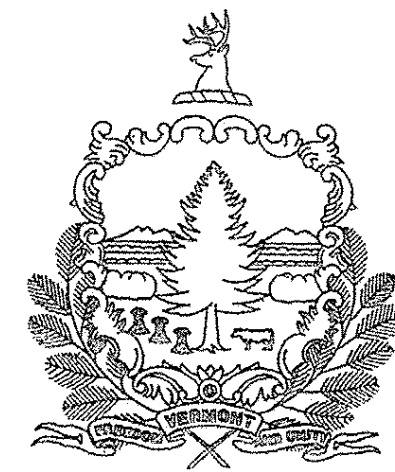
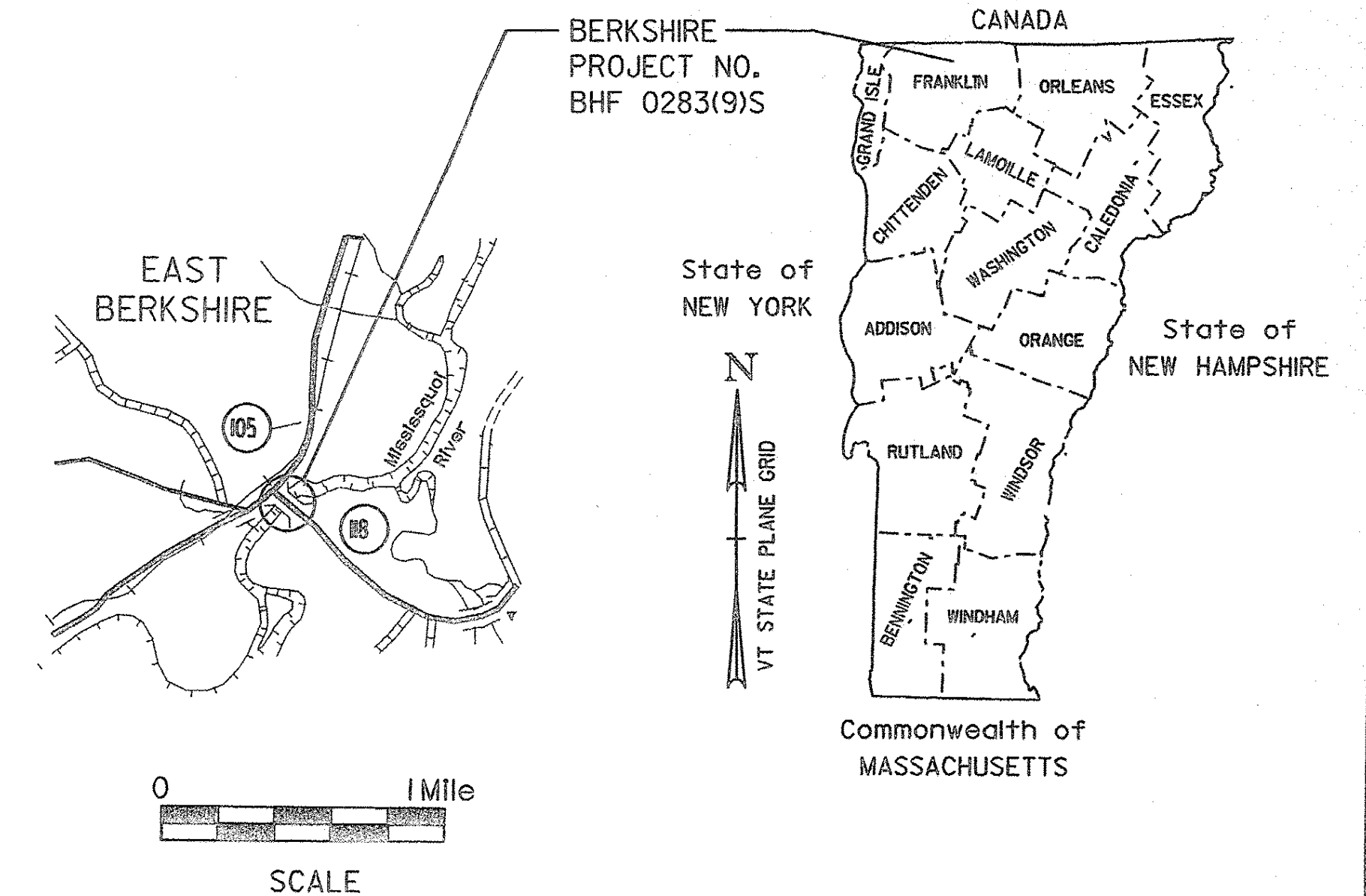


STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF BERKSHIRE
COUNTY OF FRANKLIN
VT. ROUTE 118 - MAJOR COLLECTOR
BRIDGE NO. 30



INDEX OF SHEETS

SEE SHEET 2

RECORD PLANS

CONTRACTOR: SD IRELAND-WILLISTON, VT

RESIDENT ENGINEER: CARL GLEASON

CONSTRUCTION BEGAN: FEBRUARY 22, 2010

CONSTRUCTION COMPLETE: AUGUST 27, 2011

RECORD PLANS BY: CARL GLEASON & JENNA HYDE

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

BY Carl Gleason RESIDENT ENGINEER

DATE 8/30/12

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.

PROJECT LOCATION

BEGINNING AT A POINT ON VT 118, 0.019 MILES EAST
OF VT 105 AND VT 118 INTERSECTION AND EXTENDING
EASTERLY OVER MISSISSQUOI RIVER 0.076 MILES

STRUCTURE LENGTH: 304.41 FEET
ROADWAY LENGTH: 95.59 FEET
PROJECT LENGTH: 400.00 FEET

PROJECT DESCRIPTION

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES INSTALLING TRAFFIC CONTROL,
RECONSTRUCTING APPROACHES, REPLACING CONCRETE DECK AND SIDEWALK,
PAINTING BRIDGE, REMOVING TRAFFIC CONTROL, AND MISCELLANEOUS ITEMS.

TRAFFIC DATA:

2000 ADT 2200
2000 DMV 310
V 35 MPH

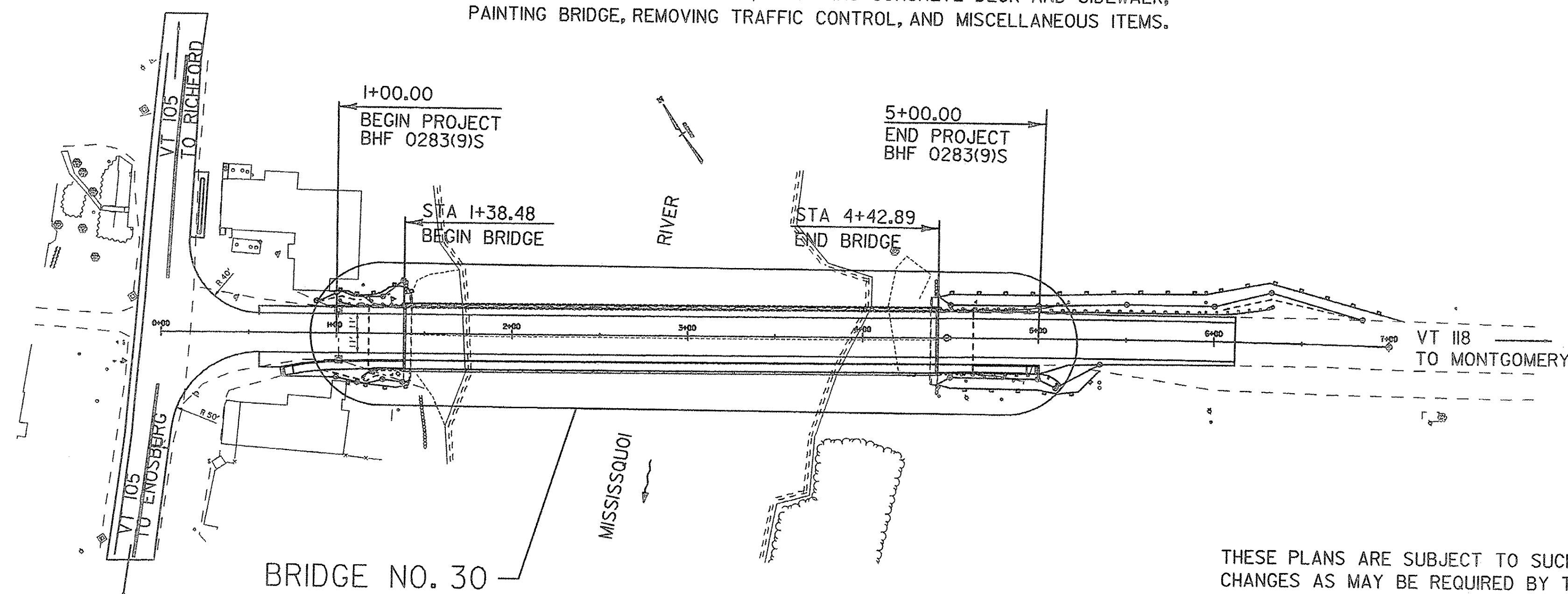
CONVENTIONAL SYMBOLS

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

SURVEYED BY : L. ORVIS
SURVEYED DATE : DEC. 7, 1998

DATUM

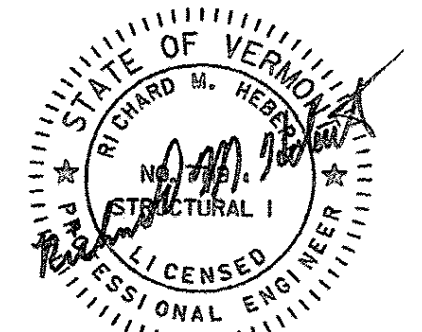
VERTICAL NAVD 88
HORIZONTAL NAD 83 (96)



SCALE 1" = 50'-0"

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING
CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY
ADMINISTRATION OR THE DIRECTOR OF PROJECT DEVELOPMENT.
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE
WITH THESE PLANS AND THE STANDARD SPECIFICATIONS
FOR CONSTRUCTION DATED 2006, AS APPROVED BY THE
FEDERAL HIGHWAY ADMINISTRATION ON JUNE 15, 2006
FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT
REVISIONS AND SUCH REVISED SPECIFICATIONS AND
SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

TYLIN INTERNATIONAL



DIRECTOR OF PROJECT DEVELOPMENT

APPROVED [Signature] DATE 11-17-09

PROJECT MANAGER : SHERWARD FARNSWORTH

PROJECT NAME : BERKSHIRE
PROJECT NUMBER : BHF 0283 (9) S

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12	GENERAL PLAN AND ELEVATION
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14	ABUTMENT MODIFICATION DETAILS
15	MISCELLANEOUS SUBSTRUCTURE DETAILS
16	N/A
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18	DECK REINFORCING PLAN (2)
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20	SCUPPER DETAILS
21	EXPANSION JOINT PLAN
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23	SIDEWALK EXPANSION DAM DETAILS
24	DOWNSPOUT DETAILS
25	APPROACH SLAB DETAILS
26	ALUMINUM BRIDGE RAILING DETAILS (1)
27	ALUMINUM BRIDGE RAILING DETAILS (2)
28	ALUMINUM BRIDGE RAILING DETAILS (3)
29	REINFORCING STEEL SCHEDULE
30	N/A
31	N/A
32-37	CROSS SECTION SHEETS
	REFERENCE SHEETS
38	EXISTING ABUTMENT NO. 1 DETAILS
39	EXISTING PIER NO. 1 AND 2 DETAILS
40	EXISTING ABUTMENT NO. 2 DETAILS
41	EXISTING SUPERSTRUCTURE DETAILS

	LIST OF STANDARDS	
C-2A	PORTLAND CEMENT CONCRETE SIDEWALK	10/14/2005
C-3A	SIDEWALK RAMPS	3/10/2008
C-10	CURBING	2/11/2008
E-100	CONSTRUCTION APPROACH SIGNS	1/2/2004
E-100A	SIDE ROAD CONSTRUCTION APPROACH SIGNS	1/2/2004
E-101	CONSTRUCTION SIGN DETAILS	5/30/2003
E-102	CONSTRUCTION SIGN DETAILS	6/30/2003
E-102A	CONSTRUCTION SIGN DETAILS	5/1/2004
E-106	TRAFFIC CONTROL - MISCELLANEOUS DETAILS	3/1/2004
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	6/30/2003
E-107A	BREAKAWAY BARRICADE DETAILS	8/8/1995
E-108	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS	12/8/2008
E-121	STANDARD SIGN PLACEMENT CONVENTIONAL ROAD	8/8/1995
E-140	REGULATORY SIGN DETAILS	8/30/1996
E-142	REGULATORY SIGN DETAILS	9/20/1995
E-160	FLANGED CHANNEL STEEL SIGN POST	5/20/1999
E-161	W-SHAPED STEEL SIGN POST	8/18/1995
E-171A	TRAFFIC CONTROL SIGNALS GENERAL NOTES & DETAILS	8/9/1995
E-171B	TRAFFIC CONTROL SIGNALS MISC. DETAILS	8/9/1995
E-171C	TRAFFIC CONTROL SIGNALS CANTILEVER MOUNTING DETAILS	8/9/1995
E-173	PULL BOXES AND JUNCTION BOXES	8/9/1995
E-175	POWER DROP STANCHIONS	11/17/1993
E-180A	STREET LIGHTING DETAILS	8/9/1995
E-180B	STREET LIGHTING DETAILS	8/9/1995
E-181	TYPICAL BRIDGE MOUNTING DETAILS FOR STREET LIGHT POLE	8/9/1995
E-193	PAVEMENT MARKING DETAILS	8/18/1995
G-1	STEEL BEAM GUARDRAIL WITH STEEL POSTS	1/3/2000
G-1D	STEEL BEAM GUARDRAIL APPROACH END TERMINAL, ANCHOR FOR STEEL BEAM GUARDRAIL	1/3/2000
G-18	PRECAST CONCRETE TEMPORARY TRAFFIC BARRIER	6/1/1994
G-19	GENERAL PLANS FOR GUARDRAIL END TERMINALS	11/15/2002

PROJECT NAME:	BERKSHIRE		
PROJECT NUMBER:	BHF 0283(9)S		
FILE NAME:	SC304IND2.XLS	PLOT DATE:	4/2/09
PROJECT LEADER:	R. HEBERT	DRAWN BY:	S. MORGAN
DESIGNED BY:	R. HEBERT	CHECKED BY:	R. HEBERT
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11	TRAFFIC CONTROL NOTES
12	GENERAL PLAN AND ELEVATION
13	BRIDGE TYPICAL SECTIONS
14	ABUTMENT MODIFICATION DETAILS
14B1*	ABUTMENT SEAT MODIFICATION DETAILS
14B1*	ELASTOMERIC BEARING DETAILS
15	MISCELLANEOUS SUBSTRUCTURE DETAILS
16	N/A
17	DECK REINFORCING PLAN (1)
18	DECK REINFORCING PLAN (2)
19	SUPERSTRUCTURE DETAILS
20	SCUPLER DETAILS
21	EXPANSION JOINT PLAN
22	EXPANSION JOINT DETAILS
23	SIDEWALK EXPANSION JOINT DETAILS
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27	ALUMINUM BRIDGE RAILING DETAILS (2)
28	ALUMINUM BRIDGE RAILING DETAILS (3)
29	REINFORCING STEEL SCHEDULE
30	N/A
31	N/A
32/37	CROSS SECTION SHEETS
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* ADDED ABUTMENT SEAT MODIFICATIONS & ELASTOMERIC BEARINGS.

LIST OF STANDARDS

C-2A	PORTLAND CEMENT CONCRETE SIDEWALK
C-2A	SIDEWALK RAMP
C-10	CURBING
E-100	CONSTRUCTION APPROACH SKINS
E-100A	SIDE ROAD CONSTRUCTION APPROACH SKINS
E-101	CONSTRUCTION SKIN DETAILS
E-102	CONSTRUCTION SKIN DETAILS
E-102A	CONSTRUCTION SKIN DETAILS
E-106	TRAFFIC CONTROL MISCELLANEOUS DETAILS
E-107	DEVELOPMENT BARBICADES AND DETOURS FOR CONSTRUCTION AHEAD
E-107A	DEVELOPMENT BARBICADE DETAILS
E-108	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS
E-121	STANDARD SIGN PLACEMENT CONVENTIONAL ROAD
E-140	REGULATORY SIGN DETAILS
E-142	REGULATORY SIGN DETAILS
E-160	FLANGED CHANNEL STEEL SIGN POST
E-181	W-SHAPED STEEL SIGN POST
E-171A	TRAFFIC CONTROL SIGNALS GENERAL NOTES & DETAILS
E-171B	TRAFFIC CONTROL SIGNALS HISC. DETAILS
E-171C	TRAFFIC CONTROL SIGNALS CANTILEVER MOUNTING DETAILS
E-173	FULL BOXES AND JUNCTION BOXES
E-175	POWER DROP STANDARDS
E-180A	STREET LIGHTING DETAILS
E-181	TYPICAL BRIDGE MOUNTING DETAILS FOR STREET LIGHT POLE
E-190	PAVEMENT MARKING DETAILS
G-1	STEEL BEAM GUARDRAIL WITH STEEL POSTS
G-1D	STEEL BEAM GUARDRAIL, APPROACH END TERMINAL
G-1E	ANCHOR FOR STEEL BEAM GUARDRAIL
G-1F	PRECAST CONCRETE TEMPORARY TRAFFIC BARRIER
G-1G	GENERAL PLANS FOR GUARDRAIL END TERMINALS

10/14/2006
3/1/2008
12/20/04
12/20/04
6/20/2003
3/1/2004
3/1/2004
6/20/2003
8/9/1995
10/20/98
8/9/1995
8/9/1995
8/9/1995
5/20/1999
8/19/1995
8/9/1995
8/9/1995
8/9/1995
11/17/1993
8/9/1995
8/9/1995
8/9/1995
12/20/00
12/20/00
8/1/1994
11/15/2002

STATE OF VERMONT AGENCY OF TRANSPORTATION														QUANTITY SHEET 1									
SUMMARY OF ESTIMATED QUANTITIES												TOTALS		DESCRIPTIONS						DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C. E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS			
							60					60		CY	COMMON EXCAVATION	203.15							
							10					10		CY	TRENCH EXCAVATION OF EARTH	204.20							
							1					1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22							
										42		42		CY	STRUCTURE EXCAVATION	204.25							
										30		30		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30							
							1200					1200		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10							
							70					70		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35							
							8					8		CWT	EMULSIFIED ASPHALT	404.65							
							242			143		385		TON	MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT	406.27							
							1					1		LU	MAT DENSITY PAY ADJUSTMENT (N.A.B.I.)	406.29							
							1					1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50							
										75		75		SF	TEMPORARY STEEL SHEET PILING	505.36							
										1350		1350		LB	STRUCTURAL STEEL	506.60							
										86900		86900		LB	EPOXY COATED REINFORCING STEEL	507.17							
										925		925		EACH	MECHANICAL BAR CONNECTOR	507.19							
										1		1		LS	SHEAR CONNECTORS (15141 - 7/8" X 7")	508.15							
										44		44		GAL	WATER REPELLENT, SILANE	514.10							
										77		77		LF	BRIDGE EXPANSION JOINT, VERMONT	516.11							
										1030		1030		SY	SHEET MEMBRANE WATERPROOFNG, TORCH APPLIED	519.20							
										305		305		LF	BRIDGE RAILING, ANODIZED 3 RAIL ALUMINUM	525.225							
										305		305		LF	BRIDGE RAILING, ANODIZED ALUMINUM/PEDESTRIAN	525.235							
										1		1		LS	MAINTENANCE OF STRUCTURES AND APPROACHES	527.10							
										1020		1020		SY	REMOVAL OF BRIDGE PAVEMENT	529.10							
										1		1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20							
										16		16		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	580.13							
										16		16		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	580.14							
										3		3		CY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III	580.15							
							2					2		EACH	CHANGING ELEVATION OF DROP INLETS, CATCH BASINS, OR MANHOLES	604.40							
							20					20		HR	POWER GRADER RENTAL	608.15							
							20					20		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25							
							20					20		HR	TRUCK RENTAL	608.37							
							20					20		HR	LOADER RENTAL, TYPE I	608.40							
									10			10		CY	STONE FILL, TYPE I	613.10							
							236					236		LF	CAST-IN-PLACE CONCRETE CURB, TYPE B	616.28							
							50					50		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	618.10							
							20					20		SF	DETECTABLE WARNING SURFACE	618.30							
							190					190		LF	STEEL BEAM GUARDRAIL, GALVANIZED	621.20							
							1					1		EACH	MANUFACTURED TERMINAL SECTION, FLARED	621.50							
							6					6		EACH	ENERGY ABSORPTION ATTENUATOR	621.56							
							3					3		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60							
																		PROJECTNAME: Berkshire					
																		PROJECTNUMBER: BHF 0283(9)S					
																		FILE NAME: ZC304QS1.dgn		PLOT DATE: 11/18/2009			
																		PROJECT LEADER: R. HEBERT		DRAWN BY: SAM			
																		DESIGNED BY: SAM		CHECKED BY: RMH			
																		QUANTITY SHEET #1		SHEET 3 OF 41			

STATE OF VERMONT AGENCY OF TRANSPORTATION														QUANTITY SHEET 2									
SUMMARY OF ESTIMATED QUANTITIES												TOTALS		DESCRIPTIONS							DETAILED SUMMARY OF QUANTITIES		
							ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C. E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND		QUANTITIES	UNIT	ITEMS		
							100					100		LF	ALUMINUM APPROACH RAILING, ANODIZED	621.745							
							180					180		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80							
							1050					1050		LF	TEMPORARY TRAFFIC BARRIER	621.90							
							1050					1050		LF	REMOVE AND RESET TEMPORARY TRAFFIC BARRIER	621.95							
							160					160		HR	UNIFORMED TRAFFIC OFFICERS	630.10							
							1000					1000		HR	FLAGGERS	630.15							
											1	1		LS	FIELD OFFICE, ENGINEERS	631.10							
											1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16							
											1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17							
											1	1		LS	TESTING EQUIPMENT, PROTECTIVE COATINGS	631.18							
											1	1		LU	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.25							
								520				520		HR	EMPLOYEE TRAINEESHIP	634.10							
							1					1		LS	MOBILIZATION/DEMOBILIZATION	635.11							
							1					1		LS	TRAFFIC CONTROL	641.10							
							1780					1780		LF	4 INCH WHITE LINE	646.20							
							1680					1680		LF	4 INCH YELLOW LINE	646.21							
							21					21		LF	24 INCH STOP BAR	646.26							
							13					13		EACH	LETTER OR SYMBOL	646.30							
							670					670		LF	TEMPORARY 4 INCH WHITE LINE, PAINT	646.602							
							525					525		LF	TEMPORARY 4 INCH YELLOW LINE, PAINT	646.612							
							50					50		LF	TEMPORARY 24 INCH STOP BAR, PAINT	646.682							
							5					5		EACH	TEMPORARY LETTER OR SYMBOL, PAINT	646.692							
							865					865		SF	REMOVAL OF EXISTING PAVEMENT MARKINGS	646.85							
									10			10		SY	GEOTEXTILE UNDER STONE FILL	649.31							
									210			210		SY	GEOTEXTILE FOR SILT FENCE	649.51							
									10			10		LB	SEED	651.15							
									10			10		LB	SEED, WINTER RYE	651.17							
									50			50		LB	FERTILIZER	651.18							
									1			1		TON	AGRICULTURAL LIMESTONE	651.20							
									1			1		TON	HAYMULCH	651.25							
									10			10		CY	TOPSOIL	651.35							
							2					2		EACH	DELINEATOR WITH STEEL POST	676.10							
							2			5		7		EACH	JUNCTION BOX	678.26							
										340		340		LF	ELECTRICAL CONDUIT SLEEVE (2")(PVC)	678.30							
							1					1		EACH	TEMPORARY TRAFFIC SIGNAL SYSTEM	678.40							
							4					4		EACH	TEMPORARY DETECTOR	678.42							
							1			475		476		CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT)	900.608							
										28		28		EACH	SPECIAL PROVISION (REFURBISH EXISTING BEARING DEVICE ASSEMBLY)	900.620							
										48		48		LF	SPECIAL PROVISION (DUCT BANK)(6 CONDUIT)	900.640							
																		PROJECTNAME: Berkshire					
																		PROJECTNUMBER: BHF 0283(9)S					
																		FILE NAME: ZC304QS1.dgn					
																		PLOT DATE: 11/18/2009					
																		PROJECT LEADER: R. HEBERT					
																		DRAWN BY: SAM					
																		DESIGNED BY: SAM					
																		CHECKED BY: RMH					
																		QUANTITY SHEET #2					
																		SHEET 4 OF 41					

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 2002, AND ITS LATEST REVISIONS.
2. DESIGN CRITERIA:

- SEISMIC PERFORMANCE CATEGORY: A

- DESIGN LIVE LOAD FOR PROPOSED SUPERSTRUCTURE REHABILITATION: HS 25
3. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 ° F.
4. THE CONTRACTOR IS RESPONSIBLE FOR FIELD CHECKING ANY AND ALL DIMENSIONS AND ELEVATIONS APPLICABLE TO THIS WORK PRIOR TO COMMENCING WORK OR ORDERING MATERIAL.
5. ALL WORK SHALL TAKE PLACE WITHIN THE EXISTING RIGHT-OF-WAY. NO PROVISIONS HAVE BEEN MADE FOR THE CONTRACTOR TO PERFORM WORK OR SET UP STAGING OUTSIDE THE EXISTING RIGHT-OF-WAY ON THE WEST END OF THE BRIDGE OR OUTSIDE OF THE SILT FENCE ON THE EAST END OF THE PROJECT AS DETAILED ON SHEET 6 OF 41 DUE TO ARCHAEOLOGICAL CONCERNS.
6. HALF WIDTH CONSTRUCTION PHASING SHALL BE USED AND ONE-WAY TRAFFIC WILL BE MAINTAINED WITH TEMPORARY TRAFFIC SIGNAL. NO TEMPORARY BRIDGE WILL BE ALLOWED DUE TO ARCHAEOLOGICAL CONCERNS.
7. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION, ESPECIALLY THE DISCHARGE OF RAW CONCRETE INTO THE MISSISSQUOI RIVER AS DIRECTED BY THE RESIDENT ENGINEER AND STANDARD SPECIFICATIONS SECTION 105.
8. FLEMING BRACKETS OR SIMILAR FALSEWORK SHALL BE SPACED AS REQUIRED BY DESIGN UP TO A MAXIMUM OF 4 FEET.
9. EXISTING GUARDRAIL AND BRIDGE APPROACH RAIL SHALL BE REMOVED UNDER ITEM 621.80, REMOVAL AND DISPOSAL OF GUARDRAIL.
10. N/A
11. THE EXISTING PAVEMENT ON THE BRIDGE DECK SHALL BE REMOVED USING ITEM 529.10, REMOVAL OF BRIDGE PAVEMENT.
12. ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE SHALL INCLUDE: REMOVAL OF THE EXISTING BRIDGE RAILING, CONCRETE BRIDGE DECK, SIDEWALK, EXISTING ELECTRICAL CONDUIT, AND CURB, APPROACH SLABS, AND ABUTMENTS, AS INDICATED BY THIS PLAN SET. CARE SHALL BE TAKEN NOT TO DAMAGE THE EXISTING BEAMS. ANY DAMAGE TO THE BEAMS DUE TO THE REMOVAL OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR'S METHODS FOR PARTIAL REMOVAL OF THE EXISTING STRUCTURE SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY REMOVAL WORK.
13. ITEM 613.10, STONE FILL, TYPE I SHALL BE USED TO REPAIR AREAS OF EMBANKMENT AND SLOPE EROSION AS ORDERED BY THE ENGINEER.
14. AFTER SUPERSTRUCTURE DECK CONCRETE HAS BEEN REMOVED, ELEVATIONS ALONG THE TOP OF THE BEAMS SHALL BE TAKEN AS DIRECTED BY THE ENGINEER, FOR USE IN DETERMINING CONCRETE HAUNCH DEPTHS.
15. BECAUSE THE NEW DECK AND PAVEMENT ARE THICKER THAN THE EXISTING, THE PROPOSED FINISHED GRADE WILL BE APPROXIMATELY 3½' HIGHER THAN THE EXISTING. CONSEQUENTLY, IT IS NECESSARY TO TRANSITION THE NEW BRIDGE PAVEMENT INTO THE EXISTING APPROACH PAVEMENT. THE COLD PLANING NECESSARY FOR SHAPING BRIDGE APPROACHES FOR FINAL PAVING SHALL BE PAID UNDER ITEM 210.10, COLD PLANING BITUMINOUS PAVEMENT. A BUTT PAVEMENT JOINT IS REQUIRED FOR EACH LIFT. FEATHERING NEW PAVEMENT INTO EXISTING WILL NOT BE ALLOWED. EMULSIFIED ASPHALT SHALL BE APPLIED TO THE COLD PLANED BITUMINOUS CONCRETE PAVEMENT SURFACE AT THE RATE OF 0.025 GAL/S.Y. OR AS DIRECTED BY THE ENGINEER. EMULSIFIED ASPHALT SHALL ALSO BE APPLIED BETWEEN ALL LIFTS OF PAVEMENT, NOT JUST ON COLD PLANED AREAS. THE COST SHALL BE PAID UNDER ITEM 404.65, EMULSIFIED ASPHALT.
16. ALL CONCRETE SHALL BE SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT).

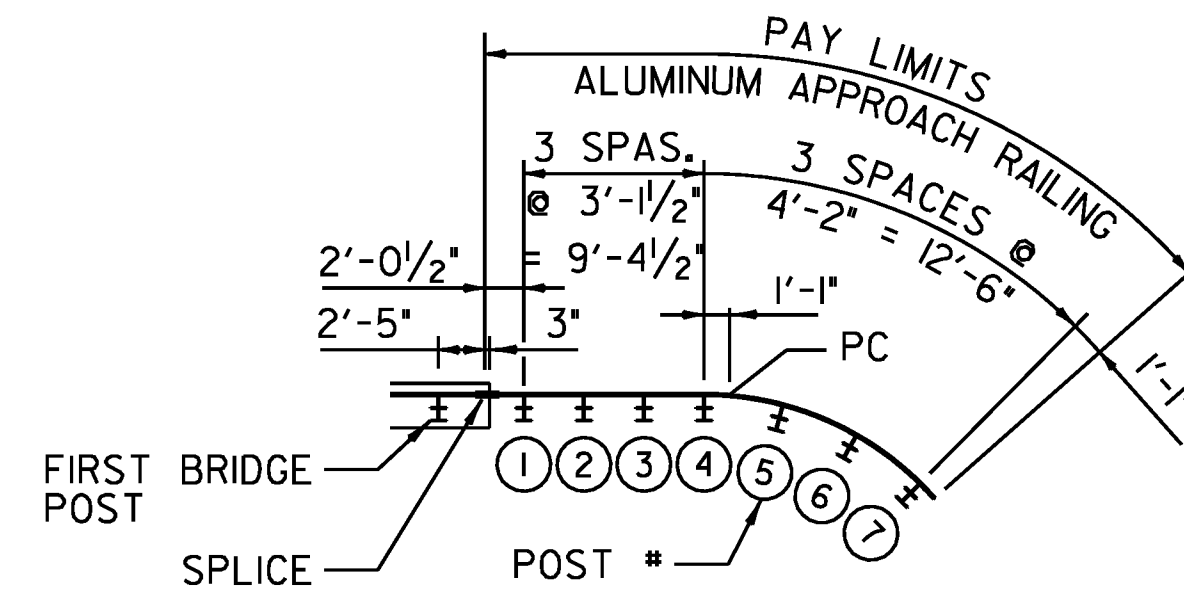
HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT f_c = 4000 psi
17. REINFORCING STEEL SHALL CONFORM TO AASHTO M 31, GRADE 420 (GRADE 60) AND SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
18. ALL REINFORCING STEEL SHALL BE EPOXY COATED AND PAID FOR UNDER ITEM 507.17. WHEN EPOXY COATED REBAR IS CUT, THE UNCOATED ENDS SHALL BE REPAIRED WITH MATERIALS AND PROCEDURES APPROVED BY THE COATING MANUFACTURER. FLAME CUTTING OF EPOXY COATED REBAR WILL NOT BE PERMITTED.
19. ABUTMENT CONCRETE REPAIRS SHALL BE PERFORMED. A THOROUGH INSPECTION BY THE ENGINEER WILL BE MADE OF ALL SUBSTRUCTURE AREAS PRIOR TO COMMENCING ANY WORK AND THOSE AREAS FOUND TO HAVE SPALLED, DELAMINATED OR OTHERWISE UNSOUND CONCRETE WILL BE REPAIRED. THE CONTRACTOR SHALL SUPPLY ANY STAGING REQUIRED FOR THIS INSPECTION. THE COST FOR WHICH SHALL BE INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.
20. MINIMUM COVER FOR REINFORCING STEEL (EXCEPT IN THE DECK) SHALL BE 2 INCHES ALONG BACK FACES OF WALLS AGAINST EARTH, AND 3 INCHES ELSEWHERE.
21. REINFORCING PLACEMENT TOLERANCES SHALL BE:

SPACING: +/- 1 INCH

CLEARANCE: +/- ¼ INCH
22. WHEN POURING THE DECK, THE CONCRETE SHALL BE DEPOSITED PARALLEL TO THE CENTERLINE OF BEARING SO AS TO LOAD THE BEAMS EQUALLY. SEE THE DECK REINFORCING PLAN FOR DECK POUR SEQUENCE DETAILS.

23. THE KEY IN CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT.
24. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
25. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1".
26. WATER REPELLENT SHALL BE APPLIED TO ALL NEW EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP BEADS AND ALL EXISTING EXPOSED CONCRETE SUBSTRUCTURE SURFACES. ITEM 514.10, WATER REPELLENT, SILANE SHALL BE USED.
27. 100% OF ALL EXISTING STRUCTURAL STEEL PAINT COATING IS TO BE REMOVED AND THE STRUCTURAL STEEL SURFACES SHALL BE FIELD PREPARED FOR PAINTING PER SPECIAL PROVISION SECTION 900 - QC/QA CLEAN AND PAINT EXISTING STEEL STRUCTURES, BARE STEEL. PAYMENT FOR REMOVAL OF EXISTING PAINT COATING SHALL BE PAID UNDER ITEM 900.645, SPECIAL PROVISION (QC/QA CLEAN AND PAINT EXISTING STEEL STRUCTURES, BARE STEEL).
28. THE EXISTING BEARINGS TO BE REMOVED ON THIS PROJECT ARE PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. THE EXISTING STEEL NOT REUSED IS TO BECOME THE PROPERTY OF THE CONTRACTOR AND THE CONTRACTOR MAY DISPOSE OF OR RETAIN IT FOR FUTURE USE. THE CONTRACTOR WILL INFORM THE ENGINEER OF THEIR PLANS TO DISPOSE OF OR RETAIN THE STEEL PRIOR TO ITS REMOVAL. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE REMOVED STRUCTURAL STEEL.
29. ALL STEEL PAID UNDER THE ITEM 506.60, STRUCTURAL STEEL SHALL CONFORM TO AASHTO M 270, GRADE 345 (GRADE 50) PAINTED UNLESS NOTED OTHERWISE ON THE PLANS.
30. ALL EXISTING STRUCTURAL STEEL THAT IS TO REMAIN SHALL BE PAINTED PER SPECIAL PROVISION SECTION 900 - QC/QA CLEAN AND PAINT EXISTING STEEL STRUCTURES, BARE STEEL. FINAL COAT PAINT COLOR SHALL BE BLACK, FEDERAL STANDARD (595) COLOR CHIP 27038. GREASE COATING SHALL BE APPLIED TO BEAM ENDS AT EXPANSION JOINTS AND TO AREAS EXTENDING 3 FEET TO EACH SIDE OF SCUPPER LOCATIONS. THE GREASE COATING AS REQUIRED BY SPECIAL PROVISIONS SECTION 900 - QC/QA CLEAN AND PAINT EXISTING STEEL STRUCTURES, BARE STEEL, SHALL BE INCIDENTAL TO THE ITEM 900.645, SPECIAL PROVISION (QC/QA CLEAN AND PAINT EXISTING STEEL STRUCTURES, BARE STEEL). PAYMENT FOR FIELD PAINTING SHALL BE UNDER ITEM 900.645, SPECIAL PROVISION (QC/QA CLEAN AND PAINT EXISTING STEEL, STRUCTURES, BARE STEEL).
31. THE CONTRACTOR SHALL PROVIDE CONTAINMENT, COLLECTION, TEMPORARY STORAGE, TRANSPORTATION, AND DISPOSAL OF WASTE FROM LEAD PAINT REMOVAL OPERATIONS PER THE REQUIREMENTS OF SPECIAL PROVISION SECTION 900 - CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES. PAYMENT FOR THIS WORK SHALL BE UNDER ITEM 900.645, SPECIAL PROVISION (CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES).
32. ALL FIELD CONNECTIONS SHALL BE MADE USING NEW 7⁄8 INCH DIAMETER, AASHTO M 164 TYPE 1 GALVANIZED BOLTS. HOLES SHALL BE 5⁄16 INCH DIAMETER, UNLESS OTHERWISE NOTED. ANY CONNECTIONS NOT DESIGNATED SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.
33. ANY BOLT HOLES IN THE WEB OF THE FASCIA BEAMS NOT OTHERWISE FILLED SHALL BE FILLED WITH NEW AASHTO M 164 TYPE 1 GALVANIZED BOLTS. THE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19. FASTENERS SHALL BE FIELD PAINTED AFTER INSTALLATION.
34. SHEAR STUDS SHALL BE INSTALLED ON ALL BEAMS AS INDICATED.
35. ONCE THE HAUNCHES HAVE BEEN CALCULATED, THE SHEAR STUDS WITHIN THE AREAS WITH GREATER THAN 4" OF HAUNCH MUST BE EITHER "PIGGY-BACKED" WITH ADDITIONAL SHEAR STUDS OR LONGER STUDS MUST BE USED. IN NO CASE SHALL THERE BE LESS THAN 2 ½" OF COVER OVER THE TOP OF THE STUDS OR THE STUDS HAVE LESS THAN 2" OF EMBEDMENT INTO THE DECK. ITEM 508.15, SHEAR CONNECTORS SHALL BE CONSIDERED AS FULL COMPENSATION FOR ALL "PIGGY-BACKED" OR LONGER STUDS USED.
36. PAYMENT FOR MAINTAINING PORTIONS OF THE EXISTING STRUCTURE AND ROADWAY FOR ACCEPTABLE USE DURING PHASED CONSTRUCTION WILL BE MADE UNDER CONTRACT ITEM 527.10.
37. CURB AND SIDEWALK JOINTS SHALL BE SPACED AT 15'-0" MAXIMUM. CURB AND SIDEWALK POUR SEQUENCE SHALL BE IN ALTERNATING SECTIONS.
38. NEW DOWNSPOUTS AND SCUPPERS SHALL BE PAID FOR UNDER ITEM 506.60, STRUCTURAL STEEL.
39. FOR PG BINDER GRADE SEE SECTION 406 OF THE GENERAL SPECIAL PROVISIONS.
40. ALL PLAN REFERENCES TO "BITUMINOUS CONCRETE PAVEMENT (TYPE IV)" REFER TO "MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT (TYPE IV)".
41. THE APPROXIMATE AERIAL UTILITY RELOCATION BY VERMONT ELECTRIC COOPERATIVE, INC., COMCAST COMMUNICATIONS AND TELEPHONE OPERATING COMPANY OF VERMONT, L.L.C. (FAIRPOINT COMMUNICATIONS) WILL REPLACE THE EXISTING TWO UTILITY POLES AT EITHER END OF THE BRIDGE WITH NEW TEN FOOT LONGER UTILITY POLES IN APPROXIMATELY THE SAME LOCATION. THE ATTACHED UTILITY LINES WILL BE ADJUSTED ACCORDINGLY.
42. ALL BEARING DEVICES SHALL BE RETAINED AND 100% CLEANED AND METALIZED PER STANDARD SPECIFICATION SUBSECTION 506.15 (b).
43. ALL BEARING DEVICES SHALL BE METALIZED AS PER SUBSECTIONS 531.04(b), 506.14(b), AND 506.15(b) OF THE STANDARD SPECIFICATIONS. THE BEARINGS SHALL BE SEALED WITH AN APPROVED SEALANT (NOT PRIMER) PER SUBSECTION 531.04(b).
44. ALL BEARING DEVICES SHALL BE GREASED PER SUBSECTION 513.06(d).
45. CLEANING, METALIZING AND GREASING OF BEARINGS SHALL BE INCIDENTAL TO ITEM 900.620 SPECIAL PROVISION (REFURBISH EXISTING BEARING DEVICE ASSEMBLY).

STATE OF VERMONT			
AGENCY OF TRANSPORTATION			
Town Of <i>BERKSHIRE</i>		Bridge No. <i>30</i>	
Highway No. <i>VT 118</i>		Log Sta.	
		Surv. Sta.	
<i>VT 118 OVER MISSISSQUOI RIVER</i>			
GENERAL NOTES			
Designed By <i>J Howe</i>		Drawn By <i>J Davis</i>	
Checked By <i>R Hebert</i>		Date <i>4/2/09</i>	
PROJECT <i>BERKSHIRE</i>		PROJECT NO. <i>BHF 0283(9)S</i>	
I.G.C. Info.		<i>ZC304GILDGN</i>	
Bridge Sheet No.		Sheet <i>5</i> of <i>41</i>	

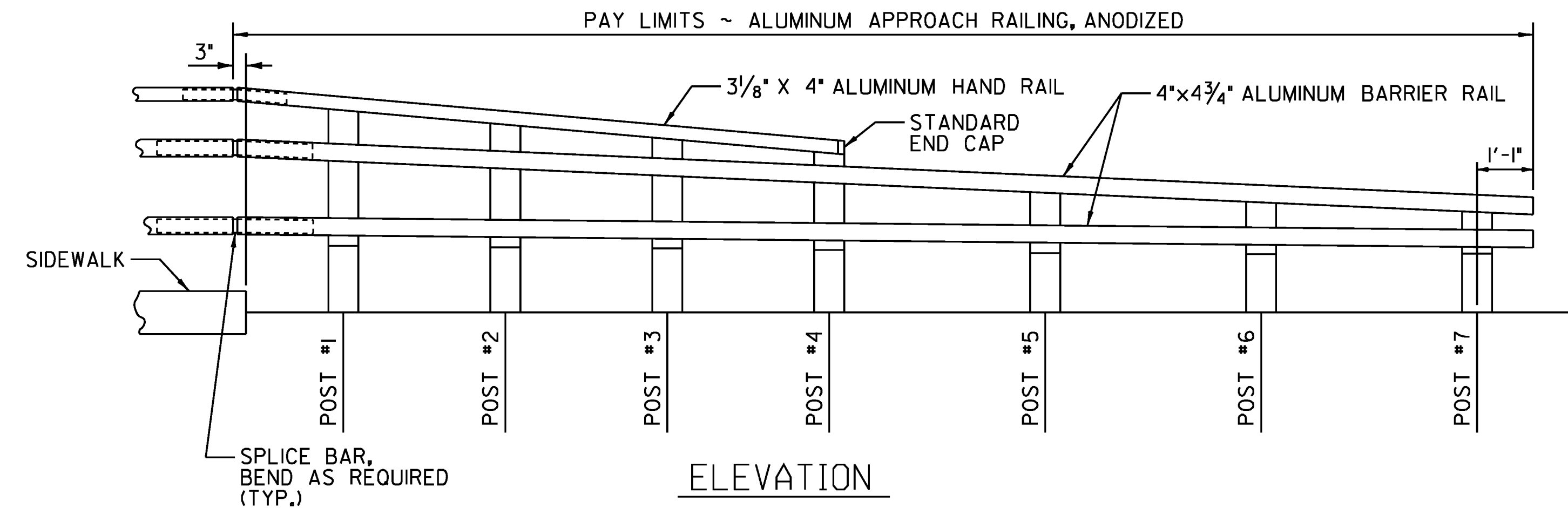


NOTES:

1. COST FOR CURVED RAIL GEOMETRY SHALL BE INCIDENTAL TO ALUMINUM APPROACH RAILING.
2. STANDARD END CAP AT POST #4.
3. SEE SHEET "ALUMINUM BRIDGE RAILING DETAILS (3)" FOR ADDITIONAL RAILING GEOMETRY.

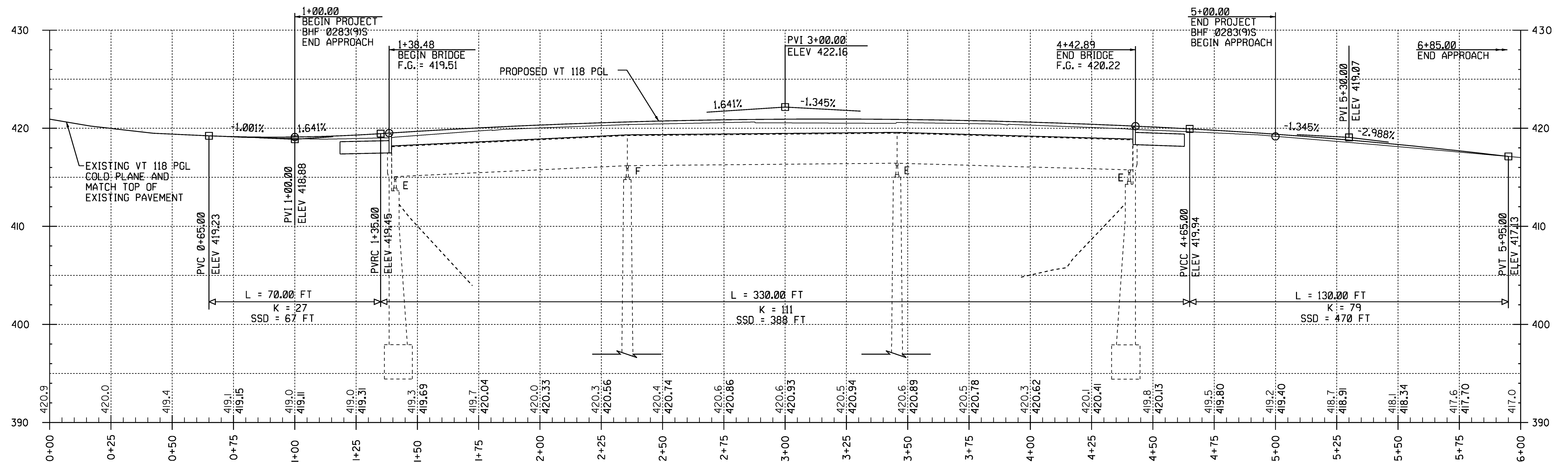
CURVED ALUMINUM APPROACH RAILING DETAIL

NOT TO SCALE



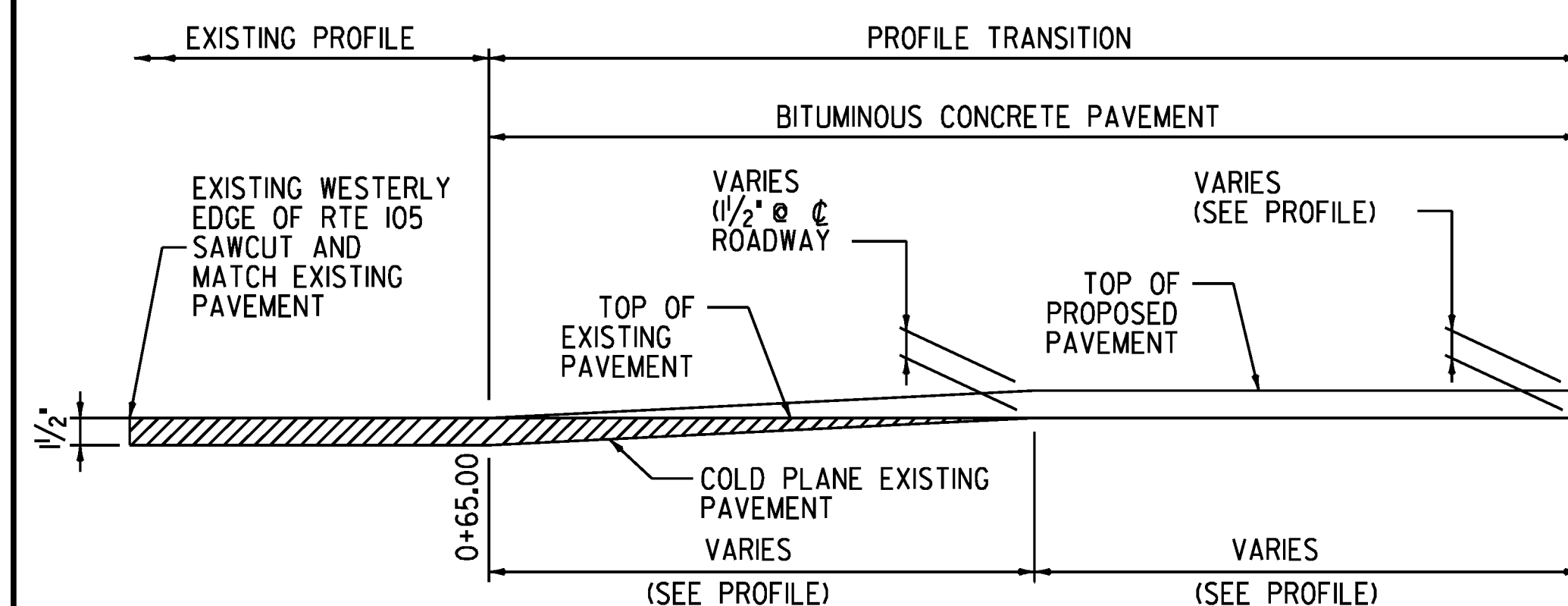
ELEVATION

NOT TO SCALE



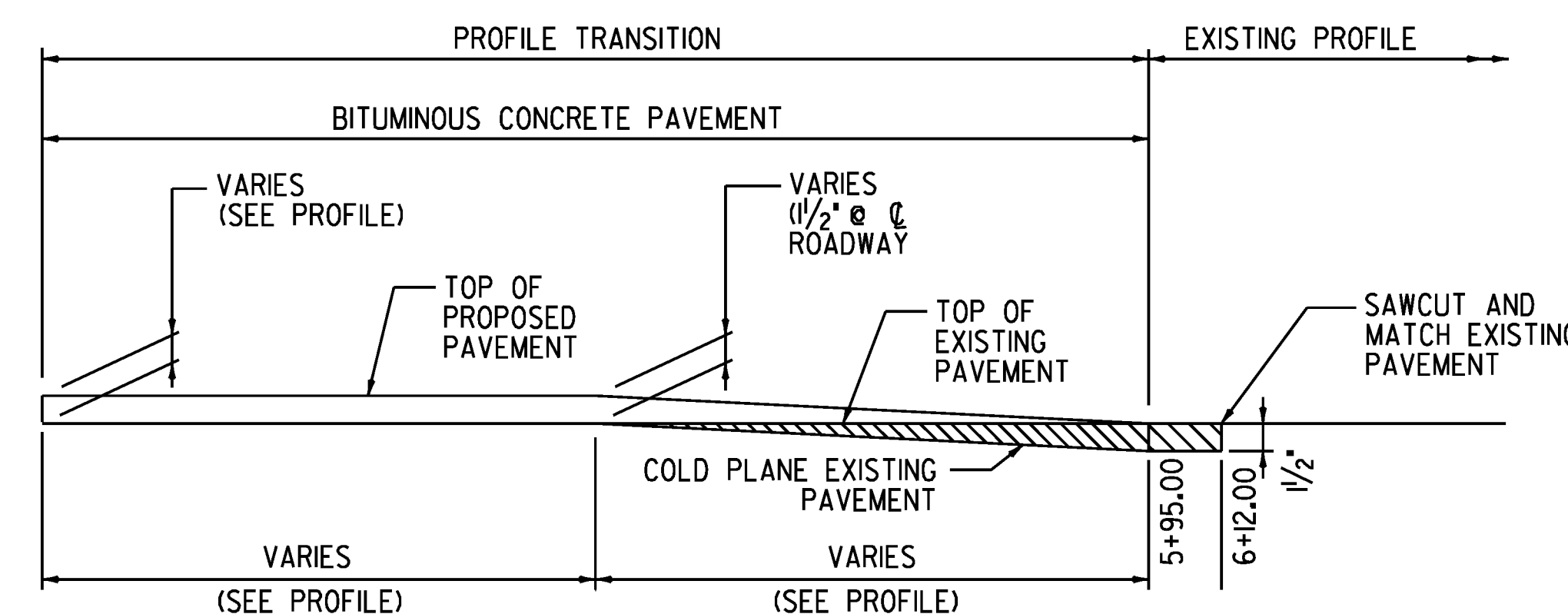
VT 118 PROFILE

NOTE:
ELEVATIONS SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND.
ELEVATION SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE.



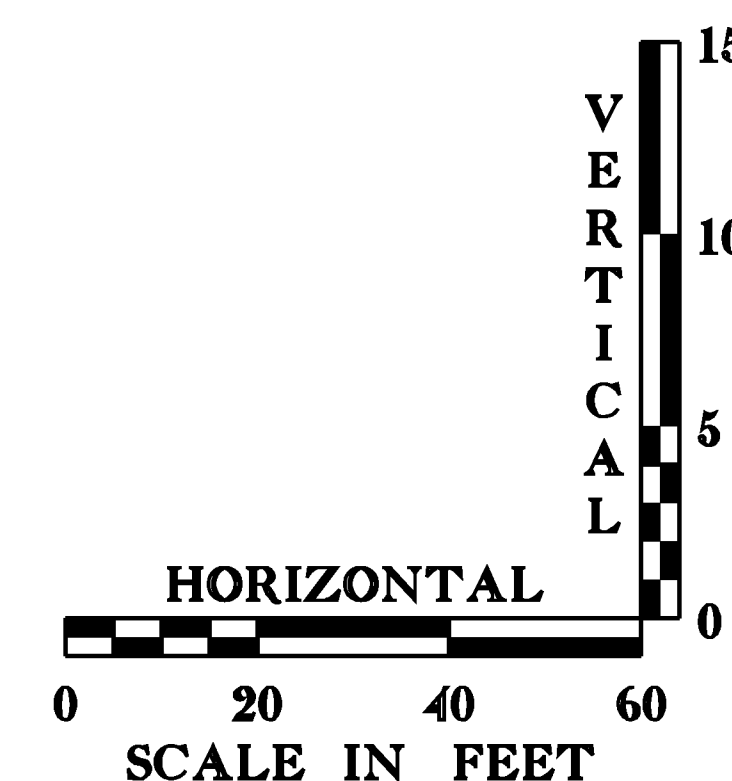
WEST APPROACH PAVEMENT TRANSITION DETAIL

NOT TO SCALE



EAST APPROACH PAVEMENT TRANSITION DETAIL

NOT TO SCALE



STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	
VT 118 OVER MISSISSQUOI RIVER			
PROFILE AND DETAILS			
Designed By	D. Bryant	Drawn By	J. Davis
Checked By	J. Andrews	Date	4/2/09
		Bridge Design Supervisor	
		Date	
PROJECT	BERKSHIRE	PROJECT NO.	BHF 0283(9)S
I.G.C. Info.			ZC304PRLDGN
Bridge Sheet No.		Sheet	7 of 41

GPS CONTROL POINTS

HVCTRL #1

EAST BERKSHIRE AZ MK

N = 884459.1562
E = 158806.935
ELEV. = 569.159

To reach from the intersection of VT route 105 and VT route 118 south in Berkshire go southeast along rte 118 for 0.55 mi to the intersection of Pearly Road right. Turn right and go southeast along Pearly road for 0.2 mi to the intersection of a gravel drive left, leading to the Watson sign company. Turn left and go south along the gravel drive for about 164 ft to the end of the drive at the sign company building. Park vehicle and walk southeast, uphill through a pasture, for about 246 ft to the site of the mark. The mark is set in the top of a massive rock outcrop on the northwest edge of a knob, in a pasture. It is 247.4 ft (slope) southeast of the southeast corner of an attached shed on the sign company building, 162.1 ft east of the east edge of a pond, 27.9 ft east of a clump Apple, 213.3 ft southeast of an angle point in a wire fence, and 225.7 ft west of another angle point in the same fence.

HVCTRL #2

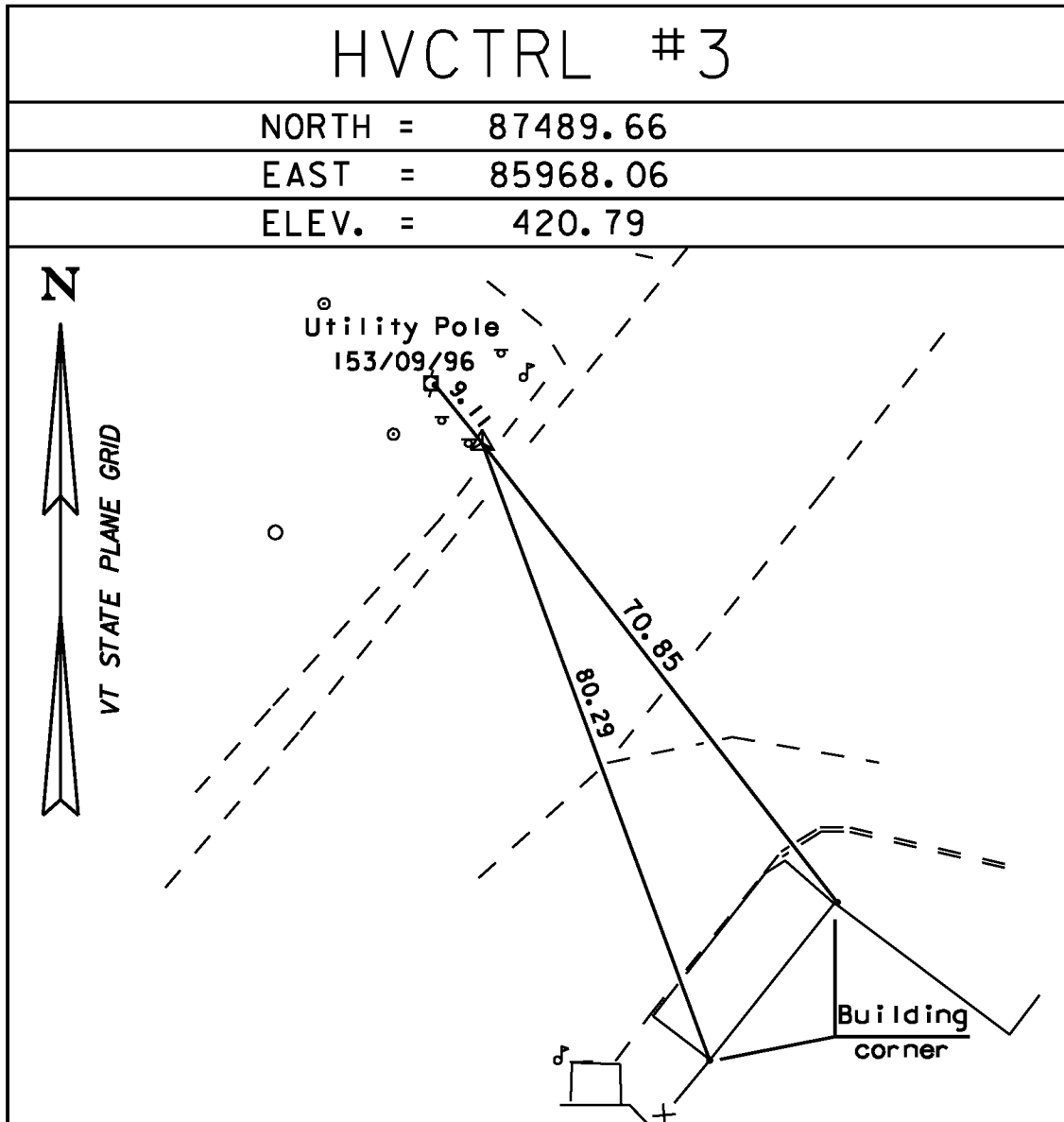
EAST BERKSHIRE

N = 887130.3779
E = 1586474.107
ELEV. = 414.632

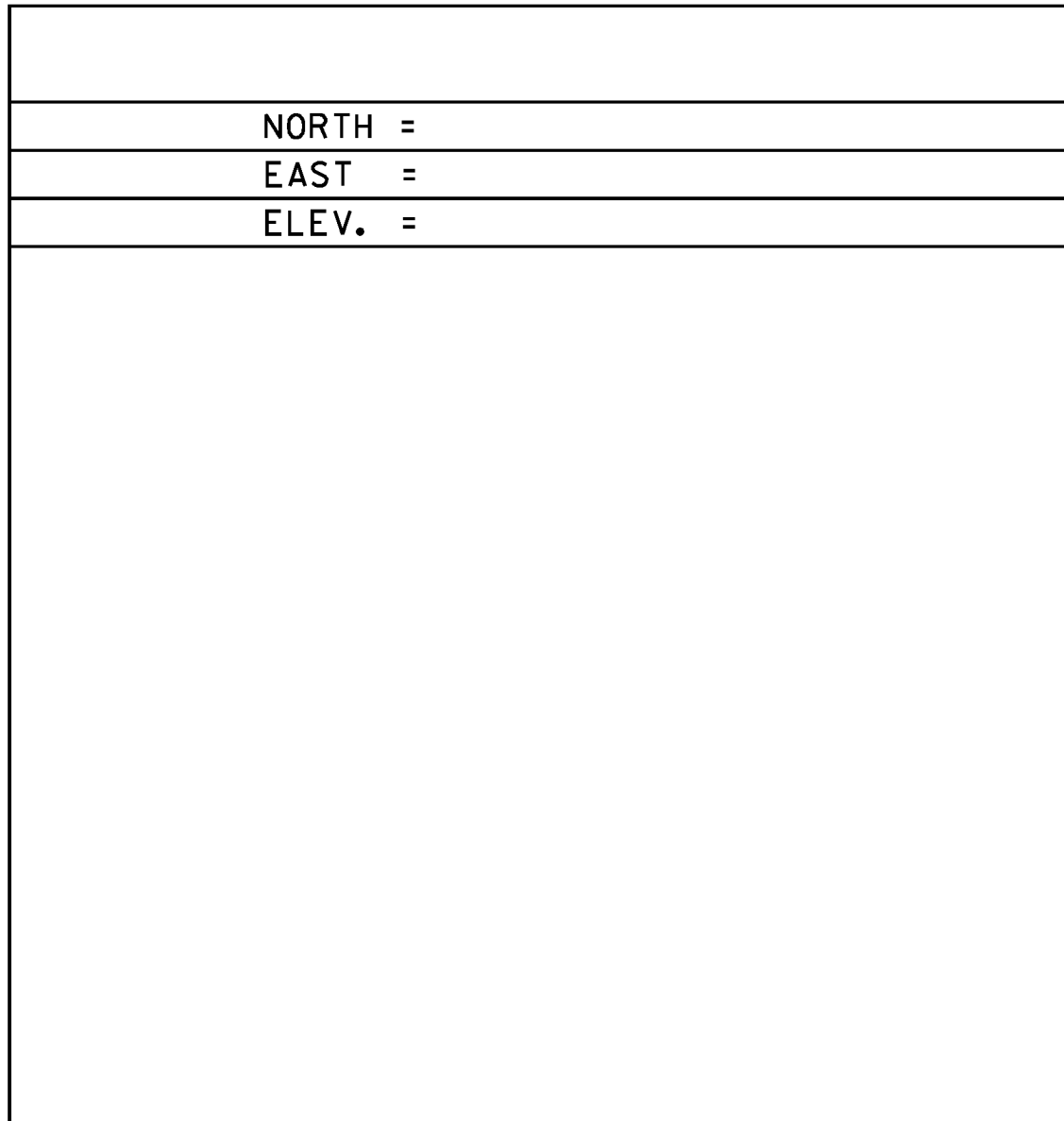
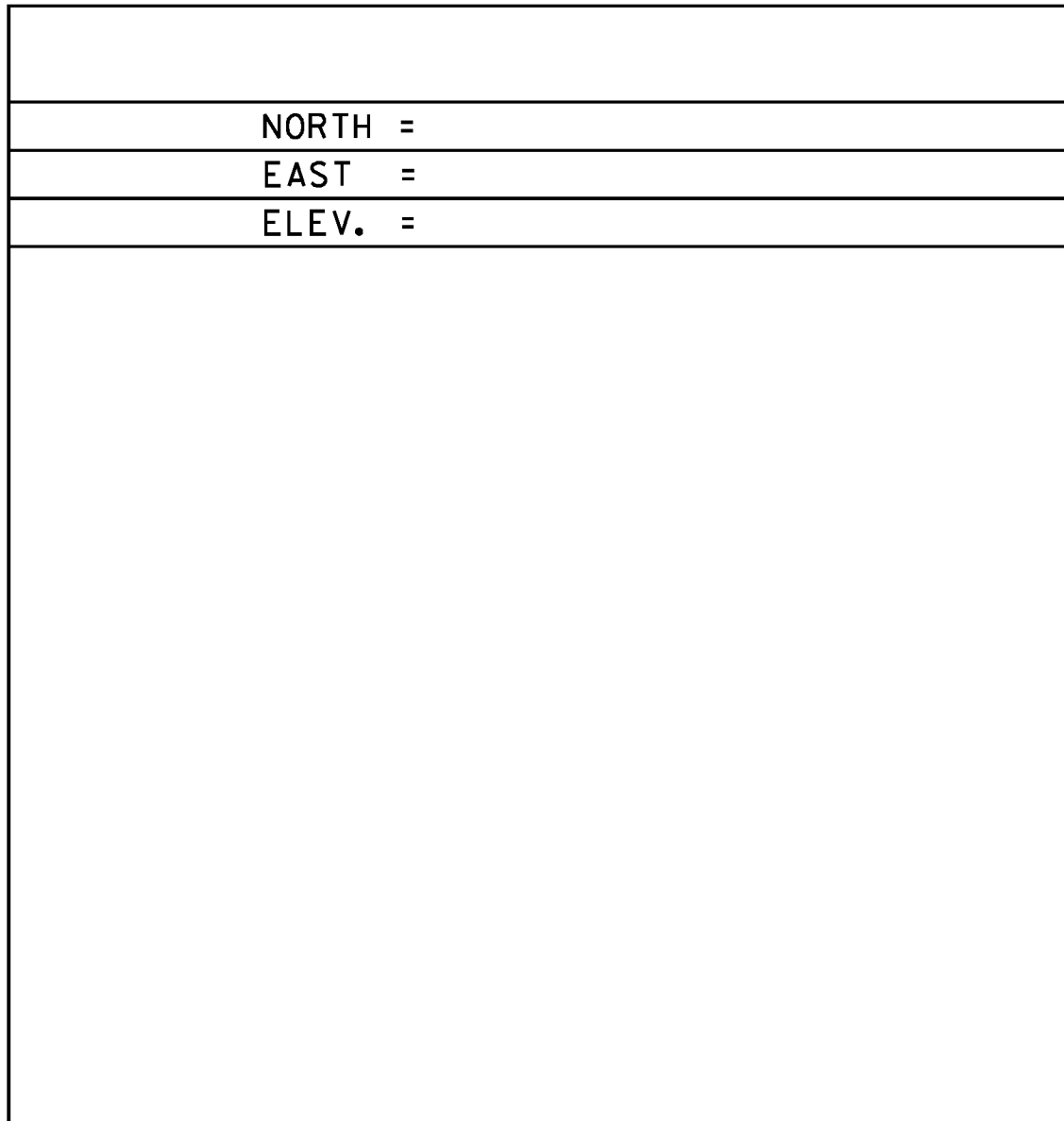
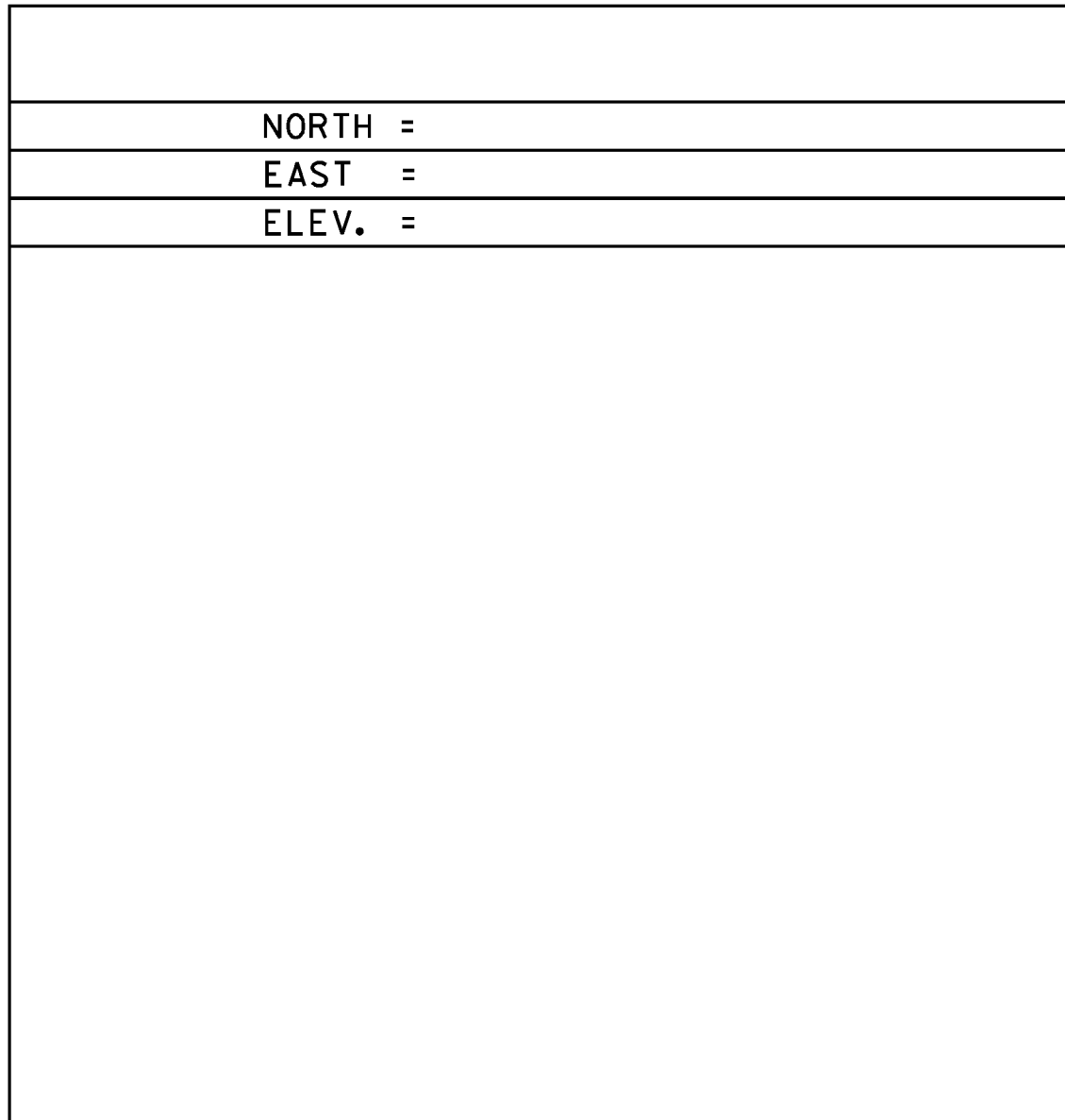
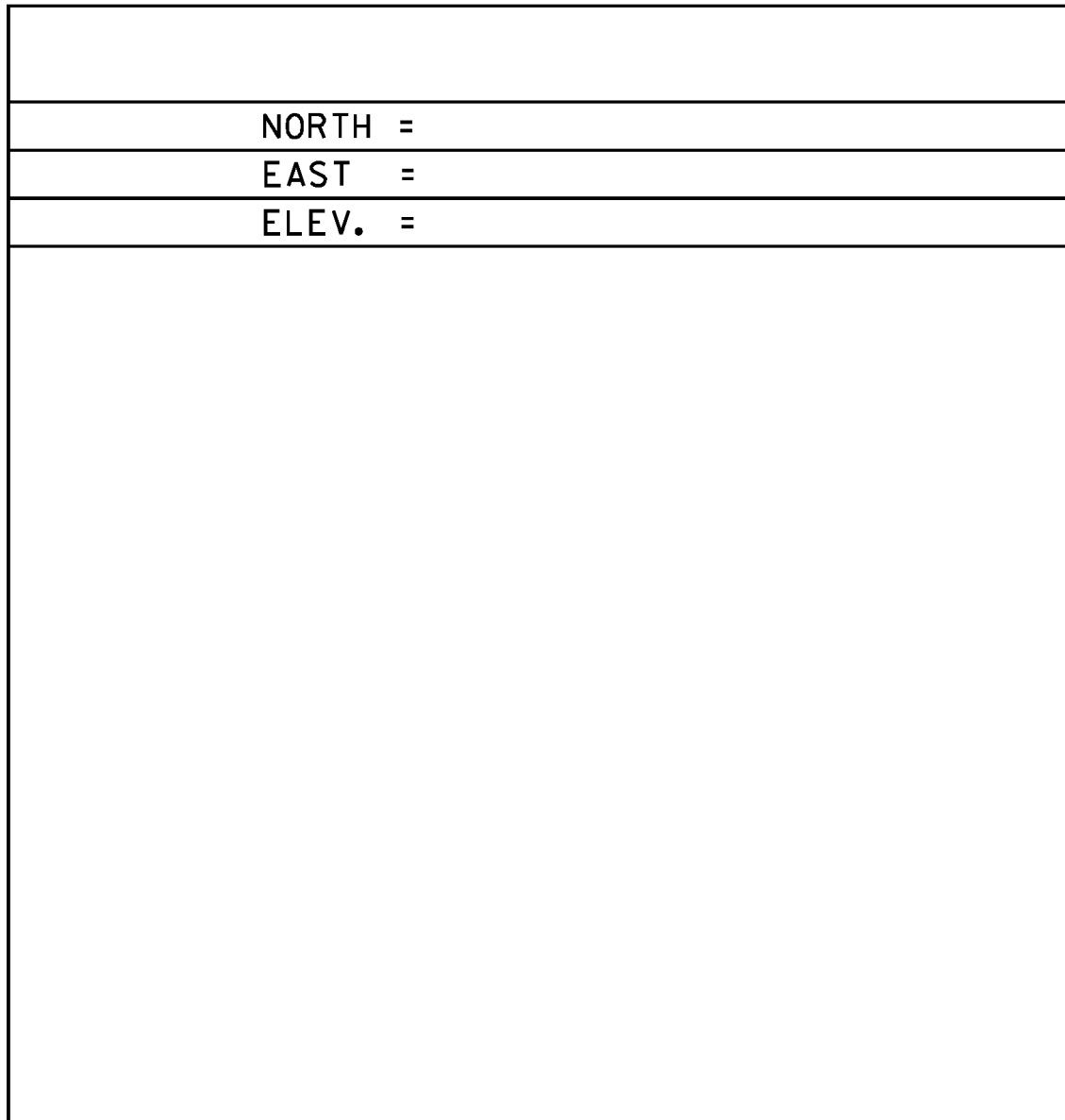
To reach from the intersection of VT rote 105 and VT route 118 south in East Berkshire, go southeast along VT 118 for 0.05 mi to the 118 bridge over the Missisquoi River. From the southeast end of the bridge continue southeast along 118 for about 164 ft to the site of the mark on the right in a pasture. The mark is set 0.05 ft below the ground surface in the top of a 1 ft diameter concrete monument poured 4 ft deep. It is 21.3 ft southwest of and about 1.6 ft lower than the southwest edge of pavement of route 118, 124.7 ft northwest of pole. no. 153 and 4.3 ft east of pole no. 4+1/2 and a fiberglass witness post.

*TO ALLOW THE STATE PLANE COORDINATES TO FIT THE AGENCY DESIGN PLANE, SUBTRACT 800,000 FROM THE NORTHING AND SUBTRACT 1,500,000 FROM THE EASTING.

TRAVERSE TIES



• MAIN TRAVERSE COMPLETED



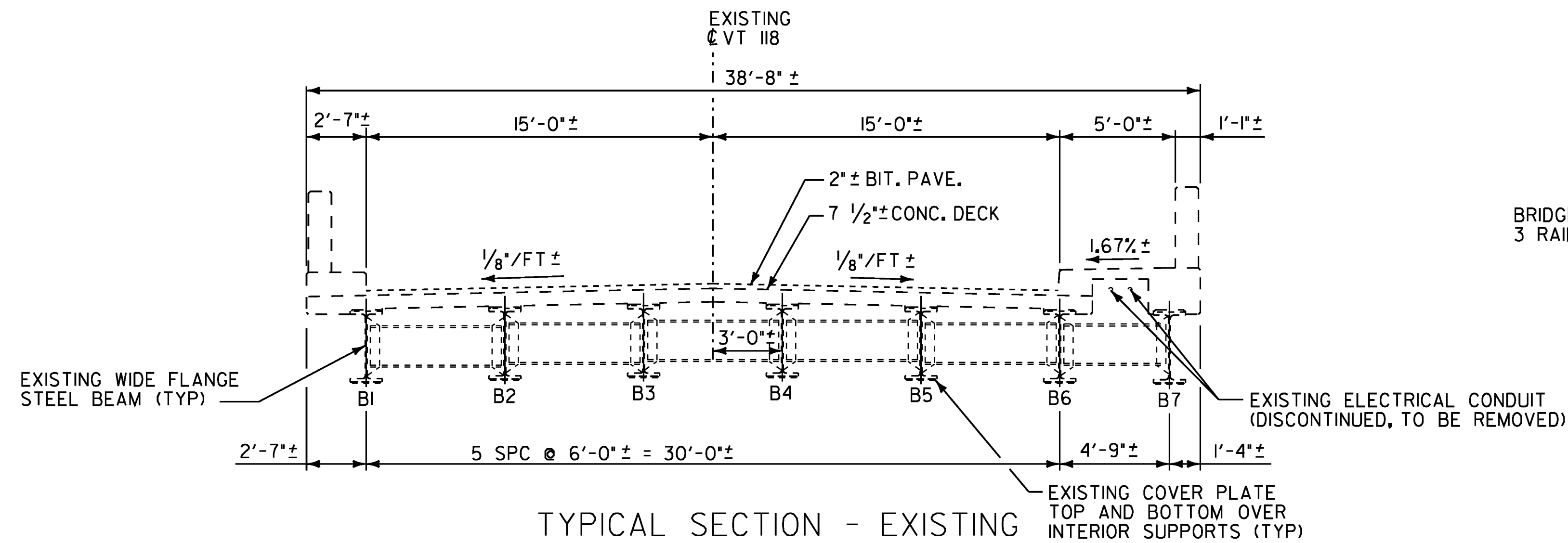
ALIGNMENT TIES

Station		Northing	Easting
POB	0+00.00	87492.1208	85994.9863
Begin Bridge	1+38.48	87415.5065	86110.3425
End Bridge	4+42.89	87247.0912	86363.9211
PC	4+47.79	87244.3777	86368.0068
PT	7+00.00	87101.8841	865576.0968
POE	7+00.00	87101.8841	865576.0968

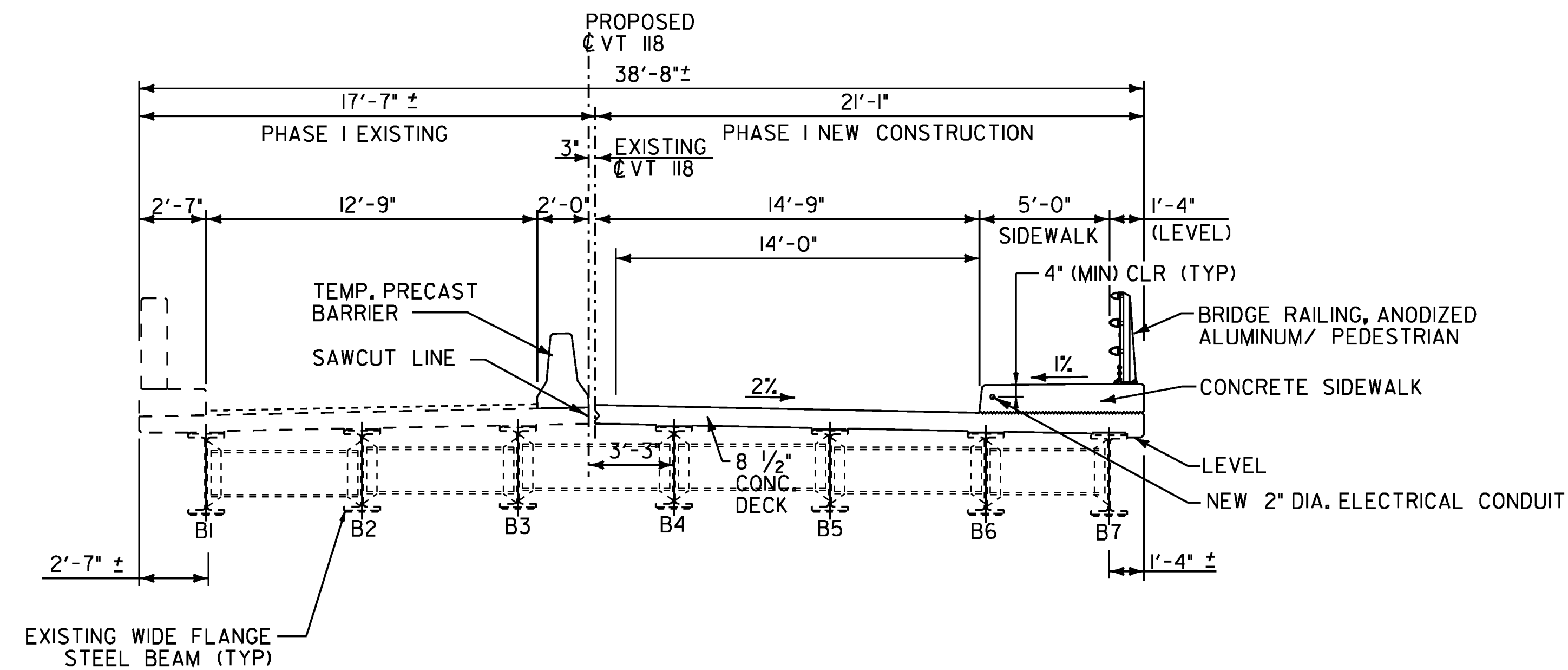
Curve Data

Δ = 1° 37' 25.2" RT
D = 0° 38' 37.6"
R = 8900.00'
T = 126.11'
L = 252.20'
E = 0.89'

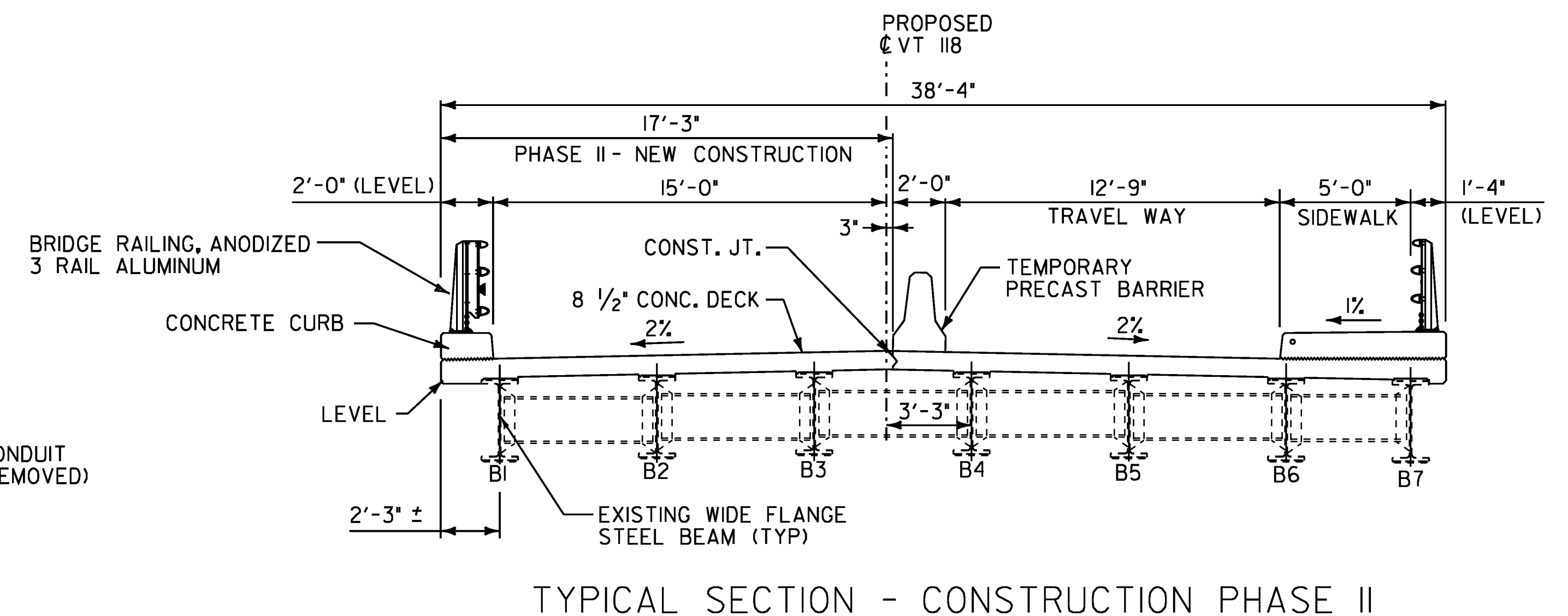
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of <i>BERKSHIRE</i>		Bridge No.	30
Highway No. <i>VT 118</i>		Log Sta.	
		Surv. Sta.	
<i>VT 118 OVER MISSISSQUOI RIVER</i>			
<i>TIES</i>			
Designed By <i>J Howe</i>		Drawn By <i>S Morgan</i>	
Checked By <i>R Hebert</i>		Date <i>4/2/09</i>	
PROJECT <i>BERKSHIRE</i>		PROJECT NO. <i>BHF 0283(9)S</i>	
I.G.C. Info.		<i>X98C304T1.DGN</i>	
Bridge Sheet No.		Sheet <i>7A</i> of <i>41</i>	



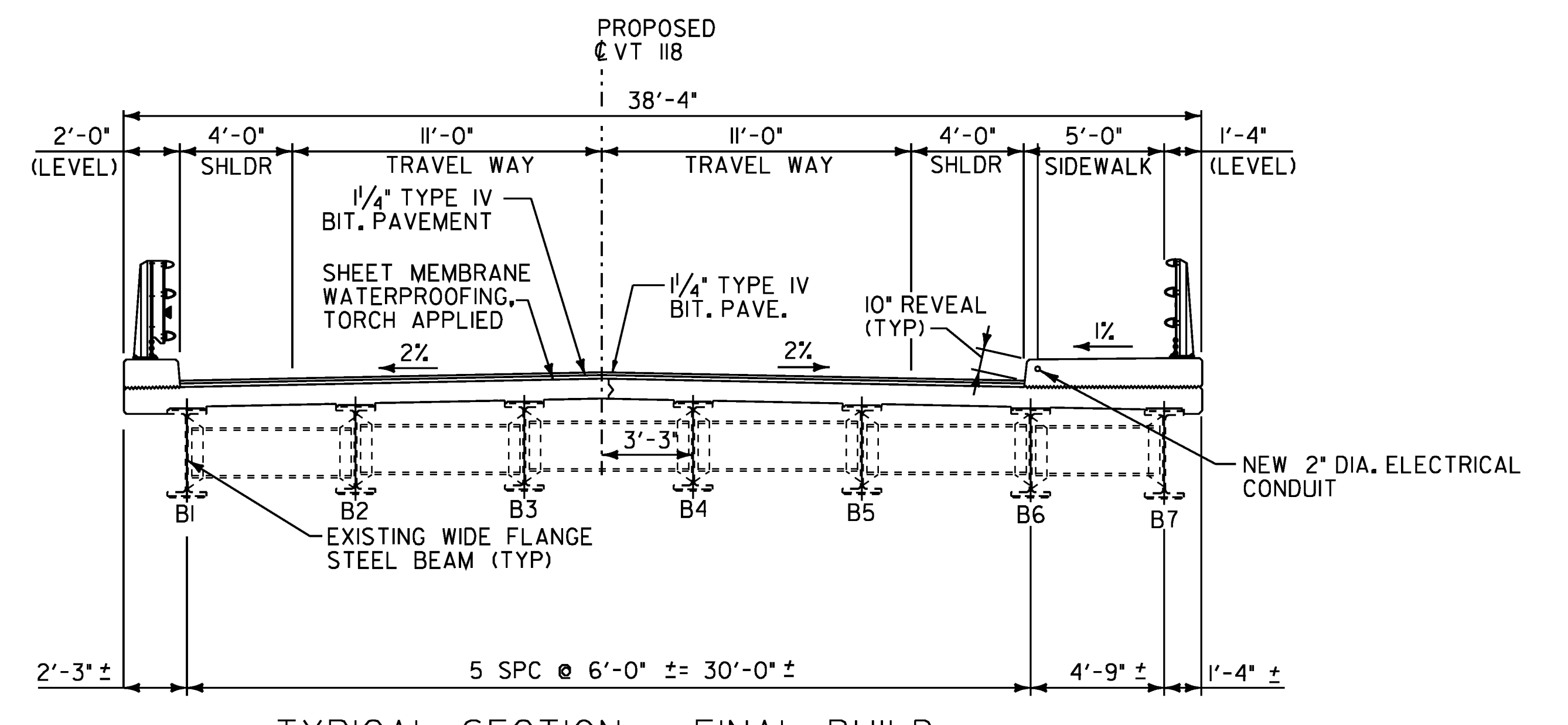
SCALE: 1/4"=1'-0"



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



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



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

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	
VT 118 OVER MISSISSQUOI RIVER			
BRIDGE CONSTRUCTION STAGING			
Designed By	J. Howe	Drawn By	J. Davis
Checked By	R. Hebert	Bridge Design Supervisor	
	4/2/09	Date	
PROJECT	BERKSHIRE	PROJECT NO.	BHF 0283(9)S
I.G.C. Info.	ZC304CSIDGN		
Bridge Sheet No.		Sheet	8 of 41

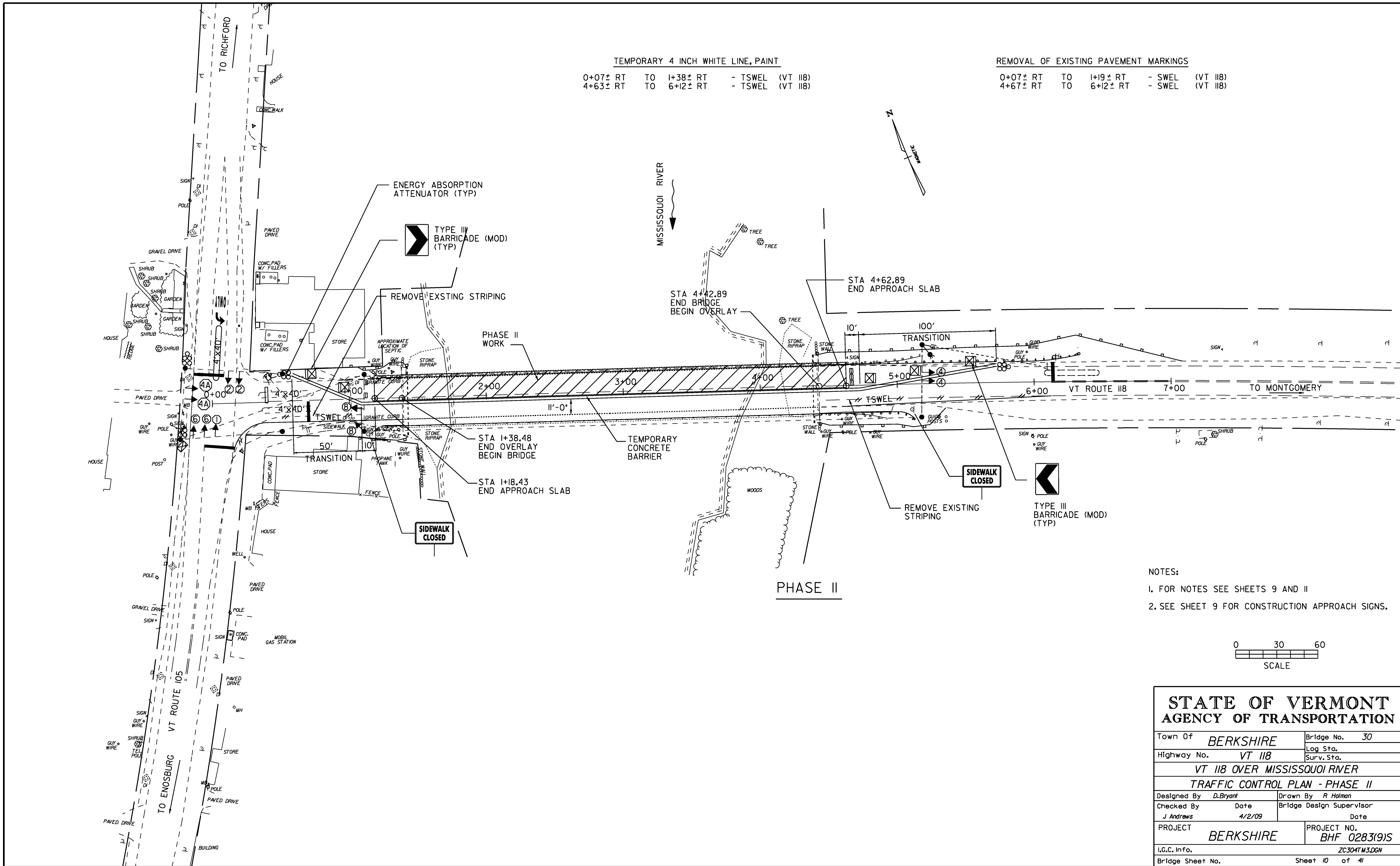


CHART SEQUENCE (TYPICAL) FOR VT 105 @ VT 118

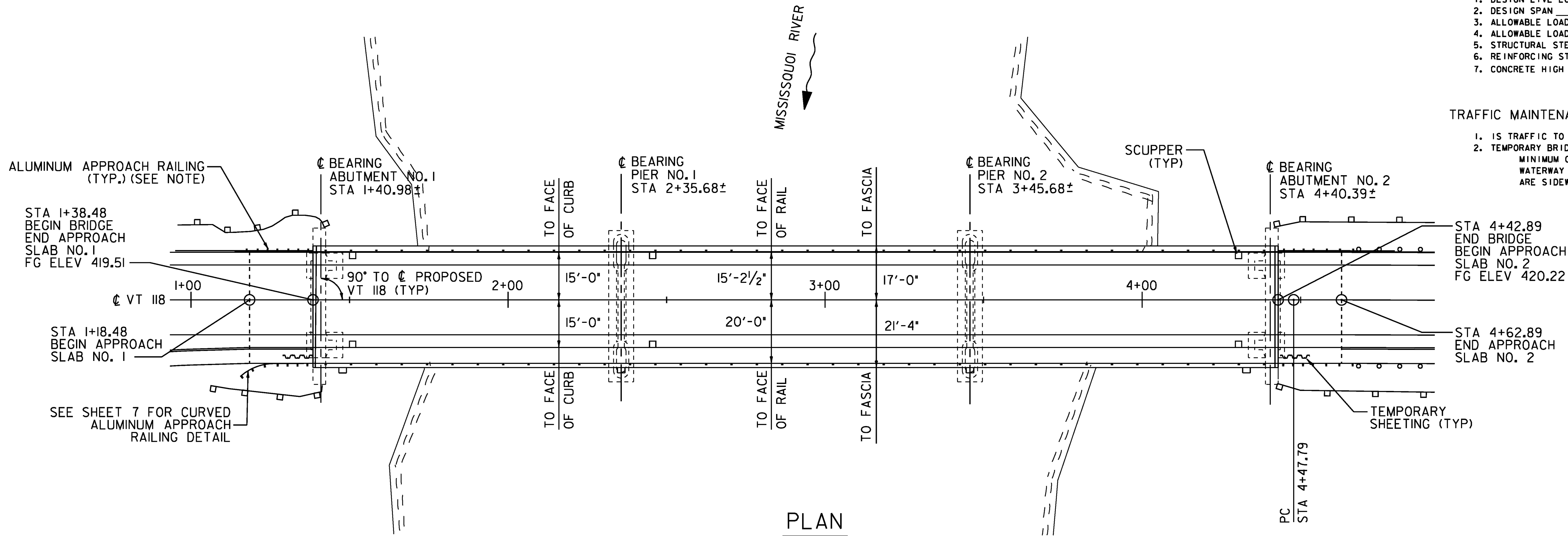
SIGNAL FACE ARRANGEMENT **(12" LENSES)**



STEP	VT 105 @ VT 118	VT 118 EAST APPROACH	TIME FOR STEP IN SEC.
A			12
B			20
C			26
D			12
E			20

26. PAYMENT FOR TEMPORARY BARRIER USED SHALL BE MADE UNDER THE APPROPRIATE ITEM.
27. THE CONTRACTOR SHALL NOTIFY VTRANS TRAFFIC DESIGN DIVISION PRIOR TO ACTIVATING THE TRAFFIC SIGNALS SUCH THAT THEY CAN FIELD REVIEW CONDITIONS.
28. THE RESIDENT ENGINEER SHALL COORDINATE TRAFFIC ACCESS RESTRICTIONS WITH PROPERTY OWNER OF DRIVEWAY OPPOSITE VT-118.

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of <i>BERKSHIRE</i>		Bridge No. <i>30</i>	
Highway No. <i>VT 118</i>		Log Sta.	
		Surv. Sta.	
<i>VT 118 OVER MISSISSQUOI RIVER</i>			
TRAFFIC CONTROL NOTES			
Designed By <i>D Bryant</i>		Drawn By <i>R Holman</i>	
Checked By <i>J Andrews</i>		Date <i>4/2/09</i>	
		Bridge Design Supervisor	
PROJECT <i>BERKSHIRE</i>		PROJECT NO. <i>BHF 0283/95</i>	
I.G.C. Info.		<i>ZC304T MI.DGN</i>	
Bridge Sheet No.		Sheet <i>11</i> of <i>41</i>	



DESIGN CRITERIA:

- DESIGN LIVE LOAD AASHTO HS-25
- DESIGN SPAN 94.71 - 110 - 94.71
- ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A ON LEDGE N/A
- ALLOWABLE LOAD FOR PILING 20 TONS TYPE EXISTING TIMBER ESTIMATED LENGTH N/A
- STRUCTURAL STEEL AASHTO GRADE EXISTING ASTM, A7-49T GR 33 PAINTED
- REINFORCING STEEL GRADE 60
- CONCRETE HIGH PERFORMANCE CLASS A LOW CEMENT f'_c 4000 PSI

TRAFFIC MAINTENANCE:

- IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE YES OR ON TEMPORARY BRIDGE NO
- TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY N/A TRAFFIC CONTROL SIGNALS REQUIRED YES
MINIMUM CLEAR SPAN (NORMAL TO STREAM): N/A VERTICAL CLEARANCE ABOVE STREAMBED: N/A
WATERWAY AT FULL OPENING: N/A
ARE SIDEWALKS REQUIRED? PHASE II ONLY IF SO, ON WHAT SIDE? DOWN STREAM

EXISTING STRUCTURE

STRUCTURE TYPE: THREE SPAN CONTINUOUS COMPOSITE STEEL BEAM YEAR BUILT: 1952
CLEAR SPAN (NORMAL TO STREAM): 287'
VERTICAL CLEARANCE ABOVE STREAMBED: 17'
WATERWAY OF FULL OPENING: UNKNOWN
DISPOSITION OF STRUCTURE: REMOVE BRIDGE RAIL AND CONCRETE DECK

TYPE OF MATERIAL UNDER SUBSTRUCTURE: GRAVEL AND CLAY

WATER SURFACE ELEV. @ 02.33: UNKNOWN VELOCITY: UNKNOWN
010: 410.7' " UNKNOWN
025: UNKNOWN " UNKNOWN
050: 412.2' " UNKNOWN
0100: 412.9' " UNKNOWN

LONG TERM STREAM BED CHANGES: UNKNOWN

IS THE ROADWAY OVERTOPPED BELOW THE 0100? UNKNOWN FREQUENCY: N/A
RELIEF ELEVATION: N/A DISCHARGE OVER ROAD @ 0100: N/A

UPSTREAM STRUCTURE: TOWN: BERKSHIRE DISTANCE: 1.8 MILES
HIGHWAY NO.: VT 105 STRUCTURE NO.: 27
STRUCTURE TYPE: PLATE GIRDER W/ CONC. DECK
CLEAR SPAN: 144' CLEAR HEIGHT: 17'
YEAR BUILT: 1967 FULL WATERWAY: UNKNOWN

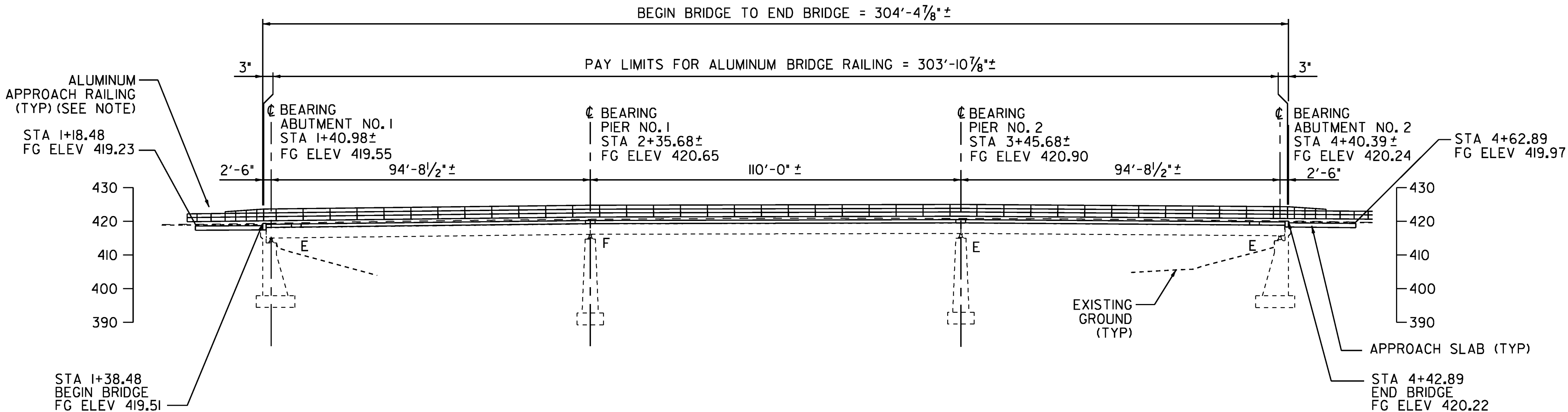
DOWNSIDE STRUCTURE: TOWN: ENOSBURG DISTANCE: 3.2 MILES
HIGHWAY NO.: OLD BOSTON POST RD STRUCTURE NO.: 12
STRUCTURE TYPE: THRU-TRUSS
CLEAR SPAN: 196' CLEAR HEIGHT: 23'
YEAR BUILT: 1929 FULL WATERWAY: UNKNOWN

NOTE:
WATER SURFACE ELEVATIONS OBTAINED FROM TOWN OF BERKSHIRE, FLOOD INSURANCE STUDY (FIS) DATED DECEMBER 1, 1982. ALL OTHER INFORMATION OBTAINED FROM RECORD PLANS AND BRIDGE INSPECTION FILES.

