

**TYPICAL RAILING ELEVATION
BRIDGE NO. 14**

LOOKING AT FACE OF RAIL FROM CENTERLINE OF ROAD
BOTH SIDES SIMILAR

PORTIONS OF HDSB W-BEAM RAIL AND TUBULAR BLOCKS HAVE BEEN REMOVED FROM THIS VIEW FOR CLARITY

BILL OF MATERIAL

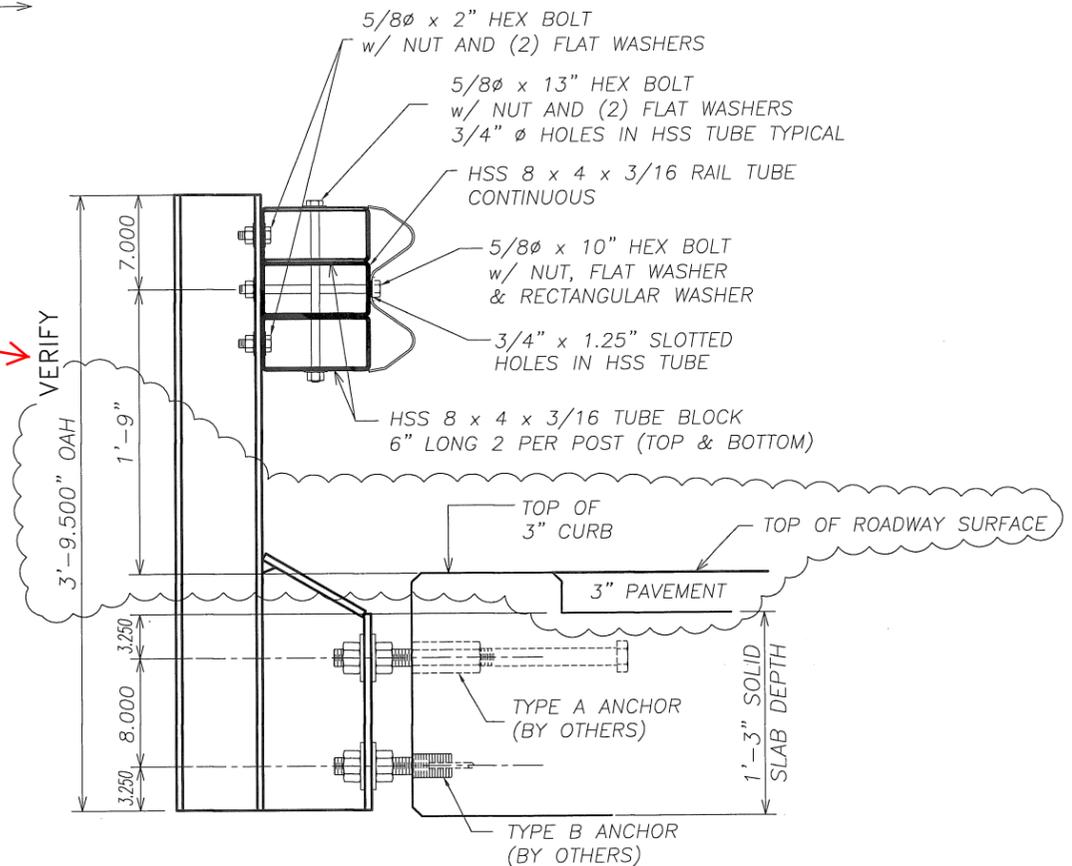
TOTAL PAY LENGTH ITEM 525.44 (BRIDGE 14) = 100 LF

