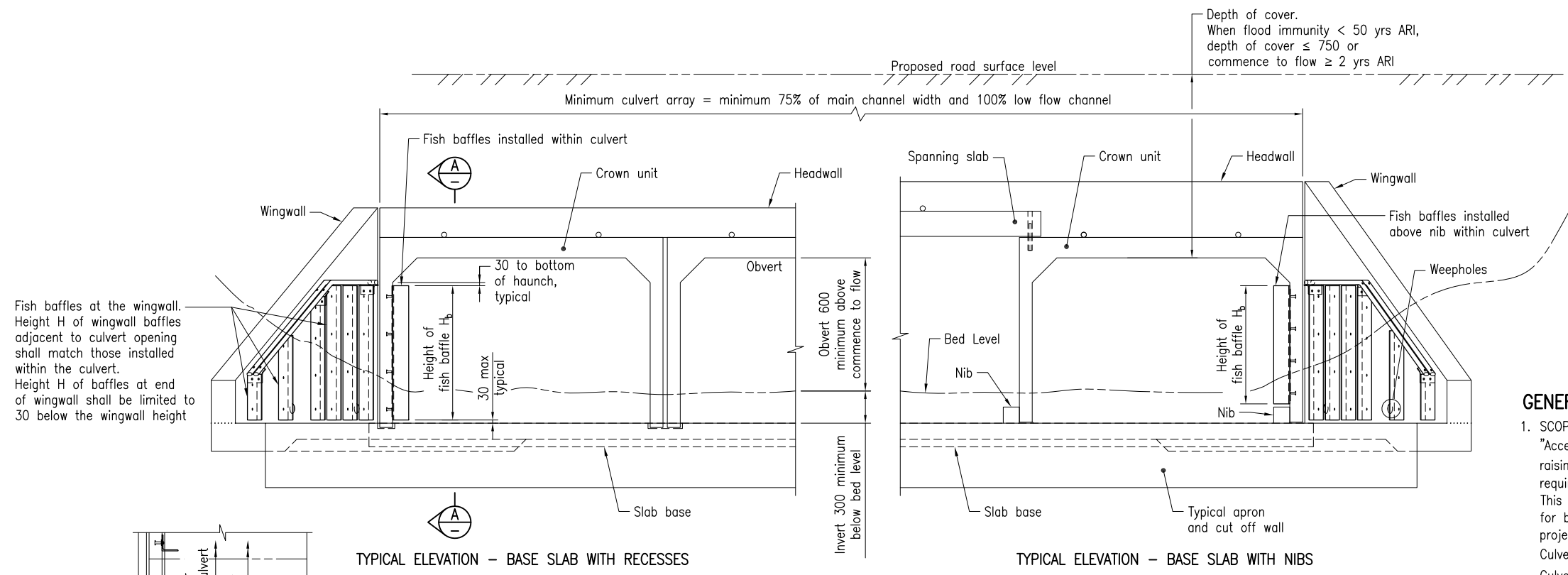


The purpose of this Standard Drawing is to provide typical standard details that shall be used within the limitations specified in the drawing and in accordance with the following:

1. The use of the standard details shall be assessed by the project designer in respect of project situation.
2. When there is uncertainty around the application of the standard details on this drawing for a specific project, advice shall be sought from E&T Structures.
3. The details specific to the project shall be shown on the project specific drawings.

