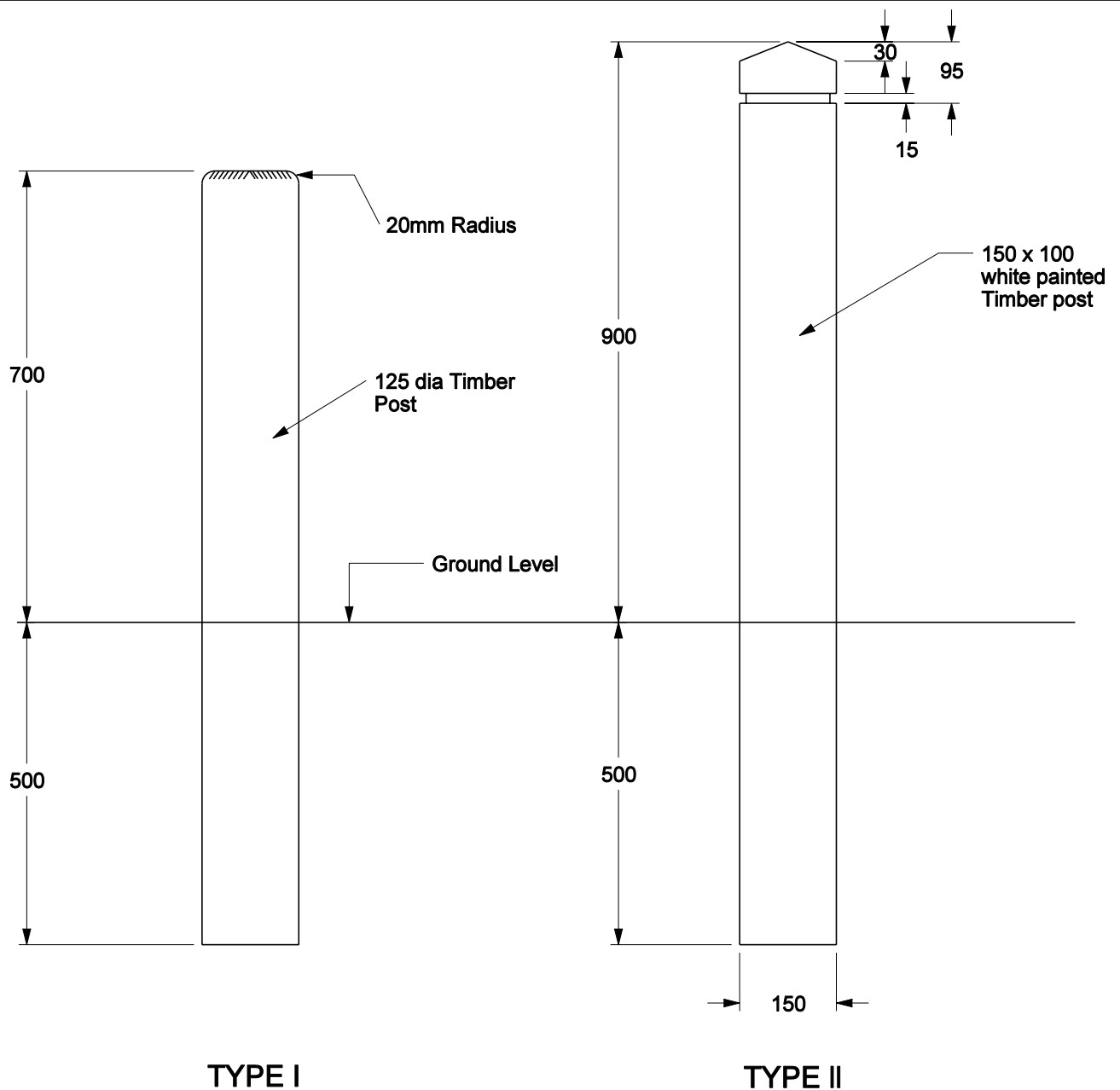
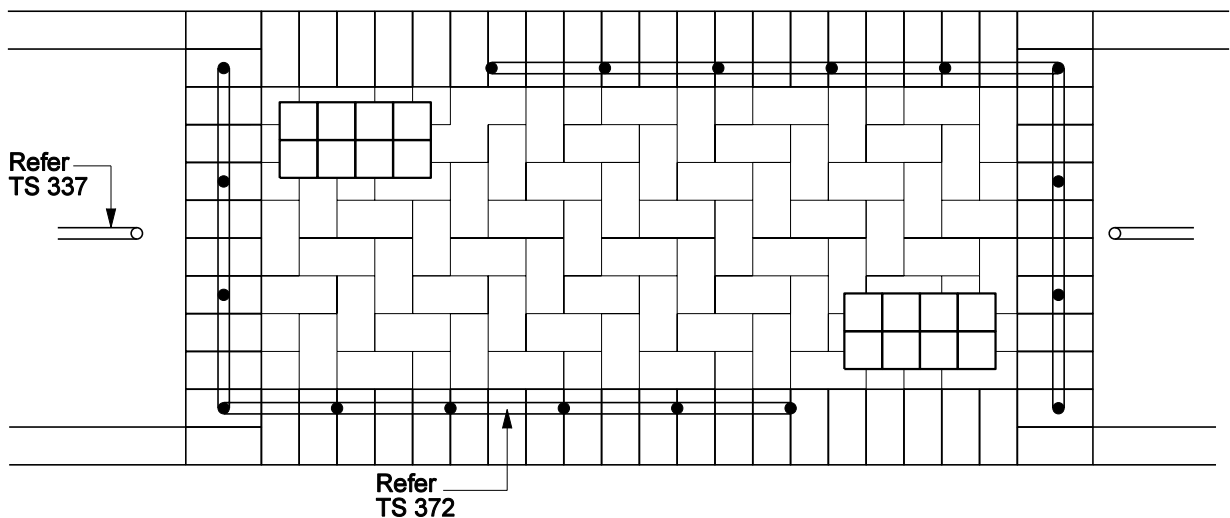
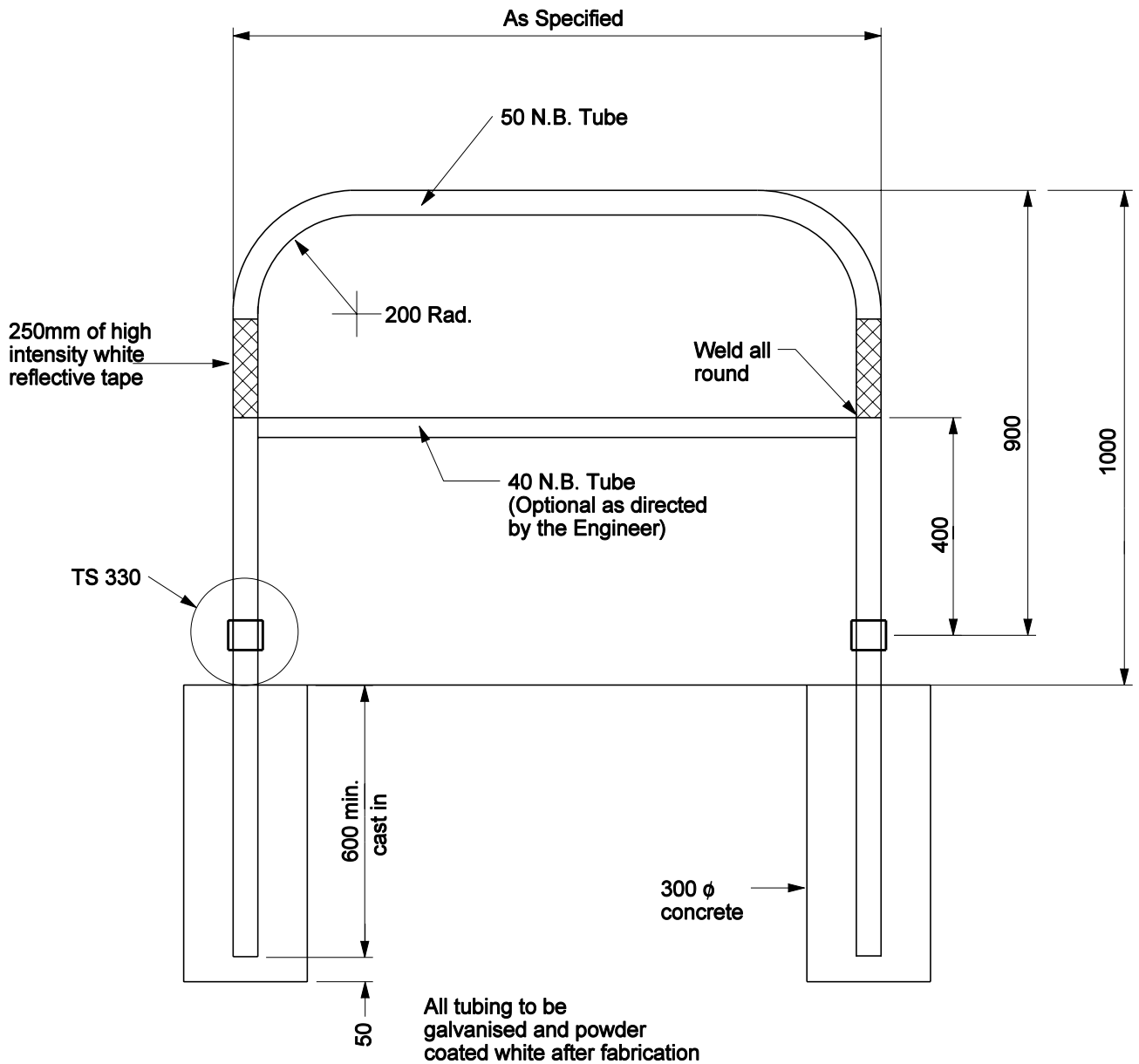
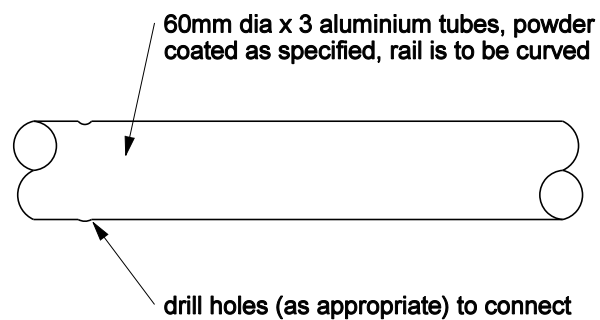
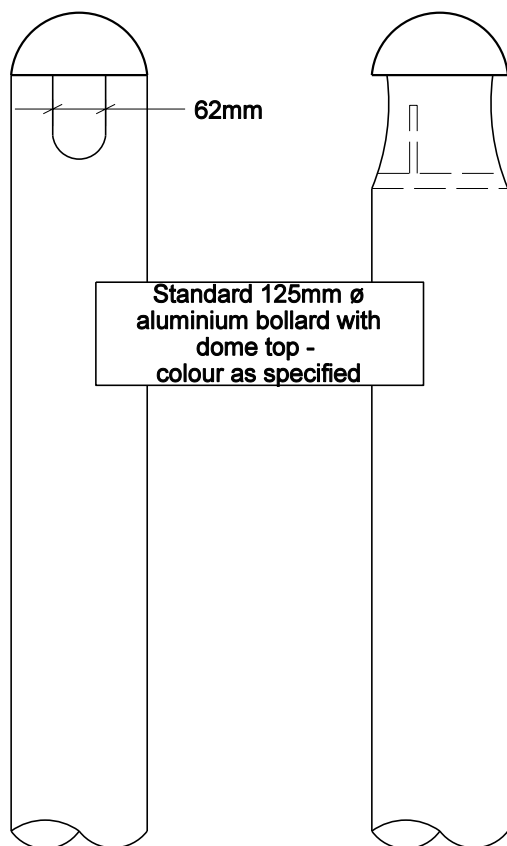
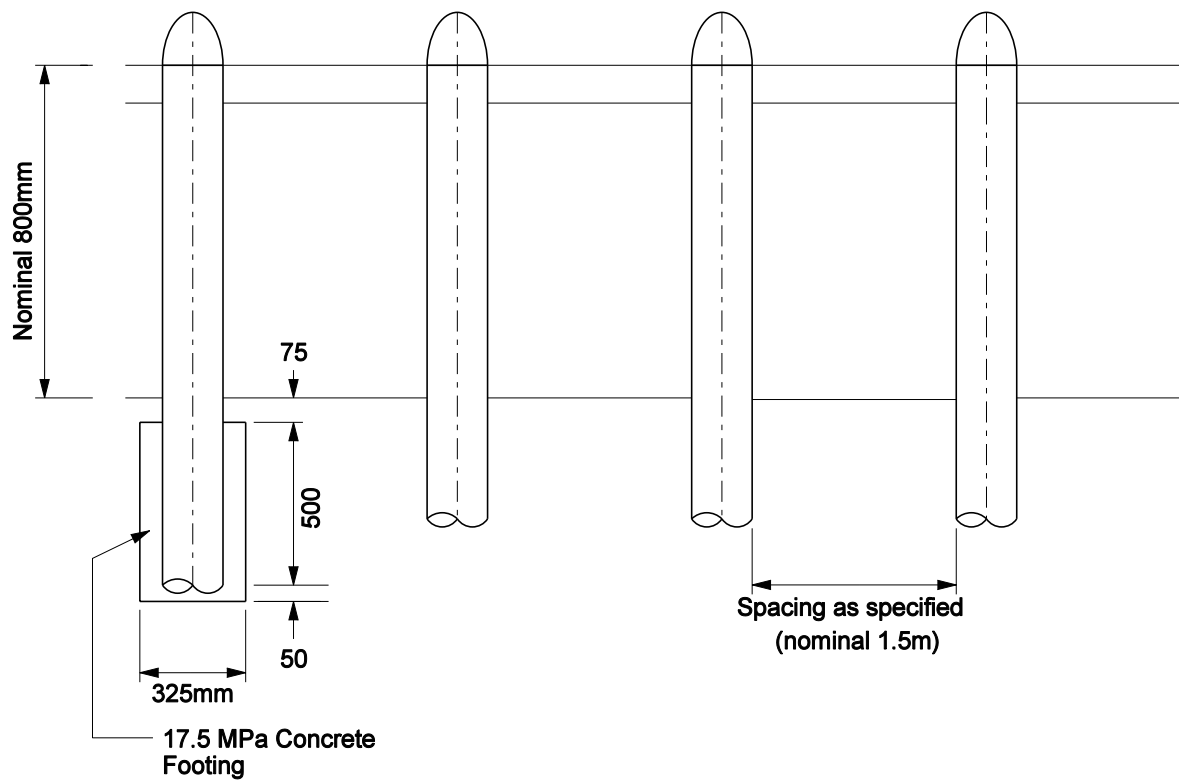




