

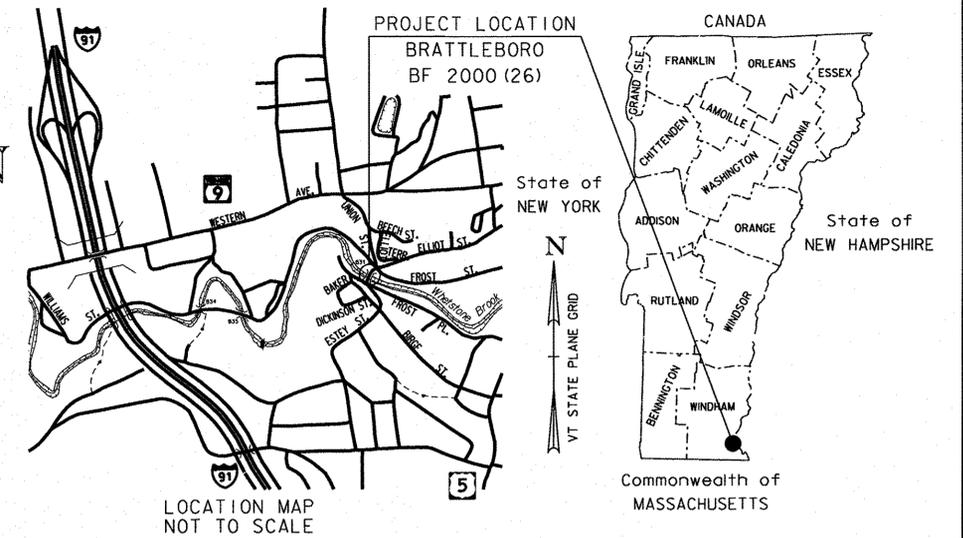
# STATE OF VERMONT AGENCY OF TRANSPORTATION



## PROPOSED IMPROVEMENT BRIDGE PROJECT

TOWN OF BRATTLEBORO  
COUNTY OF WINDHAM

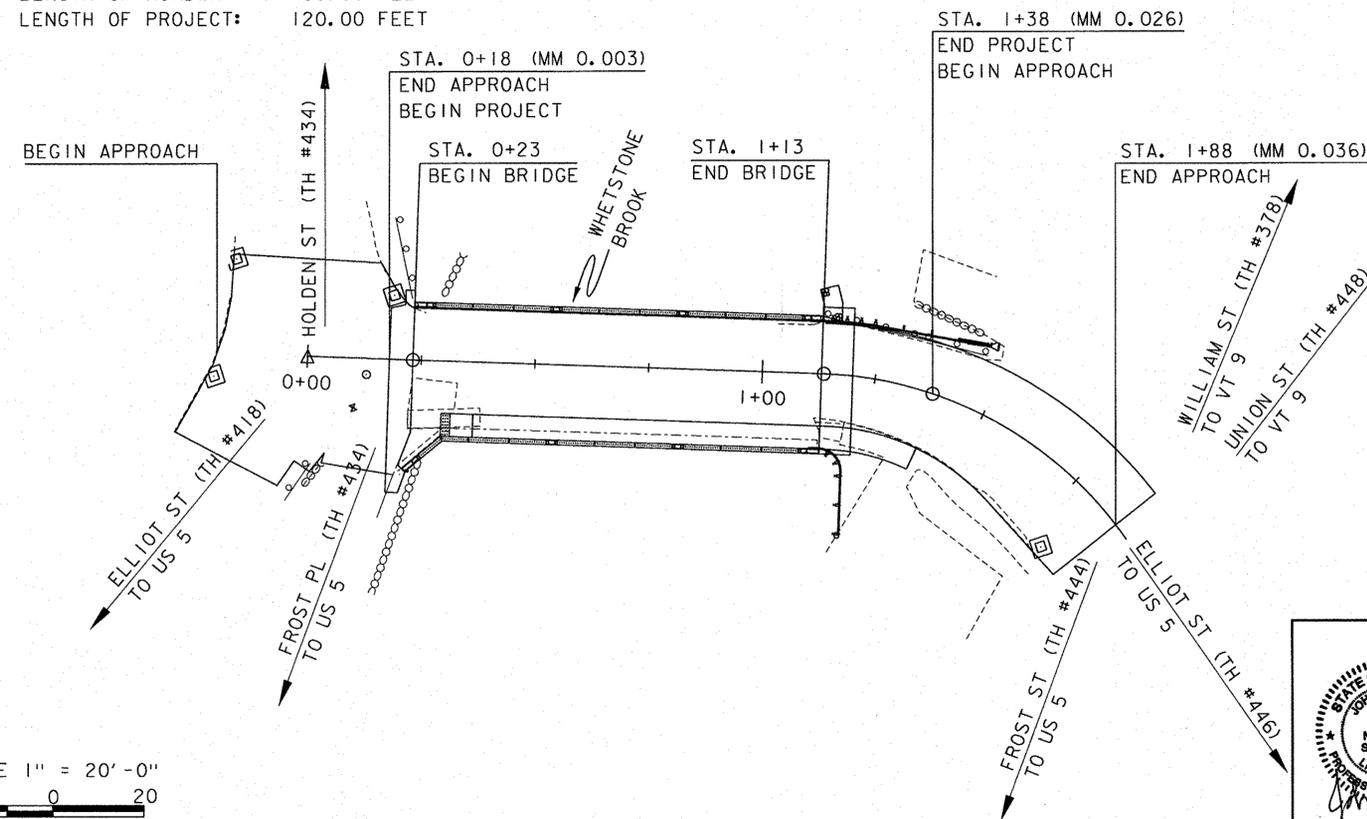
### ELLIOT ST (TH #446) (URBAN COLLECTOR) BRIDGE NO. 31



**PROJECT LOCATION:** LOCATED IN THE TOWN OF BRATTLEBORO, ON ELLIOT ST (TH #446), APPROXIMATELY 0.010 MILES EASTERLY FROM THE INTERSECTION WITH FROST PL (TH #434).

**PROJECT DESCRIPTION:** WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES THE REPLACEMENT OF THE EXISTING BRIDGE DECK INCLUDING RELATED APPROACH WORK.

**LENGTH OF STRUCTURE:** 90.00 FEET  
**LENGTH OF ROADWAY:** 30.00 FEET  
**LENGTH OF PROJECT:** 120.00 FEET



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.

QUALITY ASSURANCE PROGRAM : LEVEL 2
SURVEYED BY : CLD
SURVEYED DATE : 09/21/2015
DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83

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

	<p>540 Commercial Street Manchester, NH 03101 (603) 668-8223 www.cldengineers.com</p>	DIRECTOR OF PROJECT DELIVERY
		APPROVED <i>J.Fitch</i> DATE 2/4/2016
		PROJECT MANAGER : JENNIFER FITCH, P.E.
		PROJECT NAME : BRATTLEBORO
		PROJECT NUMBER : BF 2000 (26)
		SHEET 1 OF 26 SHEETS

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- SD-501.00 02/09/2012 CONCRETE DETAILS AND NOTES
- SD-502.00 10/10/2012 CONCRETE DETAILS AND NOTES
- SD-516.10 08/29/2011 BRIDGE JOINT ASPHALTIC PLUG
- SD-601.00 06/04/2010 STRUCTURAL STEEL DETAILS & NOTES

HIGHWAY SAFETY AND DESIGN DETAIL SHEETS

- HSD-621.06 11/03/2015 GUARDRAIL TERMINAL LABEL DETAIL

VAOT STANDARD SHEETS

- B-5 06/1/1994 EMBANKMENT ON EARTH SLOPE, EMBANKMENT ON ROCK SLOPE, MUCK EXCAVATION, TYPICAL SLOPE ROUNDING
- B-71 07/08/2005 STANDARDS FOR RESIDENTIAL AND COMMERCIAL DRIVES
- C-3A 03/10/2008 SIDEWALK RAMPS
- D-3 06/01/1994 TREATED GUTTERS
- E-193 08/18/1995 PAVEMENT MARKING DETAILS
- G-1 11/10/2015 STEEL BEAM GUARDRAIL WITH STEEL POSTS, STEEL BEAM GUARDRAIL WITH WOOD POSTS
- G-1d 02/10/2014 STEEL BEAM GUARDRAIL APPROACH END TERMINAL, STEEL BEAM GUARDRAIL TRAILING END TERMINAL
- T-1 08/06/2012 TRAFFIC CONTROL GENERAL NOTES
- T-11 08/06/2012 CONSTRUCTION APPROACH SIGNING DIVIDED HIGHWAY ONE LANE CLOSED
- T-31 08/06/2012 CONSTRUCTION SIGN DETAILS
- T-42 04/09/2014 BRIDGE NUMBER PLAQUE
- T-44 04/09/2014 MILEMARKER DETAILS STATE AND TOWN HIGHWAYS

LRFR LOAD RATING FACTORS							
LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY	1.60	1.01					
POSTING							
OPERATING	2.07	1.32	2.68	1.75	2.46	2.21	2.33
COMMENTS:	H-20 CONTROLLED BY DECK, HL-93 AND OTHER TRUCKS CONTROLLED BY EXTERIOR BEAMS SERVICE II						

PROJECT NOTES

GENERAL

- 1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2014, AND ITS LATEST REVISIONS.
- 2. THE DESIGN LIVE LOAD SHALL BE HL-93.
- 3. ALL WORK AND ANY ASSOCIATED ACTIVITY ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS.
- 4. THE CONTRACTOR IS MADE AWARE THAT EXISTING UTILITIES ARE WITHIN THE CONSTRUCTION LIMITS OF BRIDGE NO. 31. THE LOCATION OF ANY UTILITY INFORMATION ON THE PLANS IS APPROXIMATE. NO CLAIMS ARE MADE TO THE ACCURACY OR COMPLETENESS OF THE UTILITIES SHOWN. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR LOCATING AND PROTECTING FROM DAMAGE ALL UTILITIES ON SITE DURING ALL STAGES OF CONSTRUCTION. ANY DAMAGE TO UTILITIES DUE DIRECTLY TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE STATE. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
- 5. FOLLOWING THE COMPLETION OF ALL OTHER CONSTRUCTION ACTIVITIES, ALL BEAM SEATS SHALL BE CLEANED OFF. THE COST FOR CLEANING BEAM SEATS WILL BE CONSIDERED INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.
- 6. ALL PG BINDER USED IN BITUMINOUS CONCRETE PAVEMENT SHALL BE IN ACCORDANCE WITH SUBSECTION 490.03B.
- 7. EMULSIFIED ASPHALT SHALL BE APPLIED ON ALL COLD PLANED SURFACES AT THE RATE OF 0.08 GAL/SY AND BETWEEN ALL COURSE OF PAVEMENT AT THE RATE OF 0.040 GAL/SY OR AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCIDENTAL TO ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)".
- 8. ANY REQUIRED SAWCUT OF EXISTING PAVEMENT WILL BE CONSIDERED INCIDENTAL TO ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)".
- 9. ANY DAMAGE TO PRIVATE OR PUBLIC PROPERTY DUE DIRECTLY TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.
- 10. LIMITS OF GROUND SURVEY ARE BETWEEN STA 0+00 AND STA 1+84. OUTSIDE THESE LIMITS ARE APPROXIMATE LOCATION TAKEN FROM AERIAL MAPPING.

ENVIRONMENTAL

- 11. THE CONTRACTOR SHALL REVIEW AND UNDERSTAND ALL APPLICABLE ENVIRONMENTAL PERMITS AND ENSURE THAT ALL CONSTRUCTION CONDITIONS ARE MET.
- 12. EROSION CONTROL MEASURES SHALL BE UTILIZED AS REQUIRED AND SHALL CONFORM TO SECTION 105 OF THE STANDARD SPECIFICATIONS AND THE LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL FROM THE AGENCY OF NATURAL RESOURCES. PAYMENT FOR EROSION CONTROL MEASURES, IF APPLICABLE, WILL BE PAID FOR UNDER EXTRA WORK IN ACCORDANCE WITH 104.03.
- 13. THE CONTRACTOR SHALL PREVENT ANY MATERIAL FROM ENTERING THE WATERWAY DURING EXCAVATION, PARTIAL REMOVAL OF STRUCTURE, OR CONSTRUCTING THE NEW DECK.
- 14. THE DESIGN INTENT IS TO ALLOW THE CONTRACTOR TO STAGE IN THE TRAVELED ROADWAY OF THE APPROACHES TO THE BRIDGE DURING THE CLOSURE PERIOD. ANY STAGING AREAS OUTSIDE OF THIS SHALL BE CLEARED FOR RESOURCES THROUGH THE VTRANS ENVIRONMENTAL UNIT.

TRAFFIC CONTROL

- 15. AS PART OF ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL INCLUSIVE)", THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC TRAFFIC CONTROL PLAN TO THE PROJECT MANAGER FOR APPROVAL IN ACCORDANCE WITH SUBSECTION 105.03 AND SHALL BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN AN APPROPRIATE DISCIPLINE IN THE STATE OF VERMONT. THE PLAN SHALL INCLUDE A LAYOUT SHOWING ALL ON- AND OFF-PROJECT SIGNS AND BARRICADES AND ANY OTHER DETAILS ASSOCIATED WITH THE TRAFFIC CONTROL.
- 16. ALL ITEMS REQUIRED TO PREPARE, SUBMIT, AND IMPLEMENT THE CONTRACTOR'S PLAN, INCLUDING ANY NECESSARY REVISIONS TO THE PLAN, WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)". THE PAY ITEM INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

TRAFFIC CONTROL PLAN  
 TEMPORARY TRAFFIC BARRIERS  
 BARRICADES  
 DRUMS/CONES  
 ON PROJECT CONSTRUCTION SIGNING  
 TEMPORARY PAVEMENT MARKINGS (IF REQUIRED)  
 REMOVE AND RESET TRAFFIC BARRIER

TRAFFIC CONTROL ITEMS NOT PAID FOR IN THE UNIT PRICE BID FOR ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)", AND PAID FOR SEPARATELY INCLUDE THE FOLLOWING:

ITEM 630.10, "UNIFORMED TRAFFIC OFFICERS"  
 ITEM 630.15, " FLAGGERS"  
 ITEM 641.15, "PORTABLE CHANGEABLE MESSAGE SIGN"

THE CONTRACTOR SHALL ALLOW TWO WEEKS FOR APPROVAL OF THE TRAFFIC CONTROL PLAN. NO WORK SHALL COMMENCE UNTIL THE CONTRACTOR HAS AN APPROVED TRAFFIC CONTROL PLAN.

THE EXISTING CONCRETE TRAFFIC BARRIER ADJACENT TO THE BRIDGE IS TOWN OWNED AND SHALL BE REMOVED TO ACCOMMODATE BRIDGE WORK AND RESET ONCE THE BRIDGE WORK IS COMPLETED. SEE LAYOUT PLAN ON SHEET 9. THE CONTRACTOR SHALL CONTACT PUBLIC WORKS DIRECTOR STEVE BARRETT AT 1-802-254-4255 WITH ANY QUESTIONS. THIS WORK WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)" AS NOTED ABOVE. ANY DAMAGE TO THE TRAFFIC BARRIER DUE DIRECTLY TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE STATE OR OWNER.

- 17. DURING CLOSURE PERIOD, TRAFFIC SHALL BE MAINTAINED BY AN OFF-SITE DETOUR TO BE SIGNED BY THE TOWN OF BRATTLEBORO. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CLOSURE SIGNAGE AS SHOWN ON SHEET 11 IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD AND VTRANS STANDARDS. PAYMENT FOR BRIDGE CLOSURE SIGNAGE WILL BE MADE UNDER ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)". ANY COORDINATION REQUIRED BETWEEN THE CONTRACTOR AND THE TOWN OF BRATTLEBORO WILL BE AT NO ADDITIONAL COST TO THE STATE. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS REGARDING THE CLOSURE PERIOD.

PROJECT NAME:	BRATTLEBORO
PROJECT NUMBER:	BF 2000(26)
FILE NAME: z15j09notes-3l.dgn	PLOT DATE: 3/8/2016
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: J. FRENCH
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## DECK REMOVAL AND RELATED ITEMS

18. PAVEMENT REMOVAL SHOULD BE LIMITED AS SHOWN ON THE PLANS. THIS WORK SHALL BE IN ACCORDANCE WITH SECTION 529 OF THE STANDARD SPECIFICATIONS.
19. ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE" WILL INCLUDE REMOVAL OF ANY PORTIONS OF THE EXISTING STRUCTURE AS SHOWN ON THE PLANS, INCLUDING THE EXISTING BRIDGE DECK, CURTAIN WALLS, WINGWALLS, AND BRIDGE RAILING. THE EXISTING CONCRETE CURTAIN WALLS AND WINGWALLS SHALL BE REMOVED BY MECHANICAL MEANS AND THE REMAINING CONCRETE SHALL HAVE NEAT LINES AND BE SMOOTH. PROTECT ALL ELEMENTS INTENDED TO REMAIN.
20. DURING EXCAVATION OF BRIDGE CURTAIN WALL, ALL DRAINAGE STRUCTURES AND PIPES SHALL BE SUPPORTED AND SHALL REMAIN IN-PLACE. PAYMENT FOR SUPPORTING DRAINAGE STRUCTURES WILL BE CONSIDERED INCIDENTAL TO 203.15, "COMMON EXCAVATION".
21. AFTER REMOVAL OF THE EXISTING BRIDGE DECK AND CURTAIN WALL, ANY AREAS ON THE CONCRETE BEAM SEAT THAT ARE FOUND TO BE UNSOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE METHOD FOR DETERMINING AREAS OF UNSOUND CONCRETE SHALL BE APPROVED BY THE ENGINEER. THE ENGINEER SHALL MAKE A DETERMINATION AS TO HOW TO REPAIR THE DETERIORATED PORTION OF THE CONCRETE BEAM SEAT AND THE LIMITS OF THE REPAIR. THE REPAIRS WILL BE PAID FOR UNDER ITEM 580.13, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I" OR ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II, AS APPLICABLE. QUANTITIES FOR ITEMS 580.13 AND 580.14 AS SHOWN ON THE QUANTITY SUMMARY SHEETS ARE ESTIMATED.

## STEEL

22. AFTER ALL PAVEMENT AND MEMBRANE ARE REMOVED BUT PRIOR TO THE REMOVAL OF THE EXISTING CONCRETE DECK, THE CONTRACTOR SHALL TAKE TOP OF DECK ELEVATIONS ALONG THE CENTERLINE OF EACH BEAM AT TENTH POINTS FROM CENTERLINE TO CENTERLINE OF BEARING. AFTER THE EXISTING CONCRETE DECK HAS BEEN REMOVED, THE CONTRACTOR SHALL TAKE ELEVATIONS ALONG THE TOP OF EACH BEAM AT TENTH POINTS FROM CENTERLINE TO CENTERLINE OF BEARING. THE TOP OF DECK AND TOP OF BEAM ELEVATIONS SHALL THEN BE SENT TO THE ENGINEER FOR USE IN DETERMINING THE FINAL PROFILE AND HAUNCH DEPTHS. THE CONTRACTOR SHALL EXPECT 3 WORKING DAYS FOR VTRANS TO PREPARE THE REVISED PROFILE AND HAUNCH DEPTH CALCULATIONS.
23. THE EXISTING STRUCTURAL STEEL IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. ANY REMOVED STRUCTURAL STEEL, IF APPLICABLE, IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE AND ITS OFFICERS AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE REMOVED EXISTING STRUCTURAL STEEL.
24. UPON REMOVING THE DECK, THE TOPS OF THE BEAMS IN THE AREA OF THE SHEAR STUDS SHALL BE CLEANED IN ACCORDANCE WITH SSPC-SP11 REQUIREMENTS AND ALL APPLICABLE PROVISIONS PRIOR TO THE WELDING OF THE SHEAR STUDS. THE CONTRACTOR IS NOT REQUIRED TO APPLY NEW PAINT. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE", EXCEPT AS NOTED IN PROJECT NOTE 25.
25. THE CONTRACTOR SHALL TEST ALL AREAS WHERE EXISTING PAINT IS TO BE REMOVED FOR LEAD. PAYMENT FOR LEAD PAINT TESTING WILL BE CONSIDERED INCIDENTAL TO ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE". IF LEAD PAINT REMOVAL IS REQUIRED, PAINT REMOVAL, SURFACE PREPARATION, CONTAINMENT, AND DISPOSAL WILL BE PAID FOR AS EXTRA WORK IN ACCORDANCE WITH 104.03. THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH ALL NECESSARY LEAD ABATEMENT PERMITS.
26. THE SHEAR CONNECTORS SHALL BE SPACED AS SHOWN ON THE PLANS AND WILL BE PAID FOR UNDER ITEM 508.15, "SHEAR CONNECTORS (1266 - 8" X 7/8)".

## REINFORCED CONCRETE

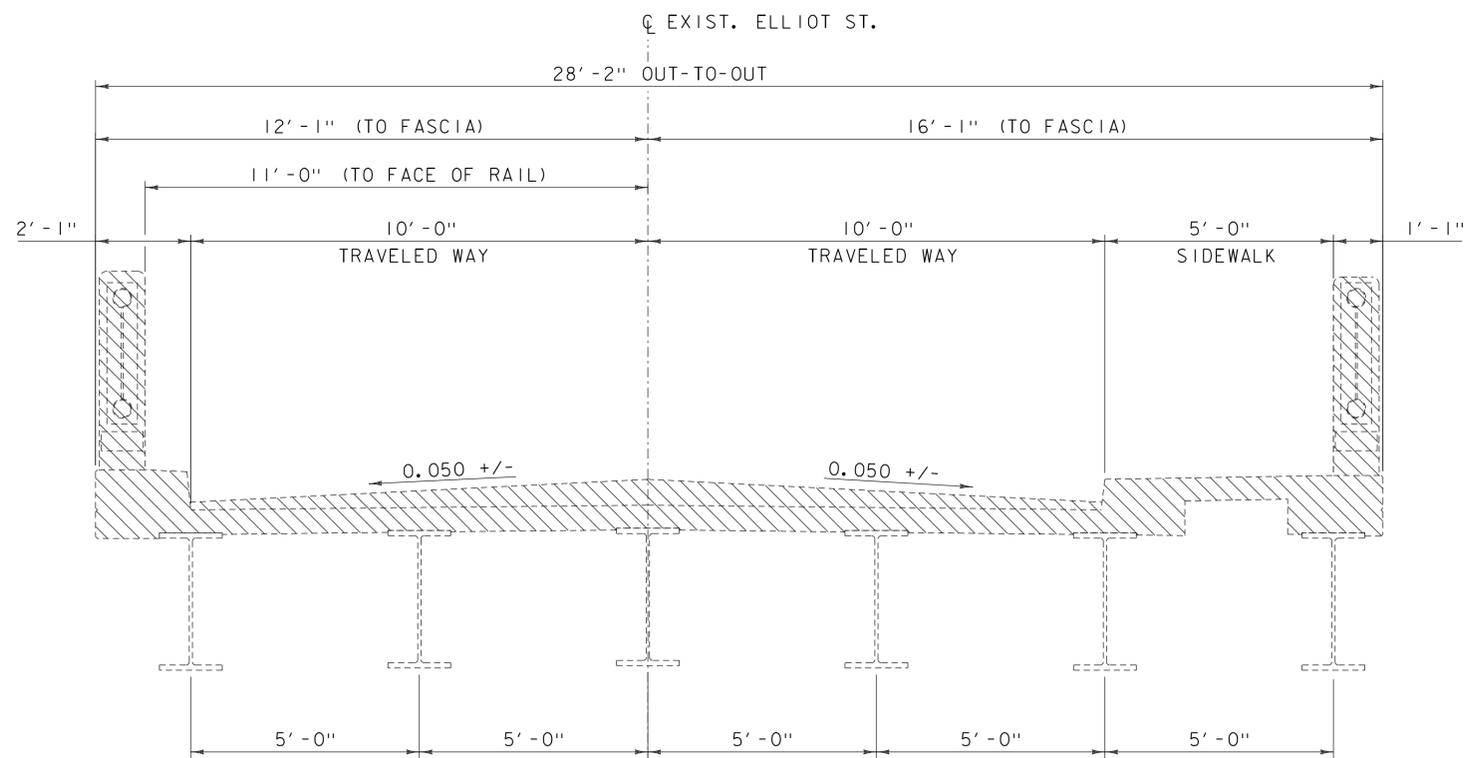
27. ALL CONCRETE SHALL CONFORM TO THE SPECIFICATIONS FOR CONCRETE, HIGH PERFORMANCE CLASS A. THE CONTRACTOR SHALL PROVIDE TESTING EQUIPMENT FOR CONCRETE IN ACCORDANCE WITH SUBSECTION 631.05.
28. A REINFORCING STEEL SCHEDULE AND SHOP DRAWINGS MEETING THE REQUIREMENTS OF SUBSECTION 105.03 SHALL BE SUBMITTED. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 507.11, "REINFORCING STEEL, LEVEL I" OR TO ITEM 900.640 "SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION)", AS APPLICABLE. ALL REINFORCING STEEL SHALL BE LEVEL I - EPOXY COATED AND MEET THE REQUIREMENTS OF SECTION 507.
29. TEST BARS SHALL BE PROVIDED IN ACCORDANCE WITH THE "VERMONT AGENCY OF TRANSPORTATION MATERIAL SAMPLING MANUAL" AVAILABLE ON THE AGENCY WEBSITE. A MINIMUM OF TWO TEST SECTIONS ARE REQUIRED FOR EACH SIZE, BRAND, AND GRADE OR TYPE OF REINFORCING. SEE THE MANUAL FOR ACCEPTABLE DIMENSIONS OF TEST SECTIONS. EXTRA BARS FOR TESTING PURPOSES SHALL BE SPECIFIED IN THE WORKING DRAWING SUBMITTAL.
30. ALL BEAM SEATS SHALL BE CLEANED OFF AND WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF THE DECK BETWEEN THE DRIP NOTCHES. THIS WORK, INCLUDING CLEANING OF BEAM SEATS, WILL BE PAID FOR UNDER ITEM 514.10, "WATER REPELLENT, SILANE".
31. THE CORK JOINT BETWEEN THE EXISTING CHEEKWALLS AND CAST-IN-PLACE CONCRETE CURTAIN WALL WILL BE CONSIDERED INCIDENTAL TO ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".
32. THE PREFORMED JOINT SEALER, CLOSED CELL FOAM BETWEEN THE CAST-IN-PLACE CONCRETE CURTAIN WALL AND THE EXISTING BRIDGE SEAT SHALL MEET THE REQUIREMENTS OF SUBSECTION 707.09 AND WILL BE CONSIDERED INCIDENTAL TO ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".
33. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING INSTITUTE".
34. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

ALONG BACK FACES OF WALL AGAINST EARTH:	2.0 INCH
ALONG TOP SURFACE OF DECK SLAB:	3.0 INCH
ALONG BOTTOM SURFACE OF DECK SLAB:	1.5 INCH
ELSEWHERE UNLESS OTHERWISE INDICATED:	3.0 INCH

PROJECT NAME: BRATTLEBORO  
PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j09notes-3l.dgn PLOT DATE: 3/8/2016  
PROJECT LEADER: J. BYATT DRAWN BY: M. SMITH  
DESIGNED BY: S. BEAUMONT CHECKED BY: J. FRENCH  
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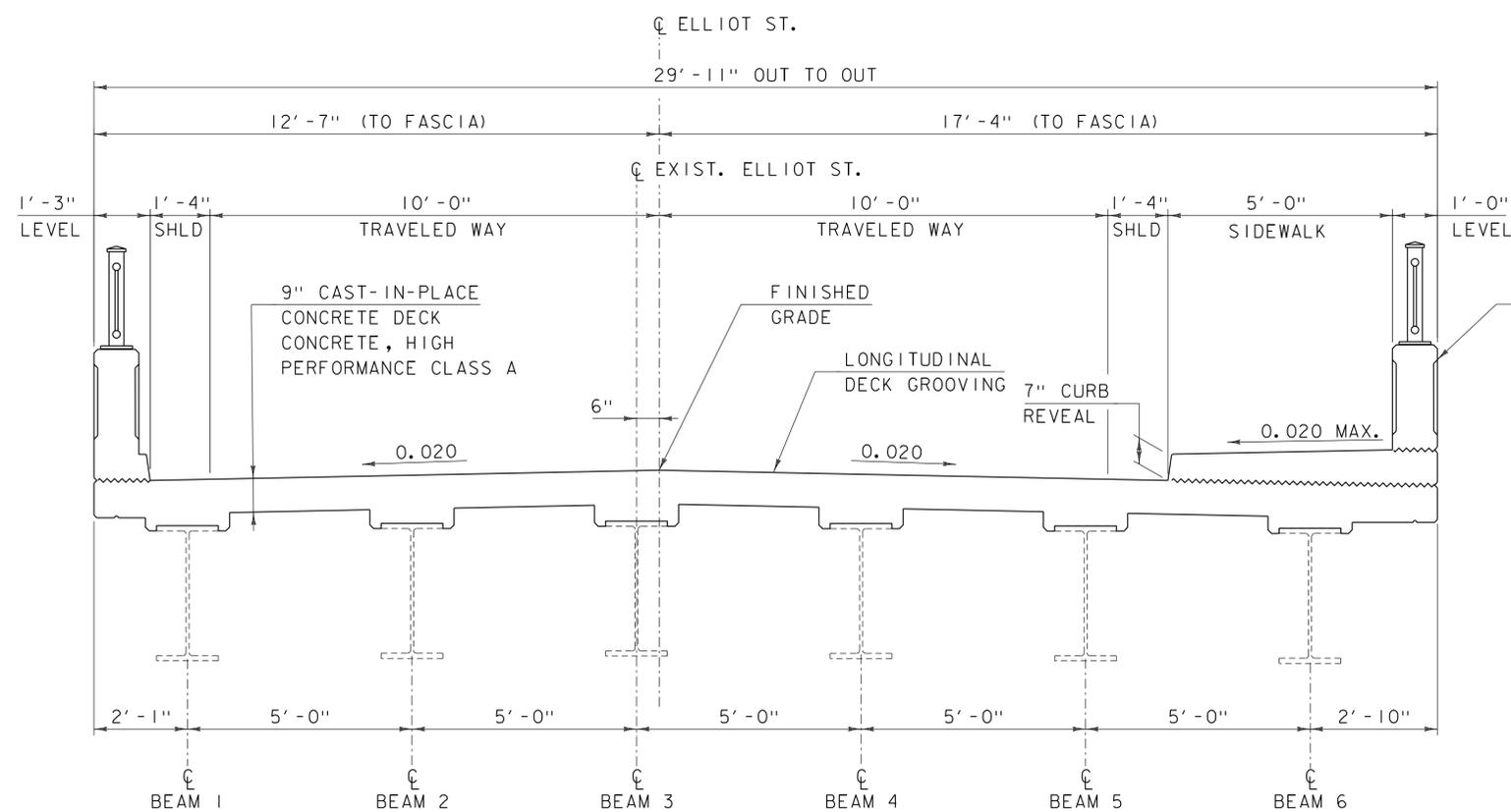




**EXISTING TYPICAL BRIDGE SECTION**

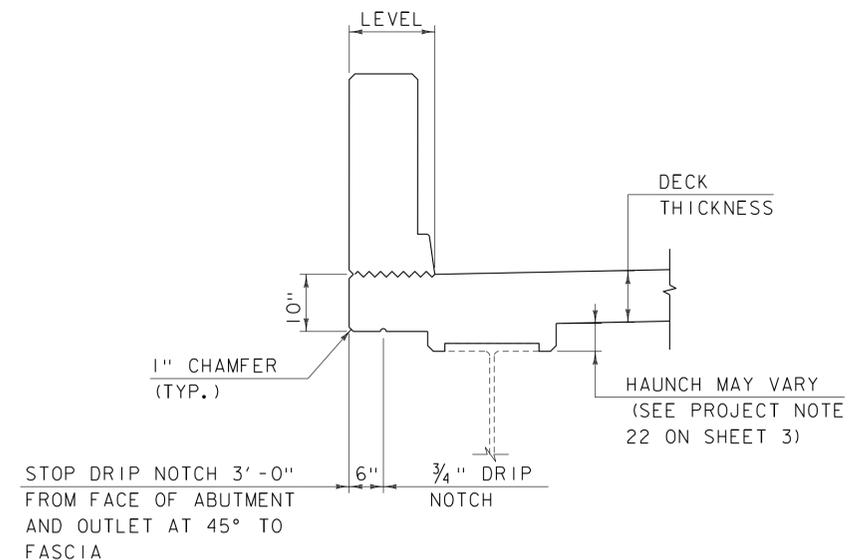
SCALE: 1/2" = 1'-0"

PARTIAL REMOVAL OF STRUCTURE



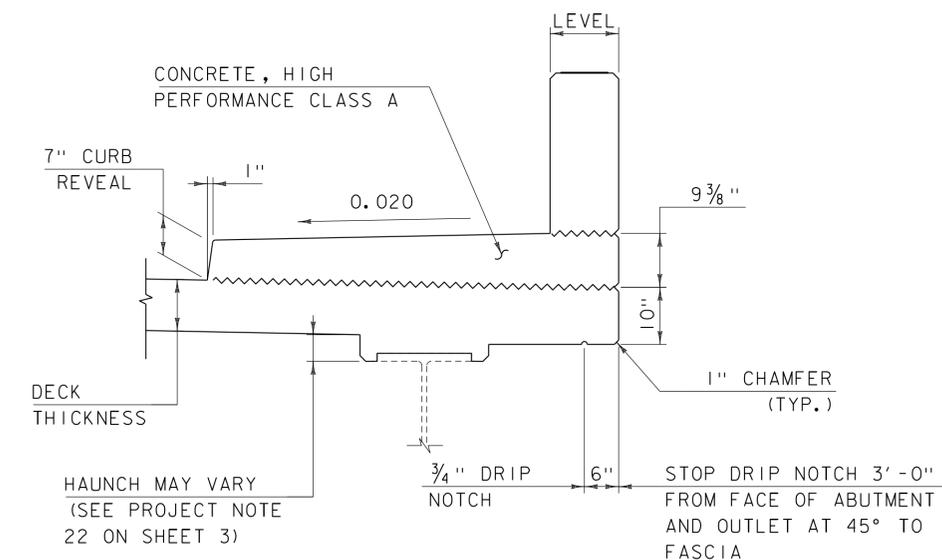
**TYPICAL BRIDGE SECTION**

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



**CURB FASCIA AND DRIP NOTCH DETAIL**

SCALE: 3/4" = 1'-0"



**SIDEWALK FASCIA AND DRIP NOTCH DETAIL**

SCALE: 3/4" = 1'-0"

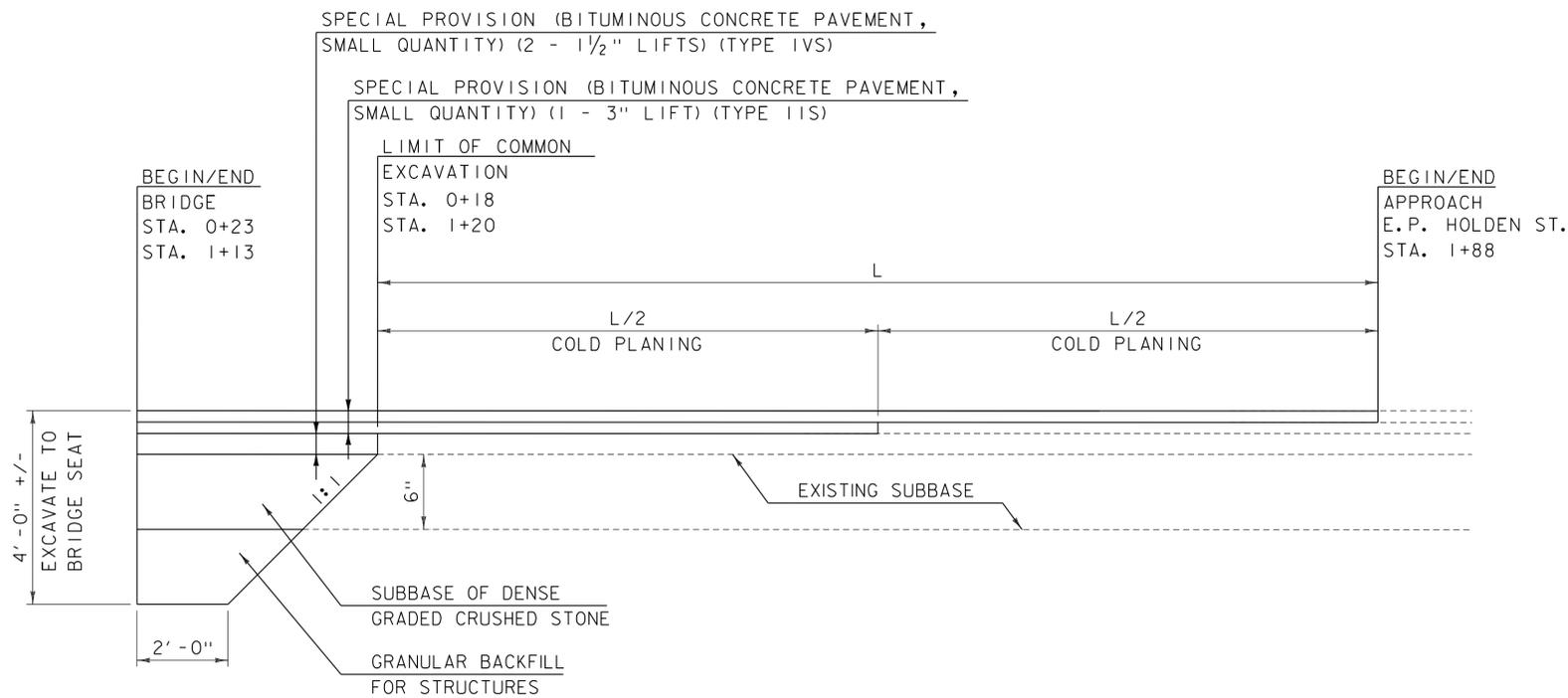
CLD 15-0223 MODEL: TYP01

PROJECT NAME: BRATTLEBORO  
PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j091typ-3l.dgn  
PROJECT LEADER: J. BYATT  
DESIGNED BY: N. CARON  
TYPICALS BRIDGE SECTIONS SHEET

PLOT DATE: 2/5/2016  
DRAWN BY: M. SMITH  
CHECKED BY: S. BEAUMONT  
SHEET 4 OF 26



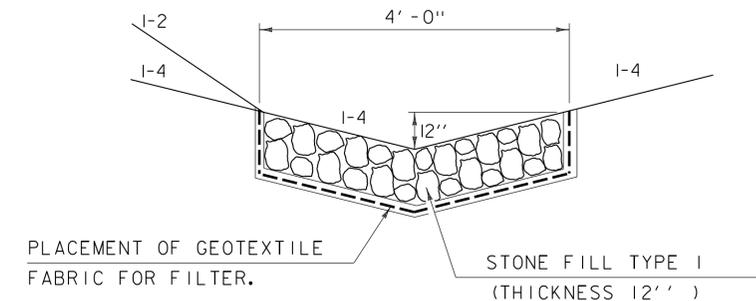


**MATERIAL TRANSITION DIAGRAM**

NOT TO SCALE

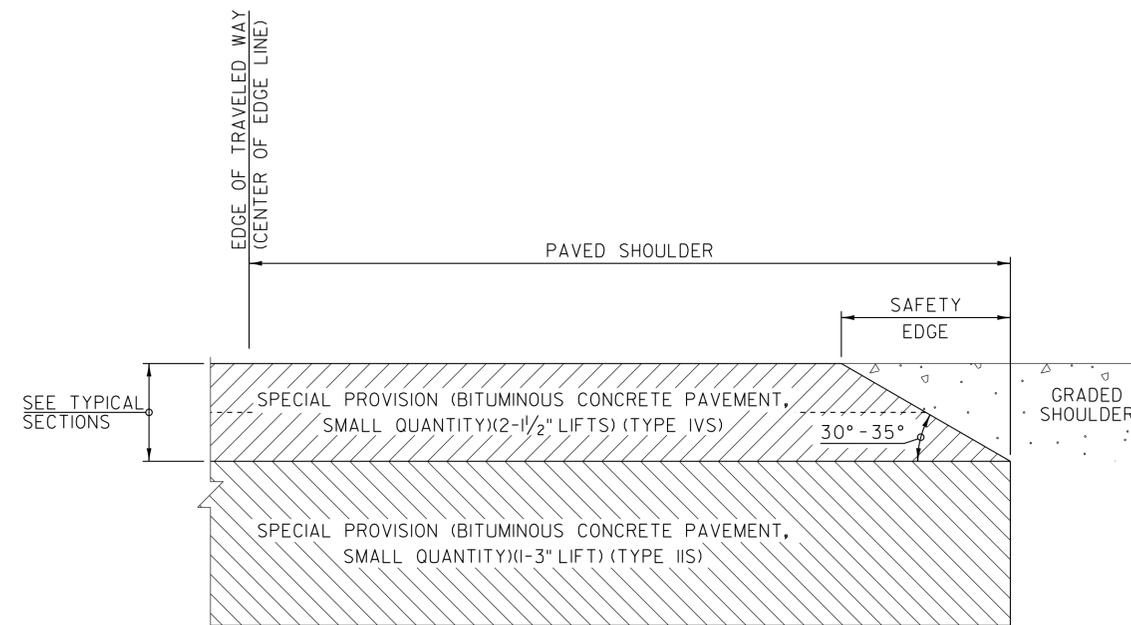
MATERIAL TOLERANCES	
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"

3" SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) (2 - 1 1/2" LIFTS) (TYPE IVS)  
 3" SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) (1 - 3" LIFT) (TYPE IIS)



**TYPICAL STONE FILL DITCH**

NOT TO SCALE

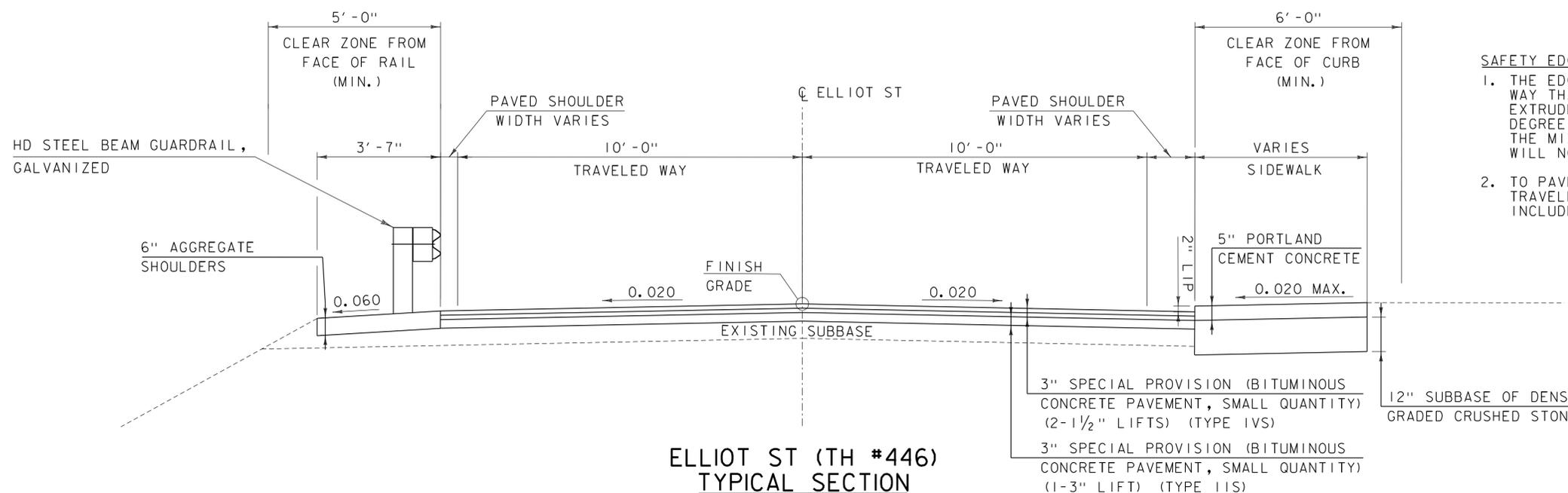


**SAFETY EDGE DETAIL**

NOT TO SCALE

**SAFETY EDGE NOTES**

1. THE EDGE OF PAVEMENT SHALL BE FORMED IN SUCH A WAY THAT THE BITUMINOUS CONCRETE PAVEMENT IS EXTRUDED OR COMPRESSED TO FORM THE 30 TO 35 DEGREE ANGLE. DEVICES THAT SIMPLY STRIKE-OFF THE MIX WITHOUT PROVIDING ANY COMPACTIVE EFFORT WILL NOT BE ALLOWED.
2. TO PAVED SHOULDER EXTENDS FROM THE EDGE OF TRAVELED WAY TO THE EDGE OF THE WEARING COURSE, INCLUDED THE "SAFETY EDGE".



