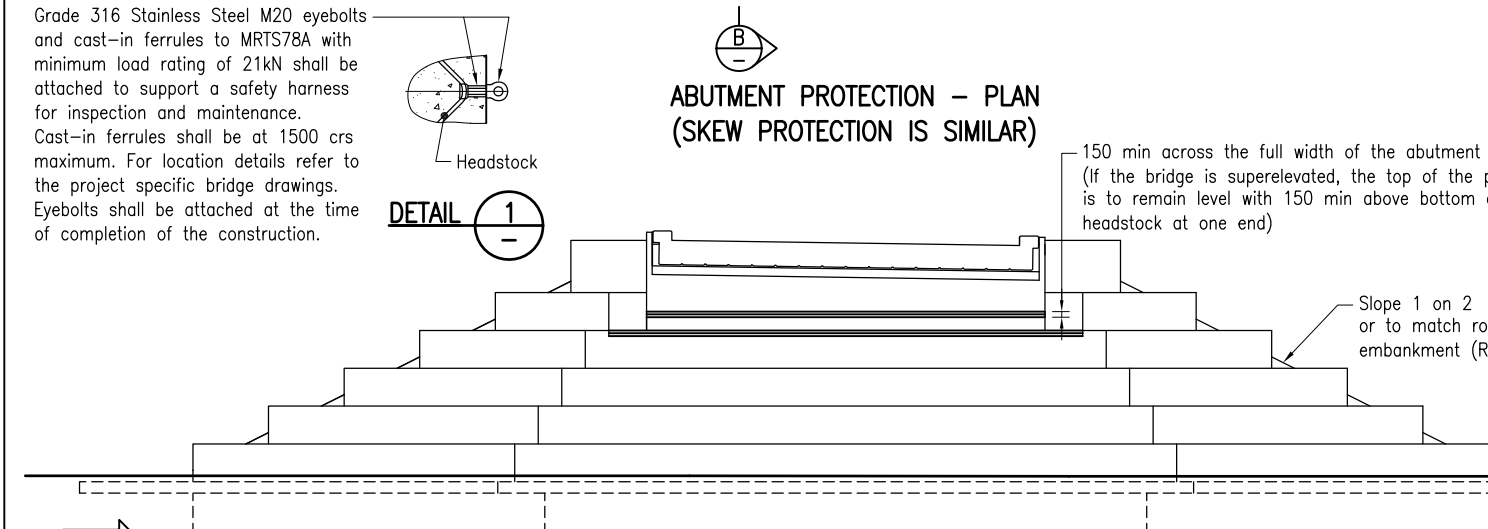


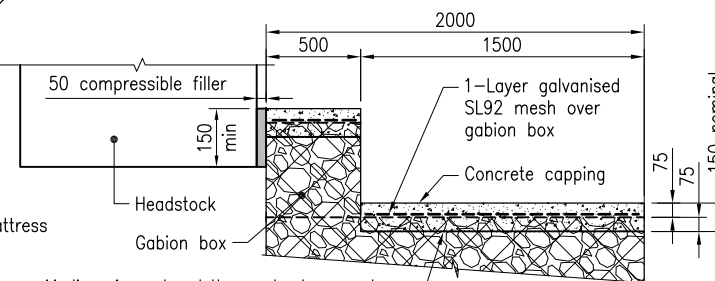
ABUTMENT PROTECTION – PERSPECTIVE VIEW

NOTES:

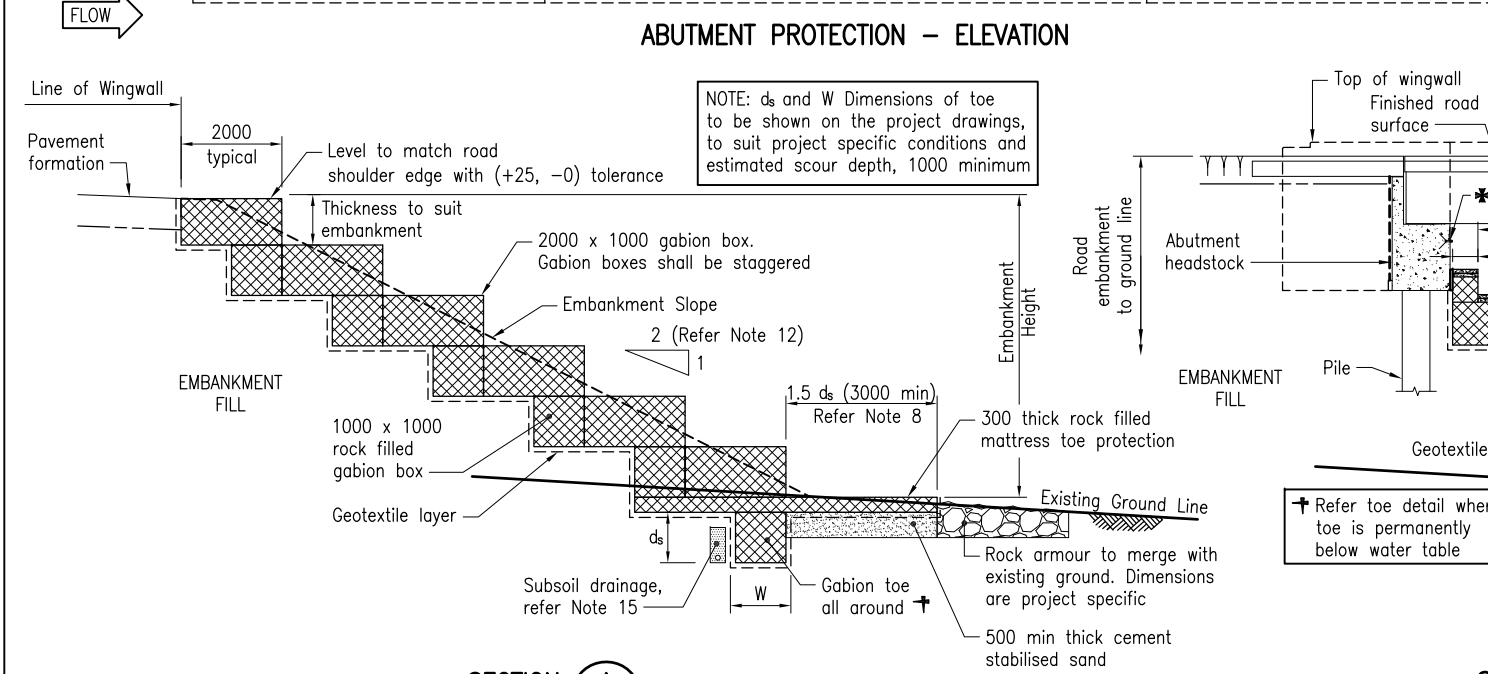
- 'Fit for purpose' design for specific project requirements shall be developed and certified by a RPEQ, using this Standard Drawing as the basis. Project specific details shall be included in the scheme drawings. Gabion protection details shown are only for the protection of the abutment from scour. Gabion protection shown here shall not be considered for stability of the abutment / embankment fill.
 - Refer Design Criteria for Bridges and Other Structures for the abutment protection type selection criteria. Construction of abutment protection shall be in accordance with MRTS03.
 - In accordance with Workplaces Health and Safety requirements, abutment must be easily accessible for inspection and maintenance. Provision for safety harness attachment on headstocks shall be made where if required.
 - Design life for scour protection is 50 years. Rock filled wire cage gabions are not durable for applications in exposure classification C to AS 3600.
 - Roadway embankments steeper than 1 on 2 must be protected in accordance with the road design advice.
 - Critical flood velocity for the scour protection design shall be determined for 1% Annual Exceedance Probability (ARI 100 yrs) flood immunity and the overtopping flood level unless otherwise advised by a project specific hydraulic assessment and agreed in writing with TMR Hydraulic Branch.
 - Bridge construction sequence shall be taken into consideration when constructing the scour protection.
 - Width of the mattress toe protection shall be modified to suit project specific scour situation in accordance with the project scour assessment.
 - Abutment protection on the upstream side of the road embankment shall extend along the carriageway past the abutment for a distance of not less than 10m, and along the downstream side of the same for a distance of three times the height of the road embankment, but not less than 10m, as shown. If the gabion protection along the embankment is less than 10m, due to existing ground surface height, terminate gabions to engage 1m into the ground. Rock protection transition shall be extended as shown.
