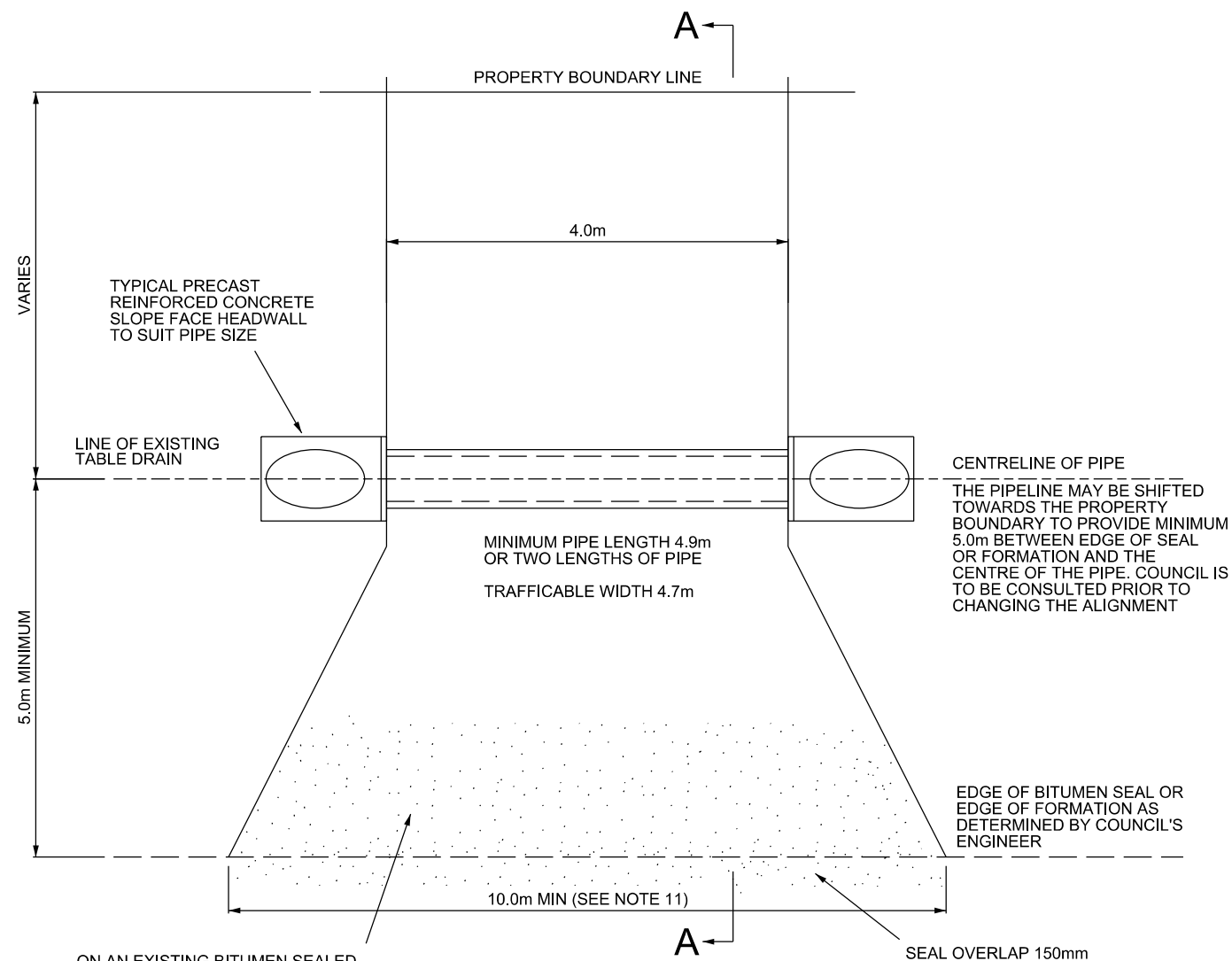


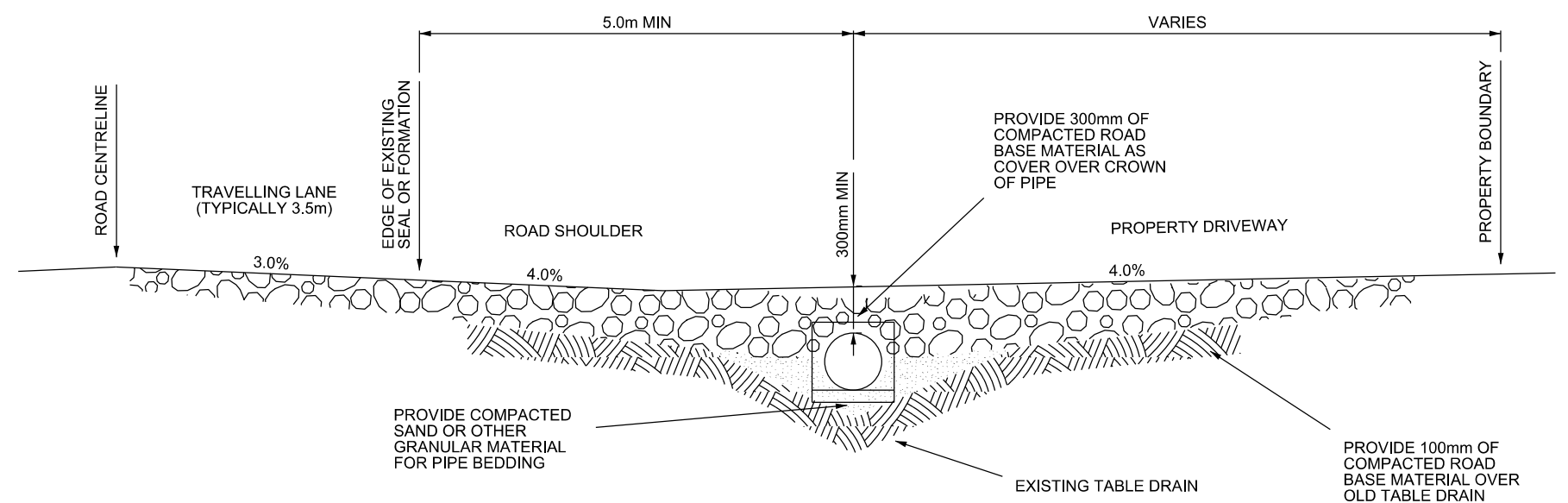
STANDARD DRAWINGS

Drawing No.	Drawing Title	Revised
STD 1264	Pipe Culvert in Rural Situation	19/06/2014
STD 1270	Stormwater Gully Pit	19/06/2014
STD 1271	Stormwater Junction Pit	19/06/2014
STD 1620	Grated Inlet Pit in Roll Over Kerb	19/06/2014
STD 5090	Grated Letter Opening Stormwater Pit	19/06/2014
STD 5166	Pram Ramp	19/06/2014
STD 5197	Inter-Allotment Drainage Inlet Pit	19/06/2014
STD 5205	Crossover Driveway Slab	19/06/2014
STD 5211	Driveway Slab	19/06/2014
STD 5235	Kerb & Vehicular Crossing Profiles	19/06/2014
STD 5251	Footpaths & Cycleways	19/06/2014
STD 5266	Concrete Causeway	19/06/2014
STD 5268	Residential Subdivision Service Allocation in Footway	19/06/2014
STD 5320	Hydrant Location Markers for Urban Roads	10/03/2015
STD 5364	Grated Surcharge & Inlet Pits	20/02/2015
STD 5458	Intersection Median Island	20/02/2015
STD 5518	Utility Trench Details	19/06/2014
STD 5882	20mm Water Service Connection Detail	09/09/2014
STD 6639	Tree Planting Standards	21/08/2014
STD 6659	Bridge Style Vehicular Crossing Slab	19/06/2014
STD 6720	Installation of Stormwater Outlets Through Kerb Face	19/06/2014
STD 6738	Arrangements for Pits with Internal Branch Points	19/06/2014
STD 6750	Subsoil Drainage Flushing Point	19/06/2014
STD 6763	CBD Stormwater Kerb Adaptor	19/06/2014
STD 6818	Scour Valve Pit & Fittings Arrangement	29/01/2015
STD 6882	Street Name Signs	05/02/2015

APPROVED MANAGER TECHNICAL SUPPORT	SURVEY _____ DATE _____	FIELD BOOK/SURVEY FILES	SCALES NOT TO SCALE ORIGINAL SIZE A1 0 1 2 3 4 5 cm	PERMANENT MARK: N/A RL: N/A DATUM: AHD & MGA	DUBBO CITY COUNCIL TECHNICAL SERVICES DIVISION	DRAWING TITLE STANDARD DRAWINGS INDEX	JOB STANDARD DRAWING	SHEET No. 1 OF 1 SHEETS PLAN NO.																			
	DESIGN _____ DATE _____	DESIGN FILES		STATUS: STANDARD DRAWING PRINT DATE: 10/03/2015																							
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	CHECKED _____ DATE 10/03/2015	DRAWING FILES U:\TS\Technical Support\Design Section\Standards and Design Guides\DCS Standard Engineering Drawings\Control\DCS Standard Drawings.dgn																									



PLAN



SECTION A-A




NOTES

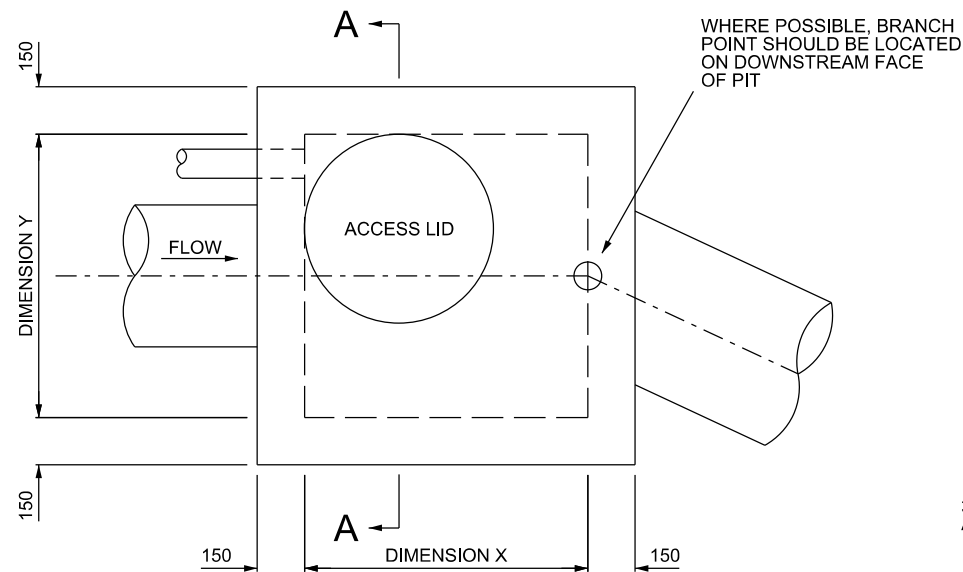
1. This plan is to be read in conjunction with Dubbo City Council's Specification for Standard Culvert Access for Rural Property Entrances from Bitumen Sealed or Gravel Roads.
2. Contractors/Owners/Developers are responsible for the locating of all underground services and the arranging and completion of repairs with the appropriate authority should they be broken or damaged during construction. Any service pits located within the proposed driveway shall be moved at the cost of the Contractor/Owner/Developer by contacting the relevant authority.
3. The pipe entrance is to be constructed to the dimensions and specifications shown on this plan. Generally, pipes are to be 450mm dia. or larger. If a pipe smaller than 450mm dia. is proposed, detailed stormwater calculations must be submitted to and approved by Council prior to construction.
4. Reinforced concrete pipes are to be used. Pipes are to be a minimum of Class 3.
5. The pipe bedding is to be as specified in the Aus-Spec documentation for pipe laying. All poor subgrade material shall be removed and replaced with suitable fill material. All subgrades are to be well compacted before the placement of the base material.
6. The pavement is to be constructed in accordance with the Aus-Spec documentation with a minimum depth of 200mm. Any bitumen seal is to use 10mm aggregate.
7. The potential for erosion and the transportation of sediment is to be addressed. Appropriate measures are to be in place to prevent this from happening. Where the table drains are more than 5% grade, measures are to be put in place so that the potential for erosion can be minimised.
8. The Contractor/Owner/Developer is responsible for the removal of all debris and rubbish associated with the construction from the site and the reinstatement of the surface adjacent to the works upon completion.
9. Energy dissipators (rock mattress) may be required to be installed for 1m either side of the culvert at the discretion of Council's supervising engineer.
10. The existing table drain shall be reshaped to ensure the culvert is free draining.
11. The width of the driveway at the edge of bitumen seal/edge of formation may be increased to accommodate turning paths of design vehicles.

APPROVED MANAGER TECHNICAL SUPPORT	SURVEY _____ DATE _____	FIELD BOOK/SURVEY FILES	SCALES NOT TO SCALE ORIGINAL SIZE A1 0 1 2 3 4 5 cm	PERMANENT MARK: N/A	RL: N/A	DATUM: AHD & MGA	 DUBBO CITY COUNCIL TECHNICAL SERVICES DIVISION	DRAWING TITLE PIPE CULVERT IN RURAL SITUATION	JOB STANDARD DRAWING	SHEET No. 1
	DESIGN _____ DATE _____	DESIGN FILES		STATUS: STANDARD DRAWING	PRINT DATE: 20/06/2014	OF 1 SHEETS				
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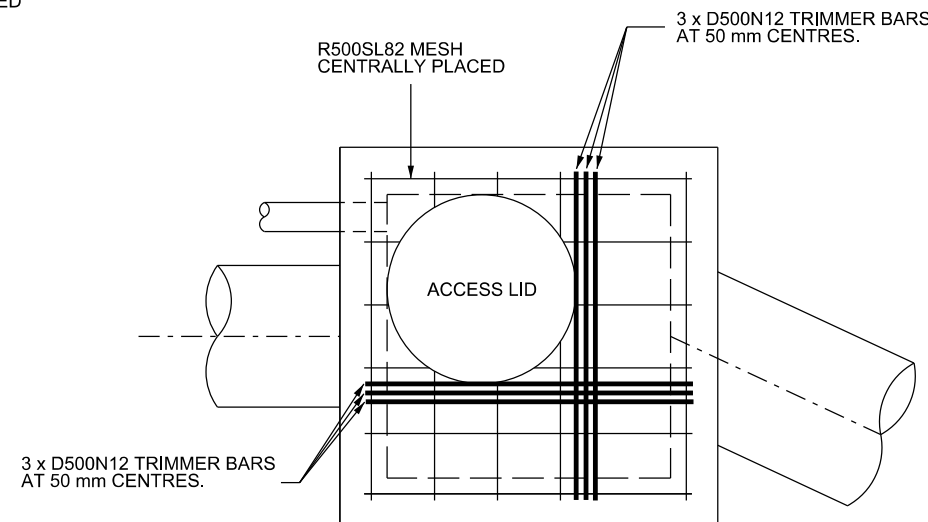


TABLE FOR DIMENSION X		TABLE FOR DIMENSION Y	
LINTEL SIZE (m)	DIMENSION X (mm)	PIPE DIA. (mm)	DIMENSION Y (mm)
1.8	660	≤ 600	650
2.4	810	675	790
3.0	960	750	870
3.6	1110	825	950
		900	1030
		1050	1200
		1200	1260

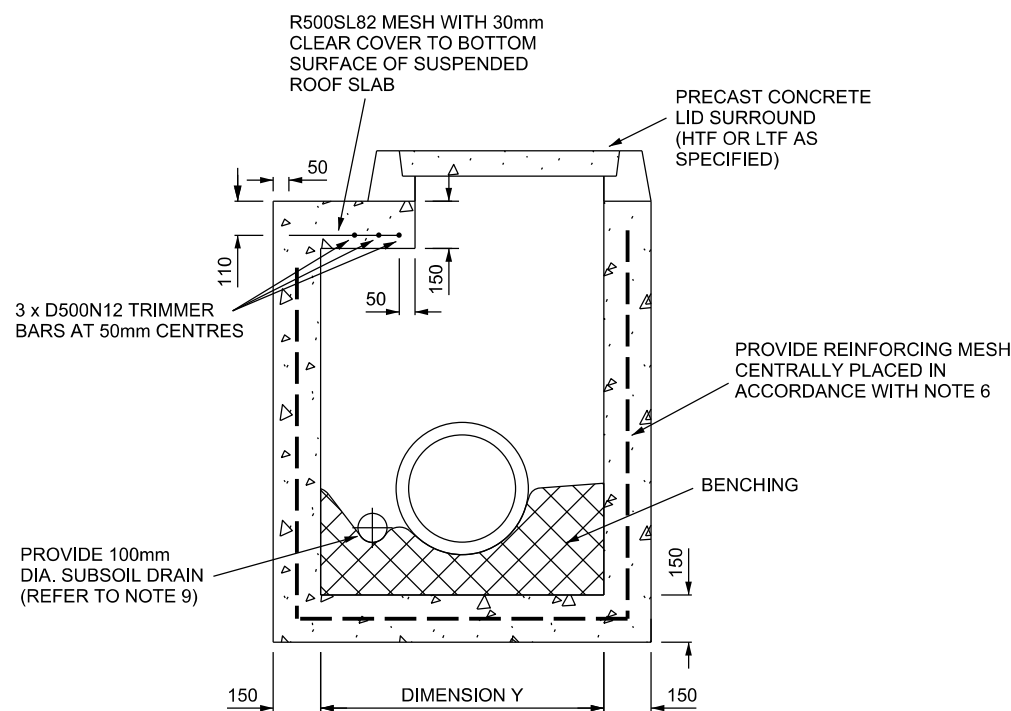
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	No.	DATE	APP'D	DETAILS OF AMENDMENTS																								
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2.	19/06/2014	CG	AMENDED																									
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PLAN



ROOF SLAB REINFORCEMENT DETAILS



SECTION A-A

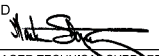
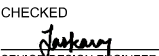


SCHEDULE OF JUNCTION PIT SIZES

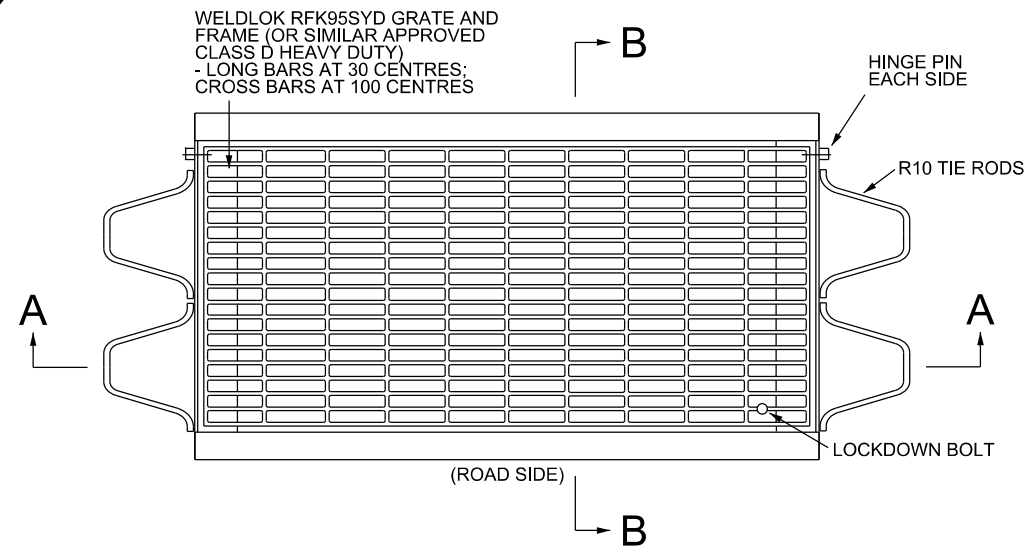
PIPE DIA.	INTERNAL PIT DIMENSIONS	
	DIMENSION X	DIMENSION Y
300-750mm	900mm	900mm
900mm	1050mm	1050mm
1050mm	1200mm	1200mm

NOTES

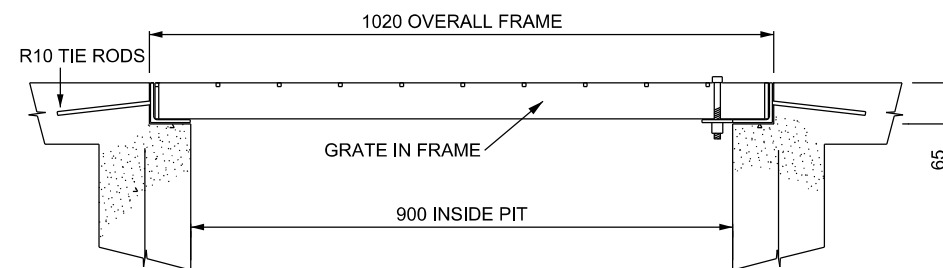
- The compressive strength of the concrete is to be 25MPa at 28 days.
- R500SL82 mesh shall be provided in pit walls and floor slab centrally placed for pit depths less than 1.8m. For pits deeper than 1.8m R500SL81 will be provided.
- Outlet pipes are to have rounded entrances.
- Pits deeper than 1.0m are to have step irons at 300mm spacing.
- All pits to suit 1200mm dia pipes are to have R500SL82 mesh with 30mm clear cover to bottom surface of suspended roof slab with 3 x D500N12 trimmer bars at 50mm centres around the access grate.
- Provide the following reinforcement in walls and floor slabs:
 - Use D500N10 bent corner bars at 200mm centres lapped 400mm floor to wall and wall to wall.
 - For pits less than 1.8m deep provide R500SL82 mesh centrally placed in floor and wall slabs.
 - For pit depths between 1.8m and 3.0m provide R500SL81 mesh centrally placed in floor and wall slabs.
- Pits constructed to accommodate pipes larger than 1200mm dia. and having depths greater than 3.0m are to have a special design.
- Where possible, intersection of pipe centrelines should occur on the downstream face of the pit. (See STD 6738 for preferred options where this is not possible).
- A 100mm dia. subsoil drainage pipe 3.0m long wrapped in filter sock is to be provided adjacent to and at the invert level of the inlet drainage pipe.
- Steel reinforcing shall conform to AS/NZS4671-2001:

R/D/I	= Round, Deformed ribbed, deformed Indented shape.
250/500	= Strength grade.
S/R	= Square or Rectangular bar configuration (mesh only).
L/N	= Low or Normal ductility class.
Size	= Nominal bar diameter in millimetres.
Spacing	= Transverse spacing of bars, expressed in millimetres, divided by 100 (mesh only).
- All concrete works are to be in accordance with Aus-Spec Construction Specification No. 0319 for minor concrete works.

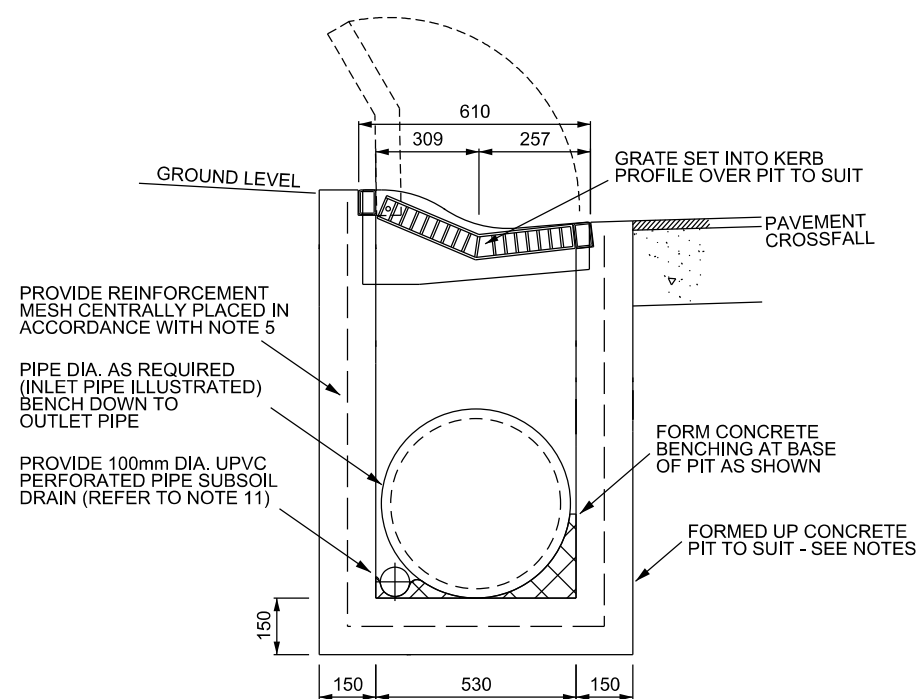
APPROVED:  DATE: 19/06/2014 MANAGER TECHNICAL SUPPORT	SURVEY _____ DATE _____ DESIGN _____ DATE _____ DRAWING AR, CG DATE 29/05/2014 CHECKED:  DATE 19/06/2014 SENIOR DESIGN ENGINEER	FIELD BOOK/SURVEY FILES DESIGN FILES DRAWING FILES <small>U:\TS\Technical Support\Design Section\Standards and Design Guides\DCS Standard Engineering Drawings\Control\DCS Standard Drawings.dgn</small>	SCALES NOT TO SCALE 	PERMANENT MARK: N/A RL: N/A DATUM: AHD & MGA STATUS: STANDARD DRAWING PRINT DATE: 20/06/2014 <table border="1"> <tr> <th>No.</th> <th>DATE</th> <th>APP'D</th> <th>DETAILS OF AMENDMENTS</th> </tr> <tr> <td>1.</td> <td>29/05/2014</td> <td>CG</td> <td>AMENDED</td> </tr> <tr> <td>2.</td> <td>19/06/2014</td> <td>CG</td> <td>AMENDED</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </table>	No.	DATE	APP'D	DETAILS OF AMENDMENTS	1.	29/05/2014	CG	AMENDED	2.	19/06/2014	CG	AMENDED	-	-	-	-	-	-	-	-	 TECHNICAL SERVICES DIVISION	DRAWING TITLE STORMWATER JUNCTION PIT	JOB STANDARD DRAWING	SHEET No. 1 OF 1 SHEETS PLAN NO. STD 1271
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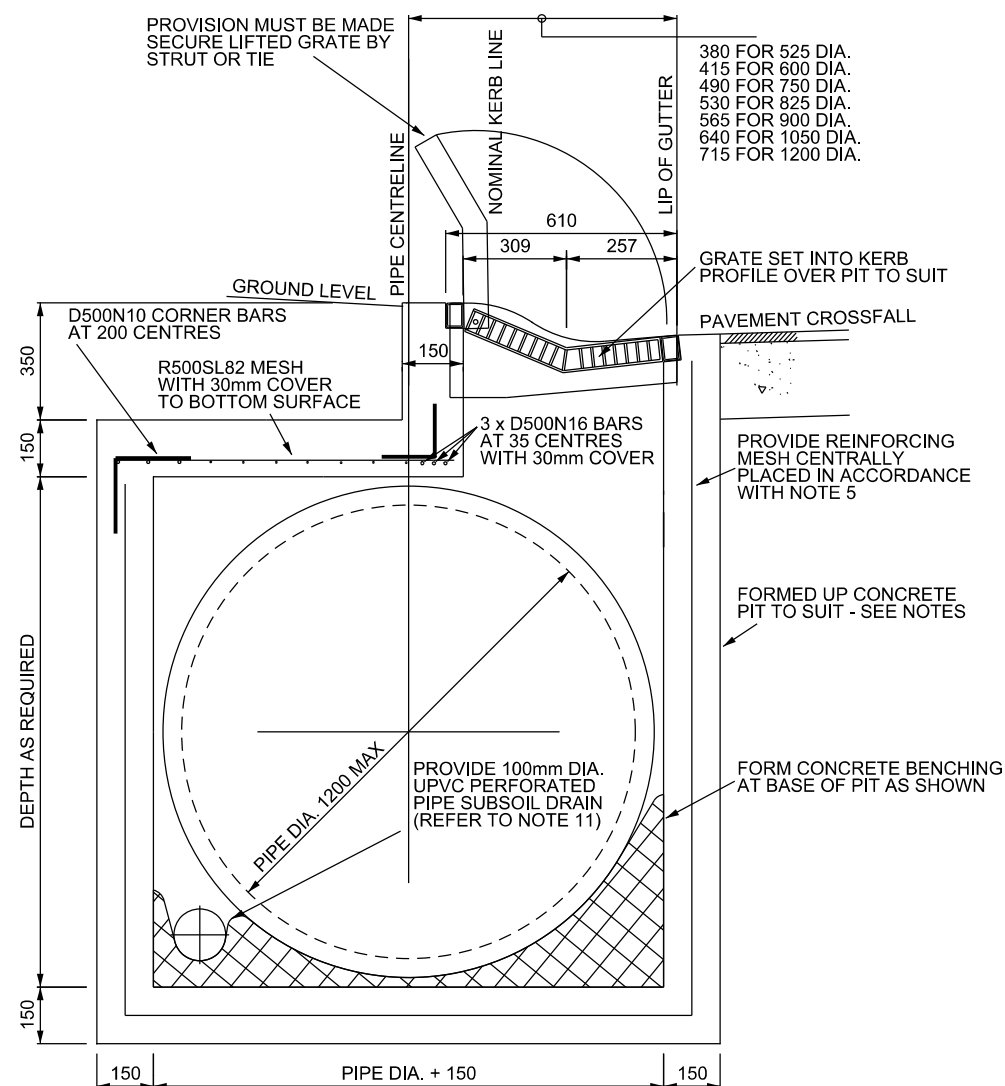
PLAN SHOWING GRATE & FRAME



SECTION A-A



**SECTION B-B - THROUGH PIT
(FOR PIPES UP TO 450 DIA.)**



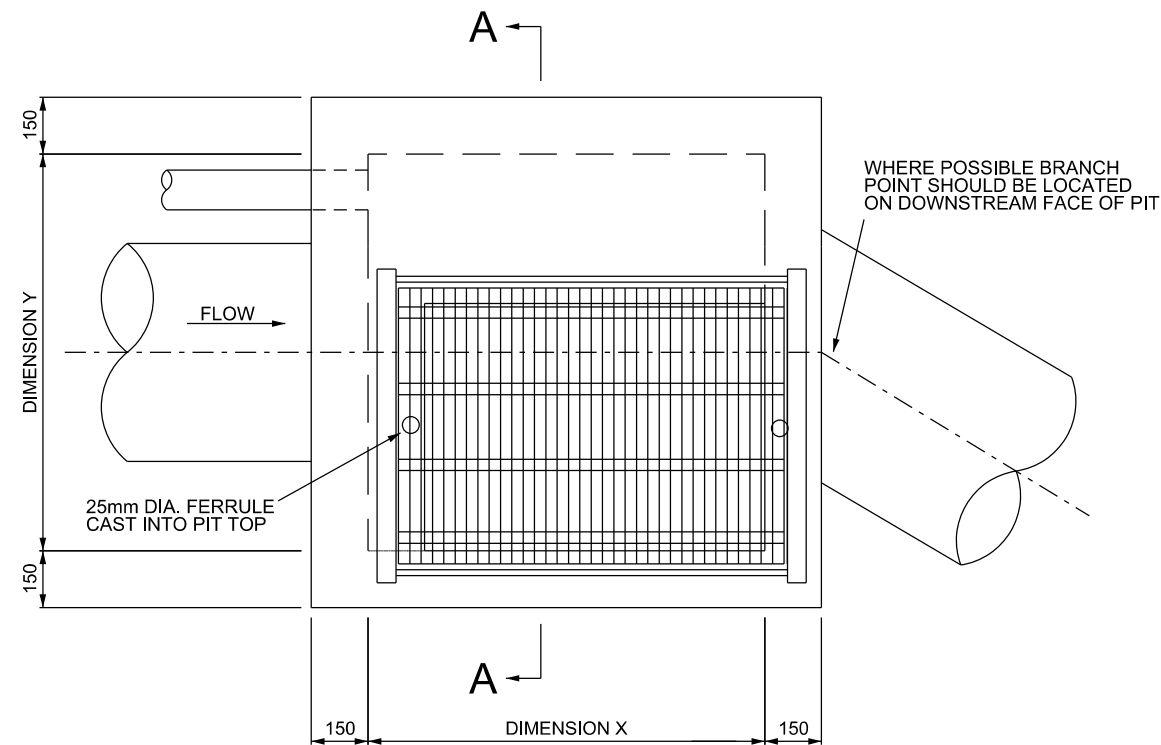
**SECTION B-B - THROUGH PIT
(FOR PIPES 525 TO 1200 DIA.)**

NOTES

- The compressive strength of the concrete is to 25MPa at 28 days.
- Base of pit to be benched down to outlet pipe.
- Outlet pipe to have a rounded entrance.
- Pits over 1.0m deep to have step irons installed at 300mm spacing.
- Provide the following reinforcement in wall and floor slabs:
 - Use D500N10 bent corner bars at 200 centres, lapped 400 floor to wall and wall to wall.
 - For pits less than 1.8m deep provide R500SL82 mesh centrally placed in floor and wall slabs.
 - For pits between 1.8m and 3.0m deep provide R500SL81 mesh centrally placed in floor and wall slabs.
- Pits constructed to accommodate pipes larger than 1200mm dia. or having a depth greater than 3.0m are to have a special design.
- Where possible, intersection of pipe centrelines should occur on the downstream face of the pit. (See STD 6738 for preferred options where this is not possible).
- Centreline of pipes to be pegged at the downstream face of pit.
- Pits to have supporting roof sections for pipes larger than 900 dia. running perpendicular to kerb and gutter and 600 dia. running under kerb and gutter. Provide R500SL82 mesh with 30mm clear cover to bottom surface of suspended roof slab.
- Steel reinforcing shall conform to AS/NZS4671-2001:

R/D/I	= Round, Deformed ribbed, deformed Indented shape.
250/500	= Strength grade.
S/R	= Square or Rectangular bar configuration (mesh only).
L/N	= Low or Normal ductility class.
Size	= Nominal bar diameter in millimetres.
Spacing	= Transverse spacing of bars, expressed in millimetres, divided by 100 (mesh only).
- A 100mm dia. subsoil drainage pipe 3.0m long wrapped in filter sock is to be provided adjacent to and at the invert level of the inlet drainage pipe.
- All concrete works are to be in accordance with Aus-Spec Construction Specification No. 0319 for minor concrete works.