LOADING LEVELS (LOAD FACTOR)	LOAD FACTOR LOAD RATING (TONS)					
	H	HS	352	6 AXLE	3A. STR.	4A. STR.
INVENTORY A=2.17; B=1.00	25*	46*				
POSTED A=1.55; B=1.40	35*	64*	119		70*	95
OPERATING A=1.30; B=1.67		76*	141	168	83*	113

STRENGTH RF = $\frac{0.9 M_N - 1.3 M_{DL}}{A \times M_{LL+1}}$ SERVICEABILITY RF = $B \left[.95 F_y \times S_{LL+1} - M_{DL} \times \frac{S_{LL+1}}{S_{SL}} - M_{SOL} \times \frac{S_{LL+1}}{S_{SL}} \right] 1.67 M_{LL+1}$

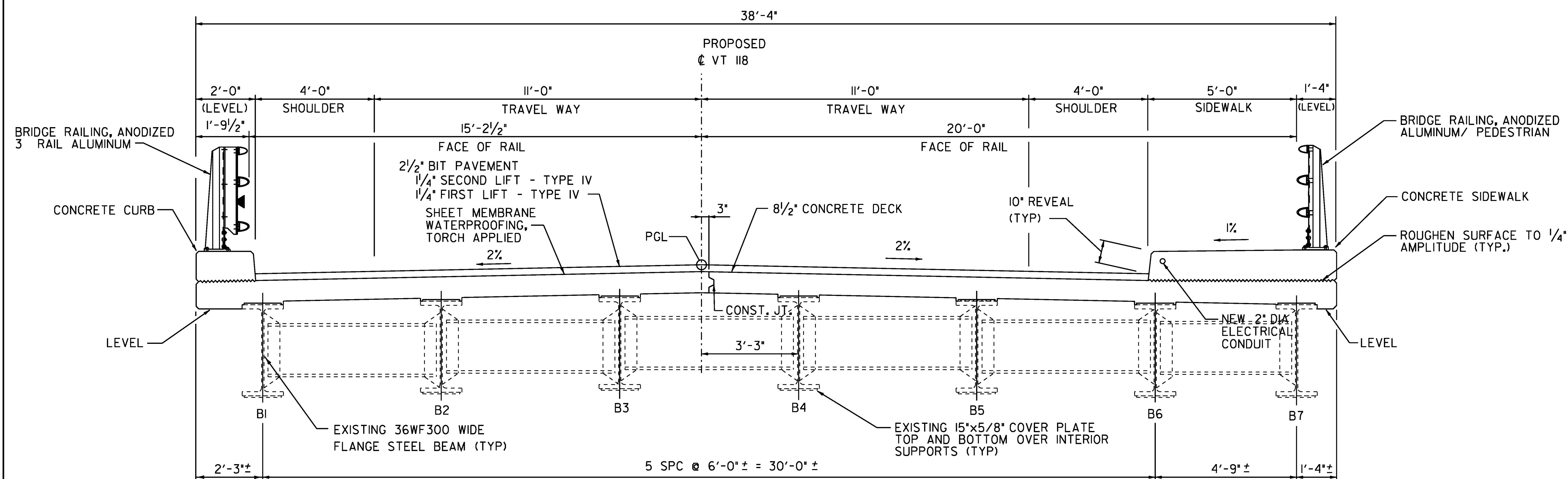
• RATING CONTROLLED BY DECK



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

STATE OF VERMONT
AGENCY OF TRANSPORTATION

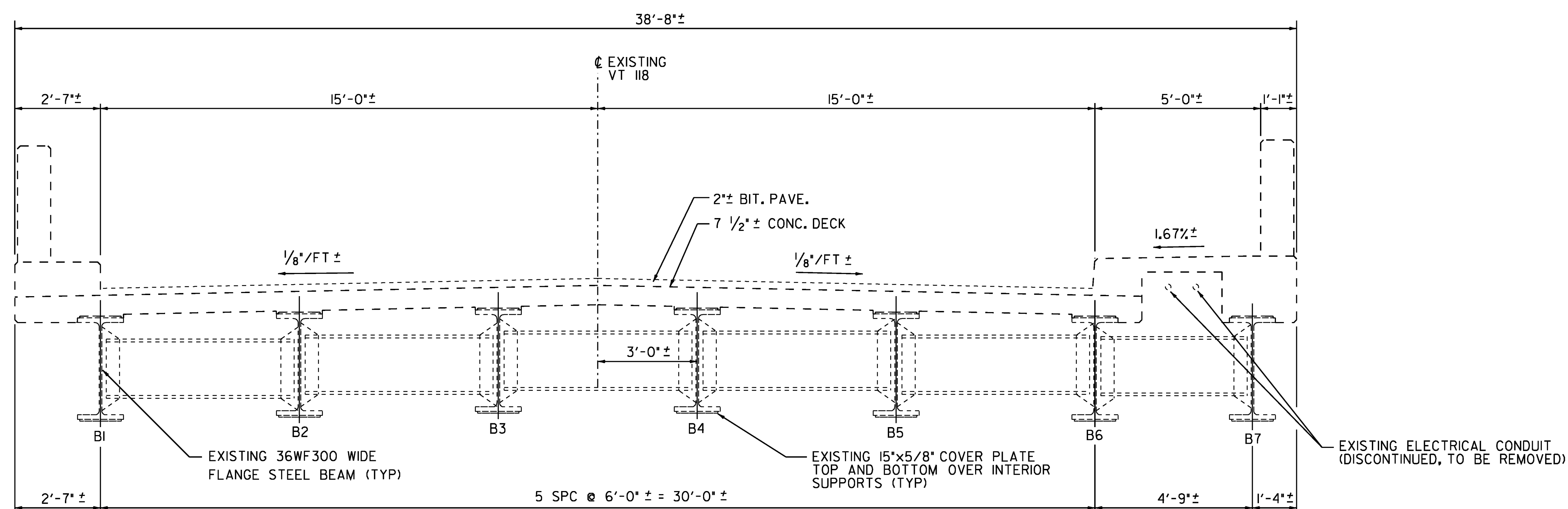
Town Of <u>BERKSHIRE</u>	Bridge No. <u>30</u>
Highway No. <u>VT 118</u>	Log Sta. <u></u>
Surv. Sta. <u></u>	
<u>VT 118 OVER MISSISSQUOI RIVER</u>	
<u>GENERAL PLAN AND ELEVATION</u>	
Designed By <u>J Howe</u>	Drawn By <u>J Davis</u>
Checked By <u>R Hebert</u>	Bridge Design Supervisor <u></u>
Date <u>4/2/09</u>	Date <u></u>
PROJECT <u>BERKSHIRE</u>	PROJECT NO. <u>BHF 0283(9)S</u>
I.G.C. Info. <u>ZC304PELDGN</u>	
Bridge Sheet No. <u></u>	Sheet <u>12</u> of <u>41</u>



NOTE:
CURB, SIDEWALK, AND 8 1/2" DECK CONCRETE SHALL BE SPECIAL PROVISION - HIGH PERFORMANCE CONCRETE, CLASS A, LOW CEMENT.

PROPOSED TYPICAL SECTION

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



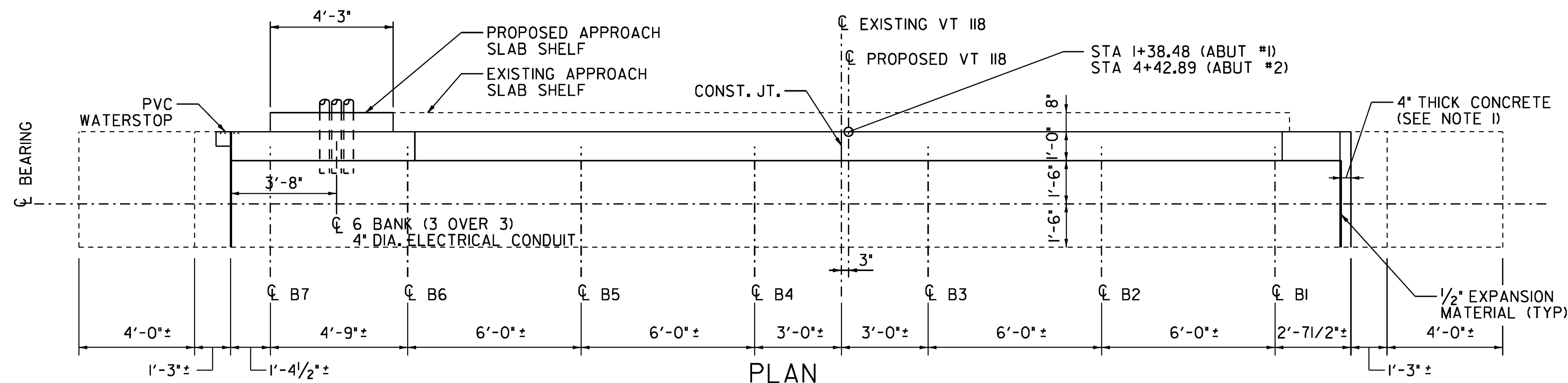
EXISTING TYPICAL SECTION

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

NOTE: PAYMENT FOR REMOVAL OF EXISTING ELECTRICAL CONDUIT SHALL BE INCIDENTAL TO ITEM 529.20 "PARTIAL REMOVAL OF STRUCTURE".

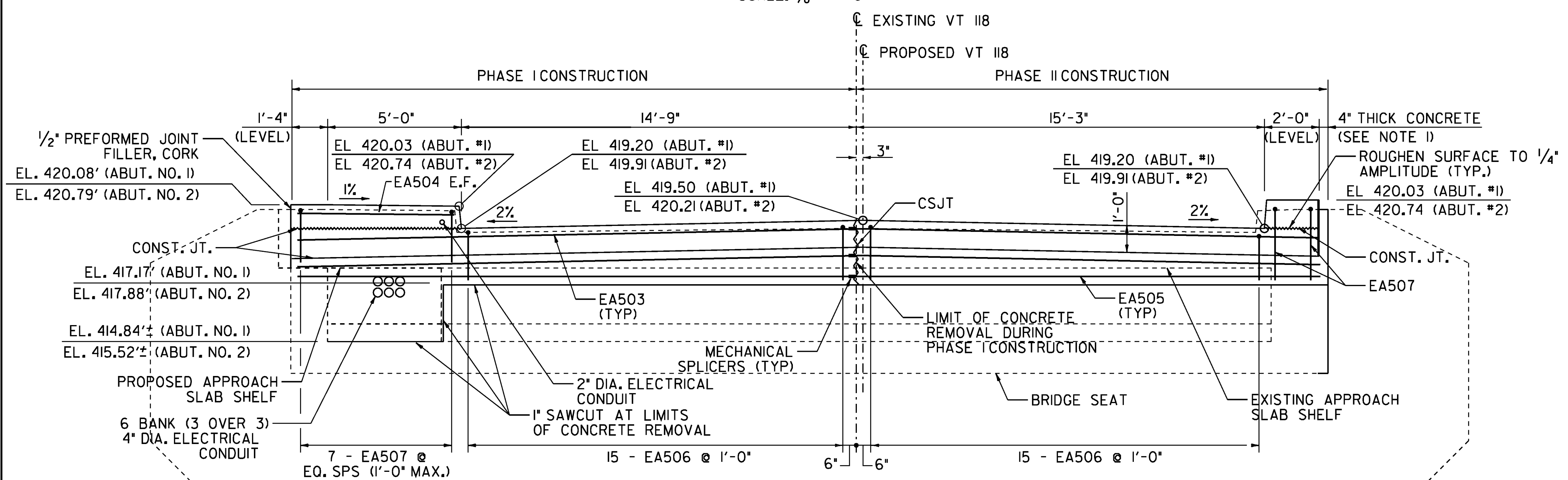
STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	
VT 118 OVER MISSISSQUOI RIVER			
BRIDGE TYPICAL SECTIONS			
Designed By	J. Howe	Drawn By	J. Davis
Checked By	R. Hebert	Bridge Design Supervisor	
	4/2/09	Date	
PROJECT	BERKSHIRE	PROJECT NO.	BHF 0283(9)S
I.G.C. Info.		ZC304TYLDGN	
Bridge Sheet No.		Sheet 13 of 41	



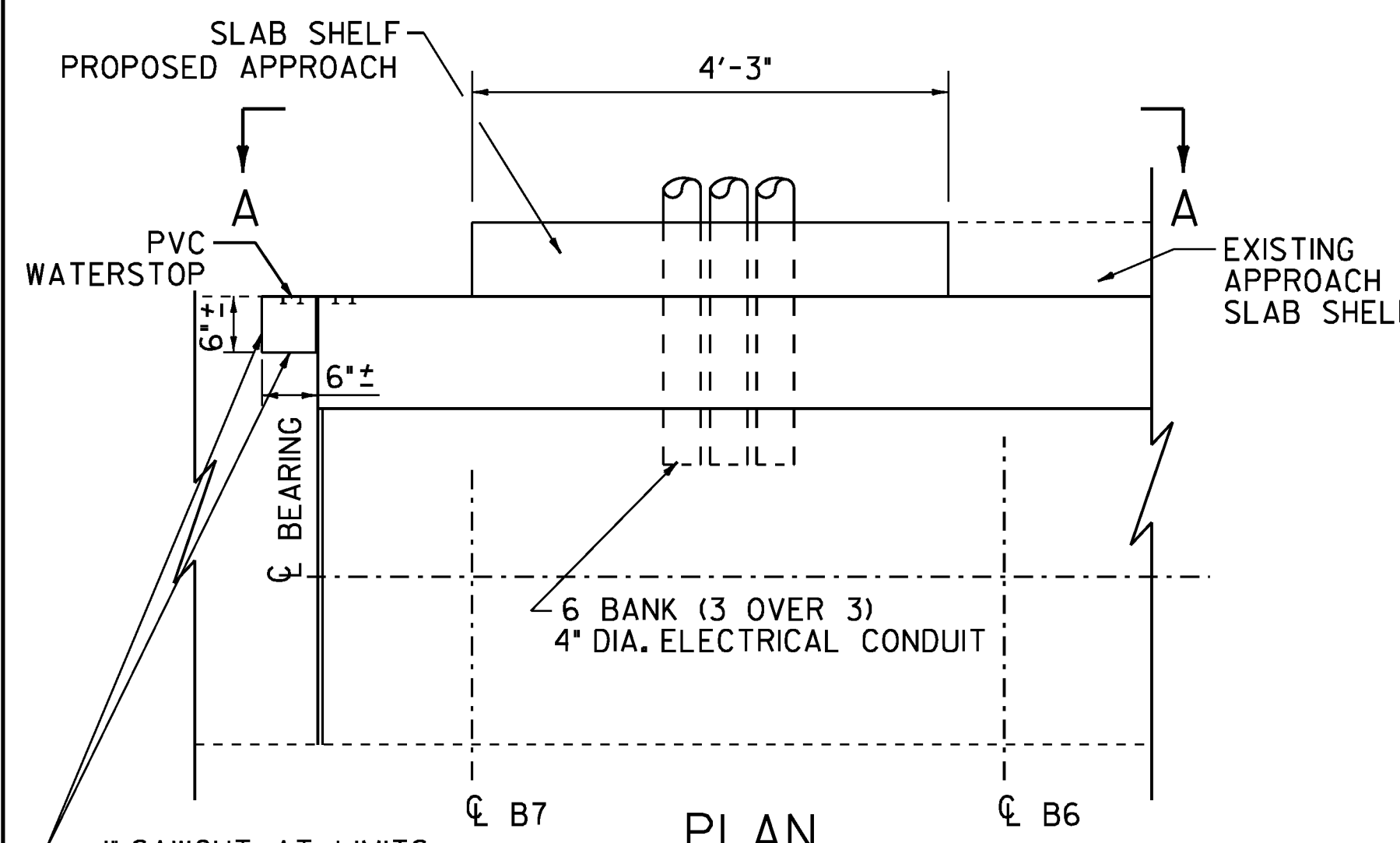
PLAN

ABUTMENT NO. 1 SHOWN
ABUTMENT NO. 2 SIM/OPP HAND
SCALE: 3/8" = 1'-0"



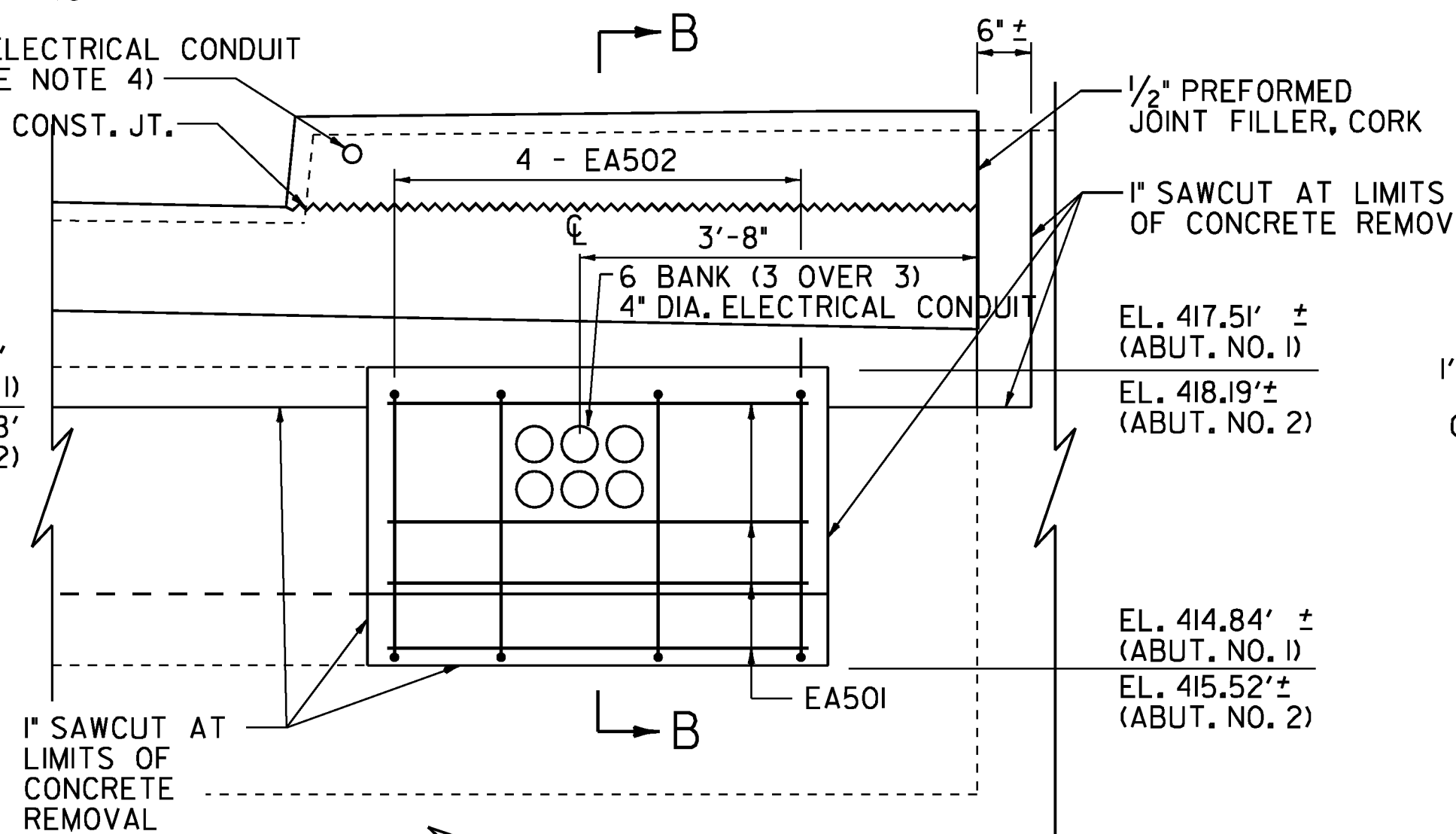
ELEVATION

ABUTMENT NO. 1 SHOWN
ABUTMENT NO. 2 SIM/OPP HAND
SCALE: 3/8" = 1'-0"



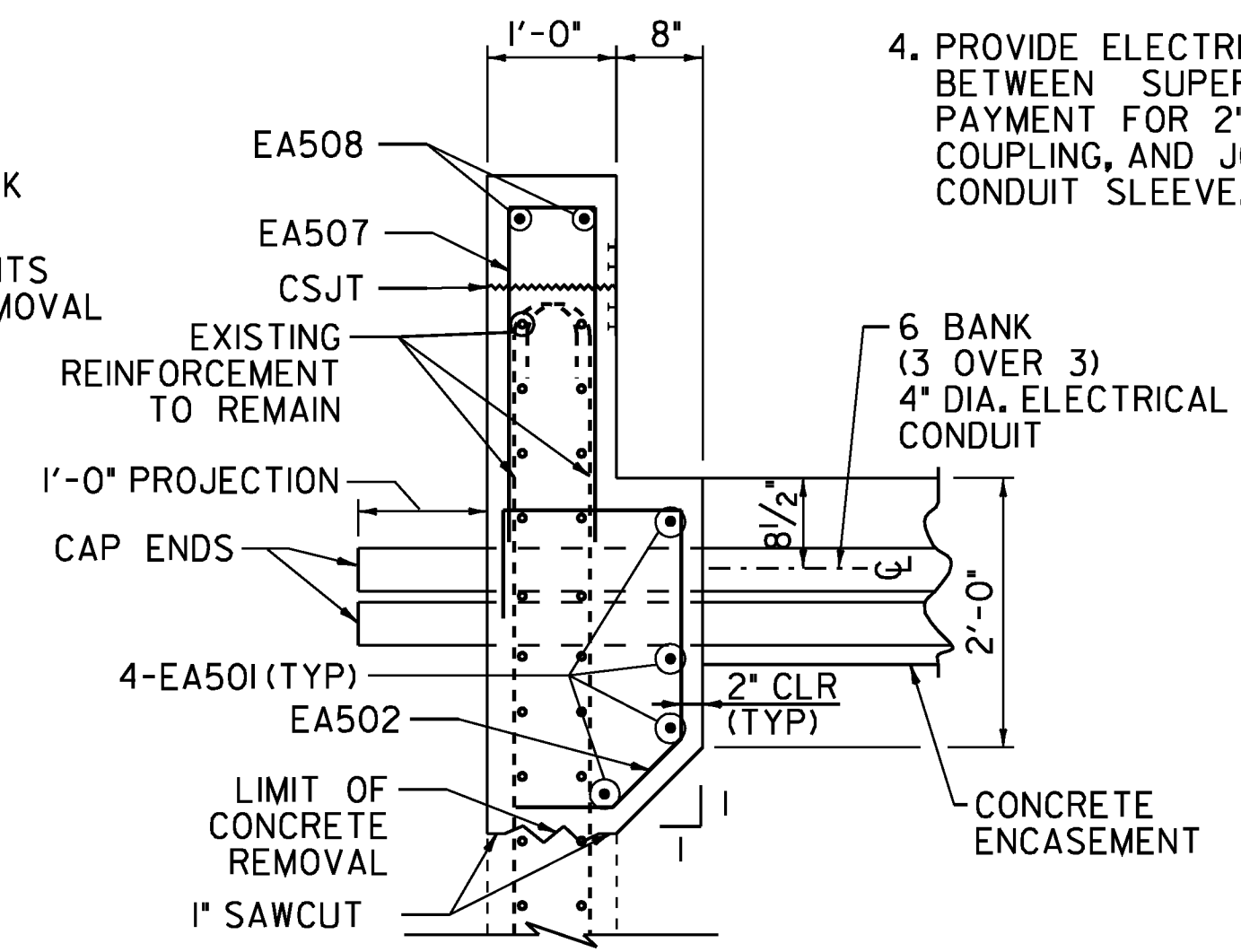
PLAN

ABUTMENT NO. 1 SHOWN
ABUTMENT NO. 2 SIM/OPP HAND
SCALE: 3/4" = 1'-0"



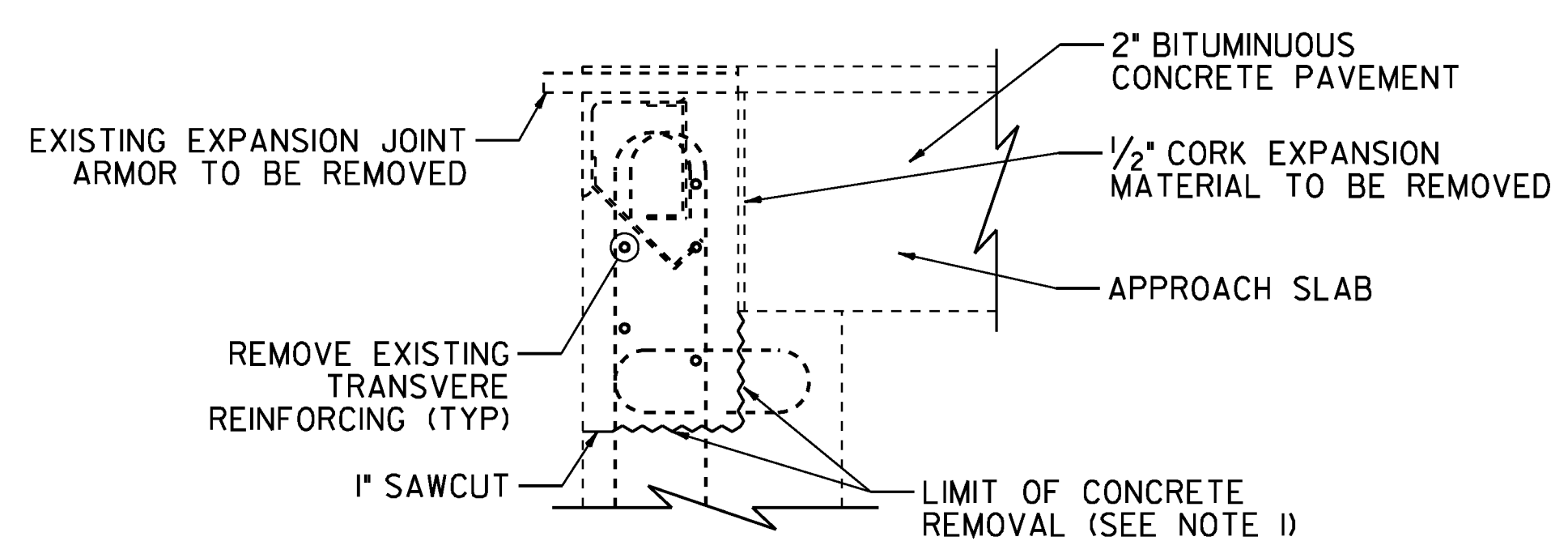
ELEVATION A-A

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



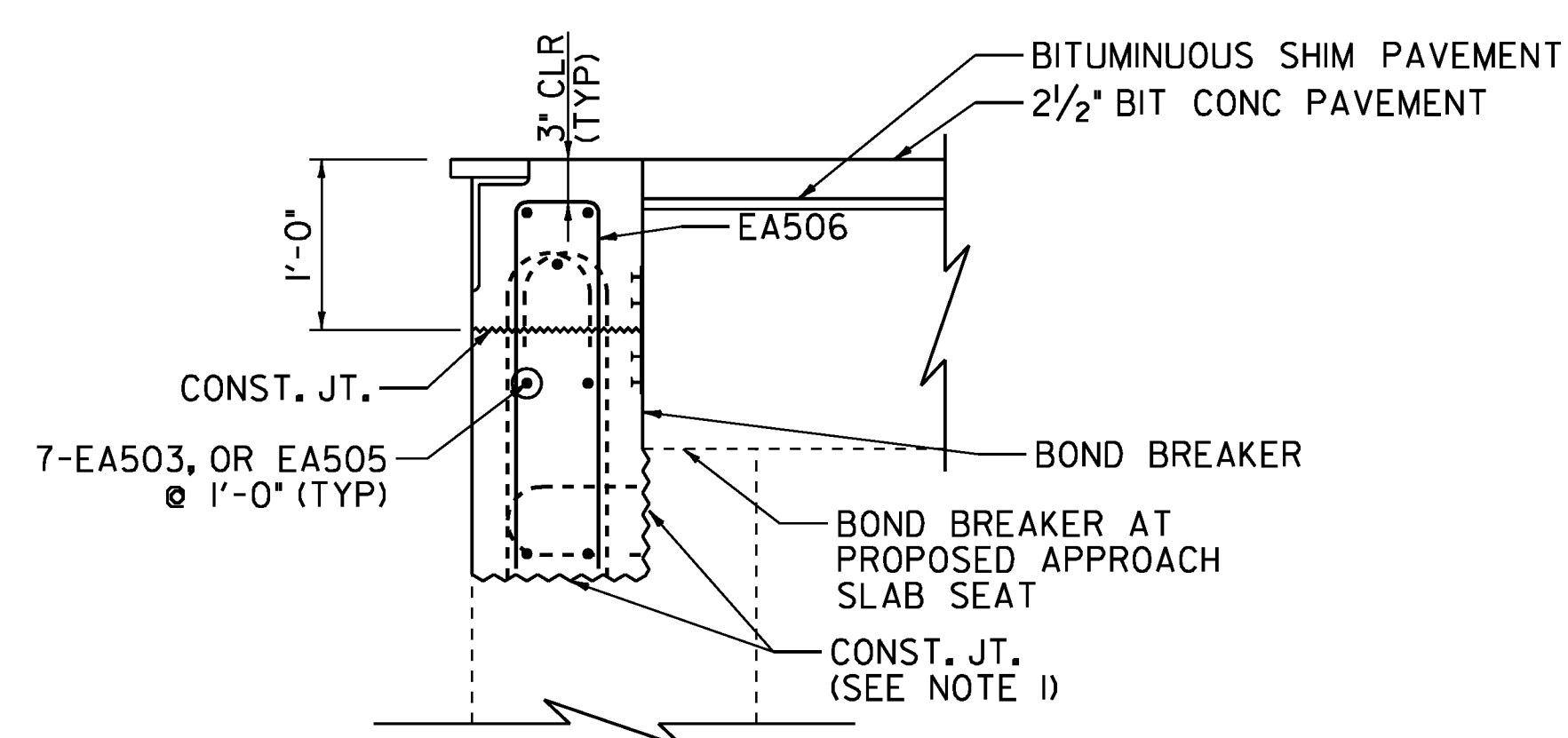
SECTION B-B

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



TYPICAL EXISTING ABUTMENT SECTION

SCALE: 1" = 1'-0"

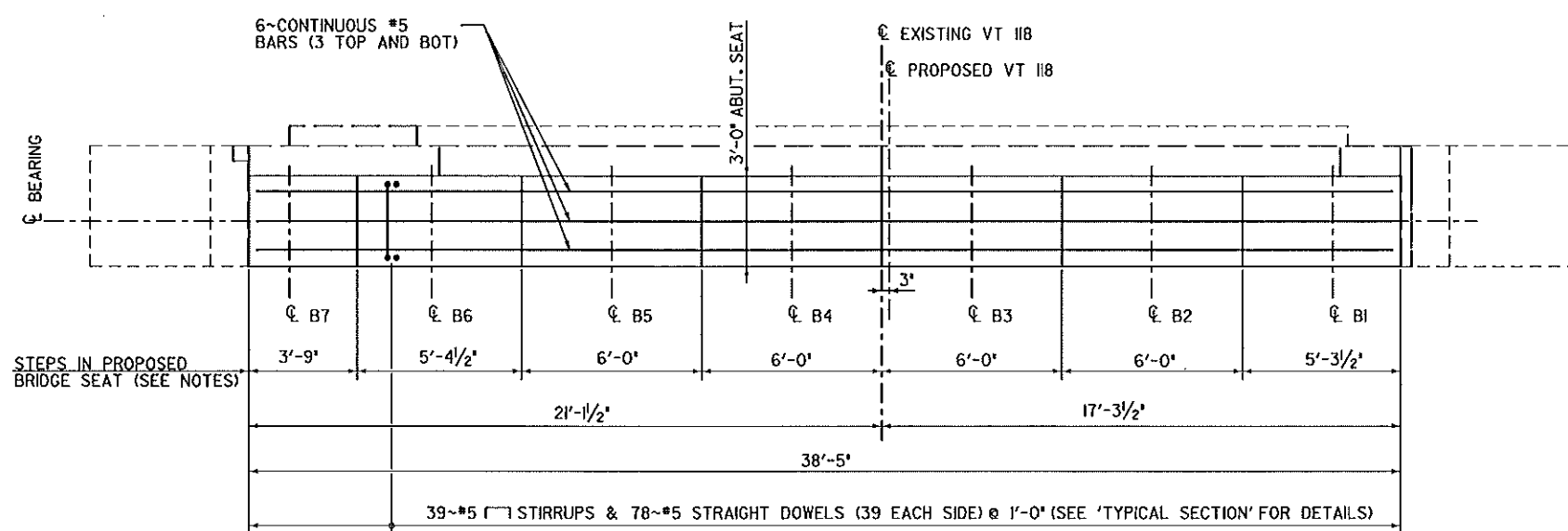


TYPICAL PROPOSED ABUTMENT SECTION

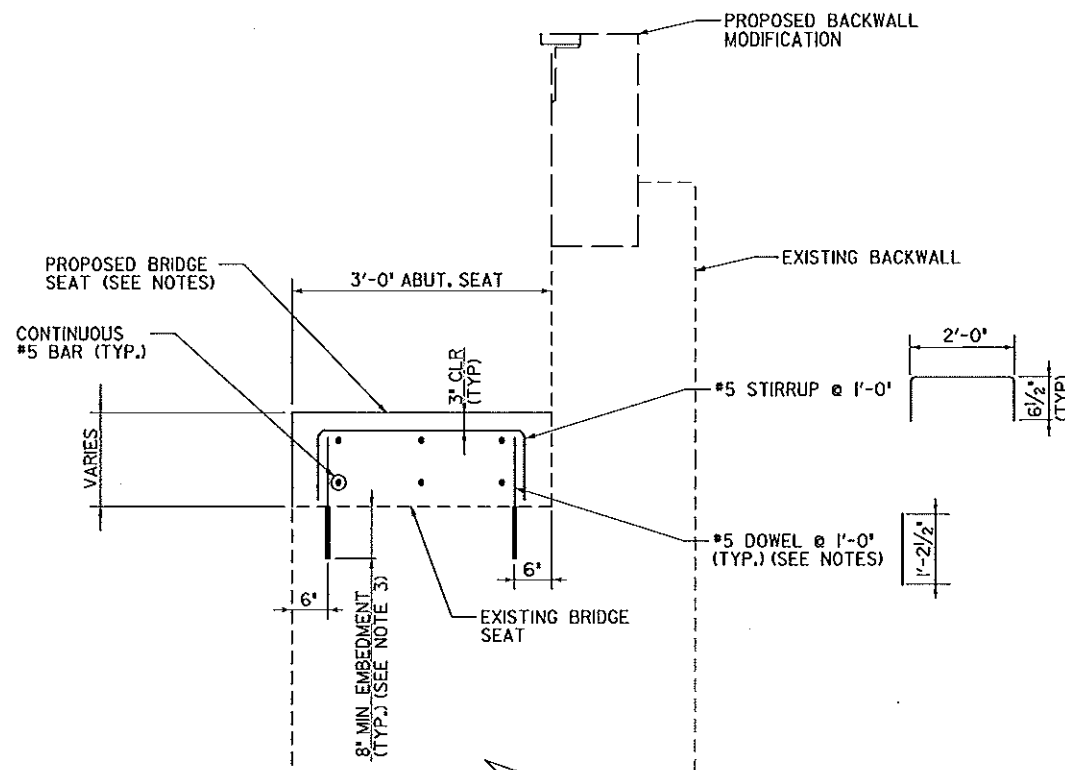
SCALE: 1" = 1'-0"

- NOTE:
1. APPLY EPOXY BONDING COMPOUND PRIOR TO PLACING CONCRETE, INCIDENTAL TO ITEM 900.608 SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE CLASS A LOW CEMENT).
 2. ALL DIMENSIONS ARE APPROXIMATE AND MUST BE FIELD VERIFIED. IN CASES WHERE FIELD DIMENSIONS DIFFER, MATCH EXISTING.
 3. ELEVATIONS SHOWN AT ENDS OF BRIDGE:
STA. 1+38.48 ABUT. #1
STA. 4+42.89 ABUT. #2
 4. PROVIDE ELECTRICAL CONDUIT EXPANSION COUPLING AND JOINT SEAL BETWEEN SUPERSTRUCTURE SIDEWALK AND ABUTMENT BACKWALL. PAYMENT FOR 2" DIA. ELECTRICAL CONDUIT, CONDUIT EXPANSION COUPLING, AND JOINT SEAL SHALL BE UNDER ITEM 678.30, ELECTRICAL CONDUIT SLEEVE.

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	
VT 118 OVER MISSISSQUOI RIVER			
ABUTMENT MODIFICATION DETAILS			
Designed By	J Howe	Drawn By	J Davis
Checked By	R HEBERT	Bridge Design Supervisor	
	4/2/09	Date	
PROJECT	BERKSHIRE	PROJECT NO.	BHF 0283(9)S
I.G.C. Info.	ZC304ABLDGN		
Bridge Sheet No.	Sheet 14 of 41		



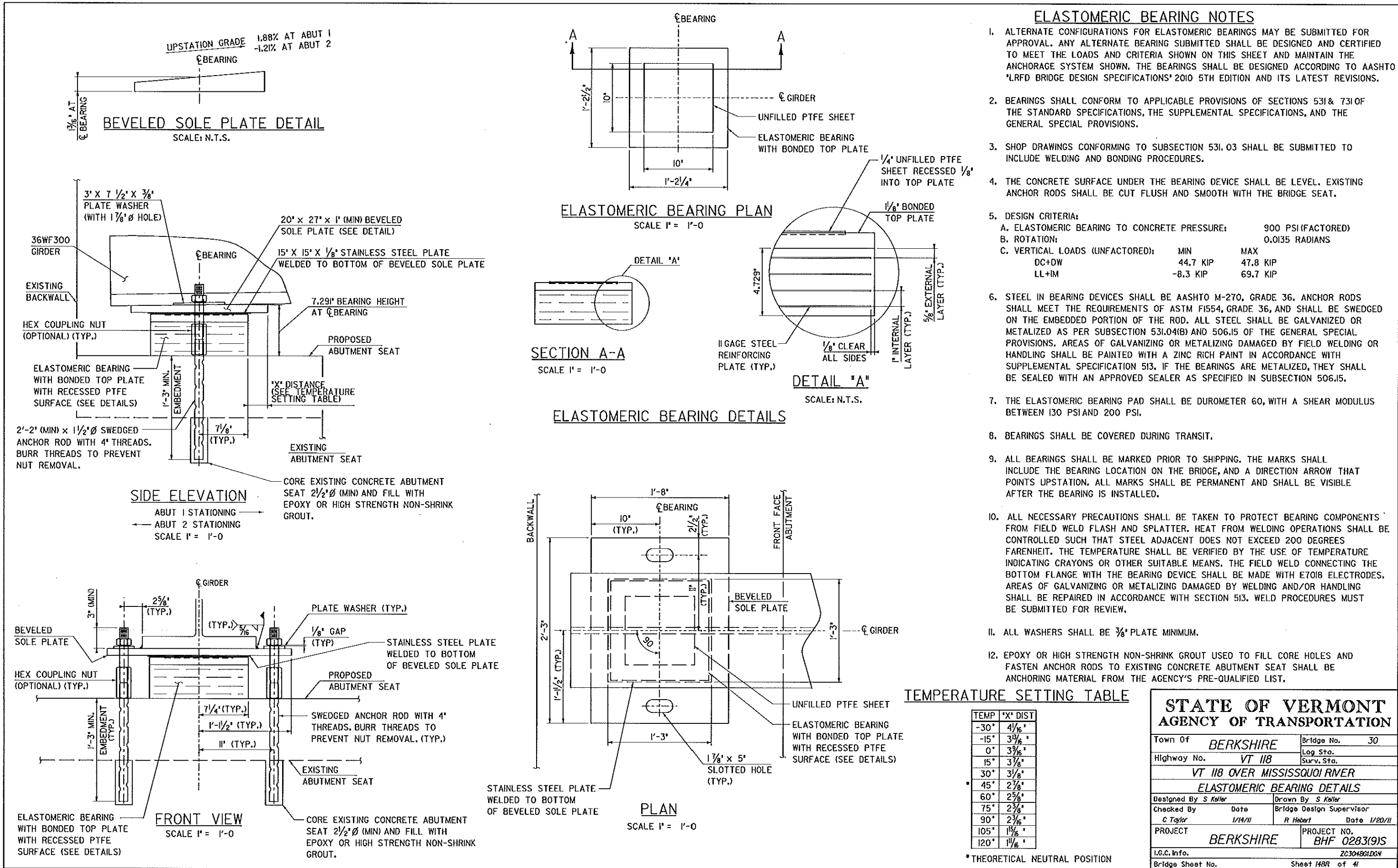
PLAN
ABUTMENT NO. 1 SHOWN
ABUTMENT NO. 2 SIM/OPP HAND
SCALE: 1/4" = 1'-0"



TYPICAL SECTION
SCALE: 1" = 1'-0"

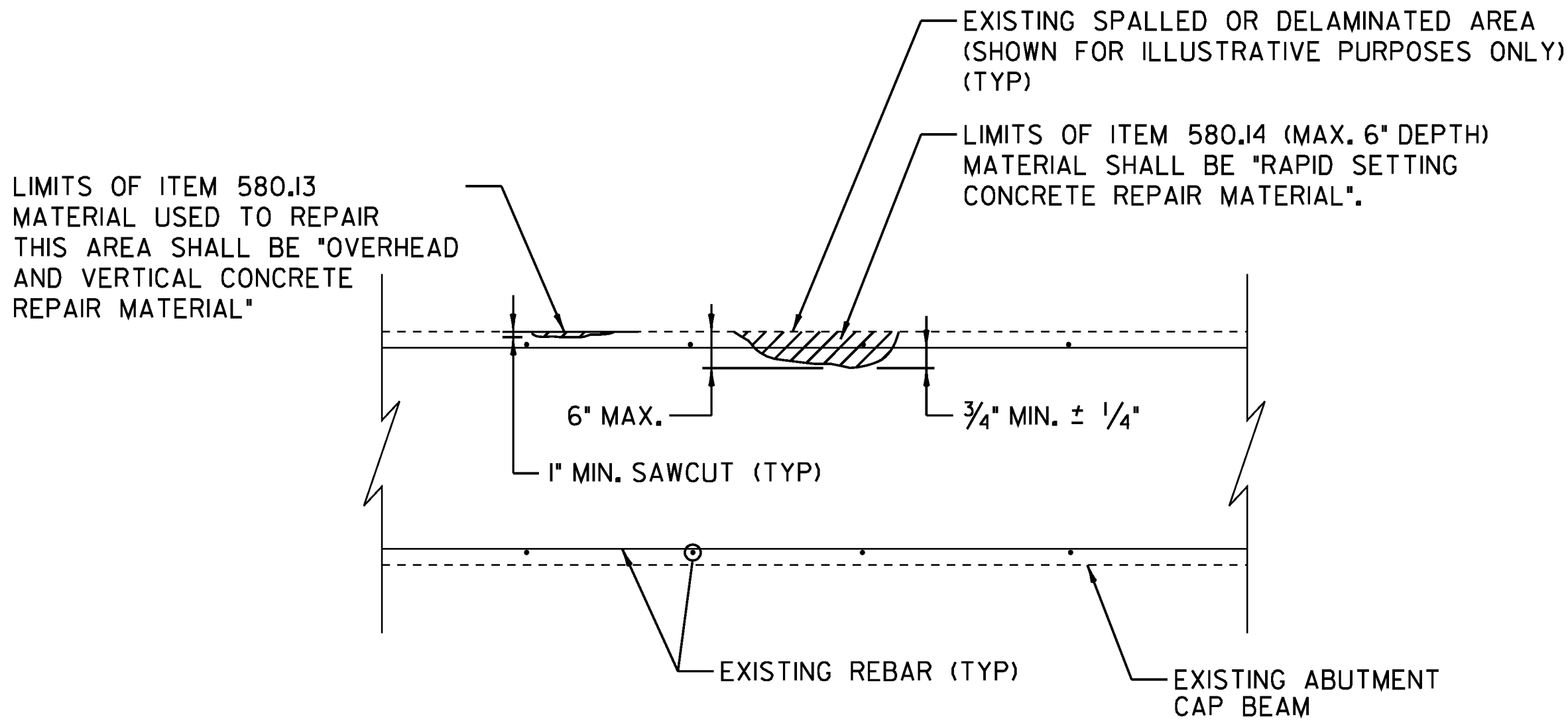
- NOTES:
- EXISTING GROUND ELEVATIONS AT BEARING SHALL BE SURVEYED PRIOR TO JACKING. PROPOSED BEAM SEAT STEP ELEVATIONS SHALL BE SET A DISTANCE EQUAL TO THE PROPOSED BEARING HEIGHT BELOW THE SURVEYED BOTTOM OF GROUND ELEVATION AT EACH GROUND.
 - SEE 'ELASTOMERIC BEARING DETAILS' SHEET FOR PROPOSED BEARING DETAILS.
 - DOWELS SHALL BE DRILLED AND ANCHORED TO EXISTING CONCRETE ABUTMENT SEAT USING HILTI HIT-HY 150 FAST CURRING ADHESIVE ANCHORING SYSTEM OR AN APPROVED EQUAL ADHESIVE ANCHORING SYSTEM. DOWELS SHALL BE INSTALLED IN ACCORDANCE WITH ADHESIVE ANCHORING SYSTEM MANUFACTURER'S INSTRUCTIONS.

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT 118	Log. Sta.	
		Surv. Sta.	
VT 118 OVER MISSISSQUOI RIVER			
ABUTMENT SEAT MODIFICATION DETAILS			
Designed By	S. Kolar	Drawn By	S. Kolar
Checked By	C. Taylor	Bridge Design Supervisor	
DATE	1/1/2011	DATE	1/20/11
PROJECT	BERKSHIRE	PROJECT NO.	BHP 02833/S
LOG. INFO.		DATE	1/20/11
Bridge Sheet No.		Sheet	MAN of 4



EXISTING SUBSTRUCTURE CONCRETE REPAIR NOTES:

1. THIS WORK SHALL INCLUDE REMOVAL AND DISPOSAL OF UNSOUND AND DELAMINATED CONCRETE FROM ALL ABUTMENTS AS DIRECTED BY THE ENGINEER. THE PREPARED SURFACES SHALL BE THOROUGHLY SANDBLASTED TO REMOVE ALL LOOSE MATERIAL AND ANY CONTAMINANTS OR EFFLORESCENCE. THE REINFORCING STEEL (IF EXPOSED), SHALL BE SANDBLASTED. THE MATERIAL USED TO FILL A PATCH SHALL BE PLACED AND FINISHED OR FORMED SO THAT THE FINAL SURFACE WILL HAVE THE SAME SCORE MARKS AND EXTERIOR FACE APPEARANCE AS THE ORIGINAL SURFACES BEING REPAIRED. THE SURFACE SHALL BE THOROUGHLY WETTED PRIOR TO PLACEMENT, THE SURFACE SHALL BE COATED WITH NEAT CEMENT PASTE, MIXED TO THE CONSISTENCY OF THICK LATEX PAINT, AND THOROUGHLY BRUSHED INTO THE SURFACE. WHEN "OVERHEAD AND VERTICAL CONCRETE REPAIR MATERIAL" CONFORMING TO SECTION 780.02 IS USED, THE BONDING AGENT, (IF ANY REQUIRED) AND ITS APPLICATION PROCEDURE SHALL COMPLY WITH THE REQUIREMENTS OF THE PATCHING MATERIAL MANUFACTURER. PAYMENT FOR BONDING AGENT WILL BE INCIDENTAL TO ITEM 580.I3, 580.I4 OR 580.I5.
2. THE LIMITS FOR REMOVAL OF CONCRETE UNDER THE ITEM 580.I3, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I" SHALL BE FROM THE EXISTING CONCRETE SURFACE TO A MAXIMUM DEPTH OF THE OUTSIDE FACE OF THE FIRST MAT OF REINFORCING STEEL. ALL WORK AND MATERIALS NECESSARY FOR PREPARING A PATCH AND FILLING IT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 580.I3, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I". THE FILLING MATERIAL SHALL BE "OVERHEAD AND VERTICAL CONCRETE REPAIR MATERIAL" CONFORMING TO SUBSECTION 780.02. THE EDGES OF ALL PATCHES SHALL BE SAW CUT IN STRAIGHT LINES TO A MINIMUM DEPTH OF 1 INCH. IF MORE THAN 1/4 INCH OF THE REBAR IS EXPOSED, OR THE BOND BETWEEN THE REBAR AND THE CONCRETE IS BROKEN, THEN PROCEED TO ITEM 580.I4, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II".
3. THE LIMITS FOR REMOVAL OF CONCRETE UNDER THE ITEM 580.I4, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II" SHALL BE FROM THE EXISTING CONCRETE SURFACE TO A MINIMUM DEPTH OF 3/4 INCH +/- 1/4 INCH INSIDE THE INSIDE FACE OF THE FIRST MAT OF REINFORCING STEEL AND TO A MAXIMUM DEPTH OF 6 INCHES FROM THE EXISTING CONCRETE SURFACE. ALL WORK AND MATERIALS NECESSARY FOR PREPARING A PATCH AND FILLING IT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 580.I4, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II". THE FILLING MATERIAL SHALL BE "RAPID SETTING CONCRETE REPAIR MATERIAL" CONFORMING TO SUBSECTION 780.03. THE EDGES OF ALL PATCHES SHALL BE SAW CUT IN STRAIGHT LINES TO A MINIMUM DEPTH OF 1 INCH.
4. THE LIMITS FOR REMOVAL OF CONCRETE UNDER THE ITEM 580.I5, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III" SHALL BE FROM THE EXISTING CONCRETE SURFACE TO A DEPTH OF GREATER THAN 6 INCHES. ALL WORK AND MATERIALS NECESSARY FOR PREPARING A PATCH AND FILLING IT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 580.I5, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III". THE FILLING MATERIAL SHALL BE "RAPID SETTING CONCRETE REPAIR MATERIAL WITH COURSE AGGREGATE" CONFORMING TO SUBSECTION 780.04. THE EDGES OF ALL PATCHES SHALL BE SAW CUT IN STRAIGHT LINES TO A MINIMUM DEPTH OF 1 INCH.
5. IF PNEUMATICALLY APPLIED CONCRETE IS SELECTED FOR REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II OR III, THEN THIS TYPE OF CONCRETE REPAIR SHALL BE CONFINED ONLY TO VERTICAL AND OVERHEAD SURFACES OF THE SUBSTRUCTURE. ALSO, THE BRIDGE AND BEAMS SHOULD BE COMPLETELY PROTECTED FROM REBOUND MATERIAL DURING PNEUMATICALLY APPLIED CONCRETE APPLICATION PROCEDURES.
6. THE ENGINEER SHALL ORDER REPLACEMENT OF ANY SUBSTRUCTURE REINFORCING STEEL THAT IS DETERIORATED (WITH MORE THAN 25% SECTION LOSS) WITH NEW REINFORCING STEEL OF THE SAME SIZE. ALL REINFORCING STEEL SHALL HAVE AN APPROPRIATE LAP SPLICE. SUBSTRUCTURE REINFORCING STEEL REPLACED WILL NOT BE EPOXY COATED AND WILL BE PAID FOR AT SAME UNIT PRICE AS ITEM 507.I7.

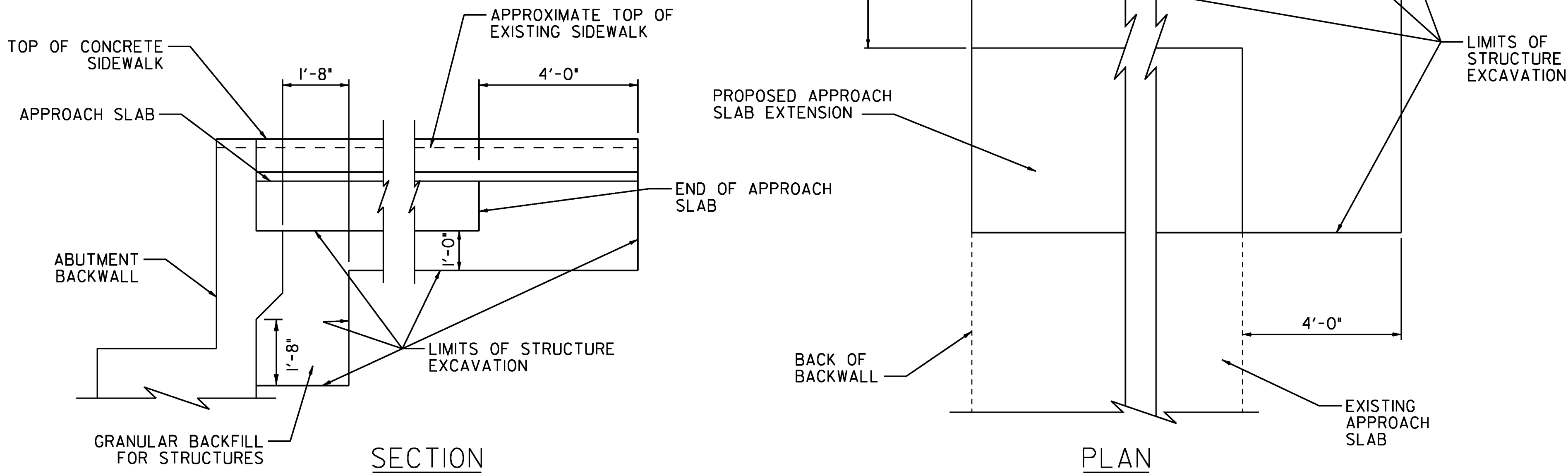


NOTES

1. PLAN VIEW OF EXISTING ABUTMENT CAP BEAM SHOWN.
2. REMOVAL OF EXISTING CONCRETE TO A DEPTH GREATER THAN SPECIFIED FOR ITEM 580.I4 SHALL BE PAID UNDER THE ITEM 580.I5, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III".
3. DETAIL SHOWS LIMIT OF ITEMS 580.I3, 580.I4 AND 580.I5 REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I, CLASS II, OR CLASS III.

CONCRETE SUBSTRUCTURE REPAIR DETAIL

NOT TO SCALE



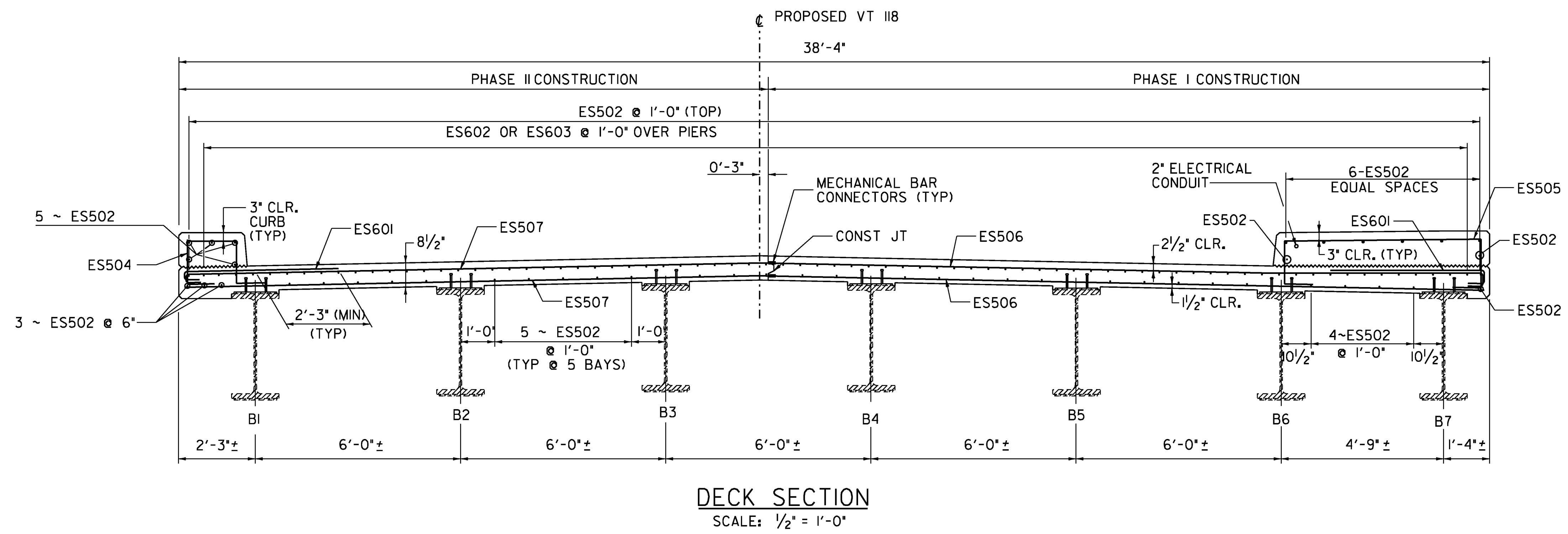
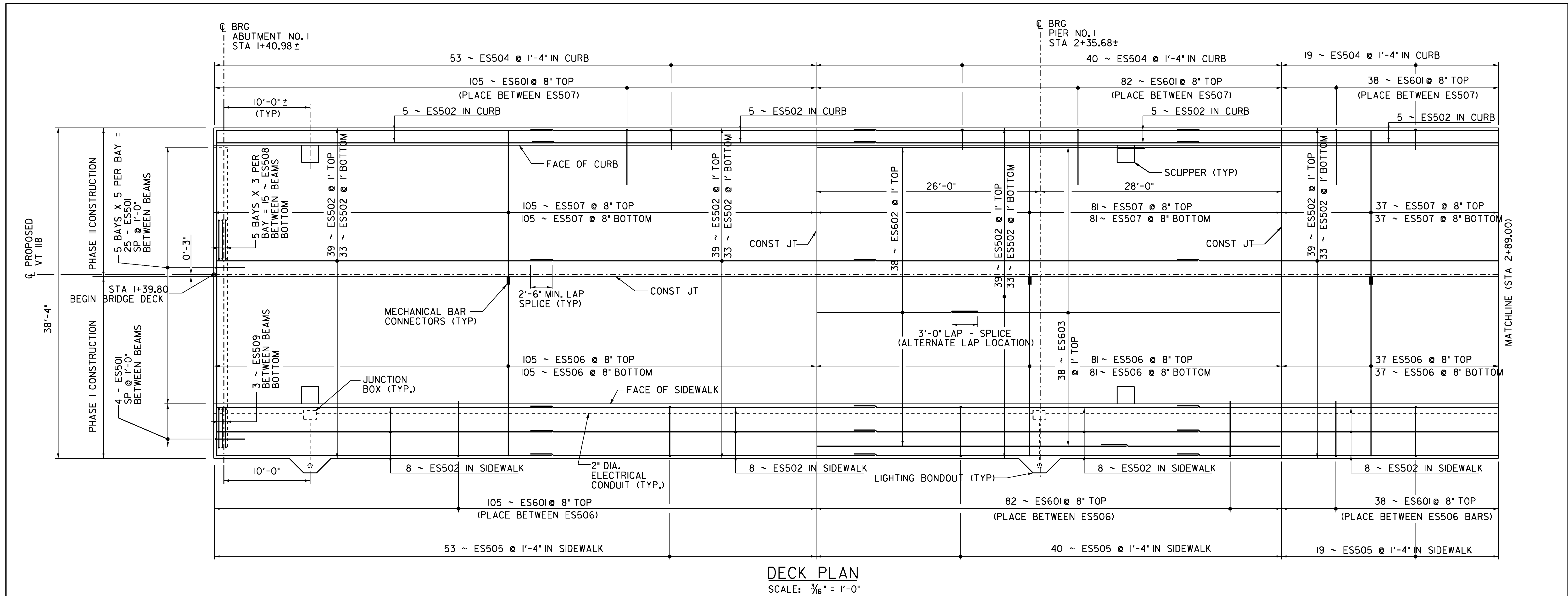
LIMITS OF EXCAVATION DETAILS

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

STATE OF VERMONT
AGENCY OF TRANSPORTATION

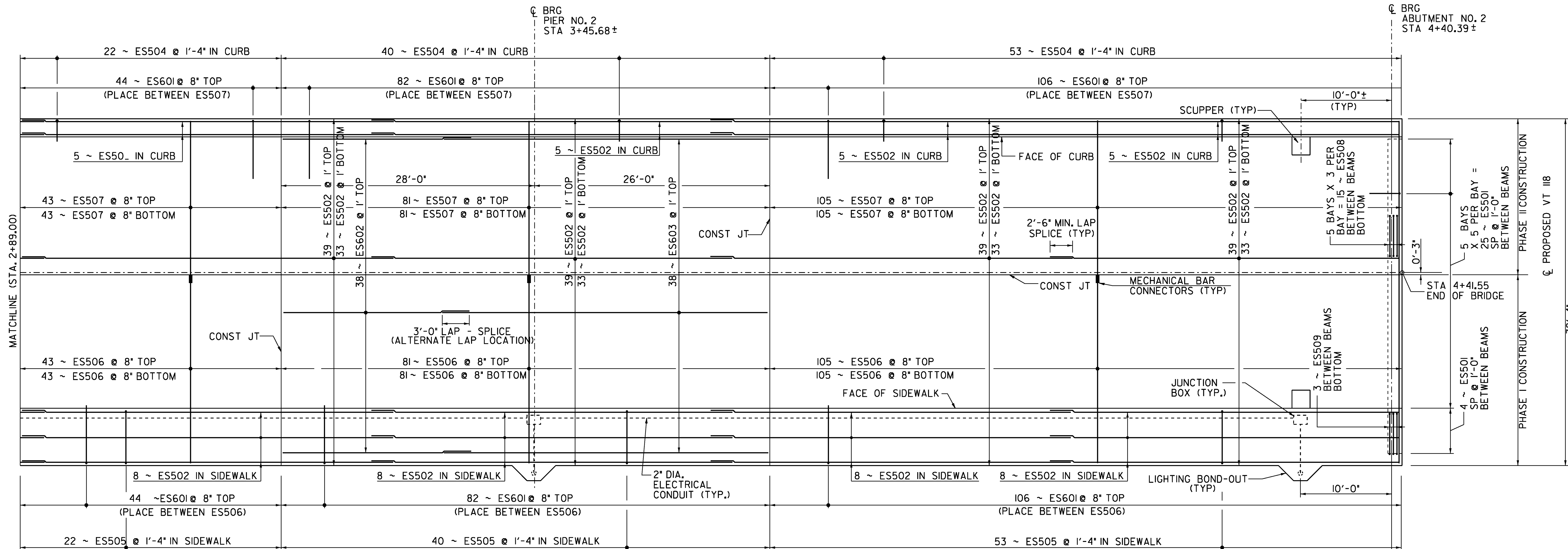
Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	
VT 118 OVER MISSISSQUOI RIVER			
MISCELLANEOUS SUBSTRUCTURE DETAILS			
Designed By	J HOWE	Drawn By	J.Davis
Checked By	R HEBERT	Bridge Design Supervisor	
	4/2/09	Date	
PROJECT	BERKSHIRE	PROJECT NO.	BHF 0283(9)S
I.G.C. Info.	ZC304RMLDGN		
Bridge Sheet No.	Sheet 15 of 41		

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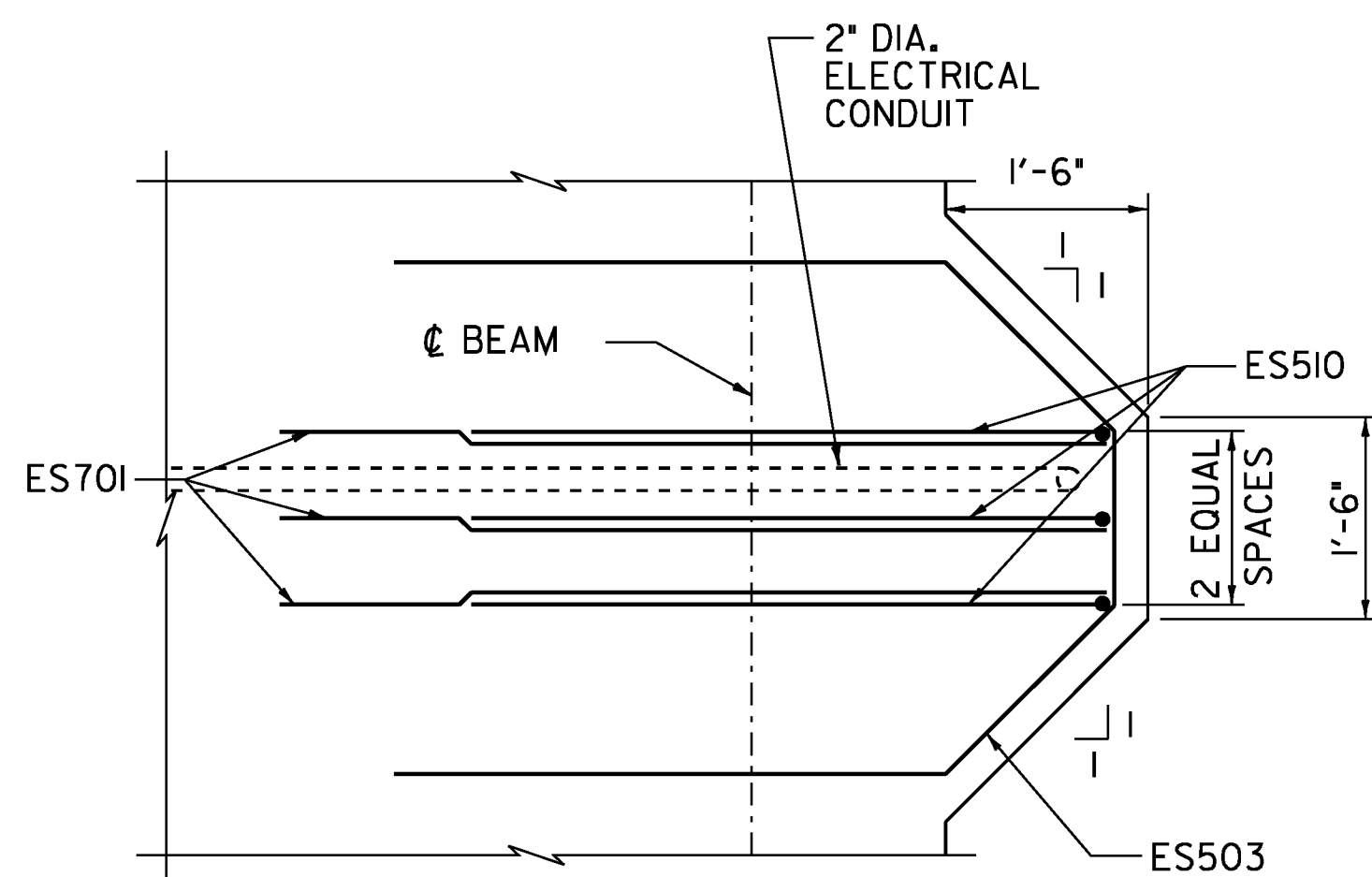


- NOTES:
- FOR ADDITIONAL DECK DETAILS SEE SHEET 18
 - PAYMENT FOR 2" DIA. ELECTRICAL CONDUIT SHALL BE UNDER ITEM 678.30 "ELECTRICAL CONDUIT SLEEVE (2") (PVC)".

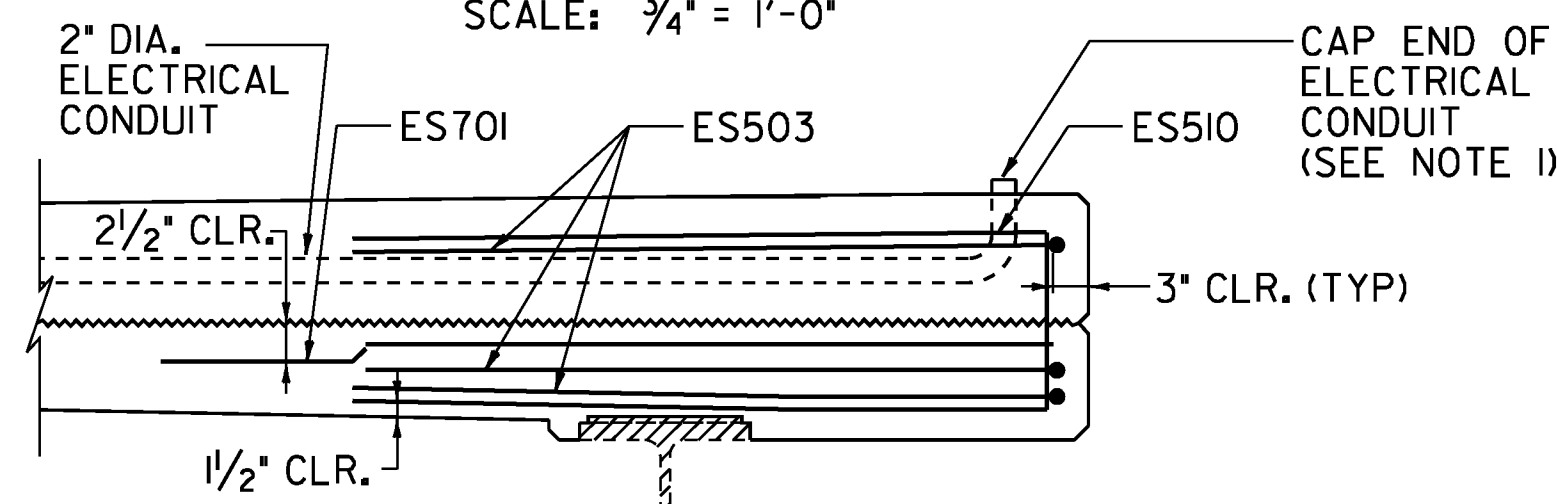
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	
VT 118 OVER MISSISSQUOI RIVER			
DECK REINFORCING PLAN (1)			
Designed By	J Howe	Drawn By	J Davis
Checked By	R Hebert	Date	4/2/09
PROJECT	BERKSHIRE	Bridge Design Supervisor	
		Date	
I.G.C. Info.		PROJECT NO.	BHF 0283(9)S
Bridge Sheet No.			Z304DPLDGN
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DECK PLAN
SCALE: $\frac{3}{16}" = 1'-0"$



LIGHTING BONDOUT PLAN
SCALE: $\frac{3}{4}" = 1'-0"$



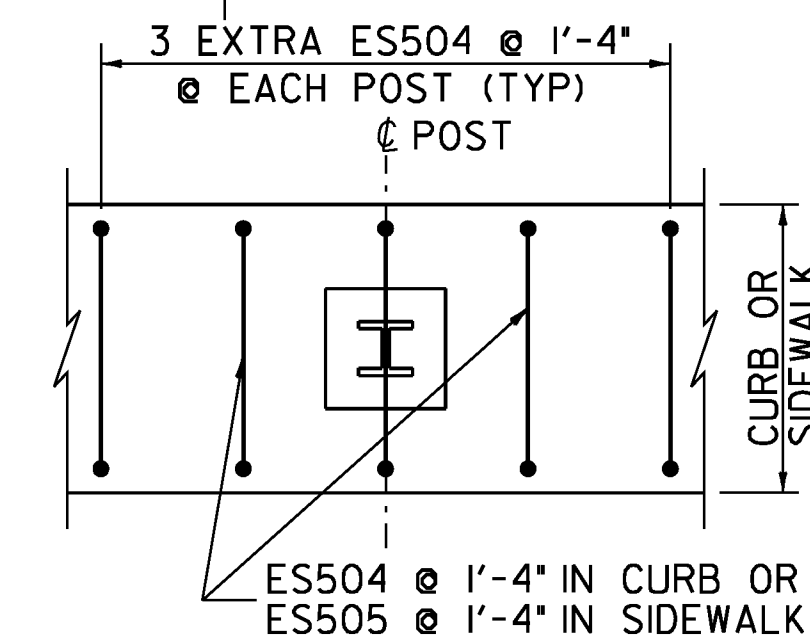
LIGHTING BONDOUT SECTION
SCALE: $\frac{3}{4}" = 1'-0"$

BONDOUT NOTES:

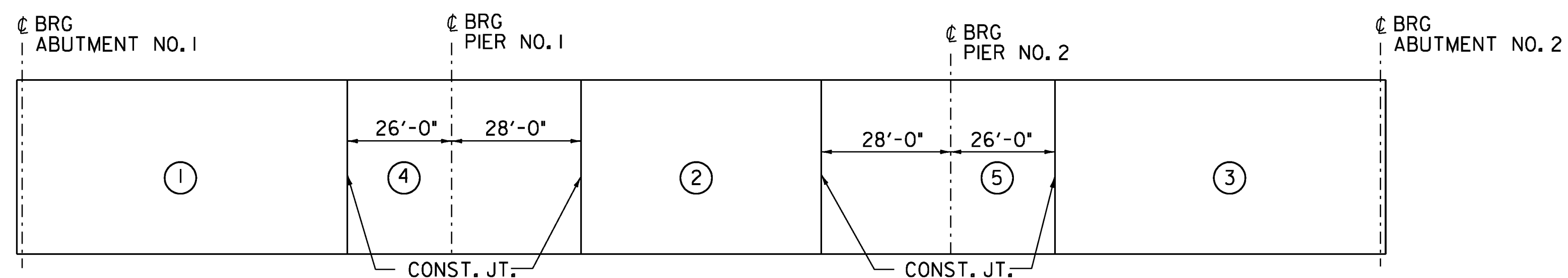
- CONTRACTOR SHALL CAP END OF ELECTRICAL CONDUIT USING METHOD APPROVED BY THE ENGINEER.
- DESIGN CRITERIA:
MAXIMUM POLE HEIGHT = 20'-0"
MAXIMUM DIAMETER = 1'-0"
MAXIMUM POLE WEIGHT = 1,300 LBS.

DECK POUR SEQUENCE NOTES:

- IF APPROVED BY THE ENGINEER, POURS 1, 2, AND 3, OR 4 & 5, MAY BE Poured THE SAME DAY PROVIDED THAT THE MAXIMUM TIME SPAN OF THE POUR IS EIGHT HOURS. THE INDICATED POURING SEQUENCE SHALL BE FOLLOWED AND A RETARDING ADMIXTURE USED SO THAT THE DECK CONCRETE WILL NOT SET UP UNTIL ALL THE POUR HAS BEEN MADE. THE RETARDING ADMIXTURE SHALL BE INCIDENTAL TO ITEM 900.608 SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT).
- TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINTS, AS SHOWN ON SHEET 19, SHALL BE USED BETWEEN ADJACENT DECK POURS.
- ALL INDIVIDUAL DECK POURS SHALL START FROM THE LOW END (RELATIVE TO GRADE).
- THERE SHALL BE A MINIMUM DELAY PERIOD OF 96 HOURS BETWEEN POURS.
- ANY POURING SEQUENCE OTHER THAN INDICATED SHALL BE SUBMITTED, IN WRITING, TO THE STRUCTURES ENGINEERS FOR APPROVAL.



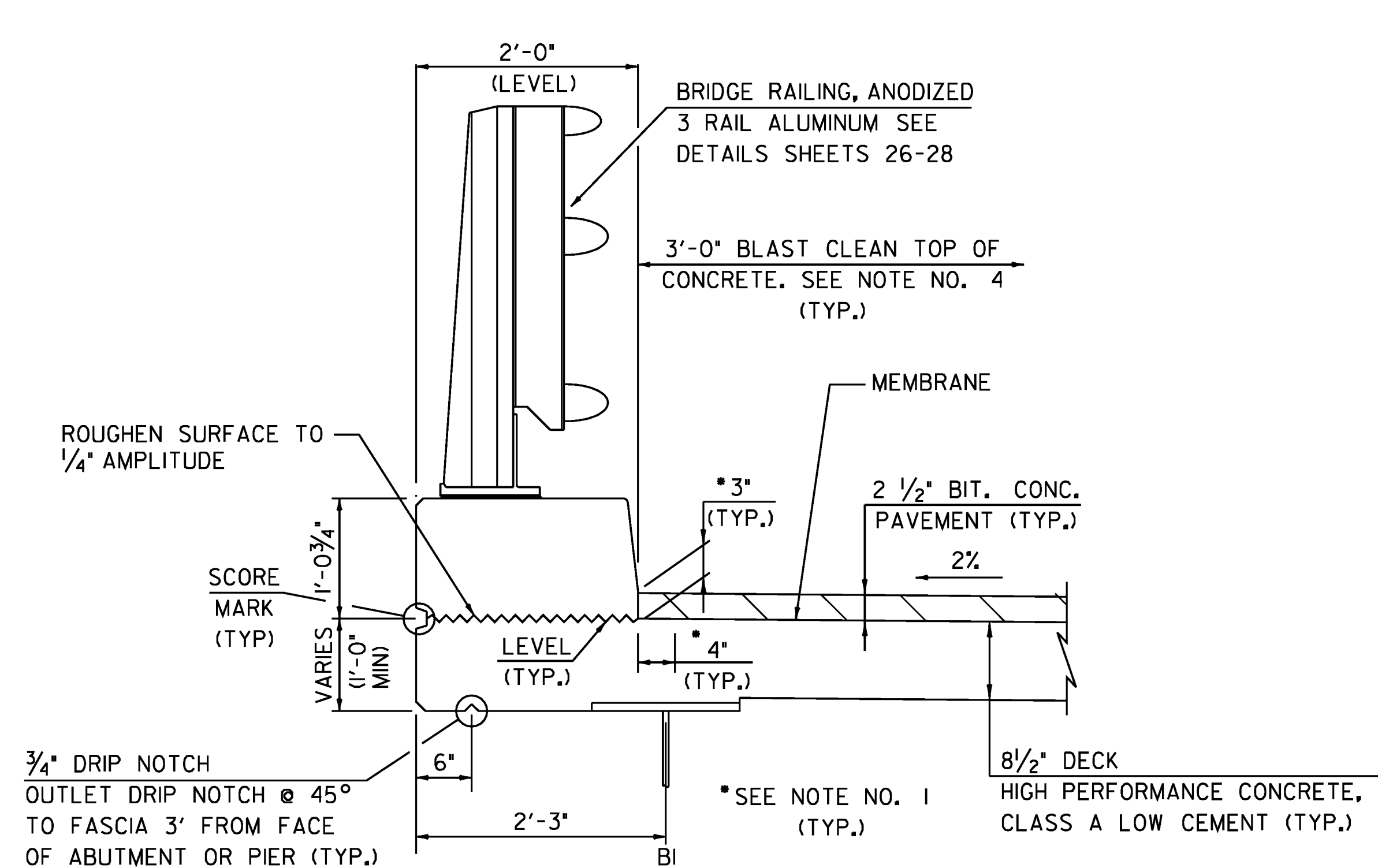
ADDITIONAL REINFORCEMENT
AT BRIDGE RAIL POST
NTS



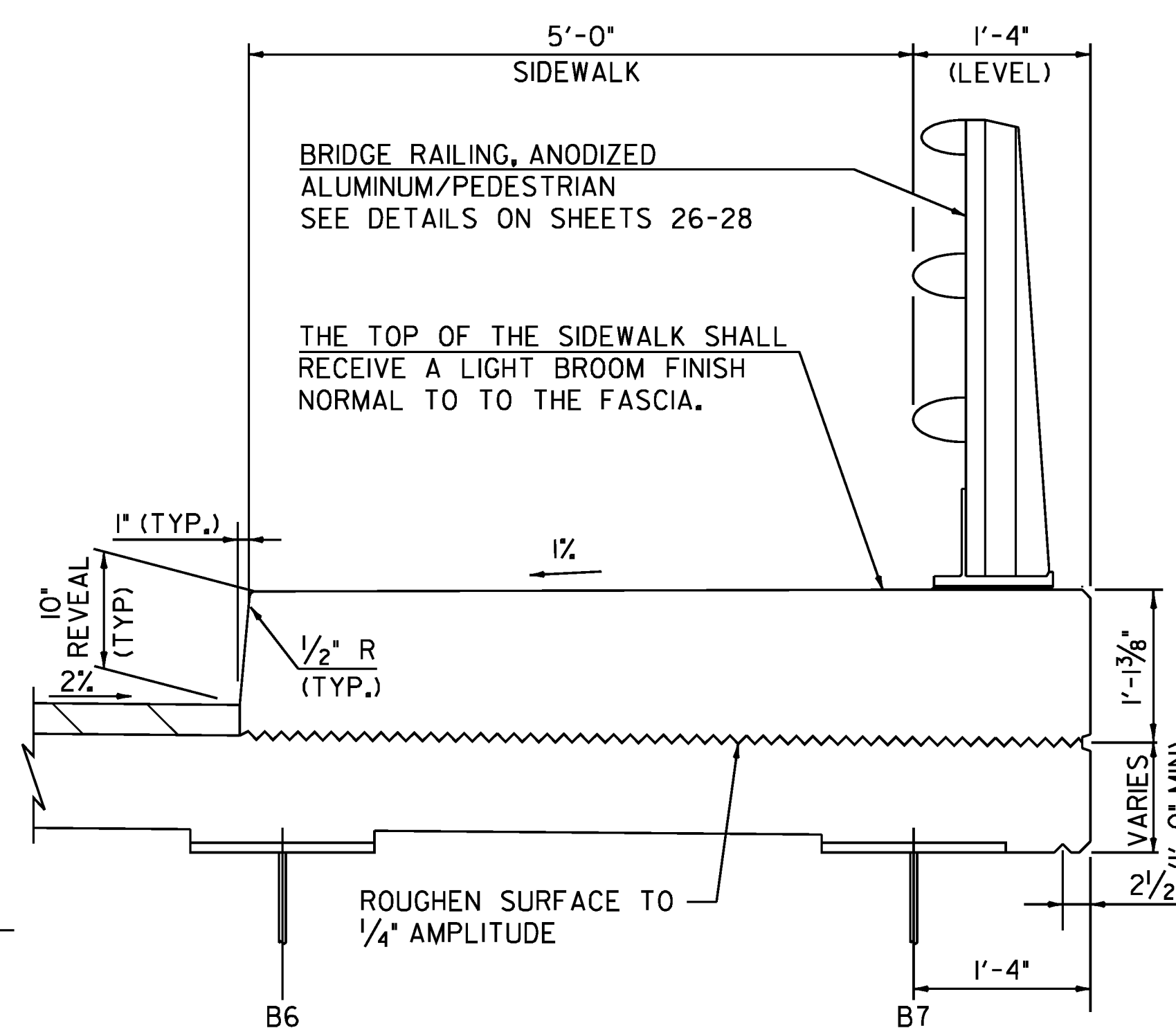
DECK POUR SEQUENCE
NTS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	
VT 118 OVER MISSISSQUOI RIVER			
DECK REINFORCING PLAN (2)			
Designed By	J Howe	Drawn By	J Davis
Checked By	R Hebert	Bridge Design Supervisor	
	4/2/09	Date	
PROJECT	BERKSHIRE	PROJECT NO.	BHF 0283(9)S
I.G.C. Info.			Z304DPLDGN
Bridge Sheet No.		Sheet	18 of 41



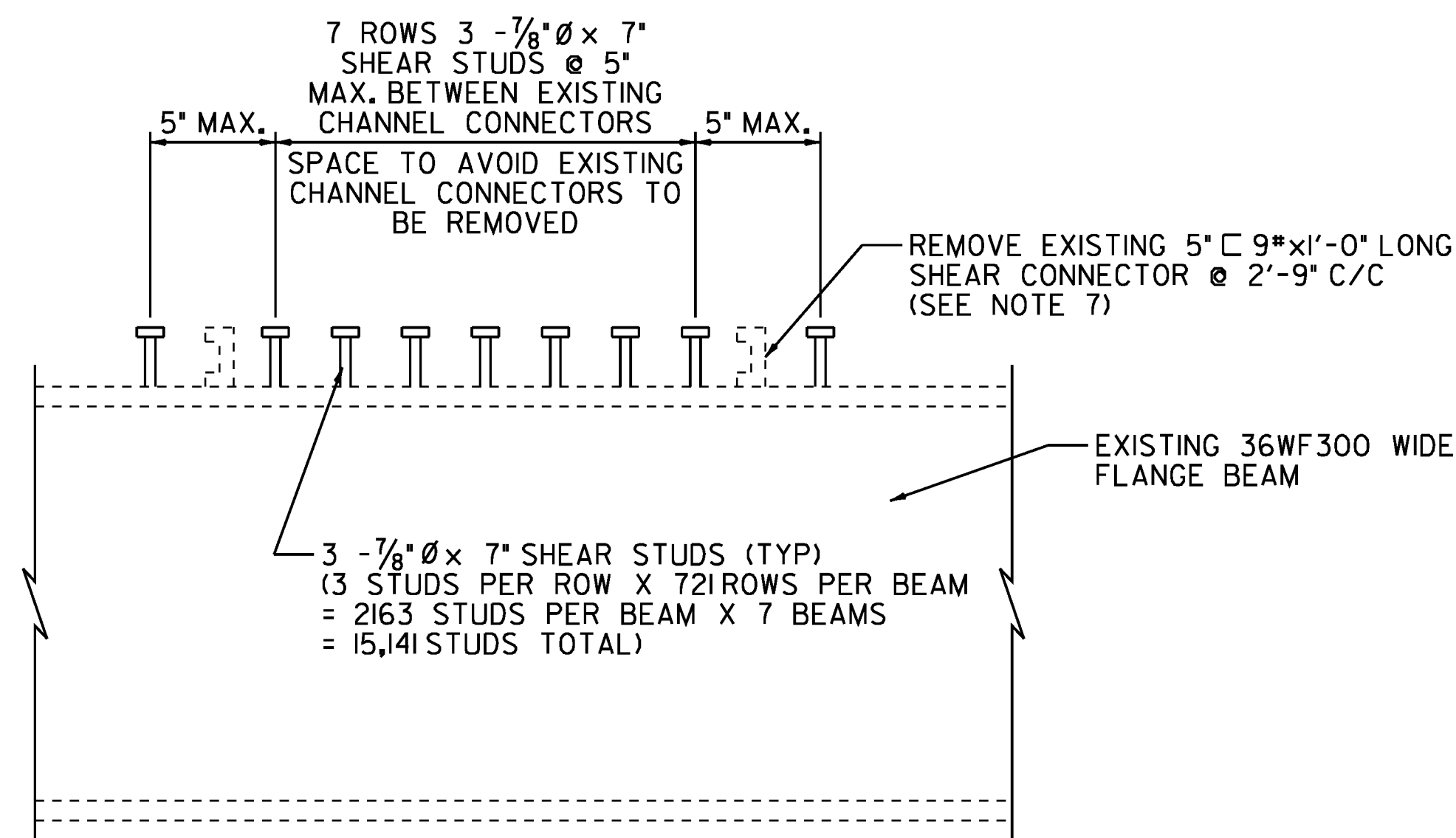
LEFT SIDE



RIGHT SIDE

CURB, SIDEWALK, AND RAIL SECTION

1" = 1'-0"

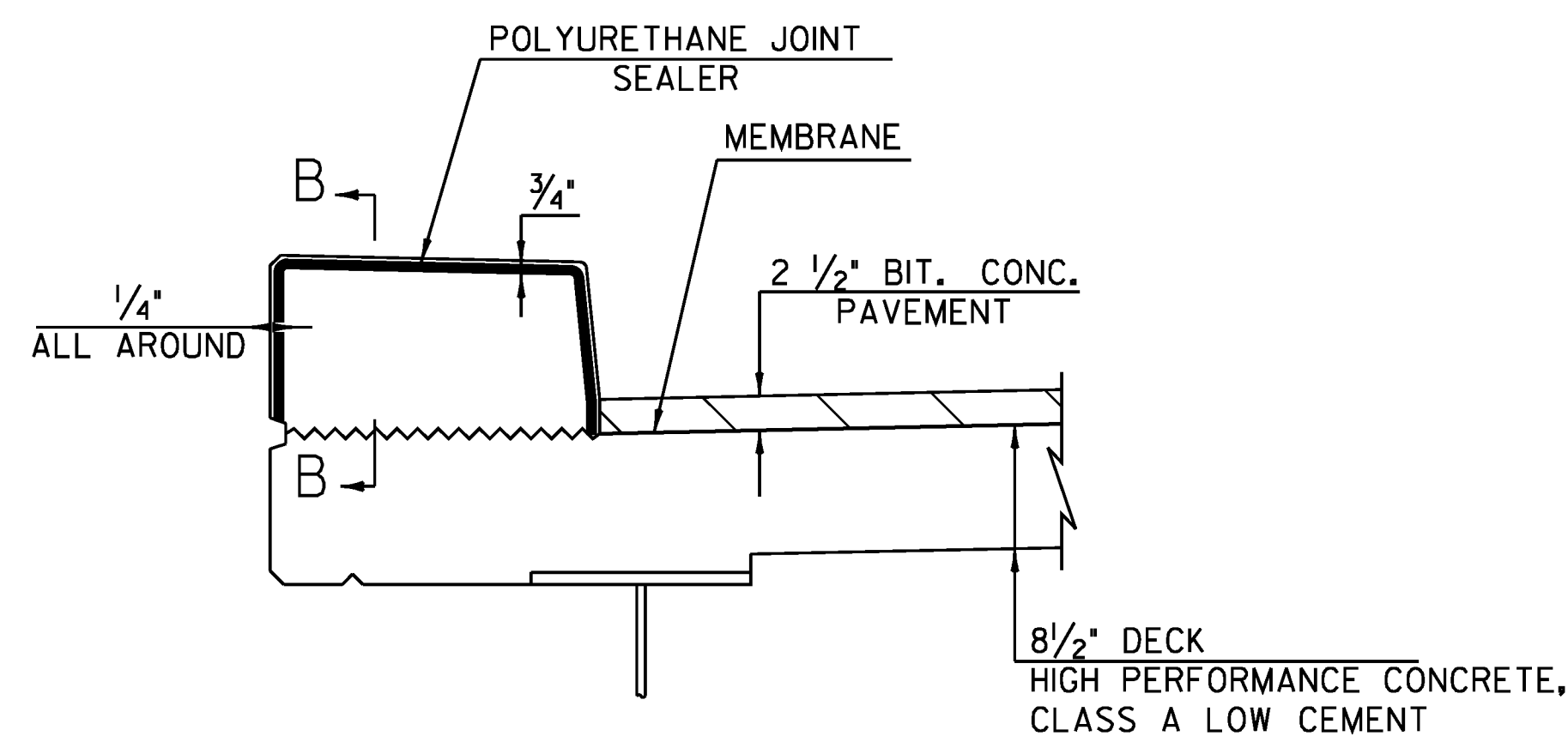


TYPICAL SHEAR STUD PLACEMENT

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

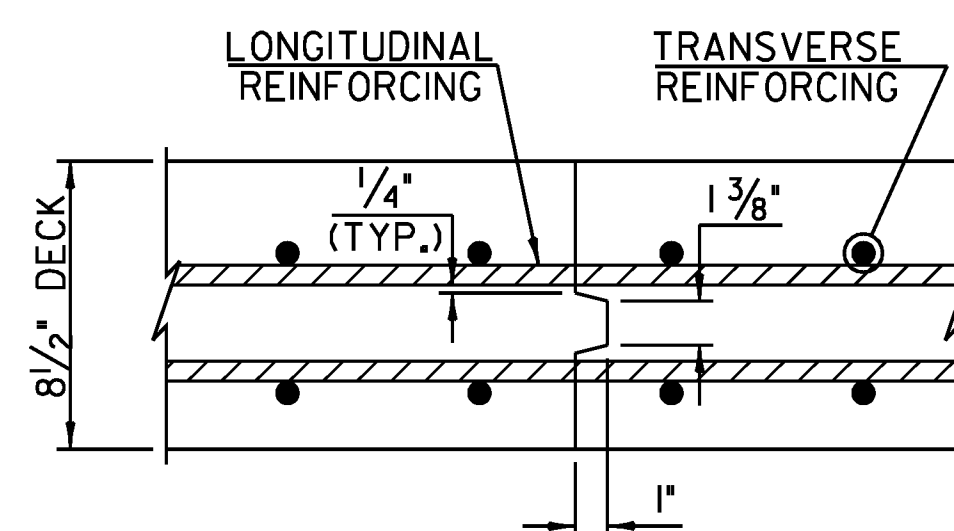
NOTES

- INDICATES AREA ALONG DECK AND UP FACE OF CURB FOR PLACEMENT OF 2 COATS OF POLYURETHANE MEMBRANE.
- MEMBRANE AND BLAST CLEANING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SHEET MEMBRANE WATERPROOFING, TORCH APPLIED.
- SHEET MEMBRANE WATERPROOFING SHALL EXTEND TO FACE OF CURB AS SHOWN.
- BLAST CLEAN 3'-0" FROM FACE OF CURB AND 3" UP CURB FACE PRIOR TO PLACING MEMBRANE.
- CONSTRUCTION JOINTS THROUGH CONCRETE CURBS AND SIDEWALKS SHALL BE SPACED A MAXIMUM OF 15'-0" CENTER TO CENTER AND SHALL BE 1'-6" MINIMUM FROM THE CENTER OF THE NEAREST BRIDGE RAIL POST. CONCRETE SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOURS DELAY BETWEEN ADJACENT POURS.
- LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CONSTRUCTION JOINTS.
- EXISTING SHEAR CONNECTORS SHALL BE REMOVED BY CUTTING OFF FLUSH ABOVE BOTTOM FLANGE OF CHANNEL SHEAR CONNECTOR. PAYMENT FOR REMOVAL OF EXISTING SHEAR CONNECTORS SHALL BE INCIDENTAL TO ITEM 508.15, "SHEAR CONNECTORS".



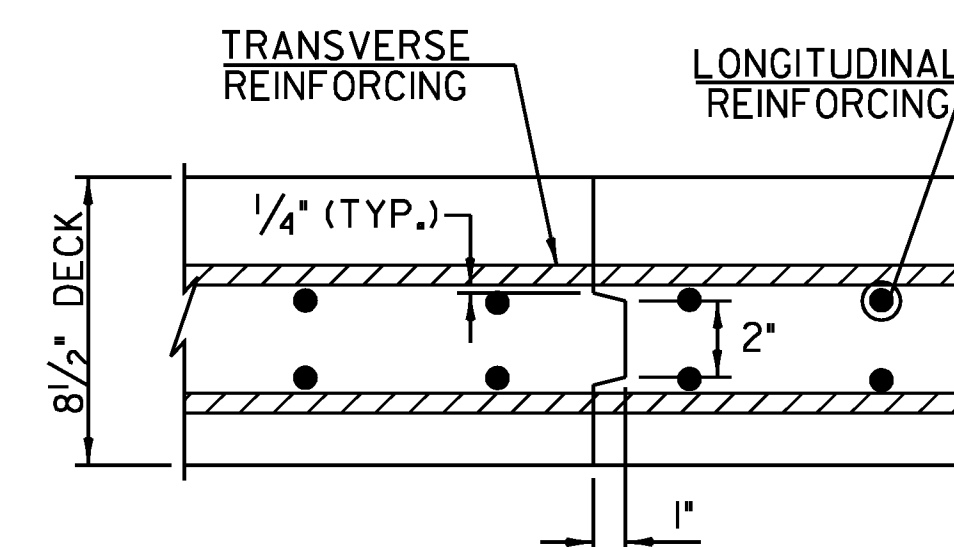
TYPICAL SECTION THROUGH
CONCRETE CURB AND SIDEWALK CONSTRUCTION JOINT

NTS



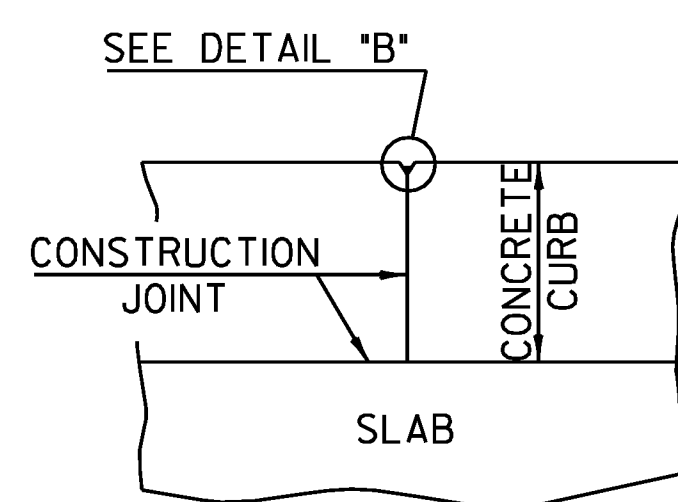
TRANSVERSE BRIDGE SLAB
CONSTRUCTION JOINT DETAILS

NTS



LONGITUDINAL BRIDGE SLAB
CONSTRUCTION JOINT DETAILS

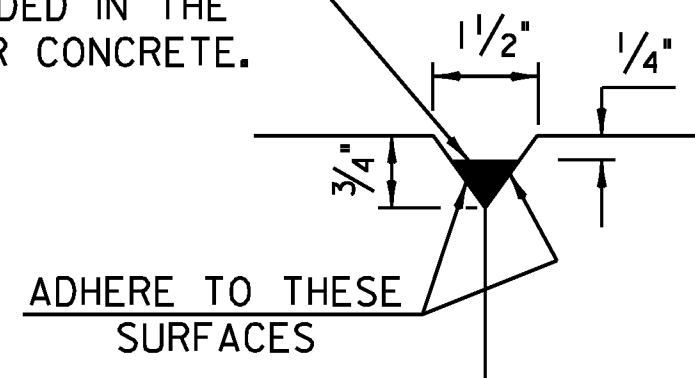
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SECTION B-B

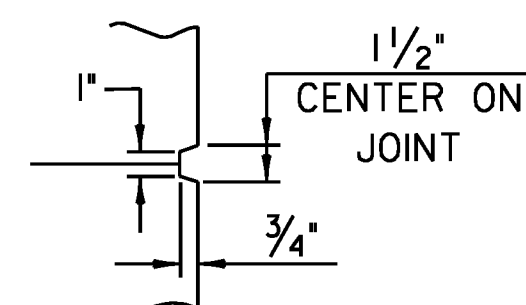
NTS

POLYURETHANE JOINT SEALER
PER SUBSECTION 524.06C
COLOR TO MATCH CONCRETE.
COST TO BE INCLUDED IN THE
UNIT PRICE BID FOR CONCRETE.