**ELLIOT ST (TH #446)  
TYPICAL SECTION**

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

PROJECT NAME: BRATTLEBORO  
 PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j091typ-3l.dgn  
 PROJECT LEADER: J. BYATT  
 DESIGNED BY: L. GREER  
 TYPICAL ROADWAY SECTIONS SHEET

PLOT DATE: 2/5/2016  
 DRAWN BY: P. McKECHNE  
 CHECKED BY: S. FORTIER  
 SHEET 5 OF 26



# QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE NO. 31	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	-			
							50				50		CY	COMMON EXCAVATION	203.15	3			
							1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	-			
							35				35		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	5			
							425				425		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10	8			
							15				15		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35	1.9			
							10				10		TON	AGGREGATE SHOULDERS	402.12	1			
							1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50	-			
									110		110		CY	CONCRETE, HIGH PERFORMANCE CLASS A	501.33	0.2			
									20941		20941		LB	REINFORCING STEEL, LEVEL I	507.11	0.98			
									1		1		LS	SHEAR CONNECTORS (1266 - 8" X 7/8")	508.15	-			
									234		234		SY	LONGITUDINAL DECK GROOVING	509.10	0.49			
									38		38		GAL	WATER REPELLENT, SILANE	514.10	0.25			
									37		37		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10	0.33			
									23		23		LF	JOINT SEALER, HOT POURED	524.11	0.33			
									1		1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20	-			
									10		10		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	580.13	EST.			
									10		10		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	580.14	EST.			
							4				4		EACH	REHAB. DROP INLETS, CATCH BASINS, OR MANHOLES, CLASS I	604.412	-			
							1				1		EACH	CHANGING ELEVATION OF SEWER MANHOLES	604.42	-			
							1				1		CY	STONE FILL, TYPE I	613.10	-			
							8				8		LF	CAST-IN-PLACE CONCRETE CURB, TYPE B	616.28	-			
							15				15		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	618.10	1			
									10		10		SF	DETECTABLE WARNING SURFACE	618.30	-			
							37.5				37.5		LF	HD STEEL BEAM GUARDRAIL, GALVANIZED	621.21	-			
							3				3		EACH	STEEL BEAM GUARDRAIL OFFSET BLOCK	621.219	-			
							1				1		EACH	MANUFACTURED TERMINAL SECTION, FLARED	621.50	-			
							2				2		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60	-			
							40				40		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80	3			
							3				3		EACH	GUIDE POSTS	621.85	-			
							1				1		EACH	ADJUST ELEVATION OF VALVE BOX	629.20	-			
							40				40		HR	UNIFORMED TRAFFIC OFFICERS	630.10	-			
							120				120		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	-			
							1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11	-			
							2				2		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15	-			
							200				200		LF	DURABLE 4 INCH WHITE LINE, THERMOPLASTIC	646.402	20			

PROJECT NAME: BRATTLEBORO  
PROJECT NUMBER: BF 2000(26)  
FILE NAME: z15j09lqss-3l.dgn  
PROJECT LEADER: J. BYATT  
DESIGNED BY: J. FRENCH  
QUANTITY SHEET 1  
PLOT DATE: 2/26/2016  
DRAWN BY: M. SMITH  
CHECKED BY: A. GIRALDI  
SHEET 6 OF 26

# QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE NO. 31	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
							350				350		LF	DURABLE 4 INCH YELLOW LINE, THERMOPLASTIC	646.412	20			<b>SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)</b>
							10				10		LF	DURABLE 24 INCH STOP BAR	646.480	-	61	TON	TYPE I/S
							5				5		SY	GEOTEXTILE UNDER STONE FILL	649.31	1	6	TON	TYPE I/S
							3				3		EACH	REMOVING SIGNS	675.50	-	67	TON	SUBTOTAL
							2				2		EACH	ERECTING SALVAGED SIGNS	675.60	-	3	TON	ROUNDING
							1				1		EACH	SETTING SALVAGED POSTS	675.61	-	70	TON	TOTAL
							2				2		EACH	DELINEATOR WITH STEEL POST	676.10	-			
							6				6		EACH	SPECIAL PROVISION (CPM SCHEDULE)	900.620	-			
									185.13		185.13		LF	SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION)	900.640	-			
							1				1		LS	SPECIAL PROVISION (TRAFFIC CONTROL, ALL INCLUSIVE)	900.645	-			
							1				1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY) (N.A.B.I.)	900.650	-			
							1				1		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT) (N.A.B.I.)	900.650	-			
							15				15		SY	SPECIAL PROVISION (HAND-PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES)	900.675	4			
							70				70		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680	3			

PROJECT NAME: BRATTLEBORO  
PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j09lqss-3l.dgn  
PROJECT LEADER: J. BYATT  
DESIGNED BY: S. BEAUMONT  
QUANTITY SHEET 2

PLOT DATE: 2/26/2016  
DRAWN BY: M. SMITH  
CHECKED BY: A. GIRALDI  
SHEET 7 OF 26

**GENERAL INFORMATION**

**SYMBOLY LEGEND NOTE**

THE SYMBOLY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLY. THE SYMBOLY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

**R.O.W. ABBREVIATIONS (CODES) & SYMBOLS**

POINT CODE	DESCRIPTION
CH	CHANNEL EASEMENT
CONST	CONSTRUCTION EASEMENT
CUL	CULVERT EASEMENT
D&C	DISCONNECT & CONNECT
DIT	DITCH EASEMENT
DR	DRAINAGE EASEMENT
DRIVE	DRIVEWAY EASEMENT
EC	EROSION CONTROL
HWY	HIGHWAY EASEMENT
I&M	INSTALL & MAINTAIN EASEMENT
LAND	LANDSCAPE EASEMENT
R&RES	REMOVE & RESET
R&REP	REMOVE & REPLACE
SR	SLOPE RIGHT
UE	UTILITY EASEMENT
(P)	PERMANENT EASEMENT
(T)	TEMPORARY EASEMENT
■	BNDNS BOUND SET
▣	BNDNS BOUND TO BE SET
●	IPNS IRON PIN SET
⊙	IPNS IRON PIN TO BE SET
⊗	CALC EXISTING ROW POINT
○	PROW PROPOSED ROW POINT
[LENGTH]	LENGTH CARRIED ON NEXT SHEET

**COMMON TOPOGRAPHIC POINT SYMBOLS**

POINT CODE	DESCRIPTION
⊕	APL BOUND APPARENT LOCATION
◊	BM BENCHMARK
▣	BND BOUND
▣	CB CATCH BASIN
⊕	COMB COMBINATION POLE
▣	DITHR DROP INLET THROATED DNC
⊕	EL ELECTRIC POWER POLE
◊	FPOLE FLAGPOLE
⊙	GASFIL GAS FILLER
⊙	GP GUIDE POST
⊗	GSO GAS SHUT OFF
◊	GUY GUY POLE
◊	GUYW GUY WIRE
⊗	GV GATE VALVE
⊗	H TREE HARDWOOD
△	HCTRL CONTROL HORIZONTAL
△	HVCTRL CONTROL HORIZ. & VERTICAL
◇	HYD HYDRANT
⊙	IP IRON PIN
⊙	IPIPE IRON PIPE
⊕	LI LIGHT - STREET OR YARD
⊕	MB MAILBOX
○	MH MANHOLE (MH)
▣	MM MILE MARKER
⊙	PM PARKING METER
▣	PMK PROJECT MARKER
⊙	POST POST STONE/WOOD
⊕	RRSIG RAILROAD SIGNAL
⊕	RRSL RAILROAD SWITCH LEVER
⊕	S TREE SOFTWOOD
⊕	SAT SATELLITE DISH
⊕	SHRUB SHRUB
⊕	SIGN SIGN
⊕	STUMP STUMP
⊕	TEL TELEPHONE POLE
⊕	TIE TIE
⊕	TSIGN SIGN W/DOUBLE POST
⊕	VCTRL CONTROL VERTICAL
⊕	WELL WELL
⊕	WSO WATER SHUT OFF

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

**PROPOSED GEOMETRY CODES**

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADIUS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE

**UTILITY SYMBOLY**

UNDERGROUND UTILITIES	
— UGU —	UTILITY (GENERIC-UNKNOWN)
— — — — —	TELEPHONE
— — — — —	ELECTRIC
— — — — —	CABLE (TV)
— UEC —	ELECTRIC+CABLE
— UET —	ELECTRIC+TELEPHONE
— UCT —	CABLE+TELEPHONE
— UECT —	ELECTRIC+CABLE+TELEP.
— — — — —	GAS LINE
— — — — —	WATER LINE
— — — — —	SANITARY SEWER (SEPTIC)
ABOVE GROUND UTILITIES (AERIAL)	
— AGU —	UTILITY (GENERIC-UNKNOWN)
— — — — —	TELEPHONE
— — — — —	ELECTRIC
— C —	CABLE (TV)
— EC —	ELECTRIC+CABLE
— ET —	ELECTRIC+TELEPHONE
— — — — —	ELECTRIC+TELEPHONE
— CT —	CABLE+TELEPHONE
— ECT —	ELECTRIC+CABLE+TELEP.
— — — — —	UTILITY POLE GUY WIRE