APPROVED MANAGER TECHNICAL SUPPORT	SURVEY _____ DATE _____	FIELD BOOK/SURVEY FILES	SCALES NOT TO SCALE ORIGINAL SIZE A1 0 1 2 3 4 5 cm	PERMANENT MARK: N/A	RL: N/A	DATUM: AHD & MGA	DUBBO CITY COUNCIL TECHNICAL SERVICES DIVISION	DRAWING TITLE GRATED INLET PIT IN ROLL OVER KERB	JOB STANDARD DRAWING	SHEET No. 1 OF 1 SHEETS PLAN NO. STD 1620
	DESIGN _____ DATE _____	DESIGN FILES		STATUS: STANDARD DRAWING	PRINT DATE: 20/06/2014					
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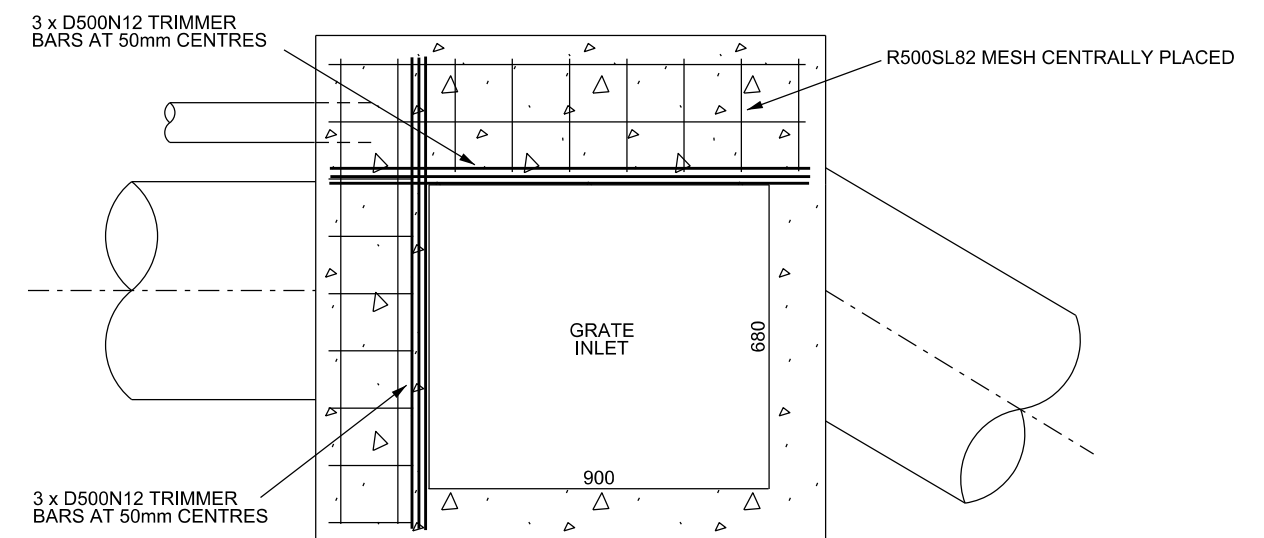
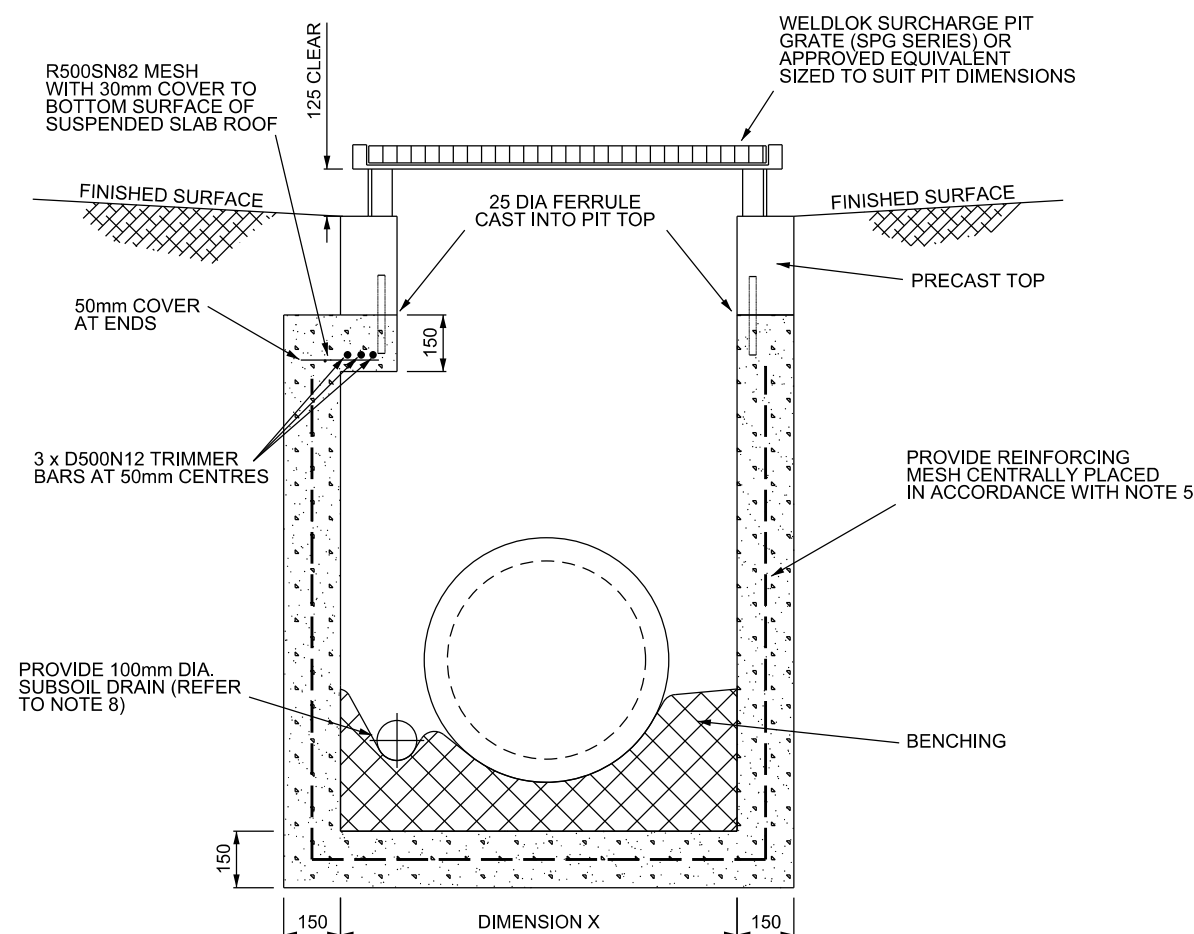


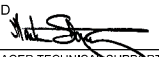
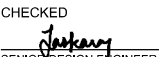


SCHEDULE OF JUNCTION PIT SIZES

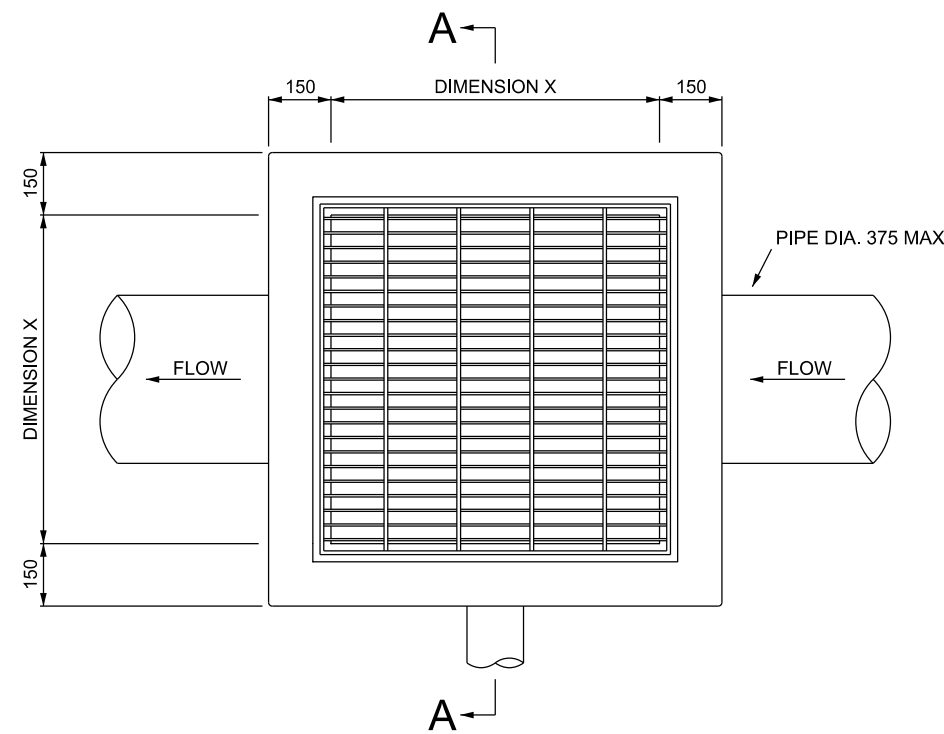
PIPE SIZE	INTERNAL PIT DIMENSIONS	
	DIMENSION X	DIMENSION Y
300 TO 750mm	900mm	900mm
900mm	1050mm	1050mm
1050mm	1200mm	1200mm

NOTES

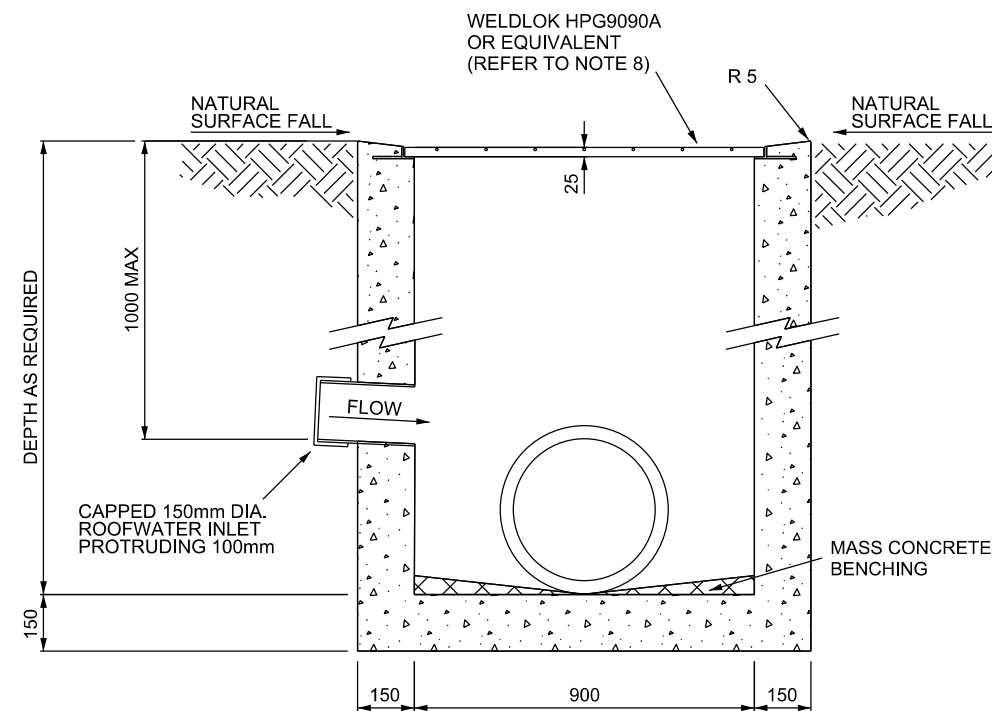
- The compressive strength of the concrete is to be 25MPa at 28 days.
- All pipes are to be smoothly grouted at pit walls.
- Pits deeper than 1.0m are to have step irons at 300mm spacing.
- All pits to suit 1200mm dia. pipes are to have R500SL82 mesh with 30mm clear cover to bottom surface of suspended roof slab with 3 x D500SN12 trimmer bars at 50mm centres around the access grate.
- Provide the following reinforcement in walls and floor slabs:
 - Use D500N10 bent corner bars at 200mm centres lapped 400mm floor to wall and wall to wall.
 - For pits less than 1.8m deep provide R500SL82 mesh centrally placed in floor and wall slabs.
 - For pit depths between 1.8m and 3.0m provide R500SL81 mesh centrally placed in floor and wall slabs.
- Pits constructed to accommodate pipes larger than 1200mm dia. and having depths greater than 3.0m are to have a special design.
- Where possible, intersection of pipe centrelines should occur on the downstream face of the pit. (See STD 6738 for preferred options where this is not possible).
- A 100mm dia. subsoil drainage pipe 3.0m long wrapped in filter sock to be provided adjacent to and at the invert level of the inlet drainage pipe.
- All concrete works are to be in accordance with Aus-Spec Construction Specification No. 0319 for minor concrete works.



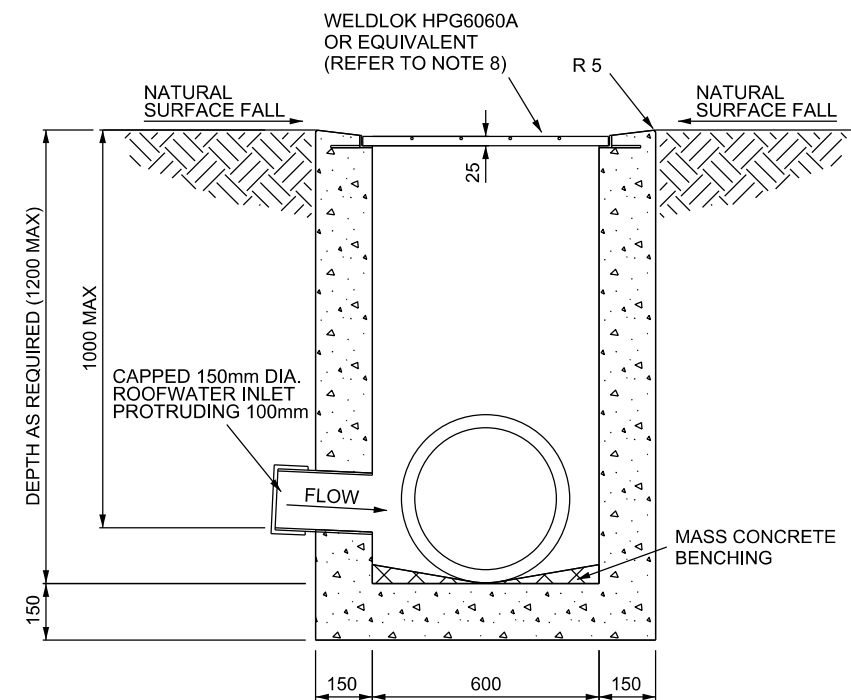
APPROVED:  DATE: 19/06/2014 MANAGER TECHNICAL SUPPORT	SURVEY _____ DATE _____ DESIGN _____ DATE _____ DRAWING AR, CG DATE: 29/05/2014 CHECKED:  DATE: 19/06/2014 SENIOR DESIGN ENGINEER	FIELD BOOK/SURVEY FILES DESIGN FILES DRAWING FILES <small>U:\TS\Technical Support\Design Section\Standards and Design Guides\DDC Standard Engineering Drawings\Control\DDC Standard Drawings.dgn</small>	SCALES NOT TO SCALE 	PERMANENT MARK: N/A RL: N/A DATUM: AHD & MGA STATUS: STANDARD DRAWING PRINT DATE: 20/06/2014 <table border="1"> <thead> <tr> <th>No.</th> <th>DATE</th> <th>APP'D</th> <th>DETAILS OF AMENDMENTS</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>29/05/2014</td> <td>CG</td> <td>AMENDED</td> </tr> <tr> <td>2.</td> <td>19/06/2014</td> <td>CG</td> <td>AMENDED</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	No.	DATE	APP'D	DETAILS OF AMENDMENTS	1.	29/05/2014	CG	AMENDED	2.	19/06/2014	CG	AMENDED	-	-	-	-	-	-	-	-	 TECHNICAL SERVICES DIVISION	DRAWING TITLE GRATED LETTER OPENING STORMWATER PIT	JOB STANDARD DRAWING	SHEET No. 1 OF 1 SHEETS PLAN NO. STD 5090
	No.	DATE	APP'D	DETAILS OF AMENDMENTS																								
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2.	19/06/2014	CG	AMENDED																									
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PLAN



SECTION A-A
(FOR DEPTHS OVER 1200mm)



SECTION A-A
(FOR DEPTHS UP TO 1200mm)

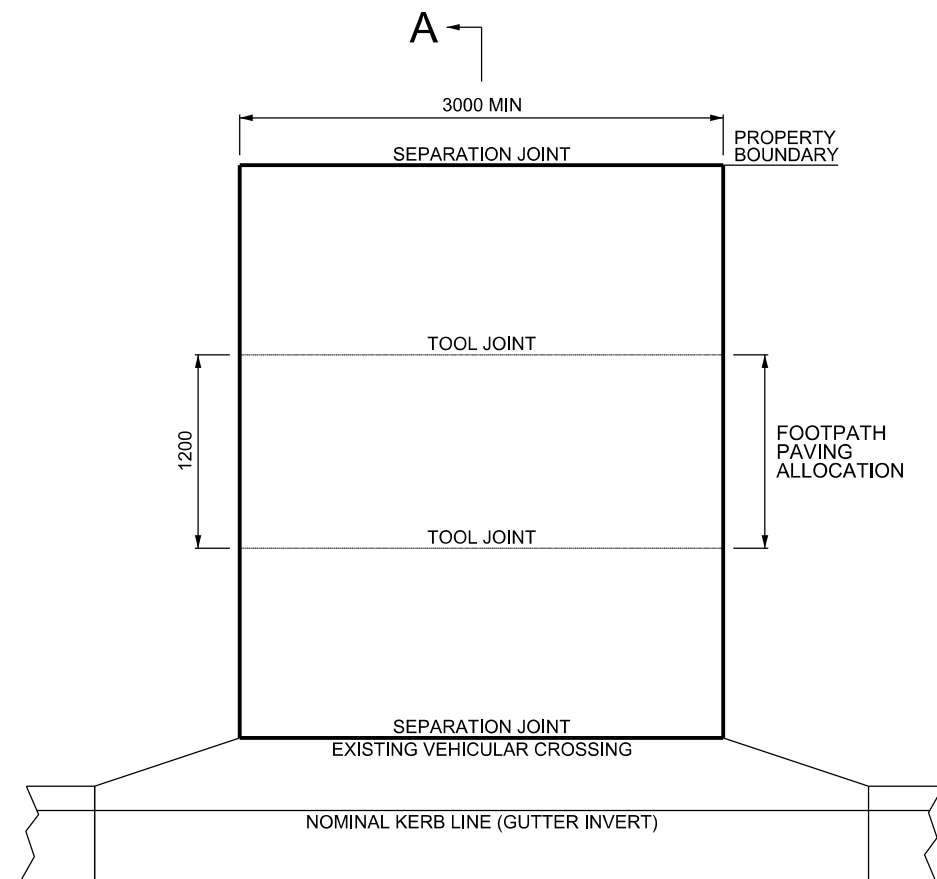
NOTES

1. The compressive strength of the concrete is to be 25MPa at 28 days.
2. Interallotment drainage pits are primarily built as part of subdivision developments and constructed at the rear of the allotments in the lowest point when it is not possible to drain the roof water to the street drainage system.
3. All concrete works are to be in accordance with Aus-Spec Construction Specification No. 0319 for minor concrete works.
4. Pits over 1.2m deep are to have step irons installed at 300mm spacing.
5. A capped, 150mm Dia uPVC inlet stub is to be placed in the pit to allow for future roof water connections. The position of the stub is to be indicated by a peg installed on the surface.
6. Pits may be built using precast components, however pipe entry and exits are to be sealed to the satisfaction of Council and the bases to be benched with mass concrete as shown in Section A-A of this drawing.
7. Pit lids are to be lower than the natural ground level. The surrounding area is to be shaped so that all surface runoff is directed into the grate.
8. Grates are to be galvanised mild steel with hinged surround and lock down bolts (WELDLOK HPG6060A or HPG9090A or equivalent).
9. At the completion of the works, erosion and sediment controls are to be placed around the pits in accordance with the approved Erosion and Sediment Control Plan and are to remain in place until such time as the site has been established with vegetation. The operation of erosion and sediment controls should be monitored and rectified as necessary.
10. One single width (300mm) of turf is to be laid around the pit to avoid any scouring of topsoil.

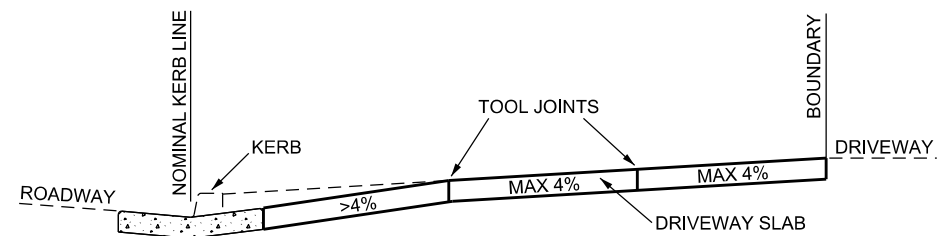
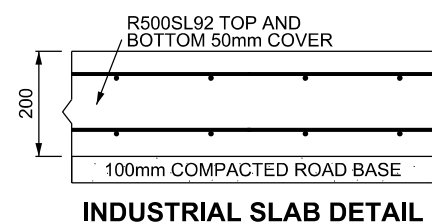
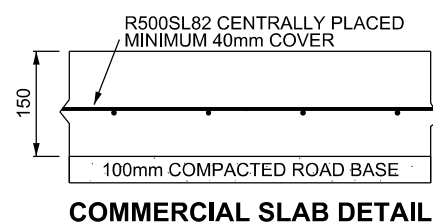
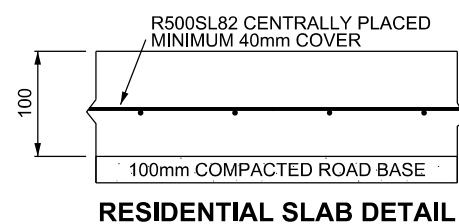
TABLE FOR DIMENSION X

PIT DEPTH (mm)	DIMENSION X (mm)
≤ 1200	600
> 1200	900

APPROVED MANAGER TECHNICAL SUPPORT	SURVEY _____ DATE _____	FIELD BOOK/SURVEY FILES	SCALES NOT TO SCALE ORIGINAL SIZE A1 0 1 2 3 4 5 cm	PERMANENT MARK: N/A	RL: N/A	DATUM: AHD & MGA		DRAWING TITLE INTER-ALLOTMENT DRAINAGE INLET PIT	JOB STANDARD DRAWING	SHEET No. 1 OF 1 SHEETS PLAN NO. STD 5197														
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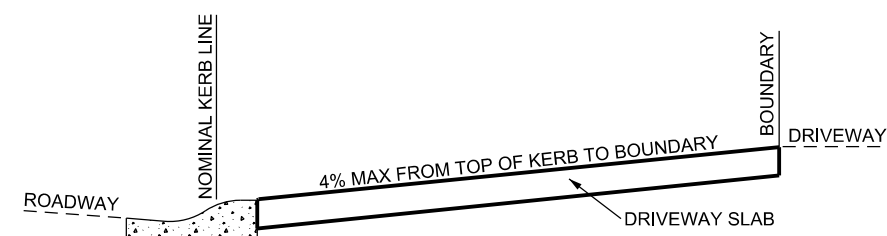


SECTION A-A - STANDARD KERB AND GUTTER

NOTES

- Construction of driveway slabs is to be carried out strictly in accordance with Dubbo City Council's Road Opening Policy and relevant Aus-Spec documentation. These documents are available from Council's Customer Service area.
- Contractors/Owners/Developers are responsible for the locating of all all underground services and the arranging and completion of repairs with the appropriate authority should they be broken or damaged during construction.
- The driveway slab is to be constructed to the dimensions and specifications as shown on this drawing. The compressive strength of the concrete is to be 25MPa at 28 days. All exposed edges are to be 10mm radius. Additionally, all poor subgrade material shall be removed and replaced with suitable fill material. All subgrades are to be well compacted before the placement of the base material. Formwork must extend from finished concrete height to the base material for the total area of the slab.
- It is the responsibility of the Contractor/Owner/Developer to ensure that the crossfall results in a suitable change of grade such that vehicles will not bottom out. In areas of doubt, the applicant will be required to provide Council with a longitudinal section through the proposed driveway with an appropriate car profile to verify such works. Alternatively, Council can carry out such works at the full cost to the applicant.
- A fully separated joint is to be provided at the back of the new vehicular crossing and the driveway slab using bituminous jointing (Jointex) or similar.
- The vehicular crossing and the driveway slab are to be poured separately. Pouring of the two (i.e. the vehicular crossing and the driveway slab), as one project will lead to rejection by Council.
- The finished surface is to be kept from drying out too rapidly by covering with wet sand or plastic sheeting.
- An approved Traffic and Pedestrian Control Plan completed by an appropriately qualified person in accordance with AS 1742.3-2009 is to be in place prior to any construction works commencing and during any construction works.
- Prior to construction of driveway slab, Section 138 Roads Act - Approval for Works in the Public Road to be lodged and approved by Council.
- The potential for sediment to enter Council's underground stormwater system is to be addressed. Appropriate measures are to be put in place to prevent this from happening.
- The Contractor/Owner/Developer is responsible for the removal of all formwork and rubbish associated with the construction from the site and the reinstatement of the surface adjacent to the works upon completion.
- The following inspections are to be carried out prior to and during construction. In this regard 24 hours notice is to be given by phoning 6801 4000. The inspections required are as follows:
 - Site inspection prior to the commencement of work.
 - When the formwork and compacted base are in place and prior to the mesh being placed.
 - When the mesh has been placed.
 - At the completion of all the works including restoration of the site.

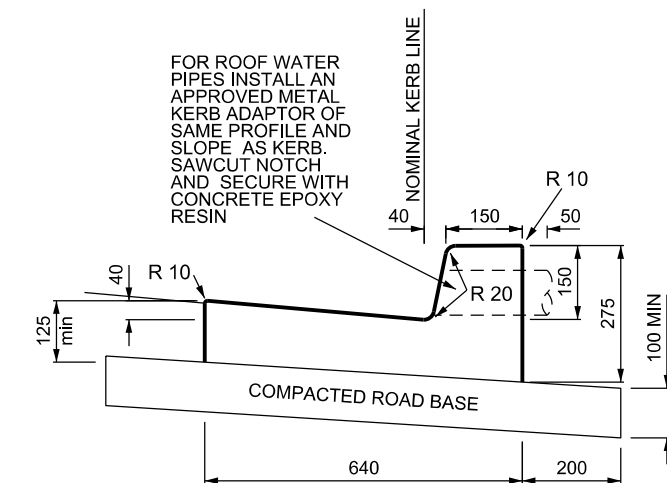
Failure to have the above inspections carried out may result in the rejection of the crossing.



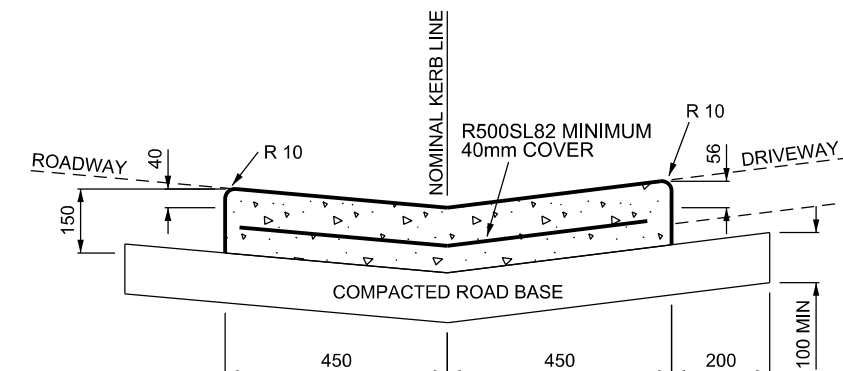
SECTION A-A - ROLL OVER KERB AND GUTTER

NOTE: WHERE A NEW VEHICULAR CROSSING IS TO BE CONSTRUCTED WITHIN AN EXISTING KERB AND GUTTER, THE TOTAL LENGTH OF KERB AND GUTTER MUST BE REMOVED (REFER STD 5235)

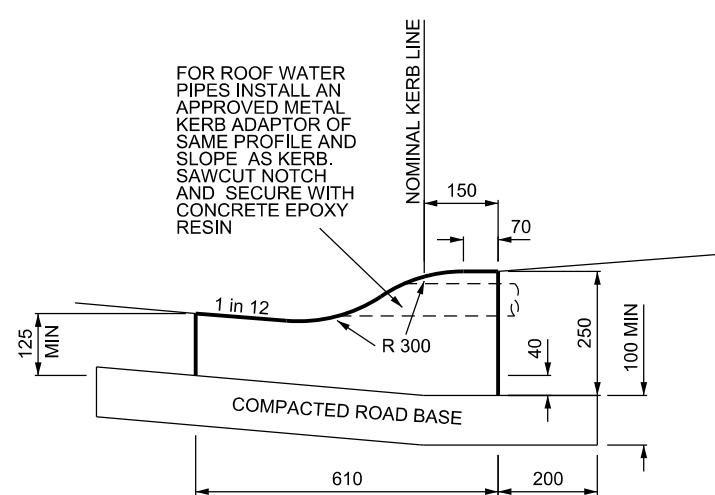
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	DESIGN _____ DATE _____	DESIGN FILES		STATUS: STANDARD DRAWING PRINT DATE: 20/06/2014																							
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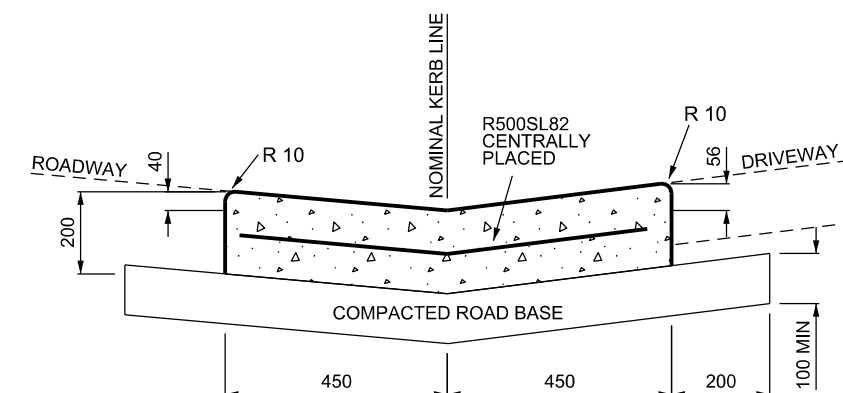
STANDARD KERB & GUTTER SECTION DETAIL



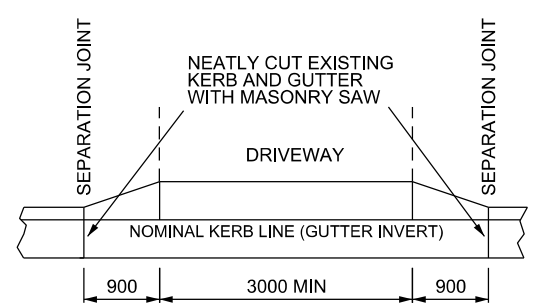
RESIDENTIAL VEHICULAR CROSSING SECTION DETAIL



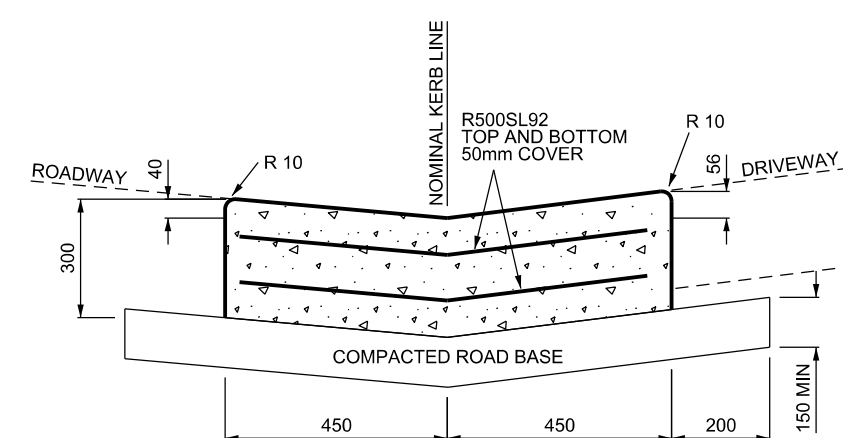
ROLL OVER KERB AND GUTTER SECTION DETAIL



COMMERCIAL VEHICULAR CROSSING SECTION DETAIL



RESIDENTIAL VEHICULAR CROSSING WITH STANDARD KERB AND GUTTER


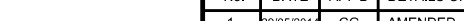




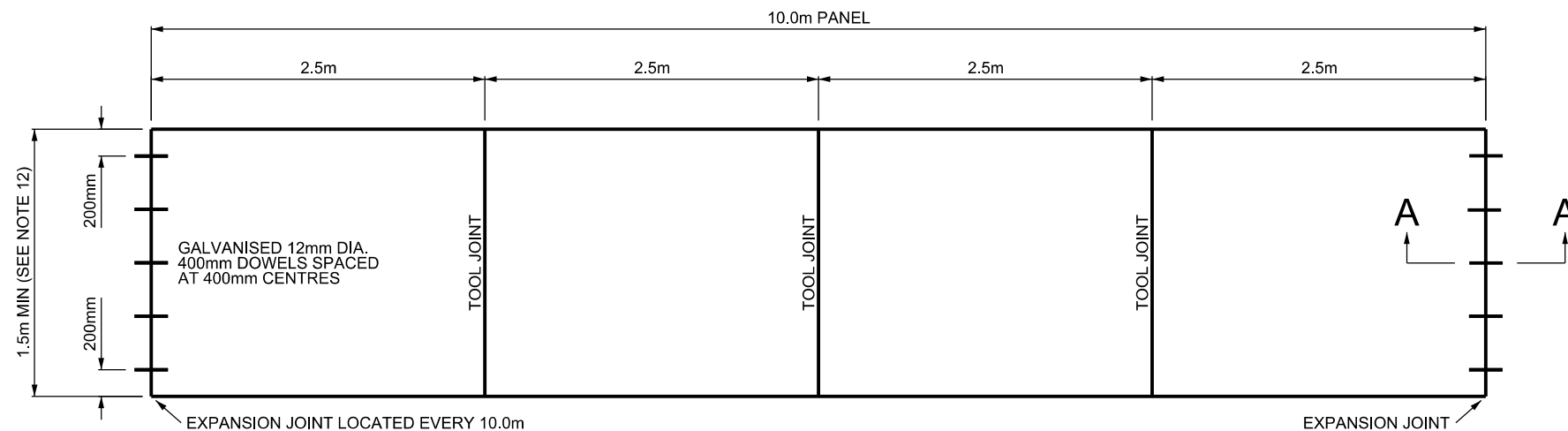
INDUSTRIAL VEHICULAR CROSSING SECTION DETAIL

NOTES

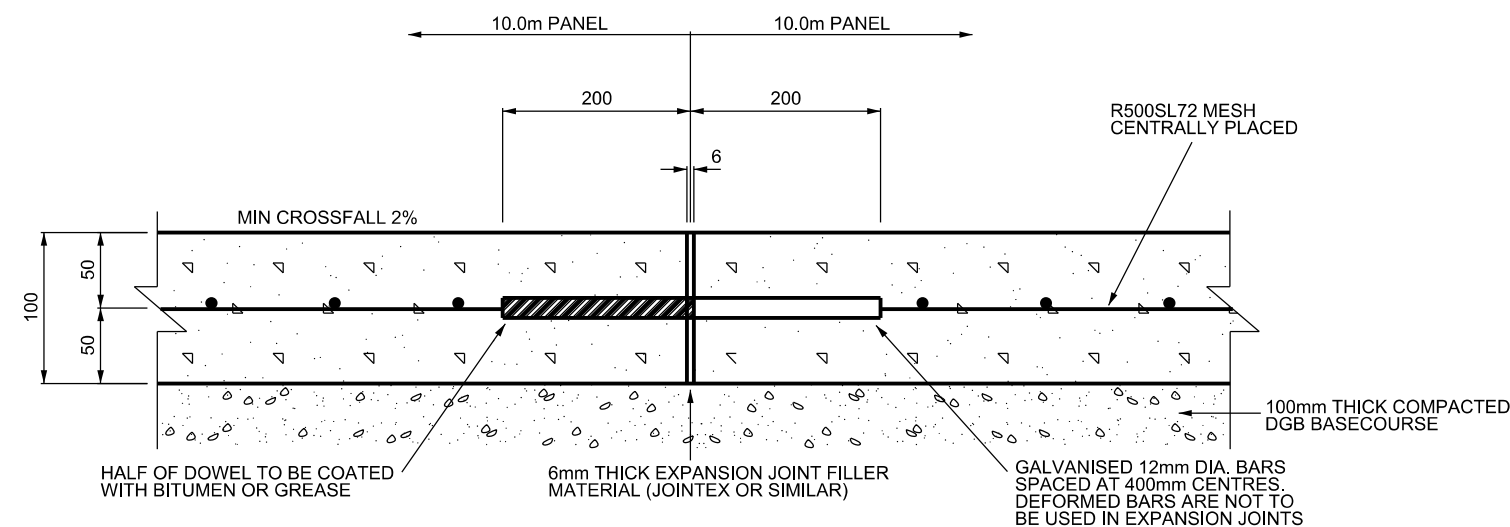
1. Construction of vehicular crossings is to be carried out strictly in accordance with Dubbo City Council's Road Opening Policy and relevant Aus-Spec documentation. These documents are available from Council's Customer Service area.
2. Contractors/Owners/Developers are responsible for the locating of all underground services and the arranging and completion of repairs with the appropriate authority should they be broken or damaged during construction.
3. The vehicular crossing is to be constructed to the dimensions and specifications shown on this drawing. The compressive strength of the concrete is to be 25 MPa at 28 days. All exposed edges are to be 10mm radius. Additionally, all poor subgrade material shall be removed and replaced with suitable fill material. All subgrades are to be well compacted before placement of the base material. Formwork must extend from finished concrete height to the base material for the total area of the vehicular crossing.
4. It is the responsibility of the Contractor/Owner/Developer to ensure that the crossfall results in a suitable change of grade such that vehicles will not bottom out. In areas of doubt, the applicant will be required to provide Council with a longitudinal section through the proposed driveway with an appropriate car profile to verify such works. Alternatively, Council can carry out such works at the full cost to the applicant. The section depicting a suitable arrangement for high crossfall road shoulders will be assessed on an individual basis and will only be allowed with specific approval from Dubbo City Council.
5. A full separation joint is to be provided at the back of the new vehicular crossing and the driveway slab using bituminous jointing (Jointex) or similar.
6. The vehicular crossing and the driveway slab are to be poured separately. Pouring the two (i.e. the vehicular crossing and the driveway slab) as one project will lead to the rejection by Council.
7. The finished surface should be kept from drying out too rapidly by covering with wet sand or plastic sheeting.
8. An approved Traffic and Pedestrian Control Plan completed by an appropriately qualified person in accordance with AS 1742.3-2009 is to be in place prior to any construction works commencing and during any construction works.
9. Prior to construction of any driveway crossover, Section 138 Roads Act - Approval for Works in the Public Road to be lodged and approved by Council.
10. The potential for sediment to enter Council's underground stormwater system is to be addressed. Appropriate measures are to be put in place to prevent this from happening.
11. The Contractor/Owner/Developer is responsible for the removal of all formwork and rubbish associated with the construction from the site and the reinstatement of the surface adjacent to the works upon completion.
12. Where a redundant vehicular crossing is to be removed and replaced with kerbing and guttering, the total length of the existing vehicular crossing is to be completely removed. The section is to be replaced with kerb and gutter that is constructed in accordance with this standard drawing.
13. The area in front of the replacement kerb and gutter or vehicular crossing shall be neatly saw cut and the material removed and replaced with AC10 (Asphaltic Concrete). Minimum dimensiona of the restoration work are to be 600mm wide and 50mm deep. All material is to be placed on a thoroughly compacted DGB base material.
14. The following inspections are to be carried out prior to and during construction. In this regard, 24 hours notice is to be given by phoning 6801 4000. The inspections required are as follows:
 - (a) Site inspection prior to commencement of work.
 - (b) When the formwork and compacted base are in place and prior to the mesh being placed.
 - (c) When the mesh has been placed.
 - (d) Prior to the bitumen sealing or asphalt works.
 - (e) At the completion of all works including restoration of site.

