

KUBRICKY CONSTRUCTION CORP.
269 BALLARD ROAD

WILTON, NY 12831
518 792-5864



Rutland City BRF 3000 (2014036)
SUBMITTAL 79.1

Issued 01/12/16
Respond by 01/22/16

To

Timothy Pockette, PE

Topic BRF3000 Subm 79.1 (19) 525.44 Bridge Railing
Status Submitted For Review

Message Tim,
Please see attached submittal BRF3000 79.1 (19) 525.44 Bridge Railing for review.

Thanks,
Mike

From

Volker H.D. Burkowski

Signed by

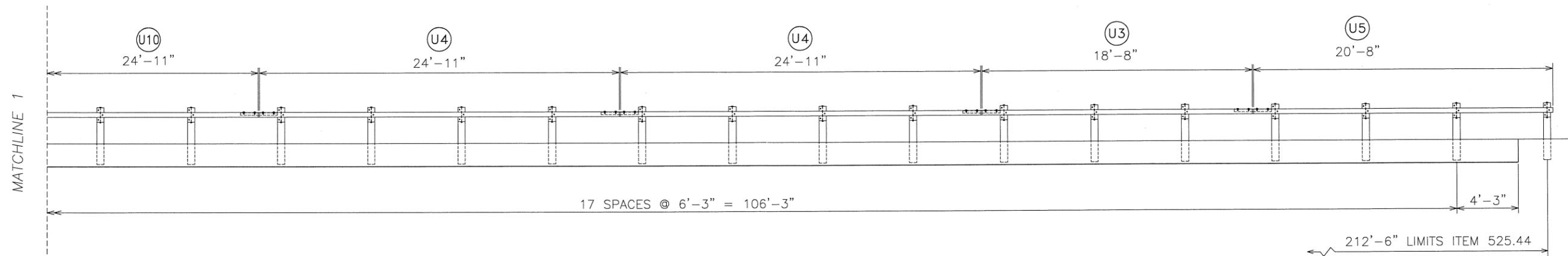
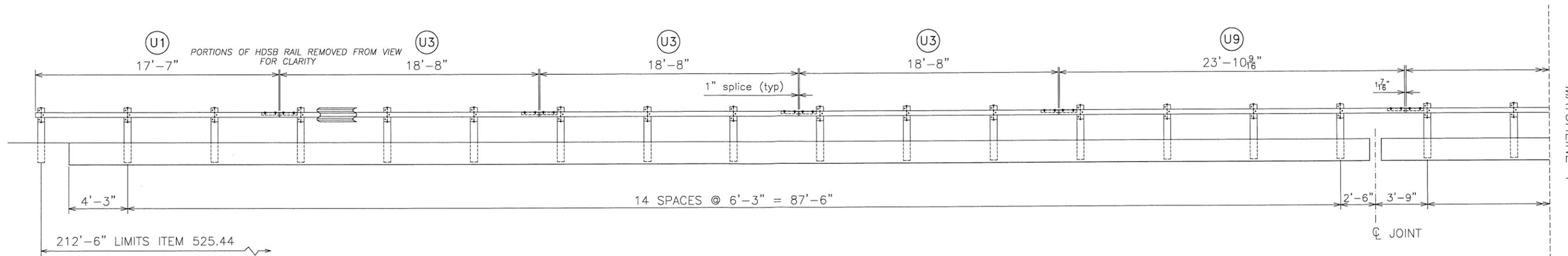
Date

1/12/15

Proceed as Indicated

Date

Owner Authorized Representative



B.I.N. 17

RAILING ELEVATION VIEW

LOOKING AT FACE OF RAIL, FACING NORTH, FROM CENTERLINE OF ROAD

Vermont Agency of Transportation

RECEIVED

ON: **January 14, 2016**

and Checked for

CONFORMANCE

BY: **ABC**

DATE:

BILL OF MATERIAL ITEM 525.44 = 425 LF

Qty	mk	Description	Spec.
66		W6x25 FASCIA MOUNTED POST 37.000 OAL	A572 gr 50
4		W6x25 DRIVEN POST #1 x 6 FT LONG (GLV)	A572 gr 50
140		TUBE BLOCK HSS 8 x 4 x 3/16 x 6.000" LG (GLV)	A500 gr B
34		HDSB W-BEAM PANEL 10 GA 12'-6" LG X 6'-3" SP (GALV)	M180 B2
18		SPLICE CHANNEL C7 X 12.25 x 2'-7" w/ (4) TACKWELDED HEX NUTS (GALV)	A572 gr 50
2	U1	TUBULAR STEEL RAIL (GLV) HSS 8 x 4 x 3/16 x 17'-7.0000" OAL	A500 gr B
8	U3	TUBULAR STEEL RAIL (GLV) HSS 8 x 4 x 3/16 x 18'-8.0000" OAL	A500 gr B
4	U4	TUBULAR STEEL RAIL (GLV) HSS 8 x 4 x 3/16 x 24'-11.0000" OAL	A500 gr B
2	U5	TUBULAR STEEL RAIL (GLV) HSS 8 x 4 x 3/16 x 20'-8.0000" OAL	A500 gr B
2	U9	TUBULAR STEEL RAIL (GLV) HSS 8 x 4 x 3/16 x 23'-10.5625" OAL	A500 gr B
2	U10	TUBULAR STEEL RAIL (GLV) HSS 8 x 4 x 3/16 x 24'-11.0000" OAL	A500 gr B
70		RECTANGULAR WASHER 0.1875" x 1.75" x 3.00" (GLV)	A572 GR 50
132		U-SHAPED ANCHOR STUD 1" DIA 10" x 12"	A449
264		PLATE WASHER 0.25" x 2" x 5" w/ 1.25" DIA CENTER HOLE	A572 GR 50
528		HEX NUT (HI STR) 1"	A563 DH
264		ROUND WASHER (SAE) 1"	F436
70		HEX HEAD BOLT 5/8" DIA x 13" LG HDG	A325
70		HEX HEAD BOLT 5/8" DIA x 10" LG HDG	A325
212		HEX HEAD BOLT 5/8" DIA x 2" LG HDG	A325
280		HEX NUT 5/8" HDG	A563 DH
562		ROUND WASHER SMALL FLAT 5/8" HDG	F436
272		BUTTON HEAD BOLT 5/8" x 1.25"	A307
272		DOUBLE RECESS. NUT 5/8" HDG	A563 A

- NO EXCEPTION TAKEN
- MAKE CORRECTIONS NOTED
- REJECTED
- REVISE AND RESUBMIT
- SUBMIT SPECIFIED ITEM

CHECKING IS ONLY FOR THE GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE; FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATION OF HIS WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF THE WORK.

