

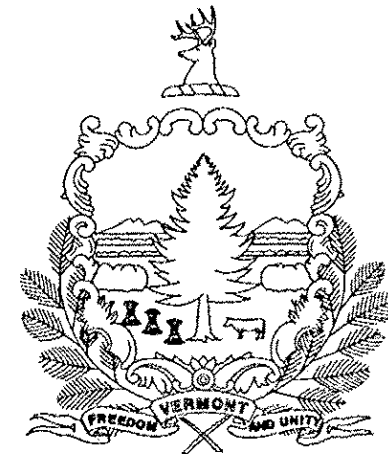
INDEX OF SHEETS

- 1 TITLE SHEET
- 2 QUANTITY SHEET
- 3 TRAFFIC CONTROL
- 4 PROJECT NOTES
- 5 DETAILS
- 6-23 REFERENCE PLANS

VAOT STANDARD SHEETS

E-100	CONSTRUCTION APPROACH SIGNS	01/02/04
E-100A	SIDE ROAD CONSTRUCTION - APPROACH SIGNS	01/02/04
E-101	CONSTRUCTION SIGN DETAILS	05/30/03
E-102	CONSTRUCTION SIGN DETAILS	06/30/03
E-102A	CONSTRUCTION SIGN DETAILS	05/01/04
E-106	TRAFFIC CONTROL- MISCELLANEOUS DETAILS	03/01/04
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	06/30/03
E-107A	BREAKAWAY BARRICADE DETAILS	06/08/09
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08/08/95
E-123	GUIDE SIGN PLACEMENT - MISCELLANEOUS DETAILS	03/16/04
E-140	REGULATORY SIGN DETAILS	08/30/96
E-171A	TRAFFIC CONTROL SIGNALS GENERAL NOTES & DETAILS	08/09/95
E-172	VEHICLE LOOP DETAILS	08/09/95
E-191	PAVEMENT MARKING DETAILS	02/01/99
E-192	PAVEMENT MARKING DETAILS	10/12/00
E-193	PAVEMENT MARKING DETAILS	08/18/95

STATE OF VERMONT
AGENCY OF TRANSPORTATION

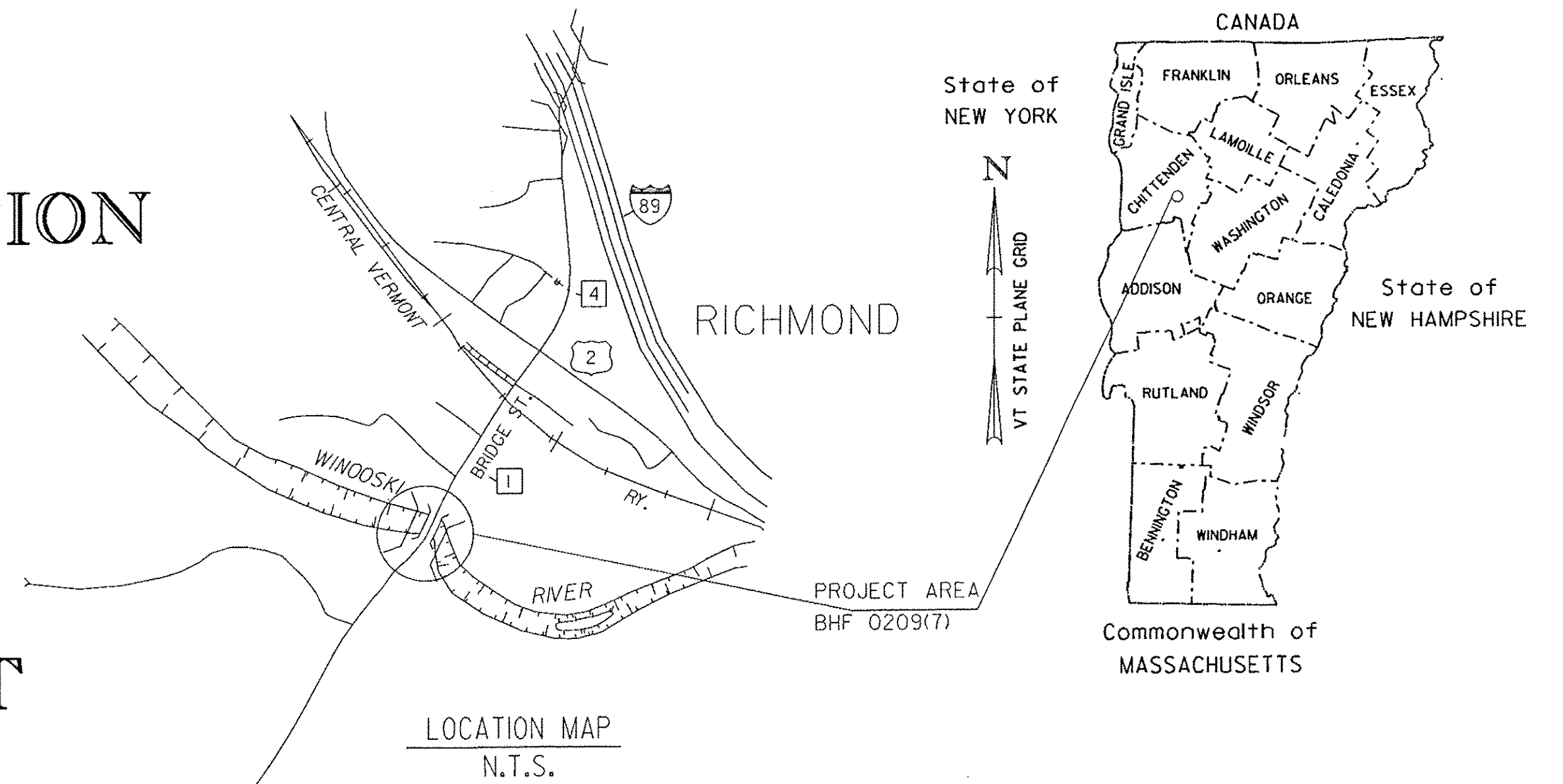


PROPOSED IMPROVEMENT

BRIDGE PROJECT
TOWN OF RICHMOND
COUNTY OF CHITTENDEN
BRIDGE NO. 31 ON TOWN HIGHWAY NO. 1 (FAS 0209)
RURAL MAJOR COLLECTOR

PROJECT LOCATION: BRIDGE STREET, APPROXIMATELY 0.25 MILES SOUTH OF THE INTERSECTION OF US ROUTE 2 AND BRIDGE STREET (T.H. 1) IN THE TOWN OF RICHMOND.

PROJECT DESCRIPTION: THIS PROJECT INVOLVES CLEANING AND PAINTING THE EXISTING STEEL SUPERSTRUCTURE MEMBERS AND MINOR ASSOCIATED WORK.



RECORD PLANS

CONTRACTOR: PHENIX DEVELOPMENT & CONST., INC. - CORFU, NY

RESIDENT ENGINEER: S. WHEATLEY

CONSTRUCTION BEGAN: SEPTEMBER 7, 2011

CONSTRUCTION COMPLETE: JUNE 1, 2012

RECORD PLANS BY: S. WHEATLEY

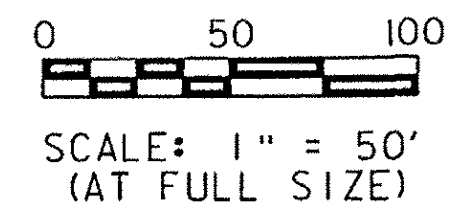
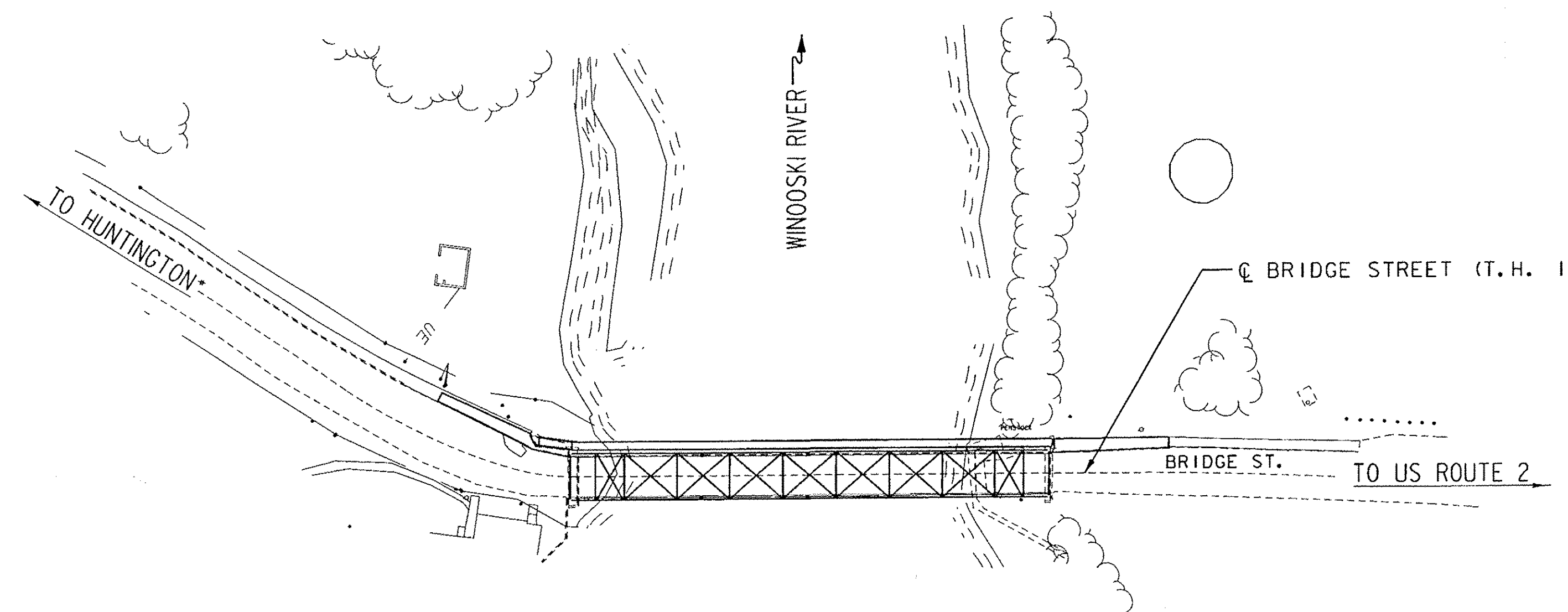
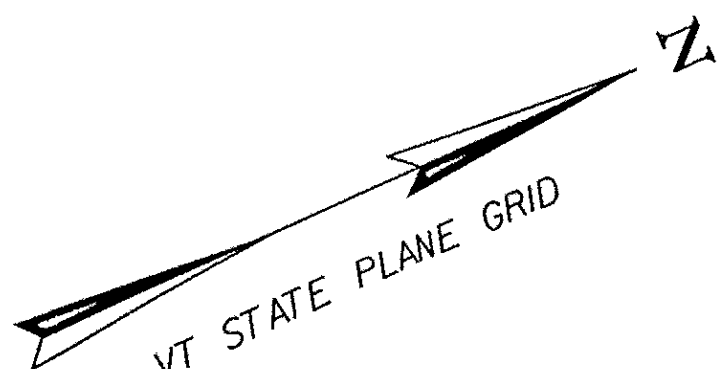
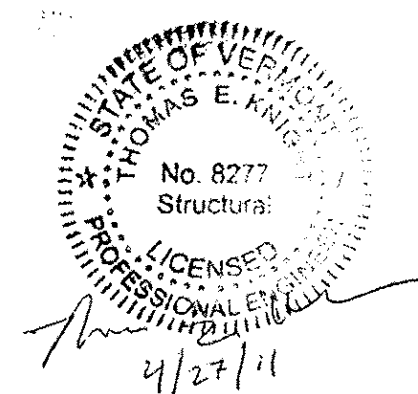
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY S. Wheatley RESIDENT ENGINEER

DATE 8-26-13

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

BUILT AS DESIGNED



THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.

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

QUALITY ASSURANCE PROGRAM: LEVEL 2

CONVENTIONAL SYMBOLS

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

SURVEYED BY : VERMONT SURVEY

SURVEYED DATE : 06/26/07

DATUM

VERTICAL NAVD88 (GEOID03)

HORIZONTAL NAD 83 (CORS96) SPC (4400 VT)

DIRECTOR OF PROGRAM DEVELOPMENT

APPROVED Mark Sargent DATE 5-2-11

PROJECT MANAGER : MARK SARGENT

PROJECT NAME : RICHMOND

PROJECT NUMBER : BHF 0209 (7)

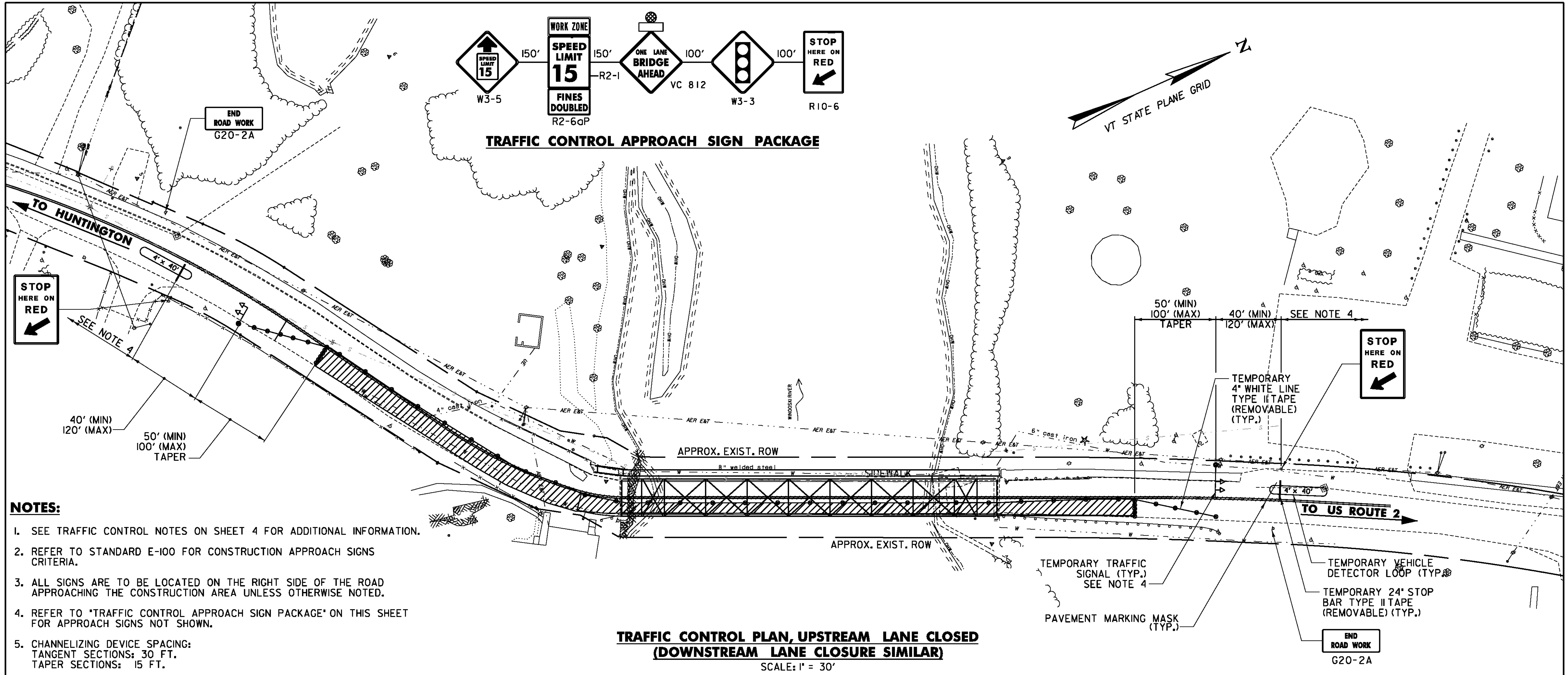
SHEET 1 OF 23 SHEETS

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES													TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
											BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
											1		1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
											750		750		LF	TEMPORARY TRAFFIC BARRIER	621.90				
											80		80		HR	FLAGGERS	630.15				
												1	1		LS	FIELD OFFICE, ENGINEERS	631.10				
												1	1		LS	TESTING EQUIPMENT, PROTECTIVE COATINGS	631.18				
												3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
											1		1		LS	MOBILIZATION/DEMobilIZATION	635.11				
											1		1		LS	TRAFFIC CONTROL	641.10				
											1		1		EACH	TEMPORARY TRAFFIC SIGNAL SYSTEM	678.40				
											2		2		EACH	TEMPORARY DETECTOR	678.42				
											1		1		LS	SPECIAL PROVISION (CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES) (17,000 SF - EST.)	900.645				
											1		1		LS	SPECIAL PROVISION (QC/QA CLEAN AND PAINT EXISTING STEEL STRUCTURES, BARE STEEL) (17,000 SF - EST.)	900.645				

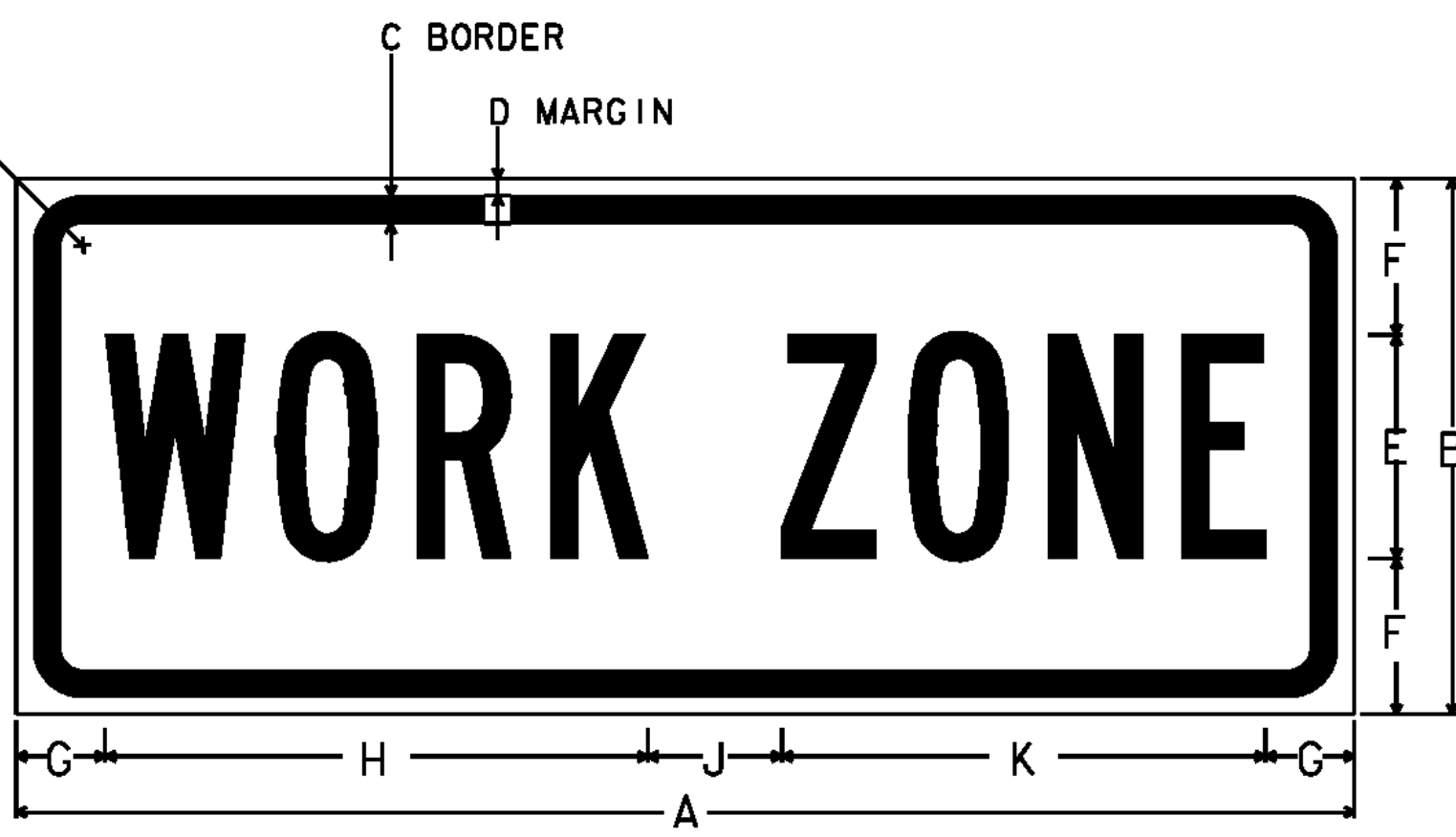
PROJECT NAME: RICHMOND
 PROJECT NUMBER: BHF 0209(7)
 FILE NAME: ...\\transportation\drawing\QTY.dgn PLOT DATE: 4/21/2011
 PROJECT LEADER: G. BOGUE DRAWN BY: J. SOTER
 DESIGNED BY: T. KNIGHT CHECKED BY: G. BOGUE
QUANTITY SHEET SHEET 2 OF 23





- NOTES:**
- SEE TRAFFIC CONTROL NOTES ON SHEET 4 FOR ADDITIONAL INFORMATION.
 - REFER TO STANDARD E-100 FOR CONSTRUCTION APPROACH SIGNS CRITERIA.
 - ALL SIGNS ARE TO BE LOCATED ON THE RIGHT SIDE OF THE ROAD APPROACHING THE CONSTRUCTION AREA UNLESS OTHERWISE NOTED.
 - REFER TO "TRAFFIC CONTROL APPROACH SIGN PACKAGE" ON THIS SHEET FOR APPROACH SIGNS NOT SHOWN.
 - CHANNELIZING DEVICE SPACING:
TANGENT SECTIONS: 30 FT.
TAPER SECTIONS: 15 FT.
 - THE TRAFFIC CONTROL PLAN INCLUDING WORK ZONE LIMITS IS SCHEMATIC ONLY AND SHOULD BE USED AS A REFERENCE. THE CONTRACTOR SHALL DEVELOP AND IMPLEMENT A SITE SPECIFIC TRAFFIC CONTROL PLAN TO MAINTAIN SINGLE LANE ALTERNATING TRAFFIC THROUGHOUT CONSTRUCTION AND TO PROVIDE FOR THE NECESSARY STORAGE OF EQUIPMENT AND VEHICLES WITHIN THE WORK ZONE. THE SITE SPECIFIC PLAN SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES. THE CONTRACTOR SHALL ALLOW THE RESIDENT ENGINEER 14 CALENDAR DAYS TO REVIEW AND ACCEPT THE PROPOSED PLANS BEFORE THEY ARE TO BE IMPLEMENTED. NO WORK SHALL COMMENCE UNTIL THE TRAFFIC CONTROL PLAN HAS BEEN APPROVED. DEVELOPMENT AND IMPLEMENTATION OF TRAFFIC CONTROL PLAN, AND MAKING REVISIONS AS NECESSARY, SHALL BE PAID UNDER ITEM 641.10, "TRAFFIC CONTROL."
 - THE MINIMUM WIDTH FOR THE SINGLE LANE CONFIGURATION SHALL CONSIST OF AN 11 FOOT TRAVEL LANE WITH 1 FOOT SHOULDERS (13 FOOT CLEAR WIDTH). IF THE CONTRACTOR PROPOSES A TOTAL CLEAR WIDTH OF LESS THAN 14 FEET, THE CONTRACTOR SHALL INCLUDE PORTABLE CHANGEABLE MESSAGE SIGNS OR EQUIVALENT SIGNAGE TO PROVIDE ADVANCED WARNING OF THE LIMITED WIDTH IN BOTH DIRECTIONS FOR TRUCKS APPROACHING BRIDGE STREET ON US ROUTE 2. IF USED, PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 621 (COST INCIDENTAL TO ITEM 641.10).
 - ACCESS TO ALL EXISTING SIDE ROADS, DRIVES, AND PARKING AREAS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. IF THE LIMITS OF SINGLE LANE TRAFFIC ARE EXTENDED TO INCORPORATE DRIVES, PROVISIONS FOR SIGNALIZING DRIVES SHALL BE INCLUDED IN THE TRAFFIC CONTROL PLANS. COST FOR ADDITIONAL SIGNALS SHALL BE INCLUDED IN THE COST FOR ITEM 678.40.

**TRAFFIC CONTROL PLAN, UPSTREAM LANE CLOSED
(DOWNSTREAM LANE CLOSURE SIMILAR)**
SCALE: 1" = 30'

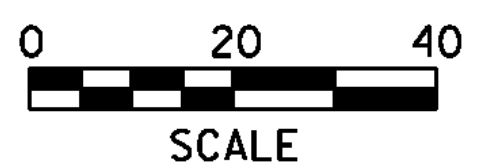


NOTE: THE SIGN IS TO HAVE A BLACK LEGEND ON AN ORANGE RETROREFLECTIVE BACKGROUND THAT IS ASTM TYPE VII, VIII OR IX. THE TEXT IS TO BE "B-TYPE".

WORK ZONE SIGN DETAIL
NOT TO SCALE

DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	L
MIN.	24	8	0.375	0.375	4B	2	2	9.5	2	8.5	1.5
SPEC.	30	12	0.375	0.625	5B	3.5	2	12.2	3	8.5	1.5
EXPWY.	36	12	0.50	0.75	6B	3	2.5	14.8	3	8.5	1.875
FWY.	48	18	0.625	0.875	8B	4	3.5	19.1	4	8.5	2.25

LEGEND	
	CHANNELIZING DEVICE
	TEMPORARY TRAFFIC SIGNAL
	TEMPORARY CONSTRUCTION SIGN
	FLASHING BEACON
	WORK ZONE



PROJECT NAME: RICHMOND
 PROJECT NUMBER: BHF 0209(7)
 FILE NAME: ...\\transportation\drawing\TCS.dgn PLOT DATE: 4/21/2011
 PROJECT LEADER: G. BOGUE
 DESIGNED BY: T. KNIGHT
 DRAWN BY: J. SOTER
 CHECKED BY: G. GOYETTE
TRAFFIC CONTROL SHEET
 SHEET 3 OF 23

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2006 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 2002, AND ITS LATEST REVISIONS.
2. ALL WORK AND ANY ASSOCIATED ACTIVITY ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS AS SHOWN IN THE REFERENCE PLANS.
3. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID DAMAGE TO THE EXISTING BRIDGE DECK, SIDEWALK, RAILS AND APPROACH PAVEMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF ANY PROPERTY WHICH HAS BEEN DAMAGED DURING THE PROSECUTION OF WORK.

PROTECTIVE COATINGS

4. ALL EXISTING STEEL THAT IS NOT HOT DIP GALVANIZED SHALL BE CLEANED AND PAINTED IN ACCORDANCE WITH ITEM 900.645 SPECIAL PROVISION (QC/QA CLEAN AND PAINT EXISTING STEEL STRUCTURES, BARE STEEL). THE SURFACE PREPARATION OF THE EXISTING STEEL SHALL INCLUDE 100% REMOVAL OF THE EXISTING PAINT SYSTEM.
5. THE COLOR OF THE FINAL COAT OF PAINT SHALL BE RED (FEDERAL CHIP NO. 10076) IN ACCORDANCE WITH FEDERAL STANDARD NO. 595
6. MEMBERS THAT ARE HOT DIP GALVANIZED (HDG) SHALL NOT BE PAINTED AND SHALL BE PROTECTED FROM DAMAGE DUE TO CLEANING AND PAINTING OF ADJACENT SURFACES. BEFORE PROCEEDING WITH REMOVAL OF EXISTING PAINT IN LOCATIONS ADJACENT TO EXISTING HDG STEEL, THE CONTRACTOR SHALL DEMONSTRATE THE PROPOSED METHOD OF PROTECTION AND REMOVAL TO THE ENGINEER. HAND TOOL CLEANING MAY BE REQUIRED IF PROTECTION FROM BLASTING CAN NOT BE DEMONSTRATED. SHOULD AT ANY TIME, THE REMOVAL METHOD CAUSE DAMAGE TO THE HDG COATING, THE CONTRACTOR SHALL CEASE WORK UNTIL THEY CAN DEMONSTRATE A METHOD THAT DOES NOT RESULT IN DAMAGE. ANY DAMAGE SHALL BE REPORTED TO AND REPAIRED AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
7. THE EXISTING STRUCTURAL STEEL ON THIS PROJECT WAS PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE STRUCTURAL STEEL. TEN DAYS PRIOR TO COMMENCING WORK WHICH INVOLVES THE HANDLING OR DISTURBANCE OF PAINTED COMPONENTS, THE CONTRACTOR SHALL PROVIDE DOCUMENTS TO THE ENGINEER, AS REFERENCED IN THE SPECIAL PROVISIONS.
8. A COAT OF GREASE RUST PROOFING COMPOUND SHALL BE APPLIED TO THE EXISTING GUSSET PLATES AT THE ABUTMENTS AND TO THE LOWER PORTION OF THE EXISTING END POSTS (BELOW THE TOP BRIDGE OF DECK).

UTILITIES

9. EXISTING WATERLINE AND SEWER FORCE MAIN SHALL REMAIN IN SERVICE AND BE PROTECTED FROM CONSTRUCTION ACTIVITIES.

TRAFFIC CONTROL /STAGING

10. THE CONTRACTOR SHALL DEVELOP A TRAFFIC CONTROL PLAN TO MAINTAIN SINGLE LANE ALTERNATING VEHICULAR TRAFFIC ON THE BRIDGE THROUGHOUT CONSTRUCTION. MAINTAINING PEDESTRIAN AND BICYCLE TRAFFIC IS NOT REQUIRED. THE TRAFFIC CONTROL PLAN SHALL INCLUDE APPROPRIATE SIGNAGE TO DESIGNATE RESTRICTIONS TO PEDESTRIAN AND BICYCLE TRAFFIC.
11. THE CONTRACTOR MAY USE THE CLOSED PORTION OF THE EXISTING BRIDGE DECK FOR STORAGE OF LIGHT MATERIAL AND EQUIPMENT. THE LINEAR WEIGHT OF CONSTRUCTION LOADS (INCLUDING ALL STAGING, MATERIALS, AND EQUIPMENT AND TRAFFIC BARRIERS) SHALL NOT EXCEED 700 POUNDS PER LINEAR FOOT. THE CONTRACTOR SHALL INCLUDE A SUMMARY OF ANTICIPATED CONSTRUCTION LOADS AND THE POSITION OF THOSE LOADS FOR APPROVAL AS PART OF THE TRAFFIC CONTROL PLAN.
12. TEMPORARY REMOVAL AND RESETTING OF GUARDRAIL OR APPROACH RAIL TO MAKE ROOM FOR STAGING OF EQUIPMENT WILL BE PERMITTED IN AREAS WHERE THE LANE ADJACENT TO THOSE RAILS IS CLOSED TO TRAFFIC. THE WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 62L. THE COST OF REMOVING AND RESETTING GUARDRAIL AND OR APPROACH RAIL SHALL BE CONSIDERED INCIDENTAL TO TRAFFIC CONTROL.

TRAFFIC CONTROL /STAGING (CONTINUED)

13. ALL TRAFFIC CONTROL MEASURES FOR THIS PROJECT SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE VTRANS STANDARD DRAWINGS, AS NEEDED. FOR CONFLICTS BETWEEN THE MUTCD AND THE VTRANS STANDARD DRAWINGS, THE MUTCD WILL GOVERN.
14. TEMPORARY BARRIER, IF USED, SHALL MEET THE REQUIREMENTS OF SECTION 62L. BARRIER ENDS FACING ONCOMING TRAFFIC SHALL BE TAPERED BEYOND THE CLEAR ZONE. THE CLEAR ZONE CAN BE TAKEN AS 3'-0" OUTSIDE THE TRAVEL WAY FOR PROPOSED 15 MPH CONSTRUCTION SPEED. IF NECESSARY, PAYMENT FOR INSTALLING, RESETTING, AND REMOVING ANY TEMPORARY TRAFFIC BARRIER WILL BE PAID FOR DIRECTLY UNDER ITEM 62L.90. ACCEPTABLE 'TEMPORARY TRAFFIC BARRIER' WILL INCLUDE WATER FILLED TYPE BARRIERS THAT HAVE MET THE NHCPR REPORT 350 CRITERIA FOR A RE-DIRECTIVE BARRIER AT TL-2 OR ABOVE.
15. ENERGY ABSORPTION ATTENUATORS, IF USED, SHALL MEET THE REQUIREMENTS OF SECTION 62L. PAYMENT FOR INSTALLING AND REMOVING ANY ENERGY ABSORPTION ATTENUATORS WILL BE INCIDENTAL TO ITEM 64L.10, TRAFFIC CONTROL.
16. SIGNS, BARRICADES, AND TRAFFIC CONTROL DEVICES SHALL BE CLEANED WEEKLY OR AS DIRECTED BY ENGINEER. THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 64L.10, TRAFFIC CONTROL.

SIGNAL NOTES

17. THE SIGNAL SYSTEM SHALL CONSIST OF POLES, SIGNS AND POSTS, TEMPORARY PAVEMENT MARKINGS (INCLUDING MASKING OF EXISTING MARKINGS AS REQUIRED), WARNING SIGNS, LUMINARIES, FLASHING BEACONS, AND SIGNAL EQUIPMENT TO PROVIDE FOR AN ADEQUATE DESIGN AND FULLY FUNCTIONAL SIGNAL SYSTEM. IT ALSO INCLUDES PERMITS AND COSTS ASSOCIATED WITH PROVIDING ELECTRICAL POWER. PAYMENT FOR THIS WORK WILL BE MADE UNDER ITEM 678.40, TEMPORARY TRAFFIC SIGNAL SYSTEM. PAYMENT FOR TEMPORARY DETECTORS WILL BE MADE UNDER CONTRACT ITEM 678.42.

THE SIGNAL SYSTEM SHALL INCLUDE THREE REMOTE PREEMPTION UNITS TO BE PROVIDED TO THE TOWN FOR THE DURATION OF CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER, TOWN FIRE, AMBULANCE, POLICE AND ANY OTHER APPROPRIATE DEPARTMENTS TO DETERMINE THE PROPER TIMING REQUIRED FOR EMERGENCY VEHICLES TO CLEAR THE PROJECT AREA ONCE PREEMPTION IS ACTIVATED. SEVERAL TRIAL RUNS SHALL BE MADE. PAYMENT FOR THE TEMPORARY TRAFFIC SIGNAL SYSTEM INCLUDING ALL POLES, MAST ARMS, SIGNAL HEADS, WIRING, PHASING DIAGRAM, TIMING ADJUSTMENTS, PREEMPTION, ACTIVATION AND ANY OTHER INCIDENTALS REQUIRED TO INSTALL, MAINTAIN & REMOVE THE FULLY OPERATIONAL SIGNAL SYSTEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 678.40 TEMPORARY TRAFFIC SIGNAL SYSTEM.
18. SIGNAL HEADS MAY BE HUNG ON A SPAN WIRE OR ON A CANTILEVER MAST ARM. AT LEAST ONE SIGNAL HEAD SHALL BE UNMISTAKABLY IN LINE WITH THE CENTER OF APPROACHING TRAFFIC AT ALL TIMES. THE SECOND SIGNAL HEAD MAY BE POST MOUNTED, LOCATED AT A DISTANCE OF NO GREATER THAN 14.5 FEET FROM THE CENTER OF THE APPROACH LANE WHEN THE STOP BAR IS 40 FEET FROM THE SIGNAL HEAD. CONSULT THE CURRENT EDITION OF THE M.U.T.C.D. FOR ADDITIONAL INFORMATION CONCERNING SIGNAL PLACEMENT.
19. SIGNAL HEAD PLACEMENT IS CRITICAL. HEADS SHALL BE ADJUSTED TO REFLECT LANE LOCATION CHANGES.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING SIGNAL PHASING. THE CONTRACTOR SHALL SUBMIT PHASING DIAGRAM TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL MAKE SIGNALS OPERATIONAL ONLY AFTER RECEIVING APPROVAL OF THE PHASING DIAGRAM BY THE ENGINEER.
21. DESIGN OF THE SIGNAL SUPPORTS AND ANY REQUIRED GUYING IS THE RESPONSIBILITY OF THE CONTRACTOR.
22. SIGNAL TIMING/TIMING ADJUSTMENTS REQUESTED BY THE ENGINEER SHALL BE ACCOMPLISHED WITHIN A 48 HOUR PERIOD. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 678.40, TEMPORARY TRAFFIC SIGNAL SYSTEM. AS DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL MAKE SEVERAL TRIAL RUNS TO DETERMINE THE PROPER ALL-RED CLEARANCE INTERVAL.
23. SIGNAL FACES SHALL CONSIST OF 12" LENSES. (RED, YELLOW, AND GREEN)
24. THE BOTTOM OF THE HOUSING OF A SIGNAL FACE SUSPENDED OVER A ROADWAY SHALL NOT BE LESS THAN 16.5 FEET NOR MORE THAN 19 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY. THE BOTTOM OF A SIGNAL FACE NOT MOUNTED OVER A ROADWAY SHALL NOT BE LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE GROUND.

