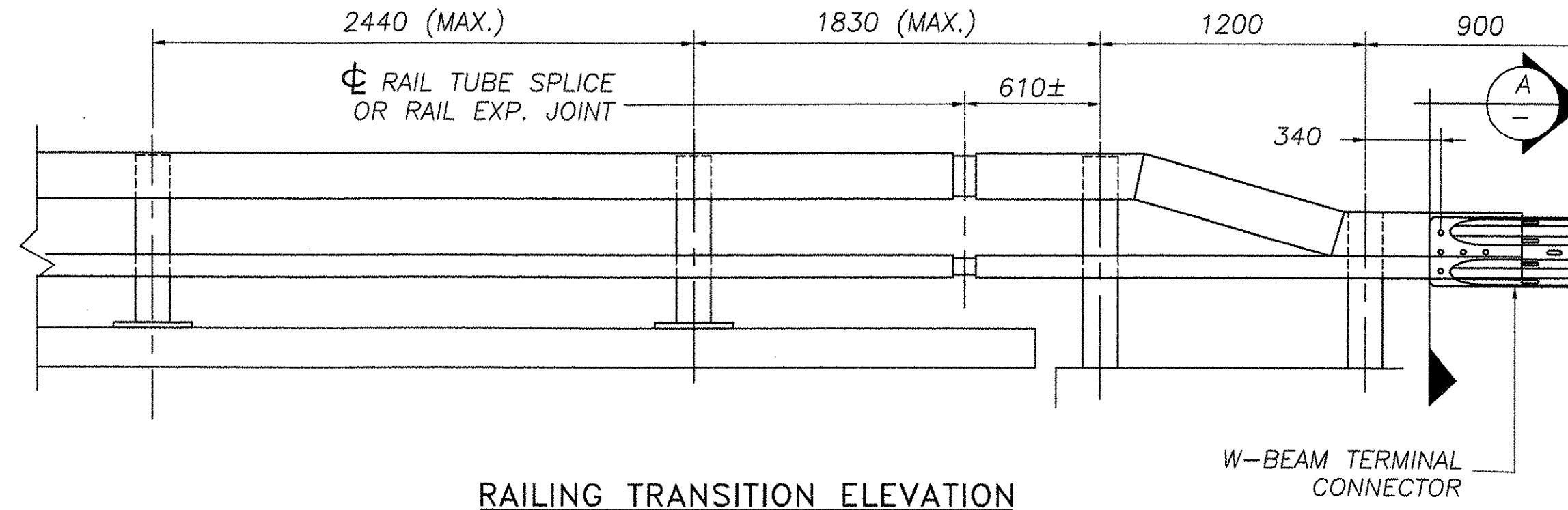
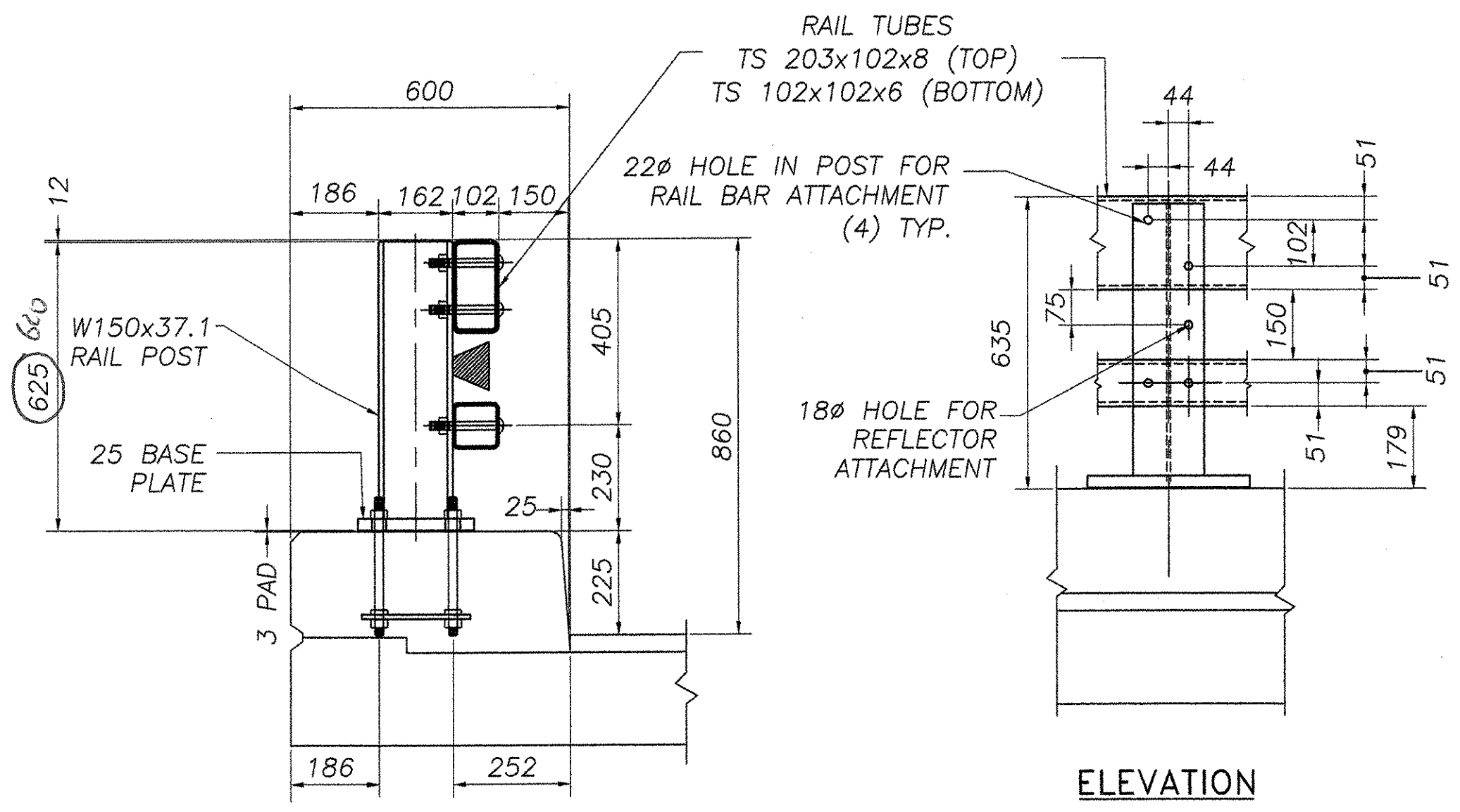