Qty	mk	Description	Spec.
14		W6x25 FASCIA MOUNTED POST 45.500 OAL w/ WELDED OFFSET PLATES (GLV)	A572 gr 50
14		PL 0.500 x 7.500 x 8.500 (WELDED TO POST)	A572 gr 50
14		PL 0.500 x 7.500 x 14.500 (WELDED TO POST)	A572 gr 50
14		PL 0.500 x 7.500 x 17.937 (WELDED TO POST)	A572 gr 50
4		W6x25 DRIVEN POST #1 x 6 FT LONG (GLV)	A572 gr 50
36		TUBE BLOCK HSS 8 x 4 x 3/16 x 6.000" LG (GLV)	A500 gr B
8		HDSB W-BEAM PANEL 10 GA 12'-6" LG X 6'-3" SP (GALV)	M180 B2
4		SPLICE CHANNEL C7 X 9.8 x 2'-6.500" w/ (4) TACKWELDED HEX NUTS (GALV)	A572 gr 50
2	F1	TUBULAR STEEL RAIL (GLV) HSS 8 x 4 x 3/16 x 14'-4.000" OAL	A500 gr B
2	F2	TUBULAR STEEL RAIL (GLV) HSS 8 x 4 x 3/16 x 18'-8.500" OAL	A500 gr B
2	F3	TUBULAR STEEL RAIL (GLV) HSS 8 x 4 x 3/16 x 16'-6.500" OAL	A500 gr B
18		RECTANGULAR WASHER 0.1875" x 1.75" x 3.00" (GLV)	A572 GR 50
18		HEX HEAD BOLT 5/8" DIA x 13" LG HDG	A325
18		HEX HEAD BOLT 5/8" DIA x 10" LG HDG	A325
52		HEX HEAD BOLT 5/8" DIA x 2" LG HDG	A325
72		HEX NUT 5/8" HDG	A563 DH
142		ROUND WASHER SMALL FLAT 5/8" HDG	F436
64		PANEL SPLICE BOLT 5/8" x 1.25" HDG	A307
64		DOUBLE RECESS. NUT 5/8" HDG	A563 A

FIRST DRIVEN POST OFF BRIDGE INCLUDED IN ITEM 525.44 ALL ADDITIONAL DOWN STREAM POSTS INCLUDED IN APPROACH ITEM

APPROACH RAILING (typ)

Verified

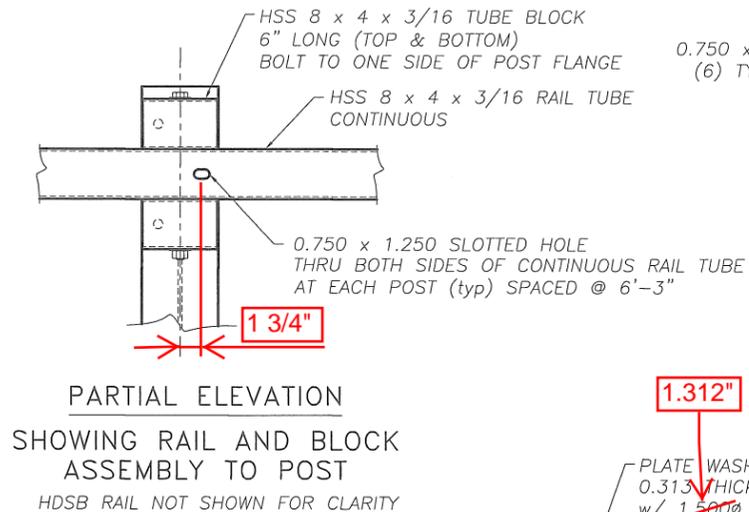
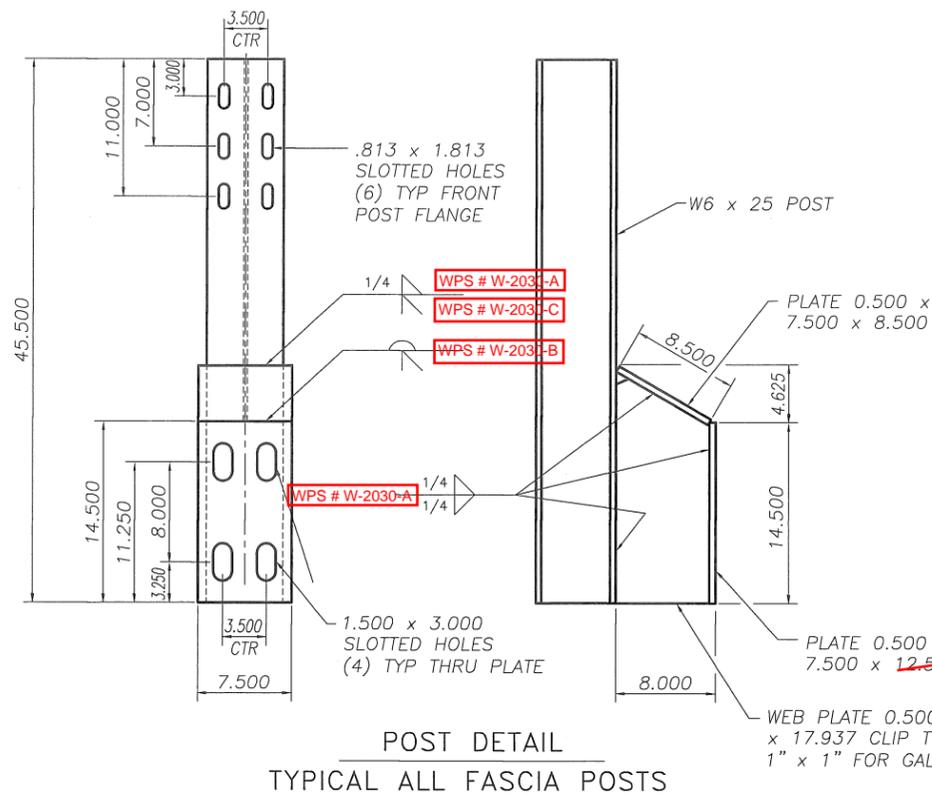


