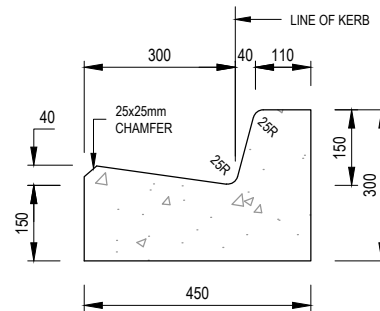
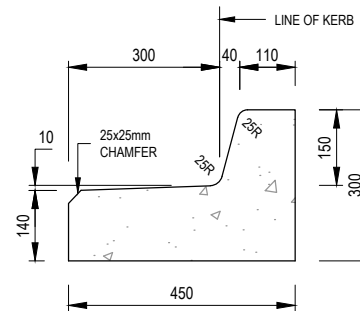


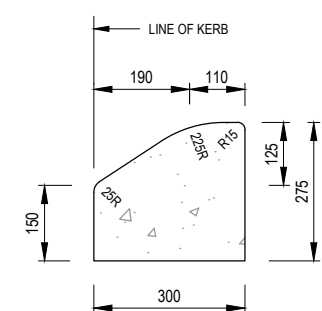
B1



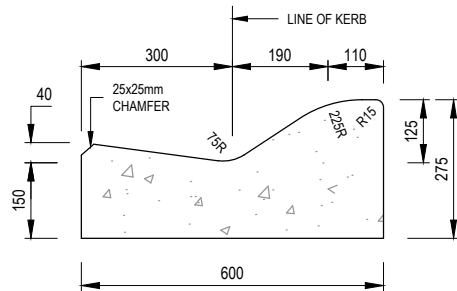
B2



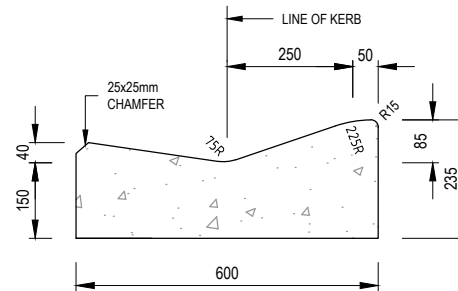
B3



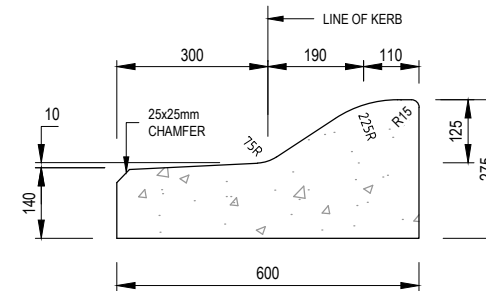
SM1



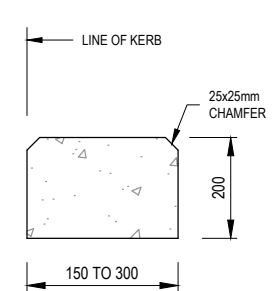
SM2



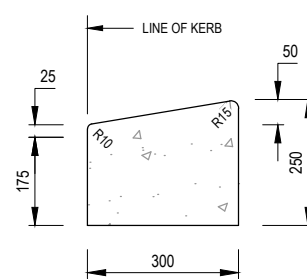
SM2-M (MODIFIED)



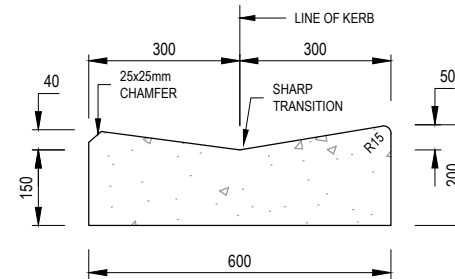
SM3



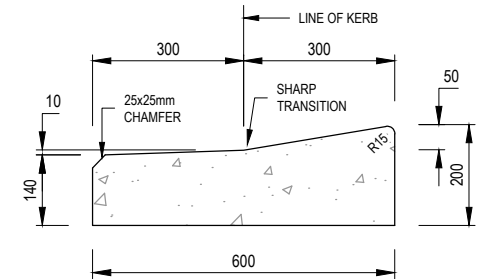
EDGE STRIP



M1



M2



M3

NOTES:

1. REFER TO AS. 2876-2000 CONCRETE KERBS AND CHANNELS FOR SPECIFIC REQUIREMENTS.
2. REFER TO AUSTROADS GUIDE TO ROAD DESIGN PART 3: GEOMETRIC DESIGN FOR THE RECOMMENDED USE OF KERBS AND CHANNELS.
3. CONCRETE SHALL BE NORMAL CLASS N25 STANDARD STRENGTH GRADE COMPLYING WITH THE REQUIREMENTS OF AS. 1379. REFER TO VICROADS STANDARD SPECIFICATION 703 FOR REQUIREMENTS OF CONCRETE TO BE USED IN EXTRUSION MACHINES.
4. BEDDING TO BE COMPACTED CLASS 3 F.C.R. SUPPLIED BY THE CONTRACTOR UNLESS OTHERWISE DIRECTED. (REFER SD110)
5. INCREASE OVERALL KERB PROFILE (DEPTH OF CONCRETE):
 - a) 80mm FOR COMMERCIAL PROPERTIES
 - b) 80mm WITH L8M TRENCH MESH FOR INDUSTRIAL PROPERTIES (MESH TO HAVE 40mm COVER)
6. CONCRETE TO BE SMOOTH TROWELLED FINISHED ON TRAY AND KERB.
7. CONCRETE SPONGE FINISHED ON LAYBACK.
8. CONSTRUCTION JOINTS LOCATED - 2500mm MAXIMUM SPACING - 75mm MINIMUM DEPTH
9. ELIMINATE 25mm BULLNOSE ON ALL POSITIVE FALL PEDESTRIAN CROSSINGS.
10. WIDTHS SPECIFIED IN CROSS SECTIONS ARE FACE (LINE) OF KERB MINIMUM.
11. MINIMUM CONCRETE STRENGTH TO BE 25 MPa.
12. LINE OF KERB IS USED TO DETERMINE CARRIAGEWAY WIDTHS.

ALL MEASUREMENTS IN MILLIMETRES

TYPICAL KERB PROFILES 'B' TYPE, 'SM' TYPE & 'M' TYPE

Infrastructure Design Manual Standard Drawings

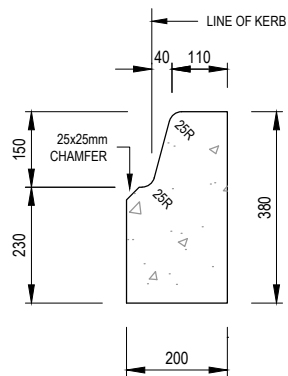


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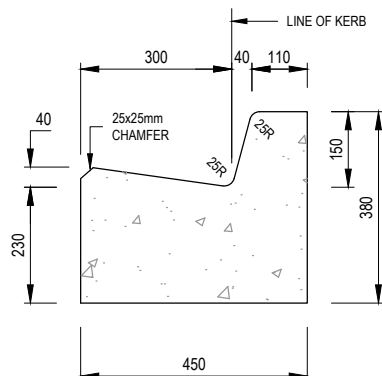
LAST UPDATED 20/03/2015

SD 100

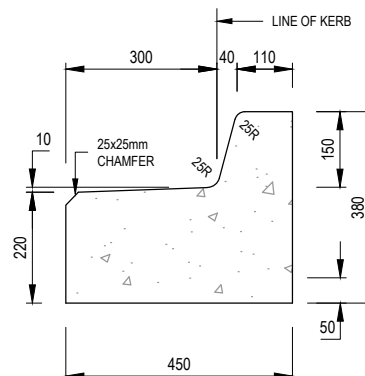
NOT TO SCALE



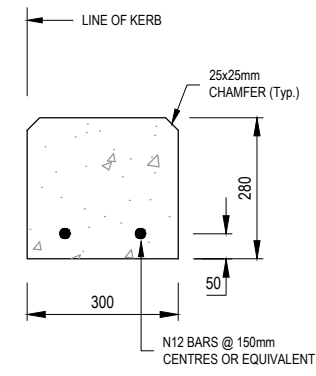
B1 (INDUSTRIAL)