NOTES:

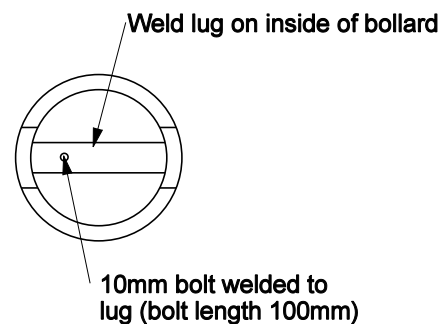
1. Type I Bollards are generally to be installed in grass verge areas.
2. Type II Bollards are generally to be installed in footpath areas.
3. All Bollards are to have a 600mm clearance to the kerb face.
4. For the installation of Type II Bollards, the surrounding surface is to be reinstated.
5. The soil is to be well compacted around the timber bollard.
6. Timber to be H.4 treated.
7. Bollards to be installed at pedestrian crossings are to be Type II but without the groove at the top.



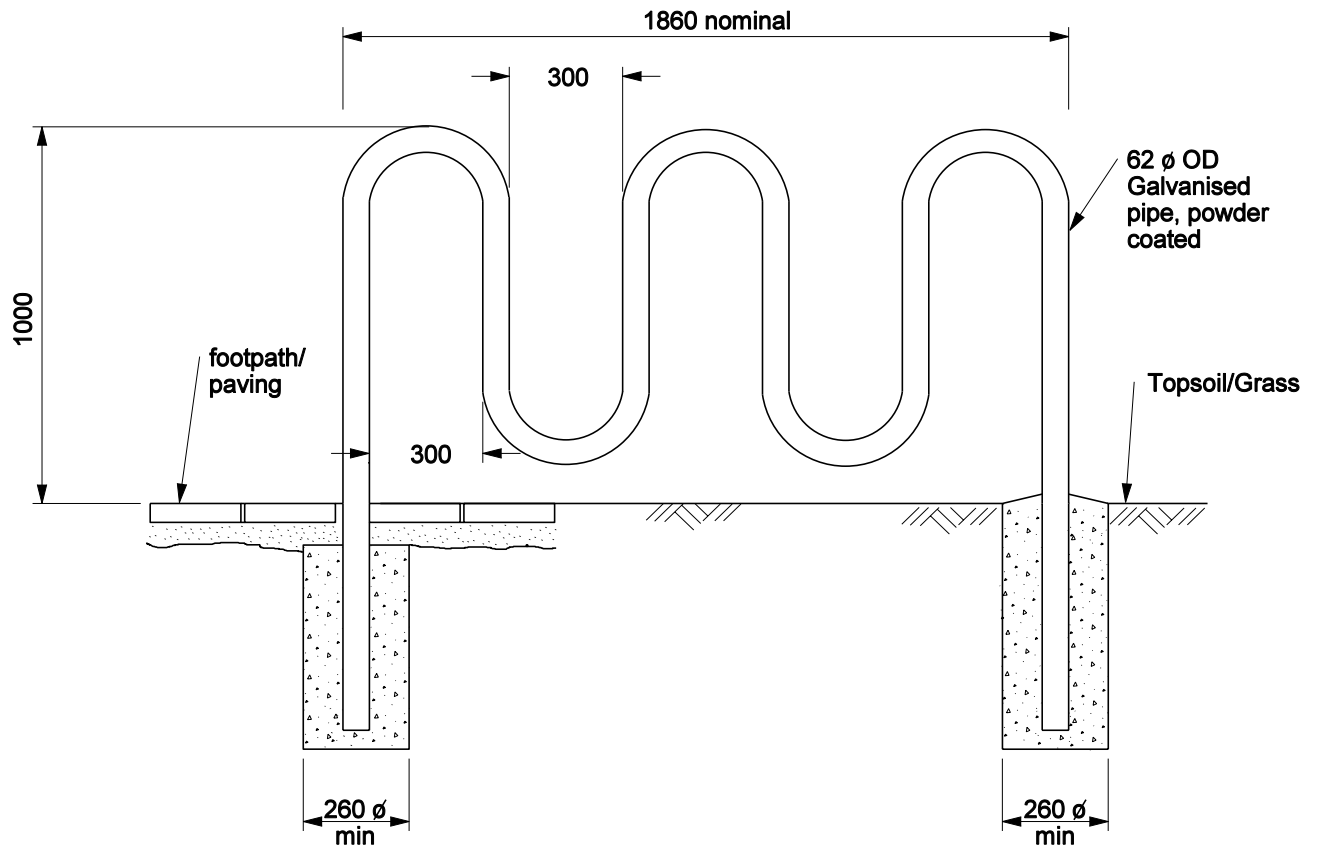


drill holes (as appropriate) to connect

End bollards are to be drilled on one side only

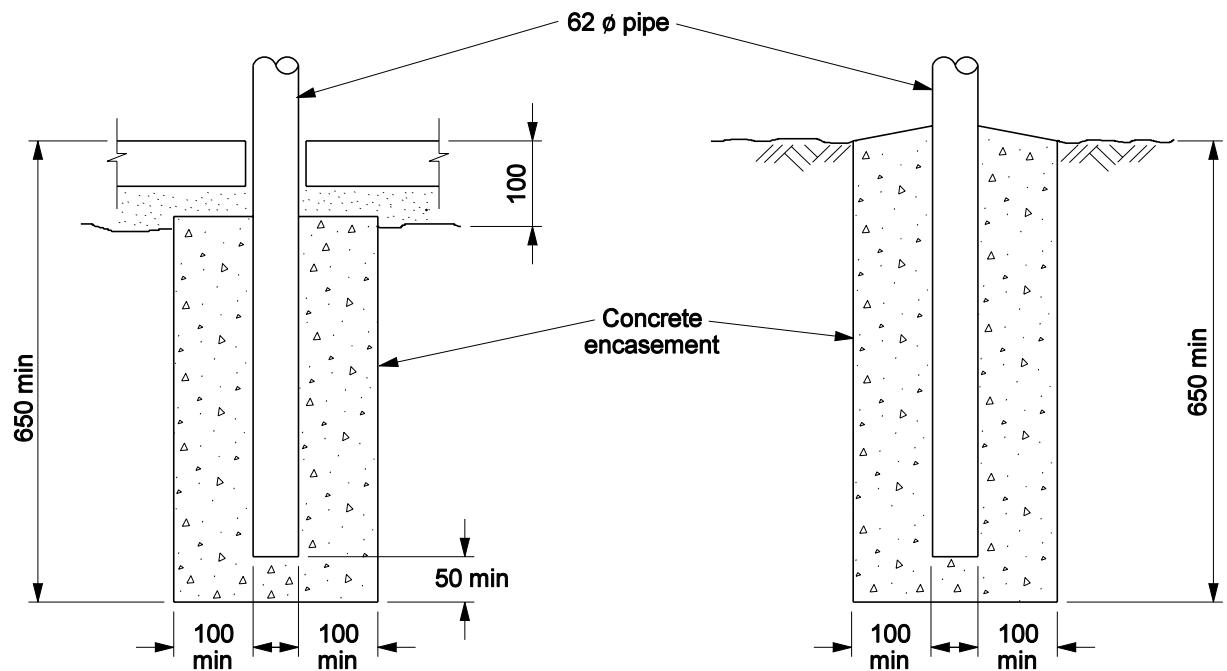


FIXING DETAIL

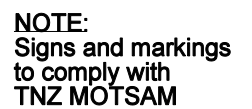


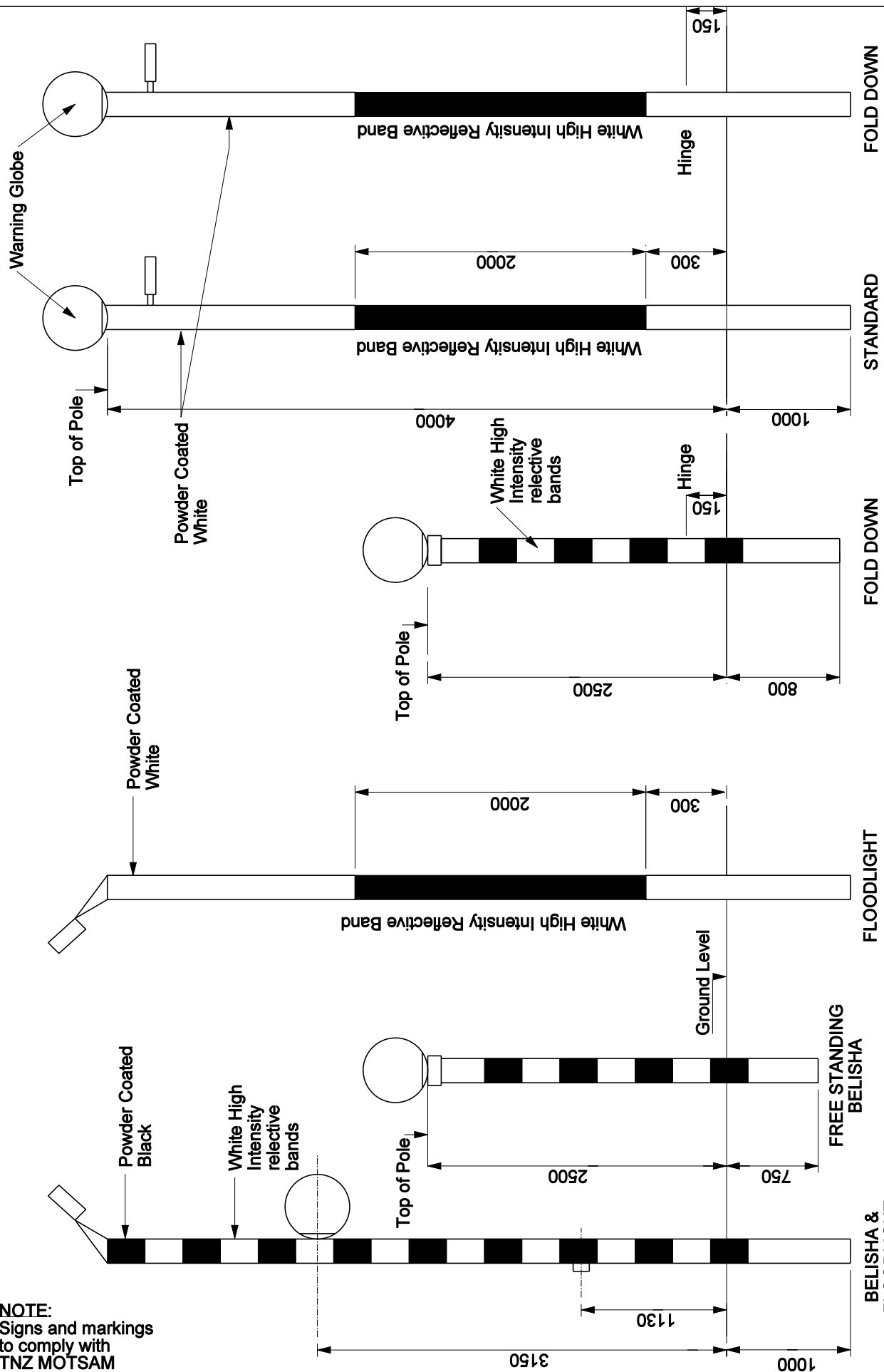
Type A - Footpath/Paving

Type B - Grass/Topsoil



NOTE: Colour to be confirmed by Engineer

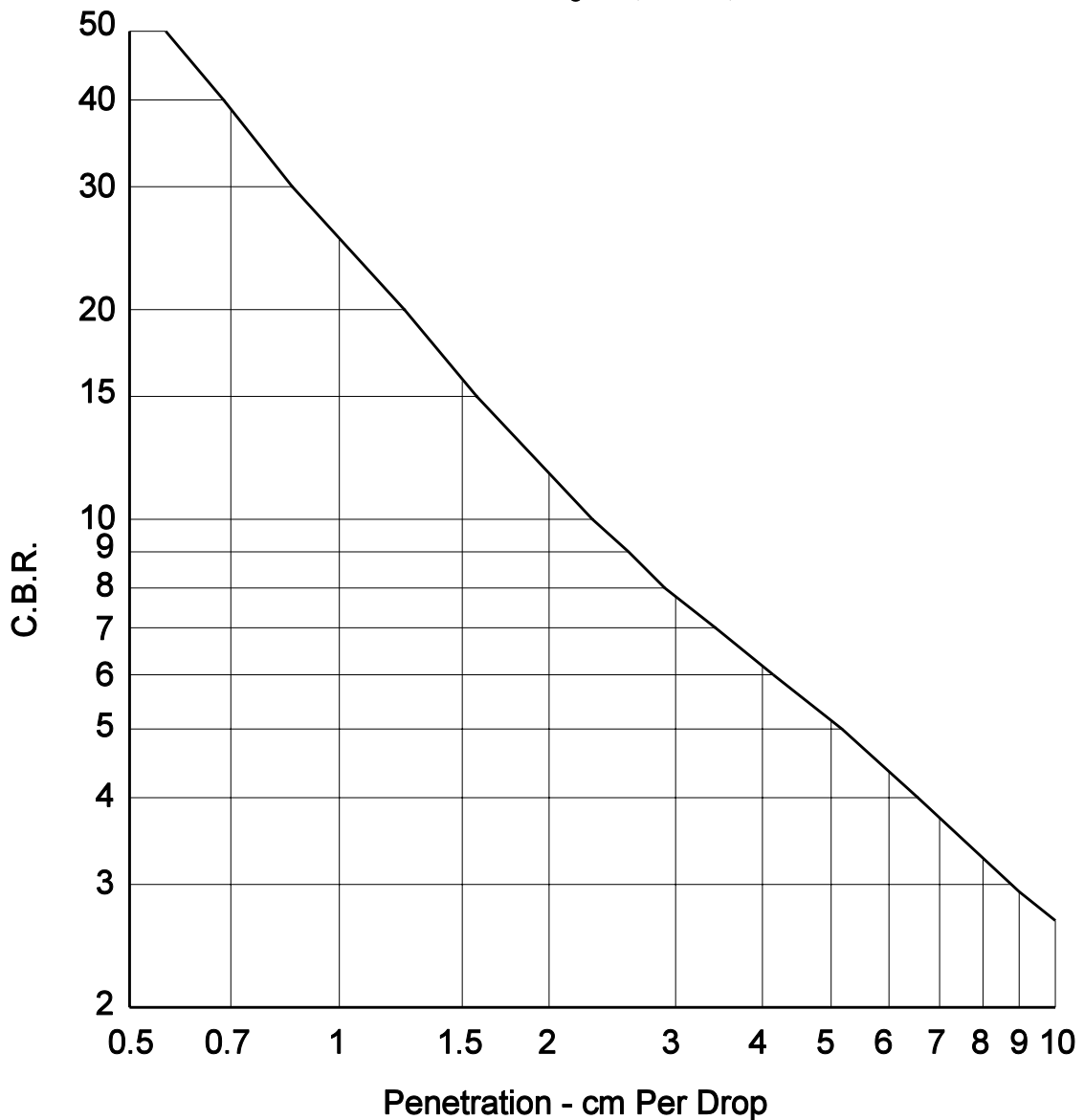




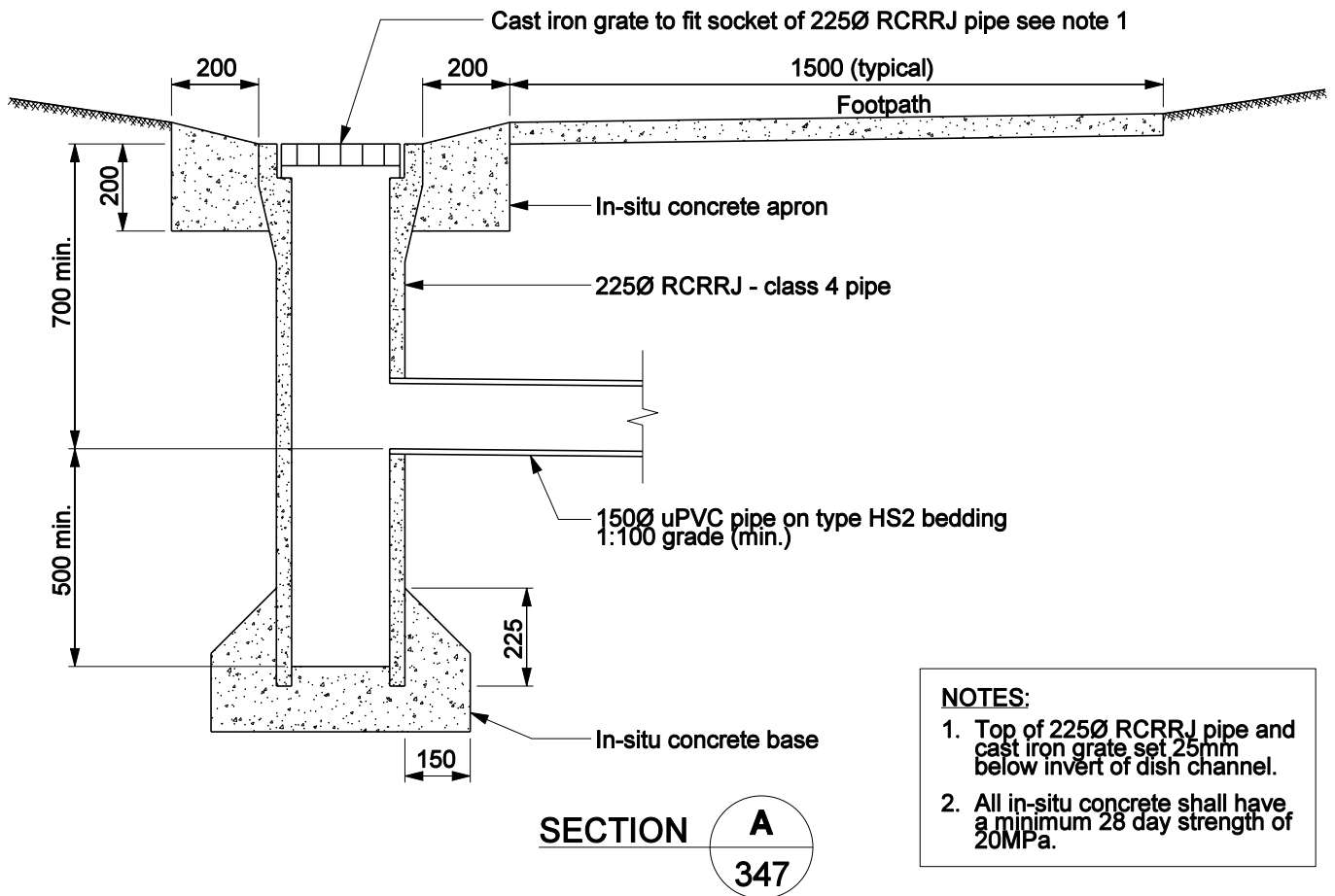
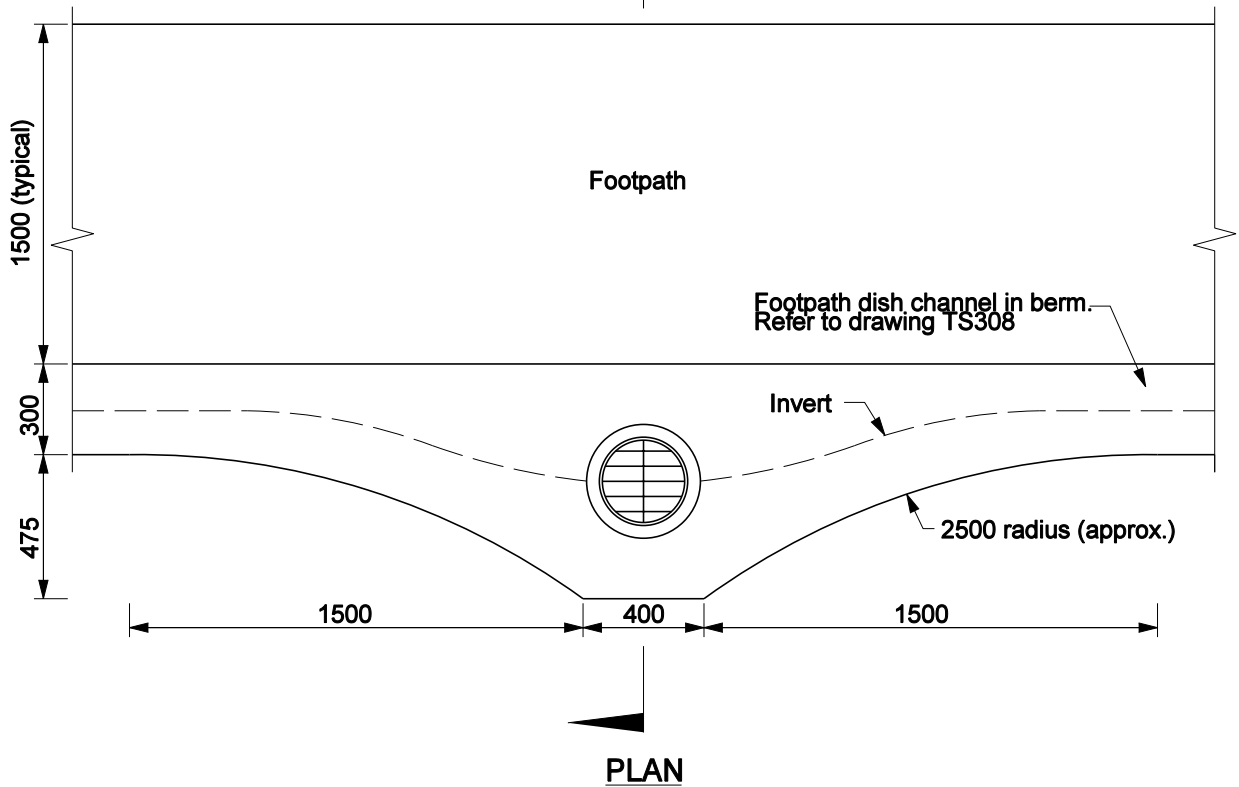
NOTE:
Signs and markings
to comply with
TNZ MOTSAM