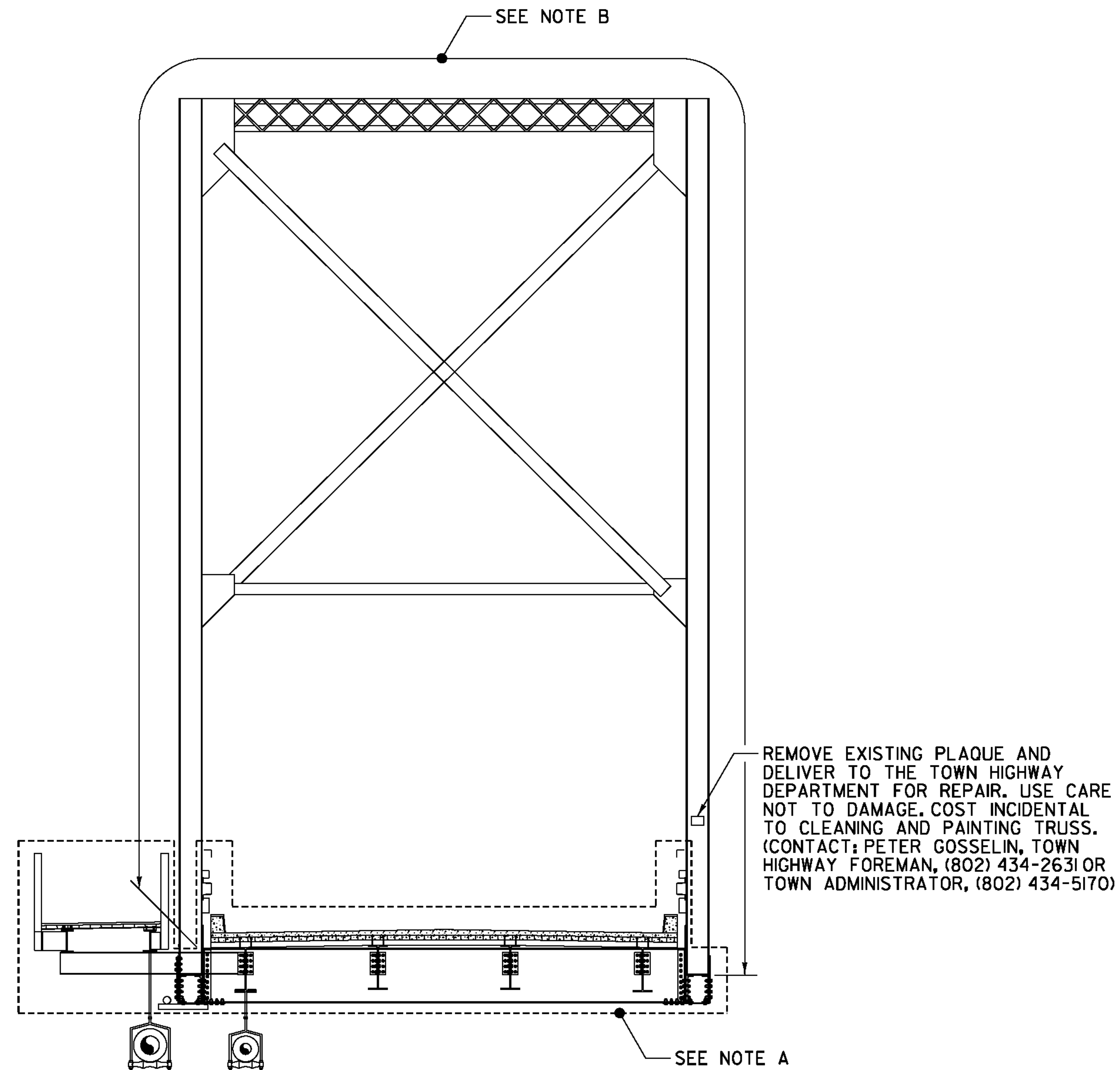
SIGNAL NOTES (CONTINUED)

25. SIGNAL FACES FOR ANY ONE APPROACH SHALL NOT BE LESS THAN 8 FEET APART MEASURED HORIZONTALLY BETWEEN CENTER FACES.
26. INSTALL WIRING BETWEEN SIGNAL POLES BY WHATEVER MEANS POSSIBLE OR CONVENIENT TO PROVIDE FOR A SAFE INSTALLATION. ATTACHMENT TO UTILITY POLES TO BE COORDINATED BY THE CONTRACTOR WITH THE UTILITY COMPANY. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 678.40, TEMPORARY TRAFFIC SIGNAL SYSTEM.
27. PLACE TEMPORARY POLES BEHIND GUARDRAIL WHERE POSSIBLE.
28. POLES SUPPORTING SPAN WIRES AND/OR MAST ARMS SHALL BE ADEQUATELY BRACED OR GUYED AND SHALL NOT BE PLACED SO AS TO CREATE A HAZARD TO THE TRAVELING PUBLIC.
29. ALL TEMPORARY SIGNAL EQUIPMENT, SIGNS, ETC., SHALL BELONG TO THE CONTRACTOR AT THE END OF THE PROJECT AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR REMOVAL. THIS INCLUDES ANY TEMPORARY PAVEMENT MARKING, MARKING MASKS, UTILITY POLES, WIRES, ETC. THIS WORK WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 678.40, TEMPORARY TRAFFIC SIGNAL SYSTEM.
30. A 250 WATT MER/150 WATT HPS LUMINAIRE AND MAST ARM SHALL BE PROVIDED ON A POLE ON EACH APPROACH AT A MOUNTING HEIGHT OF 30 FEET ABOVE ROADWAY CENTERLINE. THE INTENT IS TO LIGHT UP THE AREA AROUND THE SIGNAL HEADS AND STOP BAR FOR INCREASED VISIBILITY. THE ENGINEER SHALL DETERMINE THE ADEQUACY OF THE LIGHTING AND DIRECT CHANGES IF THE LIGHTING IS INSUFFICIENT. LIGHTING SHALL BE PAID INCIDENTAL TO ITEM 678.40, TEMPORARY TRAFFIC SIGNAL SYSTEM.
31. STOP BARS SHALL BE LOCATED A MINIMUM OF 40' AND A MAXIMUM OF 120' FROM THE NEAREST SIGNAL HEAD. PAYMENT WILL BE MADE UNDER ITEM 678.40 TEMPORARY TRAFFIC SIGNAL SYSTEM.
32. SEE STD. E-140 FOR 'STOP HERE ON RED' SIGN DETAIL AND E-101 FOR 'SIGNAL AHEAD' SYMBOL SIGN. SEE STD. E-121 FOR SIGN PLACEMENT. SEE STD. E-171A AND E-172 FOR ADDITIONAL INFORMATION ON SIGNALS.
33. ALL ELECTRICAL WORK SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND STATE INSPECTOR.
34. ALL STOP SIGNS AND ANY TRAFFIC SIGNS MADE IRRELEVANT DUE TO THE TEMPORARY SIGNAL SHALL BE COVERED DURING OPERATION OF THE TEMPORARY SIGNAL OR AT THE DISCRETION OF THE ENGINEER. THE COSTS OF COVERING AND UNCOVERING THESE SIGNS SHALL BE PAID INCIDENTAL TO ITEM 64L.10 TRAFFIC CONTROL.
35. CONSTRUCTION APPROACH SIGNS SHALL BE PROVIDED ON EACH APPROACH PER THE 'TRAFFIC CONTROL APPROACH SIGN PACKAGE' SHOWN ON SHEET 3. ADDITIONAL CONSTRUCTION APPROACH SIGNS SHALL BE INSTALLED AS REQUIRED BY THE ENGINEER PER STANDARDS E-100A, E-101, E-102 AND E-102A. PAYMENT FOR THESE SIGNS, THE REFLECTORIZED PLASTIC DRUMS, ETC., SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 64L.10 TRAFFIC CONTROL.

PROJECT NAME: RICHMOND
PROJECT NUMBER: BHF 0209(7)

FILE NAME: ...drawing\NOTES.dgn PLOT DATE: 4/21/2011
PROJECT LEADER: G. BOGUE DRAWN BY: J. SOTER
DESIGNED BY: G. BOGUE CHECKED BY: T. KNIGHT
PROJECT NOTES SHEET 4 OF 23





BUILT BY
 JE CASHMAN INC
 GENERAL CONTRACTOR
 BURLINGTON VERMONT
 1928
 STRUCTURAL STEEL BY
 BETHLEHEM
 STEEL COMPANY
 BETHLEHEM PA

PLAQUE DETAIL
 NOT TO SCALE

EXISTING COATING LIMITS:

- A. THE EXISTING FLOOR FRAMING, BRIDGE RAILING, BOTTOM CHORDS, SIDEWALK FLOOR FRAMING, SIDEWALK RAILING AND LOWER GUSSET PLATES (EXCEPT AT THE ABUTMENTS) WERE REPLACED WITH NEW HOT DIPPED GALVANIZED STEEL DURING A REHABILITATION PROJECT COMPLETED IN 2009. REFER TO REFERENCE PLANS FOR MORE DETAILS REGARDING THE SCOPE OF MEMBER REPLACEMENT CONDUCTED UNDER THE 2009 REHABILITATION PROJECT.
- B. EXISTING TOP CHORD, TRUSS DIAGONALS, TRUSS VERTICALS, PORTAL BRACING, SWAY BRACING, GUSSET PLATES AT THE ABUTMENTS AND TOP LATERAL BRACING CONSIST OF 1928 VINTAGE STEEL WHICH IS PAINTED.

EXISTING COATING LIMITS
 NOT TO SCALE

PROJECT NAME: RICHMOND
 PROJECT NUMBER: BHF 0209(7)

FILE NAME: ...drawing\DETAILS.dgn
 PROJECT LEADER: G. BOGUE
 DESIGNED BY:
DETAILS

PLOT DATE: 4/21/2011
 DRAWN BY: J. SOTER
 CHECKED BY: T. KNIGHT
 SHEET 5 OF 23



INDEX OF SHEETS

- 1 TITLE SHEET
- 2 PRELIMINARY INFORMATION SHEET
- 3-4 TYPICAL ROADWAY SECTION SHEETS
- 5-6 BRIDGE AND ROADWAY QUANTITY SHEETS
- 7-8 TIE SHEETS
- 9 LAYOUT PLAN SHEET
- 10 RESOURCES PLAN SHEET
- 11 PROFILE SHEET
- 12 SIGN & PAVEMENT MARKING PLAN
- 13 PROJECT NOTES
- 14 FRAMING PLAN
- 15 TYPICAL BRIDGE SECTION AND ELEVATION
- 16-20 STEEL DETAIL SHEETS
- 21-22 SIDEWALK DETAILS
- 23 PEDESTRIAN RAILING DETAILS
- 24-26 BRIDGE DECK DETAILS
- 27 SCUPPER DETAILS
- 28-31 BRIDGE RAIL AND CURB DETAILS
- 32 APPROACH RAIL DETAILS
- 33 EXPANSION JOINT PLAN
- 34 EXPANSION JOINT DETAILS
- 35 DOWNSPOUT DETAILS
- 36 ABUTMENT NO.1 BEARING DETAILS
- 37 ABUTMENT NO.1 PLAN & ELEVATION
- 38 ABUTMENT NO.2 PLAN & ELEVATION
- 39 ABUTMENT SECTIONS
- 40 REINFORCING STEEL SCHEDULE
- 41-42 ROADWAY CROSS SECTIONS
- 43-45 CHANNEL CROSS SECTIONS
- 46-50 REFERENCE PLANS

VAOT STANDARDS

C-10	02/11/08
C-2A	10/14/05
E-100	01/02/04
E-100A	01/02/04
E-101	05/30/03
E-102	06/30/03
E-102A	05/01/04
E-106	03/01/04
E-107	06/30/03
E-107A	08/08/95
E-108	08/18/95
E-121	08/08/95
E-154	05/01/04
E-155	05/01/04
E-164	05/20/99
E-191	02/01/99
E-193	08/18/95
G-1b	06/01/94
SB-R6-82	01/06/95

FINAL HYDRAULICS REPORT

HYDROLOGIC DATA

DRAINAGE AREA= 946.0 square miles
 CHARACTER OF TERRAIN: Hilly to mountainous drainage basin
 CHARACTER & TYPE OF STREAM: Sinuuous with sharp bends upstream
 NATURE OF STREAMBED: Silt, sand, gravel, cobbles, and some ledge

Q2.33= 17,600 cfs Q50= 46,900 cfs
 Q10= 32,100 cfs Q100= 54,300 cfs
 Q25= 40,000 cfs Q500= 75,000 cfs

DATE OF FLOOD OF RECORD: November 1927
 WATER SURFACE ELEV.: 311.9' ESTIMATED DISCHARGE: Unknown
 NATURAL STREAM VELOCITY @ Q25 = 6.0 fps
 ICE CONDITIONS: Moderate to heavy DEBRIS: Moderate
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY? No
 IS ORDINARY RISE RAPID? No
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
 IF YES, DESCRIBE: _____

PROPOSED STRUCTURE

STRUCTURE TYPE: Rehabilitate existing truss bridge
 CLEAR SPAN (NORMAL TO STREAM): 225 ft (185 ft effective from old abut.)
 VERTICAL CLEARANCE ABOVE STREAMBED: 37' maximum
 WATERWAY OF FULL OPENING: 5,200 sq. ft

WATER SURFACE ELEV. @ Q2.33= 298.0 ft VELOCITY= 7.9 fps
 Q10= 306.0 ft " 7.0 fps
 Q25= 307.3 ft " 7.8 fps
 Q50= 308.6 ft " 8.3 fps
 Q100= 309.9 ft " 8.8 fps

IS THE ROADWAY OVERTOPPED BELOW THE Q100? Yes FREQUENCY: Below Q10
 RELIEF ELEVATION: 303.9' DISCHARGE OVER ROAD @ Q100: 2115 cfs

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 312.0 ft
 VERTICAL CLEARANCE @ Q25 = 4.7 ft average (3.7 ft minimum)

SCOUR: Bridge is stable for scour. South abutment is on ledge. North abutment is behind and protected by an older abutment.

REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV as needed

PERMIT INFORMATION

AVERAGE DAILY FLOW: 2,000 cfs
 ORDINARY LOW WATER: 800 cfs DEPTH: EL. 287'
 ORDINARY HIGH WATER: 7,600 cfs DEPTH: EL. 293'

ADDITIONAL INFORMATION

All elevations are based on NAVD88 vertical datum.
 Velocities listed are the average velocities for the entire section, channel and floodplain.
 Velocities within the channel are higher.
 Hydraulics is based on limited project survey and FIS water surface elevations.

EXISTING STRUCTURE

STRUCTURE TYPE: Single span steel truss bridge
 YEAR BUILT: 1928, rehabilitated in 1977
 CLEAR SPAN (NORMAL TO STREAM): 225' (185' effective from old abutment)
 VERTICAL CLEARANCE ABOVE STREAMBED: 37' maximum
 WATERWAY OF FULL OPENING: 5,200 sq. ft
 DISPOSITION OF STRUCTURE: Rehabilitate
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: Ledge South, unknown North

WATER SURFACE ELEV. @ Q2.33= 298.0 ft VELOCITY= 7.9 fps
 Q10= 306.0 ft " 7.0 fps
 Q25= 307.3 ft " 7.8 fps
 Q50= 308.6 ft " 8.3 fps
 Q100= 309.9 ft " 8.8 fps

LONG TERM STREAM BED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW THE Q100? Yes FREQUENCY: Below Q10
 RELIEF ELEVATION: 303.9 ft DISCHARGE OVER ROAD @ Q100: 2115 cfs

UPSTREAM STRUCTURE: TOWN: Richmond DISTANCE: 18,300 ft
 HIGHWAY NO.: T.H.3 STRUCTURE NO.: 10
 STRUCTURE TYPE: 2 span steel girder bridge
 CLEAR SPAN: 236 ft CLEAR HEIGHT: 27.5 ft
 YEAR BUILT: 2003 FULL WATERWAY: 5,570 sq. ft

DOWNSTREAM STRUCTURE: TOWN: Richmond DISTANCE: 13,400 ft
 HIGHWAY NO.: 189 STRUCTURE NO.: 58 S
 STRUCTURE TYPE: 3 span steel girder bridge
 CLEAR SPAN: 541 ft CLEAR HEIGHT: 65 ft
 YEAR BUILT: 1962 FULL WATERWAY: 20,700 sq. ft

- DESIGN CRITERIA:
- DESIGN LIVE LOAD AASHTO: HS-20
 - DESIGN SPAN: 229' - 10.5"
 - ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL: N/A ON LEDGE: N/A
 - ALLOWABLE LOAD FOR PILING: _____ TYPE _____ ESTIMATED LENGTH _____
 - STRUCTURAL STEEL AASHTO GRADE: SEE PROJECT GENERAL NOTES
 - REINFORCING STEEL GRADE: 60
 CONCRETE, HIGH PERFORMANCE CLASS AA $f_c = 4000$ PSI $f_c = 1600$ psi
 CONCRETE, HIGH PERFORMANCE CLASS B $f_c = 3500$ PSI $f_c = 1400$ psi

- TRAFFIC MAINTENANCE:
- IS TRAFFIC TO BE MAINTAINED? NO IF YES, ON EXISTING STRUCTURE: N/A OR ON TEMPORARY BRIDGE: _____
 - TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY: N/A TRAFFIC CONTROL SIGNALS REQUIRED: N
 MINIMUM CLEAR SPAN (NORMAL TO STREAM): _____ MINIMUM CLEAR HEIGHT: N/A
 MINIMUM WATERWAY AREA: _____
 ARE SIDEWALKS REQUIRED? N/A IF SO, ON WHAT SIDE? N/A
 STRUCTURE TYPE: _____

LOADING LEVELS (WORKING STRESS)	WORKING STRESS LOAD RATING (TONS)						
	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy	17	30					
POSTED 0.67 Fy	26	47	42		28	35	26
OPERATING 0.75 Fy		60	54	84	36	45	34

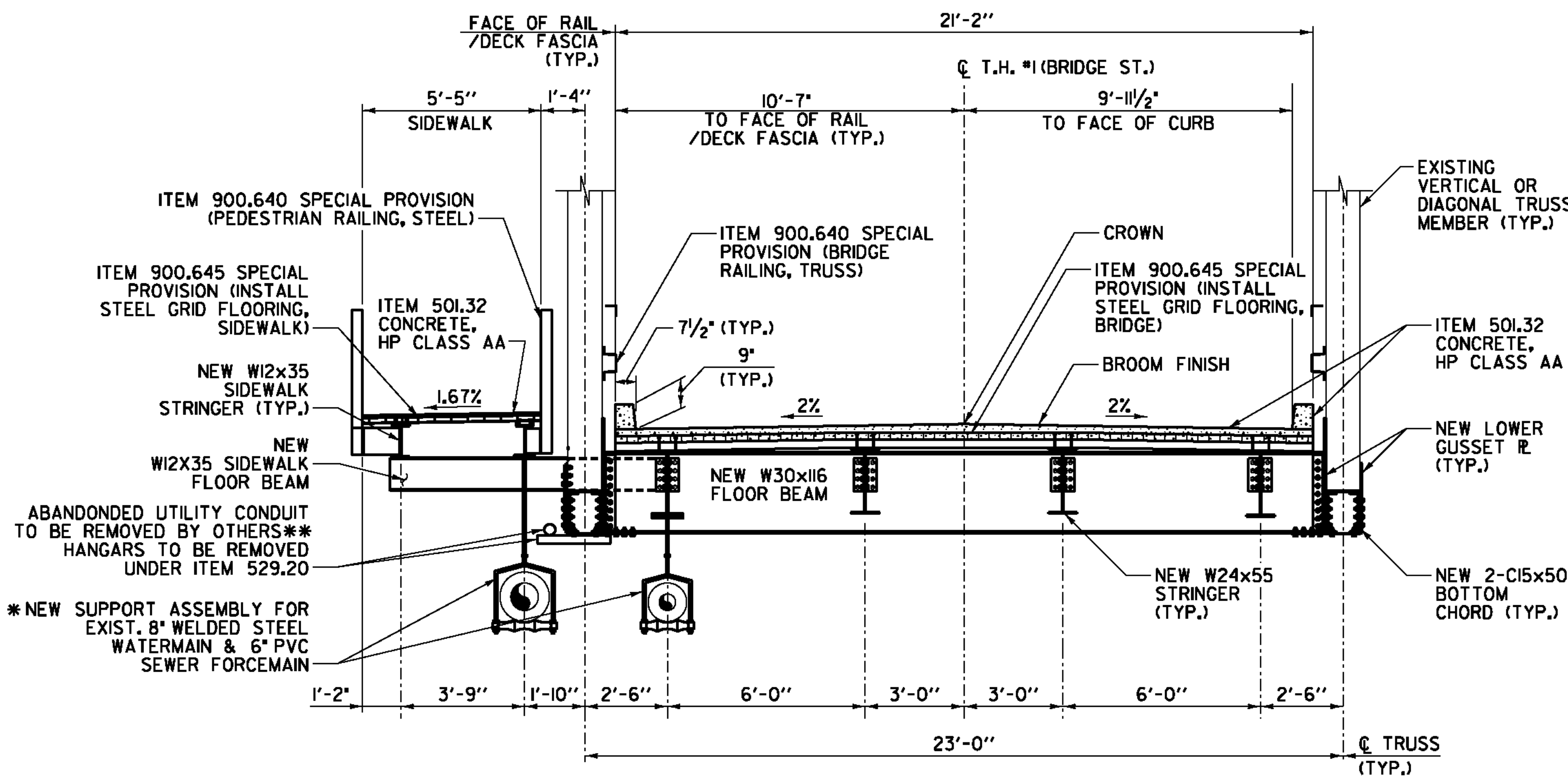
TRAFFIC DATA		YEAR	AADT	DHV	% D	% T	ADTT
2009	5800	650	66	4.2	270		
2029	7100	800	66	7.0	550		

20 year ESAL for flexible pavement 2009 to 2029 = 1,752,000
 40 year ESAL for flexible pavement 2009 to 2049 = 4,628,000
 Design speed: 15 mph

MEMBER #8 AND #25 ARE THE CONTROLLING MEMBERS.
 REFER TO TRUSS ELEVATION FOR MEMBER LOCATIONS.

WORKING STRESS $R_F = \frac{F_{ALLOW} - F_{DL}}{F_{LL+I}}$

PROJECT NAME: RICHMOND
 PROJECT NUMBER: BHF 0209(5)
 FILE NAME: ...drawing\z08j32.pl.dgn PLOT DATE: 8/17/2010
 PROJECT LEADER: C. WILLIAMS DRAWN BY: J. SOTER
 DESIGNED BY: T. KNIGHT CHECKED BY: G. BOGUE
PRELIMINARY INFORMATION SHEET SHEET 2 OF 50



REHABILITATED BRIDGE TYPICAL SECTION
 NOT TO SCALE

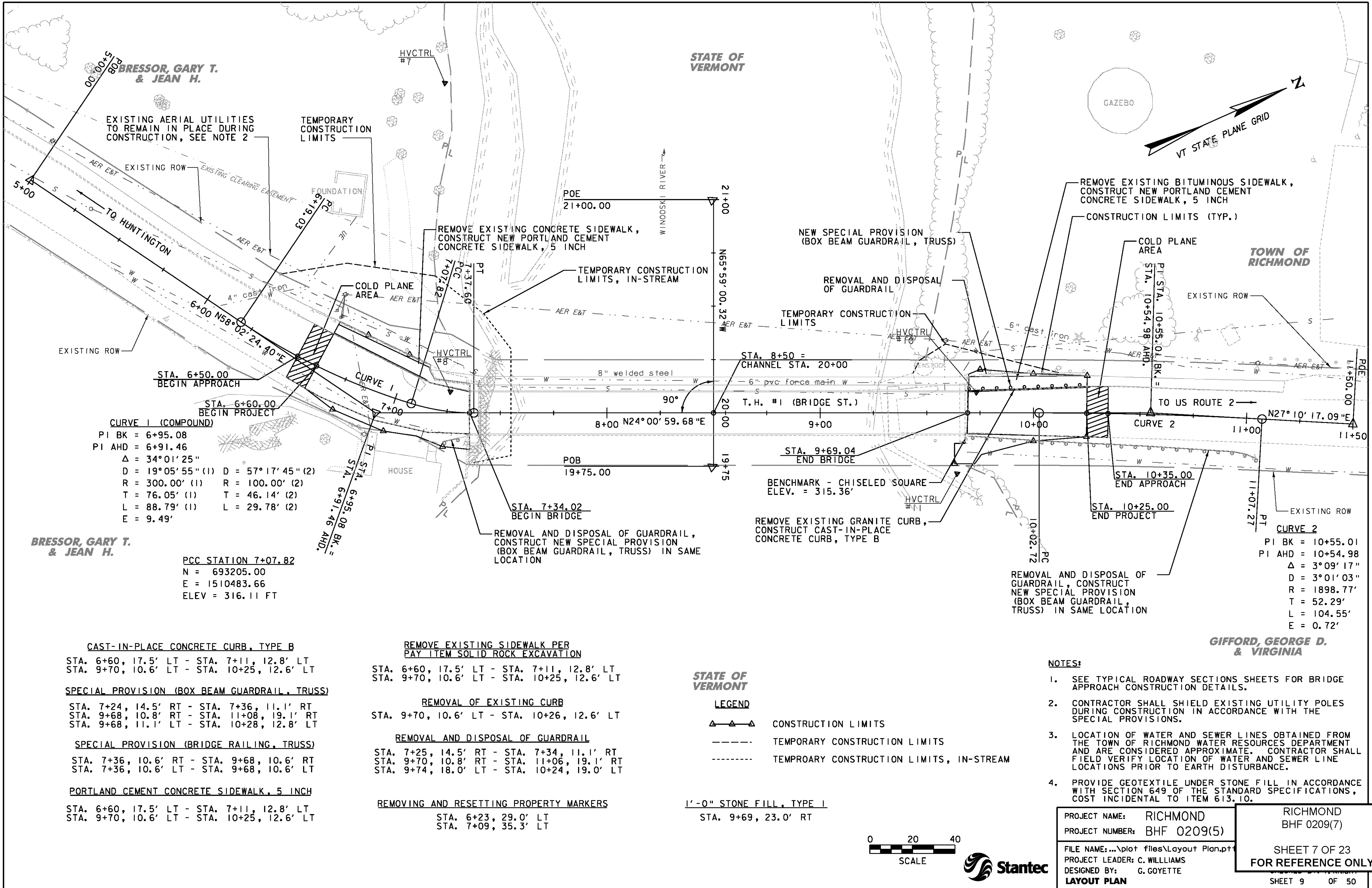
* NEW UTILITY SUPPORT ASSEMBLIES TO MATCH LOCATION AND TYPE OF EXISTING HANGERS, IN ACCORDANCE WITH ITEM 900.620 SPECIAL PROVISION (UTILITY SUPPORT ASSEMBLY, SEWER) AND ITEM 900.620 SPECIAL PROVISION (UTILITY SUPPORT ASSEMBLY, WATER).

ASSEMBLY TO BE COOPER B-LINE ADJUSTABLE STEEL YOKE AND PIPE ROLL (PART NO. B310), COOPER B-LINE W/ 1" DIA. ASTM A 307 THREADED ROD AND STEEL BEAM CLAMP (PART NO. B3055-1) OR EQUIVALENT ASSEMBLY.

CONTACTOR SHALL TAKE NECESSARY MEASUREMENTS TO ORDER APPROPRIATE HARDWARE.

** REFER TO SPECIAL PROVISIONS.

RICHMOND
BHF 0209(7)
SHEET 6 OF 23
FOR REFERENCE ONLY



BRESSOR, GARY T. & JEAN H.

GIFFORD, GEORGE D. & VIRGINIA

CURVE 1 (COMPOUND)
 PI BK = 6+95.08
 PI AHD = 6+91.46
 $\Delta = 34^{\circ}01'25''$
 $D = 19^{\circ}05'55''$ (1) $D = 57^{\circ}17'45''$ (2)
 $R = 300.00'$ (1) $R = 100.00'$ (2)
 $T = 76.05'$ (1) $T = 46.14'$ (2)
 $L = 88.79'$ (1) $L = 29.78'$ (2)
 $E = 9.49'$

CURVE 2
 PI BK = 10+55.01
 PI AHD = 10+54.98
 $\Delta = 3^{\circ}09'17''$
 $D = 3^{\circ}01'03''$
 $R = 1898.77'$
 $T = 52.29'$
 $L = 104.55'$
 $E = 0.72'$

PCC STATION 7+07.82
 N = 693205.00
 E = 1510483.66
 ELEV = 316.11 FT

CAST-IN-PLACE CONCRETE CURB, TYPE B
 STA. 6+60, 17.5' LT - STA. 7+11, 12.8' LT
 STA. 9+70, 10.6' LT - STA. 10+25, 12.6' LT

SPECIAL PROVISION (BOX BEAM GUARDRAIL, TRUSS)
 STA. 7+24, 14.5' RT - STA. 7+36, 11.1' RT
 STA. 9+68, 10.8' RT - STA. 11+08, 19.1' RT
 STA. 9+68, 11.1' LT - STA. 10+28, 12.8' LT

SPECIAL PROVISION (BRIDGE RAILING, TRUSS)
 STA. 7+36, 10.6' RT - STA. 9+68, 10.6' RT
 STA. 7+36, 10.6' LT - STA. 9+68, 10.6' LT

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
 STA. 6+60, 17.5' LT - STA. 7+11, 12.8' LT
 STA. 9+70, 10.6' LT - STA. 10+25, 12.6' LT

REMOVE EXISTING SIDEWALK PER PAY ITEM SOLID ROCK EXCAVATION
 STA. 6+60, 17.5' LT - STA. 7+11, 12.8' LT
 STA. 9+70, 10.6' LT - STA. 10+25, 12.6' LT

REMOVAL OF EXISTING CURB
 STA. 9+70, 10.6' LT - STA. 10+26, 12.6' LT

REMOVAL AND DISPOSAL OF GUARDRAIL
 STA. 7+25, 14.5' RT - STA. 7+34, 11.1' RT
 STA. 9+70, 10.8' RT - STA. 11+06, 19.1' RT
 STA. 9+74, 18.0' LT - STA. 10+24, 19.0' LT

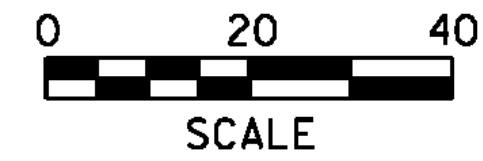
REMOVING AND RESETTING PROPERTY MARKERS
 STA. 6+23, 29.0' LT
 STA. 7+09, 35.3' LT

STATE OF VERMONT

LEGEND

- ▲-▲-▲ CONSTRUCTION LIMITS
- TEMPORARY CONSTRUCTION LIMITS
- TEMPORARY CONSTRUCTION LIMITS, IN-STREAM

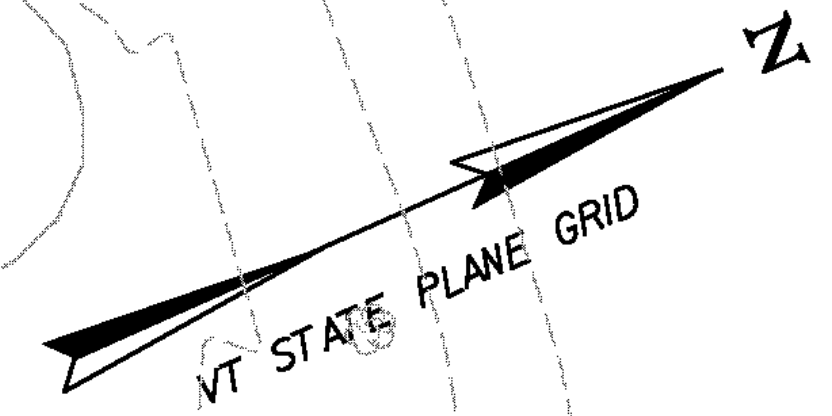
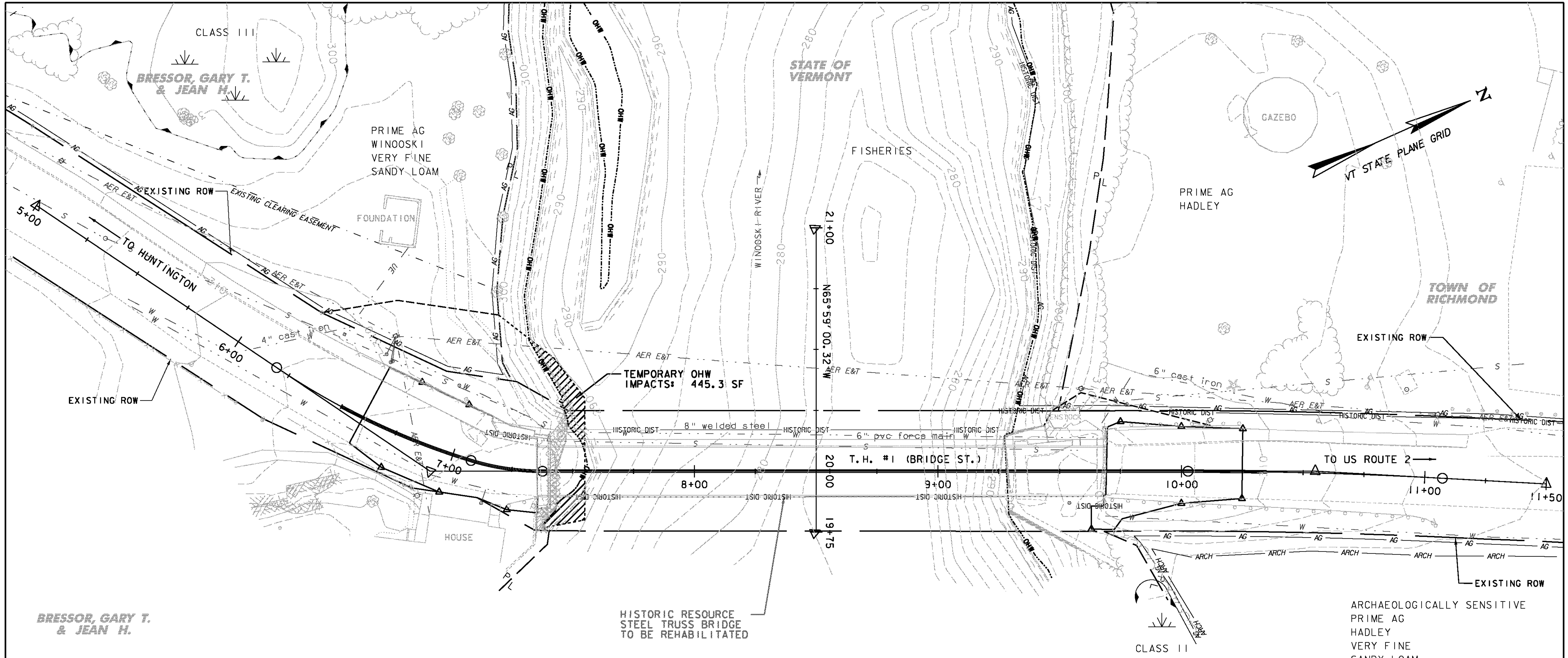
1'-0" STONE FILL, TYPE I
 STA. 9+69, 23.0' RT



NOTES:

1. SEE TYPICAL ROADWAY SECTIONS SHEETS FOR BRIDGE APPROACH CONSTRUCTION DETAILS.
2. CONTRACTOR SHALL SHIELD EXISTING UTILITY POLES DURING CONSTRUCTION IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
3. LOCATION OF WATER AND SEWER LINES OBTAINED FROM THE TOWN OF RICHMOND WATER RESOURCES DEPARTMENT AND ARE CONSIDERED APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY LOCATION OF WATER AND SEWER LINE LOCATIONS PRIOR TO EARTH DISTURBANCE.
4. PROVIDE GEOTEXTILE UNDER STONE FILL IN ACCORDANCE WITH SECTION 649 OF THE STANDARD SPECIFICATIONS, COST INCIDENTAL TO ITEM 613.10.

PROJECT NAME: RICHMOND	RICHMOND BHF 0209(7)
PROJECT NUMBER: BHF 0209(5)	
FILE NAME: ... \plot files \Layout Plan.plt	
PROJECT LEADER: C. WILLIAMS	
DESIGNED BY: G. GOYETTE	
LAYOUT PLAN	SHEET 7 OF 23 FOR REFERENCE ONLY
	SHEET 9 OF 50



BRESSOR, GARY T.
& JEAN H.