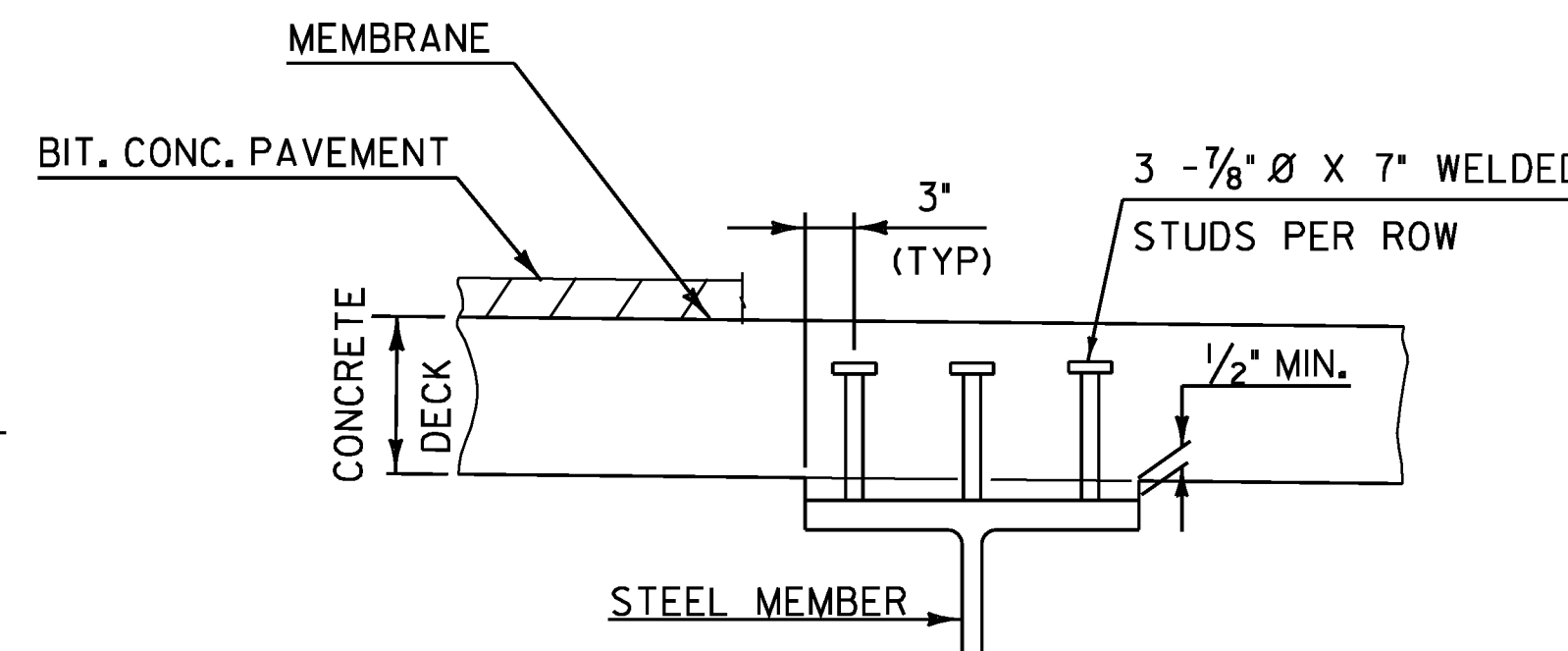
DETAIL "B"

NTS



SCORE MARK DETAIL

NTS

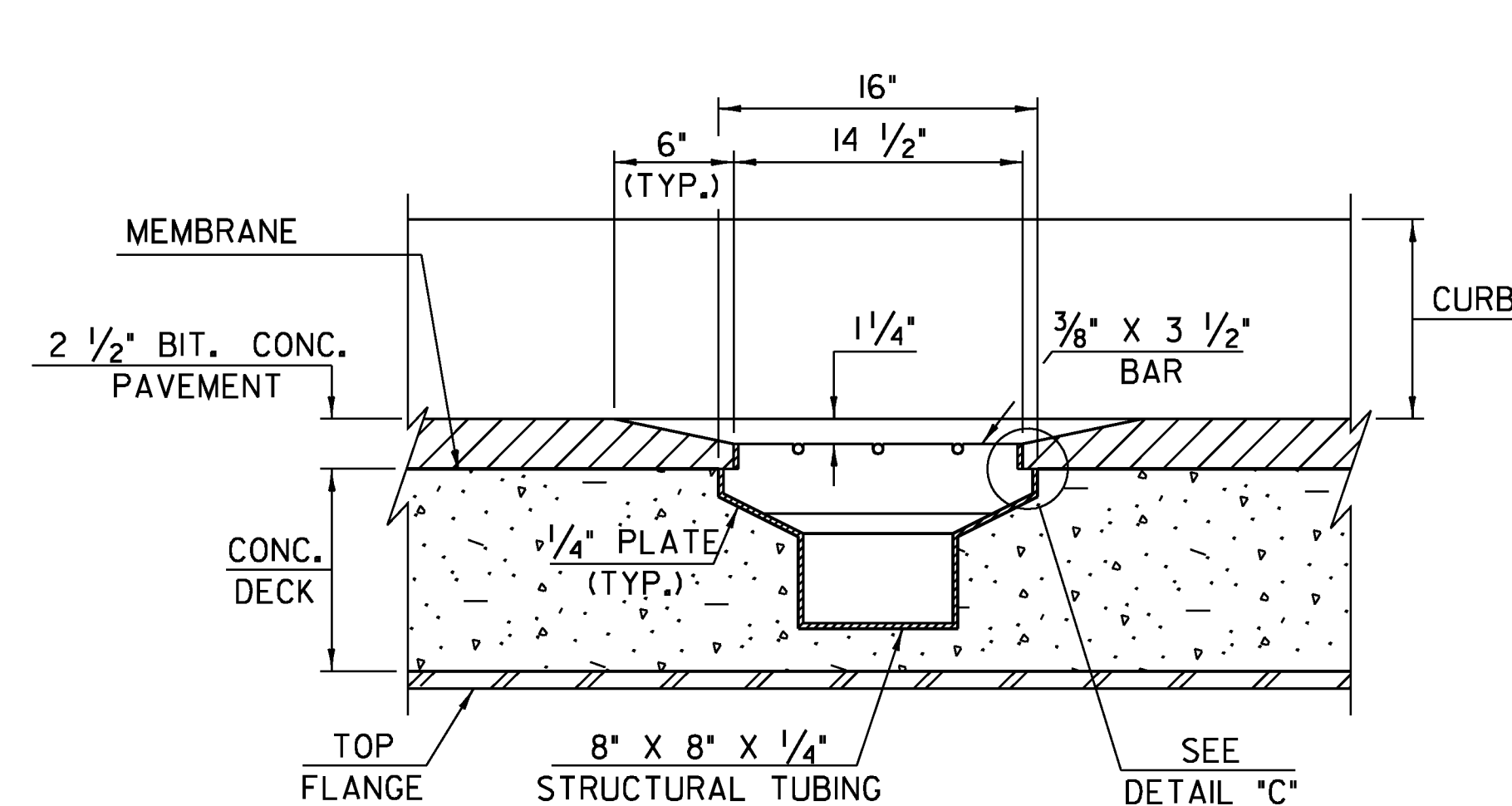


BEAM HAUNCH AND
SHEAR CONNECTOR DETAILS

NTS

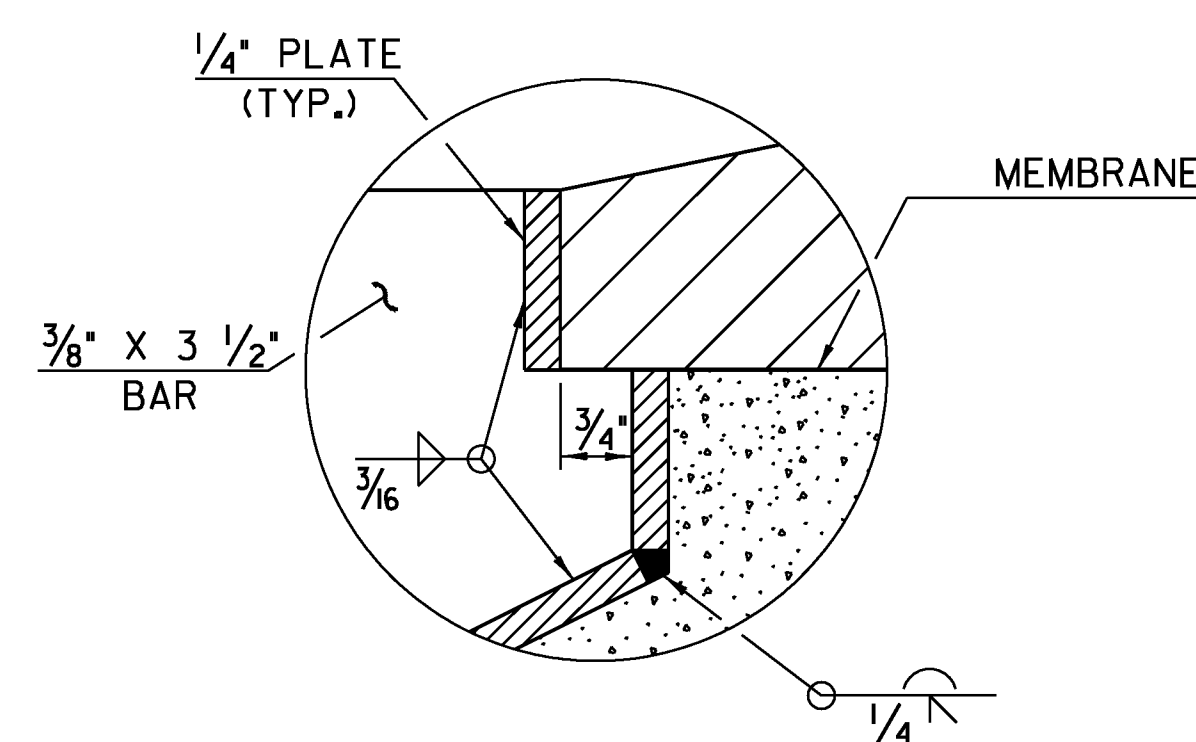
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	
VT 118 OVER MISSISSQUOI RIVER			
SUPERSTRUCTURE DETAILS			
Designed By	J. Howe	Drawn By	J. Davis
Checked By	R. Hebert	Bridge Design Supervisor	
		Date	
PROJECT	BERKSHIRE	PROJECT NO.	BHF 0283(9)S
I.G.C. Info.			ZC304CRD.DGN
Bridge Sheet No.		Sheet	19 of 41



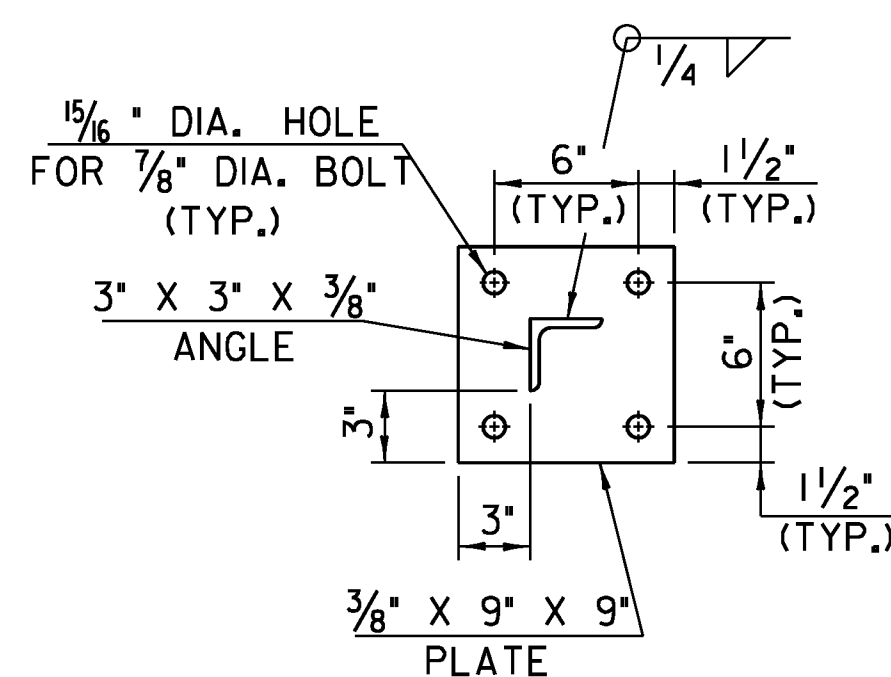
SECTION B - B

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



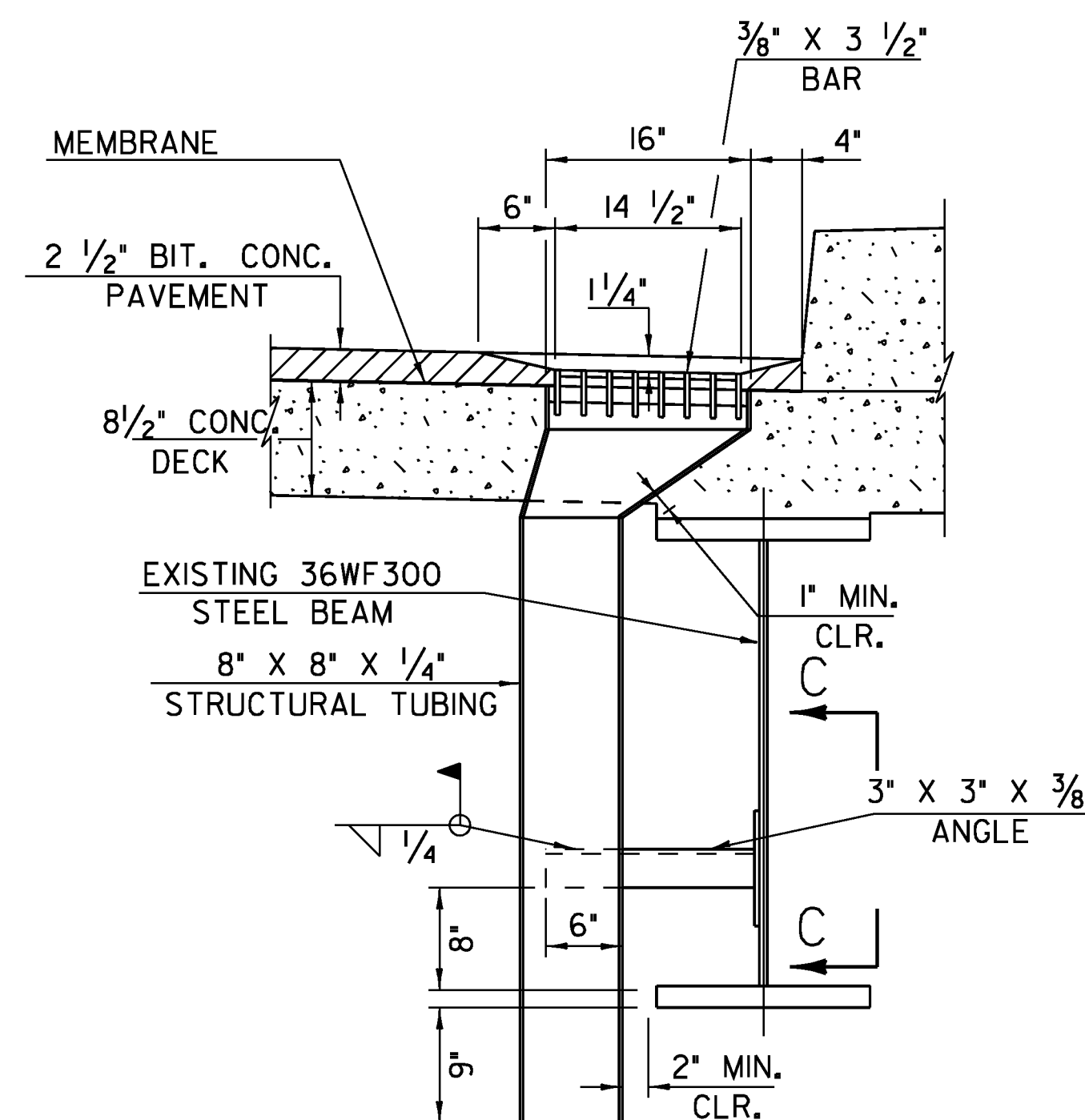
DETAIL "C"

NTS



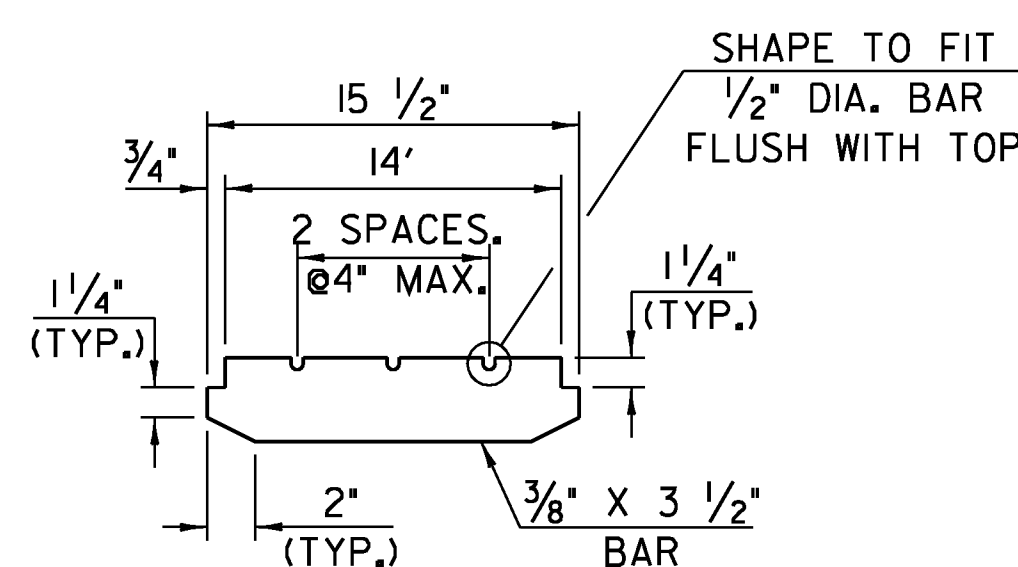
SECTION C - C

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



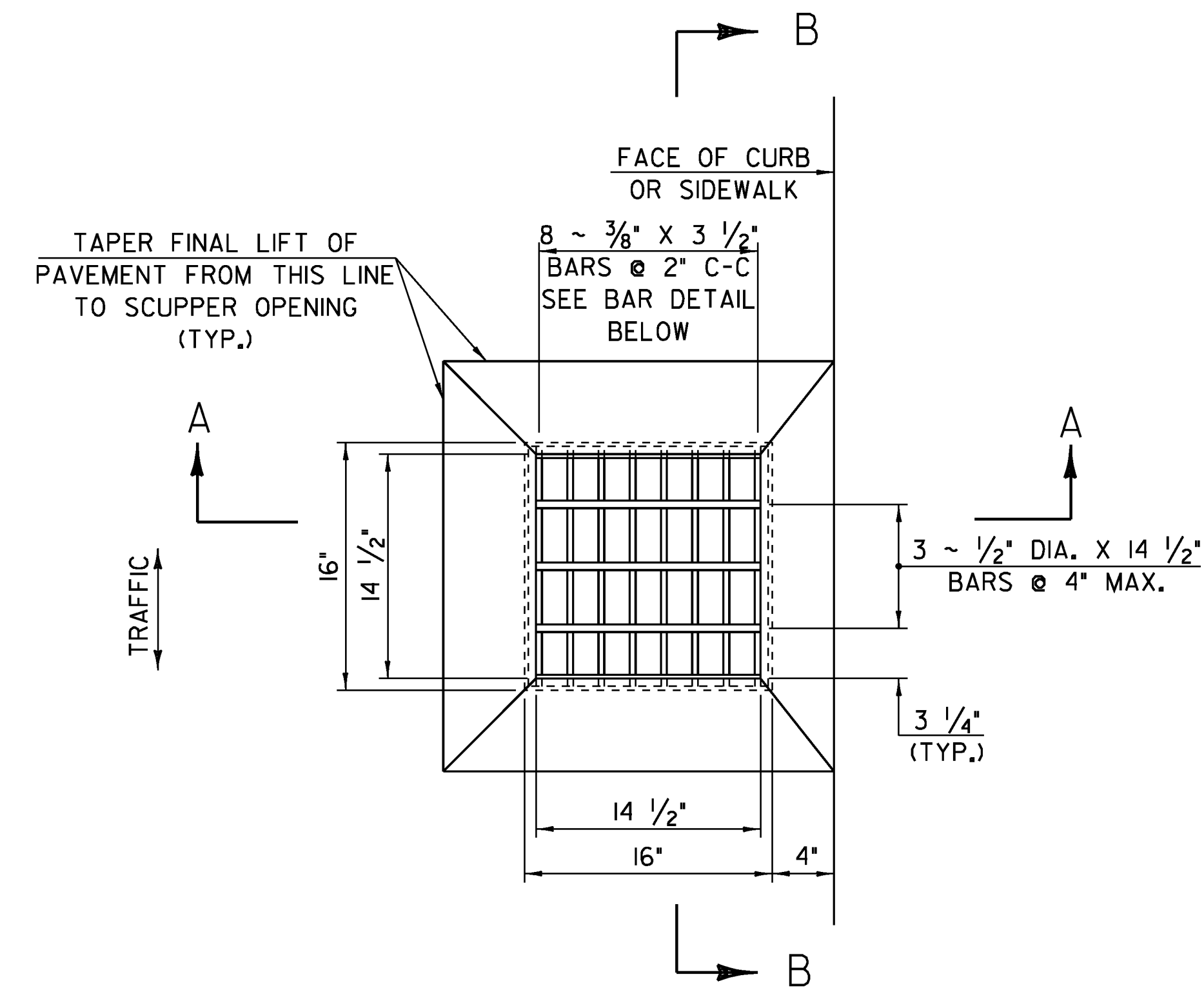
SECTION A - A

SCALE: 1" = 1'- 0"



BAR DETAIL FOR GRATE

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



PLAN

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

NOTES

THE FOLLOWING NOTES APPLY TO ALL SCUPPERS UNLESS OTHERWISE DETAILED ON PROJECT PLANS.

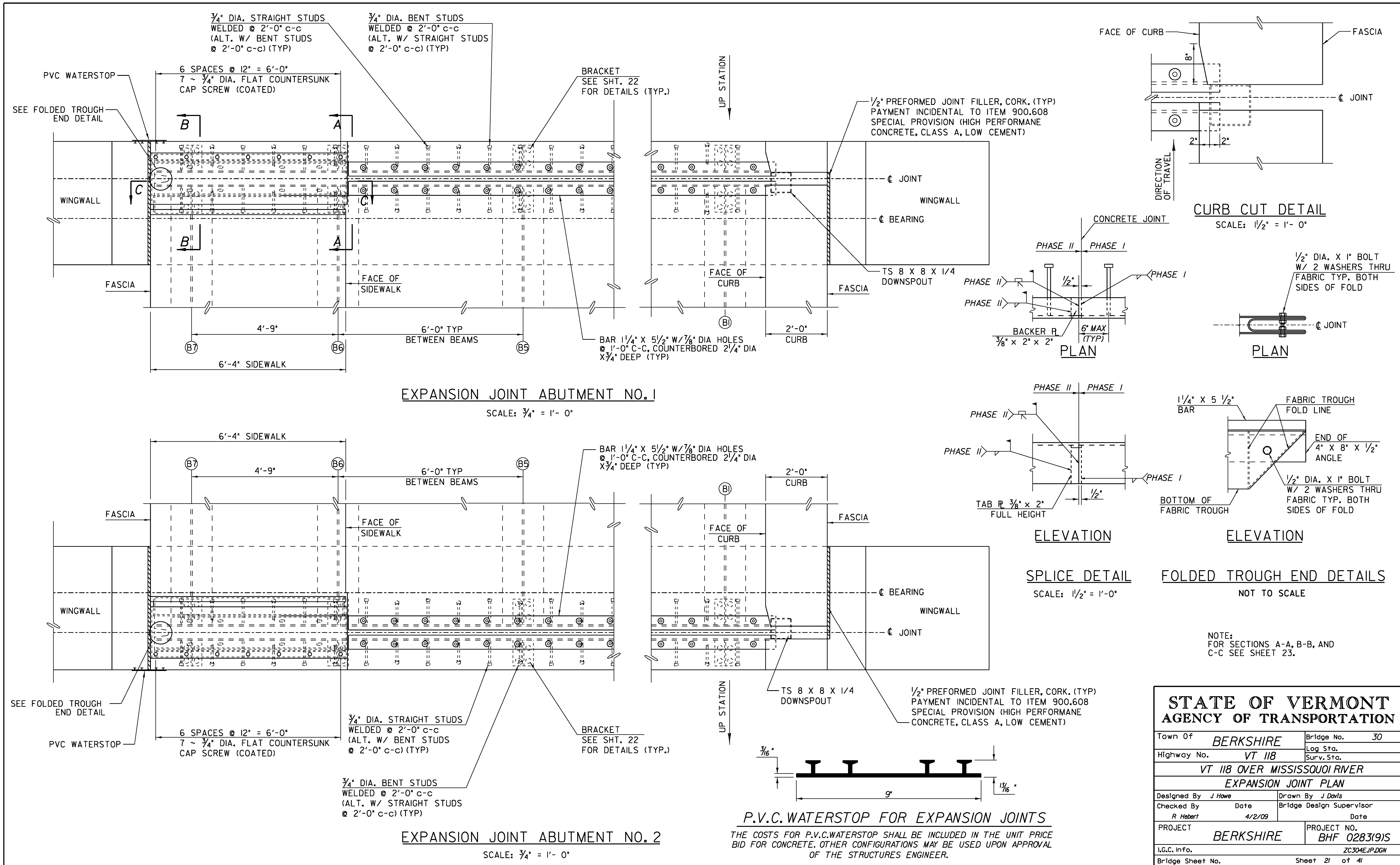
- HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A-500 GR. B OR A-501.
- ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO AASHTO M 270, GRADE 250 (GRADE 36).
- ALL SCUPPERS AND SUPPORTS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M III AFTER FABRICATION.
- THE TOP SURFACE OF SCUPPER SHALL BE SLOPED TO MATCH ROADWAY SLOPE AND GRADE.
- THE BAR AND GRATE SECTION MAY BE PREFABRICATED PROVIDING THE GEOMETRY AND SECTION PROPERTIES ARE EQUIVALENT TO THE DETAILS SHOWN.
- SCUPPERS SHALL BE PAID FOR UNDER ITEM 506.60 "STRUCTURAL STEEL".
- HI-STRENGTH BOLTS, NUTS, AND WASHERS SHALL CONFORM TO AASHTO M 164, TYPE I, GALVANIZED.

SCUPPER LOCATION

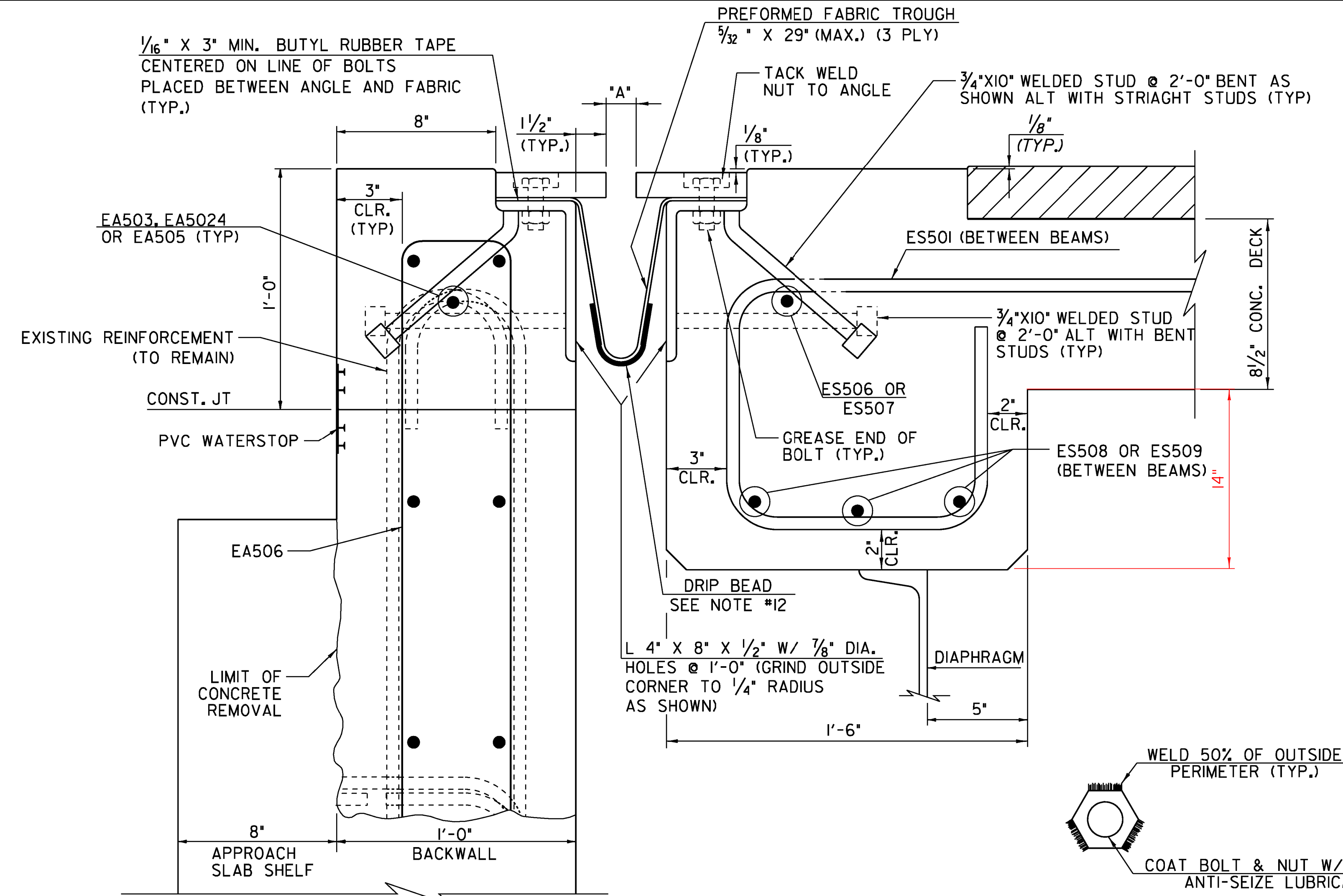
STA. 1+50 LT & RT
STA. 2+45 LT & RT
STA. 4+30 LT & RT
(SEE SHEET 6)

STATE OF VERMONT AGENCY OF TRANSPORTATION

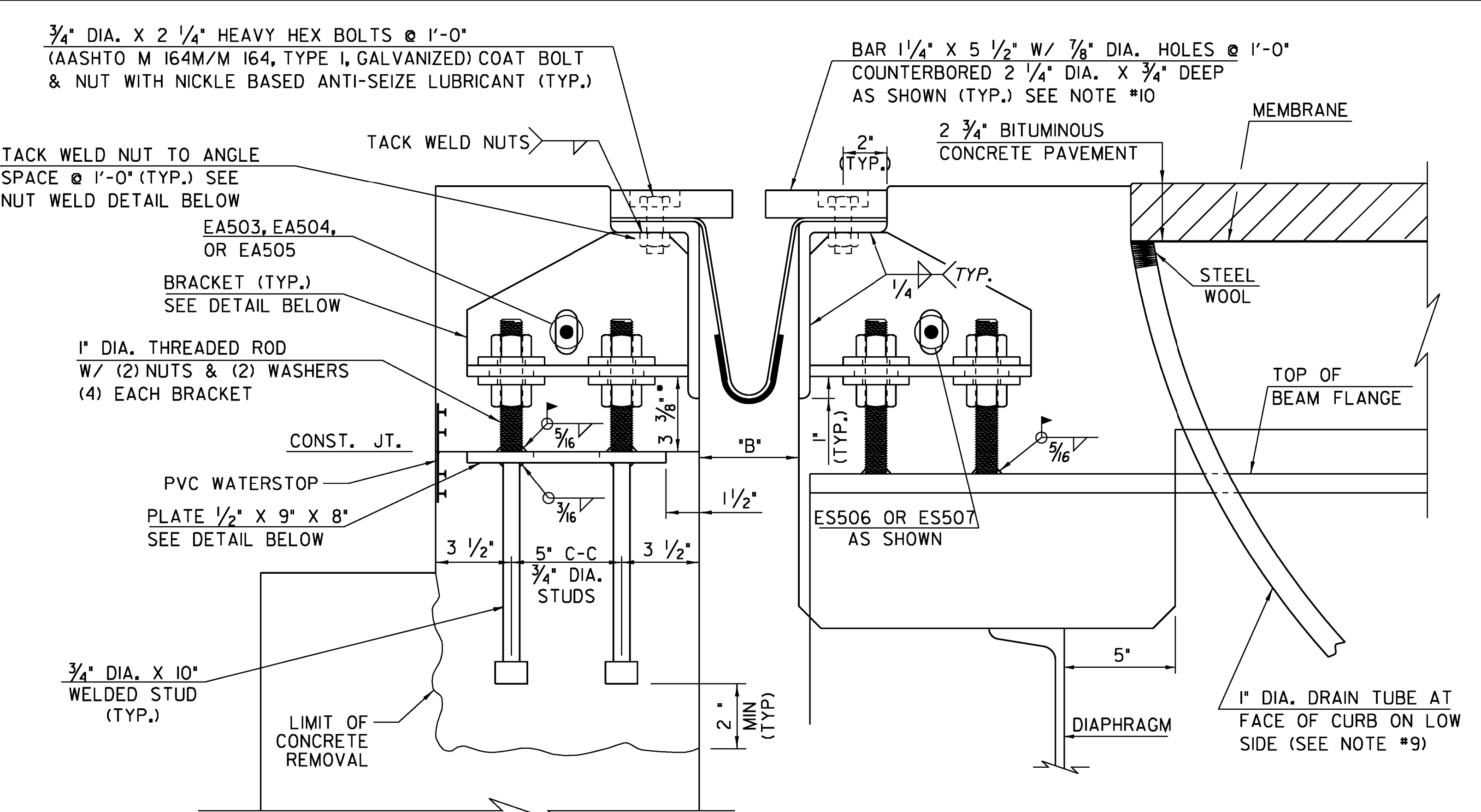
Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	
VT 118 OVER MISSISSQUOI RIVER			
SCUPPER DETAILS			
Designed By	J Howe	Drawn By	J Davis
Checked By	R Hebert	Bridge Design Supervisor	
		Date	4/2/09
PROJECT	BERKSHIRE	PROJECT NO.	BHF 0283(9)S
I.G.C. Info.			ZC304SCUDGN
Bridge Sheet No.		Sheet	20 of 41



STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	
VT 118 OVER MISSISSQUOI RIVER			
EXPANSION JOINT PLAN			
Designed By	J. Howe	Drawn By	J. Davis
Checked By	R. Hebert	Date	4/2/09
		Bridge Design Supervisor	
PROJECT	BERKSHIRE	PROJECT NO.	BHF 0283(9)S
I.G.C. Info.			ZC304EJP.DGN
Bridge Sheet No.		Sheet 21	of 41

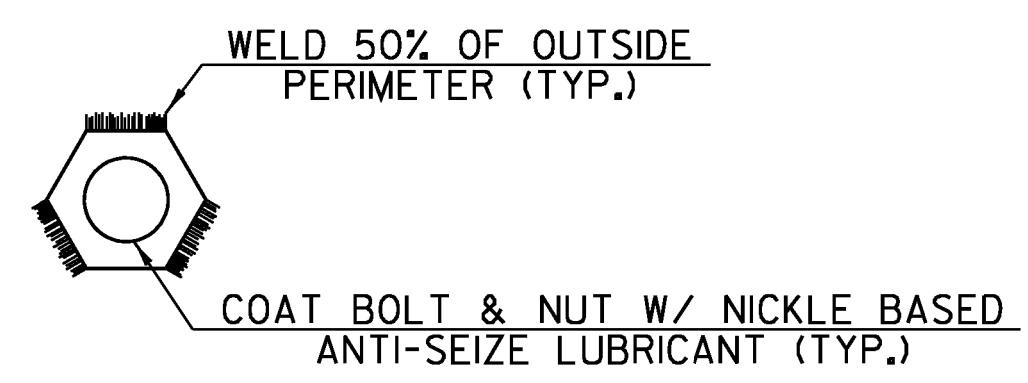


TYPICAL SECTION BETWEEN BEAMS
SCALE: 3" = 1'- 0" (NORMAL TO ϕ BEARING)



TYPICAL SECTION AT BEAMS
SCALE: 3" = 1'- 0" (NORMAL TO ϕ BEARING)

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



NUT WELD DETAIL
N.T.S.

1. DETAILS ON THIS SHEET ARE FOR ITEM 516.11"BRIDGE EXPANSION JOINT, VERMONT".

2. PREFORMED FABRIC MATERIAL SHALL BE CONTINUOUS AND SHALL CONFORM TO SUBSECTION 707.07.

3. BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO SPECIFICATION M-198, TYPE II.

4. THE FINAL FINISH OF THE EXPANSION DEVICE SHALL BE COVERED DURING THE PLACING OF BRIDGE DECK CONCRETE.

5. ALL STEEL COMPONENTS SHALL BE AASHTO M 270M/M 270, GRADE 250 (GRADE 36) GALVANIZED OR METALIZED AS PER SUBSECTION 516.04 UNLESS OTHERWISE SPECIFIED, EXCEPT FOR THREADED RODS AND NUTS WHICH WILL BE ASTM A307.

6. THE ITEM "BRIDGE EXPANSION JOINT, VERMONT" SHALL INCLUDE THE FABRICATION AND ERECTION OF THE COMPLETE JOINT ASSEMBLY INCLUDING ALL STEEL PLATES, BRACKETS, ANGLES, WELDED STUDS OR RODS, PREFORMED FABRIC TROUGH MATERIAL AND PLASTIC DRAIN TUBES, BUTYL RUBBER TAPE AND ANY OTHER MISCELLANEOUS MATERIAL NECESSARY TO INSTALL JOINT.

7. THE 4" X 8" X 1/2" ANGLES SHALL BE FURNISHED AS TWO PIECES. A FIELD WELDED BUTT SPLICE JOINT IS REQUIRED AT THE LIMIT OF PHASE I NEW CONSTRUCTION. 1 1/4" X 5 1/2" BARS EACH SIDE OF THE JOINT SHALL BE PROVIDED IN TWO PIECES.

8. COAT CONCRETE CONTACT SURFACES WITH MORTAR TYPE 4 MEETING THE REQUIREMENTS OF SUBSECTION 707.03. PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 516.11"BRIDGE EXPANSION JOINT, VERMONT".

9. A 1" DIAMETER PLASTIC DRAIN TUBE (PER STD. SPEC. 740.01) SHALL BE INSTALLED AS SHOWN AT THE FACE OF CURB. THE UPPER END IS TO BE PLUGGED WITH STEEL WOOL AND THE LOWER END IS TO EXTEND BELOW THE BOTTOM OF THE ADJACENT BEAMS. THE DRAIN TUBES SHALL BE FASTENED TO THE BEAMS USING A METHOD APPROVED BY THE ENGINEER.
10. FILL COUNTERBORED HOLES WITH HOT POURED JOINT SEALER (STD. SPEC. 707.04) AFTER BOLT INSTALLATION. PAYMENT FOR THE WORK SHALL BE INCIDENTAL TO ITEM 516.11.

11. PAYMENT FOR WATERSTOP SHALL BE INCIDENTAL TO CONCRETE PAY ITEM.

12. A DRIP BEAD OF 1/4" X 7" STRIP OF PREFORMED MATERIAL SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH USING AN ADHESIVE APPROVED BY THE MANUFACTURER. THE DRIP BEAD SHALL BE APPLIED 1' FROM THE DOWNSPOUT END OF THE TROUGH.

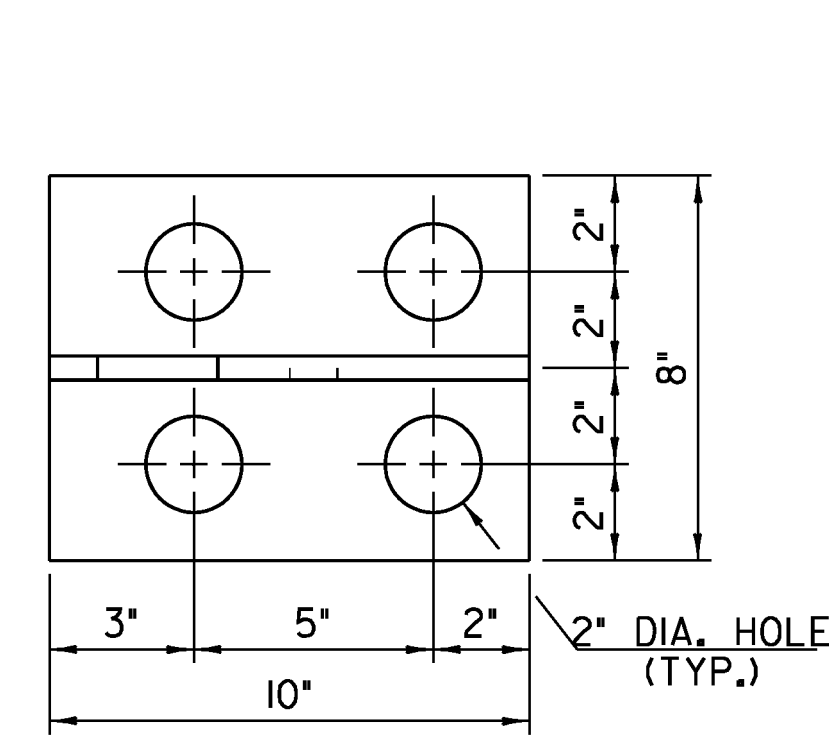
13. FABRIC TROUGH SHALL BE THOROUGHLY CLEANED AND FLUSHED AFTER PAVING OPERATION.

14. FABRIC TROUGH SHALL BE ONE CONTINUOUS UNIT AND SHALL BE INSTALLED AFTER COMPLETION OF PHASE II CONSTRUCTION.

15. THE EXPANSION JOINT SHALL BE SHOP ASSEMBLED AND SHIPPED AS TWO UNITS, CORRESPONDING TO PHASE I AND PHASE II CONSTRUCTION. THEN WELDED IN THE FIELD. (SEE SHEET 21).

16. FABRIC TROUGH SHALL BE INSTALLED SO THAT MINIMUM SLOPE IS 1% FOR POSITIVE DRAINAGE.

17. THREADED ROD AND ASSOCIATED NUTS AND WASHERS SHALL CONFORM TO SUBSECTION 714.04.



BRACKET PLAN
SCALE: 3" = 1'- 0"

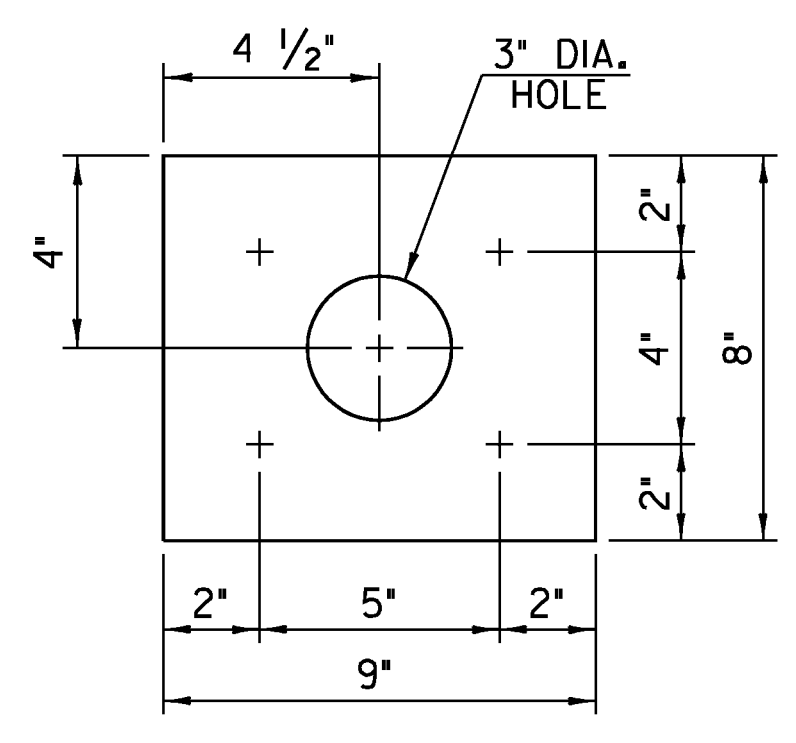
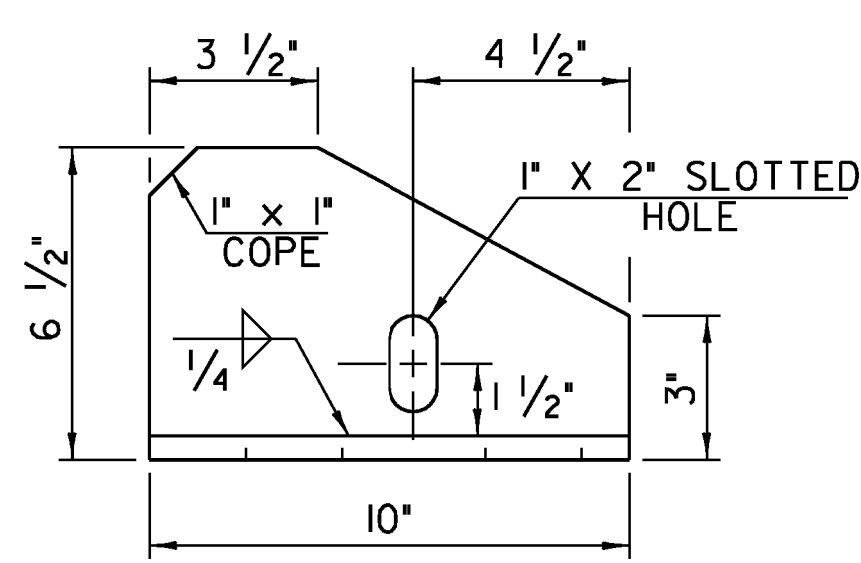
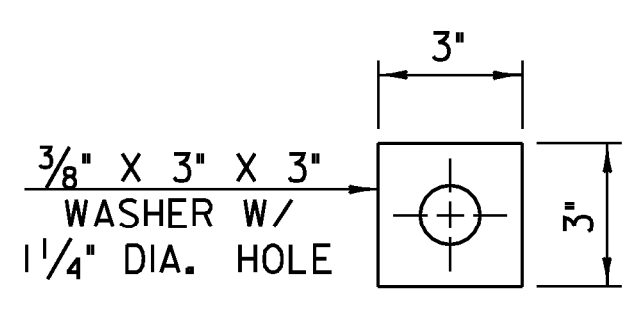


PLATE PLAN
SCALE: 3" = 1'- 0"



BRACKET ELEVATION
SCALE: 3" = 1'- 0"



WASHER FOR BRACKET
SCALE: 3" = 1'- 0"

ALL PLATES 1/2"

	"A" DISTANCE		"B" DISTANCE	
TEMP (°F)	ABUT #1	ABUT #2	ABUT #1	ABUT #2
-30	1 9/16"	2 11/16"	4 9/16"	5 11/16"
-15	1 7/16"	2 7/16"	4 7/16"	5 7/16"
0	1 5/16"	2 1/4"	4 5/16"	5 1/4"
15	1 1/4"	2"	4 1/4"	5"
30	1 1/8"	1 3/4"	4 1/8"	4 3/4"
45	1"	1 1/2"	4"	4 1/2"
60	7/8"	1 1/4"	3 7/8"	4 1/4"
75	3/4"	1"	3 3/4"	4"
90	11/16"	3/4"	3 11/16"	3 3/4"
105	3/16"	3/16"	3 3/16"	3 3/16"

"A" AND "B" ARE THE SETTINGS BEFORE DEAD LOADS ARE IN PLACE.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town of **BERKSHIRE**

Highway No. **VT 118**

VT 118 OVER MISSISSQUOI RIVER
EXPANSION JOINT DETAILS

Designed By **J Howe**
Checked By **R Hebert**
PROJECT **BERKSHIRE**
I.G.C. Info.
Bridge Sheet No.

Bridge No. **30**

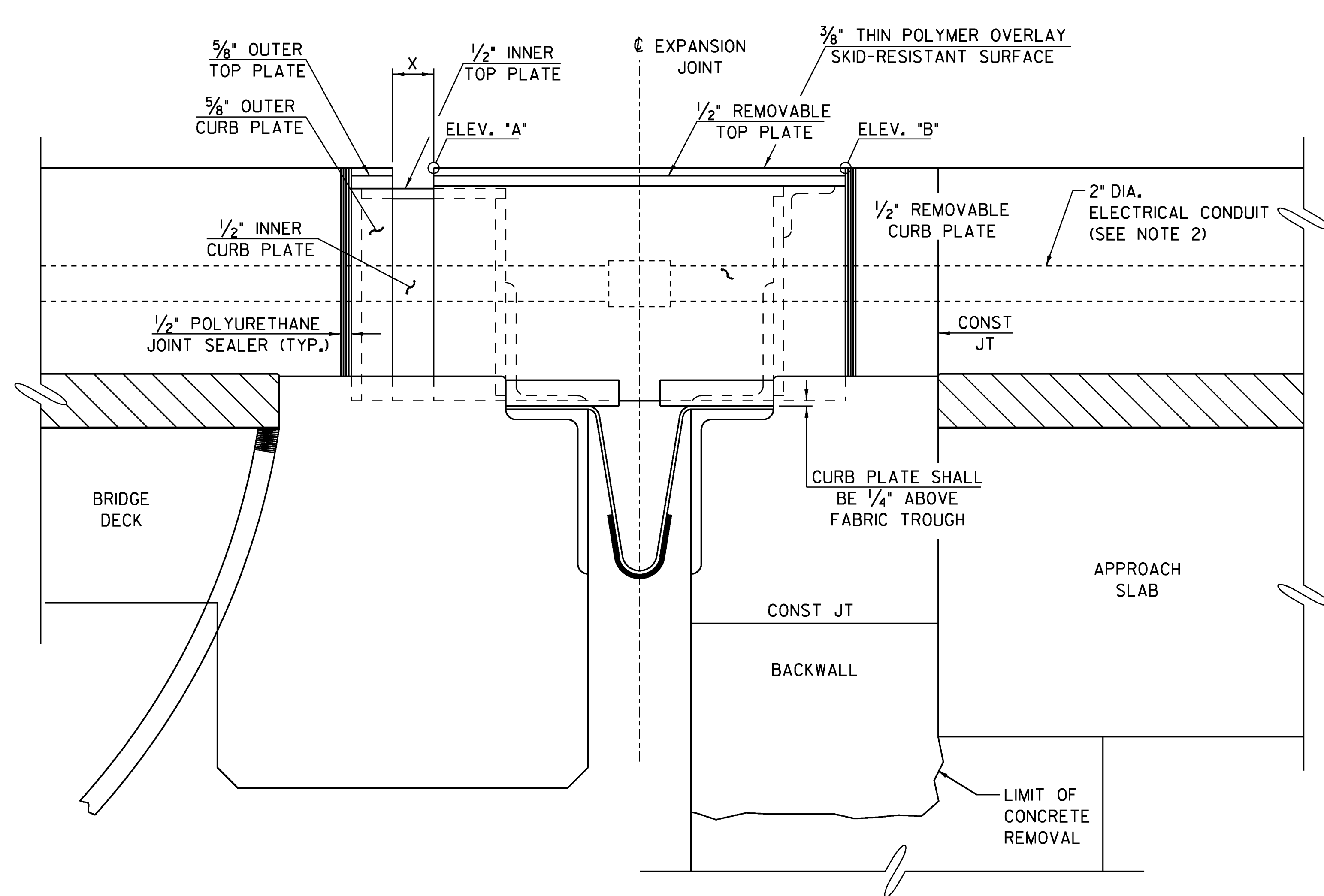
Log Sta.
Surv. Sta.

Bridge Design Supervisor
Date

PROJECT NO.
BHF 028319JS

ZC304EJDDGN

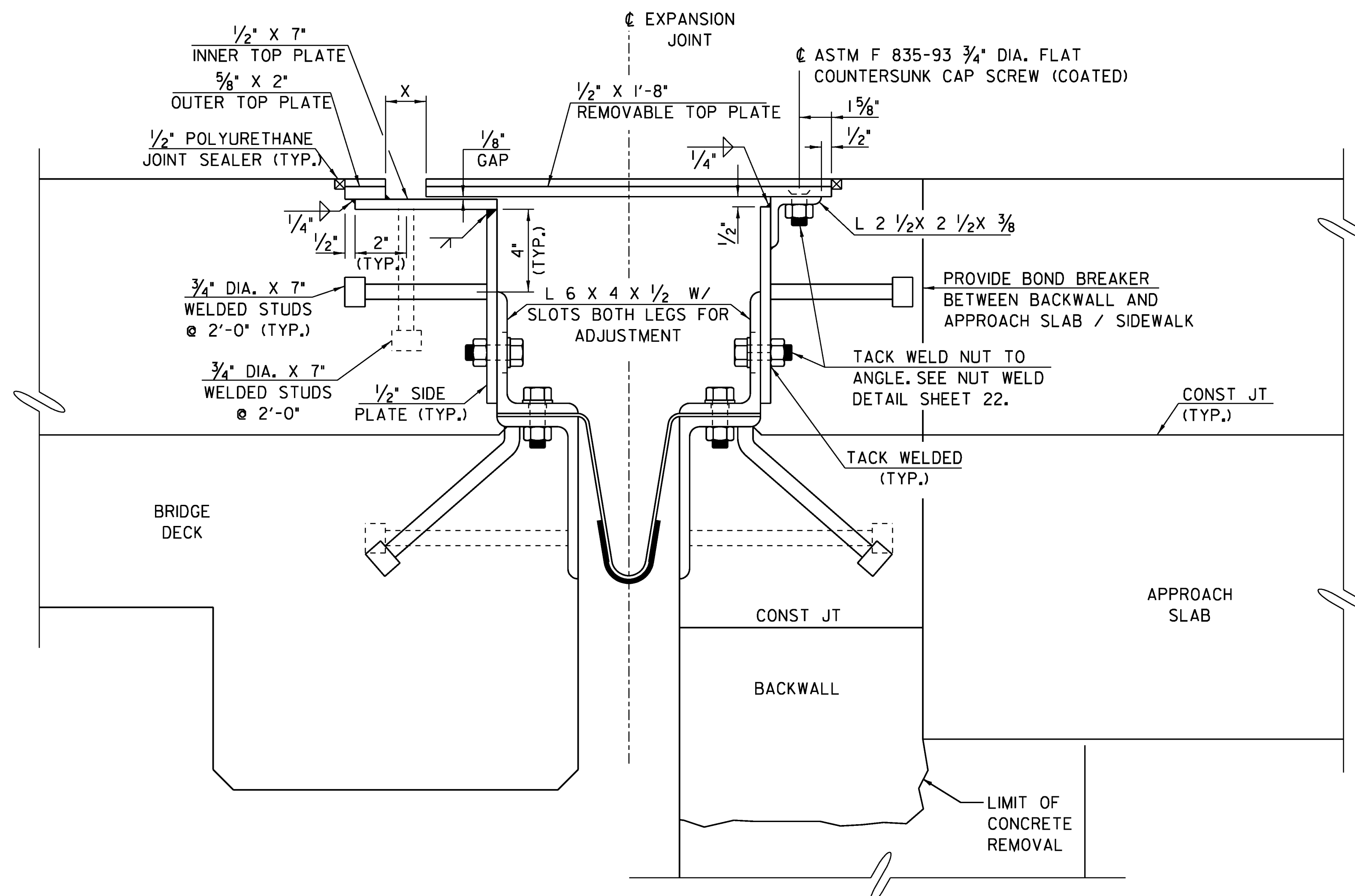
Sheet **22** of **41**



SECTION A - A

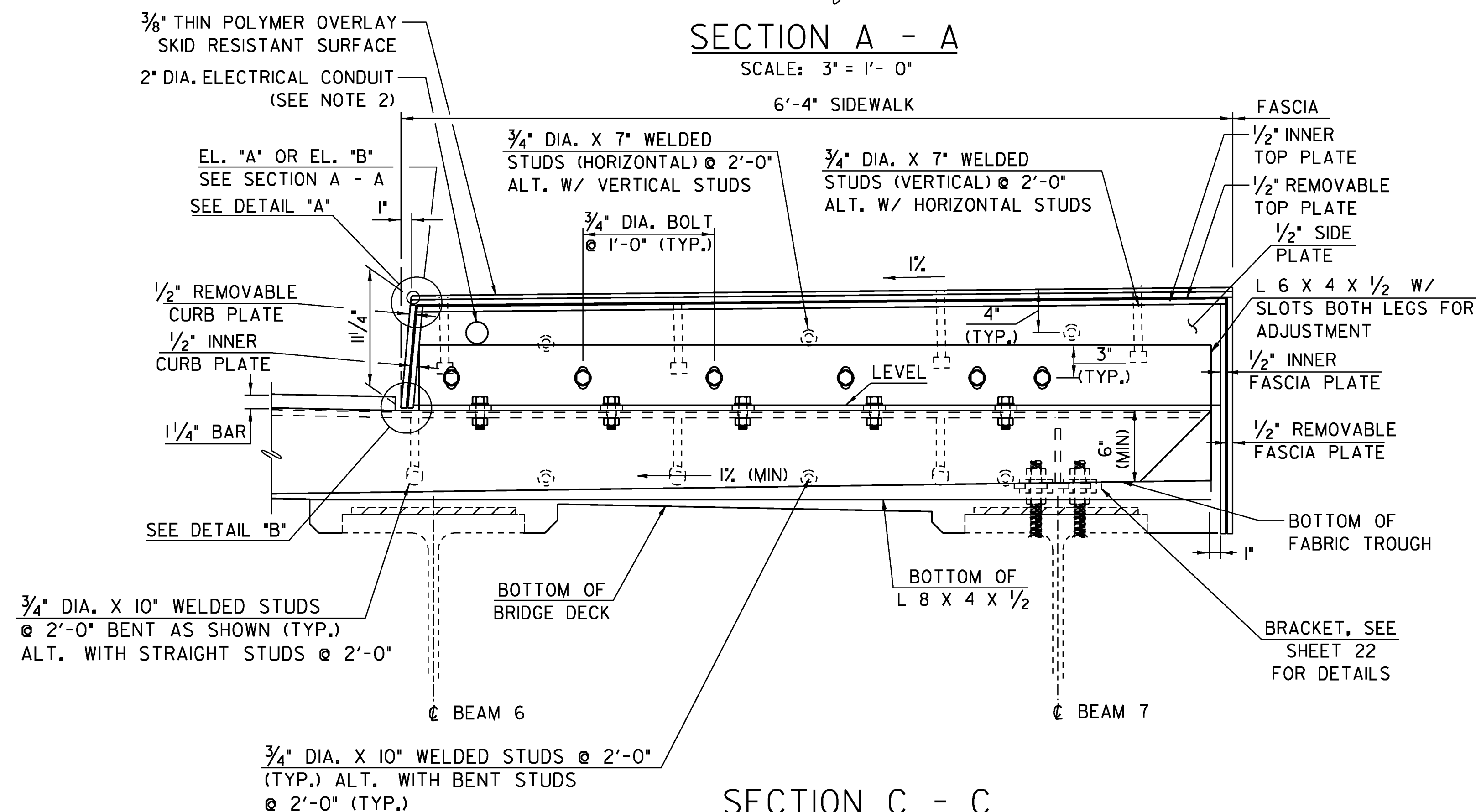
SCALE: 3" = 1'- 0"

6'-4" SIDEWALK



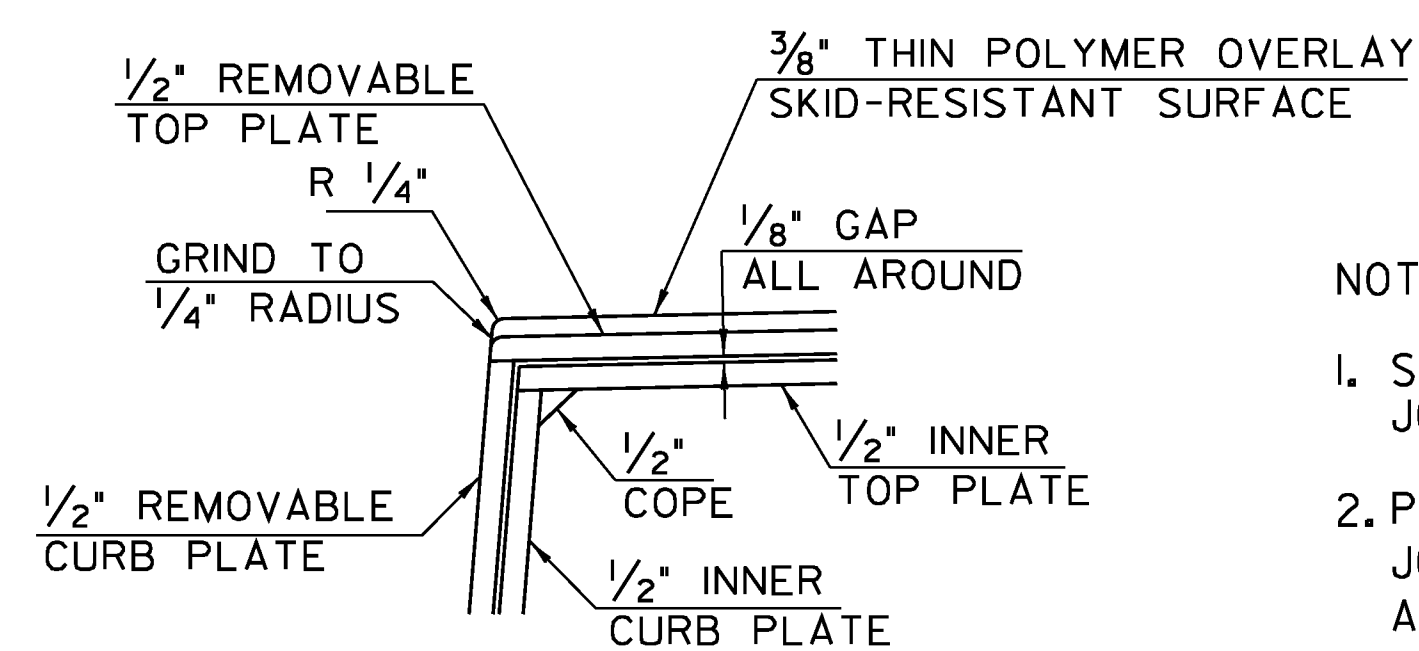
SECTION B - B

SCALE: 3" = 1'- 0"



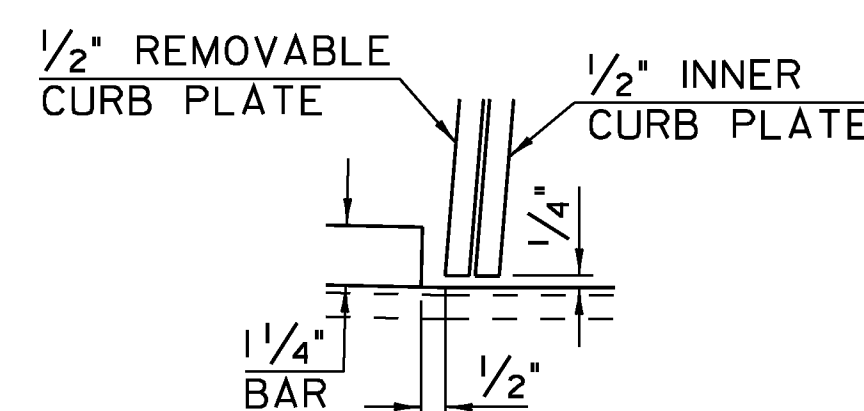
SECTION C - C

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



DETAIL "A"

SCALE: 3" = 1'- 0"



DETAIL "B"

SCALE: 3" = 1'- 0"

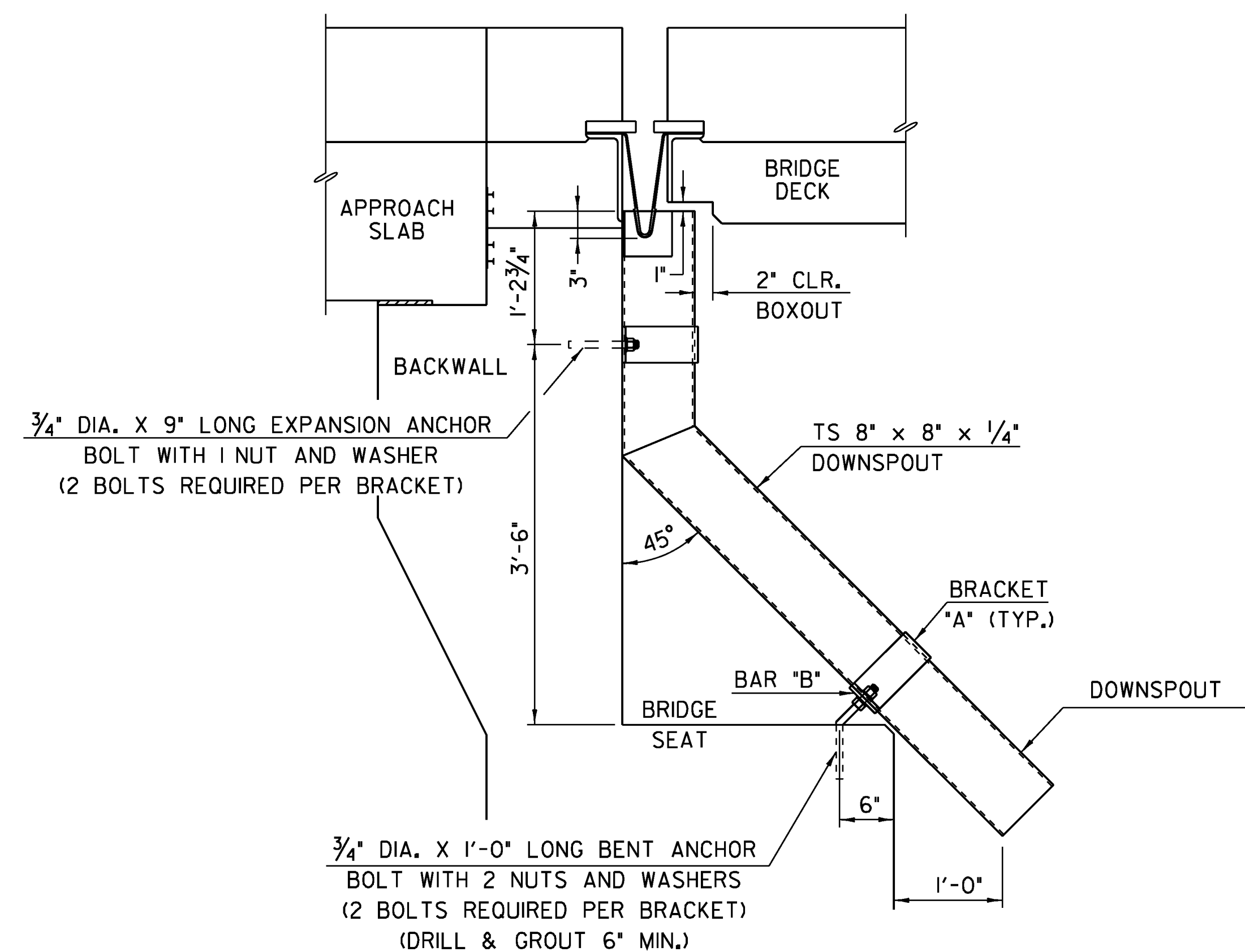
SIDEWALK TABLE @ 45° F			
ABUTMENT	EL. "A"	EL. "B"	"X"
NO. 1	420.07	420.05	1"
NO. 2	420.77	420.75	1 1/2"

NOTE:

1. SECTION LOCATIONS SHOWN ON SHT 21, EXPANSION JOINT PLAN.
2. PROVIDE ELECTRICAL CONDUIT EXPANSION COUPLING AND JOINT SEAL BETWEEN SUPERSTRUCTURE SIDEWALK AND ABUTMENT BACKWALL SIDE PLATES. PAYMENT WILL BE CONSIDERED INCIDENTAL TO CONTRACT ITEM 678.30.

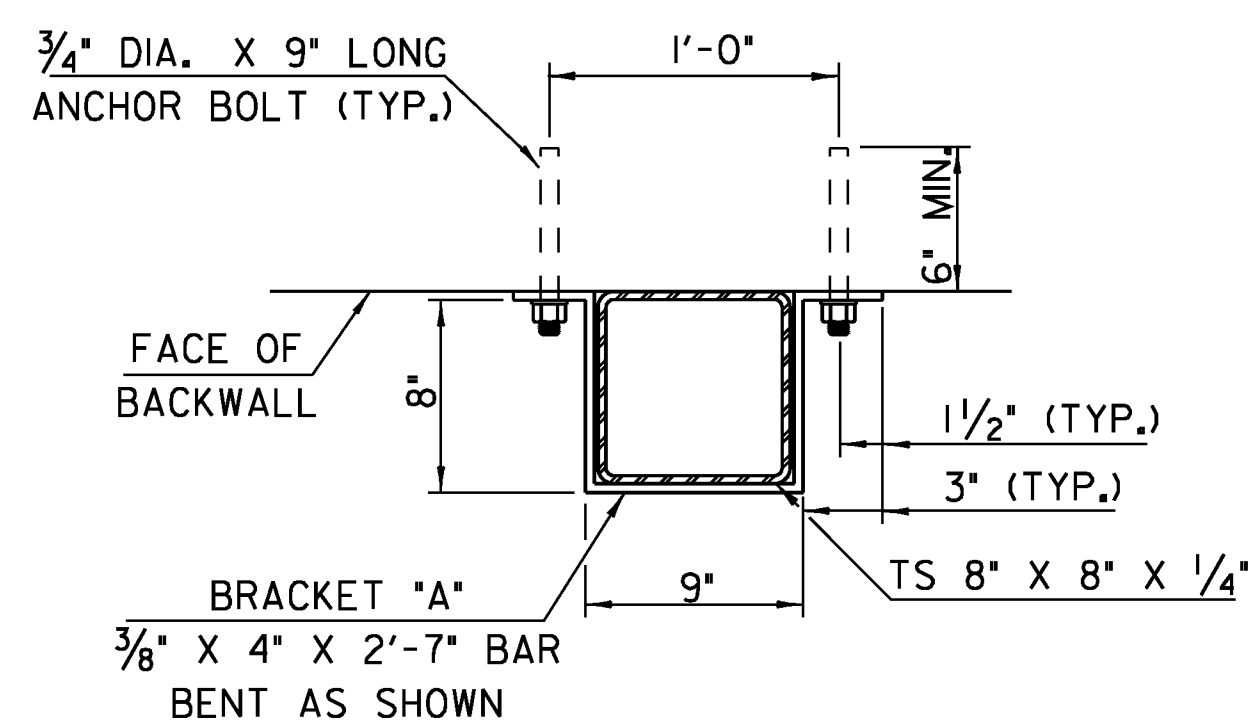
STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	
VT 118 OVER MISSISSQUOI RIVER			
SIDEWALK EXPANSION DAM DETAILS			
Designed By	J Howe	Drawn By	J Davis
Checked By	R Hebert	Date	4/2/09
		Bridge Design Supervisor	
PROJECT	BERKSHIRE	PROJECT NO.	BHF 0283(9)S
I.G.C. Info.			ZC3045CDDGN
Bridge Sheet No.		Sheet	23 of 41



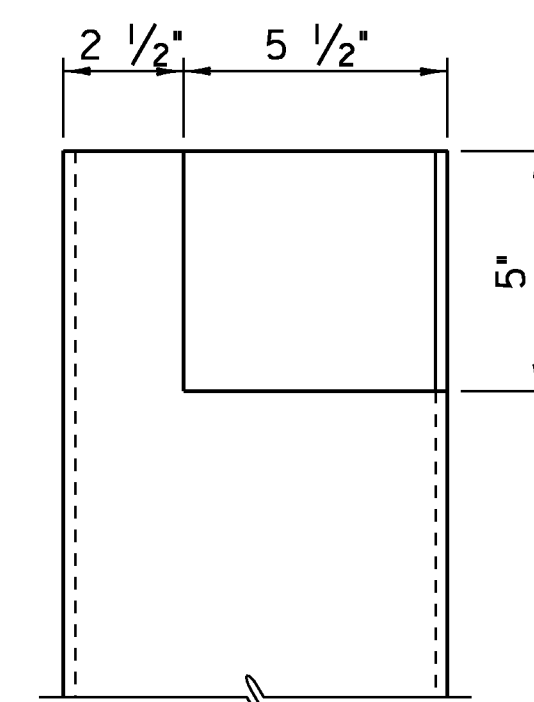
DOWNSPOUT ELEVATION

SCALE: 1" = 1'- 0"



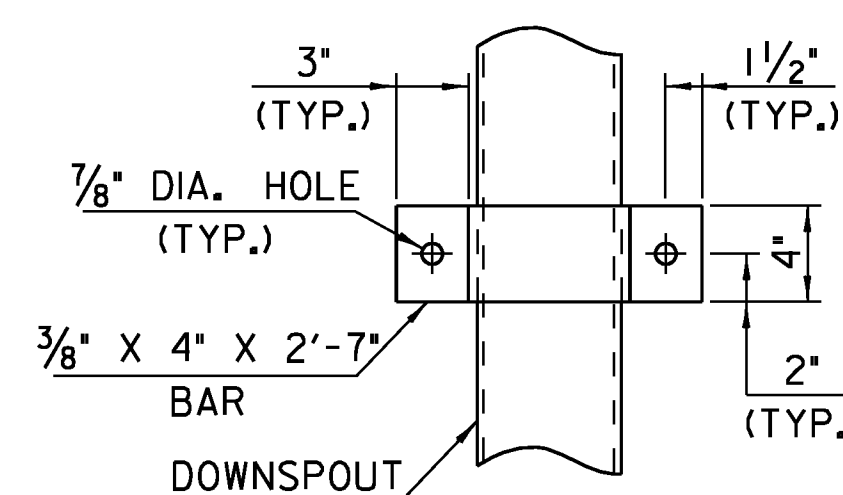
**DETAILS FOR ATTACHING
DOWNSPOUT TO ABUTMENT**

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



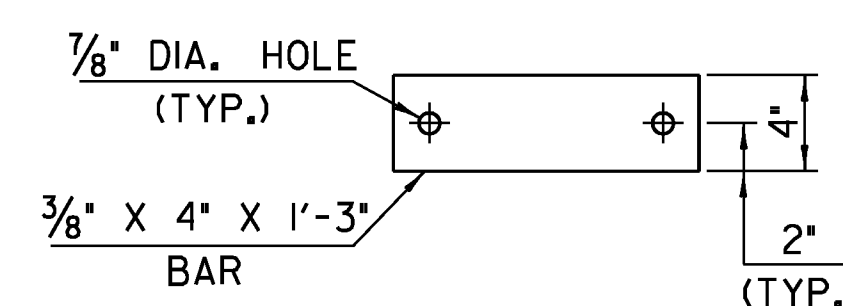
**DOWNSPOUT CUTOUT
FOR TROUGH**

SCALE: 3" = 1'- 0"



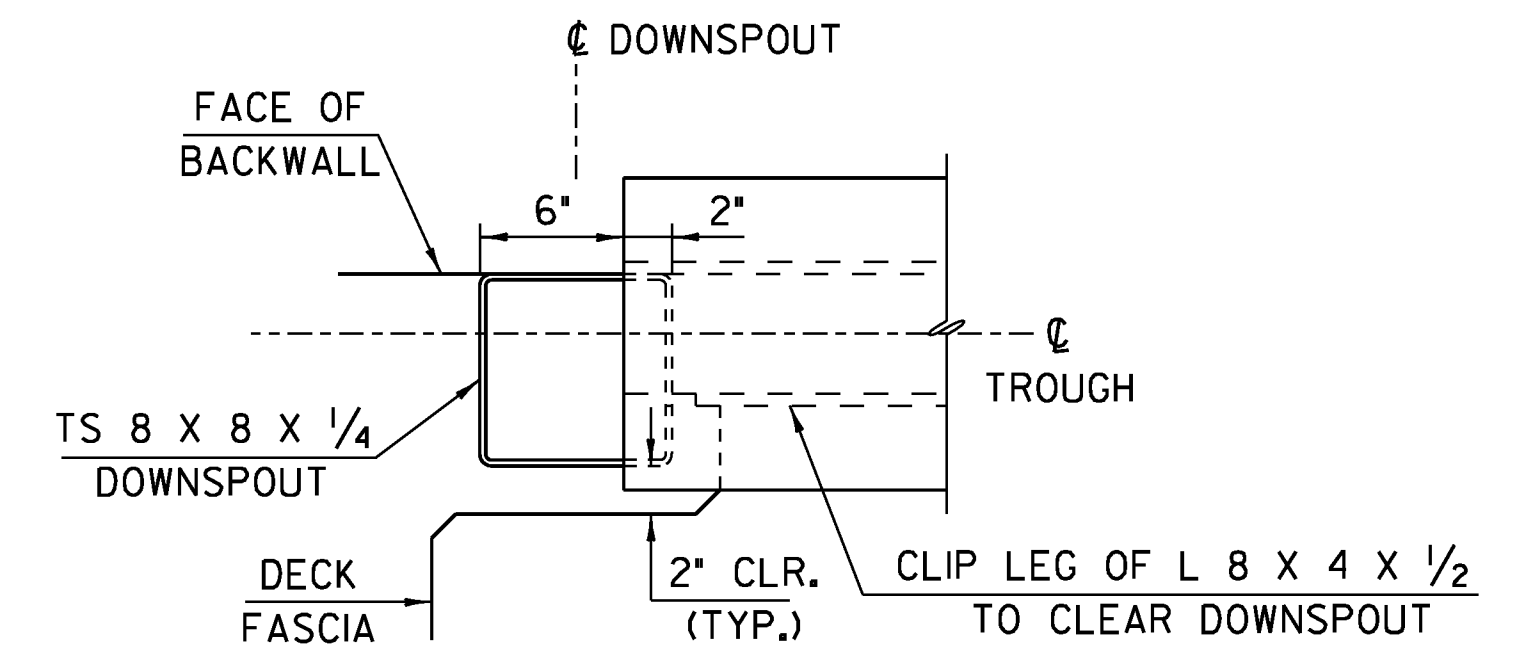
ELEVATION VIEW OF BRACKET "A"

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



ELEVATION VIEW OF BAR "B"

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



**PLAN VIEW OF DECK BOXOUT
FOR DOWNSPOUT**

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

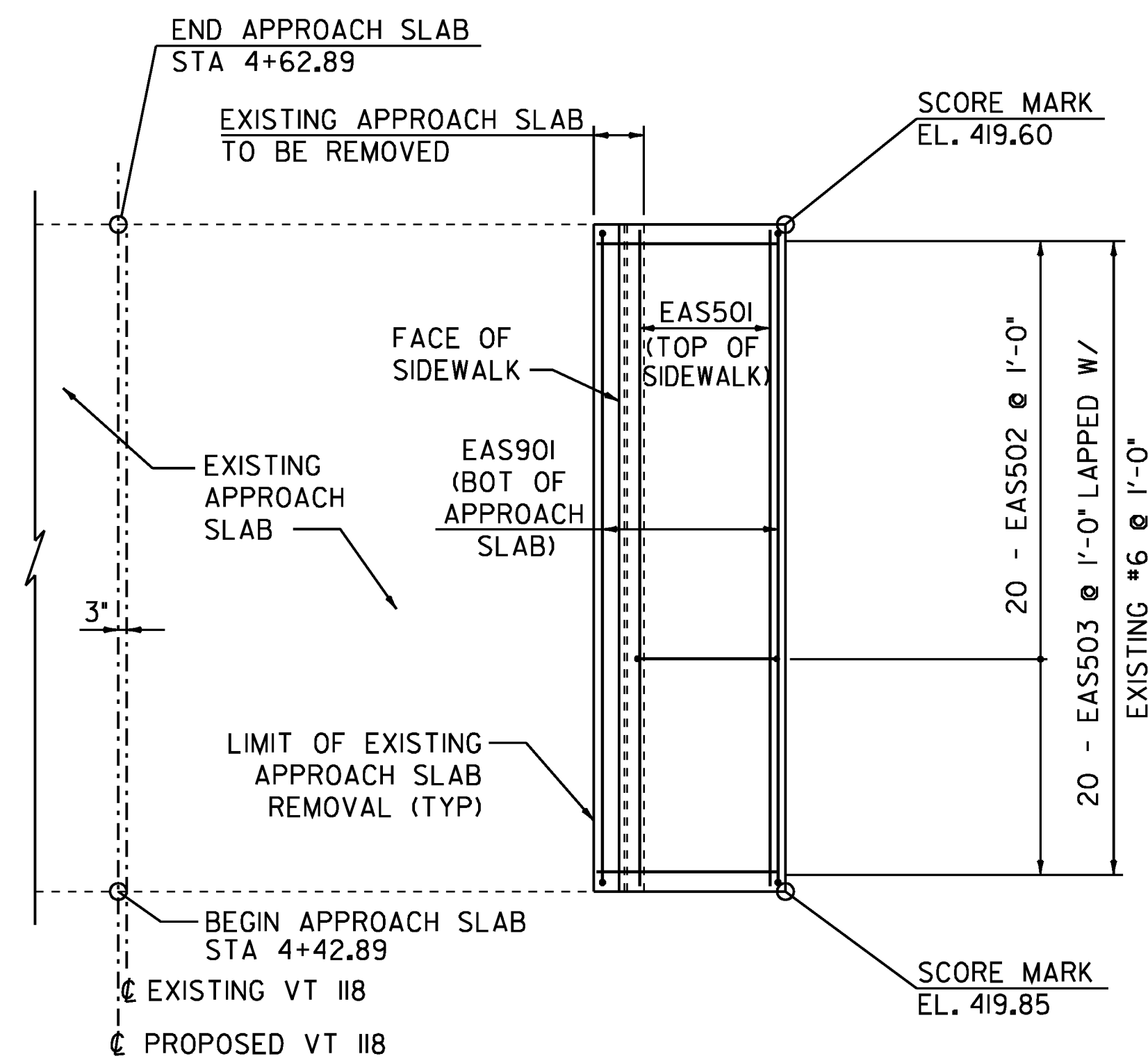
DECK BOXOUT NOTES

- BOTTOM OF DECK TO BE BOXED OUT AS SHOWN TO ALLOW DOWNSPOUT TO COME UP UNDERNEATH THE DRAIN TROUGH.
- DECK REINFORCING STEEL TO BE CUT AS REQUIRED TO MAINTAIN 3" CLEARANCE FROM BOXOUT.

DOWNSPOUT NOTES

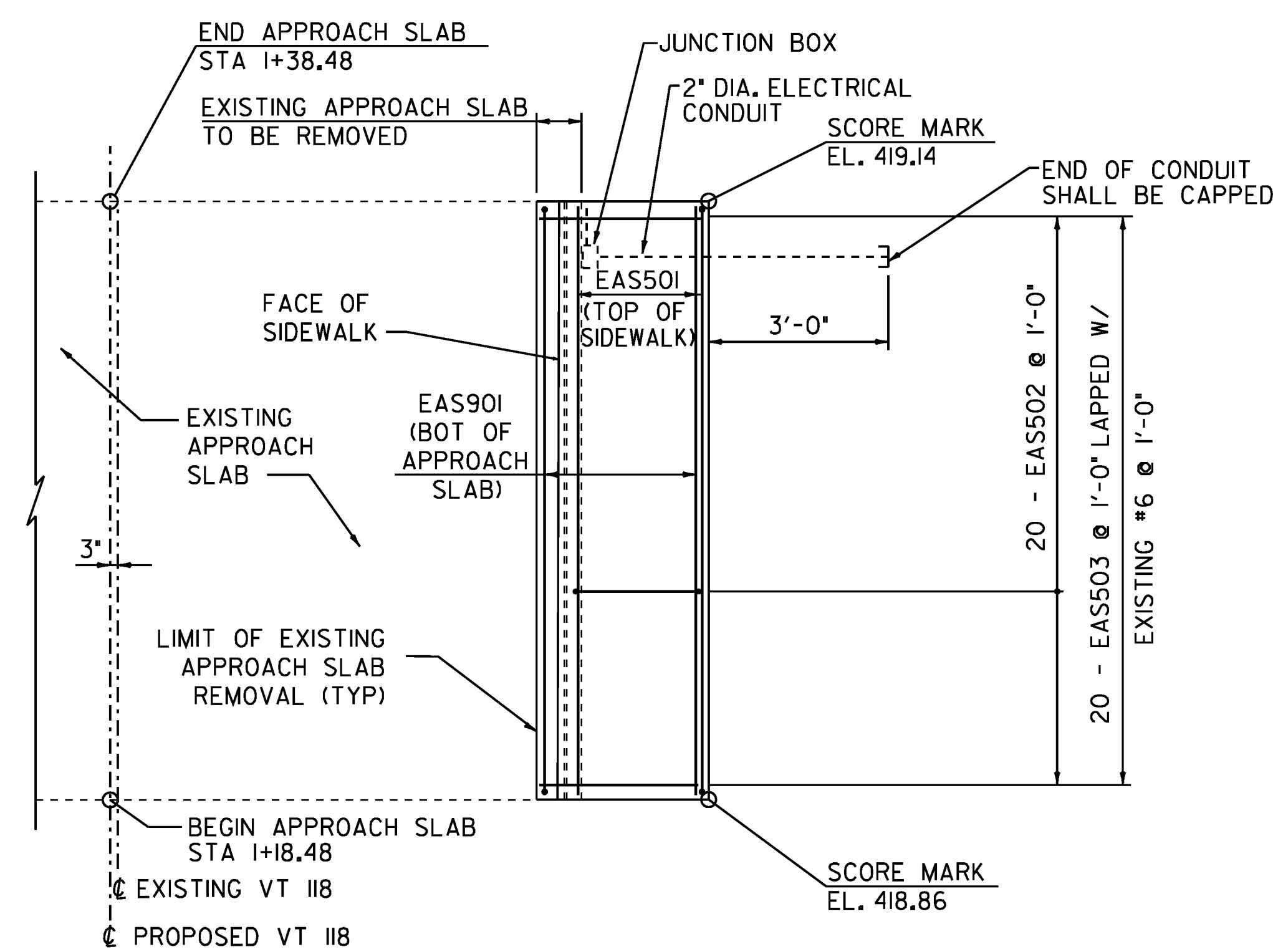
- HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A-500 OR A-501.
- ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO AASHTO M 270, GRADE 250 (GRADE 36).
- DOWNSPOUT AND BRACKETS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111 AFTER FABRICATION.
- ALL BOLTS AND RELATED HARDWARE SHALL BE ASTM A-307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153 (AASHTO M 232).
- ANY PLACE WHERE THE GALVANIZING HAS BEEN REMOVED FROM THE DOWNSPOUT EITHER BY CUTTING, BURNING, WELDING, PLACING, OR ANY OTHER MEANS, IT SHALL BE REPAIRED PER SECTION 513.
- DOWNSPOUT AND ALL ANCHOR BOLTS WITH RELATED HARDWARE SHALL BE PAID FOR UNDER ITEM 506.60 "STRUCTURAL STEEL".

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	
VT 118 OVER MISSISSQUOI RIVER			
DOWNSPOUT DETAILS			
Designed By	J Howe	Drawn By	J Davis
Checked By	R Hebert	Bridge Design Supervisor	
PROJECT	BERKSHIRE	PROJECT NO.	BHF 0283(9)S
I.G.C. Info.		ZC304DD/DGN	
Bridge Sheet No.		Sheet 24	of 41



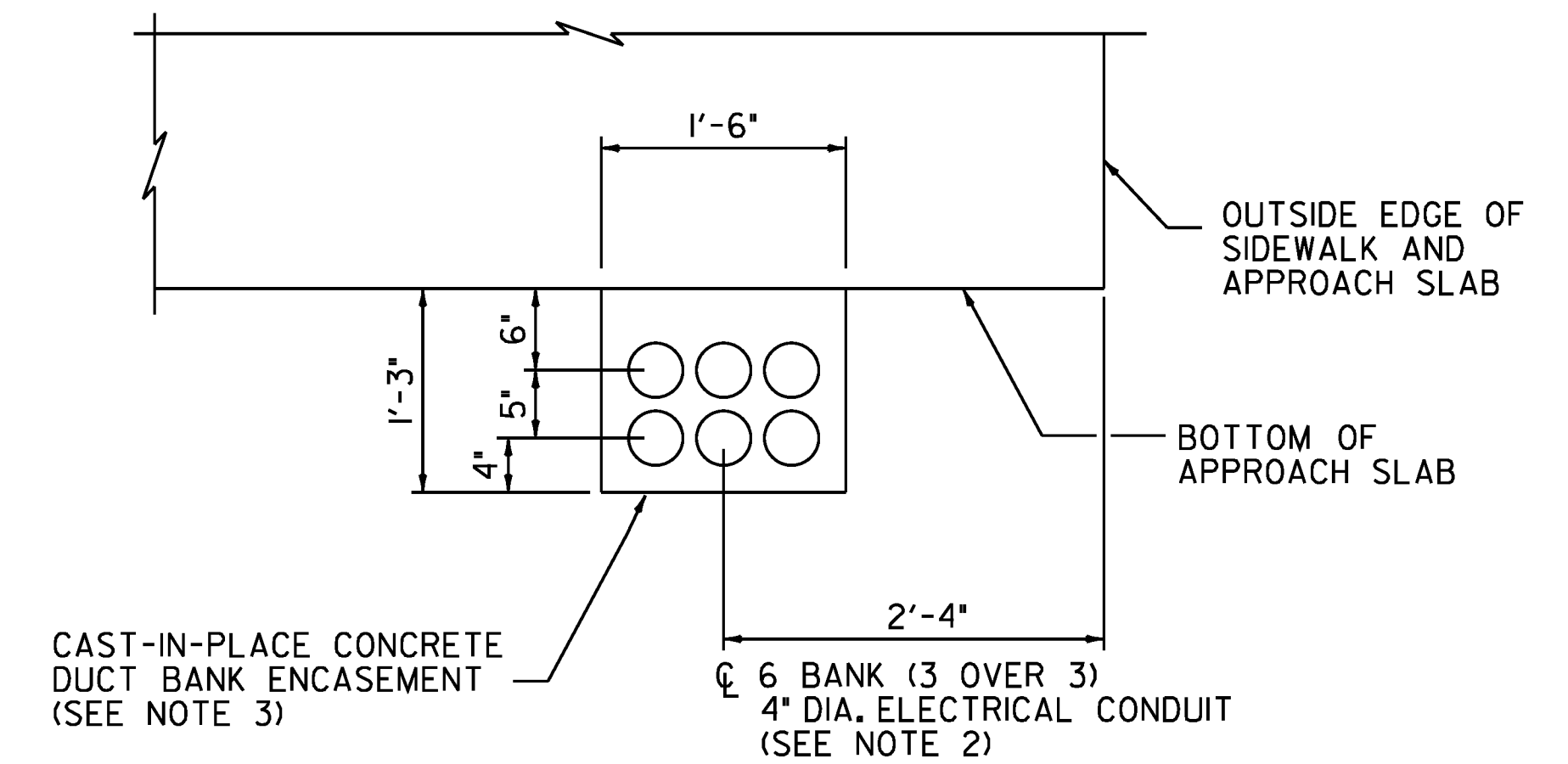
SOUTH APPROACH SLAB PLAN

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



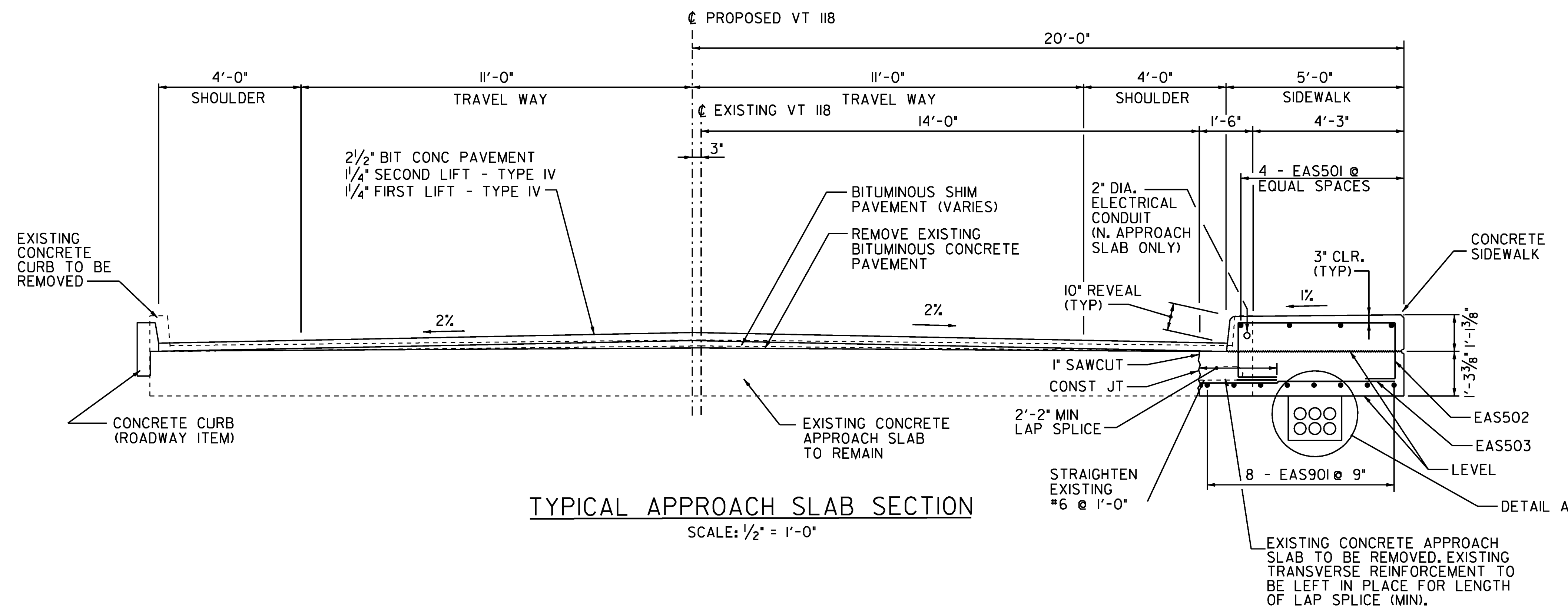
NORTH APPROACH SLAB PLAN

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



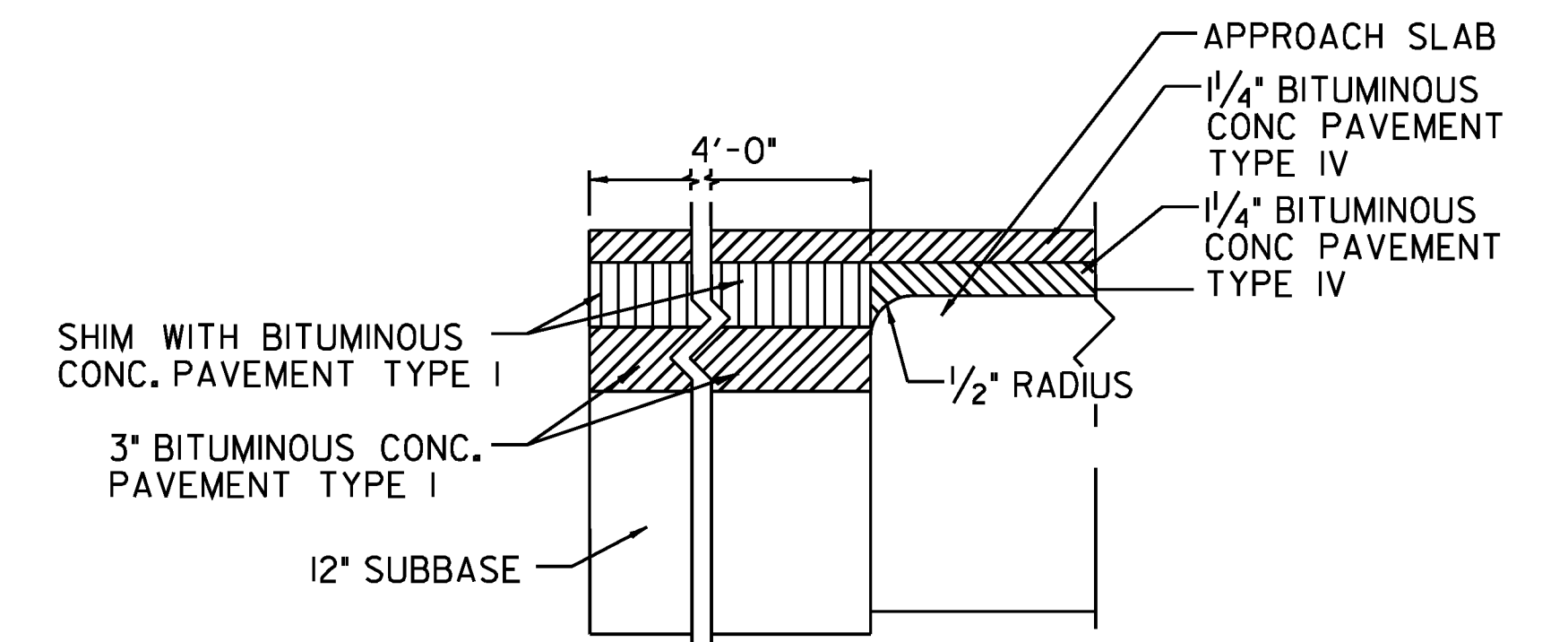
DETAIL A-A

SCALE: 1" = 1'-0"



TYPICAL APPROACH SLAB SECTION

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



DETAIL AT APPROACH SLAB END

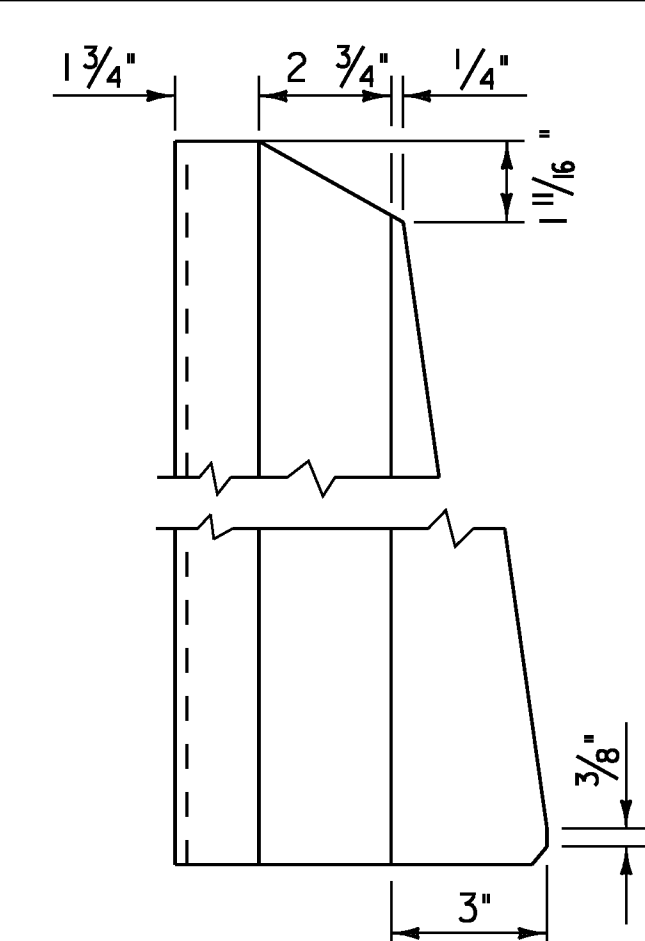
NOT TO SCALE

NOTES:

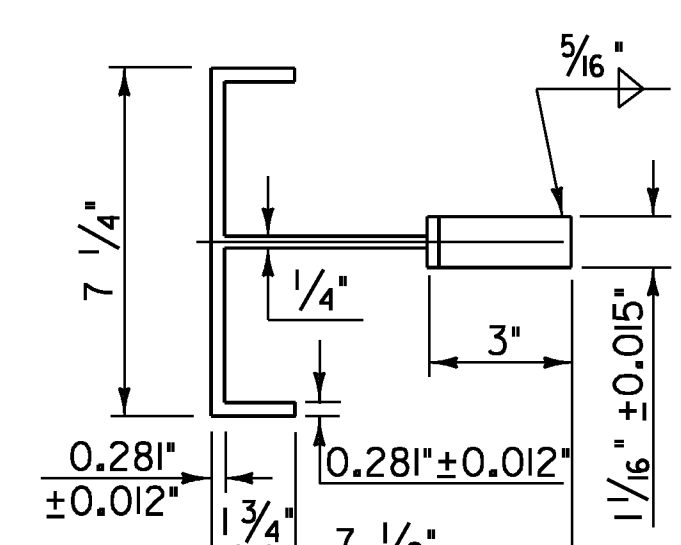
- FOR CURB AND SIDEWALK DIMENSIONS NOT SHOWN, SEE TYPICAL SECTION, SHT 13.
- 6 BANK (3 OVER 3) 4" DIA. ELECTRICAL CONDUIT SHALL BE PAID UNDER ITEM 900.640 SPECIAL PROVISION (DUCT BANK) (6 CONDUIT).
- CONCRETE FOR CONCRETE DUCT BANK ENCASEMENT SHALL BE CONCRETE, CLASS B f'c = 3500 psi AND SHALL BE INCIDENTAL TO ITEM 900.640 SPECIAL PROVISION (DUCT BANK) (6 CONDUIT).