**PROJECT CONSTRUCTION SYMBOLY**

PROJECT DESIGN & LAYOUT SYMBOLY	
— CZ —	CLEAR ZONE
— — — — —	PLAN LAYOUT MATCHLINE

**PROJECT CONSTRUCTION FEATURES**

— — — — —	TOP OF CUT SLOPE
— — — — —	TOE OF FILL SLOPE
⊗ ⊗ ⊗ ⊗ ⊗	STONE FILL
— — — — —	BOTTOM OF DITCH
— — — — —	CULVERT PROPOSED
— — — — —	STRUCTURE SUBSURFACE
— — — — —	PROJECT DEMARCATION FENCE
BF — — — — — BF	BARRIER FENCE
XXXXXXXXXXXXXXXXXXXX	TREE PROTECTION ZONE (TPZ)
///	STRIPING LINE REMOVAL
~~~~~	SHEET PILES

**CONVENTIONAL BOUNDARY SYMBOLY**

BOUNDARY LINES	
— — — — —	TOWN BOUNDARY LINE
— — — — —	COUNTY BOUNDARY LINE
— — — — —	STATE BOUNDARY LINE
— — — — —	PROPOSED STATE R.O.W. (LIMITED ACCESS)
— — — — —	PROPOSED STATE R.O.W.
— — — — —	STATE ROW (LIMITED ACCESS)
— — — — —	STATE ROW
— — — — —	TOWN ROW
— — — — —	PERMANENT EASEMENT LINE (P)
— — — — —	TEMPORARY EASEMENT LINE (T)
— — — — —	SURVEY LINE
— P — — — — — P	PROPERTY LINE (P/L)
— SR — — — — — SR	SLOPE RIGHTS
— — — — —	6F PROPERTY BOUNDARY
— — — — —	4F PROPERTY BOUNDARY
— — — — —	HAZARDOUS WASTE

**EPSC LAYOUT PLAN SYMBOLY**

EPSC MEASURES	
— — — — —	FILTER CURTAIN
— — — — —	SILT FENCE
— — — — —	SILT FENCE WOVEN WIRE
— — — — —	CHECK DAM
— — — — —	DISTURBED AREAS REQUIRING RE-VEGETATION
— — — — —	EROSION MATTING

**ENVIRONMENTAL RESOURCES**

— — — — —	WETLAND BOUNDARY
— — — — —	RIPARIAN BUFFER ZONE
— — — — —	WETLAND BUFFER ZONE
— — — — —	SOIL TYPE BOUNDARY
— T&E —	THREATENED & ENDANGERED SPECIES
— — — — —	HAZARDOUS WASTE AREA
— AG —	AGRICULTURAL LAND
— HABITAT —	FISH & WILDLIFE HABITAT
— FLOOD PLAIN —	FLOOD PLAIN
— OHW —	ORDINARY HIGH WATER (OHW)
— — — — —	STORM WATER
— — — — —	USDA FOREST SERVICE LANDS
— — — — —	WILDLIFE HABITAT SUIT/CONN

**ARCHEOLOGICAL & HISTORIC**

— ARCH —	ARCHEOLOGICAL BOUNDARY
— HISTORIC DIST —	HISTORIC DISTRICT BOUNDARY
— HISTORIC —	HISTORIC AREA
Ⓜ	HISTORIC STRUCTURE

**CONVENTIONAL TOPOGRAPHIC SYMBOLY**

EXISTING FEATURES	
— — — — —	ROAD EDGE PAVEMENT
— — — — —	ROAD EDGE GRAVEL
— — — — —	DRIVEWAY EDGE
— — — — —	DITCH
— — — — —	FOUNDATION
— — — — —	FENCE (EXISTING)
— — — — —	FENCE WOOD POST
— — — — —	FENCE STEEL POST
— — — — —	GARDEN
— — — — —	ROAD GUARDRAIL
— — — — —	RAILROAD TRACKS
— — — — —	CULVERT (EXISTING)
— — — — —	STONE WALL
— — — — —	WALL
— — — — —	WOOD LINE
— — — — —	BRUSH LINE
— — — — —	HEDGE
— — — — —	BODY OF WATER EDGE
— — — — —	LEDGE EXPOSED

PROJECT NAME: BRATTLEBORO  
PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j09legend-3l.dgn  
PROJECT LEADER: J. BYATT  
DESIGNED BY: L. GREER  
CONVENTIONAL SYMBOLY LEGEND SHEET

PLOT DATE: 2/5/2016  
DRAWN BY: P. McKECHNE  
CHECKED BY: S. FORTIER  
SHEET 8 OF 26



**EXISTING BRIDGE DATA:**

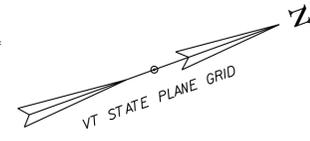
ROLLED BEAMS, CONCRETE DECK  
SPAN = 88'-0"  
WIDTH = 28'-2" OUT TO OUT  
BUILT IN 1947

- DURABLE 4 INCH WHITE LINE, THERMOPLASTIC  
0+23 TO 1+13 SOLID LT & RT
- DURABLE 4 INCH YELLOW LINE, THERMOPLASTIC  
0+23 TO 1+88 SOLID LT & RT
- DURABLE 24 INCH STOP BAR  
0+11 TO 0+20 RT
- REMOVING SIGNS  
0+24 LT  
0+21 RT (2)
- ERECTING SALVAGED SIGN  
0+21 RT (2)
- SETTING SALVAGED POST  
0+21 RT

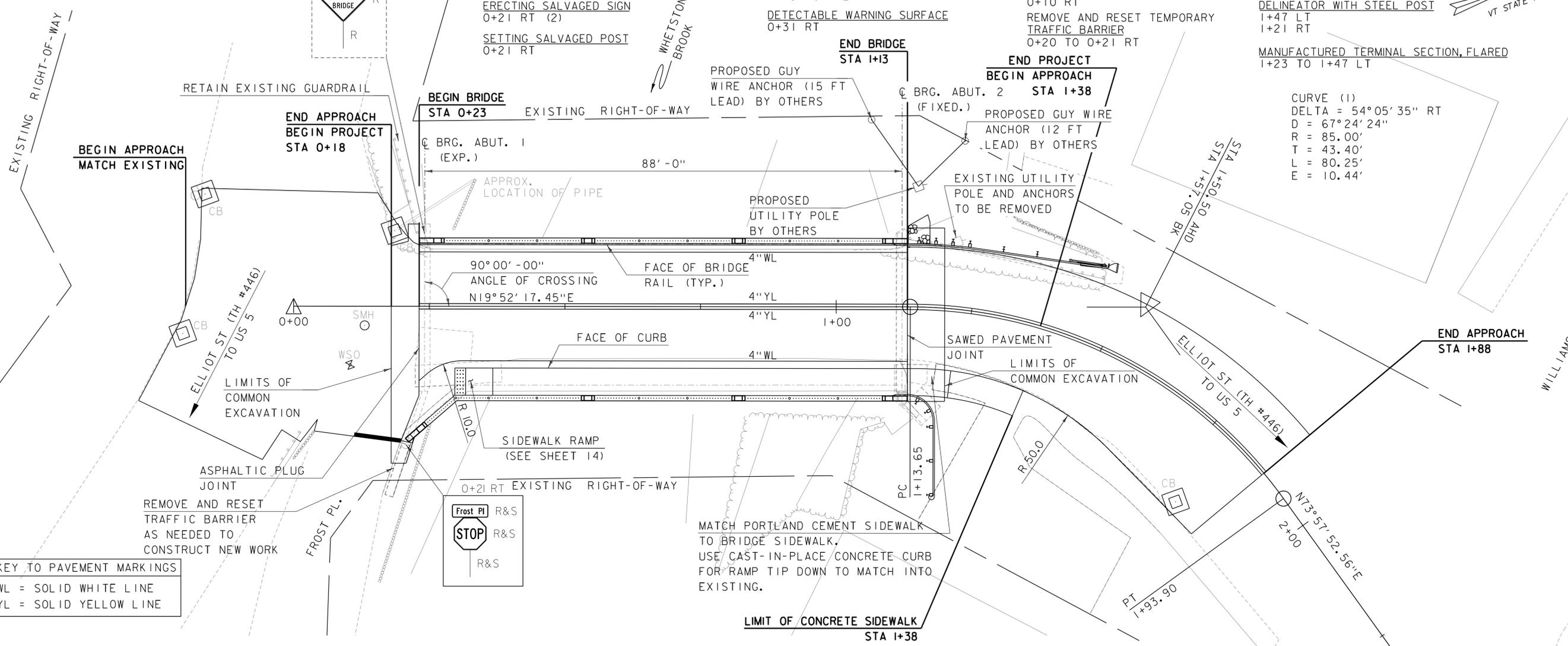
- PORTLAND CEMENT  
CONCRETE SIDEWALK, 5 INCH  
1+13 TO 1+38 RT
- STONE FILL, TYPE I  
GEOTEXTILE UNDER STONE FILL  
1+13 TO 1+17 LT
- CAST-IN-PLACE CONCRETE CURB, TYPE B  
(FOR SIDEWALK RAMP TIP DOWN)  
1+13 TO 1+21 RT
- DETECTABLE WARNING SURFACE  
0+31 RT

- REHAB. DROP INLETS, CATCH BASINS,  
OR MANHOLES, CLASS 1  
2 - AS SHOWN AT EP  
0+19 LT  
1+80 RT
- CHANGING ELEVATION  
OF SEWER MANHOLES  
0+13 RT
- ADJUST  
ELEVATION OF VALVE BOX  
0+10 RT
- REMOVE AND RESET TEMPORARY  
TRAFFIC BARRIER  
0+20 TO 0+21 RT

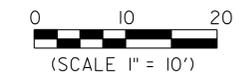
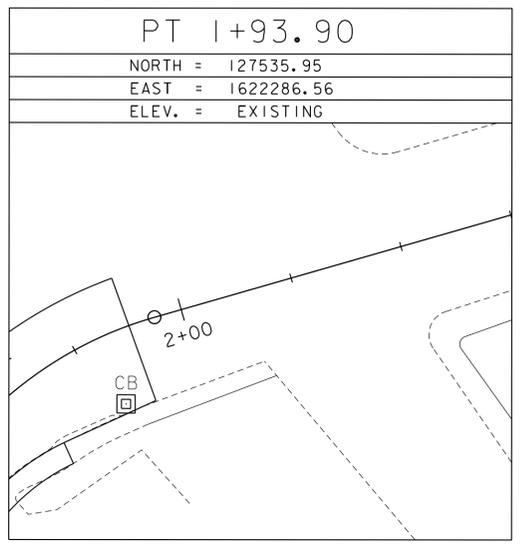
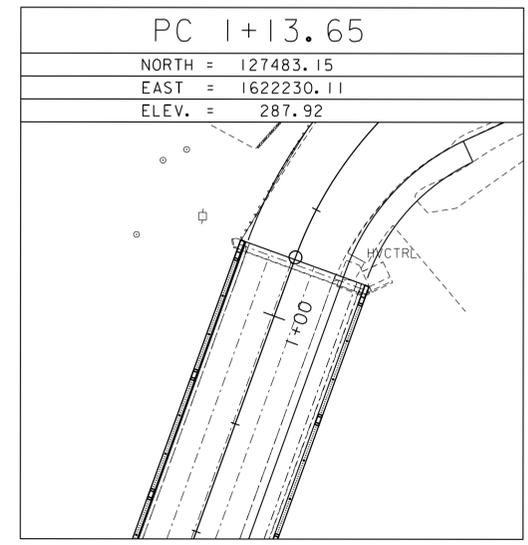
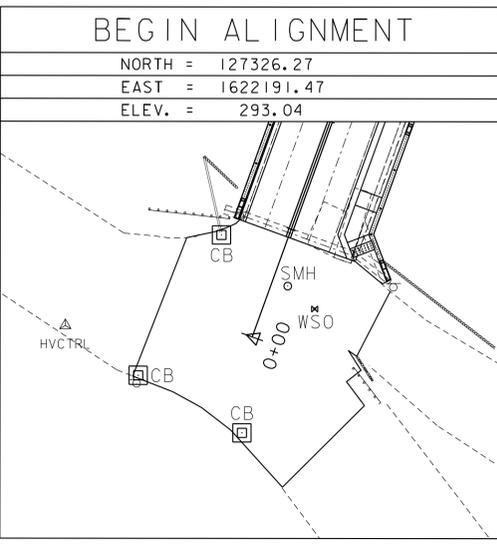
- REMOVAL AND DISPOSAL OF GUARDRAIL  
1+13 TO 1+46 LT
- HD STEEL BEAM GUARDRAIL, GALVANIZED  
1+13 TO 1+23 LT  
1+13 TO 1+21 RT
- ANCHOR FOR STEEL BEAM RAIL  
1+15 RT  
1+19 RT
- DELINEATOR WITH STEEL POST  
1+47 LT  
1+21 RT
- MANUFACTURED TERMINAL SECTION, FLARED  
1+23 TO 1+47 LT



CURVE (1)  
DELTA = 54°05'35" RT  
D = 67°24'24"  
R = 85.00'  
T = 43.40'  
L = 80.25'  
E = 10.44'



**KEY TO PAVEMENT MARKINGS**  
WL = SOLID WHITE LINE  
YL = SOLID YELLOW LINE



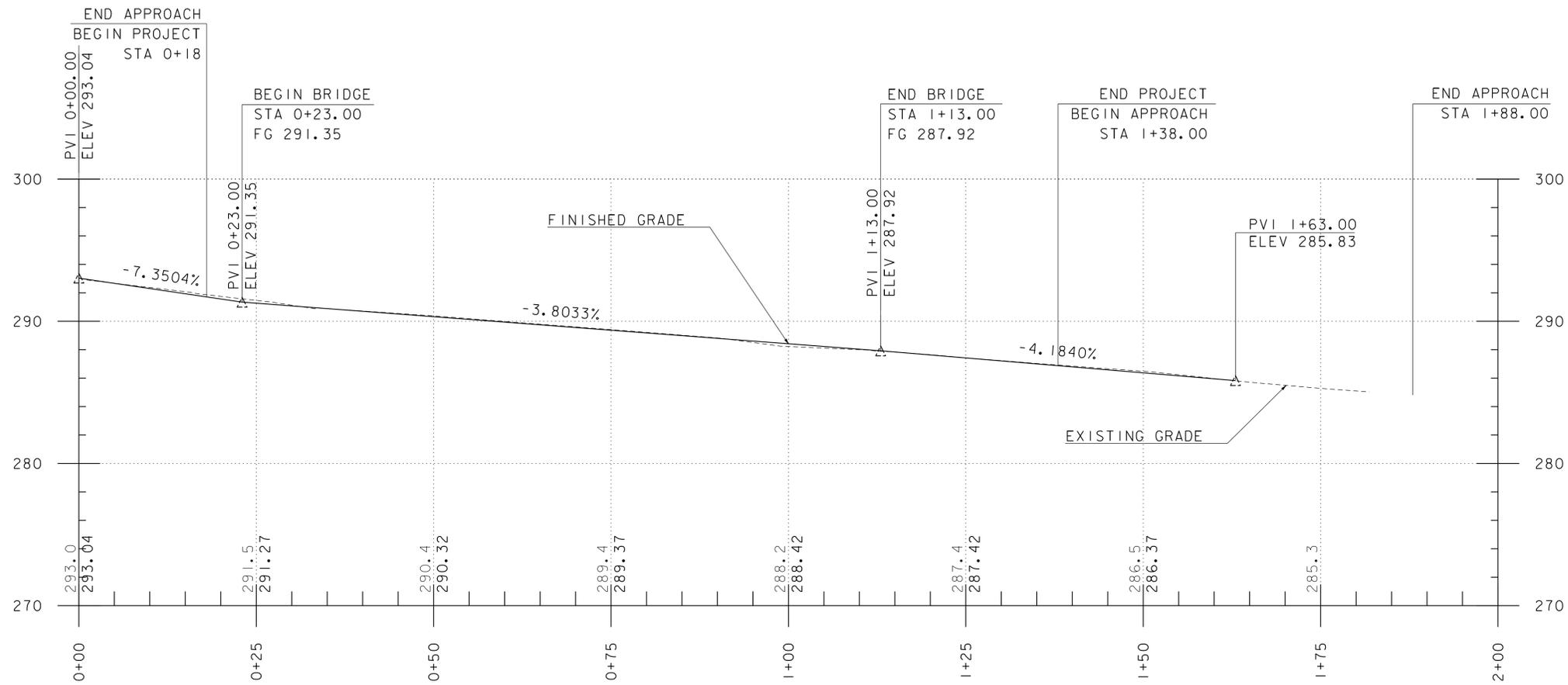
PROJECT NAME: BRATTLEBORO  
PROJECT NUMBER: BF 2000(26)  
FILE NAME: z15j09bdr-3l.dgn  
PROJECT LEADER: J. BYATT  
DESIGNED BY: L. GREER  
LAYOUT SHEET

PLOT DATE: 2/26/2016  
DRAWN BY: P. McKECHNE  
CHECKED BY: S. FORTIER  
SHEET 9 OF 26

CLD\_15-0223 MODEL: Layout 01

NOTE: NO TREES SHALL BE REMOVED.

CLD 15-0223 MODEL: PROFILE 01



### ELLIOT STREET PROFILE

#### NOTES

1. STATIONS AND ELEVATIONS ARE IN FEET.
2. THE ELEVATIONS SHOWN TO THE NEAREST TENTH ARE THE EXISTING GROUND ALONG THE CENTERLINE.
3. THE ELEVATIONS SHOWN TO THE NEAREST HUNDRETH ARE THE FINISHED GRADE ALONG THE CENTERLINE.
4. PROPOSED PROFILE SHOWN IS FOR INFORMATIONAL PURPOSES ONLY. FINAL FINISHED GRADE SHALL BE DETERMINED BY THE PROJECT MANAGER AFTER EXISTING TOP OF DECK AND TOP OF BEAM ELEVATIONS ARE SURVEYED. SEE PROJECT NOTE 22 ON SHEET 3.

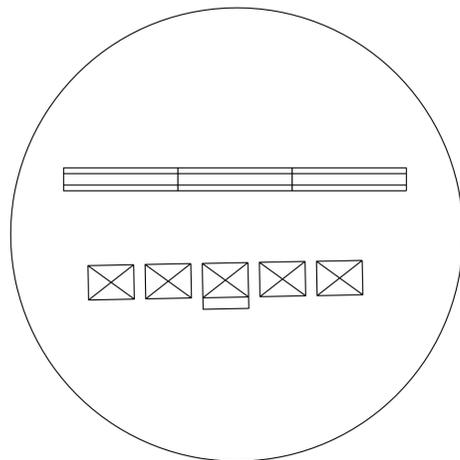
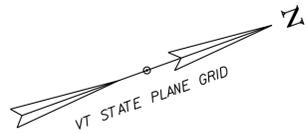
HOR. SCALE 1" = 20'-0"  
 VER. SCALE 1" = 10'-0"

PROJECT NAME: BRATTLEBORO  
 PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j09lpro-31.dgn  
 PROJECT LEADER: J. BYATT  
 DESIGNED BY: L. GREER  
 PROFILE SHEET

PLOT DATE: 2/5/2016  
 DRAWN BY: J. FOWLER  
 CHECKED BY: S. FORTIER  
 SHEET 10 OF 26





**LEGEND**

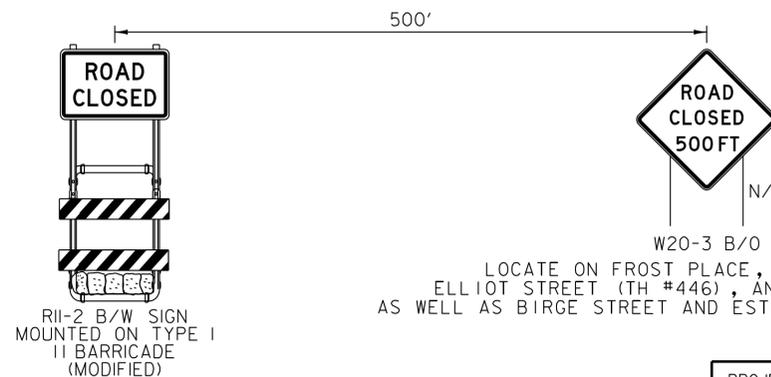
- N/C NEW SIGN/CONSTRUCTION ONLY
- B/O BLACK/ORANGE
- B/W BLACK/WHITE
- ☒ TYPE III BARRICADE
- ☒ TYPE III BARRICADE (MOD.)
- ▬ TEMPORARY TRAFFIC BARRIER



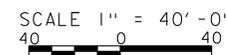
LOCATION	AADT		DHV		%T		%D		ADTT	
	2015	2035	2015	2035	2015	2035	2015	2035	2015	2035
ELLIOT STREET	4800	4900	640	650	1.4	2.1	54	54	60	90

**NOTES**

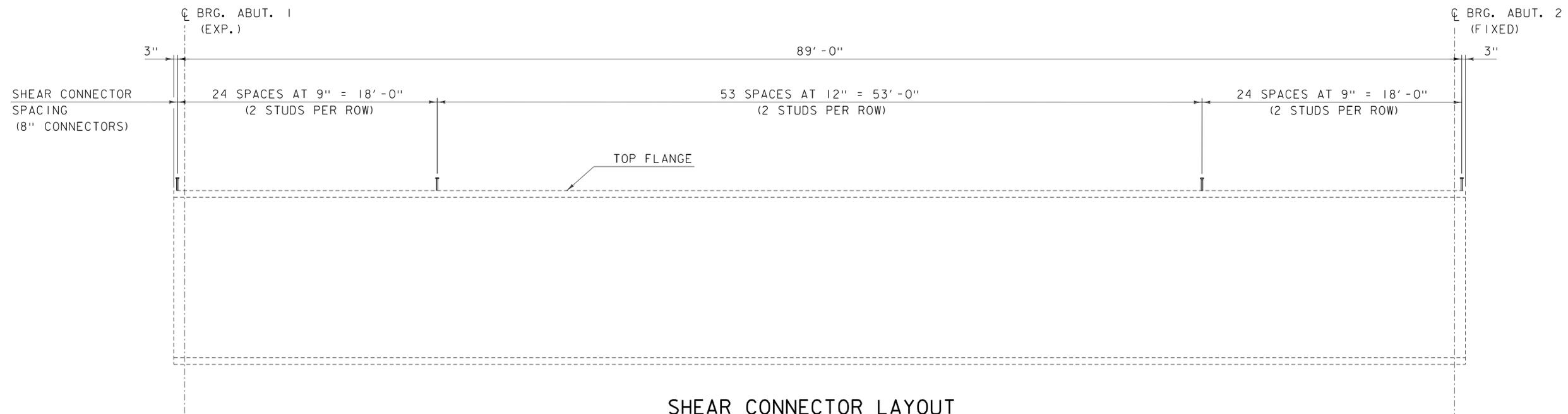
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SIGNS AND BARRICADES SHOWN ON THIS SHEET. THEY WILL BE PAID FOR UNDER ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
2. ANY TEMPORARY TRAFFIC BARRIER REQUIRED WILL BE CONSIDERED INCIDENTAL TO PAY ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)" AND FURNISHED IN ACCORDANCE WITH SECTION 621.
3. THE CONTRACTOR WILL PLACE ONE PORTABLE CHANGABLE MESSAGE SIGN ON EACH END OF PROJECT A MINIMUM OF TWO WEEKS PRIOR TO THE CLOSURE OF ELLIOT STREET (TH #446). THE MESSAGE SIGNS SHALL INDICATE THE ANTICIPATED BRIDGE CLOSURE PERIOD AND WILL BE PAID FOR UNDER ITEM 641J5, "PORTABLE CHANGEABLE MESSAGE SIGN".



LOCATE ON FROST PLACE, FROST STREET  
ELLIOT STREET (TH #446), AND WILLIAM STREET  
AS WELL AS BIRGE STREET AND ESTEY STREET TO THE WEST

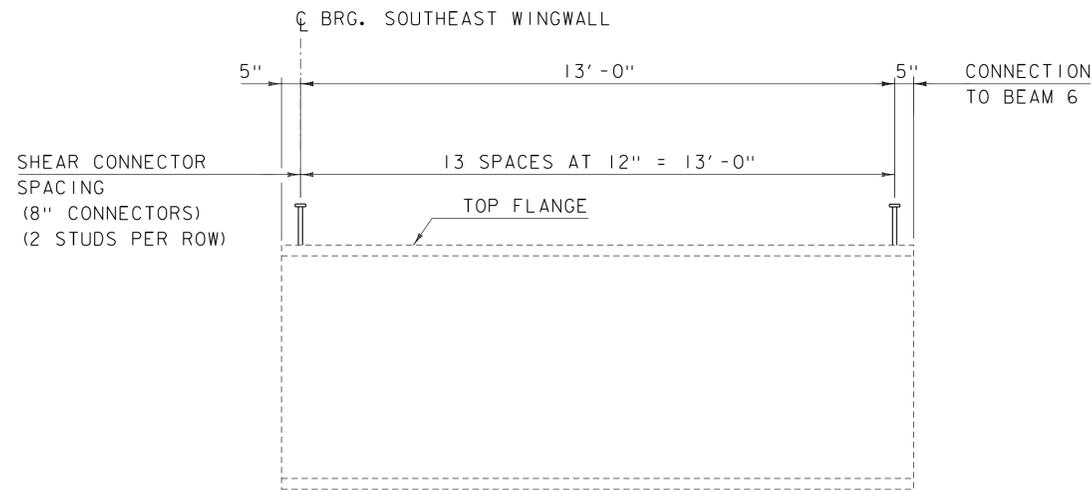


PROJECT NAME:	BRATTLEBORO
PROJECT NUMBER:	BF 2000(26)
FILE NAME:	z15j091bdr+cp-31.dgn
PROJECT LEADER:	J. BYATT
DESIGNED BY:	L. GREER
BRIDGE CLOSURE SIGNAGE SHEET	
PLOT DATE:	2/5/2016
DRAWN BY:	J. FOWLER
CHECKED BY:	S. FORTIER
SHEET	11 OF 26



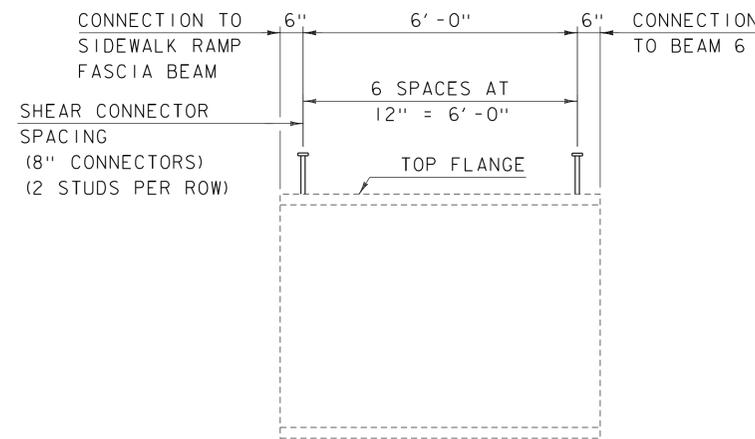
**SHEAR CONNECTOR LAYOUT**

HORIZONTAL SCALE: 1" = 1'-0"  
 VERTICAL SCALE: 1/4" = 1'-0"



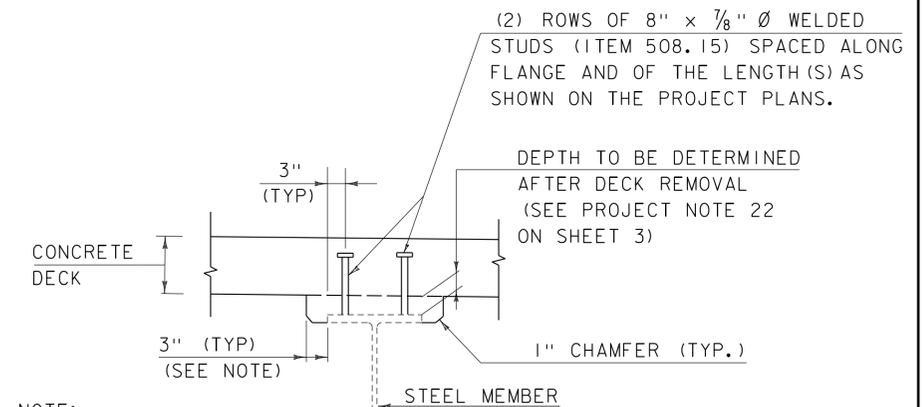
**SHEAR CONNECTOR LAYOUT FOR SIDEWALK RAMP FASCIA BEAM**

HORIZONTAL SCALE: 1/2" = 1'-0"  
 VERTICAL SCALE: 1/8" = 1'-0"



**SHEAR CONNECTOR LAYOUT FOR SIDEWALK RAMP INTERIOR BEAM**

HORIZONTAL SCALE: 1/2" = 1'-0"  
 VERTICAL SCALE: 1/8" = 1'-0"



**NOTE:**

THE 3" HORIZONTAL SECTION MAY BE ELIMINATED FOR FORMING SYSTEMS DESIGNED FOR THE CONSTRUCTION OF VERTICAL HAUNCHES. ANY VOIDS RESULTING FROM FORMING SYSTEM ELEMENTS SHALL BE FILLED WITH JOINT SEALER, POLYURETHANE MEETING THE REQUIREMENTS OF SECTION 524. THE COST OF THE JOINT SEALER, POLYURETHANE WILL BE CONSIDERED INCIDENTAL TO THE ADJACENT CONCRETE ITEM.

**HAUNCH AND SHEAR CONNECTOR DETAIL**

SCALE: 3/4" = 1'-0"

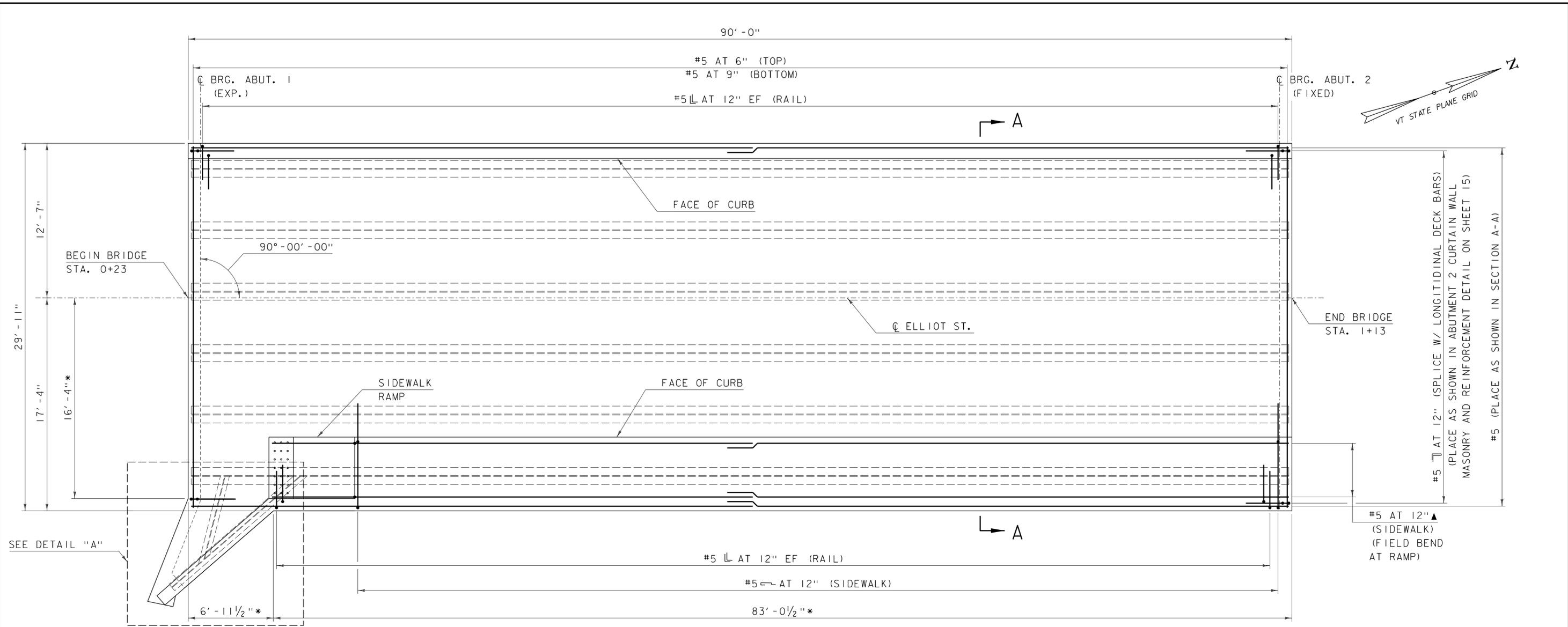
CLD 15-0223 MODEL: TYP03



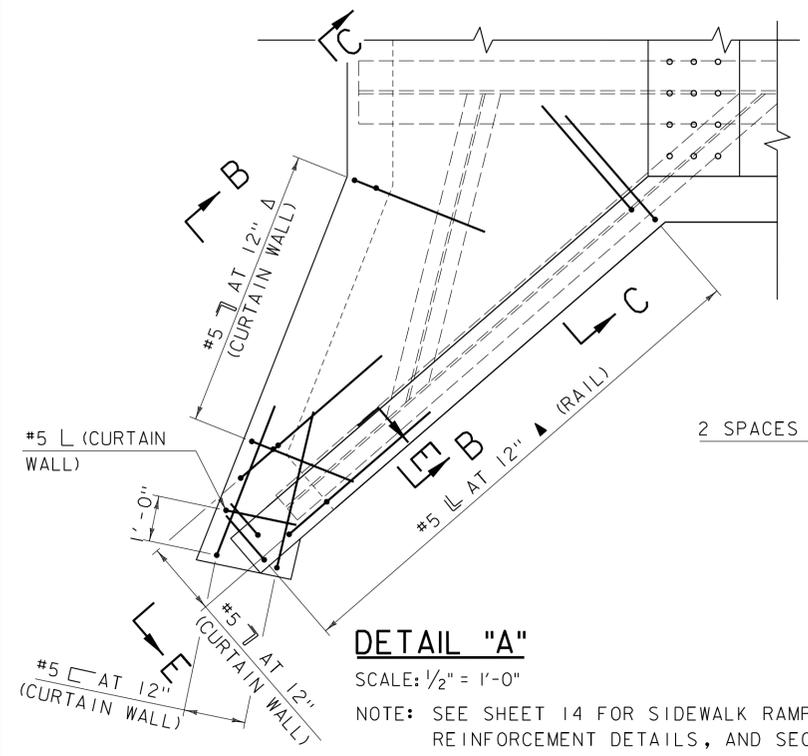
PROJECT NAME: BRATTLEBORO  
 PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j091typ-3l.dgn  
 PROJECT LEADER: J. BYATT  
 DESIGNED BY: N. CARON  
 SHEAR CONNECTOR DETAILS SHEET

PLOT DATE: 2/5/2016  
 DRAWN BY: M. SMITH  
 CHECKED BY: S. BEAUMONT  
 SHEET 12 OF 26



SEE DETAIL "A"



**DETAIL "A"**

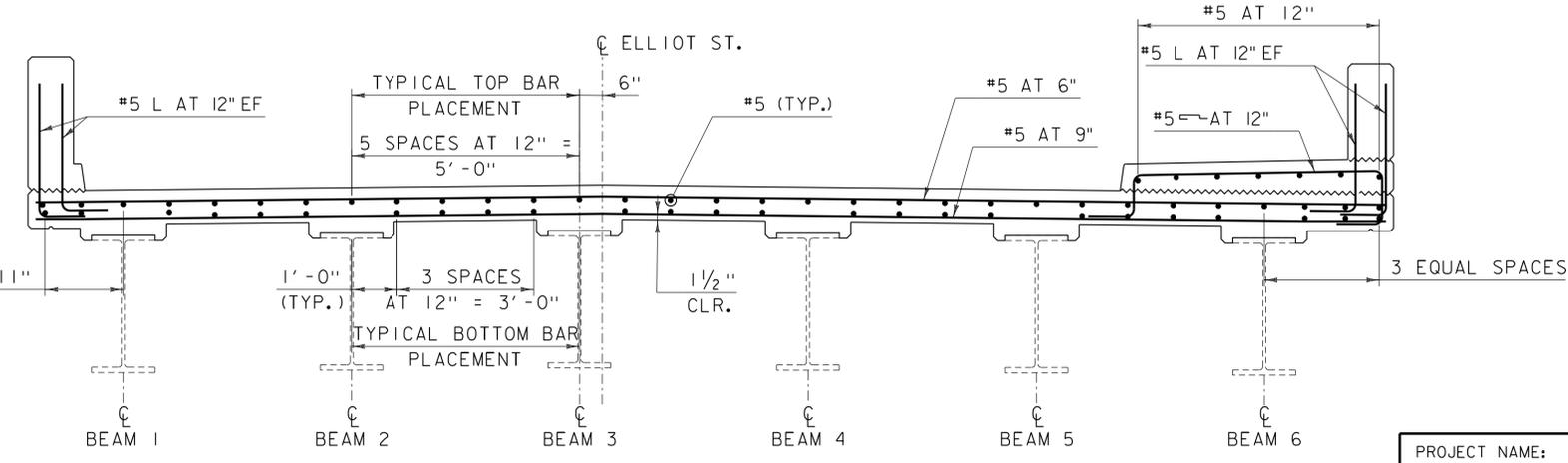
SCALE: 1/2" = 1'-0"

NOTE: SEE SHEET 14 FOR SIDEWALK RAMP MASONRY, ADDITIONAL REINFORCEMENT DETAILS, AND SECTIONS B-B, C-C, AND E-E.

**DECK REINFORCEMENT PLAN**

SCALE: 1/4" = 1'-0"

\* DIMENSIONS ARE BASED ON FIELD MEASUREMENTS AND ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS.



**SECTION A-A**

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

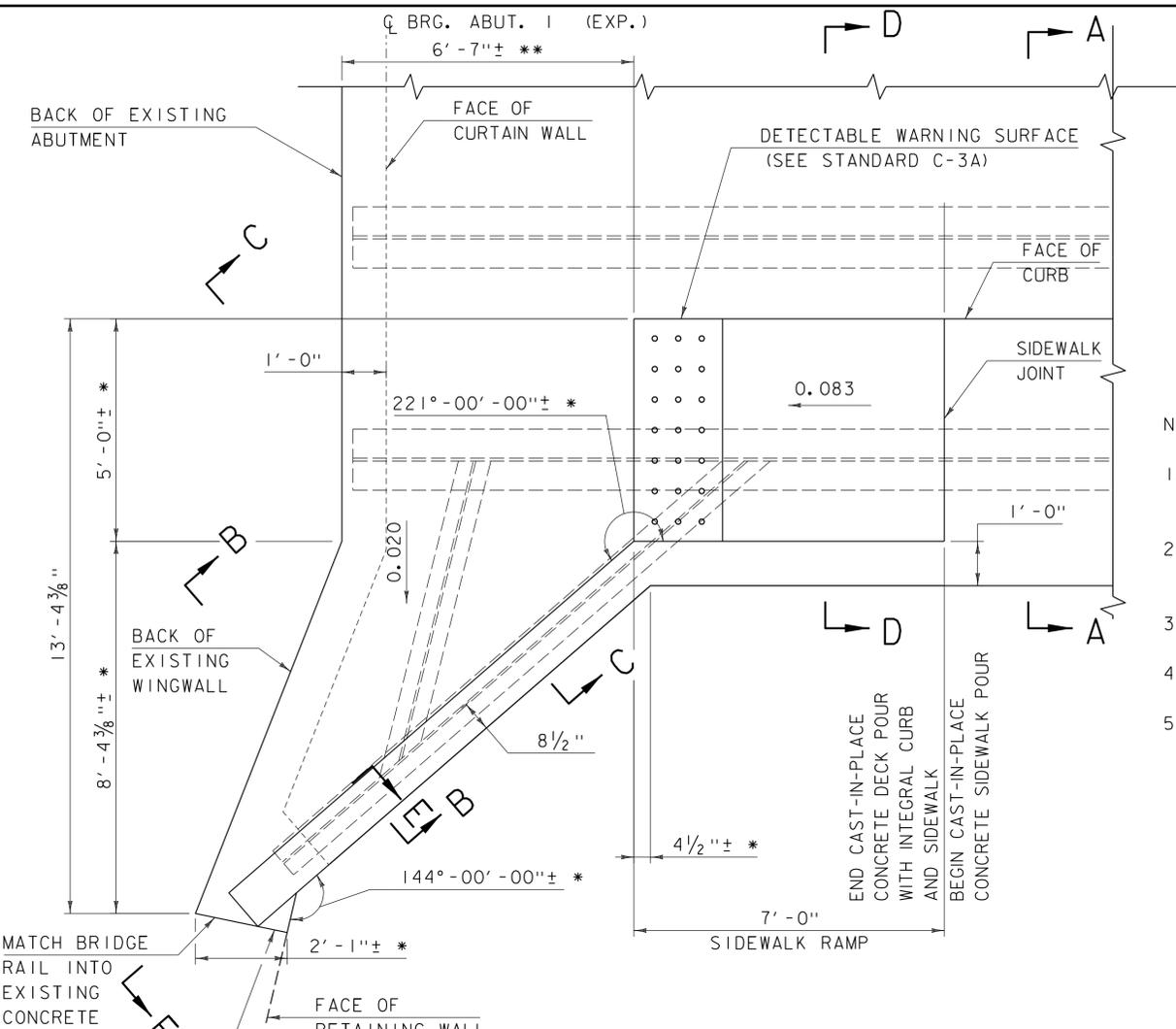
**NOTES:**

1. 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2. 3'-0" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.
3. 1'-0" HOOK UNLESS OTHERWISE SPECIFIED ON THE PLANS.
4. EF = EACH FACE
5. SEE SHEET 18 FOR RAIL LAYOUT SHEET.

PROJECT NAME:	BRATTLEBORO
PROJECT NUMBER:	BF 2000(26)
FILE NAME:	z15j091typ-3l.dgn
PROJECT LEADER:	J. BYATT
DESIGNED BY:	S. BEAUMONT
DECK DETAILS SHEET 1	
PLOT DATE:	2/5/2016
DRAWN BY:	M. SMITH
CHECKED BY:	J. FRENCH
SHEET	13 OF 26

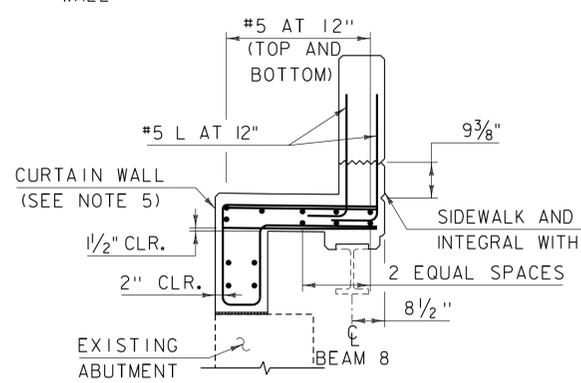


CLD 15-0223 MODEL: TYP04



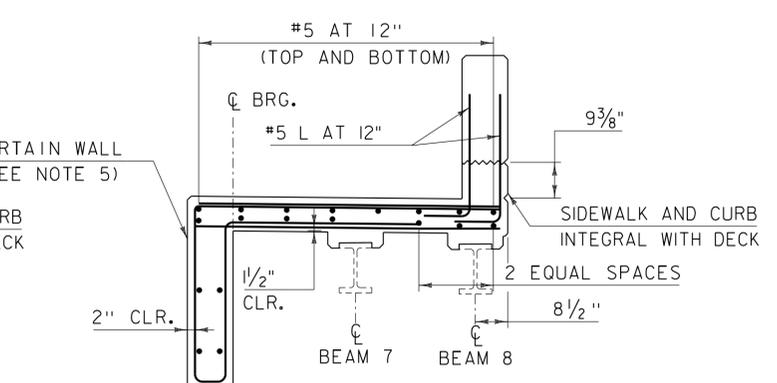
**SIDEWALK RAMP MASONRY PLAN**

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



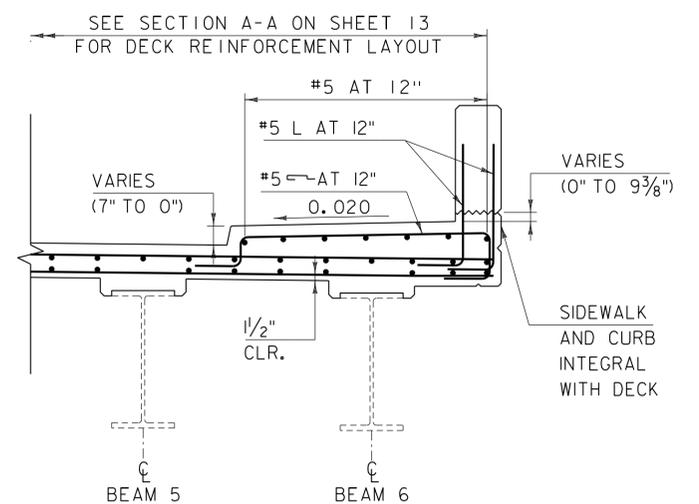
**SECTION B-B**

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



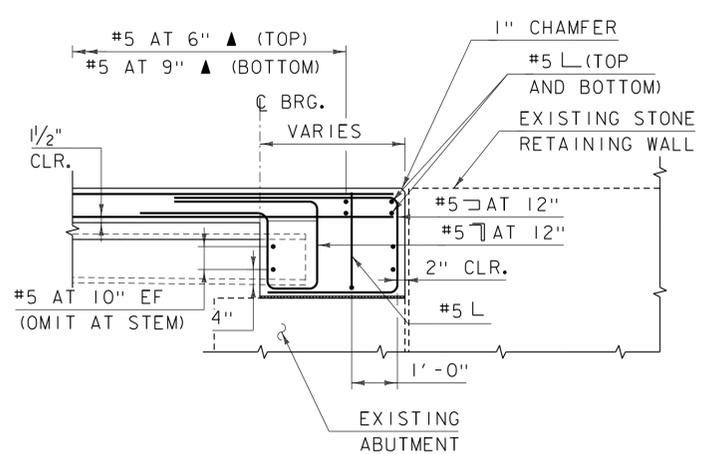
**SECTION C-C**

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



**SECTION D-D**

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

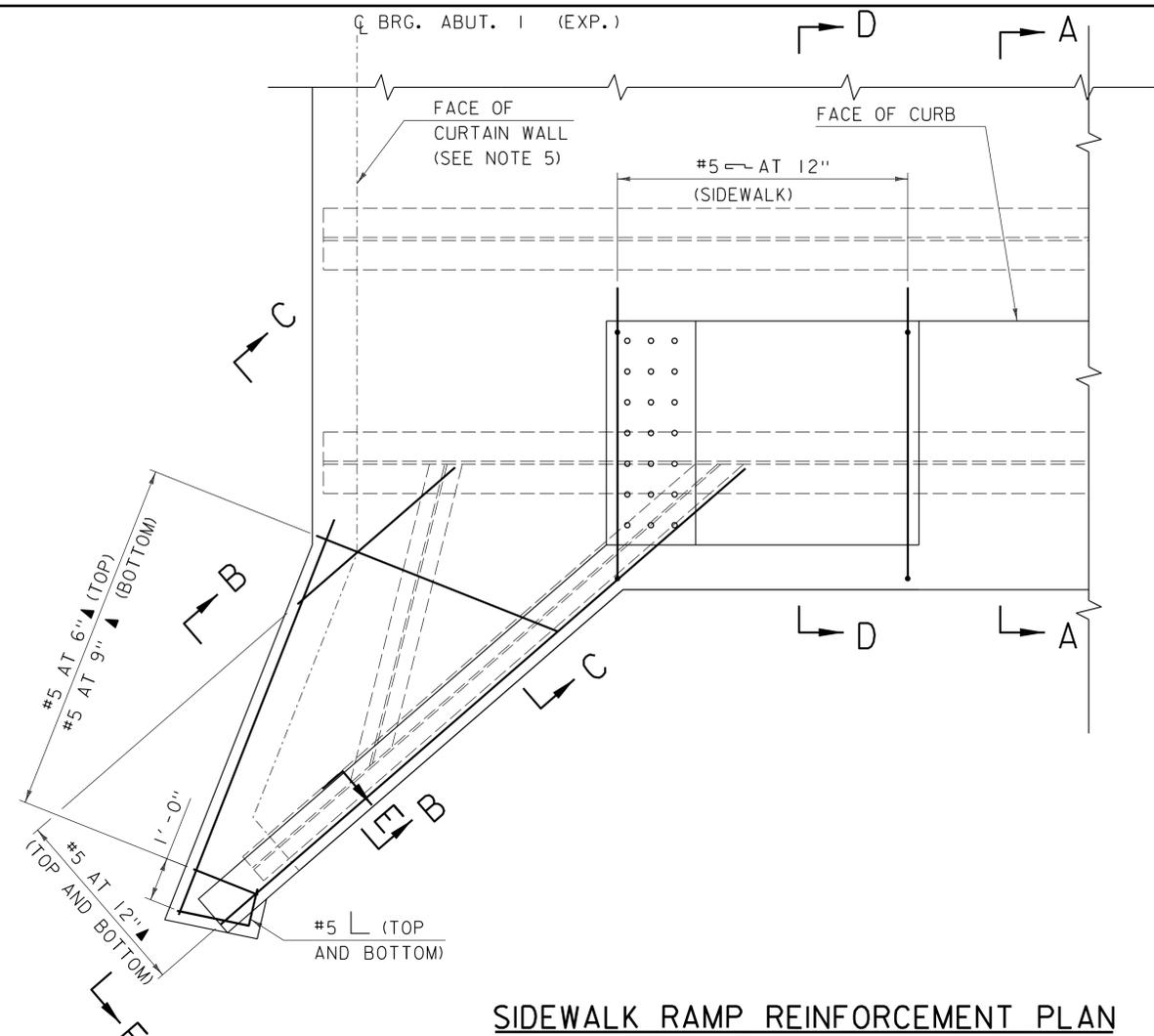
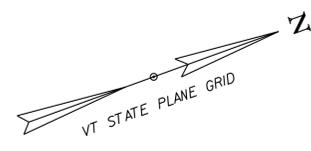


**SECTION E-E**

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

**NOTES:**

1. 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2. 3'-0" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.
3. EF = EACH FACE
4. SEE SHEET 13 FOR SECTION A-A.
5. SEE TYPICAL CURTAIN WALL SECTION ON SHEET 15 FOR MASONRY AND REINFORCEMENT DETAILS AND SECTION E-E THIS SHEET FOR REINFORCEMENT LAYOUT IN CURTAIN WALL AT SIDEWALK RAMP.



**SIDEWALK RAMP REINFORCEMENT PLAN**

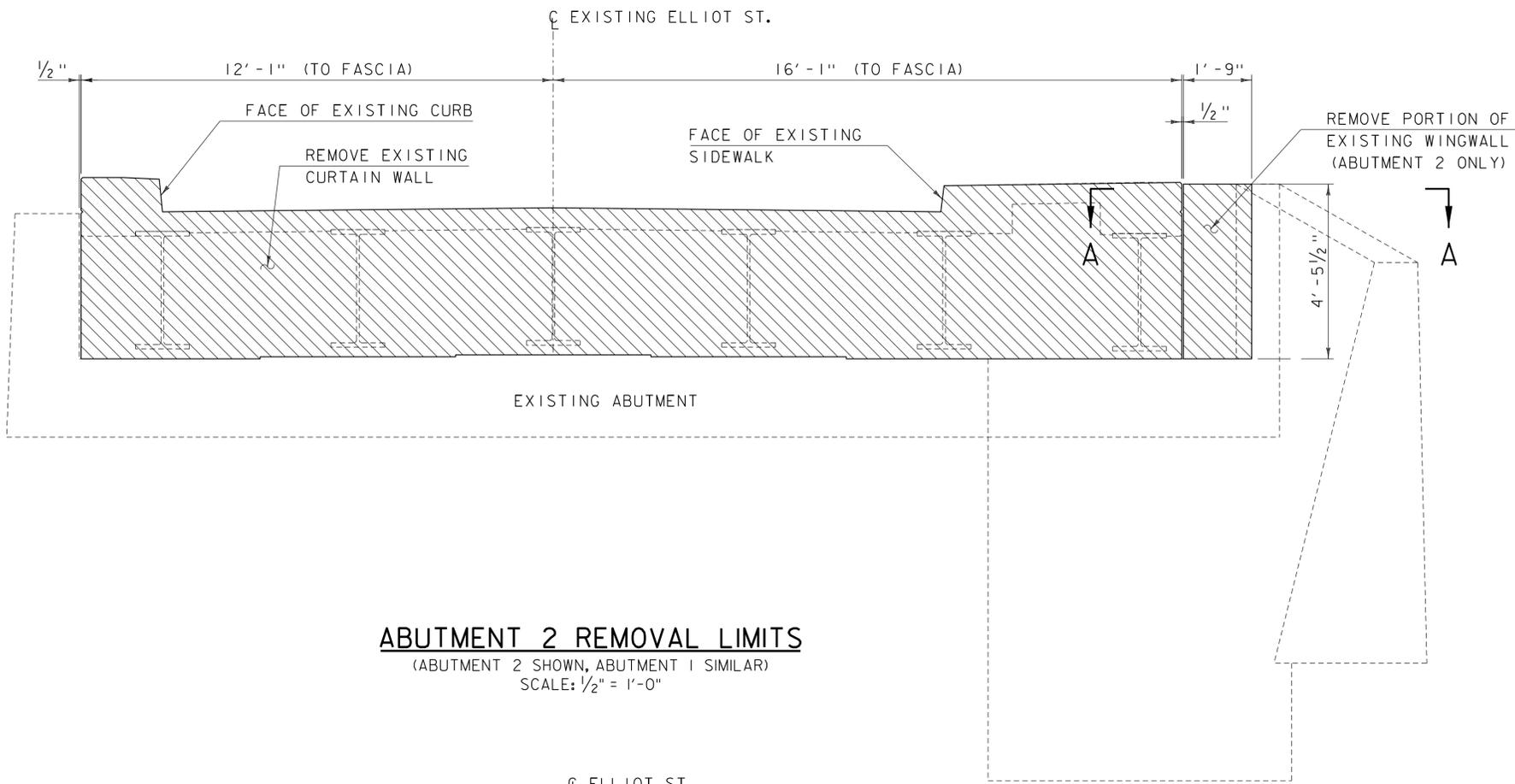
SCALE: 1/2" = 1'-0"

CLD 15-0223 MODEL: TYP05

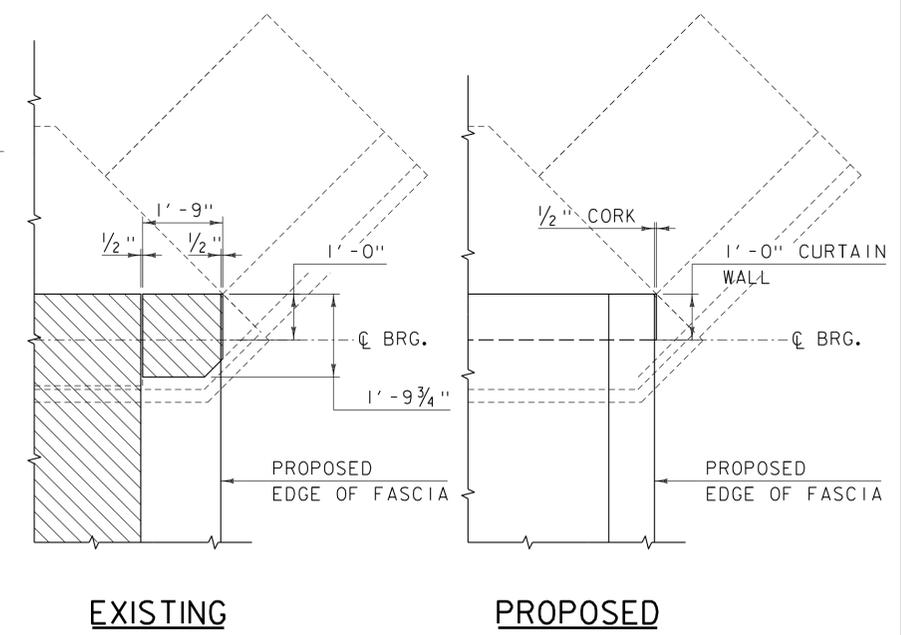
\* ALL DIMENSIONS ARE BASED ON FIELD MEASUREMENTS AND ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS.  
 \*\* SIDEWALK TO END AT BRIDGE RAIL ANGLE POINT.



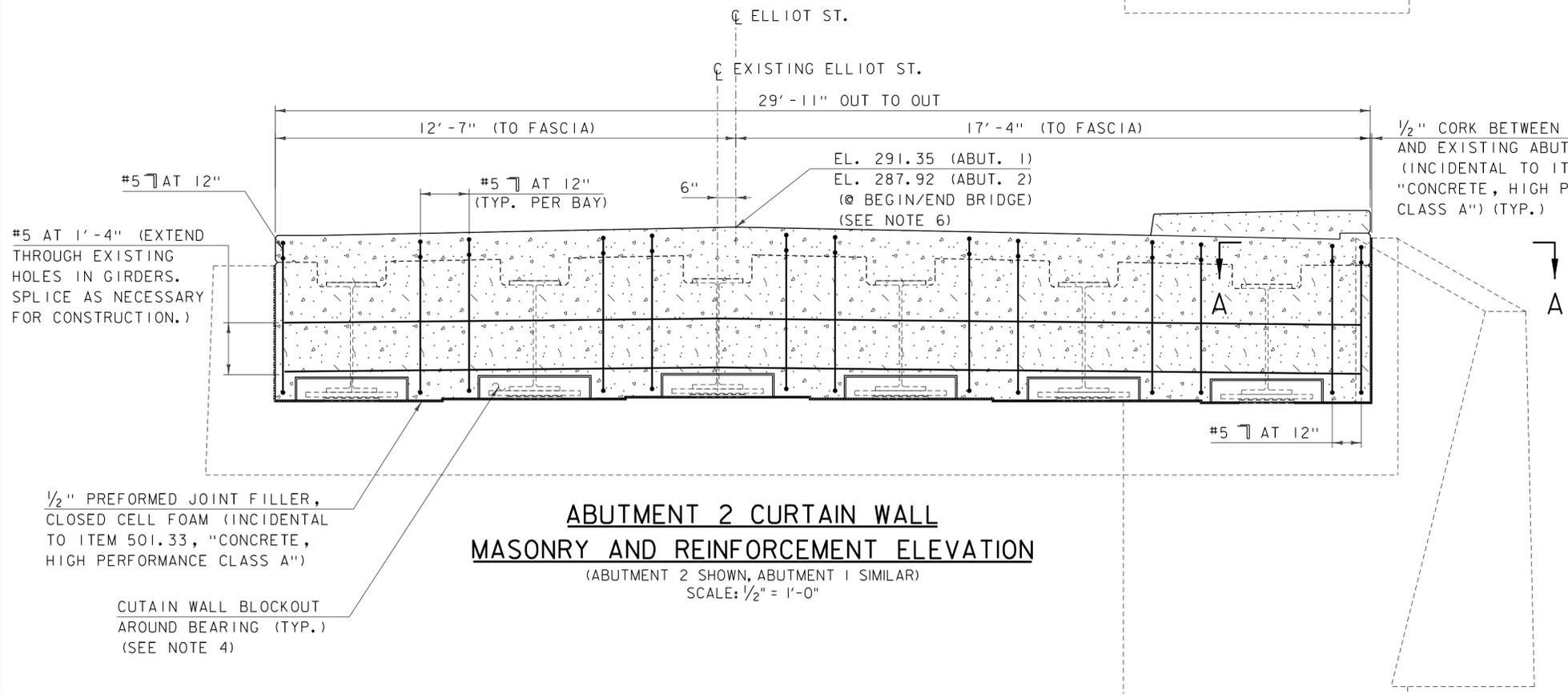
PROJECT NAME:	BRATTLEBORO	PLOT DATE:	2/5/2016
PROJECT NUMBER:	BF 2000(26)	DRAWN BY:	M. SMITH
FILE NAME:	z15j091+yp-3l.dgn	DESIGNED BY:	S. BEAUMONT
PROJECT LEADER:	J. BYATT	CHECKED BY:	J. FRENCH
DECK DETAILS SHEET 2		SHEET	14 OF 26



**ABUTMENT 2 REMOVAL LIMITS**  
 (ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR)  
 SCALE: 1/2" = 1'-0"