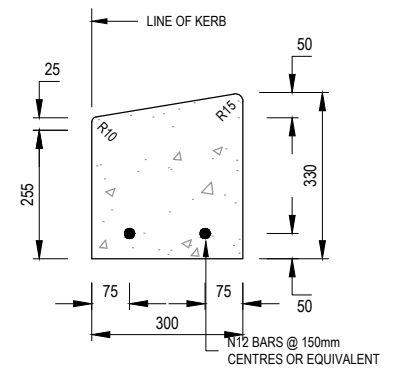
B2 (INDUSTRIAL)



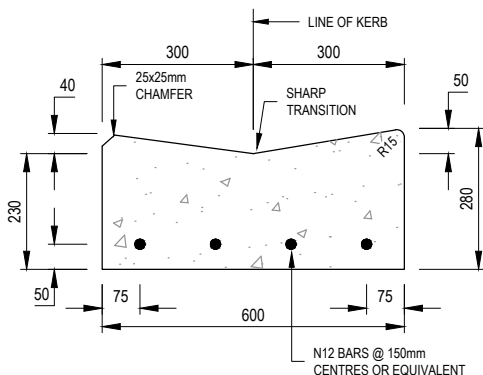
B3 (INDUSTRIAL)



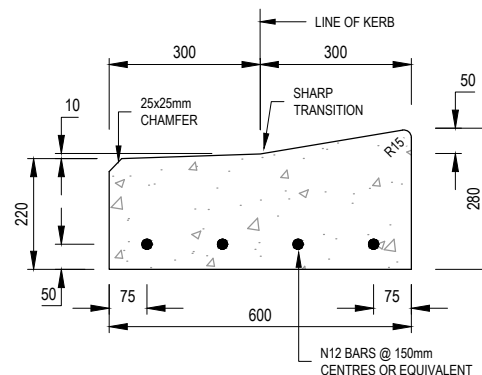
EDGE STRIP (INDUSTRIAL)



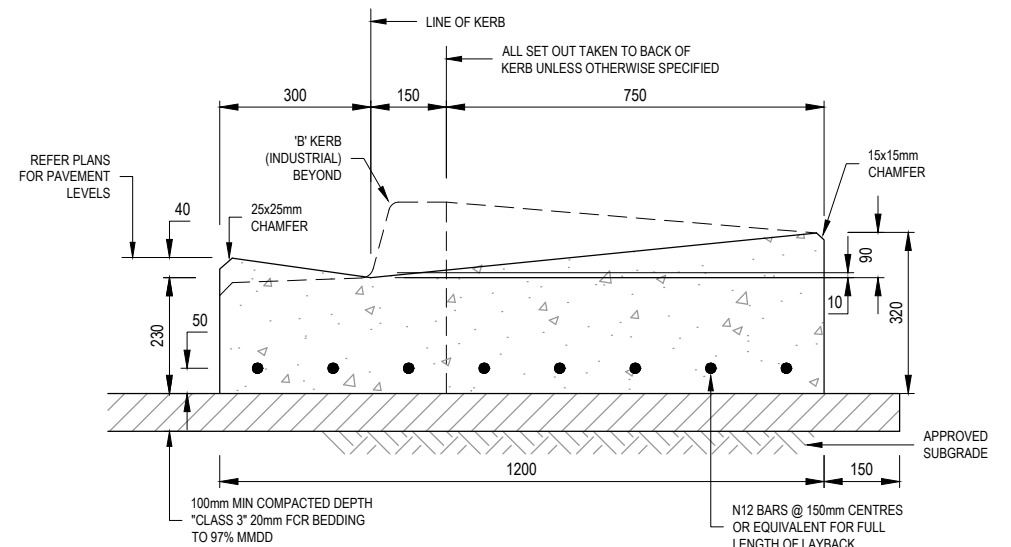
M1 (INDUSTRIAL)



