 KIPS
FINAL CAMBER	1 5/16 INCHES

27. ENDS OF FLANGES IN CONTACT WITH GROUT SHALL BE SANDBLASTED PRIOR TO DELIVERY AND POWER WASHED WITH WATER PRIOR TO ERECTION OF THE BEAMS.

28. FILL FLANGE CONNECTION WITH TYPE IV MORTAR ACCORDING TO SECTION 510. MORTAR SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 7000 PSI AND SHALL BE EXTENDED WITH AGGREGATE. ALL OTHER MATERIAL PROPERTIES SHALL REMAIN IN ACCORDANCE WITH SUBSECTION 707.03(c). GROUTING SHALL BE PAID FOR UNDER ITEM 510.24, "GROUTING SHEAR KEYS". THE CONTRACTOR SHALL SUBMIT A MIX DESIGN FOR THIS ITEM FOR APPROVAL BY THE PROJECT MANAGER.

29. METHOD OF FORMING FLANGE CONNECTION SHALL BE DETERMINED BY THE CONTRACTOR. THE FORMS SHALL BE REMOVABLE AND ABLE TO ACCOMMODATE DIFFERENTIAL CAMBER. FORM SUPPORTS SHALL NOT PENETRATE THROUGH THE TOP OF POUR UNLESS APPROVED BY THE ENGINEER.

30. THE FABRICATOR MAY ALTER THE DESIGN AS DETAILED IN THE SE PLANS TO ACCOMMODATE THEIR SPECIFIC OPERATION. THIS ALTERATION MUST BE DESIGNED BY A PROFESSIONAL ENGINEER AND MEET THE ABOVE CRITERIA AND SHALL BE APPROVED BY THE PROJECT MANAGER.

31. PROPOSED SEQUENCE OF CONSTRUCTION

- a. LAY OUT WORKING LINES THE ENTIRE WIDTH OF THE BRIDGE ALONG CENTERLINE OF BEARING, MEASURED FROM A SINGLE WORKING POINT. THE WORKING LINES SHALL BE BASED ON THE NOMINAL BEAM WIDTHS.
- b. VERIFY THE BEAM SEAT ELEVATIONS AND TAKE CORRECTIVE ACTION IF NECESSARY.
- c. INSTALL BEARINGS
- d. ERECT THE BEAMS TO FIT WITHIN THE WORKING LINES.
- e. ADJUST FASCIA BEAM TO FIT SNUG AGAINST 1/2" CORK ON INTERIOR OF CHEEK WALL.
- f. CONSTRUCT FORMS FOR THE FLANGE AND CURTAIN WALL CONNECTION POURS.
- g. GROUT CONNECTIONS BETWEEN BEAM FLANGES AND CURE.
- h. BACKFILL AND PREPARE GRADE FOR APPROACH SLABS.
- i. COMPLETE BEAM-END CLOSURE POUR TO BOTTOM OF DECK ALLOWING FOR APPROACH SLAB BRACKET.
- j. COMPLETE PLACEMENT OF BACKFILL AND PLACE APPROACH SLAB.
- k. GROUT REBAR DOWELS IN APPROACH SLAB.
- l. COMPLETE LONGITUDINAL CLOSURE POURS OF APPROACH SLAB.
- m. COMPLETE BEAM-END CLOSURE POUR TO TOP OF DECK AND APPROACH SLABS.

32. ALTERNATE SEQUENCE OF CONSTRUCTION MAY BE SUBMITTED FOR APPROVAL BY THE PROJECT MANAGER.

H-PILES

33. TO PREVENT DAMAGE TO THE PILES, PILE SHOES ARE REQUIRED AND SHALL CONFORM TO SUBSECTION 505.04 (f).

34. THE PILES SHALL BE DRIVEN TO A NOMINAL PILE DRIVING RESISTANCE (R_{NDR}) OF 286 KIPS, PROVIDED A MINIMUM PENETRATION OF 25 FEET BELOW THE BOTTOM OF PILE CAP HAS BEEN ACHIEVED.

35. A MINIMUM OF THREE DYNAMIC TESTS ARE REQUIRED DURING PILE INSTALLATION. NO LESS THAN ONE DYNAMIC PILE TEST SHALL BE CONDUCTED AT EACH ABUTMENT. PAYMENT IS ITEM 505.45, "DYNAMIC PILE LOADING TEST".

36. THE TOPS OF THE PILES AFTER DRIVING SHALL NOT VARY FROM THE POSITION SHOWN ON THE PLANS BY MORE THAN 3 INCHES. THE PILE ORIENTATION SHALL NOT VARY BY MORE THAN 5 DEGREES. THE CONTRACTOR SHALL DEMONSTRATE TO THE SATISFACTION OF THE ENGINEER HOW THE TOLERANCES WILL BE MET. THESE MEASURES SHALL BE DEMONSTRATED IN A SUBMITTAL TO BE ACCEPTED BEFORE PILE DRIVING COMMENCES.

37. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTHS MAY VARY.

MISCELLANEOUS

38. ITEM 520.10, "MEMBRANE WATERPROOFING, SPRAY APPLIED" SHALL BE APPLIED TO THE BRIDGE DECK AS PER THE MANUFACTURER'S INSTRUCTIONS AND EXTEND ONTO THE APPROACH SLABS TWO FEET BEYOND THE BEGIN BRIDGE/END OF BRIDGE.

39. A TEMPORARY BRIDGE IS IN PLACE OVER THE EXISTING, FAILED STRUCTURE. REMOVAL OF THIS TEMPORARY BRIDGE SHALL BE PAID FOR UNDER ITEM 900.645, "SPECIAL PROVISION (REMOVAL OF TEMPORARY BRIDGE AND APPROACHES)". THE TEMPORARY BRIDGE IS THE PROPERTY OF VTRANS AND SHALL BE RETURNED TO THE VTRANS MAINTENANCE FACILITY IN MIDDLESEX, VT. CONTACT BILL SARGENT AT (802) 828-2699 TO MAKE NECESSARY ARRANGEMENTS AS PER THE SPECIAL PROVISIONS.

 REVISED 10-12-12

- REVISED NOTE 16

PROJECT NAME:	BRIGHTON
PROJECT NUMBER:	ER STP 034-3(25)
FILE NAME:	s1b208gen.dgn
PROJECT LEADER:	K. HIGGINS
DESIGNED BY:	W. LAMMER
GENERAL NOTES	
PLOT DATE:	12-OCT-2012
DRAWN BY:	W. LAMMER
CHECKED BY:	J. SALVATORI
SHEET	3 OF 36

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	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				
							470				470		CY	COMMON EXCAVATION	203.15				
									430		430		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27				
							1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
									410		410		CY	STRUCTURE EXCAVATION	204.25				
									270		270		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
							305				305		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
														BEGIN OPTION AA					
							435				435		CY	SUBBASE OF GRAVEL	301.15				
							435				435		CY	SUBBASE OF CRUSHED GRAVEL, COARSE GRADED	301.25				
							435				435		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35				
														END OPTION AA					
							25				25		CY	AGGREGATE SHOULDERS, IN PLACE	402.10				
							6				6		CWT	EMULSIFIED ASPHALT	404.65				
							1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
									1		1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10				
									800		800		LF	STEEL PILING, HP 12 X 53	505.15				
									3		3		EACH	DYNAMIC PILE LOADING TEST	505.45				
									2100		2100		LB	REINFORCING STEEL, LEVEL I	507.11				
									210		210		LF	GROUTING SHEAR KEYS	510.24				
									15		15		GAL	WATER REPELLENT, SILANE	514.10				
									60		60		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
									255.53		255.53		SY	SHEET MEMBRANE WATERPROOFING, SPRAY APPLIED	520.10				
									153.32		153.32		LF	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM	525.335				
									1		1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20				
									16		16		EACH	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	531.17				
									1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #1)	540.10				
									1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #2)	540.10				
									1		1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB #1)	540.10				
									1		1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB #2)	540.10				
								1			1		MGAL	DUST CONTROL WITH WATER	609.10				
									470		470		CY	STONE FILL, TYPE III	613.12				
							149				149		LF	BOX BEAM GUARDRAIL	621.30				
							3				3		EACH	MANUFACTURED TERMINAL SECTION, TANGENT	621.51				
							4				4		EACH	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	621.725				
							400				400		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				
										3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				

EARTHWORK SUMMARY		
470	CY	COMMON EXCAVATION (470*1.0)
322	CY	UNCLASSIFIED CHANNEL EXCAVATION (430*0.75)
308	CY	STRUCTURE EXCAVATION (410*0.75)
1100	CY	SUB TOTAL
5	CY	ROUNDING
1100	CY	TOTAL FILL AVAILABLE
25	CY	TOTAL FILL REQUIRED
1075	CY	TOTAL WASTE
SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)		
90	TON	TYPE IIS
195	TON	TYPE IVS
285	TON	TOTAL

 REVISED 10-12-12

- REMOVED ITEM 507.12
- ADDED ITEM 507.11

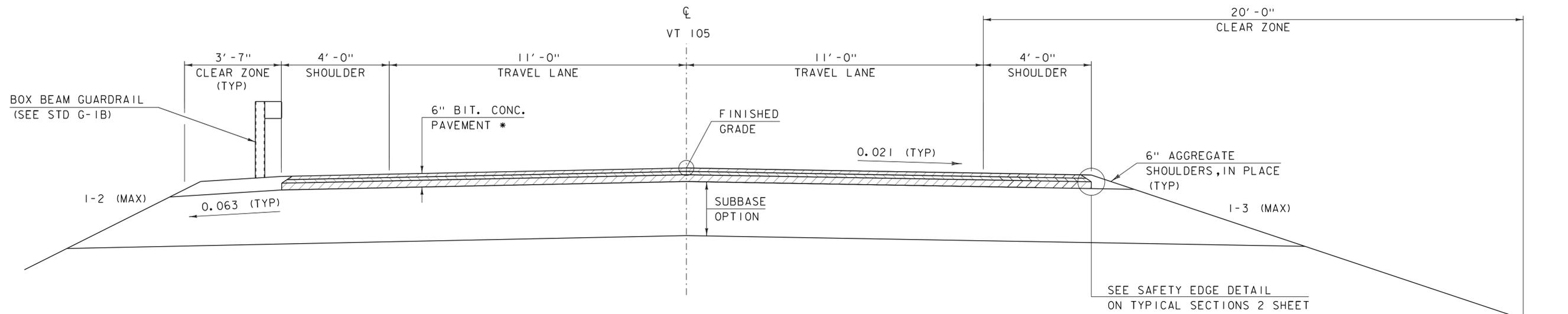
PROJECT NAME:	BRIGHTON
PROJECT NUMBER:	ER STP 034-3(25)
FILE NAME:	sllc208qs.dgn
PROJECT LEADER:	K. HIGGINS
DESIGNED BY:	W. LAMMER
QUANTITY SHEET 1	
PLOT DATE:	12-OCT-2012
DRAWN BY:	W. LAMMER
CHECKED BY:	J. SALVATORI
SHEET	4 OF 36

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
							1				1		LS	MOBILIZATION/DEMobilIZATION	635.11				
							740				740		LF	4 INCH WHITE LINE	646.20				
							740				740		LF	4 INCH YELLOW LINE	646.21				
									470		470		SY	GEOTEXTILE UNDER STONE FILL	649.31				
								275			275		SY	GEOTEXTILE FOR SILT FENCE	649.51				
								81			81		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61				
								10			10		LB	SEED	651.15				
								100			100		LB	FERTILIZER	651.18				
								1			1		TON	AGRICULTURAL LIMESTONE	651.20				
								1			1		TON	HAY MULCH	651.25				
								75			75		CY	TOPSOIL	651.35				
									120		120		SY	GRUBBING MATERIAL	651.40				
								1			1		LS	EPSC PLAN	652.10				
								40			40		HR	MONITORING EPSC PLAN	652.20				
								1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30				
								425			425		SY	TEMPORARY EROSION MATTING	653.20				
								60			60		CY	VEHICLE TRACKING PAD	653.35				
								605			605		LF	PROJECT DEMARCATION FENCE	653.55				
							0.66				0.66		SF	TRAFFIC SIGNS, TYPE A	675.20				
							16				16		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
									32		32		CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE RAPID SET)(FPQ)	900.608				
									284		284		LF	SPECIAL PROVISION (PRESTRESSED CONCRETE NEXT D BEAM)(NEXT 28 D)	900.640				
									1		1		LS	SPECIAL PROVISION (REMOVAL OF TEMPORARY BRIDGE AND APPROACHES)	900.645				
							1				1		LS	SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)	900.645				
							1				1		LU	SPECIAL PROVISION (INCENTIVE/DISINCENTIVE)(N.A.B.I.)	900.650				
							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)(N.A.B.I.)	900.650				
							285				285		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				

PROJECT NAME: BRIGHTON
 PROJECT NUMBER: ER STP 034-3(25)
 FILE NAME: s1b208qs.dgn
 PROJECT LEADER: K. HIGGINS
 DESIGNED BY: W. LAMMER
 QUANTITY SHEET 2
 PLOT DATE: 18-SEP-2012
 DRAWN BY: W. LAMMER
 CHECKED BY: J. SALVATORI
 SHEET 5 OF 36

* 1 1/2" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVS
 1 1/2" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVS
 3" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IIS
 VARIES SUBBASE OPTION

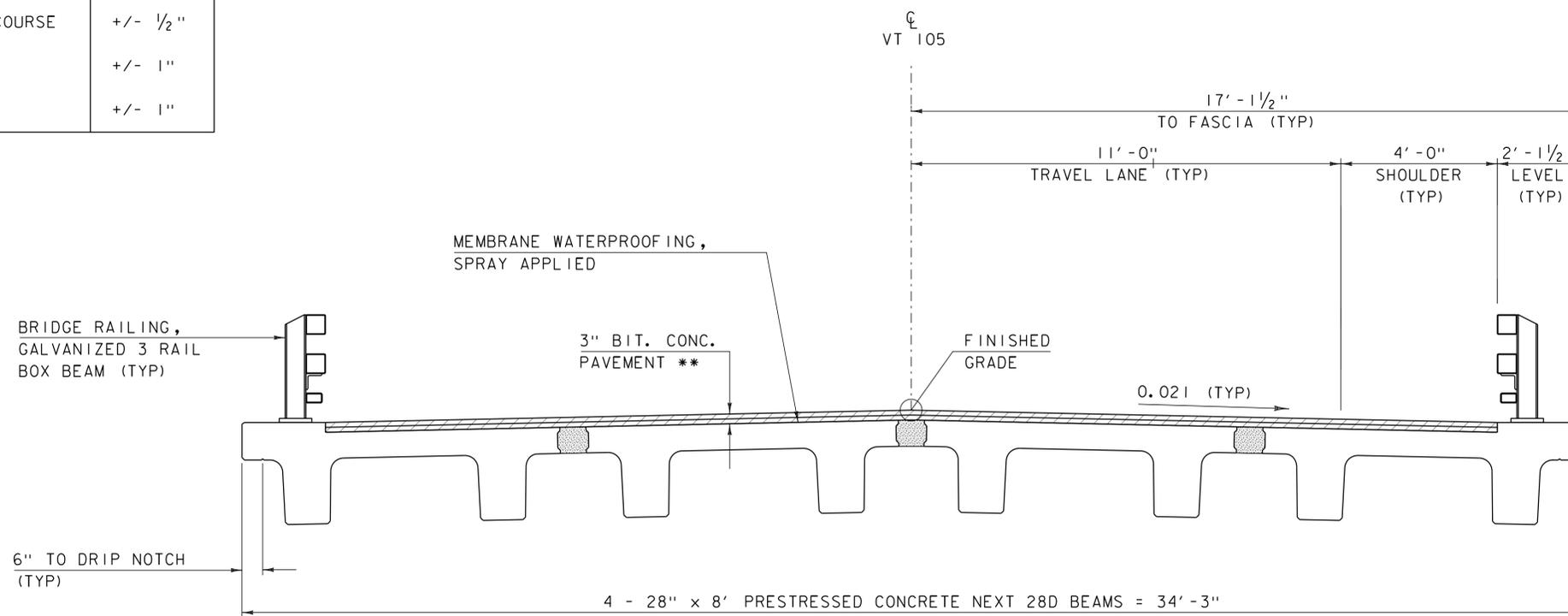


ROADWAY TYPICAL SECTION

SCALE 1/2" = 1'-0"

MATERIAL TOLERANCES
 (IF USED ON PROJECT)

SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	
	+/- 1"
SAND BORROW	
	+/- 1"



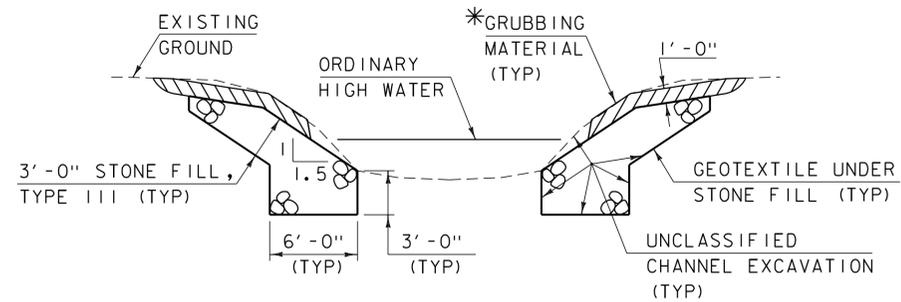
BRIDGE TYPICAL SECTION

SCALE 1/2" = 1'-0"

** 1 1/2" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVS
 1 1/2" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVS

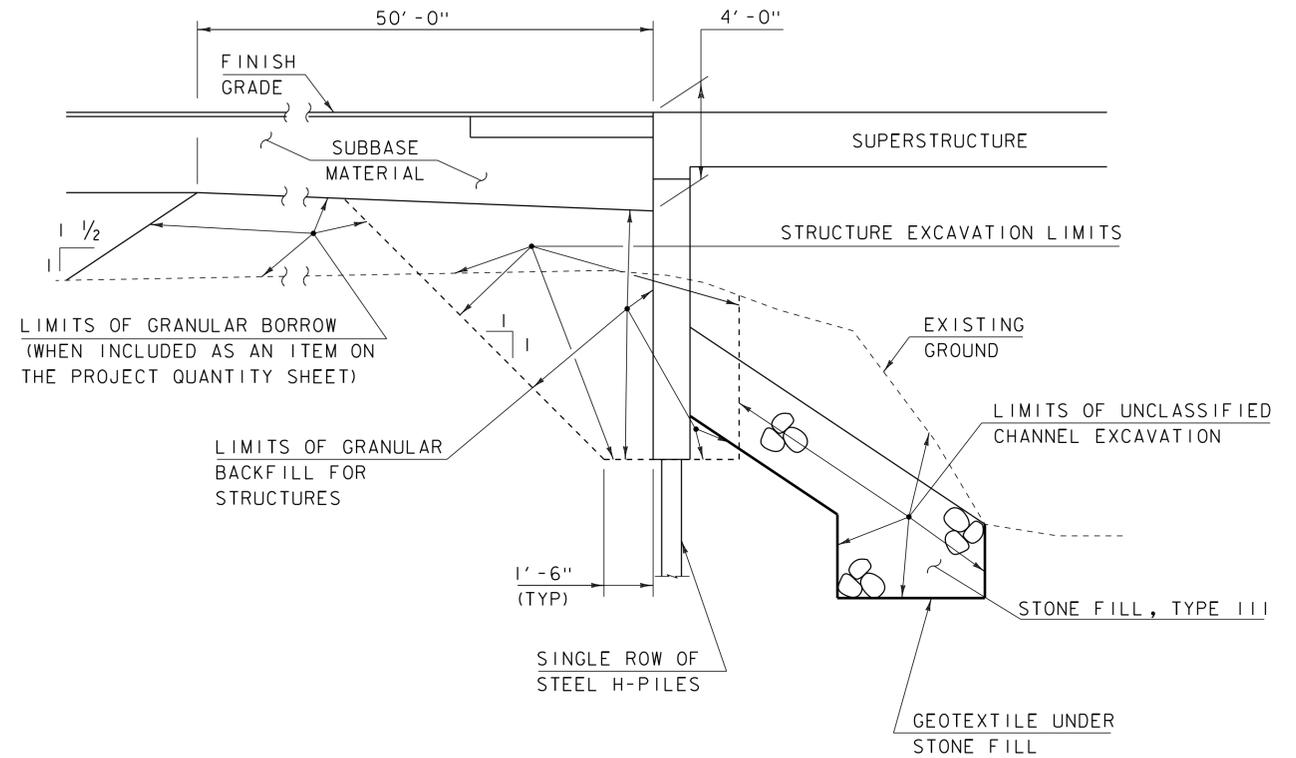
PROJECT NAME: BRIGHTON
 PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: s1b208+yp.dgn PLOT DATE: 12-SEP-2012
 PROJECT LEADER: K.HIGGINS DRAWN BY: J. SALVATORI
 DESIGNED BY: J. SALVATORI CHECKED BY: W. LAMMER
 TYPICAL SECTIONS I SHEET 6 OF 36



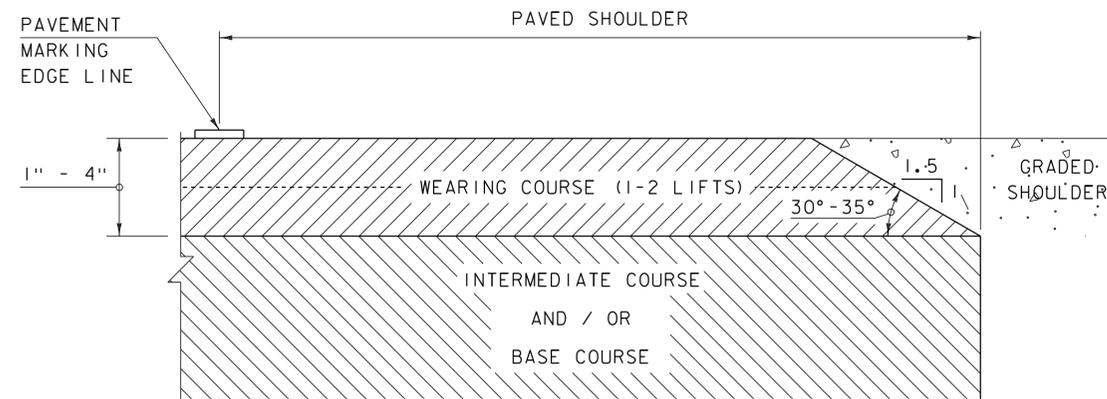
TYPICAL CHANNEL SECTION
NOT TO SCALE

*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.



TYPICAL INTEGRAL ABUTMENT SECTION
NOT TO SCALE

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



SAFETY EDGE DETAIL
NOT TO SCALE

NOTE: LEVELING COURSE MAY INCLUDE THE "SAFETY EDGE" AT THE CONTRACTOR'S CHOICE.

PROJECT NAME:	BRIGHTON
PROJECT NUMBER:	ER STP 034-3(25)
FILE NAME:	s1b208+yp.dgn
PROJECT LEADER:	K.HIGGINS
DESIGNED BY:	J. SALVATORI
TYPICAL SECTIONS 2	
PLOT DATE:	12-SEP-2012
DRAWN BY:	J. SALVATORI
CHECKED BY:	W. LAMMER
SHEET	7 OF 36

GPS CONTROL POINTS

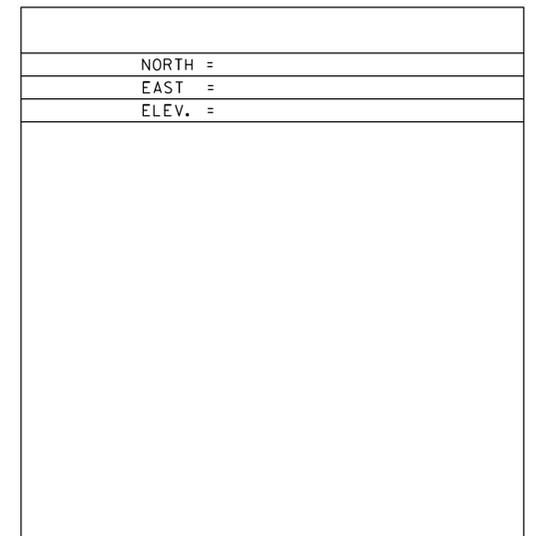
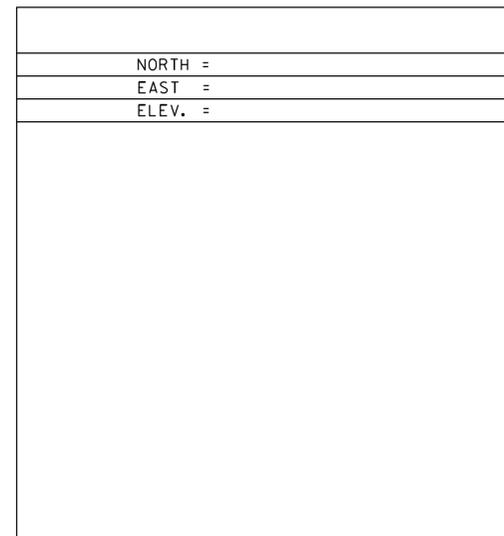
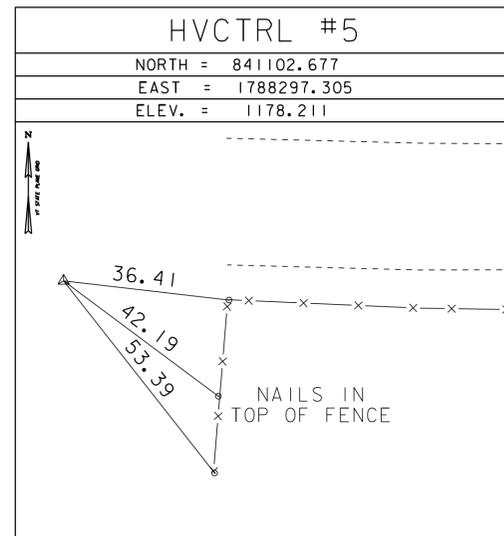
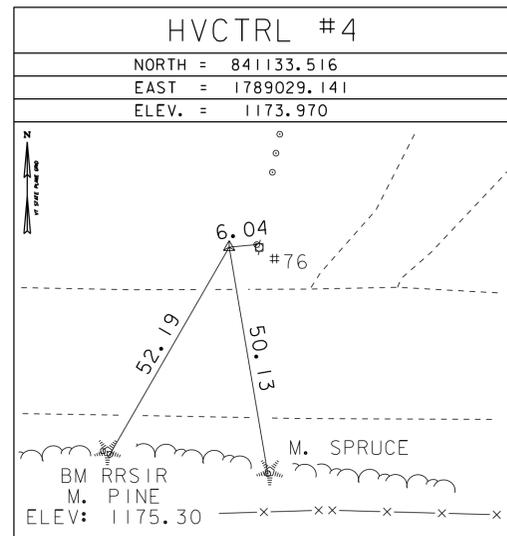
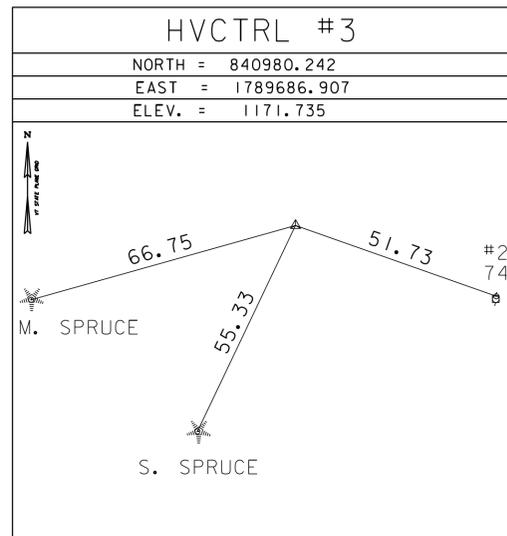
HVCTRL #1
 PORTER AZ MK
 NORTH = 839791.546
 EAST = 1791829.618
 ELEV. = 1189.855

HVCTRL #2
 PORTER
 NORTH = 840414.211
 EAST = 1790457.251
 ELEV. = 1200.817

TO REACH FROM THE INTERSECTION OF VT 114 SOUTH AND VT 105, GO NORTHWEST ALONG VT 105 FOR 0.4 MI TO THE SITE OF THE MARK ON THE LEFT. THE MARK IS SET 4" BELOW GROUND SURFACE IN THE TOP OF A 12" DIAMETER CONCRETE MONUMENT. IT IS 22.3' WEST-SOUTHWEST OF AND 3.3' LOWER THE CENTERLINE OF VT 105, 110' NORTH-NORTHWEST OF THE CENTERLINE OF A GRAVEL DRIVE LEADING TO THE GOODHILE RESIDENCE, 41.7' SOUTH OF A METAL ROAD SIGN, 87.6' EAST-NORTHEAST OF A 16" PINE, 154.5' NORTHEAST OF THE NORTH CORNER OF A 2 BAY GARAGE, 12' NORTH OF A LILAC BUSH, 88.6' EAST OF A METAL POST FOR A SATELLITE DISH, AND 1' EAST-NORTHEAST OF A FIBERGLASS WITNESS POST.

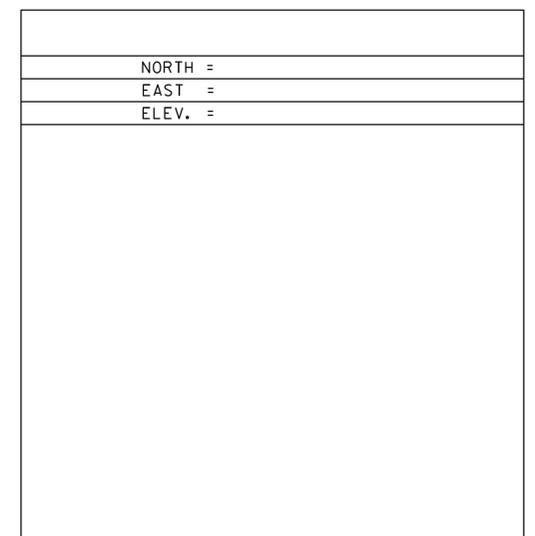
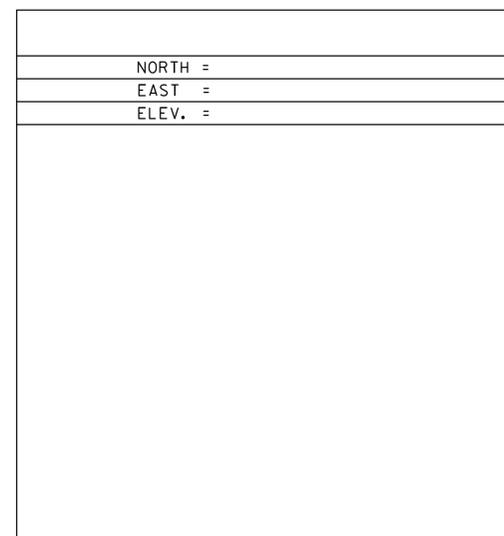
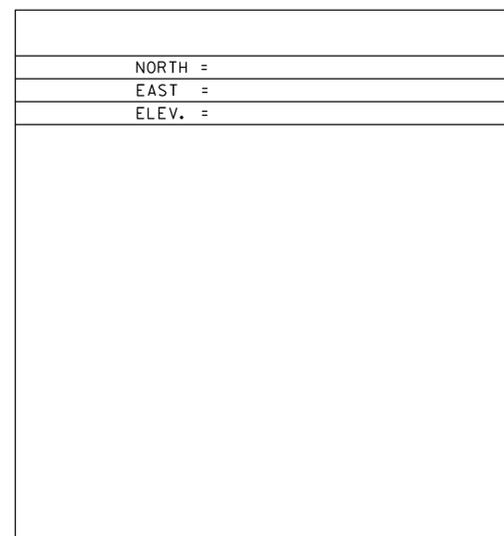
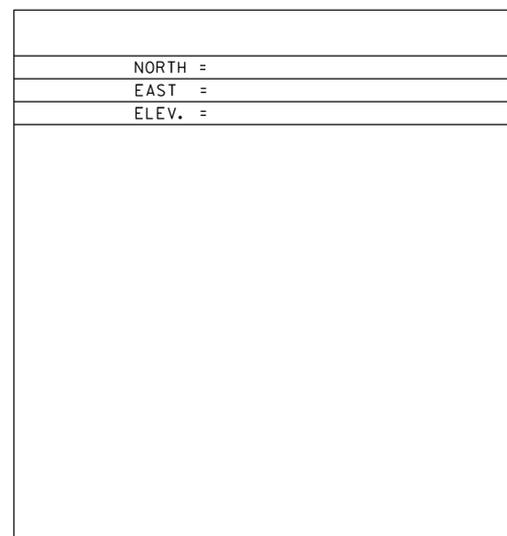
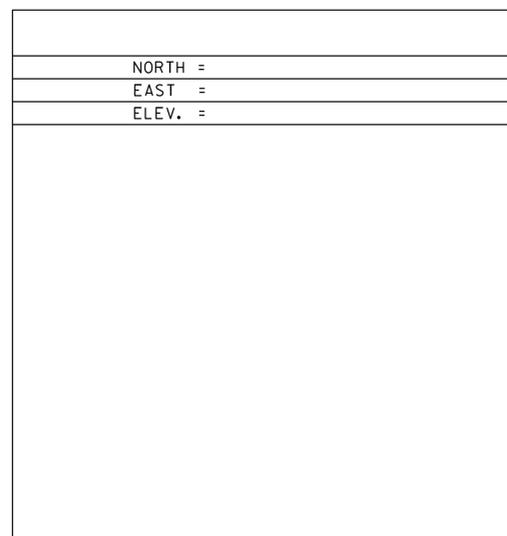
TO REACH FROM THE INTERSECTION OF VT 114 SOUTH AND VT 105, GO NORTHWEST ALONG VT 105 FOR 0.8 MI TO THE SITE OF THE MARK ON THE LEFT. THE MARK IS SET 2" BELOW GROUND SURFACE IN THE TOP OF A 12" DIAMETER CONCRETE MONUMENT. IT IS 27.6' SOUTHWEST OF AND ABOUT 2.6' HIGHER THAN THE CENTERLINE OF VT 105, 89.2' WEST-NORTHWEST OF THE NORTH CORNER OF A SMALL WOODEN STORAGE BUILDING, 115' EAST-SOUTHEAST OF A 20" ELM, 74.5' WEST-SOUTHWEST OF AND ACROSS THE ROAD FROM THE SOUTH CORNER OF THE PORTER FARM BARN, 75.5' SOUTH-SOUTHWEST OF AND ACROSS THE ROAD FROM THE SOUTH CORNER OF THE ENCLOSED PORCH OF A 2 STORY HOUSE, 21' WEST OF THE CENTERLINE OF A FARM DRIVE, AND 1' NORTH-NORTHEAST OF A FIBERGLASS WITNESS POST.

TRAVERSE TIES



*TRAVERSE COMPLETED 10/14/2011 BY R. GILMAN P.C. & P. WINTERS

ALIGNMENT TIES

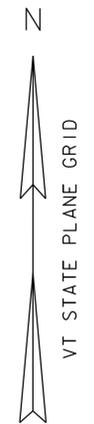
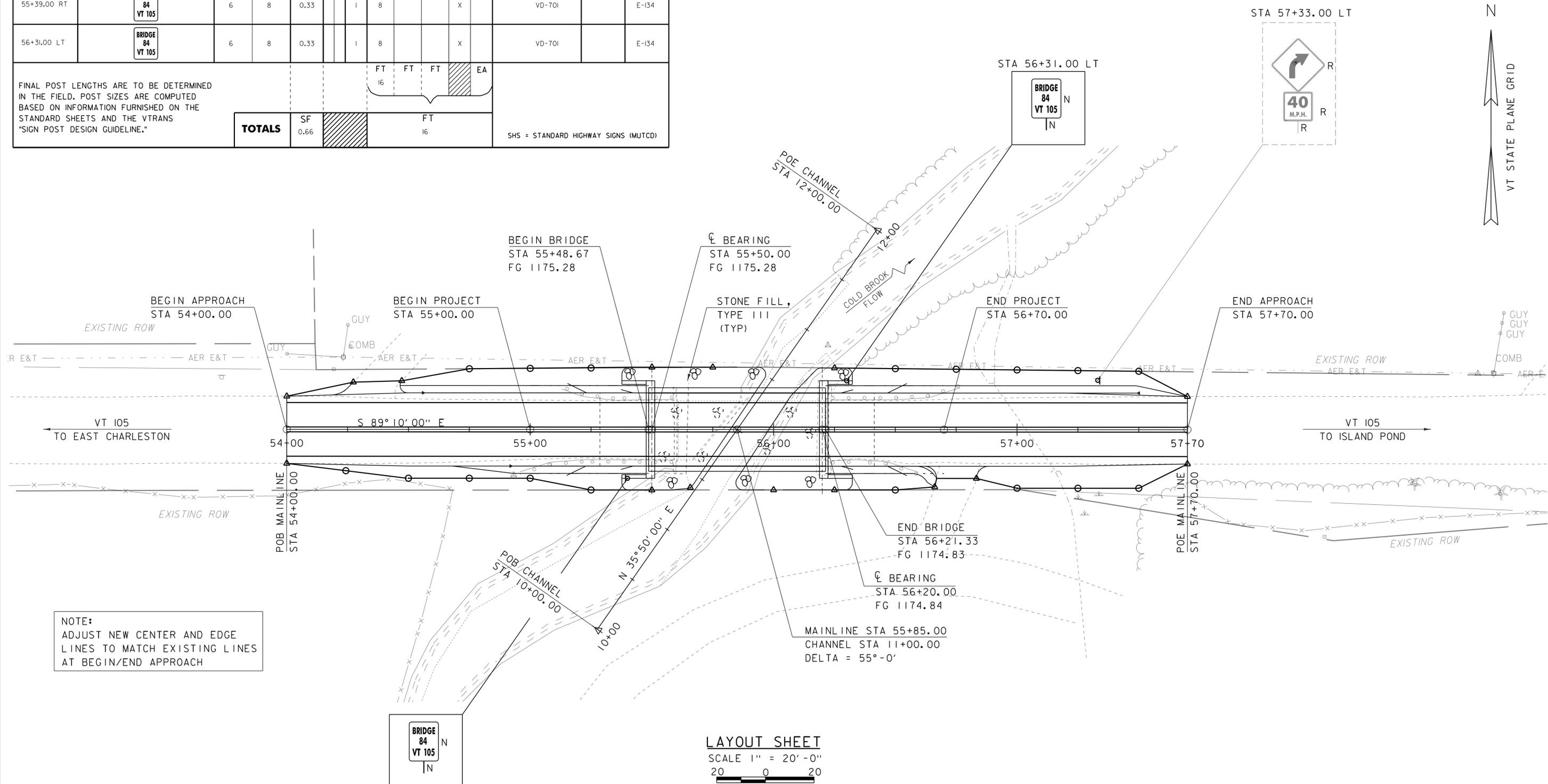


DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (07)
ADJUSTMENT	COMPASS

PROJECT NAME:	BRIGHTON	PLOT DATE:	12-SEP-2012
PROJECT NUMBER:	ER STP 034-3(25)	DRAWN BY:	W. LAMMER
FILE NAME:	s1b208t1.dgn	CHECKED BY:	J. SALVATORI
PROJECT LEADER:	K. HIGGINS	SHEET	8 OF 36
DESIGNED BY:	W. LAMMER		
TIE SHEET			

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW SIGN "A"	EXIST. POST RETAIN	NO. OF POSTS	NEW SIGN POSTS SQUARE STEEL (in)				REMARKS	SIGN DETAIL		
		WIDTH (in)	HEIGHT (in)				1.75	2.0	2.5	ANCHOR		SLAB	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
							1.88	2.42	3.35					
55+39.00 RT	BRIDGE 84 VT 105	6	8	0.33		1	8			X	VD-701	E-134		
56+31.00 LT	BRIDGE 84 VT 105	6	8	0.33		1	8			X	VD-701	E-134		
							FT	FT	FT	EA				
							16							
							SF							
							16							
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 (MUTCD)														

SIGN LEGEND
 N = NEW
 R = RETAIN



NOTE:
 ADJUST NEW CENTER AND EDGE LINES TO MATCH EXISTING LINES AT BEGIN/END APPROACH

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

CONSTRUCT PAVED APRON (5 FT)
 STA 54+18.00 - 54+50.00 LT
 STA 56+62.00 - 56+88.00 RT

SPECIAL PROVISION (REMOVAL OF TEMPORARY BRIDGE AND APPROACHES)
 STA 55+00.00 - 57+00.00

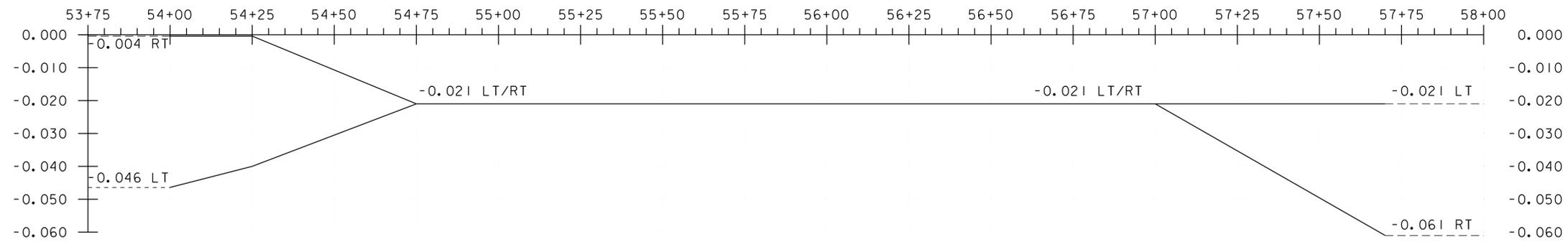
STA 55+39.00 RT

TRAFFIC SIGNS, TYPE A
 STA 55+39.00 (RT)
 STA 56+31.00 (LT)

4" WHITE LINE (LT & RT)
 STA 54+00.00 - 57+70.00

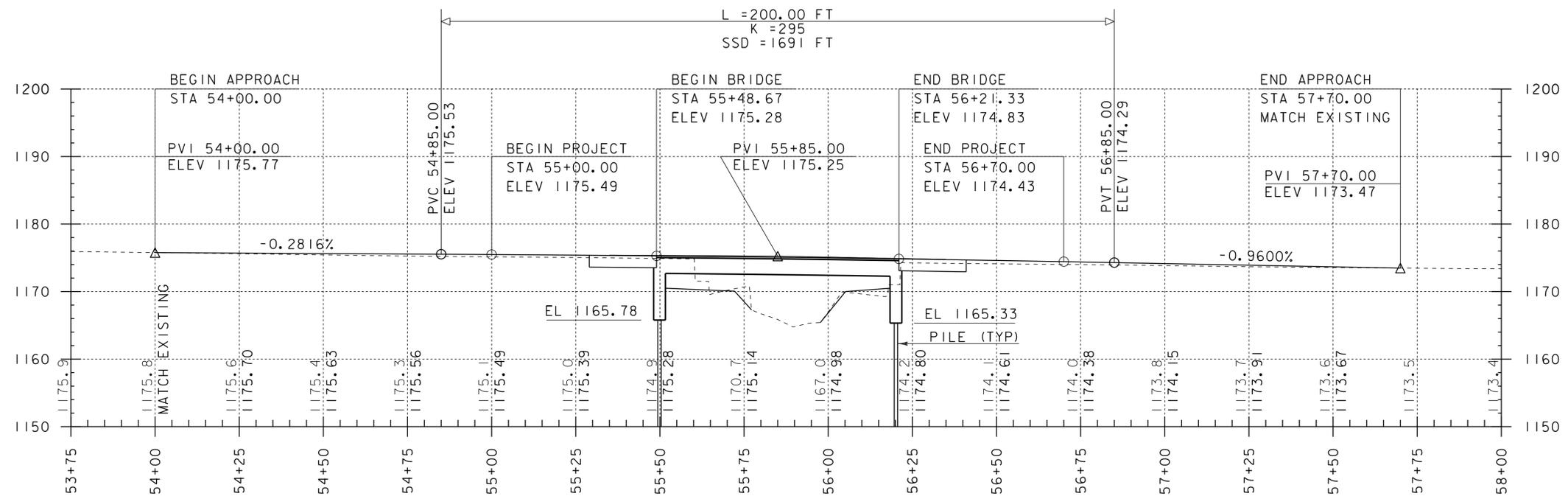
4" YELLOW LINE (DOUBLE)
 STA 54+00.00 - 57+70.00

PROJECT NAME:	BRIGHTON	PLOT DATE:	12-SEP-2012
PROJECT NUMBER:	ER STP 034-3(25)	DRAWN BY:	J. SALVATORI
FILE NAME:	s1b208bdr.dgn	CHECKED BY:	W. LAMMER
PROJECT LEADER:	K. HIGGINS	SHEET	9 OF 36
DESIGNED BY:	J. SALVATORI	LAYOUT SHEET	



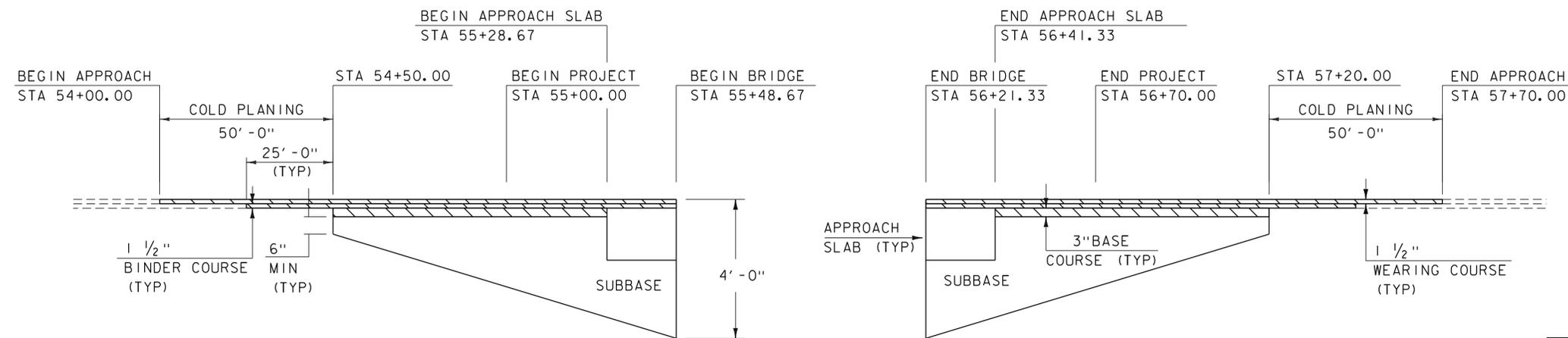
BANKING DIAGRAM

HORIZONTAL SCALE 1" = 20'-0"
 VERTICAL SCALE 1" = 10'-0"



MAINLINE PROFILE

HORIZONTAL SCALE 1" = 20'-0"
 VERTICAL SCALE 1" = 10'-0"



MATERIAL TRANSITION

HORIZONTAL SCALE 1" = 20'-0"
 VERTICAL SCALE 1/2" = 1'-0"

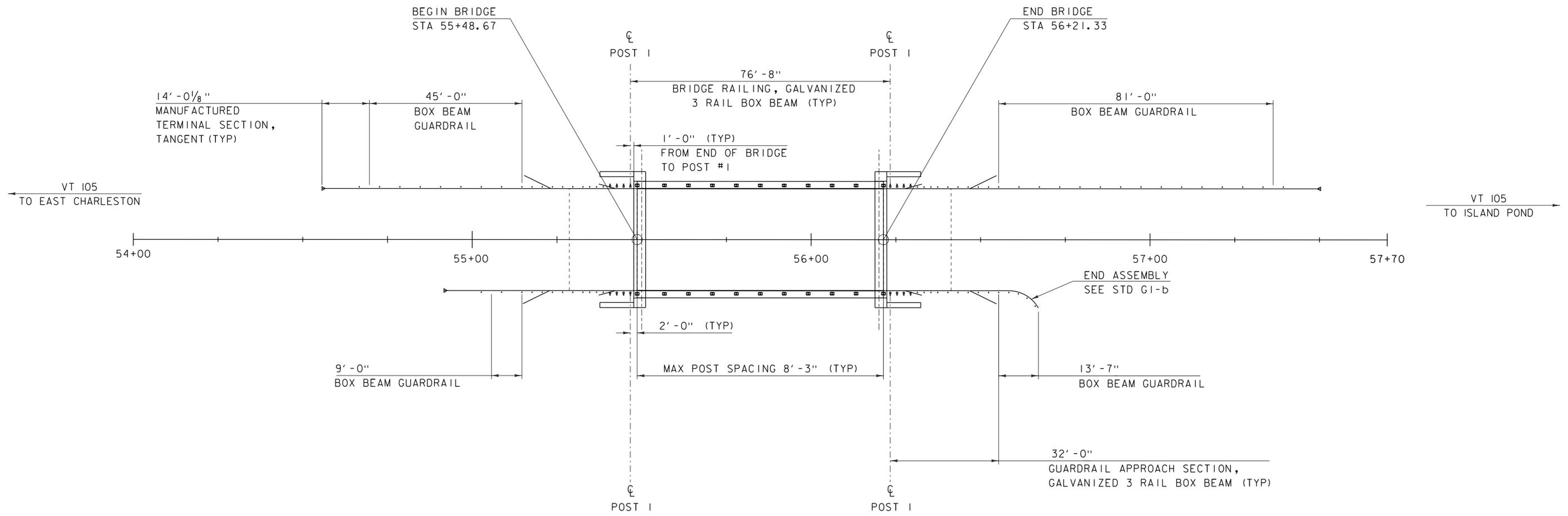
PROJECT NAME: BRIGHTON	
PROJECT NUMBER: ER STP 034-3(25)	
FILE NAME: s1lb208pro.dgn	PLOT DATE: 12-SEP-2012
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
MAINLINE PROFILE	SHEET 10 OF 36

BOX BEAM GUARDRAIL
 STA 54+69.67 - 55+14.67 LT
 STA 55+05.66 - 55+14.67 RT
 STA 56+55.33 - 57+36.34 LT
 STA 56+55.33 - 56+67.05 RT

MANUFACTURED TERMINAL SECTION, TANGENT
 STA 54+55.66 - 54+69.67 LT
 STA 54+91.65 - 55+05.66 RT
 STA 57+36.34 - 57+50.35 LT

BRIDGE RAILING, GALVANIZED
3 RAIL BOX BEAM
 STA 55+48.67 - 56+21.33 LT/RT

GUARDRAIL APPROACH SECTION,
GALVANIZED 3 RAIL BOX BEAM
 STA 55+14.67 - 55+48.67 LT/RT
 STA 56+21.33 - 56+55.33 LT/RT



RAIL LAYOUT SHEET
 SCALE 1" = 15'-0"

PROJECT NAME: BRIGHTON	
PROJECT NUMBER: ER STP 034-3(25)	
FILE NAME: s1b208rail.dgn	PLOT DATE: 12-SEP-2012
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
RAIL LAYOUT SHEET	SHEET 11 OF 36

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

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

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

COMMONLY USED SYMBOLS

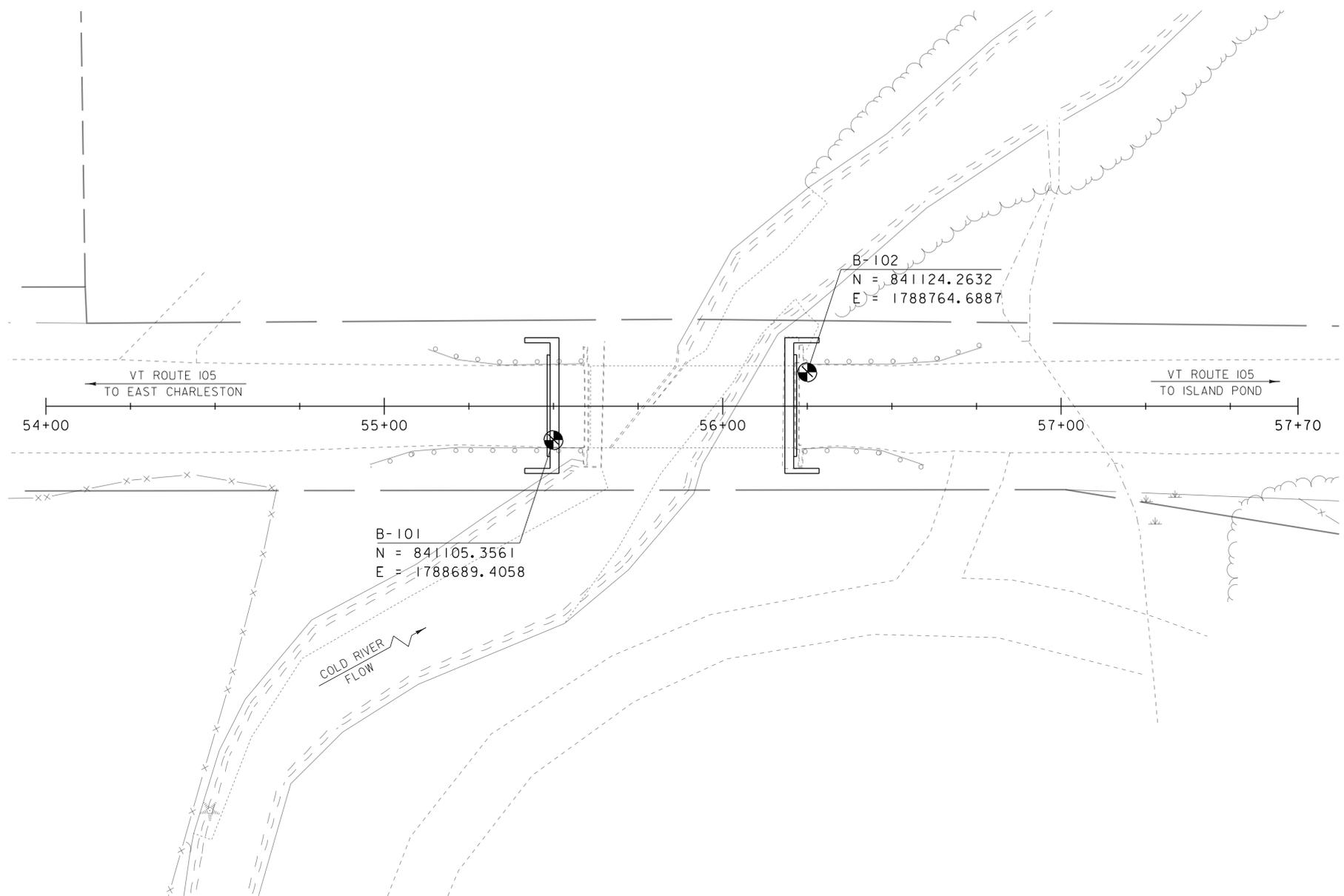
▼	Water Elevation
⊕	Standard Penetration Boring
⊗	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per Foot For: 2" O.D. Sampler 1 3/8" I.D. Sampler Hammer Weight Of 140 Lbs. Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger Core Size 1 1/8"
AX	Core Size 1 1/8"
BX	Core Size 1 3/8"
NX	Core Size 2 1/8"
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
Si	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	Top of Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
ROD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)
VTSPG	NAD83 - See Note 7

COLOR

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

DEFINITIONS (AASHTO)

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.	VARVED - Alternate layers of silt and clay.
BOULDER - A rock fragment with an average dimension > 12 inches.	HARDPAN - Extremely dense soil, cemented layer, not softened when wet.
COBBLE - Rock fragments with an average dimension between 3 and 12 inches.	MUCK - Soft organic soil (containing > 10% organic material).
GRAVEL - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).	MOISTURE CONTENT - Weight of water divided by dry weight of soil.
SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).	FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.
SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.	STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.
CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.	DIP - Inclination of bed with a horizontal plane.