**SECTION A-A**  
 SCALE: 1/2" = 1'-0"



**ABUTMENT 2 CURTAIN WALL MASONRY AND REINFORCEMENT ELEVATION**  
 (ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR)  
 SCALE: 1/2" = 1'-0"

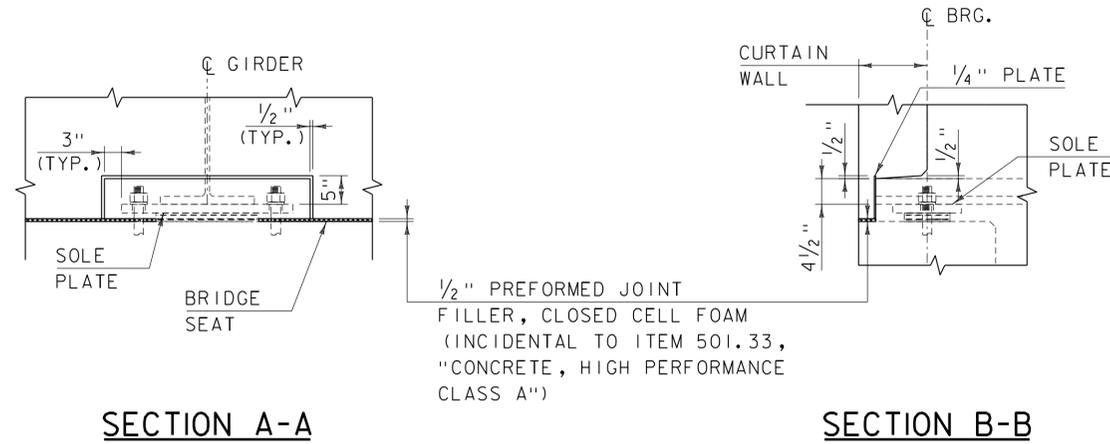
- PARTIAL REMOVAL OF STRUCTURE (SEE NOTE 18 ON SHEET 3)
- CONCRETE, HIGH PERFORMANCE CLASS A

- NOTES:
1. 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
  2. 3'-1" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.
  3. EF = EACH FACE
  4. SEE SHEET 16 FOR TYPICAL CURTAIN WALL SECTION AND CURTAIN WALL BLOCKOUT AROUND BEARINGS DETAILS.
  5. SEE SECTION F-F ON SHEET 14 FOR CURTAIN WALL AT SIDEWALK RAMP REINFORCEMENT LAYOUT.
  6. ELEVATIONS ARE FOR INFORMATIONAL PURPOSES ONLY. FINAL FINISHED GRADE SHALL BE DETERMINED BY VTRANS AFTER EXISTING TOP OF DECK AND TOP OF BEAM ELEVATIONS ARE SURVEYED. SEE PROJECT NOTE 22 ON SHEET 3.

PROJECT NAME:	BRATTLEBORO
PROJECT NUMBER:	BF 2000(26)
FILE NAME:	z15j091typ-3l.dgn
PROJECT LEADER:	J. BYATT
DESIGNED BY:	S. BEAUMONT
REMOVAL & CURTAIN WALL DETAILS SHEET 1	
PLOT DATE:	2/5/2016
DRAWN BY:	M. SMITH
CHECKED BY:	J. FRENCH
SHEET 15 OF 26	

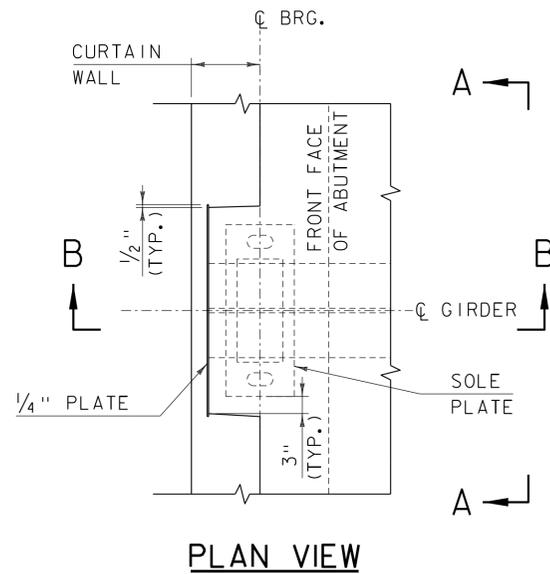


CLD 15-0223 MODEL: TYP06

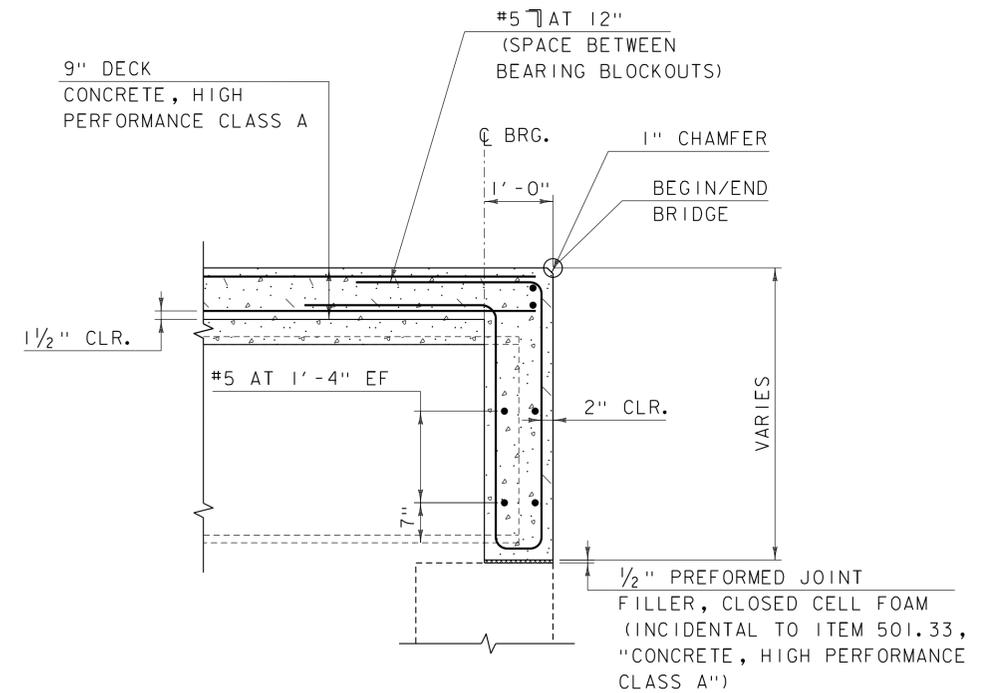


**NOTES:**

1. 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2. 3'-0" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.
3. EF = EACH FACE
4. SEE SHEET 15 FOR CURTAIN WALL MASONRY AND REINFORCEMENT ELEVATION.



**CONCRETE CURTAIN WALL BLOCKOUTS AROUND BEARINGS**  
SCALE: 3/4" = 1'-0"



**TYPICAL CURTAIN WALL SECTION**  
SCALE: 3/4" = 1'-0"

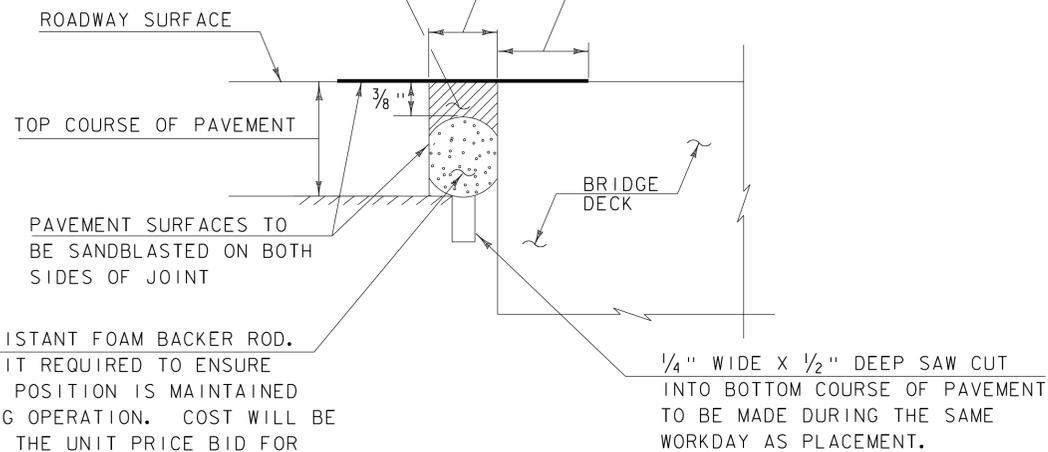
CLD\_15-0223 MODEL: TYP07

PROJECT NAME: BRATTLEBORO	
PROJECT NUMBER: BF 2000(26)	
FILE NAME: z15j091typ-3l.dgn	PLOT DATE: 2/5/2016
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: N. CARON
REMOVAL & CURTAIN WALL DETAILS SHEET 2	SHEET 16 OF 26

JOINT SEALER, HOT Poured. SHALL BE SLIGHTLY OVER FILLED THEN WIPEd FLUSH WITH A "V" OR "U" SHAPED SQUEEGEE TO PROVIDE A 1/4" WIPE ZONE EACH SIDE OF JOINT.

3/4" SAW CUT \* COST TO BE INCLUDED WITH UNIT BID PRICE FOR JOINT SEALER.

1 1/4" MIN. WIPE ZONE (TYP.)



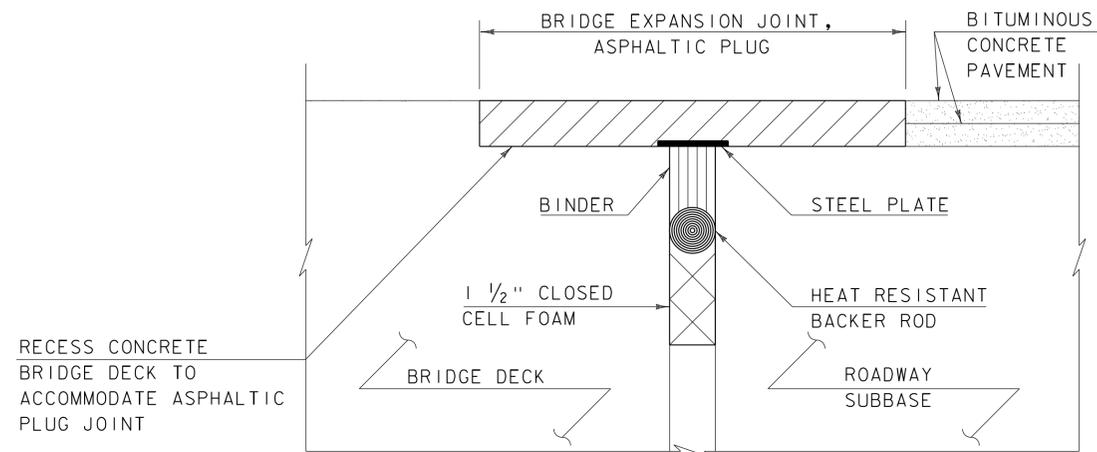
7/8" Ø HEAT RESISTANT FOAM BACKER ROD. COMPRESSION FIT REQUIRED TO ENSURE THAT THE ROD POSITION IS MAINTAINED DURING FILLING OPERATION. COST WILL BE INCLUDED WITH THE UNIT PRICE BID FOR ITEM 524.11, "JOINT SEALER, HOT POUR".

1/4" WIDE X 1/2" DEEP SAW CUT INTO BOTTOM COURSE OF PAVEMENT TO BE MADE DURING THE SAME WORKDAY AS PLACEMENT.

### SAWED PAVEMENT JOINT DETAIL

(NOT TO SCALE)

\* JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUT WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER. ALL WORK WILL BE PAID FOR UNDER ITEM 524.11, "JOINT SEALER, HOT Poured".



### ASPHALTIC PLUG-TYPE JOINT DETAIL

(NOT TO SCALE)

NOTE: SEE STANDARD SD-516.10 FOR ADDITIONAL INFORMATION.

CLD 15-0223 MODEL: TYP08



PROJECT NAME: BRATTLEBORO

PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j091typ-3l.dgn

PROJECT LEADER: J. BYATT

DESIGNED BY: N. CARON

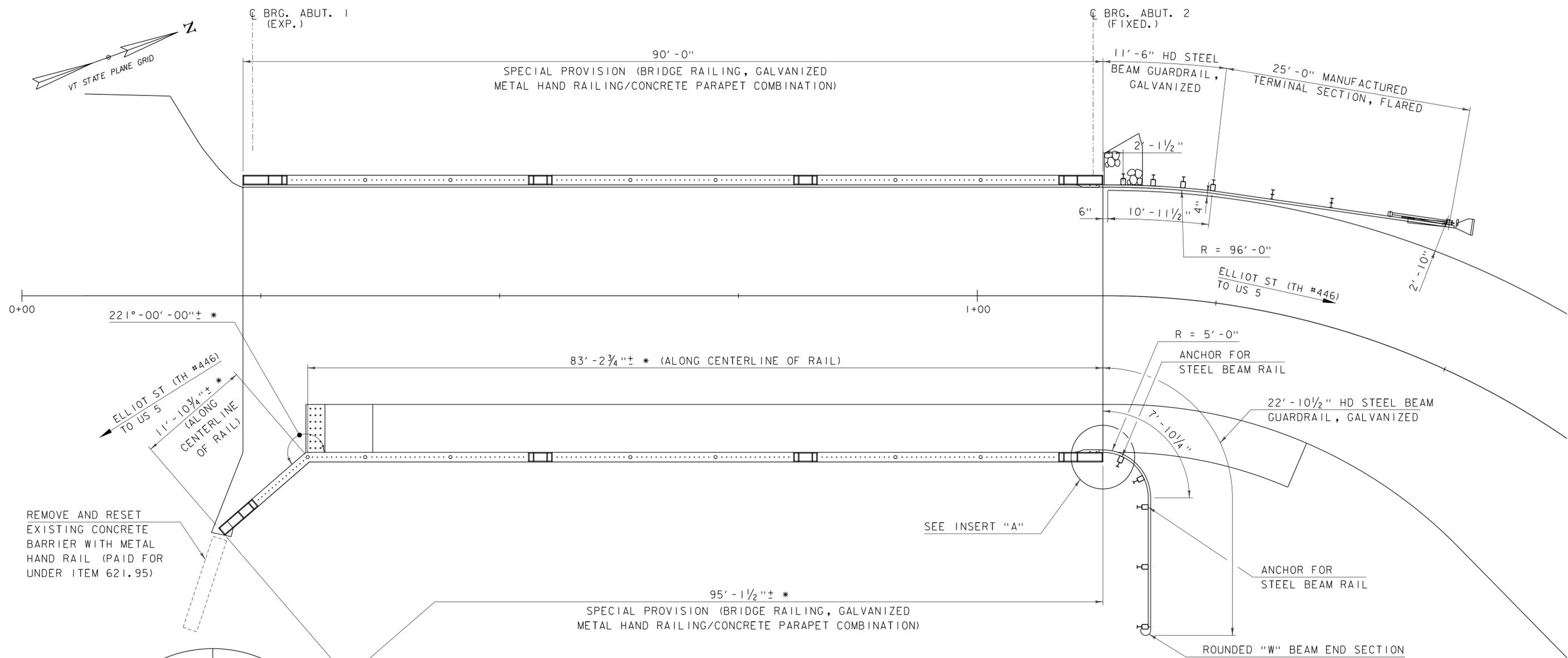
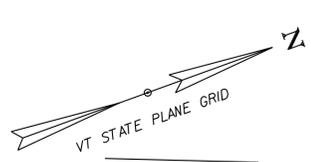
JOINT DETAILS SHEET

PLOT DATE: 2/5/2016

DRAWN BY: M. SMITH

CHECKED BY: S. BEAUMONT

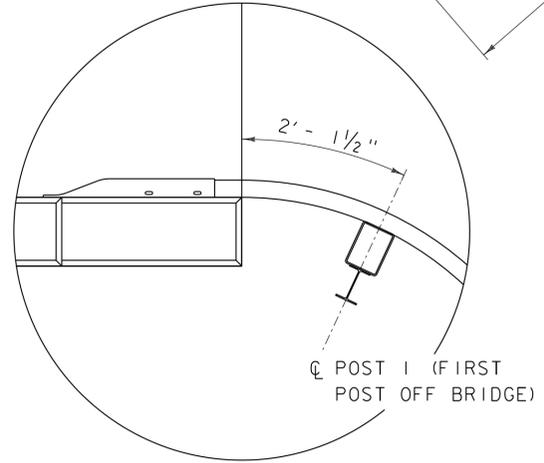
SHEET 17 OF 26



**RAIL LAYOUT**  
SCALE: 3/16" = 1'-0"

\* DIMENSIONS ARE BASED ON FIELD MEASUREMENTS AND ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY EXISTING DIMENSIONS AND MAKE ADJUSTMENTS TO RAIL LAYOUT AS APPLICABLE. SEE SIDEWALK RAMP MASONRY PLAN ON SHEET 14.

- NOTES:
- REFER TO STANDARDS G-1 AND G-1d.
  - SEE BRIDGE AND APPROACH RAIL DETAILS ON SHEETS 19 TO 23.

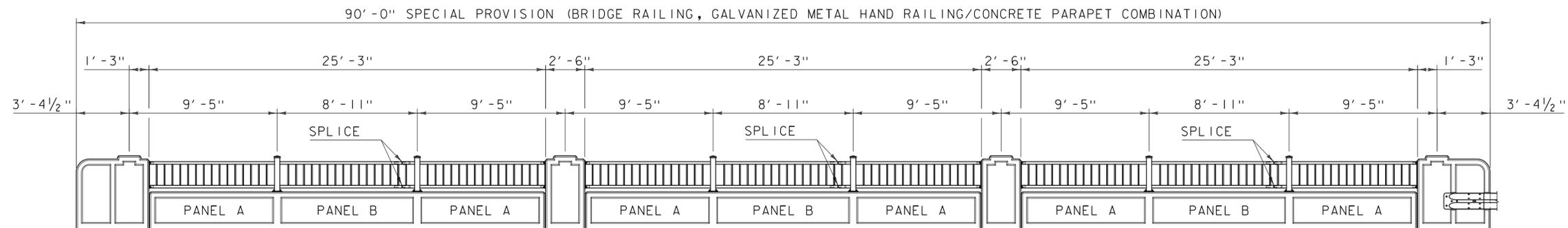


**INSERT "A"**  
(NE CORNER SHOWN, NW CORNER SIMILAR)  
SCALE: 3/4" = 1'-0"

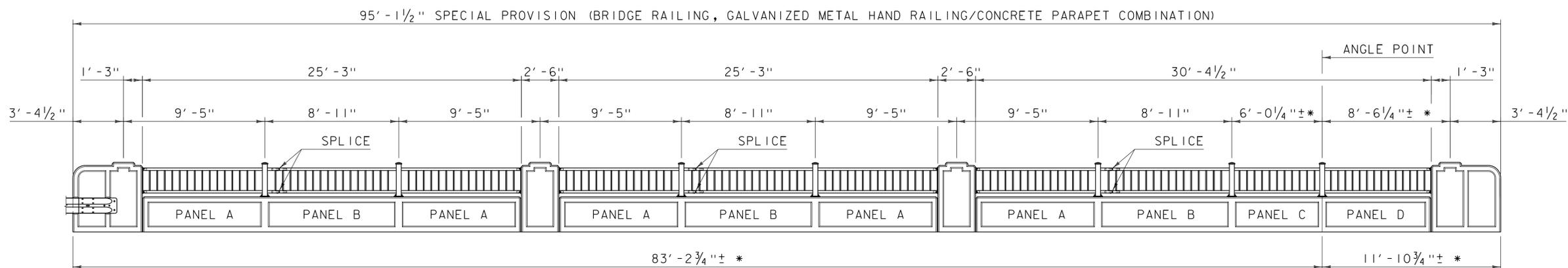
PROJECT NAME: BRATTLEBORO	PLOT DATE: 2/5/2016
PROJECT NUMBER: BF 2000(26)	DRAWN BY: M. SMITH
FILE NAME: z15j091rail.bdr-3l.dgn	CHECKED BY: N. CARON
PROJECT LEADER: J. BYATT	RAIL LAYOUT SHEET
DESIGNED BY: M. SMITH	SHEET 18 OF 26



CLD 15-0223 MODEL: Sheet01



WEST RAIL

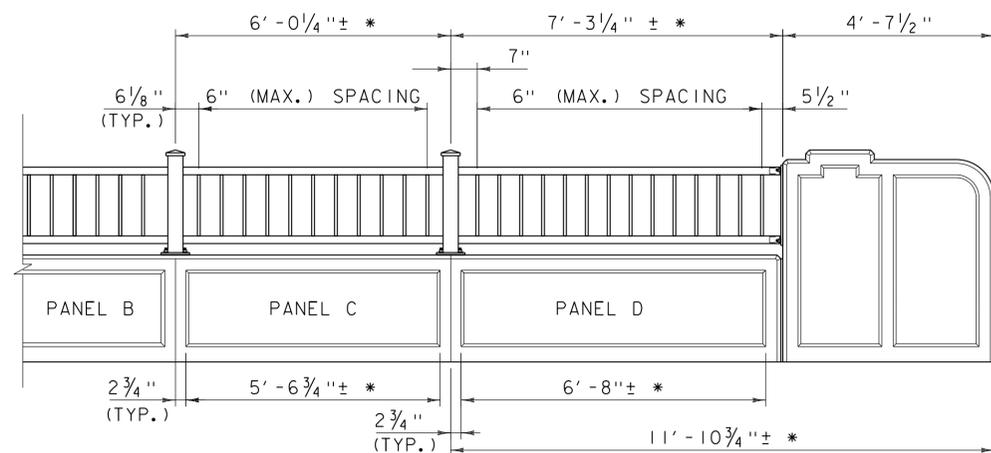


EAST RAIL

**BRIDGE RAIL ELEVATION (INTERIOR FACE)**

SCALE: 1/4" = 1'-0"

\* DIMENSIONS ARE BASED ON FIELD MEASUREMENTS AND ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY EXISTING DIMENSIONS AND MAKE ADJUSTMENTS TO RAIL LAYOUT AS APPLICABLE. SEE SIDEWALK RAMP MASONRY PLAN ON SHEET 14.



**BRIDGE RAIL ELEVATION (INTERIOR FACE) AT SIDEWALK RAMP**

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

NOTES:

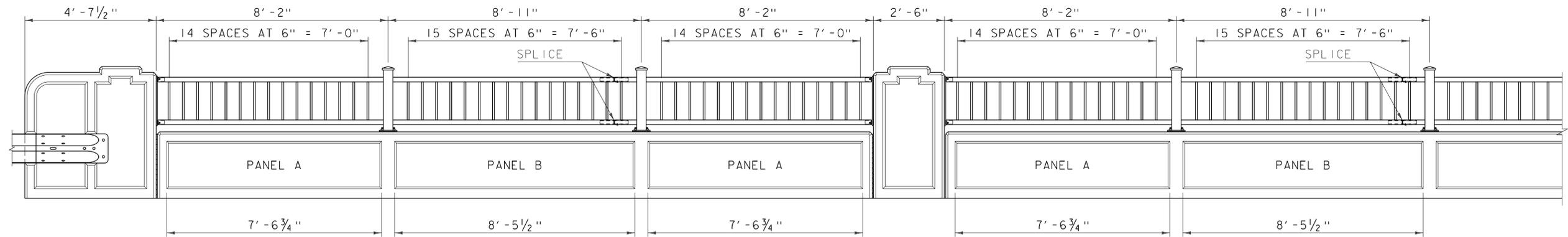
1. ALL DIMENSIONS ARE MEASURED ALONG CENTERLINE OF RAIL UNLESS NOTED OTHERWISE ON PLANS.
2. THE BRIDGE PLAQUE FURNISHED BY THE AGENCY SHALL BE CAST INTO THE BACKFACE OF THE CONCRETE RAIL AT THE NORTHEAST END PILASTER. SEE STANDARD SD-502.00 FOR ADDITIONAL INFORMATION.

PROJECT NAME: BRATTLEBORO  
PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j091rail\_bdr-3l.dgn  
PROJECT LEADER: J. BYATT  
DESIGNED BY: M. SMITH  
BRIDGE RAIL DETAILS SHEET 1

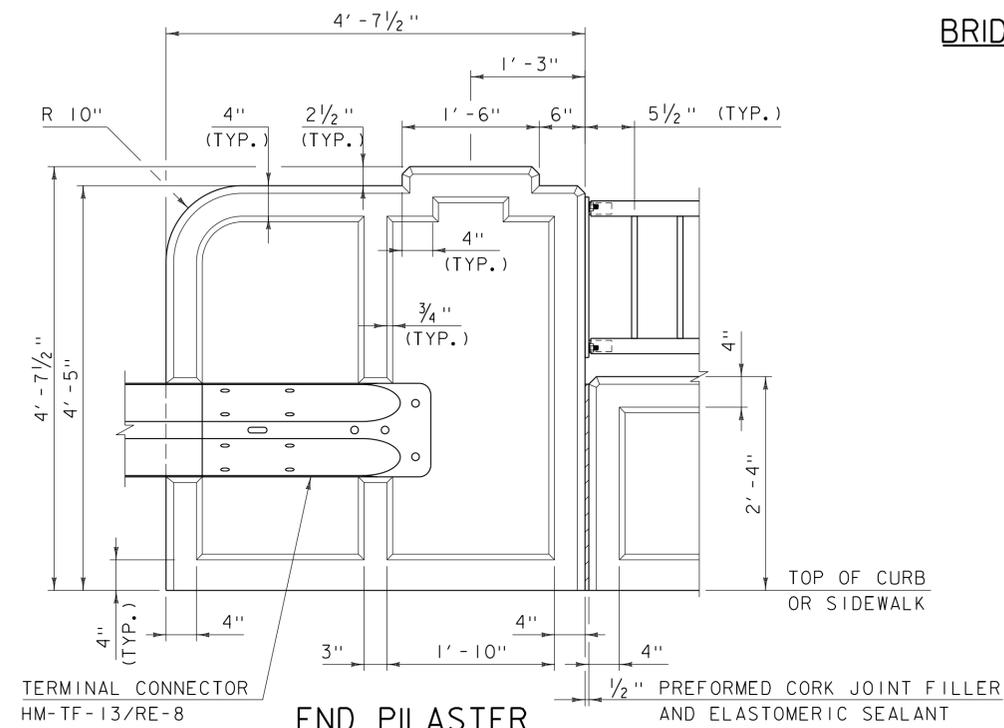
PLOT DATE: 2/5/2016  
DRAWN BY: M. SMITH  
CHECKED BY: N. CARON  
SHEET 19 OF 26



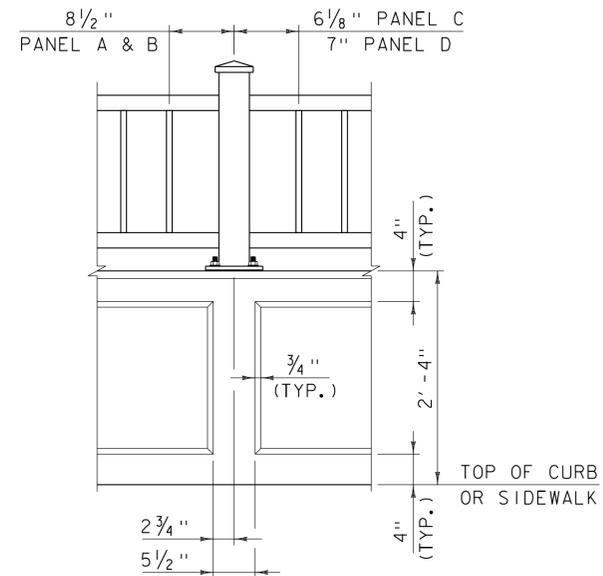


**BRIDGE RAIL ELEVATION (INTERIOR FACE)**

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



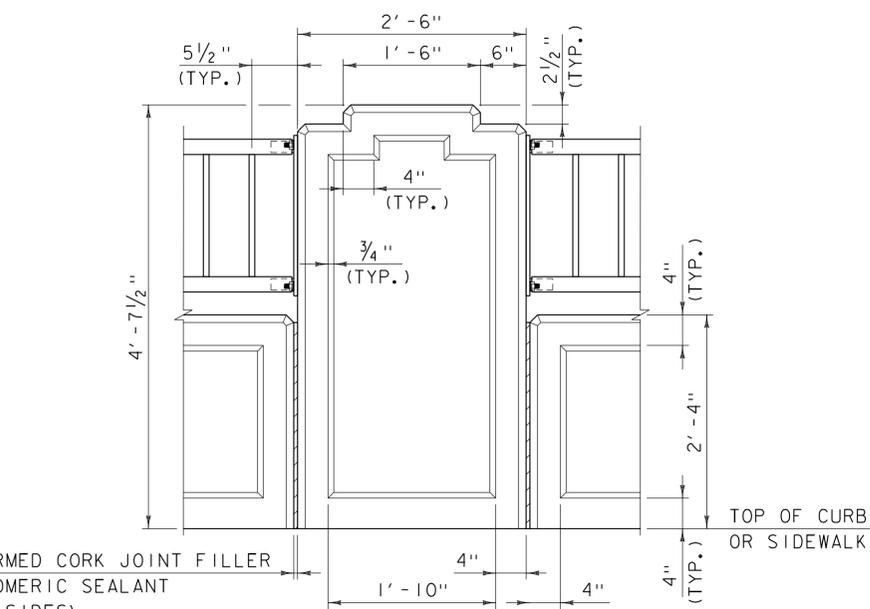
**END PILASTER**



**POST**

**BRIDGE RAIL CONCRETE DETAILS**

SCALE: 1" = 1' - 0"



**INTERMEDIATE PILASTER**

**BRIDGE RAIL NOTES**

1. ALL DIMENSIONS TO FACE OF CONCRETE UNLESS NOTED OTHERWISE.
2. RAIL POSTS WILL BE SET NORMAL TO GRADE.
3. BRIDGE RAIL WILL BE PAID FOR UNDER ITEM 900.640, "SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION)".
4. REINFORCING STEEL IN THE BRIDGE RAILING SHALL BE LEVEL I - EPOXY COATED, MEET THE REQUIREMENTS OF SECTION 507, AND WILL BE PAID FOR UNDER ITEM 900.640, "SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION)". REINFORCING STEEL EXTENDING FROM THE CONCRETE BRIDGE DECK INTO THE BRIDGE RAILING SHALL BE PAID FOR UNDER ITEM 507.11, "REINFORCING STEEL, EPOXY COATED". SEE PROJECT NOTE 28 ON SHEET 3.
5. METAL HAND RAILING, TO INCLUDE STEEL PIPES, PLATES AND HARDWARE, WILL BE PAID FOR UNDER ITEM 900.640, "SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION)".
6. STEEL PIPES FOR POSTS, TOP AND BOTTOM RAIL, AND PALINGS SHALL BE SEAMLESS, CONFORMING TO SUBSECTION 732.01.
7. STEEL FOR BASE AND ANCHORAGE PLATES SHALL CONFORM TO SUBSECTION 732.03 (b).
8. HARDWARE FOR ANCHOR BOLT ASSEMBLIES SHALL CONFORM TO SUBSECTION 732.03 (d).
9. 1/8" PAD SHALL CONFORM TO SUBSECTION 731.01 OR 731.02.
10. ALL EXPOSED CUT OR SHEARED EDGES OF STEEL COMPONENTS SHALL BE ROUNDED TO A 1/16" RADIUS AND BE FREE OF BURRS.
11. ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M 111M/M 111, EXCEPT HARDWARE, WHICH SHALL MEET THE REQUIREMENTS OF AASHTO M 232M/M 232.
12. ALL PARTS EXCEPT HARDWARE AND ANCHORAGE PLATES SHALL BE PAINTED BLACK (COLOR CHIP #27038).
13. RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
14. THE FABRICATOR SHALL SUBMIT FABRICATION DRAWINGS INCLUDING WELDING PROCEDURES FOR METAL HAND RAILING IN ACCORDANCE WITH SECTION 105.

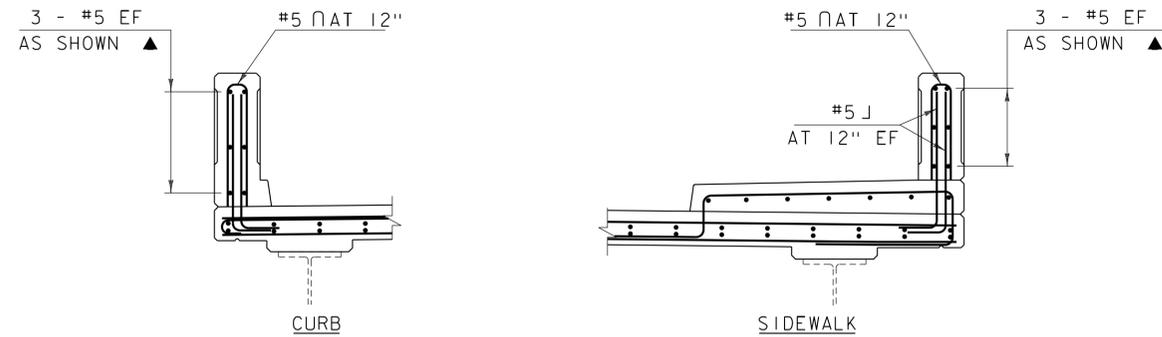
CLD 15-0223 MODEL: Sheet03



PROJECT NAME: BRATTLEBORO  
PROJECT NUMBER: BF 2000(26)

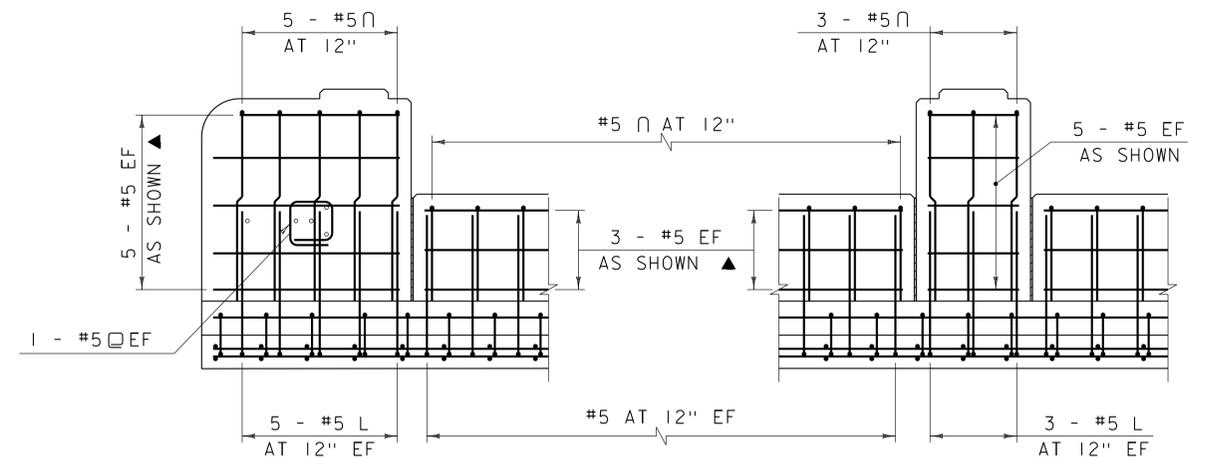
FILE NAME: z15j091rail\_bdr-3l.dgn  
PROJECT LEADER: J. BYATT  
DESIGNED BY: M. SMITH  
BRIDGE RAIL DETAILS SHEET 2

PLOT DATE: 2/5/2016  
DRAWN BY: M. SMITH  
CHECKED BY: N. CARON  
SHEET 20 OF 26



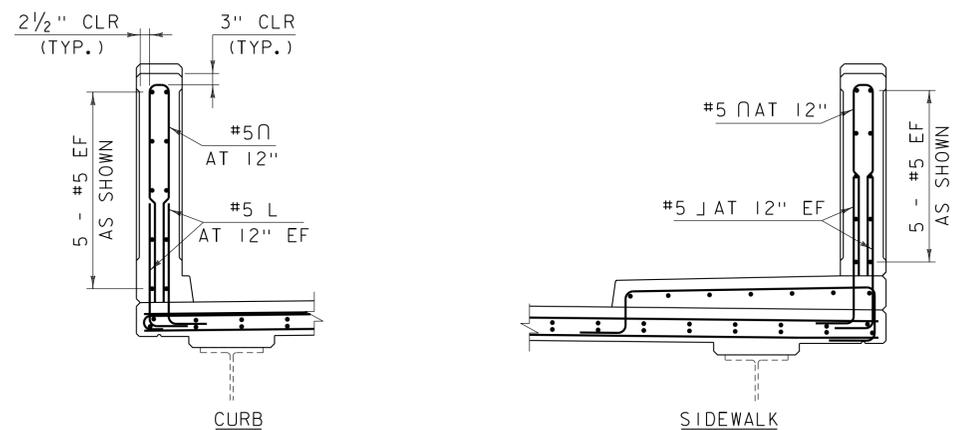
**TYPICAL CONCRETE BASE PARAPET SECTIONS**

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



**TYPICAL REINFORCING SIDEWALK SIDE**

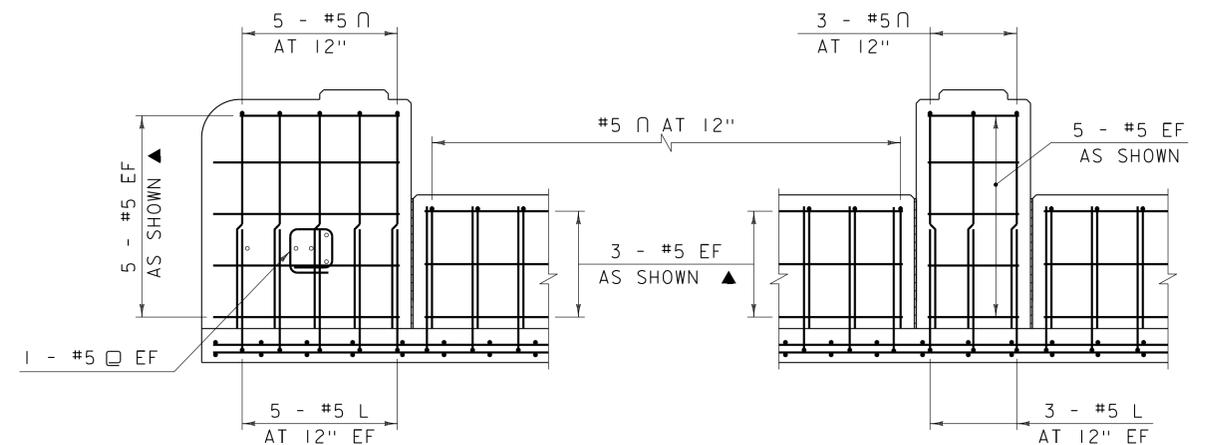
SCALE: 1/2" = 1'-0"



**TYPICAL INTERMEDIATE PILASTER SECTIONS**

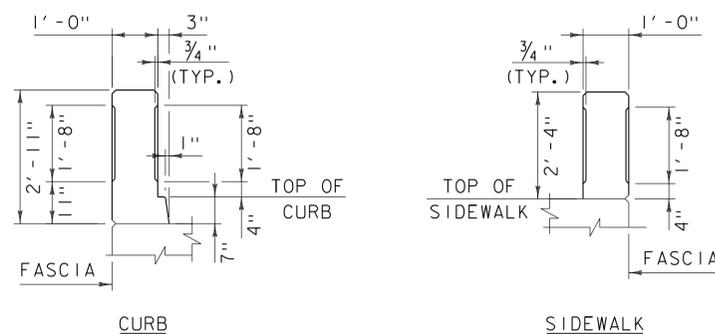
SCALE: 1/2" = 1'-0"

(END PILASTERS ARE SIMILAR)



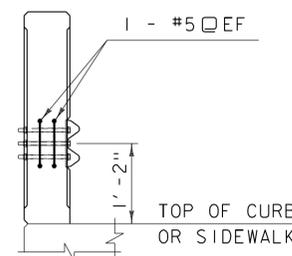
**TYPICAL REINFORCING CURB SIDE**

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



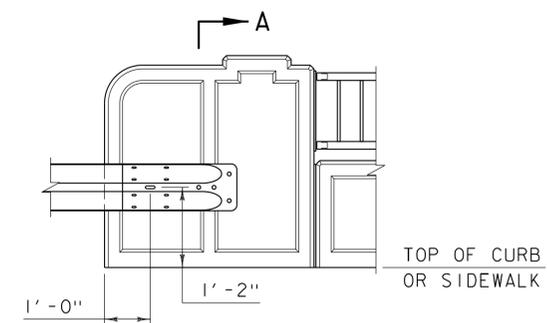
**CONCRETE INSERT DETAILS**

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



**SECTION "A-A"**

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



**TERMINAL CONNECTOR LOCATION**

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

**NOTE:**

- NF = NEAR FACE
- FF = FAR FACE
- EF = EACH FACE
- ALL REINFORCING ON THIS SHEET SHALL BE LEVEL 1 EPOXY COATED REINFORCING STEEL
- ▲ = 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: BRATTLEBORO

PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j091rail\_bdr-3l.dgn

PROJECT LEADER: J. BYATT

DESIGNED BY: M. SMITH

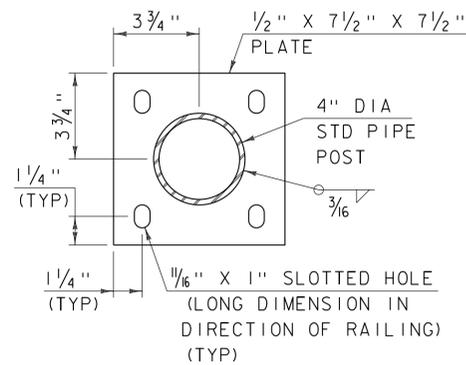
BRIDGE RAIL DETAILS SHEET 3

PLOT DATE: 2/5/2016

DRAWN BY: M. SMITH

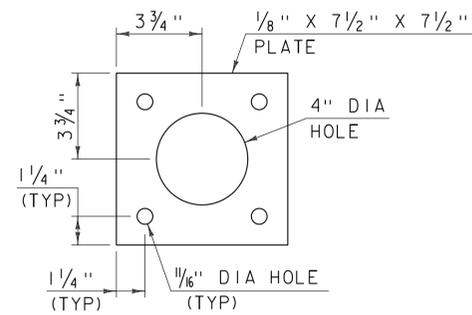
CHECKED BY: N. CARON

SHEET 21 OF 26



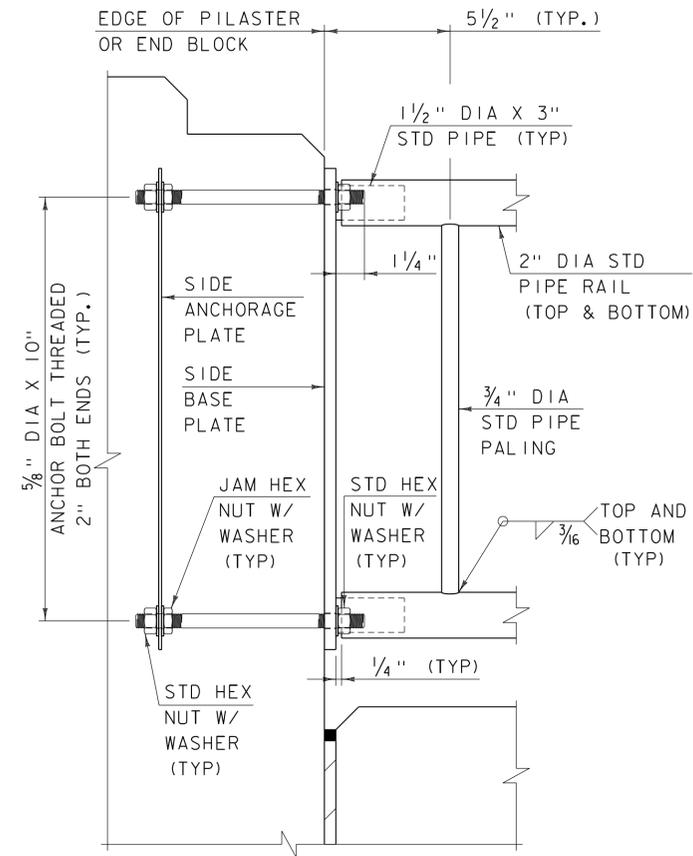
**POST BASE PLATE**

SCALE: 3" = 1'-0"



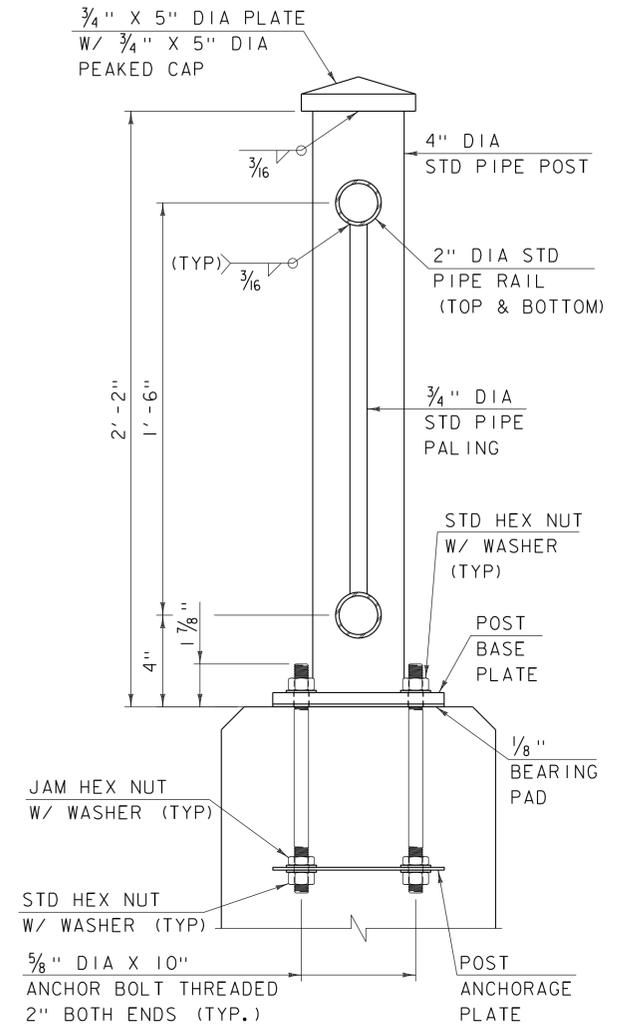
**POST ANCHORAGE PLATE**

SCALE: 3" = 1'-0"



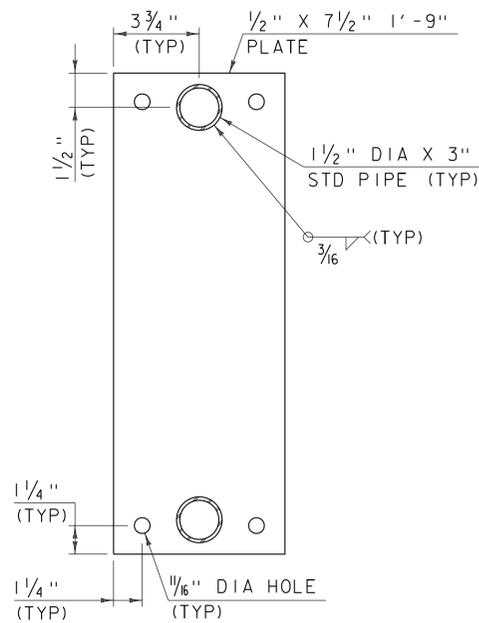
**SIDE PLATE CONNECTION DETAIL**

SCALE: 3" = 1'-0"



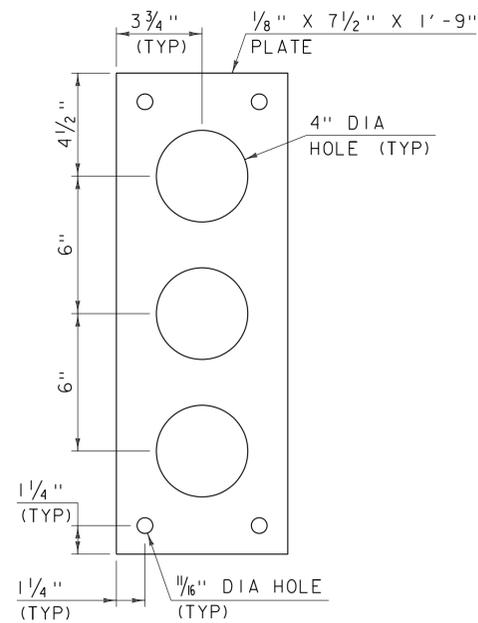
**METAL RAILING DETAIL**

SCALE: 3" = 1'-0"



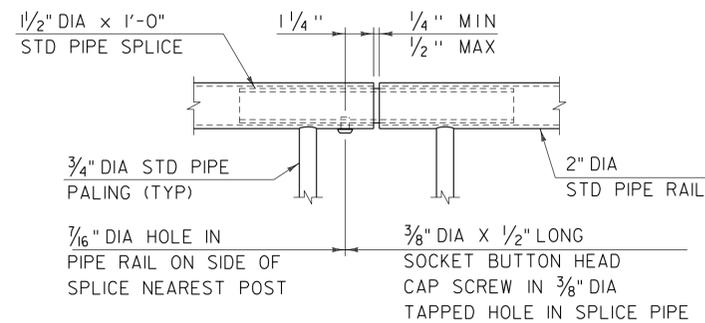
**SIDE BASE PLATE**

SCALE: 3" = 1'-0"



**SIDE ANCHORAGE PLATE**

SCALE: 3" = 1'-0"



**RAIL SPLICE DETAIL**

SCALE: 3" = 1'-0"

CLD 15-0223 MODEL: Sheet05



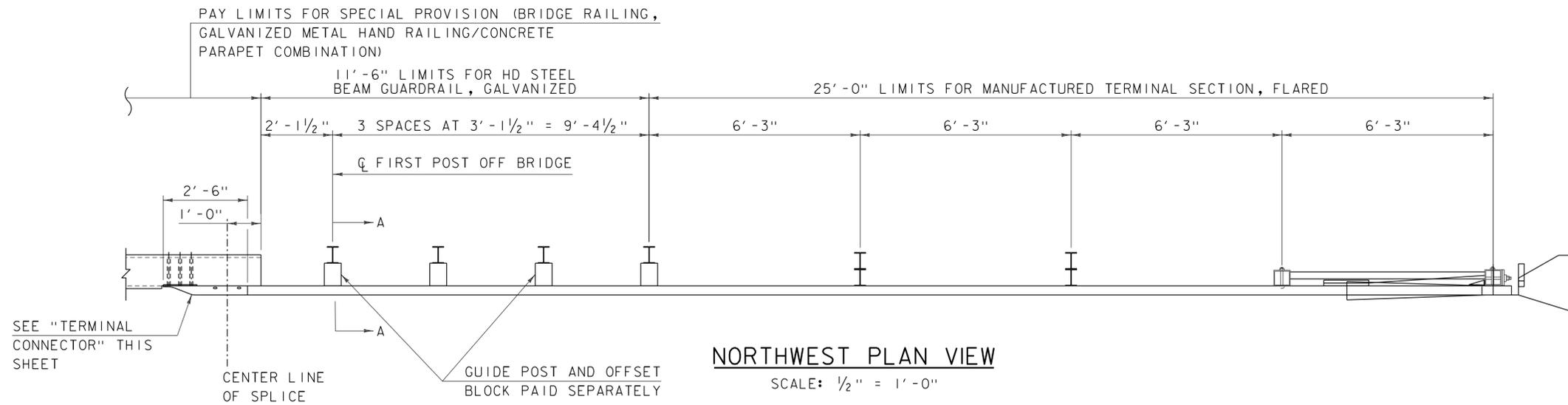
PROJECT NAME: BRATTLEBORO  
PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j09rail\_bdr-3l.dgn  
PROJECT LEADER: J. BYATT  
DESIGNED BY: M. SMITH  
BRIDGE RAIL DETAILS SHEET 4

PLOT DATE: 2/5/2016  
DRAWN BY: M. SMITH  
CHECKED BY: N. CARON  
SHEET 22 OF 26

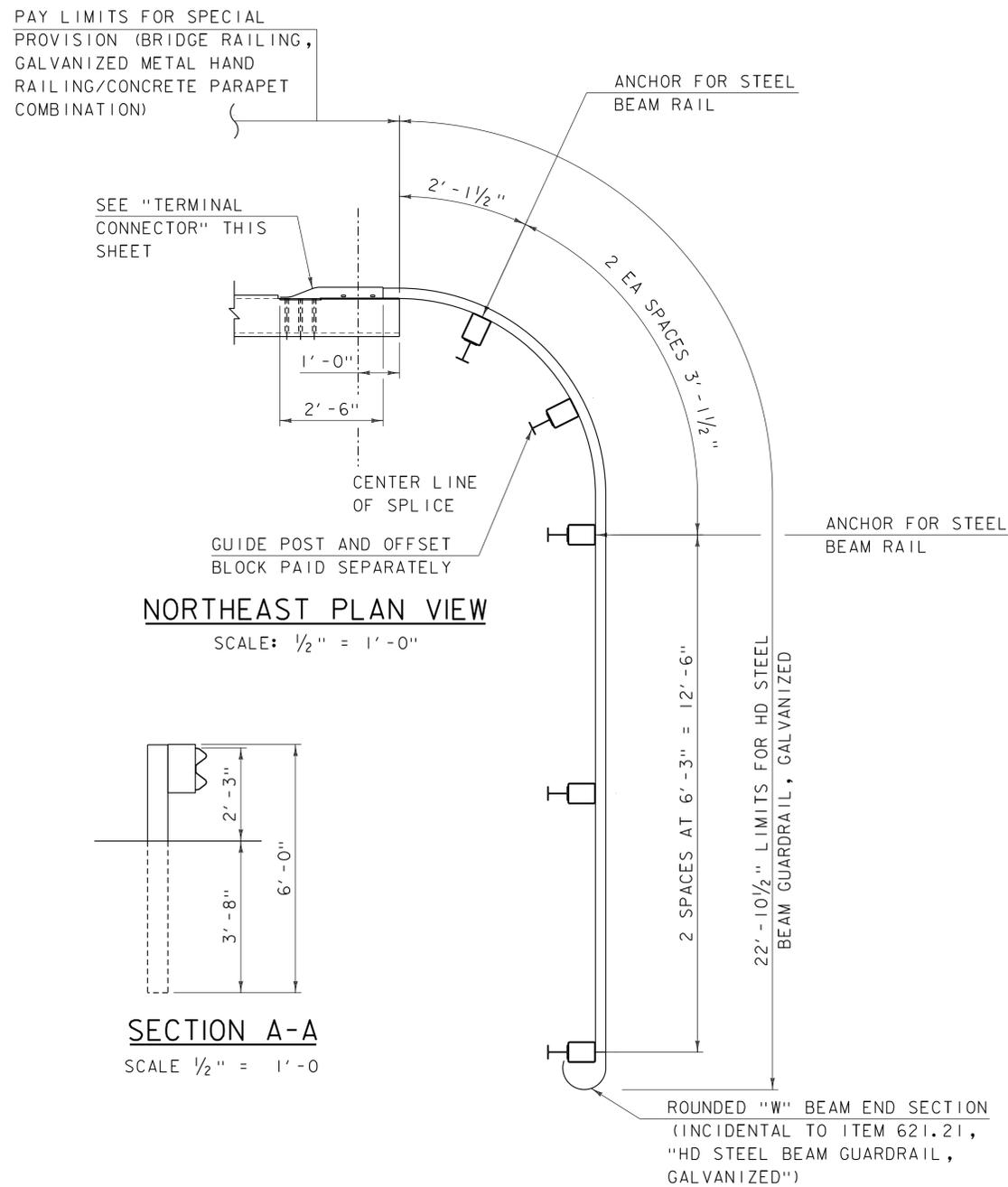
**NOTES**

1. A COMPOSITE MATERIAL POST AND/OR BLOCKOUT FROM THE APPROVED PRODUCTS LIST MAY BE SUBSTITUTED FOR A POST AND/OR BLOCKOUT OF SIMILAR DIMENSIONS.
2. REFER TO STANDARD DRAWINGS G-1 AND G-1d FOR ADDITIONAL DETAILS.
3. THE TERMINAL CONNECTOR TO BRIDGE RAIL AND THE CONNECTION PLATE SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 900.640, "SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION)".



**NORTHWEST PLAN VIEW**

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

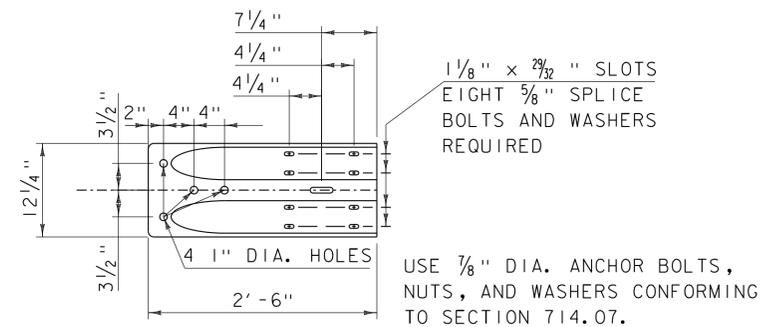


**NORTHEAST PLAN VIEW**

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

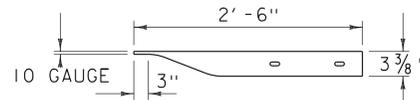
**SECTION A-A**

SCALE 1/2" = 1'-0"



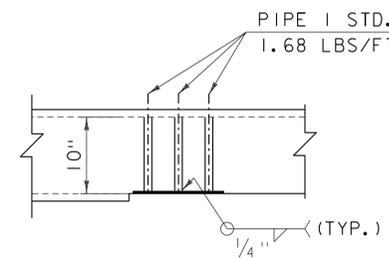
**TERMINAL CONNECTOR ELEVATION**

SCALE 1" = 1'-0"



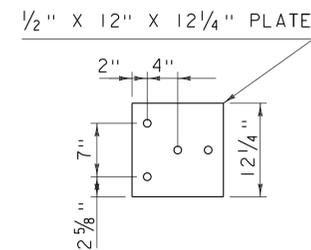
**TERMINAL CONNECTOR PLAN**

SCALE 1" = 1'-0"



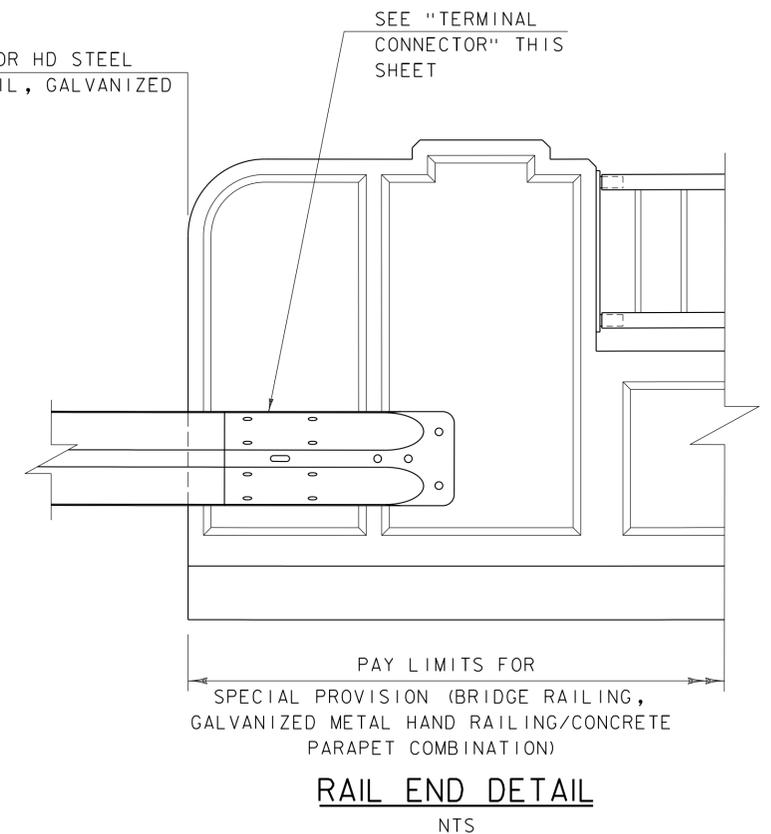
**CONNECTION PLATE DETAIL - PLAN**

SCALE 1" = 1'-0"



**CONNECTION PLATE DETAIL - ELEVATION**

SCALE 1" = 1'-0"



**RAIL END DETAIL**

NTS

THE USE OF THIS RAILING IS RESTRICTED TO DESIGN SPEEDS OF 45 MPH OR LESS.

PROJECT NAME: BRATTLEBORO

PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j091rail\_bdr-31.dgn