DATE 1/13/16 BY J. NAJDOWSKI

REVISIONS		
No.	Remarks	Date
0	Initial Submittal	11/30/15
RevA	Review Corrections	1/13/16

HIGHWAY SAFETY CORP
GLASTONBURY, CT
860-633-9445

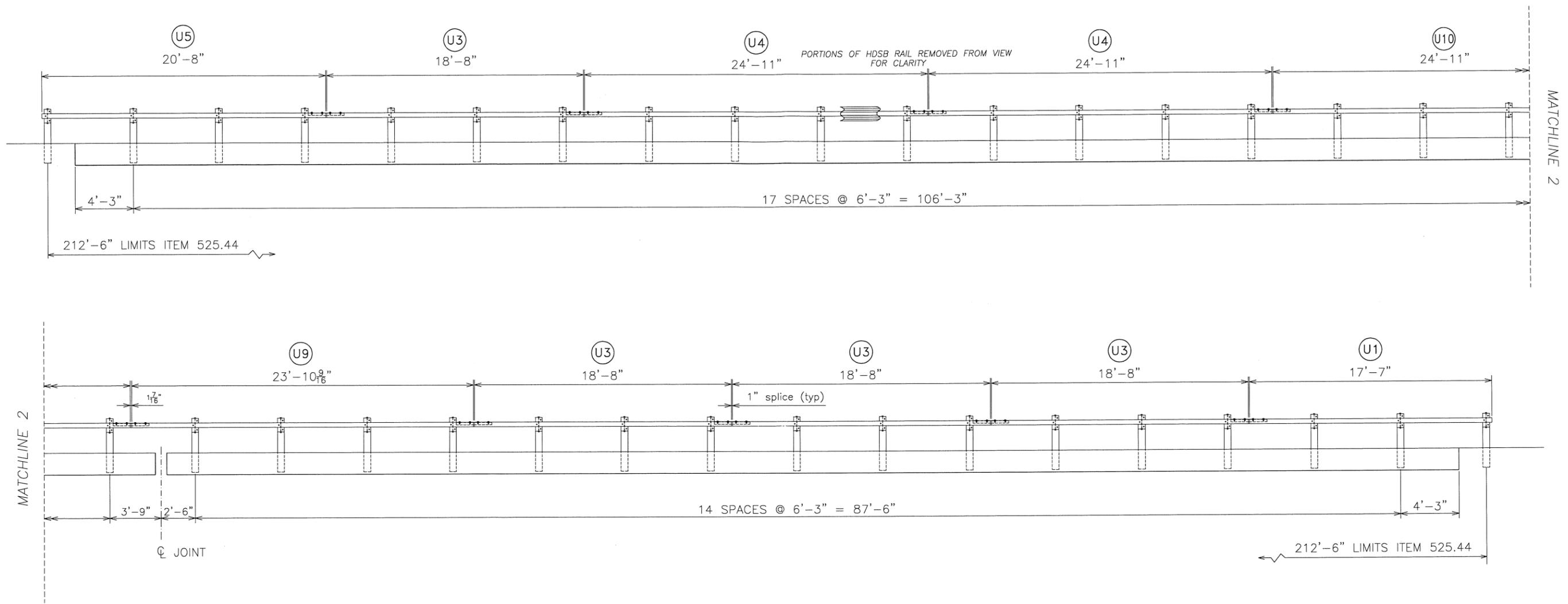
ITEM 525.44 BRIDGE RAILING
GALVANIZED HDSB/FASCIA MOUNTED/ STEEL TUBING
BRIDGE IMPROVEMENT
TH 10 OVER OTTER CREEK
BRIDGE 17 - BRF 3000(19)
CITY OF RUTLAND, VT - RUTLAND COUNTY