Failure to have the above inspections carried out may result in the rejection of the crossing.

<div>APPROVED</div> <div></div> <div>MANAGER TECHNICAL SUPPORT</div>	SURVEY _____ DATE _____	FIELD BOOK/SURVEY FILES	<div>NOT TO SCALE</div> <div></div>	PERMANENT MARK: N/A RL: N/A DATUM: AHD & MGA	<div>DUBBO CITY COUNCIL</div> <div>TECHNICAL SERVICES DIVISION</div> <div></div>	<div>DRAWING TITLE</div> <div>KERB & VEHICULAR CROSSING PROFILES</div>	<div>JOB</div> <div>STANDARD DRAWING</div>	SHEET No. 1																				
	DESIGN _____ DATE _____	DESIGN FILES		STATUS: STANDARD DRAWING PRINT DATE: 20/06/2014				OF 1 SHEETS																				
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PLAN



SECTION A-A - EXPANSION JOINT AND MESH DETAIL

NOTES

1. Construction of concrete cycleways and footpaths is to be carried out strictly in accordance with Dubbo City Council's Road Opening Policy and relevant Aus-Spec documentation. These documents are available from Council's Customer Service area.

2. Contractors/Owners/Developers are responsible for the locating of all underground services and the arranging and completion of repairs with the appropriate authority should they be broken or damaged during construction.

3. The concrete cycleway or footpath is to be constructed to the dimensions and specifications as shown on this drawing. The thickness shall be as follows:

For all concrete footpaths, the concrete shall be 100mm minimum with one layer of R500SL72 mesh centrally placed. The finish is to be a coarse broom finish applied laterally to the direction of travel.

The following exceptions will apply:

In industrial or commercial areas, the minimum thickness will remain 100mm except where there is a driveway to a property. In this case, the footpath will require thickening to 150mm in commercial areas and 200mm in industrial areas. Construction of this section of footpath is to be in accordance with Dubbo City Council's Standard Drawings 5211 and 5235.

The compressive strength of the concrete is to be 25MPa at 28 days. All exposed edges are to have a radius of 10mm. Additionally, all poor subgrade material shall be removed and replaced with suitable fill material. All subgrades are to be well compacted before the placement of the base material. Formwork must extend from finished concrete height to the base material for the total area of the footpath or cycleway.

4. Final line and level for all paths shall be determined by Dubbo City Council. The maximum crossfall for all paths is to be no greater than 2%.

5. Concrete footpaths that cross existing driveways are to be transitioned over a minimum of 5.0m on both sides of the existing driveway if any transition is required.

6. The following inspections are to be carried out prior to and during construction. In this regard, 24 hours notice is to be given by phoning (02) 6801 4000. The inspections required are as follows:

- Site inspection prior to the commencement of works.
- When the formwork and mesh are in place.
- After the completion of all works including restoration of the site.

Failure to have the above inspections carried out may result in the rejection of the footpath/cycleway. Footpaths are to be completed to the satisfaction of Council. Any decision made by Council will be final.

7. The finished surface is to be kept from drying out too quickly by covering with wet sand or plastic sheeting.

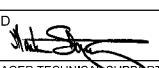


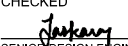
8. An approved Traffic and Pedestrian Control Plan completed by an appropriately qualified person in accordance with AS 1742.3-2009 is to be in place prior to any construction works commencing and during any construction works.

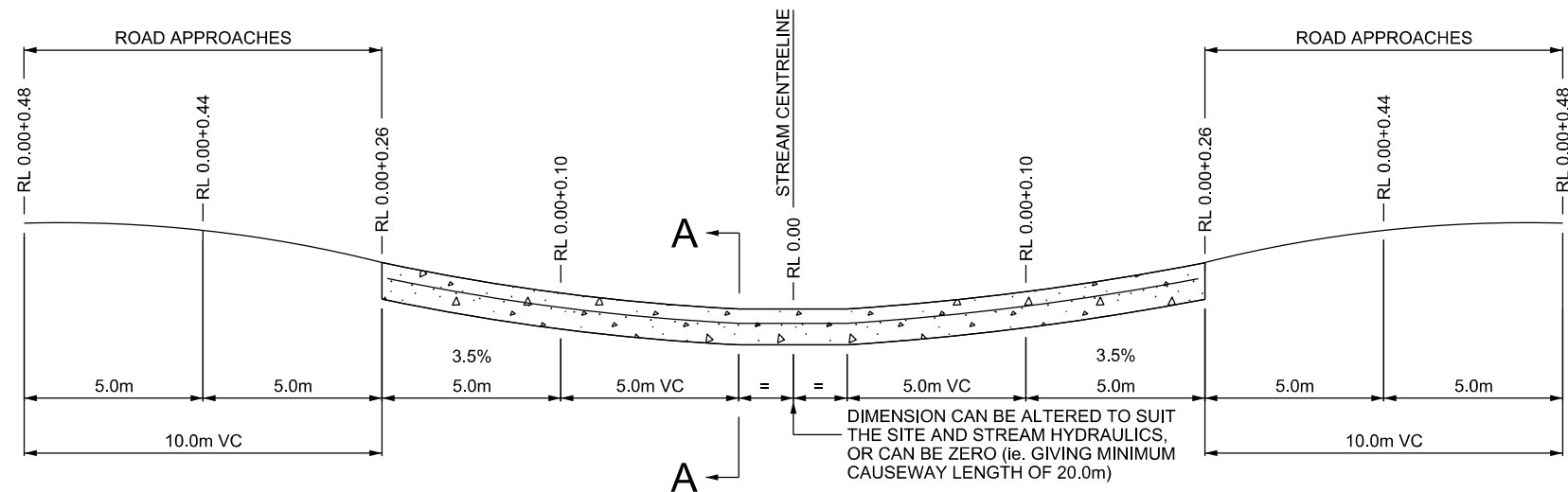
9. The potential for erosion and the transportation of sediment is to be addressed. Appropriate measures are to be in place to prevent this from happening.

10. The Contractor/Owner/Developer is responsible for the removal of all formwork and rubbish from the site and the restoration of any disturbed land adjacent to the works.

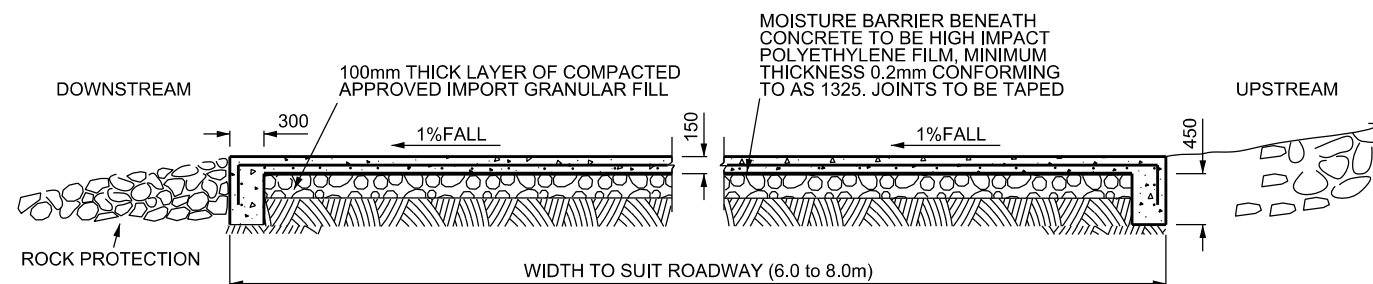
11. Longitudinally, the footpath is to blend into existing driveways at a grade no greater than 4%.

12. For shared footpaths, the minimum width is to be 2.5m.

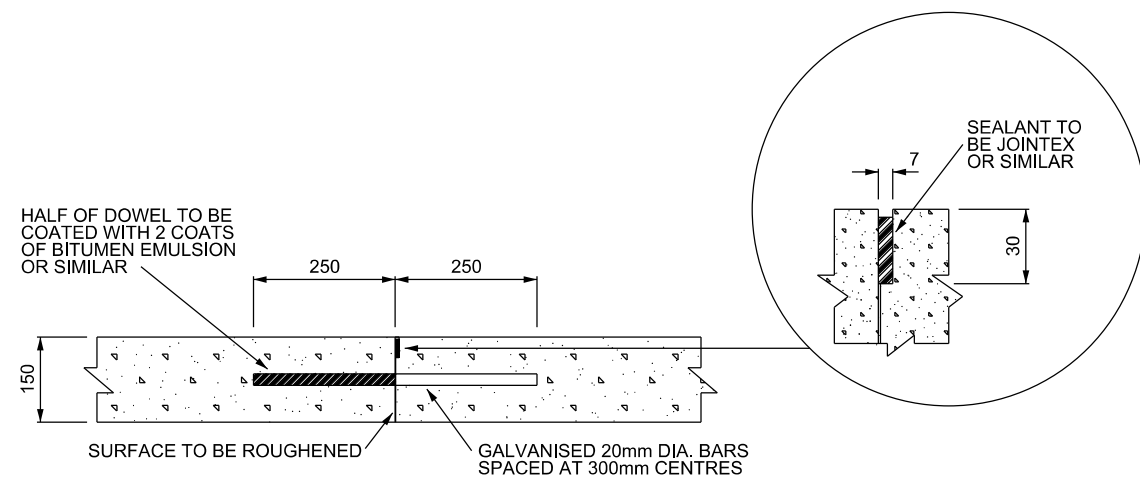
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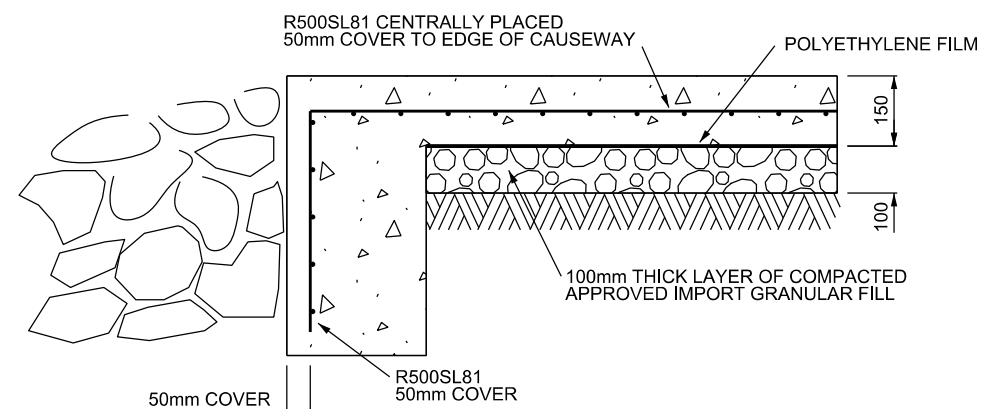
**CONCRETE CAUSEWAY
LONG SECTION**



SECTION A-A - TYPICAL CROSS SECTION



TRANSVERSE CONSTRUCTION JOINT



CURTAIN WALL DETAIL

NOTES

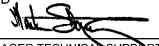
1. This causeway design standard is based on a design speed of 80km/h and is intended for use on local rural roads with Average Annual Daily Traffic (AADT) less than 200. Where the design speed or AADT is exceeded this standard is to be treated as a guide only, and a full design to current Austroads standards is to be carried out.
2. R.L. 0.00 is adopted relative to the site under investigation and will be determined by Council's supervising engineer.
3. The minimum causeway transverse crossfall is to be 1%.
4. Hydraulic analysis should be undertaken to ensure the velocity and/or depth at the causeway are not hazardous. The following guidelines may be used:
 - (a) The peak depth should not exceed 0.3m
 - (b) The peak velocity should not exceed 3.0m/s
 - (c) The peak velocity-depth product should not exceed 0.3m²/s
5. Two options are permitted for the construction of the causeway slab and curtain wall:

Reinforced concrete:

- (a) The slab dimensions are to be as shown on the Typical Cross Section detail.
- (b) The minimum compressive strength of the concrete is to be 25 MPa at 28 days.
- (c) The reinforcement will be R500SL81 mesh placed centrally. For splices in the mesh the minimum overlap (both transverse and longitudinally) will be 400mm.
- (d) Dowelled joints are to be provided at maximum spacing of 25m in accordance with the Transverse Construction Joint detail.
- (e) High impact polyethylene film moisture barrier is to be provided under the slab.

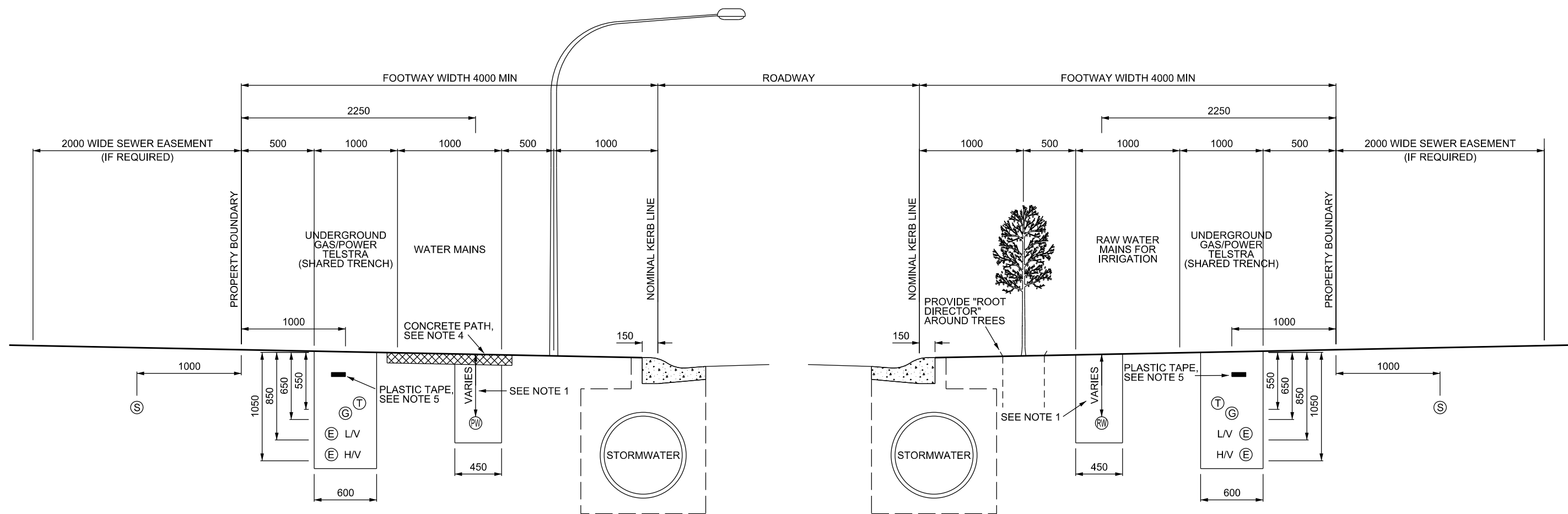
Fibrecrete:

- (a) The slab dimensions are to be as shown on the Typical Cross Section detail.
- (b) The fibrecrete is to contain 186EE fibres and have a fibre content of 75kg per cubic metre (Type F6/75). Compressive strength is to be 40MPa at 28 days and flexural strength is to be 6MPa at 90 days.
- (c) Dowelled joints are to be provided at 10m spacing in accordance with Transverse Construction Joint detail.
- (d) The steel reinforcement is not required.
- (e) The high impact polyethylene film moisture barrier is not required.

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NOTES

1. Cover over water mains shall be 600mm minimum in all areas subject to vehicular loading and 50mm minimum otherwise.
2. Footpath trees must not be planted within 6m of street lights.
3. For water, sewer and stormwater trench details refer to STD 5518.
4. If required, concrete footpath is to be 1200mm wide and located centrally. For footpath detail refer to STD 5251.
5. Two layers of plastic identification tape for electricity/gas/telstra to be installed 200mm below the finished surface level.



LEGEND

- (E) - ELECTRICITY CABLES
- (G) - GAS MAINS
- (PW) - POTABLE WATER
- (RW) - RAW WATER
- (S) - SEWER LINE
- (T) - TELSTRA CABLES

SURVEY _____ DATE _____
DESIGN _____ DATE _____
DRAWING AR, CG DATE 29/05/2014
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MANAGER TECHNICAL SUPPORT

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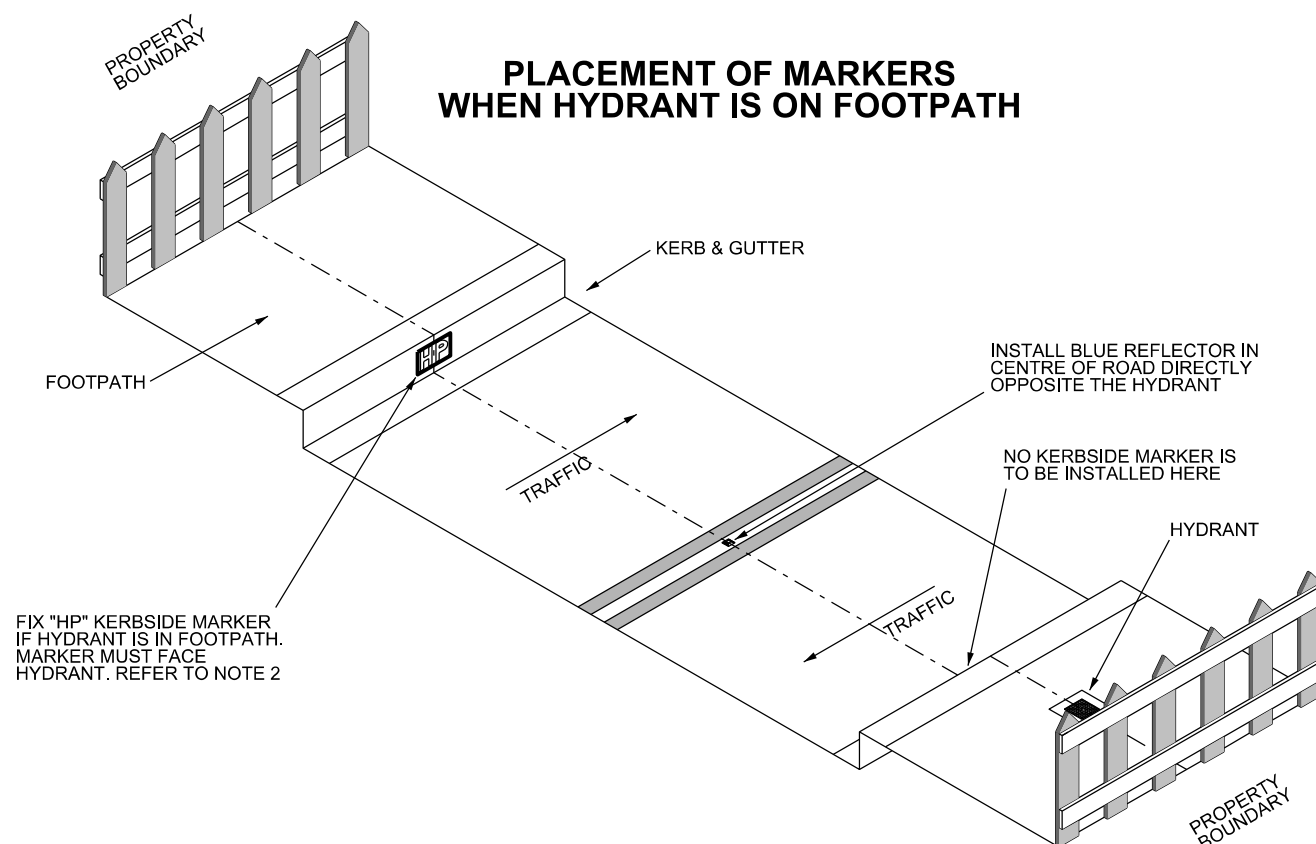
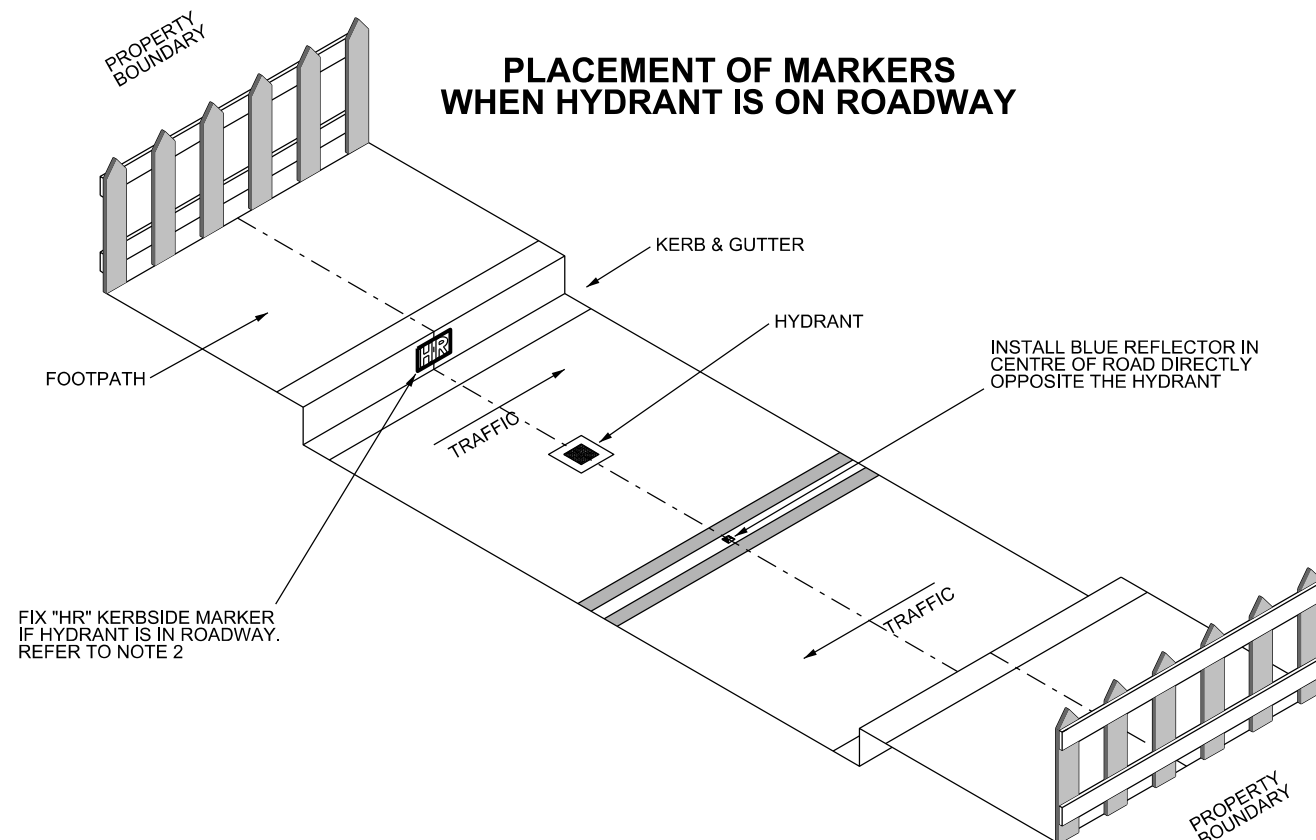
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DUBBO
CITY COUNCIL
TECHNICAL SERVICES DIVISION

DRAWING TITLE
RESIDENTIAL
SUBDIVISION
SERVICE
ALLOCATION IN
FOOTWAY

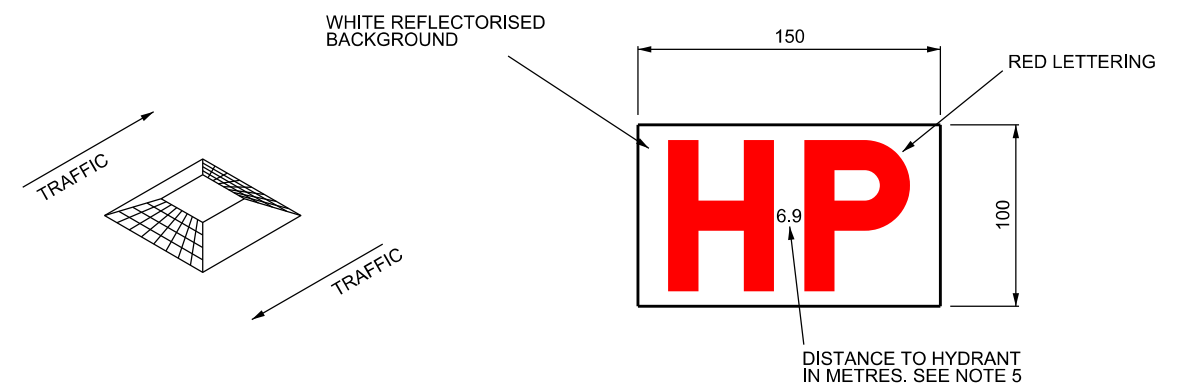
JOB
STANDARD DRAWING

SHEET No. 1
OF 1 SHEETS
PLAN NO.
STD 5268



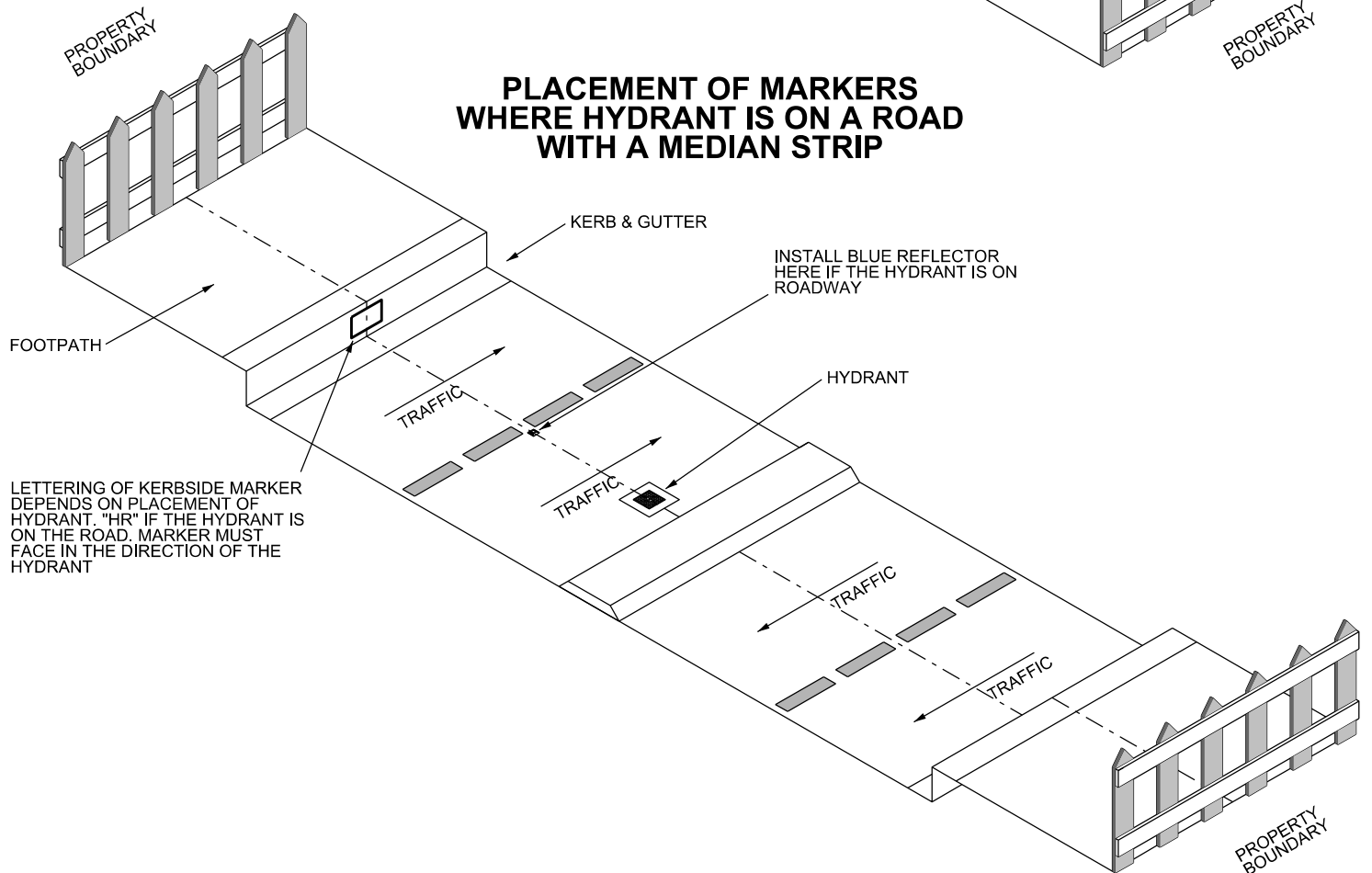
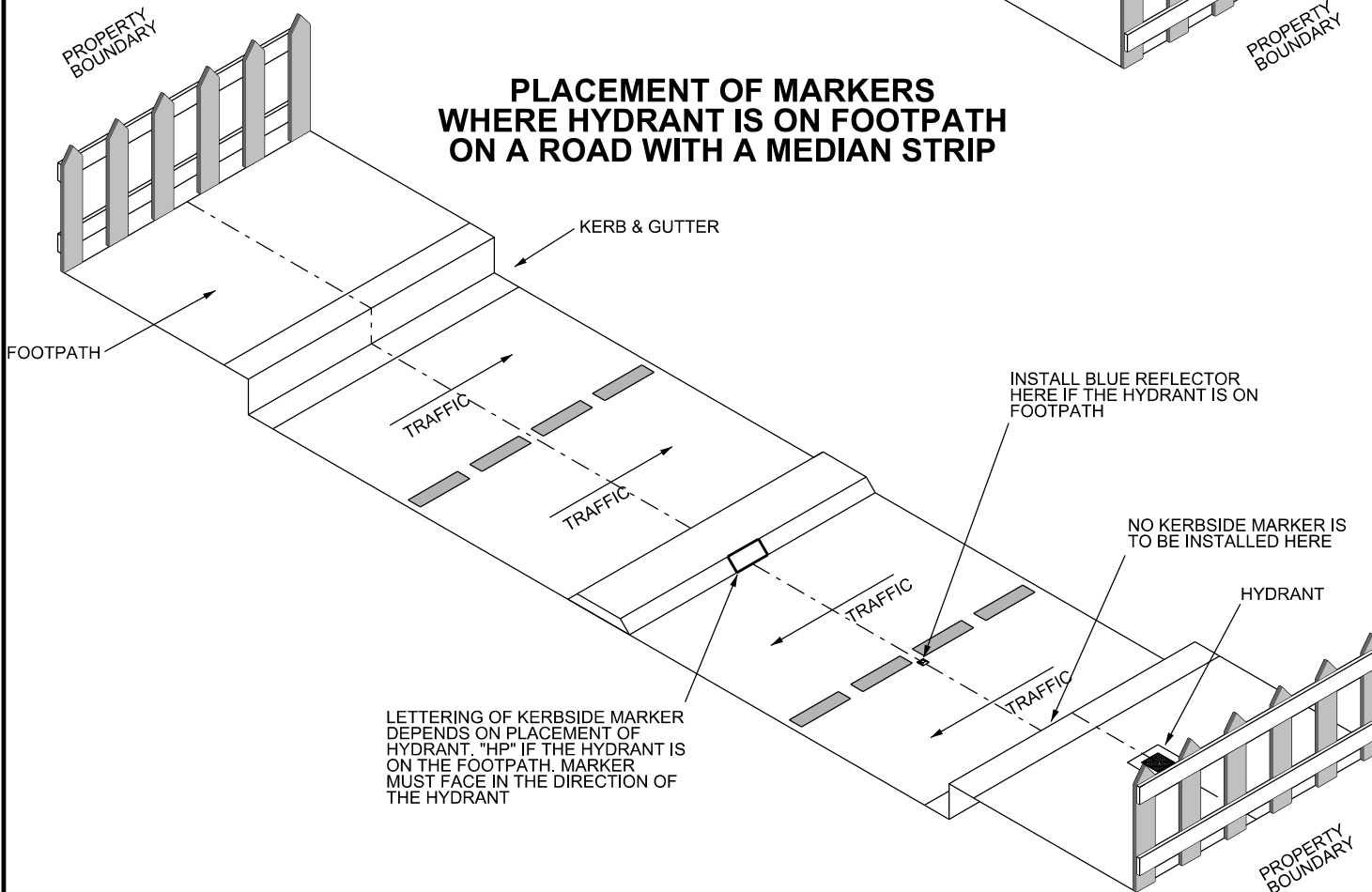
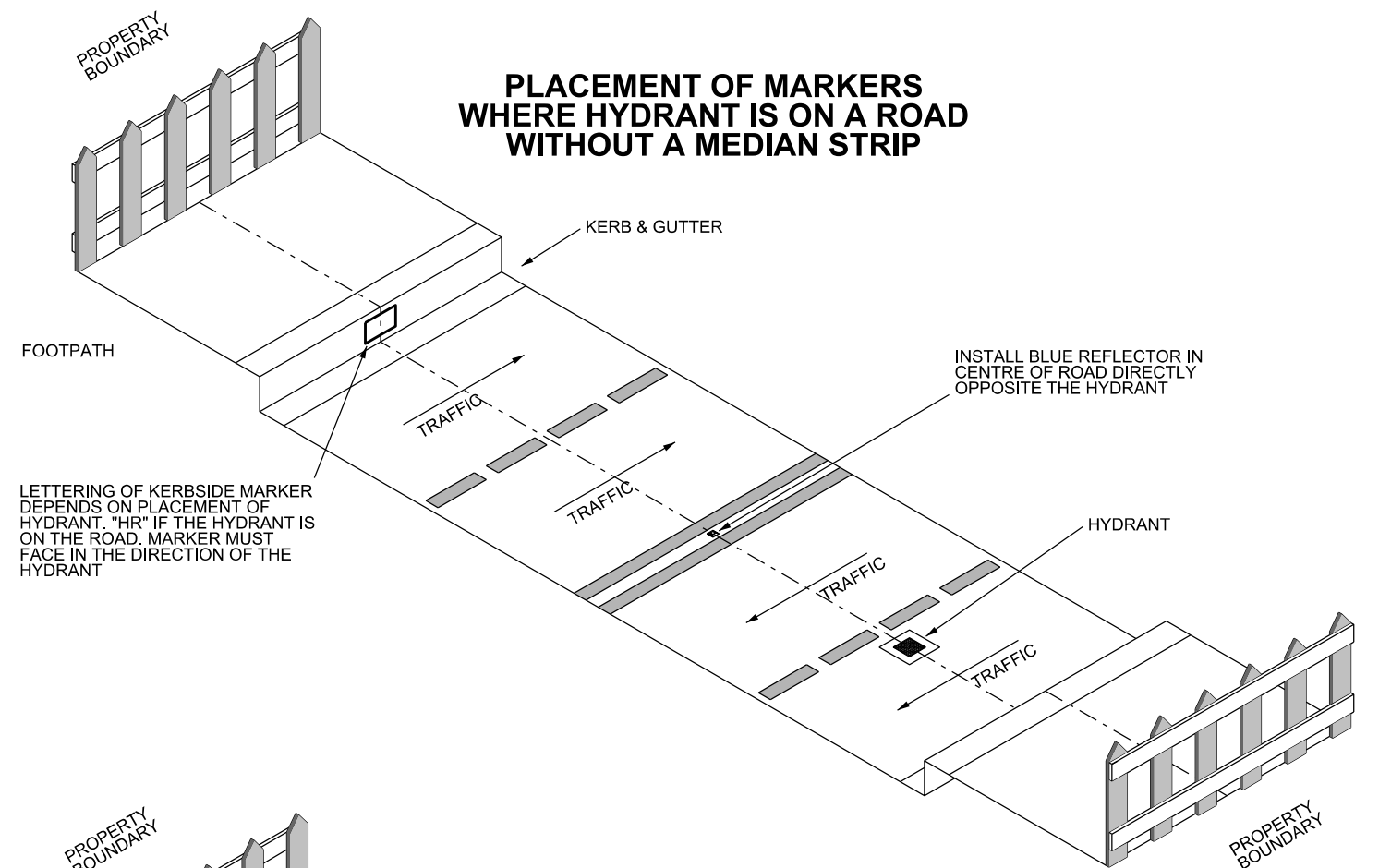
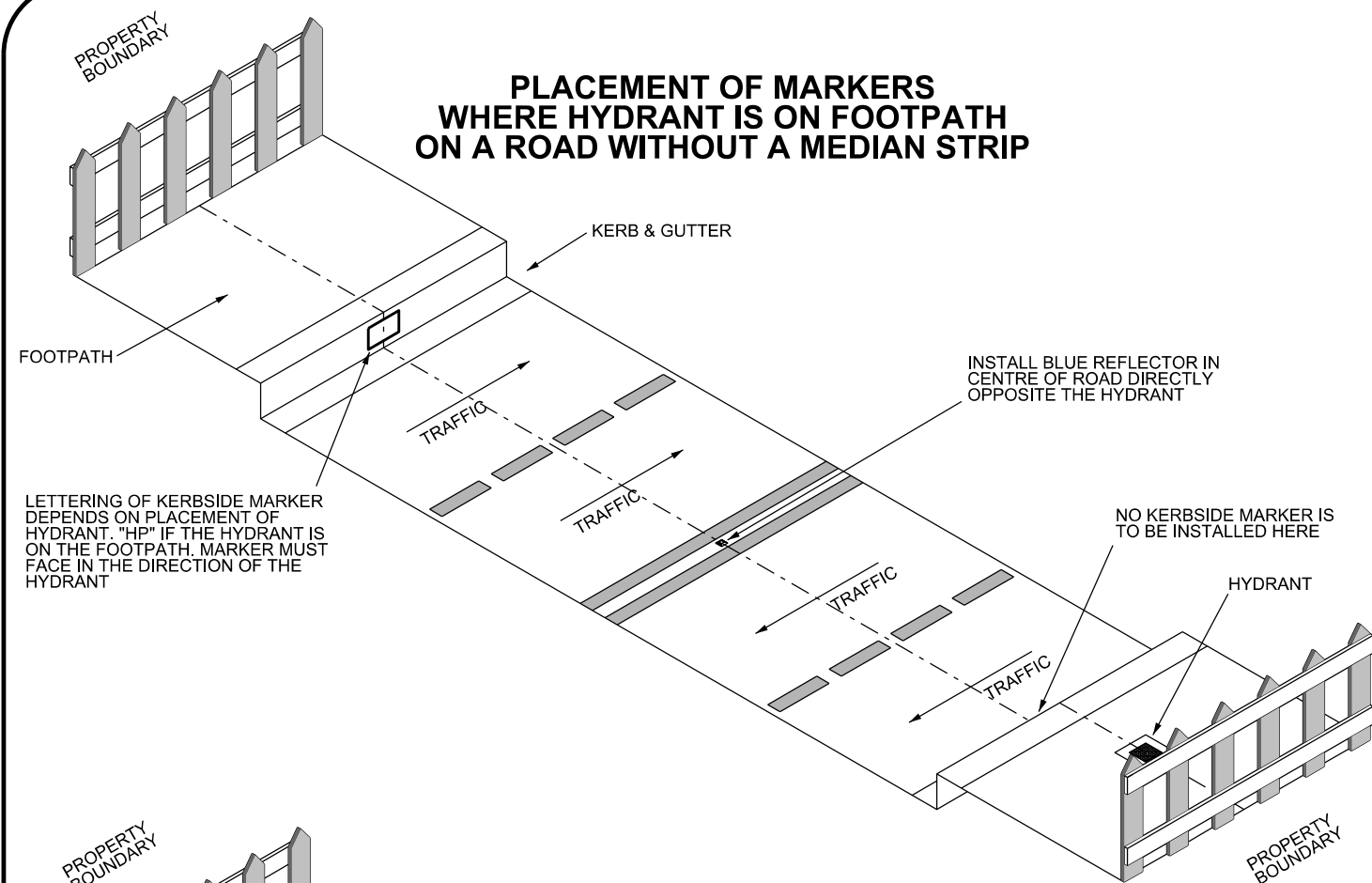
NOTES