PROJECT LEADER: J. BYATT

DESIGNED BY: N. CARON

APPROACH RAIL DETAILS SHEET

PLOT DATE: 2/5/2016

DRAWN BY: M. SMITH

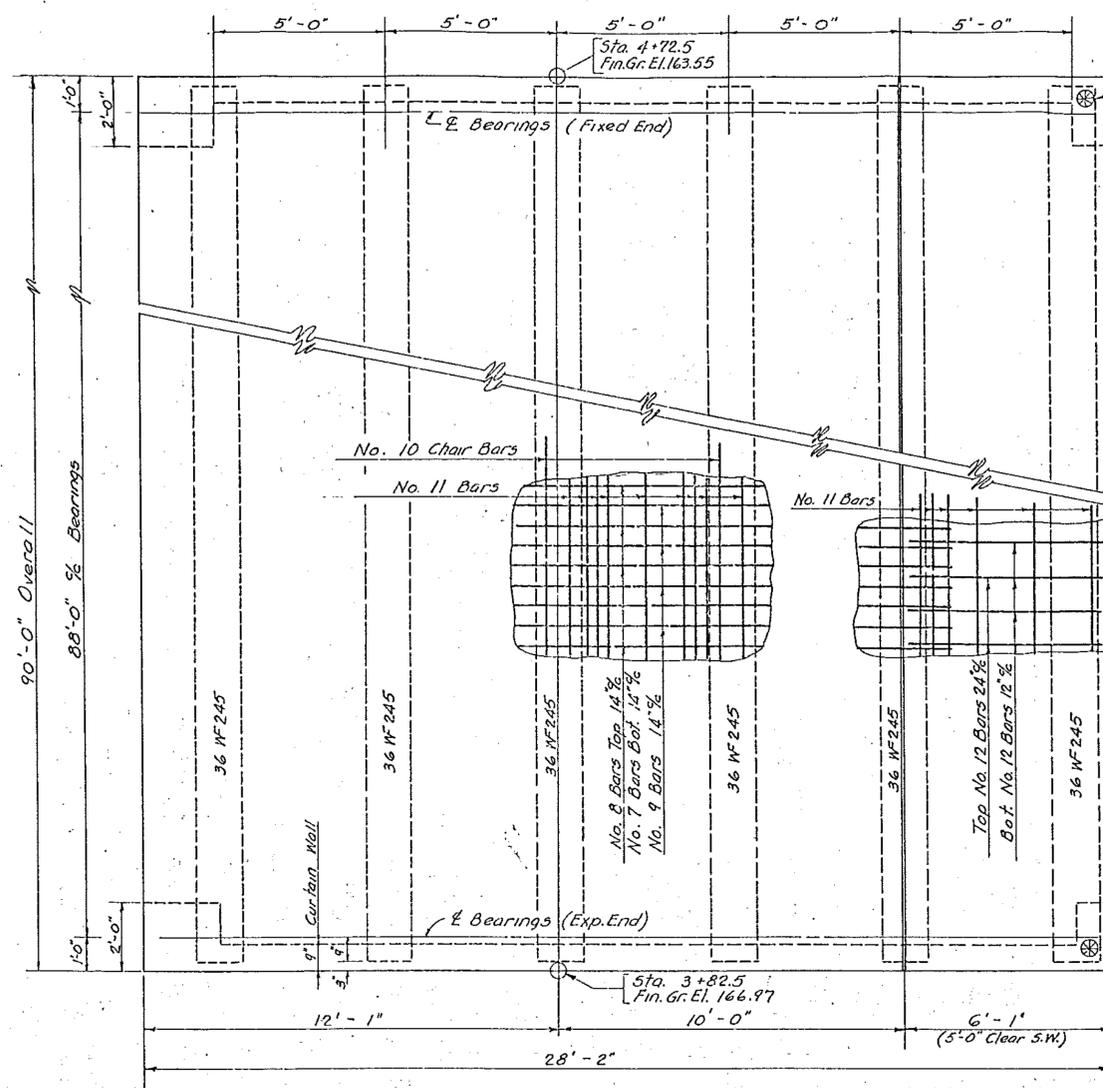
CHECKED BY: S. BEAUMONT

SHEET 23 OF 26



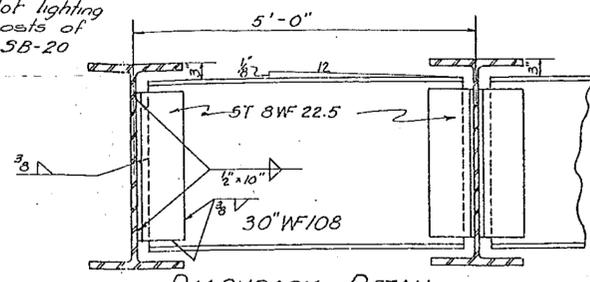




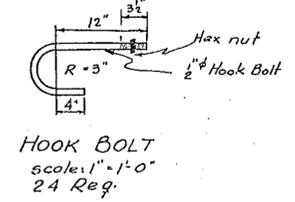


**PLAN**  
scale: 3/8" = 1'-0"

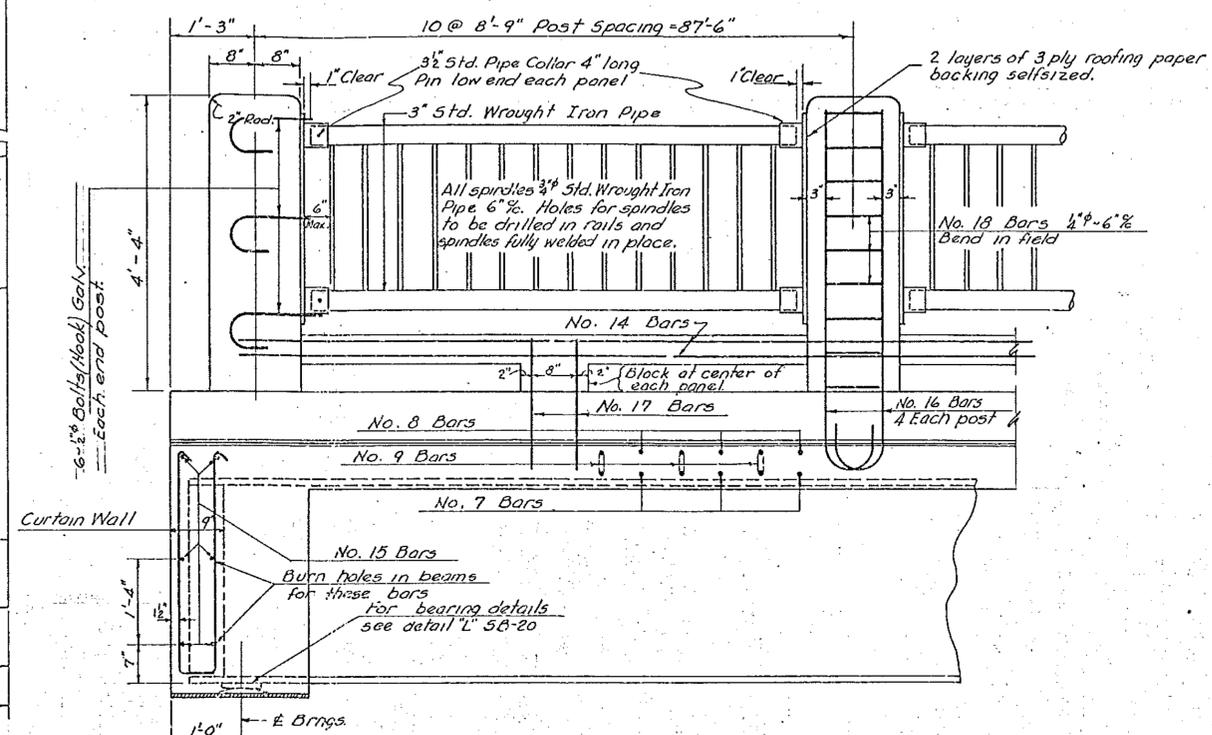
Provide Conduit for lighting system in end posts of Bridge. See Std. 5B-20 Detail-M



**DIAPHRAGM DETAIL**  
4-sets req'd of 5 points  
scale: 3/4" = 1'-0"



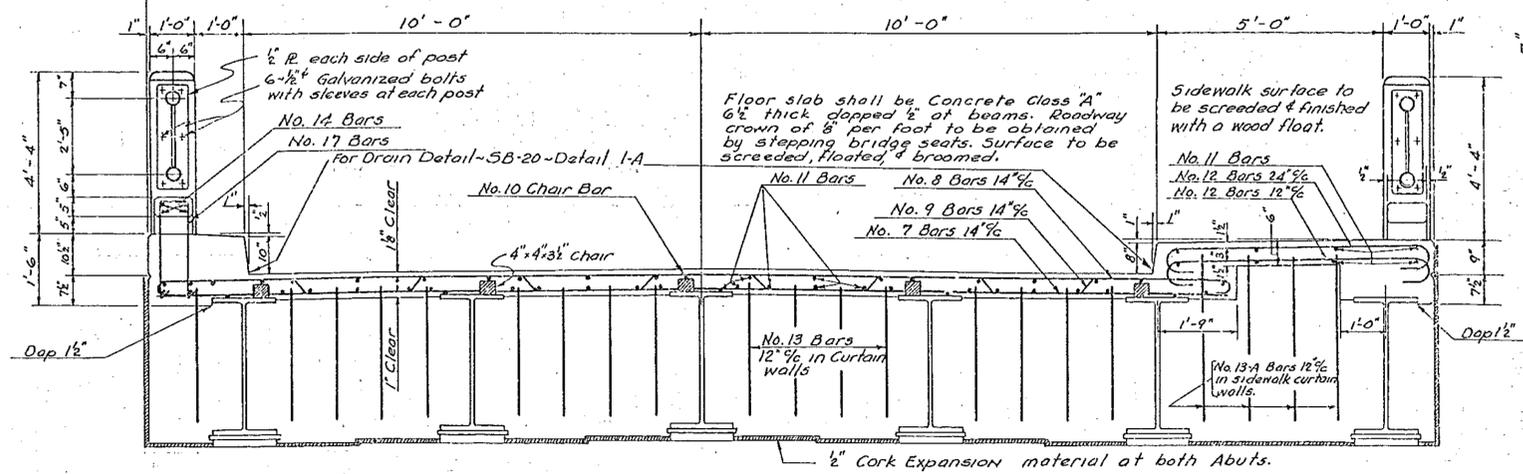
**HOOK BOLT**  
scale: 1" = 1'-0"  
24 Req.



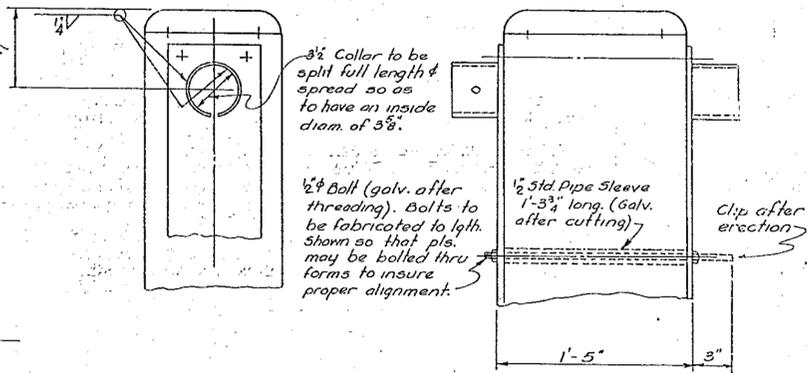
**PART LONGITUDINAL SECTION**  
scale: 3/4" = 1'-0"

BAR NO.	SIZE	TOTAL REQD.	OVERALL LGTH.	DETAIL
7	5/8"	78	23'-4"	straight
8	5/8"	78	24'-8"	
9	5/8"	77	25'-8"	
10	3/4"	15	31'-9"	straight
11	1/2"	156	31'-3"	"
12	5/8"	135	7'-3"	
13	3/8"	34	7'-0"	
13A	3/8"	8	8'-6"	
14	3/4"	24	31'-4"	straight
15	5/8"	12	27'-6"	straight
16	1"	88	6'-5"	
17	1/2"	40	4'-10"	
18	1/2"	198	3'-6"	Straight-Bend to fit in field

**GENERAL NOTES:**  
Beams shall be rolled to a true circular camber the full length of the beam. Middle ordinate for camber 3/4".  
All Structural Steel shall be painted as specified under item 43-B of Pamphlet 'E', Standard Road & Bridge Specifications, State of Vermont, 1936. Final coat shall be green.  
All material & construction shall conform to the Standard Road & Bridge Specifications, State of Vermont, 1936 & A.A.S.H.O. Specifications of 1944.  
Designed for H-15(44) live loading & 25# paving allowance.



**CROSS SECTION OF BRIDGE**  
scale: 1/2" = 1'-0"



**DETAIL OF TOP OF POSTS**  
scale: 1/2" = 1'-0"

**ESTIMATED QUANTITIES**

Conc. Class "A" 79 c.y.  
Reinforcing Steel 14,300 lbs.  
Steel Superstructure 150,500 lbs.  
Conduit for Lighting System 1 L.S.

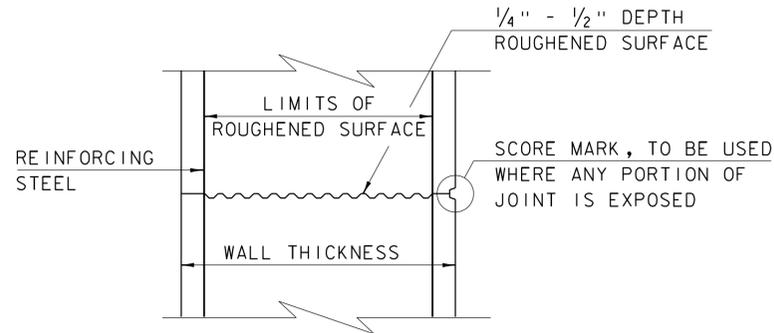
**SUPERSTRUCTURE DETAILS**  
ELLIOT STREET BRIDGE  
BRATTLEBORO, VT.  
scale as noted

BRATTLEBORO  
BF 2000(26)  
BRIDGE NO. 31  
SHEET 26 OF 26  
FOR REFERENCE ONLY

Surveyed by  
Designed by E.F.P.  
Drawn by E.F.P.  
Traced by H.W.S.  
Checked by L.M.B. 2-19-47  
Series T-7 No. 1946  
Sheet 3 of 11 Sheets

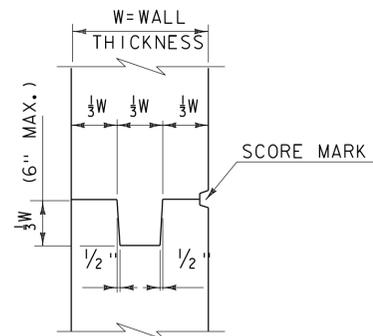
**CONCRETE GENERAL NOTES**

1. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" x 1"
2. REINFORCING STEEL SIZE AND SPACING SHOWN IN THE PLANS IS BASED ON 60 KSI STEEL, UNLESS NOTED OTHERWISE. WITH THE ENGINEER'S PERMISSION, BAR SIZE AND SPACING MAY BE MODIFIED ACCORDING TO THE LATEST AASHTO LRFD BRIDGE DESIGN SPECIFICATION AND STRUCTURES DESIGN MANUAL WHEN USING HIGHER STRENGTH STEEL.

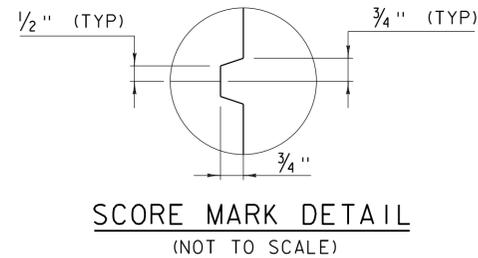


**TYPICAL HORIZONTAL CONSTRUCTION JOINT**  
(NOT TO SCALE)

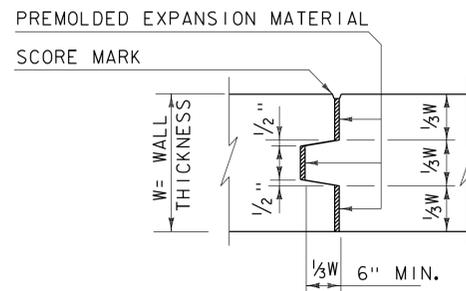
1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



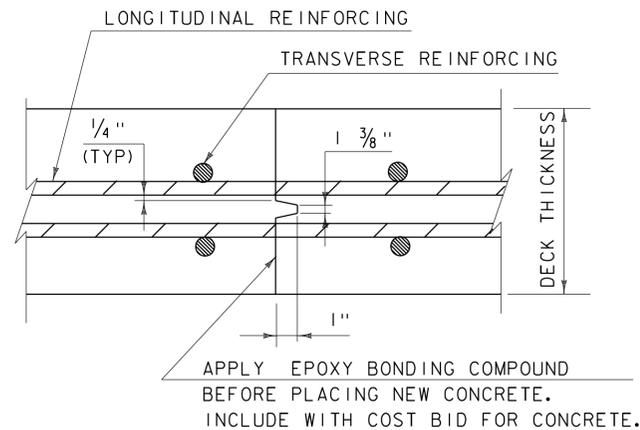
**TYPICAL CONCRETE CONSTRUCTION JOINT**  
(NOT TO SCALE)



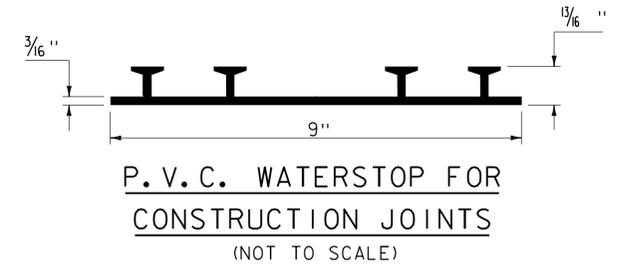
**SCORE MARK DETAIL**  
(NOT TO SCALE)



**TYPICAL CONCRETE EXPANSION JOINT**  
(NOT TO SCALE)

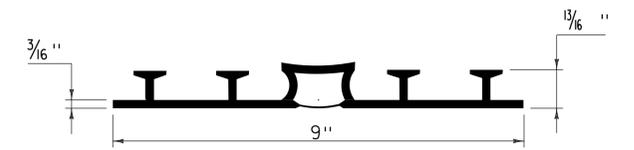


**TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS**  
(NOT TO SCALE)



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

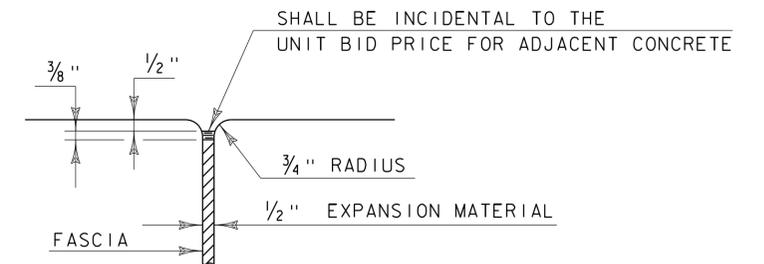
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



**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.



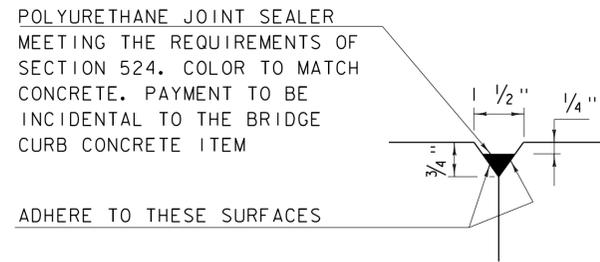
**JOINT BETWEEN FASCIA AND WINGWALL**  
(NOT TO SCALE)

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
FEBRUARY 9, 2012	REBAR SUBSTITUTION ALLOWANCE ADDED TO CONCRETE GENERAL NOTES.

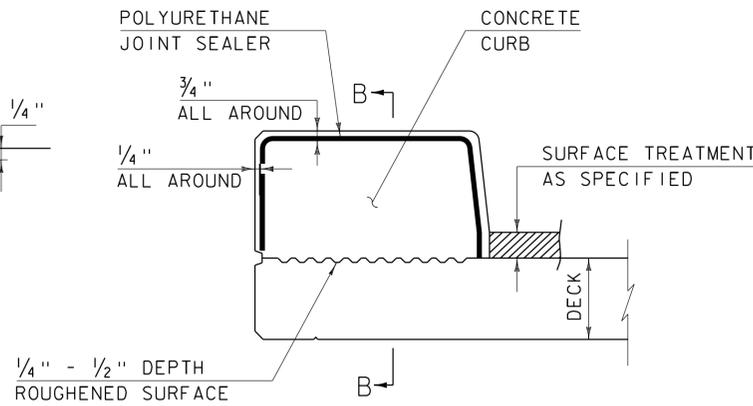
**CONCRETE  
DETAILS AND NOTES**



**STRUCTURES  
DETAIL  
SD-501.00**

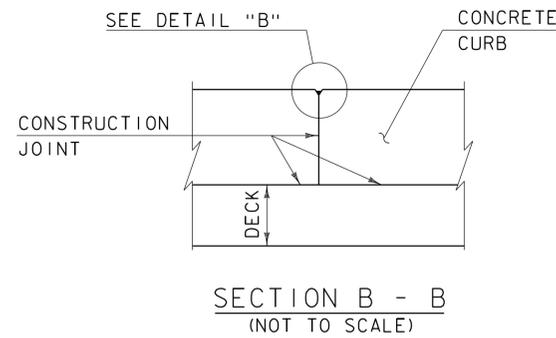


DETAIL "B"  
(NOT TO SCALE)

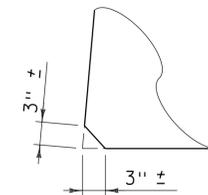


CONCRETE CURB JOINT SECTION  
(NOT TO SCALE)

1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION



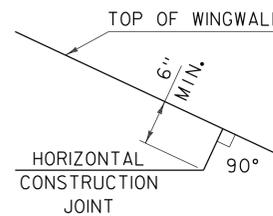
SECTION B - B  
(NOT TO SCALE)



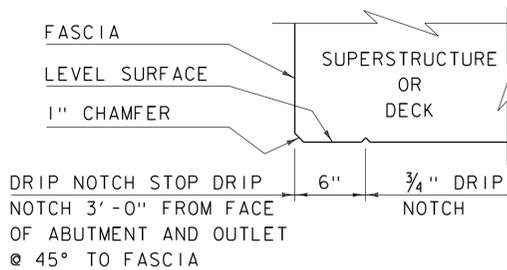
ACUTE ANGLE  
CLIP DETAIL  
(NOT TO SCALE)

CONCRETE CURB JOINT NOTES

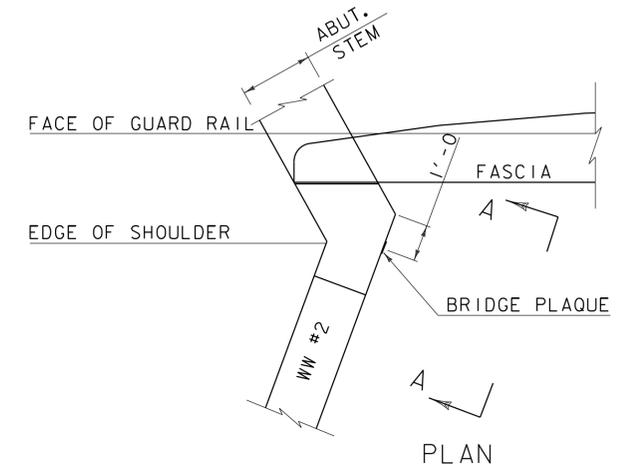
1. CONCRETE CURBS MAY BE PLACED IN ONE CONTINUOUS OPERATION IF AN APPROVED SHRINKAGE REDUCING ADMIXTURE LISTED IN THE SPECIAL PROVISIONS IS USED WITH THE CONCRETE MIX DESIGN. PAYMENT FOR THE SHRINKAGE REDUCING ADMIXTURE WILL BE INCIDENTAL TO THE BRIDGE CURB CONCRETE ITEM.
2. IF THE CONTRACTOR CHOOSES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



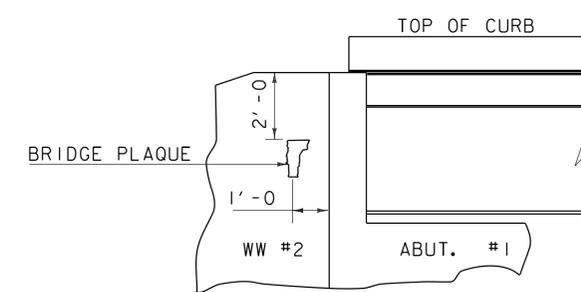
HORIZONTAL WINGWALL  
CONSTRUCTION JOINT  
(NOT TO SCALE)



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
OCTOBER 10, 2012	MODIFIED HORZ. JOINT WINGWALL ADD 6" MIN. DIMENSION

CONCRETE  
DETAILS AND NOTES



STRUCTURES  
DETAIL  
SD-502.00

ASPHALTIC PLUG JOINT NOTES

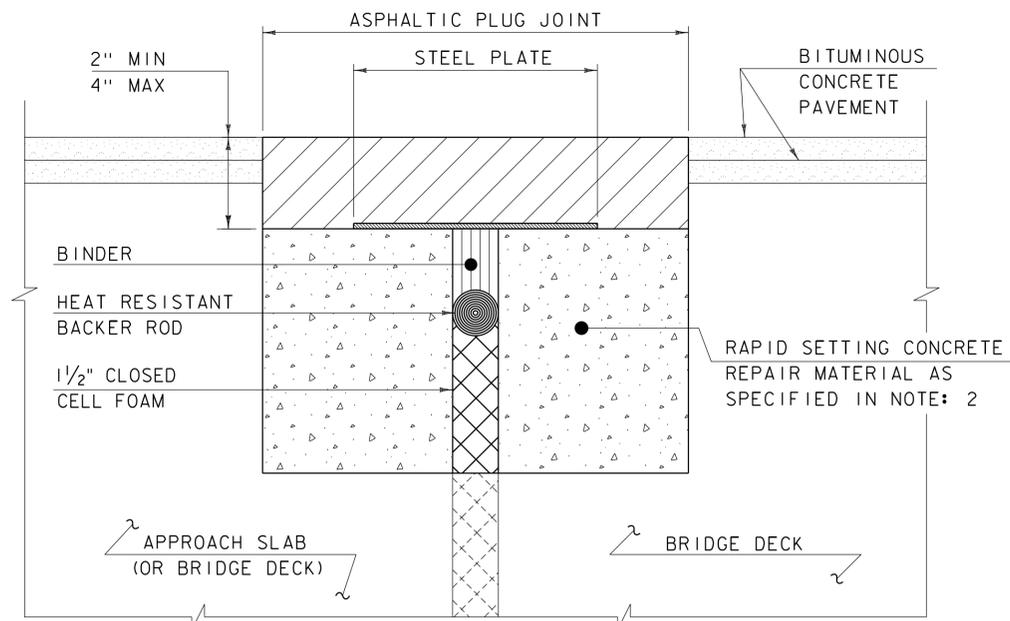
INSTALLATION:

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. PLACE PROPERLY SIZED HEAT RESISTANT BACKER ROD IN THE MOVEMENT GAP ALLOWING FOR 1" +/- OF BINDER ABOVE THE ROD.
5. HEAT AND PLACE THE BINDER MATERIAL AS RECOMMENDED BY THE MANUFACTURER.
6. IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.

WEATHER LIMITATIONS

APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL OR AS RECOMMENDED BY THE MANUFACTURER:

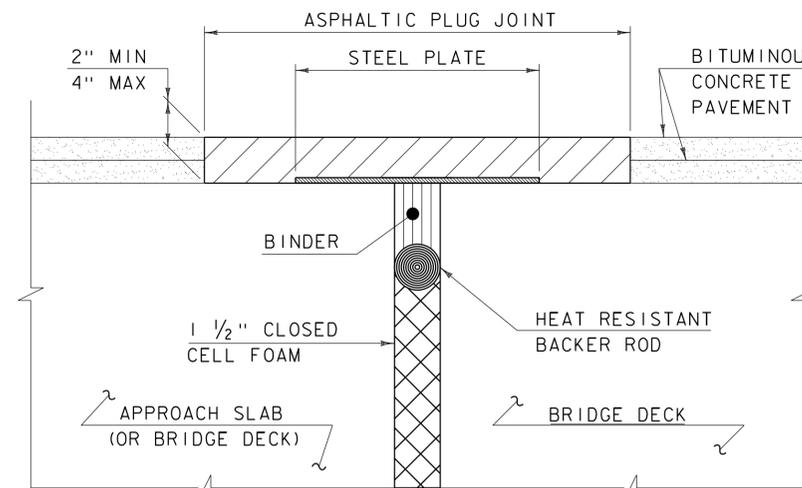
1. THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING.
2. THE ROAD SURFACE IS DRY.
3. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.



ASPHALTIC PLUG JOINT DETAIL - REHAB

NOTES:

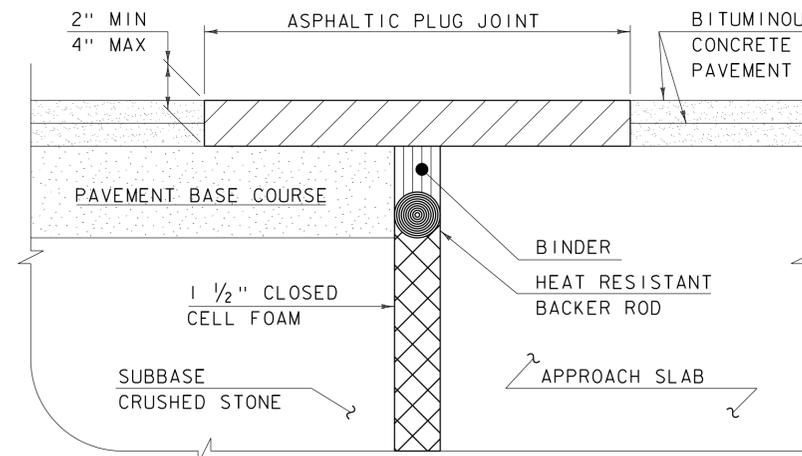
1. THE CONTRACTOR SHALL REMOVE ALL ASPHALTIC PLUG JOINT MATERIAL AND DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER. REMOVAL OF THE FIRST 4 INCHES OF MATERIAL SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG. ANY REMOVAL OF MATERIAL GREATER THAN 4 INCHES SHALL 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.
4. 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.



ASPHALTIC PLUG JOINT DETAIL "A" - NEW

NOTE:

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.



ASPHALTIC PLUG JOINT DETAIL "B" - NEW

DETAILS ON THIS SHEET ARE NOT TO SCALE.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
AUGUST 29, 2011	ADD DETAIL "B" AND REV. NOTES

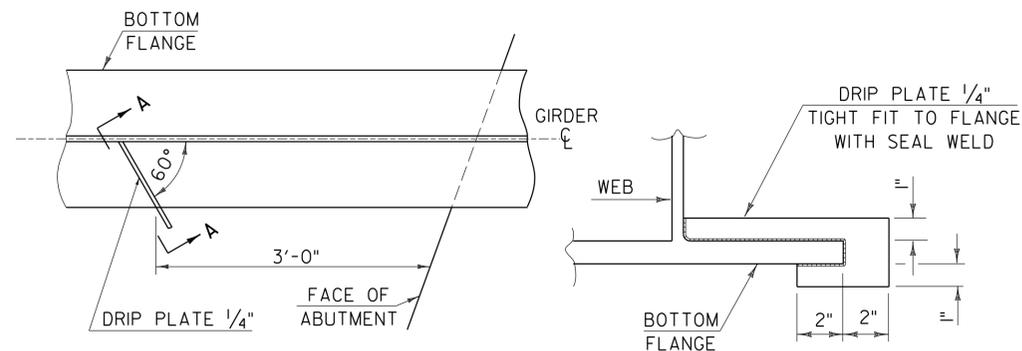
BRIDGE JOINT  
ASPHALTIC PLUG



STRUCTURES  
DETAIL  
SD-516.10

STRUCTURAL STEEL GENERAL NOTES:

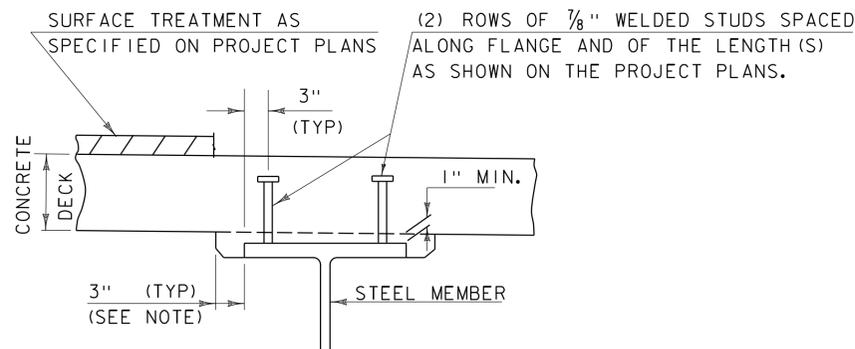
1. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH-STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SUBSECTION 506.I9, UNLESS OTHERWISE SPECIFIED.
2. ALL HOLES IN THE WEBS OF THE FASCIA GIRDERS THAT ARE NOT OTHERWISE FILLED, SHALL BE FILLED WITH EITHER BUTTON HEAD OR HEX HEAD BOLTS. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.I9.
3. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.I0.
4. ANY CONNECTIONS THAT ARE NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.
5. STRUCTURAL STEEL MEMBERS DESIGNATED "CVN" IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01 OF THE STANDARD SPECIFICATIONS.
6. ENDS OF GIRDERS ARE TO BE VERTICAL IN THEIR FINAL POSITION.
7. AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF THE GIRDERS SHALL BE TAKEN AS DIRECTED BY THE RESIDENT ENGINEER FOR USE IN DETERMINING FINISHED GRADES.



PLAN DRIP PLATE

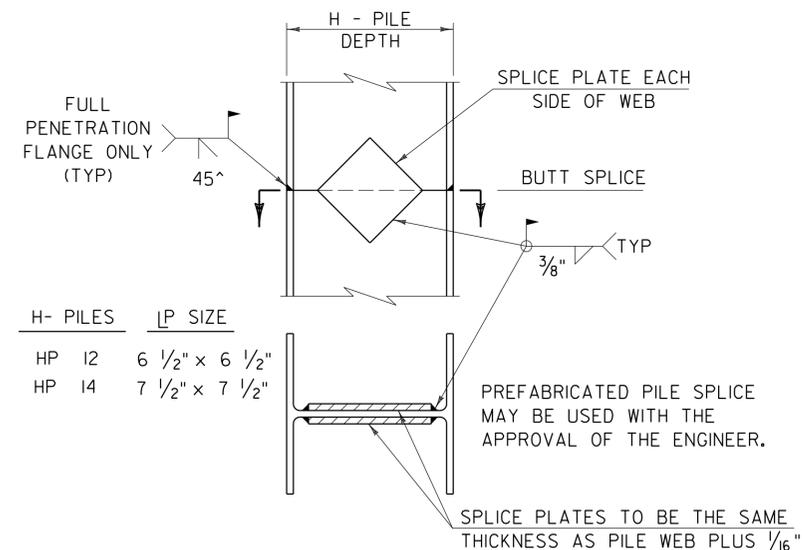
SECTION A - A

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



NOTE:  
THE 3" HORIZONTAL SECTION MAY BE ELIMINATED FOR FORMING SYSTEMS DESIGNED FOR THE CONSTRUCTION OF VERTICAL HAUNCHES. ANY VOIDS RESULTING FROM FORMING SYSTEM ELEMENTS SHALL BE FILLED WITH JOINT SEALER, POLYURETHANE MEETING THE REQUIREMENTS OF SECTION 524. THE COST OF THE JOINT SEALER, POLYURETHANE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

HAUNCH AND SHEAR CONNECTOR DETAIL

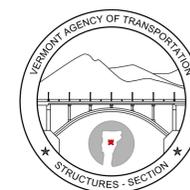


DETAIL OF PILE SPLICE

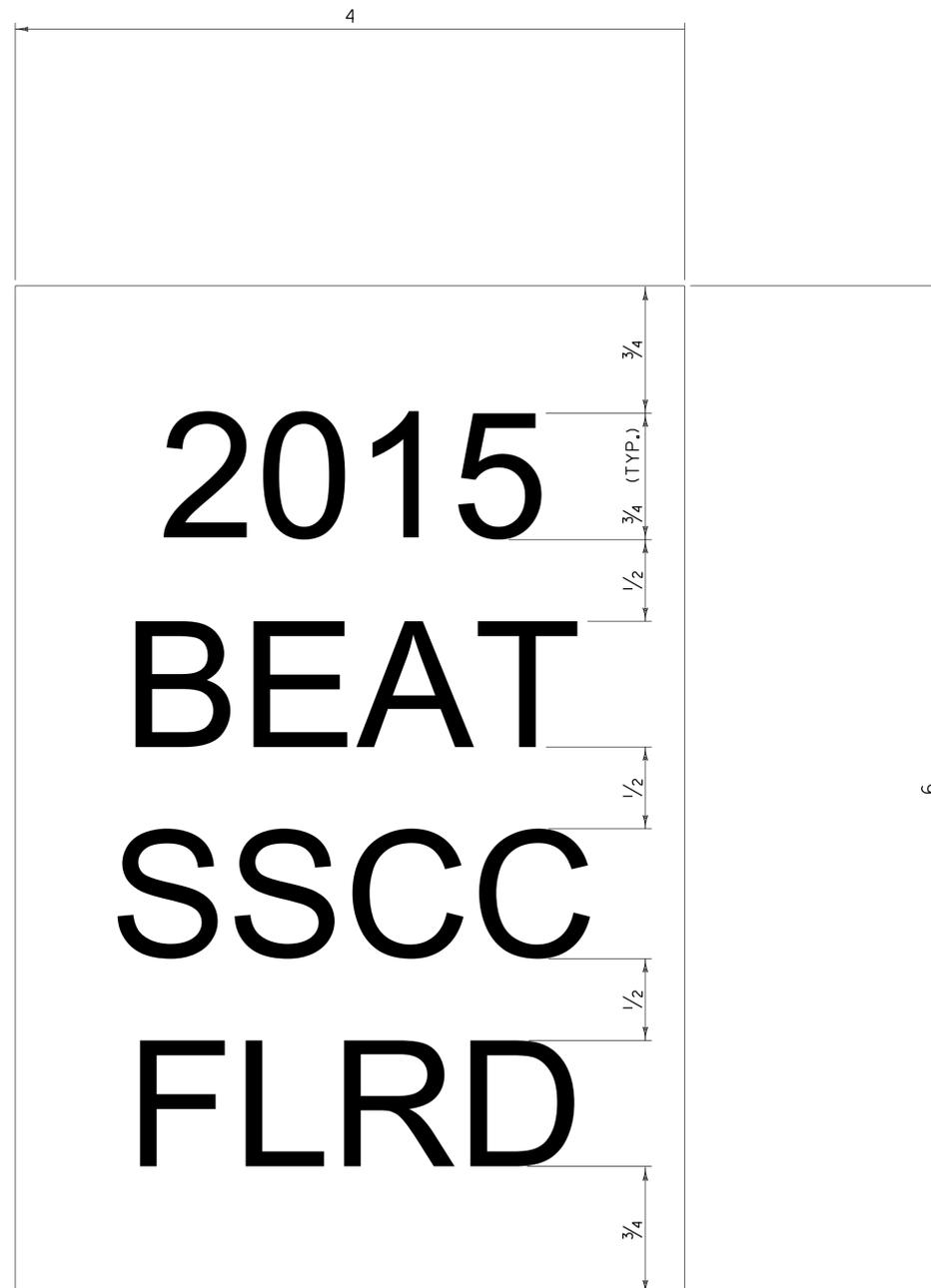
DETAILS ON THIS SHEET ARE "NOT TO SCALE" UNLESS NOTED OTHERWISE.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
JUNE 4, 2010	MODIFIED NOTES

# STRUCTURAL STEEL DETAILS & NOTES



# STRUCTURES DETAIL SD-601.00



**GENERAL NOTES:**

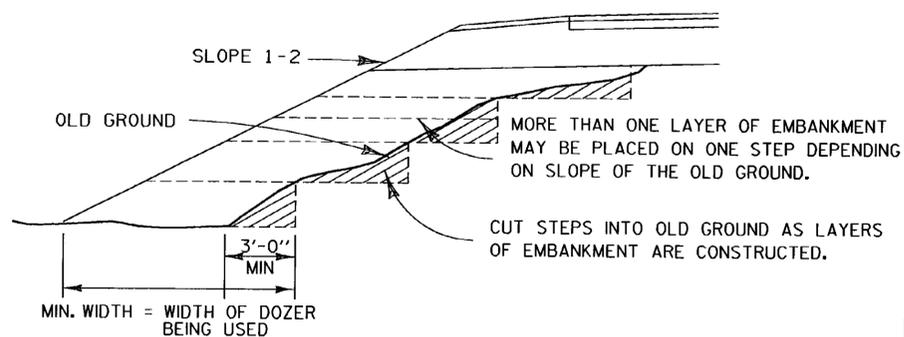
1. LINE ONE SHALL INDICATE THE INSTALLATION YEAR (YYYY).
2. LINE TWO SHALL INDICATE THE MODEL AS IDENTIFIED ON THE APPROVED PRODUCTS LIST. FOR GENERIC INSTALLATIONS THE STANDARD DRAWING DESIGNATION OR NAME AS IDENTIFIED IN THE FHWA ELIGIBILITY LETTER SHALL BE USED.
3. LINE THREE SHALL INDICATE ADDITIONAL MODEL INFORMATION IF NECESSARY.
4. LINE FOUR SHALL INDICATE FLARED (FLRD) OR TANGENT (TANG).
5. LEGEND SHALL BE ONE ARIEL FONT.
6. LEGEND SHALL BE BLACK ON A WHITE BACKGROUND, LEGEND AND BACKGROUND SHALL NOT BE REFLECTIVE.
7. SUITABLE MATERIAL SHALL BE USED SO AS TO NOT DETERIORATE DURING EXPOSURE TO WEATHER.
8. LABELS SHALL BE APPLIED IN SUCH A WAY THAT THEY REMAIN INTACT DURING THE LIFE OF THE TERMINAL.
9. FOR W-BEAM GUARDRAIL, LABEL SHALL BE PLACED ON THE TOP OF POST ONE FACING AWAY FROM TRAFFIC.
10. FOR BOX BEAM GUARDRAIL, LABEL SHALL BE PLACED ON THE BOX BEAM ADJACENT TO POST ONE FACING AWAY FROM TRAFFIC.
11. PAYMENT SHALL BE INCIDENTAL TO OTHER TRAFFIC BARRIER ITEMS.
12. ALL DIMENSIONS IN INCHES.

REV.	DATE	DESCRIPTION
0	NOV. 3, 2015	ORIGINAL APPROVAL
OTHER DETAILS REQUIRED: NONE		
DETAILS APPROVED FOR USE BY HIGHWAY SAFETY & DESIGN		

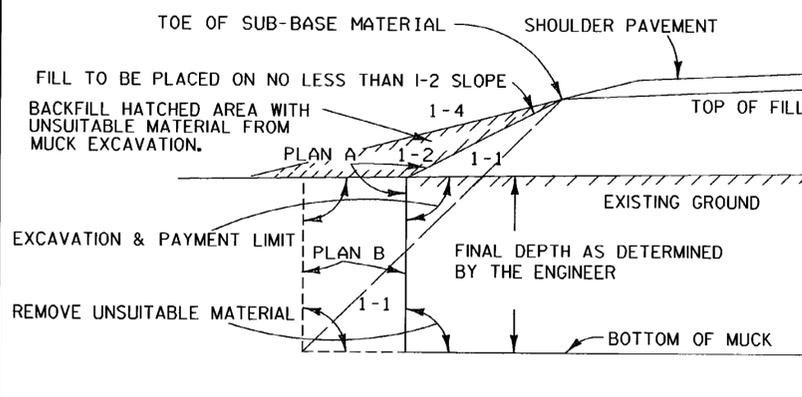
GUARDRAIL TERMINAL LABEL DETAIL



HIGHWAY SAFETY  
& DESIGN DETAIL  
HSD-621.06

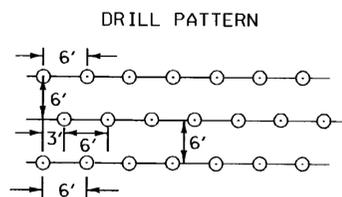
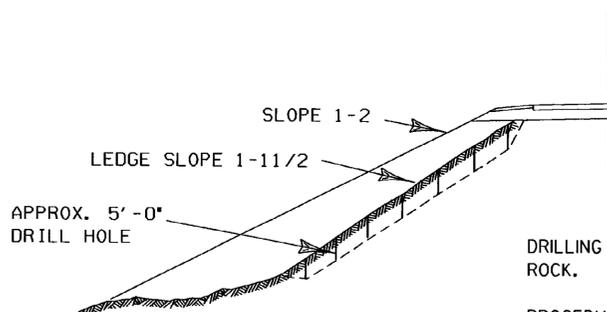


METHOD FOR CONSTRUCTING AN EMBANKMENT ON EARTH SLOPE



GENERAL NOTES:  
 THE MUCK OR UNSUITABLE MATERIAL SHALL BE EXCAVATED TO THE NEAT LINES SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER.  
 EXCAVATION AND PAYMENT LIMIT WILL BE DETERMINED FROM EITHER PLAN "A" OR PLAN "B", WHICHEVER PRODUCES THE GREATER WIDTH IN A GIVEN MUCK AREA.  
 BACKFILL MATERIAL MUST MEET THE REQUIREMENTS SET FORTH UNDER MUCK EXCAVATION, SECTION 203

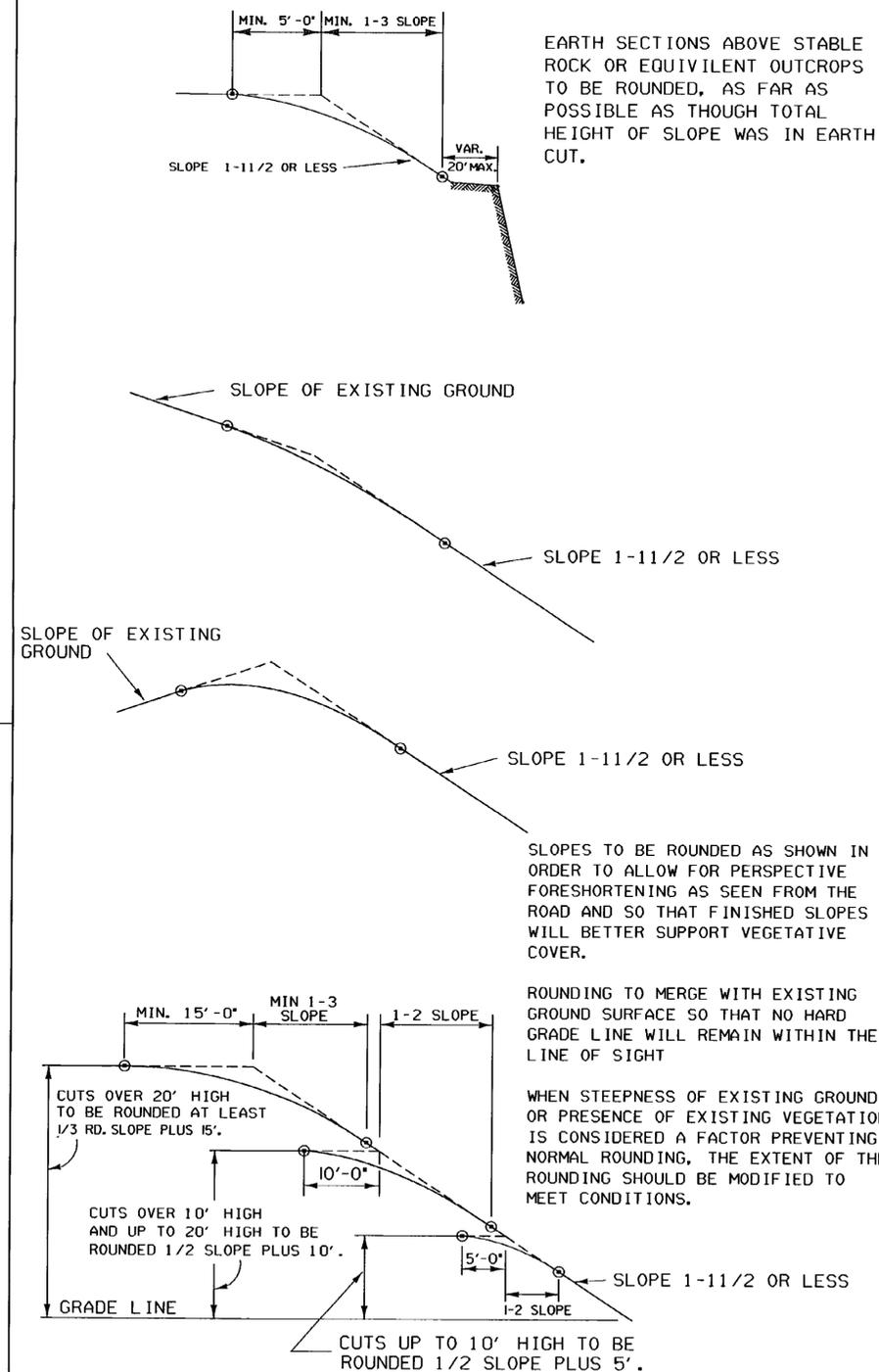
TYPICAL NEAT PAY LINES FOR MUCK EXCAVATION



DRILLING AND BLASTING OF SOLID ROCK.  
 PROCEDURE TO BE FOLLOWED WHEN LEDGE SLOPE ON OLD GROUND IS BETWEEN A 1-1 AND A 1-5 SLOPE.

ALL HOLES TO BE APPROXIMATELY 5'-0" DEEP. HOLES TO BE IN ROWS, SPACED AND STAGGERED AS SHOWN IN DRILL PATTERN, OR AS DIRECTED BY THE ENGINEER, SEE SECTION 205

A METHOD FOR PREPARING LEDGE SLOPE BEFORE CONSTRUCTING AN EMBANKMENT



TYPICAL SLOPE ROUNDING

REVISIONS AND CORRECTIONS

DEC. 6, 1971 - ORIGINAL APPROVAL DATE  
 JUNE 1, 1994 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.

APPROVED

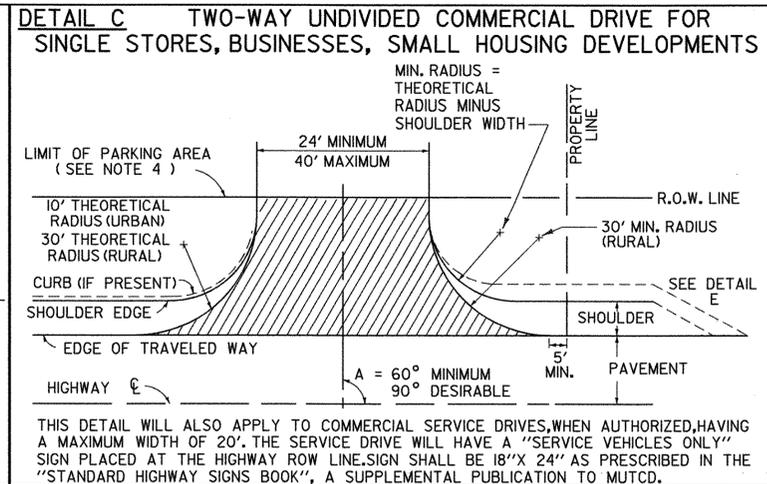
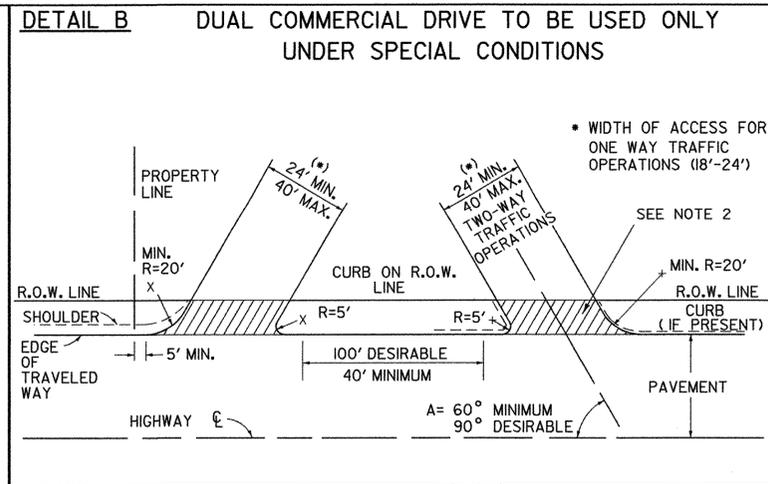
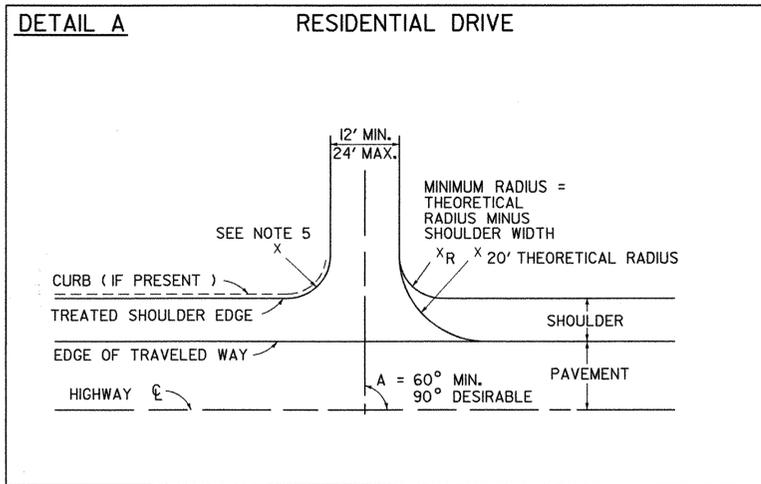
APPROVED FOR THIS PROJECT AND/OR DESIGN IMPLEMENTATION. FHWA FINAL APPROVAL PENDING.

*Stephen D. MacArthur, P.E.*  
 DIRECTOR OF ENGINEERING  
*Robert M. Murphy, P.E.*  
 DESIGN ENGINEER