NOTES:

1. C.B.R. values obtained from the ground are not applicable where material contains aggregate greater than 10mm in size.
2. Penetration readings are valid after 75mm of penetration into firm material being tested.
3. To use graph below, count number of blows for each 100mm (10cm) approx. of penetration and divide by number of drops. This gives Penetration (cm per blow).
4. Graphs show C.B.R. (California Bearing Ratio) equivalent values on Hamilton Sand Silt materials.
5. Plot is based on research work undertaken by J.F. Briggs, Senior Engineer, M.W.D., Hamilton.

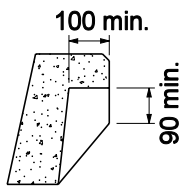


SCALA PENETROMETER (9kg Hammer)

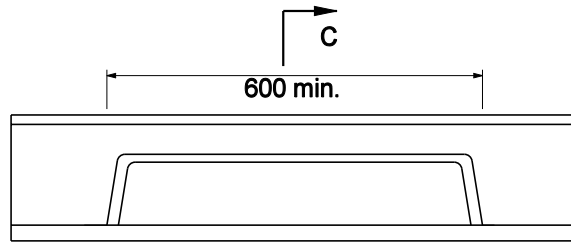


NOTES:

1. Top of 225Ø RCRRJ pipe and cast iron grate set 25mm below invert of dish channel.
2. All in-situ concrete shall have a minimum 28 day strength of 20MPa.



