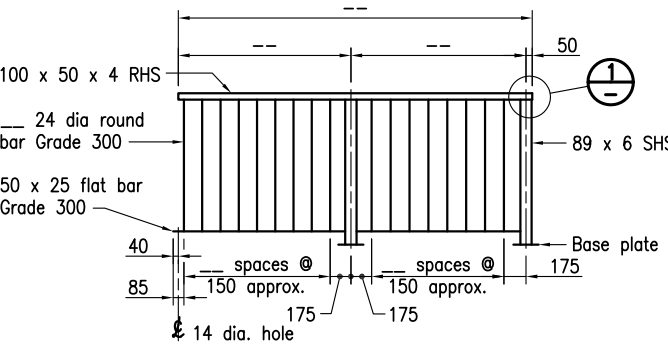
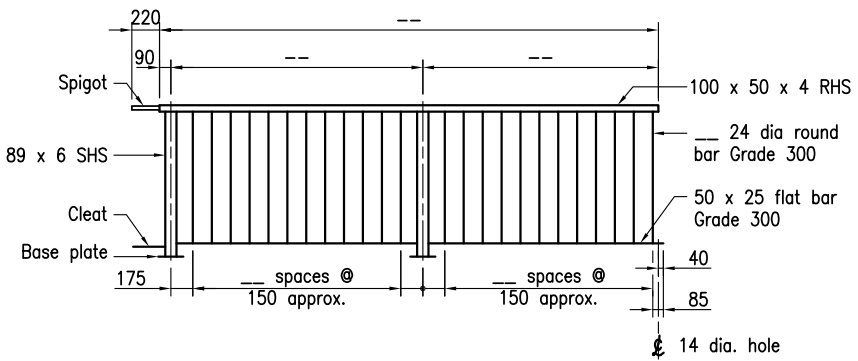


'X' denotes 40 nom gap - Fixed Joint
'Y' denotes ___ nom gap - Expansion Joint

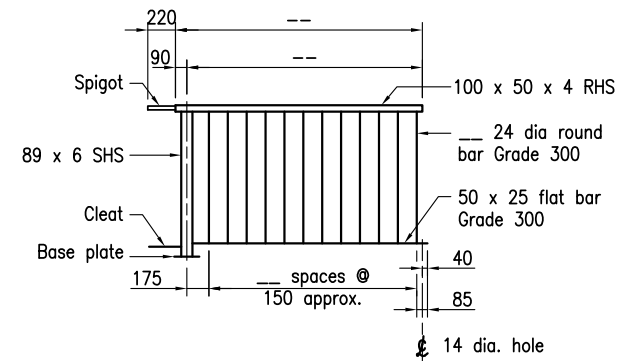
-- denotes project specific information that is to be shown on drawings



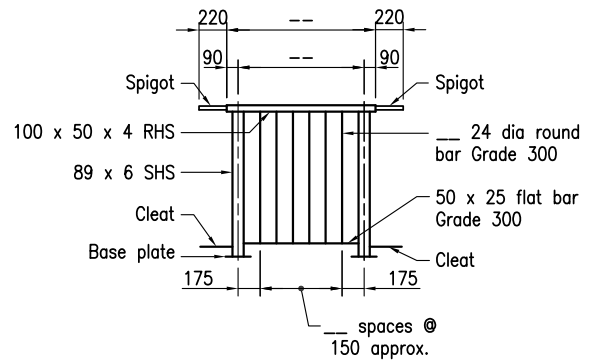
PANEL TYPE 1
(No OFF = ___)



PANEL TYPE 2
(No OFF = ___)

