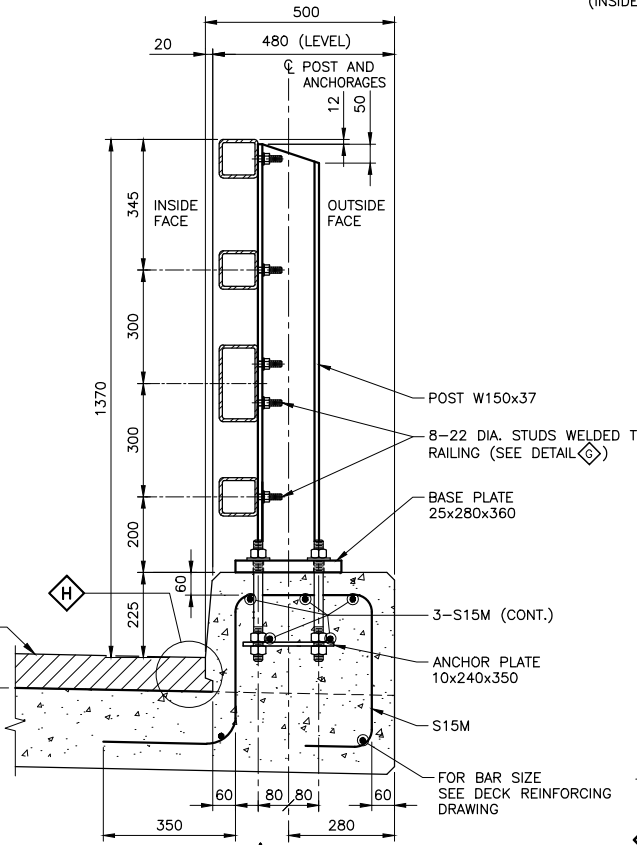
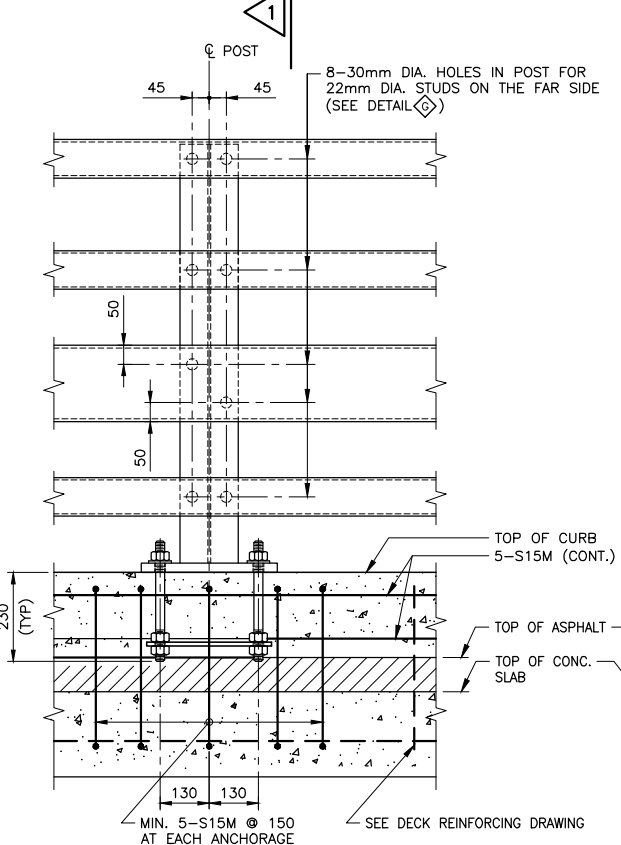


ELEVATION - BOX BEAM RAILING ON CURB
(INSIDE FACE SHOWN)

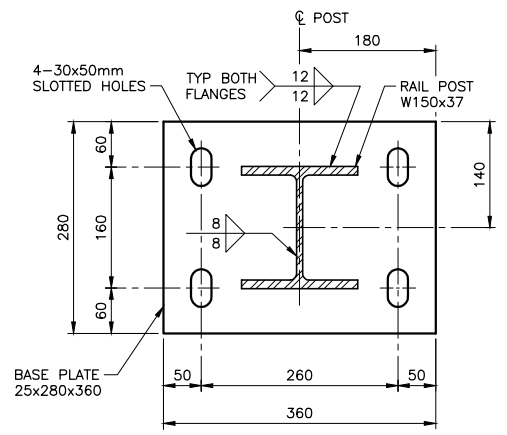
NOTES TO DESIGNER:

1. THE IMPACT TEST TEMPERATURE REQUIRED IN NOTE 3 SHALL BE DETERMINED BY REFERRING TO CSA S6-19, TABLE 10.14 BASED ON THE MINIMUM SERVICE TEMPERATURE OF THE STRUCTURE GIVEN IN FIGURE A3.1.2.
2. FOR RETROFITTING SITUATIONS, THE BASE PLATE SHOWN CAN BE MODIFIED TO SUIT EXISTING ANCHORAGE ASSEMBLY CONFIGURATION PROVIDED THAT ITS STRUCTURAL ADEQUACY IS VERIFIED.
3. THE 'NOTES TO DESIGNER' SHALL BE DELETED FROM THIS DRAWING PRIOR TO ISSUING.