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

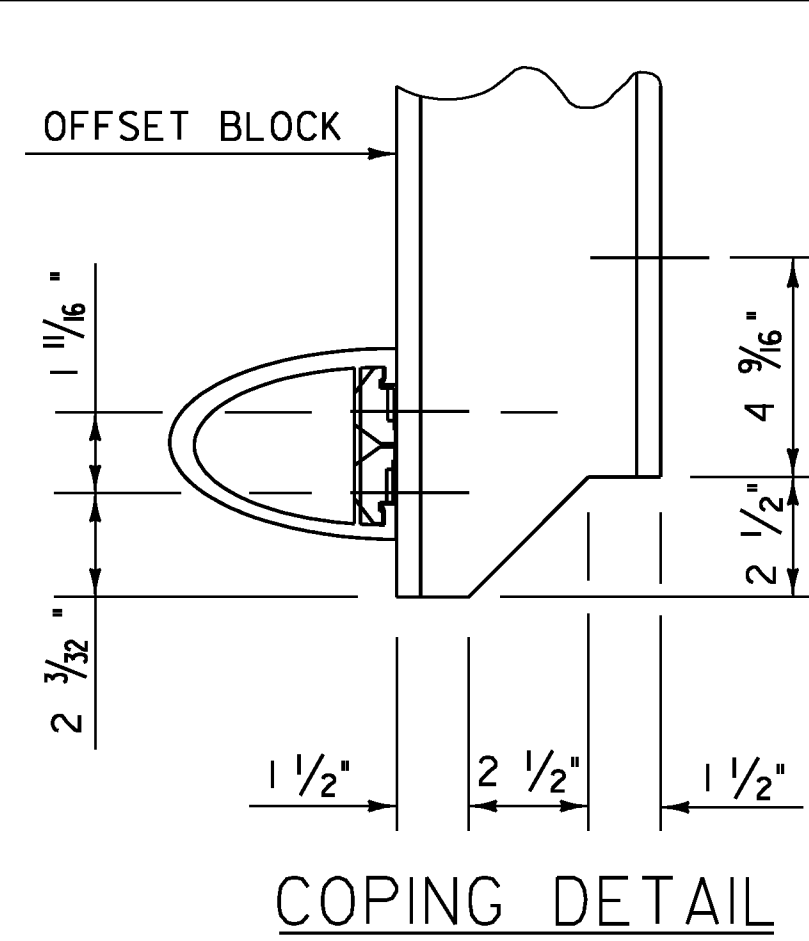
Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT I18	Log Sta.	
		Surv. Sta.	
VT I18 OVER MISSISSQUOI RIVER			
APPROACH SLAB DETAILS			
Designed By	J Howe	Drawn By	J Davis
Checked By	R Hebert	Date	4/2/09
		Bridge Design Supervisor	
		Date	
PROJECT	BERKSHIRE	PROJECT NO.	BHF 0283(9)S
I.G.C. Info.	ZC304ASP.DGN		
Bridge Sheet No.	Sheet 25 of 41		



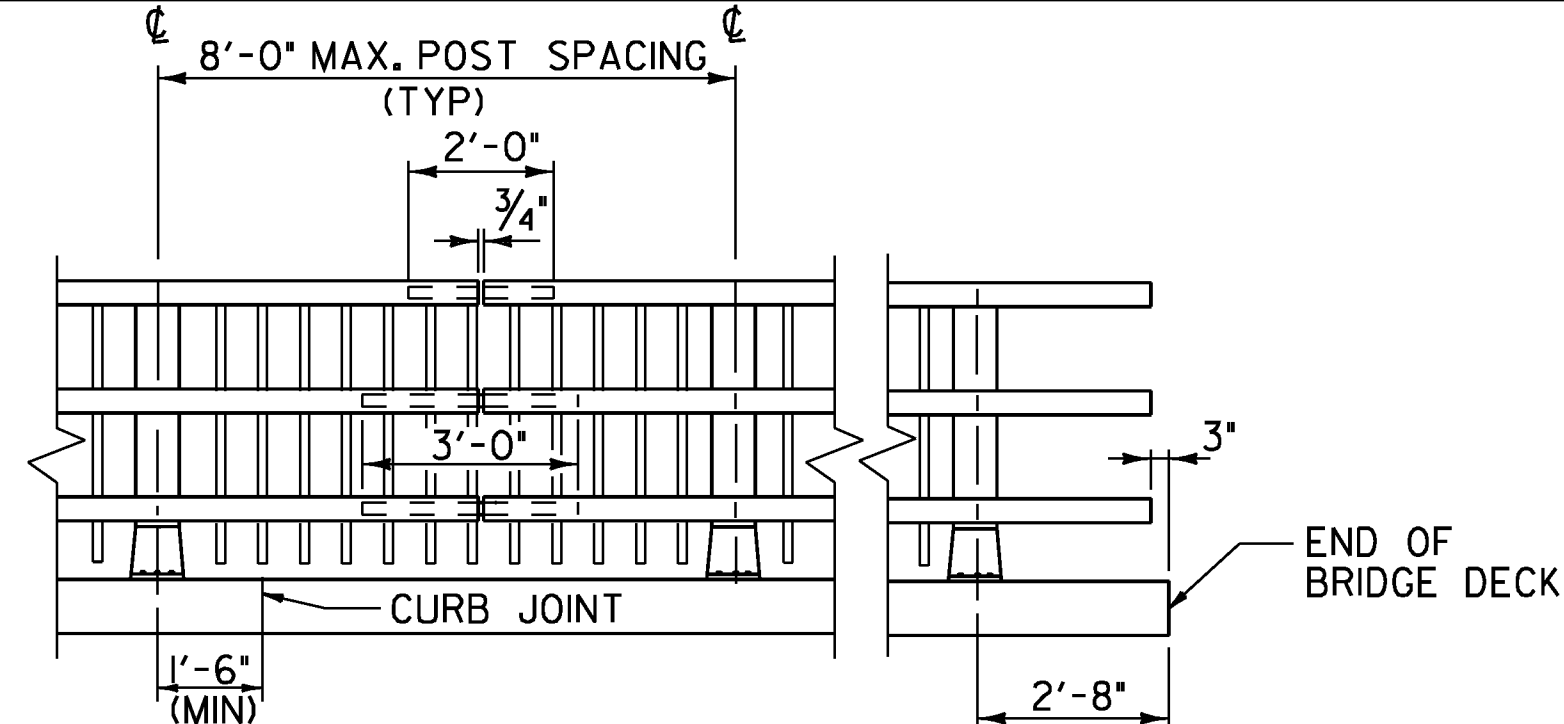
POST SIDE VIEW



POST PLAN VIEW

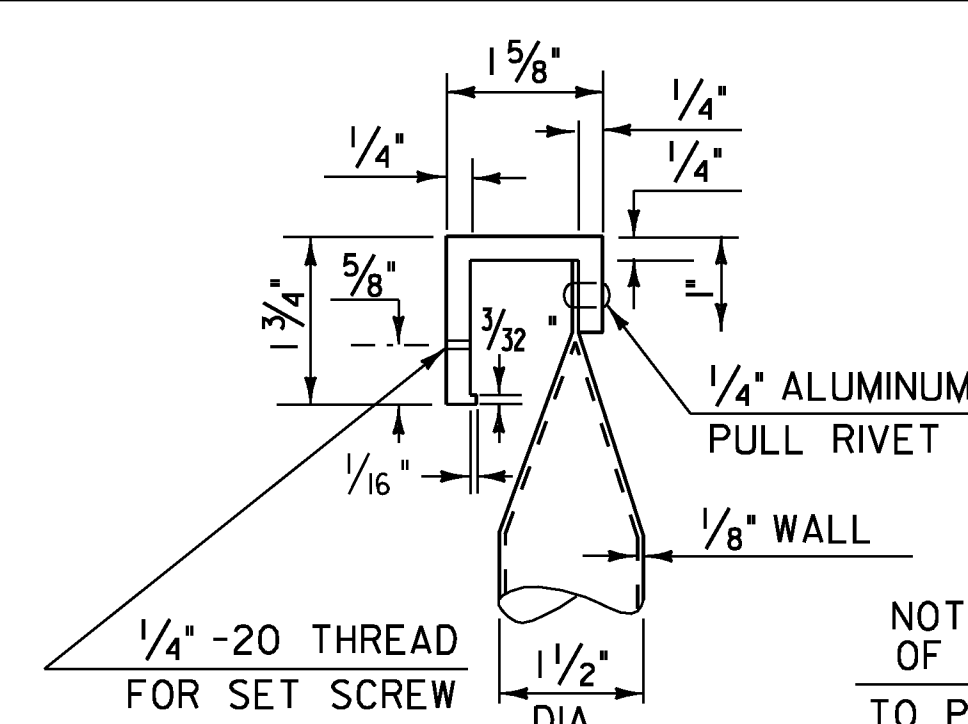


COPING DETAIL

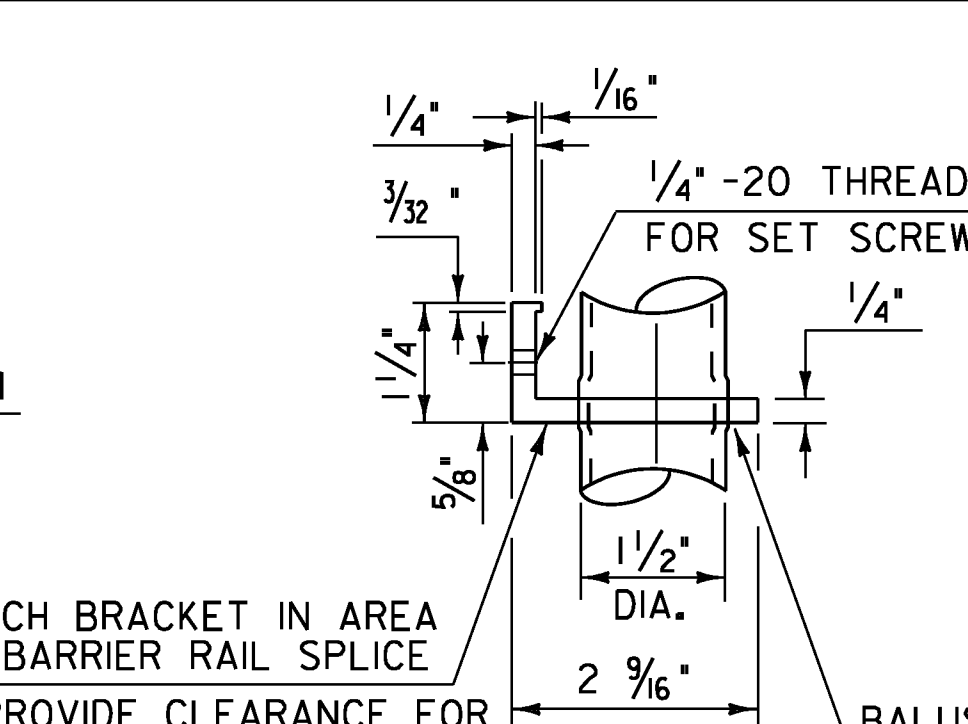


FRONT ELEVATION OF
THREE RAIL WITH SPINDLES

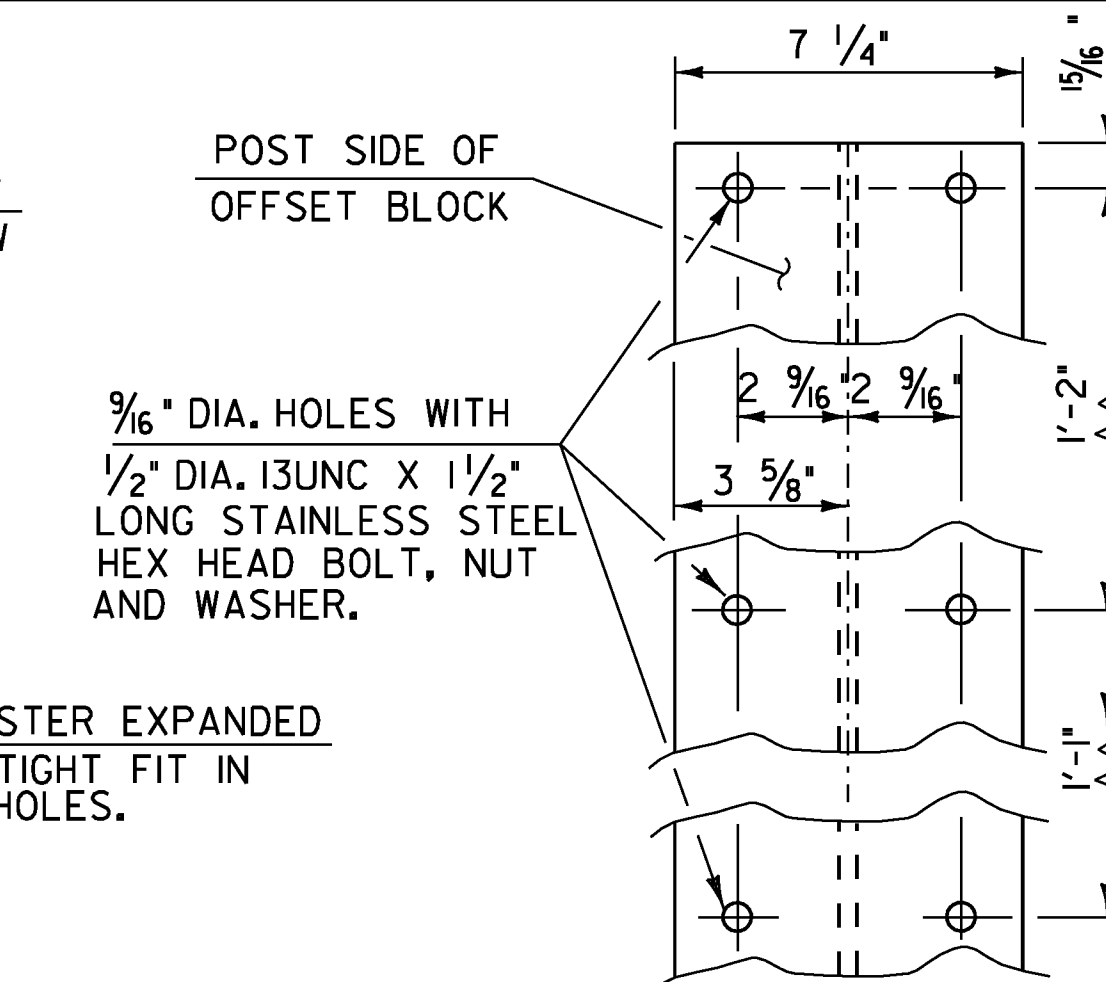
NOTE : RAIL POSTS ARE TO BE SET NORMAL TO GRADE
UNLESS OTHERWISE DESIGNATED ON BRIDGE PLANS.
ALL DIMENSIONS ARE TYPICAL UNLESS OTHERWISE
DESIGNATED ON BRIDGE PLANS.



DETAIL A

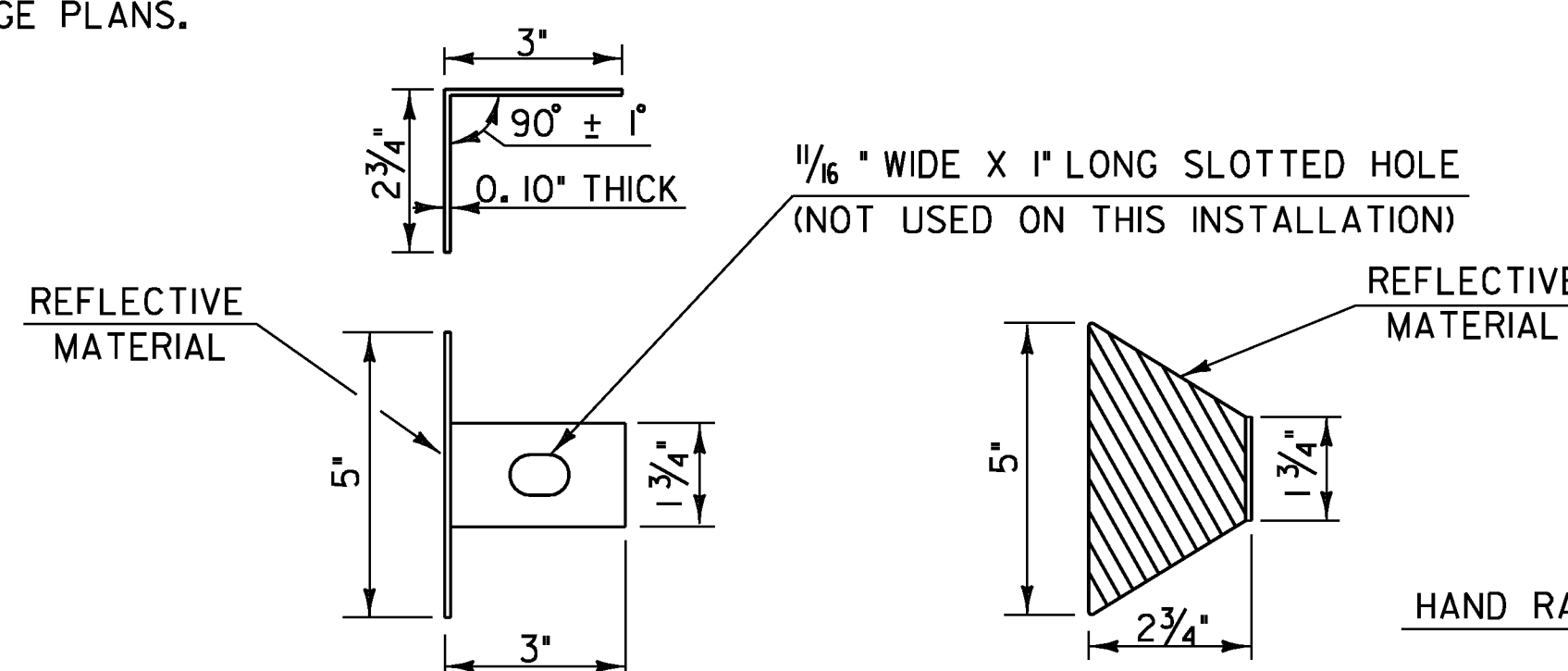


DETAIL B

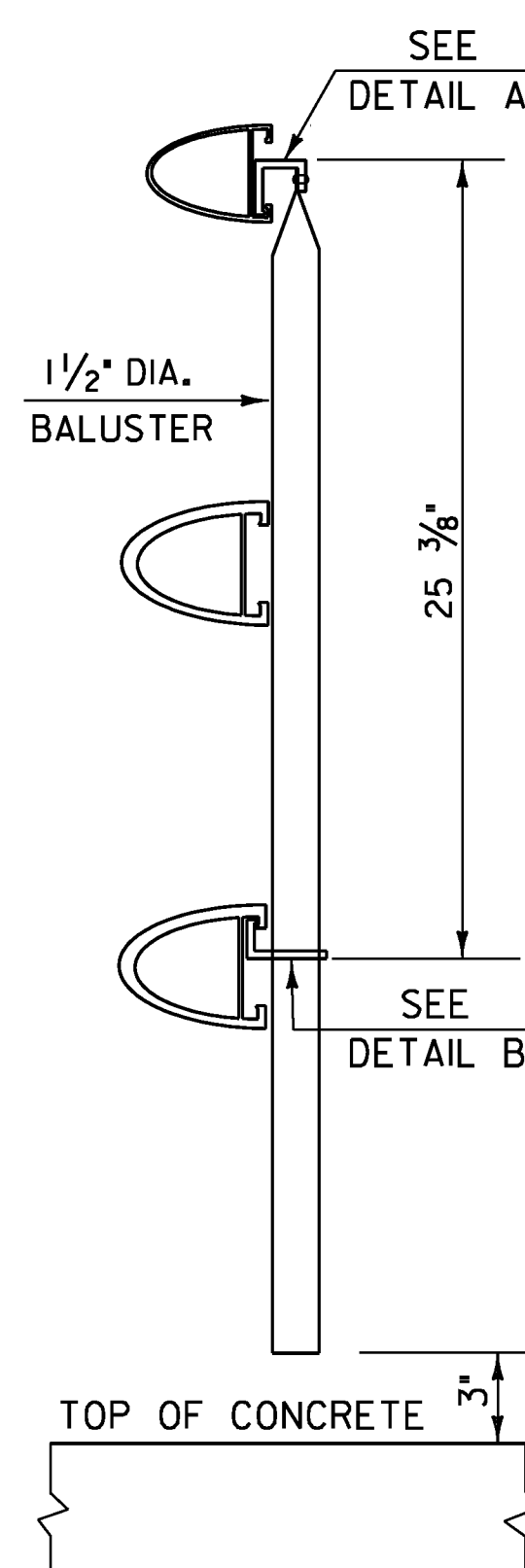


OFFSET BLOCK
CONNECTION

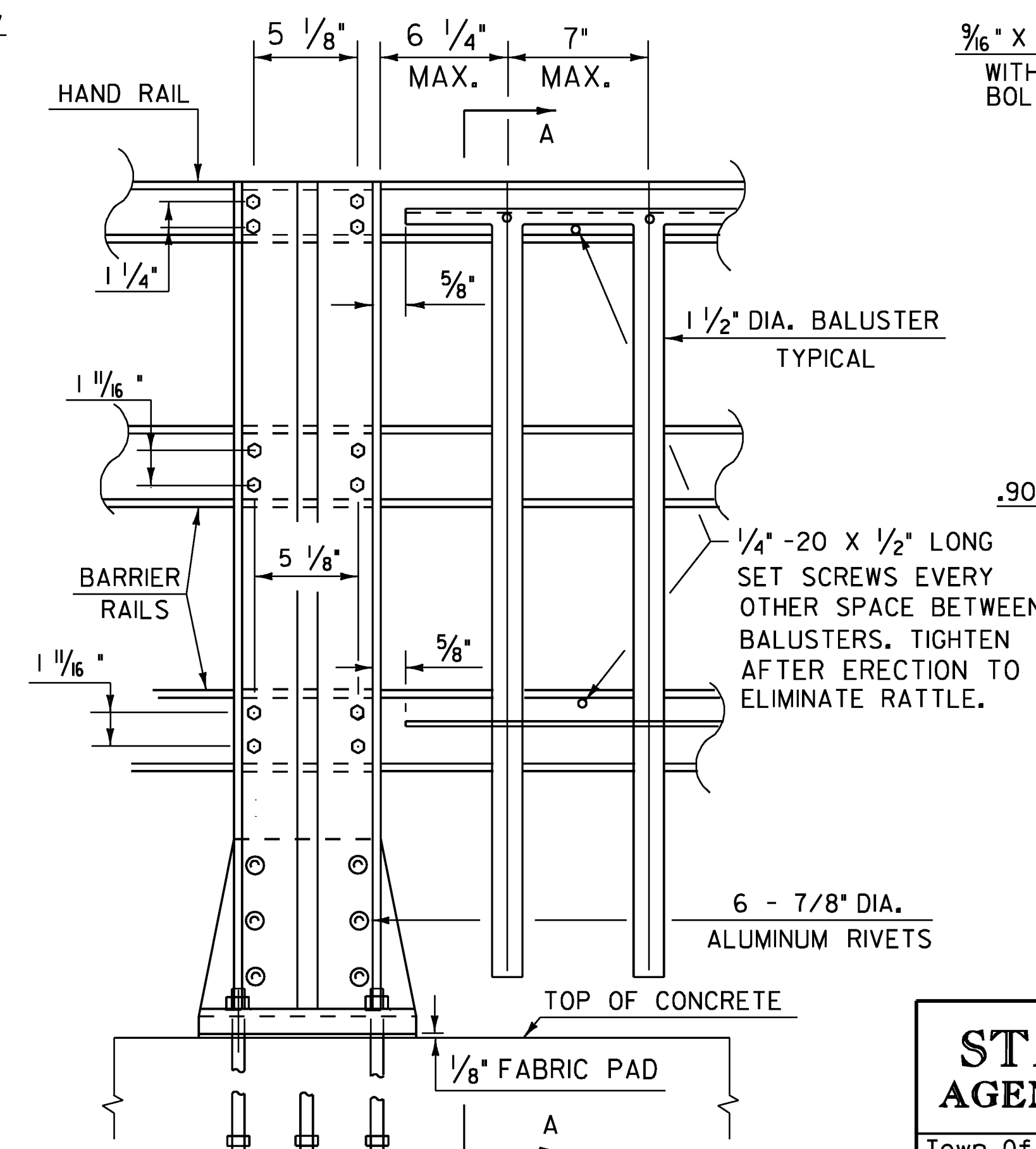
ALLOWABLE STRESSES:
RAILING : 21,000 PSI TENSION
22,000 PSI COMPRESSION
POSTS : 17,000 PSI TENSION
19,000 PSI COMPRESSION



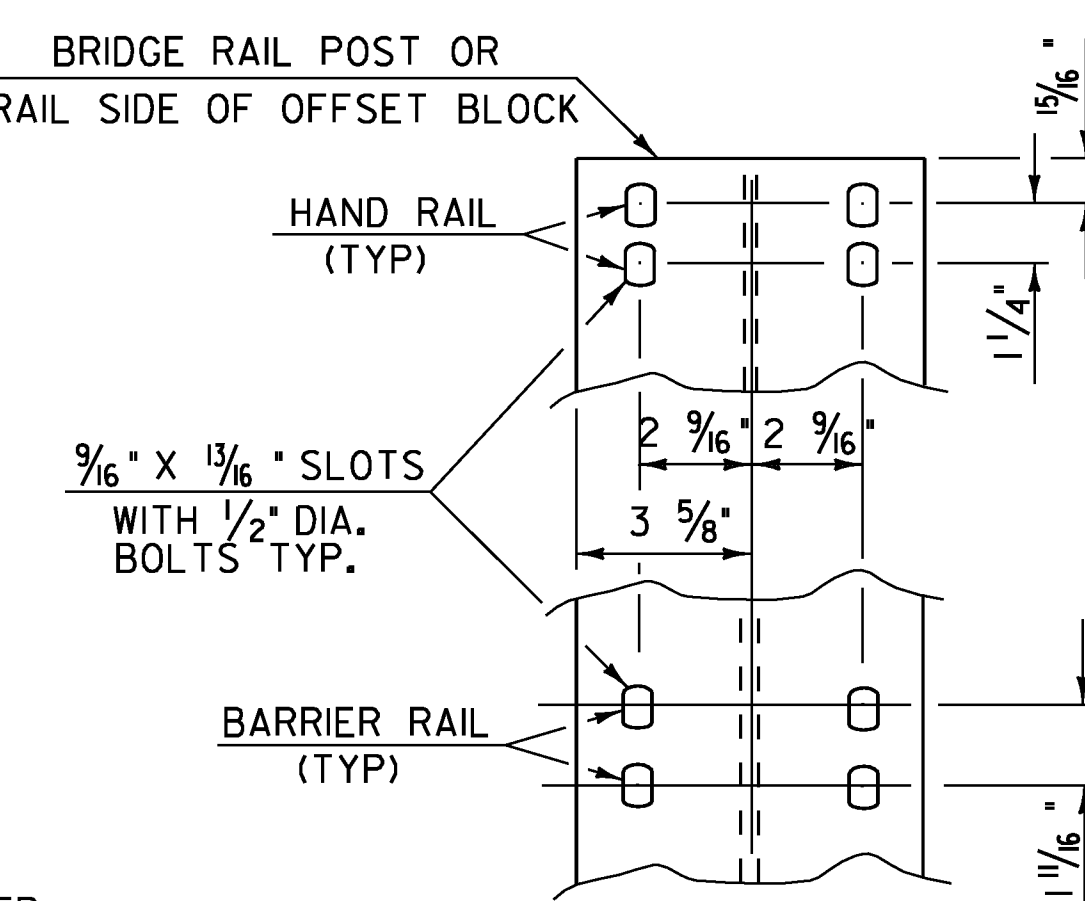
REFLECTOR DETAILS



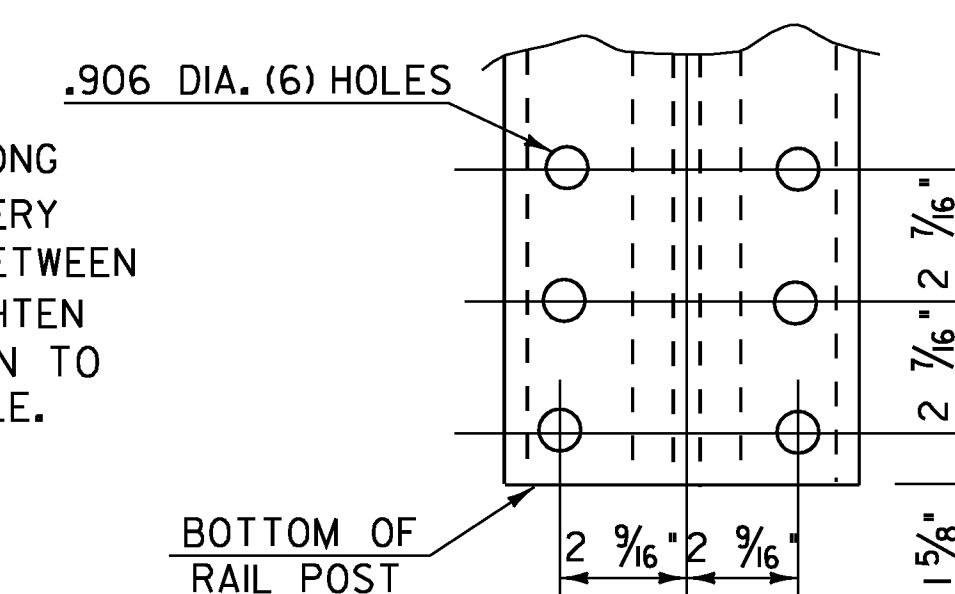
SECTION AA



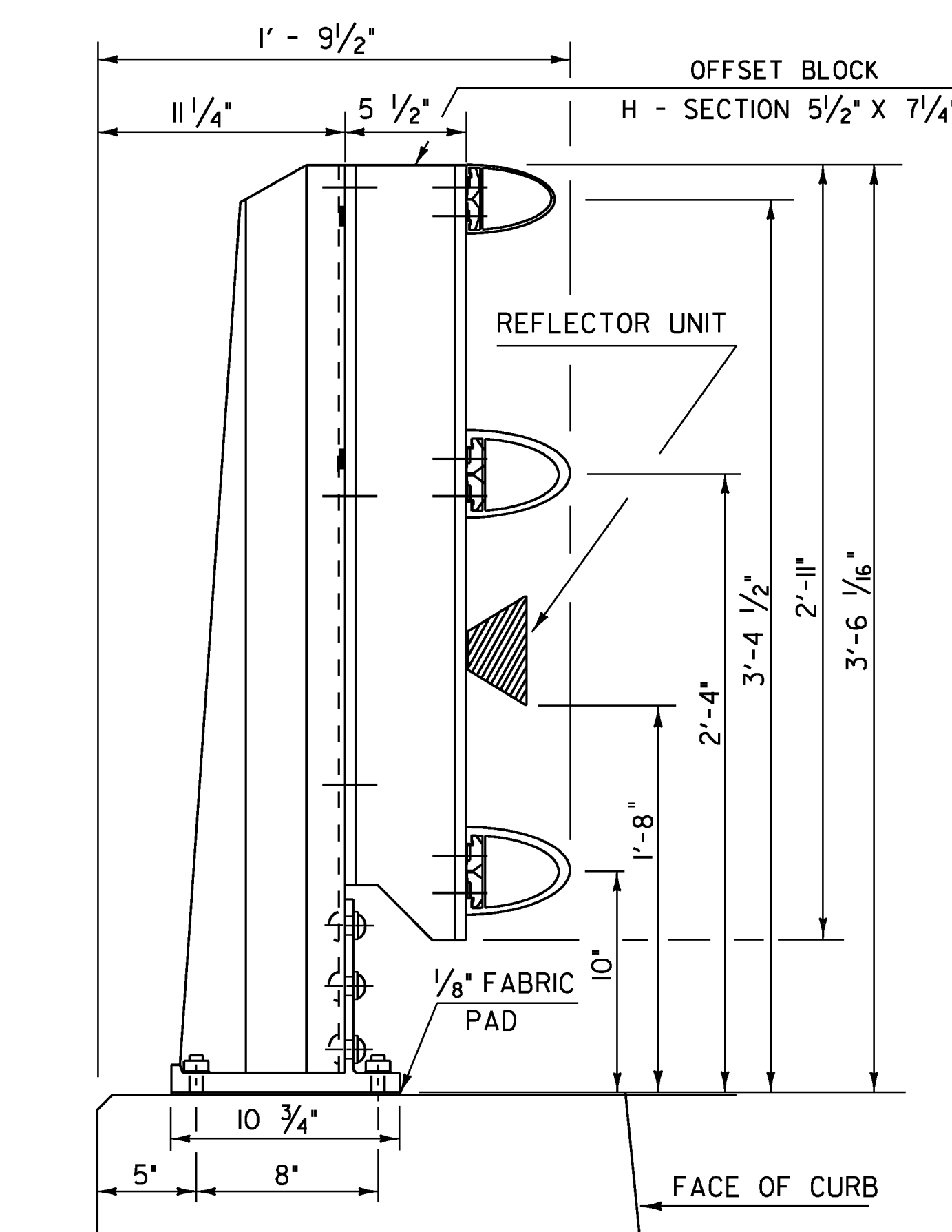
OUTSIDE ELEVATION OF
THREE RAIL POST & SPINDLES



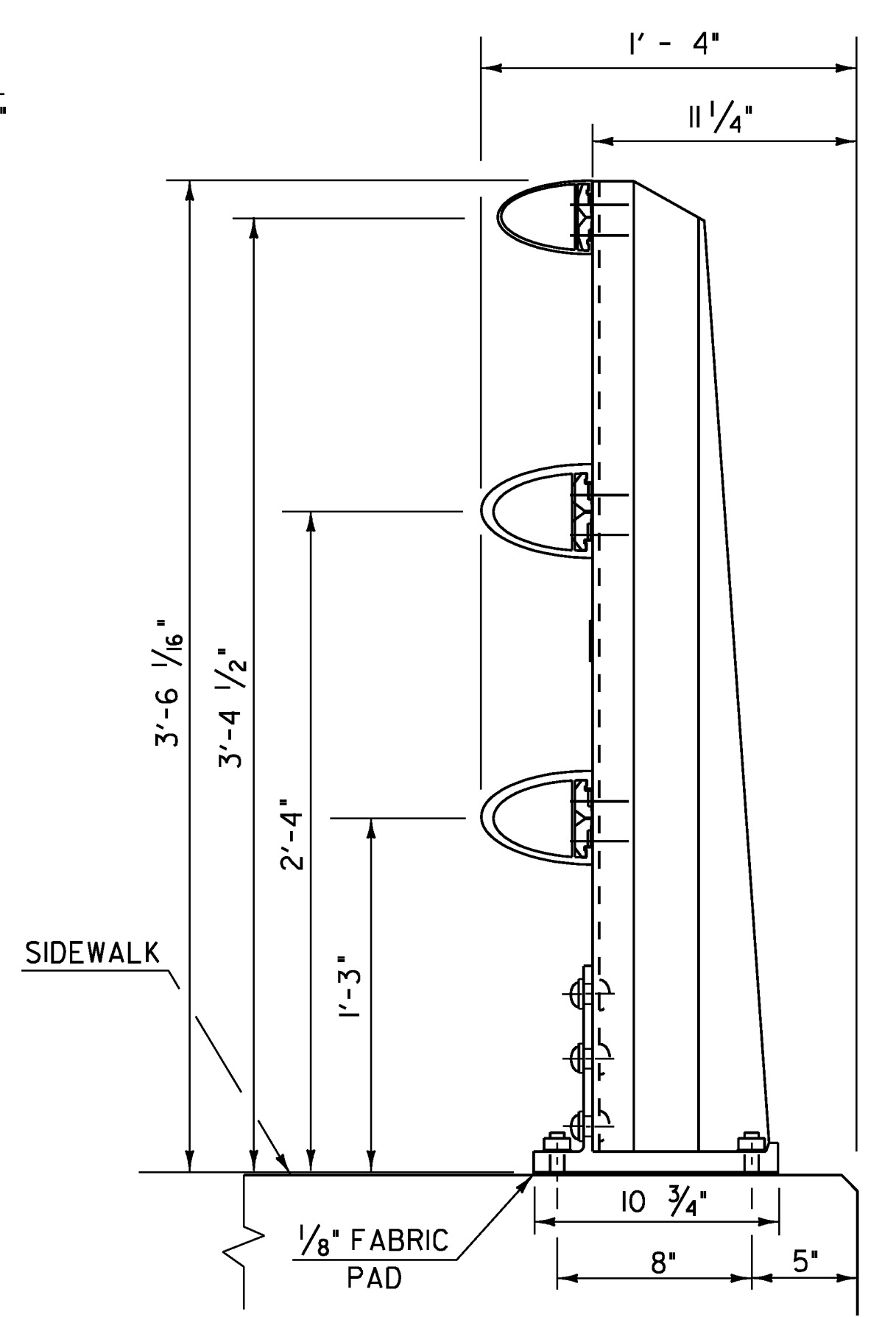
RAIL CONNECTION



POST BASE
BOLT HOLE DETAILS



SIDE ELEVATION OF THREE RAIL
TO BE USED ON CURB SIDE



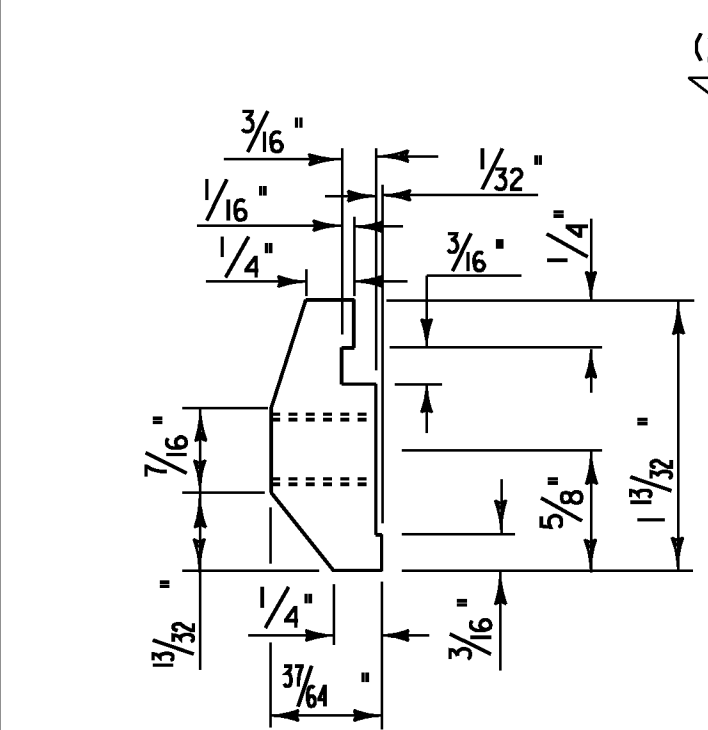
SIDE ELEVATION OF THREE RAIL
TO BE USED ON SIDEWALK SIDE

RAIL POST DETAILS ON SUPERSTRUCTURE

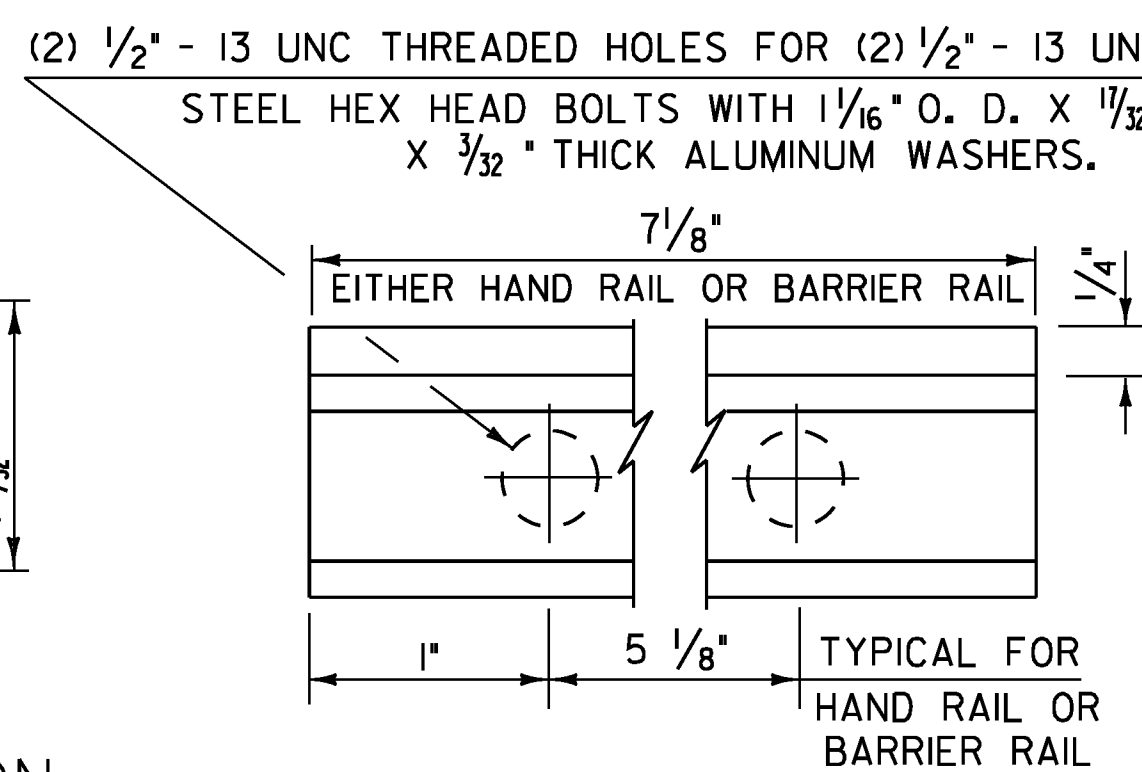
DETAILS OF SPINDLES FOR ALUMINUM RAILING

STATE OF VERMONT AGENCY OF TRANSPORTATION

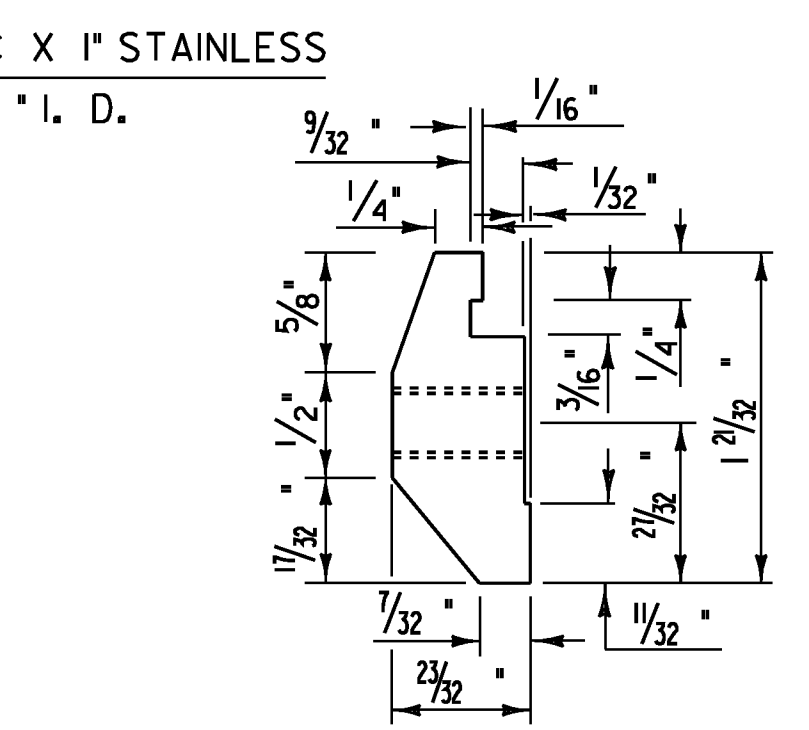
Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	
VT 118 OVER MISSISSQUOI RIVER			
ALUMINUM BRIDGE RAILING DETAILS (1)			
Designed By	R Howe	Drawn By	J Davis
Checked By	R Hebert	Bridge Design Supervisor	
		Date	4/2/09
PROJECT	BERKSHIRE	PROJECT NO.	BHF 0283(9)S
I.G.C. Info.		ZC304RALDGN	
Bridge Sheet No.		Sheet	26 of 41



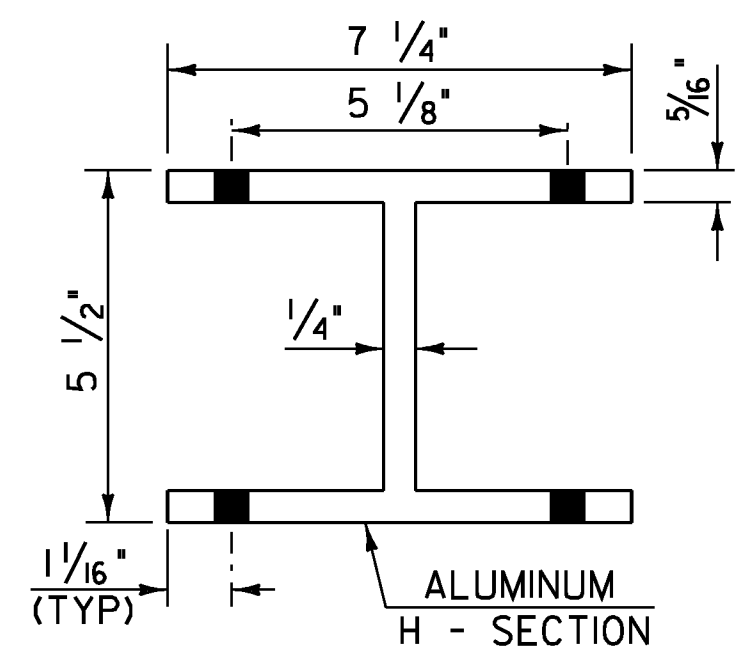
POST CONNECTION
HAND RAIL SECTION



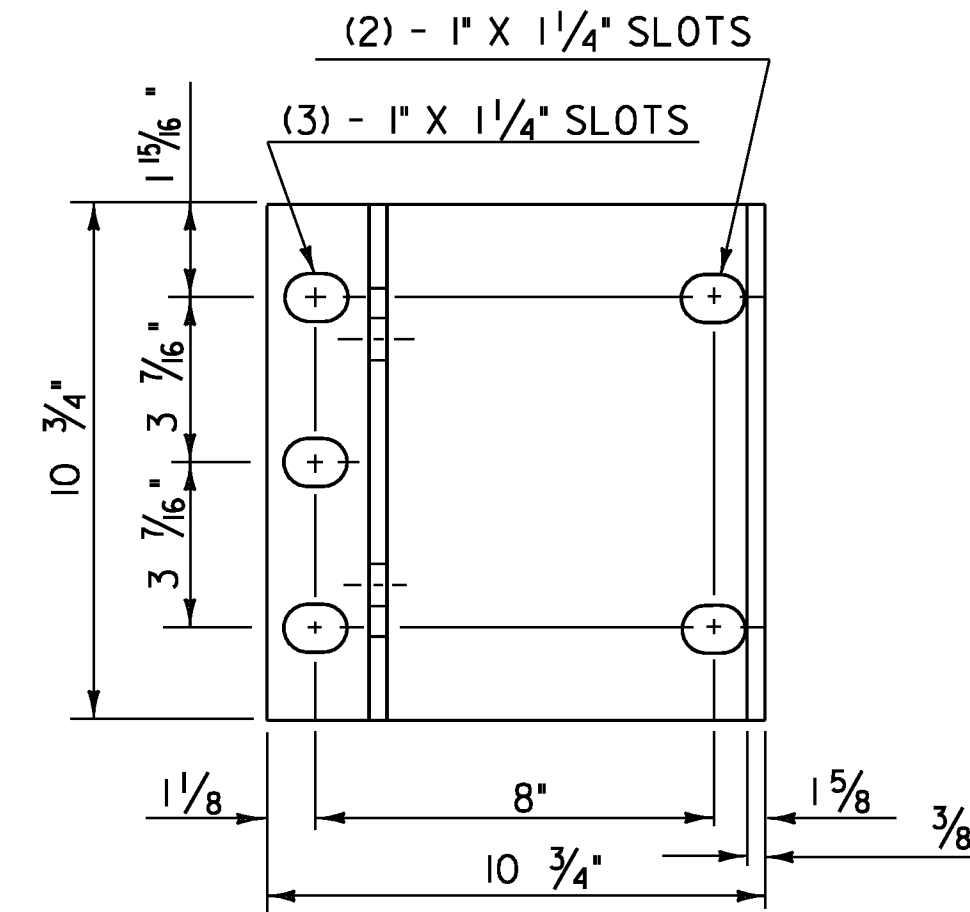
POST CONNECTION
ELEVATION



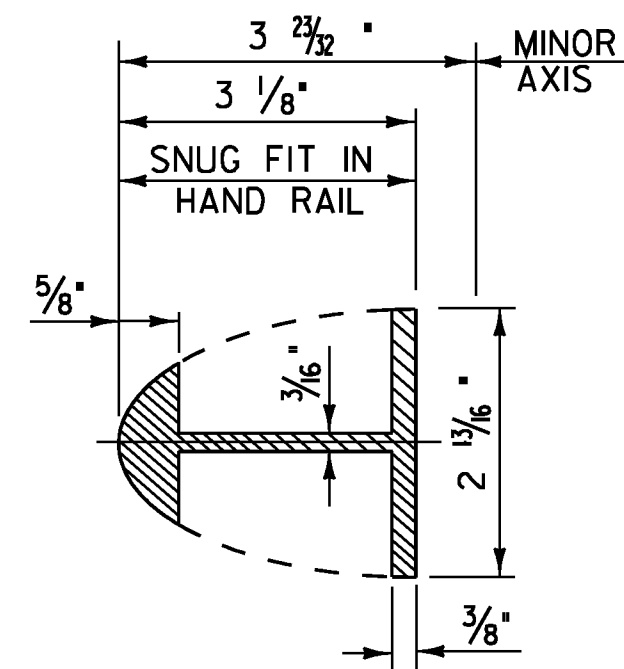
POST CONNECTION
BARRIER RAIL SECTION



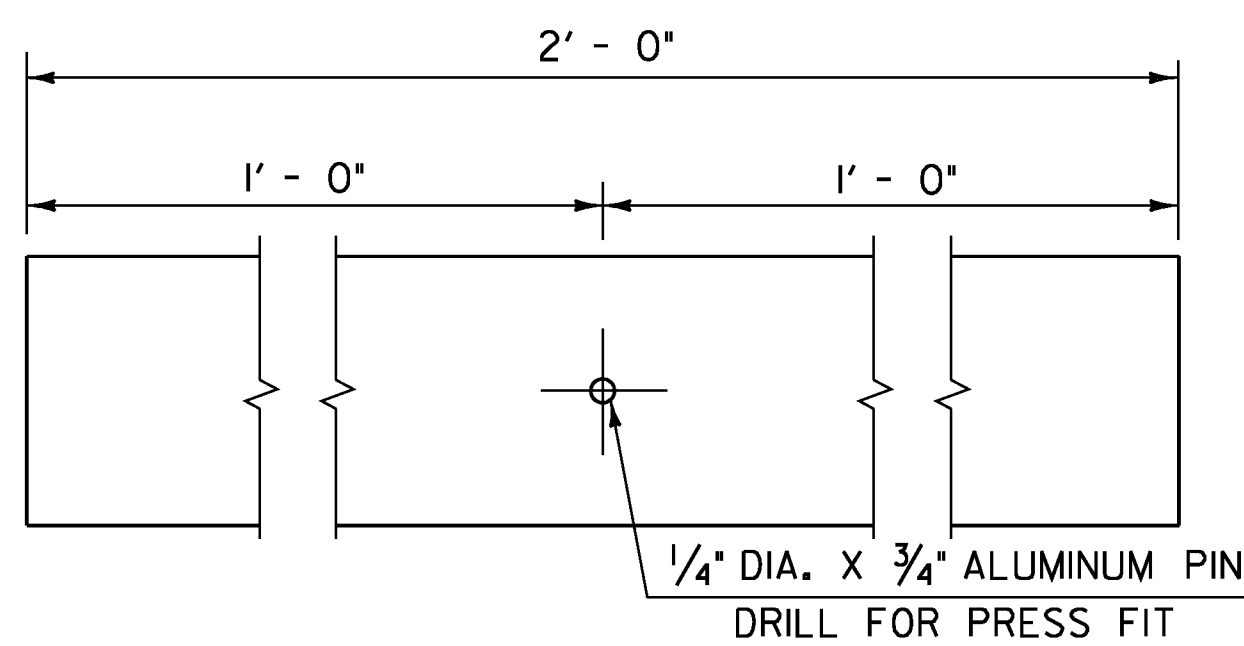
PLAN VIEW OF
OFFSET BLOCK
(TO BE USED ON
SUPERSTRUCTURE
ON CURB SIDE)



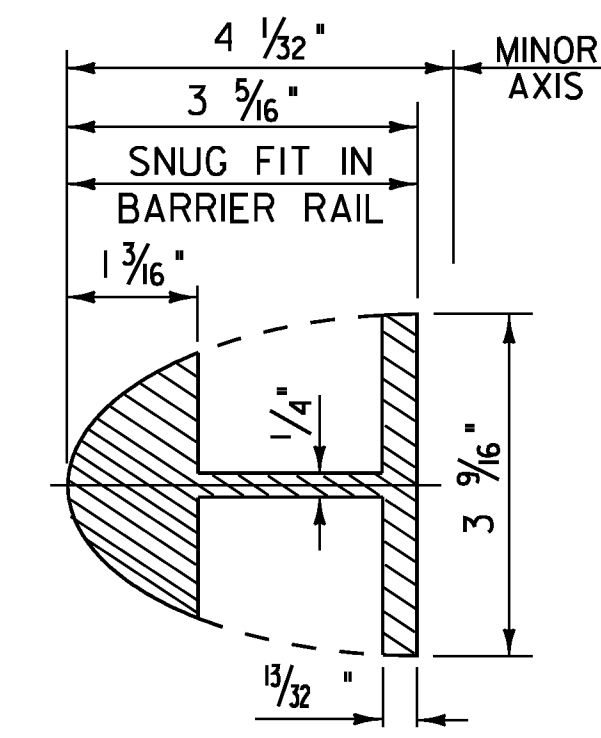
POST BASE
PLAN



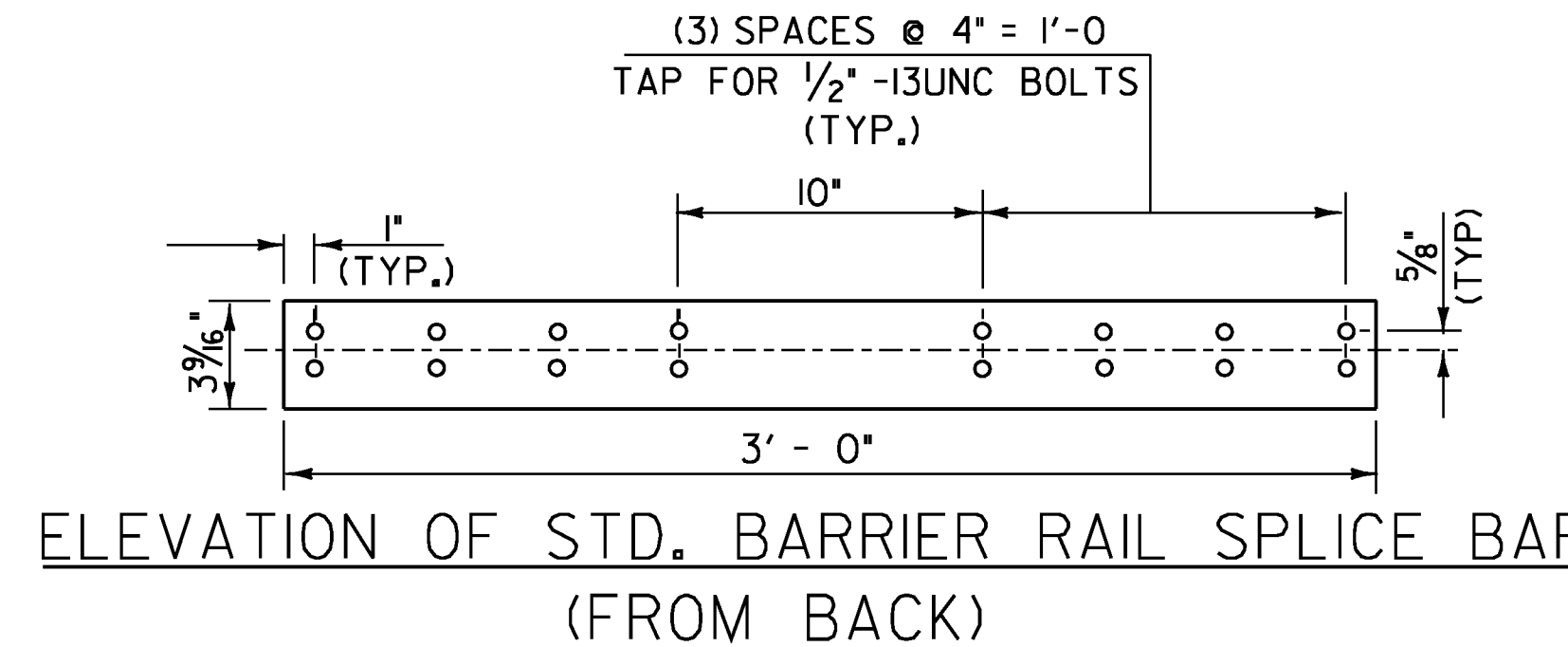
HAND RAIL
SPLICE SECTION



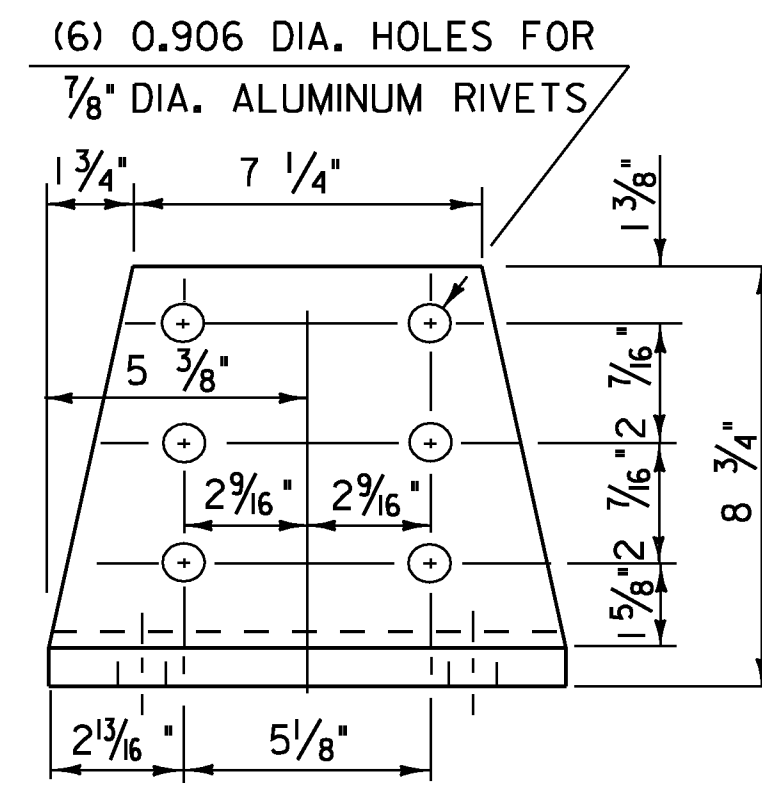
ELEVATION OF
HAND RAIL SPLICE BAR



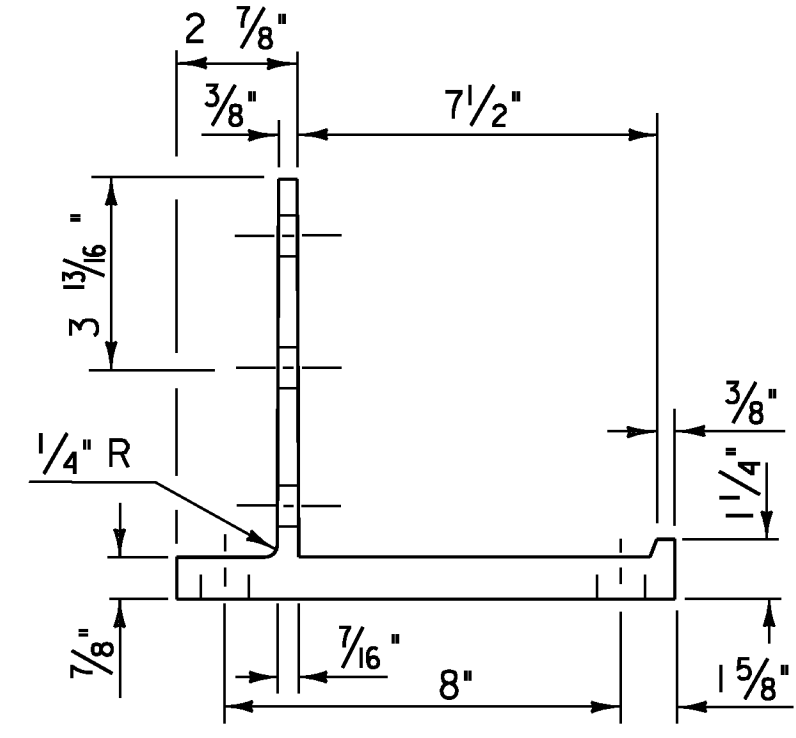
BARRIER RAIL
SPLICE SECTION
(SEE SHEET 28 FOR ELEVATION
OF BARRIER RAIL SPLICE BAR)



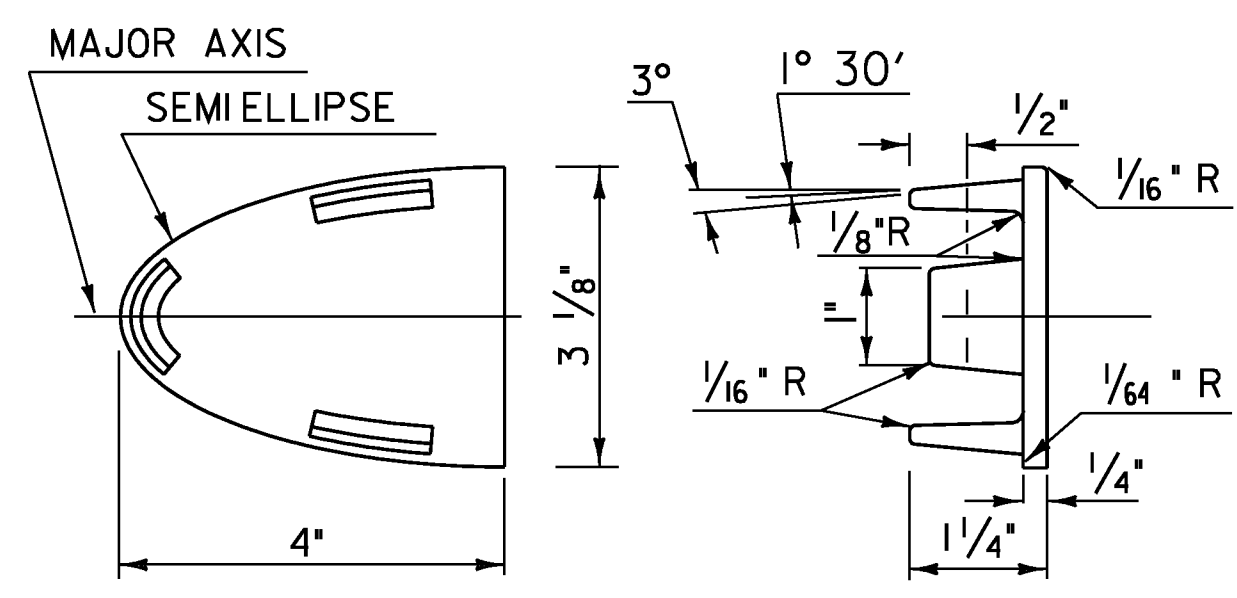
ELEVATION OF STD. BARRIER RAIL SPLICE BAR
(FROM BACK)



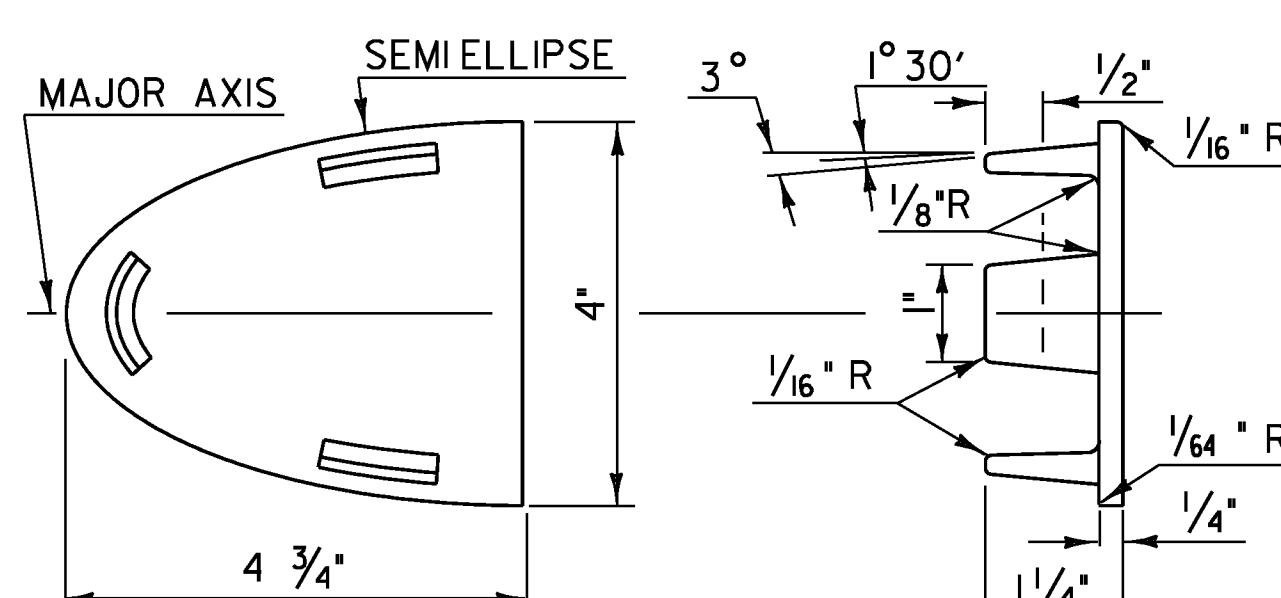
POST BASE
FRONT ELEVATION



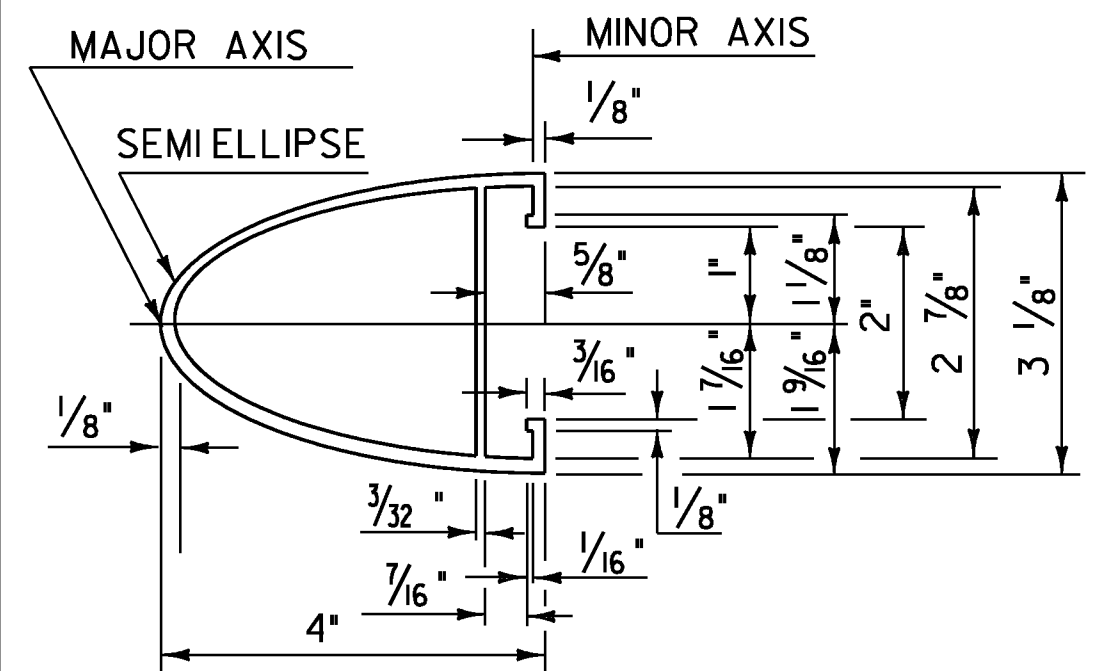
POST BASE
SECTION



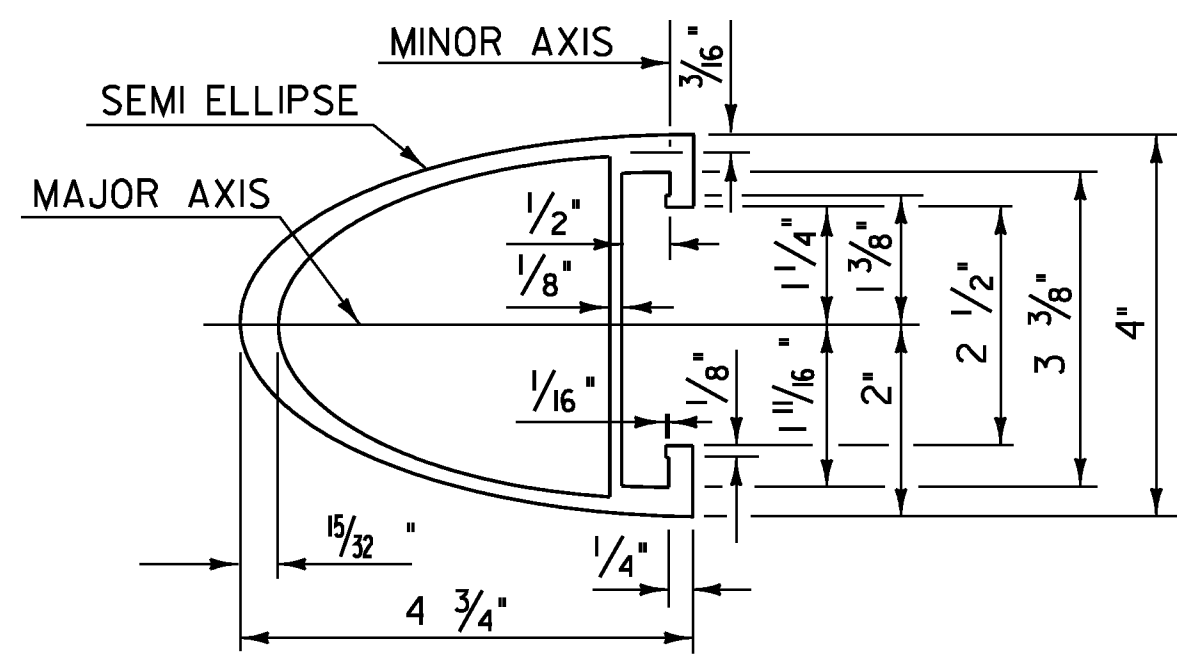
HAND RAIL END CAP



BARRIER RAIL END CAP

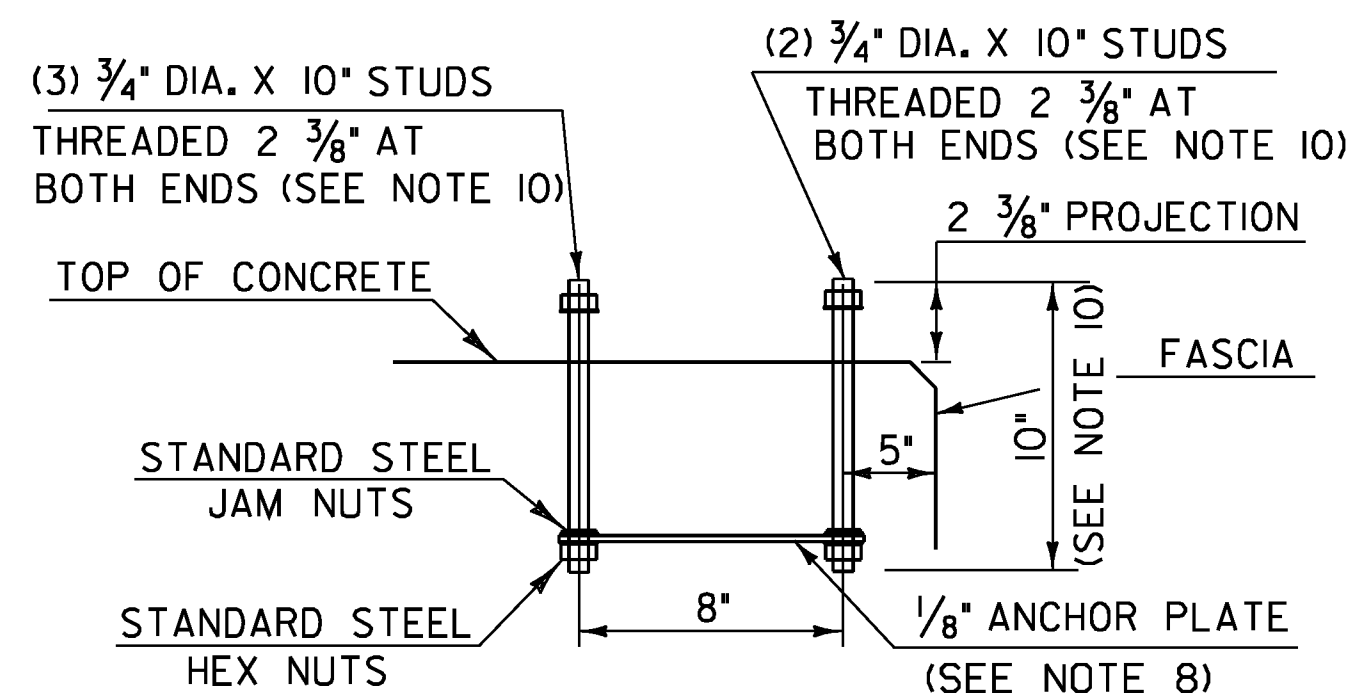


HAND RAIL SECTION

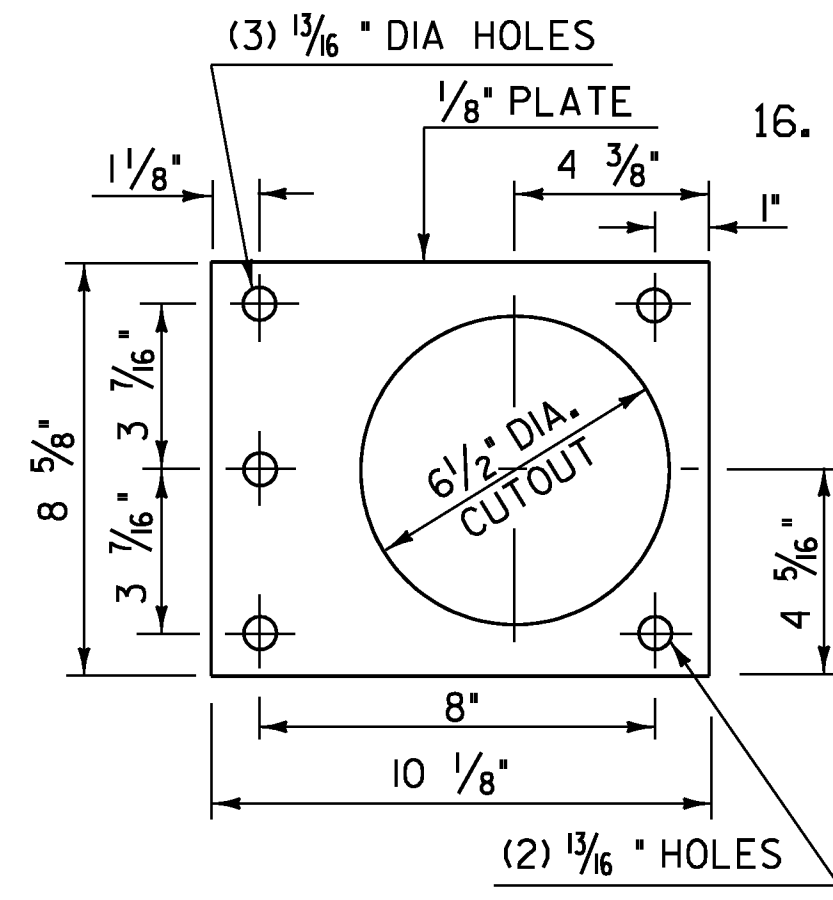


BARRIER RAIL SECTION

(SEE SHEET 26 FOR ELEVATION
OF BARRIER RAIL)



POST ANCHOR ASSEMBLY

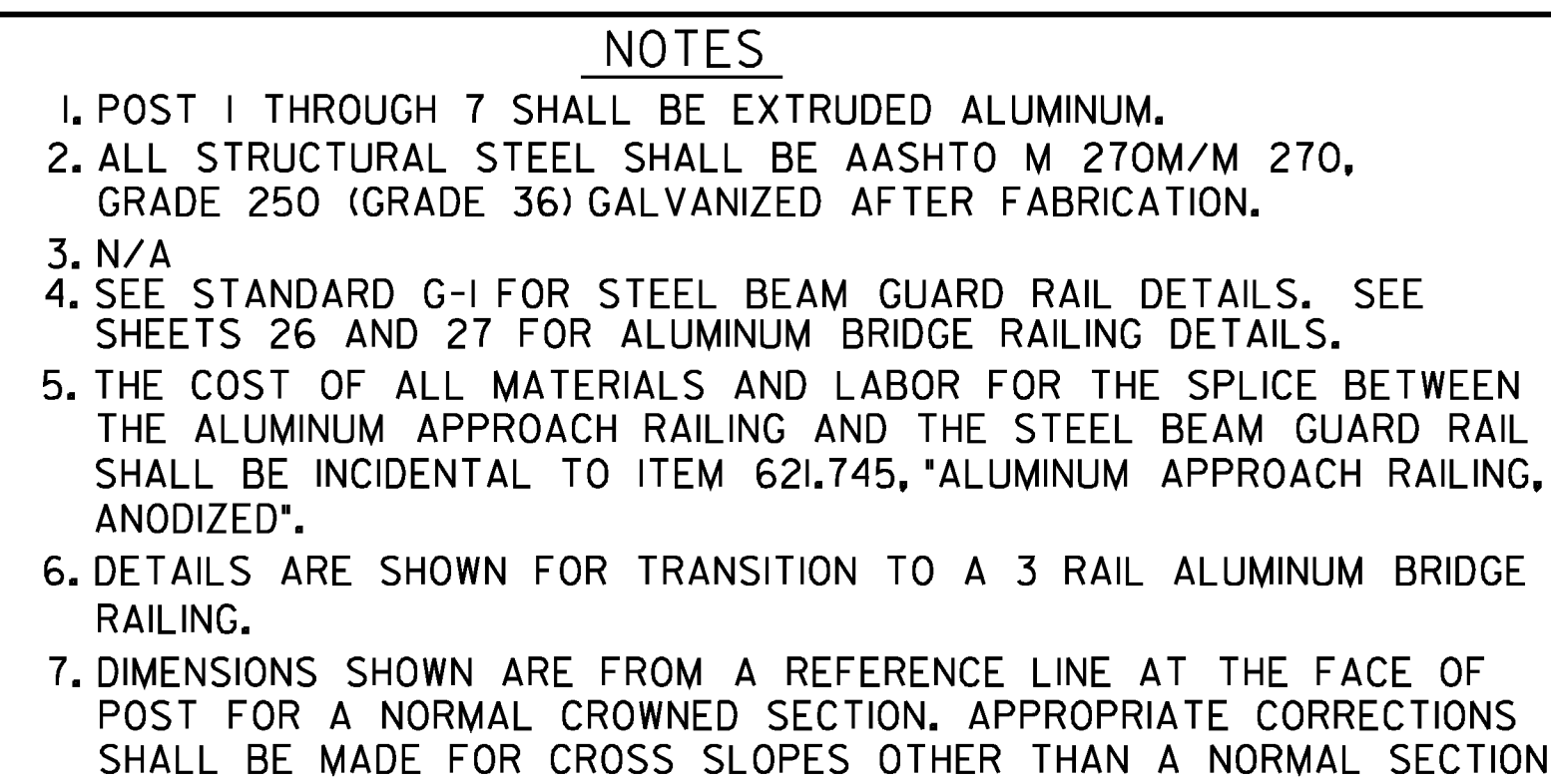


ANCHOR PLATE

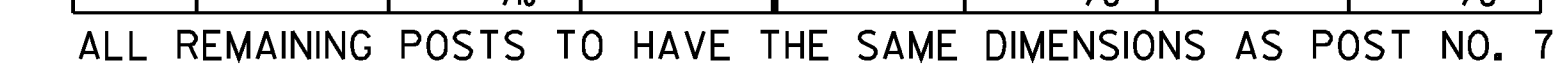
NOTES

- ANCHOR BOLTS, WASHERS AND HEAVY HEX NUTS MAY BE ANY OF THE FOLLOWING:
 - ASTM A449 GALVANIZED, OR
 - AASHTO M164 (ASTM A325) GALVANIZED
 - BOLTS AND WASHERS OF STAINLESS STEEL ASTM A276, TYPE 304 (MINIMUM ULTIMATE STRENGTH OF 100,000 PSI) WITH STAINLESS STEEL NUTS OF ASTM A194, GRADE 8A.
- ALUMINUM POSTS, POST BASES, SPLICE BARS, CONNECTION BARS, RAILS AND BALUSTER FRAMES SHALL CONFORM TO ASTM B221 ALLOY 6061-T6 OR ALLOY 6351-T5. MINIMUM ALLOWABLE STRESS $F_y = 35,000$ PSI.
- ALUMINUM BALUSTER TUBES SHALL CONFORM TO ASTM B210 ALLOY 6061-T5 OR 6063-T5.
- ALUMINUM RAIL END CAPS SHALL CONFORM TO ASTM B26 ALLOY 356-T6.
- THE POST, RAIL, AND OFFSET BLOCK CONNECTION BOLTS SHALL BE EITHER ASTM A193 OR ASTM A320. EITHER ONE SHALL BE CLASS 1, B8 GRADE AISI 304 WITH AN ULTIMATE TENSILE STRENGTH OF 75,000 PSI. NUTS FOR EITHER OF THE ABOVE BOLTS SHALL BE ASTM A194, GRADE 8, STAINLESS STEEL WITH AN ULTIMATE TENSILE STRENGTH OF 75,000 PSI.
- SET SCREWS FOR ATTACHING BALUSTERS TO RAILING SHALL BE ASTM F880, TYPE 303 MATERIAL.
- RIVETS SHALL BE COLD DRIVEN HIGH BUTTON HEAD "CONE POINT", CONFORMING TO ASTM B316 ALLOY 6061-T6.
- THE ANCHOR PLATE FOR THE POST ANCHOR ASSEMBLY SHALL BE ASTM A36 STRUCTURAL STEEL.
- WELDING SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 506.10 USING THE GMAW-INERT GAS PROCESS AND AWS ER 5356 ELECTRODE WIRE.
- UNLESS OTHERWISE SPECIFIED, ANCHOR BOLTS SHALL BE CAST INTO THE CONCRETE AS DETAILED.
- WHENEVER FEASIBLE BARRIER RAIL AND HAND RAIL SECTIONS, SHALL BE FULL LENGTH SECTIONS (40' ±) AND WHEN POSSIBLE SHALL BE ATTACHED TO THREE POSTS. RAILS SHALL BE SPLICED AT EACH DECK JOINT AND INTERMITTENTLY AS REQUIRED. SPLICES SHALL OCCUR WITHIN THE SAME PANEL.
- ENDS OF RAILS SHALL BE CUT SQUARE AND GROUND FREE OF BURRS OR RAGGED EDGES. EXPOSED ENDS SHALL BE CAPPED.
- THE CONCRETE CONTACT SURFACE AT THE POST BASE SHALL BE BUSH HAMMERED AND/OR SHIMMED AS REQUIRED FOR PROPER POST ALIGNMENT. POST HEIGHT ADJUSTMENTS LESS THAN 1/4" SHALL BE WITH 1/16" AND 1/8" SHIMS. CORRECTIONS EXCEEDING 1/4" SHALL BE WITH MORTAR TYPE 4 CONFORMING WITH SECTION 525. FABRIC BEARING PADS AND ANY REQUIRED SHIMS OR MORTAR TYPE 4 ARE INCIDENTAL TO THE UNIT PRICE BID FOR THE RAILING.
- SHIMS AND 1/8" FABRIC BEARING PADS SHALL BE 10 3/4" SQUARE WITH SLOTTED HOLES SIZED AND LOCATED THE SAME AS THE POST BASE DETAIL. FABRIC BEARING PADS SHALL CONFORM TO SUBSECTION 731.01, SHIM MATERIAL SHALL BE ASTM B 209 ALLOY 1100-0.
- EXTRUDED SECTIONS ARE DETAILED TO COMPLY WITH CURRENT AASHTO-AGC-ARTBA STANDARDS. MINOR VARIATIONS OF THE DETAILS SHOWN MAY BE CONSIDERED PROVIDING THEY DO NOT REDUCE THE STRENGTH CAPACITY OF THE RAIL SYSTEM.
- ALUMINUM WASHERS SHALL BE ASTM B209 ALLOY ACLAD 2024-T4.