HISTORIC RESOURCE
STEEL TRUSS BRIDGE
TO BE REHABILITATED

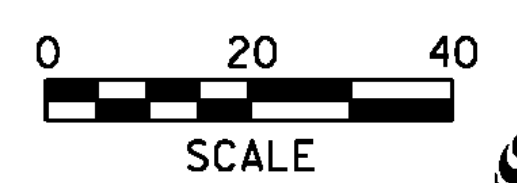
ARCHAEOLOGICALLY SENSITIVE
PRIME AG
HADLEY
VERY FINE
SANDY LOAM

LEGEND

- CONSTRUCTION LIMITS
- TEMPORARY CONSTRUCTION LIMITS
- TEMPORARY CONSTRUCTION LIMITS, IN-STREAM
- AGRICULTURAL LAND
- ARCHEOLOGICAL SITE
- ORDINARY HIGH WATER
- WETLANDS
- RIGHT-OF-WAY
- PROPERTY LINE
- HISTORIC/HISTORIC DISTRICT
- TEMPORARY OHW IMPACTS

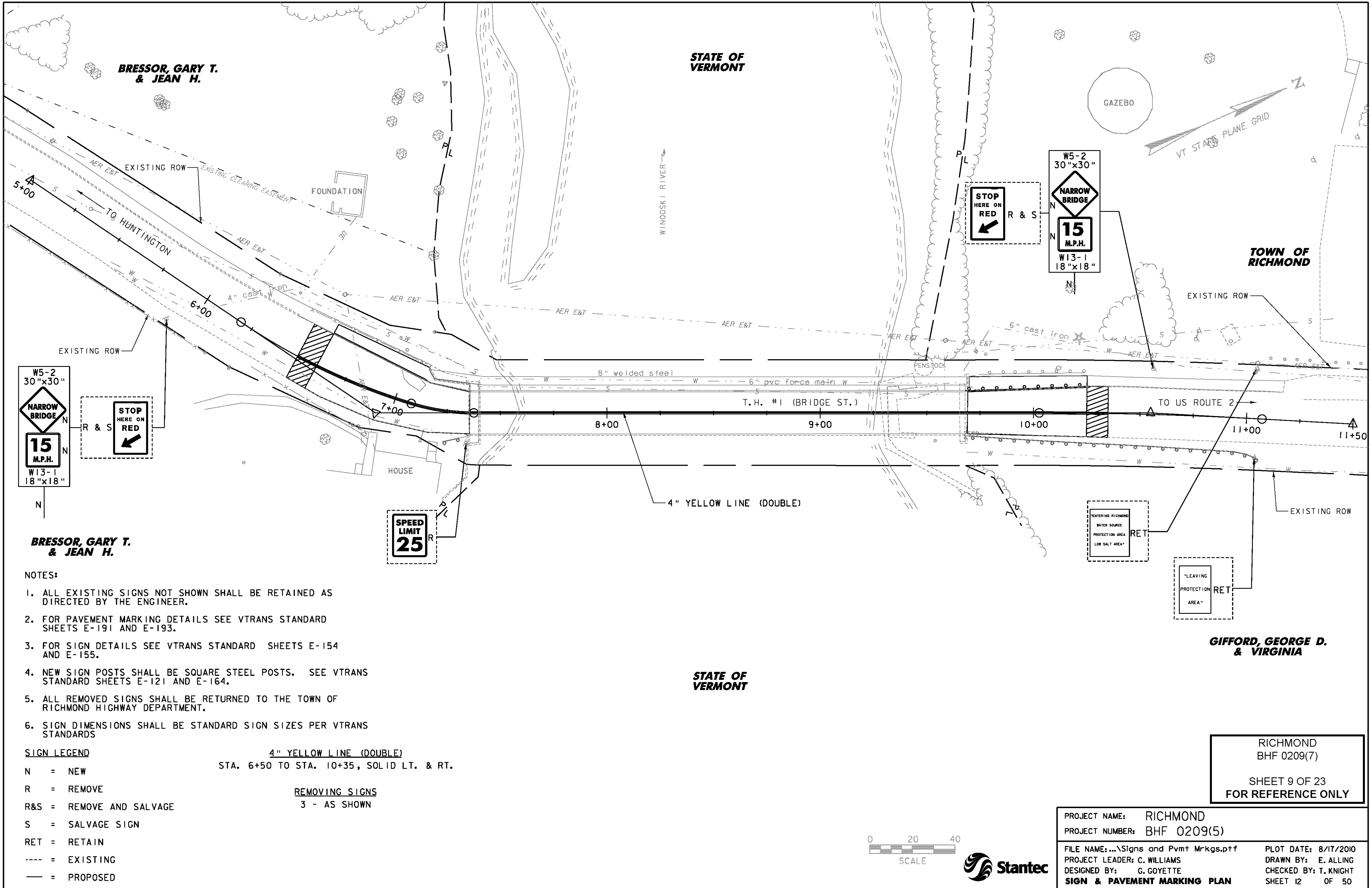
GIFFORD, GEORGE D.
& VIRGINIA

ENVIRONMENTAL RESOURCE	LEVEL	LINestyle NAME	CHECKED BY	DATE
Wetlands	EWB.P	wetland-lt, wetland-rt	G. Gingras	10-07-08
Historic/Historic District	MHBC	historic dist.	J, Ramsey	10-07-08
Archeological Site	LAAS	arch. area	University of Vermont	10-15-08
4f Property	MPL	4f property	G. Gingras	10-07-08
6f Property	MPL	6f property	G. Gingras	10-07-08
Agricultural Land	LAPB	agricult. land	G. Gingras	10-07-08
Fish & Wildlife Habitat	EHA	critical hab.	G. Gingras	10-07-08
Flood Plains	EWB.P	fld. plains	J, Ramsey	10-07-08
Endangered Species	EHA	thr. & end. spec.	G. Gingras	10-07-08
Hazardous Waste	EDEFAULT	haz. waste	J, Ramsey	10-07-08
Stormwater	DDEFAULT	Diamond		
USDA-Forest Service Lands	MJPB	Phantom	G. Gingras	10-07-08
Wildlife Habitat Suit/Conn	EHA	Divide	G. Gingras	10-07-08



RICHMOND
BHF 0209(7)
SHEET 8 OF 23
FOR REFERENCE ONLY

PROJECT NAME: RICHMOND
PROJECT NUMBER: BHF 0209(5)
FILE NAME: ...\\plot files\Resources Plan.ptf PLOT DATE: 8/17/2010
PROJECT LEADER: C. WILLIAMS DRAWN BY: E. ALLING
DESIGNED BY: G. GOYETTE CHECKED BY: T. KNIGHT
RESOURCES PLAN SHEET 10 OF 50



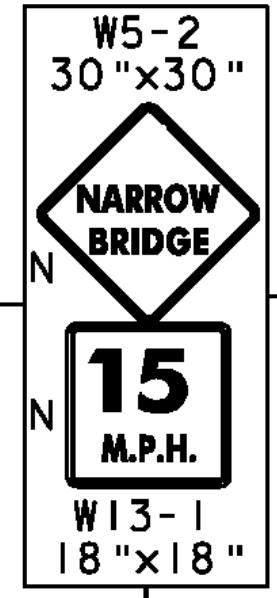
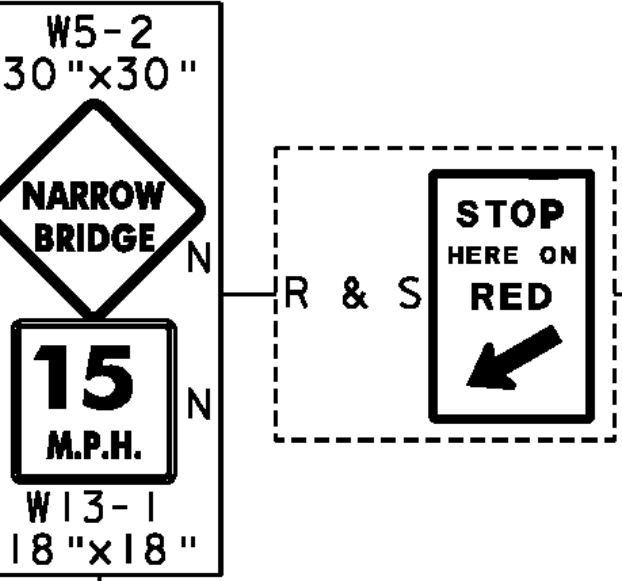
BRESSOR, GARY T. & JEAN H.

STATE OF VERMONT

TOWN OF RICHMOND

GIFFORD, GEORGE D. & VIRGINIA

STATE OF VERMONT



- NOTES:**
1. ALL EXISTING SIGNS NOT SHOWN SHALL BE RETAINED AS DIRECTED BY THE ENGINEER.
 2. FOR PAVEMENT MARKING DETAILS SEE VTRANS STANDARD SHEETS E-191 AND E-193.
 3. FOR SIGN DETAILS SEE VTRANS STANDARD SHEETS E-154 AND E-155.
 4. NEW SIGN POSTS SHALL BE SQUARE STEEL POSTS. SEE VTRANS STANDARD SHEETS E-121 AND E-164.
 5. ALL REMOVED SIGNS SHALL BE RETURNED TO THE TOWN OF RICHMOND HIGHWAY DEPARTMENT.
 6. SIGN DIMENSIONS SHALL BE STANDARD SIGN SIZES PER VTRANS STANDARDS

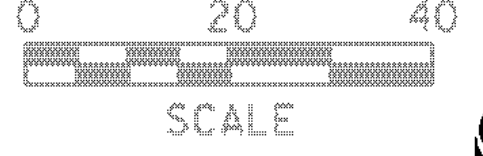
SIGN LEGEND

N	=	NEW
R	=	REMOVE
R&S	=	REMOVE AND SALVAGE
S	=	SALVAGE SIGN
RET	=	RETAIN
---	=	EXISTING
—	=	PROPOSED

4" YELLOW LINE (DOUBLE)
 STA. 6+50 TO STA. 10+35, SOLID LT. & RT.

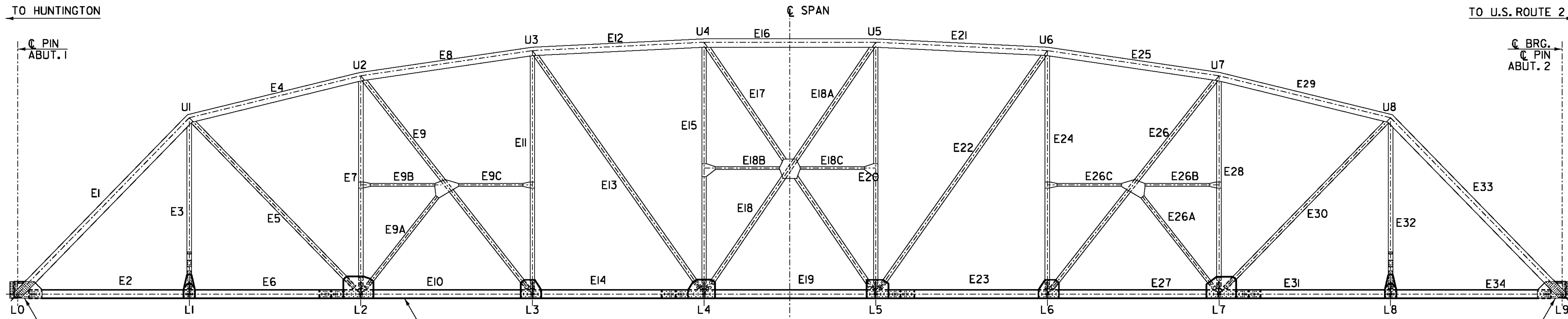
REMOVING SIGNS
 3 - AS SHOWN

RICHMOND
 BHF 0209(7)
 SHEET 9 OF 23
 FOR REFERENCE ONLY



PROJECT NAME: RICHMOND
 PROJECT NUMBER: BHF 0209(5)
 FILE NAME: ...Signs and Pvmr Mrkgs.ptf
 PROJECT LEADER: C. WILLIAMS
 DESIGNED BY: G. GOYETTE
 SIGN & PAVEMENT MARKING PLAN

PLOT DATE: 8/17/2010
 DRAWN BY: E. ALLING
 CHECKED BY: T. KNIGHT
 SHEET 12 OF 50



LOWER GUSSET PLATES AT PANEL L0 TO REMAIN

NEW BOTTOM CHORD (2)-C15x50 WITH 1/2" x 1'-0 3/8" TOP PLATE (TYP.)

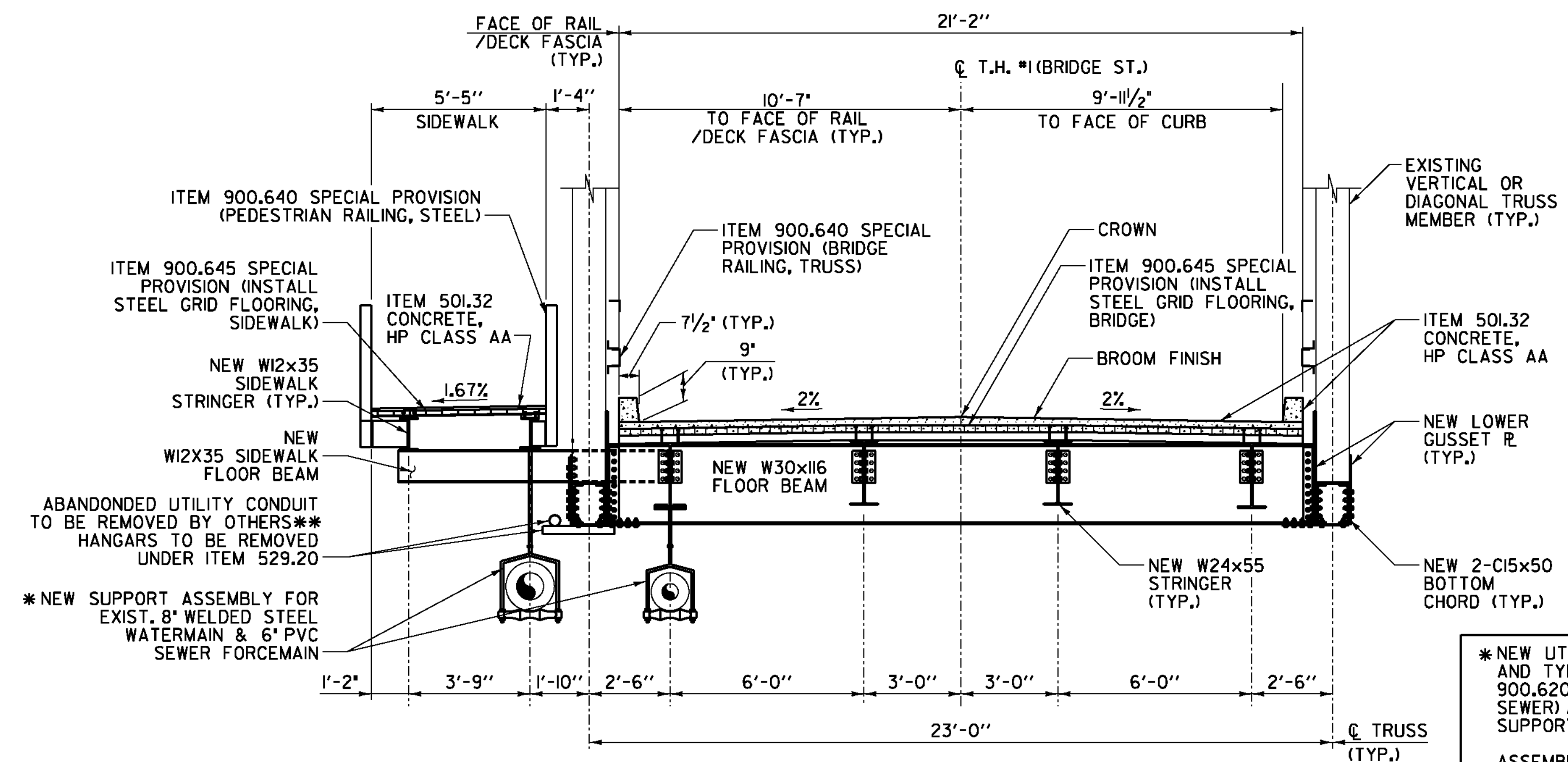
LOWER GUSSET PLATES AT PANEL L9 TO REMAIN

TRUSS ELEVATION

SCALE: 1/8" = 1'-0"
10 2 4 6 8

NOTES:

1. EAST TRUSS ELEVATION SHOWN. WEST TRUSS ELEVATION SIMILAR, EXCEPT PREFIX.
2. THE ENTIRE FLOOR SYSTEM, BOTTOM CHORD, LOWER LATERAL BRACING AND LOWER GUSSET PLATES WILL BE REMOVED AND REPLACED WITH NEW GALVANIZED STEEL UNLESS NOTED OTHERWISE.
3. VERTICAL AND DIAGONAL TRUSS MEMBERS WILL BE RETAINED.



REHABILITATED BRIDGE TYPICAL SECTION

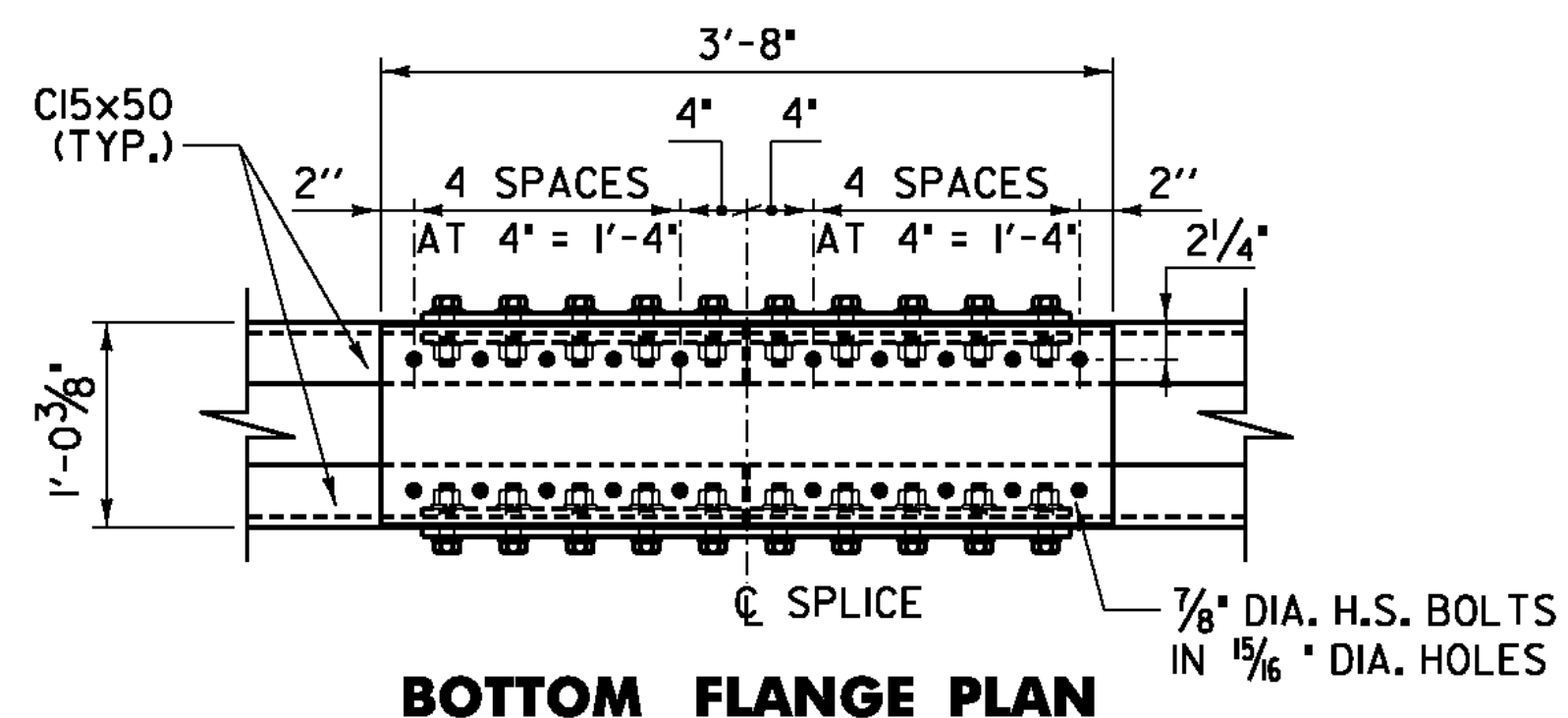
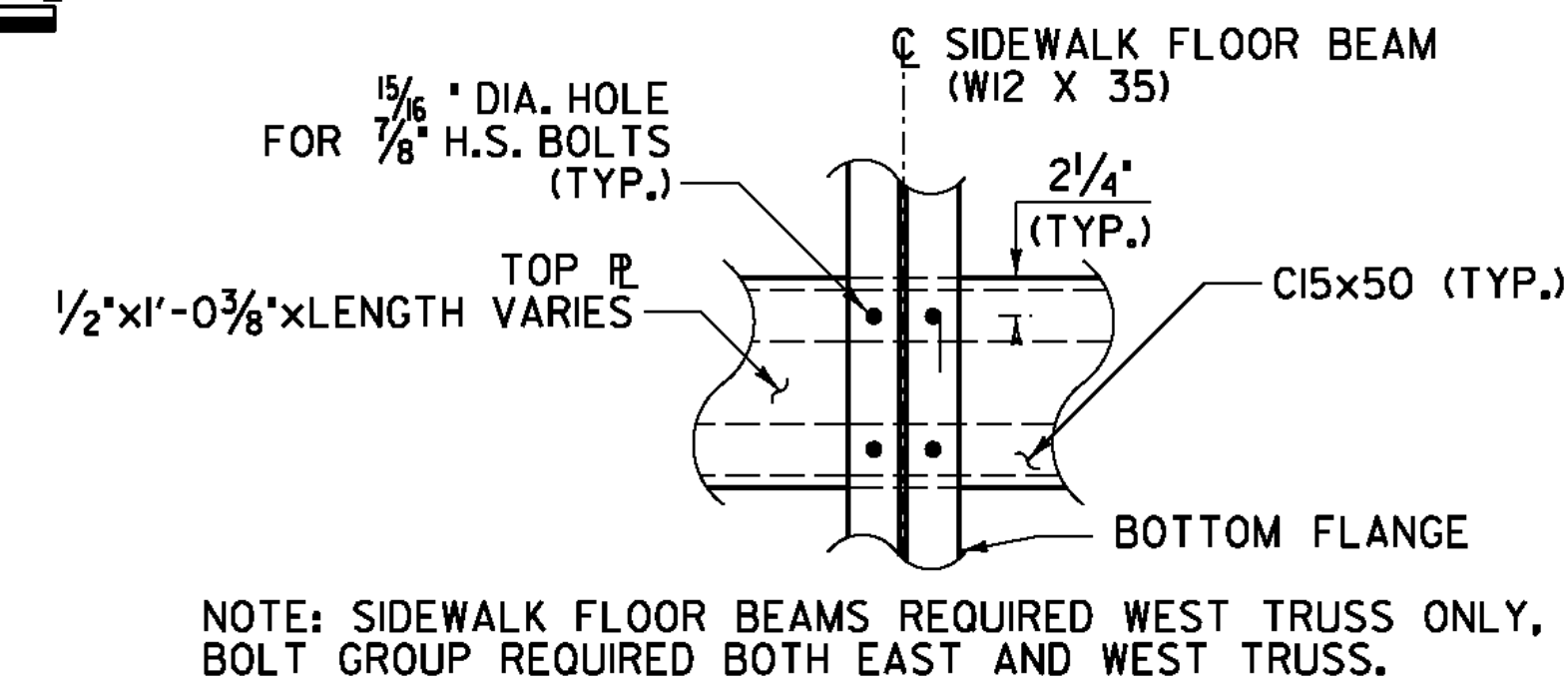
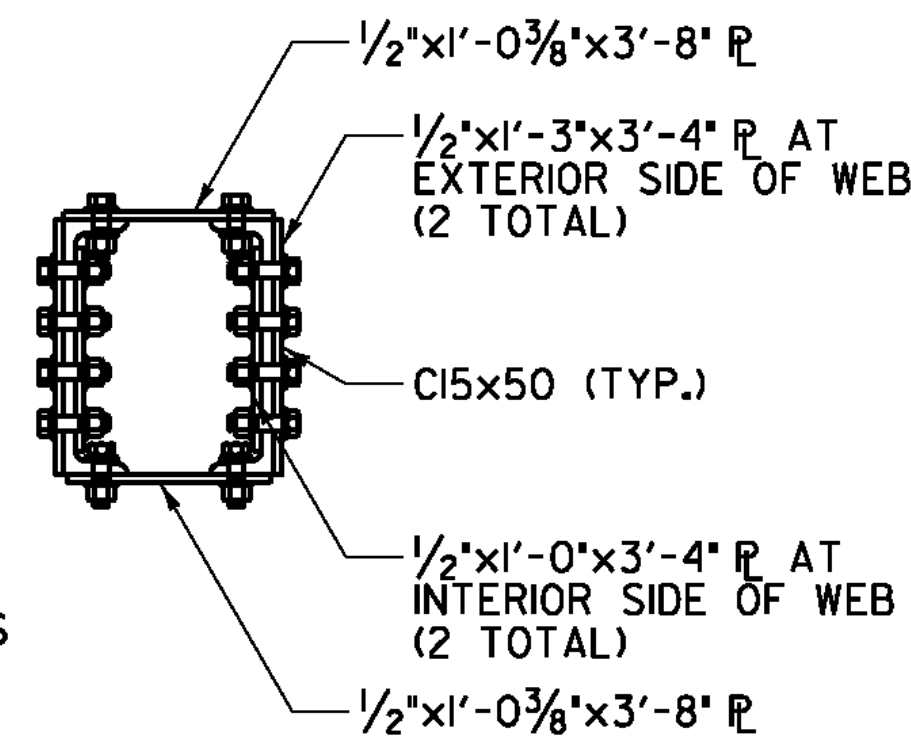
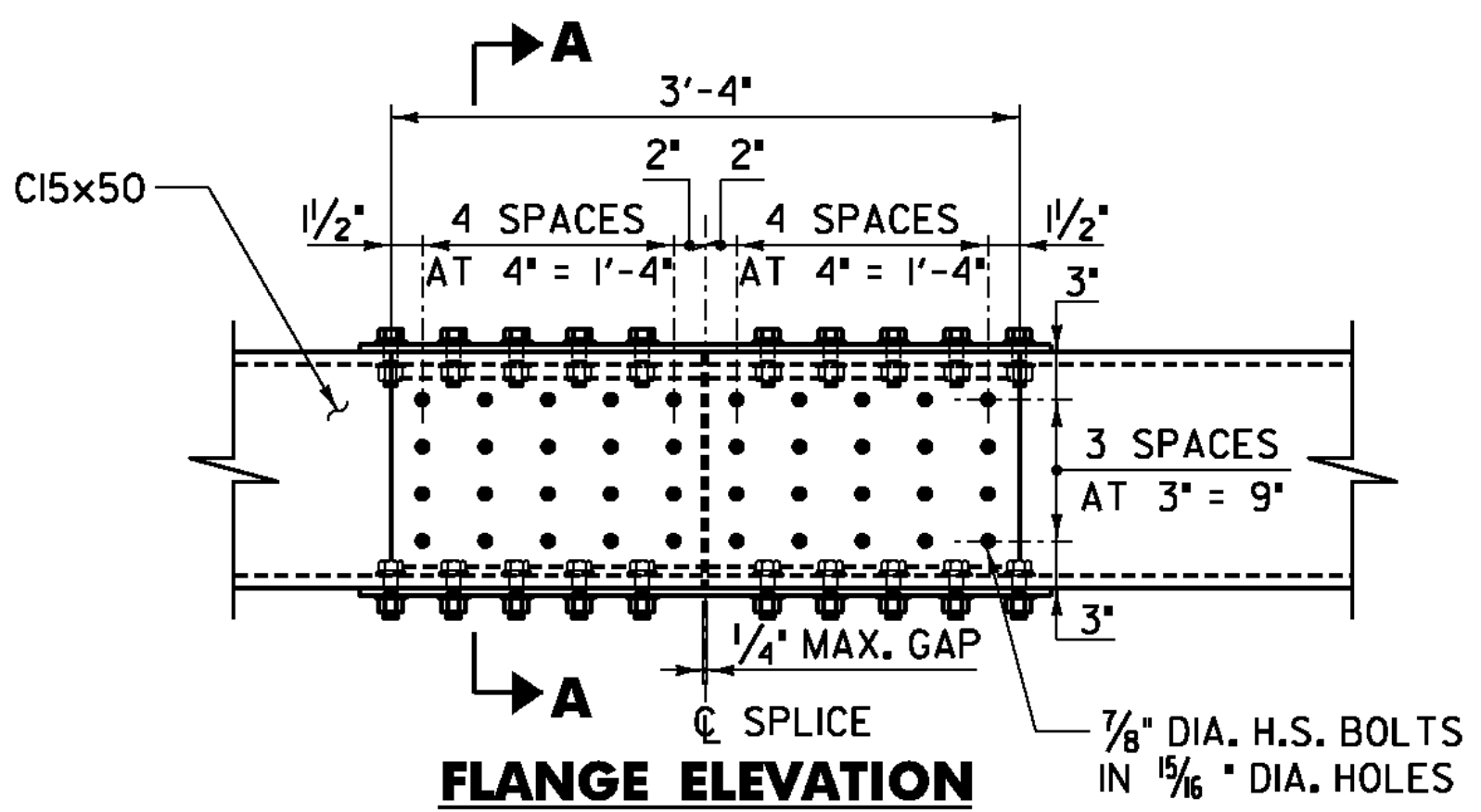
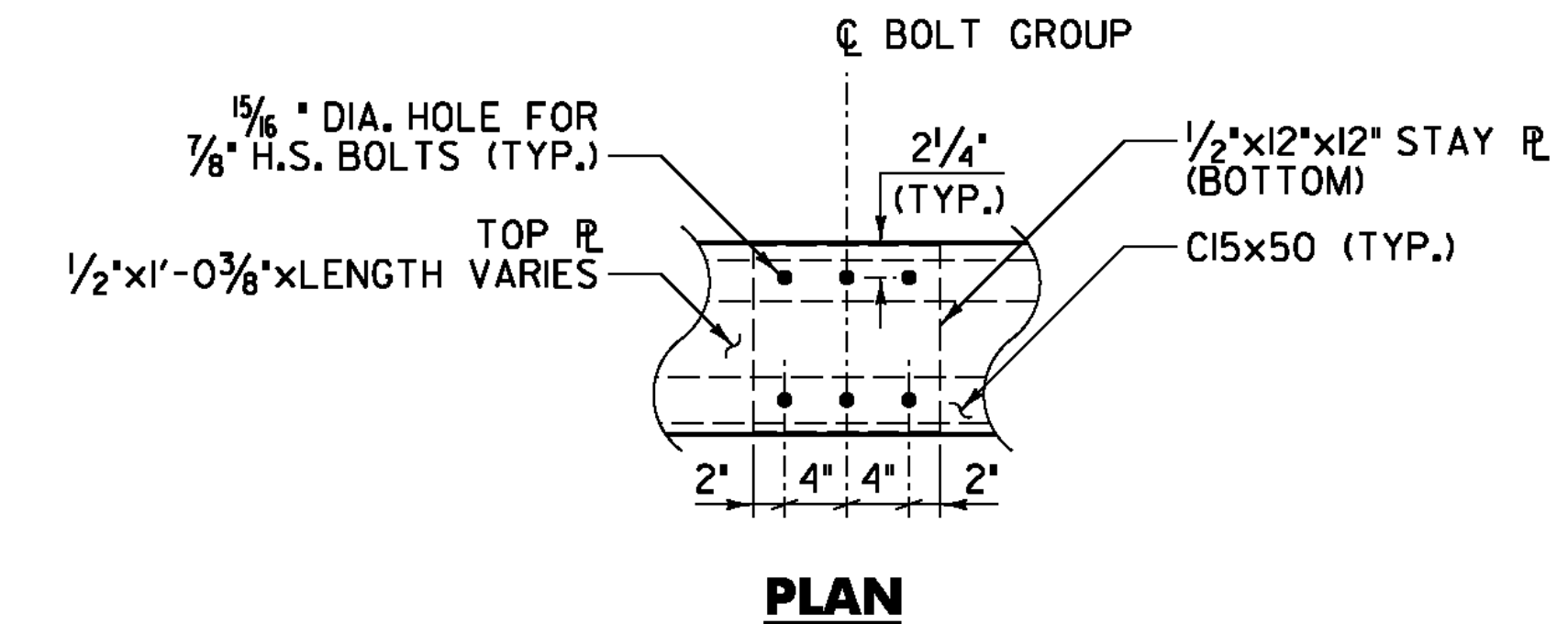
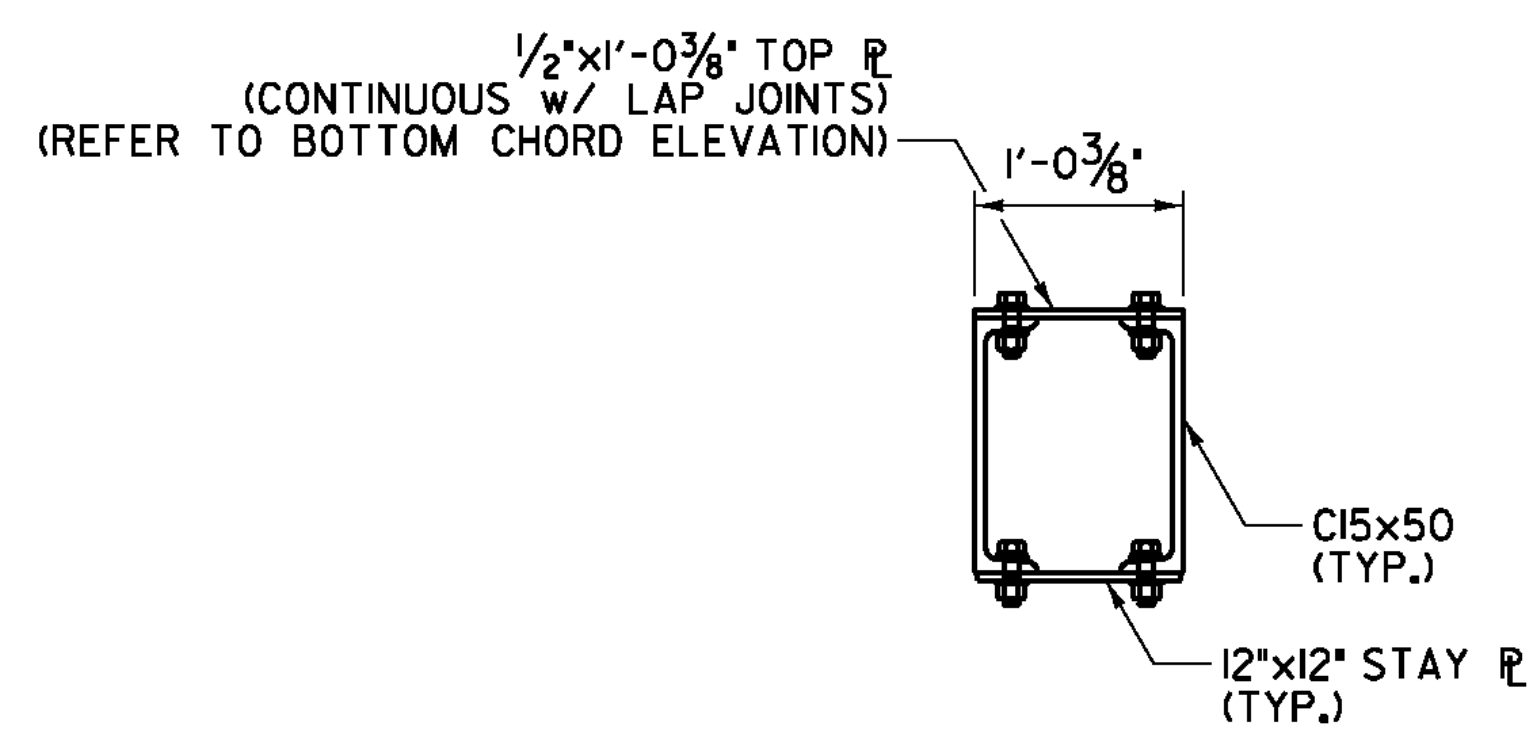
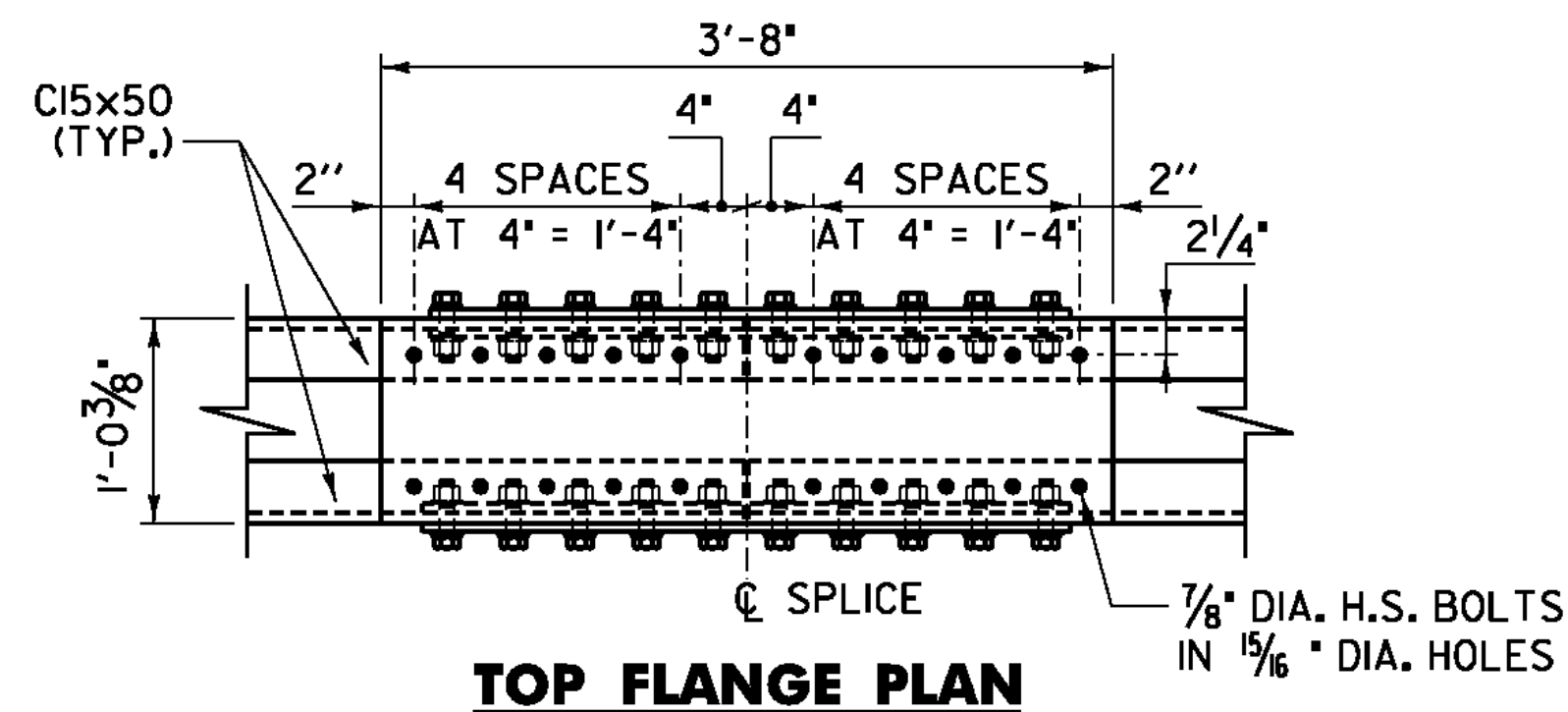
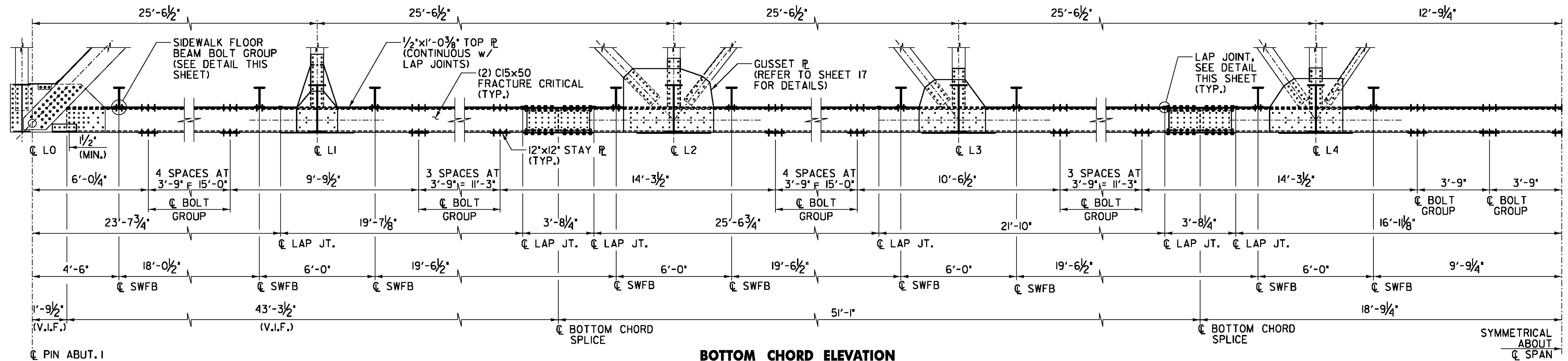
SCALE: 3/8" = 1'-0"
0 1 2 3 4

*NEW UTILITY SUPPORT ASSEMBLIES TO MATCH LOCATION AND TYPE OF EXISTING HANGERS, IN ACCORDANCE WITH ITEM 900.620 SPECIAL PROVISION (UTILITY SUPPORT ASSEMBLY, SEWER) AND ITEM 900.620 SPECIAL PROVISION (UTILITY SUPPORT ASSEMBLY, WATER).
ASSEMBLY TO BE COOPER B-LINE ADJUSTABLE STEEL YOKE AND PIPE ROLL (PART NO. B310), COOPER B-LINE W/ 1" DIA. ASTM A 307 THREADED ROD AND STEEL BEAM CLAMP (PART NO. B3055-1) OR EQUIVALENT ASSEMBLY.
CONTACTOR SHALL TAKE NECESSARY MEASUREMENTS TO ORDER APPROPRIATE HARDWARE.
** REFER TO SPECIAL PROVISIONS.