CERTIFIED FABRICATOR

HSC JOB NO. **2065**
SHEET NO. **1 of 6**

GENERAL CONTRACTOR
SUB CONTRACTOR **LAFAYETTE**

DRAWN MKT CHECKED *[Signature]* DATE 11-20-15 SCALE NONE SIZE D



Vermont Agency of Transportation

BRF3000 Subm 79 (19) 525.44 Bridge Railing - CHA Review

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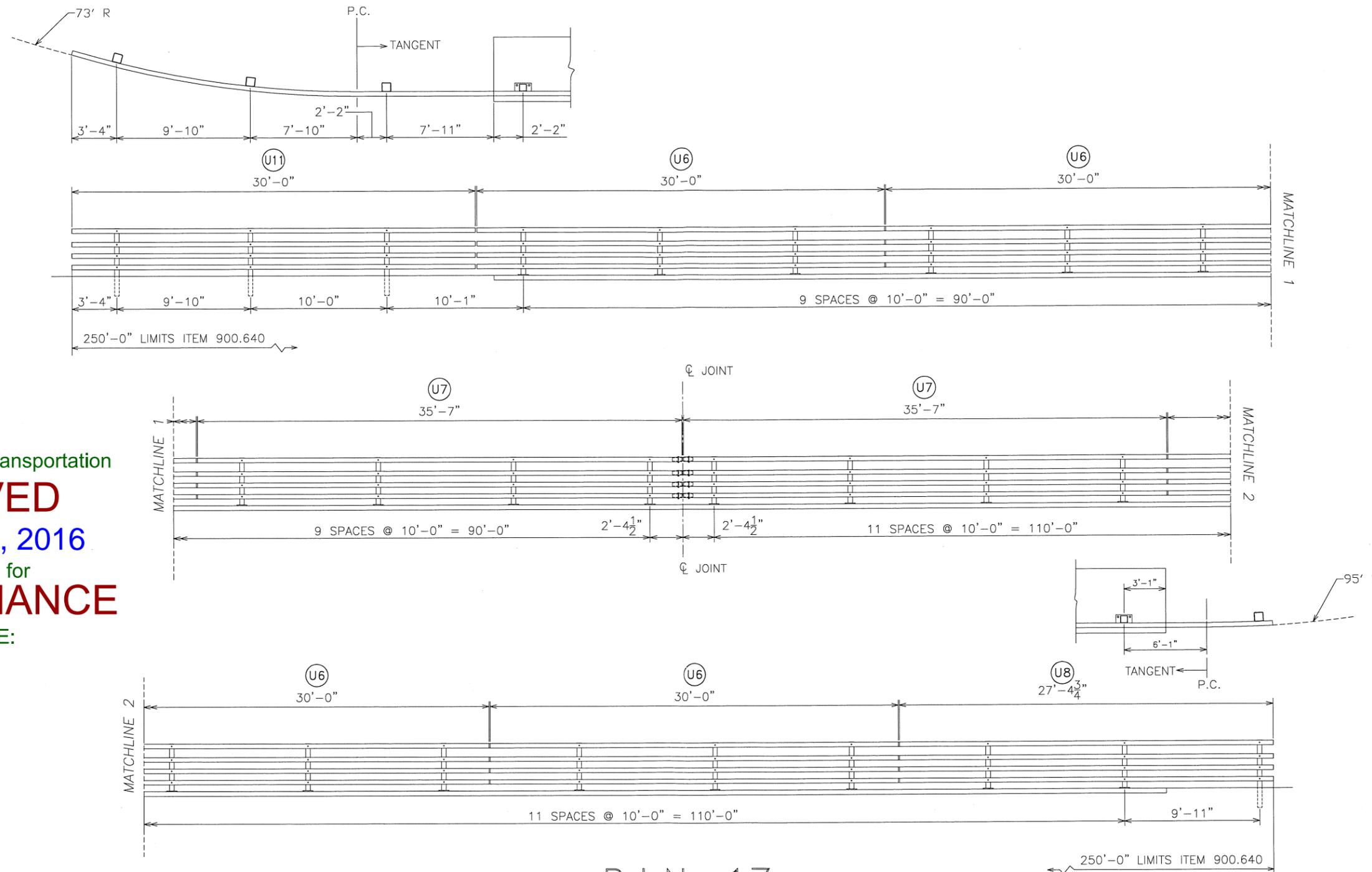
BY: **ABC** DATE:

B.I.N. 17

RAILING ELEVATION VIEW

LOOKING AT FACE OF RAIL, FACING SOUTH, FROM CENTERLINE OF ROAD

HIGHWAY SAFETY CORP GLASTONBURY, CT 860-633-9445	
ITEM 525.44 BRIDGE RAILING GALVANIZED HDSB/FASCIA MOUNTED/ STEEL TUBING BRIDGE IMPROVEMENT TH 10 OVER OTTER CREEK BRIDGE 17 - BRF 3000(19) CITY OF RUTLAND, VT - RUTLAND COUNTY	
GENERAL CONTRACTOR LAFAYETTE	CERTIFIED FABRICATOR
SUB CONTRACTOR LAFAYETTE	HSC JOB NO. 2065
DRAWN MKT	SHEET NO. 2 of 6
CHECKED DATE 11-20-15	SCALE NONE
DATE 11-20-15	SIZE D



Vermont Agency of Transportation

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BY: **ABC** DATE:

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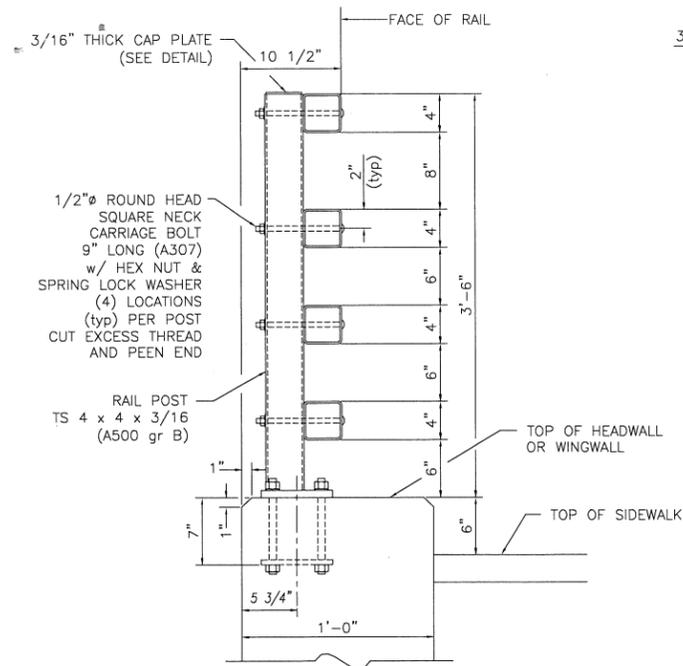
RAILING ELEVATION VIEW

LOOKING AT FACE OF RAIL, FACING NORTH, FROM CENTERLINE OF ROAD
(TRAFFIC RAILING REMOVED FOR CLARITY)

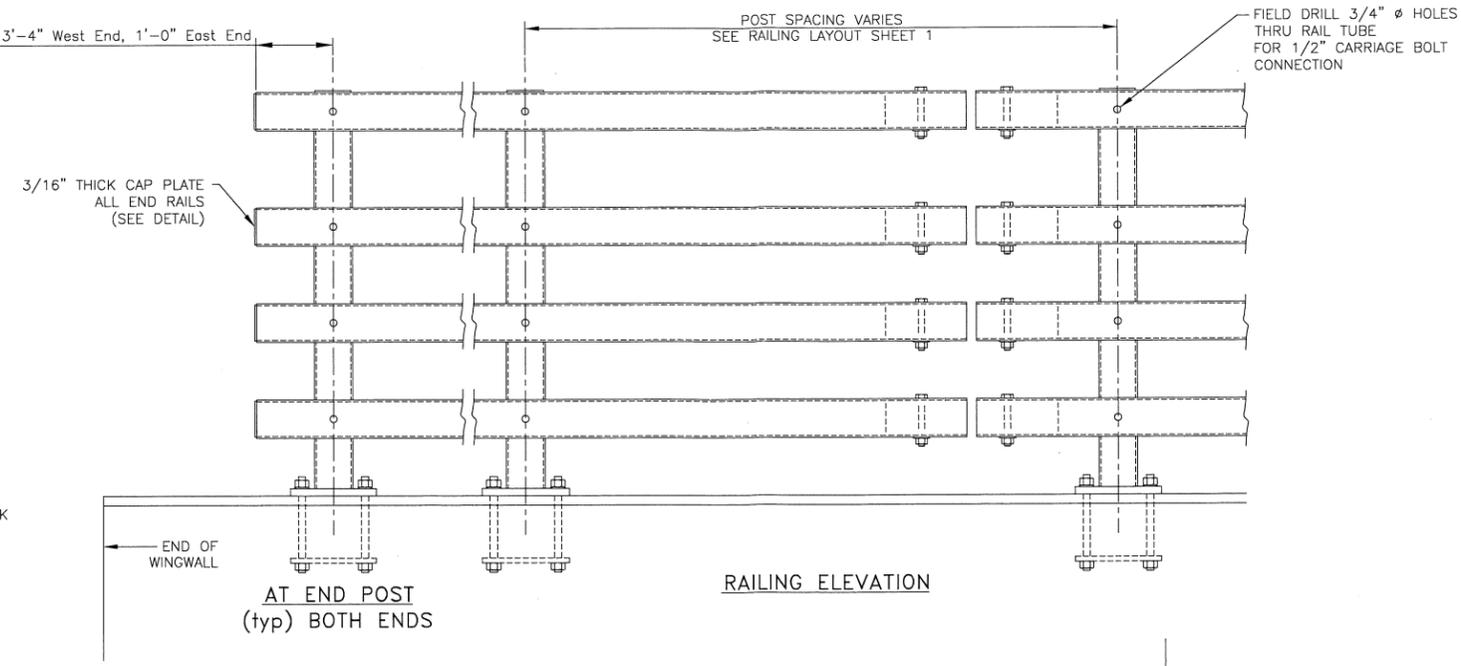
BILL OF MATERIAL ITEM 900.640 = 250 LF

Qty	mk	Description	Spec.
22		TUBULAR POST HSS 4 x 4 x 3/16 x 42.187 OAH INCLUDING 0.750 x 7.500 x 9.00 B.P. & 0.187 x 3.750 SQ CAP (GLV)	A500 gr B / A36
4		TUBULAR DRIVEN POST HSS 4 x 4 x 3/16 x 7 x 6" FT LONG (GLV) w/ 0.250 x 8.000 x 24.000 SOIL PLATE	A500 gr B / A36
36		SPLICE TUBE (FOR 4X4 RAIL) HSS 3 x 3 x 1/4 x 1'-6.000" OAL w/ TAPPED HOLES & 2 WELDED NUTS (GLV)	A500 gr B
16	U6	TUBULAR STEEL RAIL (GLV) HSS 4 x 4 x 3/16 x 30'-0.00" OAL	A500 gr B
8	U7	TUBULAR STEEL RAIL (GLV) HSS 4 x 4 x 3/16 x 35'-7.00" OAL	A500 gr B
4	U8	TUBULAR STEEL RAIL (GLV) HSS 4 x 4 x 3/16 x 27'-4.75" OAL (SHOP CURVE 95' R)	A500 gr B
4	U11	TUBULAR STEEL RAIL (GLV) HSS 4 x 4 x 3/16 x 30'-0.00" OAL (SHOP CURVE 73' R)	A500 gr B
22		ANCHOR PLATE PL 0.500 x 7.500 x 9.00 w/ TACKWELDED NUTS	A36
88		ANCHOR BOLT 3/4" DIA x 12" FULL THREAD STUD w/ NUT & WASHER	A449
104		ROUND HEAD SQUARE NECK CARRIAGE BOLT 1/2" DIA x 9" LG. w/ HEX NUT 1/2" DIA & SPRING LOCK WASHER	A307
72		HEX HEAD BOLT 5/8" DIA x 5" LG. w/ HEX NUT & WASHER	A307
8		END CAP 3.750 x 3.750 x 0.187	A36

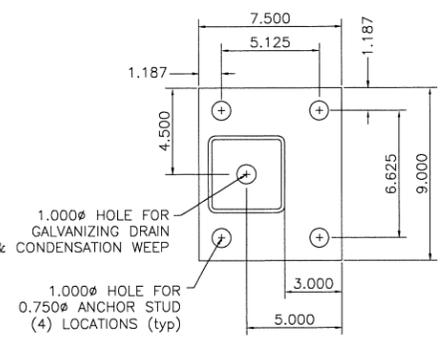
HIGHWAY SAFETY CORP GLASTONBURY, CT 860-633-9445		CERTIFIED FABRICATOR
ITEM 900.640 BRIDGE RAILING GALVANIZED HDSB/FASCIA MOUNTED/ STEEL TUBING BRIDGE IMPROVEMENT TH 10 OVER OTTER CREEK BRIDGE 17 - BR 3000(19) CITY OF RUTLAND, VT - RUTLAND COUNTY		
GENERAL CONTRACTOR LAFAYETTE		HSC JOB NO. 2065
SUB CONTRACTOR LAFAYETTE		SHEET NO. 3 of 6
DRAWN MKT	CHECKED	DATE 11-20-15 SCALE NONE SIZE D



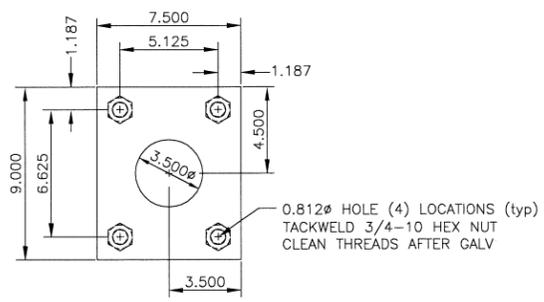
RAILING SECTION



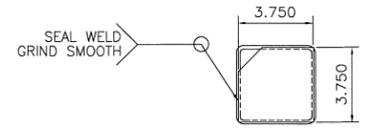
RAILING ELEVATION



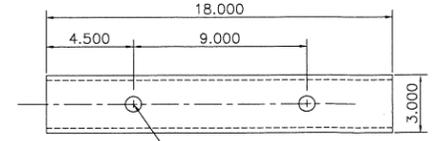
SECTION THRU POST AT BASE PLATE
PL 0.750 x 7.500 x 9.000 (A36)