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

BORING CHART

HOLE NO.	SURV. STATION	OFFSET	GROUND ELEV.
B-101	55+50	10' RT	1174.85
B-102	56+25	10' LT	1174.26

GENERAL NOTES

The subsurface explorations shown herein were made between 04/05/12 and 04/20/12 by the Agency.

Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.

Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.

4. Engineering judgment 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 judgment 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.

7. Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: s1lb208bor.dgn PLOT DATE: 12-SEP-2012
PROJECT LEADER: K. HIGGINS DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI CHECKED BY: W. LAMMER
BORING LAYOUT SHEET SHEET 12 OF 36

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-101					
				BRIGHTON STP 034-3(25) VT-105 BR-84		Page No.: 1 of 2					
						Pin No.: 11B208					
						Checked By: CCB					
Boring Crew: PORTER, DAVISON, HOLT		Casing Sampler		Groundwater Observations							
Date Started: 4/05/12 Date Finished: 4/16/12		Type: WB SS		Date	Depth (ft)	Notes					
VTSPG NAD83: N 841105.36 ft E 1788689.41 ft		I.D.: 4 in 1.5 in		04/16/12	8.5	AM					
Station: 55+50 Offset: 10.00		Hammer Wt: N.A. 140 lb.									
Ground Elevation: 1174.85 ft		Hammer Fall: N.A. 30 in.									
		Hammer/Rod Type: Auto/AWJ									
		Rig: CME 45C SKID CE = 1.33									
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg)	Core Rec. % (RDP %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.5 ft									
5		Visual Description: SiSa with one piece of granite, brn, Moist, Rec. = 0.2 ft, Stone in end of sampler. Insufficient sample for testing.					9-6-6-11 (12)				
10		A-1-a, SaGr, brn, Moist, Rec. = 0.8 ft					8-8-8-5 (16)	17.0	54.2	36.9	8.9
15		Field Note: No Recovery. Trace of silt in sampler					4-1-1-1 (2)				
20		A-2-4, Sa, gry, Moist, Rec. = 1.0 ft					15-12-11-12 (23)	19.0	15.8	72.9	11.3
25		A-1-b, Sa, brn, Moist, Rec. = 1.5 ft					5-6-8-9 (14)	19.2	7.9	86.1	6.0
30		A-2-4, Sa, brn, Moist, Rec. = 1.2 ft, Granite chips were within sample.					7-10-14-16 (24)	15.2	18.1	70.4	11.5
35		A-1-b, GrSa, brn, Moist, Rec. = 1.0 ft, Granite chips and broken rock were within sample.					17-17-21-34 (38)	13.7	40.7	44.9	14.4
40		A-1-b, GrSa, brn, Moist, Rec. = 0.8 ft, Granite chips and broken rock were within sample.					22-20-14-11 (34)	12.9	38.0	52.8	9.2
45		A-1-b, GrSa, brn, Moist, Rec. = 0.7 ft, Granite chips and broken rock were within sample.					14-12-16-15 (28)	12.6	40.2	50.5	9.3
		A-1-b, GrSa, gry-brn, Moist, Rec. = 1.1 ft, Granite chips were within sample.					8-11-18-8 (29)	15.6	38.2	53.8	8.0
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor. 3. 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.											

ABUTMENT I
BOT OF PILE CAP
EL 1165.78

BORING LOG # BRIGHTON STP 034-3(25).GPJ VERMONT AOT.GBT 5/21/12

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-101					
				BRIGHTON STP 034-3(25) VT-105 BR-84		Page No.: 2 of 2					
						Pin No.: 11B208					
						Checked By: CCB					
Boring Crew: PORTER, DAVISON, HOLT		Casing Sampler		Groundwater Observations							
Date Started: 4/05/12 Date Finished: 4/16/12		Type: WB SS		Date	Depth (ft)	Notes					
VTSPG NAD83: N 841105.36 ft E 1788689.41 ft		I.D.: 4 in 1.5 in		04/16/12	8.5	AM					
Station: 55+50 Offset: 10.00		Hammer Wt: N.A. 140 lb.									
Ground Elevation: 1174.85 ft		Hammer Fall: N.A. 30 in.									
		Hammer/Rod Type: Auto/AWJ									
		Rig: CME 45C SKID CE = 1.33									
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg)	Core Rec. % (RDP %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
55		A-1-b, GrSa, gry-brn, Moist, Rec. = 1.0 ft, Small Granite chips within size.					6-5-8-9 (13)	18.9	32.5	62.6	4.9
60		A-1-b, GrSa, gry-brn, Moist, Rec. = 1.1 ft					6-8-9-18 (17)	17.2	28.9	57.5	13.6
65		A-1-b, Sa, gry-brn, Moist, Rec. = 1.0 ft A-4, Si, brn, Moist, Rec. = 0.6 ft					9-10-21-32 (31)	18.3	17.3	78.6	4.1
70		A-4, Si, gry, Moist, Rec. = 1.3 ft					19-31-35-43 (66)	20.0	0.1	11.8	88.1
75		A-2-4, GrSa, gry, Moist, Rec. = 1.2 ft					22-25-35-27 (60)	11.6	22.3	58.6	19.1
80		Field Note: Cored ahead Field Note: Cobbles					RØ2.5"				
85		A-2-4, GrSiSa (HP), gry, Moist, Rec. = 0.2 ft					61- RØ2.5"	7.1	24.7	45.3	30.0
87.0		Field Note: Advanced casing to 87 feet. Cleaned out casing. 1.8 feet of rock inside bottom of casing.									
90		87.0 ft - 92.0 ft, Light gray, With dark green splotches Diorite, Hard, Unweathered, Very good rock, BXMD, RMR = 92		1 (?)	92 (90)	7					
95		92.0 ft - 97.0 ft, Light gray, With dark green splotches Diorite, Hard, Unweathered, Very good rock, BXMD, Healed near vertical fracture from 95.0-97.0 feet. RMR = 92		2 (?)	100 (94)	5					
		Hole stopped @ 97.0 ft									
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor. 3. 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.											

ABUTMENT I
PILE TIP
EL 1087.85

BORING LOG # BRIGHTON STP 034-3(25).GPJ VERMONT AOT.GBT 5/21/12

PROJECT NAME:	BRIGHTON
PROJECT NUMBER:	ER STP 034-3(25)
FILE NAME:	s1b208bor.dgn
PROJECT LEADER:	K. HIGGINS
DESIGNED BY:	W. LAMMER
BORING LOG I	
PLOT DATE:	12-SEP-2012
DRAWN BY:	J. SALVATORI
CHECKED BY:	W. LAMMER
SHEET	13 OF 36

VTTrans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-102		
		BRIGHTON STP 034-3(25) VT-105 BR-84		Page No.: 1 of 2		Pin No.: 11B208		
		Checked By: CCB		Groundwater Observations				
Boring Crew: PORTER, DAVISON		Casing: WB		Sampler: SS		Date: 04/20/12		
Date Started: 4/17/12 Date Finished: 4/20/12		Type: 4 in		I.D.: 1.5 in		Depth (ft): 9.5		
VTSPG NAD83: N 841124.26 ft E 1788764.69 ft		Hammer Wt: N.A.		140 lb.		Notes: AM		
Station: 56+25 Offset: -10.00		Hammer Fall: N.A.		30 in.				
Ground Elevation: 1174.26 ft		Hammer/Rod Type: Auto/AWJ		Rig: CME 45C SKID		CE = 1.33		
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.5 ft						
		A-1-b, GrSa, brn, Moist, Rec. = 1.0 ft		7-7-8-7 (15)	9.9	35.5	49.3	15.2
		A-1-a, SaGr, brn, Moist, Rec. = 0.9 ft		4-4-8-9 (12)	12.1	53.0	39.2	7.8
10		A-1-b, GrSa, brn, Moist, Rec. = 0.6 ft		2-2-3-2 (5)	18.4	30.6	58.6	10.8
		A-1-a, SaGr, brn-gry, Moist, Rec. = 0.8 ft		14-14-18-20 (32)	12.0	52.5	37.5	10.0
20		A-2-4, Sa, brn, Moist, Rec. = 1.0 ft		6-6-8-9 (14)	20.6	9.7	76.5	13.8
		A-3, Sa, brn, Moist, Rec. = 0.8 ft		6-6-7-7 (13)	16.9	9.0	81.5	9.5
30		A-1-b, GrSa, brn, Moist, Rec. = 0.8 ft		7-16-17-12 (33)	16.7	42.4	53.9	3.7
		A-1-b, GrSa, brn, Moist, Rec. = 0.7 ft		8-7-6-7 (13)	16.4	30.9	61.1	8.0
40		Field Note: No Recovery. Trace of sand		8-11-11-10 (22)				
		Visual Description: Broken Granite pieces with silty sand, brn, Moist, Rec. = 0.3 ft, Insufficient sample for testing.		27-25-17-15 (42)	17.7			
50		A-3, Sa, brn, Moist, Rec. = 0.7 ft		5-9-13-19 (22)	6.7	0.5	91.3	8.2
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor. 3. 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.								

ABUTMENT 2
BOT OF PILE CAP
EL 1165.33

BORING LOG 2 BRIGHTON STP 034-3(25) GRJ VERMONT AOT GBT 5/21/12

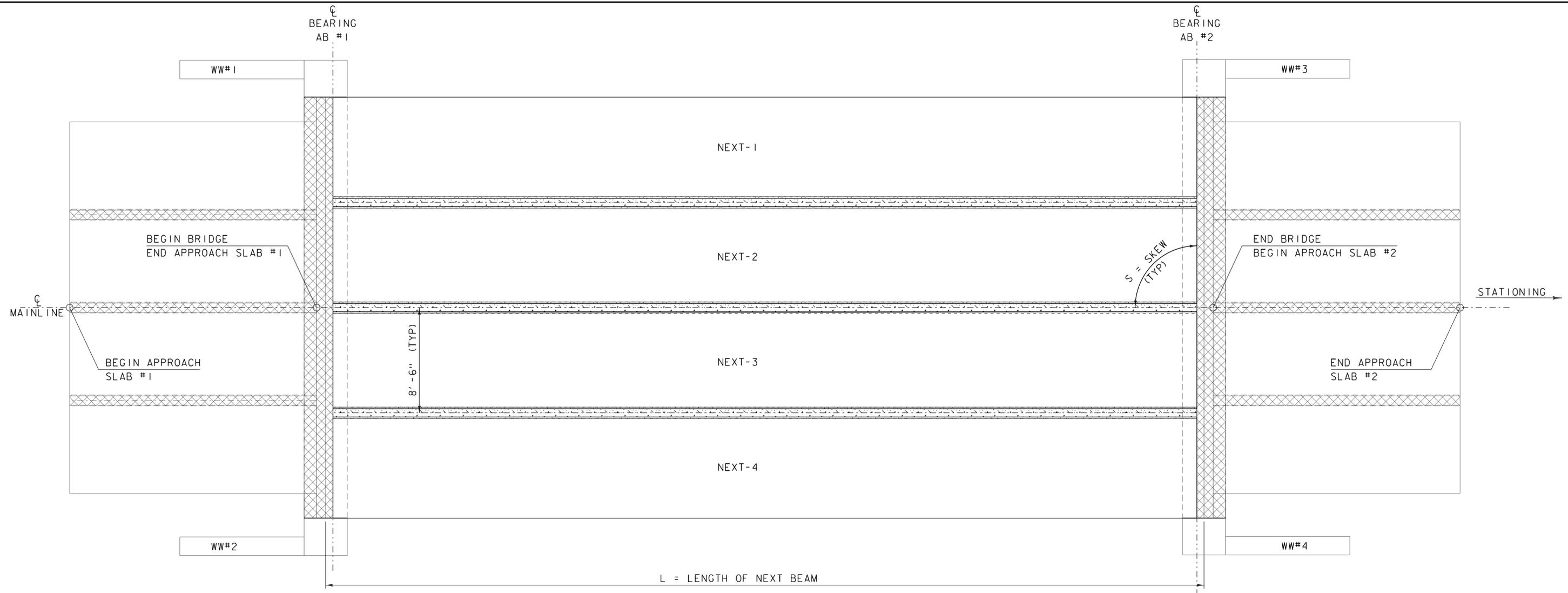
VTTrans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-102		
		BRIGHTON STP 034-3(25) VT-105 BR-84		Page No.: 2 of 2		Pin No.: 11B208		
		Checked By: CCB		Groundwater Observations				
Boring Crew: PORTER, DAVISON		Casing: WB		Sampler: SS		Date: 04/20/12		
Date Started: 4/17/12 Date Finished: 4/20/12		Type: 4 in		I.D.: 1.5 in		Depth (ft): 9.5		
VTSPG NAD83: N 841124.26 ft E 1788764.69 ft		Hammer Wt: N.A.		140 lb.		Notes: AM		
Station: 56+25 Offset: -10.00		Hammer Fall: N.A.		30 in.				
Ground Elevation: 1174.26 ft		Hammer/Rod Type: Auto/AWJ		Rig: CME 45C SKID		CE = 1.33		
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-1-b, Sa, brn, Moist, Rec. = 1.0 ft		9-11-12-12 (23)	22.5	10.5	82.5	7.0
60		A-4, Si, brn, Moist, Rec. = 1.6 ft		14-16-18-20 (34)	22.0	0.5	17.3	82.2
		A-1-b, GrSa, brn, Moist, Rec. = 1.5 ft		16-13-27-46 (40)	12.2	29.6	52.7	17.7
70		Field Note: Cobbles. Pieces of Granite		(R)				
		A-4, SaSi, gry, Moist, Rec. = 0.5 ft, Lab Note: (HP)		R@6.0"	11.9	15.0	39.8	45.2
80		Visual Description: Broken Rock with sand, gry, Moist, Rec. = 0.2 ft, Insufficient sample for testing.		R@2.5"	7.3			
		Visual Description: Broken Rock, gry, Moist, Rec. = 0.2 ft, Insufficient sample for testing.		R@2.5"				
90		A-1-b, GrSa, gry, Moist, Rec. = 0.4 ft, Advanced casing to 99 ft.		R@5.0"	8.1	38.7	43.6	17.7
100		Field Note: Granite Boulder						
Hole stopped @ 109.0 ft								
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor. 3. 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.								

ABUTMENT 2
PILE TIP
EL 1087.33

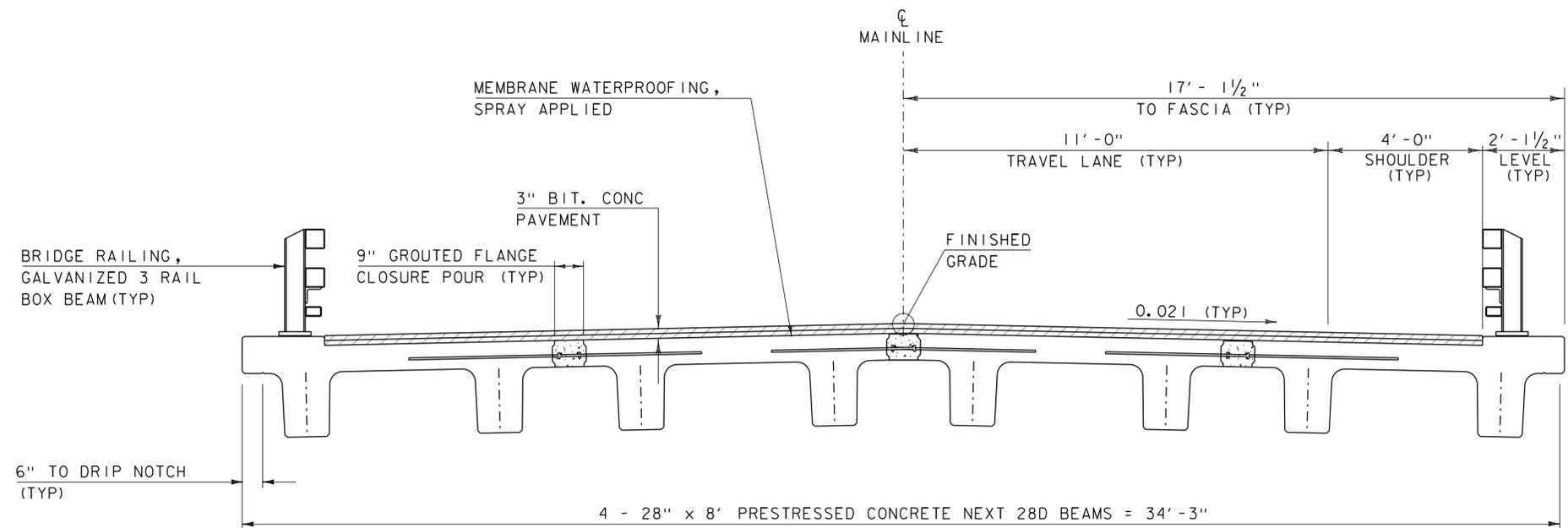
BORING LOG 2 BRIGHTON STP 034-3(25) GRJ VERMONT AOT GBT 5/21/12

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: s11b208bor.dgn PLOT DATE: 12-SEP-2012
PROJECT LEADER: K. HIGGINS DRAWN BY: J. SALVATORI
DESIGNED BY: W. LAMMER CHECKED BY: W. LAMMER
BORING LOG 2 SHEET 14 OF 36



DECK PLAN
SCALE 1/4" = 1'-0"



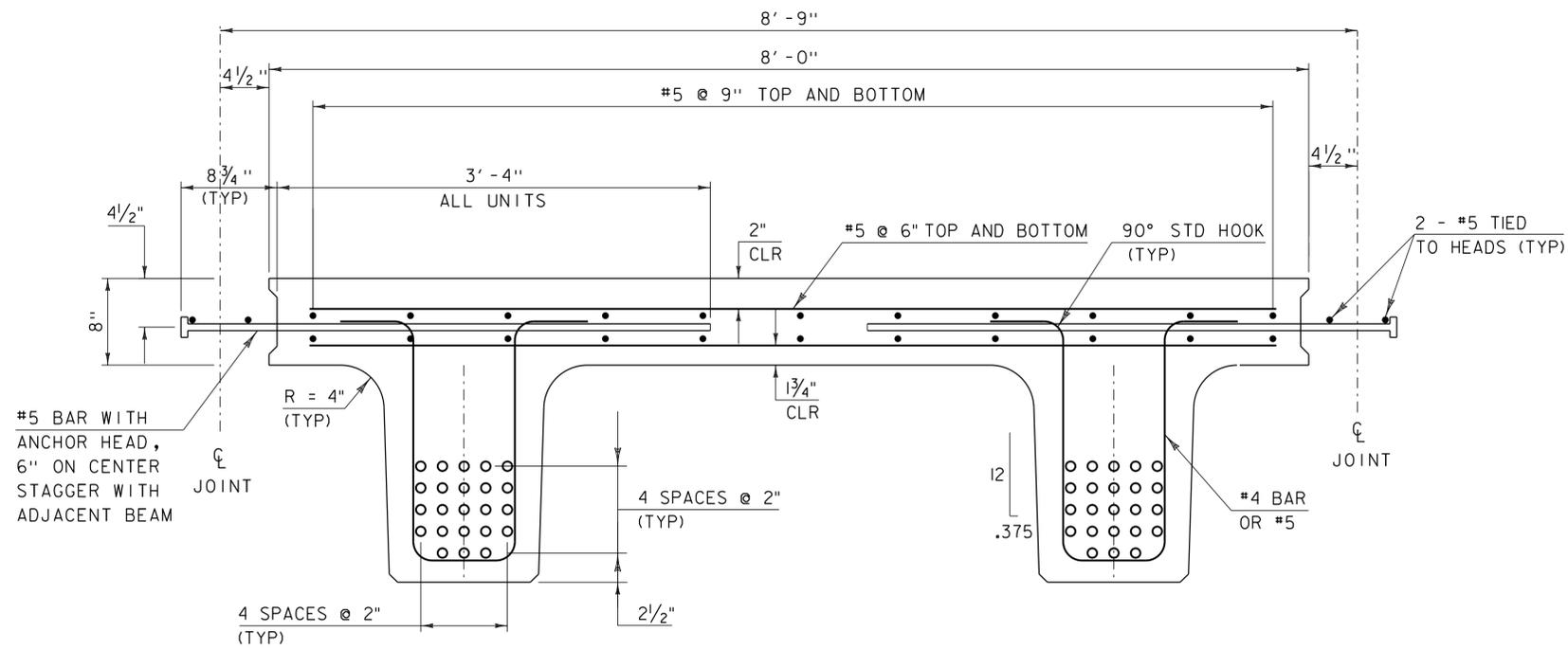
BRIDGE TYPICAL SECTION
SCALE 1/2" = 1'-0"

S	90°
L	71'-0"

LEGEND

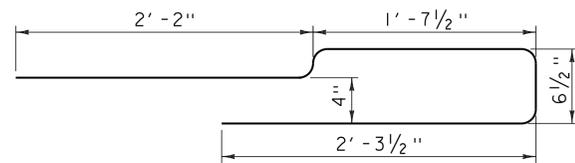
-  SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)
-  HPC = SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)
-  GROUTING SHEAR KEYS

PROJECT NAME: BRIGHTON	
PROJECT NUMBER: ER STP 034-3(25)	
FILE NAME: s1lb208sup.dgn	PLOT DATE: 12-SEP-2012
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: W. LAMMER	CHECKED BY: W. LAMMER
FRAMING PLAN	SHEET 15 OF 36



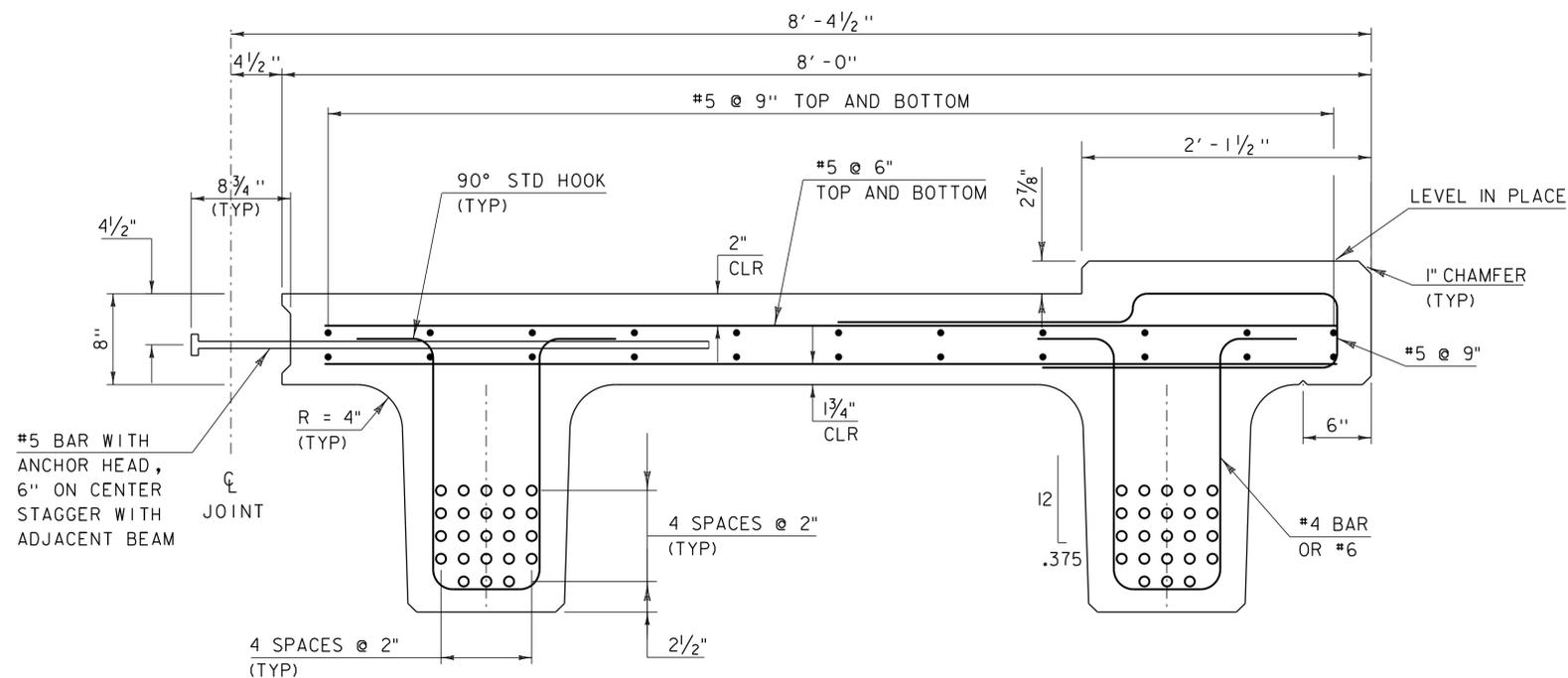
UNITS 2 & 3

SCALE: 1 1/2" = 1'-0"



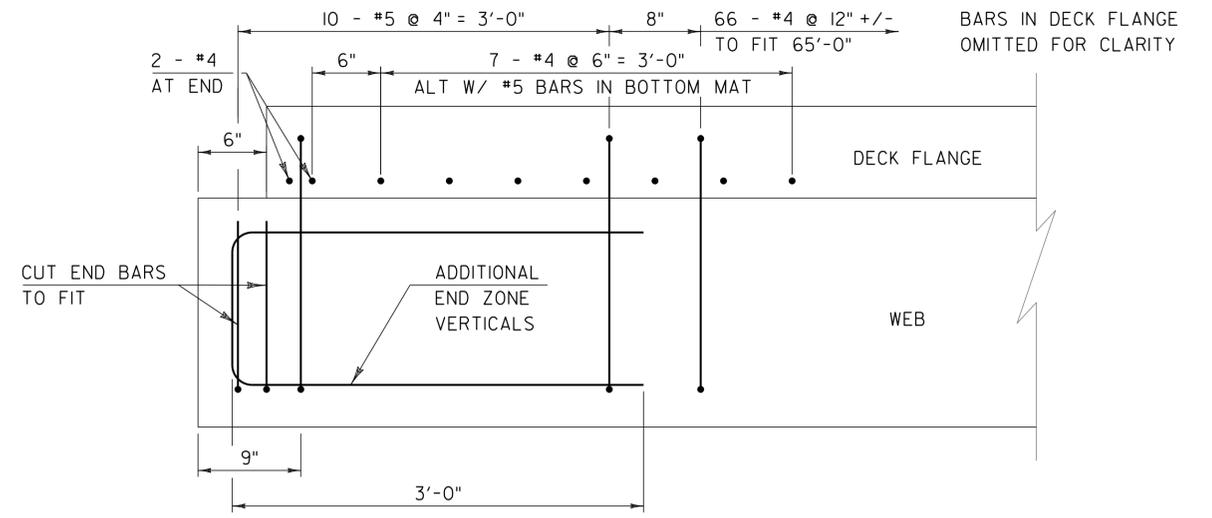
CURB BAR

SCALE: 1 1/2" = 1'-0"



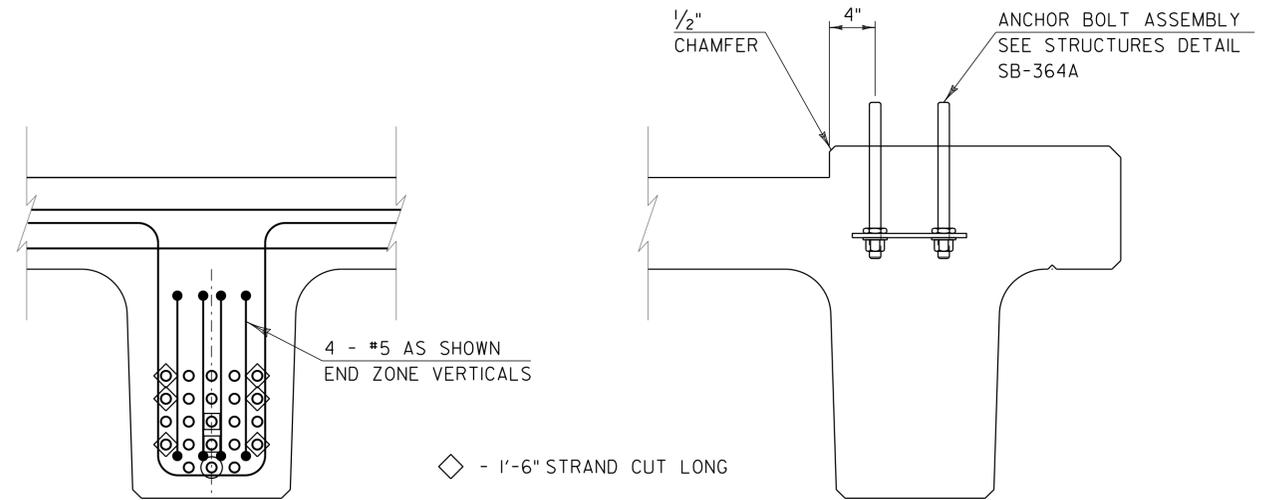
UNITS 1 & 4

SCALE: 1 1/2" = 1'-0"



**ADDITIONAL END BEAM REINFORCING
LONGITUDINAL SECTION**

SCALE: 1 1/2" = 1'-0"



BEAM SECTION

SCALE: 1 1/2" = 1'-0"

END SECTION

SCALE: 1 1/2" = 1'-0"

$L_{NEXT} = 71 \text{ FT.}$
SKEW = 90°

NOTES:

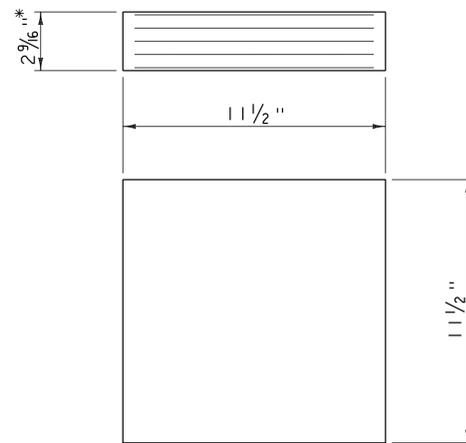
1. LEAVE SIX STRANDS 1'-6" LONG AS INDICATED. TIE STRANDS TO HORIZONTAL #5 REINFORCING IN DECK CLOSURE POUR.

REVISI REVISION 10-12-12

- REMOVED NOTE 2

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: s1lb208sup.dgn PLOT DATE: 12-OCT-2012
PROJECT LEADER: K. HIGGINS DRAWN BY: J. SALVATORI
DESIGNED BY: W. LAMMER CHECKED BY: W. LAMMER
NEXT BEAM TYPICAL SECTIONS SHEET 16 OF 36



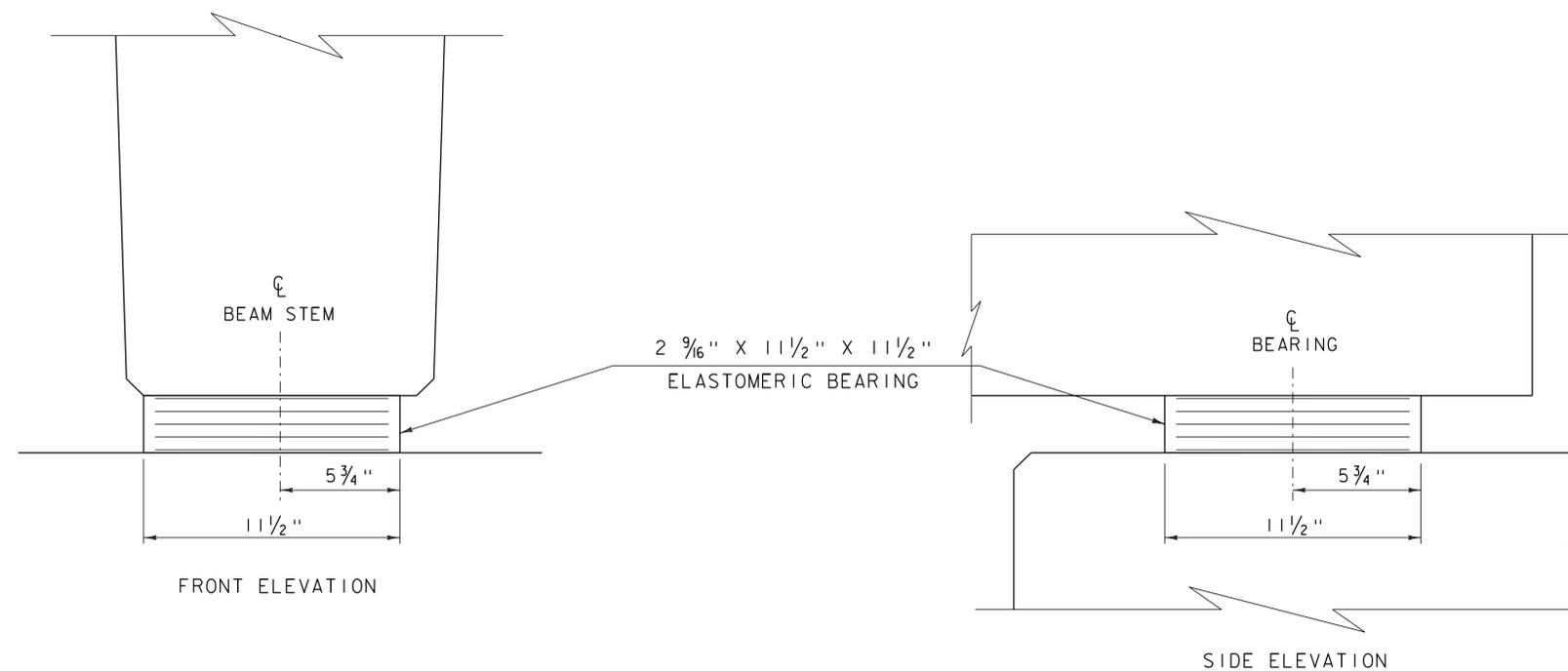
ELASTOMERIC BEARING DETAIL

SCALE 3" = 1'-0"

- * 2 - 1/8" EXTERIOR LAYERS OF ELASTOMER
- 4 - 1/2" INTERIOR LAYERS OF ELASTOMER
- 5- 1/16" STEEL REINFORCING PLATES

BEARING NOTES

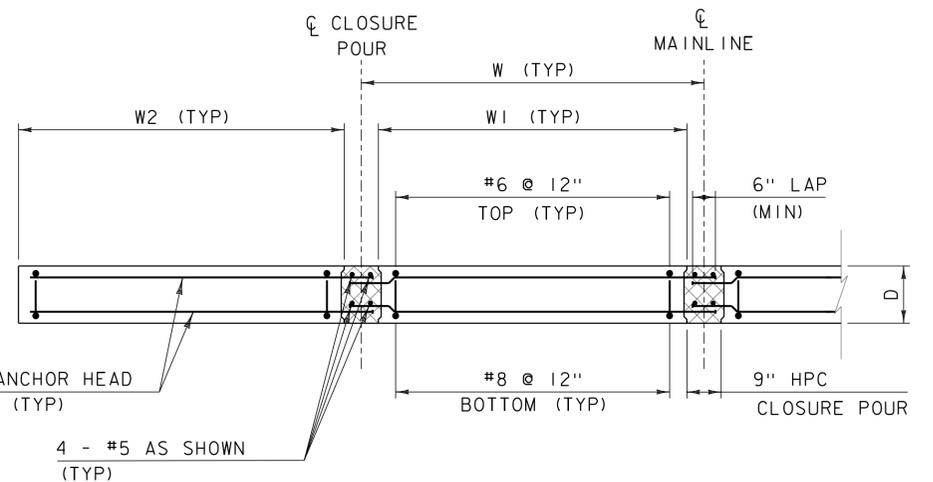
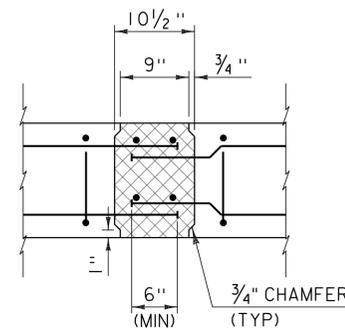
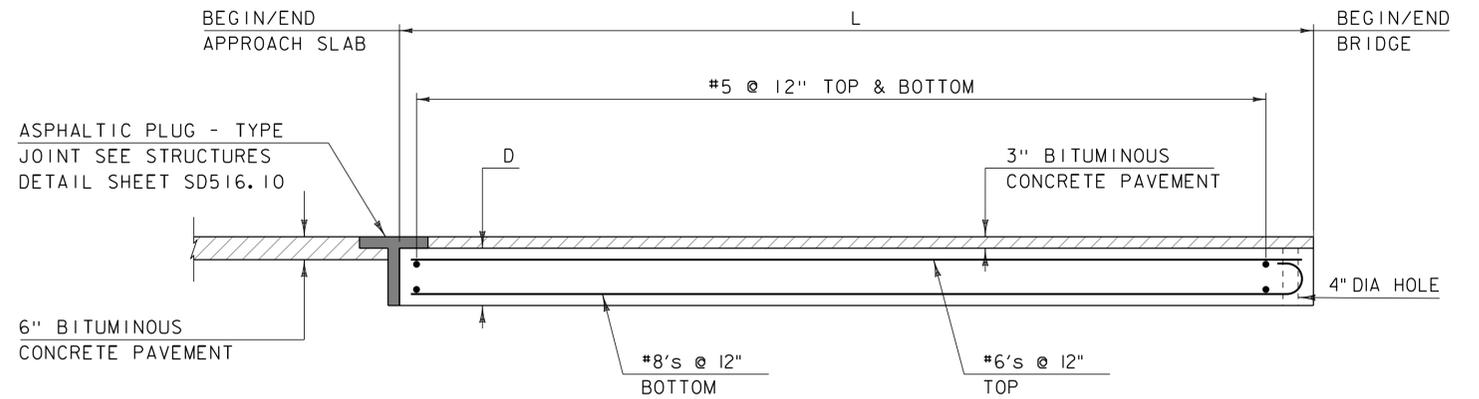
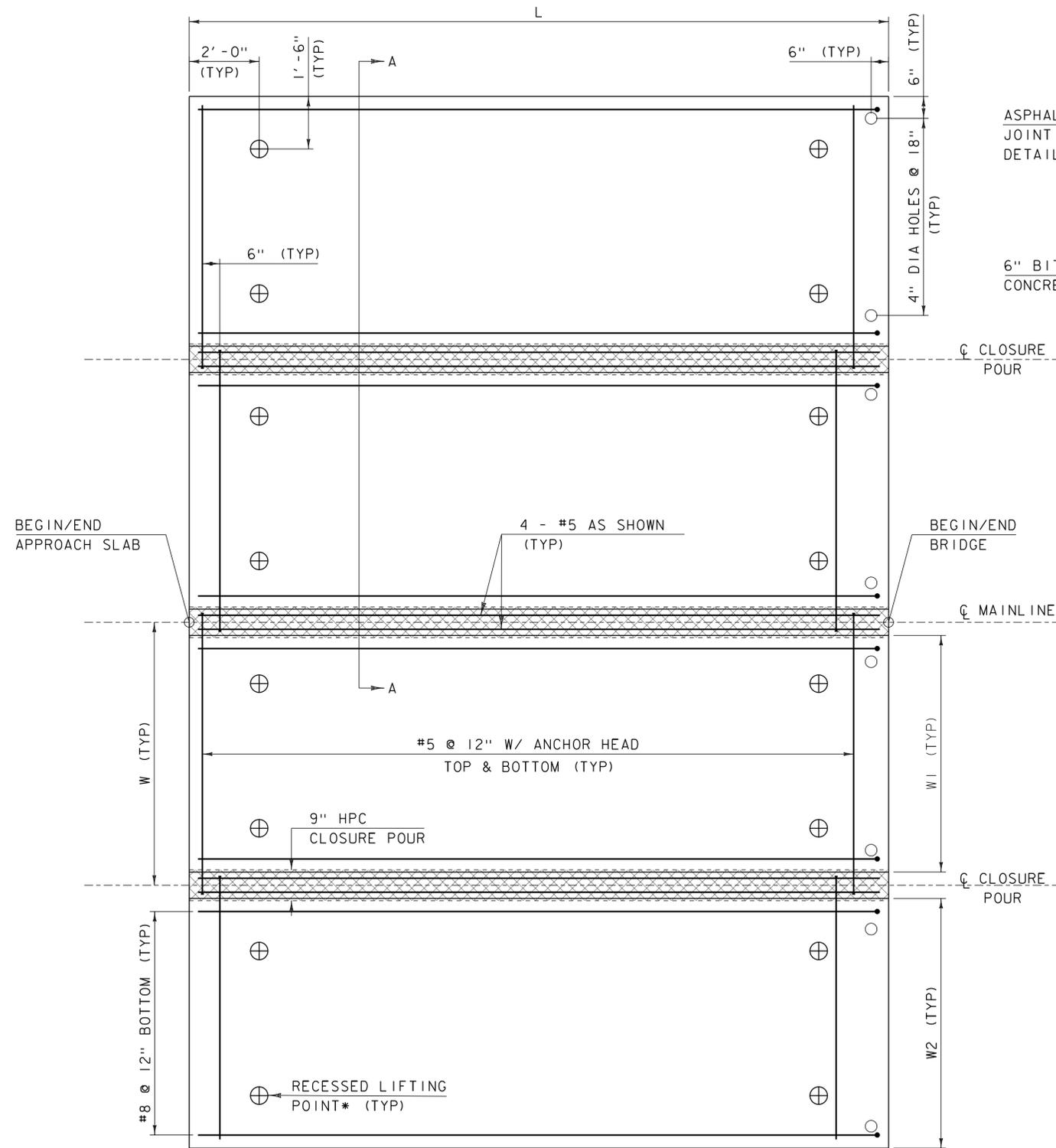
1. BEARINGS SHALL CONFORM TO THE APPLICABLE SUBSECTIONS OF SECTIONS 531 AND 731.
2. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMER SHALL BE STEEL MEETING THE REQUIREMENTS OF SUBSECTION 714.02. ALL INTERNAL STEEL PLATES SHALL BE SAND BLASTED AND FREE OF COATINGS, RUST AND MILL SCALE. THE PLATES SHALL BE FREE OF SHARP EDGES AND BURRS.
3. STEEL REINFORCED ELASTOMERIC BEARINGS SHALL HAVE A MINIMUM 1/8" EDGE SEAL OF ELASTOMER INTEGRAL WITH BEARING OVER ALL INTERNAL PLATES.
4. THE ELASTOMER WAS DESIGNED WITH A SHEAR MODULUS OF 100 PSI +/- 15%
5. THE CONCRETE UNDER THE BEARING DEVICE SHALL BE LEVEL.
6. THE CONTRACTOR IS ADVISED TO HAVE A MINIMUM OF 16 - 1/4"x12 1/2"x12 1/2" GALVANIZED STEEL SHIMS AVAILABLE FOR USE FOR ELEVATION ADJUSTMENTS UPON THE SETTING OF THE SUPERSTRUCTURE UNITS. THE SHIMS SHALL BE FABRICATED ACCORDING TO SECTION 531 AND SHALL BE INCLUDED UNDER ITEM 531.17, "BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD".