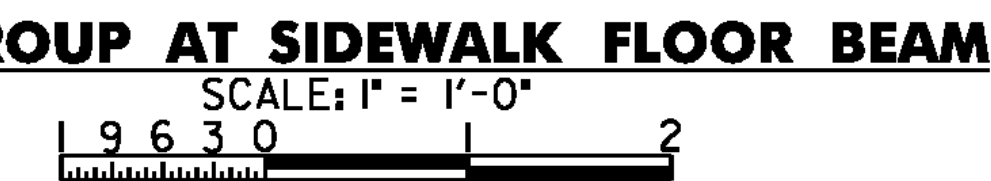
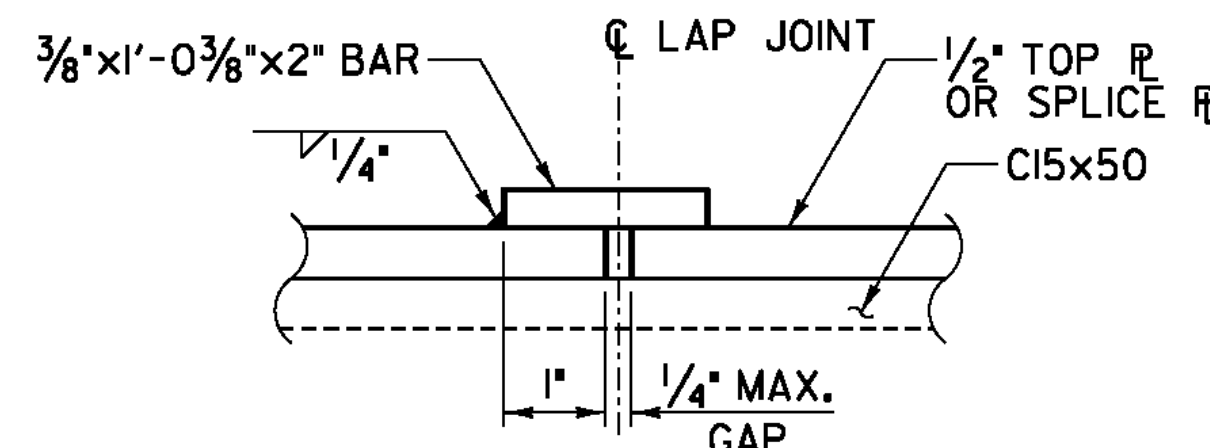
RICHMOND
BHF 0209(7)
SHEET 10 OF 23
FOR REFERENCE ONLY

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of	RICHMOND
Highway No.	T.H. #1
TOWN HIGHWAY #1 OVER WINOOSKI RIVER	
TYPICAL BRIDGE SECTION AND ELEVATION	
Designed By	T. KNIGHT
Checked By	T. KNIGHT
PROJECT	RICHMOND
CAD Dwg:	...drawing\z08J132-TYPSEC.dgn
Bridge Sheet No.	
Bridge No.	31
Log Sta.	
Surv. Sta.	
Drawn By	J. SOTER
Bridge Design Supervisor	G. BOGUE
Date	01/09
Date	01/09
PROJECT NO.	BHF 0209(5)
Plot Date:	8/17/2010
Sheet	15 of 50



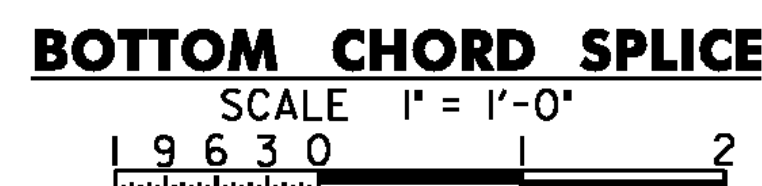


- NOTES:**
- ALL SPLICE PLATES ARE FRACTURE CRITICAL MEMBERS.
 - TOP PLATE LAP JOINT NOT SHOWN FOR CLARITY.



LEGEND

- = NEW 15/16" DIA. HOLE FOR 7/8" DIA. BOLT UNLESS NOTED OTHERWISE
- = EXISTING RIVETS TO BE REPLACED w/ 7/8" DIA. BOLTS. LAYOUT TO BE DETERMINED FROM FIELD MEASUREMENTS
- ⊙ = EXISTING RIVETS TO REMAIN
- NS = NEAR SIDE (ROADWAY SIDE OF TRUSS)
- FS = FAR SIDE (OUTSIDE OF TRUSS)



RICHMOND
 BHF 0209(7)
 SHEET 11 OF 23
 FOR REFERENCE ONLY

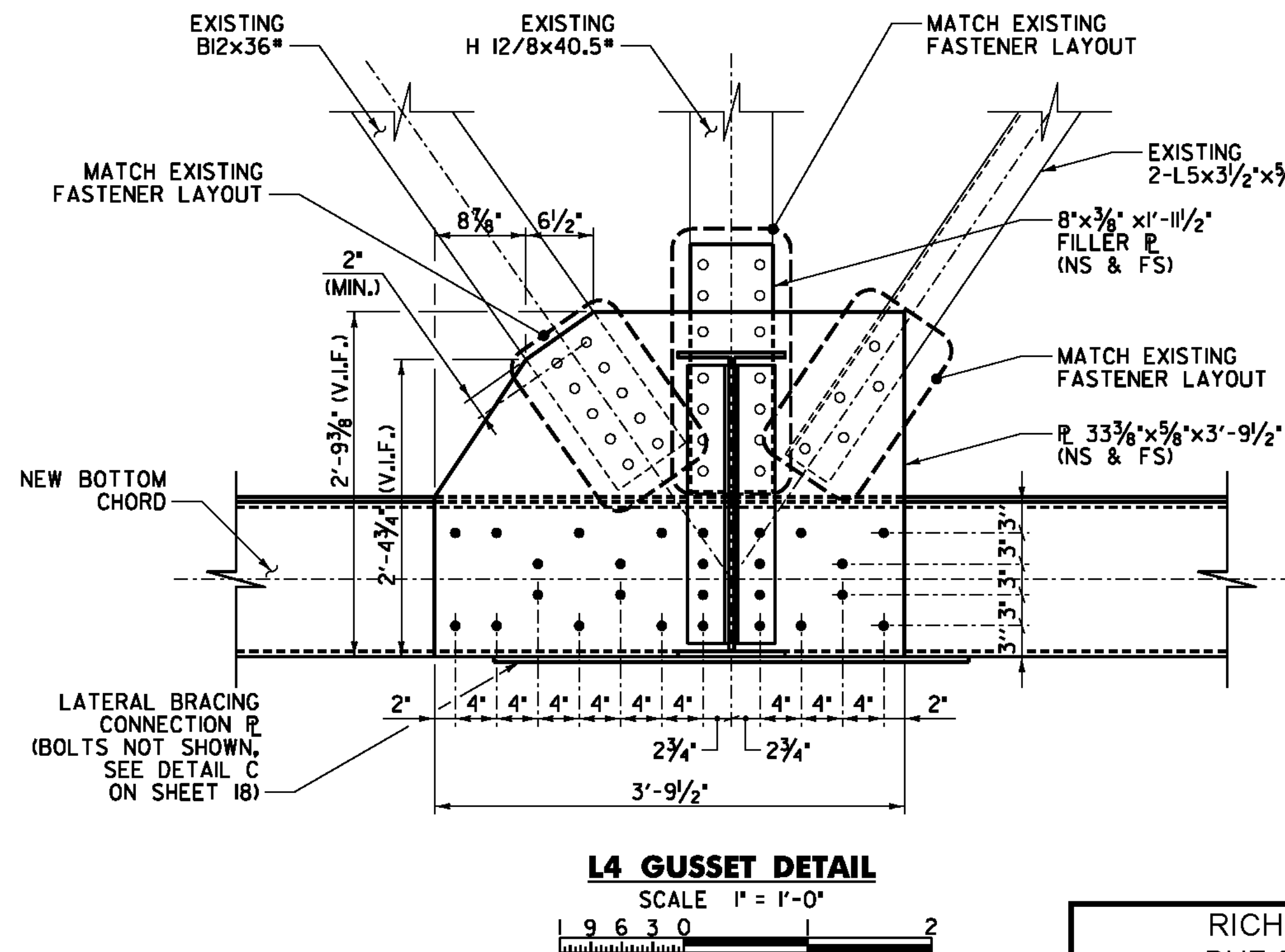
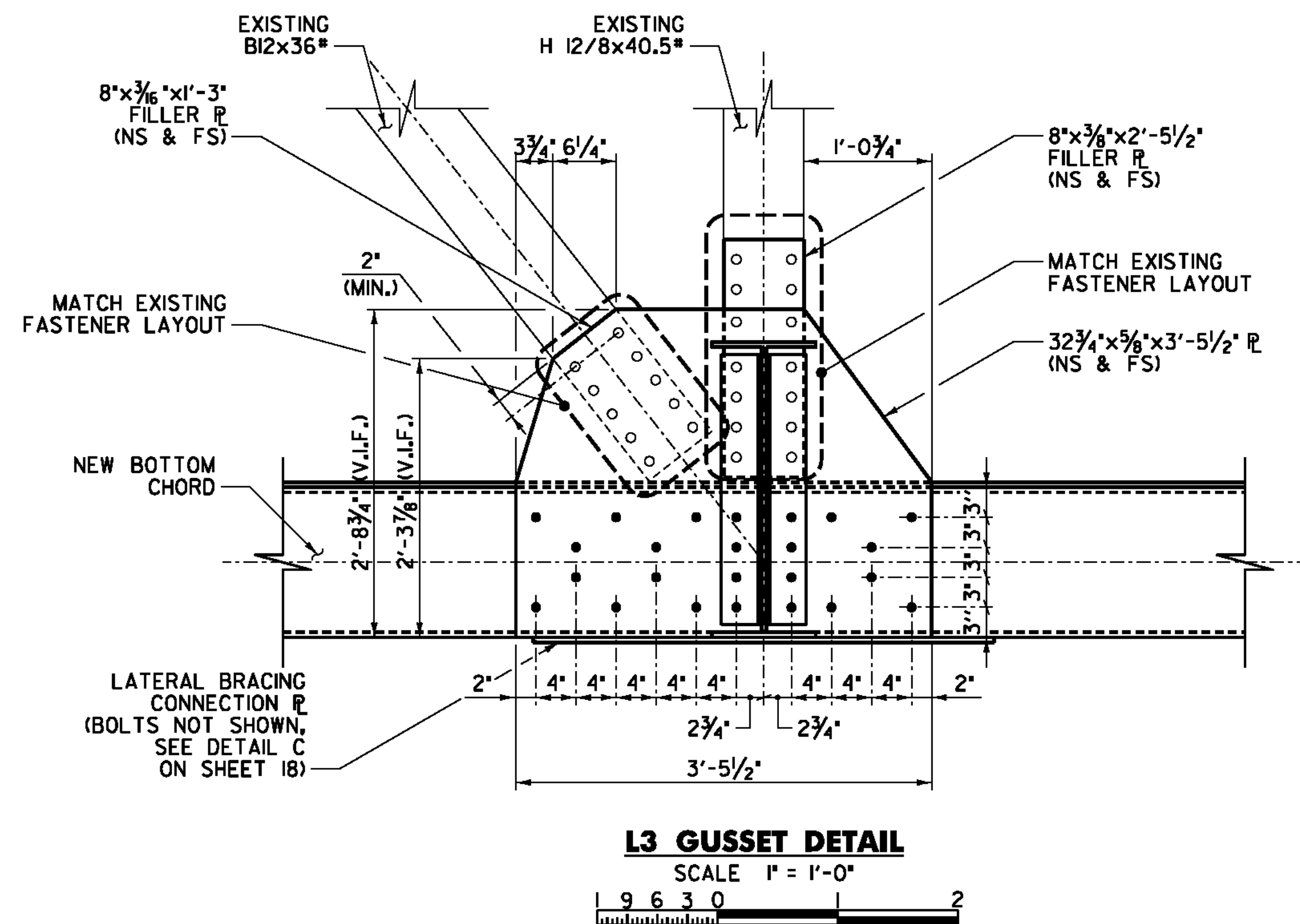
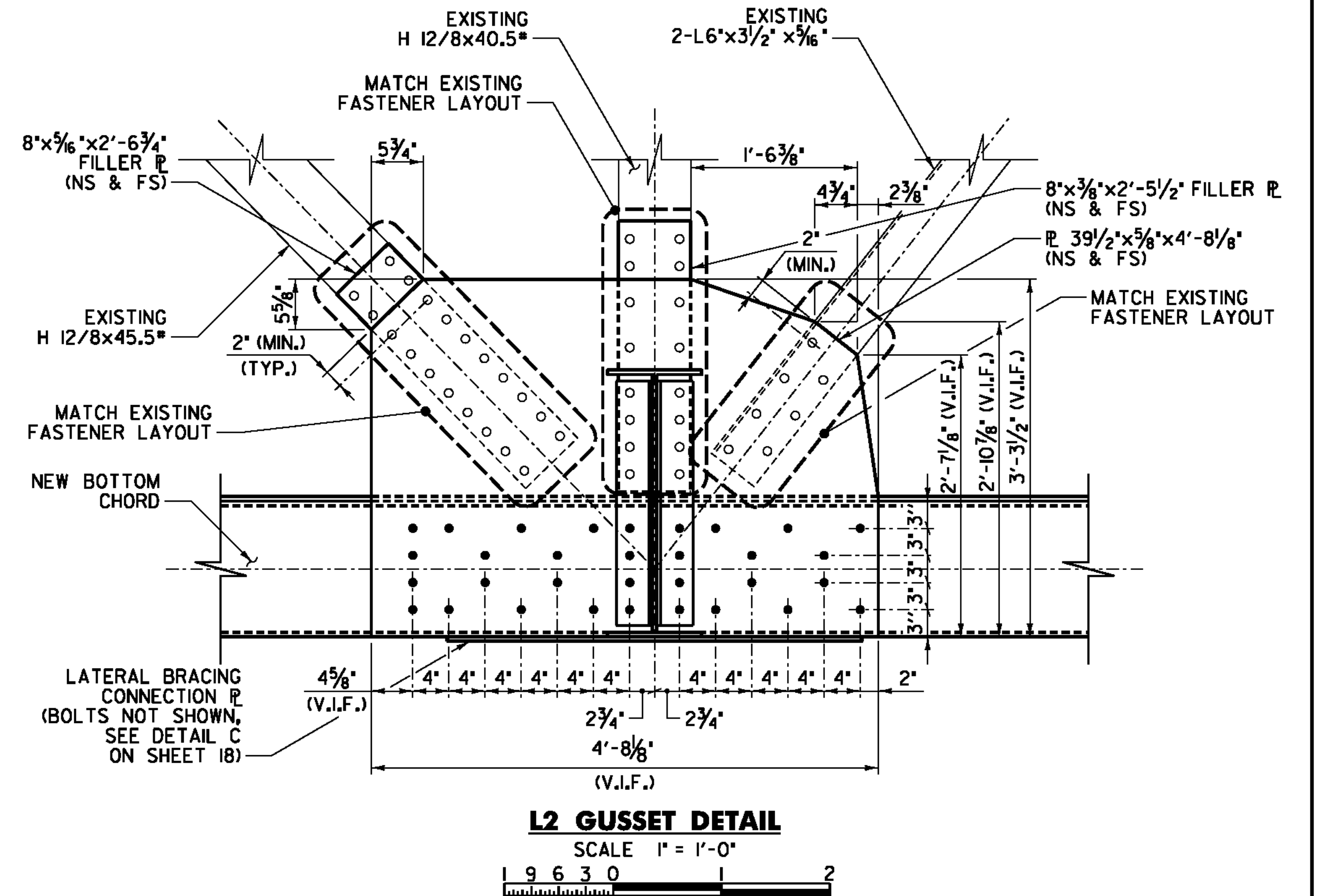
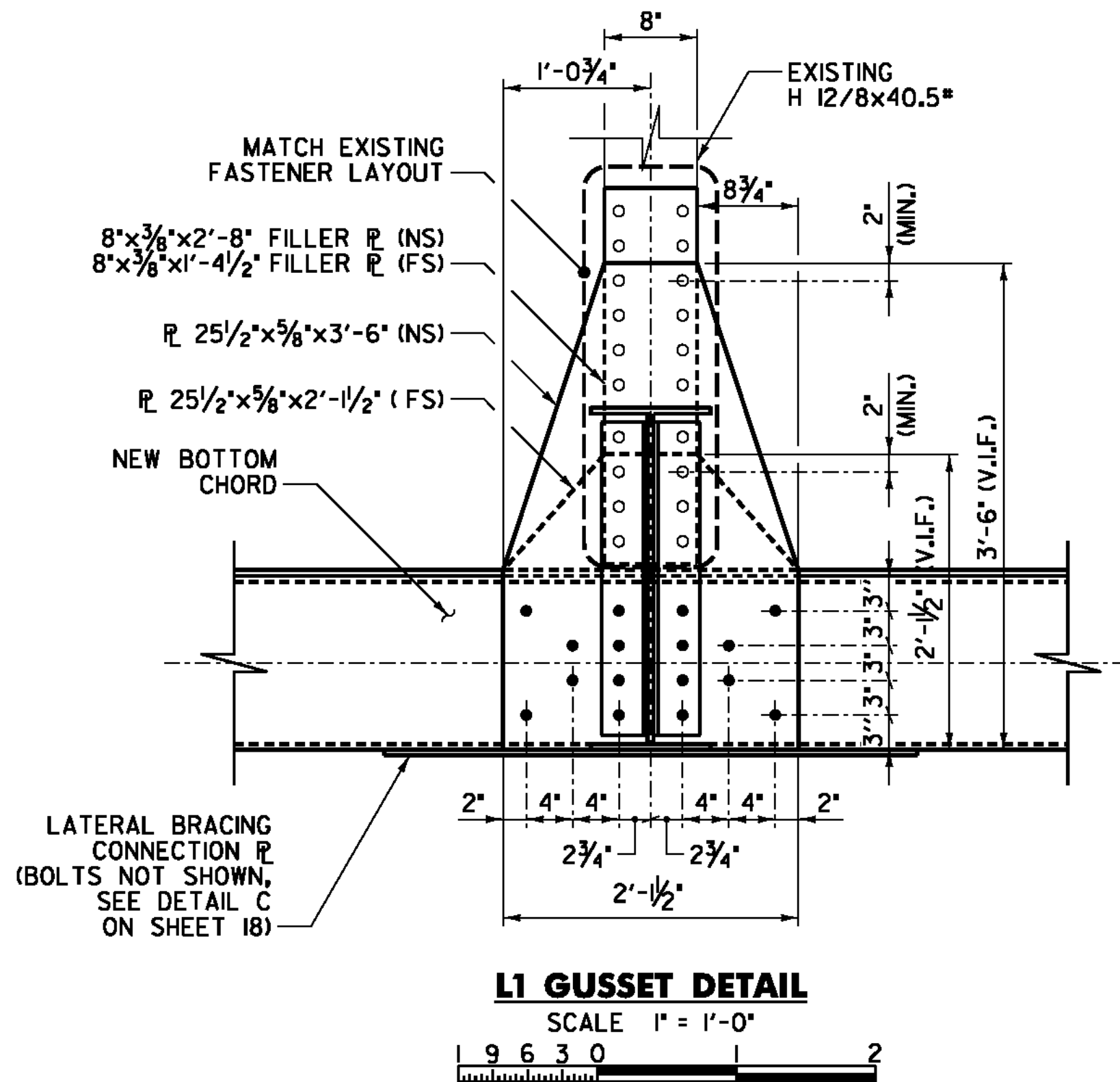
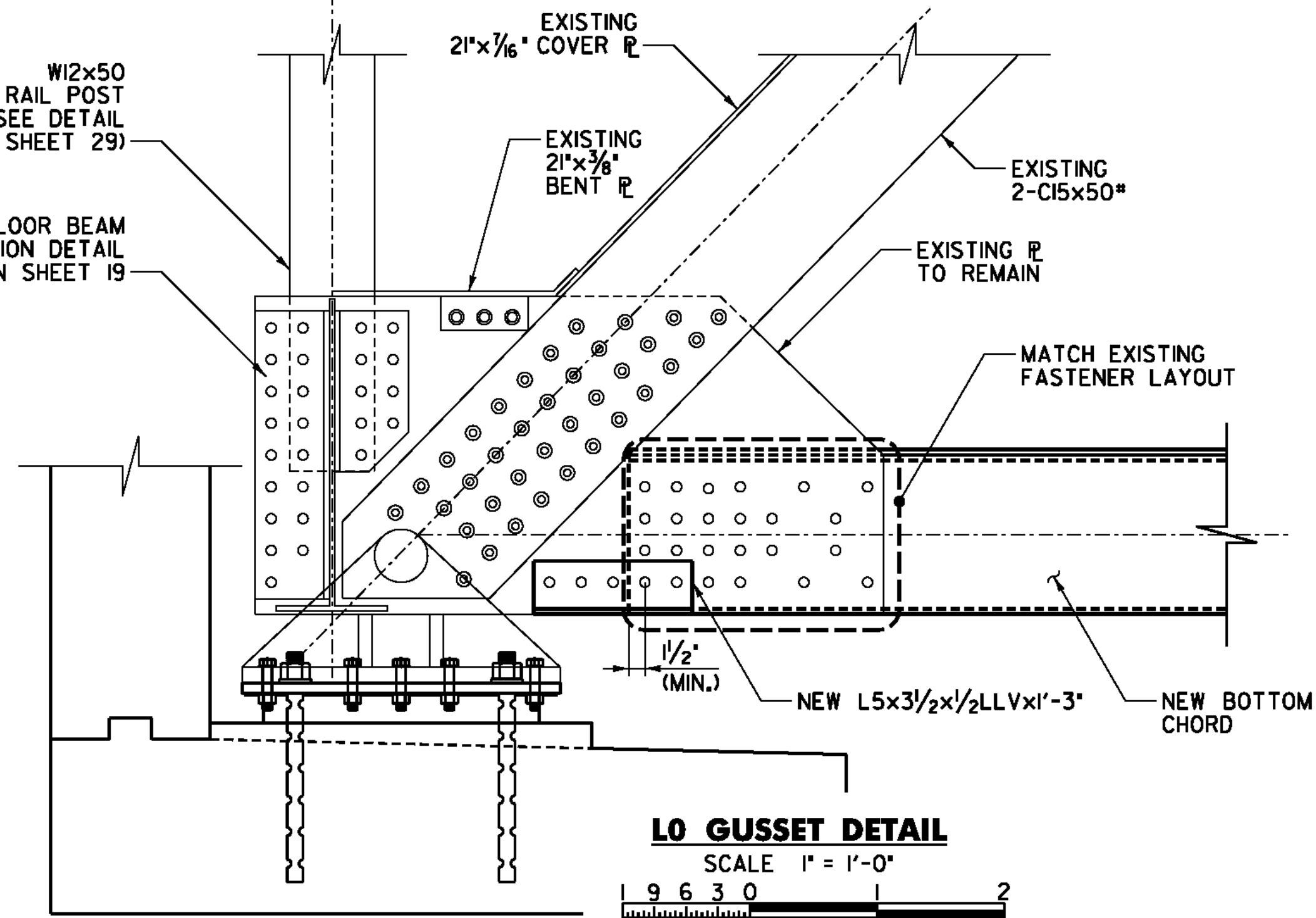


STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	RICHMOND	Bridge No.	31
Highway No.	T.H. #1	Log Sta.	
		Surv. Sta.	
TOWN HIGHWAY #1 OVER WINOOSKI RIVER			
STEEL DETAILS 1			
Designed By	T. KNIGHT	Drawn By	J. SOTER
Checked By	T. KNIGHT	Date	01/09
		Bridge Design Supervisor	G. BOGUE
		Date	01/09
PROJECT	RICHMOND BHF 0209(5)		
	PROJECT NO. BHF 0209(5)		
CAD Dwg:	... \drawing\z08J32.STEEL DETS.dgn Plot Date: 8/17/2010		
Bridge Sheet No.	Sheet 16 of 50		

W12x50
END RAIL POST
(SEE DETAIL
ON SHEET 29)

SEE FLOOR BEAM
CONNECTION DETAIL
ON SHEET 19



NOTES:

- GUSSET PLATE DIMENSIONS ARE BASED ON THE RIVET LAYOUTS SHOWN ON THE 1928 FABRICATION PLANS (ATTACHED). CONTRACTOR SHALL VERIFY ALL DIMENSIONS SHOWN PRIOR TO FABRICATION. PROVIDE 2" MINIMUM CLEARANCE FROM THE CENTERLINE OF HOLES TO EDGE OF GUSSET PLATE (UNLESS NOTED OTHERWISE). V.I.F. INDICATED SOME LOCATIONS FOR EMPHASIS ONLY.
- DETAILS FOR L0 THRU L4 SHOWN. L5 THRU L9 SIMILAR.
- FOR FLOOR BEAM CONNECTION DETAILS SEE SHEETS 18 AND 19.
- GUSSET DETAILS ARE SYMMETRICAL ABOUT \bar{C} SPAN.
- REFER TO SHEET 16 FOR LEGEND.

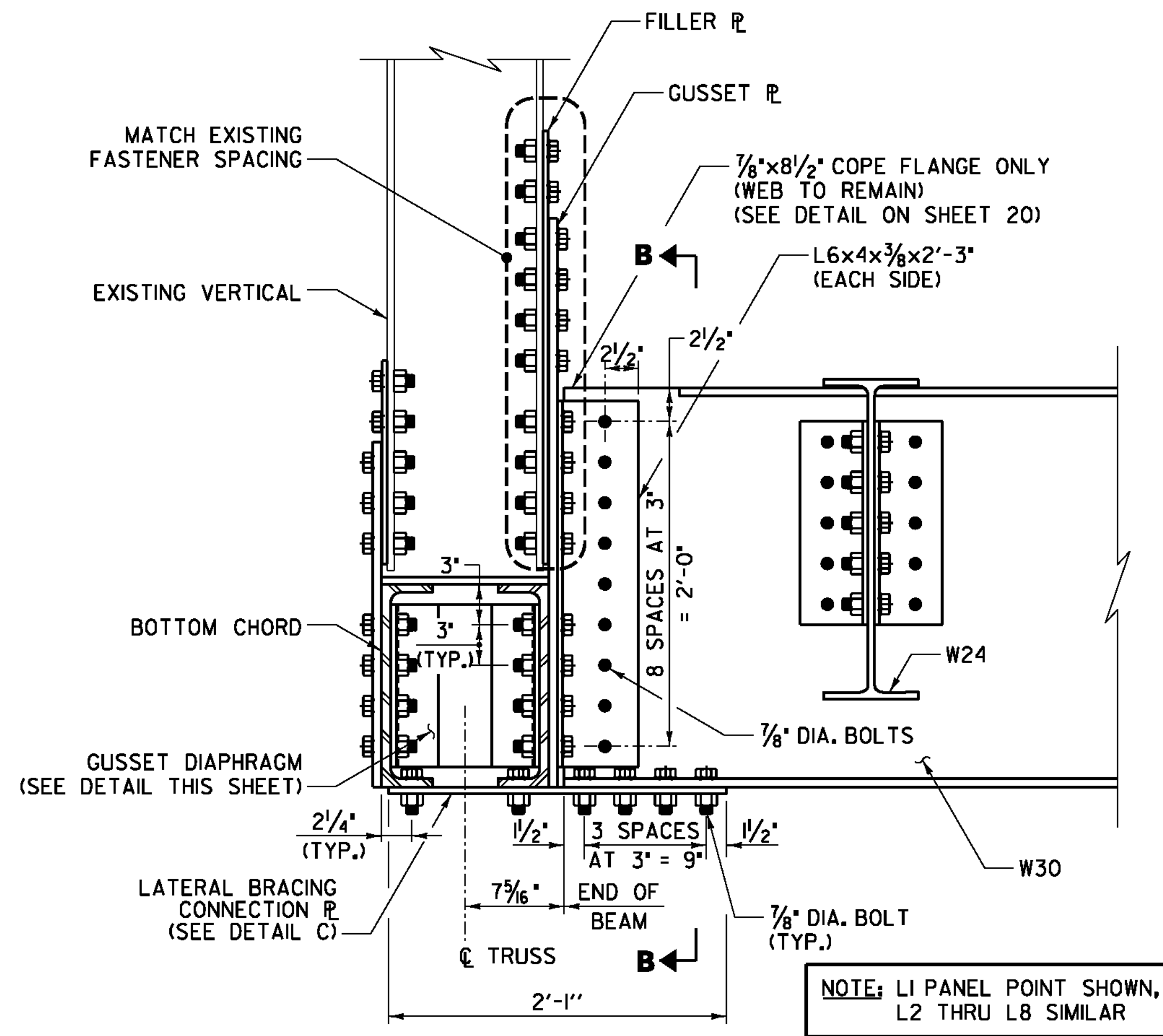
RICHMOND
BHF 0209(7)

SHEET 12 OF 23
FOR REFERENCE ONLY



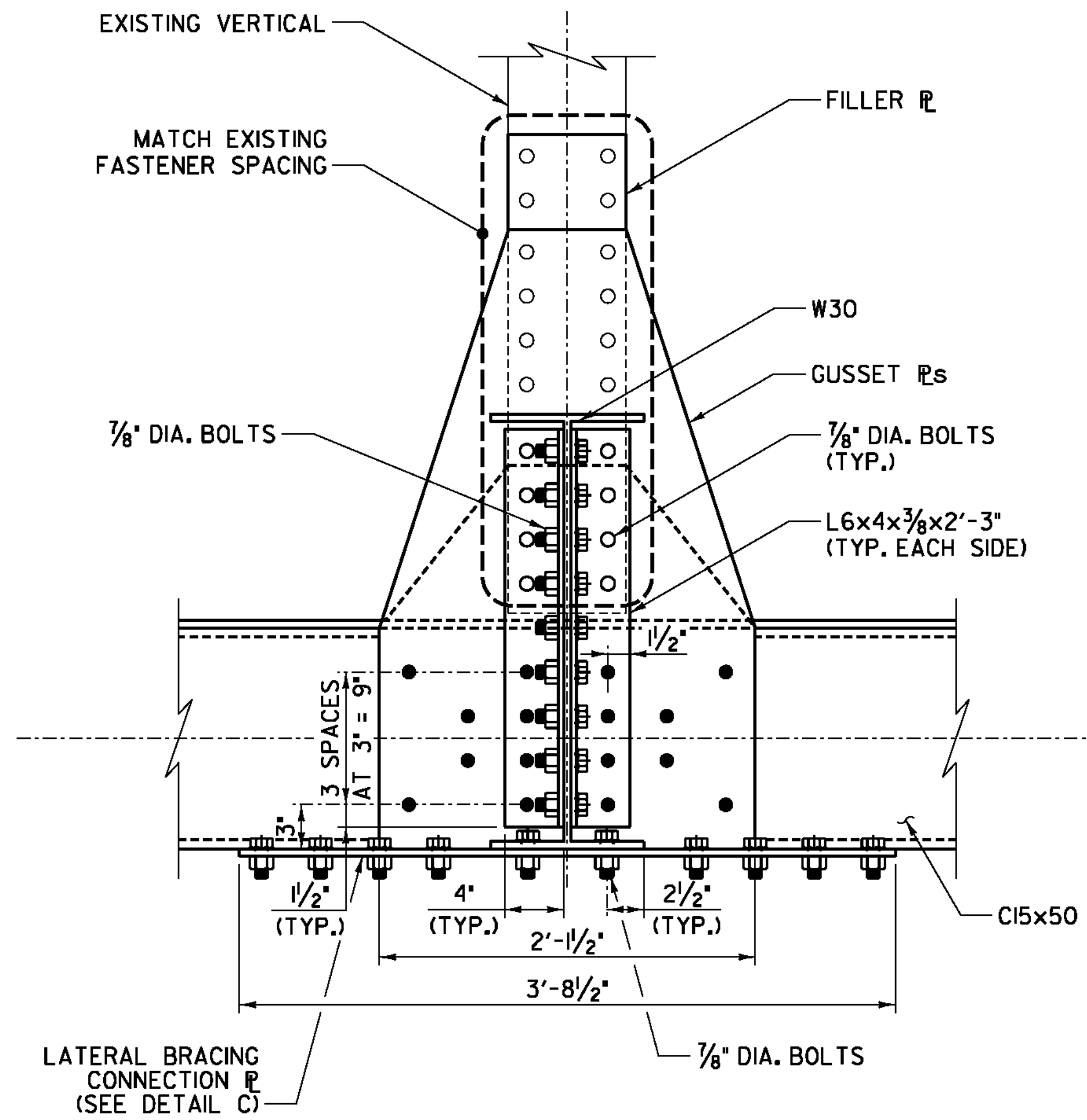
**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

Town Of	RICHMOND	Bridge No.	31
Highway No.	T.H. #1	Log Sta.	
		Surv. Sta.	
TOWN HIGHWAY #1 OVER WINOOSKI RIVER			
STEEL DETAILS 2			
Designed By	T. KNIGHT	Drawn By	J. SOTER
Checked By	G. BOGUE	Date	01/09
		Bridge Design Supervisor	G. BOGUE
		Date	01/09
PROJECT	RICHMOND BHF 0209(5)		
	PROJECT NO.		
	RICHMOND BHF 0209(5)		
CAD Dwg:	...drawing\z08J132.STEEL.DETS.dgn Plot Date: 8/17/2010		
Bridge Sheet No.	Sheet 17 of 50		



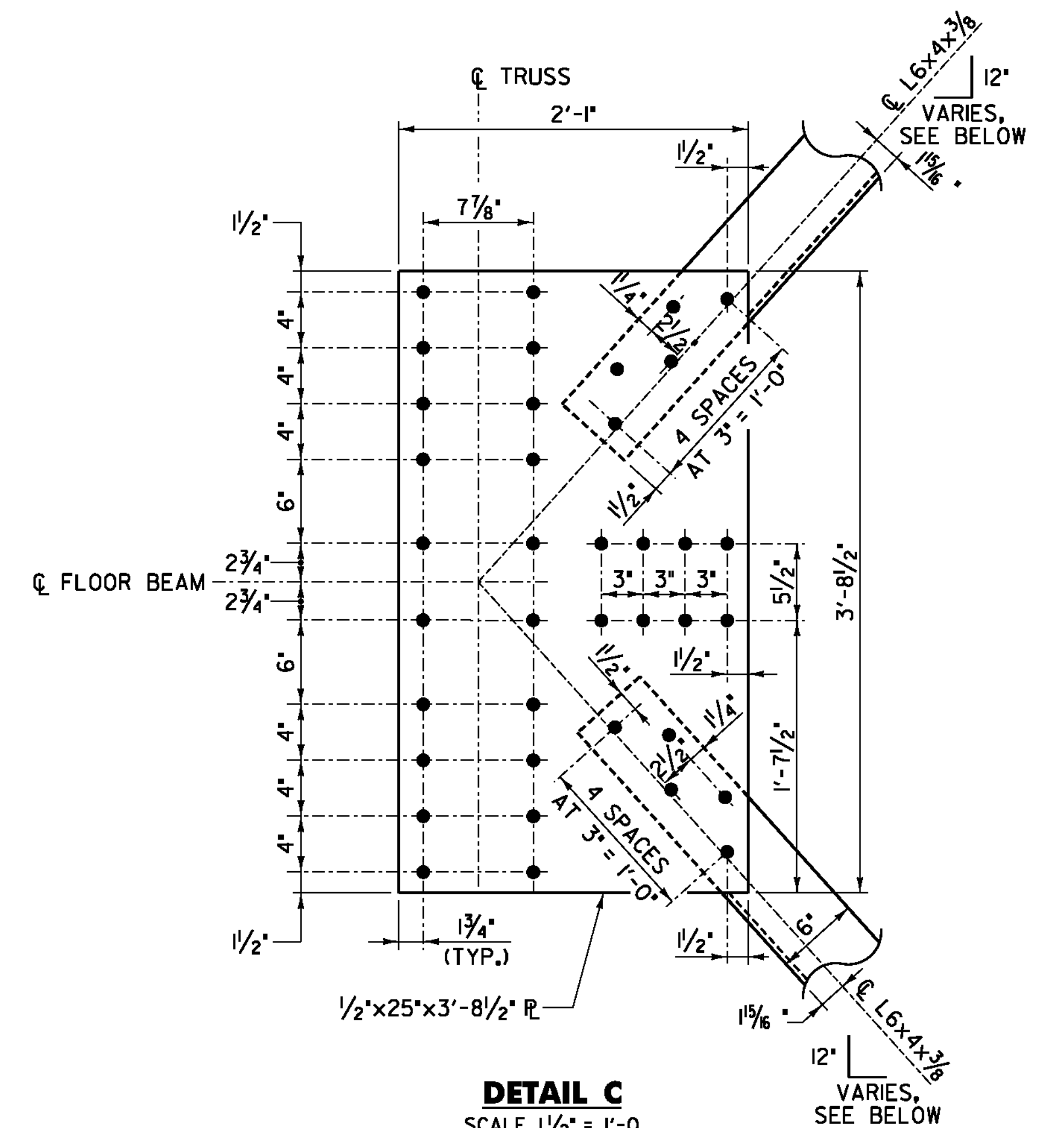
FLOOR BEAM TO TRUSS CONNECTION DETAIL (FB1 THRU FB8)