1. Hydrant RRPM (reflective raised pavement marker) shall be blue and have two reflective faces opposing traffic. RRPMS are to be manufactured in accordance with AS 1906-2007. Utilise Ray-O-Lite "Catseyes" or similar product.
2. Kerbside marker signs are to be aluminium with a thickness of 2mm. Dimensions are to be 100x150mm with a reflective white background and red upper case lettering fixed to the kerb with an exterior adhesive such as Sikaflex or a similar product applied in accordance with the manufacturer's recommendations. Signs are to have lettering "HR" if the hydrant is on the road or "HP" if the hydrant is on the footpath.
3. Hydrant RRPM is to be fixed to roadway with an exterior adhesive such as Sikaflex or a similar product applied in accordance with the manufacturer's recommendations.
4. "HP" or "HR" signs must face the direction of the hydrant.
5. Distance from kerbside marker sign to hydrant must be marked on the centre of the kerbside marker as shown in the kerbside marker example below. Distances must be expressed to one decimal place, i.e. (x.x) and measured in metres. Distance to be measured from the face of the marker plate to the centre of the hydrant lid. Numbers are to be stamped onto sign plate with a number punch and must not be written in any kind of ink or paint which could potentially fade.



ORIENTATION OF HYDRANT RRPM

APPROVED MANAGER TECHNICAL SUPPORT	SURVEY _____ DATE _____	FIELD BOOK/SURVEY FILES	SCALES NOT TO SCALE ORIGINAL SIZE A1 0 1 2 3 4 5 cm	PERMANENT MARK: N/A	RL: N/A	DATUM: AHD & MGA		DRAWING TITLE HYDRANT LOCATION MARKERS FOR URBAN ROADS	JOB STANDARD DRAWING	SHEET No. 1 OF 2 SHEETS PLAN No. STD 5320
	DESIGN _____ DATE _____	DESIGN FILES		STATUS: STANDARD DRAWING	PRINT DATE: 10/03/2015					
CHECKED SENIOR DESIGN ENGINEER	DRAWING _____ CG _____ DATE 10/03/2015	DRAWING FILES		No.	DATE	APP'D	DETAILS OF AMENDMENTS			
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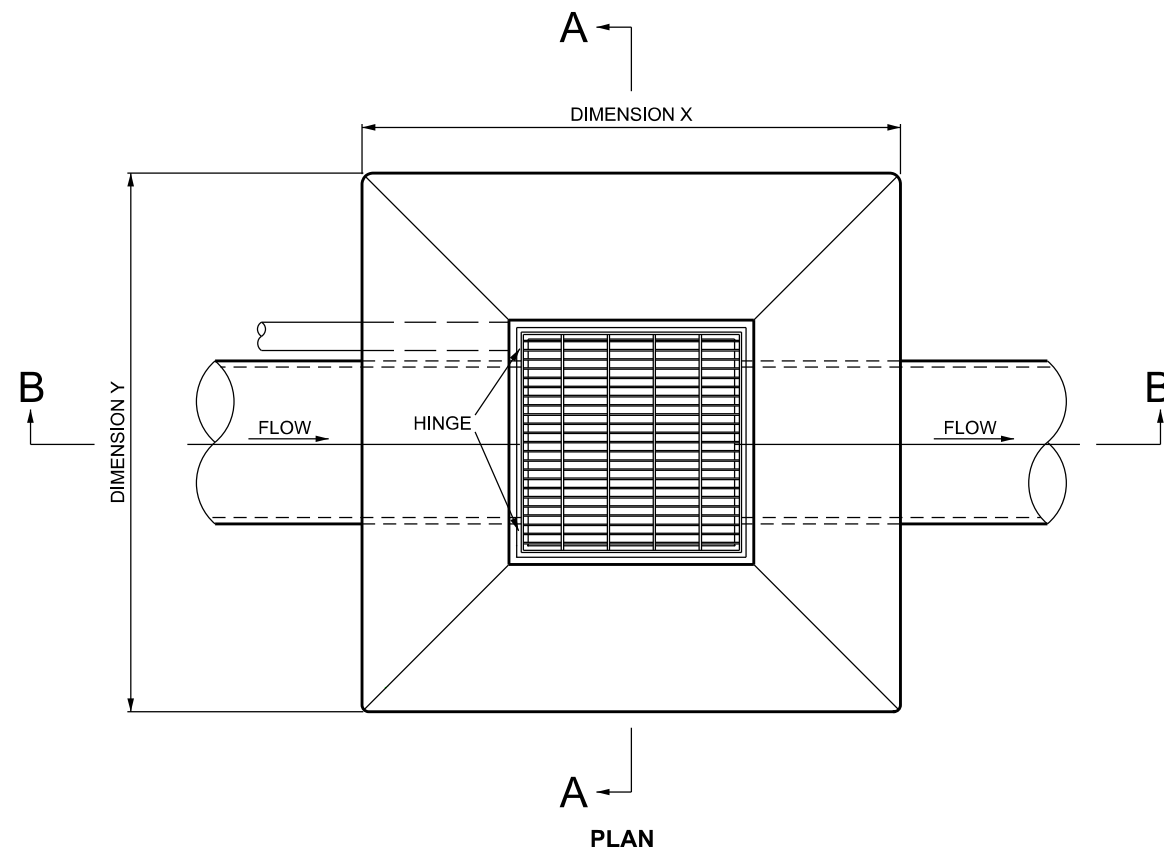


TABLE 1 - DIMENSIONS

PIT TYPE	DIMENSION (mm)				MAXIMUM PIPE DIA. (mm)
	W	X	Y	Z	
A	600	1900	1900	600	450
B	600	1900	2200	900	750
C	900	2200	2200	900	750

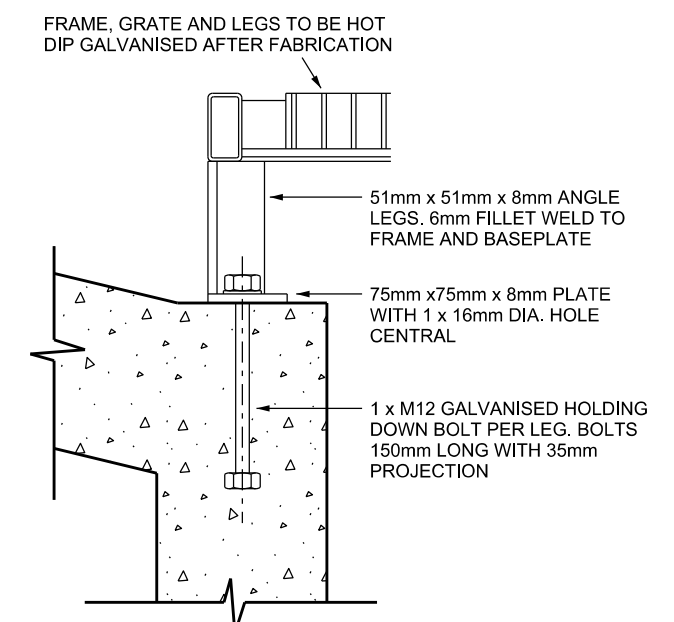
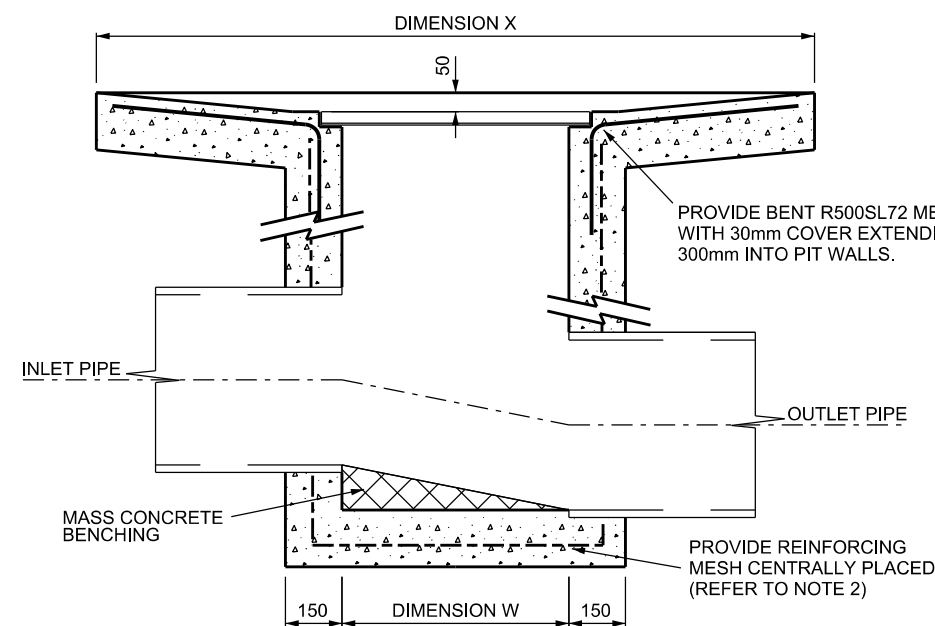
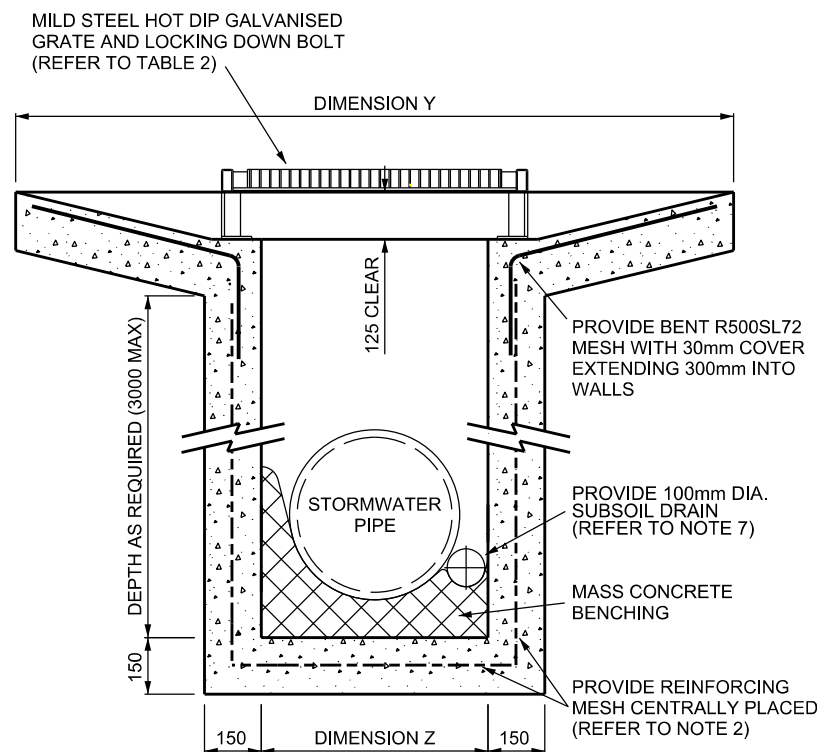
TABLE 2 - GRATE TYPES

PIT TYPE	WELDLOK GRATE TYPE*	
	INLET	SURCHARGE
A	HPG6060B	SPG66-BL
B	HPG6090B	SPG69-BL
C	HPG9090B	SPG99-BL

* FOR GRATES FITTED WITH LEGS REFER TO GRATE LEG DETAIL

NOTES

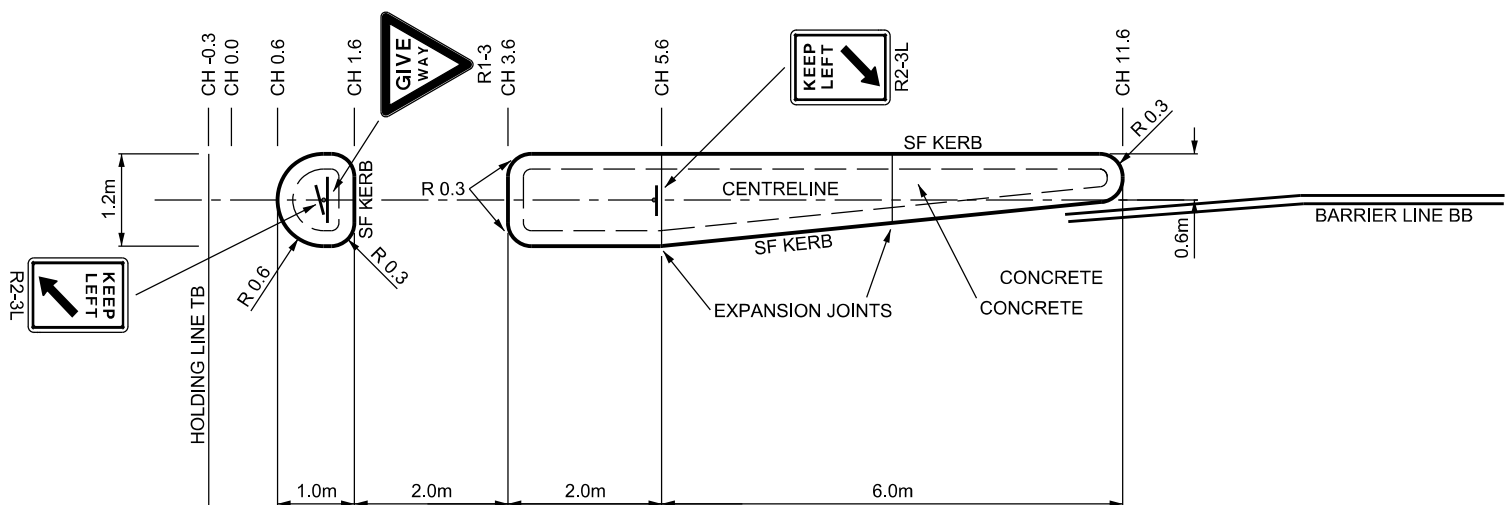
- The compressive strength of the concrete is to be 25MPa at 28 days.
- Provide the following reinforcement in walls and floor slabs:
Use D500N10 bent corner bars at 200mm centres lapped 400mm floor to wall and wall to wall.
For pits less than 1.8m deep provide R500SL82 mesh centrally placed in floor and wall slabs.
For pits between 1.8m and 3.0m provide R500SL81 mesh centrally placed in floor and wall slabs.
- Pits constructed to accommodate pipes larger than 1200mm dia. and having depths greater than 3.0m are to have a special design.
- Pits deeper than 1.0m are to have step irons at 300mm spacing.
- Hot dipped galvanised grating is to be used as specified in Table 2.
- Ensure the faces of all pipes in pit walls are smoothly grouted.
- A 100mm dia. subsoil drainage pipe 3.0m long wrapped in filter sock is to be provided adjacent to and at the invert level of the inlet pipe.
- All concrete works are to be in accordance with Aus-Spec Construction Specification No. 0319 for minor concrete works.



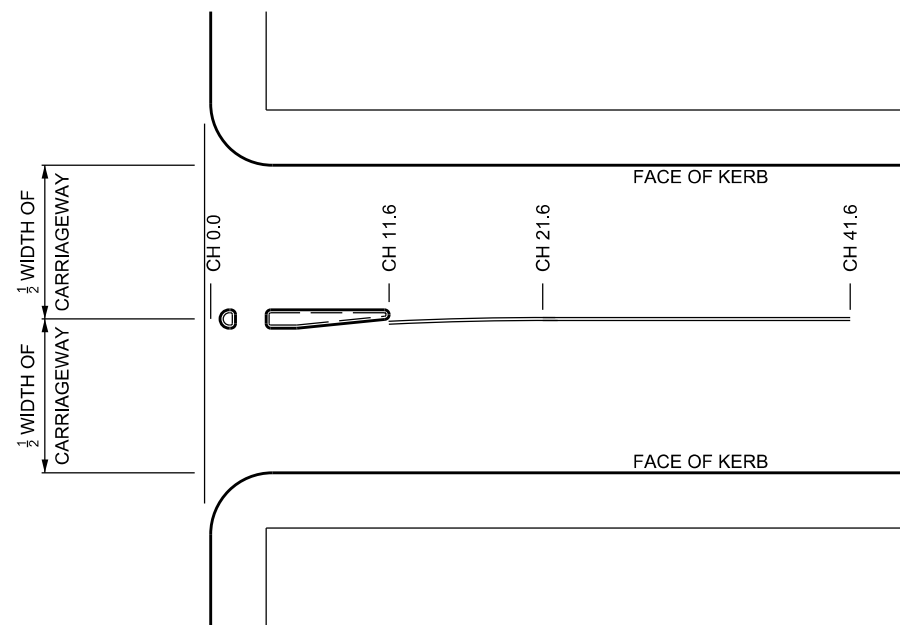
APPROVED MANAGER TECHNICAL SUPPORT	SURVEY _____ DATE _____	FIELD BOOK/SURVEY FILES	SCALES NOT TO SCALE ORIGINAL SIZE A1 0 1 2 3 4 5 cm	PERMANENT MARK: N/A	RL: N/A	DATUM: AHD & MGA	 DUBBO CITY COUNCIL TECHNICAL SERVICES DIVISION	DRAWING TITLE GRADED SURCHARGE & INLET PITS	JOB STANDARD DRAWING	SHEET No. 1 OF 1 SHEETS PLAN NO. STD 5364
	DESIGN _____ DATE _____	DESIGN FILES		STATUS: STANDARD DRAWING	PRINT DATE: 20/02/2015					
CHECKED SENIOR DESIGN ENGINEER	DRAWING AR, CG DATE 29/05/2014	DRAWING FILES U:\TS\Technical Support\Design Section\Standards and Design Guides\DCG Standard Engineering Drawings\Control\DCG Standard Drawings.dgn		No.	DATE	APP'D	DETAILS OF AMENDMENTS			
	DATE 20/02/2015			1.	29/05/2014	CG	AMENDED			
				2.	19/06/2014	CG	AMENDED			
				3.	20/02/2015	CG	AMENDED			

NOTES

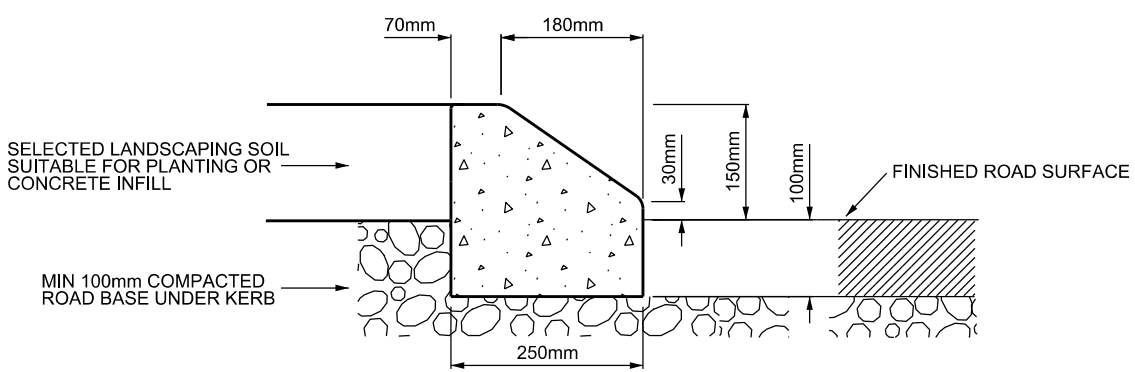
1. All work is to be carried out strictly in accordance with Dubbo City Council's Road Opening Policy and relevant Aus-Spec documentation. These documents are available from Council's Customer Service area.
2. Contractors are responsible for the locating of all underground services and the arranging and completion of repairs with the appropriate authority should they be broken or damaged during construction.
3. The median island is to be constructed to the dimensions and specifications shown on this drawing.
4. The compressive strength of the concrete is to be 25 MPa at 28 days. All exposed edges are to have a radius of 10mm. All poor quality subgrade material shall be removed and replaced with suitable fill material. All subgrades are to be well compacted before the placement of the base material.
5. The finished surface is to be kept from drying out too quickly by covering with wet sand or plastic sheeting.
6. An approved Traffic and Pedestrian Control Plan completed by an appropriately qualified person in accordance with AS 1742.3-2009 is to be in place prior to any construction works commencing and during any construction works.
7. The potential for erosion and the transportation of sediment is to be addressed. Appropriate measures are to be in place to prevent this from happening.
8. The Contractor is responsible for the removal of all formwork and rubbish from the site and the restoration of any disturbed street surface adjacent to the work site.
9. CH 0.0 is in line with face of kerb on cross street.
10. The median is to be located on the centre line of the road midway between the kerb lines or at the location specified on the approved drawings.
11. Double Barrier lines (BB) curve around the island to direct vehicles away from median.
12. Barrier line extends 30m from CH 11.6 to CH 41.6
132. Holding line (TB) located at CH -0.3m, segments 600mm long by 200mm wide with 600mm gaps between segments.
14. Keep Left sign should be angled 15° to allow cars turning right greater visibility of sign.
15. Front radius of island is to be 0.6m. All others are to be 0.3m.
16. The kerb of the median island is to be Standard Median Kerb Type SF. The kerb is to be keyed into the roadway every 2m. Key dimensions are 250x250x100mm deep.
17. Full depth expansion joints are to be provided.



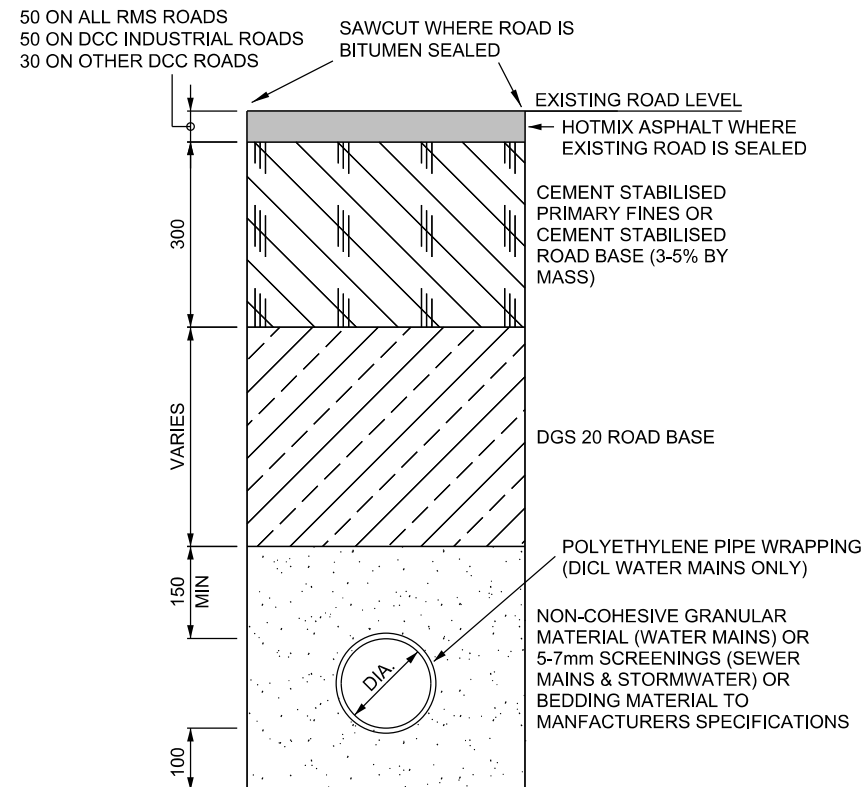
PLAN



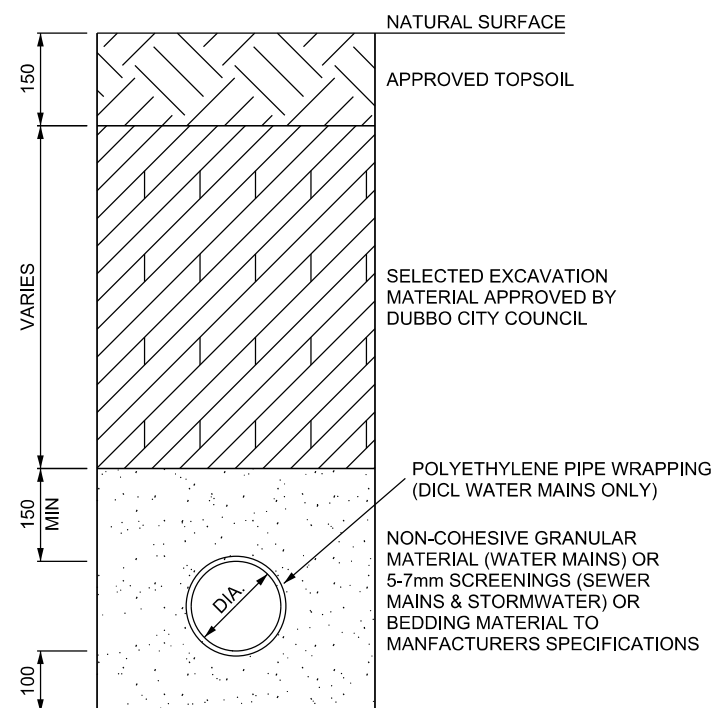
PLAN OF BB LINE



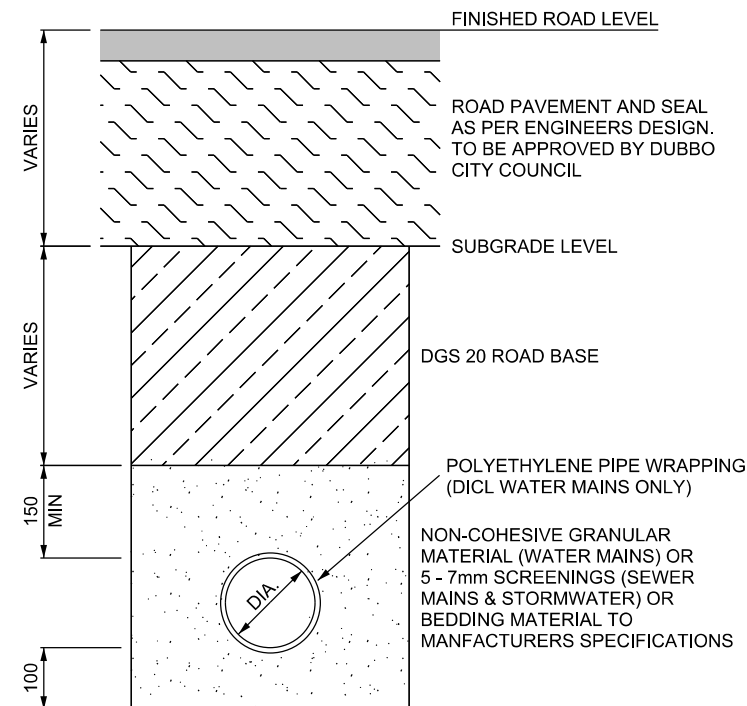
STANDARD MEDIAN KERB "SF" PROFILE



BEDDING AND BACKFILL DETAILS IN EXISTING ROADWAYS



BEDDING AND BACKFILL DETAILS NOT IN ROADWAYS



BEDDING AND BACKFILL DETAILS IN NEW ROADWAYS

TABLE 1

SIEVE APPERTURE SIZE (mm)	PERCENTAGE PASSING
9.5	100
6.7	90 - 100
0.425	40 - 90
0.150	0 - 10

For Particle Size Distribution - Sieving Method refer to AS 1141.11.1-2009

TABLE 2

IN ROADWAY	WATER	SEWER
Compaction Test Spacing (See Note 5)	100m	
Minimum Relative Standard Compaction (See Note 3)	98%	
Minimum Relative Modified Compaction (See Note 3)	95%	
NOT IN ROADWAY	WATER	SEWER
Compaction Test Spacing (See Note 5)	200m	300m
Minimum Relative Standard Compaction (See Note 4)	95%	
Minimum Relative Modified Compaction (See Note 4)	92%	

NOTES

1. NON-COHESIVE GRANULAR MATERIAL

- The bedding material is to have a low permeability and high stability when saturated.
- The particle size distribution of the material is to satisfy the limits given in TABLE 1.
- The bedding material is to be compacted to a density index of 70% determined in accordance with AS 1289.5.4.1-2007.

2. 5mm OR 7mm SCREENINGS

- Screenings are to be free of fines.
- The bedding material is to be compacted to a density index of 70% determined in accordance with AS 1289.5.4.1-2007.

3. APPROVED PRIMARY FINES OR APPROVED ROAD BASE BACKFILL

- Only select granular backfill material or DGS20 road base approved by the superintendent is to be used.
- Fill material is to be compacted in layers not exceeding 300mm to the relative modified compaction given in TABLE 2.
- The moisture content of the material is to be no more than 1% above its optimum moisture content.

4. ORDINARY EXCAVATED MATERIAL

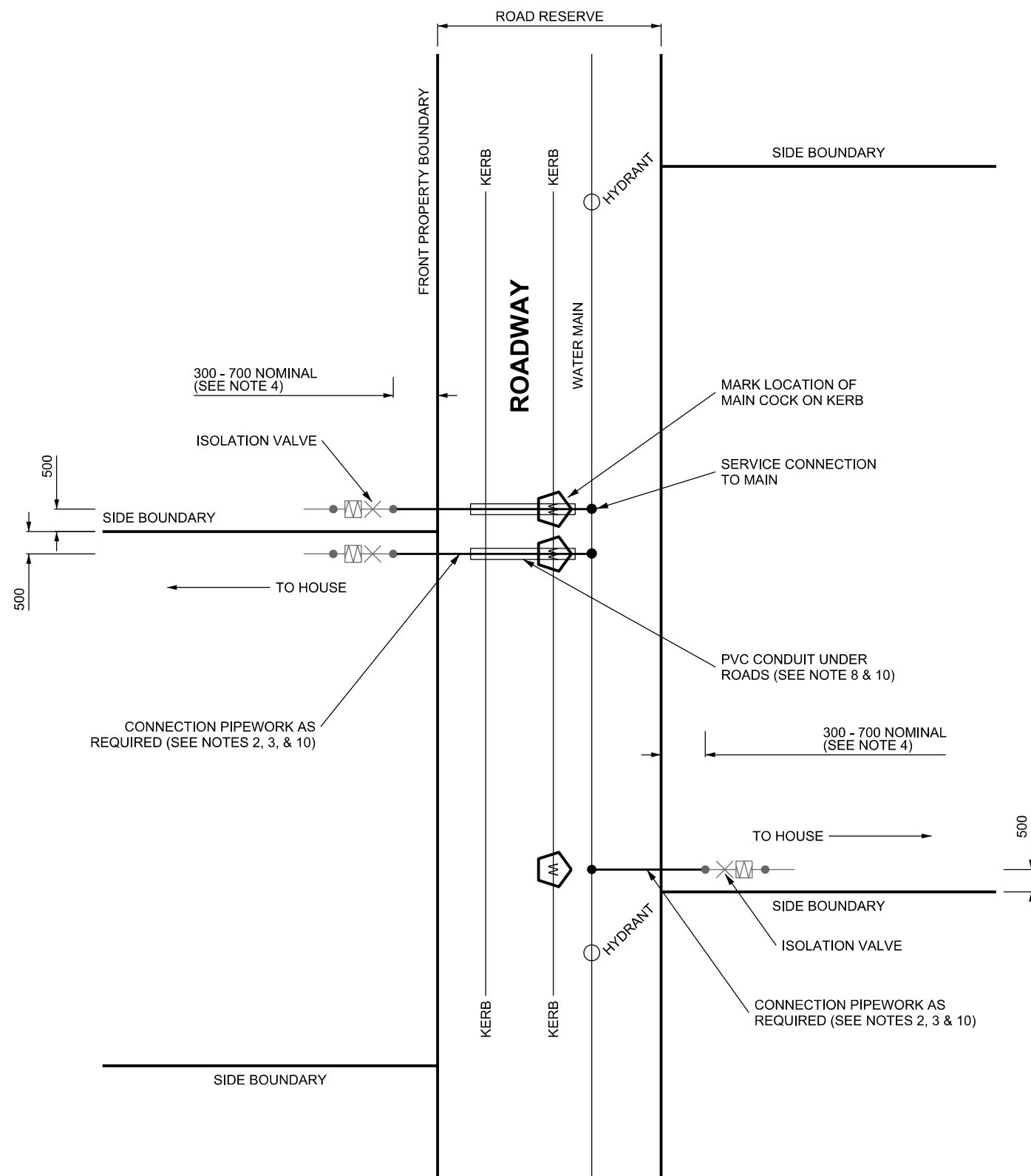
- Ordinary excavated fill material refers to material excavated from the trench that is free of vegetable matter, humus, large clay lumps and rock boulders, and has been approved by the superintendent.
- Fill material is to be compacted in layers not exceeding 300mm to the relative modified compaction given in TABLE 2.
- The moisture content of the material is to be no more than 1% above its optimum moisture content.