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	BERKSHIRE	Bridge No.	30
Highway No.	VT 118	Log Sta.	
		Surv.Sta.	
VT 118 OVER MISSISSQUOI RIVER			
ALUMINUM BRIDGE RAILING DETAILS (2)			
Designed By	R Howe	Drawn By	J Davis
Checked By	R Hebert	Bridge Design Supervisor	
		Date	4/2/09
PROJECT	BERKSHIRE	PROJECT NO.	BHF 0283(9)S
I.G.C. Info.			ZC304RALDGN
Bridge Sheet No.		Sheet	27 of 41



POST NO.	RAIL HEIGHT DIMENSIONS			OFFSET BLOCK DIMENSIONS			
	A	B	C	D	E	F	G
1	3'-4 ¹¹ / ₁₆ "	2'-5 ³ / ₄ "	1'-5 ³ / ₁₆ "	0'-11 ¹ / ₁₆ "	1'-0 ⁹ / ₁₆ "	2'-4 ¹ / ₁₆ "	
2	3'-2 ⁵ / ₈ "	2'-5 ⁵ / ₁₆ "	1'-5 ¹ / ₁₆ "	0'-9 ³ / ₄ "	0'-11 ⁷ / ₈ "	2'-2 ³ / ₁₆ "	
3	3'-0 ⁹ / ₁₆ "	2'-4 ⁷ / ₈ "	1'-5 ¹ / ₁₆ "	0'-8 ⁷ / ₈ "	0'-11 ³ / ₈ "	1'-11 ⁷ / ₈ "	
4	2'-10 ¹ / ₂ "	2'-4 ¹ / ₂ "	1'-5 ¹ / ₁₆ "	0'-6 ⁵ / ₁₆ "	0'-10 ³ / ₈ "	1'-9 ¹ / ₁₆ "	
5		2'-3 ¹ / ₁₆ "	1'-6 ⁵ / ₁₆ "		0'-9 ⁵ / ₈ "		1'-2 ⁵ / ₈ "
6		2'-3 ³ / ₈ "	1'-6 ⁵ / ₁₆ "		0'-8 ³ / ₄ "		1'-1 ³ / ₄ "
7		2'-2 ¹ / ₁₆ "	1'-7"		0'-7 ⁷ / ₈ "		1'-0 ⁹ / ₁₆ "



SEE NOTE II ON SHEET 27
FOR LENGTH OF BARRIER RAIL

(3) SPACES @ 4" = 1'-0"

3/4" X 1" SLOTTED HOLES

45 5/8"

45 1/8"

(3) SPACES @ 4" = 1'-0"

3/4" DIA. HOLES

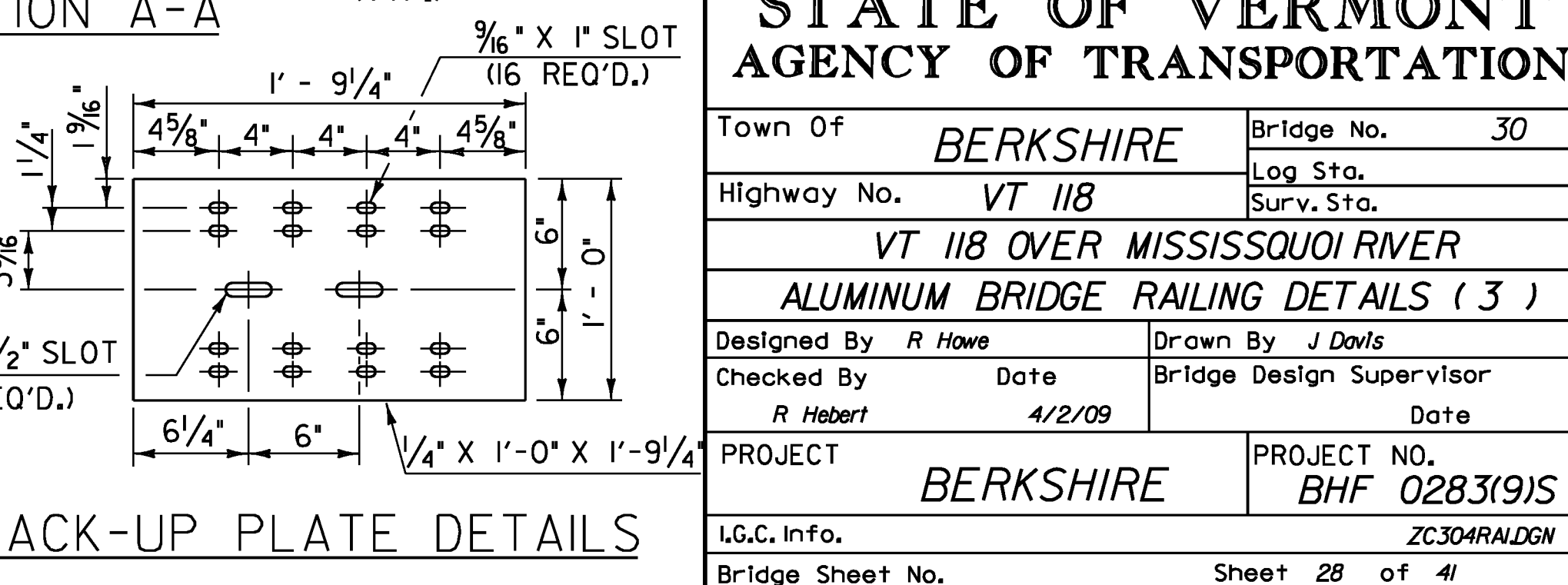
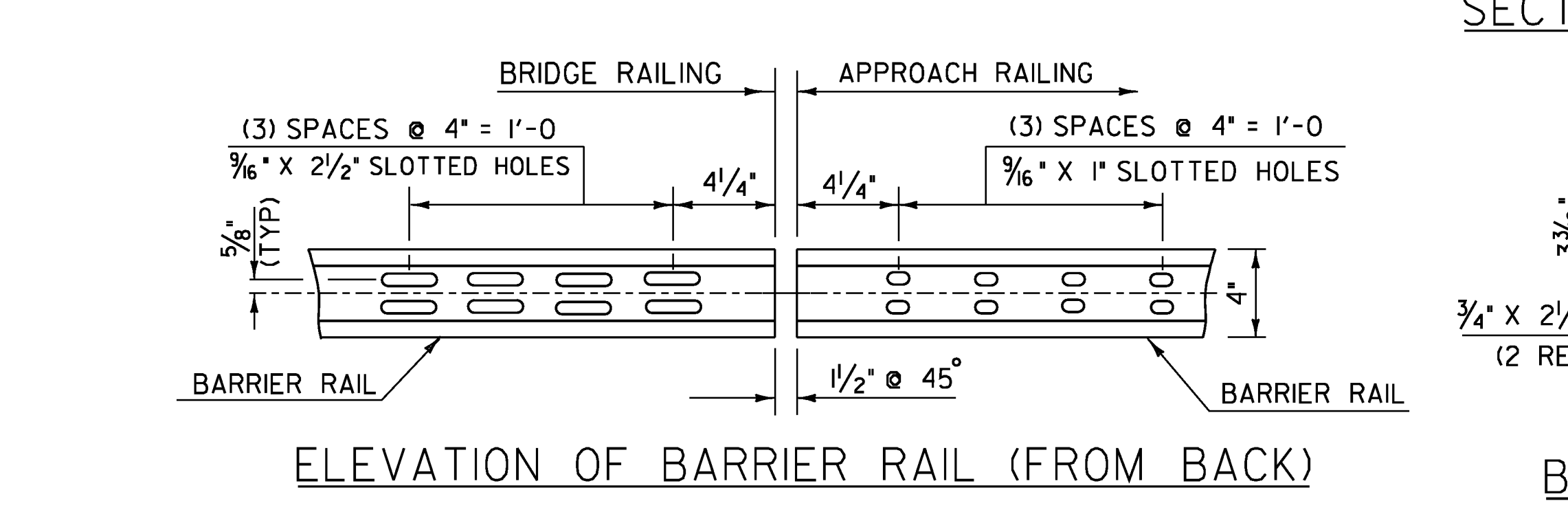
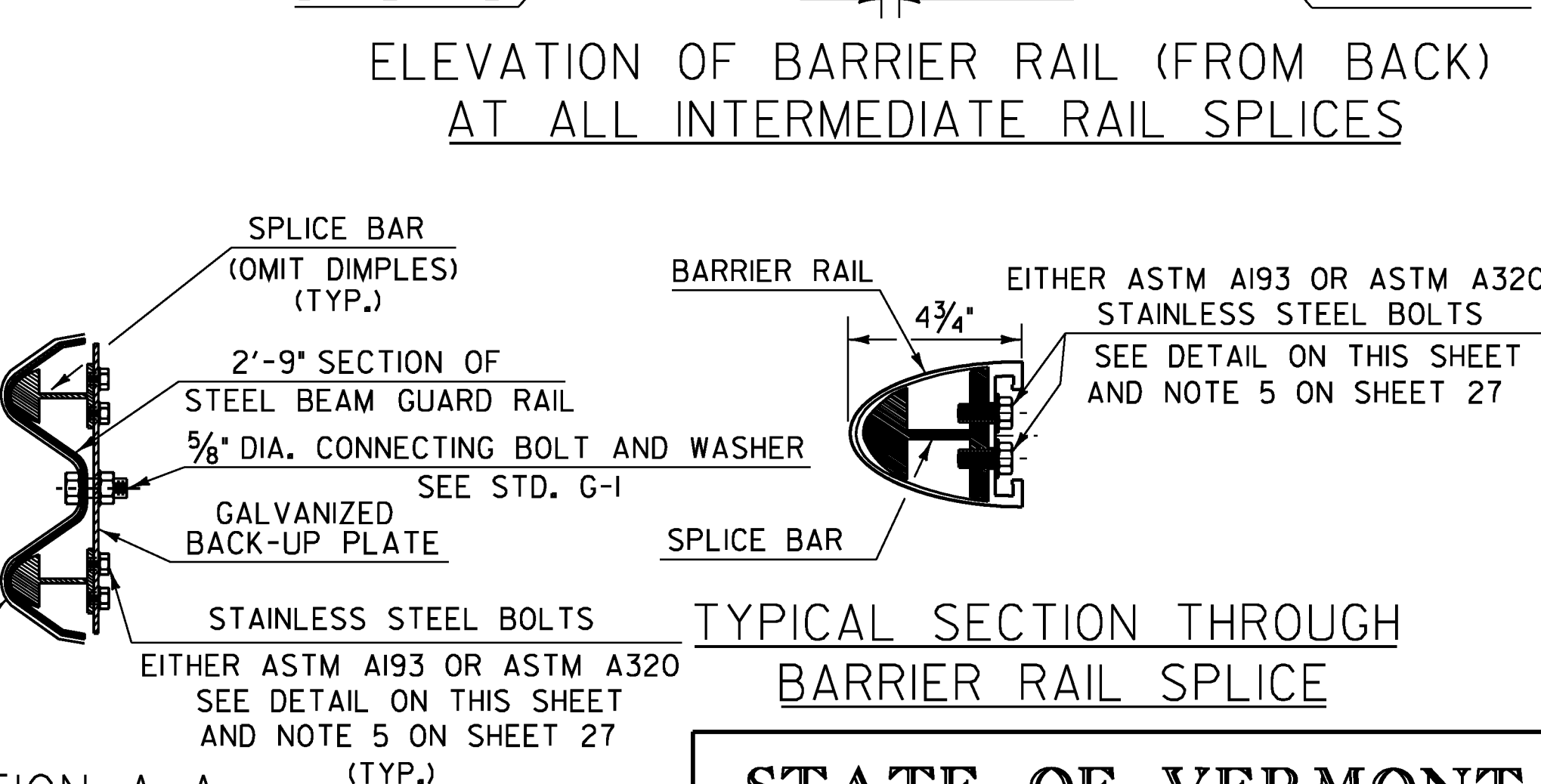
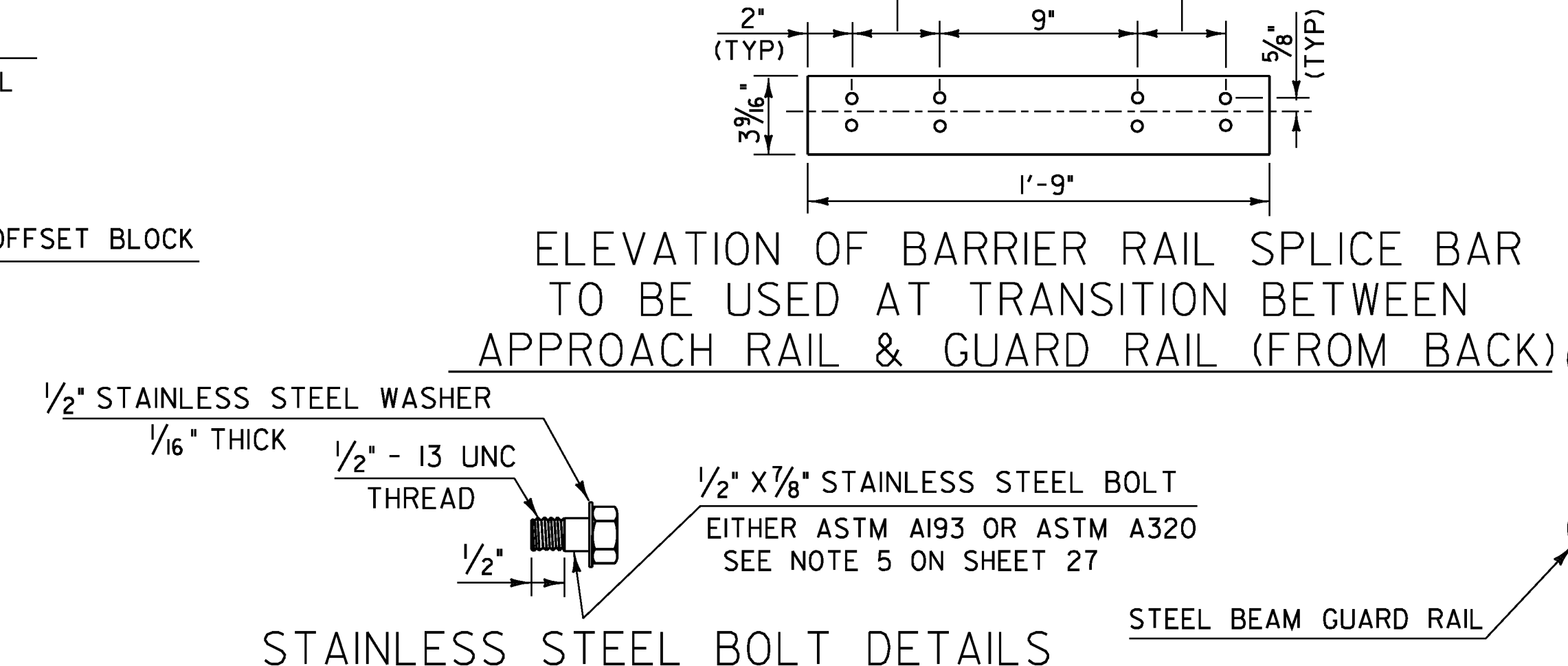
5/8" (TYP)

4"

3/4" @ 45°

BARRIER RAIL

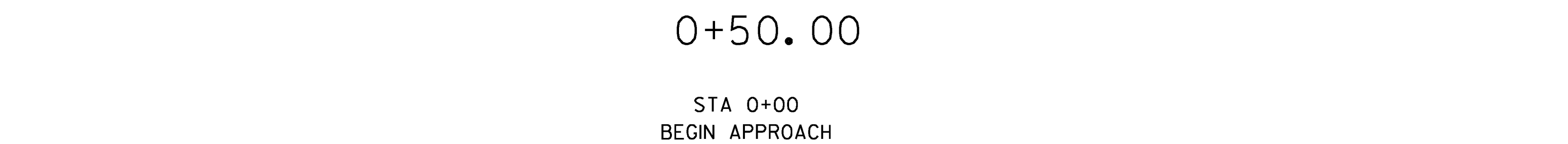
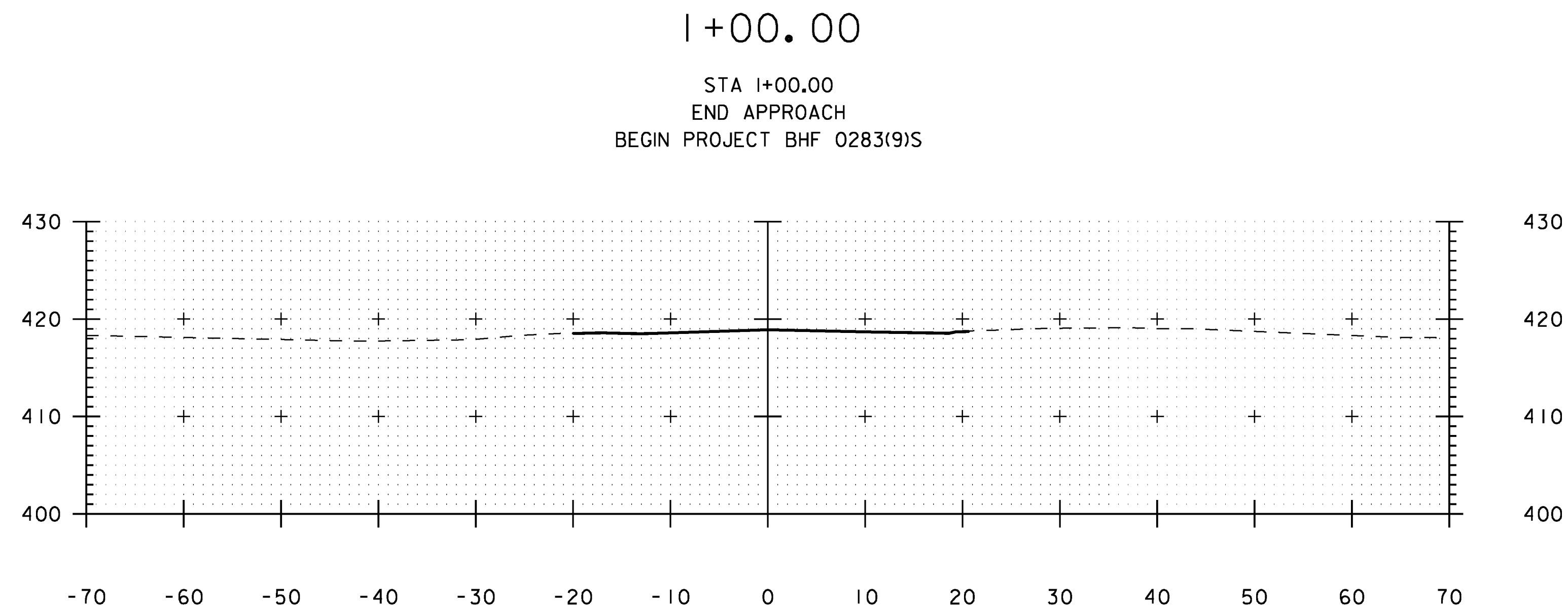
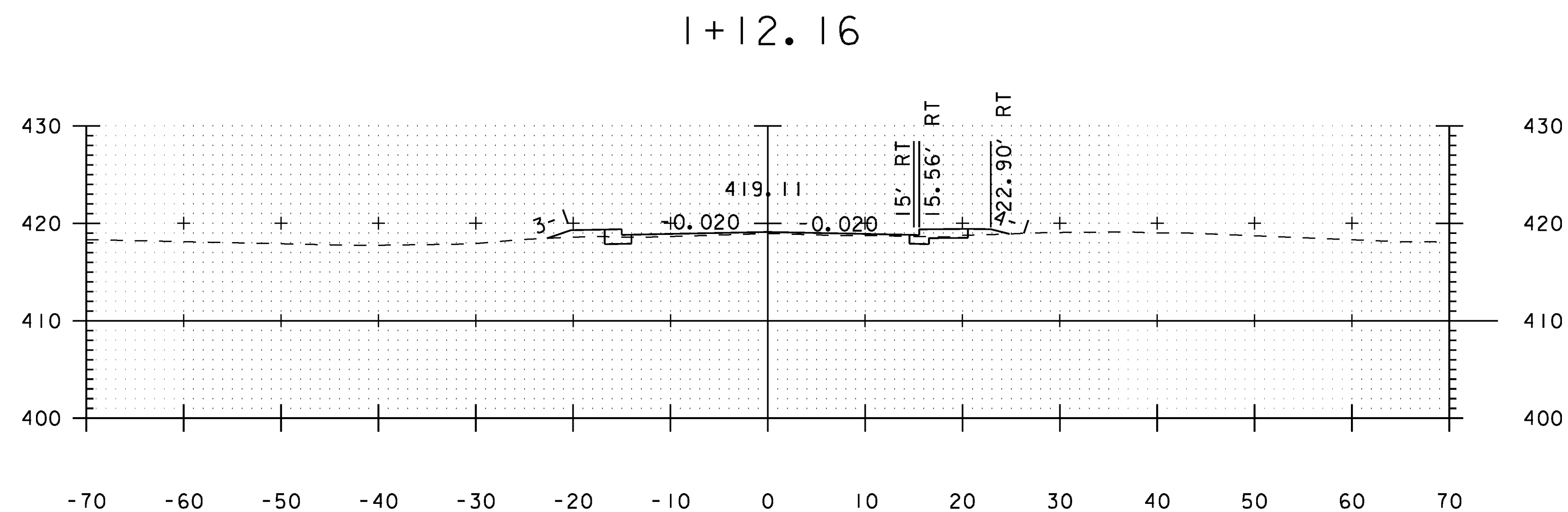
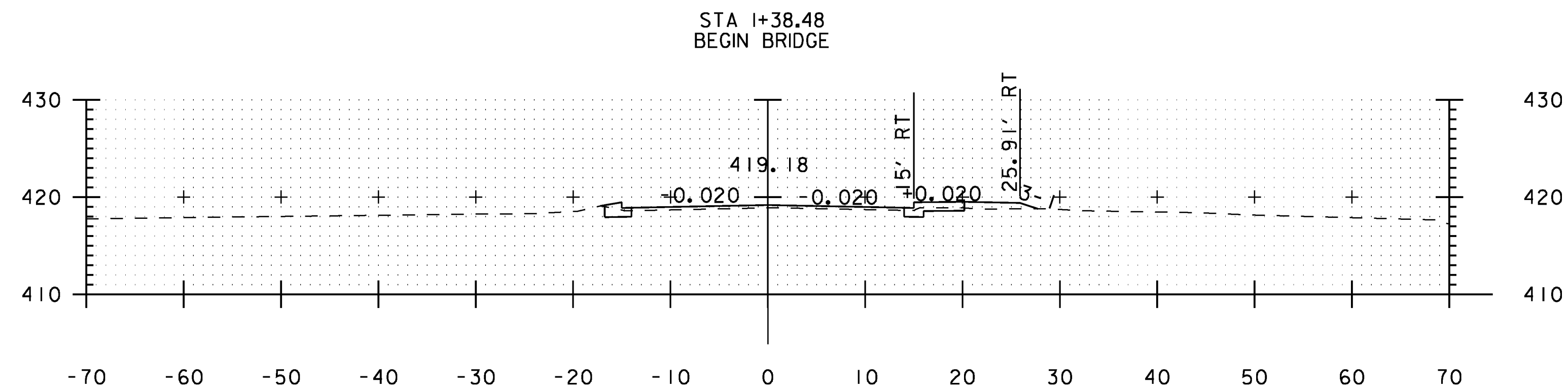
BARRIER RAIL



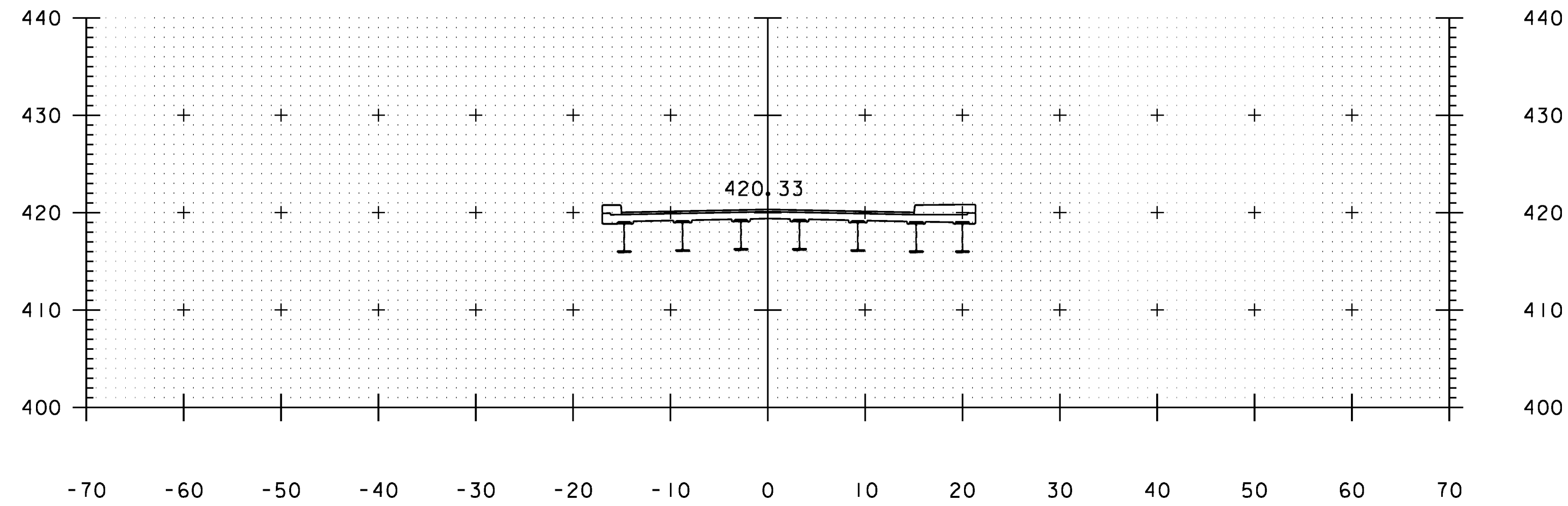
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of <i>BERKSHIRE</i>		Bridge No. <i>30</i>	
Highway No. <i>VT 118</i>		Log Sta.	
		Surv. Sta.	
<i>VT 118 OVER MISSISSQUOI RIVER</i>			
ALUMINUM BRIDGE RAILING DETAILS (3)			
Designed By <i>R Howe</i>		Drawn By <i>J Davis</i>	
Checked By <i>R Hebert</i>		Date <i>4/2/09</i>	
PROJECT <i>BERKSHIRE</i>		Bridge Design Supervisor <i>BHF 0283(9)JS</i>	
I.G.C. Info.		Date <i>02/30/4ALDGN</i>	
Bridge Sheet No.		Sheet <i>28</i> of <i>41</i>	

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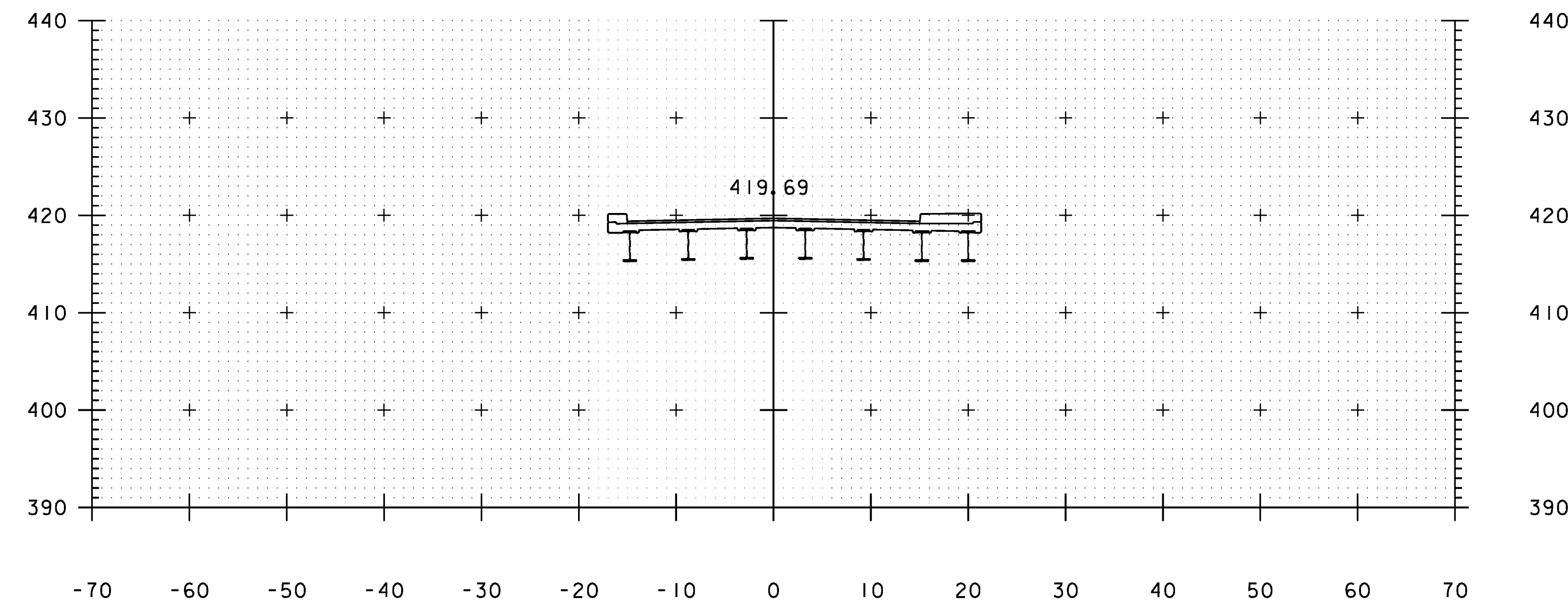
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STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of <i>BERKSHIRE</i>		Bridge No.	30
Highway No. <i>VT 118</i>		Log Sta.	
		Surv. Sta.	
<i>VT 118 OVER MISSISSQUOI RIVER</i>			
<i>CROSS SECTION 1</i>			
Designed By <i>D Bryant</i>	Drawn By <i>J Davis</i>		
Checked By <i>J Andrews</i>	Date <i>4/2/09</i>	Bridge Design Supervisor	Date
PROJECT <i>BERKSHIRE</i>		PROJECT NO.	<i>BHF 0283(9)S</i>
I.G.C. Info.		<i>ZC304XSLDGN</i>	
Bridge Sheet No.		Sheet 32 of 41	

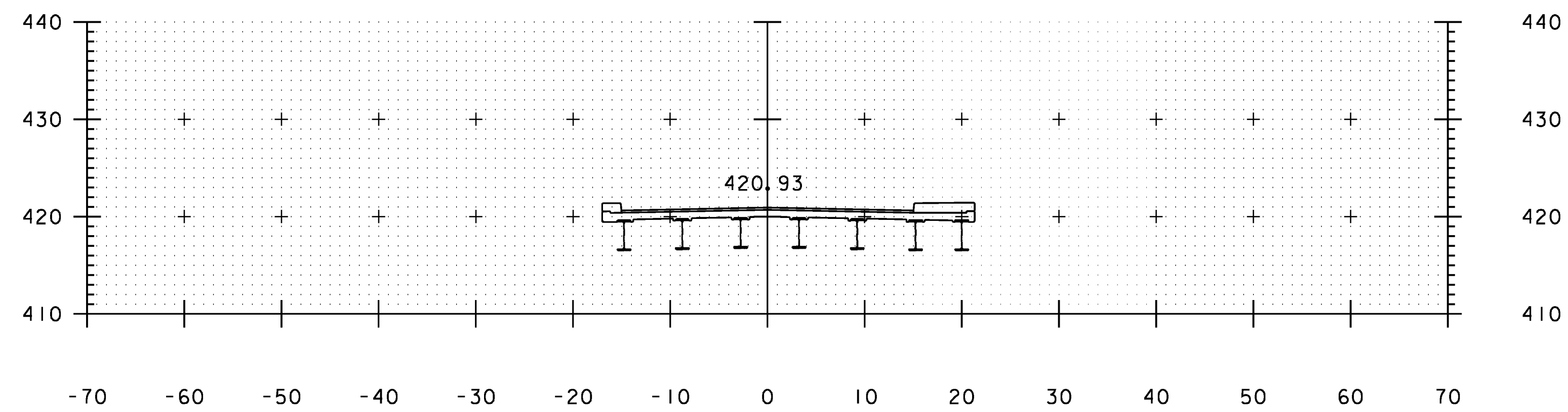


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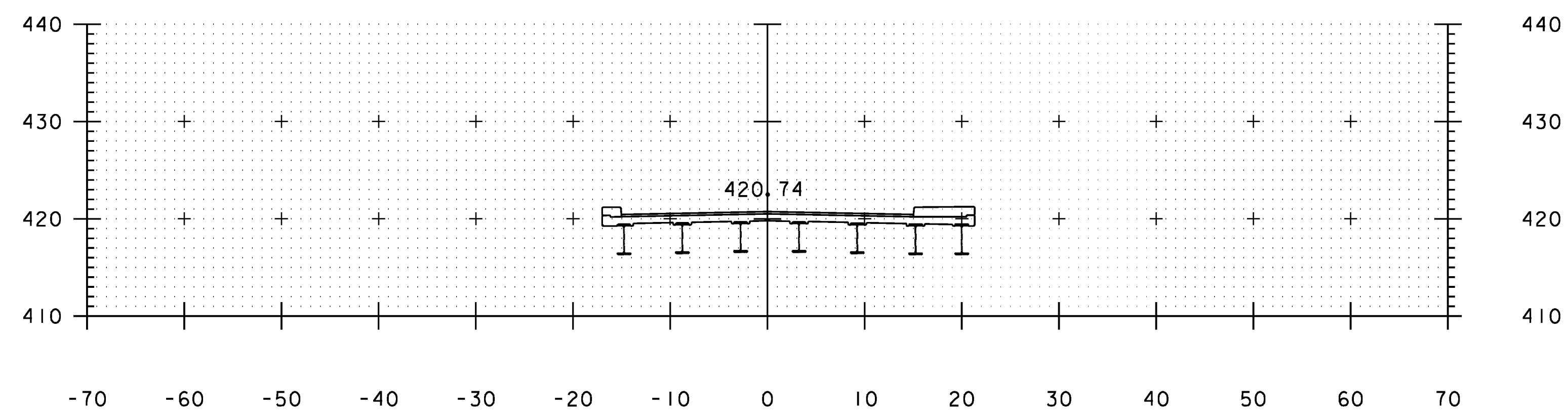


1+50.00

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of <i>BERKSHIRE</i>		Bridge No.	<i>30</i>
Highway No. <i>VT 118</i>		Log Sta.	
		Surv. Sta.	
<i>VT 118 OVER MISSISSQUOI RIVER</i>			
<i>CROSS SECTION 2</i>			
Designed By <i>D. Bryant</i>	Drawn By <i>J. Davis</i>		
Checked By <i>J. Andrews</i>	Date <i>4/2/09</i>	Bridge Design Supervisor	Date
PROJECT <i>BERKSHIRE</i>		PROJECT NO. <i>BHF 0283(9)S</i>	
I.G.C. Info.		<i>ZC304XSLDGN</i>	
Bridge Sheet No.		Sheet <i>33</i> of <i>41</i>	

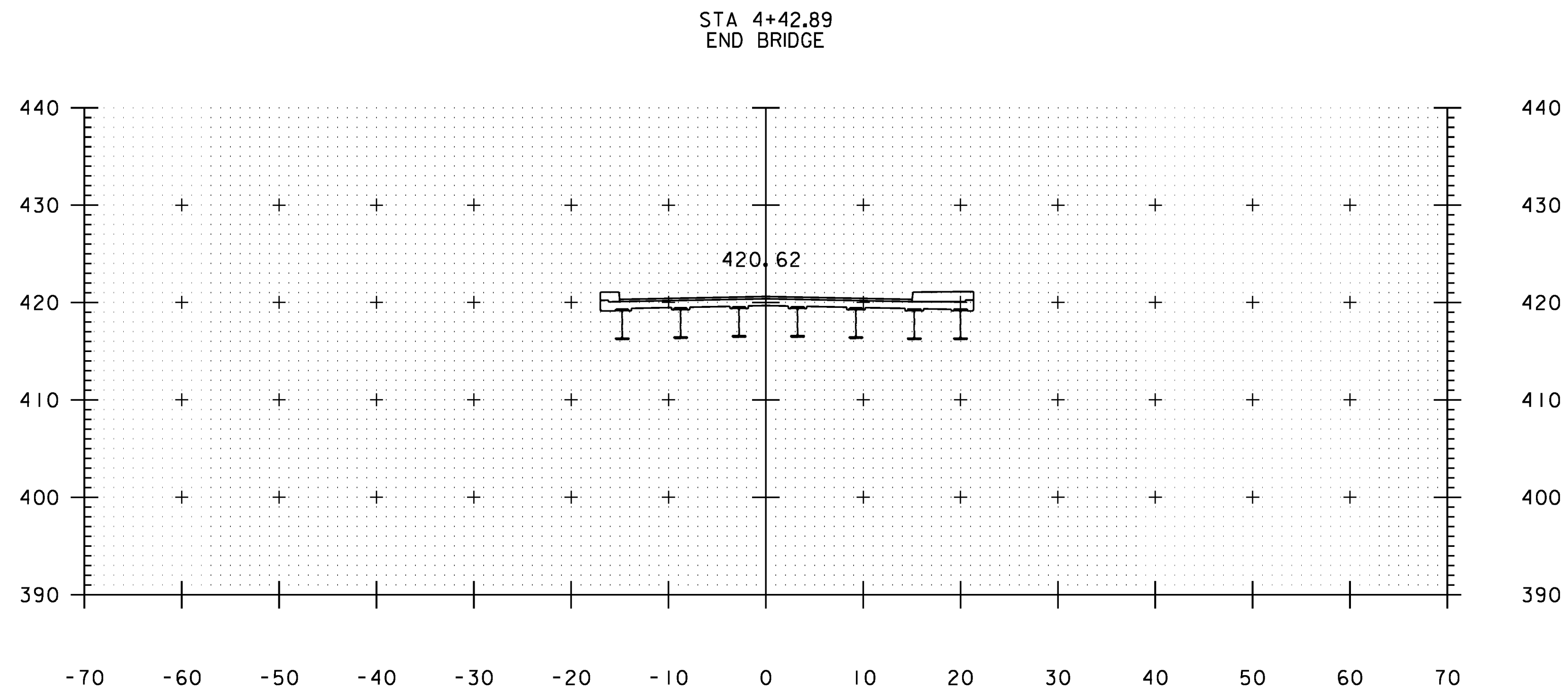


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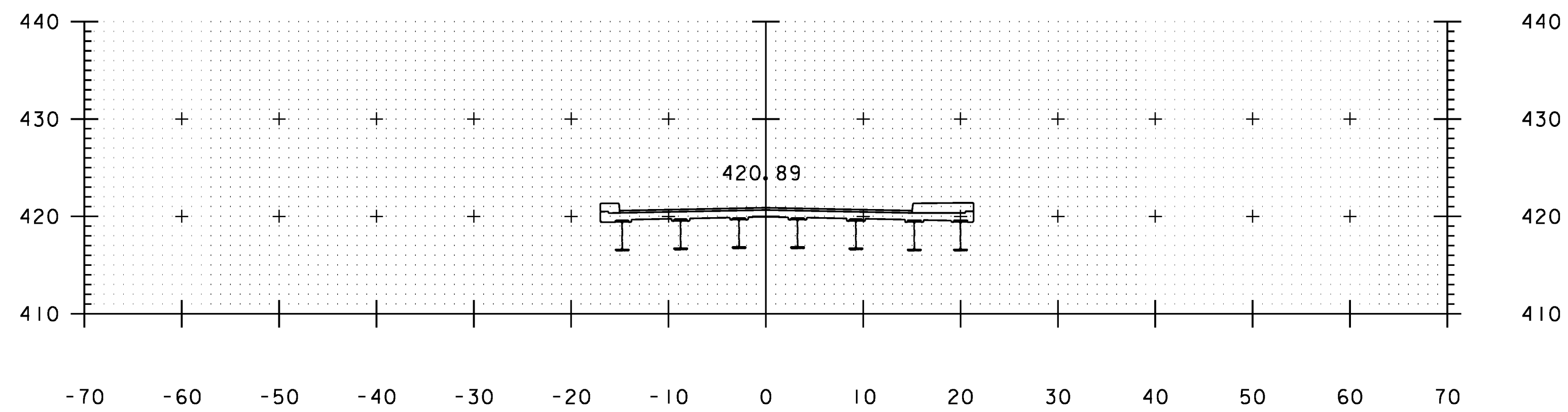


2+50.00

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of <i>BERKSHIRE</i>		Bridge No.	30
Highway No. <i>VT 118</i>		Log Sta.	
		Surv. Sta.	
<i>VT 118 OVER MISSISSQUOI RIVER</i>			
<i>CROSS SECTION 3</i>			
Designed By <i>D Bryant</i>	Drawn By <i>J Davis</i>		
Checked By <i>J Andrews</i>	Date <i>4/2/09</i>	Bridge Design Supervisor	Date
PROJECT <i>BERKSHIRE</i>		PROJECT NO.	<i>BHF 0283(9)S</i>
I.G.C. Info.		<i>ZC304XSLDGN</i>	
Bridge Sheet No.		Sheet <i>34</i> of <i>41</i>	

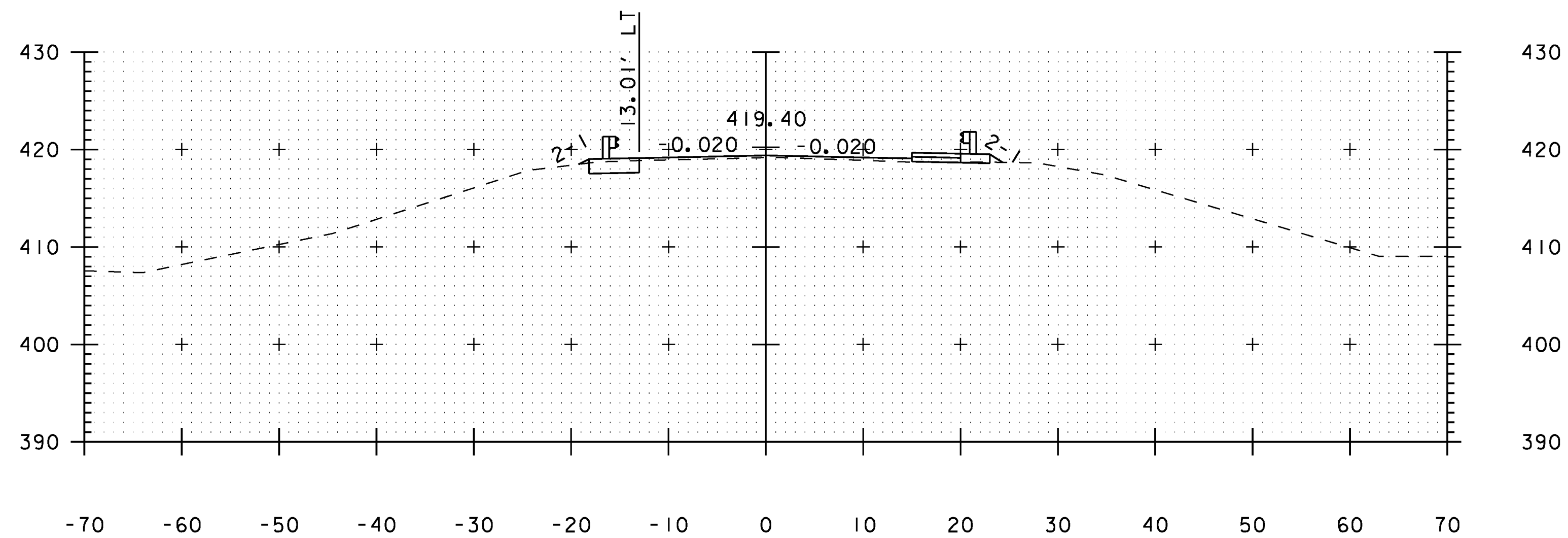


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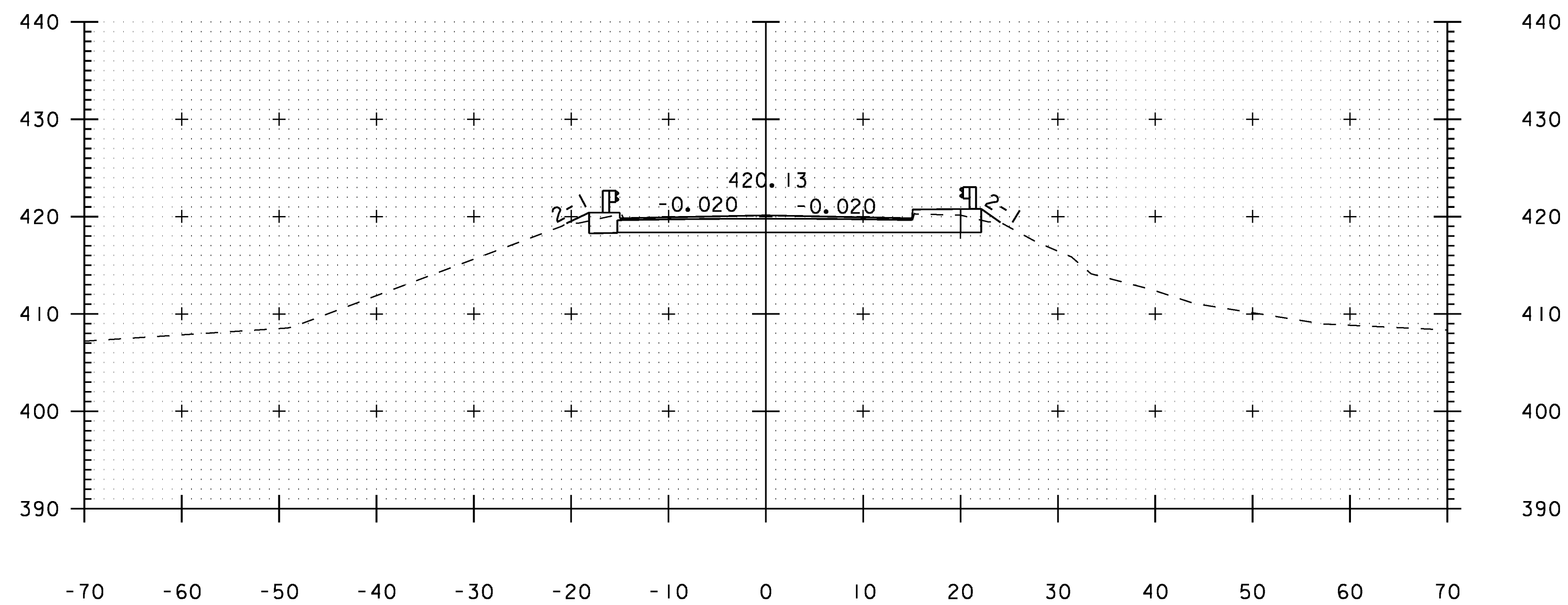
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STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of <i>BERKSHIRE</i>		Bridge No.	30
Highway No. <i>VT 118</i>		Log Sta.	
		Surv. Sta.	
<i>VT 118 OVER MISSISSQUOI RIVER</i>			
<i>CROSS SECTION 4</i>			
Designed By <i>D Bryant</i>	Drawn By <i>J Davis</i>		
Checked By <i>J Andrews</i>	Date <i>4/2/09</i>	Bridge Design Supervisor	Date
PROJECT <i>BERKSHIRE</i>		PROJECT NO. <i>BHF 0283(9)S</i>	
I.G.C. Info.		<i>ZC304XSLDGN</i>	
Bridge Sheet No.		Sheet <i>35</i> of <i>41</i>	



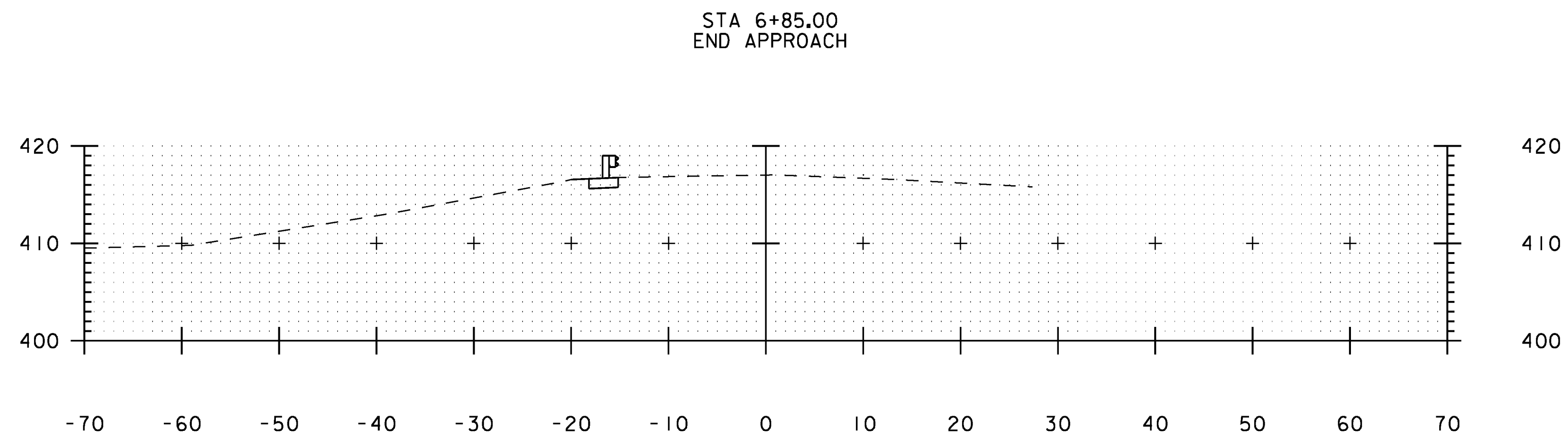
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STA 5+00.00
END PROJECT BHF 0283(9)S
BEGIN APPROACH

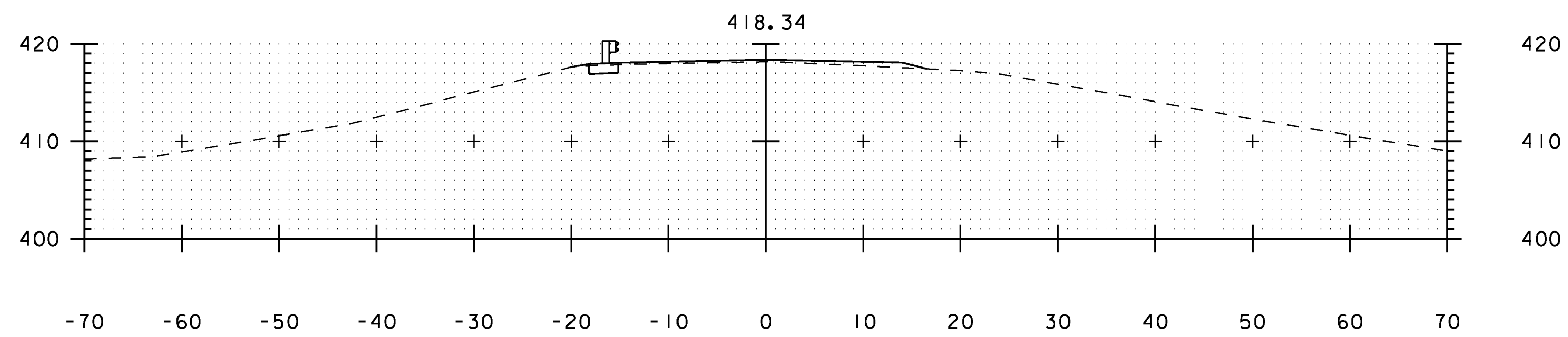


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STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of <i>BERKSHIRE</i>		Bridge No.	<i>30</i>
Highway No. <i>VT 118</i>		Log Sta.	
		Surv. Sta.	
<i>VT 118 OVER MISSISSQUOI RIVER</i>			
<i>CROSS SECTION 5</i>			
Designed By <i>D. Bryant</i>	Drawn By <i>J. Davis</i>		
Checked By <i>J. Andrews</i>	Date <i>4/2/09</i>	Bridge Design Supervisor	Date
PROJECT <i>BERKSHIRE</i>		PROJECT NO. <i>BHF 0283(9)S</i>	
I.G.C. Info.		<i>ZC304XSLDGN</i>	
Bridge Sheet No.		Sheet <i>36</i> of <i>41</i>	

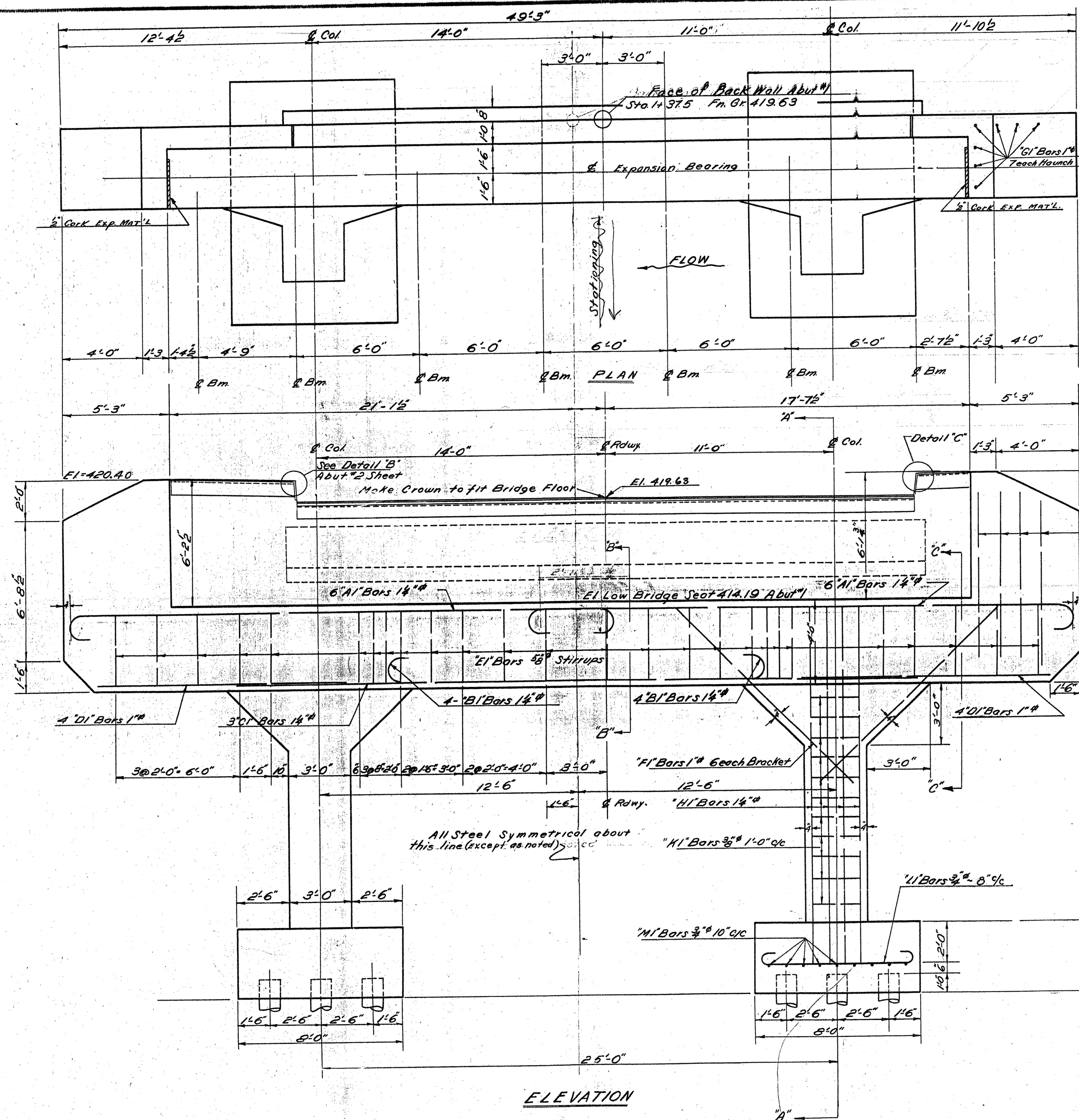


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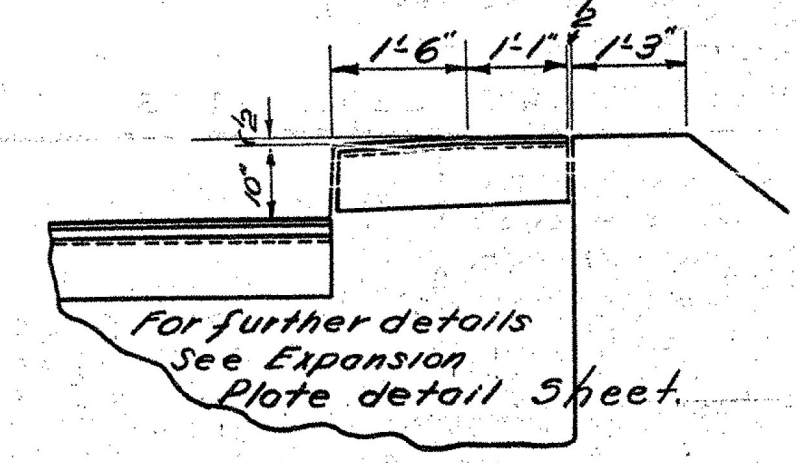
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STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of <i>BERKSHIRE</i>		Bridge No. <i>30</i>	
Highway No. <i>VT 118</i>		Log Sta.	
		Surv. Sta.	
<i>VT 118 OVER MISSISSQUOI RIVER</i>			
<i>CROSS SECTION 6</i>			
Designed By <i>D Bryant</i>		Drawn By <i>J Davis</i>	
Checked By <i>J Andrews</i>		Bridge Design Supervisor	
<i>4/2/09</i>		Date	
PROJECT <i>BERKSHIRE</i>		PROJECT NO. <i>BHF 0283(9)S</i>	
I.G.C. Info.		<i>ZC304XSLDGN</i>	
Bridge Sheet No.		Sheet <i>37</i> of <i>41</i>	



NOTE:
 Back Wall & Haunches to be poured after Superstructure is in place to enable the lining up of Expansion Plates.
 All Reinforcing Steel to be Intermediate Grade.
 All Reinforcing Steel dimensions to $\frac{1}{2}$ of bars.
 All Concrete to be Class "B".
 Exposed edges to be chamfered $\frac{3}{4}$ ".
 Piling to be untreated Timber Piling, with 12" min. butts to be driven to bearing capacity of 20 tons.
 Piling assumed to be 20' long for Est. purposes.
 Cut-off allowance for untreated Timber Piles = $3(2A) = 72$ lin. ft. for Abutment.
 At the discretion of the Engineer, Piles shall be shod with steel shoes as shown on STD DWG S.B. 2-Def S-206. Cost of steel shoes as required shall be included in bid price for untreated Timber Piling.

REINFORCING STEEL					DETAIL
BAR SIZE	REQD. LENGTH				
A1	14"	12	28'-11"		
B1	14"	4	20'-6"		
C1	14"	3	33'-0"		Straight
D1	1 1/2"	8	12'-0"		
E1	5/8"	26	14'-10"		
F1	1"	24	13'-0"		Straight
G1	1"	14	8'-0"		
H1	1 1/2"	20	18'-6"		
J1	1 1/2"	20	14'-9"		
K1	3/8"	13	32'-6"		Straight - Cut & bend in field
L1	3/8"	32	9'-0"		
M1	3/8"	18	12'-8"		
N1	5/8"	38	23'-2"		Straight
O1	5/8"	106	8'-9"		
P1	3/4"	41	3'-0"		
R1	5/8"	3	30'-0"		Straight



For Sections "B-B" & "C-C" - details "A" & "B" See Abutment Sheet.

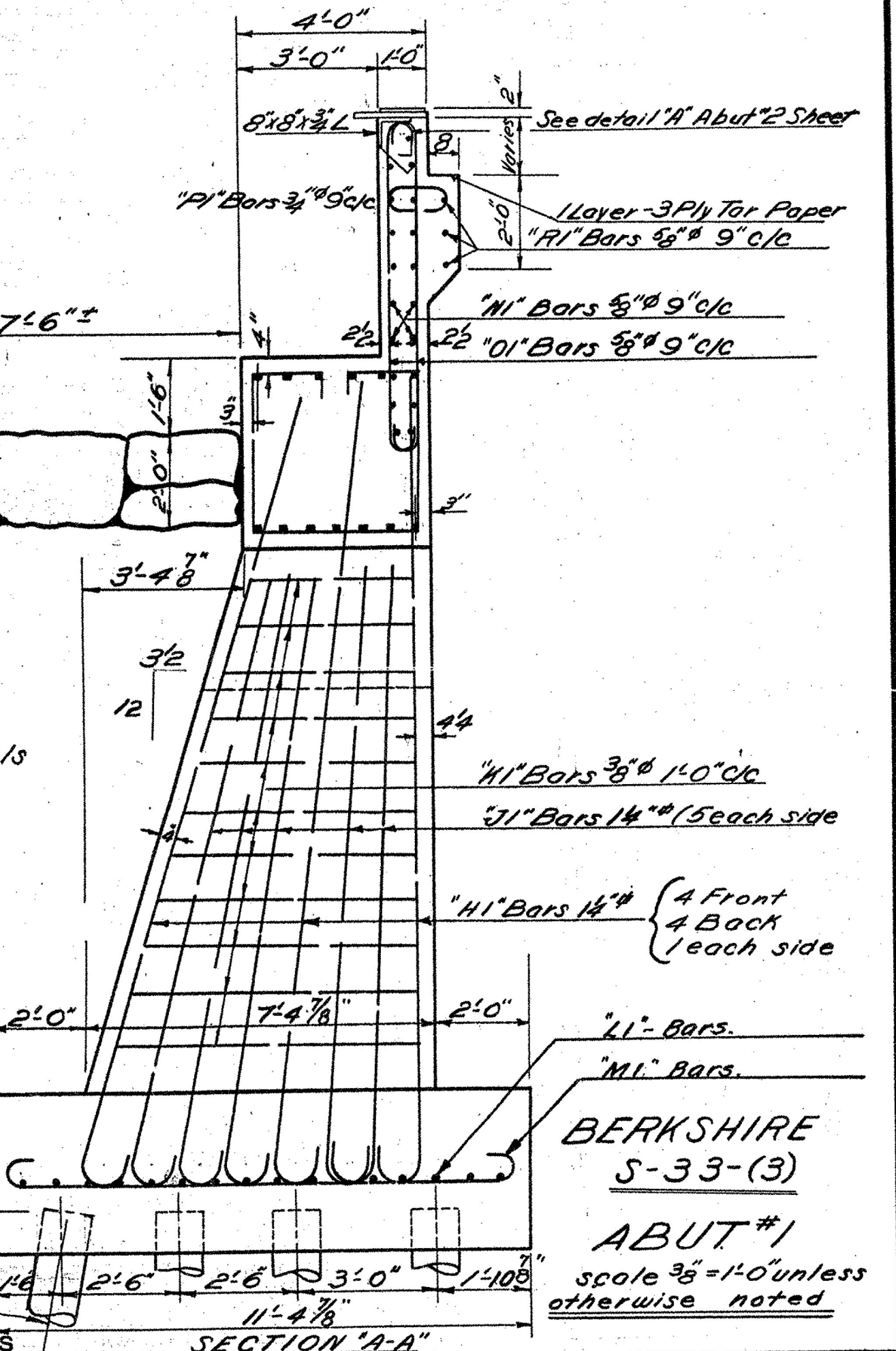
BERKSHIRE BHF 0283(9)S
 VT 118 BRIDGE 30
 SHEET 38 OF 41
 FOR REFERENCE ONLY

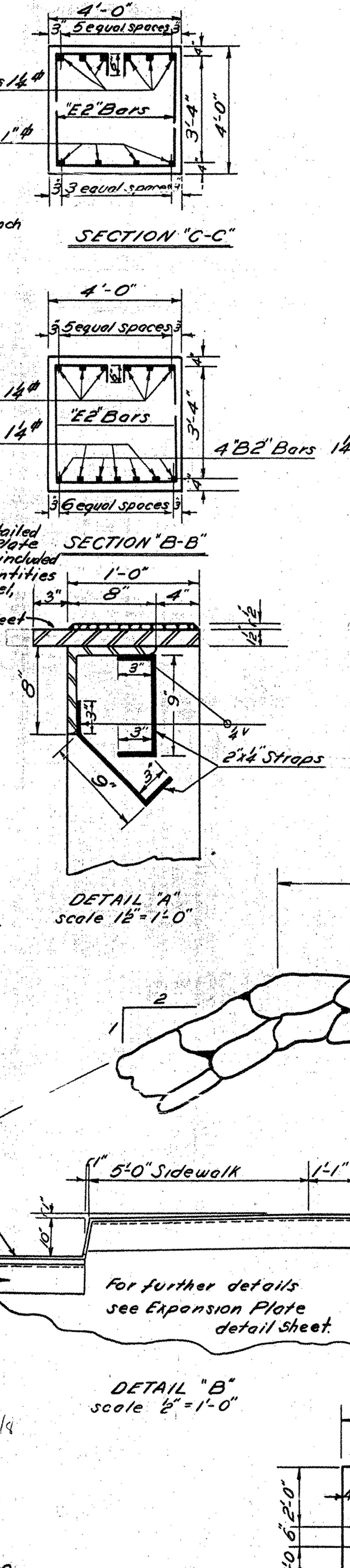
REFERENCE SHEET 1 OF 4

ESTIMATED QUANTITIES

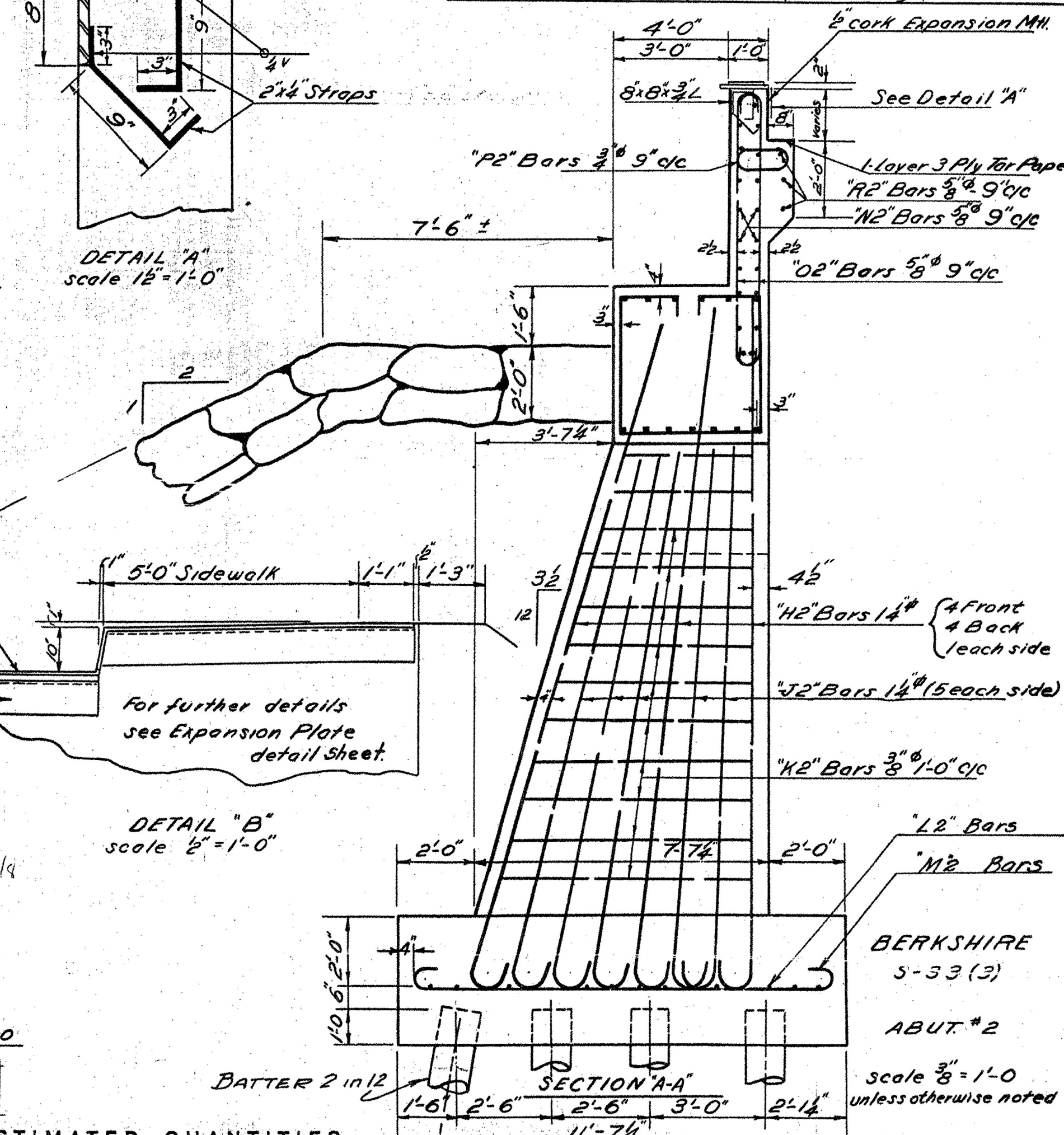
Structure Excess	305 CY
Concrete Cl. "B"	88 CY
Reinforcing Steel	11,440#
Untreated Timber Piling	480 LF
Rip Rap	511 CY
Cut-offs Untreated Timber Piling	502A(1)

Surveyed by
 Designed by JHW
 Drawn by HRC
 Traced by NRC
 Checked by Quantities H.R.C.
 Structures S.H.
 Series S No. 33(3)
 Sheet 14 of 36 Sheets





REINFORCING STEEL					
BAR	SIZE	REQ'D	LENGTH		
A2	14 [#]	12	28'-11"		DETAIL 5" 5" R=5" R=5" 28'-5"
B2	14 [#]	4	20'-6"		5" 5" R=5" R=5" 17'-0"
C2	14 [#]	3	33'-0"		Straight
D2	1 [#] @	8	12'-0"		Do
E2	5 [#] @	26	14'-10"		1.5" 1.5" 6" 3'-8" 5'-6"
F2	1 [#] @	24	12'-0"		Straight
G2	1 [#] @	14	8'-0"		Do
H2	14 [#]	20	19'-2"		3" R=5" 17'-5" 13'-9"
J2	12 [#] @	20	15'-6"		
K2	3 [#] @	13	32'-6"		Straight, cut/bend in field
L2	3 [#] @	32	9'-0"		1.5" 1.5" R=3" 8'-9"
M2	3 [#] @	18	12'-8"		
N2	5 [#] @	38	23'-2"		Straight
O2	5 [#] @	106	8'-9"		1.5" 1.5" R=3" 6'-6" R=3"
P2	3 [#] @	41	3'-0"		1.5" 1.5" R=3" 9'-0" R=3"
R2	5 [#] @	3	30'-0"		Straight



BERKSHIRE BHF 0283(9)S
VT 118 BRIDGE 30
SHEET 40 OF 41
FOR REFERENCE ONLY

Structure Excav	146 C.Y.	Surveyed by	
Concrete CI "B"	90 C.Y.	Designed by J.H.W.	
Reinforcing Steel	11,600 lbs.	Drawn by H.R.C.	
Untreated Timber Piling	720 L.F.	Traced by H.R.C.	
Rip Rap	435 C.Y.	Checked by Quantities H.R.C.	
Cut-offs Untreated Timber	72 LF	Design S.N.	
Piling (Item 502A(1))		Series S	No. 33 (3)
		Sheet 16	of 36 Sheets

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	VT.				

REINFORCING STEEL (Does not include steel in Posts)

BAR	REQD	SIZE	LGTH.	DETAIL
1A	328	5/8"	15'-6"	Straight
1B	328	5/8"	20'-8"	
1C	276	5/8"	5'-4"	
2A	328	5/8"	15'-5"	
2B	328	5/8"	24'-7"	
2C	104	5/8"	1'-2"	
2D	104	5/8"	2'-2"	
3A	328	5/8"	21'-2"	
3B	328	5/8"	20'-5"	
4A	38	5/8"	21'-3"	
4B	76	5/8"	28'-9"	
4C	76	5/8"	28'-11"	
4D	38	5/8"	28'-3"	
5A	112	5/8"	21'-3"	
5B	274	5/8"	27'-6"	
5C	224	5/8"	28'-6"	
5D	112	5/8"	28'-0"	
6	454	5/8"	7'-7"	
8A	18	5/8"	22'-0"	
8B	36	5/8"	23'-0"	
8C	36	5/8"	26'-0"	
8D	18	5/8"	30'-6"	
9	206	5/8"	3'-11"	
10	6	1"	4'-0"	Straight smooth bars
11A	40	3/4"	20'-10"	In End Spans Straight
11B	20	3/4"	20'-7"	In Center Spans
12	300	3/4"	2'-2"	Straight
13	70	5/8"	5'-3"	

Reinforcing Steel to be Intermediate Grade.
Reinforcing Steel dimensions to 1/2" of bars.
All Concrete to be Class B.
* Estimated Quantities on this sheet for Structural Steel include Bearing Devices, Cover & Splice Plates, & all Structural Steel shown on Expansion Plate Detail Sheet and quantities for Sidewalk & Sidewalk Detail Sheet, but does not include quantities for Railing & Posts.
All Structural Steel shall be painted as specified under Item 403 A-B, Standard Road & Bridge Specifications, State of Vermont, 1948. The final coat of field paint shall be green unless otherwise directed by the Engineer.
For location of "Fixed" & Expansion Bearings, see Profile Sheet.

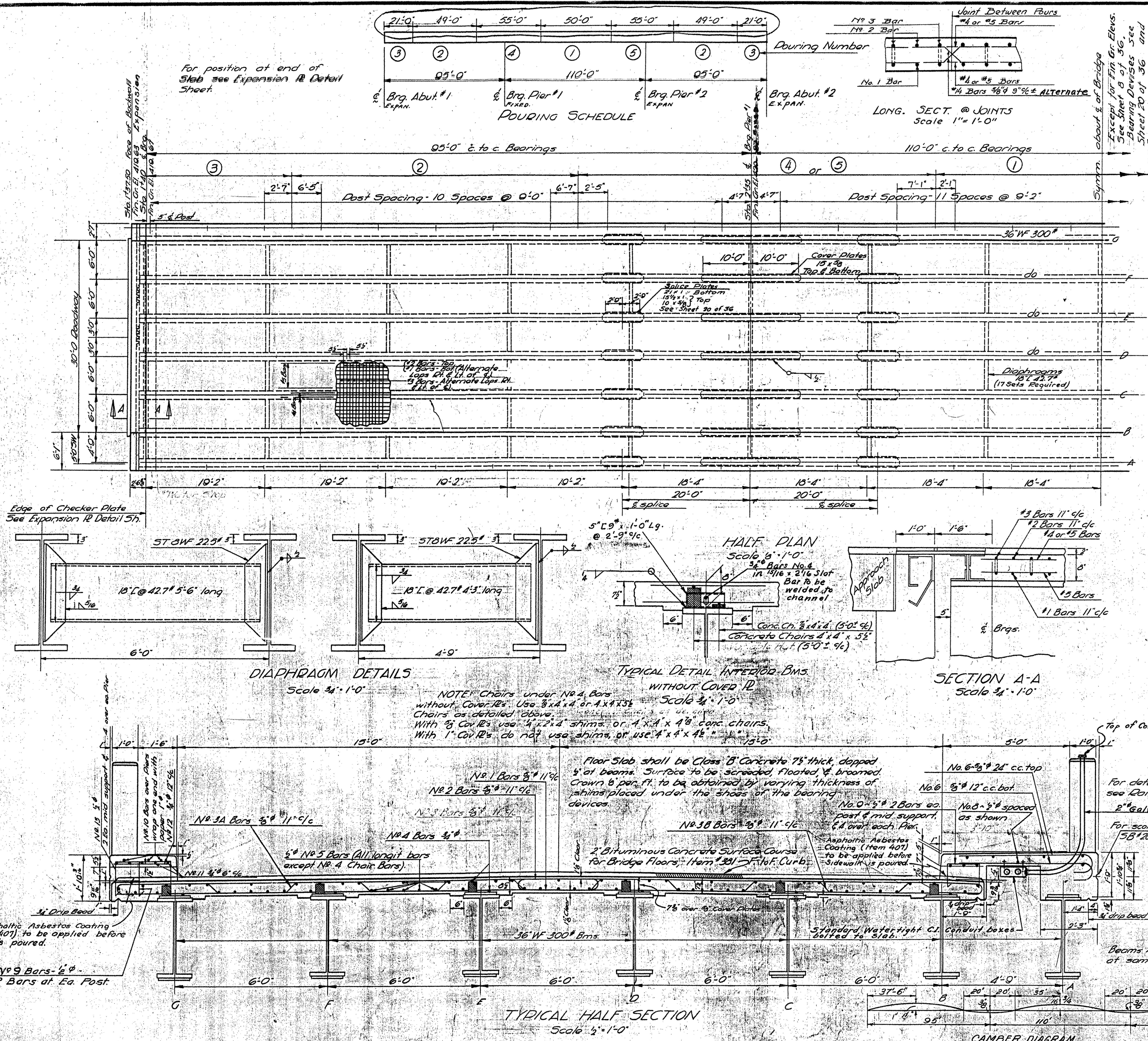
CONDUIT SYSTEM NOTES
Contractor to supply & install Conduit System for lights on the sidewalk side of the Bridge as shown on Bridge Plan & Elevation Sheet, and in accordance with Std. Div. 20, Part 11, and as specified under Item 521.2.
Contractor to leave all exposed conduit ends capped & ready for wiring by others. Any arrangements made between the Contractor, the Town of Berkshire and Local Authorities, and Municipal Electric Co. shall be made by the Contractor and will not be a part of this contract. Junction Boxes to be standard watertight C.I. Junction Boxes. All exposed metal parts that are not galvanized to be painted with Item 403 A-B.

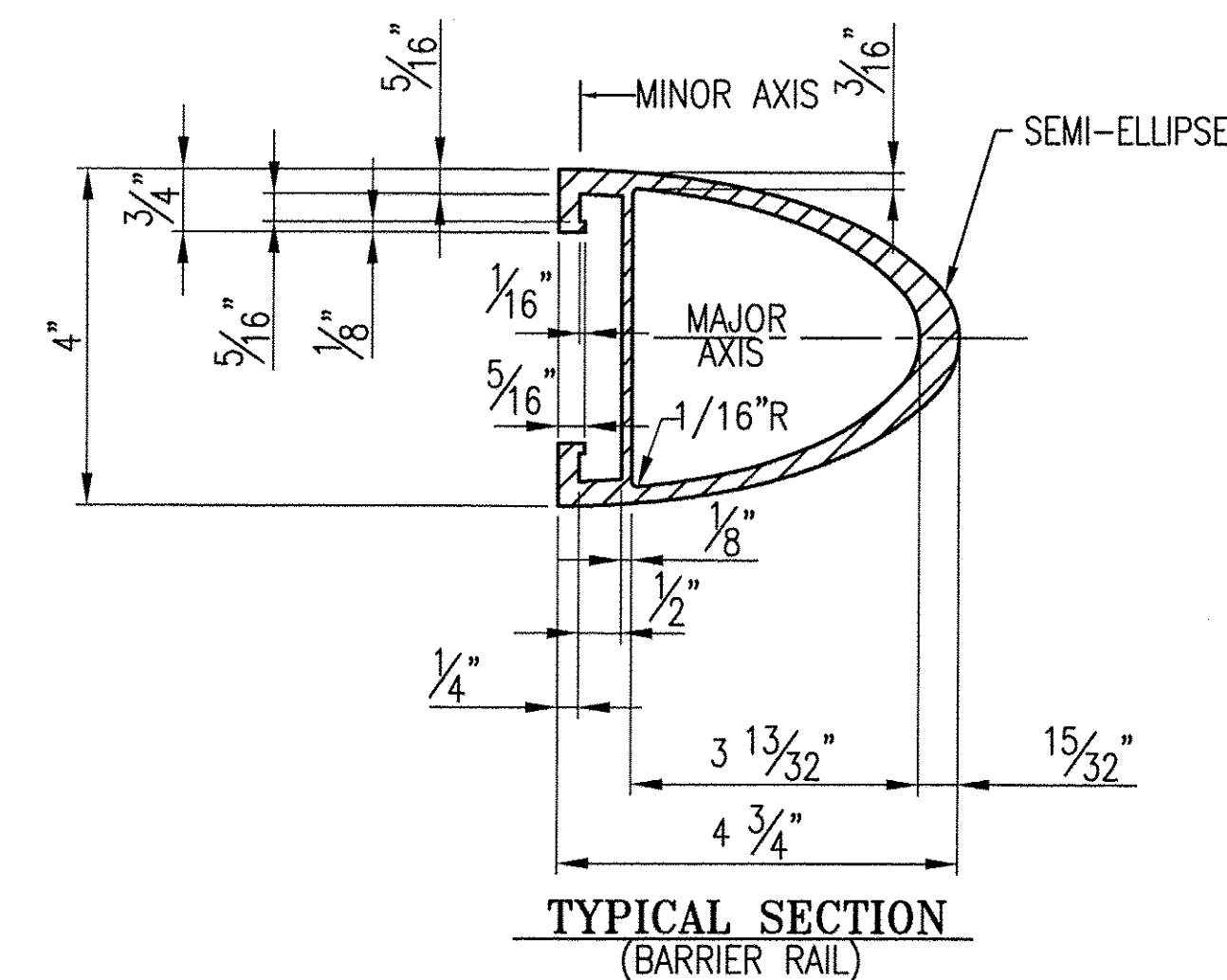
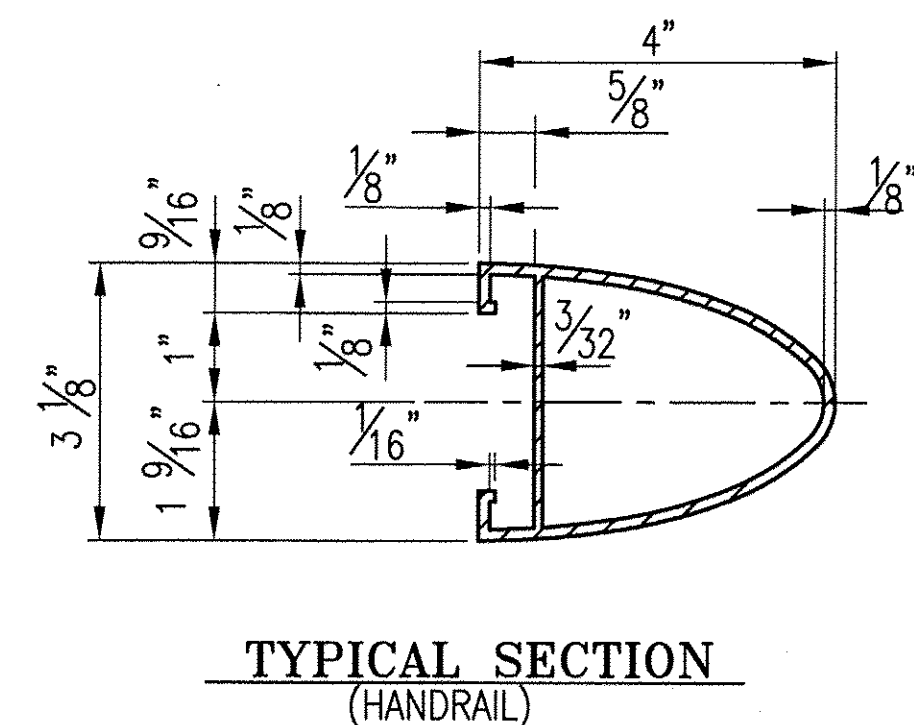
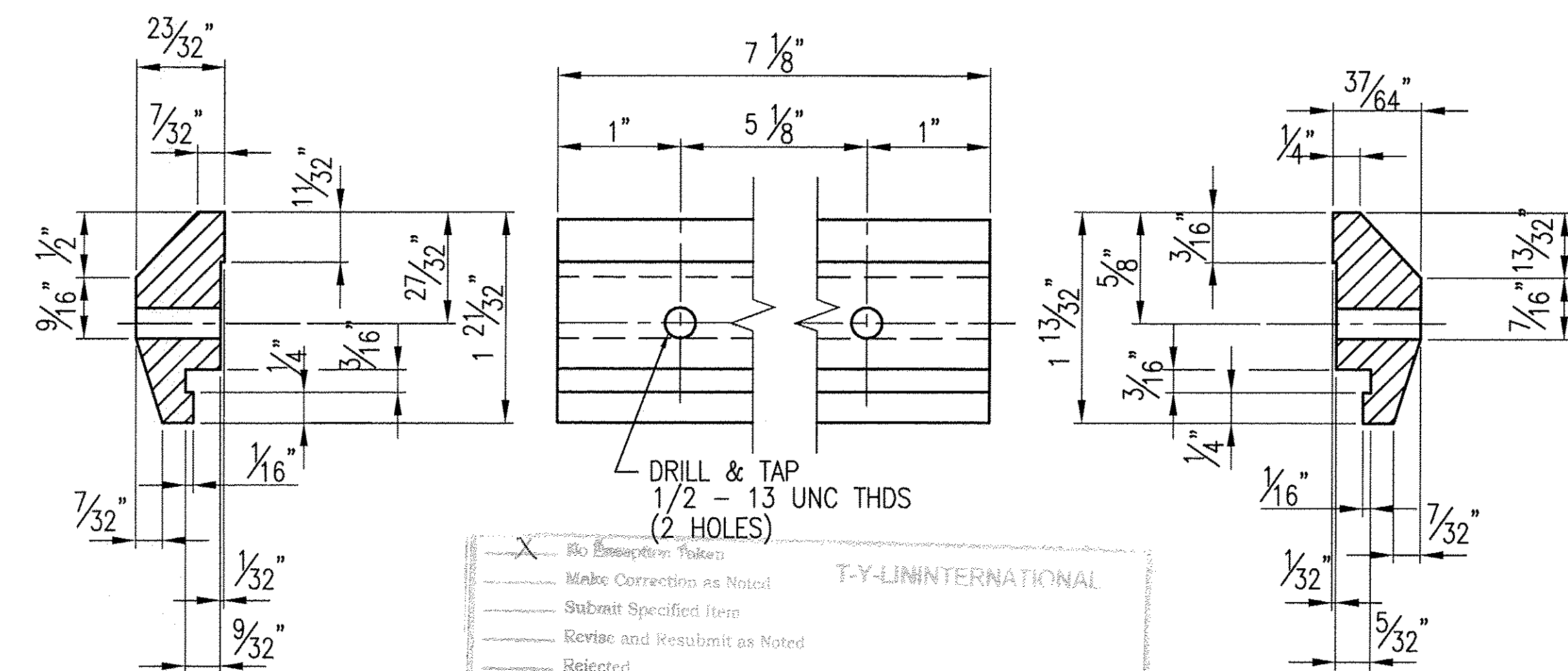
BERKSHIRE BHF 0283(9)
VT 118 BRIDGE 30
SHEET 41 OF 41
FOR REFERENCE ONLY

REFERENCE SHEET 4 OF 4
Beams A, B, & C to be set at same elevation.

ESTIMATED QUANTITIES
Conc. Class B 339.4 CY
Reinforcing Steel 12,835 Lbs.
Structural Steel 773,750 Lbs.
Bitum. Conc. Paving for Bridge Floors 113 Tons
Asphaltic Asbestos Coating 91.5

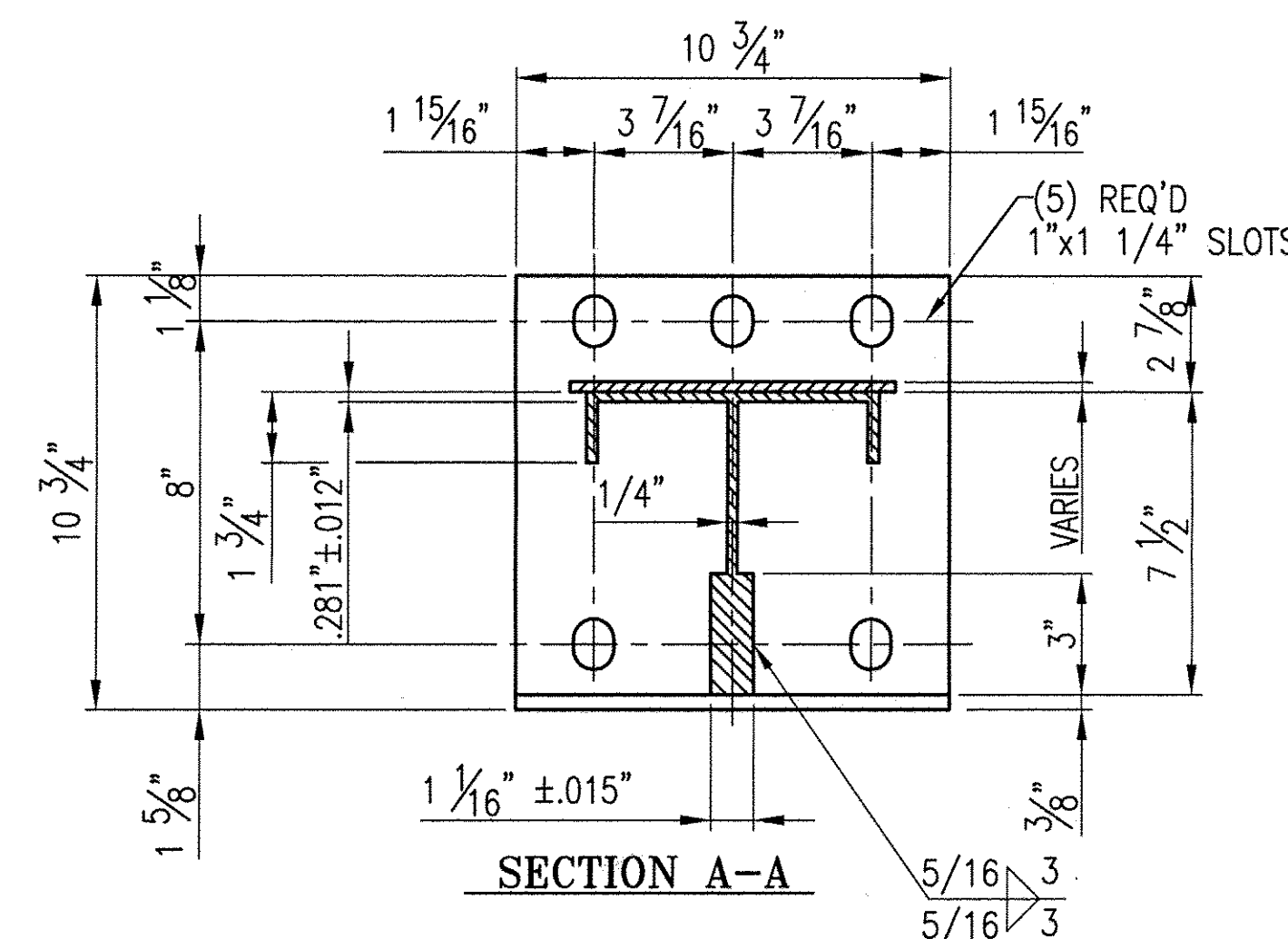
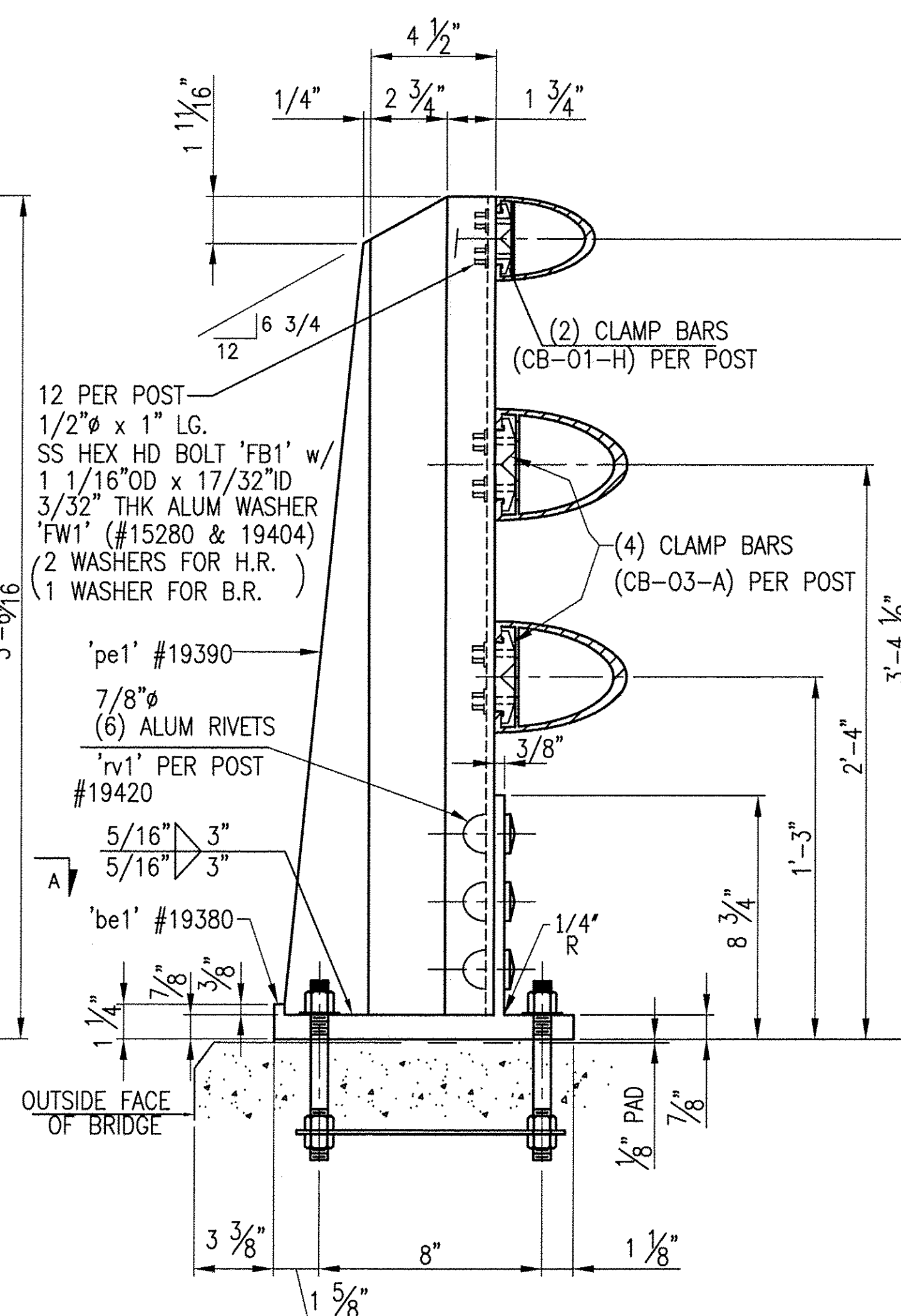
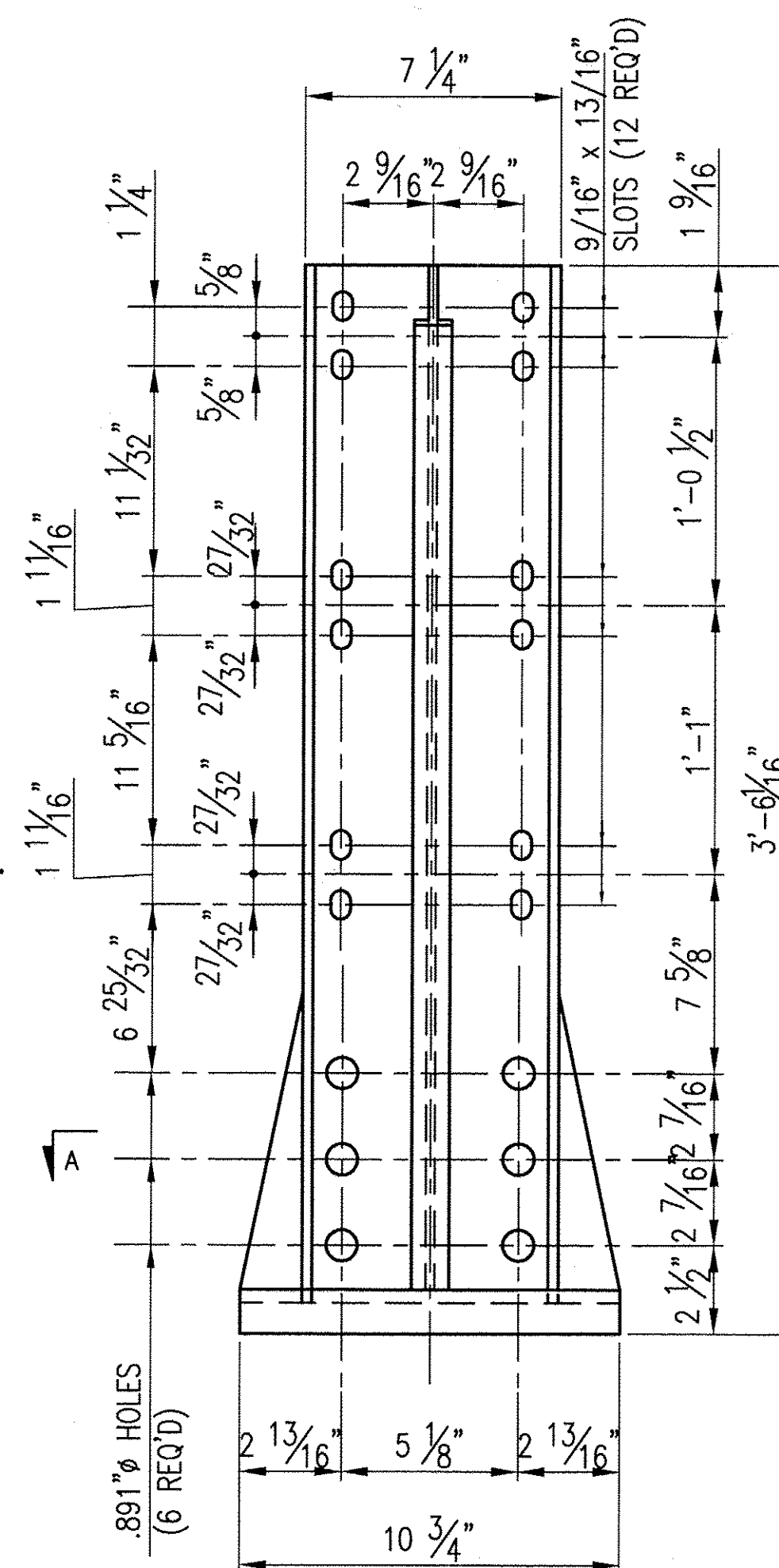
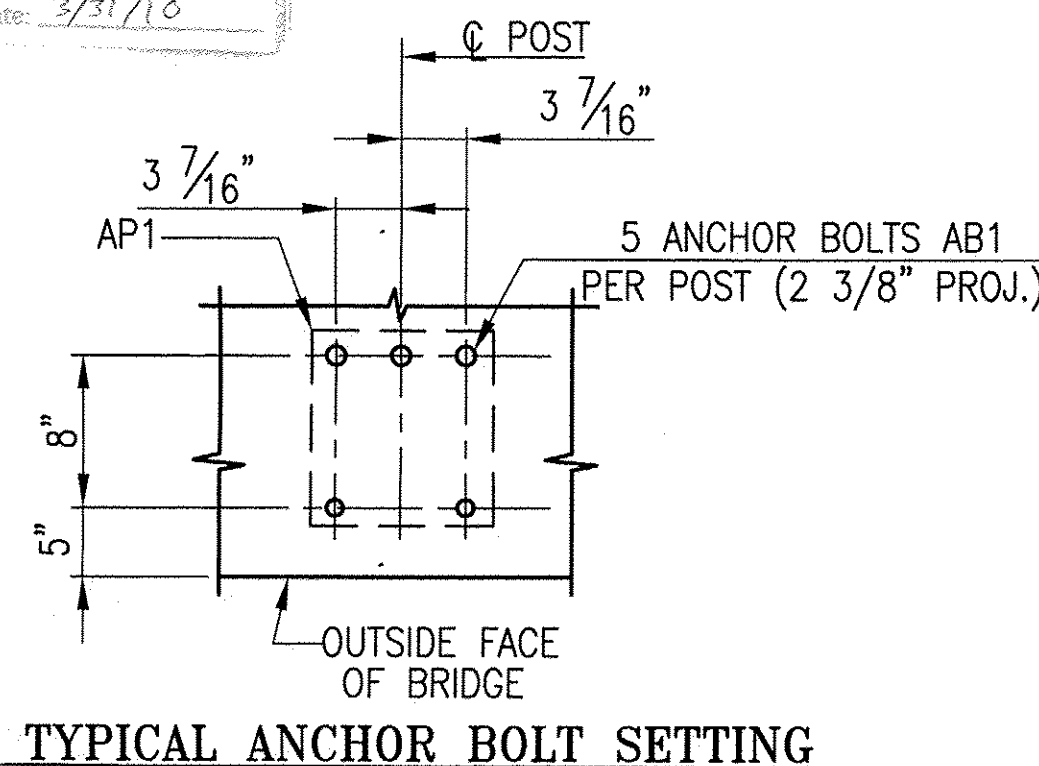
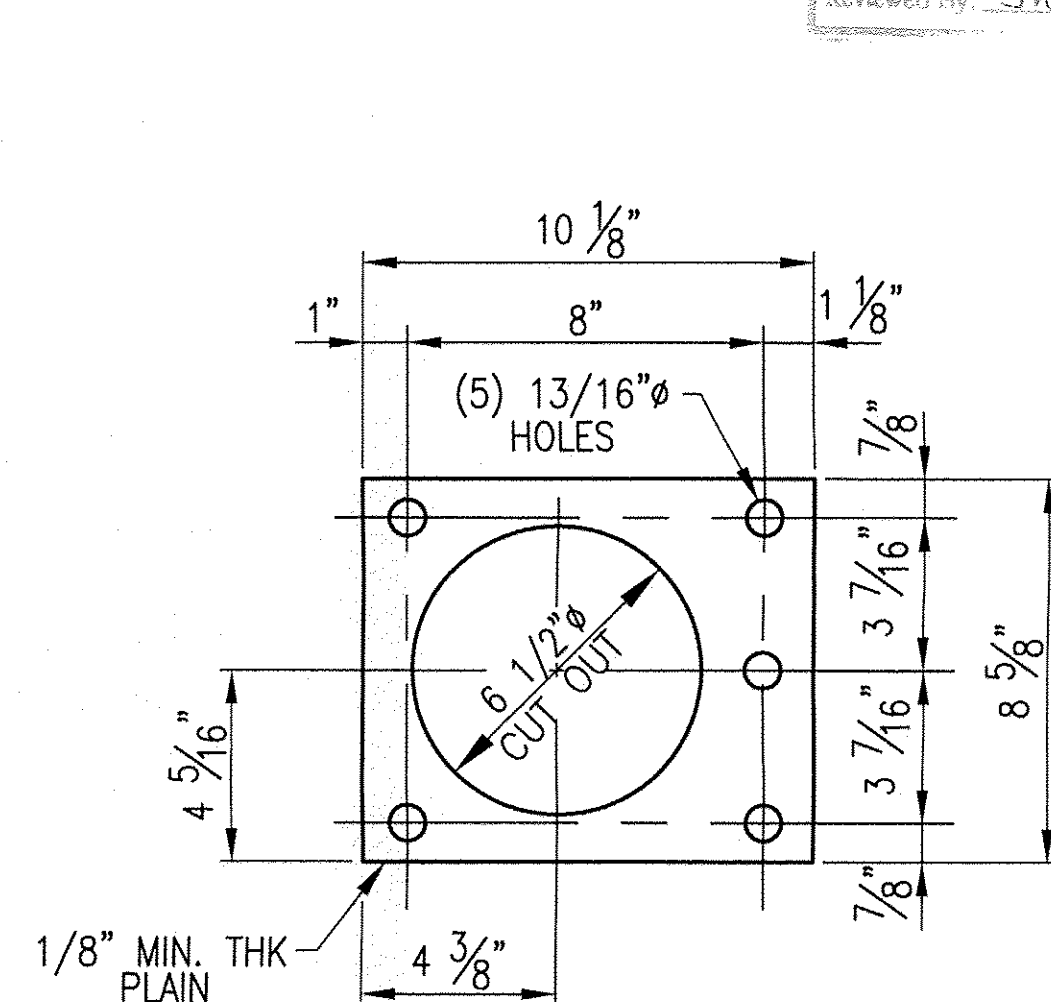
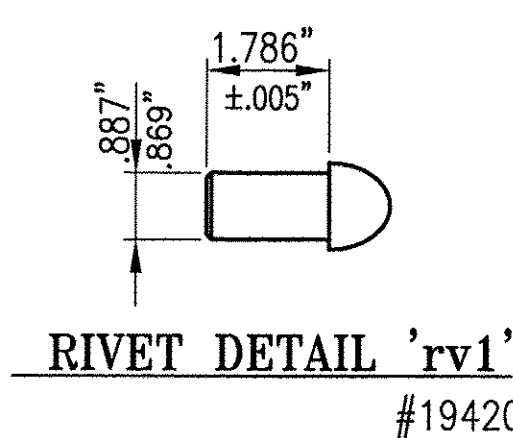
Surveyed by JHW
Designed by JHW
Drawn by HWS
Traced by HAS
Checked by QUANTITIES-M.R.C.
Series 5 No. 33 (3) Filed
Sheet 17 of 36 Sheets





160 ~ REQ'D CLAMP
BAR CB-03-A #19447
(BARRIER RAIL)

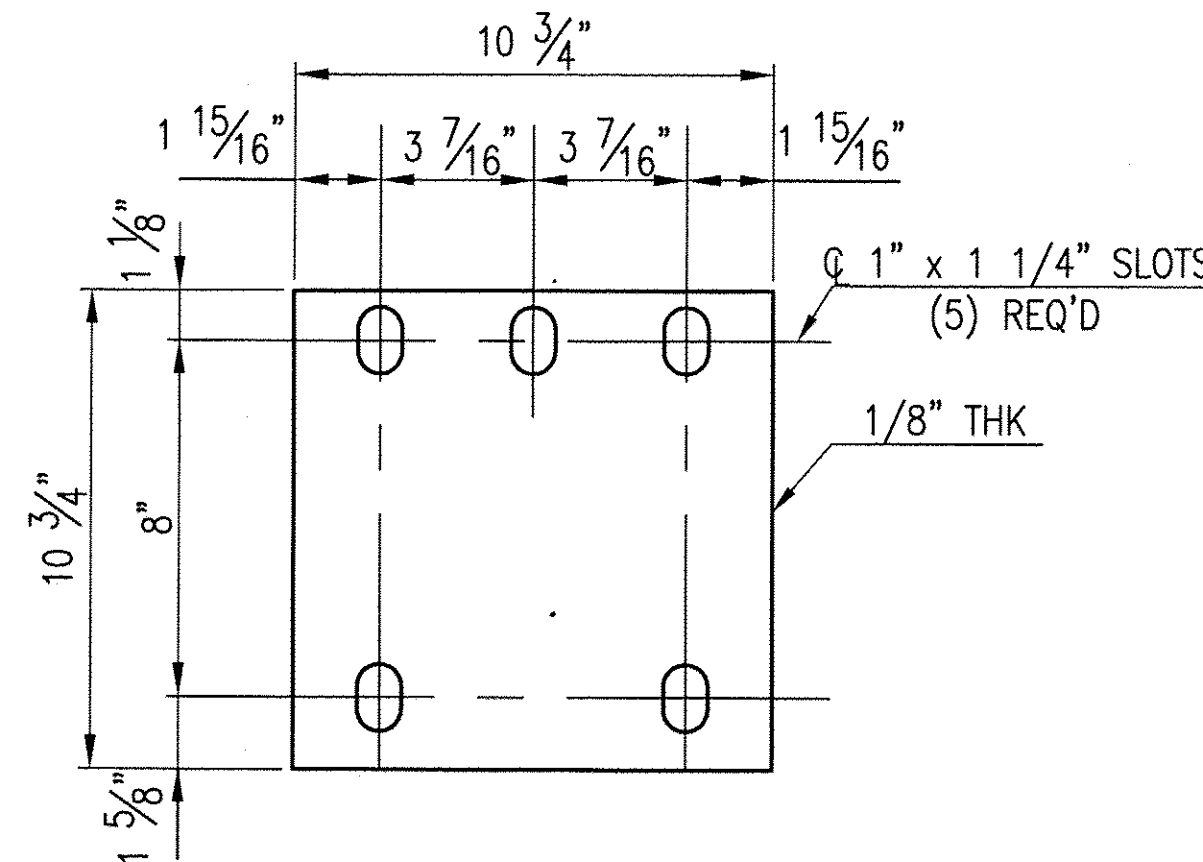
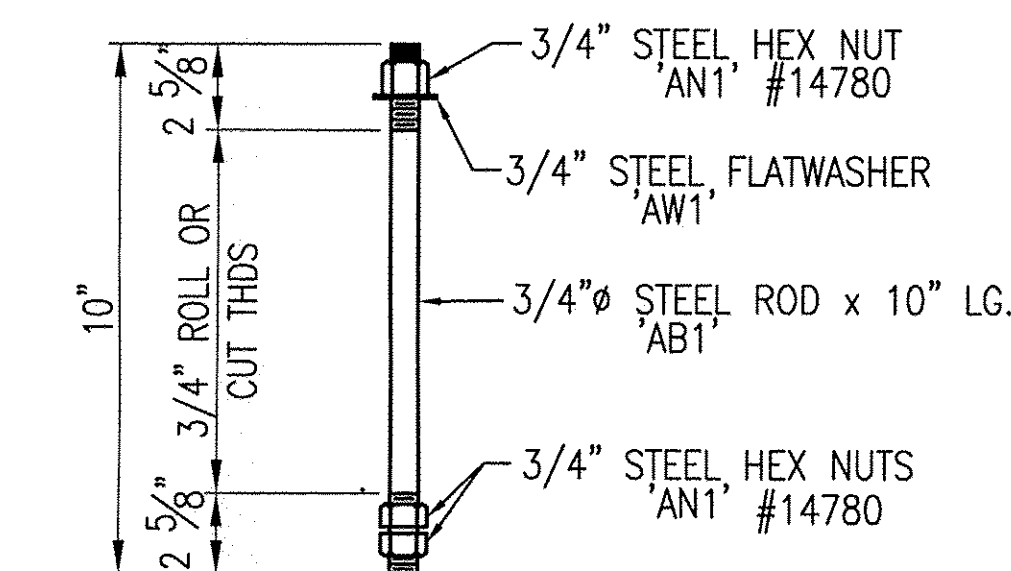
80 ~ REQ'D CLAMP
BAR CB-01-H #19439
(HANDRAIL)



40 ~ REQ'D ANCHOR PLATE AP1
#31286

ANODIZED

- ALL ALUM. COMPONENTS SHALL BE ANODIZED TO A BLACK (HARD SATIN FINISH) COLOR - AA-M10-C22-A44/A42 CLASS 1
- MIN. THICKNESS OF 0.7 mils. AND A MIN. WEIGHT OF 35 mg/sq in.
- ALL VISIBLE HARDWARE SHALL BE FIELD PAINTED TO MATCH THE ANODIZED RAIL. TOUCH UP PAINT SHALL BE PROVIDED.
- SAMPLES SHALL BE SUBMITTED FOR THE ENGINEER'S APPROVAL.
- STEEL FASTENERS TO BE TOUCHED UP IN FIELD AS REQ'D.
- TOUCH UP PAINT TO BE FURNISHED FOR FIELD USE.



200 ~ REQ'D ANCHOR BOLTS AB1

40 ~ REQ'D FABRIC PADS 'EP1'

GENERAL NOTES

ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006 AND ITS LATEST REVISIONS.

DESCRIPTION	ASTM	ALLOY/GR.	REMARKS
RAILS, POSTS, BASES, SPLICES, CLAMP BARS, PINS, & BALUSTER FRAMES	B221	6061-T6 OR 6351-T5	MIN. YIELD STRENGTH $F_y = 35,000$ psi.
BALUSTERS	B221	6061 OR 6351	T4 - USED FOR SUPERIOR EXPANDING QUALITIES
RIVETS	B316	6061-T6	BUTTON HD., CONE PT.
SET SCREWS FOR BALUSTERS	F880	TYPE 303	
STAINLESS STEEL BOLTS	A193	GRADE B8	
ANCHOR RODS	A449		GALV. A153
STEEL HEX. NUTS	A563	GRADE DH	GALV. A153
STEEL WASHERS	F436		GALV. A153
ANCHOR PLATES	A569		COMMERCIAL QUALITY (PLAIN)
ALUMINUM WASHERS	B209	6061-T6	
PREFORMED PADS			SECTION 731.01 OR 731.02
ELECTRODES FOR WELDING		AWS A5.10 ER5356	

POSTS TO BE NORMAL TO GRADE AND RAILS SHALL BE PARALLEL TO GRADE. RAILS TO BE ATTACHED TO A MINIMUM OF THREE POSTS WHEN POSSIBLE.

ALL RAILS AND WELDS TO BE FREE FROM ALL BURRS AND ROUGH EDGES. ENDS OF TUBE SECTIONS SHALL BE SAWED OR MILLED. GRIND ALL CUT EDGES SMOOTH.

ALL THREADS TO BE UNC CLASS 2A/2B.

ALL EXTRUSION TOLERANCES NOT SHOWN SHALL BE IN ACCORDANCE WITH ASTM B221.

IF CUT THREADS ARE USED, BOLT DIAMETER SHALL NOT BE LESS THAN NOMINAL DIAMETER. IF ROLLED THREADS ARE USED, BOLT DIAMETER SHALL NOT BE LESS THAN THE ROOT DIAMETER OF THREADS.

THE SPLICE BAR SHALL BE ATTACHED TO THE RAIL ELEMENT AS FOLLOWS:

THE RAIL SPLICE AT THE BRIDGE EXPANSION JOINT SHALL BE FASTENED ON BOTH SIDES OF THE RAIL SPLICE USING THE PARTIALLY THREADED BOLTS, WITH THE WASHER FACED BOLT, TIGHTENED SECURELY TO THE END OF THREADS, AND LEAVING A 1/8" GAP. THIS ALLOWS EXPANSION ON BOTH SIDES OF THE JOINT.