SCALE 1 1/2" = 1'-0"
9 6 3 0



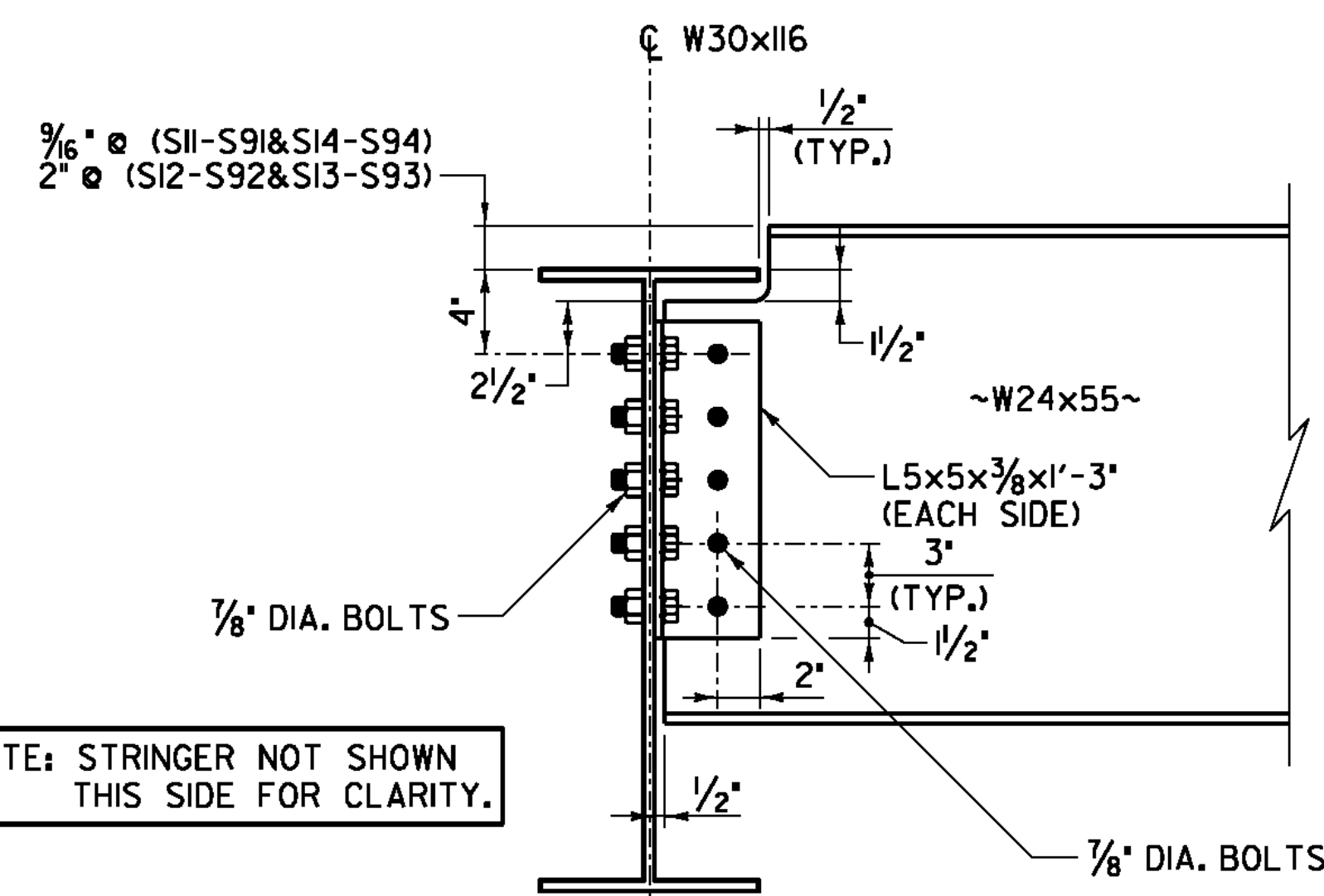
SECTION B-B

SCALE 1 1/2" = 1'-0"
9 6 3 0



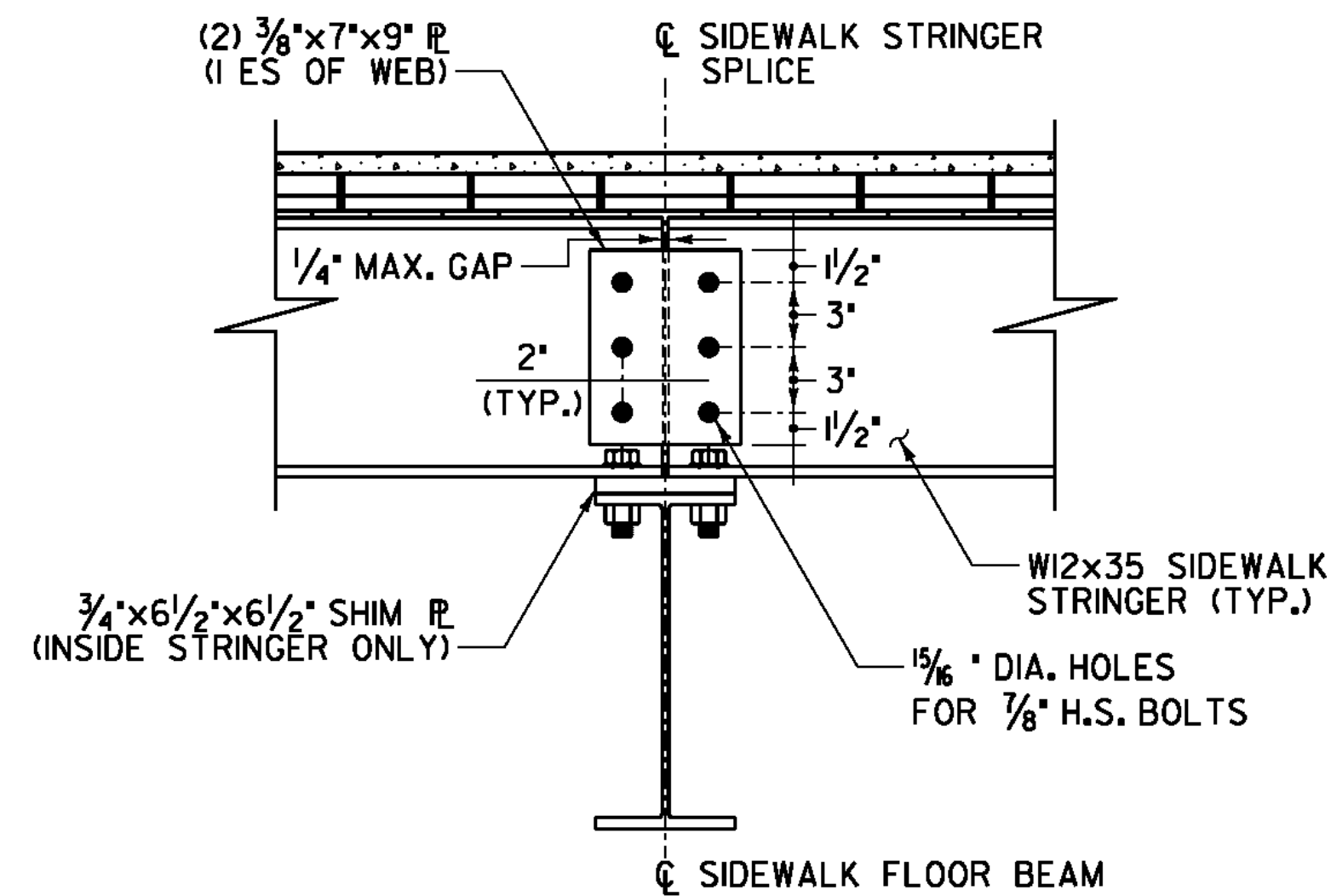
DETAIL C

SCALE 1 1/2" = 1'-0"
9 6 3 0



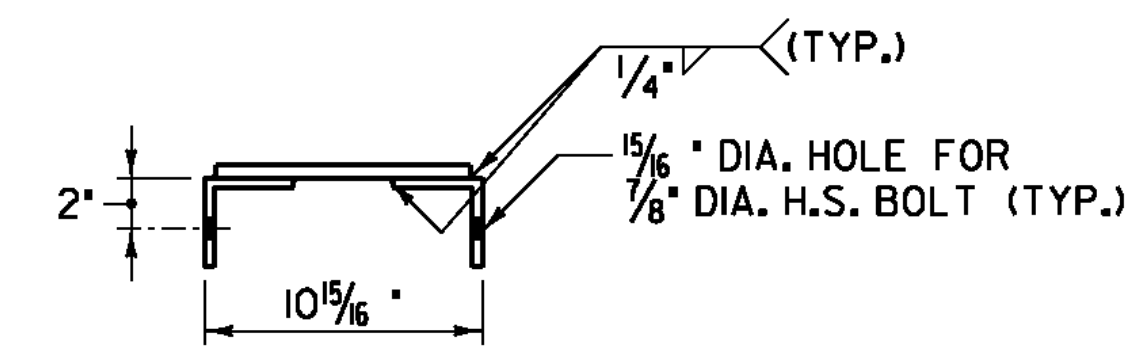
STRINGER TO BEAM CONNECTION DETAIL

SCALE 1 1/2" = 1'-0"
9 6 3 0



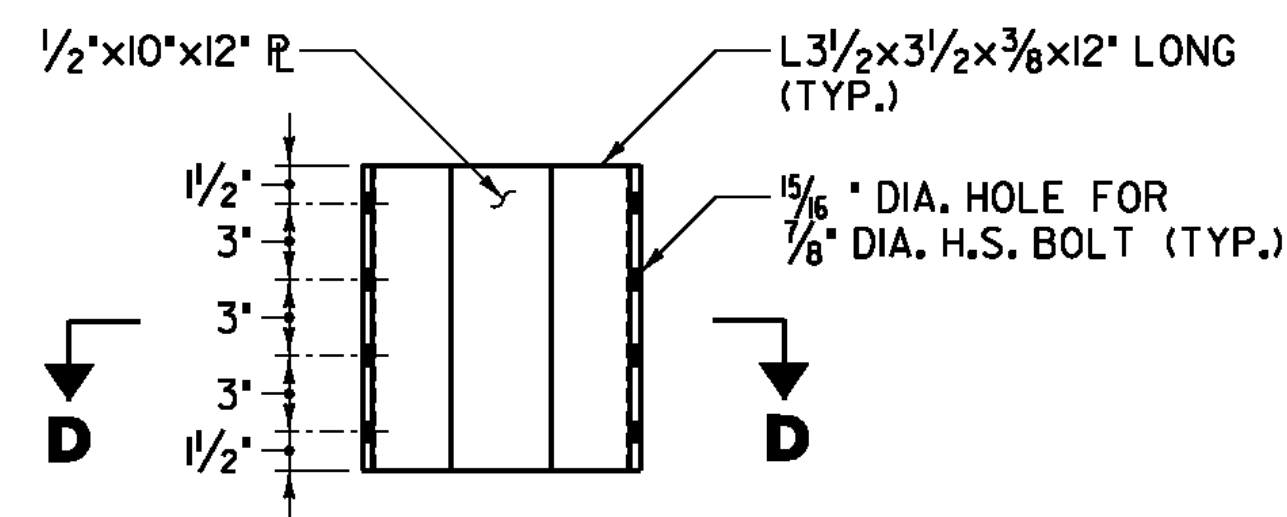
SIDEWALK STRINGER SPLICE DETAIL

SCALE 1 1/2" = 1'-0"
9 6 3 0



SECTION D-D

SCALE 1 1/2" = 1'-0"
9 6 3 0



GUSSET DIAPHRAGM DETAIL

SCALE 1 1/2" = 1'-0"
9 6 3 0

NOTE: ONE PER L1 THRU L8 EAST AND WEST TRUSS

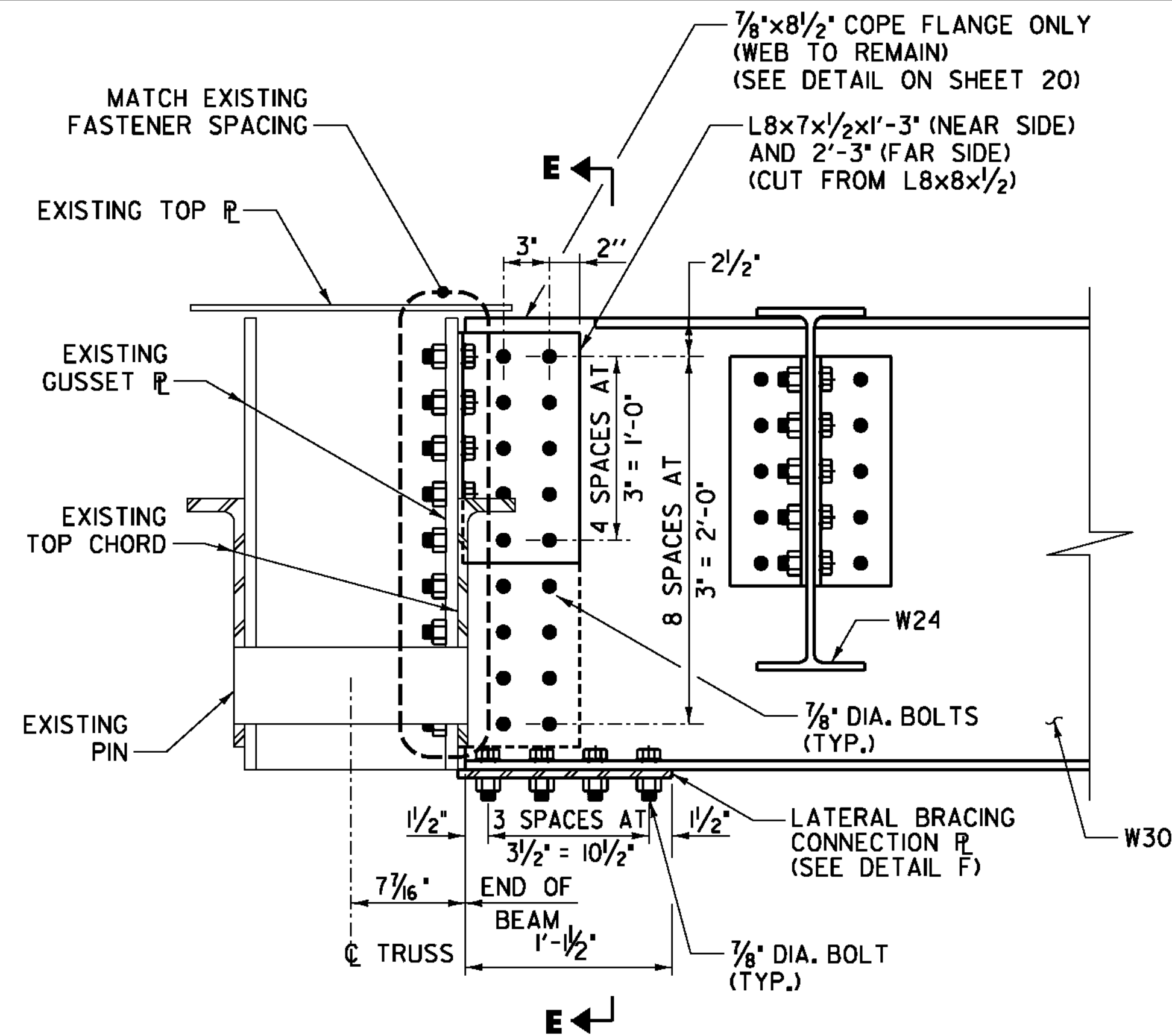
12"
10 9/16" AT L0 TO L1 AND L8 TO L9
10 5/16" AT L1 TO L8

RICHMOND
BHF 0209(7)
SHEET 13 OF 23
FOR REFERENCE ONLY

NOTE:
1. REFER TO SHEET 16 FOR LEGEND.

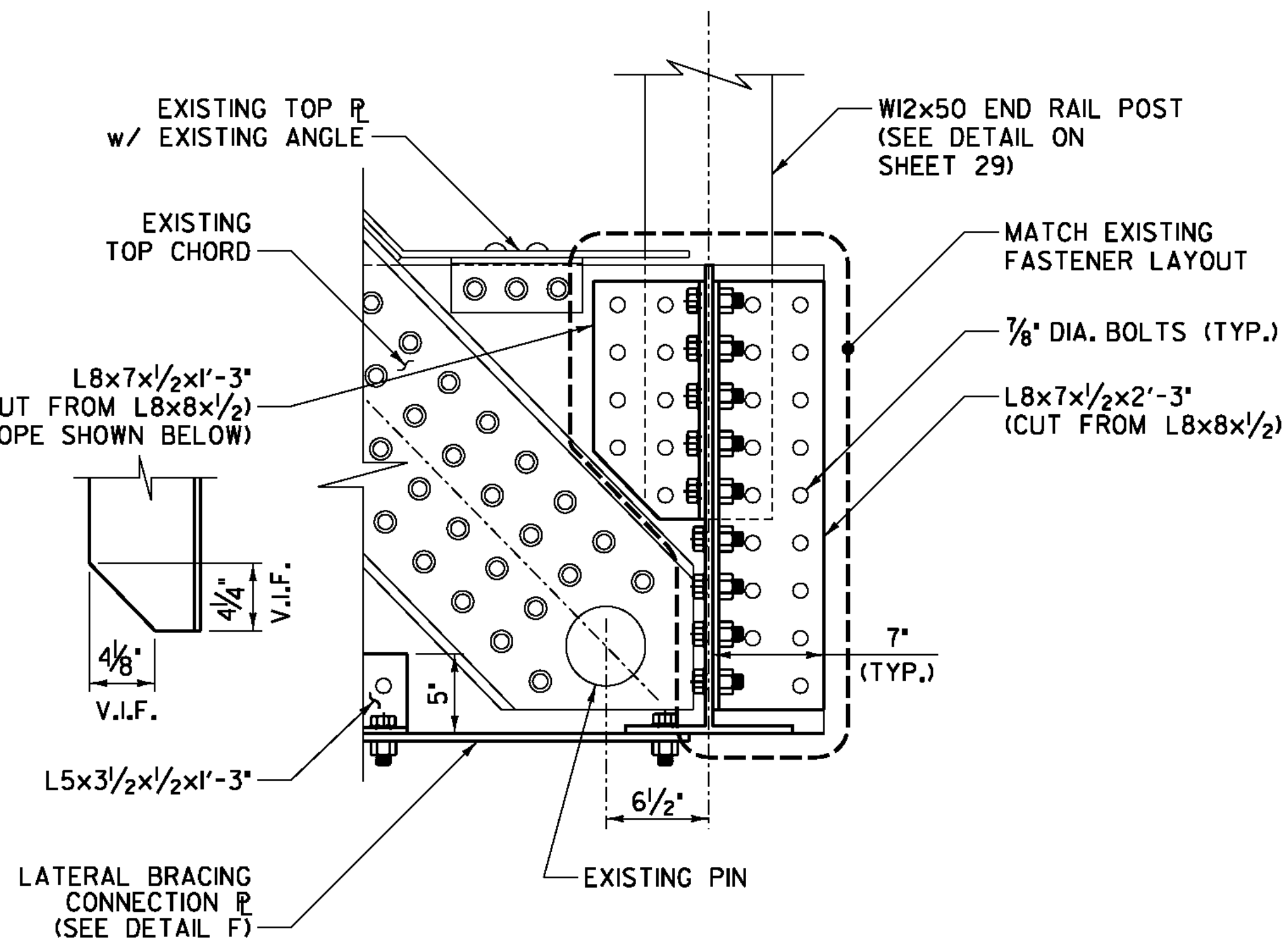
STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of	RICHMOND
Highway No.	T.H. #1
TOWN HIGHWAY #1 OVER WINOOSKI RIVER	
STEEL DETAILS 3	
Designed By	S. BURBANK
Checked By	S. BURBANK
PROJECT	RICHMOND
CAD Dwg	... \drawing\z08J132.STEEL.DETS.dgn
Bridge Sheet No.	Sheet 18 of 50
Bridge No.	31
Log Sta.	
Surv. Sta.	
Drawn By	J. SOTER
Bridge Design Supervisor	G. BOGUE
Date	01/09
Date	01/09
PROJECT NO.	BHF 0209(5)
Date	8/17/2010





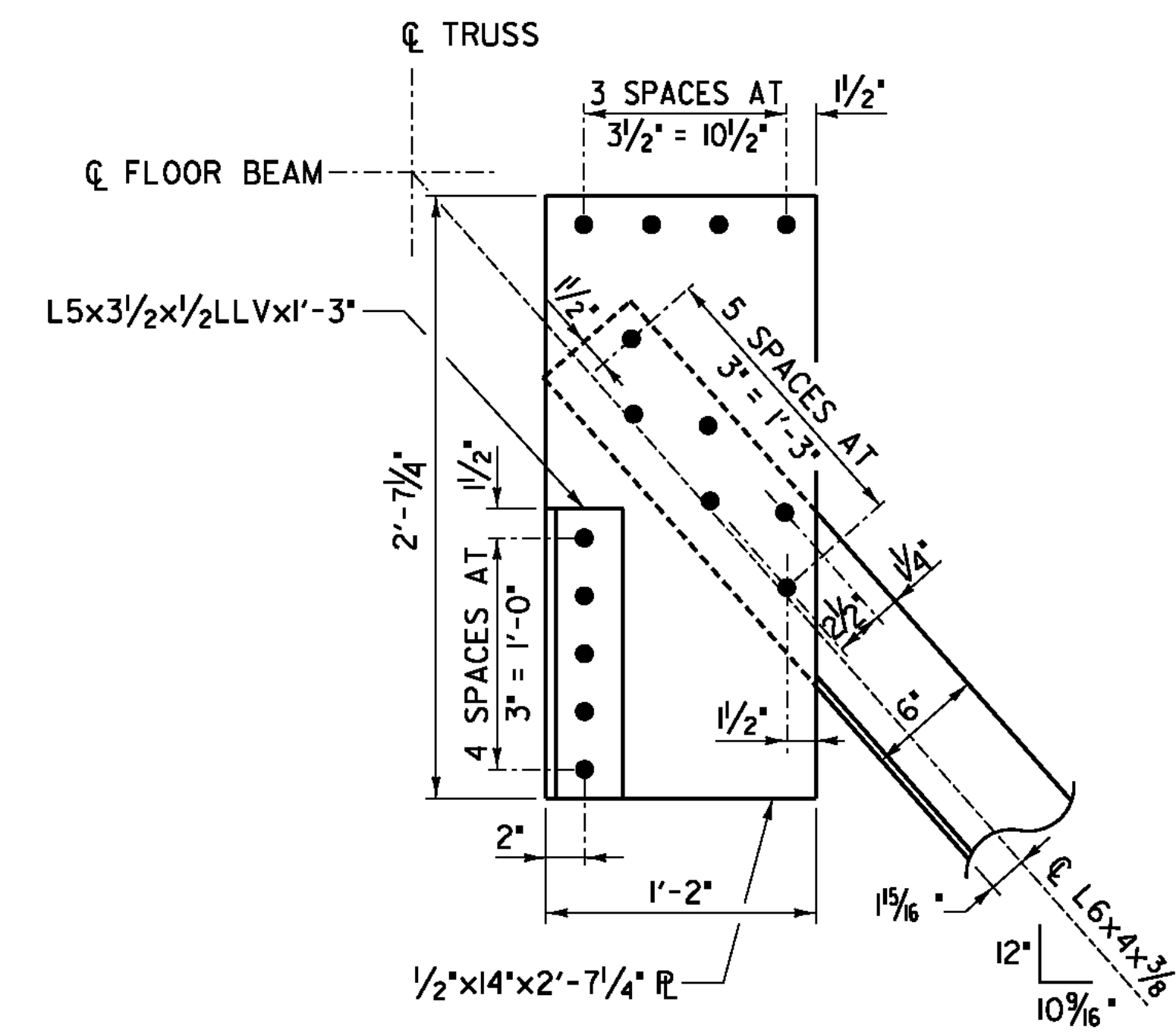
**BEAM TO TRUSS CONNECTION
DETAIL (FBO & FB9)**

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



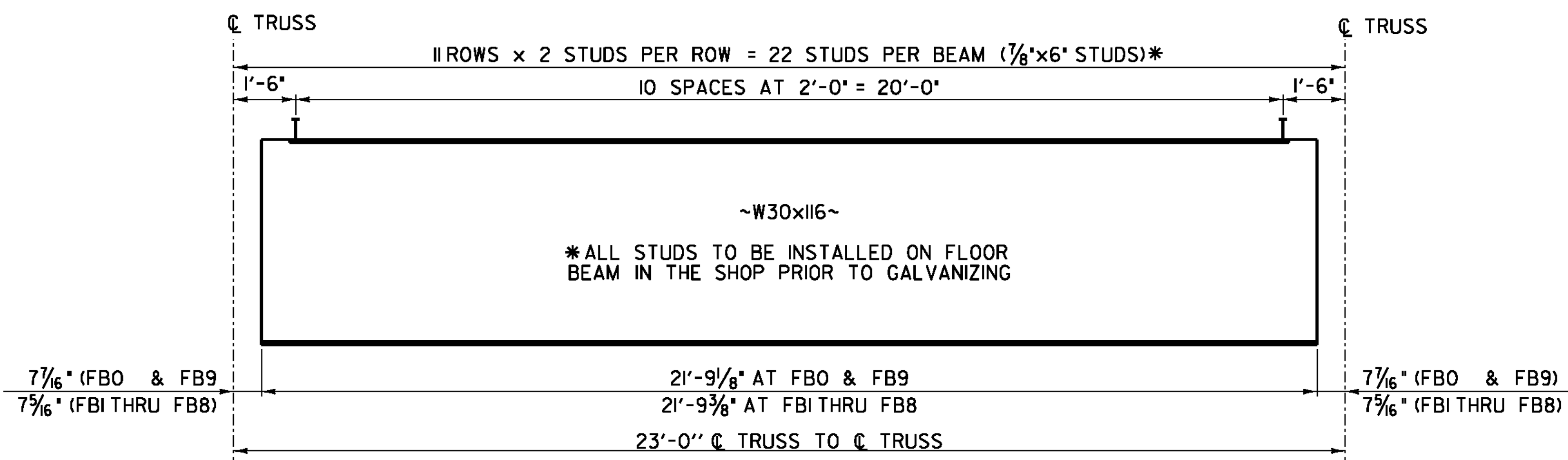
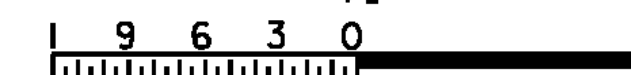
SECTION E-E

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



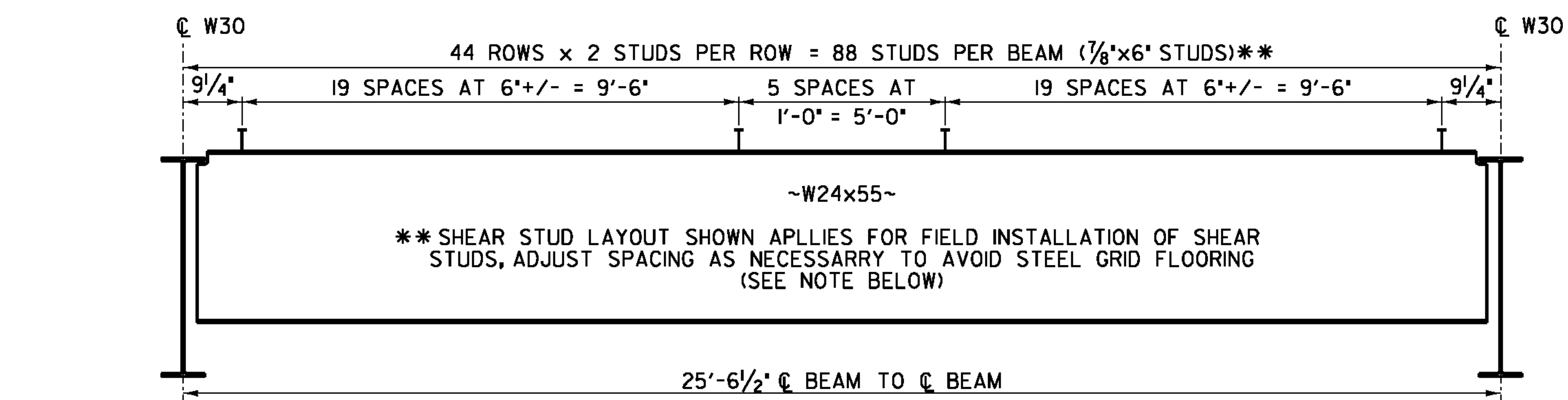
DETAIL F

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



W30 FLOOR BEAM ELEVATION

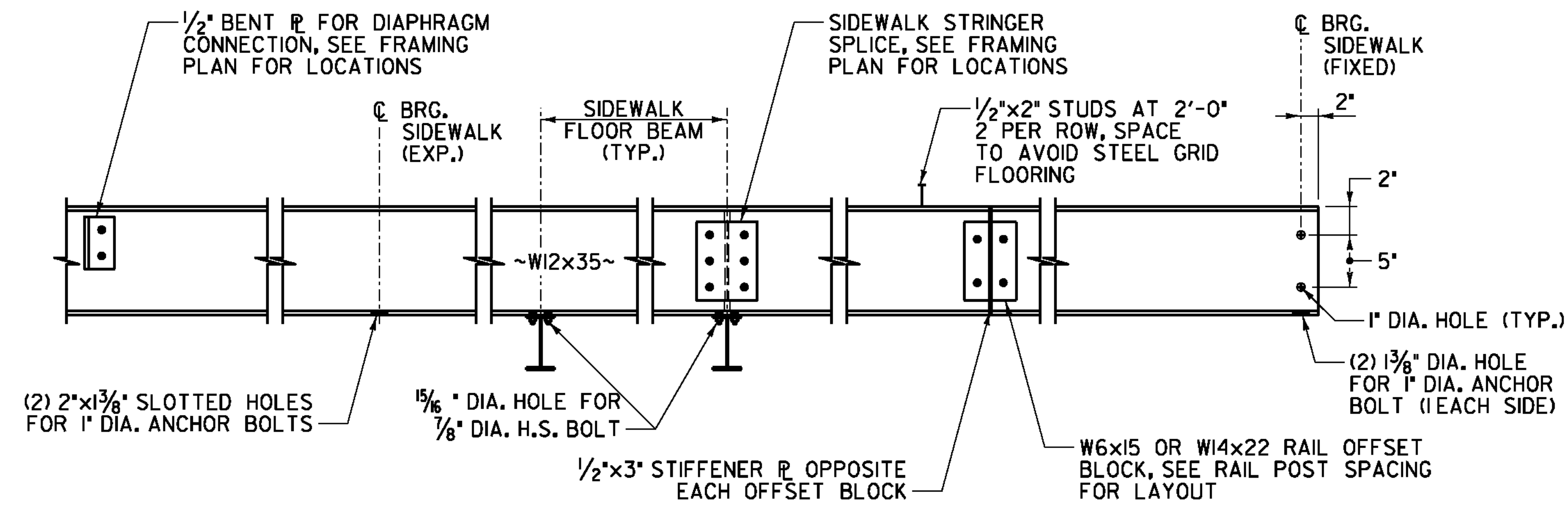
NOT TO SCALE



W24 STRINGER ELEVATION

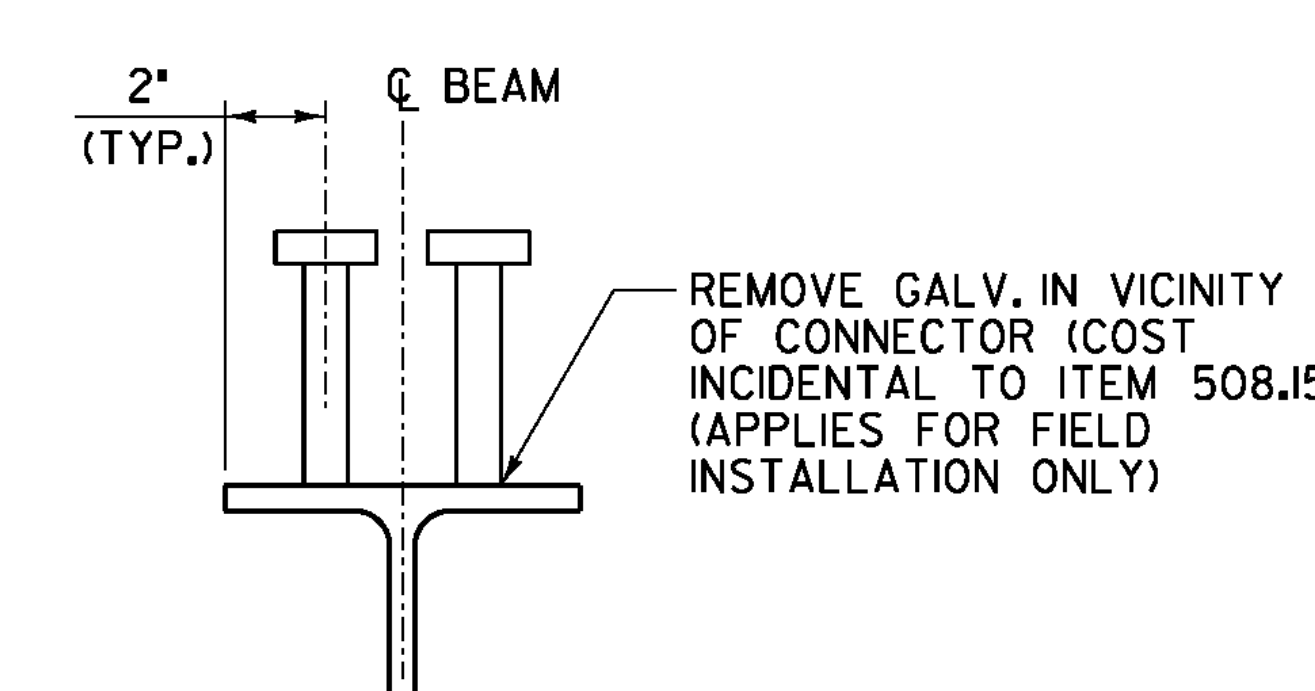
NOT TO SCALE

NOTE: CONTRACTOR SHALL HAVE THE OPTION OF INSTALLING THE STUDS OF STRINGER IN THE SHOP PRIOR TO GALVANIZING. IF THE CONTRACTOR ELECTS TO SHOP INSTALL THE STUDS, THEY SHALL SUBMIT A REVISED STUD LAYOUT TO AVOID INTERFERENCE WITH THE STEEL GRID FLOORING.



PARTIAL SIDEWALK STRINGER ELEVATION

NOT TO SCALE



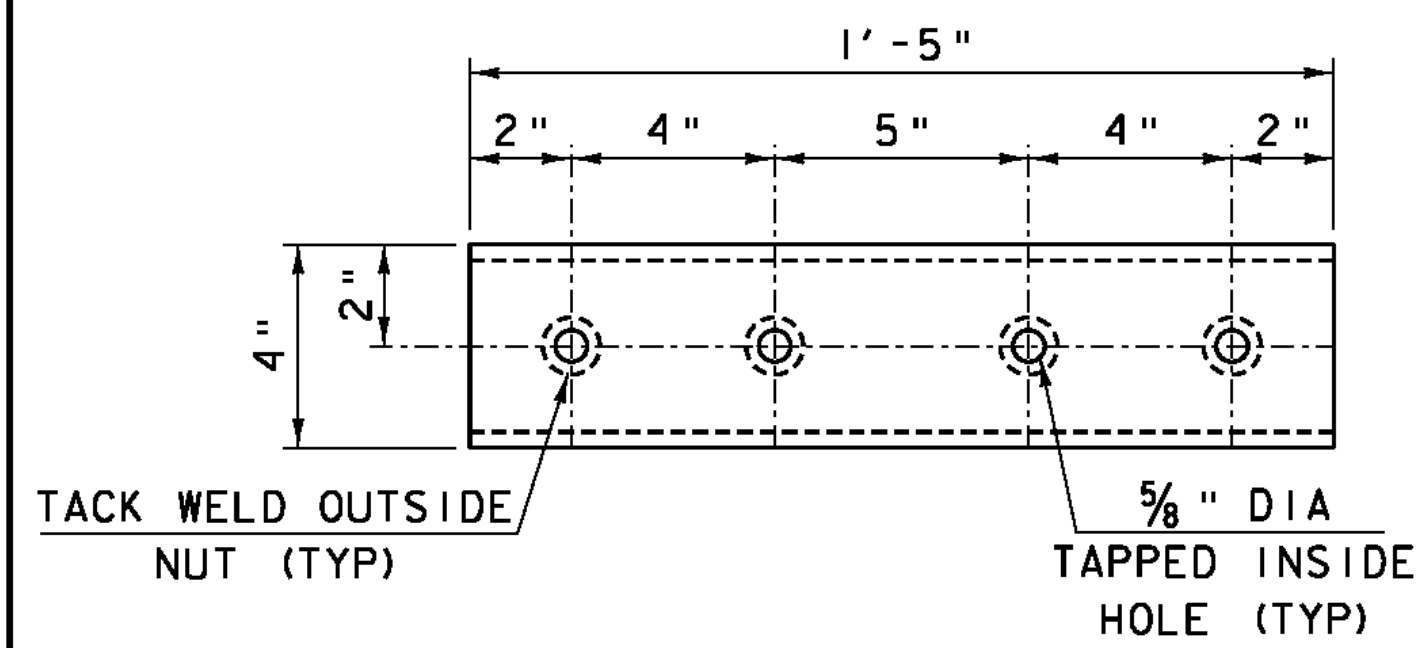
SHEAR CONNECTOR DETAIL

NOT TO SCALE

NOTE:
1. REFER TO SHEET 16 FOR LEGEND.