**SECTION
THRU RAILING**

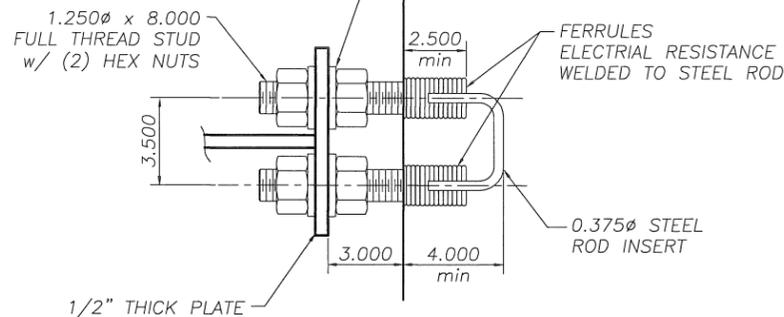
No.	Remarks	Date
0	Initial submittal	2/10/15
REVISIONS		

Vermont Agency of Transportation
RECEIVED
CK'D BY RK/JC OK'D BY RY
February 20, 2015
RESUBMIT No Approved AsNoted
BY RY DATE 03/09/2015

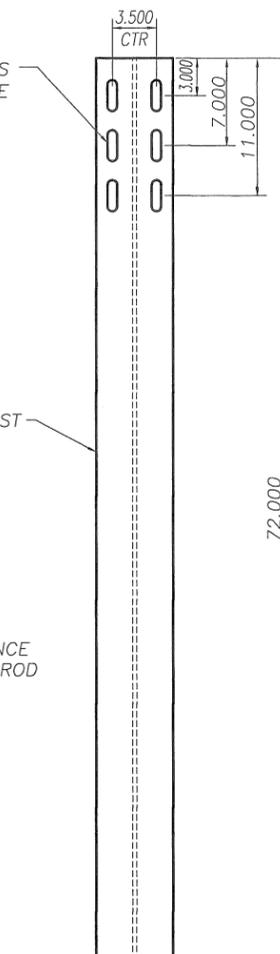
HIGHWAY SAFETY CORP
GLASTONBURY, CT
860-633-9445
ITEM 525.44 BRIDGE RAILING
GALVANIZED FASCIA MOUNTED HDSB STEEL TUBE
BRIDGE NO. 14 SOUTH ROAD BRF 0281(25)
FAIRFIELD VERMONT
GENERAL CONTRACTOR
SUB CONTRACTOR LAFAYETTE
DRAWN PAR CHECKED DATE 02-17-15 SCALE NTS SIZE D
HSC JOB NO. 2030
SHEET NO. 1 of 2
CERTIFIED FABRICATOR



