



STANDARD DRAWINGS FOR ROAD & DRAINAGE INFRASTRUCTURE

**Last Revision
OCTOBER 2007**

NOTE: THESE STANDARD DRAWINGS REPLACE ALL PREVIOUS ISSUES

STANDARD DRAWINGS FOR ROAD & DRAINAGE INFRASTRUCTURE

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* Denotes Restricted Use

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STANDARD DRAWINGS FOR ROAD & DRAINAGE INFRASTRUCTURE

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DRAINAGE WORKS

*** Denotes Restricted Use**

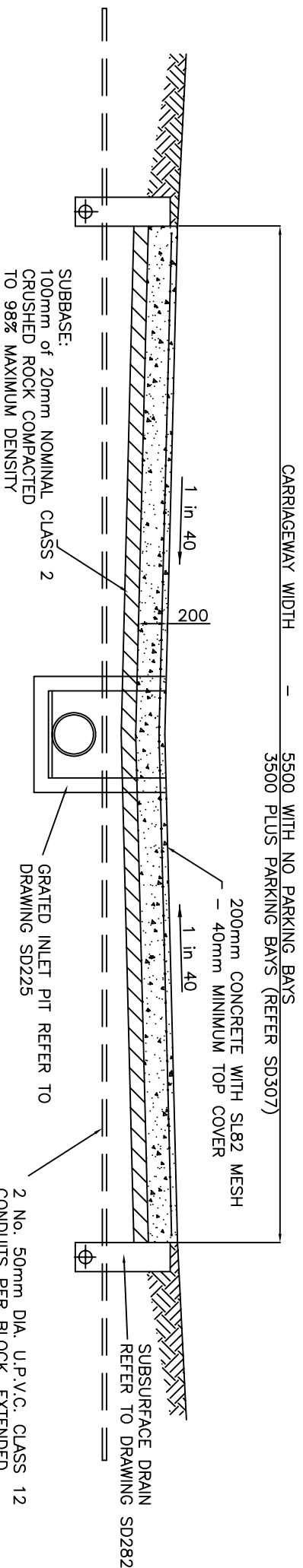
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PAVEMENT DETAILS FOR ACCESS LANE


NOTES:

1. AN ACCESS LANE IS A SIDE OR REAR LANE PRINCIPALLY PROVIDING ACCESS TO PARKING FOR LOTS WITH ANOTHER STREET FRONTAGE. MAXIMUM VOLUME OF 300 VEHICLES PER DAY. (RESCODE)
2. FOR CONTRACTION AND EXPANSION JOINT DETAILS REFER DRAWING SD306. CONTRACTION JOINTS SHALL BE LOCATED AT 7.0m INTERVALS. EXPANSION JOINTS SHALL BE PROVIDED AT EVERY 4th CONTRACTION JOINT.
3. CONCRETE SHALL BE 25 MPa AT 28 DAYS.
4. CONCRETE SURFACE SHALL HAVE A BROOM FINISH.
5. FOR PARKING BAY DETAILS REFER TO DRAWING SD307.

2 No. 50mm DIA. U.P.V.C. CLASS 12 CONDUITS PER BLOCK, EXTENDED 1500 PAST EDGE OF PAVEMENT, 100 MINIMUM BELOW CARRIAGEWAY SUBGRADE LEVEL.
FOR FUTURE WATER AND GAS CONNECTIONS. "W" AND "G" TO BE ENGRAVED ON EDGE OF LANE SURFACE ABOVE EACH CONDUIT.

Amendments			
No.	Zone	Detail	Date
1.		Mesh Code Changed	July 06.

DRAWN : K. GRAHAM	
CHECKED : P. TUTTLE	
APPROVED : S. PLATER	
SCALE : N.T.S.	
ISSUE DATE: JUNE 2004	

	PO Box 119 1079 Pascoe Vale Road Broadmeadows Victoria 3047 Telephone (03) 9205 2200 Facsimile (03) 9309 0109
TYPE : ROAD CHARACTERISTIC & PAVEMENT COMPOSITION — ACCESS LANE	DRAWING NO: SD 02

ACCESS PLACE – (MAX 300vpd)

Road Characteristics – Access Place (Maximum length = 100m)

Road Type	Max. VPD	Parking	Kerb & Channel Type	Minimum Width (mm) *
Access Place	300	One side	SM2(M) Type – Refer Std Dwg SD101	5000
Abutting a Reserve	300		B2 Type – Refer Std Dwg SD101	5000

* Measured invert to invert.

Pavement Composition – Access Place

Pavement Layer	Pavement Material	Pavement Thickness (mm)									
		Non Expansive Subgrade					Expansive Subgrade **				
		CBR 2%	CBR 3%	CBR 4%	CBR 5%	CBR 2%	CBR 3%	CBR 4%	CBR 5%		
Surfacing	Size 10 Type L Asphalt	30	30	30	30	30	30	30	30		
Bituminous Prime	Prime or Primerseal										
Base	20mm Class 2 Crushed Rock	170	170	170	170	170	170	170	170		
Upper Subbase	20mm Class 3 Crushed Rock	100	100	100	100	100	100	100	100		
Lower Subbase	20 or 40mm Class 4 Crushed Rock or Approved Equivalent	140	90	50	0	140	100	100	100		
Total		440	390	350	300	440	400	400	400		

MINIMUM PAVEMENT THICKNESS: Non-expansive subgrades 300mm
Expansive subgrades 400mm

** EXPANSIVE SOILS ARE CLASSIFIED AS FOLLOWS:
Liquid Limit >70%
Plasticity Index >45
Pl x % < 0.425mm >2200
Potential Swell >2.5

Amendments					
No.	Detail	Initials	Date		

DRAWN : K. GRAHAM	
CHECKED : P. TUTTLE	
APPROVED : S. PLATER	
SCALE :	
ISSUE DATE: JUNE 2004	

	PO Box 119 1079 Pascoe Vale Road Broadmeadows Victoria 3047 Telephone (03) 9205 2200 Facsimile (03) 9309 0109
TYPE : ROAD CHARACTERISTICS AND PAVEMENT COMPOSITION – ACCESS PLACE	DRAWING NO: SD 03

ACCESS STREET – (MAX 2000vppd)

Road Characteristics – Access Street (300 Dwellings or less)

Road Type	Max. VPD	Parking	Kerb & Channel Type	Minimum Width (mm) *
Access Street	2000	One side	SM2(M) Type – Refer Std Dwg SD101	5500
Access Street	2000	Both sides	SM2(M) Type – Refer Std Dwg SD101	7500
Abutting a Reserve	2000	Both sides	B2 Type – Refer Std Dwg SD101	7500

* Measured invert to invert.

Pavement Composition – Access Street


Pavement Layer	Pavement Material	Pavement Thickness (mm)									
		Non Expansive Subgrade					Expansive Subgrade **				
		CBR 2%	CBR 3%	CBR 4%	CBR 5%	CBR 2%	CBR 3%	CBR 4%	CBR 5%		
Surfacing	Size 10 Type L Asphalt	30	30	30	30	30	30	30	30		
Bituminous Prime	Prime or Primerseal										
Base	20mm Class 2 Crushed Rock	170	170	170	170	170	170	170	170		
Upper Subbase	20mm Class 3 Crushed Rock	140	140	140	140	140	140	140	140		
Lower Subbase	20 or 40mm Class 4 Crushed Rock or Approved Equivalent	190	120	50		190	120	60	60		
Total		530	460	390	340	530	460	400	400		

MINIMUM PAVEMENT THICKNESS: Non-expansive subgrades 340mm
Expansive subgrades 400mm

** EXPANSIVE SOILS ARE CLASSIFIED AS FOLLOWS:
Liquid Limit >70%
Plasticity Index >45
Pl x % < 0.425mm >2200
Potential Swell >2.5

Amendments			
No.	Detail	Initials	Date

DRAWN : K. GRAHAM	
CHECKED : P. TUTTLE	
APPROVED : S. PLATER	
SCALE :	
ISSUE DATE: JUNE 2004	

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TYPE : ROAD CHARACTERISTICS AND PAVEMENT COMPOSITION – ACCESS STREET	DRAWING NO: SD 04
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COLLECTOR STREET – (MAX 3000vpd)

Road Characteristics – Collector Street

Road Type	Max. VPD	Parking	Kerb & Channel Type	Minimum Width (mm) *
Collector Street	3000	Both sides of carriageway	SM2(M) Type – Refer Std Dwg SD101	7500
Collector Street	3000	Both sides of carriageway	B2 Type – Refer Std Dwg SD101	7500
Collector Street	3000	Indented to leave 6m minimum clear carriageway	SM2(M) Type – Refer Std Dwg SD101	6000
Collector Street	3000	Indented to leave 6m minimum clear carriageway	B2 Type – Refer Std Dwg SD101	6500
Abutting a Reserve	3000	Both sides of carriageway	B2 Type – Refer Std Dwg SD101	7500

* Measured invert to invert.

Pavement Composition – Collector Street

Pavement Layer	Pavement Material	Pavement Thickness (mm)									
		Non Expansive Subgrade					Expansive Subgrade **				
		CBR 2%	CBR 3%	CBR 4%	CBR 5%	CBR 2%	CBR 3%	CBR 4%	CBR 5%		
Surfacing	Size 10 Type N Asphalt	30	30	30	30	30	30	30	30		30
Bituminous Prime	Prime or Primerseal										
Base	20mm Class 2 Crushed Rock	170	170	170	170	170	170	170	170		170
Upper Subbase	20mm Class 3 Crushed Rock	150	150	150	150	150	150	150	150		150
Lower Subbase	20 or 40mm Class 4 Crushed Rock or Approved Equivalent	275	190	110	50	275	190	150	150		150
		625	540	460	400	625	540	500	500		500
Total											

NOTE:

THIS CHART IS ONLY TO BE USED WHERE THE ULTIMATE AVERAGE VEHICLES PER DAY WILL NOT EXCEED 3000.

MINIMUM PAVEMENT THICKNESS: Non-expansive subgrades 400mm
Expansive subgrades 500mm

** EXPANSIVE SOILS ARE CLASSIFIED AS FOLLOWS:

- Liquid Limit >70%
- Plasticity Index >45
- Pl x % < 0.425mm >2200
- Potential Swell >2.5

Amendments		No.	Detail	Initials	Date
DRAWN : K. GRAHAM					
CHECKED : P. TUTTLE					
APPROVED : S. PLATER					
SCALE :					
ISSUE DATE: JUNE 2004					



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TYPE :
ROAD CHARACTERISTICS AND PAVEMENT
COMPOSITION – COLLECTOR STREET

DRAWING NO.:
SD 05

TRUNK COLLECTOR STREET – (>3000vpd)

ROAD CHARACTERISTICS – TRUNK COLLECTOR STREET

Road Type	Max. VPD	Parking	Kerb & Channel Type	Minimum Width (mm) *
Trunk Collector Street	6000	Parking not permitted	SM2 Type – Refer Std Dwg SD101	7000 2x3.5m Dual Carriageway
Trunk Collector Street with parking	6000	Parking on carriageway	SM2 Type – Refer Std Dwg SD101	11000 2x5.5m Dual Carriageway
Abutting a Reserve	6000		B2 Type – Refer Std Dwg SD101	

* Measured invert to invert.

PAVEMENT COMPOSITION – DESIGN TRAFFIC LOADING

The DTL for roads carrying in excess of 3000vpd must be determined in accordance with Clause 3.1.2, "Pavement Design Guidelines For New Subdivisions – April 2002". Pavements with DTL's less than 1x10⁶ ESA's may be selected from the following tabulation.

PAVEMENT COMPOSITION – TRUNK COLLECTOR STREET – ESA<10⁶

Pavement Layer	Pavement Material	Pavement Thickness (mm)									
		Non Expansive Subgrade					Expansive Subgrade **				
		CBR 2%	CBR 3%	CBR 4%	CBR 5%	CBR 2%	CBR 3%	CBR 4%	CBR 5%	CBR 2%	CBR 5%
Surfacing	Size 14 Type N Asphalt	40	40	40	40	40	40	40	40	40	40
Bituminous Prime	Prime or Primerseal										
Base	20mm Class 2 Crushed Rock	160	160	160	160	160	160	160	160	160	160
Upper Subbase	20mm Class 3 Crushed Rock	170	170	170	170	170	170	170	170	170	170
Lower Subbase	20 or 40mm Class 4 Crushed Rock or Approved Equivalent	315	210	120	55	315	230	230	230	230	230
Total		685	580	490	425	685	600	600	600	600	600

** EXPANSIVE SOILS ARE CLASSIFIED AS FOLLOWS:
Liquid Limit >70%
Plasticity Index >45
PI x % < 0.425mm >2200
Potential Swell >2.5

PAVEMENT COMPOSITION – TRUNK COLLECTOR STREET – ESA>10⁶

Pavements with a Design Traffic Loading greater than 1x10⁶ ESA's, shall be modelled mechanistically to determine the overall thickness and composition of the pavement. A granular unbound pavement with a thin asphalt surfacing (<40mm thick), would not be acceptable for these situations.

Amendments		
No.	Detail	Initials Date

DRAWN : K. GRAHAM
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 APPROVED : S. PLATER
 SCALE :
 ISSUE DATE: JUNE 2004



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TYPE :
ROAD CHARACTERISTICS AND PAVEMENT COMPOSITION – TRUNK COLLECTOR STREET
 DRAWING NO: **SD 06**

INDUSTRIAL ROADS

Road Characteristics – Industrial Roads

Road Type	Max. VPD	Parking	Kerb & Channel Type	Minimum Width (mm) *
Local Access Road: (Note 2)				
One Way Service Road			B2 Type – Refer Std Dwg SD101	7000
On Street Parking One Side Only			B2 Type – Refer Std Dwg SD101	10000
On Street Parking Both Sides			B2 or SM2 Type – Refer Std Dwg SD101	12200
Main Access Road (4 lanes): (Note 3)				
Undivided			B2 or SM2 Type – Refer Std Dwg SD101	14600
Divided			B2 or SM2 Type – Refer Std Dwg SD101	16000

* Measured invert to invert.

CHART 'A'

Pavement Composition – Industrial Roads

MINIMUM PAVEMENT REQUIREMENTS (See Note 1)


Pavement Layer	Pavement Material	Pavement Thickness (mm)
Surfacing	Size 14 Type HG (V) Asphalt	40
Intermediate Layer	Size 20 Type SI (T) Asphalt	85
Base	Size 20 Type SF (R) Asphalt	75
Upper Subbase	20mm Class 3, 3% Cement Treated, Crushed Rock (E=500MPa)	150
Lower Subbase	20 or 40mm Class 4 Crushed Rock Or Approved Equivalent	≥250
Total		≥600

NOTES:

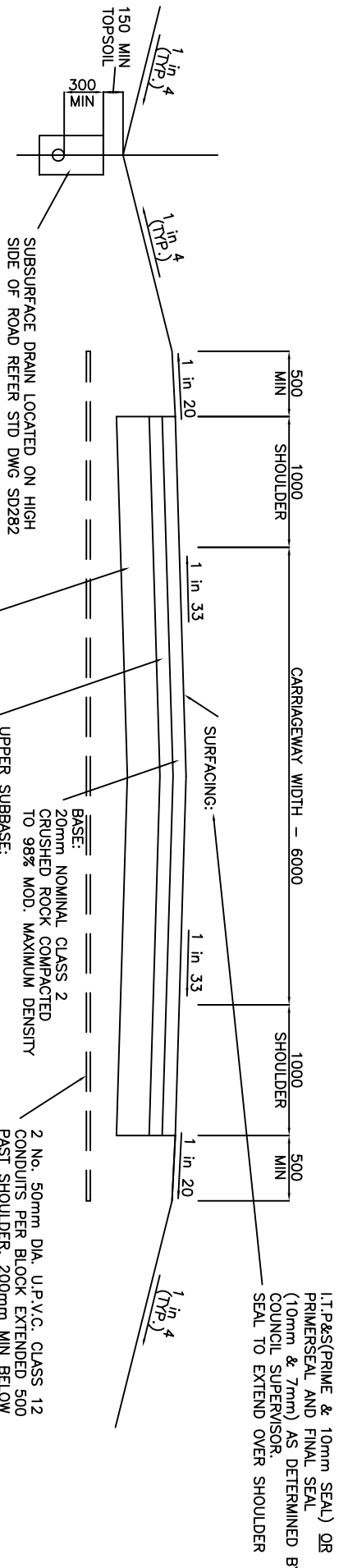
- For Industrial Roads the total pavement thickness and composition shall be designed using a mechanistic pavement design approach in accordance with the Hume City Council Industrial Road Design Guidelines. Regardless of the results of this approach, the **MINIMUM** pavement thickness and composition for industrial pavements shall be as detailed in Chart 'A'.
- An Industrial Local Access Road provides access for commercial vehicles to the abutting industrial developments. The majority of traffic will be generated by these developments and externally generated through traffic will be minimal.
- An Industrial Main Access Road provides for all traffic generated by the industrial developments to access the arterial road network. Roads shall provide four traffic lanes and may be divided with a grassed central median.

Amendments			
No.	Detail	Initials	Date
1.	Asphalt Codes Changed To New Mix Codes	R.C.	July 06
2.	Mix Pavement Changed	R.C.	Oct 07

DRAWN : K. GRAHAM	
CHECKED : P. TUTTLE	
APPROVED : S. PLATER	
SCALE :	
ISSUE DATE: JUNE 2004	

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TYPE : ROAD CHARACTERISTICS AND PAVEMENT COMPOSITION – INDUSTRIAL ROADS	DRAWING NO: SD 07
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- NOTES:
1. SURFACING & PAVEMENT TO EXTEND FULL WIDTH OF SHOULDER.
 2. WHERE THE ROAD IS LOWER THAN THE ADJOINING PROPERTY A SUBSURFACE DRAIN SHALL BE LOCATED UNDER BOTH SWALE DRAINS.
 3. FOR SERVICE CONDUIT MARKING REFER STD DWG SD402.
 4. FINAL SEALS TO BE CARRIED OUT MINIMUM 3 MONTHS AND MAXIMUM 12 MONTHS AFTER PRIMERSEAL.

PAVEMENT DETAILS FOR RESIDENTIAL RURAL ROAD

Pavement Composition – Rural Road

Pavement Layer	Pavement Material	Pavement Thickness (mm) **									
		Non Expansive Subgrade					Expansive Subgrade				
		CBR 2%	CBR 3%	CBR 4%	CBR 5%	CBR 2%	CBR 3%	CBR 4%	CBR 5%		
Surfacing	Size 10 ITP&S										
Base	20mm Class 2 Crushed Rock	100	100	100	100	100	100	100	100	100	100
Upper Subbase	20mm Class 3 Crushed Rock	100	100	100	100	100	100	100	100	100	100
Lower Subbase	20 or 40mm Class 4 Crushed Rock or Approved Equivalent	250	150	100	60	250	200	200	200	200	200
Total		450	350	300	260	450	400	400	400	400	400

MINIMUM PAVEMENT THICKNESS: Non-expansive subgrades 260mm
Expansive subgrades 400mm

** EXPANSIVE SOILS ARE CLASSIFIED AS FOLLOWS:
Liquid Limit >70%
Plasticity Index >45
Pl x % < 0.425mm >2200
Potential Swell >2.5

Amendments

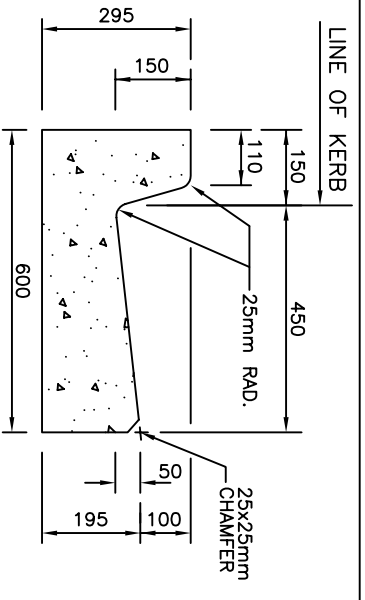
No.	Zone	Detail	Initials	Date

DRAWN : K. GRAHAM
CHECKED : P. TUTTLE
APPROVED : S. PLATER
SCALE : NTS
ISSUE DATE: JUNE 2004

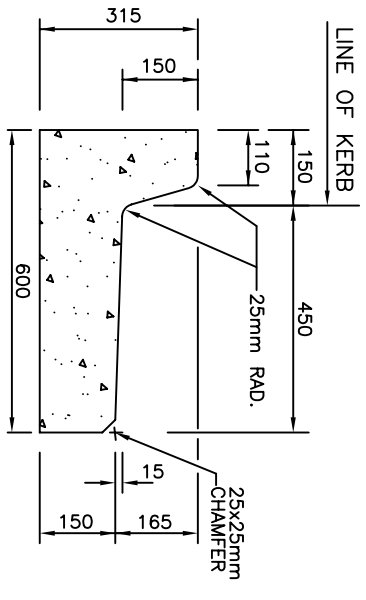


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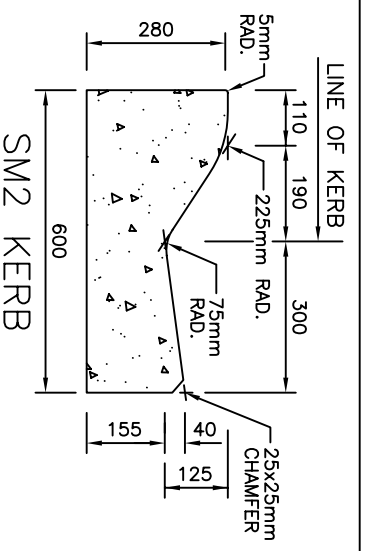
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DRAWING NO: SD 08



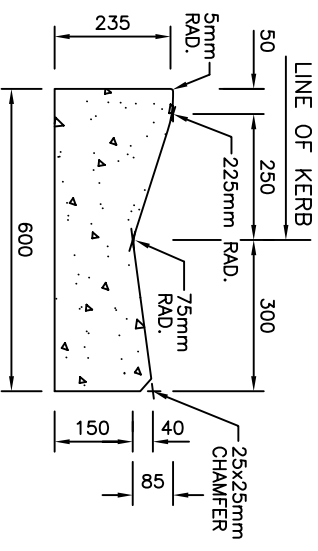
HB2 - BARRIER KERB & CHANNEL



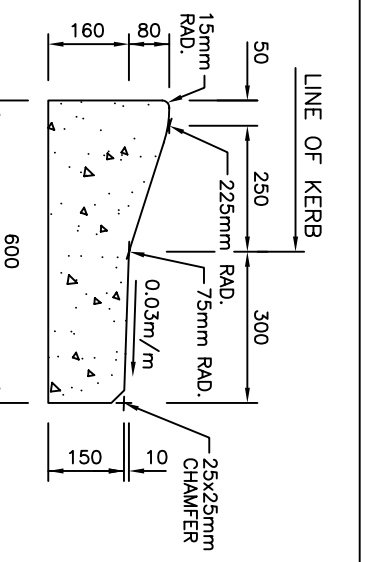
HB3 - BARRIER KERB & OUTFALL



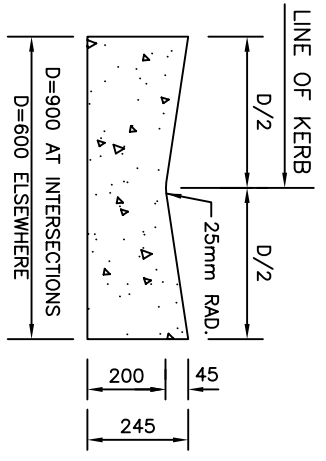
SM2 KERB



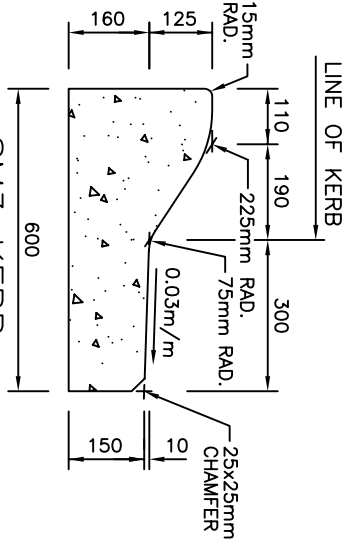
SM2(M) KERB



SM3(M) KERB



OPEN INVERT CHANNEL



SM3 KERB

- NOTES:
1. CONCRETE SHALL BE 25 MPa AT 28 DAYS.
 2. CONTRACTION JOINTS SHALL BE PLACED AT 3000 MAXIMUM INTERVALS.
 3. EXPANSION JOINTS SHALL BE PROVIDED AT PITS AND SHALL CONSIST OF 12mm RESIN BONDED CORK STRIP WITH 3 No. 450 LONG R16 BARS GREASED OR SLEEVED ONE END.
 4. ENGRAVE THE FOLLOWING LETTERS 75 HIGH IN THE FACE OF THE KERB. FOR EACH CONDUIT/SERVICE PASSING BELOW THE KERB:
 "W"
 WATER
 "G"
 GAS
 "H"
 HOUSE DRAIN
 "T"
 TELECOM
 "E"
 ELECTRICAL
 5. ASPHALT TO FINISH OMM TO 5MM MAX ABOVE LIP OF KERB. FOR ALL OUTFALL TRAY KERBS, ie. SM3, ASPHALT TO FINISH FLUSH

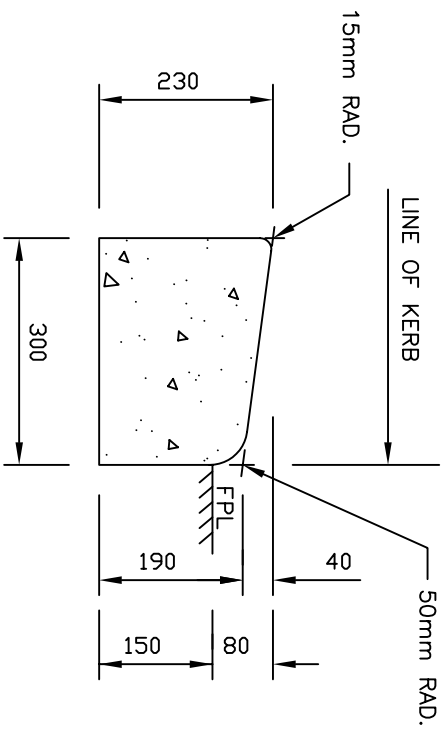
Amendments		Initials	Date
Detail			
No.	Detail	Initials	Date
1.	Add B3 Hume Kerb & Channel	R.D.	June 2005
2.	Note 5 Added	R.C.	Oct 2007

DRAWN : K. GRAHAM
 CHECKED : P. TUTTLE
 APPROVED: S. PLATER
 SCALE : N.T.S.
 ISSUE DATE: JUNE 2004

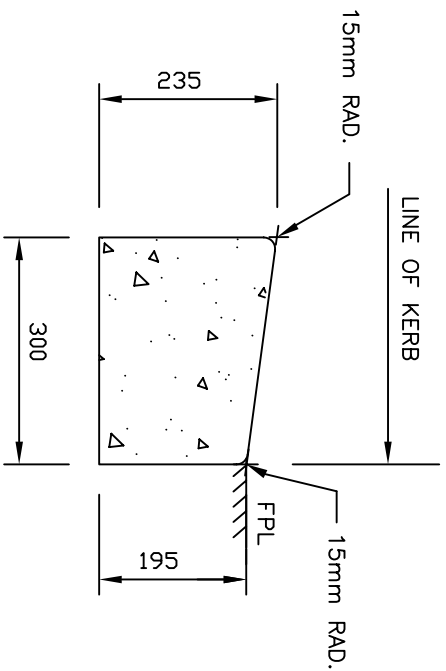
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 DRAWING NO: SD101



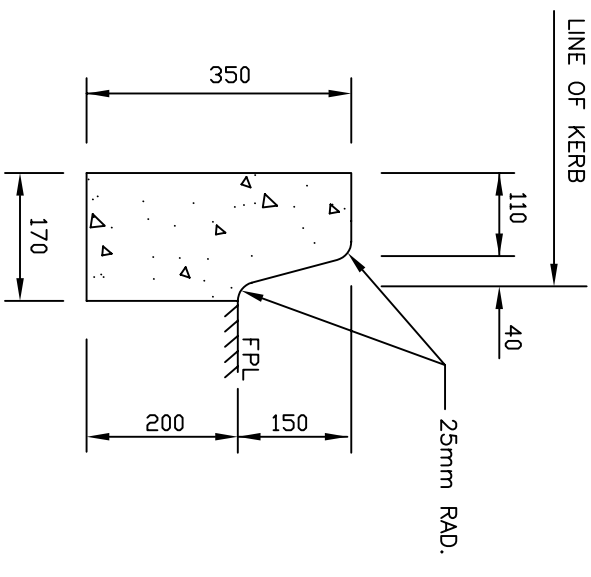
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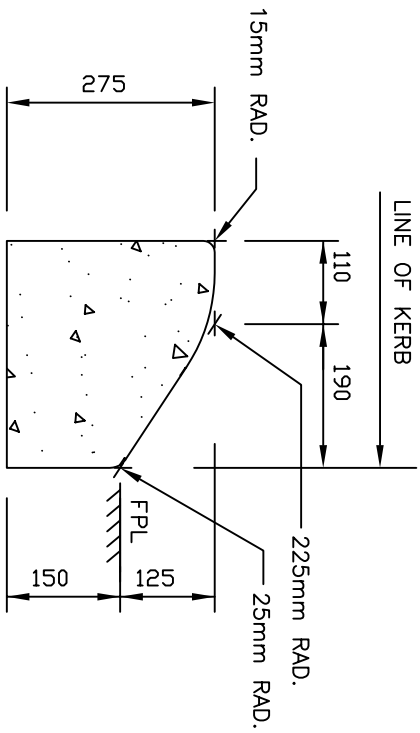
M1 KERB



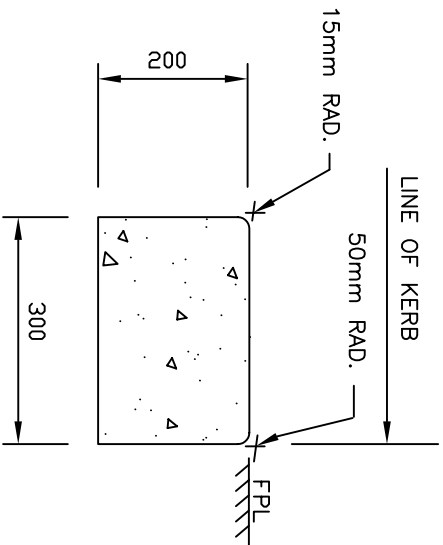
M1 (MOD) KERB



B1 BARRIER KERB



SM1 KERB



EDGE STRIP

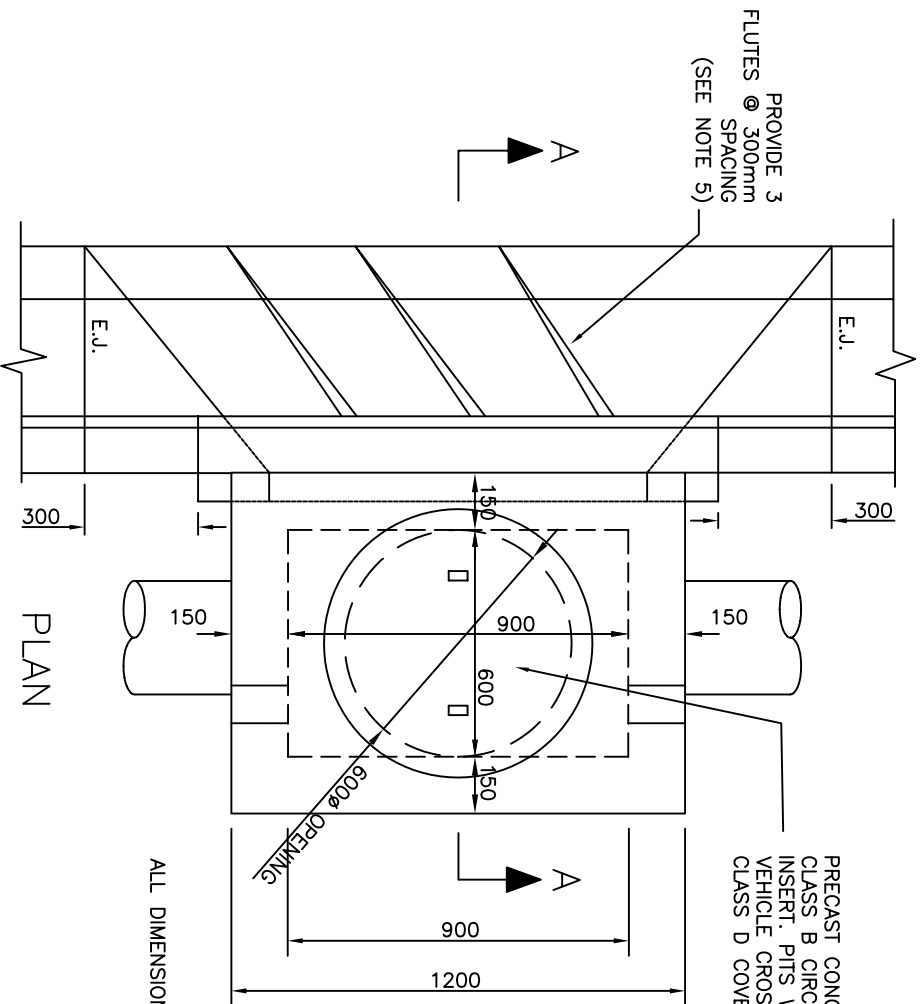
NOTES:

1. PAVEMENT IS TO EXTEND 150 BEHIND BACK OF KERB IN ALL INSTANCES.
2. UNLESS OTHERWISE SPECIFIED THE ROAD PAVEMENT IS EXTENDED FULL DEPTH UNDER THE KERB & CHANNEL, WITH A MINIMUM OF 75 COMPACTED CLASS 2 CRUSHED ROCK.
3. CONCRETE SHALL BE 25MPa AT 28 DAYS.
4. CONTRACTION JOINTS SHALL BE PLACED AT 3000 MAX. INTERVALS.

Amendments			
No.	Detail	Initials	Date
1.	Modification to B1 Kerb	R.D.	June 2005
DRAWN : K. GRAHAM			
CHECKED : P. TUTTLE			
APPROVED : S. PLATER			
SCALE : 1 : 10			
ISSUE DATE: JUNE 2004			

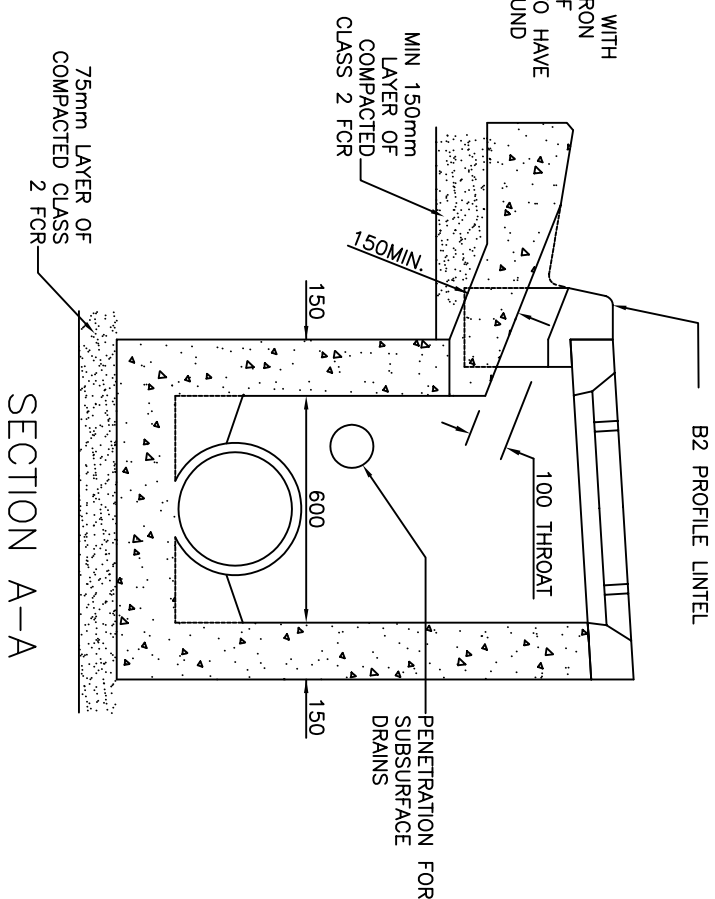
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TYPE :	KERB PROFILES
DRAWING NO.:	SD102



PRECAST CONCRETE COVER WITH CLASS B CIRCULAR CAST IRON INSERT. PITS WITHIN 1m OF VEHICLE CROSSINGS ARE TO HAVE CLASS D COVER & SURROUND

ALL DIMENSIONS IN MILLIMETRES.



RESTRICTED USE ONLY.
THIS IS ONLY TO BE USED IN SPECIAL CASES.
GENERALLY ONLY USED FOR RECONSTRUCTION WORKS

NOTES:

1. ALL WALLS TO BE 150mm THICK.
2. FOR PRECAST CONCRETE LINTEL DETAILS REFER TO STD. DWG. SD270
3. FOR PRECAST CONCRETE COVER DETAILS REFER TO STD. DWG. SD275
4. THE TOP OF THE PIT SHALL MATCH THE NATURE STRIP CROSSFALL.
5. FLUTES TO BE PROVIDED TO PITS, WHERE KERB AND CHANNEL GRADE EXCEEDS 2%
6. PIT TO BE HAUNCHED FOR PIPE DIAMETER GREATER THAN 450mm OR DEPTH EXCEEDING 2.0m. REFER TO STD. DWG. SD245
7. PROVIDE STEP IRONS FOR PIT DEPTH EXCEEDING 1.0m. REFER TO STD. DWG. SD280.
8. CONCRETE STRENGTH 25MPa AT 28 DAYS
9. EXPANSION JOINTS TO BE INSTALLED EITHER SIDE OF PIT WITH 3 No. 450mm LONG R16 BARS GREASED OR SLEEVED ONE END.

Initials	Date	DRAWN :	S. GUCH
R.C.	JAN 05	CHECKED :	R. DEVAPURA
		APPROVED :	S. PLATER
		SCALE :	
		ISSUE DATE:	JUNE 2004

HUME
CITY COUNCIL

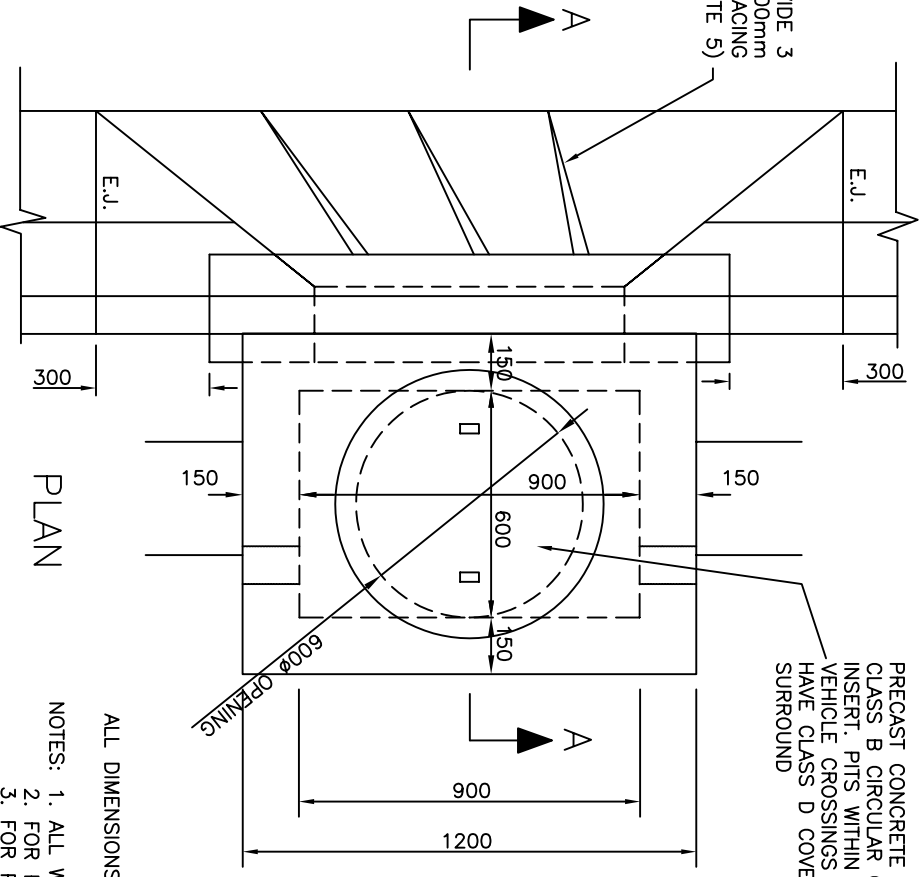
PO Box 119
1079 Pascoe Vale Road
Brookmeadows
Victoria 3047

Telephone (03) 9205 2200
Facsimile (03) 9309 0109

SIDE ENTRY PIT
B2 KERB & CHANNEL

DRAWING NO: SD200

PROVIDE 3
FLUTES @ 300mm
SPACING
(SEE NOTE 5)



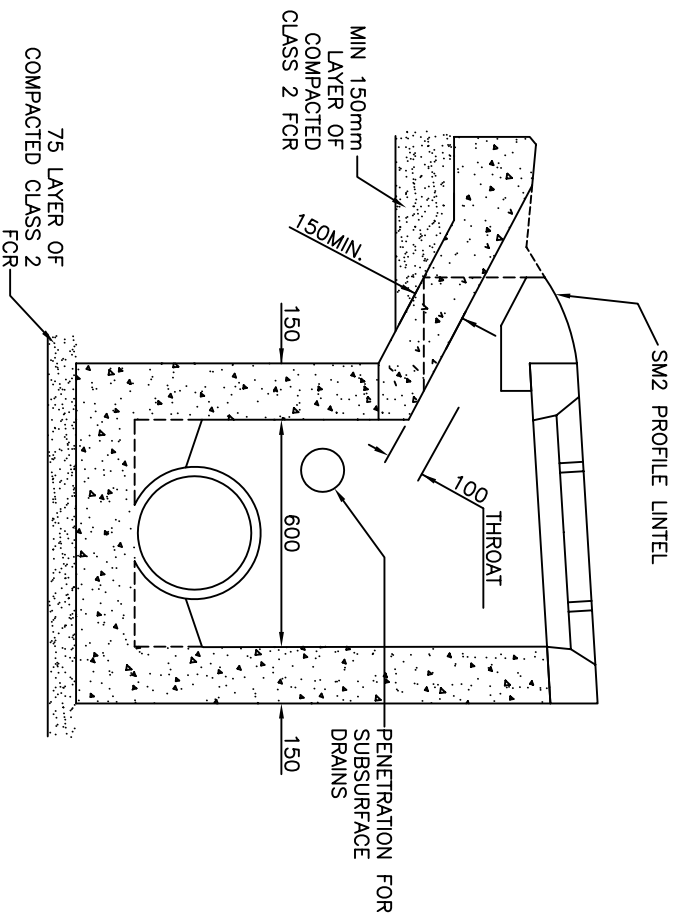
PRECAST CONCRETE COVER WITH
CLASS B CIRCULAR CAST IRON
INSERT. PITS WITHIN 1m OF
VEHICLE CROSSINGS ARE TO
HAVE CLASS D COVER &
SURROUND

ALL DIMENSIONS IN MILLIMETRES.

NOTES: 1. ALL WALLS TO BE 150mm THICK.

2. FOR PRECAST CONCRETE UNTEL DETAILS REFER TO STD. DWG. SD270
3. FOR PRECAST CONCRETE COVER DETAILS REFER TO STD. DWG. SD275
4. THE TOP OF THE PIT SHALL MATCH THE NATURE STRIP CROSSFALL
5. FLUTES TO BE PROVIDED TO PITS, WHERE KERB AND CHANNEL GRADE EXCEEDS 2%
6. PIT TO BE HAUNCHED FOR PIPE DIAMETER GREATER THAN 450mm OR DEPTH EXCEEDING 2.0m, REFER TO STD. DWG. SD245
7. PROVIDE STEP IRONS FOR PIT DEPTH EXCEEDING 1.0m, REFER TO STD. DWG. SD280.
8. CONCRETE STRENGTH 25Mpa AT 28 DAYS
9. EXPANSION JOINTS TO BE INSTALLED EITHER SIDE OF PIT WITH 3 No. 450mm LONG R16 BARS GREASED OR SLEEVED ONE END.

SECTION A-A



RESTRICTED USE ONLY.
GENERALLY ONLY USED FOR
RECONSTRUCTION WORKS.
ONLY TO BE USED IN SPECIAL CASES.


