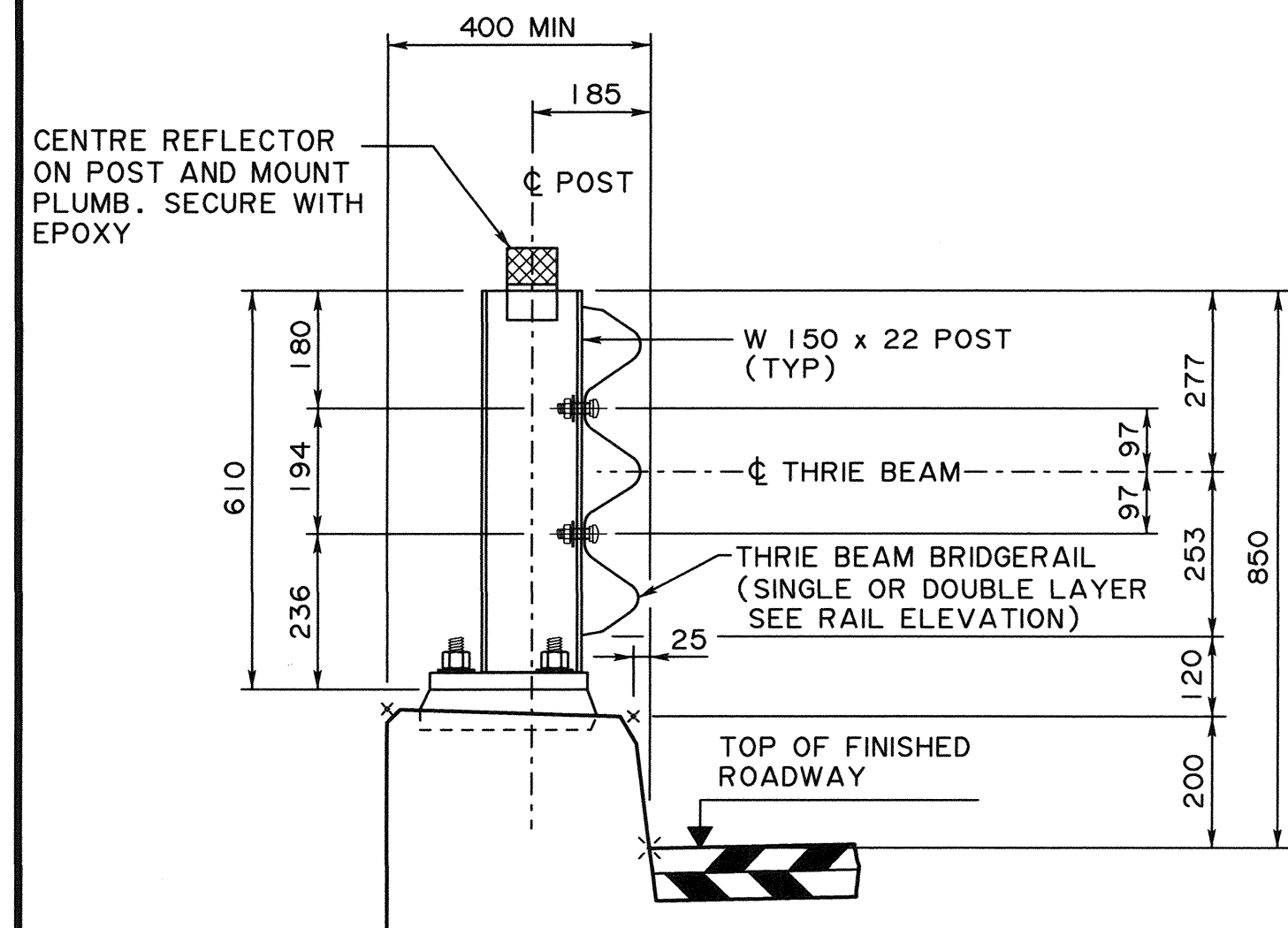
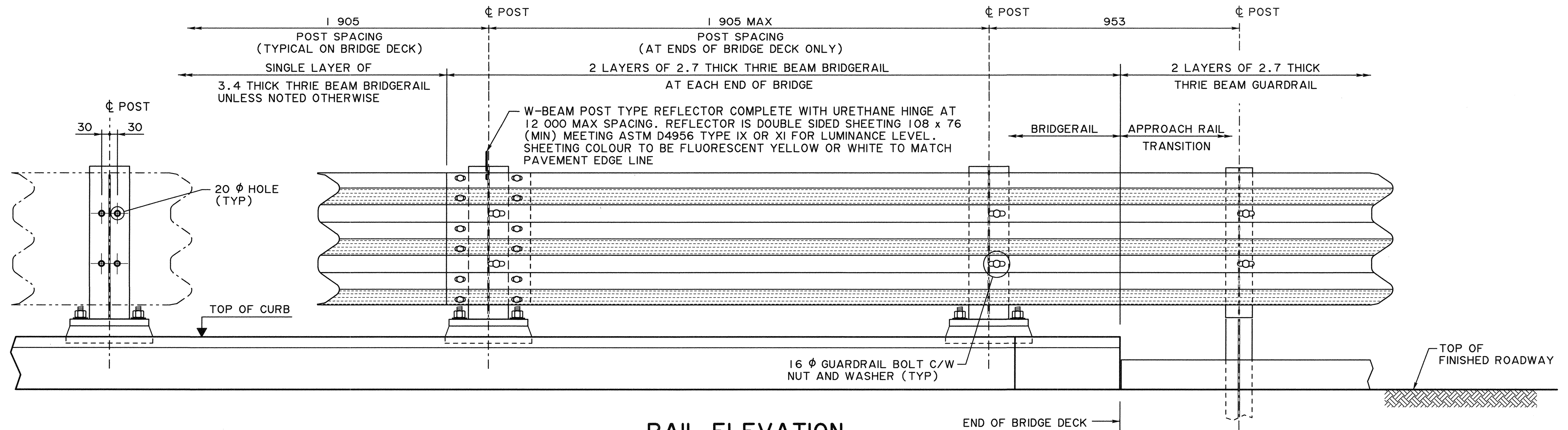