BRIDGE RAILING ELEVATION

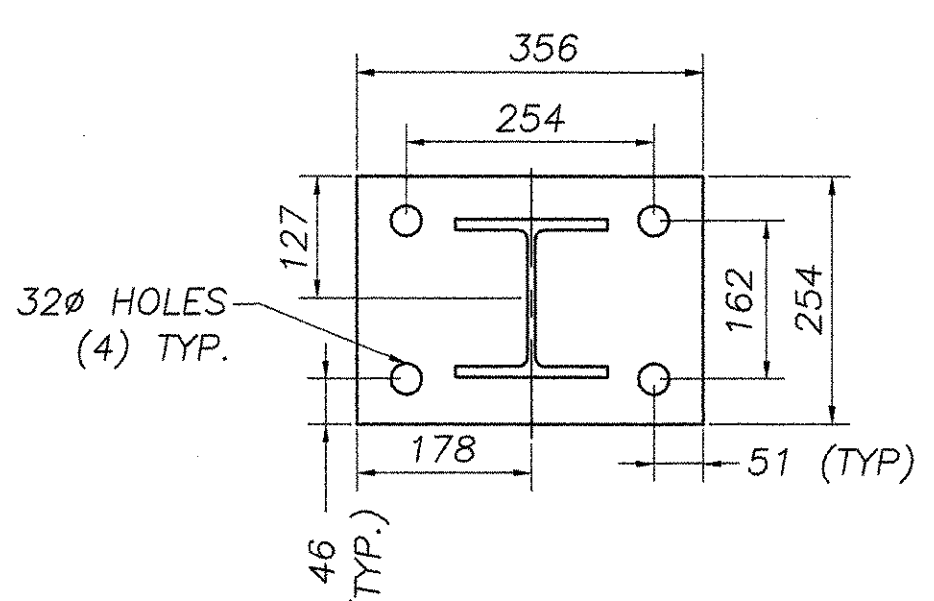


RAILING TRANSITION ELEVATION

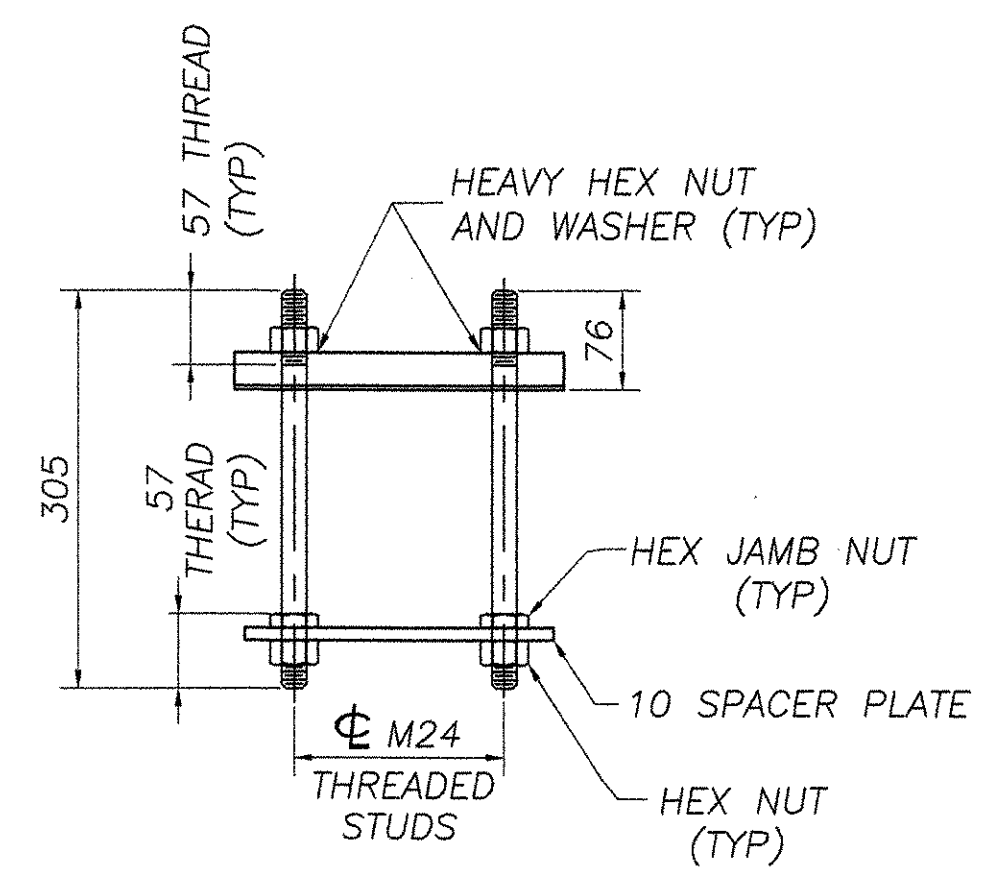
- NOTES**
1. ALL RAILINGS AND MATERIALS SHALL CONFORM TO THE PROVISION OF SECTION 525, "RAILINGS OF THE STANDARD SPECIFICATION FOR CONSTRUCTION."
 2. TUBING AND POSTS SHALL MEET THE REQUIREMENTS OF SECTION 732, "RAILING MATERIALS OR THE STANDARD SPECIFICATION OF CONSTRUCTION," EXCEPT THAT THE DROP-WEIGHT TEAR TEST IN SECTION 732 SHALL NOT APPLY TO THE STRUCTURAL TUBING SHOWN ON THIS SHEET.
 3. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 2mm RADIUS AND BE FREE OF BURRS.
 4. RAIL POSTS SHALL BE SET NORMAL TO GRADE.
 5. SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO (2) RAIL POSTS AND PREFERABLY TO AT LEAST FOUR (4) POSTS.
 6. RAIL TUBE EXPANSION JOINT SHALL BE PROVIDED IN ANY RAIL BAY SPANNING A SUPERSTRUCTURE EXPANSION JOINT WIDTH SHALL BE "X" AT 7°C AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
 7. ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111, EXCEPT HARDWARE, WHICH SHALL MEET THE REQUIREMENTS OF AASHTO M232.
 8. RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
 9. RAIL TUBES SHALL BE ATTACHED USING M20 FULL DIAMETER BODY AASHTO M164 (TYPE 1) ROUND HEAD BOLT INSERTED THROUGH THE FACE OF THE TUBE. HOLES IN POSTS SHALL BE 2mm LARGER THAN THE BOLT SIZE.
