

Refer Note 2

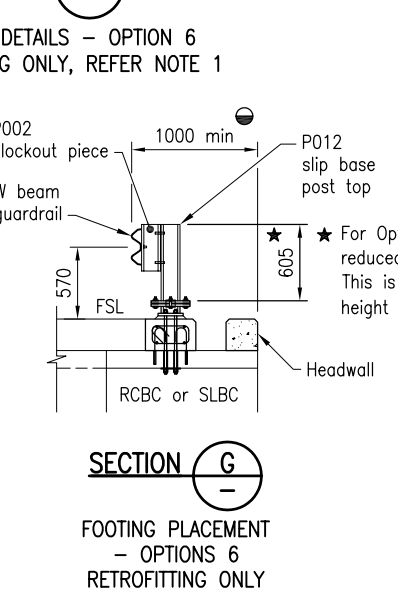
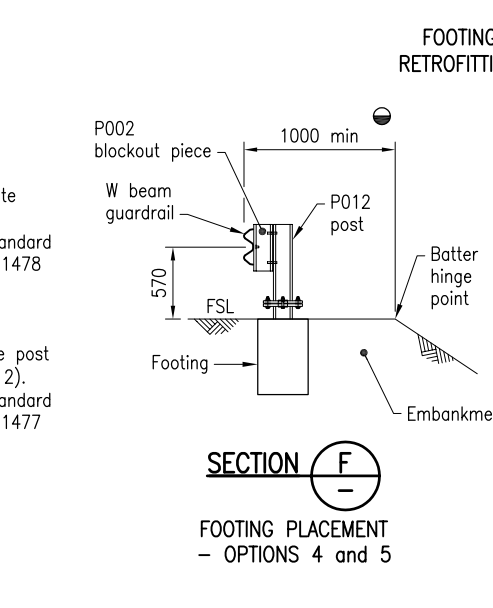
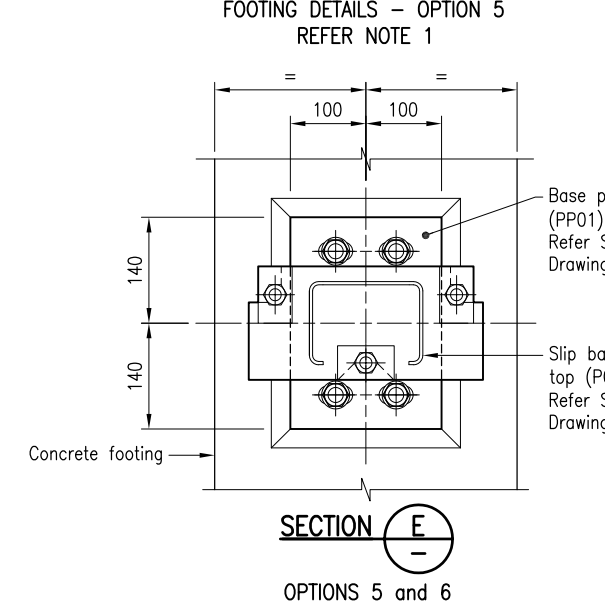
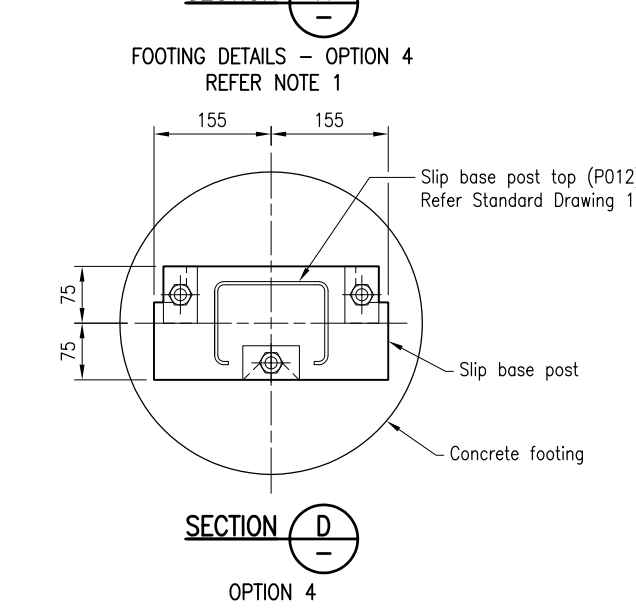
