

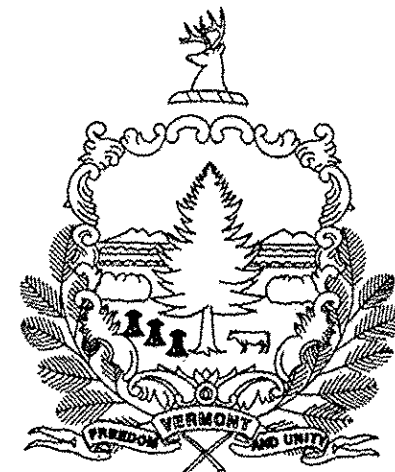
**INDEX OF SHEETS**

- 1. TITLE SHEET
- 2-3. TYPICAL SECTIONS
- 4-5. QUANTITY SHEETS
- 6. GENERAL NOTES
- 7. DRY MASONRY NOTES
- 8. LAYOUT SHEET
- 9. BLANK
- 10. ROOF REPAIR DETAILS
- 11. NORTH TRUSS DETAILS
- 12. SOUTH TRUSS DETAILS
- 13. LATTICE SISTER DETAILS
- 14. SUBSTRUCTURE DETAILS
- 15. BLANK
- 16. STEEL-BACKED TIMBER GUARDRAIL DETAILS
- 17. BLANK
- 18. TRAFFIC SIGN SUMMARY SHEET
- 19. REINFORCING STEEL SCHEDULE
- 20-23. REFERENCE SHEETS

**VTRANS STANDARD SHEETS**

E-121	STANDARD SIGN PLACEMENT	08/08/95
G-4	PLANK RAIL DETAILS	06/01/94
T-45	SQUARE TUBE SIGN POST & ANCHOR	01/02/13

STATE OF VERMONT  
AGENCY OF TRANSPORTATION



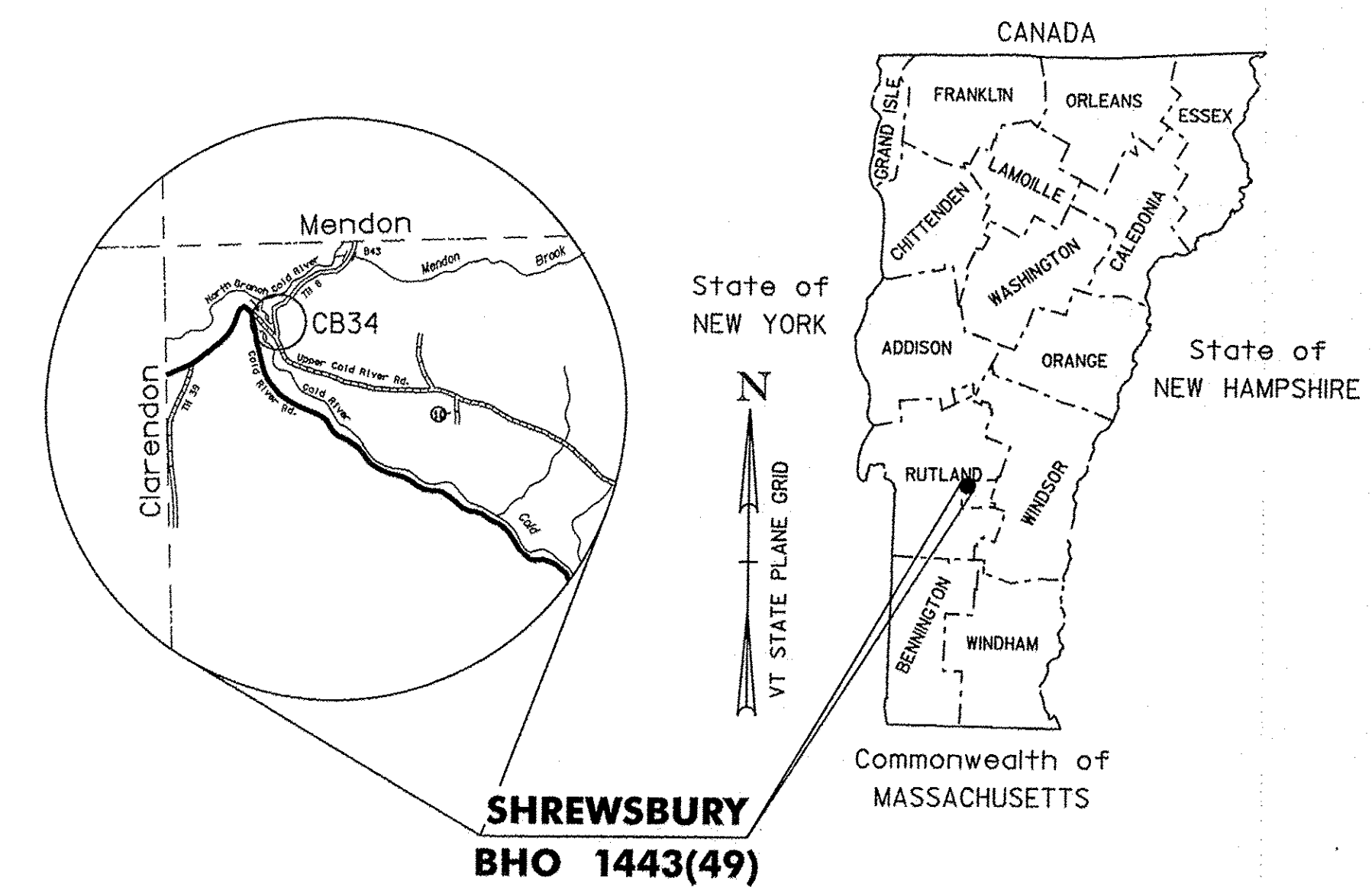
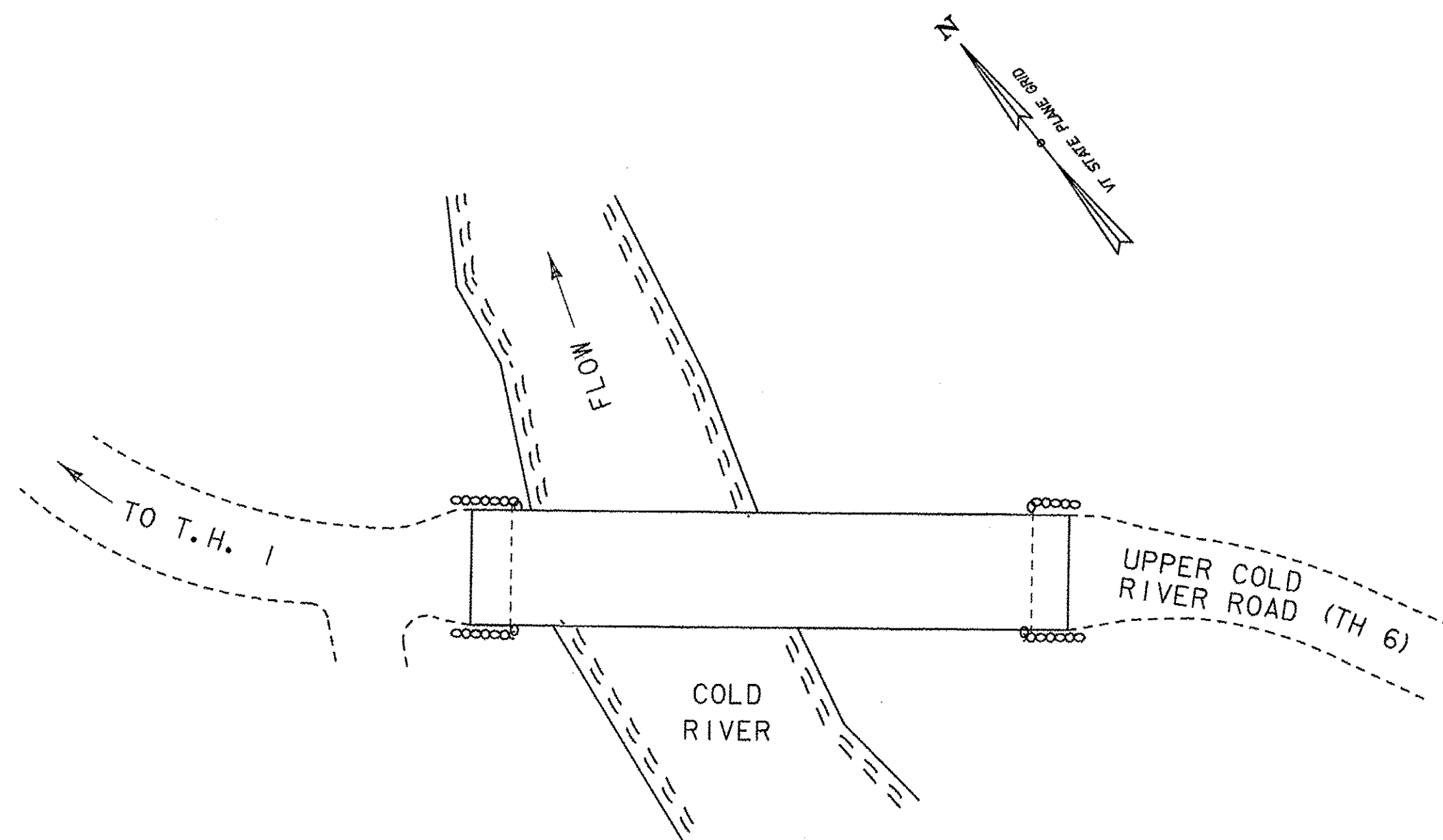
PROPOSED IMPROVEMENT  
BRIDGE PROJECT

TOWN OF SHREWSBURY COUNTY OF RUTLAND  
ROUTE NO. TH 6 (CLASS 3) BROWN COVERED BRIDGE - NO. 34

PROJECT LOCATION: BEGINNING AT A POINT ON TH 6 IN THE TOWN OF SHREWSBURY, APPROXIMATELY 0.10 MILE WEST OF ITS INTERSECTION WITH TH 1, BROWN COVERED BRIDGE, OVER THE COLD RIVER.

PROJECT DESCRIPTION: REHABILITATION OF EXISTING STONE ABUTMENTS AND WINGWALLS, PERFORMING SUPERSTRUCTURE REPAIRS, PROVIDING APPROACH RAILINGS, SIGNS, AND OTHER MISCELLANEOUS WORK.

LENGTH OF STRUCTURE: 112.20 FEET  
LENGTH OF PROJECT: 112.20 FEET



**RECORD PLANS**

CONTRACTOR: A.L. ST. ONGE CONTRACTOR, INC. - MONTGOMERY, VT.

RESIDENT ENGINEER: SCOTT WHEATLEY

CONSTRUCTION BEGAN: APRIL 23, 2014

CONSTRUCTION COMPLETE: NOVEMBER 14, 2014

RECORD PLANS BY: SCOTT WHEATLEY & KEVIN KING

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

BY: *[Signature]* RESIDENT ENGINEER

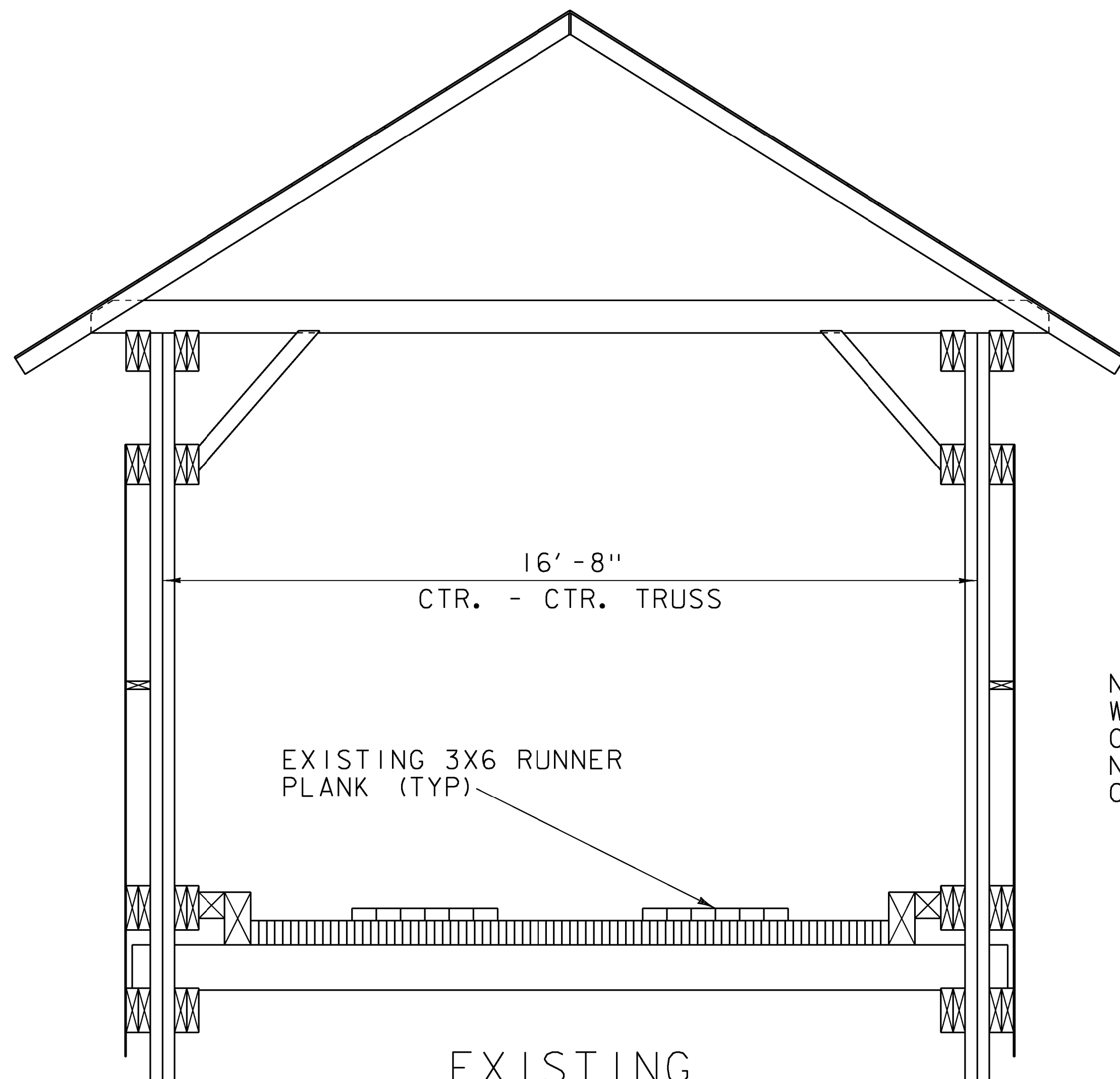
DATE: 06-30-16

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.

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.

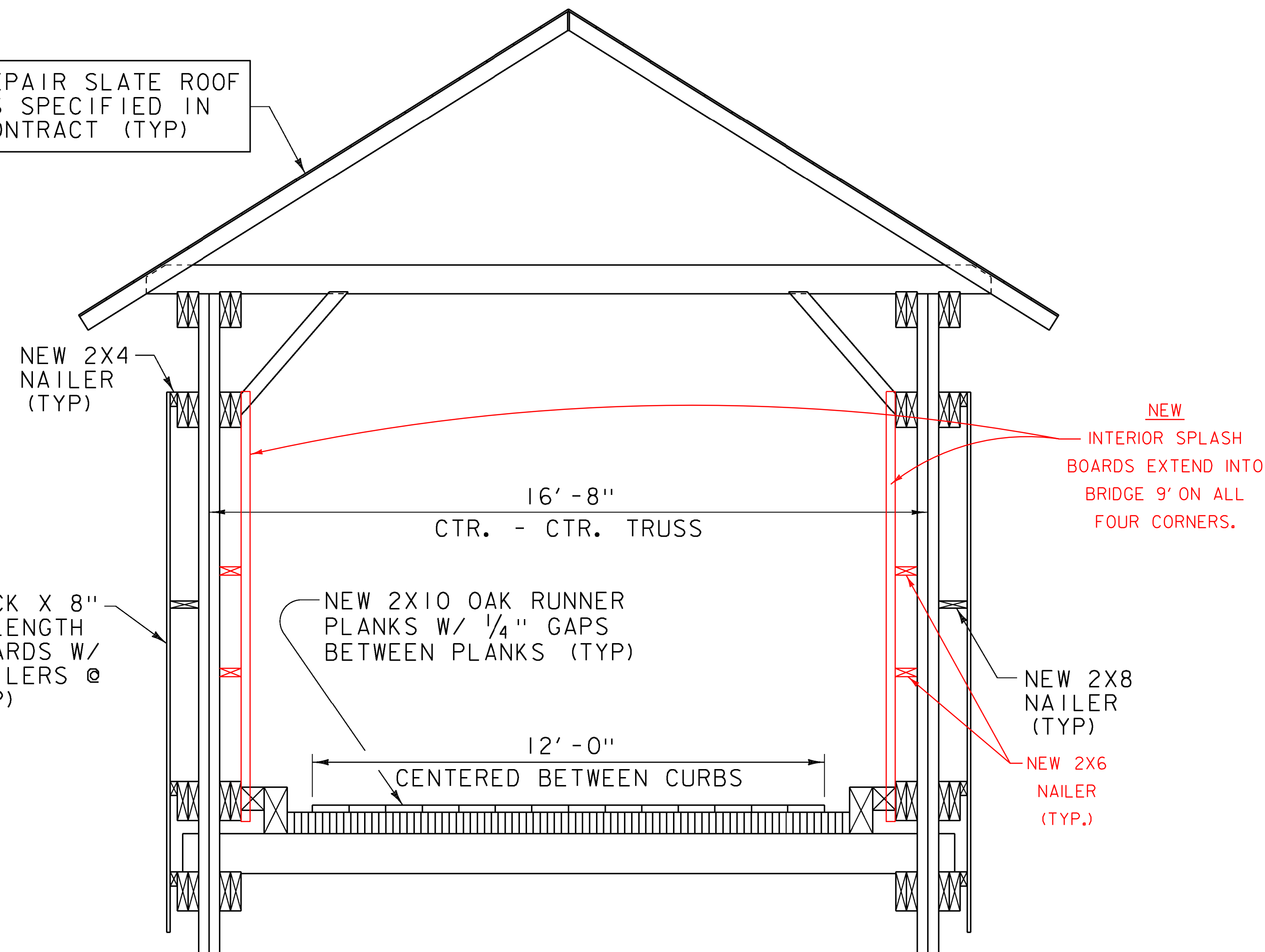
QUALITY ASSURANCE PROGRAM : LEVEL
SURVEYED BY :
SURVEYED DATE :
DATUM
VERTICAL
HORIZONTAL

DIRECTOR OF PROJECT DELIVERY
APPROVED: <i>[Signature]</i> DATE: 11/20/2014
PROJECT MANAGER : MARK SARGENT
PROJECT NAME : SHREWSBURY
PROJECT NUMBER : BHO 1443 (49)
SHEET 1 OF 23 SHEETS

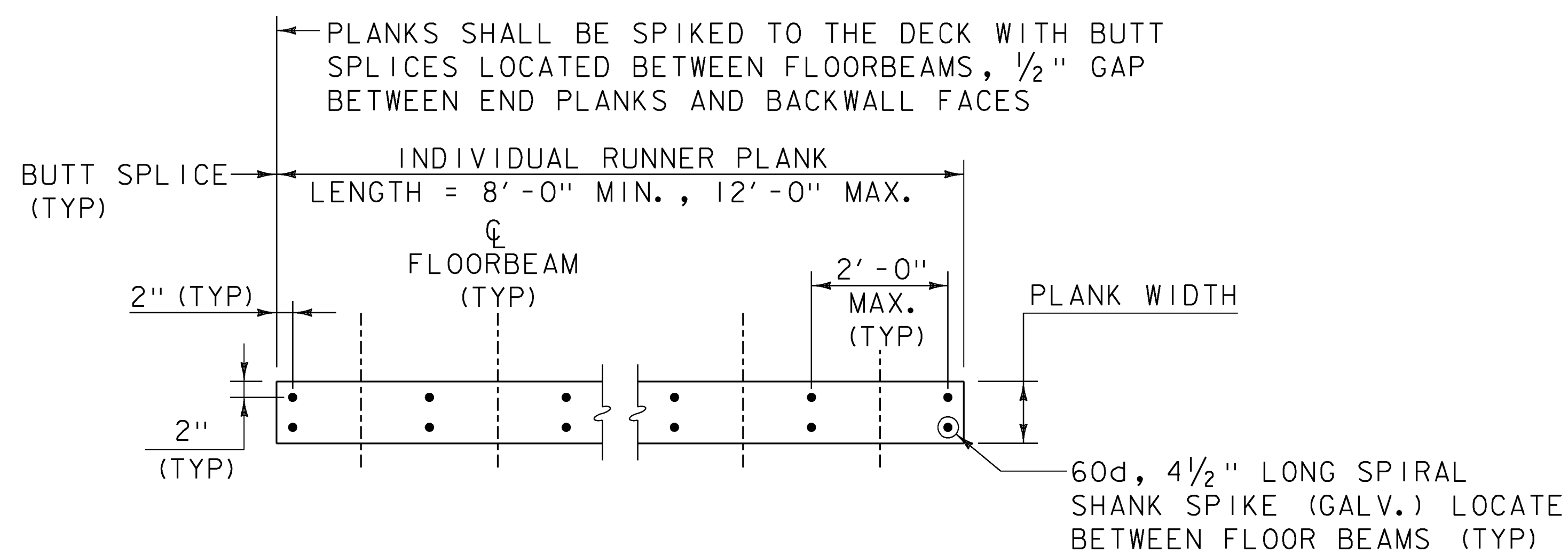


EXISTING  
CROSS SECTION  
NOT TO SCALE

REPAIR SLATE ROOF  
AS SPECIFIED IN  
CONTRACT (TYP)



NEW CROSS SECTION  
NOT TO SCALE



RUNNER PLANK ATTACHMENT DETAIL  
NOT TO SCALE

PROJECT NAME: Shrewsbury  
PROJECT NUMBER: BHO 1443(49)

FILE NAME: I2J350Typicals.dgn  
PROJECT LEADER: Sargent  
DESIGNED BY: Weaver  
Typical Sections (I)

PLOT DATE: 06-NOV-2014  
DRAWN BY: Weeber  
CHECKED BY: Weaver  
SHEET 2 OF 23



Project Name: SAREWSBURY Project No.: BHO 1443(49) Page 1 of 1  
CES: 15013002 PPMs: 12J350 Date 09-21-15  
Line No.: 0140 Computed By: A. LAVIGNE Date  
Checked By:

Item: 522.20 STRUCTURAL LUMBER AND TIMBER, UNTREATED

# RUNNER PLANK SEQUENCE

6'	(7) @ 12'	6'	11'
8'	(6) @ 12'	6'	12'
10'	(6) @ 12'	9.5'	9.5'
12'	(6) @ 12'	11'	12'
6'	(7) @ 12'	6'	11'
8'	(6) @ 12'	6'	12'
10'	(6) @ 12'	9.5'	9.5'
12'	(7) @ 12'		11'
10'	(6) @ 12'	9.5'	9.5'
8'	(6) @ 12'	6'	12'
6'	(7) @ 12'	6'	11'
12'	(6) @ 12'	11'	12'
10'	(6) @ 12'	9.5'	9.5'
8'	(6) @ 12'	6'	12'
6'	(7) @ 12'	6'	11'

2" x 10" x 12'

2" x 6" FASCIA

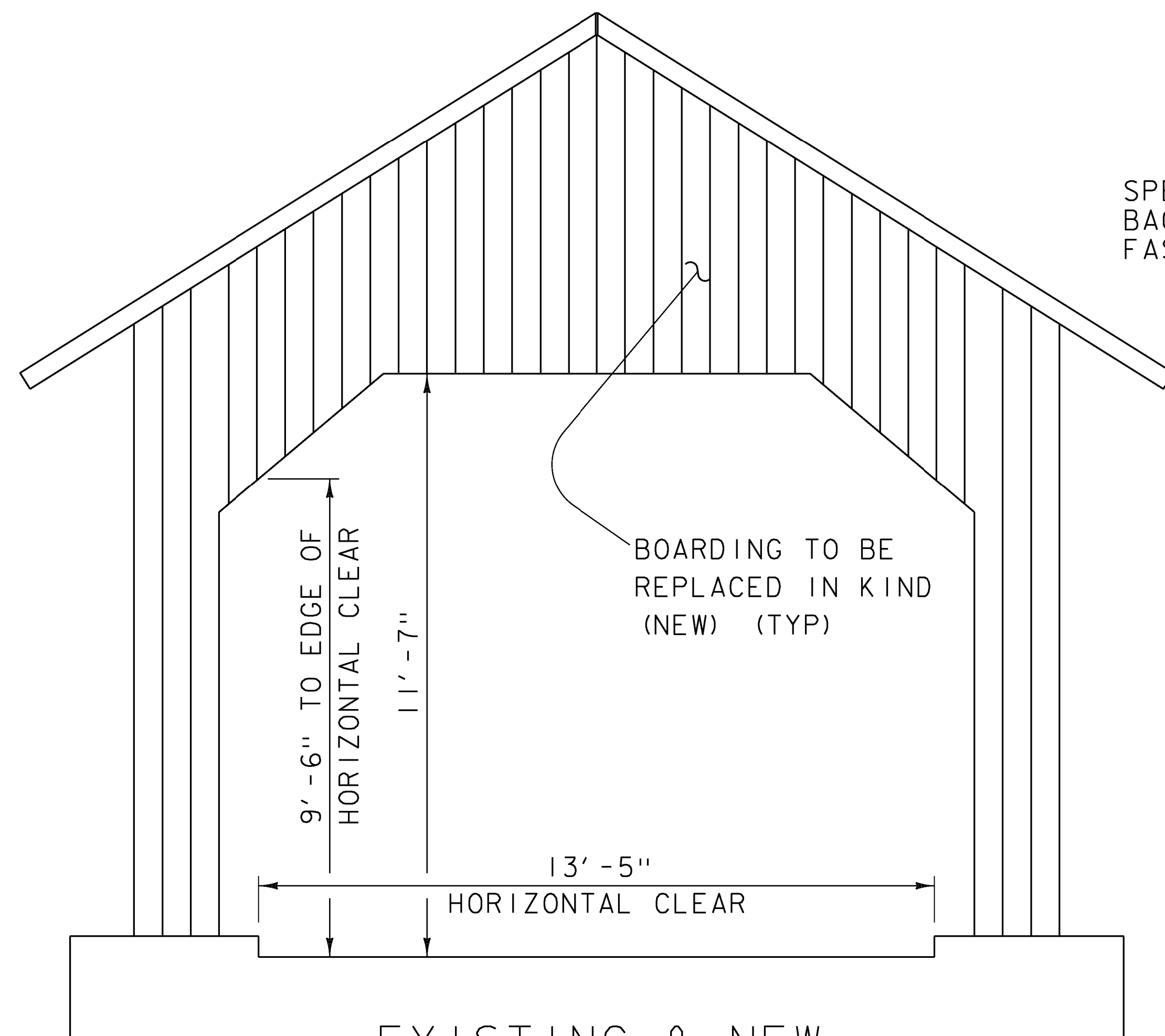
2" x 10" x 12'

2" x 6" FASCIA

2" x 10"

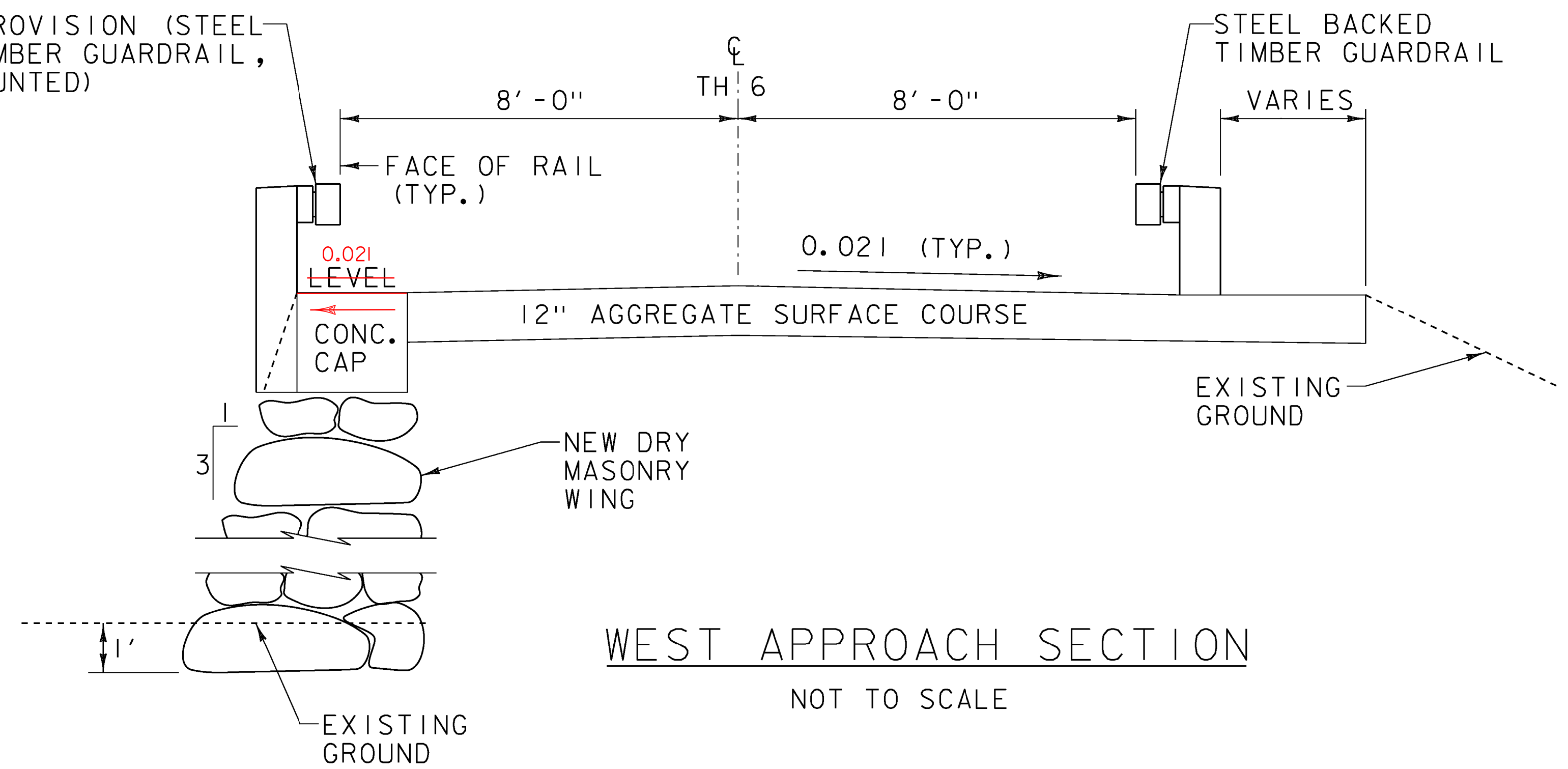
2" x 10"

NOTE: FASCIA PLANKS 2" X 6" ALL OTHER PLANKS 2" X 10"



EXISTING & NEW  
END VIEW  
NOT TO SCALE

SPECIAL PROVISION (STEEL BACKED TIMBER GUARDRAIL, FASCIA MOUNTED)



WEST APPROACH SECTION  
NOT TO SCALE

PROJECT NAME: Shrewsbury  
PROJECT NUMBER: BHO 1443(49)

FILE NAME: I2J350Typicals.dgn  
PROJECT LEADER: Sargent  
DESIGNED BY: Weaver  
Typicals Sections (2)

PLOT DATE: 03-NOV-2014  
DRAWN BY: Weeber  
CHECKED BY: Weaver  
SHEET 3 OF 23

# QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES

TOTALS

DESCRIPTIONS

DETAILED SUMMARY OF QUANTITIES

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	FULL C. E. ITEMS	BRIDGE	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
							1				1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				
							1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
										150	150		CY	STRUCTURE EXCAVATION	204.25				
										39	39		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
							54				54		CY	AGGREGATE SURFACE COURSE	401.10				
										8	8		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34				
										350	350		LB	REINFORCING STEEL, LEVEL I	507.11				
										1	1		GAL	WATER REPELLENT, SILANE	514.10				
										3.9	3.9		MFBM	STRUCTURAL LUMBER AND TIMBER, UNTREATED	522.20				
										3.5	3.5		MFBM	NONSTRUCTURAL LUMBER, UNTREATED	522.30				
										1	1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20				
										65	65		CY	DRY MASONRY	602.20				
										15	15		CY	REBUILT STONE MASONRY	602.35				
										33	33		SY	REPAIRING STONE MASONRY	602.40				
										15	15		CY	STONE FILL, TYPE II	613.11				
							24				24		LF	PLANK RAIL	621.15				
							31				31		LF	STEEL BACKED TIMBER GUARDRAIL	621.18				
							2				2		EACH	REMOVAL AND DISPOSAL OF GUIDE POSTS	621.81				
									1		1		LS	FIELD OFFICE, ENGINEERS	631.10				
									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				
										30	30		SY	GEOTEXTILE UNDER STONE FILL	649.31				
								20			20		SY	GEOTEXTILE FOR SILT FENCE	649.51				
								10			10		LB	SEED	651.15				
								10			10		LB	FERTILIZER	651.18				
								0.2			0.2		TON	AGRICULTURAL LIMESTONE	651.20				
								1			1		TON	HAY MULCH	651.25				
								4			4		CY	TOPSOIL	651.35				
								10			10		SY	TEMPORARY EROSION MATTING	653.20				
								10			10		CY	VEHICLE TRACKING PAD	653.35				
								150			150		LF	PROJECT DEMARCATION FENCE	653.55				
							35				35		SF	TRAFFIC SIGNS, TYPE A	675.20				
							110				110		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
										12	12		EACH	SPECIAL PROVISION (Slate Roof Repairs)	900.620				
										16	16		EACH	SPECIAL PROVISION (Wood Epoxy Repairs)	900.620				
							43				43		LF	SPECIAL PROVISION (Steel Backed Timber Guardrail - Fascia Mounted)	900.640				
										1	1		LS	SPECIAL PROVISION (Rehabilitating Covered Bridge Superstructure)	900.645				
										1	1		LS	SPECIAL PROVISION (Timber Coating, Environmental Protection)	900.645				
										1	1		LS	SPECIAL PROVISION (Timber Coating, Fire Retardant)	900.645				

PROJECT NAME:	<b>Shrewsbury</b>
PROJECT NUMBER:	<b>BHO 1443(49)</b>
FILE NAME: 12j350Q.xls	PLOT DATE: 12/04/2014
PROJECT LEADER: Mark Sargent	DRAWN BY: Curt Weeber
DESIGNED BY: John Weaver	CHECKED BY: John Weaver
QUANTITY SHEET #1	SHEET 4 OF 23



GENERAL NOTES:

- 1 ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 2002, AND ITS LATEST REVISIONS, AND THE CURRENT MUTCD.
- 2 ALL INFORMATION PROVIDED IN THE PLANS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING THE WORK.
- 3 FOUNDATION WORK AND OTHER WORK SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.
- 4 ALL WORK IS TO BE COMPLETED WITHIN THE AVAILABLE TOWN-OWNED RIGHT-OF-WAY, ASSUMED TO BE 3 RODS WIDE. THE R.O.W. IS ASSUMED TO BE CENTERED ABOUT THE CENTER LINE OF THE BRIDGE OR ROADWAY. NO PROVISIONS HAVE BEEN MADE TO GO OUTSIDE THE EXISTING RIGHT-OF-WAY, AND NO WORK SHALL BE PERFORMED OR PAID FOR OUTSIDE OF EXISTING TOWN-OWNED RIGHT-OF-WAY LIMITS. SHOULD THE CONTRACTOR REQUIRE ANY ADDITIONAL R.O.W., IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL EASEMENTS.
- 5 GREAT CARE SHALL BE TAKEN BY THE CONTRACTOR TO PREVENT ANY MATERIAL FROM ENTERING THE STREAMBED, PER SECTION 105 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. ANY MATERIAL THAT DOES ESCAPE THE CONTRACTOR'S CONTAINMENT SYSTEM WILL BE RECOVERED IMMEDIATELY.
- 6 IT IS NOT ANTICIPATED THAT ANY UTILITIES WILL REQUIRE ADJUSTMENT. THE CONTRACTOR IS CAUTIONED TO PROTECT THESE FACILITIES FROM DAMAGE. ALL DAMAGE TO UTILITIES AS A RESULT OF THE CONTRACTOR'S OPERATIONS, WILL BE REPAIRED AT NO COST TO THE STATE. SHOULD THE CONTRACTOR DESIRE UTILITY RELOCATIONS FOR THE CONTRACTOR'S OWN BENEFIT, ALL COSTS WILL BE THE CONTRACTOR'S RESPONSIBILITY. SEE THE UTILITY SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
- 7 ALL WORK SHALL PROCEED IN A CAREFUL, ORDERLY MANNER SO THAT THIS HISTORIC STRUCTURE IS NOT DAMAGED IN ANY WAY. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL DAMAGE TO THE STRUCTURE AS A RESULT OF THE CONTRACTOR'S OPERATIONS, AT NO COST TO THE STATE. ALL DAMAGE WILL BE REPORTED TO THE PROJECT MANAGER IMMEDIATELY, AND NO REPAIRS WILL BE MADE UNTIL APPROVED BY THE AGENCY.
- 8 ALL TRAFFIC CONTROL DEVICES, INCLUDING BUT NOT LIMITED TO SIGNS, BARRELS, BARRICADES, CONES, AND BARRIERS, NECESSARY FOR MAINTENANCE OF TRAFFIC DURING CONSTRUCTION, WILL BE PAID UNDER ITEM 641.10, 'TRAFFIC CONTROL'. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR REVIEW.
- 9 ESTIMATED QUANTITIES OF STRUCTURAL LUMBER AND TIMBER, UNTREATED, AND NON-STRUCTURAL LUMBER, UNTREATED HAVE BEEN INCLUDED FOR THE LATTICE, RUNNER, AND SIDING WORK, RESPECTIVELY. ALL 2"-4" THICK STRUCTURAL LUMBER AND TIMBER SHALL BE SPRUCE-PINE-FIR NO.1/NO.2 MEMBERS, EXCEPT RUNNERS. RUNNERS SHALL BE NO.1 WHITE OAK PLANKS, STRUCTURAL LUMBER AND TIMBER. ALL NON-STRUCTURAL LUMBER SHALL BE EASTERN HEMLOCK NO.1 COMMON BOARDS. FULL DIMENSIONED ROUGH FINISH STRUCTURAL (AND NON-STRUCTURAL) LUMBER SHALL BE USED AND PAID FOR UNDER ITEM 522.20 AND ITEM 522.30, RESPECTIVELY. ALL OTHER NEW TIMBER WORK DETAILED IN THE PLANS WILL BE INCLUDED FOR PAYMENT UNDER CONTRACT ITEM 900.645, SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE).
- 10 ALL TRUNNELS SHALL BE MADE FROM NO. 1 WHITE OAK.
- 11 ALL REMOVED MATERIAL WILL BECOME THE PROPERTY OF THE CONTRACTOR.
- 12 ESTIMATED QUANTITIES OF STRUCTURE EXCAVATION AND GRANULAR BACKFILL FOR STRUCTURES HAVE BEEN INCLUDED FOR EARTHWORK ADJACENT TO WORK REQUIRED FOR DRY MASONRY, REBUILT STONE MASONRY AND REPAIRING STONE MASONRY. EXCAVATION AND BACKFILL FOR EARTHWORK ADJACENT TO REBUILT STONE MASONRY AND REPAIRING STONE MASONRY SHALL BE AS DIRECTED BY THE ENGINEER.
- 13 NEW HEIGHT AND WEIGHT LIMIT SIGNS SHALL BE PLACED WITHIN 100 FEET OF THE BRIDGE PORTALS, AS DIRECTED BY THE ENGINEER. ALSO, NEW ONE LANE BRIDGE SIGNS SHALL BE PLACED AT LEAST 100 FEET FROM BRIDGE PORTALS, AS DIRECTED BY THE ENGINEER. SEE SHEET 18 FOR SIGN SUMMARY.
- 14 THE BRIDGE IS NOW CLOSED AND WILL REMAIN CLOSED DURING CONSTRUCTION. PRIOR TO ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF CONSTRUCTION FOR THE ENGINEER'S APPROVAL. THE SEQUENCE OF CONSTRUCTION SUBMITTAL WILL BE CONSIDERED INCIDENTAL TO THE WORK REQUIRED FOR ITEM 635.11, 'MOBILIZATION / DEMOBILIZATION'.
- 15 ACCESS ALONG THE UPPER (WESTERN) SEGMENT OF TH 6 LEADING TO THE STRUCTURE IS CLOSED TO TRAFFIC. ONLY THE EASTERN PORTION OF THE ROAD WILL REMAIN AVAILABLE FOR ACCESS.
- 16 WITHIN EXISTING R.O.W. LIMITS, CLEARING AND GRUBBING SHALL INCLUDE ALL WORK REQUIRED TO REMOVE TREES, STUMPS, AND VEGETATION UP TO 6 FEET FROM EXISTING ABUTMENT AND WINGWALL FACES, AND IN OTHER AREAS AS DETERMINED BY THE ENGINEER.
- 17 EXCEPT AS NOTED OTHERWISE, ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE, SHALL INCLUDE ANY WORK NECESSARY TO FACILITATE AND ACCOMPLISH THE PROJECT SCOPE OF WORK AS DEFINED BY THE CONTRACT DOCUMENTS AND AS DIRECTED BY THE ENGINEER: REMOVING AND DISPOSING OF SUPERSTRUCTURE MEMBERS AND PORTIONS OF MEMBERS; AS WELL AS REMOVING AND STOCKPILING MEMBERS AND PORTIONS OF MEMBERS FOR RE-USE, INCLUDING REMOVING AND STOCKPILING MEMBERS AND PORTIONS OF MEMBERS FOR THE CONTRACTOR'S METHODS OF REHABILITATION. NO BURNING OF REMOVED MATERIALS AT THE PROJECT SITE WILL BE ALLOWED. EXISTING COVERED BRIDGE LUMBER AND TIMBERS MAY CONTAIN HAZARDOUS WOOD PRESERVATIVES. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS REGARDING THE CONTRACTOR'S HANDLING OF THESE MATERIALS AND SUBSEQUENT USE, RE-USE, AND DISPOSAL OF THESE MATERIALS.
- 18 EXCEPT AS NOTED, ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1".
- 19 ALL LUMBER AND TIMBER DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE NOTED.
- 20 THE EXISTING CAMBER OF THE SUPERSTRUCTURE IS ASSUMED TO BE ADEQUATE AND IS TO BE MAINTAINED DURING REHABILITATION CONSTRUCTION ACTIVITIES, UNTIL COMPLETION OF THE PROJECT. SEE 'REHABILITATING COVERED BRIDGE SUPERSTRUCTURE' OF SECTION 900 OF THE SPECIAL PROVISIONS. AT THE BEGINNING AND END OF THE PROJECT, THE CONTRACTOR SHALL MEASURE EXISTING CAMBER, TAKE ROD SHOTS AT EACH PANEL POINT OR CROSS TIE LOCATION FOR EACH TRUSS, AND SUBMIT THESE RESULTS TO THE ENGINEER. PAYMENT IS INCIDENTAL TO ITEM 900.645, SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE).
- 21 TERMITICIDE/INSECTICIDE/FUNGICIDE COATING SHALL BE APPLIED TO ALL INTERIOR, UNSEALED SURFACES AND MEMBER JOINTS OF THE SUPERSTRUCTURE. SEE SECTION 900 - SPECIAL PROVISION ITEMS, TIMBER COATINGS.
- 22 NOCHAR FIRE PREVENTION COATING SHALL BE APPLIED TO ALL UNTREATED TIMBER SURFACES WITHIN THE INTERIOR OF THE SUPERSTRUCTURE. SEE SECTION 900 - SPECIAL PROVISION ITEMS, TIMBER COATINGS.
- 23 ANDEK POLASEAL E.F.M. FIRE RETARDANT/SEALER (CLEAR) SHALL BE APPLIED TO ALL UNTREATED TIMBER SURFACES OF THE EXTERIOR OF THE SUPERSTRUCTURE. SEE SECTION 900 - SPECIAL PROVISION ITEMS, TIMBER COATINGS.

PROJECT NAME:	Shrewsbury
PROJECT NUMBER:	BHO 1443(49)
FILE NAME:	I2J350Notes.dgn
PROJECT LEADER:	Sargent
DESIGNED BY:	Weaver
General Notes	
PLOT DATE:	11-DEC-2014
DRAWN BY:	Weeber
CHECKED BY:	Weaver
SHEET	6 OF 23

DRY MASONRY NOTES:

1. DUE TO THE HISTORIC NATURE OF THE BRIDGE AND ABUTMENTS, THE WORK FOR THIS PROJECT, AS DETAILED ON SHEET 14, REQUIRES THE EXPERTISE OF A STONE MASON WHO IS HIGHLY KNOWLEDGEABLE AND EXPERIENCED IN THE CONSTRUCTION OF DRY STONE MASONRY WALLS AND FASCIA. THE CONTRACTOR'S STONE MASON PERFORMING THE WORK MUST POSSESS AT LEAST FIVE YEARS EXPERIENCE IN THE CONSTRUCTION OF DRY STONE MASONRY WALLS. DOCUMENTATION OF EXPERIENCE, INCLUDING A LIST OF PREVIOUS PROJECTS AND REFERENCES, SHALL BE SUBMITTED TO THE ENGINEER.

2. THE FOUNDATION COURSE FOR NEW WALL CONSTRUCTION SHALL CONSIST OF LARGE STONES WITH FAIRLY UNIFORM PROFILE AND SUFFICIENTLY FLAT BASE TO PROVIDE AN EVEN LOAD DISTRIBUTION. THE LENGTH OF INDIVIDUAL FOUNDATION STONES (AS MEASURED PERPENDICULAR TO THE FACE OF WALL) SHALL BE AT LEAST ONE QUARTER TO NO LESS THAN ONE FIFTH OF THE HEIGHT OF THE WALL. WHERE STONES DO NOT EXTEND ACROSS THE FULL WIDTH OF THE BASE, THEY SHALL BE PARTNERED WITH SINGLE STONES TO MAKE UP THE DIFFERENCE; THESE 'PARTNERS' SHALL BE OF SIMILAR (BUT NOT GREATER) THICKNESS AS THE FACE STONES. UNLESS THE STONES ARE ALL (OR MUCH) THE SAME DIMENSION, SHORTER AND LONGER FOUNDATION STONES SHALL ALTERNATE ALONG THE LENGTH OF THE WALL.

3. TO WITHSTAND VIBRATION CAUSED BY VEHICULAR TRAFFIC, ALL NEW WALL SECTIONS SHALL BE BUILT USING LONG, HEAVY STONES OF SIMILAR SIZE THROUGHOUT, USING A GRADUAL DECREMENT IN SIZE (IN THE VERTICAL DIMENSION) FROM BOTTOM TO TOP. ALL STONES SHALL BE PLACED (LAID, SET) WITH THEIR LENGTH INTO THE WALL, i.e., THEIR LONG AXIS SHOULD BE PERPENDICULAR TO THE FACE OF THE WALL.

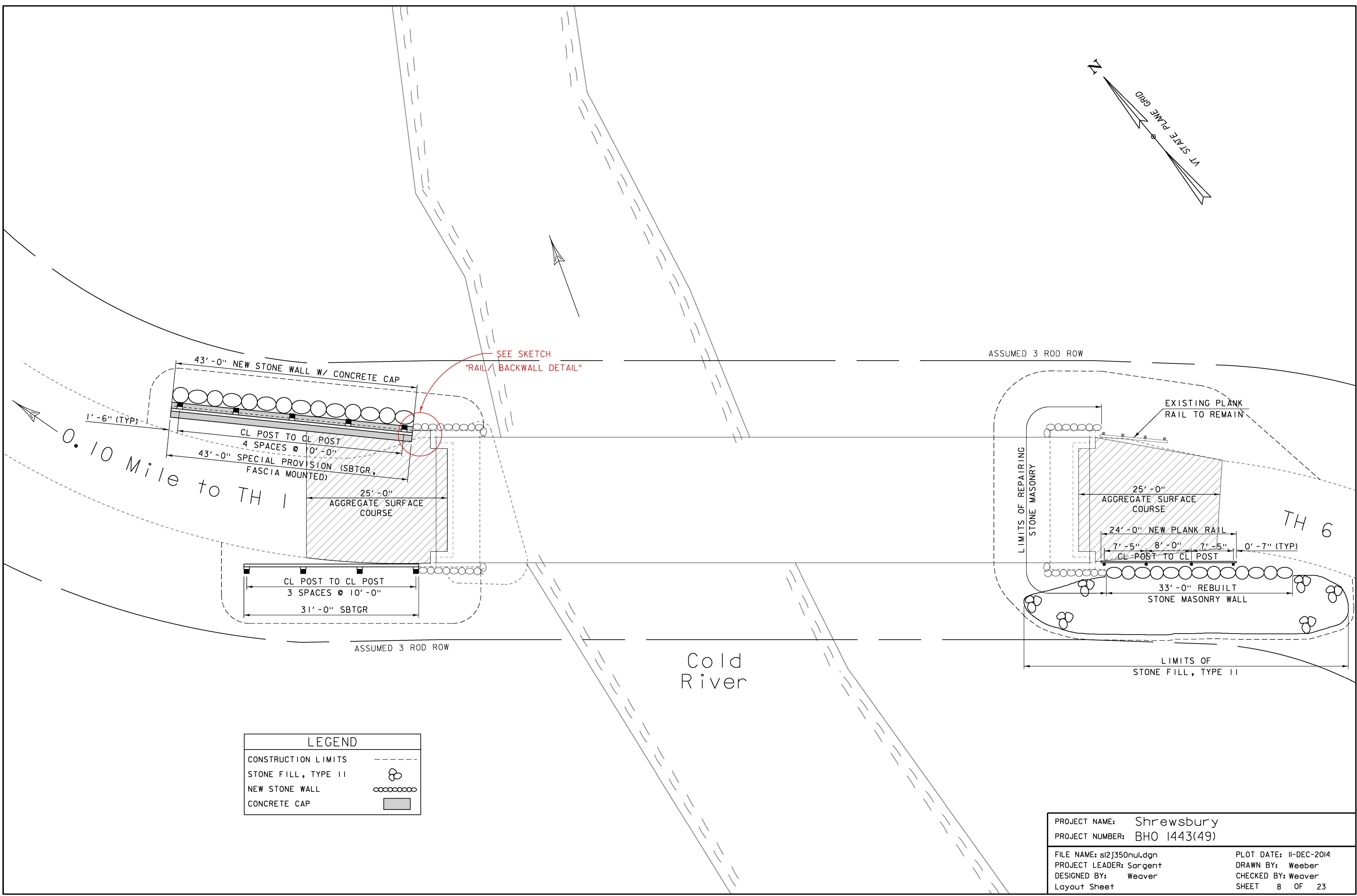
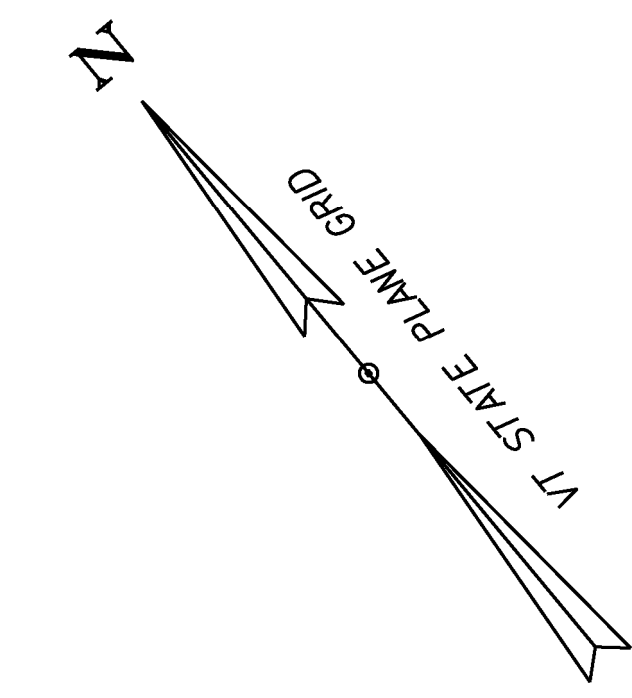
4. FOR NEW WALL CONSTRUCTION, FACE STONES SHALL BE OVERLAPPED BY 'BACK' STONES (THOSE LITERALLY ON THE BACK SIDE OF THE WALL) TO THE GREATEST EXTENT POSSIBLE. IN GENERAL, FACE STONES SHALL NOT BE SHORTER THAN ONE THIRD THE THICKNESS OF THE WALL. AS WITH THE FOUNDATION COURSE, BACK STONES SHALL NOT BE GREATER IN HEIGHT THAN THEIR CORRESPONDING FACE STONES.

5. FOR NEW WALL CONSTRUCTION, THROUGH STONES (THOSE ALL THE WAY THROUGH THE WALL) SHALL BE PLACED IN HORIZONTAL ROWS USING SPACINGS OF THREE FEET BETWEEN STONES AND TWO FEET, SIX INCHES BETWEEN ROWS (ASSUMING THAT THE STONES THEMSELVES ARE SMALLER THAN THESE DIMENSIONS). THIS IS ESPECIALLY IMPORTANT IF MORE THAN 30% OF THE FACE STONES ARE SHORTER THAN ONE HALF THE WIDTH OF THE WALL.

6. THE HEARTING (PACKING STONES) OF NEW WALL SECTIONS MUST BE DENSE AND SHALL CONSIST OF STONES APPROPRIATELY SIZED TO COMPLEMENT THE MAIN BUILDING STONES AND THROUGH STONES. THE PACKING STONES SHALL NOT BE TOO LARGE OR TOO SMALL. THE CHOICE AND PLACING OF PACKING STONES SHALL REQUIRE THE SAME EFFORT AS THE CHOICE AND PLACING OF FACE STONES.

7. NO MORTAR SHALL BE USED FOR CONSTRUCTION OF DRY MASONRY.

PROJECT NAME: Shrewsbury	
PROJECT NUMBER: BHO 1443(49)	
FILE NAME: I2J350Notes.dgn	PLOT DATE: 03-NOV-2014
PROJECT LEADER: Sargent	DRAWN BY: Weeber
DESIGNED BY: Weaver	CHECKED BY: Weaver
Dry Masonry Notes	SHEET 7 OF 23



SEE SKETCH  
"RAIL / BACKWALL DETAIL"

ASSUMED 3 ROD ROW

0.10 Mile to TH 1

TH 6

Cold River

ASSUMED 3 ROD ROW

LEGEND	
CONSTRUCTION LIMITS	---
STONE FILL, TYPE II	
NEW STONE WALL	
CONCRETE CAP	

PROJECT NAME:	Shrewsbury	PLOT DATE:	11-DEC-2014
PROJECT NUMBER:	BHO 1443(49)	DRAWN BY:	Weeber
FILE NAME:	sl2j350nul.dgn	CHECKED BY:	Weaver
PROJECT LEADER:	Sargent	SHEET	8 OF 23
DESIGNED BY:	Weaver		
Layout Sheet			



# VERMONT

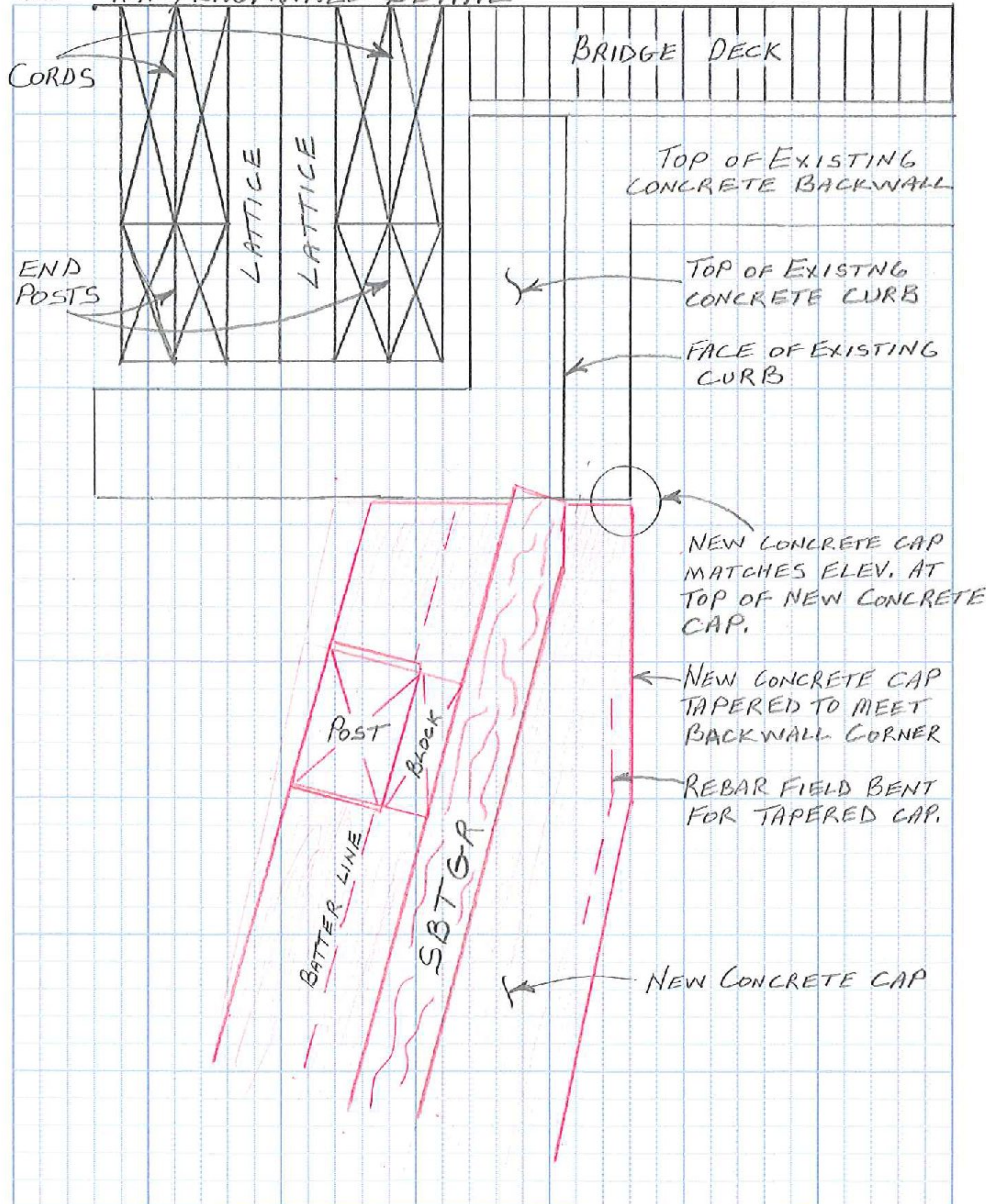
Vermont Agency Of Transportation  
Construction Section

Project Name: SHREWSBURY Project No.: BHO 1443(49) Page 1 of 1

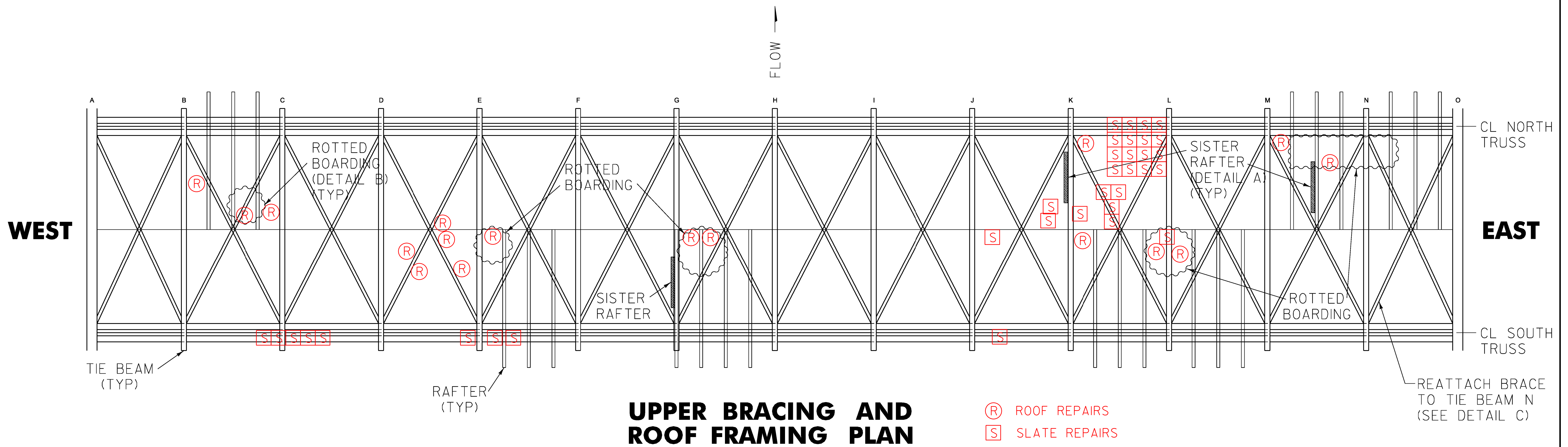
CES: 15013002 PPMS: 12J350

Line No.: \_\_\_\_\_ Computed By: A. LAVIGNE Date 11-17-15

Item: RAIL/BACKWALL DETAIL Checked By: \_\_\_\_\_ Date \_\_\_\_\_

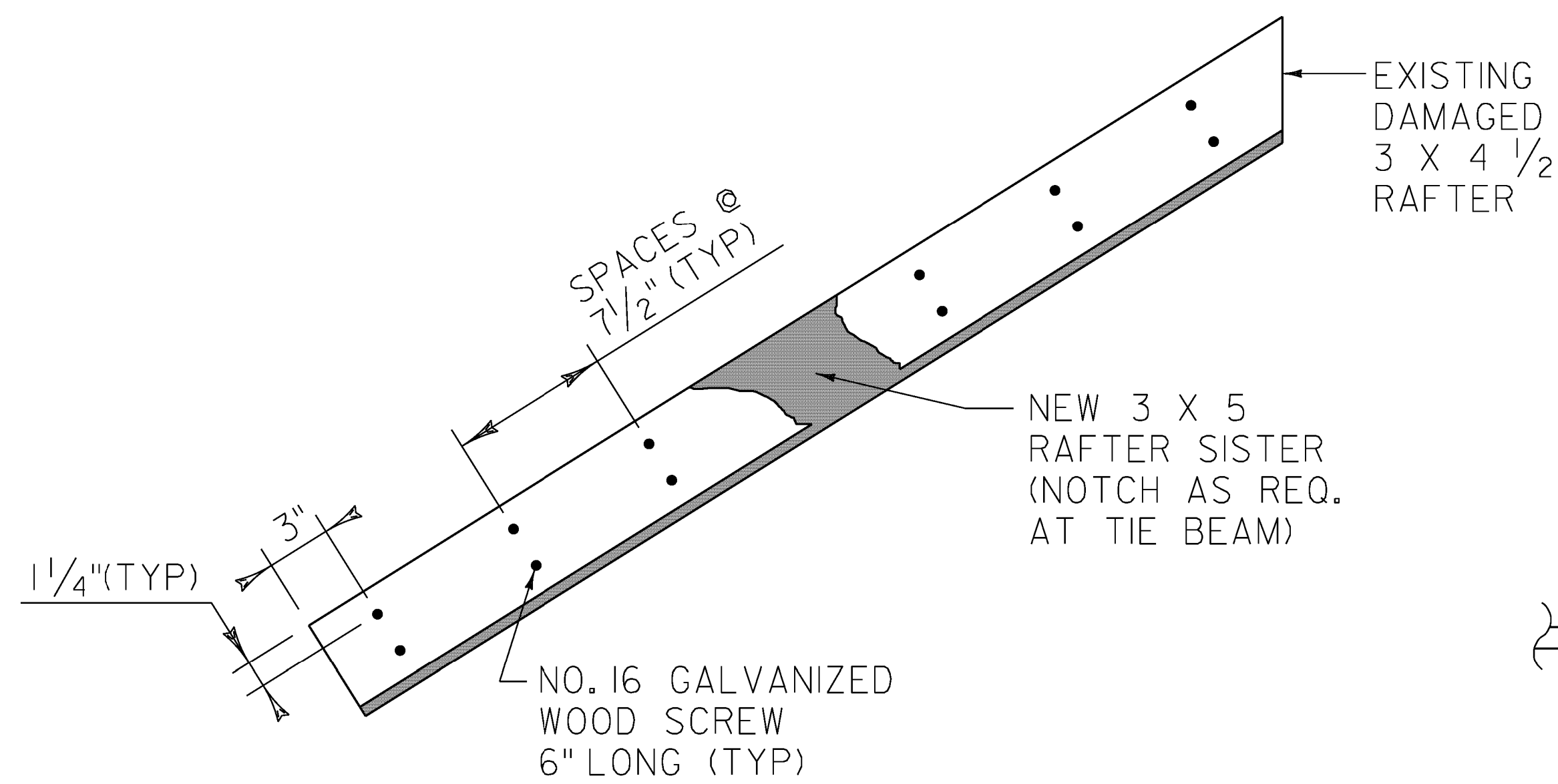




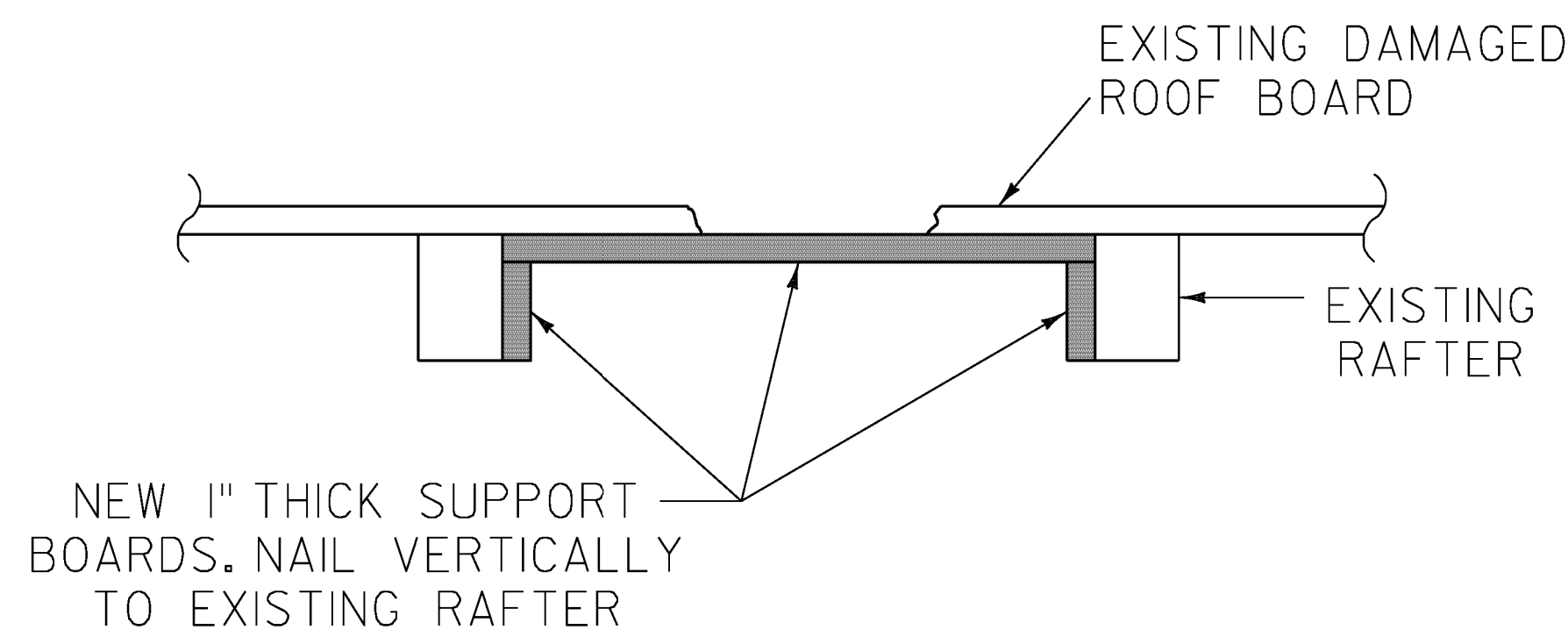


**UPPER BRACING AND ROOF FRAMING PLAN**

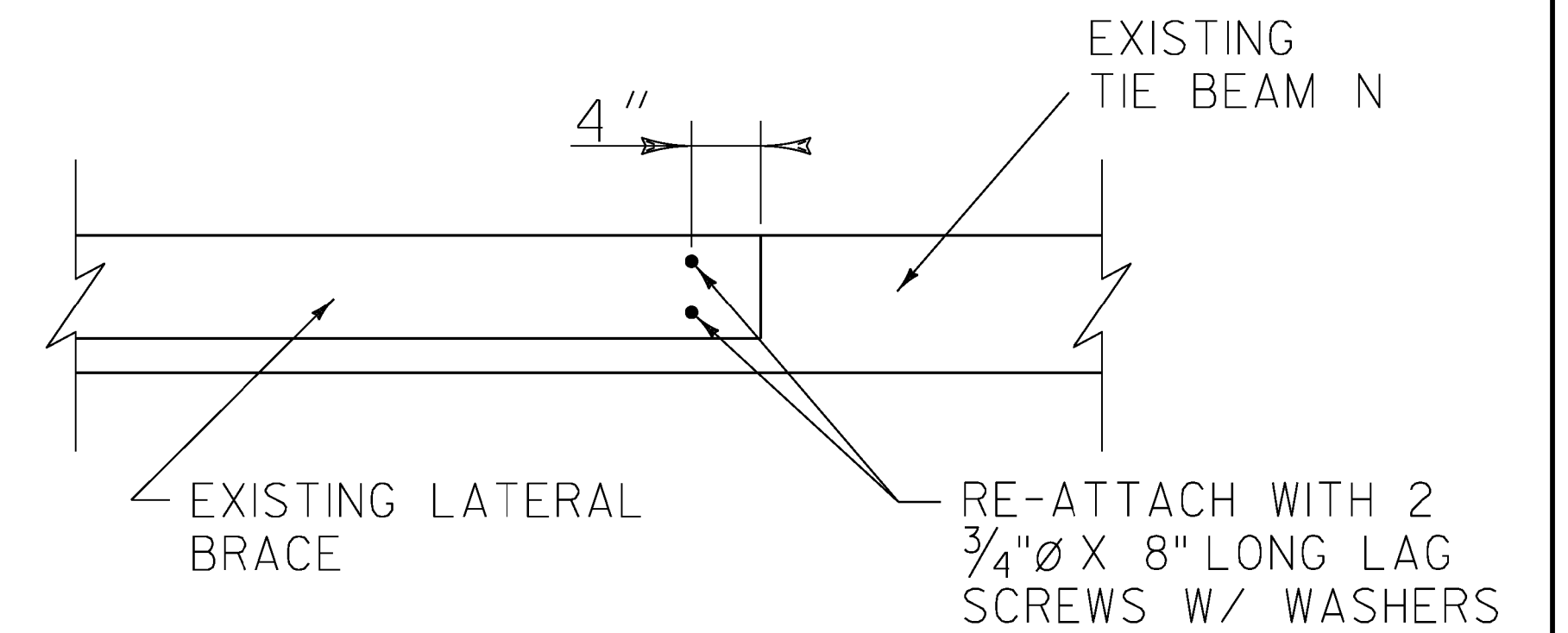
- Ⓡ ROOF REPAIRS
- Ⓢ SLATE REPAIRS



**DETAIL A  
RAFTER SISTER**

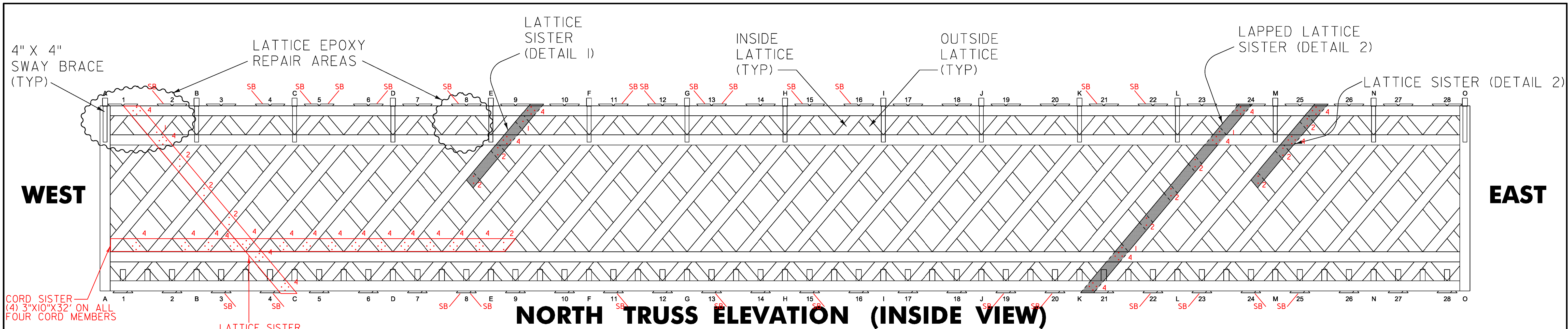


**DETAIL B  
ROOF SUPPORT BOARD**

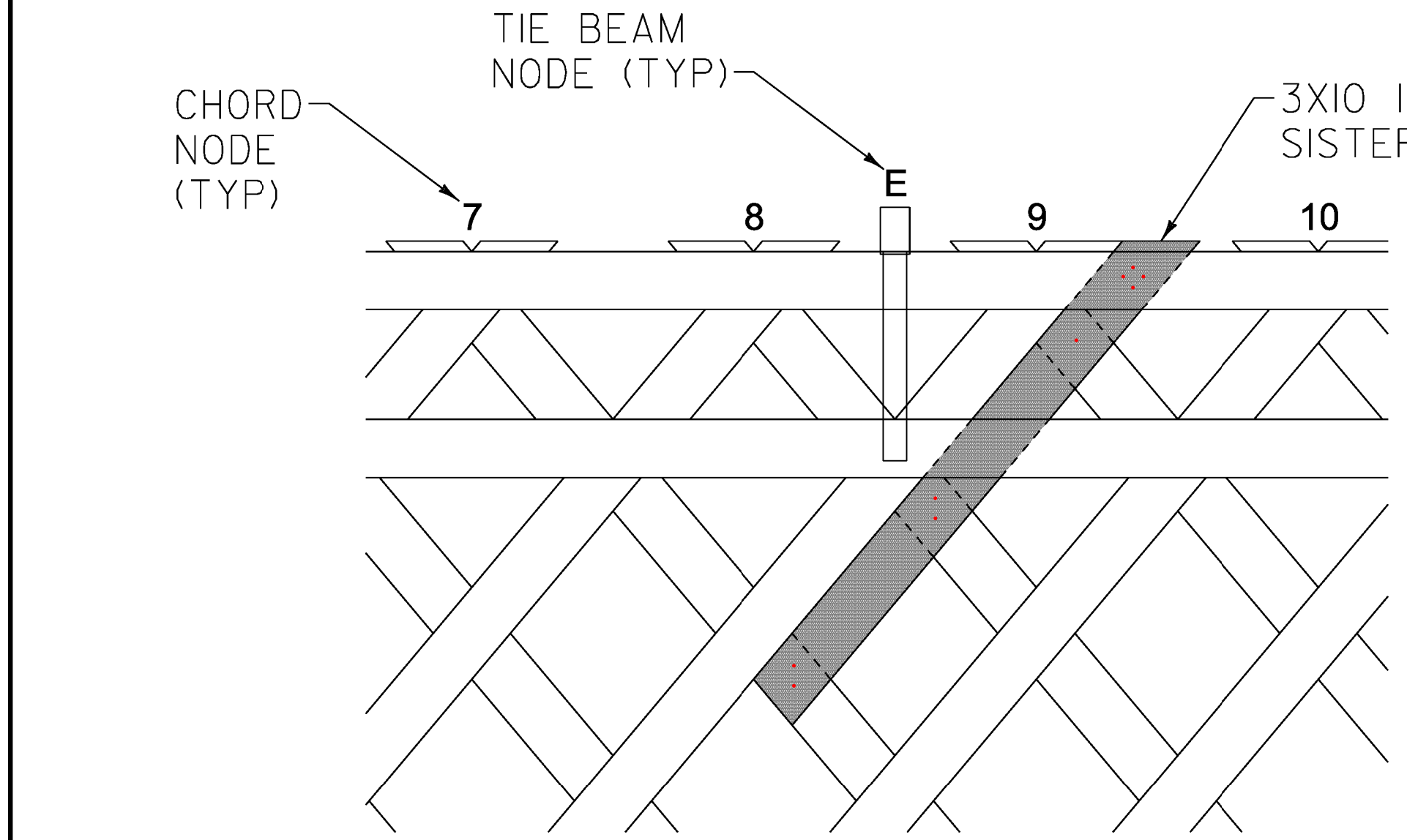


**DETAIL C  
LATERAL BRACE  
ATTACHMENT**

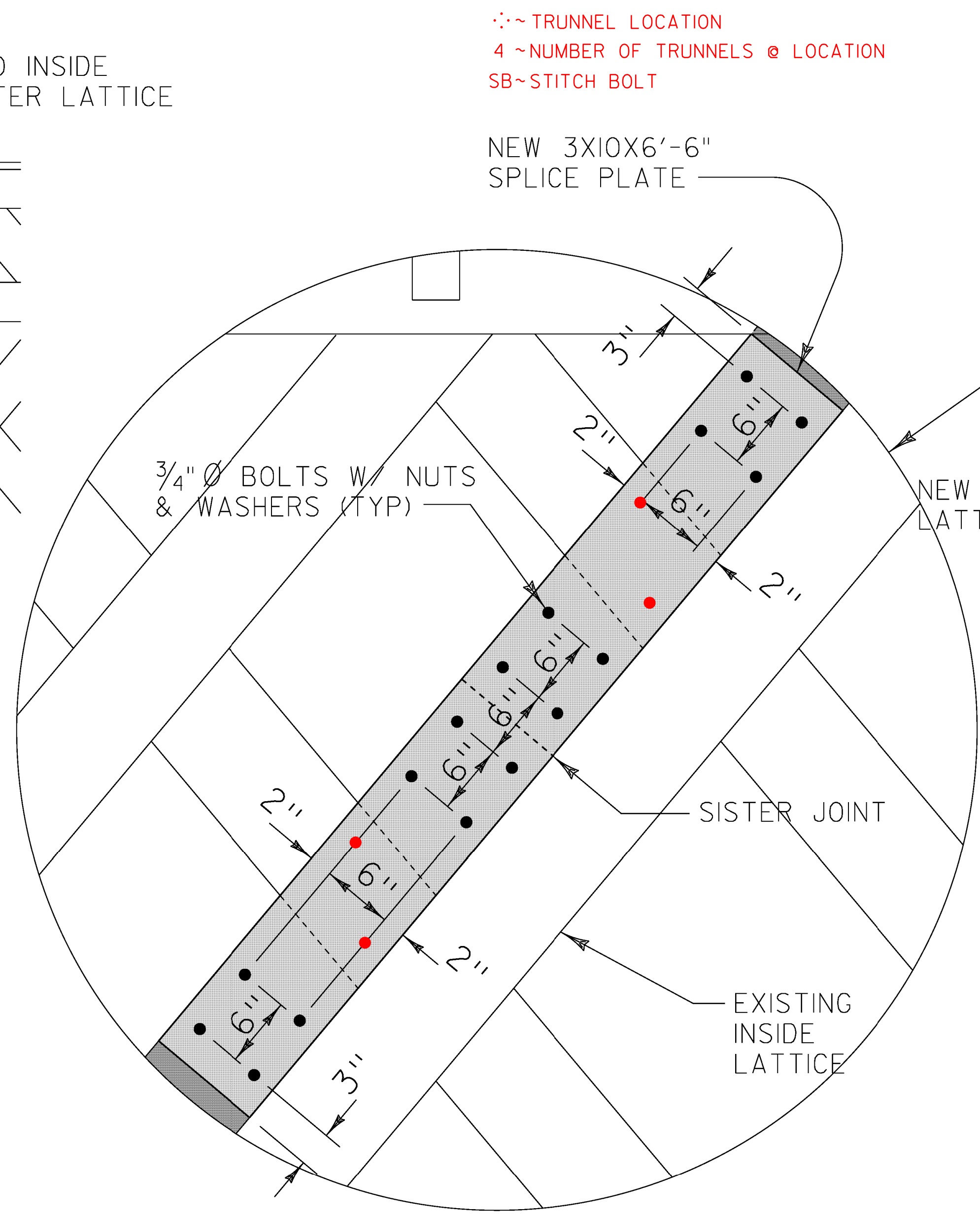
PROJECT NAME: SHREWSBURY	PLOT DATE: 18-NOV-2014
PROJECT NUMBER: BHO 1443(29)	DRAWN BY: STRI
FILE NAME: I2J350BridgeDetails	CHECKED BY: John Weaver
PROJECT LEADER: Mark Sargent	SHEET 10 OF 23
DESIGNED BY: John Weaver	
ROOF REPAIR DETAILS	



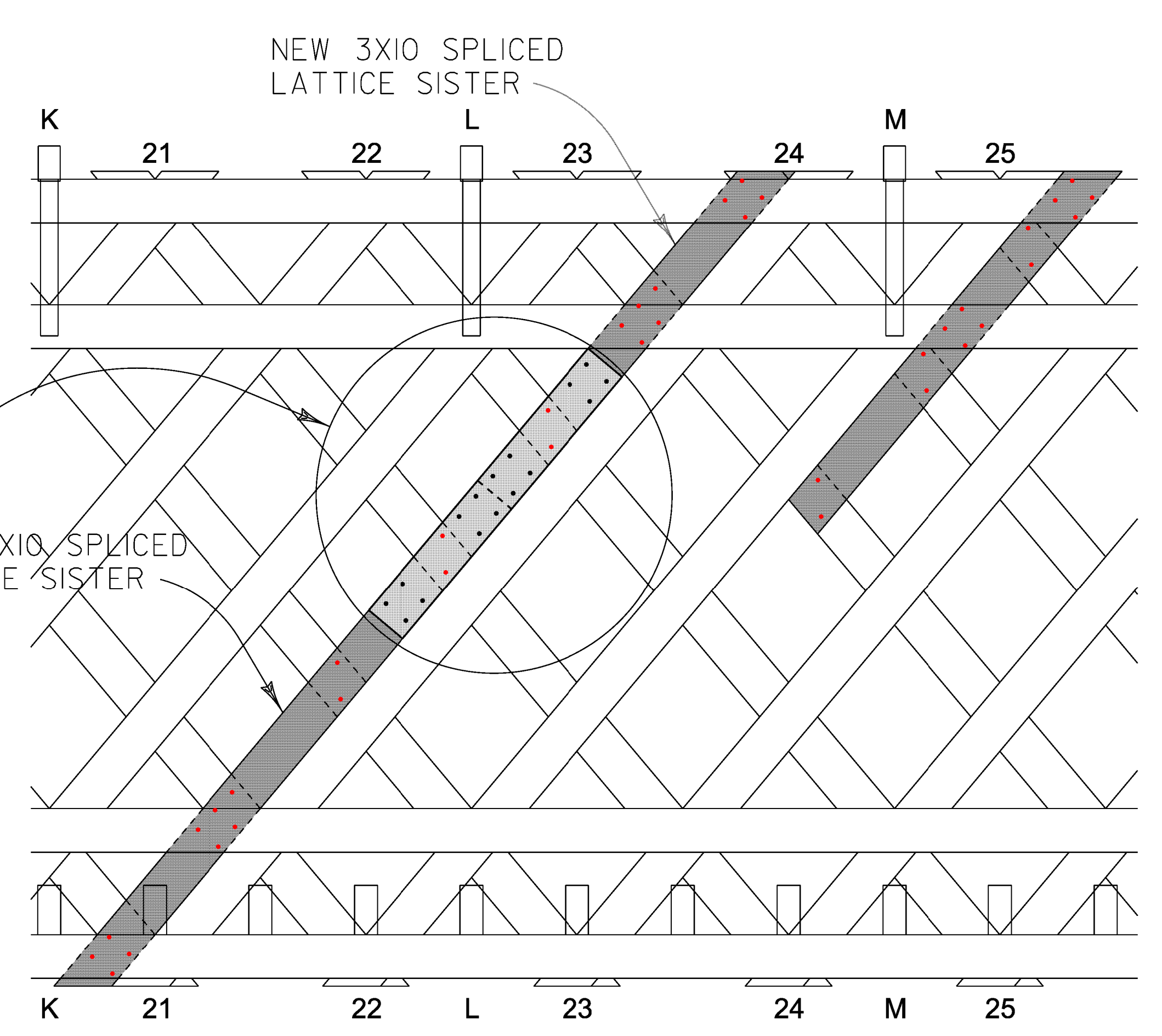
**NORTH TRUSS ELEVATION (INSIDE VIEW)**



**DETAIL 1**  
NTS



**BUTT SPLICE DETAIL**  
NTS



**DETAIL 2**  
NTS

LEGEND	
NEW SISTER	
NEW SPLICE PLATE	

PROJECT NAME:	SHREWSBURY	PLOT DATE:	14-NOV-2014
PROJECT NUMBER:	BHO 1443(29)	DRAWN BY:	STRI
FILE NAME:	I2J350BridgeDetails.dgn	CHECKED BY:	John Weaver
PROJECT LEADER:	Mark Sargent	SHEET	II OF 23
DESIGNED BY:	John Weaver		
NORTH TRUSS DETAILS			



NORTHWEST CORNER  
NEW BOLSTER BEAM  
AND BEARING BLOCKS

9-20-15  
TL2

4" X 4"  
SWAY BRACE  
(TYP)

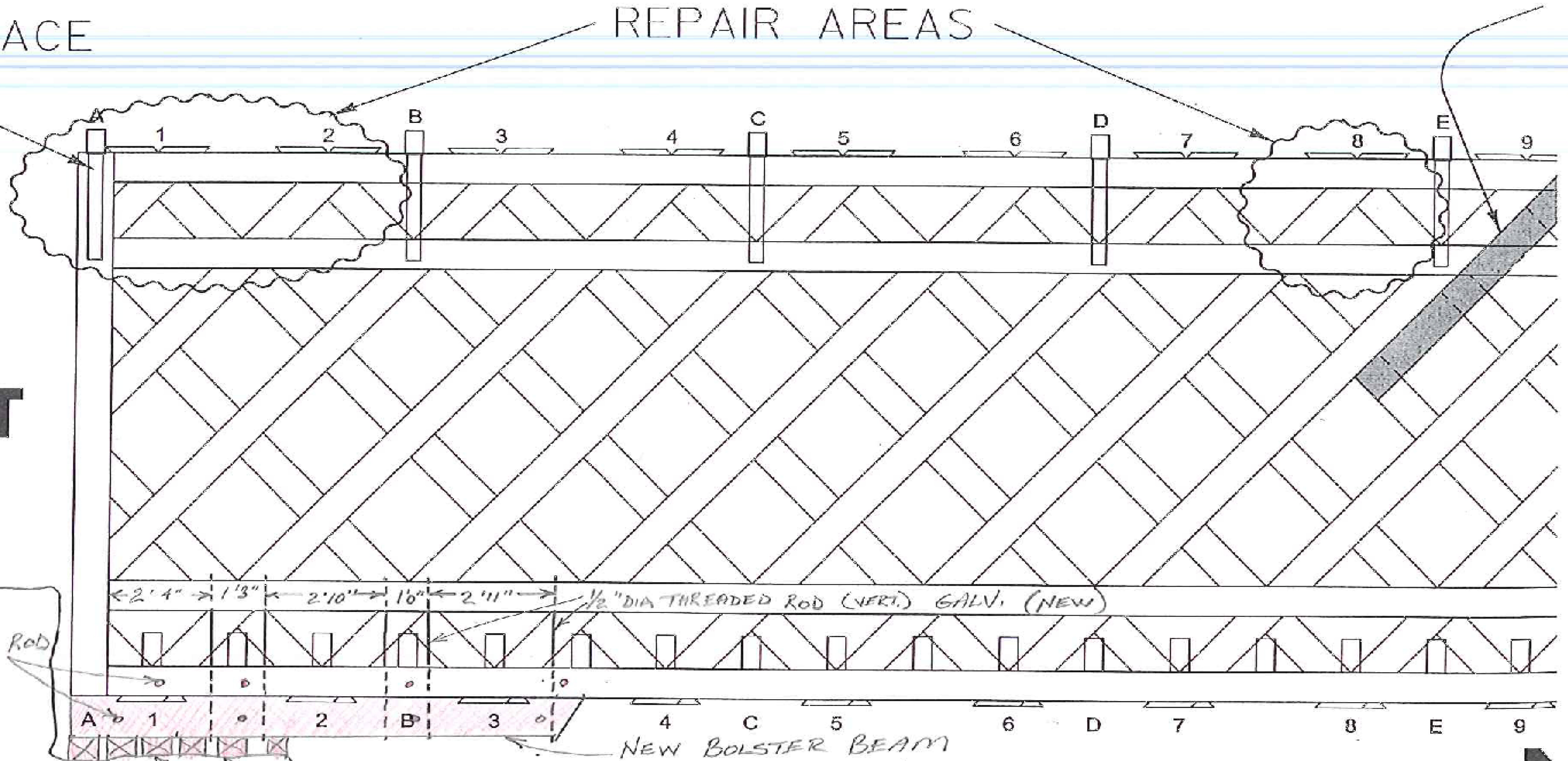
LATTICE EPOXY  
REPAIR AREAS

NORTH  
WEST

NEW  
1/2" DIA. THREADED ROD  
(HORZ.)  
GALV.

ABUTMENT

CHORD



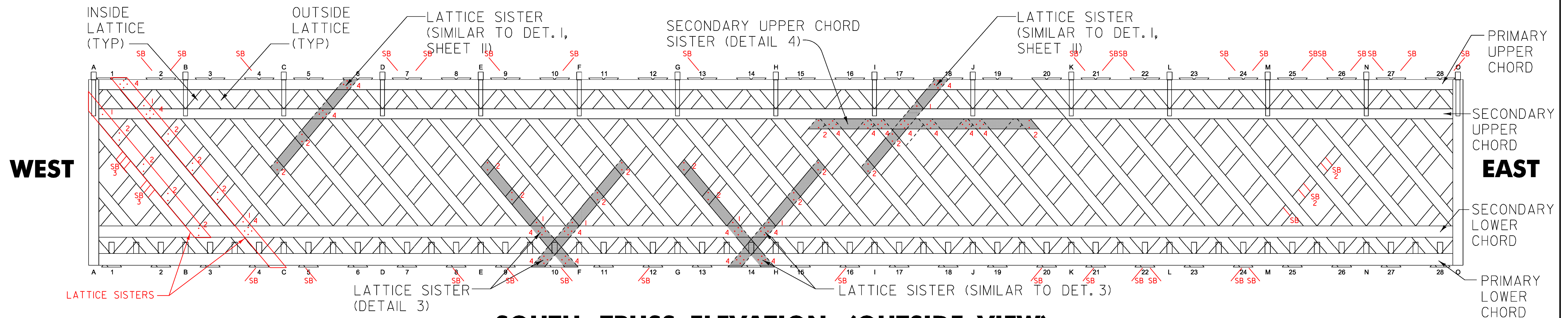
(6) NEW BEARING BLOCKS  
3" X 8" X 1'6" OAK  
(CUT TO FIT)

(2) 9" X 12" X 12"  
UNTREATED TIMBER

TIE BEAM  
NODE (TYP)

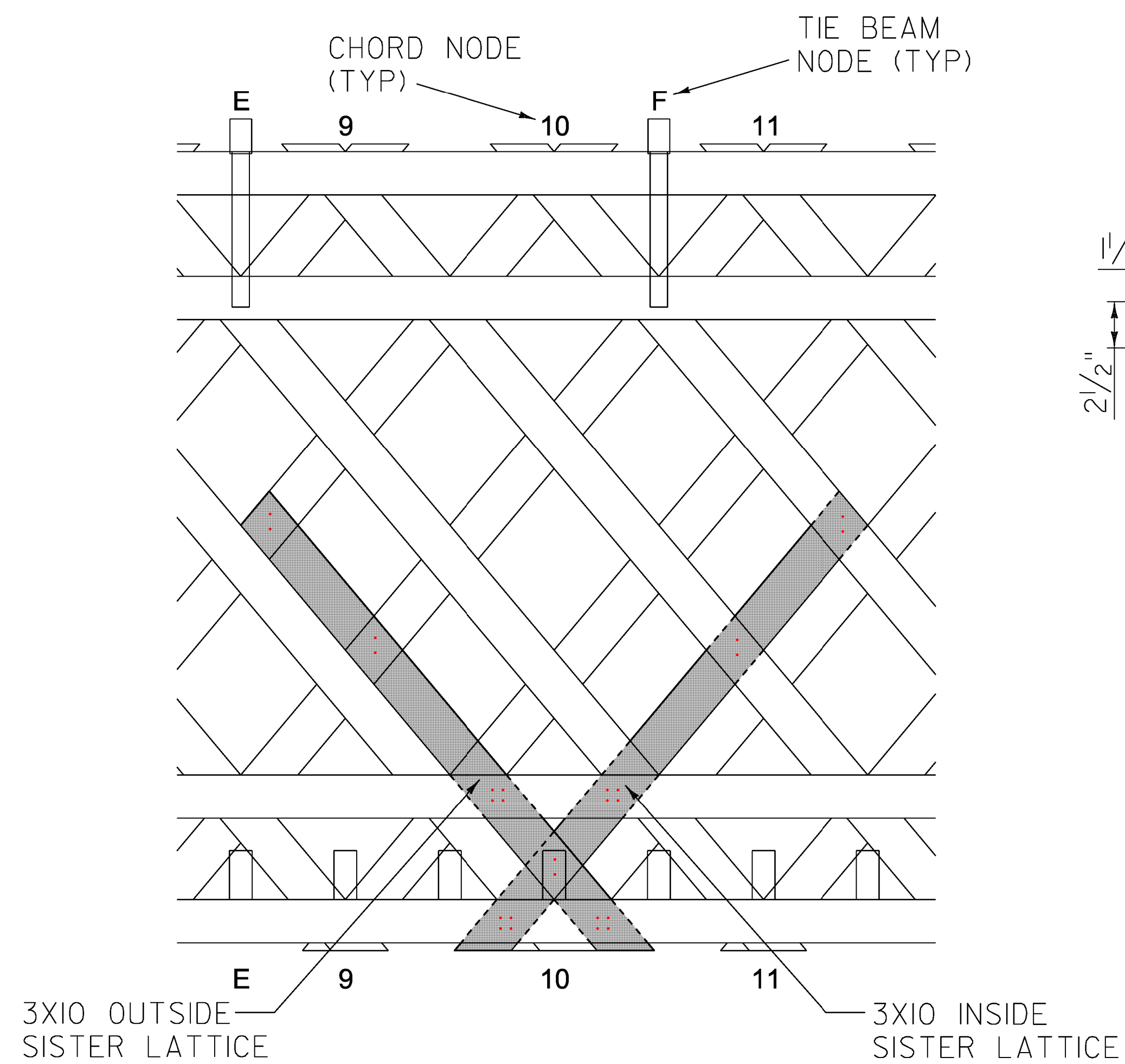
SHEET 11B REVISED

3X10 INSIDE



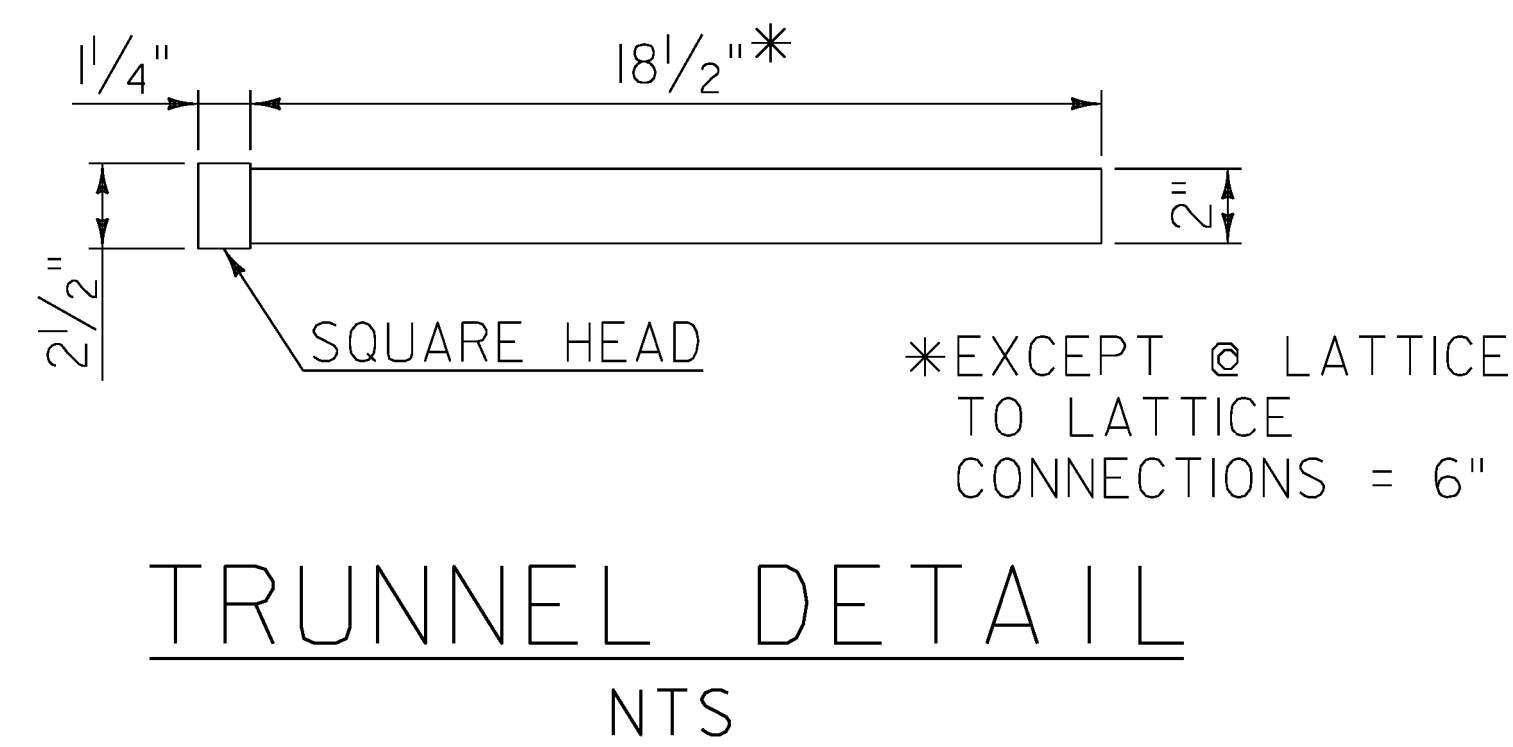
**SOUTH TRUSS ELEVATION (OUTSIDE VIEW)**

--- TRUNNEL LOCATION  
 4 ~ NUMBER OF TRUNNELS @ LOCATION  
 SB ~ STITCH BOLT



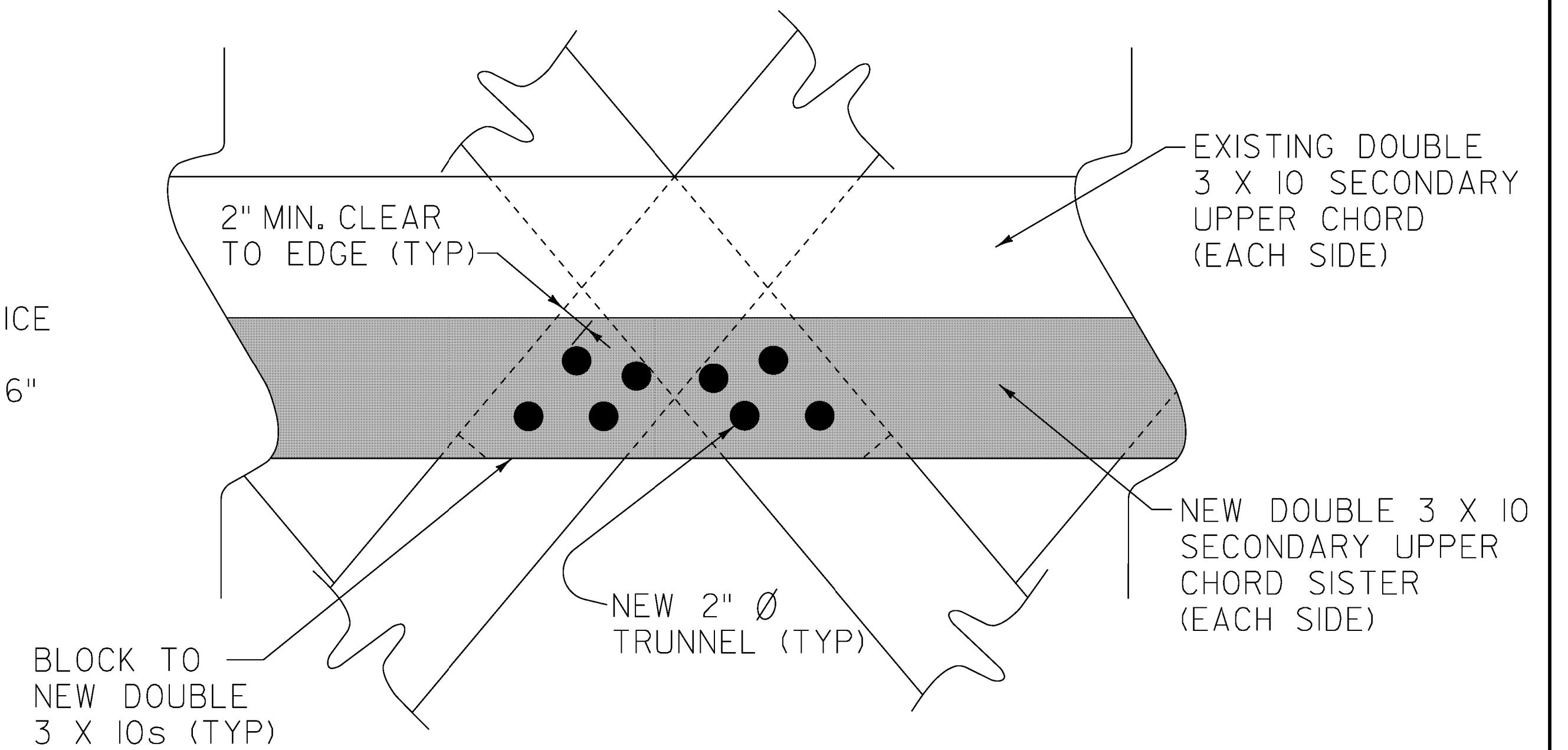
**DETAIL 3**

NTS  
 (ENLARGED ON SHEET 13)



**TRUNNEL DETAIL**

NTS



**DETAIL 4**

NTS

LEGEND	
NEW SISTER	
NEW TRUNNEL	

PROJECT NAME:	SHREWSBURY
PROJECT NUMBER:	BHO 1443(29)
FILE NAME:	I2J350BridgeDetails
PROJECT LEADER:	Mark Sargent
DESIGNED BY:	John Weaver
SOUTH TRUSS DETAILS	
PLOT DATE:	18-NOV-2014
DRAWN BY:	STRI
CHECKED BY:	John Weaver
SHEET	12 OF 23

SOUTH WEST CORNER  
 NEW BOLSTER BEAM  
 AND BEARING BLOCKS

9-20-15

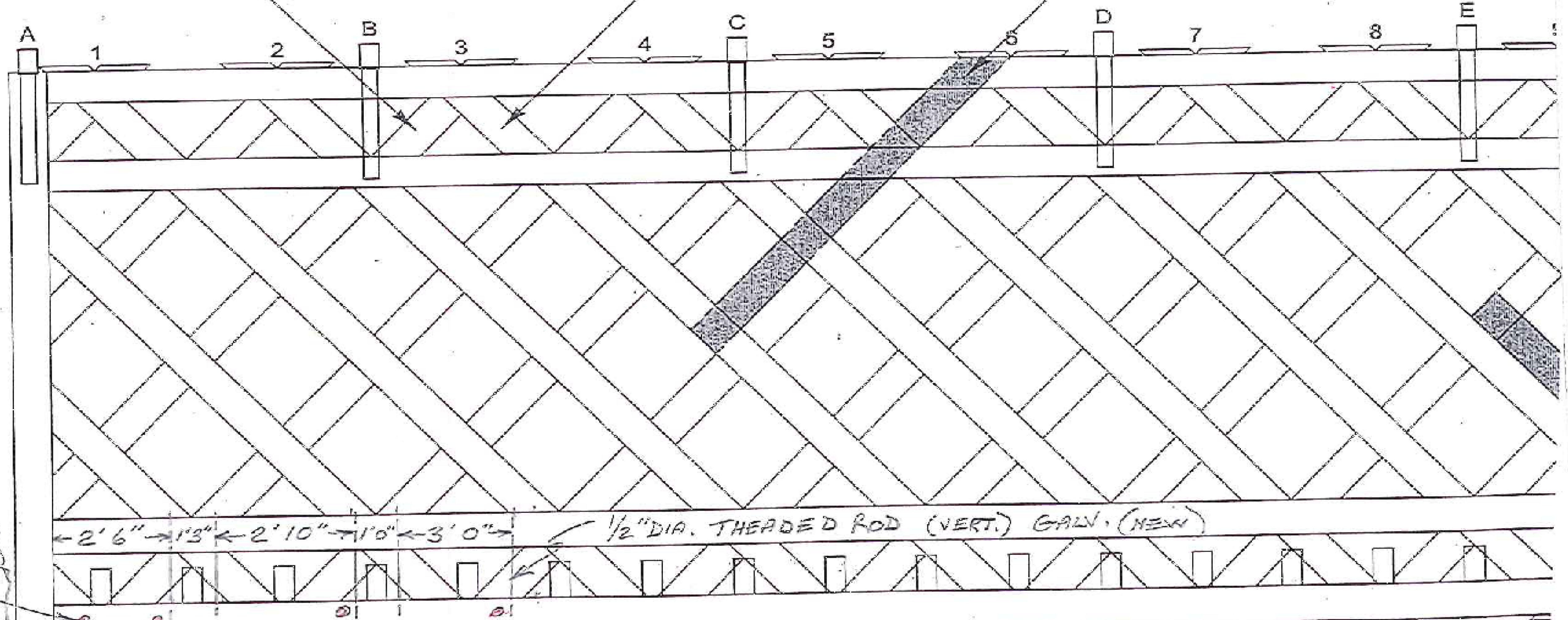
TL2

INSIDE  
 LATTICE  
 (TYP)

OUTSIDE  
 LATTICE  
 (TYP)

LATTICE S  
 (SIMILAR T  
 SHEET II)

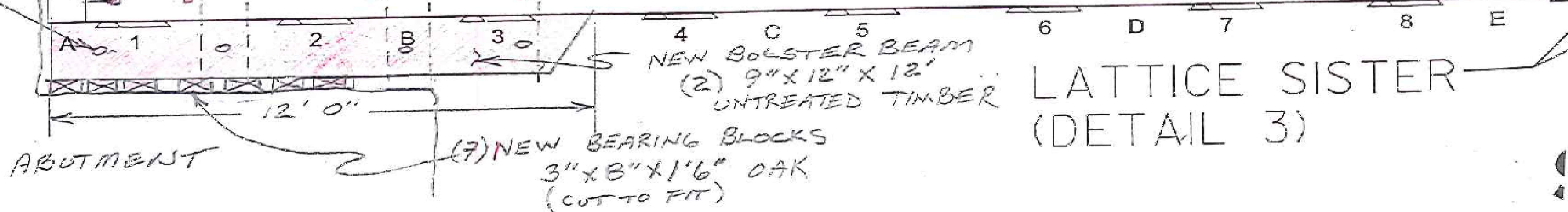
SOUTH  
**WEST**



NEW  
 1/2" DIA. THREADED ROD  
 (HORZ.)  
 GALV.

← 2' 6" → 1' 3" ← 2' 10" → 1' 0" ← 3' 0" →

1/2" DIA. THREADED ROD (VERT.) GALV. (NEW)



NEW BOLSTER BEAM  
 (2) 9" X 12" X 12"  
 UNTREATED TIMBER

(7) NEW BEARING BLOCKS  
 3" X 8" X 1' 6" OAK  
 (CUT TO FIT)

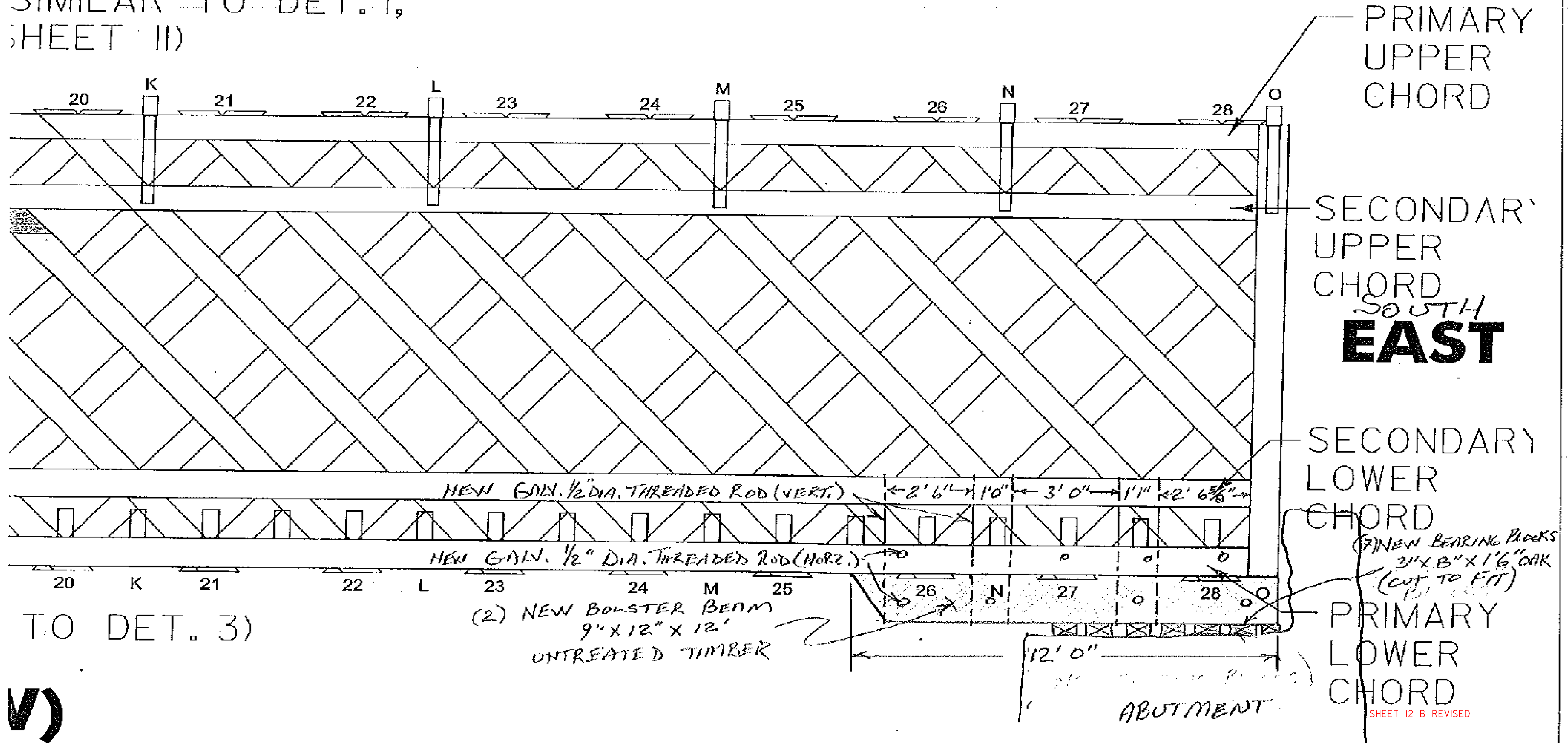
ABUTMENT

LATTICE SISTER  
 (DETAIL 3)

SOUTHEAST CORNER  
 NEW BOLSTER BEAM  
 AND BEARING BLOCKS

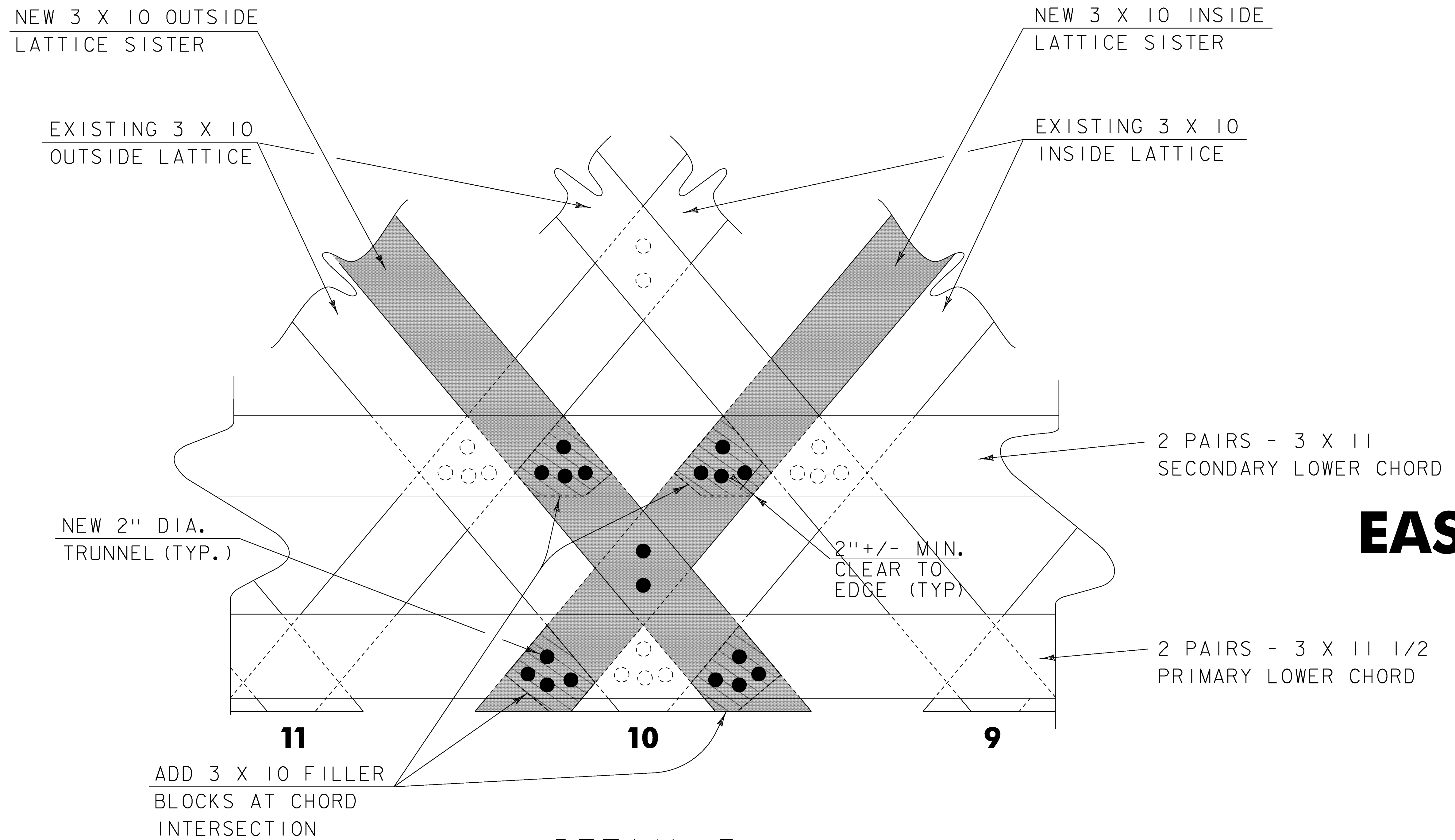
9-20-15  
 TL2

LATTICE SISTER  
 SIMILAR TO DET. 1,  
 SHEET II)



**WEST**

**EAST**



LEGEND	
NEW LATTICE SISTER	
NEW FILLER BLOCK	
NEW TRUNNEL	
EXISTING TRUNNEL	

DETAIL 3  
 OUTSIDE VIEW @ NODE 10\*  
 SOUTH TRUSS  
 SCALE: 3/4" = 1' - 0"

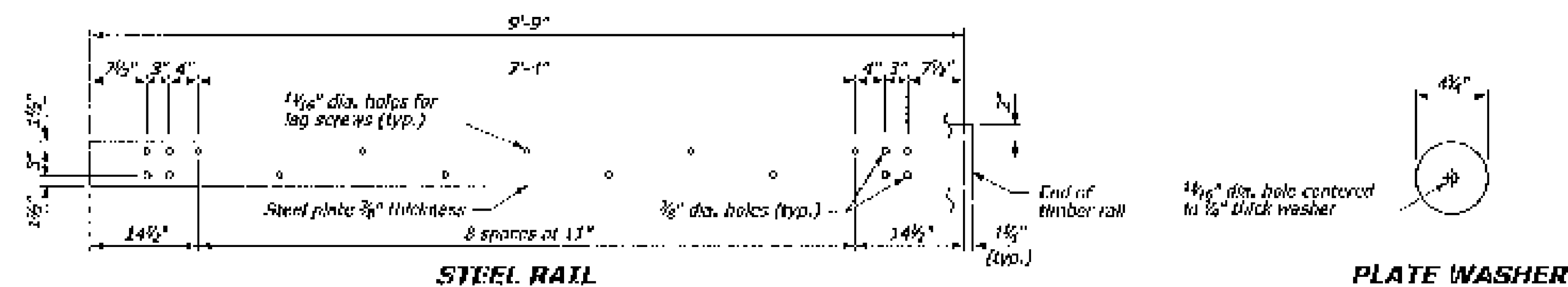
\* CONNECTION DETAILS AT OTHER NODE LOCATIONS ARE SIMILAR

PROJECT NAME: SHREWSBURY	PLOT DATE: 11-DEC-2014
PROJECT NUMBER: BHO 1443(29)	DRAWN BY: STRI
FILE NAME: I2J350BridgeDetails	CHECKED BY: John Weaver
PROJECT LEADER: Mark Sargent	SHEET 13 OF 23
DESIGNED BY: John Weaver	LATTICE SISTER DETAILS

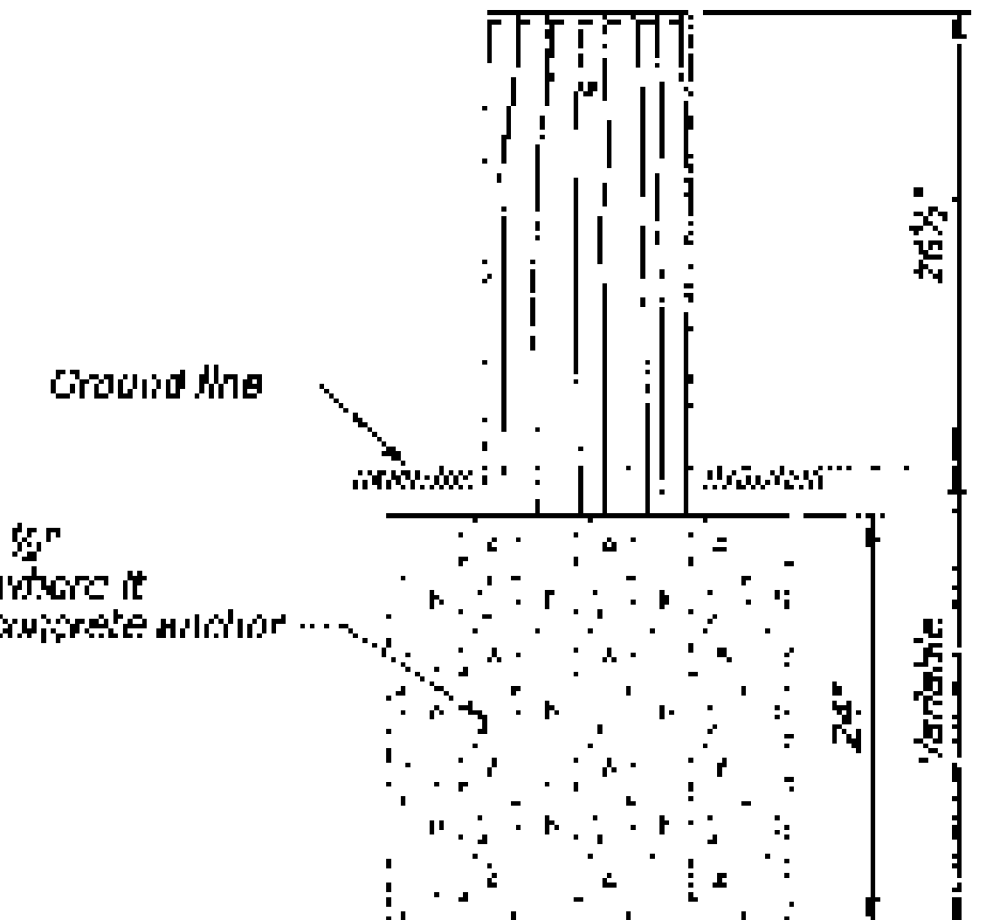
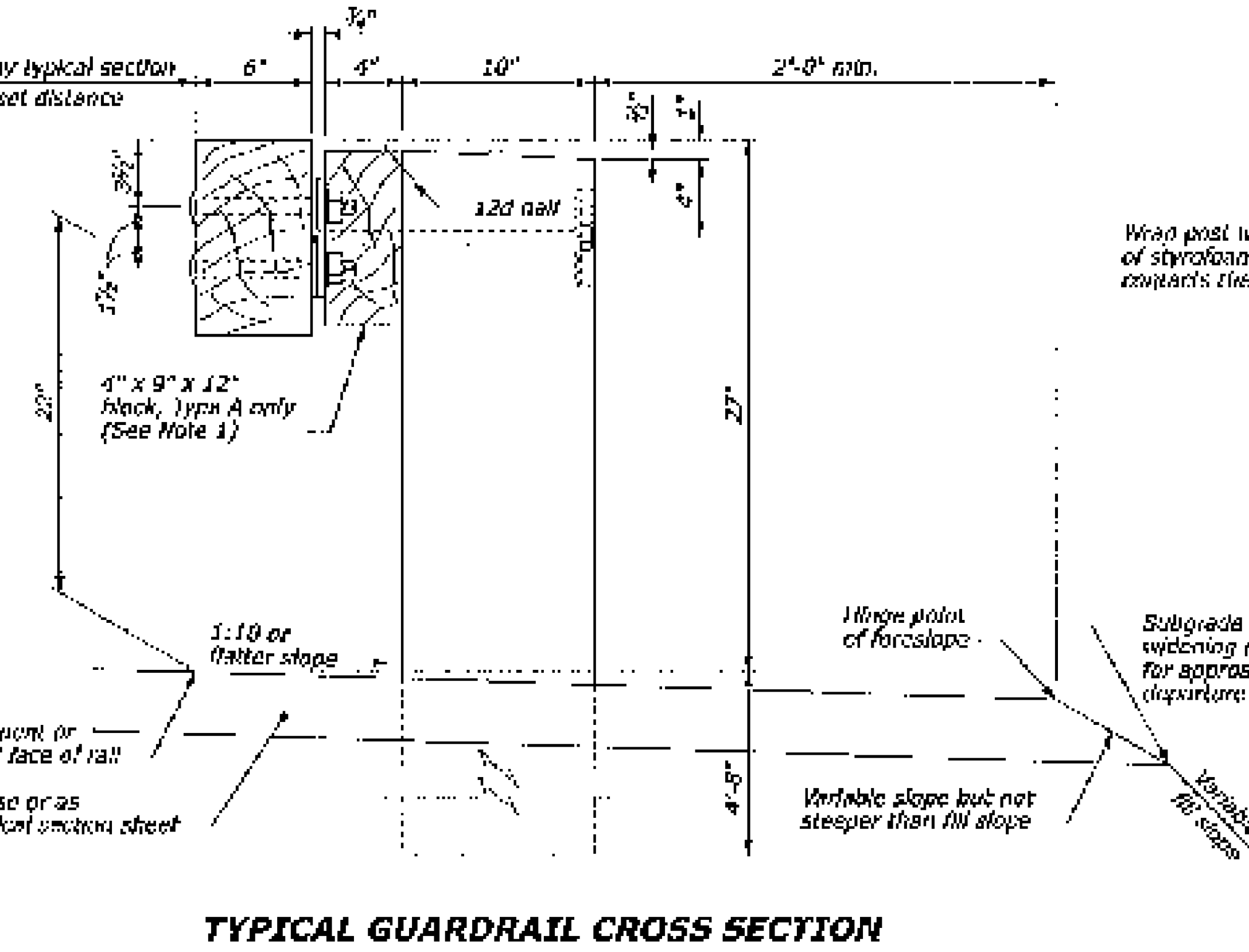
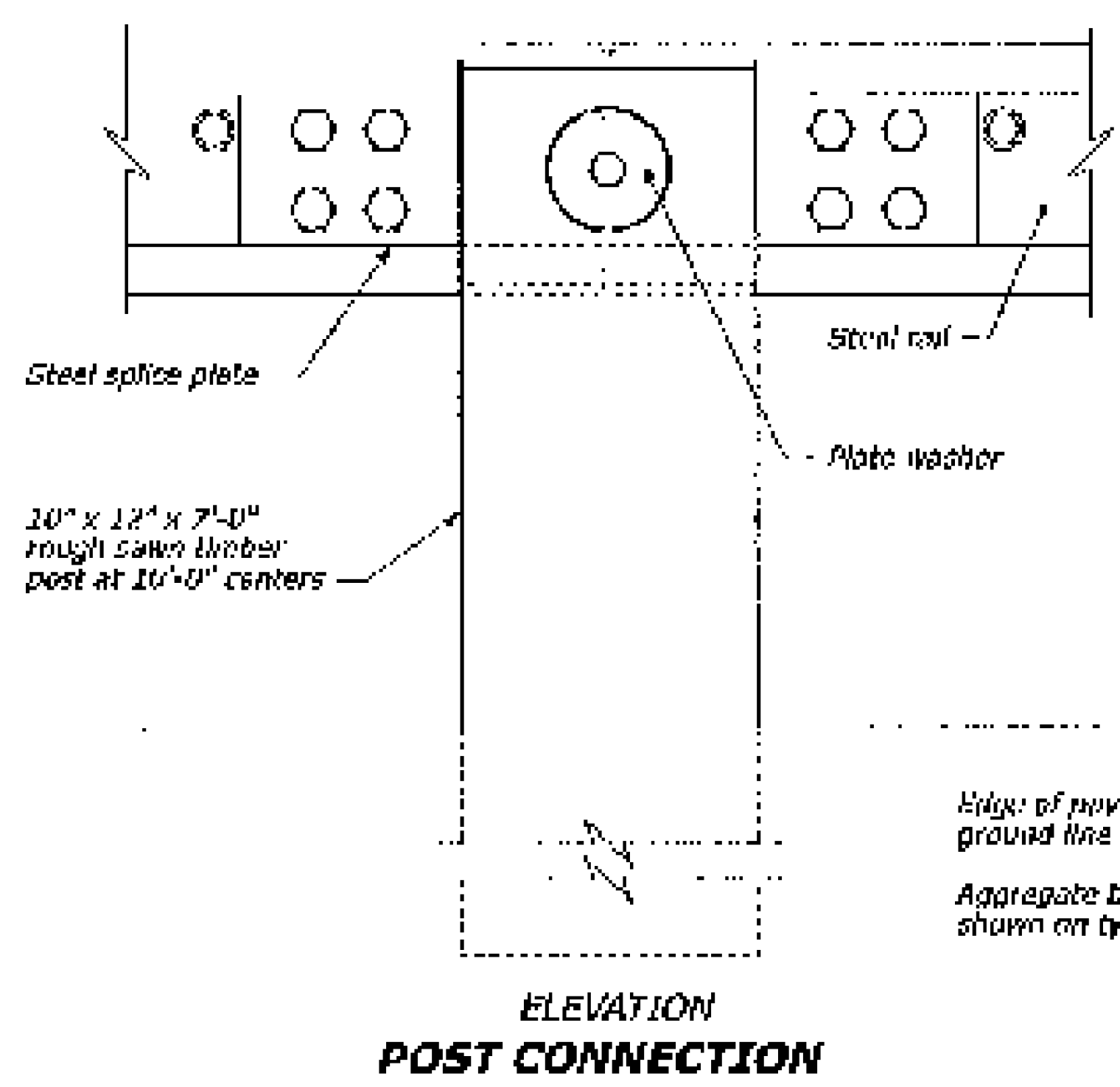
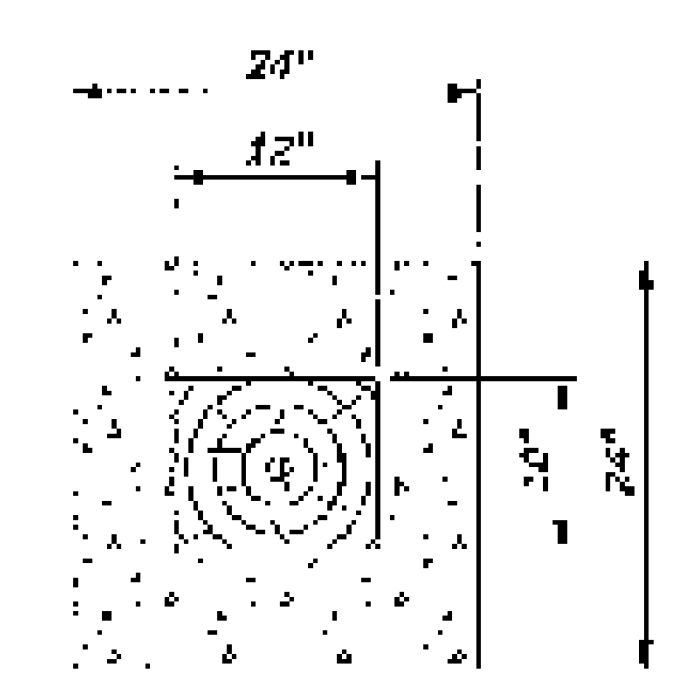
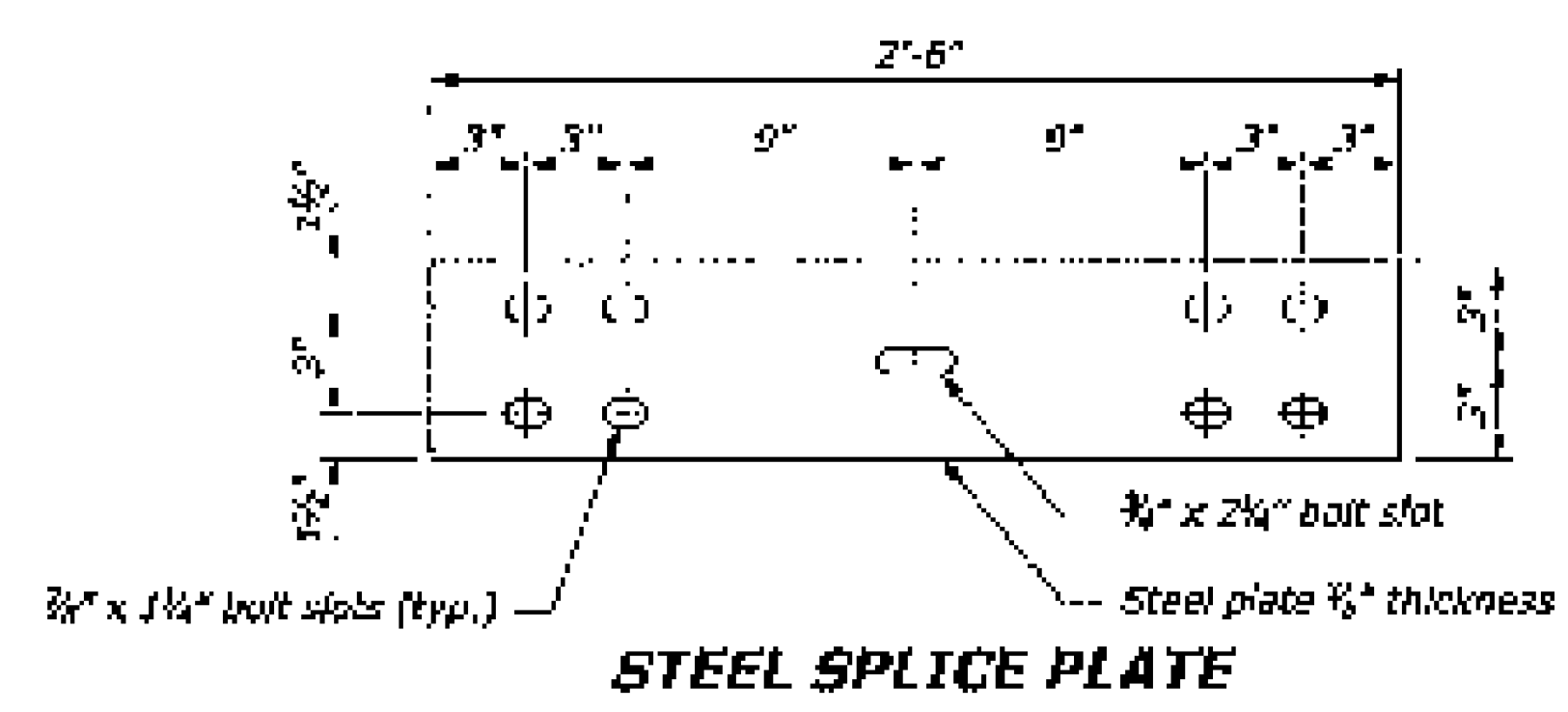
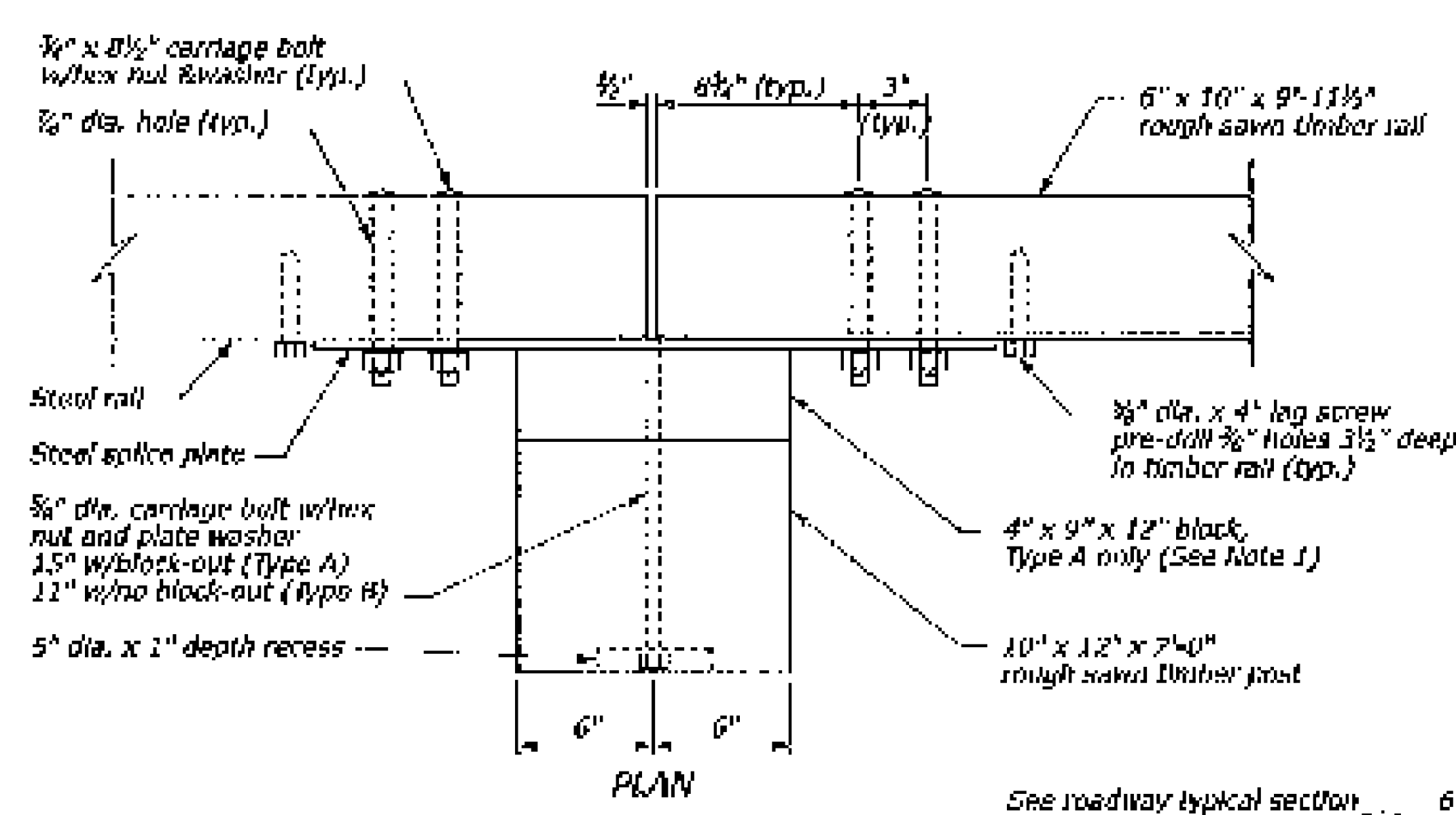