 10. HOLES IN RAILS FOR RAIL TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.
 11. IF THERE IS A CONFLICT BETWEEN THE DETAILS SHOWN ON THIS SHEET AND THE DESIGN, THE REQUIREMENTS OF THE DESIGN DRAWINGS SHALL BE FOLLOWED.
 12. ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.
 13. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS, INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH THE PROVISION OF 506.04, SHOP DRAWINGS. ALL WELDING SHALL CONFORM WITH SECTION 506.10.
 14. RAIL POSTS AND BASE PLATES SHALL BE TESTED FOR IMPACT PROPERTIES IN ACCORDANCE WITH ASTM A370 CHARPY IMPACT TESTING USING TYPE A SPECIMENS.
 15. TO FACILITATE FIELD FIT - UP OF THE TRANSITION RAILING, POSTS SHALL BE SET LOOSELY INTO FIBER FORM TUBES WHILE TRANSITION PARTS ARE BEING ASSEMBLED. POST HOLES SHALL BE BACKED FILLED WITH A CONCRETE MIX APPROVED BY THE ENGINEER. PAYMENT FOR COMPONENTS, INCLUDING BACKUP PLATE AND END TERMINAL CONNECTOR FOR GUARD RAIL, AUGERING, FIBER FORM TUBES AND CONCRETE, AND INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 525.33, "BRIDGE RAILING - NETC 2 RAILING".
 16. ALL APPROACH RAIL SPLICES SHALL BE LAPPED ON THE DIRECTION OF TRAFFIC FLOW.