0.750 x 2.500 SLOTTED HOLES (6) TYP FRONT POST FLANGE



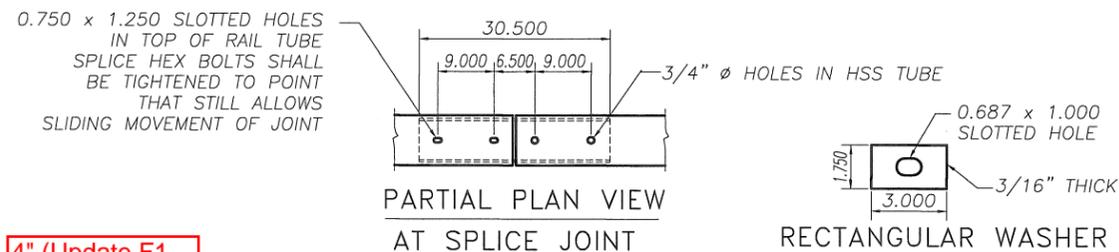
TYPE B ANCHOR ASSEMBLY
(1) PER POST
(BY OTHERS)



POST ELEVATION
DRIVEN POST #1

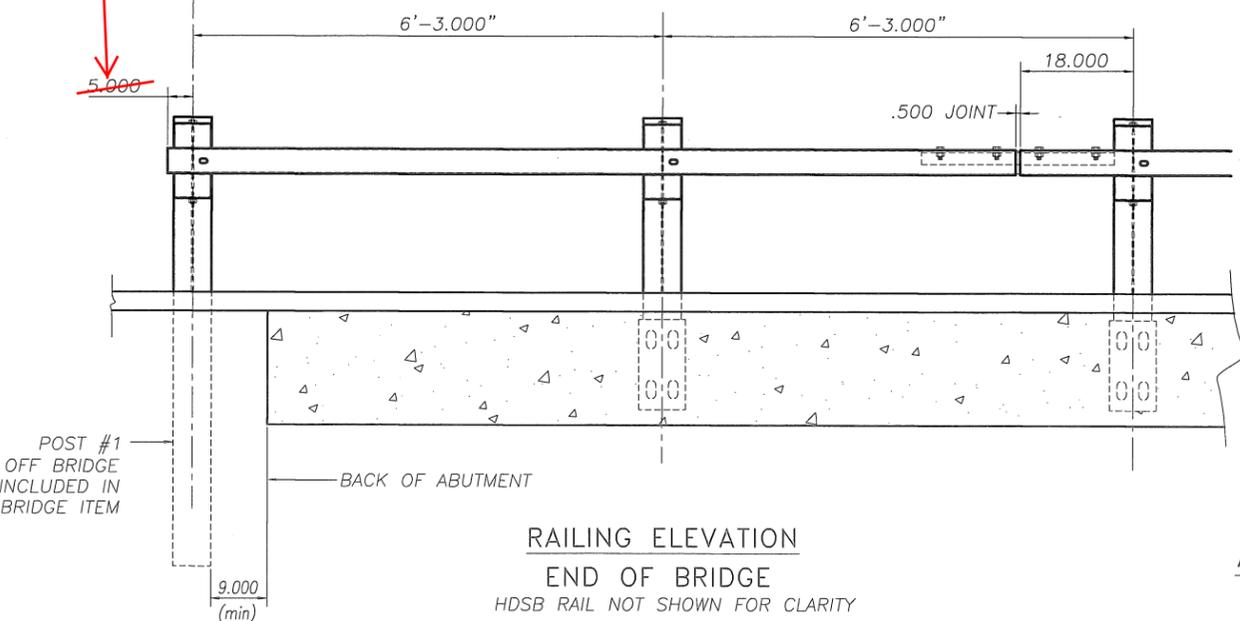
NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525
2. TYPE B ANCHOR INSERTS OF A DIFFERENT TYPE MAY BE PROVIDED, IF APPROVED BY THE ENGINEER
3. PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM 1/16" RADIUS
4. ALL POSTS SHALL BE SET NORMAL TO GRADE
5. SPLICES FOR THE STEEL BEAM GUARDRAIL SHALL LAP IN THE DIRECTION OF TRAFFIC
6. A RAILING JOINT SPLICE SHALL BE PROVIDED IN ANY RAIL BAY SPANNING THE END OF AN INTEGRAL ABUTMENT BRIDGE AND AT ALL SUPERSTRUCTURE EXPANSION JOINTS
7. SEE VAOT STANDARD DRAWING G-1 FOR DETAILS OF DELINEATORS. A DELINEATOR SHALL BE INSTALLED AT 30 FT SPACING OR THE NEAREST POST. WHITE IS TO BE INSTALLED ON THE DRIVERS RIGHT. FOR ONE WAY BRIDGES, YELLOW IS TO BE INSTALLED ON THE DRIVERS LEFT. DELINEATORS PROVIDED BY OTHERS.
8. FOR RADII LESS THAN 950 FEET, HSS 8 X 4 TUBES SHALL BE SHOP BENT TO FIT THE APPLICABLE CURVE
9. THE MINIMUM DISTANCE FROM THE LAST POST TO THE END OF SLAB IS 1'-6"
10. FERRULES SHALL BE 12L14 COLD DRAWN CARBON STEEL
11. HOLES IN THE RAIL FOR RAIL TUBE ATTACHMENT MAY BE FIELD DRILLED. FIELD DRILLED HOLES SHALL BE COATED WITH AN APPROVED ZINC RICH PAINT PRIOR TO INSTALLATION
12. THIS RAILING MEETS THE REQUIREMENTS FOR A TL-2 SERVICE LEVEL.
13. ALL METAL PARTS SHALL BE HOT-DIPPED GALVANIZED.