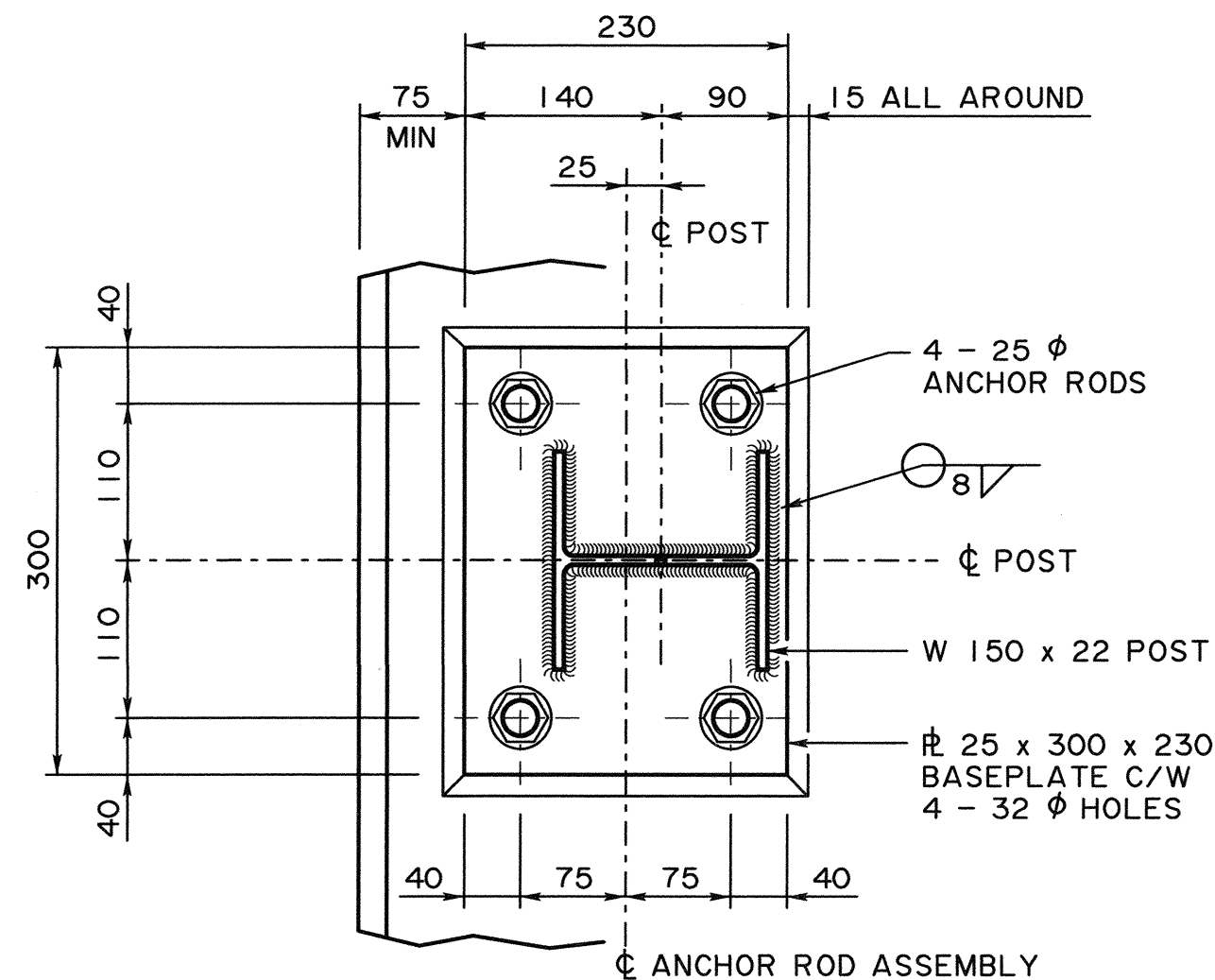