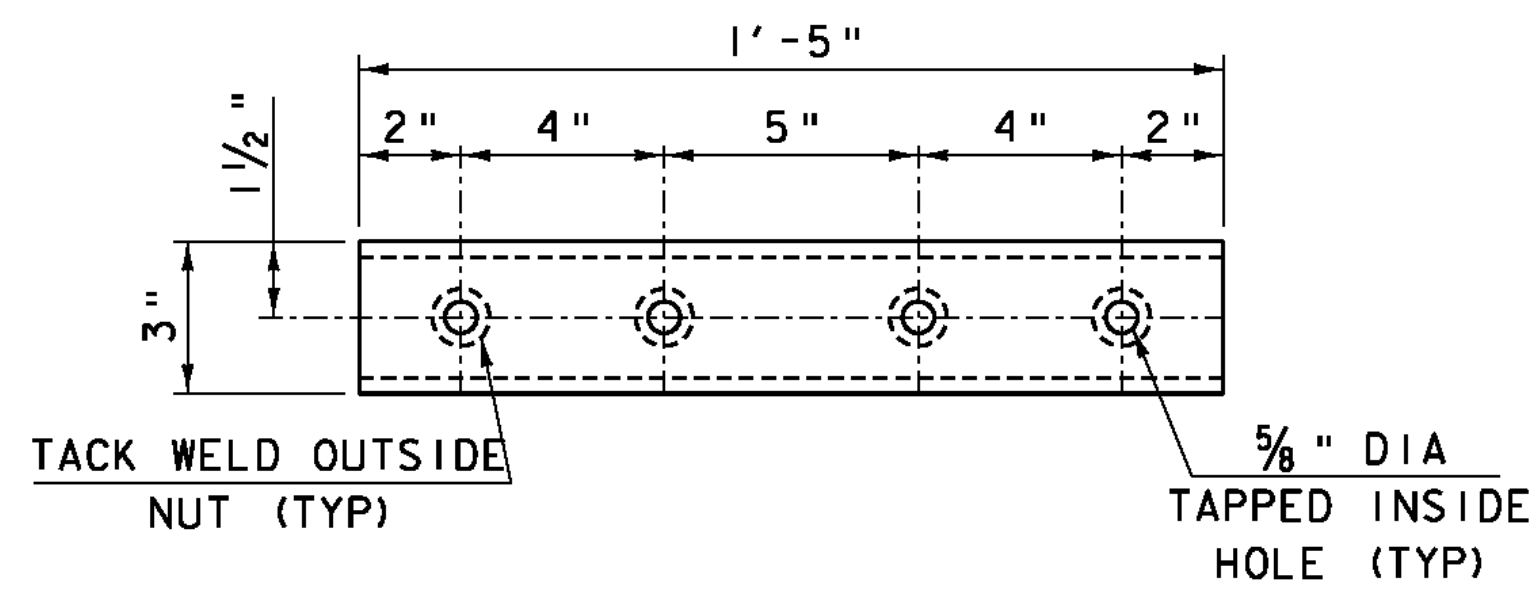
RICHMOND BHF 0209(7)	
SHEET 14 OF 23 FOR REFERENCE ONLY	
Town Of RICHMOND	Log Sta.
Highway No. T.H. #1	Surv. Sta.
TOWN HIGHWAY #1 OVER WINOOSKI RIVER	
STEEL DETAILS 4	
Designed By S. BURBANK	Drawn By J. SOTER
Checked By S. BURBANK	Date 01/09
Bridge Design Supervisor G. BOGUE Date 01/09	
PROJECT RICHMOND	PROJECT NO. BHF 0209(5)
CAD Dwg: ... \drawing\z08J132.STEEL DETS.dgn Plot Date: 8/17/2010	Sheet 19 of 50





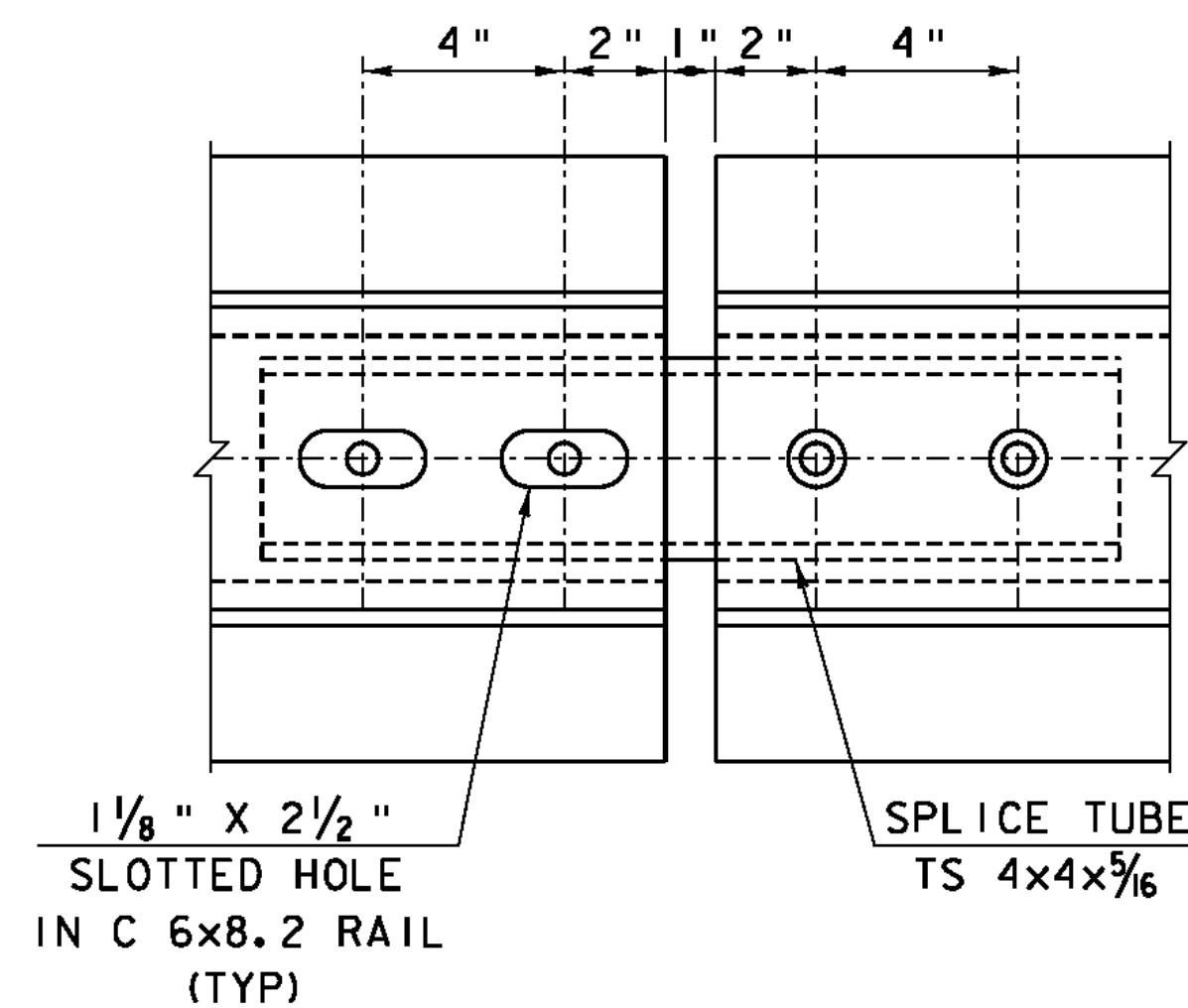
BOTTOM RAIL SPLICE TUBE DETAIL

TS 4x4x5/16
 SCALE 3" = 1'-0"



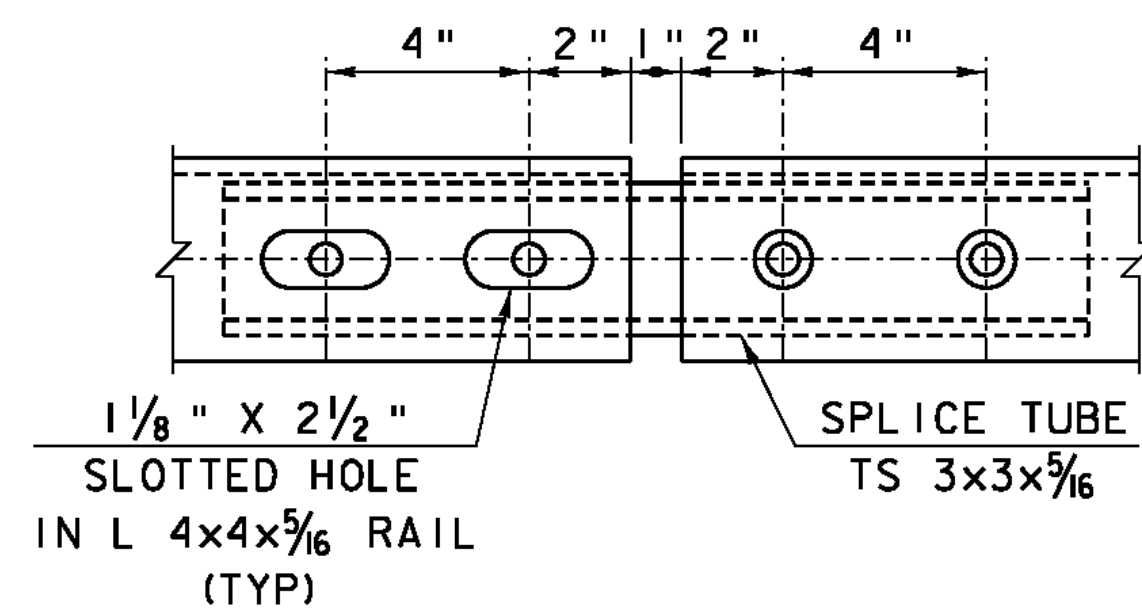
TOP RAIL SPLICE TUBE DETAIL

TS 3x3x5/16
 SCALE 3" = 1'-0"



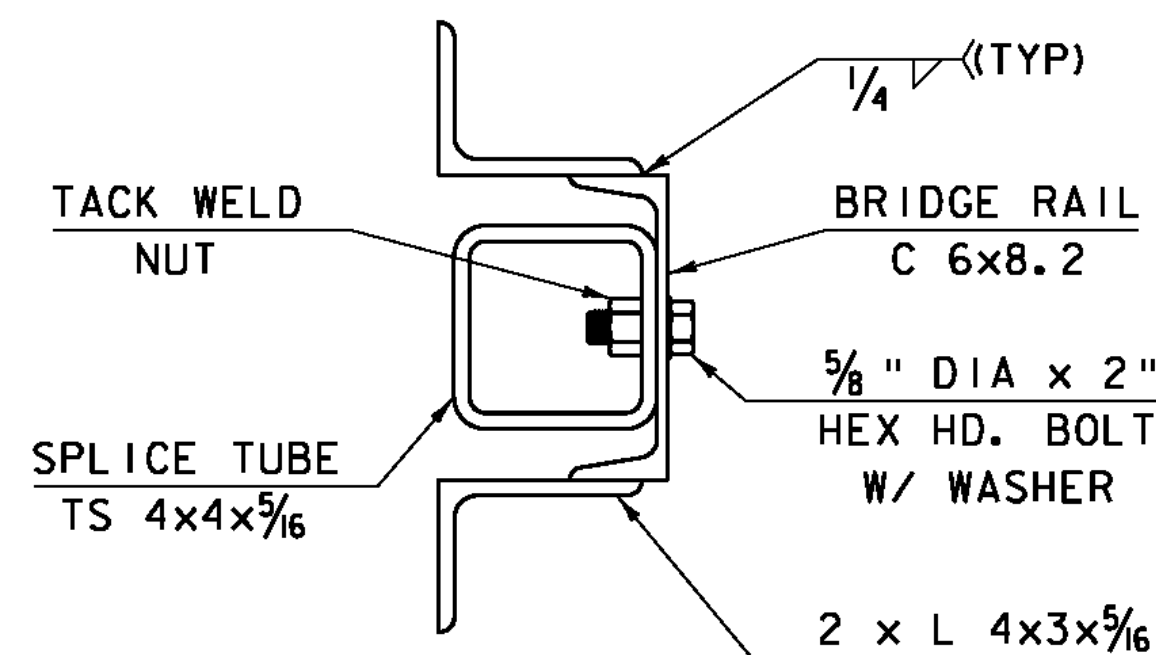
BOTTOM RAIL SPLICE DETAIL

SCALE 3" = 1'-0"



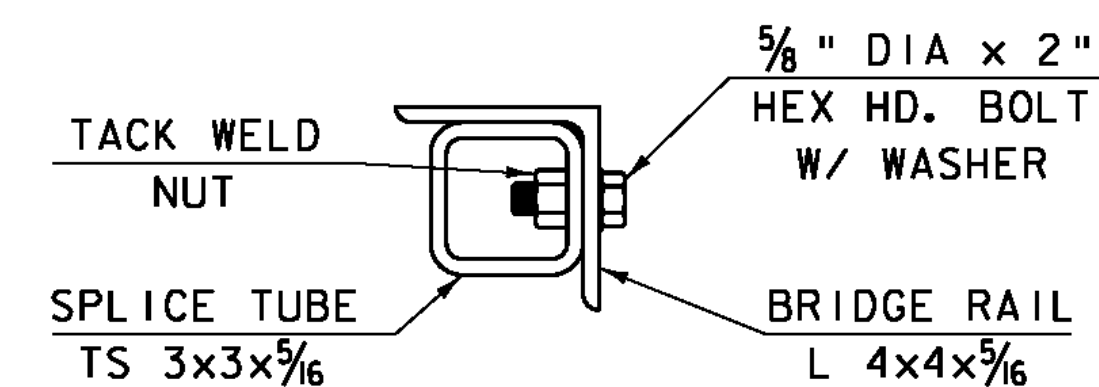
TOP RAIL SPLICE DETAIL

SCALE 3" = 1'-0"



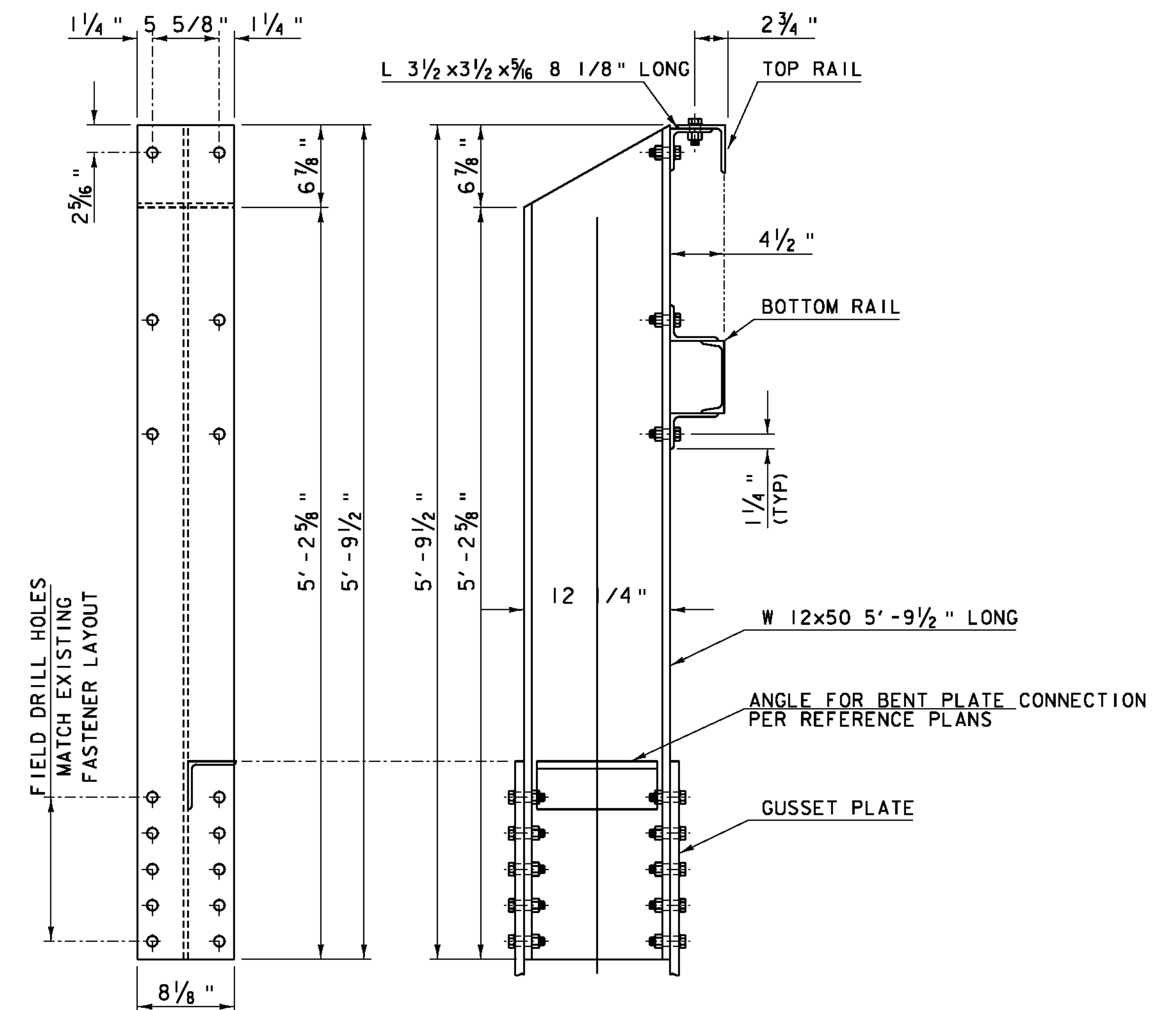
BOTTOM RAIL SPLICE SECTION

SCALE 3" = 1'-0"



TOP RAIL SPLICE SECTION

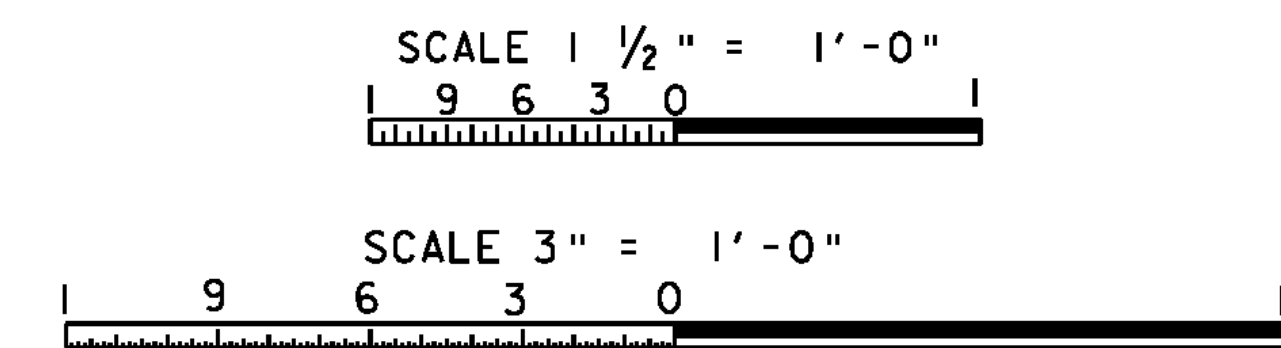
SCALE 3" = 1'-0"



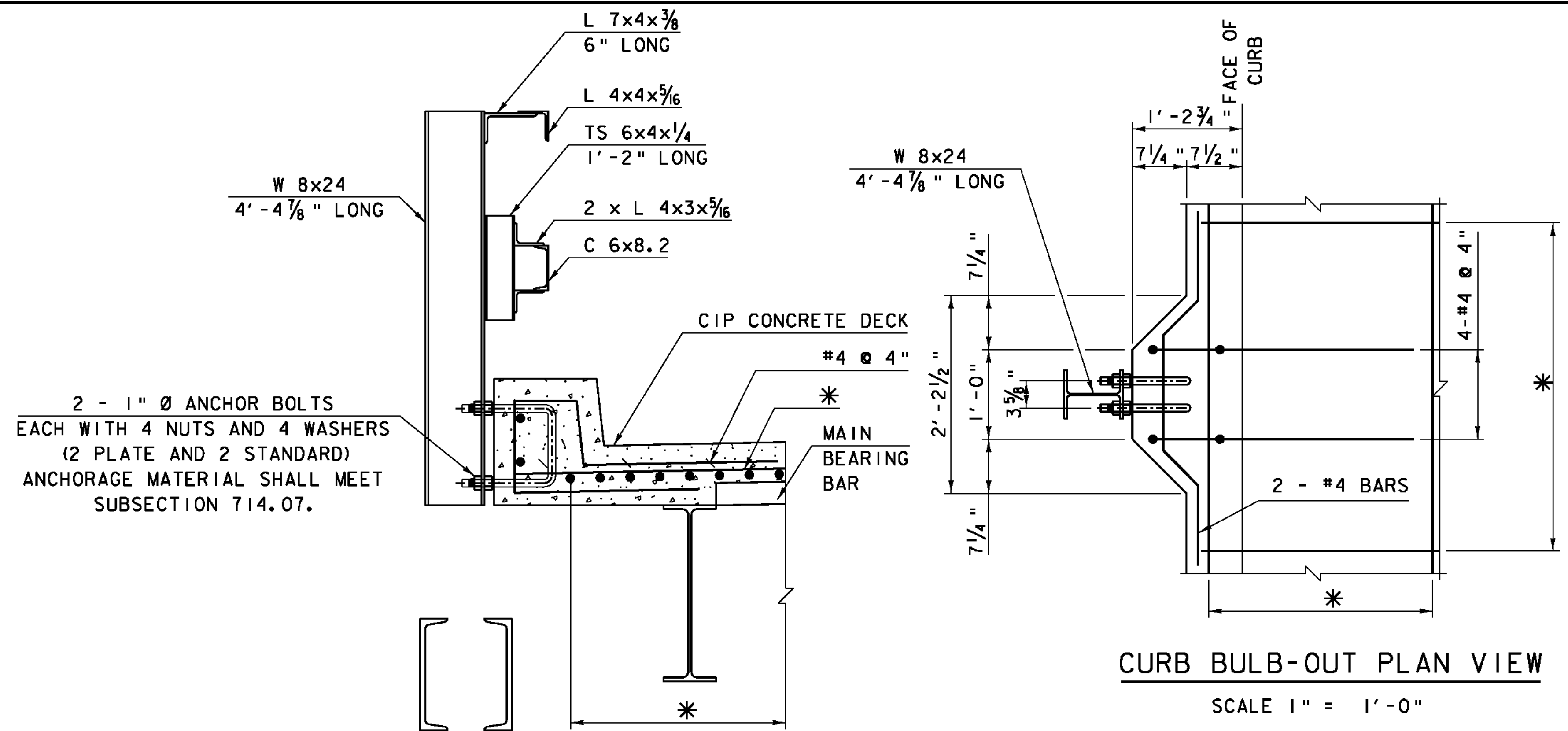
END RAIL POST

SCALE 1 1/2" = 1'-0"
 ALL HOLES SHALL BE FIELD DRILLED UNLESS OTHERWISE NOTED.

RICHMOND
 BHF 0209(7)
 SHEET 15 OF 23
 FOR REFERENCE ONLY



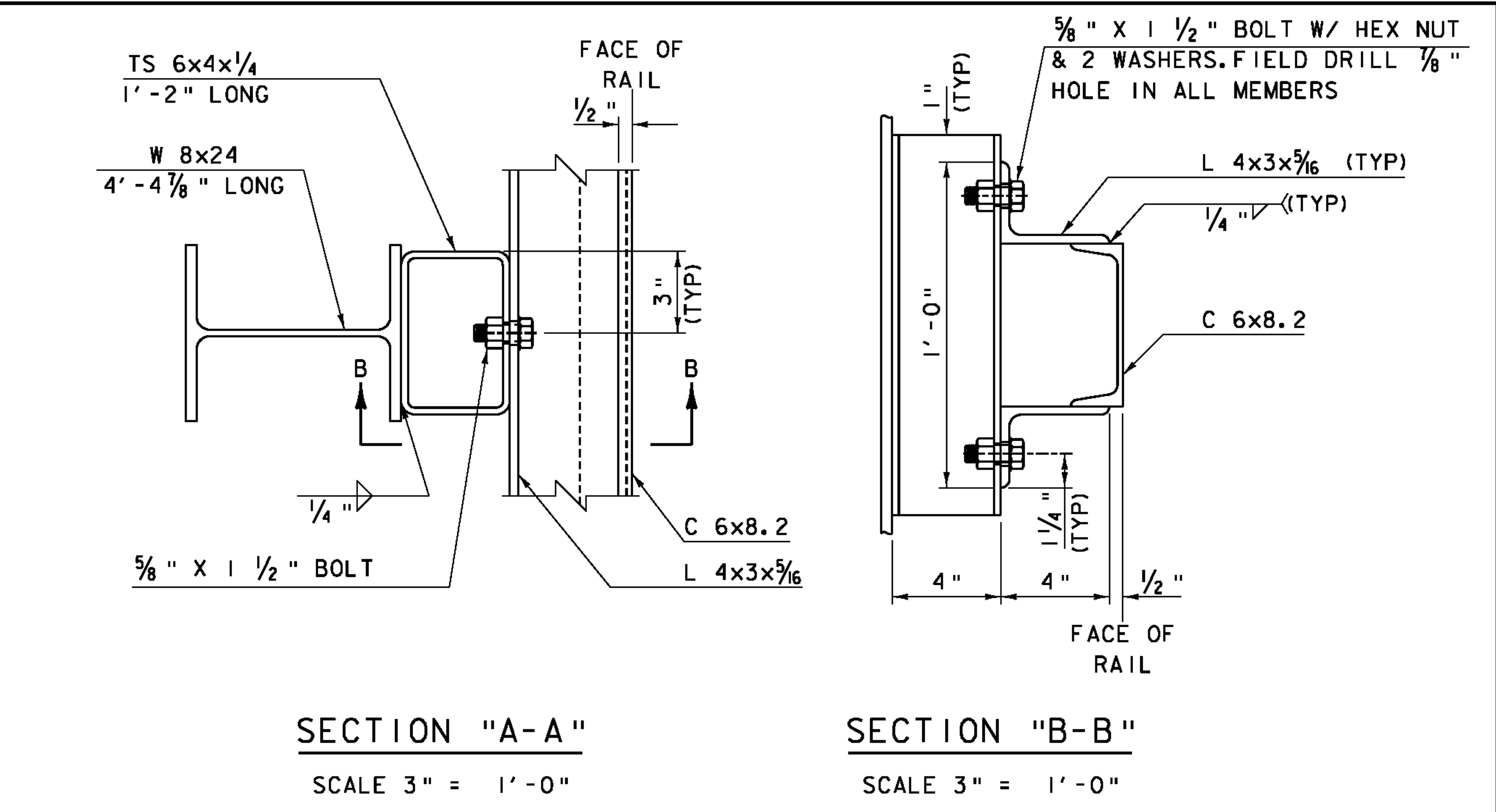
STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of RICHMOND	Bridge No. 31
Highway No. T.H. #1	Log Sta. Surv. Sta.
TOWN HIGHWAY #1 OVER WINOOSKI RIVER	
RAIL SPLICE AND END RAIL DETAILS	
Designed By C.P. WILLIAMS	Drawn By D.D. BEARD
Checked By C.P. WILLIAMS	Bridge Design Supervisor G. BOGUE
Date 12/19/08	Date 01/09
PROJECT RICHMOND	PROJECT NO. BHF 0209(5)
CAD Dwg: ...drawing\08J132_RailIng.dgn	Plot Date: 8/17/2010
Bridge Sheet No.	Sheet 29 of 50



CURB & RAILING DETAIL AT BULB-OUT
SCALE 1" = 1'-0"

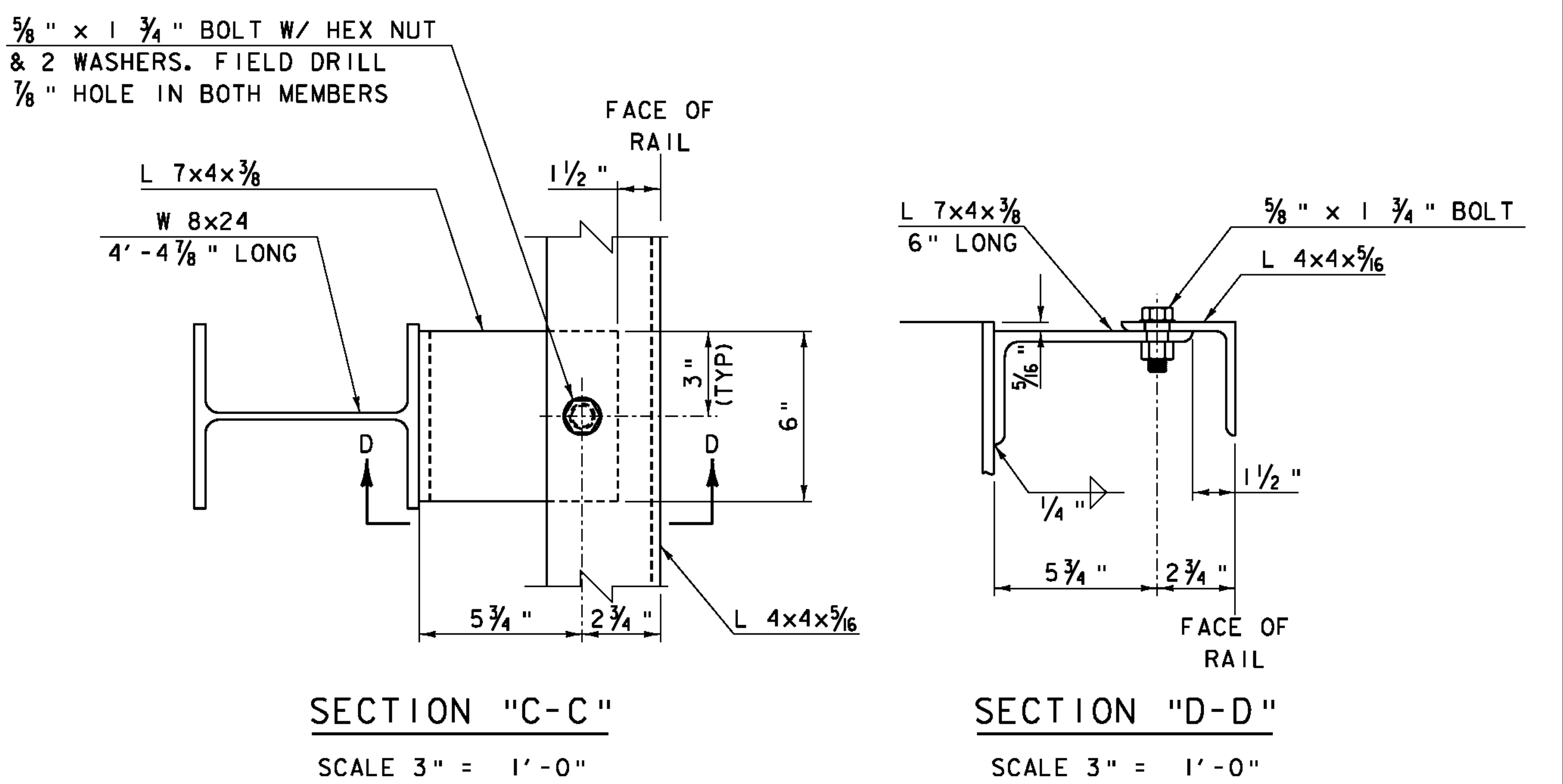
CURB BULB-OUT PLAN VIEW
SCALE 1" = 1'-0"

*REINFORCING STEEL IN THE DECK WILL BE DETERMINED BY THE GRID MANUFACTURER



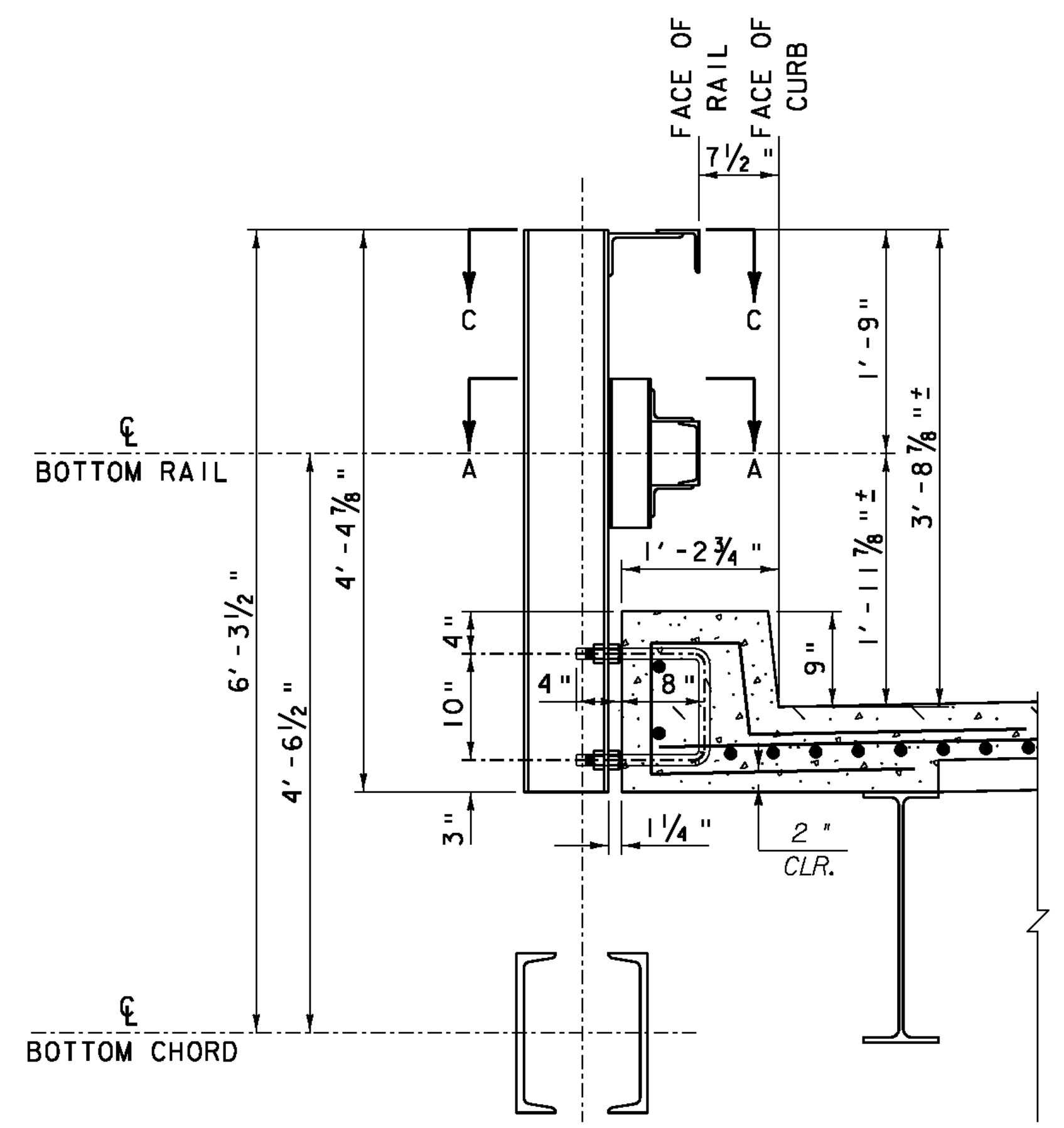
SECTION "A-A"
SCALE 3" = 1'-0"

SECTION "B-B"
SCALE 3" = 1'-0"

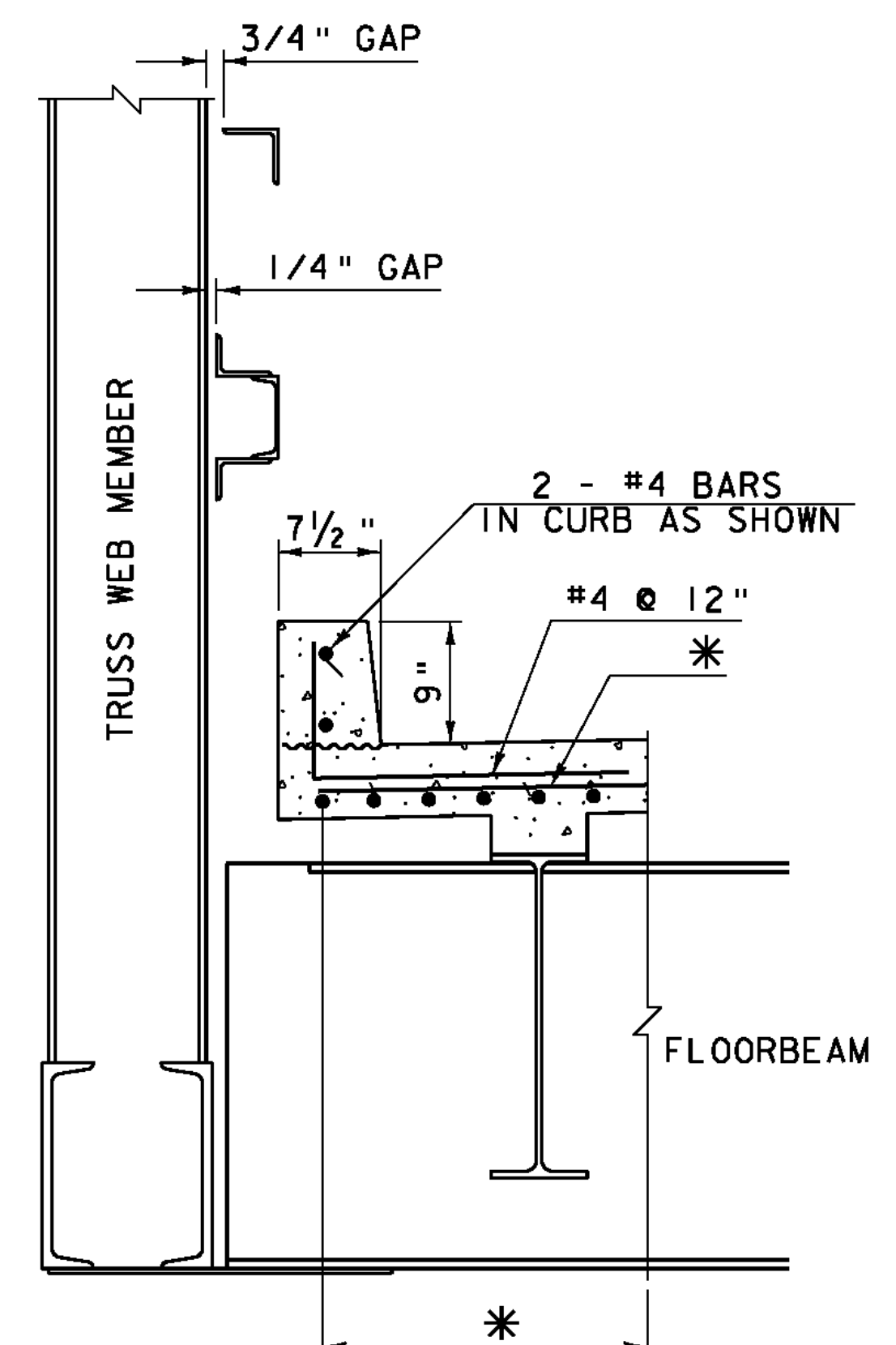


SECTION "C-C"
SCALE 3" = 1'-0"

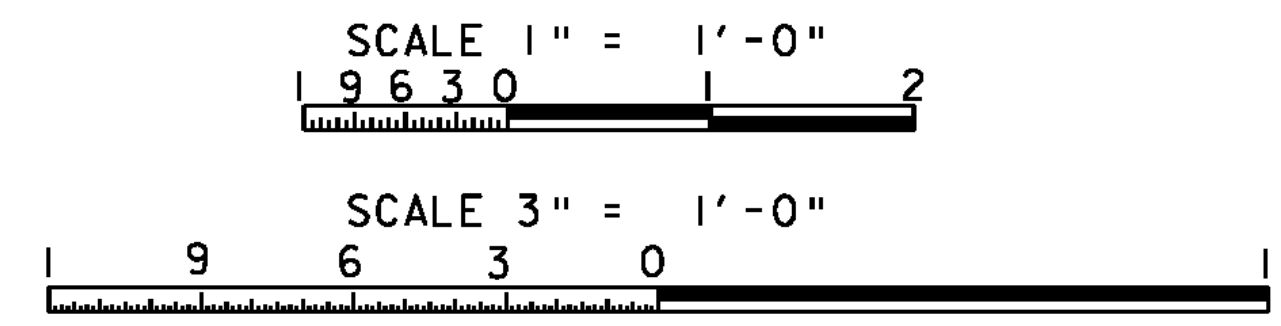
SECTION "D-D"
SCALE 3" = 1'-0"



CURB & RAILING DIMENSIONS AT BULB-OUT
SCALE 1" = 1'-0"