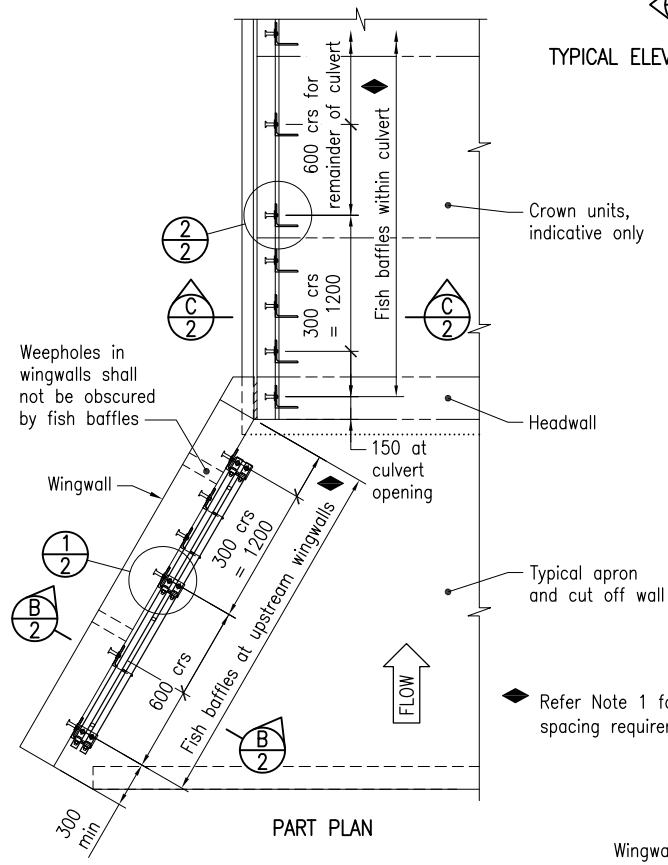
Depth of cover.  
When flood immunity < 50 yrs ARI,  
depth of cover ≤ 750 or  
commence to flow ≥ 2 yrs ARI