Initials	Date	DRAWN :	S. GUCH
R.C.	JAN 05	CHECKED :	R. DEVAPURA
		APPROVED :	S. PLATER
		SCALE :	
		ISSUE DATE:	JUNE 2004

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Brooklands
Victoria 3047
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Facsimile (03) 9309 0109

SIDE ENTRY PIT
SEMI MOUNTABLE KERB & CHANNEL
DRAWING NO: SD205

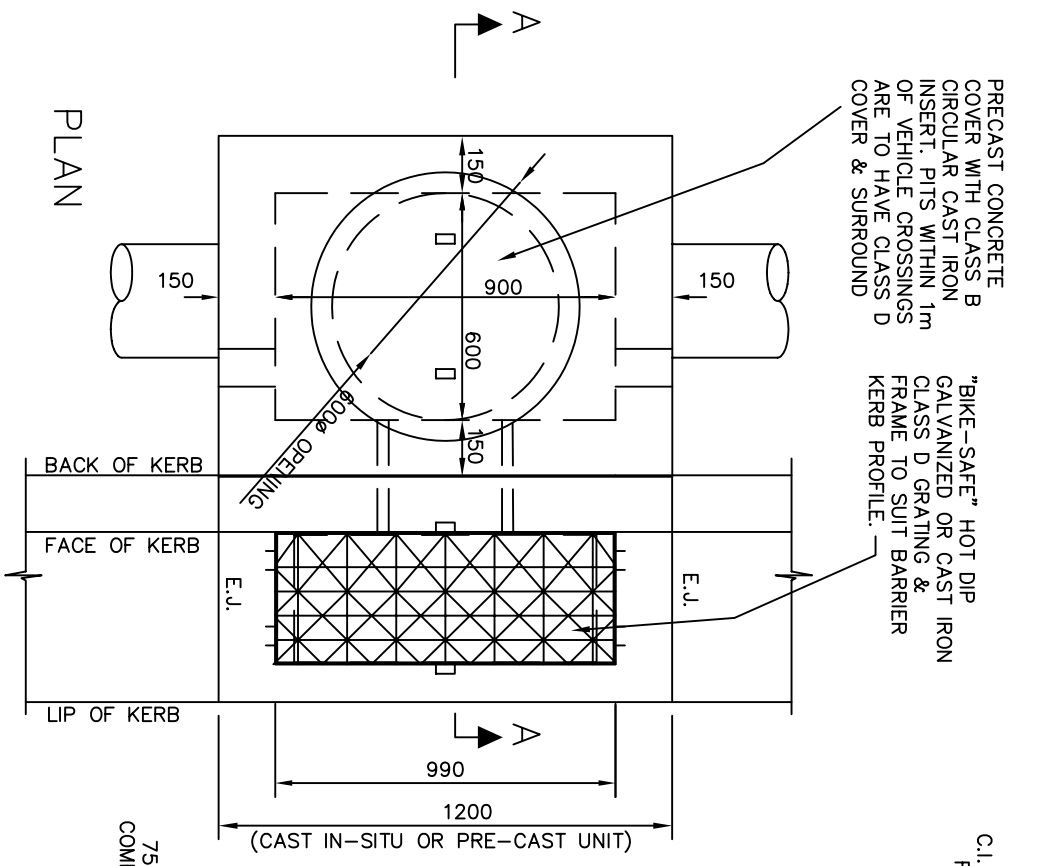
NOTE No.8 ADDED.	Initials	Date
	R.C.	JAN 05
DRAWN : S. ADAMS		
CHECKED : R. DEVAPURA		
APPROVED : S. PLATER		
SCALE : 1:20		
DATE: JUNE 2004		

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 Victoria 3047
 Telephone (03) 9205 2200
 Facsimile (03) 9309 0109



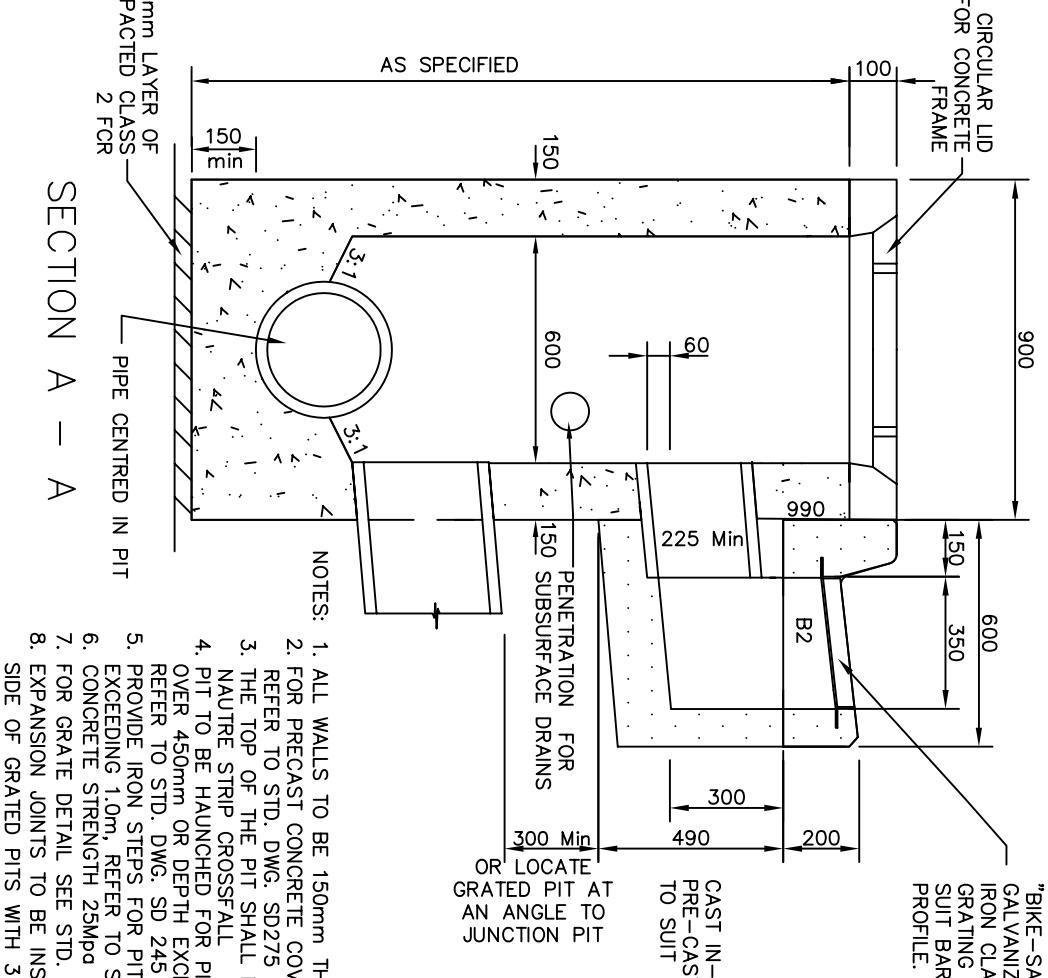
HUME
 CITY COUNCIL

DRAWING NO:	SD210
CHANNEL GRATED PIT B2 KERB & CHANNEL	



PRECAST CONCRETE COVER WITH CLASS B CIRCULAR CAST IRON INSERT. PITS WITHIN 1m OF VEHICLE CROSSINGS ARE TO HAVE CLASS D COVER & SURROUND

"BIKE-SAFE" HOT DIP GALVANIZED OR CAST IRON CLASS D GRATING & FRAME TO SUIT BARRIER KERB PROFILE.



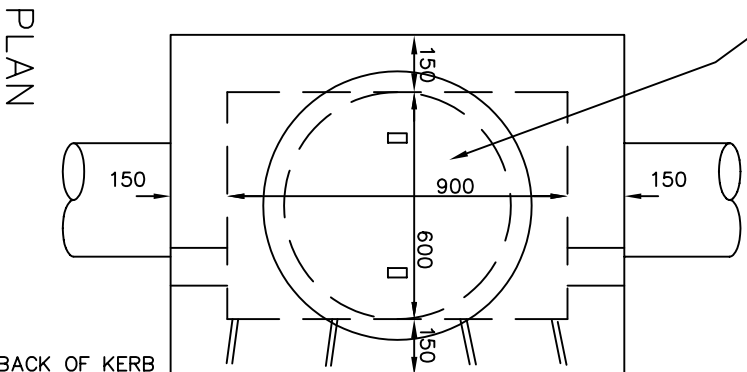
NOTES:

1. ALL WALLS TO BE 150mm THICK
2. FOR PRECAST CONCRETE COVER DETAILS REFER TO STD. DWG. SD275
3. THE TOP OF THE PIT SHALL MATCH THE NAUTRE STRIP CROSSFALL
4. PIT TO BE HAUNCHED FOR PIPE DIAMETER OVER 450mm OR DEPTH EXCEEDS 2.0m, REFER TO STD. DWG. SD 245
5. PROVIDE IRON STEPS FOR PIT DEPTH EXCEEDING 1.0m, REFER TO STD. DWG. SD280
6. CONCRETE STRENGTH 25Mpa AT 28 DAYS
7. FOR GRATE DETAIL SEE STD. DWG. SD276
8. EXPANSION JOINTS TO BE INSTALLED EITHER SIDE OF GRATED PITS WITH 3 No. 450mm LONG R16 BARS GREASED OR SLEEVED ONE END.

OR LOCATE GRATED PIT AT AN ANGLE TO JUNCTION

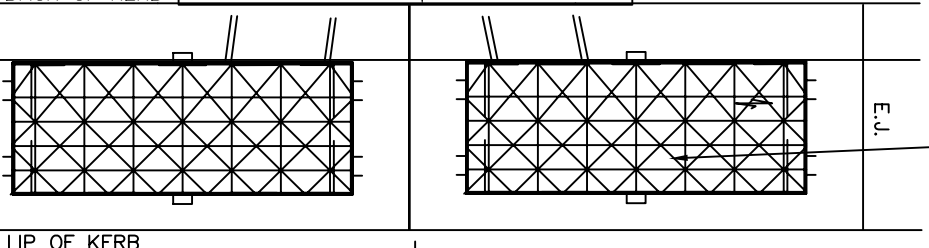
CAST IN-SITU OR PRE-CAST UNIT TO SUIT

"BIKE-SAFE" HOT DIP GALVANIZED OR CAST IRON CLASS D GRATING & FRAME TO SUIT BARRIER KERB PROFILE.

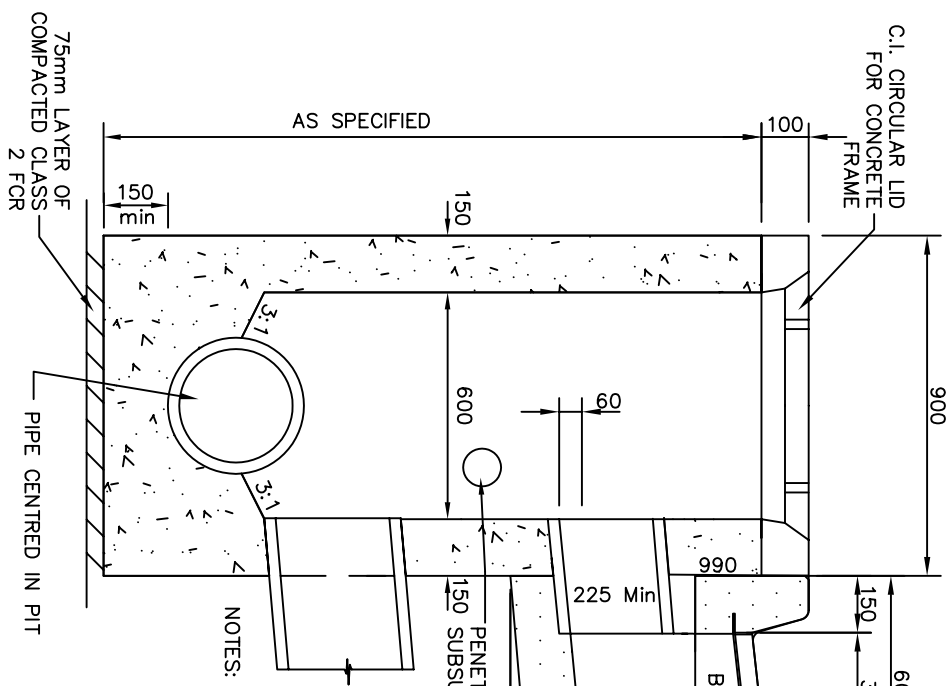


PRECAST CONCRETE COVER WITH CLASS B CIRCULAR CAST IRON INSERT. PITS WITHIN 1m OF VEHICLE CROSSINGS ARE TO HAVE CLASS D COVER & SURROUND

"BIKE-SAFE" HOT DIP GALVANIZED OR CAST IRON CLASS D GRATING & FRAME TO SUIT BARRIER KERB PROFILE.



LIP OF KERB



C.I. CIRCULAR LID FOR CONCRETE FRAME

AS SPECIFIED

75mm LAYER OF COMPACTED CLASS 2 FCR

PIPE CENTRED IN PIT

CAST IN-SITU OR PRE-CAST UNITS TO SUIT

"BIKE-SAFE" HOT DIP GALVANIZED OR CAST IRON CLASS D GRATING & FRAME TO SUIT BARRIER KERB PROFILE.

NOTES:

1. ALL WALLS TO BE 150mm THICK
2. FOR PRECAST CONCRETE COVER DETAILS REFER TO STD. DWG. SD275
3. THE TOP OF THE PIT SHALL MATCH THE NAUTRE STRIP CROSSFALL
4. PIT TO BE HAUNCHED FOR PIPE DIAMETER OVER 450mm OR DEPTH EXCEEDS 2.0m, REFER TO STD. DWG. SD 245
5. PROVIDE IRON STEPS FOR PIT DEPTH EXCEEDING 1.0m, REFER TO STD. DWG. SD280
6. CONCRETE STRENGTH 25Mpa AT 28 DAYS
7. FOR GRATE DETAIL SEE STD. DWG. SD276
8. EXPANSION JOINTS TO BE INSTALLED EITHER SIDE OF GRATED PITS WITH 3 No. 450mm LONG R16 BARS GREASED OR SLEEVED ONE END.

SECTION A - A

Initials	Date

DRAWN : R.CHARTERS
 CHECKED : J.DAVIS
 APPROVED : J.DAVIS
 SCALE : 1:20
 DATE: NOV 2007

R. HUME
CITY COUNCIL

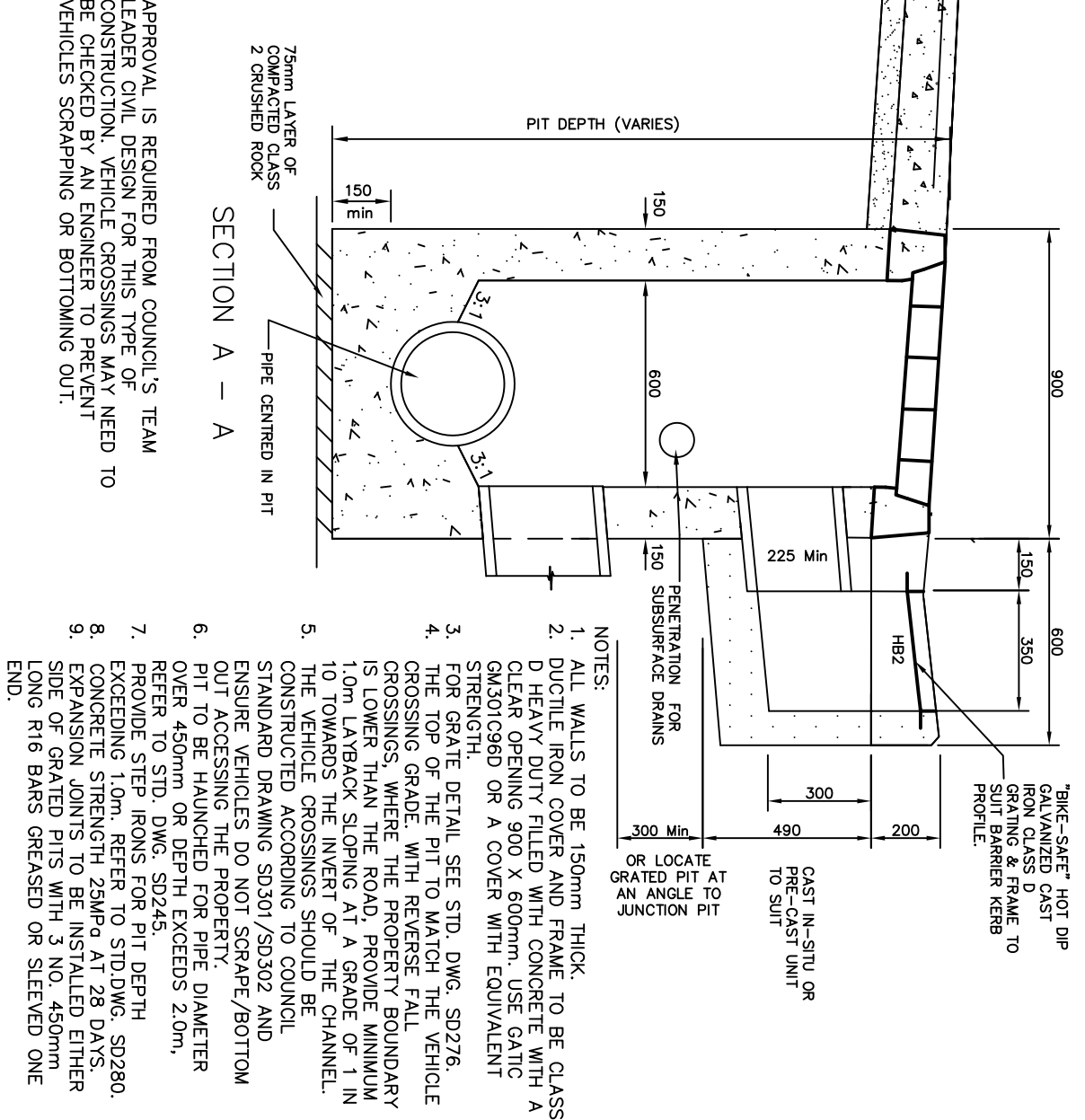
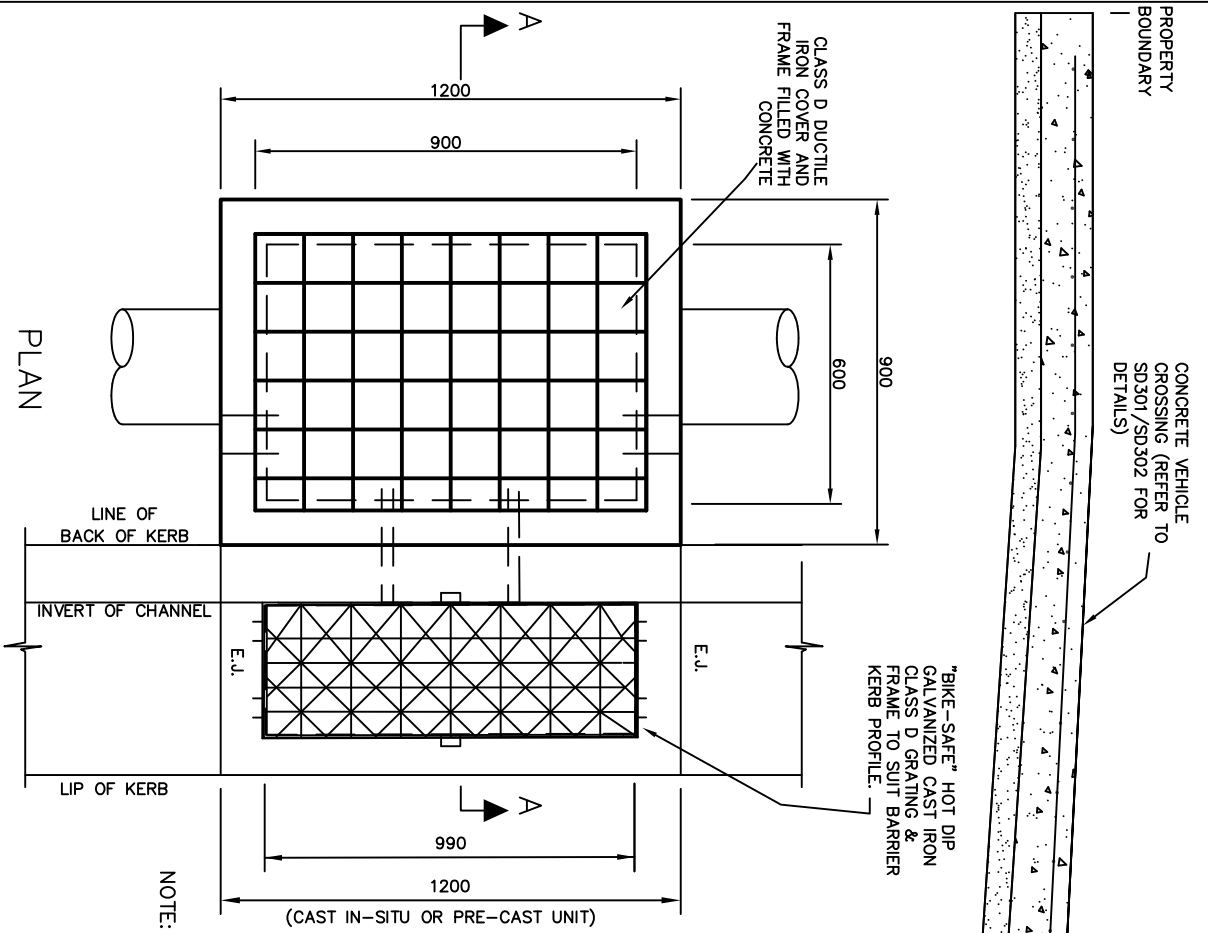
P0 Box 119
1079 Pascoe Vale Road
Brookmeadows
Victoria 3047

Telephone
03) 9205 2200

Facsimile
03) 9309 0109

DRAWING NO: SD2111

DOUBLE CHANNEL GRATED PIT
 B2 KERB & CHANNEL



- NOTES:
1. ALL WALLS TO BE 150mm THICK.
 2. DUCTILE IRON COVER AND FRAME TO BE CLASS D HEAVY DUTY FILLED WITH CONCRETE WITH A CLEAR OPENING 900 X 600mm. USE GATC GM301C96D OR A COVER WITH EQUIVALENT STRENGTH.
 3. FOR GRATE DETAIL SEE STD. DWG. SD276.
 4. THE TOP OF THE PIT TO MATCH THE VEHICLE CROSSING GRADE. WITH REVERSE FALL CROSSINGS, WHERE THE PROPERTY BOUNDARY IS LOWER THAN THE ROAD, PROVIDE MINIMUM 1.0m LAYBACK SLOPING AT A GRADE OF 1 IN 10 TOWARDS THE INVERT OF THE CHANNEL.
 5. THE VEHICLE CROSSINGS SHOULD BE CONSTRUCTED ACCORDING TO COUNCIL STANDARD DRAWING SD301/SD302 AND ENSURE VEHICLES DO NOT SCRAPE/BOTTOM OUT ACCESSING THE PROPERTY.
 6. PIT TO BE HAUNCHED FOR PIPE DIAMETER OVER 450mm OR DEPTH EXCEEDS 2.0m, REFER TO STD. DWG. SD245.
 7. PROVIDE STEP IRONS FOR PIT DEPTH EXCEEDING 1.0m. REFER TO STD. DWG. SD280.
 8. CONCRETE STRENGTH 25MPa AT 28 DAYS.
 9. EXPANSION JOINTS TO BE INSTALLED EITHER SIDE OF GRATED PITS WITH 3 NO. 450mm LONG R16 BARS GREASED OR SLEEVED ONE END.

NOTE: APPROVAL IS REQUIRED FROM COUNCIL'S TEAM LEADER CIVIL DESIGN FOR THIS TYPE OF CONSTRUCTION. VEHICLE CROSSINGS MAY NEED TO BE CHECKED BY AN ENGINEER TO PREVENT VEHICLES SCRAPING OR BOTTOMING OUT.

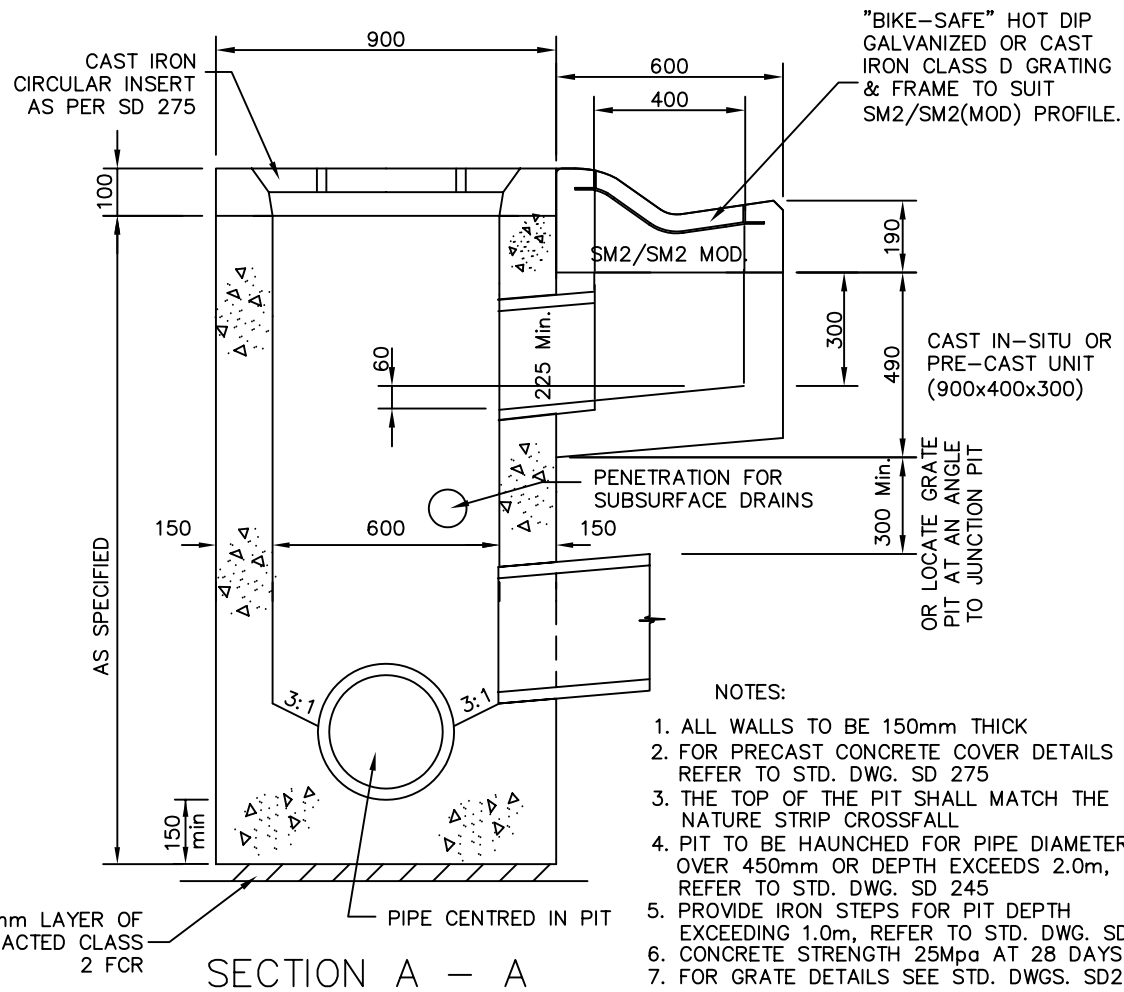
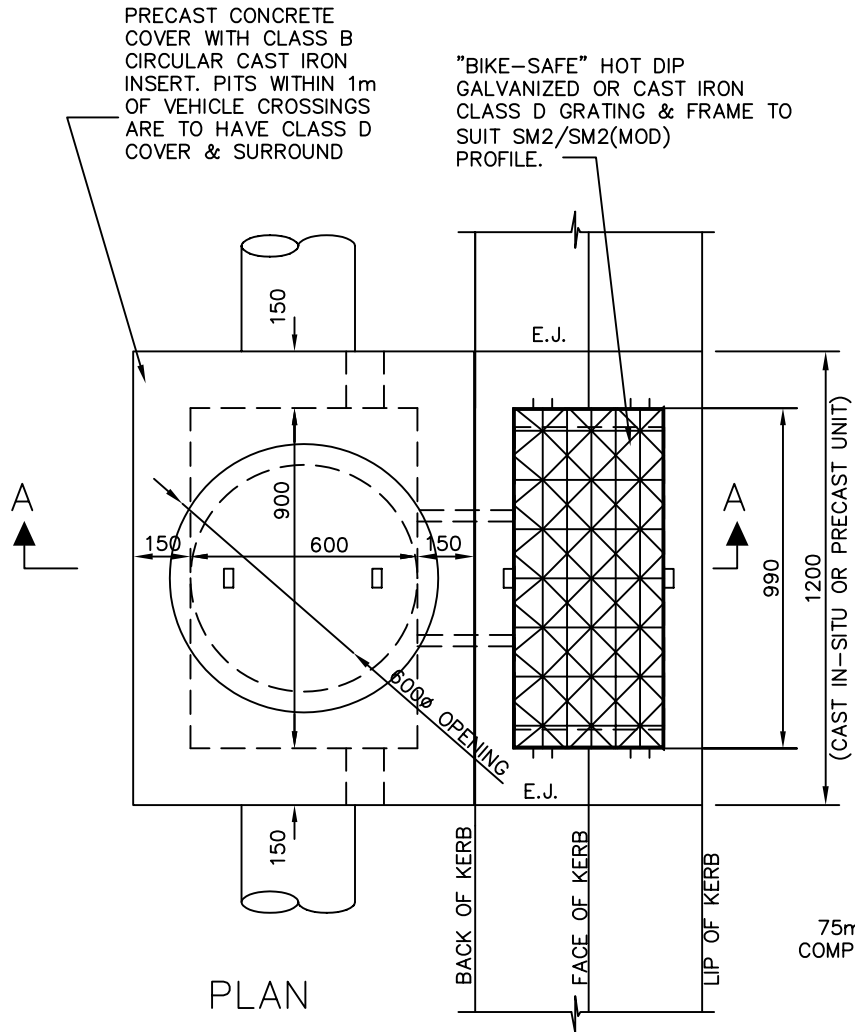
Amendments			
No.	Zone	Detail	Date
1.			
2.			
3.			
4.			

DRAWN : K.SOYLEVI
 CHECKED : R.DEVAPURA
 APPROVED : N.VARVARIS
 SCALE : 1:20
 ISSUE DATE: APRIL 2015

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 Victoria 3047
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 Facsimile 03) 9309 0109

CHANNEL GRATED (HB2 KERB PROFILE) JUNCTION PIT WITH DUCTILE IRON COVER AT VEHICLE CROSSINGS

DRAWING NO: SD212



- NOTES:
1. ALL WALLS TO BE 150mm THICK
 2. FOR PRECAST CONCRETE COVER DETAILS REFER TO STD. DWG. SD 275
 3. THE TOP OF THE PIT SHALL MATCH THE NATURE STRIP CROSSFALL
 4. PIT TO BE HAUNCHED FOR PIPE DIAMETER OVER 450mm OR DEPTH EXCEEDS 2.0m, REFER TO STD. DWG. SD 245
 5. PROVIDE IRON STEPS FOR PIT DEPTH EXCEEDING 1.0m, REFER TO STD. DWG. SD 280
 6. CONCRETE STRENGTH 25mpa AT 28 DAYS
 7. FOR GRATE DETAILS SEE STD. DWGS. SD277 & SD278
 8. EXPANSION JOINTS TO BE INSTALLED EITHER SIDE OF GRATED PITS WITH 3 No. 450mm LONG R16 BARS GREASED OR SLEEVED ONE END.

	Initials	Date
NOTE No.8 ADDED.	R.C.	JAN 05

DRAWN :	S. ADAMS
CHECKED :	R. DEVAPURA
APPROVED :	S. PLATER
SCALE :	1:20
DATE:	JUNE 2004

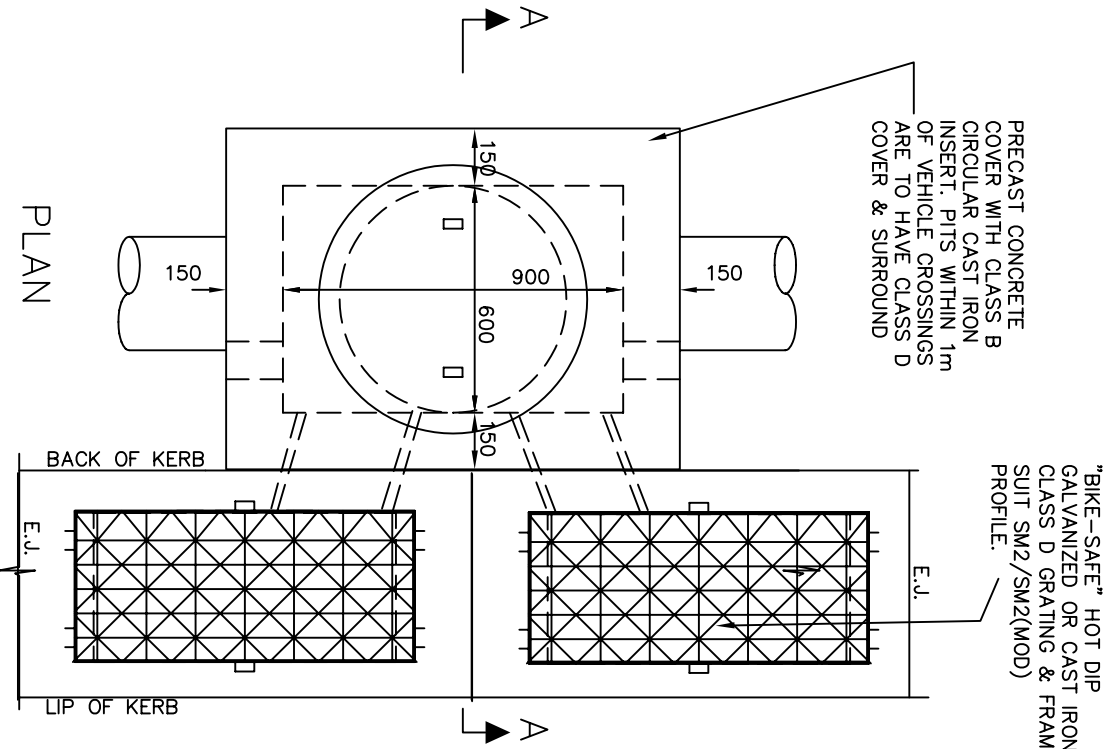


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Telephone
03) 9205 2200

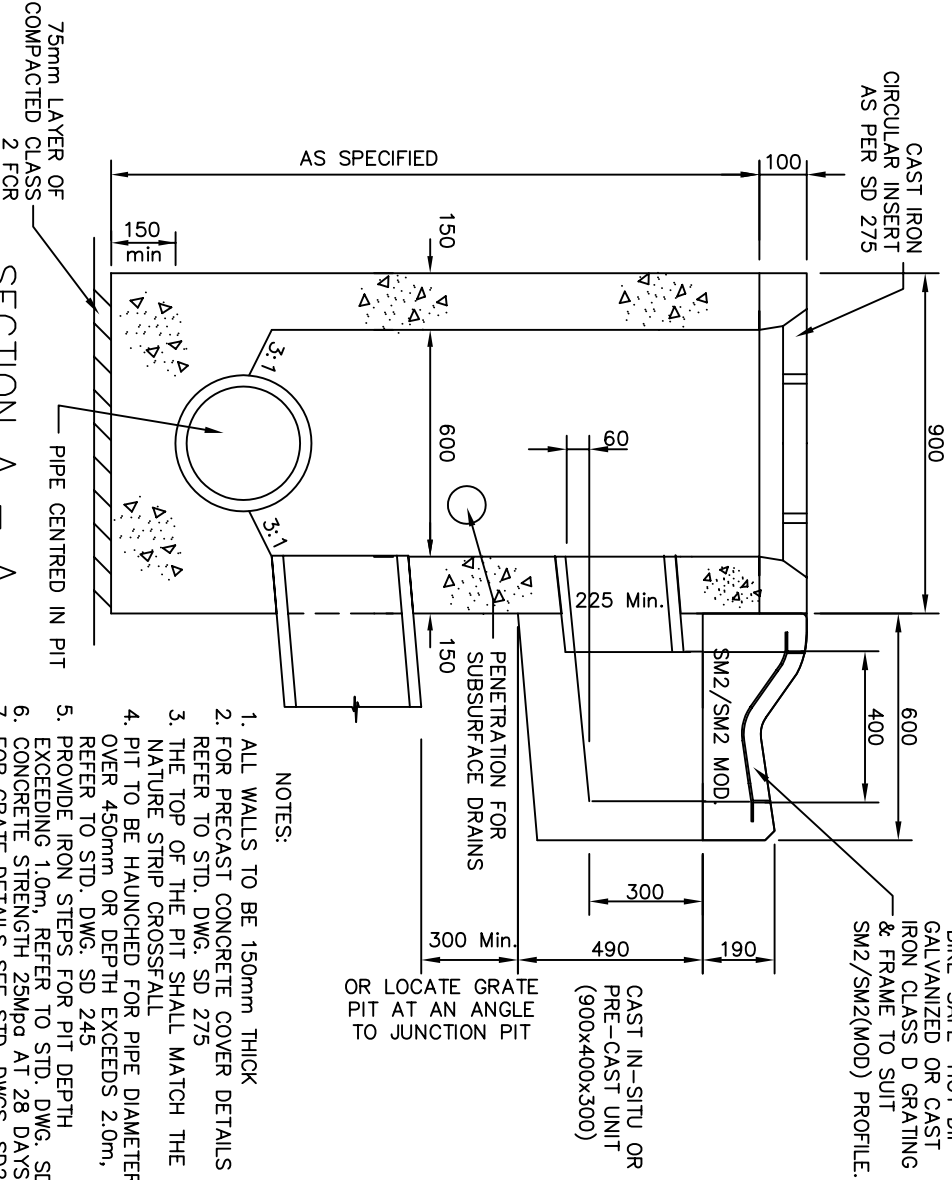
Facsimile
03) 9309 0109

CHANNEL GRATED PIT SM2 & SM2(MOD) KERB & CHANNEL	
DRAWING NO:	SD215



PRECAST CONCRETE COVER WITH CLASS B CIRCULAR CAST IRON INSERT. PITS WITHIN 1m OF VEHICLE CROSSINGS ARE TO HAVE CLASS D COVER & SURROUND

"BIKE-SAFE" HOT DIP GALVANIZED OR CAST IRON CLASS D GRATING & FRAME TO SUIT SM2/SM2(MOD) PROFILE.



"BIKE-SAFE" HOT DIP GALVANIZED OR CAST IRON CLASS D GRATING & FRAME TO SUIT SM2/SM2(MOD) PROFILE.

CAST IN-SITU OR PRE-CAST UNIT (900x400x300)

OR LOCATE GRATE PIT AT AN ANGLE TO JUNCTION PIT

NOTES:

1. ALL WALLS TO BE 150mm THICK
2. FOR PRECAST CONCRETE COVER DETAILS REFER TO STD. DWG. SD 275
3. THE TOP OF THE PIT SHALL MATCH THE NATURE STRIP CROSSFALL
4. PIT TO BE HAUNCHED FOR PIPE DIAMETER OVER 450mm OR DEPTH EXCEEDS 2.0m, REFER TO STD. DWG. SD 245
5. PROVIDE IRON STEPS FOR PIT DEPTH EXCEEDING 1.0m, REFER TO STD. DWG. SD 280
6. CONCRETE STRENGTH 25mpa AT 28 DAYS
7. FOR GRATE DETAILS SEE STD. DWGS. SD2277 & SD2278
8. EXPANSION JOINTS TO BE INSTALLED EITHER SIDE OF GRATED PITS WITH 3 No. 450mm LONG R16 BARS GREASED OR SLEEVED ONE END.

PLAN

BACK OF KERB
E.J.
LIP OF KERB

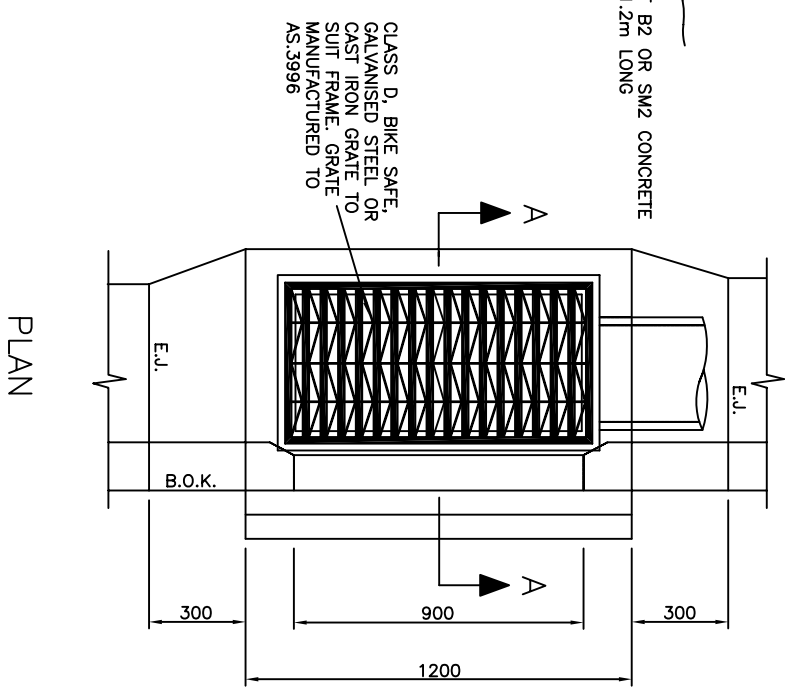
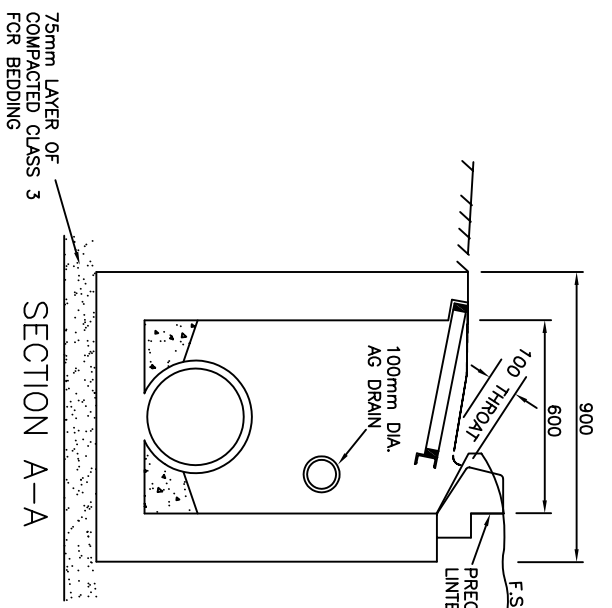
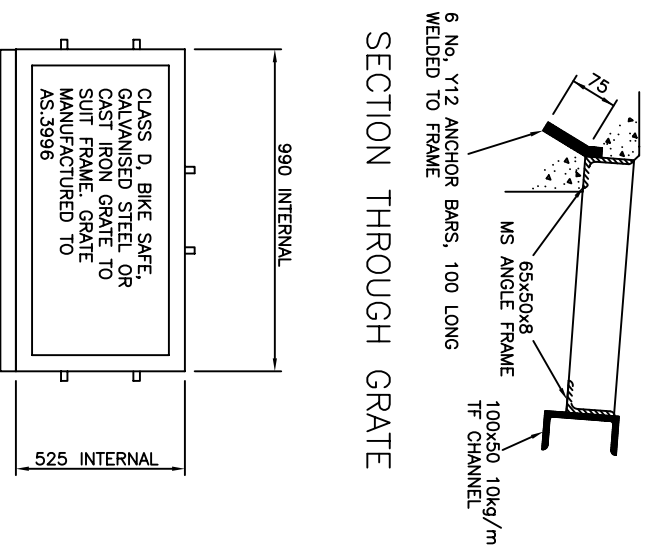
INITIALS	DATE
DRAWN : R.CHARTERS	
CHECKED : J. DAVIS	
APPROVED : J.DAVIS	
SCALE : 1:20	
DATE: NOV 2007	



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1079 Pascoe Vale Road
Brooktrudgers
Victoria 3047
Telephone (03) 9205 2200
Facsimile (03) 9309 0109

DOUBLE CHANNEL GRATED PIT
SM2 & SM2(MOD) KERB & CHANNEL

DRAWING NO: SD216



GRATE FRAME

RESTRICTED USE ONLY.
THIS IS ONLY TO BE USED IN SPECIAL CASES.
GENERALLY ONLY USED FOR RECONSTRUCTION WORKS

- NOTES:**
1. ALL WALLS TO BE 150mm THICK.
 2. PIT TO BE HAUNCHED FOR PIPE DIAMETER OVER 450mm OR DEPTH EXCEEDING 2.0m, REFER TO STD. DWG. SD245
 3. SHAPE PIT INVERT TO ONE THIRD OUTLET PIPE DIAMETER.
 4. GRATE FRAME SHALL BE CONSTRUCTED FROM 65x50x8 MS ANGLE. EACH CORNER SHALL BE WELDED ON UNDERSIDE OF HORIZONTAL LEG AND ON INSIDE OF VERTICAL LEG WITH SIZE 5 FILLET WELD.
 5. CHANNEL INVERT TO BE DROPPED 70mm OVER A DISTANCE OF 600mm FROM BOTH SIDES OF THE PIT.
 6. PROVIDE STEP IRONS FOR PIT DEPTHS EXCEEDING 1.0m, REFER TO STD. DRAWING No. SD280.
 7. CONCRETE STRENGTH 25MPa AT 28 DAYS.
 8. ALL DIMENSIONS IN MILLIMETRES
 9. EXPANSION JOINTS TO BE INSTALLED EITHER SIDE OF GRATED PIT WITH 3 No. 450mm LONG R16 BARS GREASED OR SLEEVED ONE END.