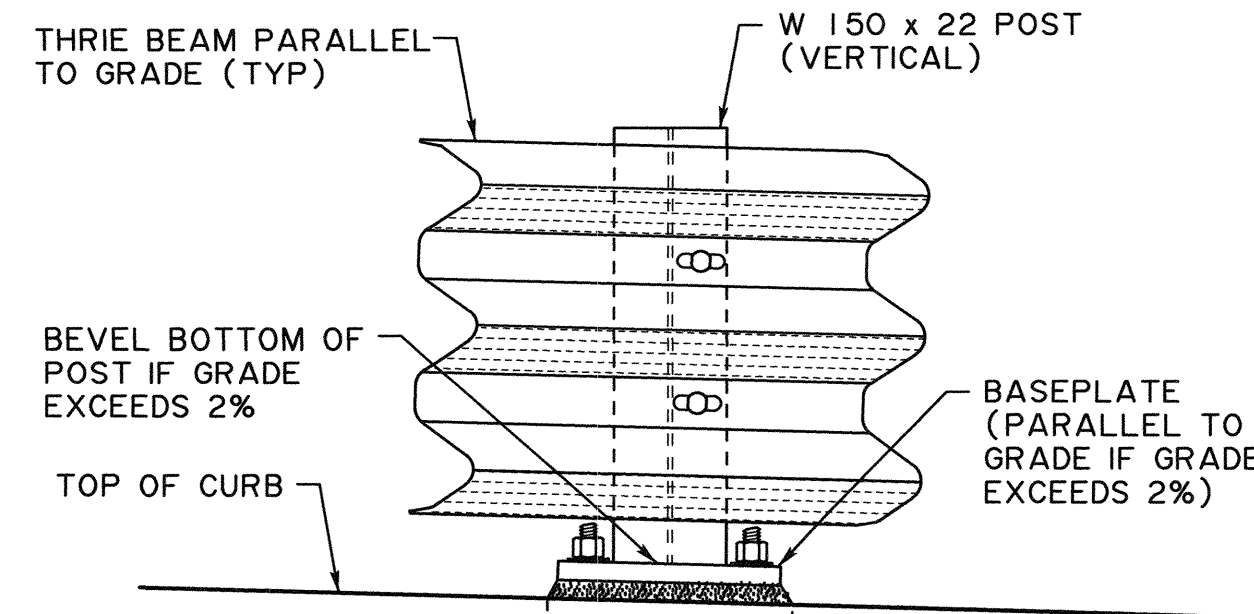
RAIL SECTION
1:10



RAIL ELEVATION
1:10

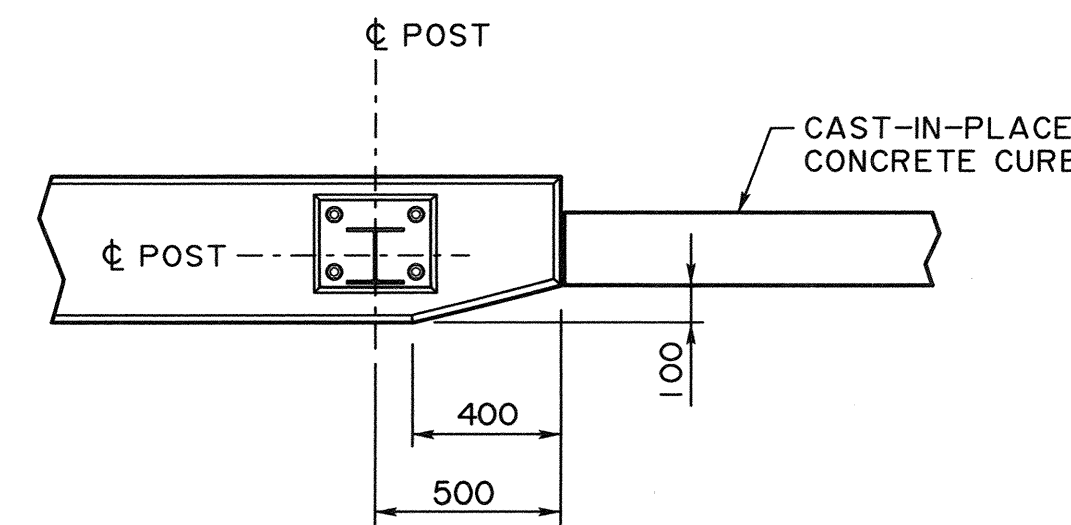


ANCHOR ROD ASSEMBLY DETAIL
(ANCHOR ROD ASSEMBLY SHALL BE MINIMUM 25 CLEAR FROM BOTTOM OF DECK)
