



BILL OF MATERIAL

QTY	PART #	DESCRIPTION	ASTM DESIGNATION
36	0033.90344	TWO RAIL POST @ 2'-2 3/8" O.A.	A572 Gr. 50
2	0033.91127	4' X 4' X 1/4" RAIL @ 29'-11 1/2"	A500 Gr. B
4	0033.91128	4' X 4' X 1/4" RAIL @ 29'-11"	A500 Gr. B
2	0033.91129	4' X 4' X 1/4" RAIL @ 19'-11 1/2"	A500 Gr. B
1	0033.91130	4' X 4' X 1/4" RAIL @ 20'-7 1/4" W/ PARTIAL 34'-6" R.	A500 Gr. B
1	0033.91131	4' X 4' X 1/4" RAIL @ 20'-5" W/ PARTIAL 15'-0" R.	A500 Gr. B
2	0033.91132	4' X 8' X 5/16" RAIL @ 29'-11 1/2"	A500 Gr. B
4	0033.91133	4' X 8' X 5/16" RAIL @ 29'-11"	A500 Gr. B
2	0033.91134	4' X 8' X 5/16" RAIL @ 19'-11 1/2"	A500 Gr. B
1	0033.91135	4' X 8' X 5/16" RAIL @ 20'-7 1/4" W/ PARTIAL 34'-6" R.	A500 Gr. B
1	0033.91136	4' X 8' X 5/16" RAIL @ 20'-5" W/ PARTIAL 15'-0" R.	A500 Gr. B
8	0033.90052	3' X 3' X 5/16" FIX. SPL. TUBE @ 1'-8"	A500 Gr. B
8	0033.90033	3' X 7' X 3/8" FIX. SPL. TUBE @ 1'-8"	A500 Gr. B, A36
36	0033.00299	3/8" X 9 3/8" X 13" ANCHOR PLATES	A36
36	0033.00052	1/8" FIBER PAD @ 10" X 14" (S-360A)	AASHTO M251
144	0042.21012	Ø 1" X 12" ANCHOR STUDS W/ 2 1/2" THREADED ENDS	A449 Gr. 1
288	0080.18901	Ø 1" HEAVY HEX NUTS	A563
144	0080.18905	Ø 1" HEX JAM NUTS	A325
144	0080.18911	Ø 1" FLAT WASHERS	F436
144	0080.06290	Ø 3/4" X 6" ROUND HEAD BOLT, NUT, FLAT WASHER, L.W.	A449, A563, ASME B18.21.1
64	0080.05045	Ø 5/8" X 1 3/4" HEX BOLT, & F.W.	A307
10	-	ALUMINUM DELINEATORS	SUPPLIED BY FRL

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 FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO 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 HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Job Number: 57517
Reviewed By: B. Mason
Date: 5-30-14

- 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 RAIL POSTS AND PREFERABLY TO AT LEAST FOUR POSTS.
 - RAIL TUBE EXPANSION JOINTS SHALL PROVIDED IN ANY RAIL BAY SPANNING THE END OF AN INTEGRAL ABUTMENT BRIDGE AND AT ALL SUPERSTRUCTURE EXPANSION JOINTS. EXPANSION JOINT WIDTH SHALL BE 4" A 45°F AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
 - HOLES IN RAILS FOR RAIL TUBE ATTACHMENT WILL BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
 - RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
 - RAIL TUBES SHALL BE ATTACHED USING 3/4" FULL DIAMETER BODY ASTM A 449 (TYPE 1) ROUND HEAD BOLTS INSERTED THROUGH THE RACE OF THE TUBE. HOLES IN POSTS SHALL BE 1/16" LARGER THAN THE BOLT SIZE.
 - ANY BENDING OF RAIL SHALL BE DONE AT A FABRICATION PLANT ACCORDING TO A PROCEDURE PROVIDED BY THE FABRICATOR.
 - 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 TO THE EXPANSION JOINT RECESS POUR, IF ONE IS USED.
 - SEE STANDARD DRAWING G-I 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 SHALL BE INCIDENTAL TO OTHER ITEMS.
 - THIS RAILING MEETS THE REQUIREMENTS FOR A TL-4 SERVICE LEVEL.

SHEET 1 OF 2

ITEM #: 525.33

APPROVED BY: _____

BRIDGE RAIL DETAILS SHEET

ROCHESTER, BR# 0162 (18) VT RTE 73 (MAJOR COLLECTOR), BRIDGE NO.: 19, OVER WHITE RIVER
TOWN OF ROCHESTER, COUNTY OF WINDSOR, VT

R NO.	DATE	DESCRIPTION	BY	R NO.	DATE	DESCRIPTION	BY
E 1	5/28/14	REVISE PER 5/27/14 EMAIL	E.P.	E			

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DRAWN	E.P.	5/8/14
CHECKED	D.L.	5/6/14
APPROVED		
SCALE	SCHEMATIC	
DRAWING NO. FRL - ROCH-BR19		