TYPICAL ELEVATION - BASE SLAB WITH RECESSES

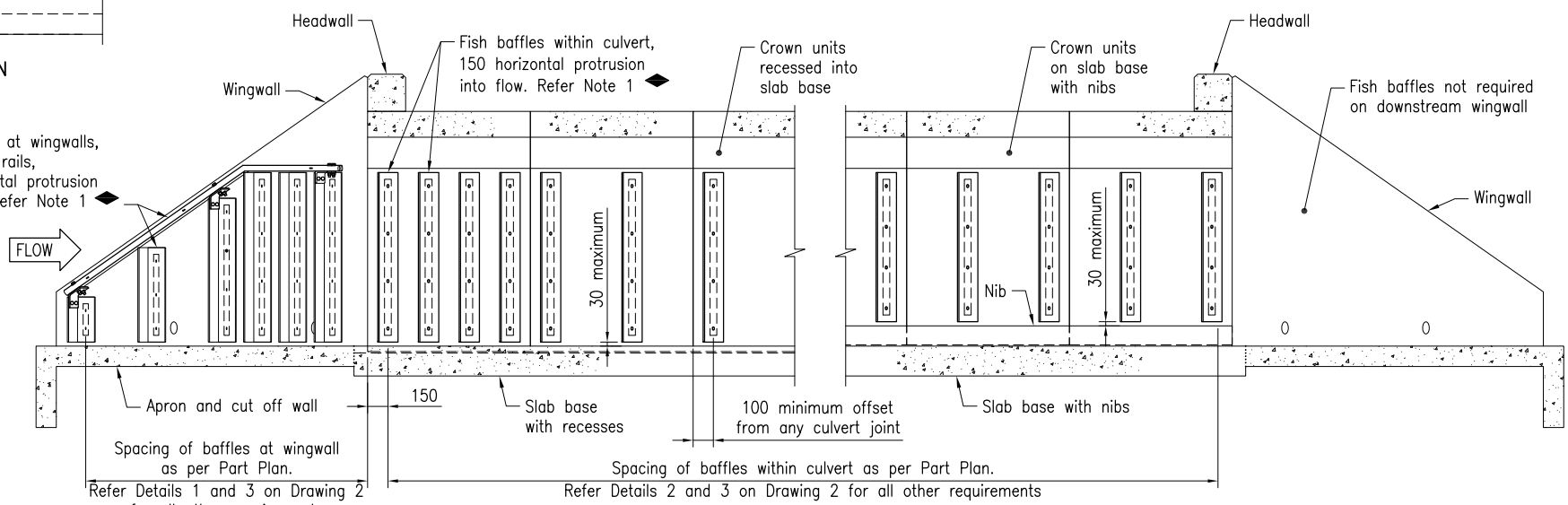
TYPICAL ELEVATION - BASE SLAB WITH NIBS

**GENERAL ARRANGEMENT - NORMAL EMBANKMENT SITUATION**  
OPTION 1 FOR RED MAPPED WATERWAYS  
Refer Note 1



PART PLAN

**PEDESTRIAN SAFETY**  
WARNING SIGNAGE and SAFETY RAILS shall be provided for all culverts with fish baffles where the site may be exposed to pedestrian activity and for all urban sites.  
2-SAFETY RAILS shall be located immediately above the wingwall baffles, as shown in this drawing.  
For all sites exposed to pedestrian activity, a risk assessment shall be carried out to determine the appropriateness of the details shown in this drawing. Where these details are deemed inappropriate, a project specific design shall be developed and RPEQ certified.



SECTION A TYPICAL SECTION

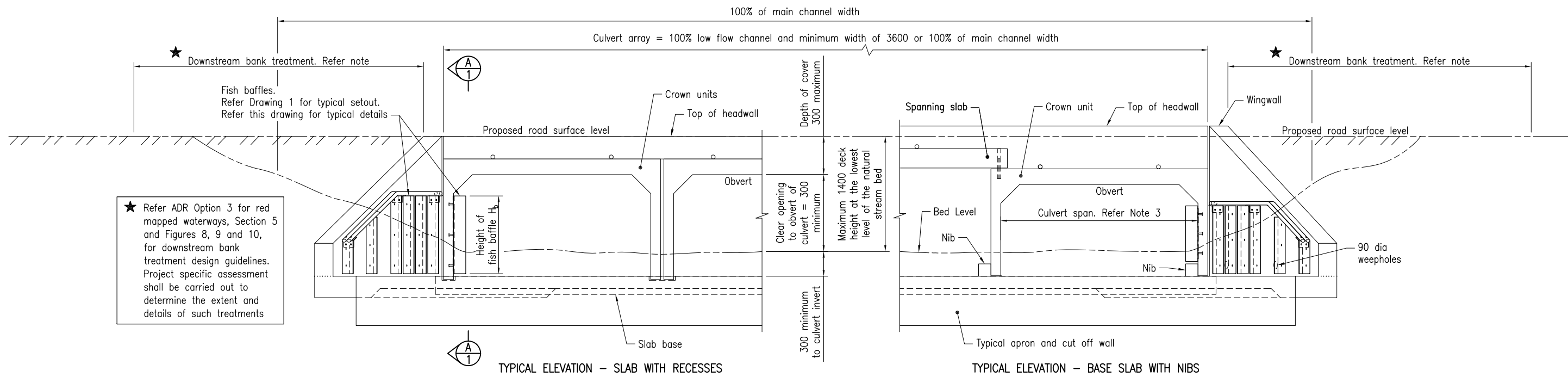
**GENERAL NOTES:**

1. SCOPE: This standard drawing shall be read in conjunction with the document "Accepted development requirements for operational work that is constructing or raising waterway barrier works" (ADR). Option 1 and Option 3 red mapped waterway requirements are detailed in this standard drawing in accordance with ADR. This standard drawing provides detailed modifications to standard TMR culvert designs for box culverts where Red mapped waterway barrier treatment is determined