SECTION C - C



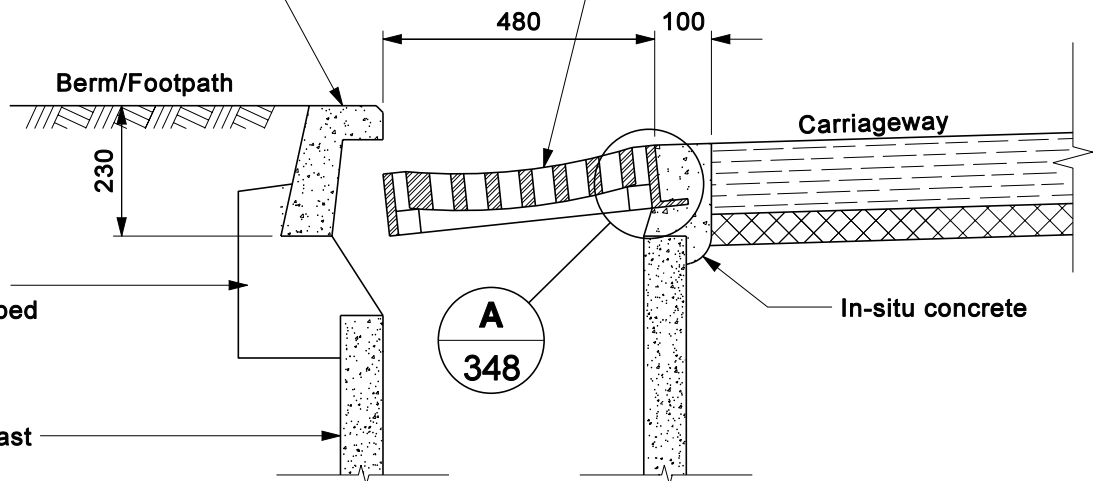
ELEVATION

PRECAST KERB COMPONENT

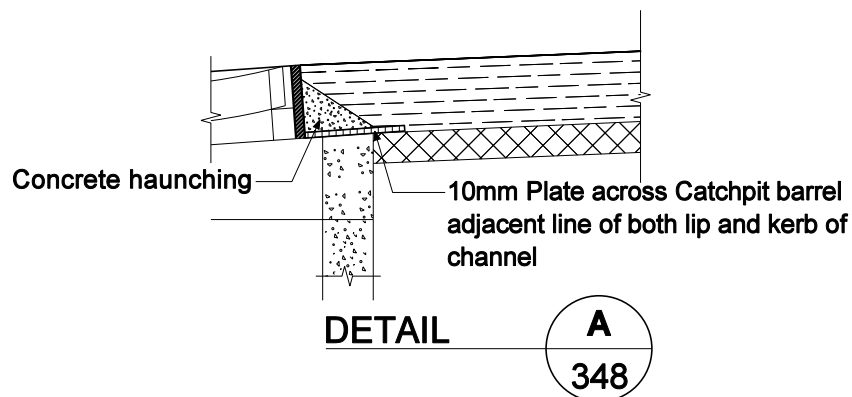
Scale 1:10

Precast back-entry
kerb component see above

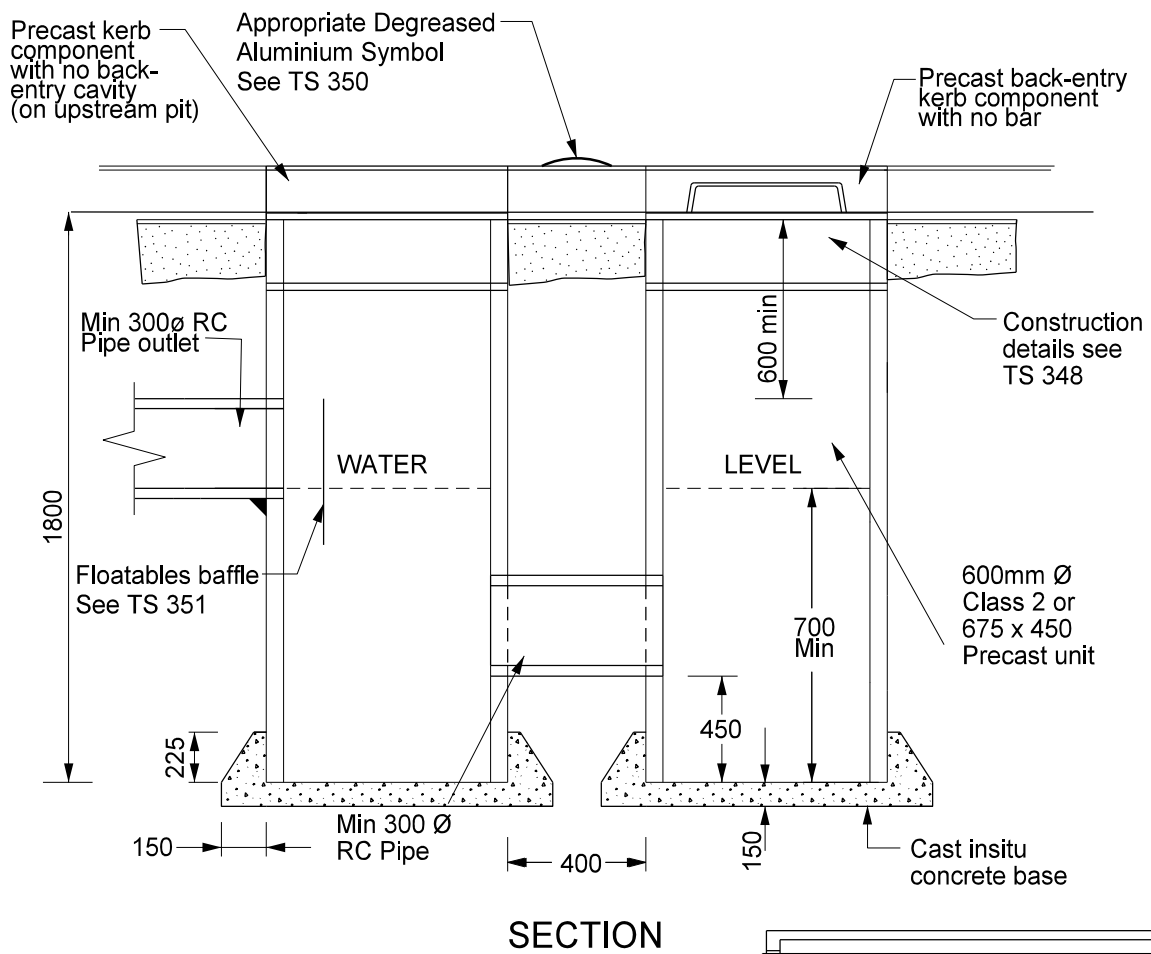
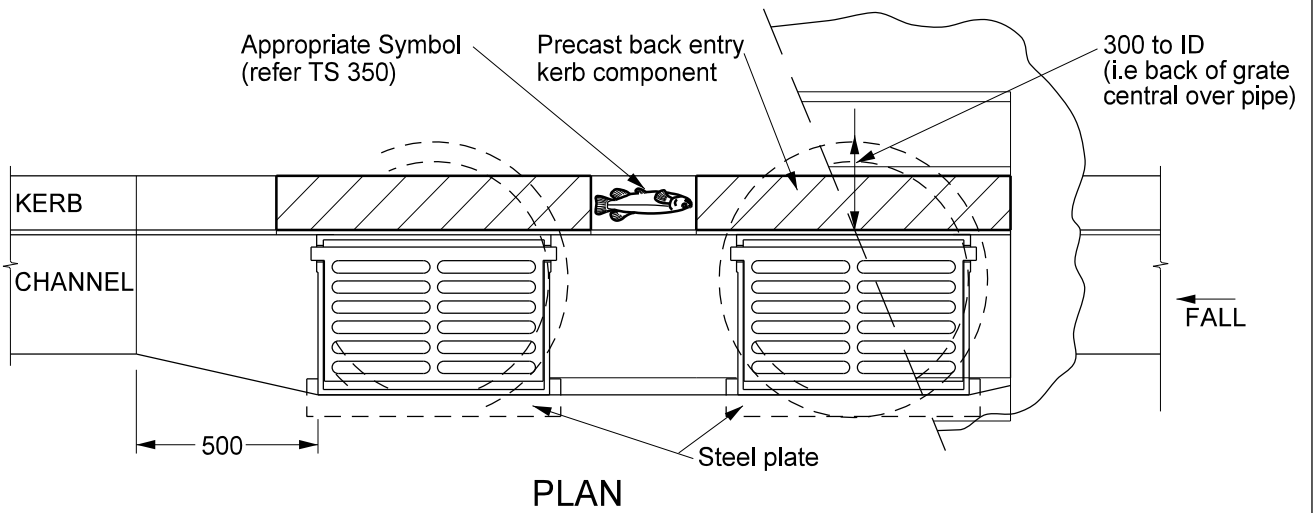
Catchpit grate and frame
angled to match channel
profile



BACK ENTRY CATCHPIT

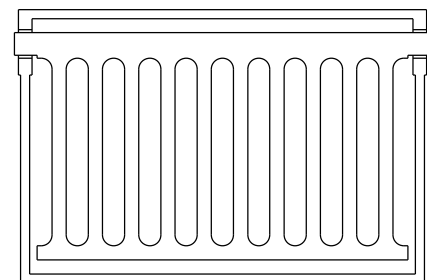


DETAIL