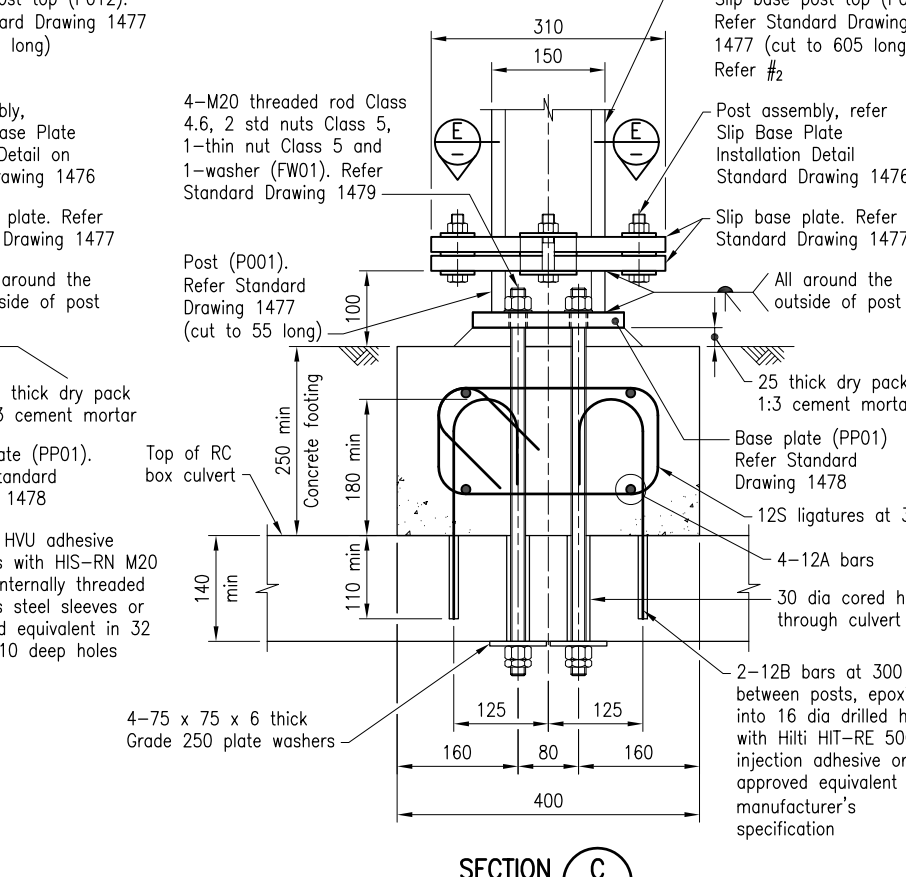
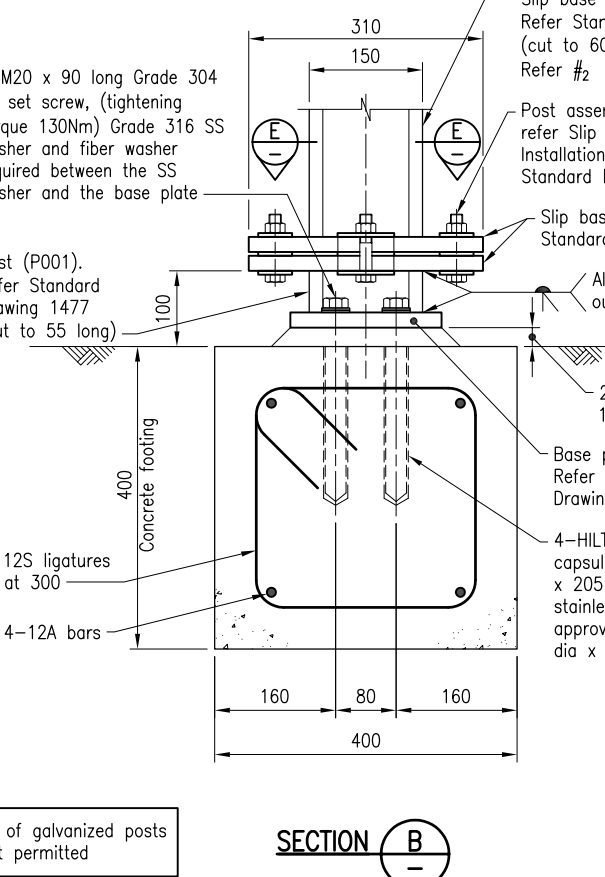
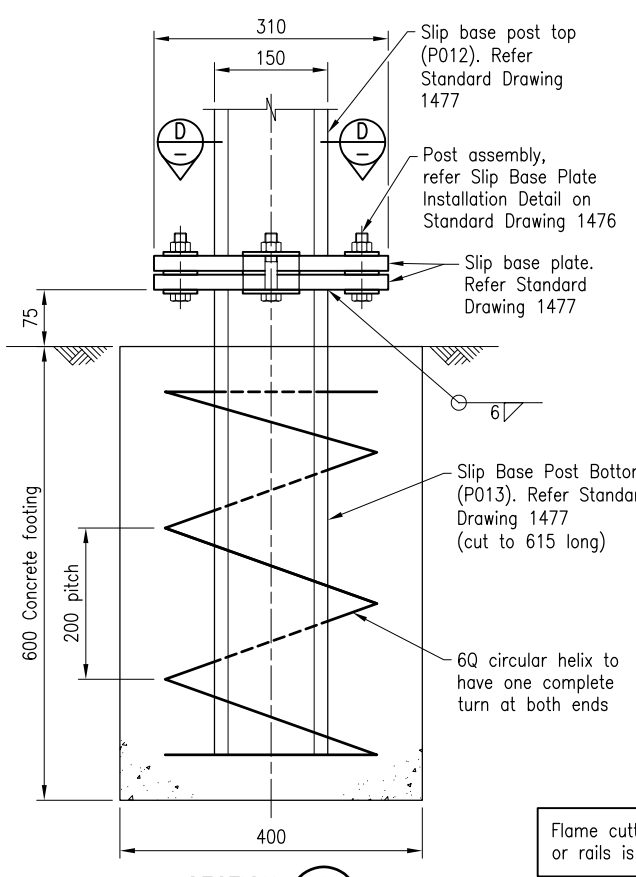
* Posts shall be set out such that they are offset to the box culvert legs and haunches