by project specific assessment. Culvert base slabs and aprons shall be no steeper than the waterway bed gradient. Culverts shall be aligned parallel (within 10°) to the direction of water flow to minimise turbulence. Baffle spacing specified in this drawing is for baffles that have 150 horizontal protrusion into flow. For baffles of less than 150 protrusion width, the spacing shall be in accordance with Table 1 of ADR, and shall be detailed in the project drawings.
2. This Standard Drawing is applicable for culverts constructed in accordance with Standard Drawing 1240, 1250 and 1260, as appropriate.
3. BOX CULVERTS shall be constructed in accordance with MRTS03 and MRTS24.
4. STEELWORK shall be fabricated to the requirements of MRTS78. Flat bar, plate and angle shall be Grade 300 to AS/NZS 3679.1. CHS shall be Grade C350L0 to AS/NZS 1163. Bolts and screws Class 4.6 to AS 1111.1 Nuts Class 5 to AS 1112.1. Washers Class 5 to AS 1237.1. After fabrication all bolts and nuts shall be hot dip galvanised to AS 1214, and all other steelwork to AS/NZS 4680. Refer Note 4 on Drawing 2 for steelwork for Exposure Classification C1 and C2.
5. WELDING: Structural Steel 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.
6. GEOTEXTILE filter material shall be in accordance with MRTS27, filtration class 3, strength class D.
7. DIMENSIONS are in millimetres.

ASSOCIATED AND REFERENCED DOCUMENTS:

- Accepted Development Requirements for Operational Work that is Constructing or Raising Waterway Barrier Works (ADR)
- Departmental Standard Drawings:
- 1240 RC Slab Deck Culvert
  - 1250 RC Box Culverts and Slab Link Box Culverts - Culverts Height > 600
  - 1260 RC Box Culverts and Slab Link Box Culverts - Culverts Height 375 to 600
- Departmental Specifications:
- MRTS03 Drainage, Retaining Structures and Protective Treatments
  - MRTS24 Manufacture of Precast Concrete Culverts
  - MRTS27 Geotextiles (Separation and Filtration)
  - MRTS78 Fabrication of Structural Steelwork
  - MRTS78A Fabrication of Structural Stainless Steelwork

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FISH PASSAGE			
RC BOX CULVERTS IN ADR RED MAPPED WATERWAYS DRAWING 1 OF 2		A3	Standard Drawing No 1270
		Not to Scale	Date 3/2021
A	B		

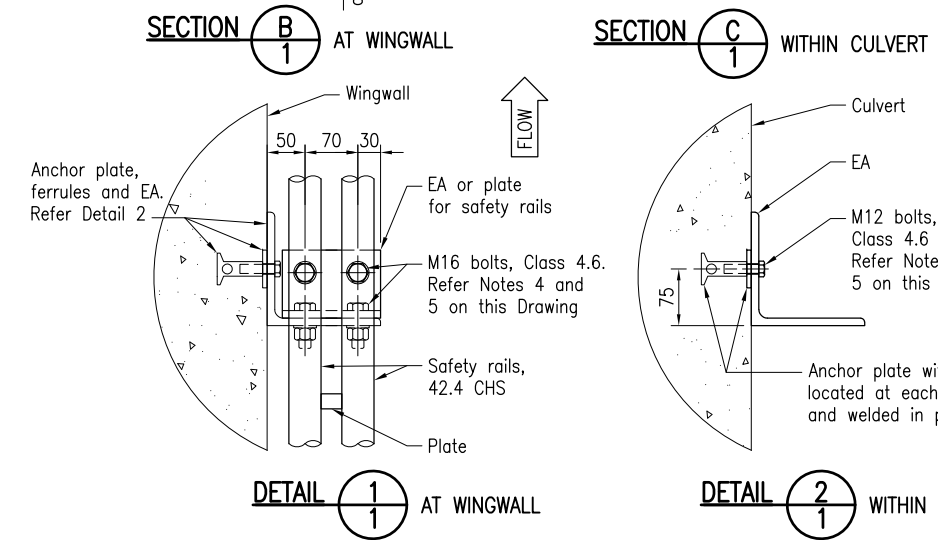
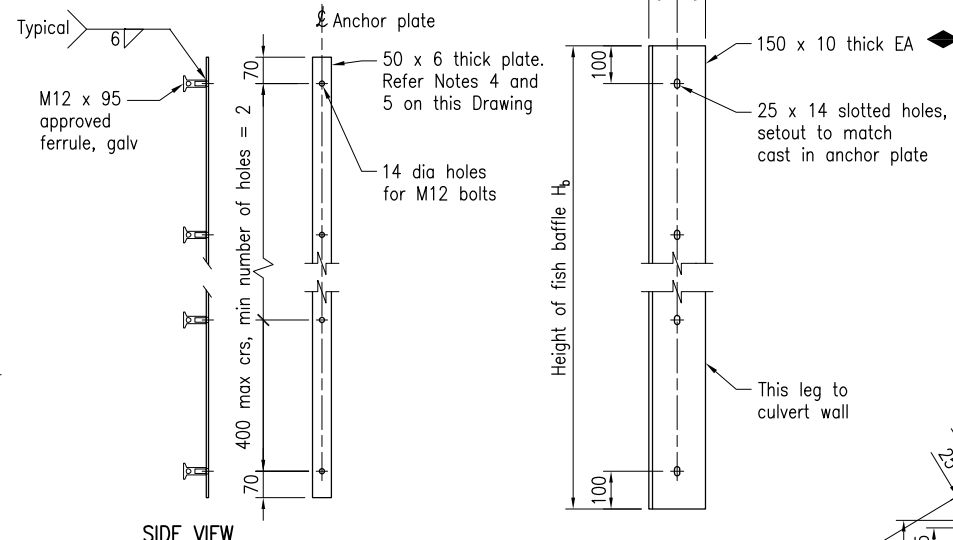
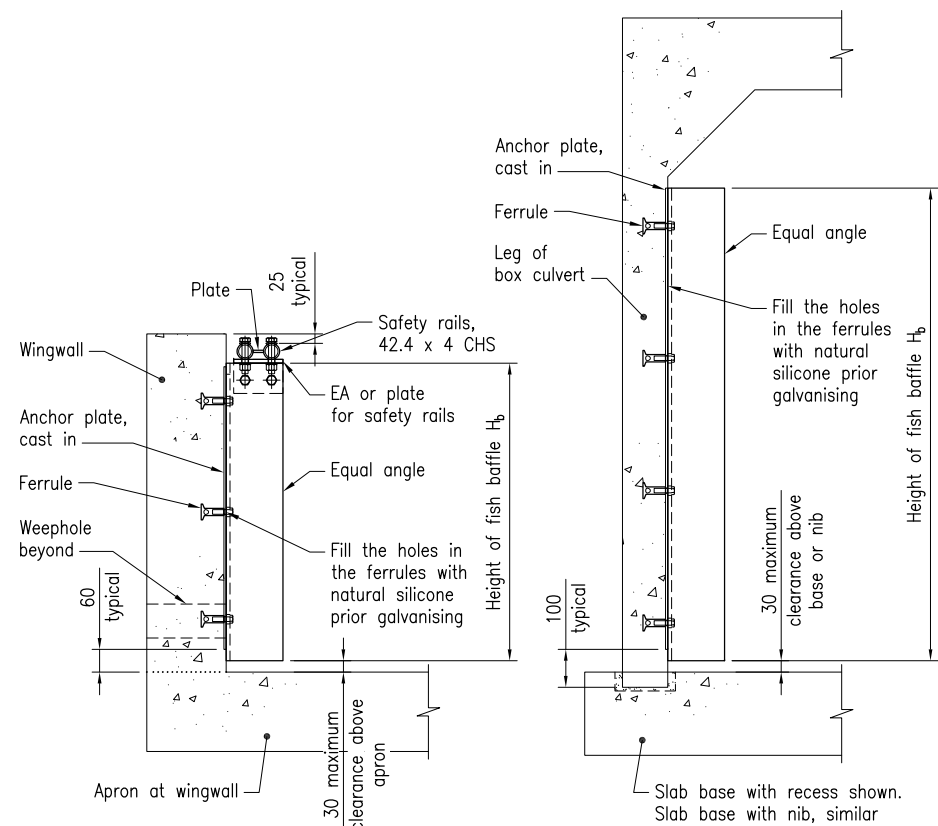