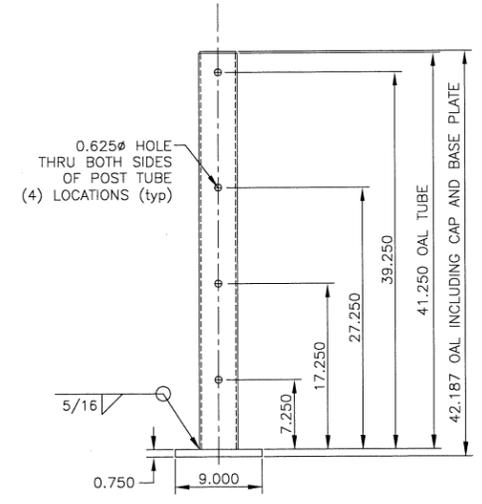
ANCHOR PLATE DETAIL
PL 0.500 x 7.500 x 9.000 (A36)



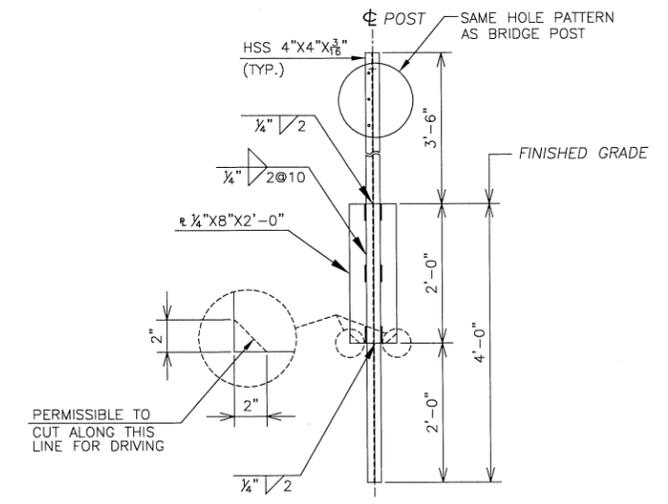
END CAP DETAIL
PL 0.187 x 3.750 x 3.750 (A36)
USE AT ALL RAIL TERMINATIONS AND POST CAPS
CLIP CORNER OF CAP PLATES 1.250 FOR GALV VENT



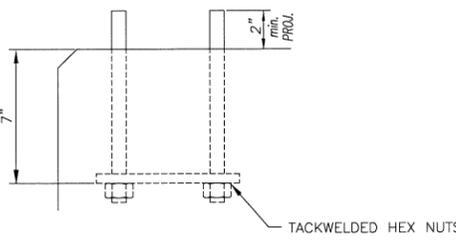
SPLICE TUBE DETAIL
TS 3 x 3 x 1/4 (A500 gr B)



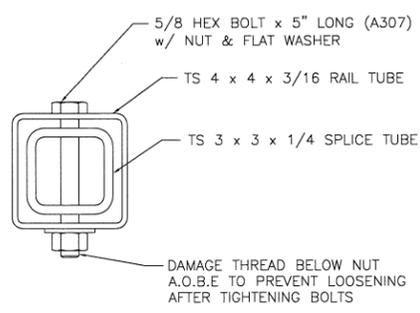
POST DETAIL
ALL POSTS WELDED PERPENDICULAR TO BASE PLATES



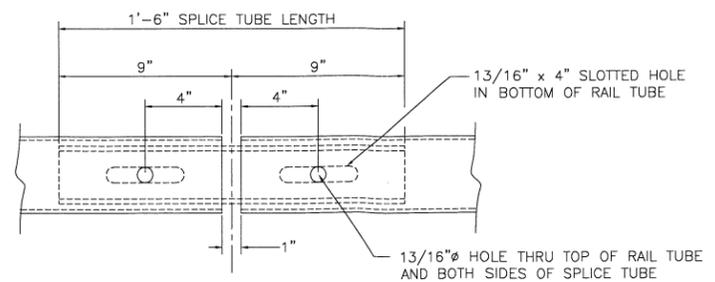
SOIL POST DETAIL



ANCHOR INSTALLATION



SECTION THRU RAIL TUBE AT SPLICE JOINT
SEE SPLICE TUBE DETAIL



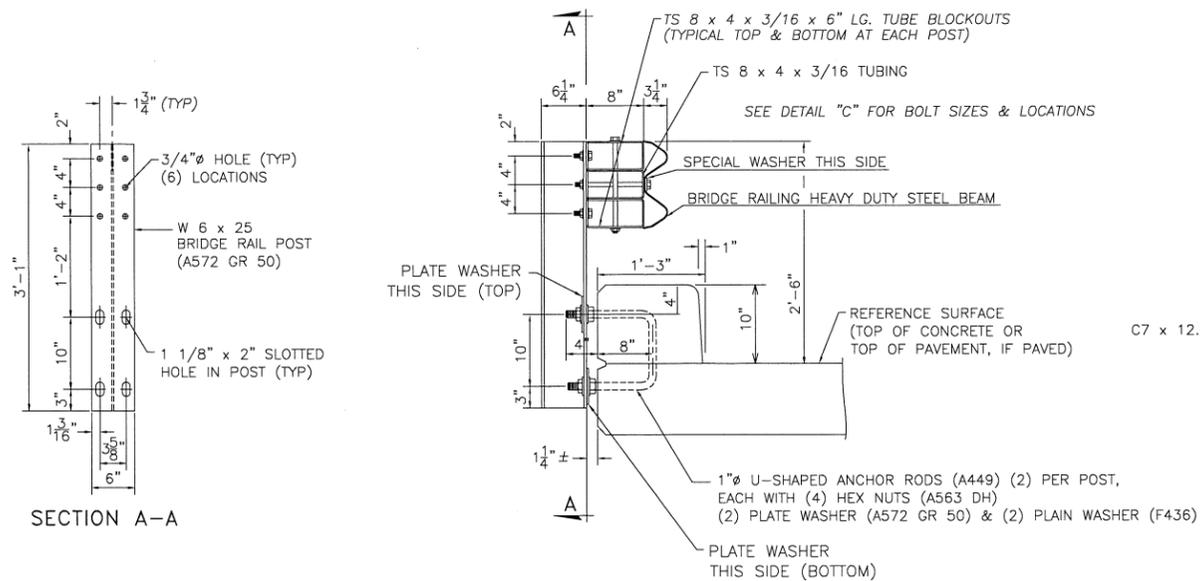
RAIL SPLICE ASSEMBLY
PLAN VIEW
SEE SPLICE TUBE DETAIL

PEDESTRIAN RAILING NOTES:

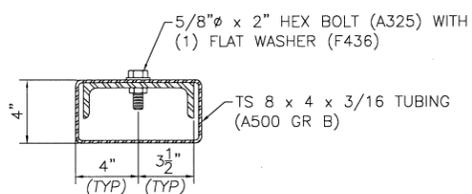
1. ALL WORK AND MATERIALS SHALL CONFORM TO STANDARD SPECIFICATION SECTION 525
2. ALL RAILING COMPONENTS, INCLUDING, BUT NOT LIMITED TO, TUBULAR STEEL RAILS, RAIL POSTS, NUTS AND WASHERS, CARRIAGE BOLTS, BASE PLATE ASSEMBLIES, ANCHOR BOLTS, ANCHOR PLATES, ANY NECESSARY SHIMS AND MORTAR PADS SHALL BE PAID FOR UNDER ITEM 900.640 SPECIAL PROVISION (BRIDGE RAILING, STEEL/PEDESTRIAN).
3. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 1/8" RADIUS AND BE FREE OF BURRS. ALL RAILING COMPONENTS ARE TO BE GALVANIZED IN ACCORDANCE WITH STANDARD SPECIFICATION SUBSECTION 726.08
4. RAIL POSTS SHALL BE SET NORMAL TO GRADE
5. ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.
6. THE FABRICATOR SHALL SUBMIT FABRICATION DRAWINGS INCLUDING WELDING PROCEDURES TO THE STRUCTURES ENGINEER FOR APPROVAL. ALL WELDING SHALL CONFORM TO STANDARD SPECIFICATION SUBSECTION 506.10.
7. AFTER THE ANCHOR STUD NUTS HAVE BEEN PLACED AND TIGHTENED TO THE SATISFACTION OF THE RESIDENT ENGINEER, THE STUDS SHALL BE CUT OFF 1" ABOVE THE NUT AND THE THREADS DAMAGED.
8. RAIL SHALL SPAN A MINIMUM OF 3 POSTS, EXCEPT AT THE END SECTIONS WHERE THE RAIL MAY SPAN A MINIMUM OF 2 POSTS.

Vermont Agency of Transportation
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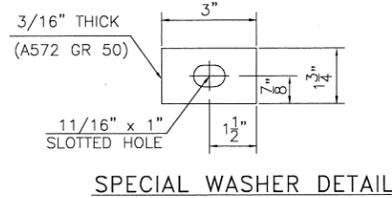
HIGHWAY SAFETY CORP		CERTIFIED FABRICATOR
GLASTONBURY, CT 860-633-9445		
900.640 SPECIAL PROVISION (BRIDGE RAILING, STEEL/ PEDESTRIAN) BRIDGE IMPROVEMENT TH 10 OVER OTTER CREEK BRIDGE 17 - BRF 3000(19) CITY OF RUTLAND, VT - RUTLAND COUNTY		
GENERAL CONTRACTOR	2065	
SUB CONTRACTOR	4 of 6	
DRAWN MKT	CHECKED	DATE 11-20-15
SCALE NONE	SIZE D	



FASCIA MOUNTED POST WITH CURB
W6x25 (A572 GR 50)



PARTIAL SECTION B-B
SHOWING TUBE & SPLICE ONLY



SPECIAL WASHER DETAIL

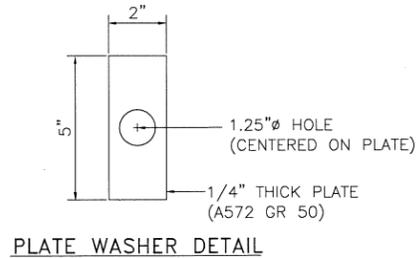
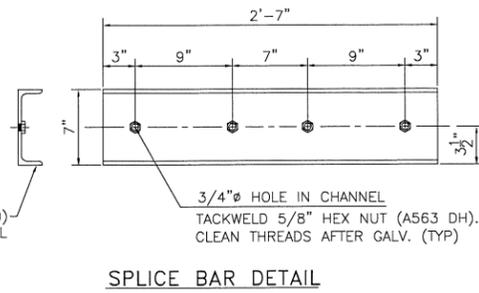
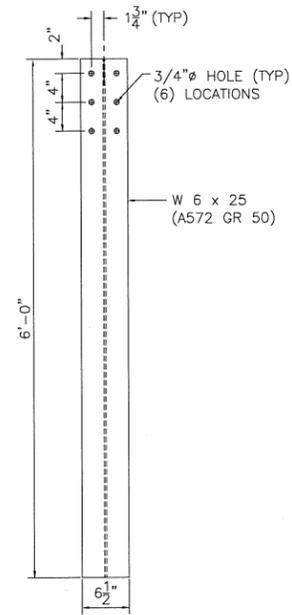