 - Materials and the construction of abutment protection using rock filled gabions, rock filled mattresses and rock armour shall be in accordance with MRTS03.
 - Standard sizes of gabion boxes and mattress in accordance with the gabion manufacturer's manuals shall be used for the protection. Customised gabion and mattress sizes shall be used for locations where standard sizes do not fit the project specific design. Use of modified standard sizes to suit is acceptable provided the supplier demonstrates there is no joint weakness and has gained prior approval from the project Administrator. Gabion installation shall be in accordance with gabion manufacturer's installation manuals and guidelines.
 - Slope of the gabion protection merging to the road embankment shall be adjusted to match embankment slope. Maximum slope shall be 1 on 2. If embankment height is greater than 6.0m, slope shall be maintained to 1 on 2 or as advised by project Geotechnical Engineer.
 - Concrete shall be in accordance with MRTS70. Concrete capping shall be N32/20.
 - Geotextile filter material shall be in accordance with MRTS27, Filtration Class 3, Strength Class D.
 - Type B subsoil drainage shall be constructed in accordance with MRTS03, using 100 dia perforated drainage pipe. Appropriate grading and outlets shall be provided.
 - Dimensions are in millimetres unless shown otherwise.
- ASSOCIATED DEPARTMENTAL DOCUMENTS:
 Bridge Scour Manual; Design Criteria for Bridges and Other Structures;
 Geotechnical Design Standards Minimum Requirements;
 NDRRA Flood Restoration Guideline for Queensland Local Governments
 Departmental Specifications:
 MRTS03 Drainage, Retaining Structures and Protective Treatments;
 MRTS70 Concrete; MRTS78A Fabrication of Structural Stainless Steelwork
 Legislation: Work Health and Safety Act 2011; Work Health and Safety Regulations 2011