ALL NUTS SHALL COMPLY WITH AMERICAN HEXAGON ANSI SPECIFICATIONS B18.2

BRIDGE No. 30
PROJECT No. BHf 0283 (9) S
ITEM No: 525.235

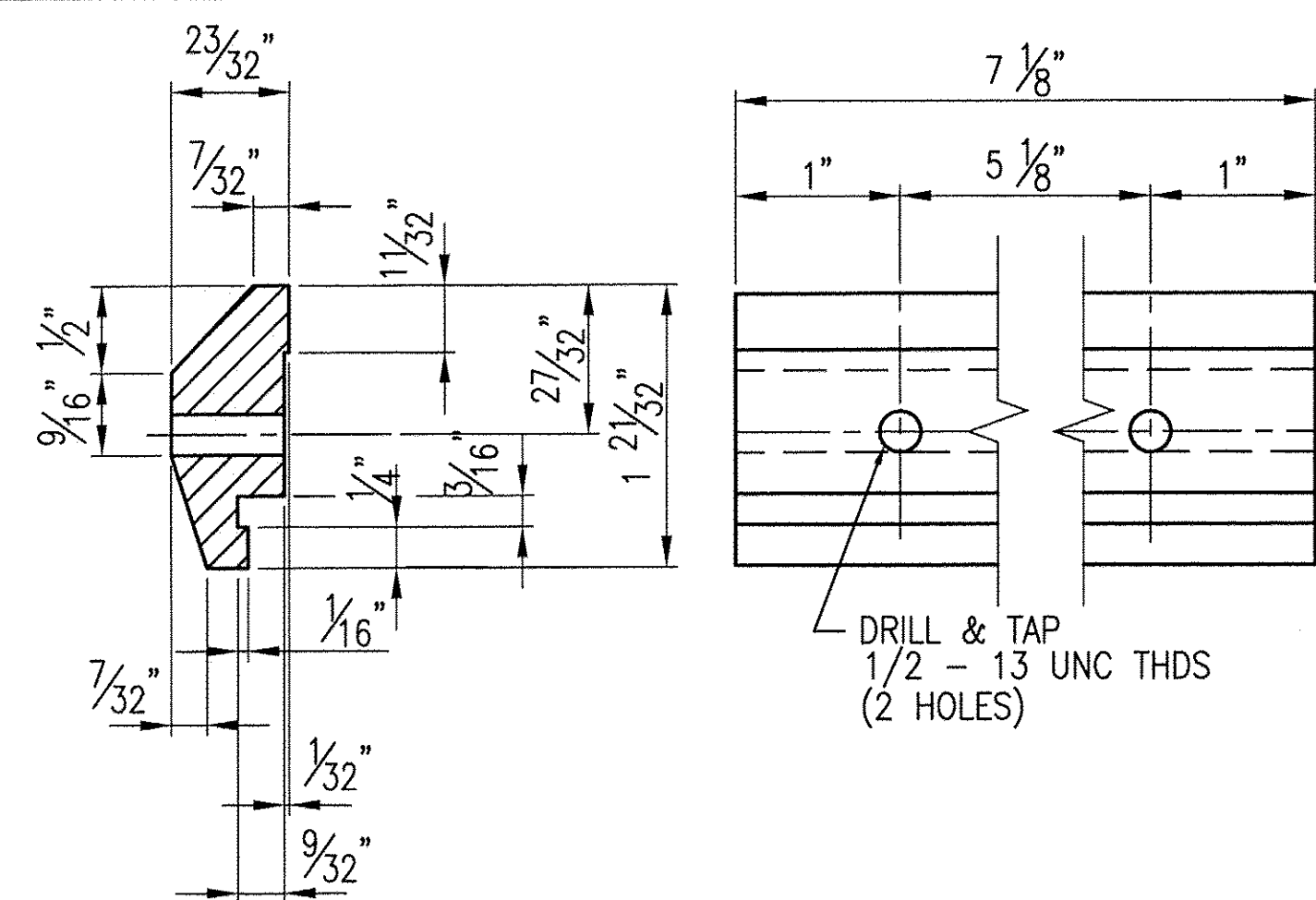
APPROVED: _____
REC'D APPROVAL
DRAWING

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A.D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF BERKSHIRE, COUNTY OF FRANKLIN
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR VT RTE 118
GENERAL NOTES AND TYP DETAILS ~ SIDEWALK SIDE

MADE CMS DATE 02/10/10 JOB No. AR0624 CUST. No.
CHECK BLJ DATE 02/25/10 DRAWING LB1 REV. No.

REV.	DESCRIPTION	BY	DATE



80 ~ REQ'D CLAMP
BAR CB-01-H #19439
(HANDRAIL)

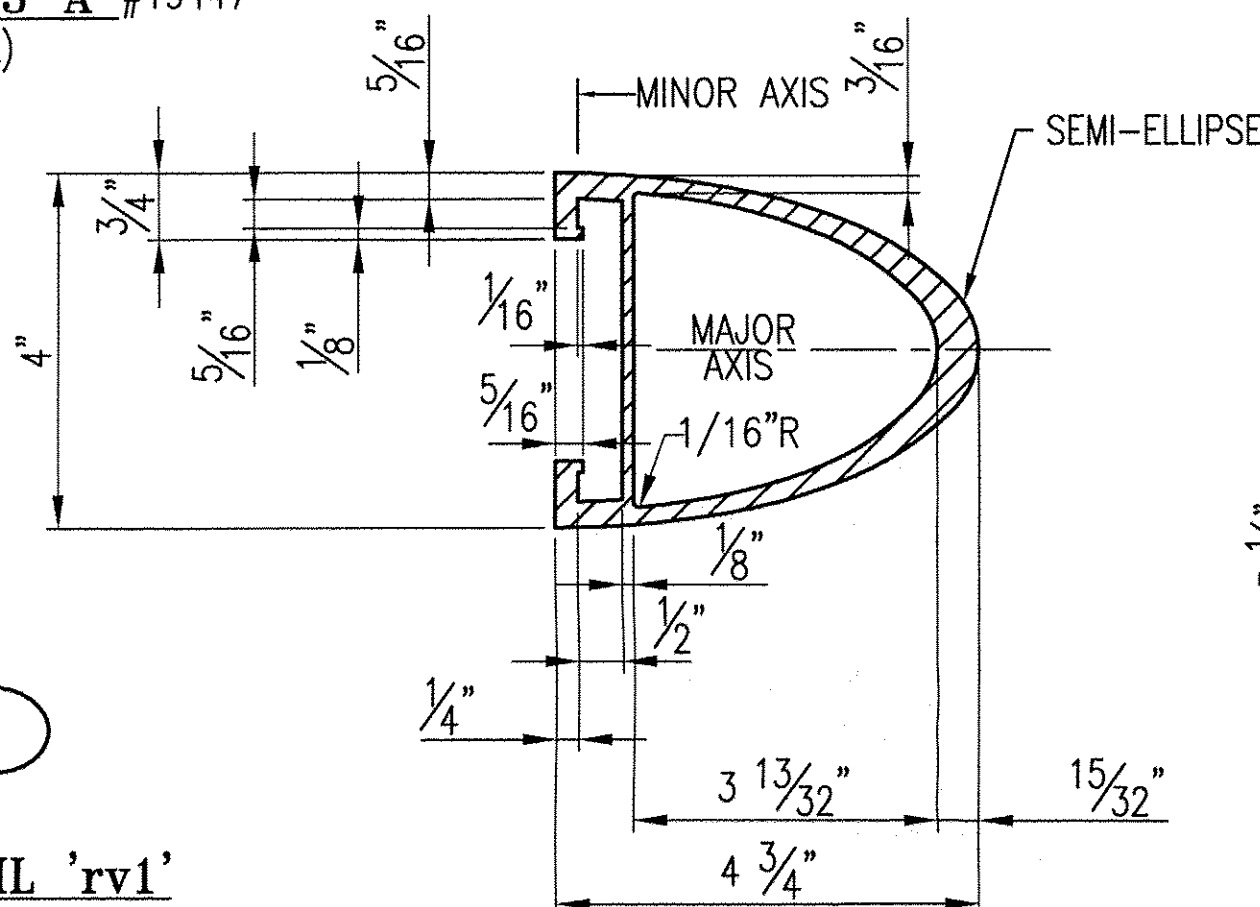
ANODIZED
(SEE LB1 FOR SPECIFICATIONS)

Checking is for general compliance with the design concept of the project and general compliance with the information in the contract documents only. Any action shown is not an approval and is not to the requirements of the plans and specifications. Any action shown on a specific item shall not indicate the checking for dimensions which shall be confirmed and correlated at the job site, fabrication processes, techniques of construction, safety precautions, and coordination of the work with that of all other trades and the satisfactory performance of the work.

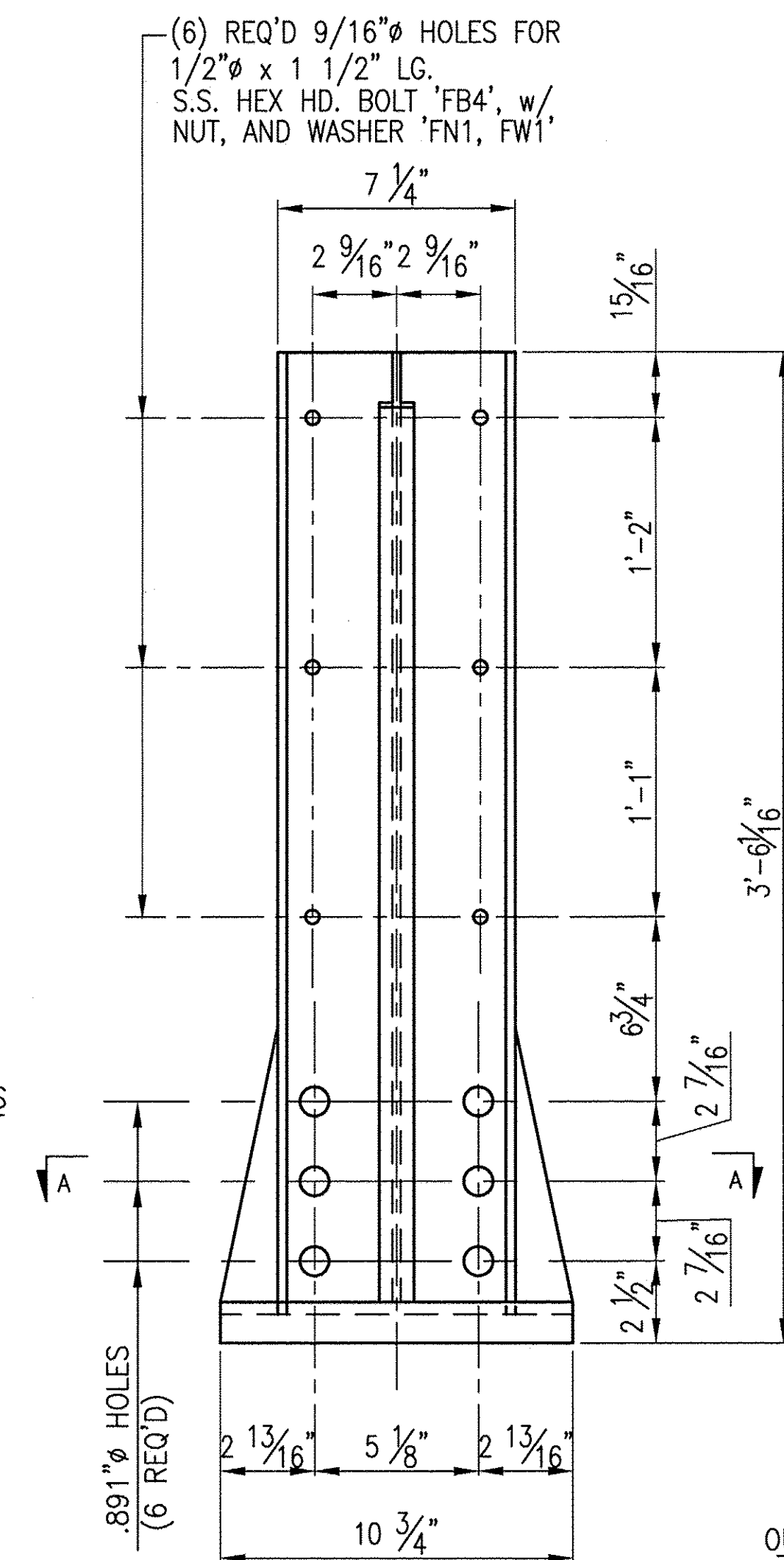
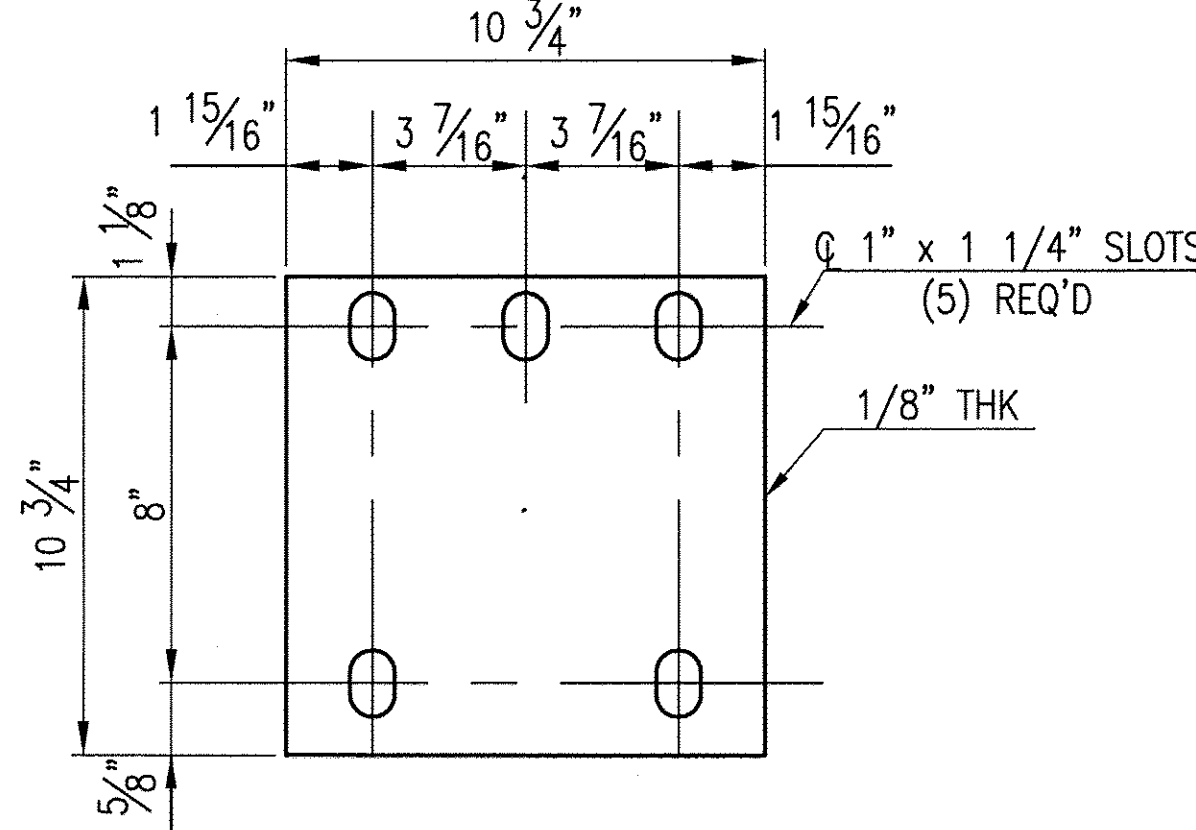
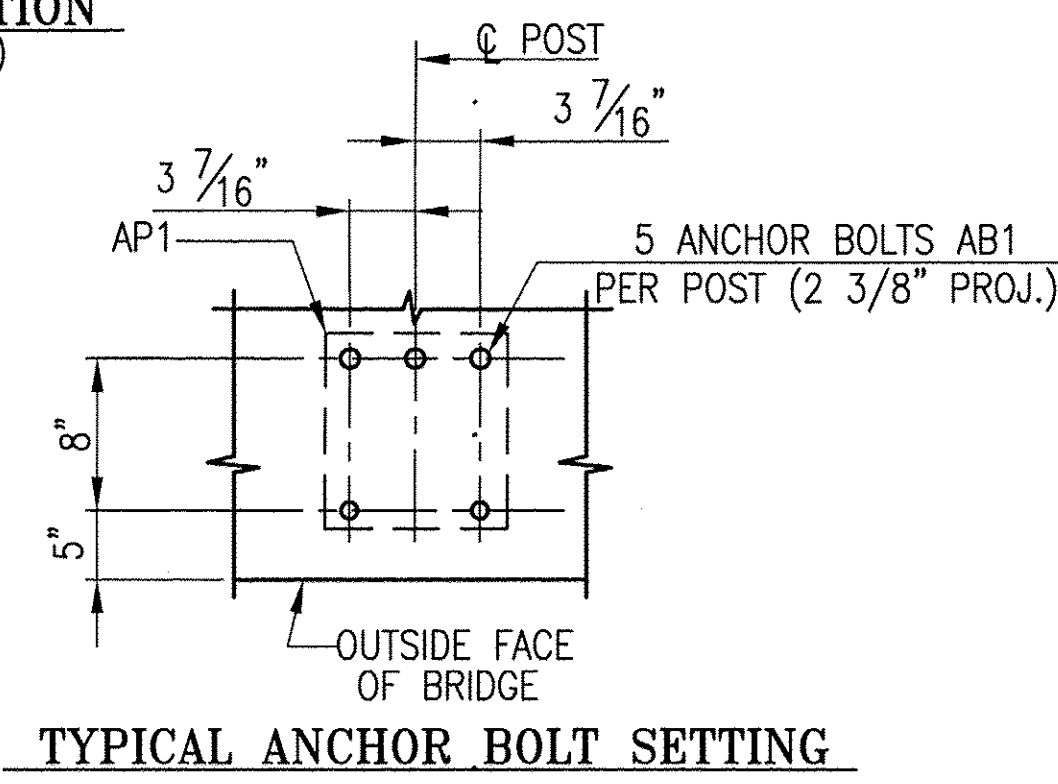
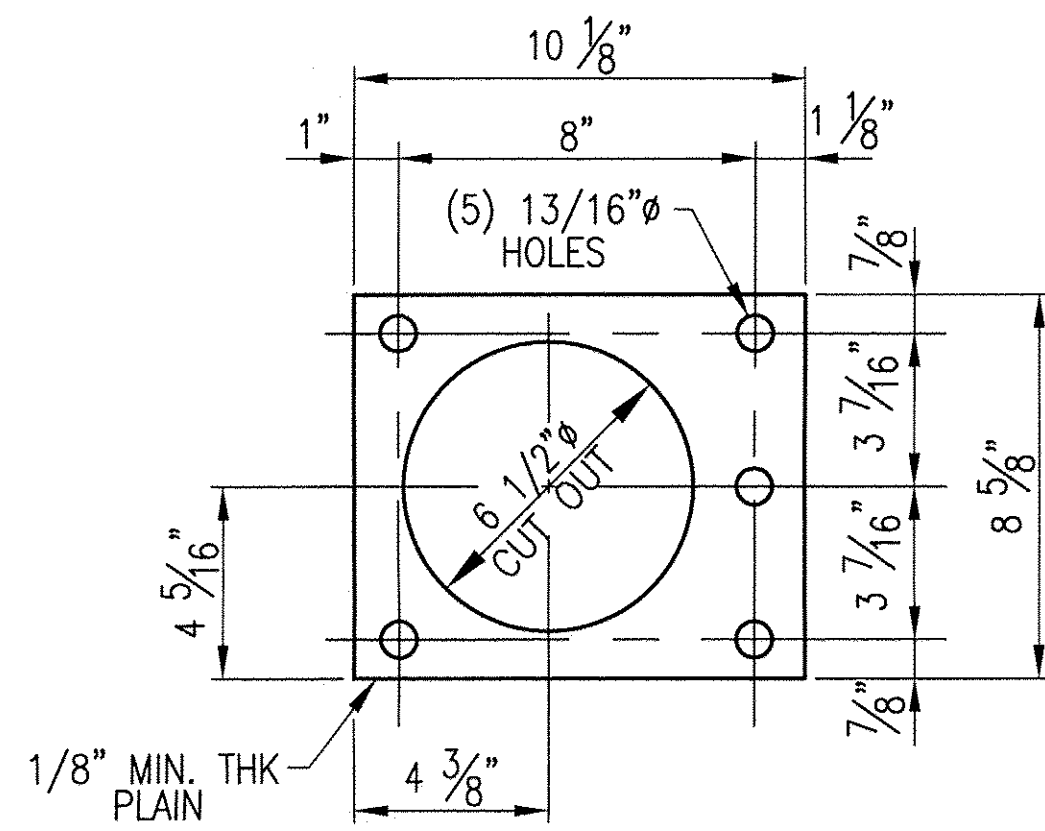
Reviewed By: *Shanta Keller* Date: *2/3/10*

160 ~ REQ'D CLAMP

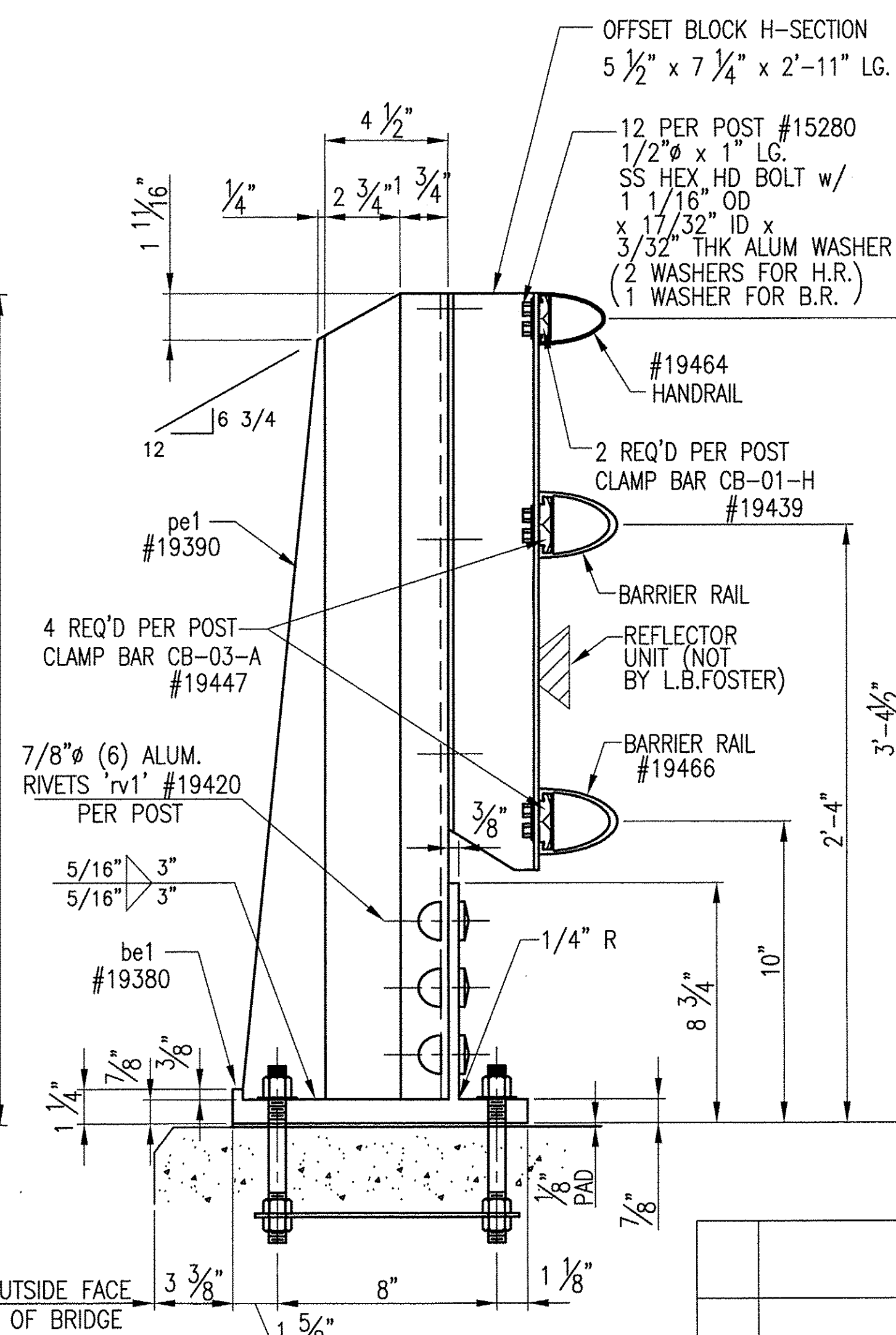
BAR CB-03-A #19447
(BARRIER RAIL)



RIVET DETAIL 'rv1'
#19420



40 ~ REQ'D OFFSET BLOCK 'OB' H-SECTION DETAIL



GENERAL NOTES
ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006 AND ITS LATEST REVISIONS.

DESCRIPTION	ASTM	ALLOY/GR.	REMARKS
RAILS, POSTS, BASES, SPLICES, CLAMP BARS, PINS,	B221	6061-T6 OR 6351-T5	MIN. YIELD STRENGTH F _y = 240 MPa (35,000 psi.)
RIVETS	B316	6061-T6	BUTTON HD., CONE PT. COLD DRIVEN
OFFSET BLOCKS (H-SECT.)	B308	6061-T6	
STAINLESS STEEL BOLTS	A193	GRADE B8	
STAINLESS STEEL HEX NUTS	A276	TYPE 304	
STAINLESS WASHERS	A276	TYPE 304	
ANCHOR RODS	A449		GALV. A153
STEEL HEX NUTS	A563	GRADE DH	GALV. A153
STEEL WASHERS	F436		GALV. A153
ANCHOR PLATES	A569		COMMERCIAL QUALITY (PLAIN)
ALUMINUM WASHERS	B209	6061-T6	
PREFORMED PADS			SECTION 731.01 OR 731.02
BACK-UP PLATES	A36		GALV. A123
ELECTRODES FOR WELDING		AWS A5.10 ER5356	

POSTS TO BE NORMAL TO GRADE AND RAILS SHALL BE PARALLEL TO GRADE. RAILS TO BE ATTACHED TO A MINIMUM OF THREE POSTS WHEN POSSIBLE.

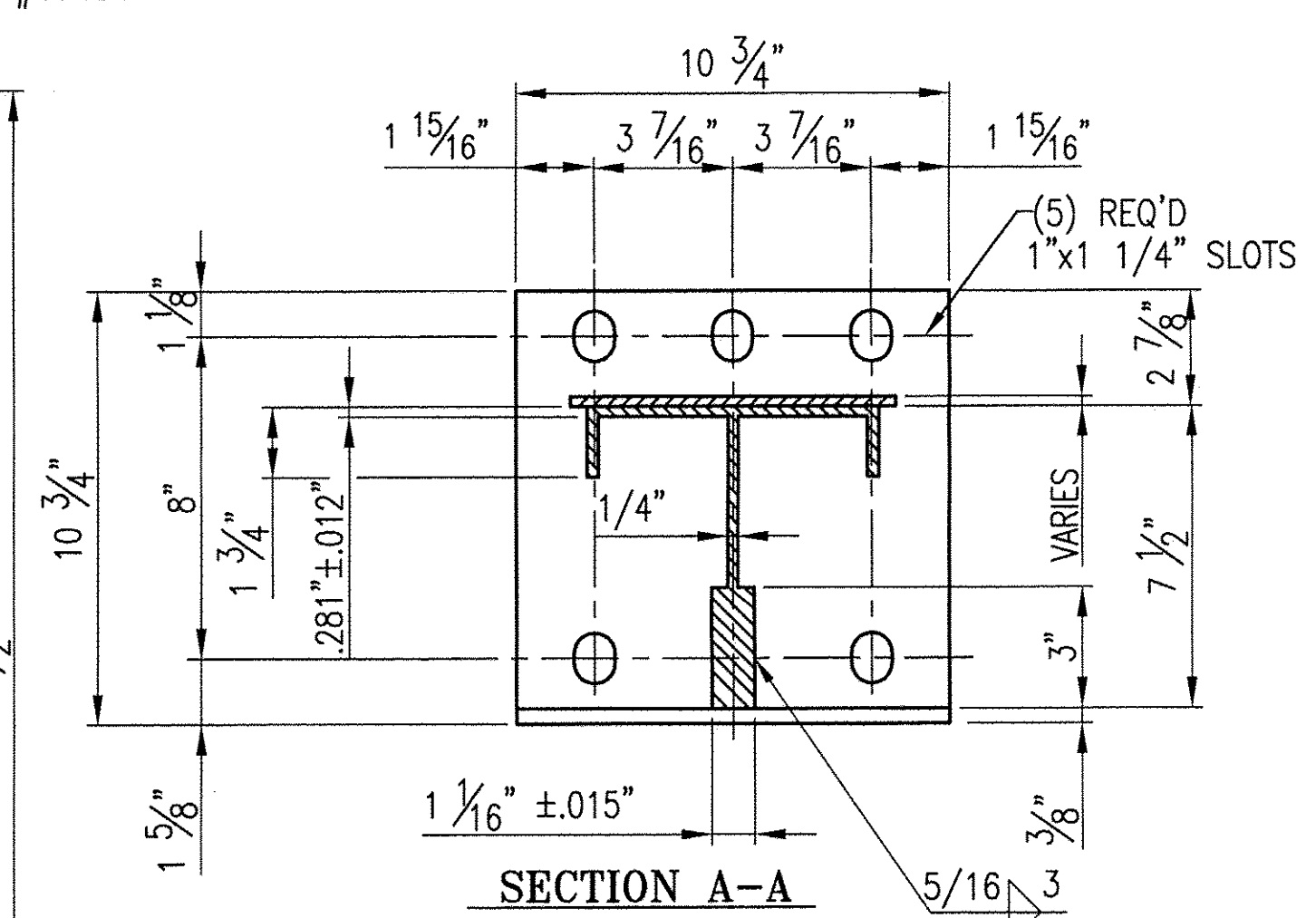
ALL RAILS AND WELDS TO BE FREE FROM ALL BURRS AND ROUGH EDGES. ENDS OF TUBE SECTIONS SHALL BE SAWED OR MILLED. GRIND ALL CUT EDGES SMOOTH.

ALL THREADS TO BE UNC CLASS 2A/2B.
ALL EXTRUSION TOLERANCES NOT SHOWN SHALL BE IN ACCORDANCE WITH ASTM B221.

IF CUT THREADS ARE USED, BOLT DIAMETER SHALL NOT BE LESS THAN NOMINAL DIAMETER. IF ROLLED THREADS ARE USED, BOLT DIAMETER SHALL NOT BE LESS THAN THE ROOT DIAMETER OF THREADS.

THE SPLICE BAR SHALL BE ATTACHED TO THE RAIL ELEMENT AS FOLLOWS:
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ALL NUTS SHALL COMPLY WITH AMERICAN HEXAGON ANSI SPECIFICATIONS B18.2



BRIDGE No. 30
PROJECT No. BHF 0283 (9) S
ITEM No: 525.225

APPROVED: _____ REC'D APPROVAL _____
DRAWING

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

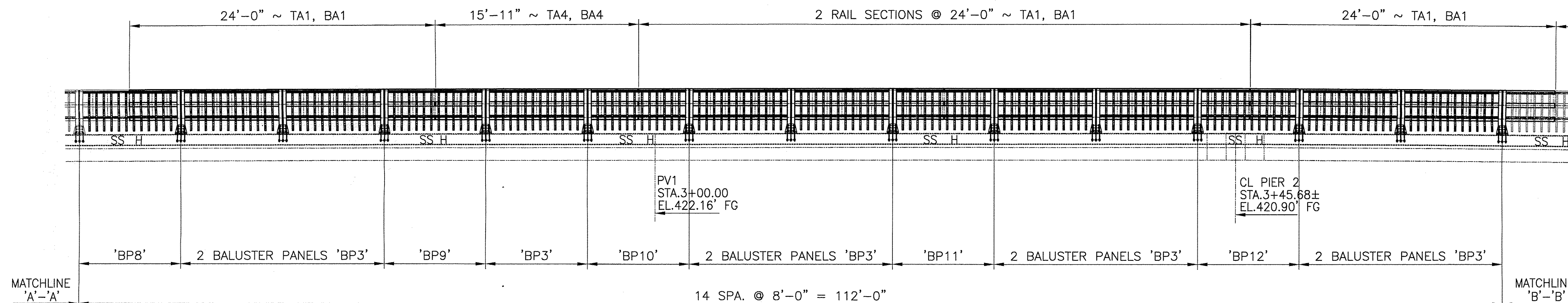
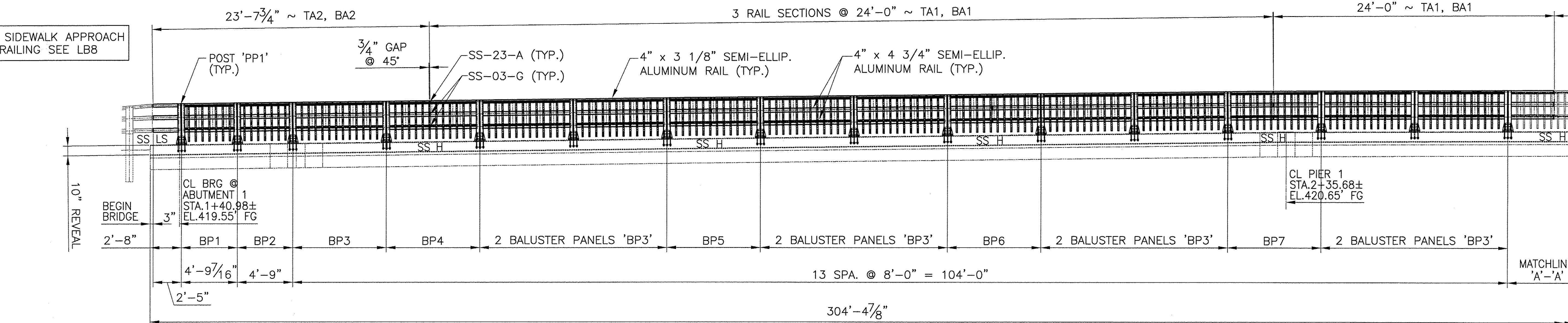
FOR: A.D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF BAKERSFIELD, COUNTY OF FRANKLIN
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR VT RTE 118
GENERAL NOTES AND TYP DETAILS - CURBSIDE

MADE CMS DATE 02/10/10 JOB No. AR0624 CUST. No.
CHECK BLJ DATE 02/25/10 DRAWING LB2 REV. No.

REV.	DESCRIPTION	BY	DATE

FOR SIDEWALK APPROACH
RAILING SEE LB8

H = HOLE SIDE
SS = SHORT SLOTTED SIDE
LS = LONG SLOTTED SIDE



X	No Exception Taken
	Make Correction as Noted
	Substit Specified Item
	Reverse and Resubmit as Noted
	Rejected

Checking is for general compliance with the design concept of the project and general conformance with the information given in the contract documents only. Any action shown is not an approval and is subject to the requirements of the plans and specifications. Any action shown on a specific item shall not indicate the checking of an assembly of which the item is a component. Contractor is solely responsible for dimensions which shall be confirmed and correlated at the job site, fabrication processes, techniques of construction, safety precautions, and coordination of its work with that of all other trades and the satisfactory performance of its work.

Reviewed By: Shanta Keller Date: 3/31/10

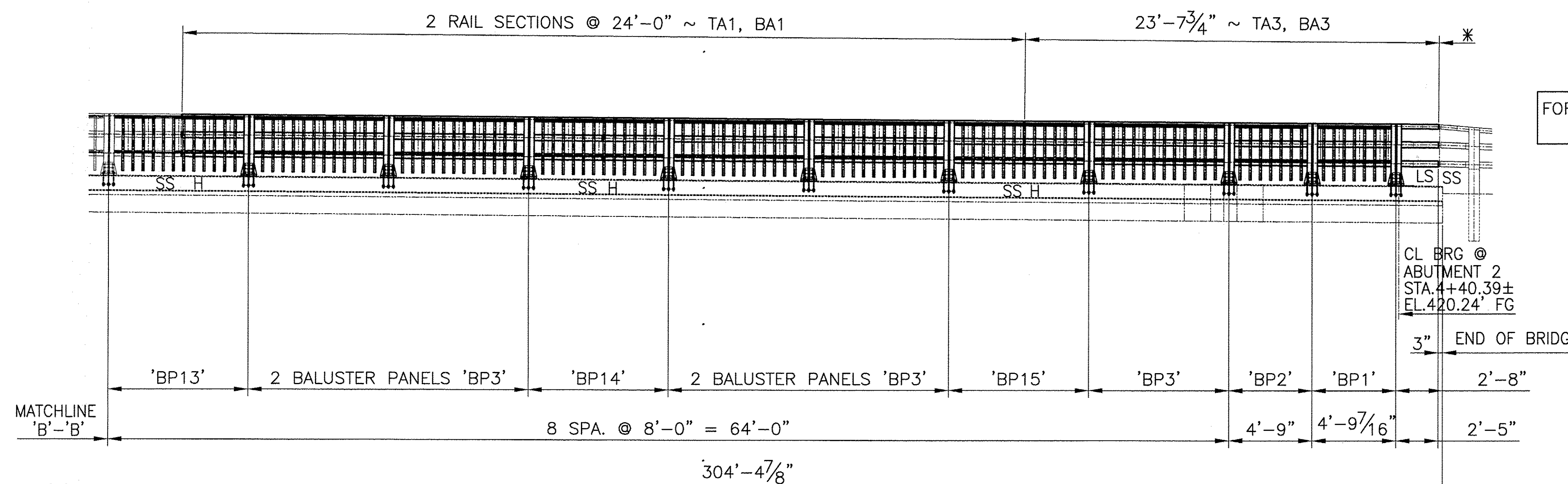
NOTE:

- THIS CONTRACT IS BASED UPON THE CONTRACTOR SETTING AND SPACING THE ANCHOR BOLTS TO THE MEASUREMENTS SHOWN ON THE APPROVED SHOP DRAWINGS. THE L.B. FOSTER CO. WILL NOT BE RESPONSIBLE FOR WORK NECESSITATED BY ANY OTHER SETTING AND SPACING.
- THIS DRAWING IS NOT TO SCALE.
- FOR GENERAL NOTES AND TYPICAL DETAILS SEE DRAWING LB1.
- LENGTH OF RAILING ON THIS SHEET IS 305 LF PAY LENGTH.
- POST SPACING IS MEASURED HORIZONTALLY ALONG O/S EDGE OF PARAPET.
- SPLICE GAP AT SLEEVE = 3/4" TYP.
- * RAIL LENGTHS DO NOT INCLUDE GAPS.
- * COMPENSATION FOR VERTICAL CURVE IS INCLUDED IN THE RAIL LGTHS.
- FOR BALUSTER DETAILS SEE DRAWING LB6.

FOR SIDEWALK APPROACH
RAILING SEE LB8

CL BRG @
ABUTMENT 2
STA. 4+40.39±
EL. 420.24' FG

3" END OF BRIDGE



OUTSIDE ELEVATION ~ SIDEWALK SIDE

ANODIZED
(SEE LB1 FOR SPECIFICATIONS)

BRIDGE No. 30
PROJECT No. BHF 0283 (9) S
ITEM No. 525.235

APPROVED: _____ REC'D APPROVAL _____
DRAWING _____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

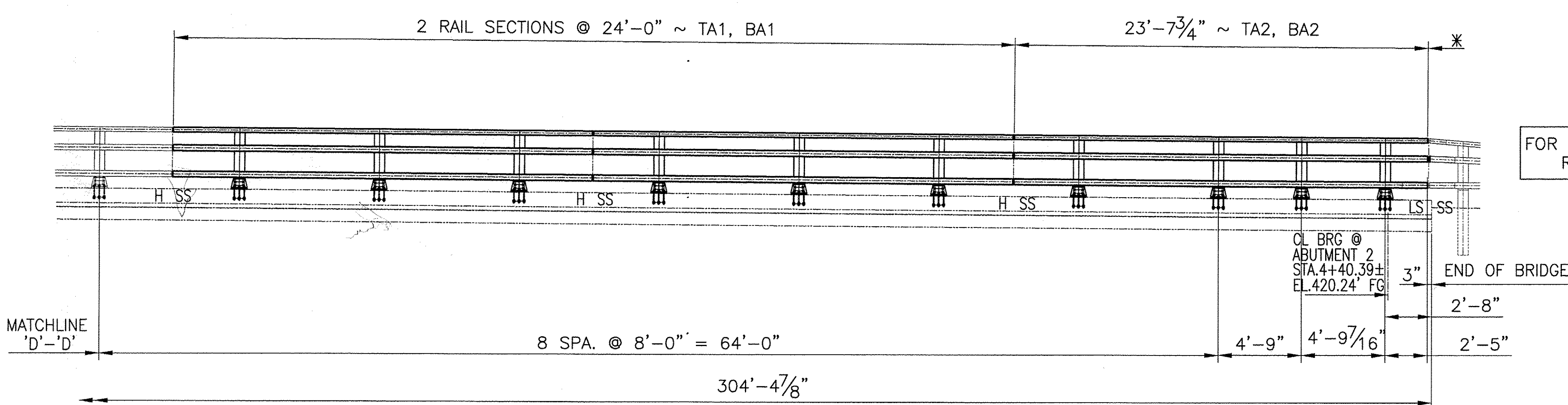
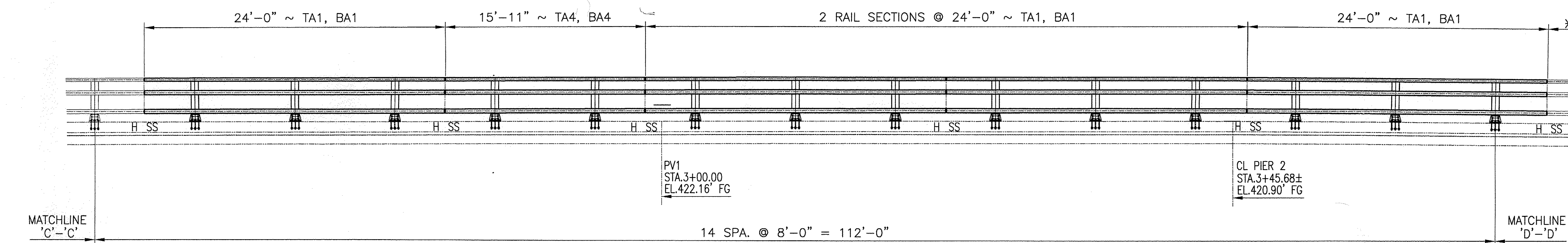
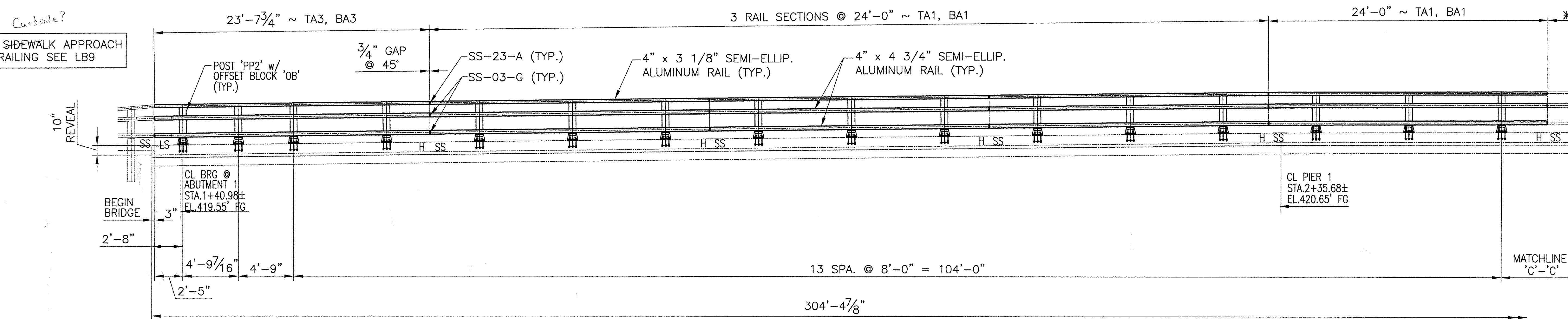
FOR: A.D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF BERKSHIRE, COUNTY OF FRANKLIN
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR VT RTE 118
ELEVATION ~ SIDEWALK SIDE

MADE CMS DATE 02/14/10 JOB No. AR0624 CUST. No.
CHECK BLJ DATE 02/25/10 DRAWING LB3 REV. No.

REV.	DESCRIPTION	BY	DATE

Curbside?
FOR SIDEWALK APPROACH
RAILING SEE LB9

H = HOLE SIDE
SS = SHORT SLOTTED SIDE
LS = LONG SLOTTED SIDE



INSIDE ELEVATION ~ CURBSIDE

- NOTE:
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 - THIS DRAWING IS NOT TO SCALE.
 - FOR GENERAL NOTES AND TYPICAL DETAILS SEE DRAWING LB1.
 - LENGTH OF RAILING ON THIS SHEET IS 305 LF. PAY LENGTH.
 - POST SPACING IS MEASURED HORIZONTALLY ALONG O/S EDGE OF PARAPET.
 - SPLICE GAP AT SLEEVE = 3/4" TYP.
 - * RAIL LENGTHS DO NOT INCLUDE GAPS.
 - * COMPENSATION FOR VERTICAL CURVE IS INCLUDED IN THE RAIL LGTHS.

Checklist for general compliance with the design concept of the project and general compliance with the information given in the contract documents only. Any action shown is not an approval and is subject to the requirements of the plans and specifications. Any action shown on a specific item shall not indicate the checking of an assembly of which the item is a component. Contractor is solely responsible for dimensions which shall be confirmed and correlated at the job site, fabrication processes, techniques of construction, safety precautions, and coordination of its work with that of all other trades and the satisfactory performance of its work.

Reviewed By: Shanta Keller Date: 3/21/10

ANODIZED
(SEE LB1 FOR SPECIFICATIONS)

BRIDGE No. 30
PROJECT No. BHF 0283 (9) S
ITEM No: 525.225

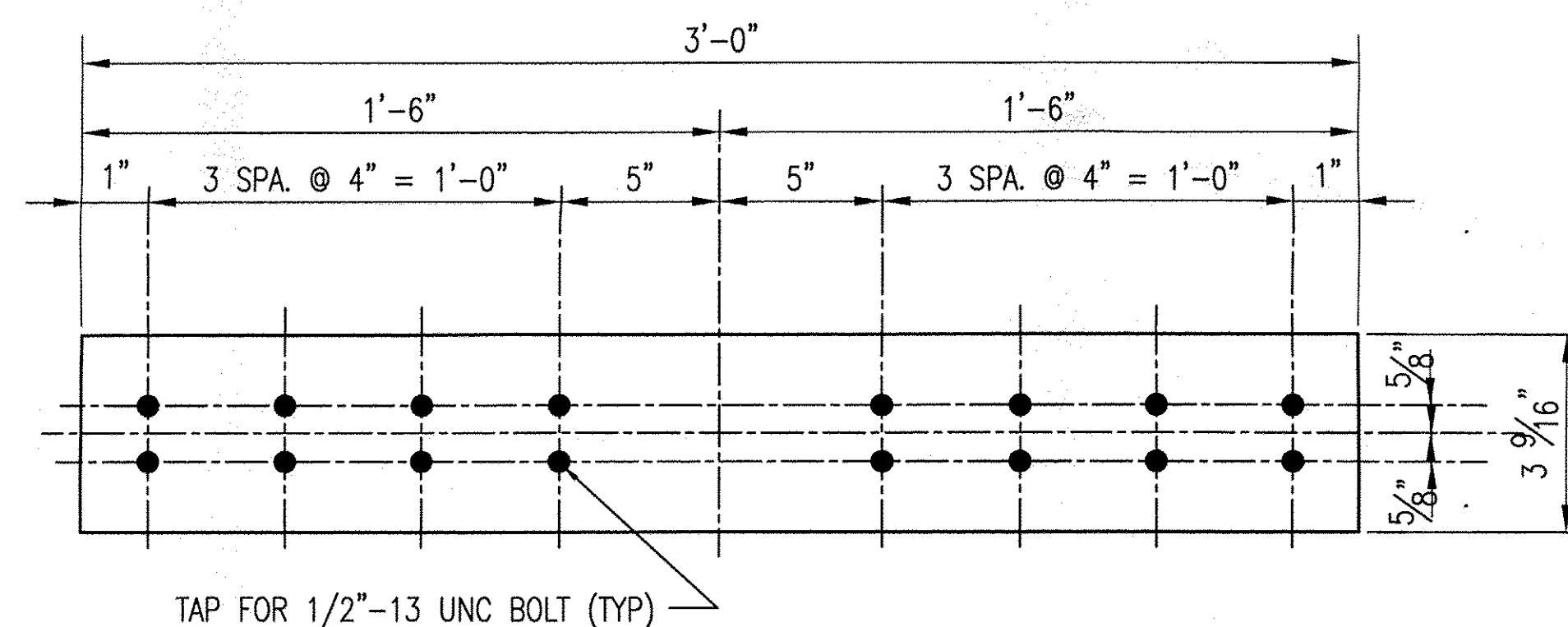
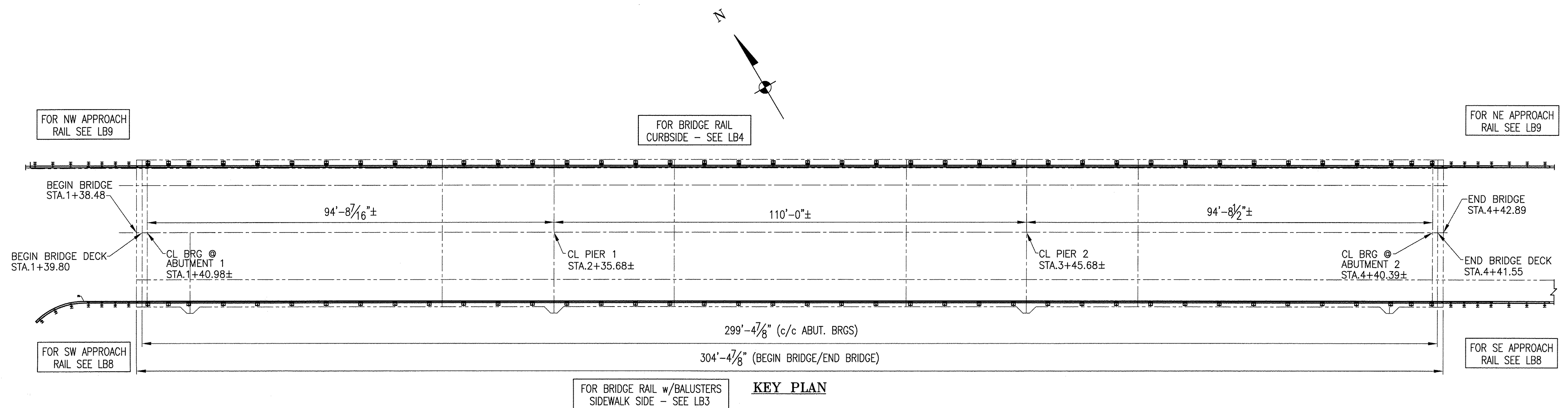
APPROVED: _____ REC'D APPROVAL _____
DRAWING _____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

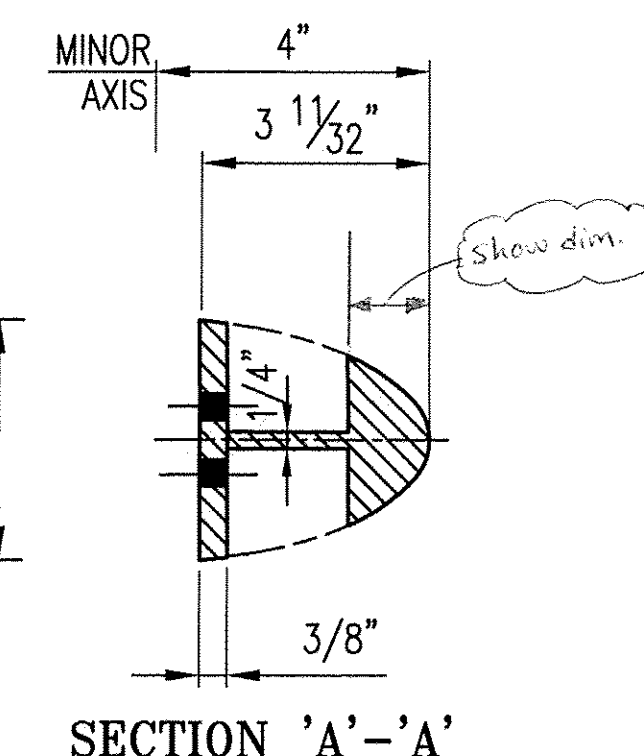
FOR: A.D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF BERKSHIRE, COUNTY OF FRANKLIN
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR VT RTE 118
ELEVATION ~ CURBSIDE

MADE CMS DATE 02/16/10 JOB No. AR0624 CUST. No. _____
CHECK BLJ DATE 02/25/10 DRAWING LB4 REV. No. _____

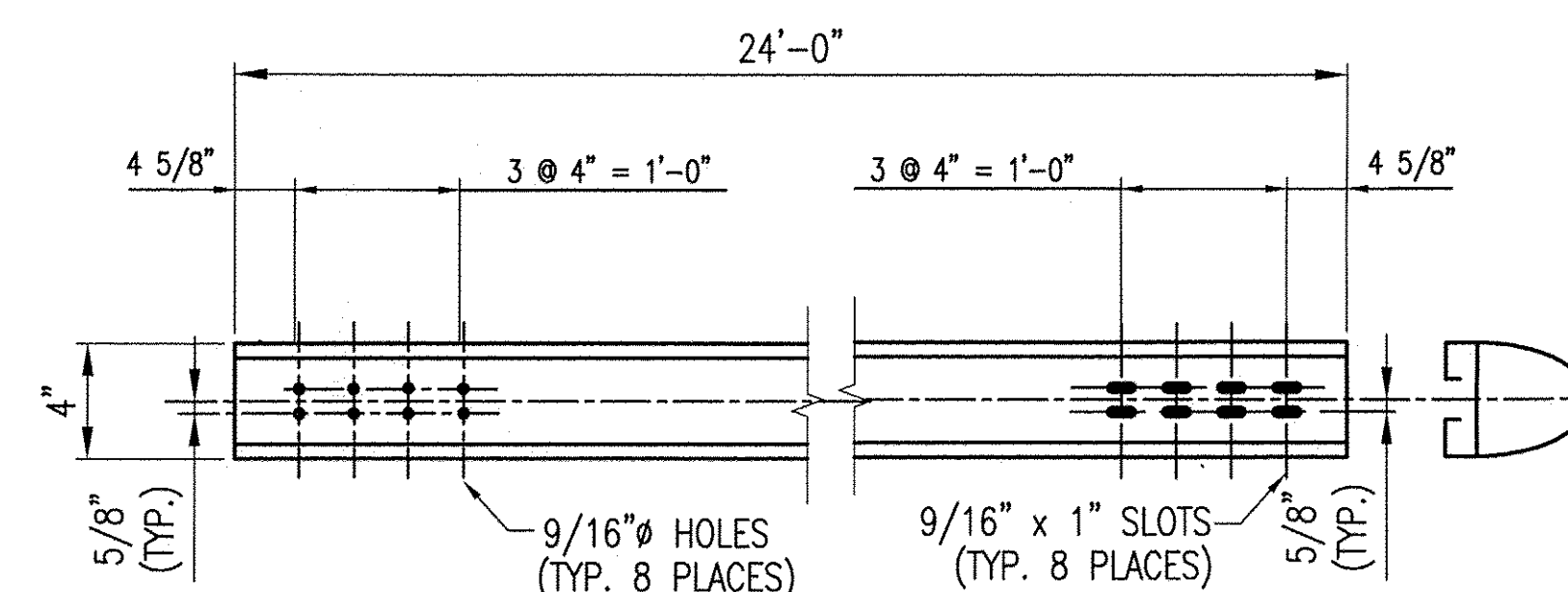
REV.	DESCRIPTION	BY	DATE



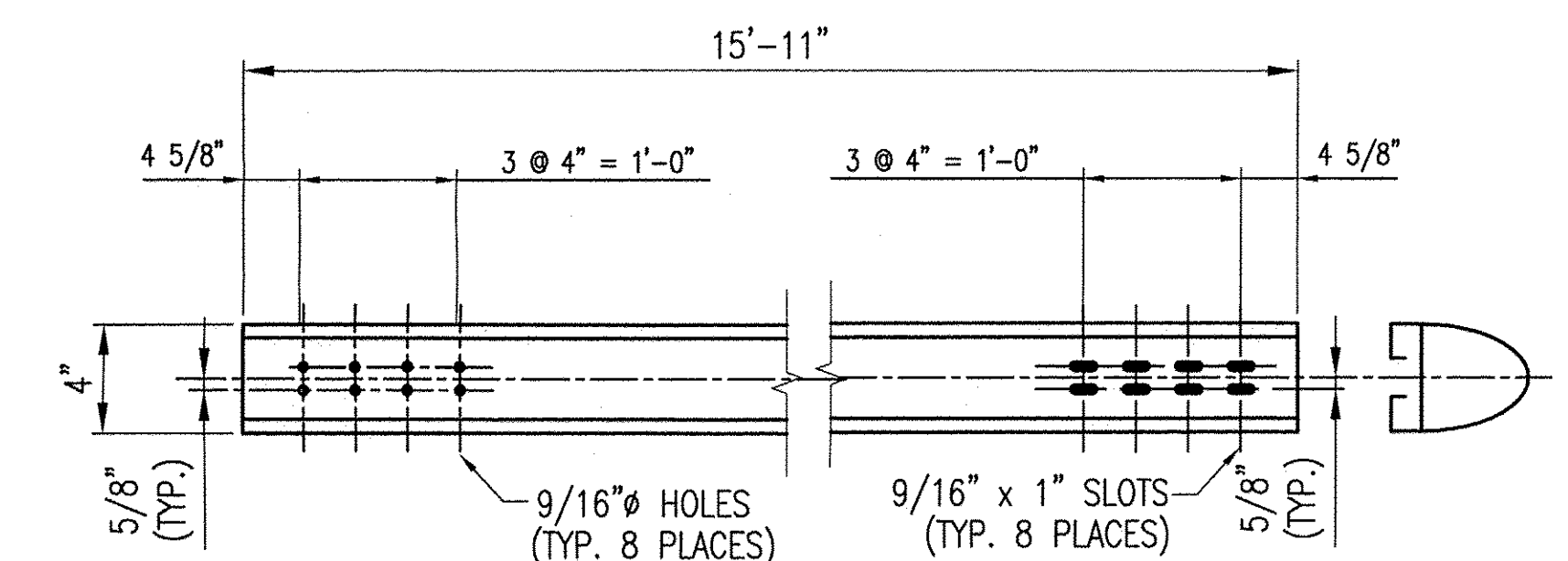
48 ~ REQ'D SPLICE SLEEVES SS-03-G
(BARRIER RAIL) #19501



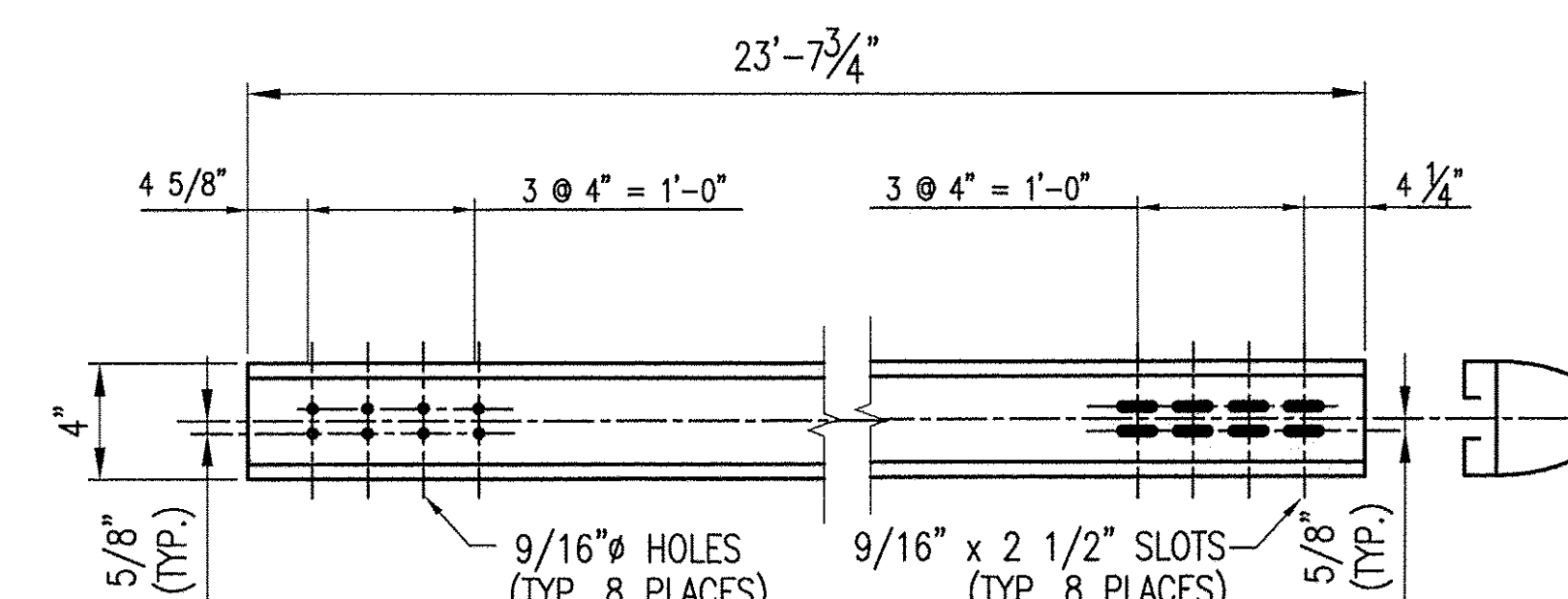
SECTION 'A'-A'



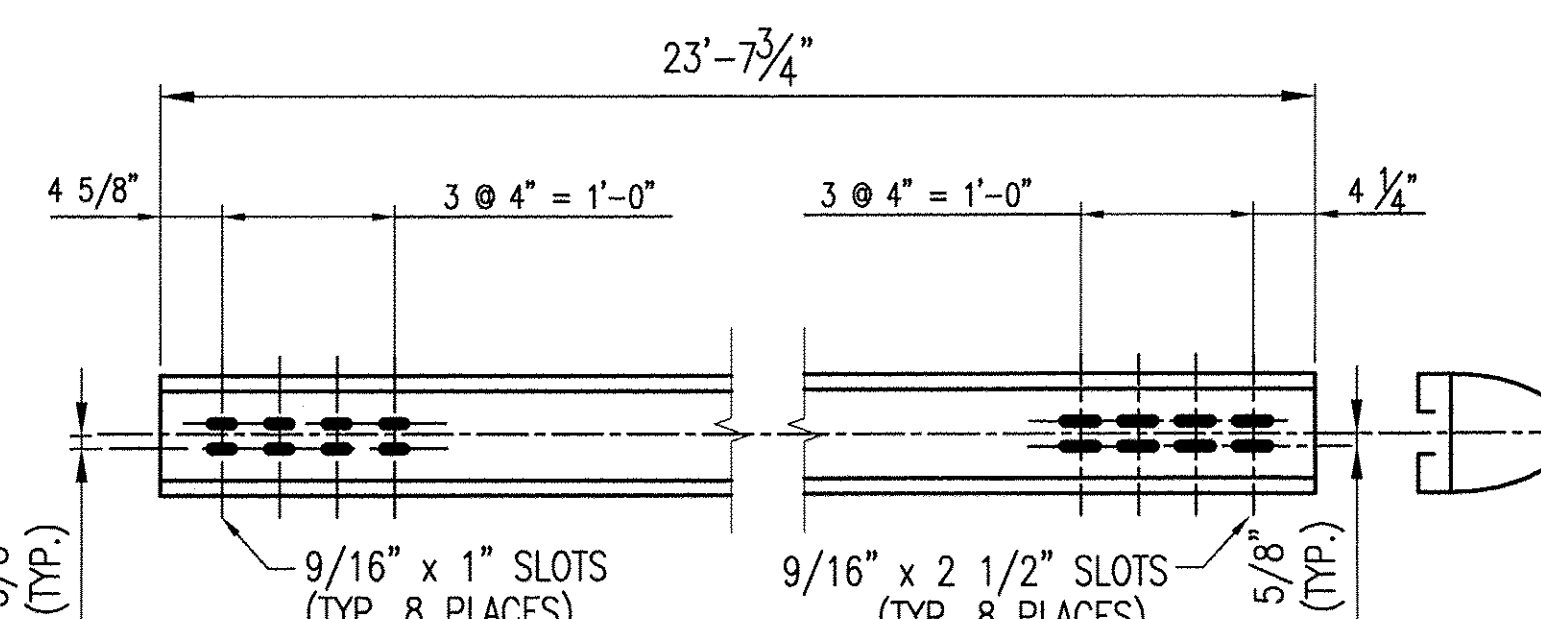
40 REQ'D. ~ RAIL 'BA1'
(BACK ELEVATION VIEW)



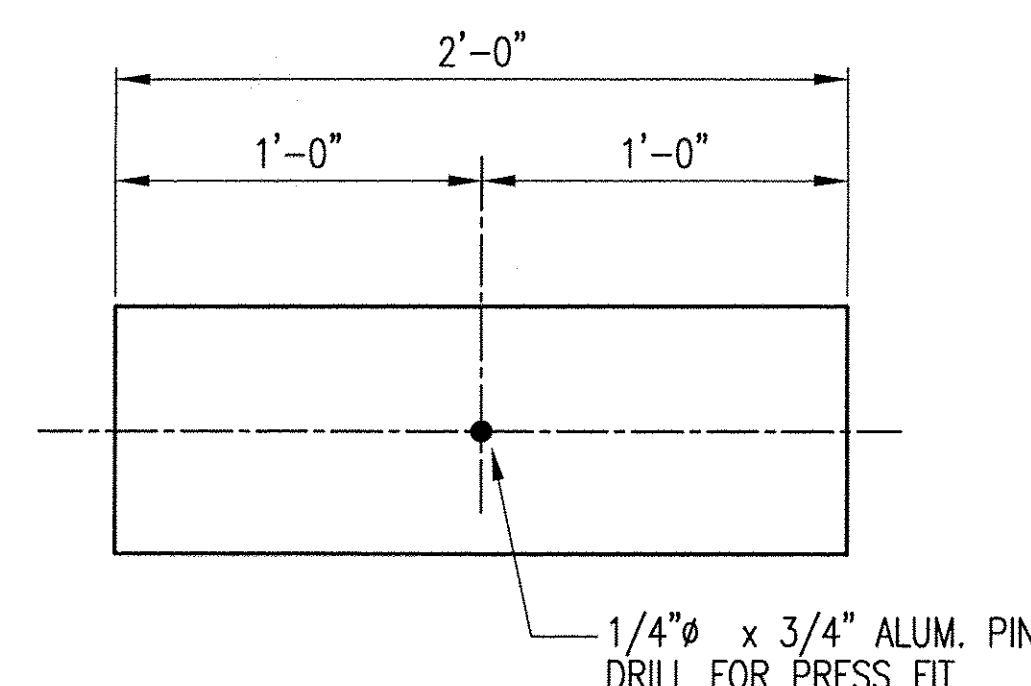
4 REQ'D. ~ RAIL 'BA4'
(BACK ELEVATION VIEW)



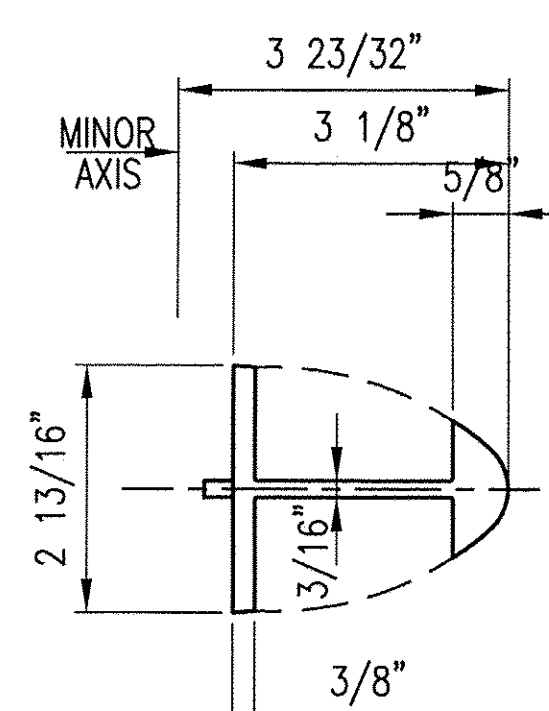
4 REQ'D. ~ RAIL 'BA3'
(BACK ELEVATION VIEW)



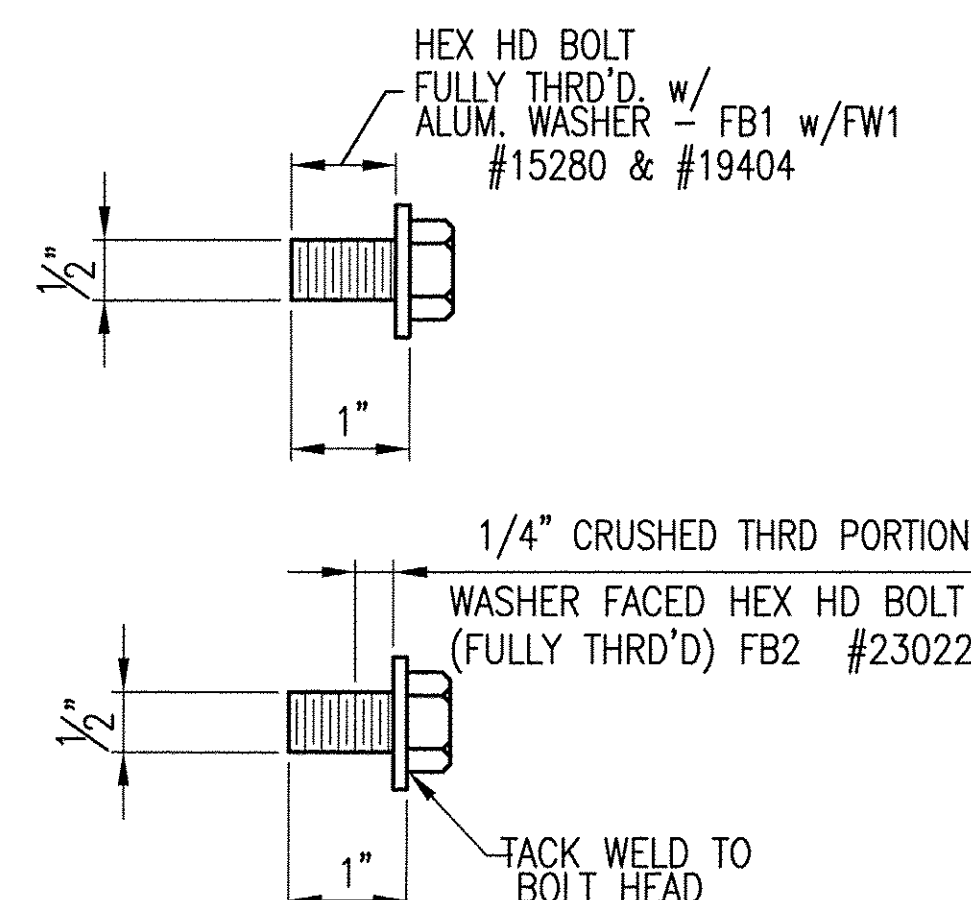
4 REQ'D. ~ RAIL 'BA2'
(BACK ELEVATION VIEW)



24 ~ REQ'D SPLICE SLEEVES SS-23-A
(HANDRAIL) #20204



SECTION 'B'-B'



SPLICE BOLT DETAILS

By Inspection Taken	T.Y. LIN INTERNATIONAL
X Make Correction as Noted	
Submit Specified Item	
Revise and Resubmit as Noted	
Rejected	

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Reviewed By: Shanta Keller Date: 3/21/10

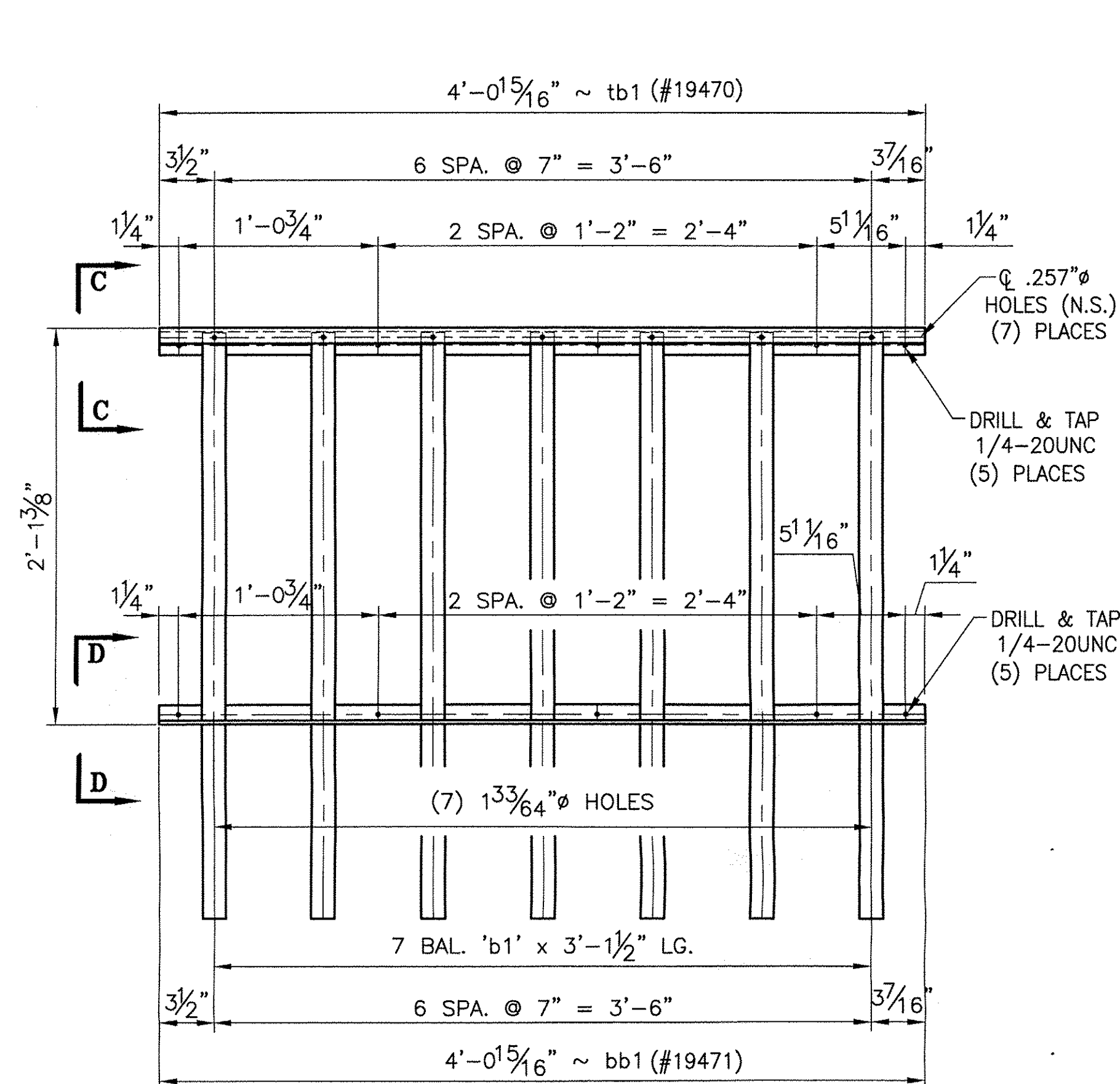
ANODIZED
(SEE LB1 FOR SPECIFICATIONS)

BRIDGE No. 30
PROJECT No. BHF 0283 (9) S

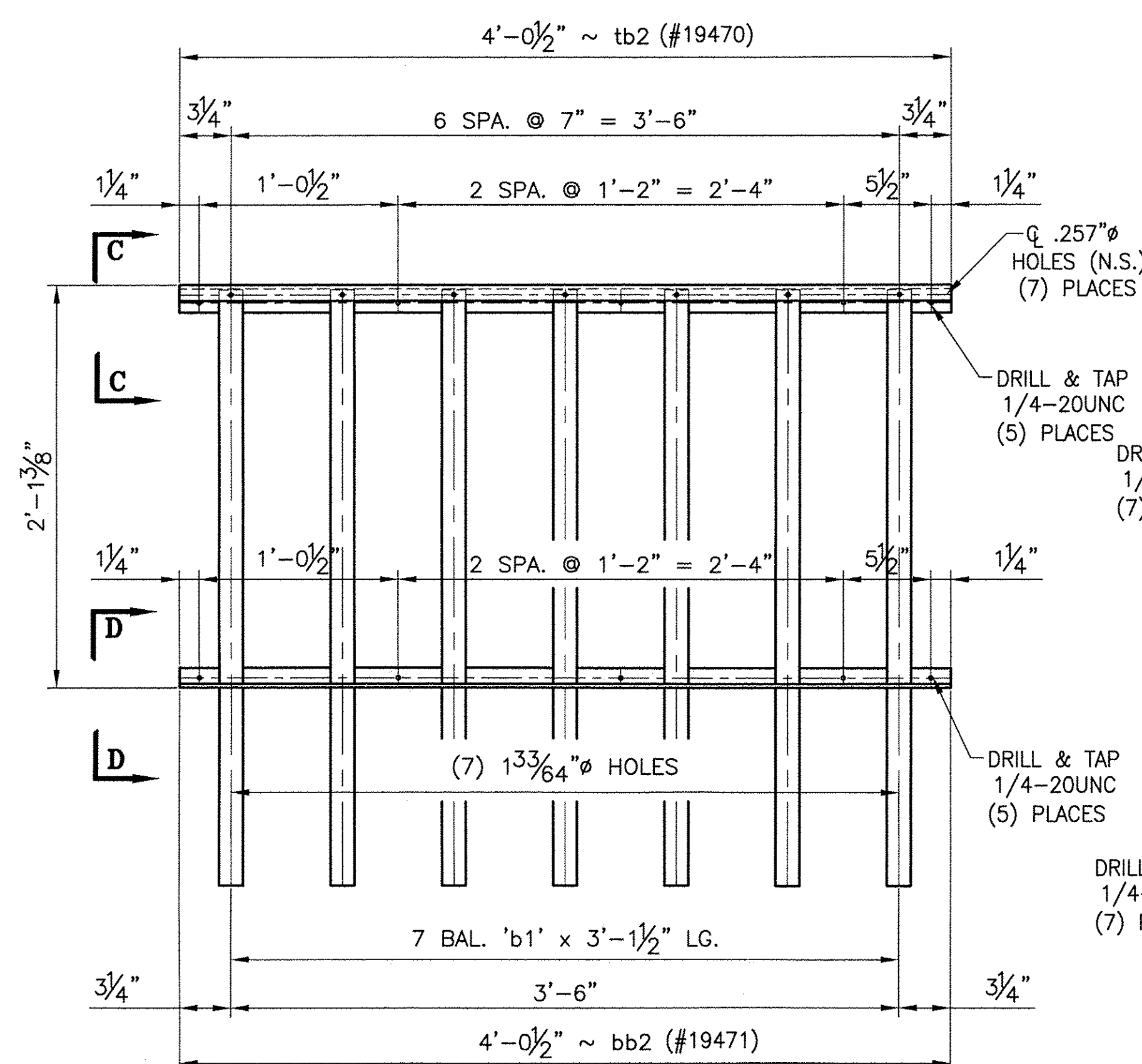
ITEM No: 525.225
ITEM No: 525.235

APPROVED:	REC'D APPROVAL
	DRAWING
L.B. FOSTER COMPANY 1016 GREENTREE ROAD PITTSBURGH, PENNSYLVANIA 15220	
FOR: A.D. ROSSI CORPORATION VERMONT AGENCY OF TRANSPORTATION TOWN OF BERKSHIRE, COUNTY OF FRANKLIN 3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR VT RTE 118 KEY PLAN & MISC DETAILS	
MADE CMS DATE 02/16/10 JOB No. AR0624 CUST. No.	
CHECK BLJ DATE 02/25/10 DRAWING LB5 REV. No.	

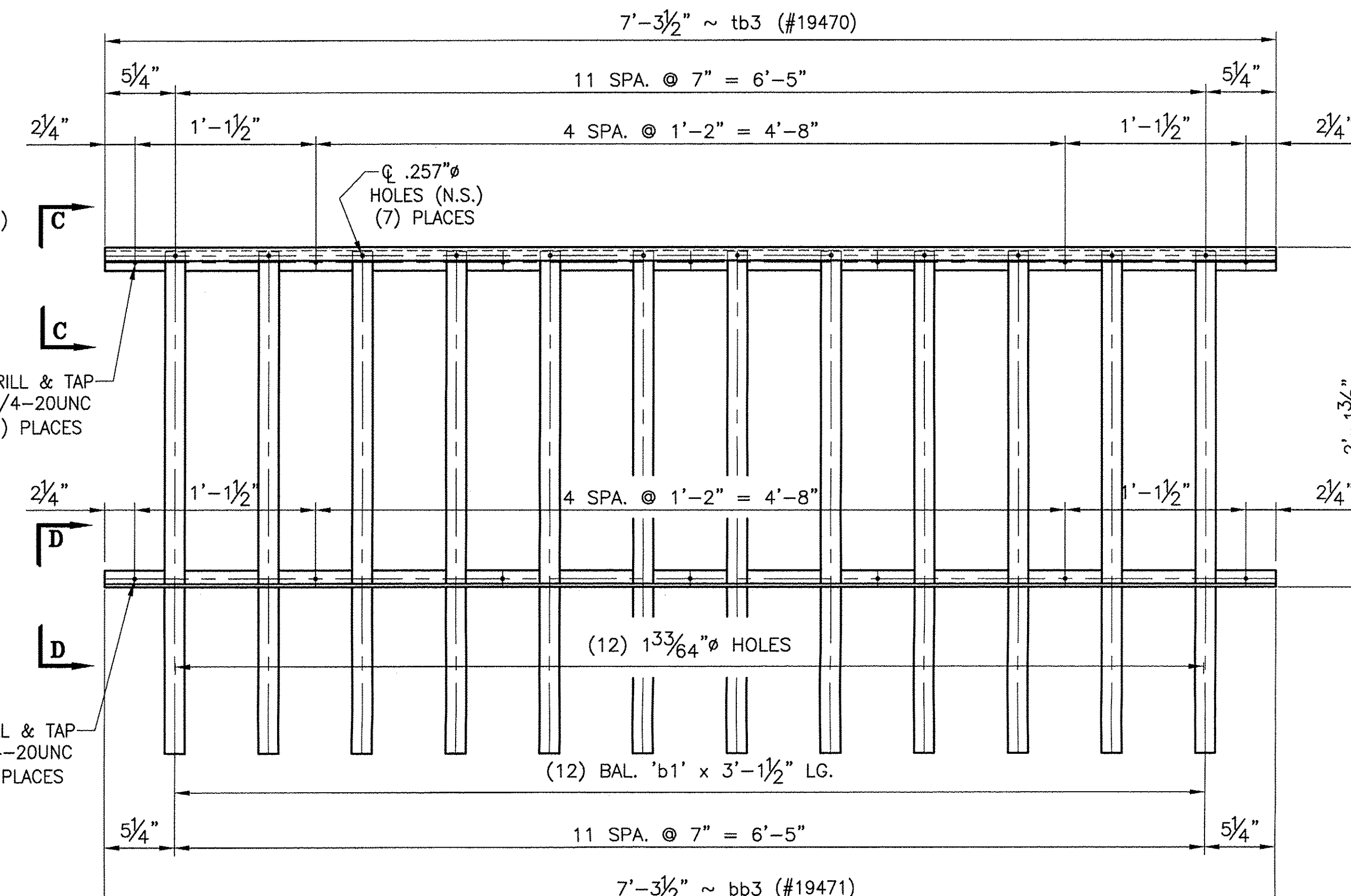
REV.	DESCRIPTION	BY	DATE



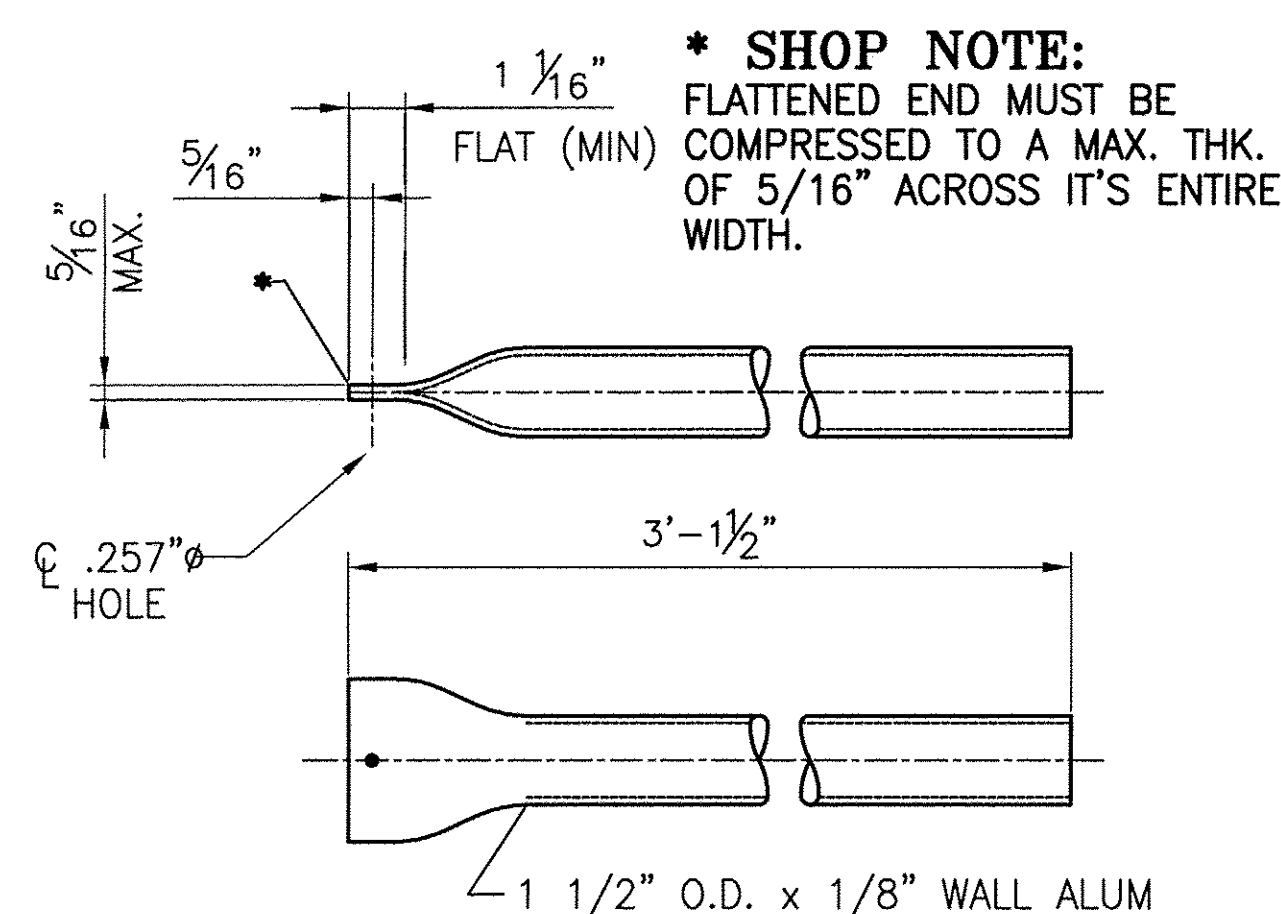
2 REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP1'
(REAR ELEVATION VIEW)



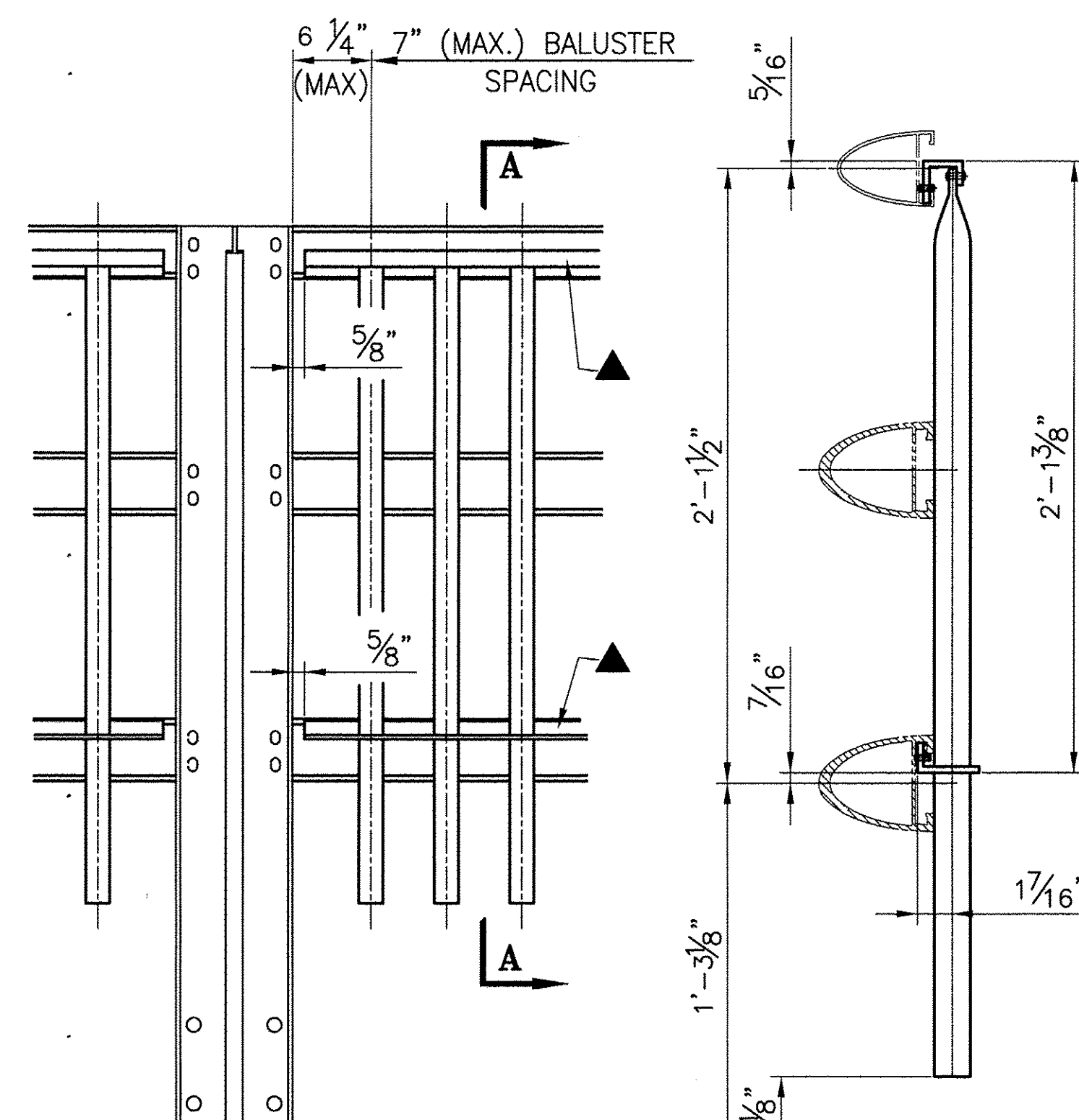
2 REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP2'
(REAR ELEVATION VIEW)



23 REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP3'
(REAR ELEVATION VIEW)



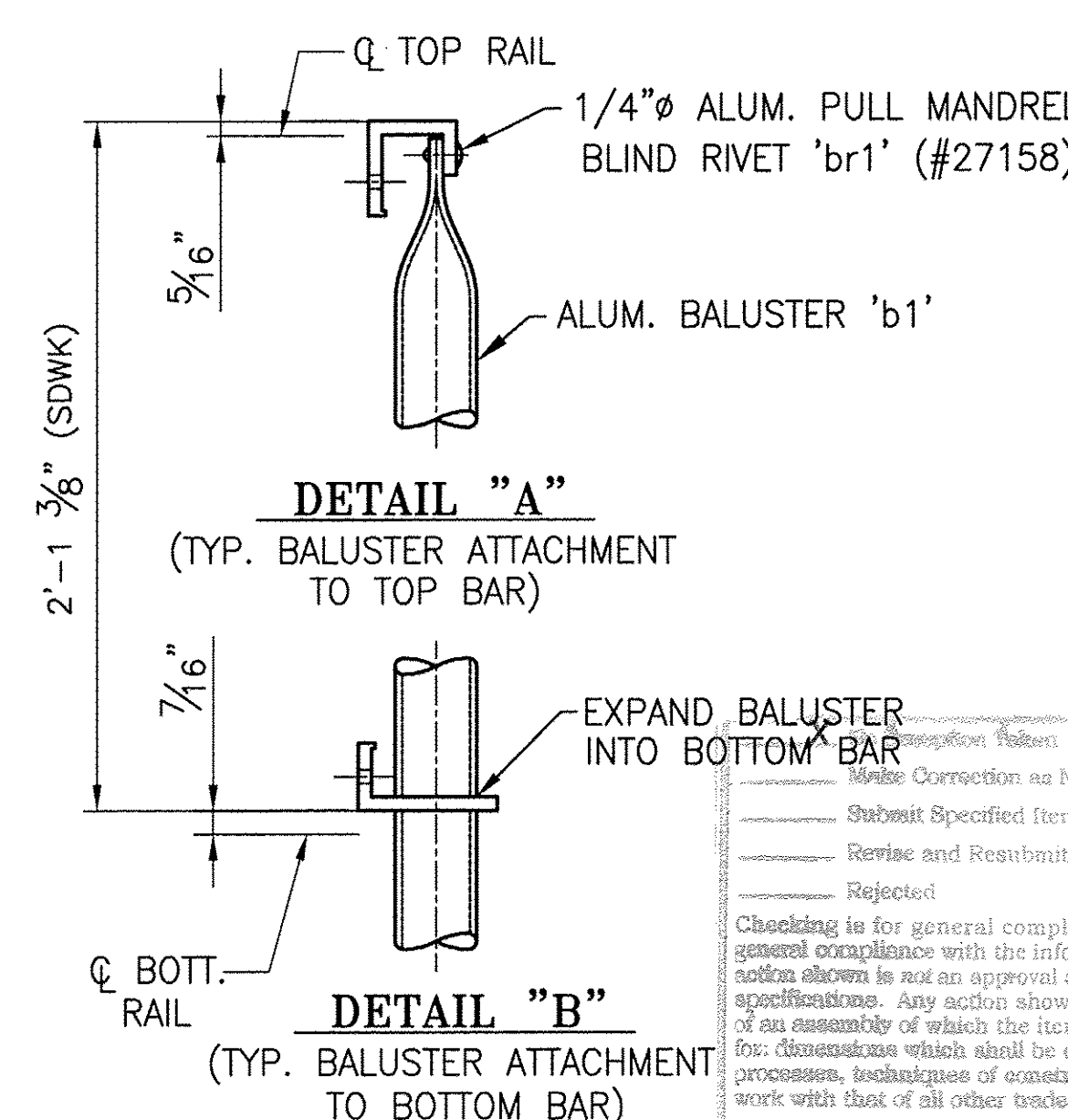
304 ~ REQ'D BALUSTERS 'b1'
#19451



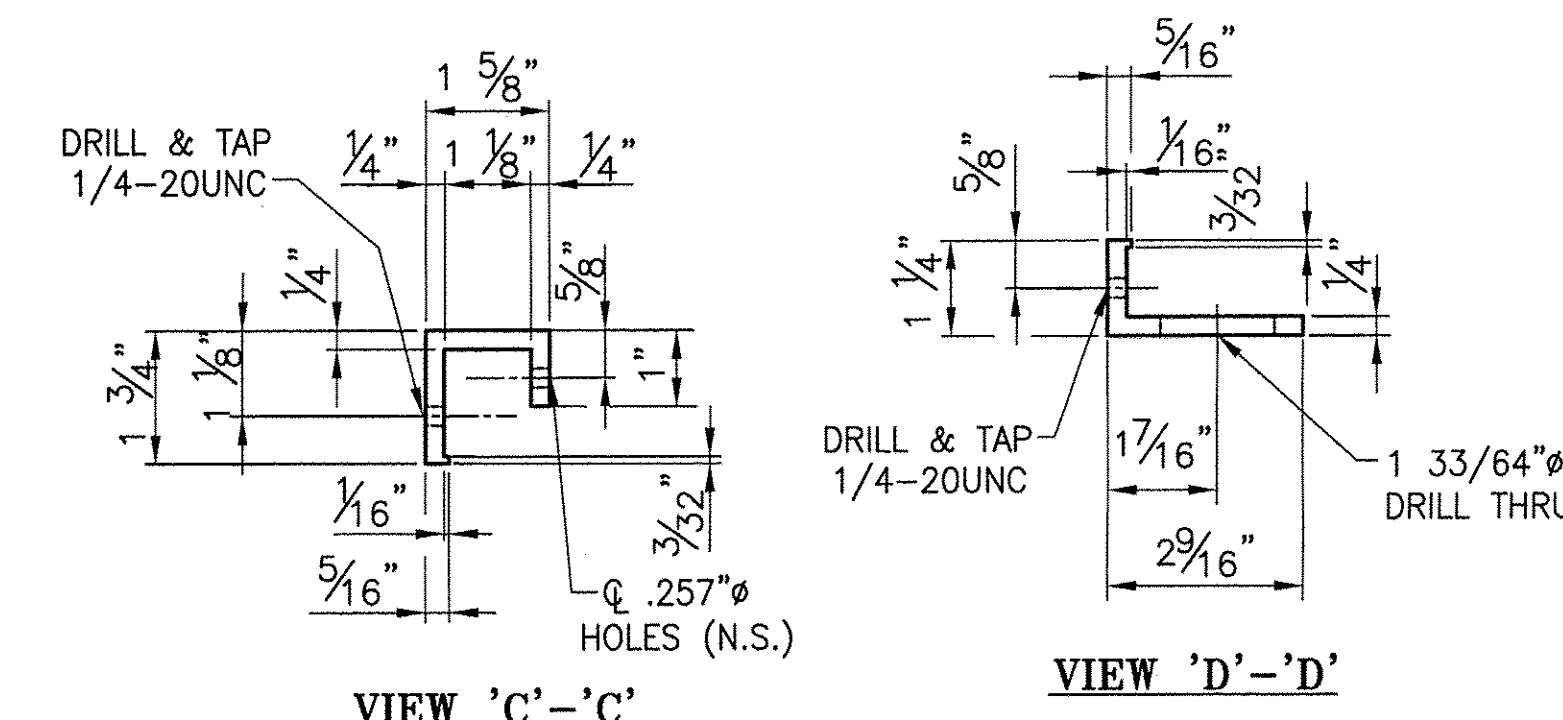
TYPICAL ELEVATION

▲ 1/4"-20UNC S.S. SOCKET SET SCREW x 1/2" - 'SS1' (#22079) EVERY OTHER SPACE BETWEEN BALUSTERS IF POSSIBLE

SECTION A-A



ANODIZED
(SEE LB1 FOR NOTES)



Checked for general compliance with the design concept of the project and general compliance with the information given in the contract documents only. Any action shown is not an approval and is subject to the requirements of the plans and specifications. Any action shown on a specific item shall not indicate the checking of an assembly of which the item is a component. Contractor is solely responsible for dimensions which shall be confirmed and correlated at the job site, fabrication processes, techniques of construction, safety precautions and coordination of its work with that of all other trades and the satisfactory performance of its work.
Reviewed By: *Shanta Keler* Date: *3/11/10*

BRIDGE No. 30
PROJECT No. BHF 0283 (9) S
ITEM No: 525.235

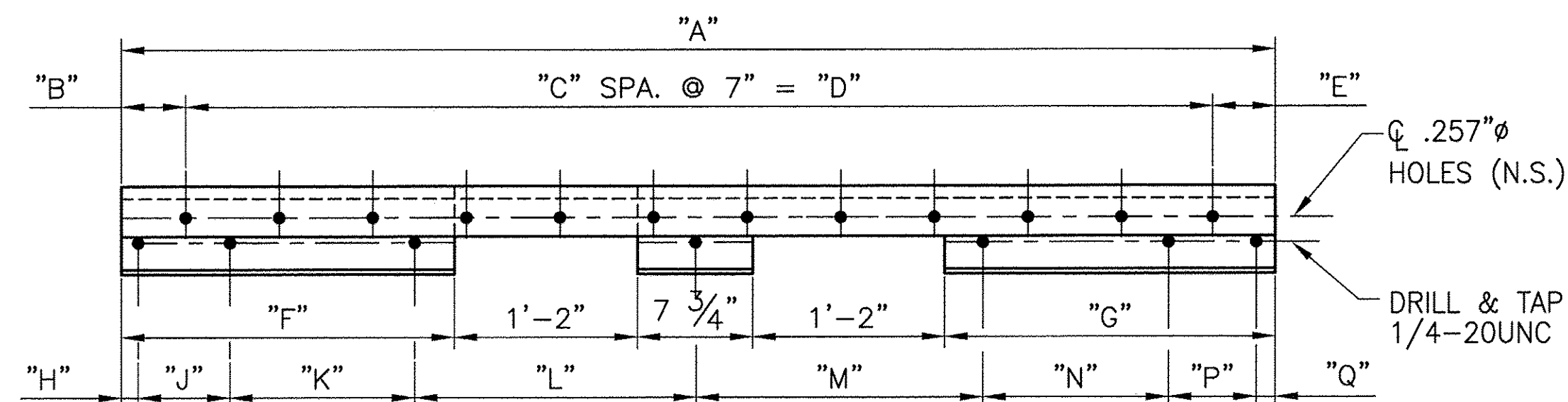
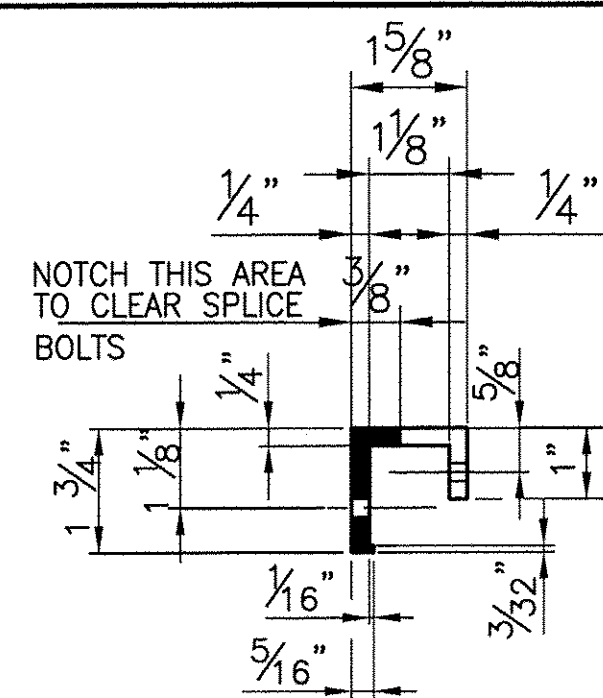
APPROVED: _____ REC'D APPROVAL _____
DRAWING _____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

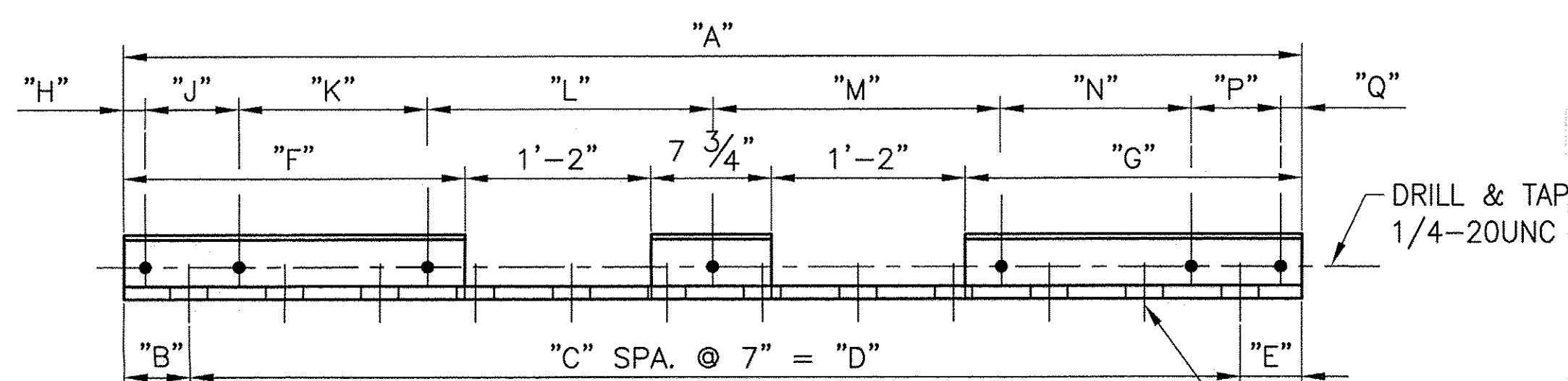
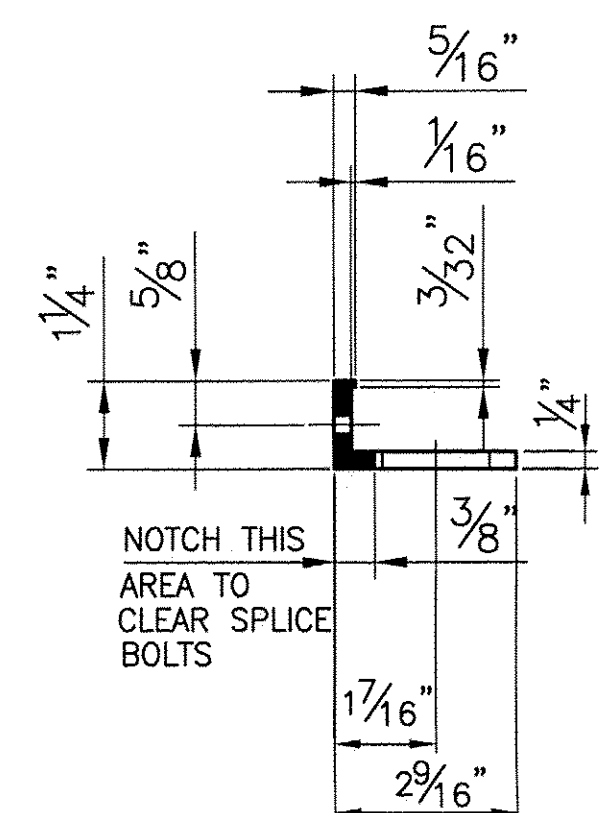
FOR: A.D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF BERKSHIRE, COUNTY OF FRANKLIN
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR VT RTE 118
ALUM BRIDGE RAILING ~ BALUSTER PANEL DETAILS

MADE CMS DATE 02/16/10 JOB No. AR0624 CUST. No.
CHECK BLJ DATE 02/25/10 DRAWING LB6 REV. No.