1:5

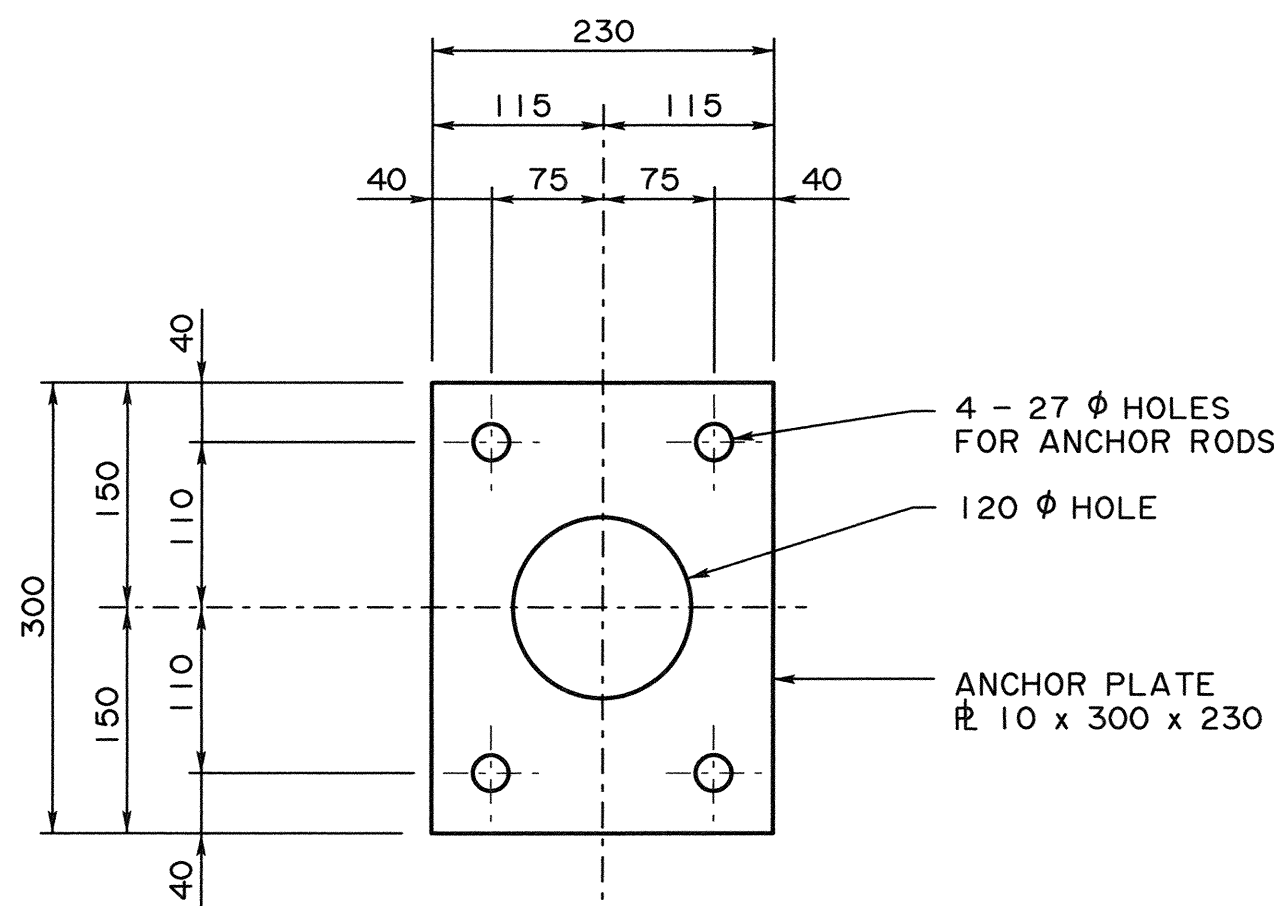


POST BEVEL DETAIL
1:10

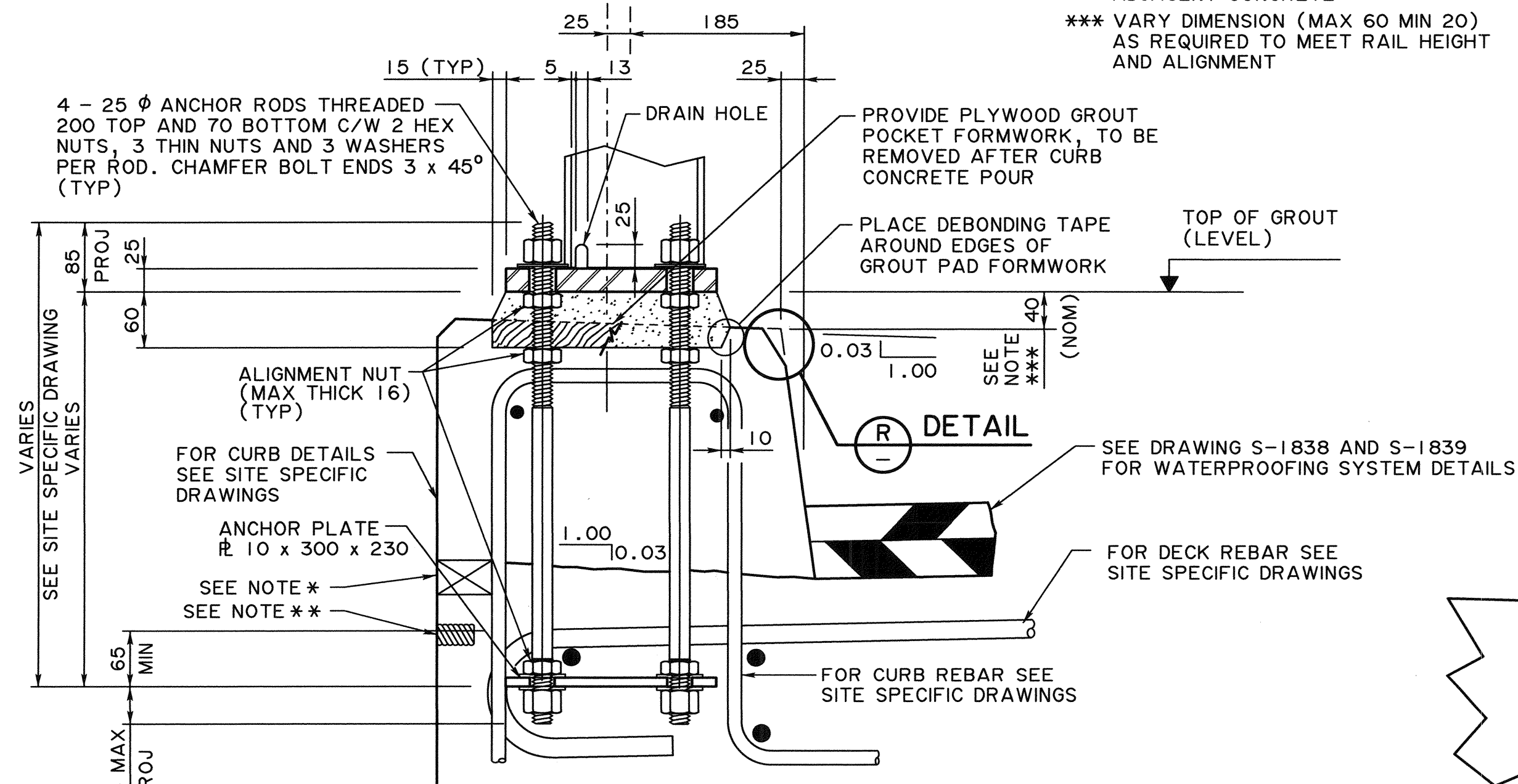
NOTE:
* 38 x 60 TEMPORARY POUR STRIP SET PARALLEL TO GRADE
** 2 - STRUT TYSCRU COUPLER C/W 50 SET BACK CONE OR APPROVED EQUIVALENT TO FACILITATE VERTICAL ALIGNMENT OF FORMWORK WITH ADJACENT CONCRETE
*** VARY DIMENSION (MAX 60 MIN 20) AS REQUIRED TO MEET RAIL HEIGHT AND ALIGNMENT



