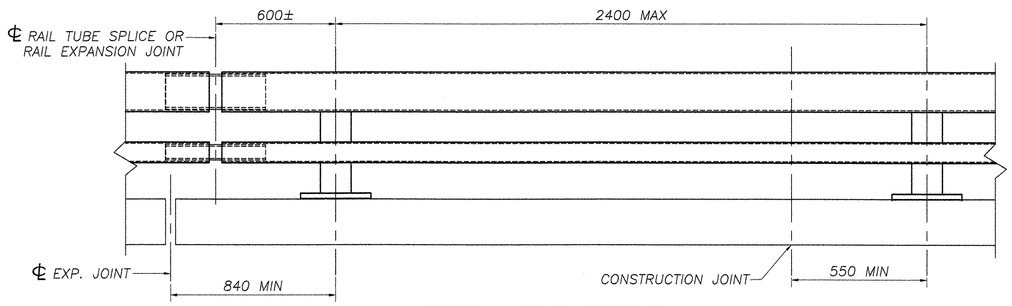
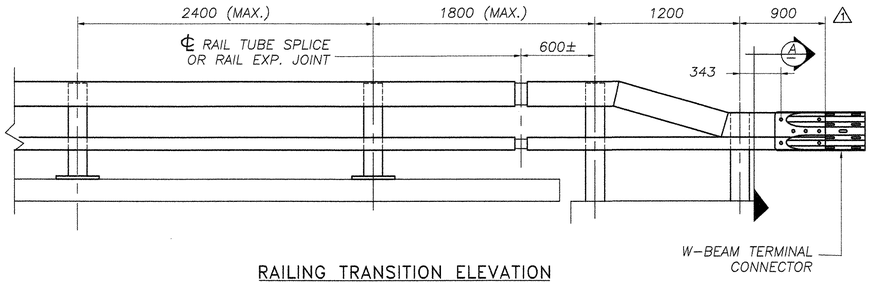
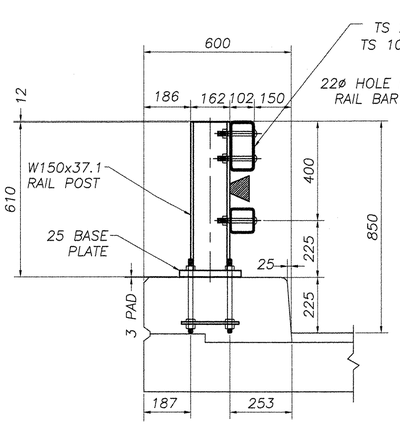


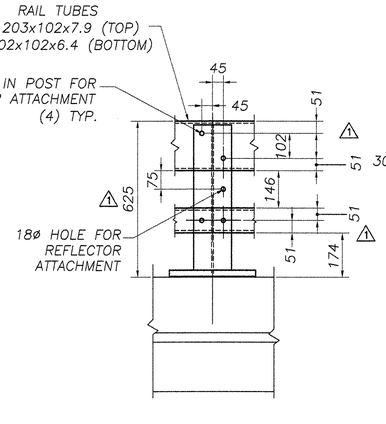
BRIDGE RAILING ELEVATION



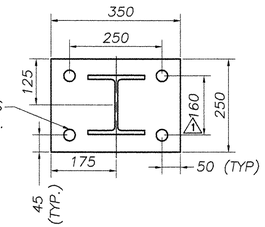
RAILING TRANSITION ELEVATION
(BOTH ENDS OF BRIDGE)



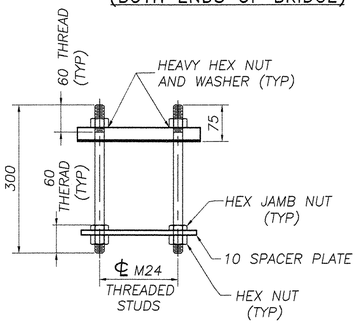
TYPICAL SECTION



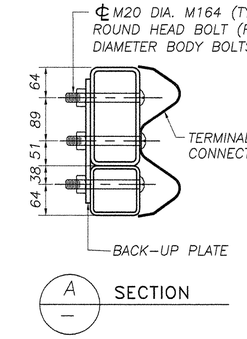
ELEVATION



POST AND BASE PLATE



RAIL POST ANCHORAGE
(BY OTHERS)



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 FOR CONSTRUCTION," EXCEPT THAT THE DROP-WEIGHT TEAR TEST IN SECTION 732 SHALL NOT APPLY TO THE STRUCTURAL TUBING SHOWN ON THIS SHEET.

3. PRIOR TO GALVANIZING, 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. 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 M232M.

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 M164M (TYPE 1) ROUND HEAD BOLT INSERTED THOUGH 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 FABICATOR 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.

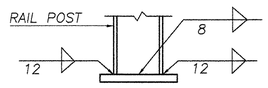
MATERIALS

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, TYPE1

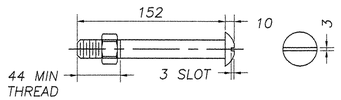
NUTS FOR AASHTO M164M (ASTM A325M) BOLTS AND ANCHOR STUDS SHALL COMPLY WITH AASTHO M291M (ASTM A563M).