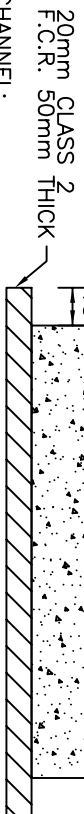
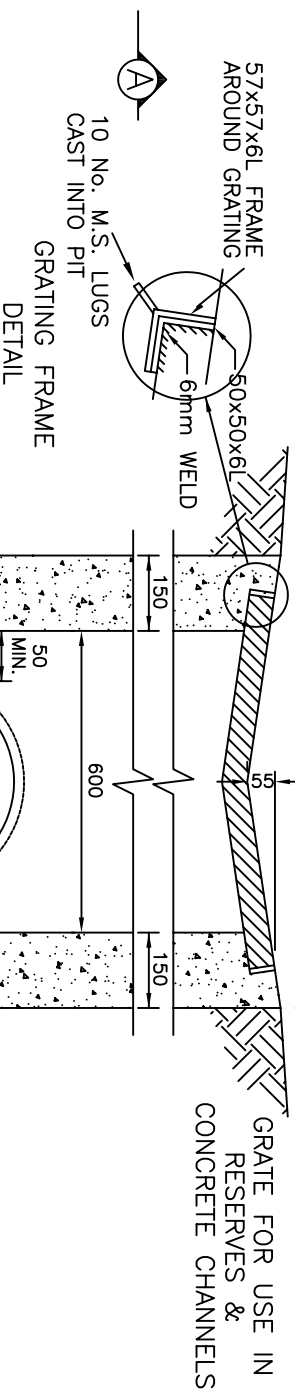
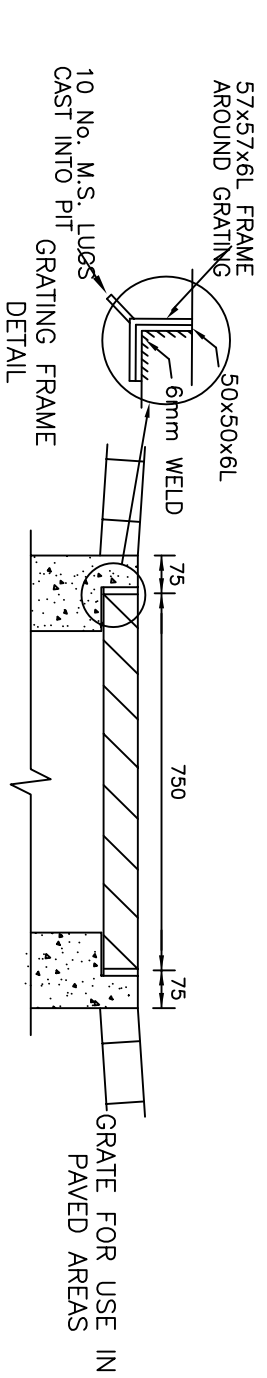
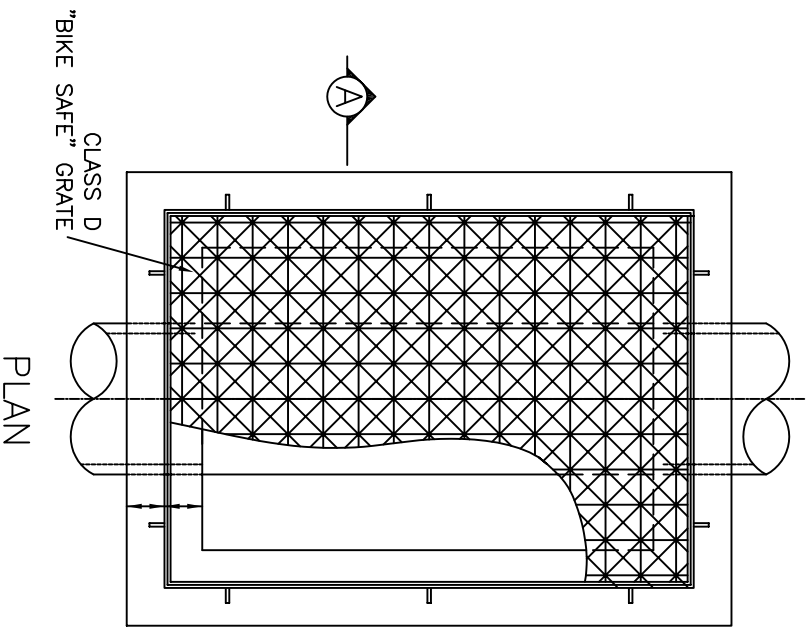
Amendments			
No.	Zone	Detail	Initials Date
1.		NOTE No.9 ADDED	R.C. JAN 05

DRAWN : D. SALAZAR
 CHECKED : R. CHARTERS
 APPROVED : S. PLATER
 SCALE : NDTs
 DATE : JUNE 2004

TYPE : GRATED SIDE ENTRY PIT
 B2 OR SM2 KERB AND CHANNEL
 DRAWING NO: SD220



PO Box 119
 1079 Pascoe Vale Road
 Broadmeadows
 Victoria 3047
 Telephone 03 9205 2200
 Facsimile 03 9309 0109



SECTION A-A

- NOTES:
1. GRATE SHALL BE "BIKE SAFE" AND MADE TO SAME SHAPE AS OPEN CHANNEL.
 2. GRATE TO BE CLASS D AS PER A.S. 3996.
 3. GRATE TO BE HOT DIPPED GALVANIZED STEEL OR CAST IRON.
 4. STEP IRONS TO BE PROVIDED IN PITS OVER 1m DEEP. REFER TO STD. DWG. SD280.
 5. THE TOP OF THE PIT SHALL MATCH THE NATURE STRIP CROSSFALL.
 6. CONCRETE TO BE 25MPa AT 28 DAYS.
 7. PIT TO BE HAUNCHED FOR PIPE DIAMETERS GREATER THAN 450mm OR DEEPER THAN 2.0m REFER TO STD. DWG. SD245.
 8. IN RESERVES WHERE AN APRON IS REQUIRED AND OPEN EARTH CHANNELS PROVIDE A 150 THICK X 450mm WIDE CONCRETE APRON WITH 150 MAXIMUM DROP TO TOP OF GRATE.

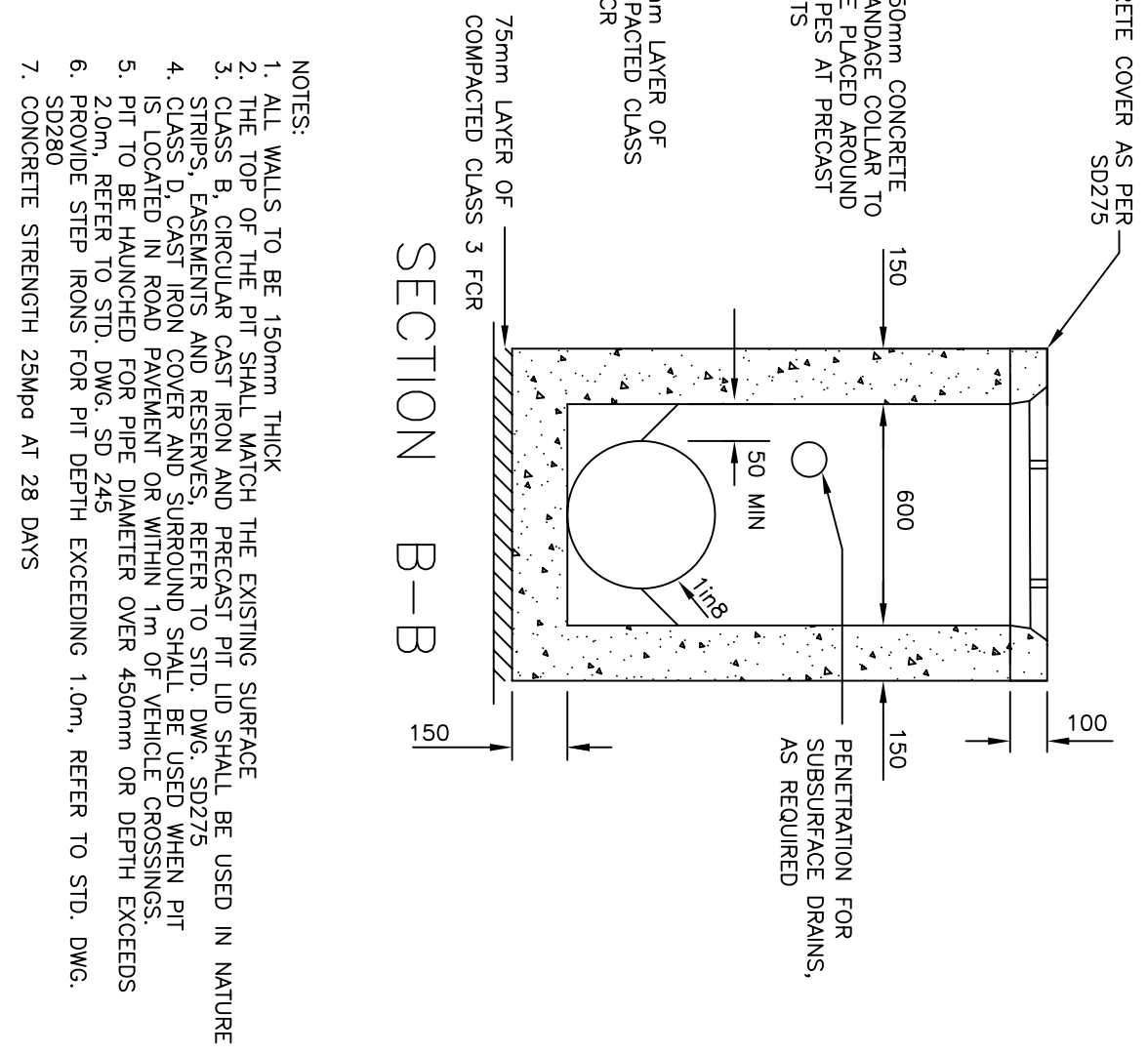
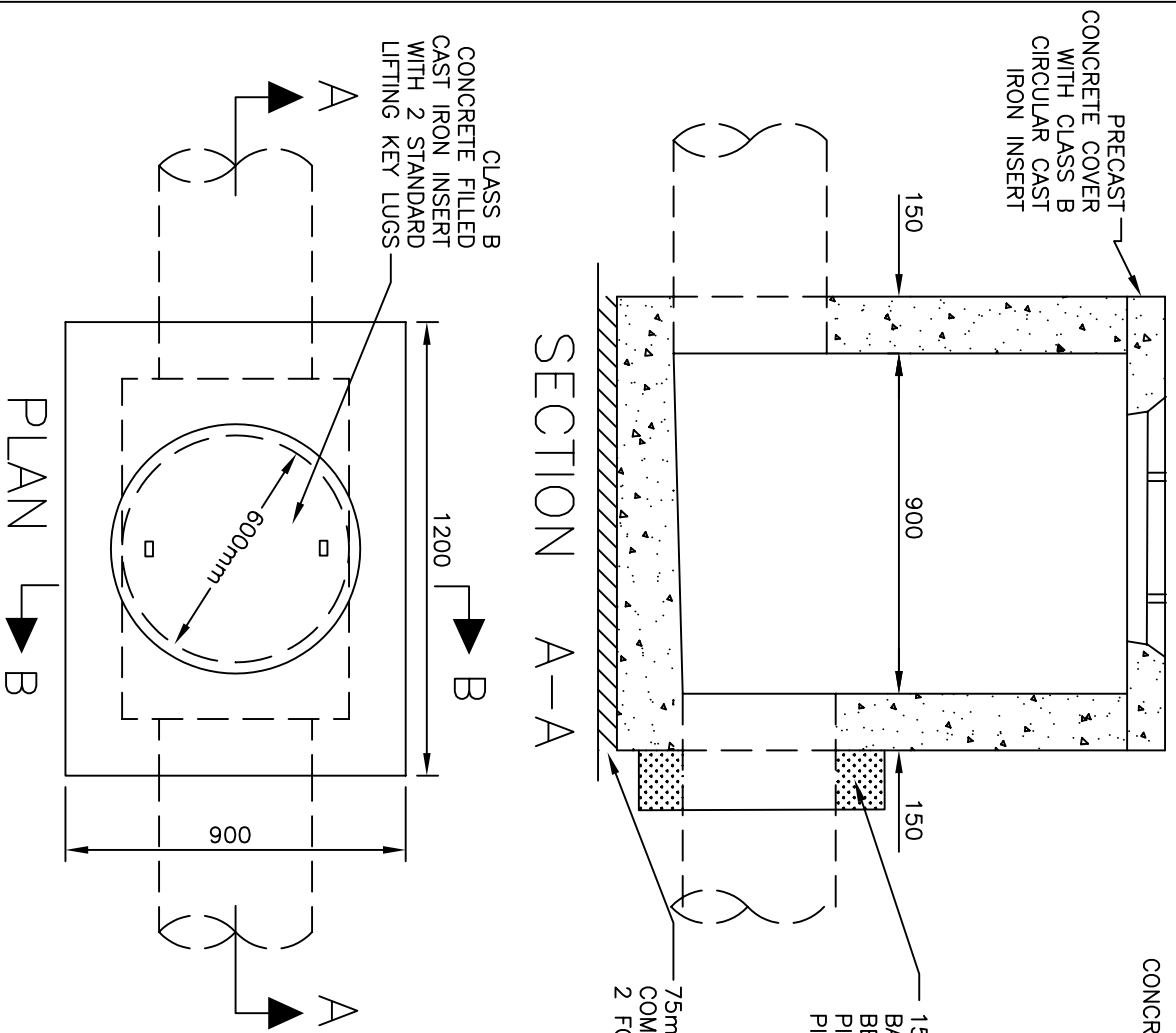
Amendments		No.	Detail	Indices	Date
		A			
DRAWN :		D. SALAZAR			
CHECKED :		R. DEVAPURA			
APPROVED :		S. PLATER			
SCALE :		N.T.S.			
ISSUE DATE:		JUNE 2004			



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Facsimile
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TYPE :
GRATED PIT IN RESERVES,
CHANNELS AND PAVED AREAS

DRAWING NO.:
SD225



PRECAST CONCRETE COVER WITH CLASS B CIRCULAR CAST IRON INSERT

150

900

150

150mm CONCRETE BANDAGE COLLAR TO BE PLACED AROUND PIPES AT PRECAST PITS

75mm LAYER OF COMPACTED CLASS 3 FCR

CONCRETE COVER AS PER SD275

150

150

150

100

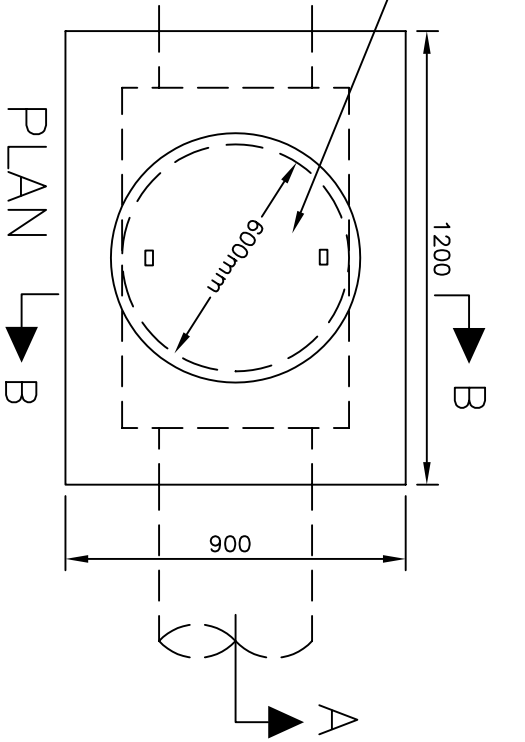
PENETRATION FOR SUBSURFACE DRAINS, AS REQUIRED

110

50 MIN

75mm LAYER OF COMPACTED CLASS 3 FCR

150



- CLASS B CONCRETE FILLED CAST IRON INSERT WITH 2 STANDARD LIFTING KEY LUGS
- 1200
- 600mm
- PLAN
- SECTION A-A
- SECTION B-B
- NOTES:
1. ALL WALLS TO BE 150mm THICK
 2. THE TOP OF THE PIT SHALL MATCH THE EXISTING SURFACE
 3. CLASS B, CIRCULAR CAST IRON AND PRECAST PIT LID SHALL BE USED IN NATURE STRIPS, EASEMENTS AND RESERVES, REFER TO STD. DWG. SD275
 4. CLASS D, CAST IRON COVER AND SURROUND SHALL BE USED WHEN PIT IS LOCATED IN ROAD PAVEMENT OR WITHIN 1m OF VEHICLE CROSSINGS.
 5. PIT TO BE HAUNCHED FOR PIPE DIAMETER OVER 450mm OR DEPTH EXCEEDS 2.0m, REFER TO STD. DWG. SD 245
 6. PROVIDE STEP IRONS FOR PIT DEPTH EXCEEDING 1.0m, REFER TO STD. DWG. SD280
 7. CONCRETE STRENGTH 25Mpa AT 28 DAYS

Amendments		Initials	Date
No.	Detail		
1.	Concrete Bandage Shown For Precast Pits	R.C.	Oct 07

DRAWN : S. GUCH
 CHECKED : R. DEVAPURA
 APPROVED : S. PLATER
 SCALE : 1 : 20
 ISSUE DATE: JUNE 2004

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CITY COUNCIL

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Victoria 3047

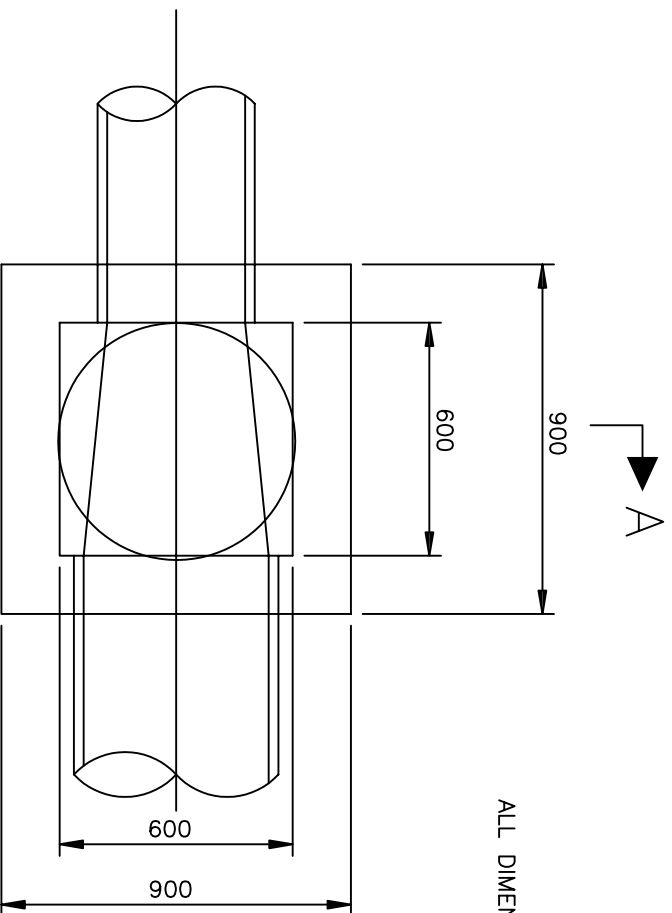
Telephone
03) 9205 2200

Facsimile
03) 9309 0109

JUNCTION PIT
ROAD RESERVE OR EASEMENT

DRAWING NO: SD230

100mm PRECAST CONCRETE LID
WITH CIRCULAR CAST IRON INSERT.
SEE STD. DWG SD274 FOR COVER DETAILS.

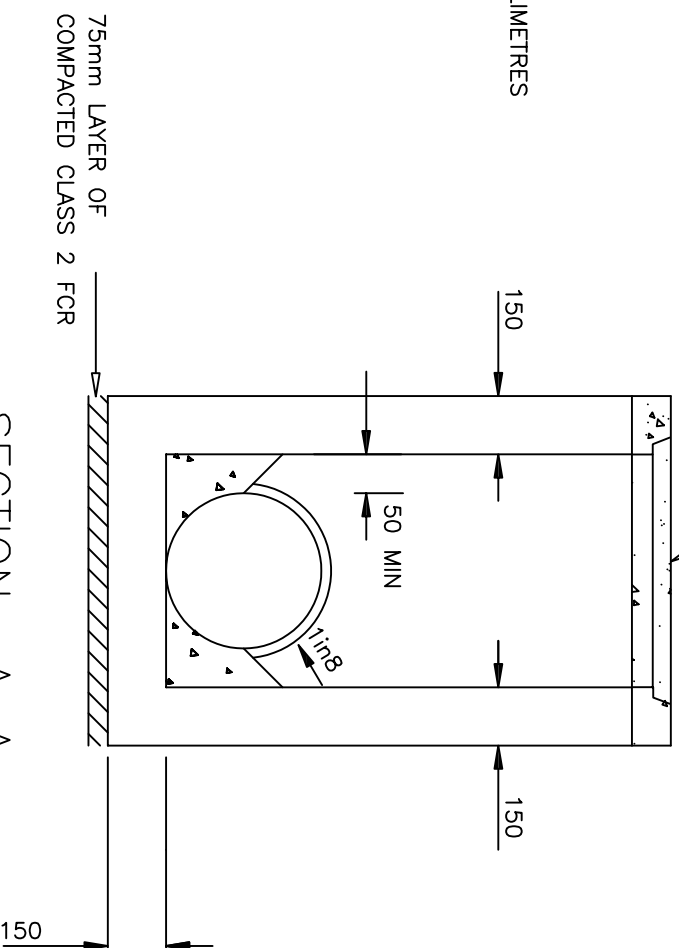


ALL DIMENSIONS IN MILLIMETRES

NOTES:

1. ALL WALLS TO BE 150mm THICK
2. THE TOP OF THE PIT SHALL MATCH THE EXISTING SURFACE
3. THE PIT IS ONLY TO BE USED IN EASEMENT DRAINAGE, WITH PIPE DIAMETER LIMITED TO 450mm AND PIT DEPTH 900mm.
4. FOR PIT DEPTH GREATER THAN 900mm OR PIPE DIAMETER GREATER THAN 450MM, PIT SIZE TO BE 900 X 600mm. REFER TO STD. DWG. SD230
5. PRECAST CONCRETE COVER WITH CLASS B CIRCULAR CAST IRON INSERT TO BE USED ON ALL PITS OVER 600 X 600mm. REFER TO STD. DWG. SD275
6. PIT TO BE HAUNCHED FOR PIPE DIAMETERS OVER 450mm OR DEPTH EXCEEDING 2.0m, REFER TO STD. DWG. SD245
7. PROVIDE STEP IRONS FOR PIT DEPTHS EXCEEDING 1.0m, REFER TO STD. DWG. SD280
8. PRECAST CONCRETE COVER WITH CLASS B CIRCULAR CAST IRON INSERT TO BE USED ON ALL PITS OVER 600 X 600mm. REFER TO STD. DWG. SD275

SECTION A-A



PLAN

Amendments

No.	Detail	Initials	Date
1.	PIT COVER CHANGED TO SD 274	R.C.	Sept 05
DRAWN : S. GUCH			
CHECKED : R. DEVAPURA			
APPROVED : S. PLATER			
SCALE : 1 : 20			
DATE: JUNE 2004			

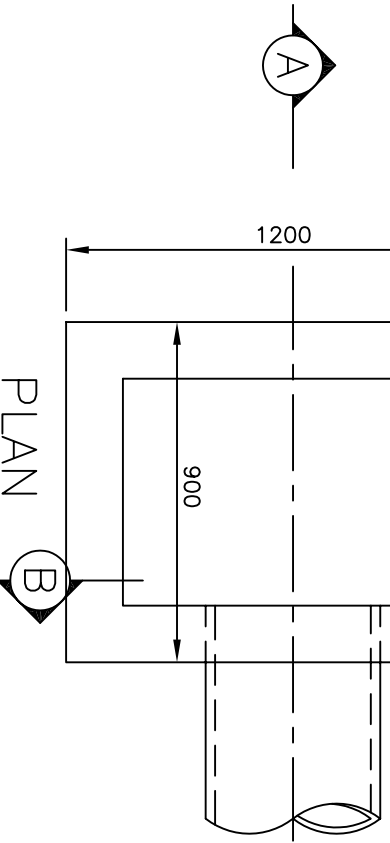
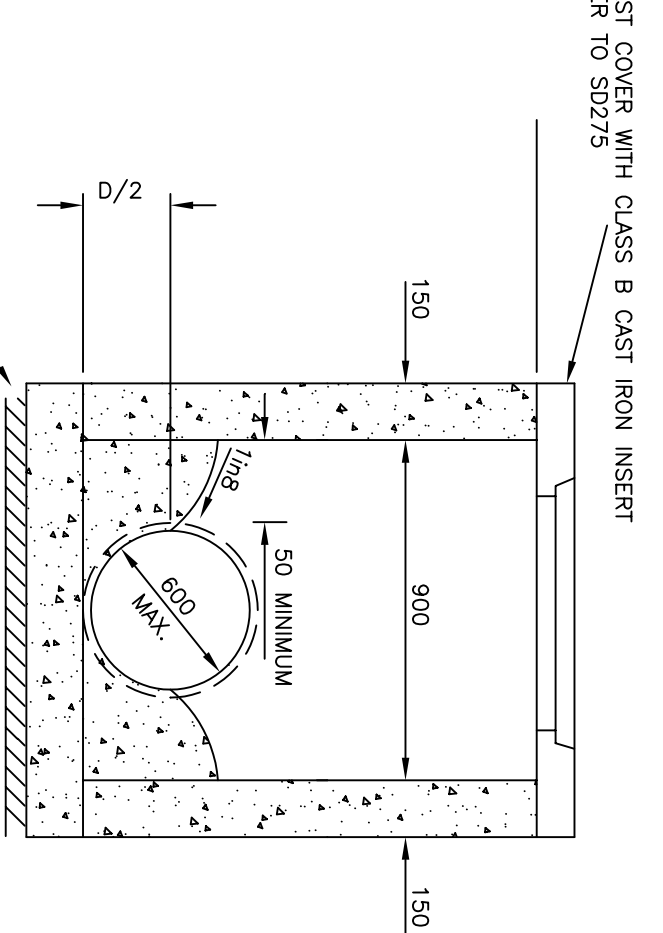
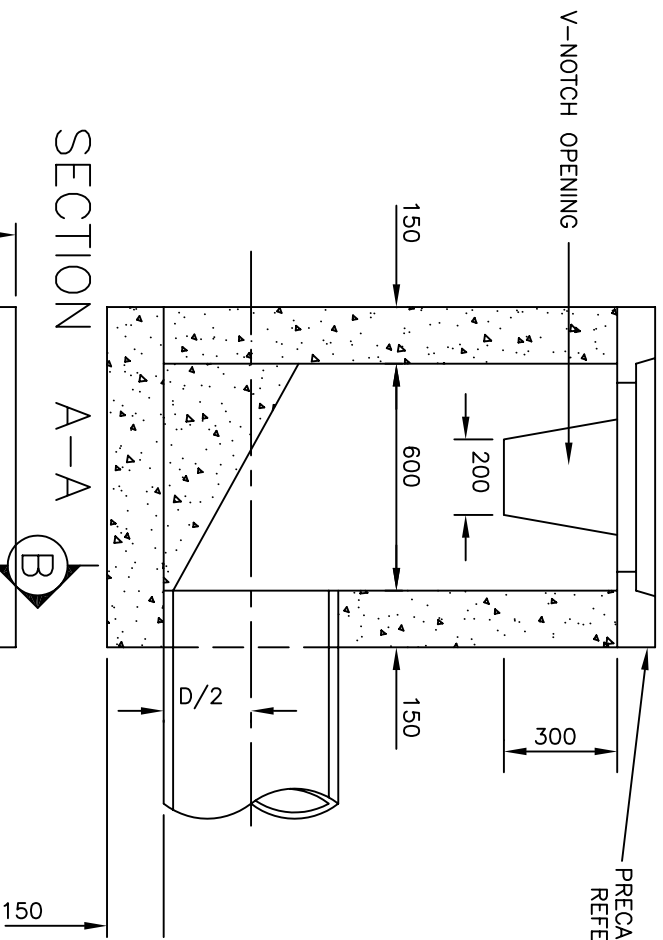


P.O. Box 119
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(03) 9309 0109

EASEMENT PIT (600x600)

DRAWING NO:

SD235



V-NOTCH OPENING

SECTION A-A

PRECAST COVER WITH CLASS B CAST IRON INSERT
REFER TO SD275

50mm COMPACTED
CLASS 3 FCR BEDDING

SECTION B-B

NOTES:

1. ALL WALLS TO BE 150mm THICK FOR PRECAST CONCRETE COVER DETAILS, REFER TO STD. DWG. SD275
2. CLASS D, CAST IRON COVER AND SURROUND TO BE USED WHEN PIT IS LOCATED IN ROAD PAVEMENT OR WITHIN 1m OF VEHICLE CROSSINGS.
3. PIT TO BE HAUNCHED FOR PIPE DIAMETER OVER 450mm OR DEPTH EXCEEDING 2.0m, REFER TO STD.DWG. SD245.
4. PROVIDE STEP IRONS FOR PIT DEPTH EXCEEDING 1.0m, REFER TO STD. DWG. SD280.
5. CONCRETE STRENGTH 25Mpa AT 28 DAYS

Amendments

No.	Detail	Initials	Date
A			

DRAWN : D. SALAZAR

CHECKED : R. CHARTERS

APPROVED : S. PLATER

SCALE : 1 : 20

ISSUE DATE: JUNE 2004

TYPE :

'V' NOTCH PIT

DRAWING NO:

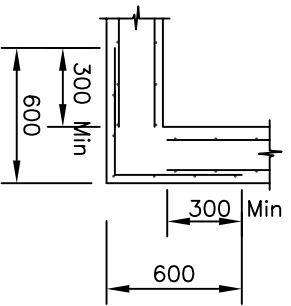
SD240



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1079 Pascoe Vale Road
Brookmeadows
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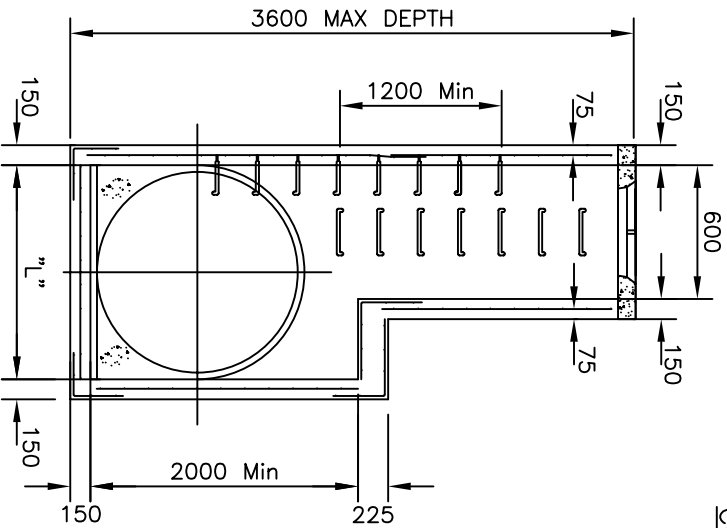
PIT LENGTH "L"	REINFORCEMENT
UP TO 1200	SL92
1201 - 1800	RL918
1801 - 2400	RL1218

REINFORCEMENT DETAILS



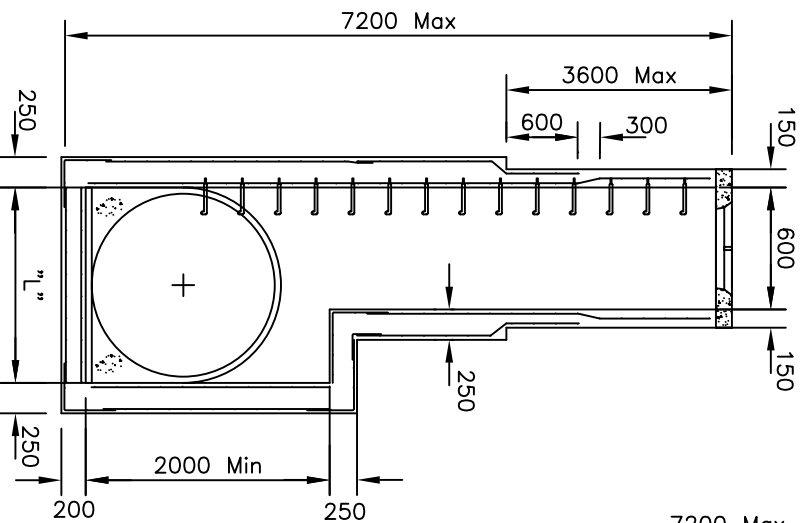
PITS WITH HAUNCHING IN TWO DIRECTIONS REQUIRE SPECIAL STRUCTURAL DESIGN LAPS TO BE 300mm, CLEAR COVER TO BE 50mm Min. CORNER RETURN REINFORCEMENT TO BE FABRIC OR EQUIVALENT BARS

CORNER DETAILS (PLAN VIEW)

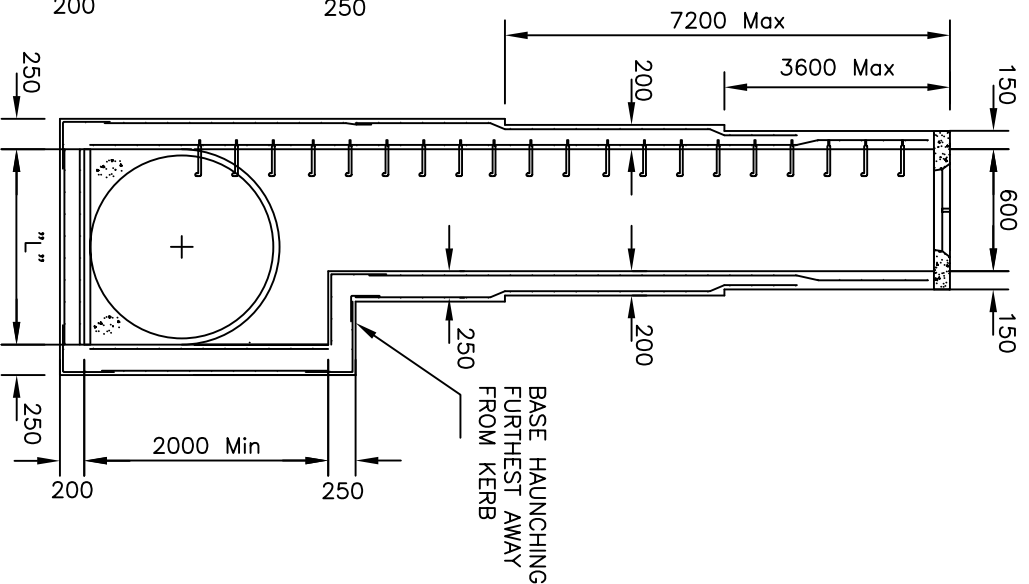


PITS UP TO 3600 DEPTH

- NOTES:**
1. THE TOP OF THE PIT SHALL MATCH FINISHED SURFACE LEVELS
 2. CLASS B, CIRCULAR CAST IRON INSERT AND PRECAST PIT LID SHALL BE USED IN NATURESTRIPS, EASEMENTS AND RESERVES, REFER TO STD. DWG. SD275.
 3. CLASS D, CAST IRON COVER AND SURROUND SHALL BE USED WHEN PIT IS LOCATED IN ROAD PAVEMENTS OR WITHIN 1m OF VEHICLE CROSSINGS. PROVIDE STEP IRONS FOR PIT DEPTH EXCEEDING 1.0m, REFER TO STD. DWG. SD280.
 4. CONCRETE STRENGTH 32Mpa AT 28 DAYS.
 5. FOR PIPE SIZES 450-750mm, "L" TO BE 900mm
 6. FOR PIPE SIZES OVER 750mm, "L" TO BE DIA.+100mm.
 7. FOR PITS OVER 2.0m DEEP, BUT WITH PIPE SIZES LESS THAN 450mm, "L" TO BE 900mm
 - 8.



PITS 3601 TO 7200 DEPTH



PITS 7201 TO 10800 DEPTH

Amendments			
No.	Detail	Initials	Date
1.	Mesh Codes Changed	R.C.	July 06

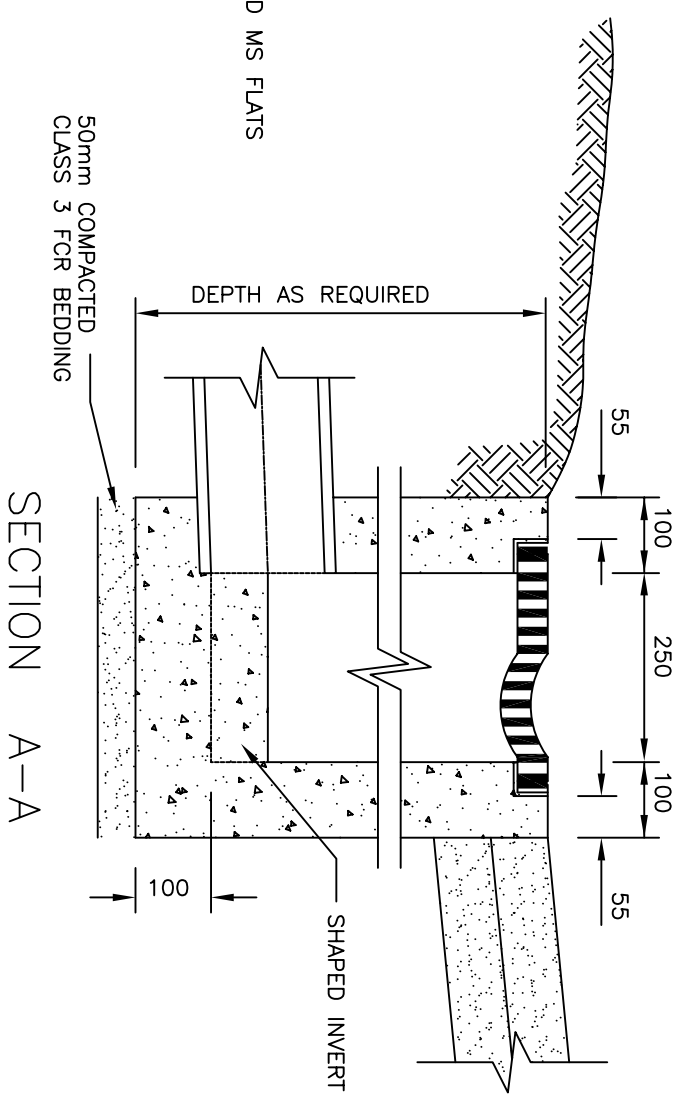
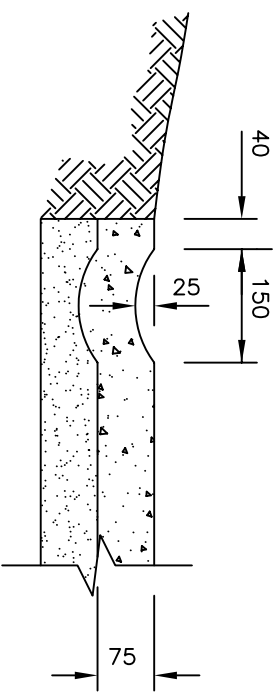
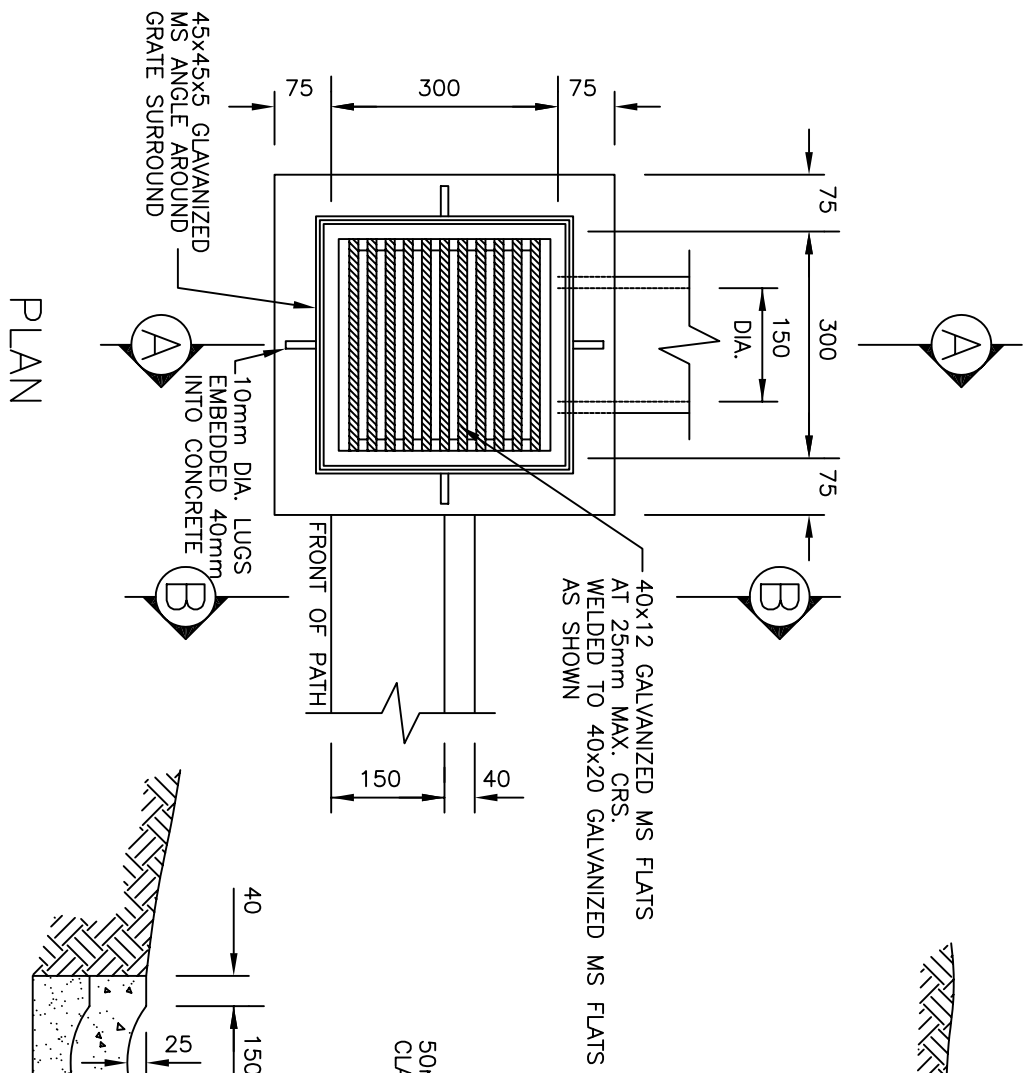
DRAWN : R. CHARTERS
 CHECKED : R. DEVAPURA
 APPROVED : S. PLATER
 SCALE : N.T.S
 ISSUE DATE: JUNE 2004



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HAUNCHED PITS
 FOR PIPES OVER 450mm IN DIA.
 OR PITS DEEPER THAN 2.0m

DRAWING NO: SD245



NOTES:

1. THESE PITS WILL ONLY BE ALLOWED IN CIRCUMSTANCES WHERE IT CAN BE DEMONSTRATED THAT THE FOOTPATH CANNOT BE GRADED TO THE ROADWAY.
2. WHERE AUXILIARY CHANNEL FORMS PART OF THE VEHICULAR ENTRANCE, CONCRETE IS TO BE INCREASED TO 150 DEPTH.
3. CHANNEL TO BE POURED INTEGRALLY WITH FOOTPATH.
4. CONCRETE TO BE 25 MPa AT 28 DAYS.