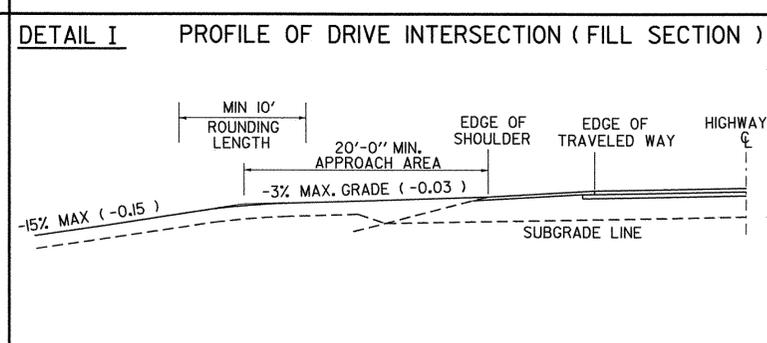
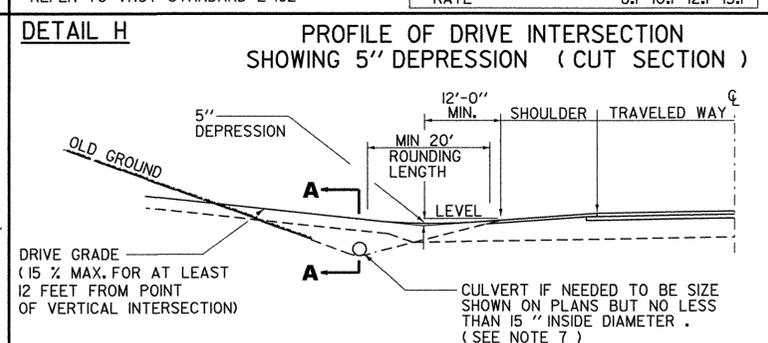
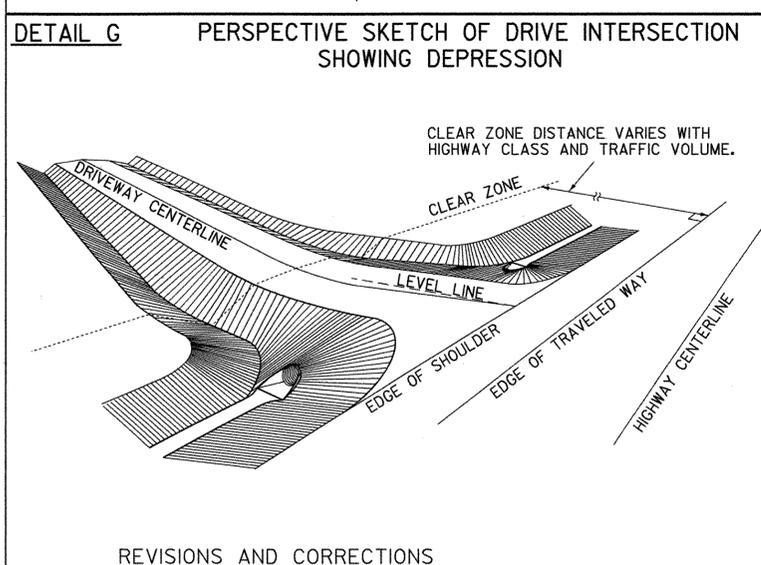
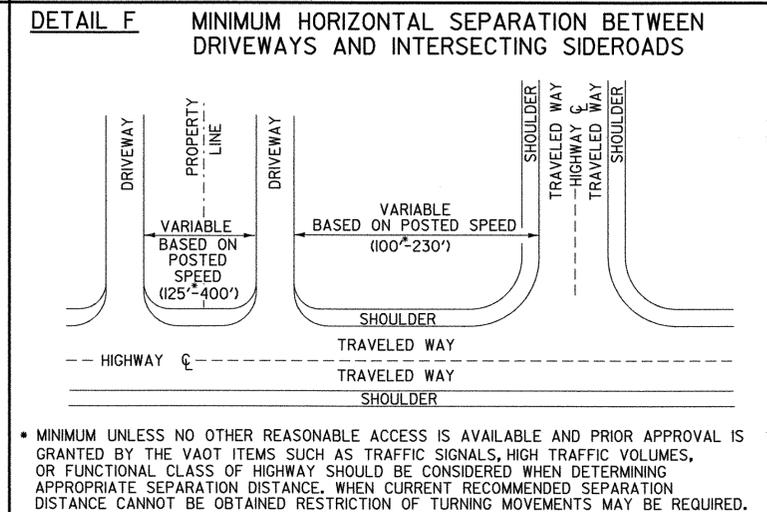
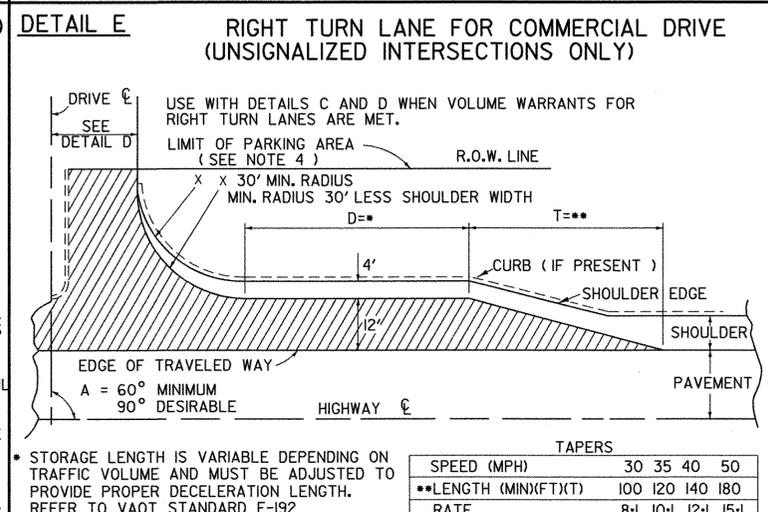
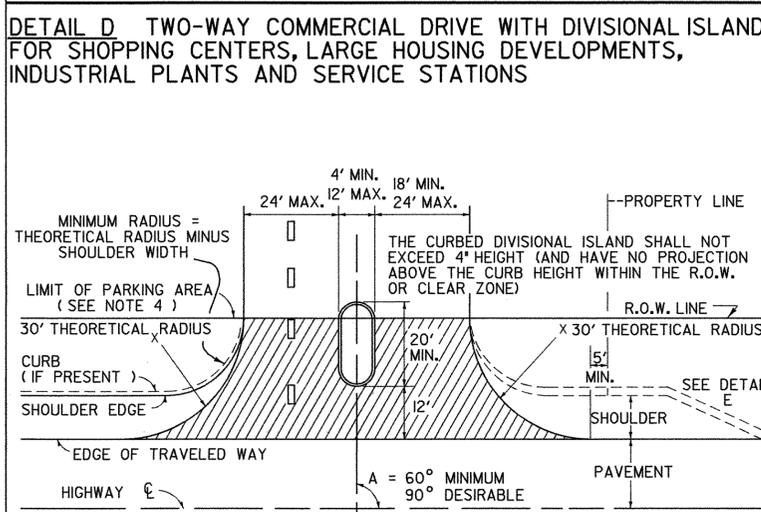
EMBANKMENT ON EARTH SLOPE  
 EMBANKMENT ON ROCK SLOPE  
 MUCK EXCAVATION  
 TYPICAL SLOPE ROUNDING



STANDARD  
 B-5



- NOTES:
- THIS SHEET IS INTENDED FOR USE BY DESIGNERS ON HIGHWAY PROJECTS AND IN CONJUNCTION WITH A PERMIT FOR WORK WITHIN HIGHWAY RIGHTS OF WAY (FORM TA 210). ALL CONSTRUCTION REQUIRED BY THE PERMIT AND INDICATED ON THIS SHEET SHALL BE THE RESPONSIBILITY OF THE APPLICANT AND IS SUBJECT TO THE APPROVAL OF THE VT. AGENCY OF TRANSPORTATION. WHEN USED WITH THE PLANS FOR A HIGHWAY CONSTRUCTION PROJECT, THIS SHEET IS INTENDED TO BE A GUIDE FOR THE DESIGNER CONCERNING DRIVE WIDTHS, HORIZONTAL, VERTICAL AND GEOMETRIC CHARACTERISTICS.
  - ALL COMMERCIAL DRIVES SHALL BE PAVED FROM THE EDGE OF THE TRAVELED WAY TO THE HIGHWAY RIGHT-OF-WAY. TO THE FARTHEST POINT OF CURVATURE ON THE DRIVEWAY EDGE OR AS DIRECTED BY THE DISTRICT TRANSPORTATION ADMINISTRATOR. THIS PAVING IS INDICATED IN DETAILS (B THRU E) BY HATCHING.
  - DEPTH OF SUBBASE AND PAVEMENT TO BE THE SAME AS HIGHWAY OR AS SHOWN IN DETAIL J WITHIN THE LIMITS OF THE HIGHWAY RIGHT-OF-WAY.
  - VEHICULAR ACCESS FROM PARKING AREAS TO THE RIGHT-OF-WAY AT OTHER THAN APPROVED ACCESS POINTS WILL BE PREVENTED BY THE CONSTRUCTION OF CURBING OR OTHER SUITABLE PHYSICAL BARRIER.
  - IF CURB IS PRESENT, SEE APPROPRIATE CURB DETAIL STANDARD OR MATCH TOWN/CITY STANDARD CURB TREATMENT.
  - WHERE TRAFFIC VOLUME FOR A PROJECT IS SUBSTANTIAL THE AGENCY MAY REQUIRE SPECIAL LANES FOR TURNING, SIGNALS OR OTHER MODIFICATIONS. BASED ON TRAFFIC STUDIES THE AGENCY WILL DETERMINE SPECIFIC TREATMENT TO BE USED. ON DEVELOPER PROJECTS THE AGENCY WILL WORK WITH THE APPLICANT TO IMPLEMENT CHANGES TO THE STATE HIGHWAY.
  - CIRCULAR DRAINAGE CULVERTS UNDER DRIVES SHALL HAVE A MINIMUM INSIDE DIAMETER (I.D.) OF 15". PIPE ARCHES USED UNDER DRIVES SHALL HAVE A MINIMUM INSIDE CROSS-SECTIONAL AREA EQUIVALENT TO THAT PROVIDED BY A 15" CIRCULAR PIPE.
  - THE OFFSET BETWEEN THE PROPERTY LINE AND THE EDGE OF THE DRIVEWAY MAY BE GOVERNED BY LOCAL ZONING LAWS. DRIVEWAY WIDTH RESTRICTIONS SHOWN PERTAIN ONLY TO THE AREA WITHIN THE HIGHWAY R.O.W. OR THE END OF THE TURNING RADIUS WHICHEVER IS GREATEST.
  - DRIVEWAY GRADES STEEPER THAN THOSE SHOWN MAY BE ALLOWED AS LONG AS A 20' APPROACH AREA IS ACHIEVED FOR THE VEHICLE TO PAUSE BEFORE ENTERING THE HIGHWAY. (WHERE CURB & SIDEWALKS EXIST, SEE STANDARDS C-2A & C-2B)
  - INTERSECTION SIGHT DISTANCES, EQUAL TO OR GREATER THAN THOSE SHOWN BELOW, SHOULD BE PROVIDED IN BOTH DIRECTIONS FOR ALL DRIVES ENTERING ON PUBLIC HIGHWAYS, UNLESS OTHERWISE APPROVED BY THE AGENCY OF TRANSPORTATION. INTERSECTION SIGHT DISTANCE IS MEASURED FROM A POINT ON THE DRIVE AT LEAST 15 FEET FROM THE EDGE OF TRAVELED WAY OF THE ADJACENT ROADWAY AND MEASURED FROM A HEIGHT OF EYE OF 3.5 FEET ON THE DRIVE TO A HEIGHT OF 3.50 FEET ON THE ROADWAY.



#### SIGHT DISTANCE CHART

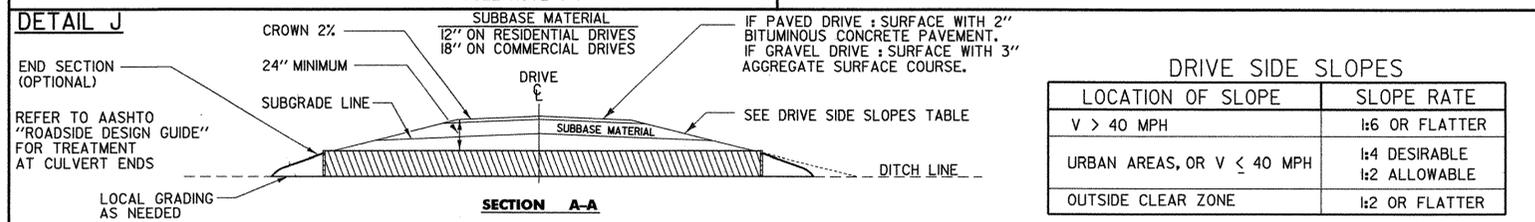
POSTED SPEED OR DESIGN SPEED (M.P.H.)	MINIMUM STOPPING SIGHT DISTANCE (FT)	MINIMUM INTERSECTION SIGHT DISTANCE (FT)
25	155	280
30	200	335
35	250	390
40	305	445
45	360	500
50	425	555
55	495	610
60	570	665
65	645	720

THE ABOVE VALUES ARE TAKEN FROM THE 2004 AASHTO "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS & STREETS."

NOTE: ADVANCE WARNING SIGNS WILL BE REQUIRED IF OBTAINABLE INTERSECTION SIGHT DISTANCES ARE BELOW MINIMUM STOPPING SIGHT DISTANCES.

THE CHART IS ENTERED TO SELECT DESIGN VALUES BASED ON THE POSTED SPEED LIMIT IN MPH. VALUES FOR DESIGN ARE CALCULATED BASED ON THE DESIGN SPEED IN MPH.

• ASSUMES A GAP OF 7.5 SECONDS IN THE TRAFFIC STREAM ON THE HIGHWAY MAINLINE BASED ON THE HIGHWAY DESIGN SPEED IN MPH. THIS ALLOWS A STOPPED PASSENGER VEHICLE TO ENTER THE MAINLINE FROM THE DRIVE WITHOUT UNDULY INTERFERING WITH THE HIGHWAY OPERATIONS.



REVISIONS AND CORRECTIONS

DEC. 11, 1992 - THIS STANDARD SUPERCEDES B-71 (7/23/80R), B-71A (3/12/90), AND B-13 (12/14/71).

JUNE 1, 1994 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.

MAR. 10, 1995 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.

NOV. 16, 2000 - CHANGES MADE TO CONFORM WITH LANGUAGE AND DIMENSIONS IN ACCESS MANAGEMENT PROGRAM GUIDELINES.

FEB 1, 2004 - CHANGES MADE TO SIGHT DISTANCE CHART TO CONFORM WITH NEWEST AASHTO CRITERIA.

JULY 8, 2005 - CHANGE MADE TO OBJECT HEIGHT TO CONFORM WITH NEWEST AASHTO CRITERIA

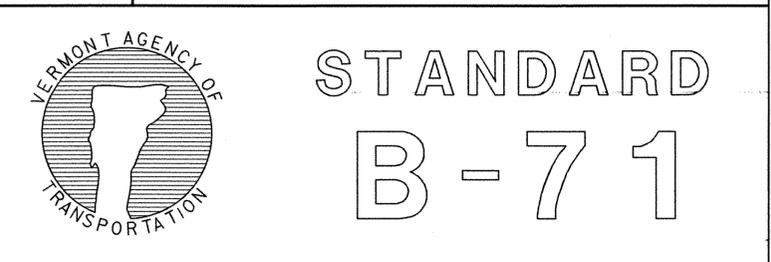
APPROVED

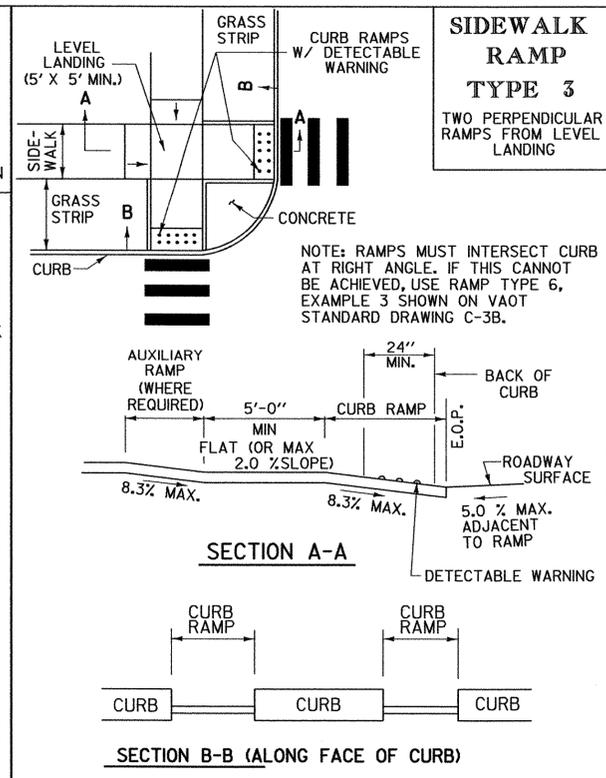
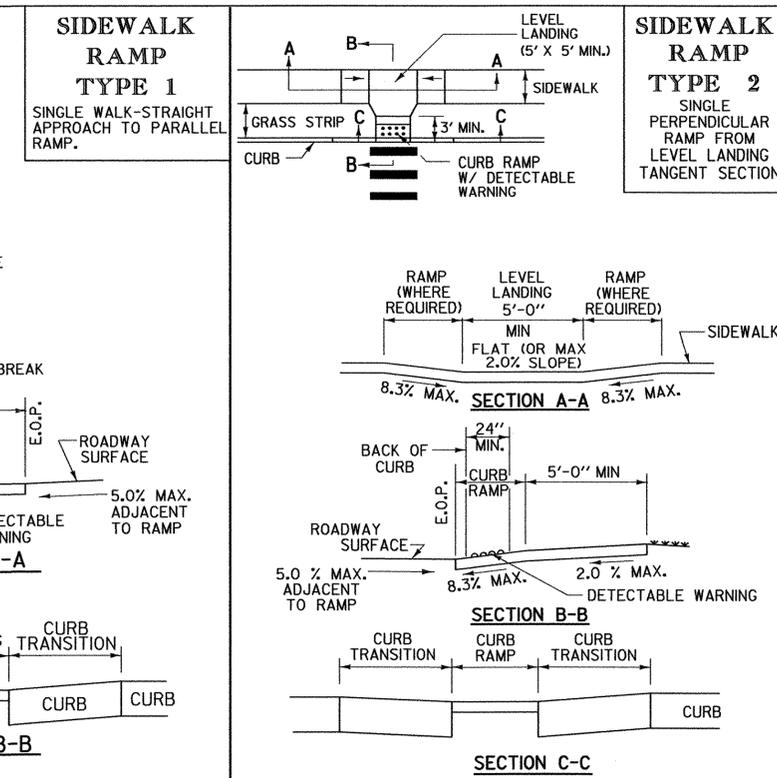
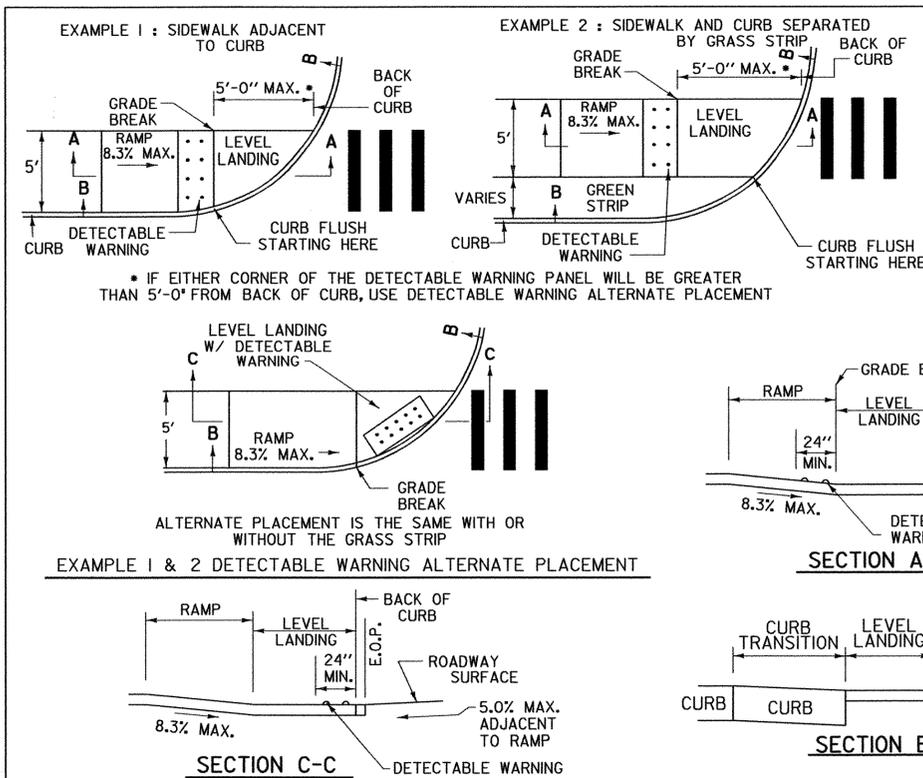
*Richard F. Stewart*  
DIRECTOR OF PROGRAM DEVELOPMENT

*Wm. S. Kelly*  
CHIEF OF UTILITIES AND PERMITS

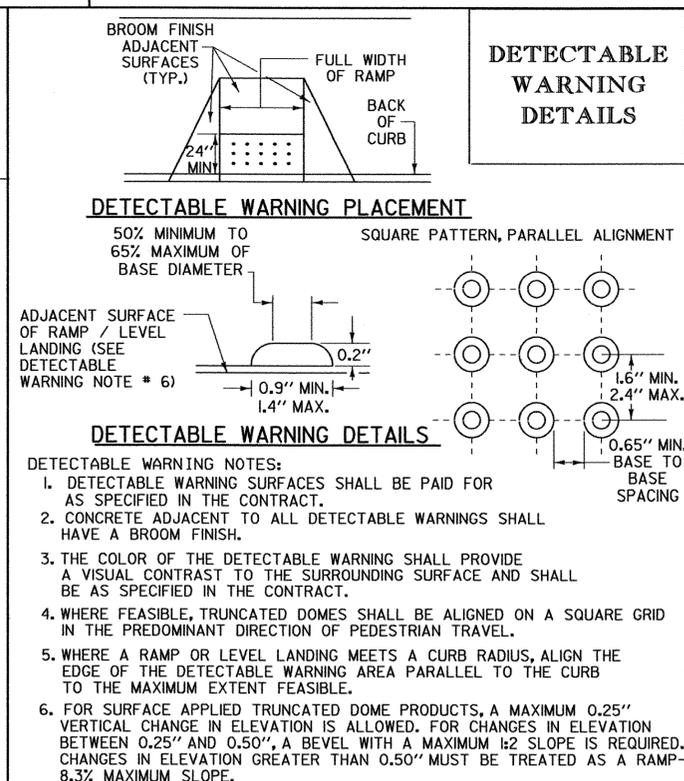
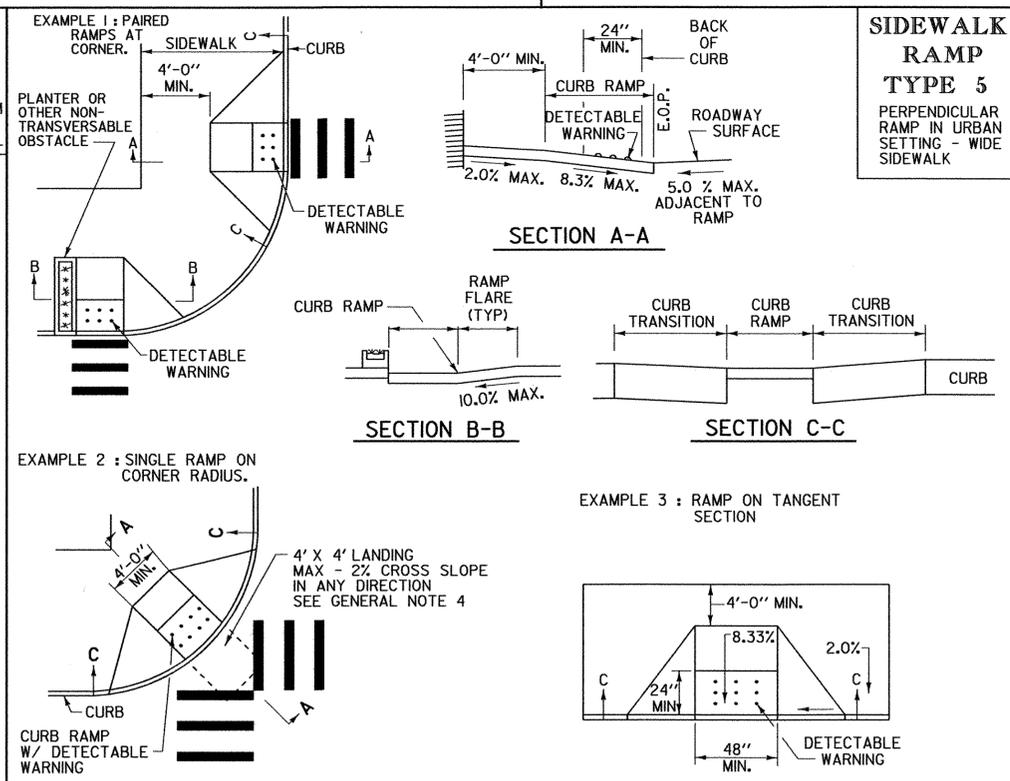
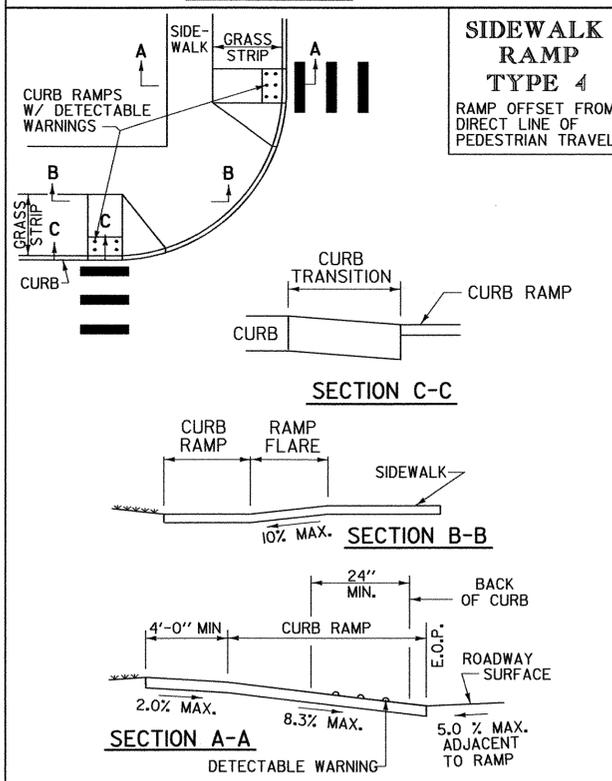
*Michael Conroy*  
FEDERAL HIGHWAY ADMINISTRATION

# STANDARDS FOR RESIDENTIAL AND COMMERCIAL DRIVES





- GENERAL NOTES:**
- THE DIMENSIONS AND GRADES SHOWN ON THIS STANDARD WILL BE ADHERED TO IN THE DESIGN AND THE CONSTRUCTION OF SIDEWALK RAMPS. WHERE SIDEWALKS RUN ADJACENT TO ROADWAYS ON STEEP (5% OR GREATER) GRADES, RAMP GRADES WILL BE AS FLAT AS POSSIBLE. (ON LOW SIDE OF DRIVES AND INTERSECTING SIDE STREETS, RAMPS SHALL SLOPE TOWARDS DRIVE OR SIDE STREET @ 2%.)
  - NOMINAL RAMP DIMENSIONS AND GRADES:  
RAMP WIDTH - 4'-0" MINIMUM  
RAMP SLOPE - 8.3% MAXIMUM  
FLARE SLOPE - 10% MAXIMUM  
RAMP CROSS SLOPE - 2.0% MAXIMUM
  - A LEVEL LANDING (NO GREATER THAN 2.0% SLOPE IN ANY DIRECTION) SHALL BE PROVIDED AT THE TOP OF SIDEWALK RAMPS TO ALLOW FOR STOPPING AND MANEUVERING OF WHEELCHAIRS.
  - LEVEL LANDINGS (NO GREATER THAN 2.0% SLOPE IN ANY DIRECTION) AT THE BOTTOM OF PERPENDICULAR RAMPS SHALL BE WHOLLY CONTAINED WITHIN MARKED CROSSWALKS.
  - DUMMY JOINTS SHALL BE PROVIDED AT TRANSITIONS (GRADE CHANGES) AT TOPS AND BOTTOMS OF RAMPS AND FLARES.
  - VERTICAL DROP-OFF EDGES TO RAMPS WILL NOT BE BUILT UNLESS THE RAMP ABUTS AN AREA WHICH WILL NOT BE USED BY PEDESTRIANS.
  - NO VERTICAL "LIP" OR "CURB REVEAL" WILL BE PROVIDED WHERE THE RAMP ADJOINS THE ROADWAY.
  - AT MARKED CROSSWALKS, THE FULL WIDTH OF THE RAMP OR LANDING SHALL BE CONTAINED WITHIN THE PAVEMENT MARKINGS.
  - WHERE POSSIBLE, RAMP FLARES SHOULD BE LOCATED OUTSIDE THE DIRECT LINE OF TRAVEL MOST LIKELY TO BE FOLLOWED BY THE VISUALLY IMPAIRED.
  - SIGNS, POLES, PLANTERS, MAILBOXES, ETC. SHALL NOT BE LOCATED WHERE THEY WILL INTERFERE WITH THE USE OF SIDEWALK RAMPS.
  - WHERE POSSIBLE, SIDEWALK RAMPS SHOULD NOT BE LOCATED WHERE USERS MUST CROSS DROP INLET GRATES, MANHOLE COVERS OR OTHER ACCESS LIDS. IF THIS CANNOT BE AVOIDED THEN GRATE DESIGN AND PLACEMENT SHALL CONFORM TO ADA REQUIREMENTS.
  - CURB DRAINAGE SHOULD BE CONSTRUCTED SO AS TO PRECLUDE THE FLOW OF WATER PAST THE SIDEWALK RAMP.
  - WHEREVER FEASIBLE, TWO SIDEWALK RAMPS ARE RECOMMENDED IN PREFERENCE TO A SINGLE RAMP.
  - JOINTS WILL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT SIDEWALK SPECIFICATIONS, HOWEVER EXPANSION JOINTS WITHIN THE SIDEWALK RAMP AREA WILL BE AVOIDED WHEREVER POSSIBLE.
  - SIDEWALKS THAT ARE LESS THAN 5' WIDE REQUIRE 5' WIDE BY 5' LONG PASSING AREAS (NO GREATER THAN 2.0% CROSS SLOPE) AT INTERVALS NOT TO EXCEED 200 FEET.
  - E.O.P. = EDGE OF PAVEMENT
  - THE PUBLIC SIDEWALK CURB RAMP STANDARDS DEPICTED HERE MAY NOT BE APPROPRIATE FOR ALL LOCATIONS. FIELD CONDITIONS AT INDIVIDUAL LOCATIONS MAY REQUIRE SPECIFIC DESIGNS. DESIGNS MUST BE CONSISTENT WITH THE PROVISIONS OF THIS SHEET TO THE MAXIMUM EXTENT FEASIBLE ON ALTERATION PROJECTS AND WHEN STRUCTURALLY PRACTICABLE ON NEW CONSTRUCTION PROJECTS AS REQUIRED BY THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES.



- OTHER STANDARDS REQUIRED:** C-2A, C-2B, C-3B AND C-10

**REVISIONS AND CORRECTIONS**

FEB. 2, 2004 - DATE OF ORIGINAL ISSUE

SEPT. 1, 2004 - MINOR REVISIONS TO COMPLY WITH ADAAG

MAR. 10, 2008 - MINOR REVISIONS TO COMPLY WITH ADA STANDARDS

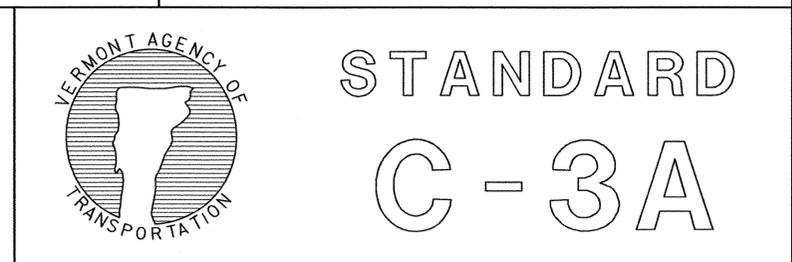
**APPROVED**

*Alan E. Newson*  
LOCAL TRANSPORTATION FACILITIES PROGRAM MANAGER

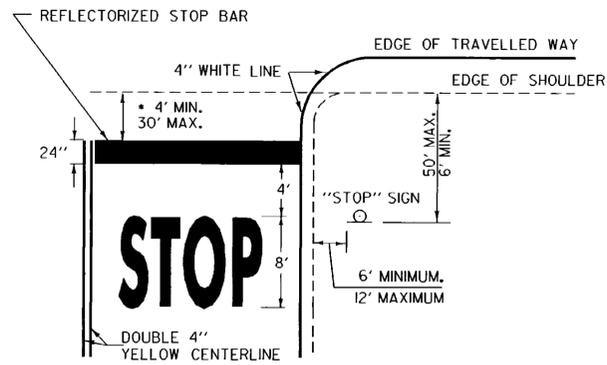
*Rudolf Fetscher*  
DIRECTOR OF PROGRAM DEVELOPMENT

*Mark D. Richter*  
FEDERAL HIGHWAY ADMINISTRATION

# SIDEWALK RAMPS

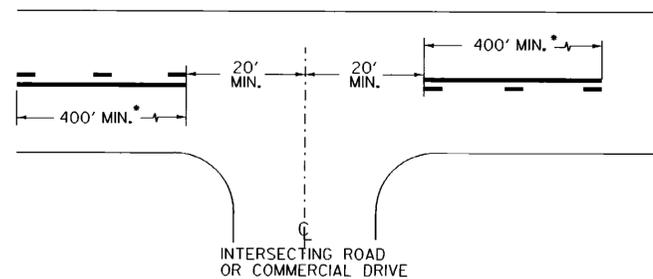






\* THE "DESIRED STOPPING POINT" IS THE LOCATION BASED ON SITE CONDITIONS THAT BEST ALLOWS THE STOPPED VEHICLE TO VIEW THE APPROACHING TRAFFIC.

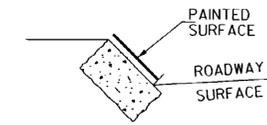
**STOP BAR LAYOUT**



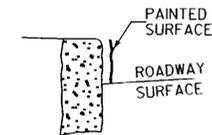
\* THE SOLID LINE SHALL BE PAIRED WITH EITHER A SOLID OR DASHED LINE DEPENDING ON SIGHT DISTANCE AVAILABILITY IN THE OPPOSING DIRECTION. ADJUSTMENTS TO THE 40 FOOT CENTERLINE OPENING MAY BE MADE TO ACCOMMODATE SKEWED INTERSECTIONS.

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

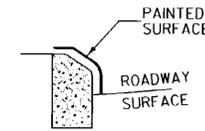
**CENTERLINE LAYOUT**



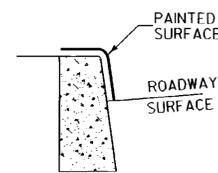
**GRANITE SLOPE EDGING**



**VERTICAL GRANITE CURB**

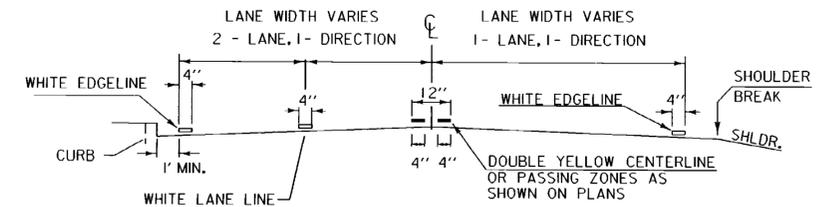


**TYPE A (CONCRETE)**

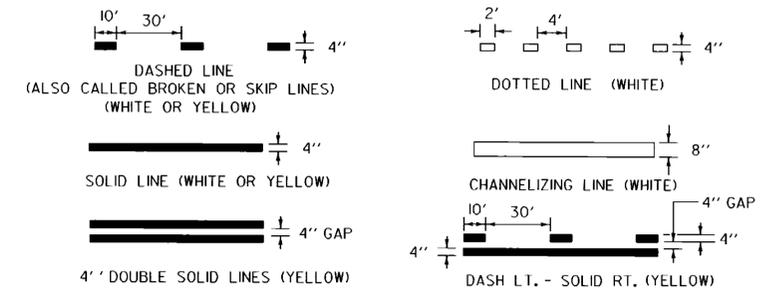


**TYPE B (CONCRETE)**

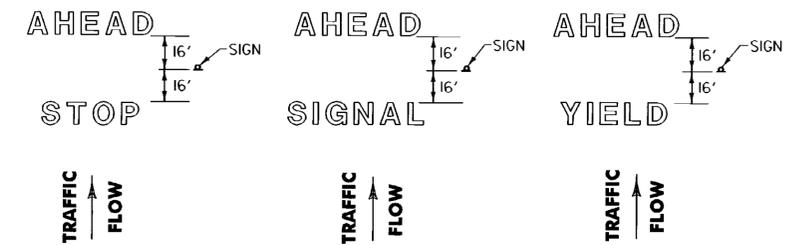
**PAINTED CURB**



**PAVEMENT MARKING PLACEMENT DETAIL**

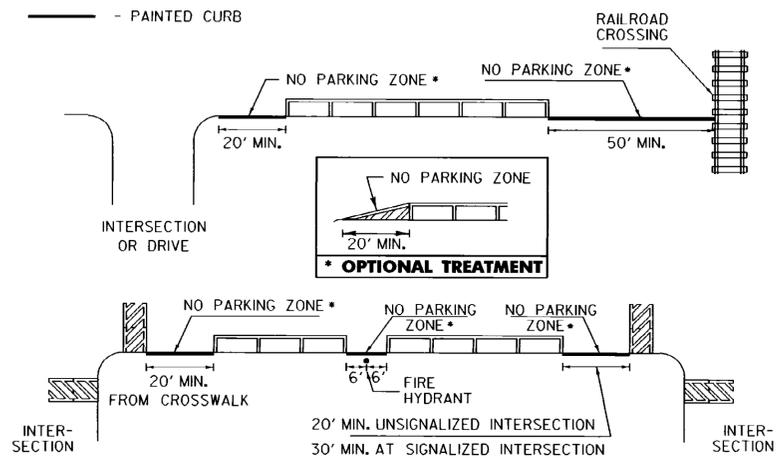


**PAVEMENT MARKING LINE DETAILS**

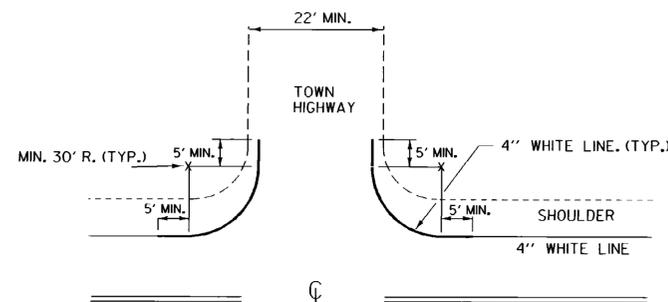


**LETTER IN WORD MARKING SPACING DETAIL**

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



**NO PARKING LAYOUT DETAILS**

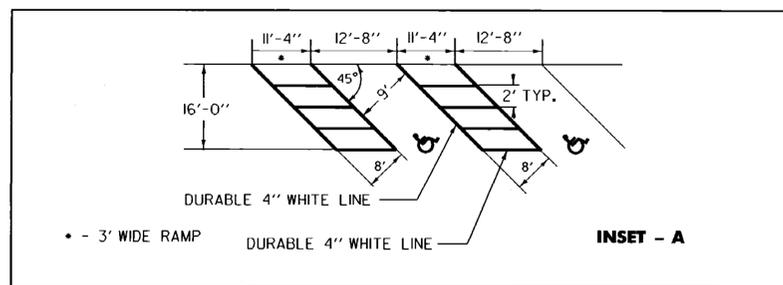


**EDGE LINE LAYOUTS**

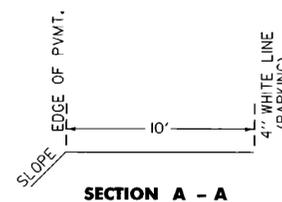
EDGE LINES SHALL BE APPLIED TO ALL STATE HIGHWAYS AND SHOULD BE MAINTAINED AT A CONSTANT DISTANCE FROM THE CENTERLINE UNLESS PAVEMENT WIDTH INCREASES TO ALLOW WIDER LANES.

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.

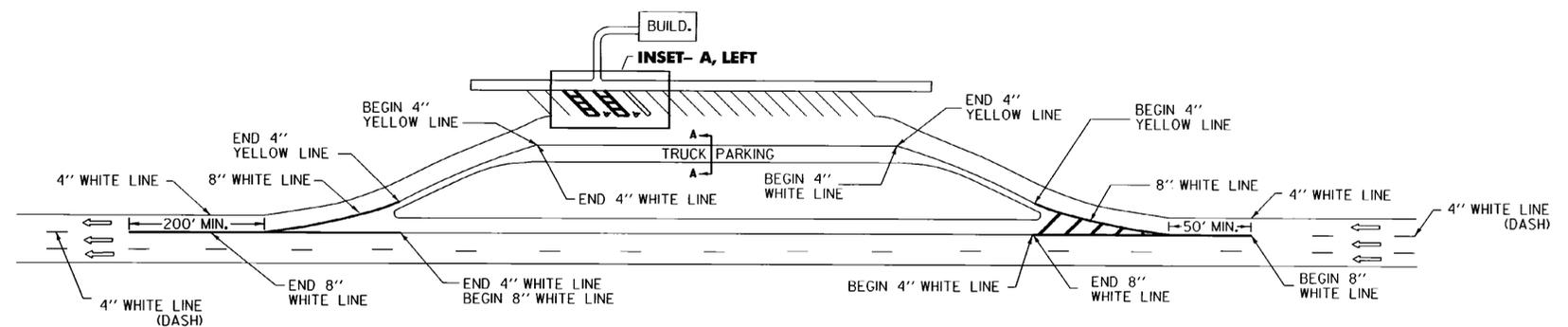
IF MIN. 30 FOOT RADIUS CANNOT BE OBTAINED, OR THE TOWN HIGHWAY IS NOT PAVED, BREAK THE EDGE LINE USING AN 80 FOOT GAP AT INTERSECTION.



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**

*Sandra S. McCutchen*  
DIRECTOR OF ENGINEERING

*David A. Ross*  
TRAFFIC AND SAFETY ENGINEER

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

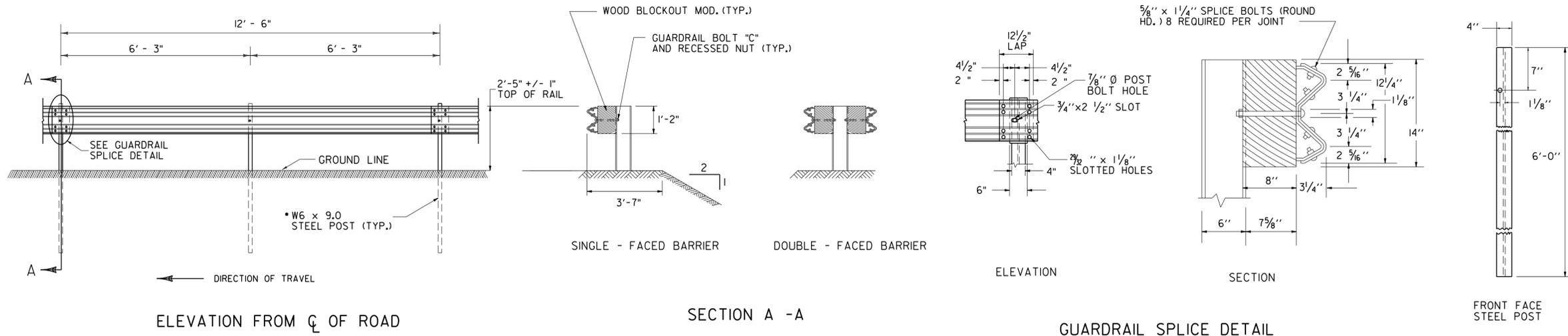
**PAVEMENT MARKING DETAILS**



**STANDARD  
E-193**

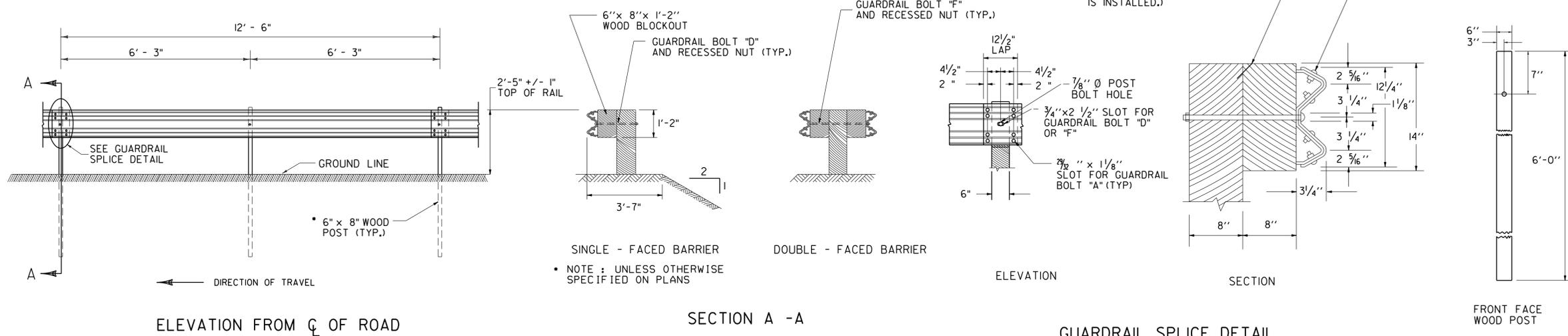
/traf/std/stdel93.dgn/stdel93.i

"W" BEAM GUARDRAIL WITH STEEL POSTS



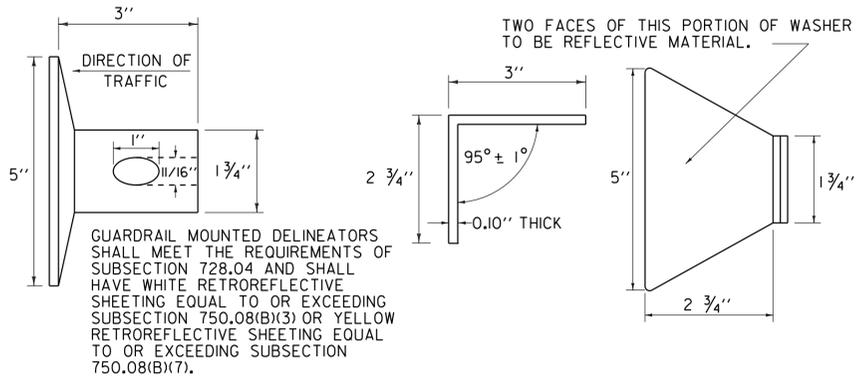
- NOTES:
- BLOCKS SHALL BE MADE OF TIMBER WITH A STRESS GRADE OF 1200 PSI OR MORE. TESTING SHALL BE IN ACCORDANCE WITH WEST COAST LUMBER INSPECTION BUREAU, SOUTHERN PINE INSPECTION BUREAU OR OTHER APPROPRIATE ASSOCIATION. TIMBER FOR BLOCKS SHALL BE ROUGH SAWN (UNPLANED) WITH DIMENSIONS INDICATED. THE SIZE TOLERANCE OF ROUGH SAWN BLOCKS IN THE DIRECTION OF THE BOLT HOLES SHALL BE NOT MORE THAN +/- 1/4".
  - SUPPLY WOOD BLOCKS PER AASHTO M 168.