REV.	DESCRIPTION	BY	DATE



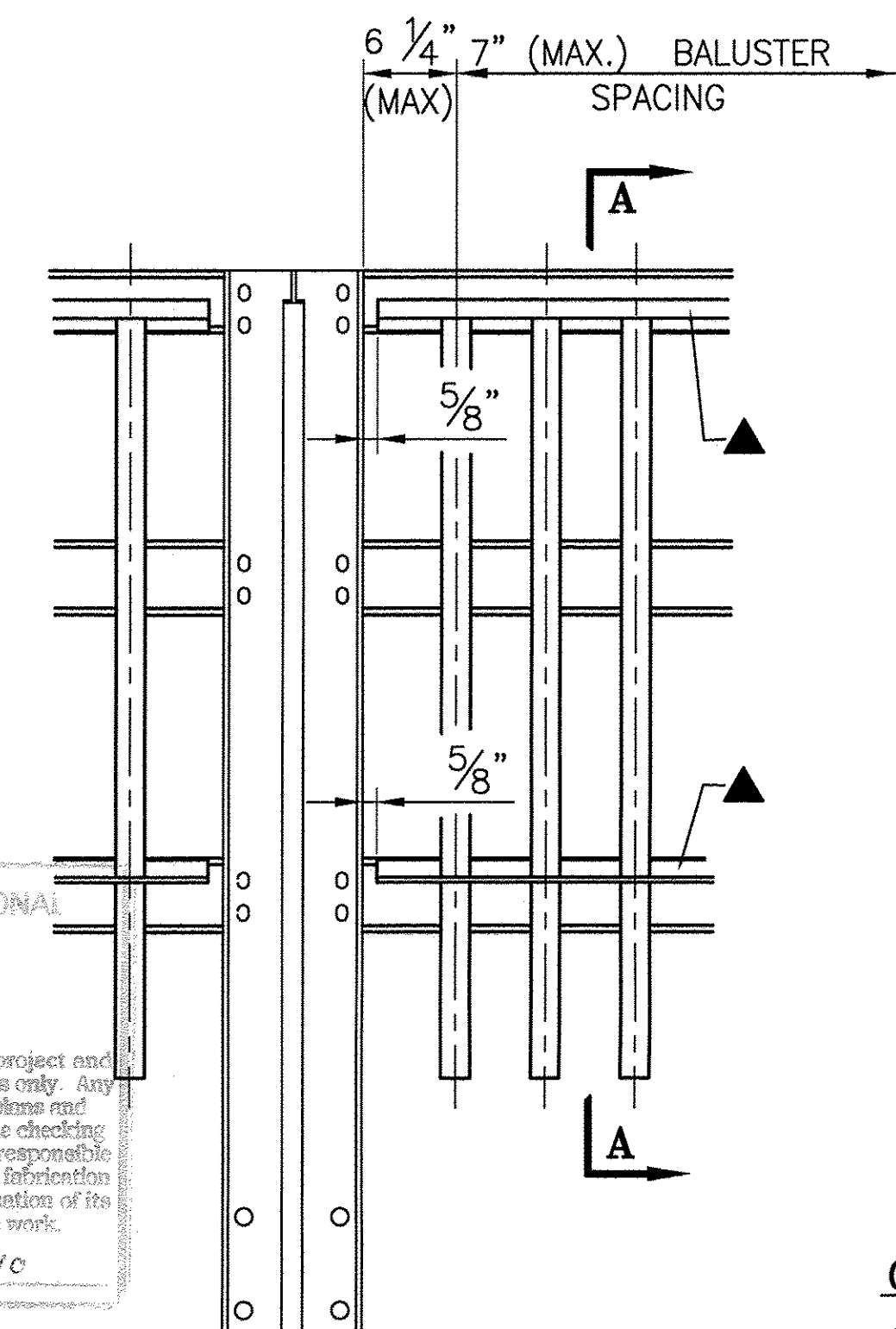
TOP BALUSTER BARS (REAR VIEW) ~ tb
(SEE CHART FOR DIMS) #19470



BOTTOM BALUSTER BARS (REAR VIEW) ~ bb
(SEE CHART FOR DIMS) #19471

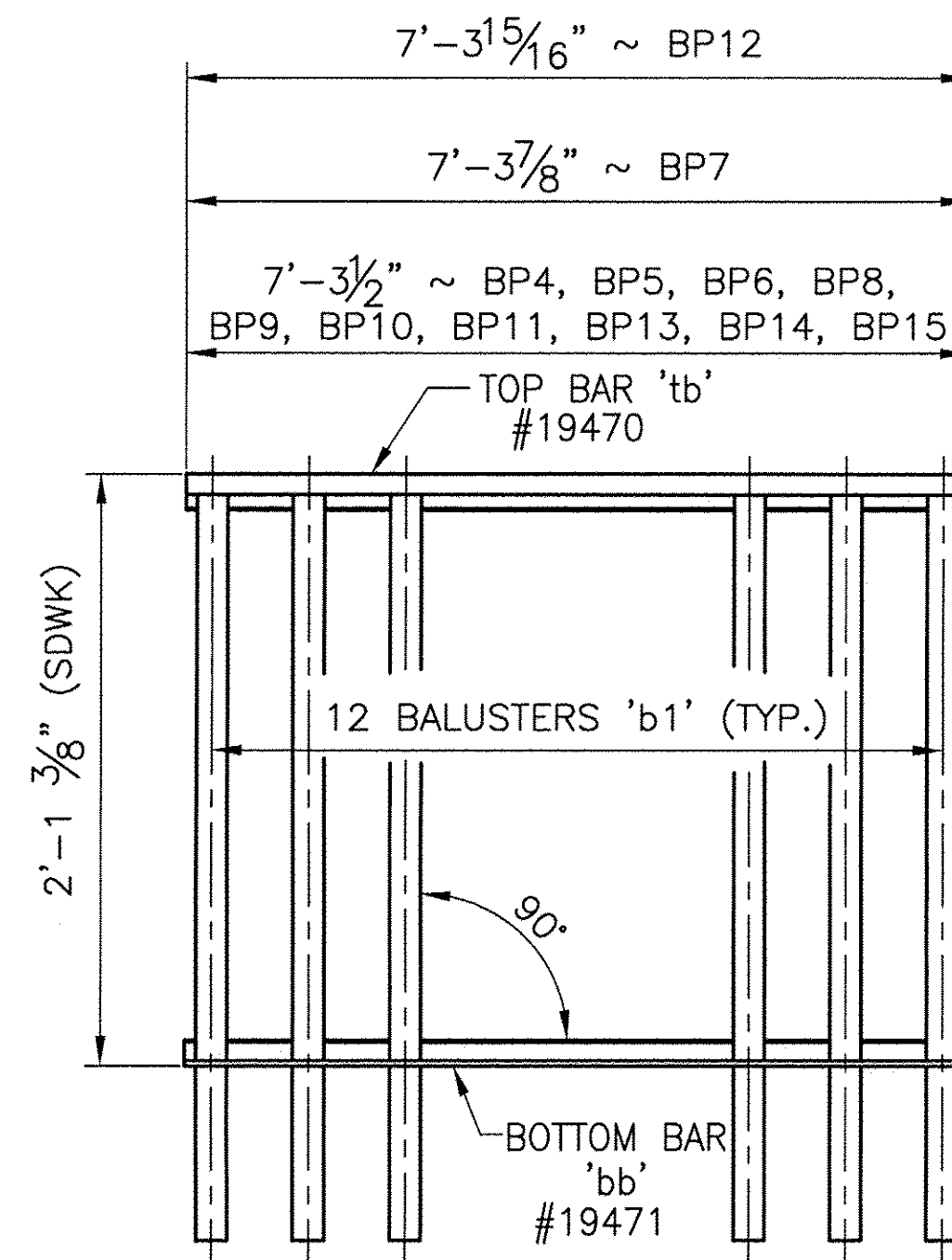
Check for general compliance with the design concept of the project and general compliance with the information given in the contract documents only. Any action shown is not an approval and is subject to the requirements of the plans and specifications. Any action shown on a specific item shall not facilitate the checking of an assembly of which the item is a component. Contractor is solely responsible for dimensions which shall be confirmed and correlated at the job site, fabrication processes, techniques of construction, safety precautions and coordination of its work with that of all other trades and the satisfactory performance of its work.

Reviewed By: Shanta Keller Date: 3/31/10



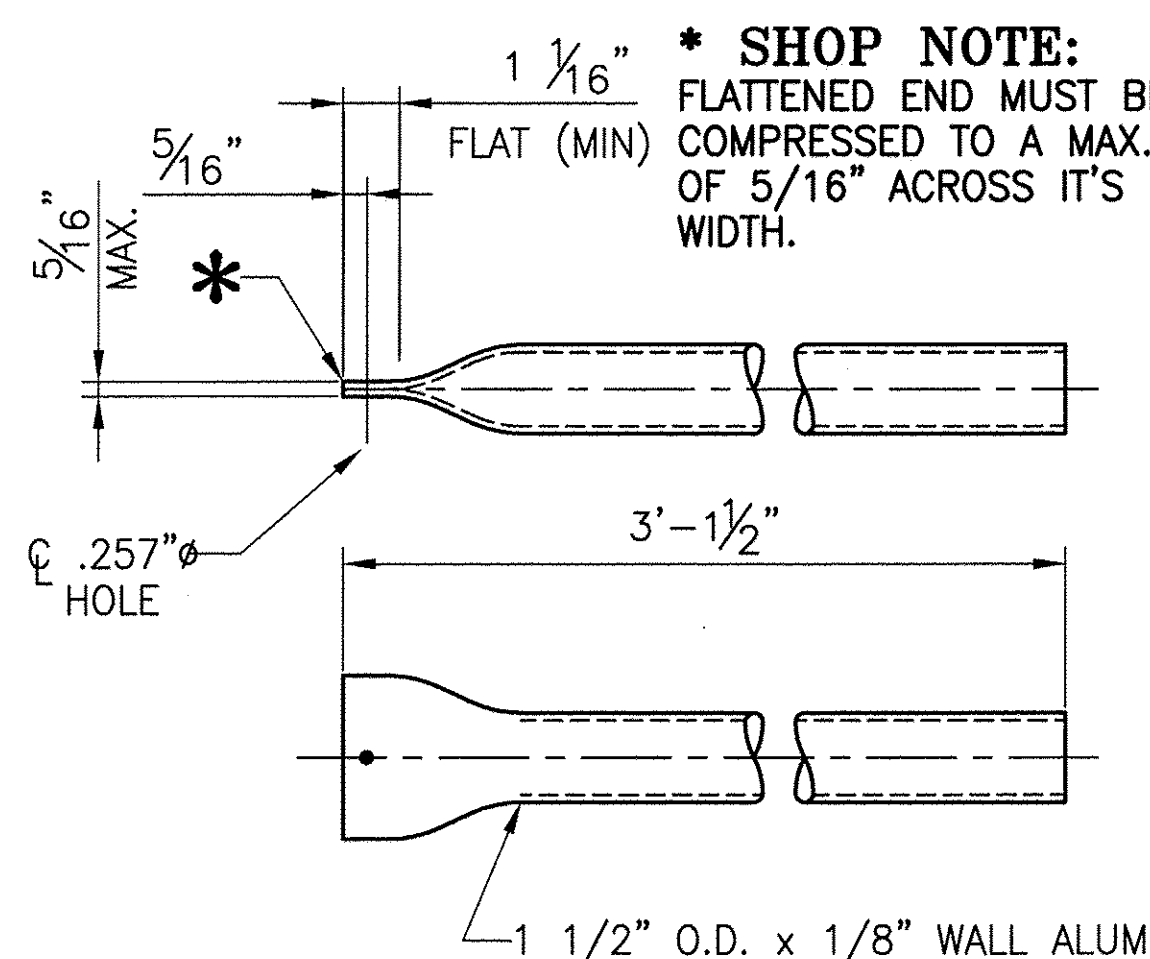
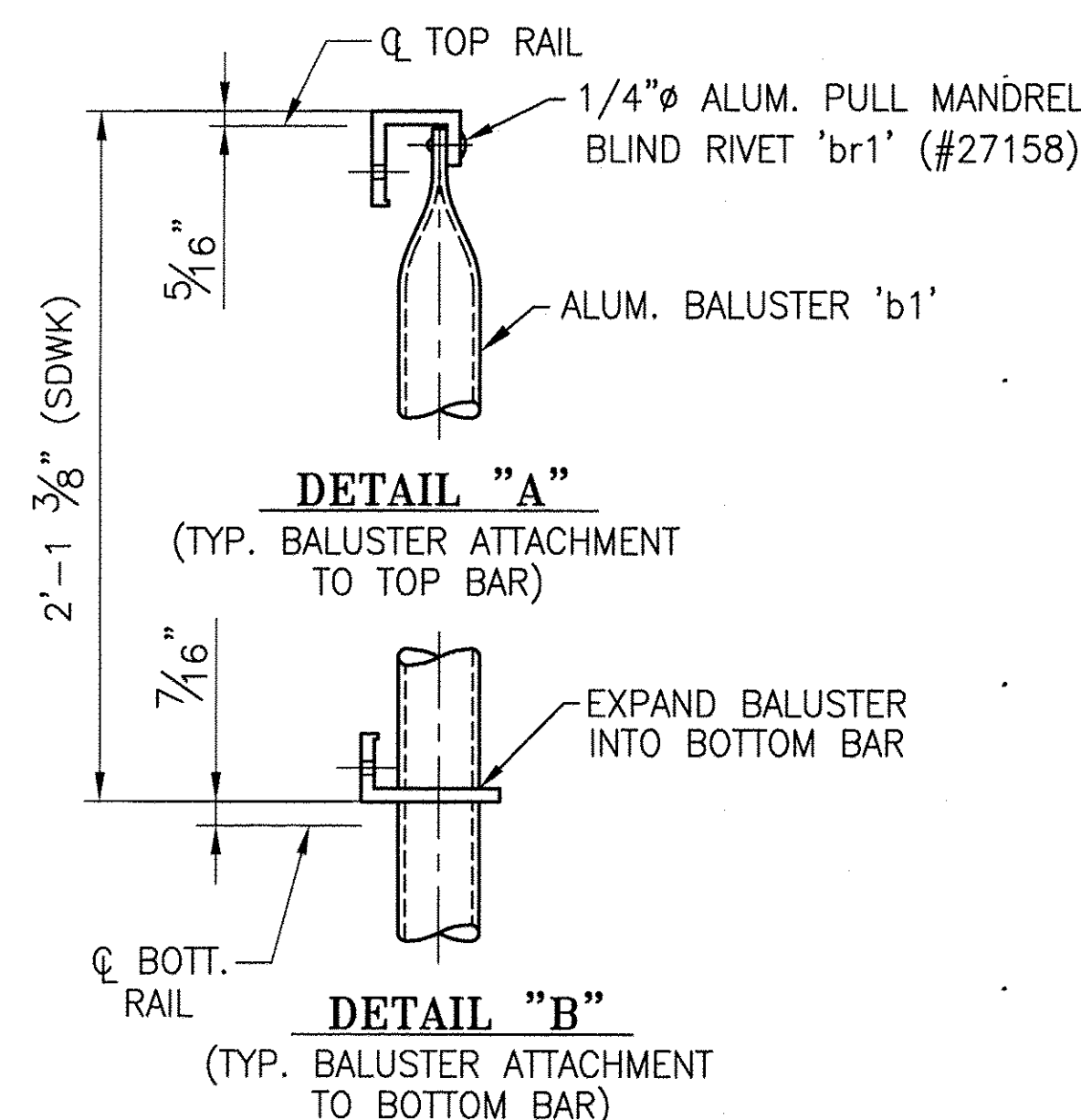
TYPICAL ELEVATION

1/4"-20UNC S.S. SOCKET SET SCREW x 1/2" - 'SS1' (#22079) EVERY OTHER SPACE BETWEEN BALUSTERS IF POSSIBLE

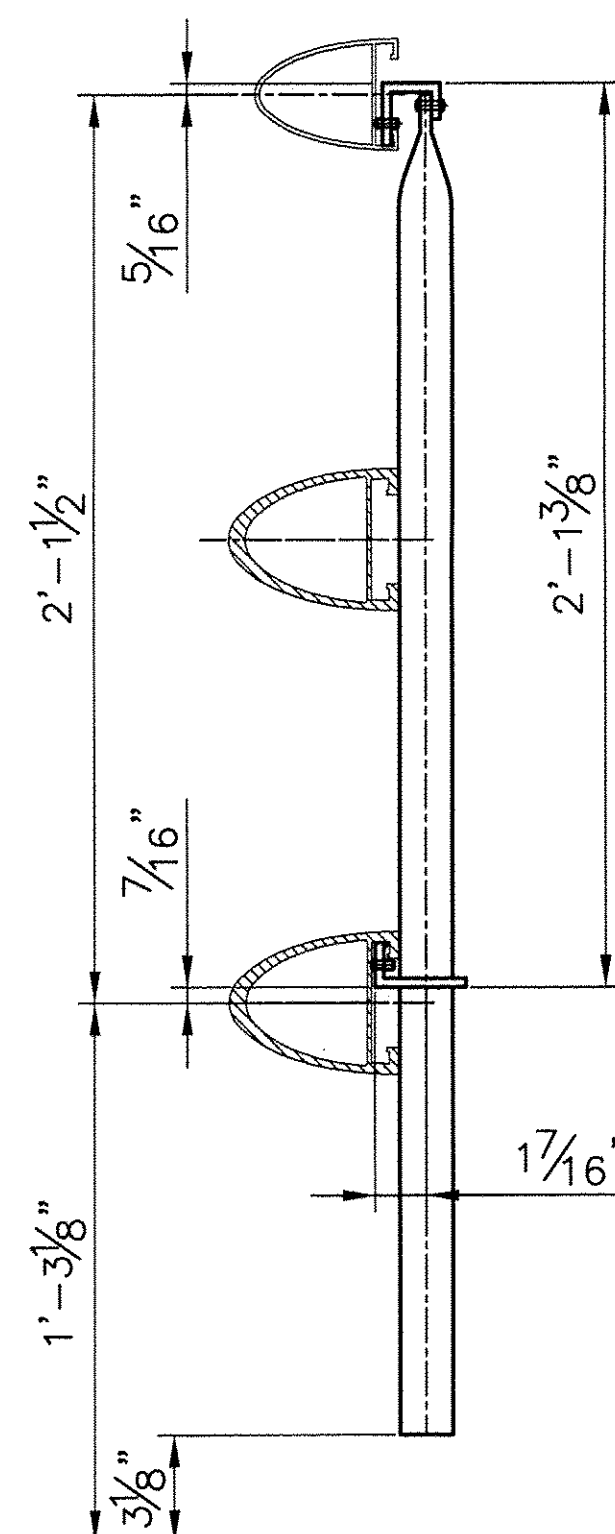


ONE REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP4'
ONE REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP5'
ONE REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP6'
ONE REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP7'
ONE REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP8'
ONE REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP9'
ONE REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP10'
ONE REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP11'
ONE REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP12'
ONE REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP13'
ONE REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP14'
ONE REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP15'

MARK	QTY	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"	"L"	"M"	"N"	"P"	"Q"	PANEL ASSY.
tb4 bb4	1	7'-3 1/2"	5 1/4"	11	6'-5"	5 1/4"	1'-10 11/16"	2'-5 1/16"	2 1/4"	1'-1 1/2"	-	2'-3"	1'-10"	1'-2"	6 1/2"	2 1/4"	BP4
tb5 bb5	1	7'-3 1/2"	5 1/4"	11	6'-5"	5 1/4"	1'-11 3/8"	2'-4 3/8"	2 1/4"	6 1/2"	1'-2"	1'-9"	1'-9"	1'-2"	6 1/2"	2 1/4"	BP5
tb6 bb6	1	7'-3 1/2"	5 1/4"	11	6'-5"	5 1/4"	2'-0 1/8"	2'-3 5/8"	2 1/4"	6 1/2"	1'-2"	1'-9"	1'-9"	1'-2"	6 1/2"	2 1/4"	BP6
tb7 bb7	1	7'-3 7/8"	5 7/16"	11	6'-5"	5 7/16"	2'-0 15/16"	2'-3 3/16"	2 1/4"	6 3/4"	1'-2"	1'-9"	1'-9"	1'-2"	6 5/8"	2 1/4"	BP7
tb8 bb8	1	7'-3 1/2"	5 1/4"	11	6'-5"	5 1/4"	2'-1 1/4"	2'-2 1/2"	2 1/4"	6 1/2"	1'-2"	1'-9"	1'-9"	1'-2"	6 1/2"	2 1/4"	BP8
tb9 bb9	1	7'-3 1/2"	5 1/4"	11	6'-5"	5 1/4"	2'-2"	2'-1 3/4"	2 1/4"	6 1/2"	1'-2"	1'-8"	1'-10"	1'-2"	6 1/2"	2 1/4"	BP9
tb10 bb10	1	7'-3 1/2"	5 1/4"	11	6'-5"	5 1/4"	2'-1 13/16"	2'-1 15/16"	2 1/4"	6 1/2"	1'-2"	1'-10"	1'-8"	1'-2"	6 1/2"	2 1/4"	BP10
tb11 bb11	1	7'-3 1/2"	5 1/4"	11	6'-5"	5 1/4"	2'-2 7/16"	2'-1 5/16"	2 1/4"	6 1/2"	1'-2"	1'-8"	1'-10"	1'-2"	6 1/2"	2 1/4"	BP11
tb12 bb12	1	7'-3 15/16"	5 7/16"	11	6'-5"	5 1/2"	2'-3 5/16"	2'-0 7/8"	2 1/4"	6 11/16"	1'-2"	1'-9"	1'-9"	1'-2"	6 3/4"	2 1/4"	BP12
tb13 bb13	1	7'-3 1/2"	5 1/4"	11	6'-5"	5 1/4"	2'-3 5/8"	2'-0 1/8"	2 1/4"	6 1/2"	1'-2"	1'-9"	1'-9"	1'-2"	6 1/2"	2 1/4"	BP13
tb14 bb14	1	7'-3 1/2"	5 1/4"	11	6'-5"	5 1/4"	2'-4 3/8"	1'-11 3/8"	2 1/4"	6 1/2"	1'-2"	1'-9"	1'-9"	1'-2"	6 1/2"	2 1/4"	BP14
tb15 bb15	1	7'-3 1/2"	5 1/4"	11	6'-5"	5 1/4"	2'-5 1/8"	1'-10 5/8"	2 1/4"	6 1/2"	1'-2"	1'-10"	2'-3"	-	1'-1 1/2"	2 1/4"	BP15



144 ~ REQ'D BALUSTERS 'b1'
#19451



SECTION
A-A

ANODIZED
(SEE LB1 FOR NOTES)

BRIDGE No. 30
PROJECT No. BHF 0283 (9) S
ITEM No: 525.235

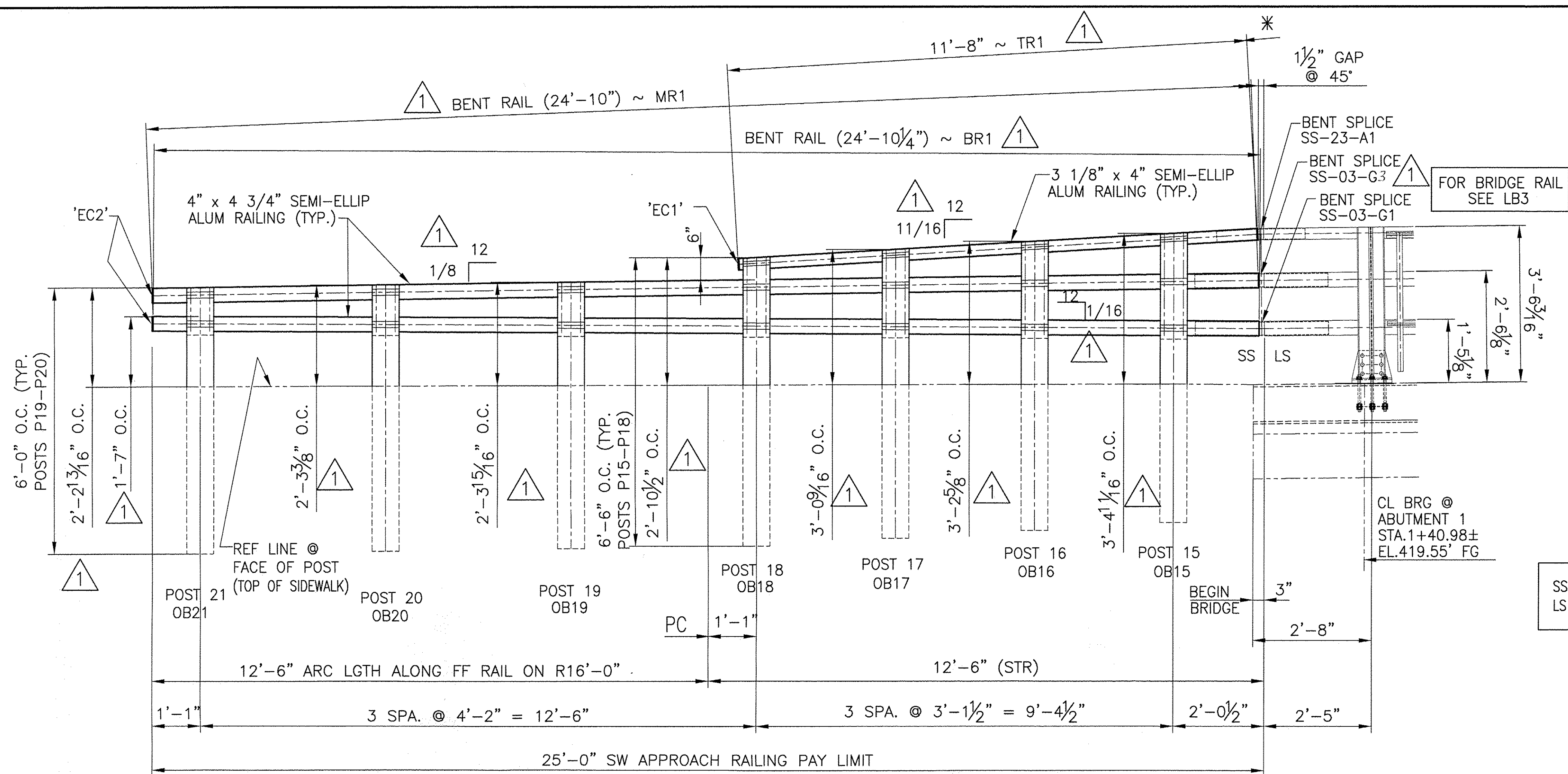
APPROVED: _____ REC'D APPROVAL _____
DRAWING _____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

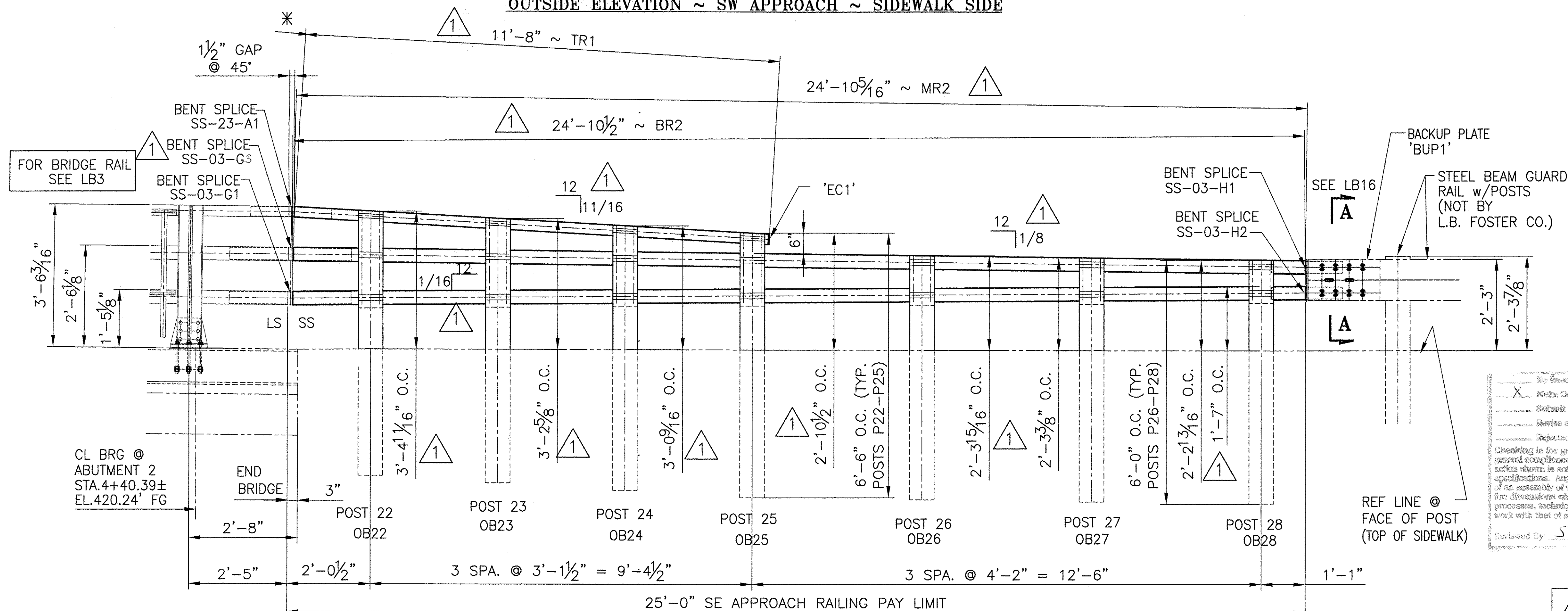
FOR: A.D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF BERKSHIRE, COUNTY OF FRANKLIN
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR VT RTE 118
ALUM BRIDGE RAILING ~ BALUSTER PANEL DETAILS

MADE CMS DATE 02/16/10 JOB No. AR0624 CUST. No.
CHECK BLJ DATE 02/25/10 DRAWING LB7 REV. No.

REV.	DESCRIPTION	BY	DATE



OUTSIDE ELEVATION ~ SW APPROACH ~ SIDEWALK SIDE



OUTSIDE ELEVATION ~ SE APPROACH ~ SIDEWALK SIDE

GENERAL NOTES

ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006 AND ITS LATEST REVISIONS.

DESCRIPTION	ASTM	ALLOY/GR.	REMARKS
RAILS, POSTS, SPICES, CLAMP BARS, PINS,	B221	6061-T6 OR 6351-T5	MIN. YIELD STRENGTH $F_y = 35,000$ psi.
STAINLESS STEEL BOLTS	A193	GRADE B8	
END CAPS	B26		356-F
BACKUP PLATE	A36		GALV. A123 AFTER FAB.
ALUMINUM WASHERS	B209	2024-T4	
PREFORMED PADS			SECTION 731.01 OR 731.02
ELECTRODES FOR WELDING		AWS A5.10 ER5356	

POSTS TO BE NORMAL TO GRADE AND RAILS SHALL BE PARALLEL TO GRADE. RAILS TO BE ATTACHED TO A MINIMUM OF THREE POSTS WHEN POSSIBLE.

ALL RAILS AND WELDS TO BE FREE FROM ALL BURRS AND ROUGH EDGES. ENDS OF TUBE SECTIONS SHALL BE SAWED OR MILLED. GRIND ALL CUT EDGES SMOOTH.

ALL THREADS TO BE UNC CLASS 2A/2B.

ALL EXTRUSION TOLERANCES NOT SHOWN SHALL BE IN ACCORDANCE WITH ASTM B221.

IF CUT THREADS ARE USED, BOLT DIAMETER SHALL NOT BE LESS THAN NOMINAL DIAMETER. IF ROLLED THREADS ARE USED, BOLT DIAMETER SHALL NOT BE LESS THAN THE ROOT DIAMETER OF THREADS.

THE SPICE BAR SHALL BE ATTACHED TO THE RAIL ELEMENT AS FOLLOWS:

THE RAIL SPICE AT THE BRIDGE EXPANSION JOINT SHALL BE FASTENED ON BOTH SIDES OF THE RAIL SPICE USING THE FULLY THREADED WASHER FACED BOLTS, TIGHTENED SECURELY TO THE END OF THREADS, AND LEAVING A 1/8" GAP, THIS ALLOWS EXPANSION ON BOTH SIDES OF THE JOINT.

ALL NUTS SHALL COMPLY WITH AMERICAN HEXAGON ANSI SPECIFICATIONS B18.2

NOTE:

- THIS CONTRACT IS BASED UPON THE CONTRACTOR SETTING AND SPACING THE ANCHOR BOLTS TO THE MEASUREMENTS SHOWN ON THE APPROVED SHOP DRAWINGS. THE L.B. FOSTER CO. WILL NOT BE RESPONSIBLE FOR WORK NECESSITATED BY ANY OTHER SETTING AND SPACING.
- THIS DRAWING IS NOT TO SCALE.
- LENGTH OF APPROACH RAILING ON THIS SHEET IS 50 LF PAY LENGTH.
- POST SPACING IS MEASURED ALONG FF OF RAILING.
- SPICE GAP AT SLEEVE = 1 1/2" TYP.
- RAIL LENGTHS DO NOT INCLUDE GAPS.
- COMPENSATION FOR VERTICAL CURVE IS INCLUDED IN RAIL LGTHS.

ANODIZED
(SEE NOTES ON LB1)

BRIDGE No. 30
PROJECT No. BHF 0283 (9) S
ITEM No: 621.745

APPROVED: _____ REC'D APPROVAL _____
DRAWING _____

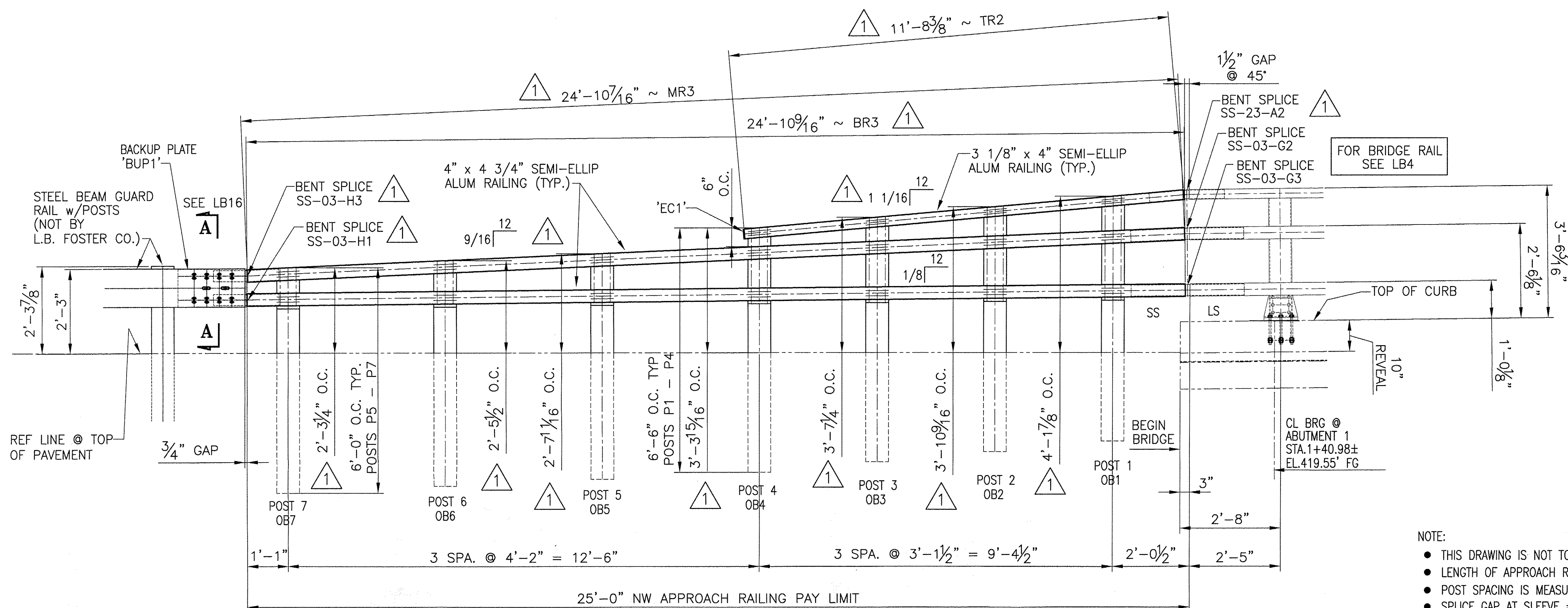
L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A.D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF BERKSHIRE, COUNTY OF FRANKLIN
3-LINE SEMI-ELLIP. ALUM. APPROACH RAIL FOR VT RTE 118

OUTSIDE ELEVATIONS ~ SIDEWALK SIDE

MADE CMS DATE 02/17/10 JOB No. AR0624 CUST. No. _____
CHECK DATE _____ DRAWING LB8 REV. No. ONE

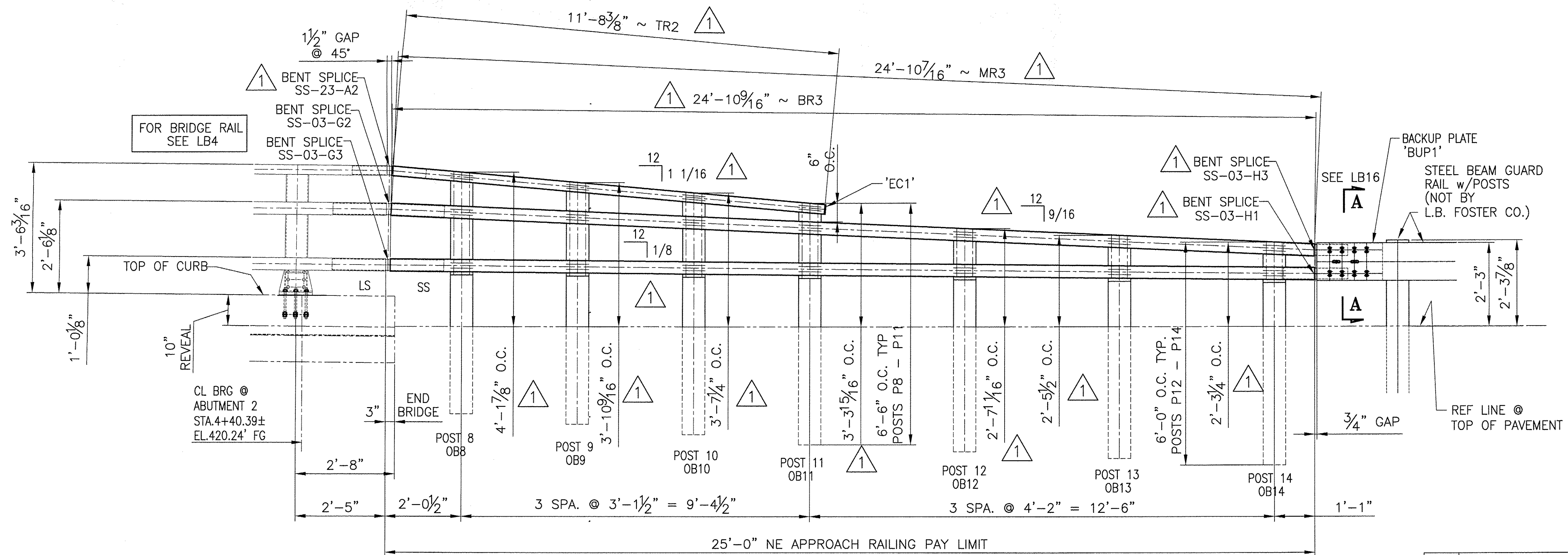
REV.	DESCRIPTION	BY	DATE
1	REVISED PER APPROVER COMMENTS	CMS	03/23/10



SS = SHORT SLOTTED SIDE
LS = LONG SLOTTED SIDE

- NOTE:
- THIS DRAWING IS NOT TO SCALE.
 - LENGTH OF APPROACH RAILING ON THIS SHEET IS 50 LF PAY LENGTH.
 - POST SPACING IS MEASURED ALONG FF OF RAILING.
 - SPLICE GAP AT SLEEVE = 1 1/2" TYP.
 - * RAIL LENGTHS DO NOT INCLUDE GAPS.
 - COMPENSATION FOR VERTICAL CURVE IS INCLUDED IN RAIL LGTHS.

INSIDE ELEVATION ~ NW APPROACH ~ CURBSIDE



INSIDE ELEVATION ~ NE APPROACH ~ CURBSIDE

Checklist for design compliance:

- ☒ No Exceptions Taken
- ☐ Make Correction as Noted
- ☐ Submit Specified Item
- ☐ Revise and Resubmit as Noted
- ☐ Rejected

Checking is for general compliance with the design concept of the project and general compliance with the information given in the contract documents only. Any action shown is not an approval and is subject to the requirements of the plans and specifications. Any action shown on a specific item shall not constitute the checking of an assembly of which the item is a component. Contractor is solely responsible for dimensions which shall be confirmed and correlated at the job site, fabrication processes, techniques of construction, safety precautions, and coordination of its work with that of all other trades and the satisfactory performance of the work.

Reviewed By: Shanta Keller Date: 3/21/16

ANODIZED
(SEE NOTES ON LB1)

BRIDGE No. 30
PROJECT No. BHF 0283 (9) S
ITEM No. 621.745

APPROVED: _____ REC'D APPROVAL _____
DRAWING _____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

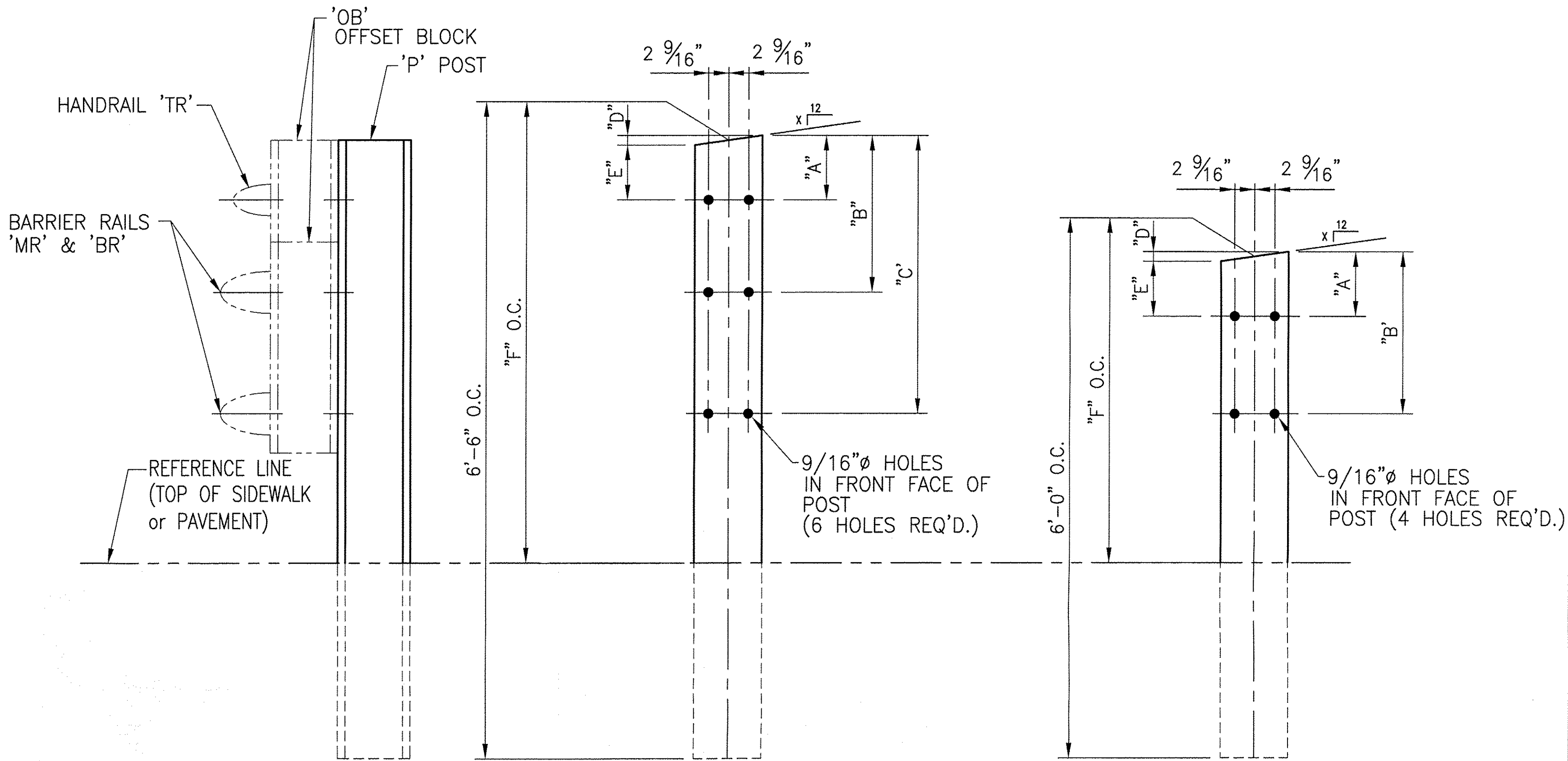
FOR: A.D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF BERKSHIRE, COUNTY OF FRANKLIN
3-LINE SEMI-ELLIP. ALUM. APPROACH RAIL FOR VT RTE 118

INSIDE ELEVATIONS ~ CURBSIDE

MADE CMS DATE 02/18/10 JOB No. AR0624 CUST. No. _____
CHECK_BJL DATE 02/25/10 DRAWING LB9 REV. No. ONE

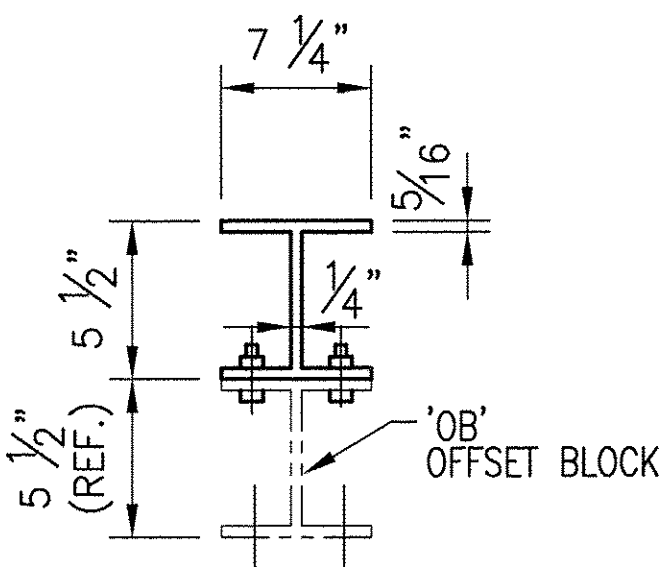
REV.	DESCRIPTION	BY	DATE
1	REVISED PER APPROVER COMMENTS	CMS	03/23/10

POST DETAIL CHART NW APPROACH 								
		OFFSET BLOCK MTG. DIMENSIONS						BEV
POST No.	QTY.	A	B	C	D	E	F (O.C.)	X
P1	1	1 7/8"	1'-1 3/8"	2'-6 9/16"	5/8"	1 1/4"	4'-1 7/8"	1 1/16
P2	1	1 7/8"	11 11/16"	2'-3 9/16"	5/8"	1 1/4"	3'-10 9/16"	1 1/16
P3	1	1 7/8"	10"	2'-0 9/16"	5/8"	1 1/4"	3'-7 1/4"	1 1/16
P4	1	1 7/8"	8 5/16"	1'-9 5/8"	5/8"	1 1/4"	3'-3 15/16"	1 1/16
P5	1	2 3/16"	1'-1 11/16"		5/16"	1 13/16"	2'-7 11/16"	9/16
P6	1	2 3/16"	11 15/16"		5/16"	1 13/16"	2'-5 1/2"	9/16
P7	1	2 3/16"	10 1/4"		5/16"	1 13/16"	2'-3 1/4"	9/16
POST DETAIL CHART FOR SE APPROACH 								
		OFFSET BLOCK MTG. DIMENSIONS						BEV
POST No.	QTY.	A	B	C	D	E	F (O.C.)	X
P22	1	1 3/4"	1'-1 1/4"	2'-1 13/16"	7/16"	1 3/8"	3'-4 11/16"	11/16
P23	1	1 3/4"	11 9/16"	1'-11 7/16"	7/16"	1 3/8"	3'-2 5/8"	11/16
P24	1	1 3/4"	9 7/8"	1'-9 1/16"	7/16"	1 3/8"	3'-0 9/16"	11/16
P25	1	1 3/4"	8 3/16"	1'-6 3/4"	7/16"	1 3/8"	2'-10 1/2"	11/16
P26	1	2"	11 11/16"		1/16"	1 15/16"	2'-3 15/16"	1/8
P27	1	2"	10 3/4"		1/16"	1 15/16"	2'-3 3/8"	1/8
P28	1	2"	9 7/8"		1/16"	1 15/16"	2'-2 13/16"	1/8



FRT VIEW
P1 - P4
P22 - P25

FRT VIEW
P5 - P7
P26 - P28



TYP. SECT. POST &
OFFSET BLOCK

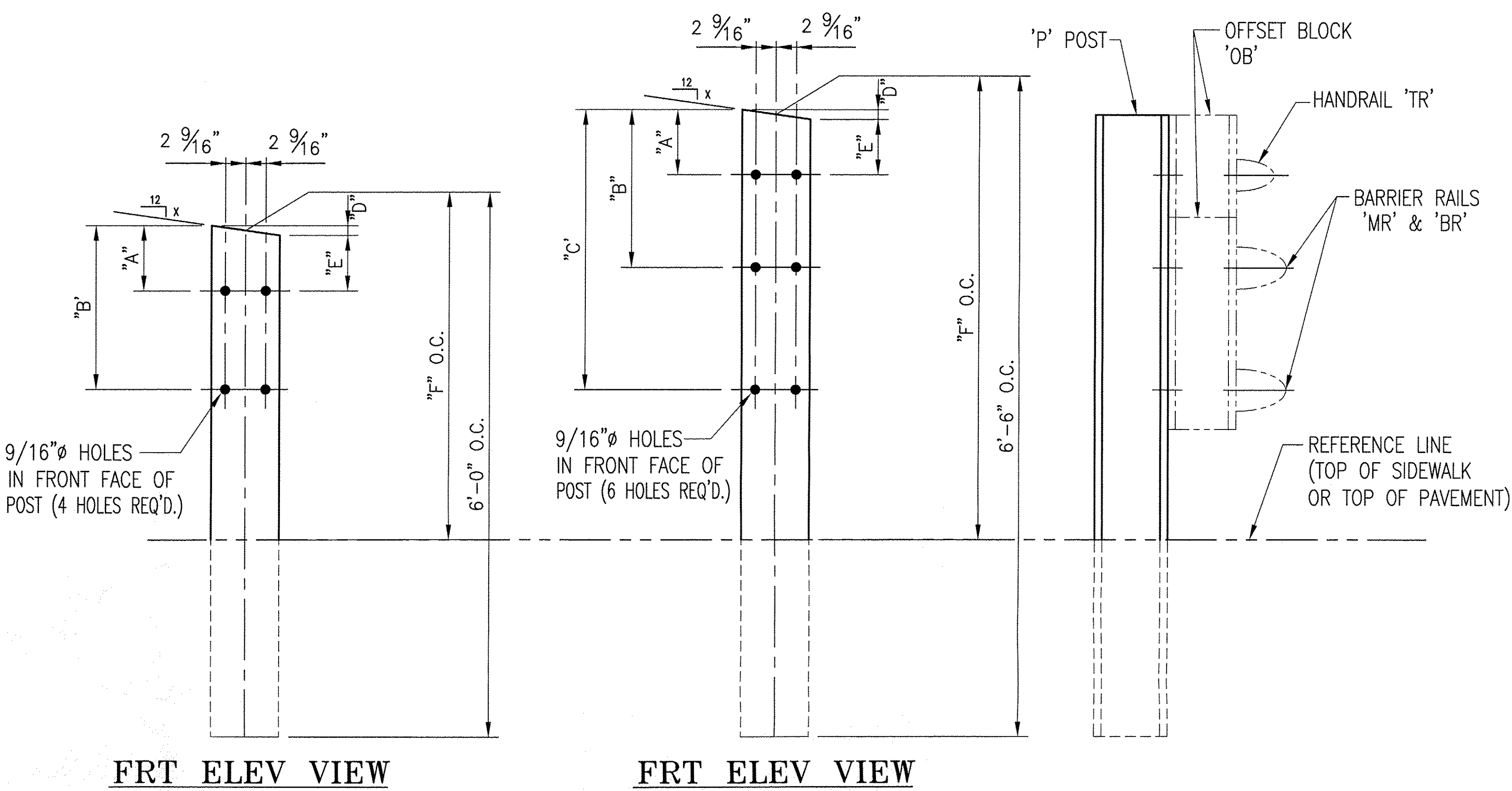
☒ No Revision Taken	T-Y-L INTERNATIONAL
☐ Make Correction as Noted	
☐ Submit Specified Item	
☐ Revise and Resubmit as Noted	
☐ Rejected	
Checking is for general compliance with the design concept of the project and general compliance with the information given in the contract documents only. Any action shown is not an approval and is subject to the requirements of the plans and specifications. Any action shown on a specific item shall not indicate the checking of an assembly of which the item is a component. Contractor is solely responsible for dimensions which shall be confirmed and correlated at the job site, fabrication processes, techniques of construction, safety precautions, and coordination of its work with that of all other trades and the satisfactory performance of its work.	
Reviewed By: Shanta Keller	Date: 3/31/10

 **ANODIZED**
(SEE NOTES ON LB1)

	REVISED DIMENSIONS PER APPROVERS MARKUPS	CMS	03 23 10
REV.	DESCRIPTION	BY	DATE

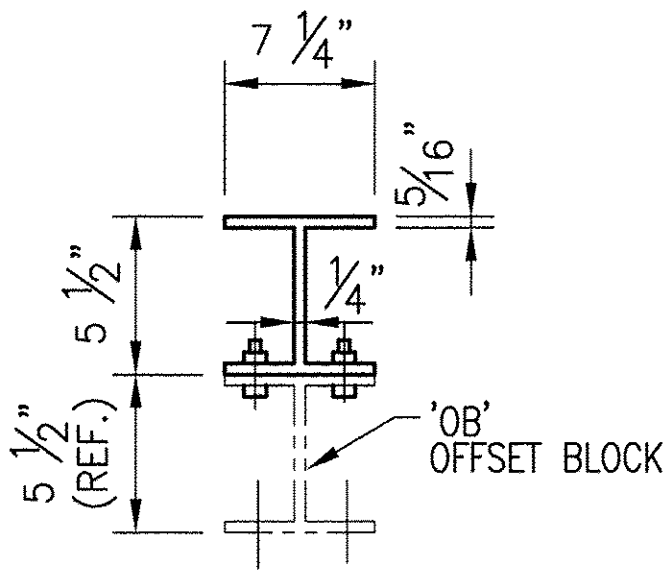
BRIDGE No. 30		ITEM No: 621.745	
PROJECT No. BHF 0283 (9) S			
APPROVED: _____		REC'D APPROVAL _____	
DRAWING _____			
L.B. FOSTER COMPANY			
1016 GREENTREE ROAD			
PITTSBURGH, PENNSYLVANIA 15220			
FOR: A.D. ROSSI CORPORATION			
VERMONT AGENCY OF TRANSPORTATION			
TOWN OF BERKSHIRE, COUNTY OF FRANKLIN			
3-LINE SEMI-ELLIP. ALUM. APPROACH RAIL FOR VT RTE 118			
ALUMINUM APPROACH RAIL POST DETAILS			
MADE CMS DATE 02/18/10 JOB No. AR0624 CUST. No.			
CHECK BLJ DATE 02/25/10 DRAWING LB10		REV. No. ONE	

POST DETAIL CHART FOR NE APPROACH 								
		OFFSET BLOCK MTG. DIMENSIONS						BEV
POST No.	QTY.	A	B	C	D	E	F (O.C.)	X
P8	1	1 7/8"	1'-1 3/8"	2'-6 9/16"	5/8"	1 1/4"	4'-1 7/8"	1 1/16
P9	1	1 7/8"	11 11/16"	2'-3 9/16"	5/8"	1 1/4"	3'-10 9/16"	1 1/16
P10	1	1 7/8"	10"	2'-0 9/16"	5/8"	1 1/4"	3'-7 1/4"	1 1/16
P11	1	1 7/8"	8 5/16"	1'-9 5/8"	5/8"	1 1/4"	3'-3 15/16"	1 1/16
P12	1	2 3/16"	1'-1 11/16"		5/16"	1 13/16"	2'-7 11/16"	9/16
P13	1	2 3/16"	11 15/16"		5/16"	1 13/16"	2'-5 1/2"	9/16
P14	1	2 3/16"	10 1/4"		5/16"	1 13/16"	2'-3 1/4"	9/16
POST DETAIL CHART FOR SW APPROACH 								
		OFFSET BLOCK MTG. DIMENSIONS						BEV
POST No.	QTY.	A	B	C	D	E	F (O.C.)	X
P15	1	1 3/4"	1'-1 1/4"	2'-1 13/16"	7/16"	1 3/8"	3'-4 11/16"	11/16
P16	1	1 3/4"	11 9/16"	1'-11 7/16"	7/16"	1 3/8"	3'-2 5/8"	11/16
P17	1	1 3/4"	9 7/8"	1'-9 1/16"	7/16"	1 3/8"	3'-0 9/16"	11/16
P18	1	1 3/4"	8 3/16"	1'-6 3/4"	7/16"	1 3/8"	2'-10 1/2"	11/16
P19	1	2"	11 11/16"		1/16"	1 15/16"	2'-3 15/16"	1/8
P20	1	2"	10 3/4"		1/16"	1 15/16"	2'-3 3/8"	1/8
P21	1	2"	9 7/8"		1/16"	1 15/16"	2'-2 13/16"	1/8



P12 - P14
P19 - P21

P8 - P11
P15 - P18



TYP. SECT. POST &
OFFSET BLOCK

☒ No Description Taken	T-Y-LINE INTERNATIONAL
☐ Make Correction as Noted	
☐ Submit Specified Item	
☐ Revise and Resubmit as Noted	
☐ Rejected	
Checking is for general compliance with the design concept of the project and general compliance with the information given in the contract documents only. Any action shown is not an approval and is subject to the requirements of the plans and specifications. Any action shown on a specific item shall not indicate the checking of an assembly of which the item is a component. Contractor is solely responsible for dimensions which shall be confirmed and corrected at the job site, fabrication processes, techniques of construction, safety precautions, and coordination of the work with that of all other trades and the satisfactory performance of the work.	
Reviewed by: Shanta Keller	Date: 3/31/10

 **ANODIZED**
(SEE NOTES ON LB1)

	REVISED DIMENSIONS PER APPROVERS MARKUPS	CMS	03 23 10
REV.	DESCRIPTION	BY	DATE

BRIDGE No. 30	PROJECT No. BHF 0283 (9) S	ITEM No: 621.745
APPROVED: _____		REC'D APPROVAL _____
L.B. FOSTER COMPANY 1016 GREENTREE ROAD PITTSBURGH, PENNSYLVANIA 15220		DRAWING _____
FOR: A.D. ROSSI CORPORATION VERMONT DEPARTMENT OF TRANSPORTATION TOWN OF BERKSHIRE, COUNTY OF FRANKLIN 3-LINE SEMI-ELLIP. ALUM. APPROACH RAIL FOR VT RTE 118 3L ALUMINUM APPROACH RAIL POST DETAILS		
MADE CMS	DATE 02/18/10	JOB No. AR0624
CHECK BLJ	DATE 02/25/10	DRAWING LB11
CUST. No.		REV. No. ONE

△ OFFSET BLOCK DETAIL CHART FOR NW & SE APPROACHES

OFFSET BLOCK MTG. DIMENSIONS									BEV
POST No.	QTY.	A	B	C	D	E	F (O.C.)	LGTH	X
P1	1	1 7/8"	1'-1 3/8"	2'-6 9/16"	5/8"	1 1/4"	2'-9 3/16"	2'-9 9/16"	1 1/16
P2	1	1 7/8"	11 11/16"	2'-3 9/16"	5/8"	1 1/4"	2'-6 1/4"	2'-6 9/16"	1 1/16
P3	1	1 7/8"	10"	2'-0 9/16"	5/8"	1 1/4"	2'-3 1/4"	2'-3 9/16"	1 1/16
P4	1	1 7/8"	8 5/16"	1'-9 5/8"	5/8"	1 1/4"	2'-0 5/16"	2'-0 5/8"	1 1/16
P22	1	1 3/4"	1'-1 1/4"	2'-1 13/16"	7/16"	1 3/8"	2'-4 9/16"	2'-4 13/16"	11/16
P23	1	1 3/4"	11 9/16"	1'-11 7/16"	7/16"	1 3/8"	2'-2 1/4"	2'-2 7/16"	11/16
P24	1	1 3/4"	9 7/8"	1'-9 1/16"	7/16"	1 3/8"	1'-11 7/8"	2'-0 1/16"	11/16
P25	1	1 3/4"	8 3/16"	1'-6 3/4"	7/16"	1 3/8"	1'-9 9/16"	1'-9 3/4"	11/16

△ OFFSET BLOCK ~ RAIL MTG. DIMENSIONS

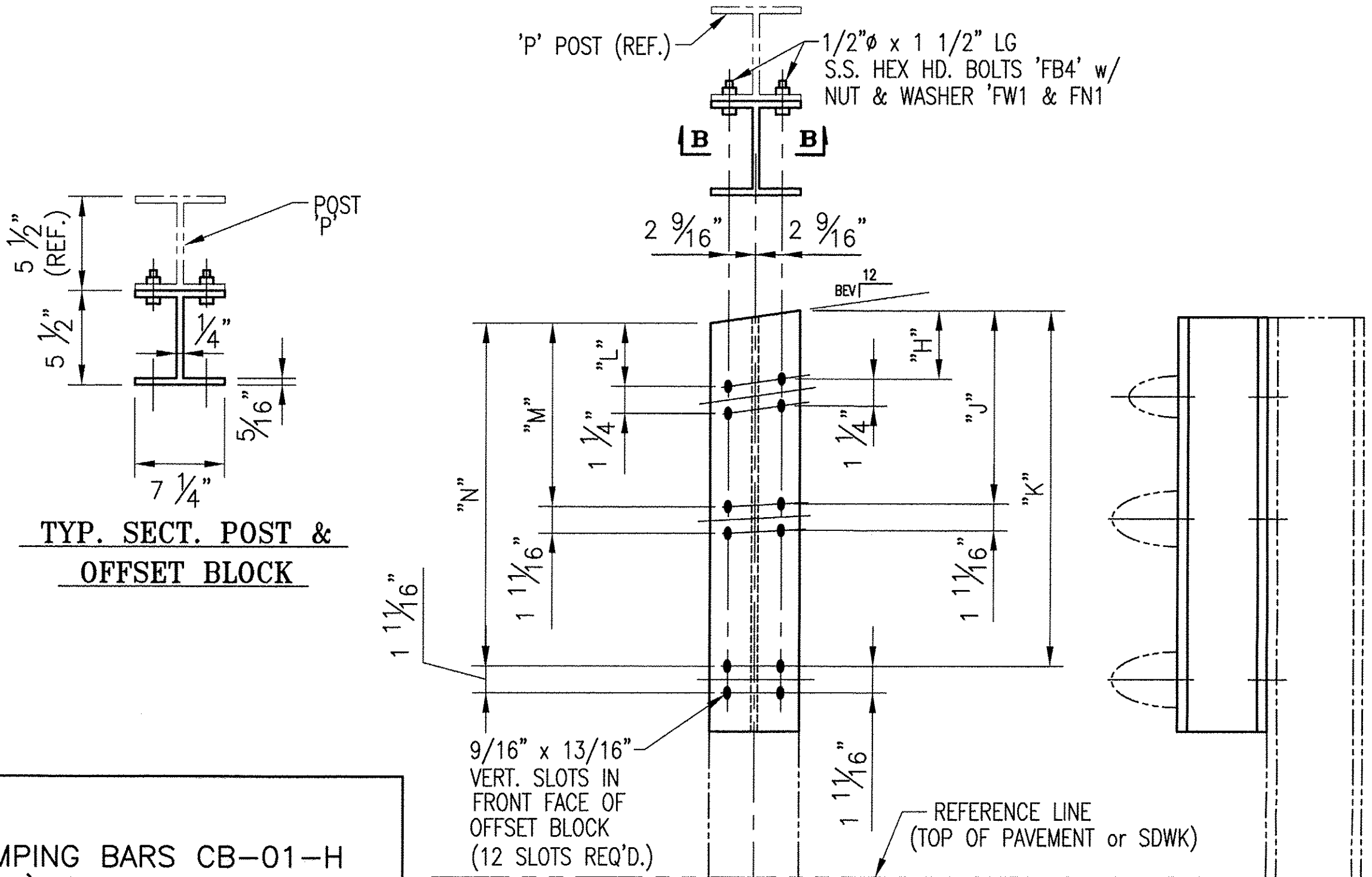
POST No.	OFFSET BLOCK	H	J	K	L	M	N
P1	OB1	1 1/16"	1'-0 3/8"	2'-5 11/16"	7/8"	1'-0"	2'-5 1/16"
P2	OB2	1 1/16"	10 11/16"	2'-2 11/16"	7/8"	10 5/16"	2'-2 1/8"
P3	OB3	1 1/16"	9 1/16"	1'-11 11/16"	7/8"	8 5/8"	1'-11 1/8"
P4	OB4	1 1/16"	7 3/8"	1'-8 3/4"	7/8"	6 15/16"	1'-8 1/8"
P22	OB22	1"	1'-0 3/8"	2'-1"	7/8"	1'-0"	2'-0 1/2"
P23	OB23	1"	10 11/16"	1'-10 5/8"	7/8"	10 5/16"	1'-10 3/16"
P24	OB24	1"	9"	1'-8 1/4"	7/8"	8 5/8"	1'-7 13/16"
P25	OB25	1"	7 5/16"	1'-5 15/16"	7/8"	7"	1'-5 7/16"

△ OFFSET BLOCK DETAIL CHART FOR NW & SE APPROACHES

		OFFSET BLOCK MTG. DIMENSIONS						BEV
POST No.	QTY.	A	B	LGTH	D	E	F (O.C.)	X
P5	1	2 3/16"	1'-1 11/16"	1'-4 11/16"	5/16"	1 13/16"	1'-4 9/16"	9/16
P6	1	2 3/16"	1'-0"	1'-3"	5/16"	1 13/16"	1'-2 13/16"	9/16
P7	1	2 3/16"	10 1/4"	1'-1 1/4"	5/16"	1 13/16"	1'-1 1/16"	9/16
P26	1	2"	11 11/16"	1'-2 11/16"	1/16"	1 15/16"	1'-2 5/8"	1/8
P27	1	2"	10 3/4"	1'-1 3/4"	1/16"	1 15/16"	1'-1 3/4"	1/8
P28	1	2"	9 7/8"	1'-0 7/8"	1/16"	1 15/16"	1'-0 13/16"	1/8

△ OFFSET BLOCK ~ RAIL MTG. DIMENSIONS

POST No.	OFFSET BLOCK	G	H	J	K
P5	OB5	1 3/16"	1'-0 7/8"	1 1/8"	1'-0 9/16"
P6	OB6	1 3/16"	11 1/8"	1 1/8"	10 13/16"
P7	OB7	1 3/16"	9 3/8"	1 1/8"	9 1/8"
P26	OB26	1 3/16"	10 13/16"	1 1/8"	10 3/4"
P27	OB27	1 3/16"	9 15/16"	1 1/8"	9 13/16"
P28	OB28	1 3/16"	9"	1 1/8"	8 15/16"

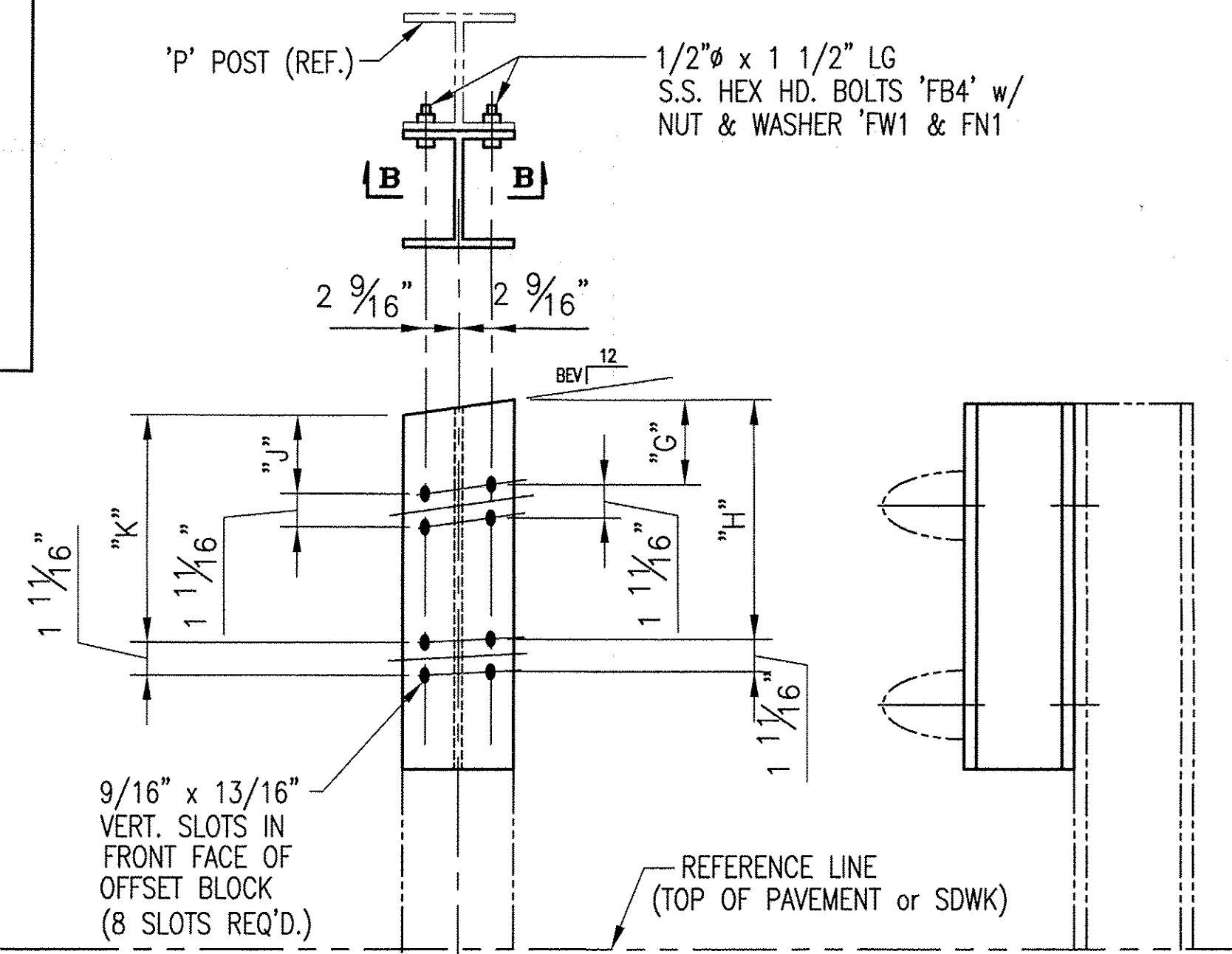


TYP. SECT. POST & OFFSET BLOCK

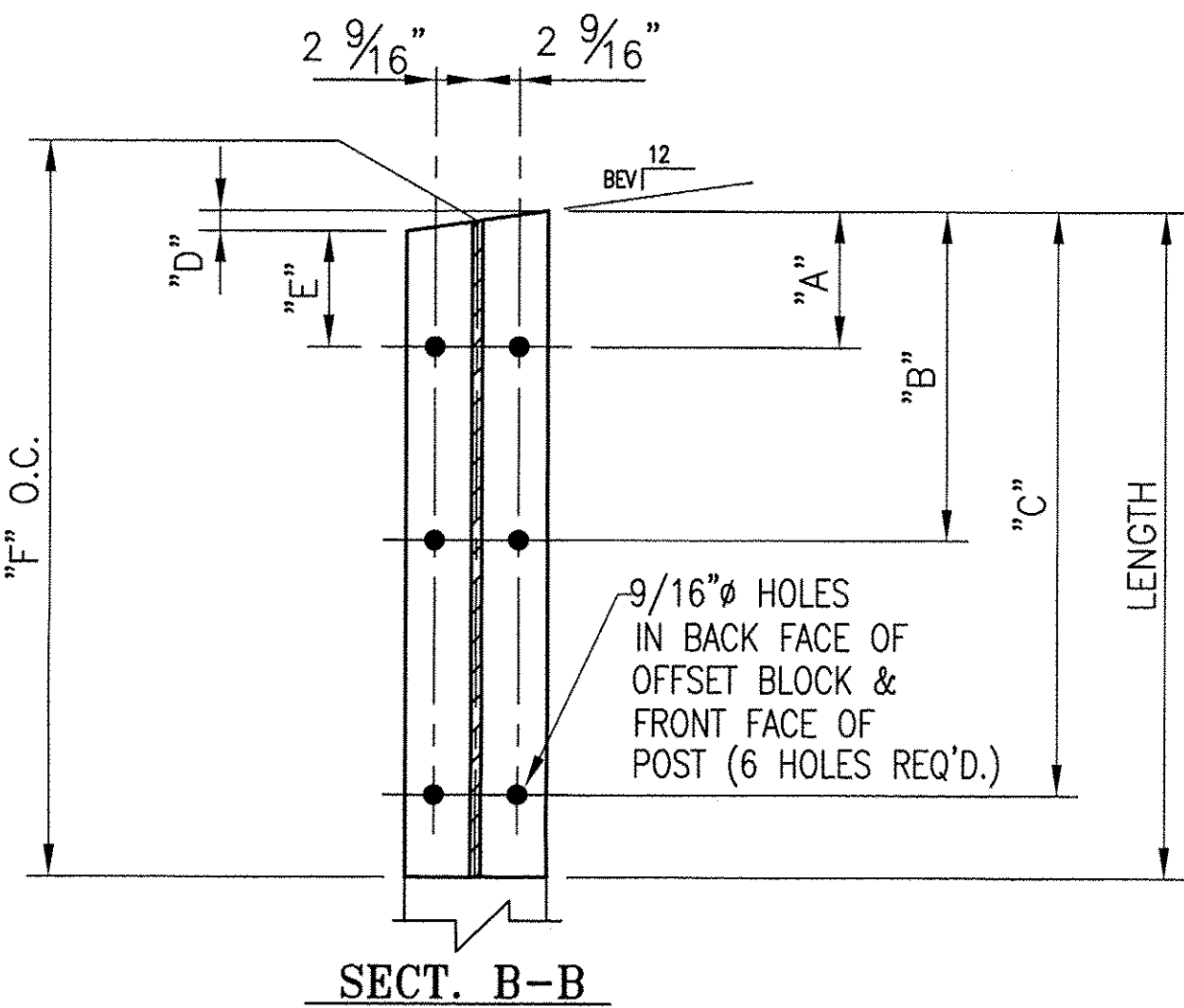
NOTE:

2 CLAMPING BARS CB-01-H (#28596) PER POSTS P1-P4, P22-P25
4 CLAMPING BARS CB-03-A (#19447) PER POSTS P1-P4, P22-P25
w/ 1/2"Ø-13 UNC S.S. BOLT x 1" LG. 'FB1', 1 1/16" O.D. x 17/32" I.D. x 3/32" THK. ALUM WASHER 'FW1' (#15280 & # 19404) (16 PER POST)

FRT ELEV VIEW ~ OB1-OB4, OB22-OB25

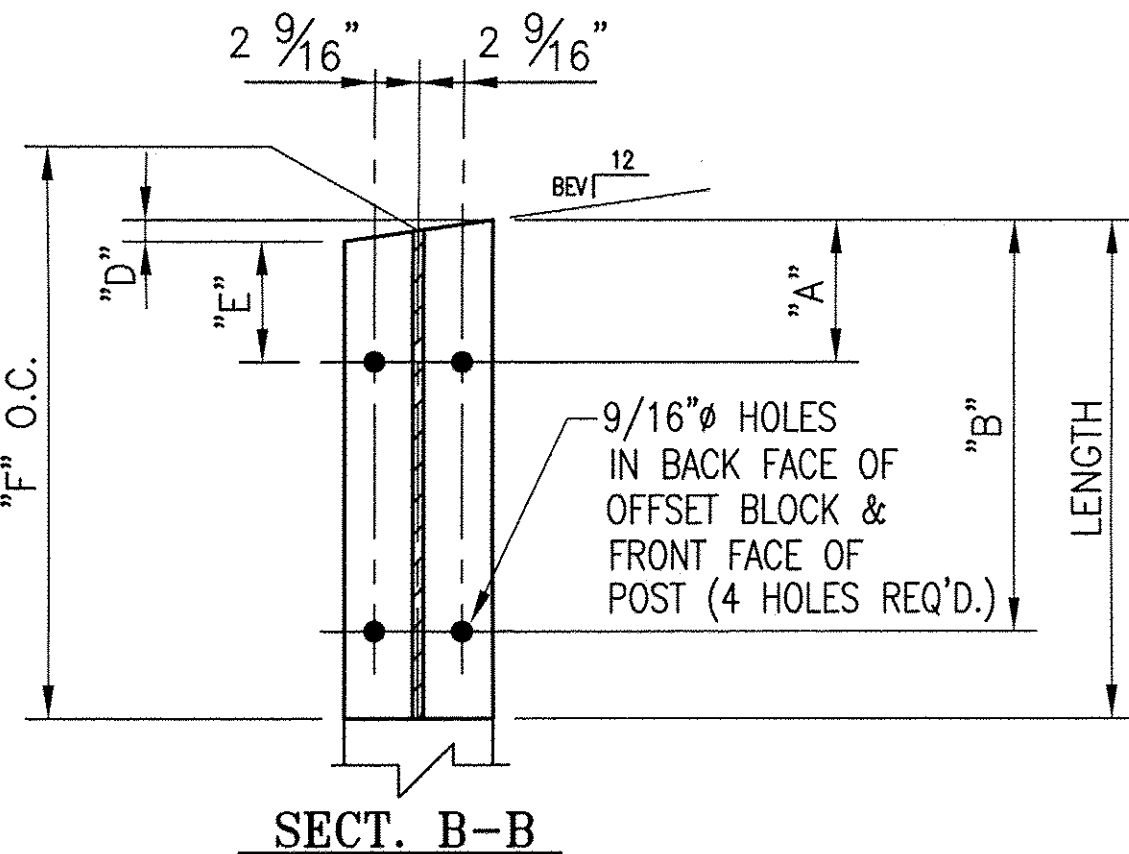


FRT ELEV VIEW ~ OB5-OB7, OB26-OB28



SECT. B-B

ANODIZED
(SEE NOTES ON LB1)



SECT. B-B

BRIDGE No. 30
PROJECT No. BHF 0283 (9) S
ITEM No: 621.745

APPROVED: _____
REC'D APPROVAL _____
DRAWING _____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A.D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION

TOWN OF BERKSHIRE, COUNTY OF FRANKLIN
3-LINE SEMI-ELLIP. ALUM. APPROACH RAIL FOR VT RTE 118
OFFSET BLOCK DETAILS

MADE CMS DATE 02/18/10 JOB No. AR0624 CUST. No.
CHECK BLJ DATE 02/25/10 DRAWING LB12 REV. No. ONE

REV.	DESCRIPTION	BY	DATE
1	REVISED DIMENSIONS PER APPROVERS MARKUPS	CMS	03 23 10

△ OFFSET BLOCK DETAIL CHART FOR NE & SW APPROACHES

OFFSET BLOCK MTG. DIMENSIONS									BEV
POST No.	QTY.	A	B	C	D	E	F (O.C.)	LGTH	X
P8	1	1 7/8"	1'-1 3/8"	2'-6 9/16"	5/8"	1 1/4"	2'-9 3/16"	2'-9 9/16"	1 1/16
P9	1	1 7/8"	11 11/16"	2'-3 9/16"	5/8"	1 1/4"	2'-6 1/4"	2'-6 9/16"	1 1/16
P10	1	1 7/8"	10"	2'-0 9/16"	5/8"	1 1/4"	2'-3 1/4"	2'-3 9/16"	1 1/16
P11	1	1 7/8"	8 5/16"	1'-9 5/8"	5/8"	1 1/4"	2'-0 5/16"	2'-0 5/8"	1 1/16
P15	1	1 3/4"	1'-1 1/4"	2'-1 13/16"	7/16"	1 3/8"	2'-4 9/16"	2'-4 13/16"	11/16
P16	1	1 3/4"	11 9/16"	1'-11 7/16"	7/16"	1 3/8"	2'-2 1/4"	2'-2 7/16"	11/16
P17	1	1 3/4"	9 7/8"	1'-9 1/16"	7/16"	1 3/8"	1'-11 7/8"	2'-0 1/16"	11/16
P18	1	1 3/4"	8 3/16"	1'-6 3/4"	7/16"	1 3/8"	1'-9 9/16"	1'-9 3/4"	11/16

△ OFFSET BLOCK ~ RAIL MTG. DIMENSIONS

POST No.	OFFSET BLOCK	H	J	K	L	M	N
P8	OB8	1 1/16"	1'-0 3/8"	2'-5 11/16"	7/8"	1'-0"	2'-5 1/16"
P9	OB9	1 1/16"	10 11/16"	2'-2 11/16"	7/8"	10 5/16"	2'-2 1/8"
P10	OB10	1 1/16"	9 1/16"	1'-11 11/16"	7/8"	8 5/8"	1'-11 1/8"
P11	OB11	1 1/16"	7 3/8"	1'-8 3/4"	7/8"	6 15/16"	1'-8 1/8"
P15	OB15	1"	1'-0 3/8"	2'-1"	7/8"	1'-0"	2'-0 1/2"
P16	OB16	1"	10 11/16"	1'-10 5/8"	7/8"	10 5/16"	1'-10 3/16"
P17	OB17	1"	9"	1'-8 1/4"	7/8"	8 5/8"	1'-7 13/16"
P18	OB18	1"	7 5/16"	1'-5 15/16"	7/8"	7"	1'-5 7/16"

△ OFFSET BLOCK DETAIL CHART FOR NE & SW APPROACHES

OFFSET BLOCK MTG. DIMENSIONS								BEV
POST No.	QTY.	A	B	LGTH	D	E	F (O.C.)	X
P12	1	2 3/16"	1'-1 11/16"	1'-4 11/16"	5/16"	1 13/16"	1'-4 9/16"	9/16
P13	1	2 3/16"	1'-0"	1'-3"	5/16"	1 13/16"	1'-2 13/16"	9/16
P14	1	2 3/16"	10 1/4"	1'-1 1/4"	5/16"	1 13/16"	1'-1 1/16"	9/16
P19	1	2"	11 11/16"	1'-2 11/16"	1/16"	1 15/16"	1'-2 5/8"	1/8
P20	1	2"	10 3/4"	1'-1 3/4"	1/16"	1 15/16"	1'-1 3/4"	1/8
P21	1	2"	9 7/8"	1'-0 7/8"	1/16"	1 15/16"	1'-0 13/16"	1/8

△ OFFSET BLOCK ~ RAIL MTG. DIMENSIONS

POST No.	OFFSET BLOCK	G	H	J	K
P12	OB12	1 3/16"	1'-0 7/8"	1 1/8"	1'-0 9/16"
P13	OB13	1 3/16"	11 1/8"	1 1/8"	10 13/16"
P14	OB14	1 3/16"	9 3/8"	1 1/8"	9 1/8"
P19	OB19	1 3/16"	10 13/16"	1 1/8"	10 3/4"
P20	OB20	1 3/16"	9 15/16"	1 1/8"	9 13/16"
P21	OB21	1 3/16"	9"	1 1/8"	8 15/16"

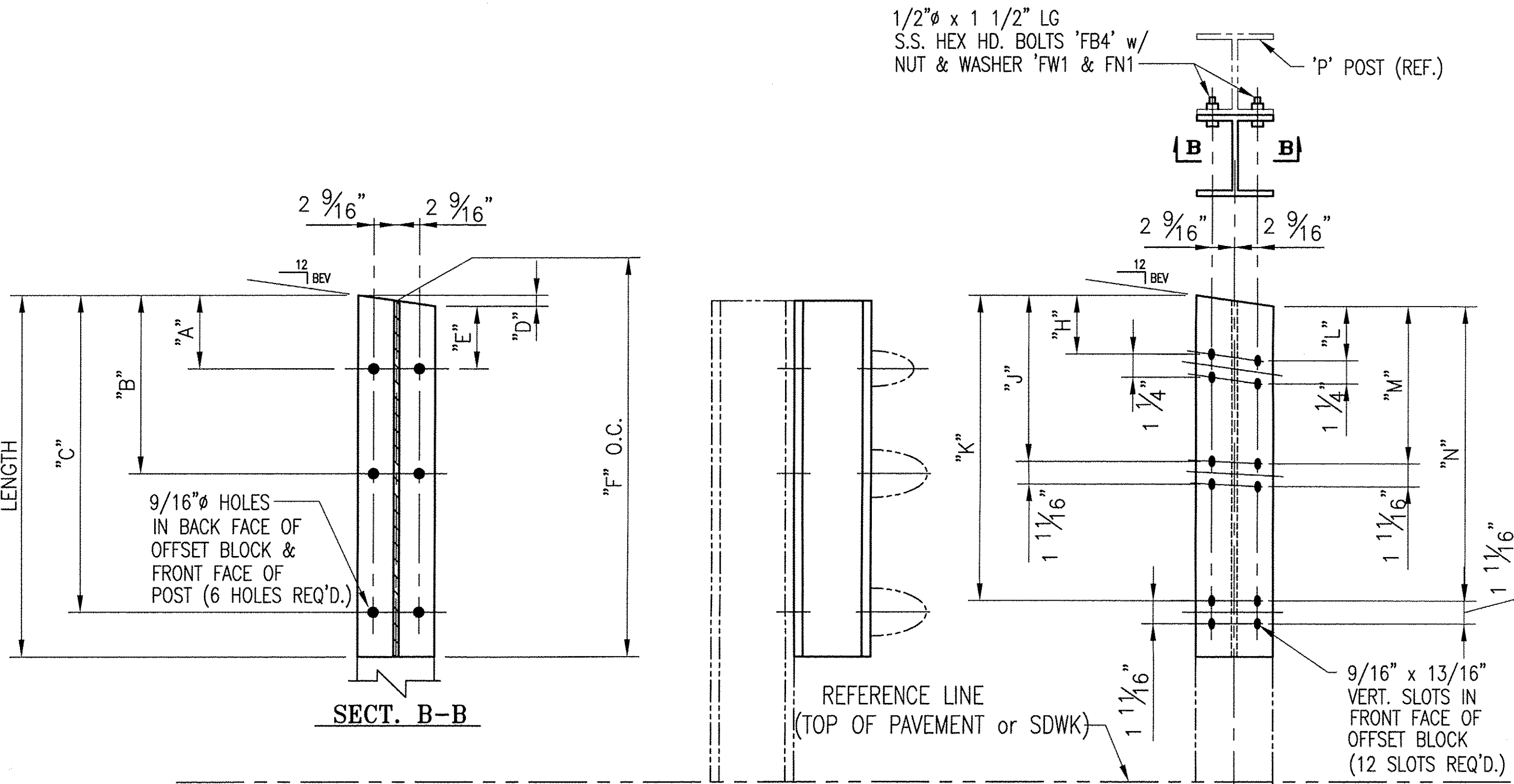
NOTE:
4 CLAMPING BARS CB-03-A (#19447) PER POSTS
P12-P14, P19-P21
w/ 1/2"Ø-13 UNC
S.S. BOLT x 1" LG. 'FB1',
1 1/16" O.D. x 17/32"
I.D. x 3/32" THK. ALUM
WASHER 'FW1'
(#15280 & # 19404)
(8 PER POST)

NOTE:

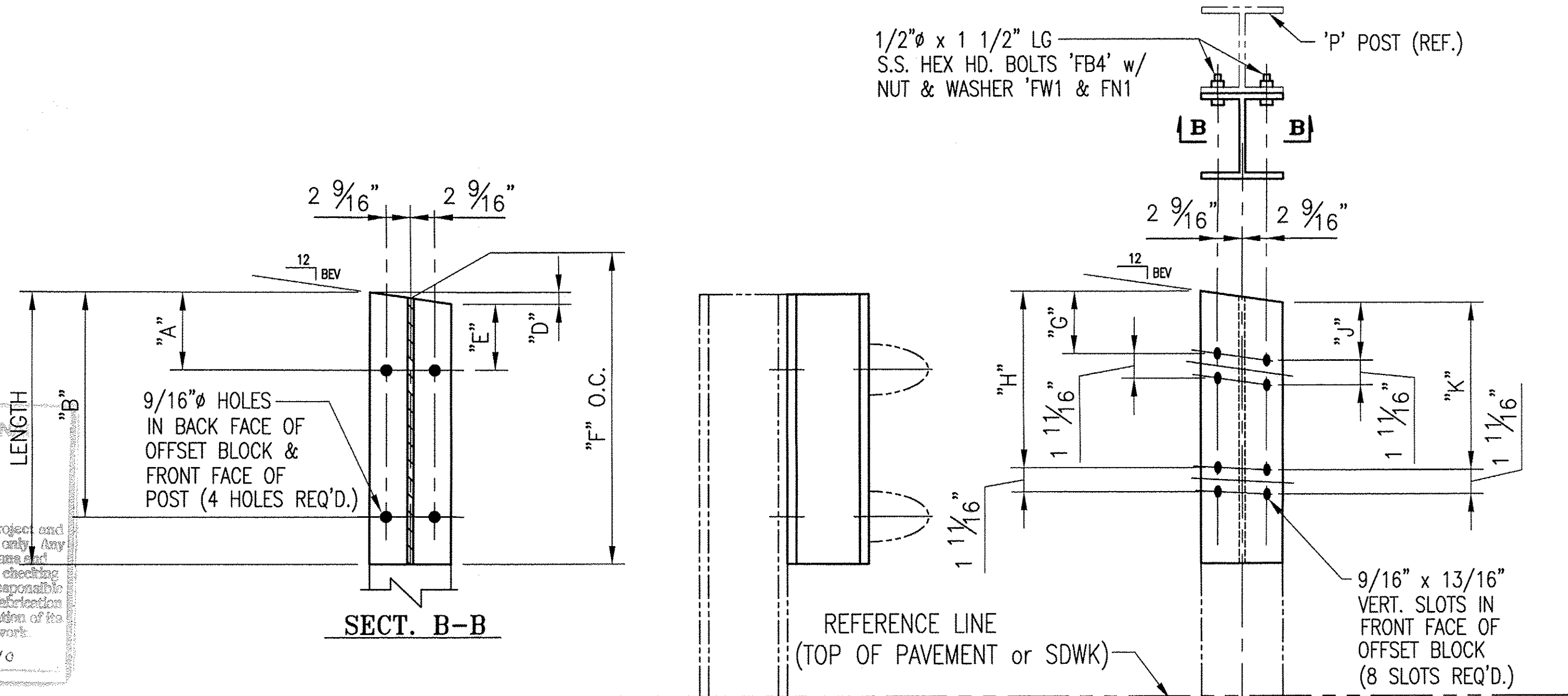
2 CLAMPING BARS CB-01-H (#28596) PER POSTS
P8-P11, P15-P18
4 CLAMPING BARS CB-03-A (#19447) PER POSTS
P8-P11, P15-P18
w/ 1/2"Ø-13 UNC
S.S. BOLT x 1" LG. 'FB1',
1 1/16" O.D. x 17/32"
I.D. x 3/32" THK. ALUM
WASHER 'FW1'
(#15280 & # 19404)
(16 PER POST)

ANODIZED
(SEE NOTES ON LB1)

REV.	DESCRIPTION	BY	DATE
1	REVISED DIMENSIONS PER APPROVERS MARKUPS	CMS	03/23/10



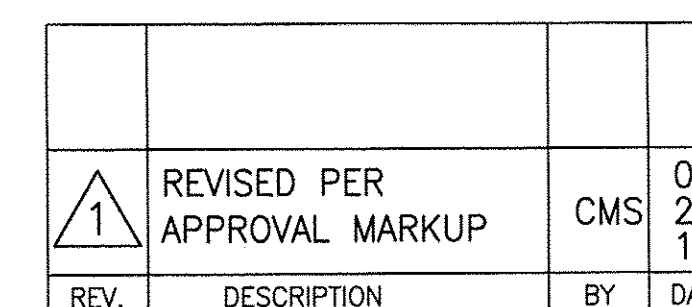
FRT ELEV VIEW ~ OB8-OB11, OB15-OB18

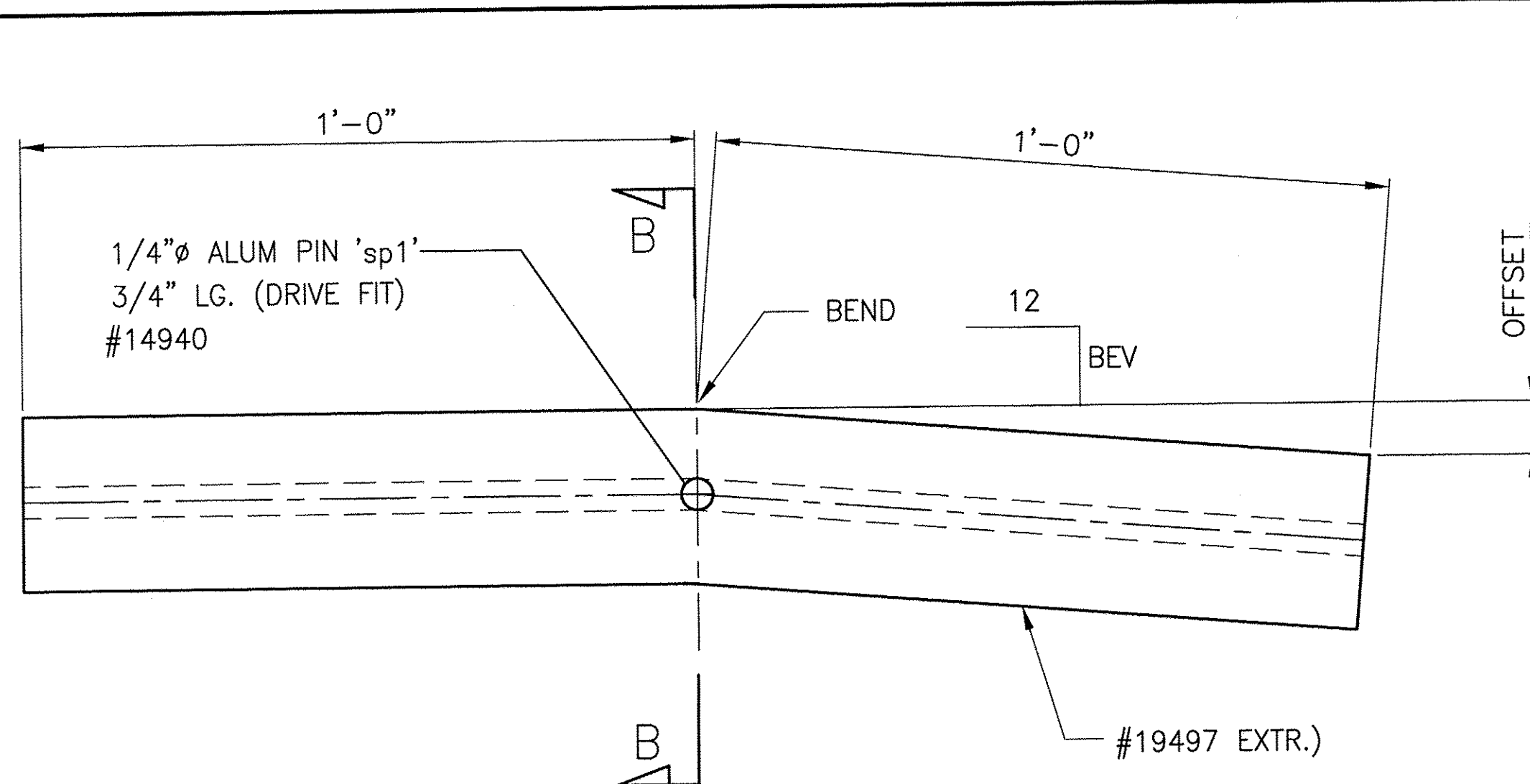


FRT ELEV VIEW ~ OB12-OB14, OB19-OB21

BRIDGE No. 30
PROJECT No. BHf 0283 (9) S
ITEM No: 621.745

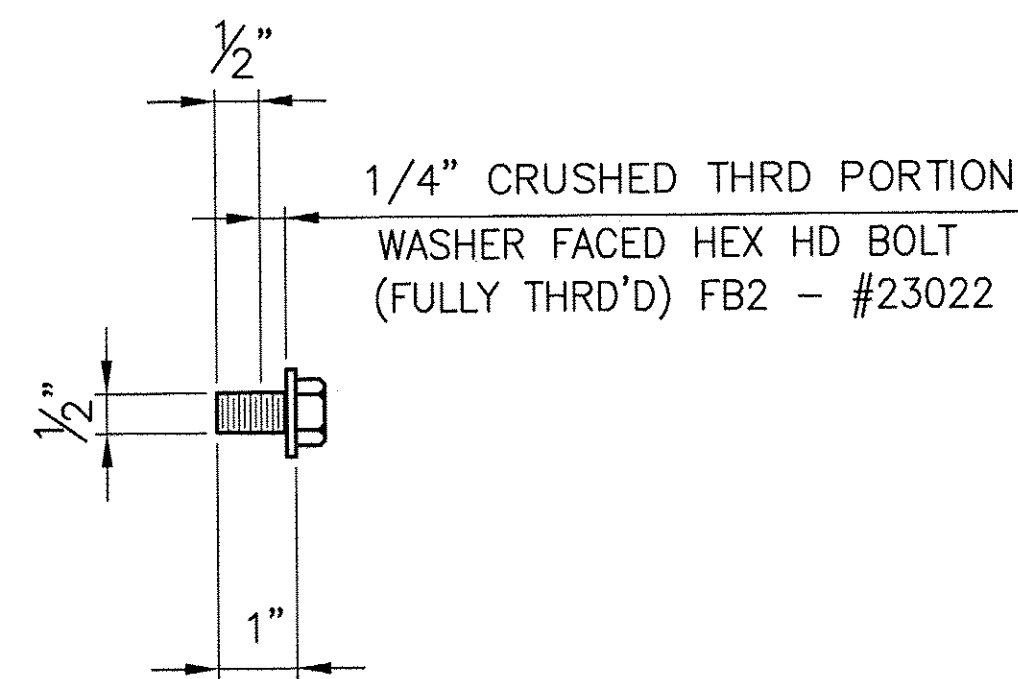
APPROVED:	REC'D APPROVAL
	DRAWING
L.B. FOSTER COMPANY 1016 GREENTREE ROAD PITTSBURGH, PENNSYLVANIA 15220	
FOR: A.D. ROSSI CORPORATION VERMONT AGENCY OF TRANSPORTATION TOWN OF BERKSHIRE, COUNTY OF FRANKLIN 3-LINE SEMI-ELLIP. ALUM. APPROACH RAIL FOR VT RTE 118	
OFFSET BLOCK DETAILS	
MADE CMS DATE 02/18/10 JOB No. AR0624 CUST. No.	
CHECK BLJ DATE 02/25/10 DRAWING LB13	REV. No. ONE



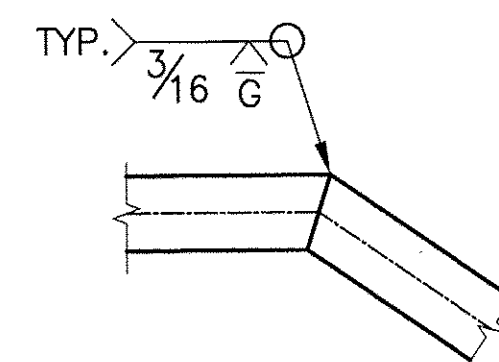


REAR ELEVATION VIEW

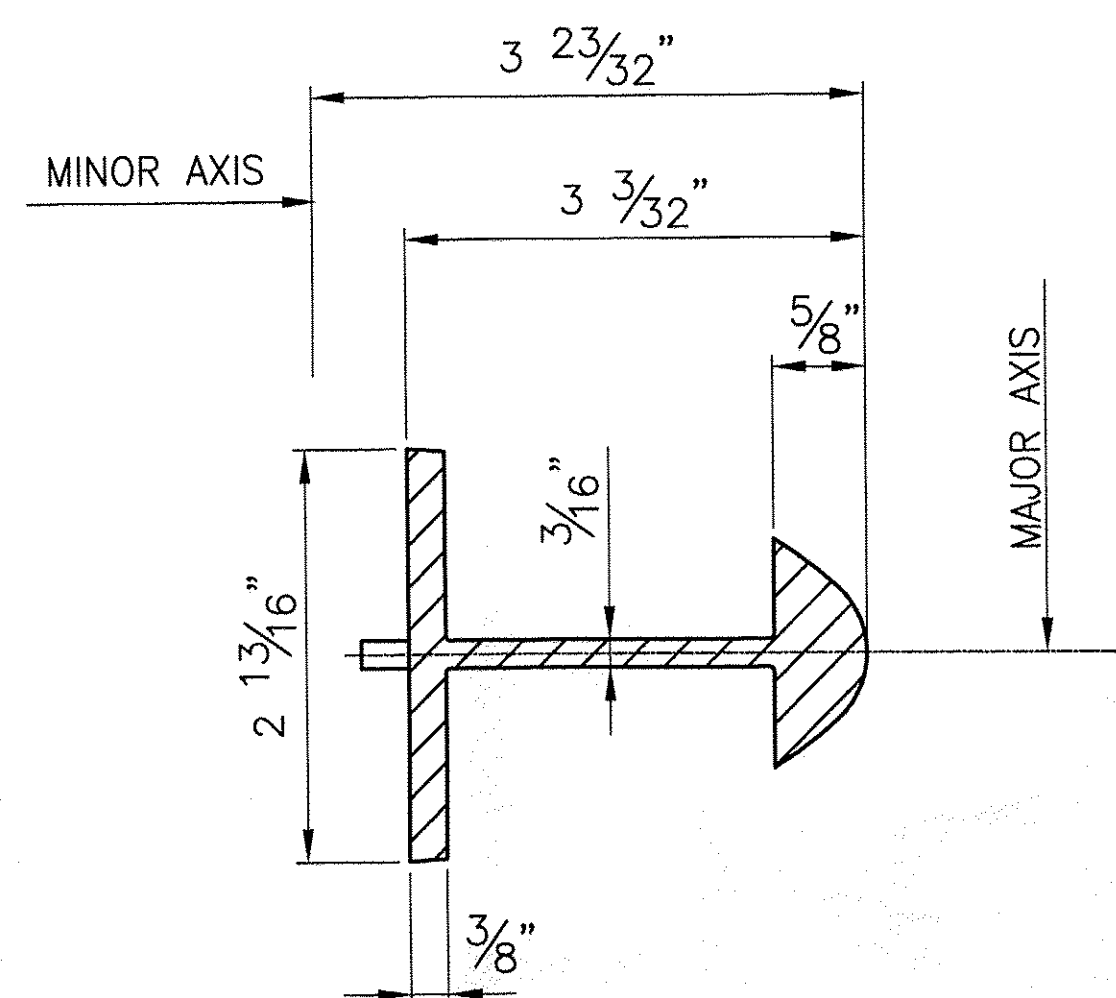
HANDRAIL SPLICES			
MK.	QTY.	OFFSET	BEV
1 SS-23-A1	2	9/16"	11/16
1 SS-23-A2	2	15/16"	1 1/16



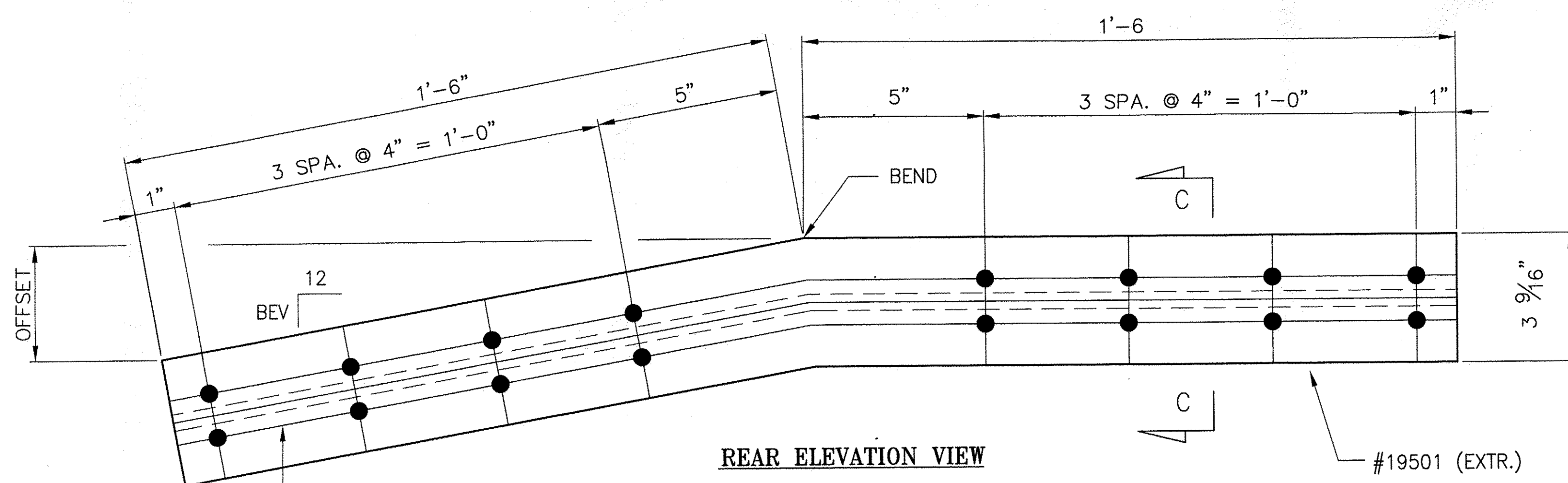
SPLICE BOLT DETAILS



OPTIONAL WELD
@ MITERED SPLICES
(IF REQ'D.)