M2 (INDUSTRIAL)



M3 (INDUSTRIAL)



TYPICAL INDUSTRIAL KERB LAYBACK

NOTES:

1. REFER TO AS. 2876-2000 CONCRETE KERBS AND CHANNELS FOR SPECIFIC REQUIREMENTS.
2. REFER TO AUSTRROADS GUIDE TO ROAD DESIGN PART 3: GEOMETRIC DESIGN FOR THE RECOMMENDED USE OF KERBS AND CHANNELS.
3. CONCRETE SHALL BE NORMAL CLASS N25 STANDARD STRENGTH GRADE COMPLYING WITH THE REQUIREMENTS OF AS. 1379. REFER TO VICROADS STANDARD SPECIFICATION 703 FOR REQUIREMENTS OF CONCRETE TO BE USED IN EXTRUSION MACHINES.
4. BEDDING TO BE COMPACTED CLASS 3 F.C.R. SUPPLIED BY THE CONTRACTOR UNLESS OTHERWISE DIRECTED. (REFER SD110)
5. INCREASE OVERALL KERB PROFILE (DEPTH OF CONCRETE):
 - a) 80mm FOR COMMERCIAL PROPERTIES
 - b) 80mm WITH L8TM TRENCH MESH FOR INDUSTRIAL PROPERTIES (MESH TO HAVE 40mm COVER)
6. CONCRETE TO BE SMOOTH TROWELLED FINISHED ON TRAY AND KERB.
7. CONCRETE SPONGE FINISHED ON LAYBACK.
8. CONSTRUCTION JOINTS LOCATED - 2500mm MAXIMUM SPACING - 75mm MINIMUM DEPTH
9. ELIMINATE 25mm BULLNOSE ON ALL POSITIVE FALL PEDESTRIAN CROSSINGS.
10. WIDTHS SPECIFIED IN CROSS SECTIONS ARE FACE (LINE) OF KERB MINIMUM.
11. MINIMUM CONCRETE STRENGTH TO BE 25 MPa.
12. LINE OF KERB IS USED TO DETERMINE CARRIAGEWAY WIDTHS.

ALL MEASUREMENTS IN MILLIMETRES

TYPICAL INDUSTRIAL KERB PROFILES 'B' TYPE & 'M' TYPE

Infrastructure Design Manual Standard Drawings

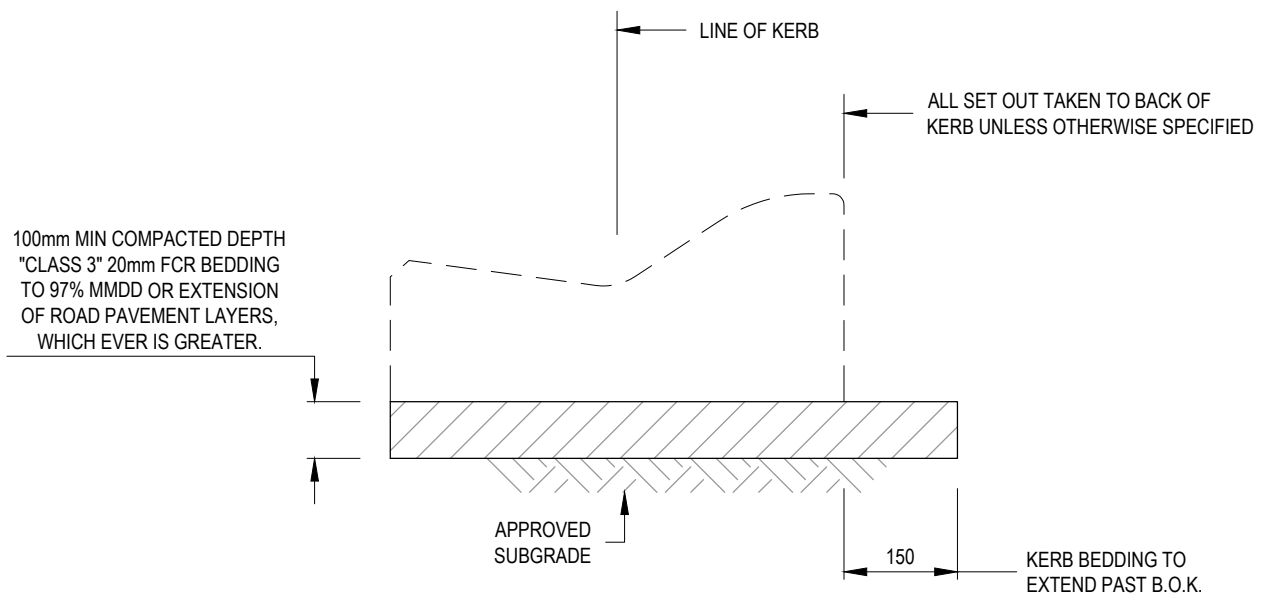
IDM Local Government
Infrastructure Design Association