  - TREAT WITH PRESERVATIVE PER AASHTO M 133.
  - BLOCKOUTS MAY ALSO BE MADE OF APPROVED ALTERNATIVE MATERIAL.

"W" BEAM GUARDRAIL WITH WOOD POSTS



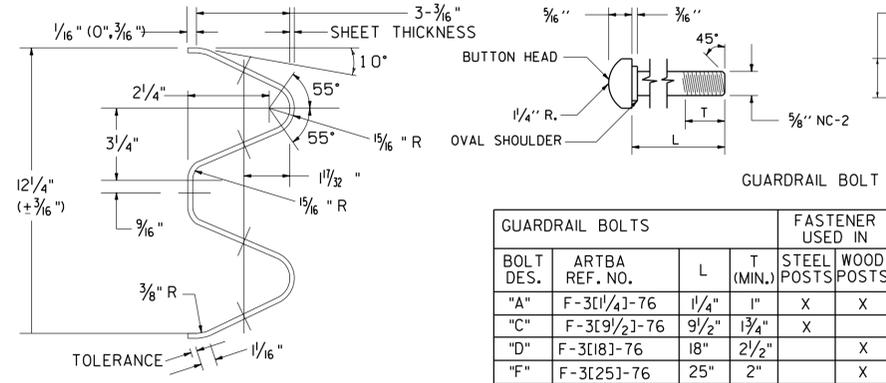
- NOTES:
- BLOCKS SHALL BE MADE OF TIMBER WITH A STRESS GRADE OF 1200 PSI OR MORE. TESTING SHALL BE IN ACCORDANCE WITH WEST COAST LUMBER INSPECTION BUREAU, SOUTHERN PINE INSPECTION BUREAU OR OTHER APPROPRIATE ASSOCIATION. TIMBER FOR BLOCKS SHALL BE ROUGH SAWN (UNPLANED) WITH DIMENSIONS INDICATED. THE SIZE TOLERANCE OF ROUGH SAWN BLOCKS IN THE DIRECTION OF THE BOLT HOLES SHALL BE NOT MORE THAN +/- 1/4".
  - SUPPLY WOOD BLOCKS PER AASHTO M 168.
  - TREAT WITH PRESERVATIVE PER AASHTO M 133.
  - BLOCKOUTS MAY ALSO BE MADE OF APPROVED ALTERNATIVE MATERIAL.

GUARDRAIL DELINEATOR



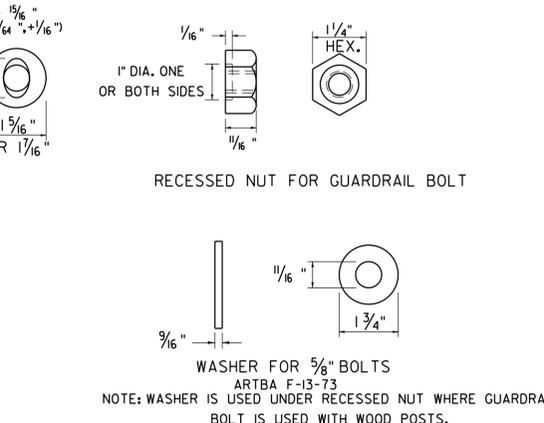
GUARDRAIL MOUNTED DELINEATORS SHALL MEET THE REQUIREMENTS OF SUBSECTION 728.04 AND SHALL HAVE WHITE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING SUBSECTION 750.08(B)(3) OR YELLOW RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING SUBSECTION 750.08(B)(7).

THIS REFLECTORIZED ALUMINUM WASHER IS TO BE PLACED IN VALLEY OF BEAM WHEN MOUNTING BEAM ONTO EACH FIFTH POST. WASHER SHALL MEET SPECIFICATION REQUIREMENTS FOR A.S.T.M. B-209 ALLOY 5052-H32.



ARTBA RE-3[206]-3"-12'-6" CLASS A, TYPE 1]-73 TYPICAL GUARDRAIL SECTION

GUARDRAIL BOLTS		FASTENER USED IN			
BOLT DES.	ARTBA REF. NO.	L	T (MIN.)	STEEL POSTS	WOOD POSTS
"A"	F-3[1/4]-76	1 1/4"	1"	X	X
"C"	F-3[9/2]-76	9 1/2"	1 3/4"	X	
"D"	F-3[18]-76	18"	2 1/2"		X
"F"	F-3[25]-76	25"	2"		X



NOTE: WASHER IS USED UNDER RECESSED NUT WHERE GUARDRAIL BOLT IS USED WITH WOOD POSTS.

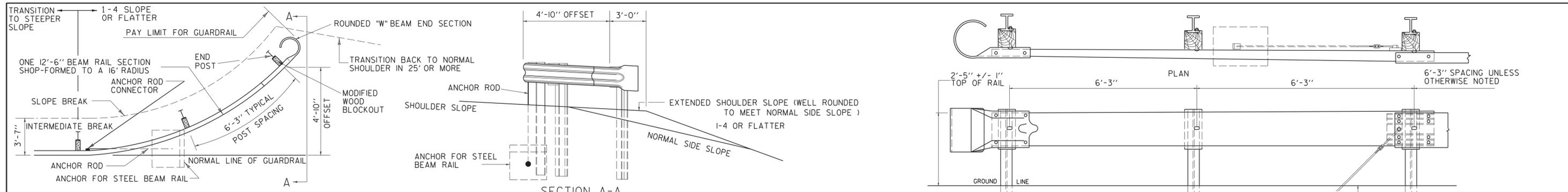
- GENERAL NOTES:
- GUARDRAIL SHALL MEET THE REQUIREMENTS OF AASHTO M 180, CLASS A, TYPE 1, UNLESS OTHERWISE DESIGNATED.
  - GUARDRAIL SHALL BE SINGLE FACED UNLESS OTHERWISE DESIGNATED.
  - GUARDRAIL SECTIONS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW FOR THE LANE NEAREST THE GUARDRAIL.
  - FOR DESCRIPTION AND SPECIFICATION OF PARTS IDENTIFIED BY (ARTBA ...) AND OTHER DETAILS OF BOLTS, POST ACCESSORIES, FASTENERS & RAIL ELEMENTS, SEE AASHTO-ACC-ARTBA JOINT TASK FORCE NO. 13, TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE", LATEST EDITION.
  - STANDARD STEEL BEAM TO BE 1/8" AND THE HEAVY DUTY TO BE 3/4" THICK.

REV.	DATE	DESCRIPTION
--	JAN. 3, 2000	UPDATED TO REFLECT METRIC STD. CHANGES
--	FEB. 10, 2014	UPDATED TO REFLECT GUARDRAIL HEIGHT OF 29"; FHWA LETTER (MAY 17, 2010)
--	NOV. 10, 2015	UPDATED DELINEATOR RETROREFLECTIVE SHEETING NOTES

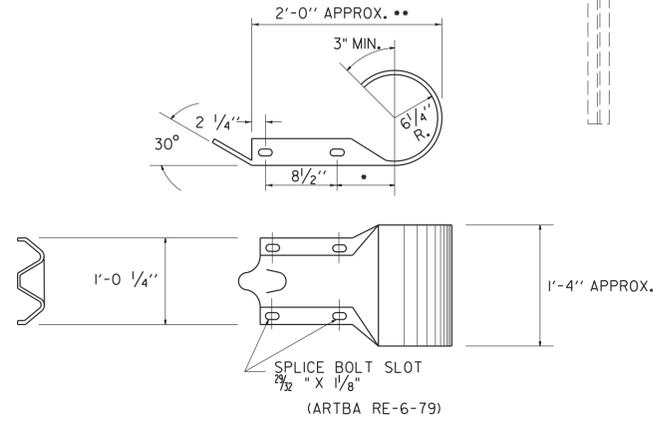
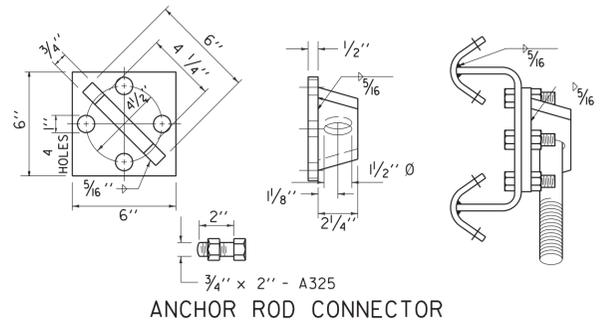
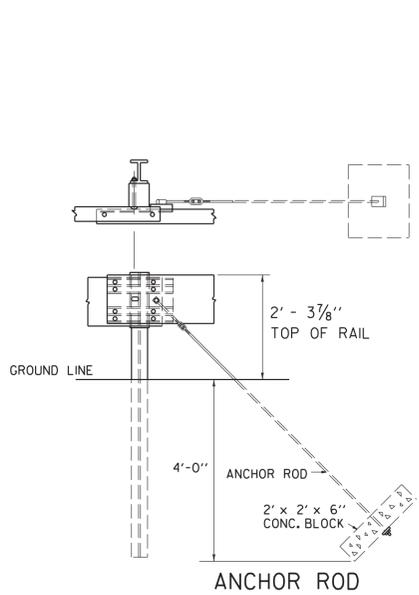
OTHER STANDARDS REQUIRED: G-ID  
VTRANS AND FHWA APPROVAL ON FILE WITH CONTRACT ADMINISTRATION

STEEL BEAM GUARDRAIL WITH STEEL POSTS  
STEEL BEAM GUARDRAIL WITH WOOD POSTS

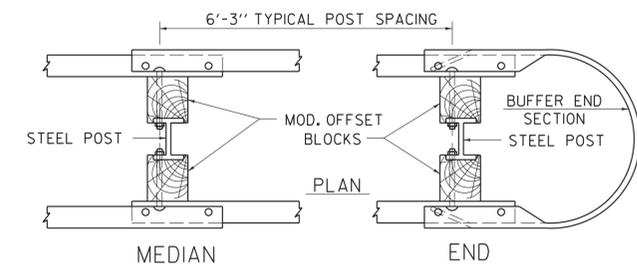
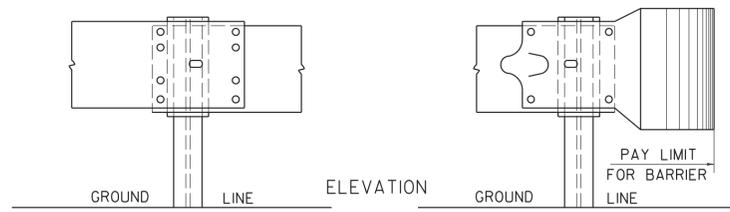




**APPROACH END DETAIL**  
 NHS APPROVED FOR USE WHERE DESIGN SPEED IS 40 OR LESS MPH  
 NON-NHS APPROVED FOR USE WHERE DESIGN SPEED IS 50 OR LESS MPH



**ROUNDED "W" BEAM END SECTION**  
 • THIS DIMENSION IS 7 1/2" IN RE-7-79. IF THE DIMENSION IS USED IN THIS PART, IT WILL GIVE AN ACCEPTABLE OVERALL LENGTH (\*\*) OF APPROXIMATELY 2'- 11/2."

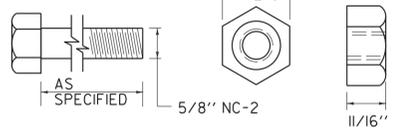
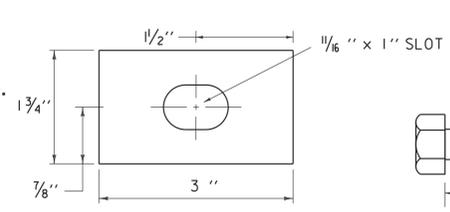
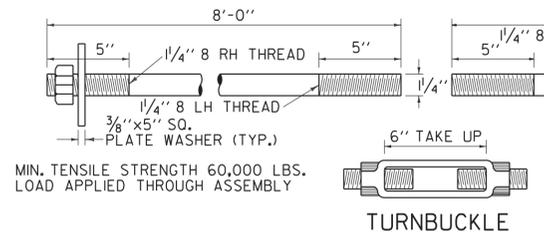


ASSEMBLY ELEVATION

TRAILING END TERMINAL FOR USE ON ONE-WAY HIGHWAYS

**GENERAL NOTES:**

1. ALL METAL PARTS SHALL BE GALVANIZED
2. ALL WOOD POSTS SHALL BE GIVEN A PRESERVATIVE TREATMENT
3. DETAILS PERTINENT TO THE STANDARD INSTALLATION OF "W" BEAM SECTIONS WILL BE FOUND ON STANDARD DRAWING G-1.
4. FOR DESCRIPTION AND SPECIFICATIONS OF PARTS IDENTIFIED BY "ARTBA..." AND OTHER DETAILS OF POSTS, POST ACCESSORIES, FASTENERS AND RAIL ELEMENTS, SEE AASHTO-ACC-ARTBA JOINT TASK FORCE NO. 13, TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE", LATEST EDITION.
5. THE TRANSITION FROM THE APPROACH END TO THE STANDARD STEEL BEAM GUARDRAIL SHALL BE 25'-0" UNLESS OTHERWISE SPECIFIED.
6. WHEN STANDARD STEEL BEAM CONNECTS TO BRIDGE APPROACH RAIL OF A DIFFERENT HEIGHT THE LENGTH NEEDED TO TRANSITION THE HEIGHT OF STANDARD STEEL BEAM TO MATCH THE BRIDGE APPROACH RAIL SHALL BE 25'-0" UNLESS OTHERWISE SPECIFIED.
7. WHEN STANDARD STEEL BEAM CONNECTS TO A MANUFACTURED TERMINAL SECTION OF A DIFFERENT HEIGHT THE LENGTH NEEDED TO TRANSITION THE HEIGHT OF STANDARD STEEL BEAM TO MATCH THE MANUFACTURED TERMINAL SECTION SHALL BE 25'-0" UNLESS OTHERWISE SPECIFIED.



MIN. TENSILE STRENGTH 60,000 LBS. LOAD APPLIED THROUGH ASSEMBLY

**TURNBUCKLE**

**RECTANGULAR GUARDRAIL PLATE WASHER**  
(ARTBA F-12-73)

**5/8" HEX NUT AND BOLT "F"**  
(ARTBA F-8-76)

**FASTENER DETAILS**

**STEEL BEAM MEDIAN BARRIER**  
NOTE: TO BE USED OUTSIDE CLEAR-ZONE ONLY.

**OTHER STANDARD REQUIRED: G-1**

**REVISIONS AND CORRECTIONS**  
 JUNE 1, 1994 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.  
 JAN. 3, 2000 - UPDATED TO REFLECT METRIC STD. CHANGES  
 FEB. 10, 2014 - UPDATED TO REFLECT GUARDRAIL HEIGHT OF 29"; AS NOTED IN FHWA LETTER DATED MAY 17, 2010

APPROVED  
*[Signature]*  
 HIGHWAY SAFETY & DESIGN ENGINEER  
*[Signature]*  
 DIRECTOR OF PROGRAM DEVELOPMENT  
*[Signature]*  
 FEDERAL HIGHWAY ADMINISTRATION

**STEEL BEAM GUARDRAIL APPROACH END TERMINAL**  
**STEEL BEAM GUARDRAIL TRAILING END TERMINAL**  
**ANCHOR FOR STEEL BEAM GUARDRAIL**  
**STEEL BEAM MEDIAN BARRIER**



**STANDARD**  
**G-1d**

1. TRAFFIC CONTROL DEVICES NOT DETAILED IN THE VERMONT AGENCY OF TRANSPORTATION (VAOT) "STANDARD DRAWINGS" OR THE PROJECT PLANS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON TRAFFIC CONTROL DEVICES" (MUTCD) AND THE "STANDARD HIGHWAY SIGNS AND MARKINGS" BOOK (SHSM) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).
2. CONSTRUCTION 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.
3. CONSTRUCTION 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.
4. SIGNS SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION SATISFACTORY TO THE ENGINEER. 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.
5. NO CROSS-BRACING OR BACK-BRACING TO KEEP POSTS PLUMB WILL BE ALLOWED. CONCRETE FOUNDATIONS, COLLARS OR SOIL BEARING PLATES ARE NOT PERMITTED. CONSTRUCTION SIGNS SHALL BE PLACED ON TWO POSTS.
6. CONSTRUCTION SIGNS INSTALLED ON POSTS SHALL BE SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST FIVE FEET ABOVE THE EDGE OF PAVEMENT AND THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST SIX FEET OUTSIDE THE SHOULDER POINT, FOUR FEET OUTSIDE GUARDRAIL, OR TWO 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 SEVEN FEET ABOVE THE SIDEWALK OR EDGE OF PAVEMENT, WHICHEVER IS HIGHER.
7. PORTABLE SIGNS SHALL BE PLACED ON THE EDGE OF ROADWAY AND A MINIMUM OF ONE FOOT ABOVE THE TRAVELED WAY. ALL VEGETATION THAT INTERFERES WITH VISIBILITY OF THE SIGNS SHALL BE REMOVED. WHEN PLACED BEHIND GUARDRAIL, THE BOTTOM OF THE SIGN FACE SHALL BE ABOVE THE TOP OF THE GUARDRAIL.
8. SIGNS SHALL BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER.
9. ROLL UP CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING THE "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE VI AND TYPE VII UNLESS OTHERWISE NOTED.
10. SOLID SUBSTRATE CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING THE "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE VIII OR IX REQUIREMENTS UNLESS OTHERWISE NOTED.
11. WHERE CONSTRUCTION SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARDRAIL OR OTHER APPROVED TRAFFIC BARRIERS, ALL SIGN STANDS AND POST INSTALLATIONS SHALL MEET "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 OR THE AASHTO "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH). THE APPROPRIATE RESOURCE SHALL BE DETERMINED AS DESCRIBED IN THE MASH PUBLICATION. NO SIGN POSTS SHALL EXTEND OVER THE TOP OF THE SIGN INSTALLED ON SAID POSTS. WHEN ANCHORS ARE INSTALLED, STUBS SHALL NOT BE GREATER THAN FOUR INCHES ABOVE EXISTING GROUND.
12. ROADWAY AND SHOULDER WIDTHS DEPICTED ON THE STANDARD DRAWINGS MAY VARY.
13. THESE STANDARD DRAWINGS ARE INTENDED TO SERVE AS VTRANS STANDARD OPERATING PROCEDURE. IT IS NOTED THAT COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL WORK ZONE MAY BE MODIFIED DUE TO FIELD CONDITIONS, AT THE DISCRETION OF THE ENGINEER.

OTHER STDS. REQUIRED: **NONE**

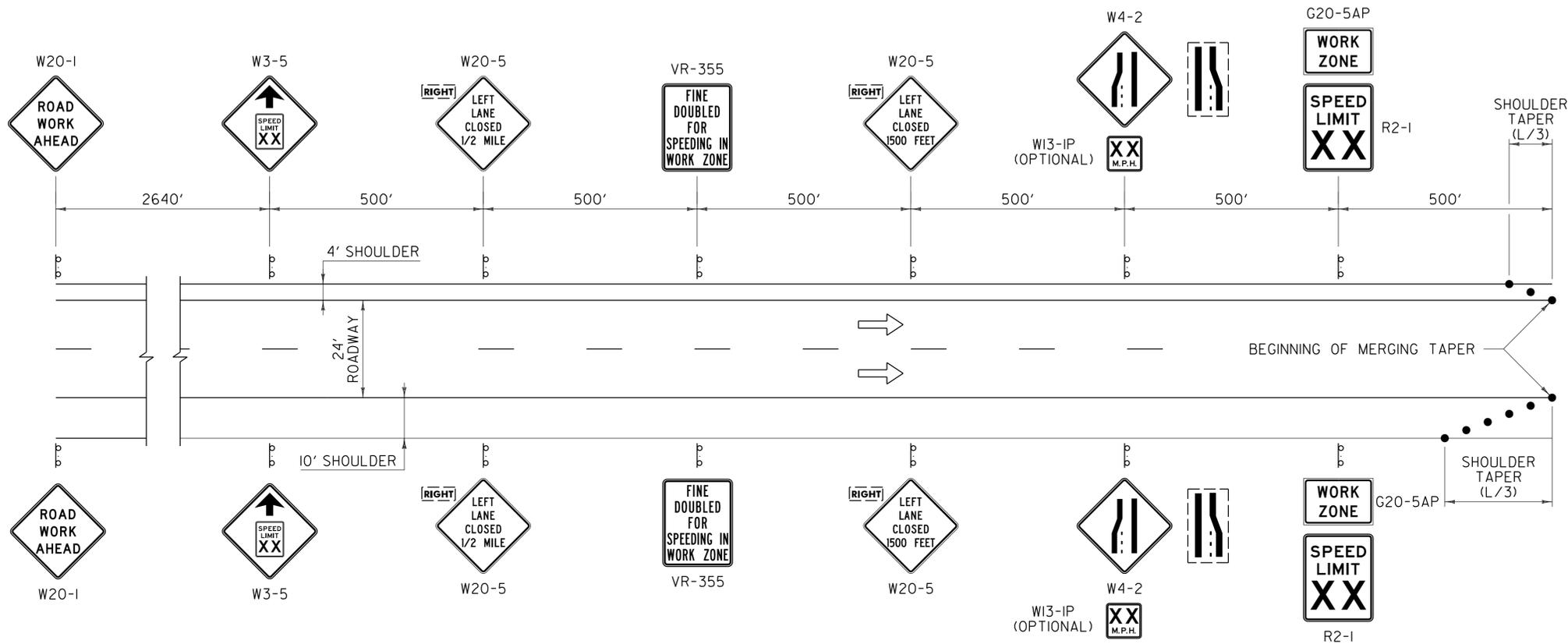
REVISIONS AND CORRECTIONS  
AUG. 6, 2012 - ORIGINAL APPROVAL DATE

APPROVED  
*W.A.P.*  
HIGHWAY SAFETY & DESIGN ENGINEER  
*Rubén J. Huante*  
DIRECTOR OF PROGRAM DEVELOPMENT  
*Mark D. Richter*  
FEDERAL HIGHWAY ADMINISTRATION

## TRAFFIC CONTROL GENERAL NOTES



STANDARD  
T-1



**LEGEND**

- FLOW OF TRAFFIC
- RETROREFLECTIVE PLASTIC DRUM

REVISIONS AND CORRECTIONS  
AUG. 6, 2012 - ORIGINAL APPROVAL DATE

APPROVED  
*W.A.P.*  
HIGHWAY SAFETY & DESIGN ENGINEER  
*Rubén Huante*  
DIRECTOR OF PROGRAM DEVELOPMENT  
*Mark D. Richter*  
FEDERAL HIGHWAY ADMINISTRATION

CONSTRUCTION APPROACH  
SIGNING DIVIDED HIGHWAY  
ONE LANE CLOSED

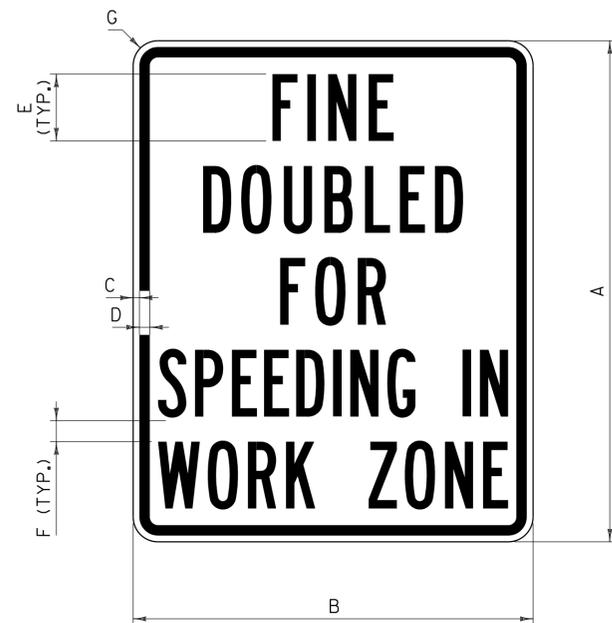
**OTHER STDS. REQUIRED: T-1, T-12, T-31**



STANDARD  
T-11

**GENERAL NOTES:**

1. IF APPLICABLE, THE CONTRACTOR SHALL HAVE SIGNS FOR CLOSURE OF RIGHT AND LEFT LANES ON PROJECT BEFORE WORK COMMENCES.
2. THE "SPEED LIMIT XX" (R2-1) AND "SPEED REDUCTION WARNING" (W3-5) SIGNS SHALL ONLY BE USED IF A TEMPORARY SPEED LIMIT CERTIFICATE HAS BEEN APPROVED. THE "SPEED LIMIT XX" (R2-1) AND OTHER RELATED SIGNS SHALL BE REMOVED OR COVERED WHEN WORK IS NOT IN PROGRESS AND ROADWAY IS NOT RESTRICTED.
3. "FINE DOUBLED FOR SPEEDING IN WORK ZONE" (VR-355) SHALL ONLY BE USED IF TEMPORARY SPEED LIMIT CERTIFICATE HAS BEEN APPROVED.
4. EXISTING SPEED LIMIT SIGNS SHALL BE COVERED WHEN TEMPORARY SPEED LIMIT SIGNS ARE POSTED.
5. FOR SHORT TERM PROJECTS (THREE CONSECUTIVE DAYS OR LESS) WITH NO OFFICIAL TEMPORARY SPEED LIMIT, THE "SPEED LIMIT XX" (R2-1) AND "SPEED REDUCTION WARNING" (W3-5) SIGNS MAY BE SUBSTITUTED WITH ADVISORY SPEED PLAQUES (W13-IP) MOUNTED AS SUPPLEMENTAL SIGNS BELOW THE "LANE ENDS" (W4-2) SIGNS.
6. FOR AN ANTICIPATED LONG TERM CLOSURE (GREATER THAN THREE CONSECUTIVE DAYS) WITH A NON-MOVING OPERATION, ALL SIGNS SHALL BE POST MOUNTED.
7. FOR A LONG TERM CLOSURE WITH A MOVING OPERATION, THE "ROAD WORK AHEAD" (W20-1) SIGN SHALL BE POST MOUNTED. THE REMAINING SIGNS MAY BE PORTABLE AND SHALL MOVE AS THE WORK AREA CHANGES.
8. FOR A SHORT TERM PROJECT (THREE CONSECUTIVE DAYS OR LESS), SIGNS MAY BE POST MOUNTED OR PORTABLE.
9. THE "SPEED LIMIT XX" (R2-1) SOLID SUBSTRATE SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING AASHTO M 268 (ASTM D 4956) TYPE III.

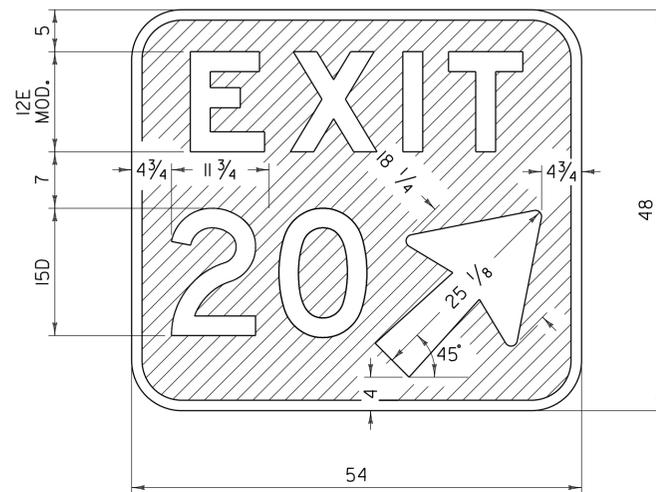


**VR-355**

SIGN	DIMENSIONS						
	A	B	C	D	E	F	G
STANDARD	36	30	1/2	3/4	4C	2 1/4	1 7/8
EXPRESSWAY/ FREEWAY	60	48	3/4	1 1/4	8B	3	3

**NOTES:**

- "SPEEDING IN" AND "WORK ZONE" SHALL EACH HAVE A SPECIFIED WIDTH OF 26 INCHES FOR STANDARD AND 42 INCHES FOR EXPRESSWAY/FREEWAY.