ELASTOMERIC BEARING DETAILS

SCALE 3" = 1'-0"

PROJECT NAME:	BRIGHTON	PLOT DATE:	12-SEP-2012
PROJECT NUMBER:	ER STP 034-3(25)	DRAWN BY:	J. SALVATORI
FILE NAME:	s1b208brg.dgn	CHECKED BY:	W. LAMMER
PROJECT LEADER:	K. HIGGINS	DESIGNED BY:	W. LAMMER
DESIGNED BY:	W. LAMMER	BEARING DETAILS	SHEET 17 OF 36



APPROACH SLAB DIMENSIONS

D	1' - 3"
L	20' - 0"
W	7' - 6"
W1	6' - 9"
W2	7' - 1 1/2"

APPROACH SLAB ELEVATIONS

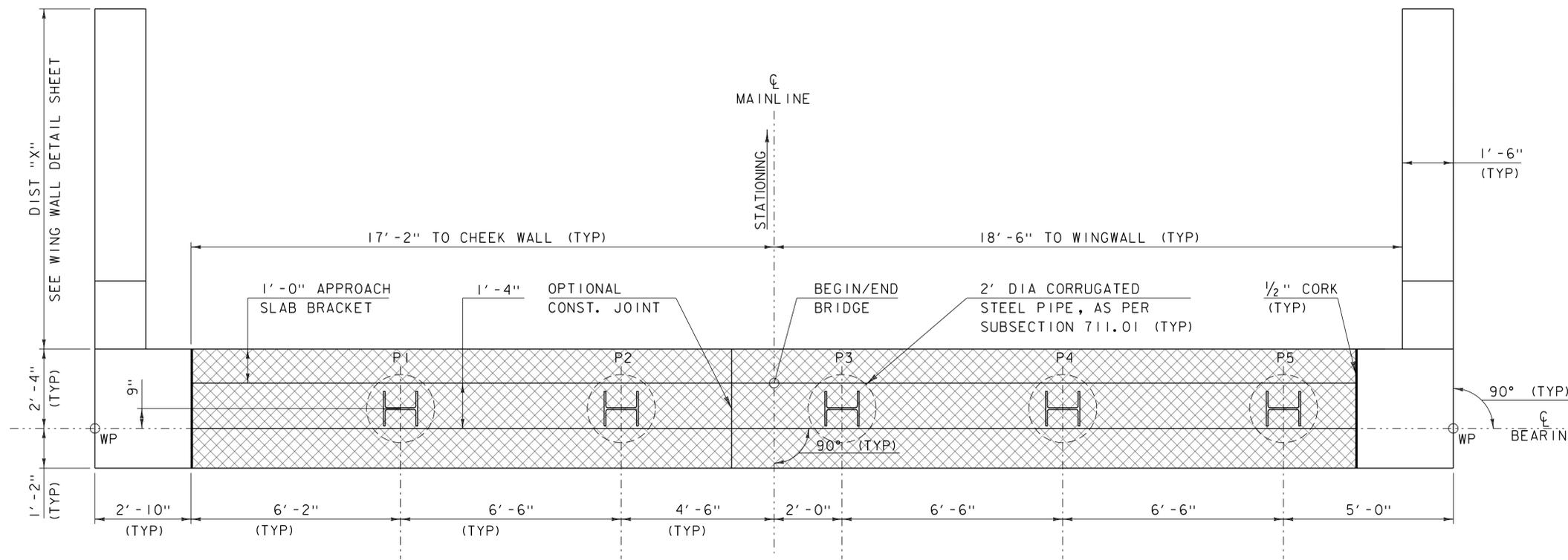
ALL ELEVATIONS ARE TOP OF SLAB

	STATION	15' - 0" LT	CL	15' - 0" RT
BEGIN AP#1	55+28.67	1174.81	1175.13	1174.81
END AP#1	55+48.67	1174.71	1175.03	1174.71
BEGIN AP#2	56+21.33	1174.26	1174.58	1174.26
END AP#2	56+41.33	1174.11	1174.43	1174.11

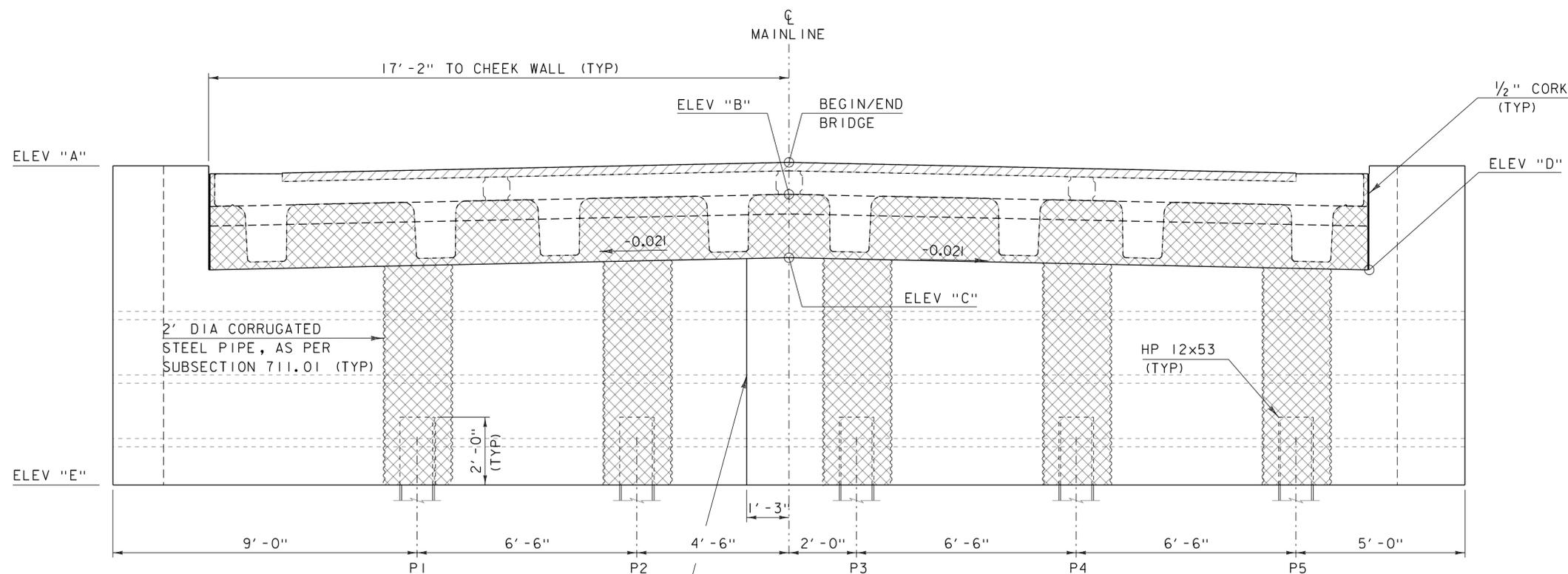
NOTE:

NF = NEAR FACE
 FF = FAR FACE
 EF = EACH FACE
 ▲ = CUT TO FIT IN FIELD
 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
 2' - 2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME:	BRIGHTON	PLOT DATE:	12-SEP-2012
PROJECT NUMBER:	ER STP 034-3(25)	DRAWN BY:	J. SALVATORI
FILE NAME:	slib208sup.dgn	DESIGNED BY:	W. LAMMER
PROJECT LEADER:	K. HIGGINS	APPROACH SLAB DETAILS	CHECKED BY: W. LAMMER
			SHEET 18 OF 36



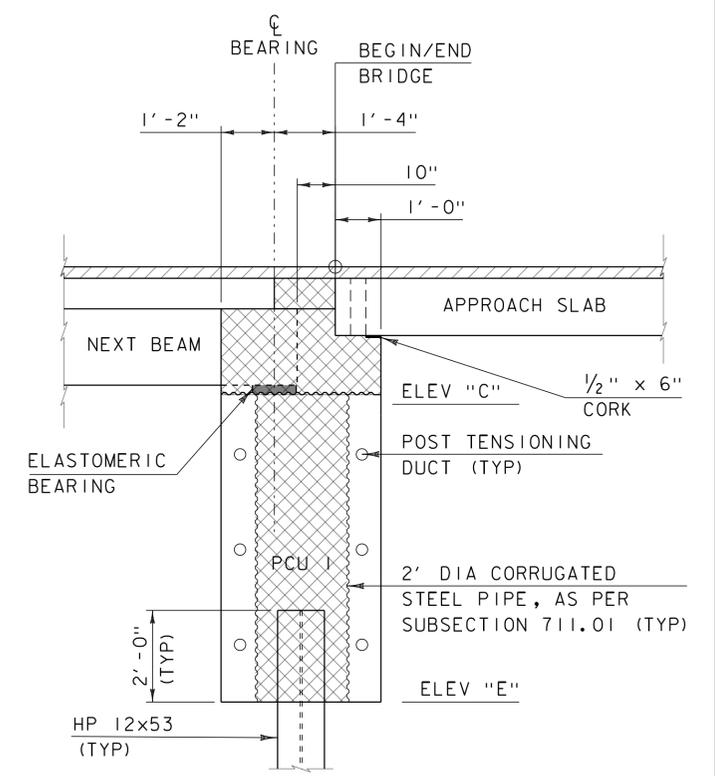
PCU I PLAN
SCALE 1/2" = 1'-0"



PCU I ELEVATION
SCALE 1/2" = 1'-0"

PCU I ELEVATIONS

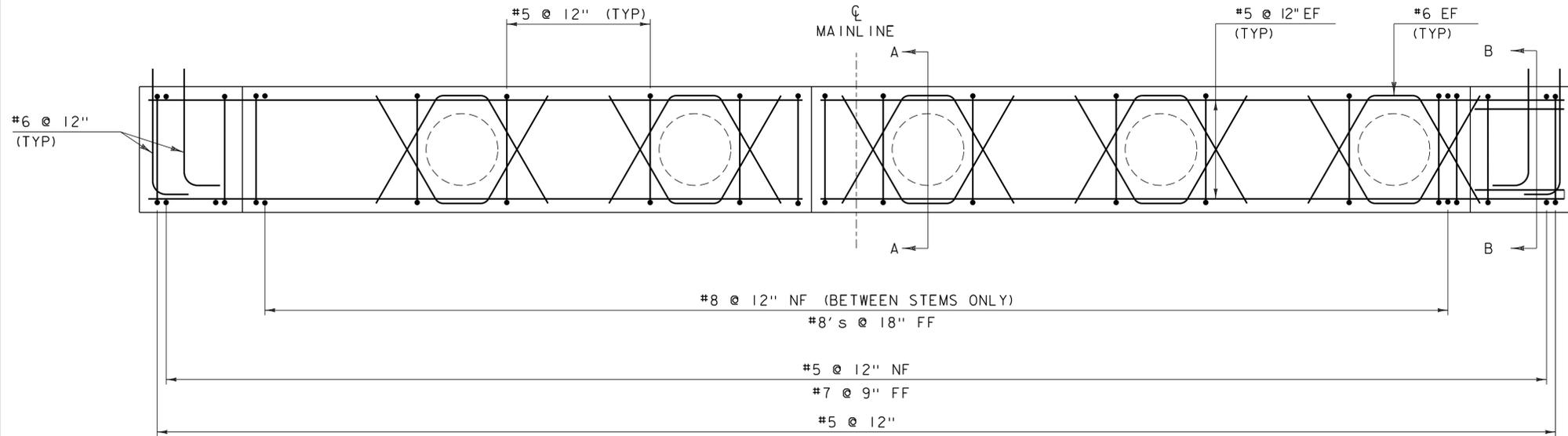
	AB1	AB2
ELEV "A"	1175.25	1174.75
ELEV "B"	1174.36	1173.91
ELEV "C"	1172.49	1172.04
ELEV "D"	1172.13	1171.68
ELEV "E"	1165.78	1165.33



PCU I TYPICAL
SCALE 1/2" = 1'-0"

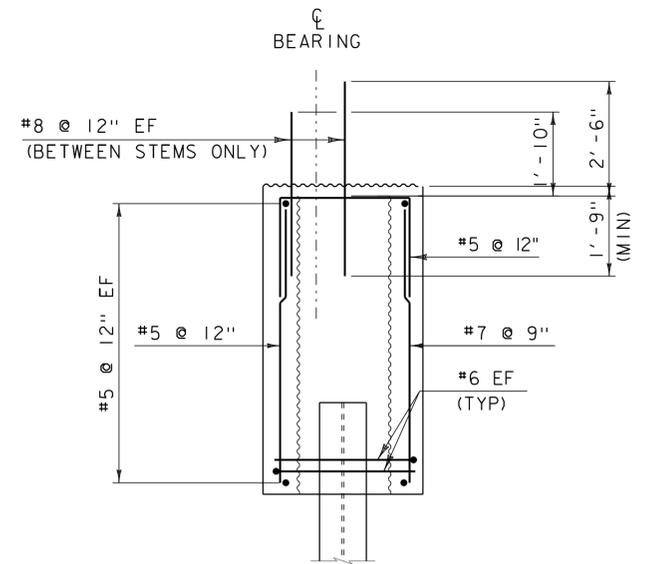
NOTE: POST-TENSIONING AND ASSOCIATED ITEMS ONLY REQUIRED IF PILE CAP IS CONSTRUCTED OF MORE THAN ONE UNIT.

PROJECT NAME:	BRIGHTON
PROJECT NUMBER:	ER STP 034-3(25)
FILE NAME:	s1b208sub.dgn
PROJECT LEADER:	K. HIGGINS
DESIGNED BY:	W. LAMMER
ABUTMENT PLAN	
PLOT DATE:	12-SEP-2012
DRAWN BY:	J. SALVATORI
CHECKED BY:	W. LAMMER
SHEET	19 OF 36



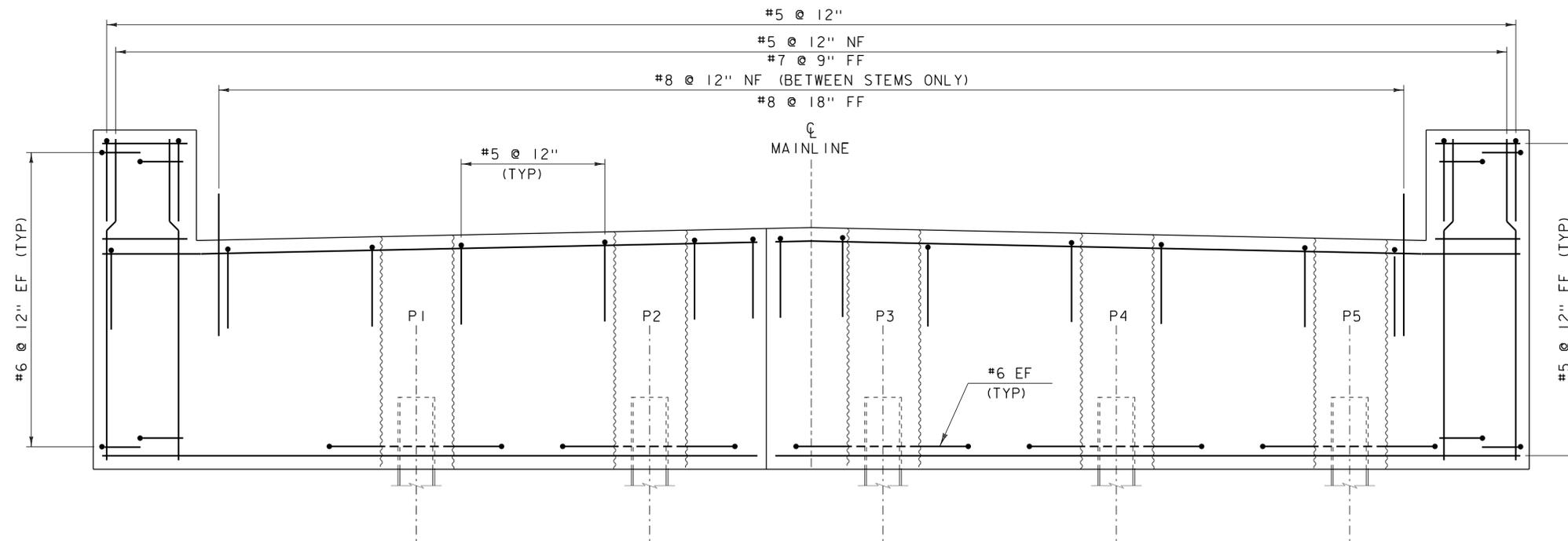
PCU I REINFORCING PLAN

SCALE 1/2" = 1'-0



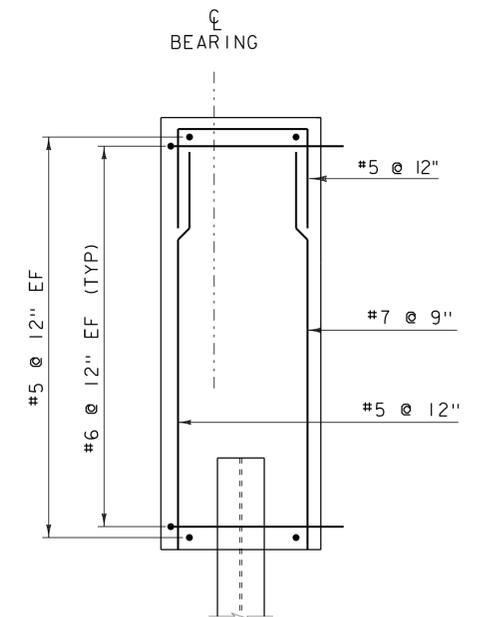
SECTION A-A

SCALE 1/2" = 1'-0



PCU I REINFORCING ELEVATION

SCALE 1/2" = 1'-0



SECTION B-B

SCALE 1/2" = 1'-0

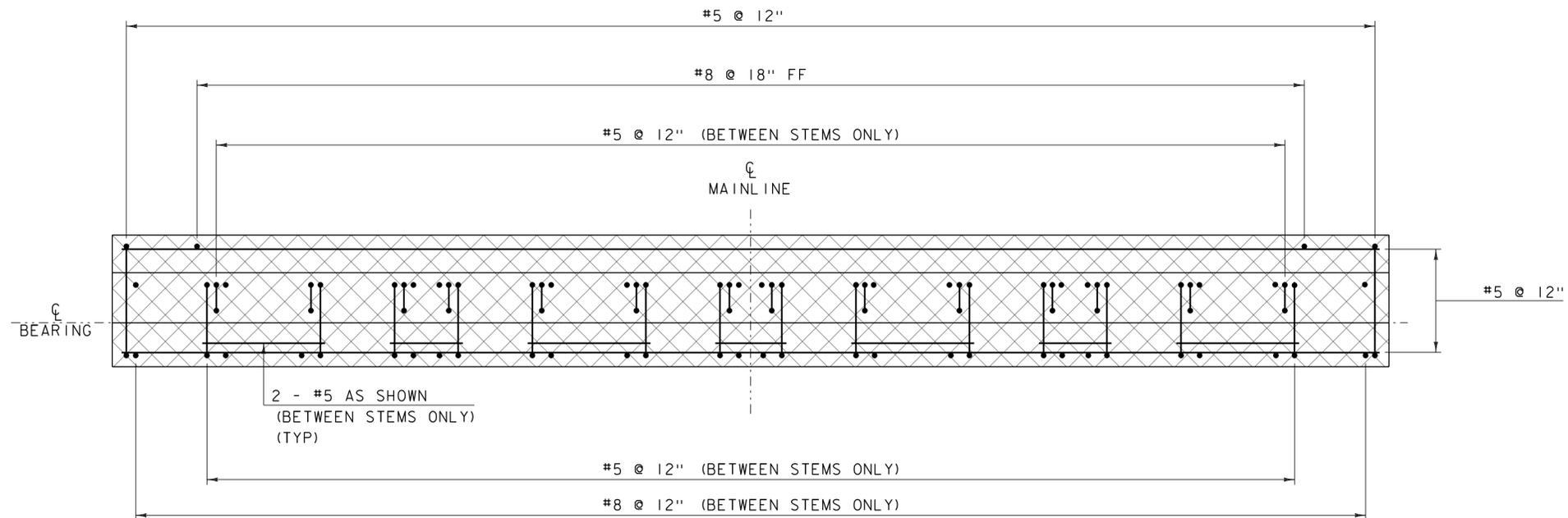
NOTE:

- NF = NEAR FACE
- FF = FAR FACE
- EF = EACH FACE
- ▲ = CUT TO FIT IN FIELD
- 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- 2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

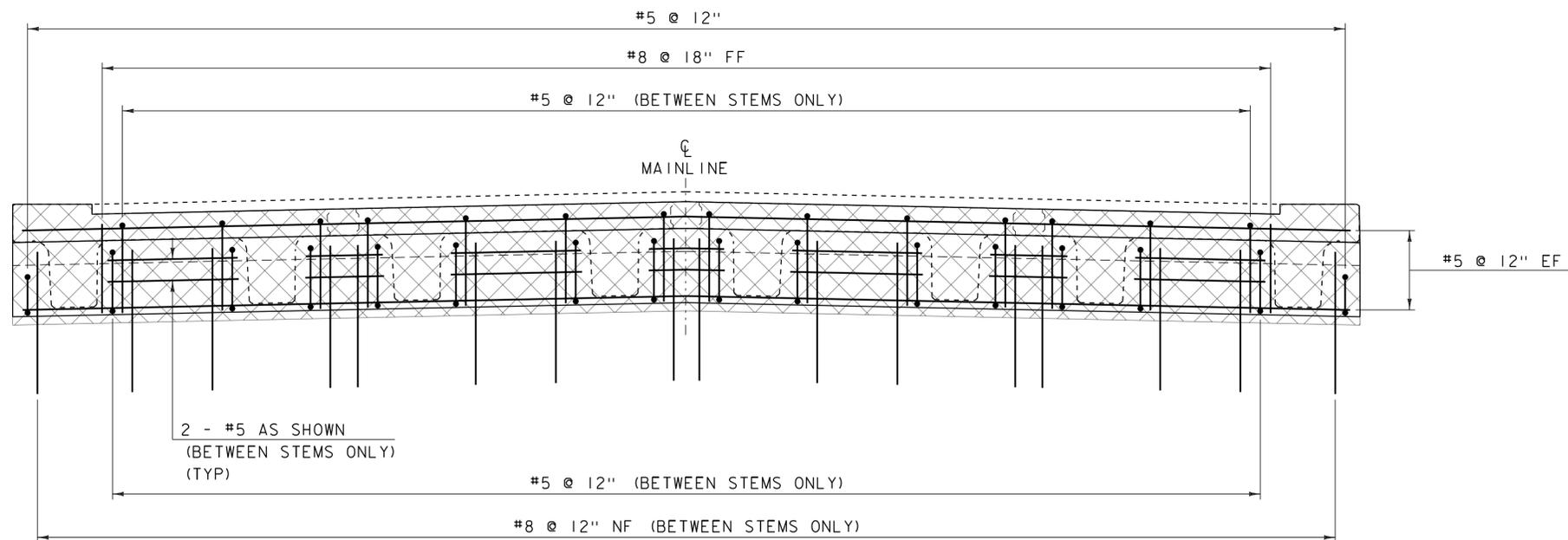
PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: s1lb208sub.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: W. LAMMER
ABUTMENT REINFORCING

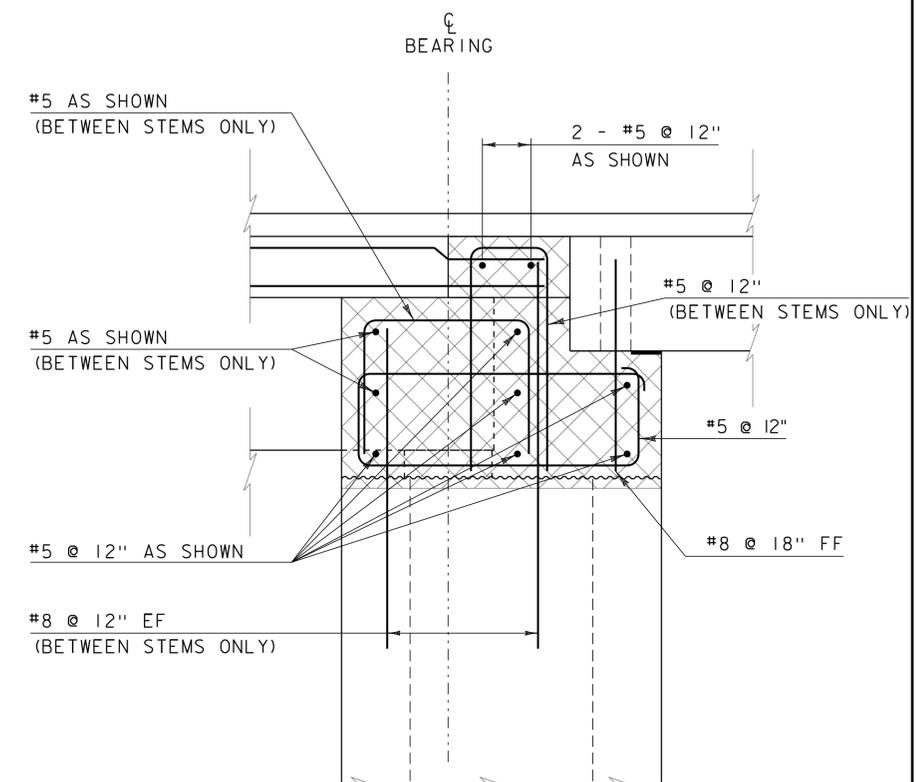
PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 20 OF 36



**DECK CLOSURE POUR
REINFORCING PLAN**
SCALE 1/2" = 1'-0"



**DECK CLOSURE POUR
REINFORCING ELEVATION**
SCALE 1/2" = 1'-0"

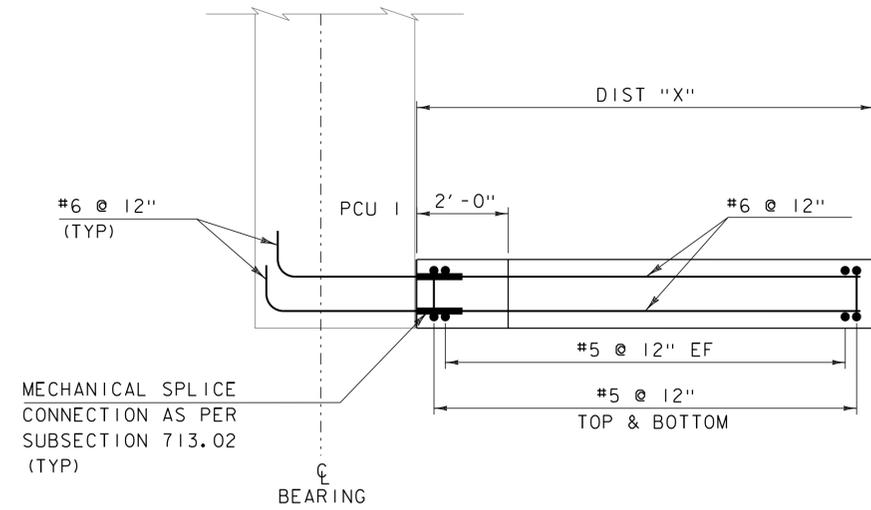


REINFORCING TYPICAL
SCALE 1" = 1'-0"

NOTE:

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- FF = FAR FACE
- EF = EACH FACE
- ▲ = CUT TO FIT IN FIELD
- 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- 2' - 2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

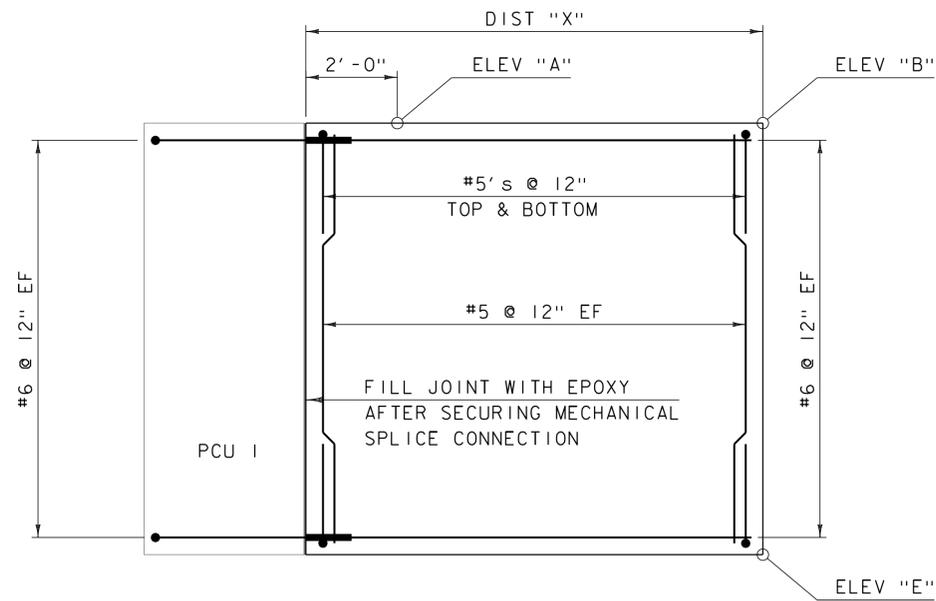
PROJECT NAME: BRIGHTON	
PROJECT NUMBER: ER STP 034-3(25)	
FILE NAME: s1lb208sub.dgn	PLOT DATE: 12-SEP-2012
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: W. LAMMER	CHECKED BY: W. LAMMER
DECK CLOSURE POUR DETAILS	SHEET 21 OF 36



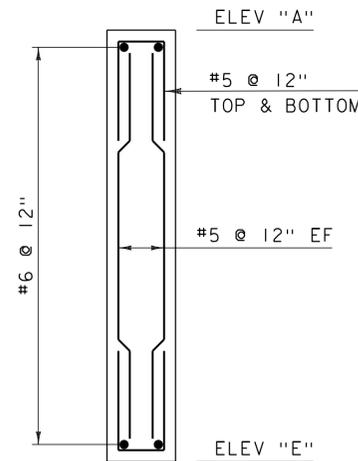
PCU 2 PLAN
SCALE 1" = 1'-0

PCU 2 ELEVATIONS

	WW1	WW2	WW3	WW4
ELEV "A"	1175.25	1175.25	1174.75	1174.75
ELEV "B"	1175.25	1175.25	1174.75	1174.75
ELEV "E"	1165.78	1165.78	1165.33	1165.33
DIST "X"	10'-0"	10'-0"	10'-0"	10'-0"



PCU 2 ELEVATION
SCALE 1/2" = 1'-0



PCU 2 TYPICAL
SCALE 1/2" = 1'-0

NOTE:

- NF = NEAR FACE
- FF = FAR FACE
- EF = EACH FACE
- ▲ = CUT TO FIT IN FIELD
- 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- 2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

NOTES:

1. EPOXY SHALL BE INCIDENTAL TO THE PRECAST CONCRETE STRUCTURE.

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: s1lb208sub.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: W. LAMMER
WINGWALL DETAILS

PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 22 OF 36

V	T	1	0	5	
C	L	O	S	E	D

PORTABLE CHANGABLE SIGN - PHASE 1

W	E	S	T	O	F
I	S	L	A	N	D
P	O	N	D		

PORTABLE CHANGABLE SIGN - PHASE 2

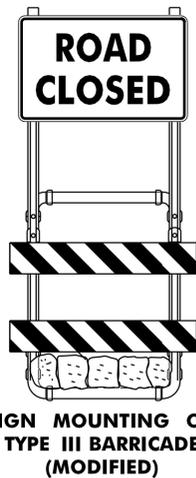
*	M	M	M	D	D	-
*	M	M	M	D	D	

PORTABLE CHANGABLE SIGN - PHASE 3

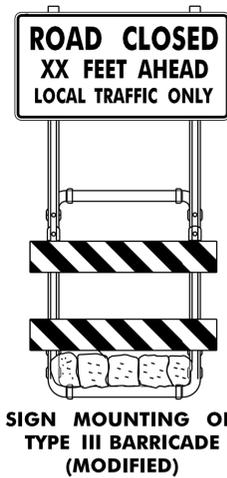
* M=MONTH
D=DAY
S

NOTES:

1. THE PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE FULLY OPERATIONAL A MINIMUM OF TWO WEEKS PRIOR TO THE CLOSURE OF VT 105.
2. DURING ACTUAL CLOSURE, ELMININATE PHASE 3 ONLY.
3. DETOUR SIGNS SHALL BE LOCATED ADJACENT TO EXISTING INTERSECTION ROUTE MARKER ASSEMBLIES WHERE APPLICABLE.
4. DETOUR SIGNING IS THE RESPONSIBILITY OF THE CONTRACTOR. PAYMENT FOR ALL TEMPRARY TRAFFIC CONTROL DEVICES FOR IMPLEMENTING THE DETOUR, INCLUDING BUT NOT LIMITED TO SIGNS, BARRICADES AND MESSAGE BOARDS, WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).
5. THIS DETOUR PLAN IS AN OUTLINE ONLY AND THE CONTRACTOR SHALL SUBMIT A DETAILED PLAN OF EACH INTERSECTION SHOWING DETOUR SIGN LOCATIONS IN RELATION TO EXISTING SIGNS.

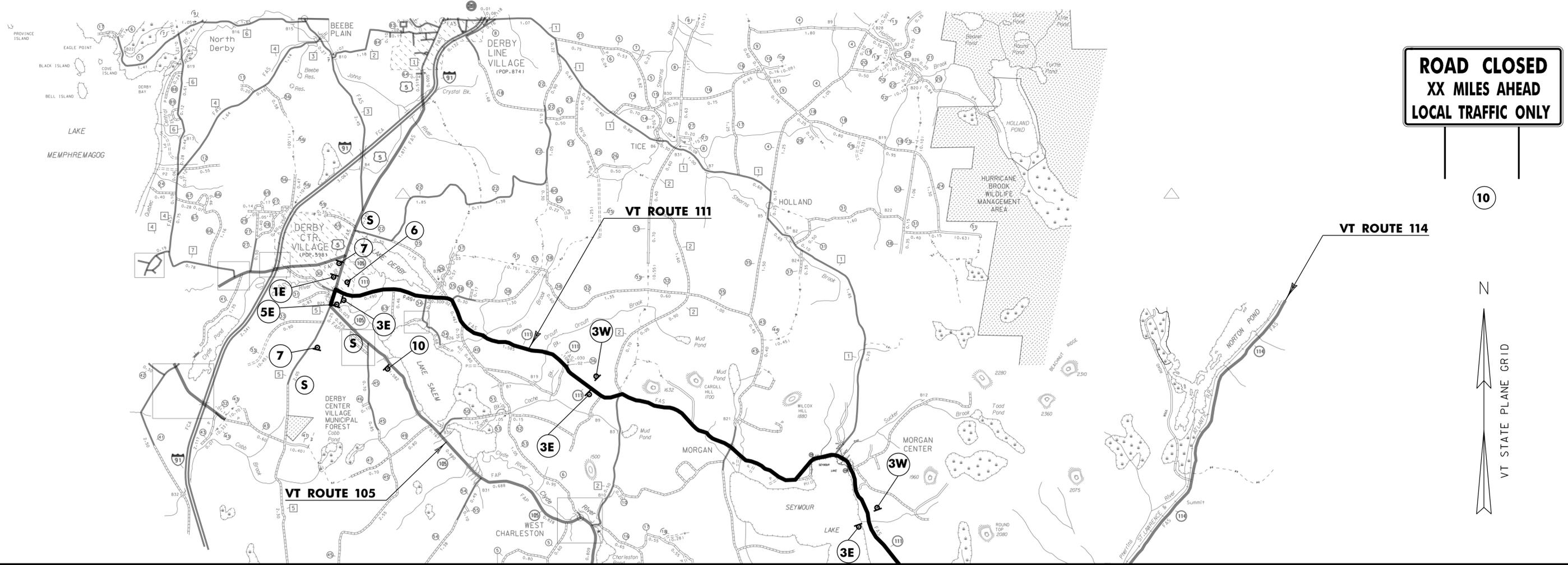
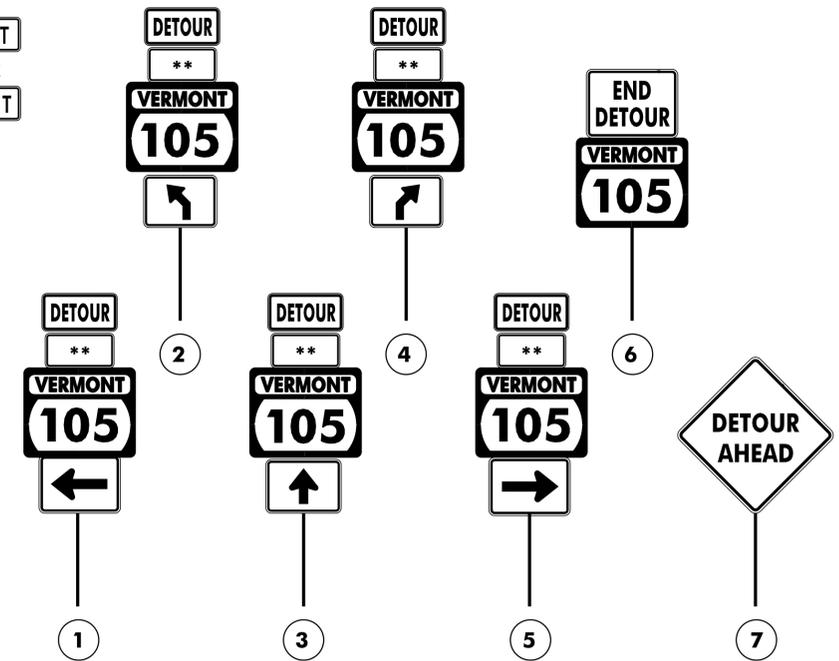


A



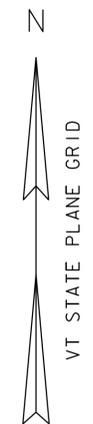
B

**E= EAST
OR
W= WEST



**ROAD CLOSED
XX MILES AHEAD
LOCAL TRAFFIC ONLY**

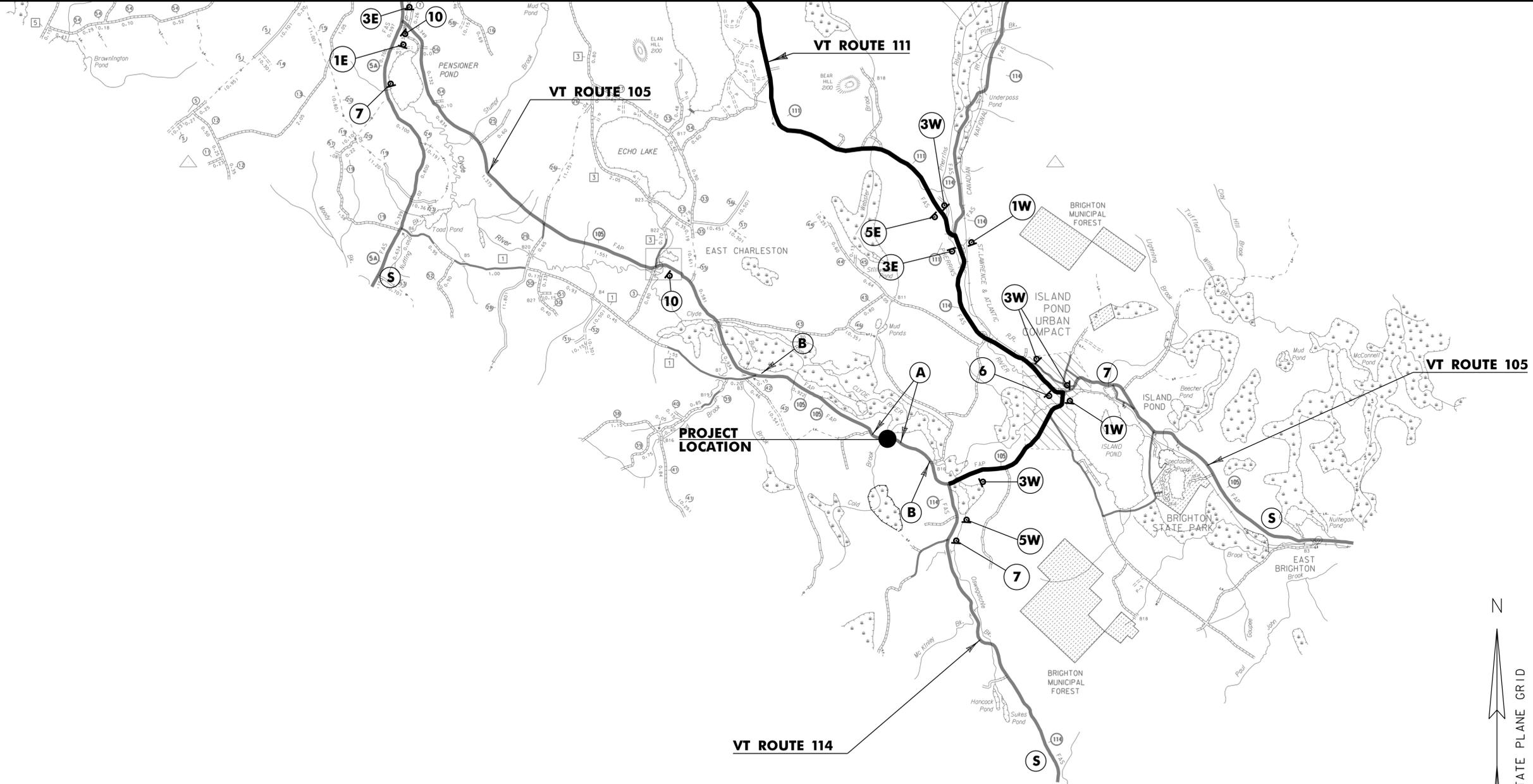
10



DETOUR PLAN - I
NOT TO SCALE

PROJECT NAME:	BRIGHTON	PLOT DATE:	12-SEP-2012
PROJECT NUMBER:	ER STP 034-3 (25)	DRAWN BY:	K. FRIEDLAND
FILE NAME:	s1b208detour.dgn	DESIGNED BY:	J. SALVATORI
PROJECT LEADER:	K. HIGGINS	CHECKED BY:	W. LAMMER
DETOUR PLAN I		SHEET	23 OF 36

MATCHLINE



DETOUR PLAN - 2

NOT TO SCALE

PROJECT NAME: BRIGHTON	
PROJECT NUMBER: ER STP 034-3 (25)	
FILE NAME: s1lb208detour.dgn	PLOT DATE: 12-SEP-2012
PROJECT LEADER: K. HIGGINS	DRAWN BY: K. FRIEDLAND
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
DETOUR PLAN 2	SHEET 24 OF 36

EPSC NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE 84 AND RELATED APPROACH AND CHANNEL WORK.

THE BRIDGE IS APPROXIMATELY 1.058 MILES SOUTH EASTERLY OF THE CHARLESTON/BRIGHTON TOWN LINE ALONG VT 105.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.39 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE PROJECT AREA IS RELATIVELY FLAT, WITH THE ROADWAY RAISED SLIGHTLY FROM THE SURROUNDING TERRAIN.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE COLD RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE RIVER IS CLASSIFIED AS SINUOUS, ALLUVIAL, WITH A BEND COMING IN TO THE BRIDGE. THE STREAM BED CONSISTS OF SAND, GRAVEL AND COBBLES. THERE IS AN EXISTING CULVERT AT STATION 57+00 THAT WILL NOT BE IMPACTED AS PART OF THIS PROJECT.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS MOSTLY FORESTED LAND COVER. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING CULVERT. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE III AS SPECIFIED ON THE PLANS. DISTURBED 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 ESSEX, VERMONT.

SOILS ON THE PROJECT SITE ARE:

3A – CHARLES SILTY LOAM, 0% TO 2% SLOPES, "K FACTOR" = 0.32. THE SOIL IS CONSIDERED FREQUENTLY FLOODED.

6B – ADAMS LOAMY FINE SAND, 3% TO 8% 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: COLD RIVER
WETLANDS: NO

1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES. SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, 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 SPECIFIC 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 APPROVED 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 AS SHOWN ON THE PLANS.

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 AS SHOWN ON THE PLANS AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

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.

FILTER CURTAIN WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

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.

THE PROJECT AREA IS RELATIVELY FLAT. THEREFORE IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSION POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

IT IS NOT ANTICIPATED THAT STONE CHECK DAMS WILL BE NECESSARY.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

THERE ARE NO PERMANENT STORMWATER TREATMENT DEVICES ANTICIPATED ON THIS PROJECT.

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

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

IT IS NOT ANTICIPATED THAT DEWATERING WILL BE NECESSARY.

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.

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: s1lb208epsc_nar.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
EPSC NARRATIVE

PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 25 OF 36

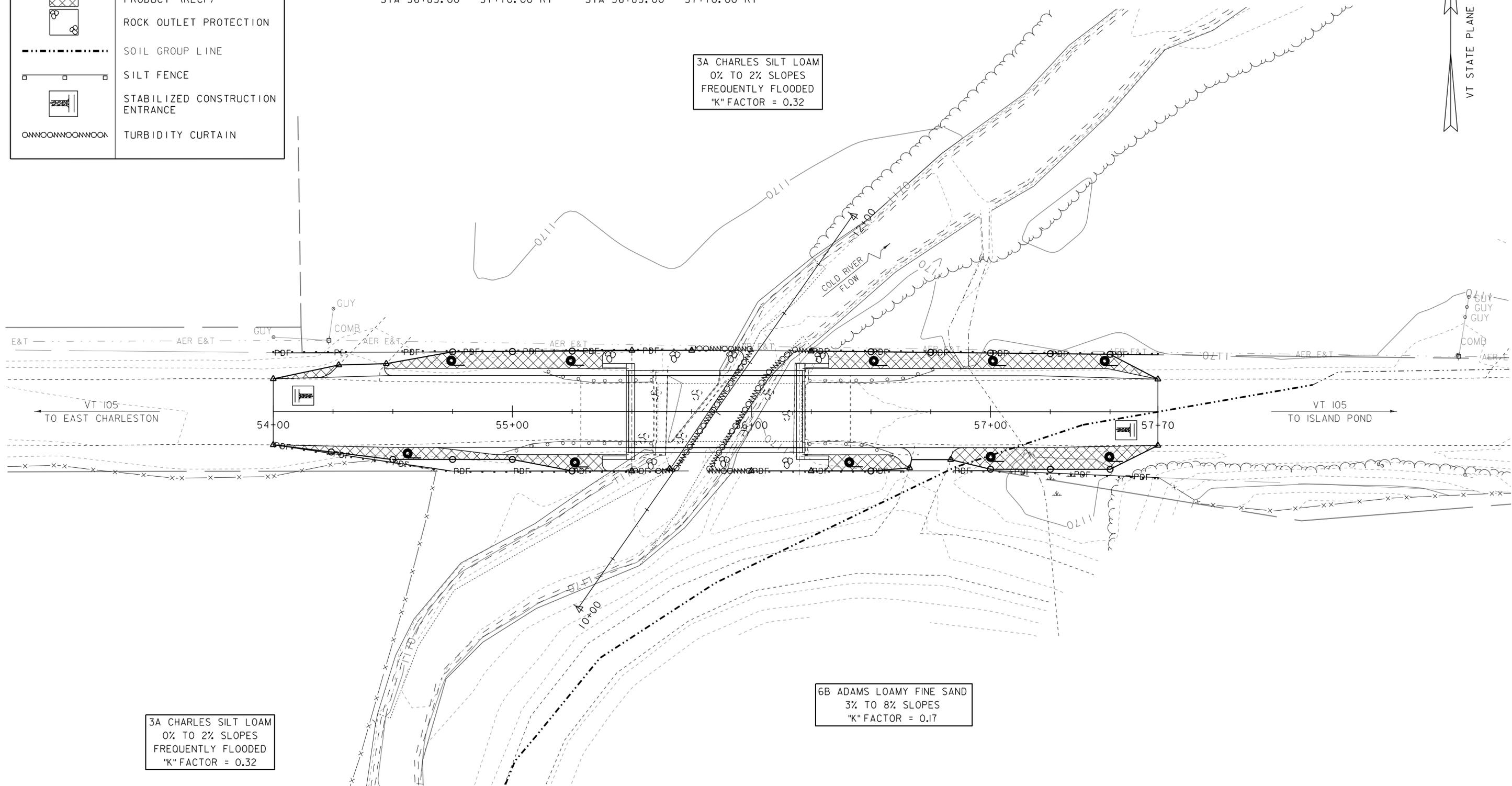
	CUT/FILL LIMITS
	PROJECT DEMARCATION FENCE
	ROLLED EROSION CONTROL PRODUCT (RECP)
	ROCK OUTLET PROTECTION
	SOIL GROUP LINE
	SILT FENCE
	STABILIZED CONSTRUCTION ENTRANCE
	TURBIDITY CURTAIN

GEOTEXTILE FOR SILT FENCE
 STA 54+00.00 - 54+25.00 LT
 STA 54+00.00 - 55+60.00 RT
 STA 54+50.00 - 55+75.00 LT
 STA 56+00.00 - 56+65.00 RT
 STA 56+25.00 - 57+70.00 LT
 STA 56+85.00 - 57+70.00 RT

PROJECT DEMARCATION FENCE
 STA 54+00.00 - 54+25.00 LT
 STA 54+00.00 - 55+60.00 RT
 STA 54+50.00 - 55+75.00 LT
 STA 56+00.00 - 56+65.00 RT
 STA 56+25.00 - 57+70.00 LT
 STA 56+85.00 - 57+70.00 RT

3A CHARLES SILT LOAM
 0% TO 2% SLOPES
 FREQUENTLY FLOODED
 "K" FACTOR = 0.32

6B ADAMS LOAMY FINE SAND
 3% TO 8% SLOPES
 "K" FACTOR = 0.17



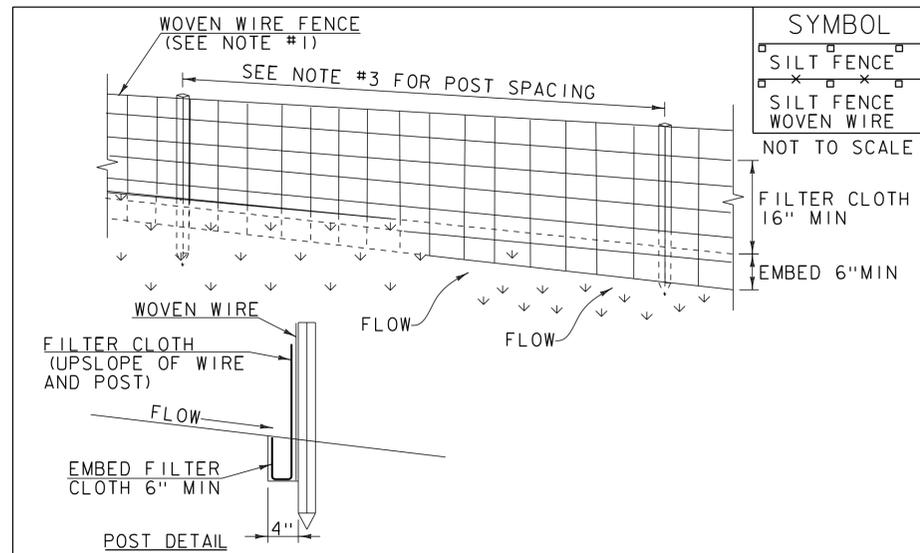
3A CHARLES SILT LOAM
 0% TO 2% SLOPES
 FREQUENTLY FLOODED
 "K" FACTOR = 0.32

NOTES:

- EXISTING CONTOURS SHOWN. SEE CROSS SECTIONS FOR FINAL CONDITIONS.
- FOR CLARITY, AREAS TO BE SEEDED AND MULCHED HAVE NOT BEEN INDICATED. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED AS APPLICABLE.