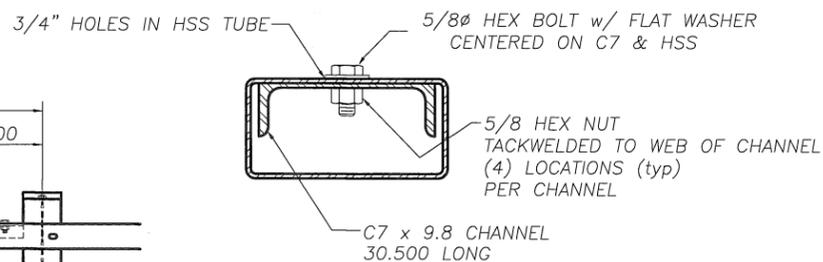


4" (Update F1 and F3 lengths accordingly)

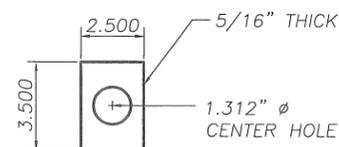
PAY LIMITS ITEM 525.44 BRIDGE RAILING GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING



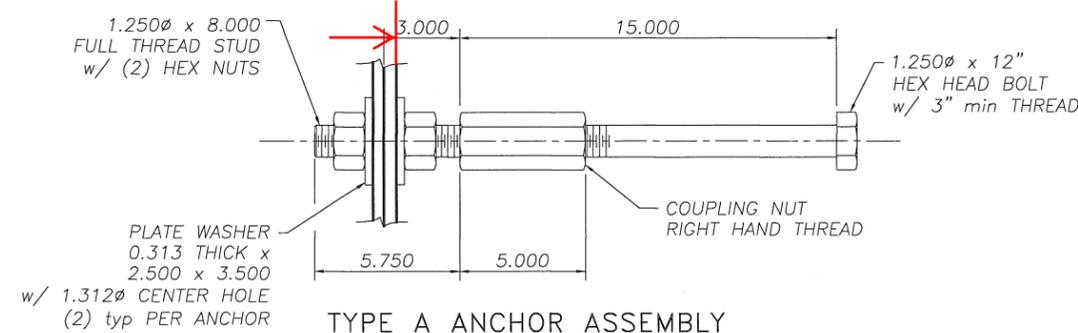
RAILING ELEVATION
END OF BRIDGE
HDSB RAIL NOT SHOWN FOR CLARITY



SECTION THRU 8x4 RAIL
AT SPLICE JOINT



ANCHOR PLATE WASHER
(BY OTHERS)