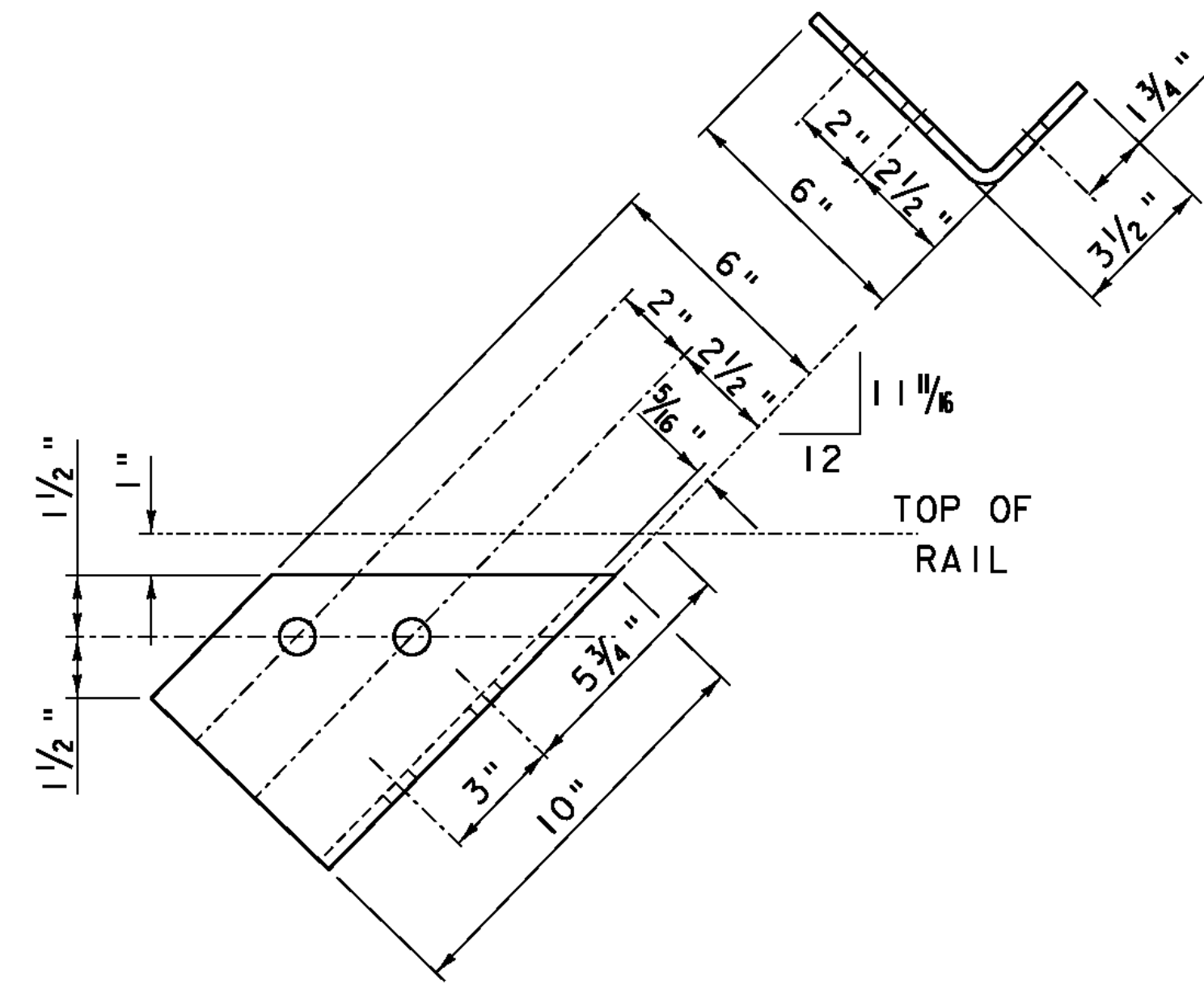


TYPICAL CURB DETAIL
SCALE 1" = 1'-0"



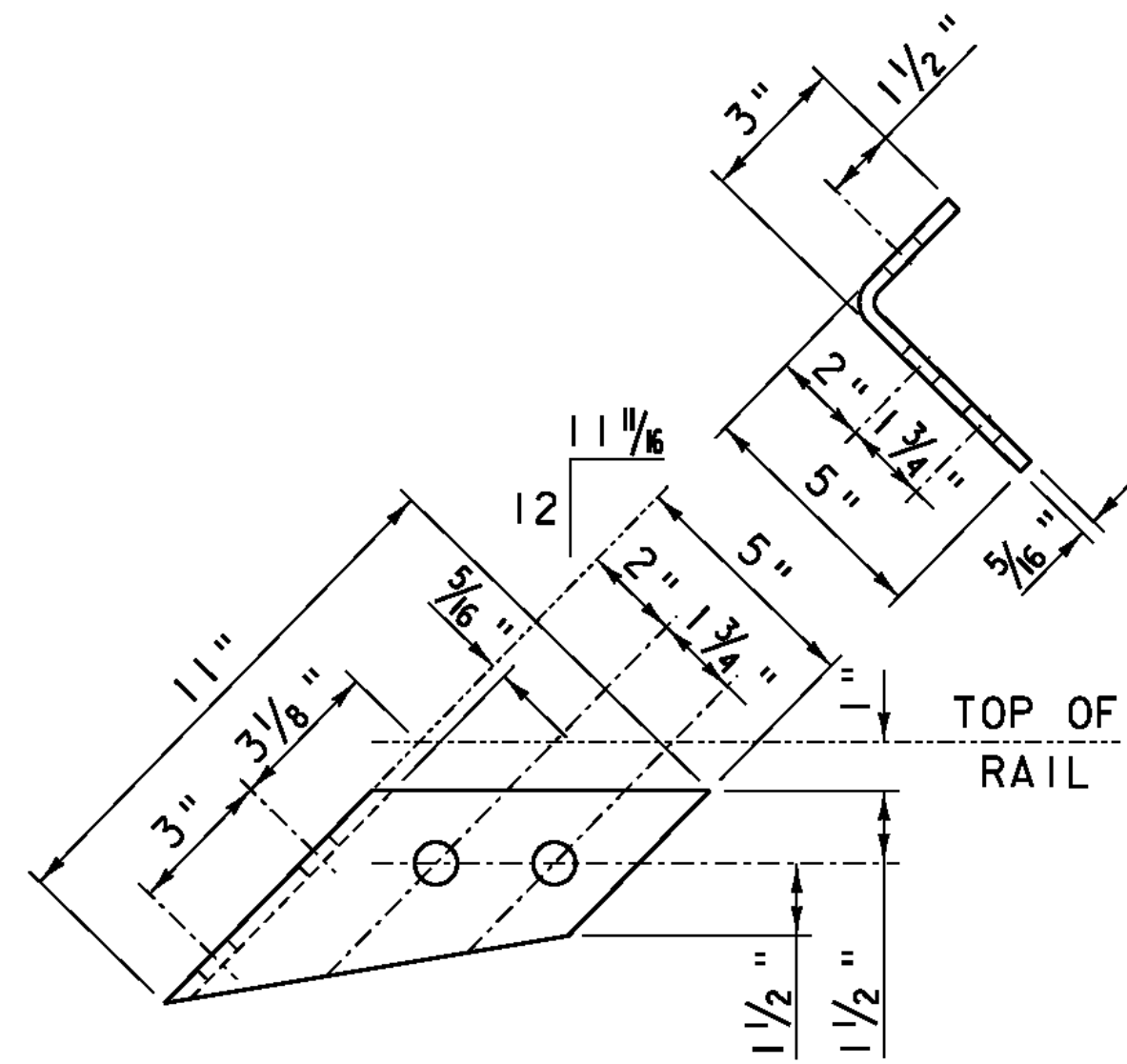
RICHMOND
BHF 0209(7)
SHEET 16 OF 23
FOR REFERENCE ONLY

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of	RICHMOND
Highway No.	T.H. #1
TOWN HIGHWAY #1 OVER WINOOSKI RIVER	
CURB AND RAILING DETAILS	
Designed By	C.P. WILLIAMS
Checked By	C.P. WILLIAMS
PROJECT	RICHMOND
CAD Dwg:	...drawing\081132_Railing.dgn
Bridge No.	31
Log Sta.	
Surv. Sta.	
Drawn By	D.D. BEARD
Date	12/10/08
Bridge Design Supervisor	G. BOGUE
PROJECT NO.	BHF 0209(5)
Plot Date:	8/17/2010
Sheet	28 of 50



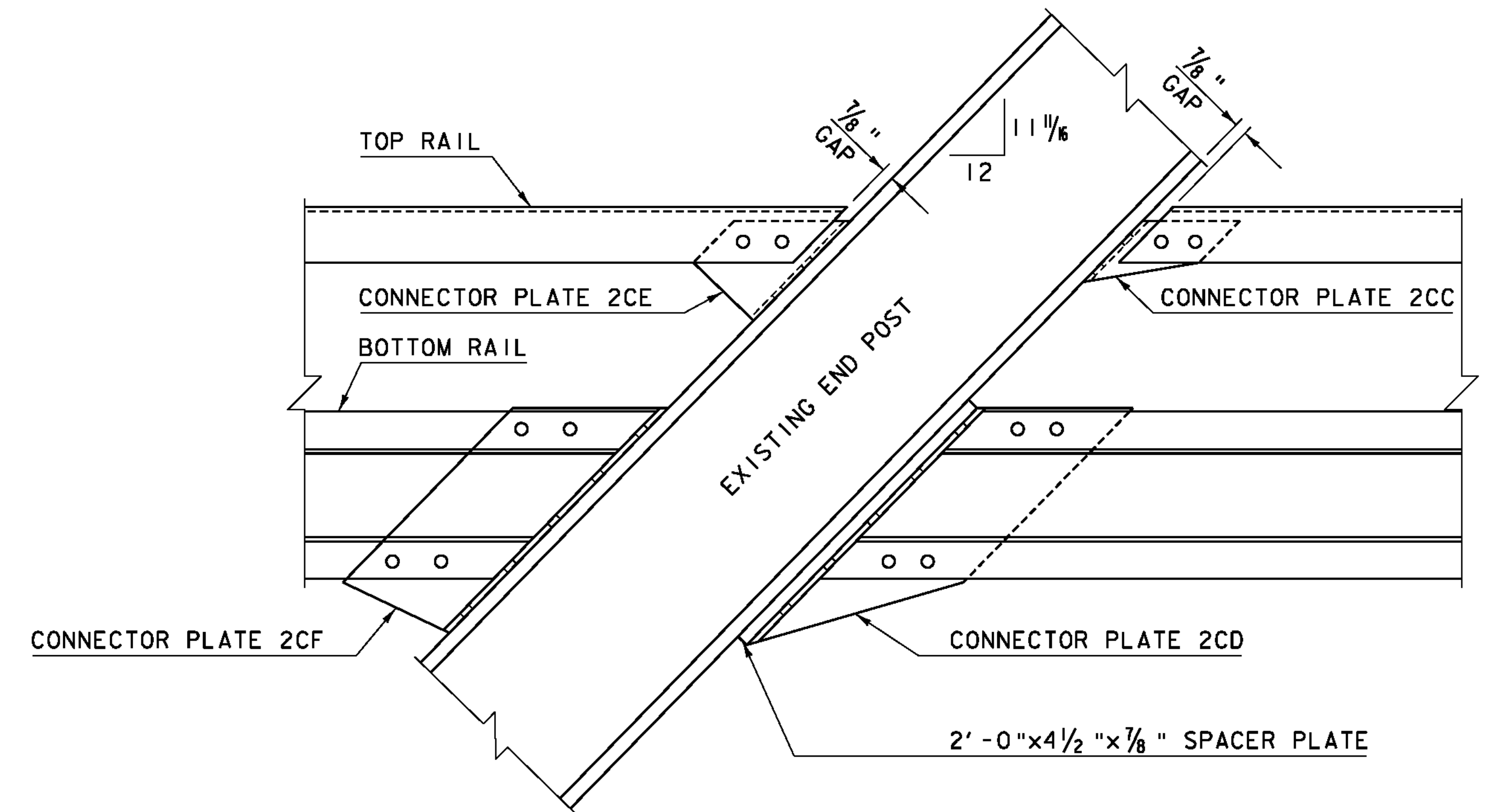
CONNECTOR PLATE 2CE

L 6x3 1/2 x 5/16 - 0'-10" LONG
SCALE 3" = 1'-0"



CONNECTOR PLATE 2CC

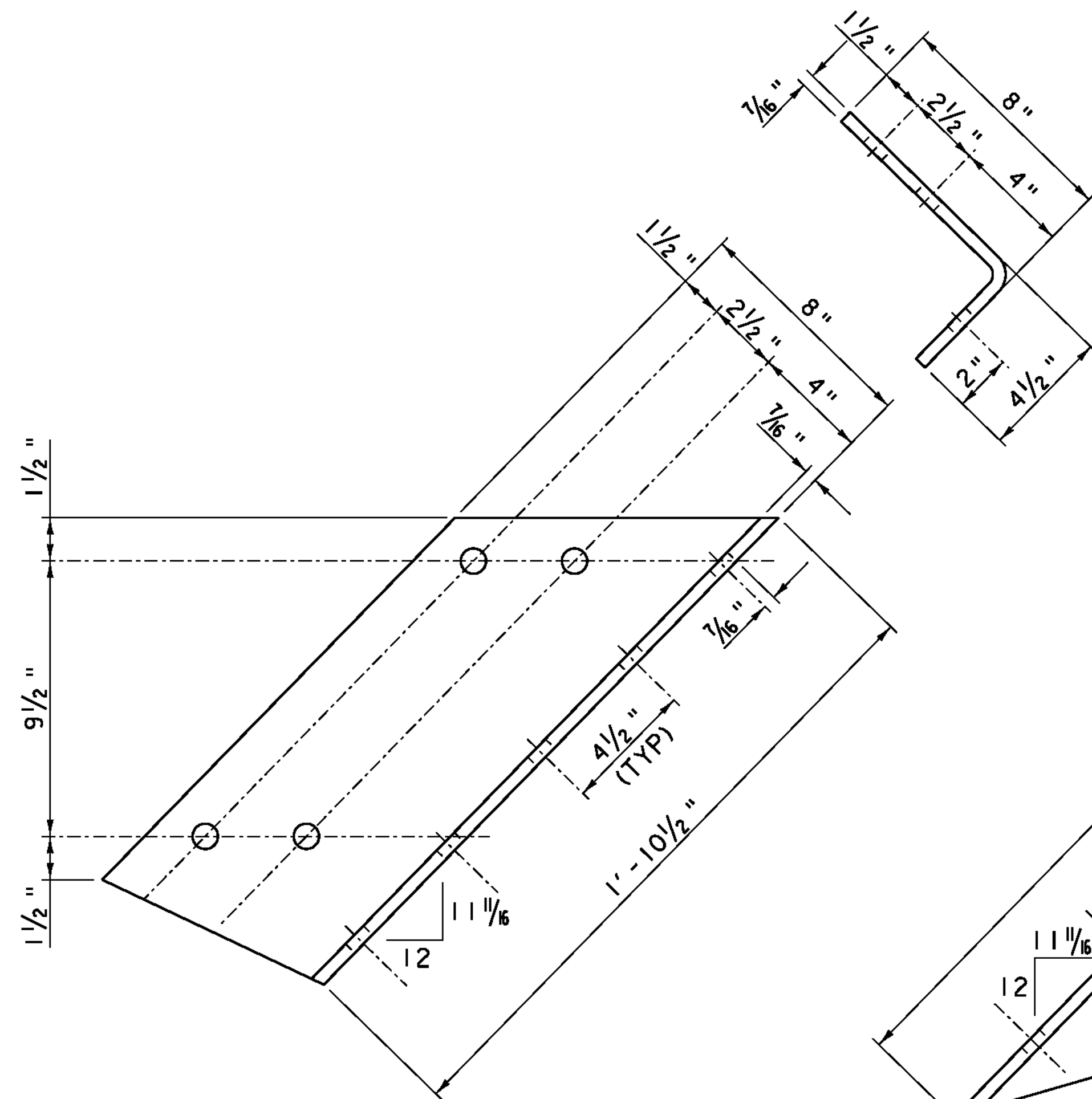
L 5x3x5/16 - 0'-11" LONG
SCALE 3" = 1'-0"



RAIL CONNECTOR DETAIL

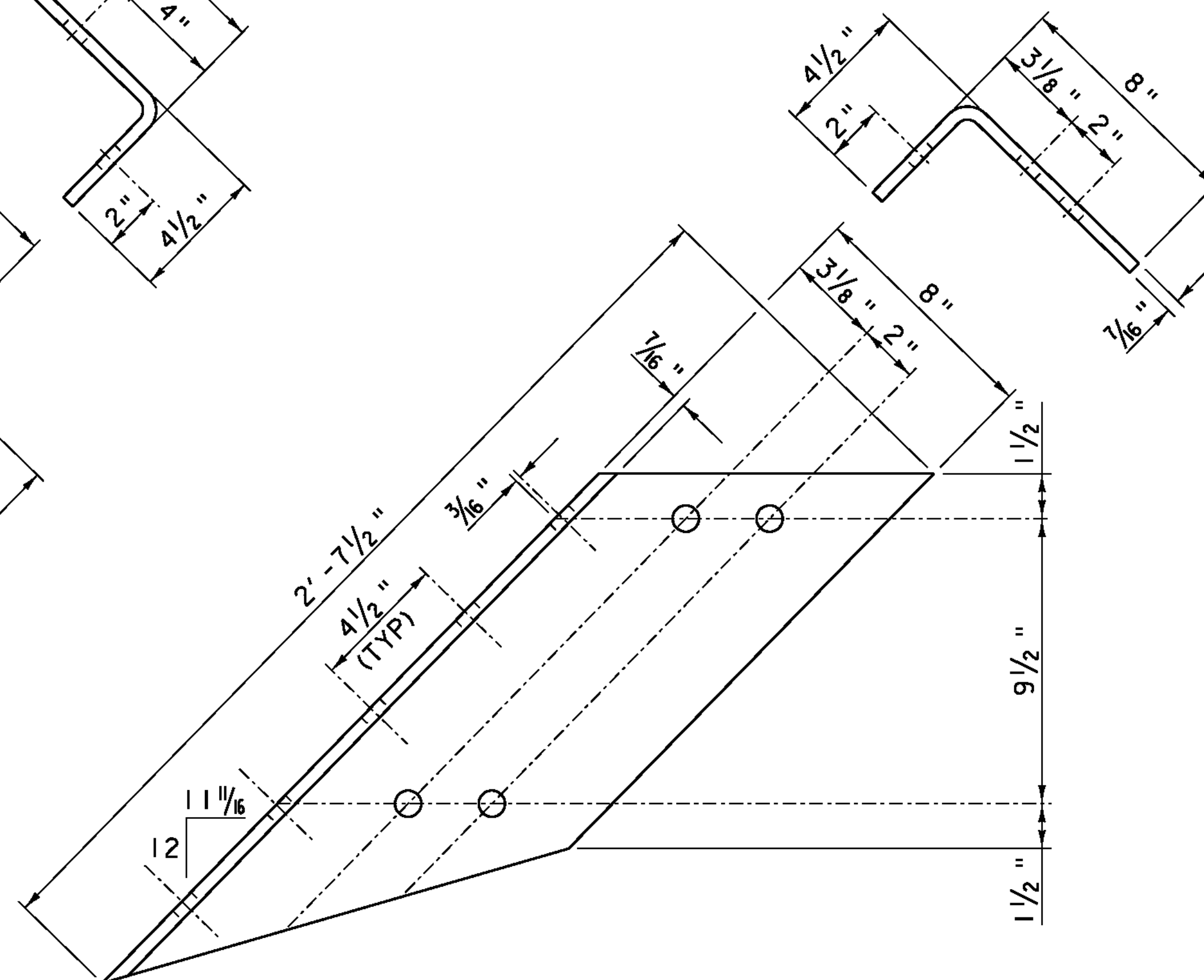
N. T. S.

THE DETAILS ON THIS SHEET ARE INTENDED TO CLARIFY THE INFORMATION FROM THE REFERENCE SHEETS. THE INTENT IS TO USE NEW MATERIAL TO DUPLICATE THE EXISTING CONNECTION. ANY CONFLICTS BETWEEN THIS INFORMATION AND THE REFERENCE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER IMMEDIATELY.



CONNECTOR PLATE 2CF

L 8x4 1/2 x 7/16 - 1'-10 1/2" LONG
SCALE 3" = 1'-0"

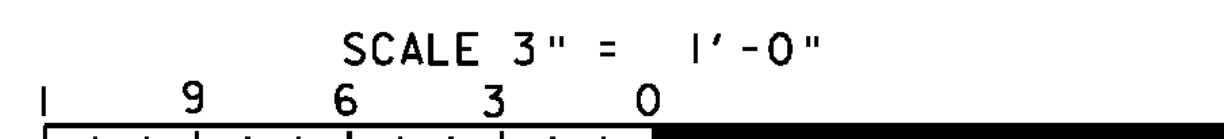


CONNECTOR PLATE 2CD

L 8x4 1/2 x 7/16 - 2'-7 1/2" LONG
SCALE 3" = 1'-0"

NOTE:

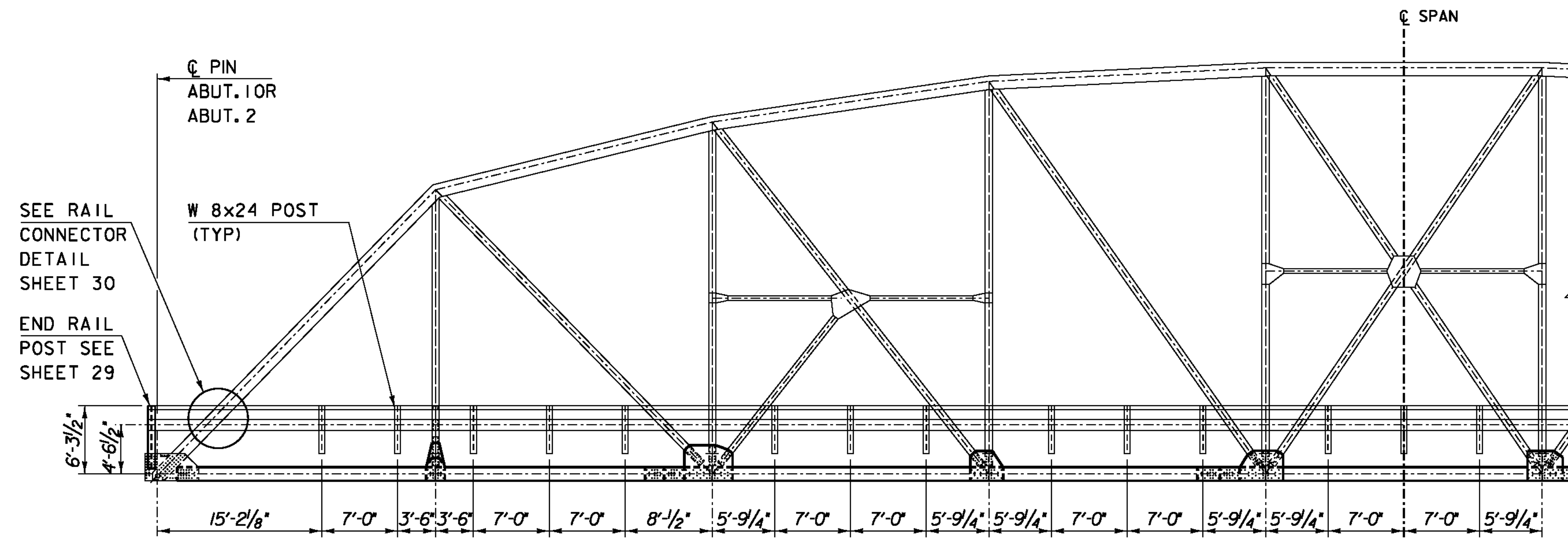
ALL HOLES SHALL BE FIELD DRILLED UNLESS OTHERWISE NOTED.



RICHMOND
BHF 0209(7)
SHEET 17 OF 23
FOR REFERENCE ONLY

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

Town Of	RICHMOND	Bridge No.	31
Highway No.	T.H. #1	Log Sta.	
		Surv. Sta.	
TOWN HIGHWAY #1 OVER WINOOSKI RIVER			
RAIL CONNECTOR DETAILS			
Designed By	C.P. WILLIAMS	Drawn By	D.D. BEARD
Checked By	C.P. WILLIAMS	Date	12/19/08
		Bridge Design Supervisor	G. BOGUE
		Date	01/09
PROJECT	RICHMOND	PROJECT NO.	BHF 0209(5)
CAD Dwg: ...	drawing\08J132_RailIng.dgn	Plot Date:	8/17/2010
Bridge Sheet No.		Sheet	30 of 50



RAILING ELEVATION

(TRUSS IS SYMMETRICAL ABOUT CENTER OF SPAN)

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

10 2 4 6 8

NOTES

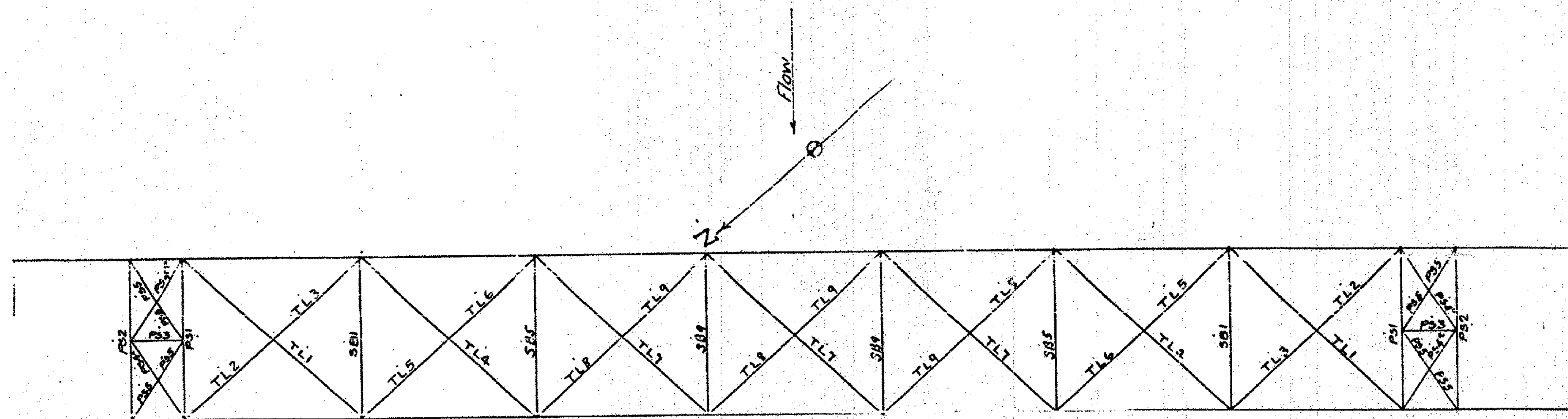
1. THE TRUSS RAILING SHALL BE PAID FOR UNDER ITEM 900.640 "SPECIAL PROVISION (BRIDGE RAILING, TRUSS)" (LF PAYMENT) TO THE LIMITS SHOWN ON THE PLANS.
2. ALL STEEL TRUSS RAILING COMPONENTS SHALL BE GALVANIZED IN ACCORDANCE WITH 506.15 (A). QUENCHING OF THE GALVANIZED STEEL SHALL NOT BE ALLOWED.
3. THE COST TO MODIFY THE STEEL GRID PANELS TO CONSTRUCT THE RAILING BULB-OUT SHALL BE INCIDENTAL TO THE GRID ITEM. THIS WILL INCLUDE CUTTING, TRIMMING, OR REMOVING ALL PLATES AND GALVANIZED PANS, REPAIRING CUT ENDS AS NECESSARY, AND FOR ALL NECESSARY CONCRETE FORMING.
4. FOR ADDITIONAL INFORMATION ON THE RAIL POST ANCHORAGE, SEE STANDARD DRAWING SB-R6-82.
5. ALL BRIDGE RAILING MATERIAL, WITHIN THE LIMITS SHOWN ON THE PLANS, SHALL BE IN ACCORDANCE WITH SUBSECTION 732.03. GRADE 36 STEEL SHALL BE USED.

RICHMOND
BHF 0209(7)

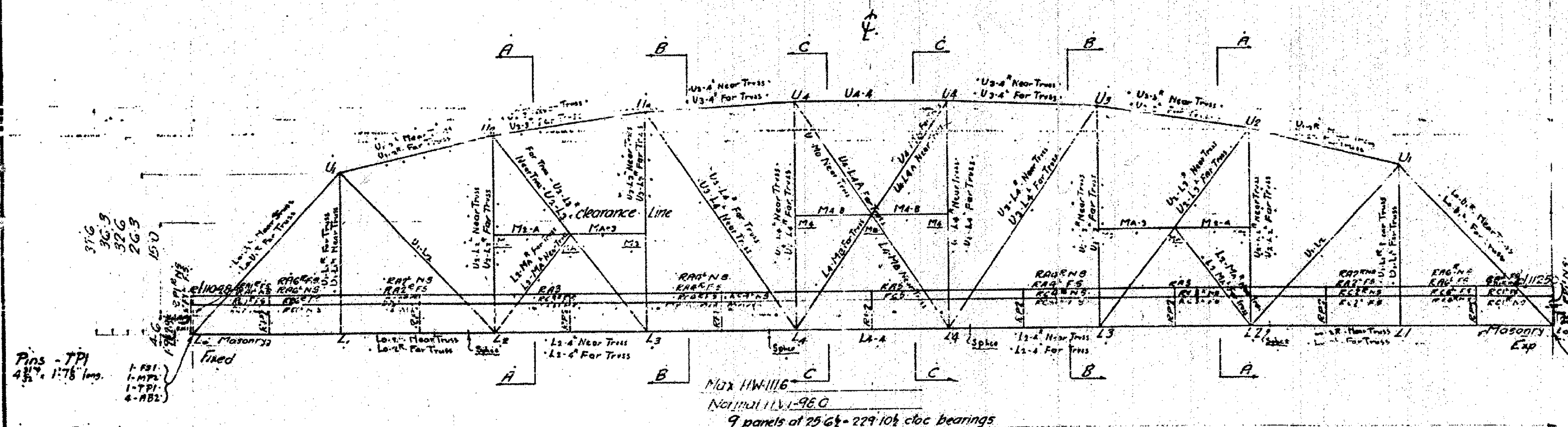
SHEET 18 OF 23
FOR REFERENCE ONLY

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

Town Of	RICHMOND	Bridge No.	31
Highway No.	T.H. #1	Log Sta.	
		Surv. Sta.	
TOWN HIGHWAY #1 OVER WINOOSKI RIVER			
RAILING POSTS LAYOUT			
Designed By	C.P. WILLIAMS	Drawn By	D.D. BEARD
Checked By	Date	Bridge Design Supervisor	Date
C.P. WILLIAMS	12/19/08	G. BOGUE	Date 01/09
PROJECT	RICHMOND	PROJECT NO.	BHF 0209(5)
CAD Dwg:	...drawing\081132_Railing.dgn	Plot Date:	8/17/2010
Bridge Sheet No.		Sheet	31 of 50



Note to Erector:
Erect all laterals on slope with L backs up hill.



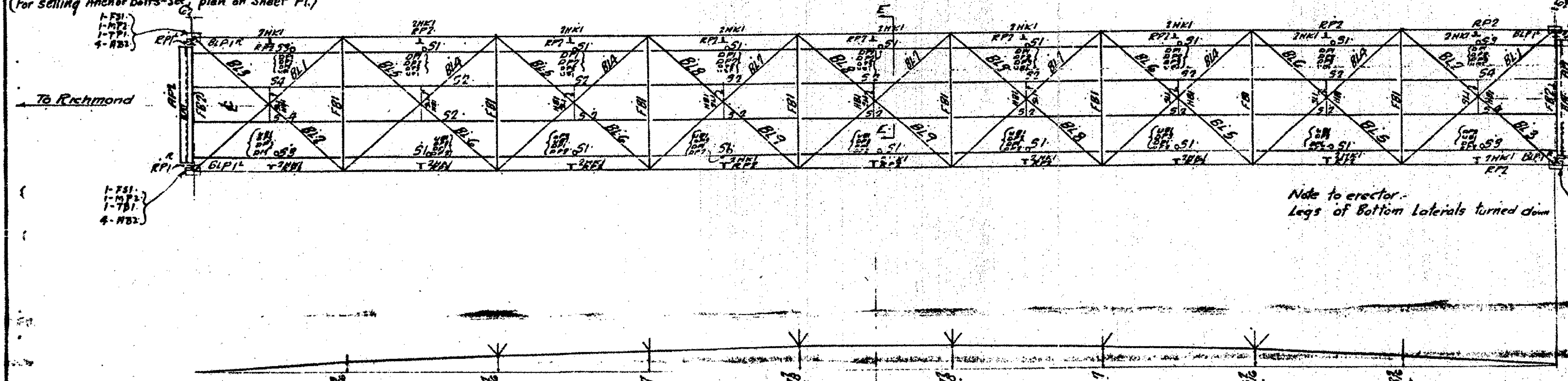
Pins - TPI
4 1/2" x 1 1/8" long
1 - F81
1 - MPT
1 - TPI
4 - AB2

All Anchor Bolts this end are
1/2" dia. x 6" long, Hex Nut, hex washer - AB2
washers - 3" x 1/2" thick, 1/2" hole.
(For setting Anchor Bolts - see plan on Sheet F1)

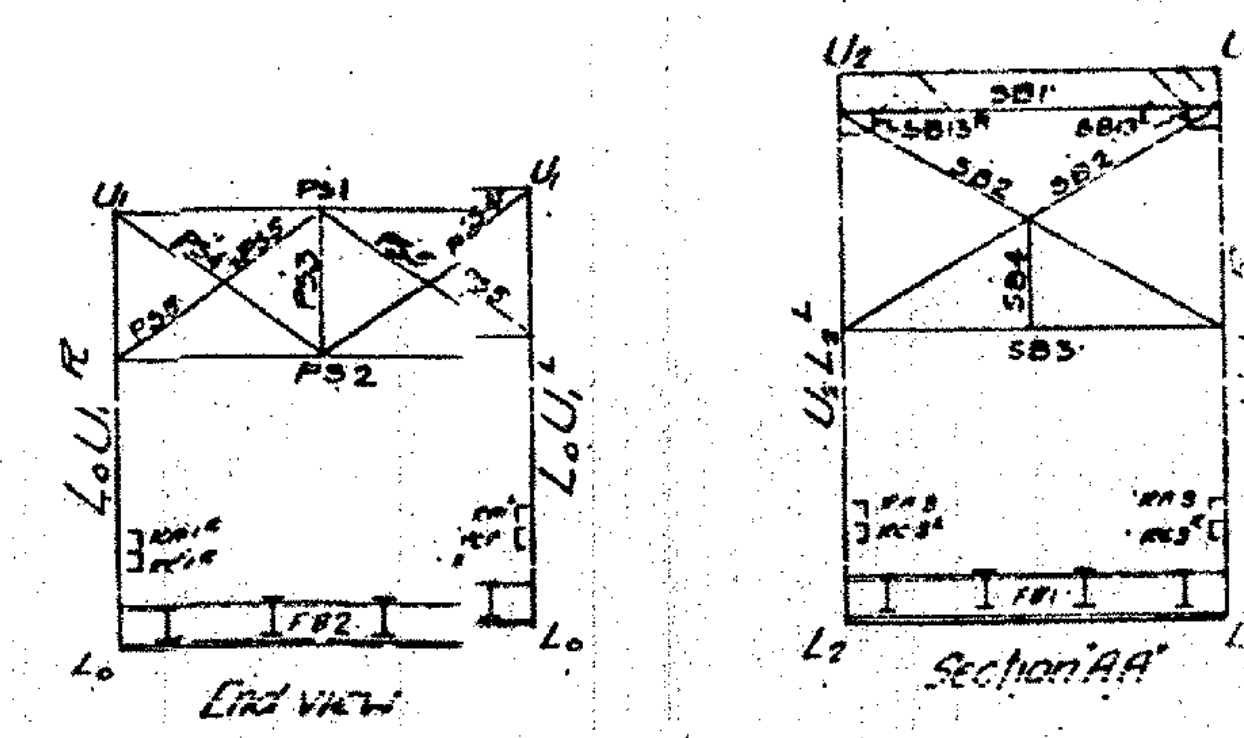
1 - F81
1 - MPT
1 - TPI
4 - AB2

To Richmond

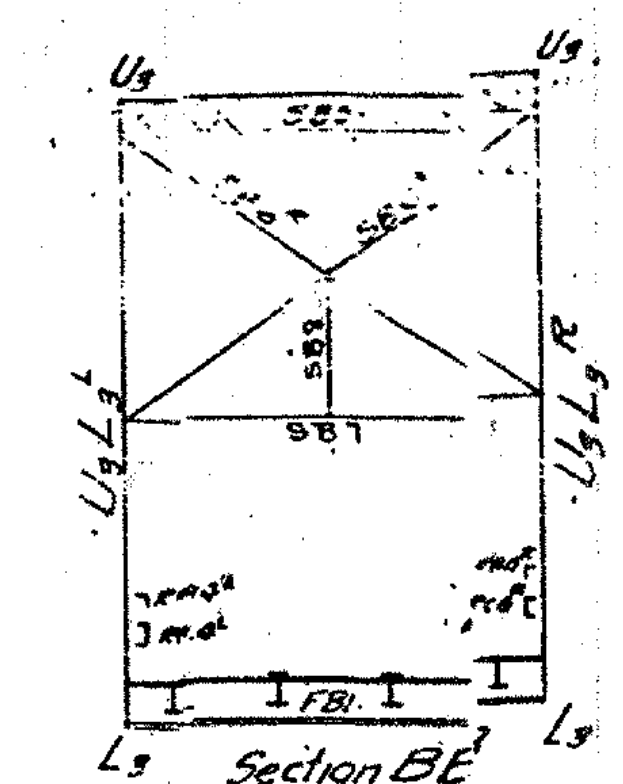
1 - F81
1 - MPT
1 - TPI
4 - AB2



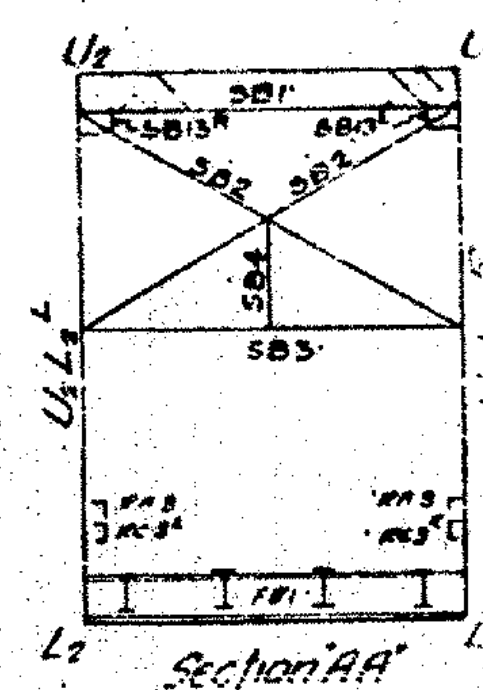
Camber Diagram - Bottom Chord
(Before application of dead load)



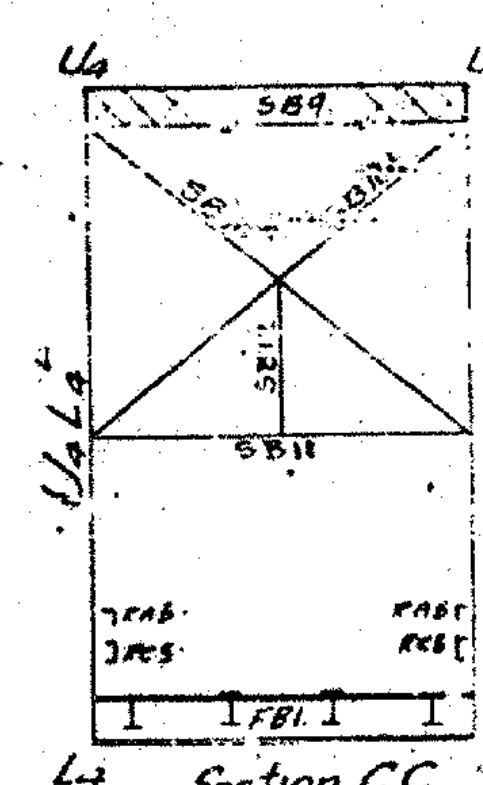
End view



Section BE

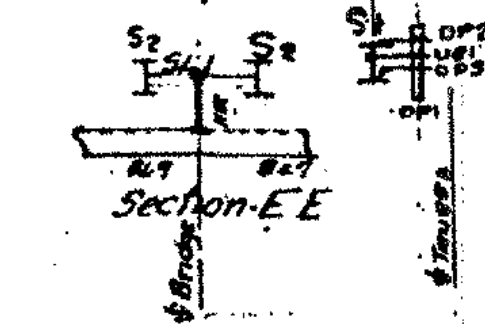


Section AA



Section CC

1 - ES1
1 - MPT
1 - TPI
4 - AB2
All Anchor Bolts this end are
1/2" dia. x 6" long, Hex Nut, hex washer - AB2
washers - 3" x 1/2" thick, 1/2" hole.
(For setting Anchor Bolts - see plan or Sheet F1)



Section EE

LIST OF DRAWINGS

Draw No	Description
1	Erection diagram
2	Shoes
3	Truss End
4	Truss Cent
5	Floor System
6	Bottom Later
7	Portal
8	Sway Brac
9	Top laterals
F1	Anchor Bo

RICHMOND
BHF 0209(7)

SHEET 19 OF 23
FOR REFERENCE ONLY

For Reference Only
Richmond BHF0209 (5)
Sheet 19 of 50

BETHLEHEM STEEL
Erection and Erection Dept.