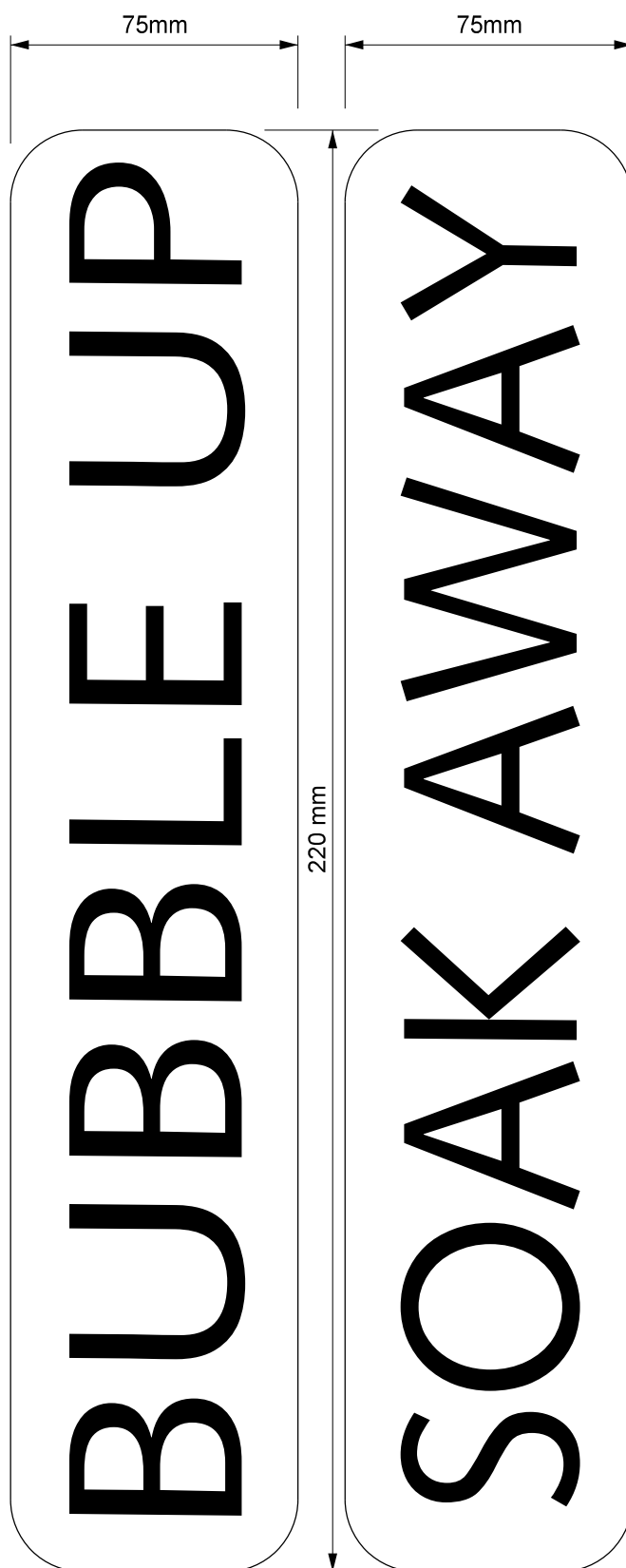


NOTES:

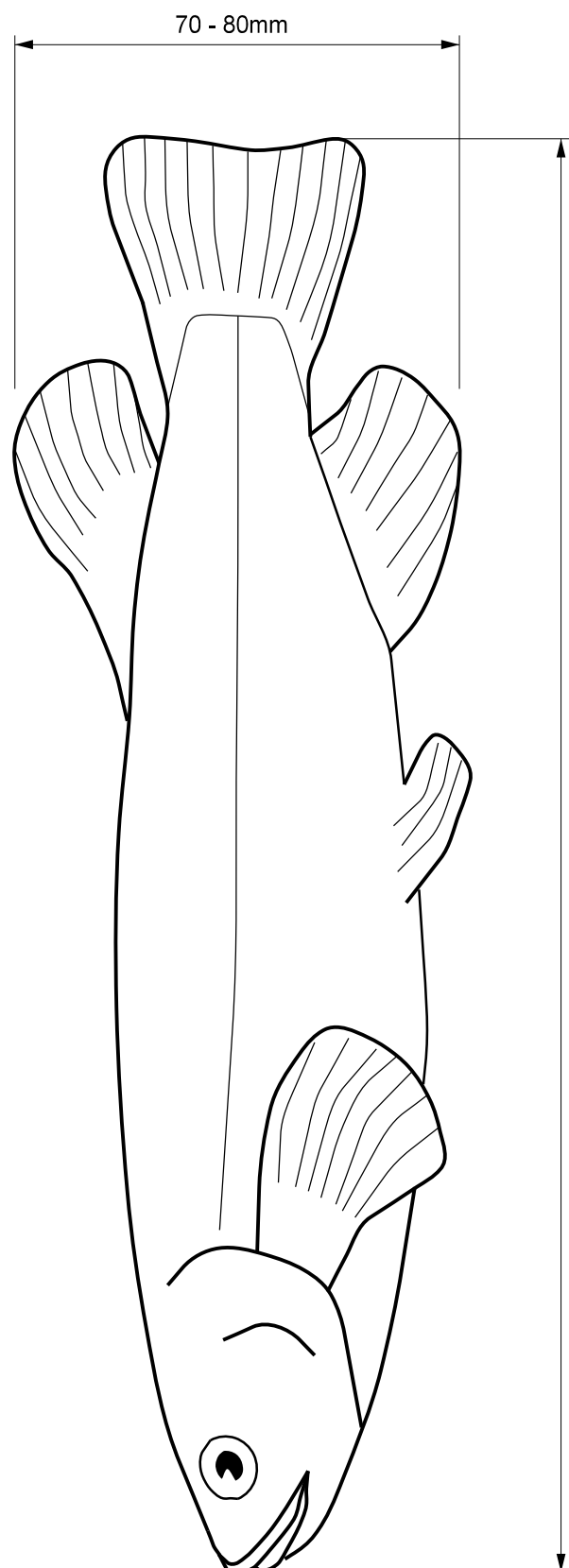
1. Cast iron grate with parallel slots shown in drawing refer to development manual vol 2 pt 3.8.5 for correct catchpit grate selection.
2. Epoxy product to be "ramset epcon C6" 2 pot epoxy or approved equivalent.
3. All in-situ concrete shall have a minimum 28 day strength of 20MPa
4. For details see TS 348