- THE SIGN SHALL HAVE BLACK LEGEND AND BORDER ON A WHITE BACKGROUND WITH RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE III.
- LEGEND SHALL BE CENTERED HORIZONTALLY AND VERTICALLY.



**VC5-1A**

**NOTES:**

- THE SIGN SHALL BE WHITE RETROREFLECTIVE LEGEND ON A GREEN RETROREFLECTIVE BACKGROUND. BOTH SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE III.
- CORNERS SHALL BE ROUNDED TO A SIX INCH RADIUS.
- THE SIGN SHALL HAVE A 1/4 INCH WIDE BORDER ALONG THE EDGE OF THE SIGN.
- EXIT NUMBER SHALL BE AS PER PLANS, OPTICALLY SPACED.
- "EXIT" SHALL BE CENTERED HORIZONTALLY.

**GENERAL NOTES:**

1. ALL DIMENSIONS IN INCHES.

**OTHER STDS. REQUIRED: T-1**

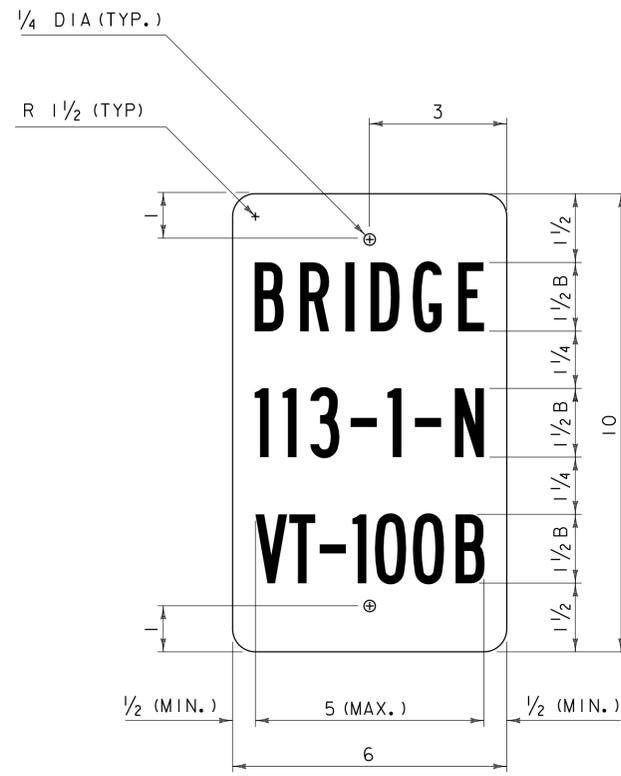
REVISIONS AND CORRECTIONS  
AUG. 6, 2012 - ORIGINAL APPROVAL DATE

APPROVED  
*[Signature]*  
HIGHWAY SAFETY & DESIGN ENGINEER  
*[Signature]*  
DIRECTOR OF PROGRAM DEVELOPMENT  
*[Signature]*  
MARK D. RICHTER  
FEDERAL HIGHWAY ADMINISTRATION

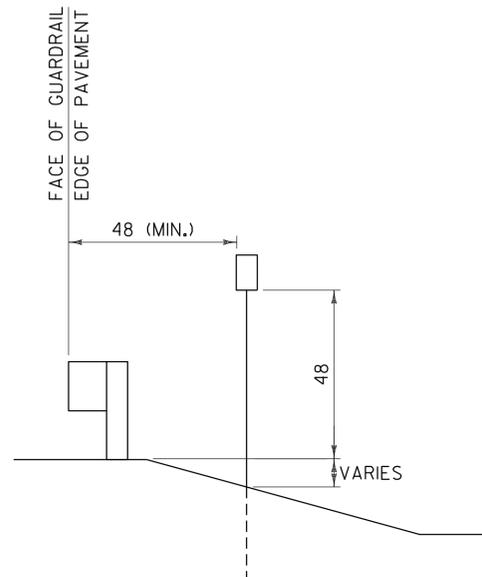
CONSTRUCTION SIGN  
DETAILS



STANDARD  
T-31



**VD-701**



**VD-701 INSTALLATION DETAIL**

**GENERAL NOTES:**

- BRIDGE NUMBER PLAQUES ARE TO BE INSTALLED ALONG THE FEDERAL AID HIGHWAY SYSTEM INCLUDING ALL STATE HIGHWAYS AND TOWN HIGHWAYS ON THE FEDERAL AID HIGHWAY SYSTEM.
- BRIDGE NUMBER PLAQUES SHALL BE LOCATED ON BOTH BRIDGE APPROACHES AT THE NEAREST VISIBLE LOCATION.
- THE SIGN BASE MATERIAL SHALL BE 0.063 INCH FLAT SHEET ALUMINUM.
- THE SIGN SHALL BE WHITE RETROREFLECTIVE LEGEND ON A GREEN RETROREFLECTIVE BACKGROUND, BOTH SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE III.
- THE SECOND LINE OF TEXT INDICATES THE BRIDGE NUMBER. THE BRIDGE NUMBER CAN BE OBTAINED USING THE VERMONT AGENCY OF TRANSPORTATION (VAOT) ROUTE LOGS OR BY CONSULTING WITH THE VAOT STRUCTURES SECTION.
- THE THIRD LINE OF TEXT INDICATES THE STATE ROUTE NUMBER. IN ALL CASES THIS WILL BE DEPICTED USING THE LETTER ABBREVIATION, FOLLOWED BY A HYPHEN, FOLLOWED BY THE ROUTE NUMBER. FOR EXAMPLE US ROUTE 2 WOULD BE IDENTIFIED USING US-2.
- THE SECOND AND THIRD LINES OF TEXT SHALL BE CENTERED HORIZONTALLY AND SHALL BE AS DEFINED IN THE PLANS.
- A SINGLE 14 GAGE, 1.75 INCH SQUARE STEEL POST AND 12 GAGE, TWO INCH SQUARE ANCHOR SHALL BE USED FOR INSTALLATION. THE ANCHOR SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
- ALL DIMENSIONS SHOWN IN INCHES.

**OTHER STDS. REQUIRED: T-45**

REVISIONS AND CORRECTIONS  
APRIL 9, 2014 - ORIGINAL APPROVAL DATE

APPROVED  
*[Signature]*  
HIGHWAY SAFETY & DESIGN ENGINEER  
*[Signature]*  
DIRECTOR OF PROGRAM DEVELOPMENT  
*[Signature]*  
MARK D. RICHTER  
FEDERAL HIGHWAY ADMINISTRATION

**BRIDGE NUMBER PLAQUE**



STANDARD  
T-42

1 - ADDISON	2 - BENNINGTON	3 - CALEDONIA	4 - CHITTENDEN	5 - ESSEX	6 - FRANKLIN	7 - GRAND ISLE	8 - LAMOILLE
0101 ADDISON 0102 BRIDPORT 0103 BRISTOL 0104 CORNWALL 0105 FERRISBURGH 0106 GOSHEN 0107 GRANVILLE 0108 HANCOCK 0109 LEICESTER 0110 LINCOLN 0111 MIDDLEBURY 0112 MONKTON 0113 NEW HAVEN 0114 ORWELL 0115 PANTON 0116 RIPTON 0117 SALISBURY 0118 SHOREHAM 0119 STARKSBORO 0120 VERGENNES 0121 WALTHAM 0122 WEYBRIDGE 0123 WHITING	0201 ARLINGTON 0202 BENNINGTON 0203 DORSET 0204 GLASTENBURY 0205 LANDGROVE 0206 MANCHESTER 0207 PERU 0208 POWNAL 0209 READSBORO 0210 RUPERT 0211 SANDGATE 0212 SEARSBURG 0213 SHAFTSBURY 0214 STAMFORD 0215 SUNDERLAND 0216 WINHALL 0217 WOODFORD	0301 BARNET 0302 BURKE 0303 DANVILLE 0304 GROTON 0305 HARDWICK 0306 KIRBY 0307 LYNDON 0308 NEWARK 0309 PEACHAM 0310 RYEGATE 0311 ST JOHNSBURY 0312 SHEFFIELD 0313 STANNARD 0314 SUTTON 0315 WALDEN 0316 WATERFORD 0317 WHEELLOCK	0401 BOLTON 0402 BUELS GORE 0403 BURLINGTON 0404 CHARLOTTE 0405 COLCHESTER 0406 ESSEX 0407 HINESBURG 0408 HUNTINGTON 0409 JERICHO 0410 MILTON 0411 RICHMOND 0412 ST GEORGE 0413 SHELburne 0414 SO BURLINGTON 0415 UNDERHILL 0416 WESTFORD 0417 WILLISTON 0418 WINOOSKI	0501 AVERILL 0502 AVERYS GORE 0503 BLOOMFIELD 0504 BRIGHTON 0505 BRUNSWICK 0506 CANAAN 0507 CONCORD 0508 EAST HAVEN 0509 FERDINAND 0510 GRANBY 0511 GUILDHALL 0512 LEMINGTON 0513 LEWIS 0514 LUNENBURG 0515 MAIDSTONE 0516 NORTON 0517 VICTORY 0518 WARNERS GRANT 0519 WARREN GORE	0601 BAKERSFIELD 0602 BERKSHIRE 0603 ENOSBURG 0604 FAIRFAX 0605 FAIRFIELD 0606 FLETCHER 0607 FRANKLIN 0608 GEORGIA 0609 HIGHGATE 0610 MONTGOMERY 0611 RICHFORD 0612 ST ALBANS CITY 0613 ST ALBANS TOWN 0614 SHELDON 0615 SWANTON	0701 ALBURGH 0702 GRAND ISLE 0703 ISLE LA MOTTE 0704 NORTH HERO 0705 SOUTH HERO	0801 BELVIDERE 0802 CAMBRIDGE 0803 EDEN 0804 ELMORE 0805 HYDE PARK 0806 JOHNSON 0807 MORRISTOWN 0808 STOWE 0809 WATERVILLE 0810 WOLCOTT

9 - ORANGE	10 - ORLEANS	11 - RUTLAND	12 - WASHINGTON	13 - WINDHAM	14 - WINDSOR
0901 BRADFORD 0902 BRAINTREE 0903 BROOKFIELD 0904 CHELSEA 0905 CORINTH 0906 FAIRLEE 0907 NEWBURY 0908 ORANGE 0909 RANDOLPH 0910 STRAFFORD 0911 THETFORD 0912 TOPSHAM 0913 TUNBRIDGE 0914 VERSHIRE 0915 WASHINGTON 0916 WEST FAIRLEE 0917 WILLIAMSTOWN	1001 ALBANY 1002 BARTON 1003 BROWNINGTON 1004 CHARLESTON 1005 COVENTRY 1006 CRAFTSBURY 1007 DERBY 1008 GLOVER 1009 GREENSBORO 1010 HOLLAND 1011 IRASBURG 1012 JAY 1013 LOWELL 1014 MORGAN 1015 NEWPORT CITY 1016 NEWPORT TOWN 1017 TROY 1018 WESTFIELD 1019 WESTMORE	1101 BENSON 1102 BRANDON 1103 CASTLETON 1104 CHITTENDEN 1105 CLARENDON 1106 DANBY 1107 FAIR HAVEN 1108 HUBBARDTOWN 1109 IRA 1110 MENDON 1111 MIDDLETOWN SPRINGS 1112 MT HOLLY 1113 MT TABOR 1114 PAWLET 1115 PITTSFIELD 1116 PITTSFORD 1117 POULTNEY 1118 PROCTOR 1119 RUTLAND CITY 1120 RUTLAND TOWN 1121 KILLINGTON 1122 SHREWSBURY 1123 SUDBURY 1124 TINMOUTH 1125 WALLINGFORD 1126 WELLS 1127 WEST HAVEN 1128 WEST RUTLAND	1201 BARRE CITY 1202 BARRE TOWN 1203 BERLIN 1204 CABOT 1205 CALAIS 1206 DUXBURY 1207 E MONTPELIER 1208 FAYSTON 1209 MARSHFIELD 1210 MIDDLESEX 1211 MONTPELIER 1212 MORETOWN 1213 NORTHFIELD 1214 PLAINFIELD 1215 ROXBURY 1216 WAITSFIELD 1217 WARREN 1218 WATERBURY 1219 WOODBURY 1220 WORCESTER	1301 ATHENS 1302 BRATTLEBORO 1303 BROOKLINE 1304 DOVER 1305 DUMMERSTON 1306 GRAFTON 1307 GUILFORD 1308 HALIFAX 1309 JAMAICA 1310 LONDONDERRY 1311 MARLBORO 1312 NEWFANE 1313 PUTNEY 1314 ROCKINGHAM 1315 SOMERSET 1316 STRATTON 1317 TOWNSEND 1318 VERNON 1319 WARDSBORO 1320 WESTMINSTER 1321 WHITINGHAM 1322 WILMINGTON 1323 WINDHAM	1401 ANDOVER 1402 BALTIMORE 1403 BARNARD 1404 BETHEL 1405 BRIDGEWATER 1406 CAVENDISH 1407 CHESTER 1408 HARTFORD 1409 HARTLAND 1410 LUDLOW 1411 NORWICH 1412 PLYMOUTH 1413 POMFRET 1414 READING 1415 ROCHESTER 1416 ROYALTON 1417 SHARON 1418 SPRINGFIELD 1419 STOCKBRIDGE 1420 WEATHERSFIELD 1421 WESTON 1422 WEST WINDSOR 1423 WINDSOR 1424 WOODSTOCK

**COUNTY AND TOWN DESIGNATIONS**

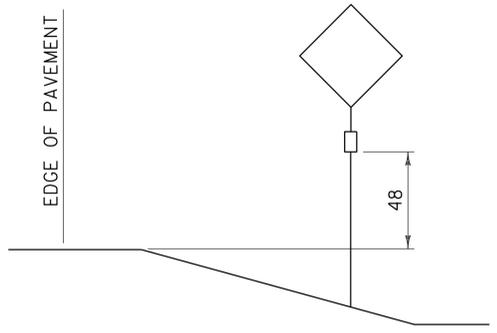
- 9020 BARNET STATE HIGHWAY  
9025 BENNINGTON NORTH STATE HIGHWAY  
9030 BERLIN STATE HIGHWAY  
9090 BRATTLEBORO STATE HIGHWAY  
9150 CASTLETON STATE HIGHWAY  
9180 COVENTRY STATE HIGHWAY  
9210 FAIR HAVEN STATE HIGHWAY  
9240 FAIRLEE STATE HIGHWAY  
9270 FERRISBURGH STATE HIGHWAY  
9330 MAIDSTONE STATE HIGHWAY  
9360 MIDDLESEX STATE HIGHWAY  
9390 MONTPELIER STATE HIGHWAY  
9420 MONTPELIER JUNCTION STATE HIGHWAY  
9430 NEWBURY STATE HIGHWAY  
9480 NORTON STATE HIGHWAY  
9540 NORWICH STATE HIGHWAY  
9600 PUTNEY STATE HIGHWAY  
9630 QUECHEE STATE HIGHWAY  
9720 ST ALBANS STATE HIGHWAY SOUTH  
9730 ST JOHNSBURY STATE HIGHWAY  
9750 SOUTH ALBURGH STATE HIGHWAY  
9840 WESTMINSTER STATE HIGHWAY  
9870 WILDER STATE HIGHWAY  
9900 WINHALL STATE HIGHWAY  
9990 WEST RUTLAND - RUTLAND (BUSINESS US-4)  
9991 BELLOWS FALLS S0117 (ROCK - WEST ST)  
9992 BELLOWS FALLS S0117 (BRIDGE ST)  
9993 BURLINGTON (ALTERNATE US-7)  
9994 DERBY (ALTERNATE US-5)  
9995 MONTPELIER (BUSINESS US-2)  
9996 NEWPORT (ALTERNATE US-5)  
9997 ST JOHNSBURY (ALTERNATE US-5)  
9998 SO BURLINGTON - KENNEDY DRIVE

**NAMED STATE AND TOWN HIGHWAYS ROUTE NUMBERS**

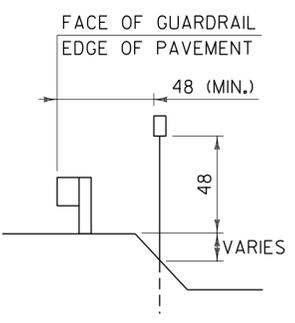
**GENERAL NOTES:**

- MILEMARKERS ARE TO BE INSTALLED ALONG THE FEDERAL AID HIGHWAY SYSTEM INCLUDING ALL STATE HIGHWAYS AND TOWN HIGHWAYS ON THE FEDERAL AID HIGHWAY SYSTEM.
- MILEMARKERS WILL NORMALLY BE INSTALLED AT EACH 0.20 MILE INTERVAL, ALTERNATING SIDES OF THE ROAD, RESULTING IN A SIGN FACING TRAFFIC EACH 0.40 MILES. A MILEMARKER WILL ALSO BE INSTALLED AT EACH INTERSECTION, ON THE SAME POST AS THE STOP SIGN (MILEMARKER TO BE PLACED PARALLEL TO MAINLINE TRAVELED WAY, VISIBLE TO TRAFFIC). ANY MILEMARKER LOCATION FALLING WITHIN 0.05 MILE OF AN INTERSECTION WILL BE OMITTED. WHEN THE NORMAL LOCATION OF A MILEMARKER IS UNDESIRABLE, SUCH AS ON A LAWN, DRIVEWAY, OR LEDGE, AN ATTEMPT WILL BE MADE TO LOCATE IT ON THE OPPOSITE SIDE OF THE ROAD. IF NO SUITABLE LOCATION CAN BE FOUND WITHIN 20 FEET OF THE NORMAL LOCATION, IT MAY BE OMITTED.
- ON CLASS I TOWN HIGHWAYS OR OTHER CONGESTED LOCATIONS MILEMARKERS WILL ONLY BE INSTALLED ON EXISTING SIGN POSTS AND WILL CARRY THE ACTUAL MILEAGE TO THAT LOCATION. A MILEMARKER LOCATED EVERY 0.10 MILES IS DESIRABLE THROUGH THESE LOCATIONS.
- THE FIRST LINE OF TEXT ON MILEMARKERS INDICATE THE STATE ROUTE NUMBER. THE FOURTH NUMERAL BEING THE CORRESPONDING ROUTE NUMBER LETTER DESIGNATION. FOR EXAMPLE US-2 (WHICH HAS NO LETTER DESIGNATION) WOULD BE IDENTIFIED USING 0020 AND VT-100B WOULD BE IDENTIFIED USING 1002. FOR ANY NAMED FEDERAL AID HIGHWAY SYSTEM HIGHWAYS, THE FOUR DIGIT ROUTE NUMBER (9000 SERIES) LISTED UNDER "NAMED STATE AND TOWN HIGHWAYS ROUTE NUMBERS" SHALL BE UTILIZED.
- THE SECOND LINE OF TEXT ON MILEMARKERS INDICATE THE COUNTY AND TOWN. THE COUNTY IS INDICATED IN THE FIRST AND SECOND NUMERALS AND THE TOWN IN THE THIRD AND FOURTH NUMERALS. THE APPROPRIATE FOUR DIGIT DESIGNATIONS ARE LISTED PER TOWN, UNDER "COUNTY AND TOWN DESIGNATIONS."
- THE THIRD LINE OF TEXT ON MILEMARKERS INDICATE THE MILEAGE, IN HUNDREDTHS, FROM THE TOWN LINE OR BEGINNING OF A ROUTE. MILEAGE IS ALWAYS MEASURED TRAVELING FROM THE SOUTH TO NORTH OR FROM THE WEST TO EAST. THE ROUTE DIRECTION IS ESTABLISHED USING THE VERMONT AGENCY OF TRANSPORTATION (VAOT) ROUTE LOGS.
- THE SIGN BASE MATERIAL SHALL BE 0.063 INCH FLAT SHEET ALUMINUM.
- THE SIGN SHALL BE WHITE RETROREFLECTIVE LEGEND ON A GREEN RETROREFLECTIVE BACKGROUND, BOTH SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE III.
- CORNERS SHALL BE ROUNDED TO A 1/2 INCH RADIUS.
- ALL LINES OF TEXT SHALL BE CENTERED HORIZONTALLY AND SHALL BE AS IDENTIFIED IN THE PLANS. THE THREE LINES OF TEXT WILL EACH CONTAIN FOUR NUMERALS.
- WHEN INSTALLED ON ITS OWN POST, A SINGLE 14 GAGE, 1.75 INCH SQUARE STEEL POST AND 12 GAGE, 2 INCH SQUARE ANCHOR SHALL BE USED FOR INSTALLATION. THE ANCHOR SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
- ALL DIMENSIONS SHOWN IN INCHES.

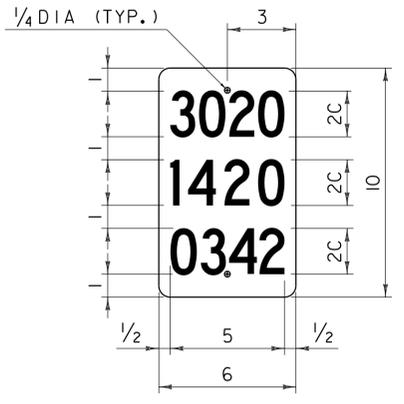
OTHER STDS. REQUIRED: **T-45**



**VD-700 INSTALLATION DETAIL SUPPLEMENTARY SIGN**



**VD-700 INSTALLATION DETAIL**



**VD-700**

REVISIONS AND CORRECTIONS  
APRIL 9, 2014 - ORIGINAL APPROVAL DATE

APPROVED  
*[Signature]*  
HIGHWAY SAFETY & DESIGN ENGINEER  
*[Signature]*  
DIRECTOR OF PROGRAM DEVELOPMENT  
*[Signature]*  
FEDERAL HIGHWAY ADMINISTRATION

**MILEMARKER DETAILS  
STATE AND TOWN  
HIGHWAYS**



**STANDARD  
T-44**