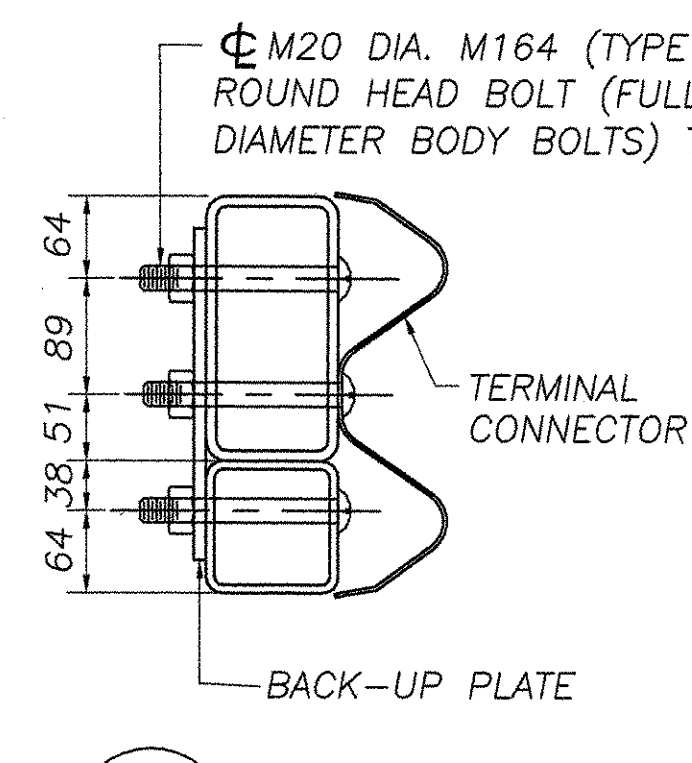
TYPICAL SECTION



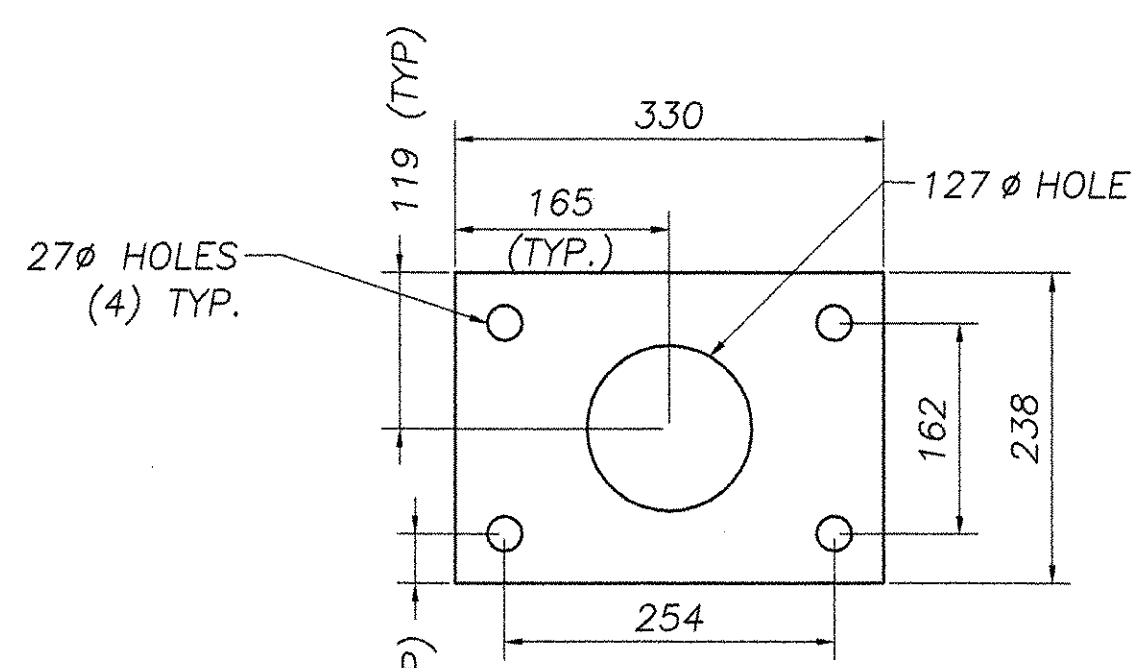
POST AND BASE PLATE