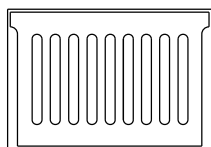
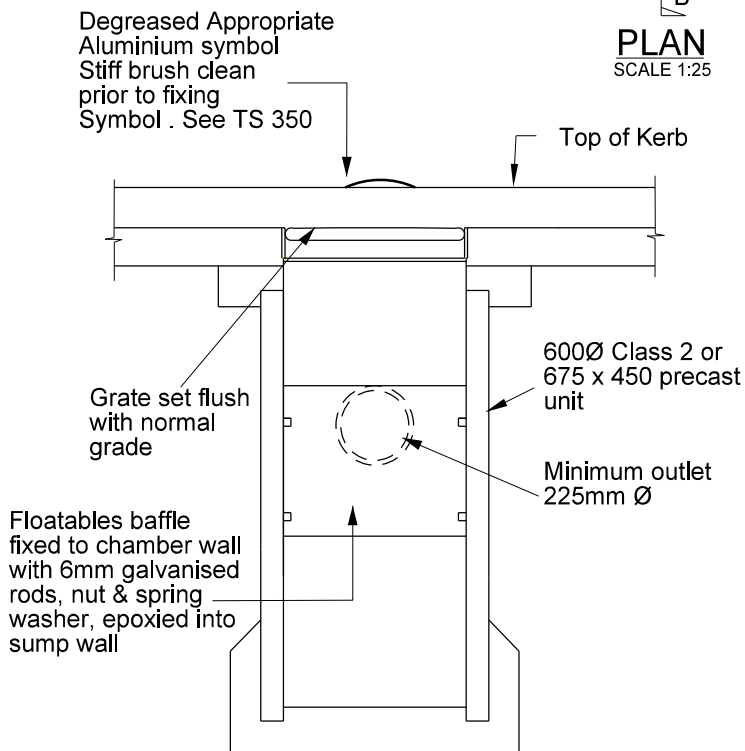
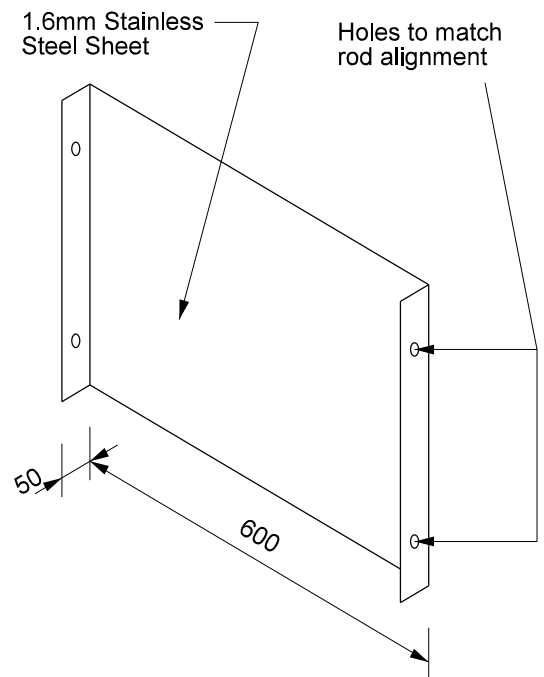
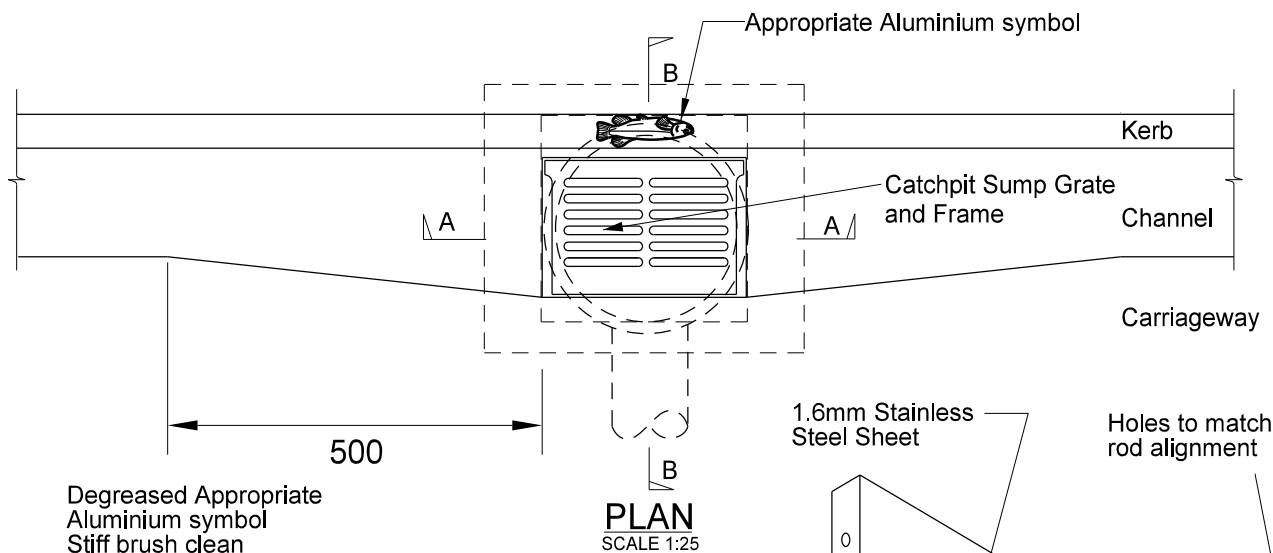
Alternative cast iron grate configuration (Perpendicular slots), for cycle routes