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LAST UPDATED 29/03/2016

SD 105

NOT TO SCALE



TYPICAL KERB BEDDING

NOTES:

1. BEDDING TO BE COMPACTED CLASS 3 F.C.R. SUPPLIED BY THE CONTRACTOR UNLESS OTHERWISE DIRECTED

ALL MEASUREMENTS IN MILLIMETRES

TYPICAL KERB BEDDING DETAIL

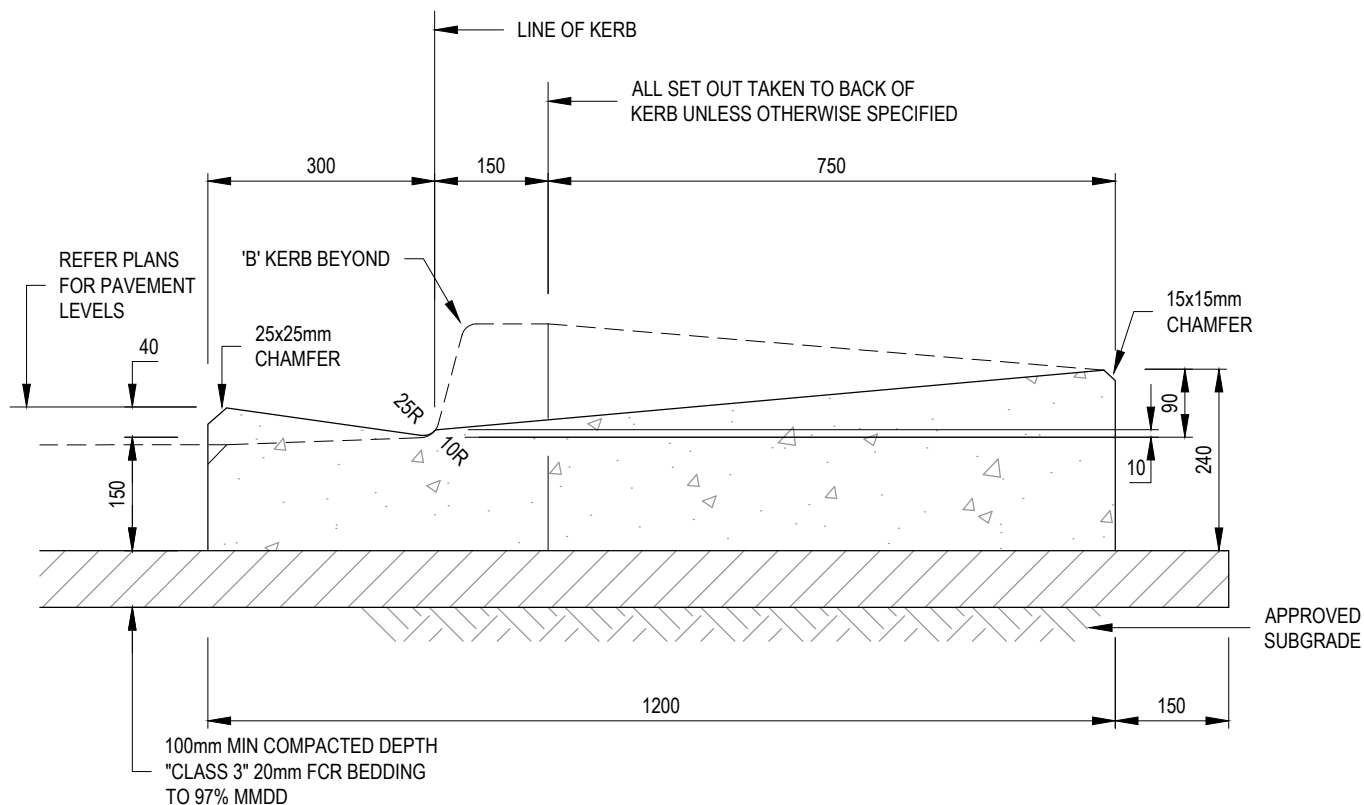
LAST UPDATED 20/03/2015

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SD 110

SCALE 1:10



TYPICAL SECTION

NOTES:

1. REFER TO AS. 2876-2000 CONCRETE KERBS AND CHANNELS FOR SPECIFIC REQUIREMENTS
2. BEDDING TO BE COMPACTED CLASS 3 F.C.R. SUPPLIED BY THE CONTRACTOR UNLESS OTHERWISE DIRECTED
3. INCREASE DEPTH OF CONCRETE
 - a) 80mm FOR COMMERCIAL PROPERTIES
 - b) 80mm WITH SL72 MESH FOR INDUSTRIAL PROPERTIES (MESH TO HAVE 40mm COVER)
4. CONCRETE TO BE SMOOTH TROWELLED FINISHED ON TRAY AND KERB
5. CONCRETE SPONGE FINISHED ON LAYBACK
6. CONSTRUCTION JOINTS LOCATED - 2500mm MAXIMUM SPACING
- 75mm MINIMUM DEPTH
7. ELIMINATE 25mm BULLNOSE ON ALL POSITIVE FALL PEDESTRIAN CROSSINGS
8. WIDTHS SPECIFIED IN CROSS SECTIONS ARE FACE (LINE) OF KERB.
9. FOR TYPICAL INDUSTRIAL KERB LAYBACK SEE DRAWING SD105.