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

PROJECT NAME: BRIGHTON	PLOT DATE: 12-SEP-2012
PROJECT NUMBER: ER STP 034-3(25)	DRAWN BY: J. SALVATORI
FILE NAME: s1lb208epsc.dgn	CHECKED BY: W. LAMMER
PROJECT LEADER: K. HIGGINS	SHEET 26 OF 36
DESIGNED BY: J. SALVATORI	
EPSC PLAN	



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, MIRAF1100X, 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.

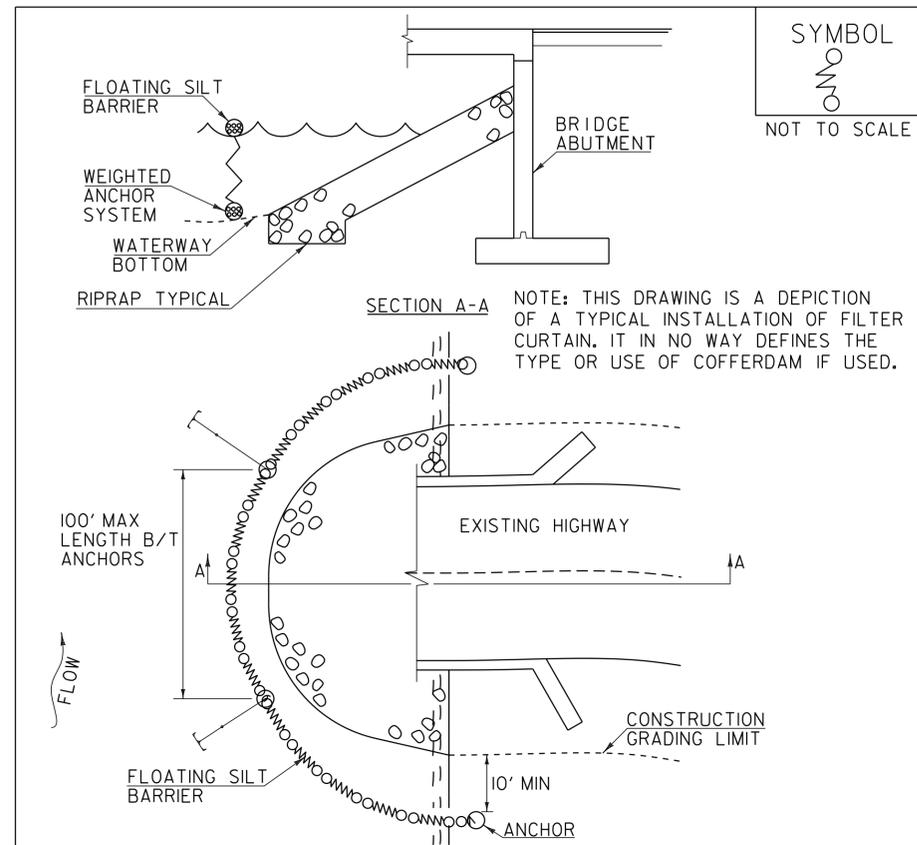
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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



CONSTRUCTION SPECIFICATIONS

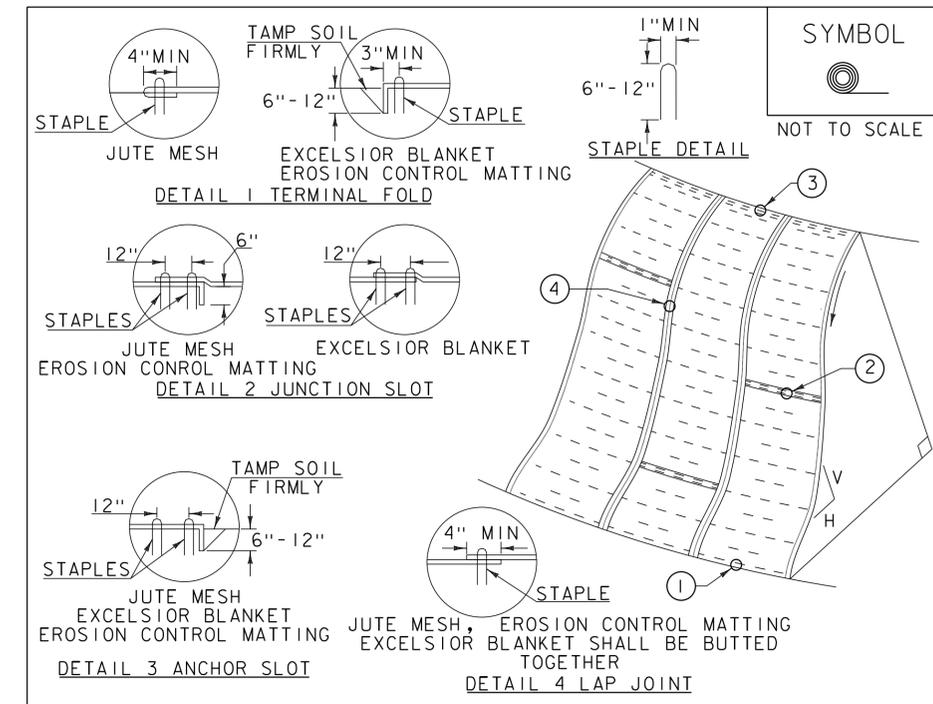
1. FILTER CURTAIN SHALL NOT BE PLACED ACROSS A FLOWING WATERWAY, OR IN A WATERWAY WITH STREAM VELOCITIES GREATER THAN 1.5 FEET/SECOND.
2. MAXIMUM 100' LENGTH BETWEEN ANCHORS.
3. LAST SECTION SHALL TERMINATE A MINIMUM OF 10' BEYOND LIMIT OF DISTURBANCE.
4. THE WEIGHTED ANCHOR SYSTEM SHALL BE A TYPE WHICH 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.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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



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

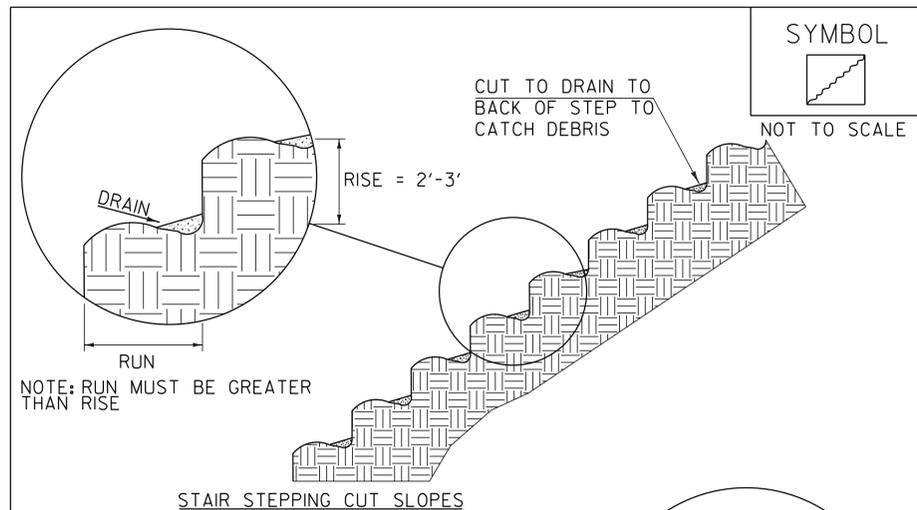
ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

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

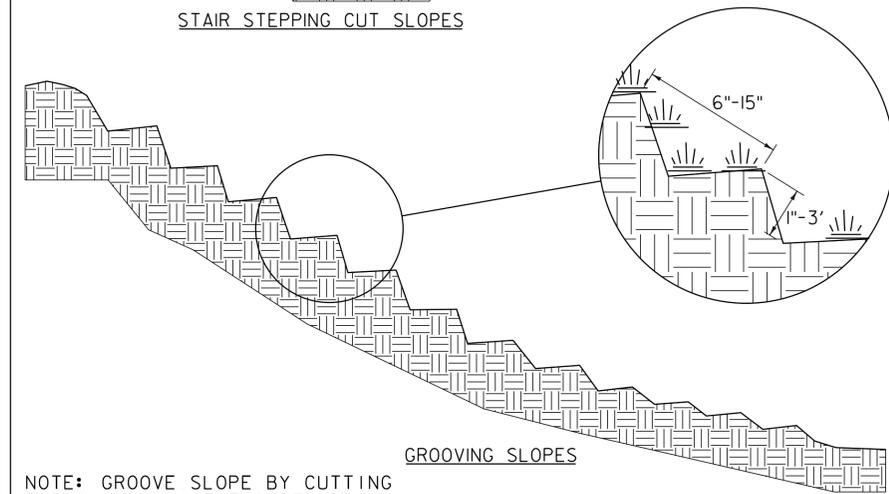
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF

PROJECT NAME: BRIGHTON	PLOT DATE: 12-SEP-2012
PROJECT NUMBER: ER STP 034-3(25)	DRAWN BY: J. SALVATORI
FILE NAME: s1b208epsc_def.dgn	CHECKED BY: W. LAMMER
PROJECT LEADER: K. HIGGINS	SHEET 27 OF 36
DESIGNED BY: J. SALVATORI	
EPSC DETAILS SHEET 1	



STAIR STEPPING CUT SLOPES



GROOVING SLOPES

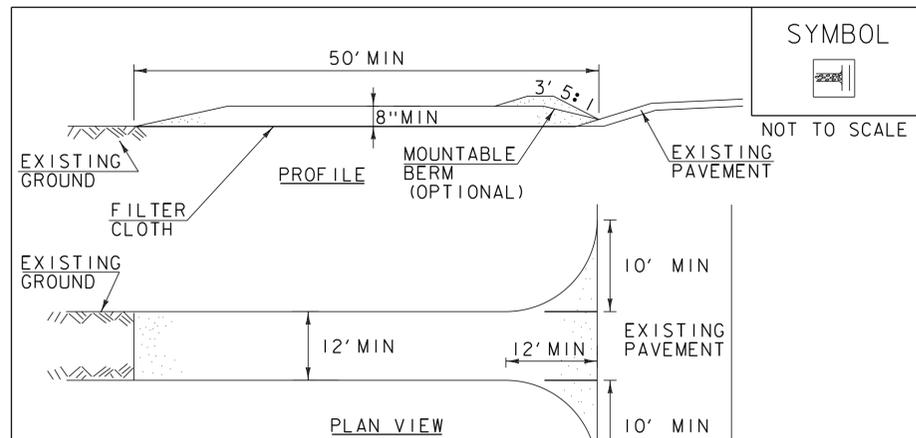
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SURFACE ROUGHENING

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 CONSIDERED INCIDENTAL TO THE
CONTRACT

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF



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

VAOT RURAL AREA MIX					
% WEIGHT	LBS/AC		NAME	GERM %	PURITY %
	BROADCAST	HYDROSEED			
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					
% WEIGHT	LBS/AC		NAME	GERM %	PURITY %
	BROADCAST	HYDROSEED			
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			

SOIL AMENDMENT GUIDANCE			
FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10-20-10	FOLLOW	PELLETIZED	FOLLOW
500 LBS/AC	MANUFACTURER	2 TONS/AC	MANUFACTURER

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 LANDSCAPE MANUAL FOR
ROADWAYS AND TRANSPORTATION FACILITIES

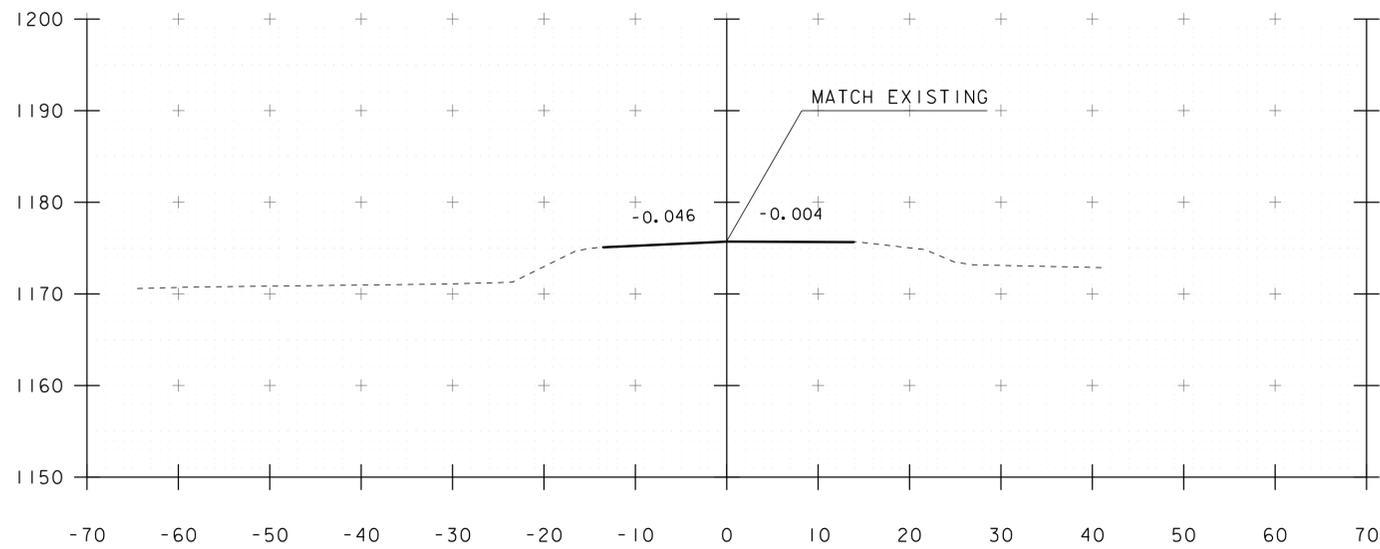
TURF ESTABLISHMENT

REVISIONS	
JUNE 23, 2009	WHF
JANUARY 15, 2010	WHF
FEBRUARY 16, 2011	WHF

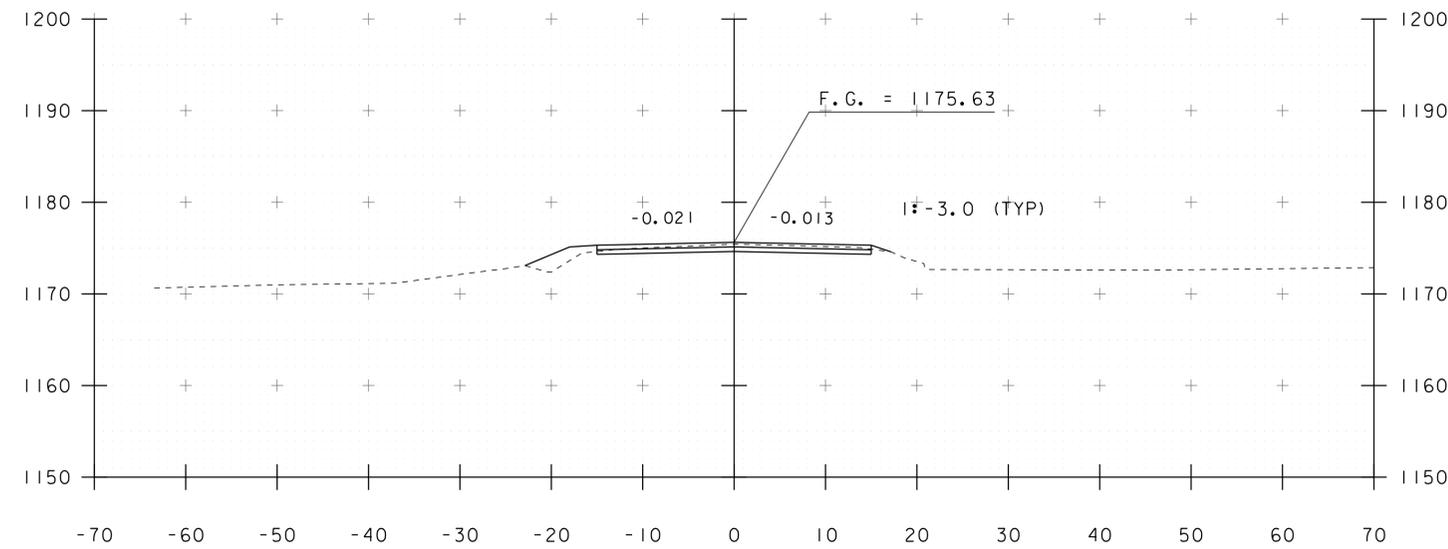
PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: s1lb208epsc_def.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
EPSC DETAILS SHEET 2

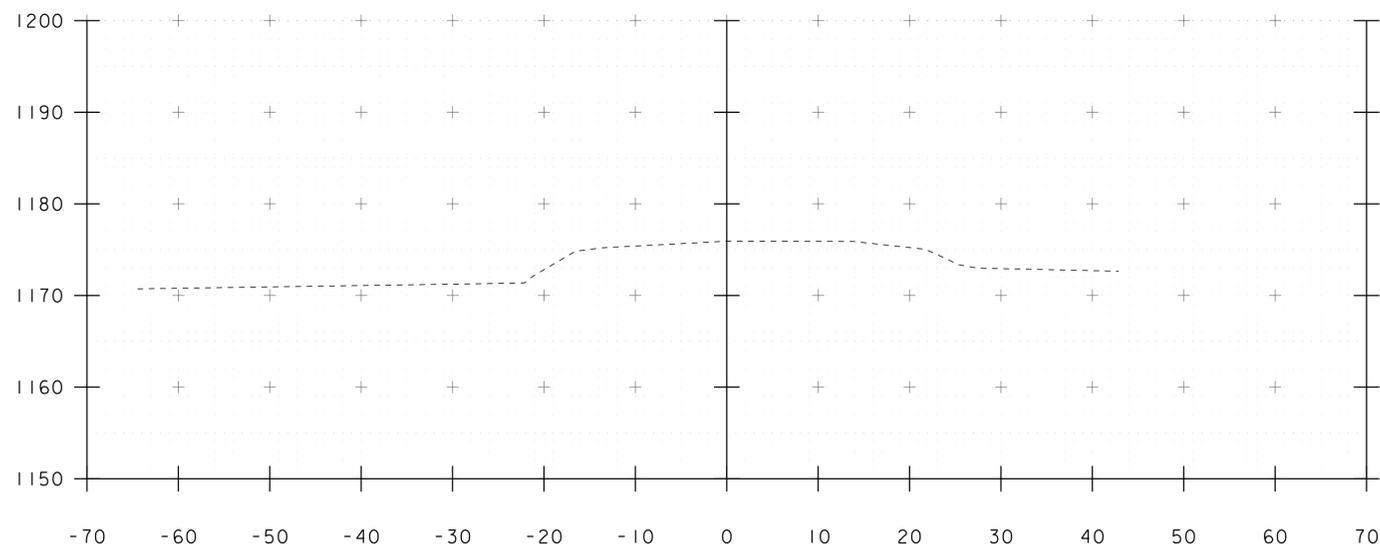
PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 28 OF 36



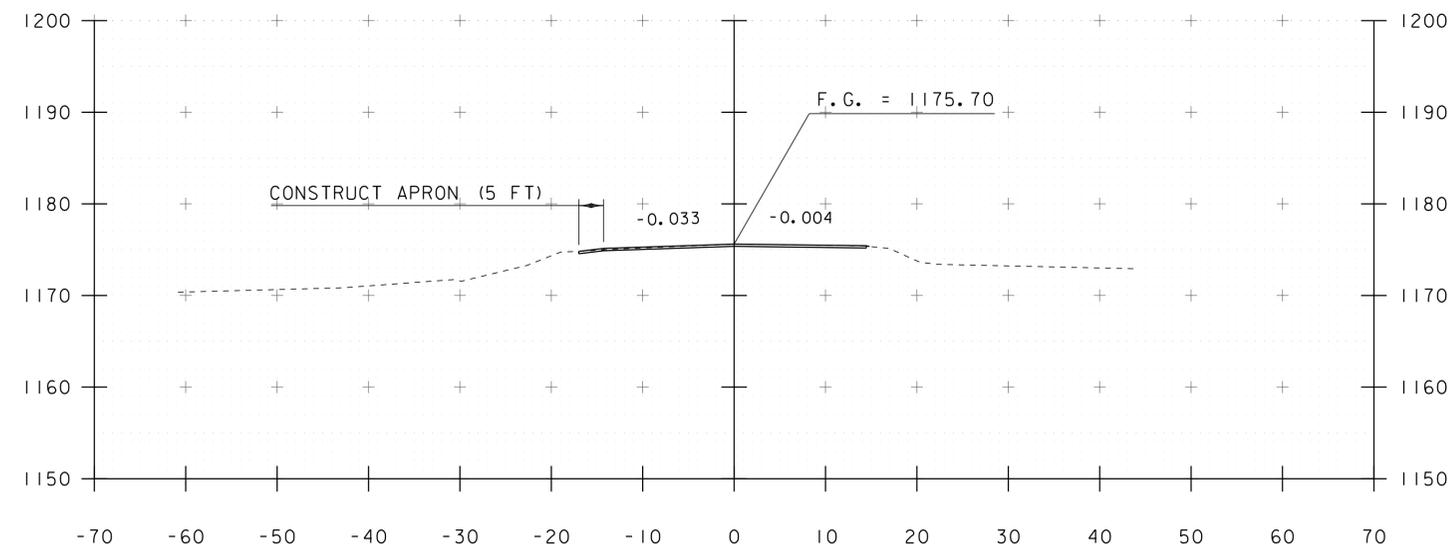
54+00
BEGIN APPROACH



54+50



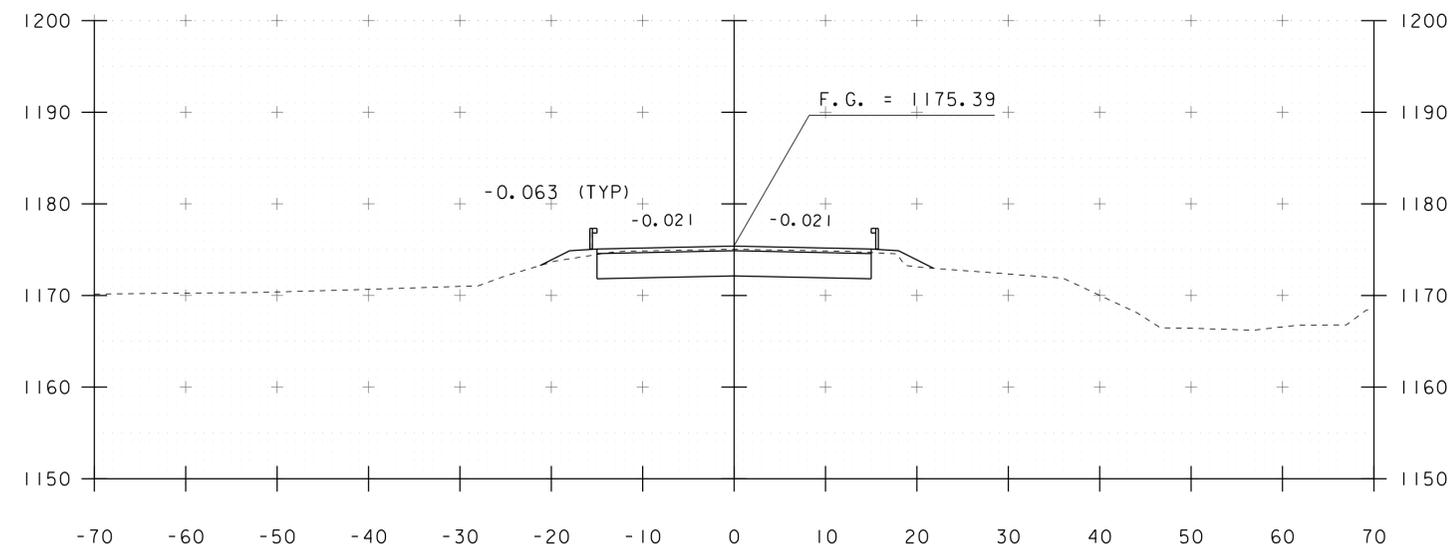
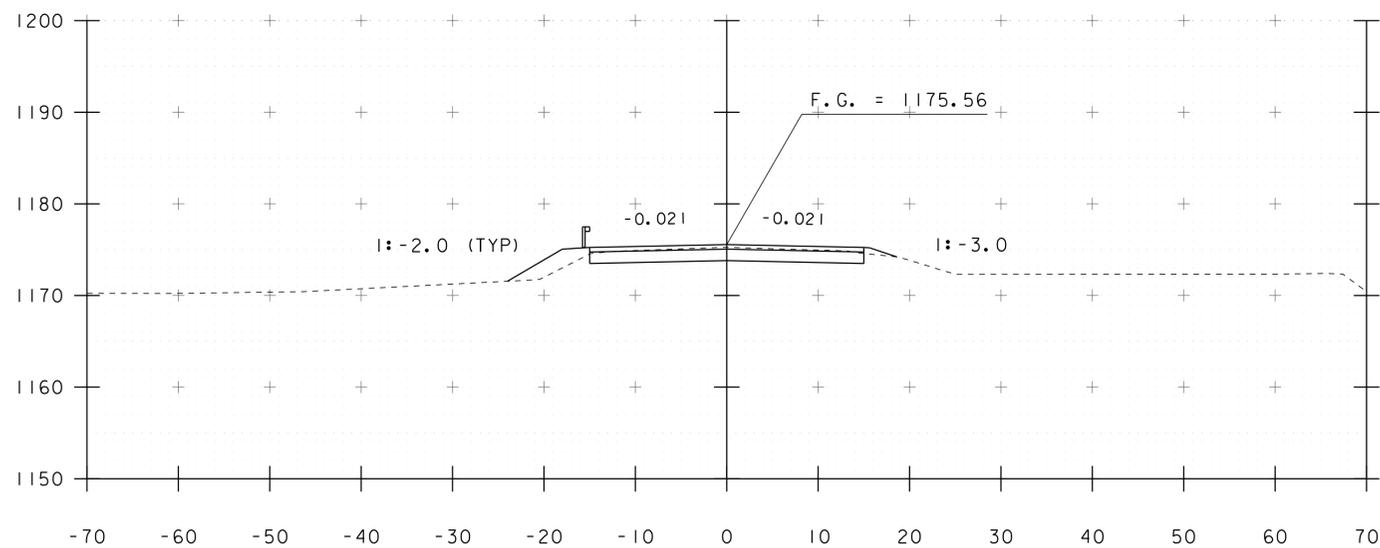
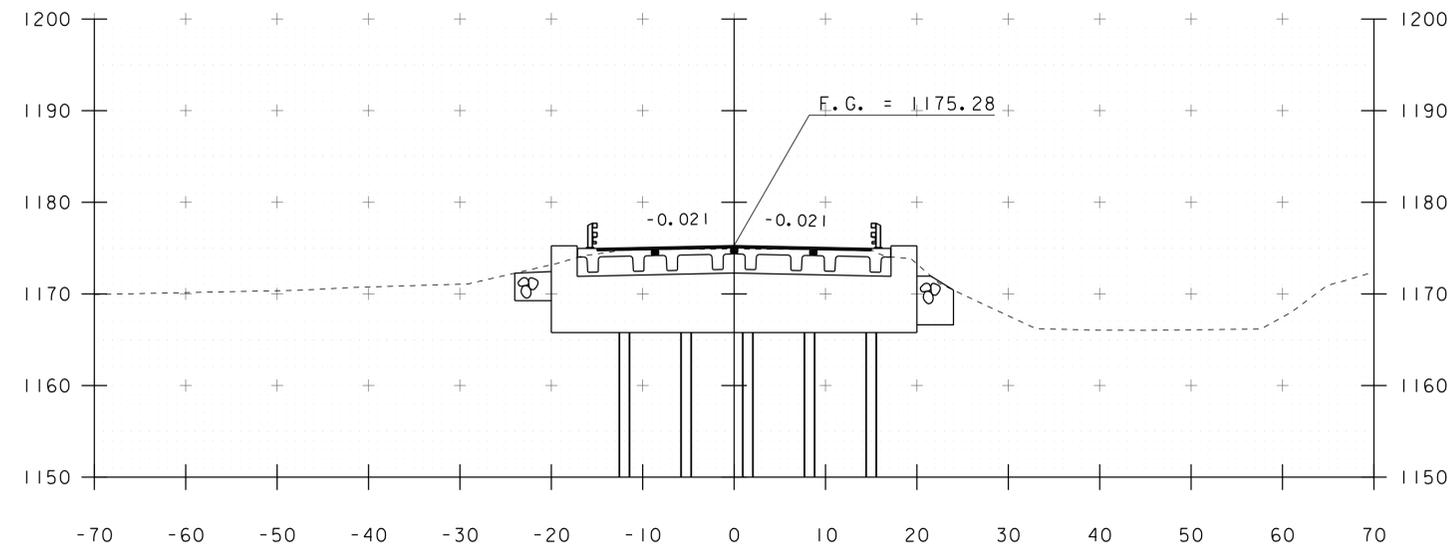
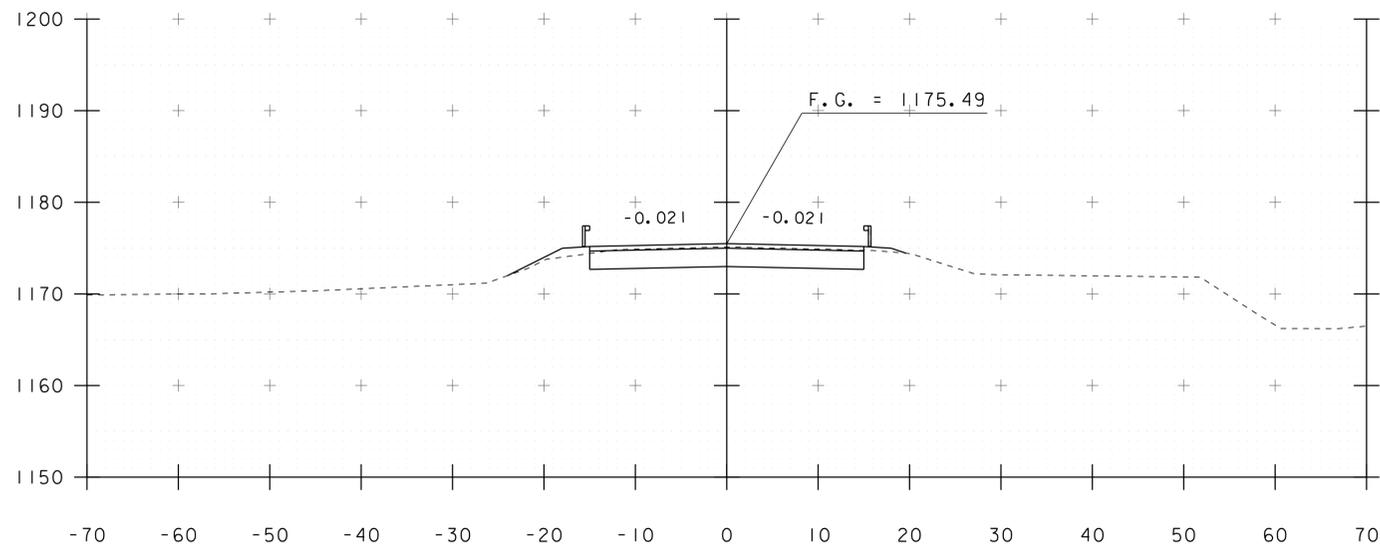
53+75



54+25

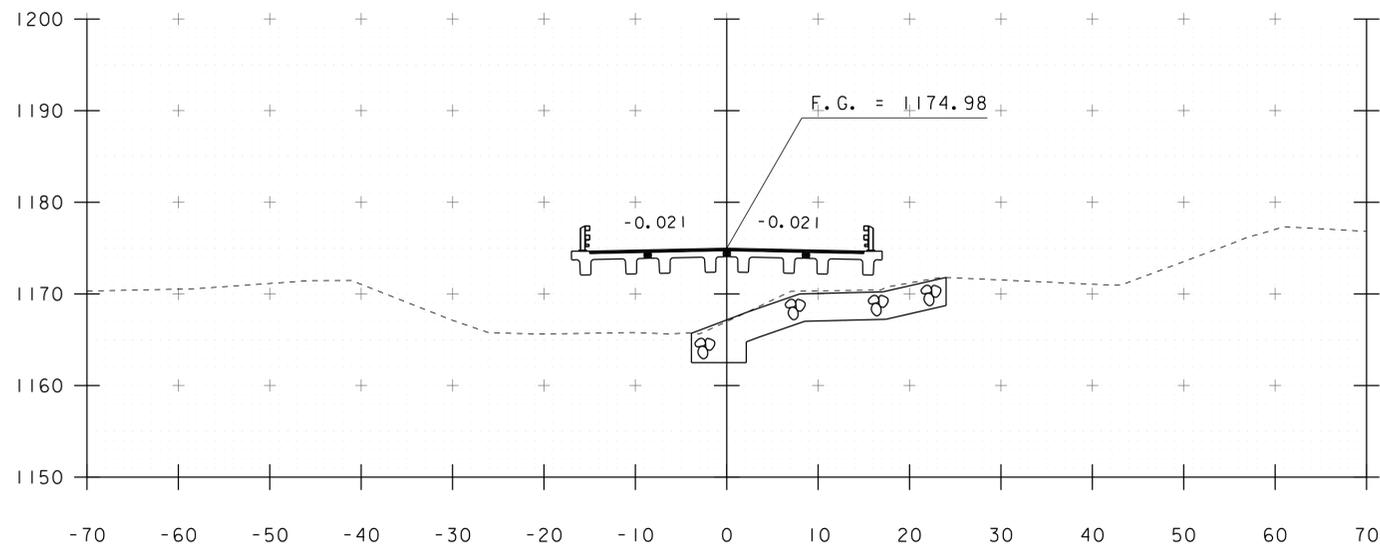
STA. 53+75 TO STA. 54+50

PROJECT NAME: BRIGHTON	
PROJECT NUMBER: ER STP 034-3(25)	
FILE NAME: s1b208xs.dgn	PLOT DATE: 12-SEP-2012
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
MAINLINE SECTIONS	SHEET 29 OF 36

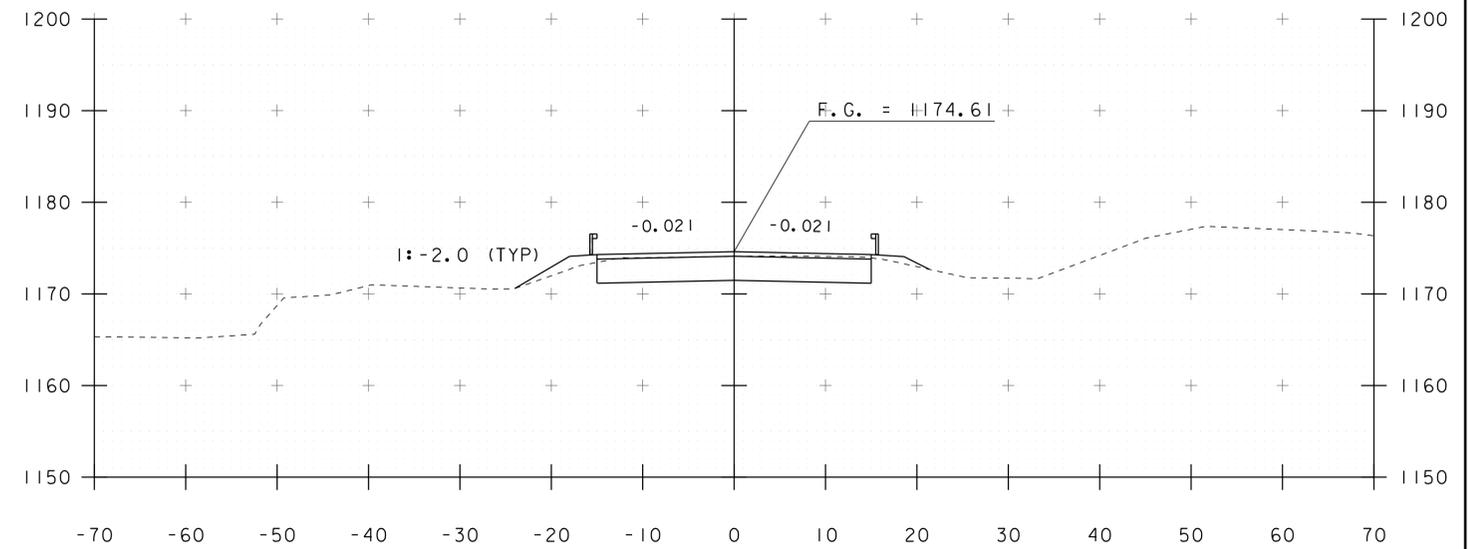


STA. 54+75 TO STA. 55+50

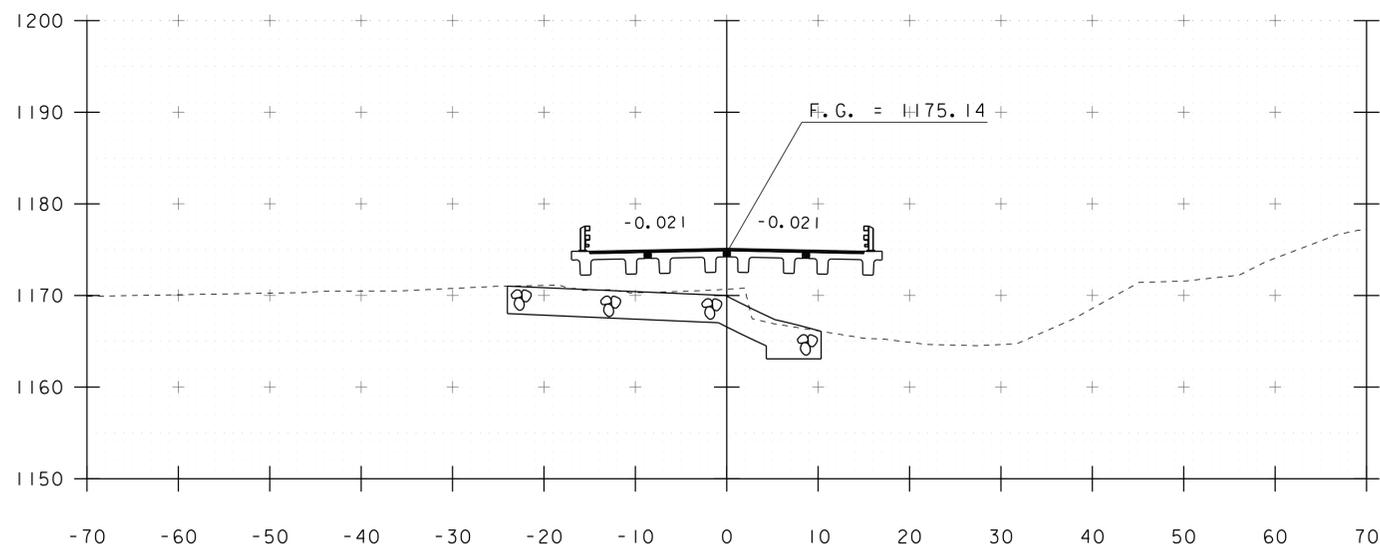
PROJECT NAME: BRIGHTON	
PROJECT NUMBER: ER STP 034-3(25)	
FILE NAME: s1b208xs.dgn	PLOT DATE: 12-SEP-2012
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
MAINLINE SECTIONS	SHEET 30 OF 36



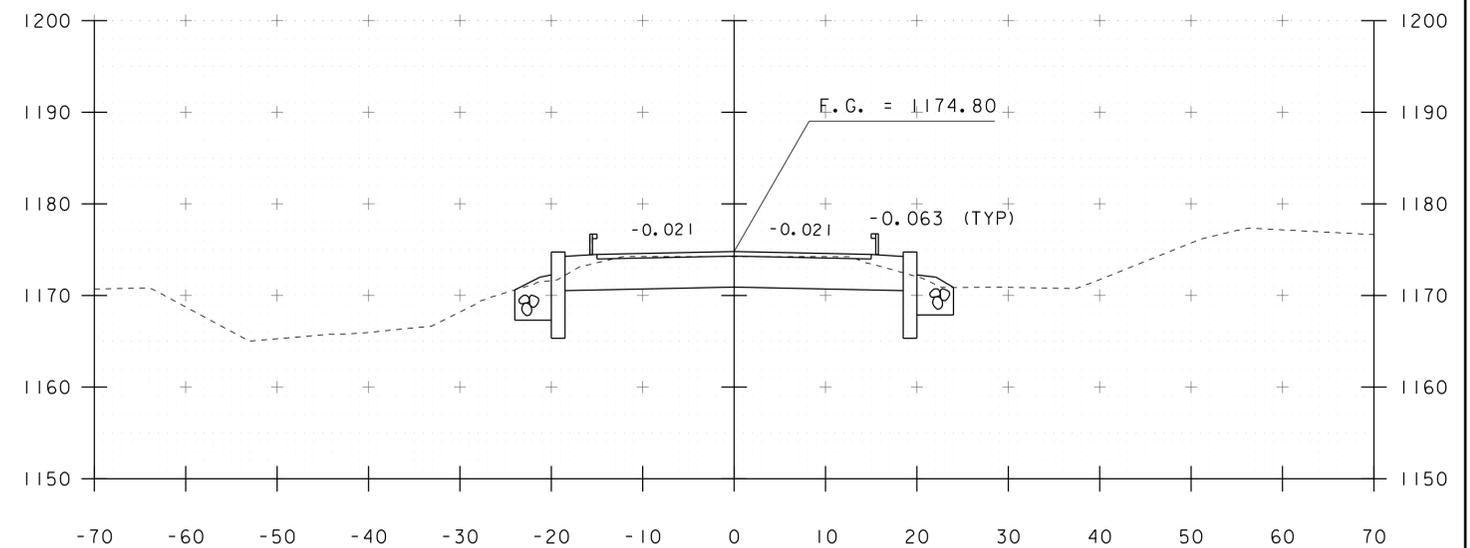
56+00



56+50



55+75

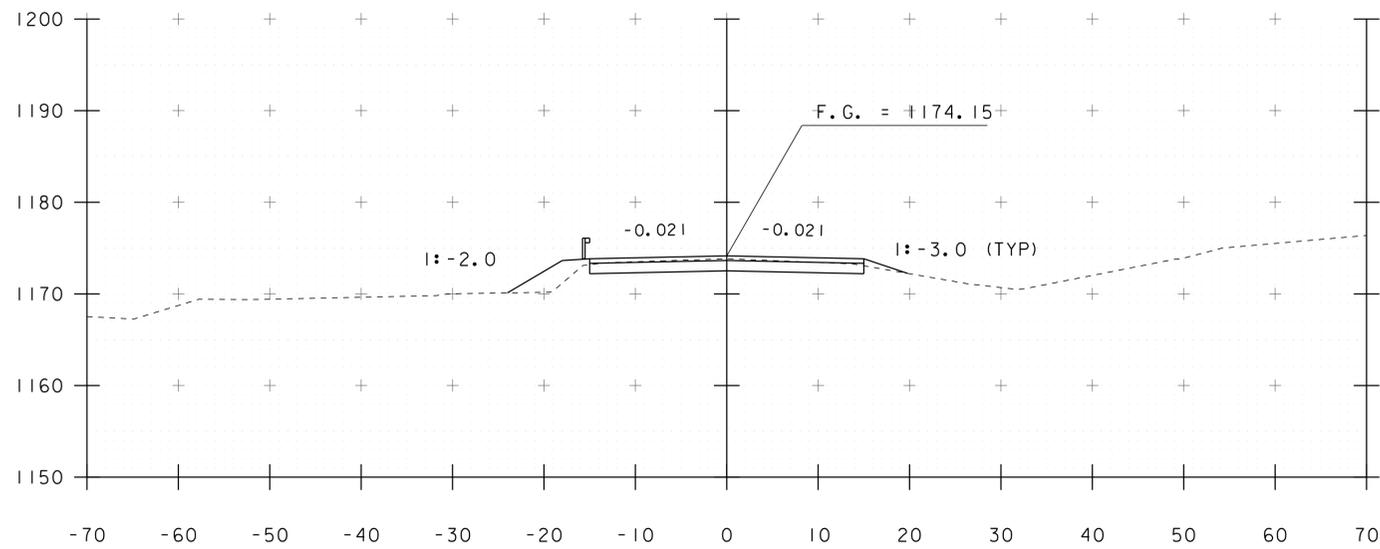


56+25

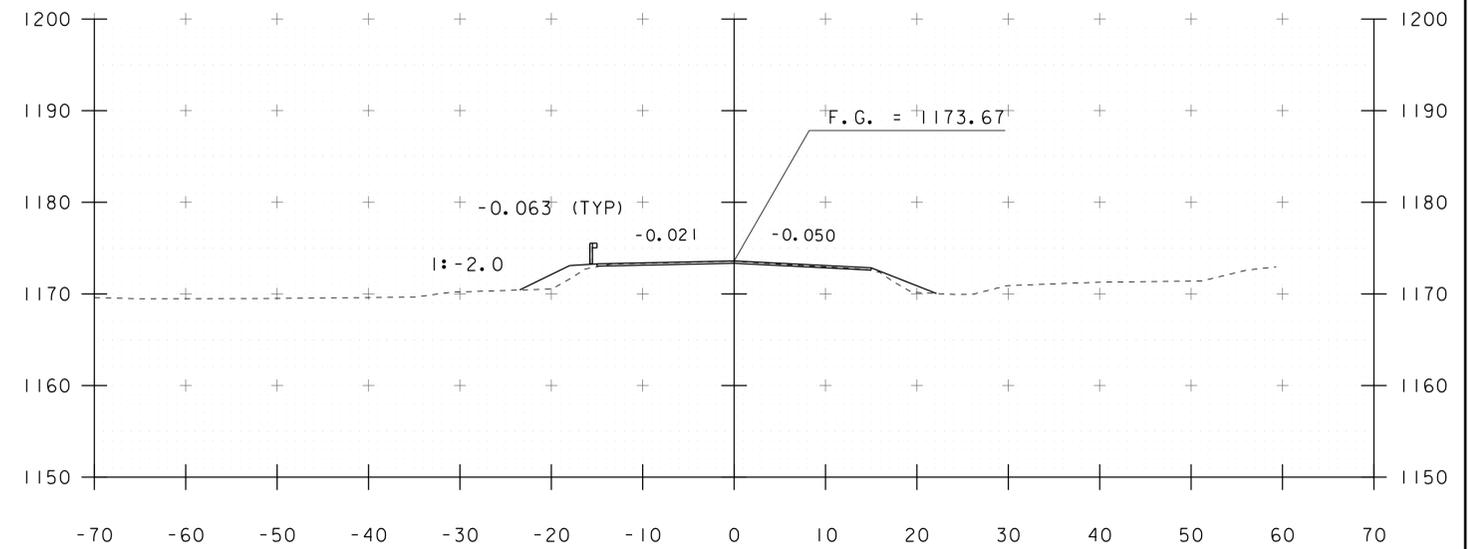
END BRIDGE STA 56+21.33

STA. 55+75 TO STA. 56+50

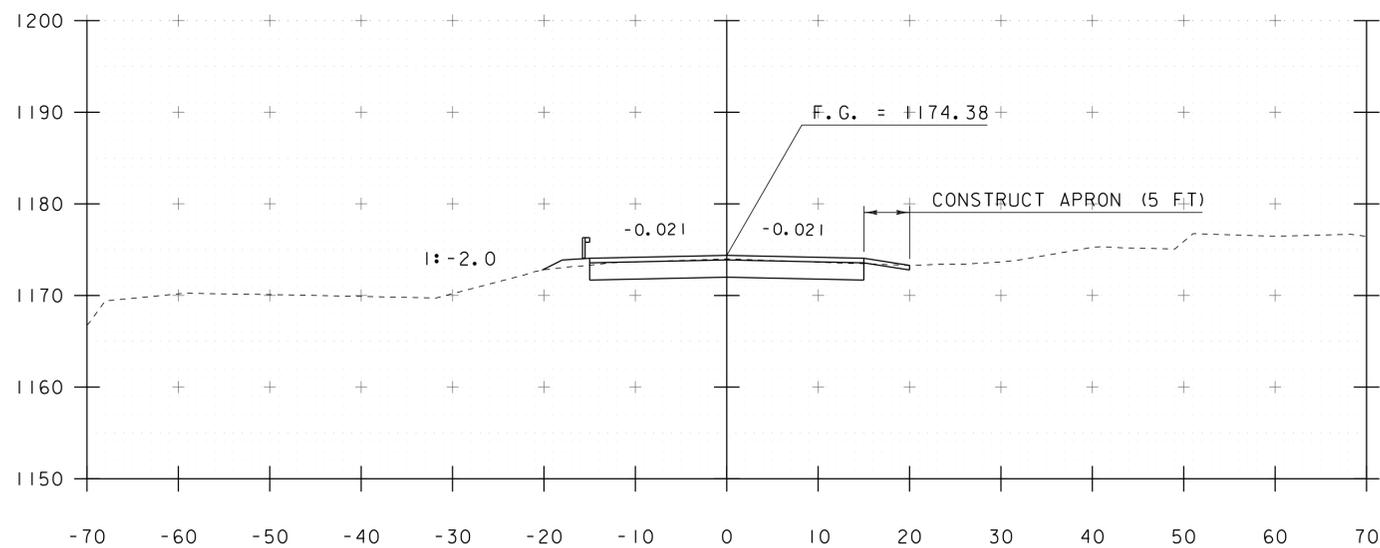
PROJECT NAME: BRIGHTON	
PROJECT NUMBER: ER STP 034-3(25)	
FILE NAME: s1b208xs.dgn	PLOT DATE: 12-SEP-2012
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
MAINLINE SECTIONS	SHEET 31 OF 36