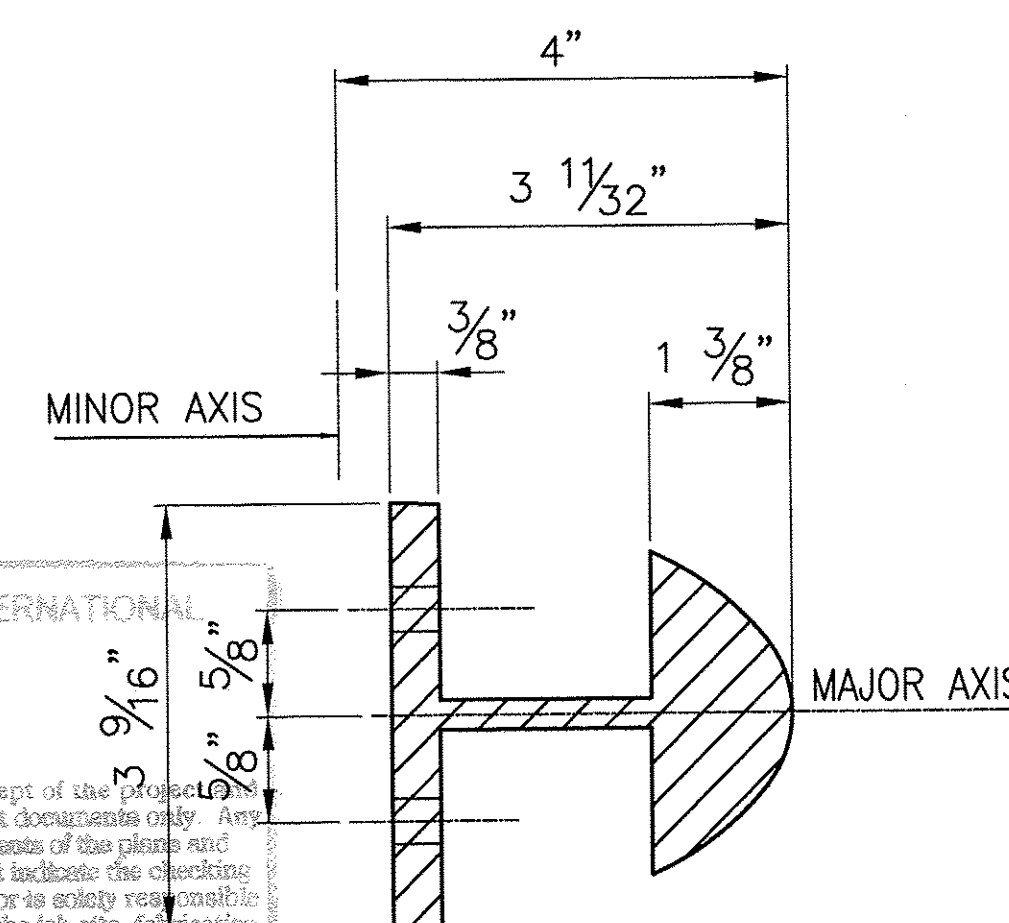
SECTION B-B



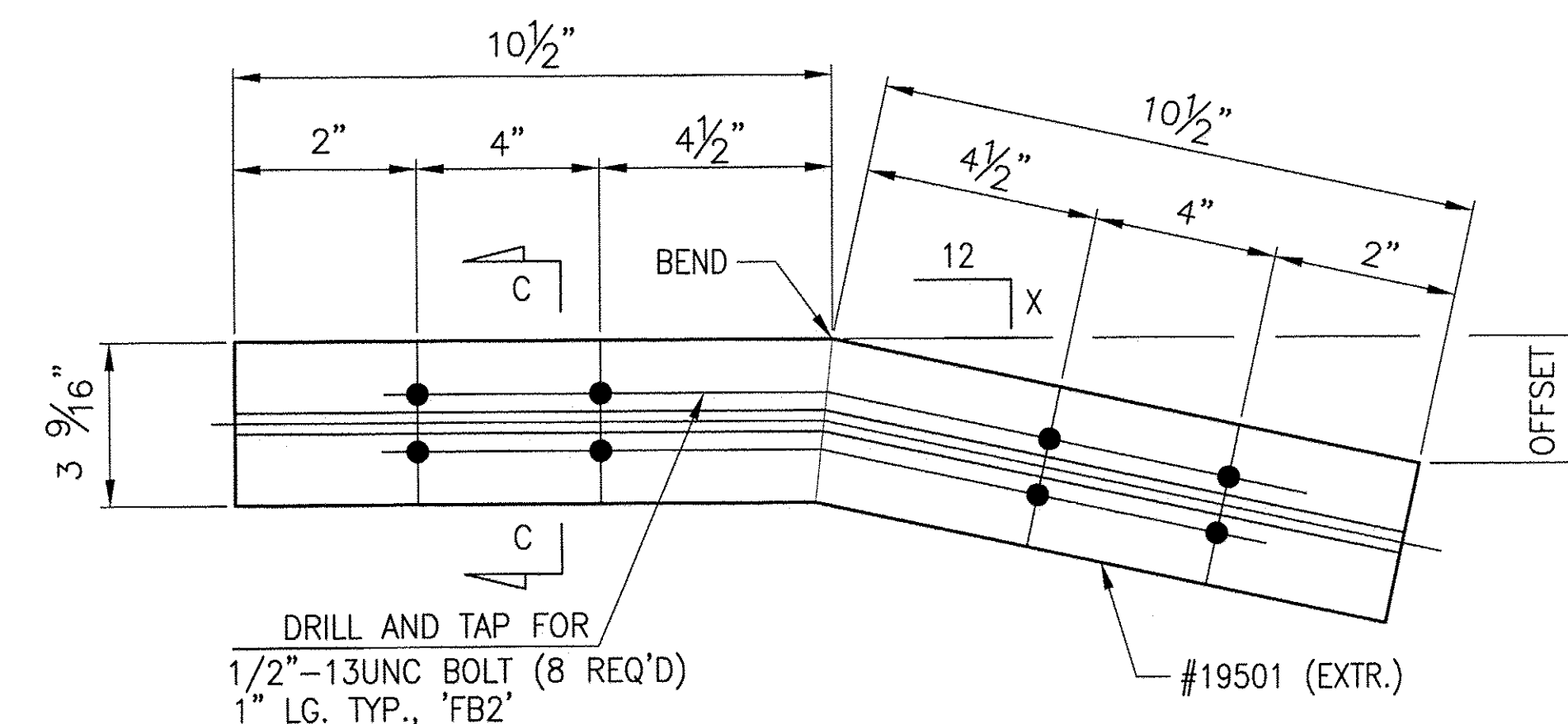
REAR ELEVATION VIEW

BARRIER RAIL SPLICES			
MK.	QTY.	OFFSET	BEV
1 SS-03-G1	2	5/16"	1/16
1 SS-03-G2	2	9/16"	9/16
1 SS-03-G3	2-4	1/16"	1/8

DRILL AND TAP FOR
1/2"-13UNC BOLT (16 REQ'D)
'FB2'

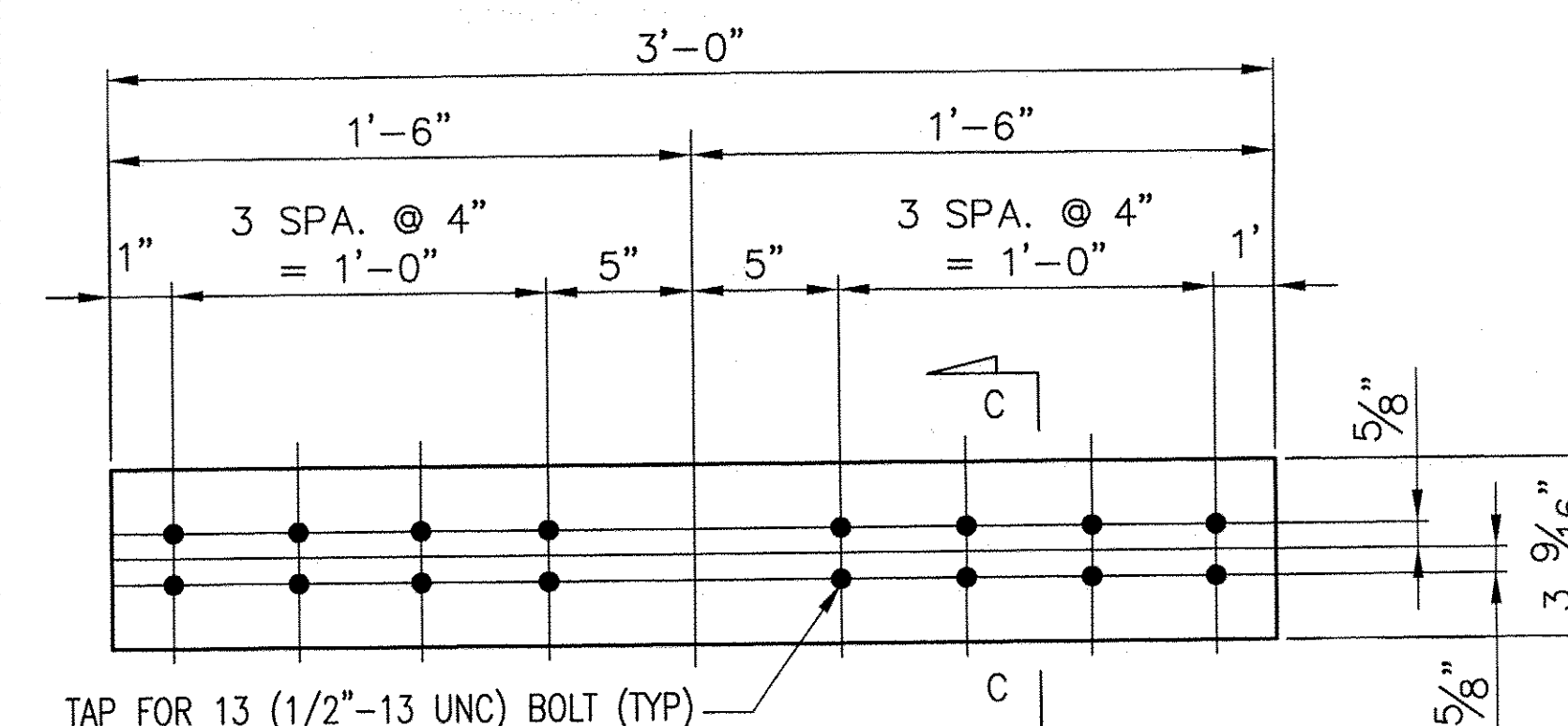


SECTION C-C



REAR ELEVATION VIEW

BARRIER RAIL SPLICES			
MK.	X	QTY.	OFFSET
1 SS-03-H1	1/8	3	1/8
1 SS-03-H2	1/16	1	1/16
1 SS-03-H3	9/16	2	7/16



2 ~ REQ'D SPLICE SLEEVES SS-03-G
(BARRIER RAIL) #19501

ANODIZED
(SEE NOTES ON LB1)

BRIDGE No. 30
PROJECT No. BHF 0283 (9) S ITEM No: 621.745

APPROVED: _____ REC'D APPROVAL _____
DRAWING _____

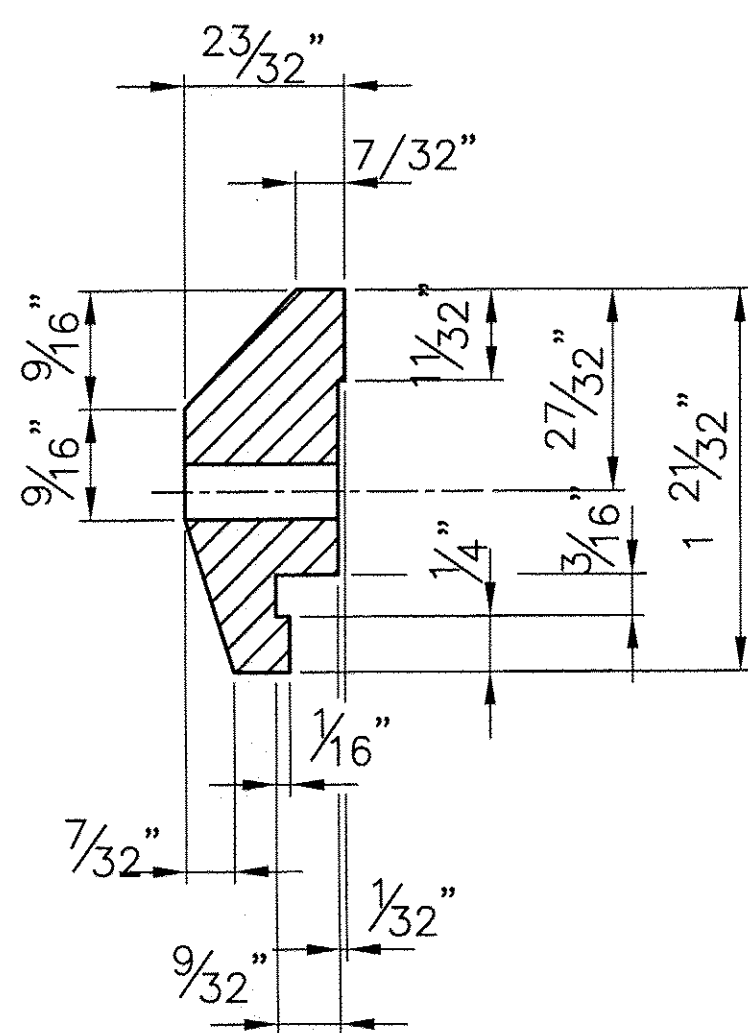
L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A.D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF BERKSHIRE, COUNTY OF FRANKLIN
3-LINE SEMI-ELLIP. ALUM. APPROACH RAIL FOR VT RTE 118
APPROACH RAIL SPLICE DETAILS

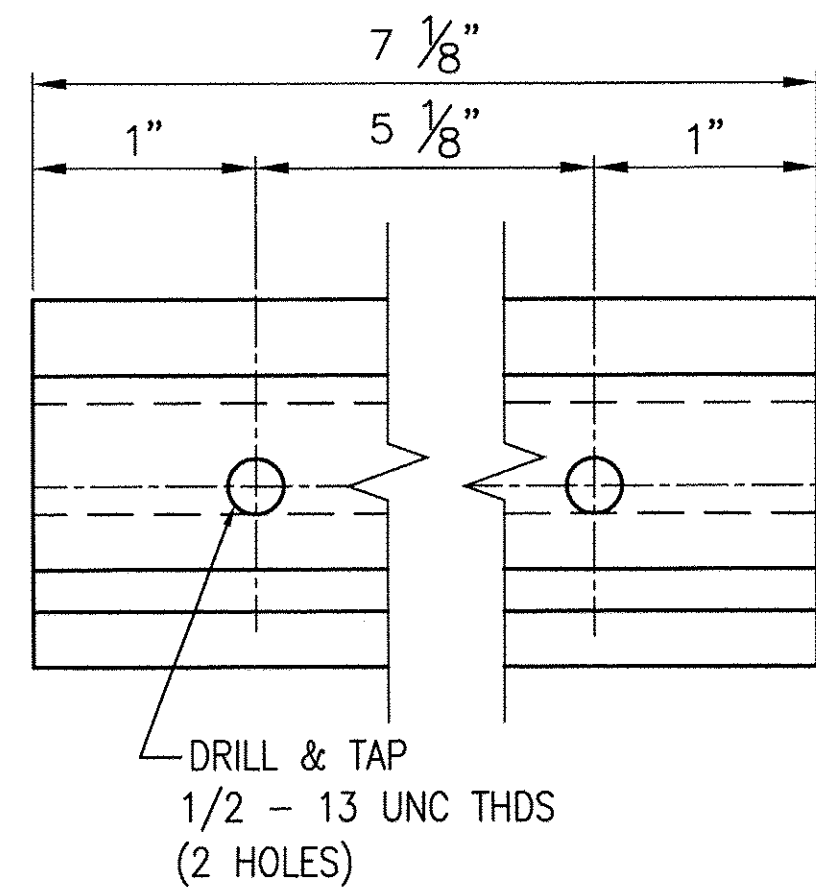
MADE CMS DATE 02/18/10 JOB No. AR0624 CUST. No. _____
CHECK BLJ DATE 02/25/10 DRAWING LB15 REV. No. ONE

REV.	DESCRIPTION	BY	DATE
1	REVISED PER APPROVER COMMENTS	CMS	03 23 10

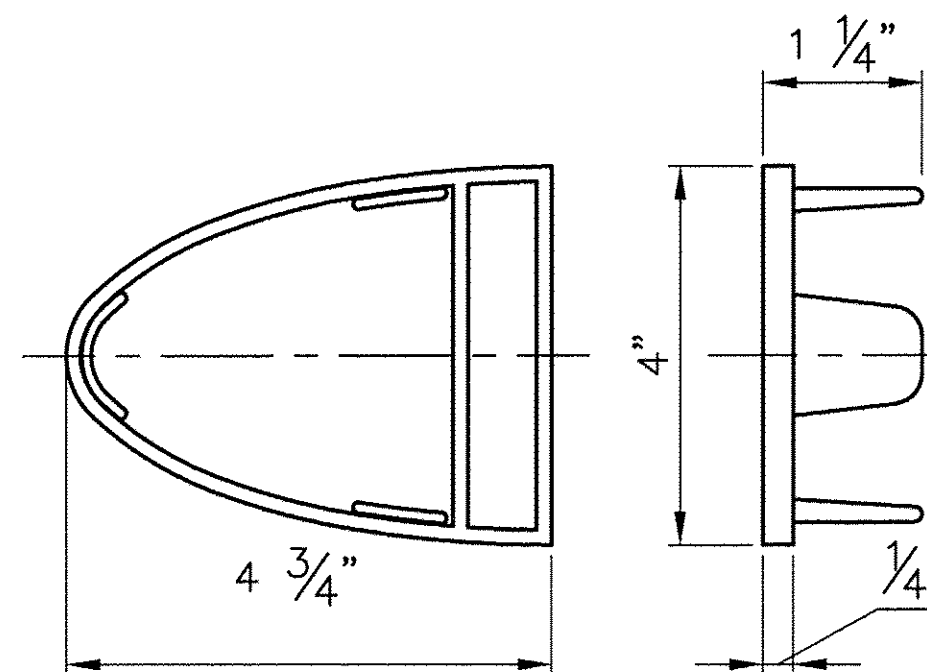
By Inspection: _____
X Make Correction as Noted
Submit Specified Item
Revise and Resubmit as Noted
Rejected
Checking is for general compliance with the design concept of the project. It is not a guarantee of performance. The contractor is responsible for the design and construction of the project. The contractor is responsible for the safety of the project. The contractor is responsible for the work with that of all other trades and the satisfactory performance of its work.
Reviewed By: Shanta Keller Date: 3/31/10



112 ~ REQ'D CLAMP
BAR CB-03-A
 (BARRIER RAIL - 4 PER POST)
 (#19447)



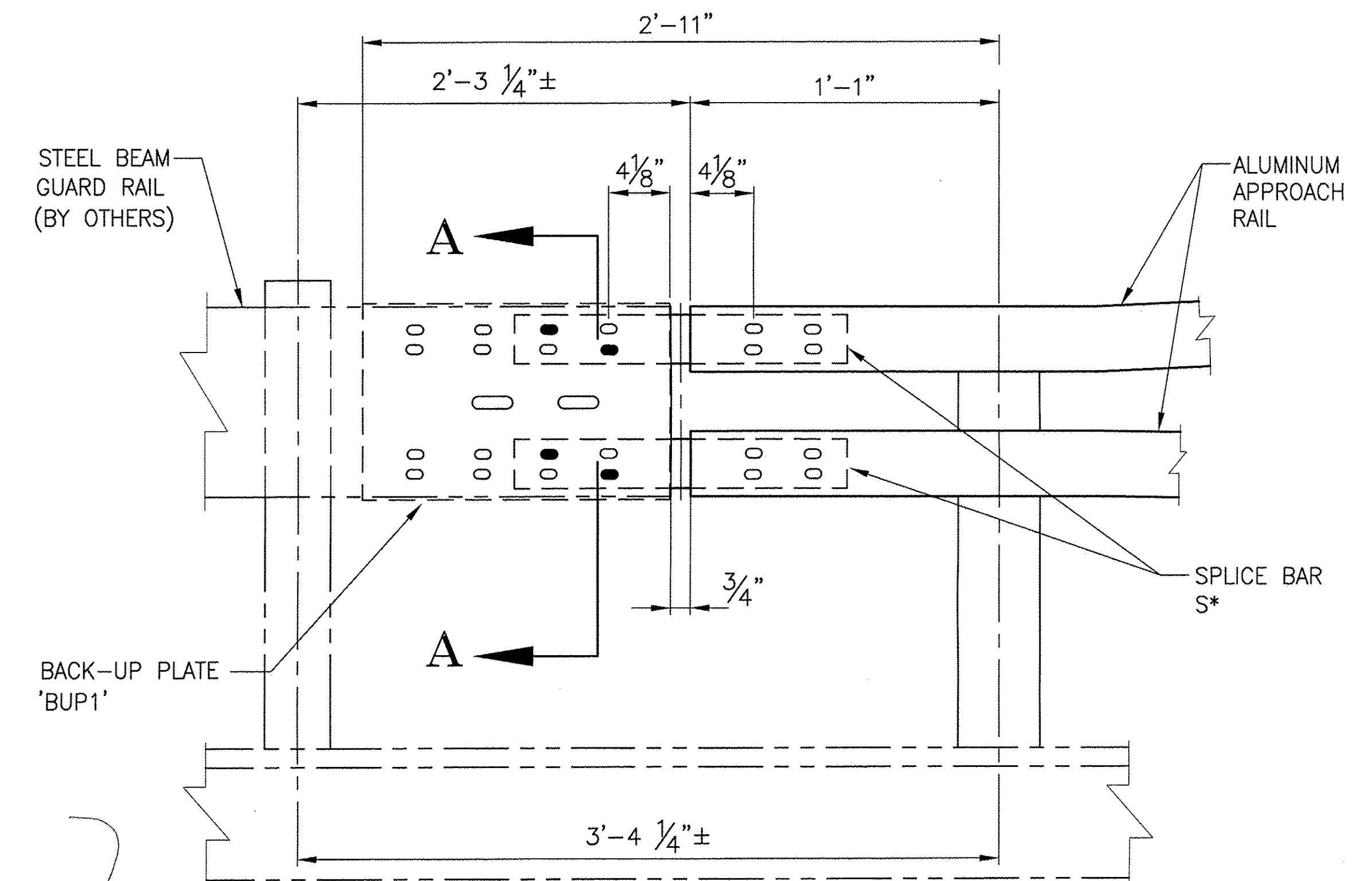
32 ~ REQ'D CLAMP
BAR CB-01-H
 (HANDRAIL - 2 PER POST)
 (#28596)



2 ~ REQ'D. ALUM
END CAPS EC2
 #19345

APPROVER,,
 THERE APPEARS TO BE A DIMENSIONAL
 PROBLEM WITH THE STATE STD. DWGS ON THE
 SIDE AT THE RAIL SPLICE. THE 4 5/8" WOULD
 EXTEND THE PLATE BEYOND THE CENTERLINE OF
 THE SPLICE TOWARDS THE RAILING.
 PLEASE VERIFY.

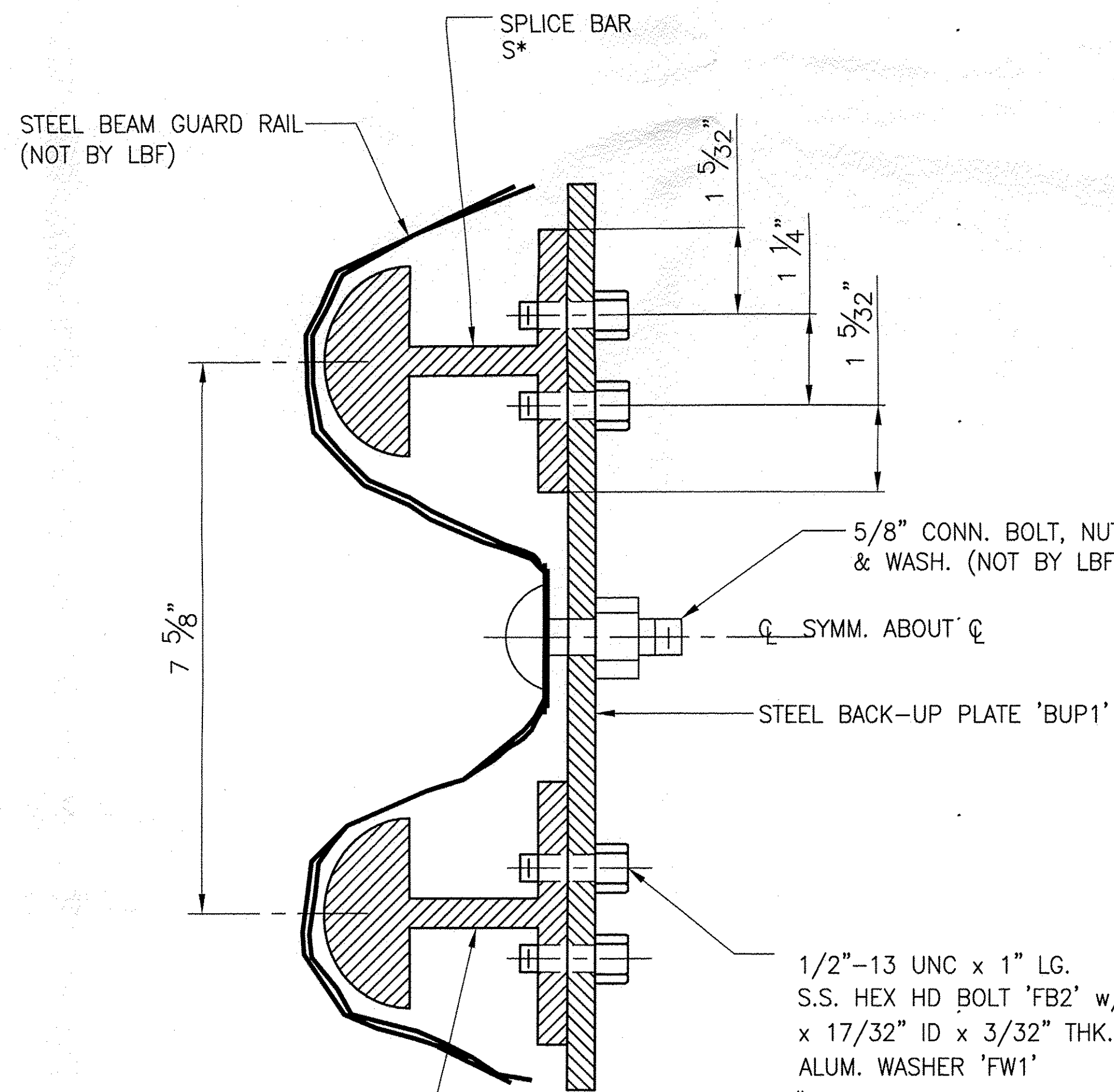
Agreed.



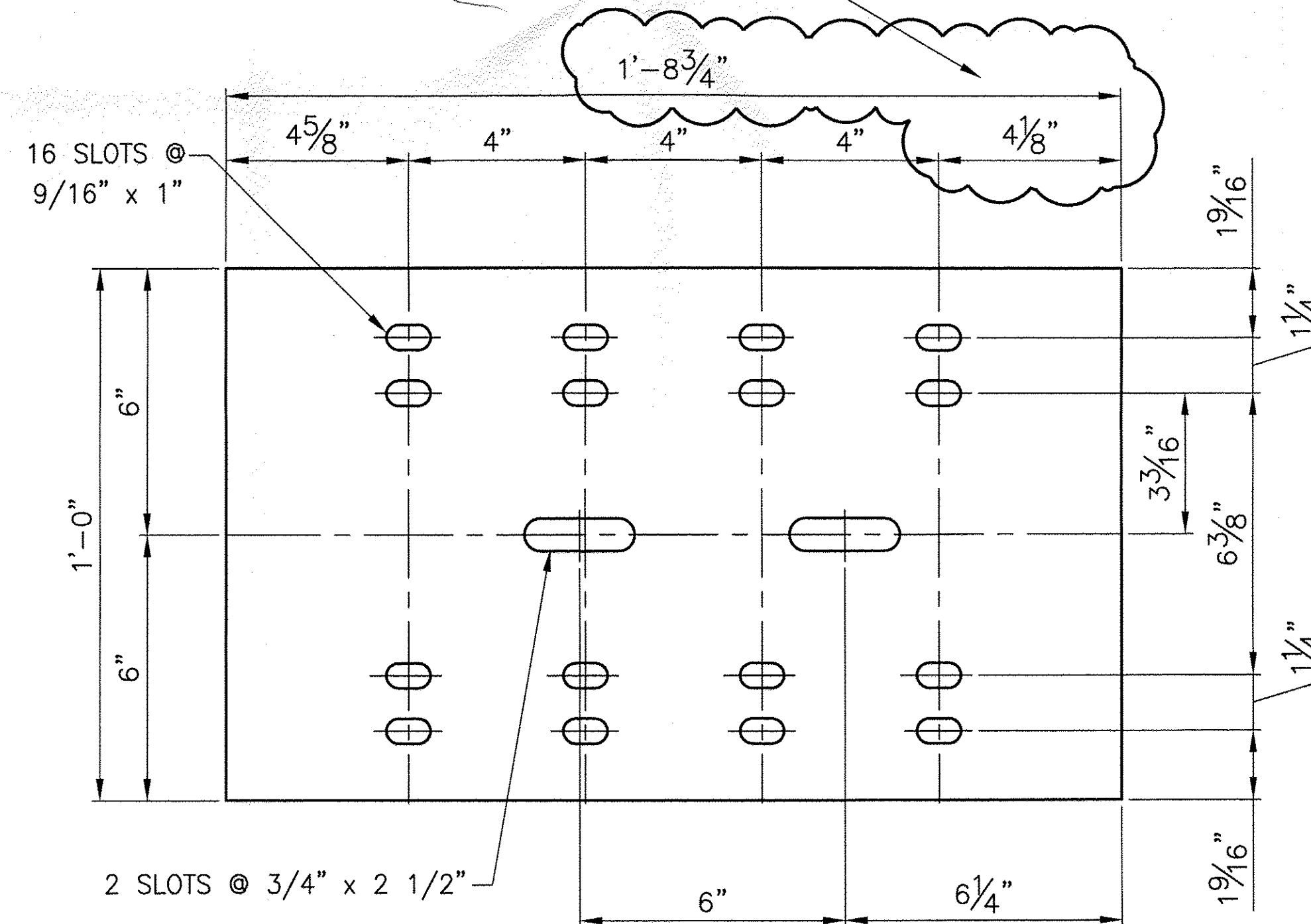
DETAIL "B"
 (FRONT ELEVATION VIEW)

Checking is for general compliance with the design concept of the project and general compliance with the information given in the contract documents only. Any action shown is not an approval and is subject to the requirements of the plans and specifications. Any action shown on a specific item shall not indicate the checking of an assembly of which the item is a component. Contractor is solely responsible for discussion which shall be confirmed and corrected at the job site. Fabrication processes, techniques of construction, safety precautions, and coordination of its work with that of all other trades and the satisfactory performance of its work.

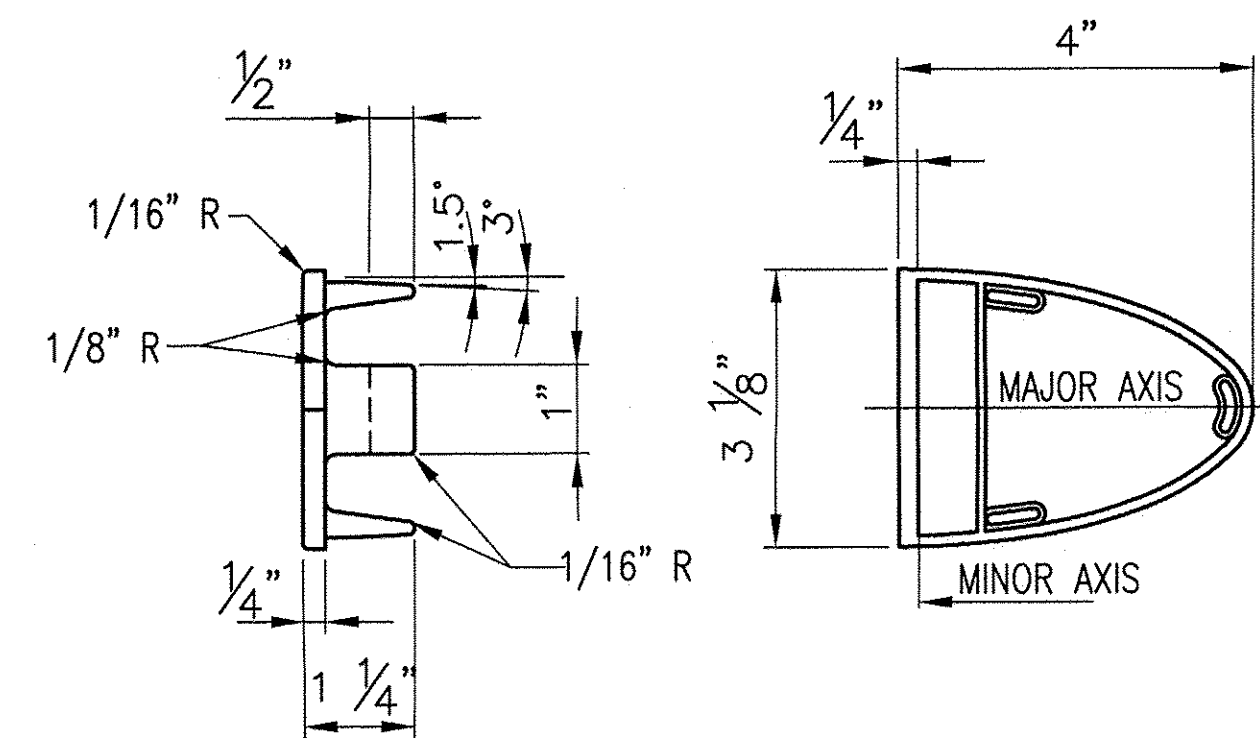
Reviewed By: *Shanta Keller* Date: *3/31/10*



SECTION A-A



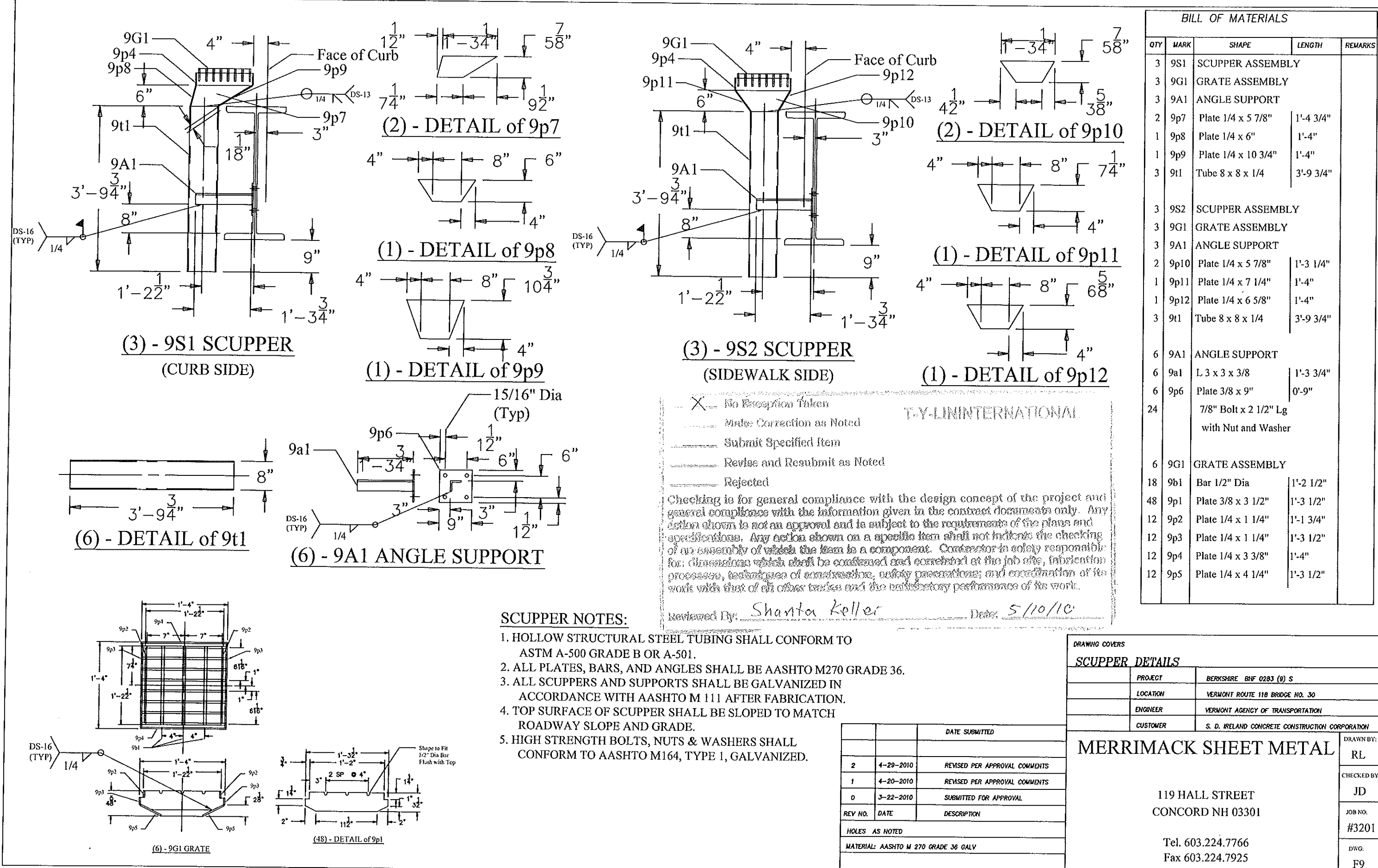
3 REQ'D. ~ BACK-UP PLATE BUP1
 (1/4" THK. PLATE ~ A36 - GALV.)



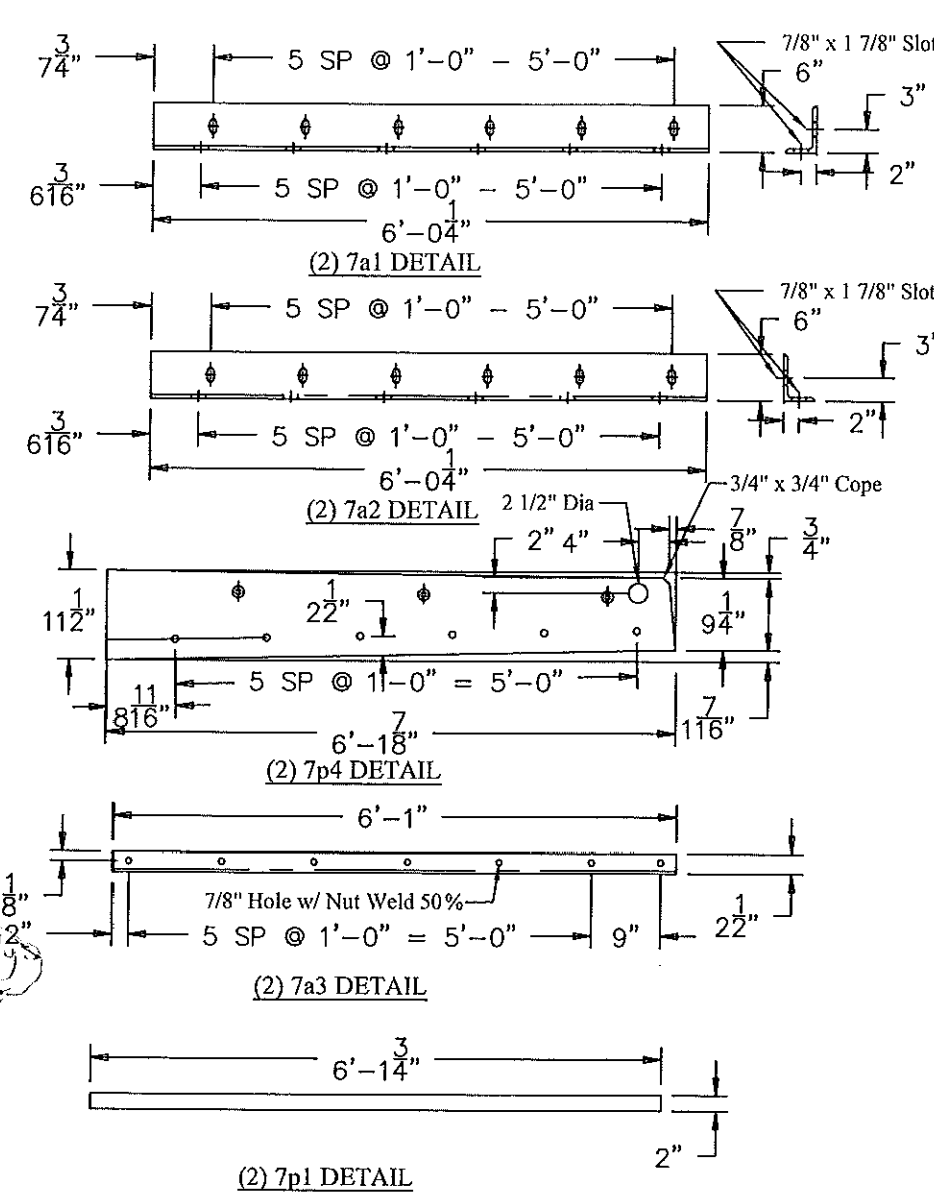
4 ~ REQ'D END CAPS (3 1/8" x 4") 'EC1'
 #19344

ANODIZED
 (SEE NOTES ON LB1)

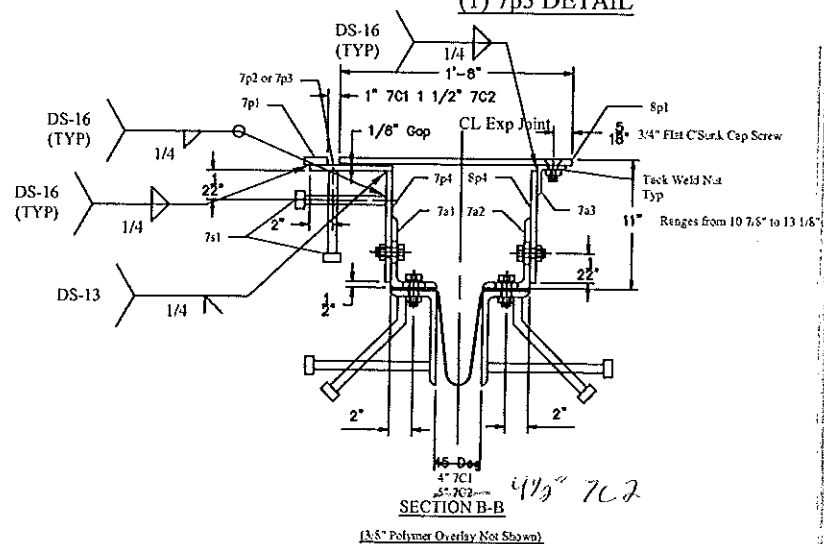
BRIDGE No. 30		PROJECT No. BHF 0283 (9) S		ITEM No: 621.745	
APPROVED: _____			REC'D APPROVAL _____		
			DRAWING _____		
L.B. FOSTER COMPANY					
1016 GREENTREE ROAD					
PITTSBURGH, PENNSYLVANIA 15220					
FOR: A.D. ROSSI CORPORATION					
VERMONT AGENCY OF TRANSPORTATION					
TOWN OF BERKSHIRE, COUNTY OF FRANKLIN					
3-LINE SEMI-ELLIP. ALUM. APPROACH RAIL FOR VT RTE 118					
3L ALUMINUM APPROACH RAIL ~ MISC DETAILS					
MADE CMS		DATE 02/18/10	JOB No. AR0624		CUST. No.
CHECK BLJ	DATE 02/25/10	DRAWING LB16(LAST)		REV. No.	
ITE					



Tel. 603.224.7766
Fax 603.224.7925



BILL OF MATERIALS				
QTY	MARK	SHAPE	LENGTH	REMARKS
1	7C1	SIDEWALK ASSEMBLY		Abut 1
1	7C2	SIDEWALK ASSEMBLY		Abut. 2
2	7a1	1.6 x 4 x 1/2"	6'-0 1/4"	
2	7a2	1.6" x 4" x 1/2"	6'-0 1/4"	
2	7a3	1.2" x 2" x 1/2" x 1/2"	6'-1"	
2	7p1	Plate 5/8 x 2"	6'-1 3/4"	
1	7p2	Plate 1/2 x 7"	6'-1 3/4"	
1	7p3	Plate 1/2 x 6 1/2"	6'-1 3/4"	
2	7p4	Plate 1/2 x 11 1/2"	6'-1 7/8"	
1	7p5	Plate 1/2 x 6 1/2"	0'-9 1/2"	
1	7p7	Plate 1/2 x 5 1/2"	0'-9 1/2"	
1	7p8	Plate 1/2 x 5 1/2"	10'-7/8"	
2	7p9	Plate 5/8 x 2"	1'-8"	
2	7p10	Plate 5/8 x 2"	10'-11 1/2"	
2	8p1	Plate 1/2 x 20"	6'-3"	
2	8p2	Plate 1/2 x 20"	1'-10 1/2"	
2	8p3	Plate 1/2 x 10 1/8"	1'-8"	
2	8p4	Plate 1/2 x 11 5/8"	6'-1 7/8"	
28	7a1	3/4" x 7" Welded Stud		Str
24	Bolt	3/4" x 2" Wt w/ Nut & Washer		
14	Flat C/Sunk Cap Screw	1/2" x 1 1/2" Lg w/ Nut		Coat



Checking for general compliance with the design concept of the project and general compliance with the information given in the contract documents only. An action shown is not an approval and is not a confirmation of the plans and specifications. Any action shown on a specific item shall not be taken as evidence of an approval of which the item is a component. Contractors are fully responsible for dimensions which shall be confirmed and controlled at the job site, fabrication processes, techniques of construction, safety precautions, and maintenance of the work with that of all other trades and the satisfactory performance of the work.

		DATE SUBMITTED
3	5-6-2010	REVISED PER APPROVAL COMMENTS
2	4-29-2010	REVISED PER APPROVAL COMMENTS
1	4-20-2010	REVISED PER APPROVAL COMMENTS
0	3-22-2010	SUBMITTED FOR APPROVAL
REV NO.	DATE	DESCRIPTION

INDEXES AS NOTED

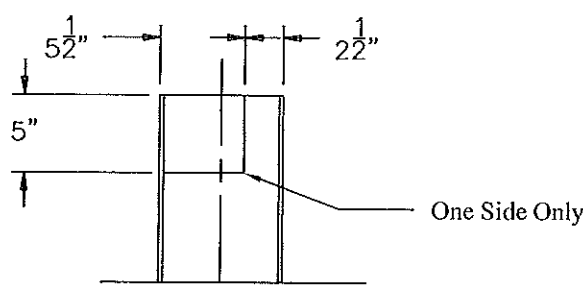
MATERIAL: AASHTO M 270 GRADE 36 GALV

DRAWING COORDS		DRAWN BY	
CURB LAYOUT & DETAILS		RL	
PROJECT	RESERVE BUS 6084 (RD 2)	CHECKED BY	JD
LOCATION	VENOMOT ROUTE 178 BRIDGE NO. 20	DATE	03/20/01
ENGINEER	VENOMOT AGENCY OF TRANSPORTATION	DIST	F7
CUSTOMER	S. D. IRELAND CONCRETE CONSTRUCTION CORPORATION		

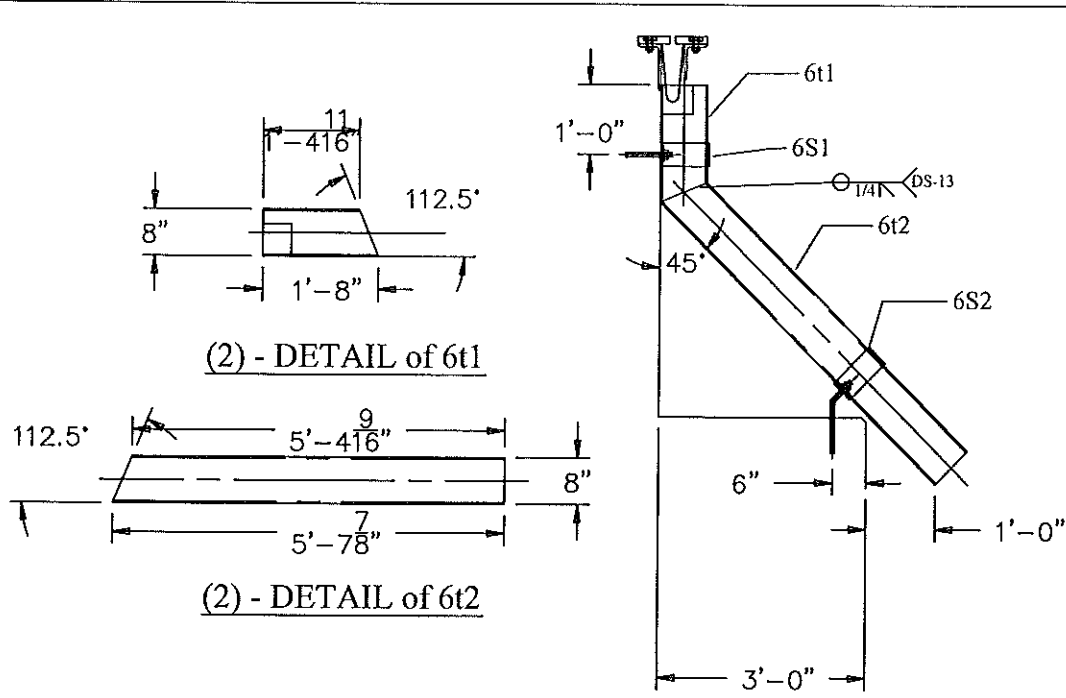
MERRIMACK SHEET METAL

119 HALL STREET
CONCORD NH 03301

Tel. 603.224.7766
Fax 603.224.7925



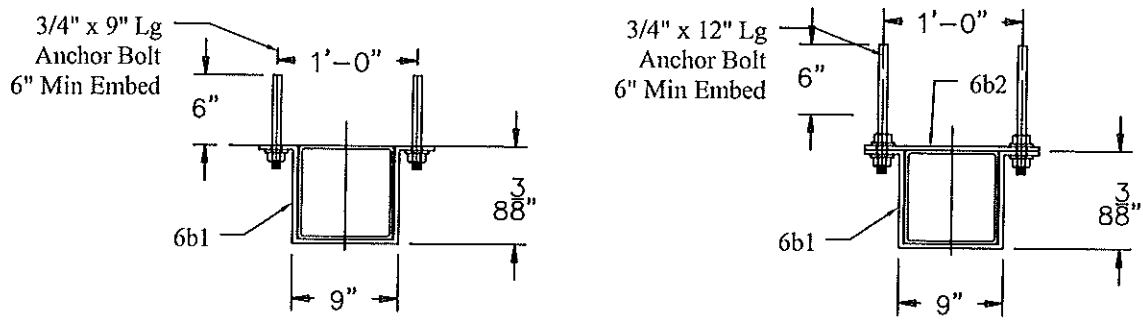
Detail of 6t1 Cutout
for Trough



(2) - 6D1 DOWNSPOUT

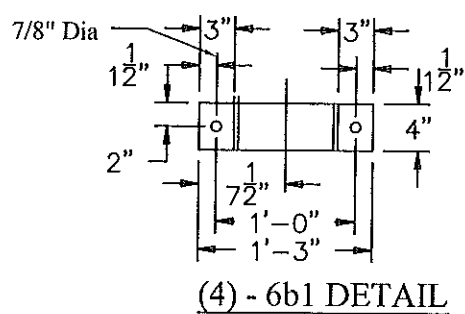
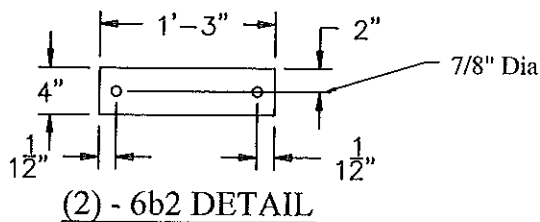
BILL OF MATERIALS				
QTY	NUM	SHAVE	LEDSH	HOWERS
2	6D1	DOWNSPOUT ASSY		
2	6S1	STRAP ASSY		
2	6S2	STRAP ASSY BENT ANCHOR		
2	6t1	Tube 8" x 8" x 1/4"	1'-4"	
2	6t2	Tube 8" x 8" x 1/4"	5'-7 3/8"	
2	6S1	STRAP ASSY		
2	6S1	Bar 3/8" x 4"	2'-7"	
4		3/4" x 9" Lg Richmond Anchor Bolts w/ Nut & Washer		
2	6S2	STRAP ASSY BENT ANCHOR		
2	6S1	Bar 3/8" x 4"	2'-7"	
2	6S2	Bar 3/8" x 4"	1'-3"	
4		3/4" x 12" Lg Richmond Anchor Bolts Bent w/ 2 Nuts & 2 Washers		

DOWNSPOUT NOTES:
1. BOLLARD STRUCTURAL STEEL SHALL CONFORM TO ASTM A-500
2. ALL PLATES AND BOLTS SHALL CONFORM TO ASTM A-36 GRADE 36
3. DOWNSPOUT AND HANGERS SHALL BE GALVANIZED IN
4. CONFORMANCE WITH ASTM A-123 TYPE B GALVANIZING
5. ALL BOLTS AND RELATED HARDWARE SHALL BE ASTM A-307 AND
SHALL BE GALVANIZED IN CONFORMANCE WITH ASTM A-123
(AS NOTED M-20)



(2) 6S1 - STRAP ASSY

(2) 6S2 - STRAP ASSY
(BENT ANCHOR)



Checklist for general compliance with the design concept of the project and general compliance with the information given in the contract documents only. Any action shown is not an approval and is subject to the requirements of the plans and specifications. Any action shown on a specific item shall not constitute the checking of an assembly of details the item is a component. Contractor is solely responsible for dimensions which shall be confirmed and controlled at the job site, before any processing, installation of components, under processing and completion of the work with that of all other trades and the satisfactory performance of the work.

Reviewed By: Shanta Keller Date: 5/28/10

DESIGN CHECKS

DOWNSPOUT LAYOUT & DETAILS

PROJECT	VERMONT ROUTE 118 BRIDGE NO. 30
LOCATION	VERMONT ROUTE 118 BRIDGE NO. 30
ENGINEER	VERMONT AGENCY OF TRANSPORTATION
CUSTOMER	S. S. IRELAND CONCRETE CONSTRUCTION CORPORATION

MERRIMACK SHEET METAL

119 HALL STREET
CONCORD NH 03301

Tel. 603.224.7766
Fax 603.224.7925

DESIGNED BY:

RL

CHECKED BY:

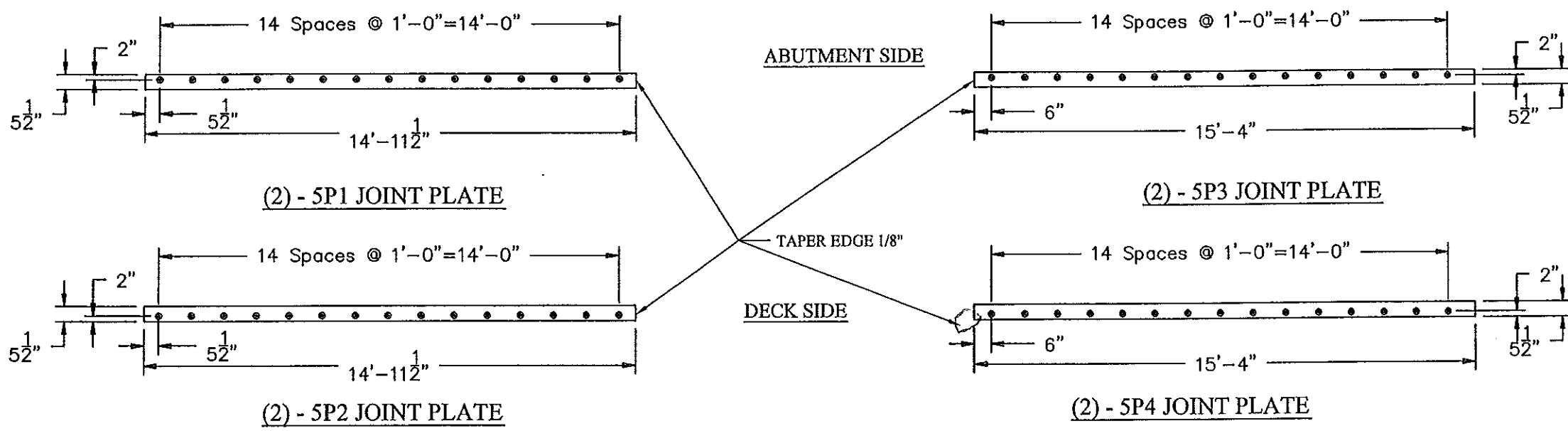
JD

JOB NO.

#3201

STUD

F6



BILL OF MATERIALS				
QTY	MARK	SHAPE	LENGTH	REMARKS
1	SP1	JOINT PLATE		
2	Sp1	Plate 1 1/4 x 5 1/2"	14'-11 1/2"	
30	3/4"	Hexhead Bolts x 2" lg with nut		
2	SP2	JOINT PLATE		
2	Sp2	Plate 1 1/4 x 5 1/2"	14'-11 1/2"	
30	3/4"	Hexhead Bolts x 2" lg with nut		
2	SP3	JOINT PLATE		
2	Sp3	Plate 1 1/4 x 5 1/2"	15'-4"	
30	3/4"	Hexhead Bolts x 2" lg with nut		
2	SP4	JOINT PLATE		
2	Sp4	Plate 1 1/4 x 5 1/2"	15'-4"	
30	3/4"	Hexhead Bolts x 2" lg with nut		

No Revision Taken

Make Correction as Noted

Submit Specified Item

Revise and Resubmit as Noted

Rejected

T-Y-L INTERNATIONAL

Checking is for general compliance with the design concept of the project and general compliance with the information given in the contract documents only. Any action shown is not an approval and is subject to the requirements of the plans and specifications. Any action shown on a specific item shall not be taken as the design of an assembly of which the item is a component. Contractor is solely responsible for dimensions which shall be confirmed and corrected at the job site, including the processes, techniques of construction, safety procedures and coordination of the work with that of all other trades and the resulting performance of the work.

Reviewed By: Shanta Keller Date: 5/26/10

HOLE LAYOUT

DATE SUBMITTED		
1	4-20-2010	REVISED FOR APPROVAL COMMENTS
2	5-25-2010	SUBMITTED FOR APPROVAL
REV NO.	DATE	DESCRIPTION
NOTES: AS NOTED		
MATERIAL: AS NOTED IN 210 GRADE 50 ONLY		

DRAWING COVERS

PLATE DETAILS

PROJECT	RECONSTRUCT HWY 202 (A) 2
LOCATION	VERMONT ROUTE 118 BRIDGE NO. 30
ENGINEER	VERMONT AGENCY OF TRANSPORTATION
CUSTOMER	S. D. IRELAND CONCRETE CONSTRUCTION CORPORATION

MERRIMACK SHEET METAL

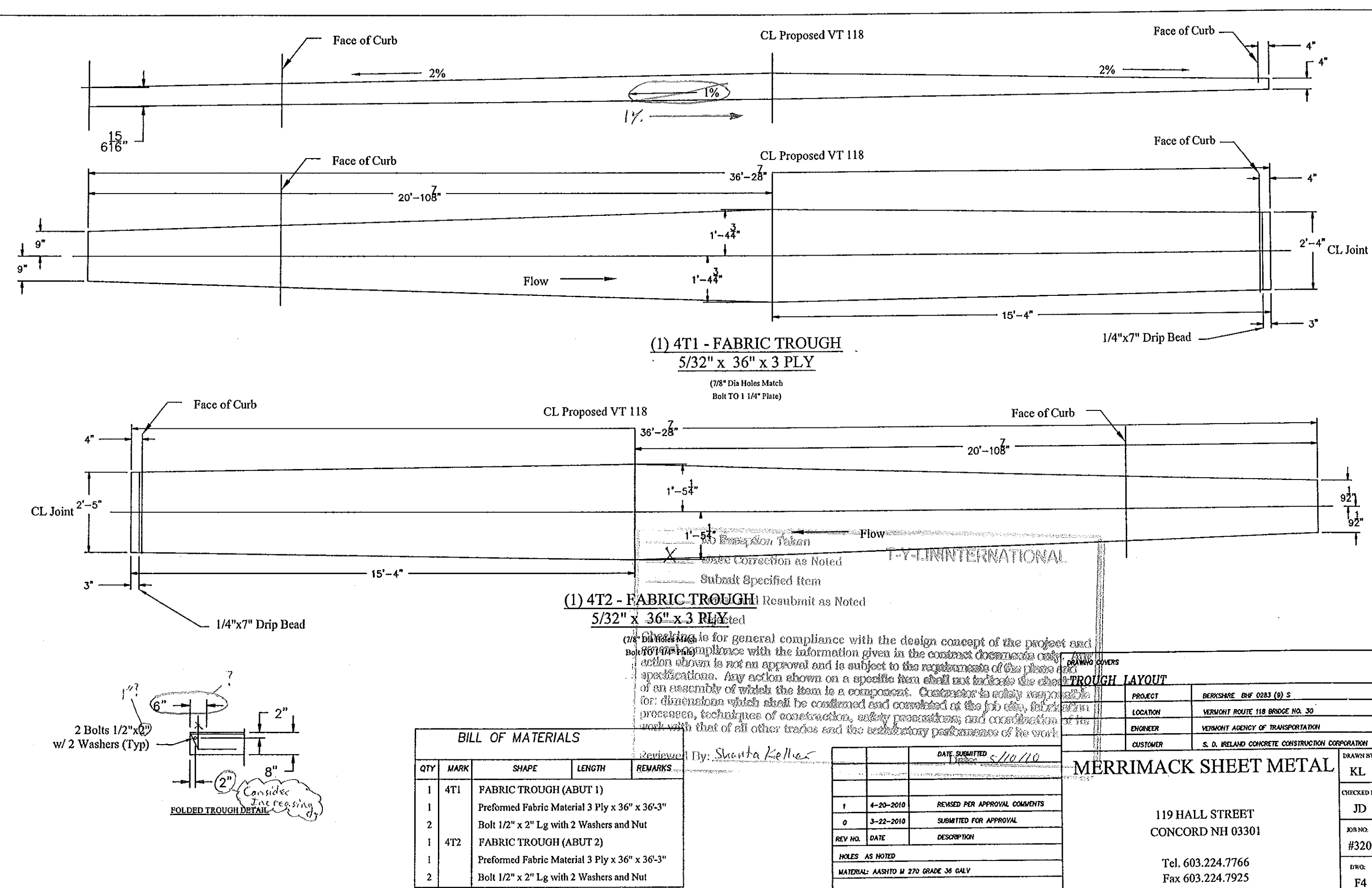
119 HALL STREET
CONCORD NH 03301
Tel. 603.224.7766
Fax 603.224.7925

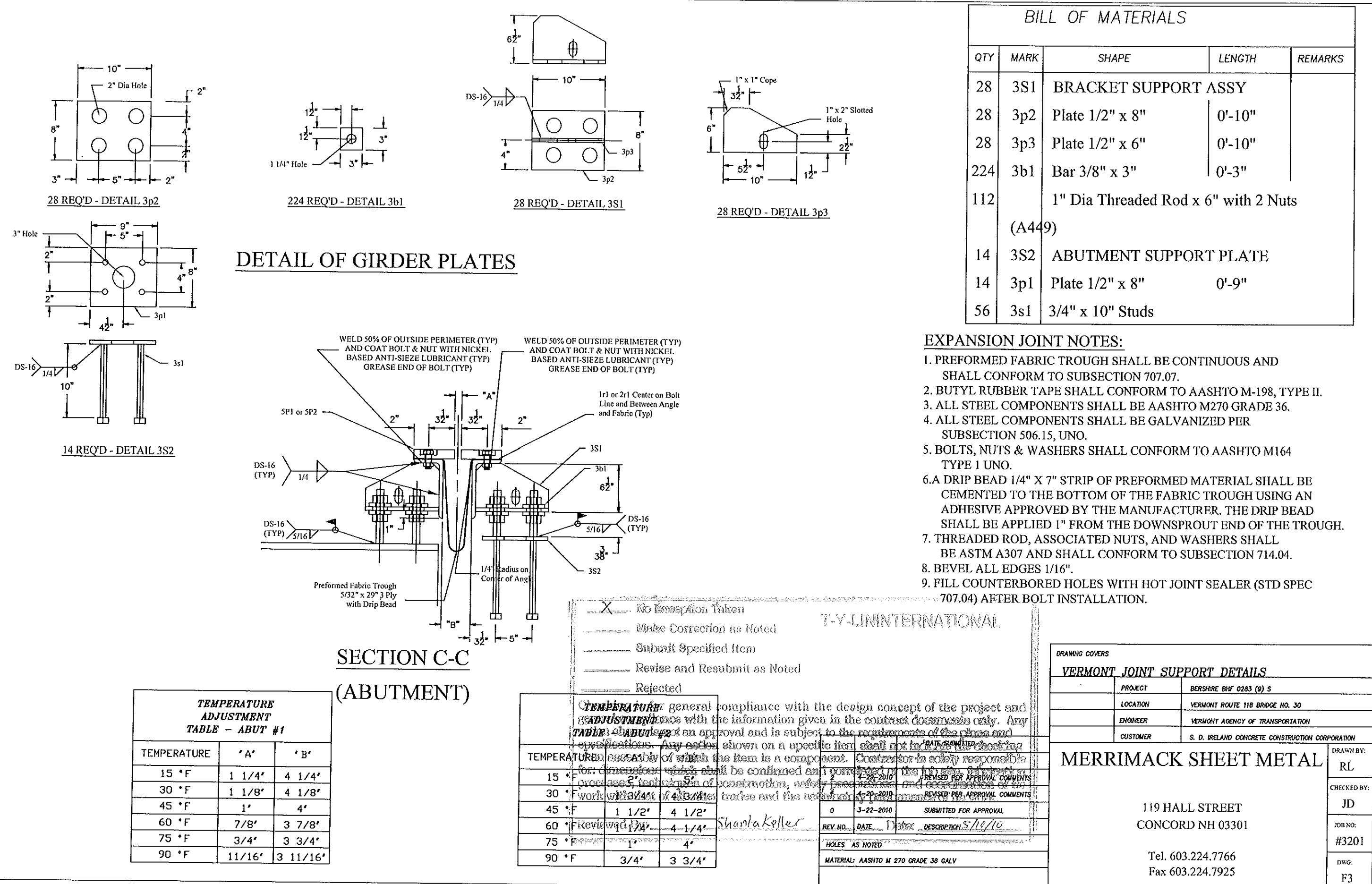
DRAWN BY:
RL

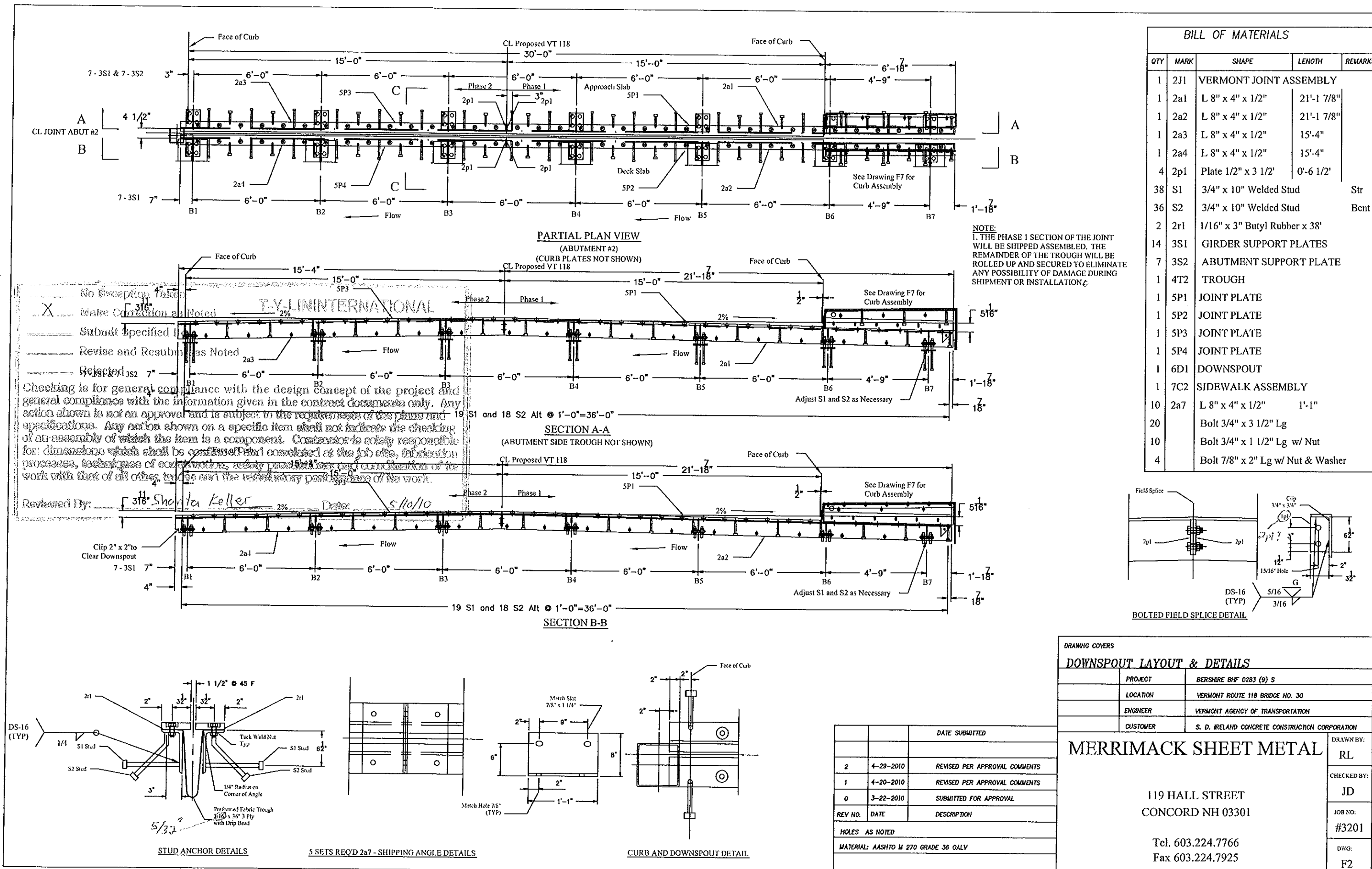
CHECKED BY:
JD

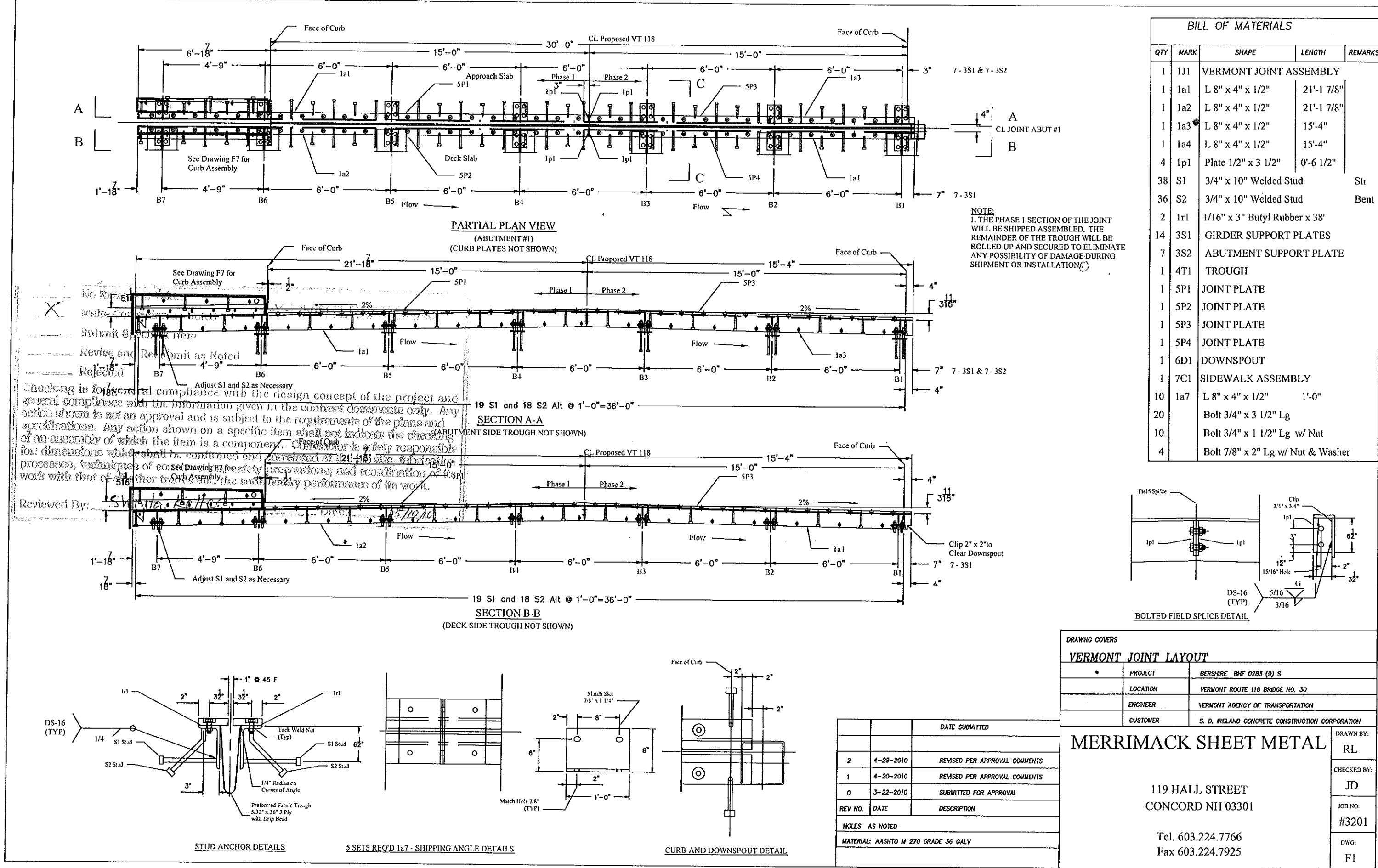
WORK:
#3201

DWG:
FS









PROJECT NAME

PREQUALIFIED JOINT WELDING PROCEDURE

PROCEDURE SPECIFICATION

PROJECT NUMBER

BERKSHIRE

BHF 6283(9)S

Material specification

A36/A572/A588

Welding process

FCAW

Manual or machine

SEMI-AUTOMATIC

Position of welding

FLAT OR HORIZONTAL

Filler metal specification

ANSI 5.20

Filler metal classification

ALLOY RODS EMAL SHIELD IT 71 ULTRA (E71T-1)

Flux

N/A

Shielding gas

CO₂

Flow rate

35 CFH

Single or multiple pass

SINGLE AND MULTIPLE

Single or multiple arc

SINGLE

ELECTRICAL STICK-OUT

3/8"-3/4"

Welding current

DC

Polarity

REVERSE

Welding progression

N/A

Root treatment

NONE

Preheat and interpass temperature

50°F to 375°F MAX. 70°F MIN. 110°F MIN.

Postheat treatment

NONE

Supported by

WPS 007 and 008

OK'D BY

OK'D BY

WELDING PROCEDURE							APR 01 2010	
Pass no.	Electrode size	Welding current		Travel speed I, P, M	Weld size (in)	Joint detail	RESUBMIT	APPROVED
		Amperes	Volts					
1	.045	220-240	26-28	16-18	3/16"		BY DATE 01/06/10	
1	.045	220-240	26-28	12-13	1/4"			
All	.045	210-230	25-27	9-10	5/16"			
1	.045	220-240	26-28	16-18	3/8"			
2	.045	220-240	26-28	16-18	(3 passes)			
3	.045	220-240	26-28	16-18				
1	.045	210-230	25-27	9-11	7/16"			
2	.045	210-230	25-27	9-11	(3 passes)			
3	.045	210-230	25-27	9-11				

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

Procedure no. DS-16

Contract Merrimack Sheet Metal, Inc.

Authorized by Scott Chaschke

Revision

Date 11/26/01

QUALIFIED JOINT WELDING PROCEDURE

PROJECT NAME

PROCEDURE SPECIFICATION

PROJECT NUMBER

Material specification

A36/A572-45RB

BERTSHIRE BHF-0287(9)S

Welding process

FCAN

Manual or machine

SEMI-AUTOMATIC

Position of welding

FLAT for groove welds

Horizontal for fillet welds

1G, 2F

Filler metal specification

AWS 5.20

Filler metal classification

ALLOY RODS DUAL SHIELD TIG WELDER (E71T-1)

Flux

N/A

Shielding gas

CO2

Flow rate 25 CFH

Single or multiple pass

SINGLE AND MULTIPLE

Single or multiple arc

SINGLE

ELECTRICAL STICK-OUT 3/8"-3/4"

Welding current

DC

Polarity

REVERSE

Welding progression

N/A

Post treatment

NONE

Preheat and interpass temperature

50 to 375 °F INCL. 70 °F INCL. 150 to 210 °F INCL.

Postheat treatment

NONE

Supported by

WPS-007 and 008

WELDING PROCEDURE

CK'D BY

OK'D BY

RECEIVED

DATE

APR 01 2003

04/26/03

Pass no.	Electrode size	Welding current		Travel speed	Weld size	Joint detail
		Amperes	Volts	in./min.	in.	
1	.045	220-240	26-28	16-18	3/16"	
1	.045	220-240	26-28	10-12	1/4"	
all	.045	220-240	26-28	14-16	5/16"	
		FILLET WELDS				
FILLET WELDS SHALL BE 1/4 OF t BUT NOT MORE THAN 3/8"						
SEE PROCEDURE DS-16 FOR PARAMETERS OF FILLET WELDS						

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

Procedure no.

DS-13

Contractor

Merrimack Sheet Metal, Inc.

Revision no.

Authorized by

Scott Blawie

Form E-2

Date

1/26/01

TYLININTERNATIONAL

engineers | planners | scientists

- [X] Merrimack Sheet Metal – Jim Dussault
- [X] S.D. Ireland Companies – Matt Wheeler

TYL INTERNATIONAL
engineers | planners | scientists

Date: 05/10/2010

TO: Rich Klein – Project Manager
S.D. Ireland Companies
P.O. Box 2286
South Burlington, VT 05407

Project Name: Berkshire Project No. BHF 0283(9)S

Structure Identification: Bridge No. 30, VT118 over Mississquoi River
The following Rev. 3 Bridge Expansion Joint and Downspout Structural Steel details [Item #516.11, Bridge Expansion Joint, Vermont and #506.60 Structural Steel] for the above project (Vendor's Job # 3201) transmitted in your e-mails dated May 5, 20010 have been reviewed and are being returned herewith.

Sheets: F3, F6, and F9 and weld procedures DS-13 and DS-16

are approved [X]

Sheets: F1, F2, F4, F5, F7, and F8

Are approved “as noted” [X].

Upon Receipt of these “as noted” or “approved” plans, please make appropriate changes and submit white prints for our use in the record plans for this project.

You must provide written notice to Vermont Agency of Transportation (VTRANS) Structures Section office as to the date fabrication represented by these drawings will begin. That notice must be received at least seven days prior to that date, as per Specifications 506.03. Any material fabricated prior to the notification date is subject to rejection without further cause.

Sincerely,

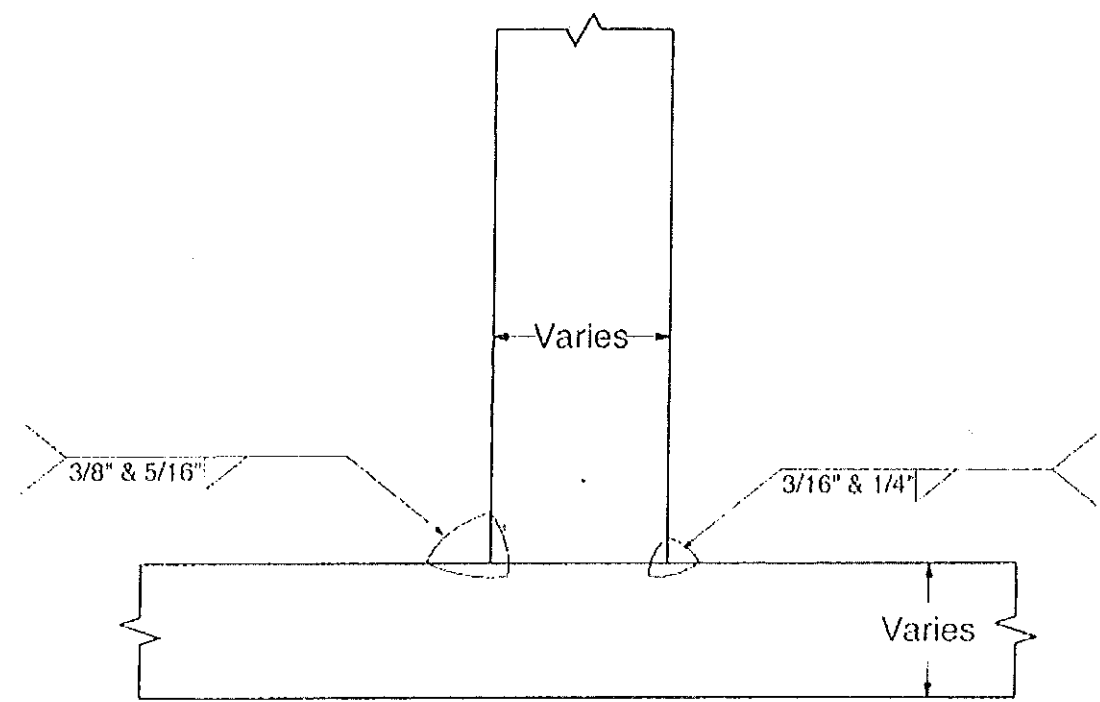
Rich Klein

Attachments: One set of prints (and welding procedures).

cc:

- [X] VTRANS Resident Engineer Carl Gleason - w/prints
- [X] Contractor Rich Klein – Project Manager, S.D. Ireland Concrete Construction Corp. - w/prints
- [X] VTRANS Construction Section - letter only
(To: Const. Eng. David Hoyne, Att: Reg. Const. Eng. Alan P. Campo, P.E.)
- [X] VTRANS Consultant Project Manager – Sherward G. Farnsworth - w/prints
- [X] VTRANS Materials & Research Section (C&IA Unit) - letter only
- [X] VTRANS Structures Section - Shop Inspector Jeff Clark - w/prints

Joint Detail



MEMO

Supporting PORs: POH AL122, AL-100

VERIFIED
RECEIVED
DATE BY
MAR 8 4 2010
RESUBMIT APPROVED
BY DATE 3/1/10



TIMOTHY A. MILLER
CWI 01061151
QCI EXP. 6/01/10

Berkshire BHF 0283(9)S
VT 118 Br 30
3 Rail Welding Procedures
Feb 26, 2010

L.B. Foster Co.
Welding Procedure Specification

Page 1 of 2
2F AL (AWS 56)

Material Spec 6061-T6 or 6061-T8						
Welding Process(es) GMAW						
Position of Welding Horizontal						
Manual ☐ Machine ☐ Semi-Automatic ☒ Automatic ☐						
Filler Metal Specification AWS A5.10						
Filler Metal Classification ER5356 F22						
Flux N/A						
Shielding Gas 100% Argon Gas Flow Rate 35 CFH						
Single or Multiple Pass Single						
Single or Multiple Arc Single						
Welding Current Direct Current						
Polarity AC ☐ DCEPR ☒ DCEN ☐ Pulsed ☐						
Welding Progression Up ☐ Down ☐						
Root Treatment Wire Brush						
Preheat Temperature 60 Deg. F min. Interpass Temperature N/A						
Postheat Treatment None						
Heat Input Min N/A Max N/A						
WELDING PROCEDURE						
Pass No	Electrode Size	Amperes	Volts	Travel Speed	Other	Joint Detail
1/16"	0.035"	100	23	20 IPM		
1/16"	0.035"	100	23	20 IPM		
5/16"	0.035"	160	23	20 IPM		
3/8"	0.035"	160	23	20 IPM		
Min.	120	20	18 IPM			
Max.	192	20	22 IPM			
RECEIVED CH 3Y DRD BY JUC MAR 04 2010 RESUBMIT APPROVED						
This procedure may vary due to fabrication technique, fit-up, pass size, etc., within the limitation of variables given in Section 5						
Procedure No 2F AL (AWS 56)		Contractor L.B. Foster Co.				
Revision No 1		Authorized By Timothy A. Miller			Date 1/22/2010	

L. B. Foster Co.
Welding Procedure Specification

Page 1 of 2
1G AL (BC-P2)

Material Spec: 6061-T6, 6063-T6

Welding Process(es) GMAW

Position of Welding 1G

Manual ☐ Machine ☐ Semi-Automatic ☒ Automatic ☐

Filler Metal Specification AWS A5.10

Filler Metal Classification ER5356 F22

Flux N/A

Shielding Gas 100% Argon Gas Flow Rate 35 CFH

Single or Multiple Pass Multiple

Single or Multiple Arc Single

Welding Current Direct Current Reverse Polarity

Polarity: AC ☐ DCEP ☒ DCEN ☐ Pulsed ☐

Welding Progression Up ☐ Down ☐

Root Treatment Clean With 55 Wire Brush

Preheat Temperature 60 Deg. F min. Interpass Temperature N/A

Postheat Treatment None

Heat Input Min N/A Max N/A

WELDING PROCEDURE

Joint Detail

Pass No.	Electrode Size	Amps	Volts	Travel Speed	Other
All	.035"	160	23	20 IPM	
Min.	128	19.5	18.6 IPM		
Max.	192	28.5	21.4 IPM		

VT TRANS
RECEIVED
CR'D BY JWC
MAR 04 2010
RESUBMIT APPROVED
BY DATE 3/11/10

BC-P2

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

Procedure No 1G AL (BC-P2) Contractor L.B. Foster Co.
Authorized By Timothy A. Miller Date 1/22/2010

Berkshire BHF 0283(9)S
VT 118 Br 30
3 Rail Welding Procedures
Feb 26, 2010

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[X] VTRANS Materials & Research Section (C&IA Unit) - letter only
[X] VTRANS Structures Section - Shop Inspector Jeff Clark w/prints

TYLINTNINTERNATIONAL
engineers | planners | scientists

Date: 04/1/2010

TO: Ms. Katrina Carreau
A.D. Rossi Corporation
564 Concord Avenue
St. Johnsbury, VT 05819

Project Name: Berkshire Project No. BHF 0283(9)S

Structure Identification: Bridge No. 30, VT118 over Mississquoi River
The following Aluminum Bridge Railing and Aluminum Approach Railing details [Item #525.225, Bridge Railing, Anodized 3 Rail Aluminum, #525.235 Bridge Railing, Anodized Aluminum/Pedestrian, and #621.745 Aluminum Approach Railing, Anodized] for the above project (Vendor's Job # AR0624) transmitted with your letter dated February 26, 2010 have been reviewed and are being returned herewith.

Sheets: LB1, LB2, LB3, LB6, LB7, LB9, LB10, LB11, LB12, LB13, LB14, and LB16 and weld procedures 1G AL (BC-P2) and 2F AL (AWS 56)

are approved [X]

Sheets: LB4, LB5, Lb8 and LB15

are approved "as noted" [X]

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

You must provide written notice to Vermont Agency of Transportation (VTRANS) Structures Section office as to the date fabrication represented by these drawings will begin. That notice must be received at least seven days prior to that date, as per Specifications 506.03. Any material fabricated prior to the notification date is subject to rejection without further cause.

Sincerely,


Attachments: One set of prints (and welding procedures).

cc:
[X] VTRANS Resident Engineer Carl Gleason - w/prints
[X] Contractor Rich Klein – Project Manager, S.D. Ireland Concrete Construction Corp. - w/prints
[X] VTRANS Construction Section - letter only
(To: Const. Eng. David Hoyne, Att: Reg. Const. Eng. Alan P. Campo, P.E.)
[X] VTRANS Consultant Project Manager – Sherward G. Farnsworth - w/prints