DETAIL OF Erection Di.
STRUCTURE: Richmond Village Br.
CUSTOMER: James F. Co.

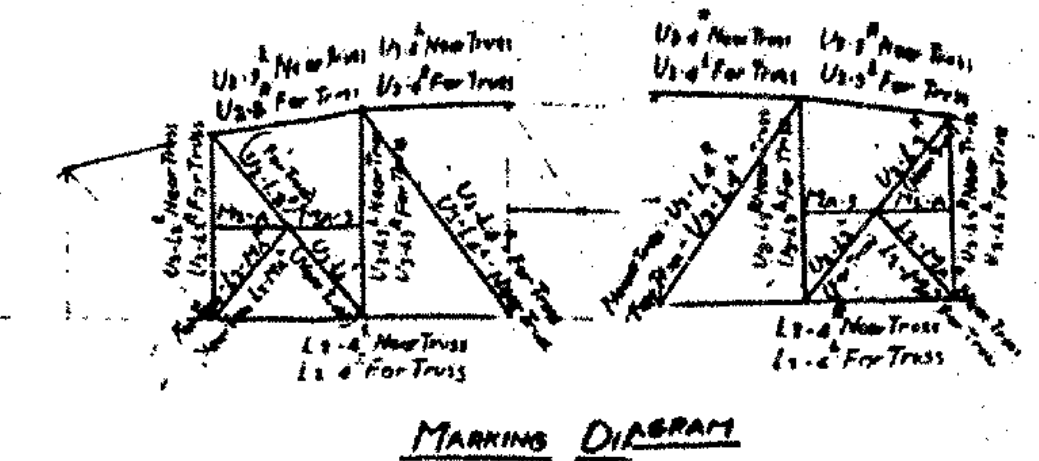
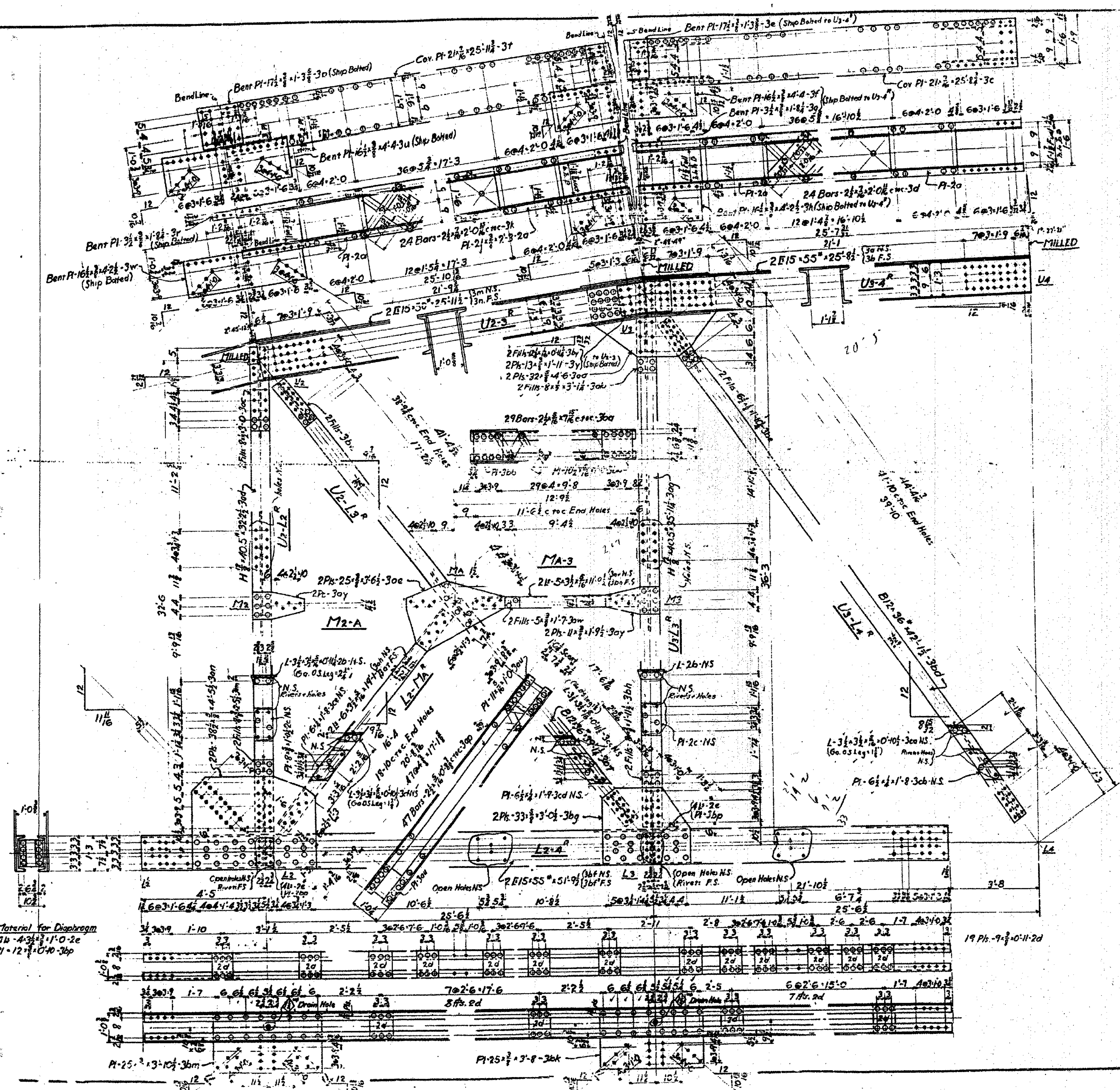
SHOP PAINT

APPROVED BY: _____ DATE: _____

DRAWN BY: ERK 3/17/28 HPH

FILE: F 7363 CONT: E E 7

Field Point
Two coats as per specification



Specifications: Standard Spec. for Steel Highway Bridges,
 U.S. Dept. of Agriculture - Dept. Bulletin 1259
 Rivets - Open Holes
 Holes in material 1/2" thick or less may be punched full size
 Holes in material more than 1/2" thick shall be subpunched
 and reamed or drilled from the solid.
 Truss members shall be assembled in the shop and holes
 for field connections reamed or drilled while assembled
 and the members match/marked.
 Floorbeam and Stringer connections to be subpunched
 and reamed to a minimum thickness not less than
 1" thick or reamed while assembled.
 Field connections for floor beams, sway bracing and
 railing punched full size.
 Shop Paint: One coat of red lead and oil.

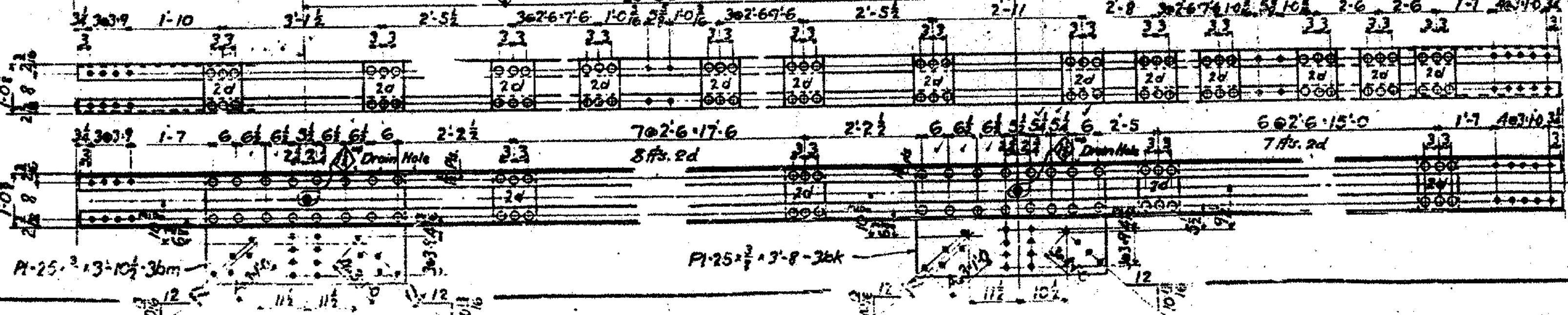
- REQUIRED LIST**
- 2 - Top Chords - U2-3^R
 - 2 - " - U2-3^L
 - 2 - " - U2-4^R
 - 2 - " - U2-4^L
 - 2 - Bot Chords - L2-4^R
 - 2 - " - L2-4^L
 - 2 - Posts - U2-12^R
 - 2 - " - U2-12^L
 - 2 - " - U2-13^R
 - 2 - " - U2-13^L
 - 2 - Diagonals - U2-17^R
 - 2 - " - U2-17^L
 - 2 - Struts - L2-M2^R
 - 4 - " - M2-A^R Alike
 - 4 - " - M2-A^L Alike
 - 2 - Diagonals - U2-13^R
 - 2 - " - U2-13^L

229-10 1/2 Highway Riveted Truss Span

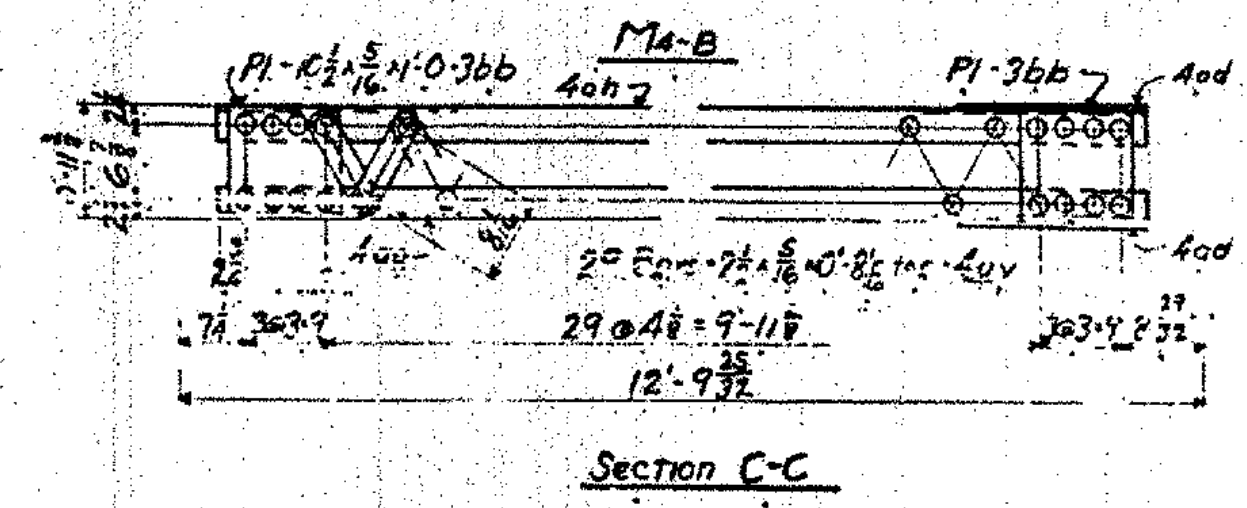
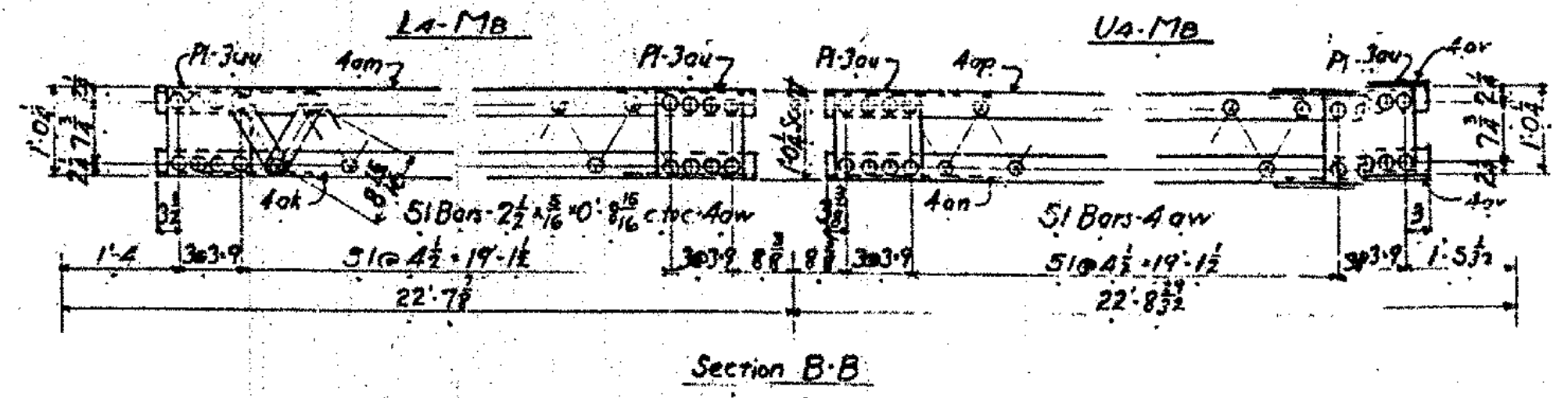
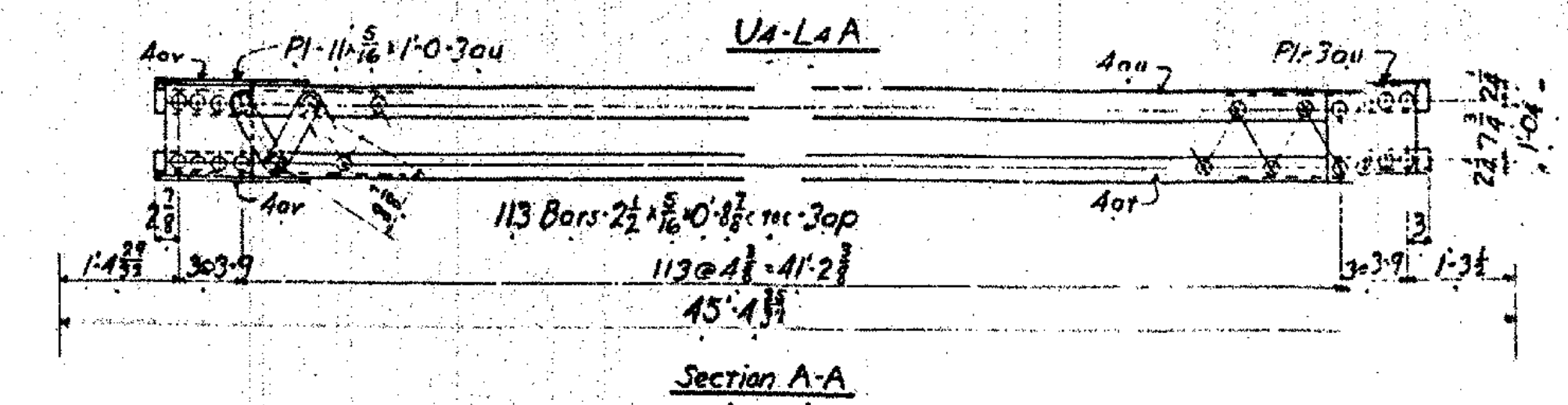
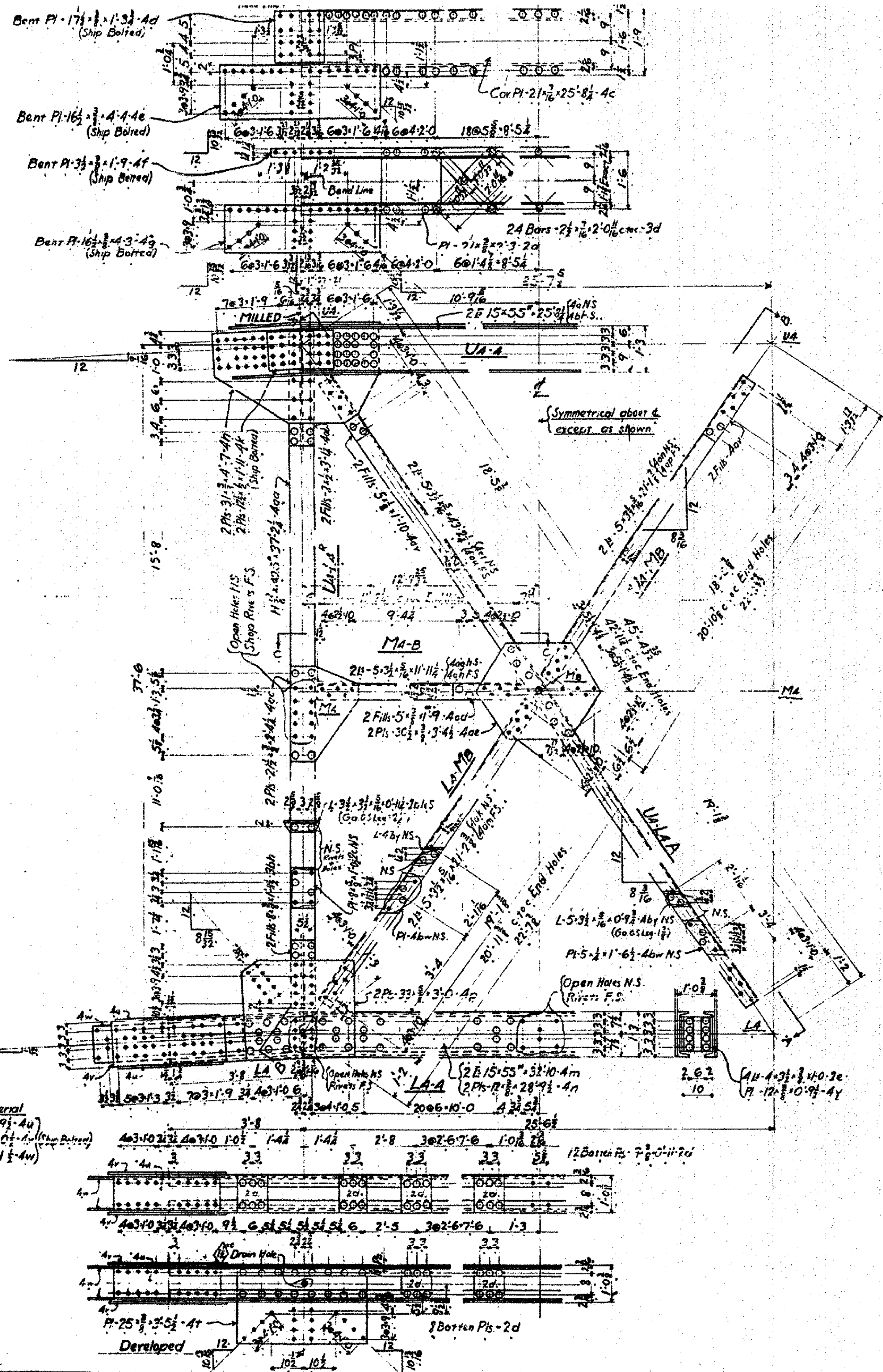
RICHMOND
 BHF 0209(7)
 SHEET 21 OF 23
 FOR REFERENCE ONLY

BETHLEHEM STEEL COMPANY	
Fabrication and Erection Dept. PETHLEHEM, PA.	
DETAIL OF Truss - Intermediate	
STRUCTURE: Richmond Village Bridge, Richwood, W. Va.	
CUSTOMER: James E. Cushman Inc.	
SHOP PAYOUT: See Note	
RIVETS	OPEN HOLES
UNLESS OTHERWISE SPECIFIED	
DRIVEN	BY
J.R.B.	3-29-28
Sheet 48 of 50	
Adv. Bills - 1-3-5	

Material for Diaphragm
 4L 4-3/8 x 11-0-2e
 P1-12 1/2 x 0-10-3bp



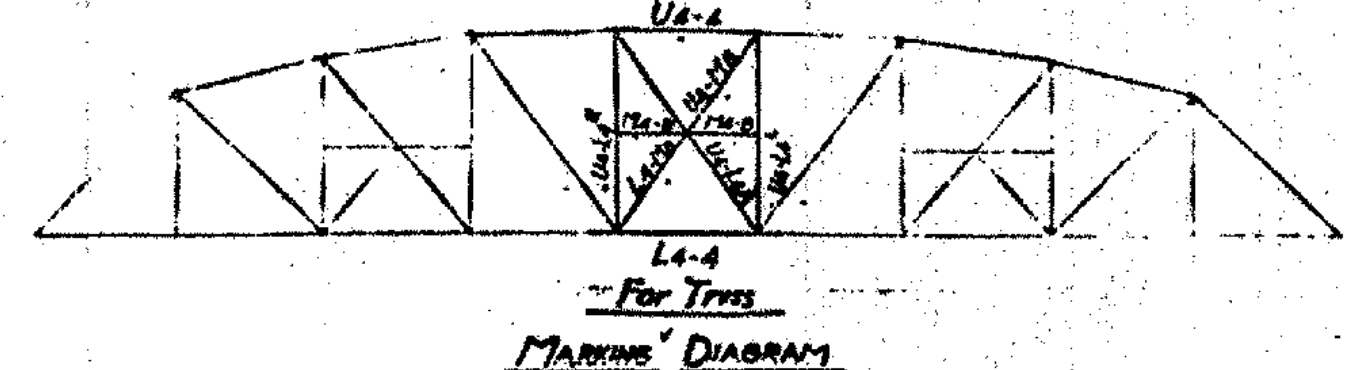
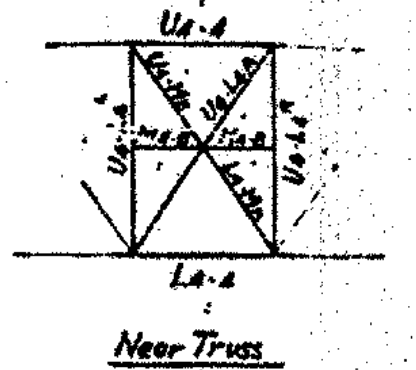
Adv. Bills - 1-3-5



- Specifications: Standard Spec for Steel Highway Bridges,
 U.S. Dept. of Agriculture Dept. Bulletin #1259
- Rivets $\frac{3}{4}$ " - Open Holes $\frac{1}{8}$ "
 - Holes in material $\frac{1}{2}$ " thick or less may be punched full size
 - Holes in material more than $\frac{1}{2}$ " thick shall be subpunched and reamed or drilled from the solid.
 - Truss members shall be assembled in the shop and holes for field connections reamed or drilled while assembled and the members matchmarked.
 - Floorbeam and Stringer Connections to be subpunched and reamed to a metal template not less than $\frac{1}{8}$ " thick or reamed while assembled.
 - Field connections for laterals, sway bracing and railing, punched full size.
 - Shop Paint: One coat of red lead and oil.

- REQUIRED LIST**
- 2 - Top Chords - Ua-4
 - 2 - Bot. Chords - La-4
 - 2 - Posts - Ua-La
 - 2 - Posts - Ua-La
 - 2 - Diagonals - Ua-La
 - 2 - " - La-Mb
 - 2 - " - Ua-Mb
 - 4 - Struts - Ma-B

Splice Material
 2 Pls. 12" x 12" x 1/2"
 2 Pls. 15" x 15" x 1/2"
 2 Pls. 12" x 4" x 1/2"



RICHMOND
 BHF 0209(7)

SHEET 22 OF 23
 FOR REFERENCE ONLY

For Reference Only
 Richmond BHF0209 (5)
 Sheet 22 of 50

229-106 Highway Riveted Truss Span

BETHLEHEM STEEL COMPANY
 Bethlehem, Pa.

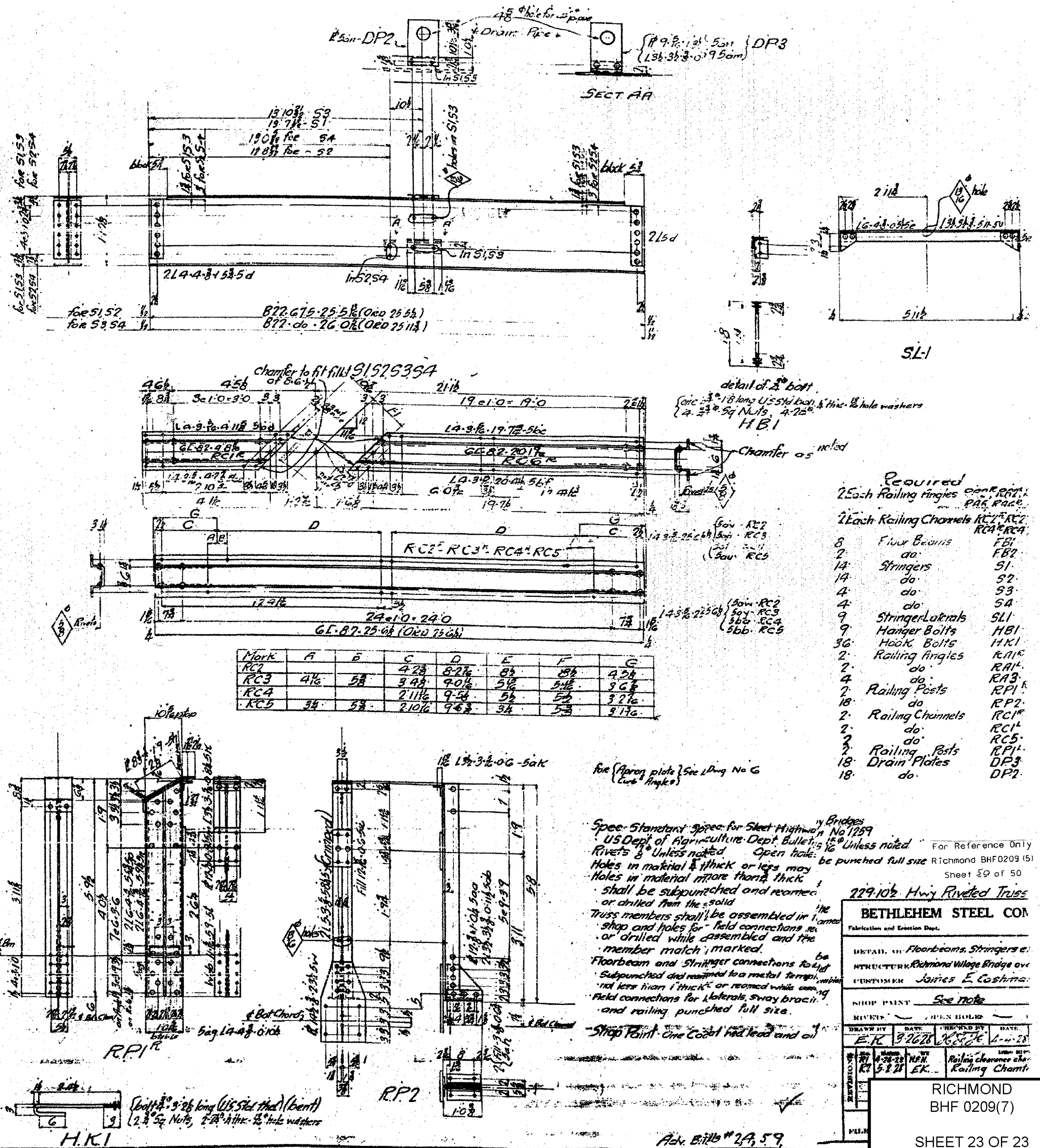
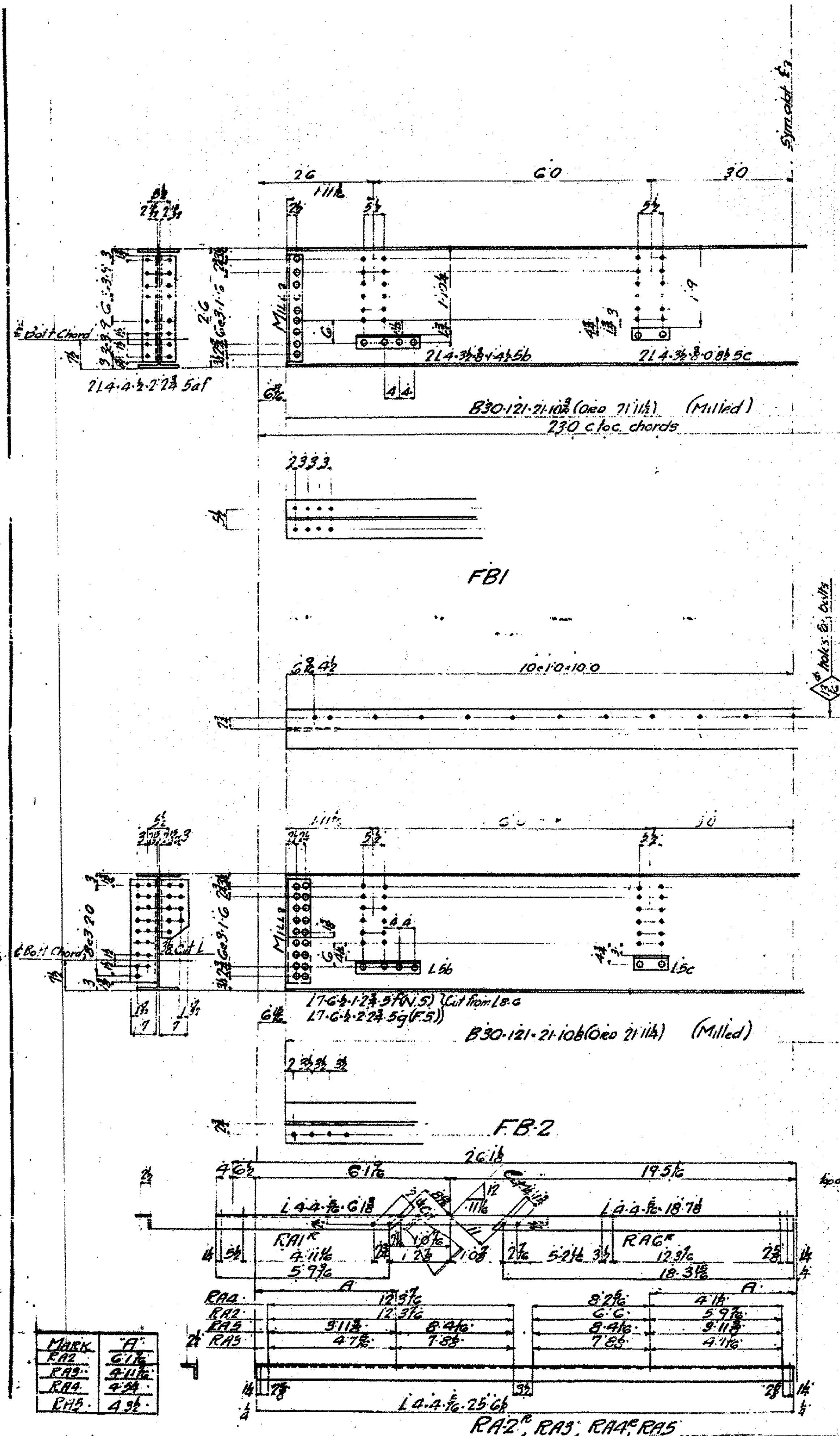
DETAIL OF Truss - Center (Continued)
 STRUCTURE: Richmond Village Bridge - Winoski Riv.
 CUSTOMER: James E. Cashman Inc.

SHOP PAINT: See Note

REV.	DATE	BY	DESCRIPTION
J.R.B.	4-4-28	EL	

F.P. F7363 CONT. EE2896 DWG. 4

Adv. Bills 1-3-8



RICHMOND BHF 0209(7)
MISC STEEL REPAIRS

REMOVE 6 DETERIORATED STEEL
LATTICE BARS, REPLACE 4 OF 6 WITH
NEW BARS APPROXIMATE BAR
DIMENSIONS BASED ON RECORD
PLANS = $28\frac{1}{2}$ " X $2\frac{1}{2}$ " X $7/16$ " (VERIFY
IN FIELD)

ALL WORK TO BE IN ACCORDANCE
WITH SECTION 50.6

ALL STEEL TO BE AASHTO
M270 GRADE 36.

REPLACE EXISTING $7/8$ " RIVETS WITH
 $7/8$ " HIGH STRENGTH BOLTS. MATCH
MARK AND DRILL HOLES IN NEW
MEMBER TO LINE UP WITH EXISTING
RIVET HOLES. NEW HOLES TO BE
 $15/16$ " ϕ .

A-A

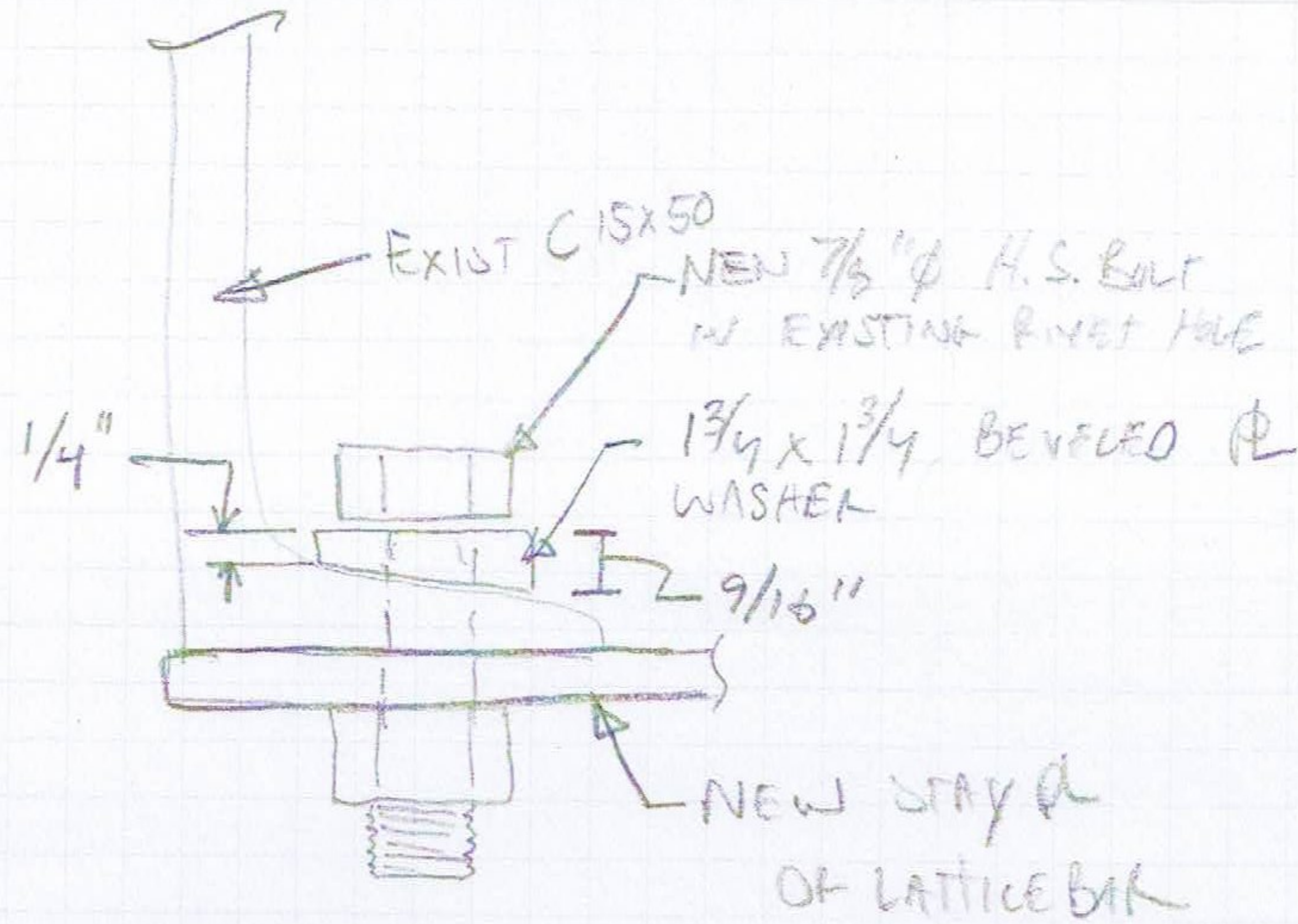
REMOVE AND REPLACE EXISTING
STAY PLATE. APPROXIMATE STAY
PLATE DIMENSIONS BASE ON
EXISTING PLANS = $27\frac{1}{2}$ " X 21" X $3/8$ "
(VERIFY IN FIELD)

REFER TO SECTION
A-A ON SAT 2



Stantec

RICHMOND BHF 0209 (7) MISC. STEEL REPAIRS



A-A

Designed by: ZEF 6/12/12 Checked by:

