

COATED BLACK - ASTM D7803

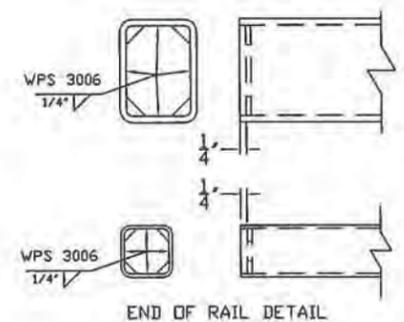
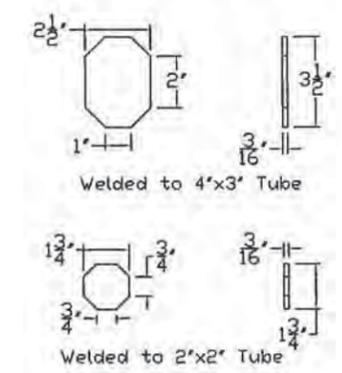
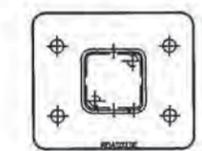
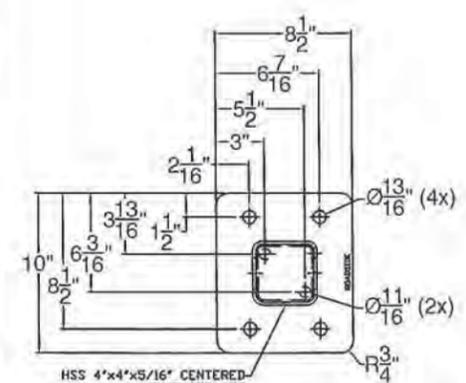
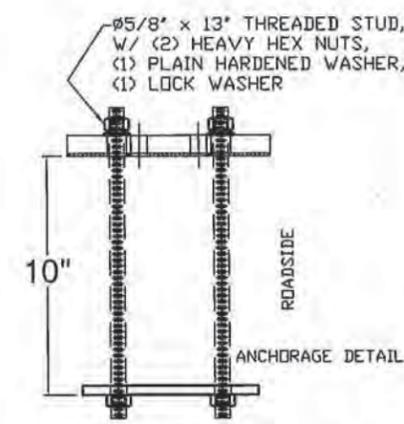
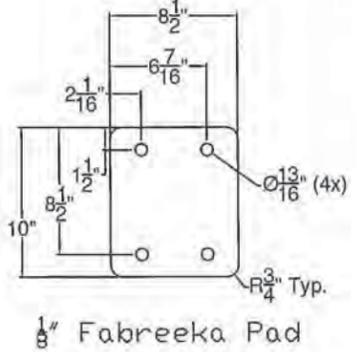
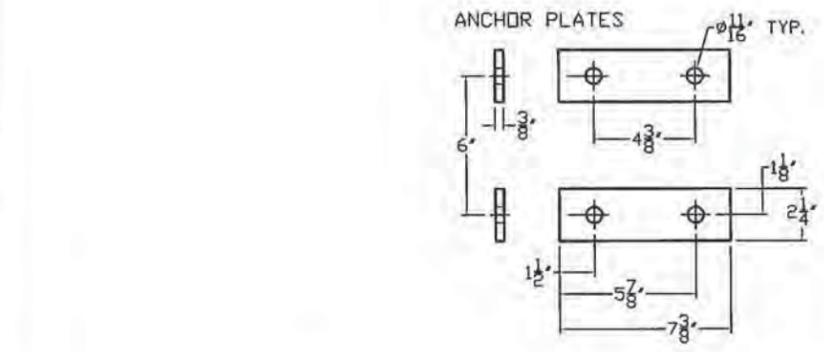
Vermont Agency of Transportation

**RECEIVED**  
 ON: December 29, 2014  
 and Checked for  
**CONFORMANCE**

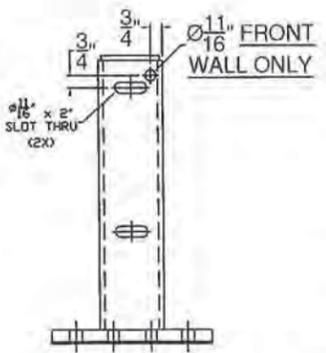
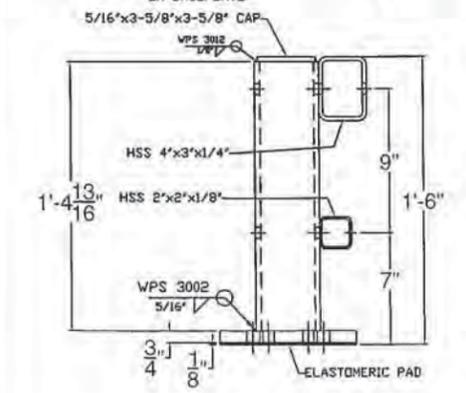
BY: TAS DATE: 01/20/2015

BILL OF MATERIAL

ITEM #	QTY	PART #	DESCRIPTION	ASTM DESIGNATION
1	60	0033.90402	TWO RAIL POST & BASE PLATE ASSEMBLY	A572 Gr. 50, A500 Gr. B
2	2	0033.91331	4' X 3' X 1/4" RAIL @ 23'-11 1/2" W/ END PLATES	A500 Gr. B
3	2	0033.91332	4' X 3' X 1/4" RAIL @ 19'-10"	A500 Gr. B
4	2	0033.91333	4' X 3' X 1/4" RAIL @ 17'-11 1/2"	A500 Gr. B
5	2	0033.91334	4' X 3' X 1/4" RAIL @ 19'-11 1/2"	A500 Gr. B
6	2	0033.91335	4' X 3' X 1/4" RAIL @ 27'-0"	A500 Gr. B
7	2	0033.91336	4' X 3' X 1/4" RAIL @ 18'-5 1/4"	A500 Gr. B
8	2	0033.91337	4' X 3' X 1/4" RAIL @ 20'-0"	A500 Gr. B
9	2	0033.91338	4' X 3' X 1/4" RAIL @ 19'-6"	A500 Gr. B
10	2	0033.91339	4' X 3' X 1/4" RAIL @ 23'-6" W/ END PLATES	A500 Gr. B
11	2	0033.91340	2' X 2' X 1/8" RAIL @ 23'-11 1/2" W/ END PLATES	A500 Gr. B
12	2	0033.91341	2' X 2' X 1/8" RAIL @ 19'-10"	A500 Gr. B
13	2	0033.91342	2' X 2' X 1/8" RAIL @ 17'-11 1/2"	A500 Gr. B
14	2	0033.91343	2' X 2' X 1/8" RAIL @ 19'-11 1/2"	A500 Gr. B
15	2	0033.91344	2' X 2' X 1/8" RAIL @ 27'-0"	A500 Gr. B
16	2	0033.91345	2' X 2' X 1/8" RAIL @ 18'-5 1/4"	A500 Gr. B
17	2	0033.91346	2' X 2' X 1/8" RAIL @ 20'-0"	A500 Gr. B
18	2	0033.91347	2' X 2' X 1/8" RAIL @ 19'-6"	A500 Gr. B
19	2	0033.91348	2' X 2' X 1/8" RAIL @ 23'-6" W/ END PLATES	A500 Gr. B
20	12	0033.90405	1-1/2" X 1-1/2" FIX. SPL BAR @ 2' 4"	A572 Gr. 50
21	12	0033.90406	2-1/4" X 3-1/4" FIX. SPL. BAR @ 2' 4"	A572 Gr. 50
22	4	0033.90407	1-1/2" X 1-1/2" EXP. SPL BAR @ 1' 5"	A572 Gr. 50
23	4	0033.90408	2-1/4" X 3-1/4" EXP. SPL. BAR @ 1' 5"	A572 Gr. 50
24	120	0033.00295	3/8" X 2 1/4" X 7 3/8" ANCHOR PLATES	A36
25	242*	0042.05813	Ø 5/8" X 13" ANCHOR STUDS	A449
26	482*	0080.15901	Ø 5/8" HEAVY HEX NUTS	A563
27	240	0080.15911	Ø 5/8" FLAT WASHERS	F436
28	240	0080.15920	Ø 5/8" LOCK WASHERS	ASME D18.2
29	60	0080.05565	Ø 5/8" X 7 1/2" SLOTTED, ROUND HEAD BOLT, NU	
30	60	0080.05585	Ø 5/8" X 8 1/2" SLOTTED, ROUND HEAD BOLT, NU	
31	64	0080.03103	Ø 3/8" X 3" HEX BOLT, NUT, F.W., & L.W.	
32	64	0080.07330	Ø 7/8" X 5 1/2" HEX BOLT, NUT, F.W., & L.W.	
33	60	0033.90068	1/8" ELASTOMERIC PAD	
34	2	0033.90403	APPRDACH WALL CONNECTORS	
35	2	0033.90404	TRAILING WALL CONNECTORS	
36	14	-	DELINEATORS (SUPPLIED BY F.R. LaFAYETTE)	



5/8"



- NOTES:
- ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525.
  - PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM RADIUS OF 1/16".
  - ALL POSTS SHALL BE SET NORMAL TO GRADE.
  - SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO BRIDGE POSTS AND PREFERABLY TO AT LEAST 4 POSTS.
  - HOLES IN RAILS FOR TUBE ATTACHMENT, WILL BE SHOP-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
  - BOLTS SHALL BE TORQUED SNUG TIGHT (APPROXIMATELY 100 FT-LB).
  - RAIL TUBES SHALL BE ATTACHED USING FULL DIAMETER BODY ASTM A449 (TYPE 1) ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE TUBE.
  - SEE STANDARD DRAWING G-1 FOR DETAILS OF DELINEATORS. A DELINEATOR SHALL BE INSTALLED AT 30 FOOT SPACING OR THE NEAREST POST. WHITE IS TO BE INSTALLED ON THE DRIVER'S RIGHT. FOR ONE WAY BRIDGES, YELLOW IS TO BE INSTALLED ON THE DRIVER'S LEFT. PAYMENT FOR DELINEATORS SHALL BE INCIDENTAL TO OTHER ITEMS.
  - AESTHETIC TREATMENT TYPE SHALL BE APPLIED AS SPECIFIED IN THE CONTRACT PLANS. IF NONE IS SPECIFIED IT SHALL NOT BE USED. AESTHETIC TREATMENT DETAILED ON THIS SHEET MAY ALSO BE APPLIED ON THE FASCIA SIDE OF THE RAIL, IF SPECIFIED IN THE CONTRACT PLANS.
  - BRIDGE RAILING SHALL HAVE A RUBBED FINISH IN ACCORDANCE WITH SECTION 501.
  - THIS RAILING MEETS THE REQUIREMENTS FOR A NCHRP REPORT 350 TL-4 SERVICE LEVEL.
  - HOLES FOR MOUNTING DELINEATORS TO BE FIELD DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
  - ALL STEEL COMPONENTS EXCEPT HARDWARE AND ANCHORAGE CAST IN CONCRETE SHALL BE COATED BLACK IN ACCORDANCE WITH ASTM D7803 FOLLOWING GALVANIZING.

T.Y. LIN INTERNATIONAL

THE STAMPED DOCUMENTS ARE HEREBY:

- APPROVED
- APPROVED AS NOTED
- REVISE AND RESUBMIT

SEE TRANSMITTAL FOR ADDITIONAL INFORMATION AS APPLICABLE.

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RICK HEBERT REVIEWER 1/16/2015 DATE

HARDWARE

ITEM #	DESCRIPTION
29	BOLT BOTTOM RAIL TO POST
30	BOLT TOP RAIL TO POST (1)
31	BOLT BOTTOM SPLICE BARS
32	BOLT TOP SPLICE BARS TO TOP RAIL

ITEM #: 525.45

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

TOLERANCE UNLESS OTHERWISE NOTED:  
 FRACTIONS = ± 1/16"  
 ANGLES = ± 1/2"  
 DIAMETERS = ± 1/32"

SHEET 1 OF 3

BRIDGE RAIL DETAILS SHEET

VT 121 (CL 2, TH 1) RURAL MAJOR COLLECTOR, BRIDGE 11R  
 ROCKINGHAM, PROJECT BR# 0126(12), TOWN OF ROCKINGHAM, WINDHAM COUNTY, VT.

R NO.	DATE	DESCRIPTION	BY	R NO.	DATE	DESCRIPTION	BY

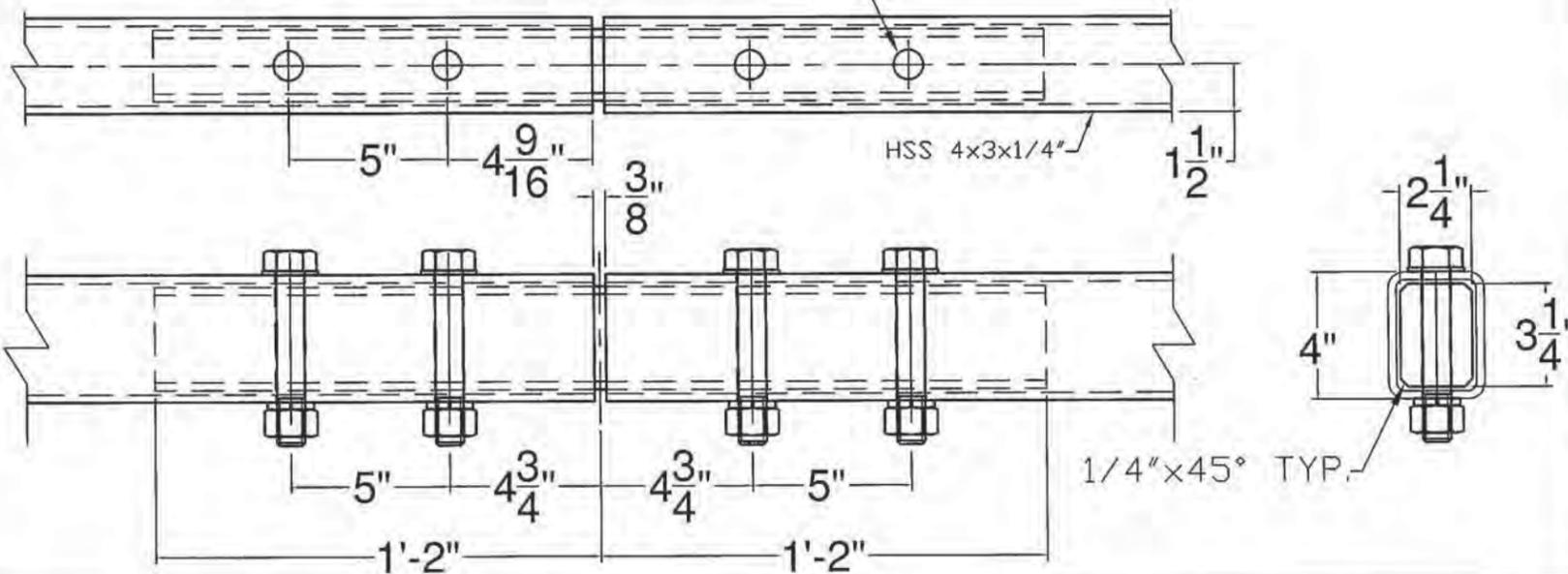
ELDERLEE, INC.  
 OAKS CORNERS, NEW YORK 14518  
 E-Mail: dlong@elderlee.com / epeek@elderlee.com  
 Tel: 315-789-6670 Fax: 315-789-6615

CERTIFIED FABRICATOR

DRAWN	E.P.	12/19/14
CHECKED	D.L.	12/19/14
APPROVED		
SCALE	SCHMATIC	
DRAWING NO.	FR-L-ROCKINGHAM	

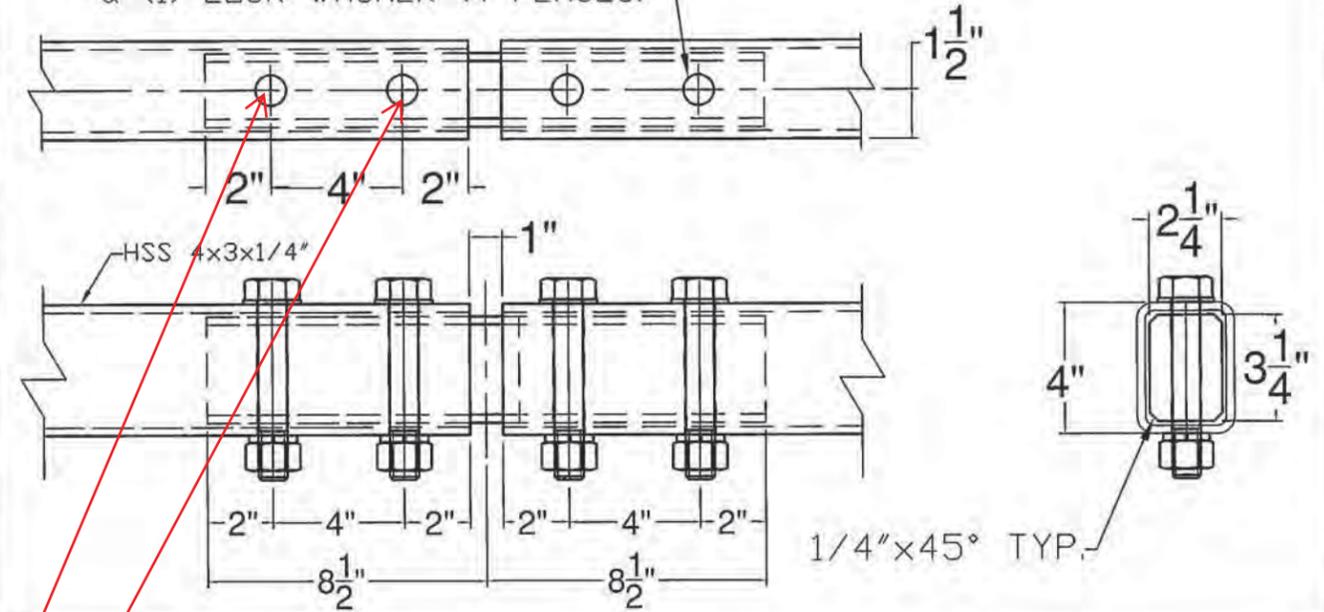
Ø15/16" THRU TUBE & SPLICE BAR,  
 Ø7/8"X5 1/2" HEX BOLT & NUT,  
 W/ (1) PLAIN HARDENED WASHER &  
 (1) LOCK WASHER (4 PLACES)

TOP RAIL FIXED SPLICE DETAIL



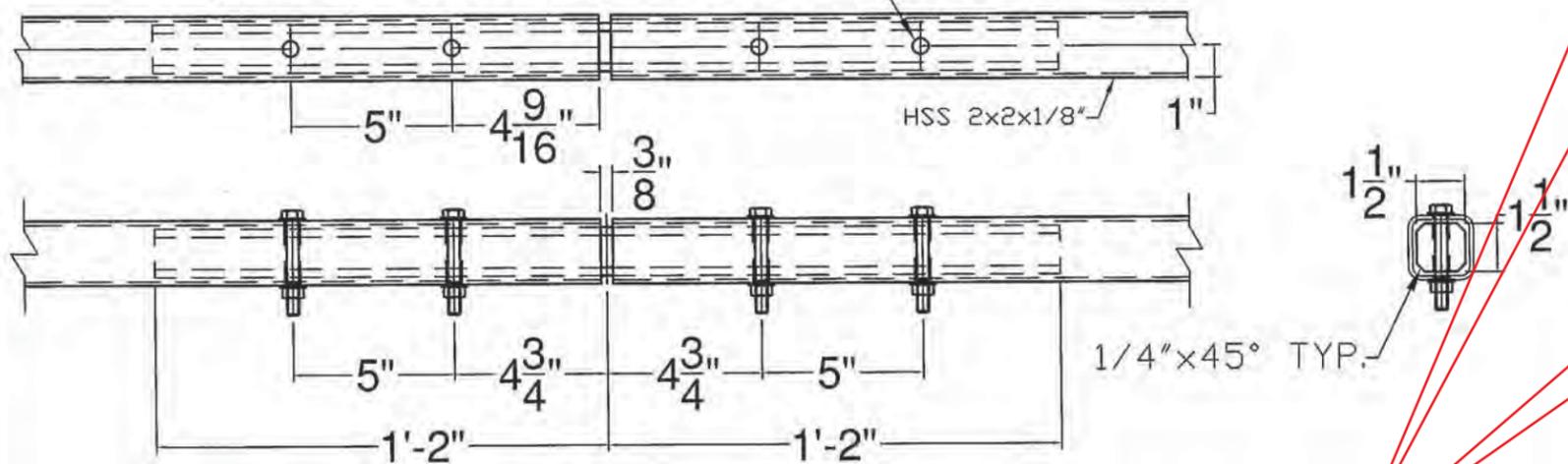
Ø15/16" THRU TUBE & SPLICE BAR,  
 Ø7/8"X5 1/2" HEX BOLT & NUT,  
 W/ (1) PLAIN HARDENED WASHER &  
 (1) LOCK WASHER (4 PLACES)

TOP RAIL EXPANSION SPLICE DETAIL



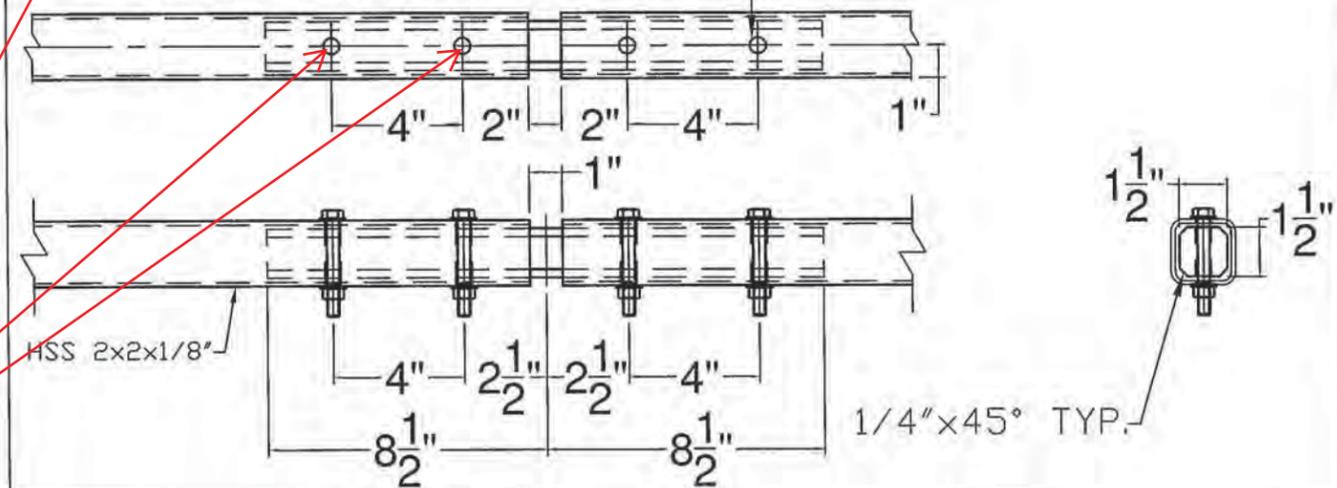
Ø1/2" THRU TUBE & SPLICE BAR,  
 Ø3/8"X3" HEX BOLT & NUT,  
 W/ (1) PLAIN HARDENED WASHER &  
 (1) LOCK WASHER (4 PLACES)

BOTTOM RAIL FIXED SPLICE DETAIL



Ø1/2" THRU TUBE & SPLICE BAR,  
 Ø3/8"X3" HEX BOLT & NUT,  
 W/ (1) PLAIN HARDENED WASHER &  
 (1) LOCK WASHER (4 PLACES)

BOTTOM RAIL EXPANSION SPLICE DETAIL



Provide 15/16" x 2" slotted holes in top rail splice bar and 1/2" x 1 1/2" slotted holes in bottom rail splice bars to accommodate movements at expansion rail splices. (Typ)

**T.Y. LIN INTERNATIONAL**

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RICK HEBERT REVIEWER 1/16/2015 DATE

Vermont Agency of Transportation

**RECEIVED**

ON: December 29, 2014

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**CONFORMANCE**

BY: TAS DATE: 01/20/2015

ITEM #: 525.45

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

TOLERANCE UNLESS OTHERWISE NOTED:  
 FRACTIONS = ± 1/16"  
 ANGLES = ± 1/2"  
 DIAMETERS = ± 1/32"

SHEET 2 OF 3

**BRIDGE RAIL DETAILS SHEET**

VT 121 (CL 2, TH 1) RURAL MAJOR COLLECTOR, BRIDGE 11R  
 ROCKINGHAM, PROJECT BR 0126(12), TOWN OF ROCKINGHAM, WINDHAM COUNTY, VT.

R NO.	DATE	DESCRIPTION	BY	R NO.	DATE	DESCRIPTION	BY

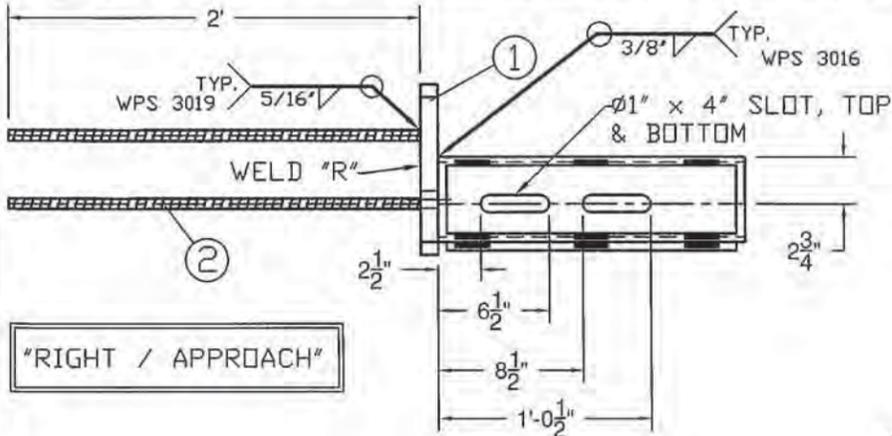
  

DRAWN	E.P.	12/19/14
CHECKED	D.L.	12/19/14
APPROVED		
SCALE	SCHEMATIC	
DRAWING NO. FRL - ROCKINGHAM		

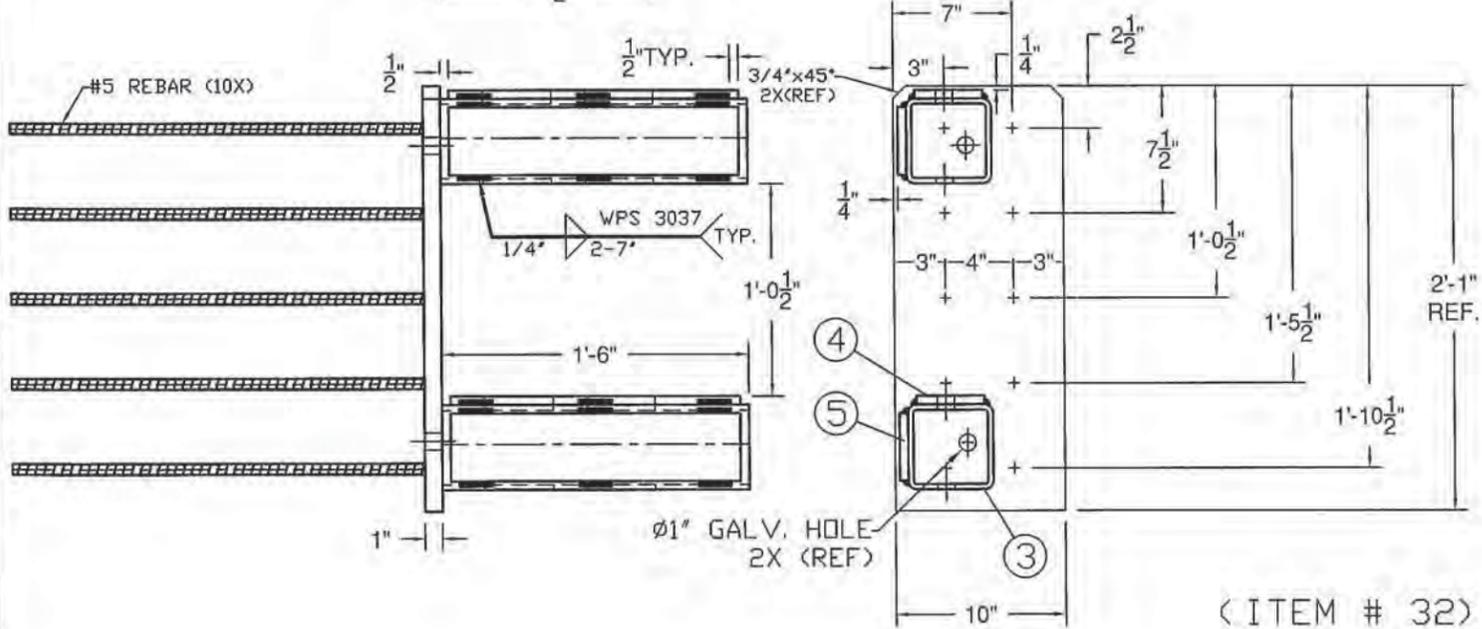
**ELDERLEE, INC.**  
 OAKS CORNERS, NEW YORK 14518  
 E-Mail: dloug@elderlee.com / epeek@elderlee.com  
 Tel: 315-789-6670 Fax: 315-789-6615

BILL OF MATERIALS

ITEM #	QTY	DESCRIPTION	ASTM #
1	1	DBL TUBE WALL PLATE - 1' X 10' x 25'	ASTM A572 Gr. 50
2	10	RAW, Ø5/8" REBAR @ 36"	A615, Gr. 60
3	2	5' X 5' X 5/16" TUBE W/ SLOTS @ 18"	ASTM A500 Gr. B
4	2	SHIM PL 1/2" X 4" X 17" W/ SLOTS	ASTM A36(ASTM A709 Gr. 36)
5	2	SHIM PL 1/2" X 4" X 17" (W/O SLOTS)	ASTM A36(ASTM A709 Gr. 36)

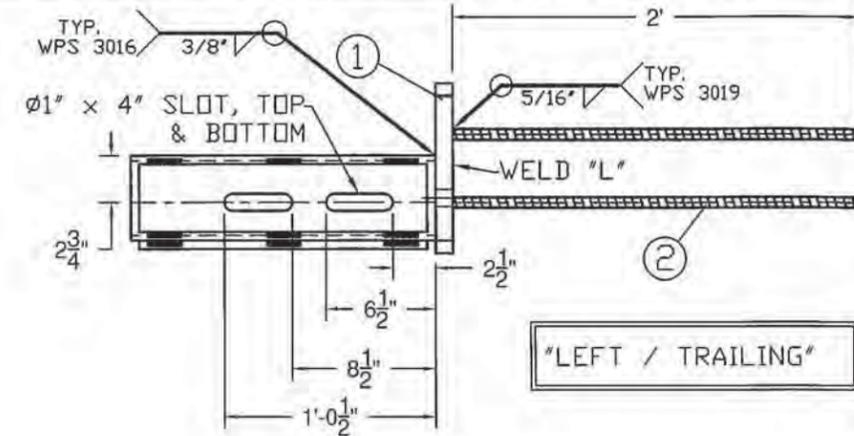


PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE SPLICE TUBES AND FILL PLATES

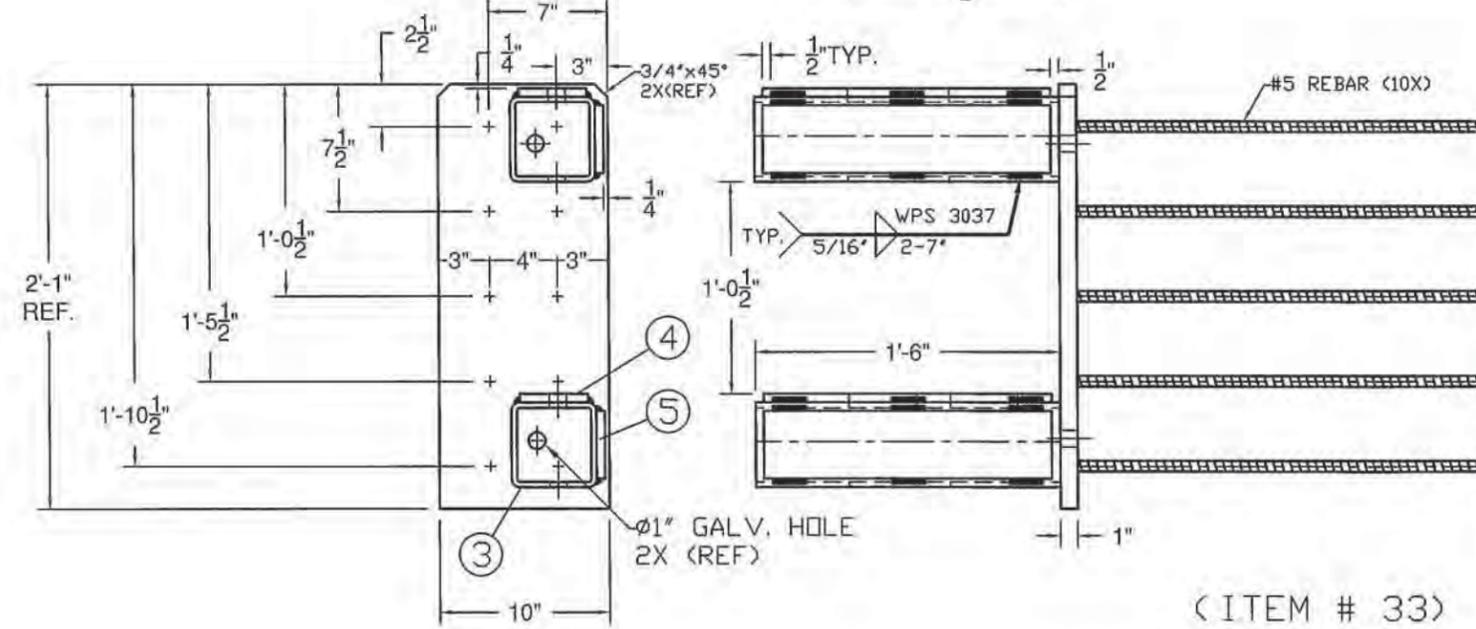


BILL OF MATERIALS

ITEM #	QTY	DESCRIPTION	ASTM #
1	1	DBL TUBE WALL PLATE - 1' X 10' x 25'	ASTM A572 Gr. 50
2	10	RAW, Ø5/8" REBAR @ 36"	A615, Gr. 60
3	2	5' X 5' X 5/16" TUBE W/ SLOTS @ 18"	ASTM A500 Gr. B
4	2	SHIM PL 1/2" X 4" X 17" W/ SLOTS	ASTM A709 Gr. 36
5	2	SHIM PL 1/2" X 4" X 17" (W/O SLOTS)	ASTM A709 Gr. 36



PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE SPLICE TUBES AND FILL PLATES



Vermont Agency of Transportation

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**T.Y. LIN INTERNATIONAL**

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RICK HEBERT REVIEWER 1/16/2015 DATE

ITEM #: 525.45

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

TOLERANCE UNLESS OTHERWISE NOTED:  
 FRACTIONS = ± 1/16"  
 ANGLES = ± 1/2"  
 DIAMETERS = ± 1/32"

SHEET 3 OF 3

**BRIDGE RAIL DETAILS SHEET**

VT 121 (CL 2, TH 1) RURAL MAJOR COLLECTOR, BRIDGE 11R  
 ROCKINGHAM, PROJECT BR 0126(12), TOWN OF ROCKINGHAM, WINDHAM COUNTY, VT.

R NO.	DATE	DESCRIPTION	BY	R NO.	DATE	DESCRIPTION	BY

DRAWN	E.P.	12/19/14
CHECKED	D.L.	12/19/14
APPROVED		
SCALE	SCHEMATIC	
DRAWING NO. FR L - ROCKINGHAM		

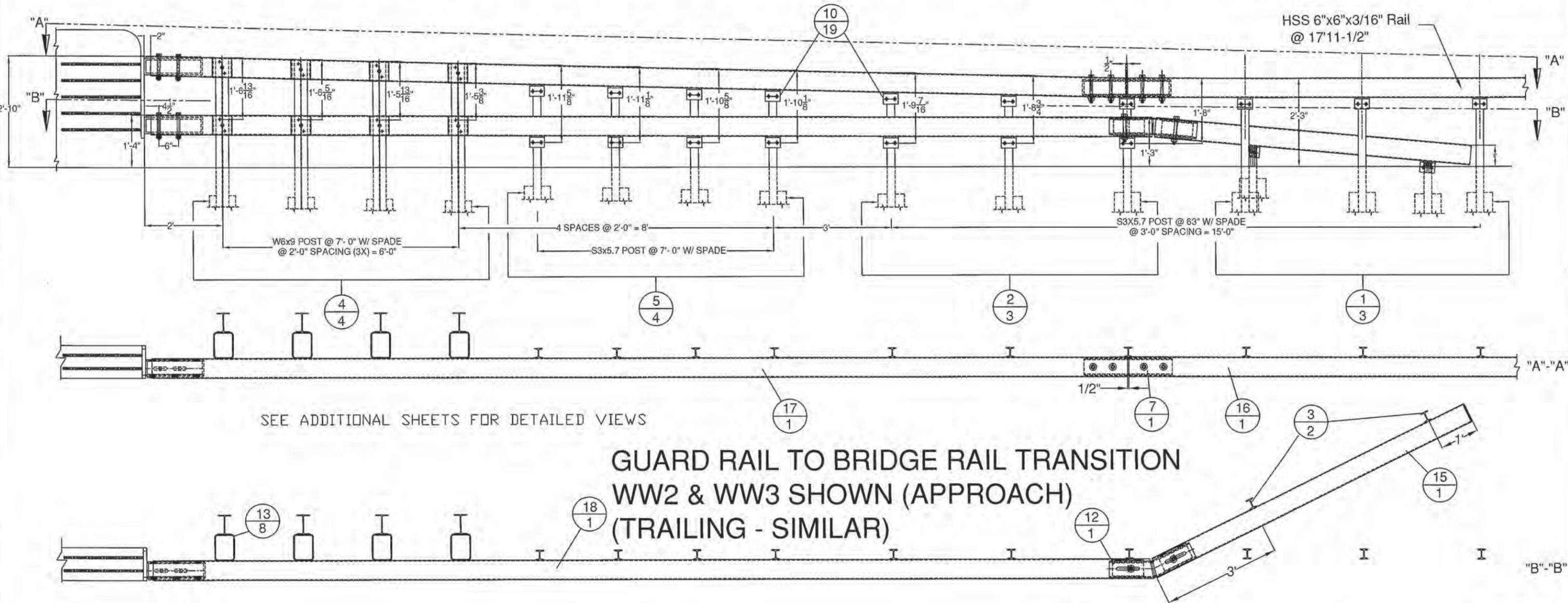
**ELDERLEE, INC.**  
 OAKS CORNERS, NEW YORK 14518  
 E-Mail: dlong@elderlee.com / epeek@elderlee.com  
 Tel: 315-789-6670 Fax: 315-789-6615



34' PAY LIMIT

COATED BLACK PER ASTM D7803

HSS 6"x6"x3/16" Kickback  
@ 9'-0" w/End Cap



SEE ADDITIONAL SHEETS FOR DETAILED VIEWS

**GUARD RAIL TO BRIDGE RAIL TRANSITION  
WW2 & WW3 SHOWN (APPROACH)  
(TRAILING - SIMILAR)**

Vermont Agency of Transportation

**RECEIVED**

ON: December 29, 2014

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BY: TAS DATE: 01/20/2015

ITEM #: 621.72

STRUCTURAL STEEL TO  
COMPLY W/ ASTM A6

TOLERANCE UNLESS  
OTHERWISE NOTED:  
FRACTIONS = ± 1/16"  
ANGLES = ± 1/2"  
DIAMETERS = ± 1/32"

SHEET 1 OF 5

**GRAS, GLV 2 RAIL BOX BEAM**

EM14-192, VT 121 (CL 2, TH 1) RURAL MAJOR COLLECTOR, BRIDGE NO: 11R  
PROJECT: ROCKINGHAM BRIF 0126(12), TOWN OF ROCKINGHAM, WINDHAM COUNTY, VT

R NO.	DATE	DESCRIPTION	BY	R NO.	DATE	DESCRIPTION	BY

DRAWN	E.P.	12/24/14
CHECKED	D.L.	
APPROVED	M.V.	
SCALE	SCHMATIC	
DRAWING NO.	FR L - ROCKINGHAM-T	

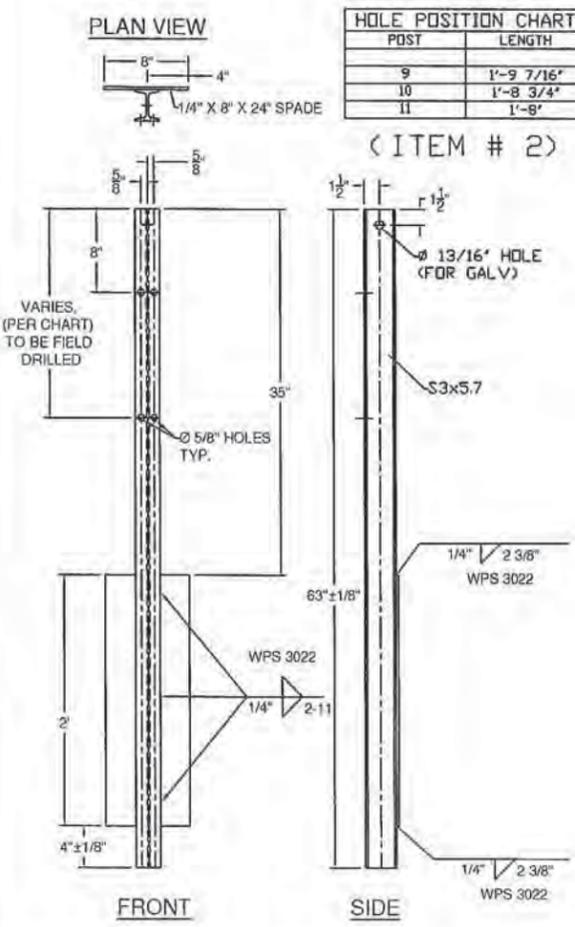
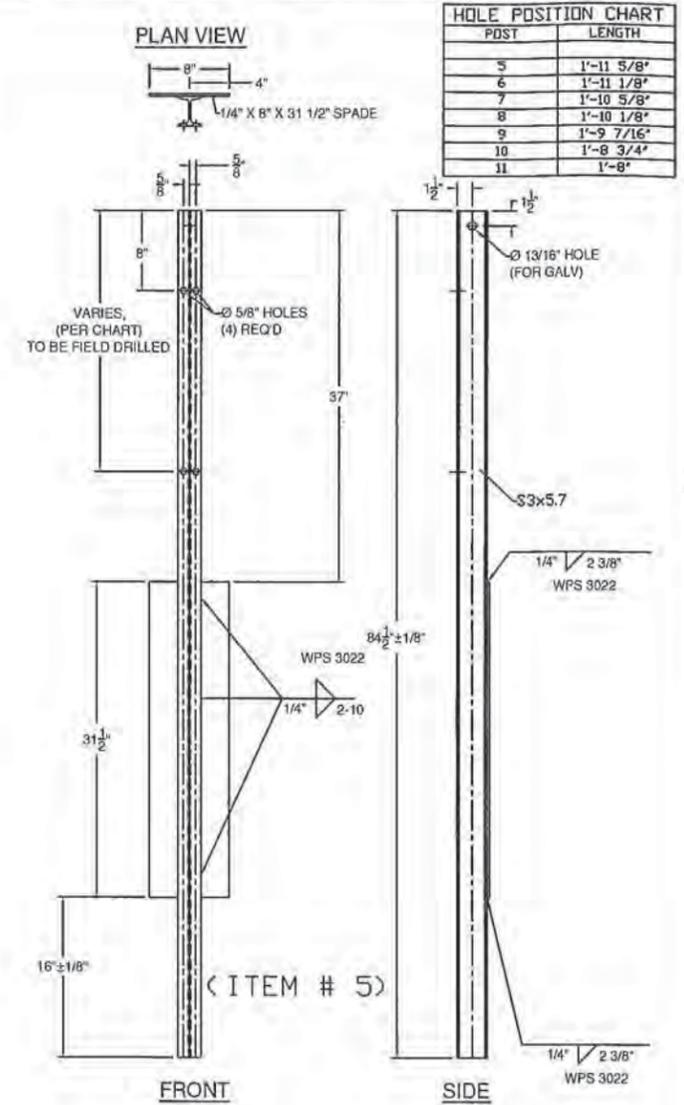
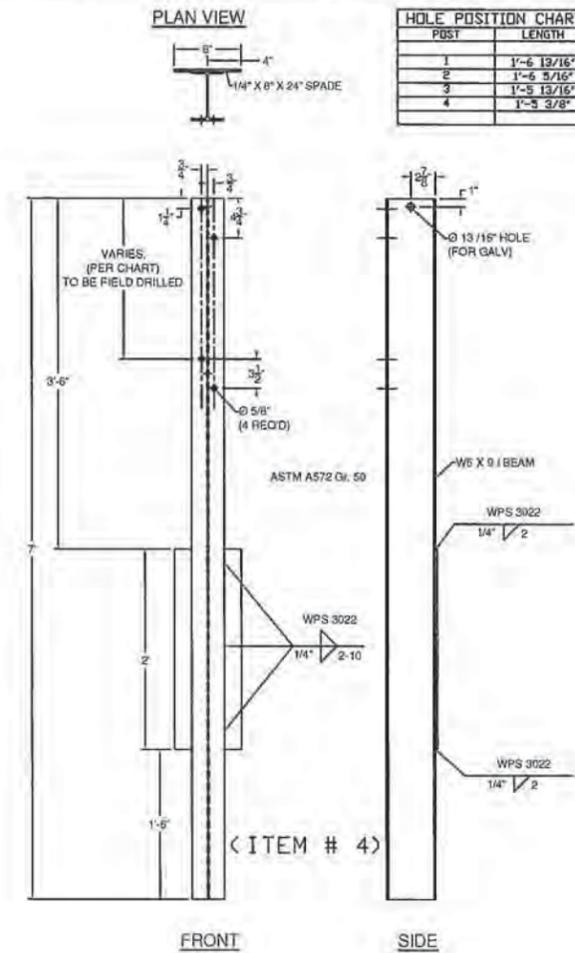
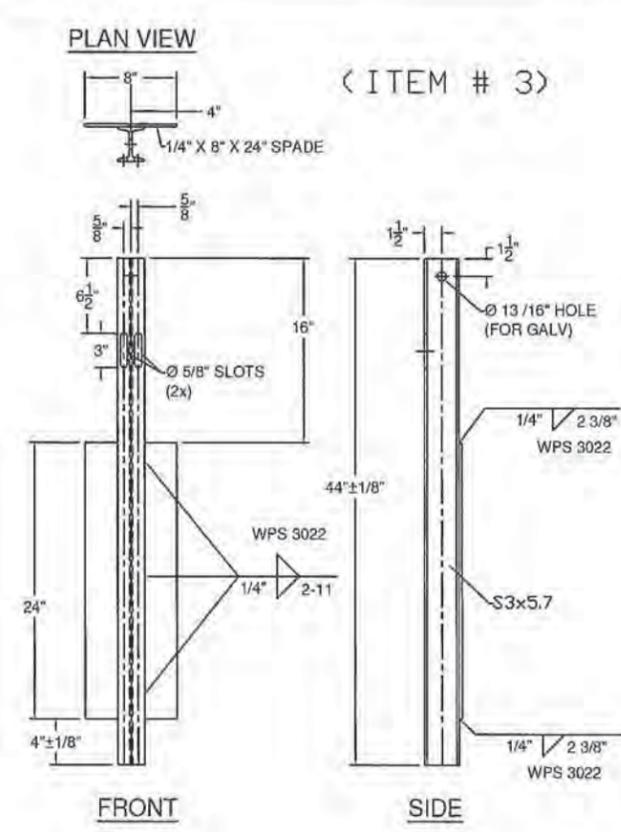
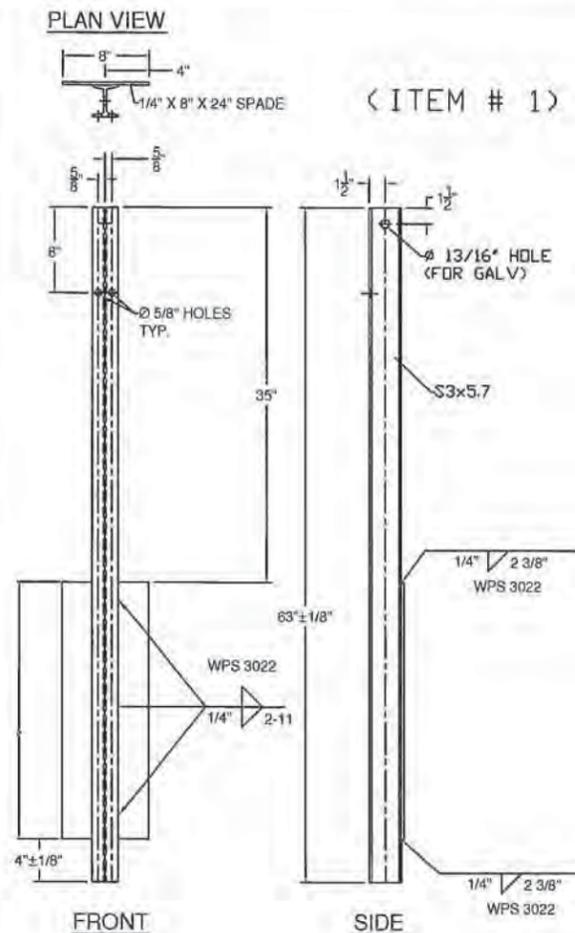


**ELDERLEE, INC.**  
OAKS CORNERS, NEW YORK 14518

E-Mail: dlong@elderlee.com / epeek@elderlee.com  
Tel: 315-789-6670 Fax: 315-789-6615



CERTIFIED FABRICATOR



**GENERAL NOTES:**

- 1) ALL RAILING IS TO BE FABRICATED AND ERECTED ACCORDING TO SECTION 525 OF THE STANDARD SPECIFICATIONS.
- 2) BOLTS SHALL BE TORQUED SNUG TIGHT (APPROXIMATELY 100 FT-LB).
- 3) PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE BOX BEAM RAILS, SPLICE TUBES AND FILL PLATES.
- 4) BOX BEAM TUBE AND STEEL POST MATERIALS, DIMENSION SIZES AND NOTES SHALL BE THE SAME AS THOSE OF THE BRIDGE RAIL, UNLESS OTHERWISE NOTED.
- 5) ANY BENDING OF RAIL SHALL BE DONE AT THE FABRICATION PLANT. RADII GREATER THAN 16' TO BE CURVED ON A TUBE BENDING MACHINE, RADII LESS THAN 16' TO BE "PIE CUT" AND WELDED. CURVED RAILING WILL HAVE AN 18" LENGTH ON EACH END STRAIGHT TO ACCOMADATE SPLICES.
- 6) ALL STEEL COMPONENTS SHALL BE COATED BLACK IN ACCORDANCE WITH ASTM D7803 FOLLOWING GALVANIZING.

BILL OF MATERIALS, EACH CORNER				
ITEM #	QTY.	COMPONENT #	DESCRIPTION	MATERIAL (ASTM)
1	3	0013.57021	3' I-POST, PUNCH 8' W/SPD @ 63' LG	ASTM A572 Gr. 50
2	3	0013.57025	3' I-POST W/SPD @ 63', PUNCH 8', & 20' & HOLES @ VARIOUS	ASTM A572 Gr. 50
3	2	0013.57060	3' I-END POST W/SPD @ 3'-8' LG	ASTM A572 Gr. 50
4	4	-	W6X9 POST @ 7' W/SPD & 5/8" HOLES @ VARIOUS	ASTM A572 Gr. 50
5	4	-	3' I-POST, PUNCH 8' & VARIOUS', W/8X32' SPADE @ 7'	ASTM A572 Gr. 50
7	1	0033.00640	HSS 5X5 TUBE SPLICE @ 27' LG W/ 1/4' SHIMS	A500 Gr. B / A572 Gr 50
10	19	0054.00050	REG BB SHELF ANGLES @ 4-1/2"	ASTM A36
12	1	-	HSS 5X5 DBL BEND TUBE SPL @ 27' LG	A500 Gr. B / A572 Gr 50
13	8	0054.00563	6X8' TRANS. TUBE B/D @ 6' LG	A500 Gr. B
15	1	0054.09000	6X6' BB @ 9'-0" KICKBACK, W/ CAP	A500 Gr. B / A36
16	1	0054.18000	6X6' BB @ 17'-11 1/2", DRILL 3' CC	A500 Gr. B
17	1	-	6X6' BB TOP TRANS @ 24'-9 3/4' LG W/EXP END	A500 Gr. B
18	1	-	6X6' BB BTM TRANS @ 25'-5 1/2' LG W/EXP END	A500 Gr. B
19	18	0080.03355	3/8" X 7 1/2" BOLT, NUT, & 2 FW	A307
20	19	0080.04100	1/2" x 1-1/2" BOLT, NUT, & FW	A307
21	16	0080.04120	1/2" x 1-1/2" BOLT, NUT, 2 FW & LW	A307
23	10	0080.06340	3/4" X 7-1/2" BOLT, NUT, 2 FW	A325, A563, F436
24	8	0080.06370	3/4" X 8" CARR BOLT, NUT, FW & LW	A307
25	1	-	3/4" THREADED ROD @ 14', NUT & FW (S.E. CORNER TURNBACK)	A449, A563, F436

POST	LENGTH
1	1'-6 13/16"
2	1'-6 5/16"
3	1'-5 13/16"
4	1'-5 3/8"

POST	LENGTH
5	1'-11 5/8"
6	1'-11 1/8"
7	1'-10 5/8"
8	1'-10 1/8"
9	1'-9 7/16"
10	1'-8 3/4"
11	1'-8"

Vermont Agency of Transportation

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**CONFORMANCE**

BY: TAS DATE: 01/20/2015

HARDWARE NOTES	
ITEM #	FUNCTION
19	BOLT RAIL TO SHELF ANGLE (ITEM #10)
20	BOLT SHELF ANGLE (ITEM # 10) TO POST
21	BOLT BLOCK-OUTS (ITEM # 13) TO HEAVY POST (ITEM # 4)
23	SPLICE TUBING (ITEM #'S 7 & 12), & (4) PER PARAPET WALL CONNECTION
24	BOLT RAIL (ITEMS #'S 17, & 18 TO BLOCK-OUTS (ITEM # 13)

ITEM #: 621.72

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

**GRAS, GLV 2 RAIL BOX BEAM**

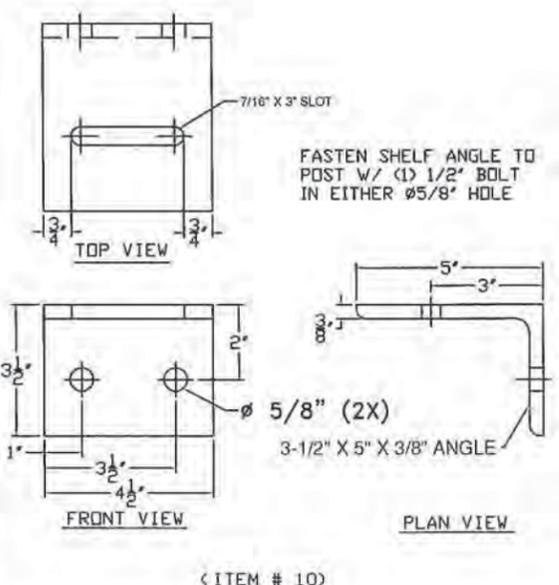
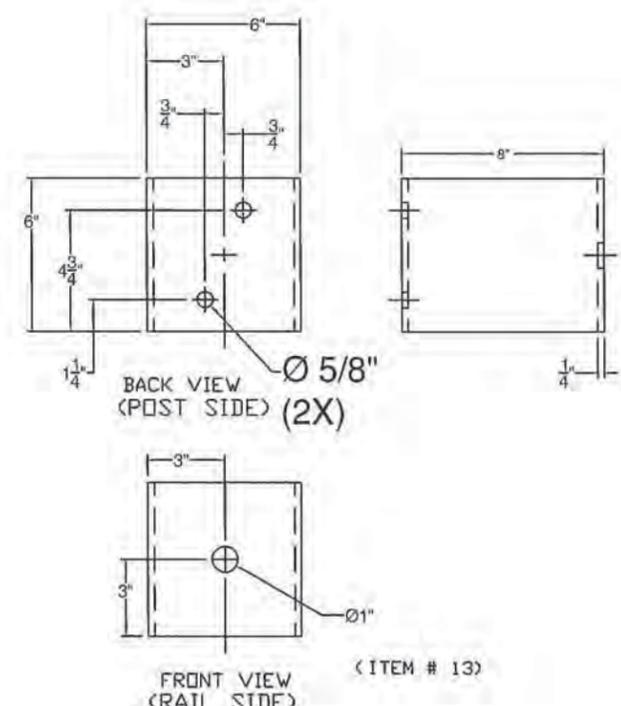
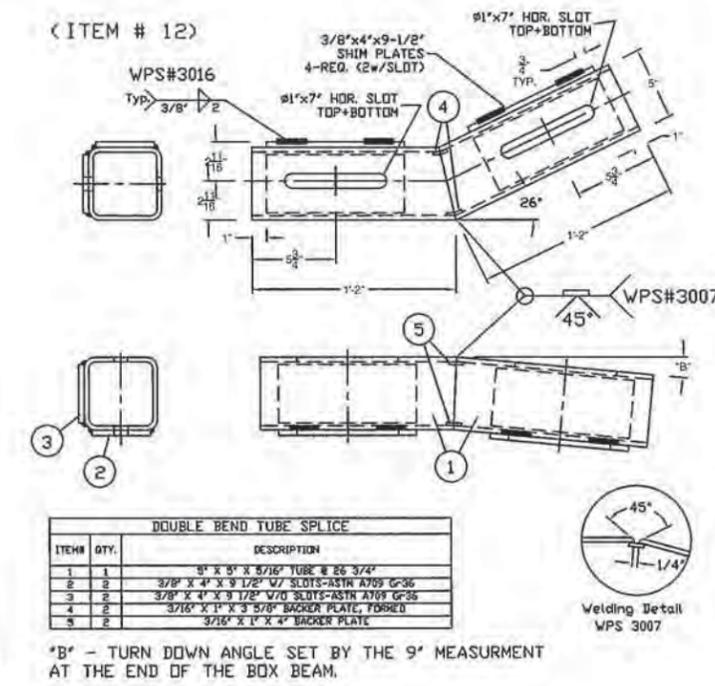
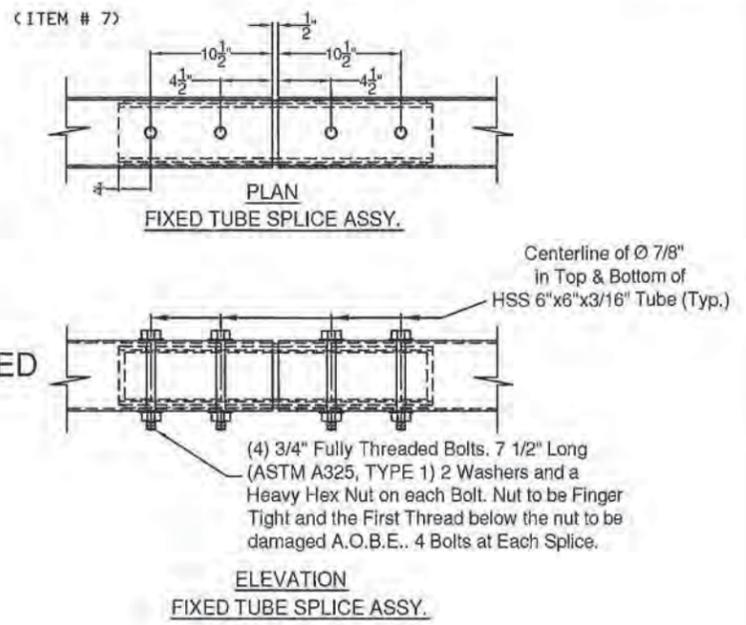
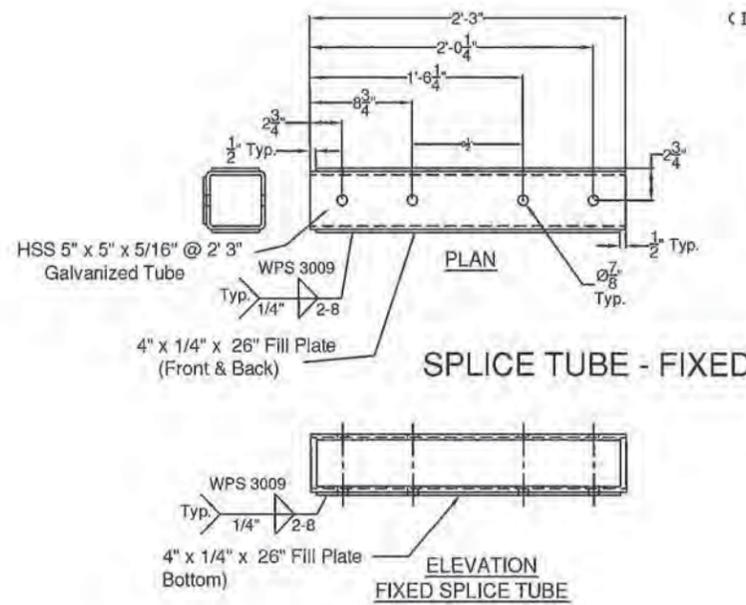
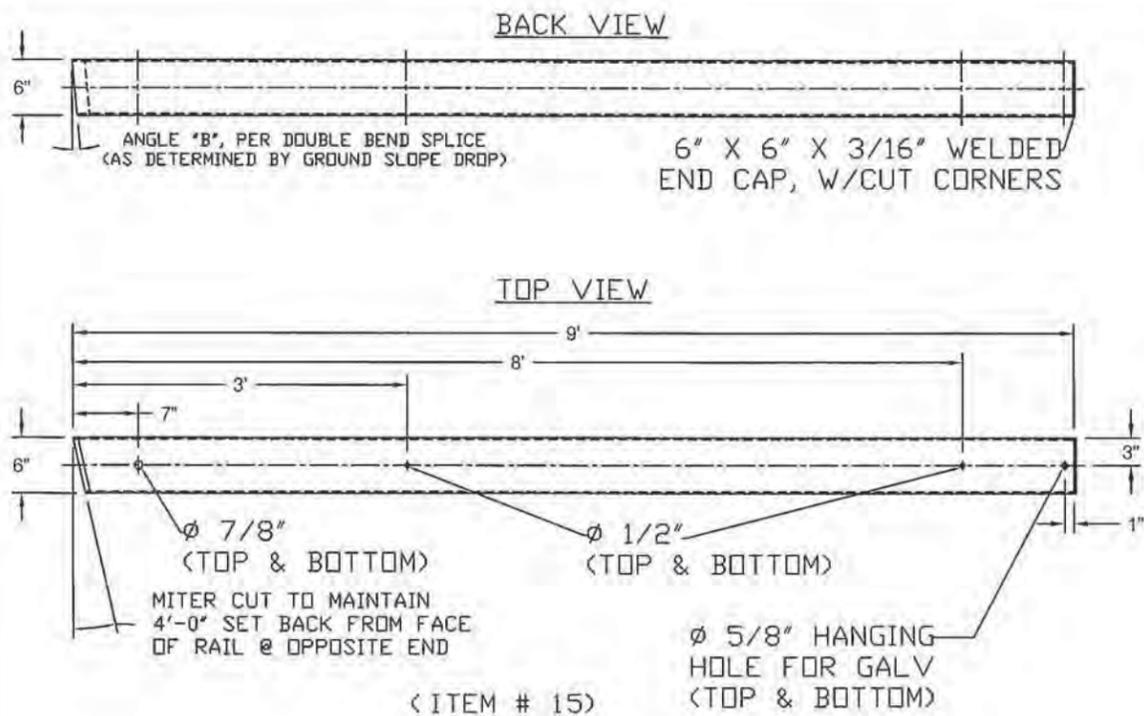
EM14-192, VT 121 (CL 2, TH 1) RURAL MAJOR COLLECTOR, BRIDGE NO: 11R  
PROJECT: ROCKINGHAM BRF 0126(12), TOWN OF ROCKINGHAM, WINDHAM COUNTY, VT

TOLERANCE UNLESS OTHERWISE NOTED:  
FRACTIONS = ± 1/16"  
ANGLES = ± 1/2"  
DIAMETERS = ± 1/32"

R	NO.	DATE	DESCRIPTION	BY	R	NO.	DATE	DESCRIPTION	BY

**ELDERLEE, INC.**  
OAKS CORNERS, NEW YORK 14518  
E-Mail: dlong@elderlee.com / epesk@elderlee.com  
Tel: 315-789-6670 Fax: 315-789-6616

DRAWN	E.P.	12/24/14
CHECKED	D.L.	
APPROVED	M.V.	
SCALE	SCHEMATIC	
DRAWING NO. FR L - ROCKINGHAM-T		



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ITEM #: 621.72  
 STRUCTURAL STEEL TO  
 COMPLY W/ ASTM A6  
 TOLERANCE UNLESS  
 OTHERWISE NOTED:  
 FRACTIONS = ± 1/16"  
 ANGLES = ± 1/2"  
 DIAMETERS = ± 1/32"

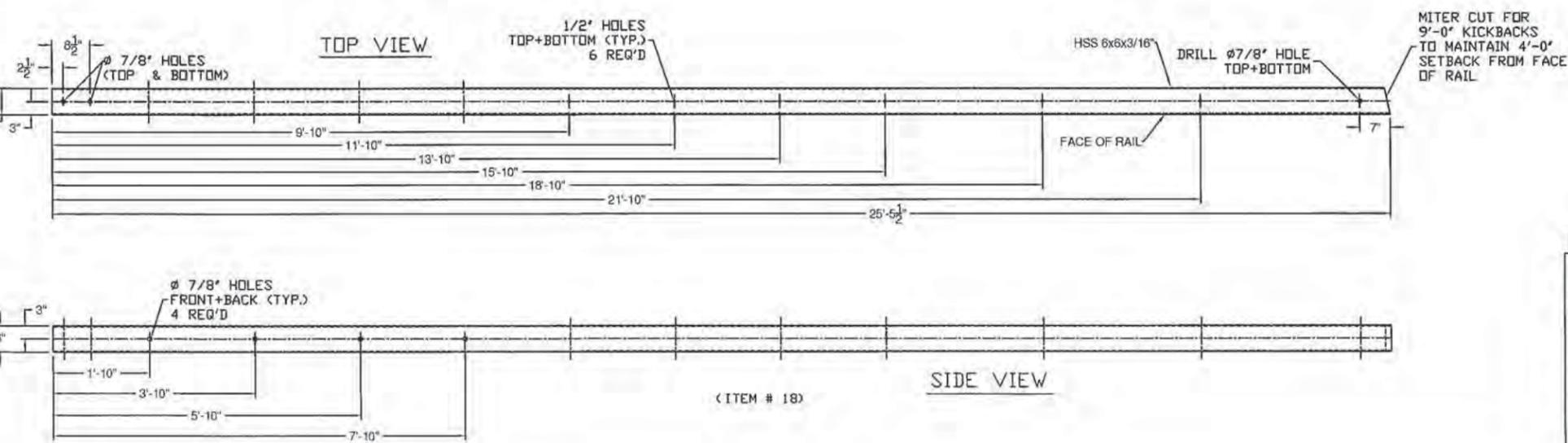
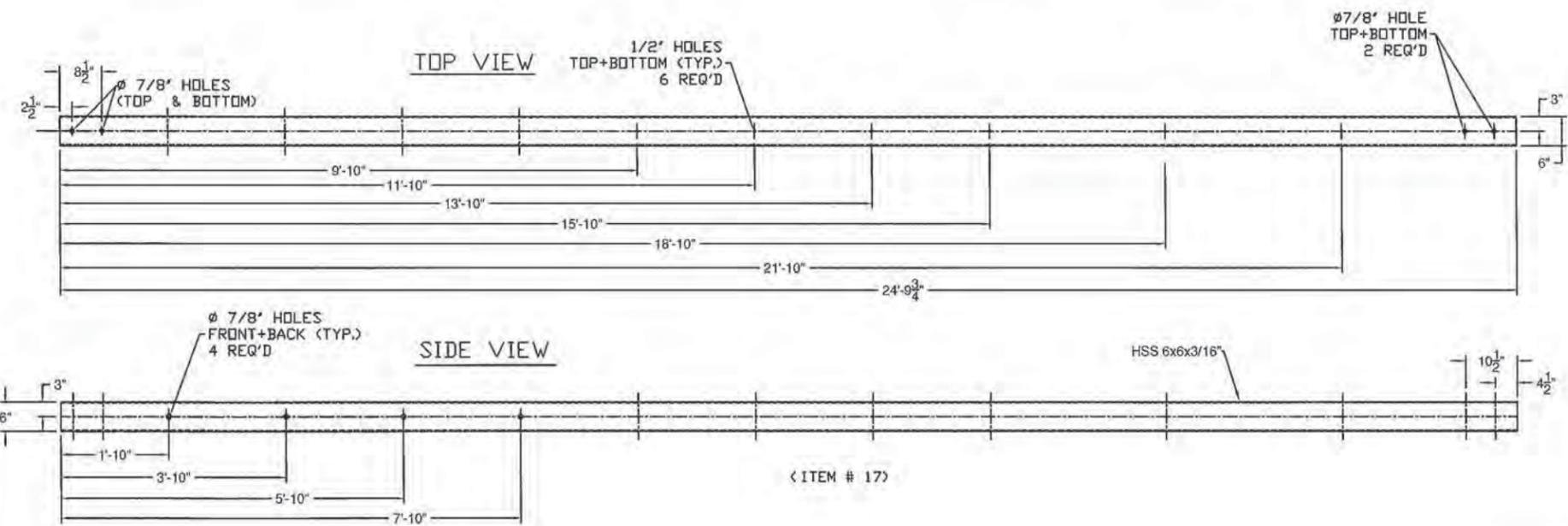
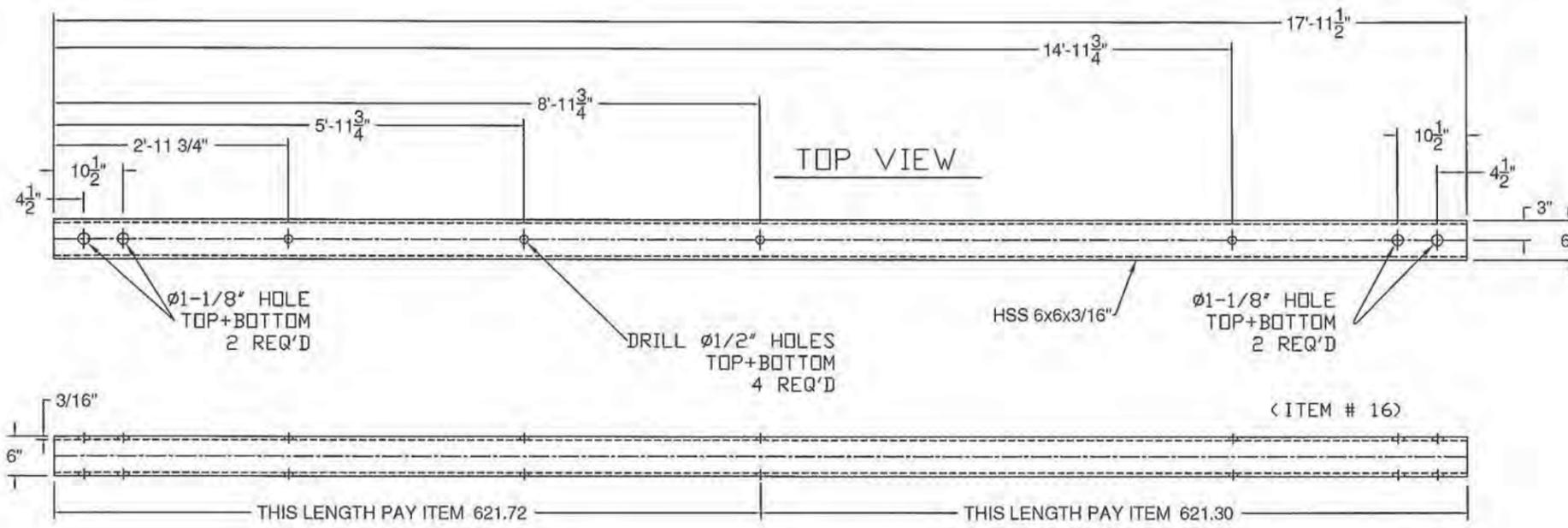
SHEET 3 OF 5

**GRAS, GLV 2 RAIL BOX BEAM**  
 EM14-192, VT 121 (CL 2, TH 1) RURAL MAJOR COLLECTOR, BRIDGE NO: 111R  
 PROJECT: ROCKINGHAM BRIDGE 0126(12), TOWN OF ROCKINGHAM, WINDHAM COUNTY, VT

R	NO.	DATE	DESCRIPTION	BY	R	NO.	DATE	DESCRIPTION	BY
E					E				
V					V				

**ELDERLEE, INC.**  
 OAKS CORNERS, NEW YORK 14518  
 E-Mail: dlong@elderlee.com / epeek@elderlee.com  
 Tel: 315-789-6670 Fax: 315-789-6615

DRAWN	E.P.	12/24/14
CHECKED	D.L.	
APPROVED	M.V.	
SCALE	SCHEMATIC	
DRAWING NO. FR L - ROCKINGHAM-T		



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ITEM #: 621.72

SHEET 4 OF 5

STRUCTURAL STEEL TO COMPLY W/ ASTM A6  
 TOLERANCE UNLESS OTHERWISE NOTED:  
 FRACTIONS = ± 1/16"  
 ANGLES = ± 1/2"  
 DIAMETERS = ± 1/32"

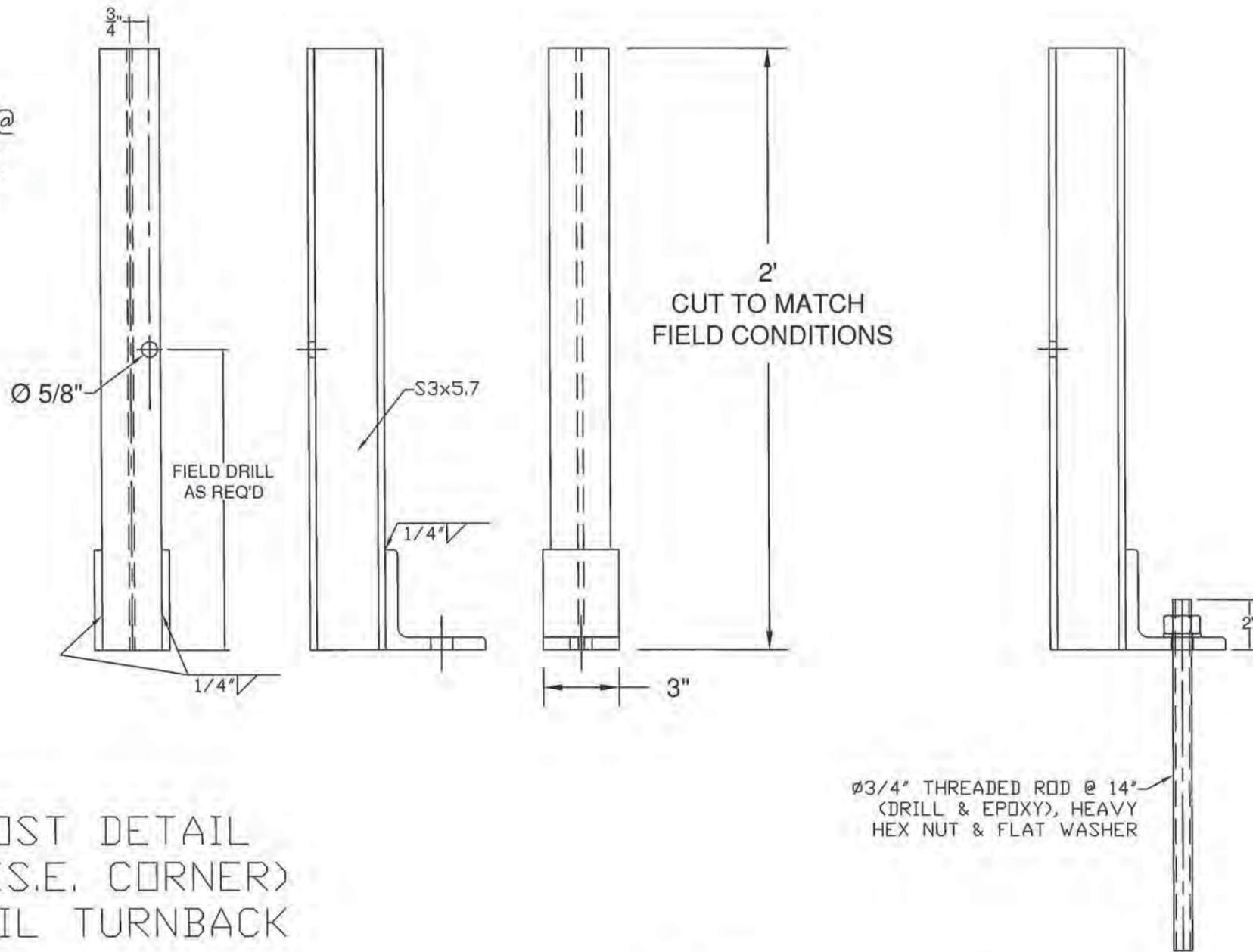
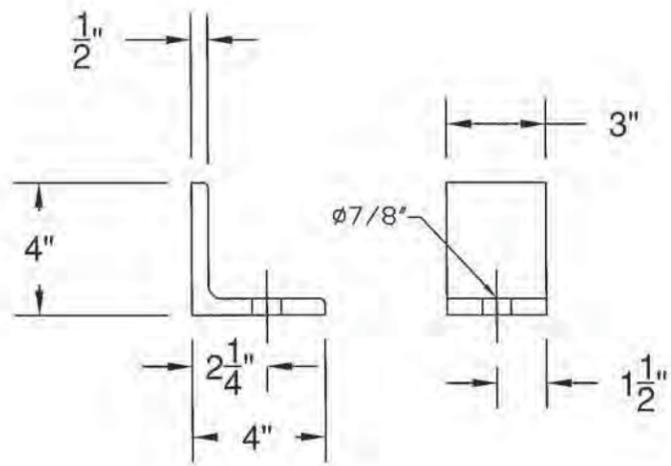
**GRAS, GLV 2 RAIL BOX BEAM**  
 EM14-192, VT 121 (CL 2, TH 1) RURAL MAJOR COLLECTOR, BRIDGE NO: 11R  
 PROJECT: ROCKINGHAM BR 0126(12), TOWN OF ROCKINGHAM, WINDHAM COUNTY, VT

R NO.	DATE	DESCRIPTION	BY	R NO.	DATE	DESCRIPTION	BY

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DRAWN	E.P.	12/24/14
CHECKED	D.L.	
APPROVED	M.V.	
SCALE	SCHEMATIC	
DRAWING NO. FR L - ROCKINGHAM-T		

NOTE: S.E. CORNER, BOTTOM RAIL TURNBACK (ITEM #15) - SUPPLIED @ STD 9'-0" LENGTH W/ WELDED END CAP. CUT & DRILL SPLICE END TO MATCH FIELD REQUIREMENTS.



SPECIAL POST DETAIL FOR W3 (S.E. CORNER) BOTTOM RAIL TURNBACK

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ITEM #: 621.72

SHEET 5 OF 5

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

**GRAS, GLV 2 RAIL BOX BEAM**

EM14-192, VT 121 (CL 2, TH 1) RURAL MAJOR COLLECTOR, BRIDGE NO: 111R  
PROJECT: ROCKINGHAM BR 0126(12), TOWN OF ROCKINGHAM, WINDHAM COUNTY, VT

TOLERANCE UNLESS OTHERWISE NOTED:  
FRACTIONS = ± 1/16"  
ANGLES = ± 1/2"  
DIAMETERS = ± 1/32"

R	NO.	DATE	DESCRIPTION	BY	R	NO.	DATE	DESCRIPTION	BY
E					E				
V					V				

DRAWN	E.P.	12/24/14
CHECKED	D.L.	
APPROVED	M.V.	
SCALE	SCHEMATIC	
DRAWING NO.	FR L - ROCKINGHAM-T	



**ELDERLEE, INC.**

OAKS CORNERS, NEW YORK 14578

E-Mail: [dlong@elderlee.com](mailto:dlong@elderlee.com) / [epetk@elderlee.com](mailto:epetk@elderlee.com)  
Tel: 315-789-6670 Fax: 315-789-6615



CERTIFIED FABRICATOR

## WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE#3

Material Specification	A500 GR B to A572 GR 50		
Welding Process	FCAW-G		
Manual or Machine	SEMAUTOMATIC		
Position of Welding	FLAT/HORIZONTAL		
Filler Metal Specification	A5.29		
Filler Metal Classification	E81T1-Ni1C-JH4		
Flux	N/A		
Shielding Gas	CO 2	Dew Point	-40DEG F Flow Rate 50CFH
Single or Multiple Pass	SINGLE		
Single or Multiple Arc	SINGLE		
Welding Current	DC		
Polarity	REVERSE ELECTRODE POSITIVE		
Welding Progression	STRINGER		
Root Treatment	PER D1.5		
Preheat and Interpass Temperature	PER D1.5		
Postheat Temperature	NONE		
Heat Input	Min		Max

### WELDING PROCEDURE

Pass no.	Electrode size	Welding Current		Travel speed	Joint detail
		Amperes	Volts		
1	1/16	310	25	11	
Variable	LIMITS	341	27	12	
		TO 269	TO 23	TO 10	

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

Procedure No. 3007

Contractor Elderlee, Inc.

Revision No. \_\_\_\_\_

Authorized By RANDY SCOTT

Vermont Agency of Transportation

Date 7/28/2014

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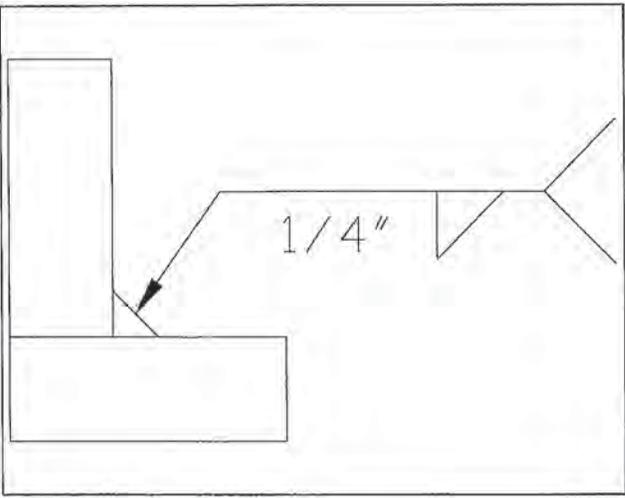
BY: TAS      DATE: 01/20/2015

## WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE #3

Material Specification	A709 TO A500 GR B		
Welding Process	FCAW-G		
Manual or Machine	SEMAUTOMATIC		
Position of Welding	FLAT/HORIZONTAL		
Filler Metal Specification	A5.29		
Filler Metal Classification	E81T1-Ni1C-JH4		
Flux	N/A		
Shielding Gas	CO 2	Dew Point	-40DEG F Flow Rate 50CFH
Single or Multiple Pass	SINGLE		
Single or Multiple Arc	SINGLE		
Welding Current	DC		
Polarity	REVERSE ELECTRODE POSITIVE		
Welding Progression	STRINGER		
Root Treatment	D1.5		
Preheat and Interpass Temperature	D1.5		
Postheat Temperature	NONE		
Heat Input	Min	_____	Max _____

### WELDING PROCEDURE

Pass no.	Electrode size	Welding Current		Travel speed	Joint detail
		Amperes	Volts		
1	1/16	310	25	11	
Variable	LIMITS	341	27	12	
		TO 269	TO 23	TO 10	

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

Procedure No. 3009

Contractor Elderlee, Inc.