5. COMPACTION TESTS

- Compaction tests shall be undertaken by a NATA registered laboratory in accordance with TABLE 2.
- Test certificates shall be issued and indicate the field optimum moisture content, standard maximum dry density, type of material, method of compaction and the relative compaction for each test location.
- The compaction test is deemed to have failed if the relative compaction at any location is less than that specified in TABLE 2.
- If the test fails the trench is to be recompacted on both sides of the failed test site to a point midway between the failed test site and the adjacent test sites, as nominated by the superintendent, and retested. The location of the compaction re-test sites is to be determined by the superintendent.

6. For detailed trench dimensions and bedding refer to relevant Auspec (DCC) Section 221 specification.

APPROVED MANAGER TECHNICAL SUPPORT	SURVEY _____ DATE _____	FIELD BOOK/SURVEY FILES	SCALES NOT TO SCALE ORIGINAL SIZE A1 0 1 2 3 4 5 cm	PERMANENT MARK: N/A	RL: N/A	DATUM: AHD & MGA	DUBBO CITY COUNCIL TECHNICAL SERVICES DIVISION	DRAWING TITLE UTILITY TRENCH DETAILS	JOB STANDARD DRAWING	SHEET No. 1 OF 1 SHEETS PLAN NO. STD 5518
	DESIGN _____ DATE _____	DESIGN FILES		STATUS: STANDARD DRAWING	PRINT DATE: 20/06/2014					
DRAWING _____ AR, CG _____ DATE 29/05/2014	CHECKED _____ DATE 19/06/2014	DRAWING FILES		No.	DATE	APPD	DETAILS OF AMENDMENTS			
		U/S/Technical Support/Design Section/Standards and Design Guides/DCC Standard Engineering Drawings/Control/DCC Standard Drawings.dgn		1.	29/05/2014	CG	AMENDED			
				2.	19/06/2014	CG	AMENDED			
				-	-	-	-			
				-	-	-	-			



WATER SERVICE CONNECTION
(SEE SHEET 2 FOR DETAILS)

NOTES

1. All dimensions in millimeters.
2. Connection pipework from the main to meter assembly to be either:
 - (a) Copper pipe type A to AS 1432-2004. Copper alloy fittings to AS 1167.1-2005. All copper fittings to be silver soldered.
 - (b) Polyethylene pipe (minimum class 12.5) to AS 4130-2009 and fittings to AS 4129-2008.
3. Where possible, lay service connections at right angles (perpendicular) to water main. Where not possible, lay marking tape on top of connection pipework.
4. Locate meter and isolation valve riser relative to the side and front boundaries as shown.
5. Orientate meter and isolation valve at right angles (perpendicular) to front property boundary.
6. Pipework to be located in road reserve is accordance with these drawings. Any variation to this standard must be approved by Dubbo City Council prior to construction.
7. Meter to be installed at a maximum of 300mm above the finished ground surface level.
8. 40mm PVC conduit under roads. PVC conduit to be solvent welded.
9. For service connections of size greater than 20mm, contact Dubbo City Council.
10. See plan STD 5518 for standard trench and reinstatement detail.
11. Where applicable, permanently mark concrete kerbing square to the location of the Main Cock, by means of a "W" stenciled into wet concrete, fixing a "W" sign or other approved method.

LEGEND

METER, INCORPORATING
BACKFLOW PREVENTION
DEVICE



ISOLATION VALVE



PROPERTY BOUNDARIES



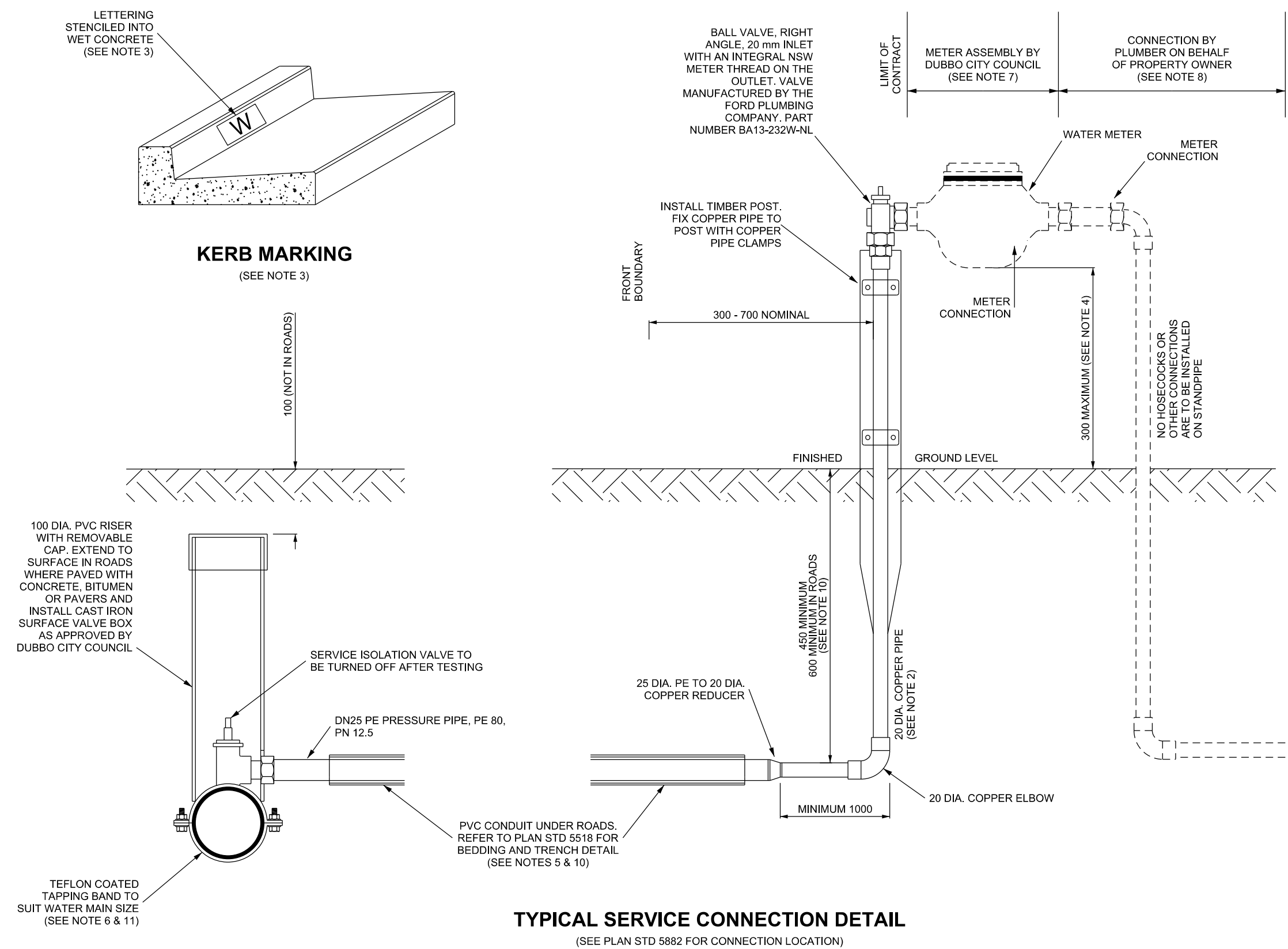
KERB MARKING

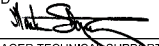



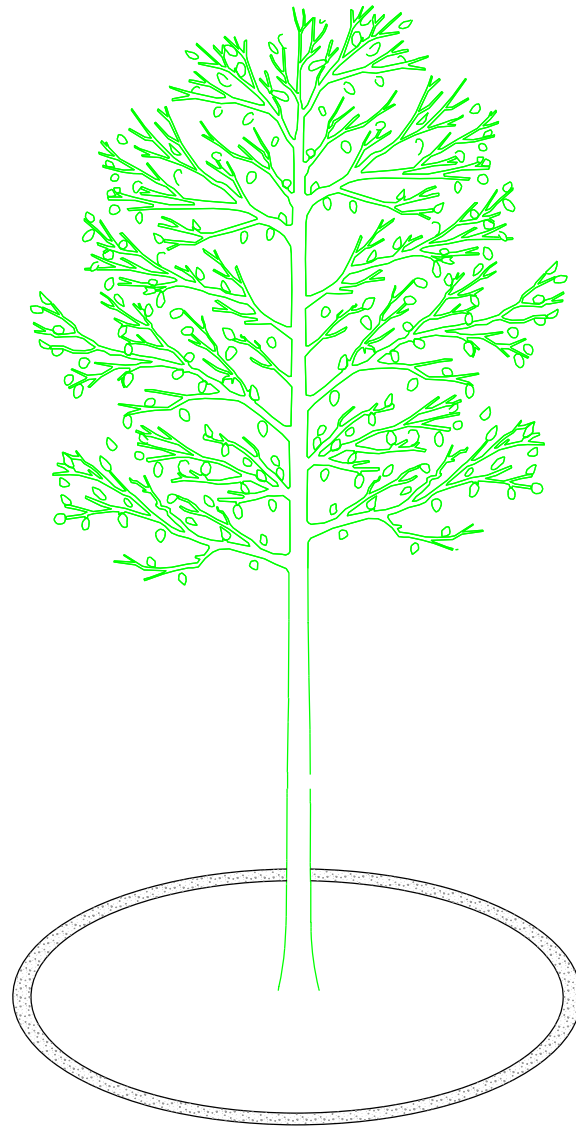
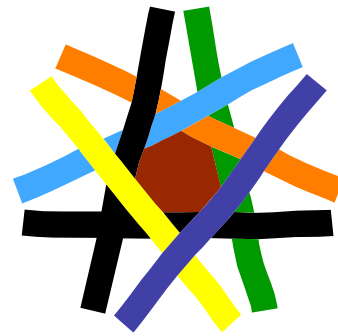
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	No.	DATE	APP'D	DETAILS OF AMENDMENTS																								
1.	29/05/2014	CG	AMENDED																									
2.	19/06/2014	CG	AMENDED																									
3.	09/09/2014	CG	AMENDED																									
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CHECKED SENIOR DESIGN ENGINEER DATE 09/09/2014																												

NOTES

1. All dimensions in millimeters.
2. Connection pipework from the main to meter assembly to be either:
- (a) Copper pipe type A to AS 1432-2004, copper alloy fittings to AS 1167.1-2005. All copper fittings to be silver soldered.
- (b) Polyethylene pipe (minimum class 12) and fittings to AS 2033-2008.
3. Where applicable, permanently mark concrete kerbing square to the location of the Main Cock, by means of a "W" stenciled into wet concrete, fixing a "W" sign or other approved method.
4. Meter to be installed at a maximum of 300mm above the finished ground surface level.
5. 40mm PVC conduit under roads. PVC conduit to be solvent welded.
6. Pre-tapped connectors and ferrule main cocks may also be used as alternatives for connection to water main.
7. Dubbo City Council to install meter assembly on receipt of water service application.
8. Service connection to be done by NSW accredited and licenced plumbers only.
9. For service connections of size greater than 20mm, contact Dubbo City Council.
10. See plan STD 5518 for standard trench and reinstatement detail.
11. Position of service tapping band should not be located under driveways.
12. Only Ford Angle Ball Meter Valves, specifically, part number BA13-232W-NL are to be utilised when providing a water service connection point to a property.



APPROVED  MANAGER TECHNICAL SUPPORT		SURVEY _____ DATE _____ DESIGN _____ DATE _____ DRAWING _____ CG _____ DATE 29/05/2014 CHECKED _____ DATE 09/09/2014 SENIOR DESIGN ENGINEER	FIELD BOOK/SURVEY FILES DESIGN FILES DRAWING FILES U:\TS\Technical Support\Design Section\Standards and Design Guides\DCS Standard Engineering Drawings\Control\DCS Standard Drawings.dgn	SCALES NOT TO SCALE ORIGINAL SIZE A1 0 1 2 3 4 5 cm	PERMANENT MARK: N/A RL: N/A DATUM: AHD & MGA STATUS: STANDARD DRAWING PRINT DATE: 9/09/2014 No. DATE APP'D DETAILS OF AMENDMENTS 1. 29/05/2014 CG AMENDED 2. 19/06/2014 CG AMENDED 3. 09/09/2014 CG AMENDED	DUBBO CITY COUNCIL TECHNICAL SERVICES DIVISION 	DRAWING TITLE 20mm WATER SERVICE CONNECTION DETAIL	JOB STANDARD DRAWING	SHEET No. 2 OF 2 SHEETS PLAN NO. STD 5882
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TREE PLANTING STANDARDS

PLAN SHEET INDEX

SHEET 1 - COVER SHEET

SHEET 2 - TREE > 45 L POT SIZE

SHEET 3 - TREES IN ROAD PAVEMENT - PART 1

SHEET 4 - TREES IN ROAD PAVEMENT - PART 2

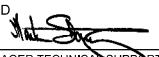


SHEET 5 - TREES IN TURF WITH FOOTPATH

SHEET 6 - TREES IN TURF NO FOOTPATH

SHEET 7 - STREET TREES IN MASS PLANTING & MALLS

SHEET 8 - TREES IN CENTRAL MEDIAN STRIPS
WITH INNER KERB

SHEET 9 - TREES IN CENTRAL MEDIAN STRIPS
WITH GARDEN

APPROVED  MANAGER TECHNICAL SUPPORT	SURVEY _____ DATE _____	FIELD BOOK/SURVEY FILES	SCALES NOT TO SCALE ORIGINAL SIZE A1 	PERMANENT MARK: N/A	RL: N/A	DATUM: AHD & MGA	DUBBO CITY COUNCIL PARKS & LANDCARE DIVISION 	DRAWING TITLE	JOB	SHEET No. 1		
	DESIGN _____ DATE _____	DESIGN FILES		STATUS: STANDARD DRAWING	PRINT DATE: 21/08/2014			COVER SHEET	TREE PLANTING STANDARDS	OF 9 SHEETS		
	DRAWING _____ NP _____ DATE 29/05/2014	DRAWING FILES		No.	DATE	APP'D					DETAILS OF AMENDMENTS	STD 6639
	CHECKED _____ DATE 21/08/2014	U:\TS\Technical Support\Design Section\Standards and Design Guides\DCG Standard Engineering Drawings\Control\DCG Tree Planting Standards.dgn		1.	29/05/2014	CG					AMENDED	
				2.	19/06/2014	CG	AMENDED					
				3.	21/08/2014	CG	AMENDED					
				-	-	-	-					

GENERAL NOTES

- Provide assessment from the supply nursery or horticultural landscape contractor showing compliance against criteria in "NATSPEC Guide to Specifying Trees - Assessment of Tree Quality" requirements, including a checklist of the key points. Supply to Council's Parks and Landcare prior to planting.

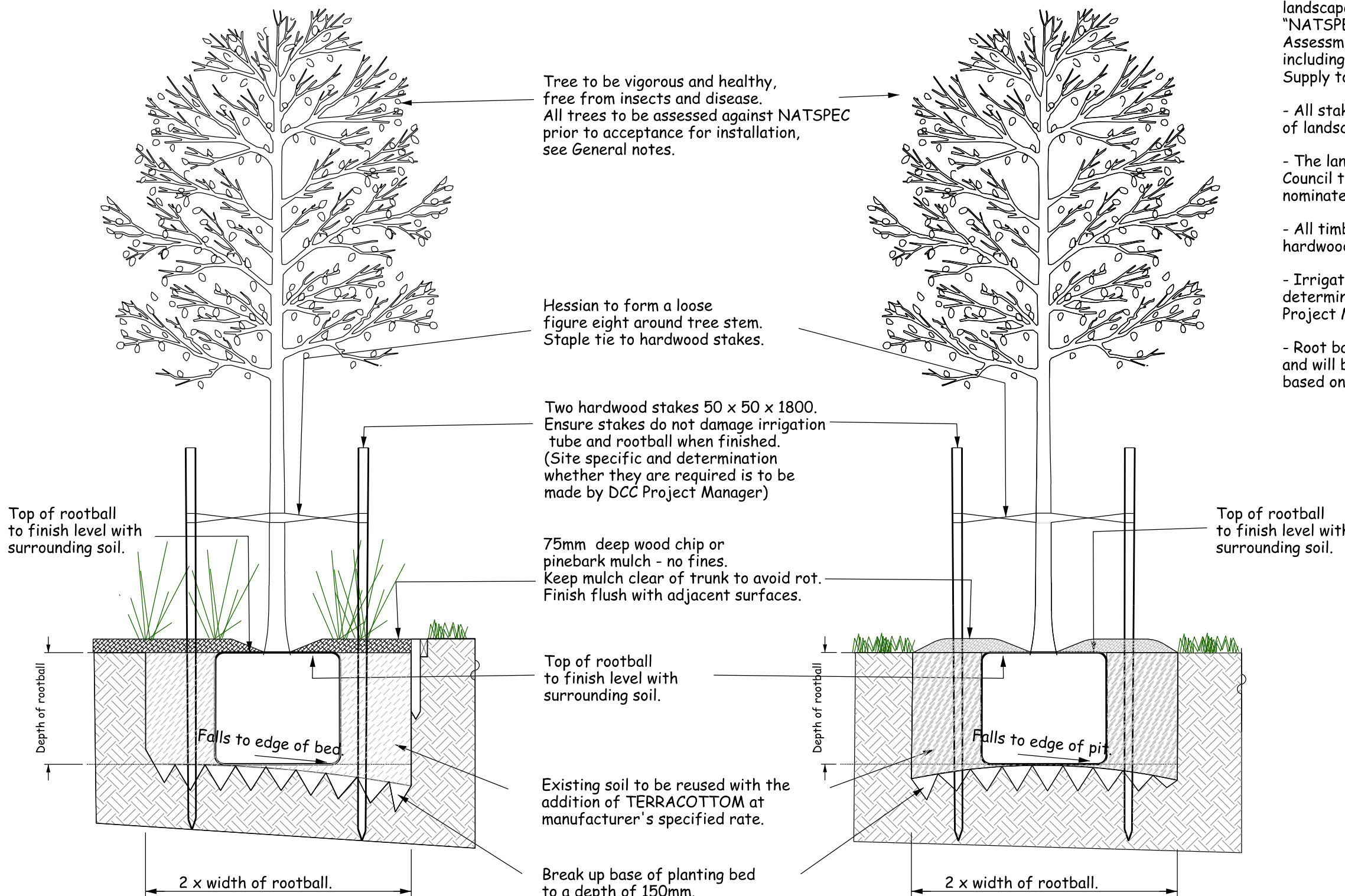
- All stakes and hessian ties to be removed at the end of landscape contractors maintenance period.

- The landscape contractor must furnish test evidence to Council that all soils used do comply with the soil types nominated on these details.

- All timber in contact with ground to be Class 1 durability hardwood or equivalent ACQ treated pine.




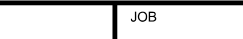
- Irrigation lines may or may not be required and will be determined on a site by site basis by the Project Manager (02 6801 4000)

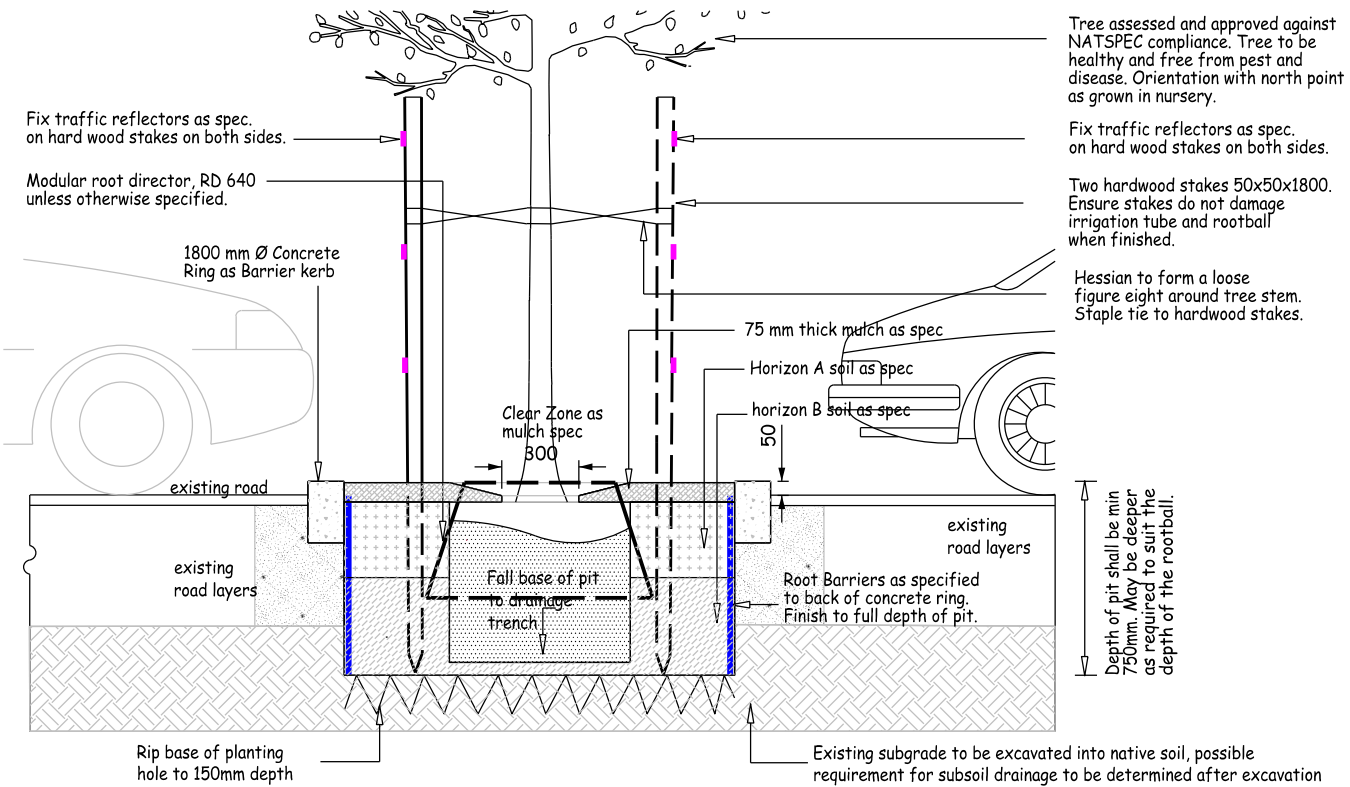
- Root barrier, either modular or linear, may be required and will be determined by the D.C.C Project Manager based on site specific conditions.



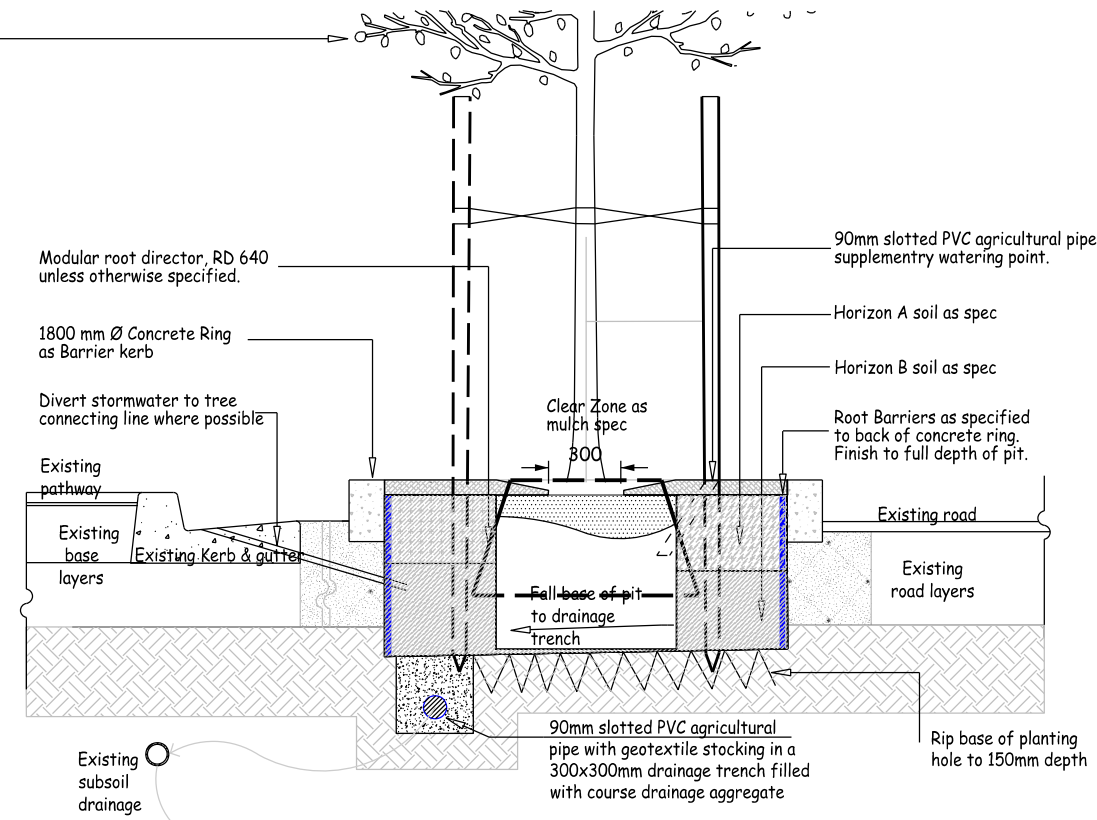
D1 >45L TREE IN MASS PLANTING BED
NTS

D2 >45L TREE IN TURF
NTS

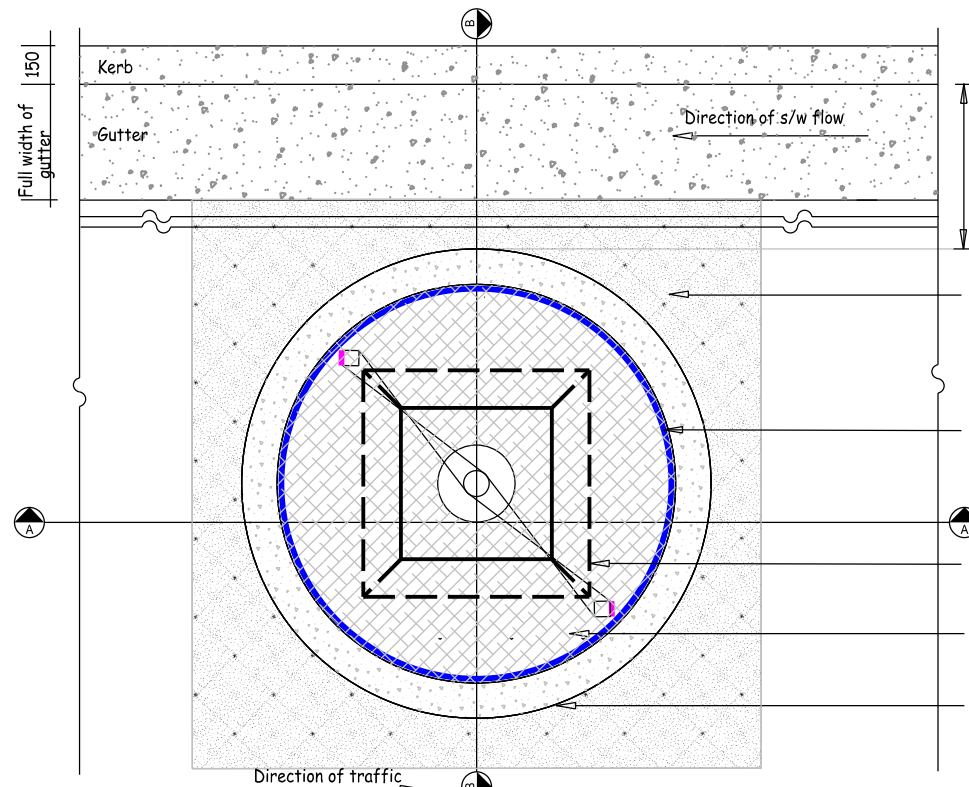
<div>APPROVED  MANAGER TECHNICAL SUPPORT</div> <div>DATE 21/08/2014</div>		<div>SURVEY _____ DATE _____</div> <div>DESIGN _____ DATE _____</div> <div>DRAWING NP _____ DATE 29/05/2014</div> <div>CHECKED  SENIOR DESIGN ENGINEER</div> <div>DATE 21/08/2014</div>	<div>FIELD BOOK/SURVEY FILES</div> <div>DESIGN FILES</div> <div>DRAWING FILES</div> <div>U:\TS\Technical Support\Design Section\Standards and Design Guides\DCC Standard Engineering Drawings\Control\Tree Planting Standards.dgn</div>	<div>SCALES</div> <div>NOT TO SCALE</div> <div> ORIGINAL SIZE A1 0 1 2 3 4 5 cm</div>	<div>PERMANENT MARK: N/A RL: N/A DATUM: AHD & MGA</div> <div>STATUS: STANDARD DRAWING PRINT DATE: 21/08/2014</div> <table><tr><th>No.</th><th>DATE</th><th>APP'D</th><th>DETAILS OF AMENDMENTS</th></tr><tr><td>1.</td><td>29/05/2014</td><td>CG</td><td>AMENDED</td></tr><tr><td>2.</td><td>19/06/2014</td><td>CG</td><td>AMENDED</td></tr><tr><td>3.</td><td>21/08/2014</td><td>CG</td><td>AMENDED</td></tr><tr><td></td><td></td><td></td><td></td></tr></table>	No.	DATE	APP'D	DETAILS OF AMENDMENTS	1.	29/05/2014	CG	AMENDED	2.	19/06/2014	CG	AMENDED	3.	21/08/2014	CG	AMENDED					<div>DUBBO CITY COUNCIL</div> <div>PARKS & LANDCARE DIVISION</div> <div></div>	<div>DRAWING TITLE</div> <div>TREE > 45 L POT SIZE</div>	<div>JOB</div> <div>TREE PLANTING STANDARDS</div>	<div>SHEET No. 2</div> <div>OF 9 SHEET</div> <div>PLAN NO.</div> <div>STD 6639</div>
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D1 SECTION A-A
NTS



D2 SECTION B-B
NTS



D3 PLAN
NTS

Distance between kerb and concrete ring will generally be a minimum of 2950mm. Confirmation from council's Project Manager should be sought prior to works.

Structural cell with approved soil and permeable pavement to suit/ match adjacent surface treatment.
Alternative
Water sensitive urban design treatment

Root Barriers as specified to back of concrete ring. Finish to full depth of pit.

Modular root director, RD 640 unless otherwise specified.

Mulch within concrete ring. Maintain mulch free zone around tree trunk.

1800 mm Ø Concrete Ring

NOTES REFER ALSO TO SHEET 2. - SPECIFICATION

SUBMISSIONS
Submit the following certificates to Council's Project Manager (02 68014000) at the following times:

- Assessment from the supply nursery or horticultural landscape contractor showing compliance against criteria in "NATSPEC Guide to Specifying Trees - Assessment of Tree Quality" requirements, including a checklist of the key points. Supply to Council and obtain approval prior to accepting the order.
- Certificate of compliance from the soil supplier providing laboratory testing to demonstrate compliance with the specification for each type of soil.

HOLD POINTS
Contact Council's Project Manager (02 68014000) at the following hold points and obtain written approval to proceed.

- Setout of pit prior to cutting of A/C and installation of concrete ring.*
- Pits excavated, drainage installed and root barrier installed ready for backfilling with soils.
- Tree supply to the site, prior to planting.
- Tree planting and tree guard installed

PRELIMINARIES
Erect sediment control barriers to gutters and drains prior to commencing excavation work. Keep the site continuously clear of debris and soil material that may wash into drainage system. Ensure continuous pedestrian access along the footpath pavement and to property entries. Comply with RTA Manual "Traffic Control at Work Sites".

UTILITIES
Contractor shall carry out Dial Before You Dig searches by phoning 1100 prior to excavation. Where services are within the zone of influence highlighted by the utilities. Locate services accurately using an Accredited Service Locator and hand excavate.

TREE PIT EXCAVATION, PREPARATION AND DRAINAGE
Setout the tree pits and seek approval from Council's Project Manager prior to proceeding. Saw cut the road pavement to create a neat and round edge. Remove excavation material & dispose off site. Provide a fall to the base of the pit toward the drainage trench as detailed. Construct the drainage trench and connect to s/w system. Break up the base of the tree pit prior to backfilling. Position the root barrier prior to placement of soils. Note: Where possible link drainage between pits and connect to the s/w system behind the kerb. Minimize connections to the s/w main.

ROOT BARRIER
- Supply a HDPE waterproof flexible cutoff wall root barrier min 0.7mm wall thickness, min height 600mm. Ensure root barrier finishes flush with the top of the pit backfill. Overlap 300mm and heat seal or seal with Butyl tape.
- A modular root director, RD 640 or similar is to be installed centrally within the concrete ring to manufacturers recommendations.

SOILS
Horizon A soil - Equal to AS4419-2003 'Organic Soil' with texture to AS4419-2003 Table I1- Sandy Loam. Place no deeper than 300mm to prevent anaerobic decomposition of organic matter within soil.
Horizon B soil - Place below a depth of 300mm. Equal to AS4419-2003 'Soil blend' with max 5% organic matter content. Texture to AS4419-2003 Table I1- Sandy Loam. Do not incorporate organic matter. to horizon B soil.

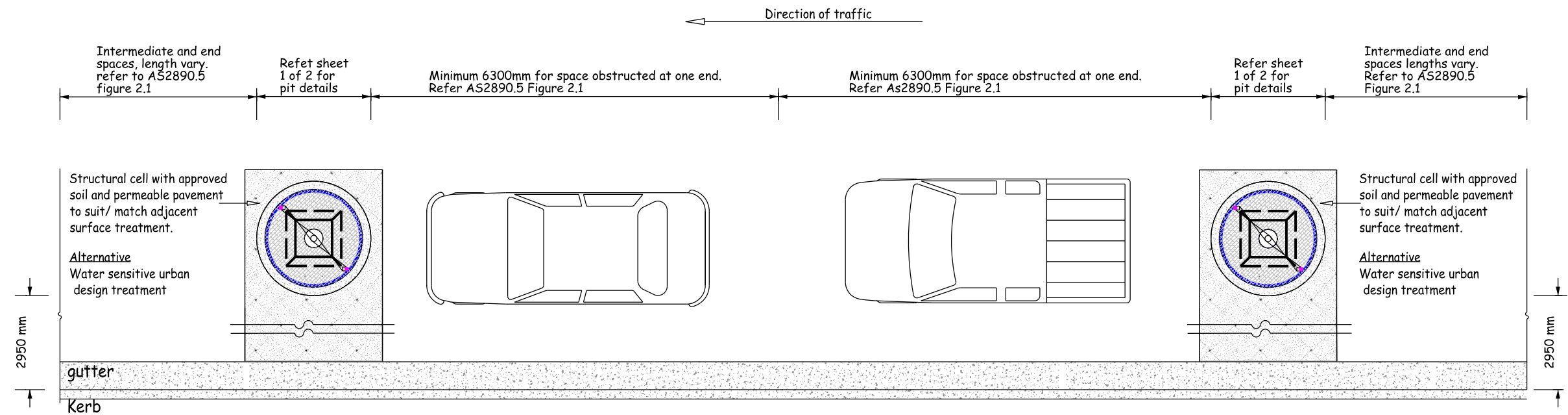
TREE SUPPLY
All trees must conform to Clark, R 2003. NATSPEC "Specifying Trees - A Guide to Assessment of Tree Quality". Appendix 2". Time site delivery to minimise storage on site. Ensure root balls are kept watered and store in the shade prior to planting. Inspect immediately upon delivery for NATSPEC compliance and return any trees that do not meet the standard. Cross reference - Inspections and Submissions.