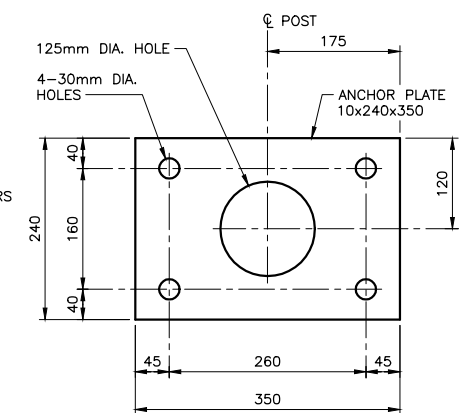


H CHASE DETAIL

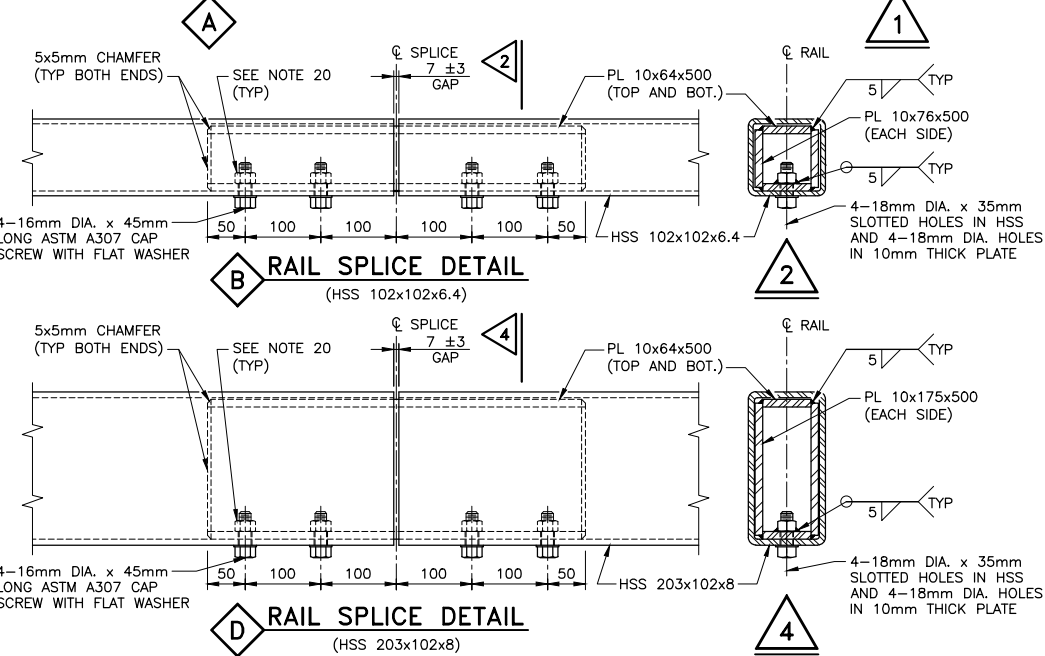
G WELDED STUD DETAIL
FULL-THREAD WELDED STUD



6 BASE PLATE



7 ANCHOR PLATE

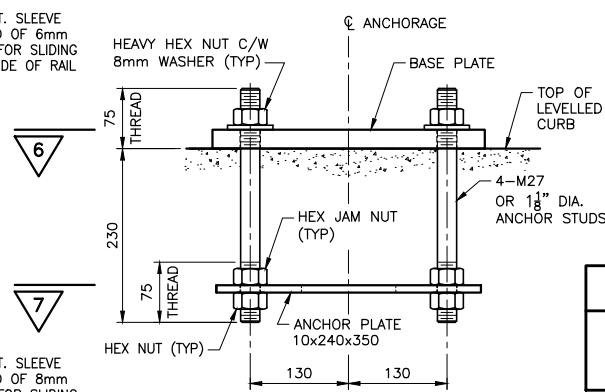


B RAIL SPLICE DETAIL
(HSS 102x102x6.4)

C CONNECTION DETAIL AT EXP. JT.
(HSS 102x102x6.4)

D RAIL SPLICE DETAIL
(HSS 203x102x8)

E CONNECTION DETAIL AT EXP. JT.
(HSS 203x102x8)