Cast Aluminium



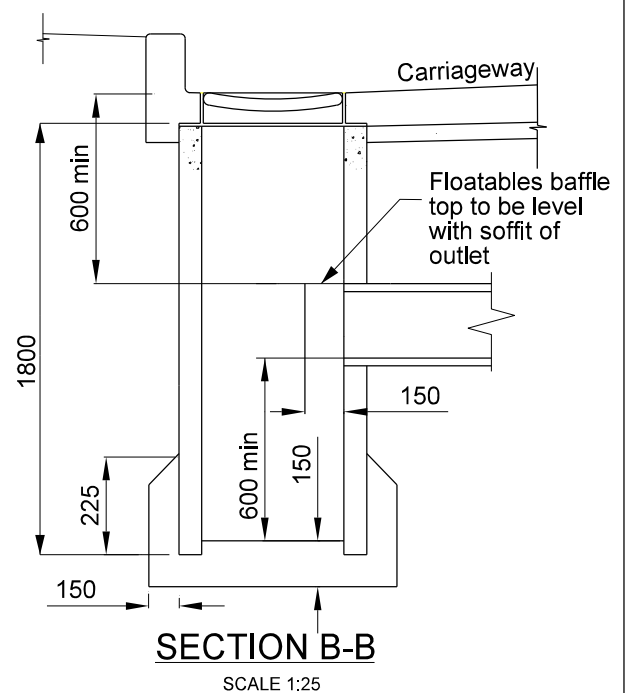
GIANT KOKOPU

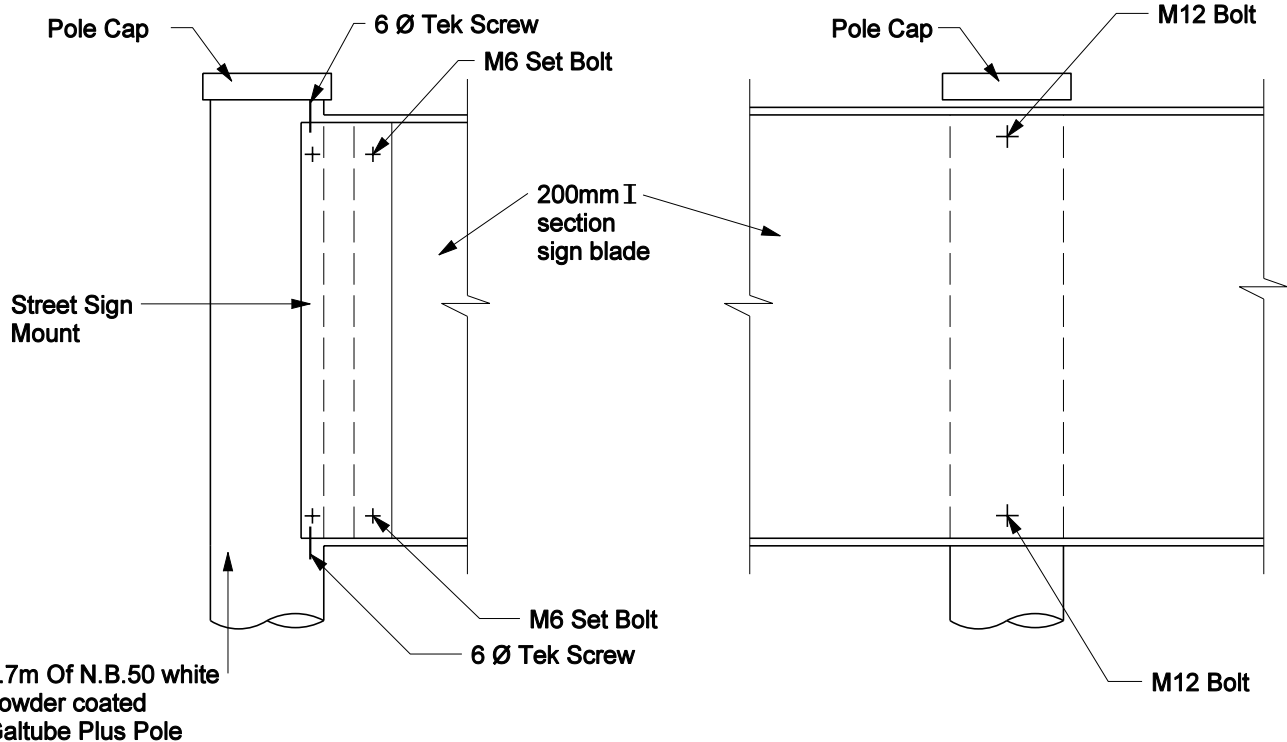
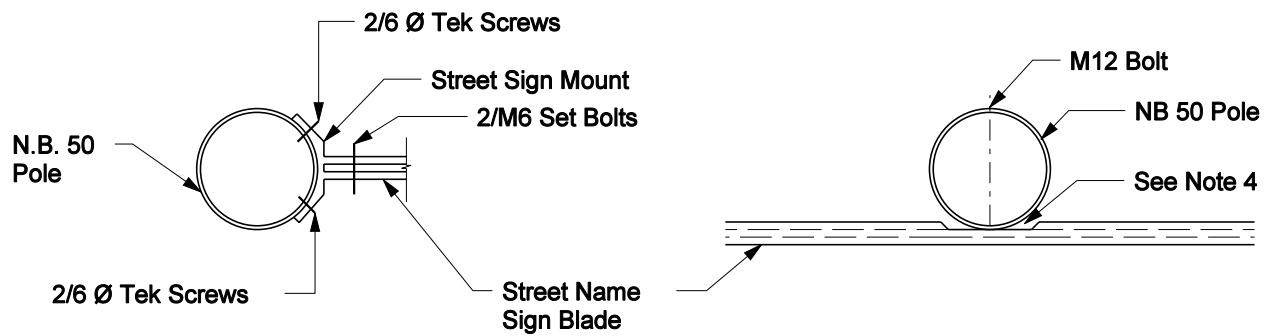


Alternative cast iron grate configuration
(perpendicular slots) for cycle routes

NOTES:

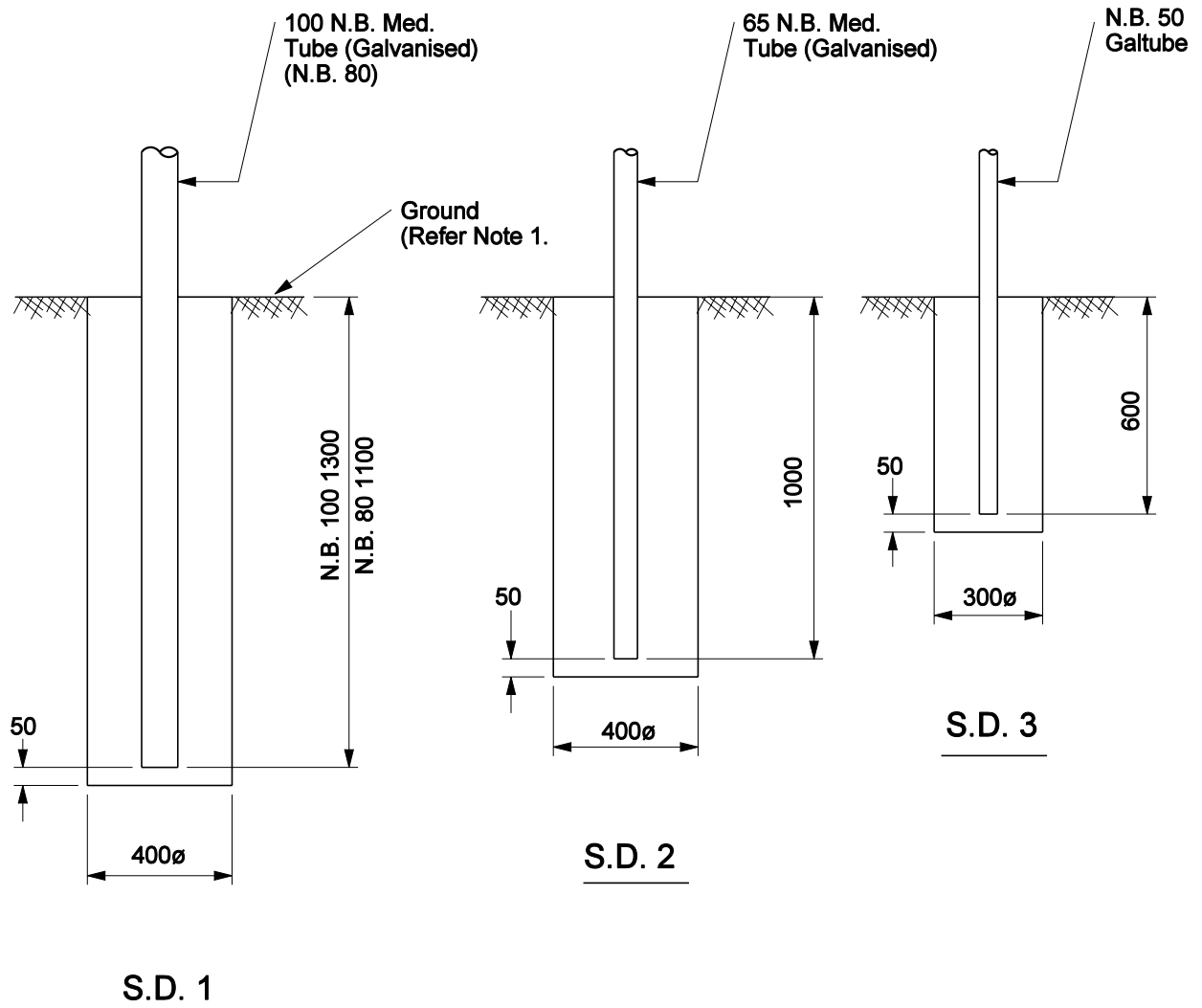
1. Cast iron grate with parallel slots shown in drawing refer to development manual vol 2 pt 3.8.5 for correct catchpit grate selection.
2. Epoxy product to be "Ramset Epcon C6" 2 pot epoxy or approved equivalent.
3. All in-situ concrete shall have a minimum 28 day strength of 20MPa.





NOTES:

1. Plastic washers are to be used against the sign face. Bolts are to be tightened in a manner which will not tear the reflective sheeting
2. The distance between the ground and the top of the top sign blade shall be 3.0m.
3. Lettering on the sign blade to finish not less than 30mm from blade end to allow complete visibility of the sign.
4. Where street name signs are to be attached to other than N.B.50 Poles, the street sign mount is to be slotted top and bottom and strapped to pole with stainless steel bands.
5. Cut notch into I section sign blade (top and bottom) to enable sign to sit flat against pole.
6. No Exit supplements are to be taped to bottom flange of sign.
7. "Sign fix" brackets shall be used for end mounted signs longer than 1.2m



NOTES:

1. This detail is for grass berm and planting areas only. In all other situations the concrete is to be recessed to allow reinstatement of the surrounding surface up to the pole.
2. Concrete to have 20 MPa in place strength at 28 days.
3. Poles are to be powder coated white.
4. All poles to be capped