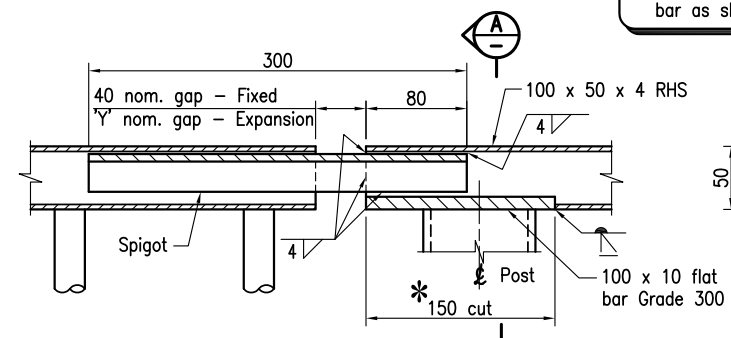


PANEL TYPE 3
(No OFF = ___)

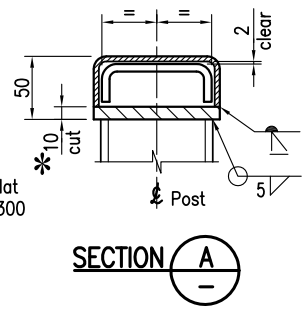


PANEL TYPE 4
(No OFF = ___)

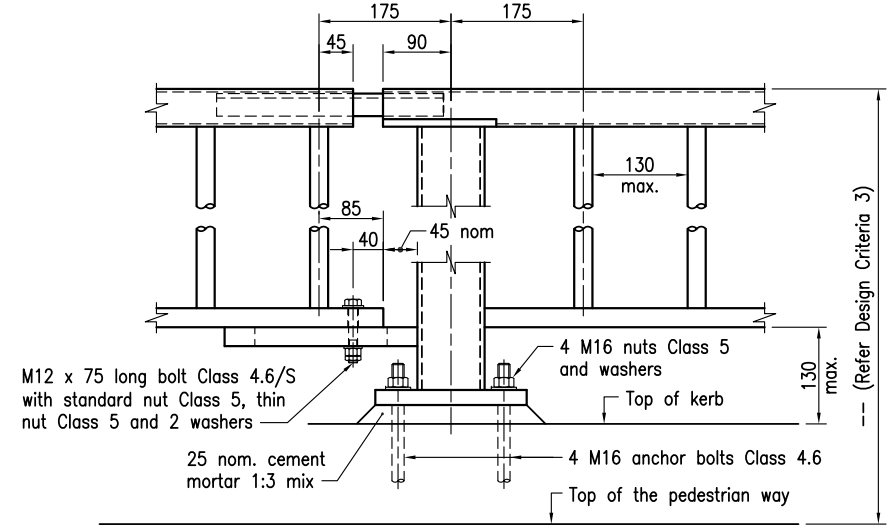
* 150 x 10 deep cut out in RHS for welding access. Replace with 100 x 10 flat bar as shown.



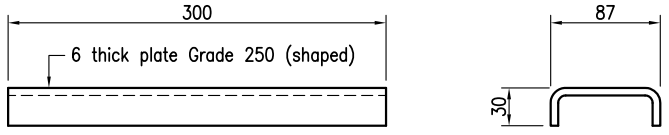
ELEVATION SPIGOT ASSEMBLY



SECTION A



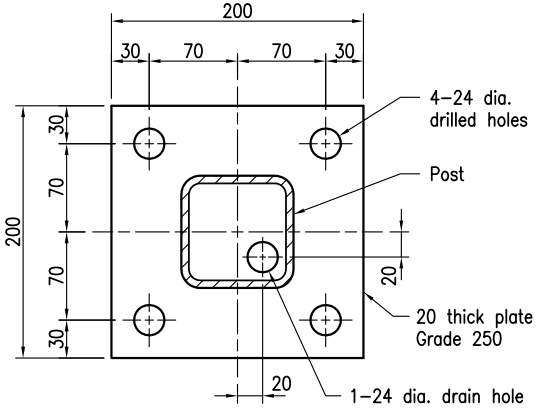
TYPICAL ASSEMBLY



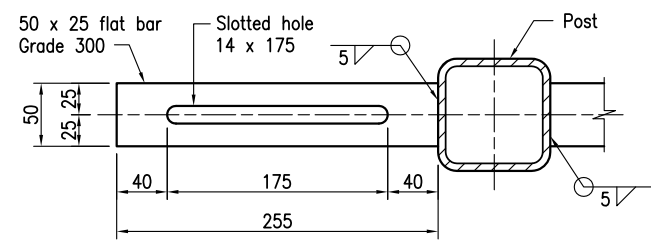
ELEVATION

END VIEW

SPIGOT
(No OFF = ___)