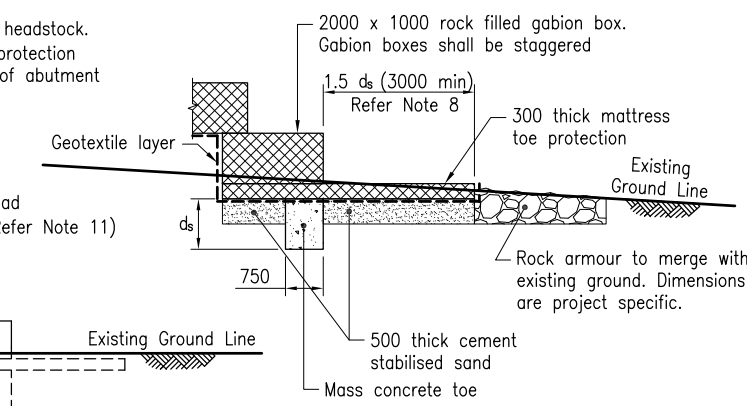
ABUTMENT PROTECTION – PLAN (SKEW PROTECTION IS SIMILAR)



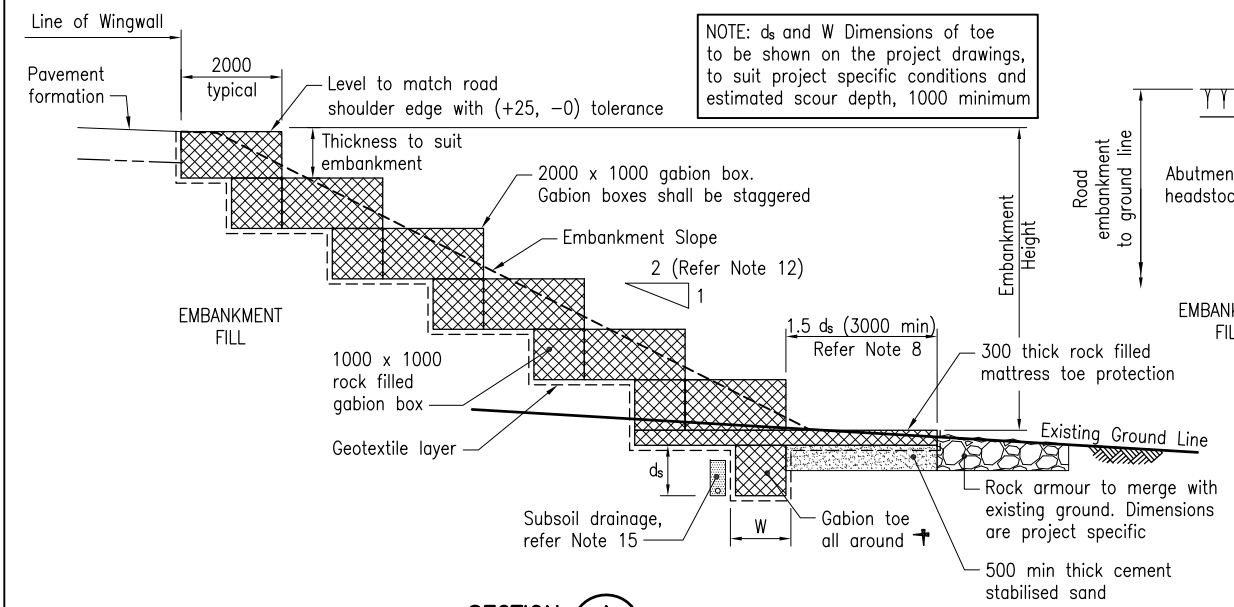
DETAIL OF CONCRETE CAPPING



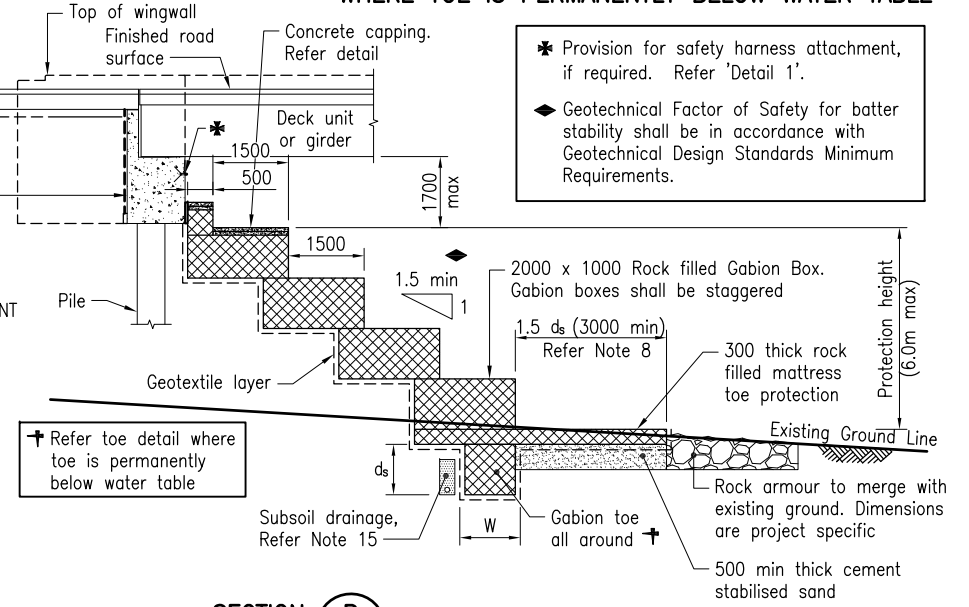
ABUTMENT PROTECTION – ELEVATION



ALTERNATIVE TOE DETAIL WHERE TOE IS PERMANENTLY BELOW WATER TABLE



SECTION A



SECTION B

Department of Transport and Main Roads			
ABUTMENT PROTECTION			
TYPE 7 – ROCK FILLED GABION PROTECTION – HEIGHT UP TO 6 METRES		A3	Standard Drawing No 2241
		Not to Scale	Date 11/19
A	B		