Amendments

No.	Detail	Initials	Date
A			

DRAWN : D. SALAZAR
 CHECKED : R. DEVAPURA
 APPROVED : S. PLATER
 SCALE : 1 : 10
 ISSUE DATE: JUNE 2004

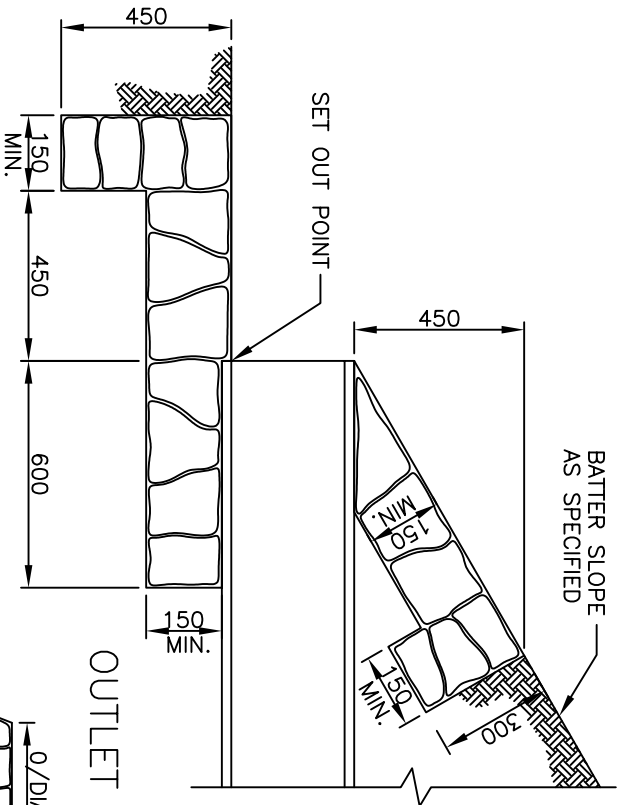
P.O. Box 119
 1079 Pascoe Vale Road
 Broadmeadows
 Victoria 3047
 Telephone (03) 9205 2200
 Facsimile (03) 9309 0109

TYPE :

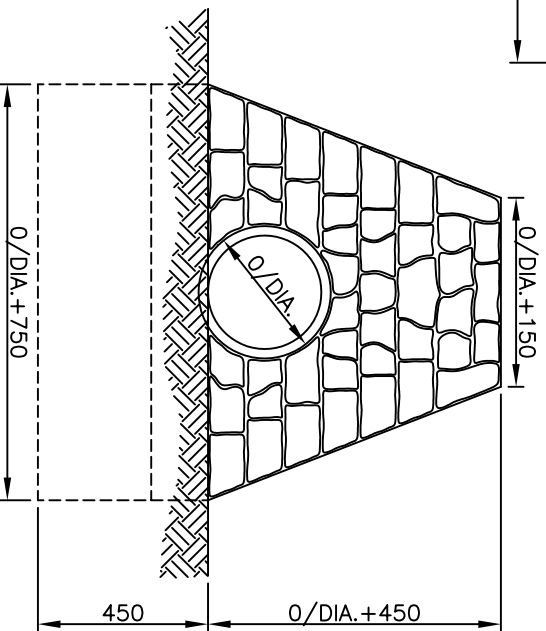
FOOTPATH GRATED PIT

DRAWING NO.:

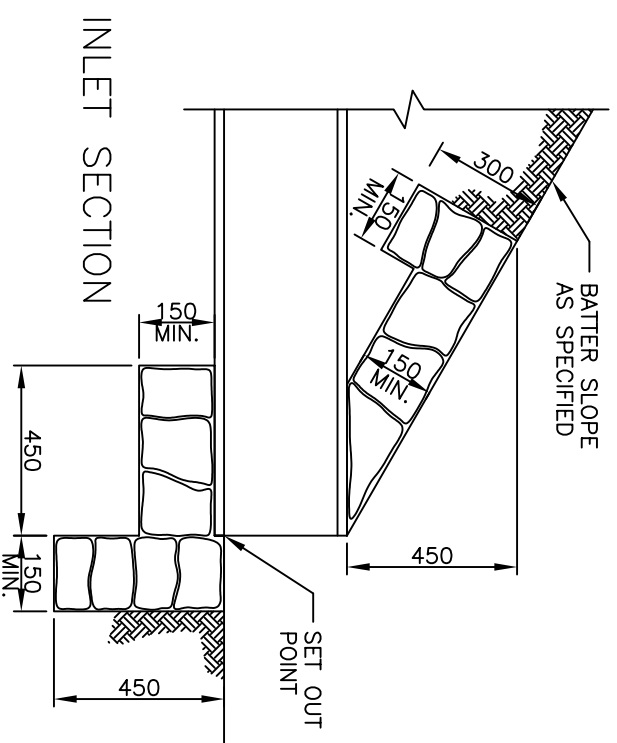
SD250



OUTLET SECTION



INLET AND OUTLET END ELEVATION



INLET SECTION

NOTES:

1. ROCKS SHALL BE SOUND, DENSE AND RESISTANT TO WEATHERING.
2. UNLESS USED FOR FILLING IN, ROCK SHALL WEIGH BETWEEN 20 AND 70 kg WITH 60% WEIGHING AT LEAST 40 kg.
3. GROUT SHALL BE 1 PART CEMENT TO 3 PARTS FINE SAND MIXED TO A STIFF CONSISTANCY.
4. TOLERANCE ON ROCKS 50mm DEVIATION.

Amendments

No.	Detail	Initials	Date
A			

DRAWN : D. SALAZAR
 CHECKED : R. DEVAPURA
 APPROVED : S. PLATER
 SCALE : 1 : 20
 ISSUE DATE: JUNE 2004



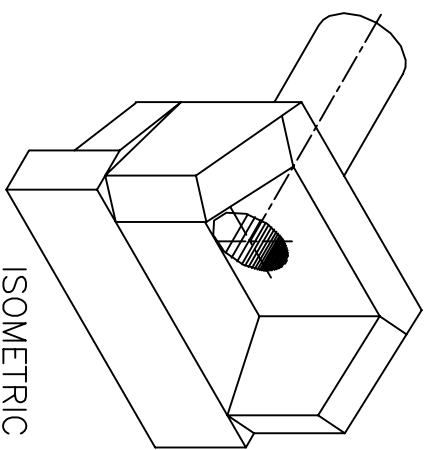
P.O. Box 119
 1079 Pascoe Vale Road
 Broadmeadows
 Victoria 3047
 Telephone
 (03) 9205 2200
 Facsimile
 (03) 9309 0109

TYPE :

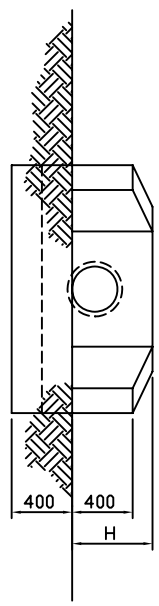
GROUTED MASONRY ENDWALL

DRAWING NO.:

SD255

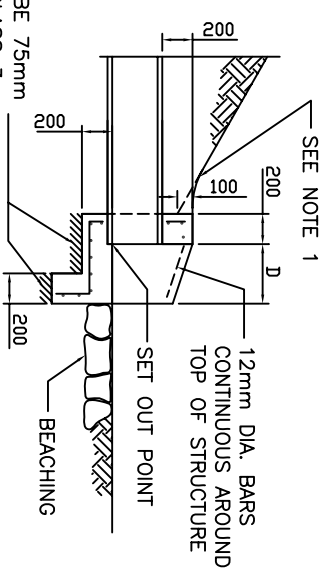


ISOMETRIC VIEW

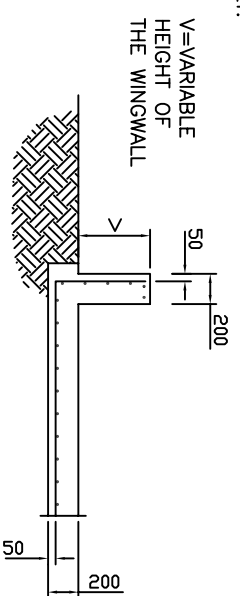


ELEVATION

BEDDING TO BE 75mm COMPACTED CLASS 3 CRUSHED ROCK



SECTION A-A



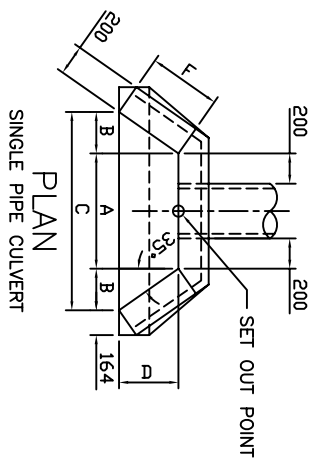
SECTION B-B

NOTES:

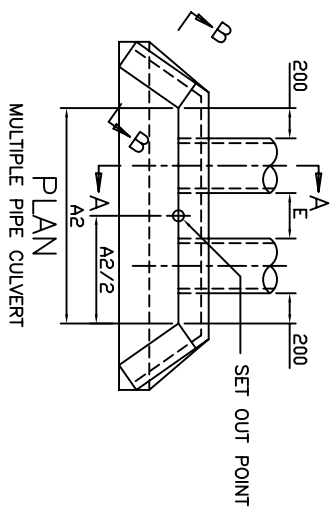
1. BECAUSE THE RELATION OF THE BATTER TO THE TOP OF THE ENDWALL IS ESSENTIAL FOR THE SAFETY OF THE MOTORIST THE DETAILS AS SHOWN IN SECTION A-A MUST BE ADHERED TO DURING CONSTRUCTION.
2. REINFORCEMENT, SL82 UNLESS OTHERWISE SPECIFIED, SHALL BE CONTINUOUS AROUND CORNERS AND LOCATED AS SHOWN ON SECTIONS A-A AND B-B. CLEAR COVER 50mm MINIMUM. LAPS : FABRICS 300 MIN. BARS 25x(BAR DIA.) MIN.
3. DISTRIBUTION BARS 12mm DIA. AT 200mm CENTRES.
4. CONCRETE STRENGTH 30 MPa.
5. EXPOSED EDGES SHALL HAVE 20x20mm CHAMFERS.
6. COMPACTION PRESSURE BEHIND WALLS NOT TO EXCEED 15 MPa. (1.5 TONNE VIBRATORY ROLLER OR 300 kg VIBRATING PLATE WITHIN 0.5m OF WALL.

DIMENSIONS		TYPE 1 *SLOPE AT 1.5:1					TYPE 2 *SLOPE AT 2:1					TYPE 3 *SLOPE AT 3:1				
		B	C	D	F	H	B	C	D	F	H	B	C	D	F	H
NOM. PIPE DIA.	EXTER. PIPE DIA.#	A**	E	H												
300	362	762	300	531	138	1037	197	240	183	1129	262	320	275	1312	393	480
375	445	845	300	610	221	1286	315	385	294	1433	420	513	441	1727	630	769
450	534	934	300	692	307	1547	438	535	409	1752	584	713	613	2161	876	1069
525	616	1016	300	775	394	1804	563	687	525	2066	750	916	788	2591	1125	1373

* THEORETICAL SLOPE OF WINGWALL MEASURED AT RIGHT ANGLES TO THE ROADWAY.
** A2=A+E+EXTERNAL DIAMETER OF PIPE
APPROXIMATE ONLY.



PLAN SINGLE PIPE CULVERT



PLAN MULTIPLE PIPE CULVERT

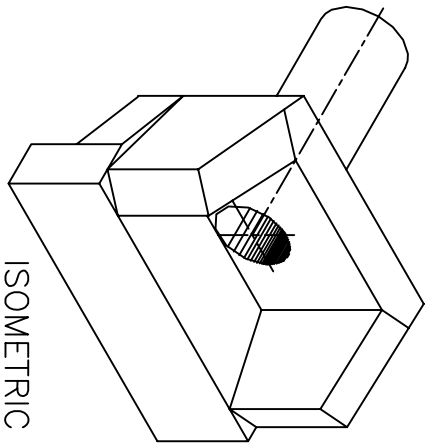
Amendments				
No.	Zone	Detail	Initialed	Date
1.		Mesh Code Changed	R.C.	July 08

DRAWN : D. SALAZAR
CHECKED : R. DEVAPURA
APPROVED : S. PLATER
SCALE : 1 : 50
ISSUE DATE: JUNE 2004

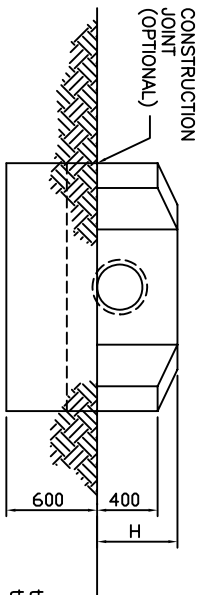


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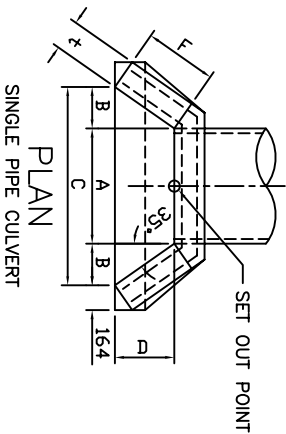
TYPE : REINFORCED CONCRETE WINGWALL
TYPES 1,2 & 3
Pipe Culverts 300mm to 525mm Dia.
DRAWING NO: SD260



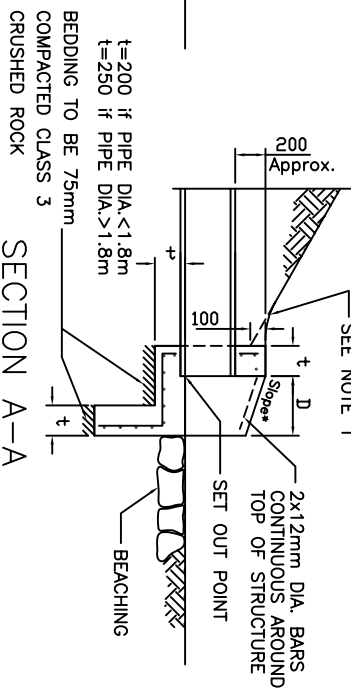
ISOMETRIC VIEW



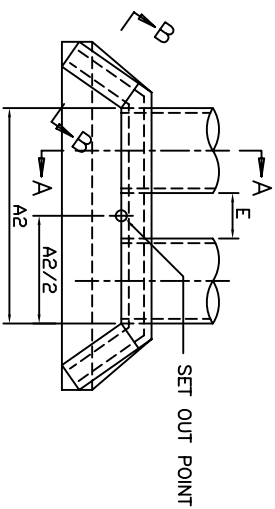
ELEVATION



PLAN
SINGLE PIPE CULVERT



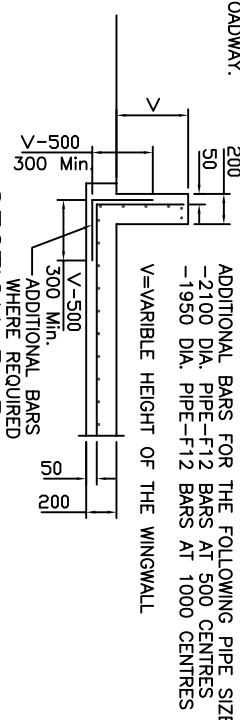
SECTION A-A



PLAN
MULTIPLE PIPE CULVERT

NOM. PIPE DIA.	EXTER. PIPE DIA. #	A**	E	H	DIMENSIONS											
					TYPE 1 *SLOPE AT 1.5:1			TYPE 2 *SLOPE AT 2:1			TYPE 3 *SLOPE AT 3:1					
					B	C	D	B	C	D	B	C	D			
600	698	698	300	854	477	1652	681	831	636	1970	1068	1108	954	2605	1362	1663
675	781	781	340	935	560	1901	800	976	746	2274	1066	1301	1120	3020	1599	1952
750	864	864	375	1013	644	2152	920	1123	858	2581	1226	1497	1288	3439	1839	2245
825	946	946	410	1092	727	2400	1038	1267	969	2884	1394	1690	1454	3853	2076	2534
900	1029	1029	450	1172	811	2651	1158	1414	1081	3191	1544	1885	1622	4272	2316	2827
1050	1194	1194	525	1330	977	3148	1395	1703	1302	3794	1860	2271	1954	5101	2790	3406
1200	1359	1359	600	1489	1144	3647	1634	1994	1525	4409	2178	2659	2288	5934	3267	3988
1350	1524	1524	675	1648	1311	4146	1872	2285	1748	5019	2496	3047	2622	6767	3744	4571
1500	1676	1676	750	1800	1470	4617	2100	2564	1961	5597	2800	3418	2941	7558	4200	5127
1650	1842	1842	825	1959	1637	5117	2339	2855	2183	6208	3118	3806	3275	8392	4677	5710
1800	2006	2006	900	2117	1803	5613	2576	3144	2405	6815	3434	4192	3607	9220	5151	6288
1950	2198	2198	900	2296	1991	6181	2844	3472	2655	7508	3792	4629	3983	10164	5688	6944
2100	2388	2388	900	2474	2178	6745	3111	3798	2904	8197	4148	5064	4357	11101	6222	7596

* THEORETICAL SLOPE OF WINGWALL MEASURED AT RIGHT ANGLES TO THE ROADWAY.
** A2=A+E-EXTERNAL DIAMETER OF PIPE.
APPROXIMATE ONLY.



SECTION B-B

- NOTES:
1. BECAUSE THE RELATION OF THE BATTERY TO THE TOP OF THE ENDWALL IS ESSENTIAL FOR THE SAFETY OF THE MOTORIST, THE DETAILS AS SHOWN IN SECTION A-A MUST BE ADHERED TO DURING CONSTRUCTION.
 2. REINFORCEMENT, SL82 UNLESS OTHERWISE SPECIFIED, SHALL BE CONTINUOUS AROUND CORNERS AND LOCATED AS SHOWN ON SECTIONS A-A AND B-B. CLEAR COVER 50mm MINIMUM. LAPS : FABRICS 300 MIN. BARS 25x(BAR DIA.) MIN.
 3. DISTRIBUTION BARS 12mm DIA. AT 200mm CENTRES.
 4. ADDITIONAL FOR LARGEST CULVERT ARE PLACED ADJACENT TO THE MESH.
 5. CONCRETE STRENGTH 30 MPa.
 6. EXPOSED EDGES SHALL HAVE 20x20mm CHAMFERS.
 7. COMPACTION PRESSURE BEHIND WALLS NOT TO EXCEED 15 MPa. (1.5 TONNE VIBRATORY ROLLER OR 300 kg VIBRATING PLATE WITHIN 0.5m OF WALL.

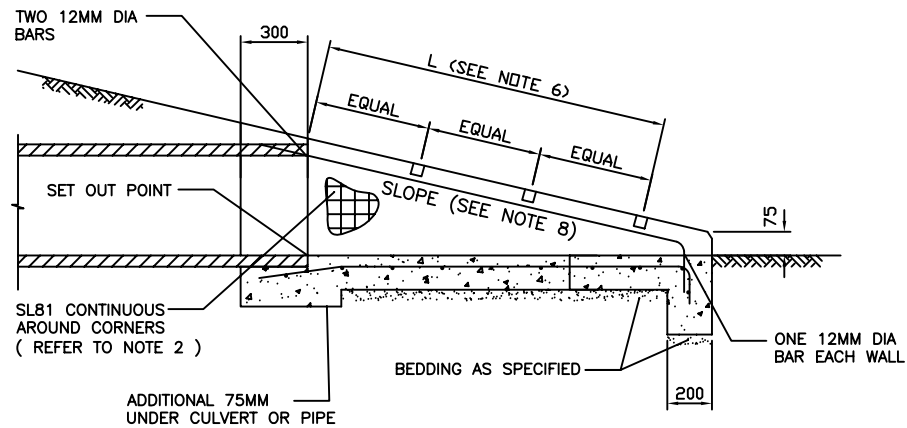
Amendments				
No.	Zone	Detail	Initialed	Date
1.		Mesh Codes Changed	R.C.	July 08

DRAWN : D. SALAZAR
 CHECKED : R. DEVAPURA
 APPROVED : S. PLATER
 SCALE : 1 : 50
 ISSUE DATE: JUNE 2004

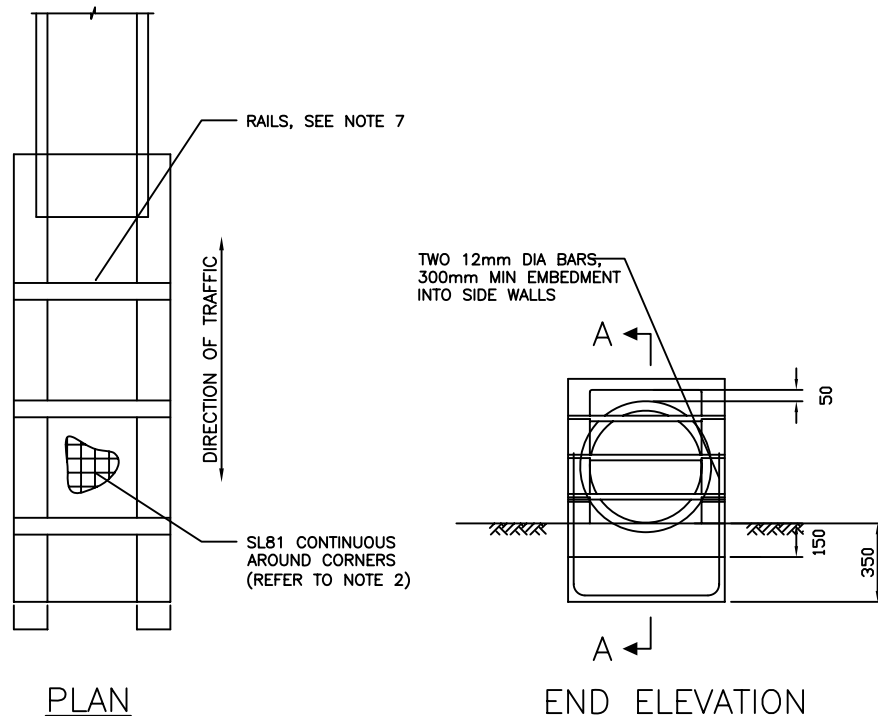


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TYPE : REINFORCED CONCRETE WINGWALL
 TYPES 1, 2 & 3
 Pipe Culverts 600mm to 2100mm Dia.
 DRAWING NO: SD265



SECTION A-A



PLAN

END ELEVATION

NOTES:

1. THESE ENDWALLS ARE TO BE USED IN AREAS WHERE HEAD ON COLLISIONS ARE LIKELY TO OCCUR.
2. REINFORCEMENT, SL81 UNLESS OTHERWISE SPECIFIED, TO BE CONTINUOUS AROUND CORNERS AND LOCATED AS SHOWN. CLEAR COVER 50mm. MIN. LAPS: FABRIC 300mm. MIN. BARS 25mm X BAR DIA. MIN.
3. DISTRIBUTION BARS 12mm DIA AT 200 CENTRES.
4. CONCRETE STRENGTH 32Mpa AT 28 DAYS.
5. EXPOSED EDGES TO HAVE 20 X 20mm CHAMFERS.
6. RAILS WITHIN LENGTH 'L' SHALL BE EVENLY SPACED. THE MAXIMUM SPACING SHALL NOT EXCEED 600mm.
7. RAILS ARE 60mm DIA GALVANISED TUBES 5.4mm THICK. THESE ARE TO BE GROUTED INTO THE SLOTS IN THE WALLS.
8. SLOPE OF ENDWALL TO MATCH BATTER SLOPE. MAXIMUM SLOPE 4 TO 1.
9. ENDWALLS TO BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT PROVISIONS OF OF AS.3600.
10. ALL DIMENSIONS IN MILLIMETRES

L (mm)	TOTAL NUMBER OF RAILS
100 - 600	1
601 - 1200	2
1201 - 1800	3
1801 - 2400	4

Amendments			
No.	Detail	Initials	Date
1.	Mesh Codes Changed	R.C.	July 06

DRAWN :	R. CHARTERS
CHECKED :	R. DEVAPURA
APPROVED :	S. PLATER
SCALE :	N.T.S.
ISSUE DATE:	JUNE 2004



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TYPE : DRIVEABLE CULVERT ENDWALL
PIPE CULVERTS UP TO 600mm DIA
& BOX CULVERTS UP TO 600mm WIDE

DRAWING NO: SD268

NOTES:

WHERE THE ABUTTING ROAD IS SEALED, THEN THE CROSSOVER IS TO BE SEALED WITH EITHER A 10MM SPRAY SEAL OR A MIN 25MM THICKNESS OF SIZE 7 ASPHALT. SEAL IS TO EXTEND FROM EDGE OF ROAD SEAL TO TITLE BOUNDARY.
 WHEN THE ABUTTING ROAD IS UNSEALED ie. GRAVEL OR F.C.R. THEN THE CROSSOVER SURFACE MAY BE COMPACTED F.C.R.

WHERE THE VEHICLE CROSSING IS A SECOND OR OCCASSION USE CROSSING ie; FARM ACCESS TO PADDOCKS, THEN AT THE DISCRETION OF COUNCIL, THIS CROSSING MAY BE CONSTRUCTED AS PER AN UNSEALED ROAD.

HEADWALL AS PER STD. DWG SD268. CONCRETE WINGWALL TYPE (SD260) WILL ONLY BE APPROVED AFTER ON SITE INSPECTON BY COUNCIL REPRESENTATIVE

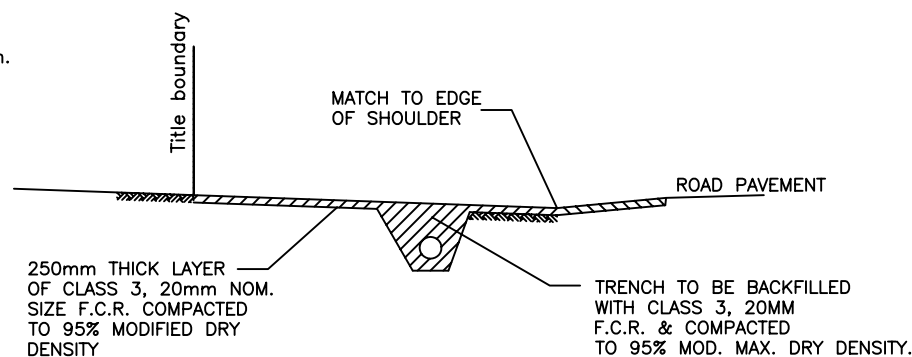
SHOULDER CROSSFALL TO BE MAINTAINED. IF NO SHOULDERS PROVIDED, EXTEND CRUSHED ROCK TO EDGE OF PAVEMENT (250mm THICK)

WHITE GUIDE POST TO BE INSTALLED AT EACH ENDWALL

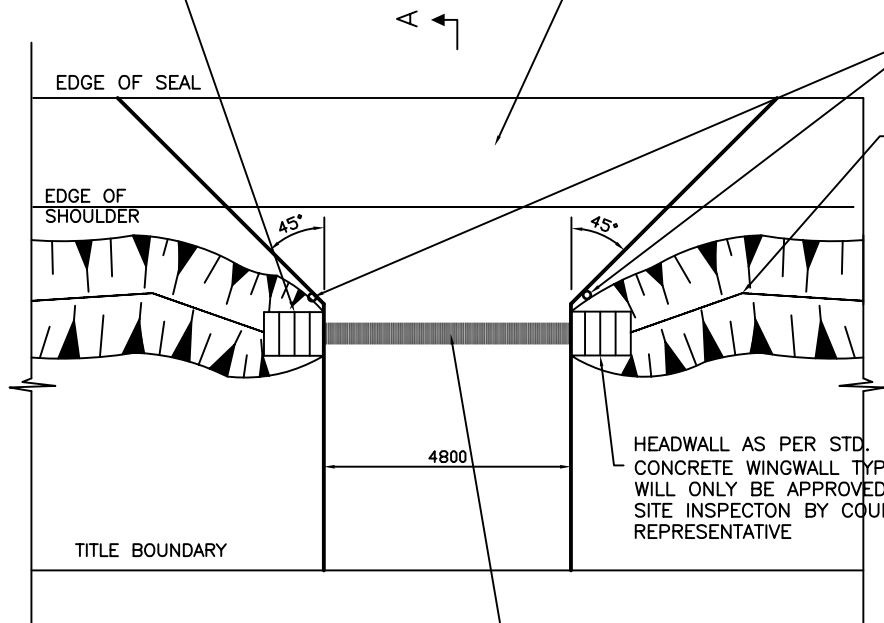
DRAIN TO BE REALIGNED AS NECESSARY TO PROVIDE MIN. COVER OVER PIPE OF 300mm.

HEADWALL AS PER STD. DWG SD268. CONCRETE WINGWALL TYPE (SD260) WILL ONLY BE APPROVED AFTER ON SITE INSPECTON BY COUNCIL REPRESENTATIVE

2 X 2.44m CLASS 4 RCP 300mm MIN DIA. PIPES. LARGER PIPES OR BOX CULVERTS MAY BE REQUIRED DEPENDING ON LOCATION AS DETERMINED BY COUNCIL REPRESENTATIVE.
 INVERT LEVEL OF PIPE TO MATCH EXISTING INVERT LEVEL OF TABLE DRAIN UNLESS OTHERWISE DIRECTED.



SECTION A-A



PLAN

Amendments			
No.	Detail	Initials	Date
1	NOTES ADDED	R.C.	OCT 07

DRAWN : R. CHARTERS
 CHECKED : R. DEVAPURA
 APPROVED : S. PLATER
 SCALE : N.T.S.
 ISSUE DATE: JUNE 2004

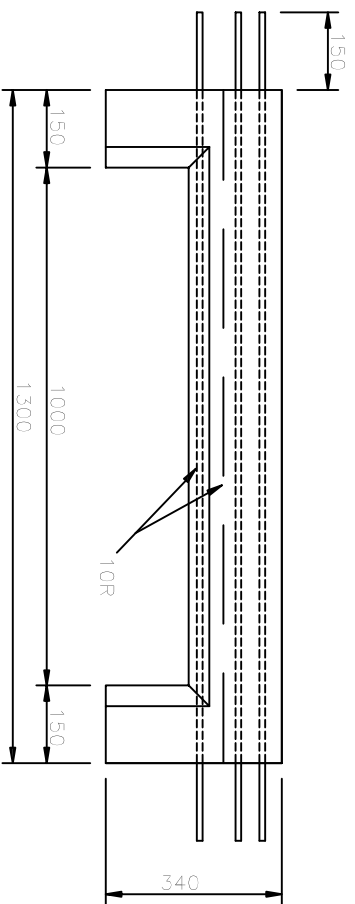


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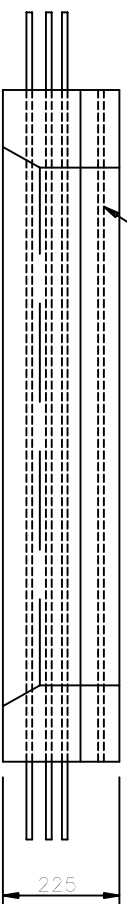
TYPE :	RURAL VEHICLE CROSSING & CULVERT
DRAWING NO:	SD269



FRONT ELEVATION

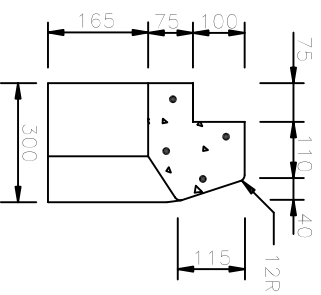
5 No. R12 BARS
25mm CLEAR COVER

A

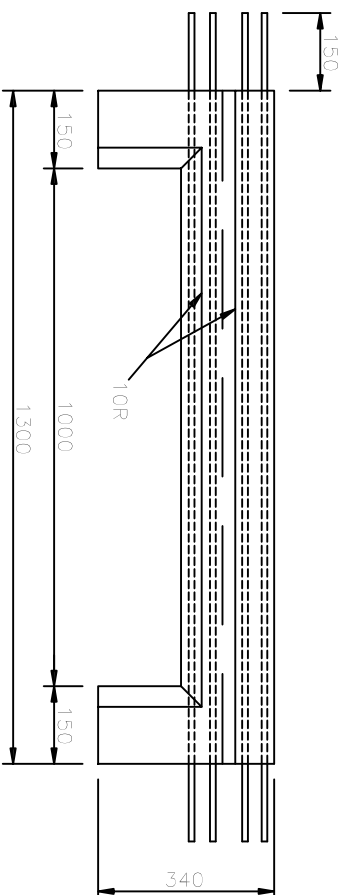


PLAN

A



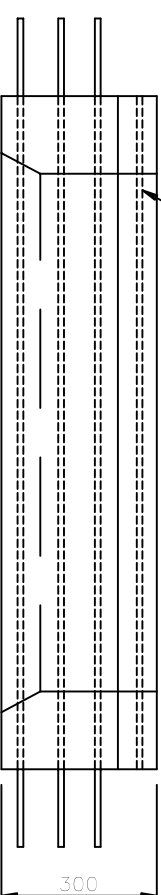
SECTION A-A



FRONT ELEVATION

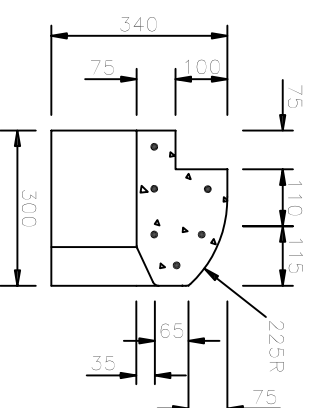
6 NO. R12 BARS
25mm CLEAR COVER

A



PLAN

A



SECTION A-A

B2 PROFILE LINTEL

SM2 PROFILE LINTEL

Appointments		Initial	Date
Drawn	S. GUCH		
Checked	R. DEVAPURA		
Approved	S. PLATER		
Scale	1 : 15		
Date	JUNE 2004		



P.O. Box 119
1079 Pascoe Vale Road
Essendon
Victoria 3047
Telephone
(03) 9200 2200
Facsimile
(03) 9208 0109

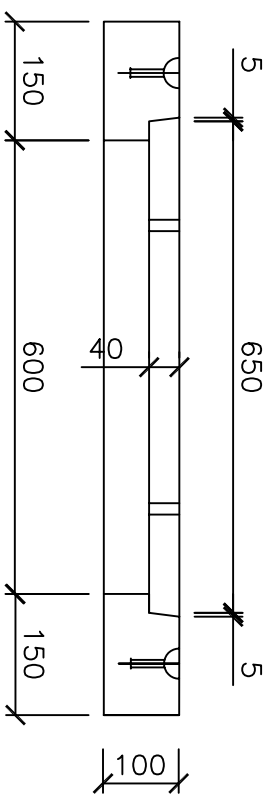
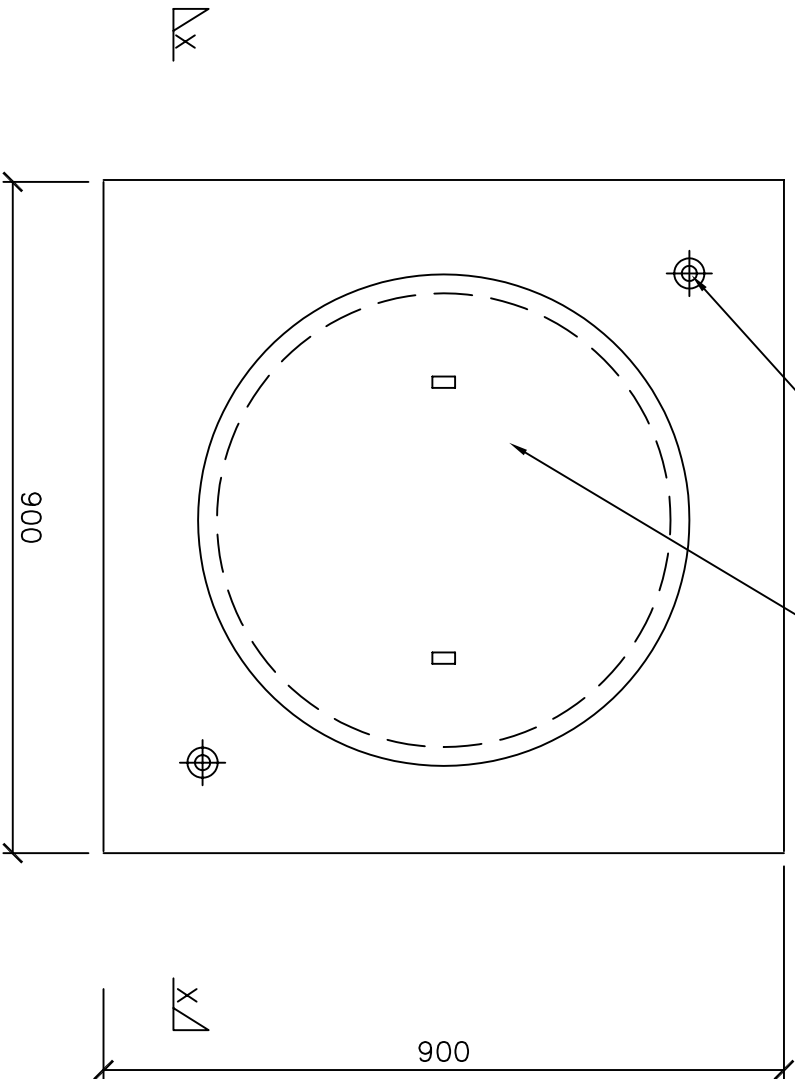
LINTELS - B2 BARRIER KERB
& SM2 SEMI MOUNTABLE TYPE

DRAWING NO:

SD270

2 NO. 1.3 TONNE X 55 LONG SWIFT LIFTS FOR HANDLING

CLASS B CONCRETE FILLED CIRCULAR CAST IRON INSERT WITH 2 STANDARD LIFTING KEY LUGS



SECTION X-X

- NOTES:
1. THIS PIT LID TO BE USED ON EASEMENT PITTS WITH INTERNAL DIMENSIONS 600 x 600.
 2. CONCRETE STRENGTH 25Mpa AT 28 DAYS

ALL DIMENSIONS ARE IN MILLIMETRES.

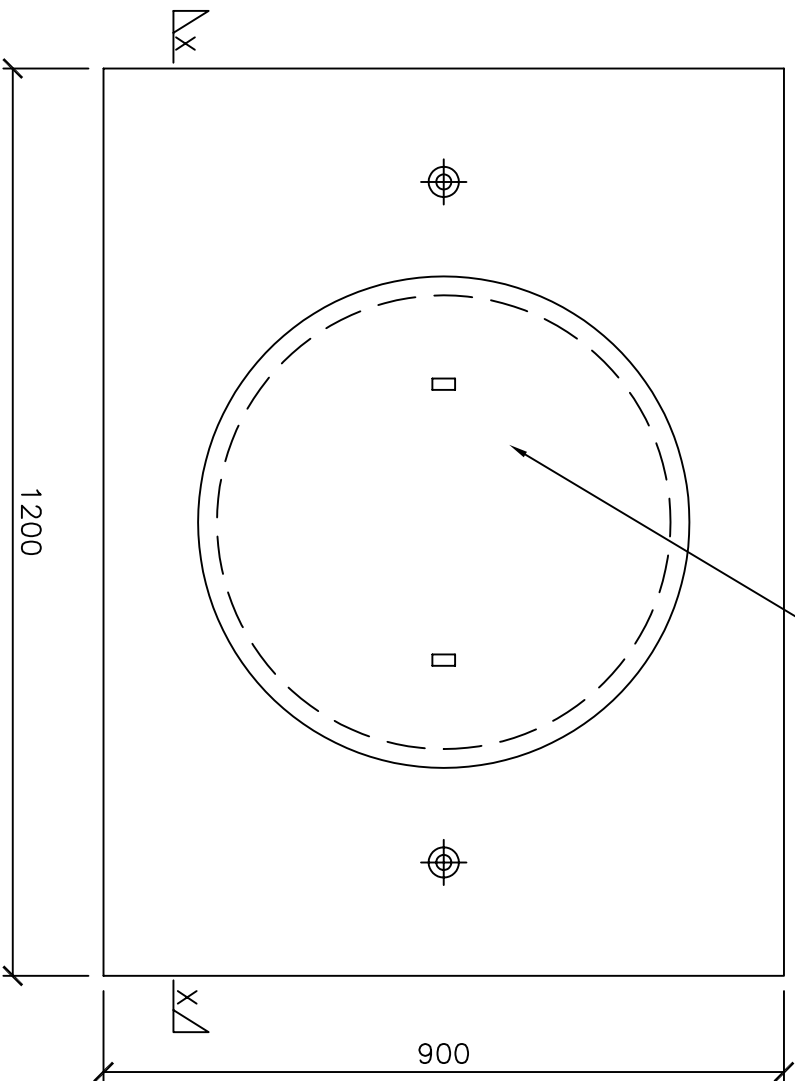
Amendments		
No.	Detail	Date

JE HUME
 CITY COUNCIL
 PO Box 119
 Broadmeadows
 Victoria 3047
 Telephone 03) 9205 2200
 Facsimile 03) 9399 0109

PRECAST CONCRETE PIT LID
 WITH CAST IRON INSERT FOR
 600mm x 600mm EASEMENT PITTS.
 DRAWING NO: SD274

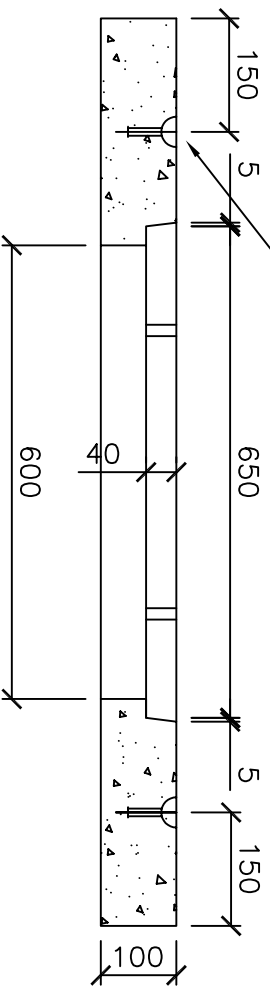
DRAWN : R. CHARTERS
 CHECKED : R. DEVPURA
 APPROVED : S. PLATER
 SCALE : 1 : 15
 DATE: SEPT 2005

CLASS B CONCRETE FILLED
 CIRCULAR CAST IRON INSERT WITH
 2 STANDARD LIFTING KEY LUGS



PLAN

2 NO. 1.3 TONNE X 55 LONG
 SWIFT LIFTS FOR HANDLING



SECTION X-X

- NOTES: 1. THIS PIT LID TO BE USED ON ALL PITS WITH INTERNAL DIMENSIONS 900 x 600 AND LARGER.
 2. CONCRETE STRENGTH 25MPa AT 28 DAYS

ALL DIMENSIONS ARE IN MILLIMETRES.