ALL MEASUREMENTS IN MILLIMETRES

LAYBACK FOR 'B2' & 'B3' KERBING

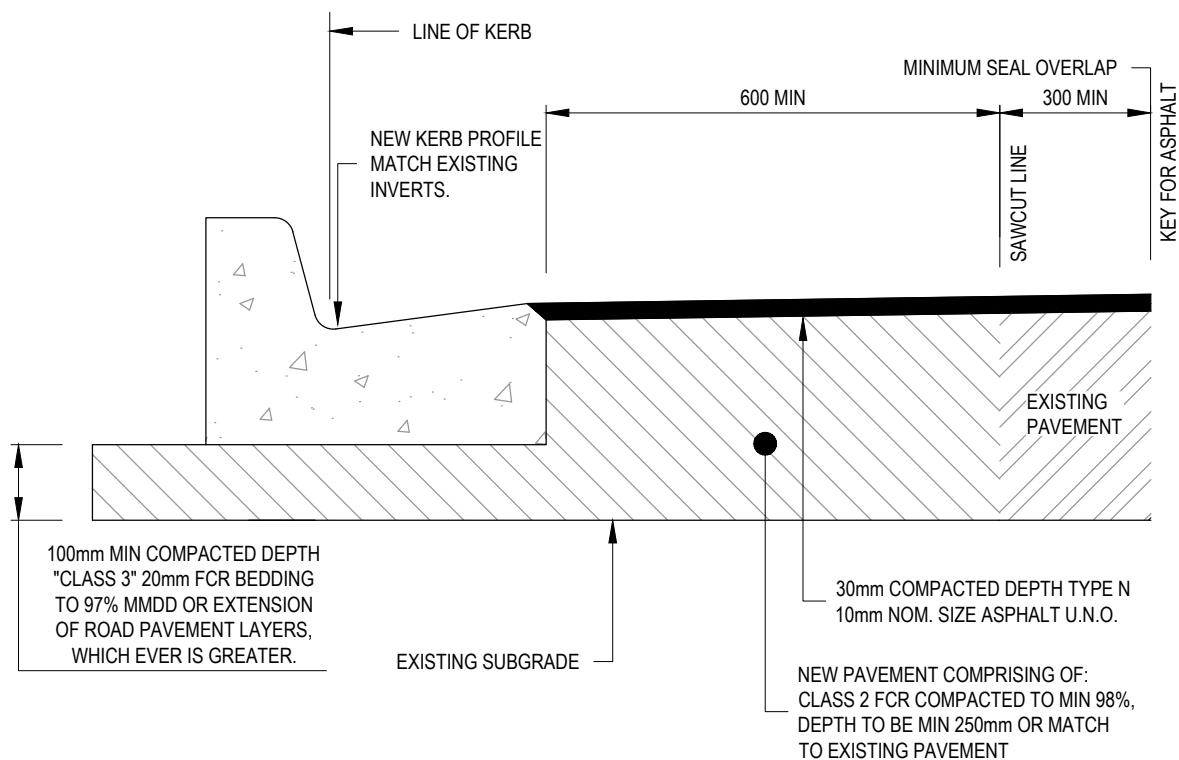
LAST UPDATED 29/03/2016

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SD 120

SCALE 1:10



TYPICAL SECTION

NOTES:

1. REFER TO CONCRETE AS. 2876-2000 CONCRETE KERBS AND CHANNELS
2. BEDDING TO BE COMPACTED CLASS 3 F.C.R. SUPPLIED BY THE CONTRACTOR UNLESS OTHERWISE DIRECTED
3. CONCRETE TO BE SMOOTH TROWELLED FINISHED ON TRAY AND KERB