57+00

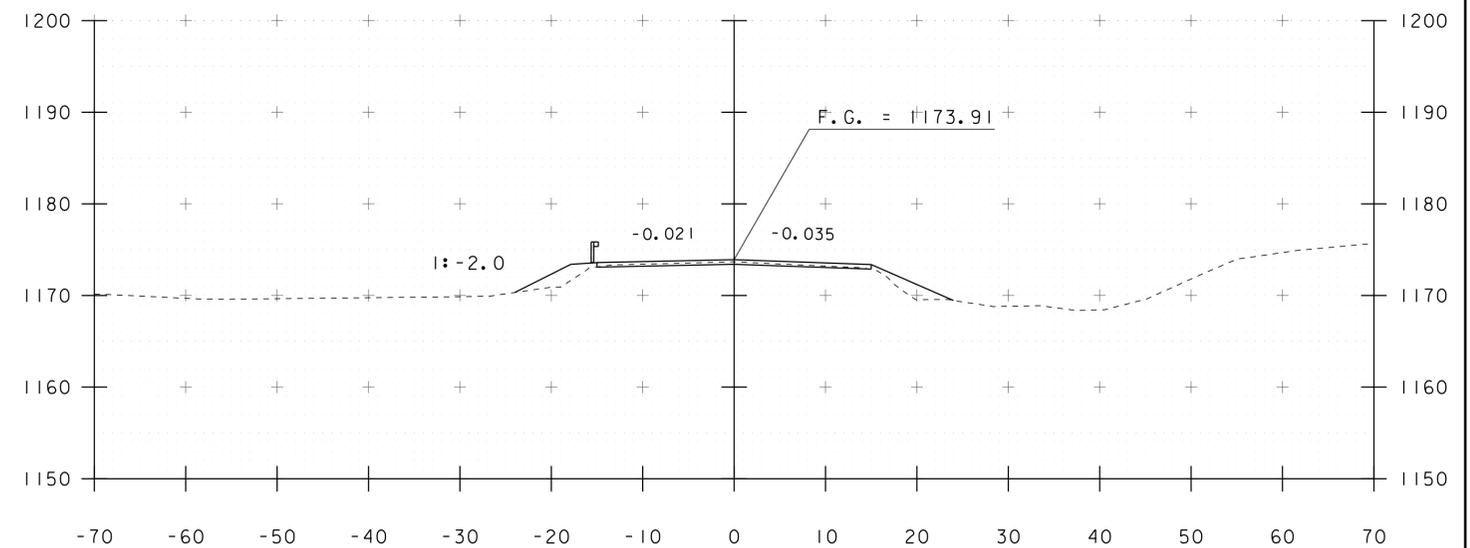


57+50



56+75

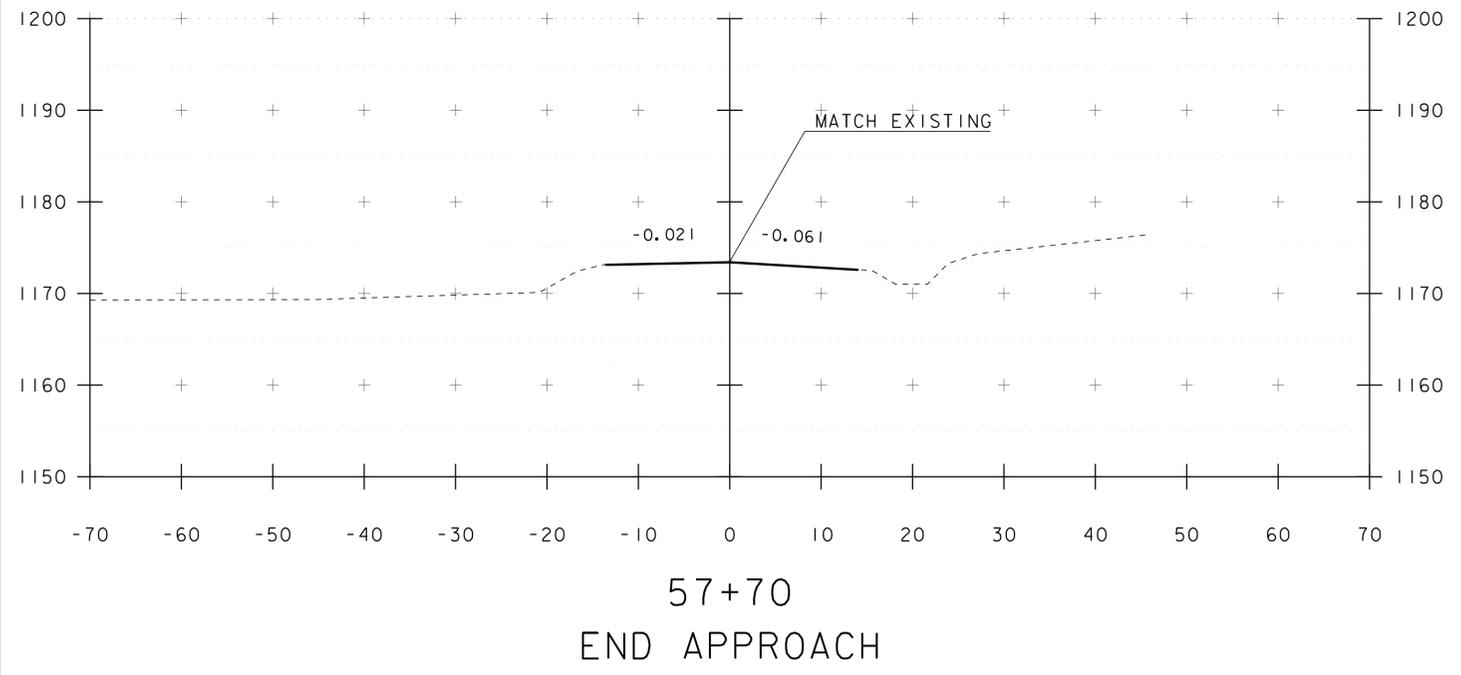
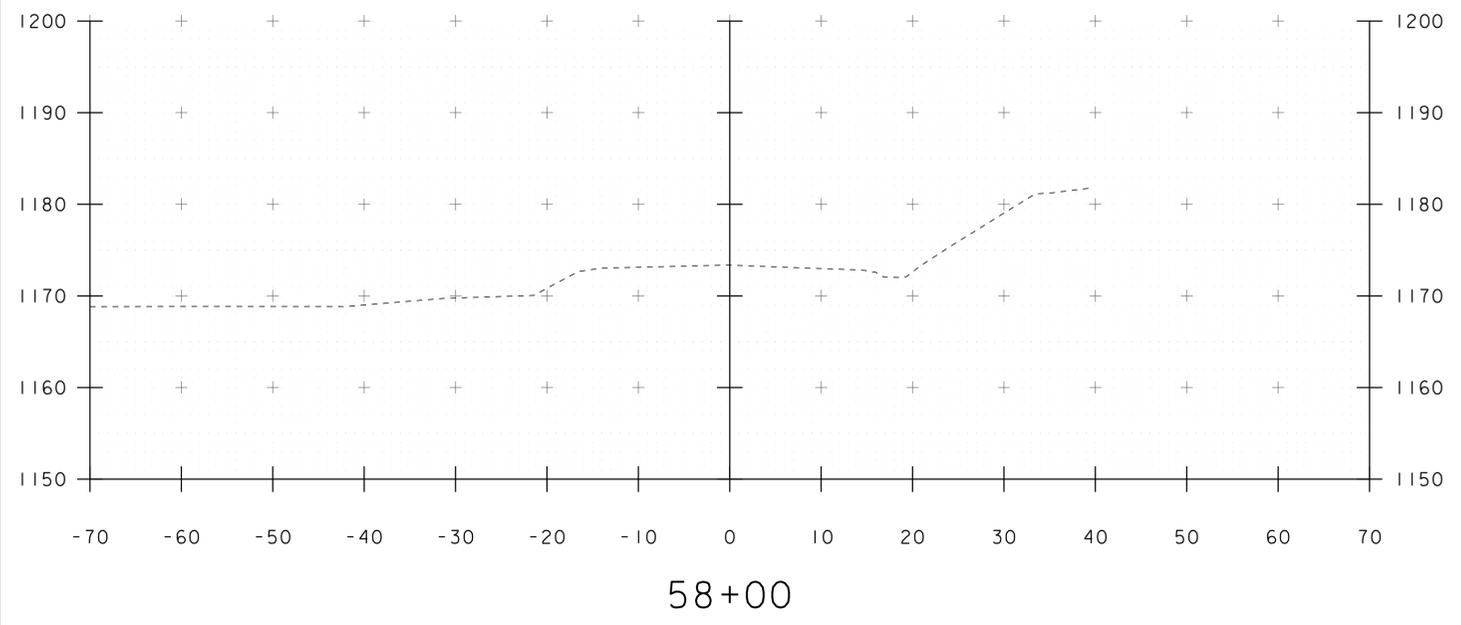
END PROJECT 56+70
BEGIN APPROACH



57+25

STA. 56+75 TO STA. 57+50

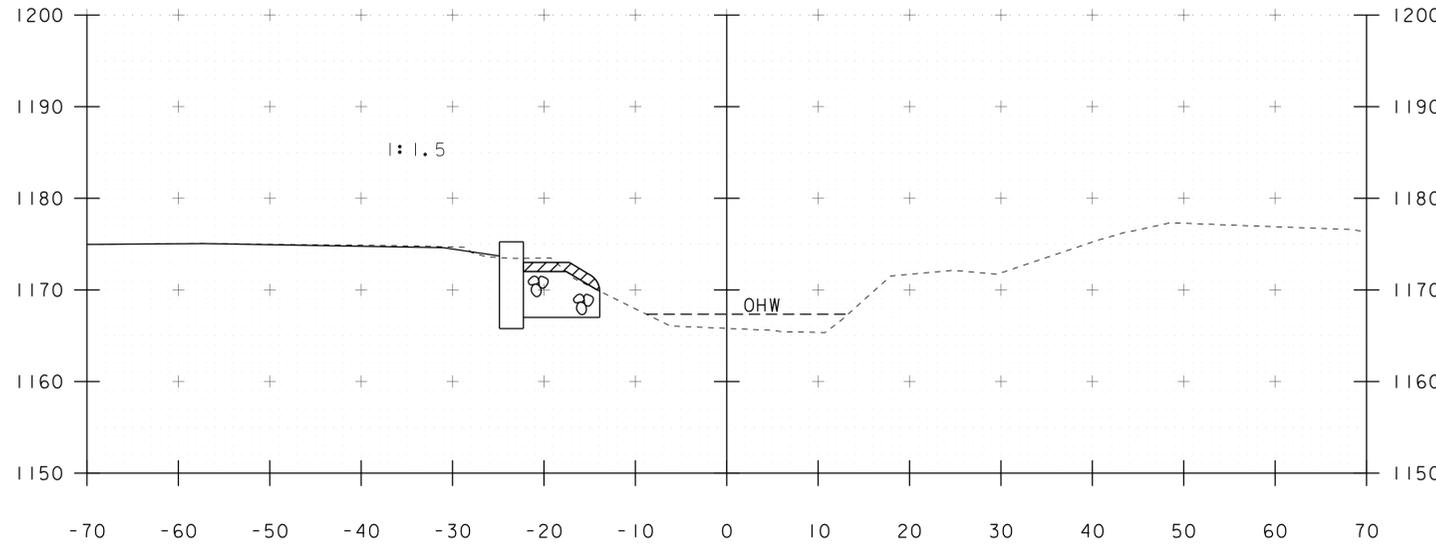
PROJECT NAME: BRIGHTON	
PROJECT NUMBER: ER STP 034-3(25)	
FILE NAME: s1b208xs.dgn	PLOT DATE: 12-SEP-2012
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
MAINLINE SECTIONS	SHEET 32 OF 36



STA. 57+75 TO STA. 58+00

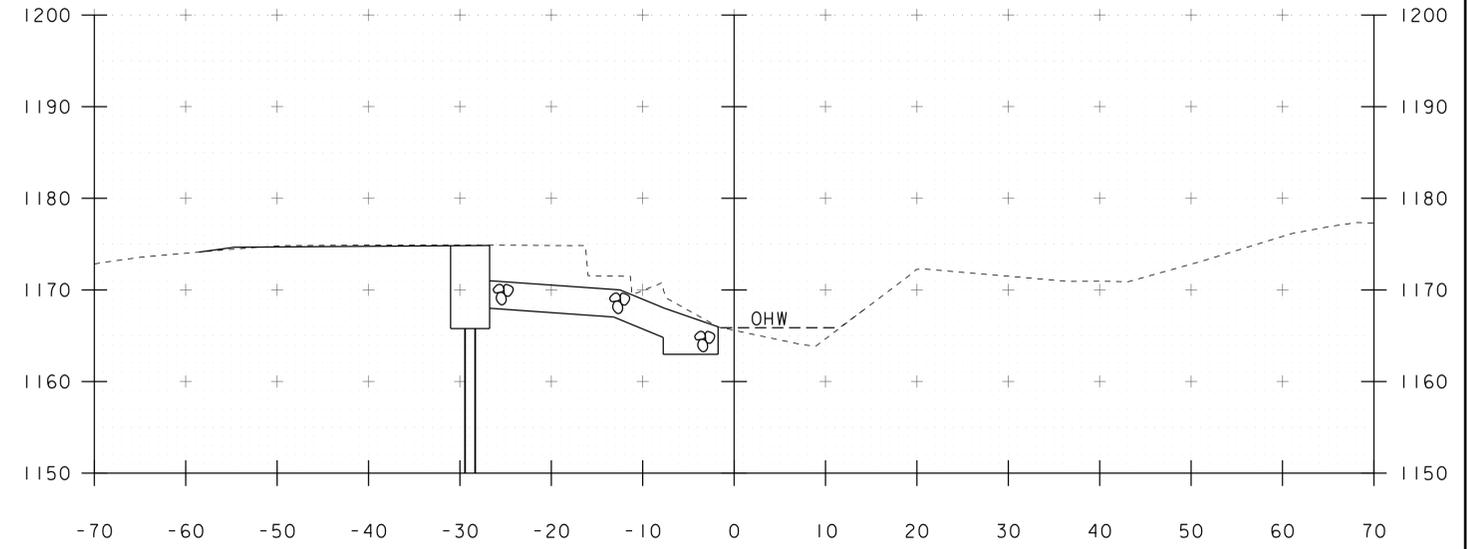
PROJECT NAME: BRIGHTON	
PROJECT NUMBER: ER STP 034-3(25)	
FILE NAME: s1b208xs.dgn	PLOT DATE: 12-SEP-2012
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
MAINLINE SECTIONS	SHEET 33 OF 36

STA 10+56 LT
 BEGIN CHANNEL EXCAVATION
 BEGIN GEOTEXTILE FABRIC UNDER STONE FILL
 BEGIN STONE FILL, TYPE III
 BEGIN GRUBBING MATERIAL



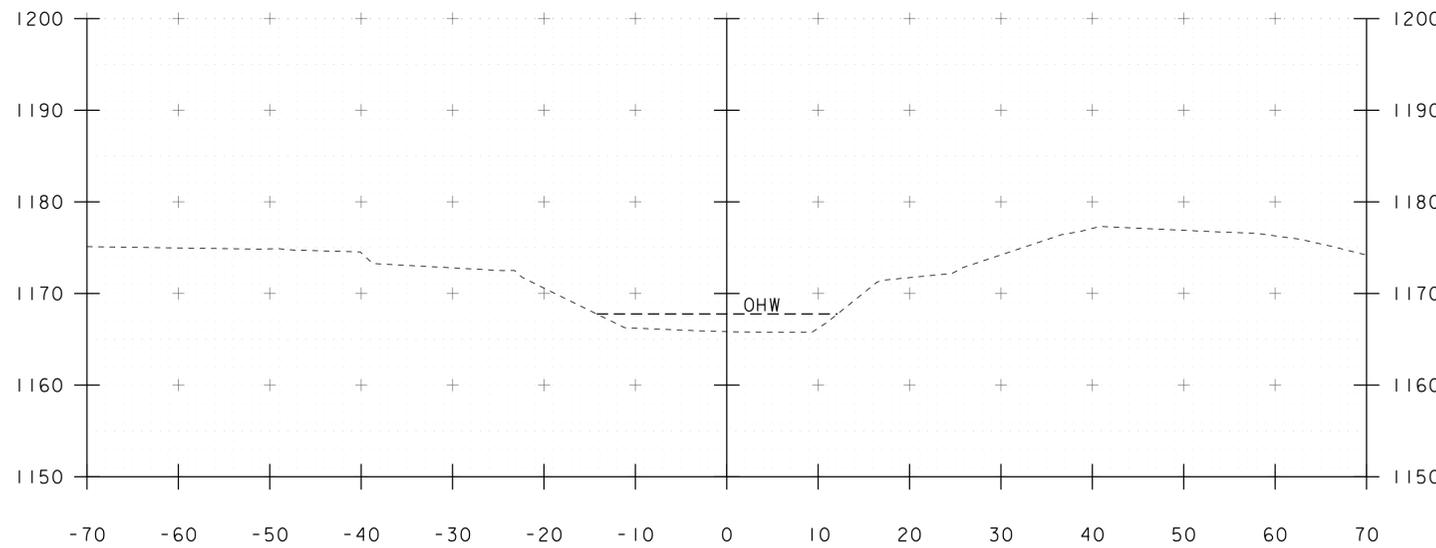
10+60

STA 10+81 RT
 BEGIN CHANNEL EXCAVATION
 BEGIN GEOTEXTILE FABRIC UNDER STONE FILL
 BEGIN STONE FILL, TYPE III
 BEGIN GRUBBING MATERIAL

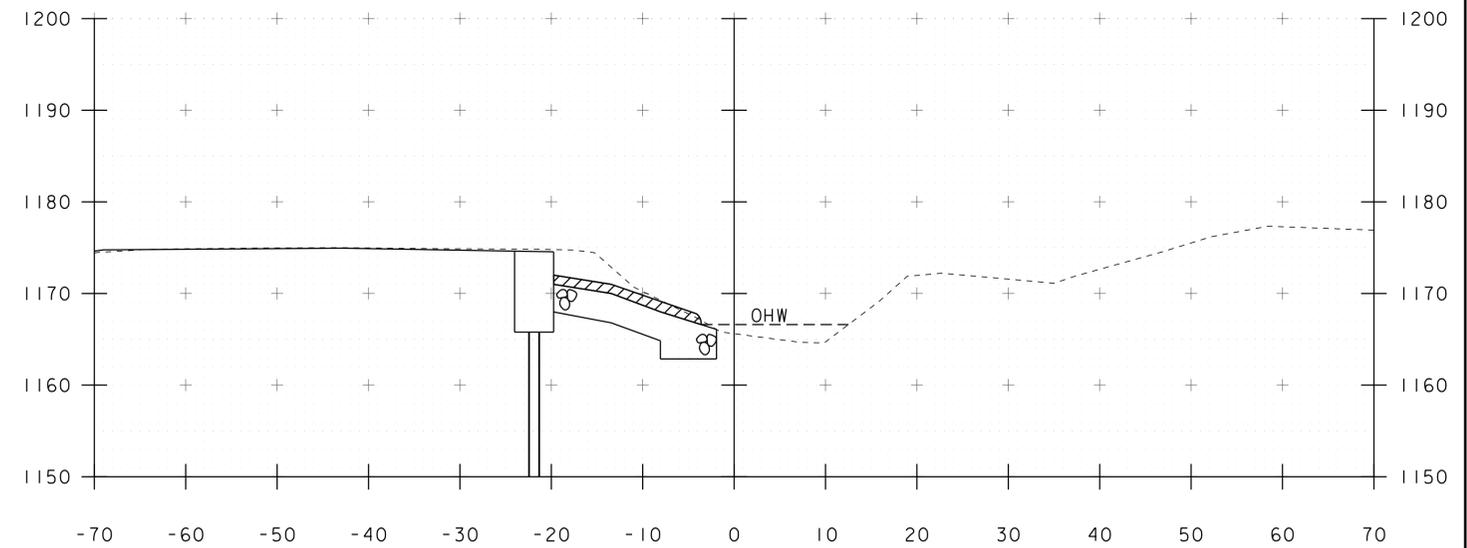


10+80

STA 10+74 LT
 END GRUBBING MATERIAL



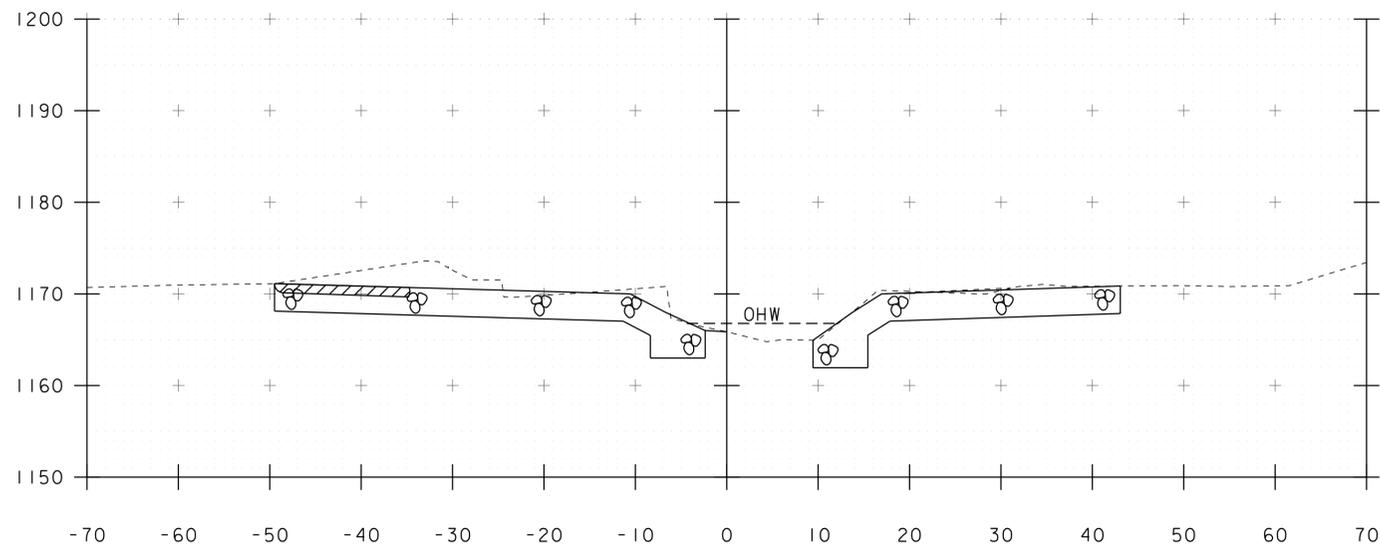
10+50



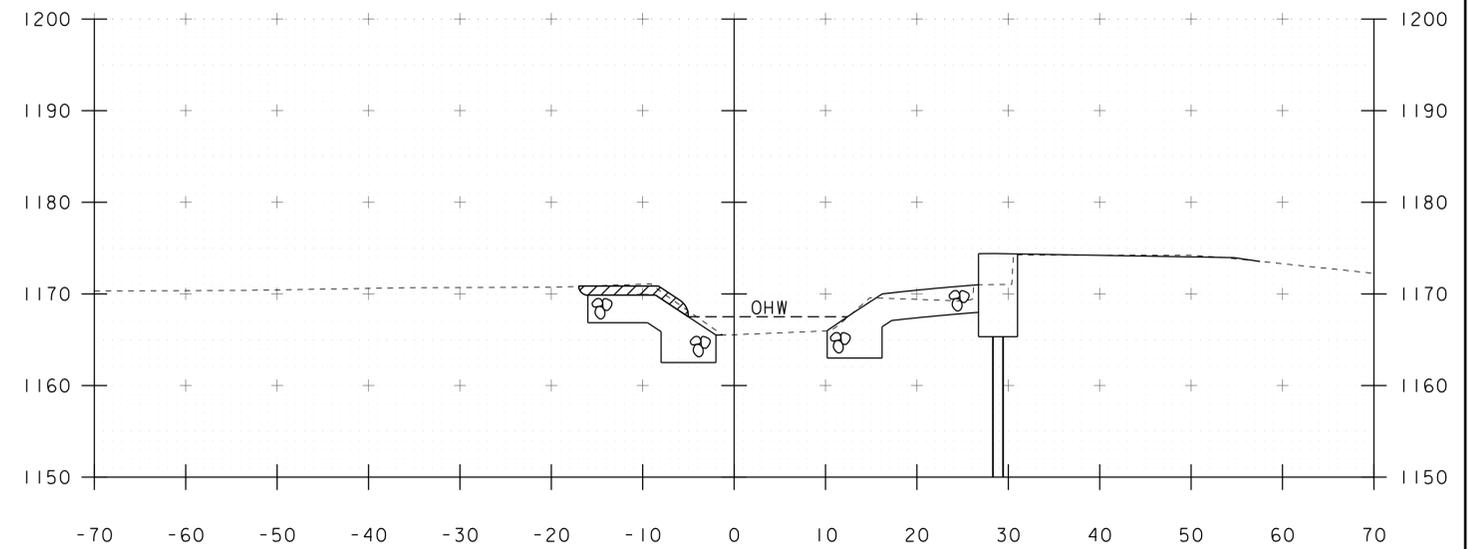
10+70

STA. 10+50 TO STA. 10+80

PROJECT NAME: BRIGHTON	
PROJECT NUMBER: ER STP 034-3(25)	
FILE NAME: s1b208xs.dgn	PLOT DATE: 12-SEP-2012
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
CHANNEL SECTIONS	SHEET 34 OF 36



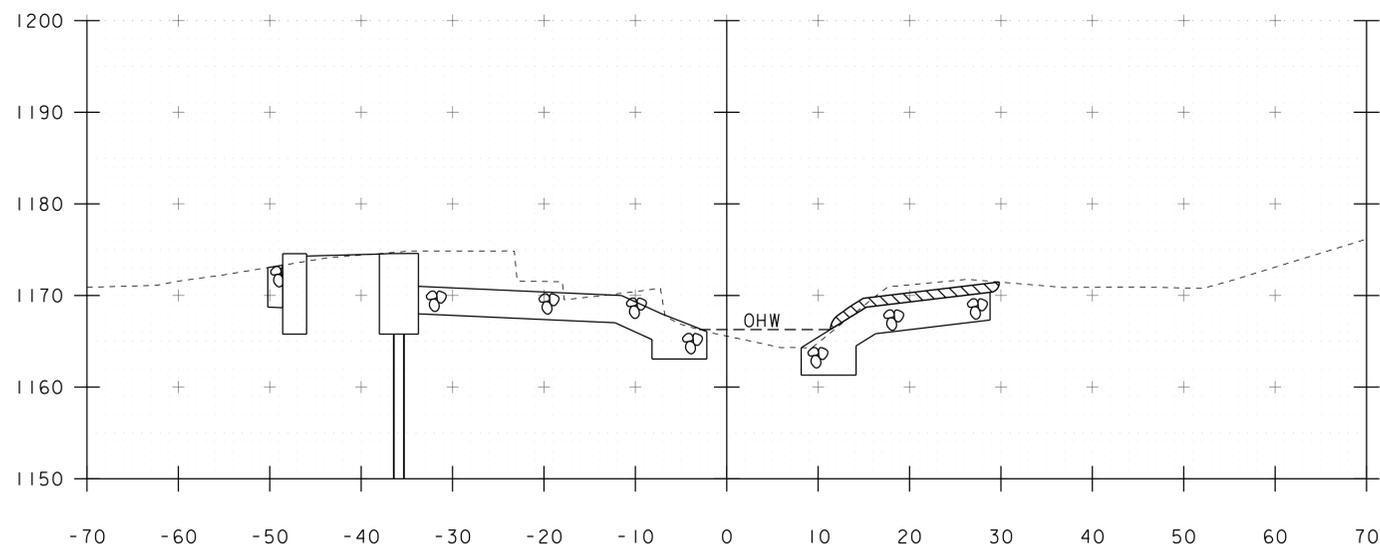
11+00



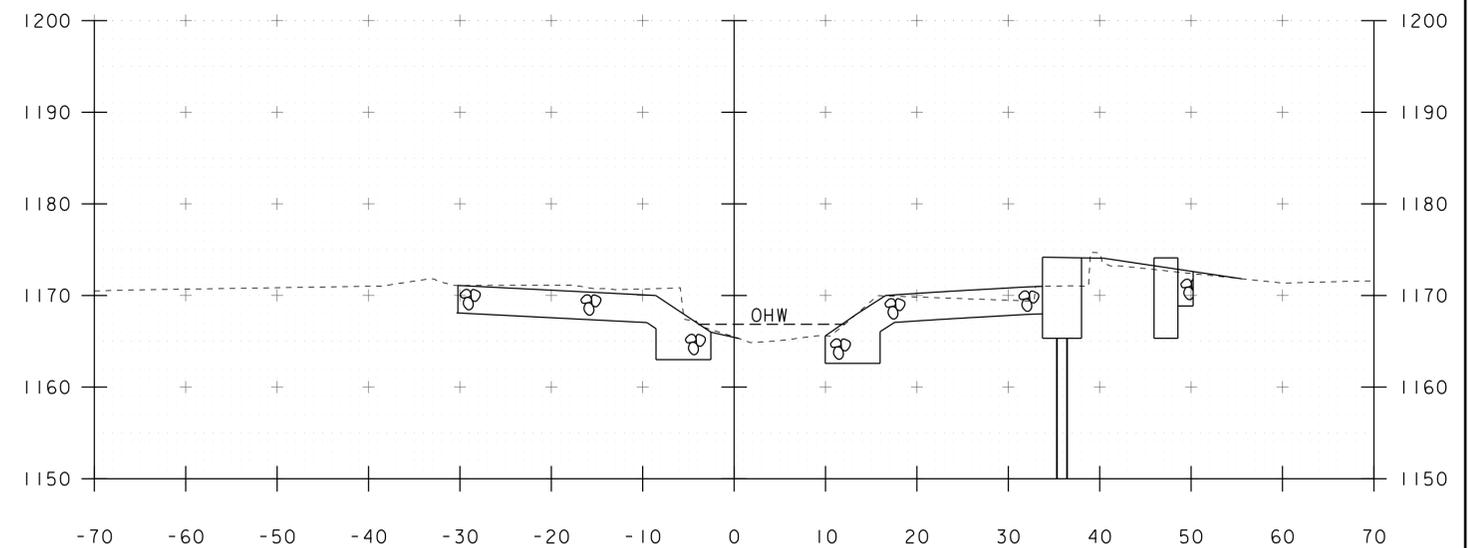
11+20

STA 10+95 LT
BEGIN GRUBBING MATERIAL

STA 10+91 RT
END GRUBBING MATERIAL



10+90

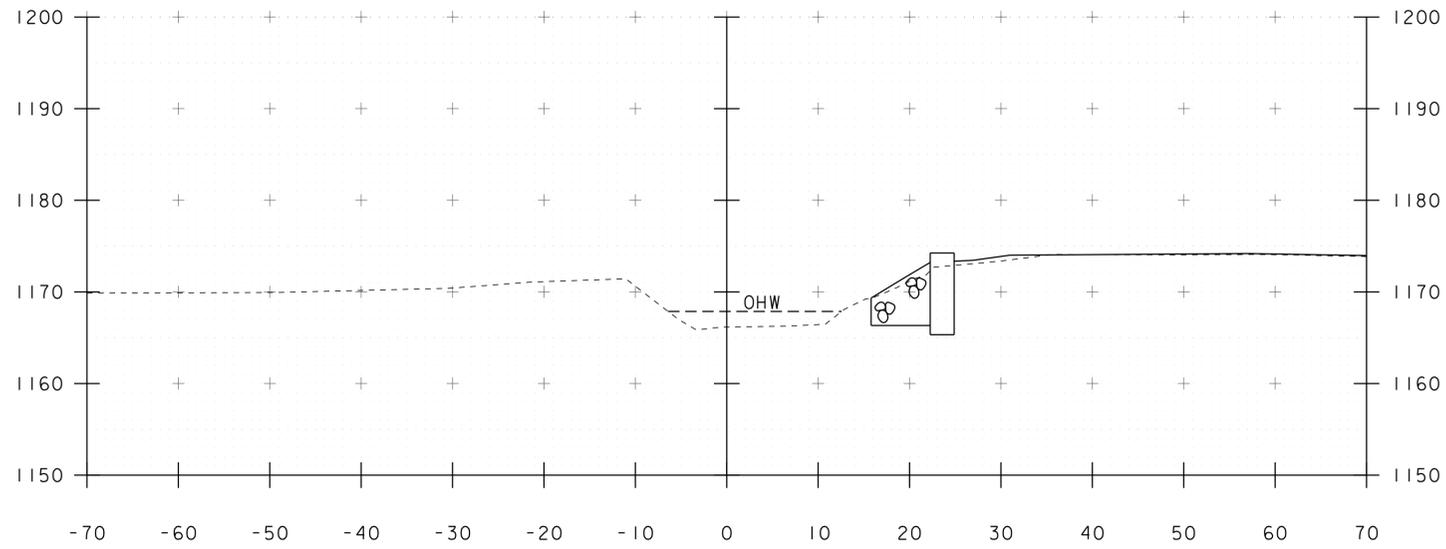


11+10

STA. 10+90 TO STA. 11+20

PROJECT NAME: BRIGHTON	
PROJECT NUMBER: ER STP 034-3(25)	
FILE NAME: s1b208xs.dgn	PLOT DATE: 13-SEP-2012
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
CHANNEL SECTIONS	SHEET 35 OF 36

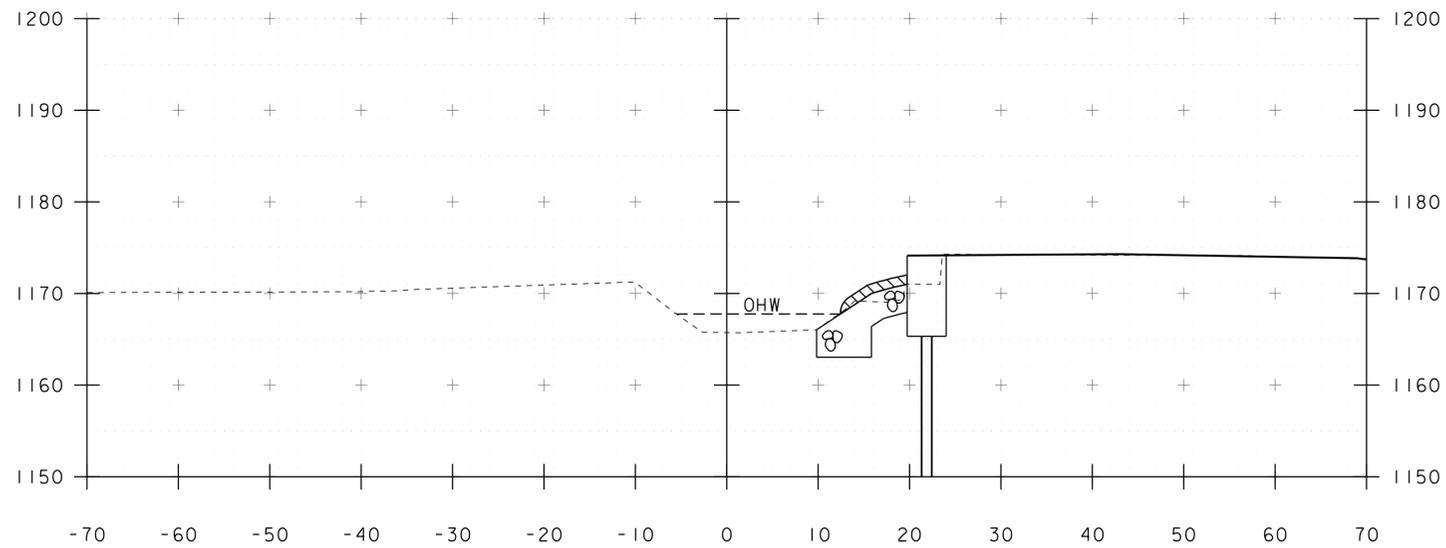
STA 11+44 RT
 END CHANNEL EXCAVATION
 END GEOTEXTILE FABRIC UNDER STONE FILL
 END STONE FILL, TYPE III
 END GRUBBING MATERIAL



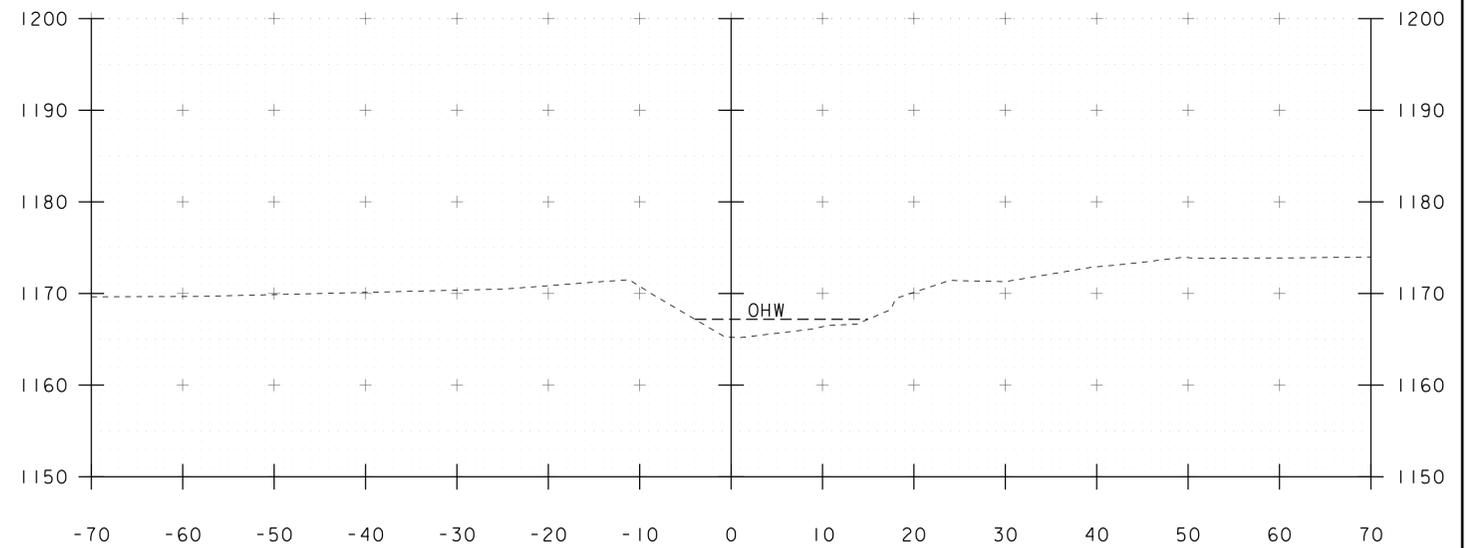
11+40

STA 11+27 LT
 END CHANNEL EXCAVATION
 END GEOTEXTILE FABRIC UNDER STONE FILL
 END STONE FILL, TYPE III
 END GRUBBING MATERIAL

STA 11+28 RT
 BEGIN GRUBBING MATERIAL



11+30



11+50

STA. 11+30 TO STA. 11+50

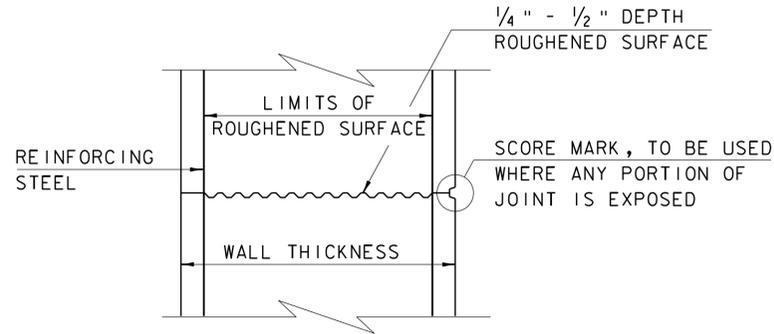
PROJECT NAME: BRIGHTON
 PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: s11b208xs.dgn
 PROJECT LEADER: K. HIGGINS
 DESIGNED BY: J. SALVATORI
 CHANNEL SECTIONS

PLOT DATE: 12-SEP-2012
 DRAWN BY: J. SALVATORI
 CHECKED BY: W. LAMMER
 SHEET 36 OF 36

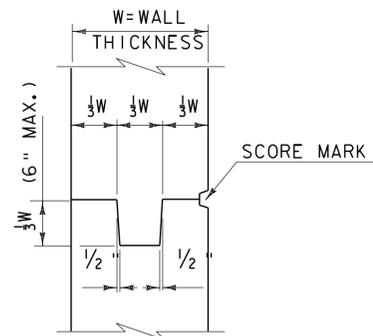
CONCRETE GENERAL NOTES

- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" x 1"

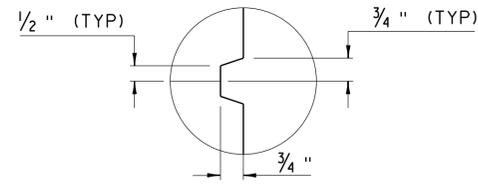


TYPICAL HORIZONTAL CONSTRUCTION JOINT
(NOT TO SCALE)

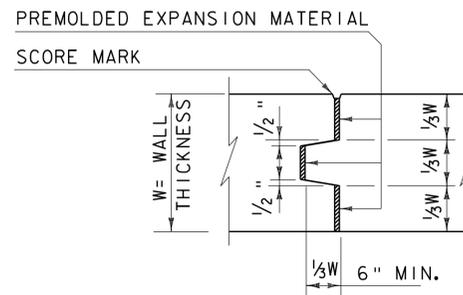
- THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
- IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



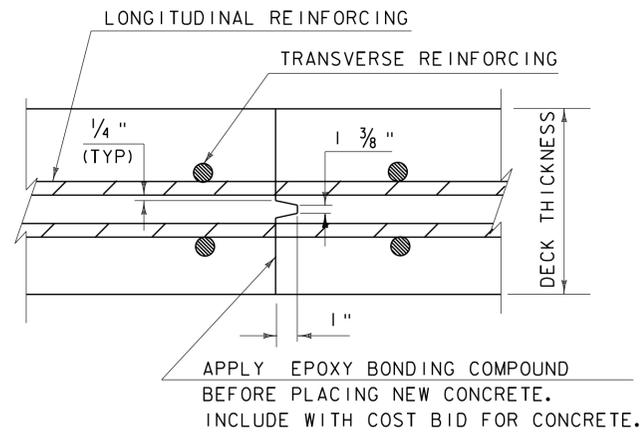
TYPICAL CONCRETE CONSTRUCTION JOINT
(NOT TO SCALE)



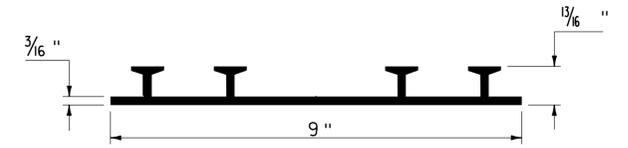
SCORE MARK DETAIL
(NOT TO SCALE)



TYPICAL CONCRETE EXPANSION JOINT
(NOT TO SCALE)



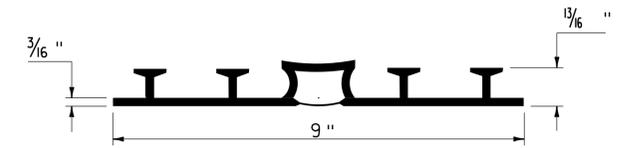
TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS
(NOT TO SCALE)



P.V.C. WATERSTOP FOR CONSTRUCTION JOINTS
(NOT TO SCALE)

PAYMENT FOR THE P.V.C. WATERSTOP SHALL BE INCIDENTAL TO THE UNIT BID PRICE FOR THE ADJACENT CONCRETE.

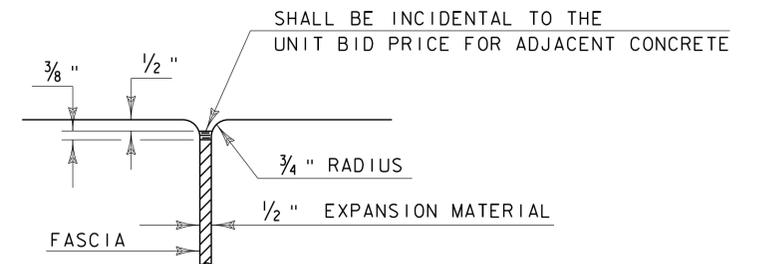
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



P.V.C. WATERSTOP FOR EXPANSION JOINTS
(NOT TO SCALE)

PAYMENT FOR THE P.V.C. WATERSTOP SHALL BE INCIDENTAL TO THE UNIT BID PRICE FOR THE ADJACENT CONCRETE.

OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



JOINT BETWEEN FASCIA AND WINGWALL
(NOT TO SCALE)

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION

**CONCRETE
DETAILS AND NOTES**

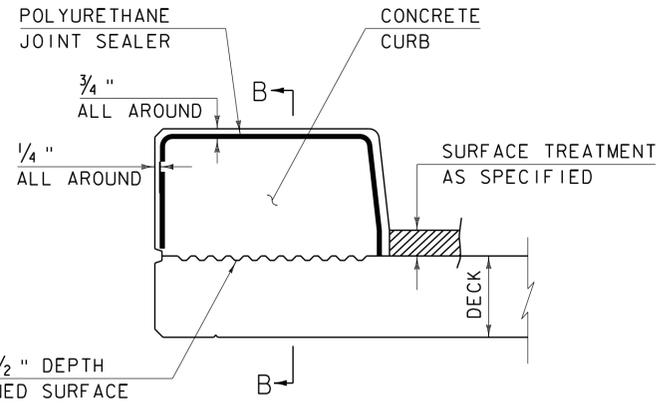


**STRUCTURES
DETAIL
SD-5 01.00**

POLYURETHANE JOINT SEALER MEETING THE REQUIREMENTS OF SECTION 524. COLOR TO MATCH CONCRETE. PAYMENT TO BE INCIDENTAL TO THE BRIDGE CURB CONCRETE ITEM

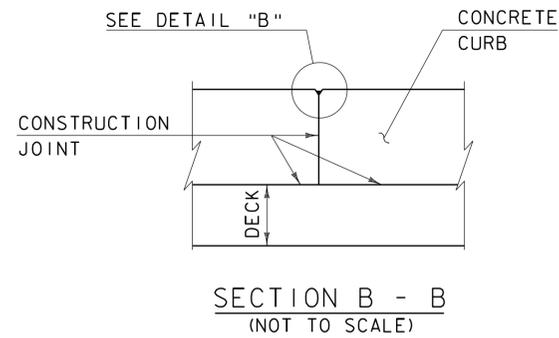
ADHERE TO THESE SURFACES

DETAIL "B"
(NOT TO SCALE)

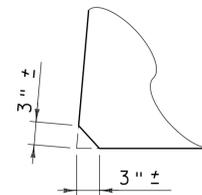


CONCRETE CURB JOINT SECTION
(NOT TO SCALE)

1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION



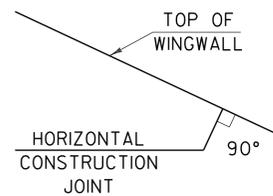
SECTION B - B
(NOT TO SCALE)



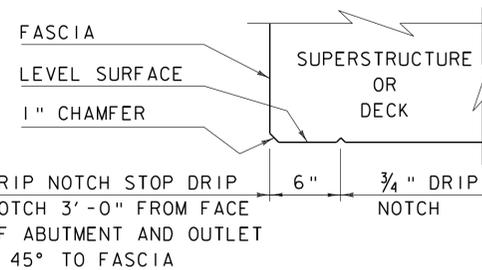
ACUTE ANGLE
CLIP DETAIL
(NOT TO SCALE)

CONCRETE CURB JOINT NOTES

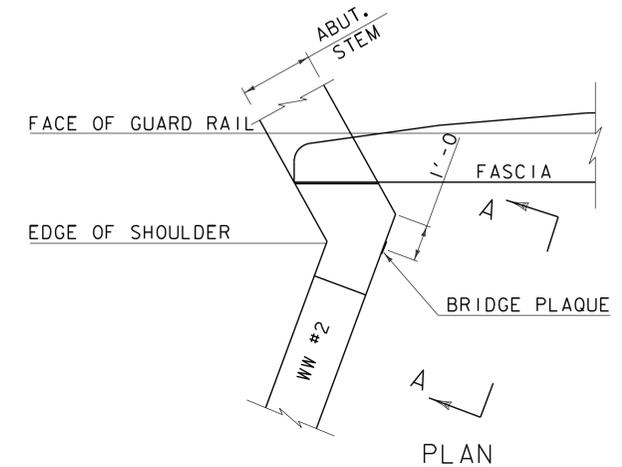
1. CONCRETE CURBS MAY BE PLACED IN ONE CONTINUOUS OPERATION IF AN APPROVED SHRINKAGE REDUCING ADMIXTURE LISTED IN THE SPECIAL PROVISIONS IS USED WITH THE CONCRETE MIX DESIGN. PAYMENT FOR THE SHRINKAGE REDUCING ADMIXTURE WILL BE INCIDENTAL TO THE BRIDGE CURB CONCRETE ITEM.
2. IF THE CONTRACTOR CHOOSES NOT TO USE AN APPROVED SHRINKAGE REDUCING ADMIXTURE, THE CURBS SHALL BE CONSTRUCTED WITH CONSTRUCTION JOINTS SPACED AT A MAXIMUM OF 15'-0" CENTER TO CENTER AND 2'-0" 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 7'-0" 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.