TREE PLANTING
Plant trees after placement of root barrier and soils, and before placing mulch. Do not lift trees by the trunk. Support from under the rootball. Remove the pot or bag and root prune 10mm all round the root ball to encourage root division and remove any girdling. Plant with the rootball flush with the top of soil and plumb.

MULCH
Mulch type shall be a woodchip mulch with NO FINES. Finish mulch layer 10mm below the top of kerb. Do not mound mulch layer.

REFLECTOR
Each traffic reflector shall be 85mm diameter red 'corner cube' delineator (plastic disc) or HV Signs or equal (See Denis V). Screw mount to tree guard on both sides.

SUB-SOIL DRAINAGES
If there are no sub-soil lines, new sub-soil drainage must be provided to connect tree pit drainage into the storm water system.
Locating existing subsoil lines and/or design of new subsoil and storm water connections must be determined prior to construction commencing to ensure feasibility of tree plantings.



 **TYPICAL PLAN - TREE IN ROAD PAVEMENT**
NTS

DESIGN NOTES

GENERAL-This detail is typical only and may require adjustment for site specific situations. This detail is intended as a design tool to assist designers to setout trees in their site masterplan. It is not intended as a construction detail.

For all proposals to plant trees in the street, installation must demonstrate compliance with the following issues:

HYDRAULIC FLOWS - seek advice from a civil engineer to check that the setout will not impede hydraulic flows along the gutter. Site specific calculations are required for this purpose and engineering certification shall be submitted with the DA/CC.

UTILITIES - The presence and location of underground services varies greatly from site to site and can affect the feasibility and design of tree planting in streetscapes. Many services are not located in accordance with standard allocations. Additional services may be present that are not documented. To check the feasibility of proposed tree locations contact Dial Before You Dig 1100 to determine service locations. Site specific service location shall also be carried out by an accredited service locator to more accurately check the site conditions. Contact council or utilities providers for a list of accredited locaters.

Document utilities locations with the DA/CC documentation to demonstrate the feasibility of proposals. Comply with clearances by utilities providers. Do not locate tree pits where they will interfere with power lines or other utilities.

SUBSOIL DRAINAGE

The locations of subsoil drainage and stormwater pits is required to determine suitable connections for pit drainage. If there are no existing sub-soil lines, new sub-soil drainage must be provided to connect tree pit drainage into the storm water system. Locating existing subsoil lines and/or design of new subsoil and storm water connections must be determined prior to construction commencing to ensure feasibility of tree plantings. Ensure that s/w mains are sealed in accordance with the relevant Australia Standard/s. Where possible minimise connections to the stormwater drains.

TRAFFIC ISSUES - Do not set out street trees in taxi stands, bus stops, loading zones, and slip lanes, driveways, pedestrian kerb ramps, etc. Do not locate street trees where they may interfere with traffic sight lines eg. on the approach side of pedestrian blisters or driveways. Comply with Figure 3.3 AS2890.2 for sight line clearances. Ensure reflectors are located on both sides of the tree guard adjacent to the travel lane and on both sides of the tree guard. Line markings are desirable to highlight the presence of the tree plantings as traffic obstacles. They may be deleted if approved in consultation with Council's traffic officer.

PARKING - Check the setout of carparking spaces before locating street trees and locate tree pits to minimise loss of on-street parking spaces. Where additional space is available without loss of parking or where parking is not a major issue, the length of the tree pit may be increased. Where parking setout is not parallel with the kerb, adjust the detail to provide alternative pit designs and setout to suit the site parking arrangements. Comply with the requirements of AS2890.5 On-street Parking.

TREE GUARD ORIENTATION - Where tree guards with decorative panels are proposed, orientate the tree guard with panels perpendicular to the kerb.

TREE SPECIES SELECTION NOTES

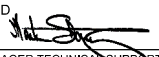


Developer must submit a detailed landscape plan of the proposed sub-division to Dubbo City Council for approval. Species must be identified by botanical nomenclature.

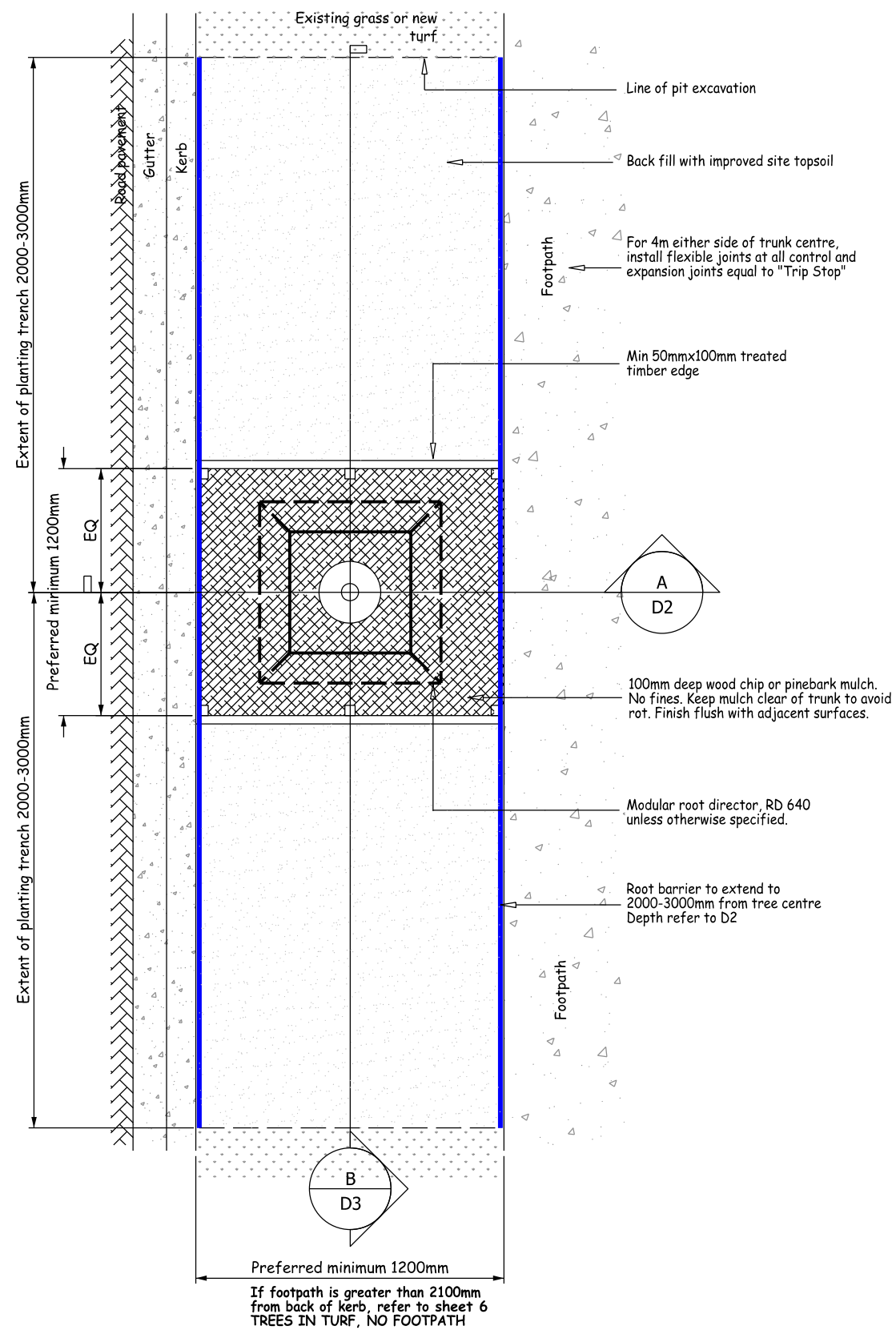
Contact DCC Parks and Landcare on 68014000 to determine whether proposed species are relevant to the site.

Weed species should always be avoided in any location.

Avoid the selection of very large trees for confined streetscape situations unless additional tree pit preparation work is carried out or a large verge area is available, well clear of all infrastructure (eg. kerb and gutter, footpath and services). Avoid the selection of trees that grow in naturally moist situations as these can be shallow rooting, unless pit preparation works are justified in the landscape report.

The 2950mm distance between the kerb and the concrete ring edge allows the D.C.C streetsweeper through.

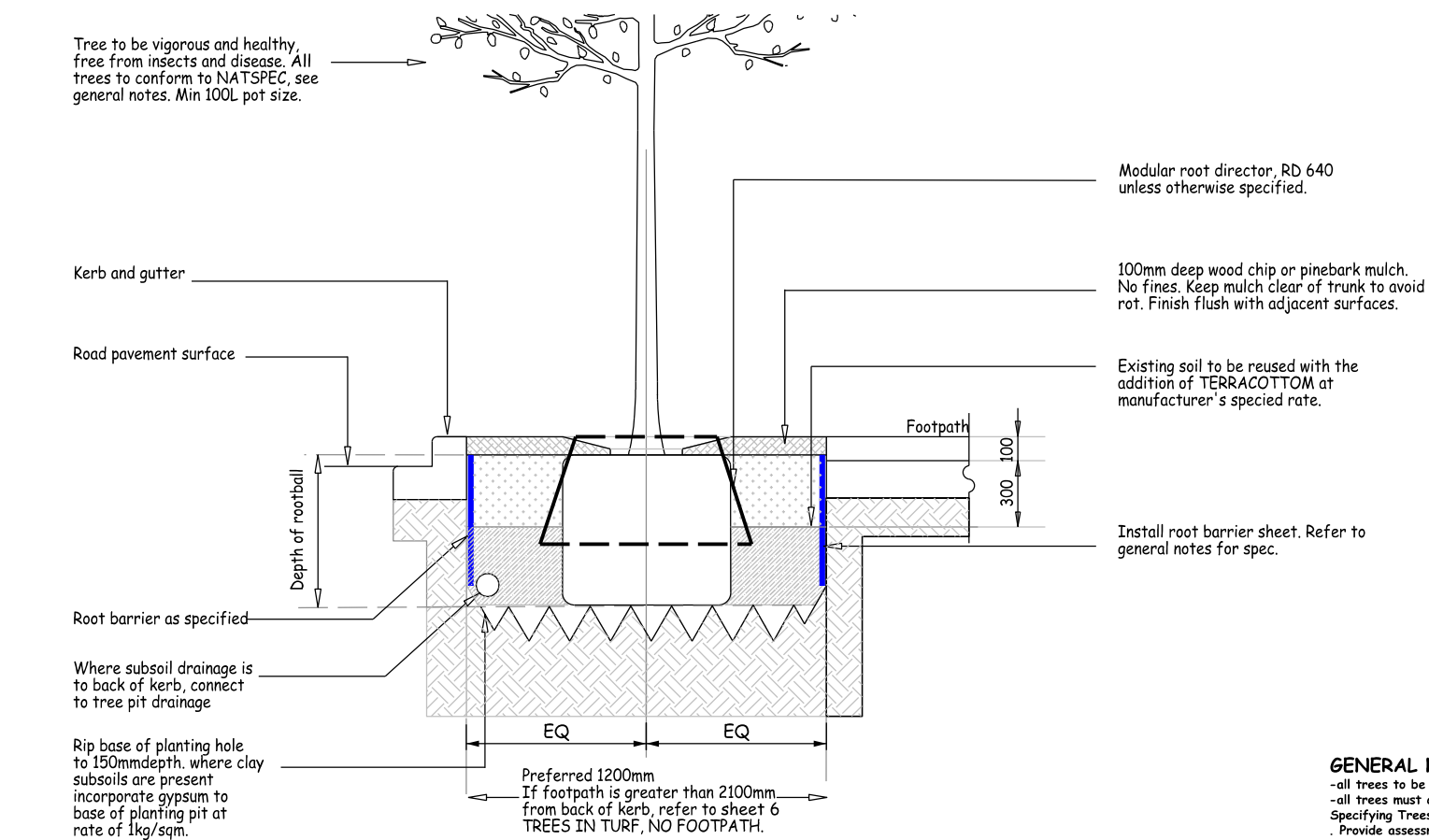
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D1

TYPICAL STREET TREE WITH FOOTPATH

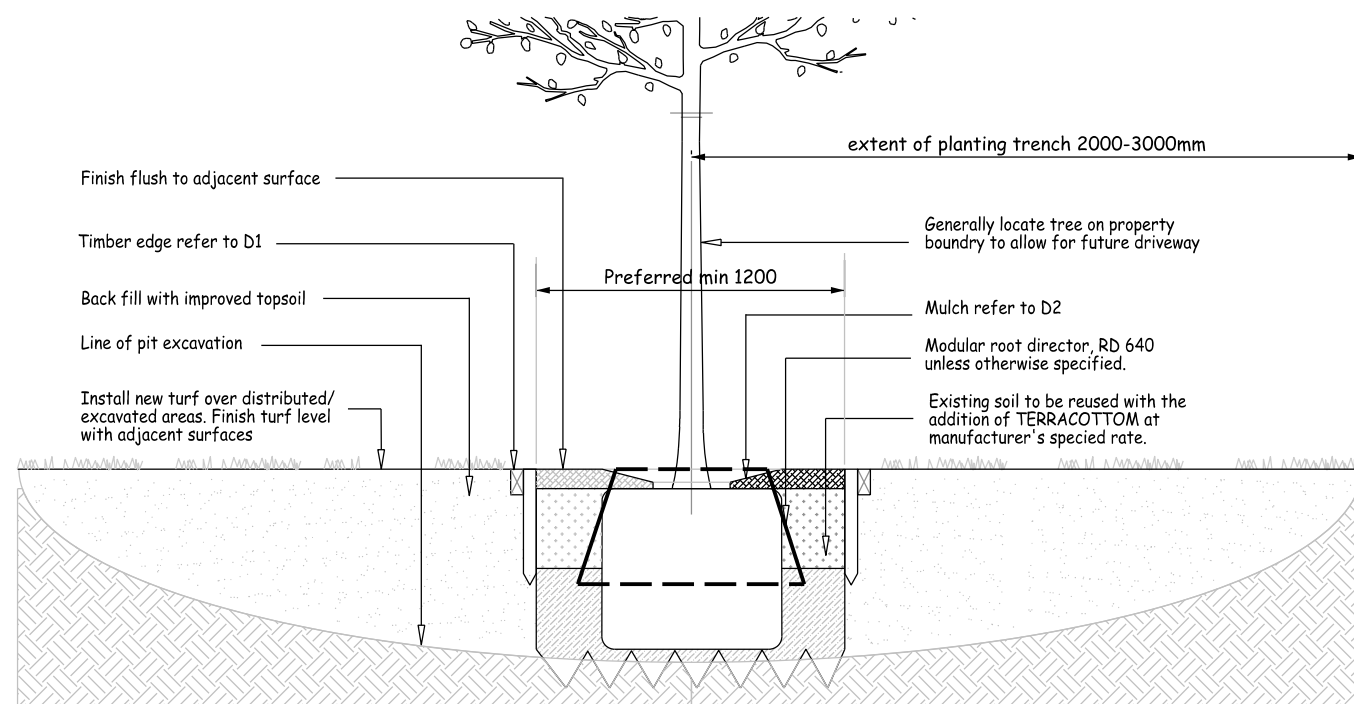
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A-A SECTION

D2

NTS



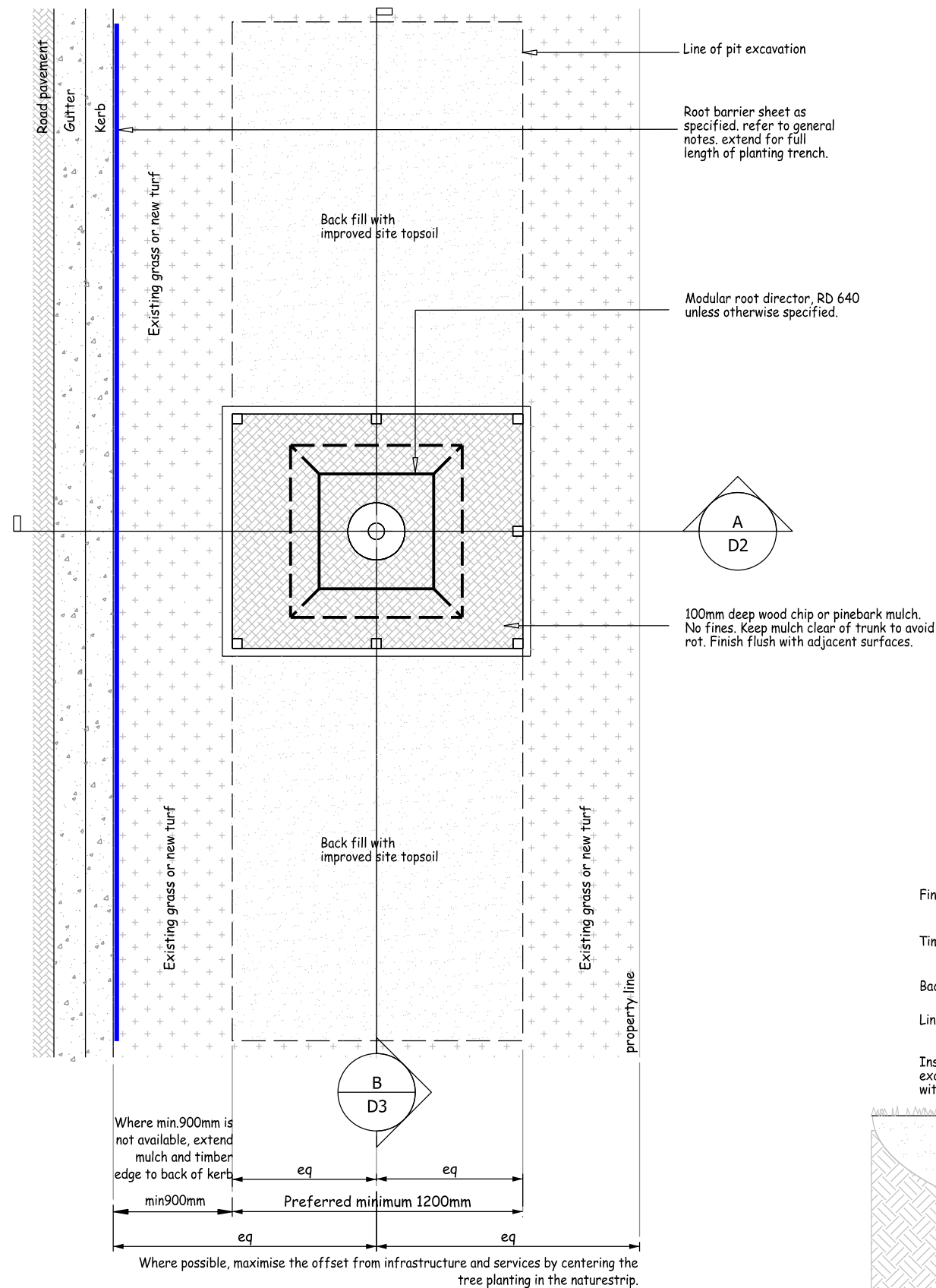
B-B SECTION

D3

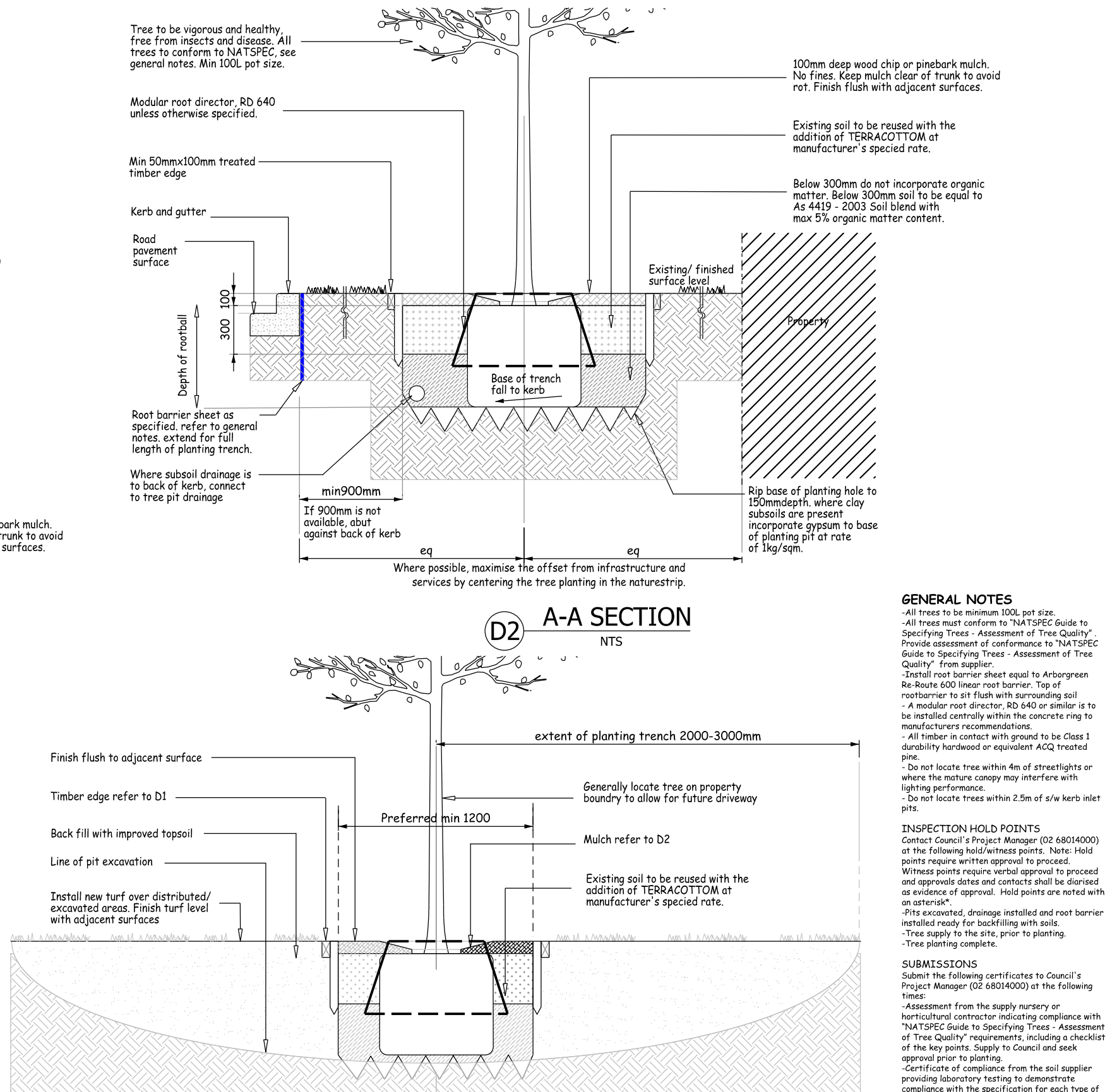
NTS

- GENERAL NOTES**
- all trees to be sized 100L.
 - all trees must conform to "NATSPEC Guide to Specifying Trees - Assessment of Tree Quality"
 - Provide assessment of conformance to "NATSPEC Guide to Specifying Trees - Assessment of Tree Quality" from supplier.
 - Install root barrier sheet equal to Arborgreen Re-Route 600 linear root barrier. Top of rootbarrier to sit flush with surrounding soil to be covered by mulch.
 - Where possible, maximize the space available for the tree root zone by co-ordinating footpath locations to be closer to the property boundary and further from the kerb, or eliminated for minor local roads where pedestrians can walk safely on the road.
 - Do not locate tree within 4m of streetlights or where the mature canopy may interfere with lighting performance.
 - Do not locate trees within 2.5m of s/w kerb inlet pits.
 - All timber in contact with ground to be class 1 durability hardwood or equivalent ACQ treated pine.
- INSPECTION HOLD POINTS**
- Contact Council's Project Manager (02 68014000) at the following hold/witness points. Note: Hold points require written approval to proceed. Witness points require verbal approval to proceed and approvals dates and contacts shall be diarised as evidence of approval. Hold points are noted with an asterisk*.
- Pits excavated, drainage installed and root barrier installed ready for backfilling with soils.*
 - Tree supply to the site, prior to planting.
 - Tree planting complete.
- SUBMISSIONS**
- Submit the following certificates to Council's Project Manager (02 68014000) at the following times:
- Assessment from the supply nursery or horticultural contractor indicating compliance with "NATSPEC Guide to Specifying Trees- Assessment of Tree Quality" requirements, including a checklist of the key points. Supply to Council and seek approval prior to planting.
 - Certificate of compliance from the soil supplier providing laboratory testing to demonstrate compliance with the specification for each type of soil.

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D1 TYPICAL STREET TREE, NO FOOTPATH
NTS



D3 B-B SECTION
NTS

GENERAL NOTES

- All trees to be minimum 100L pot size.
- All trees must conform to "NATSPEC Guide to Specifying Trees - Assessment of Tree Quality". Provide assessment of conformance to "NATSPEC Guide to Specifying Trees - Assessment of Tree Quality" from supplier.
- Install root barrier sheet equal to Arborgreen Re-Route 600 linear root barrier. Top of rootbarrier to sit flush with surrounding soil
- A modular root director, RD 640 or similar is to be installed centrally within the concrete ring to manufacturers recommendations.
- All timber in contact with ground to be Class 1 durability hardwood or equivalent ACQ treated pine.
- Do not locate tree within 4m of streetlights or where the mature canopy may interfere with lighting performance.
- Do not locate trees within 2.5m of s/w kerb inlet pits.

INSPECTION HOLD POINTS

- Contact Council's Project Manager (02 68014000) at the following hold/witness points. Note: Hold points require written approval to proceed. Witness points require verbal approval to proceed and approvals dates and contacts shall be diarised as evidence of approval. Hold points are noted with an asterisk*.
- Pits excavated, drainage installed and root barrier installed ready for backfilling with soils.
 - Tree supply to the site, prior to planting.
 - Tree planting complete.

SUBMISSIONS

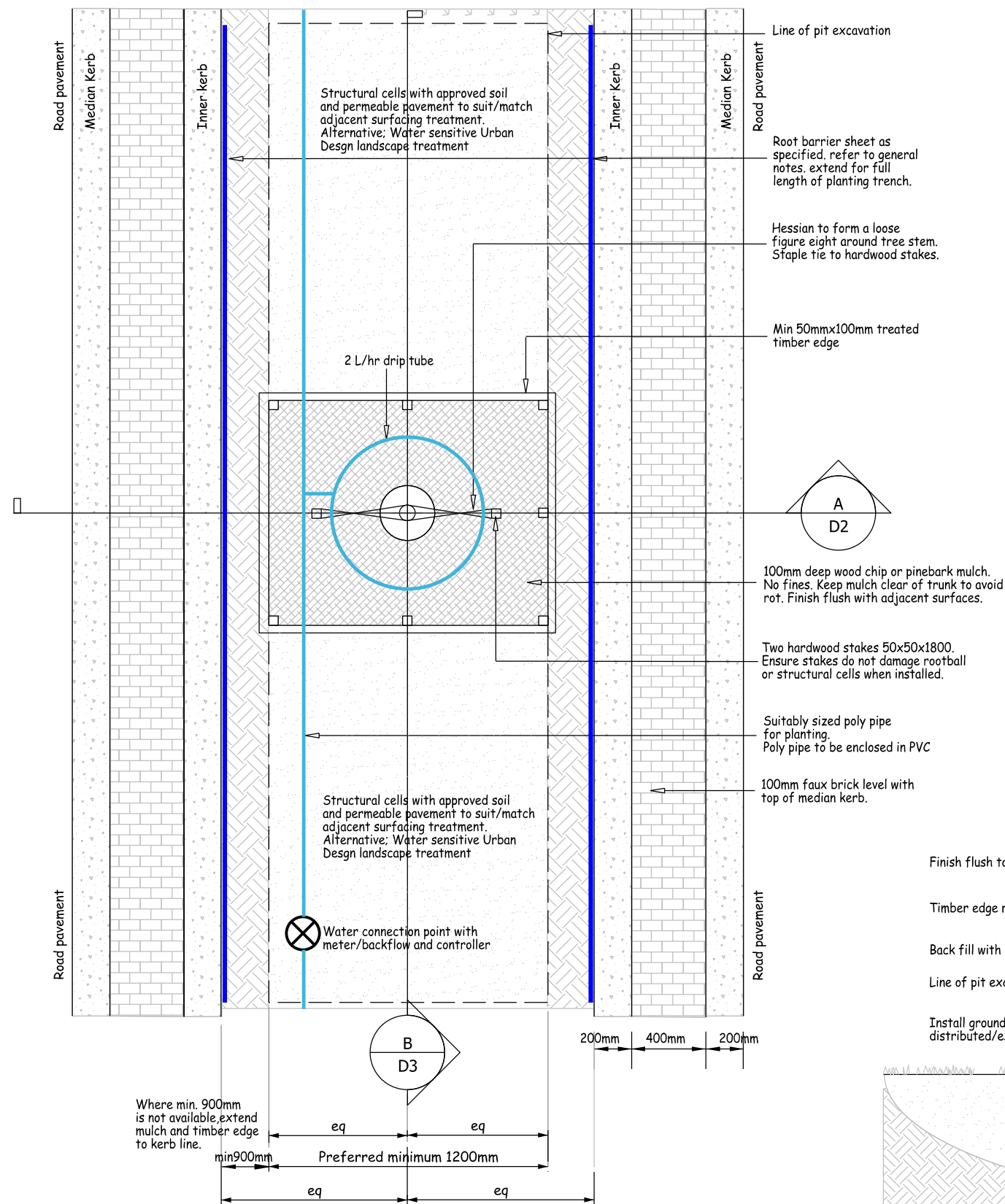
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	DATE 21/08/2014	U:\TS\Technical Support\Design Section\Standards and Design Guides\DCG Standard Engineering Drawings\Control\DCG Tree Planting Standards.dgn	No. 2. DATE 19/06/2014 APPD CG AMENDED						
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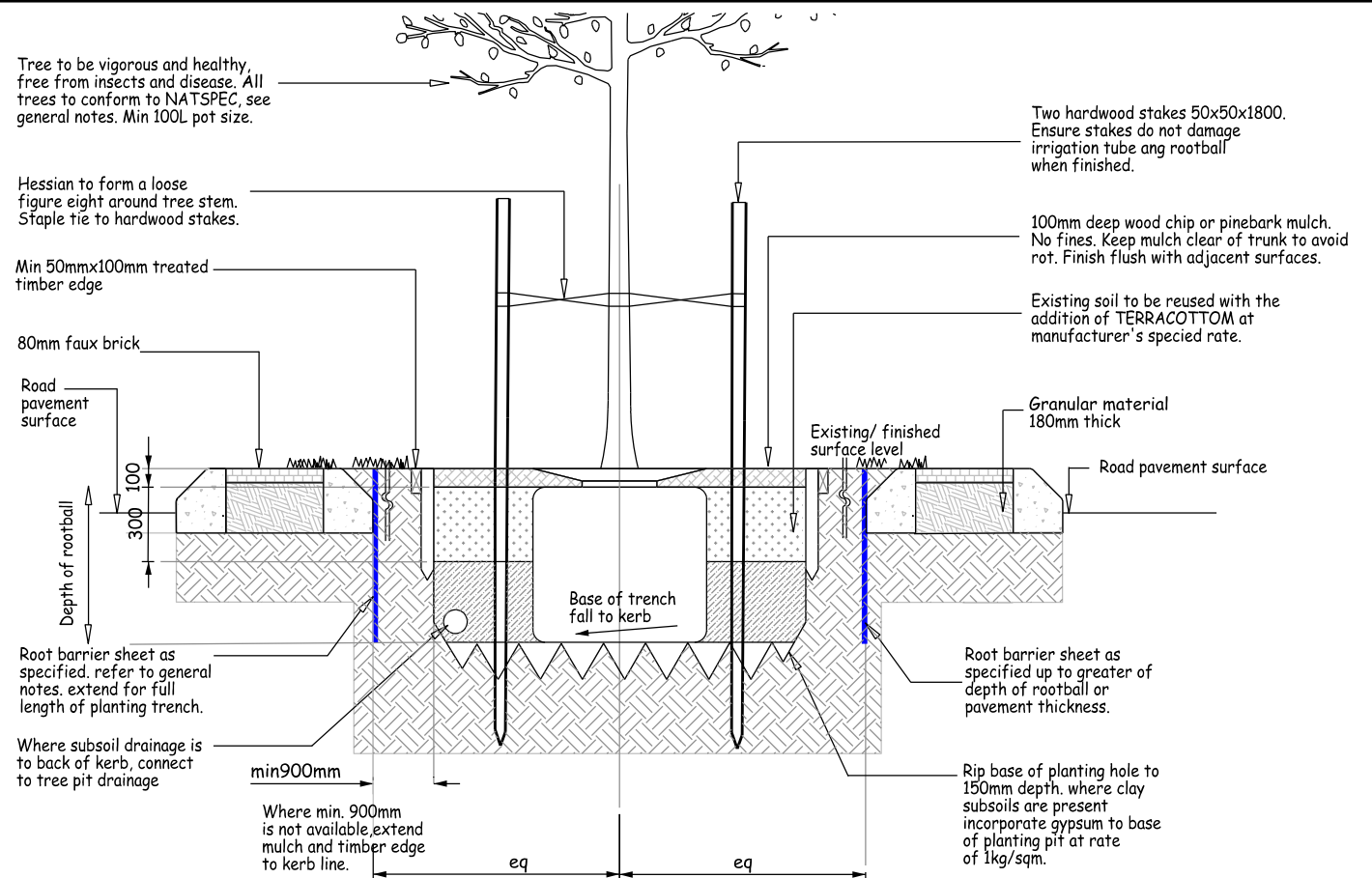
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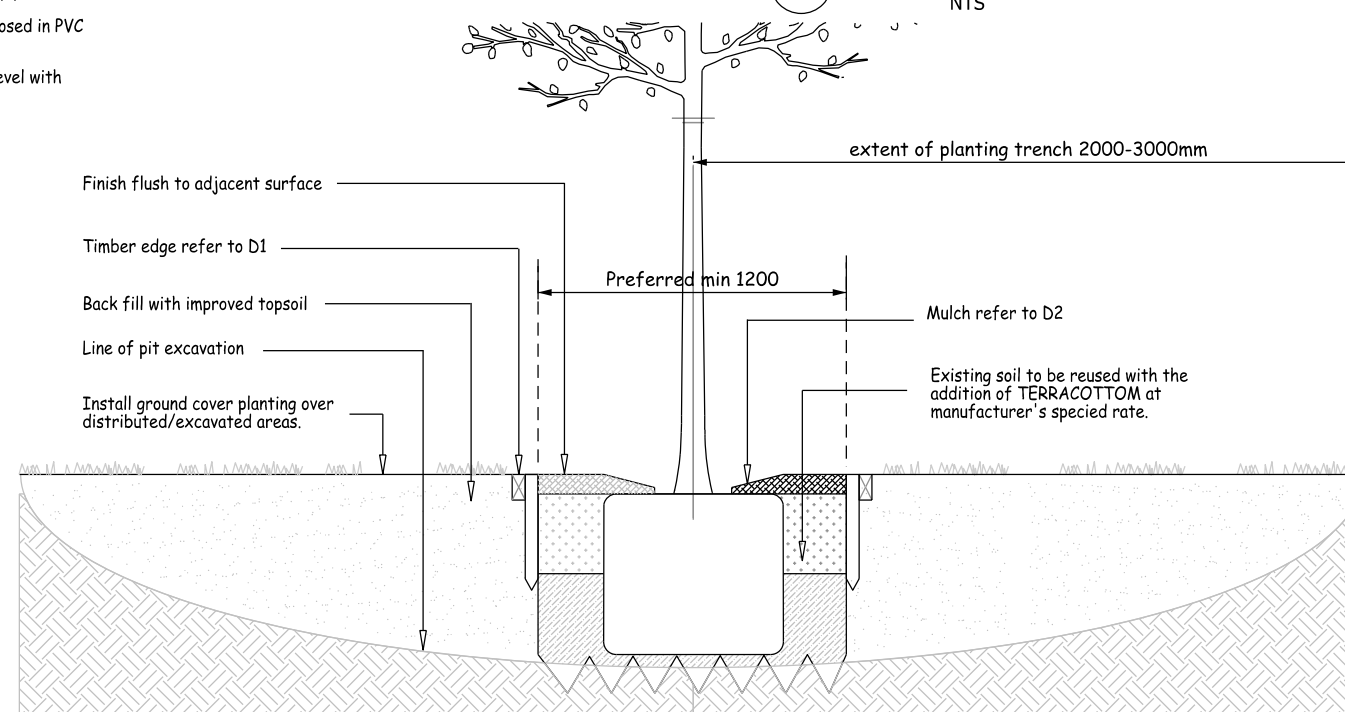
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0 1 2 3 4 5 cm



D1 TYPICAL STREET TREE- CENTRAL MEDIAN STRIP
NTS



D2 A-A SECTION
NTS



D3 B-B SECTION
NTS

GENERAL NOTES

- all trees to be minimum 100L pot size.
- all trees must conform to "NATSPEC Guide to Specifying Trees - Assessment of Tree Quality". Provide assessment of conformance to "NATSPEC Guide to Specifying Trees - Assessment of Tree Quality" from supplier.
- all stakes and hessian ties to be removed at the end of 13 week landscape establishment period.
- Install root barrier sheet equal to Arboregreen Re-Route 600 linear root barrier. Top of rootbarrier to sit flush with surrounding soil to be covered by mulch.
- All timber in contact with ground to be Class 1 durability hardwood or equivalent H4 treated pine.
- Do not locate tree within 4m of streetlights or where the mature canopy may interfere with lighting performance.
- Do not locate trees within 2.5m of s/w kerb inlet pits.

