SHOP DRAWING REVIEW

REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

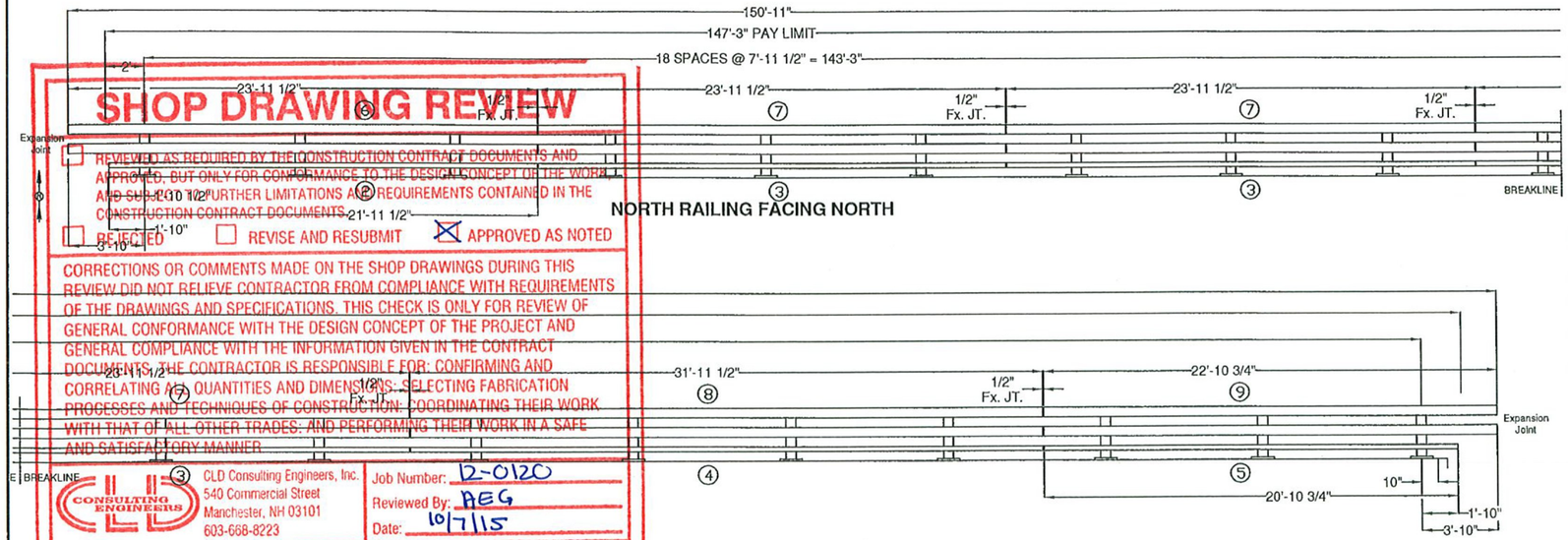
☐ REJECTED ☐ REVISE AND RESUBMIT ☒ APPROVED AS NOTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DID NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING THEIR WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING THEIR WORK IN A SAFE AND SATISFACTORY MANNER.

CLD CONSULTING ENGINEERS

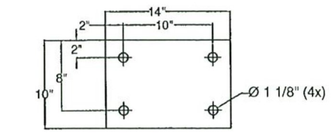
CLD Consulting Engineers, Inc.
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 12-0120
Reviewed By: AEG
Date: 10/7/15

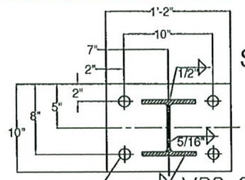


GENERAL NOTES:

1) ALL RAILING IS TO BE FABRICATED AND ERECTED ACCORDING TO SECTION 525 OF THE STANDARD SPECIFICATIONS.
2) PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM RADIUS OF 1/16".
3) ALL POST SHALL BE SET NORMAL TO GRADE. THE MAXIMUM CENTER TO CENTER SPACING OF BRIDGE RAIL POST IS 8' 3".
4) SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO BRIDGE POSTS AND PREFERABLY TO AT LEAST 4 POSTS.
5) RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING THE END OF AN INTEGRAL ABUTMENT BRIDGE AND AT ALL SUPER STRUCTURE EXPANSION JOINTS. EXPANSION JOINT WIDTH SHALL BE 4"@ 68°F AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
6) STD. SPLICE HOLES ONLY IN BRIDGE RAIL TUBES. REST TO BE DRILLED BY CUSTOMER. FIELD DRILLED HOLES TO BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
7) BOLTS SHALL BE TORQUED SNUG TIGHT (APPROXIMATELY 100 FT-LB).
8) 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.
9) ANY BENDING OF RAIL SHALL BE DONE AT THE FABRICATION PLANT ACCORDING TO A PROCEDURE PROVIDED BY THE FABRICATOR.
10) THE MINIMUM DISTANCE FROM THE POST TO AN EXPANSION JOINT SHALL BE DETERMINED BY THE MINIMUM EDGE DISTANCE OF 5" FROM ANY ANCHOR STUD TO THE END OF THE SLAB, OR THE EXPANSION JOINT RECESS POUR, IF ONE IS USED.
11) PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE BOX BEAM RAILS, SPLICE TUBES AND FILL PLATES.
12) THIS RAILING MEETS THE REQUIREMENTS FOR A TL-4 SERVICE LEVEL.



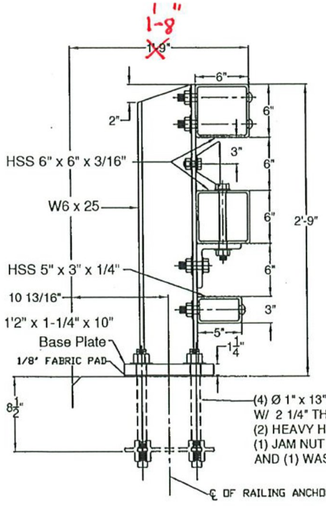
1/8" FABRIC PAD



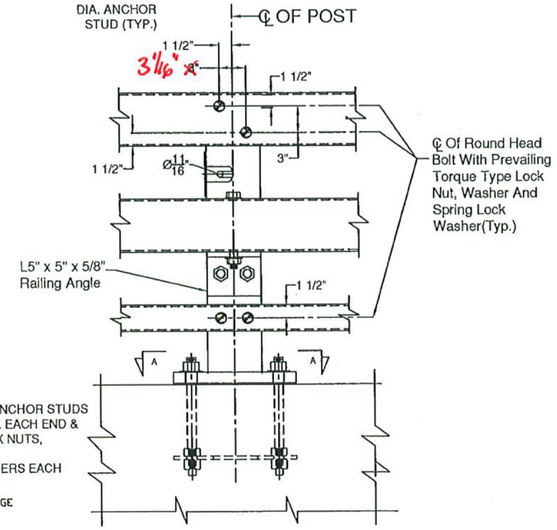
HOLE FOR 1" DIA. ANCHOR STUD (TYP.)

WPS-3008

SECTION A-A

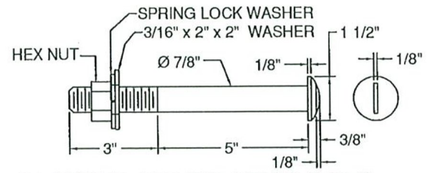


SECTION

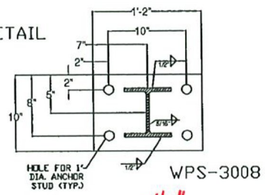


ELEVATION

STEEL BRIDGE RAILING



SLOTTED ROUND HEAD BOLT



BRIDGE POST DETAIL

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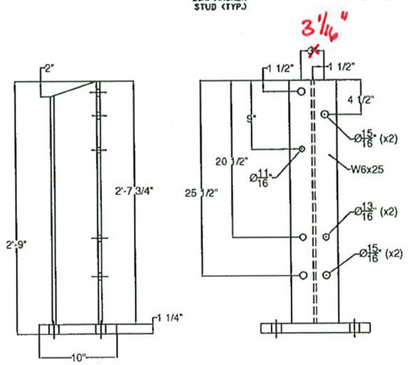