STATE	PROJECT	SHEET NUMBER
-------	---------	--------------



- NOTE:**
1. Use the Type A, blocked-out, system or the Type B, non-blocked-out, system as specified in the plans.
  2. Place a terminal section (See Standards 617-61 at non/level approach).
  3. See additional notes on sheet 67.



24" dia. round tubing is an acceptable alternative. Reduced size acceptable in solid rock.  
**CONCRETE ANCHOR FOR SHORT GUARDRAIL POST**

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION FEDERAL LANDS HIGHWAY	
U.S. CUSTOMARY STANDARD	
<b>STEEL-BACKED TIMBER GUARDRAIL TYPE A &amp; TYPE B</b>	
STANDARD APPROVED FOR USE BY AASHTO REVISED 4/1984 6/1986	STANDARD 617-60

PROJECT NAME: Shrewsbury  
 PROJECT NUMBER: BHO 1444 (43)  
 FILE NAME: I2J350\Structures\J350SBTC  
 PROJECT LEADER: M. Sargent  
 DESIGNED BY: J. Weaver  
 SBTGR DETAILS  
 PLOT DATE: 11-DEC-2014  
 DRAWN BY: C. Weeber  
 CHECKED BY: J. Weaver  
 SHEET 16 OF 23

ALL DETAILS ON THIS SHEET ARE NTS







INDEX OF SHEETS

- SHEET 1 - TITLE PAGE
- SHEET 2 - EAST & WEST ABUTMENT PLAN & ELEVATION
- SHEET 3 - TYPICAL SECTION @ ABUTMENT, FLOOR SYSTEM & REINFORCING DETAILS
- SHEET 4 - REINFORCING SCHEDULE & QUANTITIES
- SHEET 5 - STANDARD E-3 12-15-78(R)
- SHEET 6 - STANDARD E-7 9-5-78 (R)
- SHEET 7 - STANDARD E-7a 5-23-74 (R)



GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, DATED MARCH 1976 AND ITS LATEST REVISIONS AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 1977 AND ITS LATEST REVISIONS.
2. THIS STRUCTURE HAS A POSTING RATING OF 8 TONS.
3. THE CONTRACTOR SHALL BE ALLOWED TO CLOSE THE ROAD TO TRAFFIC. THE SELECTMEN SHALL BE GIVEN 7 DAYS WRITTEN NOTICE OF INTENT TO CLOSE THE ROAD.
4. COST OF SIGNS AND BARRICADES REQUIRED SHALL BE SUBSIDIARY TO CONTRACT ITEMS.
5. ALL DIMENSIONS SHOWN ON THE PLANS ARE APPROXIMATE AND SHOULD BE FIELD MEASURED AND ADJUSTMENTS MADE ON THE PLANS, AS NECESSARY.
6. THE EXISTING DECK SYSTEM SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH SECTION 202, PAYMENT TO BE INCLUDED IN PARTIAL REMOVAL OF STRUCTURE.
7. ALL LUMBER AND TIMBER SHALL CONFORM TO SECTION 611 OF VERMONT AGENCY OF TRANSPORTATION SPECIFICATIONS. ALL UNTREATED LUMBER AND TIMBER SHALL BE ROUGH SAWN TO NOMINAL DIMENSIONS. ALL TREATED LUMBER AND TIMBER SHALL BE DRESSED SQUARE FOUR SIDES (S4S) AND TREATED WITH CHROMATED COPPER ARSENATE (CCA) AS PER SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED, ALL LUMBER AND TIMBER SHALL BE EASTERN SPRUCE OR SOUTHERN PINE, SELECT STRUCTURAL OR NO. 1 GRADE.
8. BOARDING MAY BE REMOVED TO FACILITATE REPAIR WORK. ANY BOARDING REMOVED OR DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AND / OR REBUILT OF ROUGH CUT, RANDOM WIDTH BOARDS IN A MANNER MATCHING EXISTING APPEARANCE, AS DIRECTED BY THE ENGINEER.
9. PIECES SHALL BE PLACED SUCH THAT MAXIMUM VARIATION IN DEPTH AND FINISH GRADE OR ADJACENT PIECES IN LAMINATED DECK SHALL BE 3/16".
10. NEW BRIDGE RUNNER PLANKS SHALL BE OAK (UNTREATED).
11. ALL REPLACED BOARDING SHALL BE FASTENED WITH 6d GALVANIZED NAILS. OTHER NAILING NECESSARY SHALL BE DONE AS SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
12. ALL STRUCTURAL MEMBERS IN THE BRIDGE SHALL BE VISUALLY INSPECTED FOR SURFACE DECAY. ALL AREAS OF SURFACE DECAY SHALL BE CLEANED BY REMOVING UNSOUND WOOD. THESE AREAS SHALL BE TREATED WITH TWO BRUSHED ON COATS OF WOODLIFE PRESERVATIVE OR APPROVED EQUIVALENT. PAYMENT TO BE INCLUDED IN PARTIAL REMOVAL OF STRUCTURE.
13. ALL NAILS, SPIKES, BOLTS, NUTS, WASHERS, LAG BOLTS, AND OTHER HARDWARE SHALL BE ZINC COATED (GALVANIZED) IN ACCORDANCE WITH ASTM A153 WITH PAYMENT TO BE SUBSIDIARY TO LUMBER AND TIMBER ITEMS.
14. ALL FLOOR BEAMS SHALL BE TOE NAILED TO LOWER BOTTOM CHORDS USING 20d GALVANIZED SPIKES.
15. NEW FLOORING SHALL BE LAMINATED 2 x 6's ON EDGE LONGITUDINALLY WITH BUTT JOINTS OCCURRING ONLY AT THE CENTERLINE OF FLOOR BEAMS AND ADJACENT BUTT JOINTS STAGGERED AT LEAST ONE FLOOR BEAM. EVERY OTHER 2 x 6 SHALL BE TOE NAILED TO EVERY OTHER FLOOR BEAM WITH 20d GALVANIZED SPIKES.
16. NOTCH TOP OF FLOOR BEAM AS REQUIRED SO THAT EVERY OTHER FLOOR BEAM WILL EXTEND THROUGH THE OPENINGS IN THE LATTICE WORK AND SET ON THE OUTSIDE MEMBER OF THE LOWER BOTTOM CHORD. THE ALTERNATING FLOOR BEAMS WILL BUTT AGAINST THE LATTICE WORK, AND WILL REST ON THE INSIDE LOWER BOTTOM CHORD ONLY.
17. EXISTING 8" x 8" LONGITUDINAL BEARING BLOCKS AND 3" x 6" TRANSVERSE BEARING BLOCKS SHALL BE REPLACED IF NECESSARY AS DETERMINED BY THE ENGINEER. NEW BEARING BLOCKS SHALL BE YELLOW BIRCH, MAPLE, OR OAK.
18. ALL CONCRETE USED FOR NEW BACKWALLS AND BRIDGE SEATS SHALL BE CONCRETE, CLASS B. ALLOWABLE DESIGN STRESS: f'c 3500 psi, f'e 1400 psi.
19. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" x 1".
20. CEMENT RUBBLE MASONRY SHALL BE USED TO FACE ALL NEW EXPOSED CONCRETE IN A MANNER THAT CONCEALS THE CONCRETE WORK AND BLENDS WELL WITH THE EXISTING STONE ABUTMENTS, AS DIRECTED BY THE ENGINEER. LOCAL STONE MAY BE USED (SEE SPECIAL PROVISIONS).
21. PAVE APPROXIMATELY 25' AT EAST APPROACH AND APPROXIMATELY 15' AT WEST APPROACH. PAVEMENT SHALL BE 2" THICK AND DRAIN AWAY FROM BRIDGE AS DIRECTED BY THE ENGINEER. GRADING AND PREPARATION TO BE PAID UNDER BITUMINOUS CONCRETE PAVEMENT (SEE SPECIAL PROVISIONS FOR ALLOWABLE PAVING METHODS).
22. EXCAVATION FOR BACKWALLS SHALL BE PAID AS STRUCTURE EXCAVATION.
23. NEW CONCRETE CURB SHALL HAVE A 1" IN 6" BATTER, AS SHOWN ON PLANS.
24. PROJECT QUANTITIES ARE SHOWN ON SHEET # OF 7.
25. REASONABLE CARE SHALL BE USED IN THE REMOVAL OF THE EXISTING FLOOR BEAMS. THESE FLOOR BEAMS SHALL BECOME THE PROPERTY OF THE TOWN OF SHREWSBURY.

CONVENTIONAL SIGNS

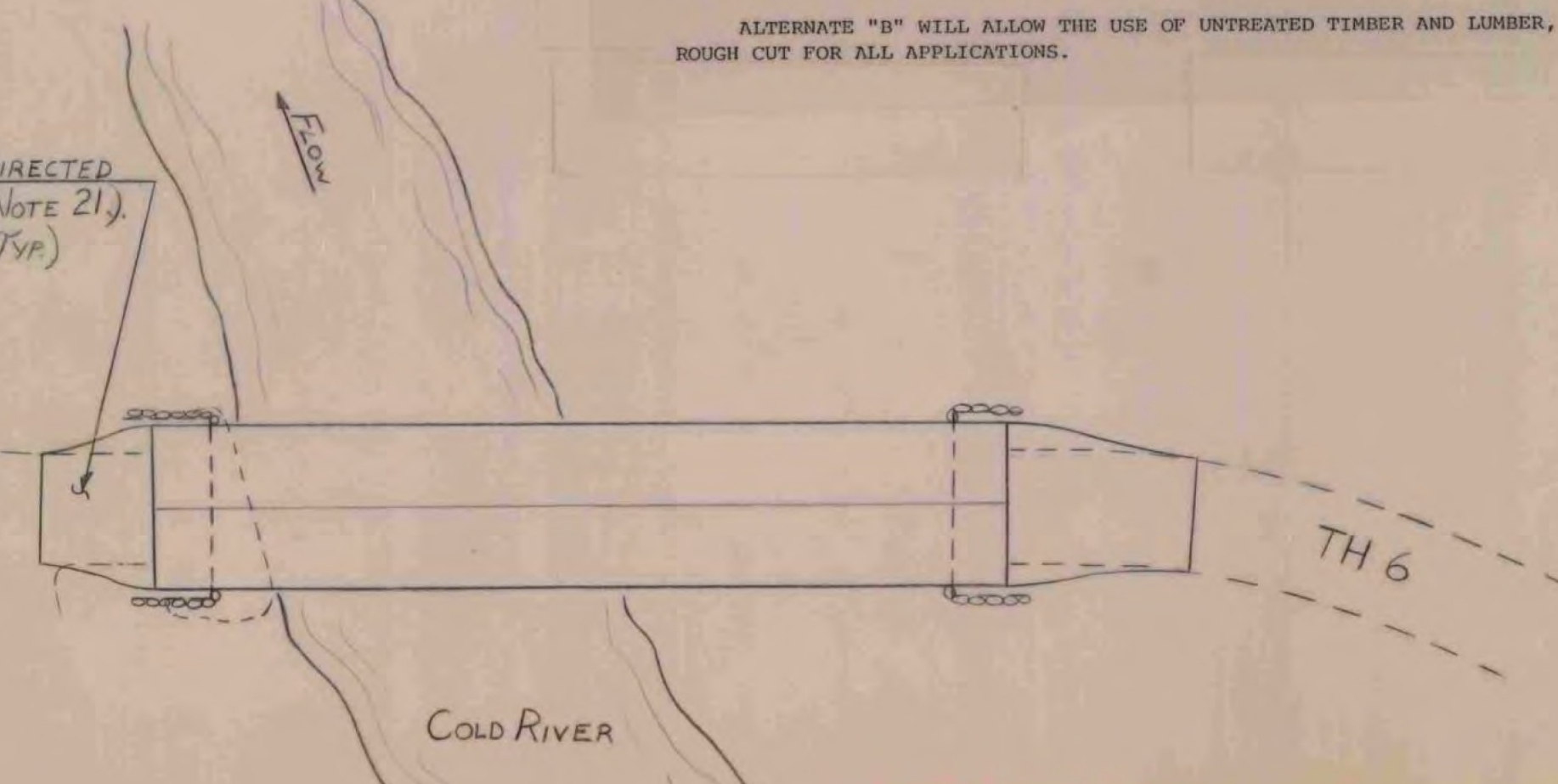
- COUNTY LINE
- TOWN LINE
- LIMITS OF ACCESS
- POINT OF ACCESS
- FENCE LINE
- STONE WALL
- TRAVELED WAY
- GUARD RAIL
- RAILROAD
- SURVEY LINE
- CULVERT
- POWER POLE
- TELEPHONE POLE
- TREES
- CONTROL OF ACCESS
- PROPERTY LINE
- ROW TAKING LINE
- SLOPE RIGHTS
- TOP OF CUT
- TOE OF SLOPE

**RECORD PLANS & MATERIAL SUPPLIERS**  
**CONTRACTOR: BREADLOAF CONSTRUCTION CO., INC.**  
**MIDDLEBURY, VERMONT**  
**CONTRACT DATED: MAY 30, 1979**  
**CONSTRUCTION COMPLETED: MAY 13, 1980**  
**CONSTRUCTION ACCEPTED: MAY 20, 1980**  
**RESIDENT ENGINEER: VICTOR DWIRE**  
**RECORD PLANS: RICHARD P. RUSSELL, JR.**  
**GRANULAR BACKFILL FOR STRUCTURES: J.F. CARRARA & SONS, INC.**  
**N. CLARENDON, VERMONT**  
**BITUMINOUS CONCRETE PAVEMENT: F.W. WHITCOMB CONST. CORP. WALLINGFORD, VT.**  
**CONCRETE, CLASS B: J.F. CARRARA & SONS, INC. N. CLARENDON, VT.**  
**REINFORCING STEEL: K-ROSS BUILDING SUPPLY CENTER INC. LEBANON, N.H.**  
**GUARD RAIL: LAFAYETTE-SHELDON INC. ESSEX JCT., VT.**  
**TREATED & UNTREATED LUMBER & TIMBER: DIAMOND LUMBER RUTLAND, VT.**

NOTE: ANY FURTHER INFORMATION CONCERNING FINAL QUANTITIES, AMOUNTS OR OTHER DETAILS RELATIVE TO THIS PROJECT MAY BE FOUND IN EITHER THE FIELD BOOK OR THE ESTIMATE FILE.