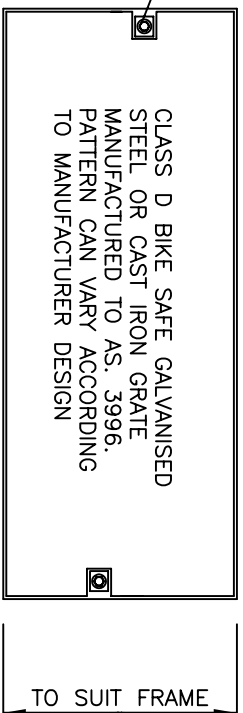
Amendments			
No.	Detail	Initials	Date
	DRAWN :	S. ADAMS	
	CHECKED :	R. DEVAPURA	
	APPROVED :	S. PLATER	
	SCALE :	1 : 15	
	DATE:	JUNE 2004	



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 Facsimile 03) 9309 0109

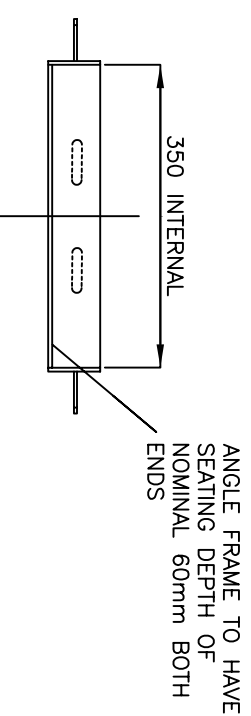
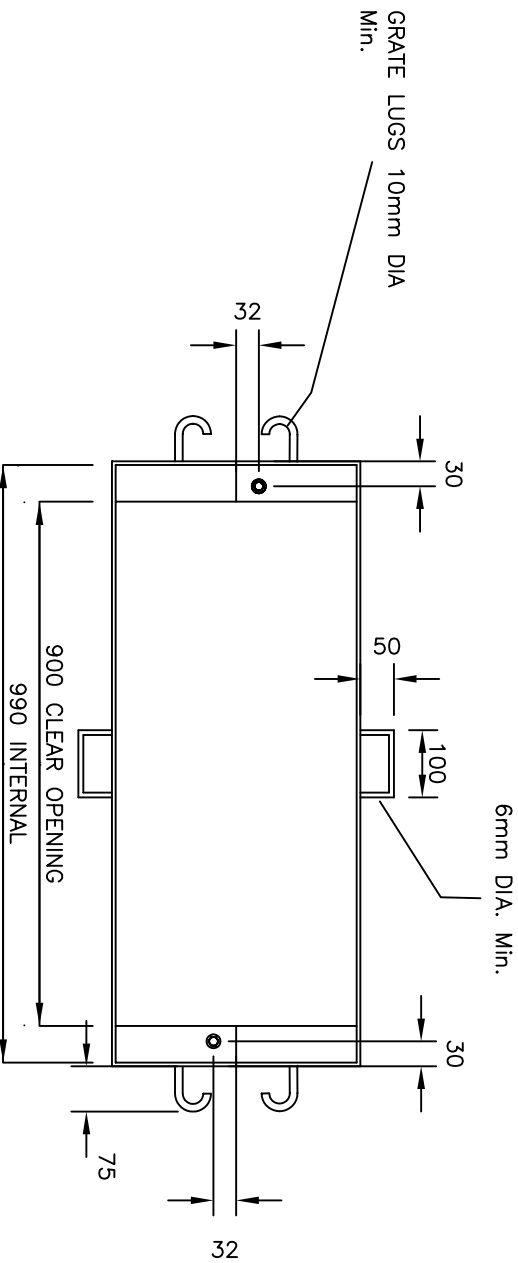
PRECAST CONCRETE PIT LID
 WITH CAST IRON INSERT
 DRAWING NO: SD275

PROVISION FOR LOCK DOWN
GRATE



- NOTES:
1. GRATE PATTERN TO BE DESIGNED BY MANUFACTURER TO FIT THE FRAME.
 2. GRATE TO BE BIKE SAFE, ABLE TO BE LOCKED DOWN, HOT DIP GALVANISED OR CAST IRON.
 3. GRATE TO BE CLASS D IN ACCORDANCE WITH AS. 3996.
 4. APPROVED GRATES TO BE USED ONLY AFTER SUBMISSION OF TEST RESULTS FROM NATA APPROVED TESTERS.
 5. FRAME AND LUGS TO BE FULLY WELDED FROM OUTSIDE ONLY.
 6. ALL DIMENSIONS IN MILLIMETRES.

GRATE

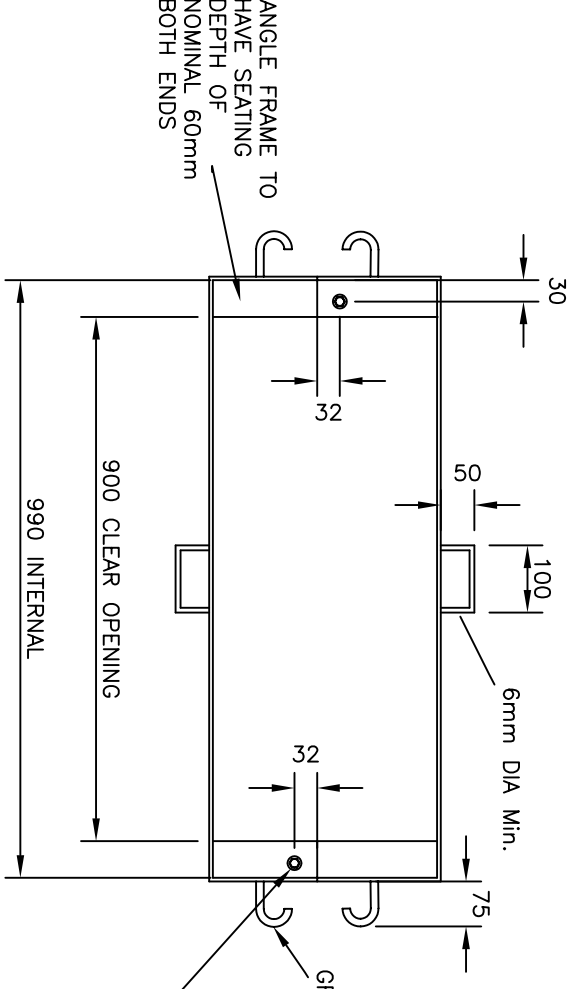
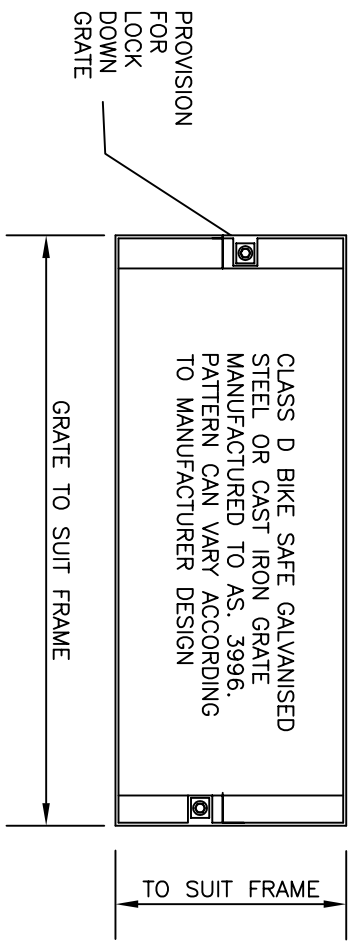


SECTION THROUGH FRAME

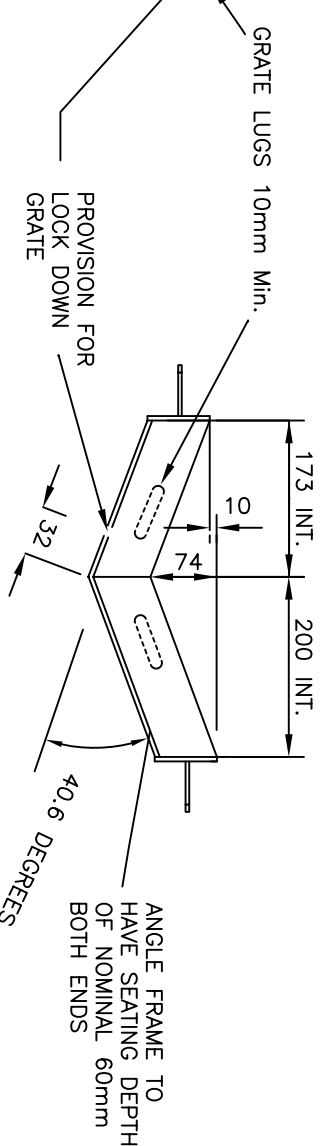
FRAME

Amendments		No.
Detail	Indices	Date
DRAWN :	R. CHARTERS	
CHECKED :	R. DEVAPURA	
APPROVED :	S. PLATER	
SCALE :	N.T.S	
ISSUE DATE:	JUNE 2004	

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	GRATE DETAIL B2 KERB AND CHANNEL DRAWING NO: SD276



- NOTES:
1. GRATE PATTERN TO BE DESIGNED BY MANUFACTURER TO FIT THE FRAME.
 2. GRATE TO BE BIKE SAFE, ABLE TO BE LOCKED DOWN, HOT DIP GALVANISED OR CAST IRON.
 3. GRATE TO BE CLASS D IN ACCORDANCE WITH AS. 3996.
 4. APPROVED GRATES TO BE USED ONLY AFTER SUBMISSION OF TEST RESULTS FROM NATA APPROVED TESTERS.
 5. FRAME AND LUGS TO BE FULLY WELDED FROM OUTSIDE ONLY.
 6. ALL DIMENSIONS IN MILLIMETRES.



FRAME
SECTION THROUGH FRAME

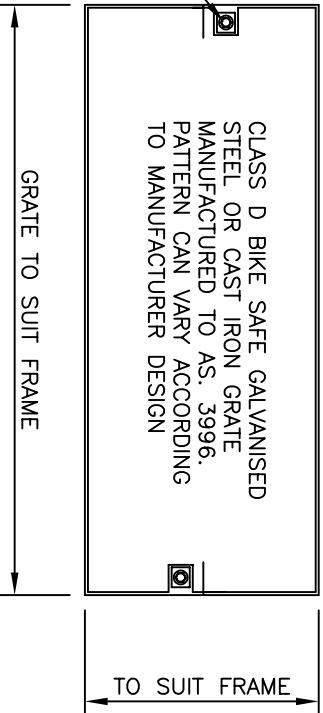
Amendments		No.
Detail	Initials	Date
DRAWN :	R. CHARTERS	
CHECKED :	R. DEVAPURA	
APPROVED :	S. PLATER	
SCALE :	N.T.S	
ISSUE DATE:	JUNE 2004	



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GRATE DETAIL
SM2 KERB AND CHANNEL
DRAWING NO:
SD277

PROVISION FOR LOCK DOWN GRATE



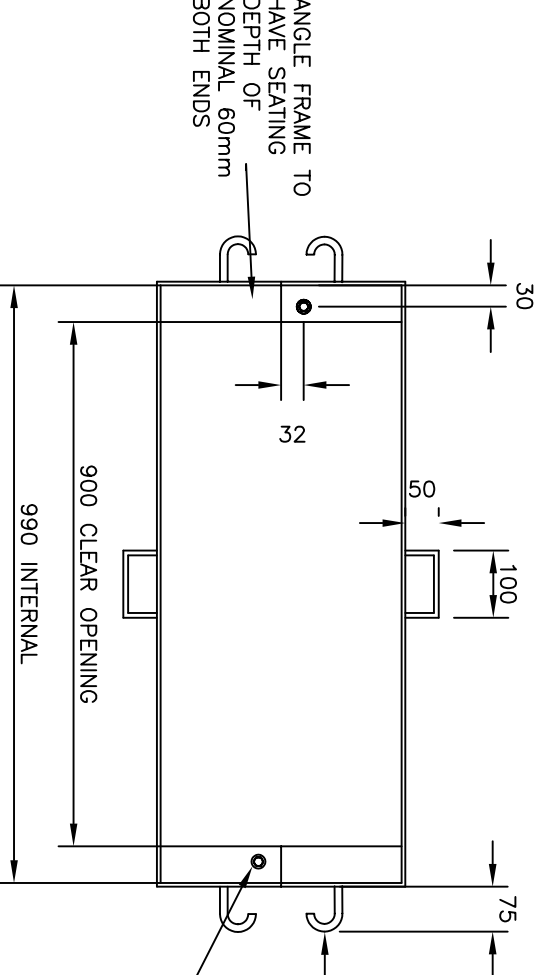
CLASS D BIKE SAFE GALVANISED
STEEL OR CAST IRON GRATE
MANUFACTURED TO AS. 3996.
PATTERN CAN VARY ACCORDING
TO MANUFACTURER DESIGN

GRATE TO SUIT FRAME

TO SUIT FRAME

GRATE

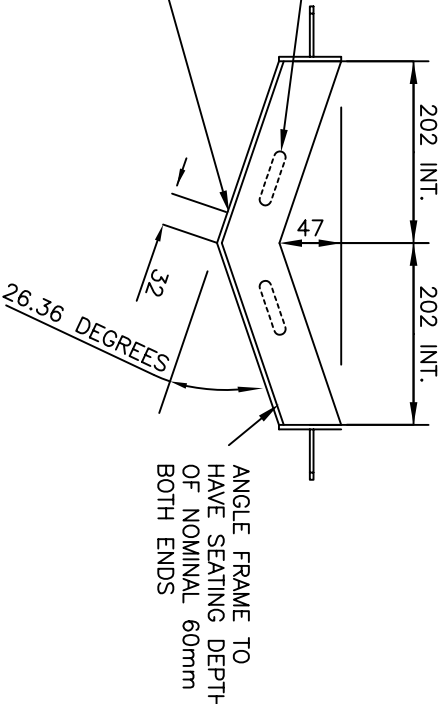
- NOTES:
1. GRATE PATTERN TO BE DESIGNED BY MANUFACTURER TO FIT THE FRAME.
 2. GRATE TO BE BIKE SAFE, ABLE TO BE LOCKED DOWN, HOT DIP GALVANISED OR CAST IRON.
 3. GRATE TO BE CLASS D IN ACCORDANCE WITH AS. 3996.
 4. APPROVED GRATES TO BE USED ONLY AFTER SUBMISSION OF TEST RESULTS FROM NATA APPROVED TESTERS.
 5. FRAME AND LUGS TO BE FULLY WELDED FROM OUTSIDE ONLY.
 6. ALL DIMENSIONS IN MILLIMETRES.



GRATE LUGS 10mm Min.

PROVISION FOR LOCK DOWN GRATE

FRAME



SECTION THROUGH FRAME

Amendments		
No.	Detail	Date

DRAWN : R. CHARTERS
 CHECKED : R. DEVAPURA
 APPROVED : S. PLATER
 SCALE : N.T.S
 ISSUE DATE: JUNE 2004

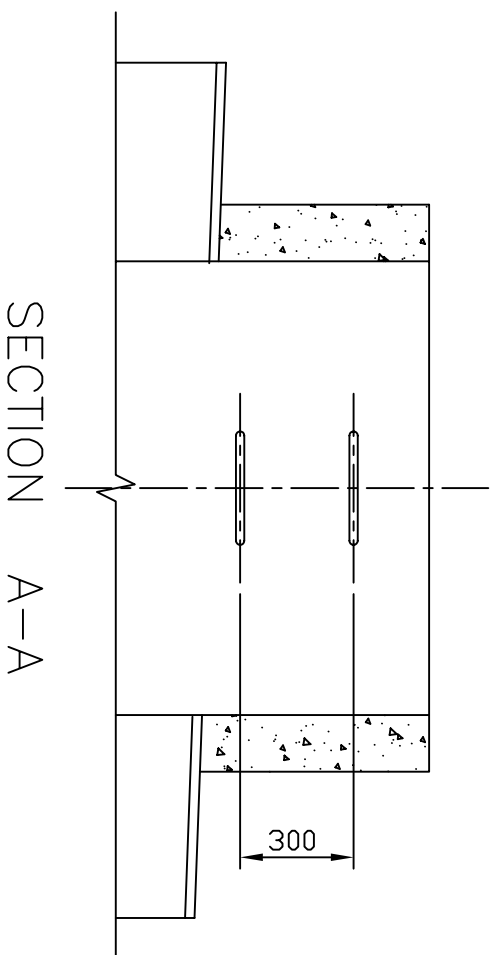


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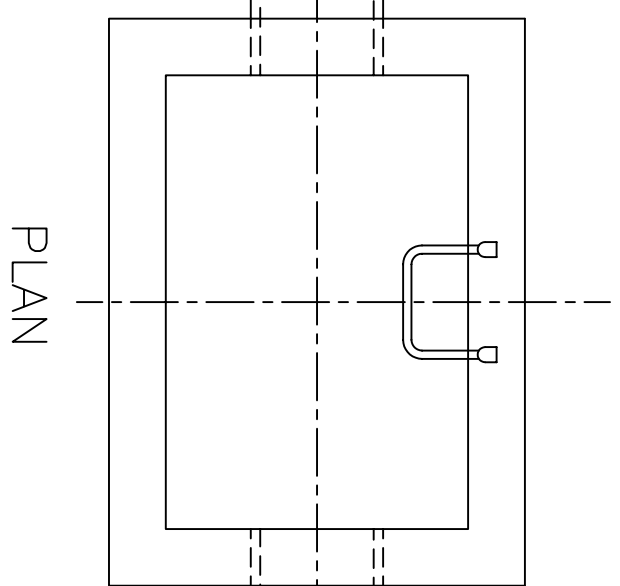
GRATE DETAIL
 SM2(MOD) KERB AND CHANNEL

DRAWING NO:

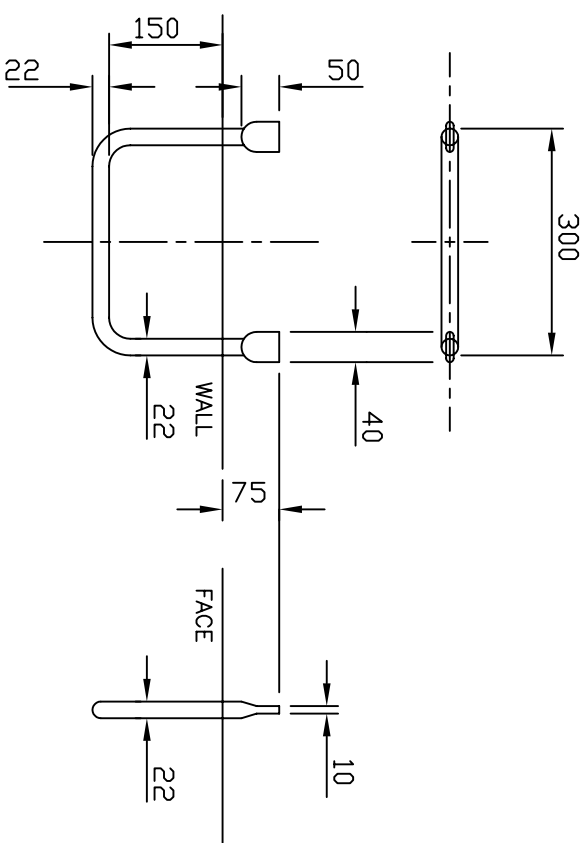
SD278



SECTION A-A



PLAN



STEP IRON DETAILS

SCALE 1 : 10

NOTES :

1. STEP IRONS TO BE 22mm DIA. MILD STEEL BARS GALVANIZED OR TREATED WITH APPROVED ZINC ON SILICATE PROCESS.
2. PITS DEEPER THAN 1000mm TO BE FITTED WITH STEP IRONS.
3. STEP IRONS TO BE SPACED AT 300mm CRS. WITH LOWEST STEP IRON NOT MORE THAN 450mm ABOVE PIT FLOOR.
4. STEP IRONS TO BE PLACED IN WALL WHICH IS CLEAR OF OPENING.
5. FIRST STEP TO BE 650mm BELOW TOP OF PIT.

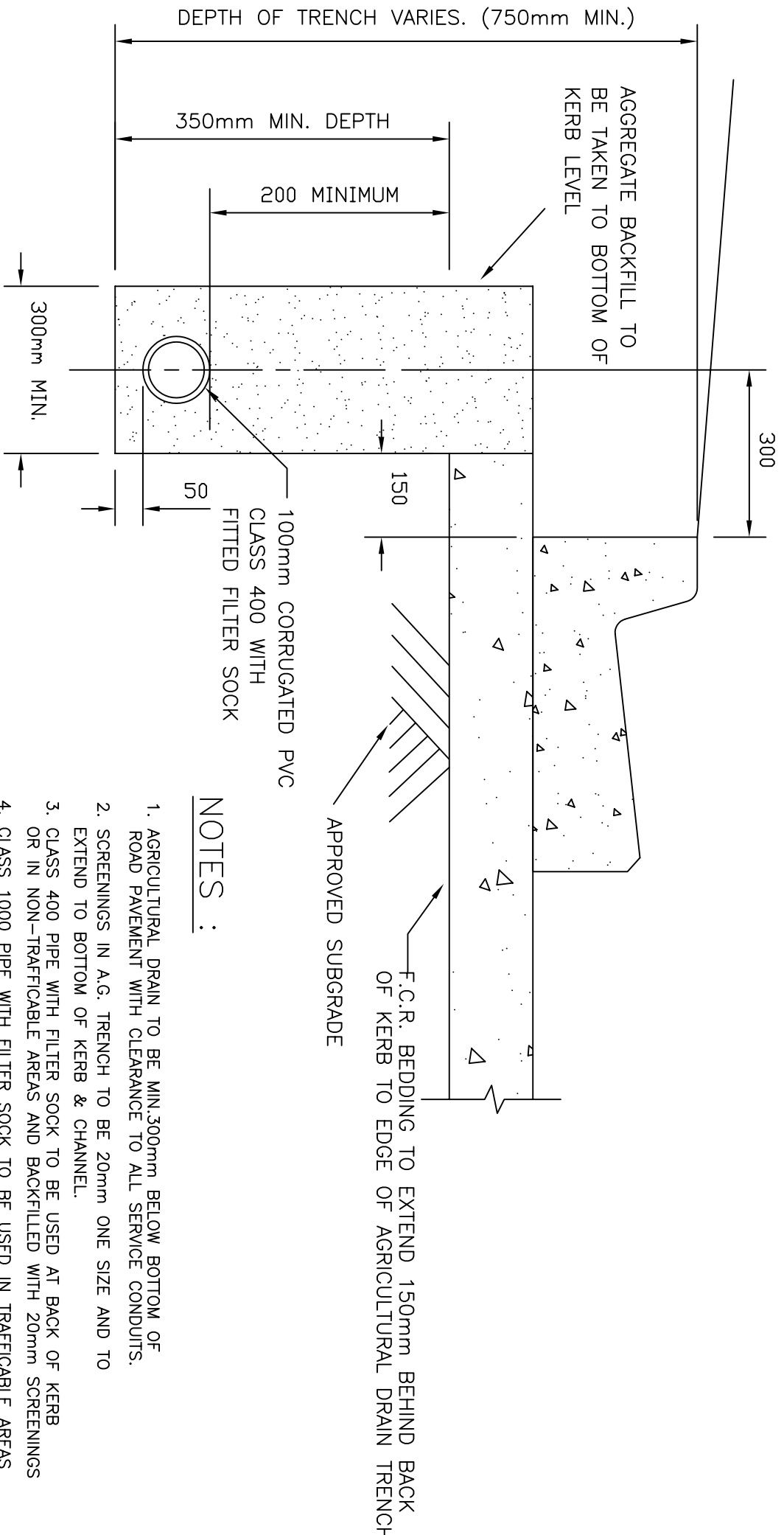
Amendments			
No.	Zone	Detail	Date

DRAWN : D. SALAZAR
 CHECKED : S. BHALLA
 APPROVED : S. PLATER
 SCALE : 1 : 20
 ISSUE DATE: JUNE 2004



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TYPE : STEP IRONS
 DRAWING NO: SD280



DEPTH OF TRENCH VARIES. (750mm MIN.)

350mm MIN. DEPTH

200 MINIMUM

AGGREGATE BACKFILL TO BE TAKEN TO BOTTOM OF KERB LEVEL

300

300mm MIN.

100mm CORRUGATED PVC CLASS 400 WITH FITTED FILTER SOCK

50

150

F.C.R. BEDDING TO EXTEND 150mm BEHIND BACK OF KERB TO EDGE OF AGRICULTURAL DRAIN TRENCH

APPROVED SUBGRADE

NOTES :

1. AGRICULTURAL DRAIN TO BE MIN.300mm BELOW BOTTOM OF ROAD PAVEMENT WITH CLEARANCE TO ALL SERVICE CONDUITS.
2. SCREENINGS IN A.G. TRENCH TO BE 20mm ONE SIZE AND TO EXTEND TO BOTTOM OF KERB & CHANNEL.
3. CLASS 400 PIPE WITH FILTER SOCK TO BE USED AT BACK OF KERB OR IN NON-TRAFFICABLE AREAS AND BACKFILLED WITH 20mm SCREENINGS
4. CLASS 1000 PIPE WITH FILTER SOCK TO BE USED IN TRAFFICABLE AREAS AND BACKFILLED WITH NO-FINES CONCRETE
5. USE OF SCORIA SCREENINGS IS NOT PERMITTED

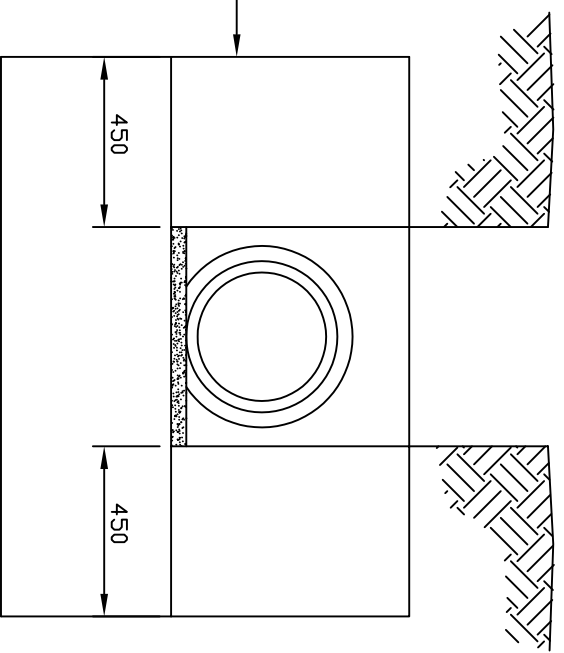
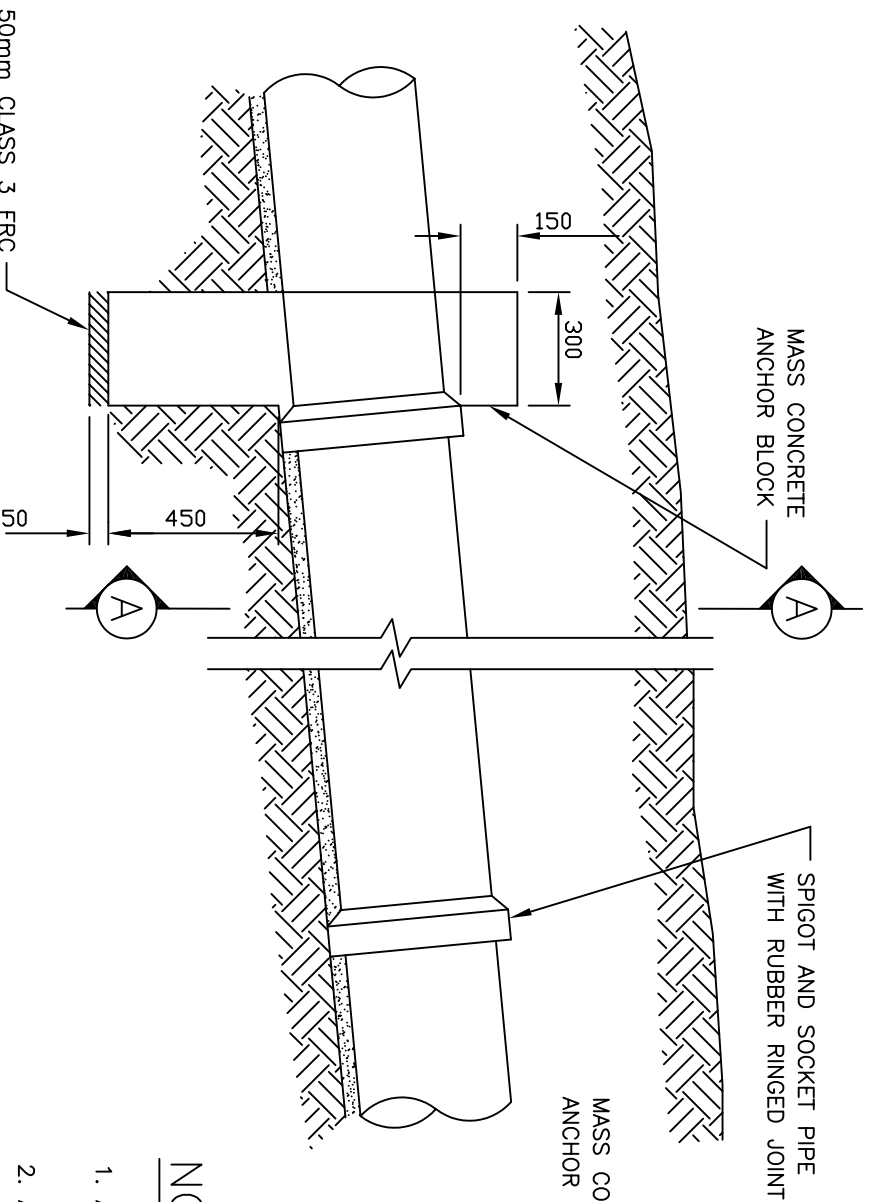
No.	Zone	Amendments	Indices	Date	DRAWN :	CHECKED :	APPROVED :	SCALE :	ISSUE DATE:
		Detail			D. SALAZAR	R. CHARTERS	S. PLATER	1 : 10	JUNE 2004



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TYPE :
AGRICULTURAL DRAIN

DRAWING NO.:
SD282



SECTION A-A

NOTES :

1. ANCHOR BLOCKS SHALL BE USED WHERE THE PIPE SLOPE IS STEEPER THAN 1 IN 6 AND PIPE LENGTH IS GREATER THAN 15m.
2. ANCHOR BLOCKS SHALL BE LOCATED AT NEAREST JOINT :
 - (i) APPROXIMATELY 2400mm FROM THE LOWER END THEN AT
 - (ii) 6m SPACING FOR LENGTHS 15m-30m OR
 - (iii) 10m SPACING FOR LENGTHS 30m-40m OR
 - (iv) 15m SPACING FOR GREATER THAN 40m.
3. CONCRETE STRENGTH TO BE 25MPa AT 28 DAYS

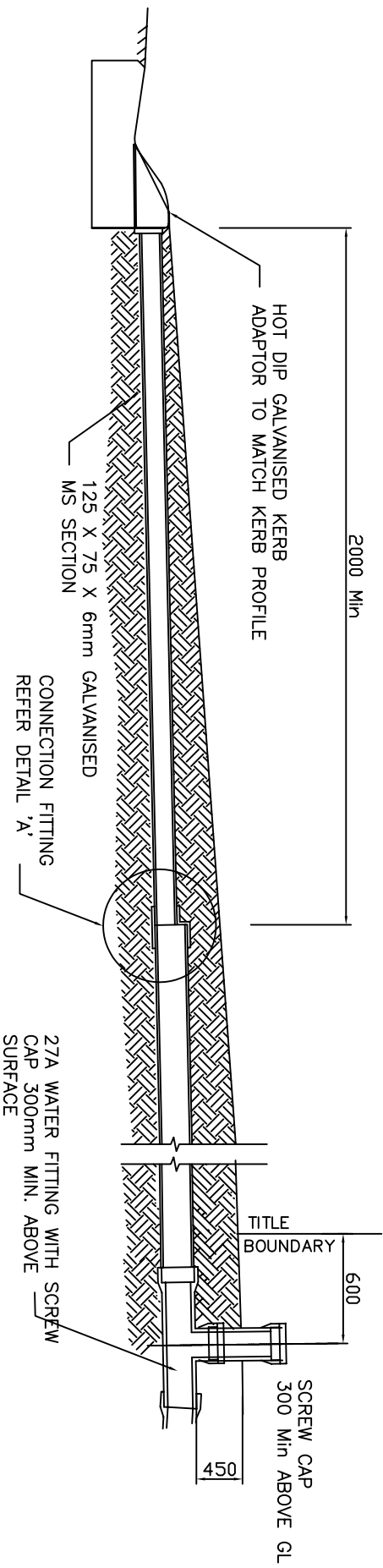
Amendments			
No.	Zone	Detail	Date

DRAWN : D. SALAZAR
 CHECKED : S. BHALLA
 APPROVED : S. PLATER
 SCALE : 1:20
 ISSUE DATE: JUNE 2004

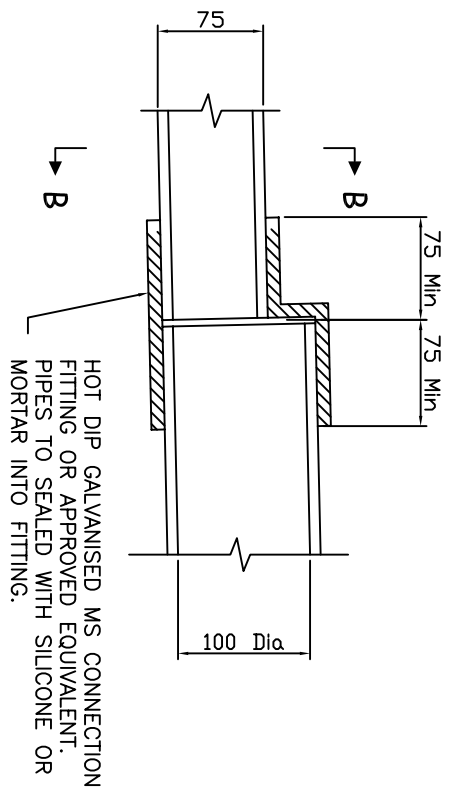


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 (03) 9309 0109

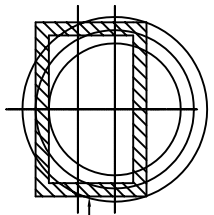
TYPE : ANCHOR BLOCK FOR PIPES UP TO 600mm DIA.
 DRAWING NO: SD284



TYPICAL CROSS SECTION



SECTION B-B



- NOTES:
1. THIS IS ONLY TO BE USED IN SPECIAL CASES. GENERALLY THIS IS ONLY USED FOR MAINTENANCE OR RECONSTRUCTION WORKS. APPROVAL FOR USE IS REQUIRED FROM TEAM LEADER CIVIL DESIGN.
 2. UPVC PIPE TO BE 100mm HEAVY DUTY DWV CLASS SNG
 3. ALL STEEL WORKS TO BE HOT DIP GALVANISED
 4. ALL JOINTS ON PVC PIPE TO BE SEALED WITH SOLVENT WELD CEMENT (TYPE N OR P), OR RUBBER RING JOINT.

ALL DIMENSIONS IN MILLIMETRES

Amendments		Initials	Date
No.	Detail		
1.	UPVC PIPE CLASS CHANGED TO NEW CODE	R.C.	Jun 05

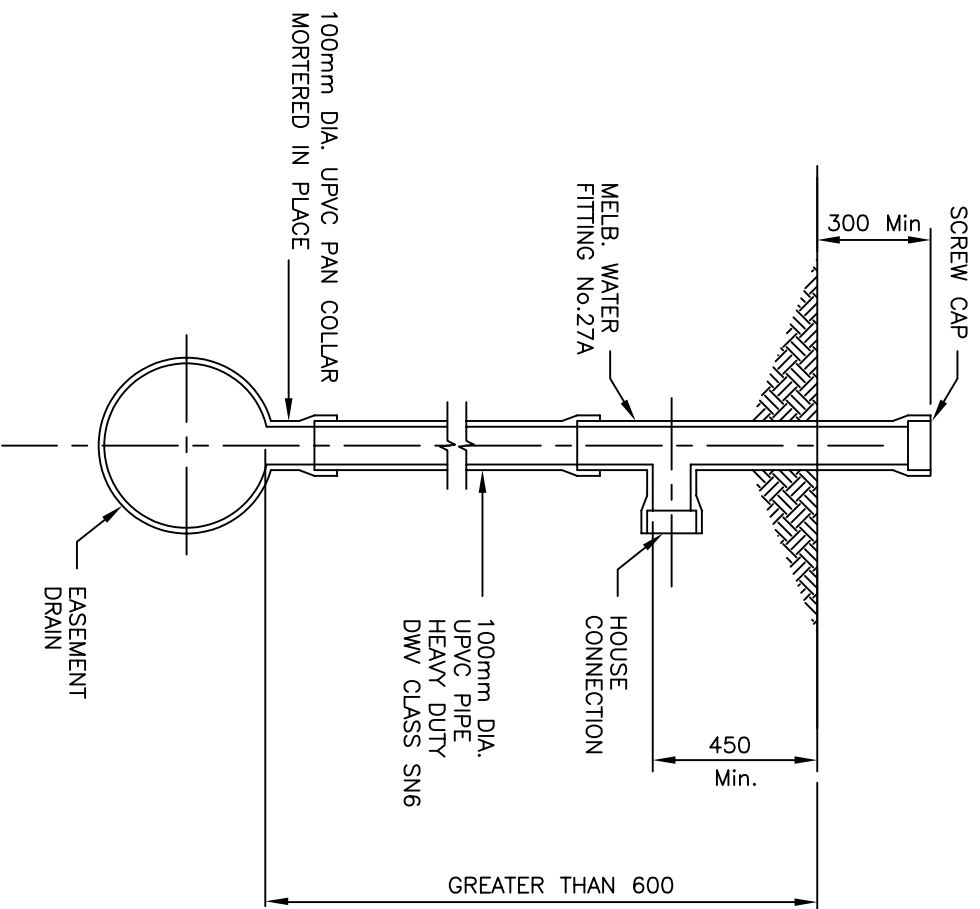
DRAWN : R. CHARTERS
 CHECKED : R. DEVAPURA
 APPROVED : S. PLATER
 SCALE : N.T.S
 ISSUE DATE: JUNE 2004



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TYPE : PROPERTY CONNECTION TO KERB
 IN EXISTING RESIDENTIAL AREAS

DRAWING NO: SD285



TYPE 'A' DEEP CONNECTION

NOTES:

1. TYPE 'A' EASEMENT CONNECTION SHALL BE ADOPTED WHEN OVERT OF DRAIN IS GREATER THAN 600 BELOW NATURAL SURFACE LEVEL.
2. BACKFILL AROUND RISER TO BE 10 CRUSHED ROCK (LIQUID FILL).
3. ALL JOINTS ON PVC PIPE TO BE SEALED WITH SOLVENT WELD CEMENT (TYPE N OR P), OR RUBBER RING JOINT.

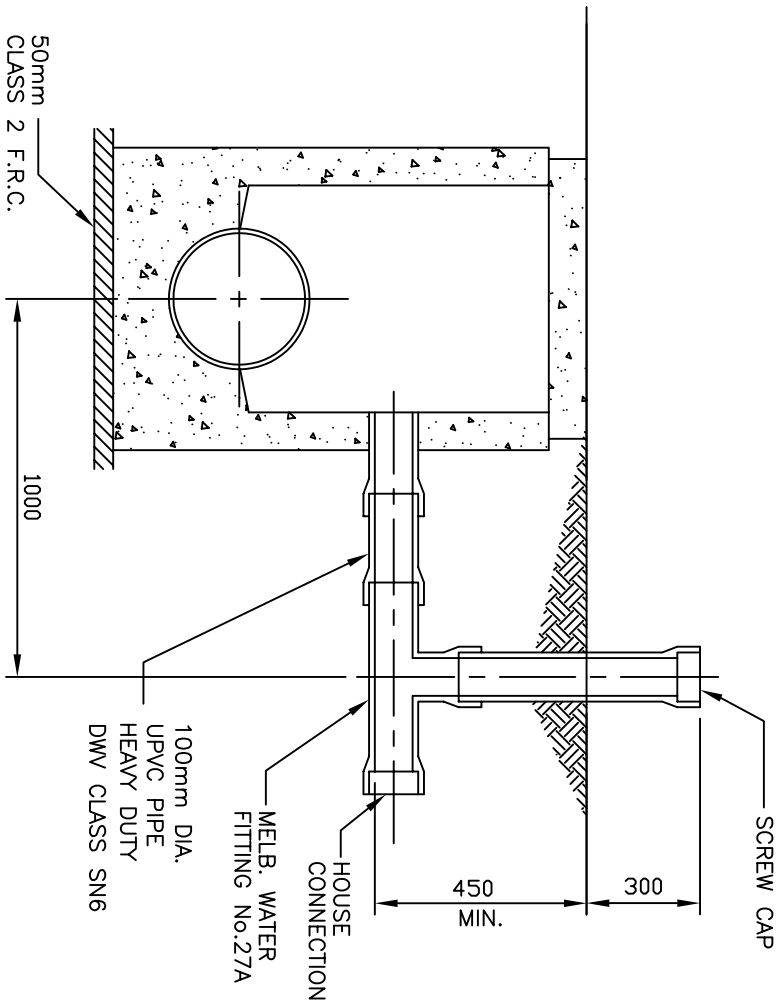
Amendments		Indids	Date
No.	Detail	R.C.	Jan 05
1.	UPVC PIPE CLASS CHANGED TO NEW CODE		

DRAWN : D. SALAZAR
 CHECKED : R. CHARTERS
 APPROVED : S. PLATER
 SCALE : 1 : 20
 ISSUE DATE: JUNE 2004

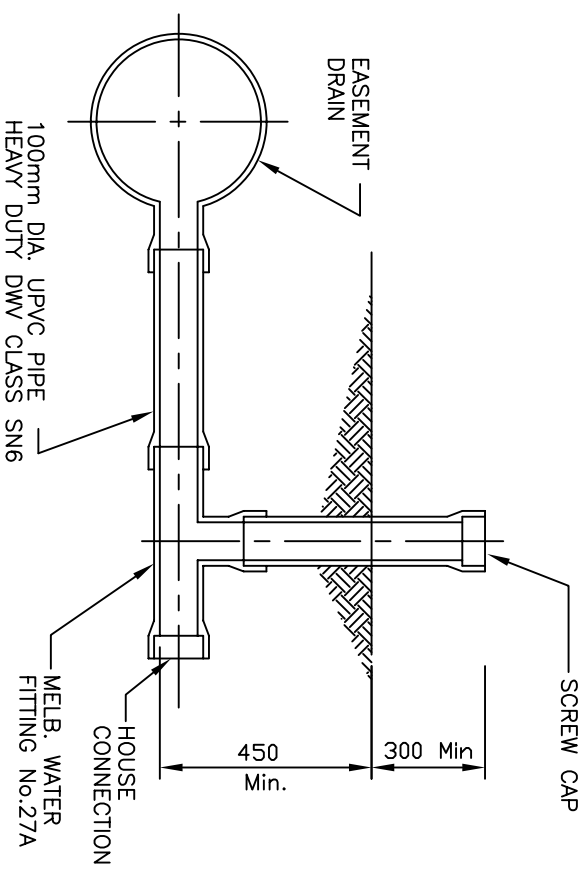


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TYPE : PROPERTY CONNECTION TO EASEMENT DRAIN.
 DEEP CONNECTION
 DRAWING NO: SD286



EASEMENT CONNECTION



TYPE 'B' SHALLOW CONNECTION

NOTES:

1. TYPE 'B' EASEMENT CONNECTION SHALL BE ADOPTED WHEN INVERT OF DRAIN IS 600 OR LESS BELOW NATURAL SURFACE LEVEL.
2. BACKFILL AROUND RISER TO BE 10 CRUSHED ROCK (LIQUID FILL).
3. ALL JOINTS ON PVC PIPE TO BE SEALED WITH SOLVENT WELD CEMENT (TYPE N OR P), OR RUBBER RING JOINT.