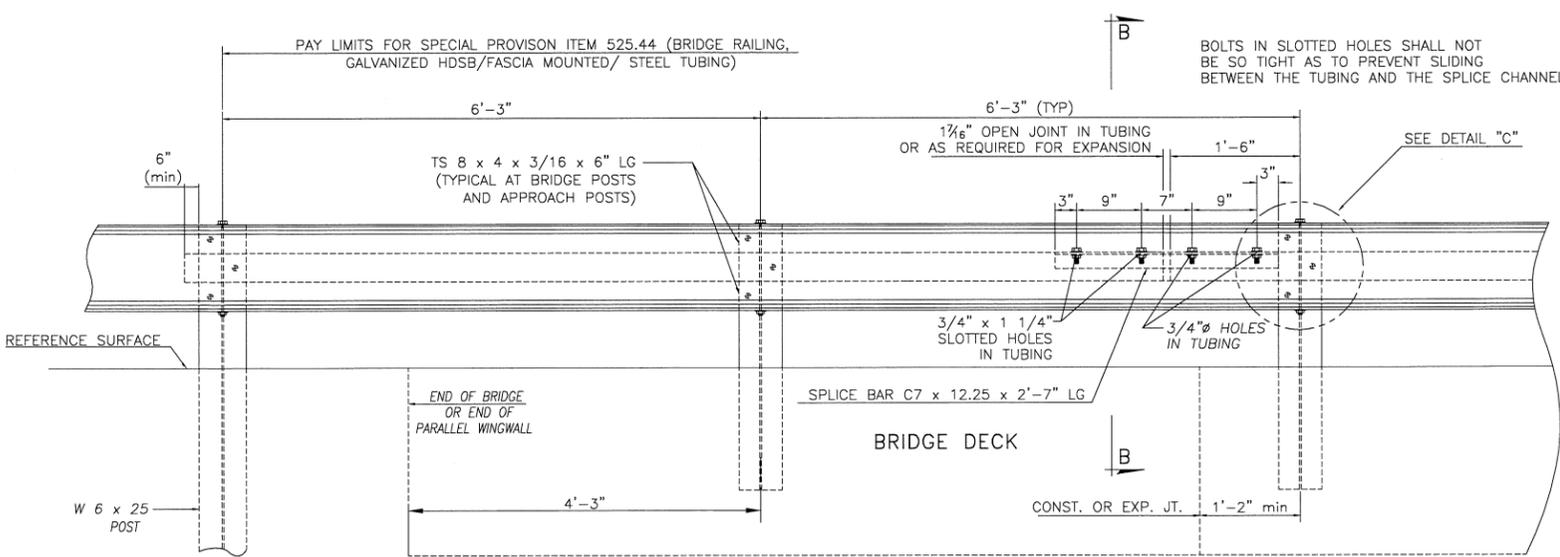
PLATE WASHER DETAIL



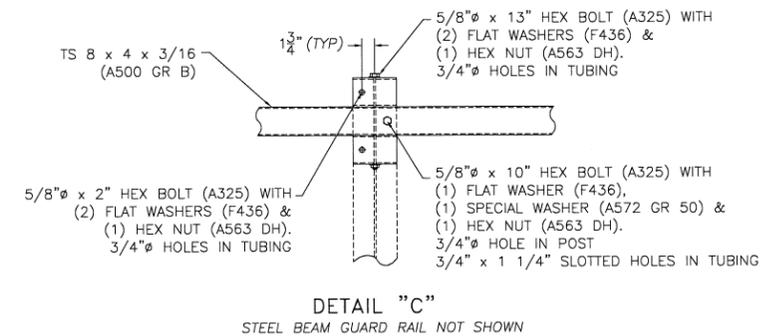
SPLICE BAR DETAIL



TRANSITION POST
W6x25 (A572 GR 50)



RAILING ELEVATION VIEW
(SHOWN LOOKING FROM CL WITHOUT CURB)



DETAIL "C"
STEEL BEAM GUARD RAIL NOT SHOWN

NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525
2. ALL RAILING COMPONENTS INCLUDING BUT NOT LIMITED TO BRIDGE RAILING, STEEL TUBING, RAIL POSTS, SPLICE BAR, NUTS, WASHERS, BOLTS, U BOLTS AND ANY NECESSARY SHIMS SHALL BE PAID FOR UNDER ITEM 525.44 BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING.
3. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 1/16" RADIUS AND BE FREE OF BURRS. ALL RAILING COMPONENTS ARE TO BE GALVANIZED IN ACCORDANCE WITH STANDARD SPECIFICATION SUBSECTION 726.08.
4. RAIL POSTS SHALL BE SET NORMAL TO GRADE.
5. THE FABRICATOR SHALL SUBMIT FABRICATION DRAWINGS INCLUDING WELDING PROCEDURES TO THE STRUCTURES ENGINEER FOR APPROVAL. ALL WELDING SHALL CONFORM TO STANDARD SPECIFICATION SUBSECTION 506.10.
6. SEE STANDARD DRAWING G-1 AND G-1D FOR ADDITIONAL DETAILS.
7. SEE STANDARD DRAWING S-367B FOR APPROACH RAIL DETAILS.
8. SPLICES FOR THE STEEL BEAM GUARDRAIL SHALL LAP IN THE DIRECTION OF TRAFFIC.
9. SEE STANDARD G-1 FOR DETAILS OF DELINEATORS. A DELINEATOR SHALL BE LOCATED AT EVERY FIFTH POST (INCIDENTAL TO ITEM 525.44).
10. A RAILING JOINT SPLICE SHALL BE PROVIDED AT THE SUPERSTRUCTURE EXPANSION JOINT.
11. ALL WORK SHOWN ON THIS SHEET SHALL BE INCLUDED IN THE COST OF ITEM 525.44 BRIDGE RAILING, GALVANIZED HDSB/ FASCIA MOUNTED/ STEEL TUBING.

Vermont Agency of Transportation

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BY: **ABC** DATE:

HIGHWAY SAFETY CORP
GLASTONBURY, CT
860-633-9445

ITEM 525.44 BRIDGE RAILING
GALVANIZED HDSB/FASCIA MOUNTED/ STEEL TUBING
BRIDGE IMPROVEMENT
TH 10 OVER OTTER CREEK
BRIDGE 17 - BR 3000(19)
CITY OF RUTLAND, VT - RUTLAND COUNTY

CERTIFIED FABRICATOR

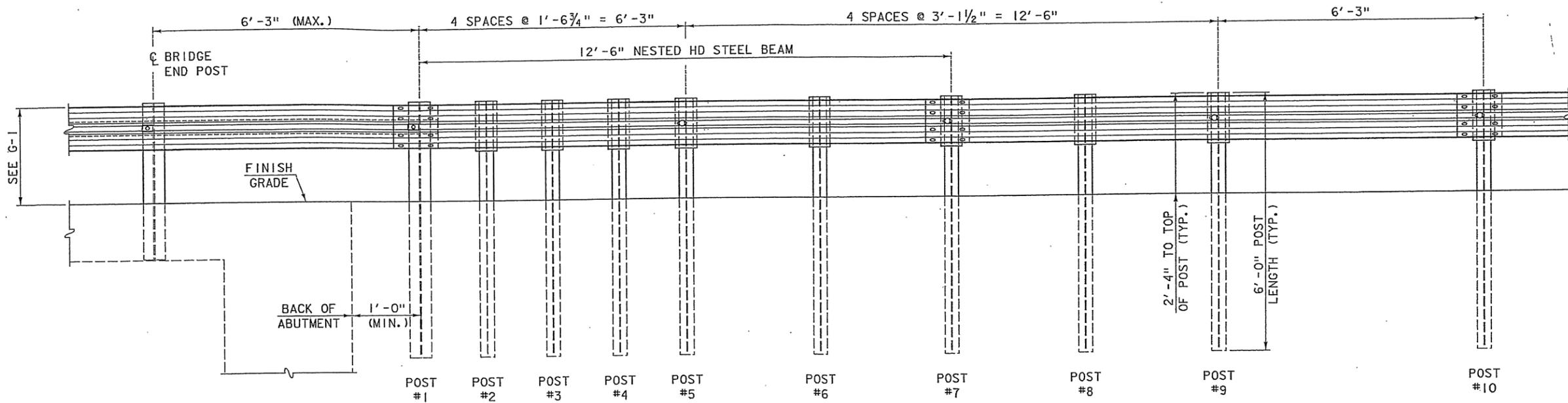
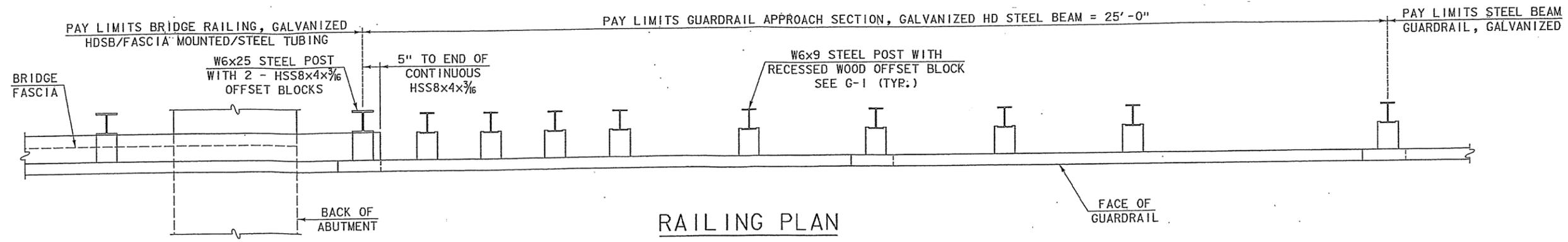
GENERAL CONTRACTOR

HSC JOB NO.
2065

SUB CONTRACTOR
LAFAYETTE

SHEET NO.
5 of 6

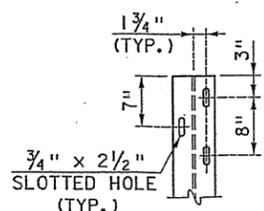
DRAWN MKT CHECKED DATE 11-20-15 SCALE NONE SIZE D



NOTES

1. PAYMENT FOR POST #1, HSS8x4x3/16 OFFSET BLOCKS AND TUBULAR BACKUP RAIL EXTENDING TO POST #1 OFF THE BRIDGE SHALL BE MADE UNDER BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING.
2. BLOCKOUTS SHALL BE RECESSED WOOD ONLY. STEEL OR PLASTIC BLOCKOUTS ARE NOT PERMITTED.
3. GUARDRAIL IS NOT ATTACHED TO POST NUMBERS 2-4, 6 AND 8. THERE SHALL BE NO GAP BETWEEN THE POSTS THAT ARE NOT ATTACHED AND THE RAIL. OFFSET BLOCKS SHALL BE ATTACHED TO POST WITH STANDARD POST BOLT.
4. POSTS MAY BE SET IN DRILLED HOLES OR DRIVEN TO GRADE.
5. THIS RAILING MEETS THE REQUIREMENTS FOR A NCHRP REPORT 350 TL-3 SERVICE LEVEL.

RAILING ELEVATION



POST #1 HOLE DETAIL

Vermont Agency of Transportation

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BY: **ABC** DATE:

HIGHWAY SAFETY CORP
GLASTONBURY, CT
860-633-9445

ITEM 525.44 BRIDGE RAILING
GALVANIZED HDSB/FASCIA MOUNTED/ STEEL TUBING
BRIDGE IMPROVEMENT
TH 10 OVER OTTER CREEK
BRIDGE 17 - BRF 3000(19)
CITY OF RUTLAND, VT - RUTLAND COUNTY



GENERAL CONTRACTOR

HSC JOB NO.

2065

SUB CONTRACTOR

SHEET NO.

6 of 6

LAFAYETTE

DATE 11-20-15 SCALE NONE SIZE D

Highway Safety Corporation

Glastonbury, CT

Welding Procedure Specification

Material specification	<u>ASTM A36, A709 Gr 36, A500 gr B, A709 gr 50, A572 gr 50</u>	
Welding process	<u>Gas Metal Arc Welding (GMAW) Spray Transfer</u>	Vermont Agency of Transportation
Manual, semi-automatic, or automatic	<u>Semi-Automatic</u>	RECEIVED
Position of welding	<u>Flat (1F) or Horizontal (2F)</u>	ON: <u>January 14, 2016</u>
Filler metal specification	<u>AWS A5.18</u>	and Checked for
Filler metal classification	<u>ER70S-6</u>	CONFORMANCE
Electrode and manufacturer	<u>Lincoln Electric Lincoln Weld L-56</u>	BY: <u>ABC</u> DATE: _____
Flux and manufacturer	<u>N/A</u>	
Shielding gas	<u>86% Argon / 14% CO2</u>	Flow rate <u>35-45 CFM</u>
Single or multiple pass	<u>Single or Multiple</u>	
Single or multiple arc	<u>Single</u>	
Welding current	<u>DCEP</u>	
Polarity	<u>Reverse - electrode positive</u>	
Welding progression	<u>Stringers</u>	
Root treatment	<u>clean base metal</u>	
Preheat and interpass temperature	<u>base metal up to 3/4" (50°F) ; over 3/4 thru 1-1/2" (150°F) : over 1-1/2" thru 2-1/2" (225°F)</u>	
Postheat treatment	<u>None</u>	
Electrode extension	<u>3/4" ± 1/4"</u>	

WELDING PROCEDURE

Weld size	Pass no.	Electrode size	Welding parameters		Travel speed	Joint detail
			Amperes	Volts		
1/4"	1	0.062"	300 A ± 30	29 V ± 2	15 ipm ± 2	<p style="text-align: center;">TYPICAL ALL FILLET WELDS</p>
5/16"	1	0.062"	300 A ± 30	29 V ± 2	10 ipm ± 2	

This procedure may vary due to fabrication sequence, fit-up, pass size, etc. within the limitation of variables given in section 5 of latest edition AWS D1.1 / D1.5

WPS no. W-2065-A
 Revision no. 0
 Supporting PQR no. Pre-Qualified
 Project Name Rutland, Vermont

Fabricator Highway Safety Corporation
 Prepared By: Paul Radice
 Date 11/30/15
 Project Number BRF 3000 (19)