INSPECTION HOLD POINTS

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 - Tree supply to the site, prior to planting.
 - Tree planting complete.

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ORIGINAL SIZE A1
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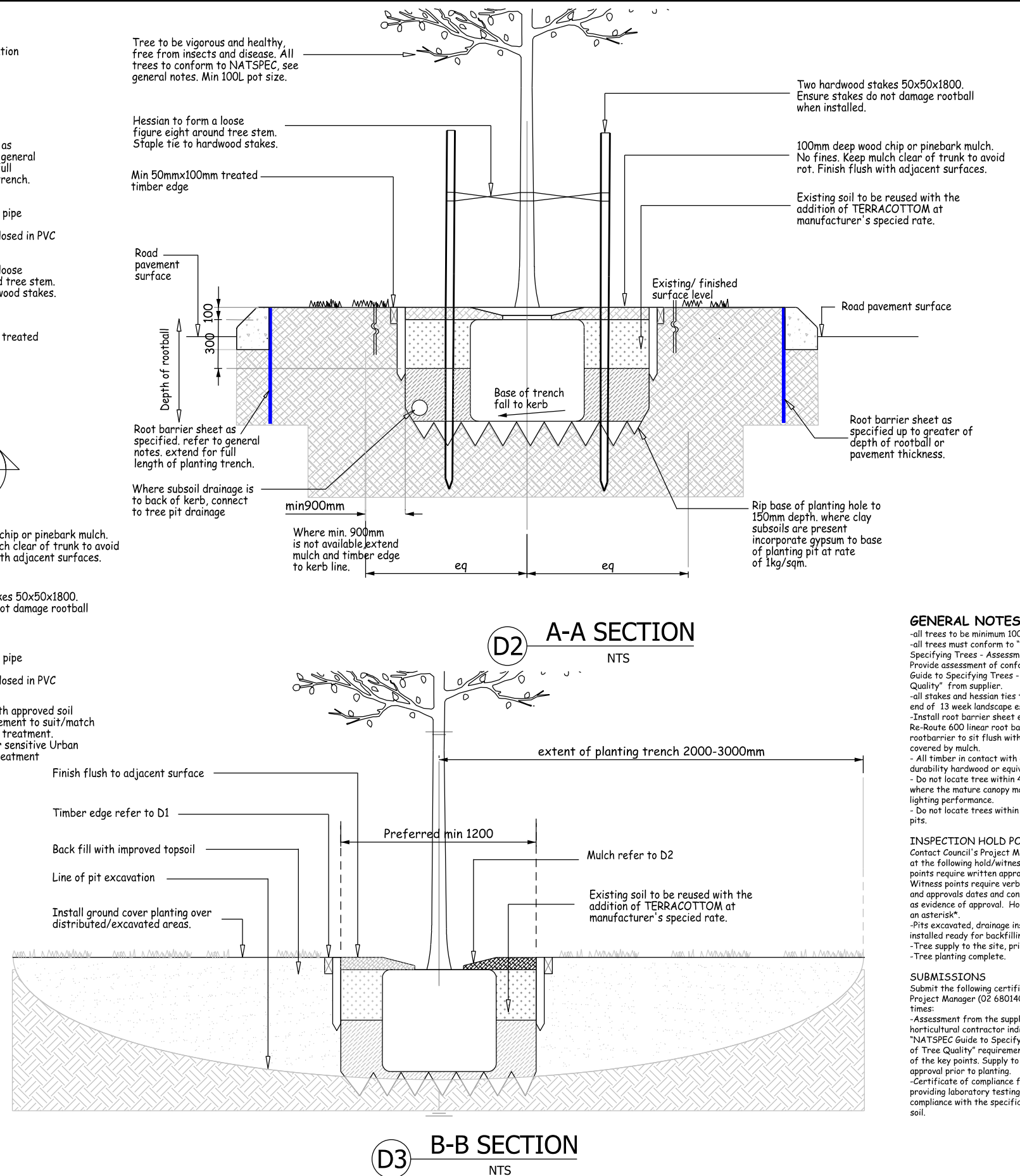
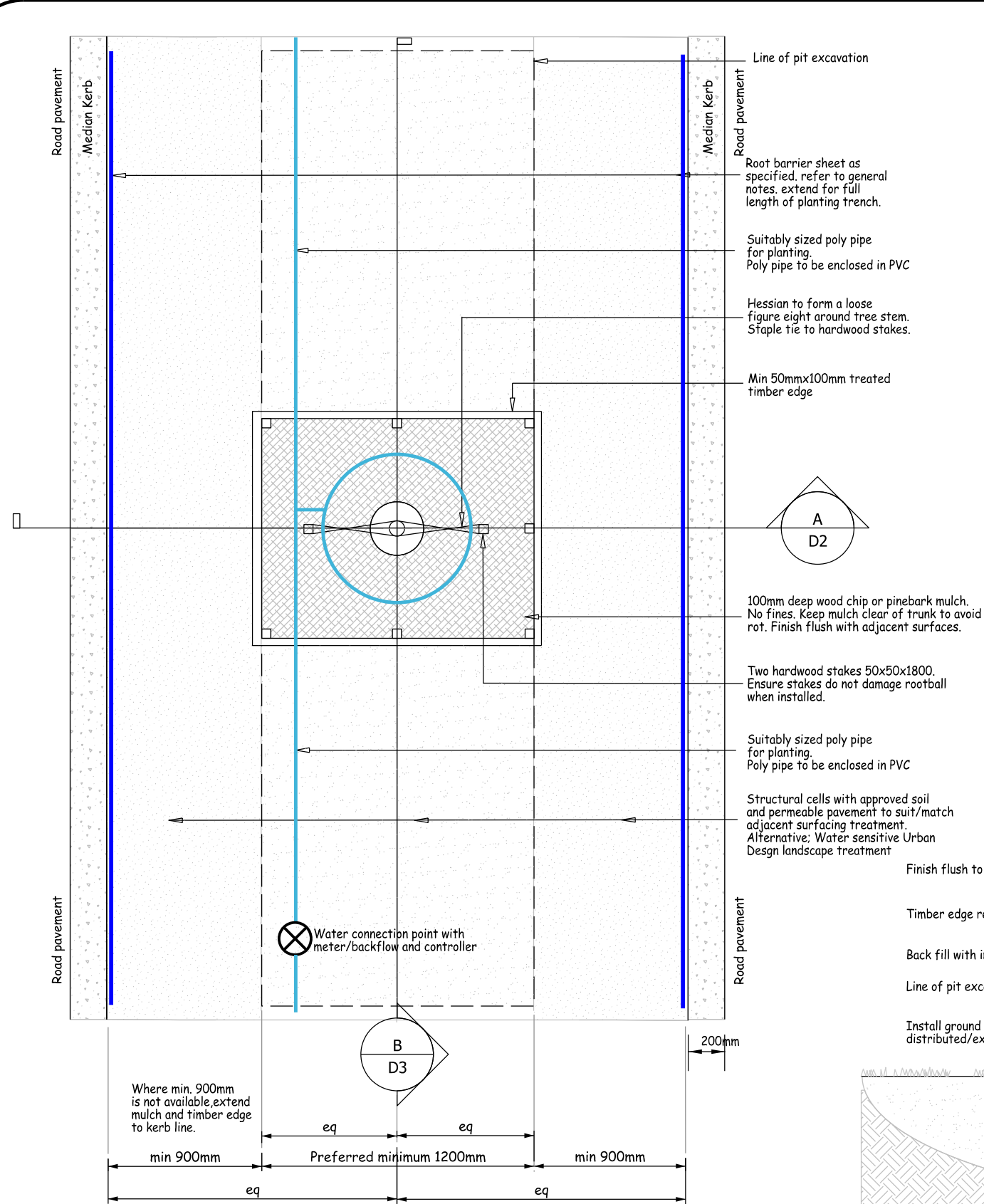
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DUBBO CITY COUNCIL	
PARKS & LANDSCAPE DIVISION	

DRAWING TITLE
TREES IN CENTRAL MEDIAN STRIPS WITH INNER KERB

JOB
TREE PLANTING STANDARDS

SHEET No.	8
OF	9 SHEETS
PLAN NO.	STD 6639



GENERAL NOTES

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- all trees must conform to "NATSPEC Guide to Specifying Trees - Assessment of Tree Quality". Provide assessment of conformance to "NATSPEC Guide to Specifying Trees - Assessment of Tree Quality" from supplier.
- all stakes and hessian ties to be removed at the end of 13 week landscape establishment period.
- Install root barrier sheet equal to Arborgreen Re-Route 600 linear root barrier. Top of rootbarrier to sit flush with surrounding soil to be covered by mulch.
- All timber in contact with ground to be Class 1 durability hardwood or equivalent H4 treated pine.
- Do not locate tree within 4m of streetlights or where the mature canopy may interfere with lighting performance.
- Do not locate trees within 2.5m of s/w kerb inlet pits.

INSPECTION HOLD POINTS

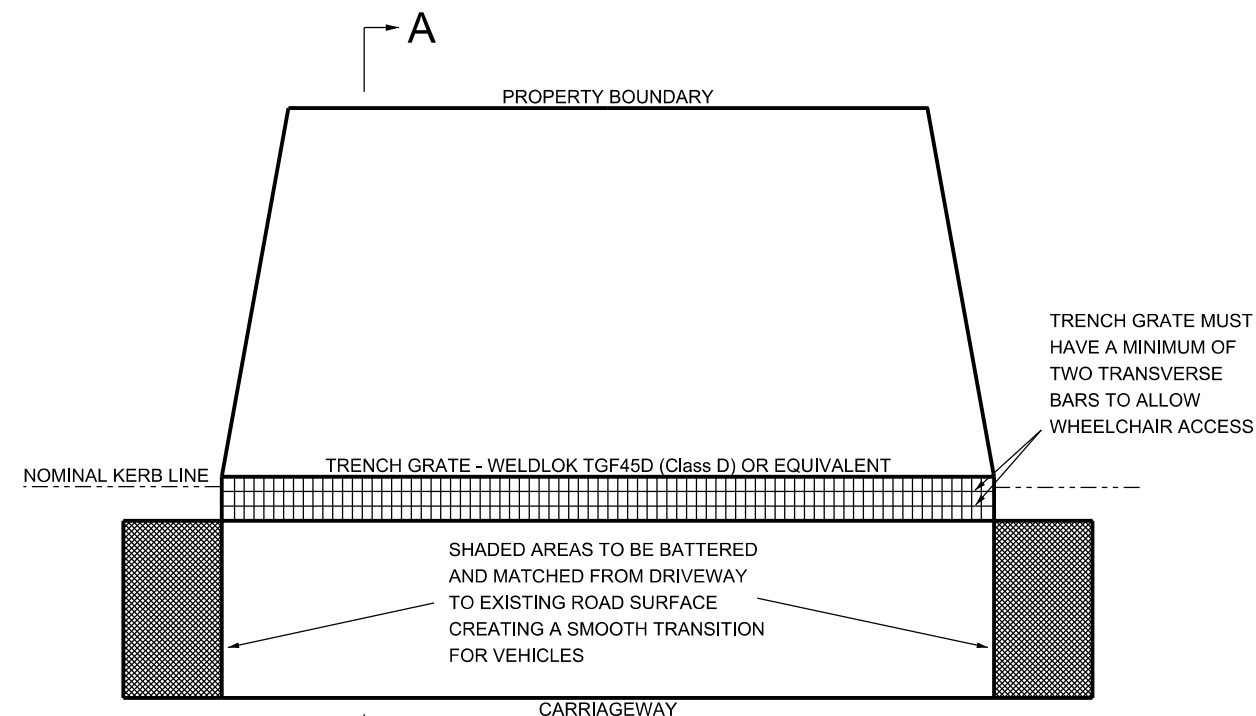
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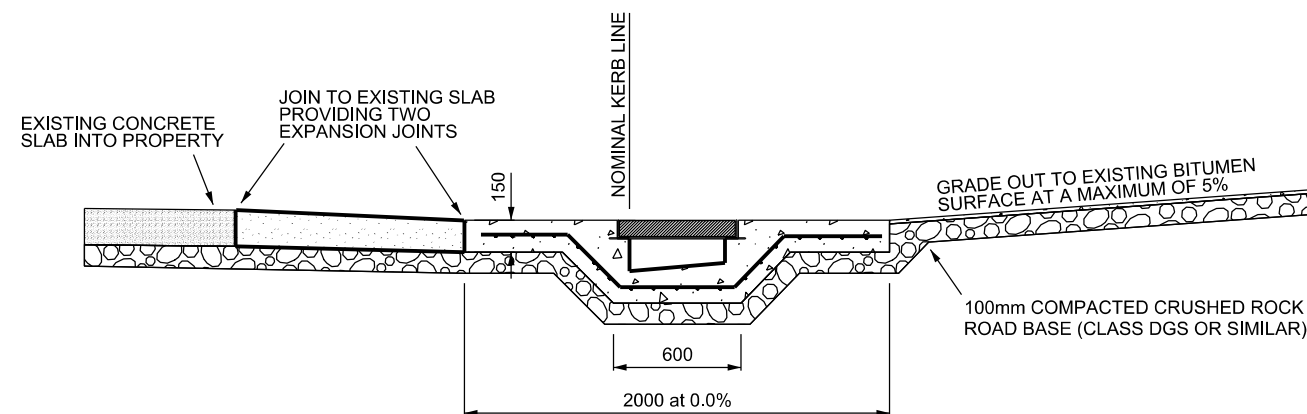
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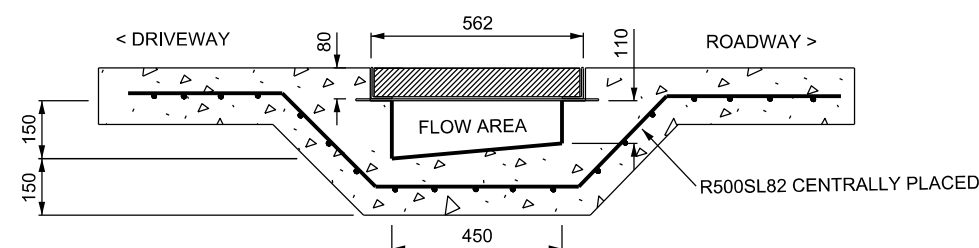
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PLAN



SECTION A-A







TRENCH GRATE AND SLAB DETAIL

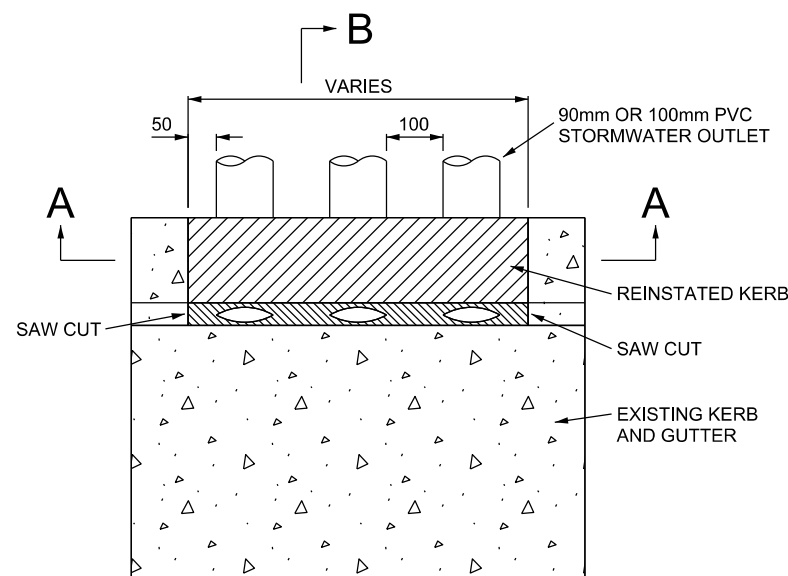
NOTE: SLAB DETAIL SHOWN IS FOR RESIDENTIAL CLASS SLAB. FOR COMMERCIAL AND INDUSTRIAL SLAB SPECIFICATIONS, SEE STD 5211

NOTES

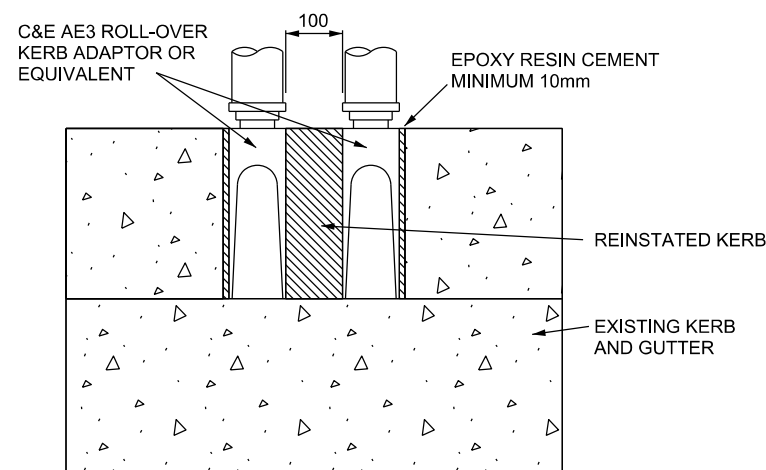
1. Construction of vehicular crossings is to be carried out strictly in accordance with Dubbo City Council's Road Opening Policy and relevant Aus-Spec documentation. These documents are available from Council's Customer Service area.
 2. Contractors/Owners/Developers are responsible for the locating of all underground services and the arranging and completion of repairs with the appropriate authority should they be broken or damaged during construction.
 3. The vehicular crossing is to be constructed to the dimensions and specifications as shown on this drawing. The compressive strength of the concrete is to be 25MPa at 28 days. All exposed edges are to be 10mm radius. Additionally, all poor subgrade material shall be removed and replaced with suitable base material. All subgrades are to be well compacted before the placement of the base material. Formwork must extend from finished concrete height to the base material for the total area of the driveway slab.
 4. Careful consideration should be given when opting to construct a bridge style driveway slab. Bridge style driveway slabs should only be used where it has been determined that the construction of a more traditional driveway slab (STD 5211) would be inappropriate and cause vehicles to scrape and or bottom out or where steep grades may pose a hazard for pedestrians.
- Bridge style driveway slabs have the potential to constrict the flow of water in the surrounding guttering. In the event that the channel becomes blocked, the slab should be designed in such a way that water can still pass over the ramp section without flowing into the property. The grate should also be easily removable to allow cleaning of the channel.
- The use of bridge style slabs to provide access to properties with high crossfall road shoulders will be assessed on an individual basis and will only be allowed with the specific approval of Dubbo City Council.
5. The driveway slab is to be classed as Industrial, Commercial or Residential depending on the type of building on the property. The slab will therefore be constructed according to the specifications for each class in Standard Drawing 5211.
 6. A full separation joint is to be provided at the back of the new vehicular crossing and the driveway slab using bituminous jointing (Jointex) or similar.
 7. The finished surface should be kept from drying out too rapidly by covering with wet sand or plastic sheeting.
 8. An approved Traffic and Pedestrian Control Plan completed by an appropriately qualified person in accordance with AS 1742.3-2009 is to be in place prior to any construction works commencing and during any construction works.
 9. The potential for sediment to enter Council's underground stormwater system is to be addressed. Appropriate measures are to be put in place to prevent this from happening.
 10. The Contractor/Owner/Developer is responsible for the removal of all formwork and rubbish associated with the construction from the site and the reinstatement of the surface adjacent to the works upon completion.
 11. The area in front of the replacement kerb and gutter or vehicular crossing shall be neatly saw cut, and the material removed and replaced with AC10 (Asphaltic Concrete). Minimum dimension of the restoration work is to be 600mm wide and a depth of 50mm. All AC material is to be placed on a thoroughly compacted base of DGB.
 12. The following inspections are to be carried out prior to and during construction. In this regard 24 hours notice is to be given by phoning 6801 4000. The inspections required are as follows:
 - Site inspection prior to commencement of work.
 - When the formwork and compacted base are in place and prior to the mesh being placed.
 - When the mesh has been placed.
 - Prior to the bitumen sealing or asphaltic works.
 - At the completion of all works including restoration of the site.

Failure to have the above inspections carried out may result in the rejection of the crossing.

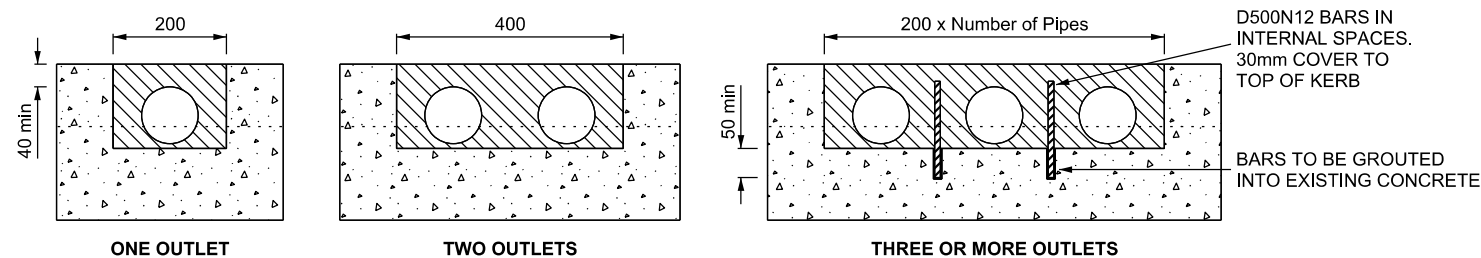
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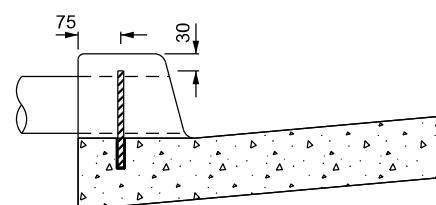
PLAN OF STANDARD KERB PROFILE



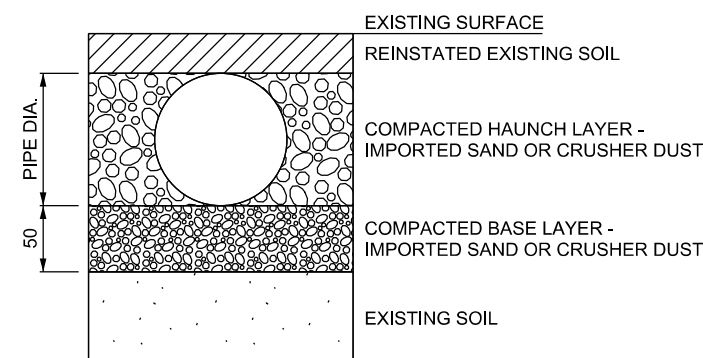
PLAN OF ROLL OVER KERB PROFILE



SECTION A-A



SECTION B-B



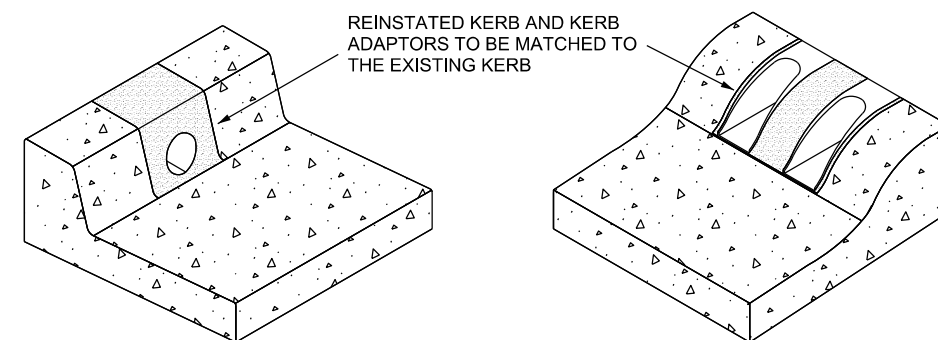
PIPE TRENCH DETAIL

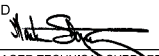

NOTES

- The following notes refer to the Roll Over and Standard kerb profiles outlined in Standard Drawing STD 5235.
- Contractors/Owners/Developers are responsible for the locating of all underground services and the arranging and completion of repairs with the appropriate authority should they be broken or damaged during construction.
- Where the proposed building works necessitate the cutting-in of new stormwater outlets into the existing street kerb, the Contractor/Owner/Developer shall ensure that the following procedures are adopted:
 - If a kerb adaptor is required, it shall be capable of withstanding vehicular loadings.
 - Create the opening in the kerb by use of either a saw cut or bored hole only. Breaking out of the kerb by impact methods such as jackhammering is not permitted.
 - If a kerb adaptor is utilised, any exposed faces must be kept flush with the adjacent surfaces of the kerb.

If a pipe is used, it must be kept flush with the face of the kerb.

 - The fixing of the kerb adaptor and filling in of any gaps is to be undertaken by the use of an epoxy resin cement. Mortar or concrete is not to be used as these materials have a tendency to crack and chip away over time and exhibit poor flexibility.
 - The fixing of a pipe and the reinstatement of the kerb is to be done with an epoxy resin cement. The kerb is to be reinstated to its original condition and profile.
- Kerb adaptors (C&E AE3 Roll-Over Adaptor or similar) are to be utilised for all Roll Over style kerb profiles. Round stormwater pipe is not to be installed through the Roll Over kerb face.
- Kerb adaptors are not to be used with either 150mm or 200mm high Standard Kerb profiles except within the CBD area. In this case, the Council approved CBD Kerb Adaptor shown in STD 6763 is to be used.
- Stormwater pipes outside the property boundary and passing through the kerb face are to be made of PVC only. Pipes are to have a pipe stiffness class of SN4 or greater as specified in AS/NZS 1254-2010, Table 3.2. Pipes are to have a minimum diameter of 90mm and a maximum diameter of 100mm. Pipe sizes exceeding these limitations are to be converted on private property using either a reducer coupling or a drainage junction pit.
- To reduce risk of pipe crushing under heavy loads (eg. vehicular loads) in the footpath area, pipe is to be installed in accordance with Pipe Trench Detail shown on this sheet.



APPROVED:  DATE: 19/06/2014 MANAGER TECHNICAL SUPPORT	SURVEY _____ DATE _____ DESIGN _____ DATE _____ DRAWING AR DATE 29/05/2014 CHECKED _____ DATE 19/06/2014 SENIOR DESIGN ENGINEER	FIELD BOOK/SURVEY FILES DESIGN FILES DRAWING FILES U:\TS\Technical Support\Design Section\Standards and Design Guides\DCS Standard Engineering Drawings\Control\DCS Standard Drawings.dgn	SCALES NOT TO SCALE ORIGINAL SIZE A1 0 1 2 3 4 5 cm	PERMANENT MARK: N/A RL: N/A DATUM: AHD & MGA STATUS: STANDARD DRAWING PRINT DATE: 20/06/2014 <table border="1"> <thead> <tr> <th>No.</th> <th>DATE</th> <th>APP'D</th> <th>DETAILS OF AMENDMENTS</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>29/05/2014</td> <td>CG</td> <td>AMENDED</td> </tr> <tr> <td>2.</td> <td>19/06/2014</td> <td>CG</td> <td>AMENDED</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	No.	DATE	APP'D	DETAILS OF AMENDMENTS	1.	29/05/2014	CG	AMENDED	2.	19/06/2014	CG	AMENDED	-	-	-	-	-	-	-	-	 DUBBO CITY COUNCIL TECHNICAL SERVICES DIVISION	DRAWING TITLE INSTALLATION OF STORMWATER OUTLETS THROUGH KERB FACE	JOB STANDARD DRAWING	SHEET No. 1 OF 1 SHEETS PLAN NO. STD 6720
	No.	DATE	APP'D	DETAILS OF AMENDMENTS																								
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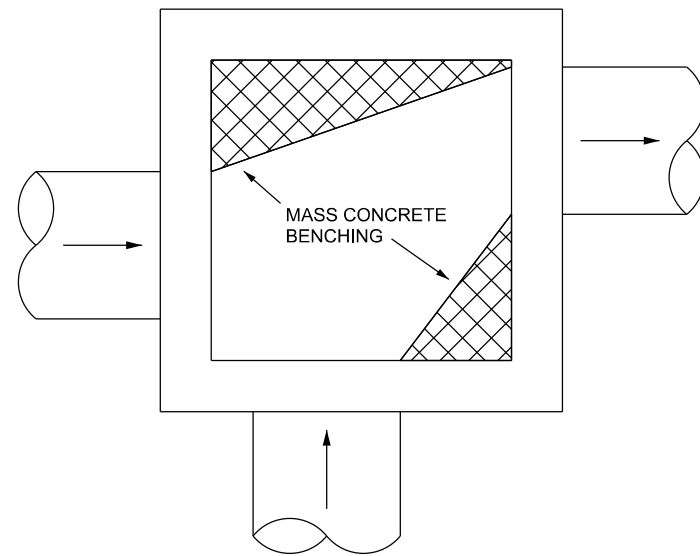
NOTES

1. Where possible, intersection of pipe centrelines should occur on the downstream face of the pit. The layouts shown on this drawing illustrate the arrangements to be used in situations where this is not possible.

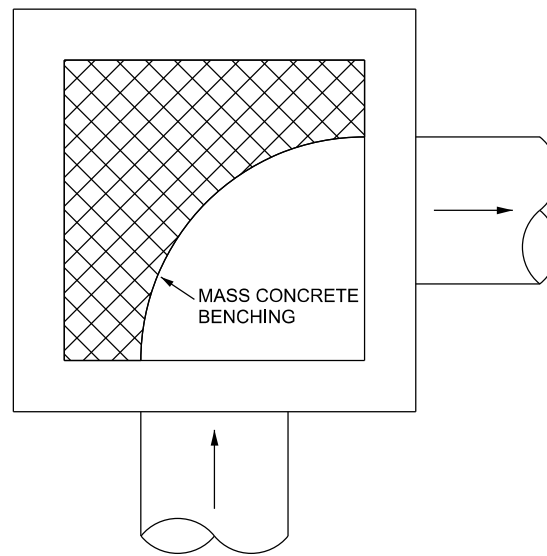
2. The layouts shown on this drawing are applicable to the following standard drawings:

STD 1270 - Stormwater Gully Pit
STD 1271 - Stormwater Junction Pit
STD 1620 - Grated Inlet Pit in Roll Over Kerb
STD 5090 - Grate Letter Opening Stormwater Pit

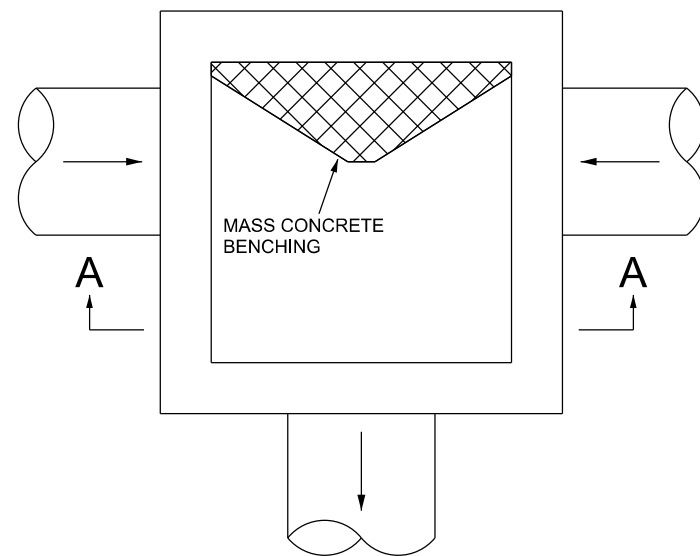
3. Mass concrete benching shown on this drawing is in addition to any other benching specified in the relevant standard drawing and should extend to the obvert of the outflow pipe or higher.



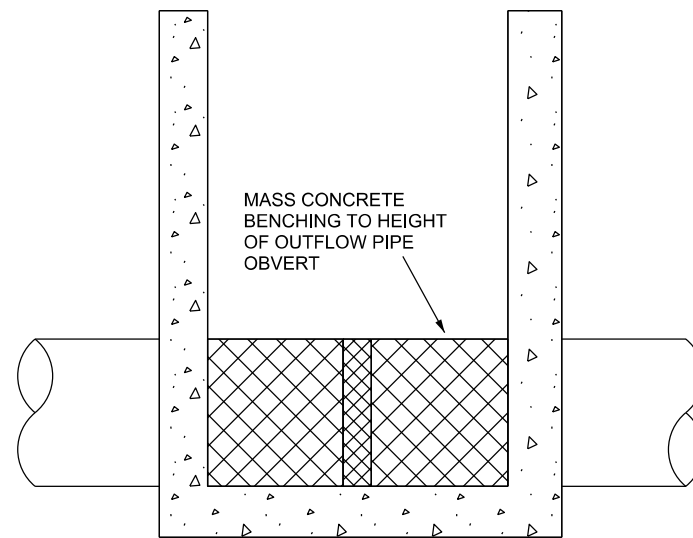
LAYOUT 1 - TWO INLETS ON PERPENDICULAR FACES



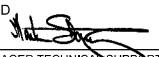
LAYOUT 2 - 90° BEND

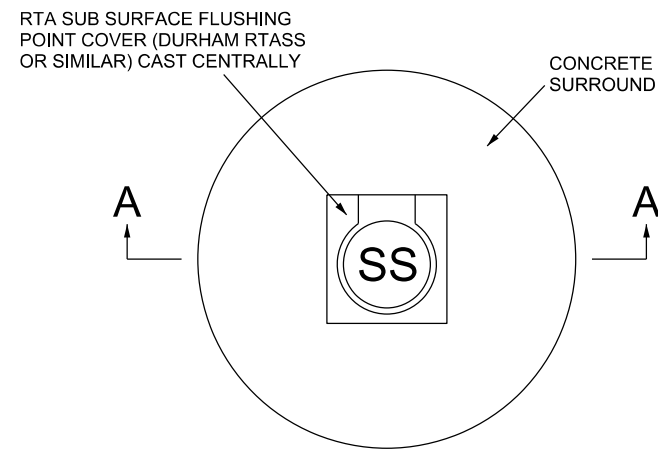


LAYOUT 3 - TWO INLETS ON OPPOSITE FACES

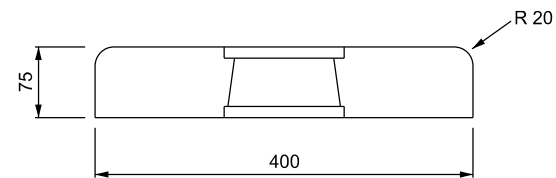


SECTION A-A

APPROVED  MANAGER TECHNICAL SUPPORT	SURVEY _____ DATE _____	FIELD BOOK/SURVEY FILES	SCALES NOT TO SCALE ORIGINAL SIZE A1 0 1 2 3 4 5 cm	PERMANENT MARK: N/A	RL: N/A	DATUM: AHD & MGA	DUBBO CITY COUNCIL TECHNICAL SERVICES DIVISION	DRAWING TITLE ARRANGEMENT FOR PITS WITH INTERNAL BRANCH POINTS	JOB STANDARD DRAWING	SHEET No. 1
	DESIGN _____ DATE _____	DESIGN FILES		STATUS: STANDARD DRAWING	PRINT DATE: 20/06/2014	OF 1 SHEETS				
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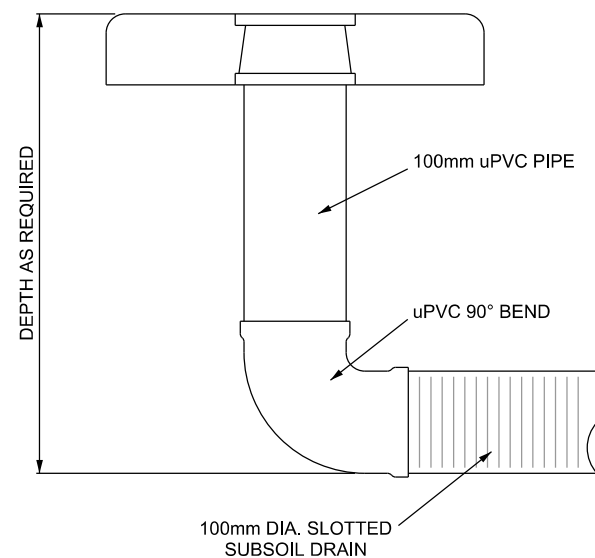
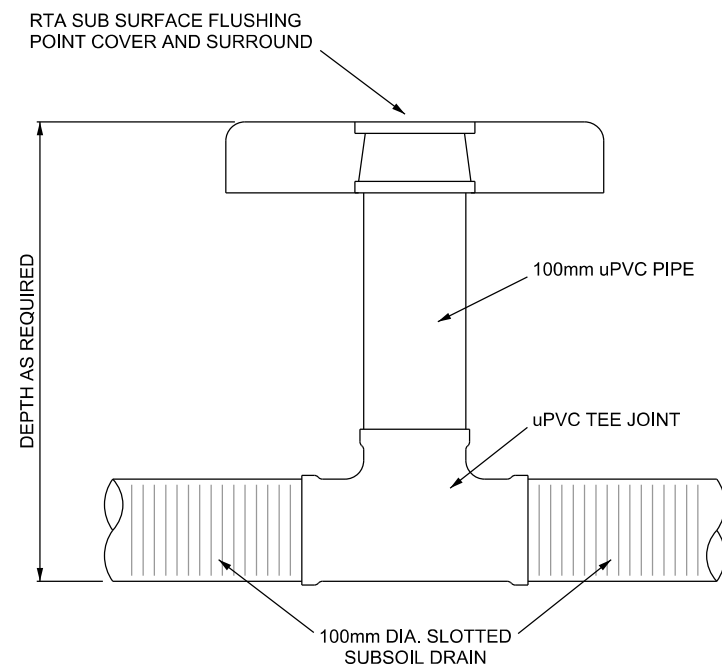
SUBSOIL DRAIN COVER



SECTION A-A

NOTES

1. Subsoil drains are to constructed in accordance with Dubbo City Council's Development Construction Specifications: C230 - Sub-Surface Drainage General, C231 - Subsoil and Foundation Drains and C232 - Pavement Drains.
2. Subsoil drains are to be layed at a minimum grade of 0.5% and have flushing points at the upstream end and at a maximum spacing of 60 metres.
3. Subsoil drains are to be connected into stormwater pits at the base of the pit.
4. uPVC pipes and fittings are to have a pipe stiffness class of SN4 or greater as specified in AS/NZS 1254-2010, Table 3.2.