Amendments			
No.	Detail	Initials	Date
1.	UPVC PIPE CLASS CHANGED TO NEW CODE	R.C.	Jan 05

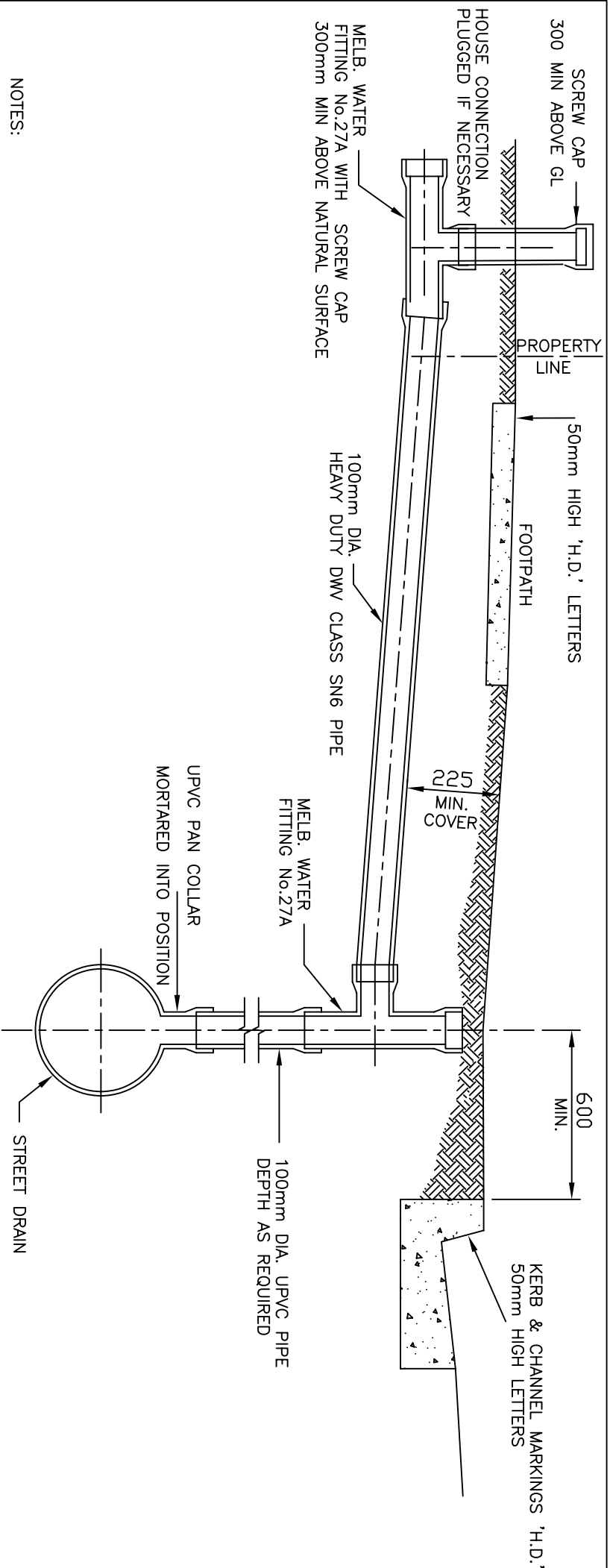
DRAWN : D. SALAZAR
 CHECKED : R. CHARTERS
 APPROVED : S. PLATER
 SCALE : 1 : 20
 ISSUE DATE: JUNE 2004

HUME
CITY COUNCIL

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TYPE :	PROPERTY CONNECTION TO EASEMENT DRAIN, SHALLOW CONNECTION
DRAWING NO:	SD288

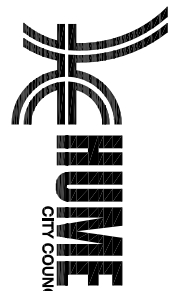


NOTES:

1. UPVC PIPE TO BE HEAVY DUTY DWV CLASS SN6
2. HOUSE DRAIN TO BE TAKEN 300mm INTO THE PROPERTY LINE AND PROVIDE WITH MELB. WATER FITTING No 27A AT THE END.
3. ALL HOUSE DRAIN CONNECTIONS TO BE MARKED ON KERB & CHANNEL AND FOOTPATH BY 50mm HIGH 'H.D.' LETTERS
4. BACKFILL AROUND RISER AND PIPE TO BE 10 CRUSHED ROCK (LIQUID FILL)
5. ALL JOINTS ON PVC PIPE TO BE SEALED WITH SOLVENT WELD CEMENT (TYPE N OR P), OR RUBBER RING JOINT.

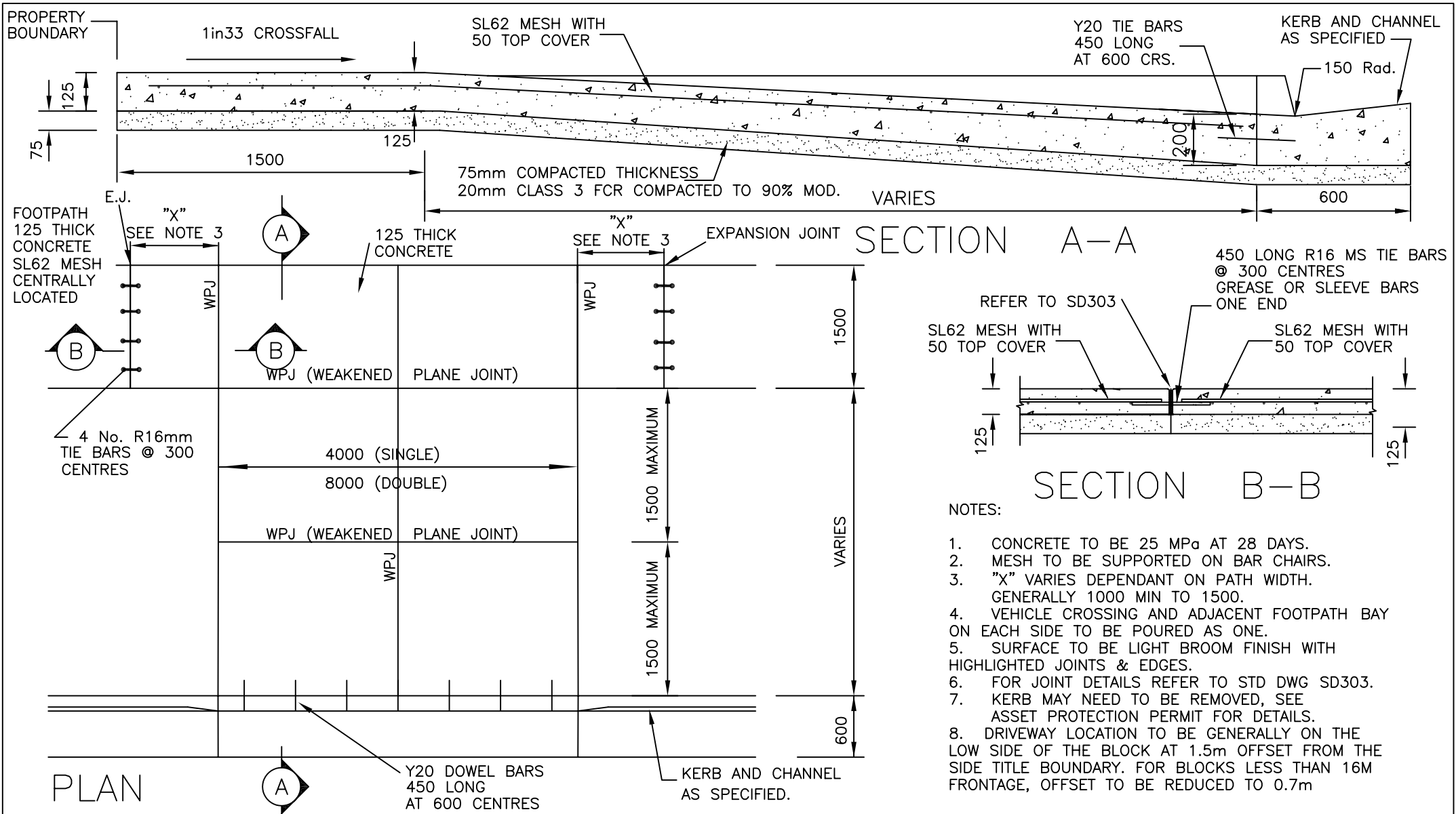
Amendments		Initials	Date
No.	Detail	R.C.	
1.	UPVC PIPE CLASS CHANGED TO NEW CODE		Jan 05

DRAWN : D. SALAZAR
 CHECKED : R. CHARTERS
 APPROVED : S. PLATER
 SCALE : 1 : 20
 ISSUE DATE: JUNE 2004



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TYPE : PROPERTY CONNECTION TO UNDERGROUND DRAIN IN ROAD RESERVE
 DRAWING NO: SD290



- NOTES:
1. CONCRETE TO BE 25 MPa AT 28 DAYS.
 2. MESH TO BE SUPPORTED ON BAR CHAIRS.
 3. "X" VARIES DEPENDANT ON PATH WIDTH. GENERALLY 1000 MIN TO 1500.
 4. VEHICLE CROSSING AND ADJACENT FOOTPATH BAY ON EACH SIDE TO BE POURED AS ONE.
 5. SURFACE TO BE LIGHT BROOM FINISH WITH HIGHLIGHTED JOINTS & EDGES.
 6. FOR JOINT DETAILS REFER TO STD DWG SD303.
 7. KERB MAY NEED TO BE REMOVED, SEE ASSET PROTECTION PERMIT FOR DETAILS.
 8. DRIVEWAY LOCATION TO BE GENERALLY ON THE LOW SIDE OF THE BLOCK AT 1.5m OFFSET FROM THE SIDE TITLE BOUNDARY. FOR BLOCKS LESS THAN 16M FRONTAGE, OFFSET TO BE REDUCED TO 0.7m

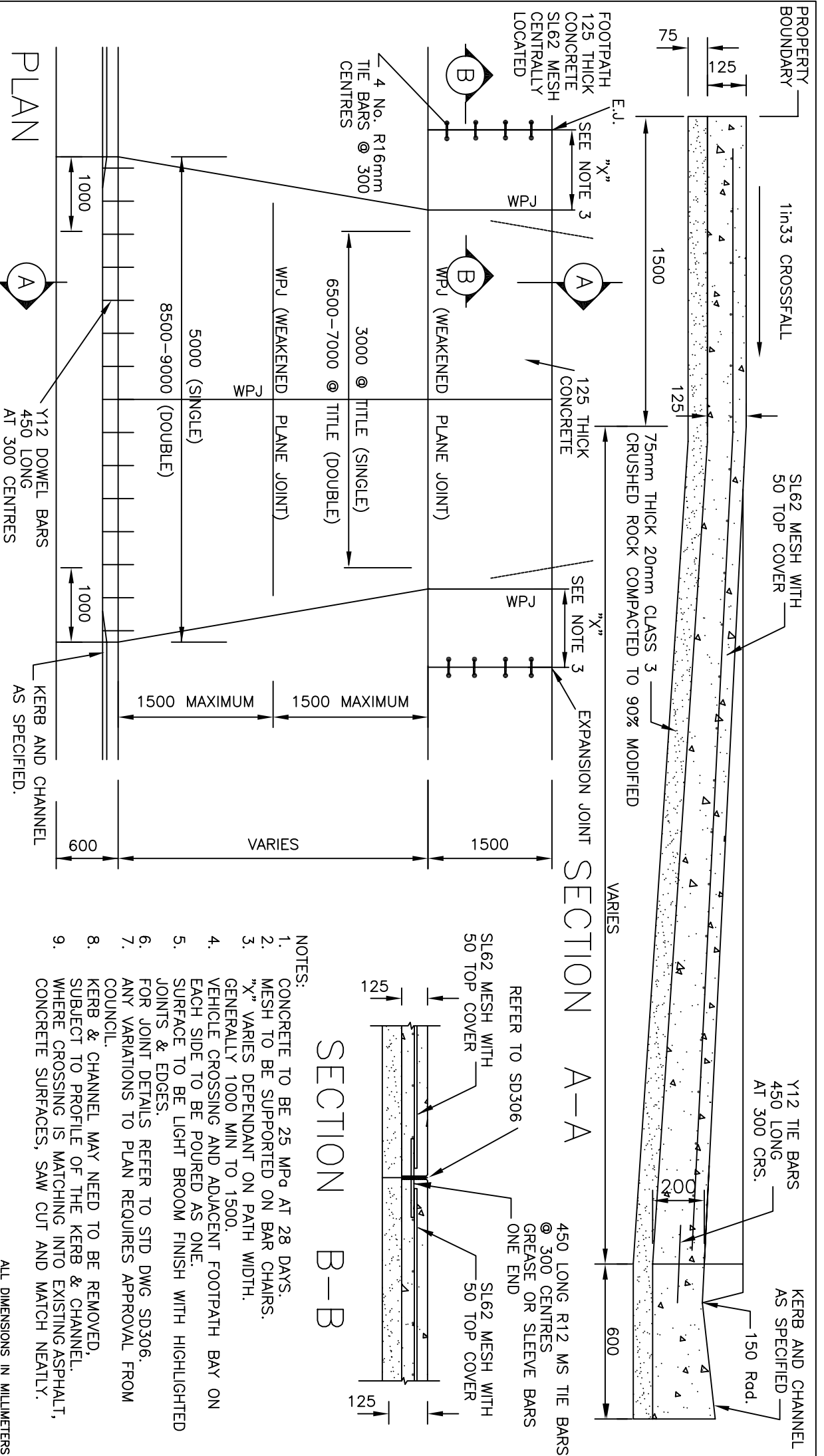
Amendments				
No.	Zone	Detail	Initials	Date
1.				

DRAWN : R. CHARTERS
 CHECKED : J. DAVIS
 APPROVED : J. DAVIS
 SCALE : N.T.S
 ISSUE DATE: OCT 2007



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TYPE : RESIDENTIAL VEHICULAR CROSSING FOR ALL NEW SUBDIVISIONS
 DRAWING NO: SD300



PLAN

SECTION A-A

SECTION B-B

- NOTES:
1. CONCRETE TO BE 25 MPa AT 28 DAYS.
 2. MESH TO BE SUPPORTED ON BAR CHAIRS.
 3. "X" VARIES DEPENDANT ON PATH WIDTH. GENERALLY 1000 MIN TO 1500.
 4. VEHICLE CROSSING AND ADJACENT FOOTPATH BAY ON EACH SIDE TO BE POURED AS ONE.
 5. SURFACE TO BE LIGHT BROOM FINISH WITH HIGHLIGHTED JOINTS & EDGES.
 6. FOR JOINT DETAILS REFER TO STD DWG SD306.
 7. ANY VARIATIONS TO PLAN REQUIRES APPROVAL FROM COUNCIL.
 8. KERB & CHANNEL MAY NEED TO BE REMOVED, SUBJECT TO PROFILE OF THE KERB & CHANNEL.
 9. WHERE CROSSING IS MATCHING INTO EXISTING ASPHALT, CONCRETE SURFACES, SAW CUT AND MATCH NEATLY.

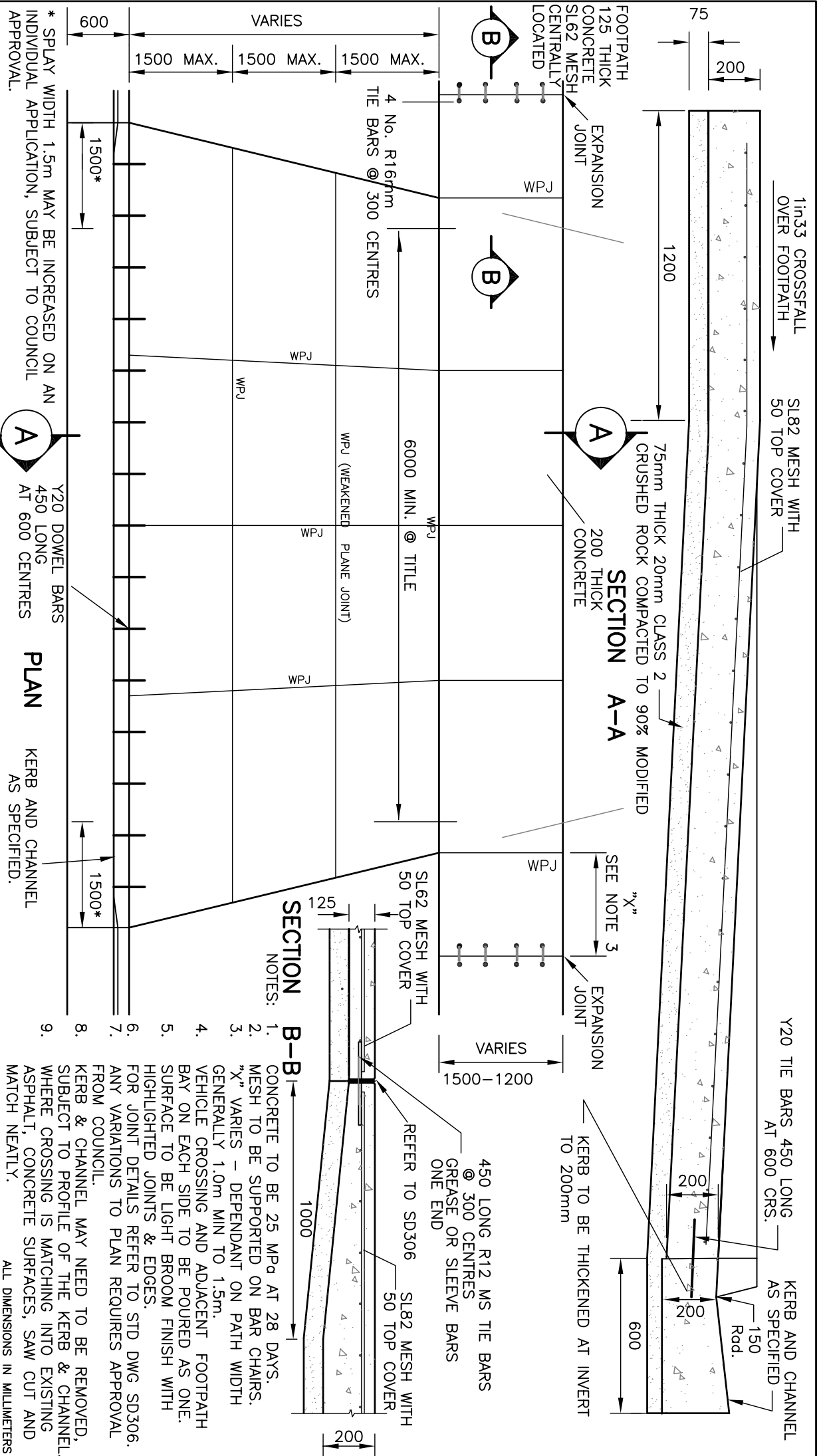
ALL DIMENSIONS IN MILLIMETERS

Amendments			
No.	Zone	Detail	Date
1.		Width At Title Bay Clarified	April 05
2.		Mesh Codes Changed	July 06
3.		Splay Distance, Notes Changed	October 07
			B.G.

DRAWN :	D. SALAZAR
CHECKED :	S. BHALLA
APPROVED :	S. PLATER
SCALE :	N.T.S
ISSUE DATE:	JUNE 2004

<p>TYPE : RESIDENTIAL VEHICULAR CROSSING (CONSTRUCTED IN CONJUNCTION WITH FOOTPATH IF APPLICABLE)</p>	<p>P.O. Box 119 1079 Pascoe Vale Road Broadmeadows Victoria 3047</p> <p>Telephone 03) 9205 2200 Facsimile 03) 9306 0109</p>
DRAWING NO:	SD301





* SPLAY WIDTH 1.5m MAY BE INCREASED ON AN INDIVIDUAL APPLICATION, SUBJECT TO COUNCIL APPROVAL.

Y20 DOWEL BARS 450 LONG AT 600 CENTRES

PLAN
KERB AND CHANNEL AS SPECIFIED.

SECTION B-B

NOTES:

1. CONCRETE TO BE 25 MPa AT 28 DAYS.
2. MESH TO BE SUPPORTED ON BAR CHAIRS.
3. "X" VARIES - DEPENDANT ON PATH WIDTH GENERALLY 1.0m MIN TO 1.5m.
4. VEHICLE CROSSING AND ADJACENT FOOTPATH BAY ON EACH SIDE TO BE POURED AS ONE. SURFACE TO BE LIGHT BROOM FINISH WITH HIGHLIGHTED JOINTS & EDGES.
5. FOR JOINT DETAILS REFER TO STD DWG SD306. ANY VARIATIONS TO PLAN REQUIRES APPROVAL FROM COUNCIL.
6. KERB & CHANNEL MAY NEED TO BE REMOVED, SUBJECT TO PROFILE OF THE KERB & CHANNEL. WHERE CROSSING IS MATCHING INTO EXISTING ASPHALT, CONCRETE SURFACES, SAW CUT AND MATCH NEATLY.
- 7.
- 8.
9. ALL DIMENSIONS IN MILLIMETERS

Amendments		
No.	Zone	Detail
1.		Kerb Thickened At Invert
2.		Width At Title Bay Clarified
3.		Mesh Codes Updated
3.		Splay Distance, Notes

Initials	Date
R.C.	Jan 2005
R.C.	April 2005
R.C.	July 06
B.G.	October 07

DRAWN : D. SALAZAR

CHECKED : S. BHALLA

APPROVED : S. PLATER

SCALE : N.T.S

ISSUE DATE: JUNE 2004



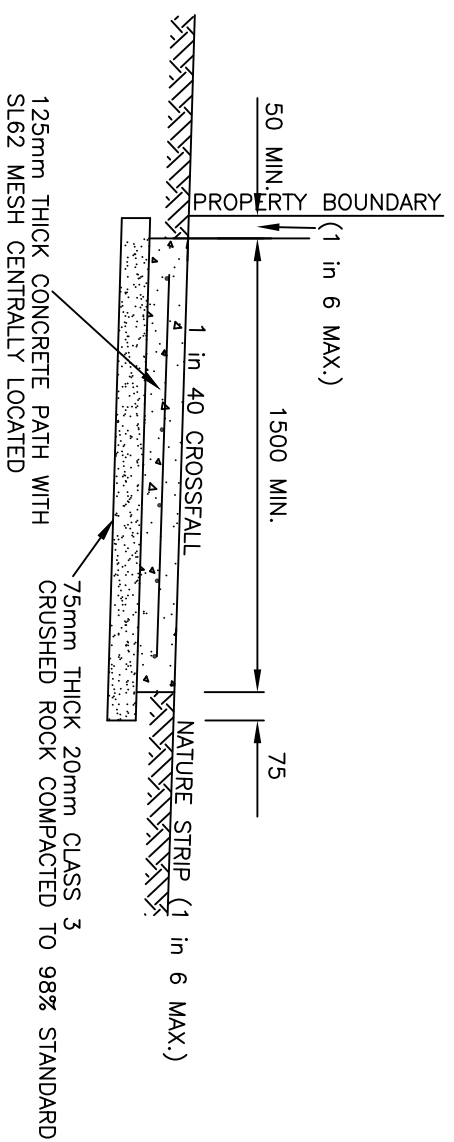
P.O. Box 119
1079 Pascoe Vale Road
Broadmeadows
Victoria 3047
Telephone 03) 9205 2200
Facsimile 03) 9309 0109

TYPE :

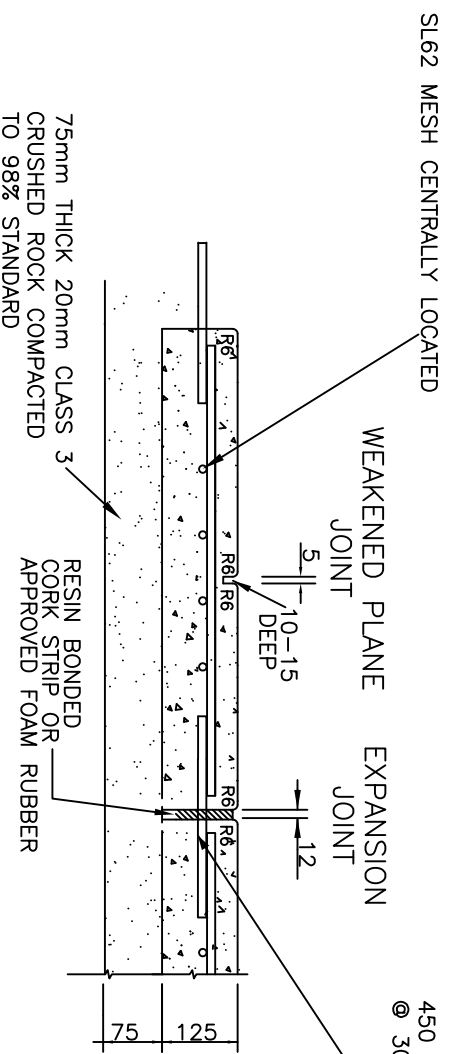
INDUSTRIAL VEHICULAR CROSSING

DRAWING NO.:

SD302



TYPICAL RESIDENTIAL FOOTPATH CROSS SECTION



RESIDENTIAL FOOTPATH JOINT DETAILS

450 LONG R16 M.S. TIE BARS @ 300 MAX CENTRES

- NOTES:
1. CONCRETE SHALL BE 25 MPa AT 28 DAYS. (32 MPa FOR INDUSTRIAL, COMMERCIAL, COUNCIL RESERVE & PUBLIC OPEN SPACE).
 2. FORMWORK TIMBER TO BE MIN. 90MM DEEP.
 3. WEAKENED PLANE JOINTS SHALL BE LOCATED AT 1.5m SPACING AND MAY BE MADE WITH A 1" IRON (OR CONCRETE SAW WITHIN 24hrs OF POUR)
 4. THE BARS TO BE INSTALLED AT 300mm MAXIMUM CENTRES COMMENCING 150mm FROM EDGE AT EACH EXPANSION OR CONSTRUCTION JOINTS.
 5. EXPANSION JOINTS AT MAXIMUM 18.0m CENTRES.
 6. THE FINISHED SURFACE SHALL HAVE A LIGHT BROOM FINISH.
 7. FOR JOINT DETAILS REFER TO STD DWG SD306.
 8. ALL DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE.

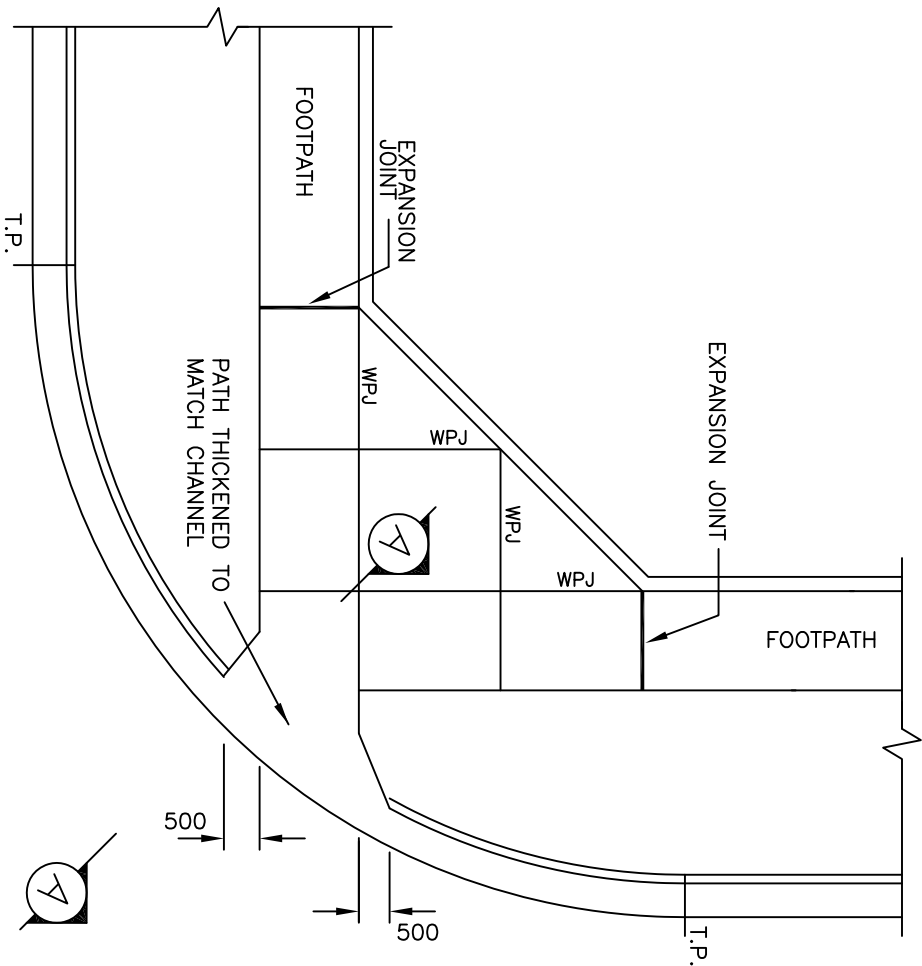
Amendments		
No.	Detail	Date

DRAWN : C. NGUYEN
 CHECKED : R. DEVAPURA
 APPROVED : R. DEVAPURA
 SCALE : NOT TO SCALE
 ISSUE DATE: MAY 2012



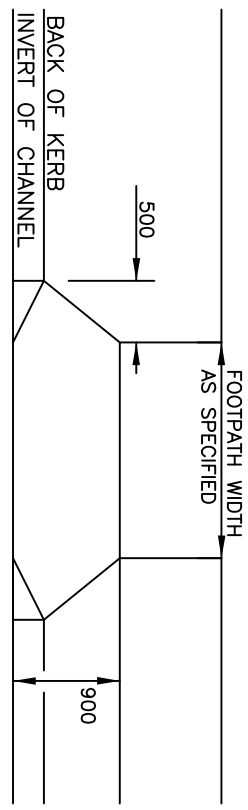
P.O. Box 119
 1079 Pascoe Vale Road
 Broadmeadows
 Victoria 3047
 Telephone (03) 9205 2200
 Facsimile (03) 9205 2212

TYPE :	CONCRETE FOOTPATH DETAILS
DRAWING NO:	SD303

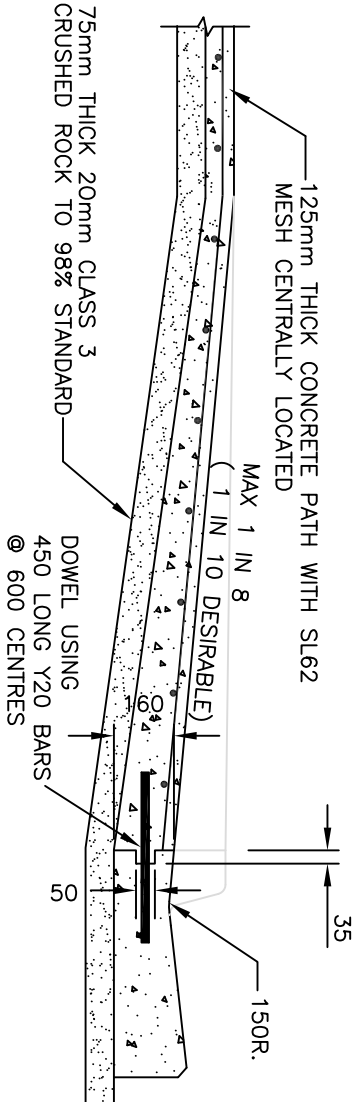


MAJOR STREET
PLAN

MINOR STREET



ELEVATION



SECTION A-A

NOTES:

1. CONCRETE SHALL BE 25MPa AT 28 DAYS. (32 MPa FOR INDUSTRIAL, COMMERCIAL, COUNCIL RESERVE & PUBLIC OPEN SPACE).
2. THE FINISHED SURFACE SHALL HAVE A LIGHT BROOM FINISH.
3. NO BULLNOSE TO BE CONSTRUCTED AT INVERT OF CHANNEL.
4. THE MAXIMUM SLOPE AT PRAM CROSSING TO BE 1 IN 8.
5. TACTILE INDICATORS (IF REQUIRED) ARE TO BE INSTALLED AS PER A.S.1428.4:2002.
6. FOR JOINT DETAILS REFER TO STD DWG SD 306.
7. ALL DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE.

Amendments		
No.	Detail	Date

DRAWN : C. NGUYEN
 CHECKED : R. DEVAPURA
 APPROVED : R. DEVAPURA
 SCALE : NOT TO SCALE
 ISSUE DATE: MAY 2012



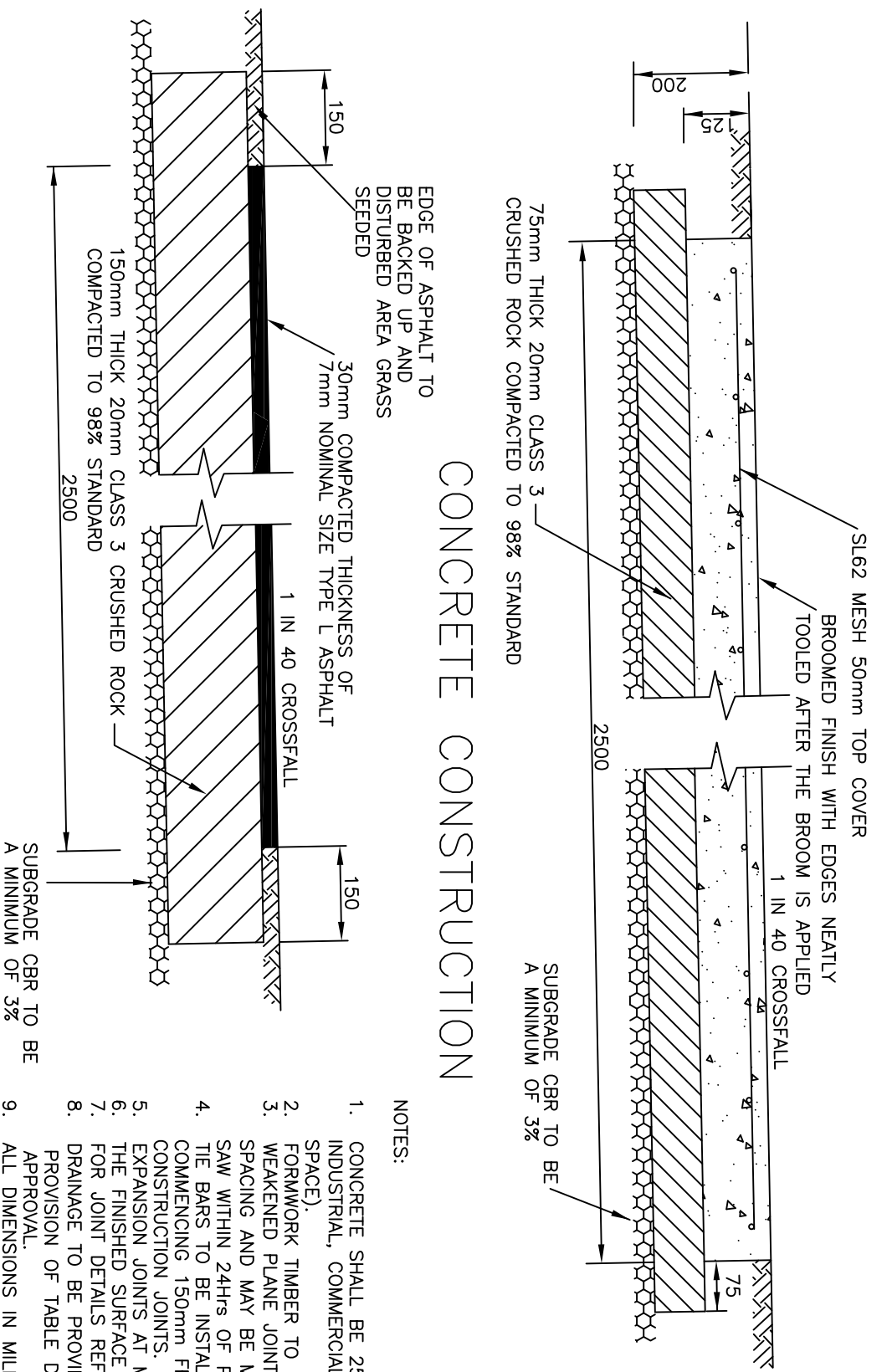
PO Box 119
 1079 Pascoe Vale Road
 Broadmeadows
 Victoria 3047
 Telephone (03) 9205 2200
 Facsimile (03) 9205 2212

TYPE :

PRAM CROSSING

DRAWING NO:

SD304




CONCRETE CONSTRUCTION

ASPHALT CONSTRUCTION

- NOTES:
1. CONCRETE SHALL BE 25 MPa AT 28 DAYS. (32 MPa FOR INDUSTRIAL, COMMERCIAL, COUNCIL RESERVE & PUBLIC OPEN SPACE).
 2. FORMWORK TIMBER TO BE MIN. 90MM DEEP. WEAKENED PLANE JOINTS SHALL BE LOCATED AT 2.5m SPACING AND MAY BE MADE WITH A 'I' IRON (OR CONCRETE SAW WITHIN 24hrs OF POUR)
 3. THE BARS TO BE INSTALLED AT 300mm MAXIMUM CENTRES COMMENCING 150mm FROM EDGE AT EACH EXPANSION OR CONSTRUCTION JOINTS.
 4. EXPANSION JOINTS AT MAXIMUM 18.0m CENTRES.
 5. THE FINISHED SURFACE SHALL HAVE A LIGHT BROOM FINISH. FOR JOINT DETAILS REFER TO STD DWG SD306.
 6. DRAINAGE TO BE PROVIDED AT LOW POINTS/FLOOD WAYS BY PROVISION OF TABLE DRAINS/CULVERTS TO THE ENGINEER'S APPROVAL.
 - 7.
 - 8.
 9. ALL DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE.

Amendments		
No.	Detail	Date

DRAWN :	C. NGUYEN
CHECKED :	R. DEVAPURA
APPROVED :	R. DEVAPURA
SCALE :	NOT TO SCALE
ISSUE DATE:	MAY 2012

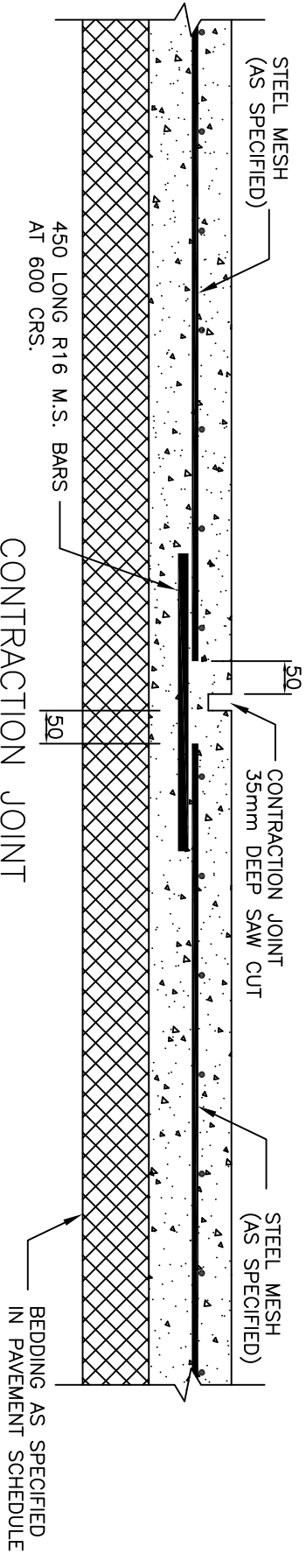
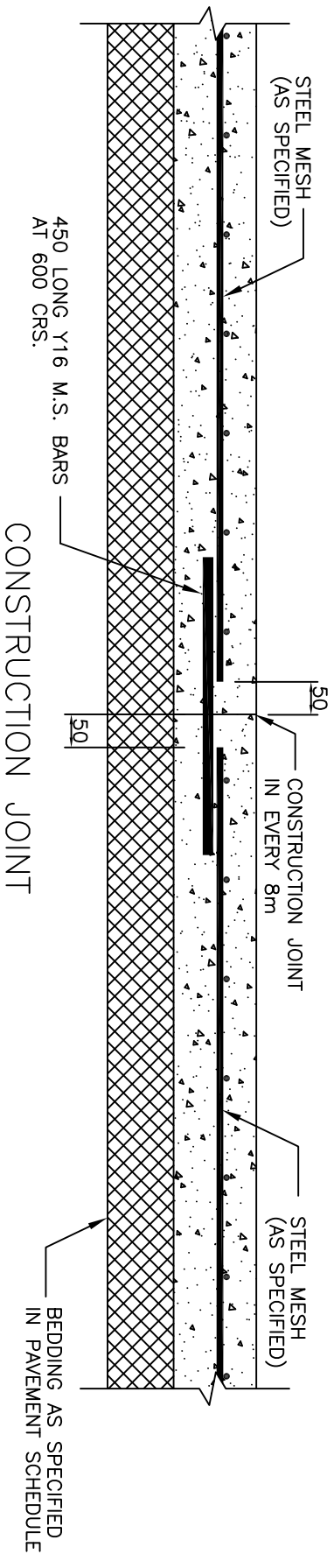
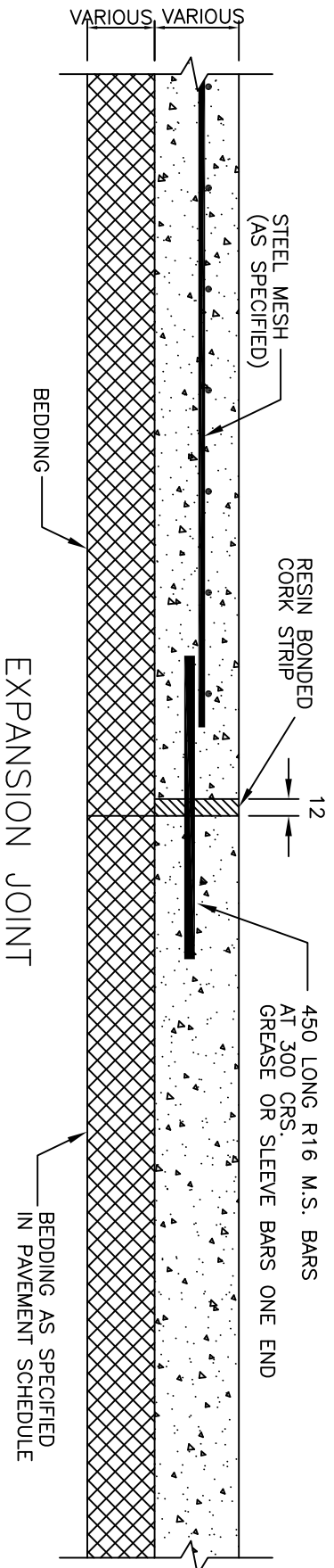


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CITY COUNCIL

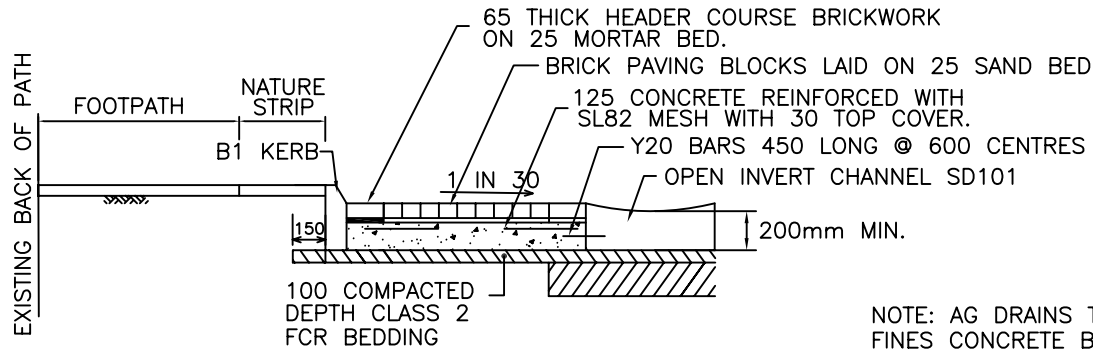
Po Box 119
1079 Pascoe Vale Road
Brookmeadows
Victoria 3047

Telephone 03) 9205 2200
Facsimile 03) 9205 2212

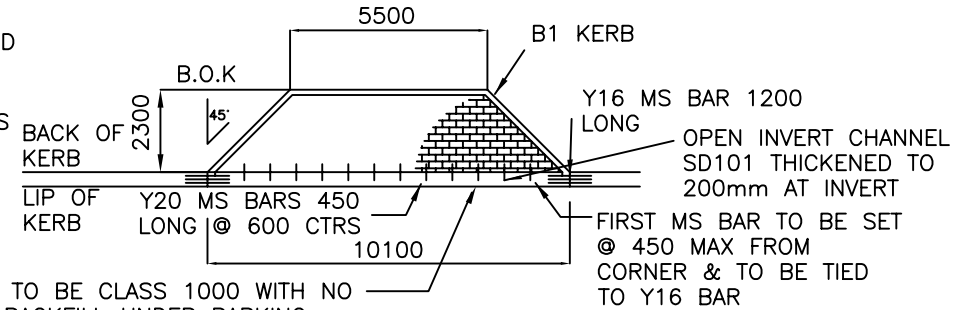
TYPE :	SHARED FOOT/BICYCLE PATH
DRAWING NO:	SD305



Amendments		
No.	Detail	Date
	Initials	Date
DRAWN : C. NGUYEN		
CHECKED : R. DEVAPURA		
APPROVED : R. DEVAPURA		
SCALE : NOT TO SCALE		
ISSUE DATE: MAY 2012		
		
PO Box 119 1079 Pascoe Vale Road Broadmeadows Victoria 3047 Telephone (03) 9205 2200 Facsimile (03) 9205 2212		
TYPE :		
JOINTS IN CONCRETE PAVEMENT		
DRAWING NO: SD306		

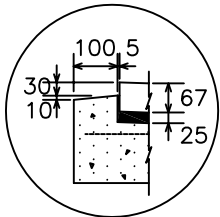


BRICK PAVING WITH B1 KERB



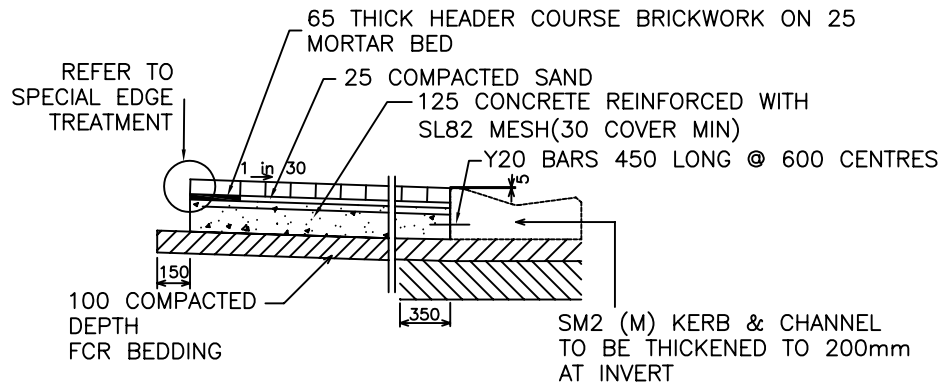
PARKING BAY SETOUT DETAIL

NOTE: AG DRAINS TO BE CLASS 1000 WITH NO FINES CONCRETE BACKFILL UNDER PARKING BAYS

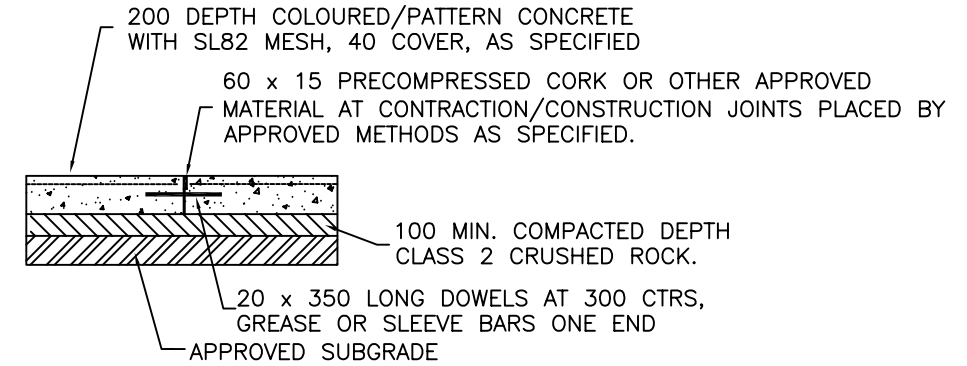


SPECIAL EDGE TREATMENT FOR PARKING BAYS

PARKING BAYS - VARIES, REFER TO SET OUT DETAILS



PAVING DETAIL WITHOUT A KERB



PATTERN PAVED CONCRETE PAVEMENT

NOTES:

1. CONCRETE STRENGTH TO BE 25 MPa FOR PLAIN CONCRETE, 32MPa FOR COLOURED CONCRETE.
2. COLOUR AND TYPE OF PAVING TO MATCH EXISTING PAVING IN THE STREET. COLOURED CONCRETE TO BE SEALED WITHIN 7 DAYS.
3. THICKNESS OF CONCRETE INTERLOCKING PAVERS TO BE 80 WHEN USED INSTEAD OF BRICK PAVERS. ANY ADJUSTMENTS IN OVERALL DEPTH TO BE IN THE CLASS 2 FCR BEDDING LAYER.
4. FOR END BAYS ALLOW 5500 LENGTH.
5. FOR INTERNAL BAYS ALLOW 6000 FOR EACH ADDITIONAL BAY.
6. AG DRAINS TO BE CLASS 1000 WITH NO FINES CONCRETE BACKFILL UNDER PARKING BAYS.