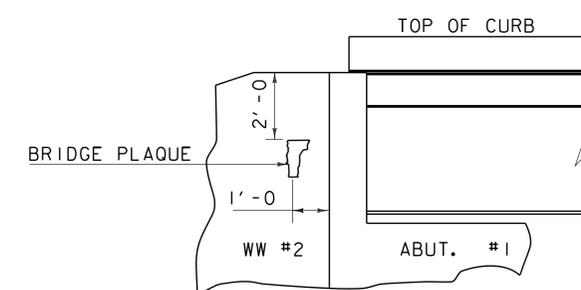
HORIZONTAL WINGWALL
CONSTRUCTION JOINT
(NOT TO SCALE)



DRIP NOTCH DETAIL
(NOT TO SCALE)



PLAN



VIEW "A - A"

BRIDGE PLAQUE
(NOT TO SCALE)

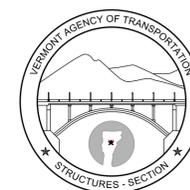
THE BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AT ABUTMENT #1 ON THE RIGHT SIDE AS SHOWN OR AS DIRECTED BY THE ENGINEER.

PAYMENT FOR INSTALLATION OF THE BRIDGE PLAQUE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

REVISIONS

MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
JUNE 4, 2010	MODIFIED AND ADDED TWO DETAILS

CONCRETE
DETAILS AND NOTES



STRUCTURES
DETAIL
SD-5 02.00

ASPHALTIC PLUG JOINT NOTES

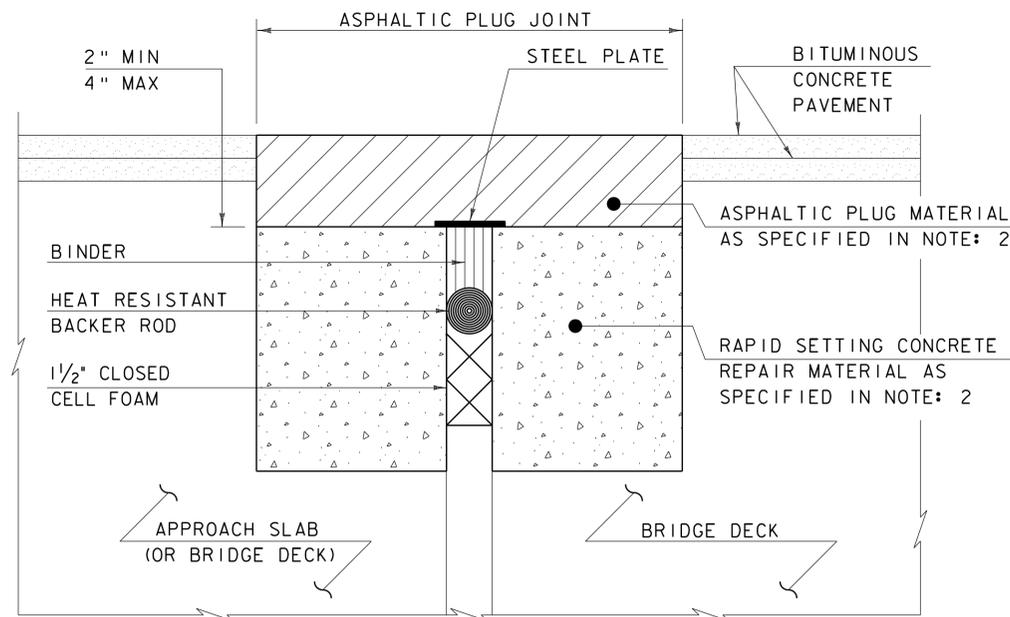
INSTALLATION:

1. LOCATE THE JOINT CENTRALLY OVER THE DECK OVERLAY EXPANSION GAP OR FIXED JOINT, MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.
2. 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.
3. BLAST CLEAN THE JOINT AREA OF DEBRIS, ASPHALT AND SHEET MEMBRANE. THOROUGHLY DRY THE JOINT AREA WITH COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.
4. REPAIR MATERIAL GREATER THAN 4 INCHES FROM FINISHED GRADE WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.
5. PLACE PROPERLY SIZED HEAT RESISTANT BACKER ROD IN THE MOVEMENT GAP ALLOWING FOR 1" +/- OF BINDER ABOVE THE ROD.
6. HEAT AND PLACE THE BINDER MATERIAL AS RECOMMENDED BY THE MANUFACTURER.
7. PLACE 1/4" THICK BY 8" 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.
8. HEAT AND MIX THE BINDER MATERIAL AND AGGREGATE AS RECOMMENDED BY THE MANUFACTURER.
9. INSTALLATION OF MATERIAL, COMPACTION, AND TOP COATING SHALL BE AS RECOMMENDED BY THE MANUFACTURER.
10. IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.
11. ONCE THE JOINT REACHES 82 DEG C (180 DEG F) +/-, WATER MAY BE USED TO EXPEDITE THE COOLING PROCESS.
12. 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:

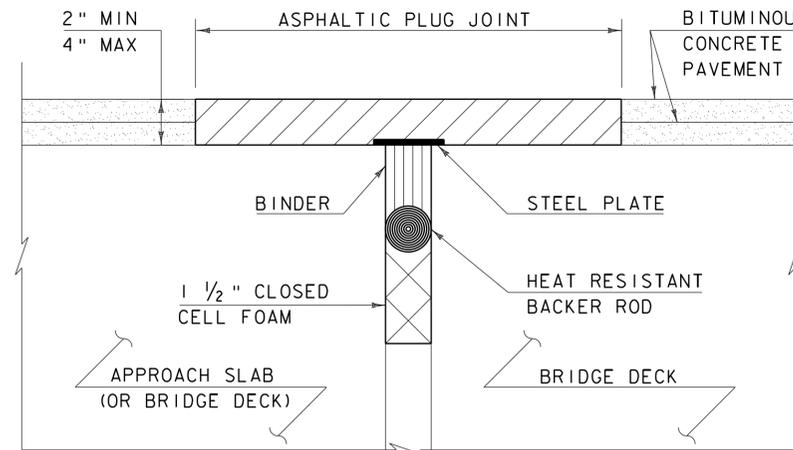
1. THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING.
2. THE ROAD SURFACE IS DRY.
3. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.



ASPHALTIC PLUG-TYPE JOINT DETAIL - REHAB

NOTES: (NOT TO SCALE)

1. THE CONTRACTOR SHALL REMOVE ALL ASPHALTIC PLUG JOINT MATERIAL AND DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER. REMOVAL OF THE FIRST 4 INCHES OF MATERIAL SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG. ANY REMOVAL OF MATERIAL GREATER THAN 4 INCHES SHALL BE INCLUDED IN THE BID PRICE OF ITEM 580.20 RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE.
2. THE CONTRACTOR SHALL REPLACE REMOVED MATERIAL THAT IS LESS THAN 4" FROM FINISHED GRADE WITH ASPHALTIC PLUG JOINT MATERIAL MEETING THE REQUIREMENTS OF SUBSECTION 707.15. ALL REMOVED MATERIAL THAT IS GREATER THAN 4 INCHES FROM FINISHED GRADE SHALL BE REPLACED WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.

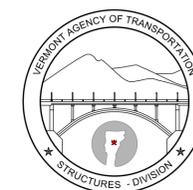


ASPHALTIC PLUG-TYPE JOINT DETAIL - NEW
(NOT TO SCALE)

REVISIONS

MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION

BRIDGE JOINT
ASPHALTIC PLUG



STRUCTURES
DETAIL
SD-516.10

NOTES CONT.

MAINTENANCE

SIGNS SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION SATISFACTORY TO THE ENGINEER. THEY SHALL BE COMPLETELY VISIBLE TO APPROACHING TRAFFIC AT ALL TIMES. THEY SHALL BE KEPT PLUMB AND LEVEL, AND ALWAYS PRESENT A NEAT APPEARANCE. DAMAGED, DEFACED, OR DIRTY SIGNS SHALL BE REPAIRED, CLEANED OR REPLACED AS ORDERED BY THE ENGINEER.

GENERAL

THE COST OF FURNISHING, INSTALLING, MAINTAINING AND REMOVING ALL CONSTRUCTION APPROACH SIGNS WILL BE CONSIDERED INCIDENTAL WORK PERTAINING TO THE PROJECT AS A WHOLE AND SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR VARIOUS ITEMS INVOLVED IN THE CONTRACT. DURING ALL PHASES OF CONSTRUCTION THE REQUIREMENTS SET FORTH IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE MET.

SIGN COVERS

SIGN COVERS SHALL CONSIST OF A PANEL PAINTED FLAT BLACK, THE SAME SIZE AS THE SIGN IT COVERS. THE PANEL SHALL BE OF WOOD, PLYWOOD, HARDBOARD OR ANY MATERIAL SATISFACTORY TO THE ENGINEER. NO MATERIAL WILL BE APPROVED THAT WILL DETERIORATE BY EXPOSURE TO THE WEATHER DURING THE PROJECT. MOUNTING OF THE PANEL SHALL BE DONE IN SUCH A WAY AS NOT TO DAMAGE THE SIGN FACE MATERIAL.

CONTRACTORS SHALL COORDINATE THEIR SIGNING ACTIVITIES WITH OTHER CONTRACTORS WITHIN THE PROJECT LIMITS, AS DIRECTED BY THE REGIONAL CONSTRUCTION ENGINEER.

SIGN POSTS

WHERE CONSTRUCTION SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARD RAIL OR OTHER APPROVED TRAFFIC BARRIERS, THE POSTS ON WHICH THE SIGNS ARE MOUNTED SHALL BE YIELDING METAL POSTS AS DESIGNATED IN THE E SERIES OF STANDARD DRAWINGS OR YIELDING WOODEN POSTS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

WOODEN POSTS ARE ACCEPTABLE FOR USE WITH CONSTRUCTION SIGNS. THESE POSTS SHALL HAVE A UNIFORM CROSS-SECTION AND SHALL BE MADE FROM GRADE 2, AIR-DRIED SOUTHERN YELLOW PINE OR ANOTHER EQUIVALENT SOFTWOOD. AN ACCEPTABLE EQUIVALENT SOFTWOOD SHALL HAVE AN EXTREME FIBER IN BENDING "FB" DESIGN VALUE NOT TO EXCEED 1400 PSI AND HORIZONTAL SHEAR "FV" DESIGN VALUE NOT TO EXCEED 90 PSI SPECIFICATION. "DESIGN VALUES FOR WOOD CONSTRUCTION" AND RELATED SUPPLEMENT, LATEST EDITION.

AS ESTABLISHED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION IN THEIR NATIONAL DESIGN. THE FOLLOWING ARE CONSIDERED TO BE ACCEPTABLE WOODEN POSTS:

- 1. 4" X 4" (ACTUAL DIMENSIONS ARE S4S 3.5" X 3.5")
- A) ACCEPTABLE FOR SINGLE OR DUAL POSTS INSTALLATION WITH NO MODIFICATIONS.

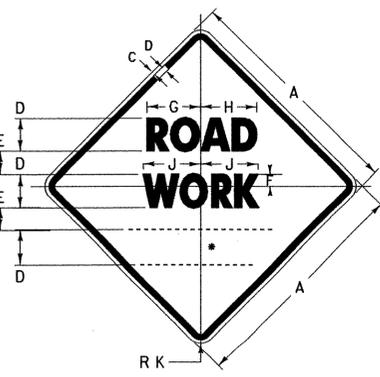
ALL WOODEN POSTS SHALL HAVE AN EMBEDMENT DEPTH OF 4 FEET. NO CROSS-BRACING OR BACK-BRACING TO KEEP THE POSTS PLUMB WILL BE ALLOWED. CONCRETE FOUNDATIONS, COLLARS, OR SOIL BEARING PLATES ARE NOT PERMITTED. CONSTRUCTION SIGNS SHALL BE PLACED ON TWO OR MORE POSTS WHEN ANY OF THE FOLLOWING CONDITIONS GOVERN:

- A) THE SIGN WIDTH (HORIZONTAL DIMENSIONS FOR DIAMOND SHAPED SIGNS) EXCEEDS 3 1/2 FEET.
- B) THE EXPOSED SIGN AREA OF ANY SINGLE SIGN OR ASSEMBLY EXCEEDS 7 SQ. FEET.
- C) THE Sv OF A SINGLE POST IS 64.

OTHER STDS. REQUIRED: E-100A, E-101, E-102

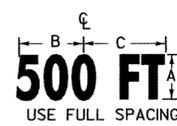


**STANDARD
E-100**



W20-1

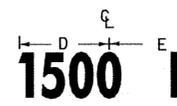
• SEE DISTANCE DETAILS



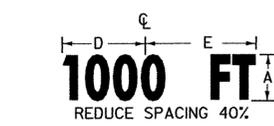
500 FT
USE FULL SPACING



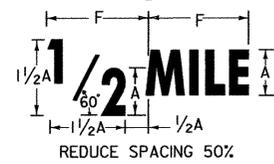
1 MILE
USE FULL SPACING



1500 FT
REDUCE SPACING 40%



1000 FT
REDUCE SPACING 40%



1/2 MILE
REDUCE SPACING 50%



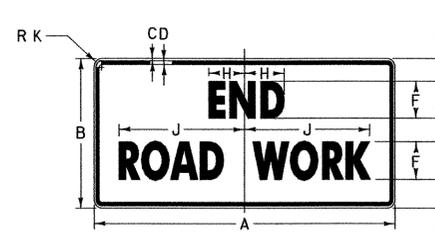
AHEAD
USE FULL SPACING

DISTANCE DETAILS

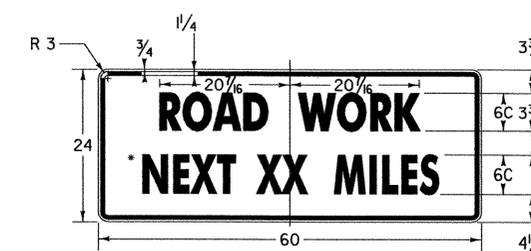
SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	J	K
MIN.	36	3/8	7/8	5D	3 1/2	3 1/4	8 3/8	8 7/8	9	2 1/4
STD.	48	3/4	1 1/4	7D	4 3/4	4 1/2	11 1/8	12 1/8	12 5/8	3

DIMENSIONS (INCHES)							
A	B	C	D	E	F	G	H
5D	10 3/8	10 3/8	11 5/8	11 1/4	11 1/4	9 1/2	10 7/8
7D	14 1/4	15 1/8	14 7/8	15 3/4	15 3/4	13 1/16	15 1/2

(ALL DIMENSIONS SHOWN IN INCHES)



G20-2A



G20-1

• OPTICALLY CENTER

THIS SIGN TO BE USED WHEN PROJECT LENGTH EXCEEDS 2 MILES OR AS REQUESTED BY THE RESIDENT ENGINEER. SHOW MILEAGE TO NEAREST 1/4 MILE USING FRACTIONS, NOT DECIMALS. HAND LETTERING OF MILEAGE WILL NOT BE ALLOWED.

SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	J	K	
MIN.	36	18	3/8	7/8	3 3/4	4C	2 1/2	4	12 5/8	2 1/4	
STD.	48	24	3/4	1 1/4	4 1/8	6C	3 3/4	5 7/8	22	3	

NOTES

THE SIGNS SHOWN ON THIS SHEET ARE INTENDED FOR USE IN PROVIDING ADVANCE WARNING AND INFORMATION ON CONSTRUCTION PROJECTS OVER WHICH TRAFFIC WILL BE MAINTAINED. WHEN ADDITIONAL APPROACH SIGNS OR OTHER TYPES OF ADVANCE SIGNING OR CONTROL ARE NECESSARY, THE PLANS AND/OR THE SPECIFICATIONS FOR THAT PROJECT WILL GIVE THE DETAILS OF THE SIGNS AND DEVICES REQUIRED. FOR ON-PROJECT CONSTRUCTION SIGNS, REFER TO APPROPRIATE STANDARD SHEETS.

APPLICATION OF STANDARDS

SINCE IT IS NOT POSSIBLE TO PRESCRIBE DETAILED STANDARDS OF APPLICATION FOR ALL OF THE SITUATIONS THAT MAY CONCEIVABLY ARISE ON A CONSTRUCTION PROJECT, REFERENCE SHALL BE MADE TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" FOR THE PRINCIPLES, PROCEDURES, AND STANDARDS THAT WILL BE REQUIRED IN CONNECTION WITH ADVANCED WARNING AND ON-PROJECT CONSTRUCTION SIGNS AND BARRICADES. THE SIGNS SHOWN IN E-101 AND E-102 REPRESENT A SAMPLE OF THOSE MORE COMMONLY USED.

LOCATION

THE SIGNS SHALL BE LOCATED AS DETAILED ON THIS SHEET OR AS OTHERWISE SHOWN ON THE PLANS. THEY SHALL APPEAR AT EACH END OF THE HIGHWAY UNDER CONSTRUCTION AND ON ALL INTERSECTING PUBLIC HIGHWAYS. THE ENGINEER SHALL DETERMINE THE EXACT LOCATIONS.

DESIGN

LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM WITH THE "STANDARD HIGHWAY SIGNS BOOK" AND DESIGNS PRESCRIBED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) ADOPTED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION (FHWA).

MATERIALS

THE SIGN BASE MATERIAL USED FOR THE SIGNS ON THIS SHEET MAY BE ANY OF THE FOLLOWING, WITH MINIMUM THICKNESS AS NOTED.

FLAT SHEET ALUMINUM	0.125 INCHES
HIGH DENSITY OVERLAYED PLYWOOD	5/8 INCHES

REFLECTORIZATION

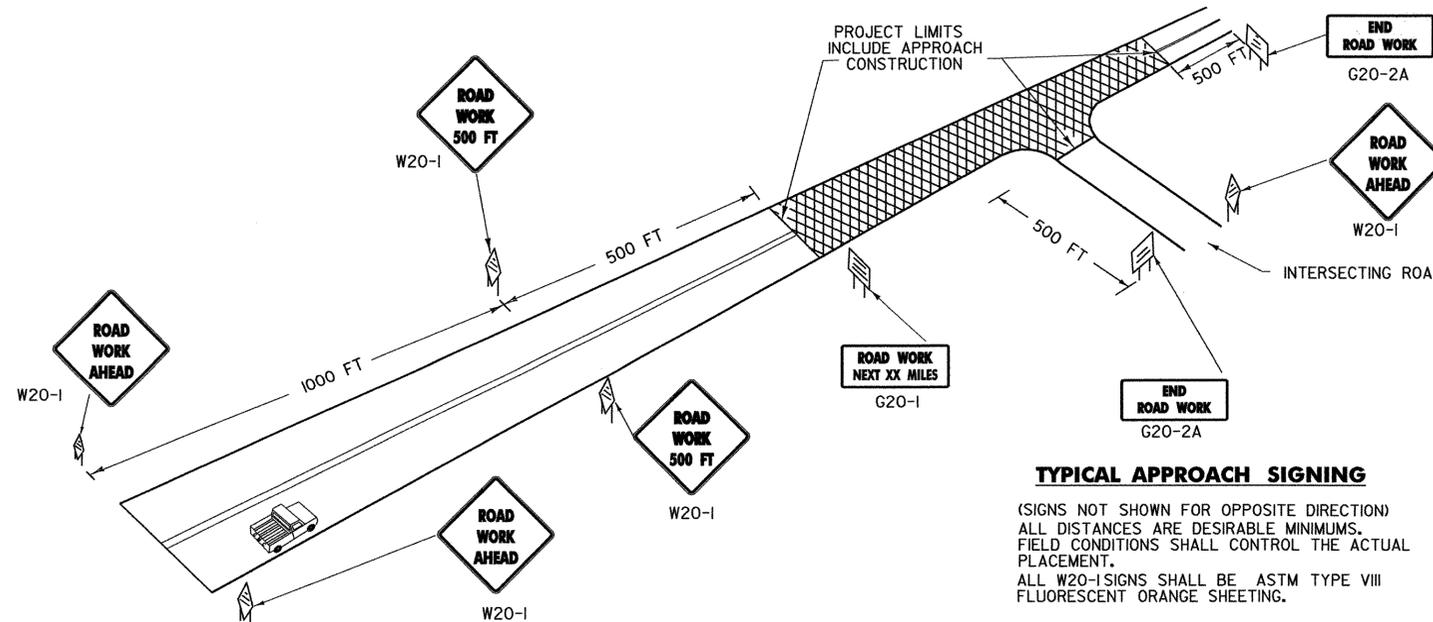
ALL LEAD SIGNS (W20-1) ON THIS SHEET SHALL BE ASTM TYPE VIII FLUORESCENT ORANGE SHEETING. ALL OTHER SIGNS ON THIS SHEET SHALL BE ASTM TYPE III RETROREFLECTORIZED SHEETING.

COLORS

THE COLORS SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA. COLORS SHOWN ON THIS SHEET CONSIST OF BLACK TEXT AND BORDER ON A RETROREFLECTORIZED ASTM TYPE III OR TYPE VIII ORANGE BACKGROUND.

INSTALLATION

THE SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES, DURING PERIODS OF INACTIVITY, OR UPON COMPLETION OF THE WORK. EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER ON POSTS SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST 7 FEET ABOVE THE EDGE OF PAVEMENT, AND THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST 6 FEET OUTSIDE THE SHOULDER POINT, 4 FEET OUTSIDE GUARD RAIL, OR 2 FEET OUTSIDE CURBING, OR SIDEWALK. THE INSTALLATION OF SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER, IN URBAN AREAS, THE BOTTOM OF THE SIGN SHALL BE AT LEAST 7 FEET ABOVE THE SIDEWALK. SIGNS MAY BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER.



TYPICAL APPROACH SIGNING

(SIGNS NOT SHOWN FOR OPPOSITE DIRECTION)
ALL DISTANCES ARE DESIRABLE MINIMUMS.
FIELD CONDITIONS SHALL CONTROL THE ACTUAL PLACEMENT.
ALL W20-1 SIGNS SHALL BE ASTM TYPE VIII FLUORESCENT ORANGE SHEETING.

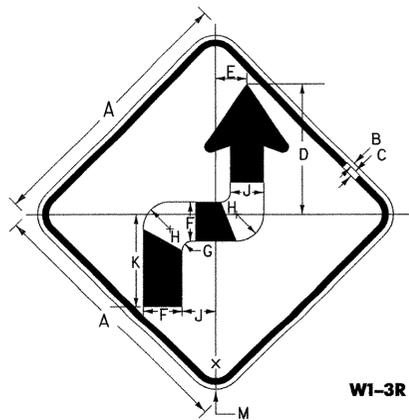
REVISIONS AND CORRECTIONS

- MAY 26, 1989 - DATE OF ORIGINAL ISSUE
- OCT 21, 1992 - REVISED WOOD POST REQUIREMENTS, ADDED SIGN DETAILS, & REVISED TITLE BLOCK
- AUG. 08, 1995 - MINOR NOTE REVISIONS
- JAN. 06, 1997 - MINOR NOTE AND DIMENSION REVISIONS
- JAN. 2, 2004 - CHANGED REFLECTIVE SHEETING TO ASTM TYPE III OR TYPE VIII

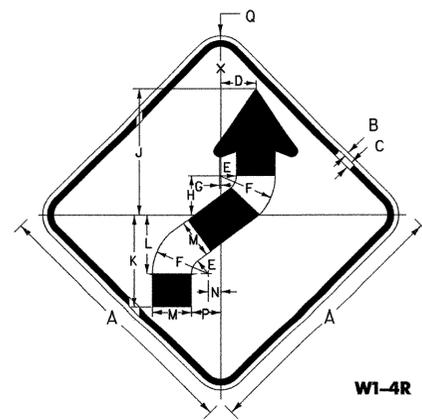
APPROVED

DIRECTOR OF PROGRAM DEVELOPMENT
TRAFFIC OPERATIONS ENGINEER
FEDERAL HIGHWAY ADMINISTRATION

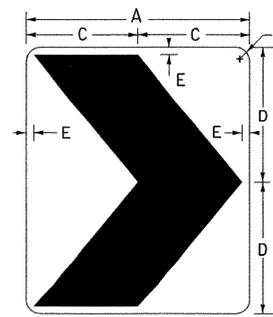
**CONSTRUCTION APPROACH
SIGNS**



W1-3R

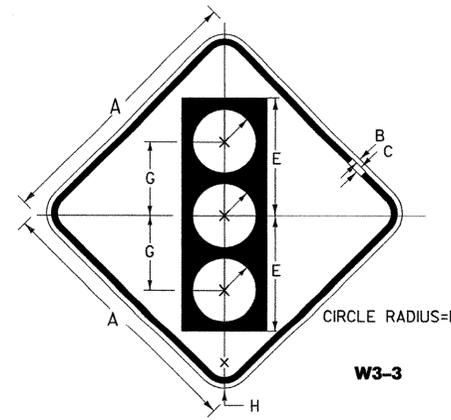


W1-4R



W1-8

SIGN	DIMENSIONS (INCHES)					
	A	B	C	D	E	F
STD.	18	24	9	12	3/4	1 1/2
SPECIAL	24	30	12	15	7/8	1 7/8
EXPWY.	30	36	15	18	1	2 1/8
FRWY.	36	48	18	24	1 1/8	2 1/4



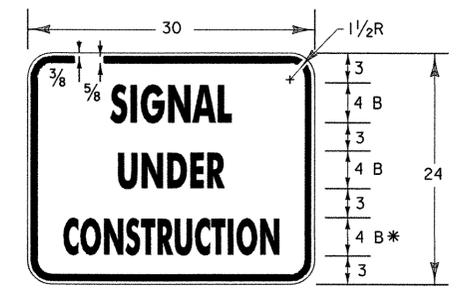
W3-3

SIGN	DIMENSIONS (INCHES)							
	A	B	C	D	E	F	G	H
STD. & MIN.	36	5/8	7/8	5 3/4	15 3/4	4 1/4	10	2 1/4
SPECIAL	48	3/4	1 1/4	7 1/2	20	5	12 1/2	3

COLORS

SYMBOL & LEGEND - BLACK (NON-REFL)
BACKGROUND - ORANGE (REFL)

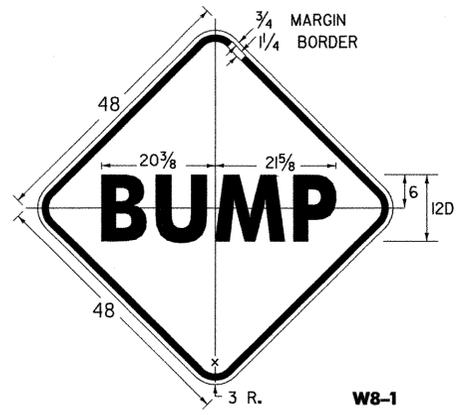
TOP CIRCLE RED (REFL)
MIDDLE CIRCLE YELLOW (REFL)
BOTTOM CIRCLE GREEN (REFL)



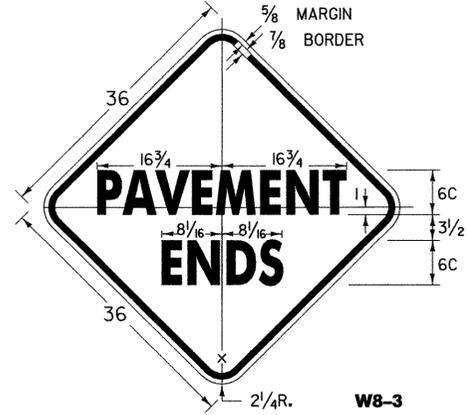
* REDUCE SPACING 50%

SIGN	DIMENSIONS (INCHES)												
	A	B	C	D	E	F	G	H	J	K	L	M	
STD. & MIN.	36	5/8	7/8	17 1/16	4 1/32	5 1/4	1 1/4	3 5/8	4 1/2	12 5/32	1 7/32	2 1/4	
SPECIAL	48	3/4	1 1/4	23 3/16	5 5/8	7	1 5/8	4 7/8	6	16 5/8	2 3/16	3	

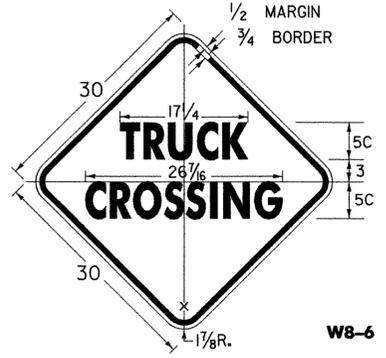
SIGN	DIMENSIONS (INCHES)															
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	
STD. & MIN.	36	5/8	7/8	4 2/32	2 1/4	7 1/2	5 3/2	5 1/4	16 7/8	12 3/8	7 7/8	5 1/4	1 1/16	3 15/16	2 1/4	
SPECIAL	48	3/4	1 1/4	6 5/16	3	10	3 1/16	7	22 1/2	16 1/2	10 1/2	7	2 1/4	5 1/4	3	



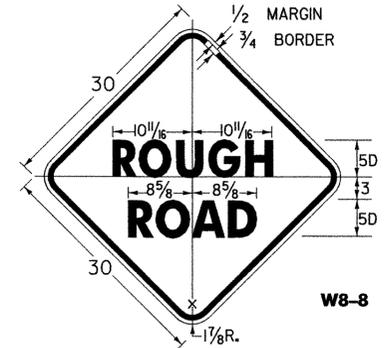
W8-1



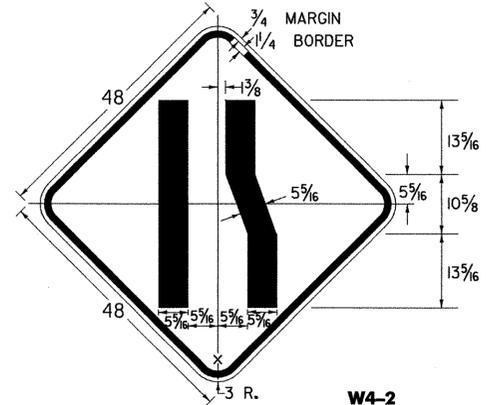
W8-3



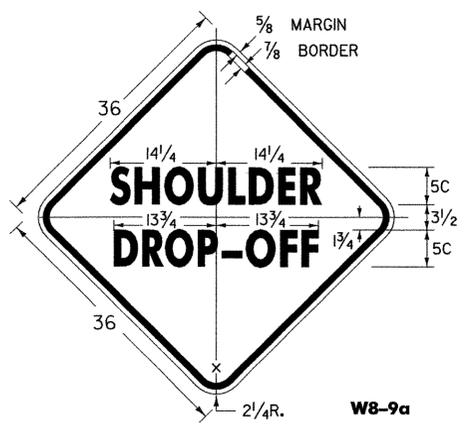
W8-6



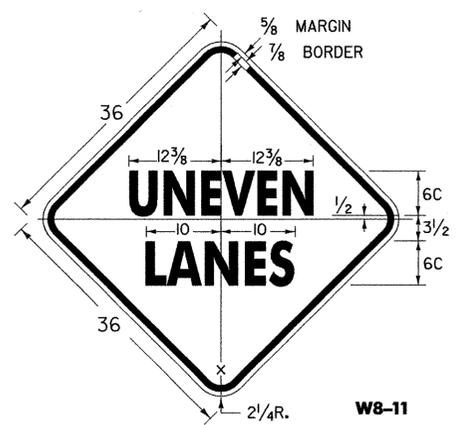
W8-8



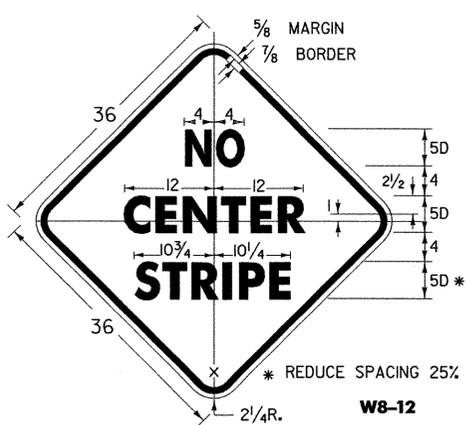
W4-2



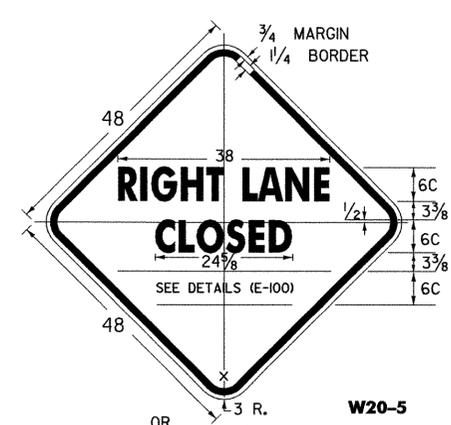
W8-9a



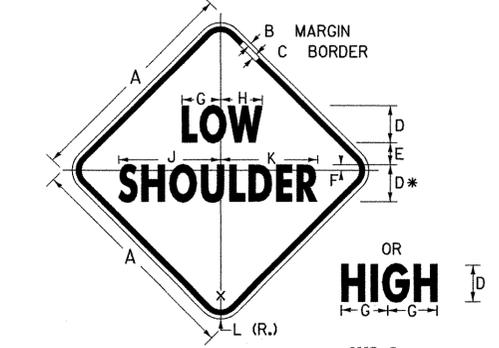
W8-11



W8-12



W20-5



W8-9

SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	J	K	L
STD.	30	1/2	3/4	5C	3	3/4	5 5/8	5 5/8	13 11/16	13 1/16	1 7/8
FWY.	48	3/4	1 1/4	8C	5	1 1/4	8 1/4	9	21 5/8	20 3/8	3

* REDUCE SPACING 25%

NOTES

SEE STANDARD SHEET E-100 FOR NOTES AND TEXT DETAILS
COLORS FOR SIGNS SHOWN ON THIS SHEET SHALL BE BLACK TEXT,
BORDER AND SYMBOLS ON ASTM TYPE III OR TYPE VI
RETROREFLECTORIZED ORANGE BACKGROUND, UNLESS OTHERWISE NOTED.

(ALL DIMENSIONS SHOWN IN INCHES) LEFT LANE

OTHER STDS. E-100
REQUIRED:

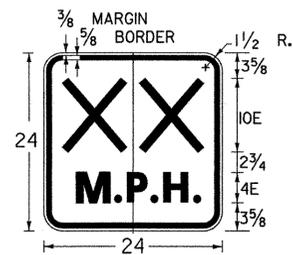
REVISIONS AND CORRECTIONS
OCT. 30, 1987 - DATE OF ORIGINAL ISSUE
OCT. 21, 1992 - ADDED ADDITIONAL SIGN DIMENSIONS,
REVISED CHEVRON BACKGROUND TO ORANGE,
& REVISED TITLE BLOCK
AUG. 08, 1995 - ADDED AND DELETED VARIOUS
SIGN DETAILS
MAR., 10 1997 - REVISED SIGN DETAILS
MAY 30, 2003 - CHANGED REFLECTIVE SHEETING TO ASTM
TYPE III OR TYPE VI

APPROVED
John H. Kell
DIRECTOR OF PROGRAM DEVELOPMENT
TRAFFIC OPERATIONS ENGINEER
Michael
FEDERAL HIGHWAY ADMINISTRATION

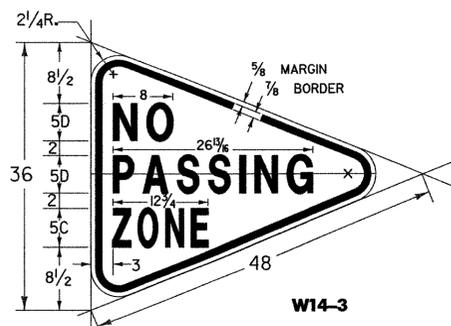
CONSTRUCTION SIGN
DETAILS



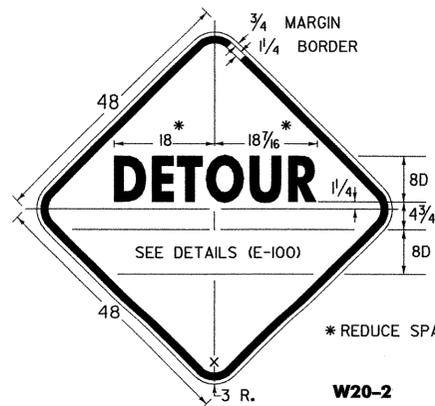
STANDARD
E-101



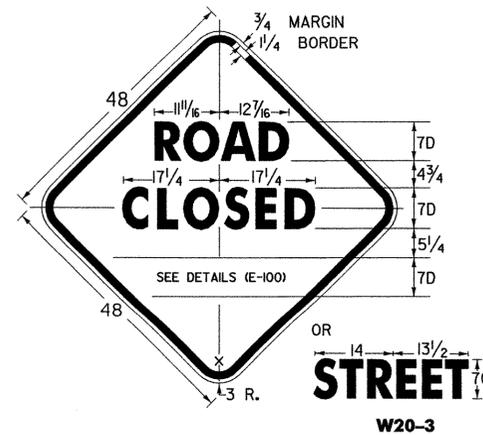
W13-1
XX DENOTES ADVISORY SPEED AS SHOWN ON THE PLANS



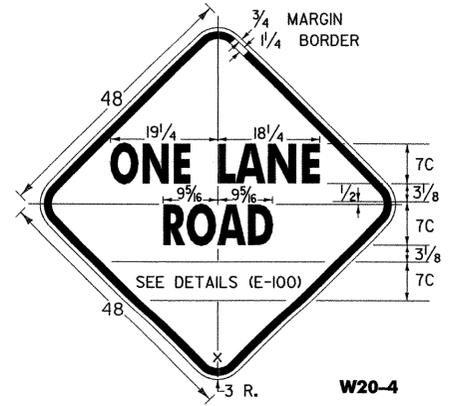
W14-3



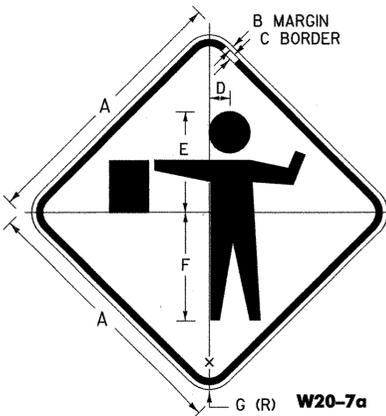
W20-2



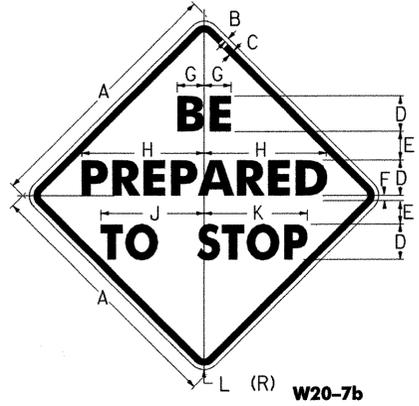
W20-3



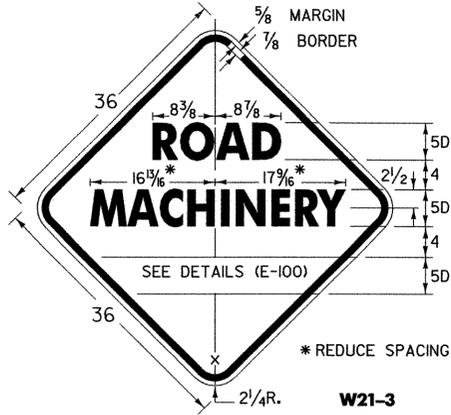
W20-4



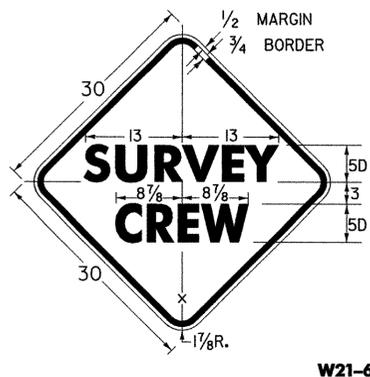
W20-7a



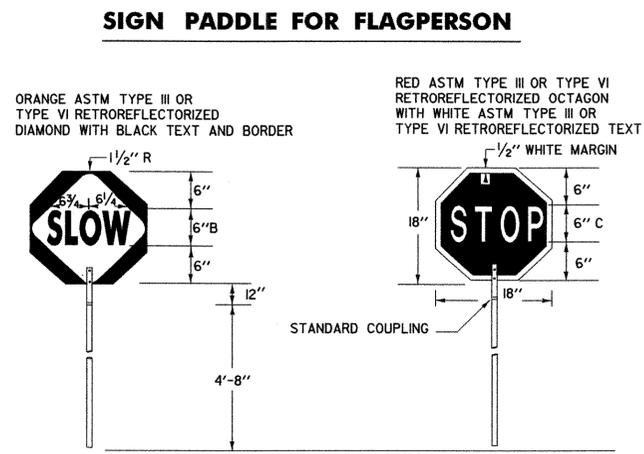
W20-7b



W21-3



W21-6



SIGN PADDLE FOR FLAGPERSON

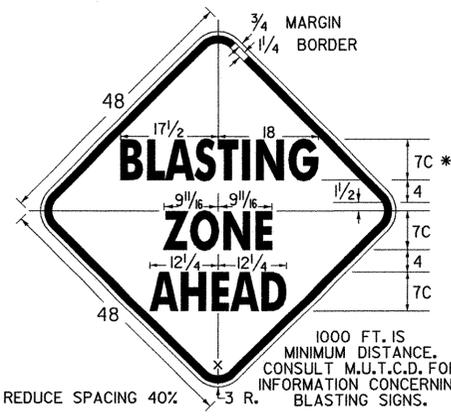
SIGN	DIMENSIONS (INCHES)						
	A	B	C	D	E	F	G
STD.	36	5/8	7/8	2 3/4	13 1/2	14 5/8	2 1/4
FWY.	48	3/4	1 1/4	3 3/4	18	19 1/2	3

COLORS:
BLACK BORDER AND TEXT (NON RETRORFL.)
ORANGE BACKGROUND (RETRORFL.)

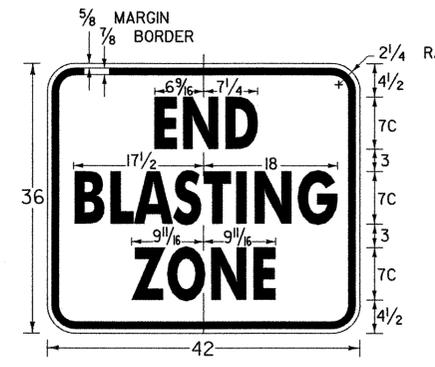
W3-4

COLORS:
BLACK BORDER AND TEXT (NON RETRORFL.)
YELLOW BACKGROUND (RETRORFL.)

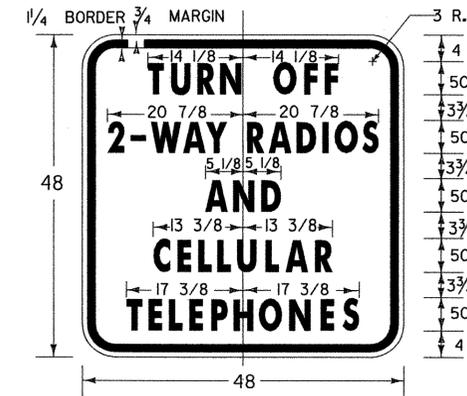
SIGN	DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	L	
MIN.	36	5/8	7/8	6C	3 3/8	7/8	3 3/4	16 3/8	13	13 3/8	2 1/4	
STD.	48	3/4	1 1/4	8C	4 7/8	1 1/4	5	21 7/8	17 3/8	18 1/2	3	
EXPWY.	60	3/4	1 1/4	9C	5 5/8	1 3/8	5 5/8	24 3/4	19 3/8	20 1/4	3	



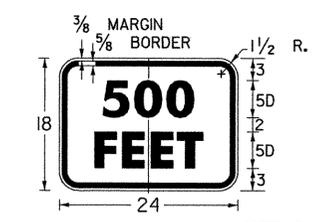
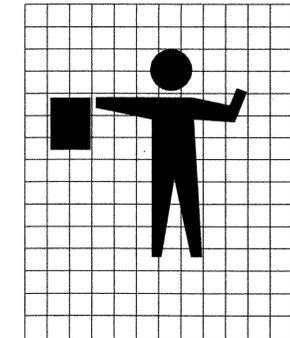
W22-1



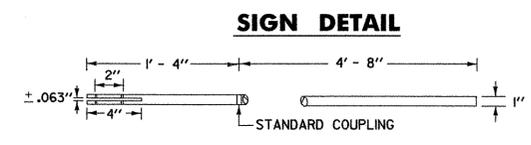
W22-3



VW22-1



W16-2a



STAFF DETAIL

MATERIALS
THE SIGN MATERIALS SHALL BE 0.063" ALUMINUM WITH COLORS AS INDICATED ON DETAILS.
THE STAFF SHALL BE 3/4" TO 1 1/4" DIAMETER RIGID ALUMINUM CONDUIT/TUBING WITH A WALL THICKNESS OF 0.125", OR 1" TO 1 1/2" DIAMETER RIGID PVC CONDUIT/TUBING WITH 0.125" WALL THICKNESS

MOUNTING
THE STAFF SHALL BE MOUNTED WITH EITHER TWO 1/4" DIAMETER ALUMINUM BOLTS OR TWO 1/4" DIAMETER ALUMINUM RIVETS.

NOTES

SEE STANDARD SHEET E-100 FOR NOTES AND TEXT DETAILS
COLORS FOR SIGNS SHOWN ON THIS SHEET SHALL BE BLACK TEXT, BORDER AND SYMBOLS ON ASTM TYPE III OR TYPE VI RETROREFLECTORIZED ORANGE BACKGROUND, UNLESS OTHERWISE NOTED
SIGN DETAILS INDICATE THE APPROPRIATE COLOR.