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

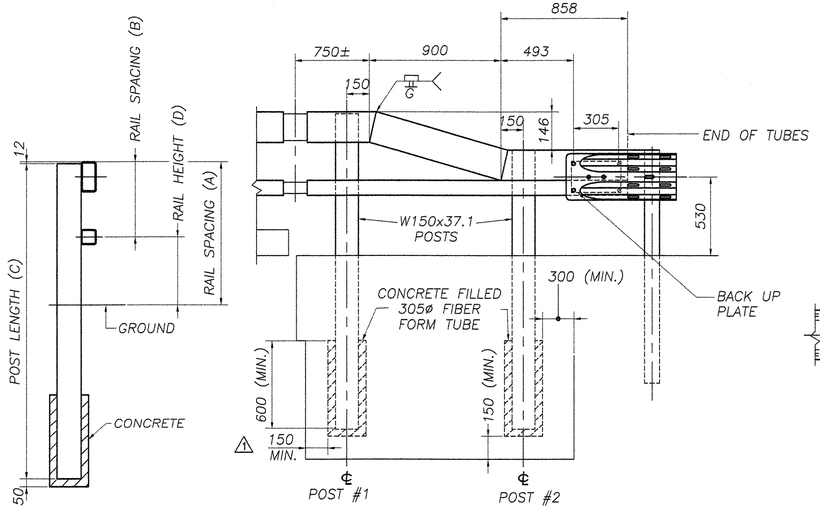
3mm PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.01 OR 731.02.



BASE WELD DETAIL

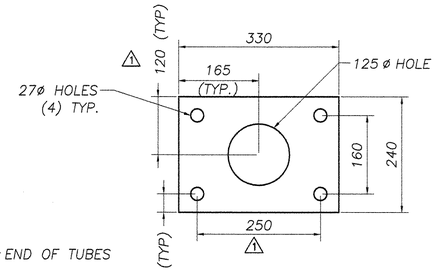


M20 DIA. M164M (TYPE 1)
ROUND HEAD BOLT
(WITH WASHER AND PREVAILING TORQUE TYPE LOCK NUT)
(SEE NOTE #9)
ONLY FULL DIAMETER BODY BOLTS WILL BE ALLOWED.

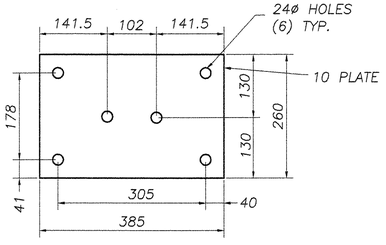


TYPICAL SECTION

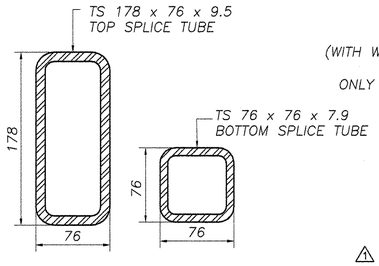
ELEVATION



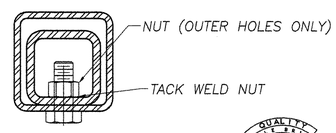
SPACER PLATE
(BY OTHERS)



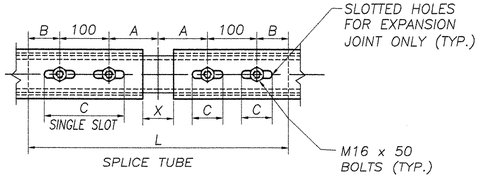
BACK-UP PLATE



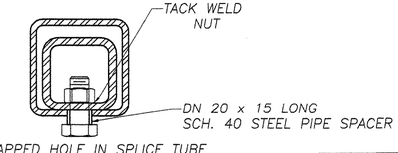
RAIL TUBE SPLICE SECTION



⚠ 16ø TAPPED HOLE IN SPLICE TUBE & 20 ø HOLE IN RAIL TUBE FOR M16 BOLT & PLAIN HARDENED WASHER



RAIL TUBE SPLICE AND RAIL
EXPANSION JOINT DETAIL



⚠ 16ø TAPPED HOLE IN SPLICE TUBE AND 28 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	850	400	2135	450
2	704	254	1990	450

SPLICE TABLE					
T	A	B	C	L	X
N/A	100	50	--	500	20
EXPANSION JOINT TABLE					
<100	100	50	65	500	65

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

* = SINGLE SLOT

REVISIONS		
No.	Remarks	Date
0	Initial submittal	7-18-06
1	VT DOT Corrections	8-08-06

VTRANS
RECEIVED
CK'D BY G.Ray OK'D BY
AUG 21 2006
RESUBMIT APPROVED
BY DATE
RECORD PLANS

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 525.33 – BRIDGE RAILING-NETC 2 RAIL
PROJECT No. AC BRF 0160(3)S
TOWN OF LEICESTER Br. No. 6
ADDISON COUNTY, ROUTE: TH 1 (FAS 160)

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

DRAWN	MHM
CHECKED	
DATE	7-18-06
SCALE	NONE
MSC REFERENCE NO.	1560
SIZE	D
REVISION	1
SHEET NO.	2 of 2