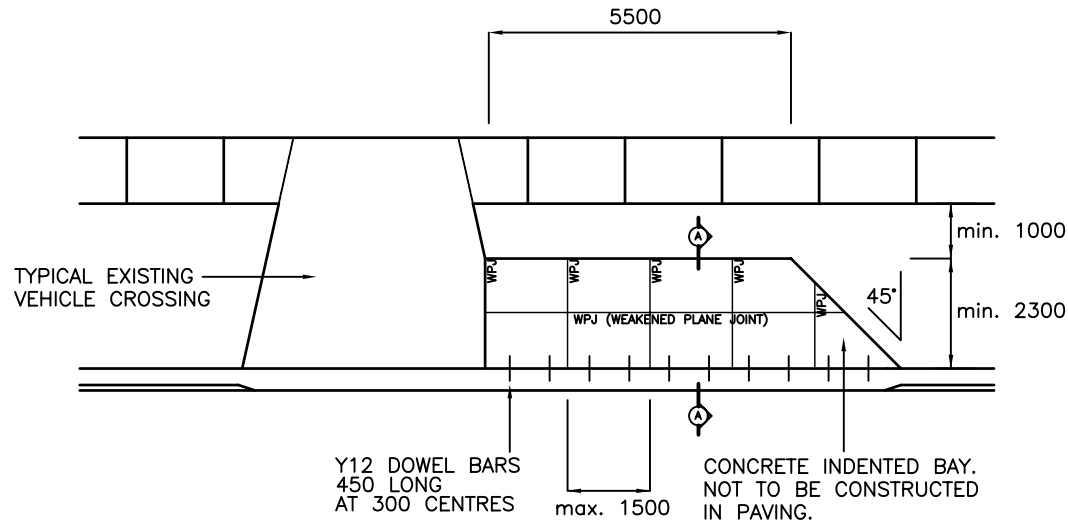
Amendments			
No.	Detail	Initials	Date
1.	Kerb Thickened	R.C.	Jan 05
2.	Mesh Codes Changed	R.C.	July 06
3.	AG Drain Note Added	R.C.	Oct 07

DRAWN : S. ADAMS
 CHECKED : S. BHALLA
 APPROVED : S. PLATER
 SCALE : N.T.S.
 ISSUE DATE: JUNE 2004



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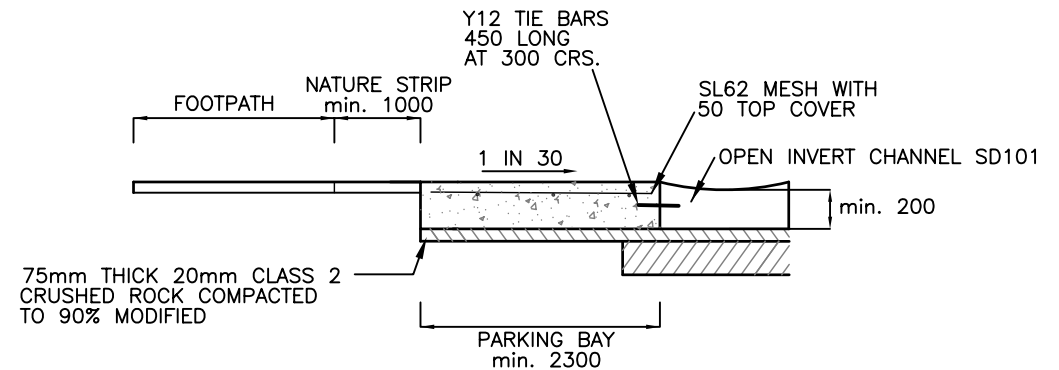
TYPE :	INDENTED CAR PARKING BAY
DRAWING NO:	SD307



PARKING BAY SETOUT DETAIL

NOTES:

1. CONCRETE STRENGTH TO BE 25 MP_a PLAIN CONCRETE.
2. COLOUR AND TYPE OF CONCRETE TO MATCH EXISTING IN THE STREET.
3. FOR END BAYS ALLOW 5500 LENGTH.



SECTION A-A

Amendments			
No.	Detail	Initials	Date

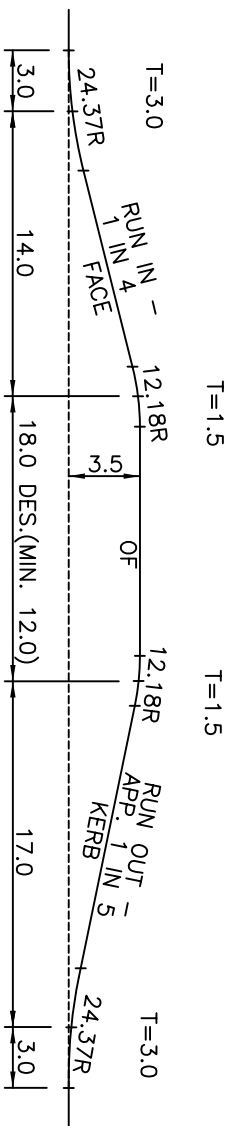
DRAWN : B. GEMMOLA
 CHECKED : J. MISSOS
 APPROVED : N. VARVARIS
 SCALE : N.T.S.
 ISSUE DATE: DEC. 2007



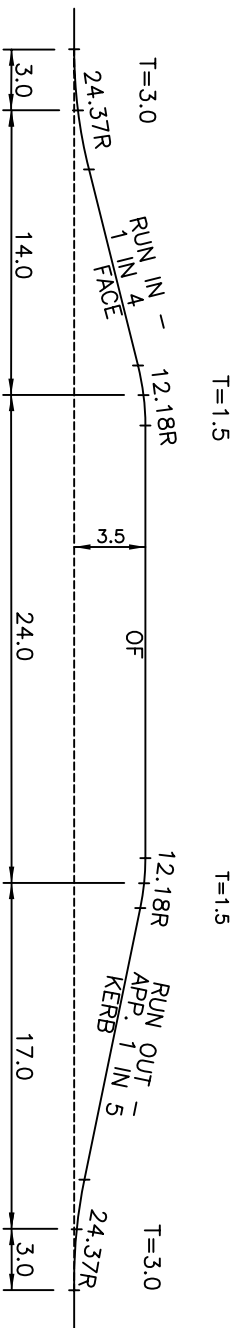
PO Box 119
 1079 Pascoe Vale Road
 Broadmeadows
 Victoria 3047
 Telephone
 (03) 9205 2200
 Facsimile
 (03) 9309 0109

TYPE :
**INDENTED CAR PARKING BAY
 (OFF VEHICLE CROSSING)**

DRAWING NO: **SD307A**

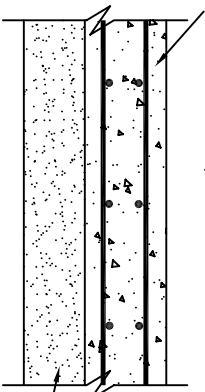


INDENTED STORAGE BAY FOR ONE BUS



INDENTED STORAGE BAY FOR TWO BUSES

ALL DIMENSIONS IN METRES.



150mm LAYER OF COMPACTED
3% CEMENT TREATED CLASS 3 FCR

200 THICK CONCRETE REINFORCED
WITH 2 LAYERS OF SLB2 MESH.
(TOP AND BOTTOM;40 CLEAR COVER)

CROSS SECTION – NTS

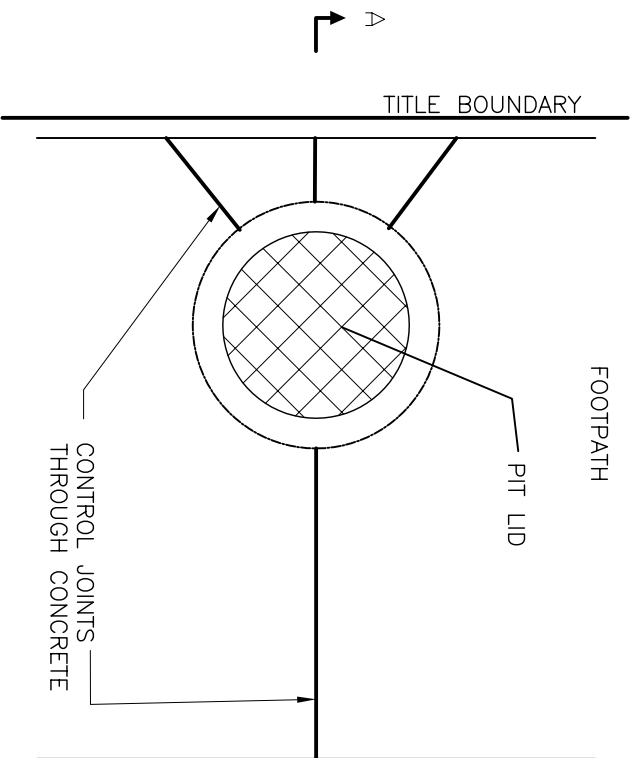
NOTES:

1. CONCRETE STRENGTH 25MPa AT 28 DAYS.
2. SAW CUT WEAKENED PLANE JOINTS TO A DEPTH OF 30,
2 DAYS AFTER POURING.
3. FOR JOINT DETAILS REFER TO STD. DRAWING No. SD306.

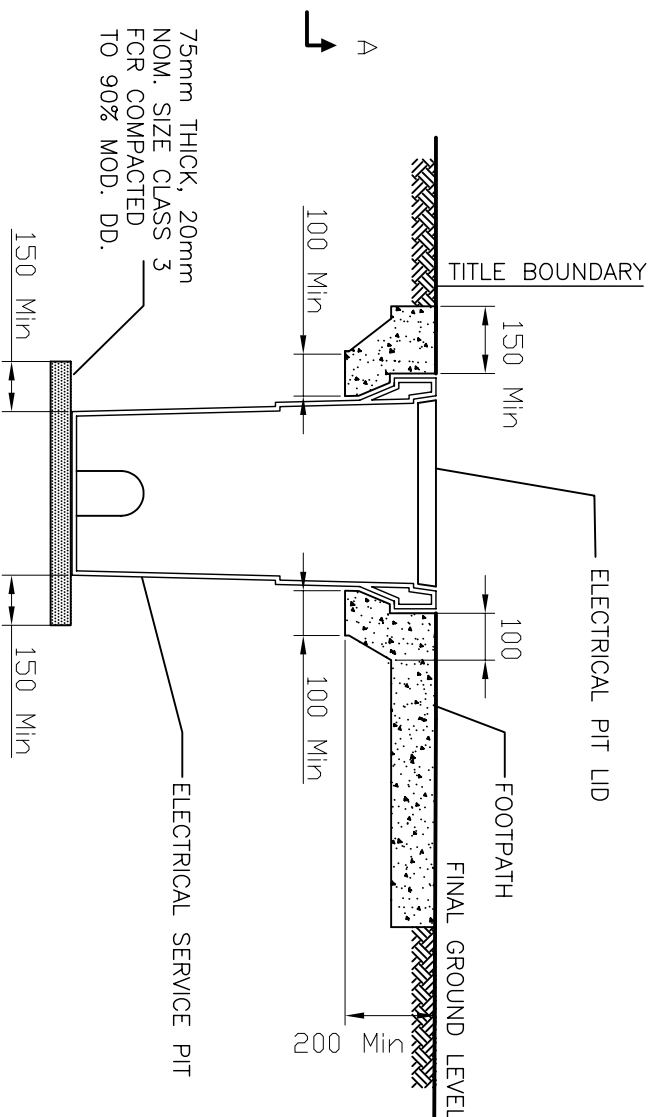
Amendments			
No.	Zone	Detail	Initials
1.		Mesh Codes Changed.	R.C.
			July 08
DRAWN :		D. SALAZAR	
CHECKED :		D. SALAZAR	
APPROVED :		S. PLATER	
SCALE :		N.T.S.	
ISSUE DATE:		JUNE 2004	

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 Facsimile (03) 9309 0109

TYPE :	INDENTED STORAGE BUS BAY
DRAWING NO.:	SD308



PLAN



SECTION A-A

- NOTES:
1. WHERE THE SERVICE PIT IS SITUATED IN THE FOOTPATH, IT IS TO BE INSTALLED WITH ITS OUTER EDGE NOT LESS THAN 150mm FROM THE EDGE OF THE FOOTPATH.
 2. THE FOOTPATH IS TO BE THICKENED A MIN OF 200mm TO FORM A CONCRETE COLLAR USED TO SUPPORT THE PIT.
 3. SEWER & TELECOM PITS ARE TO BE TREATED IN A SIMILAR MANNER. WRAP EXPANSION FOAM AROUND SEWER MANHOLES IN FOOTPATHS.
 4. CONCRETE STRENGTH 25mpa AT 28 DAYS
 5. ALL DIMENSIONS ARE IN MILLIMETRES

Amendments			
No.	Zone	Detail	Date

DRAWN : R. CHARTERS
 CHECKED : R. DEVAPURA
 APPROVED : S. PLATER
 SCALE : N.T.S
 ISSUE DATE: JUNE 2004



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 (03) 9309 0109

TYPE :
ELECTRICAL PITS IN FOOTPATHS

DRAWING NO.:
SD309

PROPERTY BOUNDARY

EDGE OF BIT. SEAL

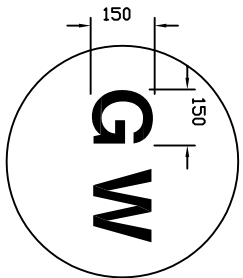
75

VARIES

75

EDGE OF BIT. SEAL

PROPERTY BOUNDARY



LETTERS INDICATING LOCATION OF CONDUITS
TO BE PAINTED WITH WHITE
ROAD MARKING PAINT
150mm FROM EACH EDGE OF ROAD.

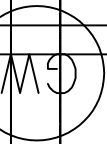
50mm CLASS 12 PVC CONDUIT

SECTION A-A

EDGE OF BIT. SEAL

EDGE OF BIT. SEAL

2 NO. 50mm CLASS 12
PVC CONDUIT



PROPERTY BOUNDARY

COMMON B/LINE

LOT 'A'

50m-VARIES.



LOT 'A'

PLAN

Amendments

No.	Zone	Detail	Initials	Date

DRAWN : D. SALAZAR

CHECKED : S. BHALLA

APPROVED : S. PLATER

SCALE : N.T.S.

ISSUE DATE: JUNE 2004



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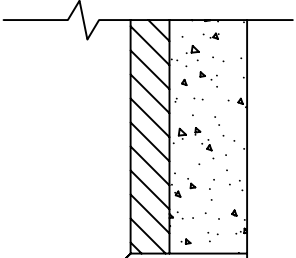
TYPE :

SERVICE CONDUIT MARKING
RURAL SEALED ROAD

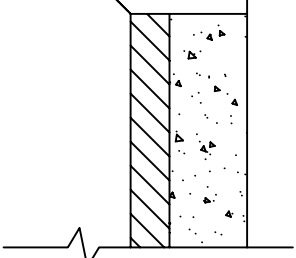
DRAWING NO:

SD402

KERB & CHANNEL
OR PARKING BAY

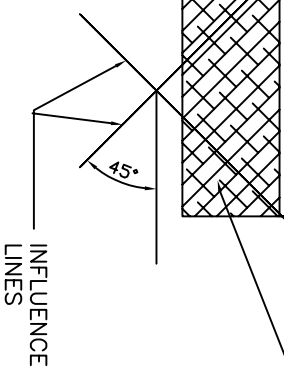


FOOTPATH



STANDARD
BACKFILL
(EXCAVATED
FROM SITE)

20mm CLASS 3 FCR
BACKFILL COMPACTED TO
95% MOD. MAX DRY DENSITY



NOTE:
THIS DETAIL FOR SERVICE TRENCHES ONLY.
FCR BACKFILL TO EXTEND FULL TRENCH
DEPTH UNDER VEHICLE CROSSINGS AND
FOOTPATHS.
DRAINAGE TRENCHES BEHIND KERB &
CHANNEL ARE TO BE BACKFILLED WITH
20mm CLASS 3 FCR TO BOTTOM OF KERB.
DRAINAGE UNDER ROAD PAVEMENTS IS TO
BE BACKFILLED WITH 20mm CLASS 2 FCR
FOR THE FULL EXTENT OF THE TRENCH.

TYPICAL SECTION

Amendments			
No.	Zone	Detail	Date

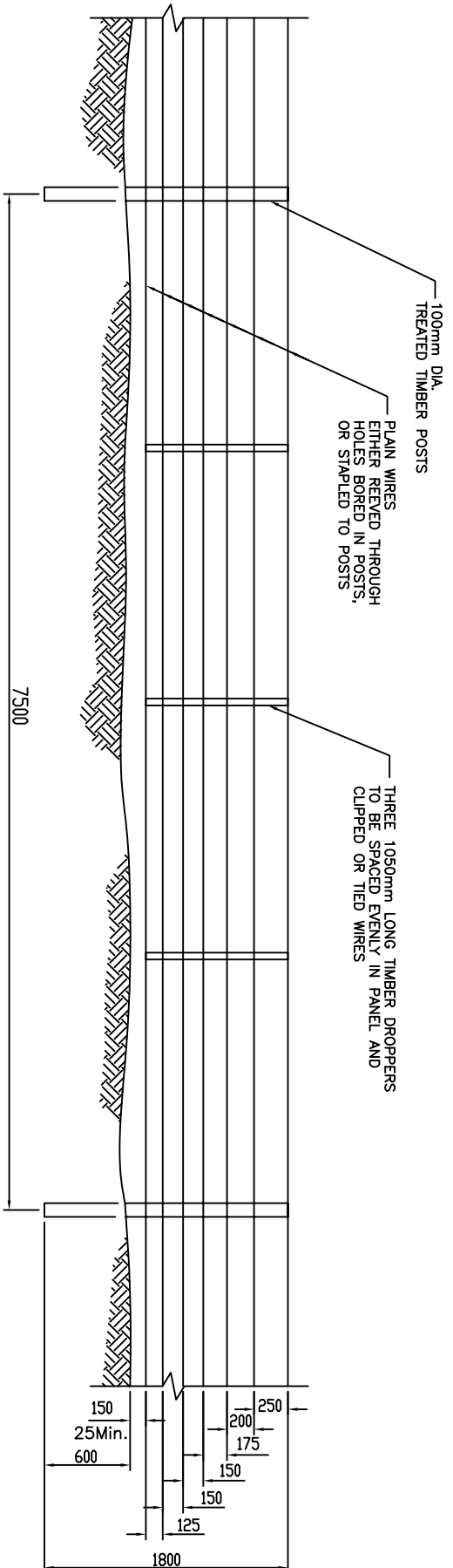
DRAWN :	D. SALAZAR
CHECKED :	R. CHARTERS
APPROVED :	S. PLATER
SCALE :	N.T.S.
ISSUE DATE:	JUNE 2004

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CITY COUNCIL

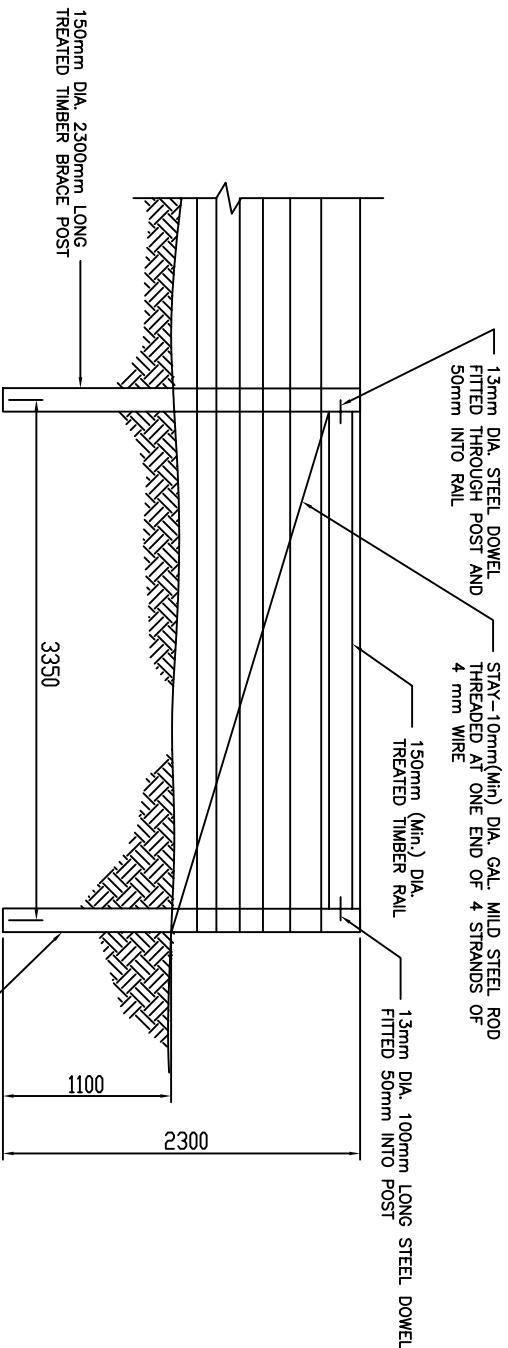
P.O. Box 119
1079 Pascoe Vale Road
Brooklands
Victoria 3047

Telephone
03) 9205 2200
Facsimile
03) 9309 0109

TYPE :	TYPICAL SERVICE TRENCH BACKFILL
DRAWING NO:	SD403



TYPICAL ELEVATION



SINGLE STRAINER ASSEMBLY

FOR USE AT GATEWAYS, ENDS, ANGLES ETC...

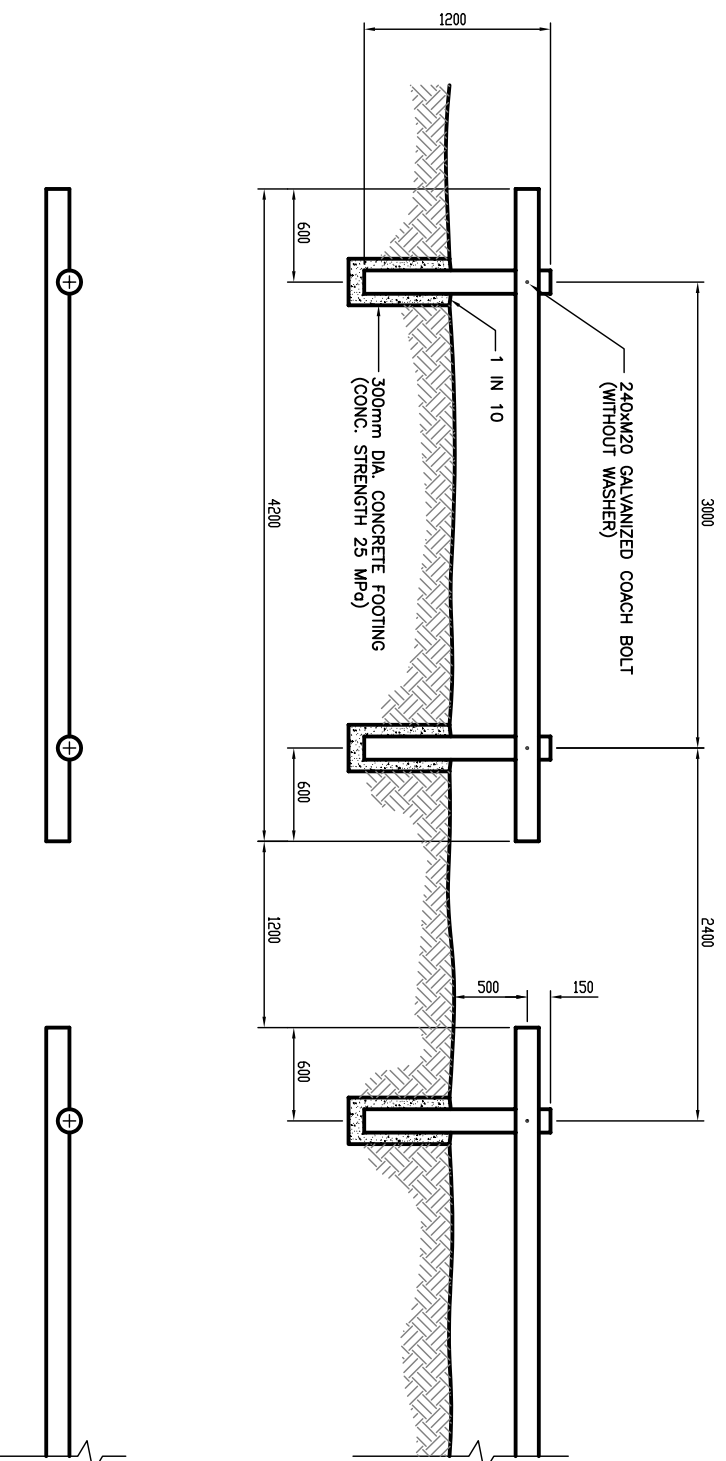
Amendments			
No.	Zone	Detail	Date

DRAWN : D. SALAZAR
 CHECKED : S. BHALLA
 APPROVED : S. PLATER
 SCALE : 1 : 50
 ISSUE DATE: JUNE 2004



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TYPE : STANDARD FENCE
 DRAWING NO: SD404



NOTES :

- TIMBER : PLANTATION CROWN RADIIATA PINE, 100 TO 125mm DIA. (MIN.)
- TREATMENT : LOGS ARE TO BE IMPREGNATED WITH COPPER--CHROME--ARSENATE (C.C.A.) SALTS WITH ANTI-GLOW FORMULATION TO AN AVERAGE 12kg NSDR PER m³.
- APPEARANCE : LOGS ARE TO BE STRAIGHT, DEBARKED, OF A CONSISTENT COLOUR, SURFACE AND QUALITY AND A MIN. DIAMETER AS SPECIFIED. POSTS TO BE SCALLOPED.

Amendments		
No.	Detail	Date

DRAWN : D. SALAZAR
 CHECKED : S. BHALLA
 APPROVED : S. PLATER
 SCALE : 1 : 50
 ISSUE DATE: JUNE 2004

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PO Box 119
1079 Pascoe Vale Road
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Victoria 3047
Telephone
(03) 9250 2200
Facsimile
(03) 9309 0109

TYPE :
PINELOG BARRIER FENCE

DRAWING NO:
SD405

2700

CRAIGIEBURN ROAD CHILD CARE CENTRE



DESIGN AND SUPERVISION

CIVIL DESIGN – HUME CITY COUNCIL

BUILDER

PROJECT COST

COMPLETION DATE

1350



Amendments

No.	Zone	Detail	Initials	Date

DRAWN : D. SALAZAR

CHECKED : S. BHALLA

CHECKED : S. PLATER

SCALE : 1 : 20

ISSUE DATE: JUNE 2004

TYPE :

SIGNBOARD DETAIL

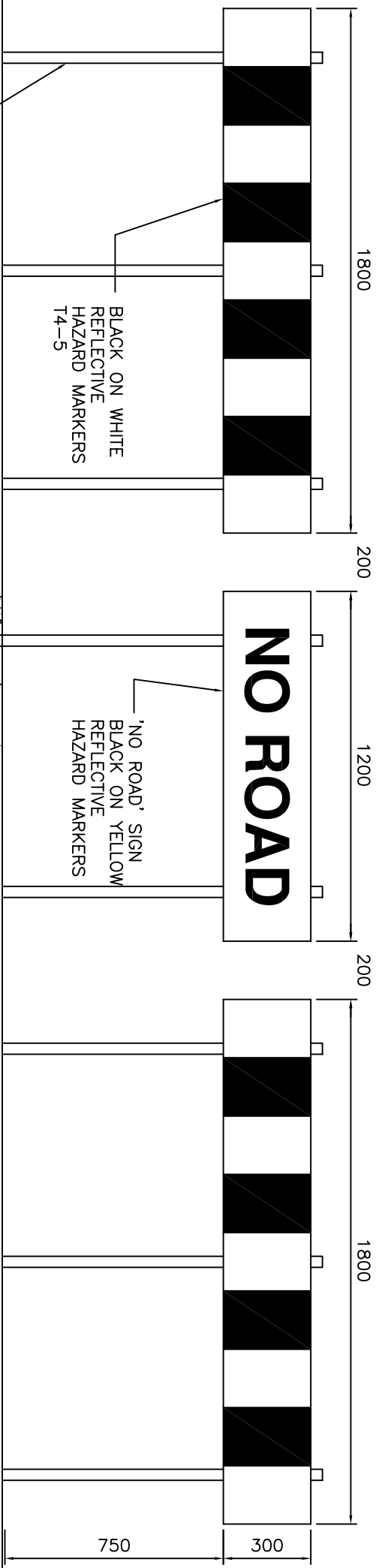
DRAWING NO:

SD406



P0 Box 119
1079 Pascoe Vale Road
Brookmeadows
Victoria 3047


Telephone
03) 9205 2200
Facsimile
03) 9309 0109



- NOTES:
1. SIGNS ATTACHED TO EACH POST WITH 2 No. 12mm DIA. AND 75mm LONG GALV. IRON BOLTS OR APPROVED BRACKETS.
 2. THE WORDS "NO ROAD" SHALL BE SIGN WRITTEN AND NOT LESS THAN 150mm HIGH AND 900mm IN LENGTH.
 3. INSTALL CONCRETE EDGE STRIP AND AG DRAIN.
 4. CONCRETE SHALL BE 25 MPa AT 28 DAYS.

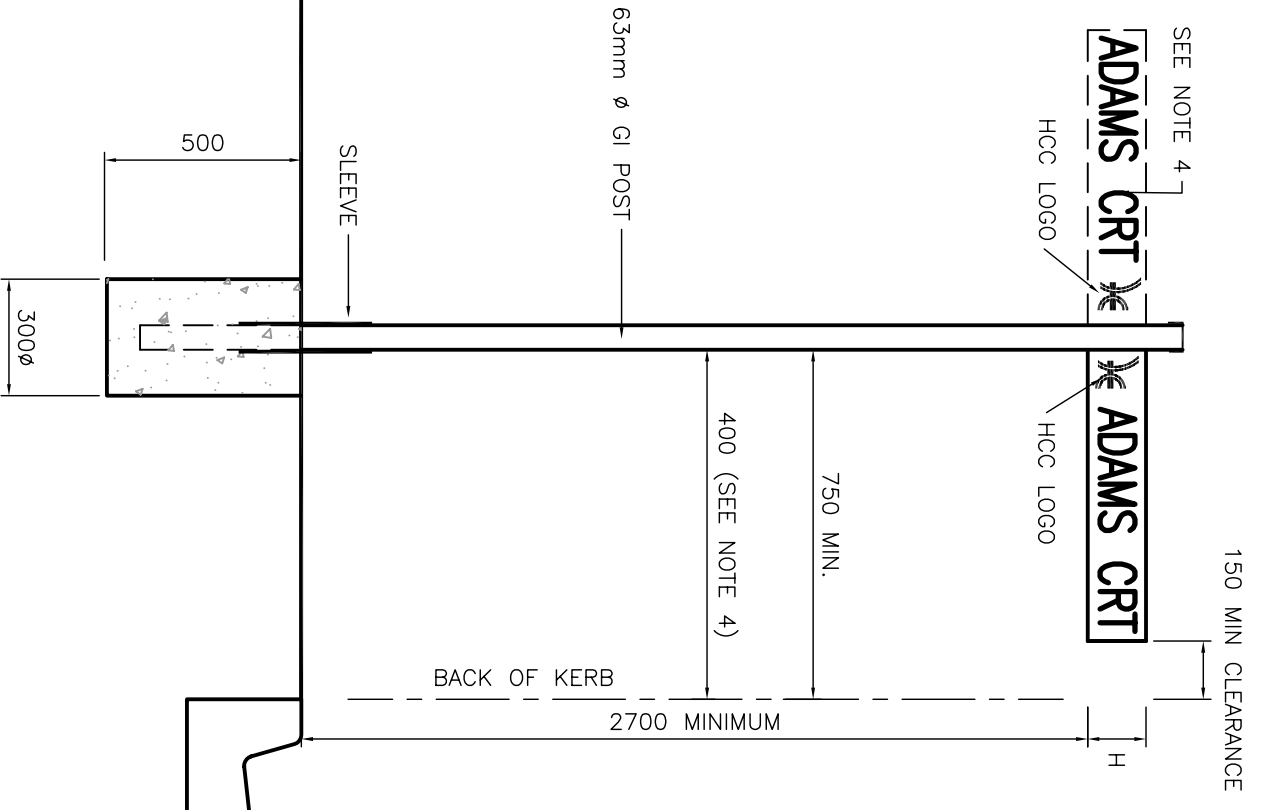
Amendments		
No.	Detail	Date

DRAWN : D. SALAZAR
 CHECKED : S. BHALLA
 APPROVED : S. PLATER
 SCALE : 1 : 20
 ISSUE DATE: JUNE 2004



HUME
 CITY COUNCIL

PO Box 119 1079 Pascoe Vale Road Broadmeadows Victoria 3047 Telephone (03) 9205 2200 Facsimile (03) 9309 0109	TYPE : END OF ROAD BARRIER
DRAWING NO: SD407	



NOTES:

1. STREET NAME SIGNS TO BE MOUNTED ON EXISTING LIGHT OR POWER POLES WHEREVER POSSIBLE.
2. FOR LONGER STREET NAMES, POLE MAY BE INSTALLED AT 400mm BEHIND KERB AND SIGN INSTALLED ON OPPOSITE SIDE OF POST.
3. FONT - SERIES C.
4. FOR LONGER STREET NAMES, POLE MAY BE INSTALLED AT 400mm BEHIND KERB AND SIGN INSTALLED ON OPPOSITE OF POST.
5. LOGO TO BE ADJACENT TO POST IN ALL CASES.

SIGN TYPE	HEIGHT H (mm)	LENGTH 'L' (mm)	FONT SIZE (mm)
TYPE 'A'	150	600 MAX.	100
TYPE 'B'	100	600 MAX.	75

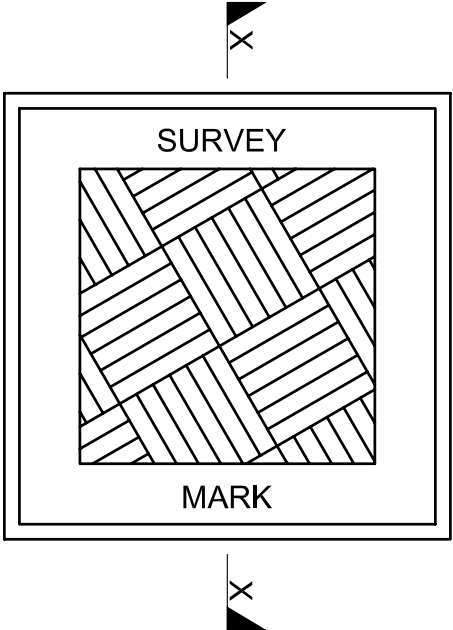
Amendments		
No.	Detail	Date

DRAWN : D. SALAZAR
 CHECKED : S. BHALLA
 APPROVED : S. PLATER
 SCALE : N.T.S.
 ISSUE DATE: JUNE 2004

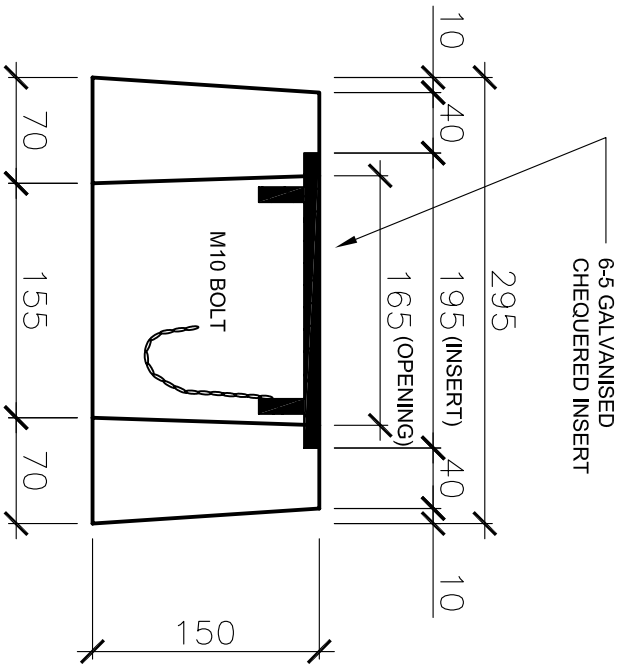
HUME
 CITY COUNCIL

PO Box 119
 1079 Pascoe Vale Road
 Broomfields
 Victoria 3047
 Telephone (03) 9205 2200
 Facsimile (03) 9309 0109

TYPE : STREET NAME PLATE AND SIGN ASSEMBLY
 DRAWING NO: SD408



PLAN



SECTION

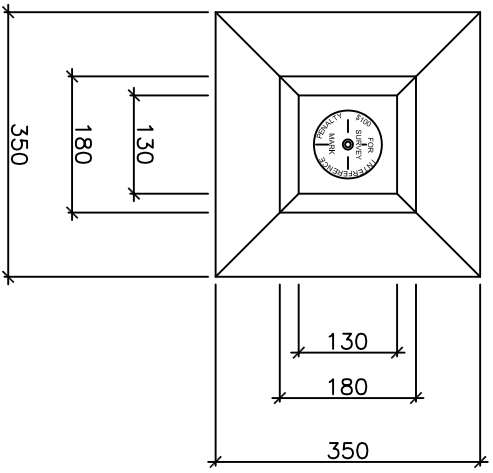
- NOTES.
 1. SURVEY MARKER TO BE INSTALLED WITHIN FOOTPATH AREAS WHERE POSSIBLE.

Initials	Date	DRAWN :	S. ADAMS
R.C.	Jan 05	CHECKED :	S. PLATER
		APPROVED :	S. PLATER
		SCALE :	1 : 50
		ISSUE DATE:	JUNE 2004

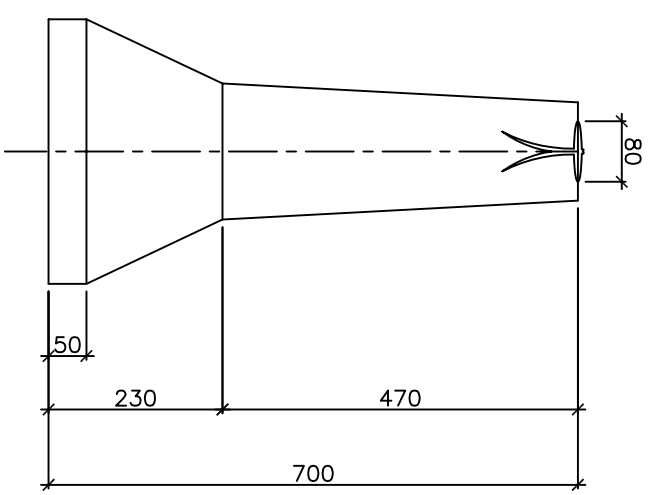
HUME
CITY COUNCIL

P.O. Box 119
 1079 Pascoe Vale Road
 Broadmeadows
 Victoria 3047
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TYPE :	SURVEY MARK COVER
DRAWING NO.:	SD 409



PLAN



SECTION

- NOTES.
 1. SURVEY MARKER TO BE INSTALLED WITHIN FOOTPATH AREAS WHERE POSSIBLE.

