

STATE OF VERMONT AGENCY OF TRANSPORTATION



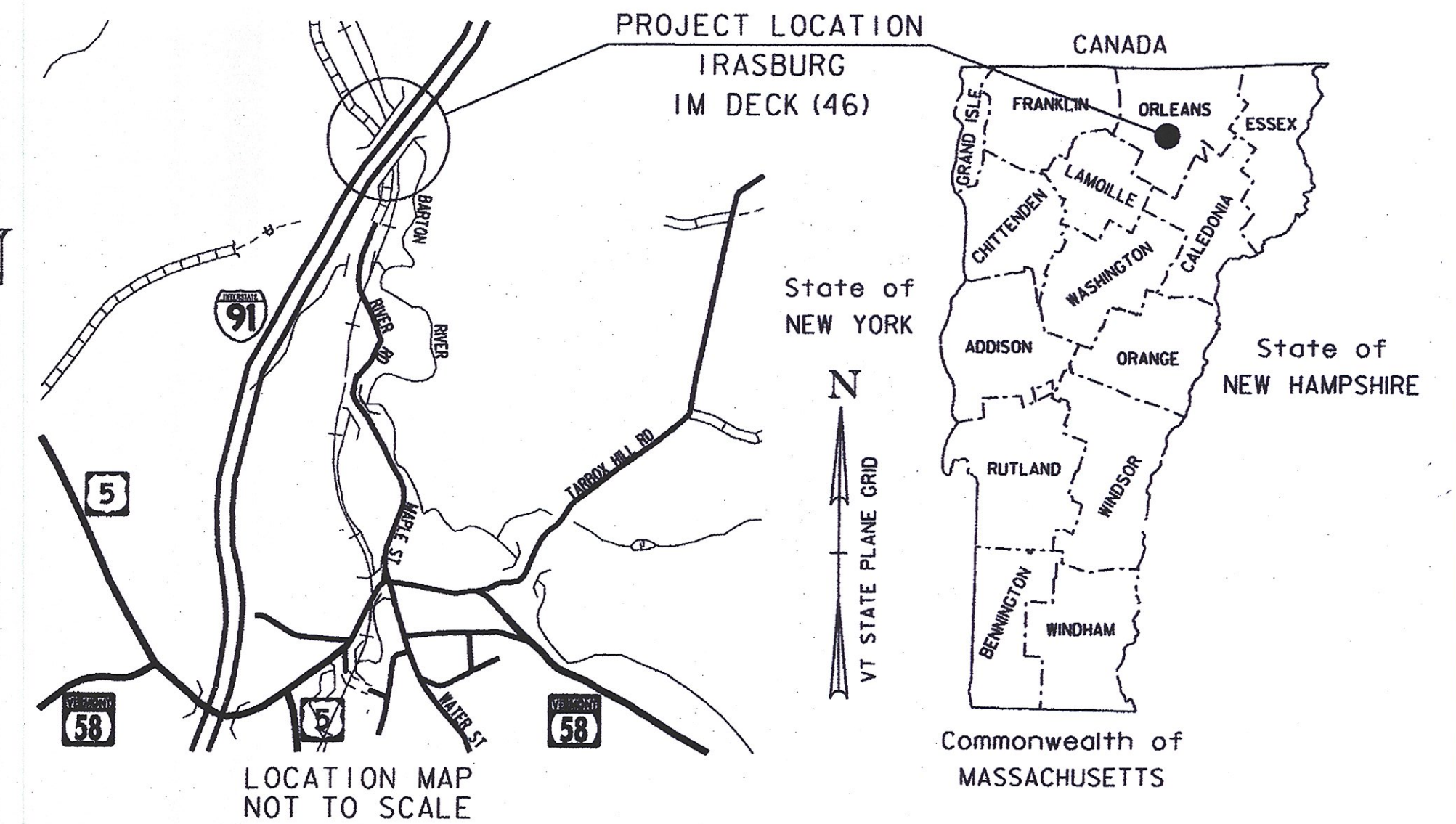
PROPOSED IMPROVEMENT BRIDGE PROJECT TOWN OF IRASBURG COUNTY OF ORLEANS

INTERSTATE 91 (PRINCIPAL ARTERIAL) BRIDGE NO. 107N

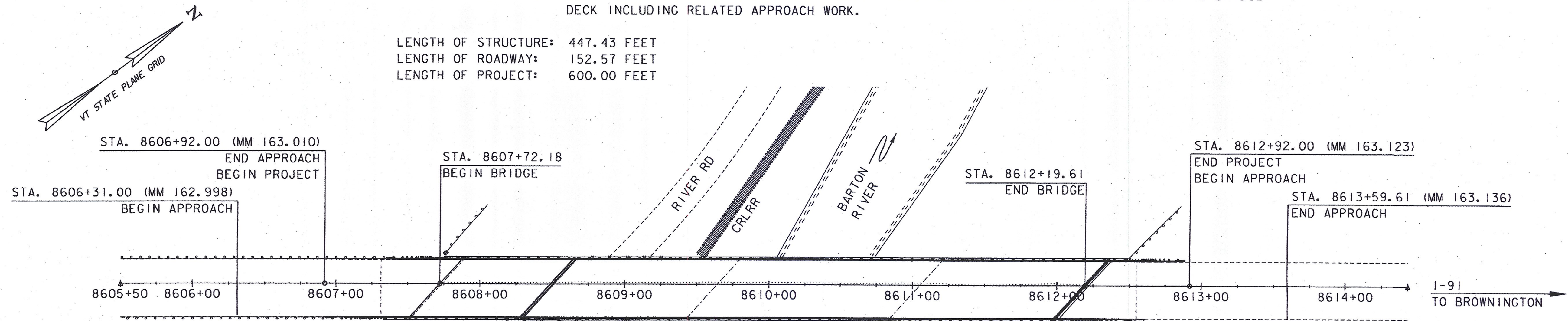
PROJECT LOCATION: LOCATED IN THE TOWN OF IRASBURG, ON INTERSTATE 91, APPROXIMATELY 0.430 MILES SOUTHERLY OF THE IRASBURG/BROWNINGTON TOWN LINE.

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

LENGTH OF STRUCTURE: 447.43 FEET
LENGTH OF ROADWAY: 152.57 FEET
LENGTH OF PROJECT: 600.00 FEET



RECORD PLANS	
CONTRACTOR:	J.P. SICARD, INC. - BARTON, VT
RESIDENT ENGINEER:	SETH HISMAN
CONSTRUCTION BEGAN:	MAY 5, 2016
CONSTRUCTION COMPLETE:	OCTOBER 31, 2016
RECORD PLANS BY:	SETH HISMAN & JESSE IVES
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.	
BY	RESIDENT ENGINEER
DATE	10/14/16
NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found by contacting Vtrans Records Management.	



CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

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

SCALE 1" = 40'-0"
40 0 40

	<p>540 Commercial Street Manchester, NH 03101 (603) 668-8223 www.cldengineers.com</p>	DIRECTOR OF PROJECT DELIVERY
		APPROVED DATE 2/4/2016
		PROJECT MANAGER : JENNIFER FITCH, P.E.
		PROJECT NAME : IRASBURG PROJECT NUMBER : IM DECK (46)
		SHEET 1 OF 49 SHEETS

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STRUCTURE DETAIL SHEETS

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

HIGHWAY SAFETY AND DESIGN DETAIL SHEETS

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

VAOT STANDARD SHEETS

- E-193 08/18/1995 PAVEMENT MARKING DETAILS
 G-1 11/10/2015 STEEL BEAM GUARDRAIL WITH STEEL POSTS, STEEL BEAM GUARDRAIL WITH WOOD POSTS
 G-1d 02/10/2014 STEEL BEAM GUARDRAIL APPROACH END TERMINAL, STEEL BEAM GUARDRAIL TRAILING END TERMINAL
 T-1 08/06/2012 TRAFFIC CONTROL GENERAL NOTES
 T-11 08/06/2012 CONSTRUCTION APPROACH SIGNING DIVIDED HIGHWAY ONE LANE CLOSED
 T-12 08/06/2012 TRAFFIC CONTROL DIVIDED HIGHWAY ONE LANE CLOSED
 T-13 08/06/2012 TRAFFIC CONTROL DIVIDED HIGHWAY ONE LANE CLOSED
 T-22 08/06/2012 TRAFFIC CONTROL FOR PAVEMENT MARKING ON DIVIDED HIGHWAY
 T-31 08/06/2012 CONSTRUCTION SIGN DETAILS
 T-42 04/09/2014 BRIDGE NUMBER PLAQUE
 T-44 04/09/2014 MILEMARKER DETAILS STATE AND TOWN HIGHWAYS
 T-55 10/26/2015 SIGN PLACEMENT EXPRESSWAY & FREEWAY
 S-360A 04/23/2012 BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM
 S-360B 04/23/2012 GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM
 S-391 01/16/2014 SNOW BARRIER

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY	1.17	0.86					
POSTING							
OPERATING	1.52	1.11	2.48	1.46	2.10	2.15	2.21
COMMENTS:	H-20 AND 3A. STR. TRUCKS CONTROLLED BY DECK RATING, OTHER TRUCKS CONTROLLED BY GIRDER RATING. HL-93 INVENTORY RATING IS LESS THAN 1.00 FOR MOMENT.						

PROJECT NOTES

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2014, AND ITS LATEST REVISIONS.
 2. THE DESIGN LIVE LOAD SHALL BE HL-93.
 3. ALL WORK AND ANY ASSOCIATED ACTIVITY ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS.
 4. THE CONTRACTOR IS MADE AWARE THAT EXISTING UTILITIES MAY EXIST WITHIN THE CONSTRUCTION LIMITS OF BRIDGE NO. 107N. THE LOCATION OF ANY UTILITY INFORMATION ON THE PLANS IS APPROXIMATE. NO CLAIMS ARE MADE TO THE ACCURACY OR COMPLETENESS OF THE UTILITIES SHOWN. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR LOCATING AND PROTECTING FROM DAMAGE ALL UTILITIES ON SITE DURING ALL STAGES OF CONSTRUCTION. ANY DAMAGE TO UTILITIES DUE DIRECTLY TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE STATE. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
 5. FOLLOWING THE COMPLETION OF ALL OTHER CONSTRUCTION ACTIVITIES, ALL BEAM SEATS SHALL BE CLEANED OFF. THE COST FOR CLEANING BEAM SEATS WILL BE CONSIDERED INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.
 6. ANY DAMAGE TO PRIVATE OR PUBLIC PROPERTY DUE DIRECTLY TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.
 7. LIMITS OF GROUND SURVEY ARE BETWEEN STA 8607+24 AND STA 8612+61. OUTSIDE THESE LIMITS ARE APPROXIMATE LOCATIONS TAKEN FROM AERIAL MAPPING.
- ### ENVIRONMENTAL
8. THE CONTRACTOR SHALL REVIEW AND UNDERSTAND ALL APPLICABLE ENVIRONMENTAL PERMITS AND ENSURE THAT ALL CONSTRUCTION CONDITIONS ARE MET.
 9. EROSION CONTROL MEASURES SHALL BE UTILIZED AS REQUIRED AND SHALL CONFORM TO SECTION 105 OF THE STANDARD SPECIFICATIONS AND THE LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL FROM THE AGENCY OF NATURAL RESOURCES. PAYMENT FOR EROSION CONTROL MEASURES, IF APPLICABLE, WILL BE PAID FOR AS EXTRA WORK IN ACCORDANCE WITH 104.03.
 10. THE CONTRACTOR SHALL PREVENT ANY MATERIAL FROM ENTERING THE WATERWAY, RAILROAD, OR ROADWAY DURING EXCAVATION, PARTIAL REMOVAL OF STRUCTURE, OR CONSTRUCTING THE NEW DECK.
 11. THE DESIGN INTENT IS TO ALLOW THE CONTRACTOR TO STAGE IN THE LANE CLOSURES OF THE TRAVELED ROADWAY OF THE APPROACHES TO THE BRIDGE. ANY STAGING AREAS OUTSIDE OF THIS SHALL BE CLEARED FOR RESOURCES THROUGH THE VTRANS ENVIRONMENTAL UNIT.

TRAFFIC CONTROL

12. SEE TRAFFIC CONTROL SHEET 1 FOR TRAFFIC CONTROL NOTES.

DECK REMOVAL AND RELATED ITEMS

13. ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE" WILL INCLUDE REMOVAL OF ANY PORTIONS OF THE EXISTING STRUCTURE AS SHOWN ON THE PLANS, INCLUDING THE EXISTING BRIDGE DECK AND CURBS, SCUPPERS, BARRIER MEMBRANE, PAVEMENT, AND BRIDGE RAILING, EXCEPT AS NOTED ON SHEET 25. ITEM 529.25, "REMOVAL OF CONCRETE OR MASONRY" WILL INCLUDE REMOVAL OF THE EXISTING CONCRETE CURBS ALONG THE TOPS OF THE WINGWALLS. ITEM 525.10, "REMOVAL OF EXISTING BRIDGE RAILING" WILL INCLUDE REMOVAL OF THE EXISTING BRIDGE RAIL ALONG THE TOP OF THE WINGWALLS. SEE BITUMINOUS CONCRETE/ CONCRETE REMOVAL DETAIL ON SHEET 25.
14. THE TOPS OF THE EXISTING WINGWALLS SHALL BE REMOVED BY MECHANICAL MEANS AND THE REMAINING CONCRETE SHALL HAVE NEAT LINES AND BE SMOOTH. PROTECT ALL ELEMENTS INTENDED TO REMAIN.
15. AFTER REMOVAL OF THE EXISTING BRIDGE DECK, ANY AREAS ON THE CONCRETE BEAM SEAT THAT ARE FOUND TO BE UNSOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE METHOD FOR DETERMINING AREAS OF UNSOUND CONCRETE SHALL BE APPROVED BY THE ENGINEER. THE ENGINEER SHALL MAKE A DETERMINATION AS TO HOW TO REPAIR THE DETERIORATED PORTION OF THE CONCRETE BEAM SEAT AND THE LIMITS OF THE REPAIR. THE REPAIRS WILL BE PAID FOR UNDER ITEM 580.13, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS 1" OR ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II, AS APPLICABLE. QUANTITIES FOR ITEMS 580.13 AND 580.14 AS SHOWN ON THE QUANTITY SUMMARY SHEETS ARE ESTIMATED.
16. THE EXISTING STEEL AND HARDWARE FOR THE FINGER JOINT AT PIER #4 AND THE COMPRESSION JOINT AT ABUTMENT #4 SHALL REMAIN IN-PLACE DURING DECK REMOVAL OPERATIONS AS SHOWN ON SHEET 20, AND THE EXISTING STEEL SHALL BE CLEANED OF REMAINING CONCRETE OR LATENT MATERIAL. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE". IF REMOVAL OF THE JOINT HARDWARE IS DETERMINED TO BE REQUIRED BY THE CONTRACTOR TO FACILITATE THE WORK, THE COST FOR THE REMOVAL OF THE HARDWARE WILL BE CONSIDERED INCIDENTAL TO ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE". RESETTING THE HARDWARE WILL BE CONSIDERED INCIDENTAL TO ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".
17. MINOR REPAIRS TO THE EXISTING COMPRESSION JOINT HARDWARE AT ABUTMENT #4, SPECIFICALLY TO THE STEEL ANGLES ALONG THE LENGTH OF THE JOINT AND ANY OTHER MINOR DAMAGE TO STEEL HARDWARE, MAY BE REQUIRED. ANY AREAS OF THE EXISTING JOINT HARDWARE THAT ARE FOUND TO BE MISSING OR DAMAGED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE ENGINEER SHALL MAKE A DETERMINATION AS TO HOW TO REPAIR THE DAMAGED HARDWARE IN ACCORDANCE WITH THE PROVISIONS OF SECTION 506 AND THE LIMITS OF THE REPAIR. ANY REPAIRS SHALL BE MADE WITH GRADE A36 STEEL AND SHALL BE GALVANIZED. THE GALVANIZING OF THE NEW STEEL SHALL BE REPAIRED PER SUBSECTION 726.08, IF APPLICABLE. THE REPAIRS TO THE JOINT WILL BE PAID FOR UNDER ITEM 506.60, "STRUCTURAL STEEL". AN ESTIMATED QUANTITY FOR ITEM 506.60 IS SHOWN IN THE QUANTITY SUMMARY SHEETS.
18. THE COMPRESSION JOINT SEAL AT ABUTMENT #4 SHALL BE REMOVED AND REPLACED. THIS WORK WILL BE PAID FOR UNDER ITEM 900.640, "SPECIAL PROVISION (REMOVE AND REPLACE COMPRESSION JOINT SEAL)".

CLD 15-0223 MODEL+Sheet01



PROJECT NAME:	IRASBURG
PROJECT NUMBER:	IM DECK(46)
FILE NAME:	z15all6notes-107N.dgn
PROJECT LEADER:	J. BYATT
DESIGNED BY:	S. BEAUMONT
INDEX OF SHEETS & PROJECT NOTES SHEET 1	SHEET 2 OF 49
PLOT DATE:	3/8/2016
DRAWN BY:	M. SMITH
CHECKED BY:	J. BYATT

STEEL

19. AFTER ALL PAVEMENT AND MEMBRANE ARE REMOVED BUT PRIOR TO THE REMOVAL OF THE EXISTING CONCRETE DECK, THE CONTRACTOR SHALL TAKE TOP OF DECK ELEVATIONS ALONG THE CENTERLINE OF EACH BEAM AT TENTH POINTS FROM CENTERLINE TO CENTERLINE OF BEARING. AFTER THE EXISTING CONCRETE DECK HAS BEEN REMOVED, THE CONTRACTOR SHALL TAKE ELEVATIONS ALONG THE TOP OF EACH BEAM AT TENTH POINTS FROM CENTERLINE TO CENTERLINE OF BEARING. THE TOP OF DECK AND TOP OF BEAM ELEVATIONS SHALL THEN BE SENT TO THE ENGINEER FOR USE IN DETERMINING THE FINAL PROFILE AND HAUNCH DEPTHS. THE CONTRACTOR SHALL EXPECT 3 WORKING DAYS FOR VTRANS TO PREPARE THE REVISED PROFILE AND HAUNCH DEPTH CALCULATIONS.
20. THE EXISTING STRUCTURAL STEEL IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. ANY REMOVED STRUCTURAL STEEL, IF APPLICABLE, IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE AND ITS OFFICERS AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE REMOVED EXISTING STRUCTURAL STEEL.
21. NEW BRIDGE SCUPPERS WILL BE PROVIDED AT THE SAME LOCATIONS AS THE REMOVED SCUPPERS. THE NEW SCUPPERS WILL BE PAID FOR UNDER ITEM 900.620, "SPECIAL PROVISION (BRIDGE SCUPPER)".

REINFORCED CONCRETE

22. ALL CONCRETE SHALL CONFORM TO THE SPECIFICATIONS FOR CONCRETE, HIGH PERFORMANCE CLASS A. THE CONTRACTOR SHALL PROVIDE TESTING EQUIPMENT FOR CONCRETE IN ACCORDANCE WITH SUBSECTION 631.05.
23. ALL REINFORCING STEEL SHALL BE LEVEL I - EPOXY COATED AND MEET THE REQUIREMENTS OF SECTION 507. A REINFORCING STEEL SCHEDULE AND SHOP DRAWINGS MEETING THE REQUIREMENTS OF SUBSECTION 105.03 SHALL BE SUBMITTED. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 507.11, "REINFORCING STEEL, LEVEL I".
24. TEST BARS SHALL BE PROVIDED IN ACCORANCE WITH THE "VERMONT AGENCY OF TRANSPORTATION MATERIAL SAMPLING MANUAL" AVAILABLE ON THE AGENCY WEBSITE. A MINIMUM OF TWO TEST SECTIONS ARE REQUIRED FOR EACH SIZE, BRAND, AND GRADE OR TYPE OF REINFORCING. SEE THE MANUAL FOR ACCEPTABLE DIMENSIONS OF TEST SECTIONS. EXTRA BARS FOR TESTING PURPOSES SHALL BE SPECIFIED IN THE WORKING DRAWING SUBMITTAL.
25. EPOXY COATED REINFORCING STEEL PROJECTING FROM THE DECK DURING CONSTRUCTION SHALL BE COVERED WITH CANVAS OR OTHER SUITABLE MATERIAL THAT WILL EFFECTIVELY PROTECT IT AGAINST DAMAGE FROM SUNLIGHT AND WEATHER EXPOSURE UNTIL IT WILL BE ENCASED IN CONCRETE. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 507.11, "REINFORCING STEEL, LEVEL I".
26. WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE BRIDGE DECK SURFACES EXCEPT THE UNDERSIDE OF THE DECK BETWEEN THE DRIP NOTCHES. THIS WORK WILL BE PAID FOR UNDER ITEM 514.10, "WATER REPELLENT, SILANE".
27. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING INSTITUTE".
28. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

ALONG BACKFACES OF WALL AGAINST EARTH:	2.0 INCH
ALONG TOP SURFACE OF DECK SLAB:	2.5 INCH
ALONG BOTTOM SURFACE OF DECK SLAB:	1.5 INCH
ELSEWHERE UNLESS OTHERWISE INDICATED:	3.0 INCH

PAVEMENT REMOVAL AND DECK REPAIRS

29. PAVEMENT REMOVAL SHOULD BE LIMITED TO WHAT IS SHOWN ON THE PLANS. ALTHOUGH THE INTENT OF THE PLANS IS TO REMOVE AND REPLACE THE CONCRETE BRIDGE DECK FOR THE ENTIRE BRIDGE LENGTH, THE ENGINEER HAS THE OPTION TO MAINTAIN THE EXISTING SPAN I CONCRETE BRIDGE DECK IF THE CONCRETE APPEARS TO BE IN GOOD CONDITION WITH MINIMAL AREAS OF UNSOUND CONCRETE. THEREFORE, PAVEMENT AND MEMBRANE REMOVAL ON SPAN #1 SHALL BE REQUIRED PRIOR TO BRIDGE DECK REMOVAL OPERATIONS. THIS WORK SHALL BE IN ACCORDANCE WITH SECTION 529 OF THE STANDARD SPECIFICATIONS.
30. THE FINAL ONE HALF INCH OF PAVEMENT ON SPAN #1 OF THE CONCRETE BRIDGE DECK AND THE AT-GRADE APPROACH SLABS SHALL BE REMOVED BY LOADER, GRADER OR EQUIPMENT APPROVED BY THE ENGINEER. COLD PLANING TO REMOVE BRIDGE PAVEMENT WILL BE CONSIDERED INCIDENTAL TO ITEM 529.10, "REMOVAL OF BRIDGE PAVEMENT".
31. DURING BRIDGE AND AT-GRADE APPROACH SLAB PAVEMENT REMOVAL, THE CONTRACTOR SHALL EXERCISE CARE TO ENSURE THAT NO DAMAGE OCCURS TO SPAN #1 OF THE EXISTING CONCRETE BRIDGE DECK AND THE EXISTING AT-GRADE APPROACH SLABS. ANY DAMAGE TO SPAN #1 OF THE CONCRETE BRIDGE DECK OR AT-GRADE APPROACH SLABS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. REPAIRS, IF APPLICABLE, SHALL BE MADE IN ACCORDANCE WITH SECTION 580.
32. THE AT-GRADE APPROACH SLABS AND SPAN I OF THE CONCRETE BRIDGE DECK (IF APPLICABLE) SHALL BE CLEANED IN ACCORDANCE WITH SUBSECTION 580.04 AND TO THE SATISFACTION OF THE ENGINEER. REMOVAL OF THE BARRIER MEMBRANE AND THE CLEANING OF THE AT-GRADE APPROACH SLABS AND SPAN #1 OF THE CONCRETE BRIDGE DECK WILL BE PAID FOR UNDER ITEM 580.16, "SURFACE PREPARATION FOR MEMBRANE".
33. ONCE THE EXISTING PAVEMENT AND MEMBRANE ARE REMOVED FROM THE SPAN #1 CONCRETE BRIDGE DECK, ANY AREAS THAT ARE FOUND TO BE UNSOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE METHOD FOR DETERMINING AREAS OF UNSOUND CONCRETE SHALL BE APPROVED BY THE ENGINEER. THE ENGINEER SHALL MAKE A DETERMINATION AS TO WHETHER THE EXISTING SPAN #1 CONCRETE BRIDGE DECK SHOULD BE REPLACED OR REPAIRED. IF THE DECK IS TO BE REPLACED, BRIDGE DECK REMOVAL OPERATIONS SHALL COMMENCE. IF THE DECK IS TO BE MAINTAINED, THE ENGINEER SHALL MAKE A DETERMINATION AS TO HOW TO REPAIR THE DETERIORATED PORTION OF THE DECK AND THE LIMITS OF THE REPAIR. THE REPAIRS WILL BE PAID FOR UNDER ITEM 580.10, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I", ITEM 580.11, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II", OR ITEM 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III". QUANTITIES FOR ITEMS 580.10, 580.11, AND 580.12 AS SHOWN ON THE QUANTITY SUMMARY SHEETS ARE ESTIMATED AND INCLUDED IN THE CONTRACT IN THE EVENT THE SPAN IS MAINTAINED.
34. ONCE THE EXISTING PAVEMENT AND MEMBRANE ARE REMOVED FROM THE AT-GRADE APPROACH SLABS, ANY AREAS THAT ARE FOUND TO BE UNSOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE METHOD FOR DETERMINING AREAS OF UNSOUND CONCRETE SHALL BE APPROVED BY THE ENGINEER. THE ENGINEER SHALL MAKE A DETERMINATION AS TO HOW TO REPAIR THE DETERIORATED PORTION OF THE AT-GRADE APPROACH SLABS AND THE LIMITS OF THE REPAIR. THE REPAIRS WILL BE PAID FOR UNDER ITEM 580.10, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I", ITEM 580.11, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II", OR ITEM 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III". QUANTITIES FOR ITEMS 580.10, 580.11, AND 580.12 AS SHOWN ON THE QUANTITY SUMMARY SHEETS ARE ESTIMATED.

PAVEMENT AND MEMBRANE

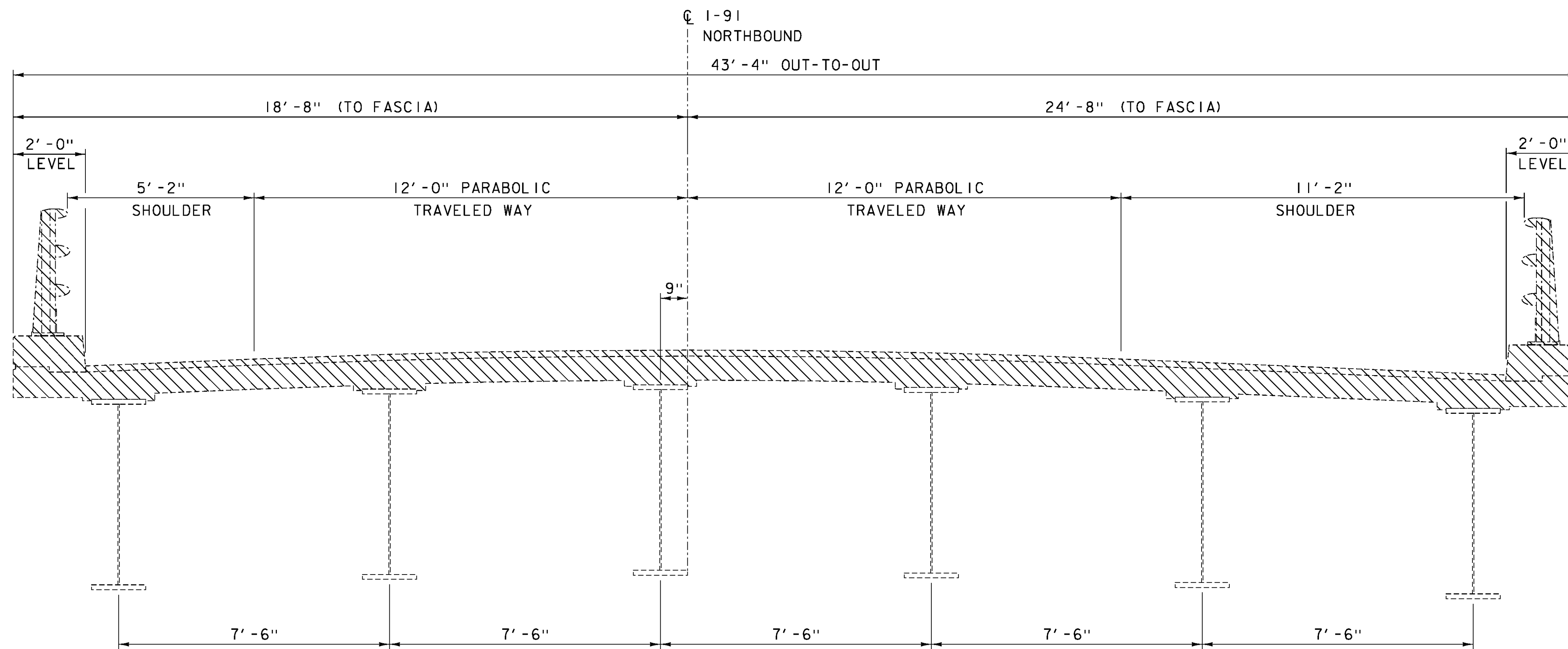
35. UPON THE ENGINEER'S APPROVAL OF THE CONCRETE BRIDGE DECK'S CONDITION, ITEM 519.20, "SHEET MEMBRANE WATERPROOFING, TORCH APPLIED" SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 519. THE CONTRACTOR SHALL NOT INSTALL ITEM 519.20, "SHEET MEMBRANE WATERPROOFING, TORCH APPLIED" WHEN THE DECK CONCRETE AND/OR DECK PATCH AREAS' MOISTURE CONTENT IS ABOVE SECTION 519 SPECIFICATIONS OR MANUFACTURER'S SPECIFICATIONS, WHICHEVER IS LESS.
36. TRAFFIC WILL BE ALLOWED TO DRIVE ON THE BARE CONCRETE DECK PRIOR TO THE DECK BEING CLEANED AND PREPARED FOR THE NEW SHEET MEMBRANE. ONCE THE CONCRETE BRIDGE DECK IS PREPARED FOR THE NEW SHEET MEMBRANE, NO TRAFFIC WILL BE ALLOWED ON THE NEW MEMBRANE UNTIL THE SECOND LIFT OF BITUMINOUS CONCRETE PAVEMENT IS IN PLACE.
37. FOLLOWING THE INSTALLATION OF THE NEW SHEET MEMBRANE WATERPROOFING ON THE CONCRETE BRIDGE DECK, THE SOUTHERN ROADWAY APPROACH, CONCRETE BRIDGE DECK, AND AT-GRADE APPROACH SLAB #5 SHALL BE PAVED CURB TO CURB WITH ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT - BRIDGE MIX - TYPE IVB)" WITH ONE 3/4" SHIM AND ONE 1 3/4" LIFT. THE TOP LIFT SHALL TAPER TO 1 1/2" AT THE PIER #4 FINGER JOINT AND THE ABUTMENT #4 COMPRESSION JOINT TO ACCOMMODATE THE EXISTING STEEL PLATES AND HARDWARE. SEE JOINT DETAILS SHEET I ON SHEET 21 FOR TAPER LOCATIONS. AT-GRADE APPROACH SLAB #6 AND THE NORTHERN ROADWAY APPROACH SHALL BE PAVED CURB TO CURB WITH ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT - BRIDGE MIX - TYPE IVB)" WITH ONE 3/4" SHIM AND ONE 1 1/2" LIFT.
38. THE GRADE OF PG ASPHALT BINDER USED TO PRODUCE BITUMINOUS CONCRETE PAVEMENT SHALL BE 58-28. SUBSTITUTIONS WILL BE ACCEPTED BASED ON AVAILABILITY WHERE THE UPPER END TEMPERATURE VALUE IS GREATER THAN 58°C (136°F) AND/OR THE LOWER END TEMPERATURE VALUE IS LESS THAN -28°C (-18°F).
39. CARE SHALL BE EXERCISED TO SMOOTHLY TRANSITION THE NEW BRIDGE PAVEMENT INTO THE EXISTING PAVEMENT. ANY COLD PLANING NECESSARY FOR SHAPING BRIDGE APPROACHES WILL BE PAID FOR UNDER ITEM 210.10, "COLD PLANING, BITUMINOUS PAVEMENT".
40. ANY REQUIRED SAWCUT OF EXISTING PAVEMENT WILL BE CONSIDERED INCIDENTAL TO ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT - BRIDGE MIX - TYPE IVB)".
41. EMULSIFIED ASPHALT SHALL BE APPLIED AT A RATE OF 0.08 GAL/SY TO ALL COLD PLANED SURFACES AND AT A RATE OF 0.04 GAL/SY BETWEEN PAVEMENT LIFTS OR AS DIRECTED BY THE ENGINEER. EMULSIFIED ASPHALT WILL BE PAID FOR UNDER ITEM 404.65, "EMULSIFIED ASPHALT".
42. UPON COMPLETION OF ALL PAVING OPERATIONS, FINAL PAVEMENT MARKINGS SHALL BE INSTALLED TO REPLICATE THE EXISTING CONFIGURATION.
43. DURABLE PAVEMENT MARKINGS ARE OPTIONED AS SHOWN ON THE PLAN SHEETS FOR THIS PROJECT. THE CONTRACTOR SHALL BID THE SAME MARKING MATERIAL FOR ALL OPTION ITEMS.



REVISION	DATE	DESCRIPTION	BY
1	03-30-2016	ADDING AND CHANGING ITEMS	LG

PROJECT NAME: IRASBURG	
PROJECT NUMBER: IM DECK(46)	
FILE NAME: z15all6notes-107N.dgn	PLOT DATE: 3/28/2016
PROJECT LEADER: J. BYATT	DRAWN BY: M. SMITH
DESIGNED BY: S. BEAUMONT	CHECKED BY: J. BYATT
INDEX OF SHEETS & PROJECT NOTES SHEET 2 SHEET 3 OF 49	

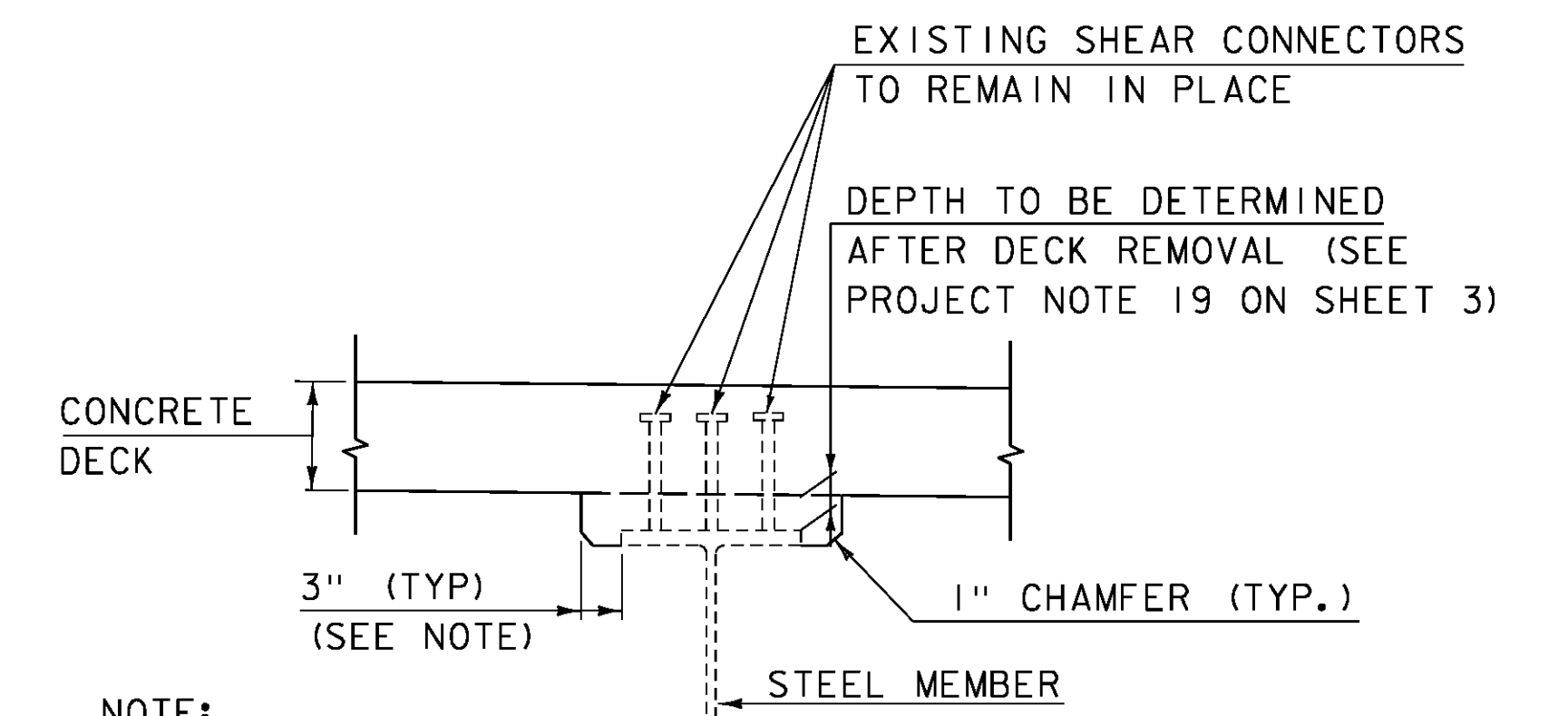




EXISTING BRIDGE TYPICAL

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

PARTIAL REMOVAL OF STRUCTURE

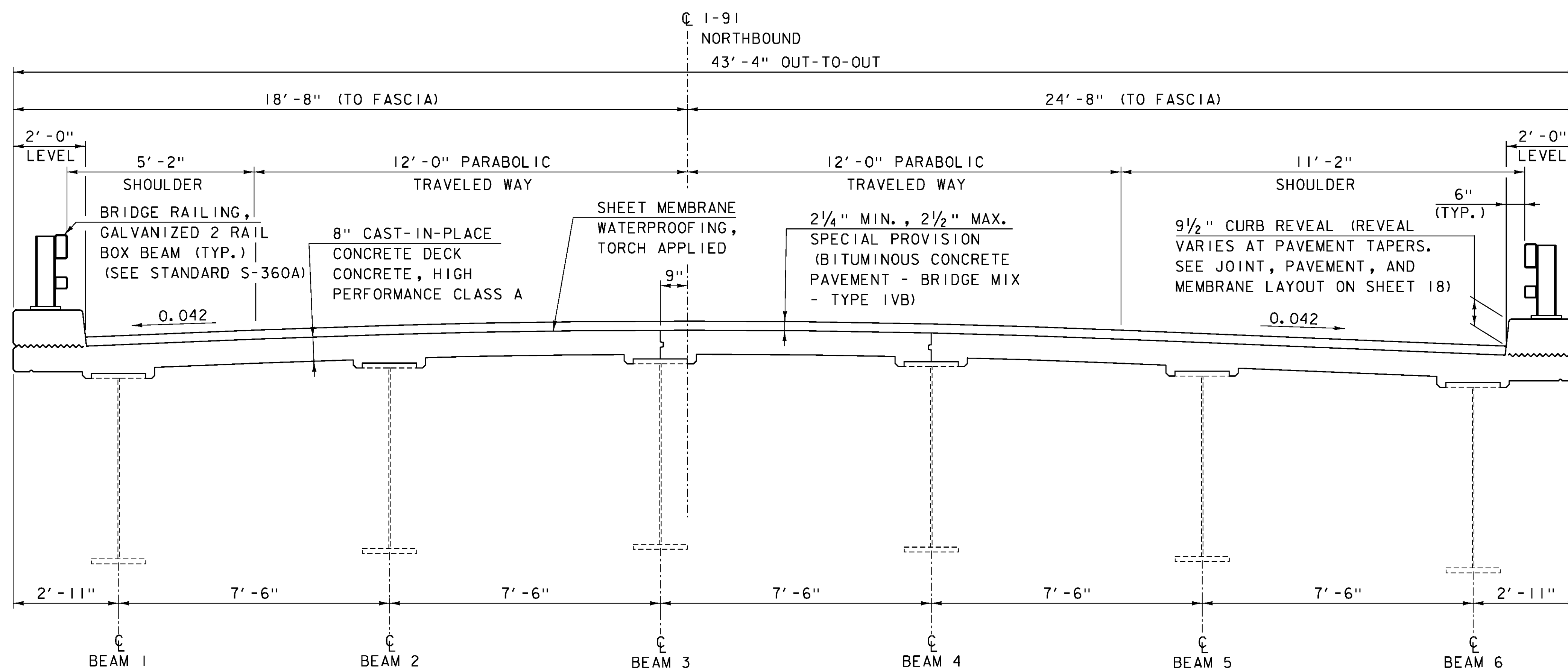


NOTE:

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

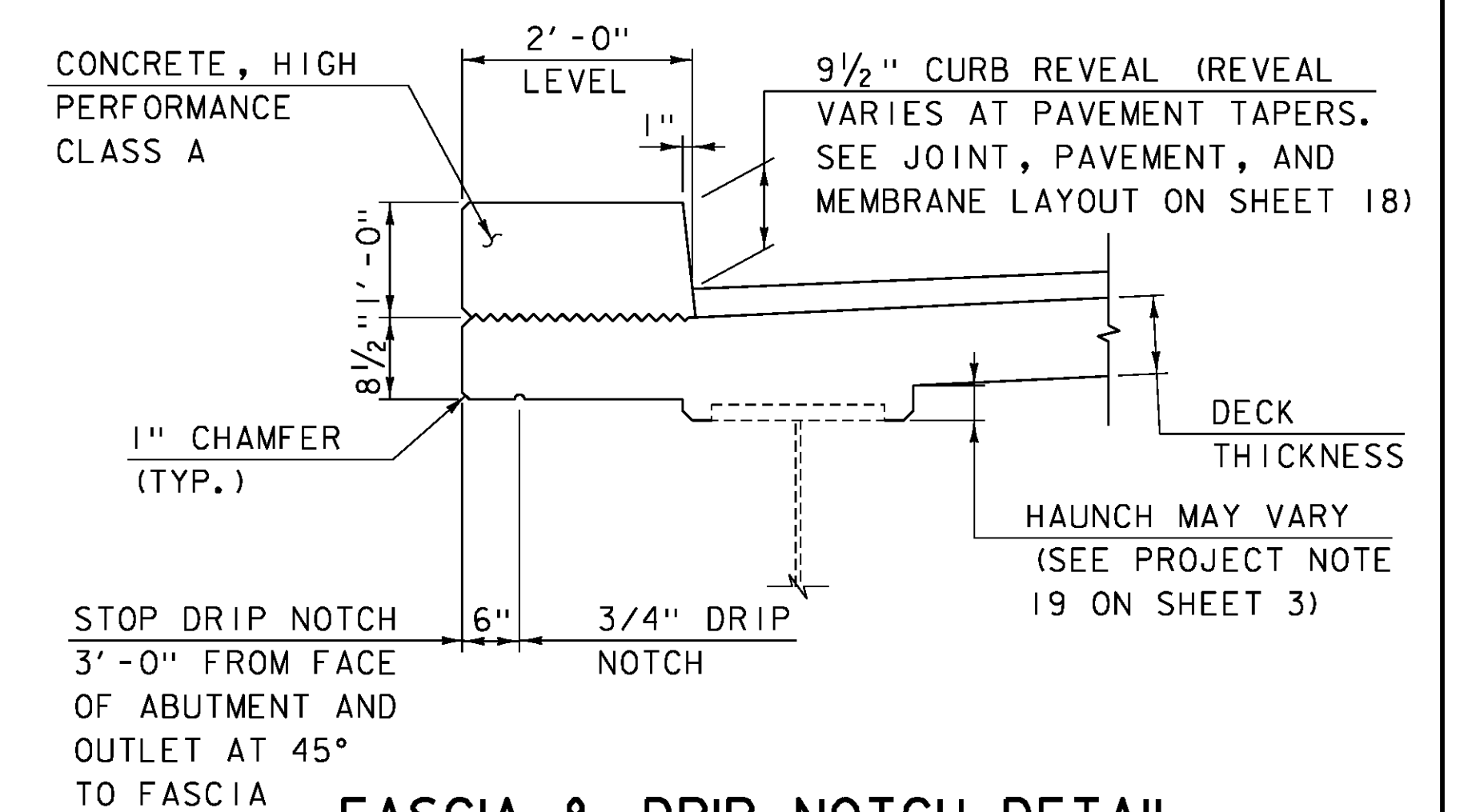
HAUNCH AND SHEAR CONNECTOR DETAIL

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



TYPICAL BRIDGE SECTION

(SPANS 2 THROUGH 4)
SCALE: 1/2" = 1'-0"



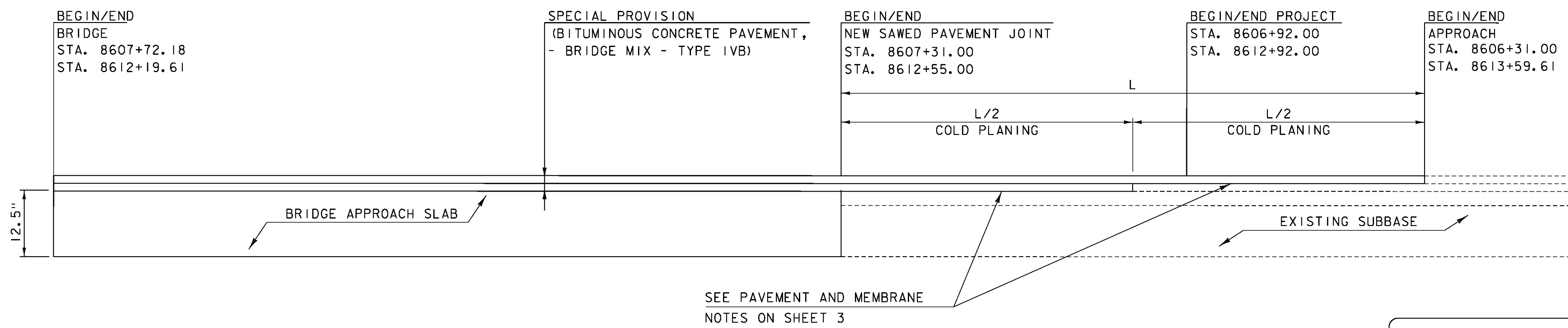
FASCIA & DRIP NOTCH DETAIL

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

MODEL: Sheet 01
CLD 15-0223

PROJECT NAME:	IRASBURG	PLOT DATE:	2/5/2016
PROJECT NUMBER:	IM DECK(46)	DRAWN BY:	M. SMITH
FILE NAME:	z15d116+yp-107N.dgn	DESIGNED BY:	N. CARON
PROJECT LEADER:	J. BYATT	CHECKED BY:	S. BEAUMONT
TYPICAL BRIDGE SECTIONS SHEET			SHEET 4 OF 49

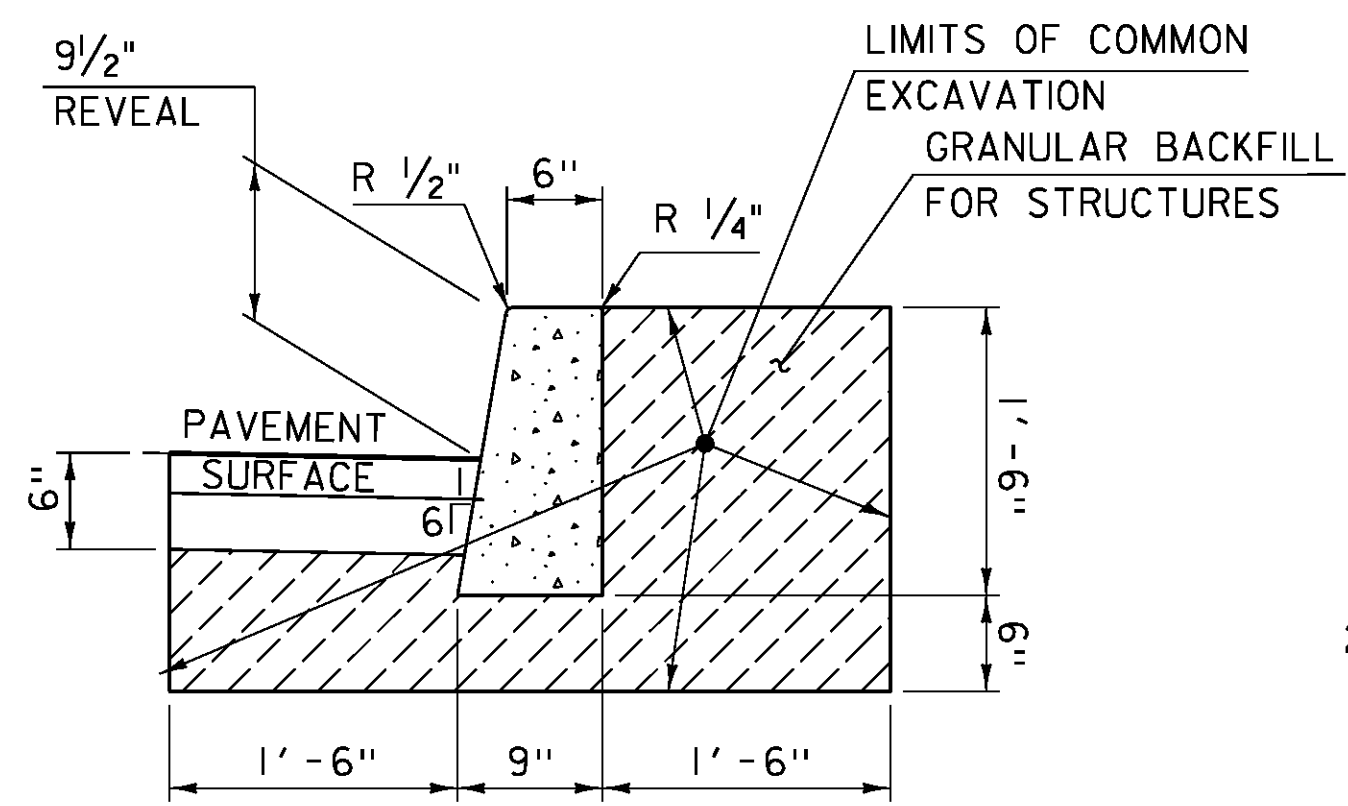




MATERIAL TRANSITION DIAGRAM
NOT TO SCALE

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

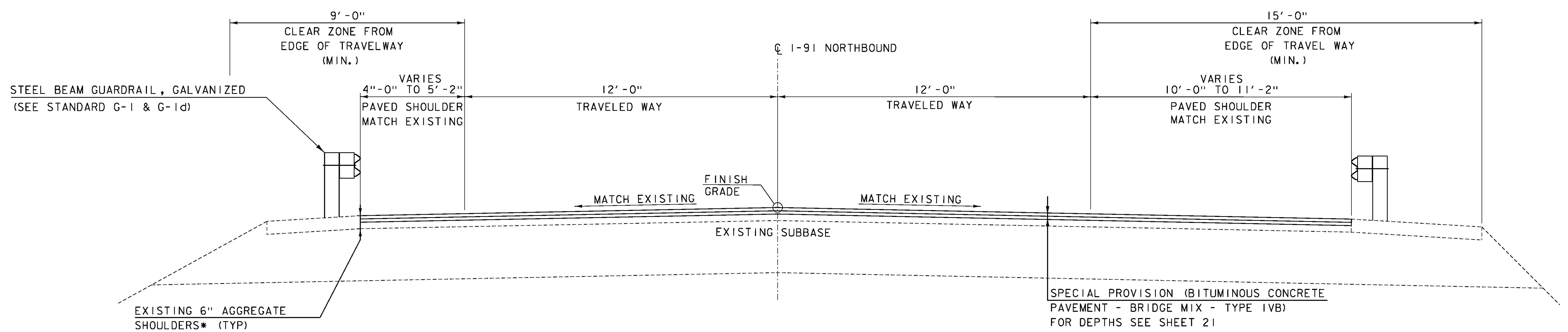
DESIGN NUMBER OF GYRATIONS - 65



TYPICAL CAST-IN-PLACE CONCRETE CURB, TYPE B EARTHWORKS DETAIL

NORTHERN APPROACH
2 1/4" SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT - BRIDGE MIX - TYPE IVB) (1 - 1 1/2" LIFT AND 1 - 3/4" SHIM)

SOUTHERN APPROACH
2 1/2" SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT - BRIDGE MIX - TYPE IVB) (1 - 1 3/4" LIFT AND 1 - 3/4" SHIM)



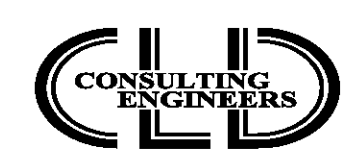
I-91 TYPICAL SECTION
SCALE: 1/2" = 1'-0"

NOTE:
IN THE EVENT THAT COLD PLANING OF THE RIGHT ROADWAY SHOULDERS ALONG BRIDGE APPROACHES EXPOSES GRAVEL SUBBASE, THE CONTRACTOR SHALL REMOVE 2" OF GRAVEL SUBBASE, PREPARE THE AREA AS DIRECTED BY THE ENGINEER, AND PROVIDE 2" BASE PAVEMENT. IN ADDITION TO THE PAVEMENT DEPTH TO BE PLACED IN ALL OTHER LOCATIONS PER THE JOINT DETAILS SHEET 1 ON SHEET 21, ADDITIONAL QUANTITIES HAVE BEEN INCLUDED IN THE ESTIMATE UNDER ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT - BRIDGE MIX - TYPE IVB)" AND ITEM 402.12, "AGGREGATE SHOULDERS" TO ADDRESS THIS WORK. WHERE DETERMINED BY THE ENGINEER, PAYMENT FOR BASE PREPARATION WILL BE CONSIDERED INCIDENTAL TO EQUIPMENT RENTAL ITEMS.

*REPLACE AGGREGATE SHOULDER AS NEEDED, AS DIRECTED BY THE ENGINEER

PROJECT NAME: IRASBURG	PLOT DATE: 3/8/2016
PROJECT NUMBER: IM DECK(46)	DRAWN BY: P. McKECHNIE
FILE NAME: z150116+yp-107N.dgn	CHECKED BY: S. FORTIER
PROJECT LEADER: J. BYATT	SHEET 5 OF 49
DESIGNED BY: L. GREER	
TYPICAL ROADWAY SECTIONS SHEET	

MODEL: Sheet02
CLD 15-0223

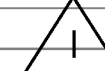
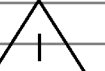


QUANTITY SHEET 1


SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE NO. 107N	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
							20				20		CY	COMMON EXCAVATION	203.15	4			
							1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	-			
							15				15		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	-			
							900				900		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10	9			
							6				6		TON	AGGREGATE SHOULDERS	402.12	0.8			
							15		23		38		CWT	EMULSIFIED ASPHALT	404.65	3.76			
							1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50	-			
									618		618		CY	CONCRETE, HIGH PERFORMANCE CLASS A	501.33	0.58			
									500		500		LB	STRUCTURAL STEEL	506.60	EST.			
									184463		184463		LB	REINFORCING STEEL, LEVEL I	507.11	0.52			
									72		72		LF	DRILLING AND GROUTING DOWELS	507.16	-			
									38		38		GAL	WATER REPELLENT, SILANE	514.10	0.65			
									54		54		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10	0.65			
									1941		1941		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20	0.28			
									79		79		LF	JOINT SEALER, HOT POURED	524.11	0.33			
									58		58		LF	REMOVAL OF EXISTING BRIDGE RAILING	525.10	0.67			
									952.35		952.35		LF	BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM	525.33	-			
									670		670		SY	REMOVAL OF BRIDGE PAVEMENT	529.10	0.87			
									1		1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20	-			
									5		5		CY	REMOVAL OF CONCRETE OR MASONRY	529.25	1.37			
									10		10		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I	580.10	EST.			
									25		25		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II	580.11	EST.			
									3		3		CY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III	580.12	EST.			
									15		15		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	580.13	EST.			
									15		15		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	580.14	EST.			
									6025		6025		SF	SURFACE PREPARATION FOR MEMBRANE	580.16	2.77			
								5			5		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25	EST.			
								5			5		HR	TRUCK RENTAL	608.37	EST.			
							160				160		LF	CAST-IN-PLACE CONCRETE CURB, TYPE B	616.28	-			
									238		238		LF	SNOW BARRIER	620.75	-			
							112.5				112.5		LF	STEEL BEAM GUARDRAIL, GALVANIZED	621.20	8.5			
							2				2		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60	-			
									4		4		EACH	GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM	621.72	-			
							50				50		LF	REMOVE AND RESET GUARDRAIL	621.75	-			
							190				190		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80	9			
							80				80		HR	UNIFORMED TRAFFIC OFFICERS	630.10	EST.			
							150				150		HR	FLAGGERS	630.15	EST.			
										1	1		LS	FIELD OFFICE, ENGINEERS	631.10	-			
										1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16	-			
										1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17	-			

PROJECT NAME: IRASBURG
PROJECT NUMBER: IM DECK(46)
FILE NAME: z15all6qss-107N.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: J. FRENCH
QUANTITY SHEET 1
PLOT DATE: 2/5/2016
DRAWN BY: M. SMITH
CHECKED BY: A. GIRALDI
SHEET 6 OF 49

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE NO. 107N	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
										3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26	-			
			1								1		LS	MOBILIZATION/DEMobilIZATION	635.11	-			
			2								2		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15	-			
														BEGIN OPTION AA 					
			950								950		LF	DURABLE 6 INCH WHITE LINE, THERMOPLASTIC	646.422				
			950								950		LF	DURABLE 6 INCH WHITE LINE, EPOXY PAINT	646.423				
			950								950		LF	DURABLE 6 INCH WHITE LINE, POLYUREA	646.424				
														END OPTION AA					
														BEGIN OPTION BB 					
			750								750		LF	DURABLE 6 INCH YELLOW LINE, THERMOPLASTIC	646.432				
			750								750		LF	DURABLE 6 INCH YELLOW LINE, EPOXY PAINT	646.433				
			750								750		LF	DURABLE 6 INCH YELLOW LINE, POLYUREA	646.434				
														END OPTION BB					
			5								5		EACH	REMOVING SIGNS	675.50	-			
			5								5		EACH	ERECTING SALVAGED SIGNS	675.60	-			
			2								2		EACH	DELINEATOR WITH STEEL POST	676.10	-			
									16		16		EACH	SPECIAL PROVISION (BRIDGE SCUPPER)	900.620	-			
			6								6		EACH	SPECIAL PROVISION (CPM SCHEDULE)	900.620	-			
			825						2920		3745		LF	SPECIAL PROVISION (PAVEMENT JOINT ADHESIVE)	900.640	5.56			
									58		58		LF	SPECIAL PROVISION (REMOVE AND REPLACE COMPRESSION JOINT SEAL)	900.640	0.65			
			1								1		LS	SPECIAL PROVISION (TRAFFIC CONTROL, ALL INCLUSIVE)	900.645	-			
			1								1		LU	SPECIAL PROVISION (MAINTENANCE OF RAILROAD TRAFFIC) (N.A.B.I.)	900.650	-			
			1								1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT - BRIDGE MIX - TYPE IVB) (N.A.B.I.)	900.650	-			
			105						320		425		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT - BRIDGE MIX - TYPE IVB)	900.680	2.3			

SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT - BRIDGE MIX - TYPE IVB)
 103.0 TON TYPE IVB (ROADWAY)
 319.7 TON TYPE IVB (BRIDGE)
 422.7 TON SUBTOTAL
 2.3 TON ROUNDING
 425.0 TON TOTAL

REVISION	DATE	DESCRIPTION	BY
	03-30-2016	ADDING AND CHANGING ITEMS	LG

PROJECT NAME: IRASBURG
PROJECT NUMBER: IM DECK(46)

FILE NAME: z15all6qss-107N.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: J. FRENCH
QUANTITY SHEET 2

PLOT DATE: 3/28/2016
DRAWN BY: M. SMITH
CHECKED BY: A. GIRALDI
SHEET 7 OF 49

GENERAL INFORMATION

SYMBOLOLOGY LEGEND NOTE

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

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

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

COMMON TOPOGRAPHIC POINT SYMBOLS

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

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

PROPOSED GEOMETRY CODES

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

UTILITY SYMBOLOLOGY

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

PROJECT CONSTRUCTION SYMBOLOLOGY

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

PROJECT CONSTRUCTION FEATURES

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

**CONVENTIONAL BOUNDARY SYMBOLOLOGY**

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

**EPSC LAYOUT PLAN SYMBOLOLOGY**

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

**ENVIRONMENTAL RESOURCES**

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

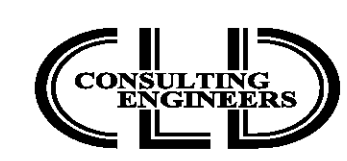
**ARCHEOLOGICAL & HISTORIC**

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

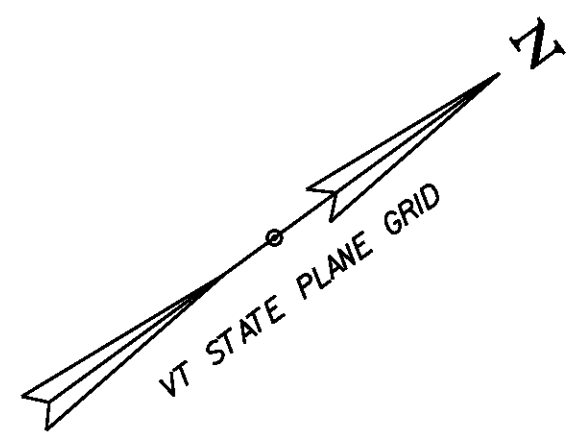
**CONVENTIONAL TOPOGRAPHIC SYMBOLOLOGY**

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

MODEL+Sheet  
CLD 15-0223



PROJECT NAME:	IRASBURG	PLOT DATE:	2/5/2016
PROJECT NUMBER:	IM DECK(46)	DRAWN BY:	P. McKECHNIE
FILE NAME:	z15all6legend-107N.dgn	CHECKED BY:	S. FORTIER
PROJECT LEADER:	J. BYATT	CONVENTIONAL SYMBOLOLOGY LEGEND SHEET	SHEET 8 OF 49
DESIGNED BY:	L. GREER		



**EXISTING BRIDGE DATA:**  
 ROLLED BEAM, CONCRETE DECK-SPAN 1  
 3-SPAN CONTINUOUS WELDED PLATE  
 GIRDER, CONCRETE DECK-SPAN 2-4.  
 LENGTH = 447'-0"  
 WIDTH = 39'-4" RAIL-TO-RAIL  
 BUILT IN 1971

**DURABLE 6 INCH WHITE LINE (OPTION ITEM)**  
 8606+31 TO 8613+60 LT (SOLID)  
 8606+31 TO 8613+60 LT (DASHED)

**DURABLE 6 INCH YELLOW LINE (OPTION ITEM)**  
 8606+31 TO 8613+60 RT (SOLID)

**REMOVAL AND DISPOSAL OF GUARDRAIL**  
 8607+21 TO 8607+67 LT  
 8606+79 TO 8607+24 RT  
 8612+58 TO 8613+03 LT  
 8612+21 TO 8612+66 RT

**STEEL BEAM GUARDRAIL, GALVANIZED**  
 8606+79 TO 8607+04 RT  
 8607+21 TO 8607+46 LT  
 8612+41 TO 8612+66 RT  
 8612+78 TO 8613+03 LT

**ANCHOR FOR STEEL BEAM RAIL**  
 8612+66 RT  
 8613+03 LT

**DELINEATOR WITH STEEL POST**  
 8612+66 RT  
 8613+03 LT

**CAST-IN-PLACE CONCRETE CURB, TYPE B**  
 8606+93 TO 8607+33 RT  
 8607+35 TO 8607+75 LT  
 8612+12 TO 8612+52 RT  
 8612+49 TO 8612+89 LT

**REMOVING SIGNS**  
 8607+23 RT  
 8607+29 RT  
 8607+29 LT  
 8609+38 LT  
 8612+00 LT

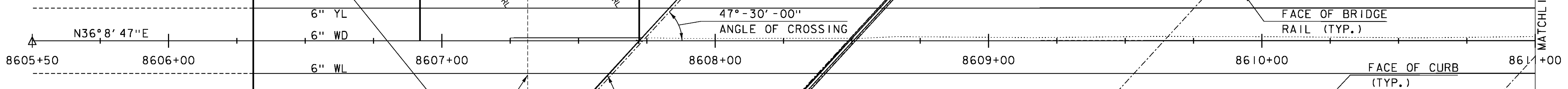
**ERECTING SALVAGED SIGNS**  
 8607+23 RT  
 8607+29 RT  
 8607+29 LT  
 8609+38 LT  
 8612+00 LT

SAWCUT FOR CAST-IN-PLACE  
 CONCRETE CURB, TYPE B  
 (INCIDENTAL TO ITEM 900.680,  
 "SPECIAL PROVISION  
 (BITUMINOUS CONCRETE PAVEMENT  
 - BRIDGE MIX - TYPE IVB)")

**END APPROACH  
 BEGIN PROJECT  
 STA 8606+92.00**

**BEGIN BRIDGE  
 STA 8607+72.18**

**BEGIN APPROACH  
 STA 8606+31.00**

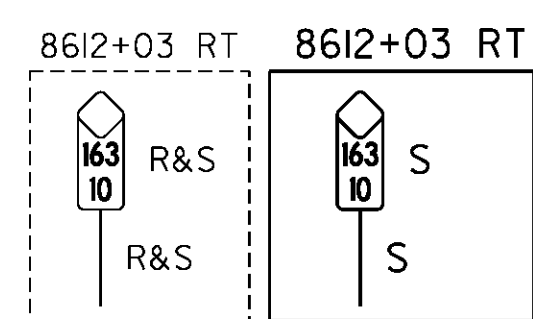
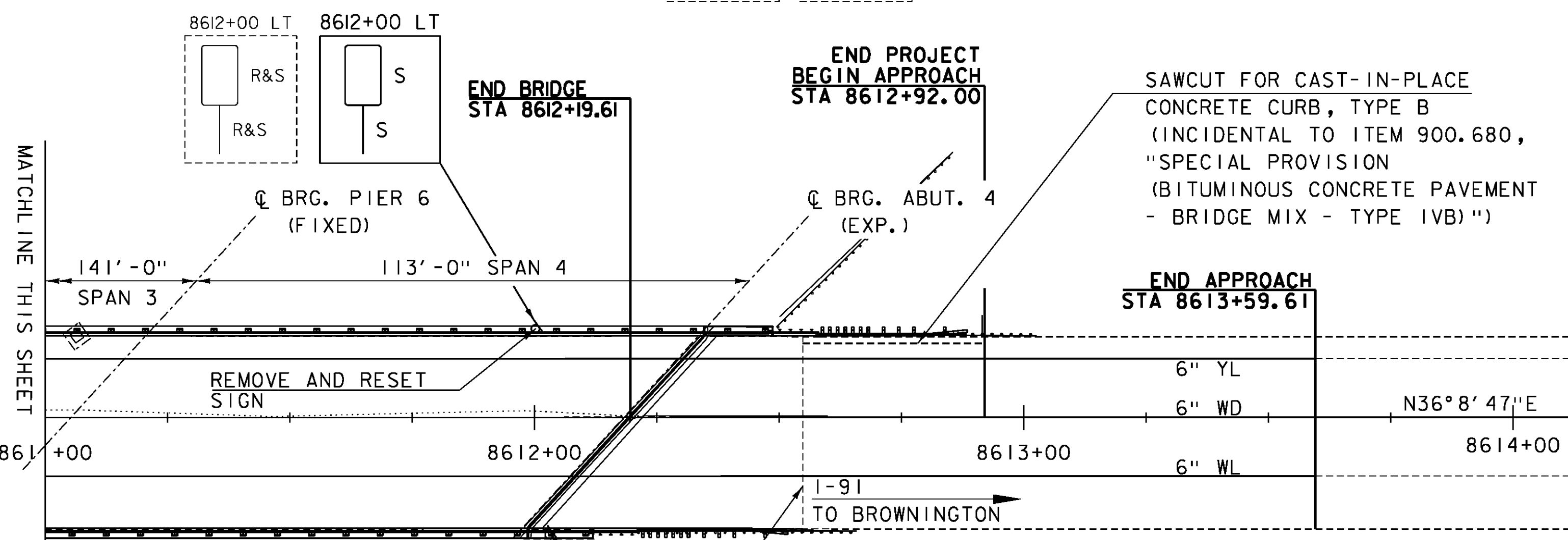
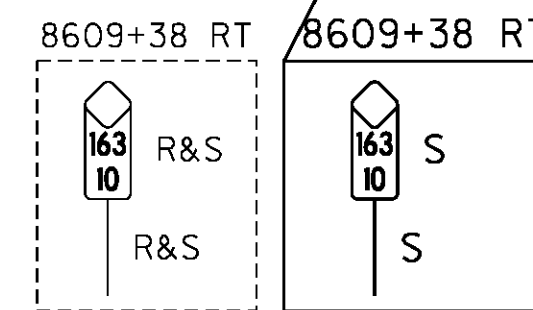
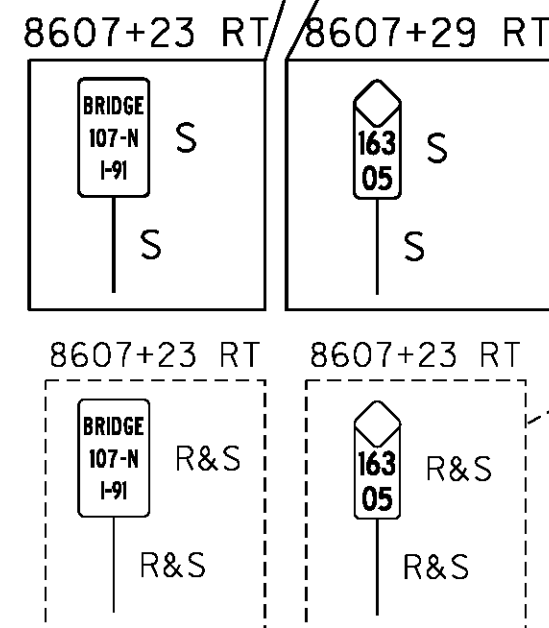


**KEY TO PAVEMENT MARKINGS**

WL	=	SOLID WHITE LINE
YL	=	SOLID YELLOW LINE
WD	=	WHITE DASHED LINE

**BEGIN APPROACH SLAB  
 SAWED PAVEMENT JOINT**

**ASPHALTIC PLUG JOINT  
 (SEE STANDARD SD-516.10)**



**END APPROACH SLAB  
 SAWED PAVEMENT JOINT**

**END APPROACH  
 STA 8613+59.61**

SAWCUT FOR CAST-IN-PLACE  
 CONCRETE CURB, TYPE B  
 (INCIDENTAL TO ITEM 900.680,  
 "SPECIAL PROVISION  
 (BITUMINOUS CONCRETE PAVEMENT  
 - BRIDGE MIX - TYPE IVB)")

**HVCTRL 8607+11.9**

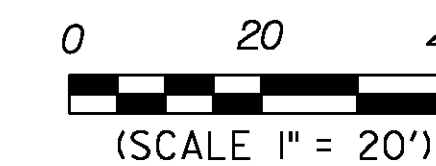
NORTH	=	848667.95
EAST	=	1717.692.58
ELEV.	=	N/A

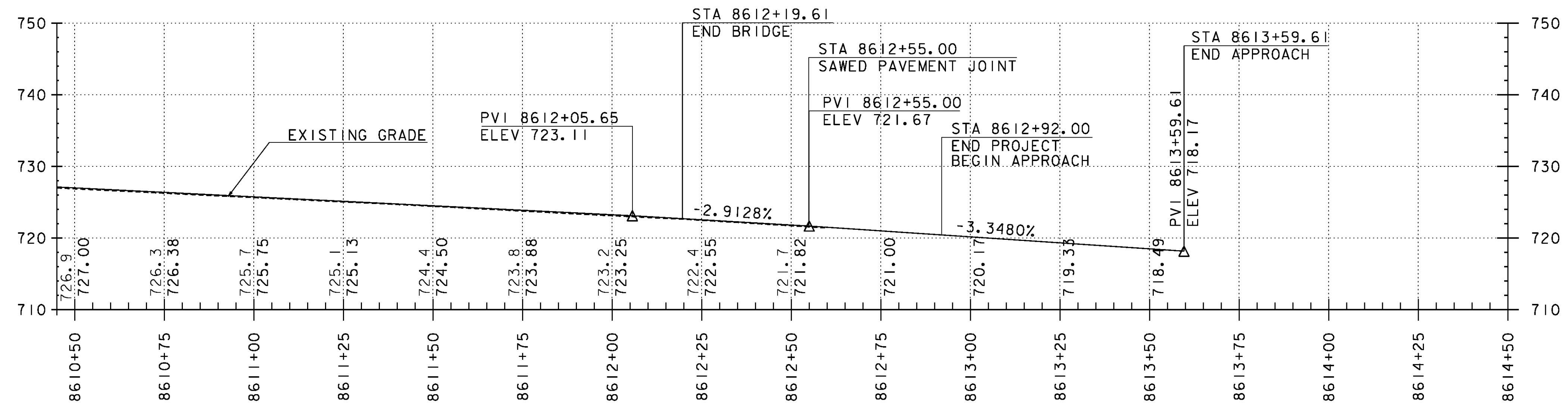
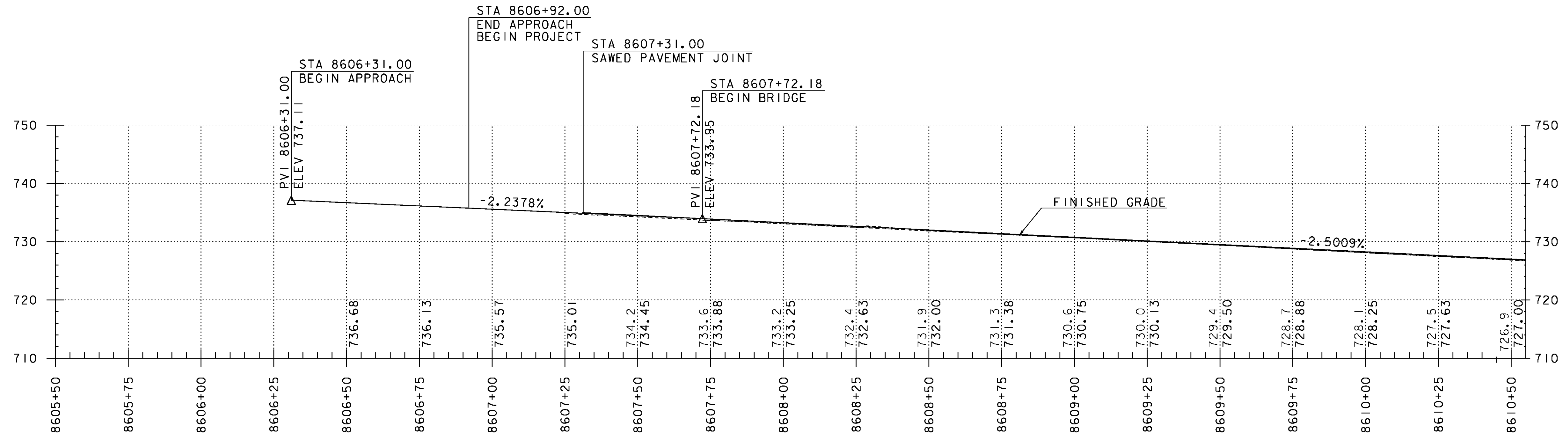
REVISION	DATE	DESCRIPTION	BY
1	03-30-2016	ADDING AND CHANGING ITEMS	LG

PROJECT NAME: IRASBURG  
 PROJECT NUMBER: IM DECK(46)

FILE NAME: z15all6bdr-107N.dgn  
 PROJECT LEADER: J. BYATT  
 DESIGNED BY: L. GREER  
 LAYOUT SHEET

PLOT DATE: 3/28/2016  
 DRAWN BY: P. McKECHNIE  
 CHECKED BY: S. FORTIER  
 SHEET 9 OF 49





**NOTES**

1. STATIONS AND ELEVATIONS ARE IN FEET.
2. THE ELEVATIONS SHOWN TO THE NEAREST TENTH ARE THE EXISTING GROUND ALONG THE CENTERLINE.
3. THE ELEVATIONS SHOWN TO THE NEAREST HUNDRETH ARE THE FINISHED GRADE ALONG THE CENTERLINE.
4. PROPOSED PROFILE SHOWN IS FOR INFORMATIONAL PURPOSES ONLY. FINAL FINISHED GRADE SHALL BE DETERMINED BY THE PROJECT MANAGER AFTER EXISTING TOP OF DECK AND TOP OF BEAM ELEVATIONS ARE SURVEYED. SEE PROJECT NOTE 19 ON SHEET 3.

**I-91 PROFILE**

HOR. SCALE 1" = 40'-0"  
 VER. SCALE 1" = 20'-0"



PROJECT NAME:	IRASBURG	PLOT DATE:	2/5/2016
PROJECT NUMBER:	IM DECK(46)	DRAWN BY:	J. FOWLER
FILE NAME:	z15all6pro-107N.dgn	CHECKED BY:	S. FORTIER
PROJECT LEADER:	J. BYATT	SHEET	10 OF 49
DESIGNED BY:	L. GREER		

## TRAFFIC CONTROL

1. AS PART OF 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL INCLUSIVE)", THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC TRAFFIC CONTROL PLAN TO THE PROJECT MANAGER DEPICTING EACH PHASE OF THE PLANNED WORK. PLANS SHALL BE SUBMITTED FOR APPROVAL IN ACCORDANCE WITH SUBSECTION 105.03. THE PLAN SHALL INCLUDE A LAYOUT SHOWING ALL ON- AND OFF-PROJECT SIGNS AND BARRICADES, DETAILS FOR LANE CLOSURES, AND ANY OTHER DETAILS ASSOCIATED WITH THE TRAFFIC CONTROL.

THE TRAFFIC CONTROL PLANS SHOWN ON TRAFFIC CONTROL SHEETS 2 AND 3, THE TRAFFIC CONTROL BARRIER SHEET ON SHEET 14, AND THE PHASING SECTIONS ON SHEETS 15 AND 16 ARE SCHEMATICS ONLY AND SHOULD BE USED AS REFERENCES. DIMENSIONS SHOWN ARE MINIMUMS BASED ON VTRANS STANDARDS AND THE MUTCD. THESE DIMENSIONS MAY BE REDUCED DUE TO SITE CONSTRAINTS WITH THE ENGINEER'S APPROVAL. ITEMS THAT MAY BE REVISED IN THE SITE SPECIFIC TRAFFIC CONTROL PLAN SUBMITTED BY THE CONTRACTOR INCLUDE, BUT ARE NOT LIMITED TO, APPROACH SIGN SPACING, TAPER LENGTHS/RATES, LANE WIDTHS, BUFFER SPACES, TANGENT LENGTHS, AND LOCATIONS OF PORTABLE CHANGEABLE MESSAGE SIGNS.

2. ALL ITEMS REQUIRED TO PREPARE, SUBMIT, AND IMPLEMENT THE CONTRACTOR'S PLAN, INCLUDING ANY NECESSARY REVISIONS TO THE PLAN, WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)". THE PAY ITEM INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

TRAFFIC CONTROL PLAN  
TEMPORARY TRAFFIC BARRIERS  
BARRICADES  
DRUMS/CONES  
ON PROJECT CONSTRUCTION SIGNING  
TEMPORARY TAPE OR RAISED PAVEMENT MARKERS, TYPE II  
PORTABLE ARROW BOARDS  
ENERGY ABSORPTION ATTENUATORS

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

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

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

3. THE EXISTING SPEED LIMIT IS 65 MPH. THE SPEED LIMIT WILL BE REDUCED TO 55 MPH IN THE WORK ZONE FOR THIS PROJECT. ANY EXISTING SPEED LIMIT SIGNS WITHIN THE SPEED REDUCTION AREA SHALL BE COMPLETELY COVERED.
4. CONSTRUCTION SIGNS SHALL BE INSTALLED SO AS NOT TO OBSTRUCT EXISTING SIGNS.
5. ALL SIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND THE "STANDARD HIGHWAY SIGNS AND MARKINGS" BOOK (SHSM) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).
6. SOLID SUBSTRATE CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM D 4956) TYPE VII, VIII OR IX REQUIREMENTS, UNLESS OTHERWISE NOTED. BLACK AND WHITE REGULATORY SIGNS SHALL BE A MINIMUM OF TYPE III, UNLESS OTHERWISE NOTED.
7. ROLL UP SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING ASTM D 4956 TYPE VI.
8. CONSTRUCTION SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES, DURING PERIODS OF INACTIVITY OR UPON COMPLETION OF THE WORK. EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER. SIGNS SHALL BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER.

## TRAFFIC CONTROL (CONTINUED)

9. FIXED SIGNS SHALL BE SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST SEVEN FEET ABOVE THE EDGE OF PAVEMENT. THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST SIX FEET OUTSIDE THE SHOULDER POINT OR FOUR FEET OUTSIDE GUARDRAIL.
10. PORTABLE SIGNS SHALL BE PLACED ON THE EDGE OF ROADWAY AND ONE FOOT MINIMUM ABOVE TRAVELED WAY. ALL VEGETATION THAT INTERFERES WITH VISIBILITY OF THE SIGNS SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE. WHEN PLACED BEHIND GUARDRAIL, THE BOTTOM OF THE SIGN FACE SHALL BE ABOVE THE TOP OF THE GUARDRAIL.
11. WHERE SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARDRAIL OR OTHER APPROVED TRAFFIC BARRIERS, ALL SIGN STANDS AND POST INSTALLATIONS SHALL BE "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 COMPLIANT. NO SIGN POSTS SHALL EXTEND OVER THE TOP OF THE SIGN INSTALLED ON SAID POST(S). WHEN ANCHORS ARE INSTALLED, STUB SHALL NOT BE GREATER THAN FOUR INCHES ABOVE EXISTING GROUND.
12. THE CONTRACTOR SHALL HAVE SIGNS FOR CLOSURE OF RIGHT AND LEFT LANES ON PROJECT BEFORE WORK COMMENCES.
13. THE TRAFFIC CONTROL CONFIGURATIONS SHOWN ON TRAFFIC CONTROL SHEET 2 MAY BE UTILIZED FOR ALL WORK REQUIRING A LANE CLOSURE OF 3 DAYS OR LESS SUCH AS MEMBRANE AND PAVING OPERATIONS THAT DO NOT REQUIRE OPEN DECK WORK. ANY WORK REQUIRING A LANE CLOSURE LONGER THAN 3 DAYS OR INCLUDES OPEN DECK WORK SUCH AS DECK REMOVAL AND REPLACEMENT OPERATIONS SHALL UTILIZE THE TRAFFIC CONTROL CONFIGURATIONS SHOWN ON TRAFFIC CONTROL SHEET 3.
14. CHANNELIZING DEVICES OTHER THAN RETROREFLECTIVE PLASTIC DRUMS SHALL BE ALLOWED ALONG THE BUFFER SPACE AND WORK AREA FOR MEMBRANE AND PAVING OPERATIONS ONLY. THE TYPE OF DEVICE SHALL BE CONSISTENT THROUGHOUT THE BUFFER SPACE AND WORK AREA AND SHALL REMAIN STABLE WHILE UNATTENDED.
15. THE NUMBER OF CHANNELIZING DEVICES, TYPE III BARRICADE AND OTHER TRAFFIC CONTROL DEVICES SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED ARE TO BE DETERMINED BASED ON INDIVIDUAL DETOUR CONDITIONS (TAPERS, SPEED LIMITS, LENGTH OF DETOUR, CURVE, ETC.). WARNING LIGHTS SHALL NOT BE USED ON CHANNELIZING DEVICES.
16. PLACE LAST CHANNELIZING DEVICE A MINIMUM 100 FEET BEYOND THE ANTICIPATED WORK ZONE TERMINAL POINT EACH DAY FOR MEMBRANE AND PAVING OPERATIONS ONLY.
17. THE ARROW PANEL SHALL BE PLACED ON THE SHOULDER OF THE ROADWAY AS CLOSE AS PRACTICAL TO THE BEGINNING OF THE MERGING TAPER.
18. THE PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE USED AT THE DISCRETION OF THE ENGINEER AND WILL BE PAID FOR UNDER ITEM 641.15, "PORTABLE CHANGEABLE MESSAGE SIGN". THE PCMS SHALL BE PLACED AS SHOWN IN THE "CONSTRUCTION APPROACH SIGNING ON 1-91" DETAIL ON TRAFFIC CONTROL SHEET 2. THE PCMS SHALL BE USED IN ACCORDANCE WITH SECTION 6F.60 OF THE MUTCD. THE PCMS SHALL READ "LEFT (OR RIGHT) LANE CLOSED AHEAD, PLEASE MERGE EARLY".
19. TRAVEL LANE SHALL BE A MINIMUM OF 12 FEET WIDE.
20. DURING MEMBRANE AND PAVING OPERATIONS, THE CONTRACTOR MAY REDUCE TRAFFIC TO ONE LANE DURING WORKING HOURS IN ACCORDANCE WITH THIS SHEET. ALL EQUIPMENT SHALL BE MOVED TO A LOCATION OFF PAVED SHOULDERS AND OUTSIDE THE CLEAR ZONE (MINIMUM 30 FEET) DURING NON-WORK PERIODS AND PROTECTED BY BARRELS OR CONES, UNLESS PROTECTED BY TRAFFIC BARRIER OR GUARDRAIL.
21. AT THE DISCRETION OF THE ENGINEER, MERGING TAPER, BUFFER SPACE, AND TANGENT LENGTHS MAY BE EXTENDED BEYOND MINIMUM VALUES, ESPECIALLY IN CLOSE PROXIMITY TO INTERCHANGE RAMPS, CURVES, OR OTHER INFLUENCING FACTORS.
22. EXTEND MERGING TAPER TO ACCOUNT FOR REQUIRED LANE SHIFT OFFSET.
23. PROVIDE MERGING TAPER LENGTH AS REQUIRED FOR LANE SHIFT.

## TEMPORARY TRAFFIC BARRIER

24. TEMPORARY TRAFFIC BARRIER SHALL BE A CONCRETE MEDIAN BARRIER (CMB) TYPE. STEEL BEAM GUARDRAIL WILL NOT BE ALLOWED FOR USE AS A TEMPORARY TRAFFIC BARRIER. PLACEMENT OF CMBs AND REMOVING AND RESETTING CMBs WILL BE CONSIDERED INCIDENTAL TO ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
25. THE END OF THE BARRIER FACING APPROACHING TRAFFIC SHALL MEET THE FOLLOWING REQUIREMENTS.
  - A. WHEN NO GUARDRAIL IS PRESENT, A 30' OFFSET SHALL BE USED FROM THE EDGE OF TRAVELED WAY. IF A 30' OFFSET IS NOT ATTAINABLE, THEN AN ENERGY ABSORPTION ATTENUATOR SHALL BE LOCATED AT THE END OF THE BARRIER.
  - B. IF GUARDRAIL IS PRESENT, THEN TEMPORARY CONCRETE TRAFFIC BARRIER SHALL BE CONNECTED TO EXISTING GUARDRAIL. PAYMENT WILL BE CONSIDERED INCIDENTAL TO ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)". (COSTS FOR DISMANTLING BARRIER CONNECTION AND RESTORING EXISTING BARRIER TO ORIGINAL CONFIGURATION WILL BE CONSIDERED INCIDENTAL TO ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".) SEE BARRIER RAIL DETAILS ON SHEET 14. AN ENERGY ABSORPTION ATTENUATOR SHALL BE LOCATED AT THE END OF THE BARRIER.
26. THE CONTRACT INCLUDES AN ESTIMATED QUANTITY OF THREE ENERGY ABSORPTION ATTENUATORS, WHICH INCLUDES ONE BACKUP ATTENUATOR TO BE USED IN THE EVENT AN IN-SERVICE ATTENUATOR IS DAMAGED AND NEEDS TO BE REPLACED. PAYMENT FOR THE ATTENUATORS AND TO MOVE ATTENUATORS FOR SHIFTING LANE CLOSURES WILL BE CONSIDERED INCIDENTAL TO ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)". PAYMENT FOR ENERGY ABSORPTION ATTENUATORS USED FOR ANY OTHER TRAFFIC CONTROL SETUP WILL BE CONSIDERED INCIDENTAL TO ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
27. TEMPORARY TAPE EDGELINES SHALL BE APPLIED AND SHALL MAINTAIN A ONE FOOT MINIMUM DISTANCE FROM THE BARRIER WITH TWO FEET BEING DESIRABLE. ALL TEMPORARY TAPE EDGE LINES AND PAVEMENT MARKING MASKS WILL BE CONSIDERED INCIDENTAL TO ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
28. THE RAISED PAVEMENT MARKERS (RPM'S), TYPE II SHALL BE PLACED TO THE OUTSIDE OF THE TEMPORARY TAPE PAVEMENT MARKINGS. THE RPM'S SHALL BE SPACED AT A MINIMUM OF 20 FEET AND WILL BE CONSIDERED INCIDENTAL TO ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
29. DASHED LINE REMOVAL SHALL BEGIN A MINIMUM OF 750 FEET IN ADVANCE OF THE BEGINNING OF THE SHOULDER TAPER FOR TRAFFIC CONTROL WITH TEMPORARY BARRIER PROTECTION.

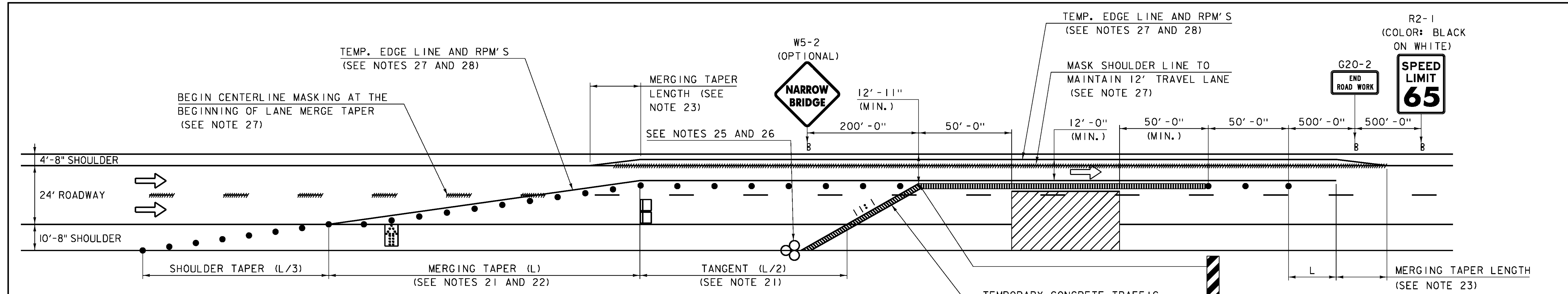


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PROJECT NUMBER: IM DECK(46)

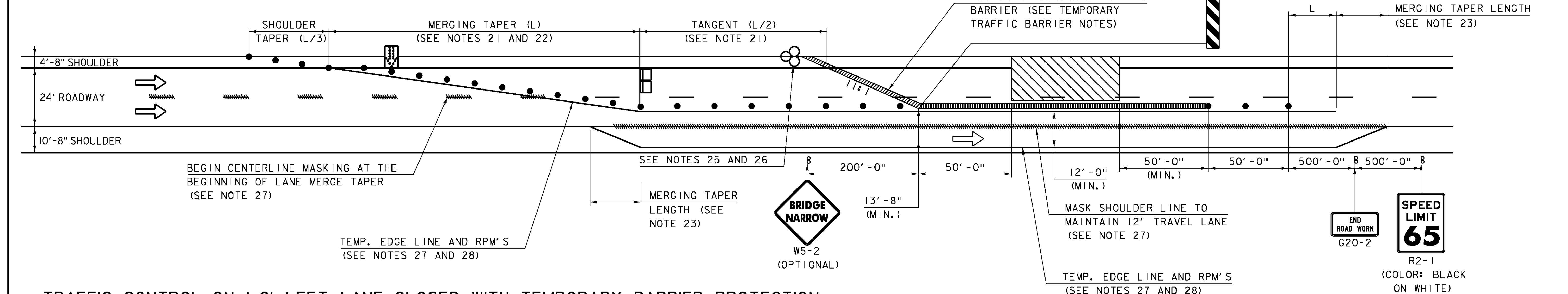
FILE NAME: z15d116+op-107N.dgn  
PROJECT LEADER: J. BYATT  
DESIGNED BY: S. BEAUMONT  
TRAFFIC CONTROL SHEET I

PLOT DATE: 3/8/2016  
DRAWN BY: S. BEAUMONT  
CHECKED BY: L. GREER  
SHEET II OF 49





**TRAFFIC CONTROL ON I-91 RIGHT LANE CLOSED WITH TEMPORARY BARRIER PROTECTION**  
(SEE NOTE 13)



**TRAFFIC CONTROL ON I-91 LEFT LANE CLOSED WITH TEMPORARY BARRIER PROTECTION**  
(SEE NOTE 13)

- LEGEND**
- ➔ FLOW OF TRAFFIC
  - RETROREFLECTIVE PLASTIC DRUM
  - ▤ PORTABLE ARROW BOARD
  - TYPE III BARRICADE
  - ▨ WORK AREA
  - ⊠ TRUCK-MOUNTED ATTENUATOR
  - ⊗ ENERGY ABSORPTION ATTENUATOR

POSTED SPEED (MPH)	TAPER LENGTHS (FT)		TANGENT W=12 FT (L/2)	BARRIER FLARE RATE (MIN.)	MIN. BUFFER SPACE LENGTH (FT)	MAXIMUM CHANNELIZING DEVICE SPACING (FT)	
	SHOULDER W=10 FT (L/3)	MERGING 12 FT LANE* (L)				TAPER (S)	TANGENT (2S)
45	150	540	270	1:9	360	45	90
50	170	600	300	1:11	425	50	100
55	185	660	330	1:13	495	55	110
60	200	720	360	1:13	570	60	120
65	215	780	390	1:13	645	65	130

* SEE NOTE 22.

TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATION:  
 $L = WS$  FOR POSTED SPEEDS OF 45 MPH OR GREATER  
 $L = WS^2/60$  FOR POSTED SPEEDS OF 40 MPH OR LESS

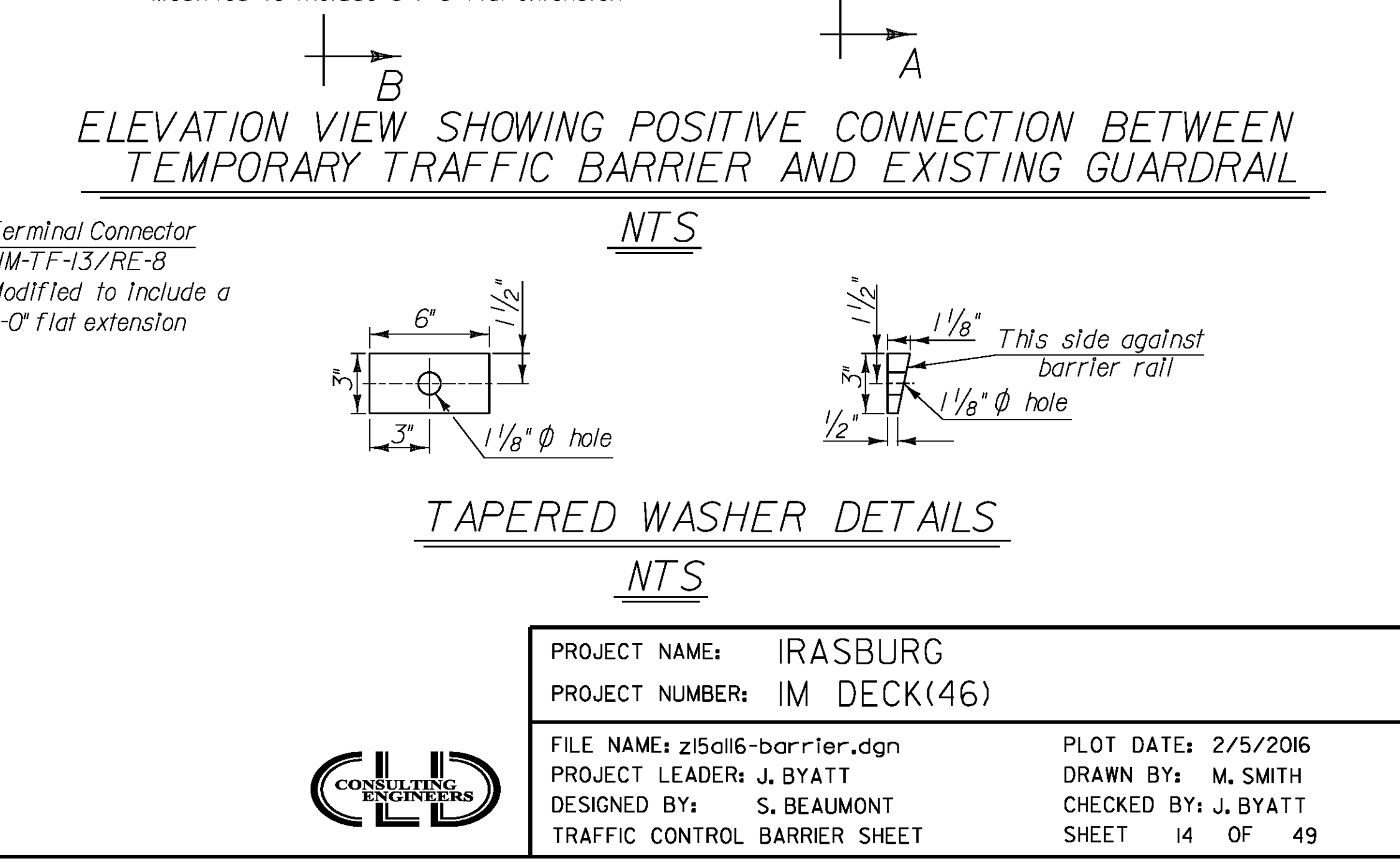
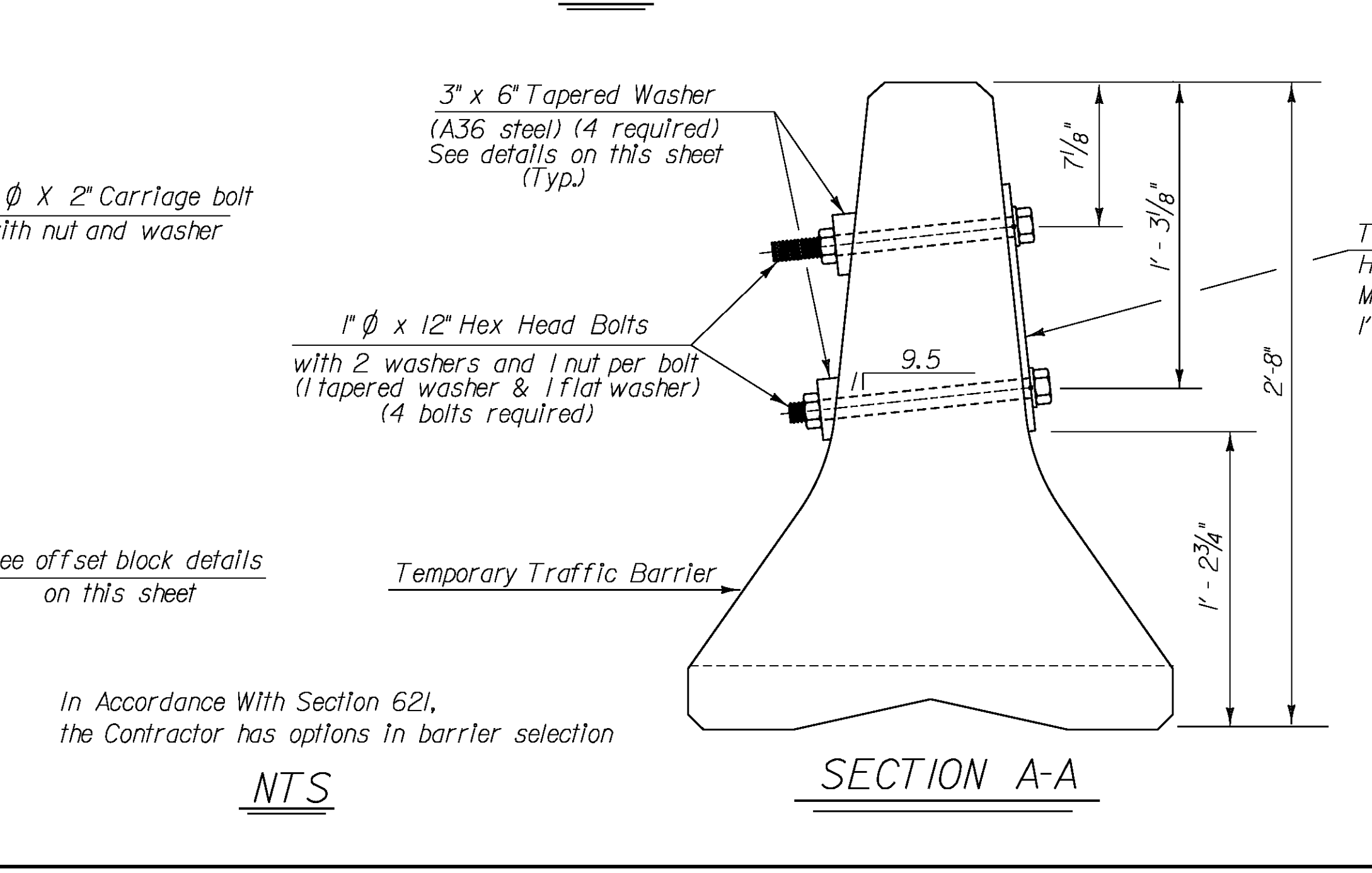
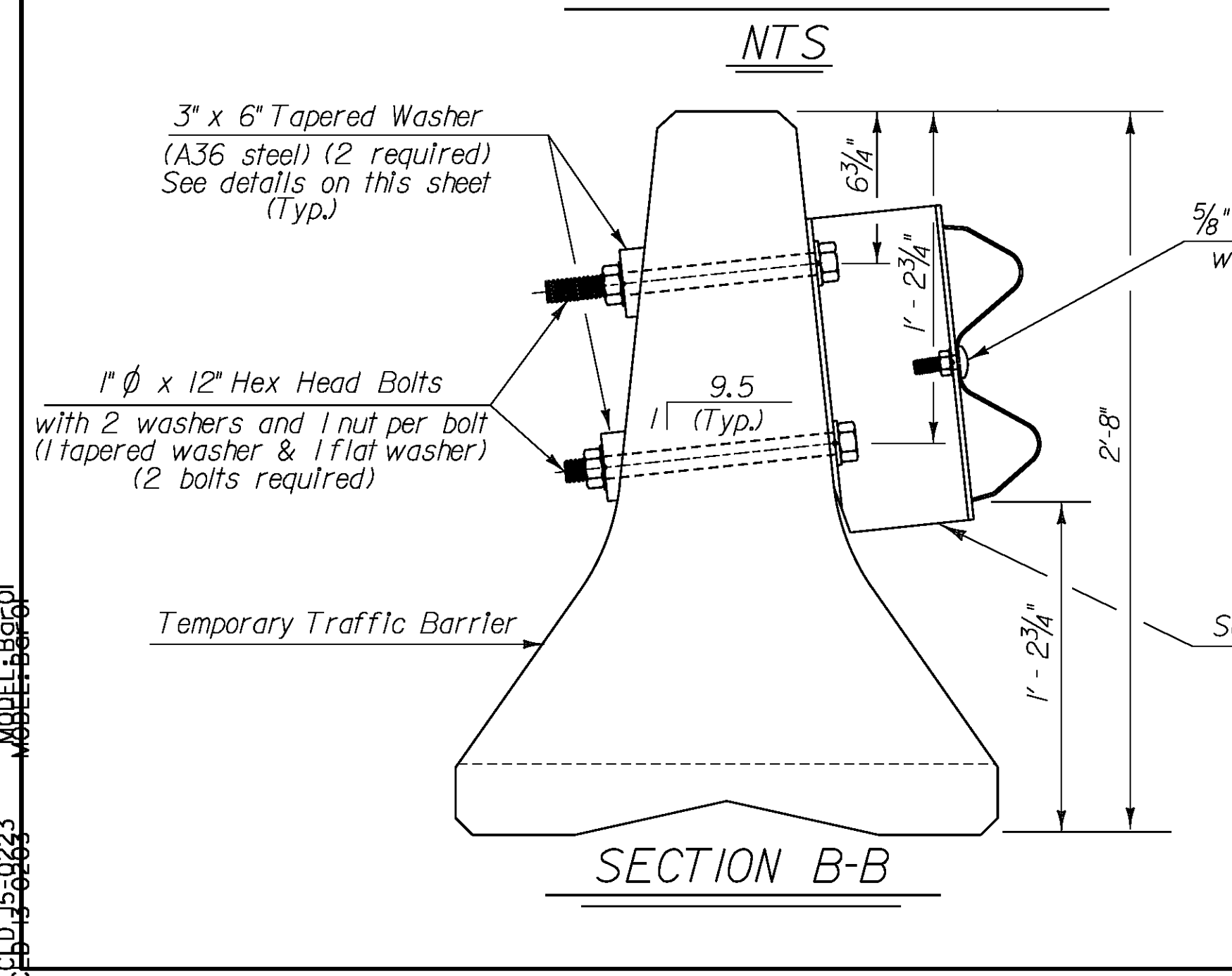
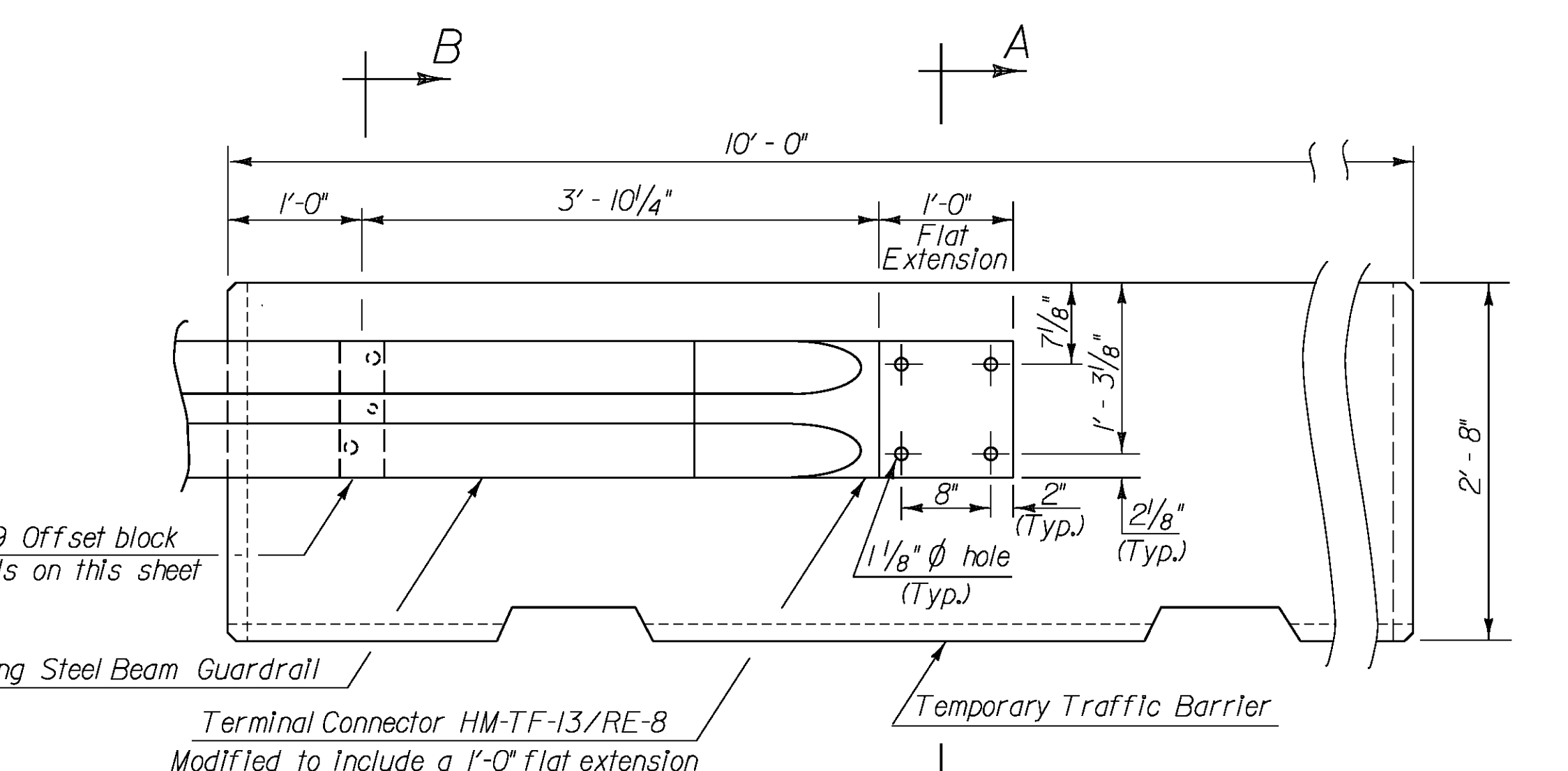
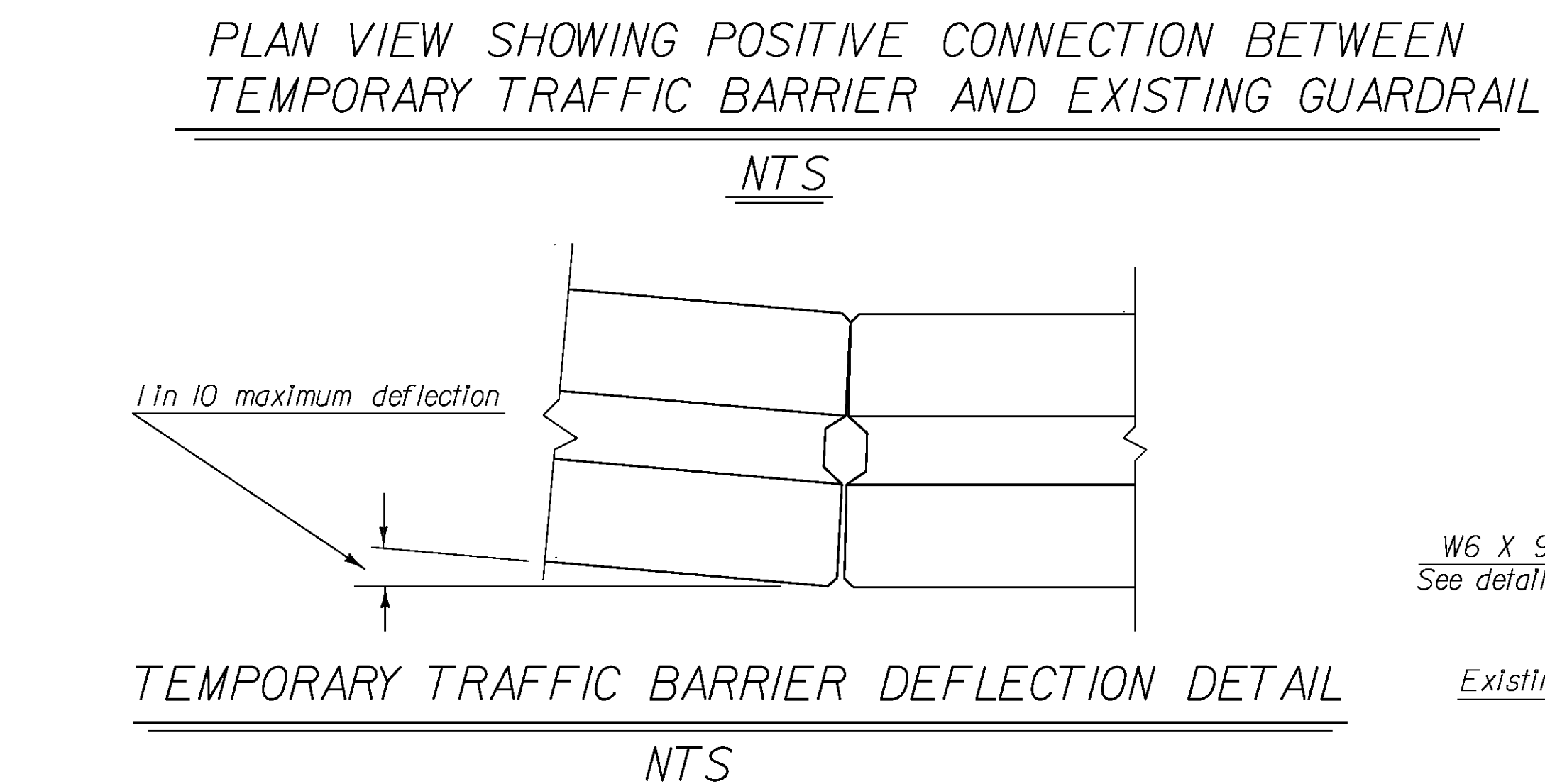
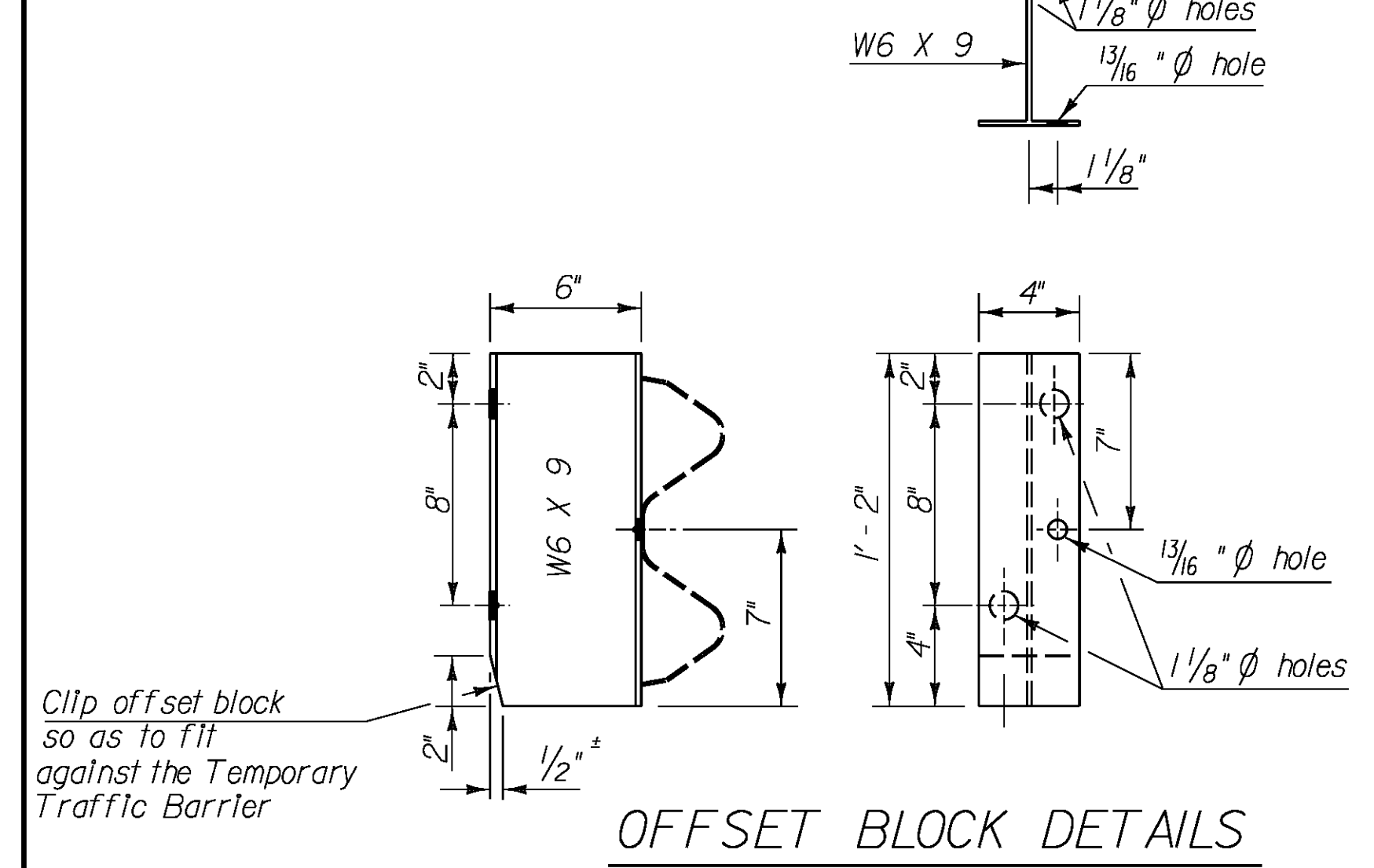
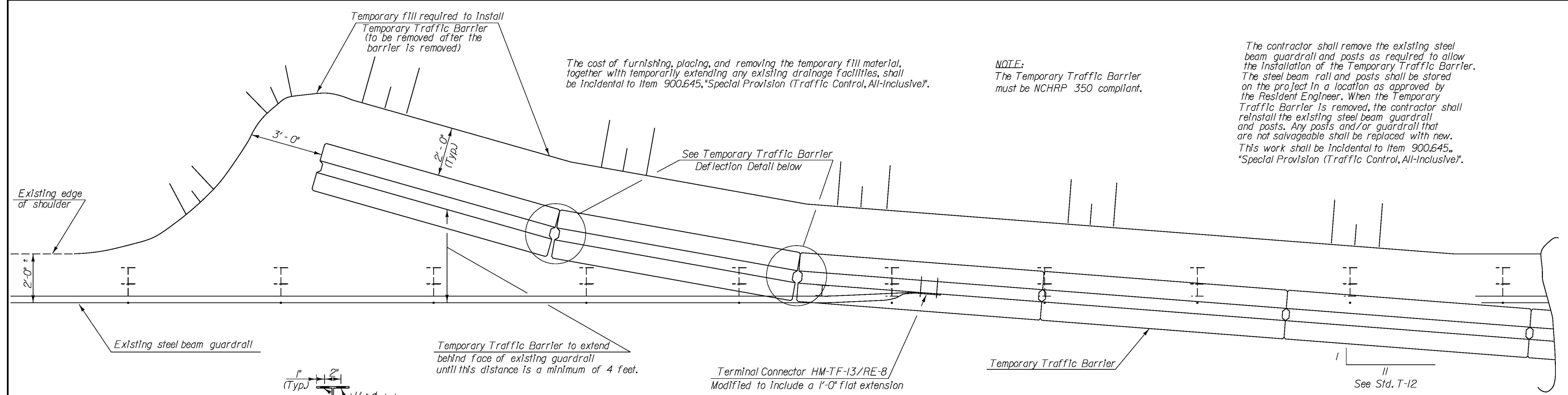
L = MINIMUM LENGTH OF TAPER  
W = WIDTH OF OFFSET IN FEET. (TYPICAL)  
S = POSTED SPEED IN MPH

NOTE: ALL NOTE REFERENCES REFER TO NOTES ON TRAFFIC CONTROL SHEET 1.