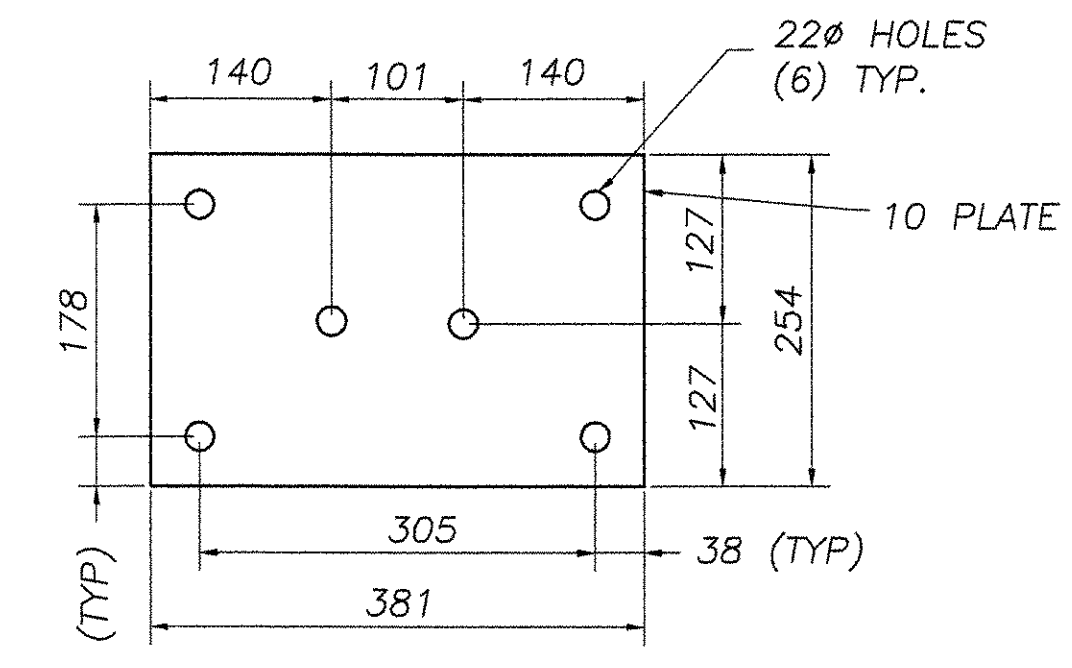
RAIL POST ANCHORAGE (BY OTHERS)



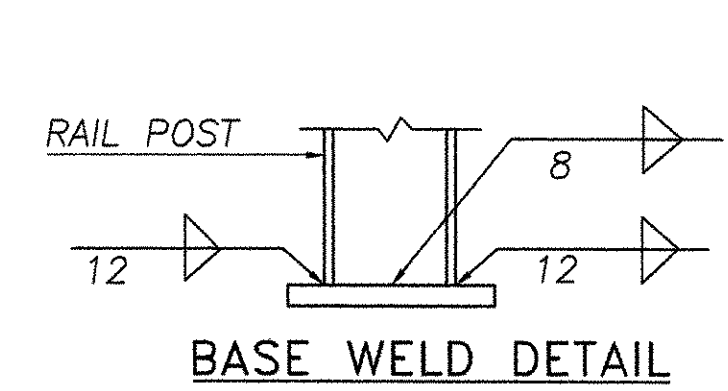
SECTION



SPACER PLATE (BY OTHERS)