OTHER STDS. E-100 REQUIRED:
NOTE: ALL DIMENSIONS SHOWN IN INCHES EXCEPT WHERE NOTED

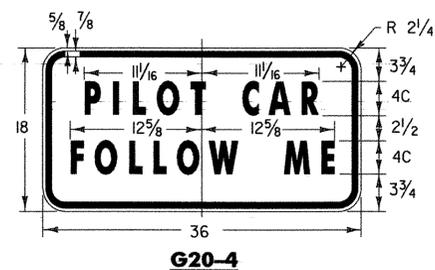
REVISIONS AND CORRECTIONS
OCT. 30, 1987 - DATE OF ORIGINAL ISSUE
JAN. 23, 1989 - DELETE MOTORCYCLE SYMBOL SIGN AND SPEED SIGN, ADDED TWO SIGNS
OCT. 21, 1992 - ADDED A SIGN, REVISED A SIGN DIMENSION & TYPE ERROR & REVISED TITLE BLOCK
AUG. 08, 1995 - ADDED FLAGGER GRID
JUNE 30, 2003 - CHANGED REFLECTIVE SHEETING TO ASTM TYPE III OR TYPE VI CHANGED TEXT ON W20-7b SIGN

APPROVED
[Signature]
DIRECTOR OF PROGRAM DEVELOPMENT
[Signature]
TRAFFIC OPERATIONS ENGINEER
[Signature]
FEDERAL HIGHWAY ADMINISTRATION

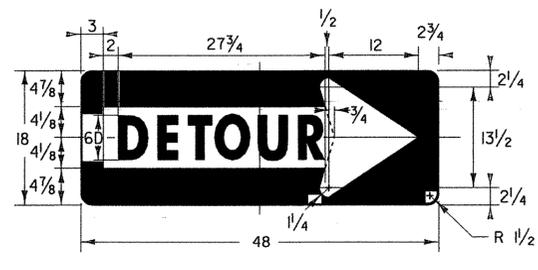
CONSTRUCTION SIGN
DETAILS



STANDARD
E-102



G20-4

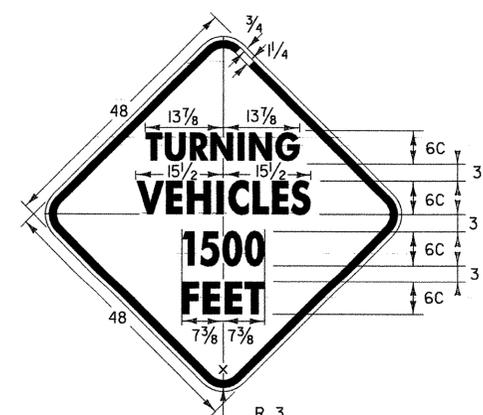


M4-10(R)

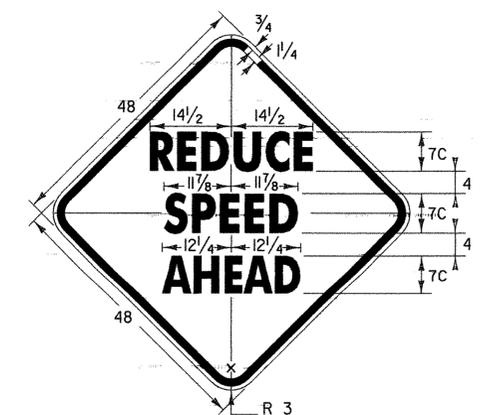


R11-2

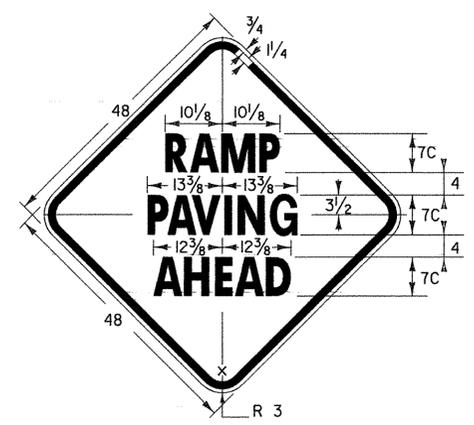
COLORS:
BLACK TEXT AND BORDER
WHITE RETROREFLECTORIZED BACKGROUND



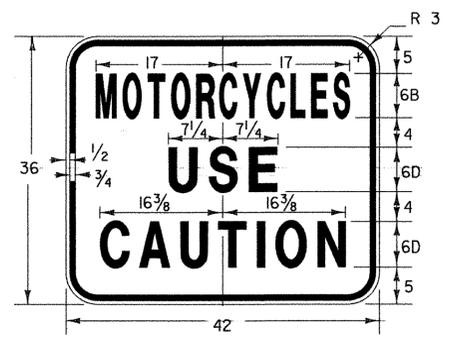
VC-001



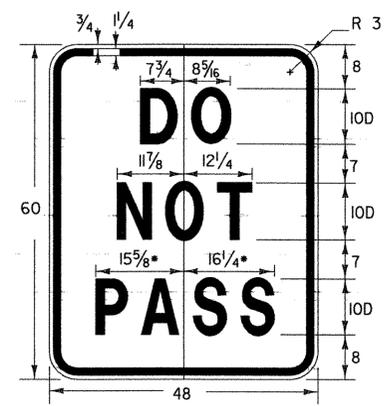
VC-002



VC-003

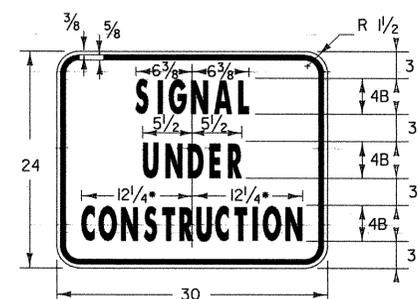


VC-004



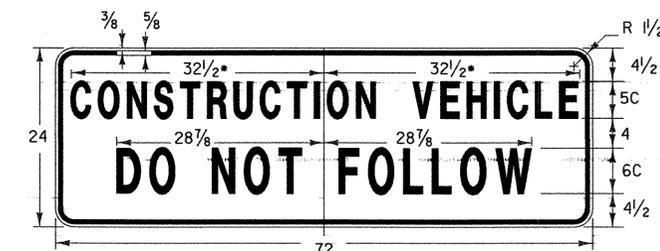
VC-005

* REDUCE SPACING BY 40%



VC-820

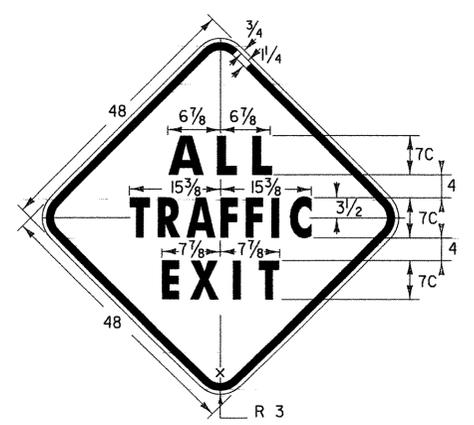
* REDUCE SPACING 25%



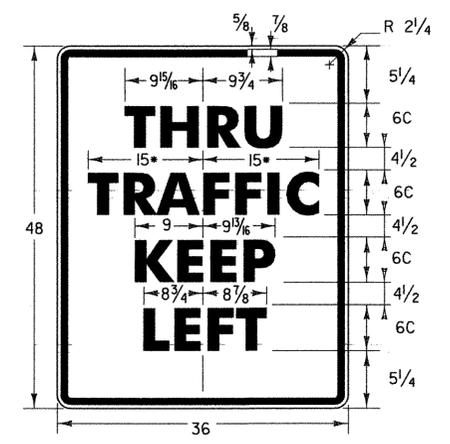
VC-007

* REDUCE SPACING 20%

IT IS SUGGESTED THAT THIS SIGN BE DESIGNED TO FOLD, (DOWN OR ACROSS), BE COVERED, OR BE REMOVED WHEN NOT IN USE. THE SIGN SHOULD ALSO BE MOUNTED AS TO NOT INTERFERE WITH THE VISIBILITY OF DIRECTIONAL OR TAIL LIGHTS AS REQUIRED BY LAW.



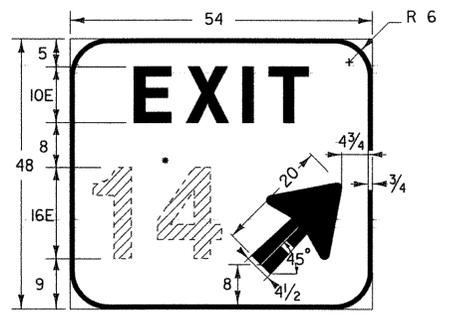
VC-008



VR-118L

* REDUCE SPACING 25 %

COLORS:
BLACK TEXT AND BORDER
WHITE (RETROREFLECTORIZED) BACKGROUND



E5-1a

* EXIT NUMBER AS PER PLANS OPTICALLY SPACED
COLORS:
WHITE RETROREFLECTORIZED BORDER, ARROW AND LEGEND
GREEN RETROREFLECTORIZED BACKGROUND

(ALL DIMENSIONS SHOWN IN INCHES EXCEPT WHERE NOTED)

NOTES

SEE STANDARD SHEET E-100 FOR NOTES AND TEXT DETAILS

COLORS FOR SIGNS SHOWN ON THIS SHEET SHALL BE BLACK TEXT, BORDER AND SYMBOLS ON ASTM TYPE III OR TYPE VIII RETROREFLECTIVE ORANGE BACKGROUND, UNLESS OTHERWISE NOTED.

SIGN DETAILS INDICATE THE PROPER COLOR.

OTHER STDS. E-100, E-151 REQUIRED:

REVISIONS AND CORRECTIONS
AUG 08, 1995 - DATE OF ORIGINAL ISSUE
MAY 01, 2004 - CHANGED REFLECTIVE SHEETING TO TYPE III

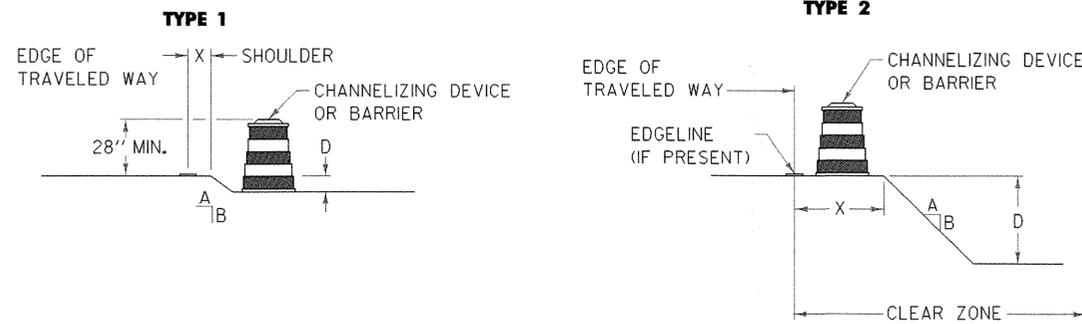
APPROVED
DIRECTOR OF PROGRAM DEVELOPMENT
TRAFFIC OPERATIONS ENGINEER
FEDERAL HIGHWAY ADMINISTRATION

CONSTRUCTION SIGN
DETAILS



STANDARD
E-102A

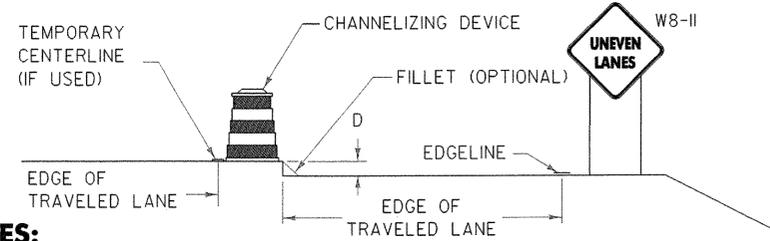
DROP-OFF ADJACENT TO TRAVELED WAY



NOTES:

- CHANNELIZING DEVICES OR BARRIER SHOULD BE PLACED TO MAXIMIZE THE WIDTH OF THE TRAVELED WAY.
- FOR SPECIFIC REQUIREMENTS USE CHART "A".
- IF THE DROP-OFF REQUIRES CHANNELIZING DEVICES TO REMAIN IN PLACE OVERNIGHT THEN "LOW SHOULDER" (W8-9) OR "SHOULDER DROP OFF" (W8-9A) SIGNS SHOULD BE INSTALLED.

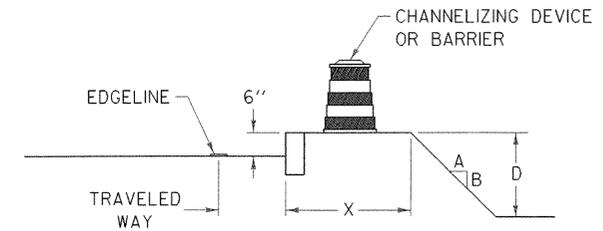
DROP-OFF BETWEEN ADJACENT TRAVELED LANE



NOTES:

- WHENEVER A LONGITUDINAL DROP-OFF BETWEEN ADJACENT TRAVELED LANES IS TO BE LEFT OVERNIGHT THEN "UNEVEN LANES" (W8-II) SIGNS AND CHANNELIZING DEVICES SHOULD BE INSTALLED.
- IF REQUIRED, THE CHANNELIZING DEVICES USED SHALL BE THOSE WHICH MAXIMIZE THE TRAVELED LANE (I.E. CONES, VERTICAL PANELS OR TUBULAR MARKERS).
- A BITUMINOUS CONCRETE FILLET WITH A 1.5:1 SLOPE MAY BE USED IN PLACE OF CHANNELIZING DEVICES, HOWEVER THE "UNEVEN LANES" (W8-II) SIGNS SHOULD BE INSTALLED REGARDLESS.
- FOR SPECIFIC REQUIREMENTS USE CHART "A".

DROP-OFF BEYOND SHOULDER OR CURB



NOTES:

- CHANNELIZING DEVICES OR BARRIER SHOULD BE PLACED TO MAXIMIZE THE WIDTH OF THE TRAVELED WAY.
- FOR SPECIFIC REQUIREMENTS USE CHART "A" OR "B" AS APPLICABLE.

CHART "A"

ALL SPEEDS WITH NO CURB

X (FEET)	DROP (D) (INCHES)	A/B SLOPE	DEVICE REQUIRED
0 TO 4'	LESS THAN 2"	ANY	NONE
	2" TO 6"	1.5:1 OR FLATTER	NONE
		STEEPER THAN 1.5:1	CHANNELIZING DEVICE
GREATER THAN 6"	3:1 OR FLATTER	3:1 OR FLATTER	NONE
		STEEPER THAN 3:1	BARRIER/CHANNELIZING DEVICE
4' TO 10'	LESS THAN 6"	ANY	NONE
	6" TO 12"	3:1 OR FLATTER	NONE
		STEEPER THAN 3:1	BARRIER/CHANNELIZING DEVICE
GREATER THAN 12"	3:1 OR FLATTER	3:1 OR FLATTER	NONE
		STEEPER THAN 3:1	BARRIER/CHANNELIZING DEVICE
10' TO CZ	LESS THAN OR EQUAL TO 12"	ANY	NONE
	GREATER THAN 12"	3:1 OR FLATTER	NONE
		STEEPER THAN 3:1	BARRIER

NOTES:

- THE MINIMUM CLEAR ZONE FOR FREEWAYS IS TO BE DETERMINED PER THE CURRENT "AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS" (AASHTO) ROADSIDE DESIGN GUIDE. ALL OTHER HIGHWAYS WILL BE DETERMINED PER THE CURRENT "VERMONT STATE STANDARDS" BOOK.
- CHANNELIZING DEVICES MAY BE USED INSTEAD OF BARRIER FOR SHORT TERM (ONE-DAY) OPERATIONS.
- ON BORDERLINE CONDITIONS, THE ENGINEER SHOULD DETERMINE WHICH TREATMENT IS ADEQUATE FOR THE EXISTING CONDITIONS.

CHART "B"

40 MPH OR LESS WITH CURB

X (FEET)	DROP (D) (INCHES)	DEVICE REQUIRED
0-10'	LESS THAN OR EQUAL TO 12"	NONE
0-10'	GREATER THAN 12"	CHANNELIZING DEVICE
GREATER THAN 10'	ANY	NONE

NOTES:

- USE THIS CHART FOR DROP-OFF BEYOND SHOULDER OR CURB.
- USE THIS CHART FOR VERTICAL CURBS OF SIX INCHES OR GREATER. FOR LOWER OR MOUNTABLE CURBS USE CHART "A".
- FOR CURBED SECTIONS WITH POSTED SPEED ABOVE 40 MPH, USE CHART "A".

GENERAL NOTES:

- THESE CONDITIONS AND TREATMENTS ARE ONLY PART OF THE TRAFFIC CONTROL SYSTEM AND SHOULD BE USED IN ADDITION TO THE PROPER WORK ZONE SIGNING.
- THE FOLLOWING ARE ACCEPTABLE CHANNELIZING DEVICES:
 - A. VERTICAL PANEL
 - B. TYPE I OR TYPE II BARRICADE
 - C. PLASTIC DRUM
 - * D. CONE - WHERE APPLICABLE
 - E. TUBULAR MARKERS (MUTCD)

* IF CHANNELIZING DEVICES ARE REQUIRED TO REMAIN IN PLACE DURING NIGHTTIME HOURS, CONES SHALL BE A MINIMUM OF 36 INCHES HIGH.
- WHERE BARRIER IS CALLED FOR, EITHER CONCRETE BARRIER (JERSEY SHAPE), STEEL BEAM GUARDRAIL OR OTHER FEDERAL HIGHWAY ADMINISTRATION (FHWA) APPROVED BARRIER MAY BE USED.

BARRIER ENDS FACING ONCOMING TRAFFIC SHALL BE TAPERED BEYOND THE CLEAR ZONE OR PROTECTED WITH AN APPROVED END TREATMENT DESIGNED FOR THE POSTED SPEED LIMIT OF THE ROADWAY.
- CHANNELIZING DEVICE SPACING ALONG A LONGITUDINAL DROP-OFF (TANGENT) SHALL BE AS FOLLOWS:

TANGENT - CHANNELIZING DEVICES SHALL BE SPACED "2S" ("S" IS THE POSTED SPEED LIMIT IN FEET) APART.
- "LOW SHOULDER" (W8-9), "SHOULDER DROP OFF" (W8-9A) OR "UNEVEN LANES" (W8-II) SIGNS, WHEN USED, SHOULD BEGIN PRIOR TO THE DROP-OFF CONDITION AND SHOULD BE REPEATED EVERY 1500 FEET.
- USE CHART "A" FOR DROP OFFS CREATED BY PROJECT ACTIVITIES.

OTHER STDS. REQUIRED: E-101, E-106, E-107, E-107A

REVISIONS AND CORRECTIONS
 SEPT. 20, 1993- ORIGINAL APPROVAL DATE
 AUG. 18, 1995 - ADDED SHOULDER WARNING NOTE
 DEC. 8, 2008 - GENERAL UPDATE
 JUN. 8, 2009 - MINOR REVISIONS

APPROVED

 HIGHWAY, SAFETY & DESIGN ENGINEER

 DIRECTOR OF PROGRAM DEVELOPMENT

 FEDERAL HIGHWAY ADMINISTRATION

**CONSTRUCTION ZONE
 LONGITUDINAL DROP OFFS**

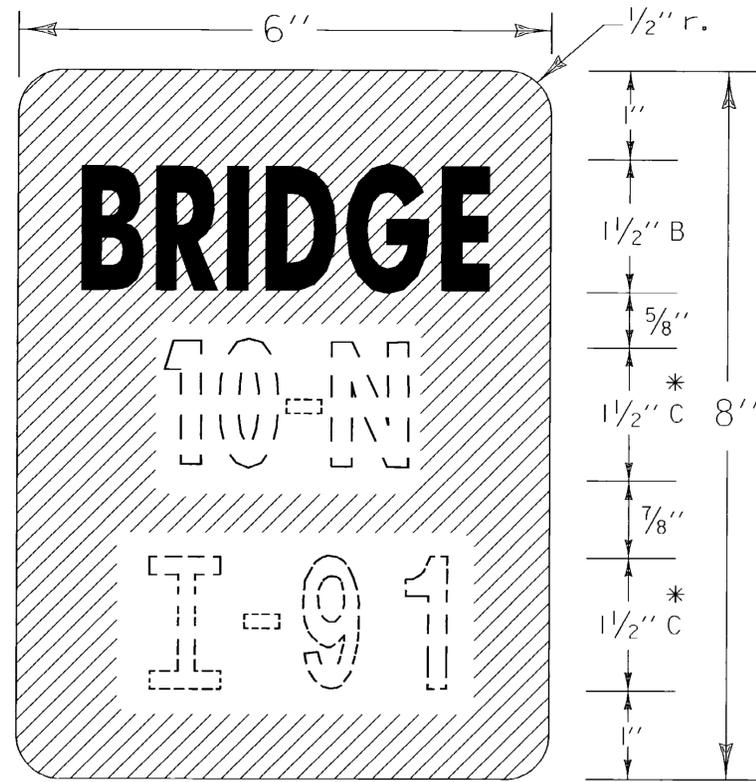
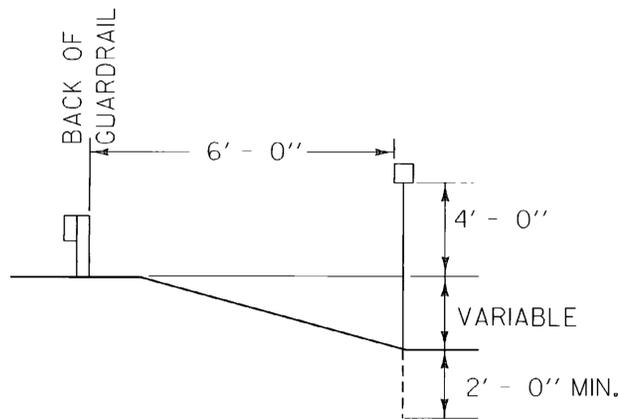
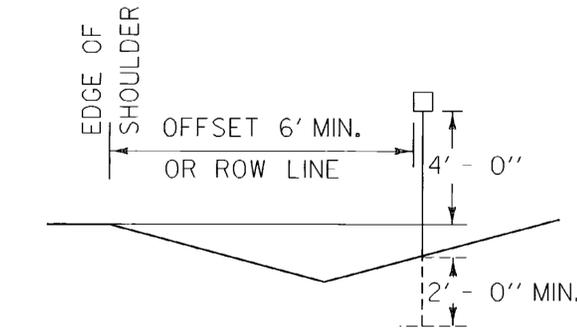


**STANDARD
 E-108**

I-91
 ← 2" →

HYPHENATED WORD DETAIL

FOR EXAMPLE, ROUTE NUMBERS
 SHALL APPEAR AS: I-91, US5, VT22



VD-701

* OPTICALLY SPACE BRIDGE
 AND ROUTE NUMBERS.
 SERIES B LETTERS MAY
 BE USED TO MAINTAIN
 VISUAL INTEGRITY.

NOTES:

- GENERAL:
 DOTTED LINES AND NUMERALS INDICATE TEXT THAT VARIES.
- PAYMENT:
 BRIDGE PLAQUES SHALL BE PAID AS TRAFFIC SIGNS, TYPE "A",
 AND POSTS PAID AS FLANGED CHANNEL STEEL SIGN POSTS.
- MATERIAL:
 THE SIGN BASE MATERIAL SHALL BE 0.04" FLAT SHEET ALUMINUM.
- COLORS:
 THE SIGN SHALL HAVE A REFLECTORIZED WHITE TEXT ON REFLECTORIZED
 GREEN BACKGROUND. THE COLORS SHALL CONFORM WITH THOSE FOUND
 IN STANDARD COLOR TOLERANCE CHARTS AS APPROVED BY THE U.S.
 DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.
- LETTERING:
 LETTERS AND DIGITS SHALL CONFORM WITH THE STANDARD ALPHABETS
 FOR HIGHWAY SIGNS AS PRINTED BY THE FEDERAL HIGHWAY ADMINISTRATION.
- POSTS:
 FLANGED CHANNEL STEEL 2"/FT POSTS SHALL BE USED WHEN THE POST LENGTH
 EXCEEDS 7 FEET. FOR LENGTH OF 7 FEET OR LESS, A 1.12"/FT STEEL SIGN POST
 SHALL BE USED.

**OTHER STDS.
 REQUIRED:**

REVISIONS AND CORRECTIONS

DEC. 17, 1989 - DATE OF ORIGINAL ISSUE
 AUG. 08, 1995 - MISC NOTE REVISIONS

APPROVED

Gordon J. MacArthur
 DIRECTOR OF ENGINEERING

David A. Ross
 TRAFFIC AND SAFETY ENGINEER

BRIDGE NUMBER PLAQUE

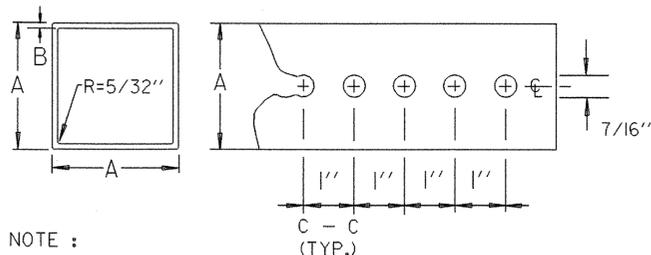


**STANDARD
 E-134**

APPROVED FOR THIS PROJECT
 AND/OR DESIGN IMPLEMENTATION.
 FHWA FINAL APPROVAL PENDING.

GUARDRAIL DEFLECTION CHART (PER AASHTO - ROADSIDE DESIGN GUIDE - LATEST EDITION)		
TYPE	GR POST SPACING	DEFLECTION
THREE CABLE W/STEEL POSTS	16' - 0"	11" - 6"
W/WOODEN POSTS	12' - 6"	11" - 6"
W-BEAM W/STRONG POST	6' - 3"	3'
BOX BEAM	6' - 0"	5'
THRIE BEAM W/STRONG POST	6' - 3"	2'

THIS CHART LISTS THE THEORETICAL MAXIMUM DEFLECTION DISTANCE, UPON IMPACT, OF DIFFERENT TYPES OF GUARDRAIL AND VARIOUS POST SPACINGS.



NOTE :

THE POSTS SHALL BE CAREFULLY FORMED OF STEEL WITH A MINIMUM YIELD OF 55,000 PSI, INTO A SIZE AND SHAPE WITH CORNERS INDUCTION WELDED IN SUCH A MANNER THAT NEITHER FLASH NOR WELD SHALL INTERFERE WITH THE TELESCOPING PROPERTIES, NOR DAMAGE THE GALVANIZING.

* THE WALL THICKNESS TOLERANCES SHALL BE +.005" AND -.010" FOR THE 12 GAUGE.

* THE WALL THICKNESS TOLERANCES SHALL BE +.002" AND -.008" FOR THE 14 GAUGE.

DIMENSION DETAILS AND POST SELECTION CHART

POST SELECTION CHART								
SIGN AREA (FT ²) X H (FT) ≤ SV (SELECTION VALUE)								
POST SIZE LBS./FT.	DIMENSIONS			SECTION MODULUS IN ³	ONE POST S _v	TWO POST S _v	THREE POST S _v	NUMBER PERMITTED IN 8' PATH
	A	*B	GAUGE					
1.88	1-3/4"	.083	14	0.230	46	92	138	TWO
2.42	2"	.083	12	0.380	77	154	231	TWO
3.35	2-1/2"	.105	12	0.642	130	260	390	ONE

DESIGN CRITERIA:

WIND SPEED = 70 MPH (10 -YEAR MEAN RECURRENCE INTERVAL)
WIND PRESSURE = 19 PSF
STEEL MINIMUM YIELD = 55,000 PSI
ALLOWABLE STRESS = (1.4) 0.60 FY

REVISIONS AND CORRECTIONS
APR. 27, 1994 - ORIGINAL APPROVAL DATE
JUL. 21, 1994 - REVISED POST GAUGES
AUG. 18, 1995 - ADDED TWO PIECE ANCHOR DETAIL
MAR. 26, 1996 - REVISED POST SELECTION CHART
MAY 20, 1999 - REPLACE LOST ORIGINAL
JUN. 08, 2009 - POST SELECTION REVISIONS

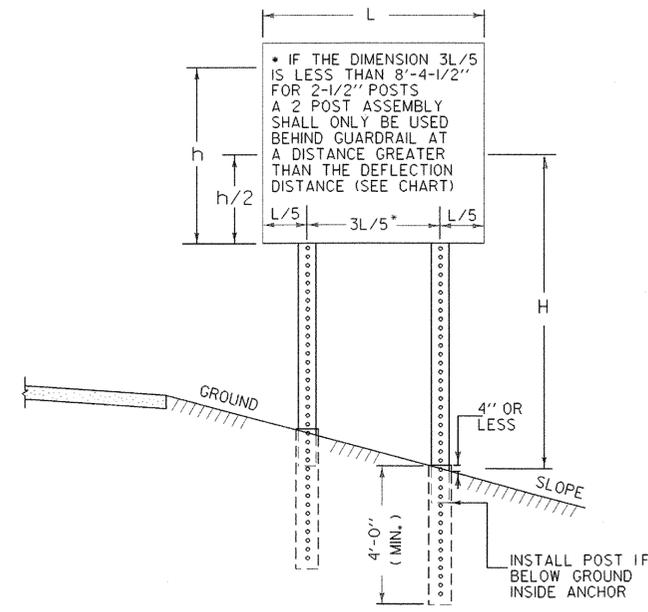
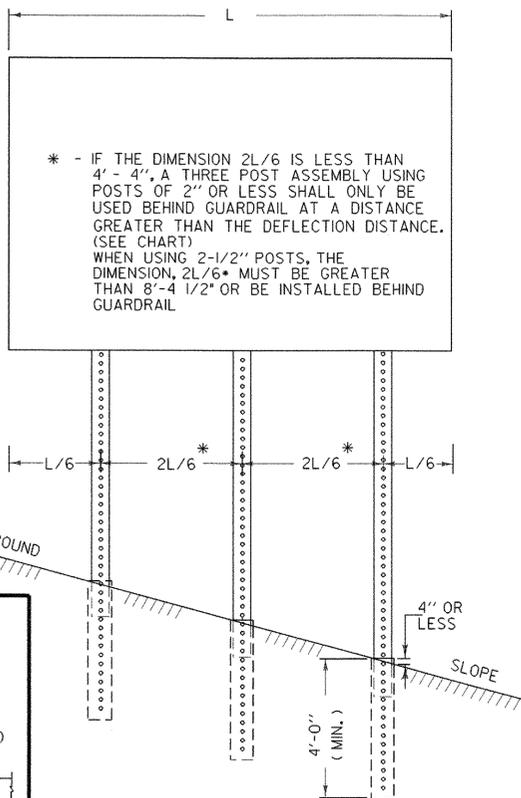
APPROVED

Kevin S. Maschie
HIGHWAY, SAFETY & DESIGN ENGINEER
Richard J. Peterson
DIRECTOR OF PROGRAM DEVELOPMENT
Mark B. Riedler
FEDERAL HIGHWAY ADMINISTRATION

SQUARE STEEL SIGN POST

/traf/english/std/e164.dgn

MULTI-POST INSTALLATIONS



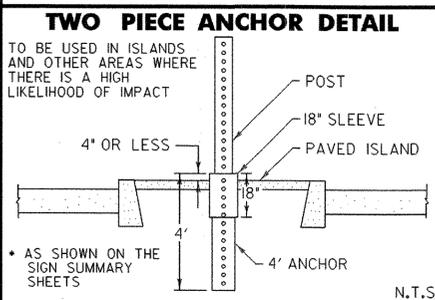
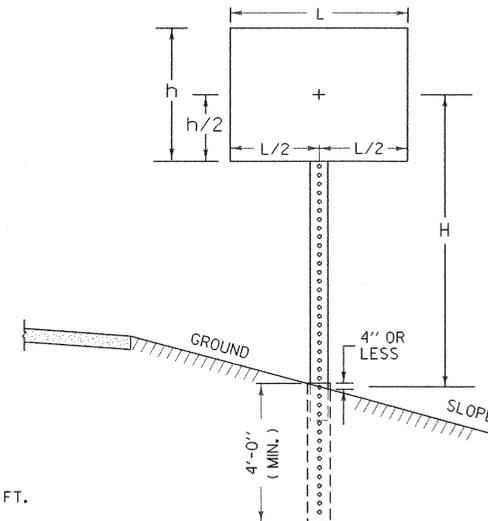
POST SPACING DETAILS

GENERAL NOTES

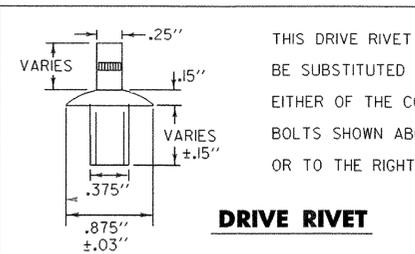
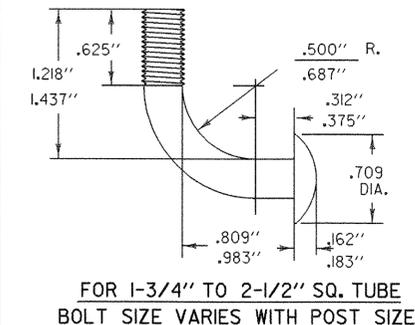
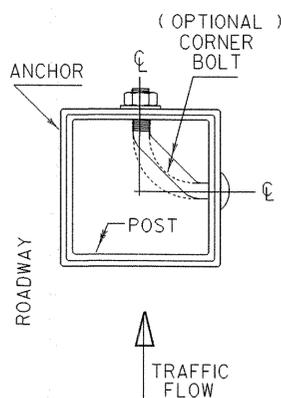
CONSTRUCTION METHODS - POSTS MAY BE DRIVEN OR SET IN A DUG HOLE AND BACKFILLED. IF DRIVEN, A DRIVING CAP SHALL BE USED. THE DUG HOLE INSTALLATION SHALL BE USED IN AREAS OF POOR SOIL CONDITIONS OR AS DIRECTED BY THE RESIDENT ENGINEER. BACKFILL SHALL BE COMPACTED AS DIRECTED BY THE RESIDENT ENGINEER.

SIGN CLEARANCES - HORIZONTAL AND VERTICAL SIGN CLEARANCES SHALL BE SHOWN ON THE PLANS OR THE APPROPRIATE STD. SHEETS.

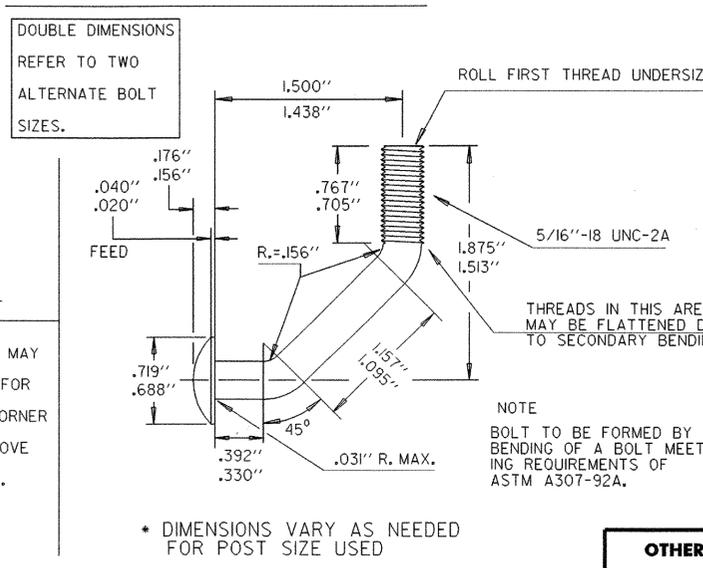
SINGLE POST INSTALLATIONS SHALL BE LIMITED TO A SIGN AREA OF 20 SQ. FT. OR LESS



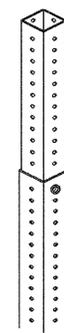
TOP VIEW OF ANCHOR, POST AND BOLT



OPTIONAL CORNER BOLT DETAILS



CONNECTION DETAIL

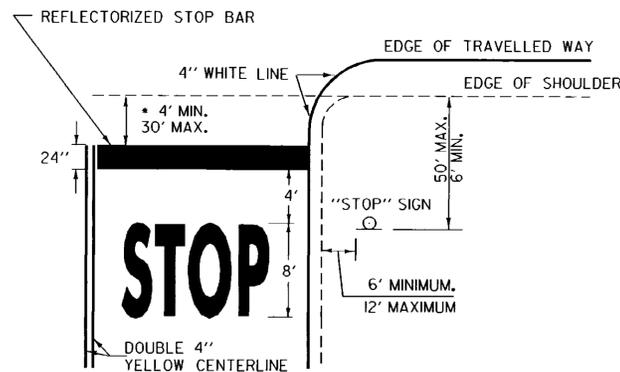


(SEE DETAIL LEFT FOR BOLT PLACEMENT)

OTHER STDS. REQUIRED E-120, E-160

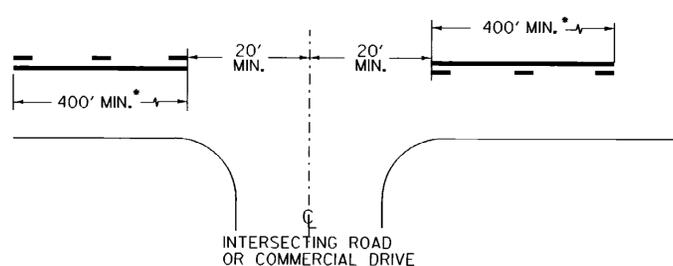


STANDARD
E-164



* THE "DESIRED STOPPING POINT" IS THE LOCATION BASED ON SITE CONDITIONS THAT BEST ALLOWS THE STOPPED VEHICLE TO VIEW THE APPROACHING TRAFFIC.

STOP BAR LAYOUT

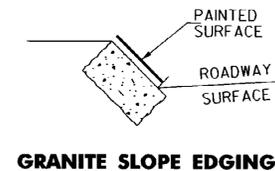


* THE SOLID LINE SHALL BE PAIRED WITH EITHER A SOLID OR DASHED LINE DEPENDING ON SIGHT DISTANCE AVAILABILITY IN THE OPPOSING DIRECTION. ADJUSTMENTS TO THE 40 FOOT CENTERLINE OPENING MAY BE MADE TO ACCOMMODATE SKEWED INTERSECTIONS.

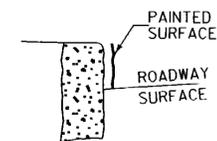
CENTERLINE BREAKS:

- A. AT ALL STATE HIGHWAYS AND TOWN HIGHWAYS, INCLUDING CLASS 4 TH'S, THAT HAVE STOP AND LEGAL LOAD LIMIT SIGNS INSTALLED
- B. COMMERCIAL DRIVES:
 - 1. WHERE A SEPERATE TURN LANE EXISTS ON THE MAIN LINE (LT. OR RT.)
 - 2. SIGNIFICANT TRAFFIC VOLUMES EXISTS.
 - 3. IF MOTORISTS NEED ASSISTANCE TO DEFINE ENTRANCE POINTS.

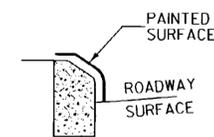
CENTERLINE LAYOUT



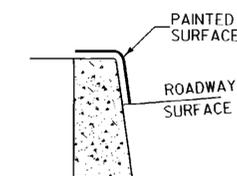
GRANITE SLOPE EDGING



VERTICAL GRANITE CURB

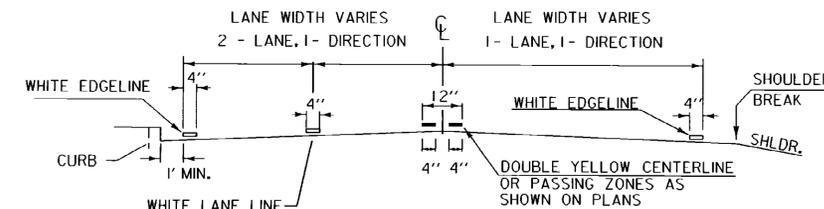


TYPE A (CONCRETE)

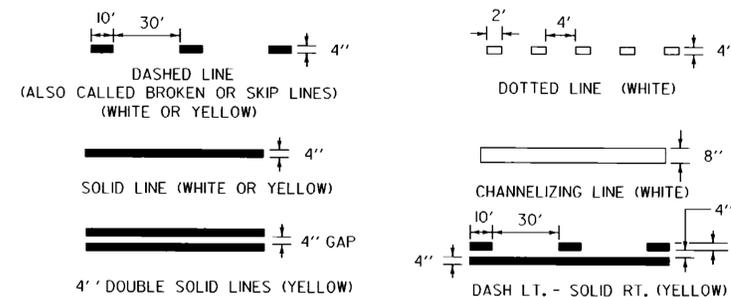


TYPE B (CONCRETE)

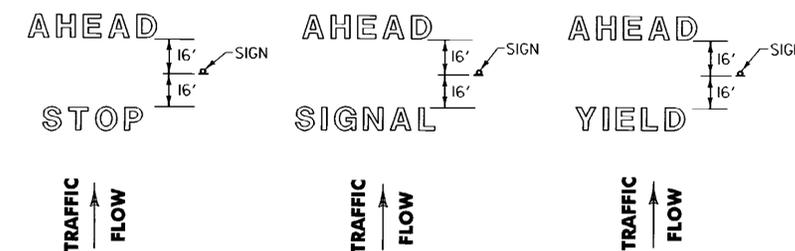
PAINTED CURB



PAVEMENT MARKING PLACEMENT DETAIL

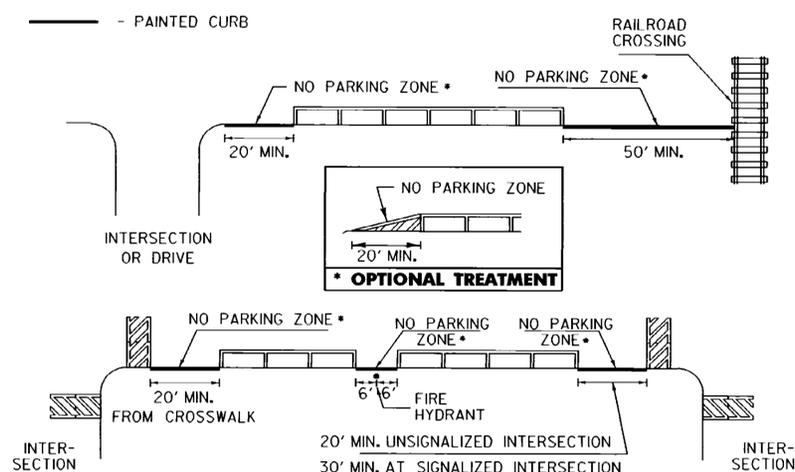


PAVEMENT MARKING LINE DETAILS

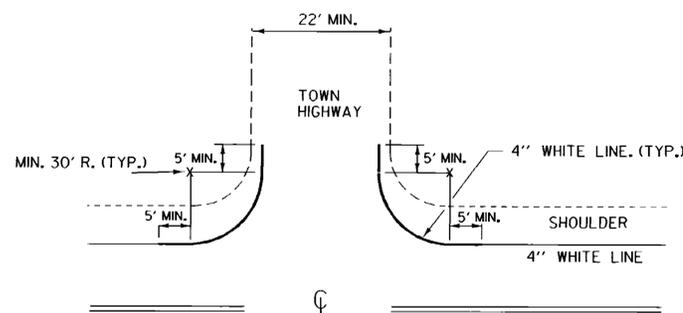


LETTER IN WORD MARKING SPACING DETAIL

NOTE: SINGLE WORDS CENTERED ON SIGN ie: SCHOOL OR YIELD



NO PARKING LAYOUT DETAILS

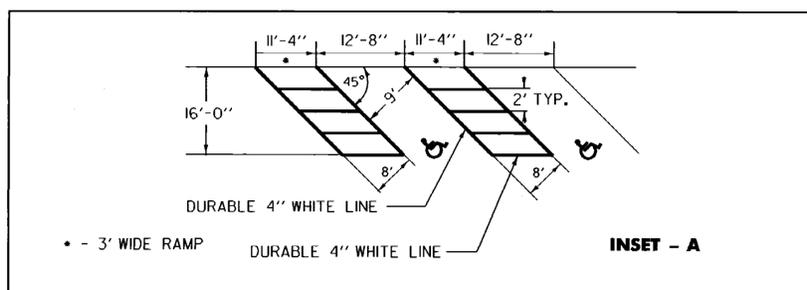


EDGE LINES SHALL BE APPLIED TO ALL STATE HIGHWAYS AND SHOULD BE MAINTAINED AT A CONSTANT DISTANCE FROM THE CENTERLINE UNLESS PAVEMENT WIDTH INCREASES TO ALLOW WIDER LANES.

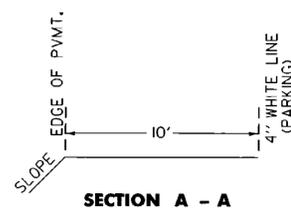
APPLY EDGE LINE AS DETAILED ON ALL PAVED CLASS 1 & CLASS 2 TOWN HIGHWAYS AND ANY CLASS 3 TOWN HIGHWAY 22 FEET OR MORE IN WIDTH.

IF MIN. 30 FOOT RADIUS CANNOT BE OBTAINED, OR THE TOWN HIGHWAY IS NOT PAVED, BREAK THE EDGE LINE USING AN 80 FOOT GAP AT INTERSECTION.

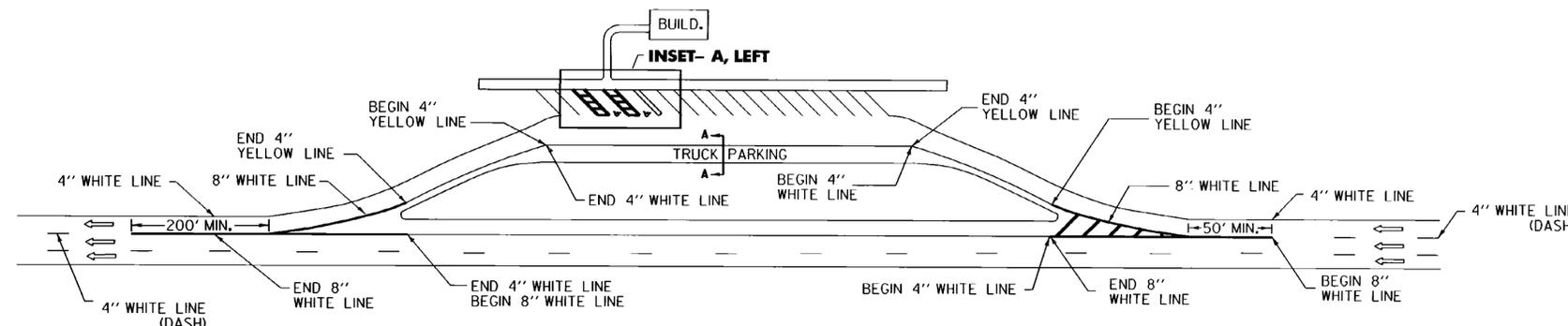
EDGE LINE LAYOUTS



NOTE: SEE STANDARD SHEET E-191 FOR HANDICAP SYMBOL POSITIONING AND DETAIL.



TRUCK PARKING DETAIL



REST AREA PARKING DETAILS

THIS SHEET IS NOT TO SCALE

OTHER STDS. E - 191, E - 192 REQUIRED

REVISIONS AND CORRECTIONS

AUG. 18, 1995 - DATE OF ORIGINAL ISSUE

APPROVED

Stephen S. McArthur
DIRECTOR OF ENGINEERING

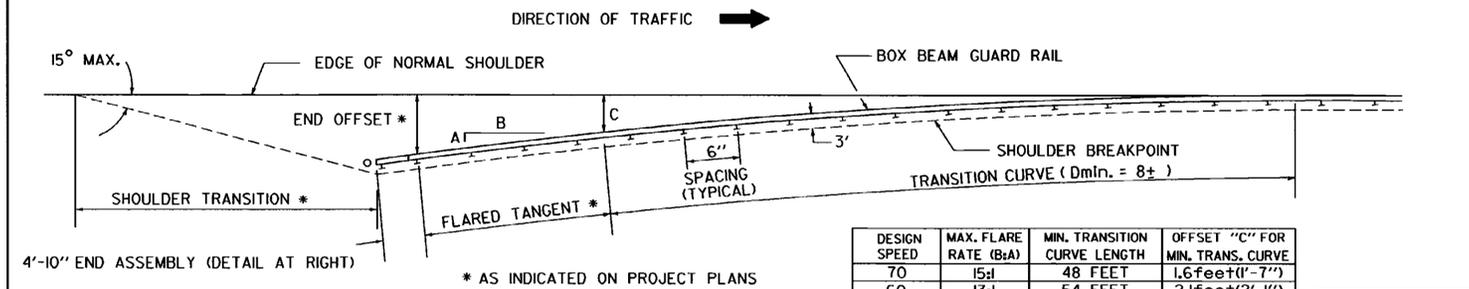
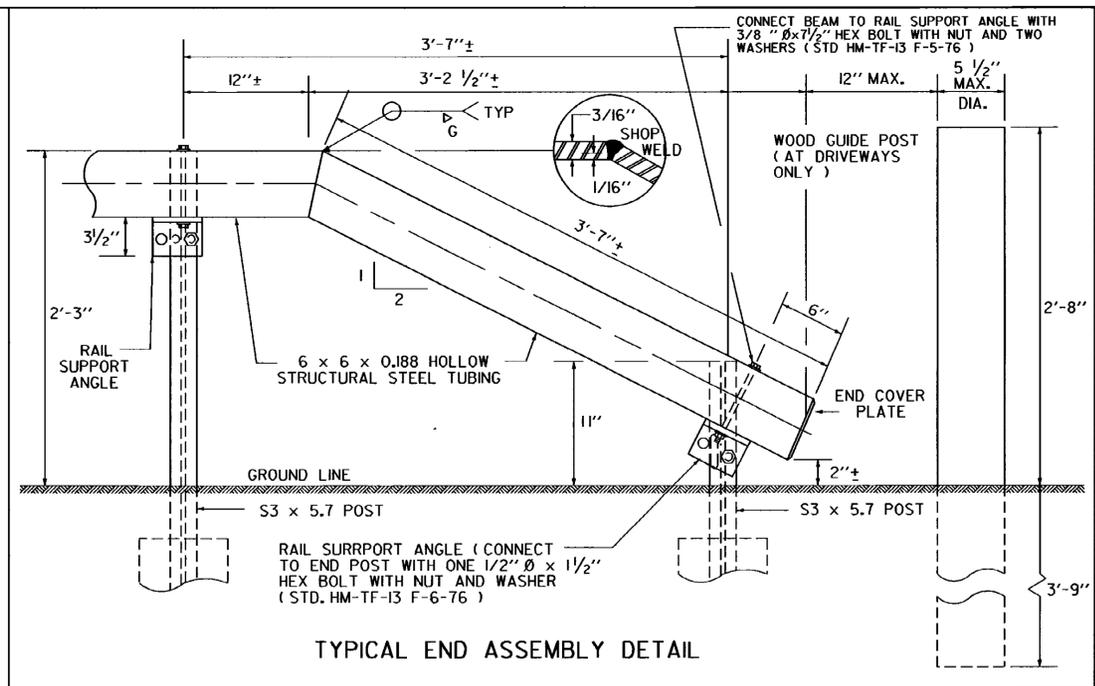
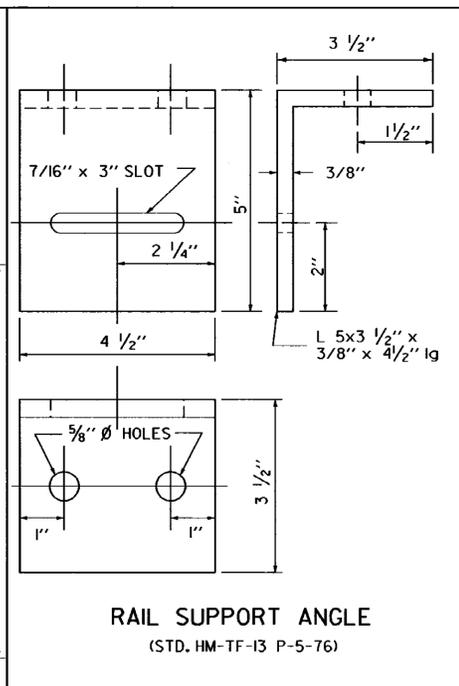
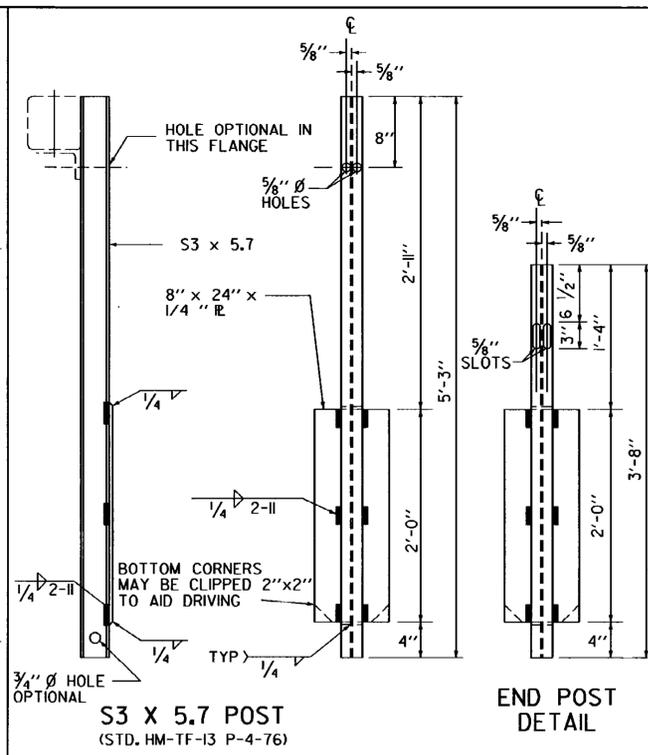
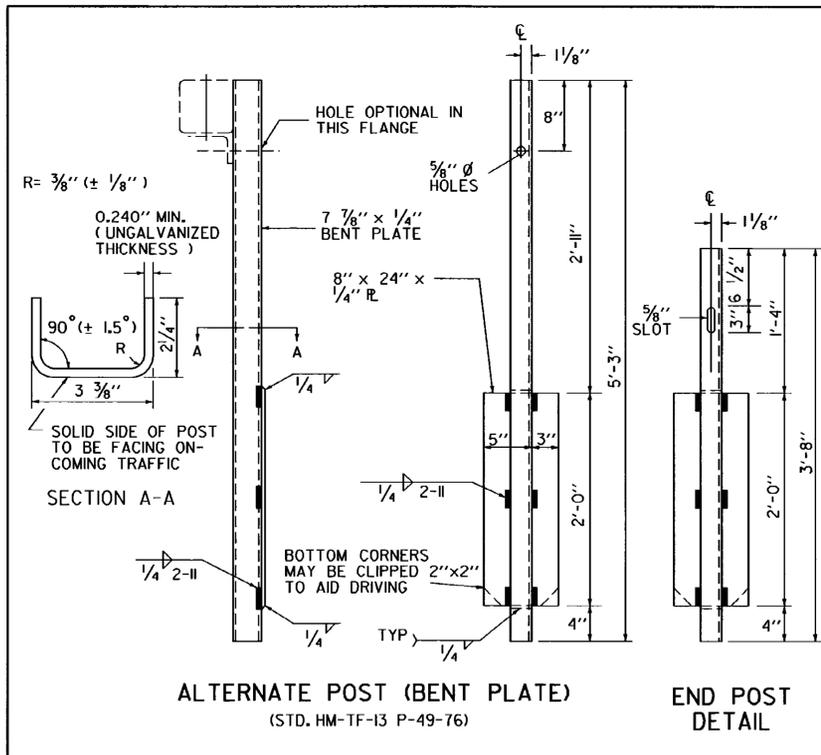
Daniel A. Ross
TRAFFIC AND SAFETY ENGINEER

APPROVED FOR THIS PROJECT AND/OR DESIGN IMPLEMENTATION. FHWA FINAL APPROVAL PENDING.