Revision No. \_\_\_\_\_

Authorized By RANDY SCOTT

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**WELDING PROCEDURE SPECIFICATION**

PQR ELDERLEE #3

Material Specification	A500 TO A572 GR 50
Welding Process	FCAW-G
Manual or Machine	SEMAUTOMATIC
Position of Welding	FLAT/HORIZONTAL
Filler Metal Specification	A5.29
Filler Metal Classification	E81T1-Ni1C-JH4
Flux	N/A
Shielding Gas	CO 2 Dew Point -40DEG F Flow Rate 50CFH
Single or Multiple Pass	SINGLE
Single or Multiple Arc	SINGLE
Welding Current	DC
Polarity	REVERSE
Welding Progression	STRINGER
Root Treatment	PER D1.5
Preheat and Interpass Temperature	PER D1.5
Postheat Temperature	NONE
Heat Input	Min _____ Max _____

**WELDING PROCEDURE**

Pass no.	Electrode size	Welding Current		Travel speed	Joint detail
		Amperes	Volts		
1	1/16	310	25	11	
Variable	LIMITS	341	27	12	
		TO 269	TO 23	TO 10	

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

Procedure No. 3016

Contractor Elderlee, Inc.

Revision No. \_\_\_\_\_  
 Vermont Agency of Transportation

Authorized By RANDY SCOTT

Date 8/4/2014

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## WELDING PROCEDURE SPECIFICATION

Material Specification	A572 GR 50		
Welding Process	GMAW		
Manual or Machine	SEMIAUTOMATIC/ROBOTIC		
Position of Welding	FLAT/HORIZONTAL		
Filler Metal Specification	A5.18		
Filler Metal Classification	L-56	LINCOLN	
Flux	N/A		
Shielding Gas	90% ARGON /10% CO2	Dew Point	-40DEG F Flow Rate 45CFH
Single or Multiple Pass	SINGLE		
Single or Multiple Arc	SINGLE		
Welding Current	DC		
Polarity	REVERSE		
Welding Progression	STRINGER		
Root Treatment	PER D1.5		
Preheat and Interpass Temperature	PER D1.5		
Postheat Temperature	NONE		
Heat Input	Min		Max

### WELDING PROCEDURE

Pass no.	Electrode size	Welding Current		Travel speed	Joint detail
		Amperes	Volts		
Variable	LIMITS	190	22	19	
		171	20	17	
		TO	TO	TO	
		209	24	21	

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

Procedure No. 3022

Contractor Elderlee, Inc.

Revision No. \_\_\_\_\_

Authorized By RANDY SCOTT

Vermont Agency of Transportation

Date 3/20/2014

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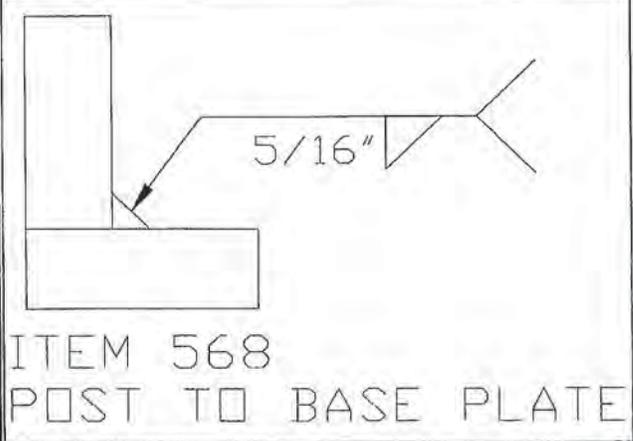
BY: **TAS**      DATE: **01/20/2015**

**WELDING PROCEDURE SPECIFICATION**

PQR ELDERLEE #3

Material Specification	A572 TO A572
Welding Process	FCAW-G
Manual or Machine	SEMAUTOMATIC
Position of Welding	FLAT/HORIZONTAL
Filler Metal Specification	A5.29
Filler Metal Classification	E81T1-Ni1C-JH4
Flux	N/A
Shielding Gas	CO 2 Dew Point -40DEG F Flow Rate 50CFH
Single or Multiple Pass	SINGLE
Single or Multiple Arc	SINGLE
Welding Current	DC ELECTRODE POSITIVE
Polarity	REVERSE
Welding Progression	STRINGER
Root Treatment	PER D1.5
Preheat and Interpass Temperature	PER D1.5
Postheat Temperature	NONE
Heat Input	Min _____ Max _____

**WELDING PROCEDURE**

Pass no.	Electrode size	Welding Current		Travel speed	Joint detail
		Amperes	Volts		
1	1/16	310	25	11	 <p>ITEM 568 POST TO BASE PLATE</p>
Variable	LIMITS	341	27	12	
		TO 269	TO 23	TO 10	

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

Procedure No. 3002

Contractor Elderlee, Inc.

Revision No. \_\_\_\_\_

Authorized By RANDY SCOTT

Date 3/20/2014

Vermont Agency of Transportation

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### WELDING PROCEDURE SPECIFICATION

Material Specification	A36 TO A500		
Welding Process	FCAW		
Manual or Machine	SEMAUTOMATIC		
Position of Welding	FLAT / HORIZONTAL		
Filler Metal Specification	A5.20 - 95		
Filler Metal Classification	E81T1-Ni1C-JH4		
Flux	N/A		
Shielding Gas	CO 2	Dew Point	-40DEG F Flow Rate 50CFH
Single or Multiple Pass	SINGLE		
Single or Multiple Arc	SINGLE		
Welding Current	DC		
Polarity	REVERSE ELECTRODE POSITIVE		
Welding Progression	STRINGER		
Root Treatment	PER D1.5		
Preheat and Interpass Temperature	PER D1.5		
Postheat Temperature	NONE		
Heat Input	Min	_____	Max _____

#### WELDING PROCEDURE

Pass no.	Electrode size	Welding Current		Travel speed	Joint detail
		Amperes	Volts		
1	1/16	300	26	14	
Variable	LIMITS	270	24	12.6	
		TO 330	TO 28	TO 15.4	

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

Procedure No. 3006  
 Revision No. \_\_\_\_\_

Contractor Elderlee, Inc.  
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**WELDING PROCEDURE SPECIFICATION**

PQR ELDERLEE #3

Material Specification	ASTM-A500-A53-GRADE B TO A36		
Welding Process	FCAW-G		
Manual or Machine	SEMAUTOMATIC		
Position of Welding	1G		
Filler Metal Specification	A5.29		
Filler Metal Classification	E81T1-Ni1C-JH4		
Flux	N/A		
Shielding Gas	CO 2	Dew Point	-40DEG F FLOW RATE 50 CFH
Single or Multiple Pass	SINGLE		
Single or Multiple Arc	SINGLE		
Welding Current	DC		
Polarity	REVERSE ELECTRODE POSITIVE		
Welding Progression	STRINGER		
Root Treatment	PER D1.5		
Preheat and Interpass Temperature	PER. D1.5		
Postheat Temperature	NONE		
Heat Input	Min		Max

**WELDING PROCEDURE**

Pass no.	Electrode size	Welding Current		Travel speed	Joint detail
		Amperes	Volts		
1	1/16	310	25	11	
Variable	LIMITS	341	27	12	
		TO 269	TO 23	TO 10	

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

Procedure No. 3012  
Revision No. \_\_\_\_\_

Contractor Elderlee, Inc.  
Authorized By RANDY SCOTT  
Date 3/20/2014

Vermont Agency of Transportation

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## WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE #3

Material Specification	A500 TO A572 GR 50		
Welding Process	FCAW-G		
Manual or Machine	SEMAUTOMATIC		
Position of Welding	FLAT/HORIZONTAL		
Filler Metal Specification	A5.29		
Filler Metal Classification	E81T1-Ni1C-JH4		
Flux	N/A		
Shielding Gas	CO 2	Dew Point	-40DEG F Flow Rate 50CFH
Single or Multiple Pass	SINGLE		
Single or Multiple Arc	SINGLE		
Welding Current	DC		
Polarity	REVERSE		
Welding Progression	STRINGER		
Root Treatment	PER D1.5		
Preheat and Interpass Temperature	PER D1.5		
Postheat Temperature	NONE		
Heat Input	Min		Max

### WELDING PROCEDURE

Pass no.	Electrode size	Welding Current		Travel speed	Joint detail
		Amperes	Volts		
1	1/16	310	25	11	
Variable	LIMITS	341	27	12	
		TO 269	TO 23	TO 10	

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

Procedure No. 3016

Contractor Elderlee, Inc.

Revision No. \_\_\_\_\_

Authorized By RANDY SCOTT

Date 8/4/2014

Vermont Agency of Transportation

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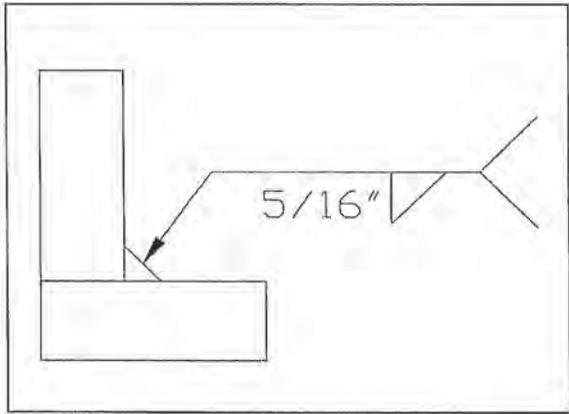
BY: **TAS**      DATE: **01/20/2015**

## WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE #3

Material Specification	ASTM A572 GR. 50 TO A325		
Welding Process	FCAW-G		
Manual or Machine	SEMAUTOMATIC		
Position of Welding	FLAT/HORIZONTAL		
Filler Metal Specification	A5.29		
Filler Metal Classification	E81T1-Ni1C-JH4		
Flux	N/A		
Shielding Gas	CO 2	Dew Point	-40DEG F Flow Rate 50CFH
Single or Multiple Pass	SINGLE		
Single or Multiple Arc	SINGLE		
Welding Current	DC		
Polarity	REVERSE ELECTRODE POSITIVE		
Welding Progression	STRINGER		
Root Treatment	CLEAN PER D1.5		
Preheat and Interpass Temperature	PER D1.5		
Postheat Temperature	NONE		
Heat Input	Min	_____	Max _____

### WELDING PROCEDURE

Pass no.	Electrode size	Welding Current		Travel speed	Joint detail
		Amperes	Volts		
1	1/16	310	25	11	
Variable	LIMITS	341	27	12	
		TO 269	TO 23	TO 10	

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

Procedure No. 3019

Contractor Elderlee, Inc.

Revision No. \_\_\_\_\_

Authorized By RANDY SCOTT

Date 7/28/2014

Vermont Agency of Transportation

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BY: TAS      DATE: 01/20/2015

## WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE #3

Material Specification	ASTM A572 GR. 50 CVN TO A500 GR B		
Welding Process	FCAW-G		
Manual or Machine	SEMAUTOMATIC		
Position of Welding	FLAT/HORIZONTAL		
Filler Metal Specification	A5.29		
Filler Metal Classification	E81T1-Ni1C-JH4		
Flux	N/A		
Shielding Gas	CO 2	Dew Point	-40DEG F Flow Rate 50CFH
Single or Multiple Pass	SINGLE		
Single or Multiple Arc	SINGLE		
Welding Current	DC		
Polarity	REVERSE ELECTRODE POSITIVE		
Welding Progression	STRINGER		
Root Treatment	PER D1.5		
Preheat and Interpass Temperature	PER D1.5		
Postheat Temperature	NONE		
Heat Input	Min		Max

### WELDING PROCEDURE

Pass no.	Electrode size	Welding Current		Travel speed	Joint detail
		Amperes	Volts		
1	1/16	310	25	11	<p style="text-align: center;">1/4~3/8"</p>
Variable	LIMITS	341	27	12	
		TO 269	TO 23	TO 10	

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

Procedure No. 3037

Contractor Elderlee, Inc.

Revision No. \_\_\_\_\_  
 Vermont Agency of Transportation

Authorized By RANDY SCOTT

Date 12/1/2014

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