BILL OF MATERIAL - NORTH

ITEM #	QTY	PART #	DESCRIPTION	ASTM DESIGNATION
1	19	0033.03610	W6x25, THREE RAIL POST @ 2'-9" OA ON 1 1/4x10x1'-2" B.P.	A572 Gr. 50
2	1	0033.22200	HSS 3" X 5" X 1/4" RAIL @ 21'-11 1/2" (EXP)	A500 Gr. B
3	3	0033.12400	HSS 3" X 5" X 1/4" RAIL @ 23'-11 1/2"	A500 Gr. B
4	1	0033.13200	HSS 3" X 5" X 1/4" RAIL @ 31'-11 1/2"	A500 Gr. B
5	1	0033.22003	HSS 3" X 5" X 1/4" RAIL @ 20'-10 3/4" (EXP)	A500 Gr. B
6	2	0033.62400	HSS 6" X 6" X 3/16" RAIL @ 23'-11 1/2" (EXP)	A500 Gr. B
7	6	0033.52400	HSS 6" X 6" X 3/16" RAIL @ 23'-11 1/2"	A500 Gr. B
8	2	0033.53200	HSS 6" X 6" X 3/16" RAIL @ 31'-11 1/2"	A500 Gr. B
9	2	0033.62211	HSS 6" X 6" X 3/16" RAIL @ 22'-10 3/4" (EXP)	A500 Gr. B
10	5	0033.00840	2-1/8" X 4-1/4" FIX. SPLICE BAR @ 2'-3"	A572 Gr. 50
11	10	0033.00640	HSS 5" X 5" X 5/16" FIX. SPLICE TUBE @ 2'-3"	A500 Gr. B, A572 Gr. 50
12	19	0033.00220	3/8" X 10" X 14" ANCHOR PLATES	A572 Gr. 50
13	19	0033.90050	1/8" X 10" X 14" FABRIC PAD	AASHTO M251
14	78*	0042.21013	Ø 1" X 13" ANCHOR STUDS, W/ 2 1/4" THD. EACH END	A449
15	154*	0080.18901	Ø 1" HEAVY HEX NUTS	A563 DH
16	76	0080.18911	Ø 1" FLAT WASHERS	F436
17	76	0080.18905	Ø 1" HEX JAM NUTS	A563 DH
18	76	0080.07500	Ø 7/8" X 8" ROUND HEAD BOLT, NUT, SQ. WASHER, L.W.	A449, A563 DH, F436, ASME D18.2
19	19	0080.06400	Ø 3/4" X 8" HEX BOLT, NUT, (2) F.W., & L.W.	A325, A563 DH, F436, & ASME D18.2
20	38	0080.06140	Ø 3/4" X 2-3/4" HEX BOLT, NUT, (2) F.W., & L.W.	A325, A563 DH, F436, & ASME D18.2
21	40	0080.06340	Ø 3/4" X 7-1/2" HEX BOLT, NUT, & (2) F.W.	A325, A563 DH, & F436
22	20	0080.06255	Ø 3/4" X 4-1/2" HEX BOLT, NUT, & (2) F.W.	A325, A563 DH, & F436
23	19	0033.00500	L5" X 5" X 5/8" RAILING ANGLE @ 6'	A572 Gr. 50
24	5		DELINEATORS - NOT SHOWN	(SUPPLIED BY CUSTOMER)

*-2 EXTRA FOR VOAT TESTING

ITEM #: 525.335

SHEET 1 OF 3

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

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

BRIDGE RAIL DETAILS SHEET

VT ROUTE 108 (MAJOR COLLECTOR), BRIDGE # 3
TOWN OF STOWE, COUNTY OF LAMOILLE, VT.

R E V	NO.	DATE	DESCRIPTION	BY

R E V	NO.	DATE	DESCRIPTION	BY

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

AISC CERTIFIED FABRICATOR

ORTHOGRAPHIC PROJECTION

DRAWN	E.P.	9/1/15
CHECKED	D.L.	9/1/15
APPROVED	.	.
SCALE	SCHEMATIC	
DRAWING NO.	F.R.L.-STOWE BRF 0235 (15)	