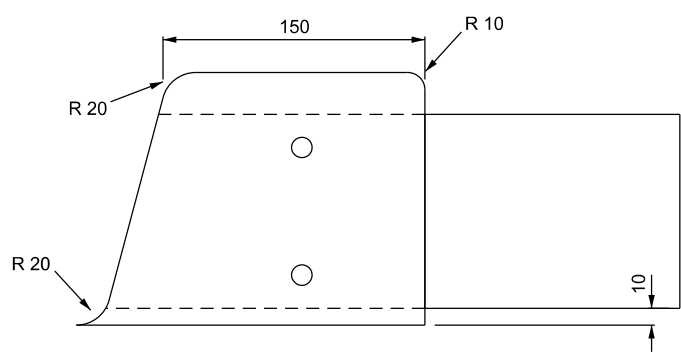
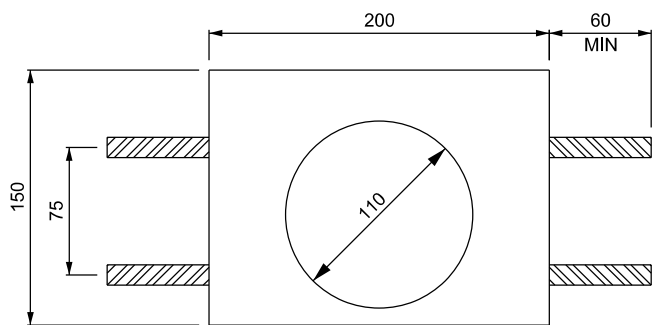
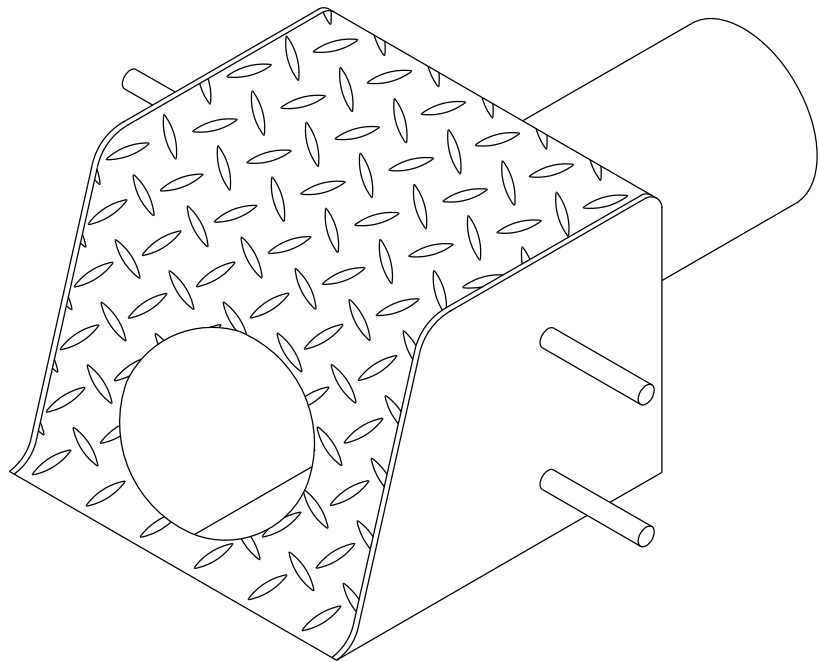
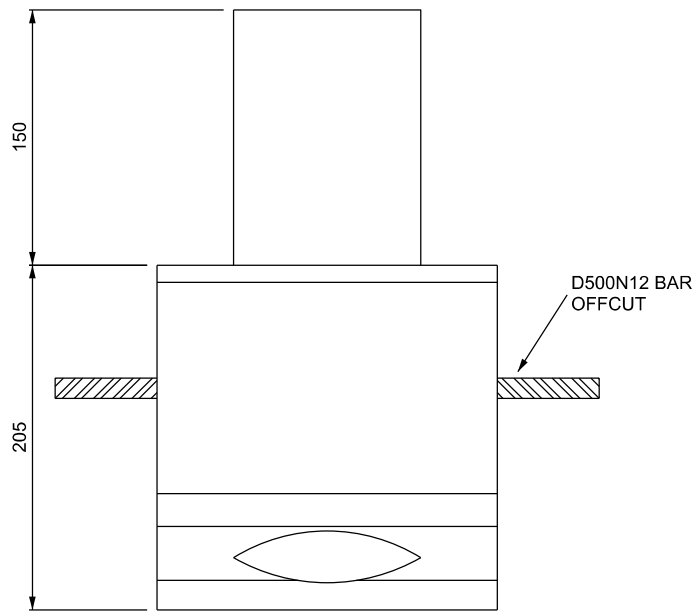


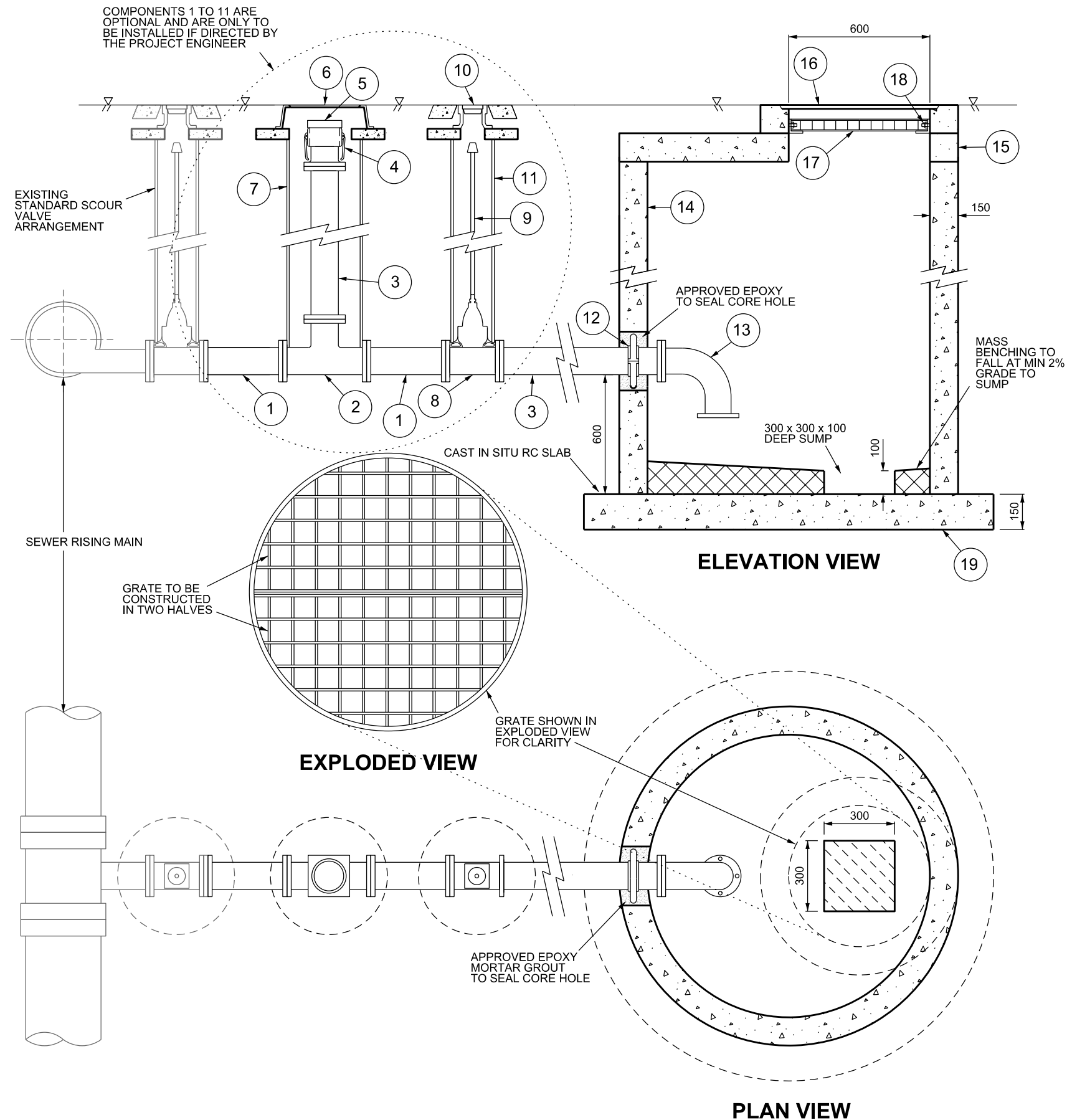
TYPICAL SUBSOIL DRAIN FLUSHING POINTS

APPROVED MANAGER TECHNICAL SUPPORT	SURVEY _____ DATE _____ DESIGN _____ DATE _____ DRAWING _____ AR _____ DATE 29/05/2014	FIELD BOOK/SURVEY FILES DESIGN FILES DRAWING FILES	SCALES NOT TO SCALE ORIGINAL SIZE A1	PERMANENT MARK: N/A RL: N/A DATUM: AHD & MGA STATUS: STANDARD DRAWING PRINT DATE: 20/06/2014	DUBBO CITY COUNCIL TECHNICAL SERVICES DIVISION 	DRAWING TITLE SUBSOIL DRAINAGE FLUSHING POINT	JOB STANDARD DRAWING	SHEET No. 1 OF 1 SHEETS PLAN NO. STD 6750
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NOTES

1. The CBD kerb adaptor is to be used only in the following locations:
- (a) Macquarie Street from Cobra Street to Erskine Street
 - (b) Talbragar Street from Bligh Street to Darling Street
 - (c) Any other location at the discretion of Dubbo City Council
2. For installation of stormwater outlets outside of the above locations refer to STD 6720
3. The front, top and back of the kerb adaptor is to be constructed from a single sheet of 3mm thick checker-plated steel bent into shape. The sides are to be cut from plain 3mm thick steel.
4. Pipe sleeve is to be a steel CHS with an internal diameter of 110mm. 90mm stormwater pipes may be fitted to the adaptor using a concentric reducer.
5. All joints and seams are to be welded.
6. The finished kerb adaptor is to be hot-dip galvanised.
7. The width of the kerb adaptor may be increased to accommodate multiple stormwater outlets. In this case the spacing between each pipe sleeve should be 50mm (160mm centre to centre).
8. The kerb adaptor is intended for installation in new (uncured) kerb only.





COMPONENT SCHEDULE		
No.	DESCRIPTION	DIA (mm)
1	DICL FL-FL PIPE (MIN LENGTH 300mm) - OPTIONAL	100
2	DICL FL-FLxFL TEE - OPTIONAL	100
3	DICL FL-FL PIPE (LENGTH TO SUIT) - OPTIONAL	100
4	FLANGED FEMALE CAMLOK FITTING - OPTIONAL	100
5	DUST PLUG (MALE CAMLOK FITTING) - OPTIONAL	100
6	SEWER ACCESS LID & SURROUND - OPTIONAL	100
7	PVC PIPE (LENGTH TO SUIT) - OPTIONAL	300
8	DICL FL-FL STOP VALVE (RESILIENT SEATED) - OPTIONAL	100
9	STOP VALVE EXTENSION SPINDLE (LENGTH TO SUIT) - OPTIONAL	N/A
10	STOP VALVE SURROUND & LID - OPTIONAL	N/A
11	PVC PIPE (LENGTH TO SUIT) - OPTIONAL	225
12	DICL PUDDLE FLANGE	100
13	90° FL-FL BEND	100
14	RC SHAFT (LENGTH TO SUIT)	1200 MIN
15	RC CONVERSION SLAB	1200 MIN
16	"GATIC" OR EQUIVALENT SURROUND & LID	600
17	ALUMINIUM GRATE	600
18	M10 x 98mm STAINLESS DYNABOLT (8 NEEDED)	N/A
19	RC BASE SLAB	1800

NOTES

1. During construction refer to the Pressure Sewerage Code of Australia Part 3 Version 1.1 by Water Services Association of Australia.

1. Pipe lengths leading up to the pit may vary with each site location and must be confirmed with the supervisor prior to construction.

2. All pipe fittings both entering and within the scour valve pit must be ductile iron. All ductile iron flanges are to be in accordance with AS 2129-2000.

3. All concrete to be 32MPa and in accordance with AS 1379-2007 and AS 3600-2009.

4. All concrete reinforcement to be in accordance with AS 1304-1991.

5. Precast concrete components are to be in accordance with AS 4198-1994.

6. All precast components to be jointed with an approved mastic sealant. Core hole to be filled with an approved epoxy once the ductile pipe is in place.

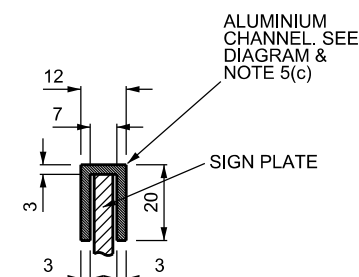
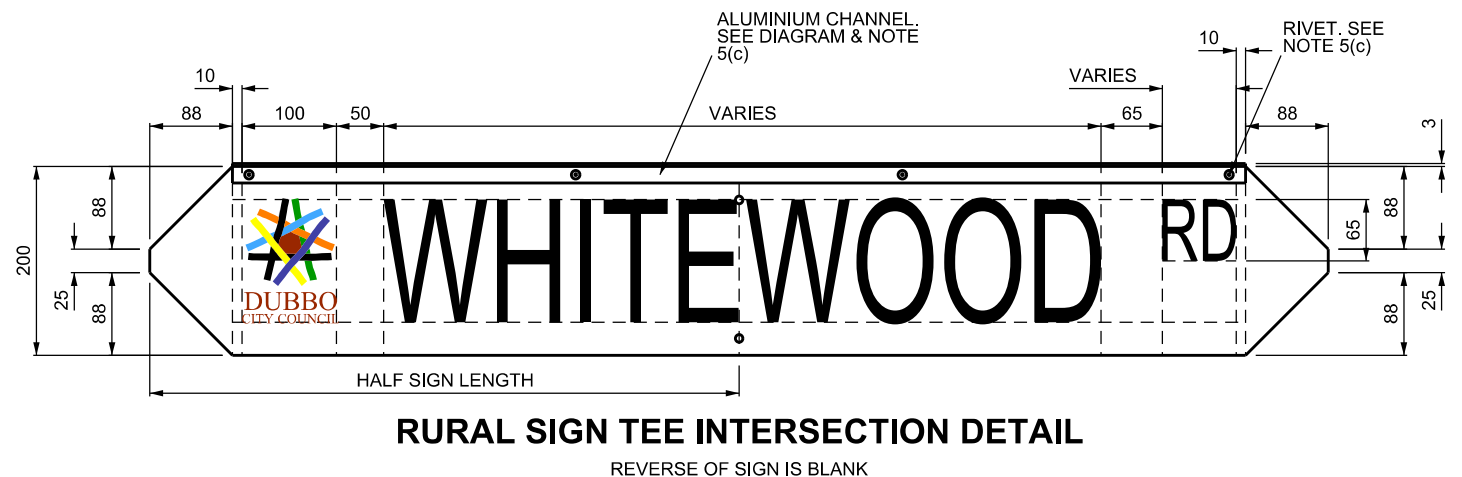
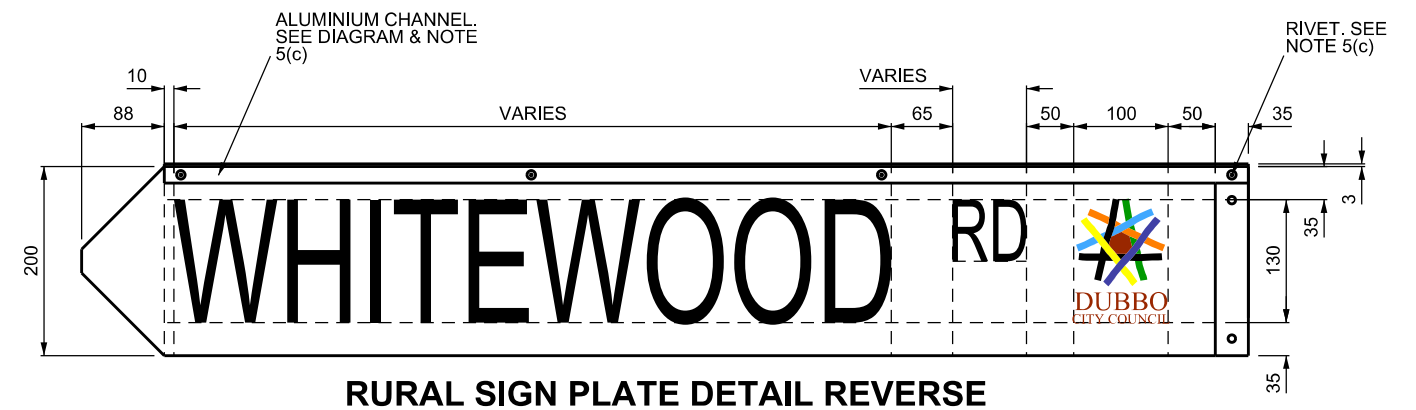
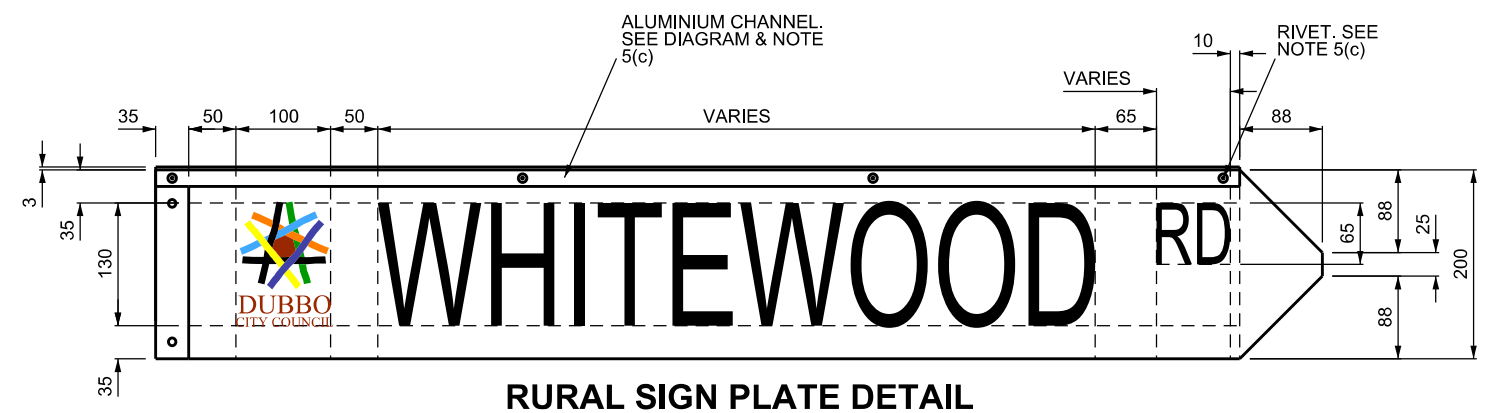
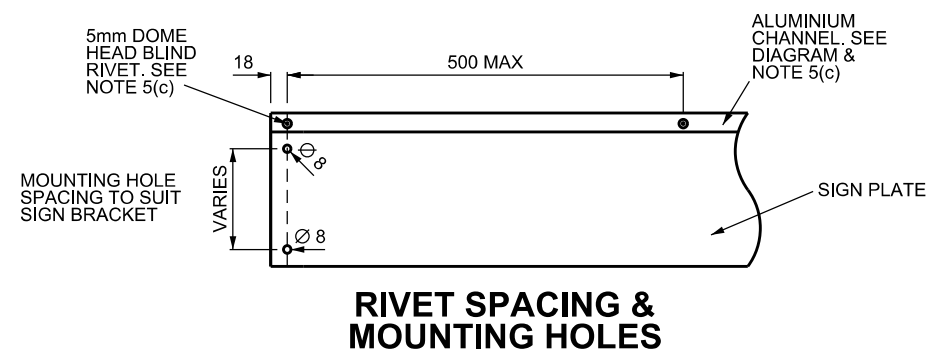
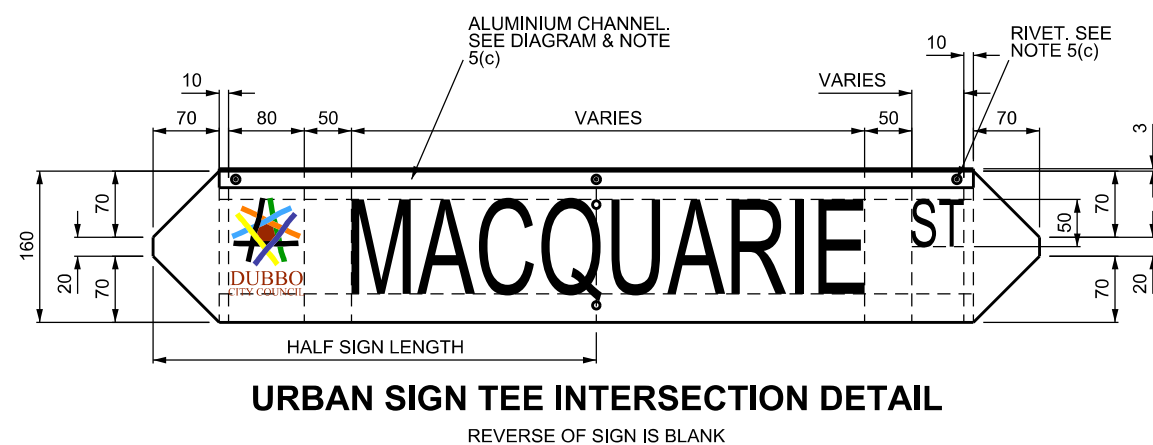
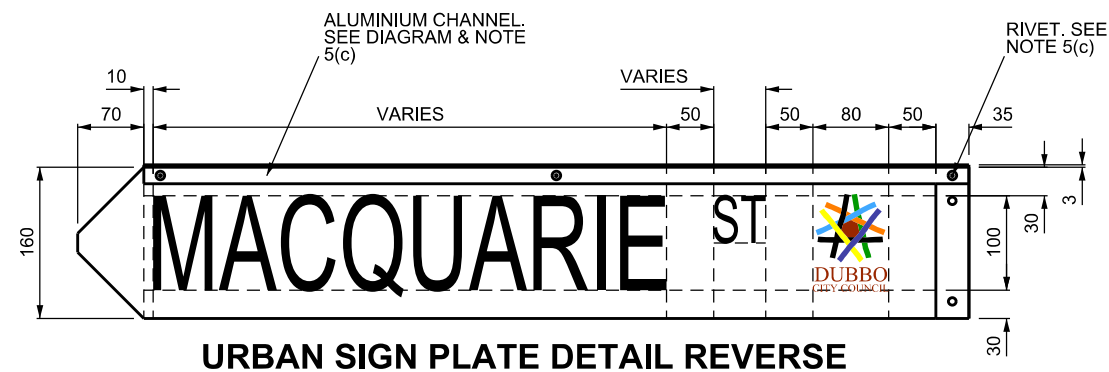
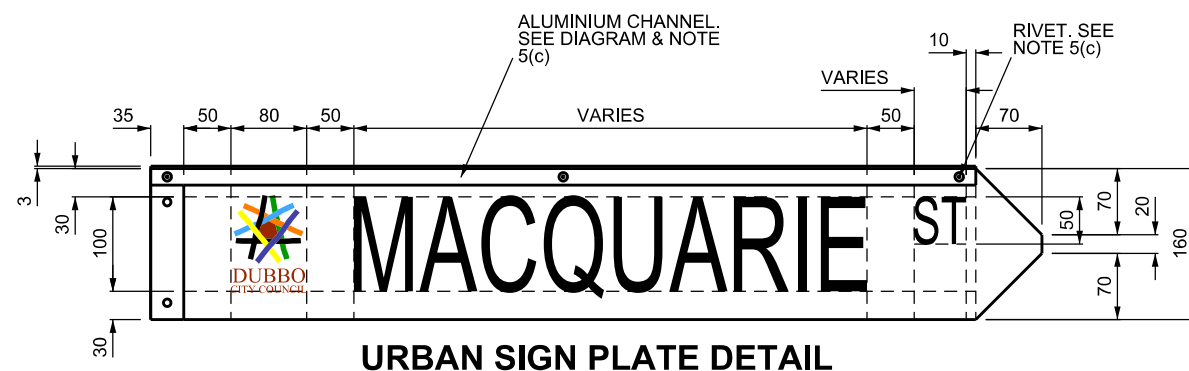
7. Cast iron lids are to be in accordance with AS 3996-2006 and are to be Class C for slow moving trafficable areas or Class D in roadways or faster moving trafficable areas. The scour pit access lid must also be sealable.

8. Form a 300mm x 500mm x 100mm deep sump at the base of the pit centred with the access lid. Provide mass benching over the entire base of pit with minimum 2% grade to the sump.

9. The aluminium grate used in the scour pit must conform to the specifications outlined in AS 1657-1992. It is to be constructed in two halves that are easy to remove from the sewer access lid. The grate is to be supported on 4 galvanised steel brackets that are each supported with 2 x M10 stainless steel dynabolts. The brackets are to be fixed to the side of the concrete surround as shown in the drawing.

10. Provide a polyurethane lining or equivalent to the scour chamber unless otherwise specified by the project engineer. Reactamine 760 or other approved products may be used. Reactamine 760 has an expected useful life of 20 years.

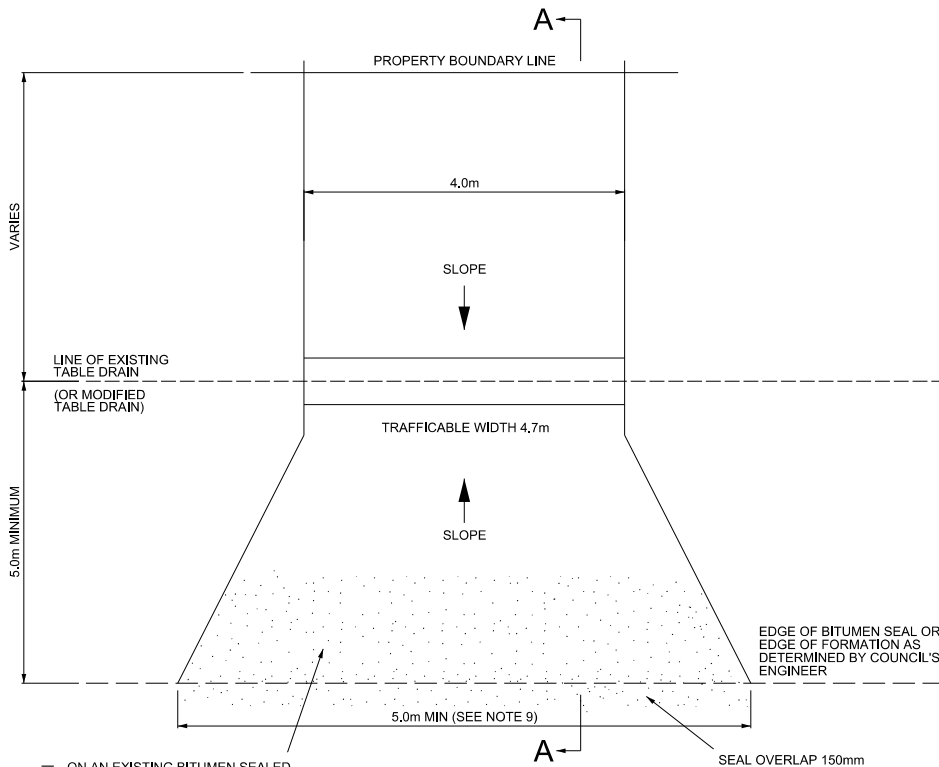
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NOTES

See Sheet 1 for all technical notes.

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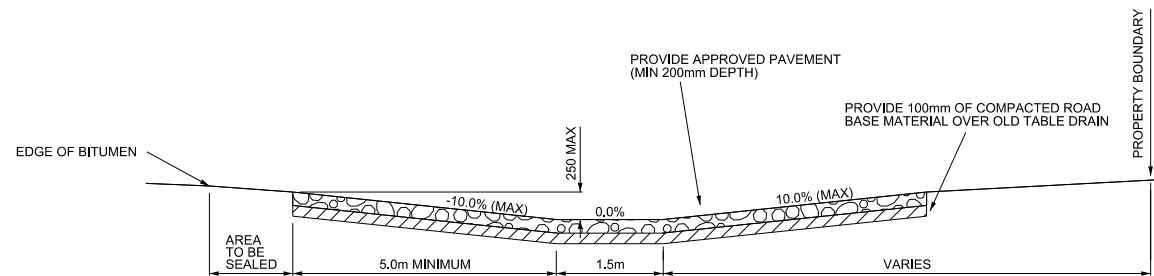


- ON AN EXISTING BITUMEN SEALED ROAD, THE ACCESS IS TO BE SEALED WITH 150mm OVERLAPPING ONTO THE EXISTING ROADWAY.
- THE BITUMEN SEAL IS TO EXTEND TO THE PROPERTY BOUNDARY (OR A MAXIMUM OF 20 METRES) UNLESS ADVISED OTHERWISE BY COUNCIL'S ENGINEER.
- ON AN EXISTING GRAVEL ROAD, NO SEALING IS REQUIRED.


PLAN

NOTES

- NO WORK IS TO COMMENCE ON THE DRIVEWAY ACCESS UNTIL THE ASSOCIATED SECTION 138 APPLICATION HAS BEEN LODGED WITH, AND APPROVED BY COUNCIL.
- THIS PLAN IS TO BE READ IN CONJUNCTION WITH DUBBO REGIONAL COUNCIL'S SPECIFICATION FOR RURAL PROPERTY ENTRANCES FROM BITUMEN SEALED OR GRAVEL ROADS.
- CONTRACTORS/ OWNERS/ DEVELOPERS ARE RESPONSIBLE FOR THE LOCATING OF ALL UNDERGROUND SERVICES (DIAL BEFORE YOU DIG INQUIRY ETC.) AND THE ARRANGING AND COMPLETION OF REPAIRS WITH THE APPROPRIATE AUTHORITY SHOULD THEY BE BROKEN OR DAMAGED DURING CONSTRUCTION. ANY SERVICE PITS LOCATED WITHIN THE PROPOSED DRIVEWAY SHALL BE MOVED AT THE COST OF THE CONTRACTOR/ OWNER/ DEVELOPER BY CONTACTING THE RELEVANT AUTHORITY.
- THE PAVEMENT IS TO BE CONSTRUCTED IN ACCORDANCE WITH COUNCIL'S ADOPTED AUS-SPEC DOCUMENTATION WITH A MINIMUM DEPTH OF 200mm. ANY BITUMEN SEAL IS TO USE 10mm AGGREGATE.
- THE POTENTIAL FOR EROSION AND THE TRANSPORTATION OF SEDIMENT IS TO BE ADDRESSED. APPROPRIATE MEASURES ARE TO BE IN PLACE TO PREVENT THIS FROM HAPPENING. WHERE THE TABLE DRAINS ARE MORE THAN 5% GRADE, MEASURES ARE TO BE PUT IN PLACE SO THAT THE POTENTIAL FOR EROSION CAN BE MINIMISED.
- THE CONTRACTOR/ OWNER/ DEVELOPER IS RESPONSIBLE FOR THE REMOVAL OF ALL DEBRIS AND RUBBISH ASSOCIATED WITH THE CONSTRUCTION FROM THE SITE AND THE REINSTATEMENT OF THE SURFACE ADJACENT TO THE WORKS UPON COMPLETION.
- ENERGY DISSIPATORS (ROCK MATTRESS) MAY BE REQUIRED TO BE INSTALLED FOR 1.0m EITHER SIDE OF THE RURAL ACCESS AT THE DISCRETION OF COUNCIL'S SUPERVISING ENGINEER.
- THE DRIVEWAY IS TO BE PLACED CENTRALLY ACROSS THE ROAD TABLEDRAIN. THE TABLEDRAIN IS REQUIRED TO HAVE MINIMUM 1% LONGITUDINAL FALL FROM THE HIGH SIDE TO THE LOW SIDE AND THE FINISHED SURFACE LEVEL OF THE FLAT SECTION SHALL BE THE SAME LEVEL AS THE EXISTING GROUND ON THE HIGH SIDE AND A MINIMUM OF 50mm HIGHER THAN THE GROUND LEVEL ON THE LOW SIDE. IN INSTANCES WHERE THE EXISTING TABLE DRAIN IS FLAT, (IE LESS THAN 1%) THEN THESE WILL BE TREATED ON AN INDIVIDUAL BASIS.
- THE WIDTH OF THE DRIVEWAY AT THE EDGE OF BITUMEN SEAL/EDGE OF FORMATION IS TO BE INCREASED TO ACCOMMODATE TURNING PATHS ASSOCIATED WITH THE LARGEST ANTICIPATED SIZED (I.E. TRUCK, SEMI-TRAILER, B-DOUBLE ETC.) DESIGN VEHICLE.



SECTION A-A

CHECKED _____ DATE _____		DRAWING FILES LATS Technical Support/Design Sign/Standards and Design Guidelines/Standard Engineering Drawings/Control/DCC Standard Drawings.dgn		FIELD BOOK/ SURVEY FILES		SCALES		No. DATE APPD DETAILS OF AMENDMENTS		 DUBBO REGIONAL COUNCIL		DRAWING TITLE		SHEET No. 1	
SENIOR DESIGN ENGINEER _____		DRAWING RC DATE 12/12/2018		SURVEY _____ DATE _____		NOT TO SCALE						RURAL DRIVEWAY (NO CULVERT)		OF 1 SHEETS	
APPROVED _____		DESIGN FILES		COORDINATE SYSTEM: N/A		ORIGINAL SIZE A1						JOB TITLE		STD NO.	
MANAGER INFRASTRUCTURE STRATEGY APPROVED _____		DESIGN _____ DATE _____		PERMANENT MARK: N/A		0 1 2 3 4 5 cm						DRC STANDARD DRAWINGS		D 1203	
DATE _____				DATUM RL: N/A								PRINT DATE: 12/12/2018		PLAN NO. STD 7246	
DIRECTOR INFRASTRUCTURE & OPERATIONS _____															