NOTES:

- BARRIER SELECTION CRITERIA:** For W-beam rail barrier over culverts, a suitable road safety barrier design solution shall be adopted after all options from firstly Standard Drawing 1474 and secondly Options 4, 5 and 6 in this drawing have been considered and assessed in accordance with the Road Planning and Design Manual. The design decisions leading to adoption of this solution shall be fully documented. Option 6 in this drawing is only for retrofitting projects. Refer Standard Drawing 1474 for normal guardrail installation Options 1, 2, and 3.
- MINIMUM 1000 OFFSET** for guardrail installation detailed in this Standard Drawing is to allow for nominal deflection upon impact, i.e. no hazards within this zone.
- THE GUARDRAIL POSTS and BASE PLATES SYSTEM** shown in this Standard Drawing shall be constructed in accordance with MRTS14.
- CONCRETE** shall be in accordance with MRTS70. Concrete strength minimum S40/20. Exposure classification minimum B2 to AS 5100. Minimum cover to reinforcement cast against ground shall be 90, all other places shall be 60. Exposed edges for options 5 and 6 shall have 15 x 15 chamfers.
- REINFORCING STEEL** shall be read in conjunction with Standard Drawings 1043 and 1044. Reinforcing steel shall be in accordance with MRTS71 and AS/NZS 4671. Deformed bars Grade D500N.
- STEELWORK** shall be fabricated to the requirements of MRTS78. Steel plate shall be Grade 350 to AS/NZS 3678. Hexagon bolts and screws shall be to AS/NZS 1111, Class 4.6, nuts Class 5 to AS 1112.4. Black steel washers shall be to AS 1237. Threaded rods Class 4.6, nuts Class 5 to AS 1112.4 and washers for Class 4.6 threaded rods to AS 1237.1. All nuts shall be snug tight in accordance with AS 4100. All threaded rods and nuts shall be hot dip galvanized to AS 1214. All steelwork shall be hot dip galvanized to AS/NZS 4680. Prior to galvanizing all weld splatter and welding slag is to be removed.
- WELDING** symbols shall conform to AS 1101.3. All welding shall be to AS/NZS 1554.1. All welds except location tack welds shall be SP category. Welding consumables shall be controlled hydrogen type: G493 to AS/NZS ISO 14341-B or T493 to AS/NZS ISO 17632-B. TACK WELDING to reinforcement for location purposes to AS/NZS 1554.3. Welding consumables to be controlled hydrogen type: G49X to AS/NZS ISO 14341-B or T49X to AS/NZS ISO 17632-B unless shown otherwise.
- DELINEATORS**, where required, shall be fixed to the guardrail, at 10m spacing, in accordance with the requirements specified in MRTS14.
- DIMENSIONS** are in millimetres unless shown otherwise.

REFERENCED DOCUMENTS:

- Road Planning and Design Manual
- Departmental Standard Drawings:
 - 1043 Reinforcing Steel - Standard Bar Shapes
 - 1044 Reinforcing Steel - Lap lengths
 - 1474 Steel Beam Guardrail - Installation and Setout
 - 1476 Steel Beam Guardrail - Terminal Components
 - 1477 Steel Beam Guardrail - Posts and Blockouts, Soil and Bearing Plates, Slip Base Plate
- Departmental Specifications:
 - MRTS14 Road Furniture
 - MRTS70 Concrete
 - MRTS71 Reinforcing Steel
 - MRTS78 Fabrication of Structural Steelwork



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* For Options 5 and 6, fabricate P012 with a reduced length of 605. This is to ensure guardrail is installed at correct height of 570 for finished surface level (FSL)

The purpose of this Standard Drawing is to provide typical standard details. The fitness for purpose of these details for a specific project shall be designed and certified by an RPEQ. The details specific to the project location shall be shown on the project specific drawings.

Department of Transport and Main Roads		
STEEL BEAM GUARDRAIL		
DETAILS FOR INSTALLATION OF GUARDRAIL OVER CULVERTS WHERE DEPTH OF COVER IS LESS THAN 1100		
A3	Standard Drawing No	1490
Not to Scale	Date	7/18
A	B	C