BACK-UP PLATE



BASE WELD DETAIL

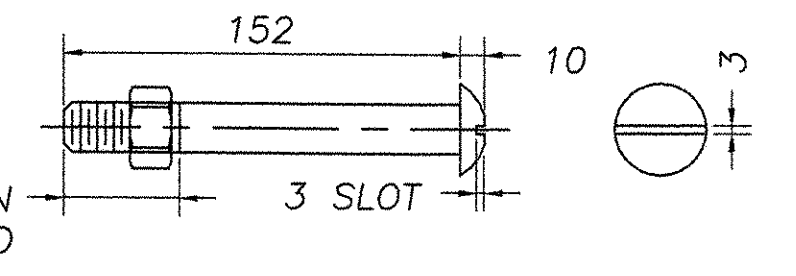
MATERIALS

RAIL TUBES.....ASTM A500, GRADE B OR ASTM A501
 RAIL POSTS AND BASE PLATES.....ASTM A709/A709M, GRADE 345
 ALL OTHER SHAPES AND PLATES.....ASTM A709/A709M, GRADE 250
 ANCHOR STUDS.....ASTM F568M CLASS 8.8
 ALL OTHER BOLTS (UNLESS NOTED).....AASHTO M164M, TYPE 1

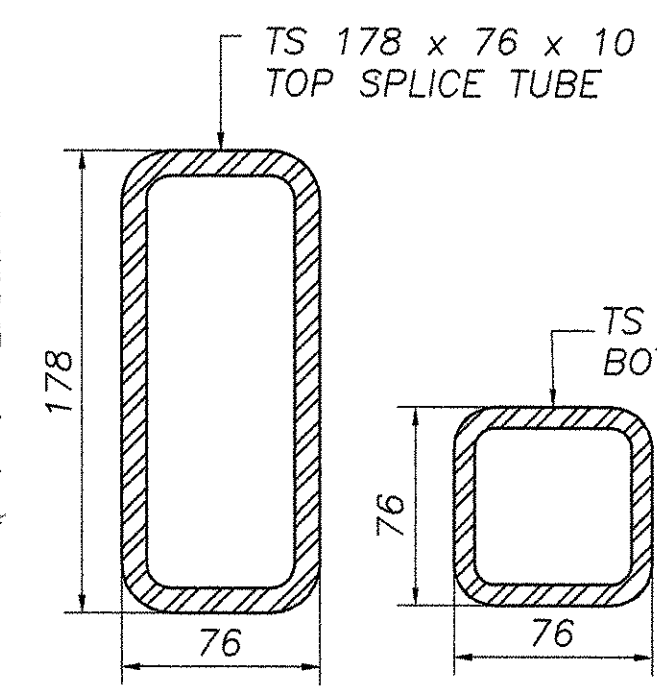
NUTS FOR AASHTO M164M (ASTM A325M) BOLTS AND ANCHOR STUDS SHALL COMPLY WITH AASHTO M291M (ASTM A563M).

WASHERS SHALL COMPLY WITH AASHTO M293M (ASTM F436M) SPECIFICATIONS.

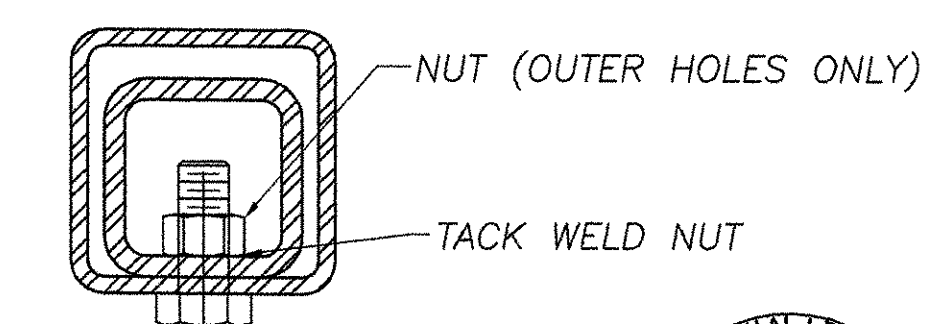
3mm PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.01 OR 731.02.