BASE PLATE



PLAN CLEAT

STEEL BALUSTRADE - DESIGN CRITERIA

1. Maximum post spacing = 2000.
2. Maximum panel length = 4 metres.
3. Maximum height of balustrade from the top of the pedestrian way = 1200 (1100 minimum).
4. Only one rail joint permitted between successive posts.
5. Provide a rail joint adjacent to each abutment or pier.
6. Maximum rail joint gap to be 125.
7. Post spacing to be adjusted to clear scuppers in kerb.

NOTES:

1. STEELWORK to be fabricated to the requirements of MRTS78.
 - RHS and SHS tube to be Grade C350L0 to AS/NZS 1163.
 - Steel plate to AS/NZS 3678.
 - Flat bar and round bar to AS/NZS 3679.1.
 - Bolts Class 4.6 to AS 1111.1, standard nuts Class 5 to AS 1112.1, thin nuts Class 5 to AS 1112.4 and washers for Class 4.6 bolts to AS 1237.
 - All bolts and nuts to be hot dip galvanized to AS 1214. All other steelwork to be hot dip galvanized to AS/NZS 4680 unless shown otherwise. Prior to galvanizing all weld splatter and welding slag is to be removed.
 - Members to be branded with suitable type number after fabrication.
2. WELDING SYMBOLS to AS 1101.3
 - All welding to AS/NZS 1554.1
 - All welds, except location tack welds, to be SP category.
 - Welding consumables for C350L0 RHS and SHS to be controlled hydrogen type: E49XX or W503. Welding consumables for all other structural steel shall be controlled hydrogen type: E49XX or W50X unless shown otherwise. Welding consumables to be in accordance with AS/NZS 4855.
3. DIMENSIONS are in millimetres unless shown otherwise.

ASSOCIATED DOCUMENTS:

- Main Roads Standard Drawings Roads Manual
- Main Roads Specifications and Technical Standards Manual

REFERENCED DOCUMENTS:

- Standard Specifications:
MRTS78 Fabrication of Structural Steelwork
- Australian Standards:
AS 1101.3 Graphic Symbols for General Engineering
AS 1111.1 ISO Metric Hexagon Bolts and Screws - Product Grade C - Bolts
AS 1112.1 ISO Metric Hexagon Nuts - Style 1 - Product Grades A and B
AS 1112.4 ISO Metric Hexagon Nuts - Chamfered Thin Nuts - Product Grades A and B
AS/NZS 1163 Structural Steel Hollow Sections
AS 1214 Hot Dip Galvanized Coatings on Threaded Fasteners (ISO Metric Coarse Thread Series)
AS 1237 Plain Washers for Metric Bolts, Screws and Nuts for General Purposes
AS/NZS 1554.1 Structural Steel Welding - Welding of Steel Structures
AS/NZS 3678 Structural Steel - Hot-rolled Plates, Floor Plates and Slabs
AS/NZS 3679.1 Structural Steel - Hot-rolled Bars and Sections
AS/NZS 4680 Hot-dip Galvanized (Zinc) Coatings on Fabricated Ferrous Articles
AS/NZS 4855 Welding Consumables - Covered Electrodes for Manual Metal Arc Welding of Non-alloy and fine grain steels - Classification
AS 5100 Bridge Design

BRIDGE BARRIERS		Queensland Government	
		Department of Transport and Main Roads	
BRIDGE BALUSTRADE	A3	Standard Drawing No	
	Not to Scale	1512	
	A	Date 11/10	