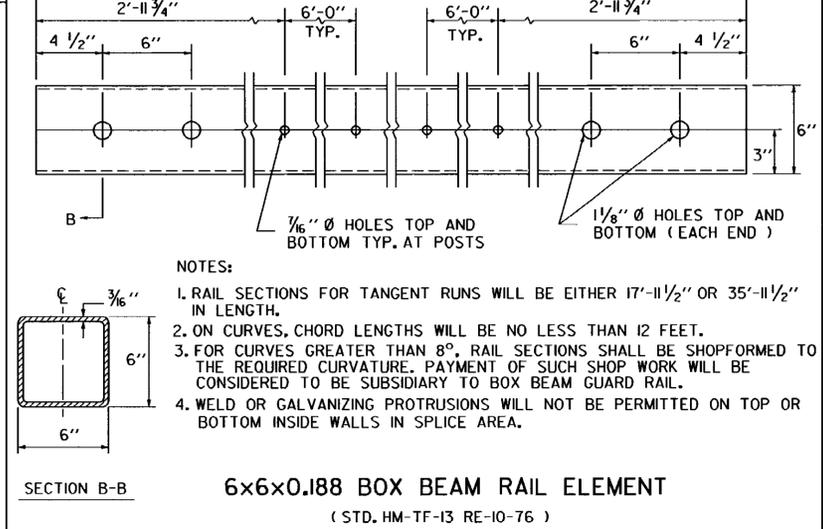
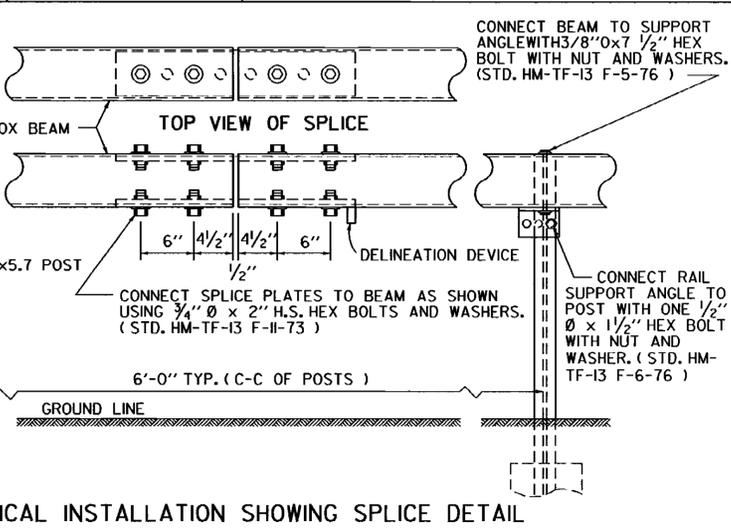
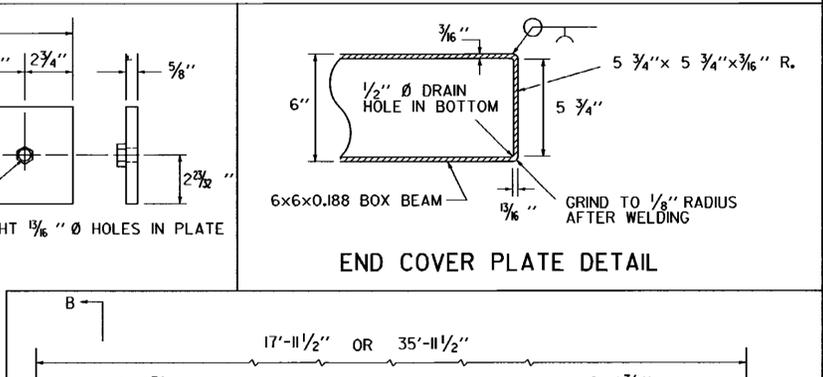
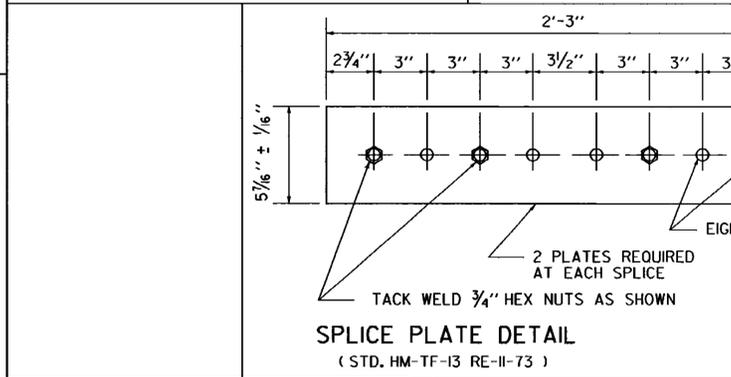
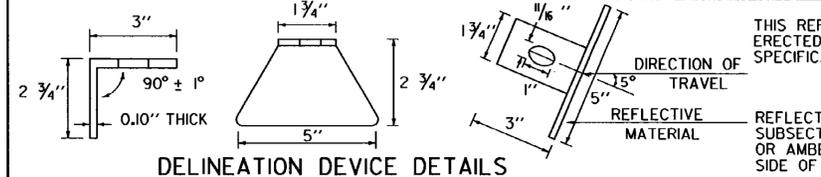
PAVEMENT MARKING DETAILS



STANDARD E-193



- GENERAL NOTES**
1. THE DESIRED APPROACH END OFFSET SHOULD BE AT LEAST 8' FROM THE EDGE OF NORMAL SHOULDER WHERE SPACE PERMITS; IN SPECIAL CASES, THE END OFFSET MAY BE REDUCED. IN NO CASE, HOWEVER, WILL THE END OFFSET BE LESS THAN 4'.
 2. POST SPACING WILL BE 6'-0" C-C, EXCEPT IN THE VICINITY OF THE JUNCTION OF BOX BEAM GUARD RAIL AND BRIDGE RAILING, AND AT OTHER LOCATIONS INDICATED ON THE PLANS. AT BRIDGE APPROACHES, THE 50' SECTION ADJACENT TO THE BRIDGE RAILING WILL HAVE A POST SPACING OF 4'-0" C-C.
 3. FOR MATERIAL REQUIREMENTS AND CONSTRUCTION DETAILS SEE SPECIFICATIONS FOR BOX BEAM GUARD RAIL.
 4. RAIL ALIGNMENT TO BE STRAIGHT AT SPLICES. NO LATERAL BENDS PERMITTED WITHIN THE SPLICE. THIS DOES NOT PRECLUDE THE SHOP FABRICATION OF BENT SPLICES.
 5. THE LINE OF BOX BEAM GUARD RAIL WHEN COMPLETED SHALL PRESENT A SMOOTH AND PLEASING GRADE LINE IN BOTH HORIZONTAL AND VERTICAL PLANES.
 6. ALL POSTS IN A GIVEN RUN TO BE OF THE SAME TYPE.



REVISIONS AND CORRECTIONS

OCT. 17, 1979- ORIGINAL APPROVAL DATE
 JULY 23, 1980- CHANGED DIAMETER OF GUIDE POST
 DEC. 16, 1980- INCREASED SHOULDER WIDENING FOR GUARD RAIL
 JUNE 17, 1984- DELINEATOR DEVICE ADDED
 DEC. 21, 1984- HEIGHT OF RAIL LOWERED FROM 2'-6" TO 2'-3"
 OCT. 31, 1985- REVISED TO CONFORM TO 1986 SPECIFICATIONS
 JUNE 1, 1994 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.

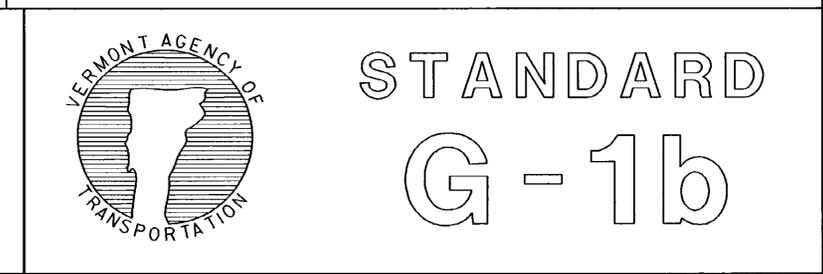
APPROVED

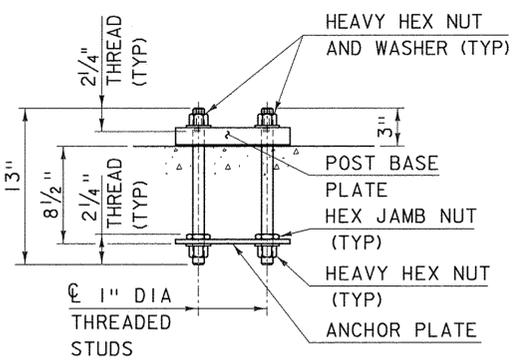
APPROVED FOR THIS PROJECT AND/OR DESIGN IMPLEMENTATION. FHWA FINAL APPROVAL PENDING.

Stephen D. MacArthur, P.E.
DIRECTOR OF ENGINEERING

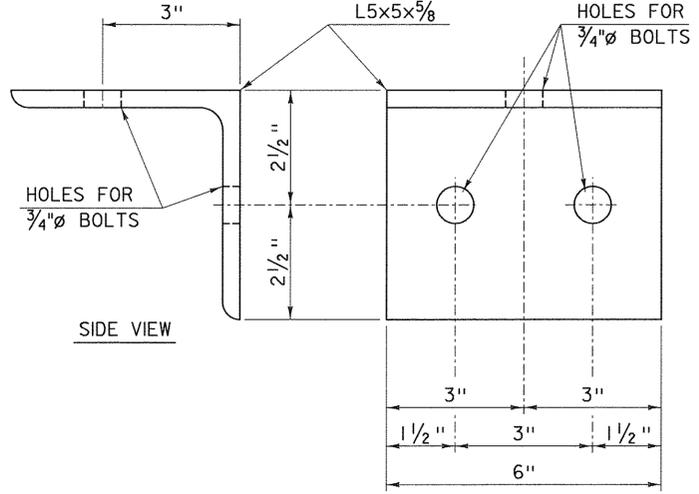
John M. Murphy, P.E.
DESIGN ENGINEER

BOX BEAM GUARD RAIL

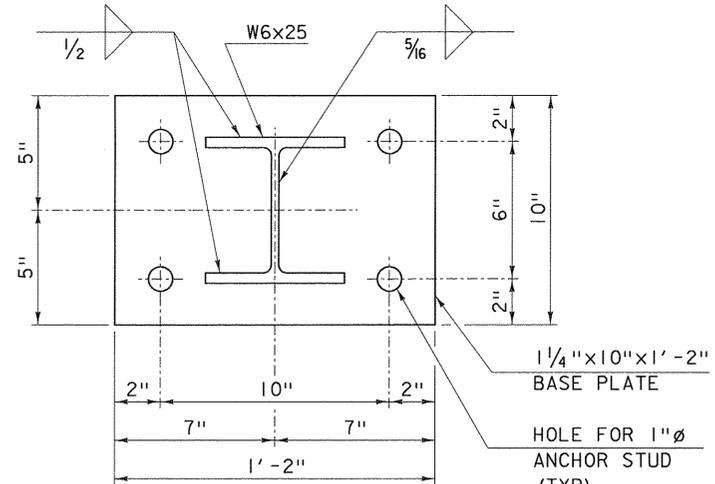




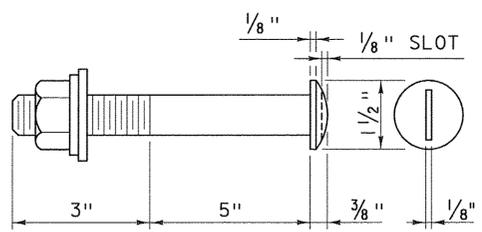
RAILING POST ANCHORAGE



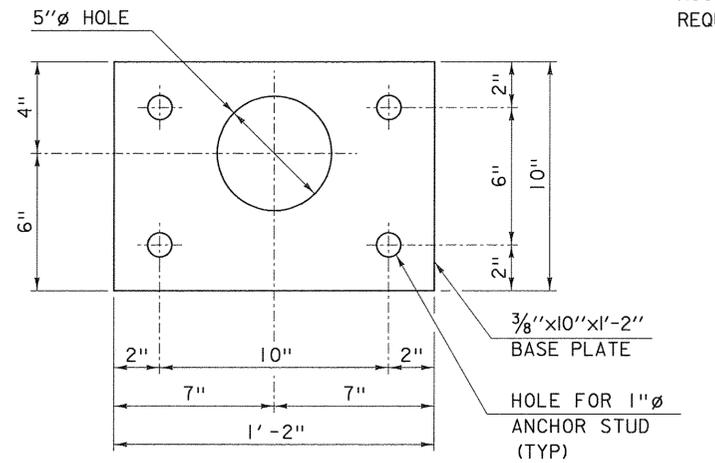
ELEVATION VIEW
RAILING ANGLE DETAILS



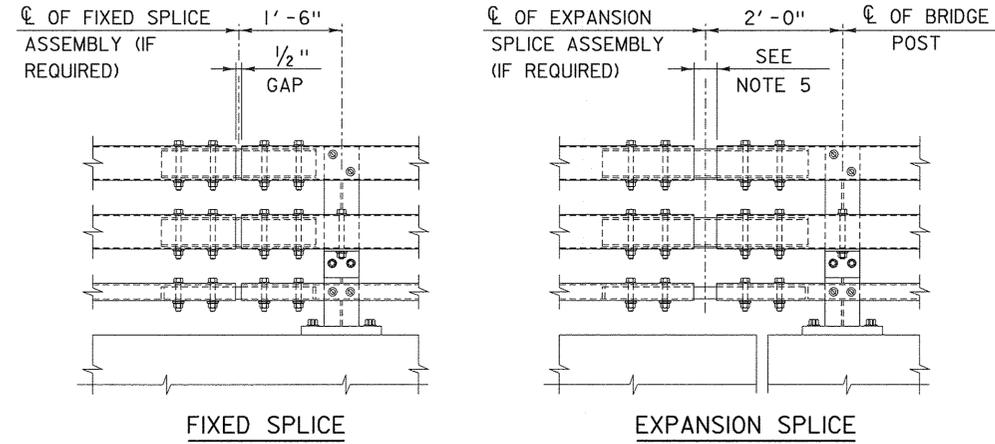
BASE PLATE DETAIL



ROUND HEAD BOLT DETAIL
A449 (TYPE 1)

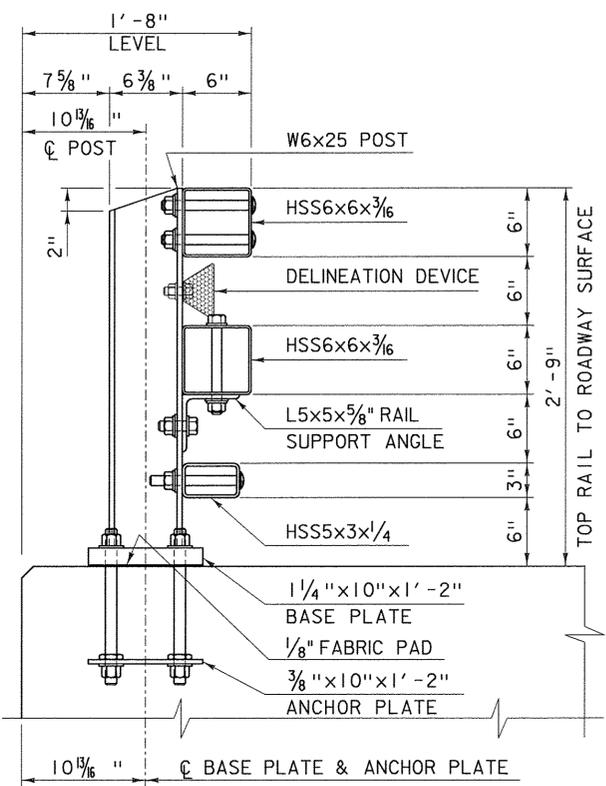


ANCHOR PLATE DETAIL



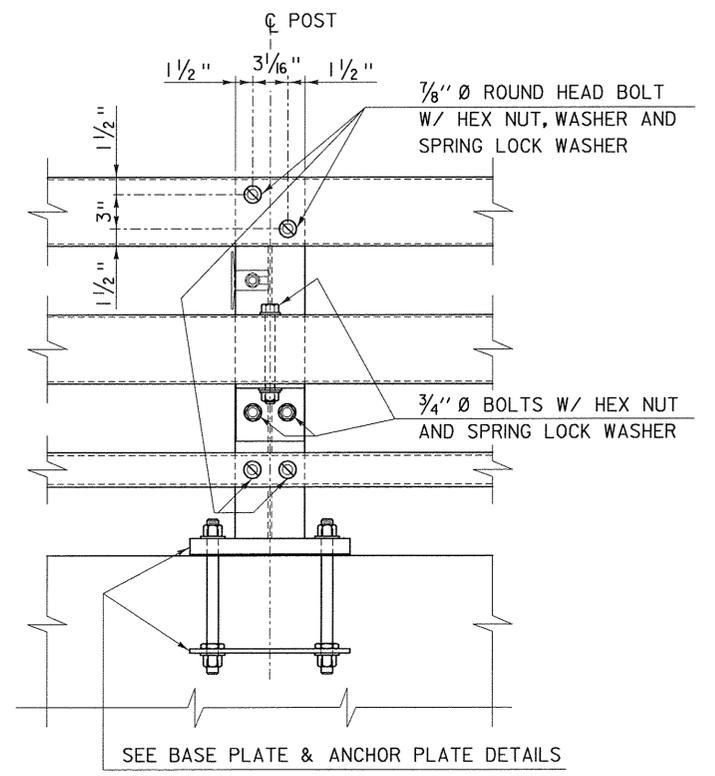
RAILING SPLICE DETAIL ELEVATION

A RAILING EXPANSION SPLICE IS REQUIRED IN ANY POST SPACING THAT CONTAINS A SUPERSTRUCTURE EXPANSION JOINT



RAILING SECTION

- NOTES:
- ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525.
 - PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM RADIUS OF 1/16".
 - ALL POSTS SHALL BE SET NORMAL TO GRADE. THE MAXIMUM CENTER TO CENTER SPACING OF BRIDGE RAIL POSTS IS 8'-3".
 - SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO BRIDGE POSTS AND PREFERABLY TO AT LEAST 4 POSTS.
 - RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING THE END OF AN INTEGRAL ABUTMENT BRIDGE AND AT ALL SUPERSTRUCTURE EXPANSION JOINTS. EXPANSION JOINT WIDTH SHALL BE 4" @ 68°F AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
 - HOLES IN RAILS FOR TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
 - BOLTS SHALL BE TORQUED SNUG TIGHT (APPROXIMATELY 100 FT-LB).
 - SEE STANDARD DRAWING G-1B FOR DETAILS OF DELINEATORS. A DELINEATOR SHALL BE INSTALLED AT 30 FOOT SPACING OR THE NEAREST POST. WHITE IS TO BE INSTALLED ON THE DRIVER'S RIGHT. FOR ONE WAY BRIDGES, YELLOW IS TO BE INSTALLED ON THE DRIVER'S LEFT. PAYMENT SHALL BE INCIDENTAL TO OTHER ITEMS.
 - ANY BENDING OF RAIL SHALL BE DONE AT THE FABRICATION PLANT ACCORDING TO A PROCEDURE PROVIDED BY THE FABRICATOR.
 - THE MINIMUM DISTANCE FROM THE POST TO AN EXPANSION JOINT SHALL BE DETERMINED BY THE MINIMUM EDGE DISTANCE OF 5" FROM ANY ANCHOR STUD TO THE END OF THE SLAB, OR TO THE EXPANSION JOINT RECESS POUR, IF ONE IS USED.
 - THIS RAILING MEETS THE REQUIREMENTS FOR A TL-4 SERVICE LEVEL.



RAILING ELEVATION

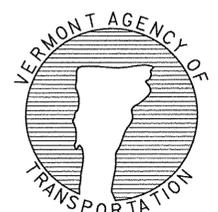
SEE BASE PLATE & ANCHOR PLATE DETAILS

REVISIONS AND CORRECTIONS
AUGUST 9, 2010 - ORIGINAL APPROVAL
APRIL 23, 2012 - GENERAL UPDATE 2012

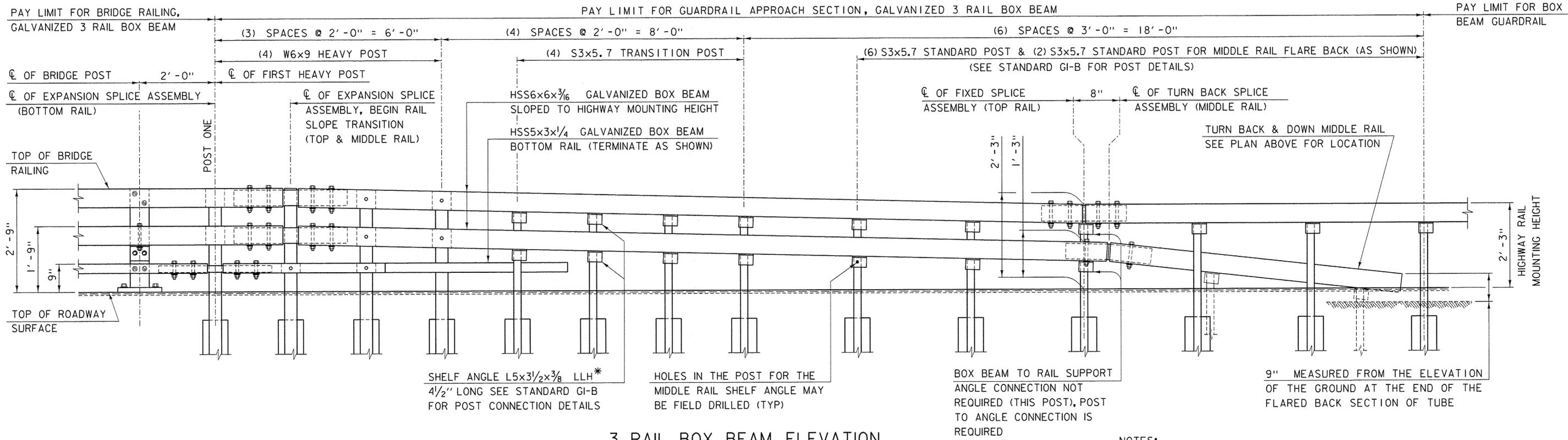
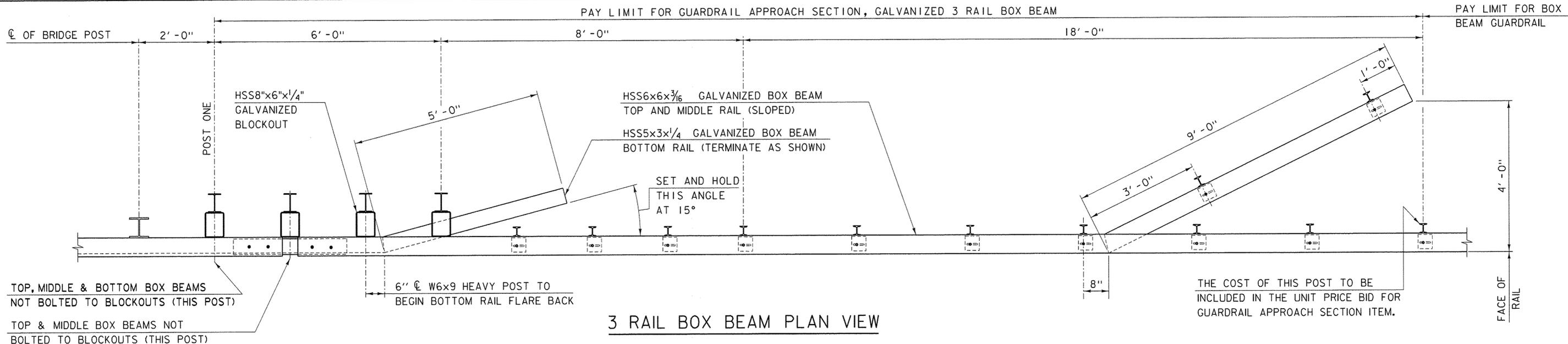
APPROVED
Wm. Michael Hedger
STRUCTURES PROGRAM MANAGER
Richard F. Schaub
DIRECTOR OF PROGRAM DEVELOPMENT
Mark D. Richter
FEDERAL HIGHWAY ADMINISTRATION

BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM

OTHER STDS. REQUIRED: **G-1B, S-364C**



STANDARD S-364A



* LONG LEG HORIZONTAL

NOTES:

1. BOX BEAM TUBE AND STEEL POST MATERIALS, DIMENSION SIZES AND NOTES SHALL BE THE SAME AS THOSE OF THE BRIDGE RAIL, UNLESS OTHERWISE NOTED.

OTHER STDS. REQUIRED: **G-1B, S-364A**

REVISIONS AND CORRECTIONS
 AUGUST 9, 2010 - ORIGINAL APPROVAL
 APRIL 23, 2012 - GENERAL UPDATE 2012

APPROVED

Don. Michel Hodges
 STRUCTURES PROGRAM MANAGER

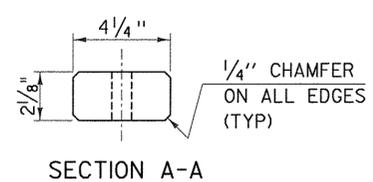
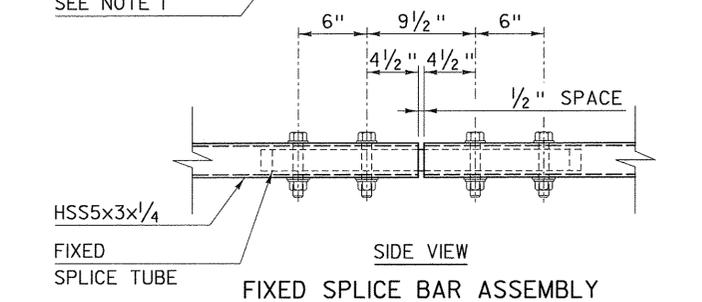
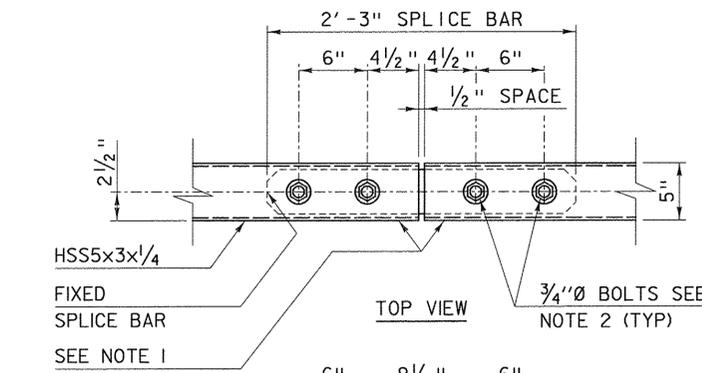
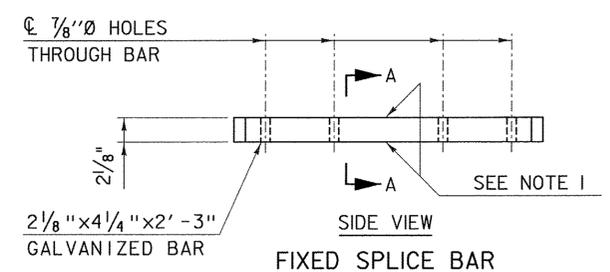
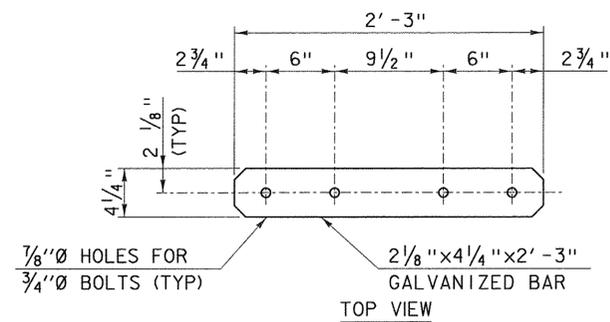
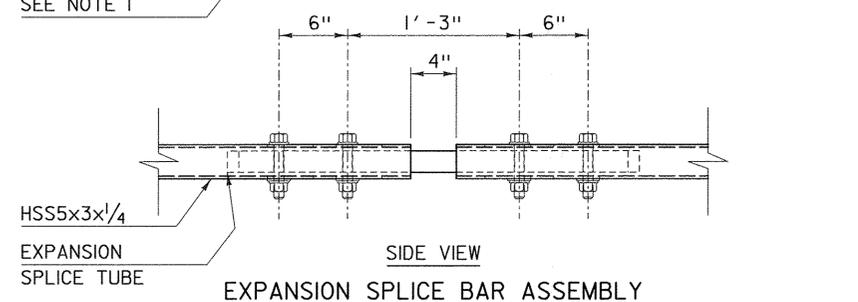
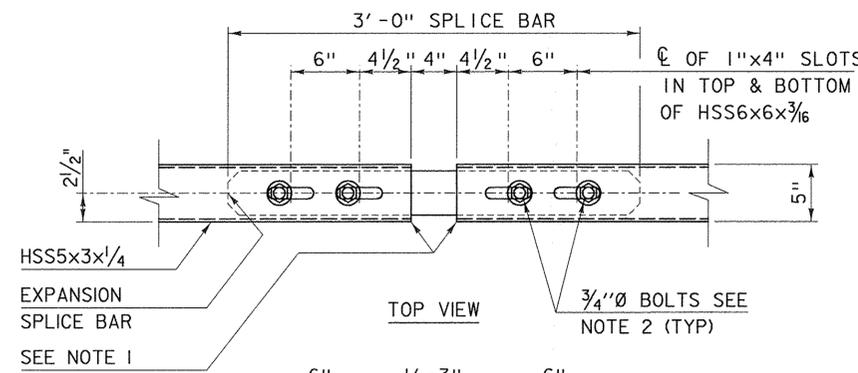
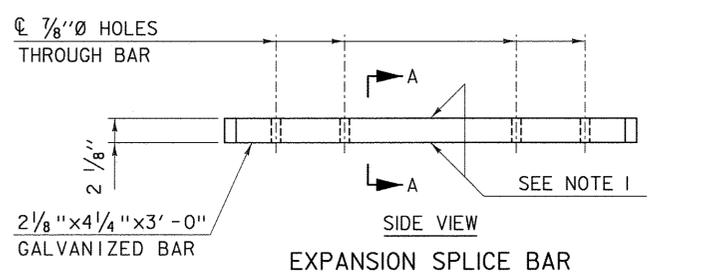
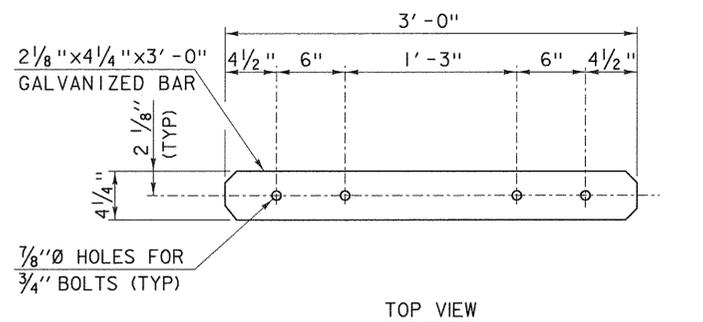
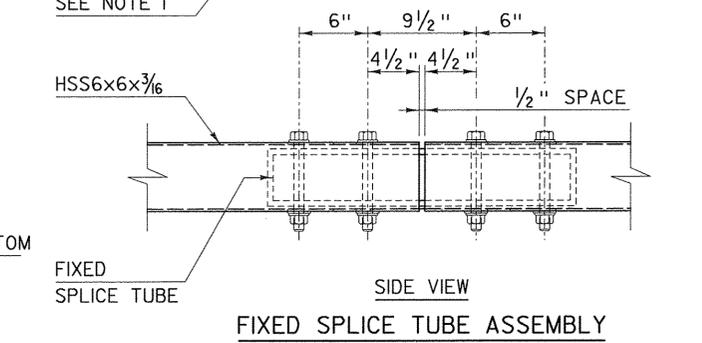
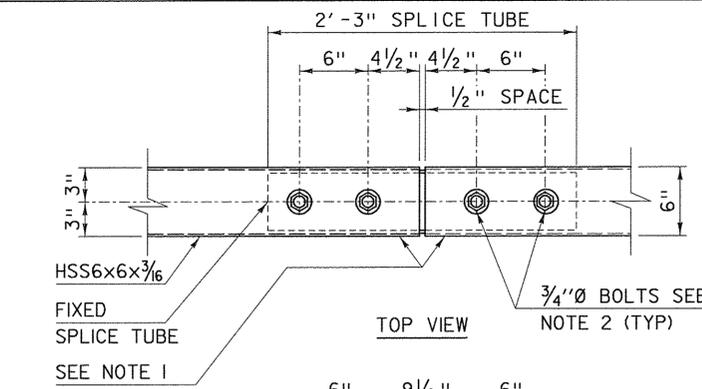
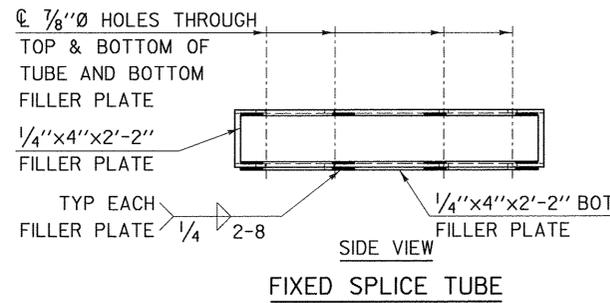
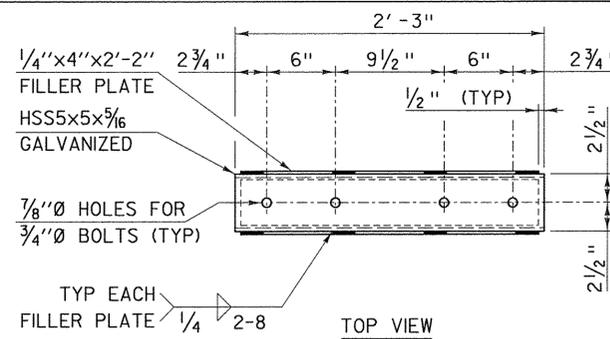
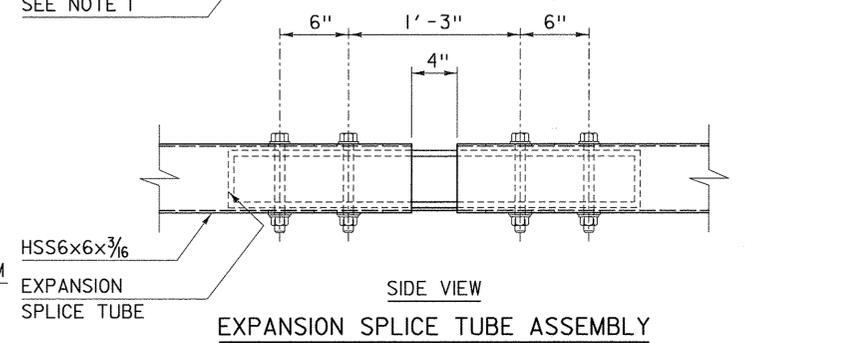
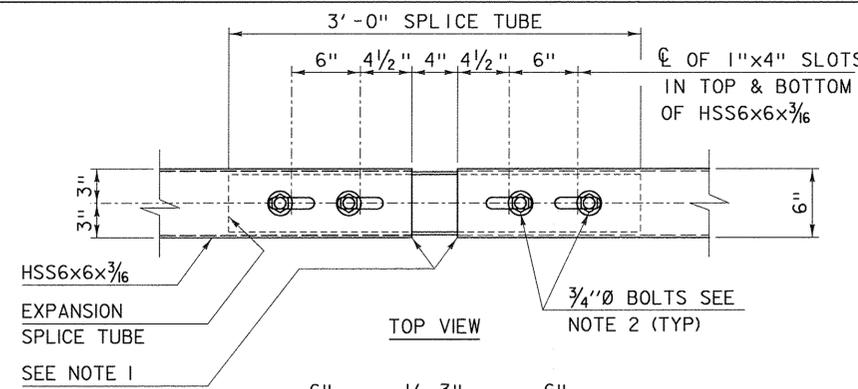
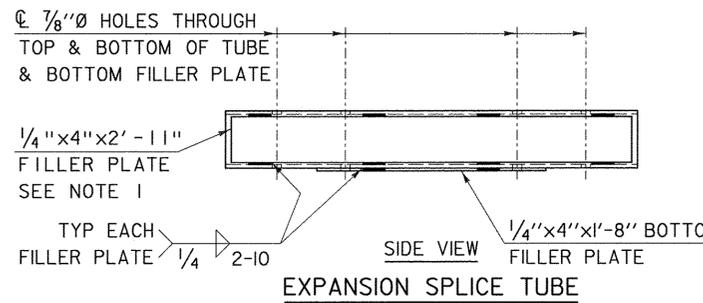
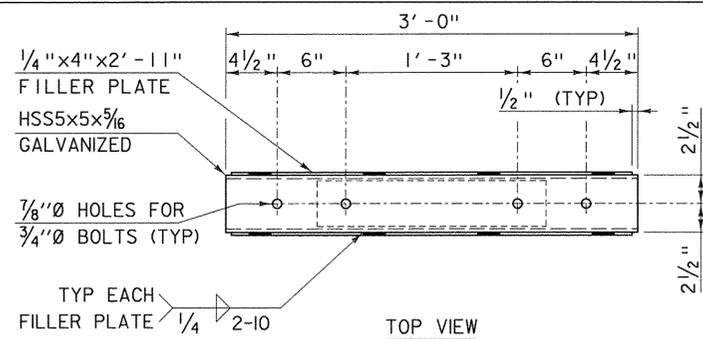
Ruthann Tibbatts
 DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Kistler
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GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM



STANDARD S-364B



NOTES:

1. PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE BOX BEAM RAILS, SPLICE TUBES AND FILL PLATES.
2. FOUR (4) 3/4" DIAMETER FULLY THREADED BOLTS, 7 1/2" LONG WITH TWO (2) WASHERS AND A HEAVY HEX NUT ON EACH BOLT. NUT TO BE FINGER TIGHT AND THE FIRST THREAD BELOW THE NUT TO BE BURRED TO PREVENT DISLODGING. FOUR (4) BOLTS AT EACH SPLICE.

REVISIONS AND CORRECTIONS
 AUGUST 9, 2010 - ORIGINAL APPROVAL
 APRIL 23, 2012 - GENERAL UPDATE 2012

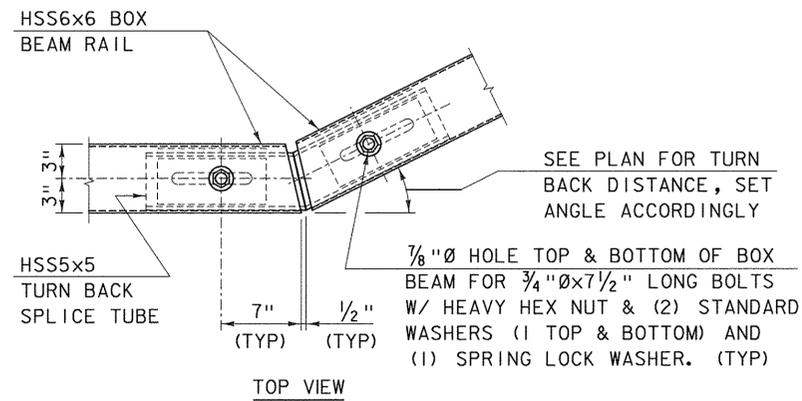
APPROVED
Jim Michael Hedger
 STRUCTURES PROGRAM MANAGER
Richard Johnson
 DIRECTOR OF PROGRAM DEVELOPMENT
Mark D. Richter
 FEDERAL HIGHWAY ADMINISTRATION

GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM

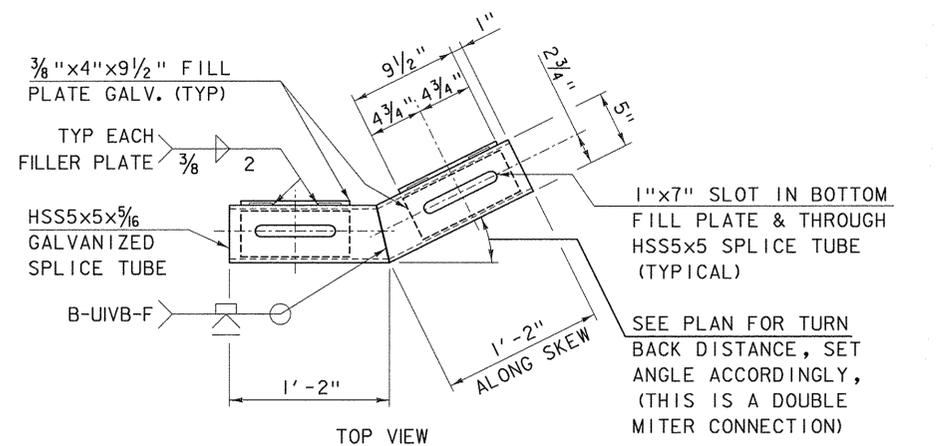
OTHER STDS. REQUIRED:



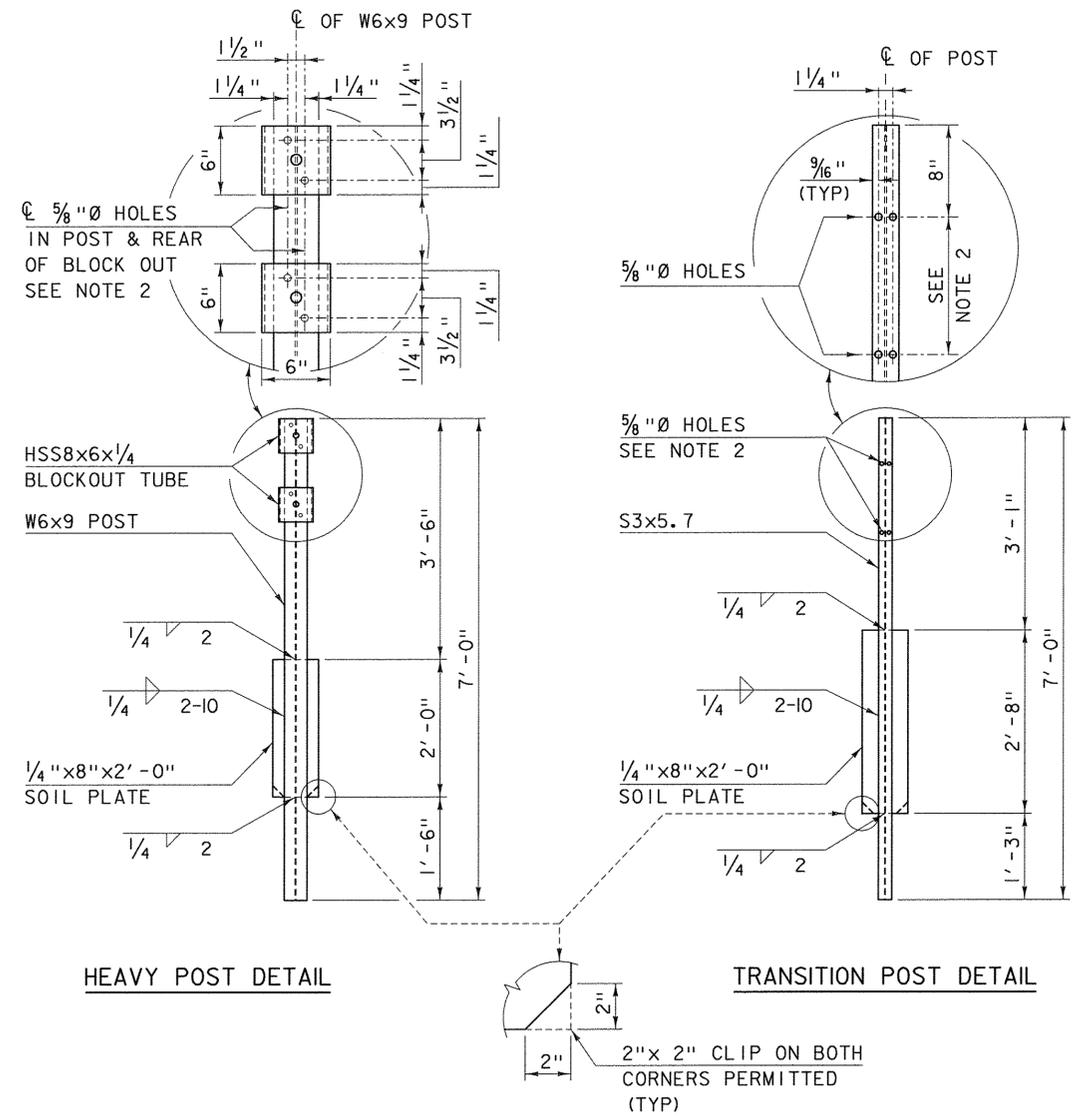
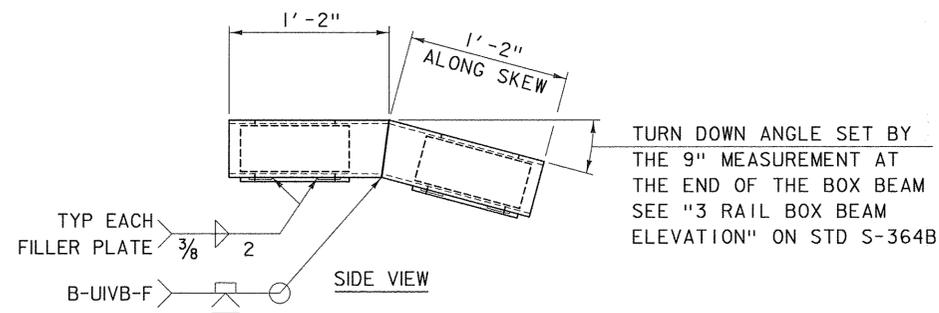
STANDARD S-364C



TURN BACK SPLICE TUBE ASSEMBLY



TURN BACK SPLICE TUBE DETAIL
TURN BACK & TURN DOWN TUBE JOINT



HEAVY POST DETAIL

TRANSITION POST DETAIL

- NOTES:
- PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE BOX BEAM RAILS, SPLICE TUBES AND FILL PLATES.
 - HOLES IN THE POST FOR THE LOWER RAIL MAY BE LOCATED AND DRILLED IN THE FIELD. IF SO, THE GALVANIZING SHALL BE REPAIRED IN ACCORDANCE WITH SPECIFICATION SECTION 525.

OTHER STDS. REQUIRED:

REVISIONS AND CORRECTIONS
AUGUST 9, 2010 - ORIGINAL APPROVAL
APRIL 23, 2012 - GENERAL UPDATE 2012

APPROVED

Wm. Michael Hedger
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GUARDRAIL APPROACH
SECTION, GALVANIZED
3 RAIL BOX BEAM



STANDARD
S - 364D