F ANCHORAGE ASSEMBLY

- NOTES:**
1. SYSTEM CONFIGURATION MEETS THE REQUIREMENTS OF NCHRP 350.
 2. RAIL ELEMENTS SHALL BE HOLLOW STRUCTURAL SECTIONS GRADE 350WT, CLASS C. RAIL ELEMENT SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH IMPACT TEST REQUIREMENTS OF 27 JOULES AT TEST TEMPERATURE OF ____ °C. (ASTM A500 GRADE B OR C STEEL MAY BE SUBSTITUTED FOR GRADE 350WT PROVIDED THAT THE CHARPY V-NOTCH IMPACT TEST REQUIREMENTS ARE VERIFIED BY THE SUBMISSION OF TEST DOCUMENTATION).
 3. POSTS AND PLATES SHALL BE GRADE 350WT.
 4. THE NOTCH TOUGHNESS REQUIREMENTS FOR POSTS AND PLATES SHALL BE THE SAME AS THOSE SPECIFIED IN NOTE 3.
 5. ANCHOR STUDS, WASHERS, AND NUTS SHALL CONFORM TO ASTM A449.
 6. FULL THREAD STUDS FOR FASTENING GUIDE RAILS TO POST SHALL CONFORM TO ASTM A108. LOCK NUTS SHALL BE ACCORDING TO ASTM A563. WASHERS SHALL BE ACCORDING TO ASTM F436.
 7. RAILS SHALL BE SUPPLIED IN LENGTHS TO BE ATTACHED TO A MINIMUM OF THREE (3) POSTS EXCEPT WHEN THE WINGWALL LENGTH OF A BRIDGE WITH EXPANSION JOINTS DOES NOT PERMIT. IN THIS CASE, THE RAIL LENGTH SHALL BE ATTACHED TO TWO (2) POSTS ON THE WINGWALL.
 8. GALVANIZING ON MATING SURFACES OF RAILS TO HAVE UNIFORM THICKNESS NOT EXCEEDING 0.15mm TO ENSURE SLIDING FIT.
 9. RAILS, POSTS, RAIL SPLICES, AND END CAPS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION AS PER OPSS 911.
 10. BOLTS, ANCHOR STUDS, PLATES, WASHERS, AND NUTS SHALL BE HOT-DIP GALVANIZED. LOCK NUTS SHALL BE ZINC PLATED ACCORDING TO ASTM-B695.
 11. RAILS SHALL BE PREBENT TO FOLLOW ROAD CURVATURE WHERE RADIUS IS LESS THAN 150 METRES.
 12. RAIL POSTS SHALL BE SET PERPENDICULAR TO GRADE.
 13. RAILS MAY BE CUT AS REQUIRED IN THE FIELD, CUT TO BE SURFACE TREATED WITH A ZINC TOUCH-UP SOLDER, GALVAGUARD OR AN APPROVED EQUIVALENT.
 14. WHEN CONNECTING TO EXISTING RAILING, RAILS MUST BE MADE CONTINUOUS AND POST SPACINGS TO BE DETERMINED WITH REFERENCE TO EXISTING POSTS.
 15. GROUT SHALL NOT BE USED UNDER BASE PLATES. THIN PAD OF EPOXY GROUT MAY BE USED WHEN REQUIRED FOR FILLING THE VOIDS UNDER THE BASE PLATE.
 16. POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT CONDITION AND GIVEN AN ADDITIONAL 1/3 OF A TURN.
 17. BOLTS IN RAIL SPLICES SHALL BE TIGHTENED TO A CONDITION THAT WILL ALLOW RAIL MOVEMENT.
 18. STAINLESS STEEL BARS SHALL BE TYPE 316 LN OR DUPLEX 2205 WITH A MINIMUM YIELD STRENGTH OF 500 MPA.
 19. CHASES ARE REQUIRED ON HIGH AND LOW SIDE OF CROSS FALL.
 20. PRIOR TO ASSEMBLY, APPLY LOCTITE 242, OR APPROVED EQUIVALENT THREAD-LOCKING FLUID, TO THE BOLT THREADS AT THE NUT ENGAGEMENT AREA, PER MANUFACTURER'S SPECIFICATION.

REFER TO THE STRUCTURAL MANUAL FOR PROFESSIONAL ENGINEER STAMPING REQUIREMENTS.

STANDARD DRAWING MAY 30, 2024 **SS110-36**
FOUR TUBE COMBINATION
TRAFFIC/BICYCLE RAILING, TL-4
(WITH CONCRETE END WALL)

DATE	BY	DESCRIPTION
DESIGN	-CHK	-CODE CSA S6-19/LOAD
DRAWN	-CHK	-SITE

FILE NAME: C:\USERS\WZAKY\ONEDRIVE - GOVERNMENT OF ONTARIO\DESKTOP\ADAM JAN RAILING 2023\SS110-36 MAY 30 2024.DWG
MODIFIED: 2024-05-30 15:47