TYPE A ANCHOR ASSEMBLY
(2) PER POST
(BY OTHERS)

Vermont Agency of Transportation

RECEIVED

Fairfield BRF 0281(25) Bridge Rail Submittal, Approved 3/9/2015.pdf

CK'D BY RK/JC OK'D BY RY

February 20, 2015

RESUBMIT No Approved AsNoted
BY RY DATE 03/09/2015

HIGHWAY SAFETY CORP

GLASTONBURY, CT
860-633-9445

ITEM 525.44 BRIDGE RAILING
GALVANIZED FASCIA MOUNTED HDSB STEEL TUBE

BRIDGE NO. 14 SOUTH ROAD BRF 0281(25)
FAIRFIELD VERMONT

GENERAL CONTRACTOR
LAFAYETTE

SUB CONTRACTOR
LAFAYETTE

DRAWN PAR CHECKED DATE 02-17-15 SCALE NTS SIZE D

HSC JOB NO. **2030**

SHEET NO. **2 of 2**

Highway Safety Corporation

Glastonbury, CT

Welding Procedure Specification

Material specification ASTM A709 gr 36/gr 50, ASTM A572 gr.36/gr.50, ASTM A36, A500 gr.B

Welding process Gas Metal Arc Welding (GMAW) Spray Transfer

Manual, semi-automatic, or automatic Semi-Automatic

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

Filler metal specification AWS A5.18

Filler metal classification ER70S-6

Electrode and manufacturer Lincoln Electric Lincoln Weld L-56

Flux and manufacturer N/A

Shielding gas 86% Argon / 14% CO2 Flow rate 35-45 CFM

Single or multiple pass Single

Single or multiple arc Single

Welding current DCEP

Polarity Reverse - electrode positive

Welding progression Stringers

Root treatment clean base metal

Preheat and interpass temperature base metal up to 3/4" (50°F)

Postheat treatment None

Electrode extension 3/4" ± 1/4"

Vermont Agency of Transportation

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OK'D BY RY

February 20, 2015

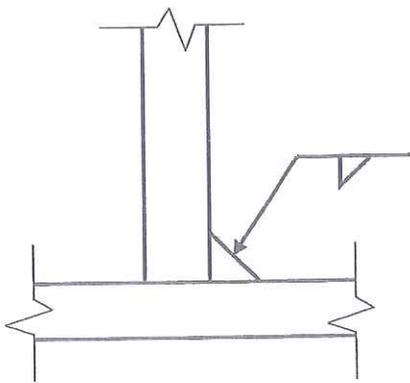
RESUBMIT No

Approved

BY RY

DATE 03/09/2015

WELDING PROCEDURE

Weld size	Pass no.	Electrode size	Welding parameters		Travel speed	Joint detail
			Amperes	Volts		
1/8	1	.063"	300 A ± 30	29 V ± 2	15 ipm ± 2	TYPICAL FILLET WELDS (5/16" MAX) 
3/16	1	.063"	300 A ± 30	29 V ± 2	15 ipm ± 2	
1/4	1	.063"	300 A ± 30	29 V ± 2	15 ipm ± 2	
5/16	1	.063"	300 A ± 30	29 V ± 2	15 ipm ± 2	

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

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

WPS no. W-2030-A

Revision no. 0

Supporting PQR no. Pre-Qualified

Project Name Fairfield, Vermont

Fabricator Highway Safety Corporation

Prepared By: Paul Radice

Date 02-18-15

Project Number BRF0281 (25) / BRO 1448(41)

Highway Safety Corporation

Glastonbury, CT

Welding Procedure Specification

Material specification ASTM A36, A572 gr 50, A709 Gr 36, ASTM A709 Gr 50, A500 gr B, A53 gr B

Welding process Gas Metal Arc Welding (GMAW) Spray Transfer

Manual, semi-automatic, or automatic Semi-Automatic

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

Filler metal specification AWS A5.18

Filler metal classification ER70S-6

Electrode and manufacturer Lincoln Electric Lincoln Weld L-56

Flux and manufacturer N/A

Shielding gas 86% Argon / 14% CO2 Flow rate 35-45 CFM

Single or multiple pass Single

Single or multiple arc Single

Welding current DCEP

Polarity Reverse - electrode positive

Welding progression Stringers

Root treatment clean base metal

Preheat and interpass temperature base metal up to 3/4" (50°F)

Postheat treatment None

Electrode extension 3/4" ± 1/4"

Vermont Agency of Transportation

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Fairfield BRF 0281(25) Bridge Rail Submittal_Approved 3-9-2015.pdf

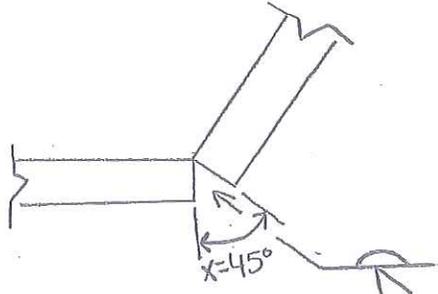
CK'D BY RK/JC OK'D BY RY

February 20, 2015

RESUBMIT No Approved

BY RY DATE 03/09/2015

WELDING PROCEDURE

Weld size	Pass no.	Electrode size	Welding parameters		Travel speed	Joint detail
			Amperes	Volts		
n/a	1	0.063	300 A	29	15 ipm	<p><u>TC-U4b-GF</u></p> 
			+/- 30	+/- 3	+/- 2	

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



WPS no. W-2030-B

Revision no. 0

Supporting PQR no. Pre-Qualified

Project Name Fairfield, Vermont

Fabricator Highway Safety Corporation

Prepared By: Paul Radice

Date 02-18-15

Project Number BRF0281 (25) / BRO 1448(41)

Highway Safety Corporation

Glastonbury, CT

Welding Procedure Specification

Material specification ASTM A36, A572 gr 50, A709 Gr 36, ASTM A709 Gr 50, A500 gr B, A53 gr B
 Welding process Gas Metal Arc Welding (GMAW) Spray Transfer
 Manual, semi-automatic, or automatic Semi-Automatic
 Position of welding Flat (1F) or Horizontal (2F)
 Filler metal specification AWS A5.18
 Filler metal classification ER70S-6
 Electrode and manufacturer Lincoln Electric Lincoln Weld L-56
 Flux and manufacturer N/A
 Shielding gas 86% Argon / 14% CO2 Flow rate 35-45 CFM
 Single or multiple pass Single
 Single or multiple arc Single
 Welding current DCEP
 Polarity Reverse - electrode positive
 Welding progression Stringers
 Root treatment clean base metal
 Preheat and interpass temperature base metal up to 3/4" (50°F)
 Postheat treatment None
 Electrode extension 3/4" ± 1/4"

Vermont Agency of Transportation

RECEIVED

Fairfield BRF 0211201 Bridge Full Schedule, Approved 3-9-2015.pdf

CK'D BY RK/JC OK'D BY RY

February 20, 2015

RESUBMIT No Approved
 BY RY DATE 03/09/2015

WELDING PROCEDURE

Weld size	Pass no.	Electrode size	Welding parameters		Travel speed	Joint detail
			Amperes	Volts		
n/a	1	0.063	300 A ±/- 30	29 ±/- 3	15 ipm ±/- 2	<p>BTC-P4-GF</p> <p>S(E)</p> <p>X = 45 As Fitup: X=+10, -5 1/4" min. thk. f = 1/8" As Fitup: f=+1/16 S = E</p>

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AWS
 Paul A Radice
 CWI 98070221
 QC1 EXP. 7/1/2016

WPS no. W-2030-C
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 Supporting PQR no. Pre-Qualified
 Project Name Fairfield, Vermont

Fabricator Highway Safety Corporation
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 Project Number BRF0281 (25) / BRO 1448(41)