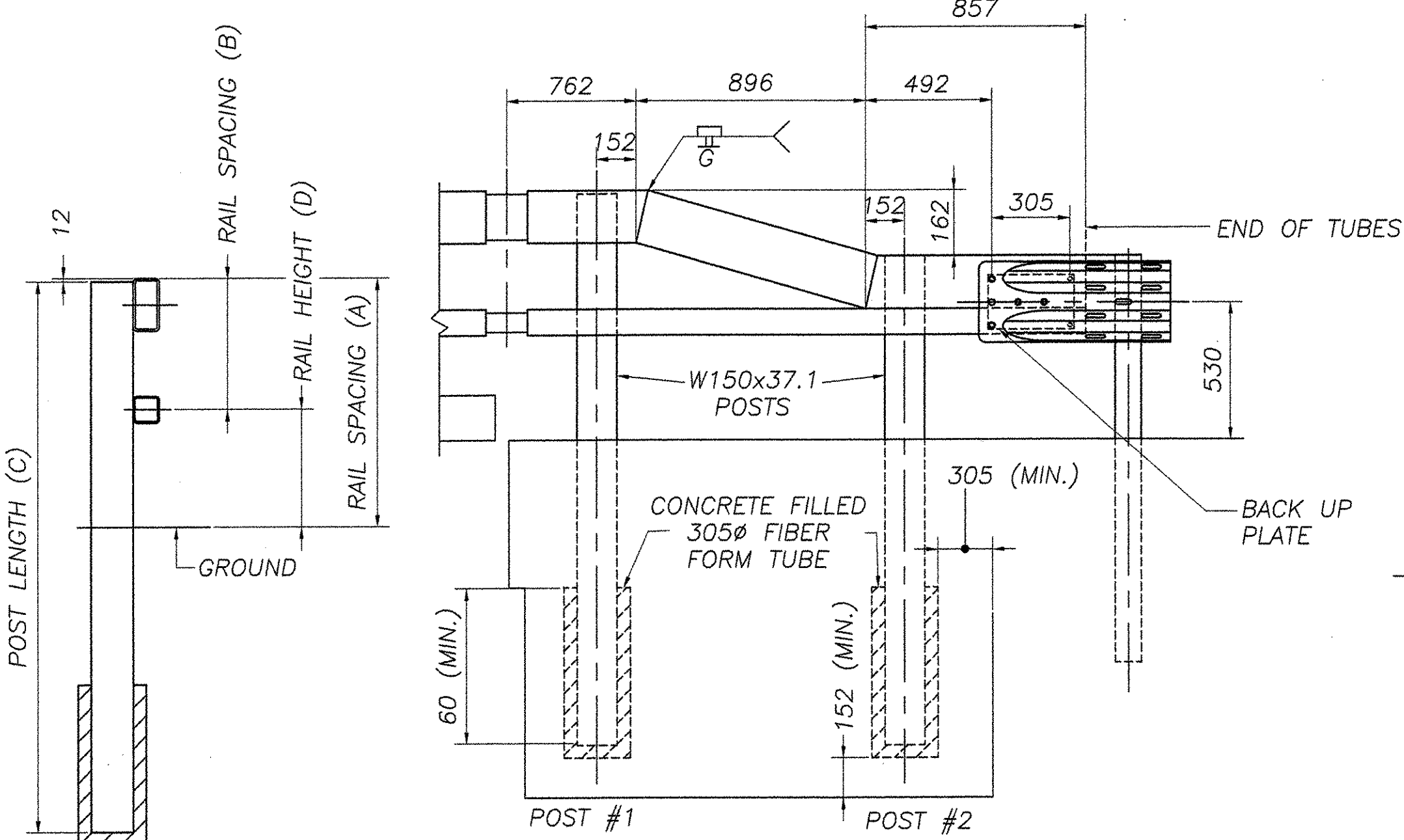
M20 DIA. M164M (TYPE 1) ROUND HEAD BOLT (WITH WASHER AND PREVAILING TORQUE TYPE LOCK NUT) (SEE NOTE #9) ONLY FULL DIAMETER BODY BOLTS WILL BE ALLOWED.