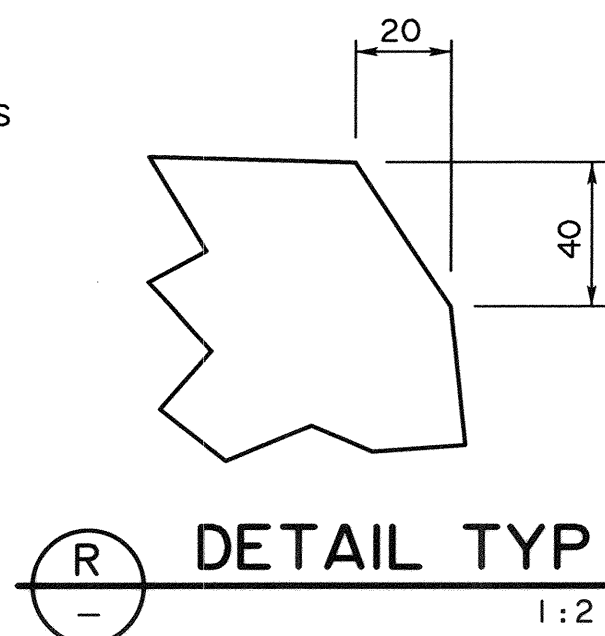
BRIDGE CURB END DETAIL
1:20



ANCHOR PLATE DETAIL
1:5



ANCHOR ROD ASSEMBLY DETAIL
(ANCHOR ROD ASSEMBLY SHALL BE MINIMUM 25 CLEAR FROM BOTTOM OF DECK)
1:5



DETAIL TYP
1:2

GENERAL NOTES

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED
- RAILING CONFIGURATION IS BASED ON A RAILING CONFIGURATION THAT HAS BEEN CRASH TESTED AND MEETS THE REQUIREMENTS OF PERFORMANCE LEVEL 2 OF THE AASHTO GUIDE SPECIFICATIONS FOR BRIDGE RAILING, 1989
- RAILING SHALL BE USED WITH CURB CONFIGURATION SHOWN
- DESIGN OF DECK AND CURB REBAR SHALL BE CARRIED OUT ON A SITE SPECIFIC BASIS TO DEVELOP THE CAPACITY OF THE BRIDGERAIL POSTS, BASED ON $F_y = 350 \text{ MPa}$