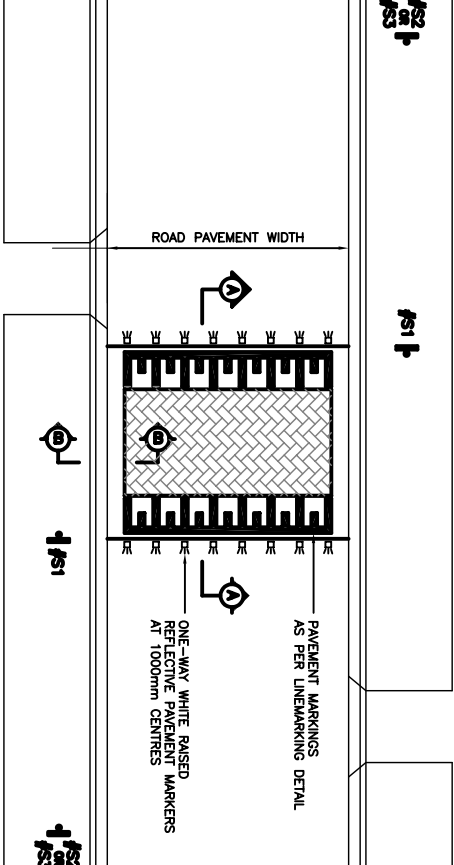
Initials	Date	DRAWN :	S. ADAMS
R.C.	Jun 05	CHECKED :	S. PLATER
		APPROVED :	S. PLATER
		SCALE :	1:10
		ISSUE DATE:	JUNE 2004

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 Facsimile 03) 9309 0109

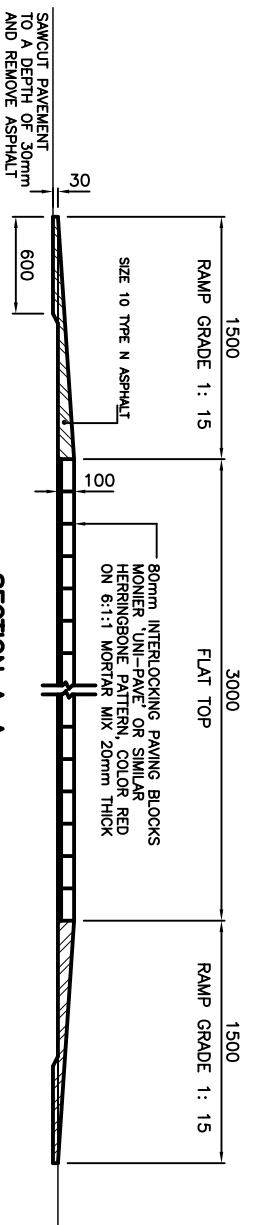
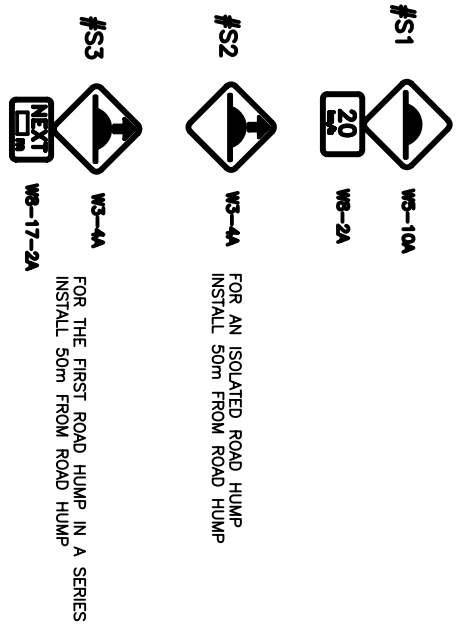
TYPE :	STANDARD PERMANENT SURVEY MARKER
DRAWING NO:	SD 410

#s2
#s3

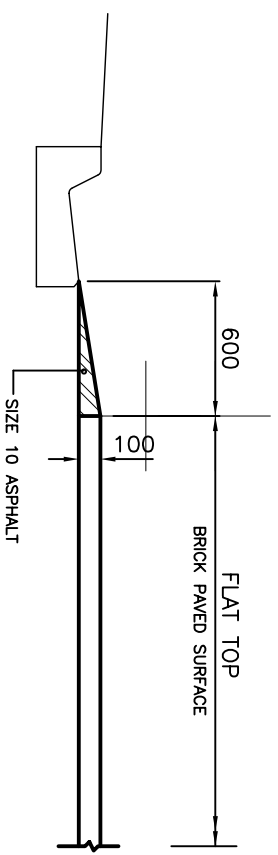


PLAN
FLAT TOP ROAD HUMPS

SIGN SCHEDULE



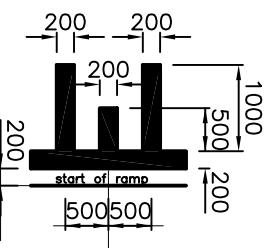
SECTION A-A
FLAT TOP BRICK PAVED ROAD HUMPS



SECTION B-B

- NOTES:**
- 1: LONGITUDINAL LINES (CENTRE & PARKING LANE LINES) LINEMARKING TO BE 3mm THICKNESS THERMO APPLIED PLASTIC
 - 2: ROAD HUMPS LINEMARKING TO BE 2mm THICKNESS COLD APPLIED PLASTIC.
 - 3: ROAD SIGNS TO BE INSTALLED IN ACCORDANCE WITH SD412

LINEMARKING DETAIL



Amendments		Initials	Date
No.	Detail		

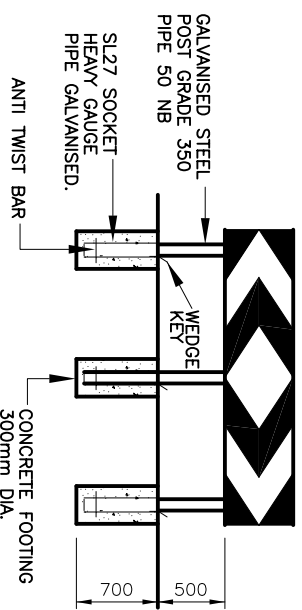
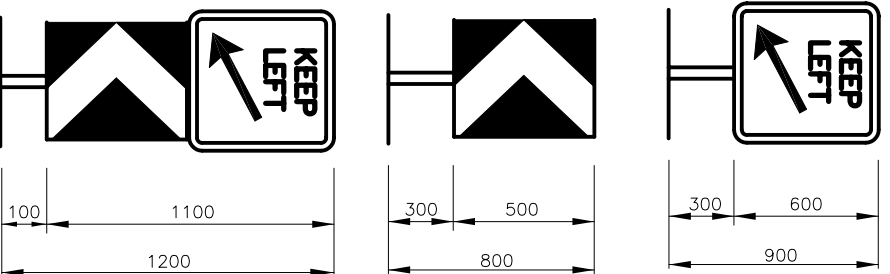
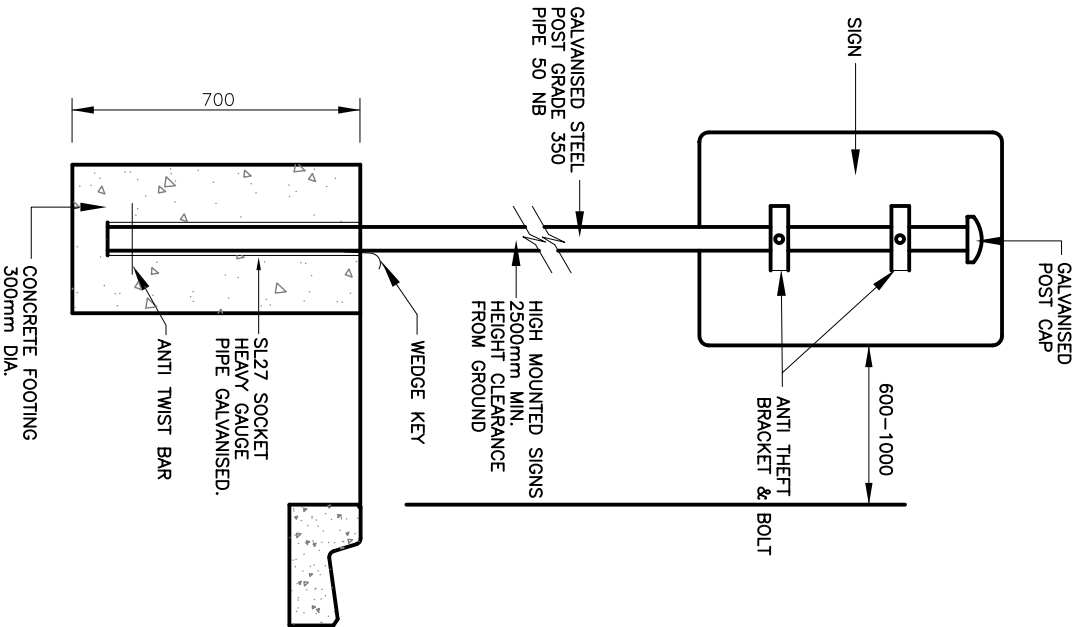
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Facsimile
(03) 9309 0109

TYPE : **FLAT TOP ROAD HUMPS DETAILS**

DRAWING NO: **SD411**



CHEVRON HAZARD MARKERS

D4-V100 ONE WAY 1800x300mm
 D4-V101 TWO WAY 1800x300mm

NOTES:

ALL REGULATORY AND HAZARD DIRECTIONAL SIGNS TO BE INSTALLED IN CLASS 1 REFLECTIVE MATERIAL AND ALL WARNING SIGNS TO BE INSTALLED IN CLASS 2 REFLECTIVE MATERIALS TO APPROVED AUSTRALIAN STANDARDS. ALL STREET NAME SIGNS TO BE INSTALLED TO COUNCIL STANDARD STREET NAME DESIGN WITH CLASS 1 OR CLASS 2 REFLECTIVE SHEETING. REFER TO SD 408. AS 1743-1992 ROAD SIGNS SPECIFICATIONS. AS 1742.1(1991), AS 1742.2(1994) AND AS 1742.5 (1997). AS 1742 MANUAL AND UNIFORM TRAFFIC CONTROL DEVICES PARTS 1, 2 AND 5. VIC ROADS-TRAFFIC ENGINEERING MANUAL VOLUME 2 SIGNAGE AND MARKINGS.

Amendments

No.	Zone	Detail	Initials	Date

DRAWN :	D. SALAZAR
CHECKED :	D. SALAZAR
APPROVED :	S. PLATER
SCALE :	N.T.S.
ISSUE DATE:	JUNE 2004

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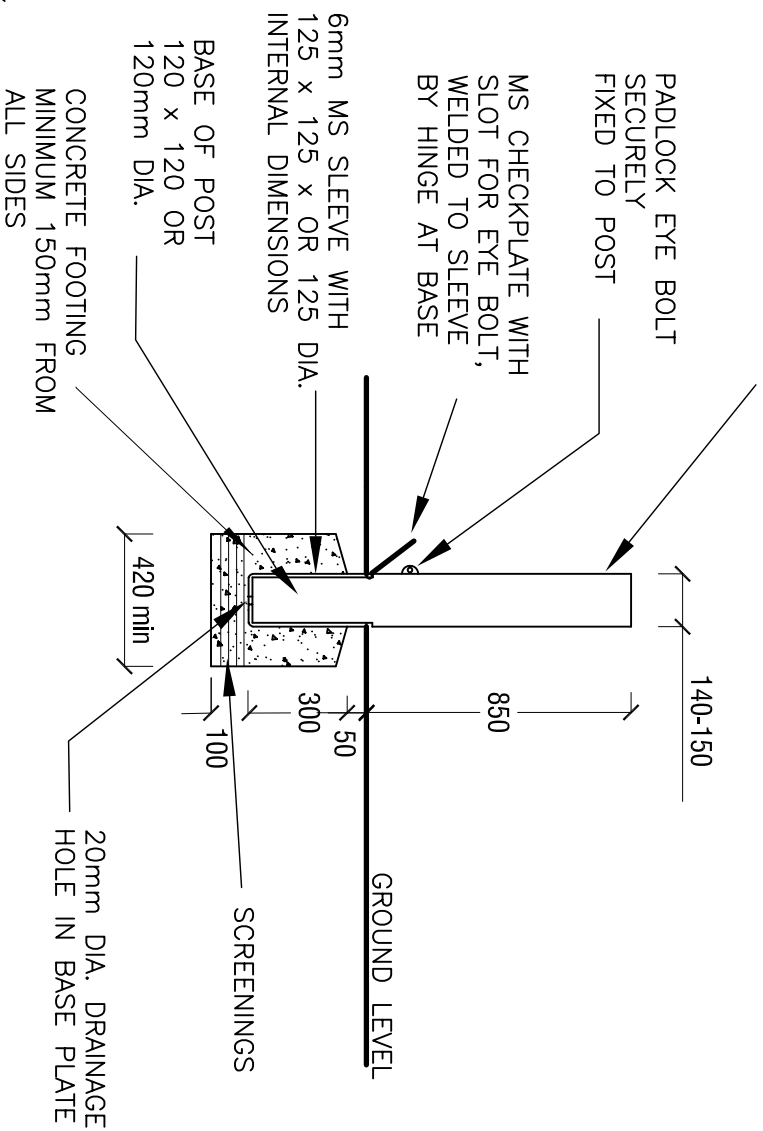
TYPE :

SIGNAGE INSTALLATION DETAILS

DRAWING NO:

SD412

TIMBER, POWDER COATED
or GALVANISED STEEL
BOLLARD (SEE NOTE 1)



- NOTES:
1. BOLLARD TYPE / SIZE TO BE APPROVED BY HUME CITY COUNCIL LANDSCAPE PLANNER.
 2. PADLOCKS (No.21 OR 11) TO BE SUPPLIED BY COUNCIL AT CONTRACTORS/DEVELOPERS COST.
 3. CONCRETE STRENGTH OF 25Mpa @ 28 DAYS.
 4. BOLLARD SLEEVE TO BE HOT DIPPED GALVANISED.
 5. ALL DIMENSIONS IN MILLIMETRES.

Initials	Date
DRAWN :	R. CHARTERS
CHECKED :	H. CURTAIN
APPROVED :	S. PLATER
SCALE :	1:10
ISSUE DATE:	JUNE 2004



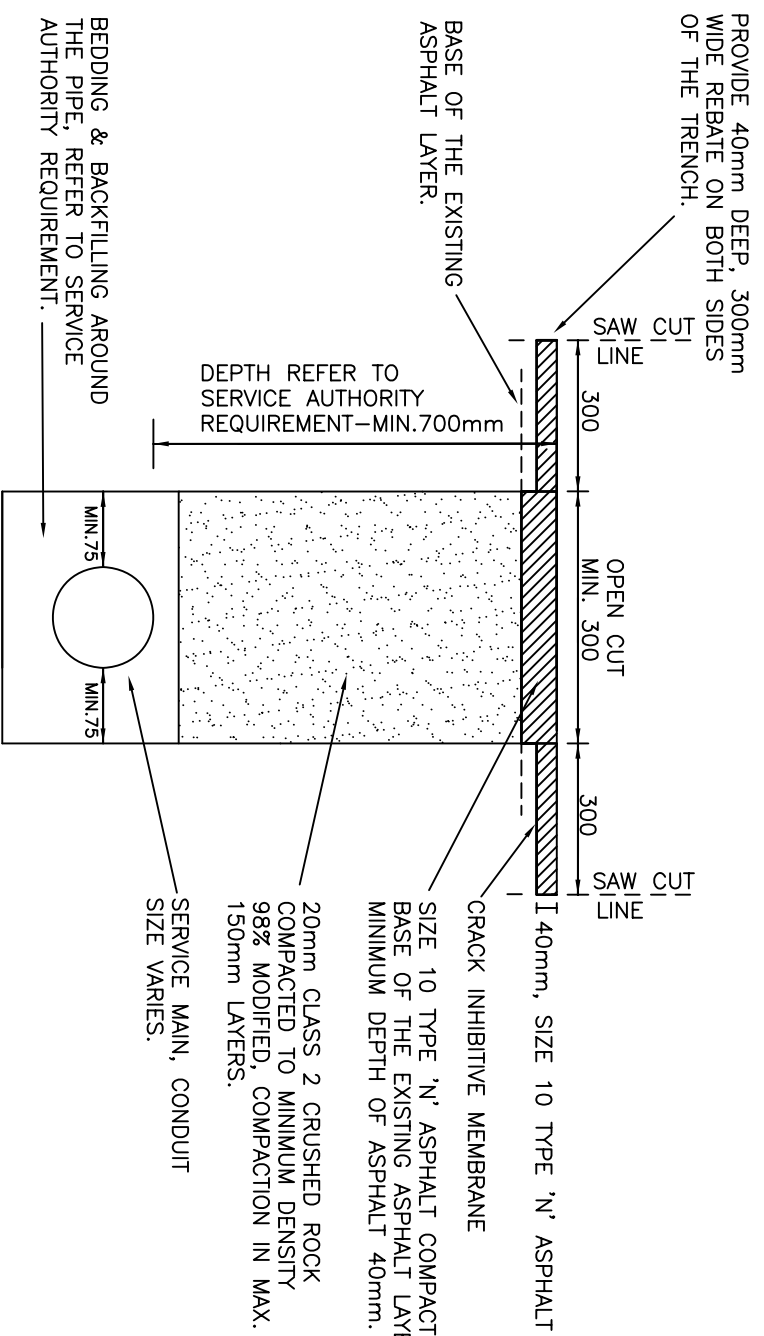
PO Box 119
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(03) 9309 0109

TYPE :

REMOVABLE BOLLARD
ROUND & SQUARE OPTIONS

DRAWING NO.:

SD 413



REINSTATEMENT OF LOCAL ROAD PAVEMENT

NOTE:

1. AT LOCATIONS WHERE PROPOSED MAINS CROSS ROADS OR CONCRETE APRONS, INSTALLATION OF THE MAINS ARE TO BE CARRIED OUT AS FAR AS PARTICIPABLE BY THRUST BORING. ANY VOID BETWEEN THE BORE AND CONDUITS TO BE BACKFILLED BY PRESSURE GROUTING.
2. THE CONTRACTOR MUST ATTEMPT TO BORE UNDER THE ROAD/CONCRETE APRON, AND IF NOT POSSIBLE DUE TO ROCK OR ANY OTHER CIRCUMSTANCE, PLEASE CONTACT COUNCIL'S TEAM LEADER CIVIL DESIGN ON 9205 2412 TO WITNESS THE SITUATION.
3. SHOULD CONDITIONS PROHIBIT BORING, WRITTEN PERMISSION MAY BE GRANTED BY THE COUNCIL'S TEAM LEADER CIVIL DESIGN TO OPEN CUT ROAD/CONCRETE APRON.
4. THE FINISHED SURFACE LEVEL OF THE REINSTATEMENT TO BE FLUSH WITH EXISTING ROAD PAVEMENT.
5. THE AUTHORITY/CONTRACTOR SHALL BEAR THE COST OF REINSTATEMENT OF THE ROAD RESERVE AND/OR ROAD PAVEMENT AND BE RESPONSIBLE FOR THE COST OF REPAIRS AND MAKING GOOD ANY DAMAGE TO EXISTING SERVICES AND OTHER ASSETS.
6. AT THE COMPLETION OF ALL WORKS, THE ORGANISATION UNDERTAKING THE WORKS IS REQUIRED TO CONTACT COUNCIL'S TECHNICAL WORK OFFICER, PROJECTS AND CONTRACT MANAGEMENT ON 9205 2403 TO ADVISE OF COMPLETED WORKS.
7. ALL DIMENSIONS ARE IN MILLIMETERS

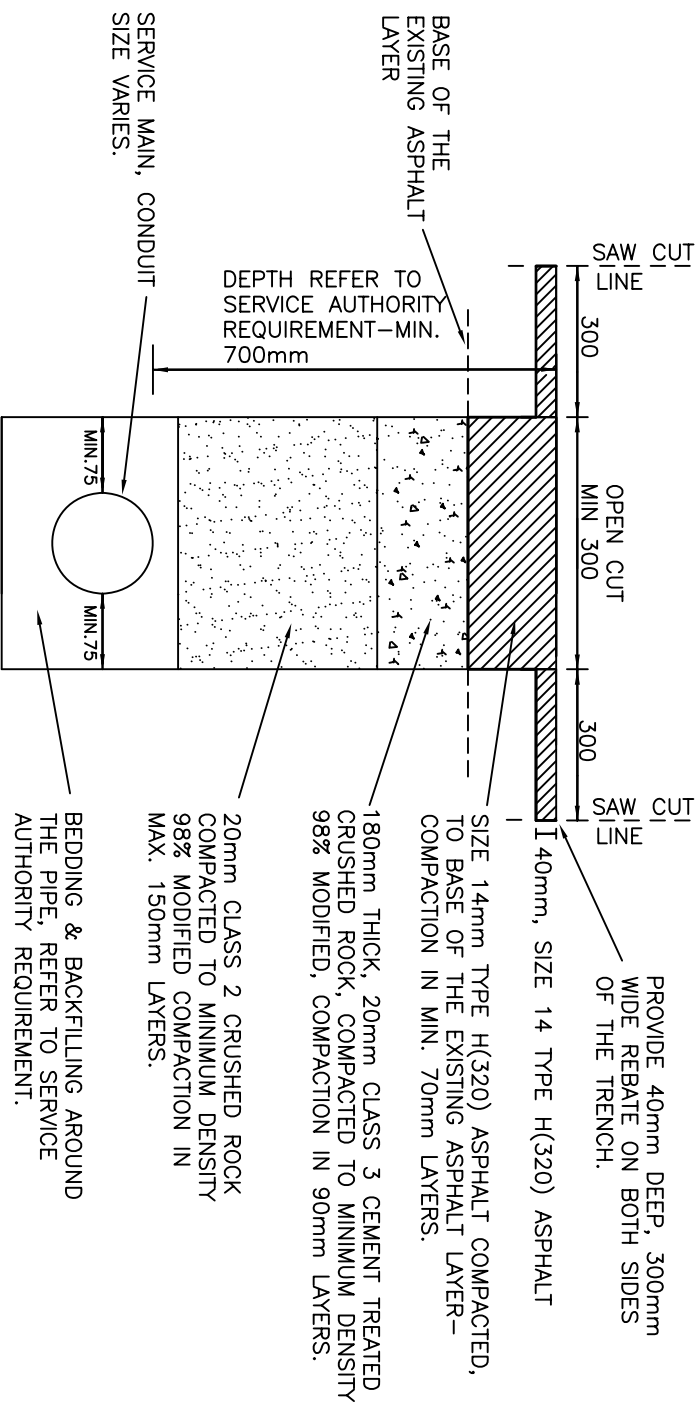
Amendments			
No.	Detail	Initials	Date
A			

DRAWN : C. NGUYEN
 CHECKED : R. DEVAPURA
 APPROVED : R. DEVAPURA
 SCALE : NOT TO SCALE
 ISSUE DATE: OCTOBER 2005

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REINSTATEMENT OF LOCAL ROAD PAVEMENT
 SERVICE AUTHORITY RENEWALS/INSTALLATION
 DRAWING NO: SD414



REINSTATEMENT OF INDUSTRIAL ROAD PAVEMENT

NOTE:

1. AT LOCATIONS WHERE PROPOSED MAINS CROSS ROADS OR CONCRETE APRONS, INSTALLATION OF THE MAINS ARE TO BE CARRIED OUT AS FAR AS PARTICABLE BY THRUST BORING. ANY VOID BETWEEN THE BORE AND CONDUITS TO BE BACKFILLED BY PRESSURE GROUTING.
2. THE CONTRACTOR MUST ATTEMPT TO BORE UNDER THE ROAD/CONCRETE APRON, AND IF NOT POSSIBLE DUE TO ROCK OR ANY OTHER CIRCUMSTANCE, PLEASE CONTACT COUNCIL'S TEAM LEADER CIVIL DESIGN ON 9205 2412 TO WITNESS THE SITUATION.
3. SHOULD CONDITIONS PROHIBIT BORING, WRITTEN PERMISSION MAY BE GRANTED BY THE COUNCIL'S TEAM LEADER CIVIL DESIGN TO OPEN CUT ROAD/CONCRETE APRON.
4. THE FINISHED SURFACE LEVEL OF THE REINSTATEMENT TO BE FLUSH WITH EXISTING ROAD PAVEMENT.
5. THE AUTHORITY/CONTRACTOR SHALL BEAR THE COST OF REINSTATEMENT OF THE ROAD RESERVE AND/OR ROAD PAVEMENT AND BE RESPONSIBLE FOR THE COST OF REPAIRS AND MAKING GOOD ANY DAMAGE TO EXISTING SERVICES AND OTHER ASSETS.
6. AT THE COMPLETION OF ALL WORKS, THE ORGANISATION UNDERTAKING THE WORKS IS REQUIRED TO CONTACT COUNCIL'S TECHNICAL WORK OFFICER, PROJECTS AND CONTRACT MANAGEMENT ON 9205 2403 TO ADVISE OF COMPLETED WORKS.
7. ALL DIMENSIONS ARE IN MILLIMETERS

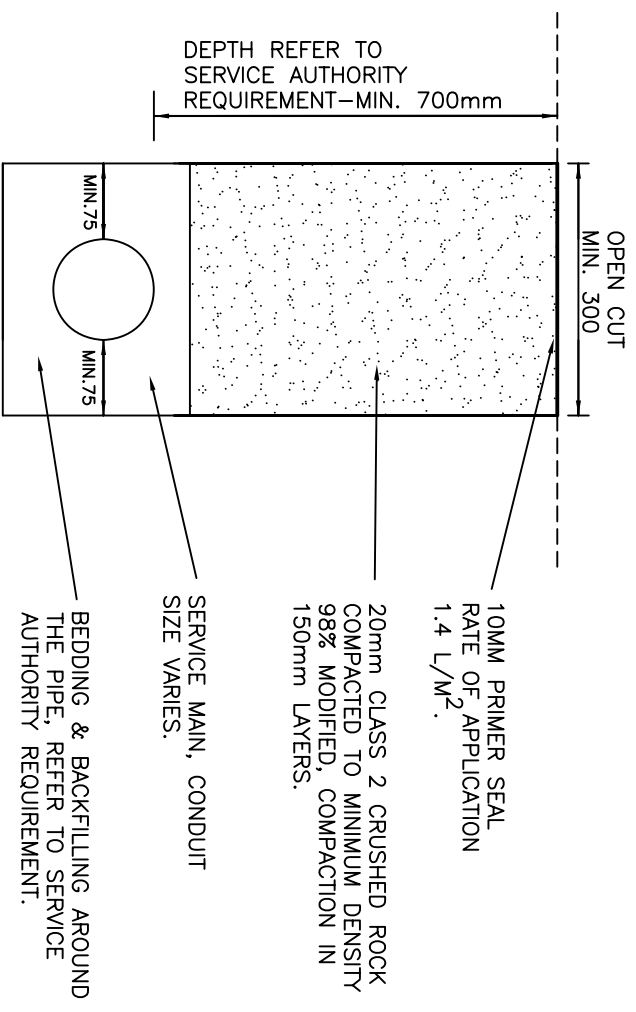
Amendments			
No.	Detail	Initials	Date
A			

DRAWN : C. NGUYEN
 CHECKED : R. DEVAPURA
 APPROVED : R. DEVAPURA
 SCALE : NOT TO SCALE
 ISSUE DATE: OCTOBER 2005

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REINSTATEMENT OF INDUSTRIAL ROAD PAVEMENT
 SERVICE AUTHORITY RENEWALS/INSTALLATION
 DRAWING NO: SD415



REINSTATEMENT OF RURAL ROAD/ UNSEALED ROAD PAVEMENT

NOTE:

1. AT LOCATIONS WHERE PROPOSED MAINS CROSS ROADS OR CONCRETE APRONS, INSTALLATION OF THE MAINS ARE TO BE CARRIED OUT AS FAR AS PARTICABLE BY THRUST BORING. ANY VOID BETWEEN THE BORE AND CONDUITS TO BE BACKFILLED BY PRESSURE GROUTING.
2. THE CONTRACTOR MUST ATTEMPT TO BORE UNDER THE ROAD/CONCRETE APRON, AND IF NOT POSSIBLE DUE TO ROCK OR ANY OTHER CIRCUMSTANCE, PLEASE CONTACT COUNCIL'S TEAM LEADER CIVIL DESIGN ON 9205 2412 TO WITNESS THE SITUATION.
3. SHOULD CONDITIONS PROHIBIT BORING, WRITTEN PERMISSION MAY BE GRANTED BY THE COUNCIL'S TEAM LEADER CIVIL DESIGN TO OPEN CUT ROAD/CONCRETE APRON.
4. THE FINISHED SURFACE LEVEL OF THE REINSTATEMENT TO BE FLUSH WITH EXISTING ROAD PAVEMENT.
5. THE AUTHORITY/CONTRACTOR SHALL BEAR THE COST OF REINSTATEMENT OF THE ROAD RESERVE AND/OR ROAD PAVEMENT AND BE RESPONSIBLE FOR THE COST OF REPAIRS AND MAKING GOOD ANY DAMAGE TO EXISTING SERVICES AND OTHER ASSETS.
6. AT THE COMPLETION OF ALL WORKS, THE ORGANISATION UNDERTAKING THE WORKS IS REQUIRED TO CONTACT COUNCIL'S TECHNICAL WORK OFFICER, PROJECTS AND CONTRACT MANAGEMENT ON 9205 2403 TO ADVISE OF COMPLETED WORKS.
7. ALL DIMENSIONS ARE IN MILLIMETERS

Amendments			
No.	Detail	Initials	Date
A			

DRAWN : C. NGUYEN
 CHECKED : R. DEVAPURA
 APPROVED : R. DEVAPURA
 SCALE : NOT TO SCALE
 ISSUE DATE: OCTOBER 2005

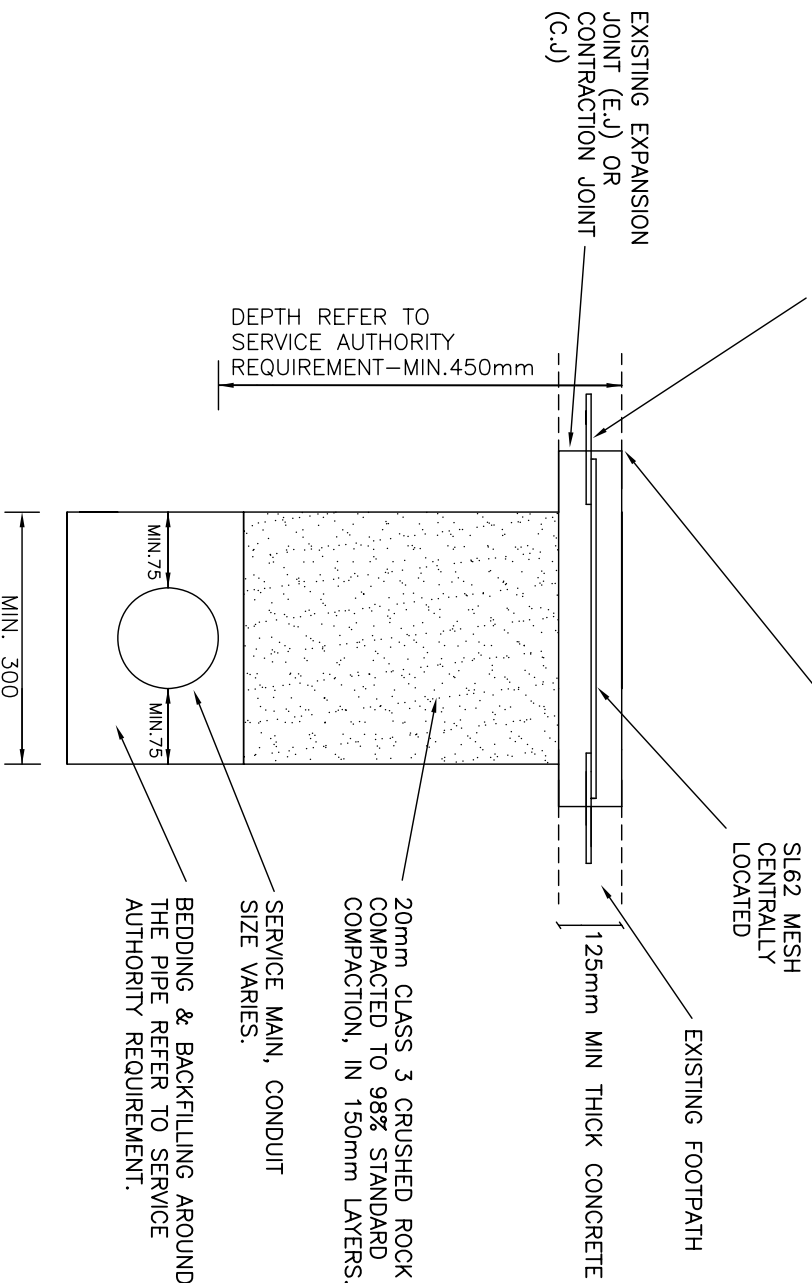


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REINSTATEMENT OF RURAL ROAD/UNSEALED
 ROAD PAVEMENT
 SERVICE AUTHORITY RENEWALS/INSTALLATION
 DRAWING NO: SD416

THE BARS (USE R16 M.S BARS, 450mm LONG) AT MAXIMUM 300mm CENTRES TO BE DRILLED & INSTALLED AT EXISTING E.J OR C.J.

REINSTATEMENT TO BE CARRIED OUT TO NEAREST EXISTING JOINT IN THE FOOTPATH. ie. FULL BAYS NEED TO BE REINSTATED.



REINSTATEMENT OF CONCRETE FOOTPATH

NOTES:

1. WEAKENED PLANE JOINTS SHALL BE LOCATED AT 1.5m CENTRES AND MAY BE MADE WITH A "T" IRON (OR CONCRETE SAW WITHIN 24hrs OF POUR)
2. CONCRETE SHALL BE 25 MPa AT 28 DAYS. (32MPa FOR COLOUR CONCRETE)
3. FORMWORK TIMBER TO BE MIN 125mm DEEP
4. EXPANSION JOINTS AT MAXIMUM 18m CENTRES
5. THE FINISHED SURFACE LEVEL OF THE REINSTATEMENT TO BE FLUSH WITH EXISTING FOOTPATH.
6. THE AUTHORITY/CONTRACTOR SHALL BEAR THE COST OF REINSTATEMENT OF THE ROAD RESERVE AND/OR ROAD PAVEMENT AND BE RESPONSIBLE FOR THE COST OF REPAIRS AND MAKING GOOD ANY DAMAGE TO EXISTING SERVICES AND OTHER ASSETS.
7. ALL DIMENSIONS ARE IN MILLIMETERS

Amendments			
No.	Detail	Initials	Date
A	Backfill Changed to Class 3	R.C.	14 March 07

DRAWN : C. NGUYEN
 CHECKED : R. DEVAPURA
 APPROVED : R. DEVAPURA
 SCALE : NOT TO SCALE
 ISSUE DATE: OCTOBER 2005

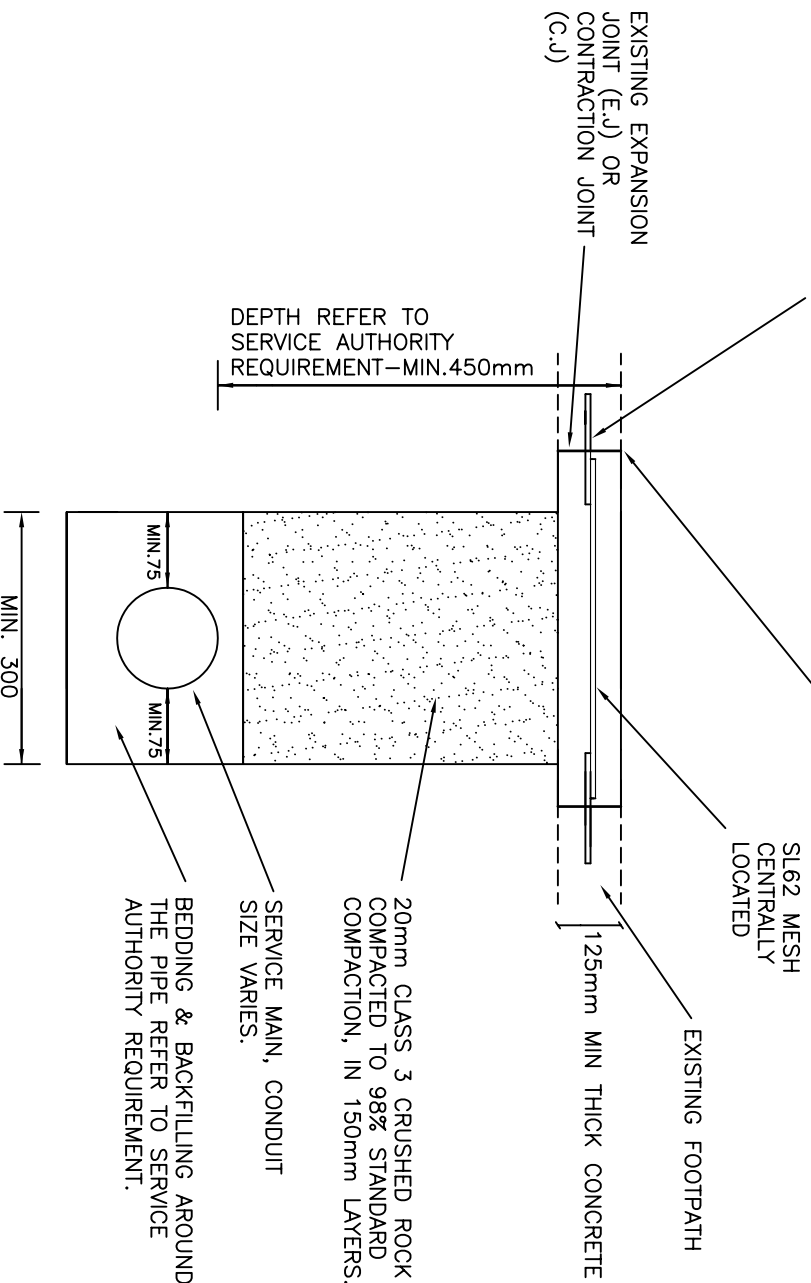


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REINSTATEMENT OF CONCRETE FOOTPATH
 SERVICE AUTHORITY RENEWALS/INSTALLATION
 DRAWING NO: SD417

THE BARS (USE R16 M.S BARS, 450mm LONG) AT MAXIMUM 300mm CENTRES TO BE DRILLED & INSTALLED AT EXISTING E.J OR C.J.

REINSTATEMENT TO BE CARRIED OUT TO NEAREST EXISTING JOINT IN THE FOOTPATH. i.e. FULL BAYS NEED TO BE REINSTATED.



REINSTATEMENT OF CONCRETE FOOTPATH

NOTES:

1. WEAKENED PLANE JOINTS SHALL BE LOCATED AT 1.5m CENTRES AND MAY BE MADE WITH A 7" IRON (OR CONCRETE SAW WITHIN 24hrs OF POUR)
2. CONCRETE SHALL BE 25 MPa AT 28 DAYS. (32MPa FOR COLOUR CONCRETE)
3. FORMWORK TIMBER TO BE MIN 125mm DEEP
4. EXPANSION JOINTS AT MAXIMUM 18m CENTRES
5. THE FINISHED SURFACE LEVEL OF THE REINSTATEMENT TO BE FLUSH WITH EXISTING FOOTPATH.
6. THE AUTHORITY/CONTRACTOR SHALL BEAR THE COST OF REINSTATEMENT OF THE ROAD RESERVE AND/OR ROAD PAVEMENT AND BE RESPONSIBLE FOR THE COST OF REPAIRS AND MAKING GOOD ANY DAMAGE TO EXISTING SERVICES AND OTHER ASSETS.
7. ALL DIMENSIONS ARE IN MILLIMETERS

Amendments			
No.	Detail	Initials	Date
A	Backfill Changed to Class 3	R.C.	14 March 07

DRAWN : C. NGUYEN

CHECKED : R. DEVAPURA

APPROVED : R. DEVAPURA

SCALE : NOT TO SCALE

ISSUE DATE: OCTOBER 2005



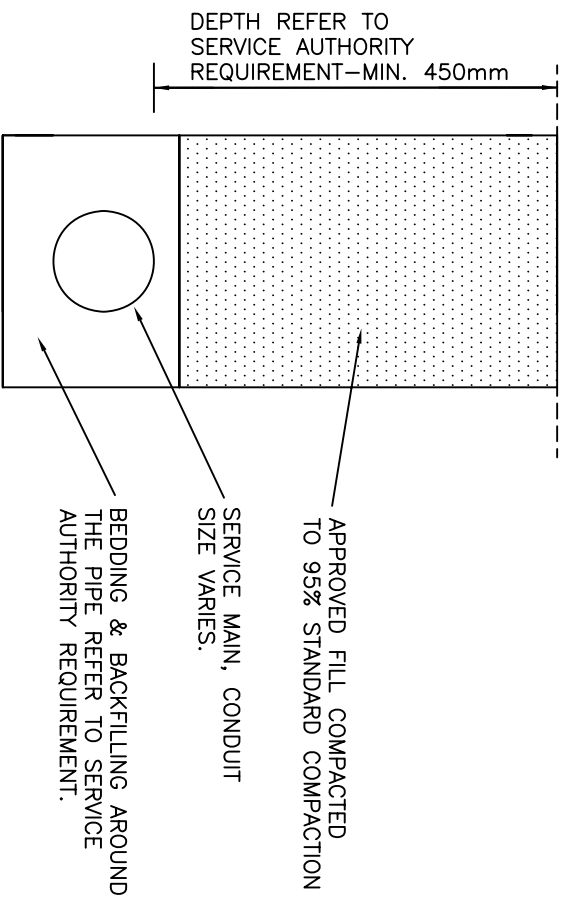
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REINSTATEMENT OF CONCRETE FOOTPATH

SERVICE AUTHORITY RENEWALS/INSTALLATION

DRAWING NO:

SD417




REINSTATEMENT OF NATURE STRIP/RESERVES

- NOTES:
1. WHERE EXCAVATION IS TO BE CARRIED OUT WITHIN THE VICINITY OF ANY EXISTING TREES, THE CONTRACTOR MUST CONTACT COUNCIL'S SENIOR ARBORIST ON 9205 2302 PRIOR TO COMMENCEMENT OF WORKS.
 2. DO NOT STOCKPILE ANY MATERIAL OR PLACE EQUIPMENT AGAINST THE TRUNK OR BENEATH THE TREE CANOPIES.
 3. THE FINISHED SURFACE LEVEL OF THE REINSTATEMENT TO BE FLUSH WITH EXISTING SURFACE.
 4. THE AUTHORITY/CONTRACTOR SHALL BEAR THE COST OF REINSTATEMENT OF THE ROAD RESERVE AND/OR ROAD PAVEMENT AND BE RESPONSIBLE FOR THE COST OF REPAIRS AND MAKING GOOD ANY DAMAGE TO EXISTING SERVICES AND OTHER ASSETS.
 5. AT THE COMPLETION OF ALL WORKS, THE ORGANISATION UNDERTAKING THE WORKS IS REQUIRED TO CONTACT COUNCIL'S PARK DEPARTMENT ON 9205 2384 FOR INSPECTION AND APPROVAL OF REINSTATEMENT WORKS.
 6. ALL DIMENSIONS ARE IN MILLIMETERS

Amendments			
No.	Detail	Initials	Date
A	Min Depth Altered to 450mm	R.C.	July 06

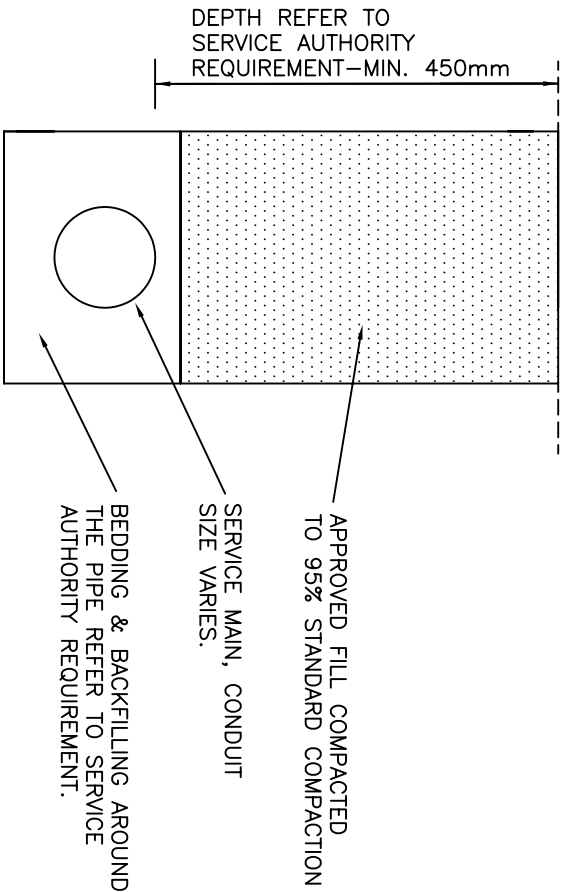
DRAWN : C. NGUYEN
 CHECKED : R. DEVAPURA
 APPROVED : R. DEVAPURA
 SCALE : NOT TO SCALE
 ISSUE DATE: OCTOBER 2005



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REINSTATEMENT OF NATURE STRIP/RESERVES
 SERVICE AUTHORITY RENEWALS/INSTALLATION
 DRAWING NO: SD418



REINSTATEMENT OF NATURE STRIP/RESERVES

NOTES:

1. WHERE EXCAVATION IS TO BE CARRIED OUT WITHIN THE VICINITY OF ANY EXISTING TREES, THE CONTRACTOR MUST CONTACT COUNCIL'S SENIOR ARBORIST ON 9205 2302 PRIOR TO COMMENCEMENT OF WORKS.
2. DO NOT STOCKPILE ANY MATERIAL OR PLACE EQUIPMENT AGAINST THE TRUNK OR BENEATH THE TREE CANOPIES.
3. THE FINISHED SURFACE LEVEL OF THE REINSTATEMENT TO BE FLUSH WITH EXISTING SURFACE.
4. THE AUTHORITY/CONTRACTOR SHALL BEAR THE COST OF REINSTATEMENT OF THE ROAD RESERVE AND/OR ROAD PAVEMENT AND BE RESPONSIBLE FOR THE COST OF REPAIRS AND MAKING GOOD ANY DAMAGE TO EXISTING SERVICES AND OTHER ASSETS.
5. AT THE COMPLETION OF ALL WORKS, THE ORGANISATION UNDERTAKING THE WORKS IS REQUIRED TO CONTACT COUNCIL'S PARK DEPARTMENT ON 9205 2384 FOR INSPECTION AND APPROVAL OF REINSTATEMENT WORKS.
6. ALL DIMENSIONS ARE IN MILLIMETERS

Amendments			
No.	Detail	Initials	Date
A	Min Depth Altered to 450mm	R.C.	July 06
DRAWN : C. NGUYEN			
CHECKED : R. DEVAPURA			
APPROVED : R. DEVAPURA			
SCALE : NOT TO SCALE			
ISSUE DATE: OCTOBER 2005			



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REINSTATEMENT OF NATURE STRIP/RESERVES
SERVICE AUTHORITY RENEWALS/INSTALLATION

DRAWING NO:

SD418