RAIL TUBE SPLICE SECTION

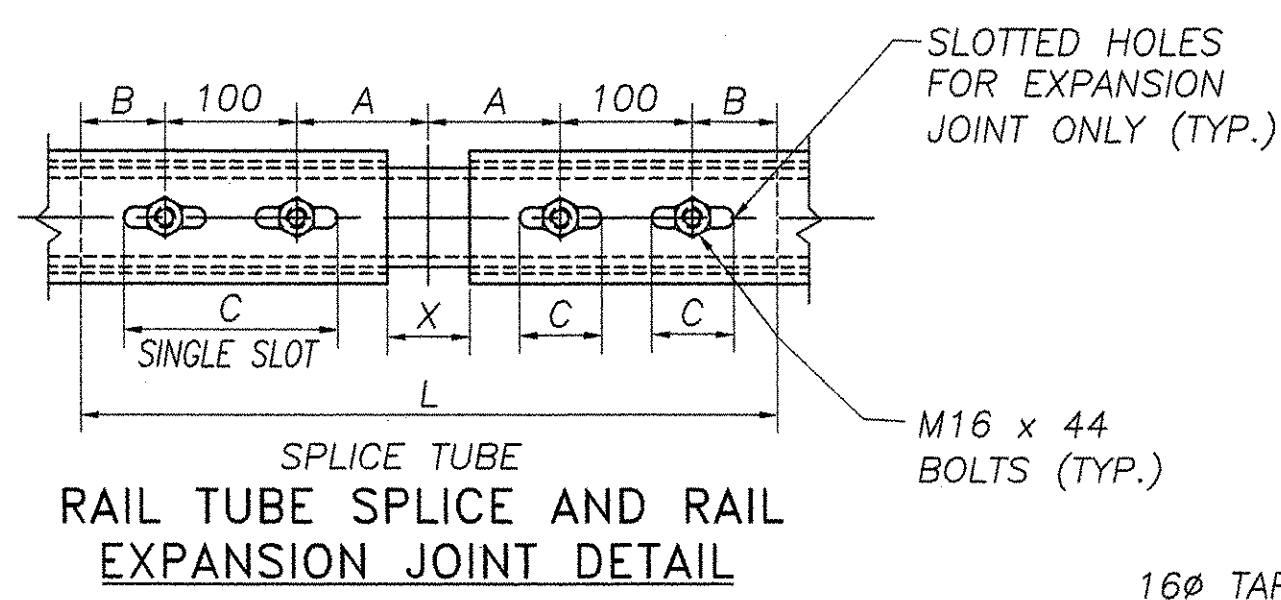


16Ø TAPPED HOLE IN SPLICE TUBE & 19Ø HOLE IN RAIL TUBE FOR M16 BOLT & PLAIN HARDENED WASHER



TYPICAL SECTION

ELEVATION



RAIL TUBE SPLICE AND RAIL EXPANSION JOINT DETAIL

McFarland-Johnson, Inc.
 Date: 5-21-04
 By: Steven F. DeLuca

Furnish as Corrected
 Revise and Resubmit
 Submit Specified Item

This review is only for general conformance with the design concept and the information given in the Construction Documents. Corrections or comments made on the shop drawings during the review do not relieve the contractor from compliance with the requirements of the plans and specifications. Review of a specific item shall not include review of an assembly of which the item is a component. The Contractor is responsible for dimensions to be confirmed and corrected at the fabricator's information that pertains solely to the fabrication process or to the means, methods, sequence, and procedures of construction, coordination of the work, and that of all other trades and performs all work in a safe and satisfactory manner.

16Ø TAPPED HOLE IN SPLICE TUBE AND 29 x 'C' SLOT IN RAIL TUBE FOR M16 BOLT AND PLAIN HARDENED WASHER
EXPANSION JOINT SECTION
 FOR DETAILS NOT SHOWN, SEE "RAIL TUBE SPLICE SECTION."

POST NUMBER	RAIL HEIGHT (A)	RAIL SPACING (B)	POST LENGTH (C)	RAIL HEIGHT (D)
1	860	405	2134	455
2	702	254	1956	448

SPLICE TABLE					
T	A	B	C	L	X
N/A	100	50	--	510	20
EXPANSION JOINT TABLE					
<100	100	50	65	510	65

T = TOTAL MOVEMENT BETWEEN BRIDGE EXPANSION JOINTS. SEE NOTE 6

* = SINGLE SLOT

REVISIONS		
No.	Remarks	Date
0	Initial submittal	

RECEIVED
 OK'D BY: OK'D BY:
 MAY 04 2004
 REBUBMIT APPROVED
 BY: DATE 5/1/04

HIGHWAY SAFETY CORP.
 GLASTONBURY, CT

ITEM 525.33 - BRIDGE RAILING-NETC 2 RAIL

PROJECT No. BRF RS 0283(7)
 TOWN OF BERKSHIRE Br. No. 26
 VT.ROUTE 118 OVER TROUT RIVER

GENERAL CONTRACTOR
 SUB CONTRACTOR F.R. LAFAYETTE, INC. 166

DRAWN: MHM
 CHECKED: [Signature]
 DATE: 2-23-04
 SCALE: NONE
 HSC REFERENCE NO.: 1422
 SIZE: D REVISION: 0
 SHEET NO.: 2 of 2