PROJECT NAME: IRASBURG  
PROJECT NUMBER: IM DECK(46)  
FILE NAME: z15d116+op-107N.dgn  
PROJECT LEADER: J. BYATT  
DESIGNED BY: S. BEAUMONT  
TRAFFIC CONTROL SHEET 3  
PLOT DATE: 2/5/2016  
DRAWN BY: S. BEAUMONT  
CHECKED BY: L. GREER  
SHEET 13 OF 49



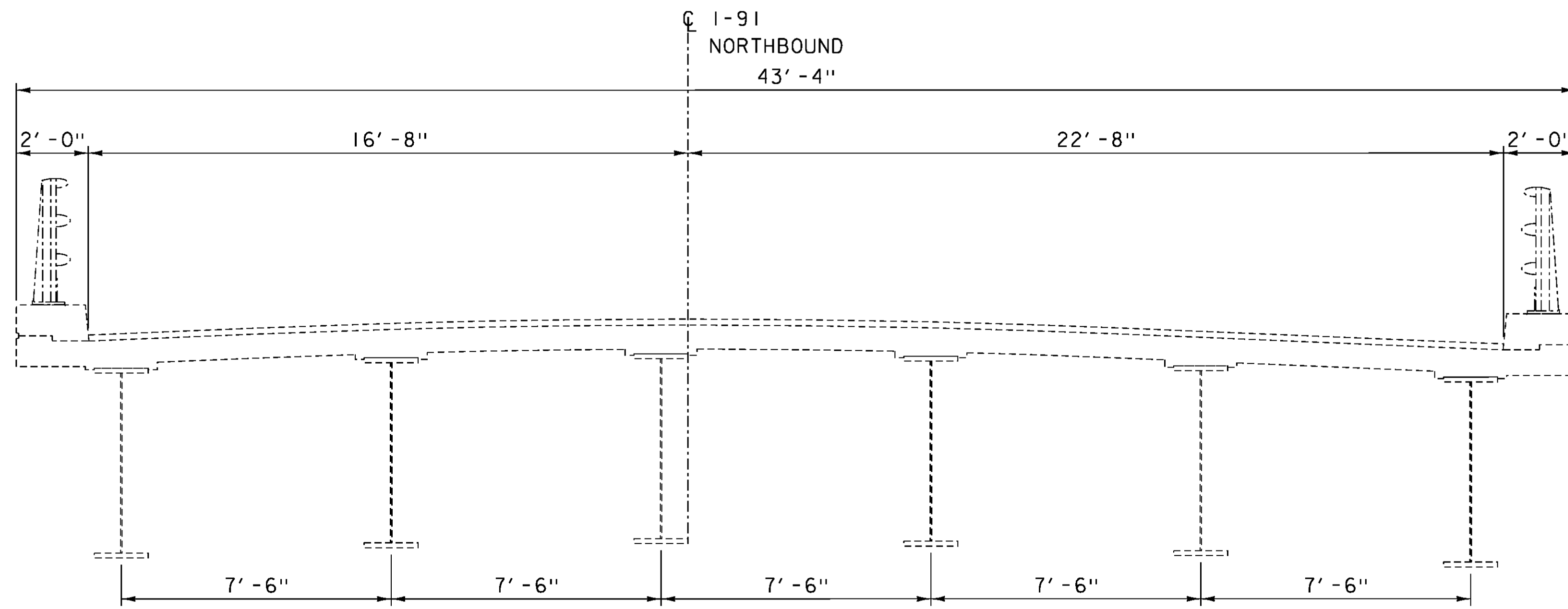
CLD 15-0223 MODEL+TCP3



PROJECT NAME:	IRASBURG
PROJECT NUMBER:	IM DECK(46)
FILE NAME:	z15all6-barrier.dgn
PROJECT LEADER:	J. BYATT
DESIGNED BY:	S. BEAUMONT
TRAFFIC CONTROL BARRIER SHEET	
PLOT DATE:	2/5/2016
DRAWN BY:	M. SMITH
CHECKED BY:	J. BYATT
SHEET	14 OF 49

CLO 15-0223 MODEL: B0501  
 15-0223

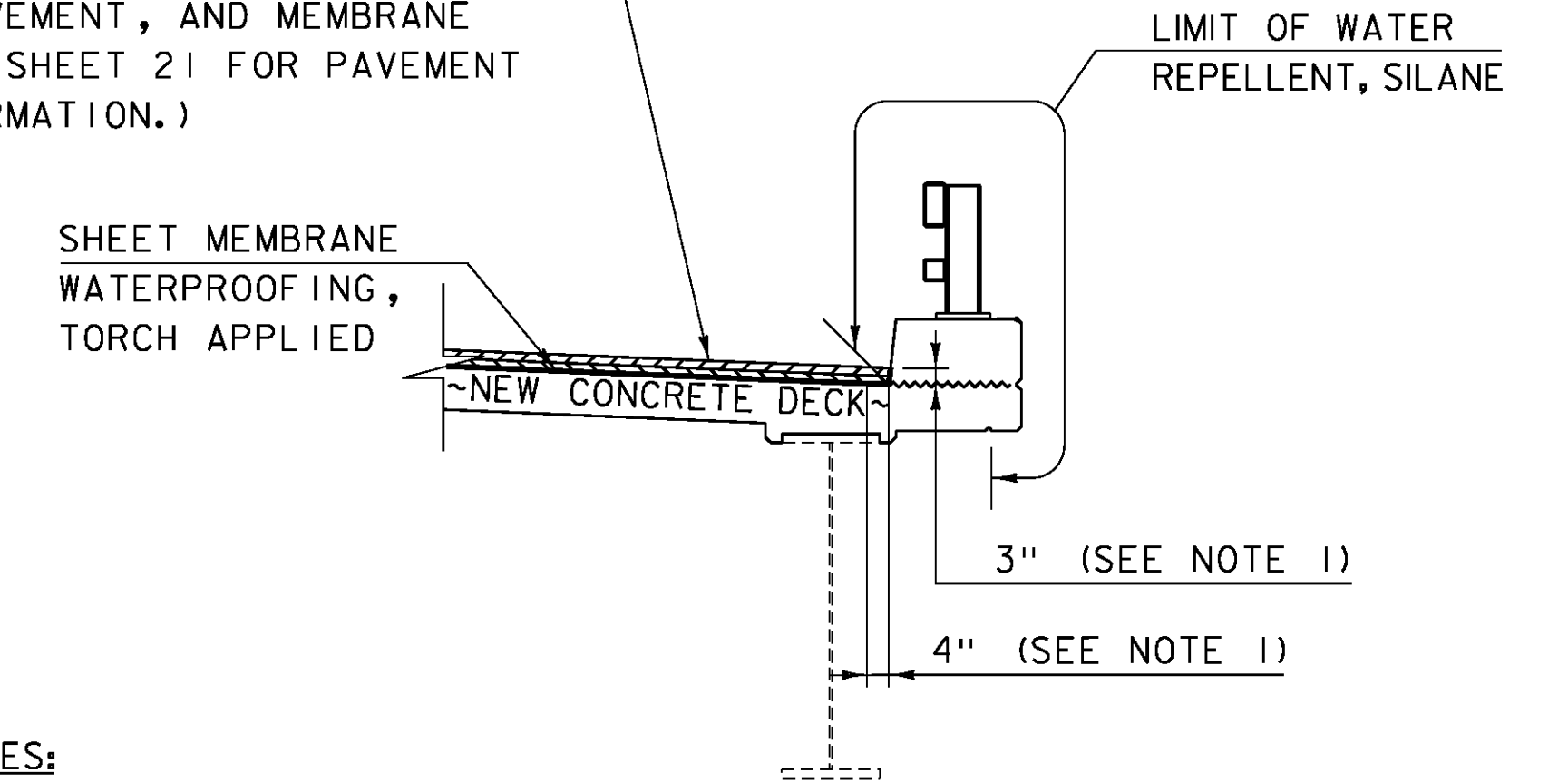




**EXISTING TYPICAL BRIDGE SECTION**

SCALE: 3/8" = 1'-0"

SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT - BRIDGE MIX - TYPE IVB) (DEPTH VARIES - SEE JOINT, PAVEMENT, AND MEMBRANE LAYOUT ON SHEET 21 FOR PAVEMENT LIFT INFORMATION.)



**DETAIL A NOTES:**

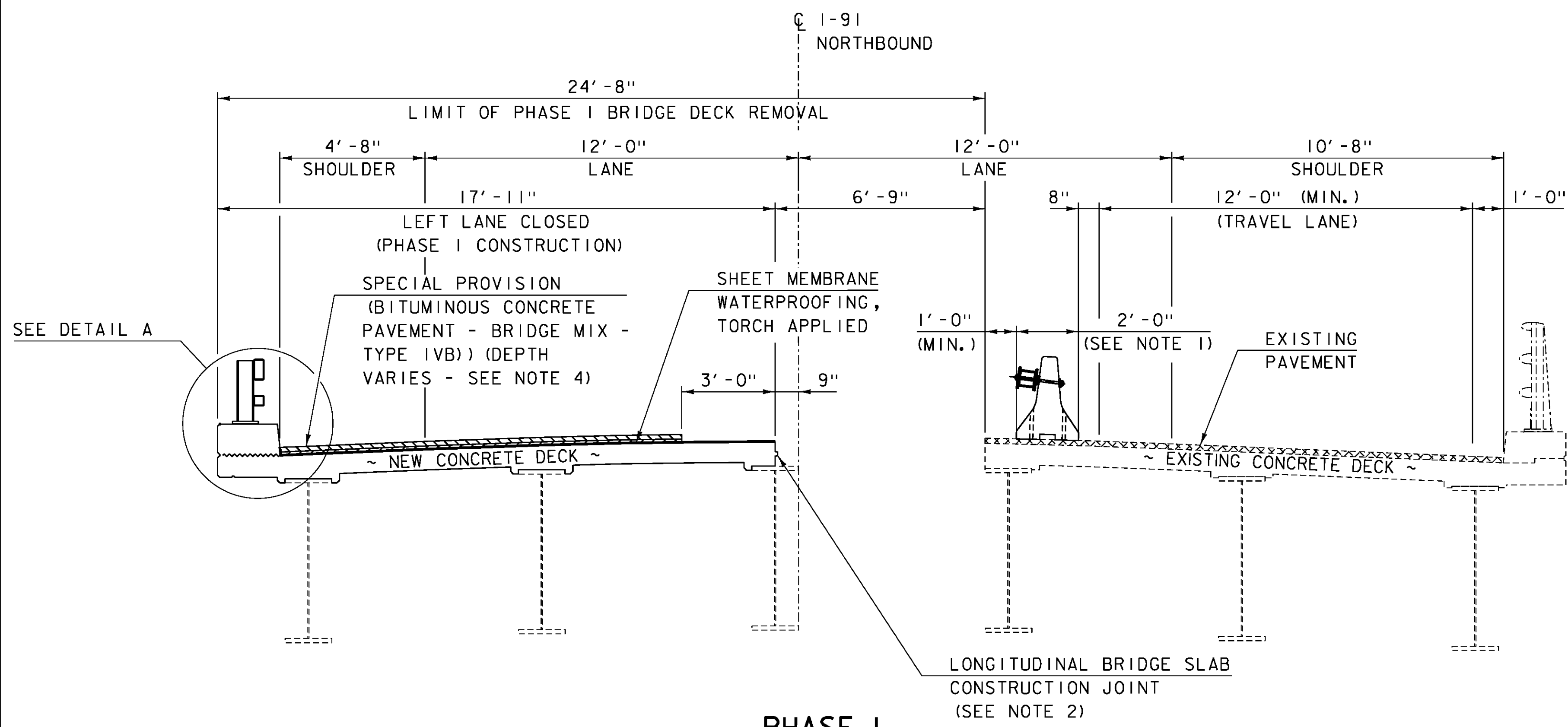
1. INDICATES AREA ALONG DECK AND UP FACE OF CURB FOR PLACEMENT OF TWO COATS OF POLYURETHANE MEMBRANE.
2. POLYURETHANE MEMBRANE AND BLAST CLEANING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SHEET MEMBRANE WATERPROOFING, TORCH APPLIED.
3. SHEET MEMBRANE WATERPROOFING SHALL EXTEND TO FACE OF CURB AS SHOWN.
4. IN ADDITION TO THE REQUIREMENTS OF SUBSECTION 519.04, BLAST CLEAN 3" UP THE FACE OF CURB PRIOR TO PLACING THE MEMBRANE.

**DETAIL A**

SCALE: 3/8" = 1'-0"

**NOTES:**

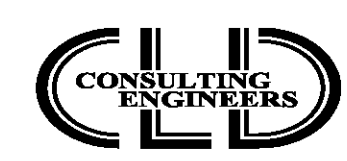
1. TEMPORARY CONCRETE TRAFFIC BARRIER AND TEMPORARY CONCRETE TRAFFIC BARRIER - BRACED SHALL BE REQUIRED DURING BRIDGE DECK CONSTRUCTION OPERATIONS. CHANNELIZING DEVICES SUCH AS RETROREFLECTIVE PLASTIC DRUMS MAY BE UTILIZED DURING PAVING AND MEMBRANE OPERATIONS. SEE TRAFFIC CONTROL NOTES ON TRAFFIC CONTROL SHEET 1.
2. SEE BRACED BARRIER, MEMBRANE OVERLAP, AND LONGITUDINAL BRIDGE SLAB CONSTRUCTION JOINT DETAILS ON SHEET 16 AND TEMPORARY CONCRETE TRAFFIC BARRIER - BRACED DETAILS ON SHEETS 17 AND 18 FOR ADDITIONAL INFORMATION.
3. PLACEMENT OF THE MEMBRANE SHALL START AT THE LOW SIDE OF THE BRIDGE. THE SPLICE SHALL BE AS SHOWN IN THE DETAILS ON THIS PAGE WITH THE HIGH SIDE OVERLAPPING THE LOW SIDE.
4. SEE JOINT, PAVEMENT, AND MEMBRANE LAYOUT ON SHEET 21 FOR PAVEMENT LIFT INFORMATION.



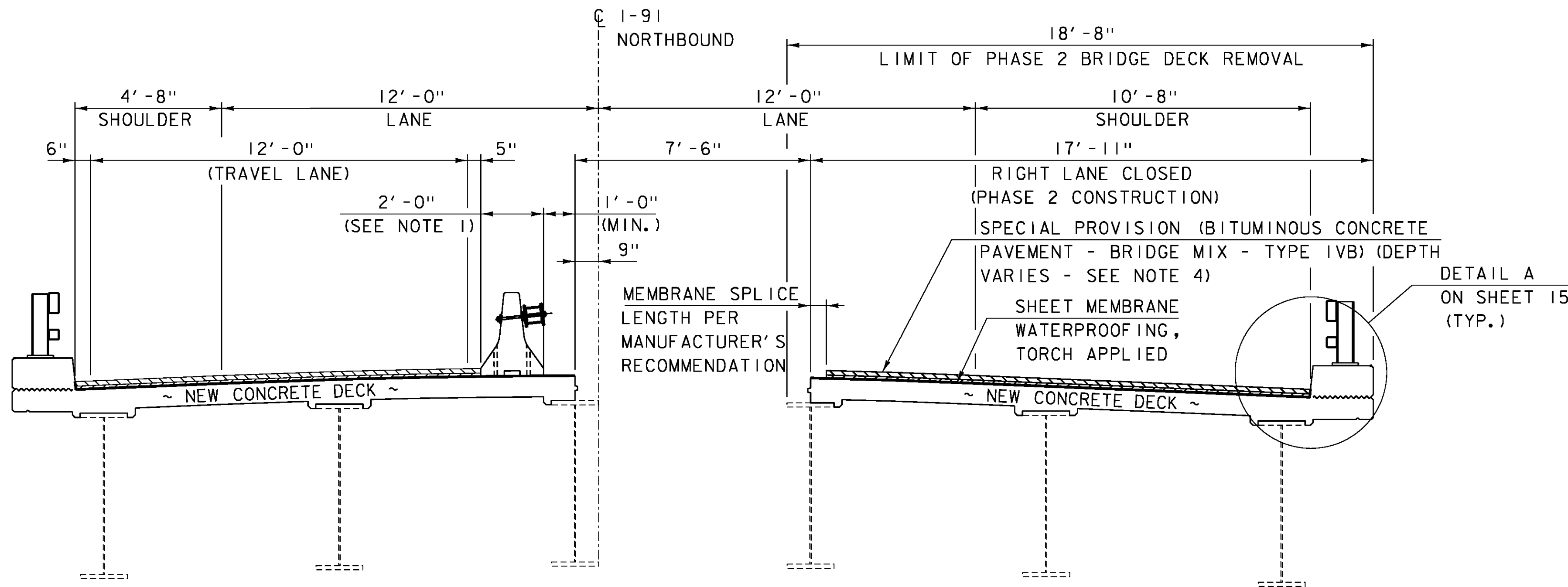
**PHASE I**

SCALE: 3/8" = 1'-0"

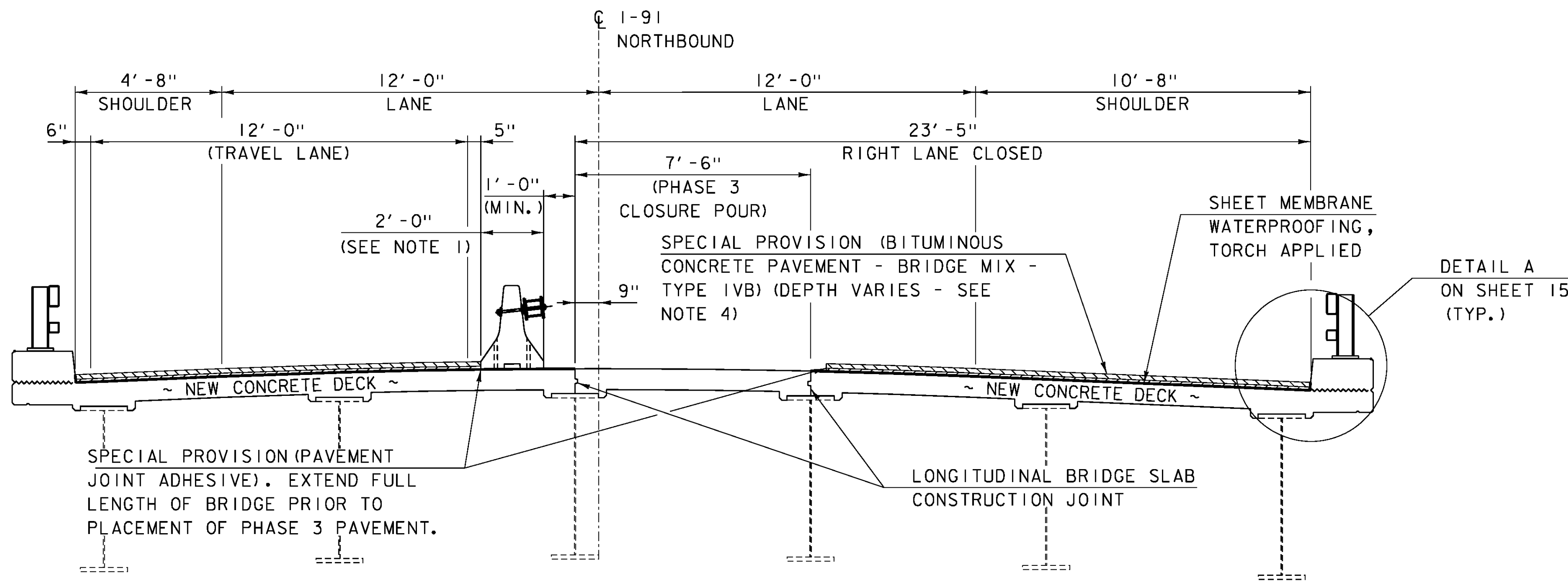
MODEL: PHASING I  
CLD 15-0223



PROJECT NAME: IRASBURG	PLOT DATE: 2/5/2016
PROJECT NUMBER: IM DECK(46)	DRAWN BY: M. SMITH
FILE NAME: z15dl16+op-107N.dgn	CHECKED BY: S. BEAUMONT
PROJECT LEADER: J. BYATT	SHEET 15 OF 49
DESIGNED BY: J. FRENCH	
PHASING SECTIONS SHEET 1	



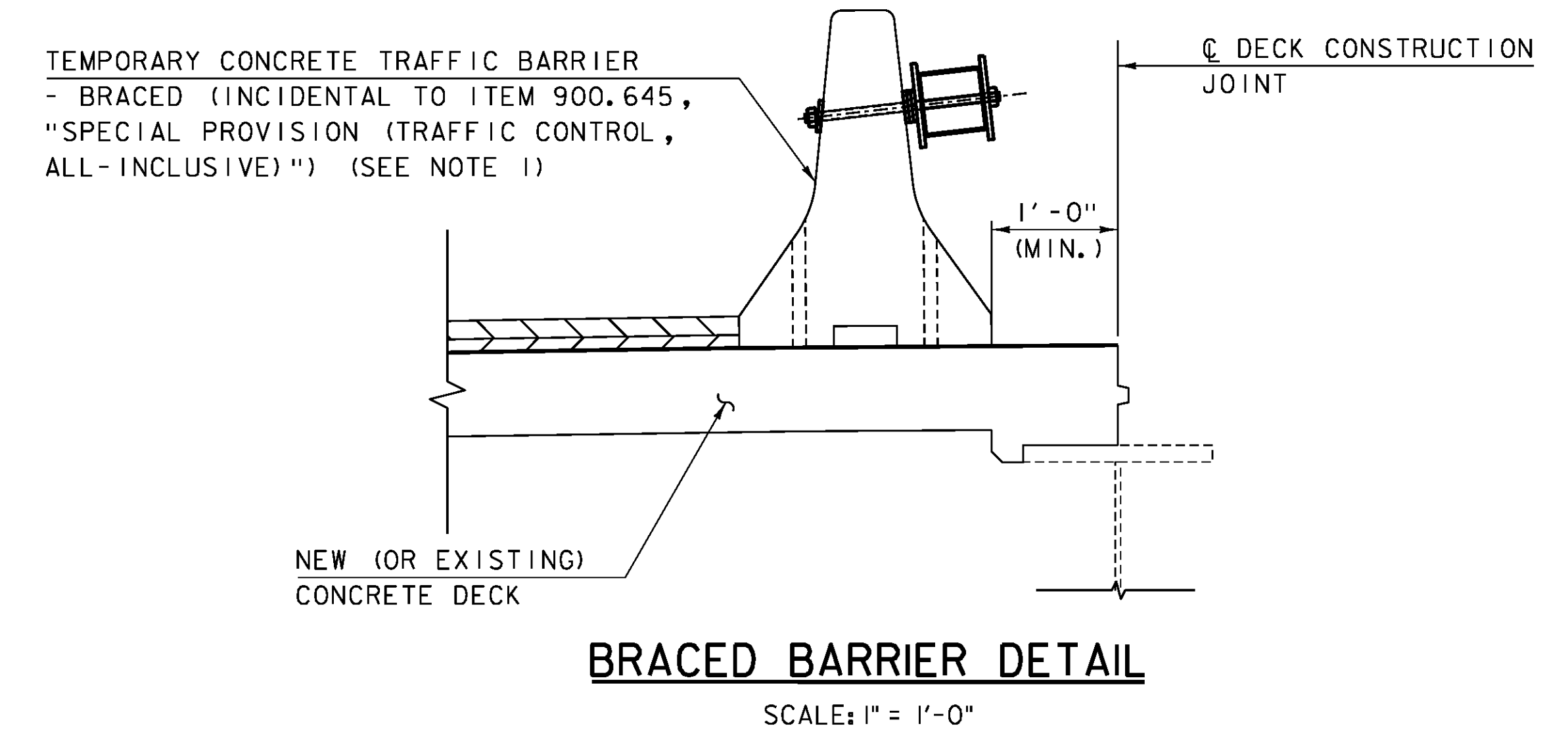
**PHASE 2**  
SCALE: 3/8" = 1'-0"



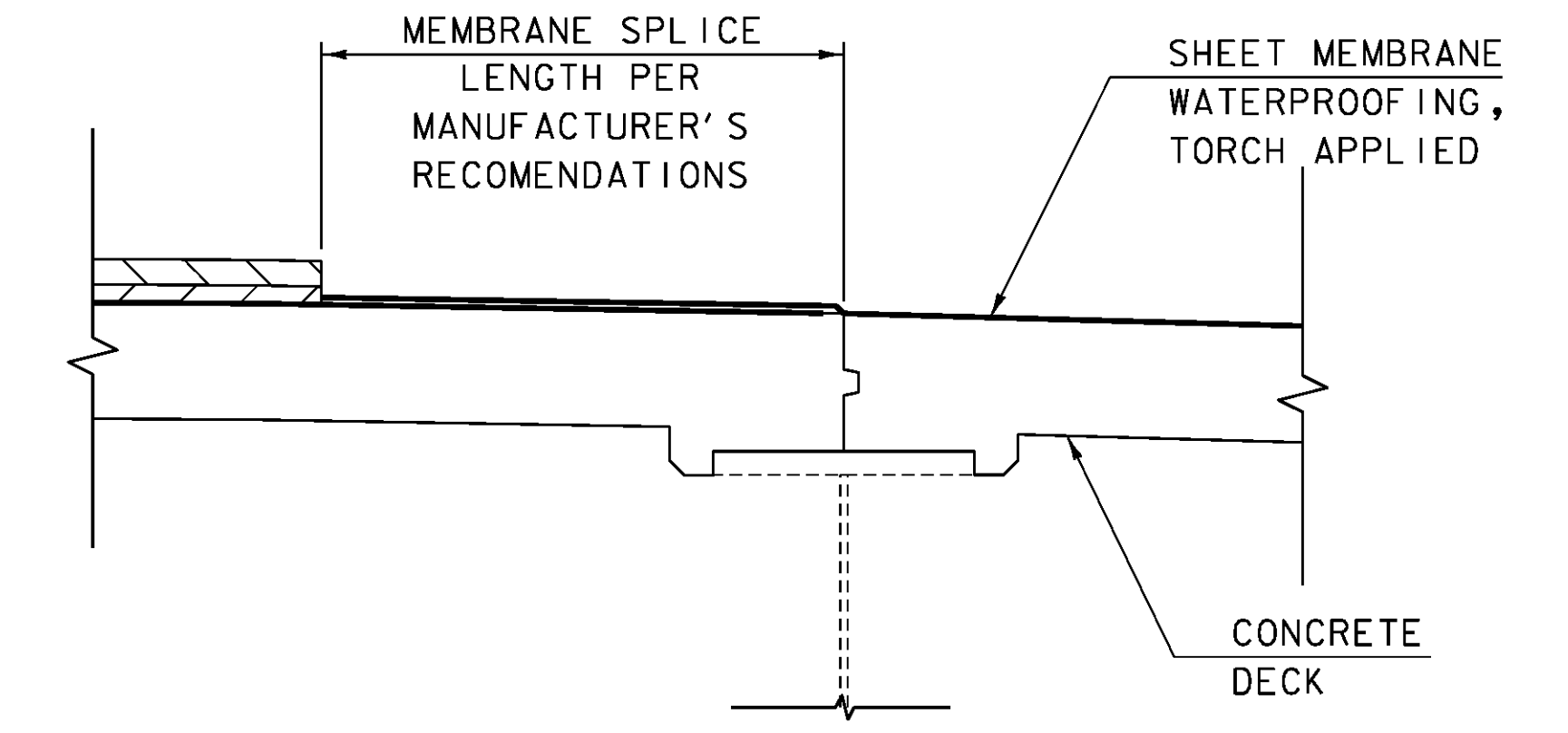
**PHASE 3**  
SCALE: 3/8" = 1'-0"

**NOTES:**

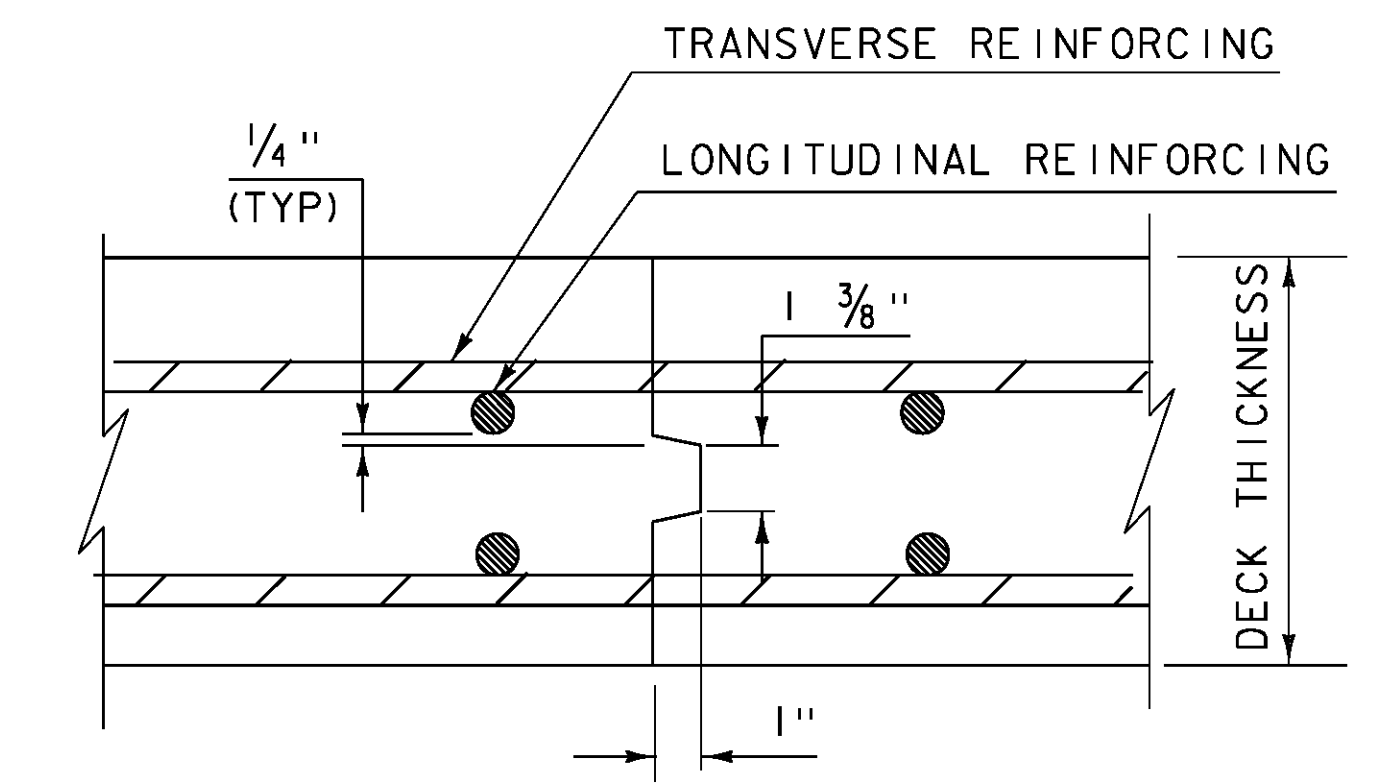
1. TEMPORARY CONCRETE TRAFFIC BARRIER AND TEMPORARY CONCRETE TRAFFIC BARRIER - BRACED SHALL BE REQUIRED DURING BRIDGE DECK CONSTRUCTION OPERATIONS. CHANNELIZING DEVICES SUCH AS RETROREFLECTIVE PLASTIC DRUMS MAY BE UTILIZED DURING PAVING AND MEMBRANE OPERATIONS. SEE TRAFFIC CONTROL NOTES ON TRAFFIC CONTROL SHEET 1.
2. SEE TEMPORARY CONCRETE TRAFFIC BARRIER - BRACED DETAILS ON SHEETS 17 AND 18 FOR ADDITIONAL INFORMATION.
3. PLACEMENT OF THE MEMBRANE SHALL START AT THE LOW SIDE OF THE BRIDGE. THE SPLICE SHALL BE AS SHOWN IN THE DETAILS ON THIS PAGE WITH THE HIGH SIDE OVERLAPPING THE LOW SIDE.
4. SEE JOINT, PAVEMENT, AND MEMBRANE LAYOUT ON SHEET 21 FOR PAVEMENT LIFT INFORMATION.
5. AFTER PHASE 3 IS COMPLETE, SHIFT TRAFFIC TO THE RIGHT LANE AND COMPLETE MEMBRANE AND PAVING OPERATIONS.



**BRACED BARRIER DETAIL**  
SCALE: 1" = 1'-0"



**MEMBRANE OVERLAP DETAIL**  
SCALE: 1" = 1'-0"

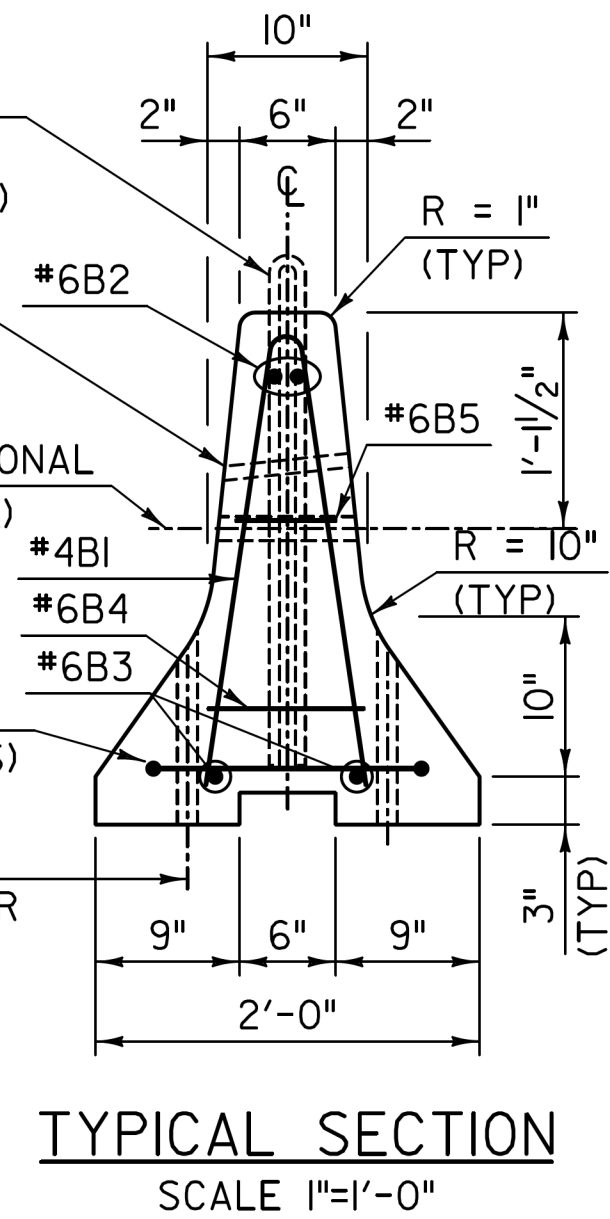
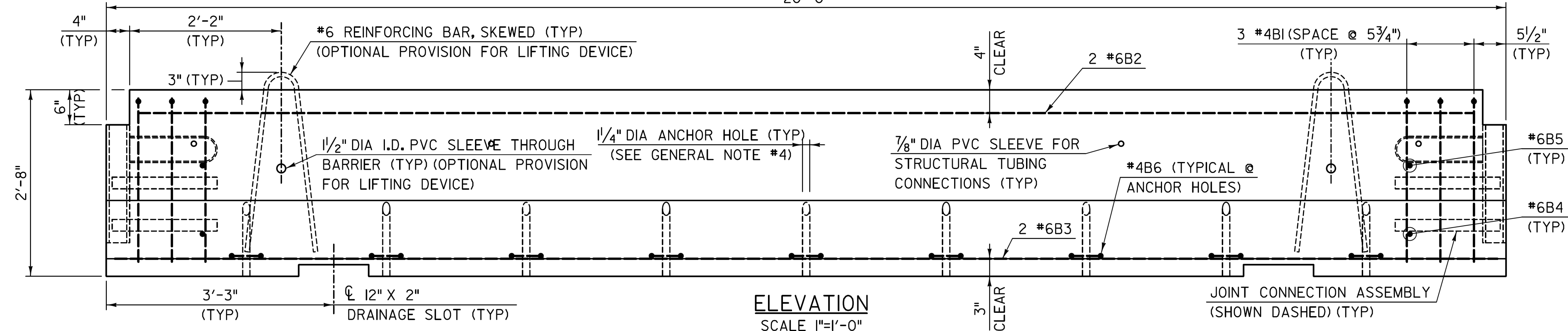
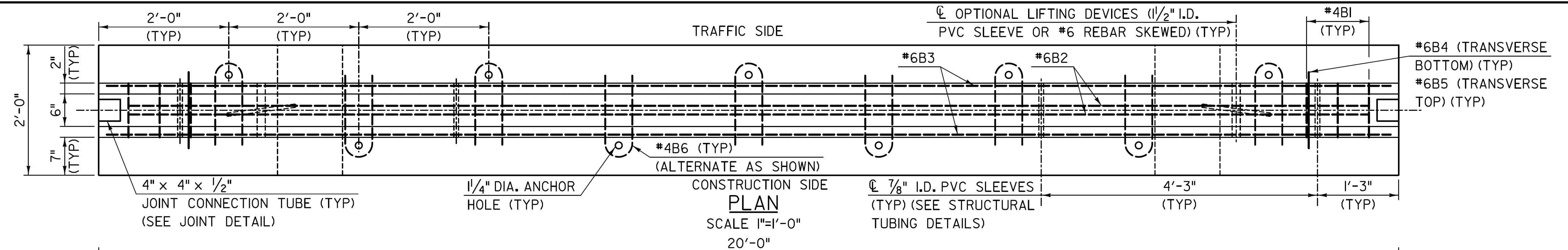


**LONGITUDINAL BRIDGE SLAB CONSTRUCTION JOINT DETAILS**  
3" = 1'-0"

CLD 15-0223 MODEL: PHASING2



PROJECT NAME:	IRASBURG	PLOT DATE:	2/5/2016
PROJECT NUMBER:	IM DECK(46)	DRAWN BY:	M. SMITH
FILE NAME:	z15dl16+op-107N.dgn	CHECKED BY:	S. BEAUMONT
PROJECT LEADER:	J. BYATT	PHASING SECTIONS SHEET 2	SHEET 16 OF 49
DESIGNED BY:	J. FRENCH		

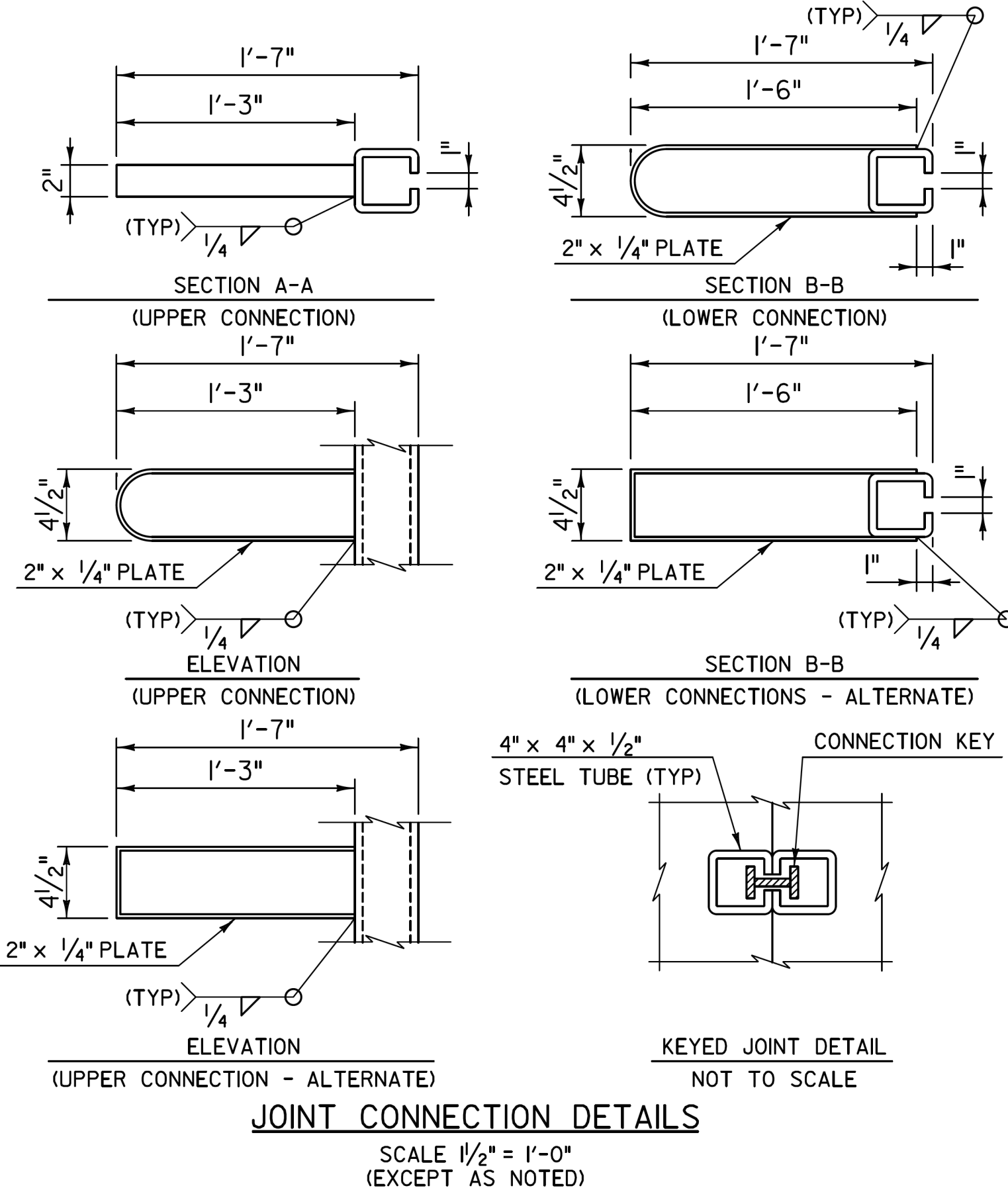
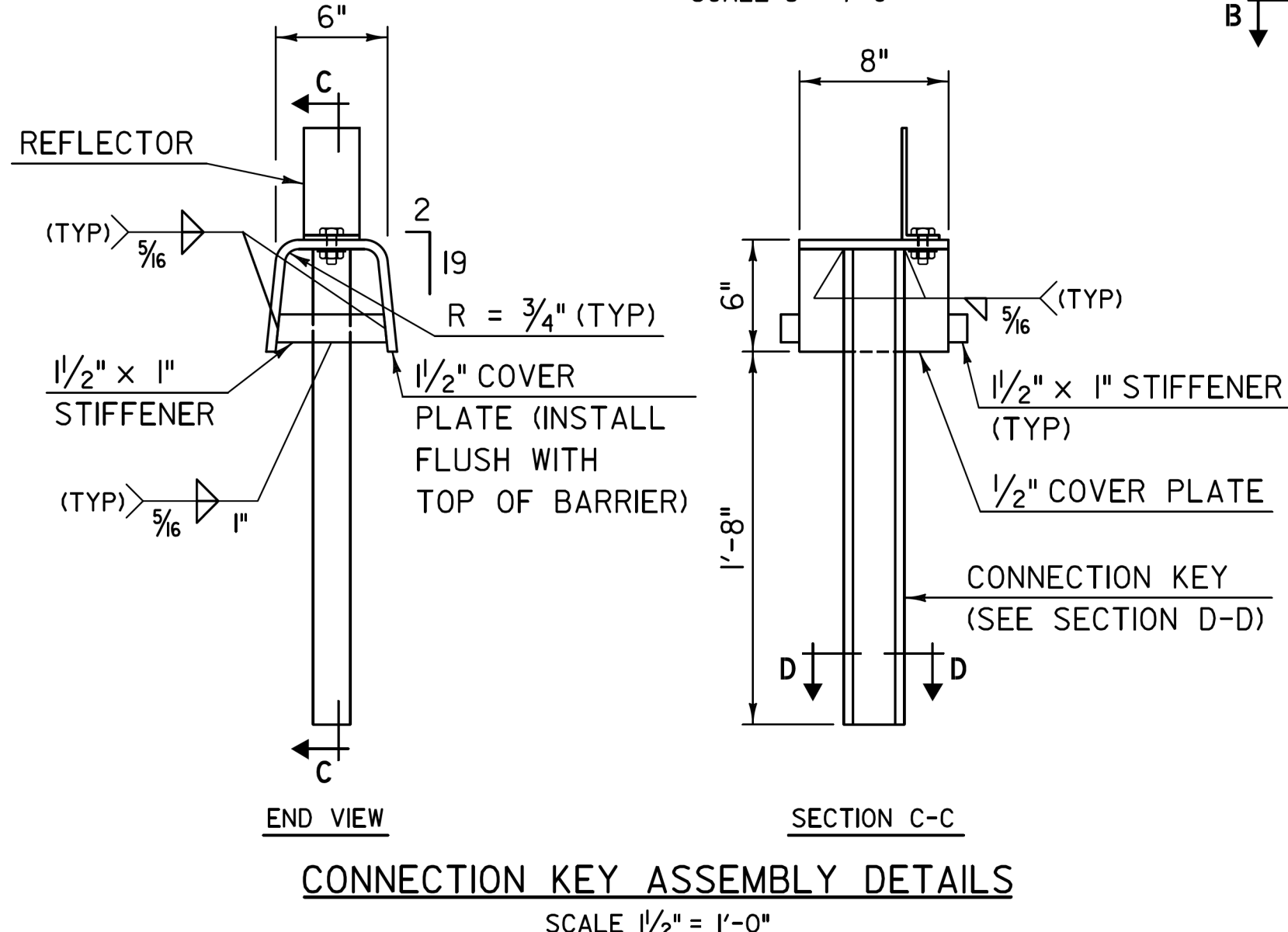
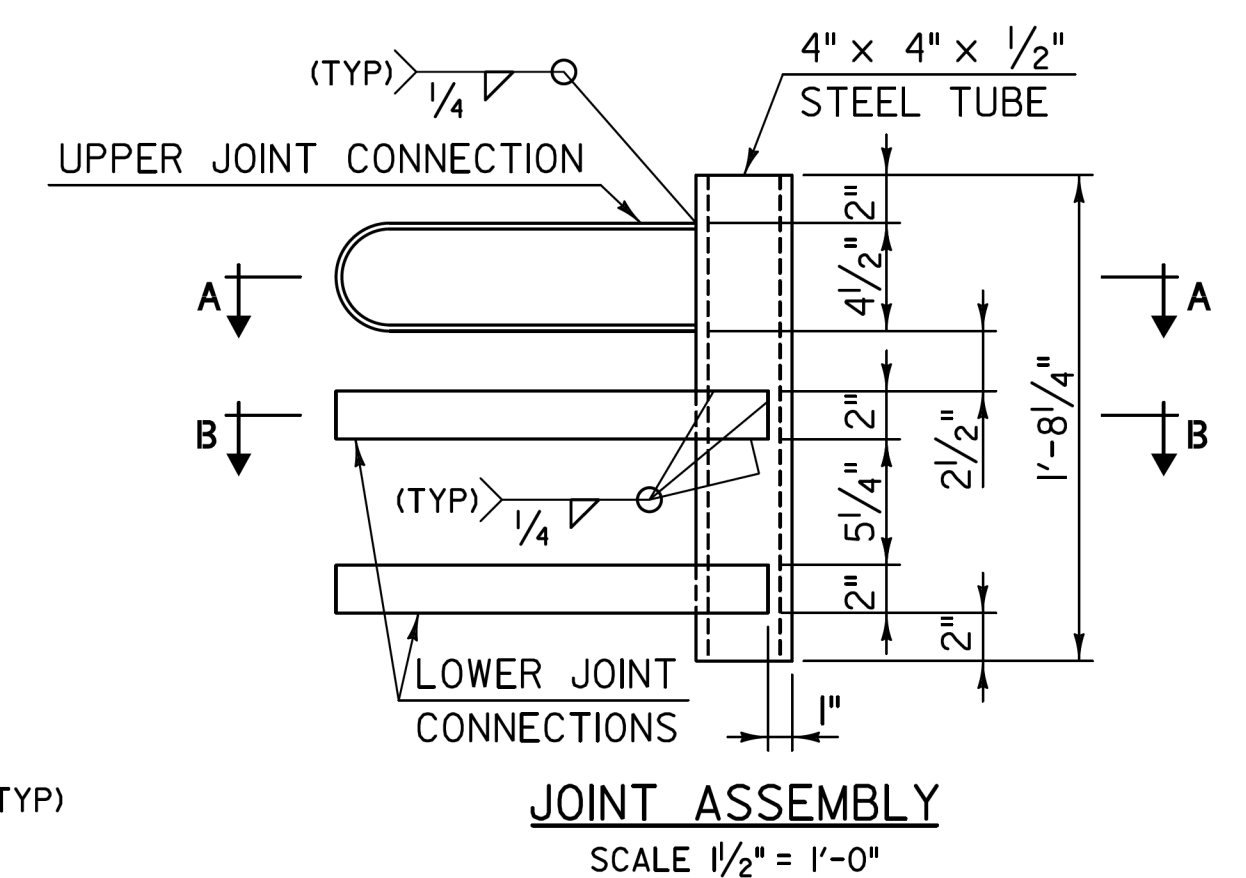
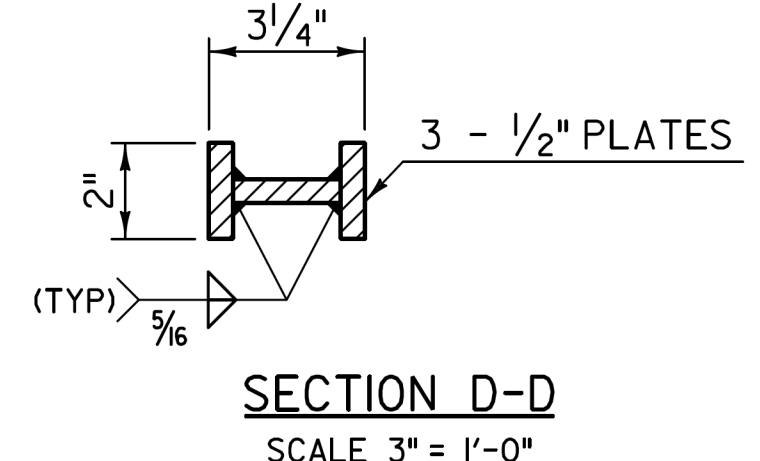


**GENERAL NOTES**

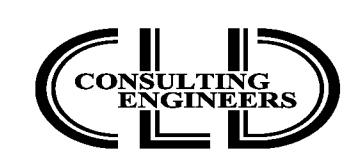
- TEMPORARY TRAFFIC BARRIER-BRACED SHALL BE FURNISHED BY THE CONTRACTOR AND PAYMENT SHALL BE INCLUDED IN PAY ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL INCLUSIVE). CONCRETE BARRIER AND ALL ATTACHMENTS SHALL BE FABRICATED IN ACCORDANCE WITH SECTION 62L. ALL BARRIER UNITS FOR BRACED SYSTEMS SHALL BE 20' LONG.
- TEMPORARY TRAFFIC BARRIER-BRACED DETAILS, AS SHOWN IN THESE PLANS, ARE IN COMPLIANCE WITH REQUIREMENTS PER UPDATED NCHRP REPORT 350 FOR TEST NO. 3-II, TL-3 CRASH TESTED BY MIDWEST ROADSIDE SAFETY; NY BOX BEAM STIFFENING OF UNANCHORED TCB, MARCH 2008. THE BARRIER SYSTEM TESTED WITH A 27.6" DYNAMIC DEFLECTION AND ALLOWS FOR PLACEMENT AT A MINIMUM 12" DISTANCE BETWEEN BARRIERS AND EDGE OF BRIDGE DECK.
- A MINIMUM OF TWO BARRIER UNITS WITH BRACED JOINTS ARE REQUIRED TO BE PLACED BEYOND BOTH ENDS OF THE BRIDGE WORK AREA FOR SPEEDS GREATER THAN 45 MPH. FOR SPEEDS  $\leq$  45 MPH, A MINIMUM OF ONE BRACED BARRIER IS REQUIRED TO BE FULLY SET BEYOND EACH END OF BRIDGE WORK AREA.
- THE LAST CONCRETE BARRIER UNIT, AT EACH END OF BARRIER LAYOUT, SHALL BE ANCHORED A MINIMUM 18" BELOW THE ROADWAY SURFACE. REQUIRED 1" DIA. ANCHOR RODS (A36 STEEL) SHALL BE INSTALLED WITH 5 ANCHORS ON THE TRAFFIC SIDE OF BARRIER AND 4 ON THE CONSTRUCTION SIDE. IF THE END(S) OF THE BRACED CONCRETE BARRIER SYSTEM EXTENDS 50' OR MORE BEYOND LIMITS OF BRIDGE WORK THE LAST BARRIER UNIT DOES NOT REQUIRE ANCHORAGE.
- TEMPORARY TRAFFIC BARRIER - BRACED MAY BE INSTALLED WITH A 230' MINIMUM RADIUS. GAPS CREATED BETWEEN STRUCTURAL TUBES AND CONCRETE BARRIER, DURING A RADIAL LAYOUT, SHALL BE SHIMMED WITH 8"x8"x1/2" PLATES & FENDER WASHERS TO FIRMLY ATTACH STRUCTURAL TUBING TO BARRIER.
- THE CONTRACTOR SHALL FURNISH AND INSTALL APPROVED RETROREFLECTIVE DELINEATORS AT 25-FOOT INTERVALS ALONG TOP AND/OR ONE FOOT DOWN THE SIDE OF PORTABLE CONCRETE BARRIER. PAYMENT SHALL BE INCLUDED IN ITEM 900.645 "SPECIAL PROVISION (TRAFFIC CONTROL, ALL INCLUSIVE)". THE COLOR OF DELINEATORS SHALL, IN ALL INSTANCES, CONFORM TO THE COLOR OF EDGE LINE MARKINGS. DELINEATORS SUPPLEMENT, BUT DO NOT REPLACE, THE NEED FOR RETROREFLECTIVE SOLID EDGE LINE MARKINGS.

**MATERIAL NOTES**

- BARRIERS SHALL BE LIGHT COLORED CLASS AA CONCRETE, WITH MINIMUM COMPRESSIVE STRENGTH OF 4000 psi, AND SHALL HAVE A SMOOTH UNIFORM SURFACE FREE OF DEFECTS AND IRREGULARITIES. CASTING DATE SHALL BE SHOWN ON BARRIER. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4", UNLESS OTHERWISE NOTED.
- ALL REINFORCING STEEL SHALL BE AASHTO M31 (ASTM A615) GRADE 60. ALL REINFORCEMENT SHALL HAVE 1/2" MINIMUM CLEAR COVER, UNLESS OTHERWISE NOTED.
- STRUCTURAL STEEL, EXCEPT THE STEEL TUBES, SHALL BE AASHTO M270 GRADE 50. ALL STEEL SHALL BE FABRICATED IN ACCORDANCE WITH SECTION 506.
- STEEL TUBES, 6x6x3/8 & 4x4x1/2, SHALL BE ASTM A 500 GRADE B OR C. THE 6x6x3/8 TUBES SHALL BE 12' LONG AND GALVANIZED IN ACCORDANCE WITH SUBSECTION 726.08.
- A MINIMUM OF 2 RECESSED LIFTING DEVICES, EACH WITH THE CAPACITY TO LIFT A MASS OF 6 TONS (MINIMUM), SHALL BE INSTALLED TO EACH BARRIER UNIT. TWENTY FOOT LONG CONCRETE BARRIER UNITS ARE APPROXIMATELY 400 LBS./FT.
- DELINEATORS SHALL BE ATTACHED TO BARRIER USING AN APPROVED ADHESIVE MATERIAL OR AS SHOWN ON THIS SHEET.

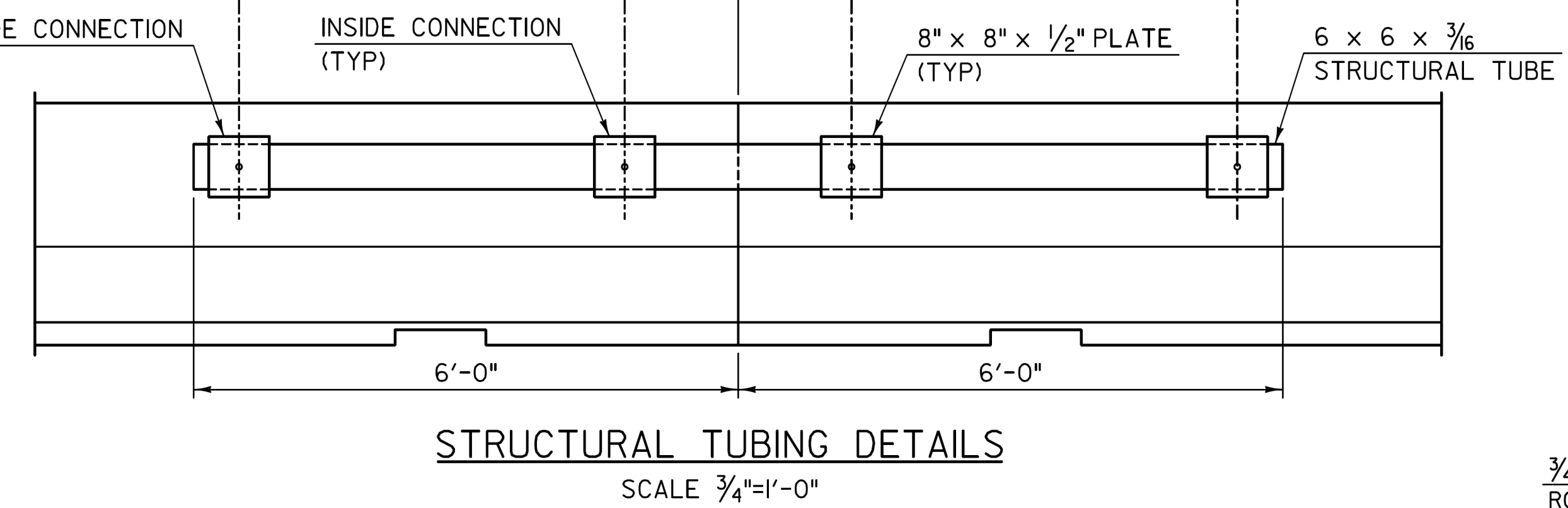
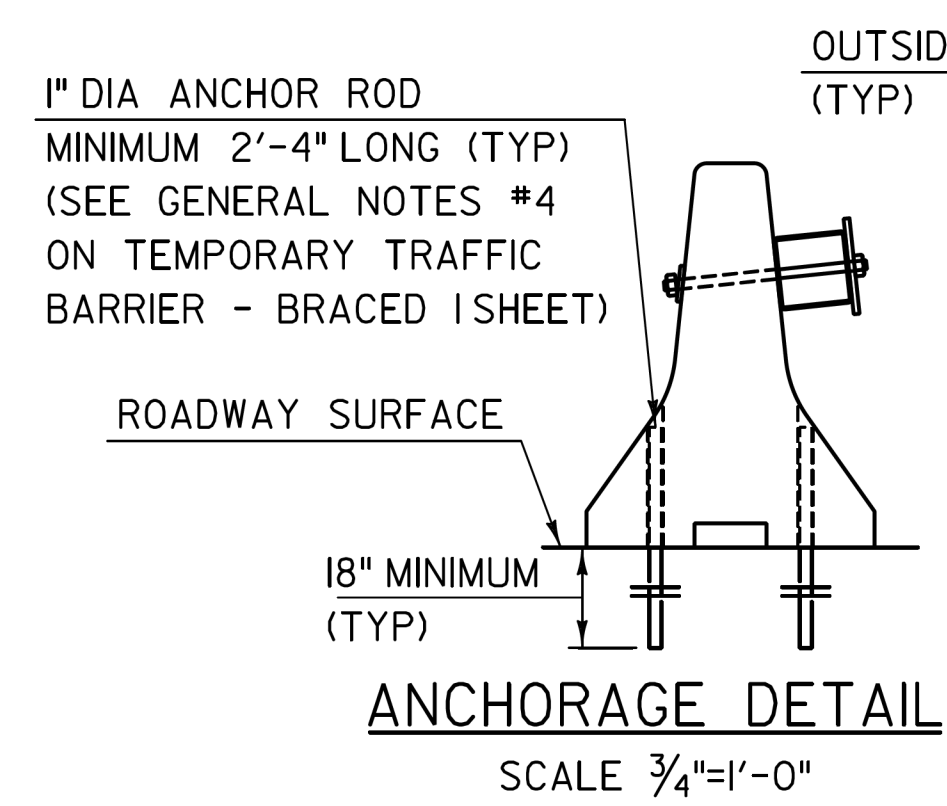
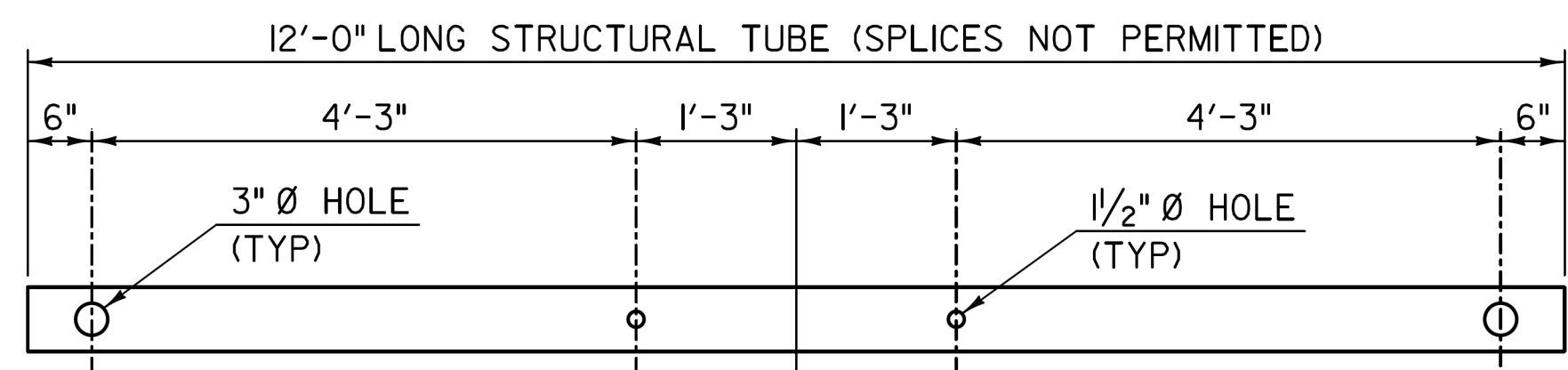
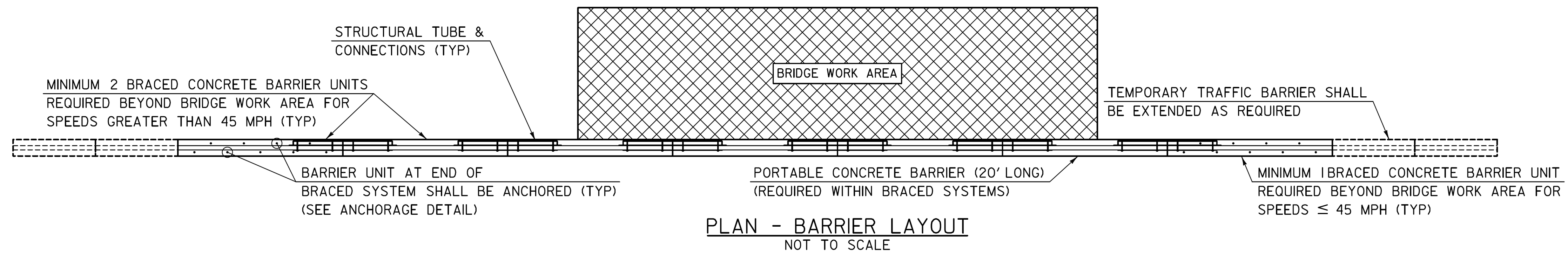


REINFORCING SCHEDULE (PER 20' BARRIER UNIT)								
MARK	SIZE	LENGTH	# PECS	TYPE	A	B	C	LOCATION
B1	#4	4'-10"	6	I	5"	2'-4"	1"	STIRRUPS
B2	#6	19'-1"	2	---	---	---	---	LONGITUDINAL (TOP)
B3	#6	19'-9"	2	---	---	---	---	LONGITUDINAL (BOTTOM)
B4	#6	1'-2"	2	---	---	---	---	TRANSVERSE (BOTTOM)
B5	#6	6"	2	---	---	---	---	TRANSVERSE (TOP)
B6	#4	2'-9"	9	II	5"	1'-3"	---	STIRRUPS



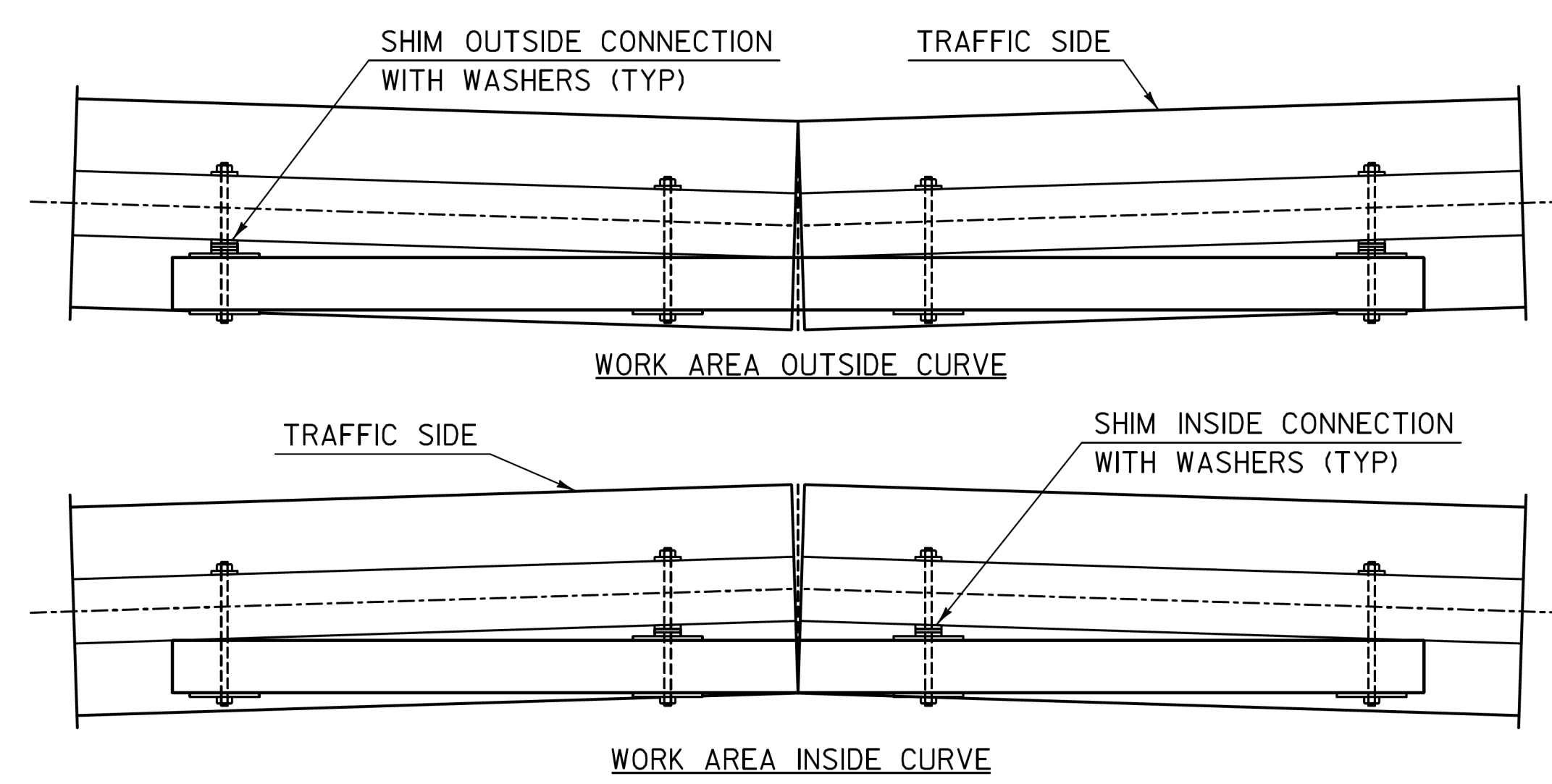
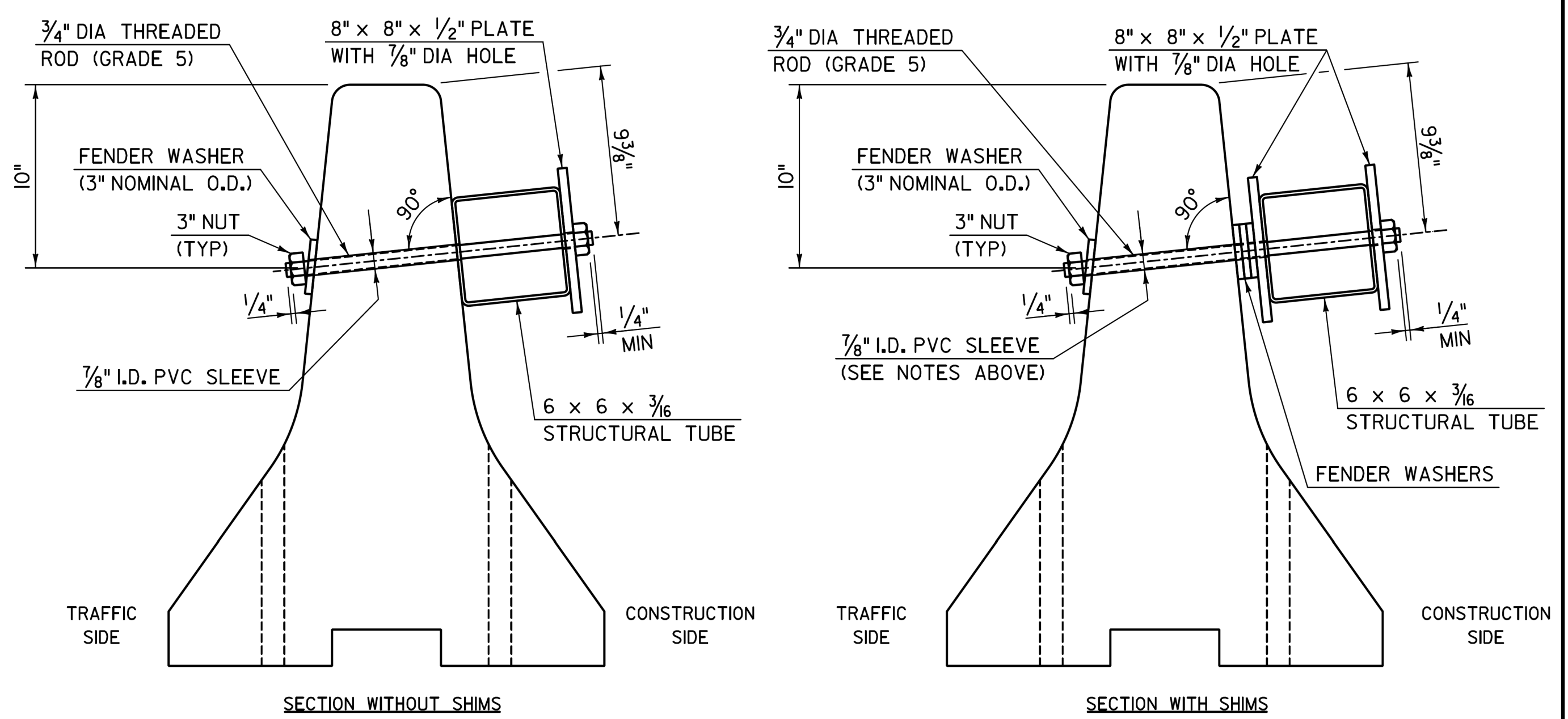
PROJECT NAME: IRASBURG  
 PROJECT NUMBER: IM DECK(46)  
 FILE NAME: z15all6barr1er-107N.dgn PLOT DATE: 2/5/2016  
 PROJECT LEADER: J. BYATT DRAWN BY: M. SMITH  
 DESIGNED BY: S. BEAUMONT CHECKED BY: J. BYATT  
 TEMPORARY TRAFFIC BARRIER - BRACED SHEET 1 SHEET 17 OF 49

MODEL: Sheet 01  
 CLD 15-0223

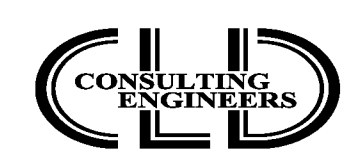


PVC SLEEVE OPENINGS SHALL BE MODIFIED/DRILLED AS REQUIRED TO PROPERLY ALIGN STRUCTURAL TUBE BRACING UNITS FOR CURVED ALIGNMENTS

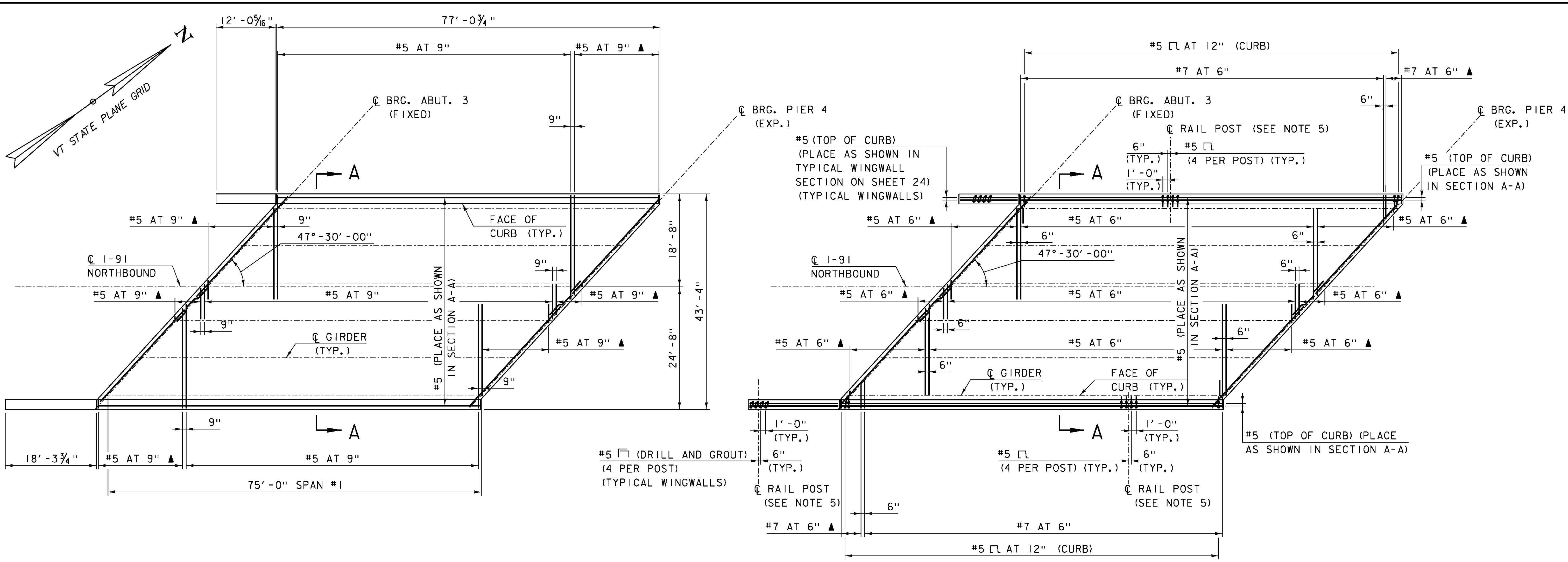
THE PRESENCE OF NORMAL HOLES WHICH HAVE BEEN MODIFIED/DRILLED WILL NOT AFFECT THE REUSE OF CONCRETE BARRIER UNITS



CLD 15-0223 MODEL: Sheet02



PROJECT NAME:	IRASBURG
PROJECT NUMBER:	IM DECK(46)
FILE NAME:	z15all6barrier-107N.dgn
PROJECT LEADER:	J. BYATT
DESIGNED BY:	S. BEAUMONT
TEMPORARY TRAFFIC BARRIER - BRACED SHEET 2	SHEET 18 OF 49
PLOT DATE:	2/5/2016
DRAWN BY:	M. SMITH
CHECKED BY:	J. BYATT

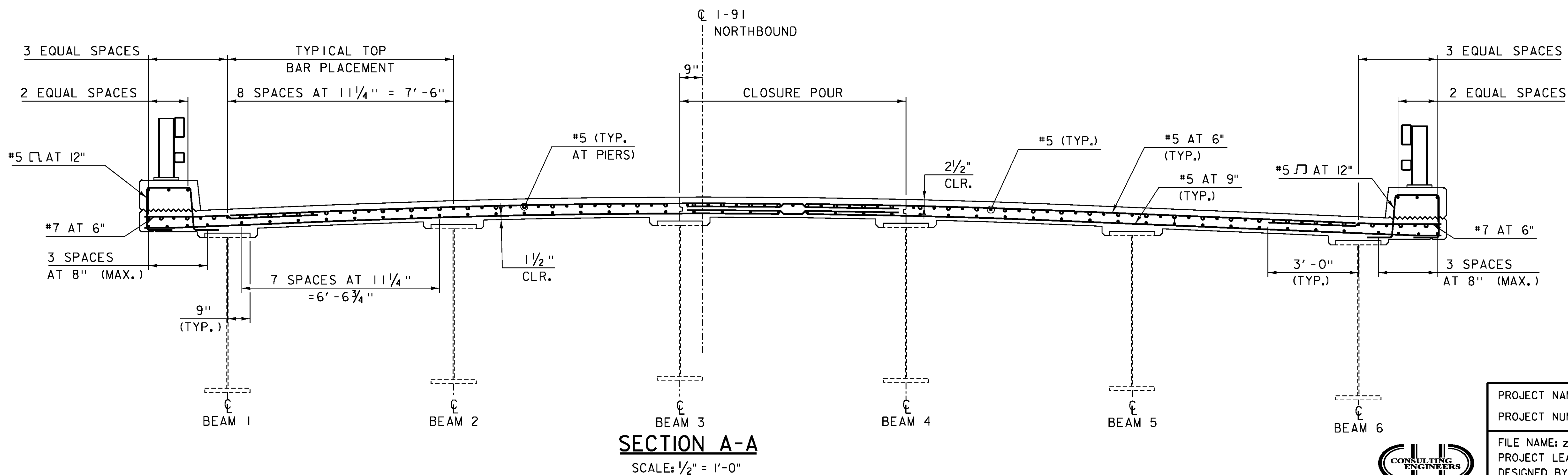


**DECK REINFORCEMENT PLAN - BOTTOM BARS - SPAN #1**

SCALE: 1" = 10'-0"

**DECK REINFORCEMENT PLAN - TOP BARS - SPAN #1**

SCALE: 1" = 10'-0"



**SECTION A-A**

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

**NOTES:**

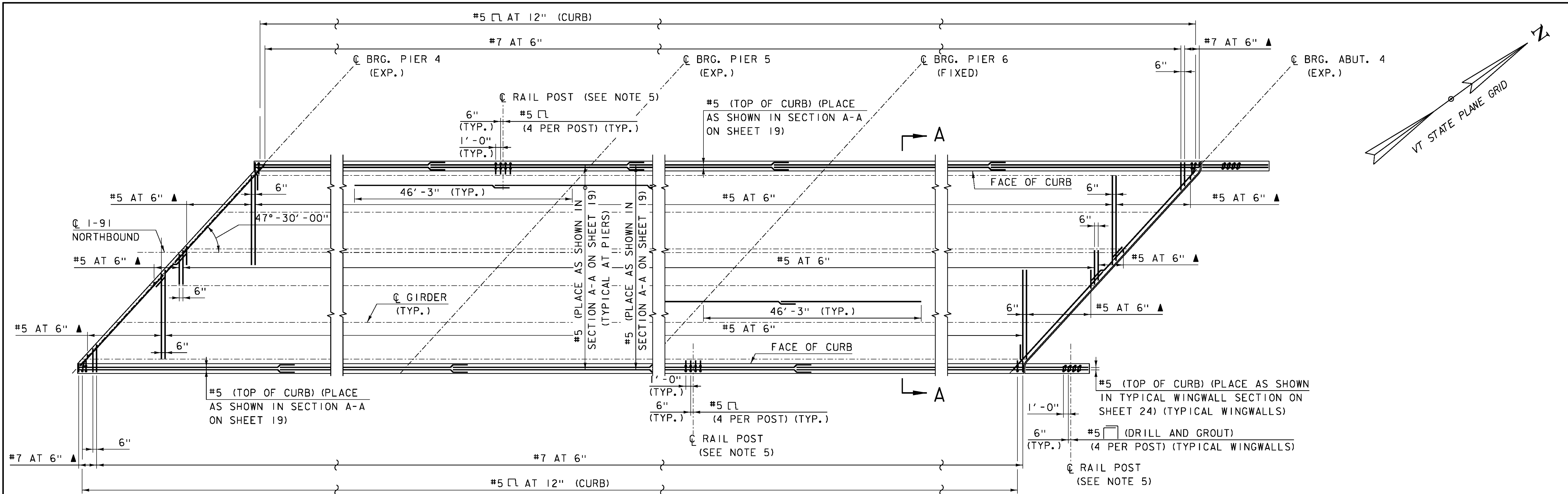
1. 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2. 3'-0" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.
3. 1'-0" HOOK UNLESS OTHERWISE SPECIFIED ON THE PLANS.
4. SEE SHEET 20 FOR SPAN #2 THROUGH SPAN #4 DECK REINFORCEMENT PLANS.
5. SEE SHEET 26 FOR RAIL LAYOUT PLAN.
6. DECK DIMENSIONS ARE APPROXIMATED FROM REFERENCE PLANS. CONTRACTOR SHALL FIELD VERIFY.

PROJECT NAME: IRASBURG  
PROJECT NUMBER: IM DECK(46)

FILE NAME: z15oll6+yp-107N.dgn  
PROJECT LEADER: J. BYATT  
DESIGNED BY: N. CARON  
DECK DETAILS SHEET 1

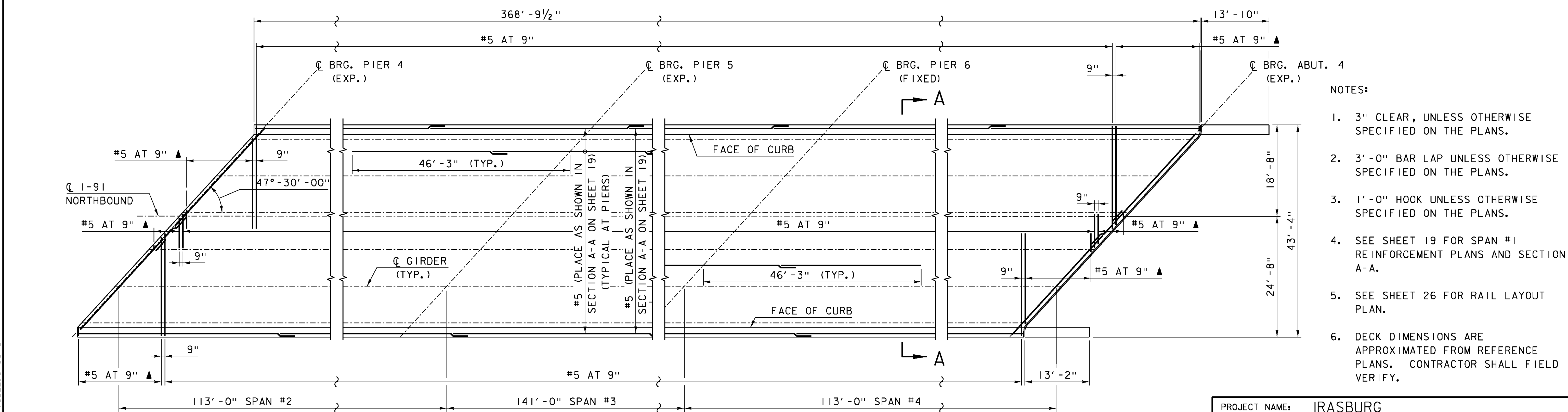
PLOT DATE: 2/5/2016  
DRAWN BY: M. SMITH  
CHECKED BY: S. BEAUMONT  
SHEET 19 OF 49





**DECK REINFORCEMENT PLAN - TOP BARS - SPAN #2 THROUGH SPAN #4**

SCALE: 1" = 10'-0"



**DECK REINFORCEMENT PLAN - BOTTOM BARS - SPAN #2 THROUGH SPAN #4**

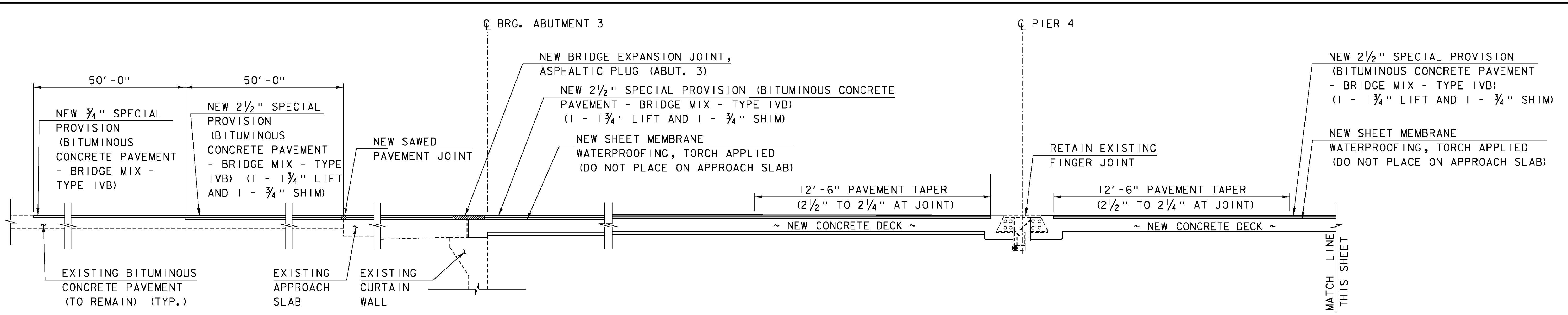
SCALE: 1" = 10'-0"

- NOTES:
1. 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
  2. 3'-0" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.
  3. 1'-0" HOOK UNLESS OTHERWISE SPECIFIED ON THE PLANS.
  4. SEE SHEET 19 FOR SPAN #1 REINFORCEMENT PLANS AND SECTION A-A.
  5. SEE SHEET 26 FOR RAIL LAYOUT PLAN.
  6. DECK DIMENSIONS ARE APPROXIMATED FROM REFERENCE PLANS. CONTRACTOR SHALL FIELD VERIFY.

PROJECT NAME:	IRASBURG	PLOT DATE:	2/5/2016
PROJECT NUMBER:	IM DECK(46)	DRAWN BY:	M. SMITH
FILE NAME:	z15d116+yp-107N.dgn	DESIGNED BY:	N. CARON
PROJECT LEADER:	J. BYATT	DECK DETAILS SHEET	SHEET 20 OF 49



CLD 15-0223 MODEL Sheet 04

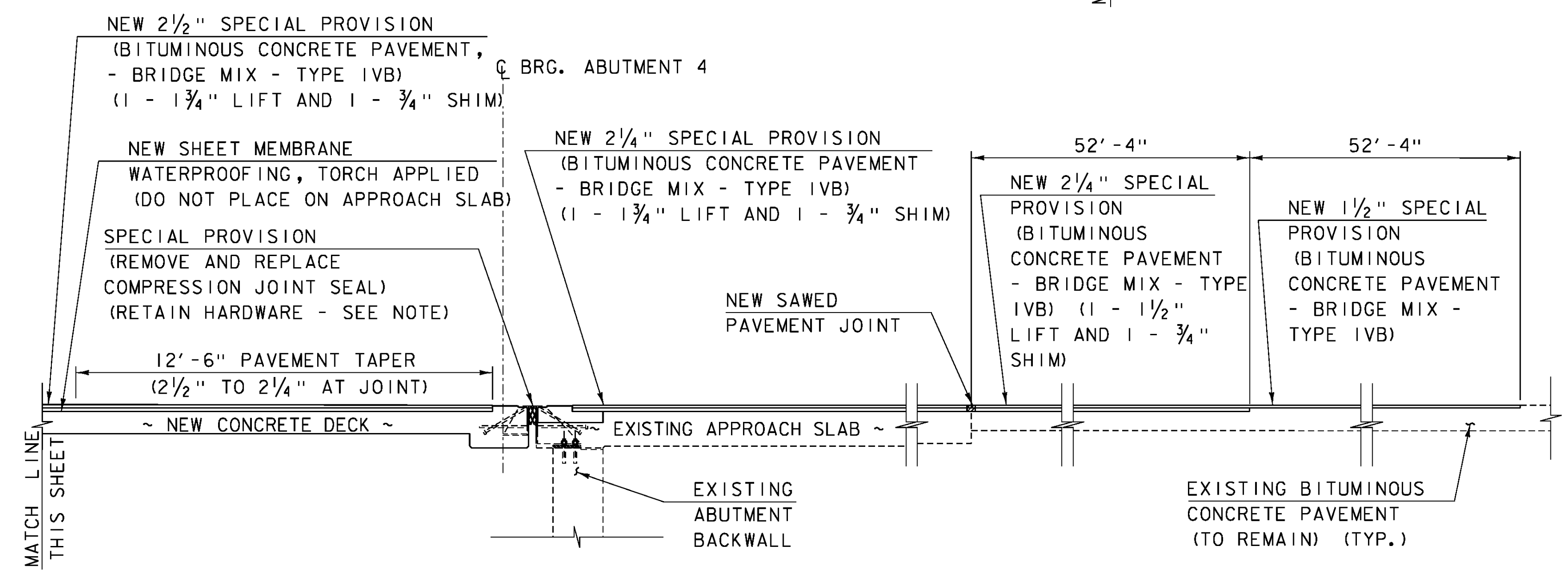


### SAWED PAVEMENT JOINT REPLACEMENT SCHEDULE

BRIDGE NO.	APPROACH SLAB 3	APPROACH SLAB 4
107N	40 LF	40 LF

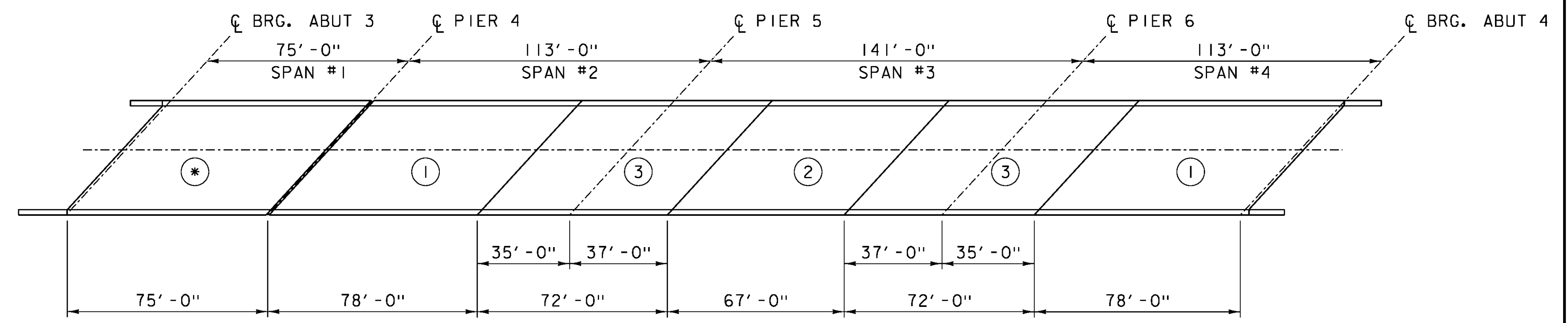
### JOINT SCHEDULE

	ABUT. 3	PIER 4	PIER 5	PIER 6	ABUT. 4
JOINT TYPE	ASPHALTIC PLUG	FINGER JOINT	N/A	N/A	COMPRESSION SEAL
REQUIRED JOINT WORK	REPLACE	RETAIN (SEE NOTE)	N/A	N/A	REPLACE SEAL, RETAIN HARDWARE (SEE NOTE)
LENGTH	54 LF	58 LF	N/A	N/A	58 LF



### JOINT, PAVEMENT, AND MEMBRANE LAYOUT

SCALE: 3/8" = 1'-0"

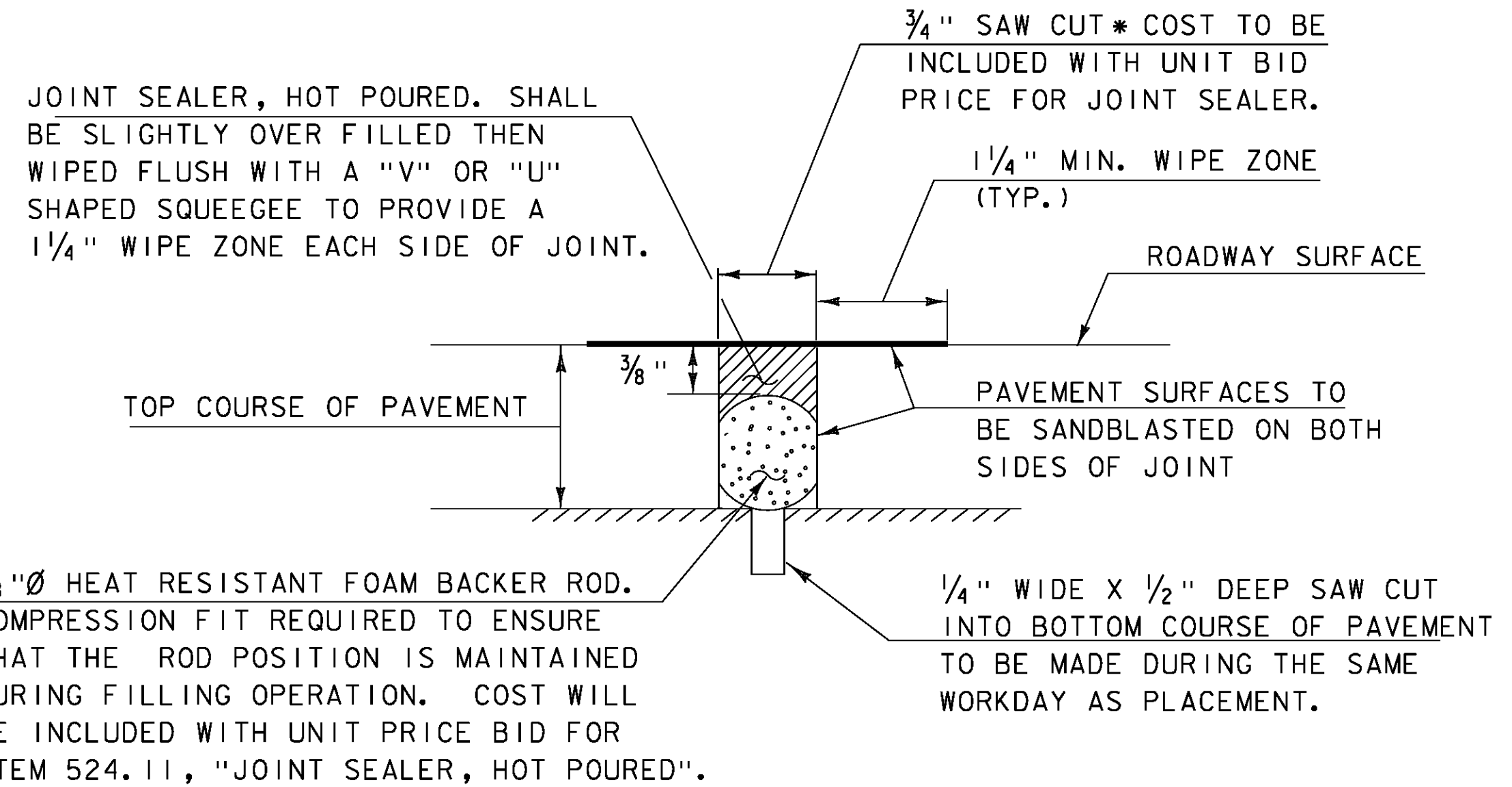


* SPAN #1 IS A SIMPLE SPAN AND CAN BE POURED AT ANY TIME.

### DECK POUR SEQUENCE

SCALE: N.T.S.

NOTE: SEE NOTES 17 THROUGH 19 ON SHEET 2 FOR ADDITIONAL JOINT INFORMATION.



### SAWED PAVEMENT JOINT DETAIL

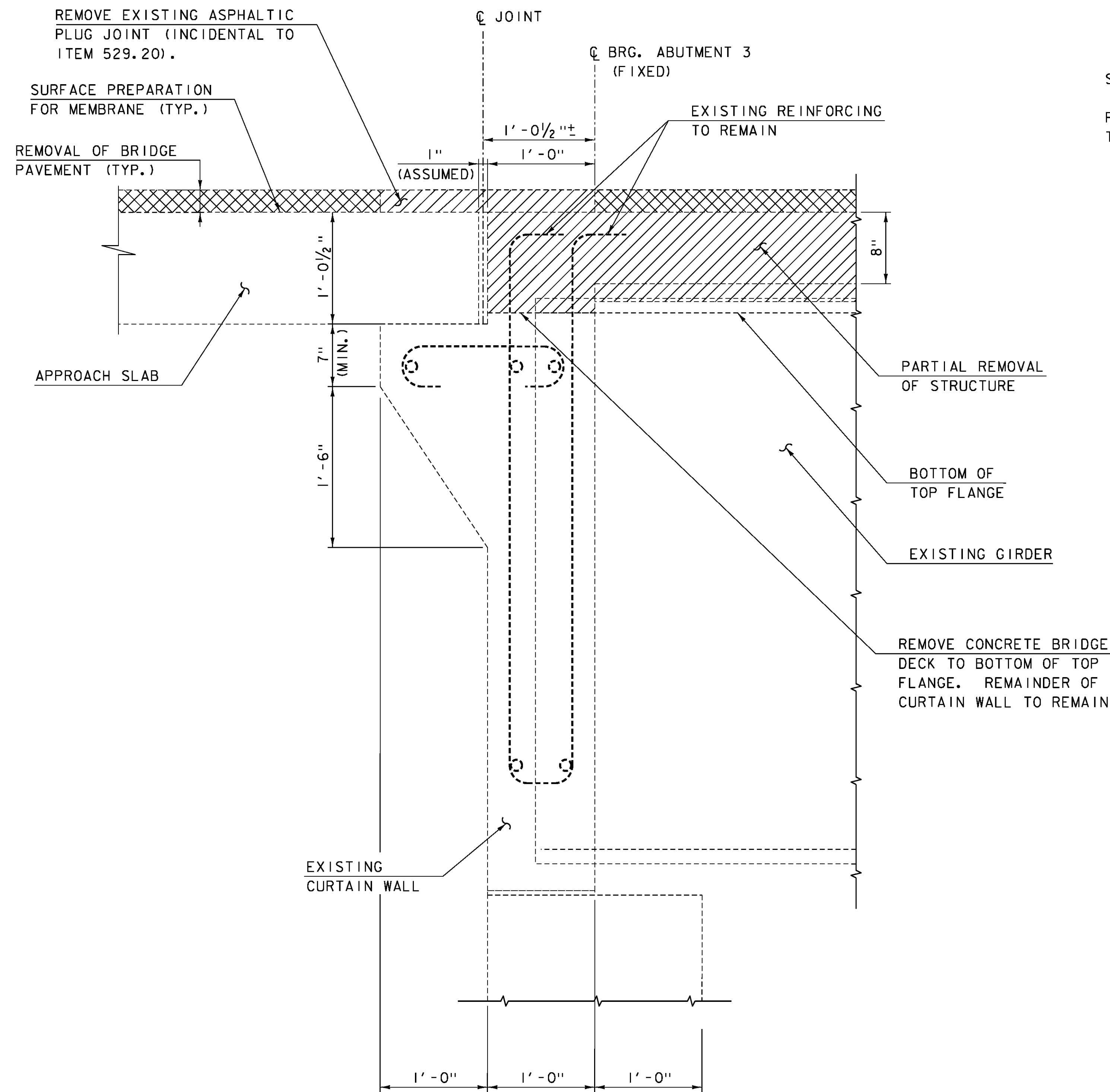
(NOT TO SCALE)

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

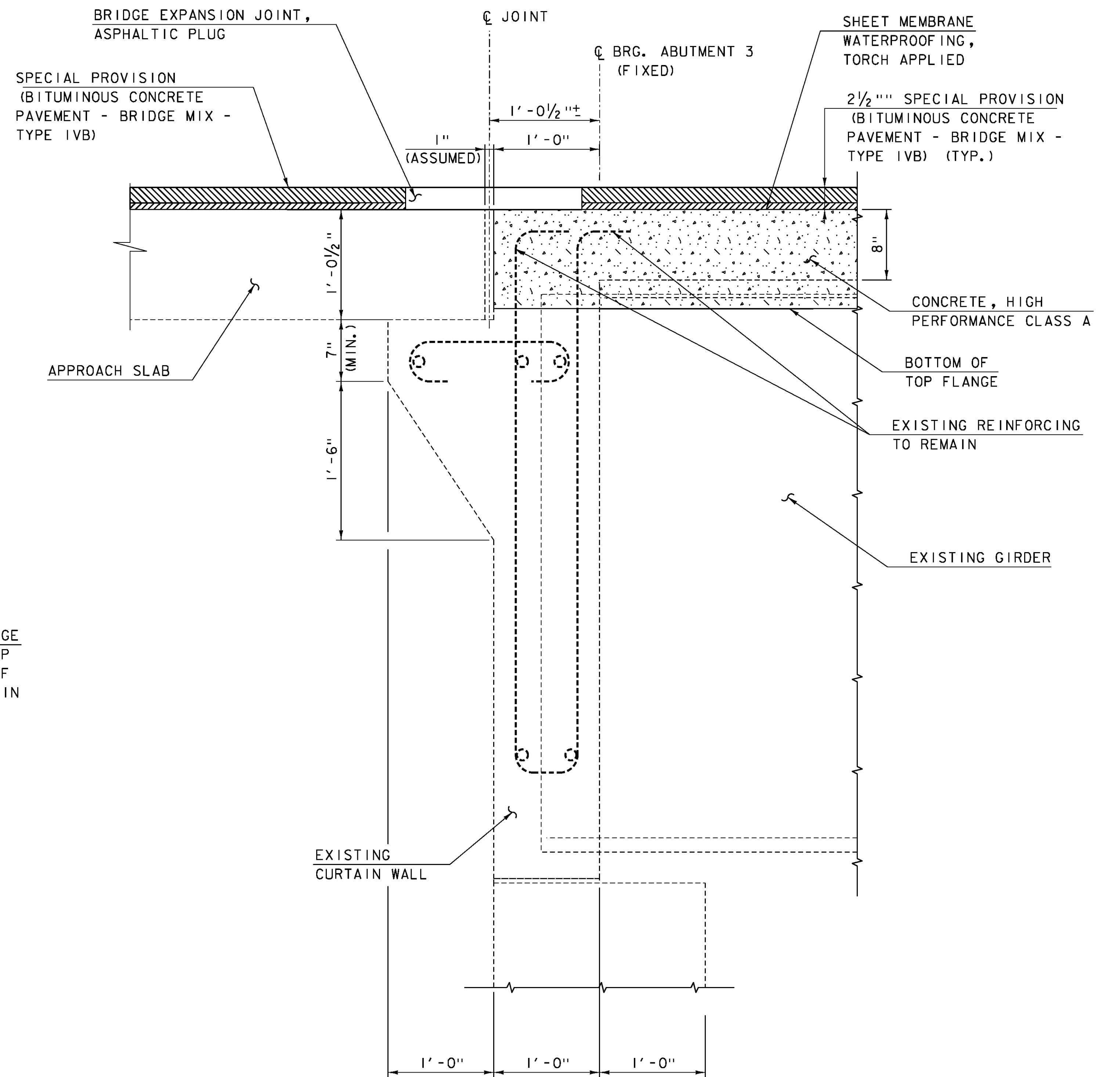
PROJECT NAME:	IRASBURG
PROJECT NUMBER:	IM DECK(46)
FILE NAME:	z15oll6+yp-107N.dgn
PROJECT LEADER:	J. BYATT
DESIGNED BY:	J. FRENCH
JOINT DETAILS SHEET 1	
PLOT DATE:	2/5/2016
DRAWN BY:	M. SMITH
CHECKED BY:	S. BEAUMONT
SHEET	21 OF 49



CLD 15-0223 MODEL+Sheet05



**DECK REMOVAL DETAIL AT ABUTMENT 3**  
SCALE: 1/2" = 1'-0"

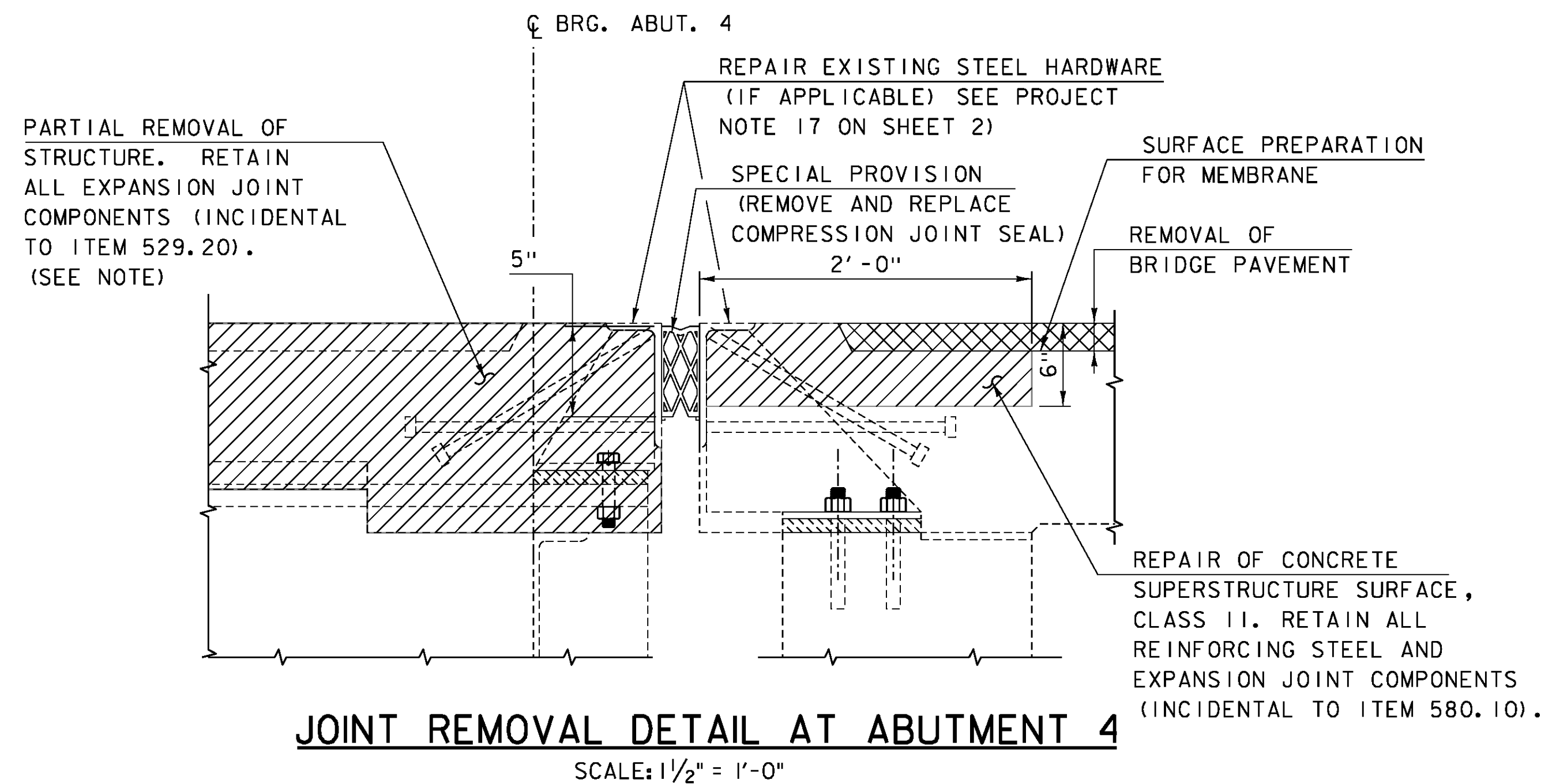


**JOINT DETAIL AT ABUTMENT 3**  
SCALE: 1/2" = 1'-0"

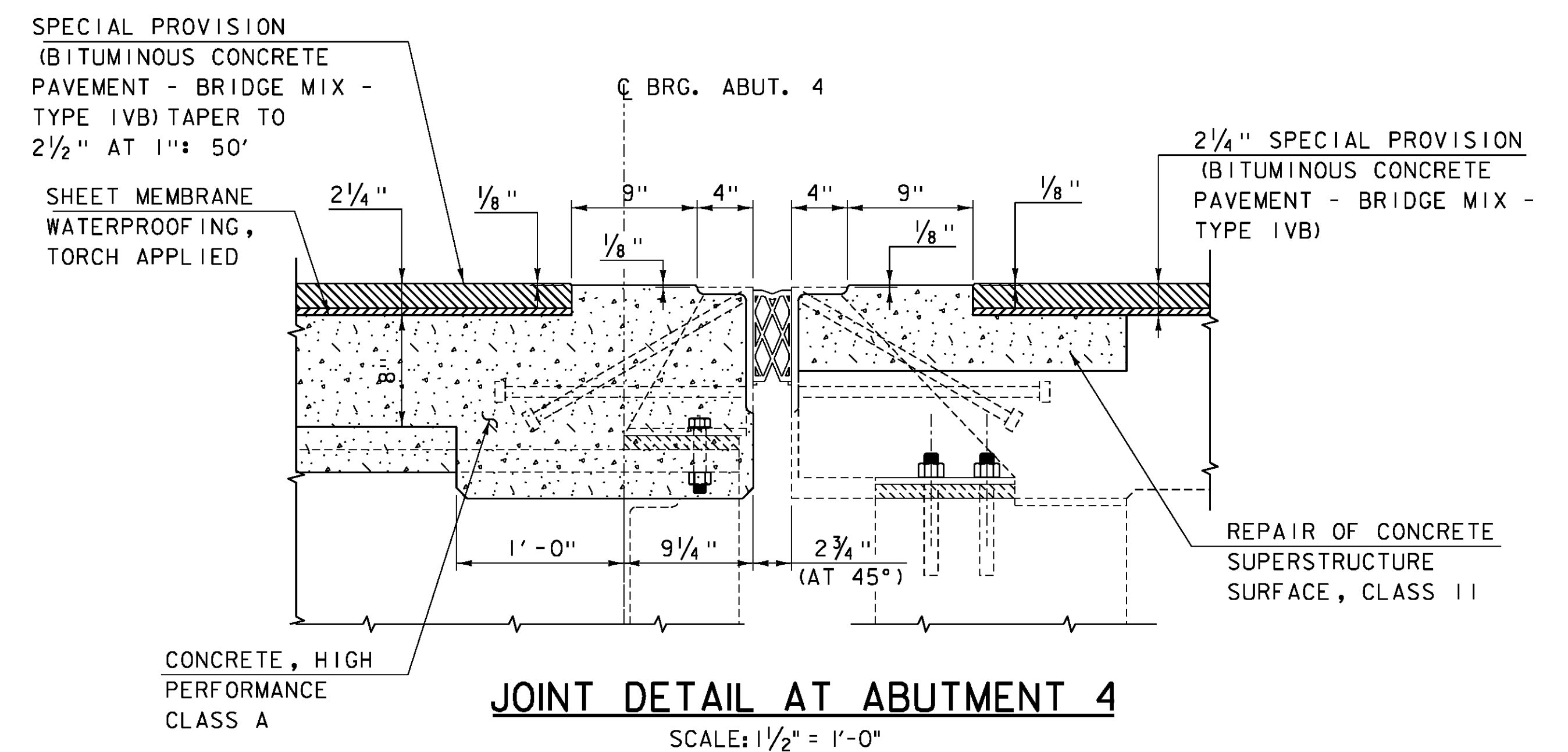
CLD 15-0223 MODEL: Sheet06



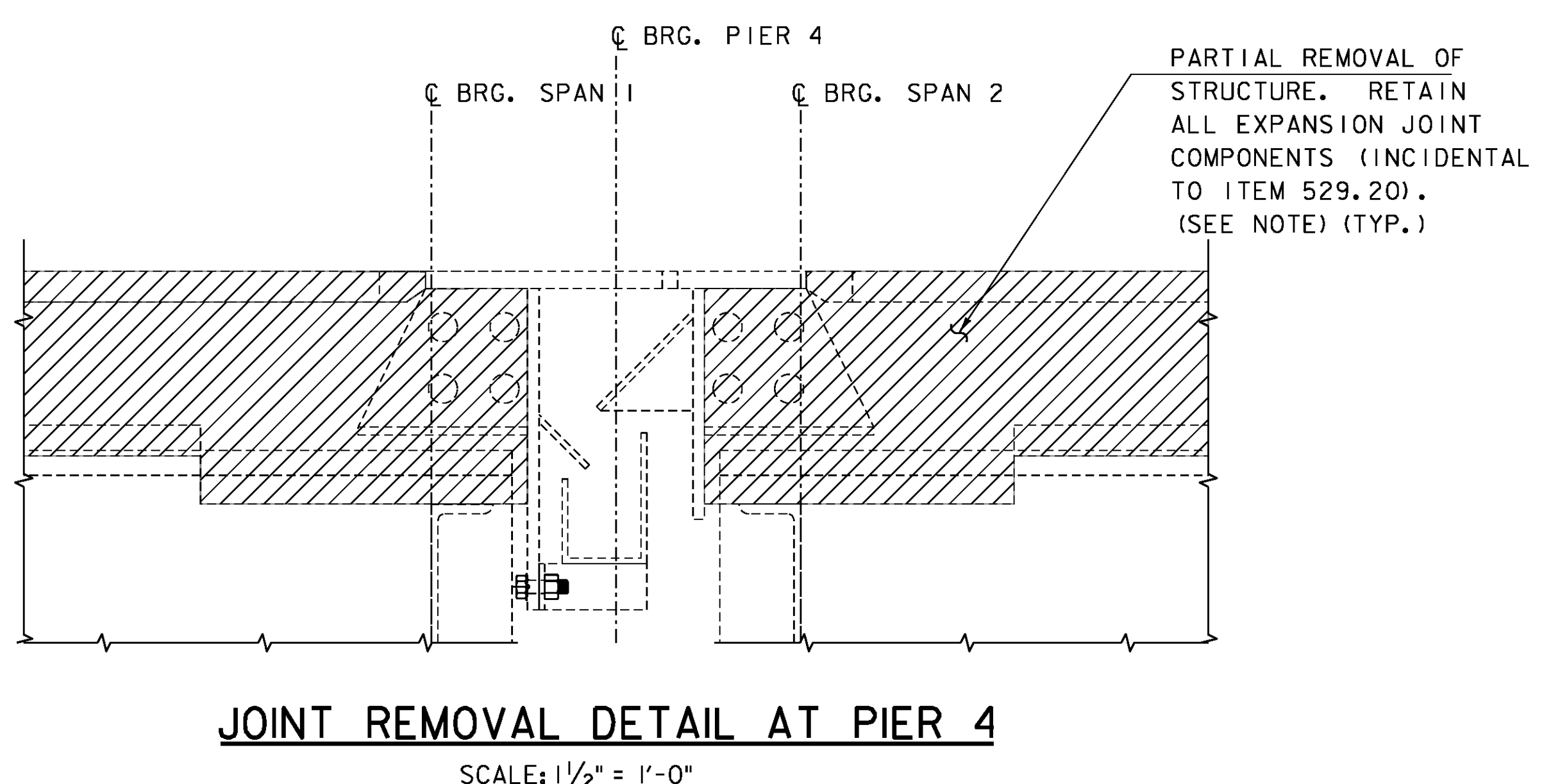
PROJECT NAME:	IRASBURG	PLOT DATE:	2/5/2016
PROJECT NUMBER:	IM DECK(46)	DRAWN BY:	M. SMITH
FILE NAME:	z150116+yp-107N.dgn	CHECKED BY:	S. BEAUMONT
PROJECT LEADER:	J. BYATT		
DESIGNED BY:	J. FRENCH		
JOINT DETAILS SHEET 2			SHEET 22 OF 49



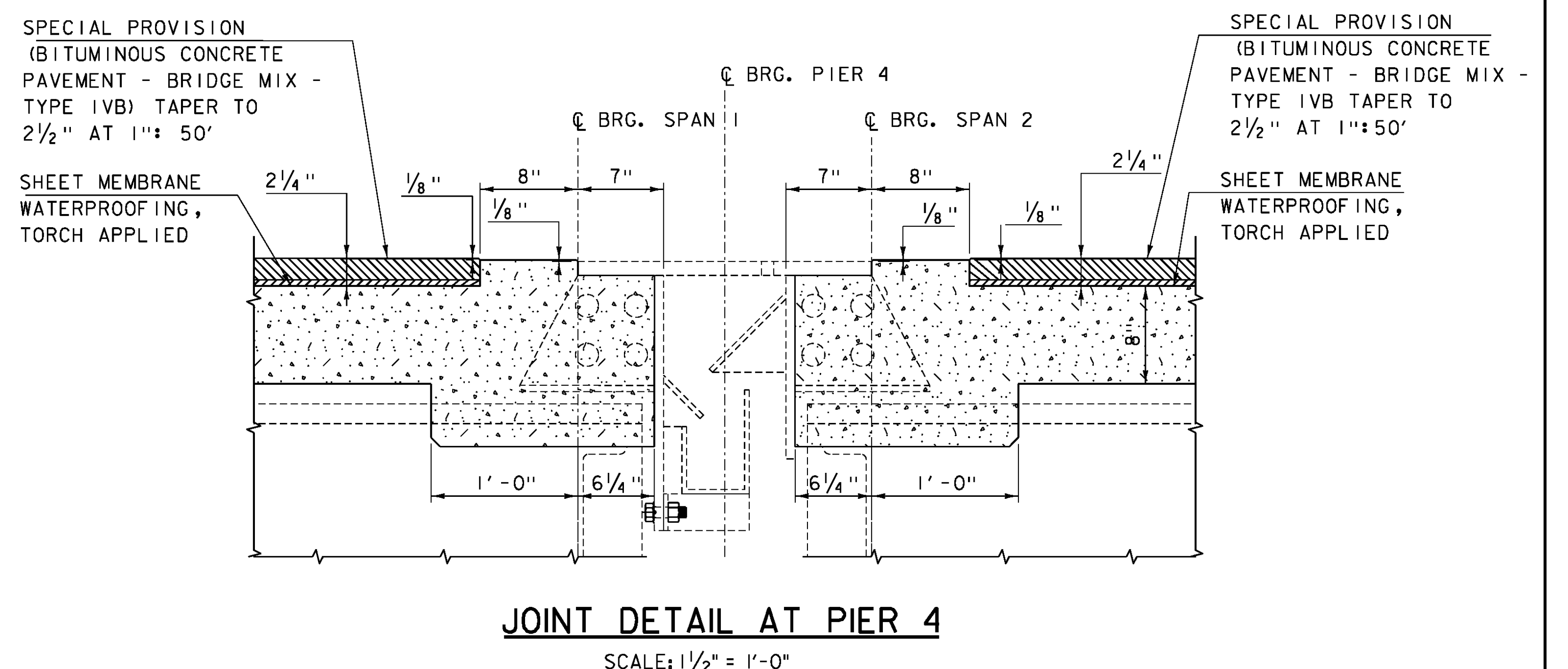
**JOINT REMOVAL DETAIL AT ABUTMENT 4**  
SCALE: 1/2" = 1'-0"



**JOINT DETAIL AT ABUTMENT 4**  
SCALE: 1/2" = 1'-0"



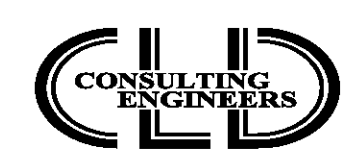
**JOINT REMOVAL DETAIL AT PIER 4**  
SCALE: 1/2" = 1'-0"



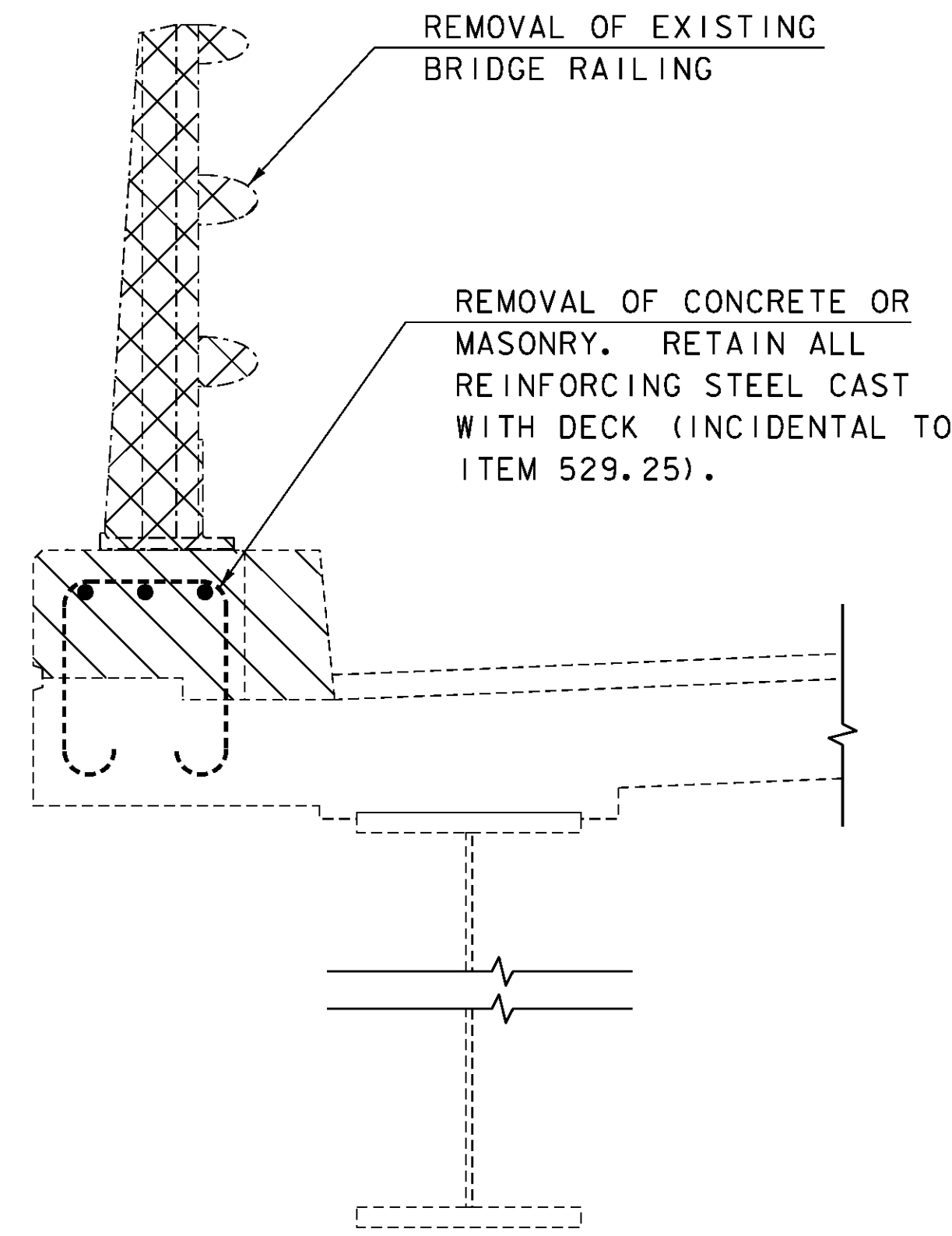
**JOINT DETAIL AT PIER 4**  
SCALE: 1/2" = 1'-0"

NOTE: SEE PROJECT NOTES 16 THROUGH 18 ON SHEET 2 FOR ADDITIONAL JOINT INFORMATION.