FABRICATION

- BRIDGERAIL INCLUDING APPROACH RAIL TRANSITION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION SECTION 12 AND SECTION 14
- ALL PLATE STEEL AND STRUCTURAL SHAPES SHALL CONFORM TO CSA G40.21M GRADE 350W OR ASTM A36
- ALL GUARDRAIL BOLTS, NUTS AND WASHERS SHALL CONFORM TO AASHTO M180. ALL BOLTS FOR CONNECTING THE STEEL SPACER TO POST SHALL CONFORM TO ASTM A307
- ANCHOR RODS SHALL CONFORM TO OF ASTM A193 GRADE B7 ($F_y = 725 \text{ MPa}$, $F_u = 860 \text{ MPa}$). GALVANIZING OF ANCHOR RODS SHALL BE IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN THE STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION
- ALL NUTS AND WASHERS SHALL CONFORM TO ASTM A563 AND F436 RESPECTIVELY UNLESS NOTED OTHERWISE
- ALL W-BEAM AND THRIE BEAM GUARDRAIL (INCLUDING W-THRIE BEAM TRANSITION SECTION) SHALL HAVE A MINIMUM YIELD STRENGTH OF 345 MPa
- TIMBER POSTS AND SPACERS SHALL BE COAST DOUGLAS FIR, PACIFIC COAST HEMLOCK OR LODGEPOLE PINE CONFORMING TO THE STRESS GRADE "SELECT STRUCTURAL POSTS AND TIMBERS" (NLGA PARAGRAPH 131 a)
- ALL WELDING SHALL CONFORM TO CURRENT AWS SPECIFICATION D1.5
- IF ROADWAY GRADE EXCEEDS 2% BOTTOM OF POST SHALL BE BEVELLED TO MATCH ROADWAY GRADE (SEE POST BEVEL DETAIL)
- ALL STEEL MATERIALS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123/A123M AND ASTM F2329 UNLESS NOTED OTHERWISE
- THE BOTTOM SURFACE OF THE BASEPLATES SHALL BE COATED WITH AN APPROVED COATING SYSTEM, SUITABLE FOR APPLICATION ON GALVANIZED STEEL, TO PREVENT CONTACT BETWEEN THE ZINC AND THE GROUT. THE COLOUR SHALL BE MEDIUM GREY

ERECTION

- ALL ALIGNMENT NUTS MUST BE "SNUG- TIGHT" BEFORE ANCHOR RODS ARE FULLY PRETENSIONED
- ALL ANCHOR ROD NUTS AND GUARDRAIL BOLTS SHALL BE TIGHTENED AN ADDITIONAL $\frac{1}{3}$ TURN OF THE NUT PAST THE "SNUG-TIGHT" CONDITION
- ALL POSTS SHALL BE VERTICAL
- ALL DIMENSIONS ARE MEASURED PARALLEL TO TOP OF CURB AND ALONG THE CENTRELINE OF ANCHOR ROD ASSEMBLIES
- LINE AND ELEVATION OF RAIL SHALL BE SET BY INSTRUMENT
- ALL NON-STANDARD GUARDRAIL LENGTHS SHALL BE SAW CUT TO SUIT AND ALL NON-STANDARD GUARDRAIL HOLES SHALL BE DRILLED. FLAME CUTTING OF GUARDRAIL SHALL NOT BE ALLOWED. APPLY TWO COATS OF ZINC RICH PAINT ON AREAS DAMAGED BY SAW CUTTING OR DRILLING

• WORK THESE DRAWINGS TOGETHER: S-1648 AND S-1649

				RECOMMENDED DIRECTOR BRIDGE ENGINEERING		Alberta Transportation	
						TL-4 THRIE BEAM ON CURB BRIDGERAIL AND BRIDGERAIL DETAILS	
				APPROVED EXECUTIVE DIRECTOR TECHNICAL STANDARDS BRANCH			
				DATE 2021-3-2		DATE 2020-09-04	
				BY		SHEET 1 OF 2	
				DESIGNER CM CM		DRAWING S-1648-20	
				CHECKER MC MT			