**GENERAL ARRANGEMENT - LOW EMBANKMENT SITUATION**

OPTION 3 FOR RED MAPPED WATERWAYS

Refer Note 1 on Drawing 1

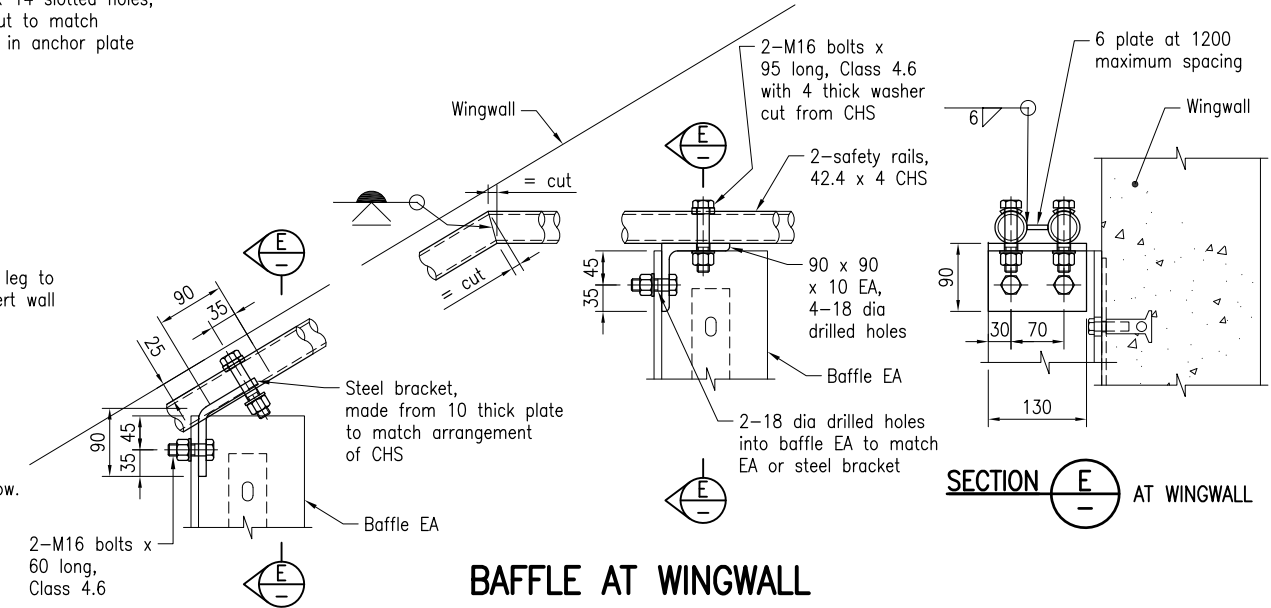
**PEDESTRIAN SAFETY**  
 WARNING SIGNAGE and SAFETY RAILS shall be provided for all culverts with fish baffles where the site may be exposed to pedestrian activity and for all urban sites.  
 2-SAFETY RAILS shall be located immediately above the wingwall baffles, as shown in this drawing.  
 For all sites exposed to pedestrian activity, a risk assessment shall be carried out to determine the appropriateness of the details shown in this drawing. Where these details are deemed inappropriate, a project specific design shall be developed and RPEQ certified.



**SIDE VIEW ANCHOR PLATE**  
At all locations

**EQUAL ANGLE (EA)**  
150 horizontal protrusion into flow. Refer Note 1 on Drawing 1

**COMPONENTS OF BAFFLE**



**BAFFLE AT WINGWALL**

- NOTES:**
1. Refer Drawing 1 for all general notes.
  2. Option 3 details in accordance with ADR may be beneficial for red mapped waterways that are of a shallow and wide nature where it is likely to be feasible to construct the culvert along full width of the main channel.
  3. At least one culvert span shall be  $\geq 1200$ .
  4. For Exposure Classification C1 and C2 to AS 5100.5, all angle, plate, ferrules and bolts shall be stainless steel Grade 316 in accordance with MRTS78A.
  5. Alternative baffle fixing details shall be RPEQ certified and submitted for review and approval of the project Administrator prior to commencement of construction.

Department of Transport and Main Roads			
FISH PASSAGE			
RC BOX CULVERTS IN ADR RED MAPPED WATERWAYS DRAWING 2 OF 2		A3	Standard Drawing No 1270
		Not to Scale	Date 3/2021
A	B		