PAVE APPROACH AS DIRECTED BY THE ENGINEER (SEE GEN. NOTE 21). (TYP.)

0.10 MILES TO TH 1



PLAN  
SCALE 1" = 20'-0"

LENGTH OF BRIDGE 115.0 FT.

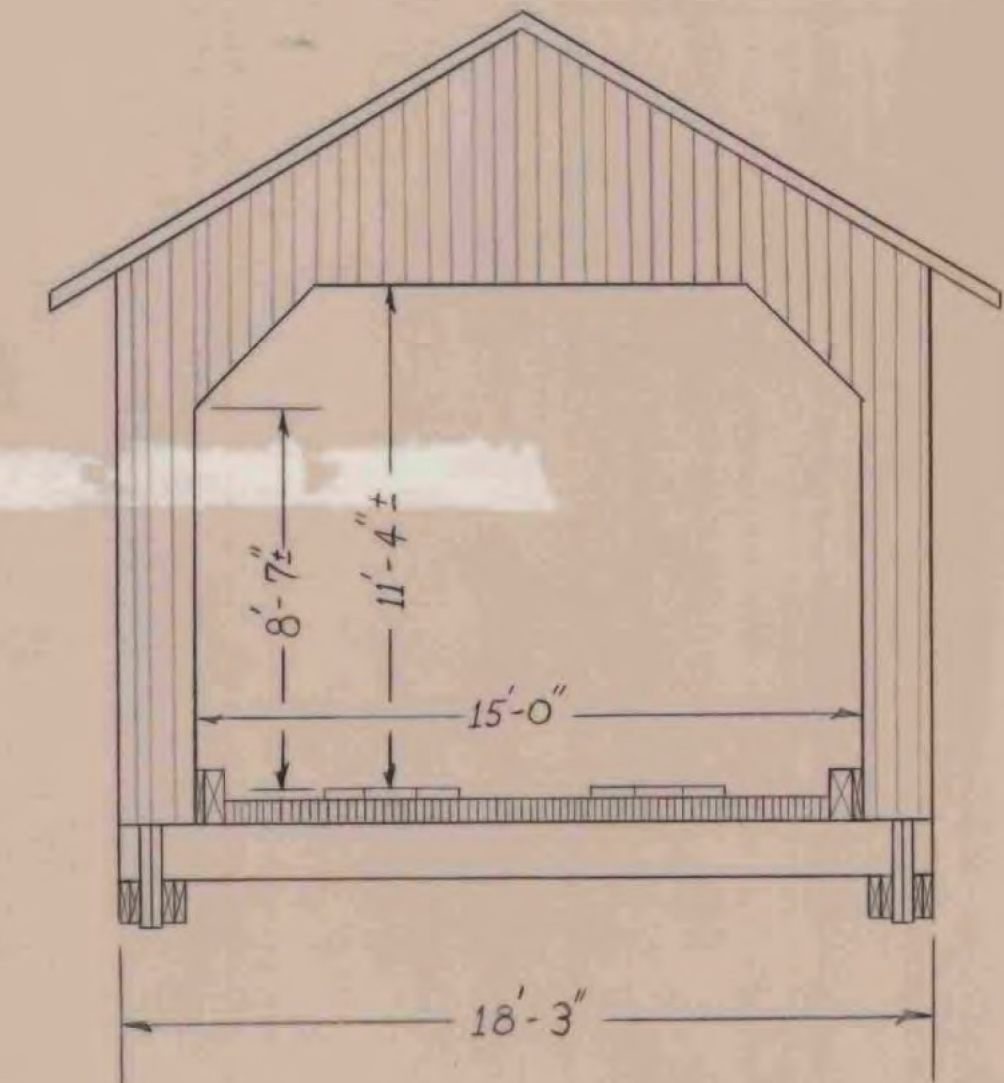
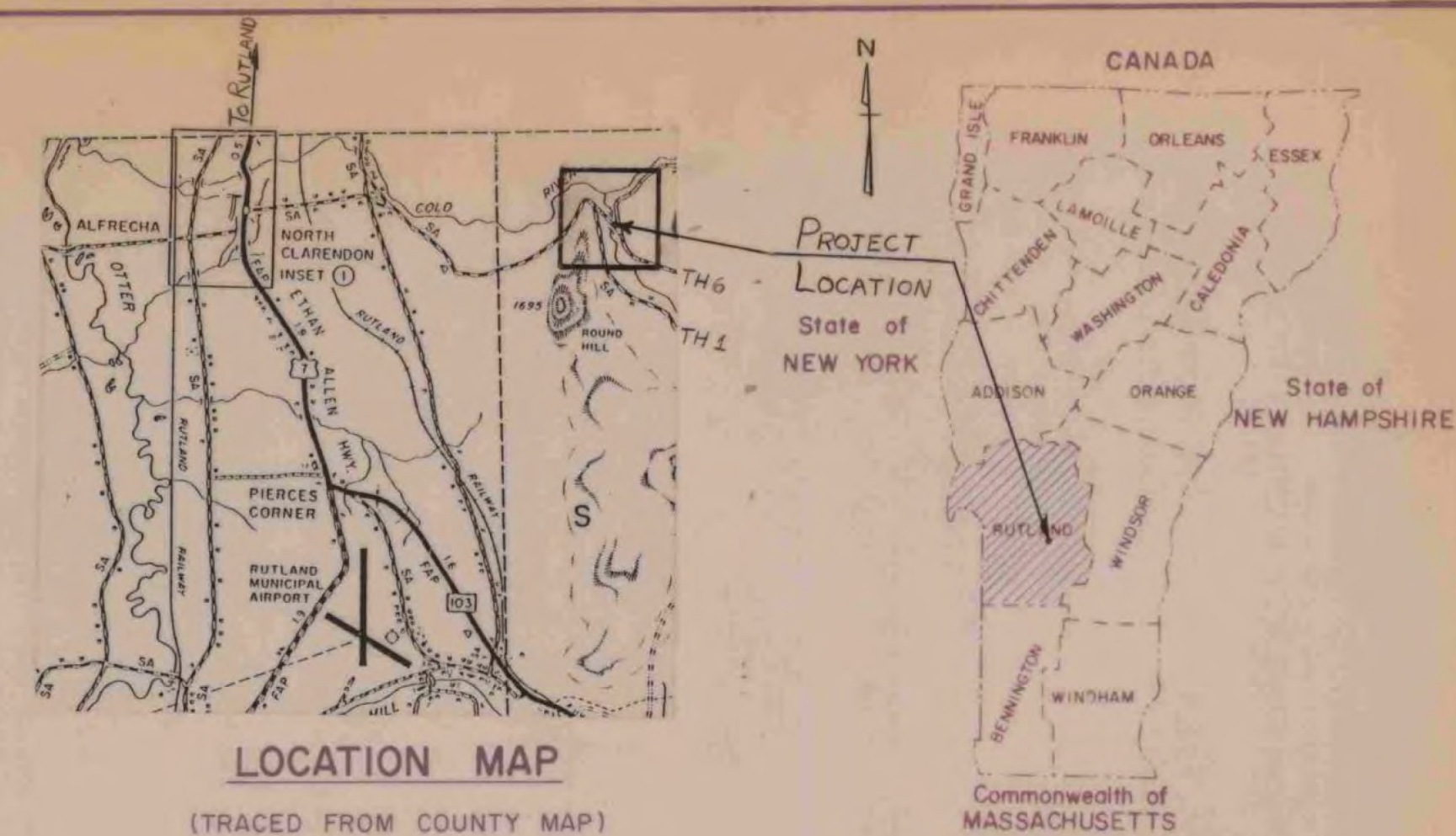
PROJECT LOCATION: SHREWSBURY BRIDGE #34 (BROWN COVERED BRIDGE) OVER THE COLD RIVER ON TH 6, 0.1 MILES WEST OF TH 1.

PROJECT DESCRIPTION: ADD NEW CONCRETE BACKWALLS AND BRIDGE SEATS FACED WITH CEMENT RUBBLE MASONRY. REPLACE FLOOR BEAMS, ADD NEW LAMINATED LONGITUDINAL 2" x 6" DECK AND RUNNER PLANKS. INSTALL NEW 3" PLANK GUARDRAIL. REPLACE DETERIORATED BEARING TIMBERS.

STATE OF VERMONT  
 AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT  
 BRIDGE PROJECT  
 TOWN OF SHREWSBURY  
 COUNTY OF RUTLAND  
 ROUTE NO: TH 6 BRIDGE NO: 34



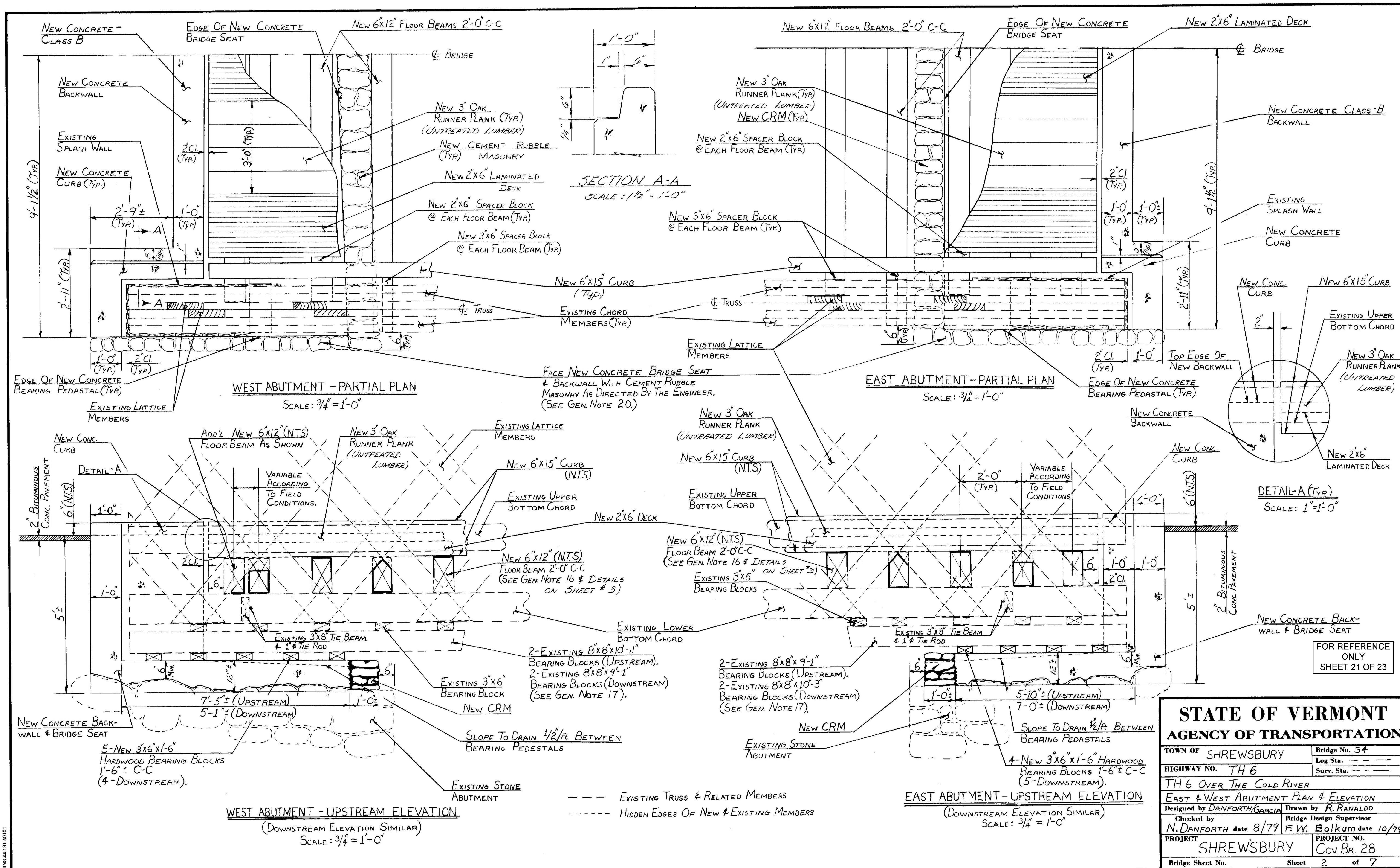
END ELEVATION  
 SCALE 1/4" = 1'-0"

FOR REFERENCE ONLY  
 SHEET 20 OF 23

SUBMITTED BY ORDER OF THE STATE TRANSPORTATION BOARD

APPROVED: *A.J. Gage* DATE: OCT 24, 1979  
 DIR. OF ENGINEERING AND CONSTRUCTION

PROJECT NO: SHREWSBURY  
 Cov. Br. 28  
 SHEET 1 OF 7 SHEETS



<b>STATE OF VERMONT</b>	
<b>AGENCY OF TRANSPORTATION</b>	
TOWN OF SHREWSBURY	Bridge No. 34
HIGHWAY NO. TH 6	Log Sta. ---
	Surv. Sta. ---
TH 6 OVER THE COLD RIVER	
EAST & WEST ABUTMENT PLAN & ELEVATION	
Designed by DANFORTH/GARCIA	Drawn by R. RANALDO
Checked by N. DANFORTH date 8/79	Bridge Design Supervisor F. W. Bolkum date 10/79
PROJECT SHREWSBURY	PROJECT NO. Cov. Br. 28
Bridge Sheet No.	Sheet 2 of 7

BR-6



# BRIDGE QUANTITY

NO.	ITEM	UNIT	ROADWAY		SUPER-STRUCTURE	TOTAL	FINAL
			ABUTMENTS				
202.30	PARTIAL REMOVAL OF STRUCTURE	EA.			1	1	
204.25	STRUCTURE EXCAVATION	C.Y.	20			20	
204.30	GRANULAR BACKFILL FOR STRUCTURES	C.Y.	10			10	
406.25	BITUMINOUS CONCRETE PAVEMENT	TON	10			10	
501.25	CONCRETE CLASS - B	C.Y.	16			16	
502.10	SHORING SUPERSTRUCTURE	L.S.			1	1	
507.15	REINFORCING STEEL	L.B.	1130			1130	
602.15	CEMENT RUBBLE MASONRY	C.Y.	3			3	
621.10	GUARD RAIL - PLANK WITH WOOD POSTS	L.F.	130			130	
ALTERNATE "A"							
611.20	UNTREATED LUMBER AND TIMBER	MBF			2	2	
611.25	TREATED LUMBER AND TIMBER	MBF			20	20	
ALTERNATE "B"							
611.20	UNTREATED LUMBER AND TIMBER	MBF			19	19	

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
81																	
82																	
83																	
84	6	5	17'-9"	WA501 STR.													
85	6	"	2'-4"	WA503 STR.													
86	6	"	4'-6"	WA505 STR.													
87																	
88																	
89	12	5	10'-7"	WA502 STR.													
90	14	"	10'-6"	WA504 STR.													
91	6	"	13'-0"	WA506 STR.													
92	12	"	4'-6"	WA507 STR.													
93																	
94																	
95																	
96																	
97																	
98																	
99																	
100	7	5	17'-9"	EA501 STR.													
101	2	"	2'-4"	EA503 STR.													
102	2	"	4'-6"	EA505 STR.													
103																	
104																	
105	12	5	8'-11"	EA502 STR.													
106	14	"	11'-6"	EA504 STR.													
107	6	"	12'-6"	EA506 STR.													
108	12	"	3'-4"	EA507 STR.													
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## WEST ABUTMENT

(CUT TO FIT IN FIELD)

## EAST ABUTMENT

(CUT TO FIT IN FIELD)

(CUT TO FIT IN FIELD)

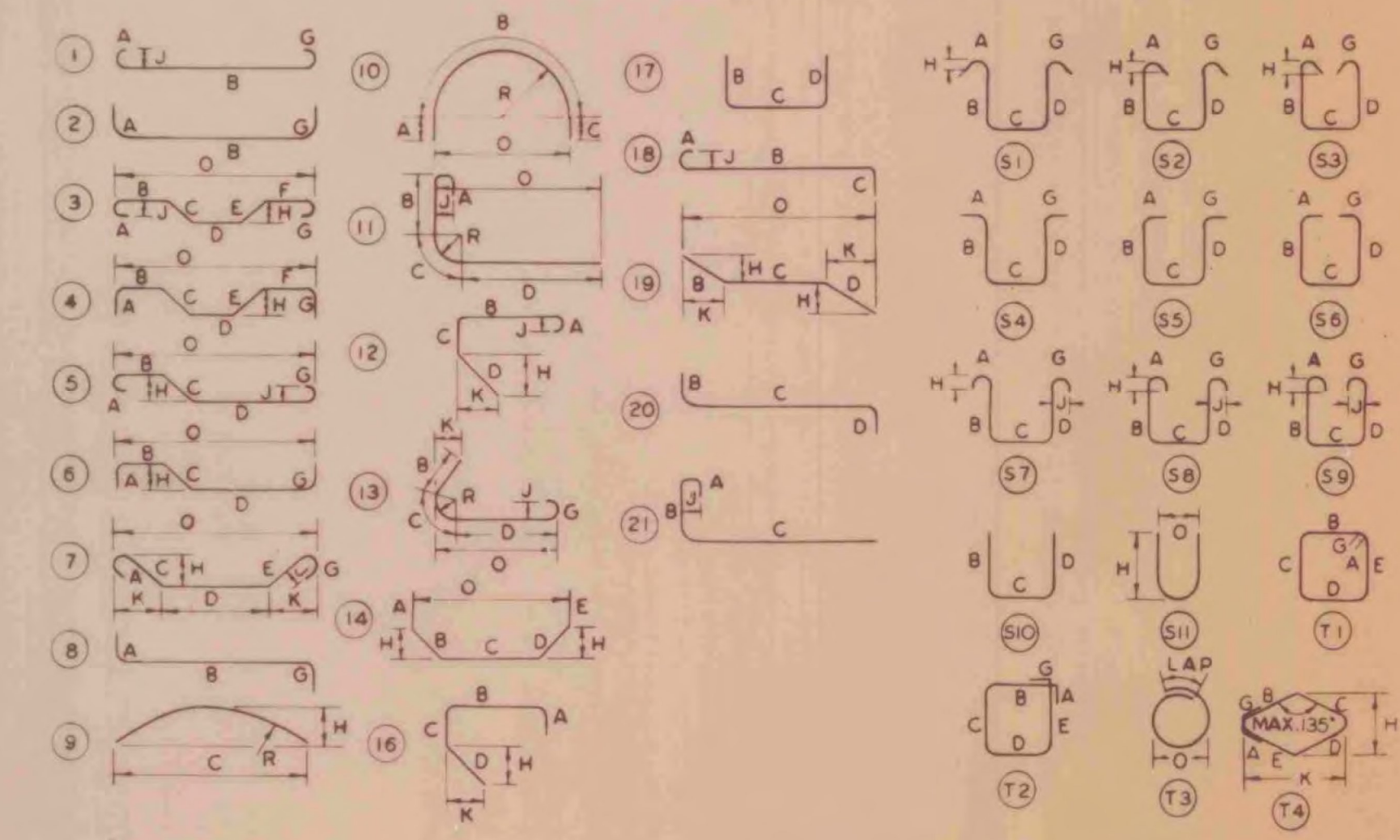
### NOTES

- UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT," AASHTO M 31 (ASTM A 615), GRADE 60.
  - FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS AND OTHER STANDARD PRACTICE SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE."
  - BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
  - ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180° AND 135° HOOKS.
  - "J" DIMENSION ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD HOOKS ARE TO BE USED.
  - "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
  - WHERE SLOPE DIFFERS FROM 45° DIMENSIONS "H" AND "K" MUST BE SHOWN.
- \* DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES

### ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER INCHES	CROSS SECTIONAL AREA SQ. INCHES	PERIMETER INCHES
#3	.376	.375	.11	1.178
#4	.668	.500	.20	1.571
#5	1.043	.625	.31	1.963
#6	1.502	.750	.44	2.356
#7	2.044	.875	.60	2.749
#8	2.670	1.000	.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

### TYPICAL BAR BENDS



REV. NO.	MADE BY	DATE	DESCRIPTION
1	J. WOOD	8/11/75	AASHTO CHANGED TO AASHTO AND GRADE 40 CHANGED TO GRADE 60.

FOR REFERENCE ONLY SHEET 23 OF 23

## STATE OF VERMONT AGENCY OF TRANSPORTATION

TOWN OF SHREWSBURY	BRIDGE NO. 34
HIGHWAY NO. TH 6	LOG STA.
	SURV. STA.
TH 6 OVER THE COLD RIVER	
REINFORCING SCHEDULE & BRIDGE QUANTITY SHEET	
DESIGNED BY N. DANFORTH	DRAWN BY R. RANALD
CHECKED BY M. GARCIA	BRIDGE DESIGN SUPERVISOR
DATE 8/79	F. W. Bolkum DATE 10/79
PROJECT SHREWSBURY	PROJECT NO. Cov. Br. 28
BRIDGE SHEET NO.	SHEET 4 OF 7