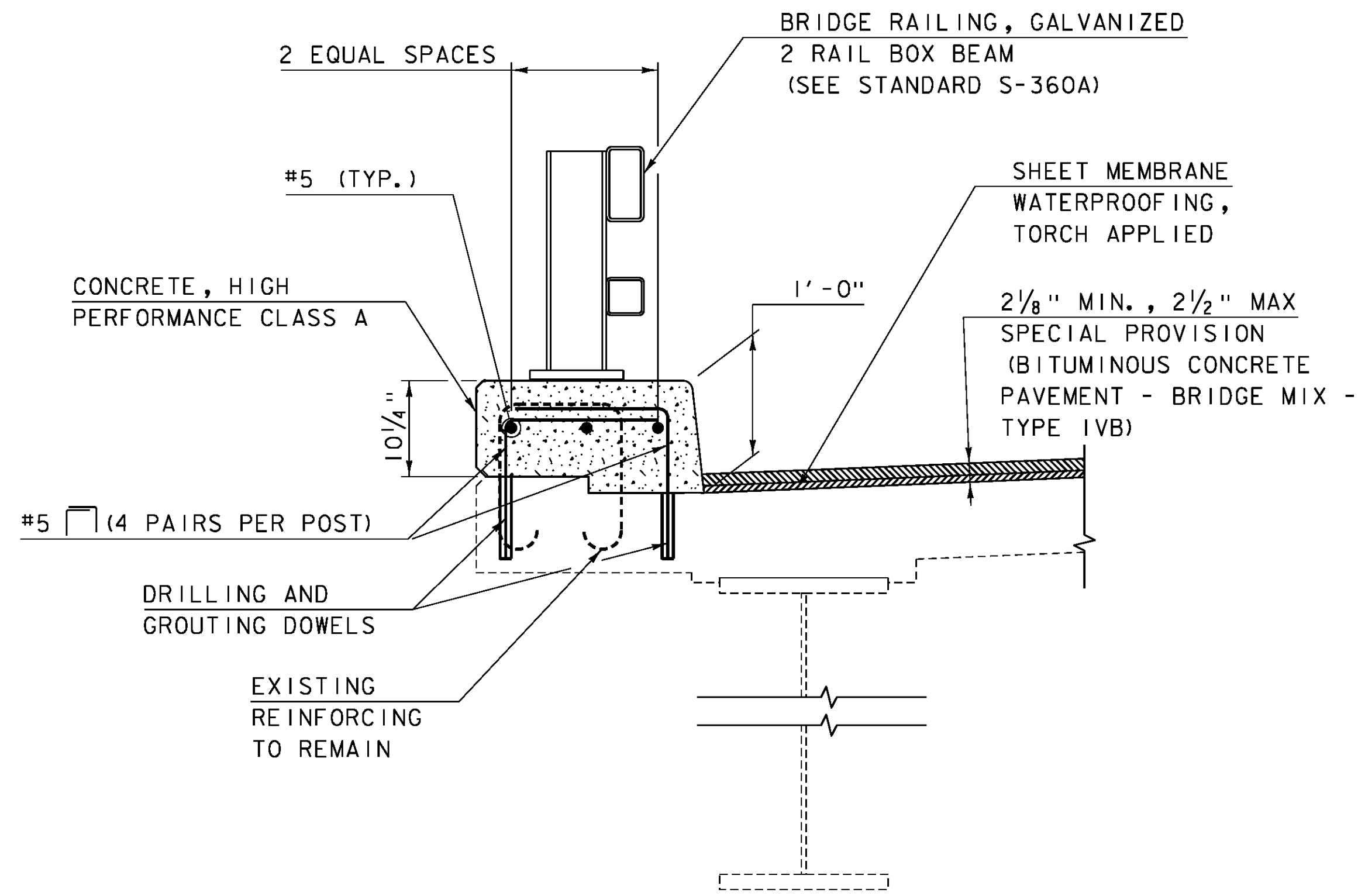
PROJECT NAME:	IRASBURG
PROJECT NUMBER:	IM DECK(46)
FILE NAME:	z15d116+yp-107N.dgn
PROJECT LEADER:	J. BYATT
DESIGNED BY:	J. FRENCH
JOINT DETAILS SHEET 3	
PLOT DATE:	2/5/2016
DRAWN BY:	M. SMITH
CHECKED BY:	S. BEAUMONT
SHEET	23 OF 49



CLD 15-0223 MODEL: Sheet07

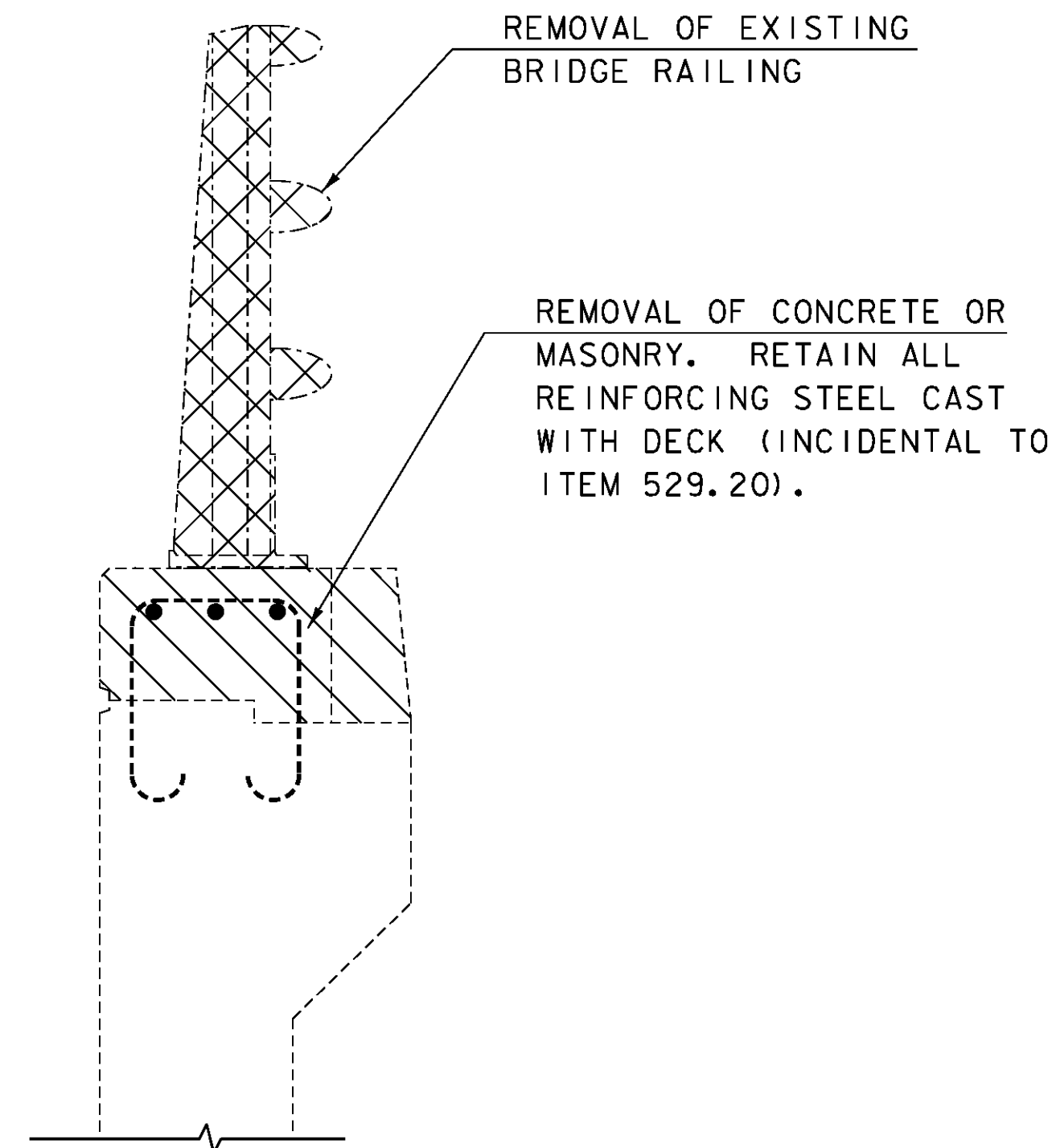


**SPAN I REMOVAL LIMITS**  
SCALE: 1" = 1'-0"

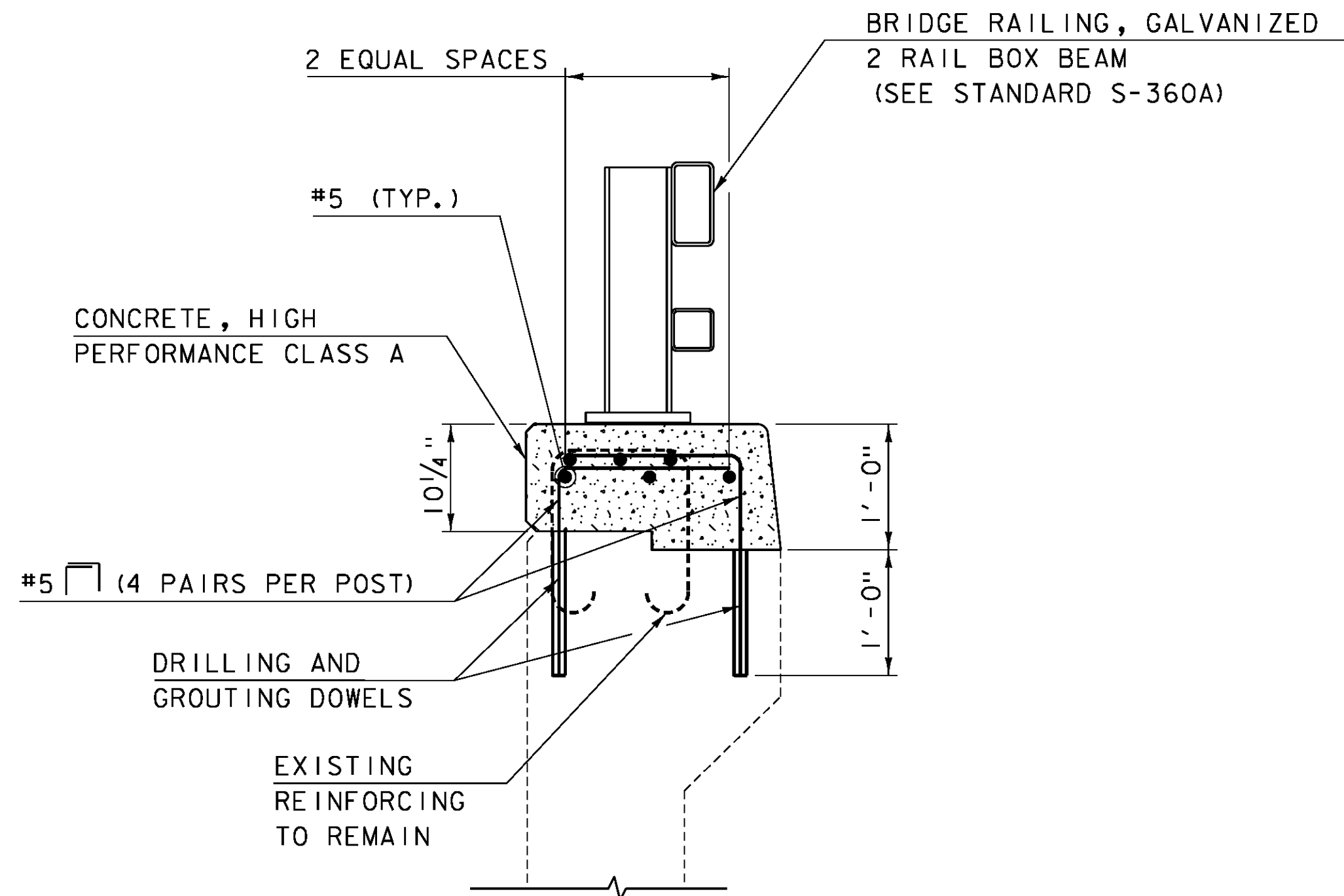


**TYPICAL SPAN I SECTION**  
SCALE: 1" = 1'-0"

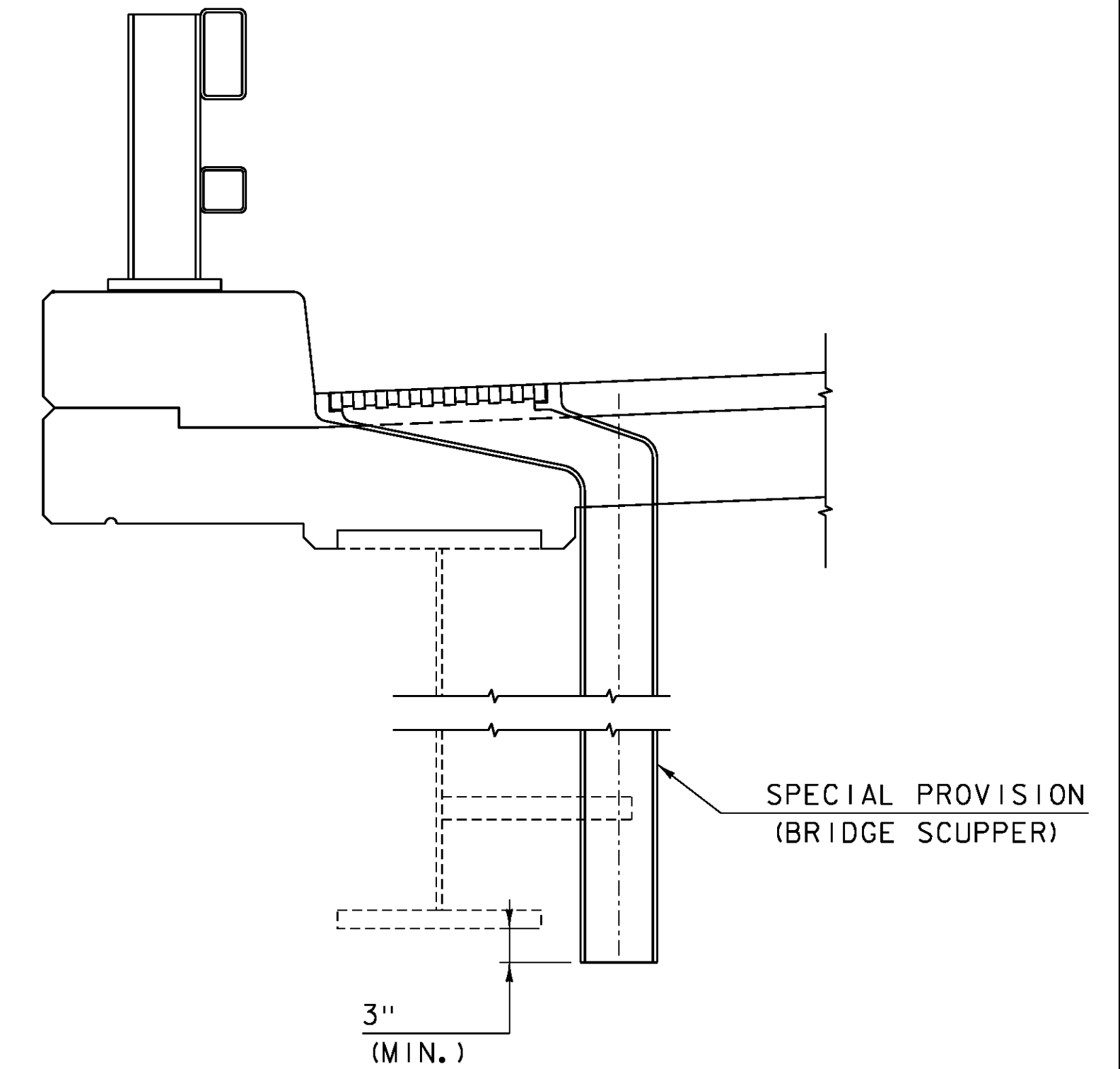
TO BE USED IF SPAN I REMAINS IN-PLACE



**WINGWALL REMOVAL LIMITS**  
SCALE: 1" = 1'-0"



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

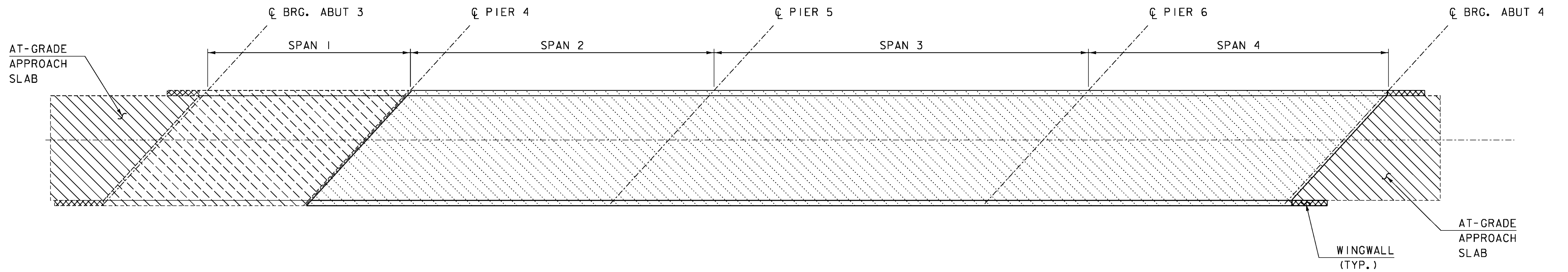


**TYPICAL SCUPPER DETAIL**  
SCALE: 1" = 1'-0"

- REMOVAL OF EXISTING BRIDGE RAILING
- REMOVAL OF CONCRETE OR MASONRY  
SEE PROJECT NOTES 13 AND 14 ON SHEET 2.
- CONCRETE, HIGH PERFORMANCE CLASS A

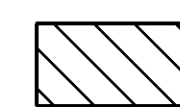
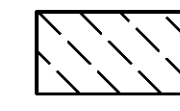
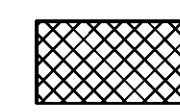

PROJECT NAME:	IRASBURG	PLOT DATE:	2/5/2016
PROJECT NUMBER:	IM DECK(46)	DRAWN BY:	M. SMITH
FILE NAME:	z15all6+yp-107N.dgn	DESIGNED BY:	J. FRENCH
PROJECT LEADER:	J. BYATT	CHECKED BY:	S. BEAUMONT
CURB REPLACEMENT DETAILS SHEET			SHEET 24 OF 49





**BITUMINOUS CONCRETE/ CONCRETE REMOVAL**

SCALE: 1" = 20'-0"

-  REMOVE BIT. CONC. PAVEMENT TO TOP OF AT-GRADE APPROACH SLABS (PAID FOR UNDER ITEM 529.10). NO MORE THAN 4" OF PAVEMENT SHALL BE REMOVED. SEE PROJECT NOTE 30 ON SHEET 3. REMOVE BARRIER MEMBRANE (PAID FOR UNDER ITEM 580.16), IF APPLICABLE. SEE PROJECT NOTE 32 ON SHEET 3.
-  REMOVE BIT. CONC. PAVEMENT TO TOP OF BRIDGE DECK (PAID FOR UNDER ITEM 529.10) AND REMOVE THE BARRIER MEMBRANE (PAID FOR UNDER ITEM 580.16). REMOVE BRIDGE DECK (PAID FOR UNDER ITEM 529.20), IF APPLICABLE. SEE PROJECT NOTE 30 ON SHEET 3 AND NOTE 1 THIS SHEET.
-  REMOVE BRIDGE RAIL (PAID FOR UNDER ITEM 525.10) AND CONCRETE CURB (PAID FOR UNDER ITEM 529.25).
-  REMOVE BRIDGE DECK (PAID FOR UNDER ITEM 529.20). SEE NOTE 2 THIS SHEET.

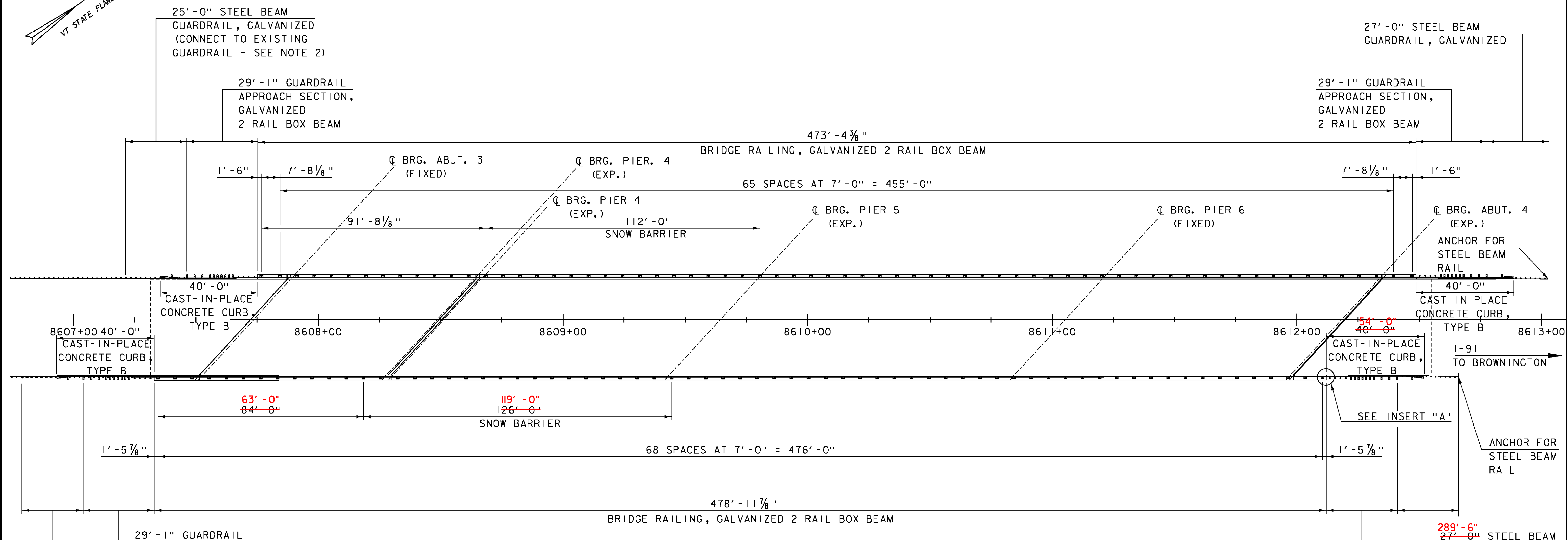
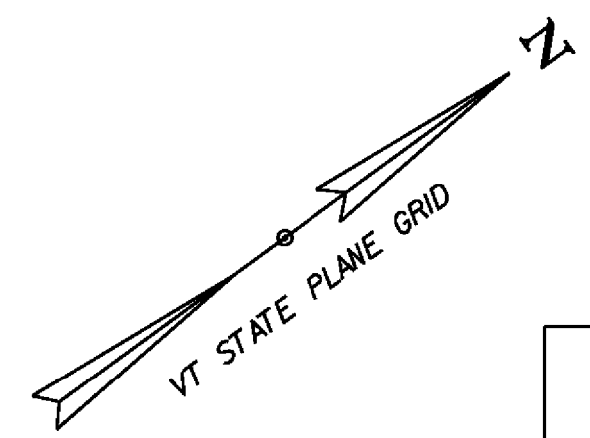
**NOTES:**

1. PAYMENT UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE" FOR THE REMOVAL OF THE BRIDGE DECK FOR SPAN #1 WILL INCLUDE THE CONCRETE DECK AND CURBS AND THE BRIDGE RAILING.
2. PAYMENT UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE" FOR THE REMOVAL OF THE BRIDGE DECK FOR SPANS #2 THROUGH #4 WILL INCLUDE THE REMOVAL OF THE CONCRETE DECK AND CURBS, BARRIER MEMBRANE, PAVEMENT, AND BRIDGE RAILING.

PROJECT NAME: IRASBURG  
 PROJECT NUMBER: IM DECK(46)

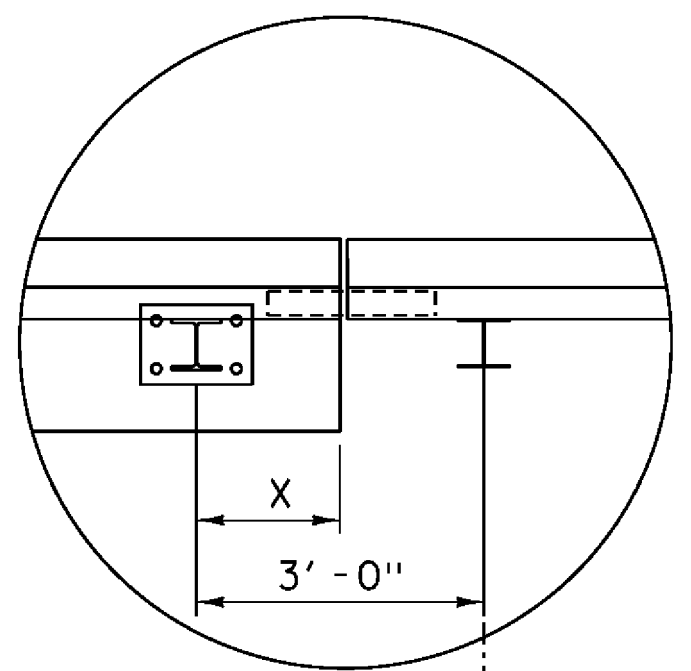
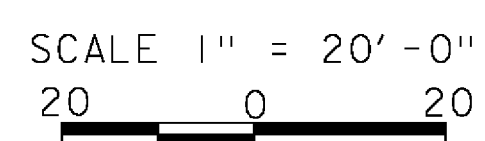
FILE NAME: z15dl16+yp-107N.dgn PLOT DATE: 2/5/2016  
 PROJECT LEADER: J. BYATT DRAWN BY: M. SMITH  
 DESIGNED BY: J. FRENCH CHECKED BY: S. BEAUMONT  
 BITUMINOUS CONCRETE REMOVAL PLAN SHEET SHEET 25 OF 49





**RAIL LAYOUT PLAN**

SCALE 1" = 20'-0"



X = 1'-6" NW AND SW CORNERS  
= 1'-5 7/8" NE AND SE CORNERS

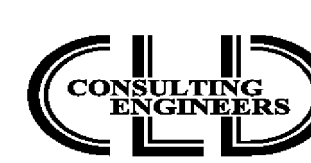
**INSERT "A"**

(NE CORNER SHOWN, OTHERS SIMILAR)  
SCALE: 1/2" = 1'-0"

**NOTES:**

- REFER TO STANDARDS G-1, G-1d, S-360A, AND S360B.
- PAYMENT FOR NEW STEEL BEAM GUARDRAIL CONNECTION TO EXISTING RAIL WILL BE CONSIDERED INCIDENTAL TO ITEM 621.20, "STEEL BEAM GUARDRAIL, GALVANIZED".

PROJECT NAME:	IRASBURG
PROJECT NUMBER:	IM DECK(46)
FILE NAME:	z15a16rail_bdr-107N.dgn
PROJECT LEADER:	J. BYATT
DESIGNED BY:	L. GREER
RAIL LAYOUT SHEET	
PLOT DATE:	2/5/2016
DRAWN BY:	P. McKECHNIE
CHECKED BY:	S. FORTIER
SHEET	26 OF 49



MODEL: Sheet01  
CLD 15-0223

750-A

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8-9 QUANTITY SHEETS
10-17 DRAINAGE SHEETS
22-37 EARTHWORK AND GRADE SHEETS
38-40 ROW DETAIL SHEETS
41-99 PLAN AND PROFILE SHEETS - MAINLINE AND SA-3
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102-103 BLANK
104-115 ROUND PLATE PIPE AND PLATE PIPE ARCH DETAIL SHEETS
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121 BLANK
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132 D-4 ELBOWS AND FLUSHING BASINS 12-1-68 R
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453-504 NORTHBOUND CROSS SECTIONS STA. 2550+50 - 2895+00
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569-605 CULVERT CROSS SECTIONS

STATE OF VERMONT DEPARTMENT OF HIGHWAYS PROPOSED IMPROVEMENT

INTERSTATE PROJECT TOWNS OF IRASBURG-BROWNINGTON-COVENTRY-DERBY COUNTY OF ORLEANS INTERSTATE ROUTE 91 IRASBURG-DERBY

BEGINNING AT A POINT APPROXIMATELY 1.540 MILES SOUTHWESTERLY FROM THE IRASBURG - BROWNINGTON TOWN LINE U.S.S. AND EXTENDING NORTHERLY 7.799 MILES. LENGTH OF ROADWAY - 40,465.29 FEET + 7.654 MILES. LENGTH OF BRIDGES - 447.43 FEET + 0.085 MILES. LENGTH OF PROJECT - 40,912.72 FEET + 7.749 MILES.

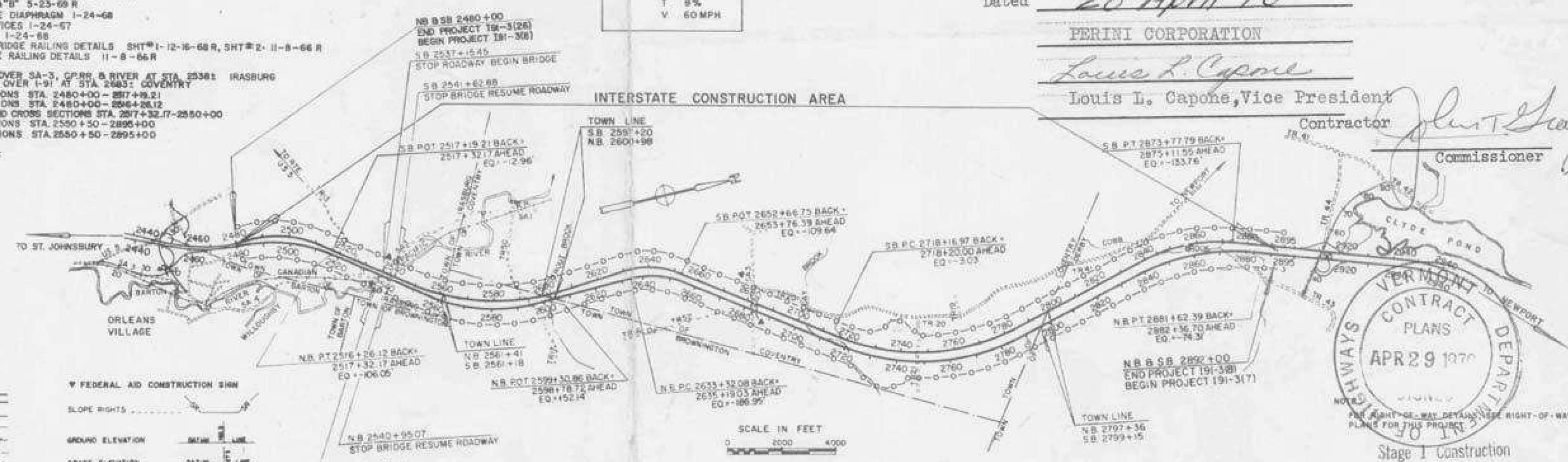
TRAFFIC DATA table with columns for ADT, DHV, D, T, V and values for 1962, 1967, 1987.

THESE PLANS HAVE BEEN REDUCED PHOTOGRAPHICALLY TO APPROXIMATELY 1/2 SCALE

Dated 28 April 70 PERINI CORPORATION Louis L. Capone, Vice President

Contractor James T. Gray Commissioner

CONVENTIONAL SIGNS table listing symbols for County Line, Town Line, Fence Line, Stone Wall, Unfenced Property, Guard Rail, Traveled Way, Railroad, Retaining Wall, Center Line, Survey Line, Culvert, Drop Inlet, Trolley Pole, Power Pole, Telephone Pole, Trees, Hedge, Limited Access, Federal Aid Construction Sign, Slope Rights, Ground Elevation, Grade Elevation, Curve Data, Deflection of Angle, Degree of Curve, Radius of Curve, Tangent Distance, Length of Curve, External Distance, Point of Intersection, Point of Curve, Point of Tangent, Point on Tangent, Point on Sub-Tangent, Seismic Point Profile.

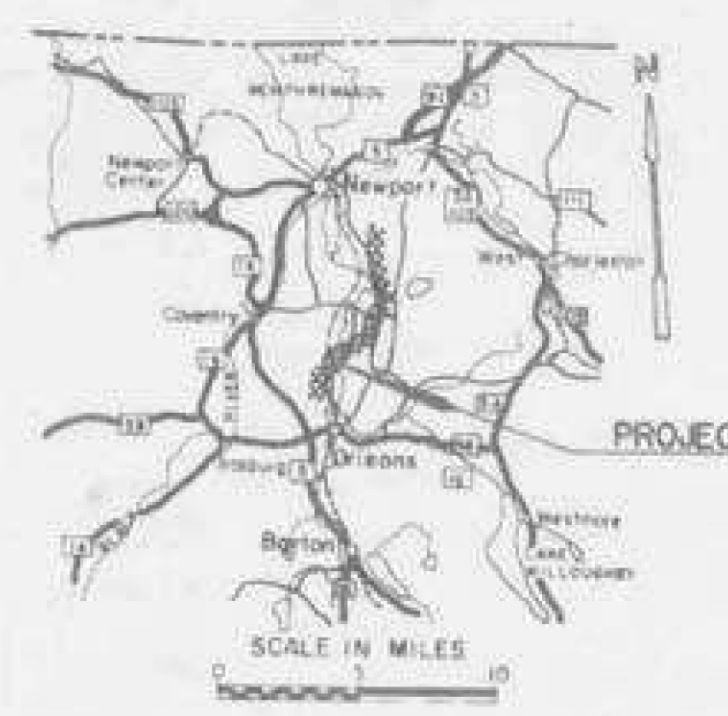


PREPARED BY EDWARDS AND KELCEY, INC. BOSTON, MASSACHUSETTS

Approval table with columns for APPROVED, DATE, and SIGNATURE for various roles including District Engineer, Survey Engineer, and Surveyor.



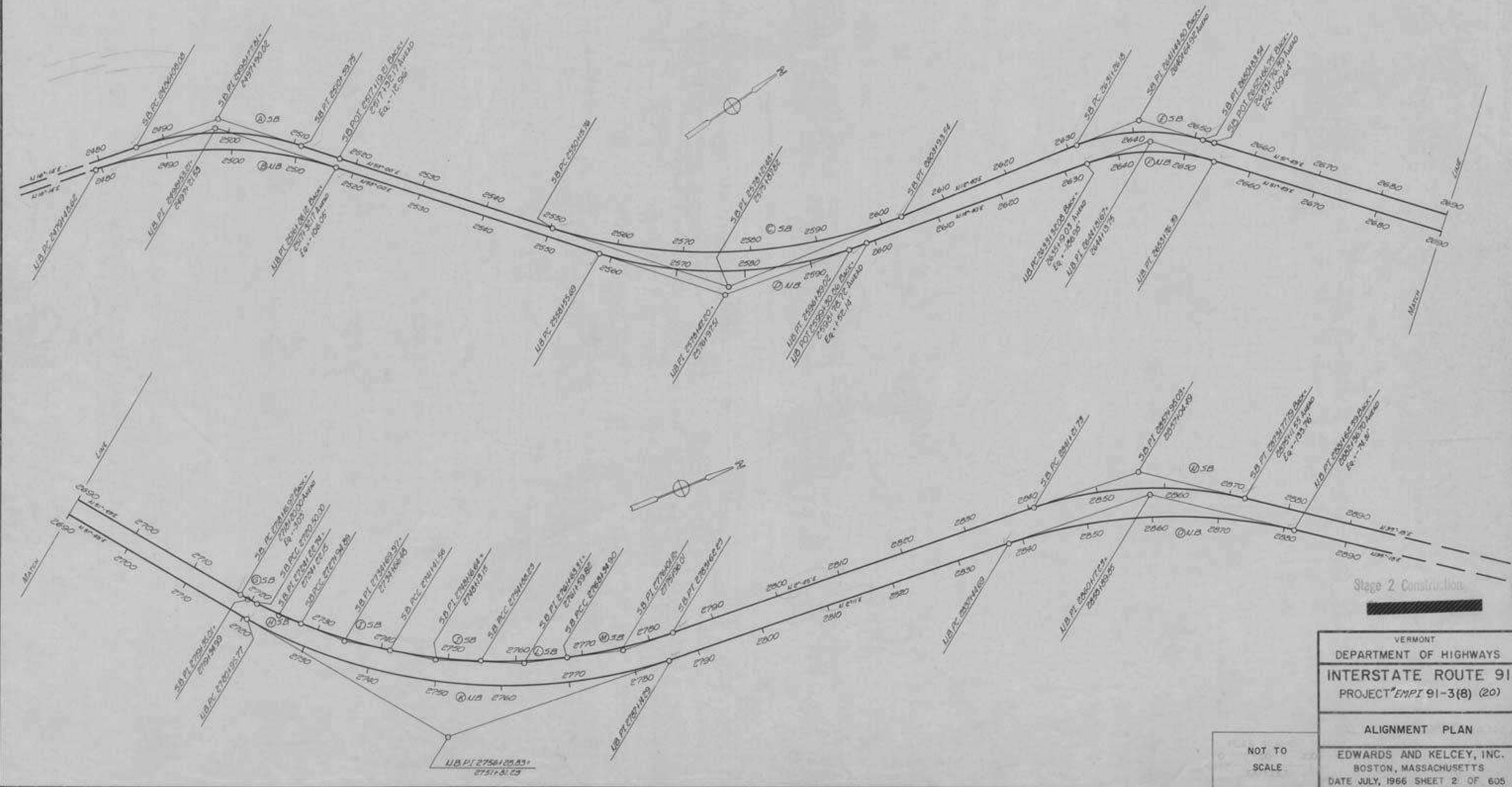
Table with columns for APPROVED, DIVISION ENGINEER, DATE, PROJECT NO. (191-3(8)), and SHEET 1 OF 605 SHEETS.



IRASBURG IM DECK(46) BRIDGE NO. 107N SHEET 27 OF 49 FOR REFERENCE ONLY

PLAN  
 DATE: 7/1/66  
 BY: [Signature]  
 CHECKED: [Signature]  
 ROW CHECKED: [Signature]

Curve ① SB Δ: 36°-46'-30" R D: 17'-30" E: 3019.72 T: 1269.73 L: 2151.87 E: 205.91 Bank 76' Pk Ft	Curve ② UB Δ: 36°-46'-30" R D: 17'-00" E: 5729.58 T: 604.33 L: 3677.50 E: 305.26 Bank 76' Pk Ft	Curve ③ SB Δ: 40°-20'-00" L D: 0'-45" E: 7639.437 T: 2205.721 L: 5377.778 E: 495.933 Bank 76' Pk Ft	Curve ④ UB Δ: 36°-20'-00" L D: 17'-00" E: 5729.58 T: 1391.51 L: 3333.33 E: 336.27 Bank 76' Pk Ft	Curve ⑤ SB Δ: 35°-08'-50" R D: 2'-00" E: 2864.789 T: 1016.619 L: 1957.361 E: 175.705 Bank 76' Pk Ft	Curve ⑥ UB Δ: 37°-08'-50" R D: 2'-00" E: 2064.789 T: 362.639 L: 1857.361 E: 157.411 Bank 76' Pk Ft	Curve ⑦ SB Δ: 15°-43'-30" L D: 0'-45" E: 7639.437 T: 115.009 L: 230.000 E: 0.00 Bank 76' Pk Ft	Curve ⑧ SB Δ: 5°-35'-12" R D: 0'-45" E: 7639.437 T: 372.740 L: 744.389 M: 23.077 Bank 76' Pk Ft	Curve ⑨ SB Δ: 10°-28'-00" L D: 0'-45" E: 7639.437 T: 675.082 L: 1346.667 M: 23.454 Bank 76' Pk Ft	Curve ⑩ SB Δ: 10°-28'-00" L D: 0'-45" E: 7639.437 T: 675.082 L: 1346.667 M: 23.454 Bank 76' Pk Ft	Curve ⑪ UB Δ: 49°-30'-20" L D: 0'-45" E: 7639.437 T: 3333.062 L: 6645.519 E: 777.425 Bank 76' Pk Ft	Curve ⑫ SB Δ: 10°-06'-00" L D: 0'-45" E: 7639.437 T: 675.082 L: 1346.667 M: 23.454 Bank 76' Pk Ft	Curve ⑬ SB Δ: 32°-25'-35" R D: 1'-00" E: 5729.578 T: 1673.305 L: 3256.056 E: 259.343 Bank 76' Pk Ft	Curve ⑭ SB Δ: 32°-25'-35" R D: 1'-00" E: 5729.578 T: 1673.305 L: 3256.056 E: 259.343 Bank 76' Pk Ft	Curve ⑮ UB Δ: 33°-07'-50" R D: 0'-45" E: 7639.437 T: 2275.536 L: 4417.708 E: 330.846 Bank 76' Pk Ft
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VERMONT  
 DEPARTMENT OF HIGHWAYS  
 INTERSTATE ROUTE 91  
 PROJECT E.M.P.I. 91-3(8) (20)  
 ALIGNMENT PLAN  
 NOT TO SCALE  
 EDWARDS AND KELCEY, INC.  
 BOSTON, MASSACHUSETTS  
 DATE JULY, 1966 SHEET 2 OF 605

IRASBURG  
 IM DECK(46)  
 BRIDGE NO. 107N  
 SHEET 28 OF 49  
 FOR REFERENCE ONLY

SOUTHBOUND ROADWAY

# EARTHWORK SHEET

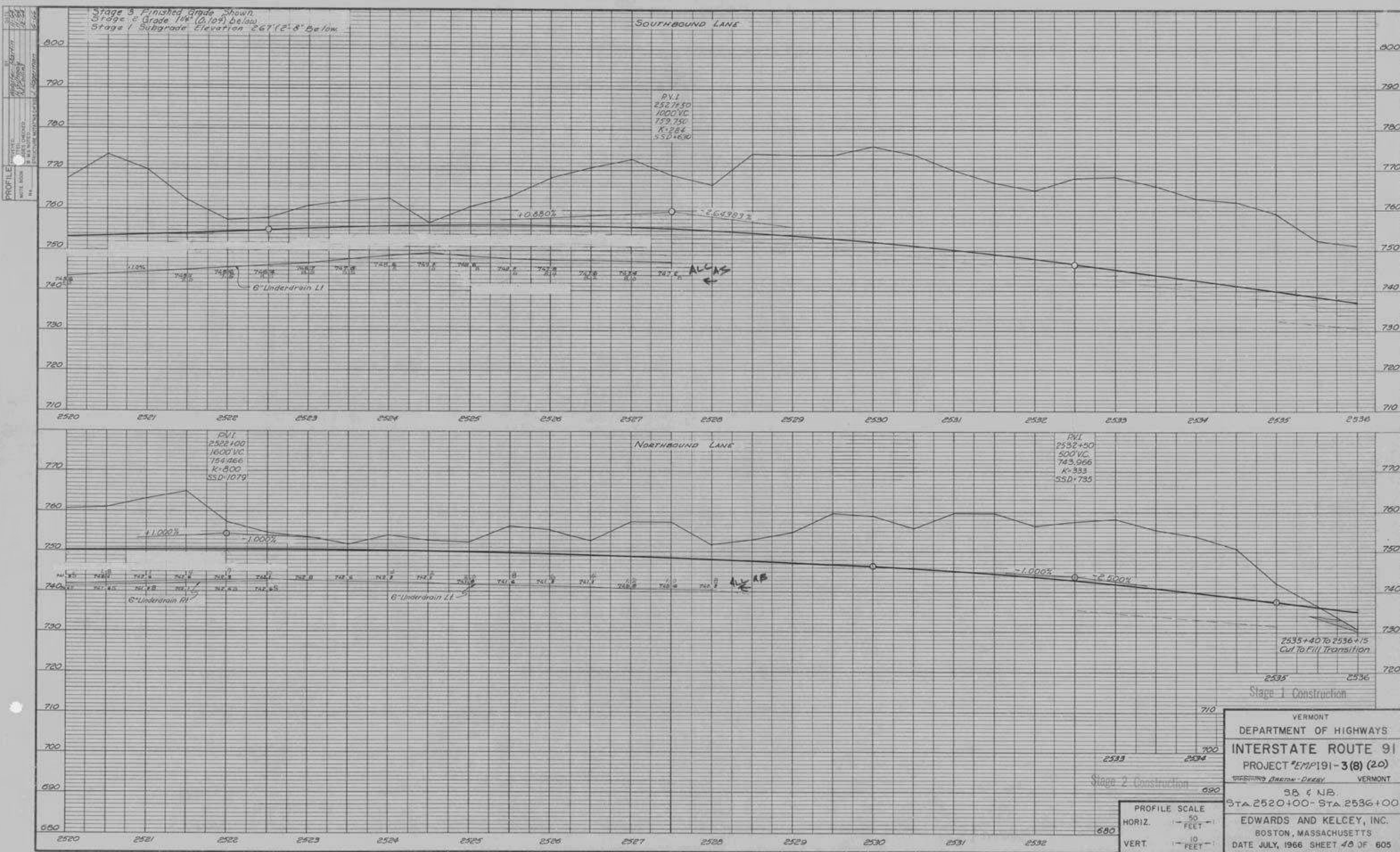
STATE OF VERMONT  
DEPARTMENT OF HIGHWAYS

FED. ROAD DIVISION NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
1	VT	101-308	22	605

STAGE 2  
STAGE 1 SUBGRADE ELEVATION 2.67' (2'-8") BELOW

VC	PRICE	GRADES						TOTAL EXCAVATION EARTH AND ROCK						ROCK EXCAVATION						EMBANKMENT						BASE					
		STATION	ELEVATION ON TANGENT	ELEVATION ON V. CURVES	CORR. V. C.	DIST	AREA	CU YDS	AREA	CU YDS	AREA	CU YDS	AREA	CU YDS	AREA	CU YDS	AREA	CU YDS	AREA	CU YDS	AREA	CU YDS	AREA	CU YDS							
-1.7759%	700' VC	2480+00	755.59																												
		+50	751.70				50																								
		2481	750.81																												
		+50	748.92																												
		2482	748.04																												
		+50	746.15																												
		2483	745.28																												
		+50	743.37																												
		2484	742.48																												
		+50	740.60																												
		2485	739.71																												
		+50	737.82																												
		2486	736.93																												
		+50	735.04																												
		2487	734.16																												
		+50	732.27																												
		2488	731.38																												
		+50	729.50																												
		2489	728.60																												
		+50	726.72																												
2490	725.83	734.88	+0.05																												
+50	723.94	734.13	+0.19																												
2491	723.05	733.48	+0.43																												
+50	721.16	732.92	+0.76																												
2492	720.28	732.47	+1.19																												
+50	718.39	732.10	+1.71																												
2493	717.50	731.82	+2.33																												
+50	715.61	731.65	+3.11																												
2494	714.73	731.47	+4.19																												
+50	712.84	731.28	+5.76																												
2495	711.96	731.09	+7.01																												
+50	710.07	730.89	+8.99																												
2496	709.19	730.69	+11.28																												
+50	707.30	730.49	+14.97																												
2497	706.41	730.29	+19.16																												
+50	704.52	730.09	+23.95																												
2498	703.63	729.89	+29.34																												
+50	701.74	729.69	+35.43																												
2499	700.85	729.49	+42.22																												
+50	698.96	729.29	+49.71																												
2500	698.07	729.09	+57.90																												
+50	696.18	728.89	+66.89																												
2501	695.29	728.69	+76.68																												
+50	693.40	728.49	+87.27																												
2502	692.51	728.29	+98.66																												
+50	690.62	728.09	+110.85																												
2503	689.73	727.89	+123.84																												
+50	687.84	727.69	+137.63																												
2504	686.95	727.49	+152.22																												
+50	685.06	727.29	+167.61																												
2505	684.17	727.09	+183.80																												
+50	682.28	726.89	+200.79																												
2506	681.39	726.69	+218.58																												
+50	679.50	726.49	+237.17																												
2507	678.61	726.29	+256.76																												
+50	676.72	726.09	+277.35																												
2508	675.83	725.89	+298.94																												
+50	673.94	725.69	+321.53																												
2509	673.05	725.49	+345.12																												
+50	671.16	725.29	+369.71																												
2510	670.27	725.09	+395.30																												
+50	668.38	724.89	+421.89																												
2511	667.49	724.69	+449.48																												
+50	665.60	724.49	+478.07																												
2512	664.71	724.29	+507.66																												
+50	662.82	724.09	+538.25																												
2513	661.93	723.89	+569.84																												
+50	660.04	723.69	+602.43																												
2514	659.15	723.49	+636.02																												
+50	657.26	723.29	+670.61																												
2515	656.37	723.09	+706.20																												
+50	654.48	722.89	+742.79																												
2516	653.59	722.69	+780.38																												
+50	651.70	722.49	+818.97																												
2517	650.81	722.29	+858.56																												





IRASBURG  
 IM DECK(46)  
 BRIDGE NO. 107N  
 SHEET 31 OF 49  
 FOR REFERENCE ONLY

PLAN  
 UNLIMITED  
 NOTE BOOK  
 INVENT CHECKED  
 NO. 1000000000  
 DATE 7/1/66

CONTROL OF ACCESS COMPLETE ON THIS SHEET

R=1400' R=500'  
 D=4°08'33" D=11°27'33"  
 L=8°03'46" L=20°43'54"  
 T=98.67' T=91.68'  
 L=197.01' L=180.92'  
 E=3.45' E=8.30'  
 Bank=1/4 Per Ft. Bank=1/4 Per Ft.

FOR SA 3 PROFILE SEE SHEET 97.

* JUTE MATTING  
 ITEM 603

Med 2541+88 - 2544+00  
 Med 2545+00 - 2547+00  
 Med 2548+00 - 2550+00  
 Med 2550+00 - 2552+00

PROPERTY LINE FENCE  
 W/STEEL POSTS ITEM 585 B Mod

SB 2536+00 - 2539+05 LT  
 NB 2536+00 - 2539+60 RT  
 SB 2541+30 - 2552+00 LT  
 NB 2540+30 - 2552+00 RT

DEMOLITION AND DISPOSAL OF  
 BUILDING MOD ITEM 586

SB 2538+00 RH

STANDARD STEEL BEAM GUARD  
 RAIL W/STEEL POSTS ITEM 545-A

54" x 9" 920 - 111.00 LT (2x4)

* TREATED TIMBER CURB  
 ITEM 558

NB 2540+16 - 2546+00 RT  
 NB 2541+15 - 2551+00 LT

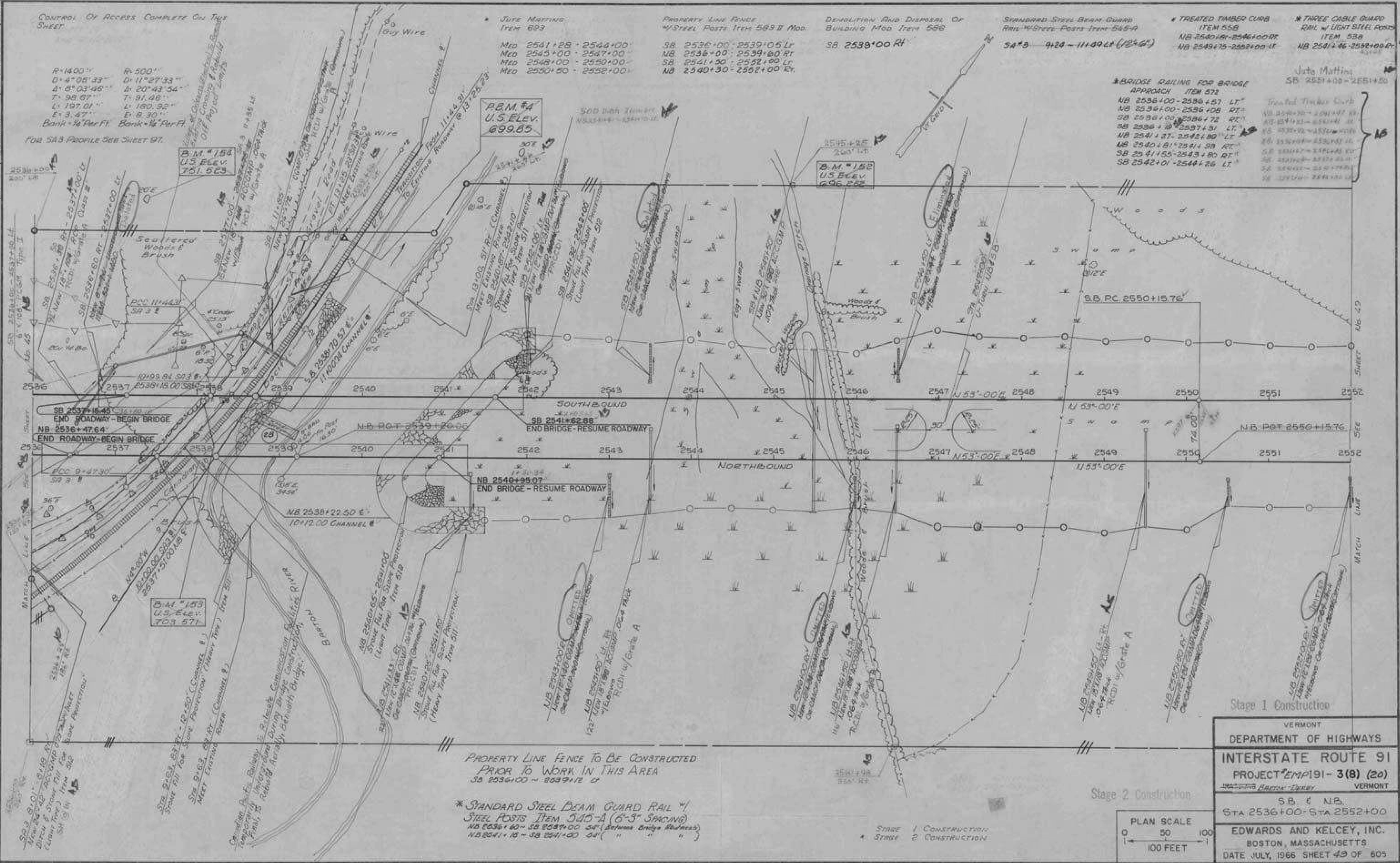
* THREE CABLE GUARD  
 RAIL W/ LIGHT STEEL POSTS  
 ITEM 538

NB 2541+46 - 2551+00 RT  
 NB 2541+46 - 2551+00 LT

* BRIDGE DAILING FOR BRIDGE  
 APPROACH ITEM 572

NB 2536+00 - 2536+57 LT  
 NB 2536+00 - 2536+08 RT  
 SB 2536+00 - 2536+72 RT  
 SB 2536+10 - 2537+31 LT  
 NB 2541+27 - 2542+89 LT  
 NB 2540+21 - 2541+33 RT  
 SB 2541+35 - 2543+90 RT  
 SB 2542+01 - 2544+26 LT

Jute Matting  
 SB 2551+00 - 2551+20



PROPERTY LINE FENCE TO BE CONSTRUCTED  
 PRIOR TO WORK IN THIS AREA  
 SB 2536+00 - 2552+00

* STANDARD STEEL I-BEAM GUARD RAIL W/  
 STEEL POSTS ITEM 545-A (6" x 3" SPACING)  
 NB 2536+00 - SB 2549+00 54" (Between Bridge Railings)  
 NB 2541+15 - SB 2541+00 54" ( " " " )

Stage 1 Construction

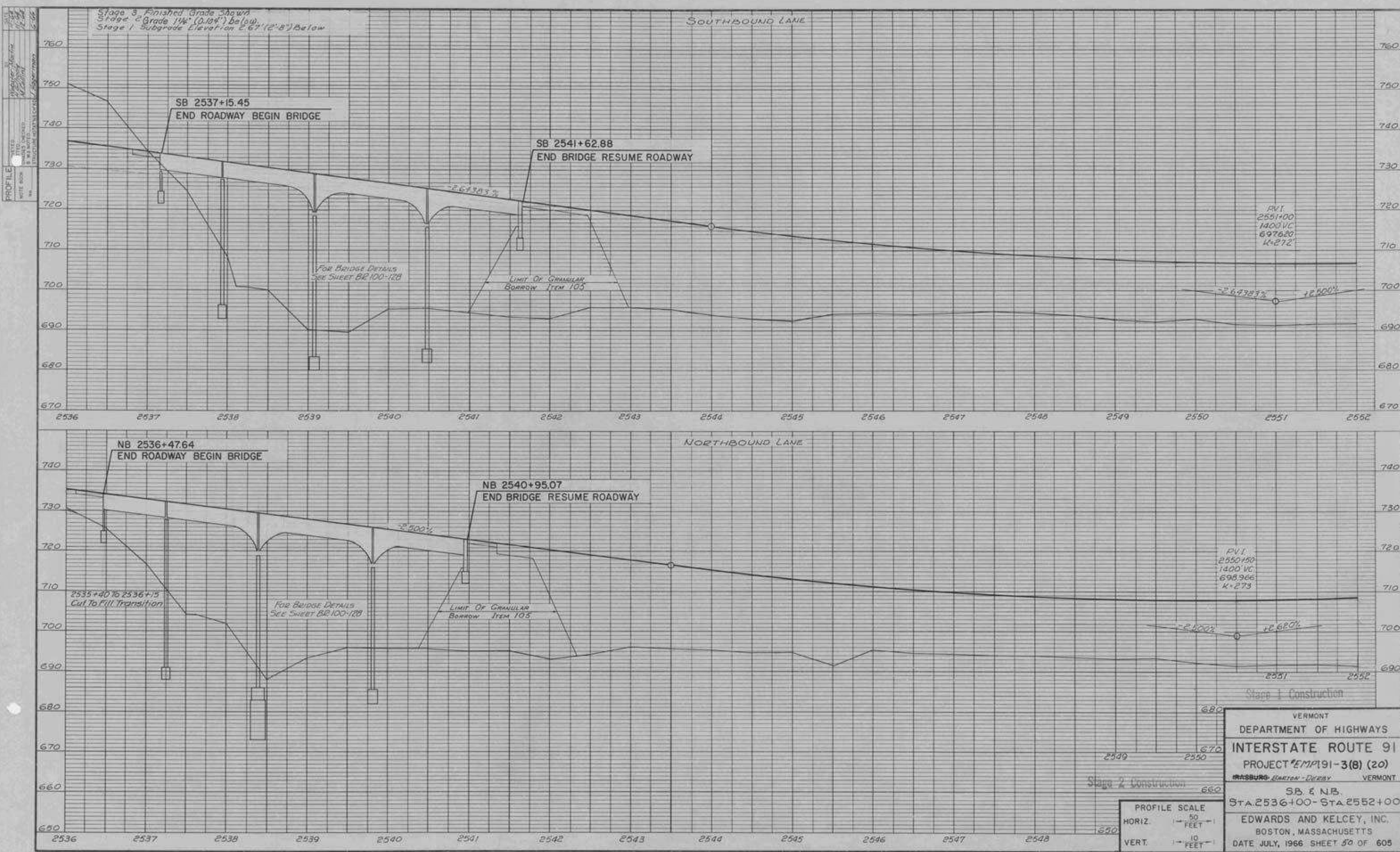
Stage 2 Construction



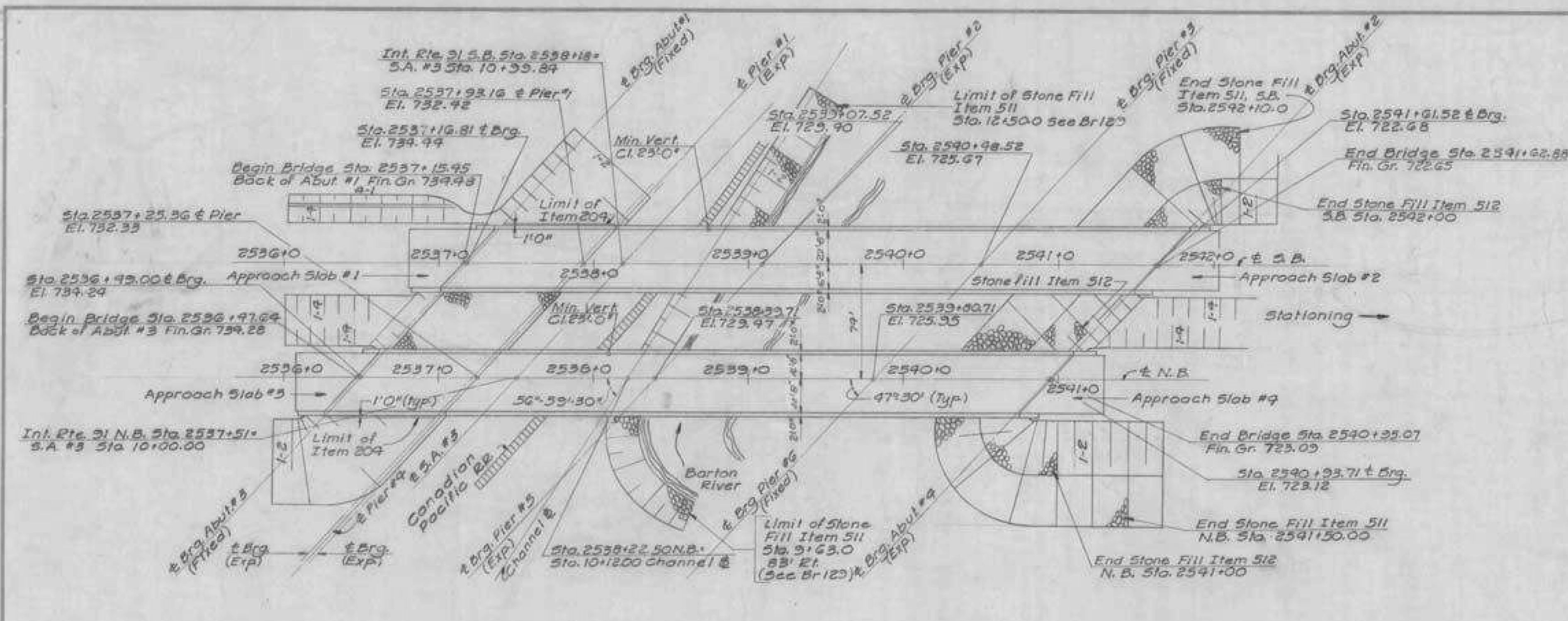
VERMONT
DEPARTMENT OF HIGHWAYS
INTERSTATE ROUTE 91
PROJECT EMP191-3(8) (20)
VERMONT
S.B. & N.B.
STA 2536+00 - STA 2552+00
EDWARDS AND KELCEY, INC.
BOSTON, MASSACHUSETTS
DATE JULY, 1966 SHEET 49 OF 605

Sheet 60 of 173 Sheets

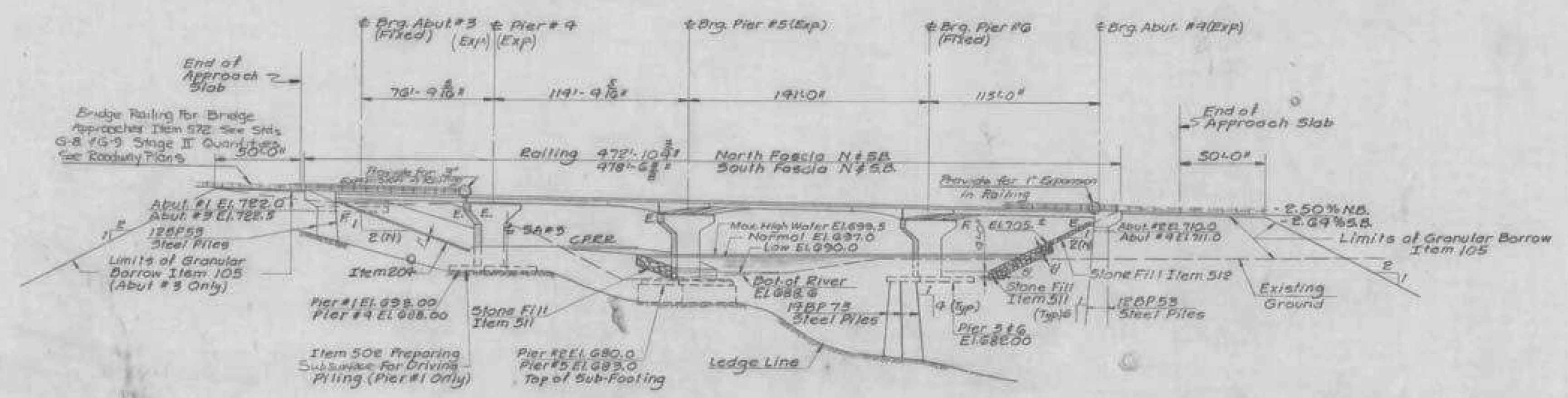
IRASBURG  
 IM DECK(46)  
 BRIDGE NO. 107N  
 SHEET 32 OF 49  
 FOR REFERENCE ONLY



IRASBURG  
IM DECK(46)  
BRIDGE NO. 107N  
SHEET 33 OF 49  
FOR REFERENCE ONLY



PLAN



ELEVATION

LIST OF SHEETS

- Br 100 Plan & Elevation
- Br 101-102 Bridge Quantity Sheets
- Br 103 Preliminary Information Sheet
- Br 104-106 Borings Logs
- Br 107 Framing Plan & Girder Details
- Br 108 Girder Elevation & Conn. Details
- Br 109 Deck Section & Splice
- Br 110 Expansion Dam & Scupper Details
- Br 111 Rafter Bearings
- Br 112 Abutment #1
- Br 113 Abutment #2
- Br 114 Abutment #3
- Br 115 Abutment #4
- Br 116 Abutment #2 & #4 Details
- Br 117 Abutment #1 & #3 Approach Slab
- Br 118 Abutment #2 & #4 Approach Slab
- Br 119 Pier #1
- Br 120 Pier #2
- Br 121 Pier #3
- Br 122 Pier #4
- Br 123 Pier #5
- Br 124 Pier #6
- Br 125-128 Reinforcing Schedules
- Br 129 Channel sections

STANDARD SHEETS REQUIRED

- SCB D1 67 General Notes & Information Jan 24, 48
- SCB D2 67 Detail A&B'60 Jan 24, 48
- SCB D3 67 Drain Trough Details Jan 24, 48
- SCB D4 67 Reinforcing of Abutments Dec 17, 48
- SCB D5 67 Detail A&B May 23, 1949
- SCB D7 67 Intermediate Diaphragm Jan 24, 48
- SCB D8 67 Bearing Devices Jan 24, 48
- SCB D9 67 Detail A Jan 24, 48
- SB R1 64 Abutment Railing (3 Sheets) Sheet 1 & 2 Dec 14, 1948; Sheet 3 Dec 8, 44
- SB R2 65 Steel Bridge Railing Nov 8, 44

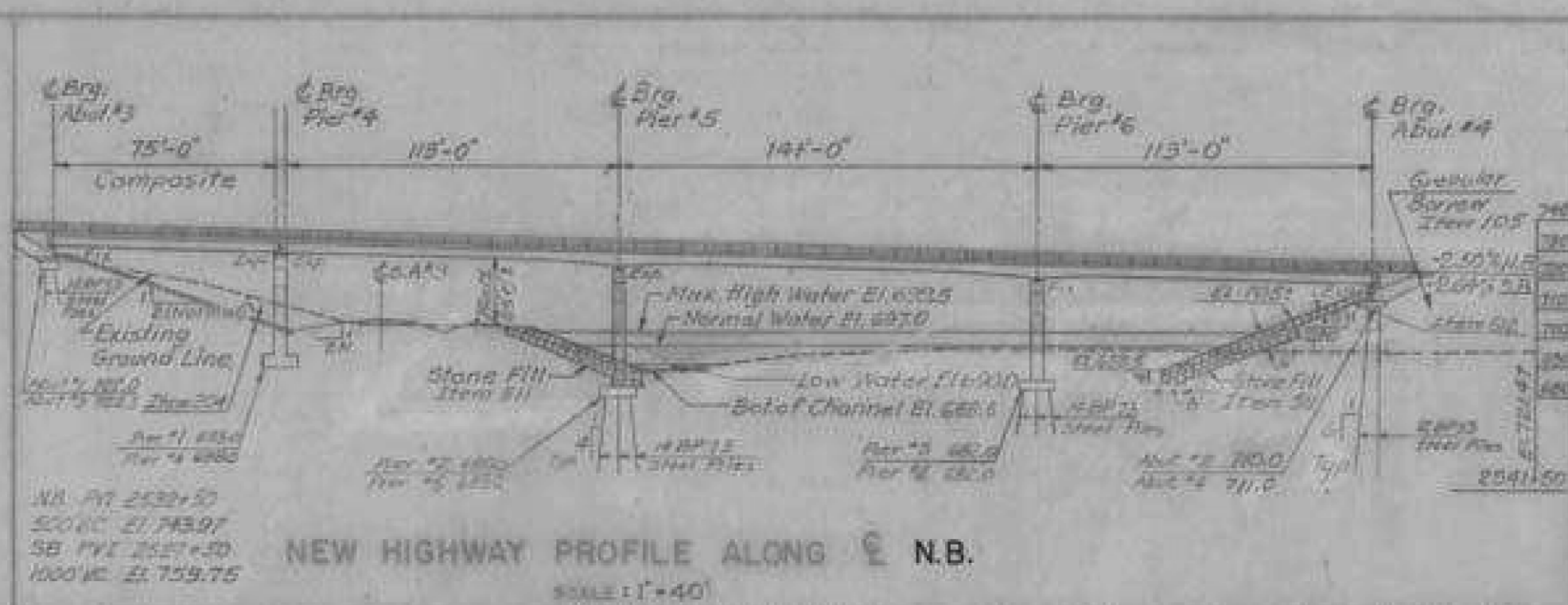
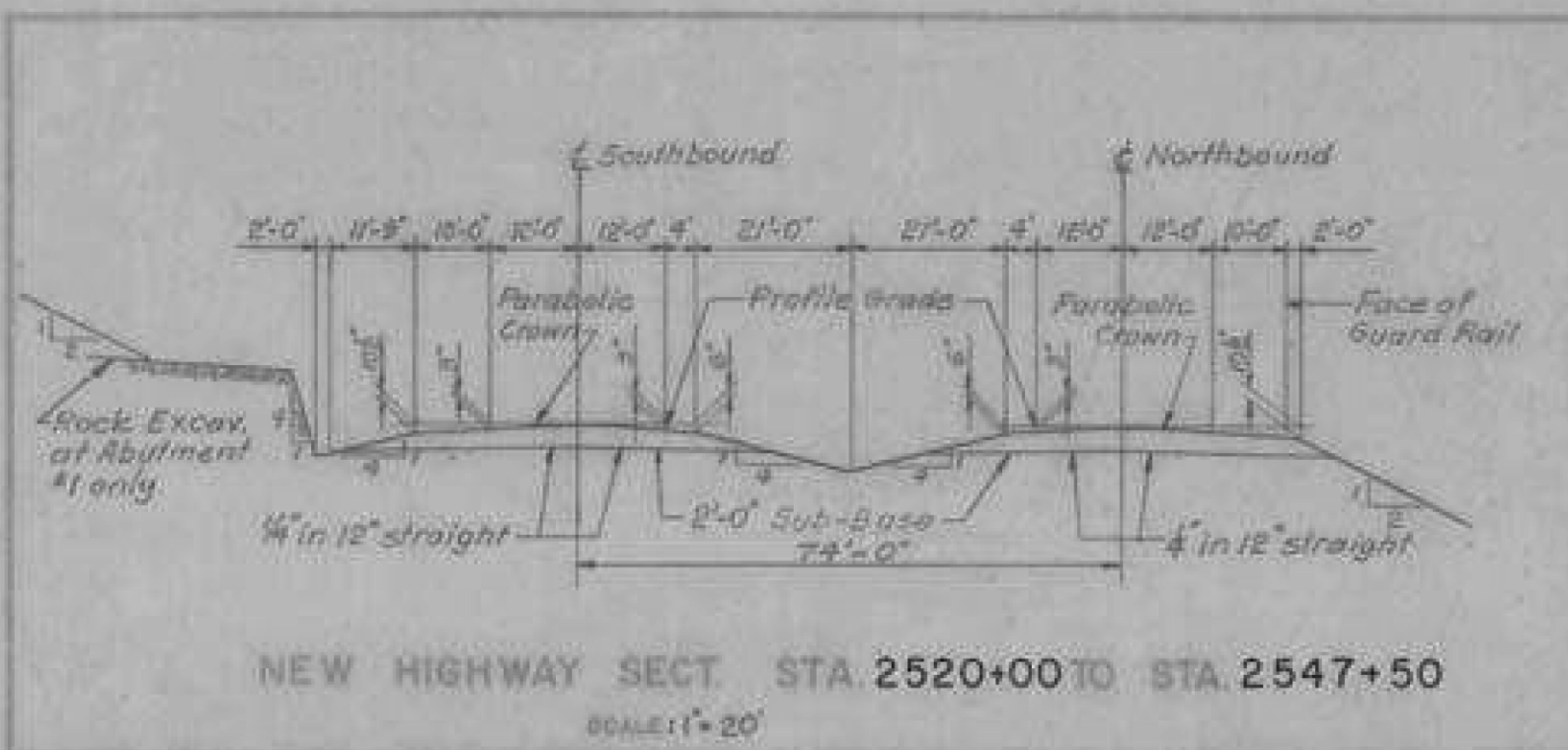
NOTE:

The channel excavation and stone fill shall be done between July 1 and October 1 so as not to interfere with the Bear bow Trout runs. Precautions shall be taken during construction to prevent siltation or pollution of the river.

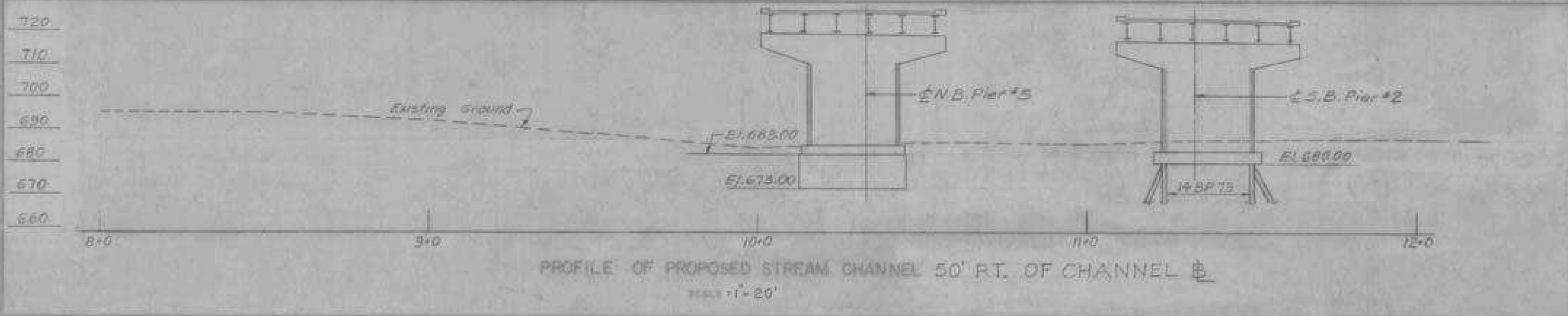
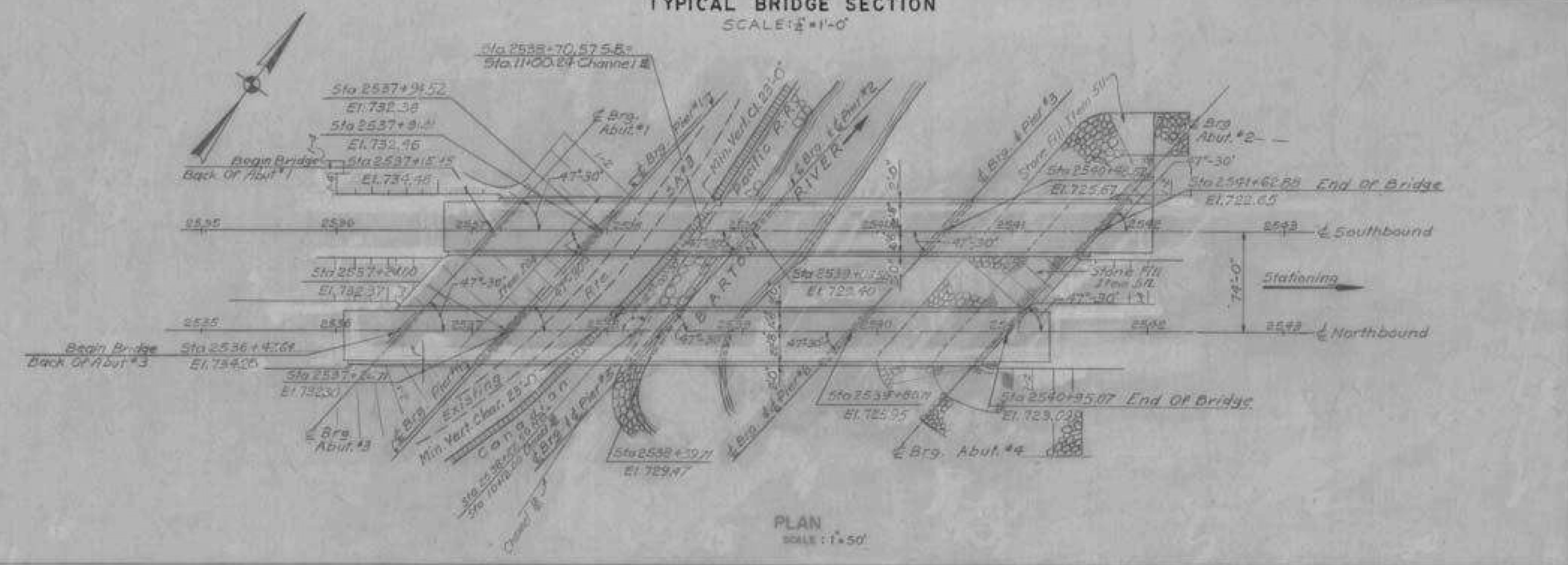
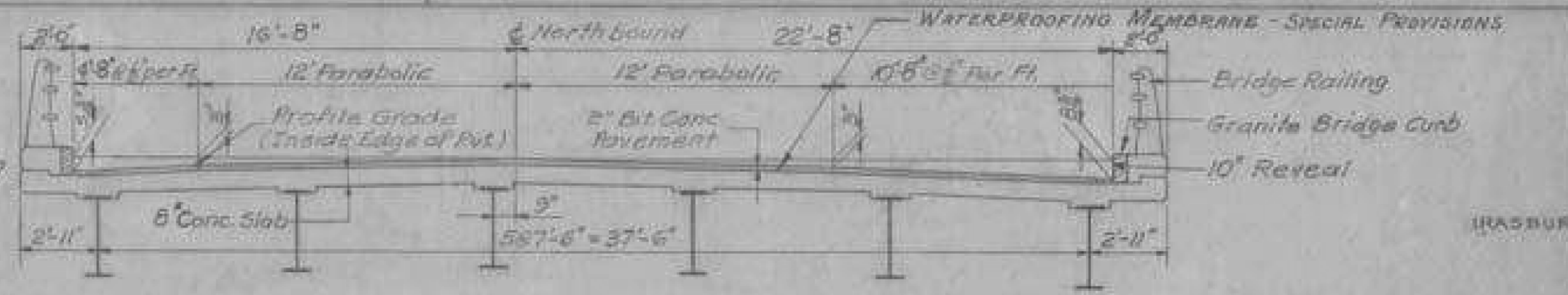
1. Changed roadway width from 36'0" to 39'4" with width from 15'6" to 17'0" quarter mile sheet R. Sheet 852

STATE OF VERMONT	
DEPARTMENT OF HIGHWAYS	
PROJECT IRASBURG-LEWIS	
TOWN OF IRASBURG	82-187
ROUTE No. I-91	STA. 25391
I-91 OVER BARTON RIVER AND SA #3	
PLAN AND ELEVATION	
SCALE 1" = 40'	
IN CHARGE S. IERENZIO	
DRAWN BY JMR CHECKED BY A. GENTORE	
PROJECT No. I-91-3(B) 9-57	
SHEET 152 OF 152 BR 100	

IRASBURG  
IM DECK(46)  
BRIDGE NO. 107N  
SHEET 34 OF 49  
FOR REFERENCE ONLY



Note: For Details of Deck Construction see BR 109  
For railing Details see SB-R1-64 and SB-R2-65  
For Curb Details see SCB-06-67



ROADWAY NO.	I-91	NAME OF HIGHWAY	INTERSTATE
STRUCTURE NO.		COUNTY	ORLEANS
		TOWN	IRASBURG
PROJECT NO.	I-91-3(B)	LOCATION	I-91 OVER BARTON RIVER, C.P.R.R. and Irasburg SA '3

EXISTING STRUCTURE	
1 RATED LOADING OF EXISTING STRUCTURE	N.A.
2 TYPE OF EXISTING STRUCTURE	N.A.
3 UNDERCLEARANCE ELEVATION OF EXISTING STRUCTURE	N.A.
4 WHAT DISPOSITION SHOULD BE MADE OF EXISTING STRUCTURE?	N.A. COST OF REMOVAL N.A.
5 SHOULD EXISTING STRUCTURE BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF NEW STRUCTURE?	N.A.
6 SHOULD NEW TEMPORARY STRUCTURE BE BUILT?	N.A.
7 ORDINARY HIGH WATER SURFACE ELEV. AT EXISTING STRUCTURE	N.A. WATERWAY TO ORDINARY H.W. N.A.
8 EXTREME HIGH WATER AT EXISTING STRUCTURE	N.A. WATERWAY TO EXTREME H.W. N.A.
9 SPAN OF EXISTING BRIDGE	N.A. WATERWAY TO EXTREME H.W. STRUCTURE TYPE 1800 SF
10 TYPE OF FOUNDATION UNDER EXISTING ABUTMENTS	N.A.
11 DOES ALL WATER AT FLOOD ELEVATION PASS THROUGH EXISTING STRUCTURE?	N.A.
12 IF NOT AT WHAT ELEVATION IS RELIEF AFFORDED?	N.A.
13 ADDITIONAL WATERWAY AREA PROVIDED	N.A.

NEW STRUCTURE	
1 RECOMMENDED TYPE OF STRUCTURE	ONE SINGLE SPAN COMB. 3000 WIDE 2 GIRDER (CONTINUOUS) CONC.
2 RECOMMENDED CLEAR SPAN OR SPANS	75'-0" - 113'-0" - 141'-0" - 163'-0"
3 MEASURED PARALLEL TO & NEW HIGHWAY	75'-0" - 113'-0" - 141'-0" - 163'-0"
4 MEASURED AT RIGHT ANGLES TO & STREAM	55'-0" - 84'-0" - 104'-0" - 24'-0"
5 ARE THERE OBJECTIONS TO A PIER IN THE STREAM UNDER YES OR NO	No
6 ORDINARY HIGH WATER SURFACE ELEV. AT NEW STRUCTURE	697.0
7 EXTREME HIGH WATER SURFACE ELEV. AT NEW STRUCTURE	692.5 SOURCE OF INFORMATION COMPILED
8 IS ALL WATER INTENDED TO PASS THROUGH NEW STRUCTURE?	Yes
9 DOES STREAM SEARCH ITS MAXIMUM HIGH WATER ELEVATION FREELY?	No IS ORDINARY HIGH WATER? No
10 LOW WATER SURFACE ELEV. AT NEW STRUCTURE	690.0
11 DRAINAGE AREA IN ACRES ABOVE STRUCTURE	99.3/2 CHARACTER OF TERRAIN ROLLING
12 IS STREAM EVER DRY?	No
13 VELOCITY OF STREAM AT HIGH WATER STAGE	6.21 C.F.S. ESTIMATED DISCHARGE 1000 C.F.S.
14 AREA FULL OPENING	1282.3 S.F. AREA BELOW OBSTACLE H.W. 1000 S.F.
15 CHARACTER OF SOILS	DRIFT NAME IS MEDIUM
16 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL OBSTACLE	135.8 SQ. MI.
17 VERTICAL CLEARANCE ABOVE FLOOD ELEVATION	18 FT. BOTH SIDES
18 ARE SIDEWALKS REQUIRED? & 20 OR WAYS SIDE?	No
19 RECOMMENDED TYPE OF PAVEMENT	2 BITUMINOUS CONCRETE, 8" CONCRETE
20 TRAFFIC TO BE MAINTAINED UNDER PIER NO.	N.A. ONE OR TWO WAYS PROBABLE COST
21 PROBABLE COST OF CLEANING AND GRUBBING STREAM CHANNEL AT STRUCTURE SITE	\$1000.
22 SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES?	No
23 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS	See Below

**FOUNDATION INFORMATION**

OBTAINED FOR DESIGN PURPOSES ONLY, AND THE STATE ASSUMES NO RESPONSIBILITY WHATSOEVER FOR THE SUFFICIENCY OR ACCURACY OF THE INFORMATION WHICH BUILDERS MAY BE ENCOUNTERED AT ANY PIER OR ABUTMENT LOCATION.

Pier No. 4 & 5 - 5 Tons / 5-Ft.  
Abutment No. 2 - 12 BP 53 110' Long  
Abutment No. 1 & 3 - 12 BP 53 20' Long; 58 Tons / Pile Max.  
Abutment No. 4 - 12 BP 53 100' Long  
Pier No. 1 - 14 BP 73 20' Long  
Pier No. 2 - 14 BP 73 30' Long  
Pier No. 3 - 14 BP 73 25' Long  
Pier No. 5 - 14 BP 73 45' Long; 80 Tons / Pile Max.

**Design Stresses!**  
Concrete  $f'_c = 3000$  p.s.i.  $f_c = 1200$  p.s.i.  
Structural Steel  $F_y = 20,000$  p.s.i. (A-36) others per AASHTO Specs  
Reinforcing Steel  $f_y = 20,000$  p.s.i. Tension  
 $f_c = 15,000$  p.s.i. Compression  
Welding per A.W.S. Specs.

**Design Loading: HS 20-44**

Stage 2 Construction  
Br. 103 OF 120

STATE OF VERMONT  
DEPARTMENT OF HIGHWAYS

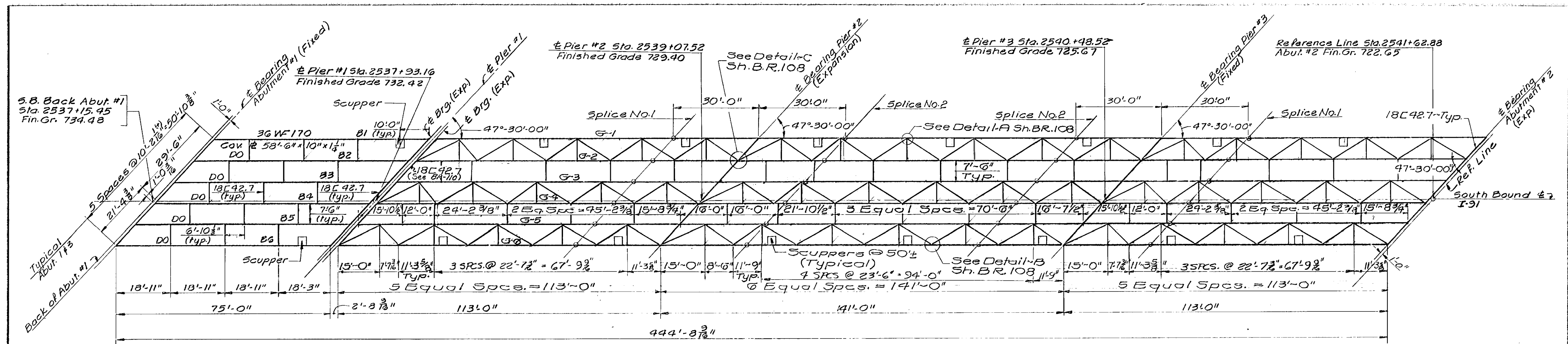
PROJECT: I-91 BR #107  
ROUTE NO I-91 STA. 2539'  
I-91 OVER BARTON RIVER, C.P.R.R. & IRASBURG SA '3

PRELIMINARY INFORMATION SHEET

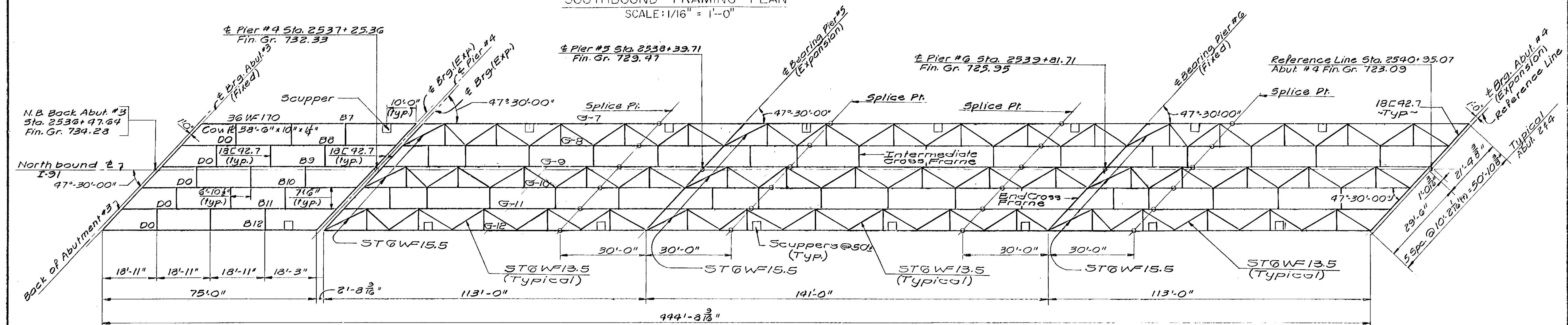
RECOMMENDED FOR APPROVAL: *[Signature]* 9-15-69 DATE  
RECOMMENDED FOR APPROVAL: *[Signature]* 9-15-69 DATE  
RECOMMENDED FOR APPROVAL: *[Signature]* 9-15-69 DATE  
APPROVED BY: *[Signature]* 9/15/69 DATE

CHANGED ROADWAY WIDTH FROM 38'-0" TO 39'-4"  
CHANGED CURB WIDTH FROM 2'-8" TO 2'-0" 9/15/69

IRASBURG  
IM DECK(46)  
BRIDGE NO. 107N  
SHEET 35 OF 49  
FOR REFERENCE ONLY

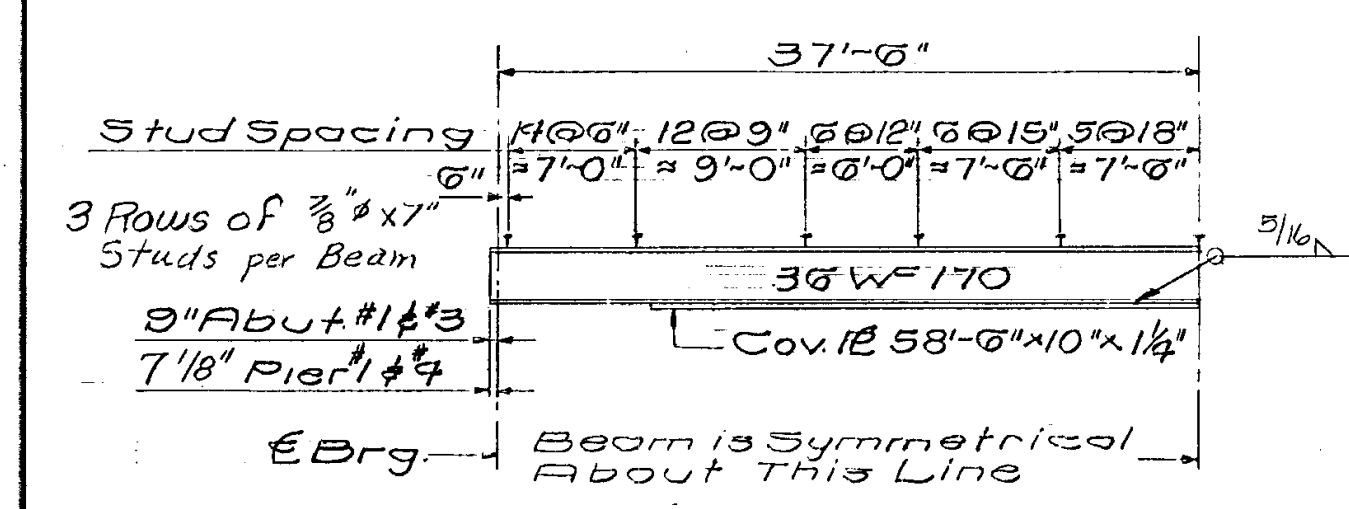


SOUTHBOUND FRAMING PLAN  
SCALE: 1/16" = 1'-0"

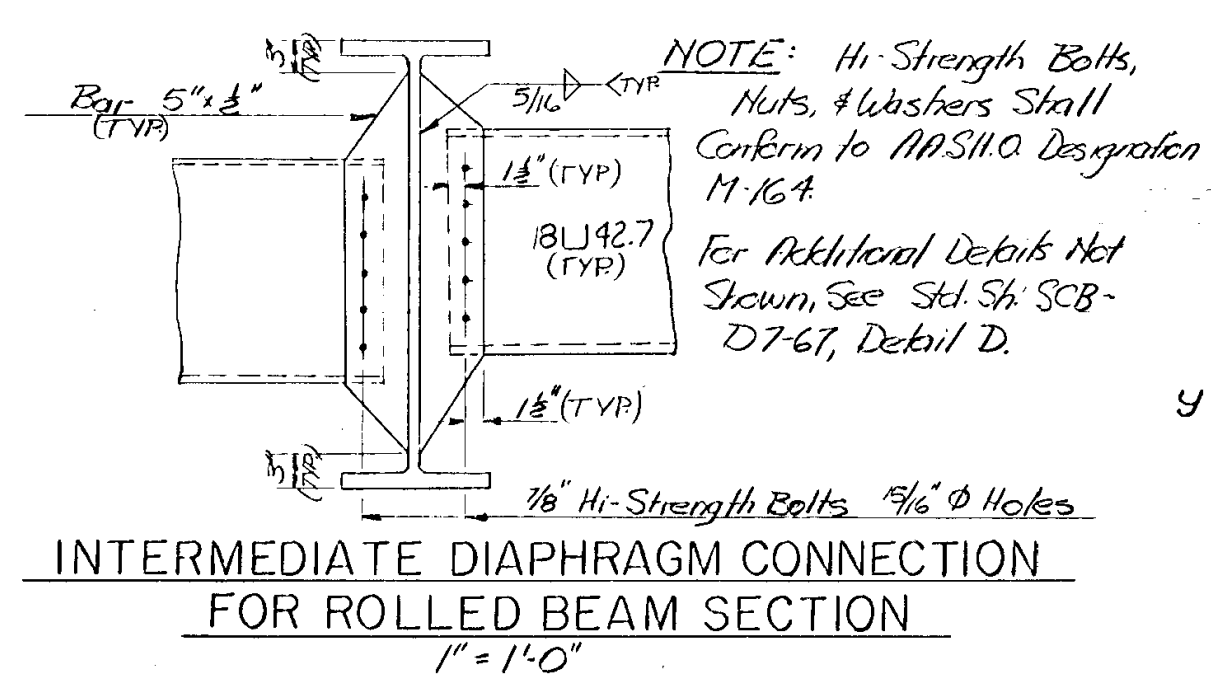


NORTHBOUND FRAMING PLAN  
SCALE: 1/16" = 1'-0"

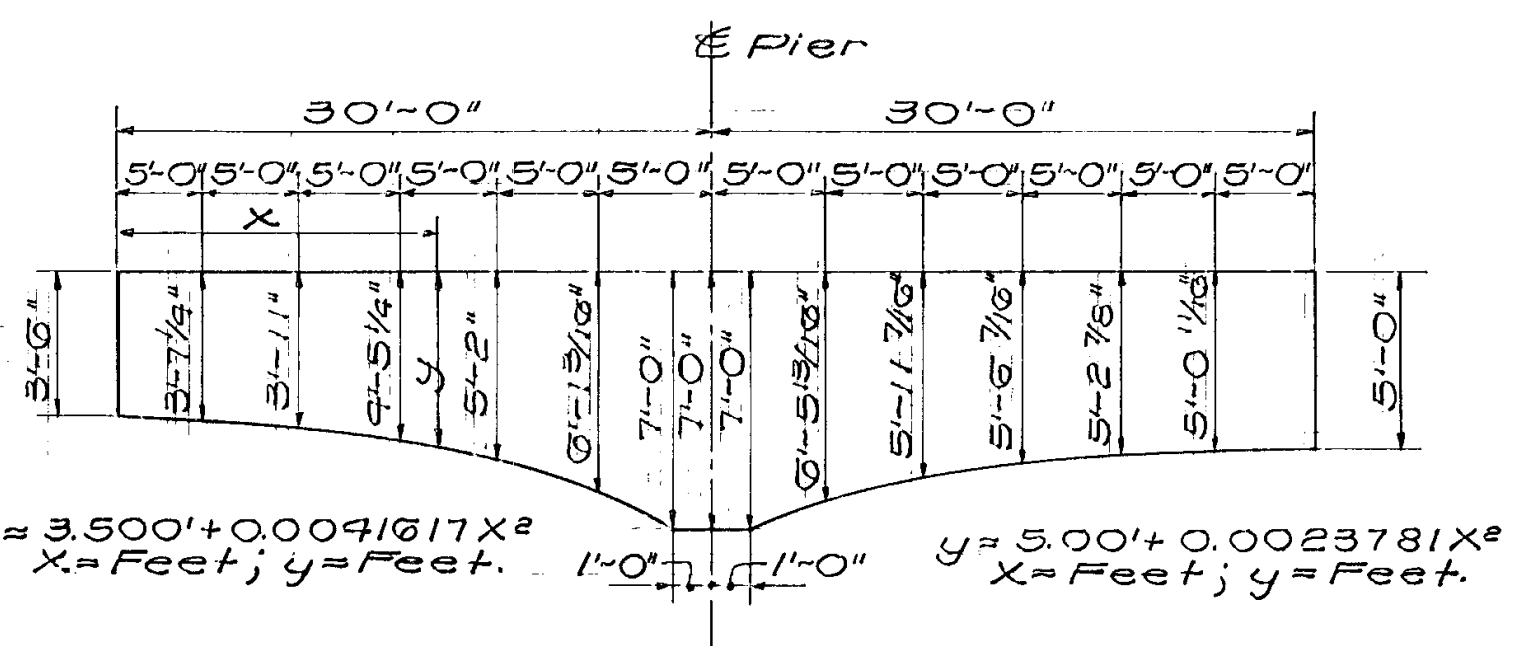
Note: See Southbound Framing Plan For Cross Frame and Lateral Bracing Dimensions.



BEAM HALF ELEVATION B-1 THRU B-12  
SCALE: 1/8" = 1'-0"



INTERMEDIATE DIAPHRAGM CONNECTION FOR ROLLED BEAM SECTION  
SCALE: 1" = 1'-0"

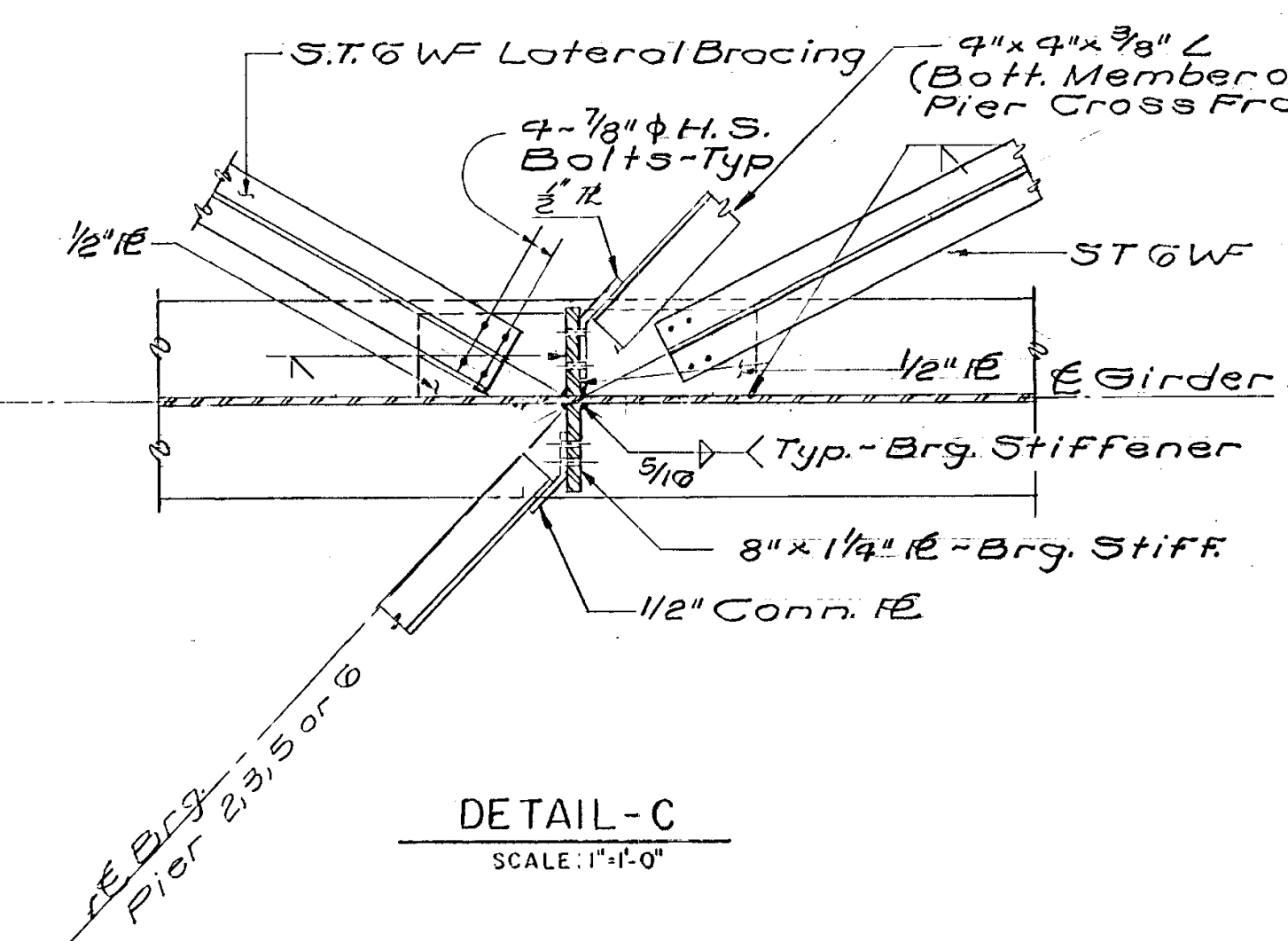
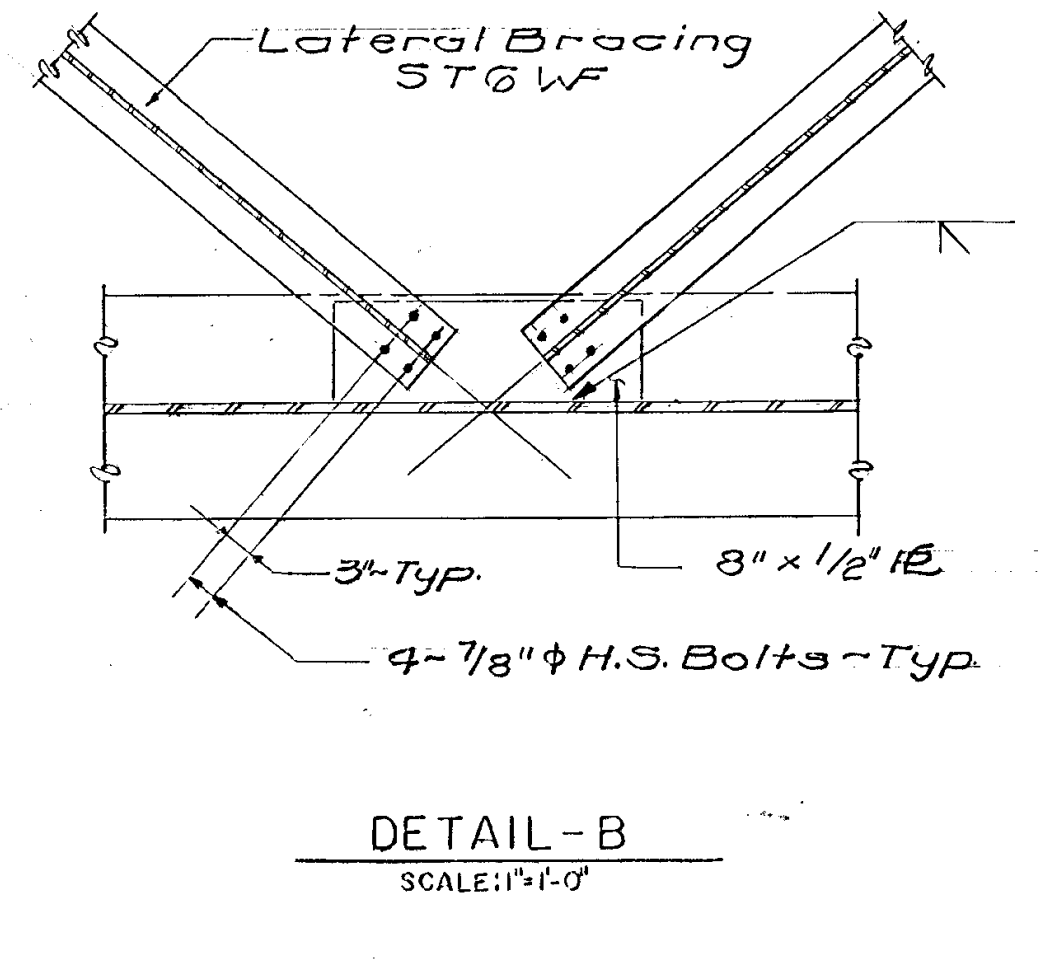
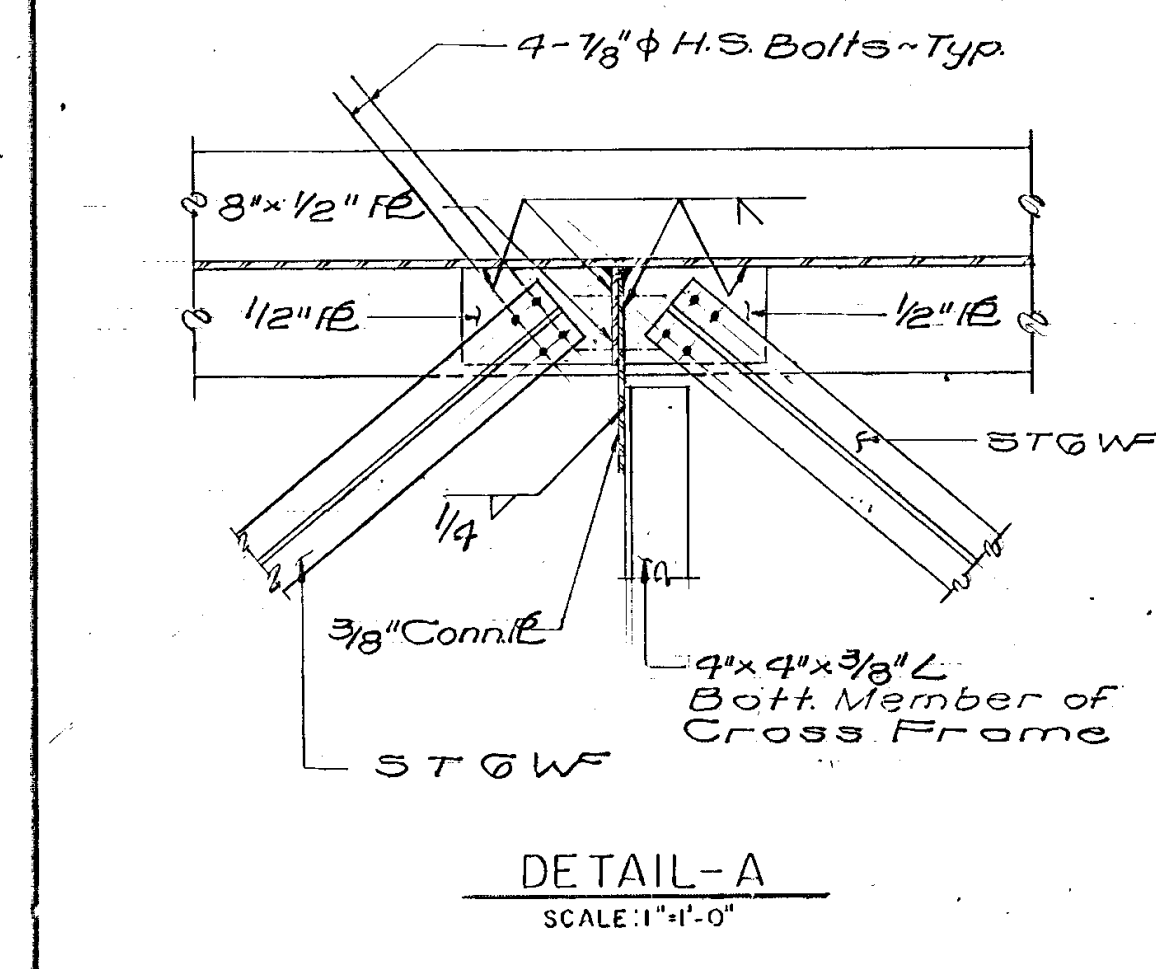
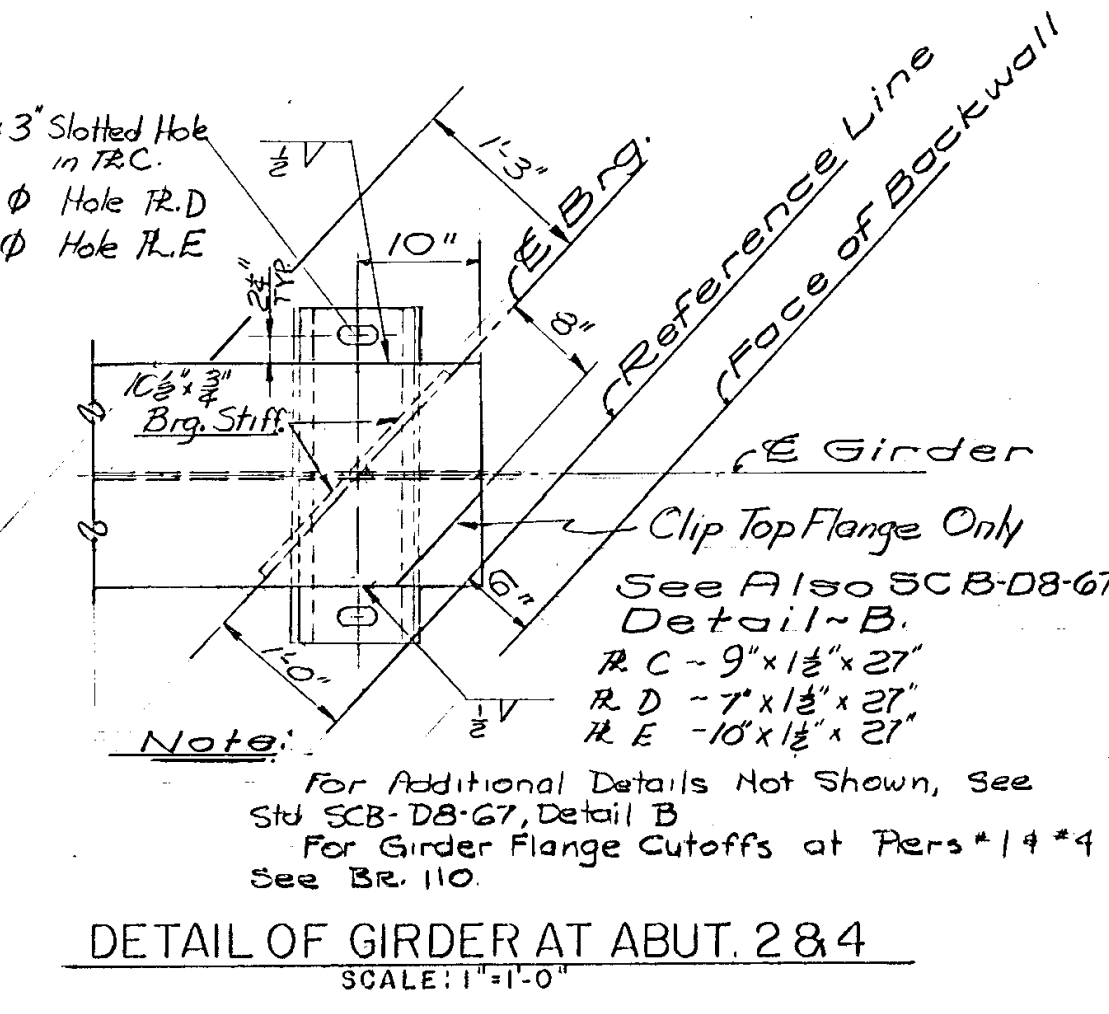
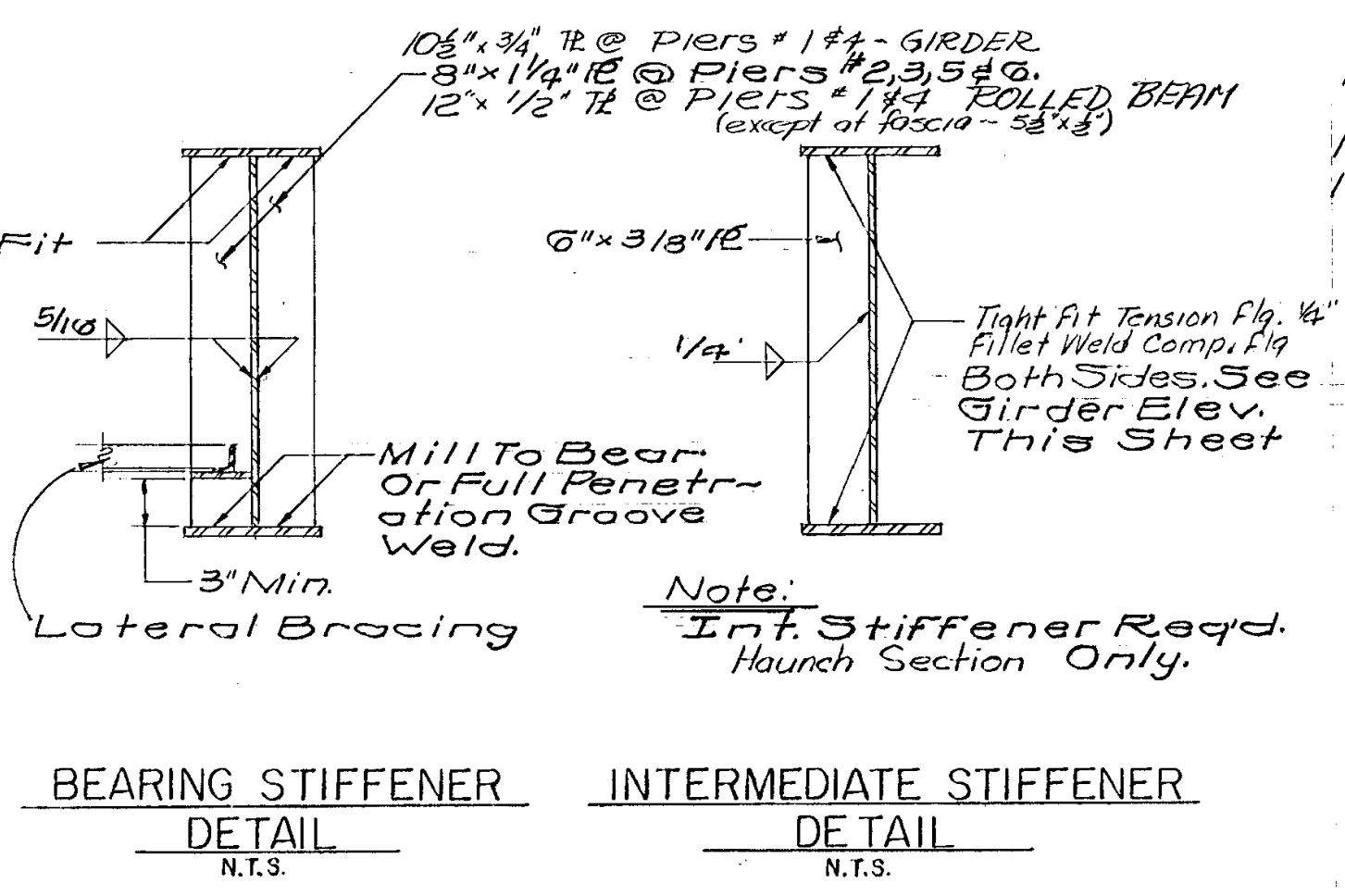
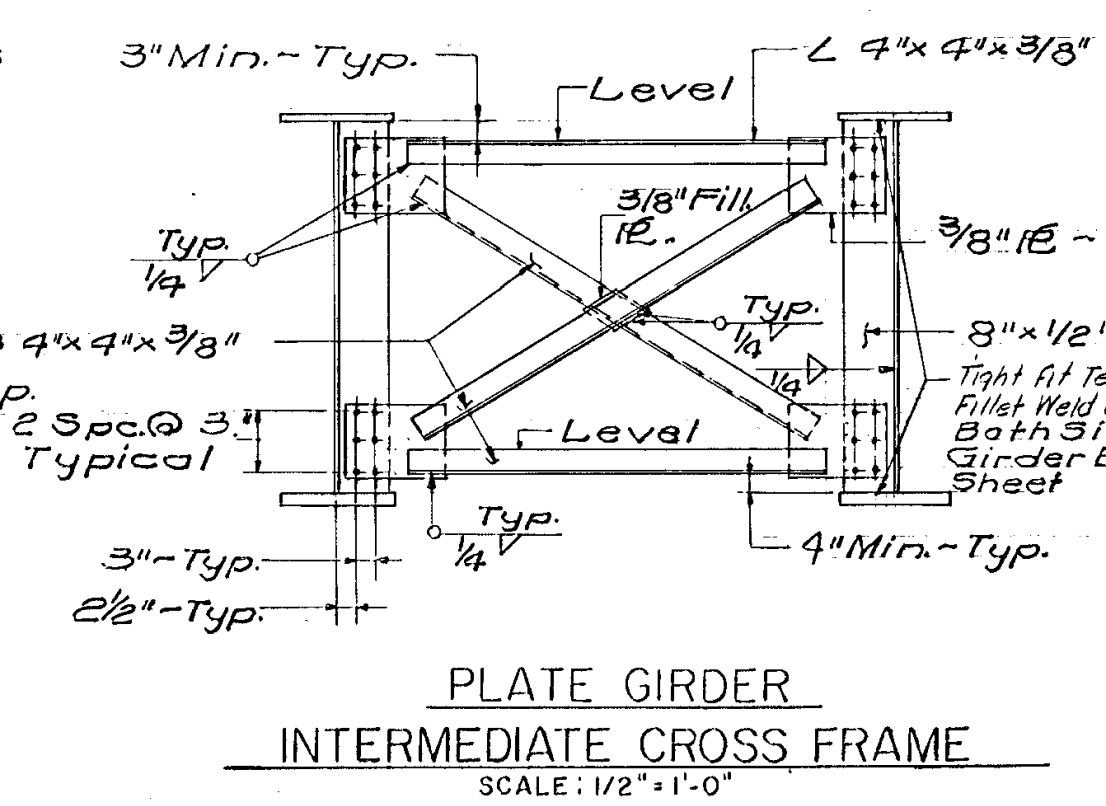
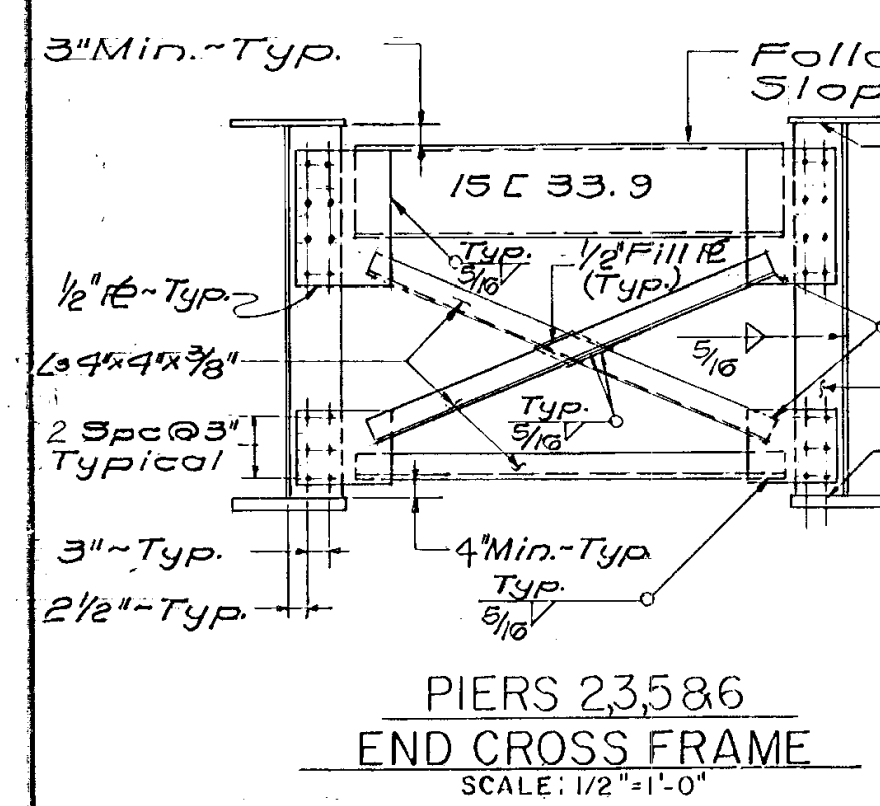
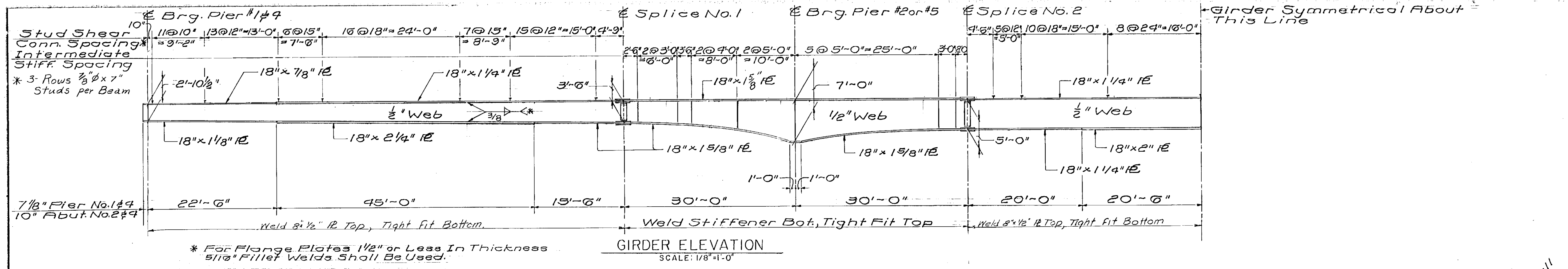


PARABOLIC HAUNCH DETAIL  
N.T.S.

Dr. 107 of 129

STATE OF VERMONT	
DEPARTMENT OF HIGHWAYS	
PROJECT	IRASBURG-DERRY
TOWN OF	IRASBURG
ROUTE No.	I-91 STA. 2539±
I-91 OVER BARTON RIVER AND SA*3	
FRAMING PLAN AND GIRDER DETAILS	
SCALE AS NOTED	
IN CHARGE C. TERENCE	
DRAWN BY	JMB
CHECKED BY	A. CENTORE
PROJECT No.	191-3(8) 9-67
SHEET	176 OF 605 BR. 107

IRASBURG IM DECK(46)  
BRIDGE NO. 107N  
SHEET 36 OF 49  
FOR REFERENCE ONLY

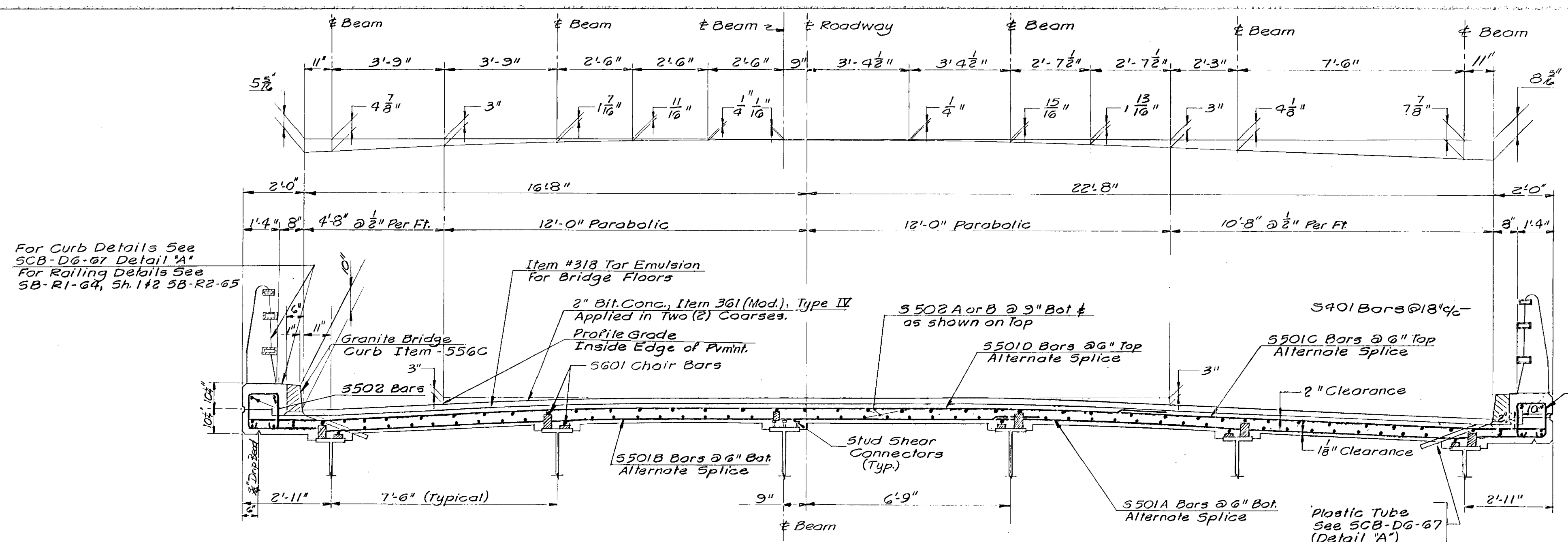


- NOTES:**
1. Intermediate Stiffeners Shall Be Placed on Alternate Sides of Girder Web. Intermediate Stiffeners Shall Not Be Placed on The Outside Face of The Fassa Girder.
  2. Bearing and Intermediate Stiff. and Ends of Girders Shall Be Vertical After Application of Full Dead Load.
  3. For Detail of Beam at Abutments No. 1 & 3 See Sld. SCB-D-67 Detail 'A'.
  4. Omit Int. Stiffeners at cross frame locations.

<b>STATE OF VERMONT</b> DEPARTMENT OF HIGHWAYS	
PROJECT	IRASBURG-DERBY
TOWN OF	IRASBURG
ROUTE No.	I-91 LOG STA. 2539±
	I-91 OVER BARTON RIVER AND SA 3
<b>GIRDER ELEVATION &amp; CONN. DETAILS</b>	
SCALE	AS NOTED
IN CHARGE	C. TERENZIO
DRAWN BY	J.M.B. CHECKED BY A.CENTORE
PROJECT No.	I-91 (8) 9-67
SHEET	177 OF 605 BR.108

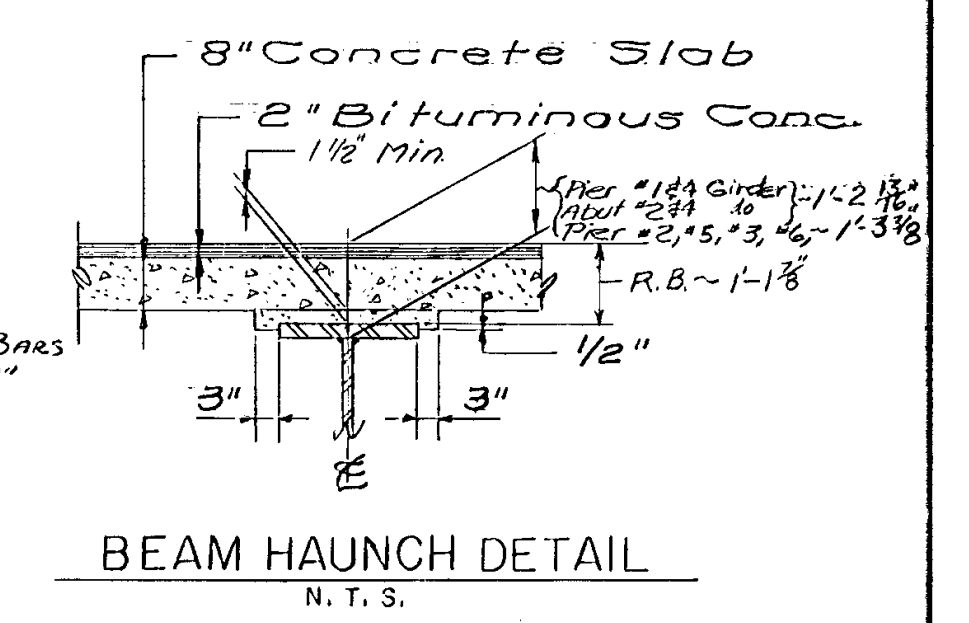
Δ Cross frame Conn. Flg. & Member Rev. Rev. 8-1-67  
 Changed 1/2" Web to 1/2" Web. Removed Int  
 Stiff. Added Cutoff Detail to Flange at Abut  
 2 & 4. Changed Brg. Stiff Sizes Revised  
 Connection at Detail C. Rev. 5-1-69  
 Added Brg. Stiff. at Abut. 2 & 4

IRASBURG  
IM DECK(46)  
BRIDGE NO. 107N  
SHEET 37 OF 49  
FOR REFERENCE ONLY

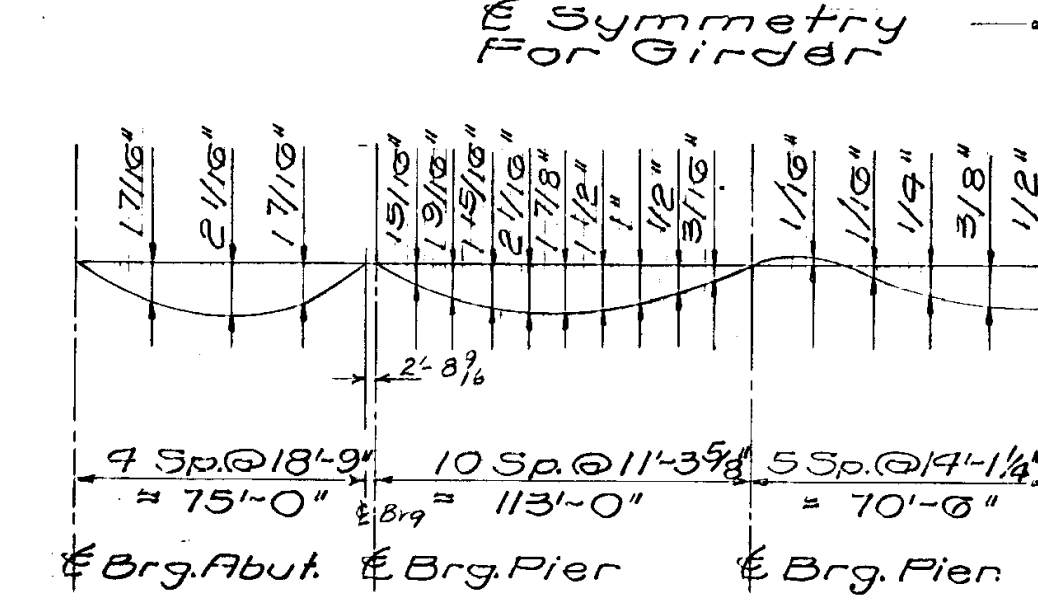
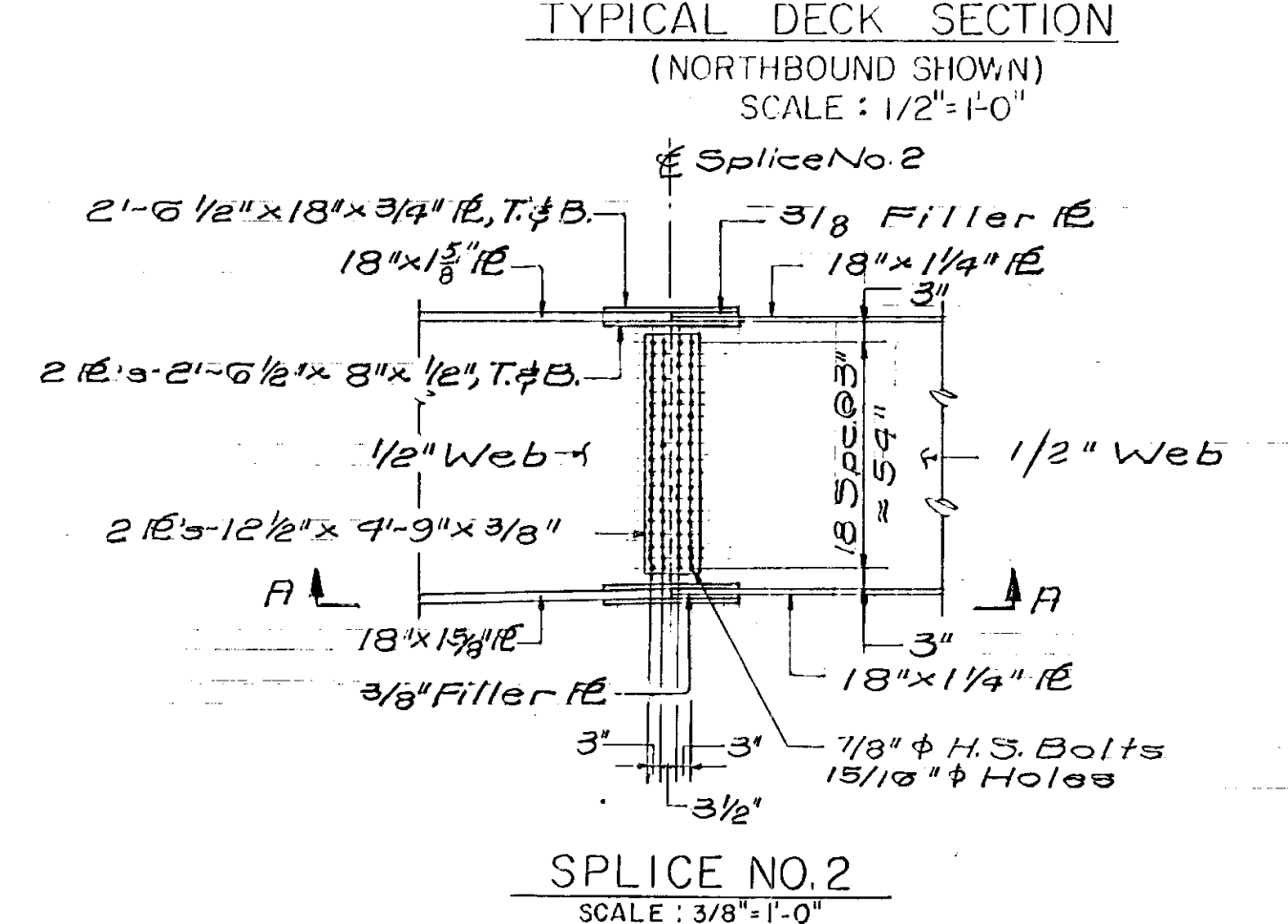
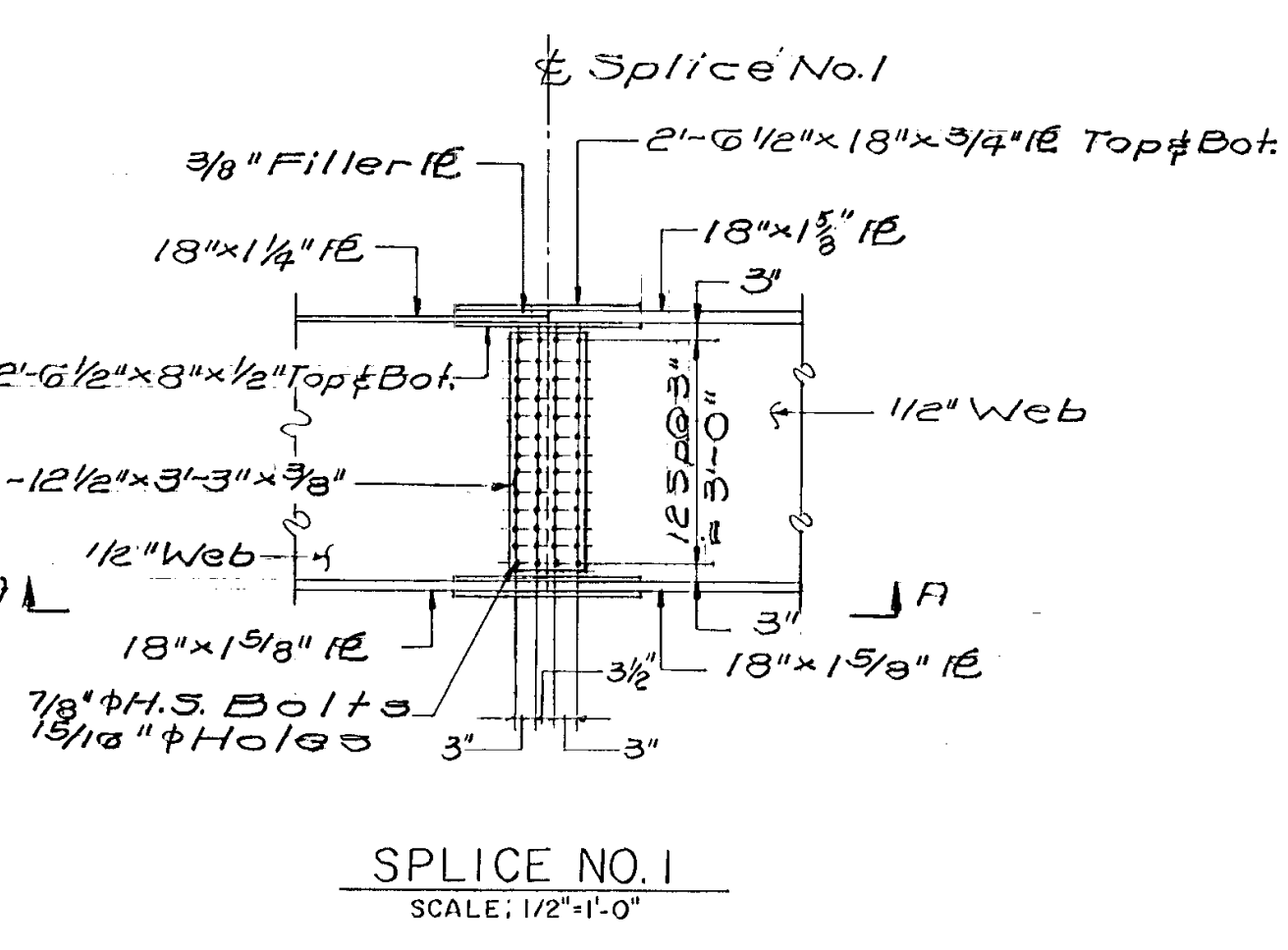


Floor Slab to be concrete, class AA, 8" thick, dapped as shown at Beam Haunch, surface to be finished with a self-propelled concrete finishing machine.  
 Parabolic crown, as per detail, to be obtained by stepping bridge seats. Cut 5501 Transverse Bars at skew end and use cut off on opposite end.

Note: Water Repellent, Item 990 Shall Be Used on Top of Safety Walk And on The Fascia And Back To The Fascia Beam Under The Slab.

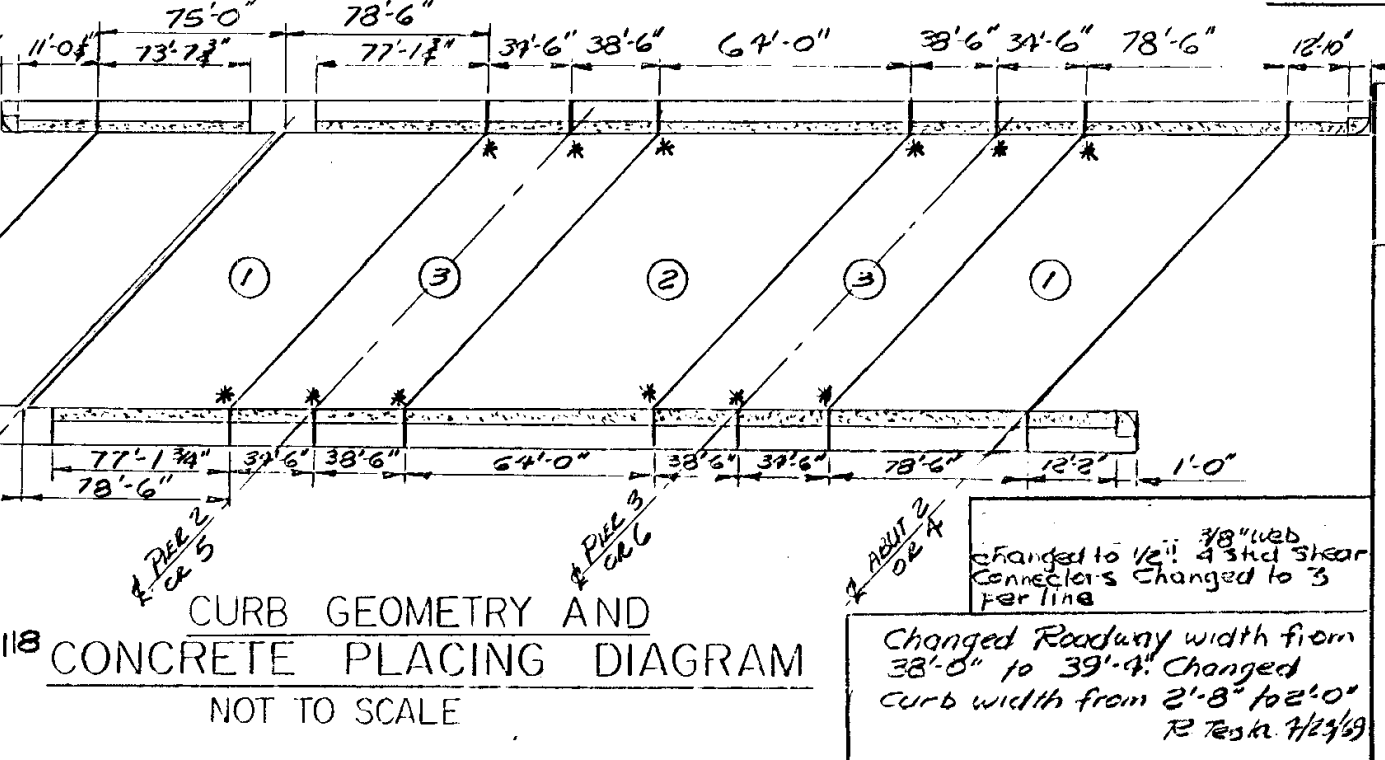
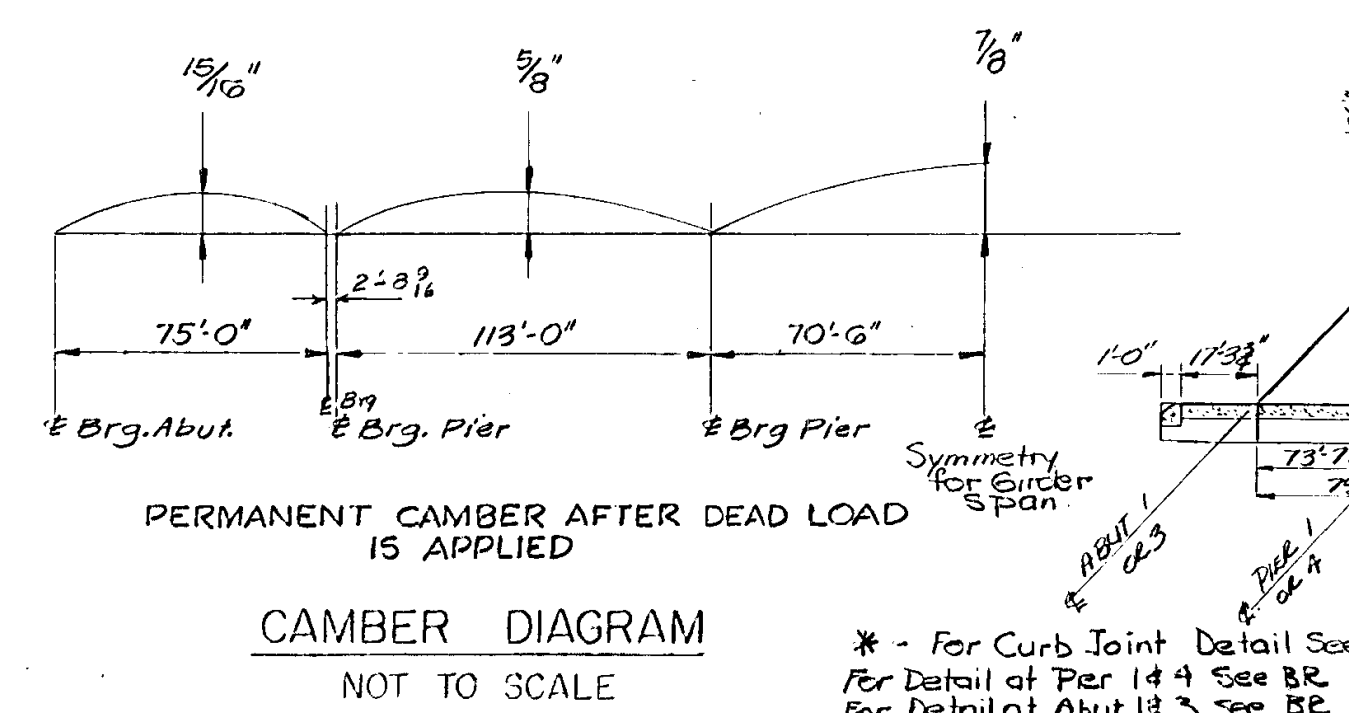
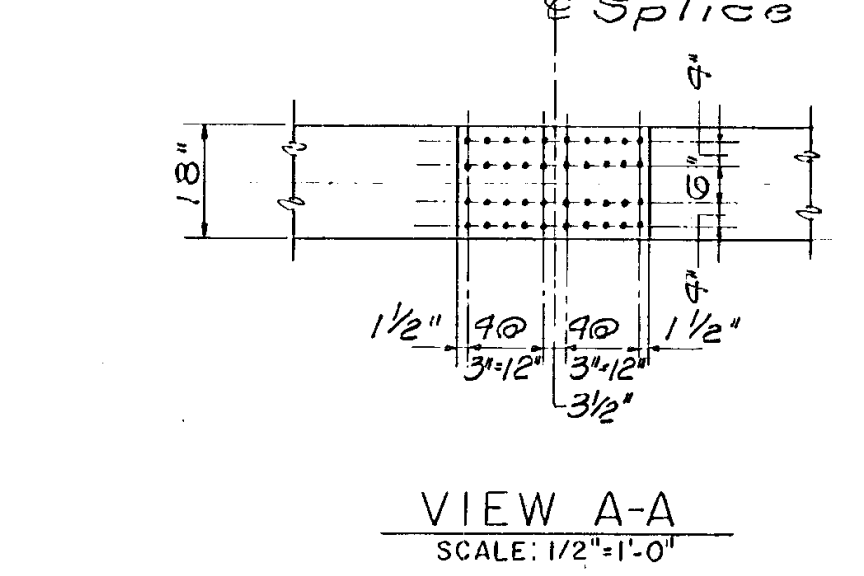
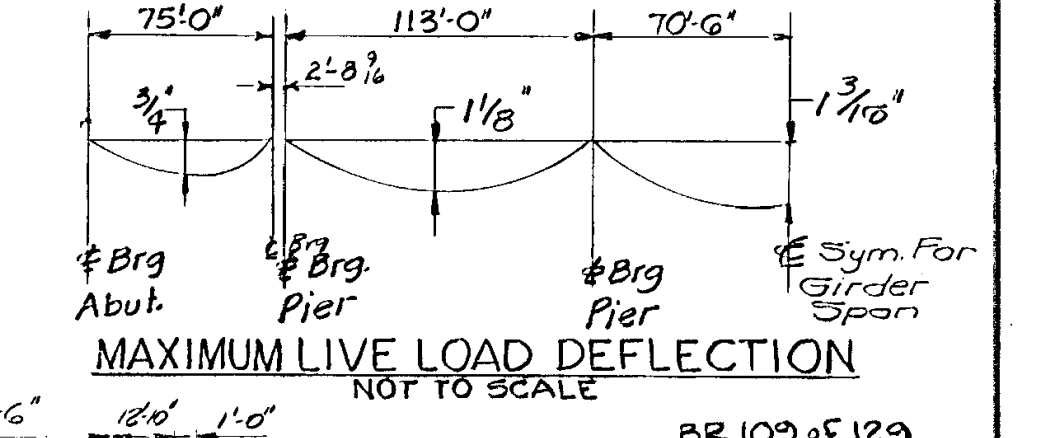


For Curb Details See SCB-D6-67 Detail 'A'  
 For Railing Details See SB-R1-64, Sh. 112 SB-R2-65



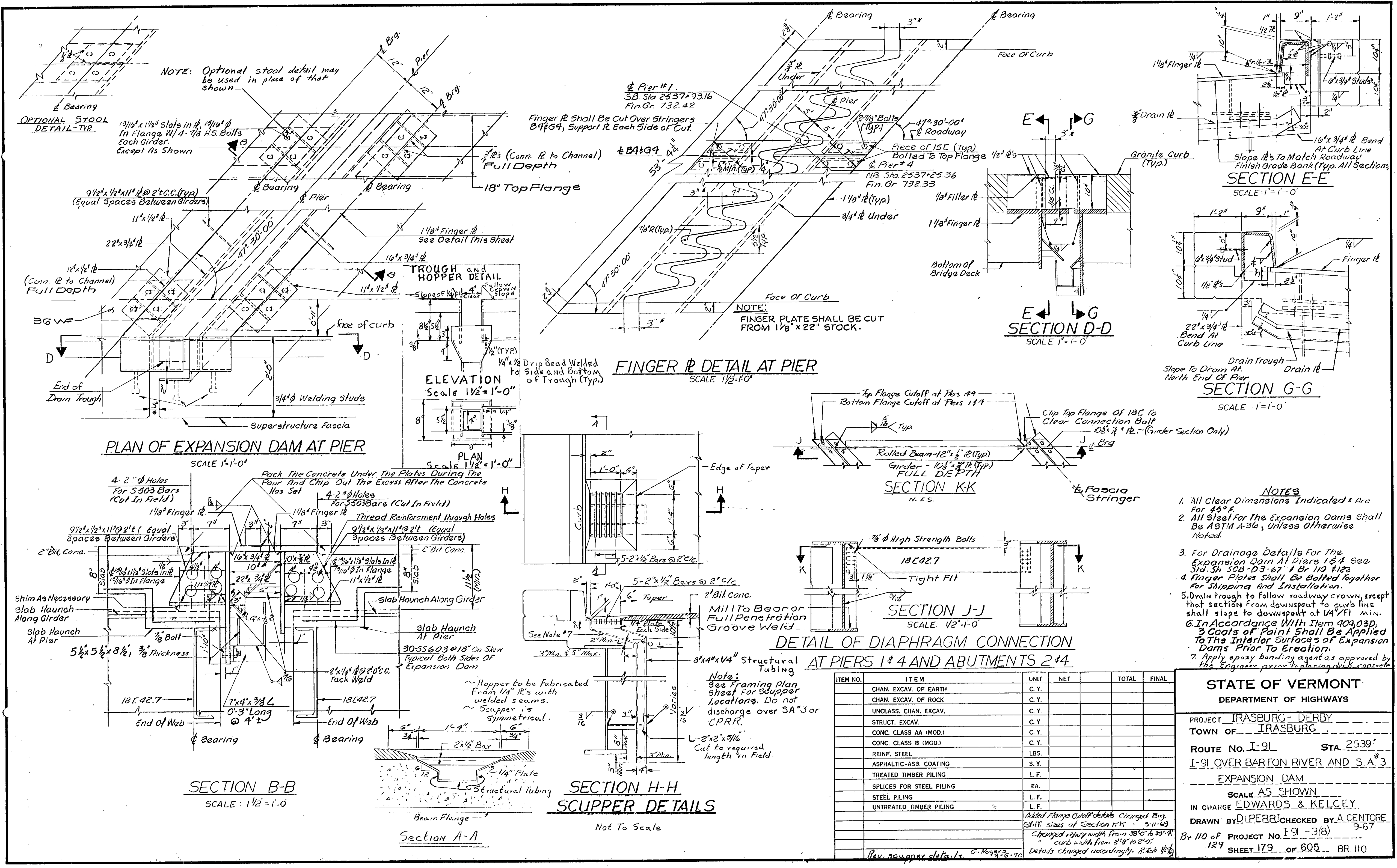
SUPERSTRUCTURE NOTES:

- For general notes and design stresses see std. sh. SCB-D1-67
- For details of shear connectors see std. sh. SCB-D2-67
- For bearing details of abutments see std. sh. SCB-D8-67 & Br III & Br IV
- All cover plate welds to be 3/8" fillet continuous shop welds.
- All field connections to be made with 7/8" high strength bolts with 3/8" holes.
- Structural steel shall be ASTM A-36-62T unless otherwise noted.
- Scuppers to be placed @ 50' (±) except as noted. Do not place above SA-3 or Railroad.
- For curtain wall details, Approach Slab bracket details, see SCB-D2-67, Detail A.



STATE OF VERMONT	
DEPARTMENT OF HIGHWAYS	
PROJECT	IRASBURG-DERBY
TOWN OF	IRASBURG
ROUTE No.	191 STA. 2539'
191 OVER BARTON RIVER AND SA 3	
DECK SECTION AND SPLICE	
SCALE	AS NOTED
IN CHARGE	C. TERENZIO
DRAWN BY	J.M.B. CHECKED BY A. CENTRE
PROJECT No.	191-3(8) 9-67
SHEET	178 OF 605 BR. 109

IRASBURG  
 IM DECK(46)  
 BRIDGE NO. 107N  
 SHEET 38 OF 49  
 FOR REFERENCE ONLY



ITEM NO.	ITEM	UNIT	NET	TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C.Y.			
	CHAN. EXCAV. OF ROCK	C.Y.			
	UNCLASS. CHAN. EXCAV.	C.Y.			
	STRUCT. EXCAV.	C.Y.			
	CONC. CLASS AA (MOD.)	C.Y.			
	CONC. CLASS B (MOD.)	C.Y.			
	REINF. STEEL	LBS.			
	ASPHALTIC-ASB. COATING	S.Y.			
	TREATED TIMBER PILING	L.F.			
	SPLICES FOR STEEL PILING	EA.			
	STEEL PILING	L.F.			
	UNTREATED TIMBER PILING	L.F.			

Added Flange Cutoff Details Changed Orig. Shfr. sizes of Section K-K - 5-11-69  
 Changed rebay width from 38" to 39" curb width from 21" to 22"  
 Details changed accordingly. R.E.S. 1/6  
 Rev. scupper details. G. 10/28/32-70

**STATE OF VERMONT**  
 DEPARTMENT OF HIGHWAYS

PROJECT IRASBURG-DERBY  
 TOWN OF IRASBURG

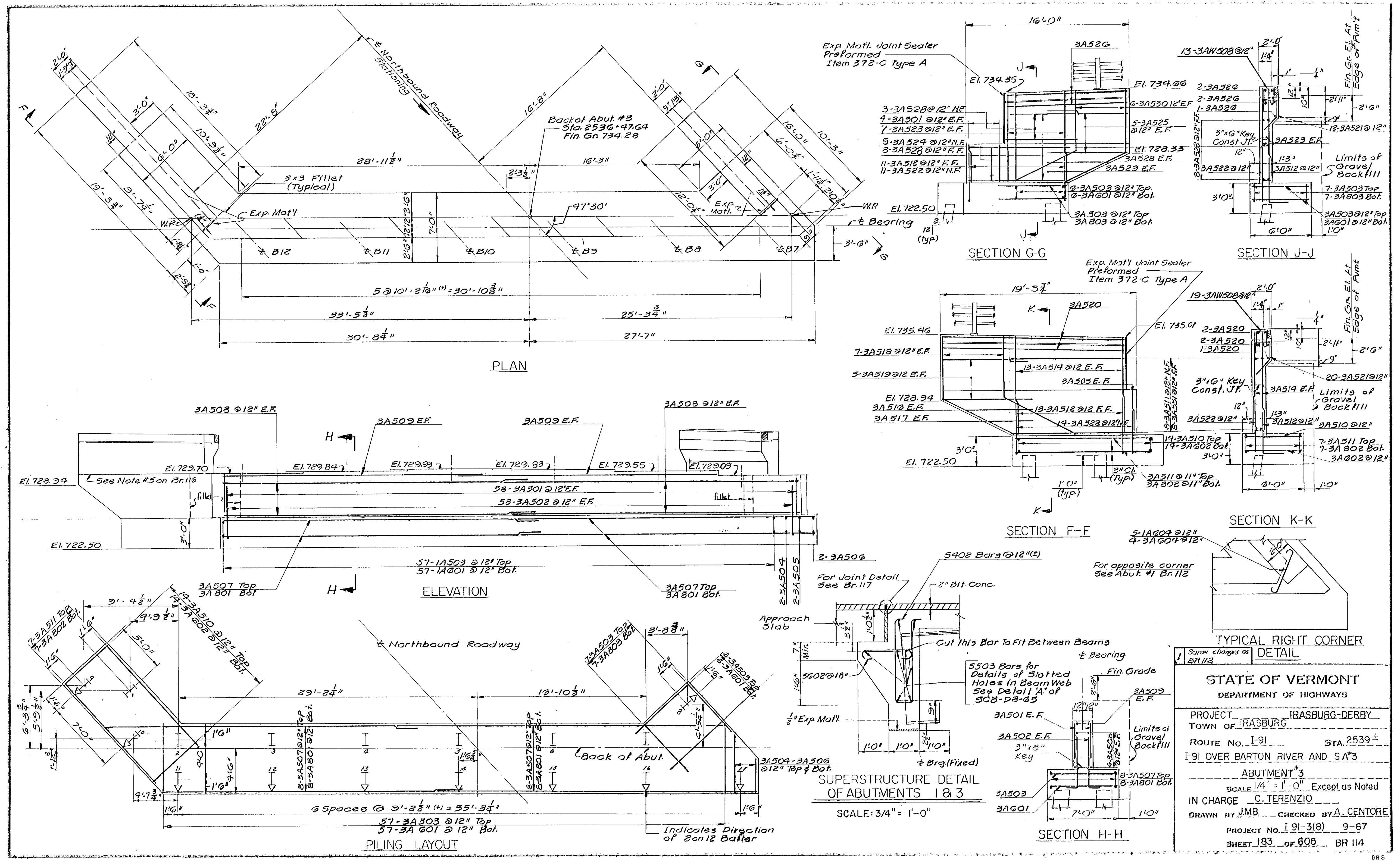
ROUTE NO. I-91 STA. 2539'  
 I-91 OVER BARTON RIVER AND S.A. 3  
 EXPANSION DAM

SCALE AS SHOWN

IN CHARGE EDWARDS & KELCEY

DRAWN BY DIPERRI CHECKED BY A. CENTORE  
 Br 110 of PROJECT NO. I-91-3(8) 9-67  
 129 SHEET 179 OF 605 BR 110

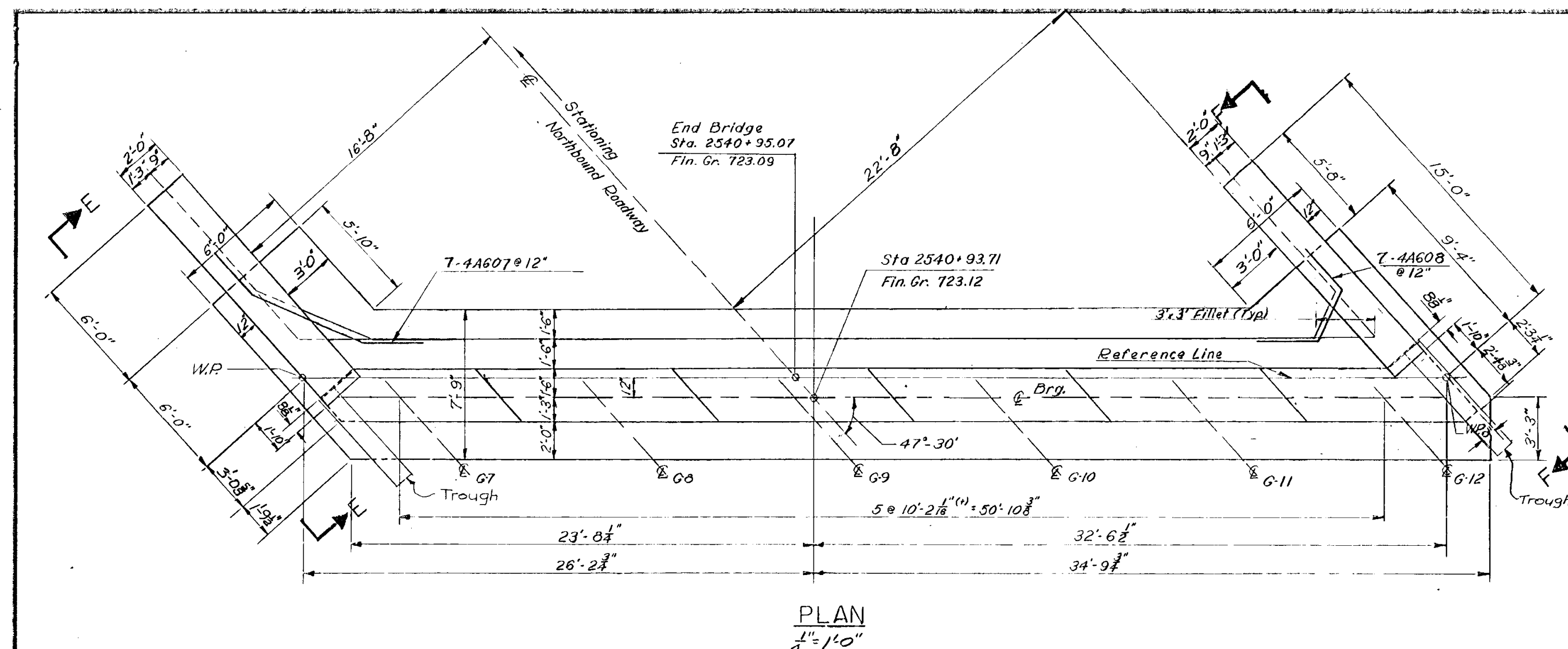
IRASBURG  
 IM DECK(46)  
 BRIDGE NO. 107N  
 SHEET 39 OF 49  
 FOR REFERENCE ONLY



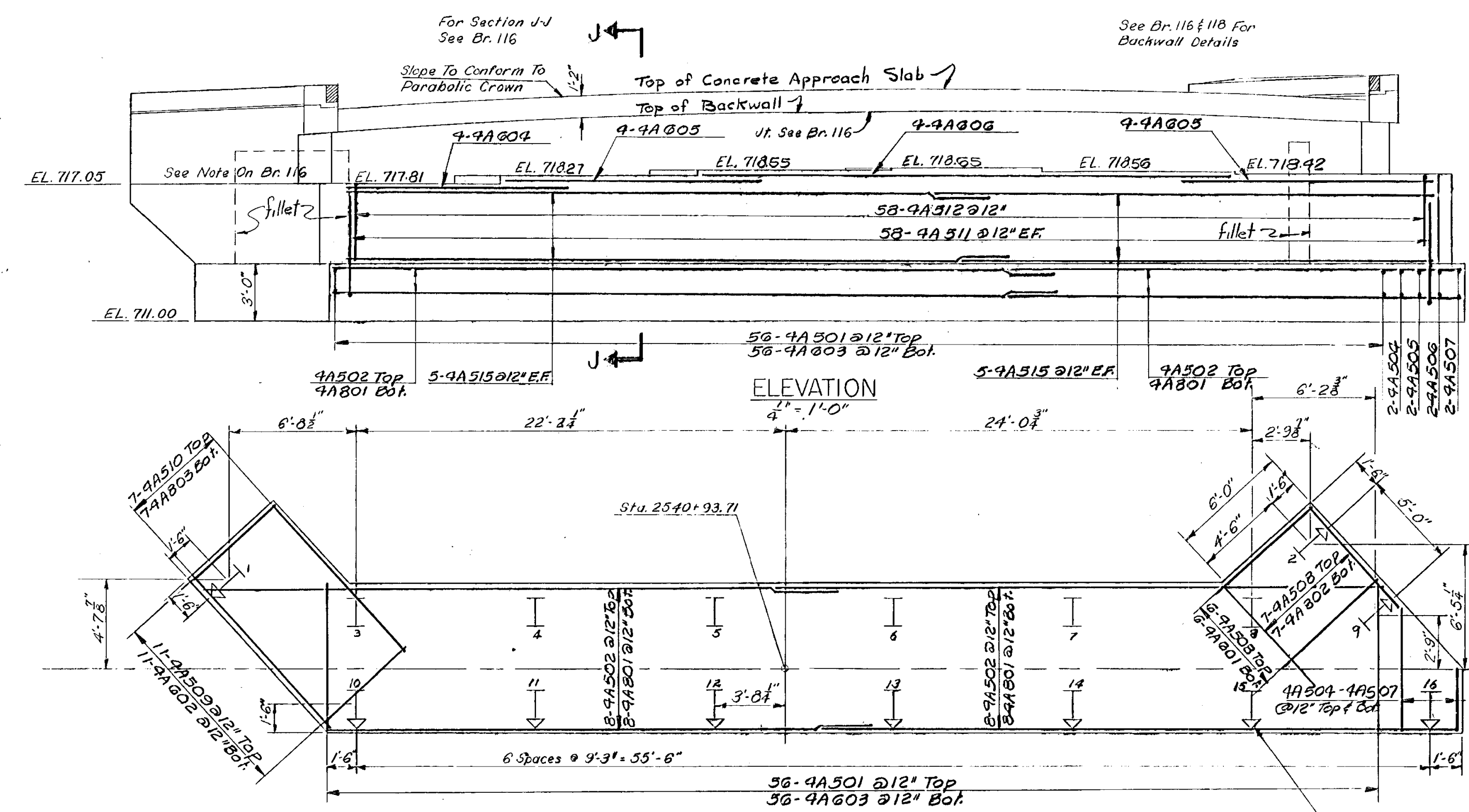
STATE OF VERMONT  
DEPARTMENT OF HIGHWAYS

PROJECT IRASBURG-DERBY  
TOWN OF IRASBURG  
ROUTE No. 191 STA. 2539 ±  
I-91 OVER BARTON RIVER AND SA#3  
ABUTMENT #3  
SCALE 1/4" = 1'-0" Except as Noted  
IN CHARGE C. TERENCE  
DRAWN BY JMB CHECKED BY A. CENTORE  
PROJECT No. I 91-3(8) 9-67  
SHEET 183 OF 805 BR 114

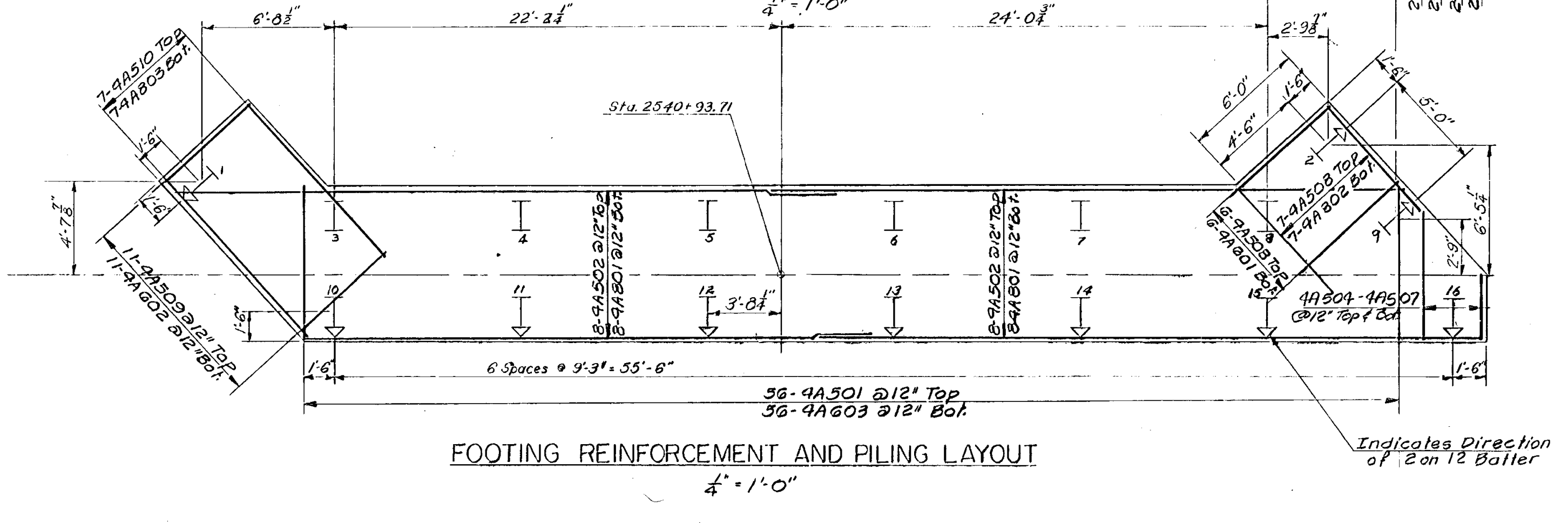
IRASBURG  
IM DECK(46)  
BRIDGE NO. 107N  
SHEET 40 OF 49  
FOR REFERENCE ONLY



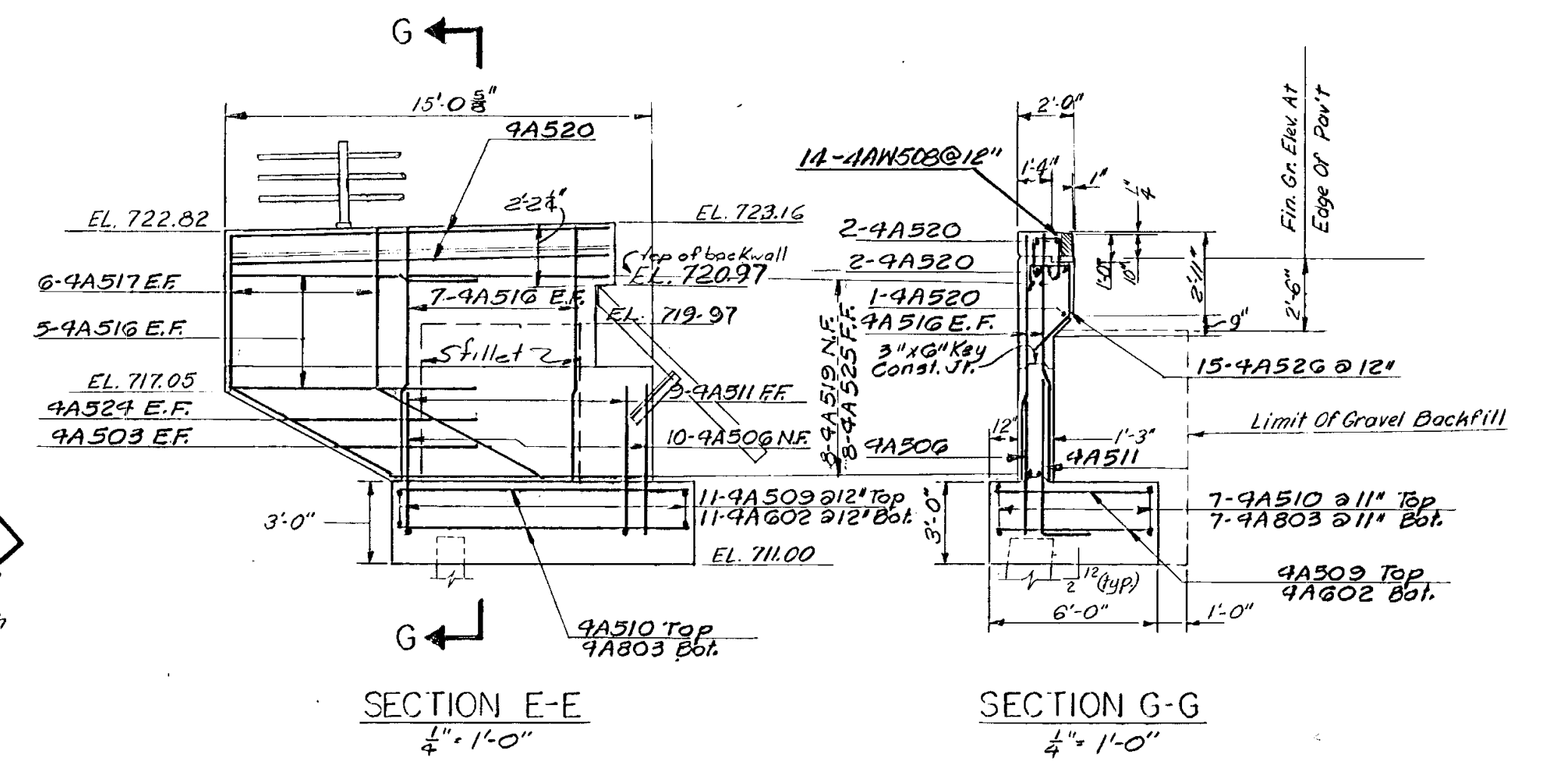
PLAN  
1/4" = 1'-0"



ELEVATION  
1/4" = 1'-0"

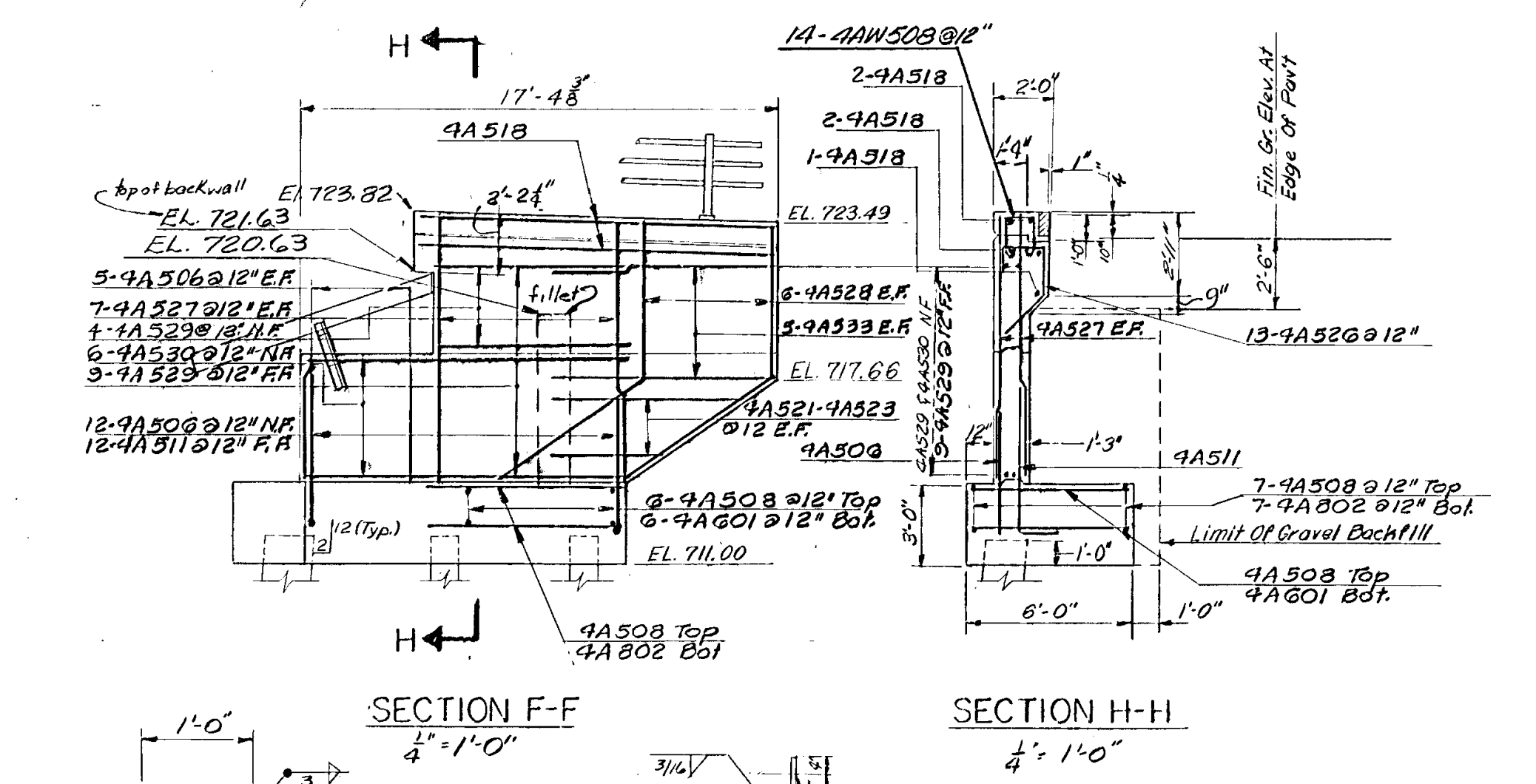


FOOTING REINFORCEMENT AND PILING LAYOUT  
1/4" = 1'-0"



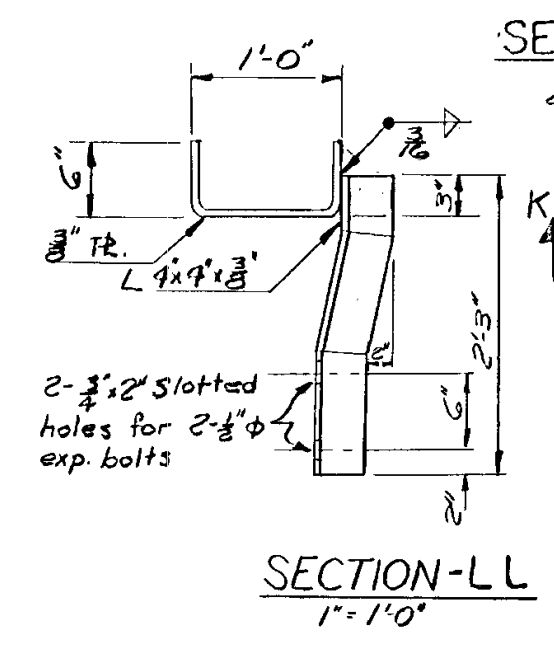
SECTION E-E  
1/4" = 1'-0"

SECTION G-G  
1/4" = 1'-0"

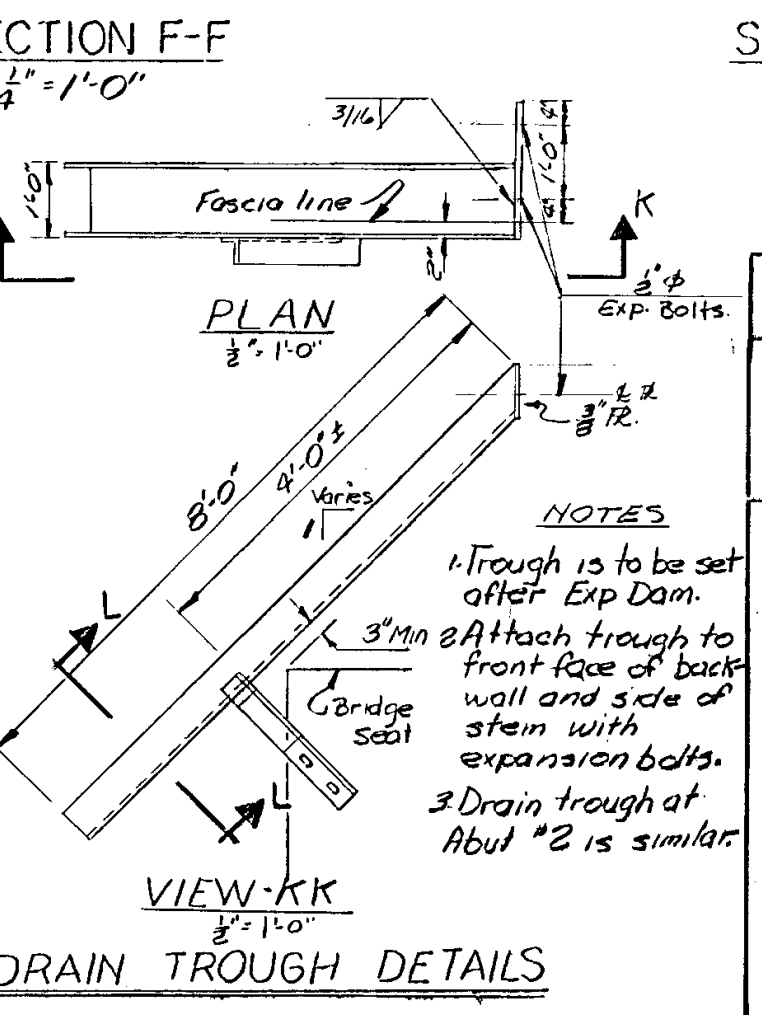


SECTION F-F  
1/4" = 1'-0"

SECTION H-H  
1/4" = 1'-0"



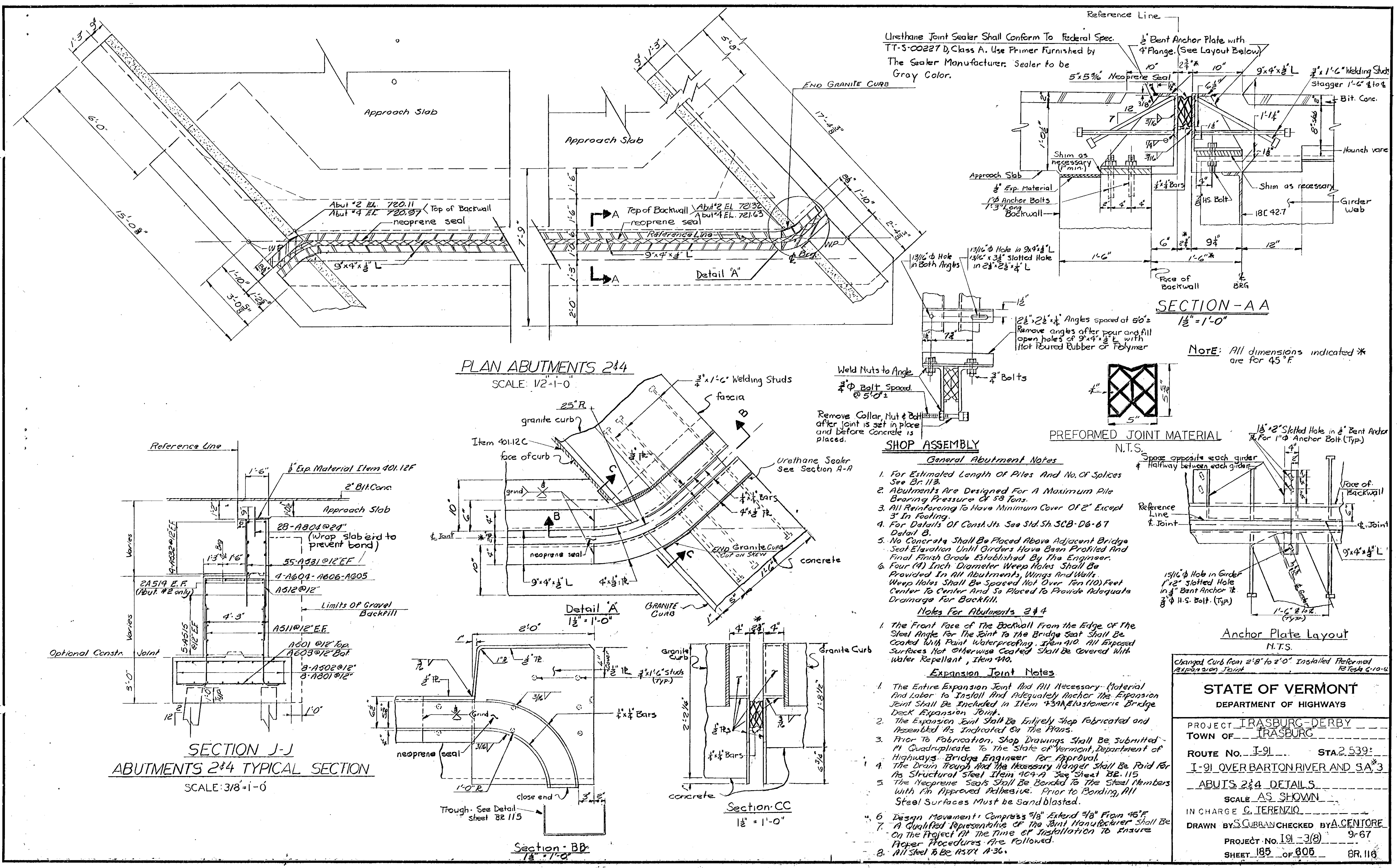
SECTION-L-L  
1" = 1'-0"



VIEW-KK  
1/2" = 1'-0"  
DRAIN TROUGH DETAILS

1 Same changes as on BR 113 - R 70 to 3/69 added detail of drain trough - 5/1/69	
<b>STATE OF VERMONT</b> DEPARTMENT OF HIGHWAYS	
PROJECT	IRASBURG IRASBURG-DERBY
TOWN OF	IRASBURG
ROUTE No.	191 STA 2539 ±
	91 OVER BARTON RIVER AND SA#3
	ABUTMENT #4
SCALE	AS SHOWN
IN CHARGE	C. TERENCE
DRAWN BY	D.L. CHECKED BY A. CENTORE
PROJECT No.	191-3(8) 2-67
SHEET	184 OF 605 BR 115

IRASBURG  
IM DECK(46)  
BRIDGE NO. 107N  
SHEET 41 OF 49  
FOR REFERENCE ONLY

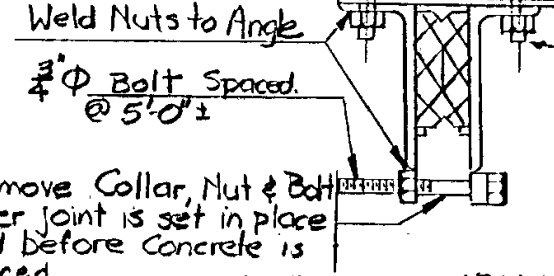


Urethane Joint Sealer Shall Conform To Federal Spec. TT-5-C0227 D, Class A. Use Primer Furnished by The Sealer Manufacturer; Sealer to be Gray Color.

SECTION - A A  
1/2" = 1'-0"

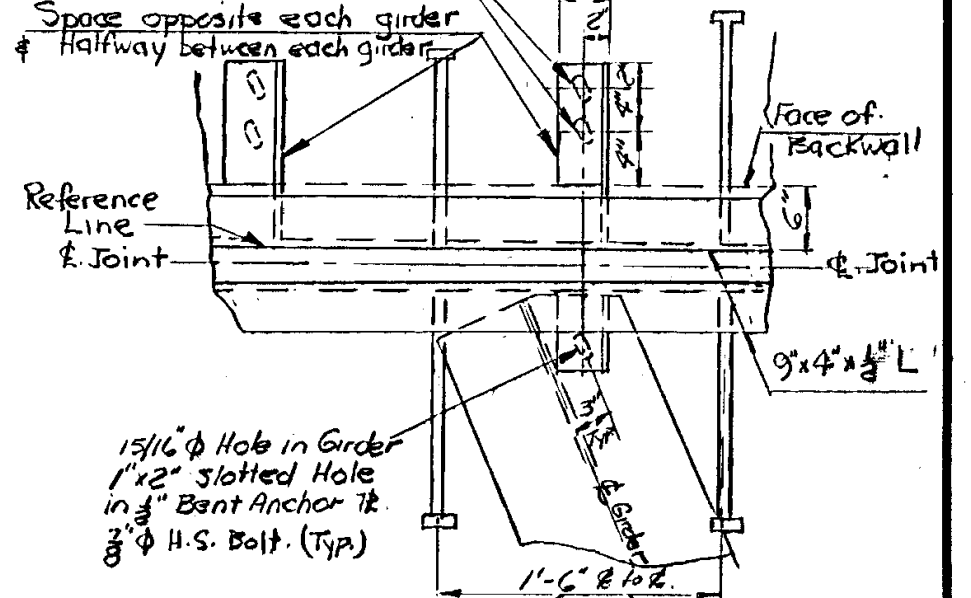
NOTE: All dimensions indicated * are for 45° F

PLAN ABUTMENTS 2&4  
SCALE: 1/2" = 1'-0"



SHOP ASSEMBLY

PREFORMED JOINT MATERIAL  
N.T.S.



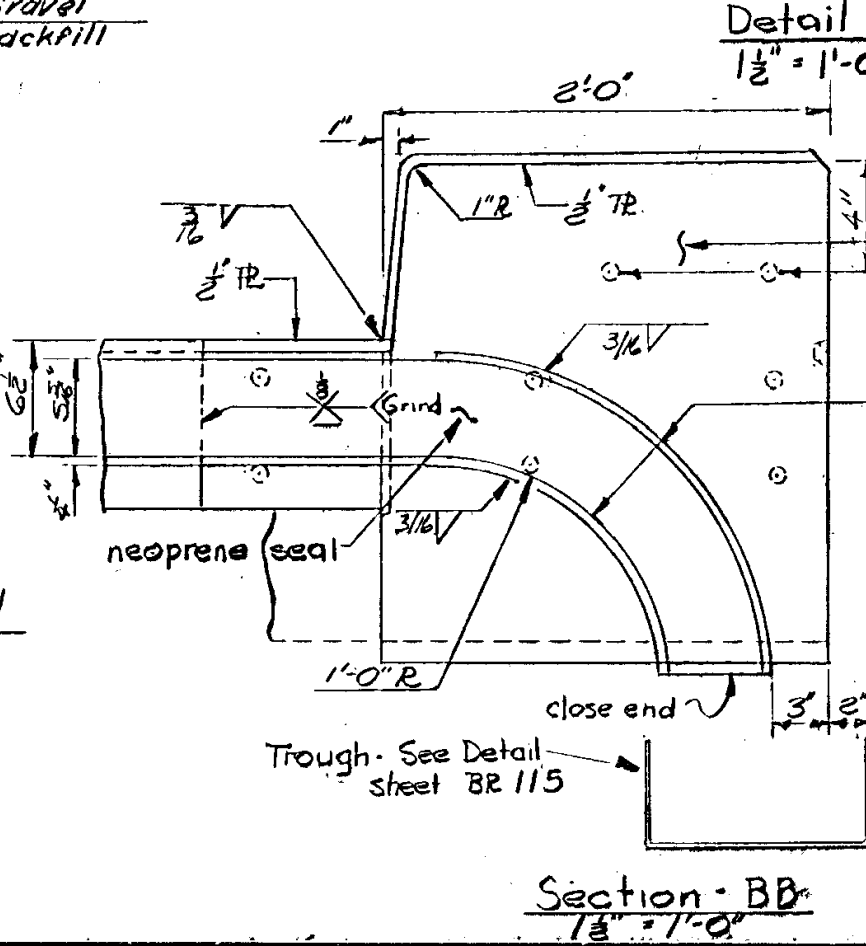
Anchor Plate Layout  
N.T.S.

- General Abutment Notes**
1. For Estimated Length of Piles And No. of Splices See Br. 113.
  2. Abutments Are Designed For A Maximum Pile Bearing Pressure of 58 Tons.
  3. All Reinforcing To Have Minimum Cover of 2" Except 3" in Footing.
  4. For Details of Const. Uts. See Std. Sh. SCB-D6-67 Detail B.
  5. No Concrete Shall Be Placed Above Adjacent Bridge Seat Elevation Until Girders Have Been Profiled And Final Finish Grade Established By The Engineer.
  6. Four (4) Inch Diameter Weep Holes Shall Be Provided In All Abutments, Wings And Curb. Weep Holes Shall Be Spaced Not Over Ten (10) Feet Center to Center And So Placed To Provide Adequate Drainage For Backfill.

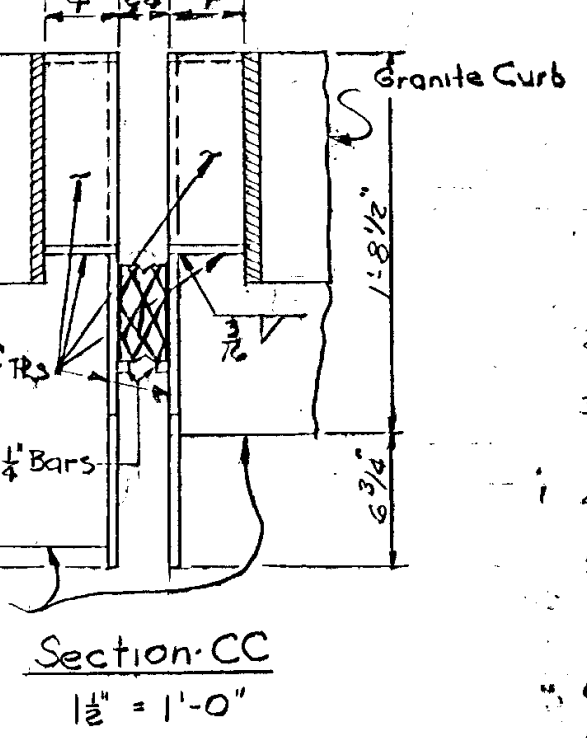
Notes For Abutments 2&4

- Expansion Joint Notes**
1. The Entire Expansion Joint And All Necessary Material And Labor To Install And Adequately Anchor The Expansion Joint Shall Be Included In Item #394 Elastomeric Bridge Deck Expansion Joint.
  2. The Expansion Joint Shall Be Entirely Shop Fabricated and Assembled As Indicated On The Plans.
  3. Prior To Fabrication, Shop Drawings Shall Be Submitted In Quadruplicate To The State of Vermont Department of Highways - Bridge Engineer For Approval.
  4. The Drain Trough And The Necessary Hanger Shall Be Roid For As Structural Steel Item 404-A See Sheet BR-115.
  5. The Neoprene Seals Shall Be Bonded To The Steel Members With An Approved Adhesive. Prior To Bonding, All Steel Surfaces Must Be Sand Blasted.
  6. Design Movement: Compress 3/8" Extend 3/8" From 45° F.
  7. A Qualified Representative Of The Joint Manufacturer Shall Be On The Project At The Time of Installation To Ensure Proper Procedures Are Followed.
  8. All Steel To Be 1571 A-36.

SECTION J-J  
ABUTMENTS 2&4 TYPICAL SECTION  
SCALE: 3/8" = 1'-0"



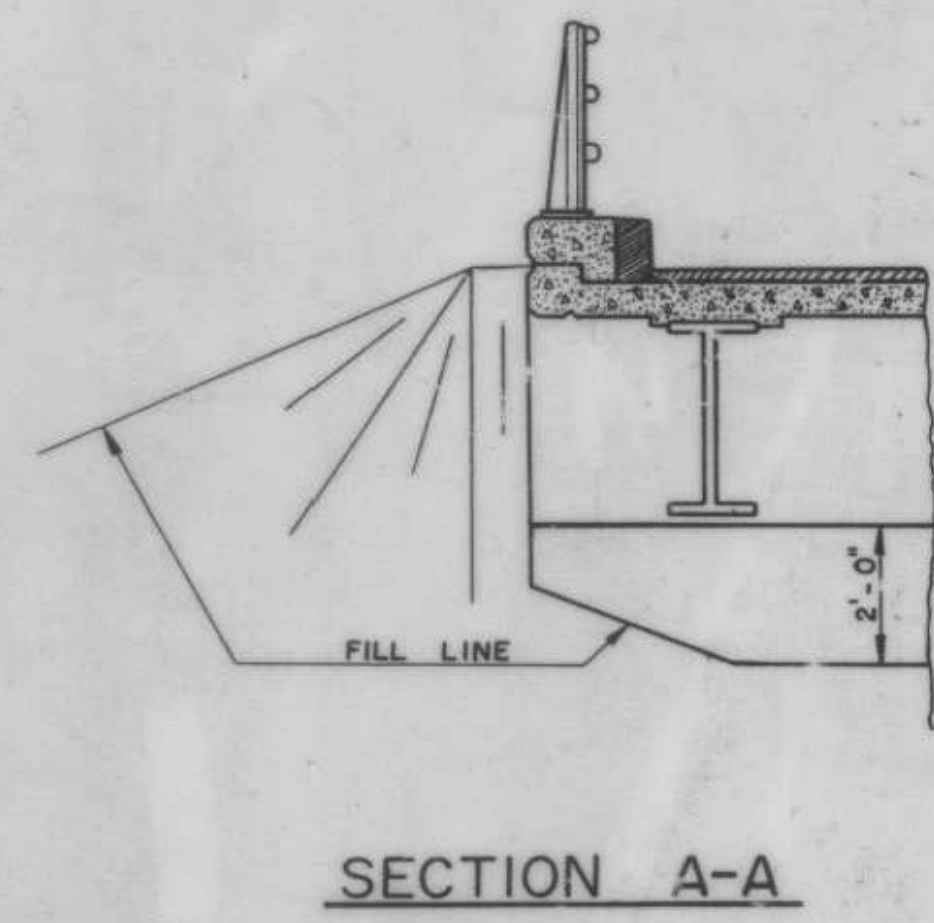
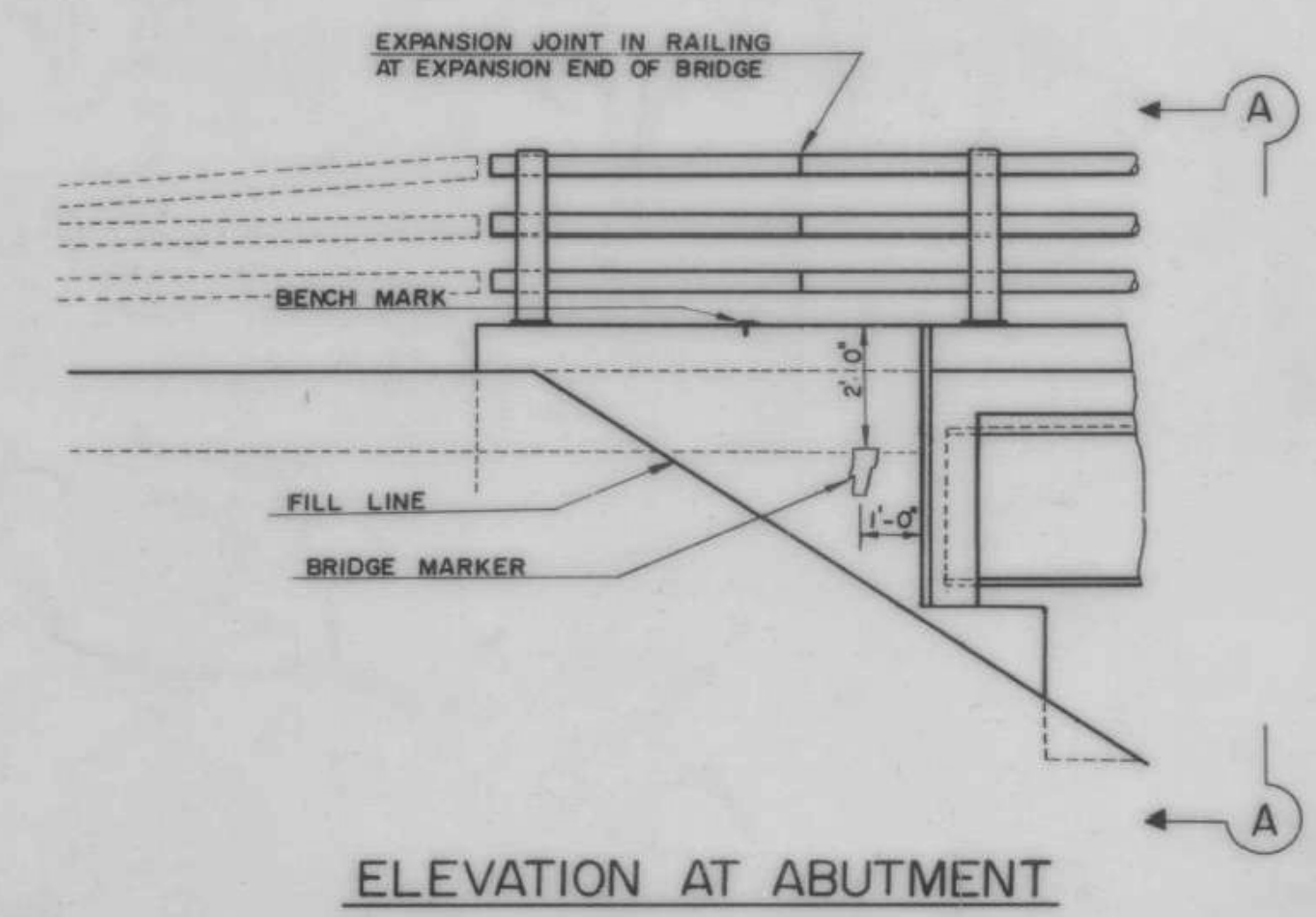
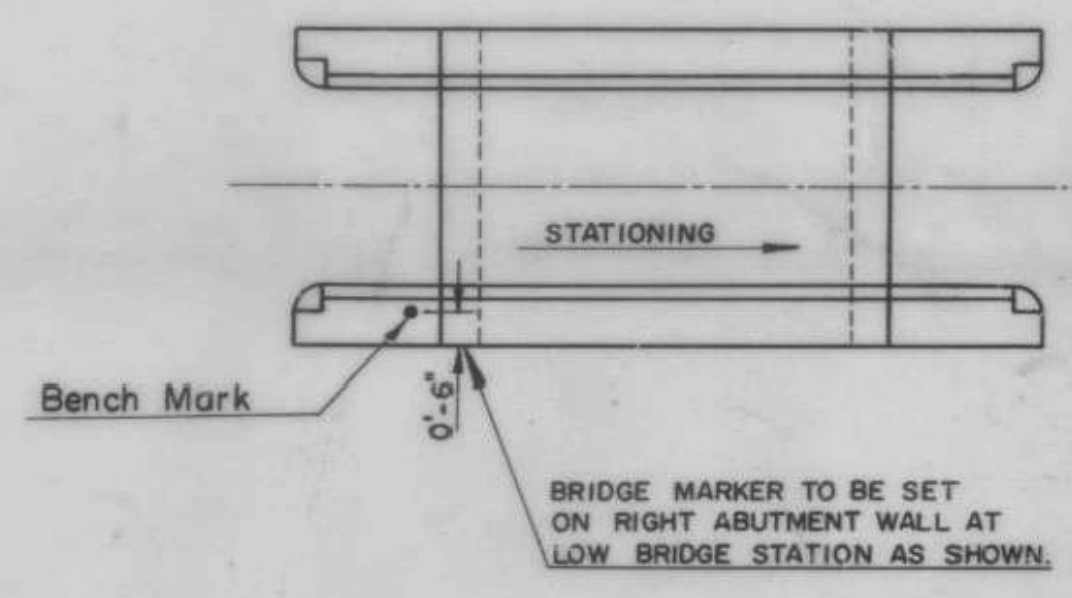
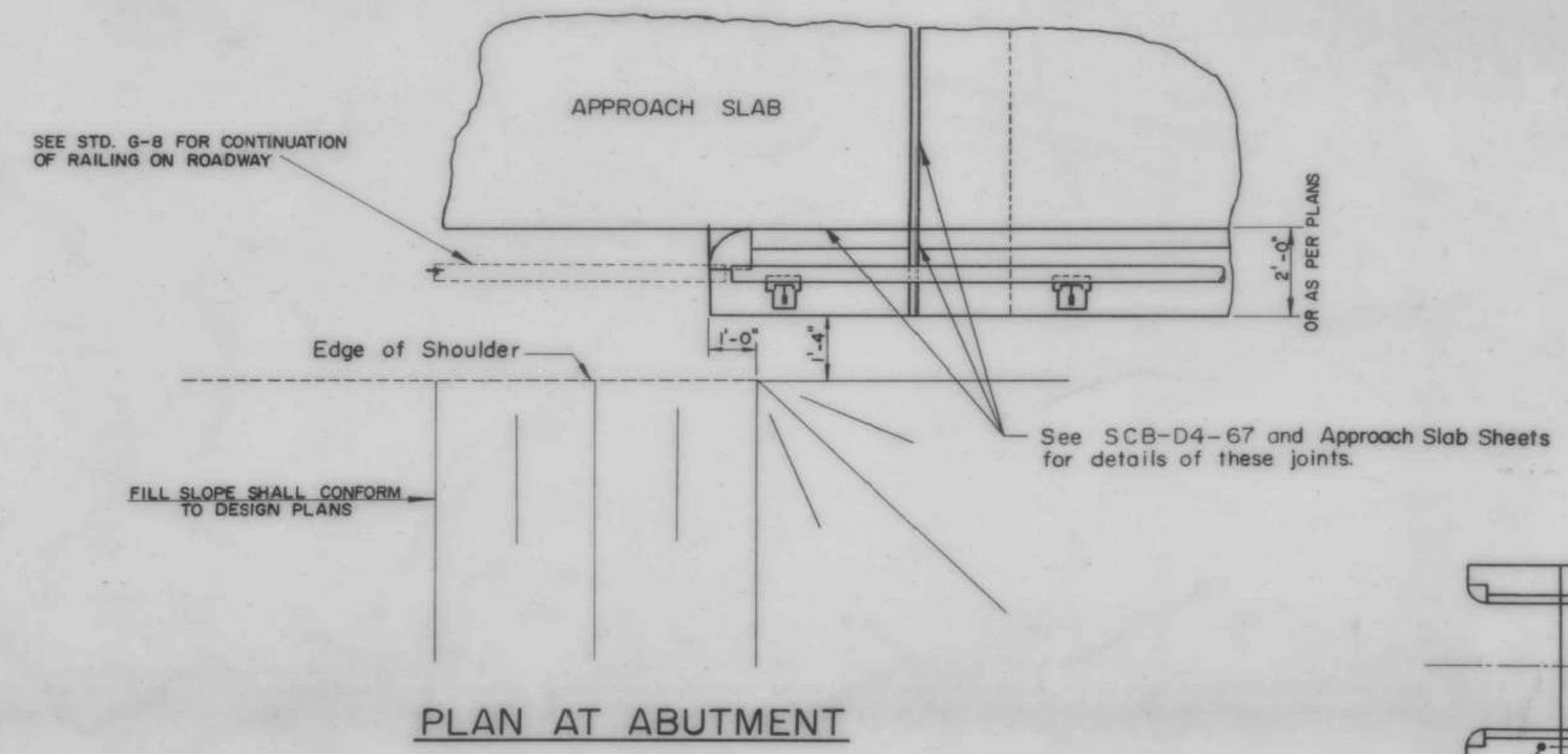
Section BB  
1/2" = 1'-0"



Section CC  
1/2" = 1'-0"

STATE OF VERMONT DEPARTMENT OF HIGHWAYS	
PROJECT IRASBURG-DERBY	
TOWN OF IRASBURG	
ROUTE No. I-91	STA. 2.539
I-91 OVER BARTON RIVER AND SA 3	
ABUTS 2&4 DETAILS	
SCALE AS SHOWN	
IN CHARGE C. IERENZIO	
DRAWN BY S. CURRAN	CHECKED BY A. CENTORE
PROJECT No. 191-3(8)	9-67
SHEET 189 OF 206	BR. 116

IRASBURG  
IM DECK(46)  
BRIDGE NO. 107N  
SHEET 42 OF 49  
FOR REFERENCE ONLY



GENERAL NOTES

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, DATED APRIL 1964, AND THE A.A.S.H.O. STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 1965 AND ITS LATEST REVISIONS. DESIGN IS FOR HS20-44 LOADING MODIFIED FOR THE NATIONAL SYSTEM OF INTERSTATE HIGHWAYS, APPLIED IN ACCORDANCE WITH THE PROVISIONS OF A.A.S.H.O. STANDARD SPECIFICATIONS.
- THE FOLLOWING NOTES SHALL APPLY UNLESS OTHERWISE NOTED ON PROJECT PLANS.
- ALL STRUCTURAL STEEL SHALL CONFORM TO A.S.T.M. DESIGNATION A-36. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" Ø A.S.T.M. A325 BOLTS IN 15/16" Ø HOLES. WHERE CONNECTIONS ARE NOT DETAILED ON THE PLANS THEY SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STATE FOR APPROVAL.
  - SIMPLE BEAMS SHALL BE CAMBERED FOR THE DEAD LOAD DEFLECTION PLUS ONE-EIGHTH (1/8) INCH FOR EACH TEN FEET OF SPAN OR FRACTION THEREOF. THE CAMBER SHALL APPROXIMATE A SIMPLE CIRCULAR CURVE FROM END TO END OF BEAM. TOLERANCES IN CAMBER SHALL BE AS INDICATED IN THE A.I.S.C. HANDBOOK FOR ROLLED BEAMS AND AS INDICATED IN THE A.W.S. SPECIFICATIONS FOR WELDED GIRDERS.
  - THE DIMENSIONS OF WELDED STRUCTURAL MEMBERS SHALL BE WITHIN THE LIMITS SET UP IN PARAGRAPH 407, DIMENSIONAL TOLERANCES AWS D2.0-66, "SPECIFICATIONS FOR WELDED HIGHWAY AND RAILWAY BRIDGES".
  - AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS AT INTERVALS ALONG THE TOP OF THE ERECTED BEAMS SHALL BE TAKEN UNDER THE DIRECTION OF THE ENGINEER FOR USE IN DETERMINING THE FINAL GRADE.
  - SCUFPERS SHALL BE USED ONLY WHEN INDICATED ON THE PROJECT PLANS. THEY SHALL BE PLACED MIDWAY BETWEEN INTERMEDIATE DIAPHRAGMS. ON SUPERELEVATED BRIDGES PLACE SCUFPERS ON LOW SIDE ONLY. PAYMENT FOR SCUFPERS SHALL BE AT THE UNIT PRICE BID FOR STRUCTURAL STEEL, ITEM 404-A.
  - CHANNEL SHEAR CONNECTORS MAY BE SUBSTITUTED FOR THE STUDS SHOWN ON THE STANDARDS. DETAILS OF SHEAR CONNECTORS SHALL BE SUBMITTED TO THE STATE FOR APPROVAL.
  - THE FINAL COAT OF FIELD PAINT SHALL BE GREEN.
  - ALL CONCRETE IN THE SUPERSTRUCTURE SHALL BE CLASS AA, MODIFIED. ALL EXPOSED EDGES OF CONCRETE IN THE SUBSTRUCTURE AND SUPERSTRUCTURE SHALL BE CHAMFERED 1" X 1".
  - SLAB REINFORCING STEEL FOR SKEWED BRIDGES SHALL BE MODIFIED FROM THAT INDICATED ON THE STANDARDS FOR SQUARE SPANS AS FOLLOWS:
    - TRANSVERSE BARS SHALL BE FURNISHED AS FOR A SQUARE SPAN. THESE BARS SHALL BE CUT IN THE FIELD TO FIT ONE END, WITH CUT-OFF BARS USED AT THE OPPOSITE END OF THE SPAN.
    - THE S506 BARS SHALL BE LENGTHENED.
    - THE QUANTITY OF S402 AND S 602 BARS SHALL BE INCREASED.
    - S506 AND S507 BARS SHALL BE INCREASED.
  - SPIRAL COLUMN REINFORCEMENT SHALL CONFORM TO A.A.S.H.O. SPECIFICATION M-32 COLD DRAWN STEEL WIRE FOR CONCRETE REINFORCEMENT.
  - MINIMUM COVER FOR REINFORCING STEEL SHALL BE 2" MEASURED FROM THE CONCRETE SURFACE TO THE FACE OF THE REINFORCEMENT.
  - LAYOUT AND DETAIL DRAWINGS FOR GRANITE BRIDGE CURB, ITEM 556-C, SHALL BE SUBMITTED IN TRIPPLICATE TO THE STATE OF VERMONT FOR APPROVAL PRIOR TO FABRICATION AND SHIPMENT. GRANITE CURB ENDS SHALL BE SAWED ON EACH SIDE OF ALL JOINTS WHERE JOINT SEALER - PREFORMED, ITEM 372-C IS USED OR WHERE THE CURB BUTTS A METAL EXPANSION JOINT. GRANITE CURB SHALL BE FURNISHED IN RANDOM LENGTHS RANGING FROM 4' MINIMUM TO 10' MAXIMUM.
  - WATER REPELLENT, ITEM 440, SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES NOT OTHERWISE TREATED IN BOTH SUPERSTRUCTURE AND SUBSTRUCTURE, EXCEPT FOR THAT PORTION OF THE DECK SLAB AND CURTAIN OR BACKWALLS BETWEEN FASCIA BEAMS.
  - TOP SURFACES OF ALL PIERS AND ABUTMENTS SHALL BE SLOPED 1/2" PER FOOT EXCEPT UNDER BEARING PLATES WHERE THE SURFACES SHALL BE LEVEL. ABUTMENT BRIDGE SEATS SHALL BE SLOPED FROM THE FRONT EDGE OF THE CURTAIN WALL OR BACKWALL, AND PIER BRIDGE SEATS SHALL BE SLOPED FROM THE CENTERLINE OF PIER.
  - THE ENTIRE EXPOSED TOP SURFACE OF THE ABUTMENTS AND PIERS, EXCEPT THE TOP OF ABUTMENT WINGS SHALL BE COATED WITH ASPHALTIC-ASBESTOS COATING ITEM 407. THIS ITEM SHALL BE APPLIED AFTER ALL PAINTING AND INCIDENTAL ITEMS ARE COMPLETED.
  - ALL EXPANSION MATERIAL SHALL CONFORM TO A.A.S.H.O. DESIGNATION M153, AND SHALL NOT CONTAIN ASPHALT OR BITUMINOUS MATERIAL.
  - WHERE BITUMINOUS CONCRETE PAVEMENT IS CALLED FOR AS A WEARING SURFACE ON BRIDGE DECKS AND APPROACH SLABS, IT SHALL BE TYPE IV MIX APPLIED IN TWO COURSES.
  - BORINGS INDICATED ON THE DRAWINGS HAVE BEEN MADE FOR DESIGN PURPOSES ONLY AND ARE NOT WARRANTED TO SHOW ACTUAL SUB-SURFACE CONDITIONS.
  - ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL.
  - ALLOWABLE DESIGN STRESSES:
 

CONCRETE:	$F_c = 3,000$ P.S.I.	$F_c = 1,200$ P.S.I.
STRUCTURAL STEEL:	$F_s = 20,000$ P.S.I. - A36	(ALL OTHER STEELS AS PER A.A.S.H.O. SPECIFICATIONS)
REINFORCING STEEL:	$F_s = 20,000$ P.S.I. TENSION	$F_s = 16,000$ P.S.I. COMPRESSION
  - WHEN PILE SUPPORTED SUBSTRUCTURES ARE PLACED ON EMBANKMENTS, THE CONSTRUCTION PROCEDURE OUTLINED UNDER ITEM 503, ARTICLE 503.03A SHALL BE FOLLOWED. MATERIAL REMOVED WITHIN THE SIX (6) INCH DEPTH SHALL BE PAID FOR AS STRUCTURE EXCAVATION, ITEM 109.

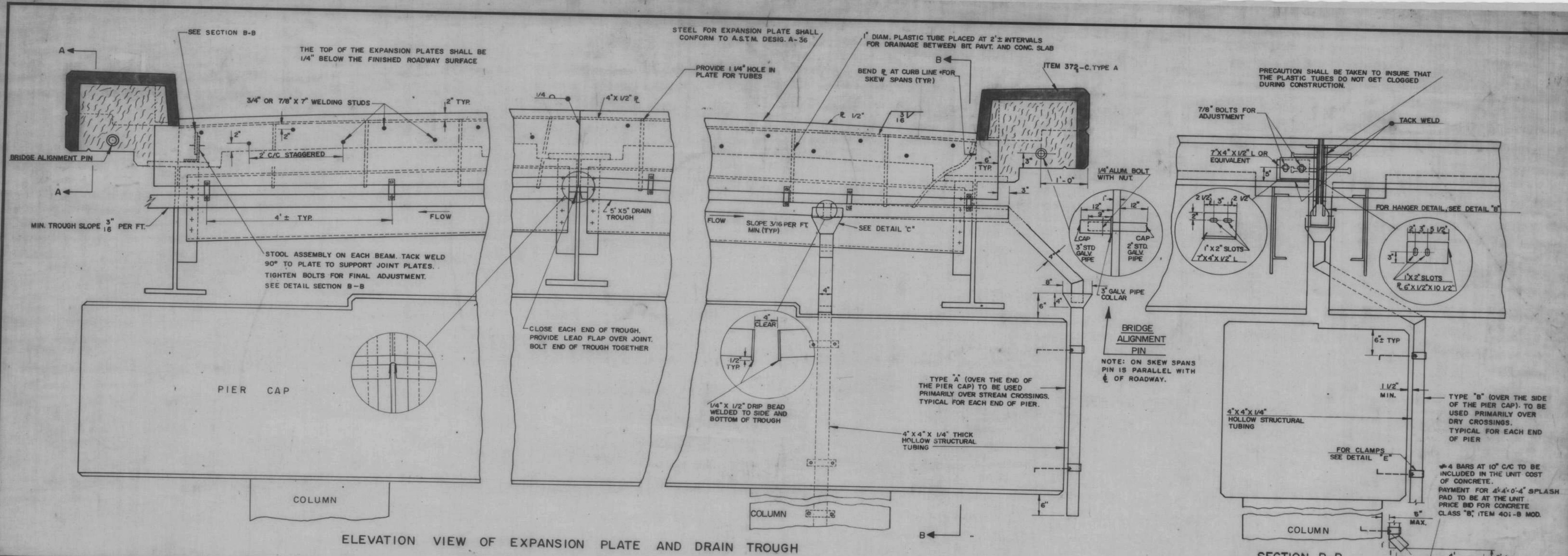
IRASBURG  
IM DECK(46)  
BRIDGE NO. 107N  
SHEET 43 OF 49  
FOR REFERENCE ONLY

REVISIONS AND CORRECTIONS

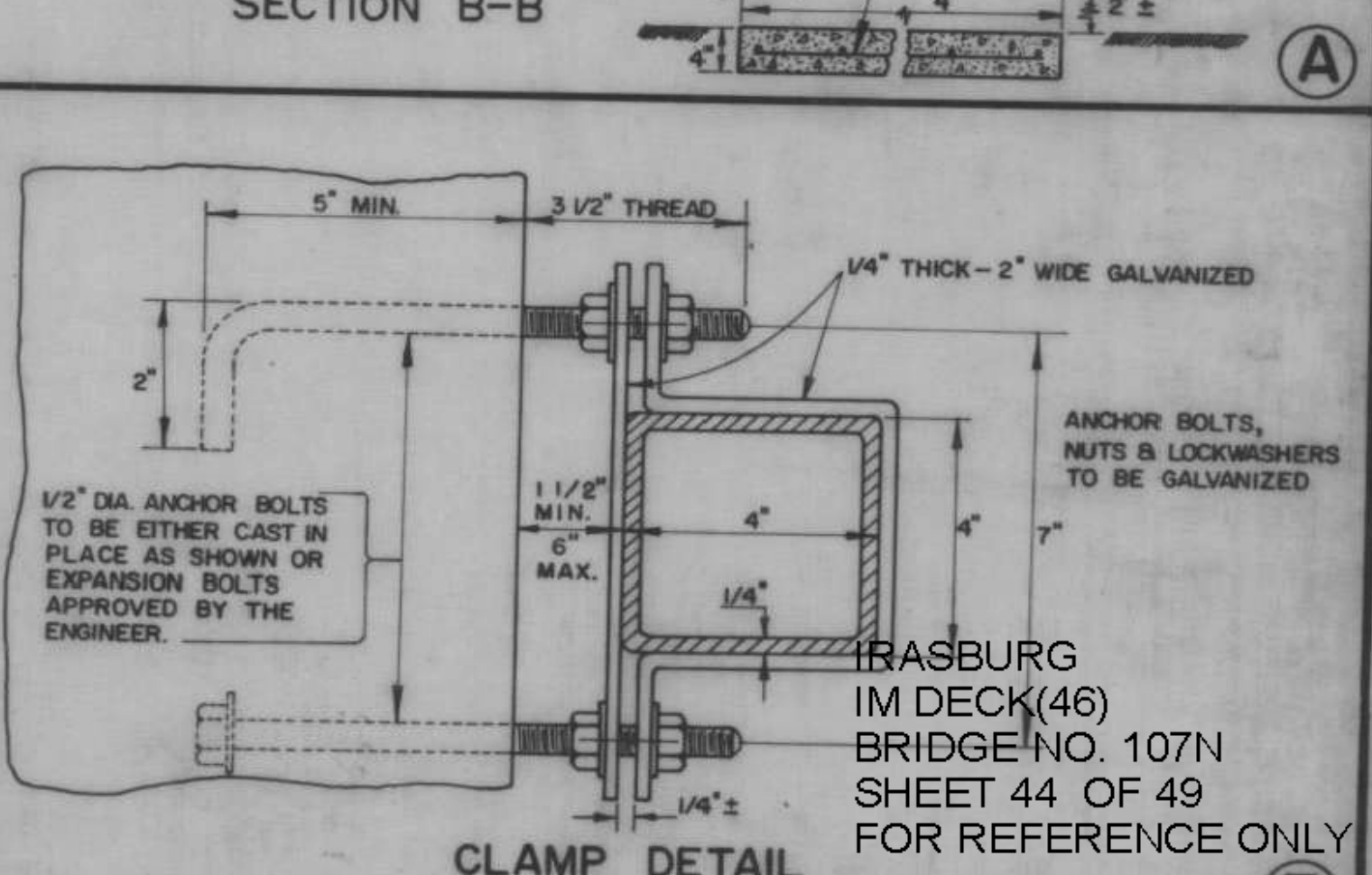
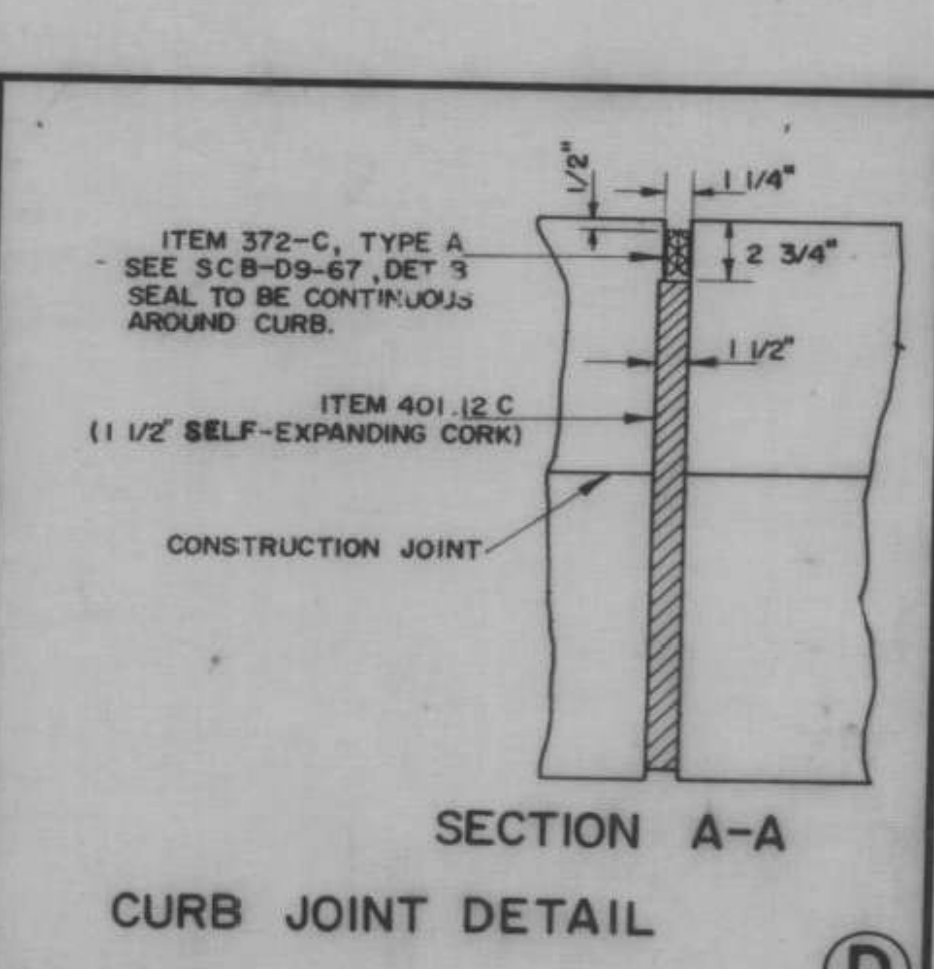
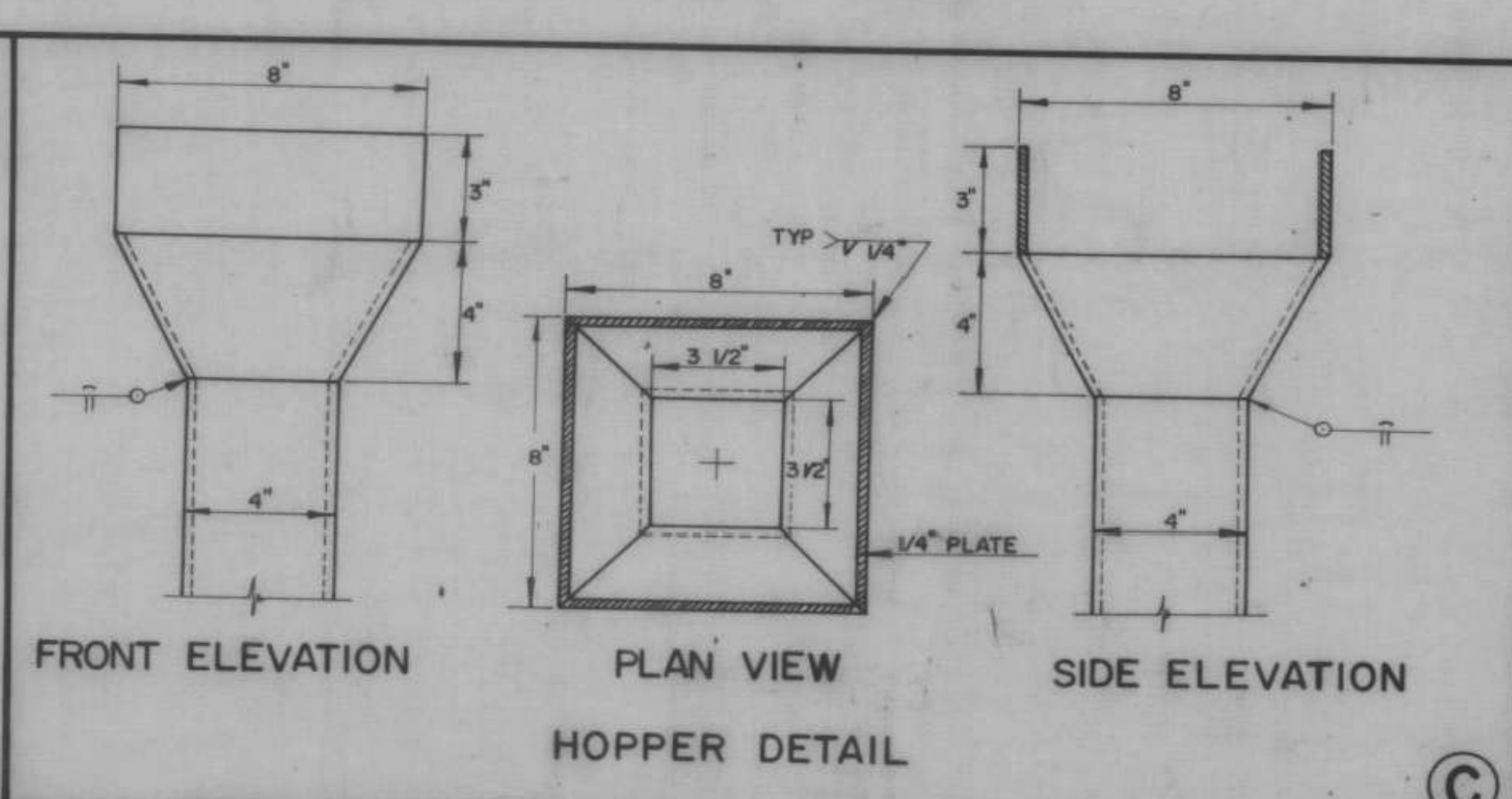
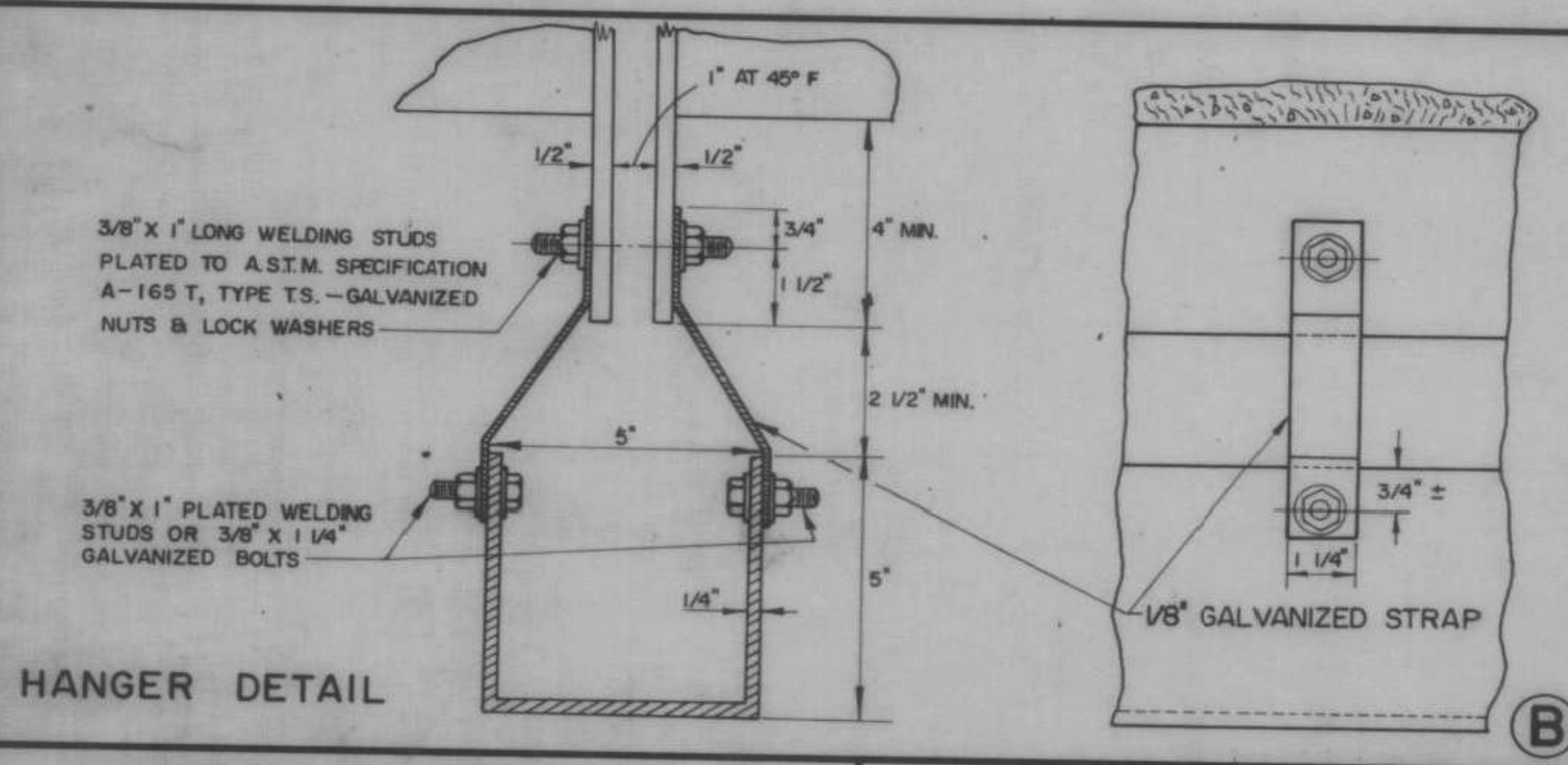
DRAWN BY:	W. T.	JAN. 1965
RETRACED BY:	AJA	MAY 1967
CHECKED BY:	W. M. Smith	DEC. 1967
RECOMMENDED FOR APPROVAL	<i>[Signature]</i>	BRIDGE ENGINEER
RECOMMENDED FOR APPROVAL	<i>[Signature]</i>	CONSTRUCTION ENGINEER
RECOMMENDED FOR APPROVAL	<i>[Signature]</i>	ASST. CHIEF ENGINEER
APPROVED BY:	<i>[Signature]</i>	CHIEF ENGINEER
		DATE

DETAILS OF W BEAM BRIDGES  
GENERAL INFORMATION  
AND  
GENERAL NOTES

VERMONT  
DEPARTMENT OF HIGHWAYS  
STRUCTURE STANDARDS  
**SCB-D1-67**



ELEVATION VIEW OF EXPANSION PLATE AND DRAIN TROUGH



REVISIONS AND CORRECTIONS

DRAWN BY: A. V. DEC. 1962

RETRACTED BY: A.J.A. MAY 1967

CHECKED BY: W. SMITH DEC. 1967

RECOMMENDED FOR APPROVAL: *W. Smith* 1/24/68 BRIDGE ENGINEER

RECOMMENDED FOR APPROVAL: *R. Smith* 1/24/68 CONSTRUCTION ENGINEER

RECOMMENDED FOR APPROVAL: *E. W. Deane* 1/24/68 ASST. CHIEF ENGINEER

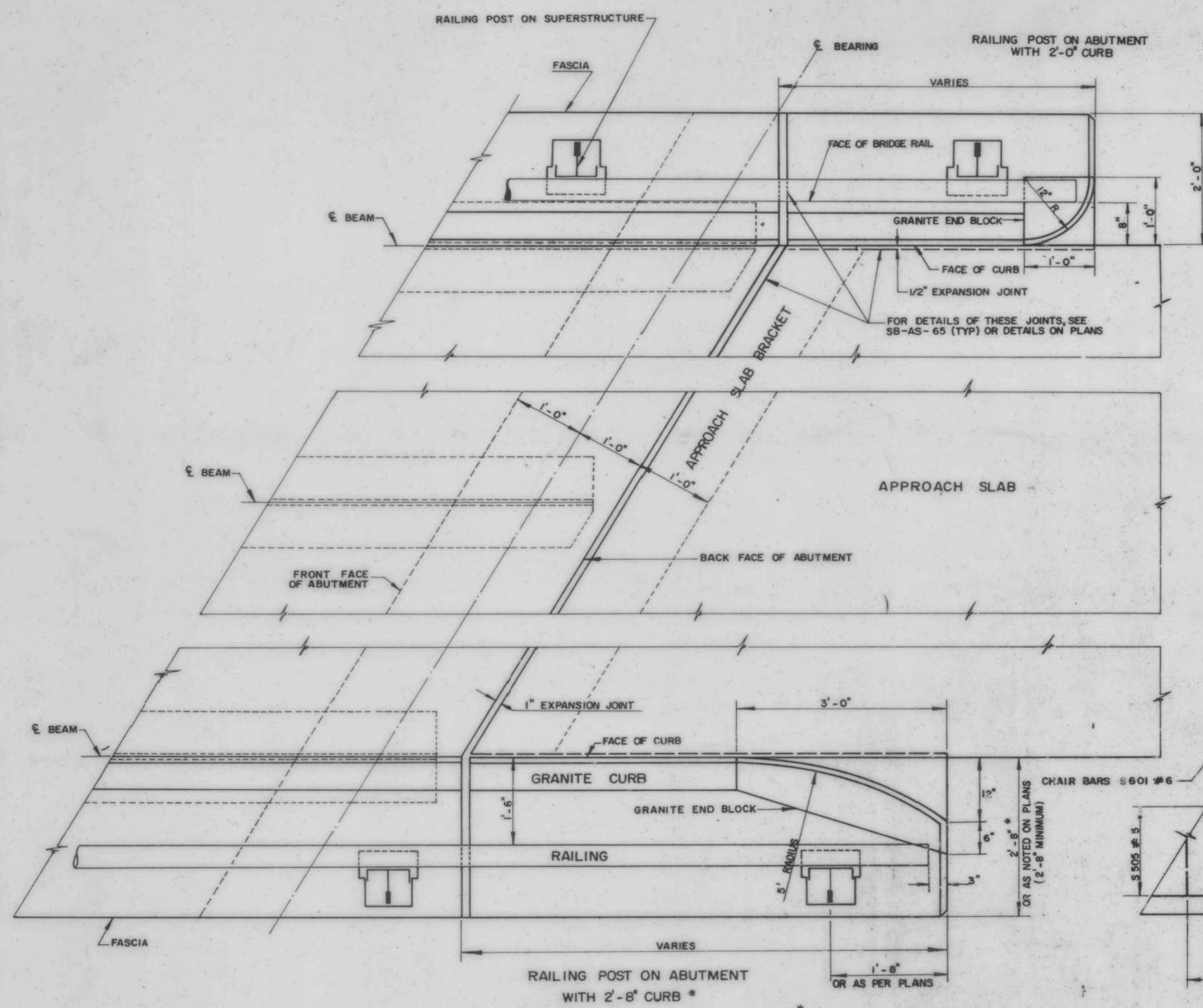
APPROVED BY: *R. W. Currier* 1/24/68 CHIEF ENGINEER DATE

DETAIL OF W F BEAM BRIDGES  
PIER EXPANSION PLATES  
AND  
DRAIN TROUGH DETAILS

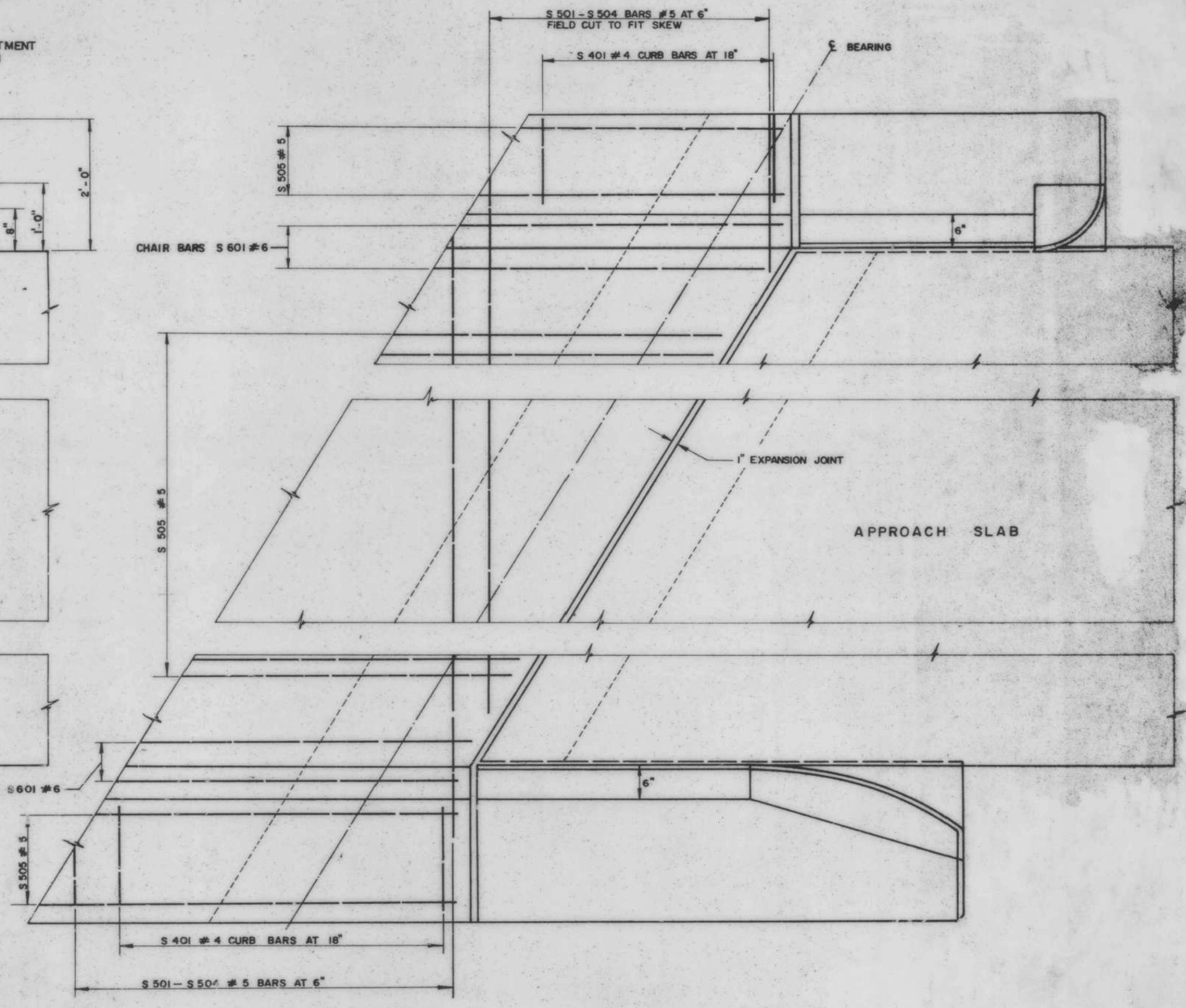
VERMONT  
DEPARTMENT OF HIGHWAYS  
STANDARD STRUCTURES  
SCB-D3-67

BRASBURG  
IM DECK(46)  
BRIDGE NO. 107N  
SHEET 44 OF 49  
FOR REFERENCE ONLY

246A



PLAN AT ABUTMENT



REINFORCEMENT LAYOUT AT ABUTMENT

* NOTE: DETAILS FOR "RAILING POST ON ABUTMENT WITH 2'-8\"/>

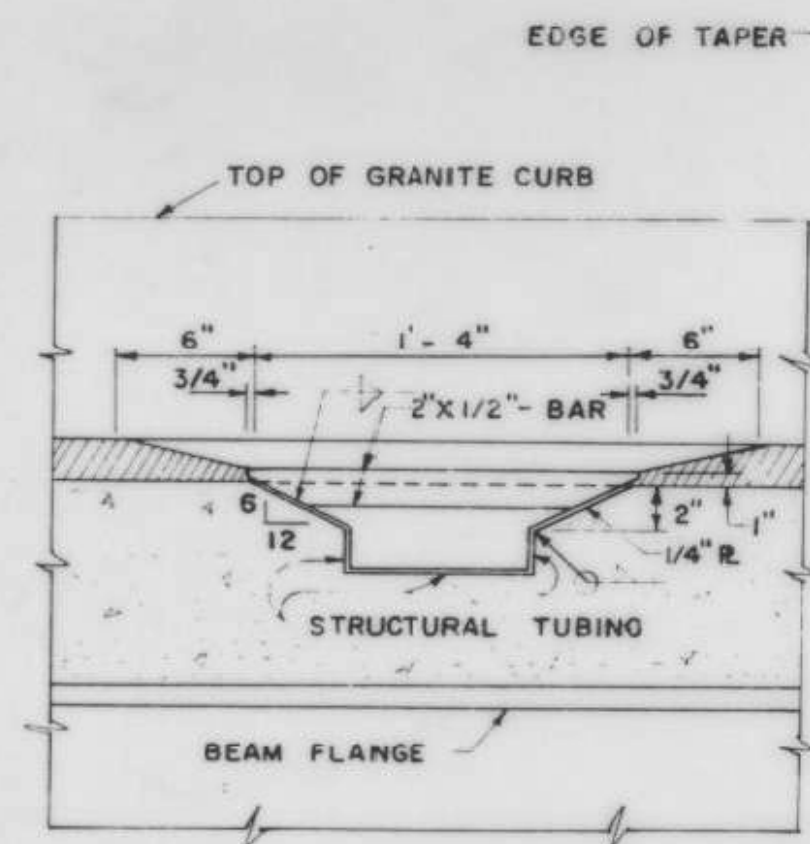
IRASBURG  
IM DECK(46)  
BRIDGE NO. 107N  
SHEET 45 OF 49  
FOR REFERENCE ONLY

REVISIONS AND CORRECTIONS  
1. NOTE CONCERNING 2'-8" CURB SECTION ADDED DEC. 17, 1968 R.S.H.

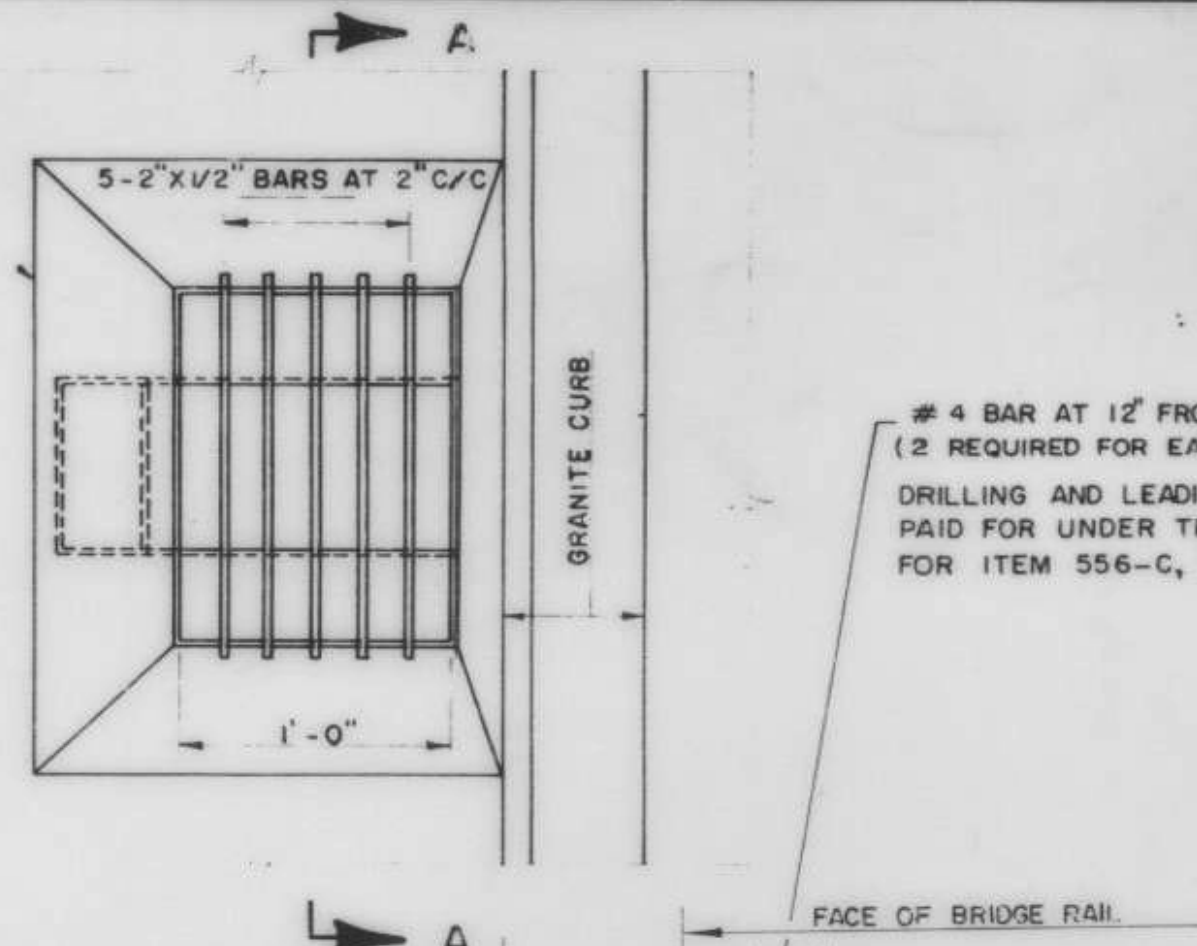
DRAWN BY: A.V. DEC. 1962  
 RETRACED BY: A.J.A. MAY 1967  
 CHECKED BY: W. SMITH DEC. 1967  
 RECOMMENDED FOR APPROVAL: [Signature] 1/24/68  
 RECOMMENDED FOR APPROVAL: [Signature] 1/24/68  
 RECOMMENDED FOR APPROVAL: [Signature] 1/24/68  
 APPROVED BY: [Signature] 1/24/68  
 CHIEF ENGINEER DATE

DETAILS OF W BEAM BRIDGES  
PLAN AND REINFORCEMENT LAYOUT AT ABUTMENT

VERMONT  
DEPARTMENT OF HIGHWAYS  
STRUCTURE STANDARDS  
**SCB-D4-67**

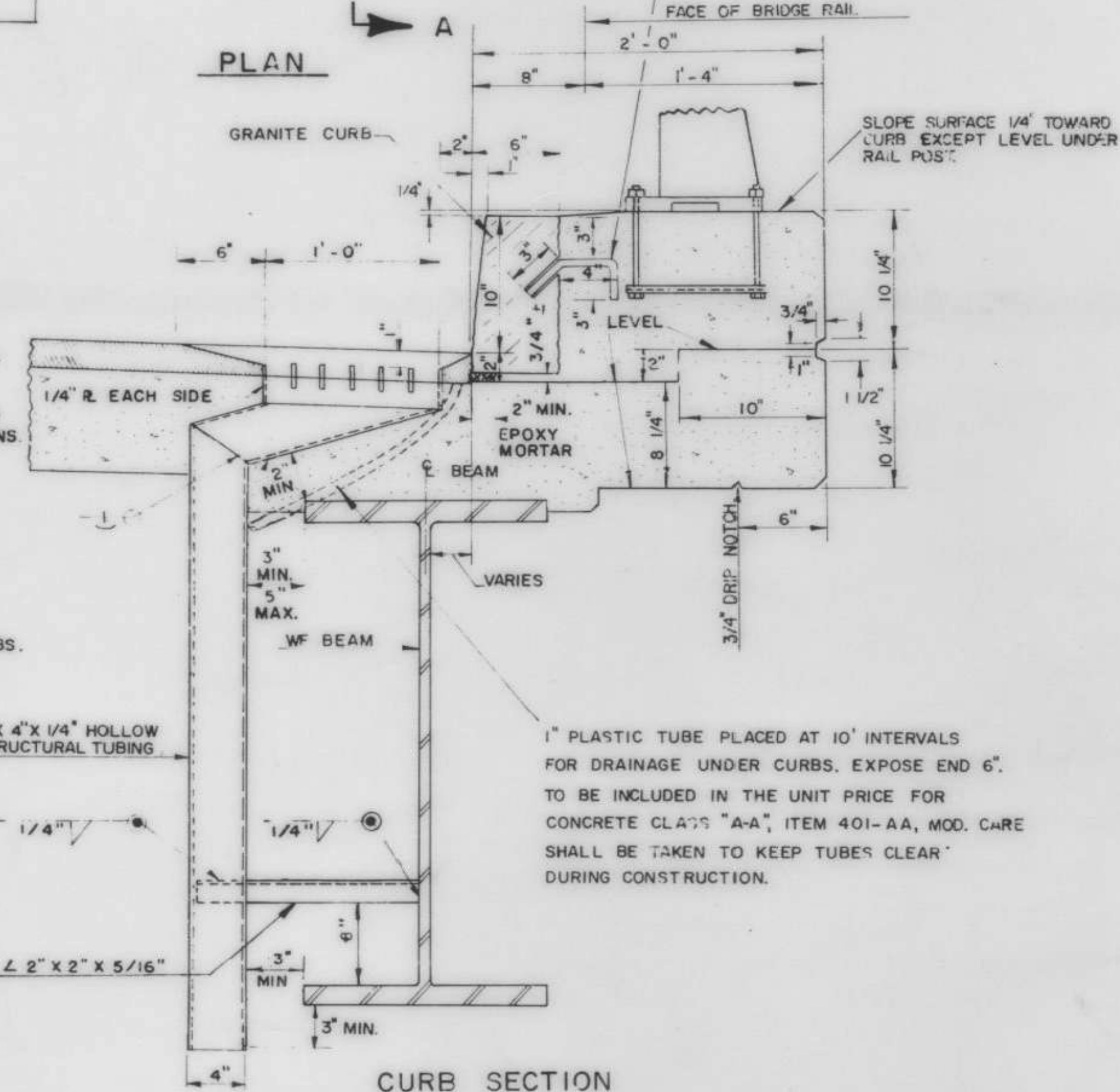


SECTION A-A



PLAN

#4 BAR AT 12" FROM EITHER END.  
(2 REQUIRED FOR EACH CURB SECTION)  
DRILLING AND LEADING OF BARS TO BE PAID FOR UNDER THE UNIT PRICE BID FOR ITEM 556-C, GRANITE BRIDGE CURB.



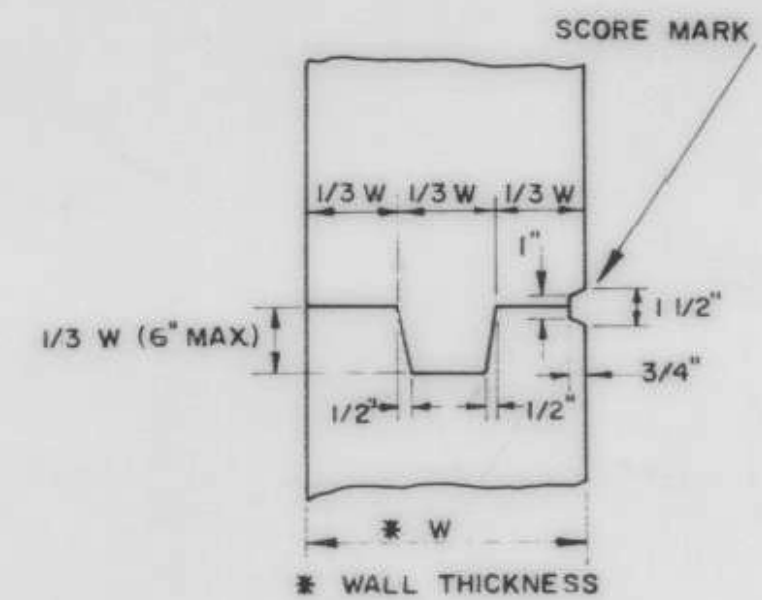
CURB SECTION

APPROXIMATE WEIGHT OF SCUPPER IS 140 LBS.

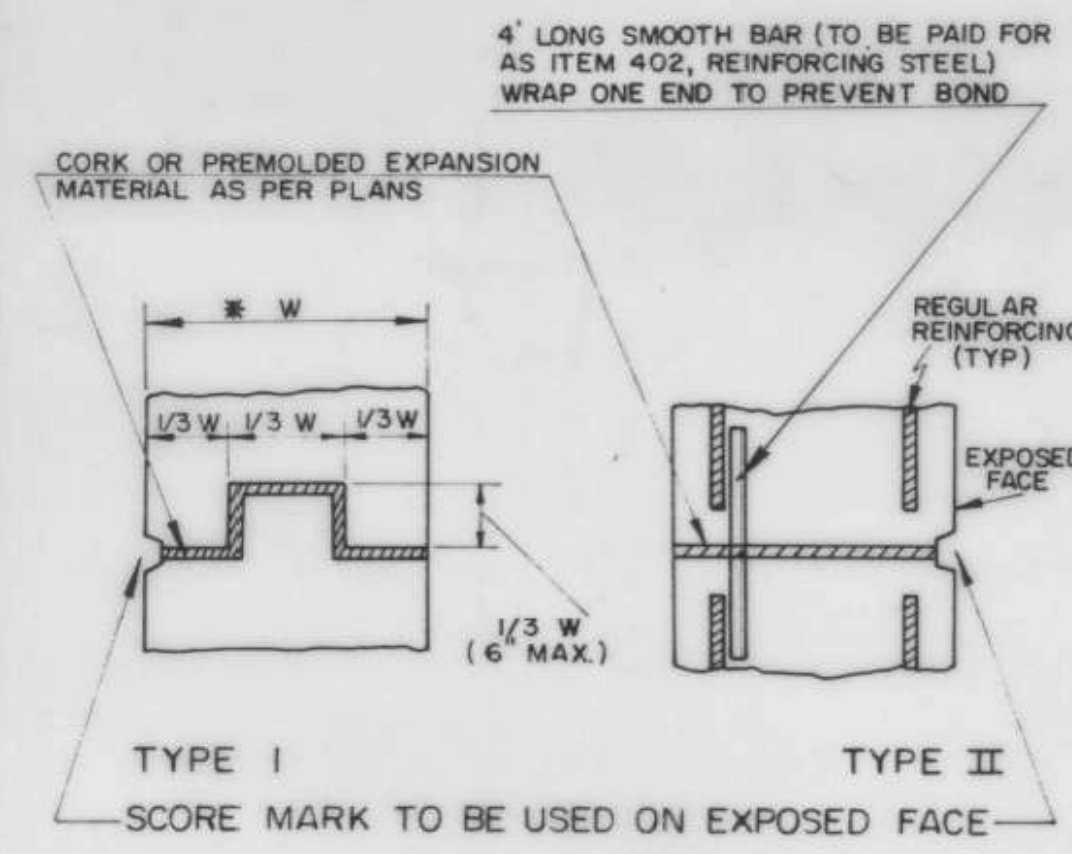
UNLESS OTHERWISE CALLED FOR ON THE PLANS:  
1. END SCUPPERS ARE TO BE PLACED MIDWAY BETWEEN  $\phi$  BRG. AND FIRST DIAPHRAGM ASSEMBLY.  
2. INTERMEDIATE SCUPPERS ARE TO BE PLACED MIDWAY BETWEEN DIAPHRAGM ASSEMBLIES.

SCUPPER AND CURB DETAILS

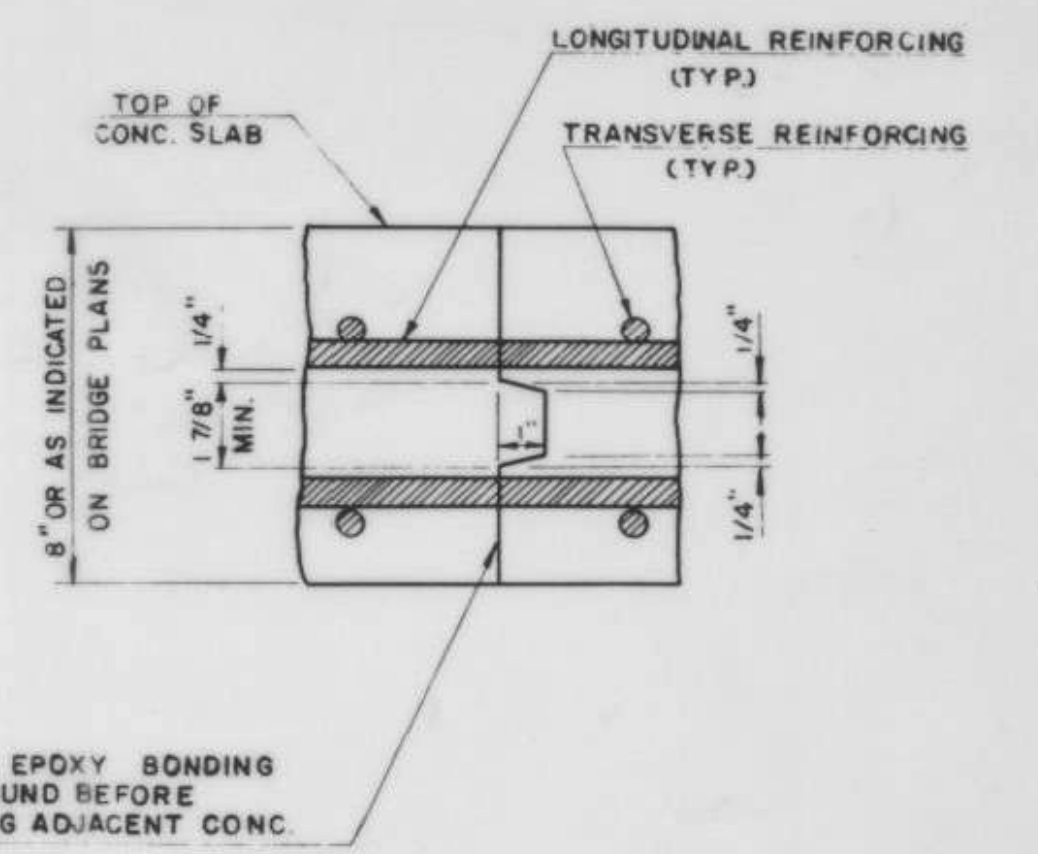
CONSTRUCTION JOINTS SHALL BE PLACED AS INDICATED ON THE PLANS.  
HORIZONTAL SCORE MARKS SHALL BE PLACED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.



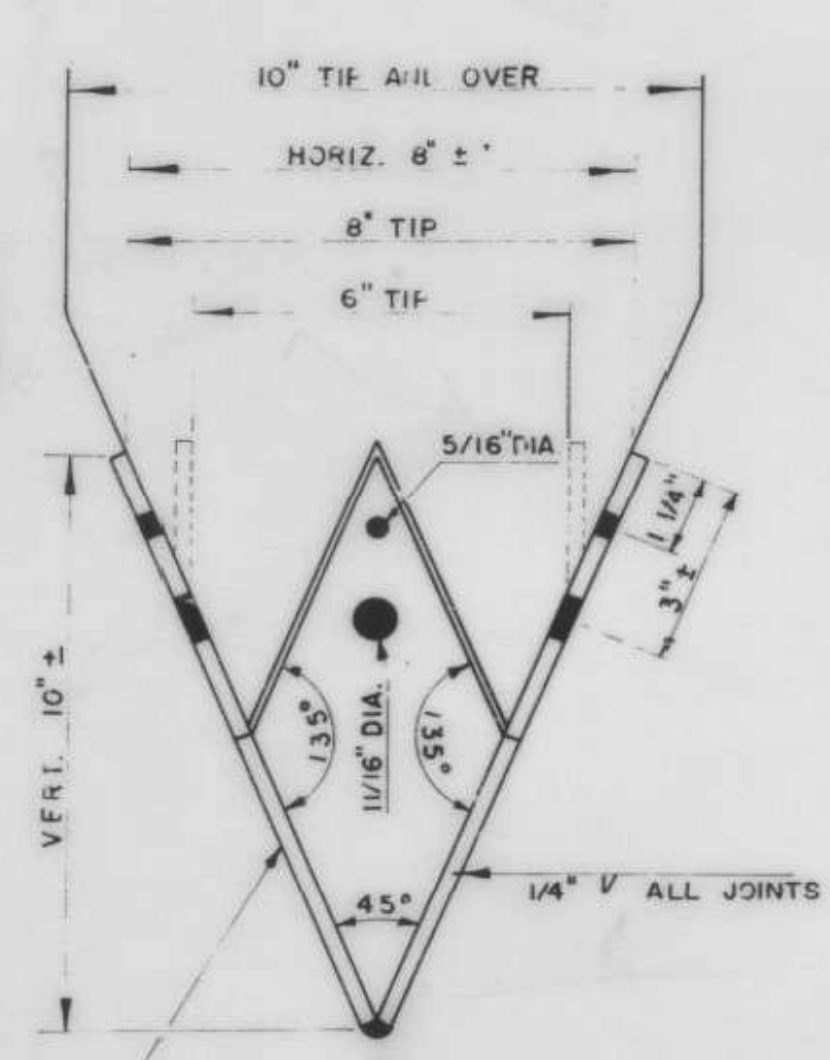
TYPICAL DETAIL OF CONSTRUCTION JOINT AND SCORE MARKS



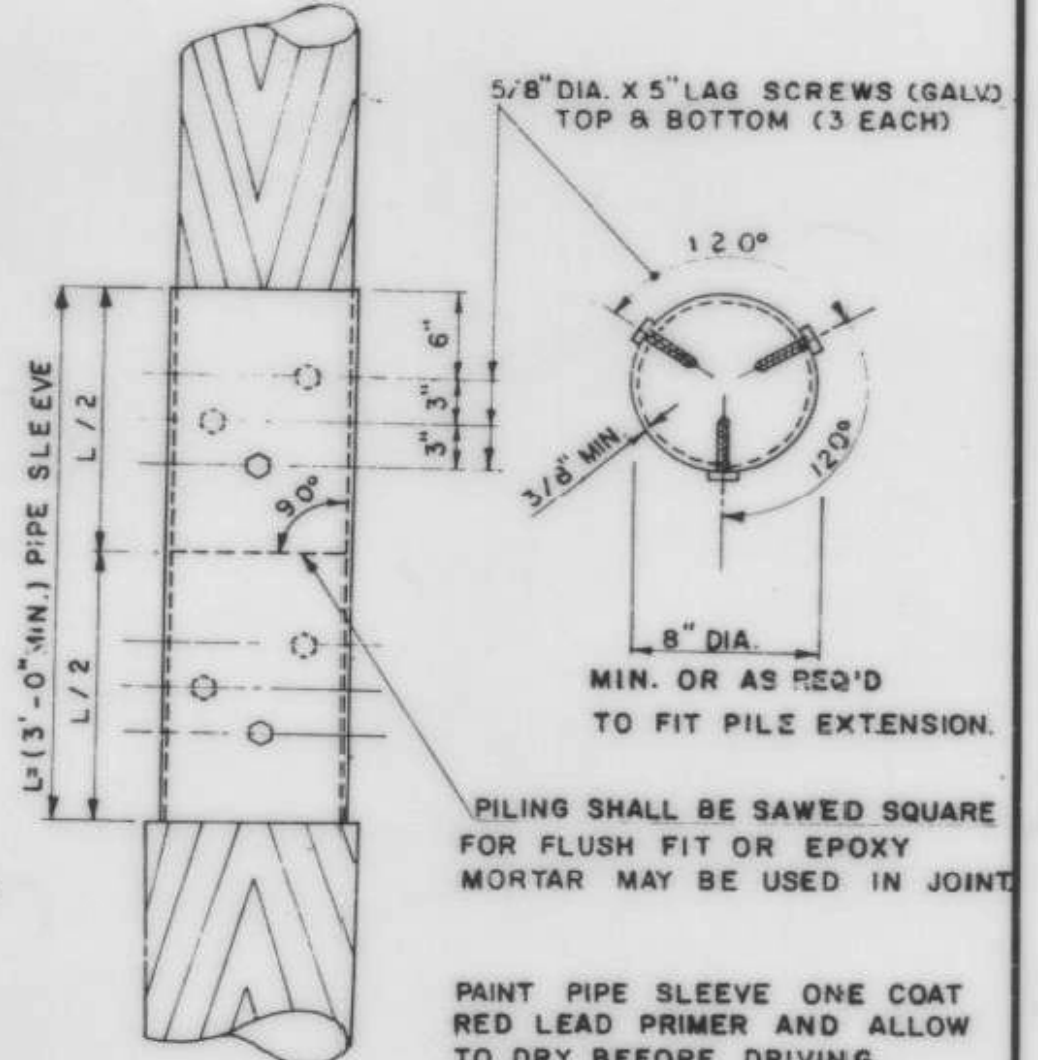
DETAILS OF VERTICAL EXPANSION JOINTS



TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS

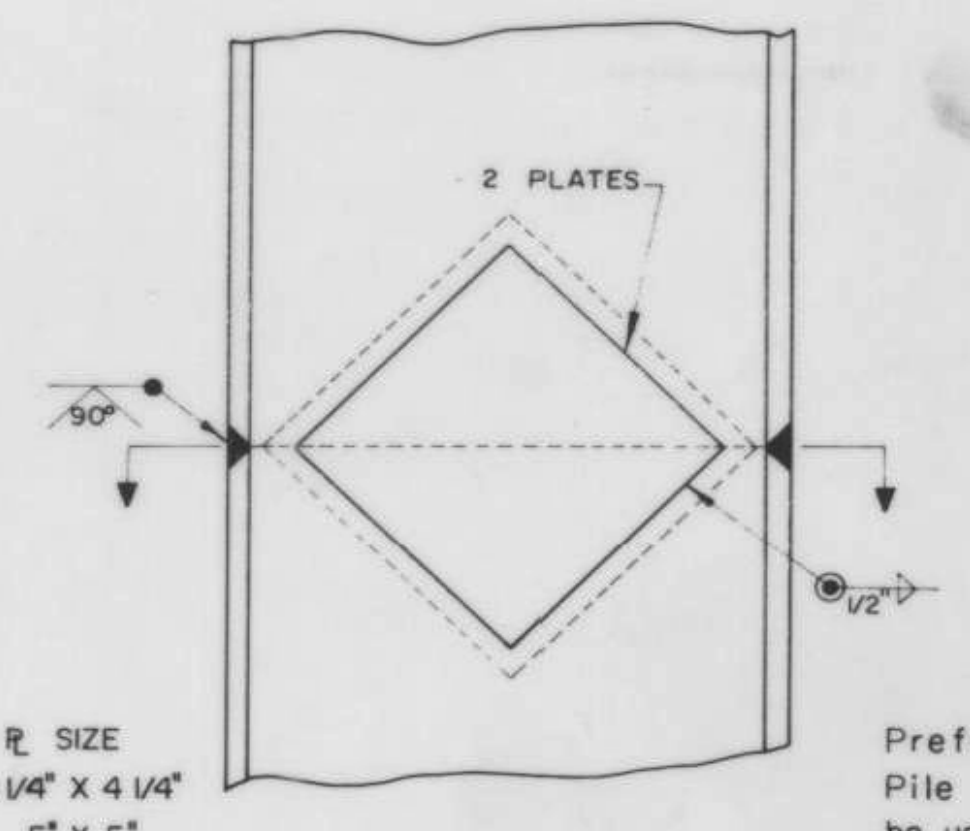


PILE SHOE



PILE SPLICE

DETAILS FOR TIMBER PILES



DETAIL OF PILE SPICE

H-PILES	R SIZE
8 BP	4 1/4" X 4 1/4"
10 BP	5" X 5"
12 BP	6 1/2" X 6 1/2"
14 BP	7 1/2" X 7 1/2"

Prefabricated Pile Splice may be used with the approval of the Engineer.

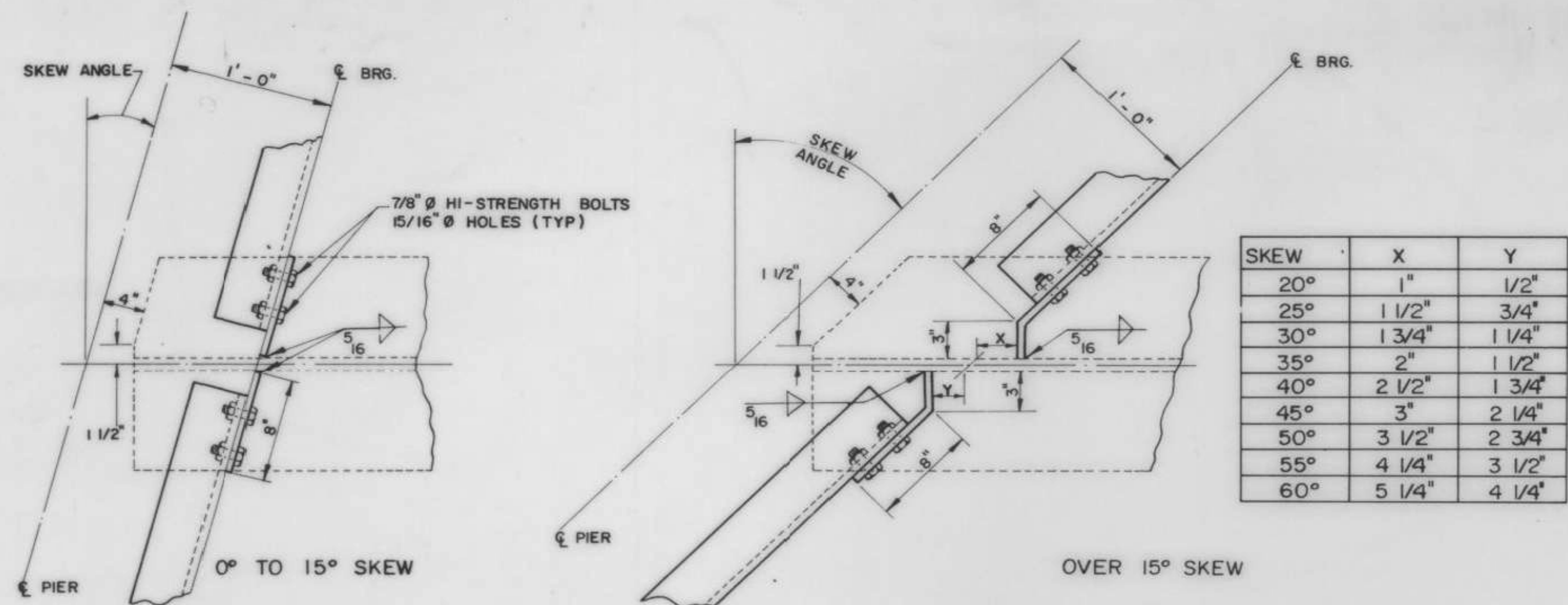
IRASBURG  
IM DECK(46)  
BRIDGE NO. 107N  
SHEET 46 OF 49  
FOR REFERENCE ONLY

REVISIONS AND CORRECTIONS  
1. REVISION IN SCUPPER TO BEAM CONNECTION. MAY 23, 1969 R.S.H.  
2. REVISED SCUPPER DETAILS AND WEIGHT. - (D) ADDED "TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS", DELETED "DETAIL OF COPPER SUPPORT FOR EXPANSION MATERIAL" - (E) ADDED "PILE SPLICE" DETAIL. APRIL 28, 1970 - C OBRYAN

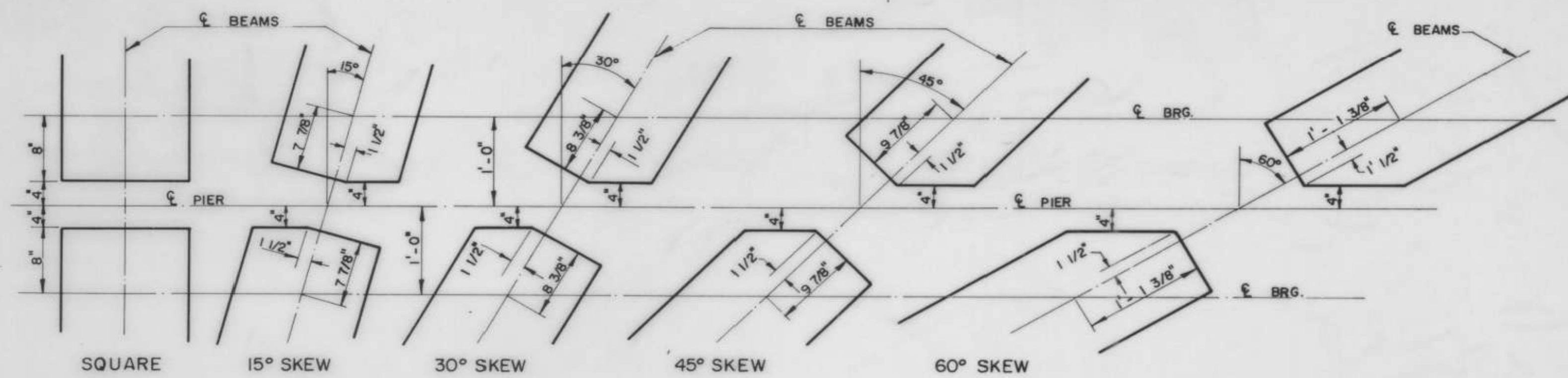
DRAWN BY: A. V. DEC. 1962  
RETRACTED BY: A.J.A. MAY 1967  
CHECKED BY: W. SMITH DEC. 1967  
RECOMMENDED FOR APPROVAL: [Signature] BRIDGE ENGINEER  
RECOMMENDED FOR APPROVAL: [Signature] CONSTRUCTION ENGINEER  
RECOMMENDED FOR APPROVAL: [Signature] ASST. CHIEF ENGINEER  
APPROVED BY: [Signature] CHIEF ENGINEER  
DATE: 1/24/68

DETAILS OF W. BEAM BRIDGES  
(A) SCUPPER AND CURB DETAILS  
(B)(C)(D) CONSTRUCTION DETAILS  
(E)(F) PILE DETAILS

VERMONT  
DEPARTMENT OF HIGHWAYS  
STRUCTURE STANDARDS  
SCB-D6-67



DETAILS OF PIER DIAPHRAGM CONNECTIONS



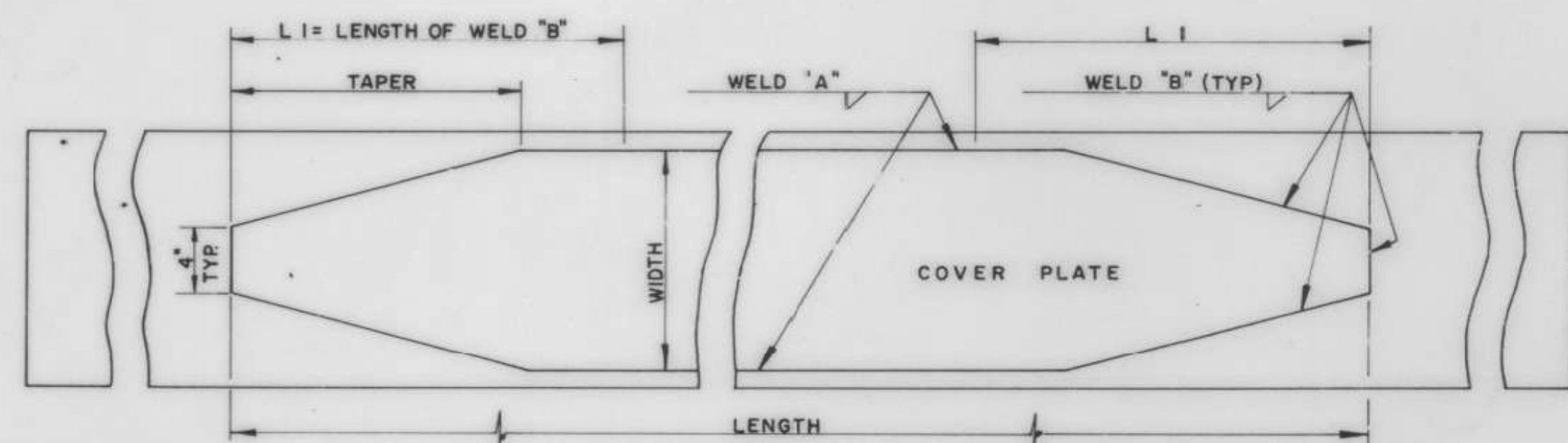
INTERIOR WF BEAM CUT-OFFS AT PIER

7'-6" BEAM SPACING - S.C.B. - 24-67

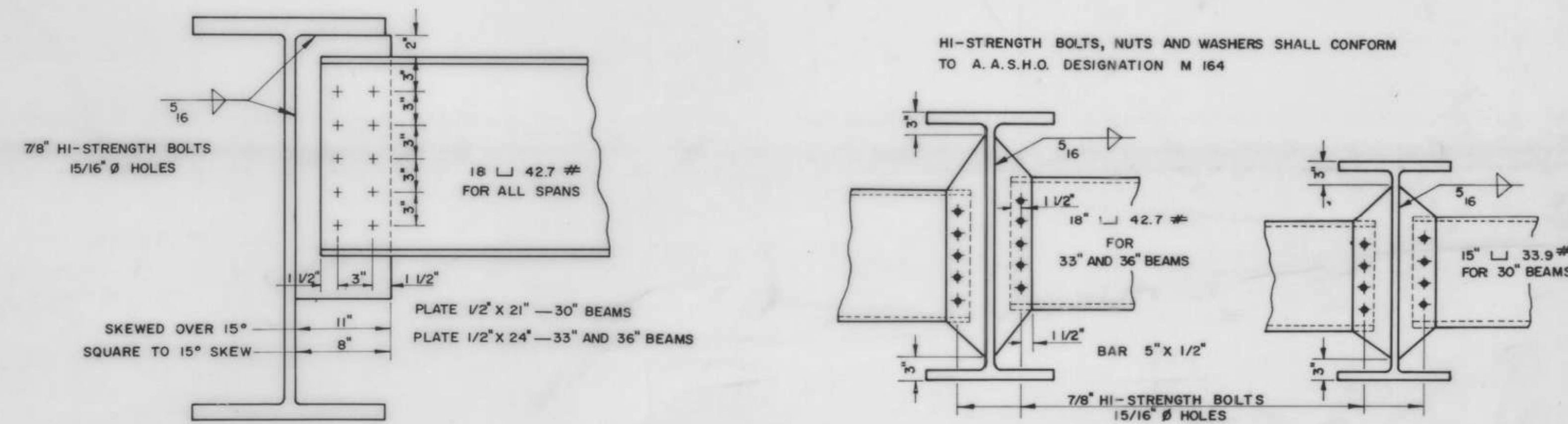
SPAN	COVER PLATE LENGTH	WIDTH	THICKNESS	TAPER	WELD "A"	WELD "B"	L I
99'-0"	64'-10"	15"	2 1/4"	1'-10"	3/8"	5/8"	2'-5"
94'-0"	62'-2"	15"	2"	1'-10"	3/8"	5/8"	2'-1"
89'-0"	56'-6"	15"	1 5/8"	1'-10"	3/8"	1/2"	2'-3"
84'-0"	57'-4"	11"	1 3/4"	1'-4"	3/8"	1/2"	1'-8"
79'-0"	50'-9"	11"	1 3/8"	1'-4"	5/16"	1/2"	1'-4"
74'-0"	48'-9"	11"	1 1/4"	1'-4"	5/16"	1/2"	1'-4"
69'-0"	43'-0"	11"	1"	1'-4"	5/16"	3/8"	1'-6"
64'-0"	40'-9"	11"	3/4"	1'-4"	5/16"	5/16"	---
59'-0"	30'-9"	11"	1/2"	1'-4"	5/16"	5/16"	---
54'-0"	18'-9"	11"	1/2"	1'-4"	5/16"	5/16"	---

7'-4" BEAM SPACING S.C.B. - 30, 38, 44-67

COVER PLATE LENGTH	WIDTH	THICKNESS	TAPER	WELD "A"	WELD "B"	L I
60'-0"	15"	2 1/4"	1'-10"	3/8"	5/8"	2'-5"
60'-2"	15"	2"	1'-10"	3/8"	5/8"	2'-1"
54'-6"	15"	1 1/2"	1'-10"	5/16"	1/2"	2'-3"
55'-4"	11"	1 5/8"	1'-4"	3/8"	1/2"	1'-8"
48'-9"	11"	1 1/8"	1'-4"	5/16"	1/2"	1'-4"
46'-9"	11"	1"	1'-4"	5/16"	1/2"	1'-4"
45'-0"	11"	1"	1'-4"	5/16"	3/8"	1'-6"
38'-9"	11"	3/4"	1'-4"	5/16"	5/16"	---
28'-9"	11"	1/2"	1'-4"	5/16"	5/16"	---
14'-9"	11"	1/2"	1'-4"	5/16"	5/16"	---

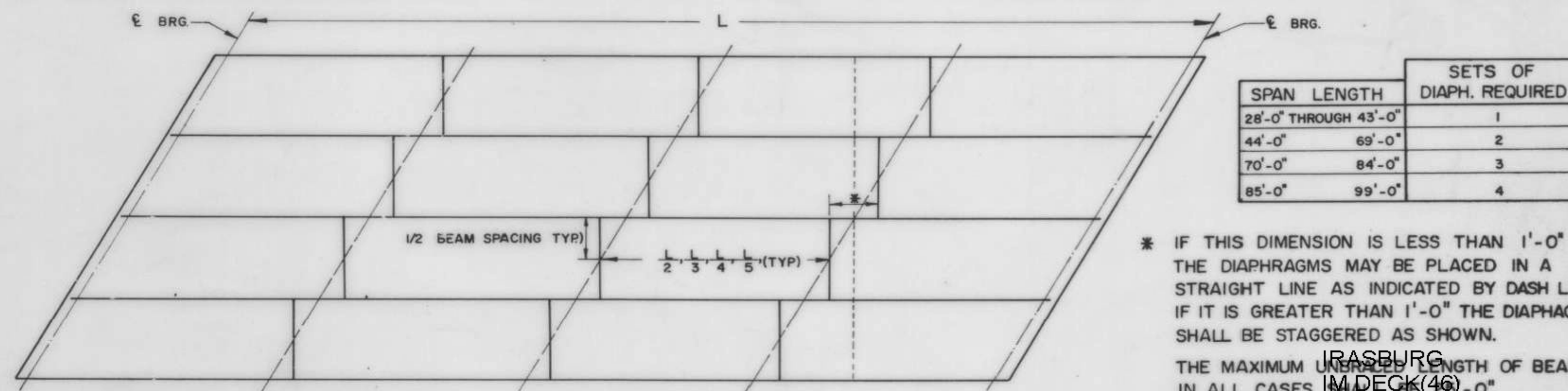


COVER PLATE DETAILS



PIER DIAPHRAGMS

INTERMEDIATE DIAPHRAGMS



DIAPHRAGM LOCATION PLAN

* IF THIS DIMENSION IS LESS THAN 1'-0" THE DIAPHRAGMS MAY BE PLACED IN A STRAIGHT LINE AS INDICATED BY DASH LINE. IF IT IS GREATER THAN 1'-0" THE DIAPHRAGMS SHALL BE STAGGERED AS SHOWN.

THE MAXIMUM UNBOLTED LENGTH OF BEAM IN ALL CASES SHALL NOT EXCEED 40'-0".

IRASBURG  
M.D.E.C. (46)  
BRIDGE NO. 107N  
SHEET 47 OF 49  
FOR REFERENCE ONLY

REVISIONS AND CORRECTIONS

DRAWN BY: A. V. DEC. 1962  
 RETRACED BY: A. J. A. MAY 1967  
 CHECKED BY: W. SMITH DEC. 1967  
 RECOMMENDED FOR APPROVAL: [Signature] BRIDGE ENGINEER  
 RECOMMENDED FOR APPROVAL: [Signature] CONSTRUCTION ENGINEER  
 RECOMMENDED FOR APPROVAL: [Signature] ASST. CHIEF ENGINEER  
 APPROVED BY: [Signature] CHIEF ENGINEER DATE: 4/24/68

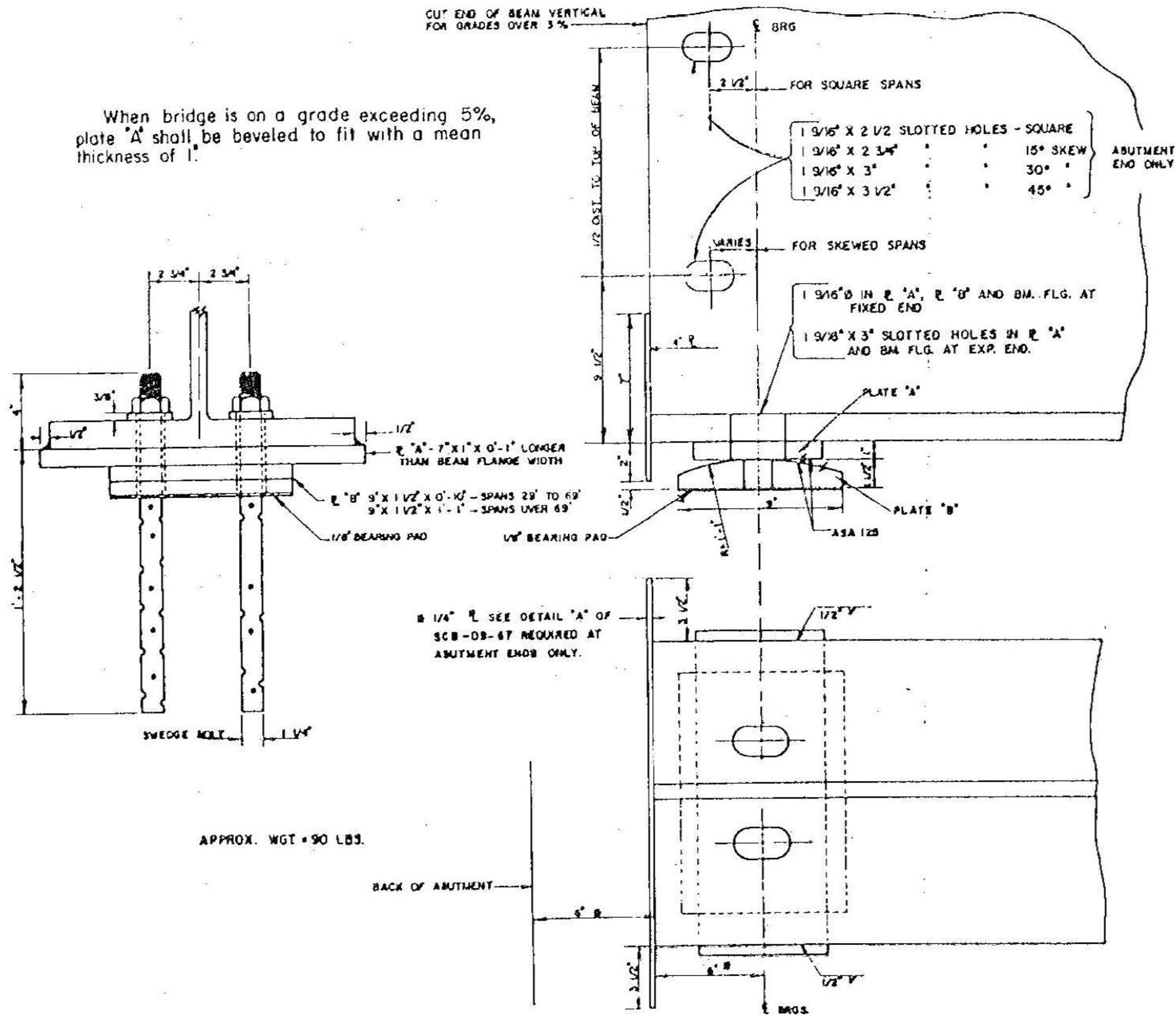
DETAILS OF WF BEAM BRIDGES  
 STRUCTURAL STEEL DETAILS  
 (A) (D) (E) DIAPHRAGM DETAILS  
 (B) WF BEAM CUT-OFFS  
 (C) COVER PLATE DETAILS

VERMONT  
 DEPARTMENT OF HIGHWAYS  
 STRUCTURE STANDARDS

SCB-D7-67

254A

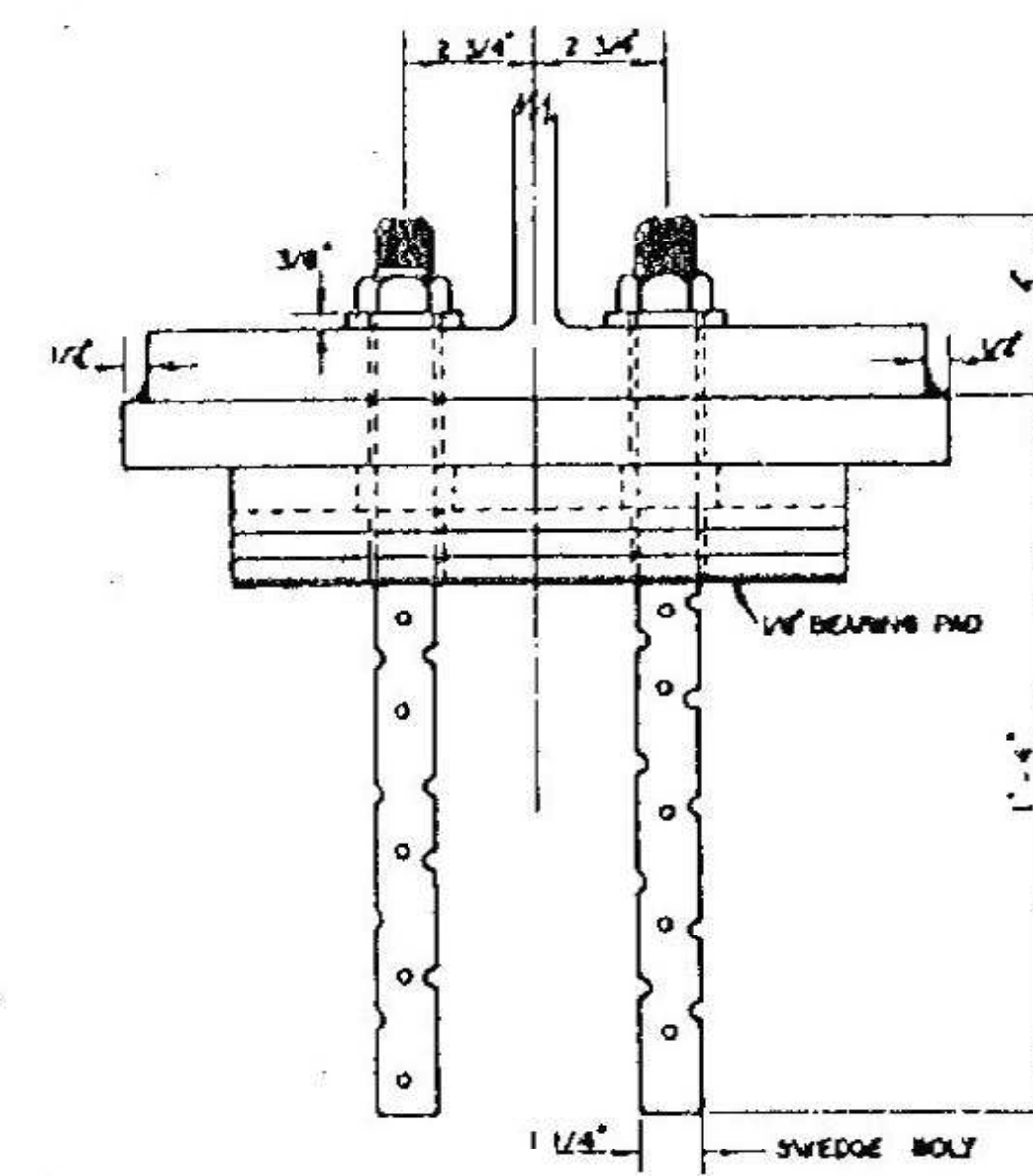
When bridge is on a grade exceeding 5%, plate "A" shall be beveled to fit with a mean thickness of 1".



APPROX. WGT. = 90 LBS.

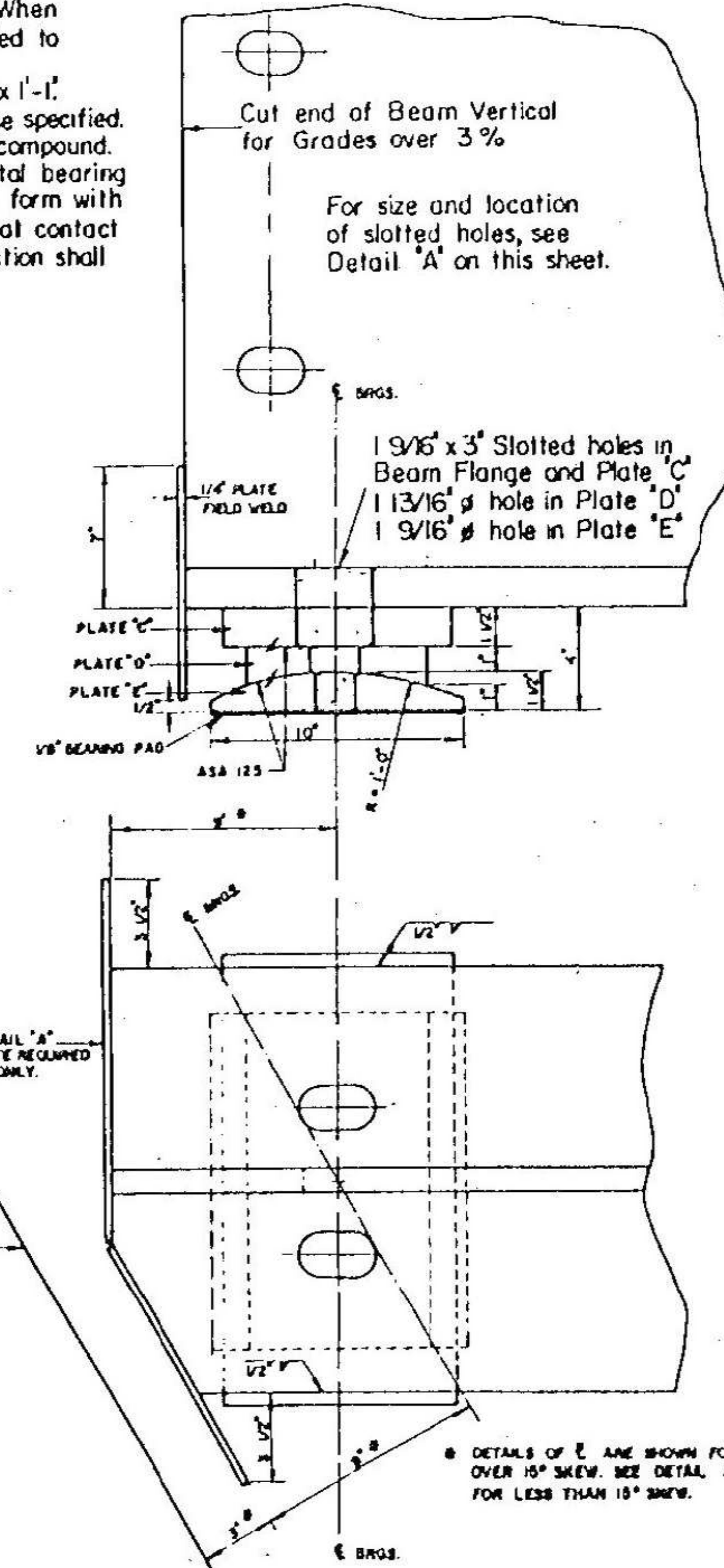
FIXED END BEARING DEVICE  
USE FOR EXPANSION END ON SPANS UP TO AND INCLUDING 69'

Plate "C" - 9' x 1 1/2' x 1" longer than the beam flange width. When the bridge is on a grade exceeding 5%, plate "C" shall be beveled to fit the grade with a mean thickness of 1 1/2".  
Plate "D" - 7' x (outer edge thickness 1 1/2", center thickness 1") x 1'-1". To be Cast Bronze - A.S.T.M. - B 22-40 T, Class "B" unless otherwise specified. This plate shall have trepanned recesses filled with a lubricating compound. The lubricating area shall comprise not less than 25% of the total bearing area. The manufacturer shall supply additional lubricant in liquid form with which the Contractor shall thoroughly coat the bearing surfaces that contact the lubricated portion of the bronze plate. The coefficient of friction shall not exceed 0.10.  
Plate "E" - 10' x 1 1/2' x 1'-1".



APPROX. WGT. = 150 LBS.

EXPANSION END BEARING DEVICE  
FOR SPANS OVER 69'



DETAILS OF E ARE SHOWN FOR OVER 15° SKEW. SEE DETAIL A FOR LESS THAN 15° SKEW.

Attention is called to State of Vermont Department of Highways Standard Specifications for Highway and Bridge Construction, Item # 404, paragraph 404.02 (23) for bearing materials for Shoes and Pedestals.

IRASBURG  
IM DECK(46)  
BRIDGE NO. 107N  
SHEET NO. 40-71  
FOR REFERENCE ONLY

REVISIONS AND CORRECTIONS

DRAWN BY: A.V. DEC 1988  
RETRACED BY: A.J.A. MAY 1991  
CHECKED BY: W. SMITH DEC 1982

RECOMMENDED FOR APPROVAL  
RECOMMENDED FOR APPROVAL  
RECOMMENDED FOR APPROVAL  
APPROVED BY: R. H. [Signature] 1/24/69  
DATE

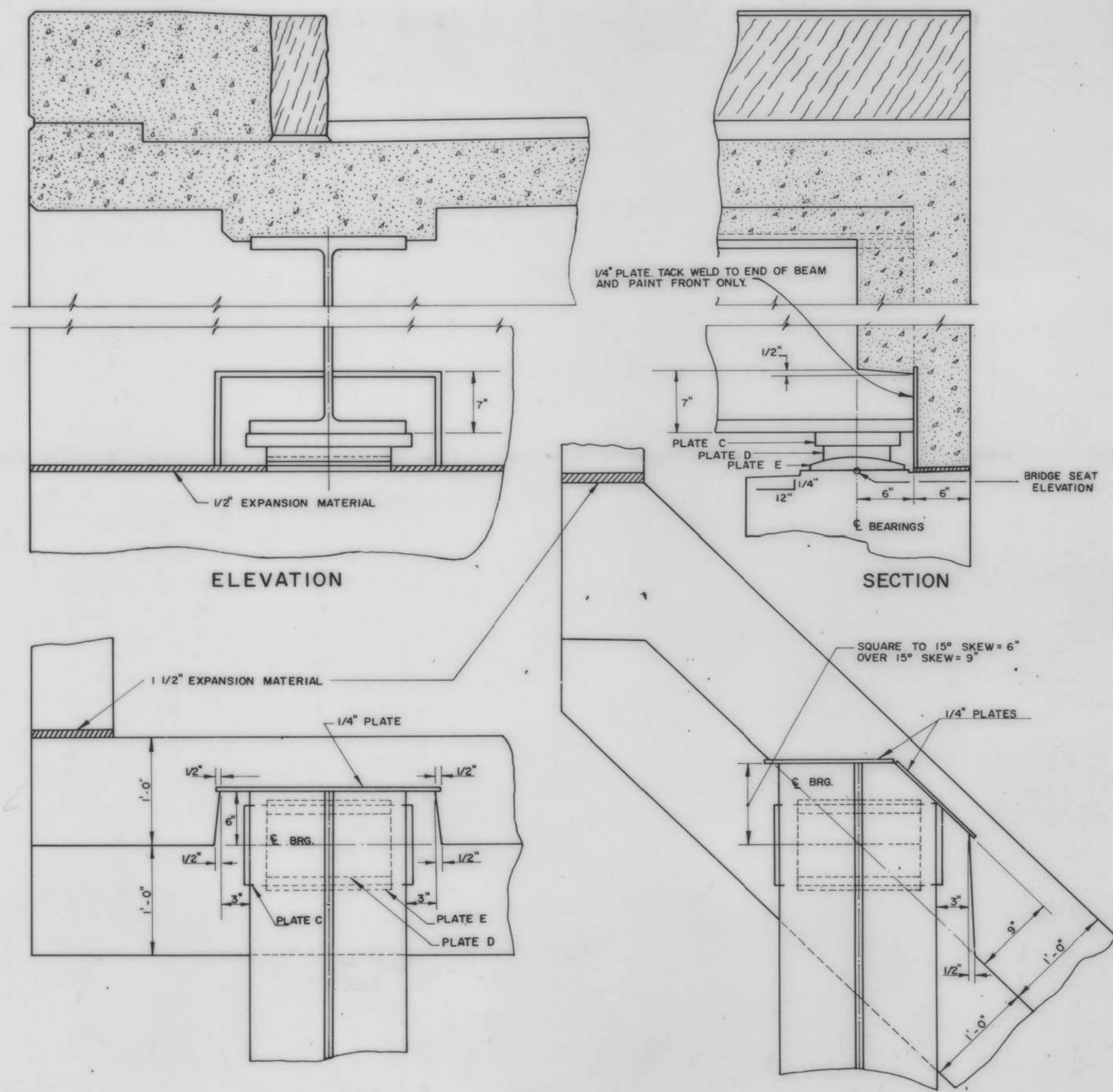
DETAILS OF W BEAM BRIDGES

- (A) FIXED END BEARING DEVICE
- (B) EXPANSION END BEARING DEVICE

VERMONT  
DEPARTMENT OF HIGHWAYS  
STRUCTURE STANDARDS

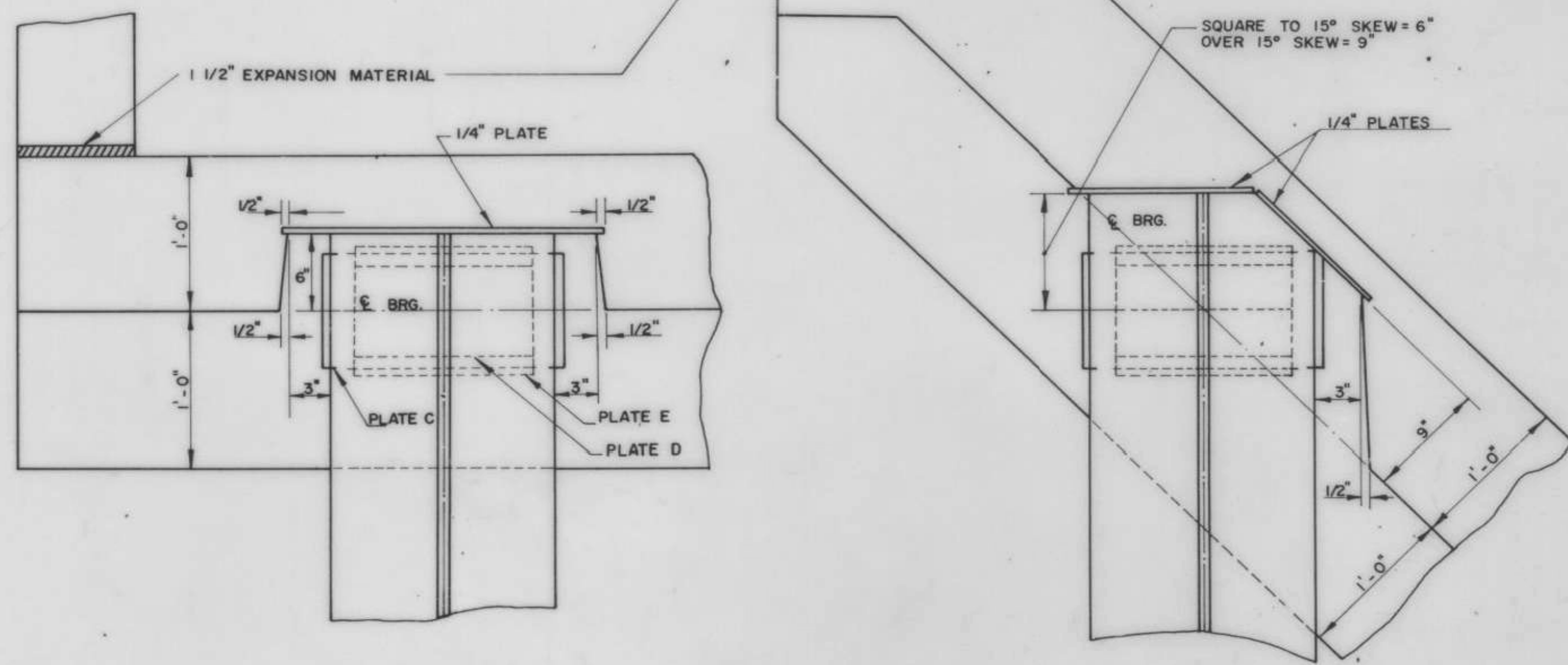
SCB-D8-67

256 A



ELEVATION

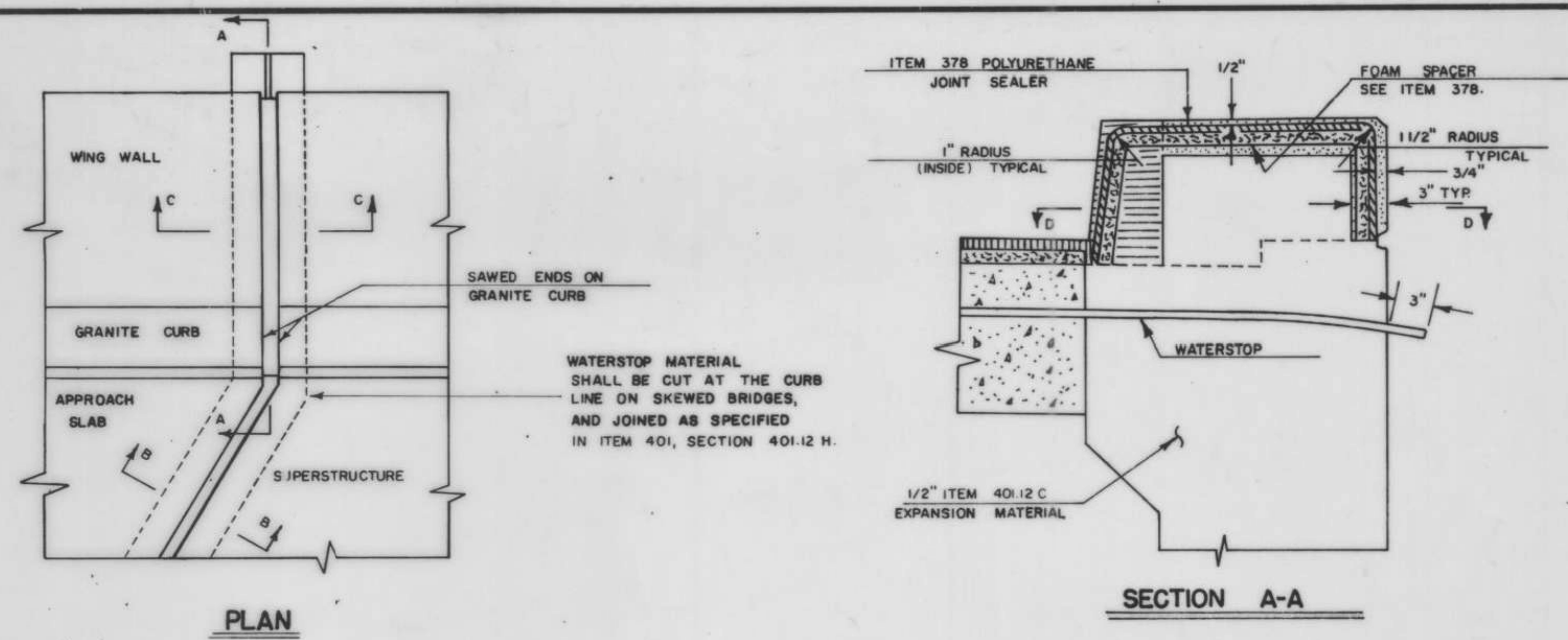
SECTION



PLAN FOR SQUARE BRIDGES

PLAN FOR SKEWED BRIDGES

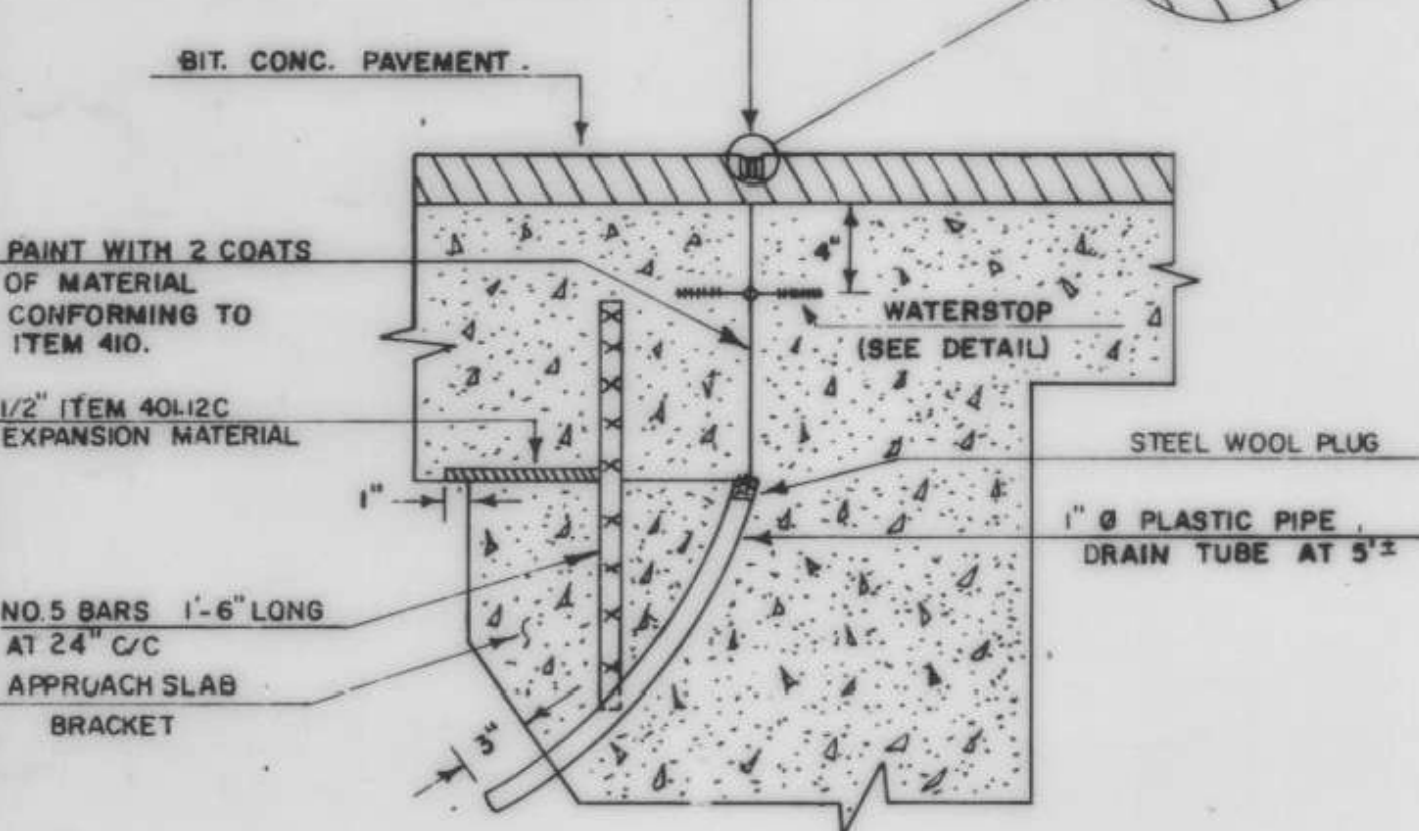
(DETAILS SHOWN FOR EXP END; FIXED END SIMILAR EXCEPT P_s A AND B IN LIEU OF P_s C, D AND E; SEE SCB-D8-69)



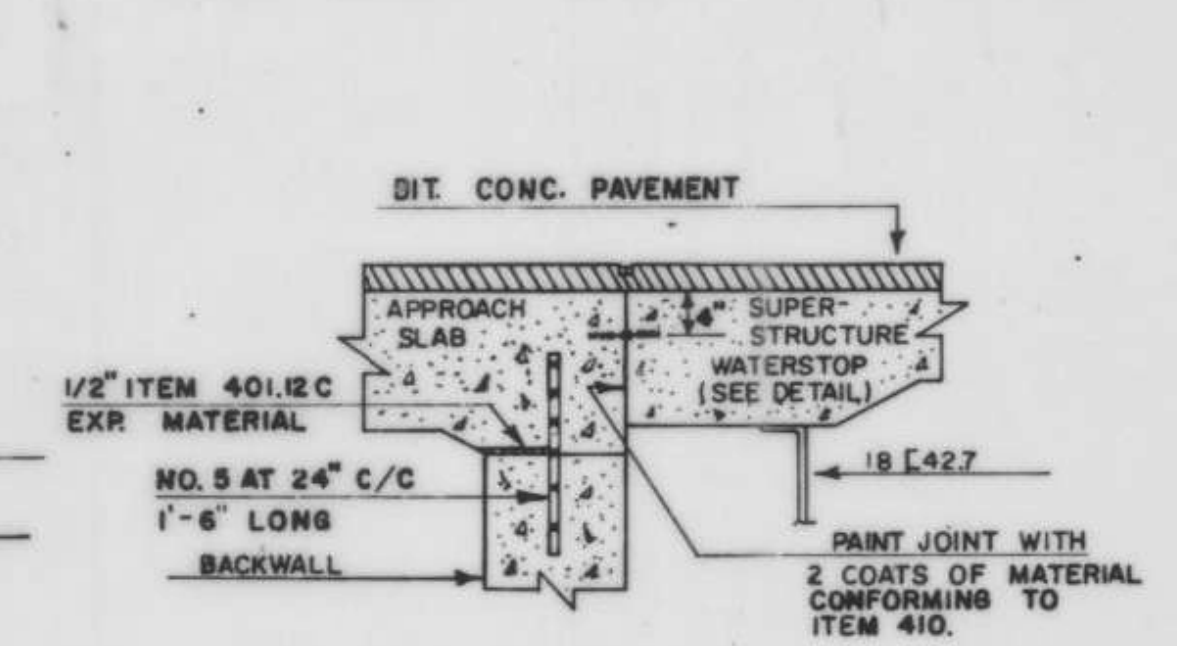
PLAN

SECTION A-A

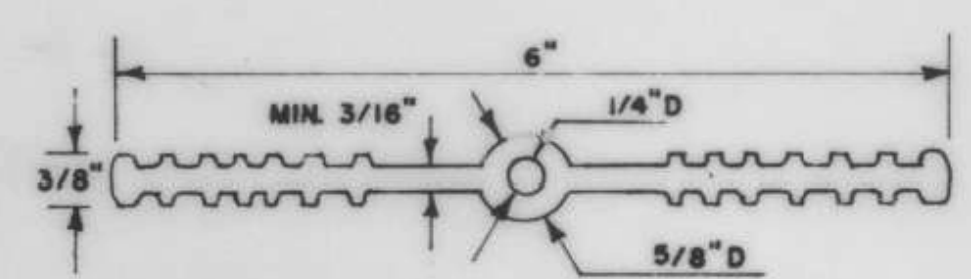
JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUT WILL BE MADE DIRECTLY OVER THE JOINT.



SECTION B-B



SECTION B-B WITH BACKWALL

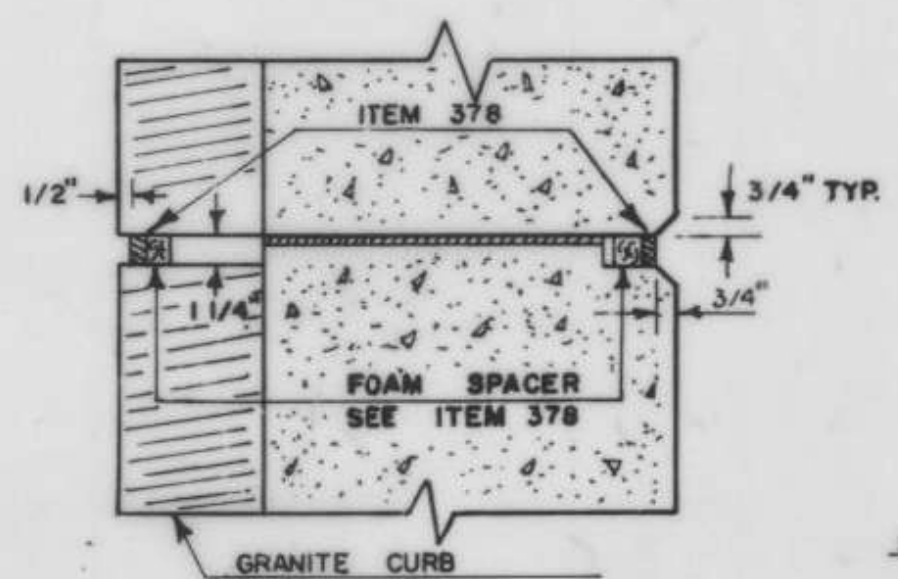


WATERSTOP DETAIL

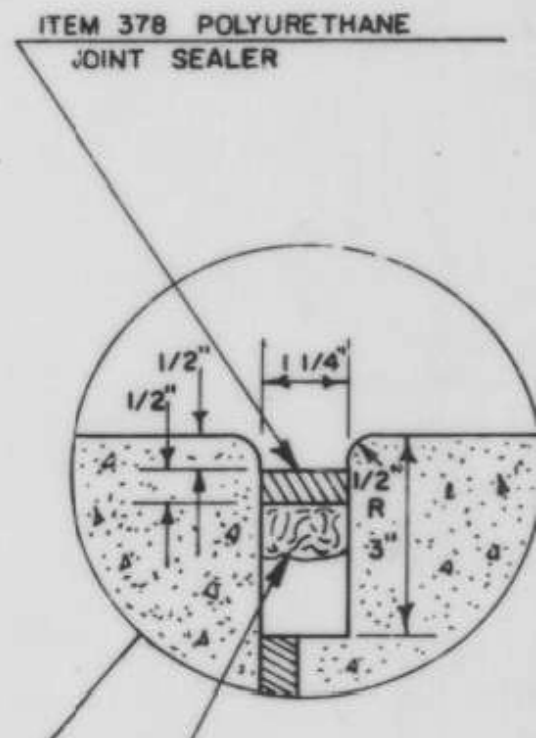
MATERIAL TO BE POLYVINYLCHLORIDE, AS SPECIFIED IN ITEM 401.12 H. OTHER CONFIGURATIONS, WITH MINOR DIMENSION VARIATIONS, MAY BE USED WITH THE APPROVAL OF THE BRIDGE ENGINEER.

COST OF THE WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 401, CONCRETE.

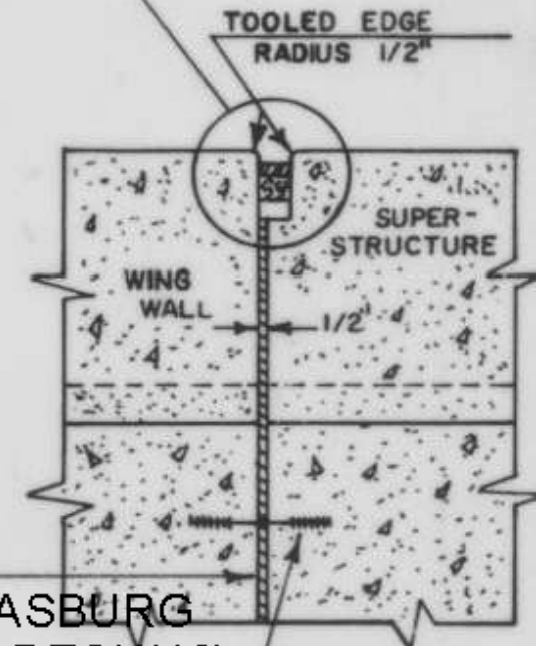
THE CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORT TO MAINTAIN PROPER ALIGNMENT OF WATERSTOP DURING CONSTRUCTION.



SECTION D-D



FOAM SPACER SEE ITEM 378.



TOOLED EDGE RADIUS 1/2"

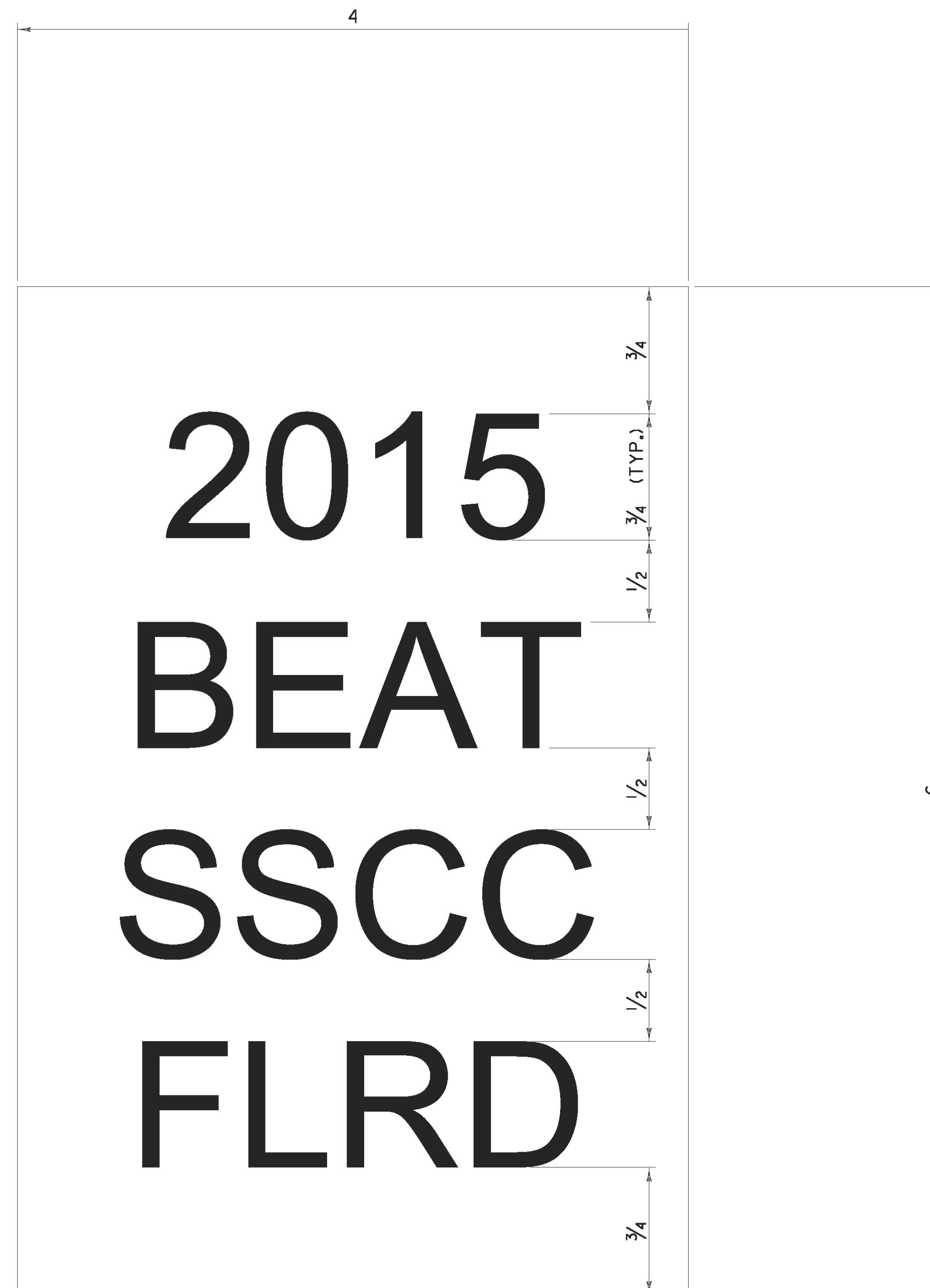
IRASBURG IM DECK(46) BRIDGE NO. 1074N SHEET 30 OF 49 C-C FOR REFERENCE ONLY

REVISIONS AND CORRECTIONS  
 1 (B) FIXED END JOINT DETAILS - ADDED 4-2R 70 J.WOOD  
 2 ADDED " SEE SCB-D8-69 " TO NOTE ON DET (A) 12-11-70 J.WOOD

DRAWN BY: AV DEC 1962  
 RETRACED BY: AJA MAY 1967  
 CHECKED BY: W. SMITH DEC. 1967  
 RECOMMENDED FOR APPROVAL: [Signature] 1/24/68  
 RECOMMENDED FOR APPROVAL: [Signature] 1/24/68  
 RECOMMENDED FOR APPROVAL: [Signature] 1/24/68  
 APPROVED BY: [Signature] 1/24/68  
 CHIEF ENGINEER DATE

DETAILS OF W BEAM BRIDGES  
 (A) CURTAIN WALL AT BEARING DEVICES  
 (B) FIXED END JOINT DETAILS

VERMONT DEPARTMENT OF HIGHWAYS  
 STRUCTURE STANDARDS  
 SCB-D9-67



**GENERAL NOTES:**

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

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

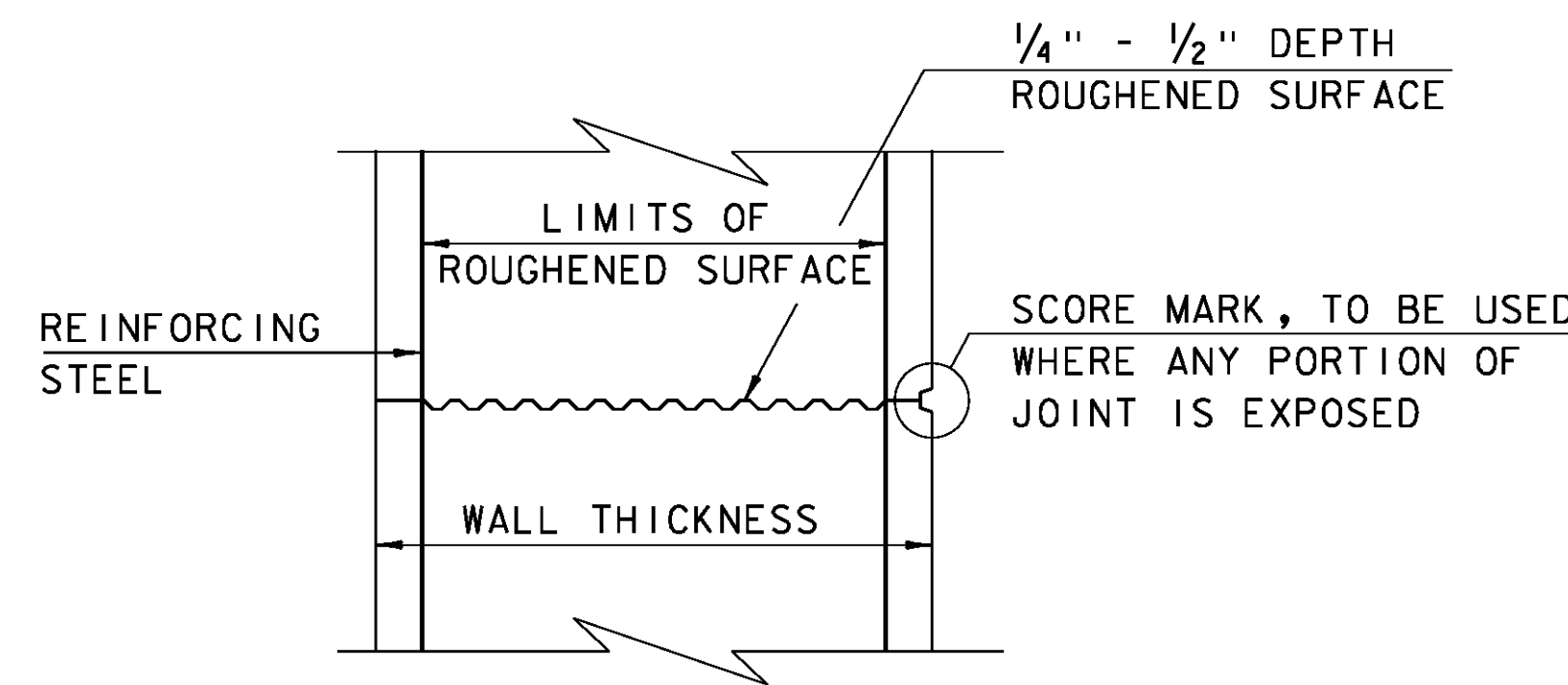
GUARDRAIL TERMINAL LABEL DETAIL



HIGHWAY SAFETY  
& DESIGN DETAIL  
HSD - 621.06

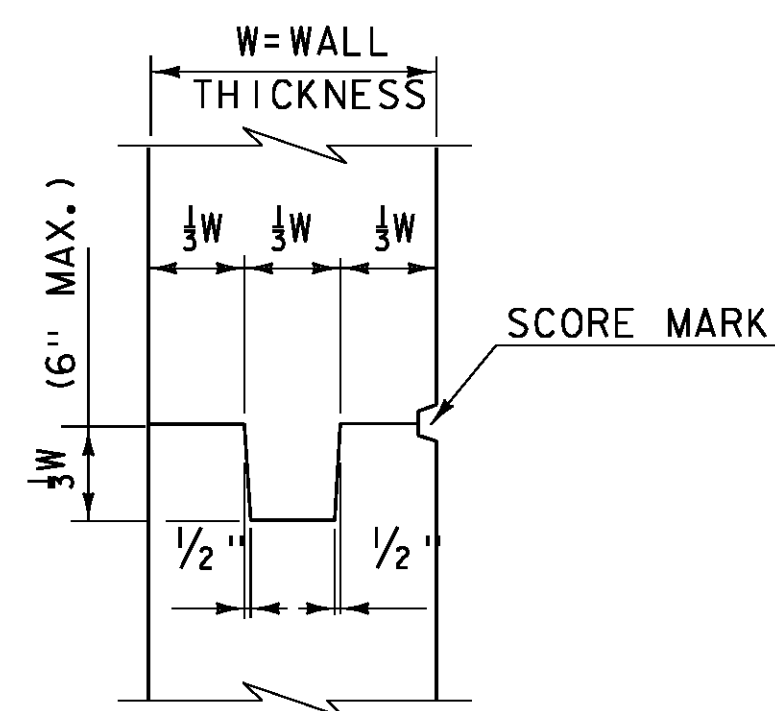
**CONCRETE GENERAL NOTES**

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

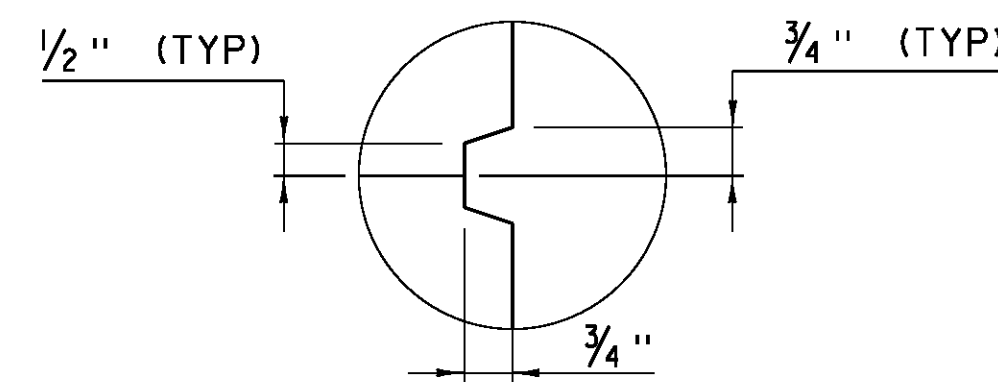


**TYPICAL HORIZONTAL CONSTRUCTION JOINT**  
(NOT TO SCALE)

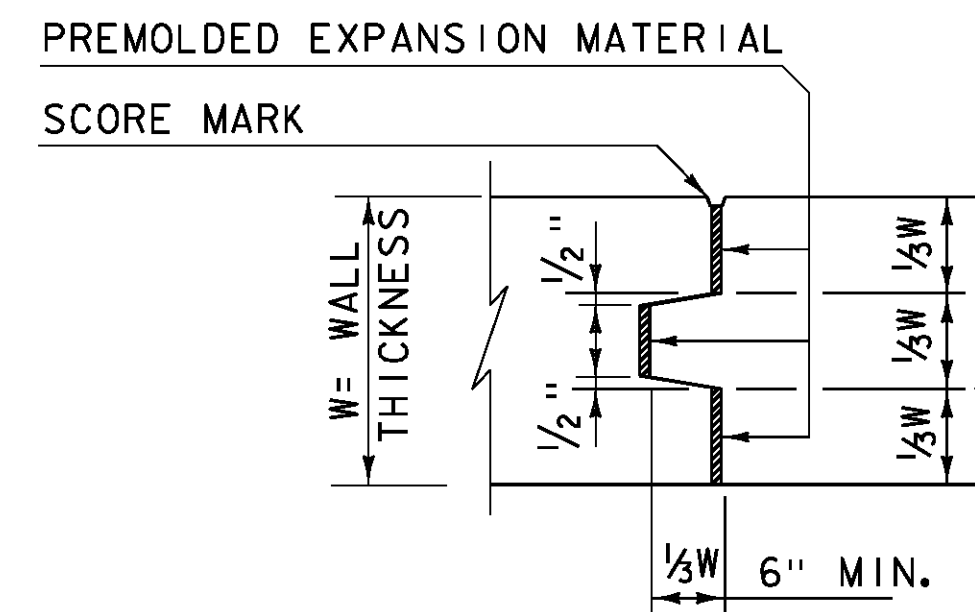
1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



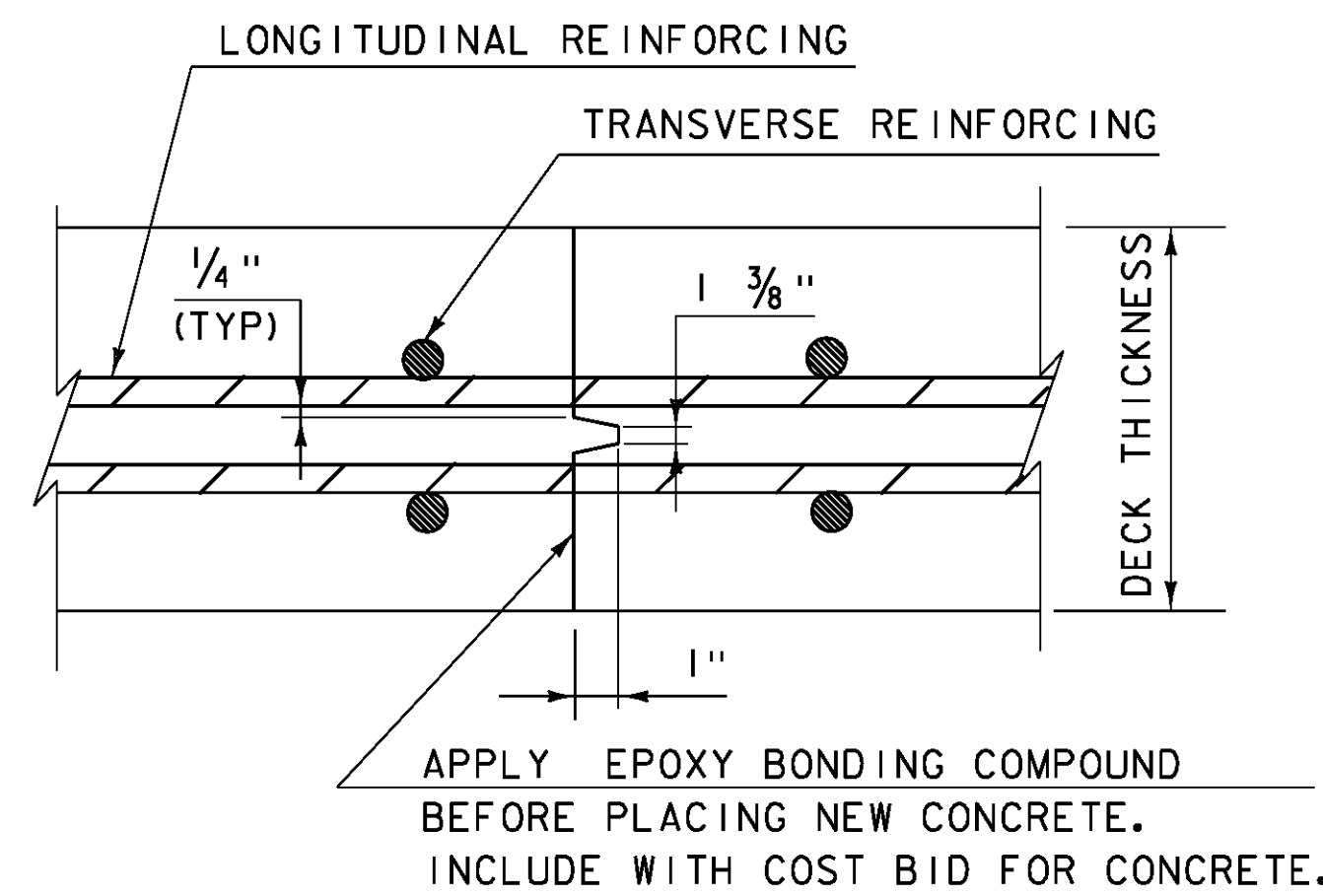
**TYPICAL CONCRETE CONSTRUCTION JOINT**  
(NOT TO SCALE)



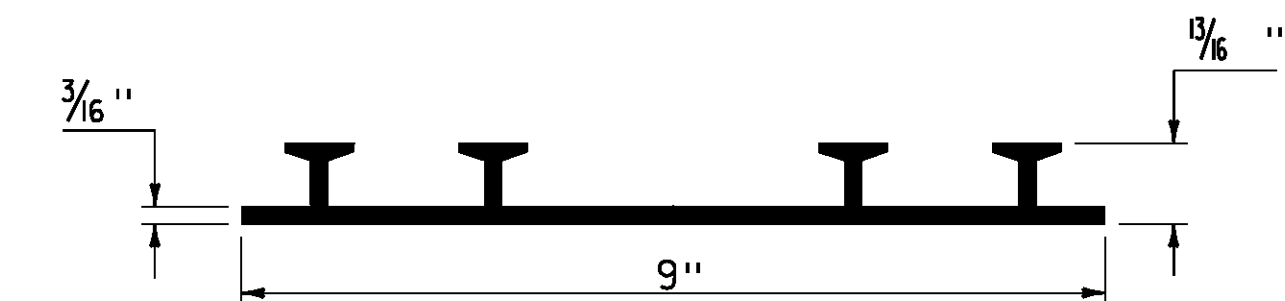
**SCORE MARK DETAIL**  
(NOT TO SCALE)



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



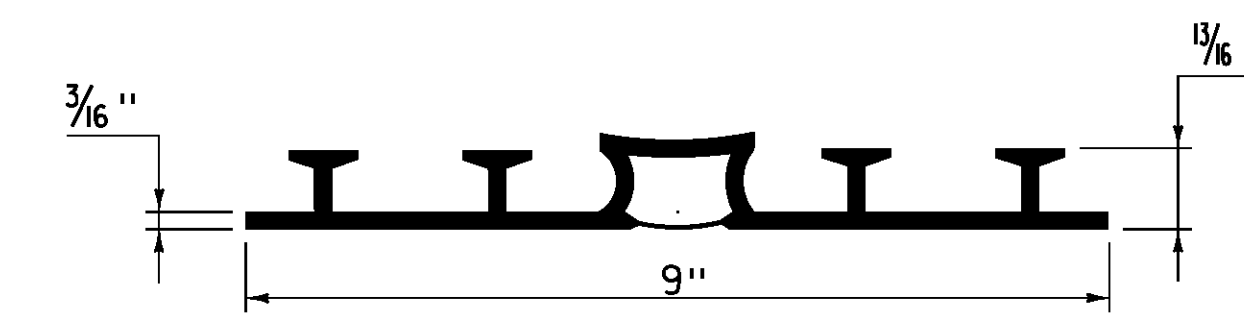
**TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS**  
(NOT TO SCALE)



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

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

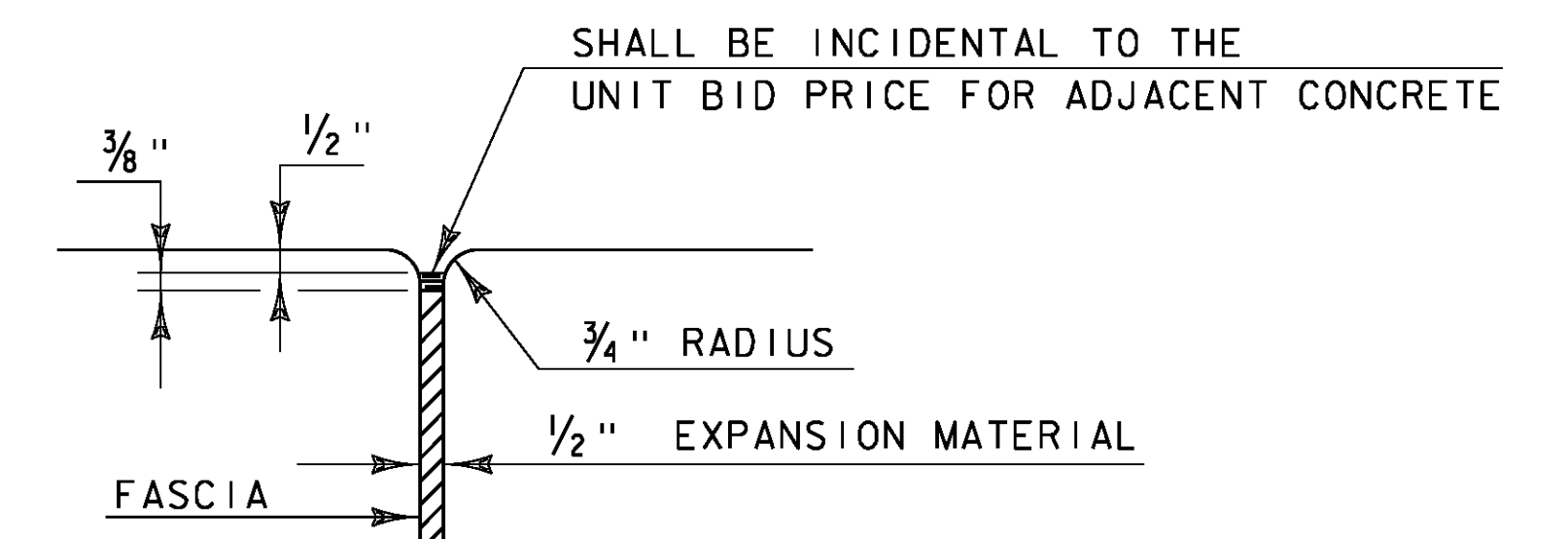
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



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

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

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

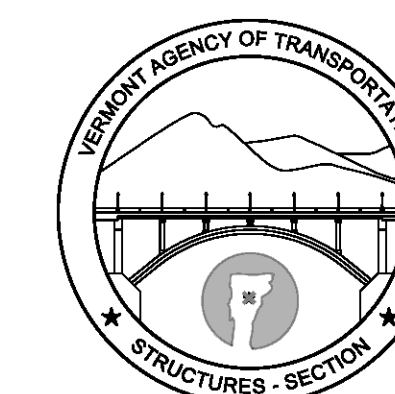


**JOINT BETWEEN FASCIA AND WINGWALL**  
(NOT TO SCALE)

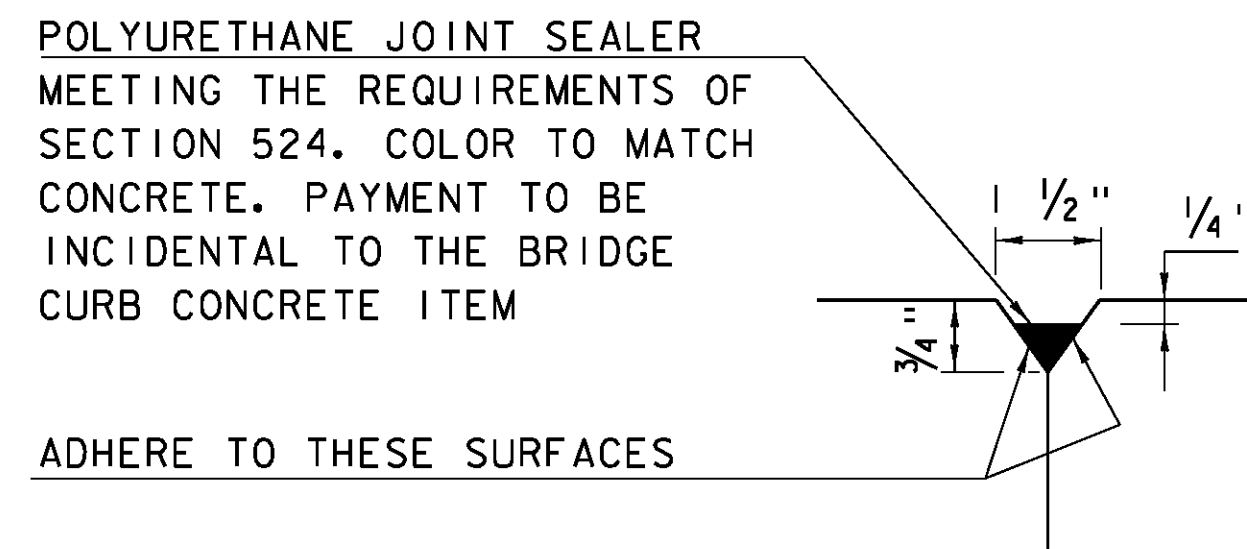
**REVISIONS**

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

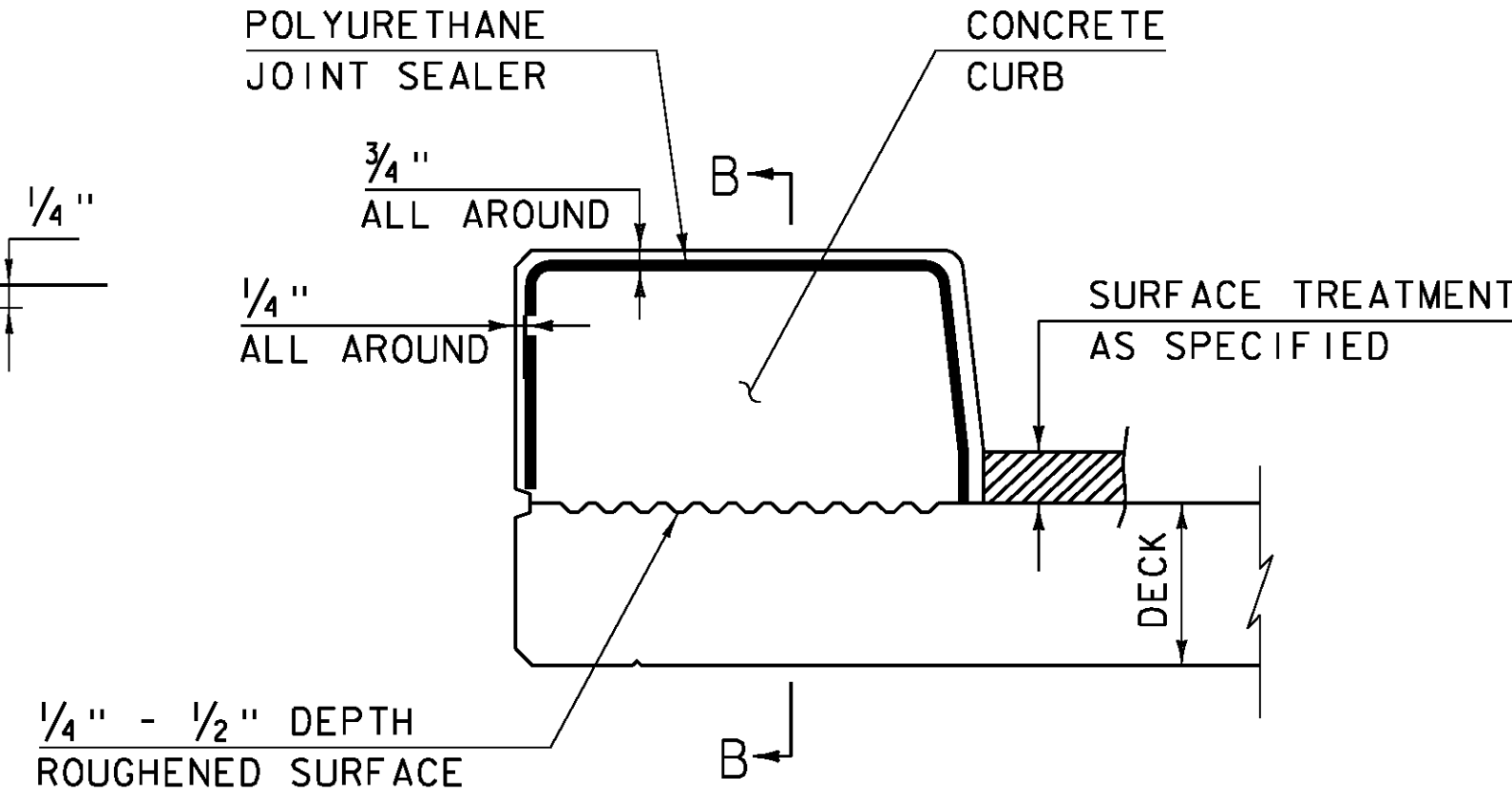
**CONCRETE  
DETAILS AND NOTES**



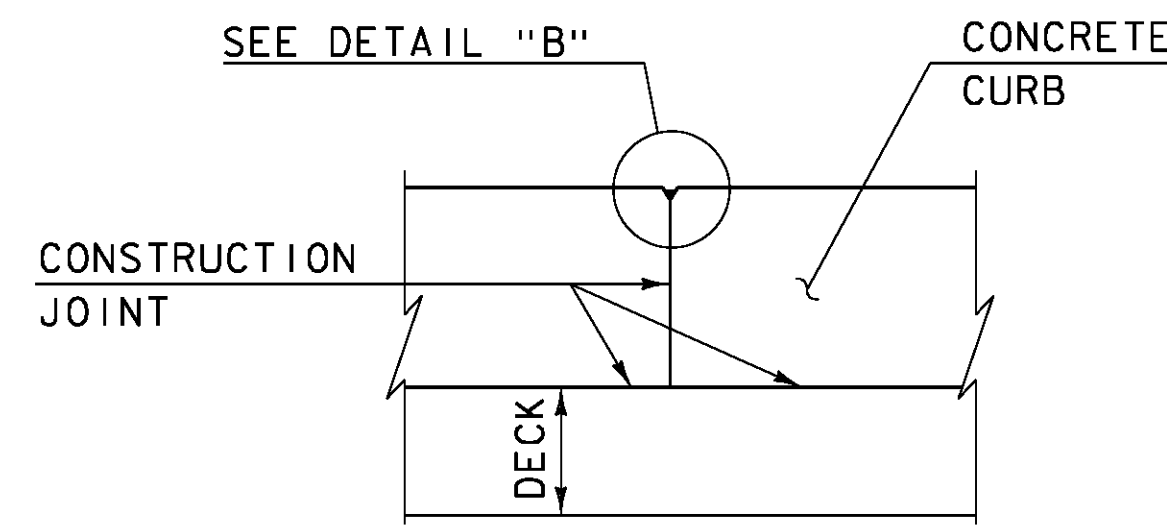
**STRUCTURES  
DETAIL  
SD-501.00**



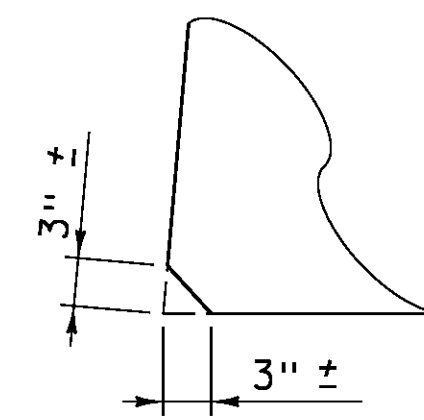
DETAIL "B"  
(NOT TO SCALE)



CONCRETE CURB JOINT SECTION  
(NOT TO SCALE)



SECTION B - B  
(NOT TO SCALE)

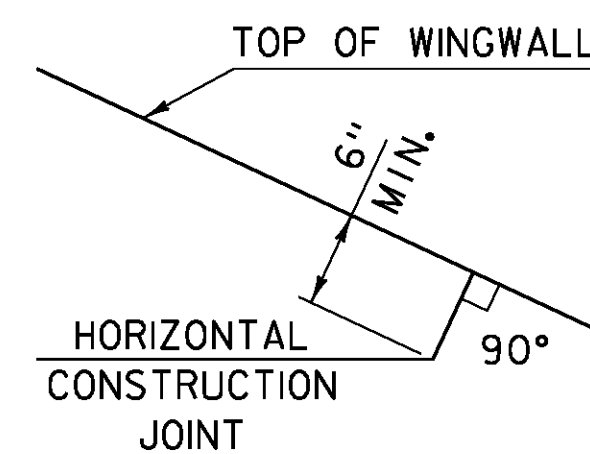


ACUTE ANGLE  
CLIP DETAIL  
(NOT TO SCALE)

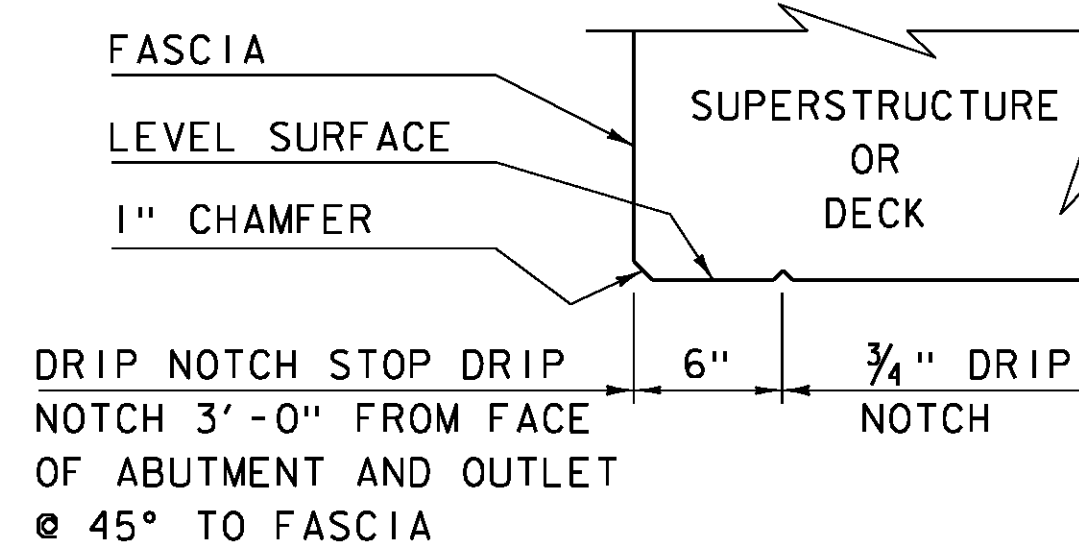
- SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION

CONCRETE CURB JOINT NOTES

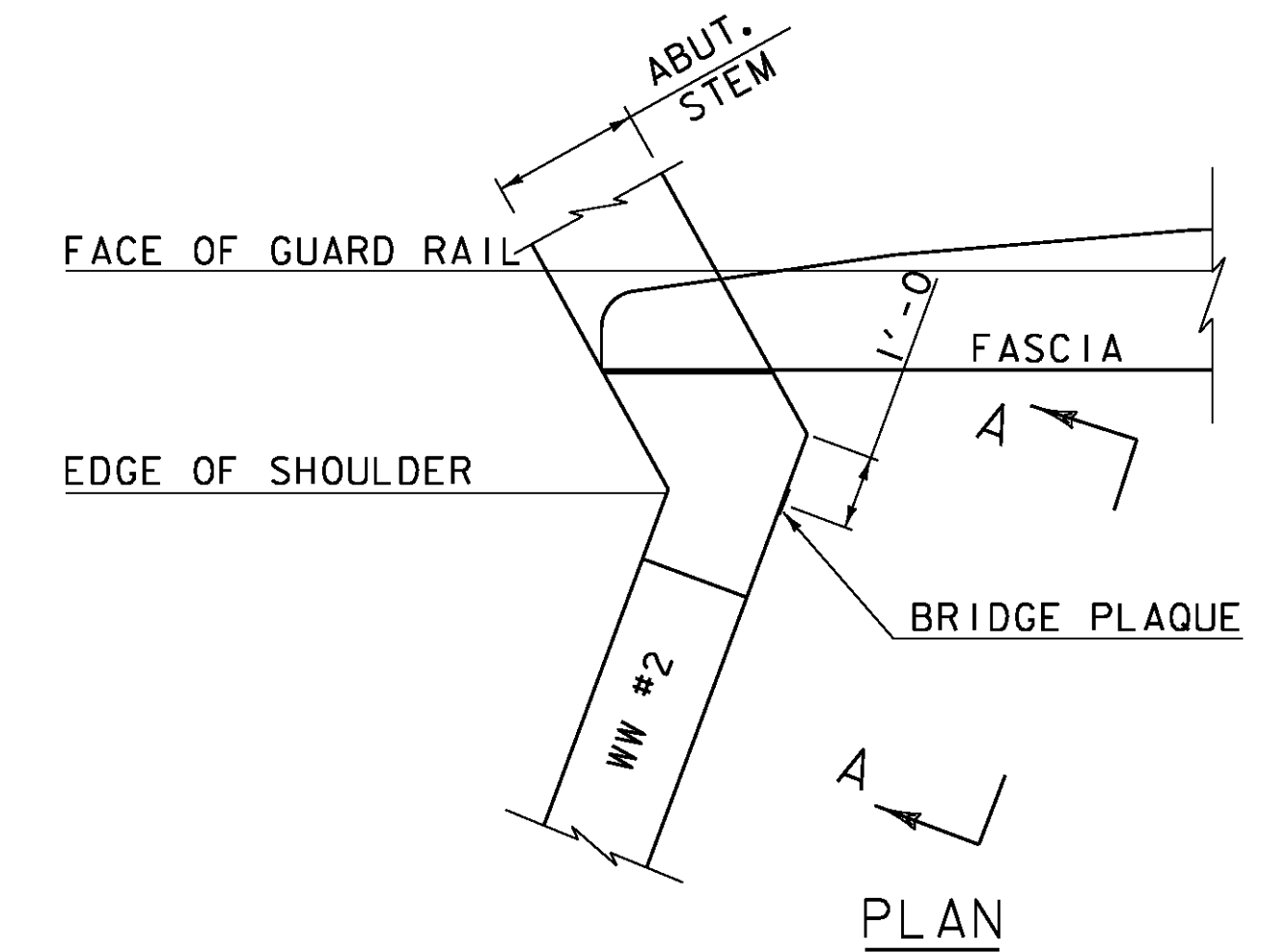
- CONCRETE CURBS MAY BE PLACED IN ONE CONTINUOUS OPERATION IF AN APPROVED SHRINKAGE REDUCING ADMIXTURE LISTED IN THE SPECIAL PROVISIONS IS USED WITH THE CONCRETE MIX DESIGN. PAYMENT FOR THE SHRINKAGE REDUCING ADMIXTURE WILL BE INCIDENTAL TO THE BRIDGE CURB CONCRETE ITEM.
- IF THE CONTRACTOR CHOOSES NOT TO USE AN APPROVED SHRINKAGE REDUCING ADMIXTURE, THE CURBS SHALL BE CONSTRUCTED WITH CONSTRUCTION JOINTS SPACED AT A MAXIMUM OF 15'-0" CENTER TO CENTER AND 2'-0" MINIMUM FROM THE CENTER OF NEAREST BRIDGE RAILING POST.
- ON MULTI-SPAN CONTINUOUS SUPERSTRUCTURES, REGARDLESS OF WHETHER APPROVED SHRINKAGE REDUCING ADMIXTURE IS USED, CURB JOINTS SHALL BE LOCATED OVER THE CENTERLINE OF PIERS AND 7'-0" EACH SIDE OF THE CENTERLINE OF EACH PIER.
- WHEN CURB JOINTS ARE USED THE CURBS SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOUR DELAY BETWEEN ADJACENT PLACEMENTS.
- LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THROUGH CURB CONSTRUCTION JOINTS. CURB STIRRUP BARS SHALL BE TURNED AS NECESSARY TO MAINTAIN COVER IN THE FLARED CURB ENDS.
- THE JOINT SPACING AND DETAILS SHOWN SHALL APPLY TO SIDEWALKS WHEN SHOWN IN THE PLANS.



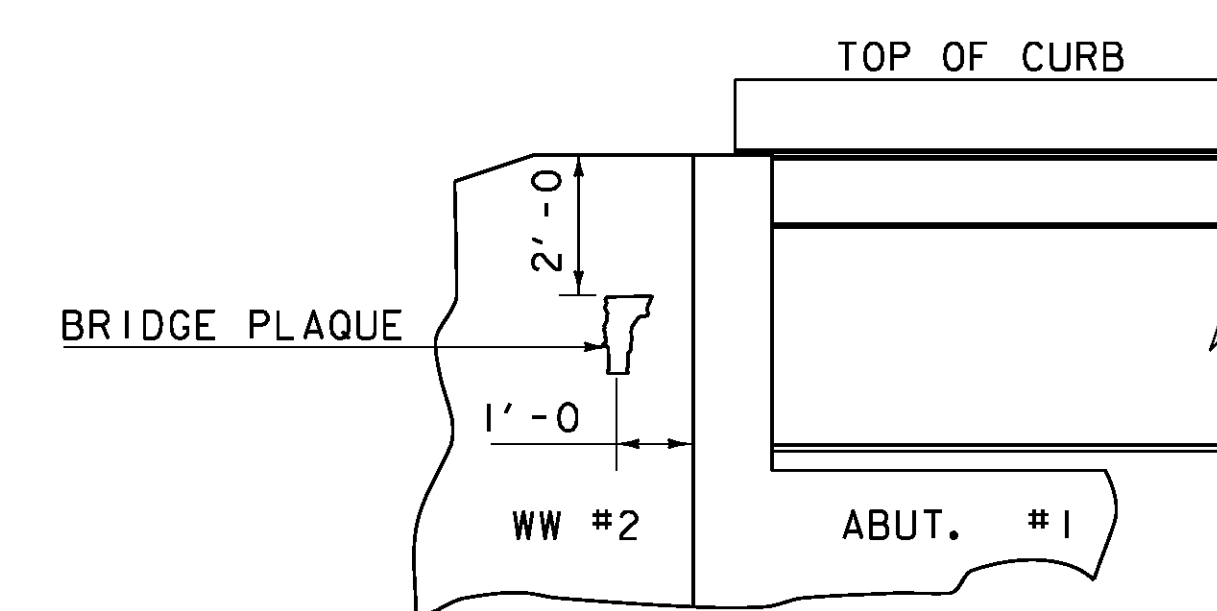
HORIZONTAL WINGWALL  
CONSTRUCTION JOINT  
(NOT TO SCALE)



DRIP NOTCH DETAIL  
(NOT TO SCALE)



PLAN



VIEW "A - A"

BRIDGE PLAQUE  
(NOT TO SCALE)

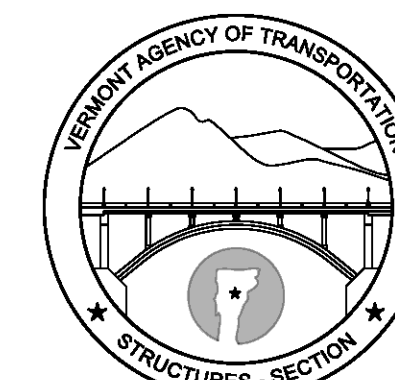
THE BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AT ABUTMENT #1 ON THE RIGHT SIDE AS SHOWN OR AS DIRECTED BY THE ENGINEER.

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

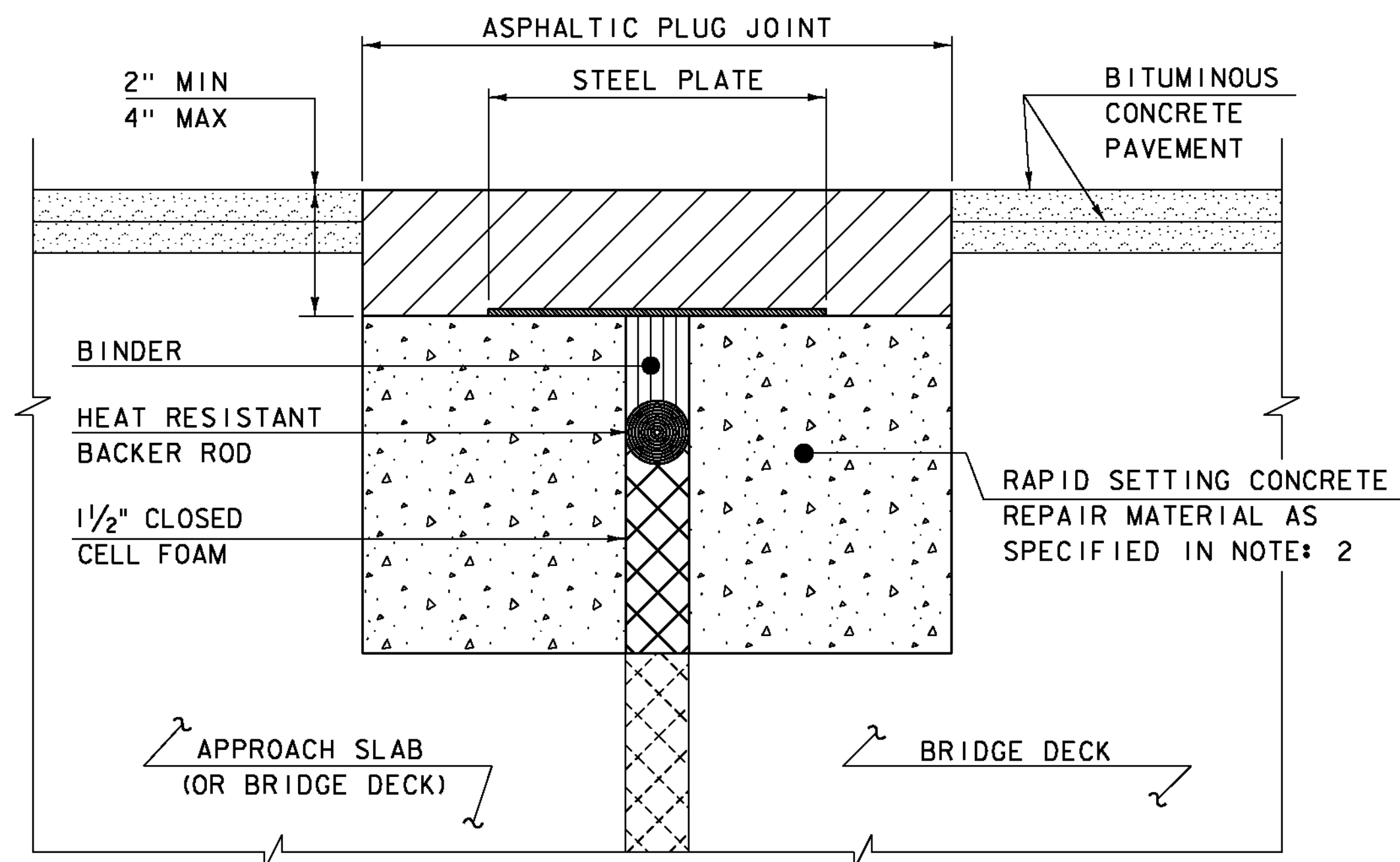
REVISIONS

MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
JUNE 4, 2010	MODIFIED AND ADDED TWO DETAILS
OCTOBER 10, 2012	MODIFIED HORZ. JOINT WINGWALL ADD 6" MIN. DIMENSION

CONCRETE  
DETAILS AND NOTES



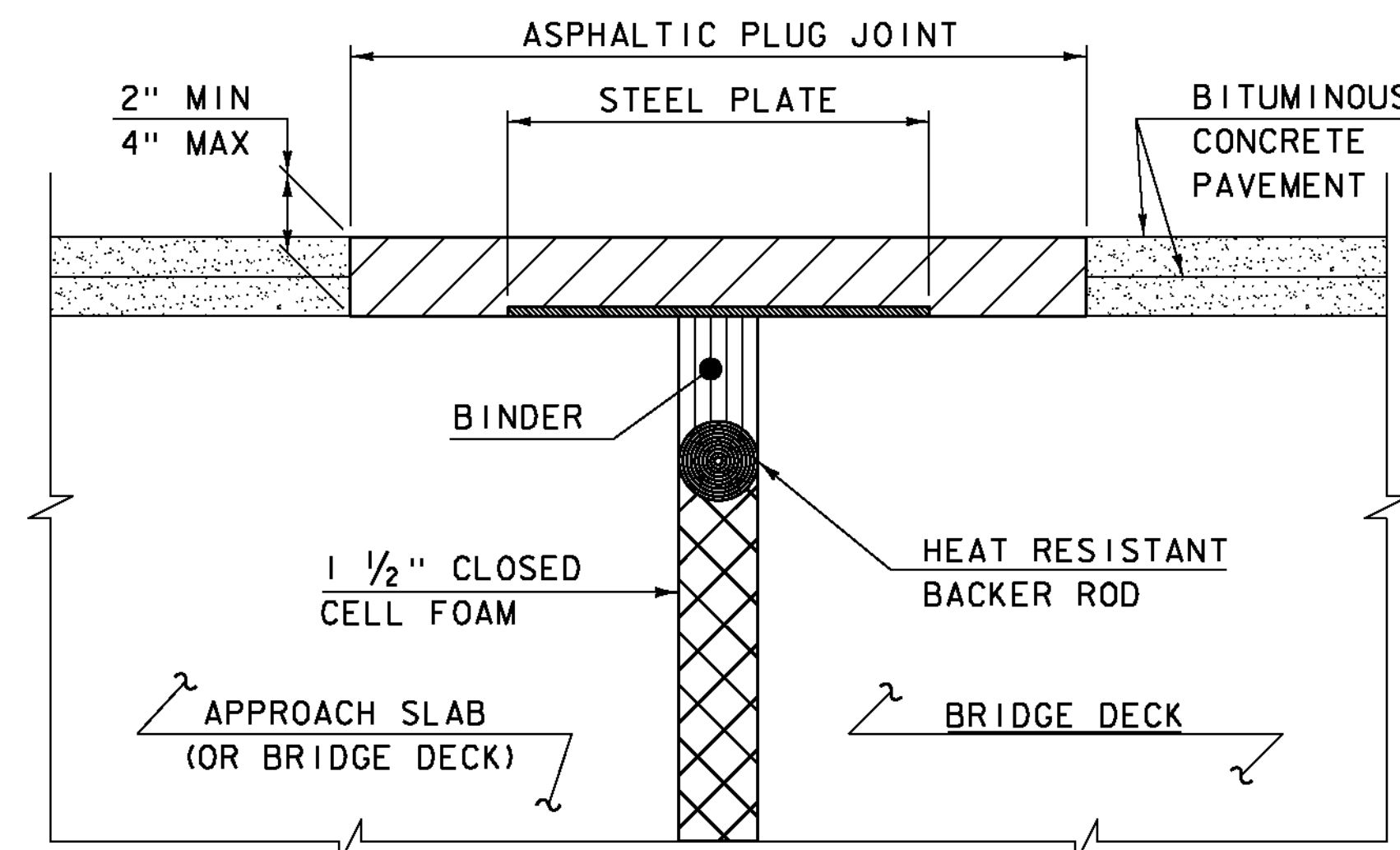
STRUCTURES  
DETAIL  
SD-502.00



**ASPHALTIC PLUG JOINT DETAIL - REHAB**

**NOTES:**

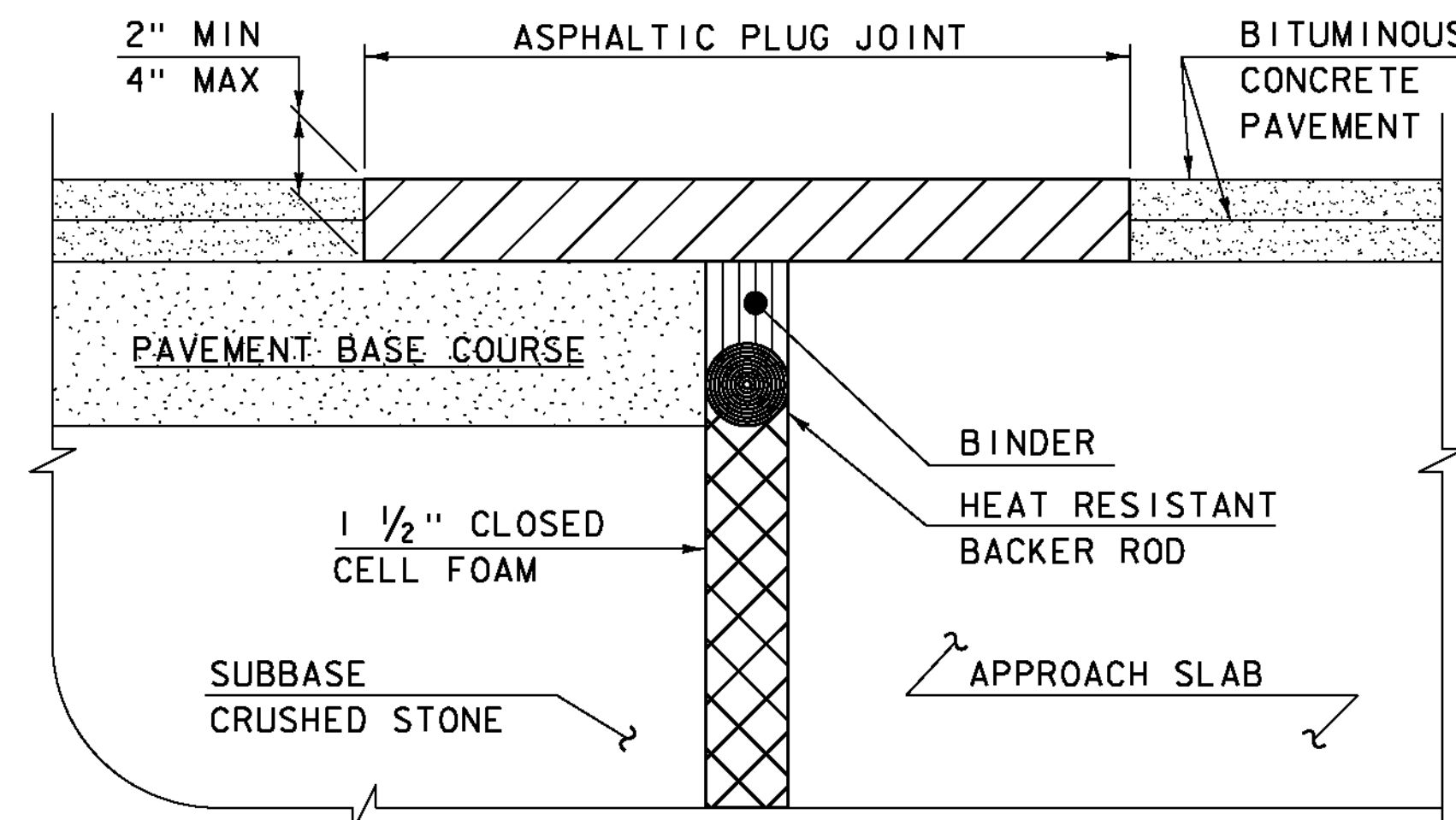
1. THE CONTRACTOR SHALL REMOVE ALL ASPHALTIC PLUG JOINT MATERIAL AND DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER. REMOVAL OF THE FIRST 4 INCHES OF MATERIAL SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG. ANY REMOVAL OF MATERIAL GREATER THAN 4 INCHES SHALL BE INCLUDED IN THE BID PRICE OF ITEM 580.20 RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE.
2. THE CONTRACTOR SHALL REPLACE REMOVED MATERIAL THAT IS LESS THAN 4" FROM FINISHED GRADE WITH ASPHALTIC PLUG JOINT MATERIAL MEETING THE REQUIREMENTS OF SUBSECTION 707.15. ALL REMOVED MATERIAL THAT IS GREATER THAN 4 INCHES FROM FINISHED GRADE SHALL BE REPLACED WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.
4. PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER. THE STEEL PLATES MAY BE OMITTED WHERE THE ENGINEER DETERMINES THAT THE APPROACH SLAB OR BRIDGE DECK WILL PROVIDE INADEQUATE SUPPORT AND WHERE VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.



**ASPHALTIC PLUG JOINT DETAIL "A" - NEW**

**NOTE:**

PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER.



**ASPHALTIC PLUG JOINT DETAIL "B" - NEW**

**ASPHALTIC PLUG JOINT NOTES**

**INSTALLATION:**

1. LOCATE THE JOINT CENTRALLY OVER THE DECK OVERLAY EXPANSION GAP OR FIXED JOINT, MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.
2. REMOVE THE BITUMINOUS CONCRETE PAVEMENT FULL DEPTH AS SHOWN ON THE PLANS. THE PAVEMENT SHALL BE DRY AND SAW CUT TO THE LIMITS REQUIRED TO PLACE THE JOINT. A PNEUMATIC HAMMER AND CHISEL MAY BE USED ADJACENT TO THE CURB ONLY WHEN SAW CUTTING IS NOT POSSIBLE.
3. BLAST CLEAN THE JOINT AREA OF DEBRIS, ASPHALT AND SHEET MEMBRANE. THOROUGHLY DRY THE JOINT AREA WITH COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.
4. PLACE PROPERLY SIZED HEAT RESISTANT BACKER ROD IN THE MOVEMENT GAP ALLOWING FOR 1" +/- OF BINDER ABOVE THE ROD.
5. HEAT AND PLACE THE BINDER MATERIAL AS RECOMMENDED BY THE MANUFACTURER.
6. IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.

**WEATHER LIMITATIONS**

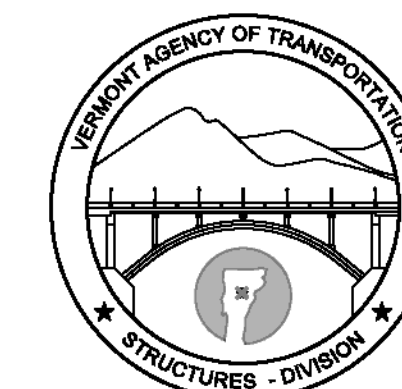
APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL OR AS RECOMMENDED BY THE MANUFACTURER:

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

DETAILS ON THIS SHEET ARE NOT TO SCALE.

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

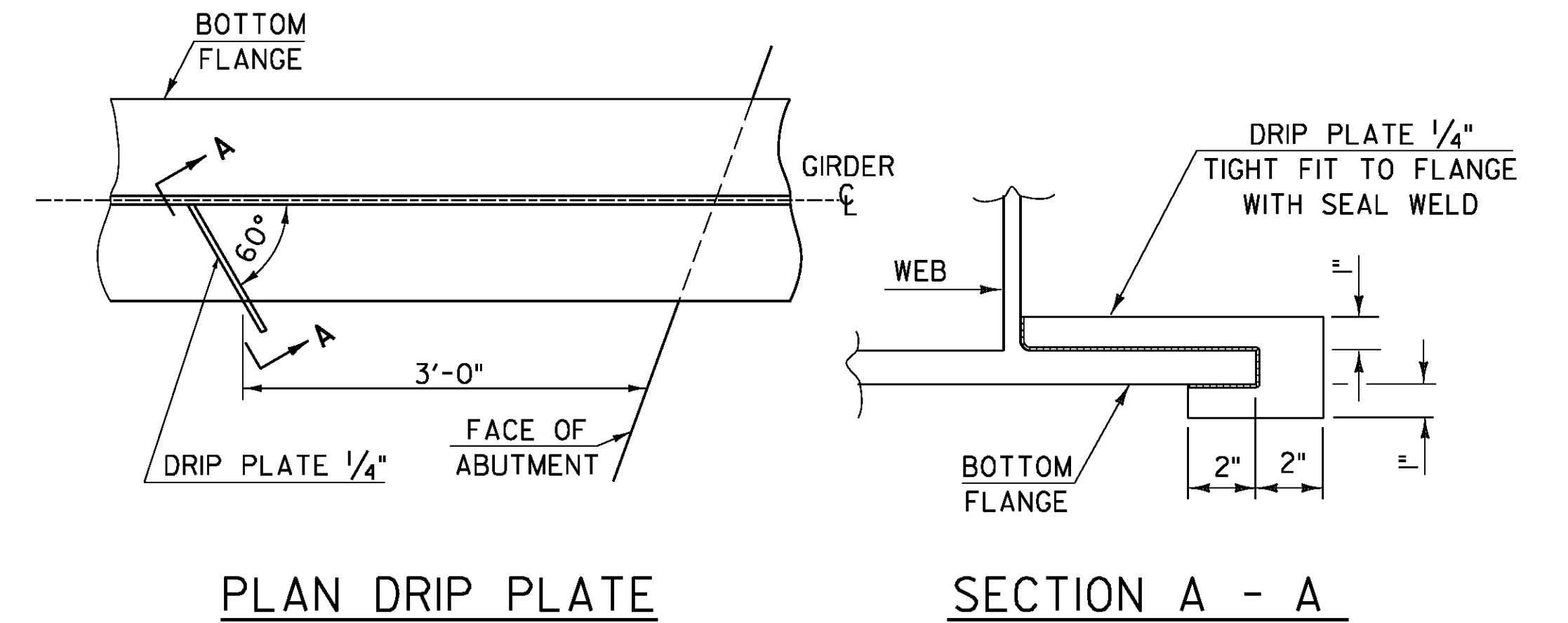
**BRIDGE JOINT  
ASPHALTIC PLUG**



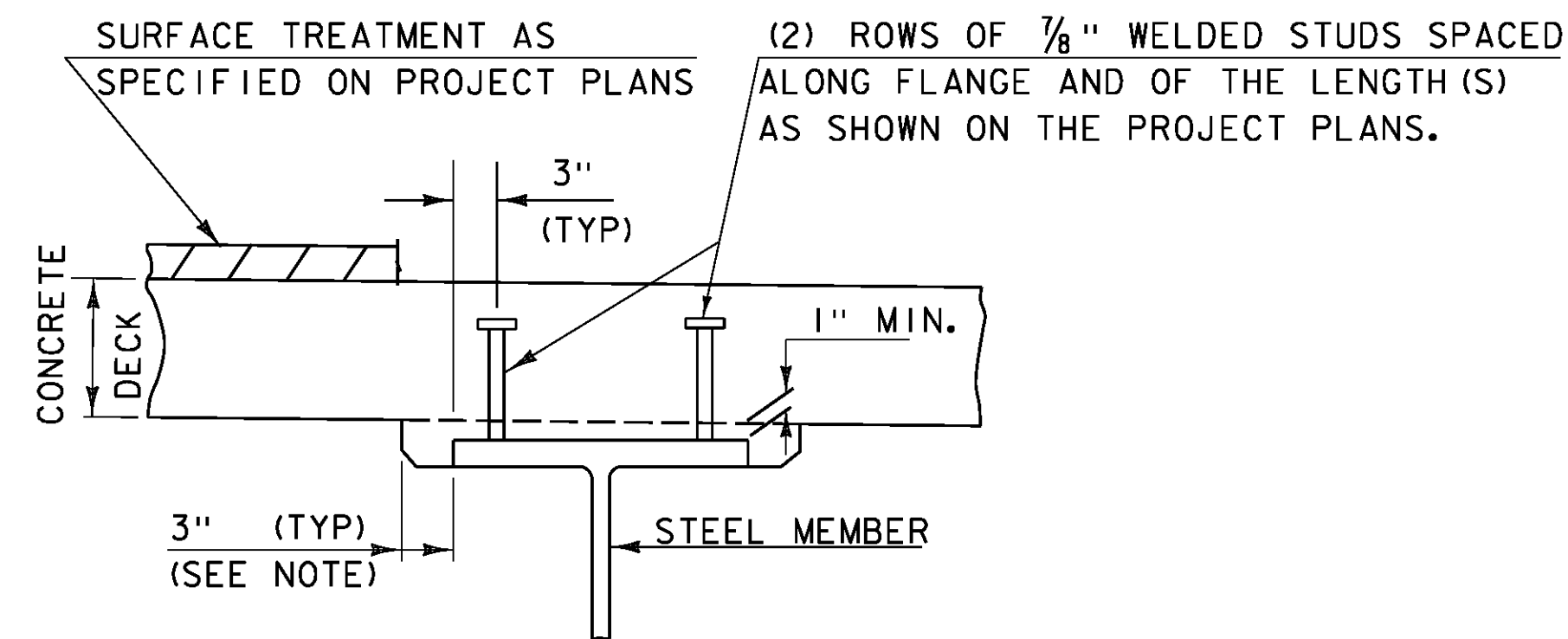
**STRUCTURES  
DETAIL  
SD-516.10**

STRUCTURAL STEEL GENERAL NOTES:

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

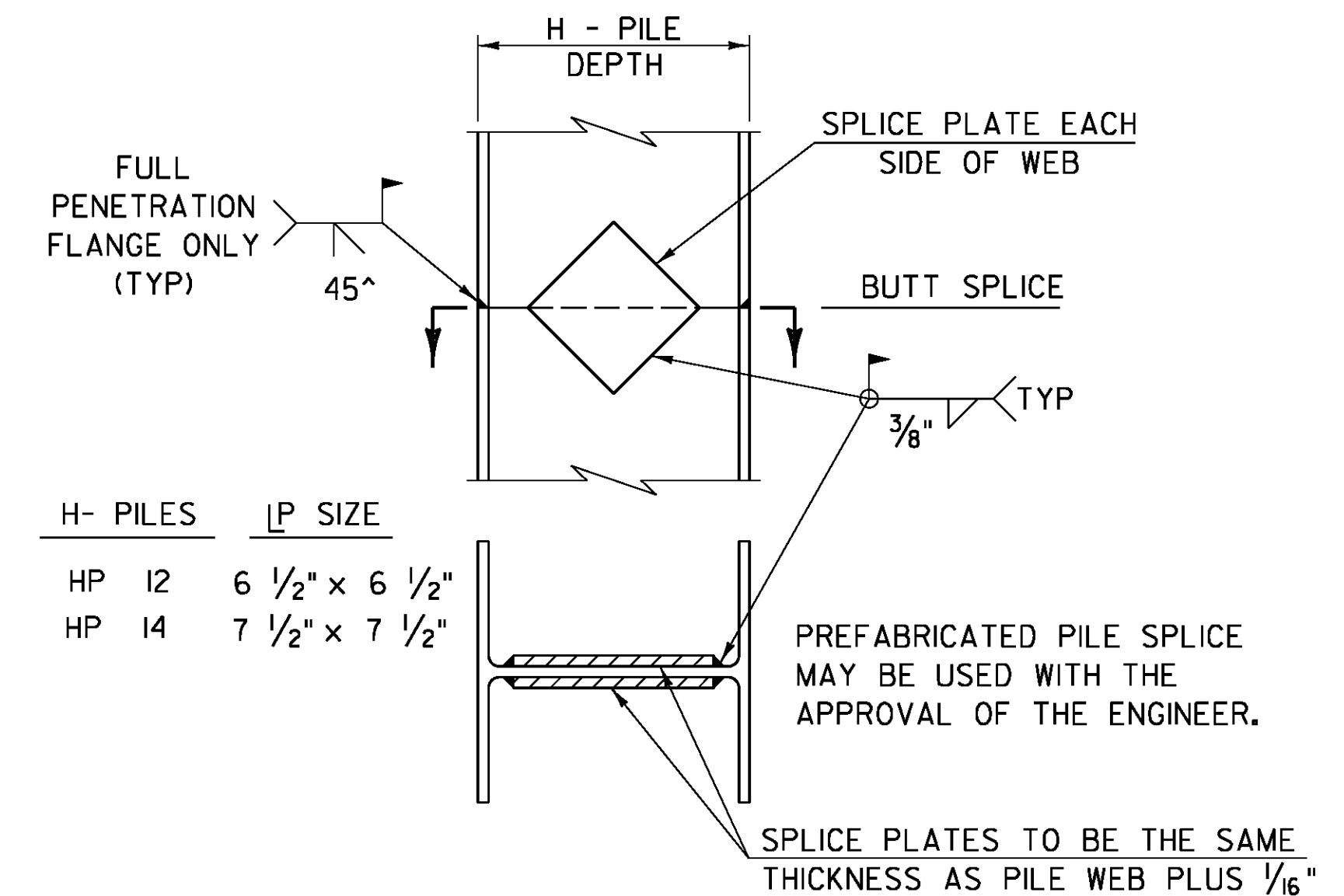


NOTE: DRIP PLATES SHALL BE PLACED ON OUTSIDE EDGE OF FASCIA GIRDERS ON THE HIGH SIDE OF ALL PIERS AND ABUTMENTS OR AS INDICATED ON PROJECT PLANS.



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

HAUNCH AND SHEAR CONNECTOR DETAIL

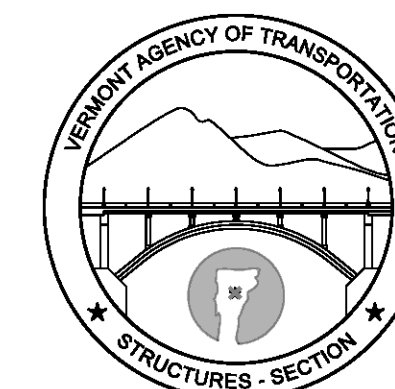


DETAIL OF PILE SPLICE

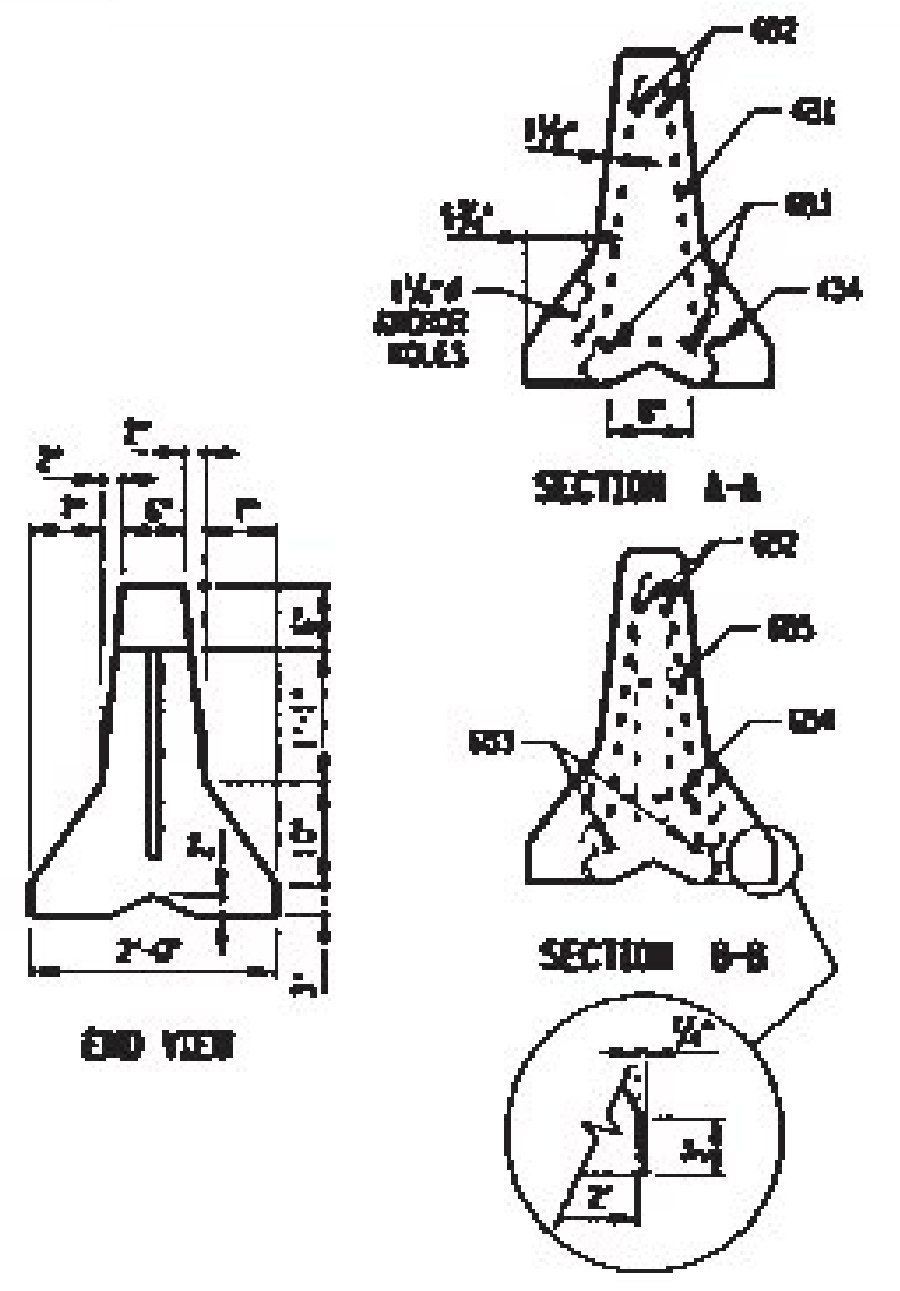
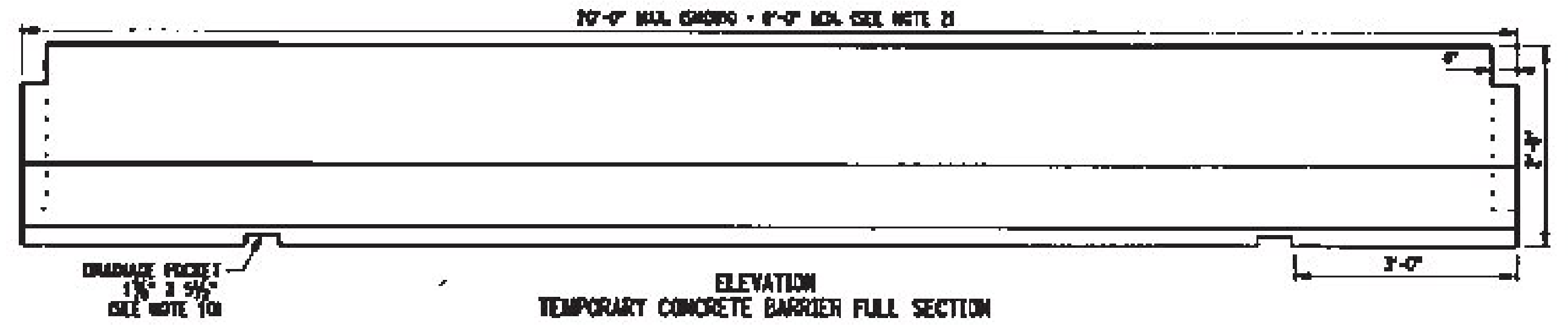
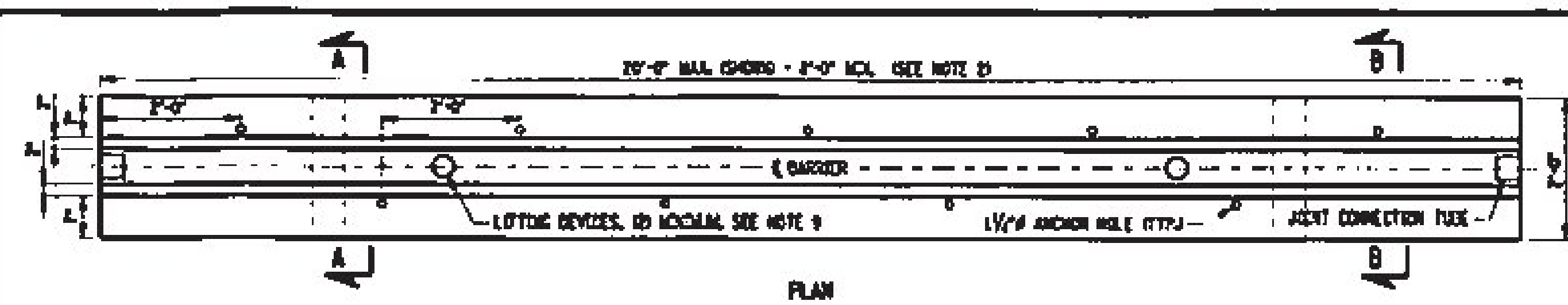
DETAILS ON THIS SHEET ARE "NOT TO SCALE" UNLESS NOTED OTHERWISE.

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

# STRUCTURAL STEEL DETAILS & NOTES



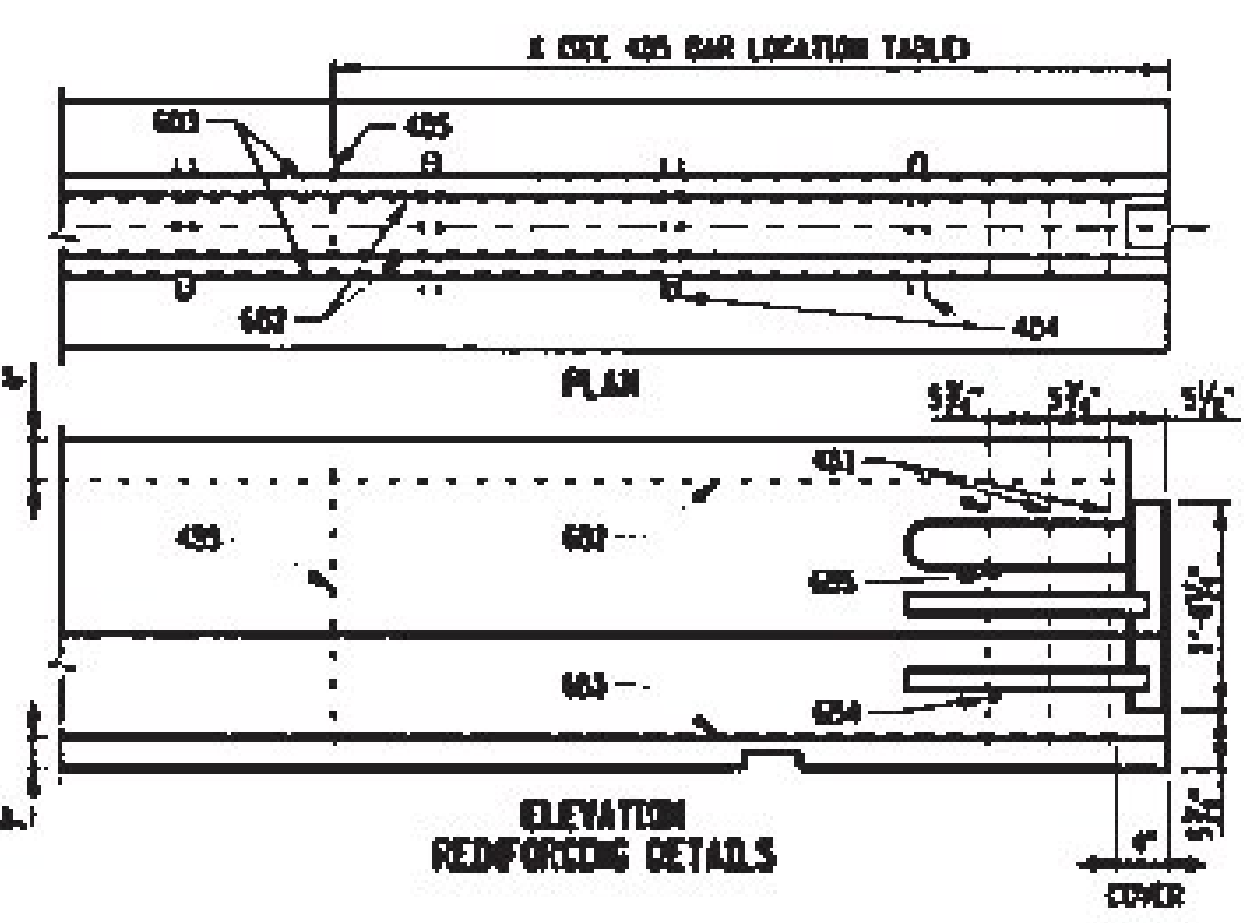
# STRUCTURES DETAIL SD-601.00



- NOTES**
- TEMPERARY CONCRETE BARRIER SHALL BE PRECAST IN ACCORDANCE WITH THE REQUIREMENTS OF SP14-04 PRECAST CONCRETE BARRIER.
  - TEMPERARY CONCRETE BARRIER SHALL BE PRECAST UNITS OF ONE OF THE FOLLOWING NOMINAL LENGTHS 8', 10', 12', 14', 16', 18', 20'.
  - STEEL PLATE REINFORCEMENT SHALL BE ASTM A36, ASTM GRADE 305 STEEL. THESE REINFORCEMENTS SHALL BE ASTM A36, GRADE B OR C, AND REINFORCING BARS SHALL BE #414, GRADE 60. EPOXY BARS ARE NOT REQUIRED.
  - ALL WELDING SHALL BE PERFORMED BY A WELDER QUALIFIED IN ACCORDANCE WITH SECTION 8 OF THE NYS STEEL CONSTRUCTION MANUAL.
  - SURFACES TO BE WELDED SHALL BE FREE OF SLAG, RUST, MOISTURE, GREASE OR ANY OTHER MATERIAL THAT WILL PREVENT PROPER WELDING OR PRODUCE OBJECTIONABLE FUMES.
  - WELDING SHALL BE SHIELDED METAL ARC WELDING USING PROPERLY DRIED 1/2\"/>

**FULL SECTION BAR LIST**

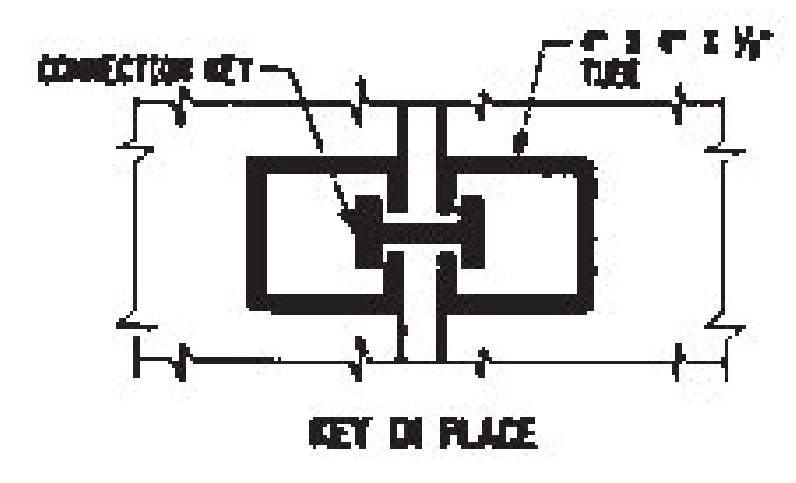
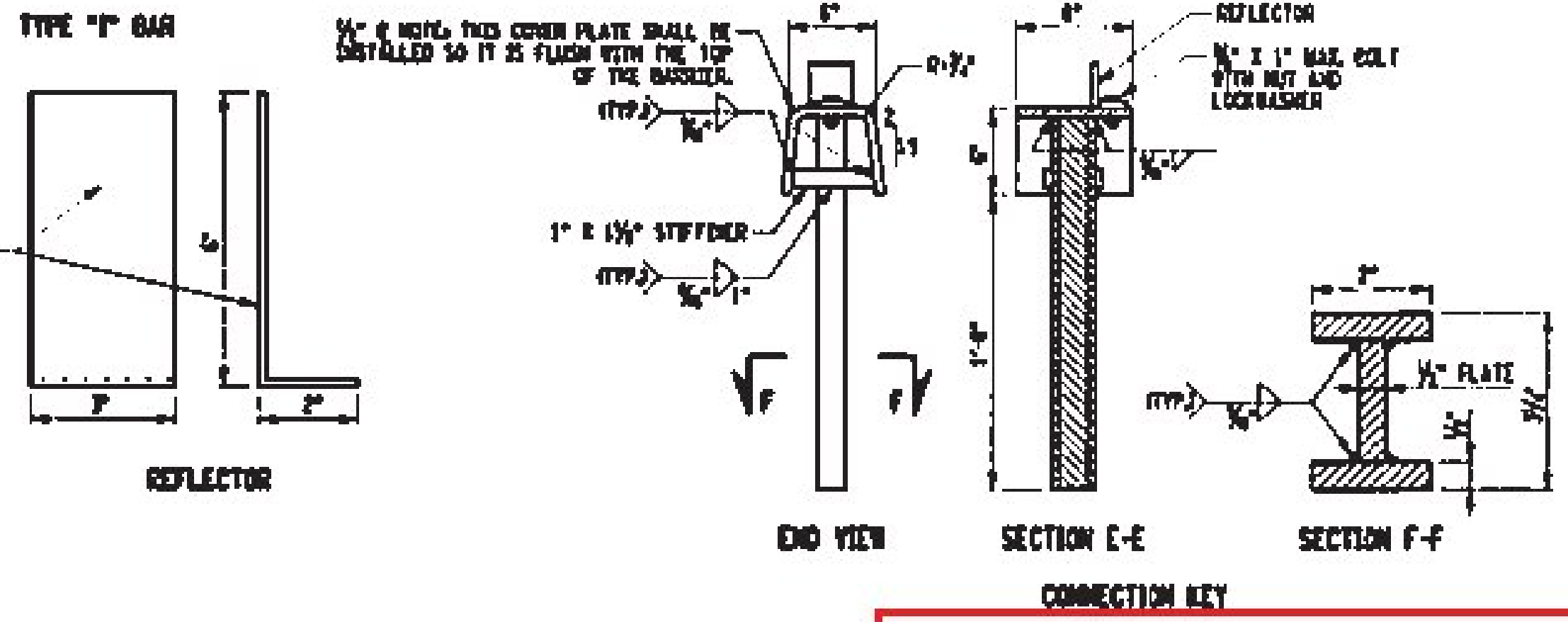
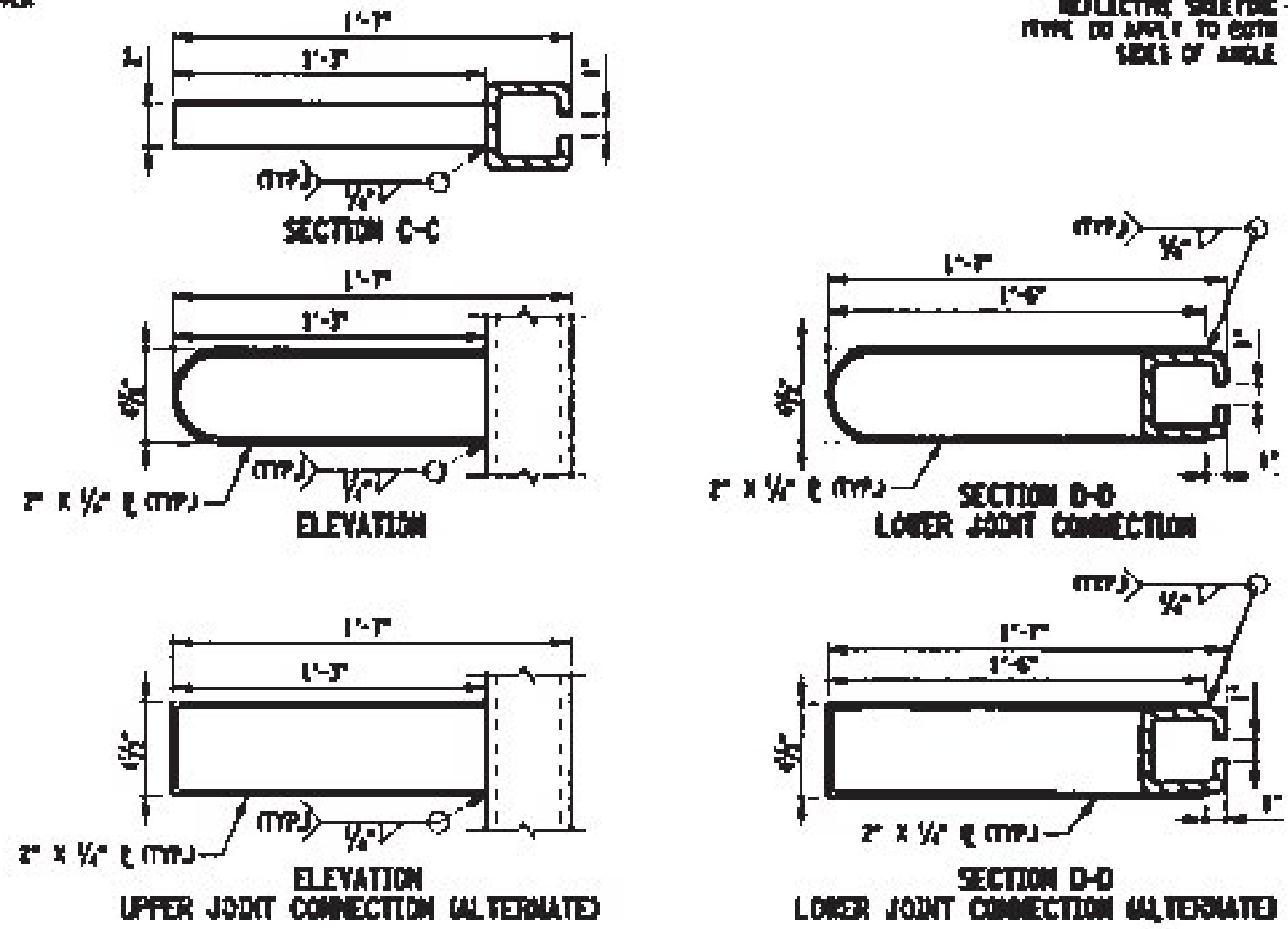
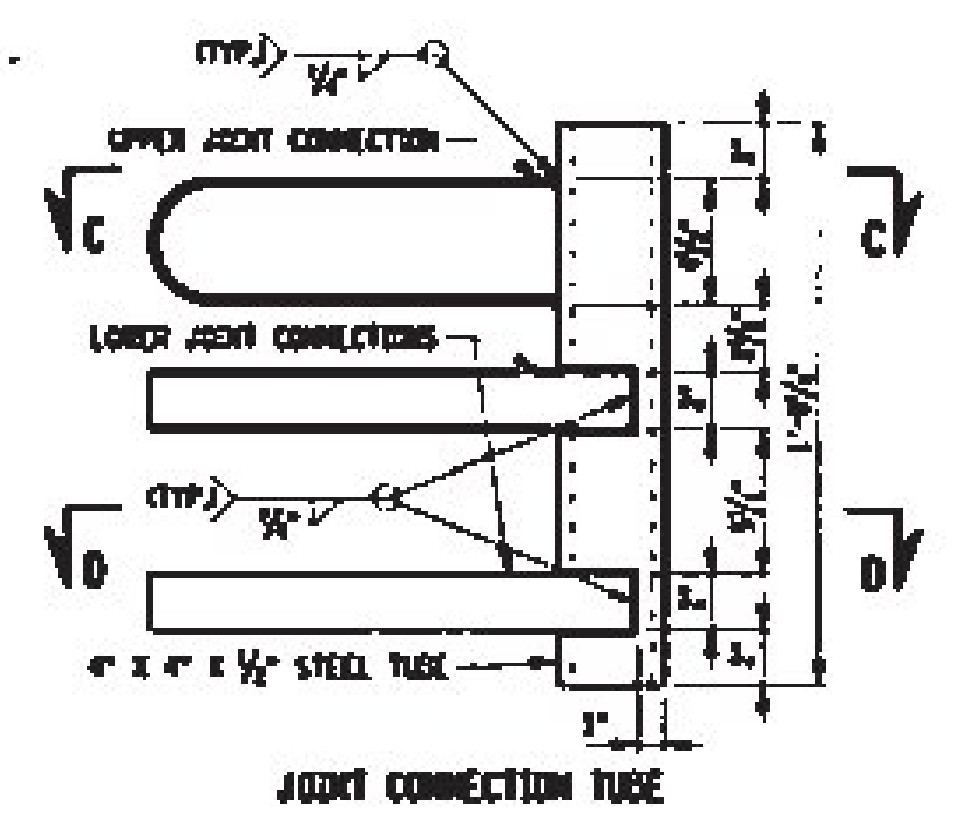
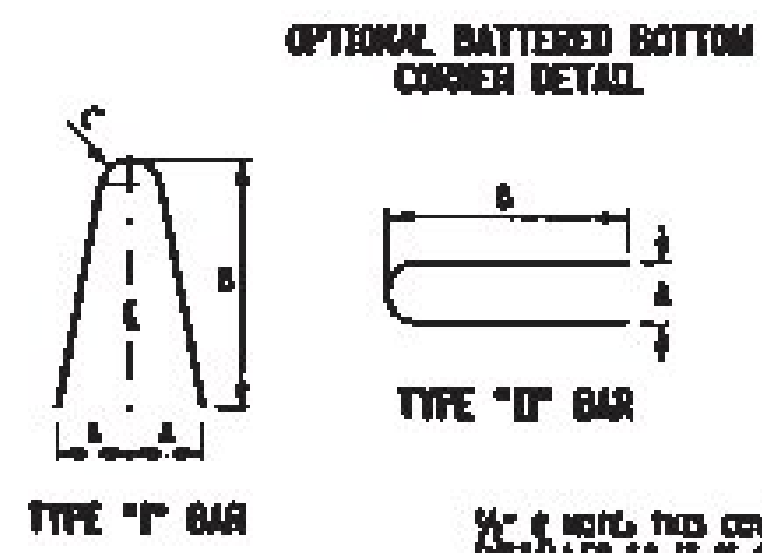
MARK	SIZE	NUMBER PER SECTION	LENGTH	TYPE	A	B	C	LOCATION
401	4	6	4'-11"	L	8"	20"	1"	STIRRUPS
404	4	SEE TABLE	2'-1"	U	4"	18"		ANCHOR RECESS HOOPS
405	4	1 PER ACCESS	4'-11"	L	5"	20"	1"	STIRRUPS
602	6	2	SEE NOTE 7	STR.				LONGITUDINAL TOP
603	6	2	SEE NOTE 7	STR.				LONGITUDINAL BOTTOM
604	6	2	1'-8"	STR.				TRANSVERSE BOTTOM
605	6	2	6"	STR.				TRANSVERSE TOP



**4x4x1/2\"/>**

NOMINAL LENGTH OF BARRIER UNIT	X	NO. EACH SECTION
20'	8'-11"	2
18'	6'-9"	2
16'	5'-11"	2
14'	7'	1
12'	6'	1
10'	5'	1
8'	N/A	0

*2\"/>*



STATE OF NEW YORK  
DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY STANDARD SHEET

TEMPERARY CONCRETE BARRIER  
(SHEET 1 OF 3)

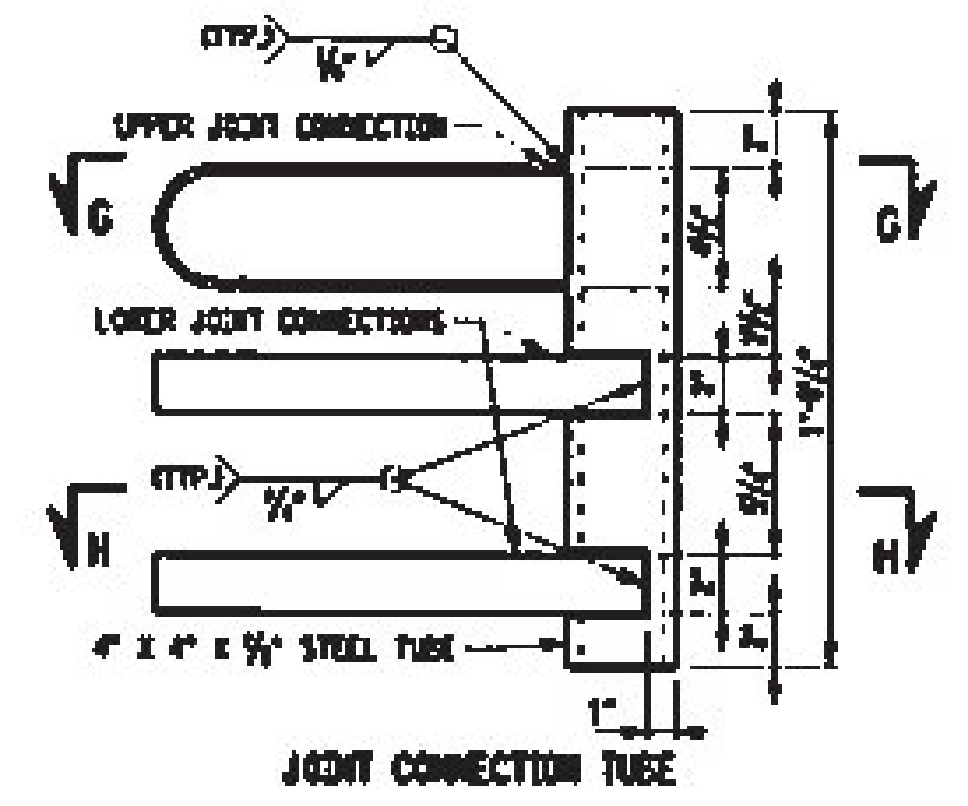
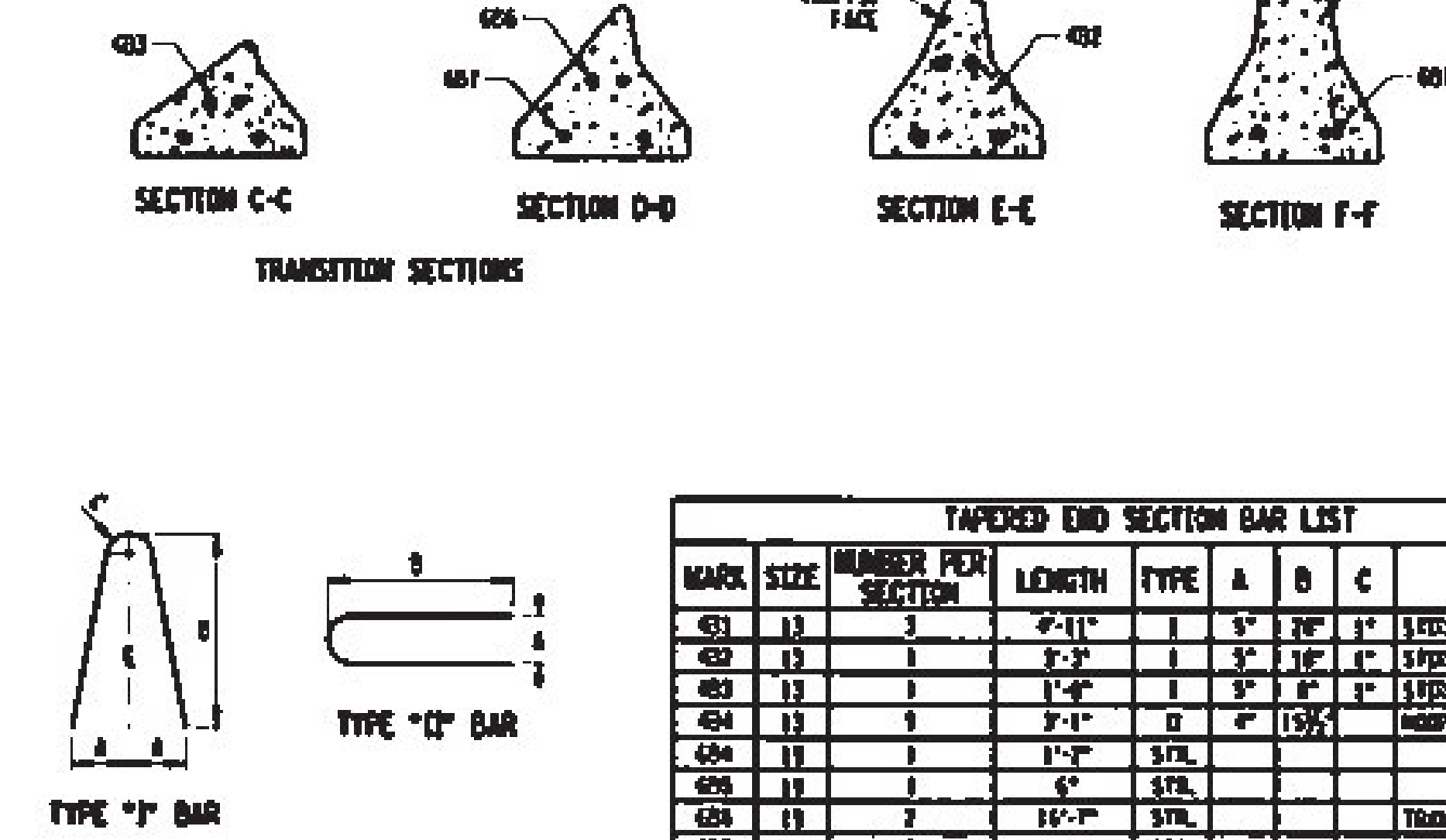
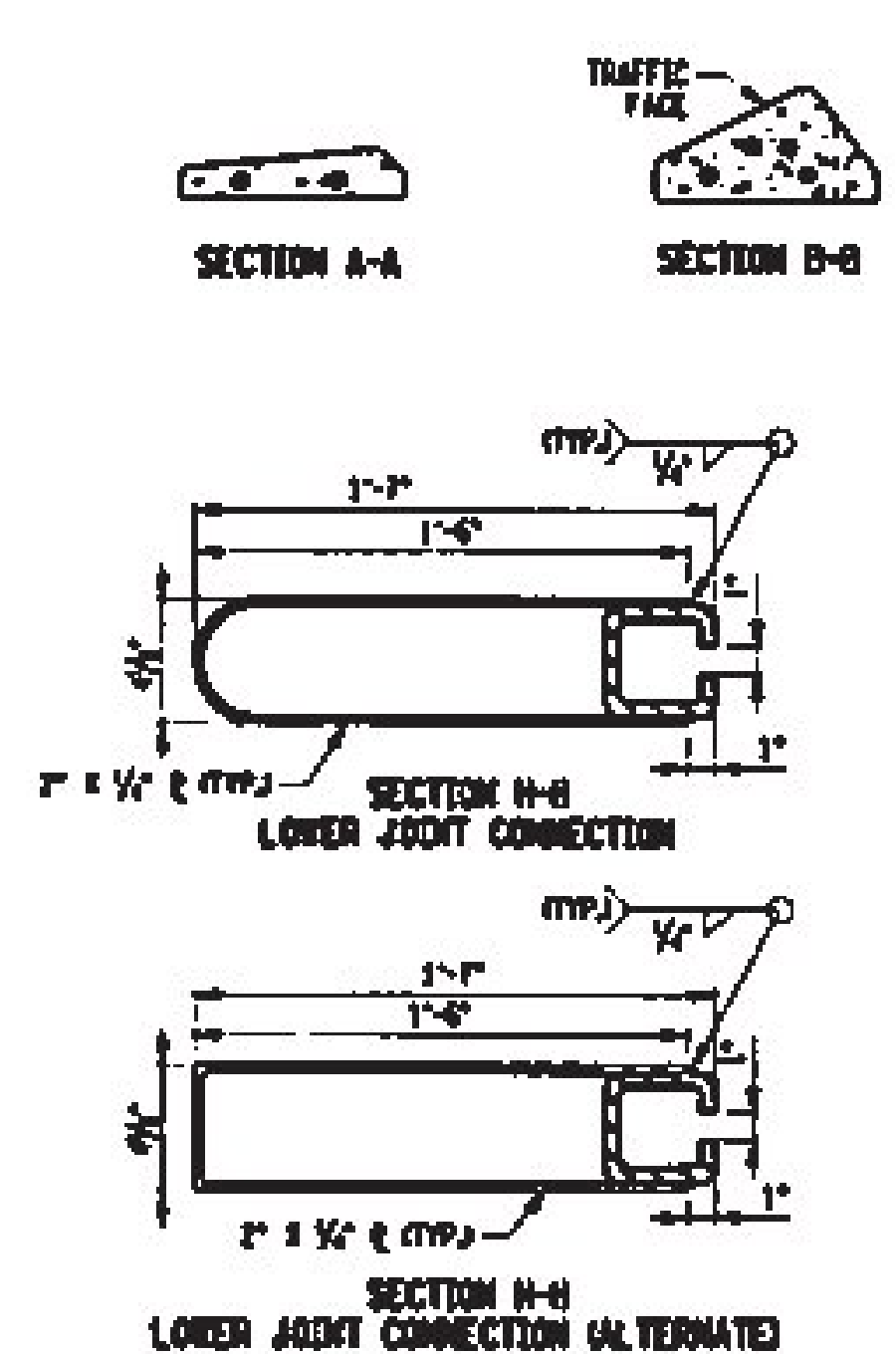
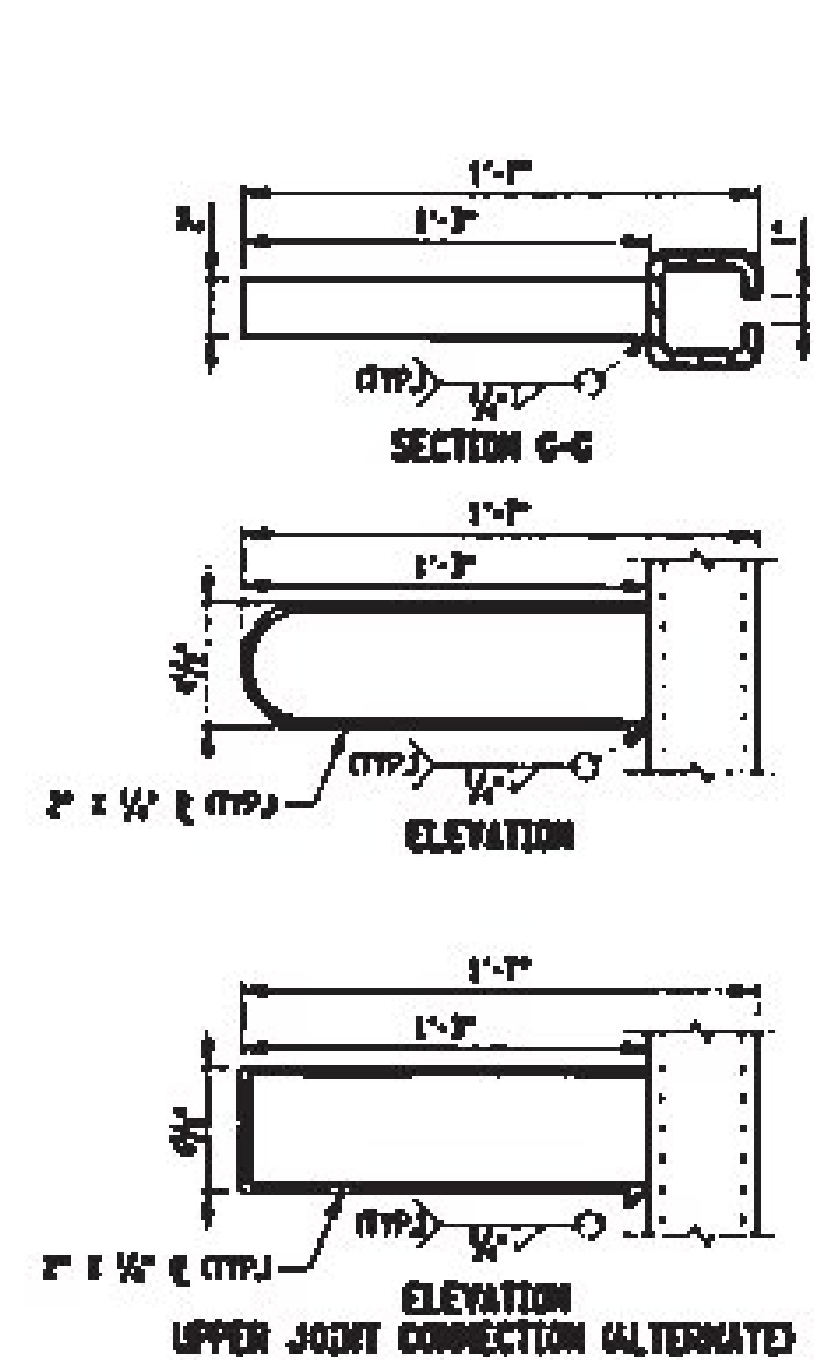
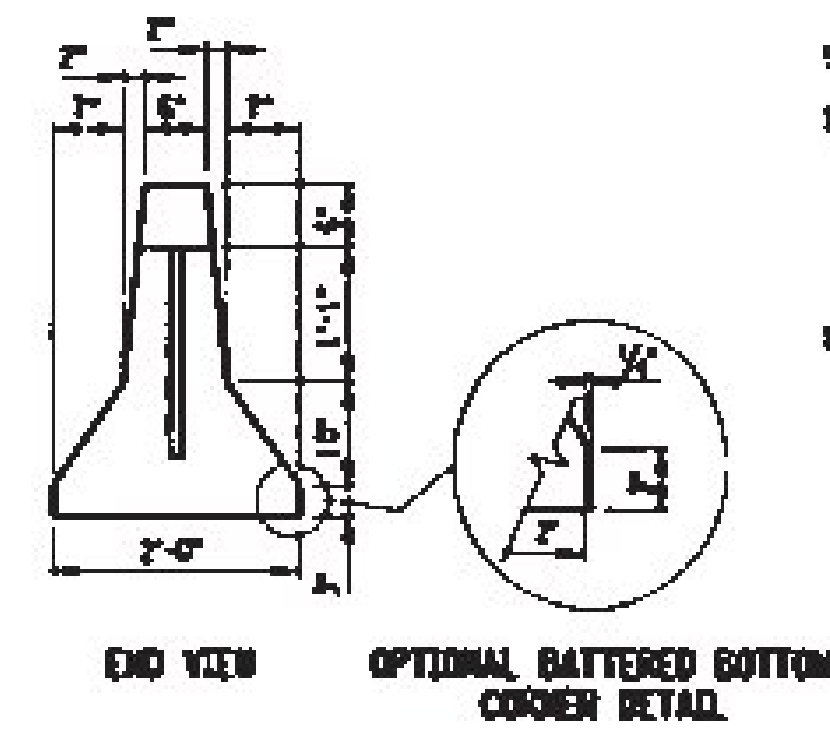
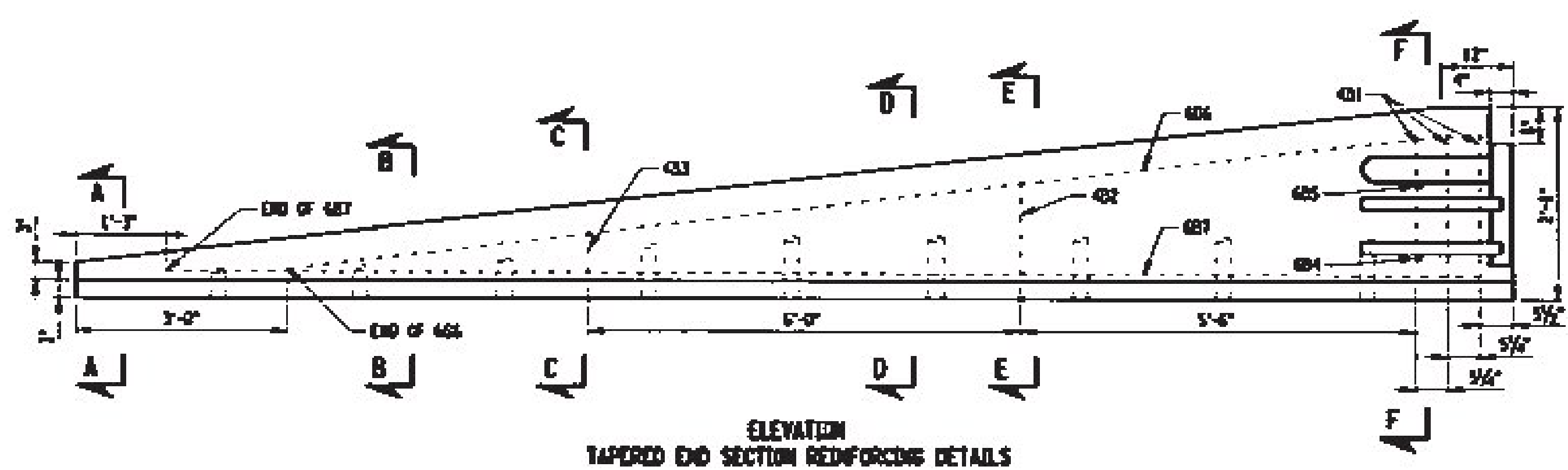
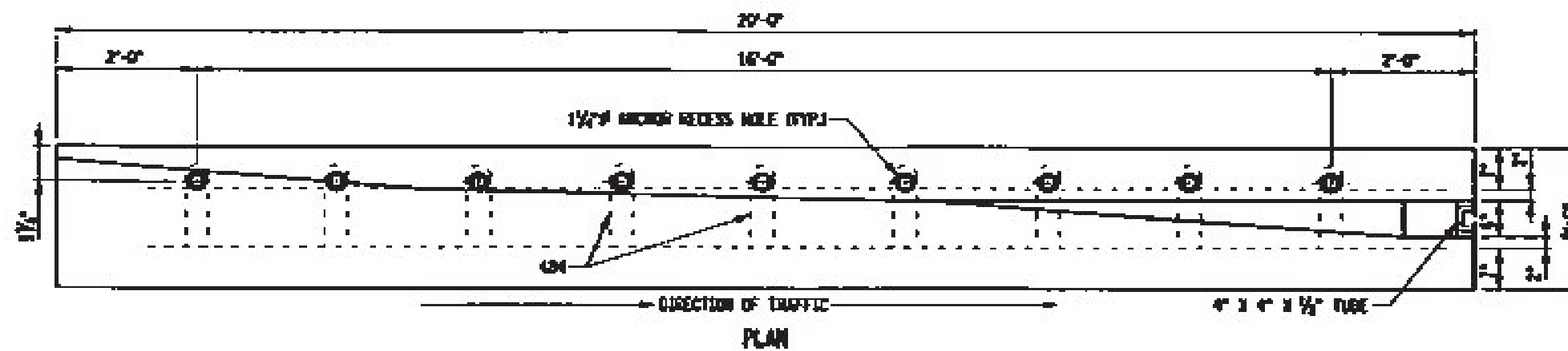
APPROVED SEPTEMBER 30, 2009 ISSUED UNDER ED 09-03

/s/ J. F. TYNAN, P.E.  
DEPUTY CHIEF ENGINEER  
CONSTRUCTION

619-01

EFFECTIVE DATE: 01/07/10

FILE NAME: 619-01A.DWG  
DATE: 09-08-09  
USER: JFT  
PLT: JFT



TAPERED END SECTION BAR LIST								
MARK	SIZE	NUMBER PER SECTION	LENGTH	TYPE	A	B	C	LOCATION
A01	12	3	4'-11"	I	3"	20"	3"	STIRRUPS
A02	12	1	3'-3"	I	3"	16"	4"	STIRRUPS
A03	12	1	1'-4"	I	3"	8"	3"	STIRRUPS
A04	12	1	2'-1"	II	4"	15 1/2"		HOOPS
A05	12	1	1'-3"	STL				TRANSVERSE TOP
A06	12	2	16'-2"	STL				TRANSVERSE BOTTOM

- NOTES:
- TEMPORARY CONCRETE BARRIER SHALL BE PRECAST IN ACCORDANCE WITH THE REINFORCEMENTS OF SP04-02, PRECAST CONCRETE BARRIER.
  - STEEL PLATE SHALL BE ASTM A36, ASTM GRADE 36L TUBE STEEL SHALL BE ASTM A500 GRADE B OR C, AND REINFORCING BARS SHALL BE A615 GRADE 42S.
  - ALL WELDING SHALL BE PERFORMED BY A QUALIFIED WELDER IN ACCORDANCE WITH SECTION 6 OF THE NYS STEEL CONSTRUCTION MANUAL.
  - SURFACES TO BE WELDED SHALL BE FREE OF SLAG, RUST, MOISTURE, GREASE OR ANY OTHER MATERIAL THAT WILL PREVENT PROPER WELDING OR PRODUCE OBJECTIONABLE FUMES.
  - WELDING SHALL BE SHIELDED METAL ARC WELDING USING PROPERLY DRIED  $\frac{1}{8}$ " (T10) ELECTRODES CONFORMING TO THE REINFORCEMENTS OF SECTION 7 OF THE NYS STEEL CONSTRUCTION MANUAL.
  - CONCRETE CLEAR COVER FOR REINFORCING BARS SHALL BE 1 1/2" MIN. EXCEPT WHERE OTHERWISE SPECIFIED.
  - A MINIMUM OF 400 TWO RECESSED LIFTING DEVICES, WITH THE CAPACITY TO LIFT A MASS OF 6 TONS EACH, SHALL BE INSTALLED ON EACH SEGMENT.
  - 1/2" ASTM A36 ANCHOR BOLTS SHALL BE PLACED IN FOUR RECESSES OF EACH SEGMENT TO BE PINNED.
  - CONNECTION KEY COVER PLATE SHALL BE INSTALLED FULLY WITH THE GUARD RAIL.
  - THE DETAILS SHOWN FOR THE END SECTIONS ON THIS SHEET ARE FOR APPROACH ENDS WHICH ARE TO BE LOCATED TO THE LEFT OF THE TRAFFIC FLOW ON ONE-WAY OPERATIONS OR BETWEEN OPPOSING FLOWS OF TRAFFIC ON TWO-WAY OPERATIONS, WHEN AN APPROACH END IS TO BE LOCATED TO THE RIGHT OF THE TRAFFIC FLOW, THE END SEGMENT SHALL BE CONSTRUCTED SO THAT IT IS OPPOSITE-SIDE REVERSED IN ALL CONFIGURATIONS, ANCHOR BOLT LOCATIONS AND REINFORCEMENT.
  - ALL CORNERS ON THE TOP OF THE SEGMENT SHALL BE ROUNDED TO A 1" RADIUS. THE SEGMENT SHALL MAKE A SMOOTH TRANSITION TO A 6" END-OF-SECTION HEIGHT. ALL END SECTIONS SHALL BE PINNED UNLESS OTHERWISE NOTED.

STATE OF NEW YORK  
DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY STANDARD SHEET

TEMPORARY CONCRETE BARRIER  
(SHEET 2 OF 3)

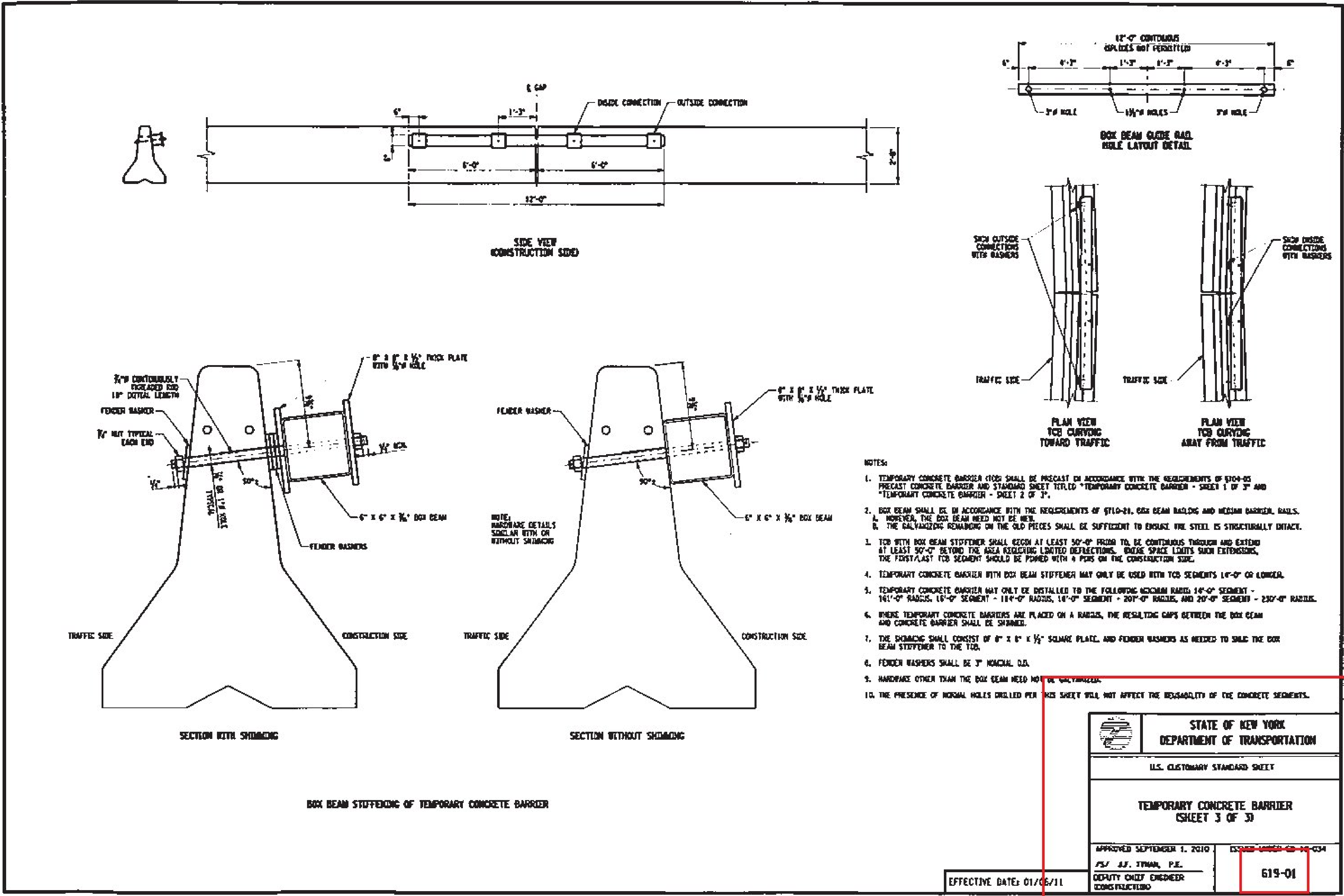
APPROVED SEPTEMBER 30, 2009 ISSUED UNDER E.O. 99-079

J. F. FRYMAN, P.E.  
DEPUTY CHIEF ENGINEER  
CONSTRUCTION


619-01

EFFECTIVE DATE: 01/07/10

FILE NAME: CON-REC-LETTING-07  
DATE/TIME: 10:50:58 AM  
USER: J.FRYMAN




- NOTES:
- TEMPORARY CONCRETE BARRIER (TCB) SHALL BE PRECAST IN ACCORDANCE WITH THE REQUIREMENTS OF STD-05 PRECAST CONCRETE BARRIER AND STANDARD SHEET TITLED "TEMPORARY CONCRETE BARRIER - SHEET 1 OF 3" AND "TEMPORARY CONCRETE BARRIER - SHEET 2 OF 3".
  - BOX BEAM SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF STD-01, BOX BEAM RAILING AND MEDIUM BARRIER, RAILS.
    - HOWEVER, THE BOX BEAM NEED NOT BE NEW.
    - THE GALVANIZING REMAINING ON THE OLD PIECES SHALL BE SUFFICIENT TO ENSURE THE STEEL IS STRUCTURALLY INTACT.
  - TCB WITH BOX BEAM STIFFENER SHALL BEGIN AT LEAST 50'-0" FROM TO, BE CONTINUOUS THROUGH AND EXTEND AT LEAST 50'-0" BEYOND THE AREA REQUIRING LIMITED DEFLECTIONS. THESE SPACE LIMITS SHALL EXTEND, THE FIRST/LAST TCB SEGMENT SHOULD BE FORMED WITH 4 PINS ON THE CONSTRUCTION SIDE.
  - TEMPORARY CONCRETE BARRIER WITH BOX BEAM STIFFENER MAY ONLY BE USED WITH TCB SEGMENTS 14'-0" OR LONGER.
  - TEMPORARY CONCRETE BARRIER MAY ONLY BE INSTALLED TO THE FOLLOWING MINIMUM RADII: 14'-0" SEGMENT - 161'-0" RADIUS, 18'-0" SEGMENT - 114'-0" RADIUS, 14'-0" SEGMENT - 201'-0" RADIUS, AND 20'-0" SEGMENT - 232'-0" RADIUS.
  - WHERE TEMPORARY CONCRETE BARRIERS ARE PLACED ON A RADIUS, THE RESULTING GAPS BETWEEN THE BOX BEAM AND CONCRETE BARRIER SHALL BE SHIMMED.
  - THE SHIMMING SHALL CONSIST OF 8" x 8" x 1/2" SQUARE PLATE, AND FENDER WASHERS AS NEEDED TO SHIM THE BOX BEAM STIFFENER TO THE TCB.
  - FENDER WASHERS SHALL BE 3" NOMINAL O.D.
  - HARDWARE OTHER THAN THE BOX BEAM NEED NOT BE GALVANIZED.
  - THE PRESENCE OF NORMAL HOLES DRILLED PER THIS SHEET WILL NOT AFFECT THE DURABILITY OF THE CONCRETE SEGMENTS.

 <b>STATE OF NEW YORK DEPARTMENT OF TRANSPORTATION</b>	
U.S. CUSTOMARY STANDARD SHEET	
<b>TEMPORARY CONCRETE BARRIER (SHEET 3 OF 3)</b>	
APPROVED SEPTEMBER 1, 2010	ISSUED UNDER CD-10-034
<b>J.J. TYMAR, P.E.</b> DEPUTY CHIEF ENGINEER CONSTRUCTION	<b>619-01</b>

EFFECTIVE DATE: 01/06/11

FILE NAME: 619-013-007  
 DATE/TIME: 10-SEP-2010 10:44  
 USER: jtymar

To:		New York State Department of Transportation <b>ENGINEERING BULLETIN</b>	<b>EB 10-034</b>
		Expires one year after issue unless replaced sooner	
Title: <b>BOX BEAM STIFFENING OF TEMPORARY CONCRETE BARRIER</b>			
Distribution:		Approved:	
<input checked="" type="checkbox"/> Manufacturers (18)	<input type="checkbox"/> Surveyors (33)	/s/J.F. Tynan James F. Tynan, P.E. Deputy Chief Engineer (Construction)	8-31-10
<input checked="" type="checkbox"/> Local Govt. (31)	<input checked="" type="checkbox"/> Consultants (34)		Date
<input checked="" type="checkbox"/> Agencies (32)	<input checked="" type="checkbox"/> Contractors (39)		
	<input type="checkbox"/> _____ ( )		

**ADMINISTRATIVE INFORMATION:**

- This Engineering Bulletin (EB) is effective beginning with projects submitted for the letting of 01/06/11.
- This EB does not supersede any previous issuances.
- This standard sheet will be incorporated into the next complete printing of the Standard Sheets.

**PURPOSE:**

The purpose of this EB is to issue Standard Sheets *619-01 Temporary Concrete Barrier (Sheet 3 of 3)* and *M619-72 Box Beam Stiffening of Temporary Concrete Barrier*.

**TECHNICAL INFORMATION:**

- Box Beam Stiffening of Temporary Concrete Barrier is an option to limit the deflection of temporary concrete barrier to 2.2 feet for standard impact conditions (5000# pickup impacting at 62 mph and a 25° angle). Without box beam stiffening, the deflection was 3.3 feet. With all segments pinned and no box beam stiffening, the deflection was 0.7 feet.
- Standard Specification Section 619 will subsequently be modified to include construction details and separate payment items for Box Beam Stiffened Temporary Concrete Barrier. In the interim, if a designer plans to use this detail, he/she must submit a special specification to the Design Quality Assurance Bureau, Specification and Standards Section for approval. Contact Terry Hale at [terry.hale@dot.state.ny.us](mailto:terry.hale@dot.state.ny.us) or (518) 485-7009 for assistance.
- Standard Sheets 619-01, 1 of 2 and 2 of 2 will be renumbered to 1 of 3 and 2 of 3 on the website, but will not be reissued.

**TRANSMITTED MATERIALS:**

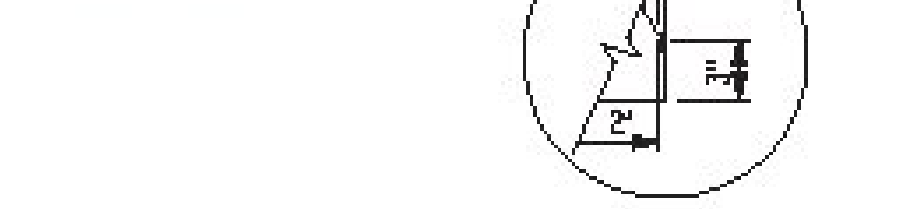
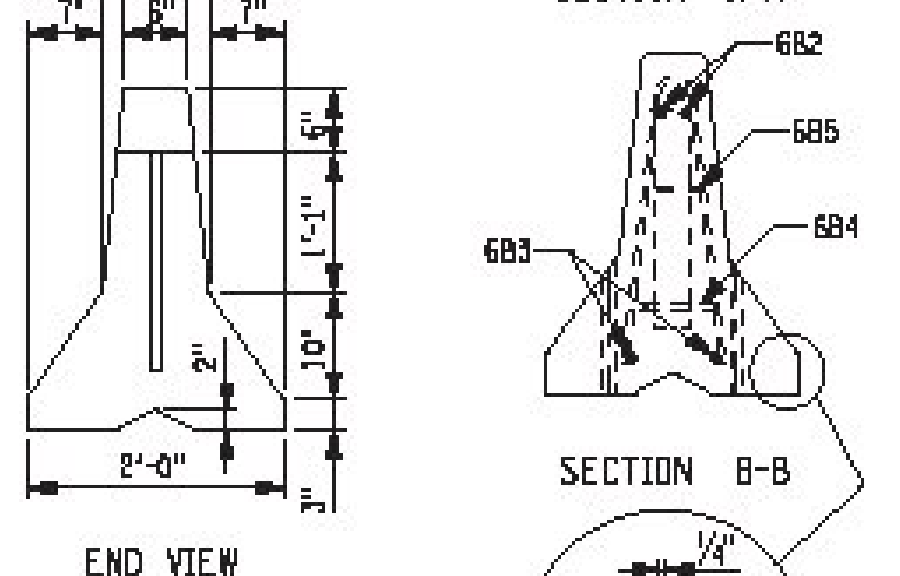
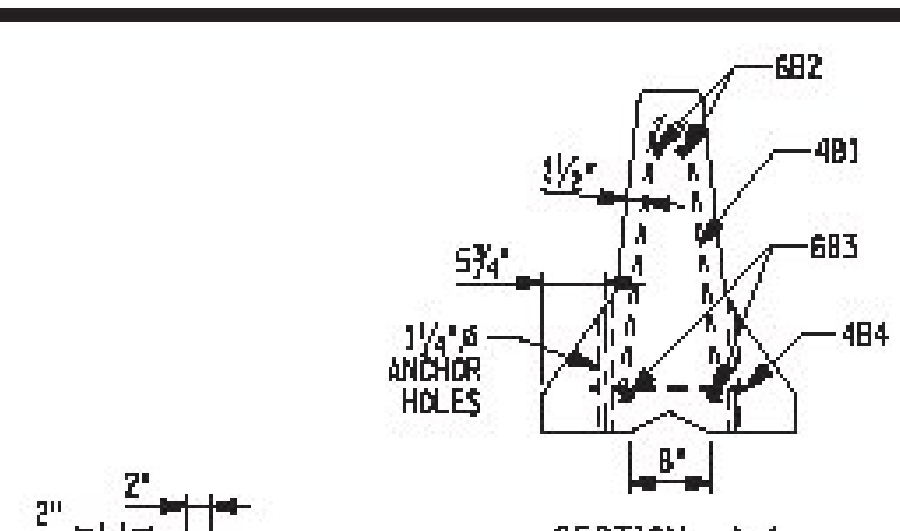
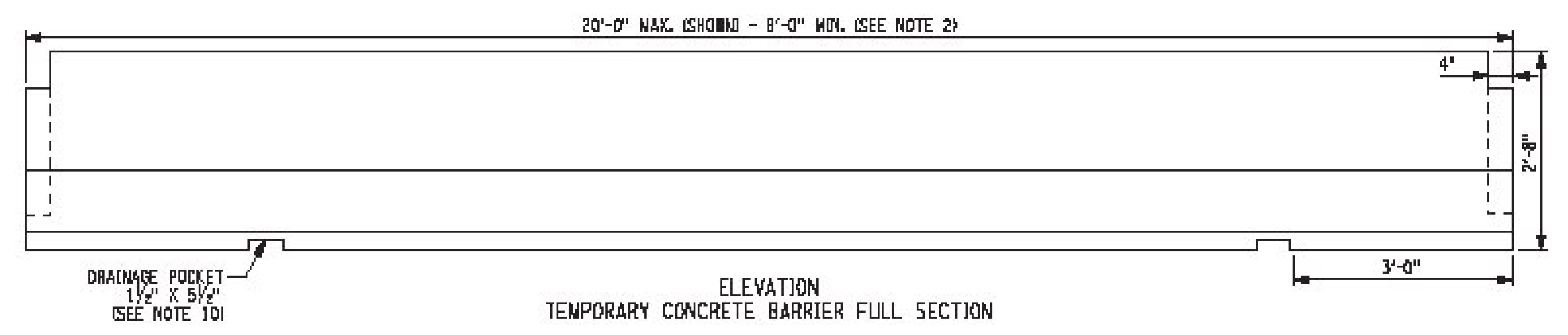
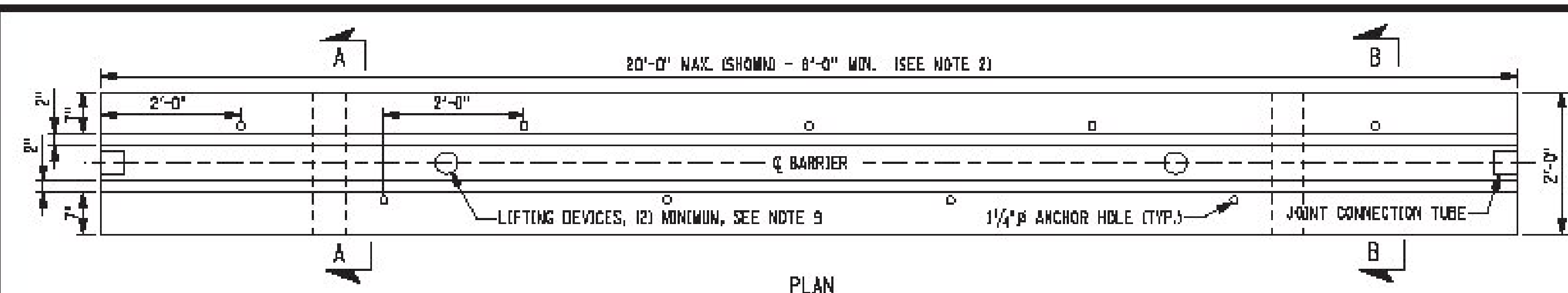
Standard Sheets *619-01 Temporary Concrete Barrier (Sheet 3 of 3)* and *M619-72 Box Beam Stiffening of Temporary Concrete Barrier* are available on the IntraDOT and the Department's website at: <https://www.nysdot.gov/main/business-center/engineering/cadd-info/drawings>

**BACKGROUND:**

In 2007, research was conducted on a concept to reduce the deflection of TCB without the need to pin units into the pavement or a bridge deck. The concept involved bolting 12 foot lengths of 6" x 6" box beam on the back side of the TCB, spanning across the joints.

**CONTACT:**

For additional information contact Terry Hale of the Design Quality Assurance Bureau at (518) 485-7009, [thale@dot.state.ny.us](mailto:thale@dot.state.ny.us) or Tom Melander of the Office of Construction at (518) 457-6472, [tmelander@dot.state.ny.us](mailto:tmelander@dot.state.ny.us).



- NOTES:
- TEMPORARY CONCRETE BARRIER SHALL BE PRECAST IN ACCORDANCE WITH THE REQUIREMENTS OF 5704-05 PRECAST CONCRETE BARRIER.
  - TEMPORARY CONCRETE BARRIER SHALL BE PRECAST UNITS OF ONE OF THE FOLLOWING NOMINAL LENGTHS 8', 10', 12', 14', 16', 18', 20'.
  - STEEL PLATE REINFORCEMENT SHALL BE ASTM A36M, A572M, GRADE 345 STEEL. TUBE REINFORCEMENT SHALL BE ASTM A500, GRADE B OR C, AND REINFORCING BARS SHALL BE A615, GRADE 420. EPOXY BARS ARE NOT REQUIRED.
  - ALL WELDING SHALL BE PERFORMED BY A WELDER QUALIFIED IN ACCORDANCE WITH SECTION 8 OF THE NYS STEEL CONSTRUCTION MANUAL.
  - SURFACES TO BE WELDED SHALL BE FREE OF SLAG, RUST, MOISTURE, GREASE OR ANY OTHER MATERIAL THAT WILL PREVENT PROPER WELDING OR PRODUCE OBJECTIONABLE FUMES.
  - WELDING SHALL BE SHIELDED METAL ARC WELDING USING PROPERLY DRIED 5/32" E7018 ELECTRODES CONFORMING TO THE REQUIREMENTS OF SECTION 7 OF THE NYS STEEL CONSTRUCTION MANUAL.
  - THE NUMBER AND PLACEMENT OF THE 4B4 AND 4B5 BARS WILL VARY WITH THE LENGTH OF THE BARRIER SEGMENT.
  - CONCRETE CLEAR COVER FOR REINFORCING BARS SHALL BE 1 1/2" (MIN.) UNLESS OTHERWISE SPECIFIED.
  - A MINIMUM OF 12) TWO RECESSED LIFTING DEVICES, EACH WITH THE CAPACITY TO LIFT A MASS OF 5 TONS MINIMUM, SHALL BE INSTALLED ON EACH SEGMENT. SEGMENT MASS IS APPROXIMATELY 400 LBS/FT.
  - ONE DRAINAGE POCKET SHALL BE INCLUDED IN THE CENTER OF 8'-0" AND 10'-0" SEGMENTS, TWO DRAINAGE POCKETS IN ALL OTHER SEGMENTS.
  - CONNECTION KEY COVER PLATE SHALL BE INSTALLED FLUSH WITH THE BARRIER TOP.
  - 1/2" ASTM A36M ANCHOR PINS SHALL BE PLACED IN FOUR ANCHOR HOLES OF EACH SEGMENT TO BE PINNED. PINS SHALL BE PLACED ON THE WORKZONE SIDE OF THE BARRIER.
  - BASED ON SEGMENT LENGTH AND MAXIMUM JOINT ROTATION, TEMPORARY CONCRETE BARRIER CAN ONLY BE INSTALLED TO THE FOLLOWING MINIMUM RADIUS: 8' - 32', 10' - 119', 12' - 138', 14' - 161', 16' - 184', 18' - 201', 20' - 230'.

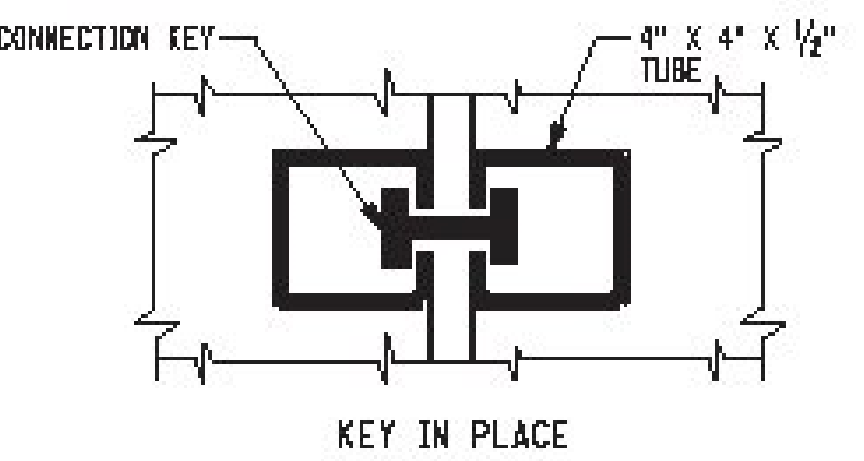
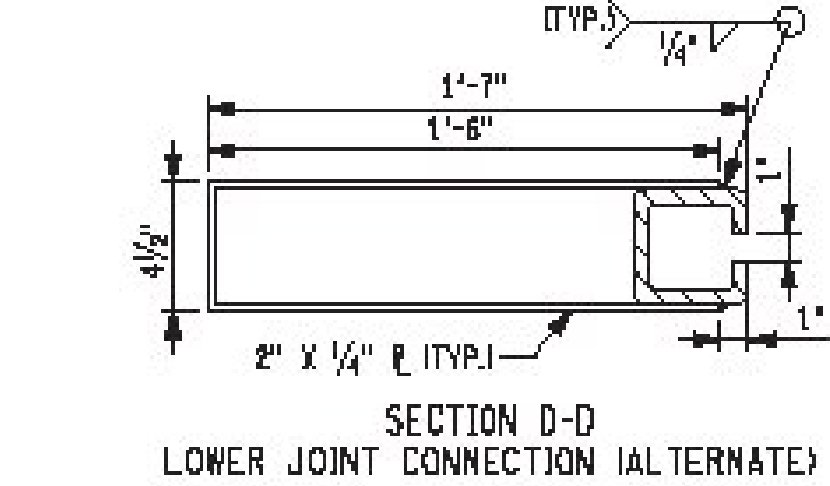
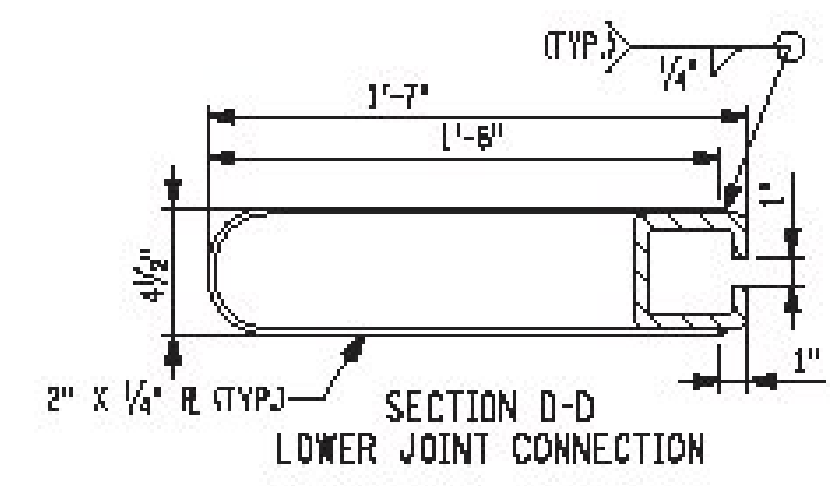
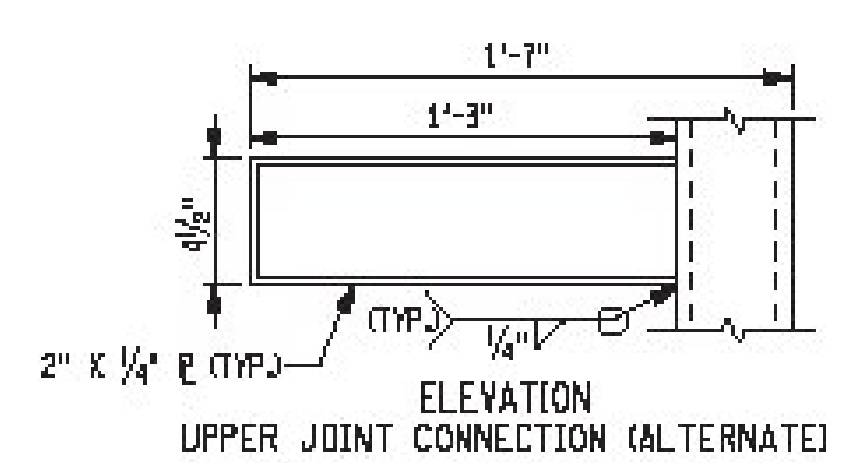
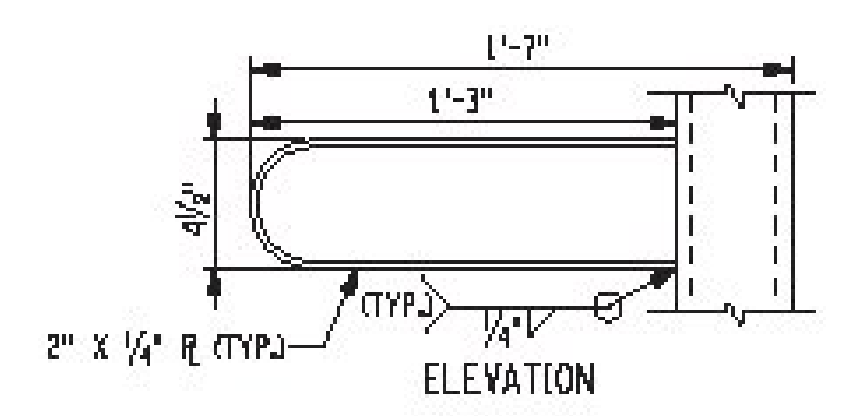
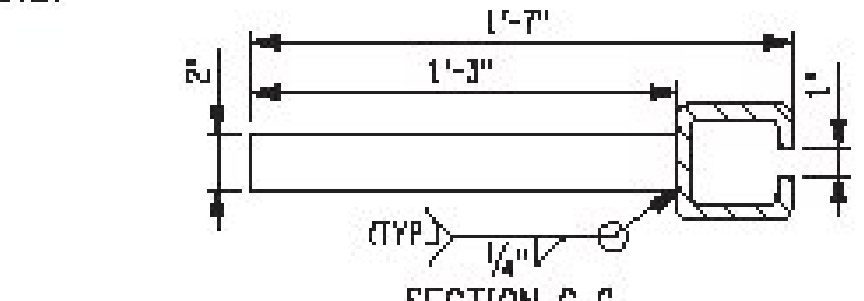
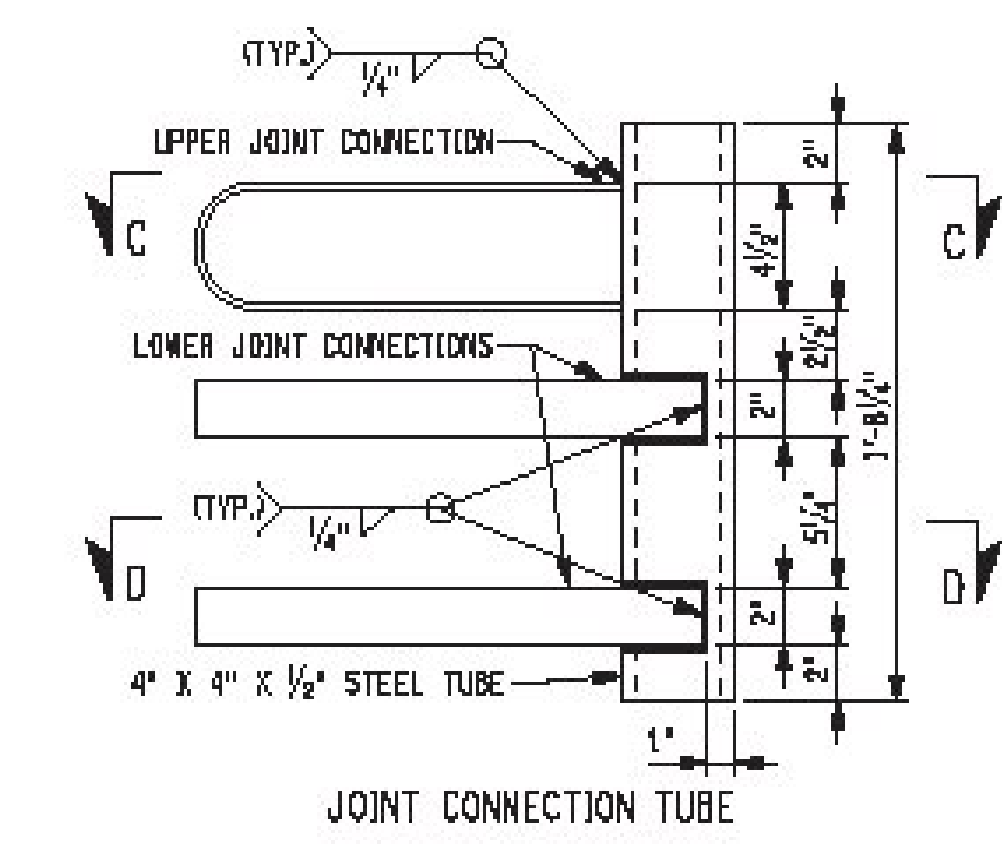
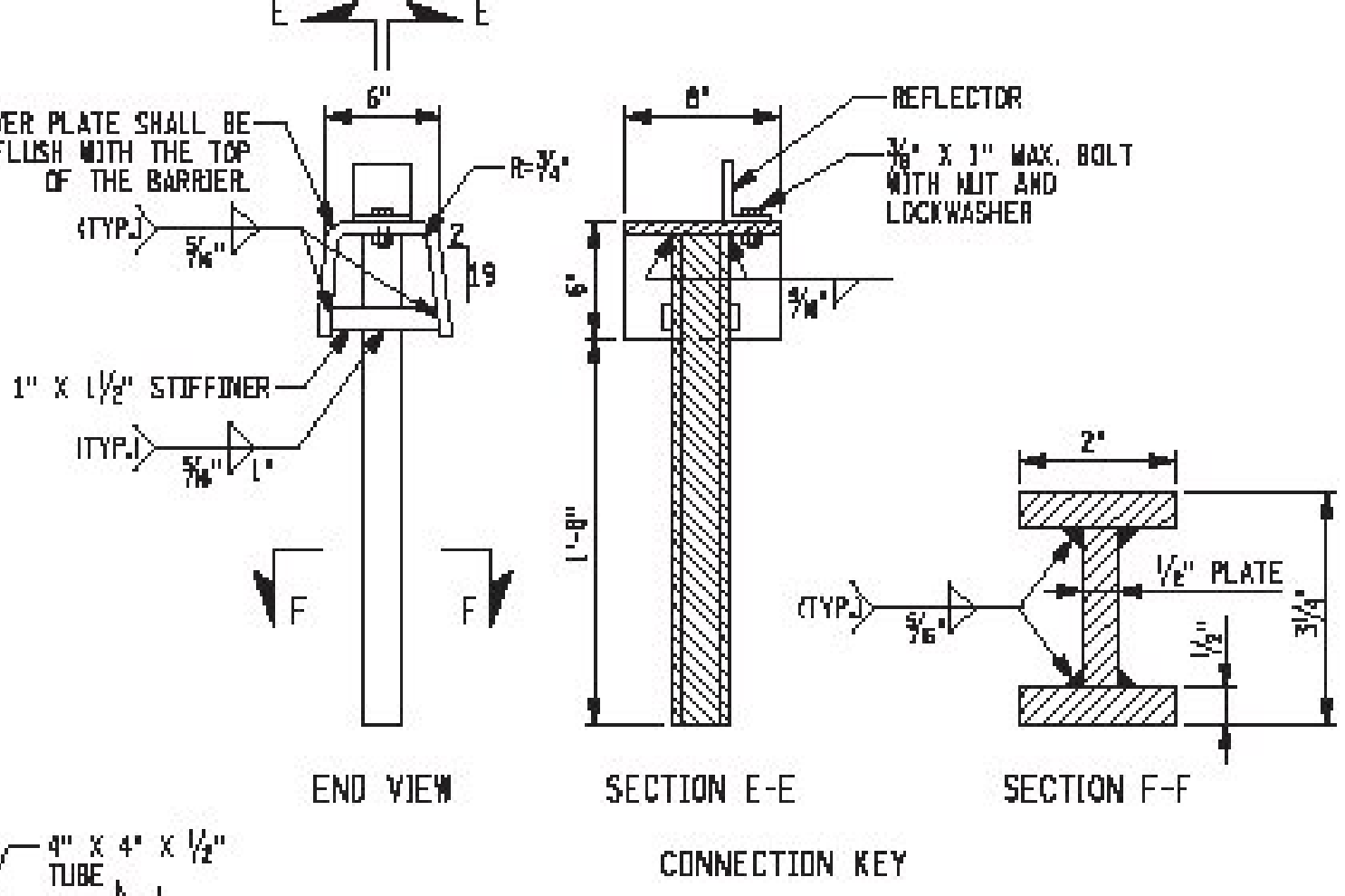
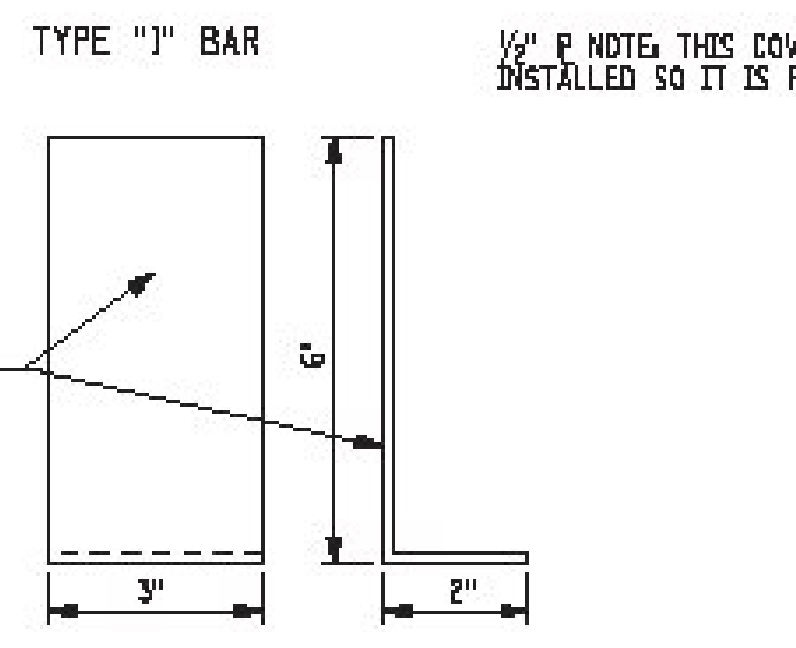
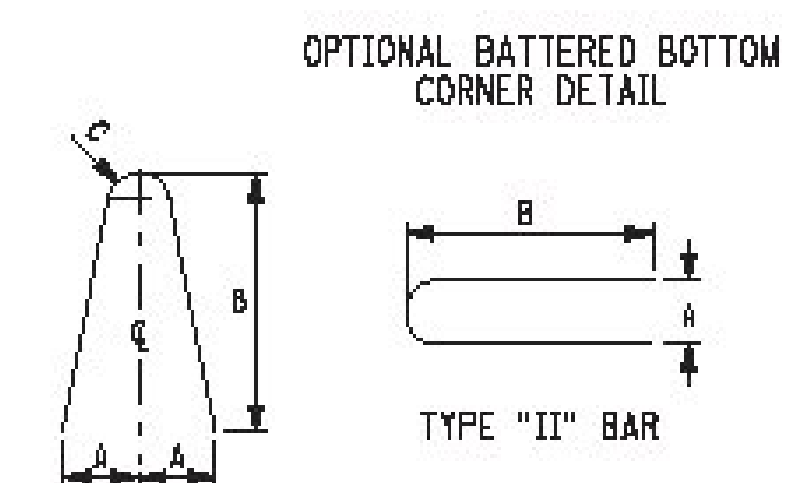
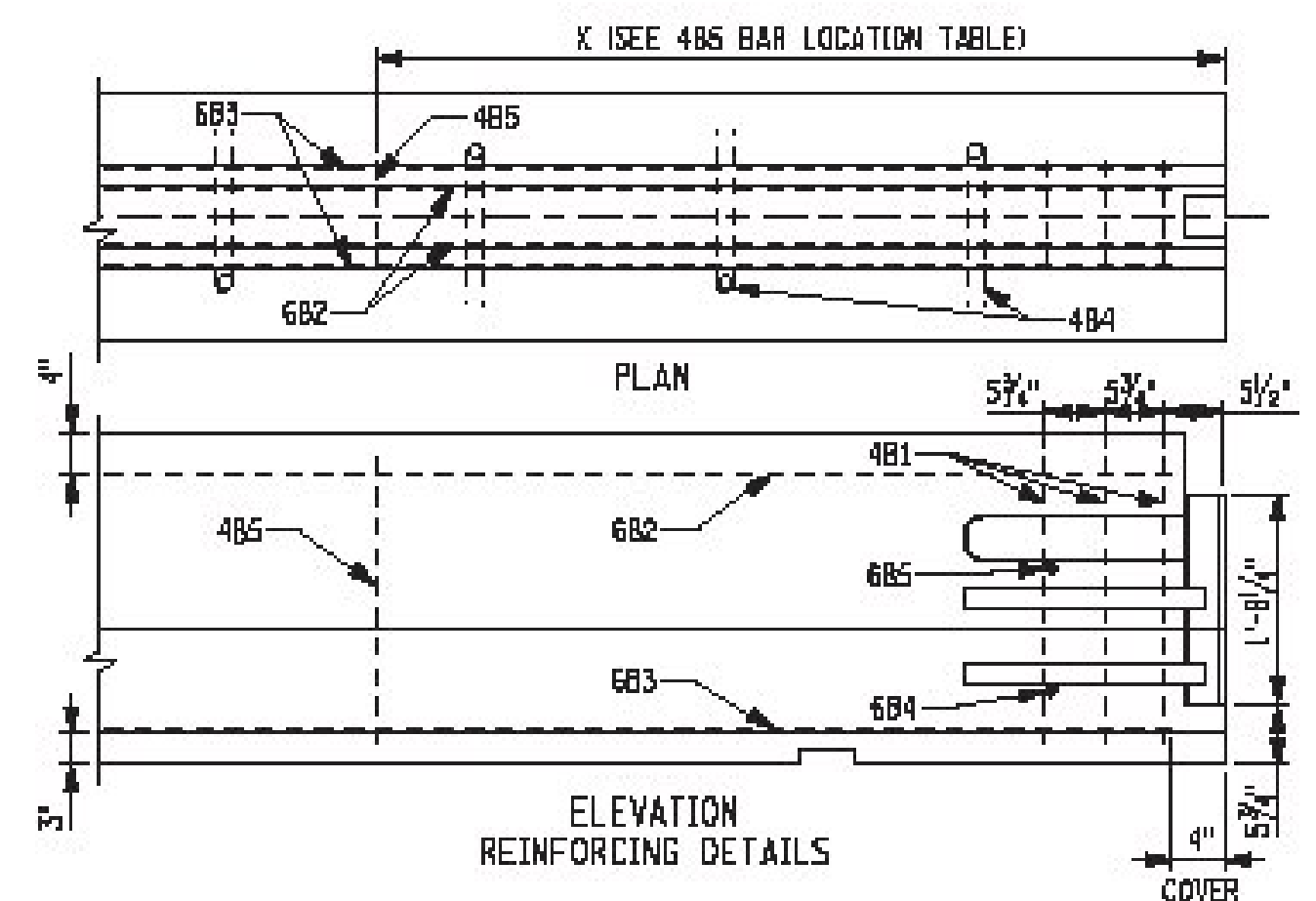
FULL SECTION BAR LIST

MARK	SIZE	NUMBER PER SECTION	LENGTH	TYPE	A	B	C	LOCATION
4B1	4	6	4'-11"	I	5'	20"	1"	STIRRUPS
4B4	4	1 PER RECESS	3'-1"	II	4'	15 1/2"		ANCHOR RECESS HOOPS
4B5	4	SEE TABLE	4'-11"	I	5'	20"	1"	STIRRUPS
6B2	6	2	SEE NOTE 7	STR.				LONGITUDINAL (TOP)
6B3	6	2	SEE NOTE 7	STR.				LONGITUDINAL (BOTTOM)
6B4	6	2	1'-2"	STR.				TRANSVERSE (BOTTOM)
6B5	6	2	6"	STR.				TRANSVERSE (TOP)

4B5 BAR LOCATION TABLE

NOMINAL LENGTH OF BARRIER UNIT	X	NO. EACH SECTION
20'	6'-11"	2
18'	6'-5"	2
16'	5'-11"	2
14'	7'	1
12'	5'	1
10'	5'	1
8'	N/A	0

"X" DISTANCE FROM END OF BARRIER TO 4B5 BAR



STATE OF NEW YORK  
DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY STANDARD SHEET

TEMPORARY CONCRETE BARRIER  
(SHEET 1 OF 3)

ERRATA 2 EFF. 09/04/2014  
ISSUED WITH EB 14-025

ERRATA 1 EFF. 01/09/2014  
ISSUED WITH EB 13-042

EFFECTIVE DATE: 01/07/10

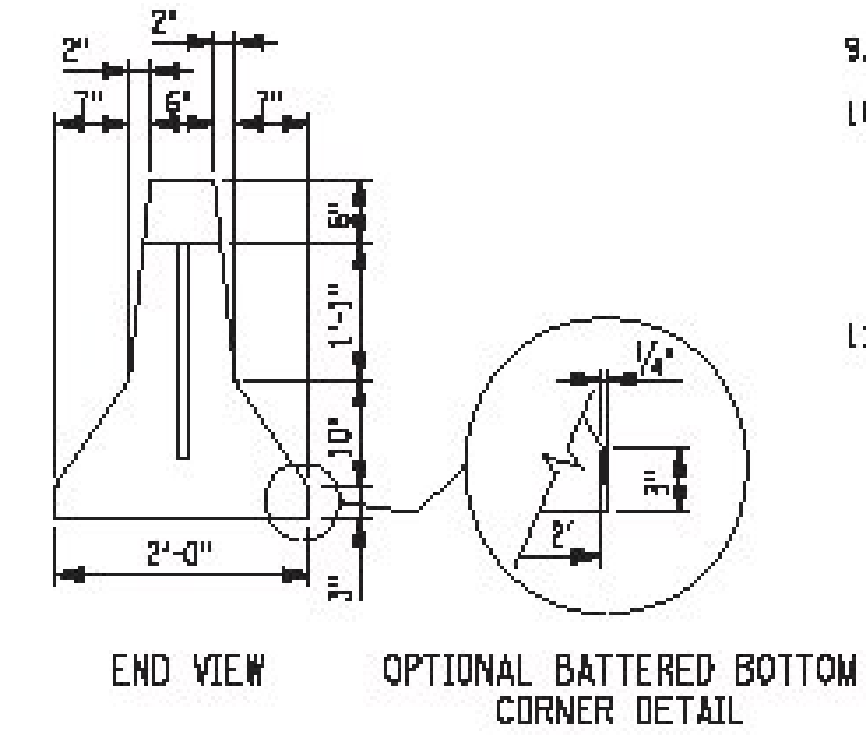
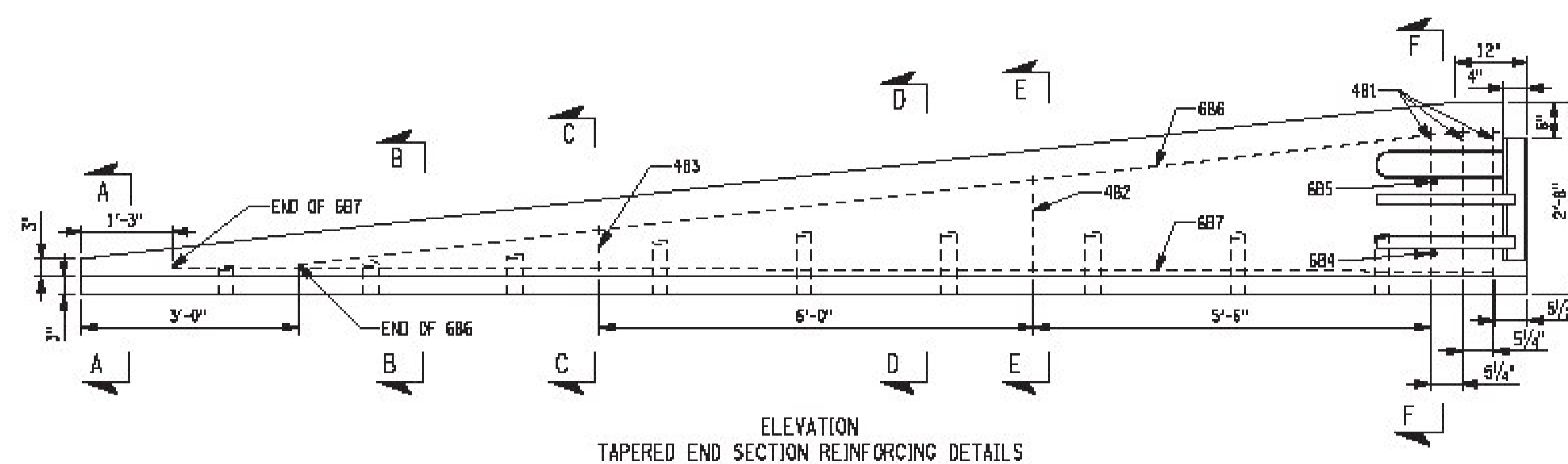
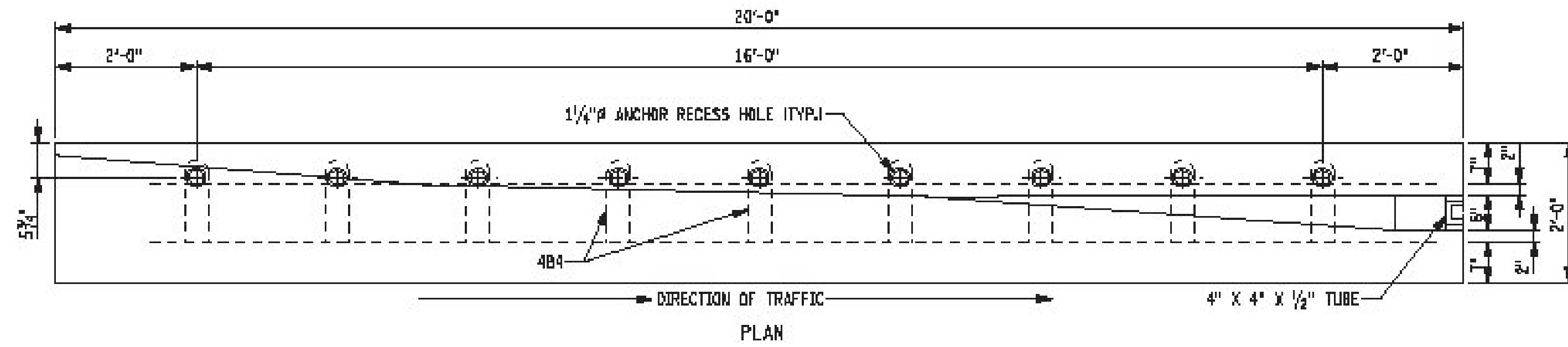
APPROVED JULY 10, 2014

/S/ J. F. TYMAN, PE.  
DEPUTY CHIEF ENGINEER  
CONSTRUCTION

ISSUED UNDER EB 09-025

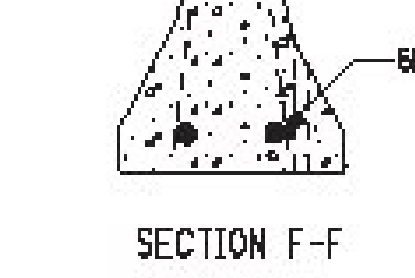
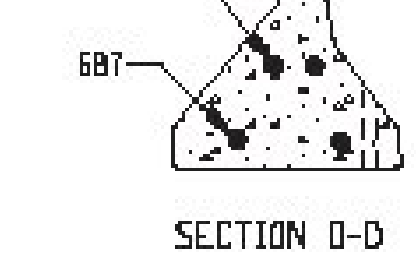
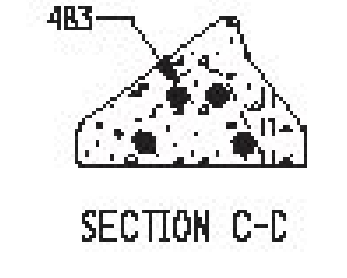
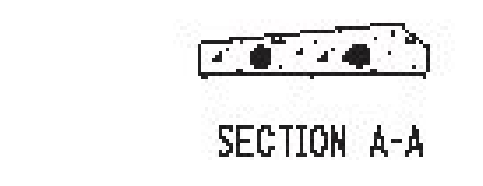
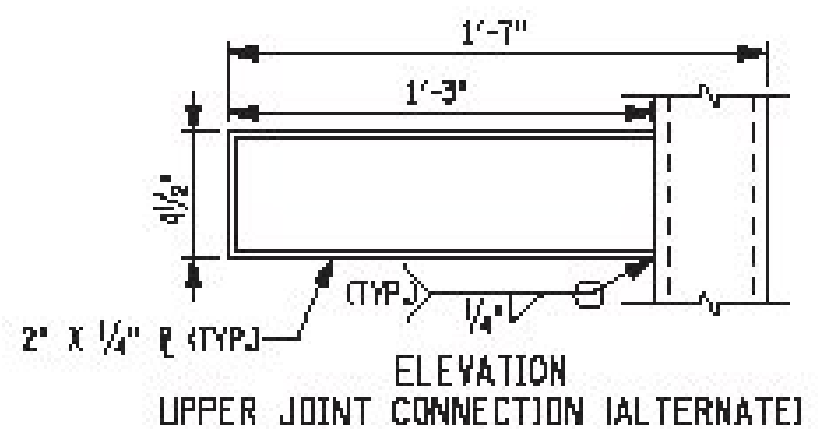
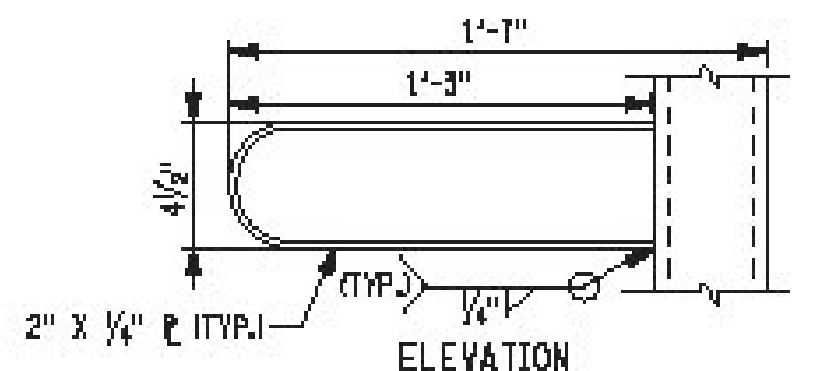
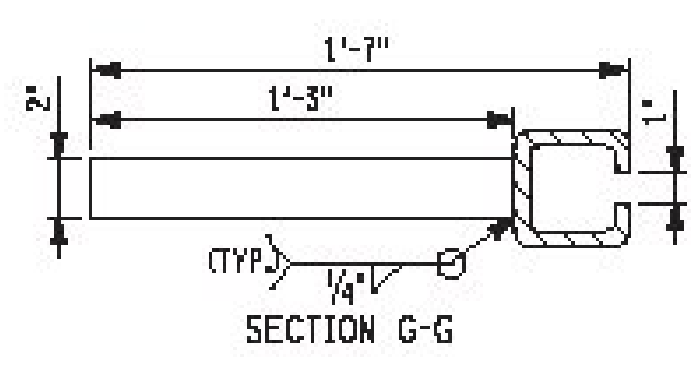
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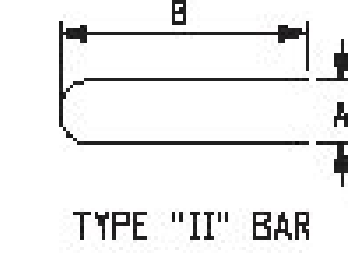
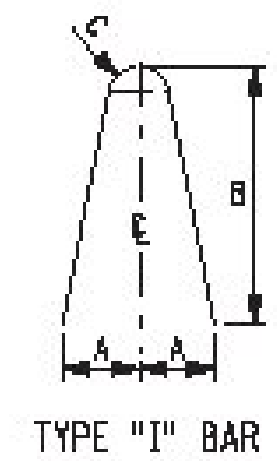
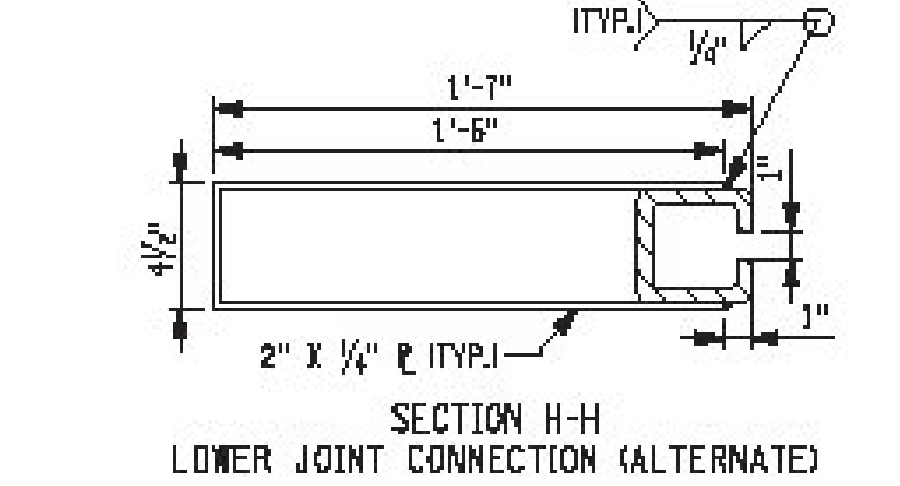
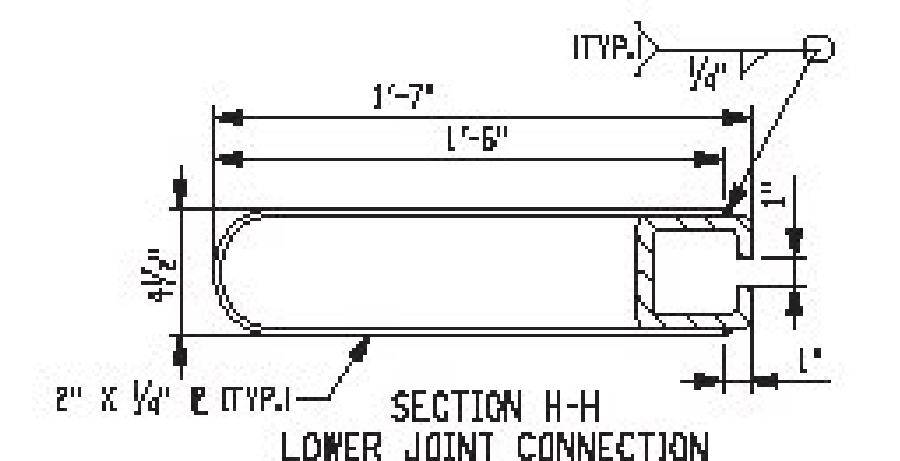


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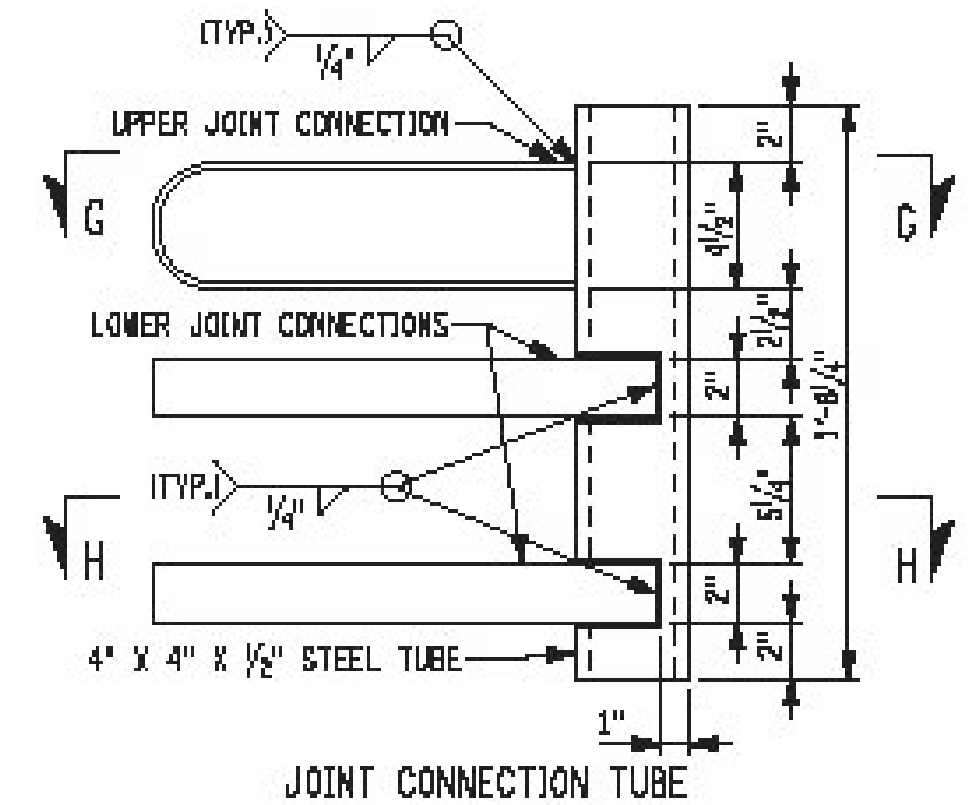
1. TEMPORARY CONCRETE BARRIER SHALL BE PRECAST IN ACCORDANCE WITH THE REQUIREMENTS OF §704-05, PRECAST CONCRETE BARRIER.
2. STEEL PLATE SHALL BE ASTM A36, A572, GRADE 345, TUBE STEEL SHALL BE ASTM A500 GRADE B OR C, AND REINFORCING BARS SHALL BE A615 GRADE 420.
3. ALL WELDING SHALL BE PERFORMED BY A QUALIFIED WELDER IN ACCORDANCE WITH SECTION 8 OF THE NYS STEEL CONSTRUCTION MANUAL.
4. SURFACES TO BE WELDED SHALL BE FREE OF SLAG, RUST, MOISTURE, GREASE OR ANY OTHER MATERIAL THAT WILL PREVENT PROPER WELDING OR PRODUCE OBJECTIONABLE FUMES.
5. WELDING SHALL BE SHIELDED METAL ARC WELDING USING PROPERLY DRIED 3/32" E7018 ELECTRODES CONFORMING TO THE REQUIREMENTS OF SECTION 7 OF THE NYS STEEL CONSTRUCTION MANUAL.
6. CONCRETE CLEAR COVER FOR REINFORCING BARS SHALL BE 1/2" (MIN.) EXCEPT WHERE OTHERWISE SPECIFIED.
7. A MINIMUM OF (2) TWO RECESSED LIFTING DEVICES, WITH THE CAPACITY TO LIFT A MASS OF 5 TONS (MINIMUM) SHALL BE INSTALLED ON EACH SEGMENT.
8. 1/8" ASTM A36 ANCHOR PINS SHALL BE PLACED IN FOUR RECESSES OF EACH SEGMENT TO BE PINNED.
9. CONNECTION KEY COVER PLATE SHALL BE INSTALLED FLUSH WITH THE BARRIER TOP.
10. THE DETAILS SHOWN FOR THE END SECTIONS ON THIS SHEET ARE FOR APPROACH ENDS WHICH ARE TO BE LOCATED TO THE LEFT OF THE TRAFFIC FLOW ON ONE-WAY OPERATIONS OR BETWEEN OPPOSING FLOWS OF TRAFFIC ON TWO-WAY OPERATIONS. WHEN AN APPROACH END IS TO BE LOCATED TO THE RIGHT OF THE TRAFFIC FLOW, THE END SEGMENT SHALL BE CONSTRUCTED SO THAT IT IS OPPOSITE-HAND (REVERSED IN ALL CONFIGURATIONS, ANCHOR HOLE LOCATIONS AND REINFORCEMENT).
11. ALL CORNERS ON THE TOP OF THE SEGMENT SHALL BE ROUNDED TO A 1" RADIUS. THE SEGMENT SHALL HAVE A SMOOTH TRANSITION TO A 6" END-OF-SECTION HEIGHT. ALL END SECTIONS SHALL BE PINNED UNLESS OTHERWISE NOTED.



TRANSITION SECTIONS



TAPERED END SECTION BAR LIST								
MARK	SIZE	NUMBER PER SECTION	LENGTH	TYPE	A	B	C	LOCATION
4B1	13	3	4'-11"	I	5"	28"	1"	STIRRUPS
4B2	13	1	3'-3"	I	5"	18"	1"	STIRRUPS
4B3	13	1	1'-8"	I	5"	8"	1"	STIRRUPS
4B4	13	9	3'-1"	II	4"	18 1/2"		HOOPS
6B4	19	1	1'-2"	STR.				
6B5	19	1	6"	STR.				
6B6	19	2	16'-7"	STR.				TRANSVERSE (TOP)
6B7	19	2	18'-2"	STR.				TRANSVERSE (BOTTOM)



STATE OF NEW YORK  
DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY STANDARD SHEET

TEMPORARY CONCRETE BARRIER  
(SHEET 2 OF 3)

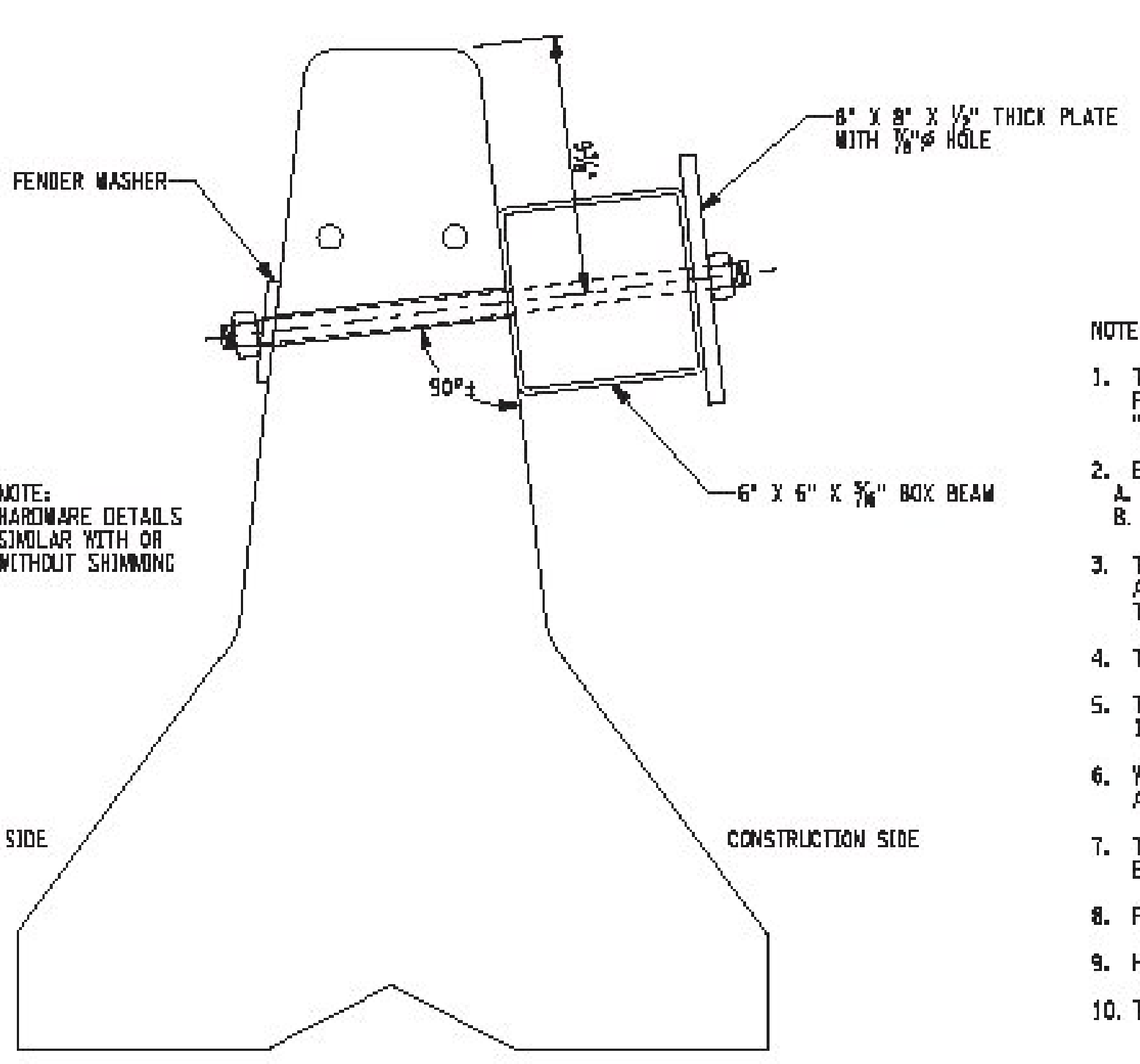
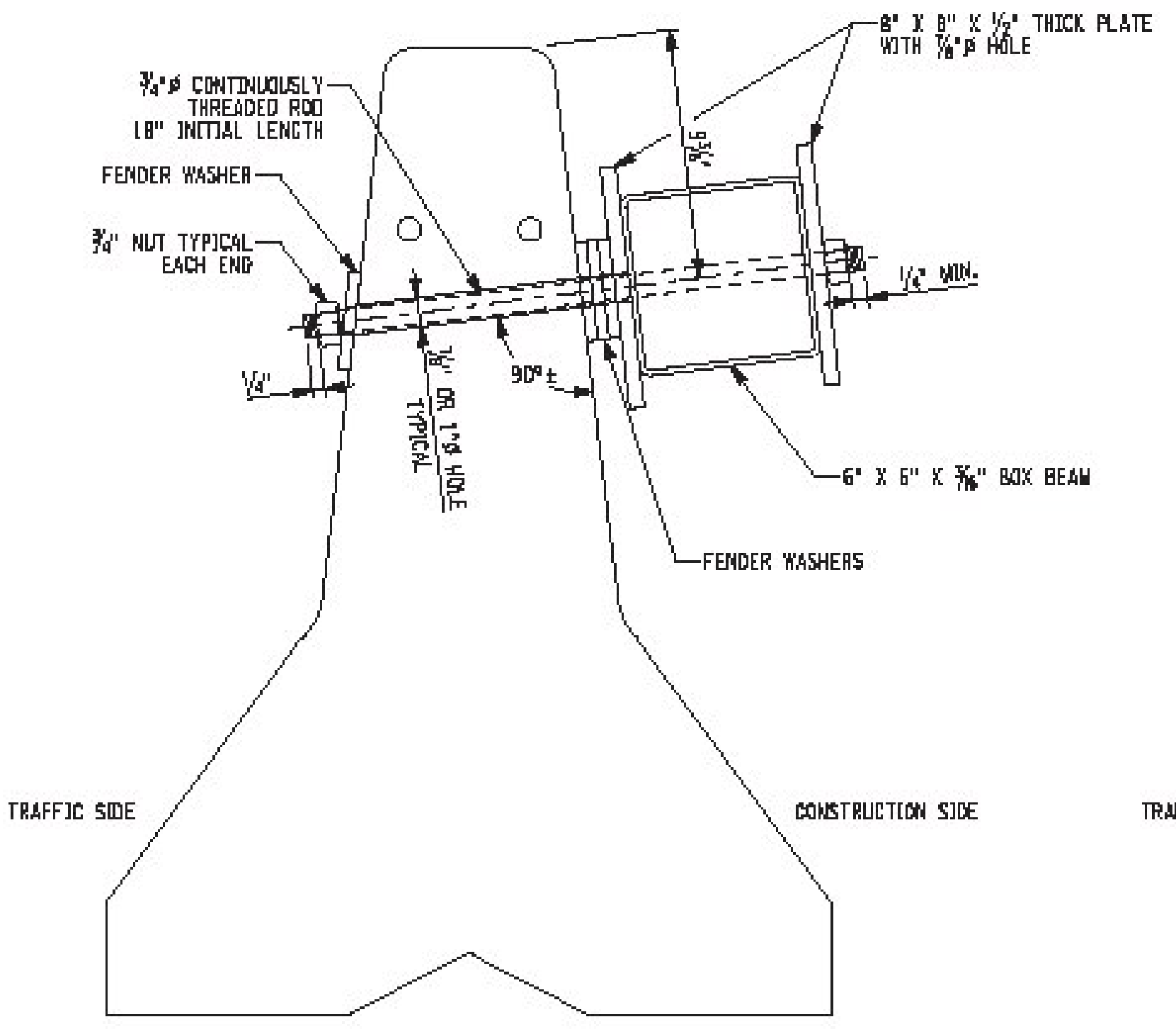
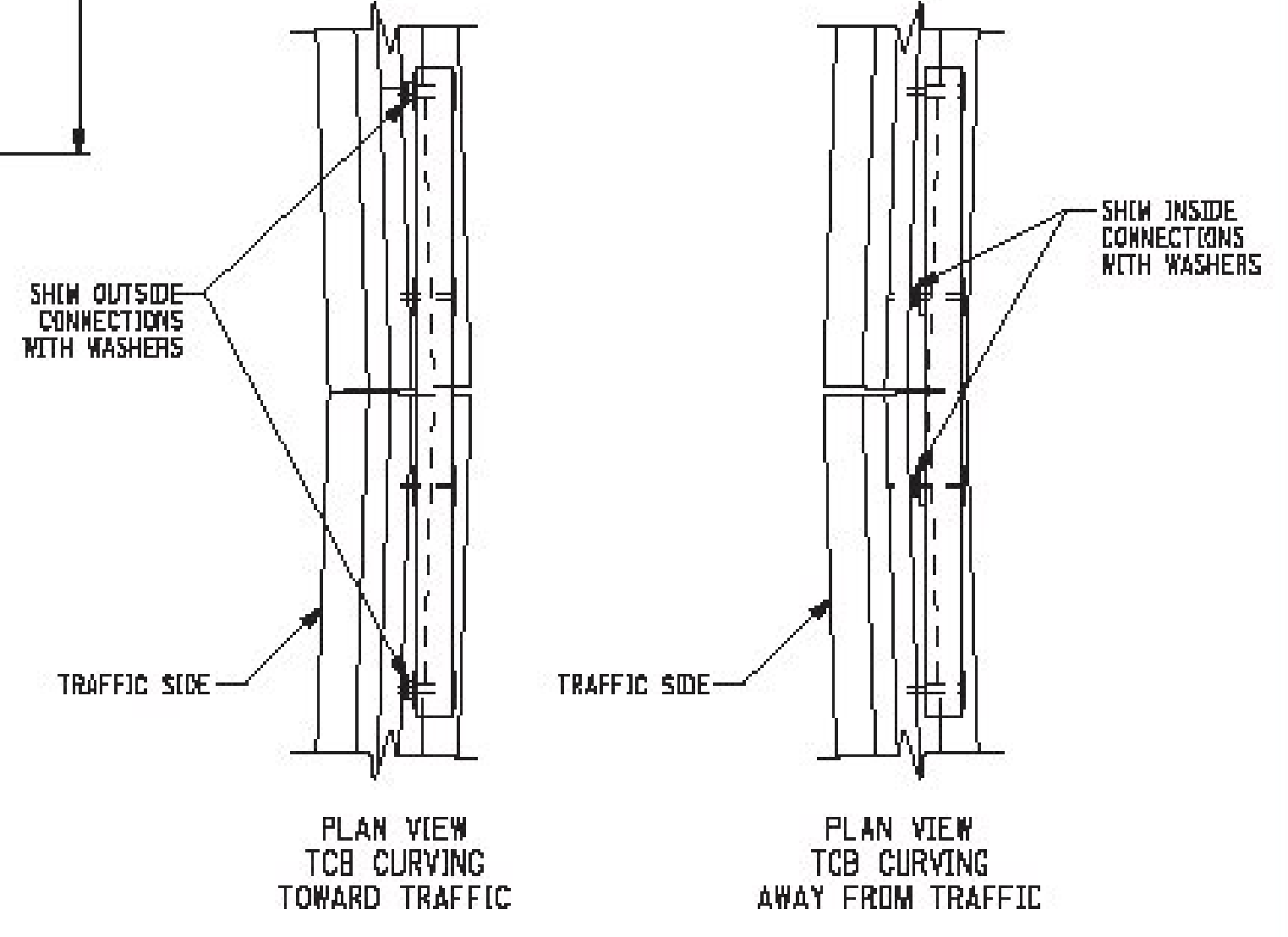
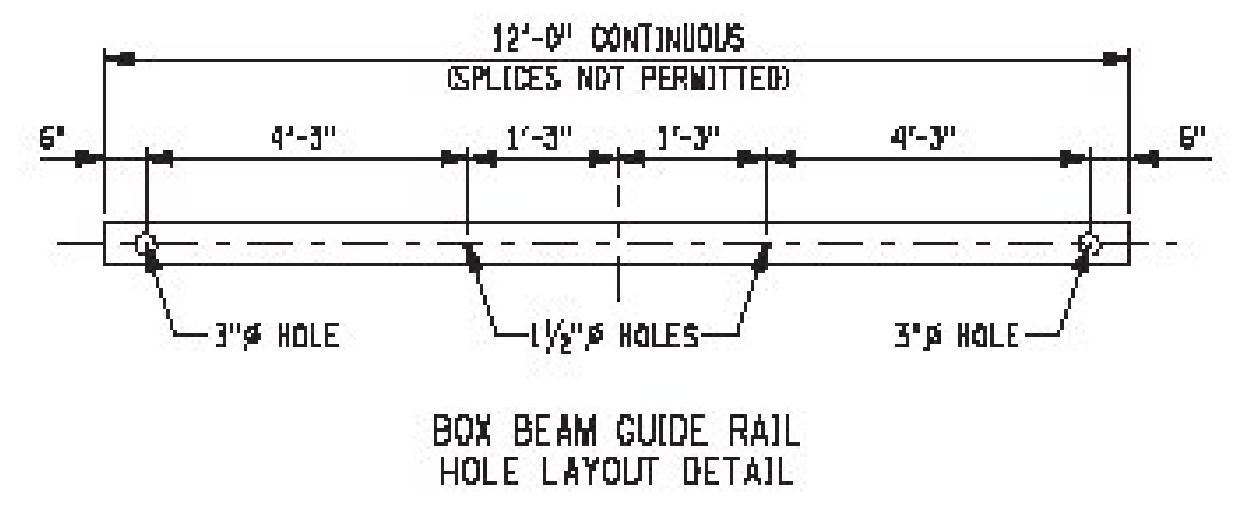
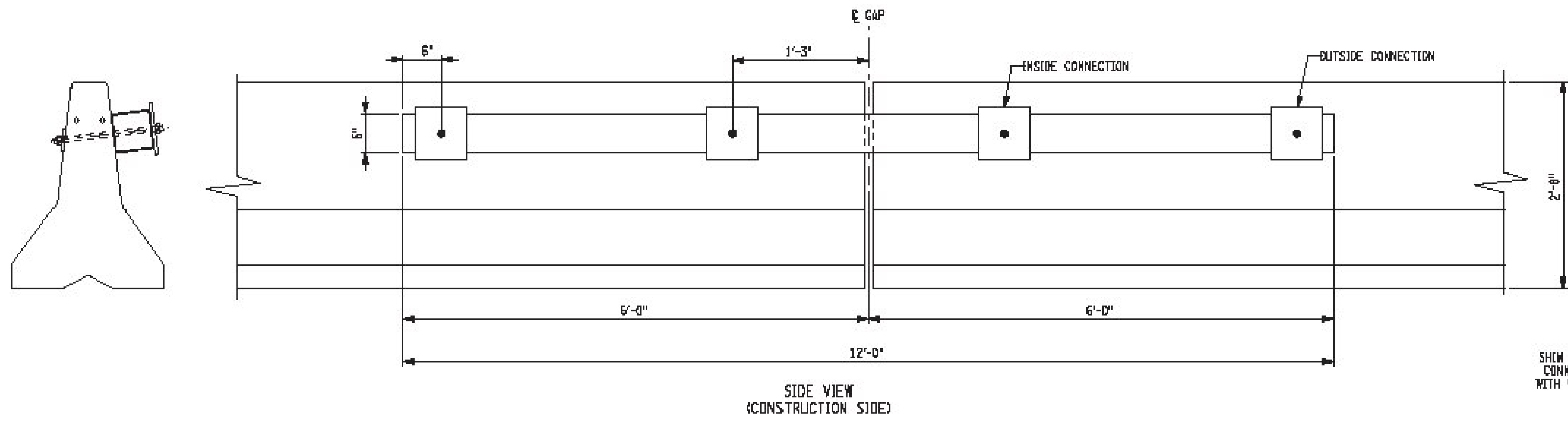
APPROVED SEPTEMBER 30, 2009 ISSUED UNDER EB 09-025

/S/ J. F. TYNAN, P.E.  
DEPUTY CHIEF ENGINEER  
(CONSTRUCTION)

619-01

EFFECTIVE DATE: 01/07/10

FILE NAME = 619-002-010710.dwg  
DATE/TIME = 10-SEP-2010 14:55  
USER = rlahse



NOTE:  
HARDWARE DETAILS  
SIMILAR WITH OR  
WITHOUT SHIMMING

NOTES:

1. TEMPORARY CONCRETE BARRIER (TCB) SHALL BE PRECAST IN ACCORDANCE WITH THE REQUIREMENTS OF §704-05 PRECAST CONCRETE BARRIER AND STANDARD SHEET TITLED "TEMPORARY CONCRETE BARRIER - SHEET 1 OF 3" AND "TEMPORARY CONCRETE BARRIER - SHEET 2 OF 3".
2. BOX BEAM SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF §710-21, BOX BEAM RAILING AND MEDIAN BARRIER, RAILS.
  - A. HOWEVER, THE BOX BEAM NEED NOT BE NEW.
  - B. THE GALVANIZING REMAINING ON THE OLD PIECES SHALL BE SUFFICIENT TO ENSURE THE STEEL IS STRUCTURALLY INTACT.
3. TCB WITH BOX BEAM STIFFENER SHALL BEGIN AT LEAST 50'-0" PRIOR TO, BE CONTINUOUS THROUGH AND EXTEND AT LEAST 50'-0" BEYOND THE AREA REQUIRING LIMITED DEFLECTIONS. WHERE SPACE LIMITS SUCH EXTENSIONS, THE FIRST/LAST TCB SEGMENT SHOULD BE PINNED WITH 4 PINS ON THE CONSTRUCTION SIDE.
4. TEMPORARY CONCRETE BARRIER WITH BOX BEAM STIFFENER MAY ONLY BE USED WITH TCB SEGMENTS 14'-0" OR LONGER.
5. TEMPORARY CONCRETE BARRIER MAY ONLY BE INSTALLED TO THE FOLLOWING MINIMUM RADII: 14'-0" SEGMENT - 161'-0" RADIUS, 16'-0" SEGMENT - 184'-0" RADIUS, 18'-0" SEGMENT - 207'-0" RADIUS, AND 20'-0" SEGMENT - 230'-0" RADIUS.
6. WHERE TEMPORARY CONCRETE BARRIERS ARE PLACED ON A RADIUS, THE RESULTING GAPS BETWEEN THE BOX BEAM AND CONCRETE BARRIER SHALL BE SHIMMED.
7. THE SHIMMING SHALL CONSIST OF 8" X 8" X 1/2" SQUARE PLATE, AND FENDER WASHERS AS NEEDED TO SNUG THE BOX BEAM STIFFENER TO THE TCB.
8. FENDER WASHERS SHALL BE 3" MINIMAL O.D.
9. HARDWARE OTHER THAN THE BOX BEAM NEED NOT BE GALVANIZED.
10. THE PRESENCE OF NORMAL HOLES DRILLED PER THIS SHEET WILL NOT AFFECT THE REUSABILITY OF THE CONCRETE SEGMENTS.

SECTION WITH SHIMMING

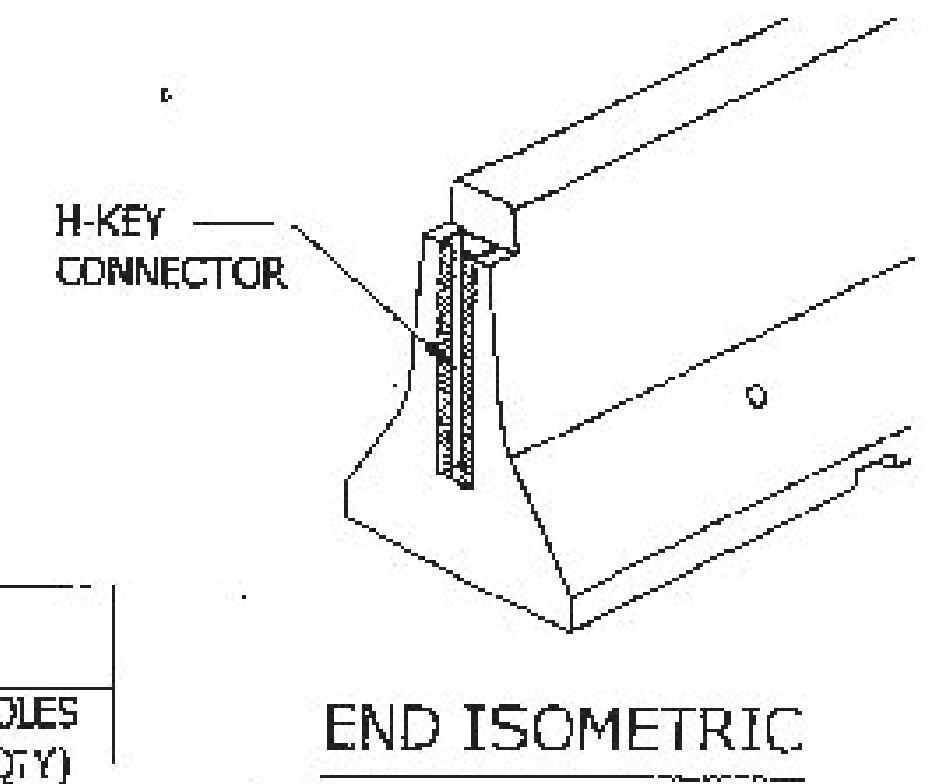
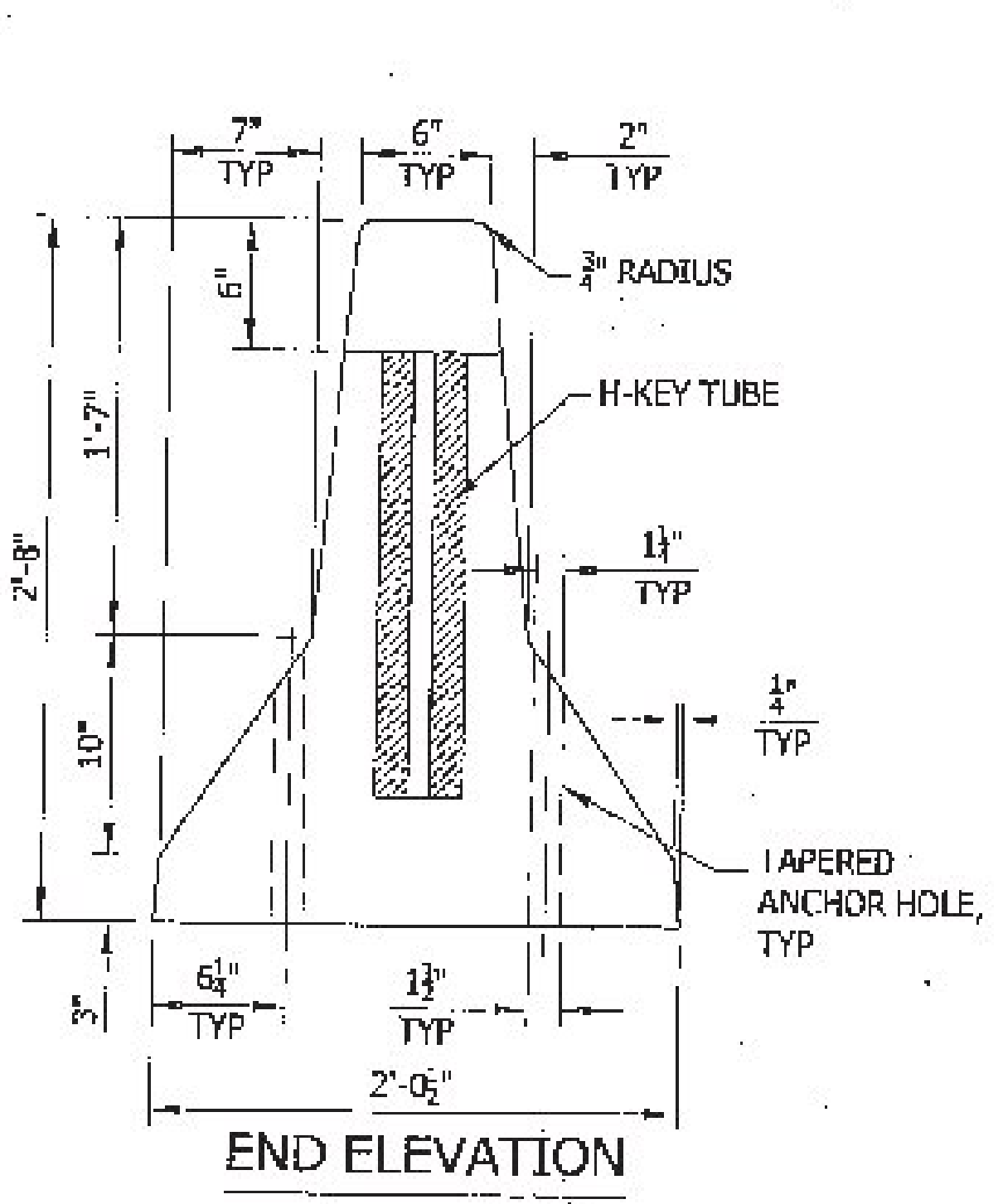
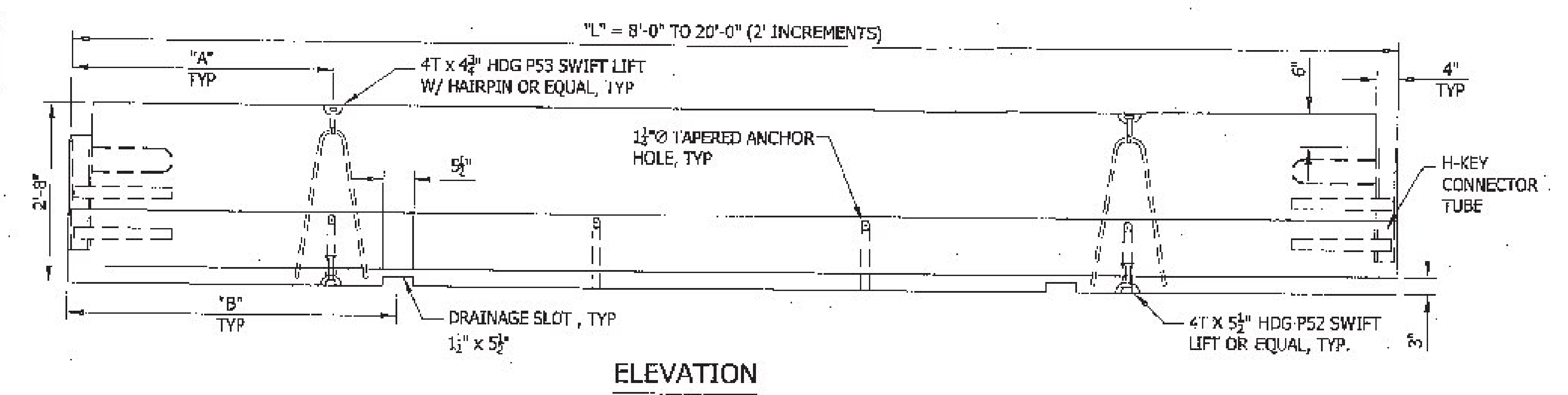
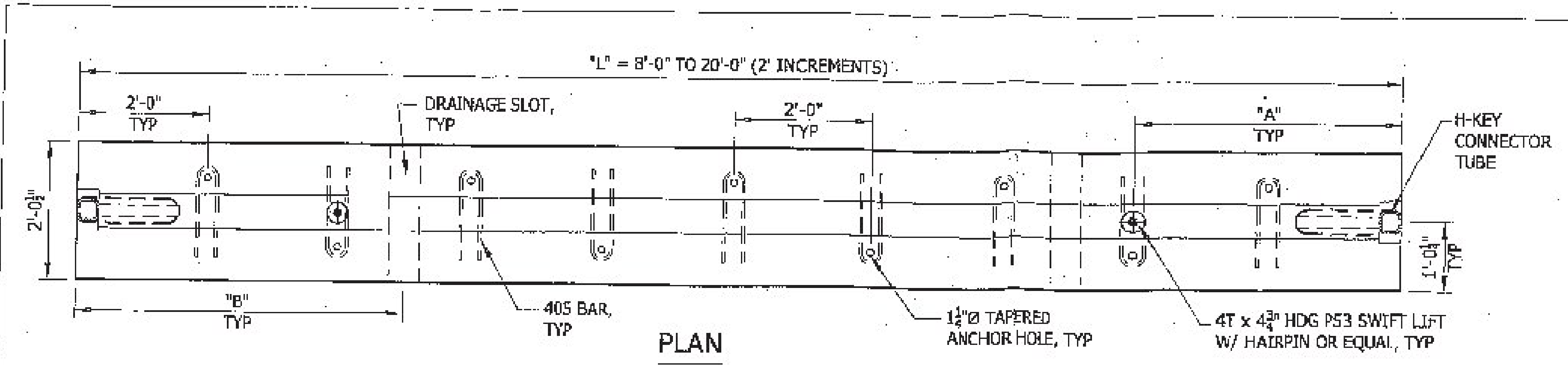
SECTION WITHOUT SHIMMING

BOX BEAM STIFFENING OF TEMPORARY CONCRETE BARRIER

STATE OF NEW YORK DEPARTMENT OF TRANSPORTATION		
U.S. CUSTOMARY STANDARD SHEET		
TEMPORARY CONCRETE BARRIER (SHEET 3 OF 3)		
ERRATA 1 EFF. 01/09/2014 ISSUED WITH EB 13-042	APPROVED NOVEMBER 4, 2013 /S/ J.F. TYMAN, P.E. DEPUTY CHIEF ENGINEER (CONSTRUCTION)	ISSUED UNDER EB 10-034  619-01
EFFECTIVE DATE: 01/06/11		

FILE NAME = 619-01(EB 10)03(1).dgn  
 DATE/TIME = 14-NOV-2013 09:50  
 USER = r1obias

300.36  
ISSUED 1/10/12



**TABLE**

MK#	LENGTH (FT)	VOLUME (C.Y.)	WEIGHT (TONS)	LIFTING "A"	SLOT "B"	HOLES (QTY)
H8	8'-0"	0.80	1.61	2'-0"	5'-0"*	3
H10	10'-0"	0.99	2.01	2'-0"	5'-0"*	4
H12	12'-0"	1.19	2.42	2'-0"	3'-0"	5
H14	14'-0"	1.39	2.82	4'-0"	5'-0"	6
H16	16'-0"	1.59	3.22	4'-0"	5'-0"	7
H18	18'-0"	1.79	3.62	4'-0"	5'-0"	8
H20	20'-0"	1.99	4.03	4'-0"	5'-0"	9

* 8'-0" & 10'-0" UNITS HAVE ONLY (1) DRAINAGE SLOT. SLOT IN 8'-0" UNIT IS 5'-0" IN FROM ONE END & 3'-0" IN FROM THE OTHER.

**NOTES:**

- ALL MATERIAL SHALL CONFORM TO SECTION 704-05, PRECAST CONCRETE BARRIER, OF THE NYS DOT STANDARD SPECIFICATIONS AND THE FORT MILLER CO., INC. QUALITY CONTROL PLAN FOR MANUFACTURING PRECAST CONCRETE.
- REINFORCING BARS SHALL BE ASTM A615, GRADE 60.
- CONCRETE TO BE 3,000 PSI @ 28 DAYS.
- AIR CONTENT SHALL BE 5.0 - 9.0%.
- MINIMUM STRIPPING STRENGTH: 2,000 PSI.
- POSITION OF REINFORCEMENT TO BE MAINTAINED WITH THERMOPLASTIC CHAIRS OR PLASTIC TIPPED SLAB BOLSTERS.
- CURING WITH MEMBRANE CURING COMPOUND SHALL CONFORM TO NYS DOT SPECIFICATION 704-D3.
- ALL H-KEY & TUBE DETAILS, MATERIALS AND WELDING REQUIREMENTS SHALL CONFORM TO NYS DOT STANDARD SHEET 619-01.
- CONCRETE CLEAR COVER FOR REINFORCING BARS SHALL BE 1 1/2", UNLESS OTHERWISE SPECIFIED.

**DIMENSIONAL TOLERANCES:**

- H-KEY CONNECTOR LOCATION:  $\pm 1/4"$
- CROSS-SECTIONAL DIMENSIONS:  $\pm 1/4"$
- PLUMBNESS:  $\pm 1/4"$
- LONGITUDINAL DIMENSIONS (LAY LENGTH):  $\pm 1/4"$  PER 10'-0"
- WHEN CHECKED WITH A 10'-0" STRAIGHT EDGE, IRREGULARITIES SHALL NOT EXCEED  $\pm 1/4"$
- REINFORCING COVER: 1 1/2" (-1/4", +3/8")
- REINFORCING SPACING:  $\pm 2"$  NON-CUMULATIVE

**TESTING/INSPECTION:**

FMC QCP/NYS DOT

**UNIT MARKING:**

EACH UNIT SHALL BE PERMANENTLY MARKED WITH THE FOLLOWING:

FMC MMYY

EACH UNIT SHALL ALSO BE LABELED OR PAINTED WITH THE FOLLOWING INFORMATION FOR FIELD INSPECTION PURPOSES:

FMC  
D.O.M.  
MK#/PIECE I.D.  
NYS DOT

**NYS DOT**  
 Approved  
 Approved As Noted  
ORIGINAL SIGNED BY: J. P. REIDY  
By _____ Date _____  
For: Director Materials Bureau  
Drawing Verified In English Units Only

NO	DATE	BY	REVISIONS

THE FORT MILLER Co., Inc.  
P.O. BOX 98  
SCHUCLERVILLE, NY 12871  
(518) 695-8000/(518) 695-4970 FAX  
www.fortmiller.com

F.M. JOB NO. NA  
SHEET NO. 1 OF 2  
DATE: 12-19-11  
CONTRACT NO.: _____  
PROJECT: _____  
LOCATION: _____  
SUBJECT: H-KEY TEMPORARY BARRIER 8' TO 20'  
CONTRACTOR: _____  
ENGINEER/ARCHITECT: NYS DOT

DRN. BY: TDS  
CHK. BY: SDH  
SCALE: NONE  
CWS. NO.: _____  
TB5-1



PO Box 508  
Barton, VT 05822  
Phone: (802)525-9506  
Fax: (802)525-4616  
[www.jp Sicard.com](http://www.jp Sicard.com)

Submittal Data Sheet

Submittal #: 8

Submission #: 2

Date: 5/6/2016

Project Name: Irasburg IM Deck (46)

Owner: Vermont Agency of Transportation

Engineer: VTrans

Contractor: J.P. Sicard, Inc.

Item Number: 507.11

Supplier: Dimension Fabricators, Inc.

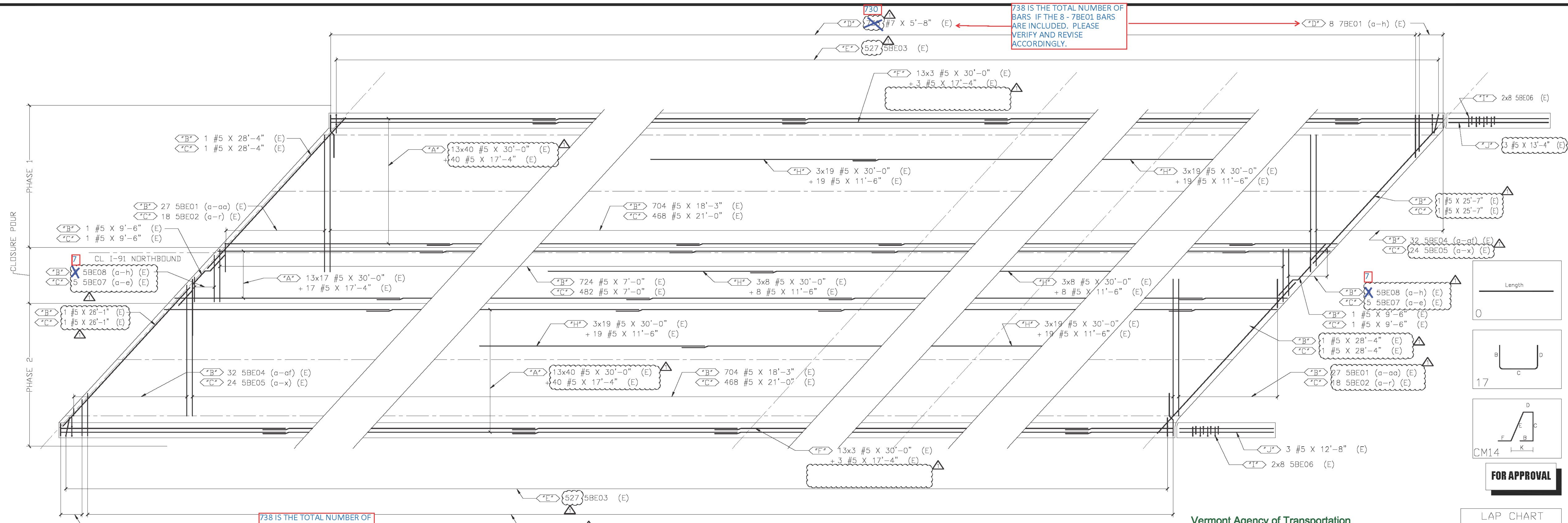
Description of Item: 507.11 Reinforcing Steel, Placement Drawings: Page 1: Span 1/Page 2: Span 2-4 REV1

Substitution: NO

Engineers Review Comments:  
_____  
_____

Submitted By: Brad Drake  
Title: Project Manager  
Company: JP Sicard, Inc.





**DECK REINFORCEMENT PLAN - SPANS 2 THRU 4**  
CONTRACT DWG. REF. 20 DF 49

Bar Mark	Qty	Size	Total Length	Type	A'	B'	C'	D'	E'	F'	G'	H'	I'	J'	K'	L'	M'	N'
5BE01a	2	#5	3'-9"	0														
5BE01aa	2	#5	17'-11"	0														
5BE01a	2	#5	4'-3"	0														
5BE02r	2	#5	18'-3"	0														
5BE03	1054	#5	5'-8 3/4"	DM1														
5BE04a	2	#5	1'-2"	0														
5BE04af	2	#5	18'-1"	0														
5BE05a	2	#5	1'-8"	0														
5BE05x	2	#5	20'-5"	0														
5BE06	32	#5	3'-1" 17															
5BE07a	2	#5	3'-4"	0														
5BE07e	2	#5	6'-8"	0														

Bar Mark	Qty	Size	Total Length	Type	A'	B'	C'	D'	E'	F'	G'	H'	I'	J'	K'	L'	M'	N'
5BE08a	2	#5	3'-4"	0														
5BE08h	2	#5	6'-8"	0														
7BE01a	2	#7	1'-8"	0														
7BE01h	2	#7	5'-5"	0														

**SHOP DRAWING REVIEW**

REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

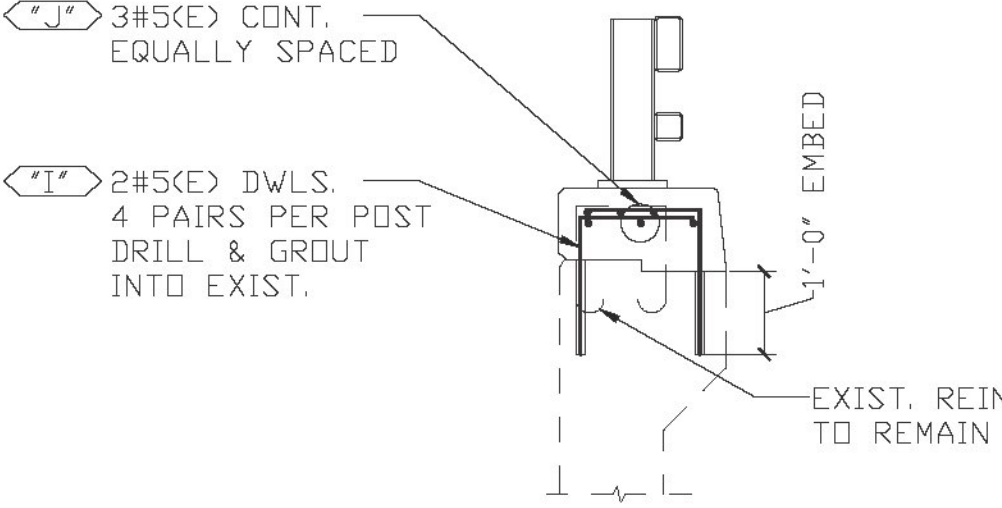
REJECTED  REVISE AND RESUBMIT  APPROVED AS NOTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATING THEIR WORK WITH THAT OF ALL OTHER TRADES, AND PERFORMING THEIR WORK IN A SAFE AND SATISFACTORY MANNER.

CLD Consulting Engineers  
540 Commercial Street  
Manchester, NH 03101  
603.988.9223

Job Number: 150223  
Reviewed by: SRB  
Date: 05/06/2016

Vermont Agency of Transportation  
**RECEIVED**  
ON: **May 6, 2016**  
and Checked for  
**CONFORMANCE**  
BY: Jennifer Fitch DATE: 05/10/16



**TYPICAL WINGWALL SECTION**  
CONTRACT DWG. REF. 24 DF 49

**LEGEND:**

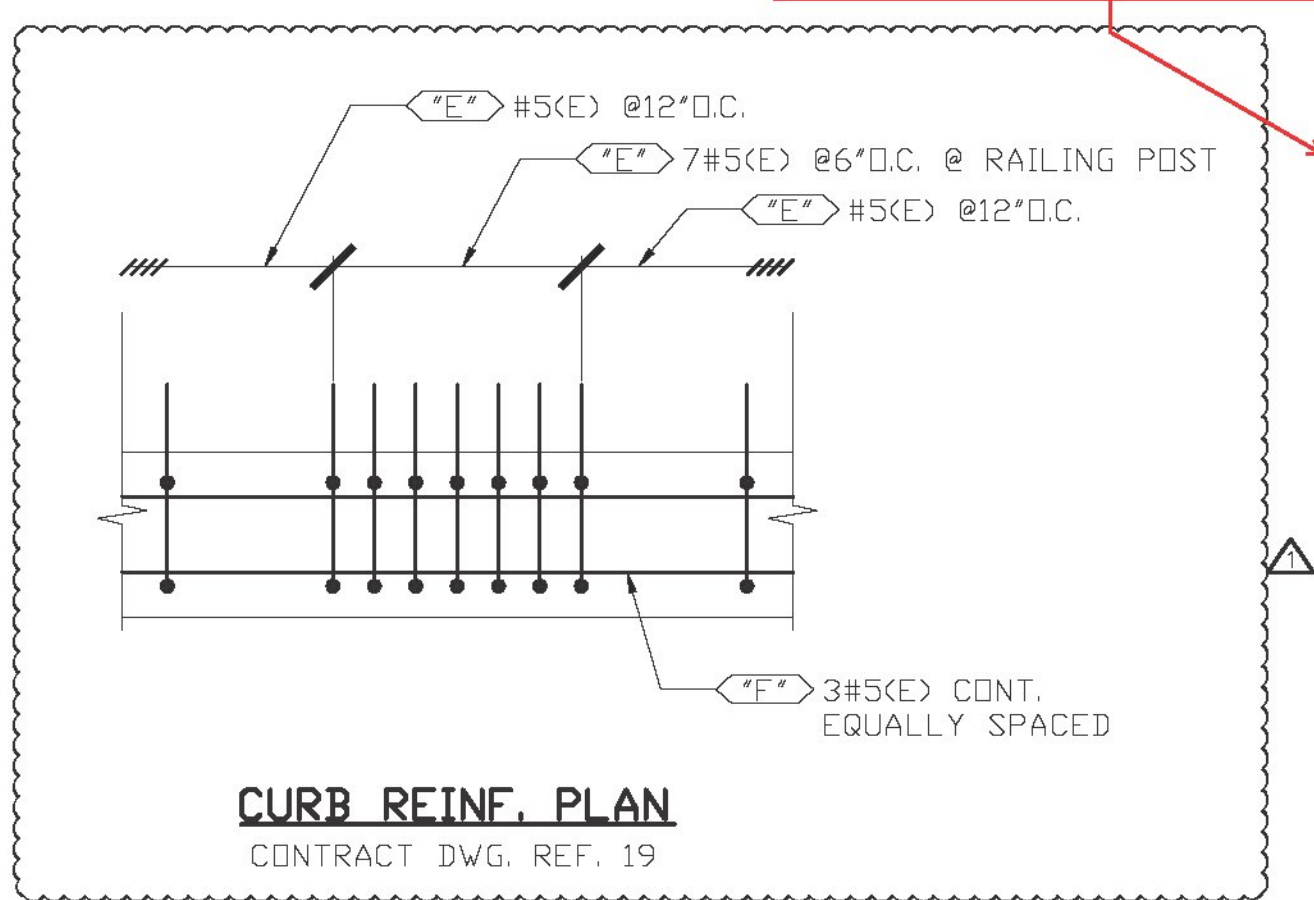
CONT.-CONTINUOUS	E.E.-EACH END
TRANS.-TRANSVERSE	E.F.-EACH FACE
DWLS-DOWELS	F.F.-FRONT FACE
VERTS.-VERTICAL	R.F.-REAR FACE
HORIZ.-HORIZONTAL	E.W.-EACH WAY
T&B -TOP & BOTTOM	D.C.-DN CENTER
I.F.-INNER FACE	L.W.-LONG WAY
O.F.-OUTER FACE	S.W.-SHORT WAY

ELEVATIONS & DIMENSIONS SHOWN ON THIS DWG. ARE FOR REINF. DETAILING PURPOSES ONLY AND ARE NOT INTENDED FOR DIMENSIONAL CONSTRUCTION.

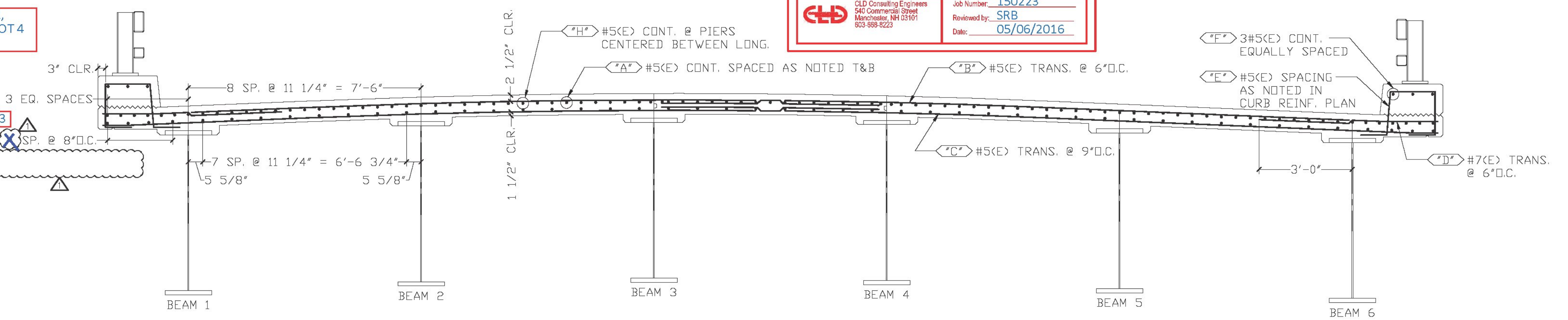
EPOXY REINF. BARS ASTM A615 GRADE 60, MARKED (E)

VERIFICATION OF UNCLEAR INFORMATION MAY BE REQUESTED ON THIS DRAWING. SHOULD VERIFICATION BE LEFT UN-ADDRESSED IT WILL REMAIN AS SHOWN AND ASSUME TO BE CORRECT.

YES - DRAWN CORRECTLY. HOWEVER, THERE ARE 3 SPACES WITH 4 BARS, NOT 4 SPACES. PLEASE REVISE.

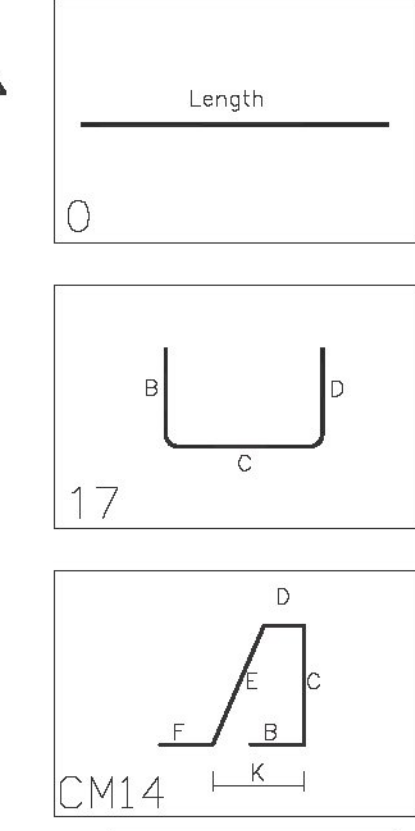


**CURB REINF. PLAN**  
CONTRACT DWG. REF. 19



**SECTION A**  
CONTRACT DWG. REF. A / 19 DF 49

**ALL REINF. EPOXY**



**LAP CHART**  
#5 3'-0"

**FOR APPROVAL**

6			
5			
4			
3			
2	5/6/16	REVISD PER APPROVAL / FOR APPROVAL	
1	5/3/16	FOR APPROVAL	
<b>DATE</b>		<b>REV.#</b>	<b>SENT FOR</b>
<b>DIMENSION</b>		2000 7TH STREET SCITUA, N.Y. 13369 PH: (518) 374-1936 FAX: (518) 374-4836 www.dimensionfabricators.com	
<b>DIMENSION FABRICATORS INC.</b>			
STRUCTURE:	VTAOT IRASBURG IM DECK (46)		
LOCATION:	INTERSTATE 91 (PRINCIPLE ARTERIAL) BRIDGE NO. 107N		
ARCHITECT:	TOWN OF IRASBURG, COUNTY OF ORLEANS		
ENGINEER:	CLD CONSULTING ENGINEERS		
CUSTOMER:	J.P. SICARD, INC.		
DRAWN BY:	DATE:	DPI #	
CMB	5/2/16	9737	
DRAWING COVERS		DRAWING #	
DECK SLAB - SPANS 2-4		B	



PO Box 508  
Barton, VT 05822  
Phone: (802)525-9506  
Fax: (802)525-4616  
[www.jp Sicard.com](http://www.jp Sicard.com)

Submittal Data Sheet

Submittal #: 1

Submission #: 1

Date: 4/19/2016

Project Name: Irasburg IM Deck (46)

Owner: Vermont Agency of Transportation

Engineer: VTrans

Contractor: J.P. Sicard, Inc.

Item Number: Special Provision 900.620 (Bridge Scupper)

Supplier: NEENAH Foundry Company

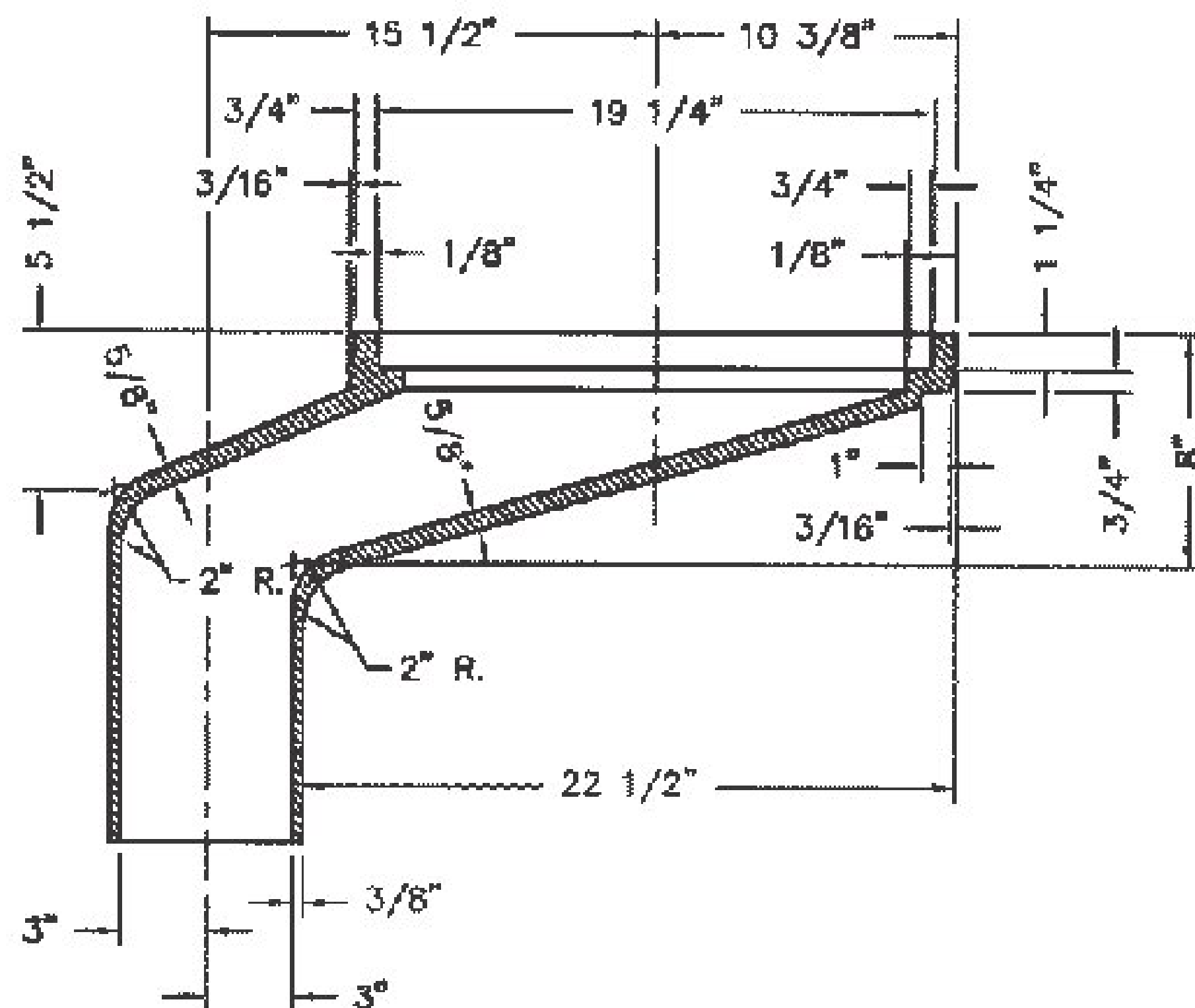
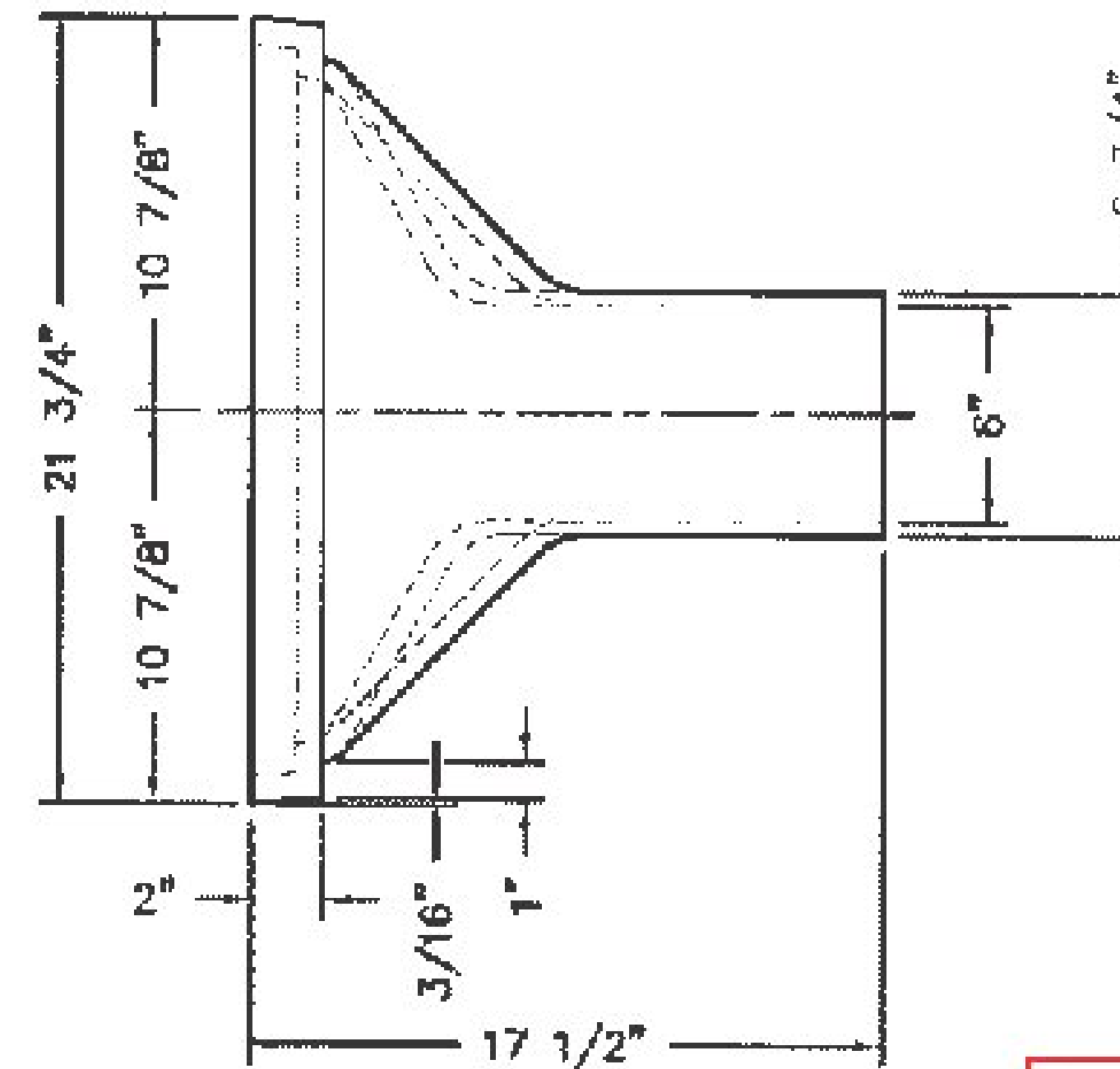
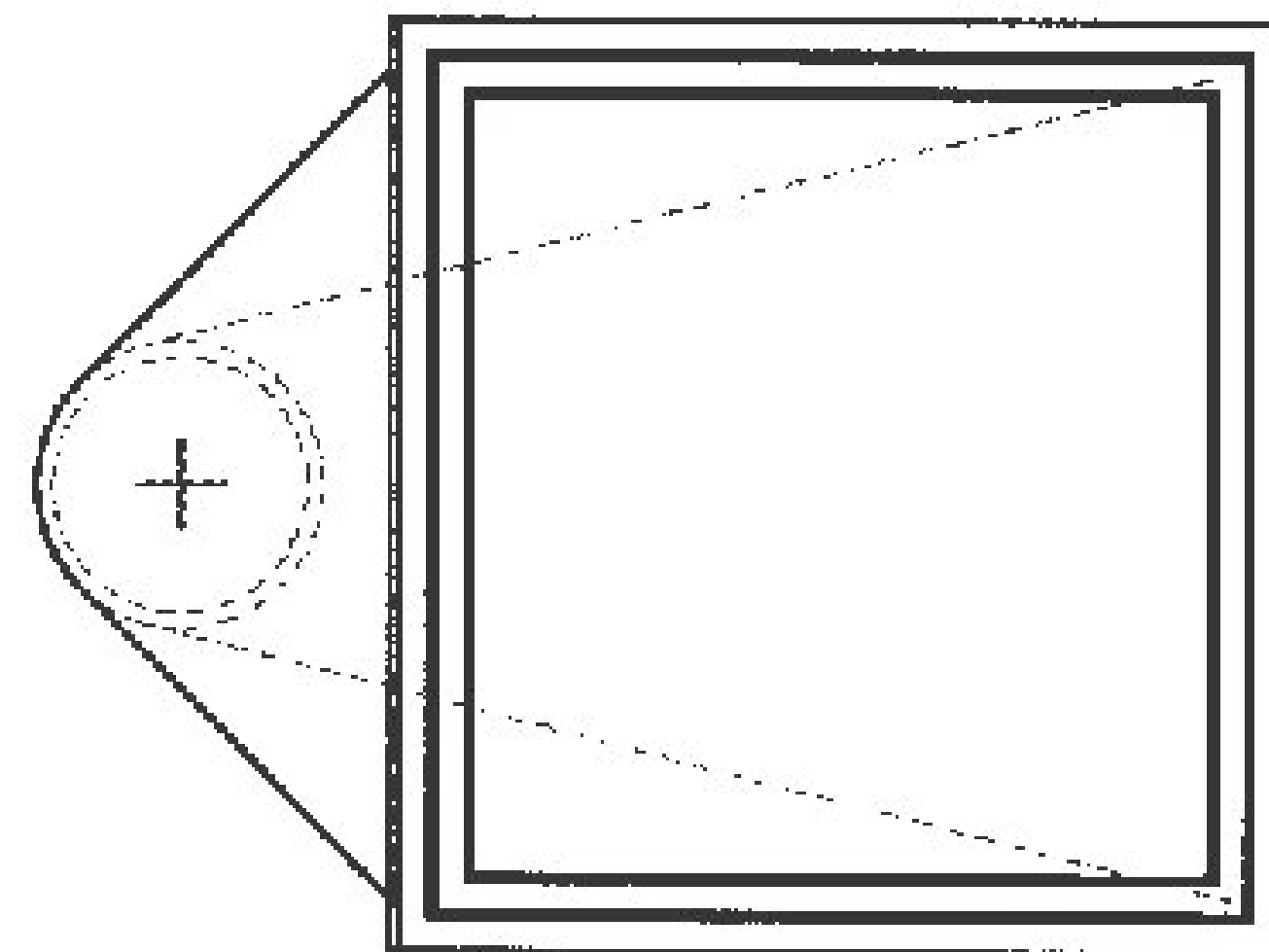
Description of Item: Bridge Scupper

Substitution: NO

Engineers Review Comments:  
_____  
_____

Submitted By: Brad Drake  
Title: Project Manager  
Company: JP Sicard, Inc.

# 39360001 - 4 B8



Vermont Agency of Transportation

**RECEIVED**

ON: April 20, 2016

and Checked for

**CONFORMANCE**

BY: Jennifer Fitch DATE: 04/26/16

SHOP DRAWING REVIEW

REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

REJECTED     REVISE AND RESUBMIT     APPROVED AS NOTED

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<small>CLD Consulting Engineers 590 Commercial Street Manchester, NH 03101 603-888-8223</small>	Job Number: 150229
	Reviewed by: SRB
	Date: 04/26/2016

MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B

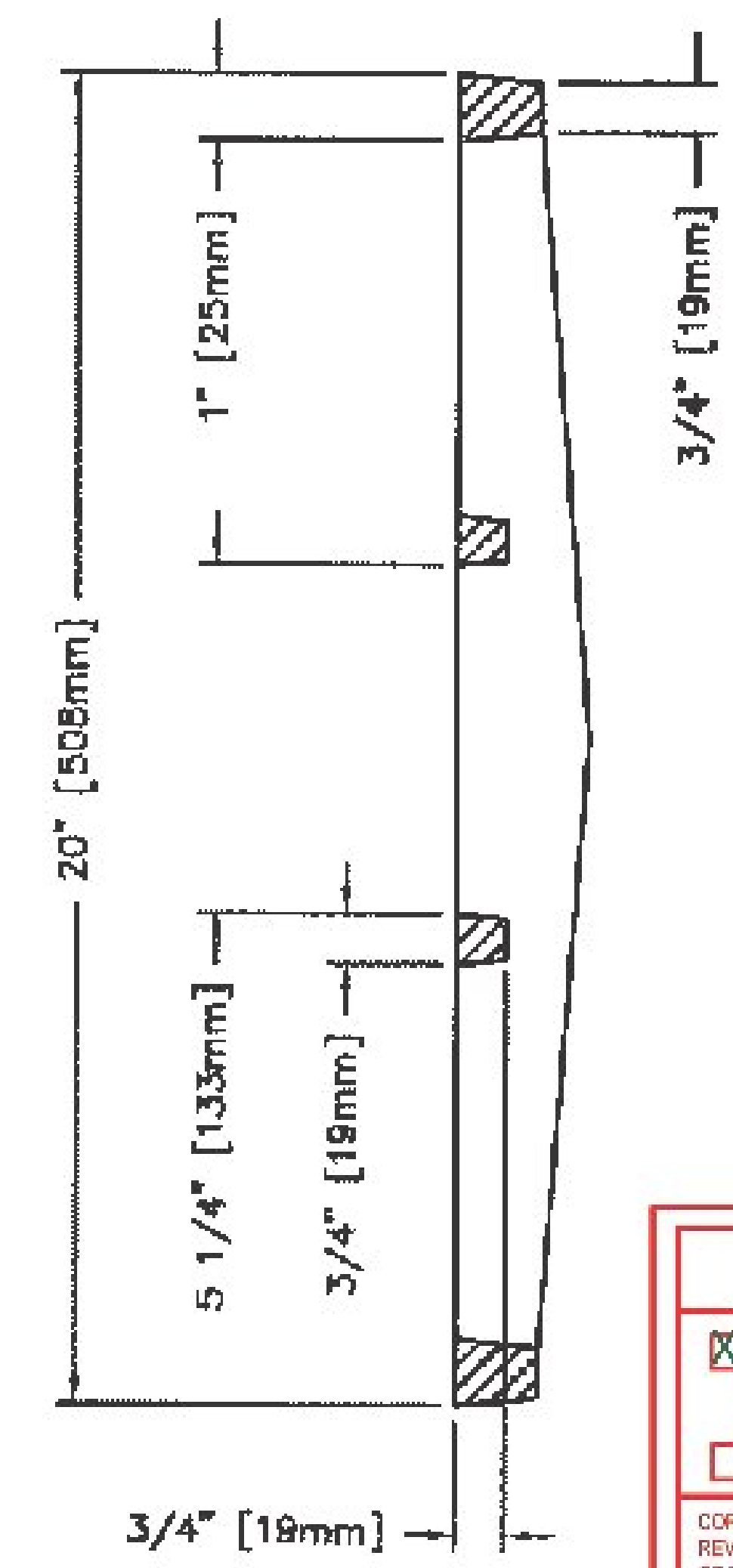
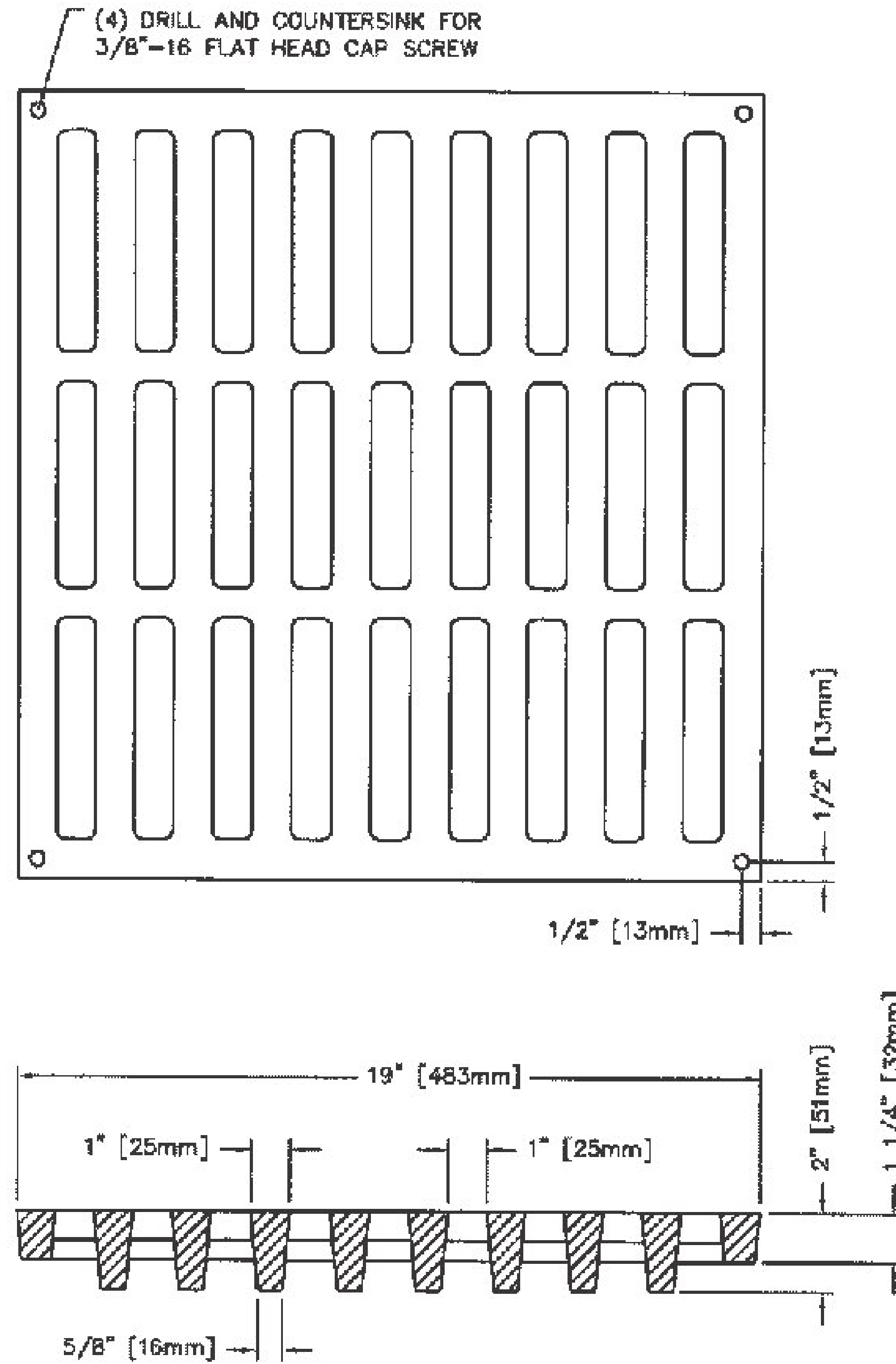
FINISH: NO PAINT

WEIGHT: 250#

DR. E. REMME	SCALE	TITLE	
CH.	1/8"=1"	R-3936-A	
APP.	DMB CHK.	SCUPPER	
DATE 05/10/90		NEENAH FOUNDRY COMPANY <small>NEENAH WISCONSIN 54906</small>	NF-39360001 B

<small>11-00-2000</small>	<small>REVIEWED AND MATCH DIMENSIONS SPEC-6 3/4"</small>	<small>DMB</small>	<small>CHK</small>	<small>BY</small>
<small>08-11-2008</small>	<small>REVIEWED SPEC Q.D. FROM 6 1/2"</small>	<small>ELR</small>	<small>CHK</small>	<small>BY</small>
<small>08-24-2000</small>	<small>REVIEWED SPEC Q.D. FROM 6 3/4"</small>	<small>ELR</small>	<small>CHK</small>	<small>BY</small>
<small>DATE</small>	<small>REVISION</small>			

# 3936 0004-1 B4



**SHOP DRAWING REVIEW**

REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

REJECTED     REVISE AND RESUBMIT     APPROVED AS NOTED

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	<small>CJD Consulting Engineers 540 Commercial Street Montpelier, VT 05601 802-888-8223</small>	Job Number: 150223
		Reviewed by: SRB
		Date: 04/26/2016

Vermont Agency of Transportation  
**RECEIVED**  
 ON: April 20, 2016  
 and Checked for  
**CONFORMANCE**  
 BY: Jennifer Fitch    DATE: 04/26/16

**NOTE:** ALL DIMENSIONS SHOWN ARE IN ENGLISH AND [METRIC]  
 MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B  
 FINISH: NO PAINT  
 WEIGHT: 79#    WAS NF-12105

DR. KMH	SCALE 1:4	TITLE: R-3936-A TYPE "C" GRATE
CH.	DN. CHK.	<b>NEENAH</b> FOUNDRY COMPANY <small>NEENAH WISCONSIN 54956</small>
APP.	DATE 06-30-2000	



PO Box 508  
Barton, VT 05822  
Phone: (802)525-9506  
Fax: (802)525-4616  
[www.jp Sicard.com](http://www.jp Sicard.com)

Submittal Data Sheet

Submittal #: 7

Submission #: 1

Date: 4/28/2016

Project Name: Irasburg IM Deck (46)

Owner: Vermont Agency of Transportation

Engineer: VTrans

Contractor: J.P. Sicard, Inc.

Item Number: Bridge Railing 525.33 / Steel Beam Guardrail 621.20 / Guardrail Approach Section 621.72

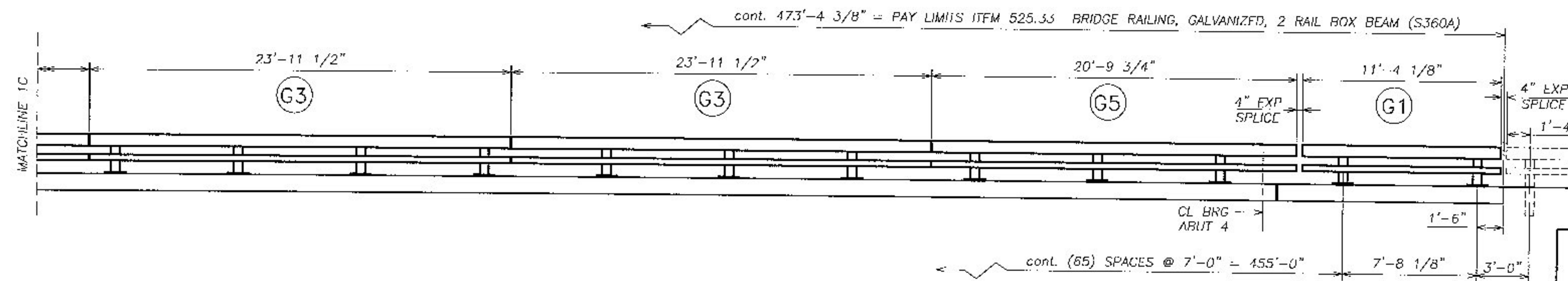
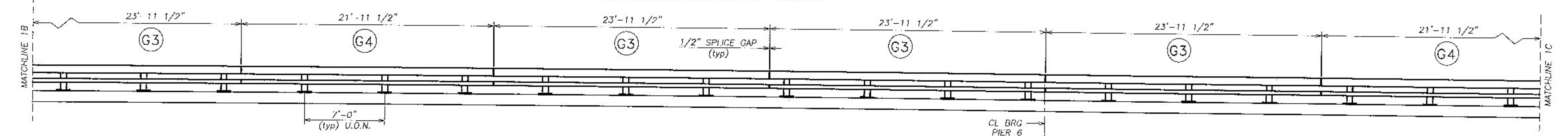
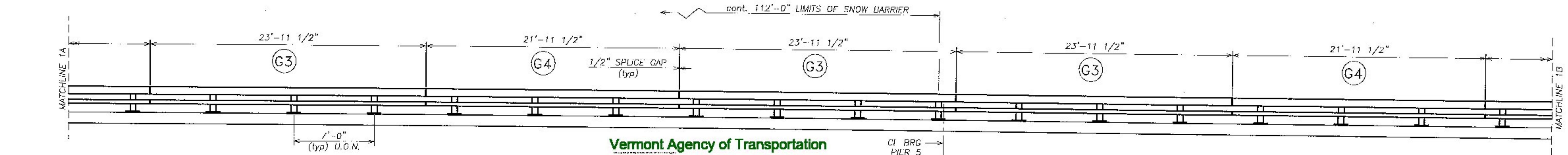
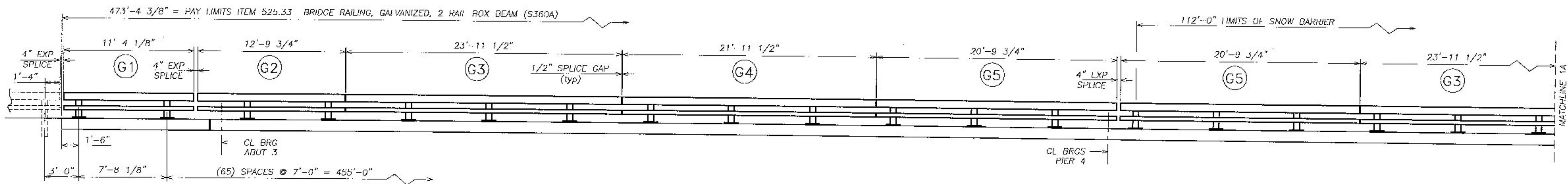
Supplier: J.P. Sicard, Inc.

Description of Item: Bridge Rail, Approach Rail (Galvanized 2 Rail Box Beam) / Steel Beam Guardrail  
+ Welding Procedure

Substitution: NO

Engineers Review Comments:

Submitted By: Brad Drake  
Title: Project Manager  
Company: JP Sicard, Inc.



Vermont Agency of Transportation  
**RECEIVED**  
 ON: April 28, 2016  
 and Checked for  
**CONFORMANCE**  
 BY: Jennifer Fitch DATE: 05/02/16

**NORTHWEST SIDE RAILING ELEVATION**  
 LOOKING AT TRAFFIC FACE OF RAILING  
 FACING NORTHWEST FROM CENTERLINE OF ROAD

No.	Remarks	Date
0	Initial submittal	4/28/16
REVISIONS - APPLIES TO SET		

**SHOP DRAWING REVIEW**

REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

REJECTED     REVISE AND RESUBMIT     APPROVED AS NOTED

CORRECTIONS OR COMMENTS MADE ON THESE SHOP DRAWINGS DURING THIS REVIEW DID NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THESE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATING THEIR WORK WITH OTHER CONTRACTORS, AND PERFORMING THEIR WORK IN A SAFE AND SATISFACTORY MANNER.

**CLD** Consulting Engineers  
 540 Cornhill Drive  
 Montpelier, NH 05601  
 802-888-6225

Job Number: 150223  
 Reviewed by: SRB  
 Date: 04/29/2015

**HIGHWAY SAFETY CORP**  
 GLASTONBURY, CT  
 860-633-9445

ITEM 525.33 BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM (S-360A)  
 ITEM 621.72 GUARDRAIL APPROACH, GALV 2 RAIL BOX BEAM (S-360B)

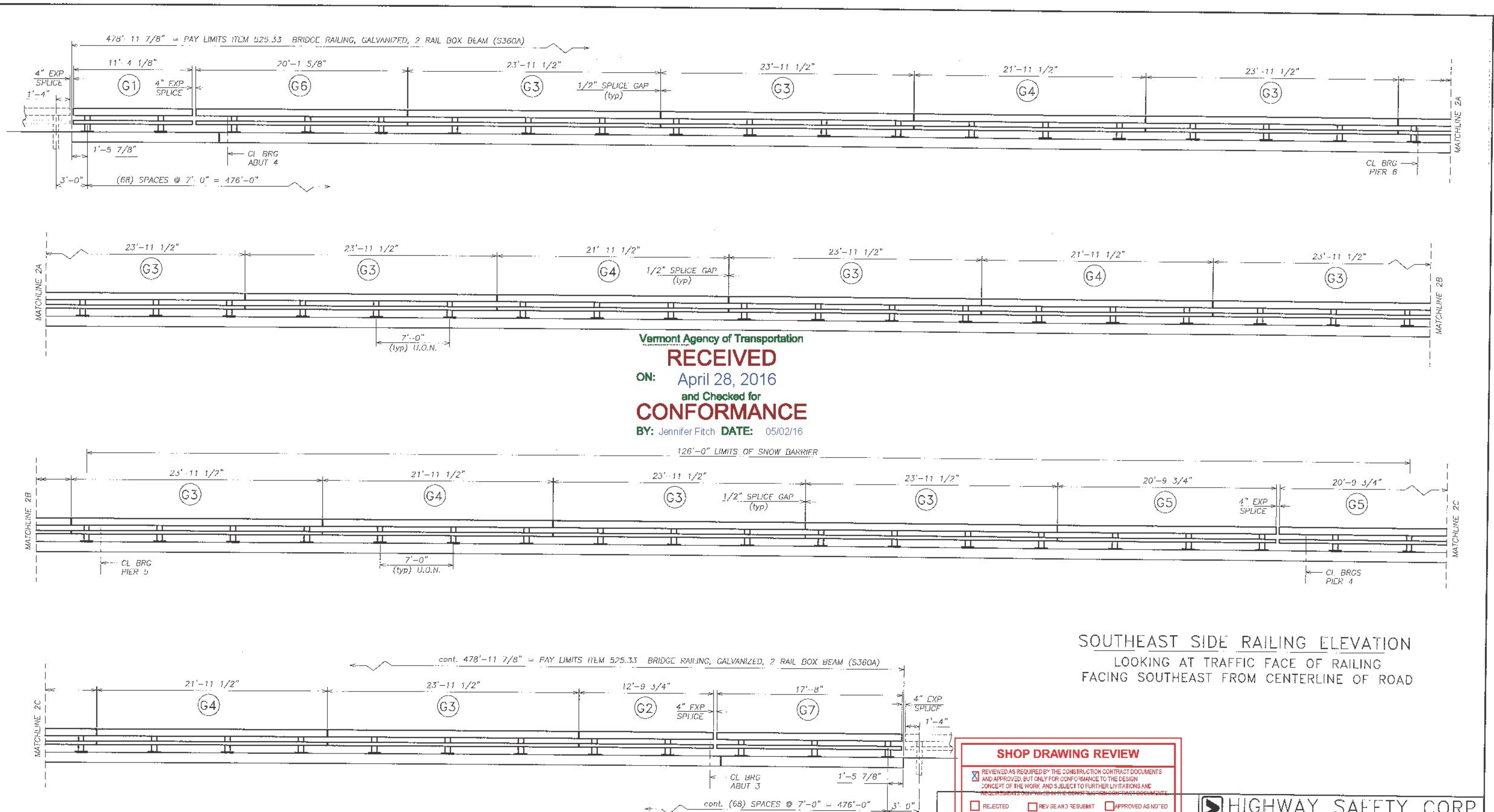
TOWN OF IRASHBURG, VERMONT  
 INTERSTATE 91 (PRINCIPAL ARTERIAL) BRIDGE NO. 107 N  
 ORLEANS COUNTY 1M DECK (46)

**CERTIFIED FABRICATOR**

GEN. CONTRACTOR: LAFAYETTE  
 SUB CONTRACTOR: LAFAYETTE

REV. JOB NO.: 2103  
 SHEET NO.: 1 of 5

DATE: 04-27-16 SCALE: NONE SIZE: D



**SOUTHEAST SIDE RAILING ELEVATION**  
 LOOKING AT TRAFFIC FACE OF RAILING  
 FACING SOUTHEAST FROM CENTERLINE OF ROAD

**SHOP DRAWING REVIEW**

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CLD Consulting Engineers  
 840 Cornhill Street  
 Manchester, NH 03101  
 603-893-0223

Job Number: 150223  
 Reviewed by: SRB  
 Date: 04/29/2015

**HIGHWAY SAFETY CORP**  
 GLASTONBURY, CT  
 860-633-9445

ITEM 525.33 BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM (S-360A)  
 ITEM 621.72 GUARDRAIL APPROACH, GALV 2 RAIL BOX BEAM (S-360B)

TOWN OF IRASBURG, VERMONT  
 INTERSTATE 91 (PRINCIPAL ARTERIAL) BRIDGE NO. 107 N  
 ORLEANS COUNTY IM DECK (46)

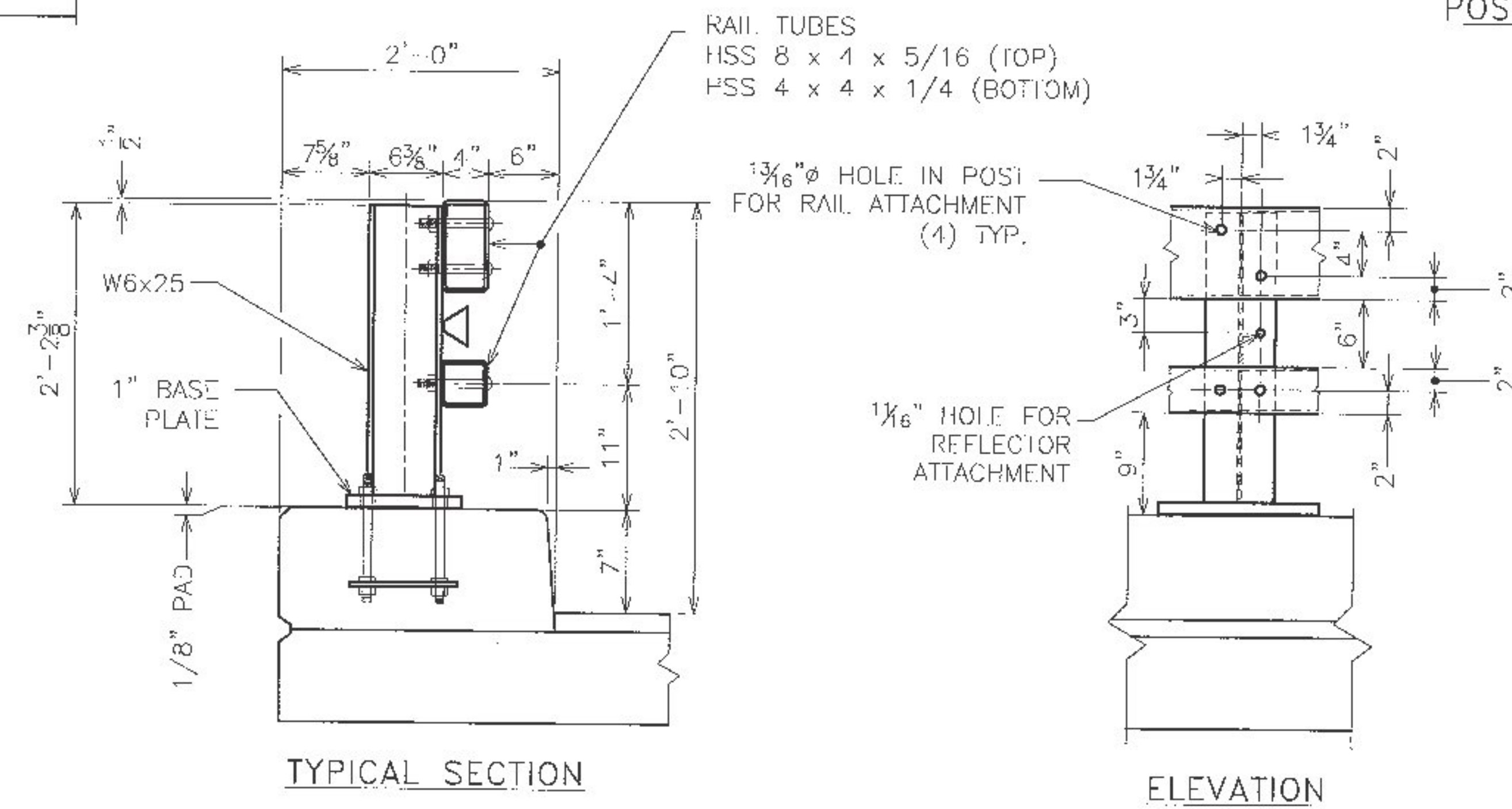
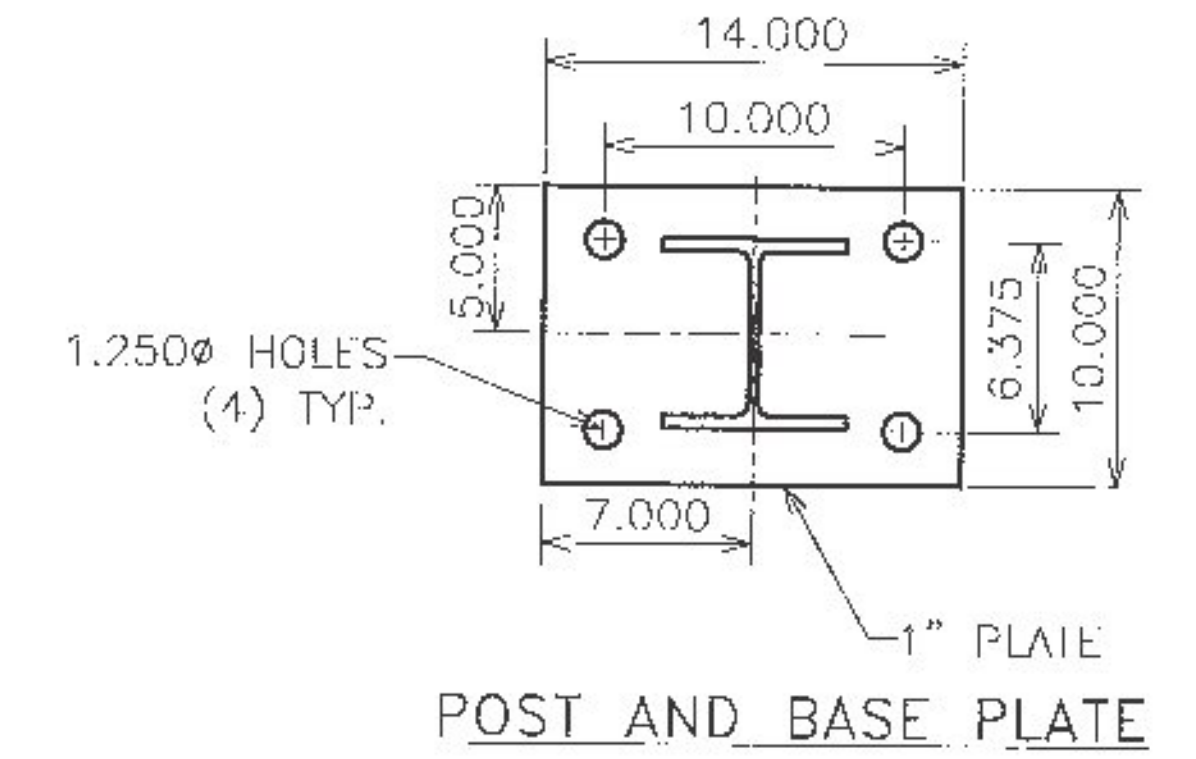
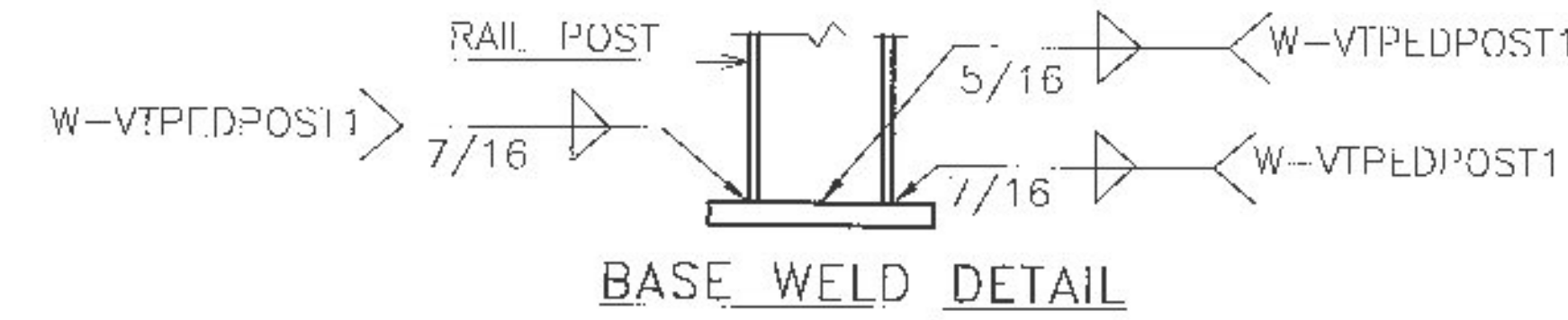
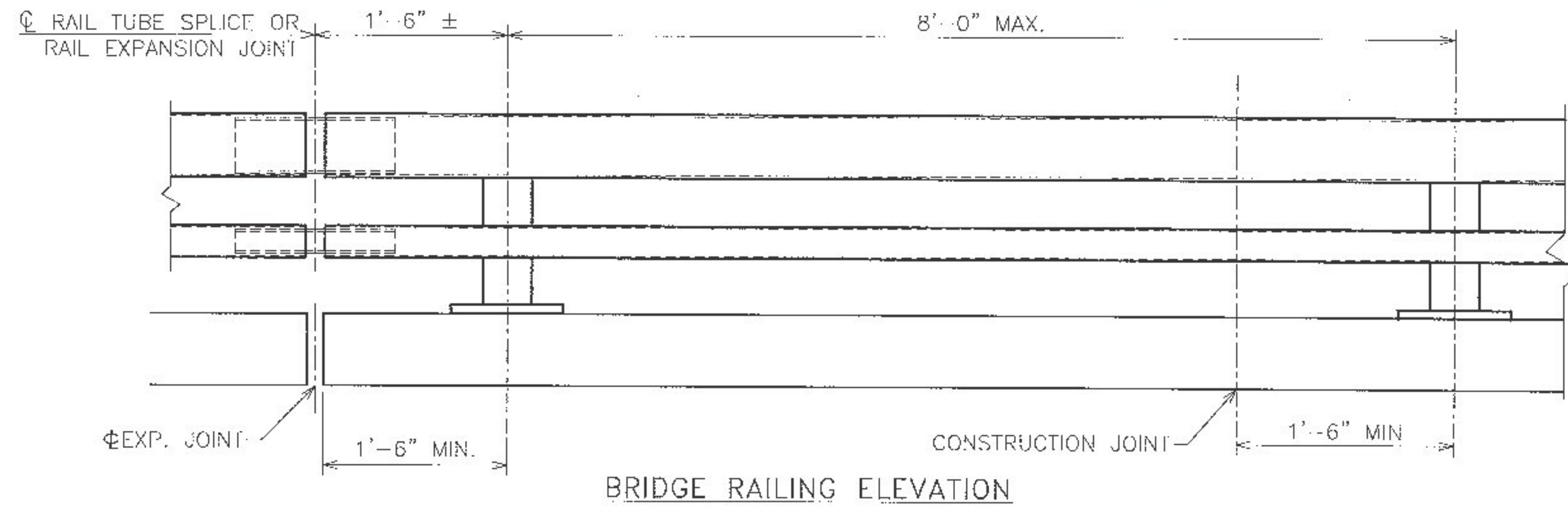
CONTRACTOR: LAFAYETTE

DATE: 04-27-16

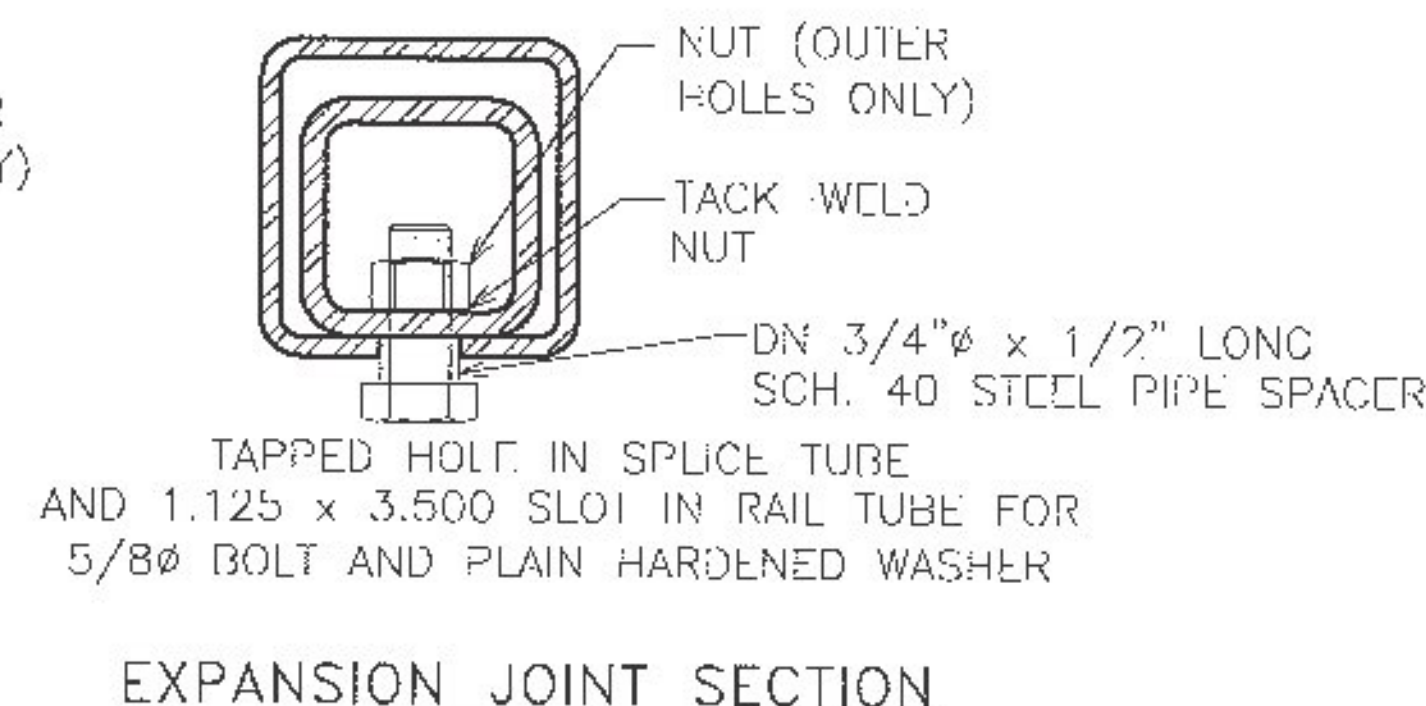
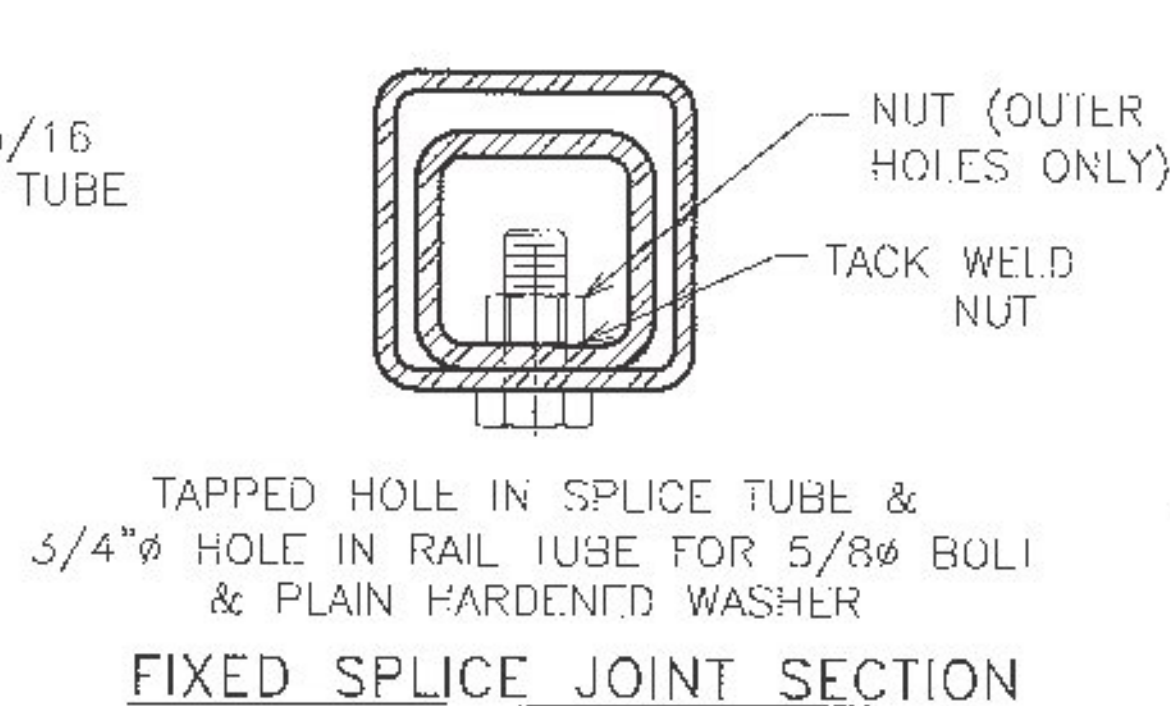
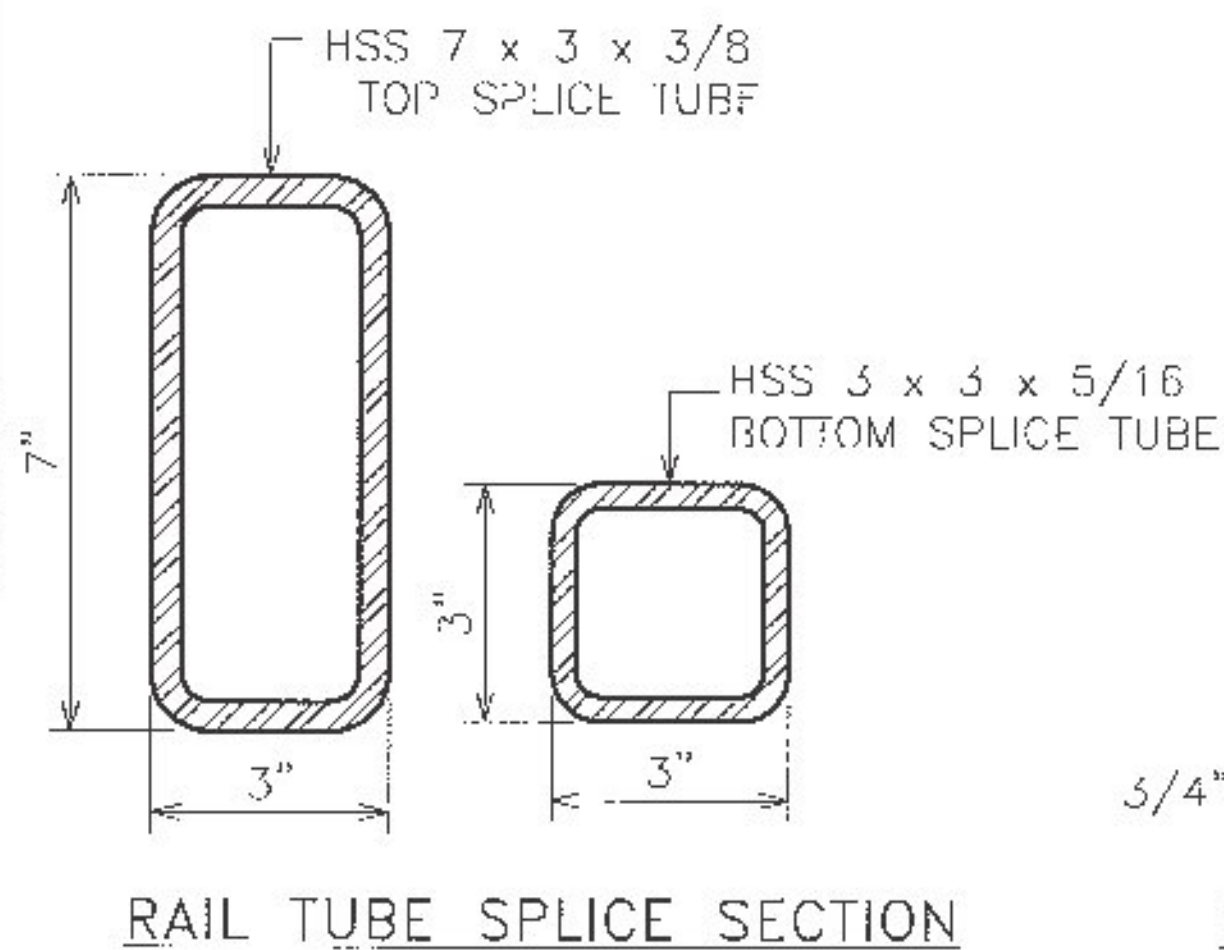
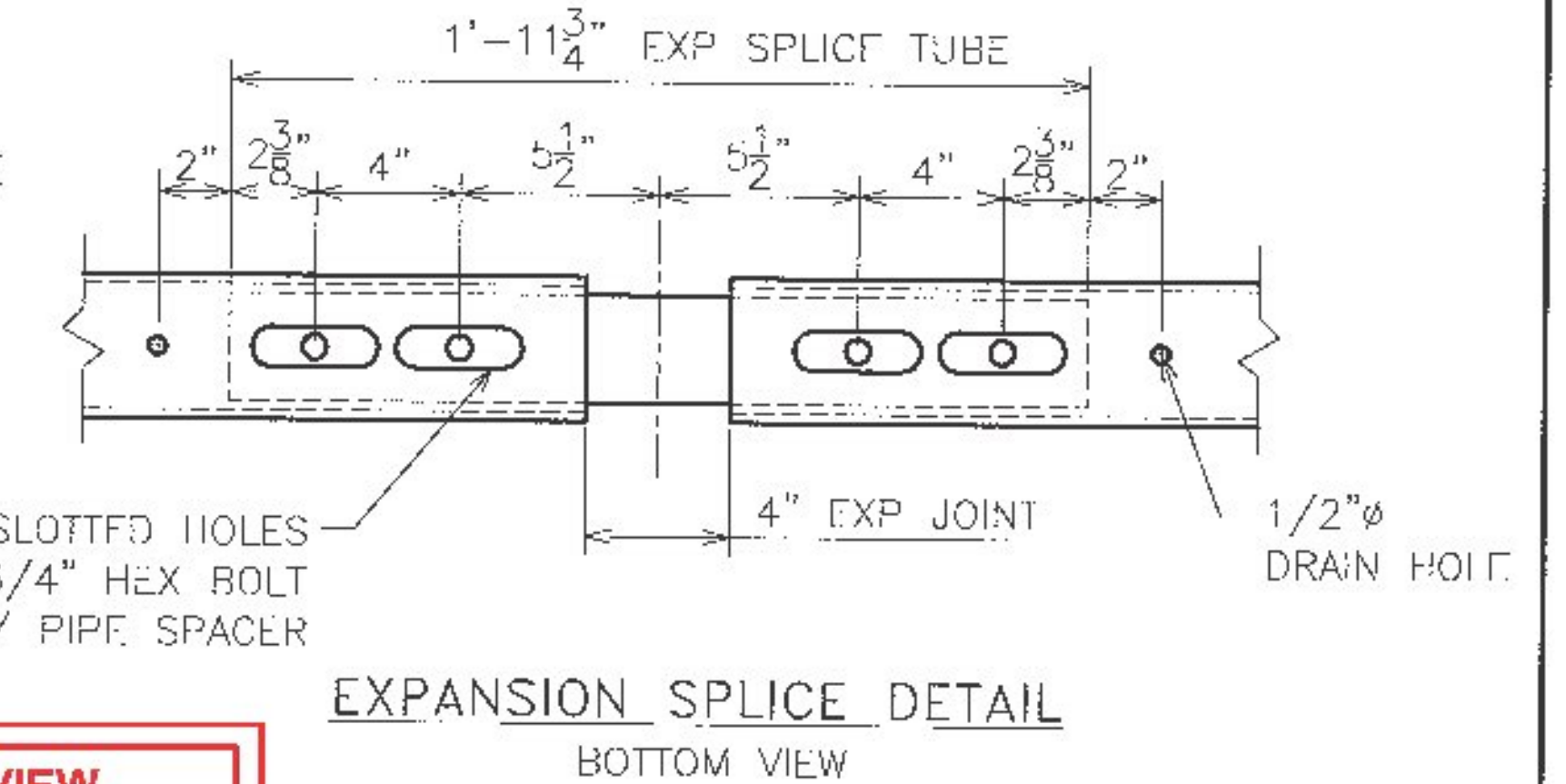
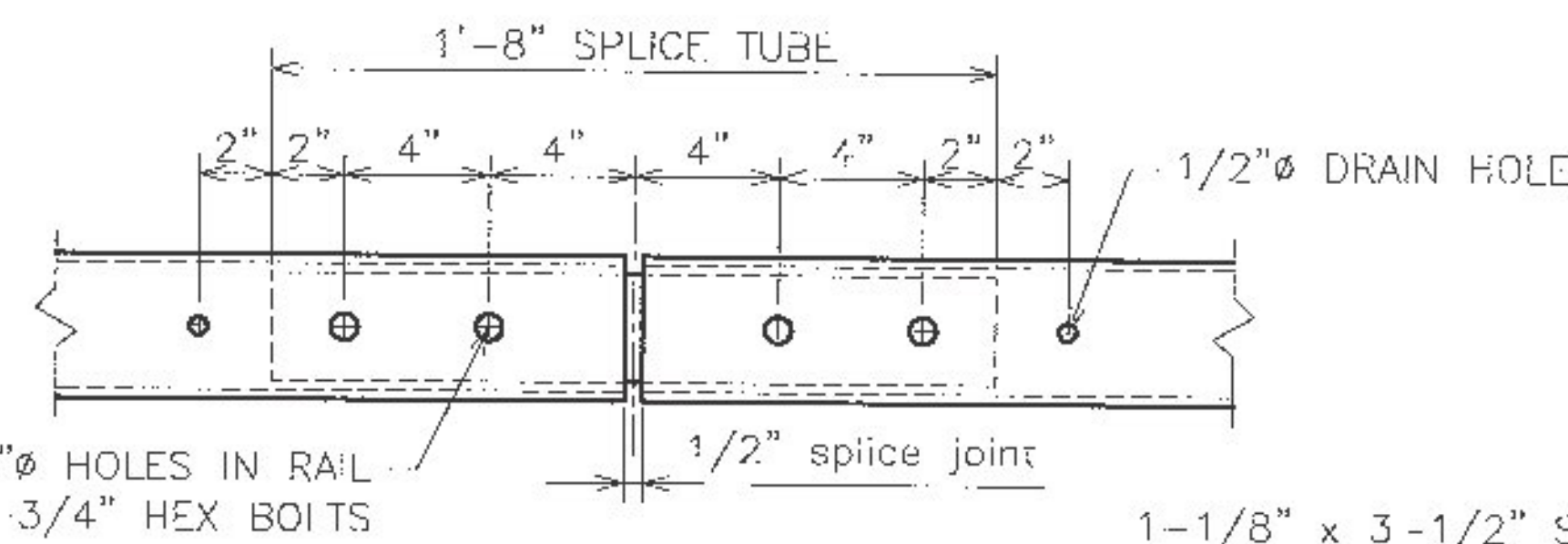
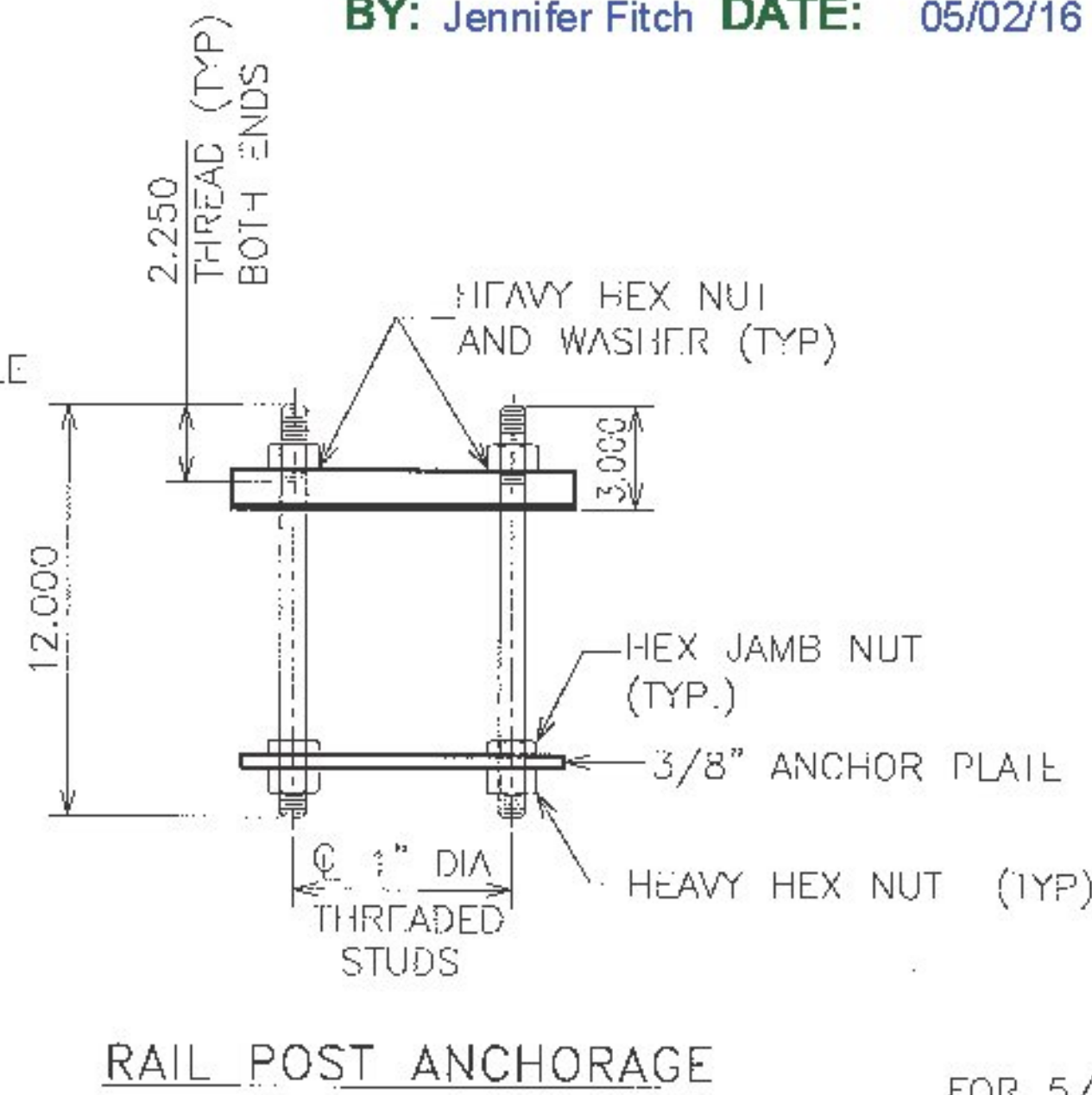
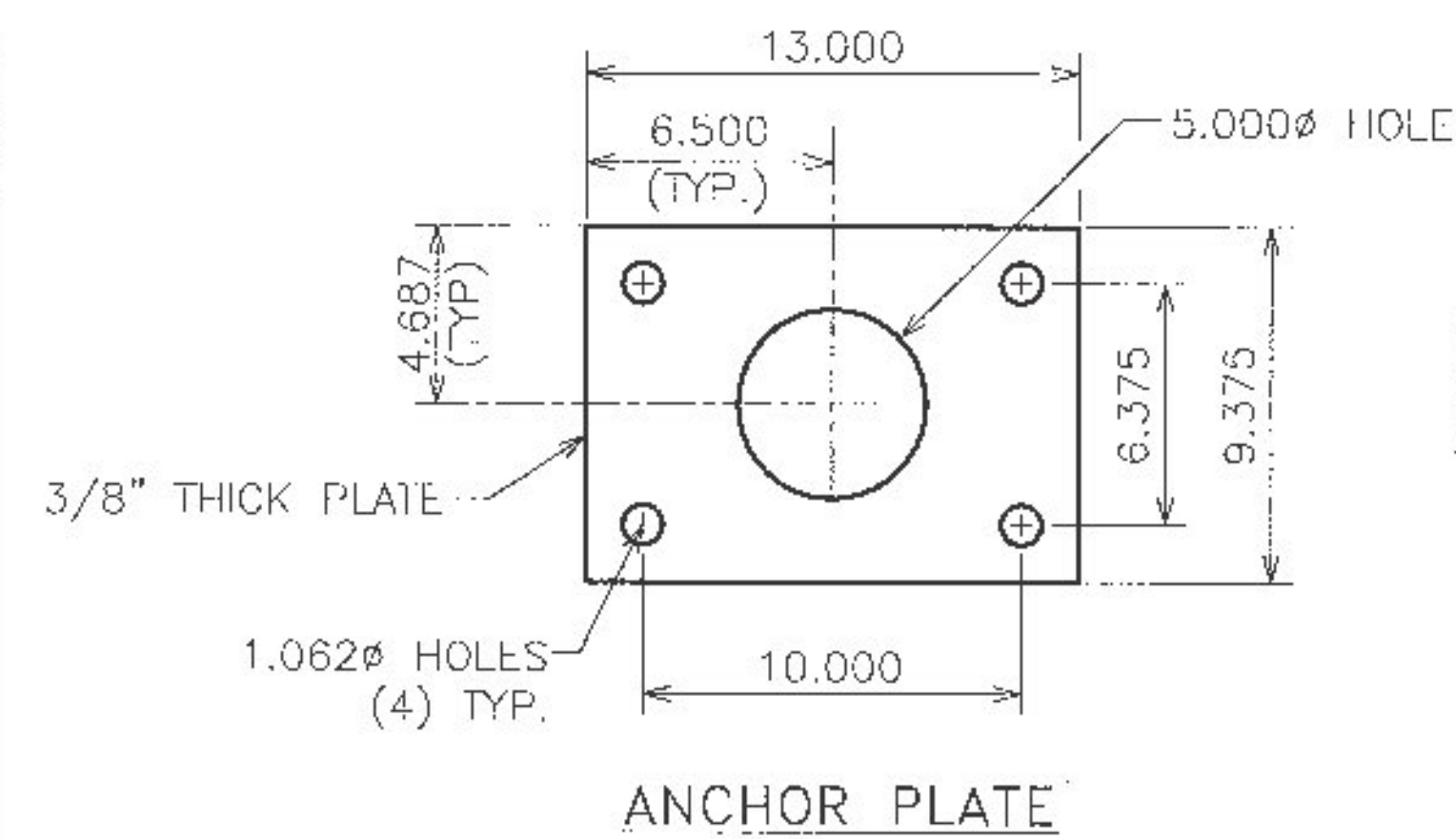
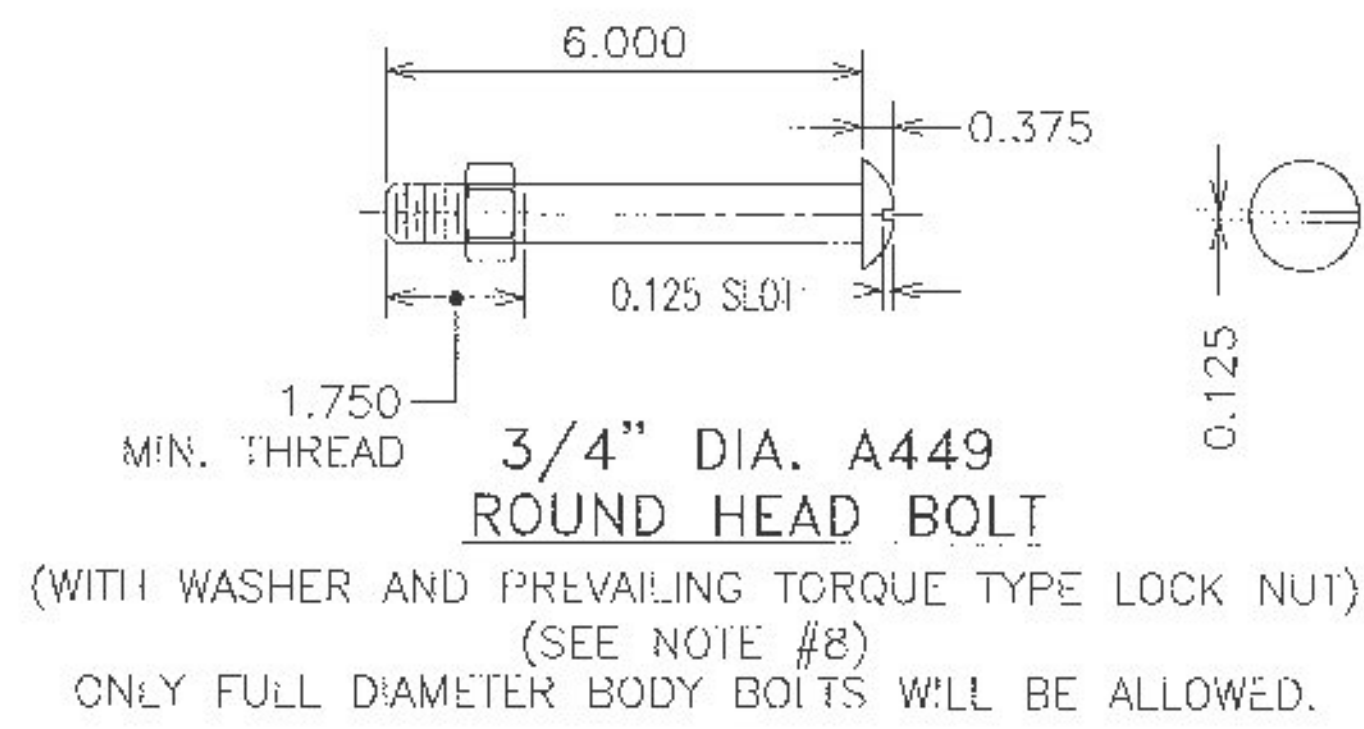
SCALE: NONE SIZE: D

ISSUED AS CERTIFIED FABRICATOR

JOB NO. 2103  
 SHEET NO. 2 of 5



Vermont Agency of Transportation  
**RECEIVED**  
 ON: April 28, 2016  
 and Checked for  
**CONFORMANCE**  
 BY: Jennifer Fitch DATE: 05/02/16



**SHOP DRAWING REVIEW**

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REVIEWED  REVISE AND RESUBMIT  APPROVED AS NOTED

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Job Number: 150223  
 Reviewed by: SRB  
 Date: 04/29/2015

**HIGHWAY SAFETY CORP**  
 GLASTONBURY, CT  
 860-633-9445

ITEM 525.33 BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM (S-360A)

TOWN OF IRASBURG, VERMONT  
 INTERSTATE 91 (PRINCIPAL ARTERIAL) BRIDGE NO. 107 N  
 ORLEANS COUNTY IM DECK (46)

GENERAL CONTRACTOR: LAFAYETTE

DATE: 04-27-16 SCALE: NONE SIZE: D

CERTIFIED FABRICATOR

2103

3 of 5

# BILL OF MATERIAL

Qty	mk	Description	Spec.
952.35	LF	ITEM 525.33 BRIDGE RAILING, GALVANIZED, 2 RAIL BOX BEAM	
137		BRIDGE RAILING POST W6 x 25 x 2'-2.375" OAH WITH 1 x 10 x 14 BASE PLATE (GLV)	A709 gr B
36		SPLICE TUBE (FOR 8X4 RAIL) HSS 7 x 3 x 3/8 x 1'-8.000" OAL w/ TAPPED HOLES & 2 WELDED NUTS (GLV)	A500 gr B
36		SPLICE TUBE (FOR 4X4 RAIL) HSS 3 x 3 x 5/16 x 1'-8.000" OAL w/ TAPPED HOLES & 2 WELDED NUTS (GLV)	A500 gr B
6		EXP SPLICE (FOR 8X4 RAIL) HSS 7 x 3 x 3/8 x 1'-11.750" OAL w/ TAPPED HOLES & 2 WELDED NUTS (GLV)	A500 gr B
6		EXP SPLICE (FOR 4X4 RAIL) HSS 3 x 3 x 5/16 x 1'-11.750" OAL w/ TAPPED HOLES & 2 WELDED NUTS (GLV)	A500 gr B
3	G1	RAIL TUBE HSS 8 x 4 x 5/16 x 11 ft - 4.125 in OAL - EXP splice both ends (GLV)	A500 gr B
2	G2	RAIL TUBE HSS 8 x 4 x 5/16 x 12 ft - 9.75 in OAL - FIX splice 1 end, EXP splice 1 end (GLV)	A500 gr B
22	G3	RAIL TUBE HSS 8 x 4 x 5/16 x 23 ft - 11.5 in OAL - FIX splice both ends (GLV)	A500 gr B
10	G4	RAIL TUBE HSS 8 x 4 x 5/16 x 21 ft - 11.5 in OAL - FIX splice both ends (GLV)	A500 gr B
5	G5	RAIL TUBE HSS 8 x 4 x 5/16 x 20 ft - 9.75 in OAL - FIX splice 1 end, EXP splice 1 end (GLV)	A500 gr B
1	G6	RAIL TUBE HSS 8 x 4 x 5/16 x 20 ft - 1.625 in OAL - FIX splice 1 end, EXP splice 1 end (GLV)	A500 gr B
1	G7	RAIL TUBE HSS 8 x 4 x 5/16 x 17 ft - 8 in OAL - EXP splice both ends (GLV)	A500 gr B
3	G1	RAIL TUBE HSS 4 x 4 x 1/4 x 11 ft - 4.125 in OAL - EXP splice both ends (GLV)	A500 gr B
2	G2	RAIL TUBE HSS 4 x 4 x 1/4 x 12 ft - 9.75 in OAL - FIX splice 1 end, EXP splice 1 end (GLV)	A500 gr B
22	G3	RAIL TUBE HSS 4 x 4 x 1/4 x 23 ft - 11.5 in OAL - FIX splice both ends (GLV)	A500 gr B
10	G4	RAIL TUBE HSS 4 x 4 x 1/4 x 21 ft - 11.5 in OAL - FIX splice both ends (GLV)	A500 gr B
5	G5	RAIL TUBE HSS 4 x 4 x 1/4 x 20 ft - 9.75 in OAL - FIX splice 1 end, EXP splice 1 end (GLV)	A500 gr B
1	G6	RAIL TUBE HSS 4 x 4 x 1/4 x 20 ft - 1.625 in OAL - FIX splice 1 end, EXP splice 1 end (GLV)	A500 gr B
1	G7	RAIL TUBE HSS 4 x 4 x 1/4 x 17 ft - 8 in OAL - EXP splice both ends (GLV)	A500 gr B
137		ANCHOR SPACER PLATE PL 0.375 x 13.000 x 9.375	A709 gr B
548		ANCHOR STUD DBL END PART THREAD - 1" DIA x 12.000 w/ 2.250" THD EACH END (GLV)	A449
1096		HEAVY HEX NUT 1" (GLV)	A563 DH
548		ROUND WASHER (SAE) - 1" DIA SMALL (GLV)	F436
548		JAM NUT 1" (GALV)	A563 DH
548		ROUND HEAD POST BOLT slot or wrench head - no shoulder 3/4" DIA x 6" LG. FULL BODY (GLV)	A449 / A325
548		LOCK NUT 3/4" (GLV)	A563 DH
548		ROUND WASHER (SAE) 3/4" (GLV)	F436
336		HEX HEAD BOLT 5/8" DIA x 1.75" LG. (GLV)	A325
336		ROUND WASHER (SAE) 5/8" (GLV)	F436
48		SPACER PIPE - GALVANIZED 3/4" SCH. 40 x 1/2" LONG (GLV)	A53 gr B
137		BEARING PAD 0.125" THICK x 10.000 x 14.000 (NEOPRENE 80 duro +/-10)	aashto M251

Vermont Agency of Transportation

**RECEIVED**  
**ON: April 28, 2016**  
**and Checked for CONFORMANCE**  
**BY: Jennifer Fitch DATE: 05/02/16**

**NOTES:**

- ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525.
- PRIOR TO GALVANIZING, ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 1/16" RADIUS AND BE FREE OF BURRS.
- ALL POSTS SHALL BE SET NORMAL TO GRADE.
- SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO (2) RAIL POSTS AND PREFERABLY TO AT LEAST FOUR (4) POSTS.
- RAIL TUBE EXPANSION JOINT SHALL BE PROVIDED IN ANY RAIL BAY SPANNING THE END OF AN INTEGRAL ABUTMENT BRIDGE AND AT ALL SUPERSTRUCTURE EXPANSION JOINTS. EXPANSION JOINT WIDTH SHALL BE 4" AT 45°F AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
- HOLES IN RAILS FOR RAIL TUBE ATTACHMENT SHALL BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
- RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
- RAIL TUBES SHALL BE ATTACHED USING 3/4" FULL DIAMETER BODY ASTM A449 ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE TUBE. HOLES IN POSTS SHALL BE 1/16" LARGER THAN THE BOLT SIZE.
- ANY BENDING OR CURVING OF RAIL SHALL BE DONE IN A FABRICATION PLANT IN ACCORDANCE WITH SUBMITTED PROCEDURES.
- THE MINIMUM DISTANCE FROM A POST TO AN EXPANSION JOINT SHALL BE SUCH TO MAINTAIN MINIMUM EDGE DISTANCE OF 5" FROM ANY ANCHOR STUD TO THE END OF THE SLAB, OR TO THE EXPANSION JOINT RECESS POUR, IF ONE IS USED.
- A DELINEATOR (SEE VAOT STANDARD DRAWING G-1 FOR DETAILS) SHALL BE INSTALLED AT NEAREST POST TO 30 FT SPACING. WHITE IS TO BE INSTALLED ON THE DRIVER'S RIGHT. FOR ONE WAY BRIDGES, YELLOW IS TO BE INSTALLED ON THE DRIVER'S LEFT. PAYMENT SHALL BE INCIDENTAL TO OTHER ITEMS.
- THIS RAILING MEETS THE REQUIREMENTS FOR A TL-4 SERVICE LEVEL.  
**MATERIALS**  
 RAIL TUBES.....ASTM A500 GRADE B OR ASTM A501  
 RAIL POSTS AND BASE PLATES.....ASTM A709/A709M, GRADE 50  
 ALL OTHER SHAPES AND PLATES.....ASTM A709/A709M, GRADE 36  
 ANCHOR STUDS.....ASTM A449  
 ALL OTHER BOLTS (UNLESS NOTED).....AASHTO M164, TYPE 1  
 NUTS FOR AASHTO M164 BOLTS AND FOR ANCHOR STUDS SHALL COMPLY WITH AASHTO M291 (ASTM A563).  
 WASHERS SHALL COMPLY WITH AASHTO M293 (ASTM F436) SPECIFICATIONS.  
 1/8" PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.01 OR 731.02.  
 RAIL POSTS AND BASE PLATES SHALL BE TESTED FOR IMPACT PROPERTIES IN ACCORDANCE WITH ASTM A370 CHARPY IMPACT TESTING USING TYPE A SPECIMEN.

**SHOP DRAWING REVIEW**

REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED BY THE DESIGNER FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK AND SUBJECT TO FURTHER LIVATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

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**CEB** Civil Engineering  
 140 Commercial Street  
 Montpelier, VT 05602  
 802.865.2221

Job Number: 150223  
 Reviewed by: SRB  
 Date: 04/29/2015

**HIGHWAY SAFETY CORP**  
 GLASTONBURY, CT  
 860-633-9445

ITEM 525.33 BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM (S-360A)

TOWN OF IRASBURG, VERMONT  
 INTERSTATE 91 (PRINCIPAL ARTERIAL) BRIDGE NO. 107 N  
 ORLEANS COUNTY IM DECK (46)

GENERAL CONTRACTOR: LAFAYETTE

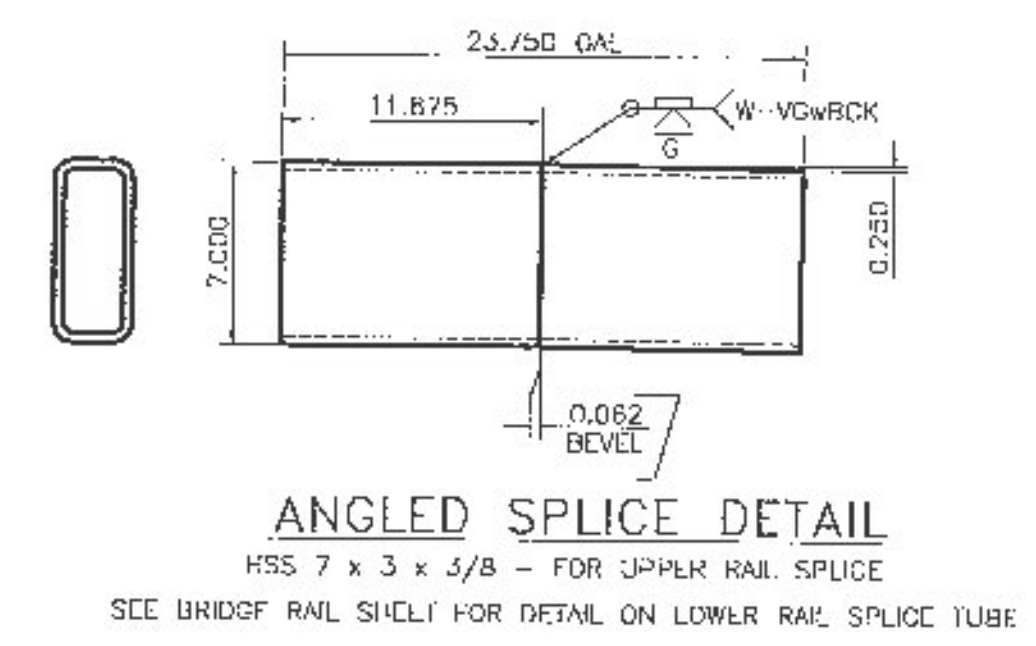
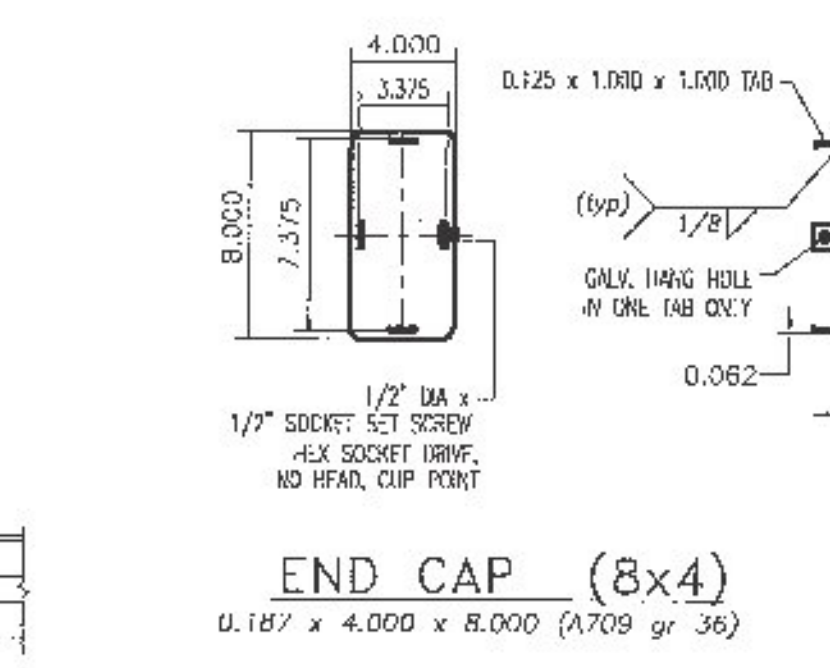
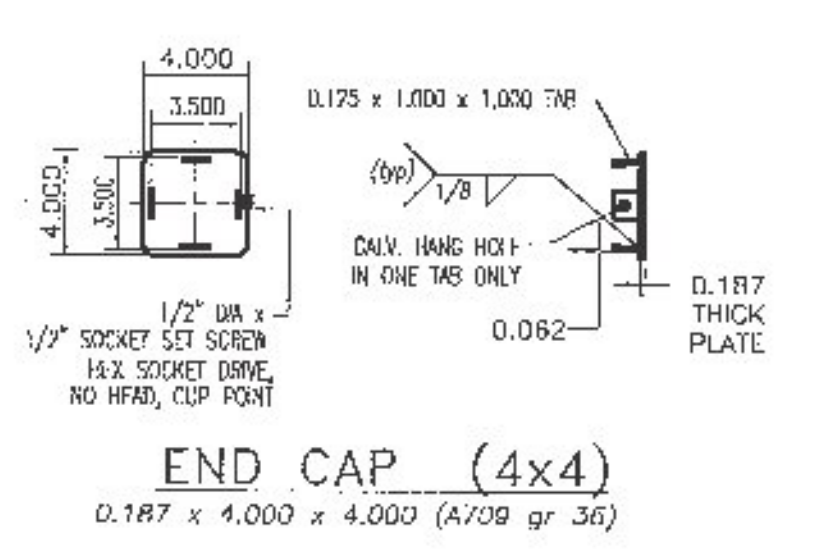
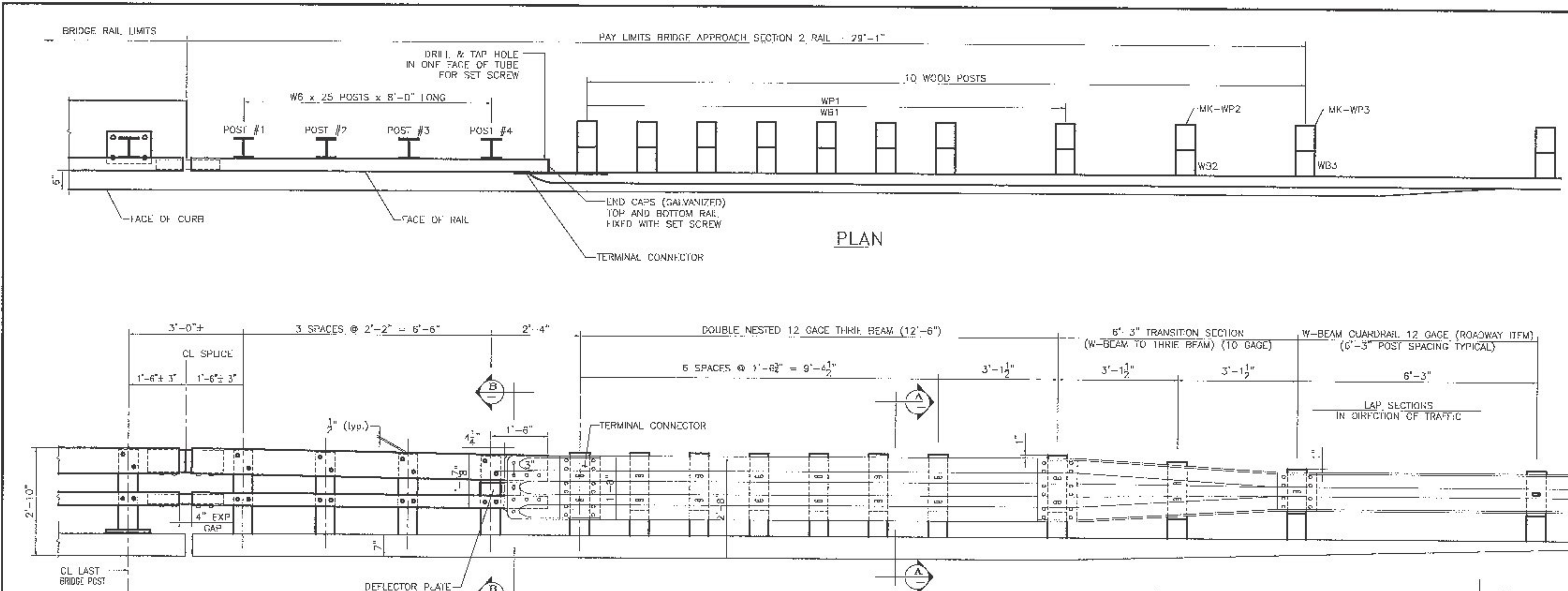
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SCALE: NONE

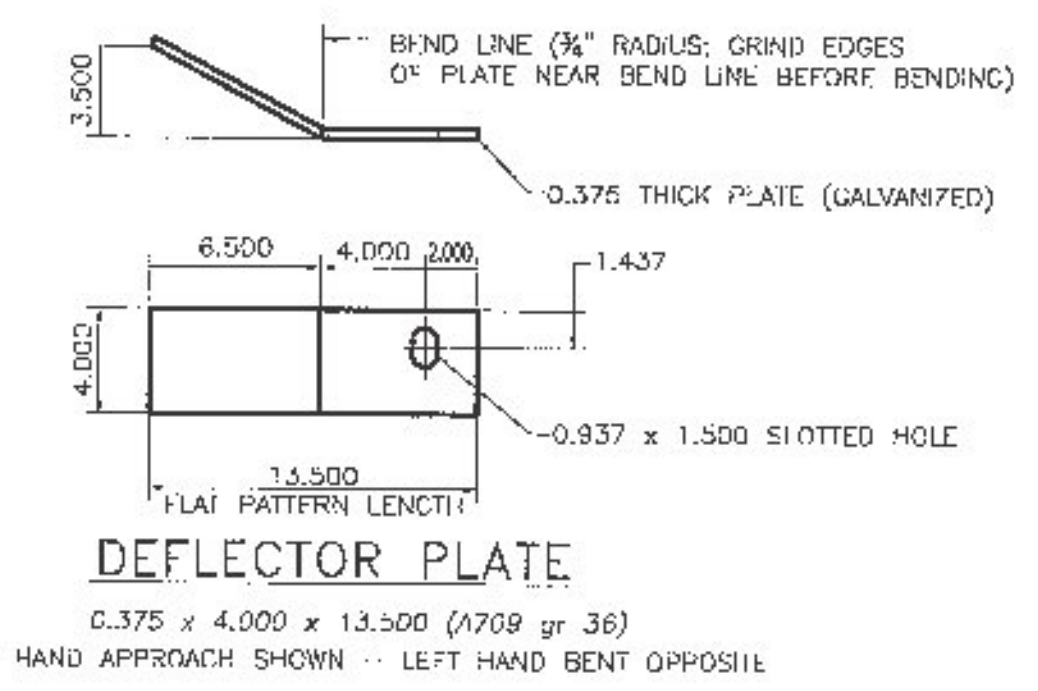
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2103

CERTIFIED FABRICATOR

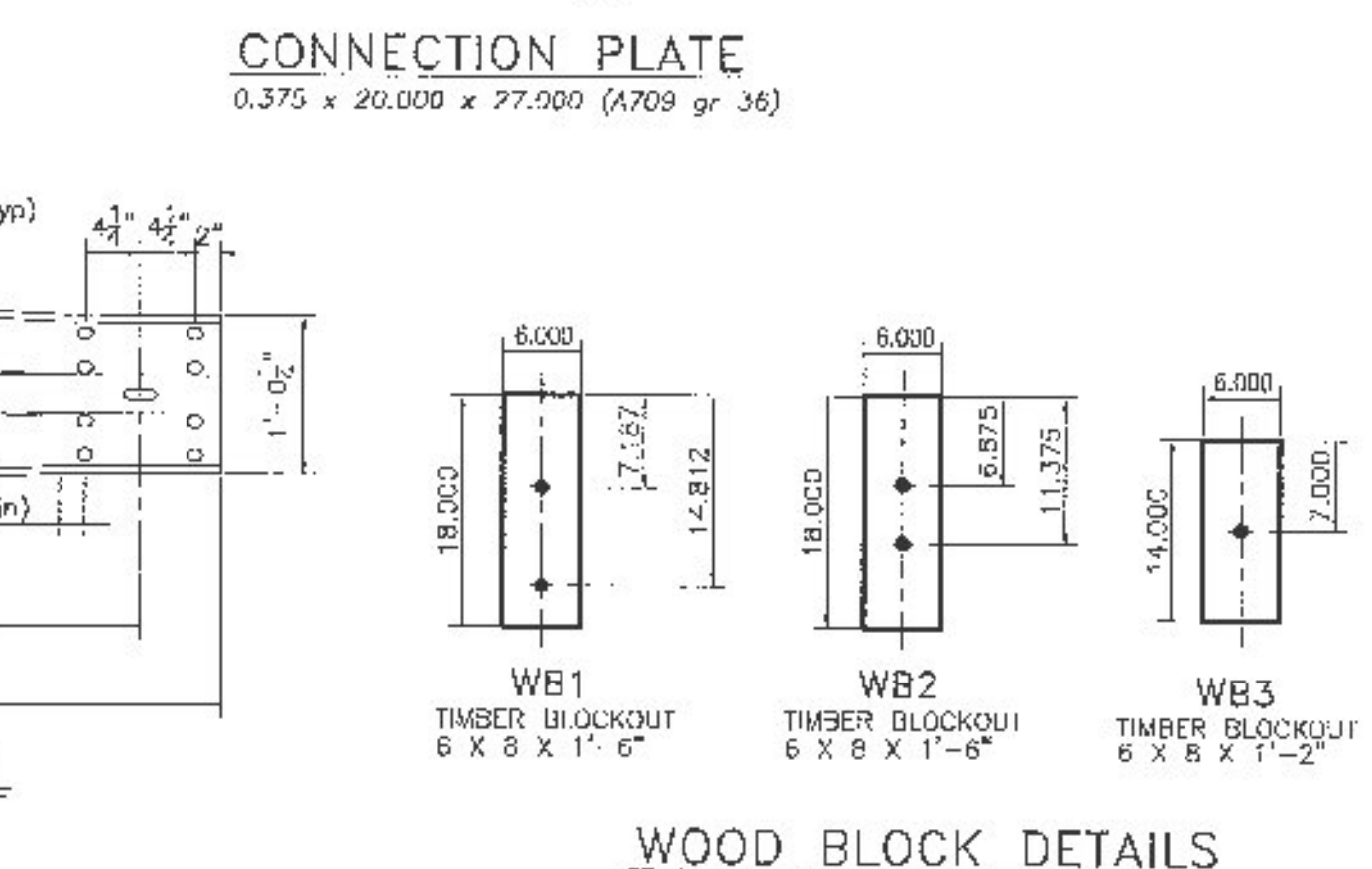
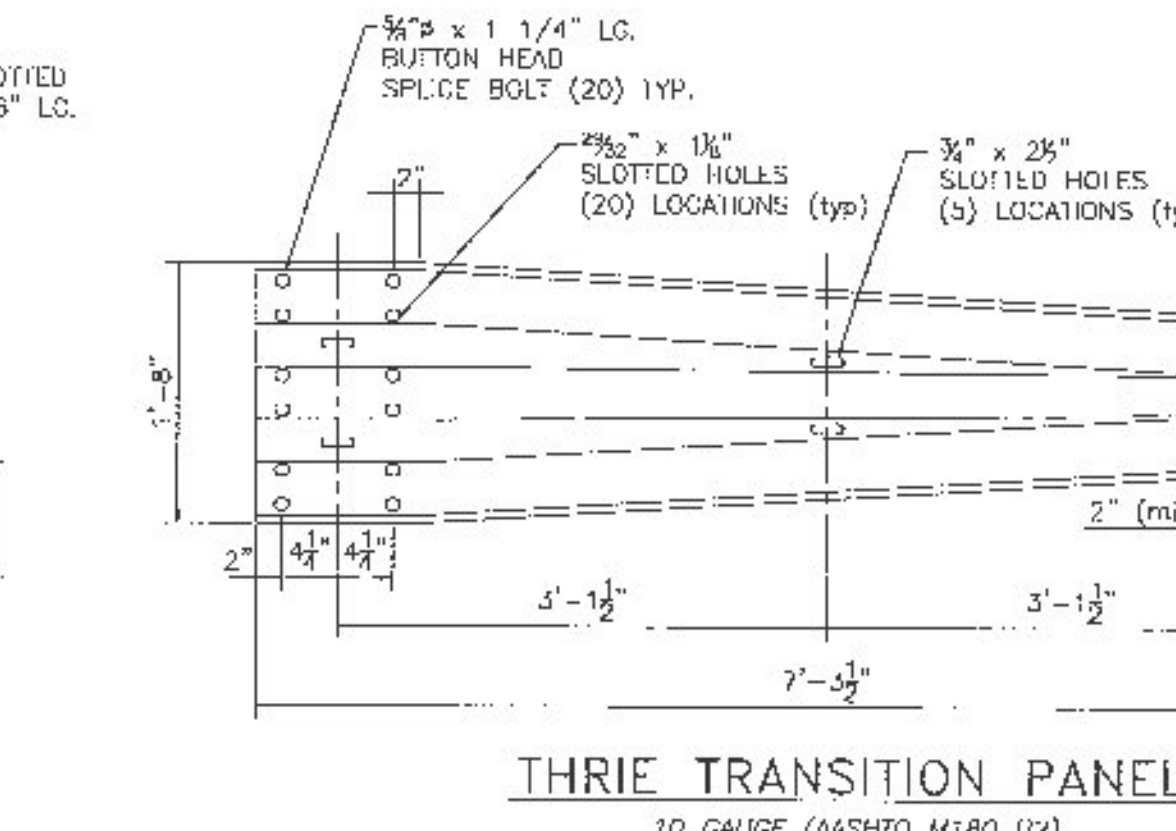
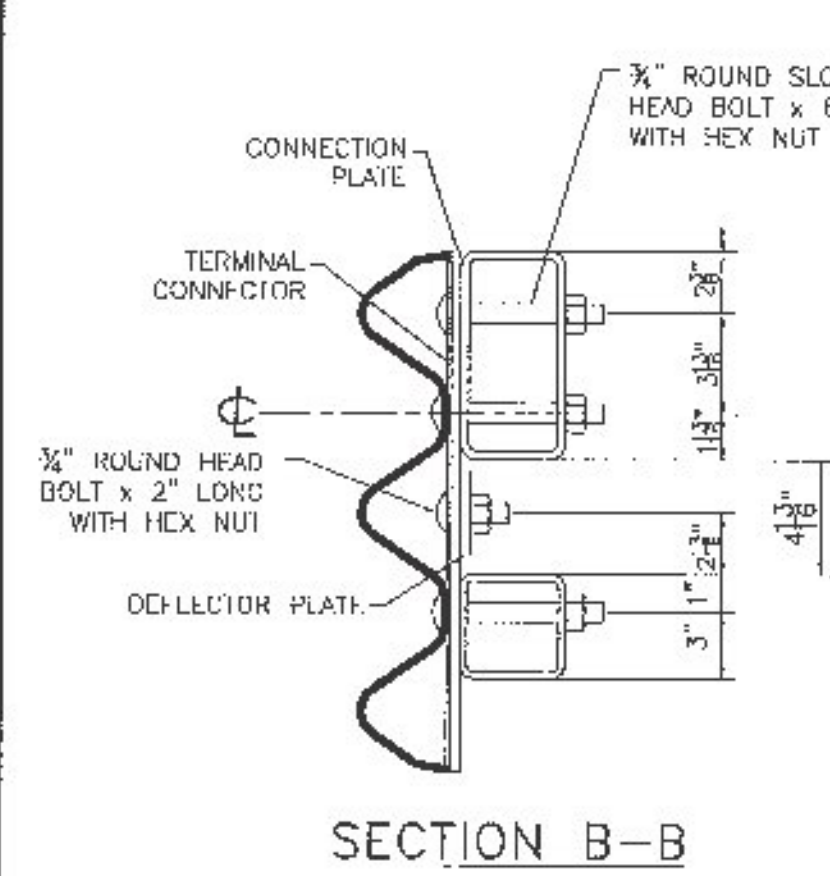
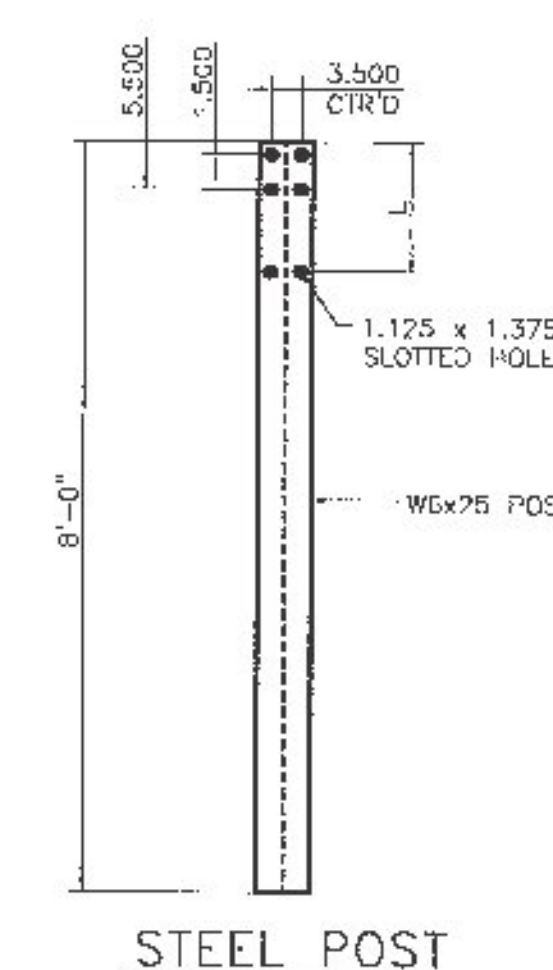
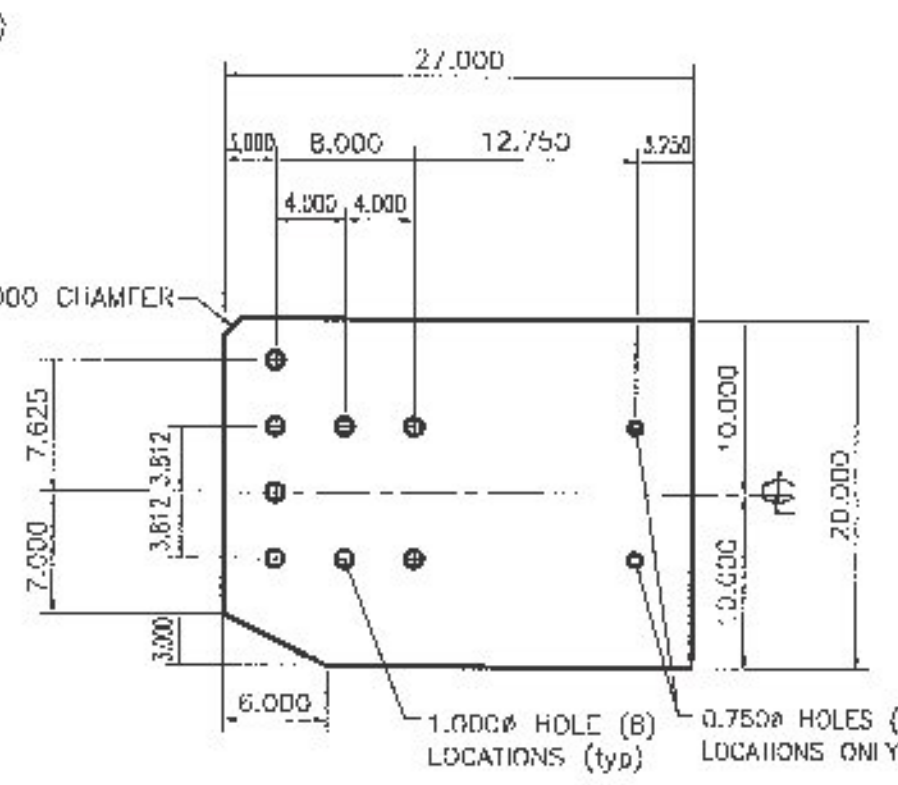
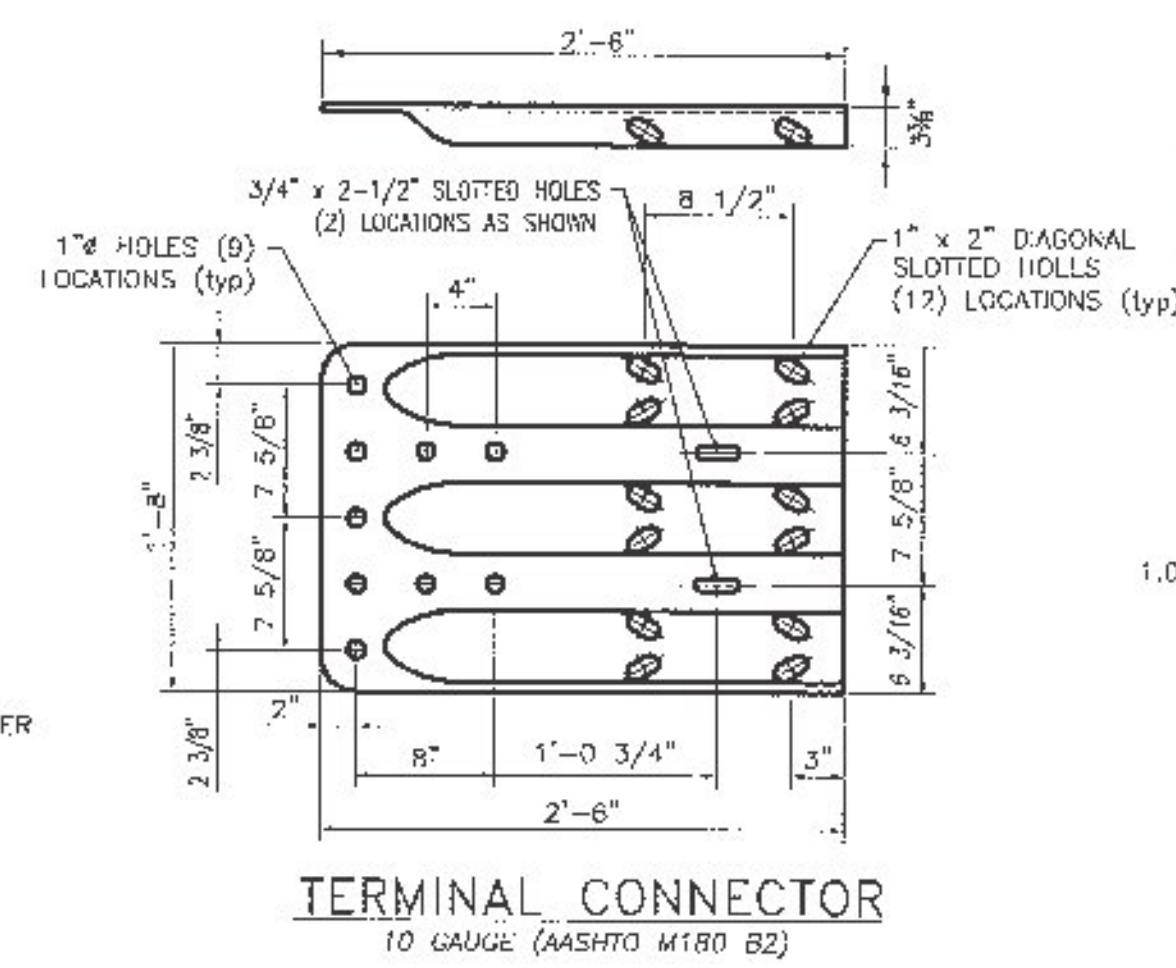
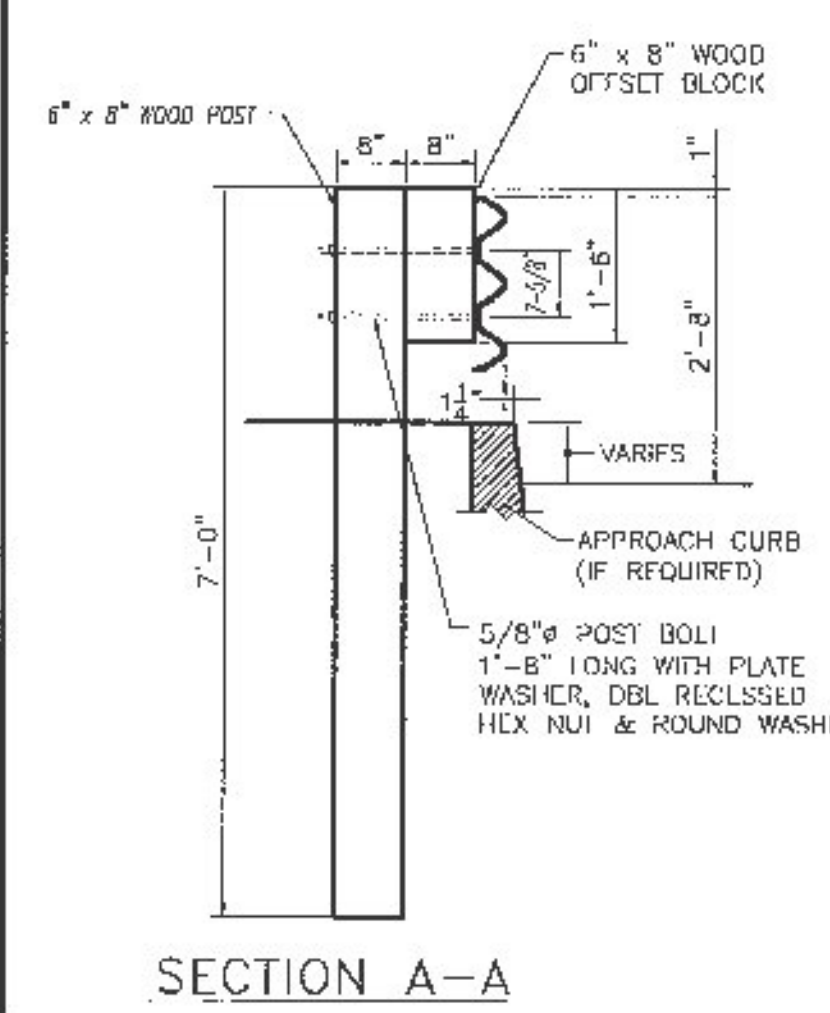


APPROACH RAIL ELEVATION  
LEADING END (RIGHT) IS SHOWN  
DEPARTURE END (LEFT) SIMILAR BUT OPPOSITE HAND



Vermont Agency of Transportation  
**RECEIVED**  
ON: April 28, 2016  
and Checked for  
**CONFORMANCE**  
BY: Jennifer Fitch DATE: 05/02/16

Qty	mk	Description	Spec.
4 EA		ITEM 621.72 GUARDRAIL APPROACH SECTION, GALVANIZED, 2 RAIL BOX BEAM	
4	01	W6x25 APPROACH POST - #1 x 8'-0" OAL (GALV)	A709 gr 50
4	02	W6x25 APPROACH POST - #2 x 8'-0" OAL (GALV)	A709 gr 50
4	03	W6x25 APPROACH POST - #3 x 8'-0" OAL (GALV)	A709 gr 50
4	04	W6x25 APPROACH POST - #4 x 8'-0" OAL (GALV)	A709 gr 50
4		UPPER RAIL APPROACH TUBE HSS 8 x 4 x 5/16 x 9'-4.000" w/ 3.500 SLOTS FOR 4" EXP GAP (GALV)	A500 gr B
4		LOWER RAIL APPROACH TUBE HSS 4 x 4 x 5/16 x 9'-4.000" w/ 3.500 SLOTS FOR 4" EXP GAP (GALV)	A500 gr B
4		CONNECTION PLATE PL 0.375" x 20.000" x 27.000" (GALV)	A709 gr 36
2		DEFLECTOR PLATE (RIGHT) PL 0.375 x 4.000 x 13.375 (GALV)	A709 gr 36
2		DEFLECTOR PLATE (LEFT) PL 0.375 x 4.000 x 13.375 (GALV)	A709 gr 36
4		END CAP FOR 8x4 TUBE 0.187 THICK PLATE 8.000 x 4.000 w/ WELDED TABS (GALV)	A709 gr 36
4		END CAP FOR 4x4 TUBE 0.187 THICK PLATE 4.000 x 4.000 w/ WELDED TABS (GALV)	A709 gr 36
4		(ANGLED) SPLICE TUBE (EXPANSION) FOR 8x4 UPPER RAIL HSS 7 x 3 x 5/8 x 1'-11.750" OAL (GALV)	A500 gr B
4		SPLICE TUBE (EXPANSION) FOR 4x4 LOWER RAIL HSS 3 x 3 x 5/16 x 1'-11.750" OAL (GALV)	A500 gr B
32		WOOD POST (WP1) 6 x 8 x 7'-0"	TIMBER
32		WOOD BLOCKOUT (WB1) 6 x 8 x 1'-6"	TIMBER
4		WOOD POST (WP2) 6 x 8 x 7'-0"	TIMBER
4		WOOD BLOCKOUT (WB2) 6 x 8 x 1'-6"	TIMBER
4		WOOD POST (WP3) 6 x 8 x 7'-0"	TIMBER
4		WOOD BLOCKOUT (WB3) 6 x 8 x 1'-2"	TIMBER
4		THREE FLAT LIP BRIDGE SHOE (MODIFIED) 10 GA. GALV	aashto M180 B2
4		THREE TRANSITION PANEL 8'-3" / 3'-1 1/2" 10 GA. GALV.	aashto M180 B2
8		THREE PANEL 12'-6" / 1'-6 3/4" 12 GA. GALV.	aashto M180 A2
92		ROUND HEAD POST BOLT slot or wrench head - no shoulder 3/4" DIA x 6" LG. (GLV) w/ LOCK NUT & FLAT WASHER	A449
4		ROUND HEAD POST BOLT slot or wrench head - no shoulder 3/4" DIA x 2" LG. (GLV) w/ HEX NUT	A449
8		ROUND HEAD POST BOLT - oval shoulder 5/8" DIA x 1'-8" LG. (GALV) w/ DBL RECESS NUT, FLAT WASHER	A307
88		ROUND HEAD POST BOLT - oval shoulder 5/8" DIA x 1'-8" LG. (GALV) w/ DBL RECESS NUT, FLAT WASHER	A307
32		HEX HEAD BOLT 5/8 x 1-3/4" (GALV) w/ FLAT WASHER	A325
128		PANEL SPLICE BOLT 5/8 x 1-1/4" (GALV) w/ DOUBLE RECESSED NUT	A307
76		RECTANGULAR PLATE WASHER 0.187 x 1.750 x 3.000 (GALV)	A709 gr 36
32		SPACER PIPE - GALVANIZED 3/4" SCH. 40 x 1/2" LONG (GLV)	A53 gr B



STEEL POST CHART

No.	L
#1	1'-3.250"
#2	1'-3.000"
#3	1'-2.687"
#4	1'-2.375"

**SHOP DRAWING REVIEW**

REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

REJECTED  REVISE AND RESUBMIT  APPROVED AS NOTED

CONNECTIONS OR COMPONENTS MADE ON THE SHOP DRAWINGS DURING THE REVIEW DID NOT MEET THE CONSTRUCTION CONTRACT DOCUMENTS REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT. THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS SELECTING FABRICATORS, PROCESSES AND TECHNIQUES OF CONSTRUCTION AND COORDINATING THEIR WORK WITH ALL OTHER TRADES AND PERFORMING THEIR WORK IN A SAFE AND SATISFACTORY MANNER.

C.D. Consulting Engineers  
580 Cambridge St.  
Cambridge, MA 02142  
617-852-8225

Job Number: 150223  
Drawing No: 62172  
Date: 04/29/2015

**HIGHWAY SAFETY CORP**  
GLASTONBURY, CT  
860-633-9445

ITEM 621.72 GUARDRAIL APPROACH, GALV 2 RAIL BOX BEAM (S-3608)

TOWN OF IRASBURG, VERMONT  
INTERSTATE 93 (PRINCIPAL ARTERIAL) BRIDGE NO. 107 N  
ORLEANS COUNTY IM DECK (46)

CERTIFIED FABRICATOR

REC JOB NO. 2103  
SHEET NO. 5 of 5

CLIENT CONTRACTOR: LAFAYETTE

DESIGN: PAR CHECKED: DATE: 04-27-16 SCALE: NONE SITE: D

# Highway Safety Corporation

Glastonbury, CT

## Welding Procedure Specification

Material specification A572 gr 50, A709 Gr 50

Welding process Gas Metal Arc Welding (GMAW) Spray Transfer

Manual, semi-automatic, or automatic Semi-Automatic

Position of welding Flat (1F) or Horizontal (2F)

Filler metal specification AWS A5.18

Filler metal classification ER70S-6

Electrode and manufacturer Lincoln Electric Lincoln Weld L-56

Flux and manufacturer N/A

Shielding gas 86% Argon / 14% CO2 Flow rate 39 - 45 CFH

Single or multiple pass Single or Multiple

Single or multiple arc Single

Welding current DCEP

Polarity Reverse - electrode positive

Welding progression Stringers

Root treatment clean base metal

Preheat and interpass temperature base metal up to 3/4" (50°F) ; over 3/4 thru 1-1/2" ( 150°F ) ; over 1-1/2" thru 2-1/2" (225°F)

Postweld heat treatment None

Electrode extension 3/4" ± 1/4"

SHOP DRAWING REVIEW

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REJECTED  REUSE AND RESUBMIT  APPROVED AS NOTED

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CLD Corp. Eng. Signature: 540 Commercial Street, Manchester, NH 03111, 603-686-8222 Job Number: 1511223  
Reviewed by: SRB  
Date: 04/29/2016

Vermont Agency of Transportation  
**RECEIVED**  
 ON: April 28, 2016  
 and Checked for  
**CONFORMANCE**  
 BY: Jennifer Fitch DATE: 05/02/16

### WELDING PROCEDURE

Weld size	Pass no.	Electrode size	Welding parameters		Travel speed	Joint detail
			Amperes	Volts		
5/16"	1	0.062"	300 A ± 30	29 V ± 2	15 ipm ± 2	
7/16"	1 & 2	0.062"	↓	↓	15 ipm ± 2	

This procedure may vary due to fabrication sequence, fit-up, pass size, etc. within the limitation of variables given in section 5 of latest edition AWS D1.5

WPS no. W-VTPEDPOST1 Fabricator Highway Safety Corporation

Revision no. 0 Prepared By: Paul Radice

Supporting PQR no. W-AWSD1511 (06-22-11) Date 04-28-16

Project Name Irasburg, VT Project Number IM DECK (46)

Paul A Radice  
 CWI 98070221  
 QC-1 EXP. 7/1/2016

# Highway Safety Corporation

Glastonbury, CT

## Welding Procedure Specification

Material specification	<u>ASTM A500 gr B</u>		
Welding process	<u>Gas Metal Arc Welding (GMAW)</u>		
Manual, semi-automatic, or automatic	<u>Semi-Automatic</u>		
Position of welding	<u>Flat (1F)</u>		
Filler metal specification	<u>AWS A5.18</u>		
Filler metal classification	<u>ER70S-6</u>		
Electrode and manufacturer	<u>Lincoln Electric Lincoln Weld L-56</u>		
Flux and manufacturer	<u>N/A</u>		
Shielding gas	<u>86% Argon / 14% CO2</u>	Flow rate	<u>39 - 45 CFH</u>
Single or multiple pass	<u>Single</u>		
Single or multiple arc	<u>Single</u>		
Welding current	<u>DCEP</u>		
Polarity	<u>Reverse - electrode positive</u>		
Welding progression	<u>Stringers</u>		
Root treatment	<u>clean base metal</u>		
Preheat and interpass temperature	<u>base metal up to 3/4" (50°F)</u>		
Postweld heat treatment	<u>None</u>		
Electrode extension	<u>3/4" ± 1/4"</u>		

**SHOP DRAWING REVIEW**

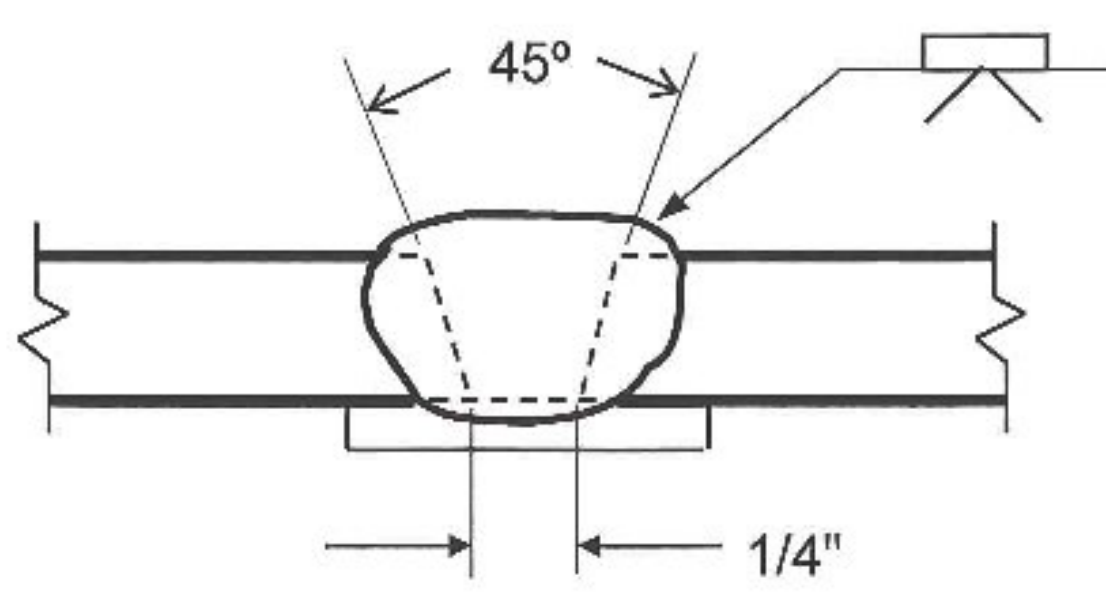
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REJECTED     REVISE AND RESUBMIT     APPROVED AS NOTED

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GLD Consulting Engineers 540 Commercial Street Glastonbury, CT 06033 033-633-8223	Job Number: <u>150223</u>
	Reviewed by: <u>CRB</u>
Date: <u>04/29/2015</u>	

### WELDING PROCEDURE

Weld size	Pass no.	Electrode size	Welding parameters		Travel speed	Joint detail
			Amperes	Volts		
	1	0.063"	300 A ± 30	29 V ± 2	15 ipm ± 2	B-U2a-GF 

Vermont Agency of Transportation

RECEIVED

ON: April 28, 2016

and Checked for CONFORMANCE

BY: Jennifer Fitch DATE: 05/02/16

This procedure may vary due to fabrication sequence, fit-up, pass size, etc. within the limitation of variables given in section 5 of latest edition AWS D1.5

WPS no. <u>W-VGwBCK</u>	Fabricator <u>Highway Safety Corporation</u>
Revision no. <u>0</u>	Prepared By: <u>Paul Radice</u>
Supporting PQR no. <u>W-AWSD1511 (06-22-11)</u>	Date <u>04-28-16</u>
Project Name <u>Irasburg, VT</u>	Project Number <u>IM DECK (46)</u>

Paul A Radice  
 CWI 98070221  
 QC-1 EXP. 7/1/2016