4. CONSTRUCTION JOINTS LOCATED - 2500mm MAXIMUM SPACING
- 75mm MINIMUM DEPTH
5. ELIMINATE 25mm BULLNOSE ON ALL POSITIVE FALL PEDESTRIAN CROSSINGS
6. WIDTHS SPECIFIED IN CROSS SECTIONS ARE FACE (LINE) OF KERB.

ALL MEASUREMENTS IN MILLIMETRES

KERB & CHANNEL INSTALLATION ABUTTING EXISTING PAVEMENT

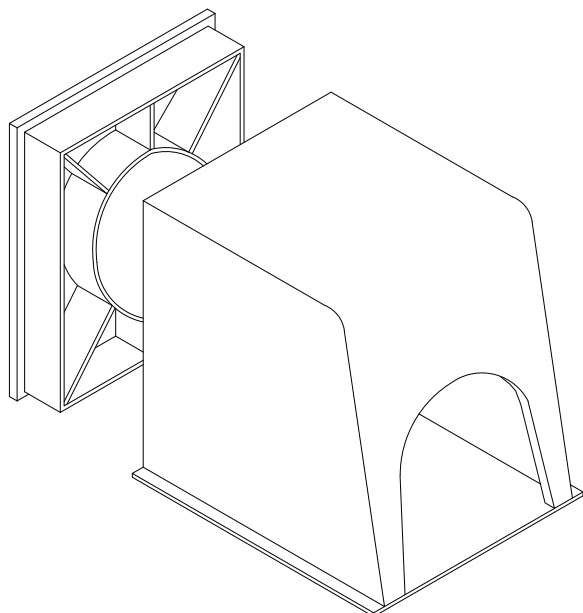
LAST UPDATED 29/03/2016

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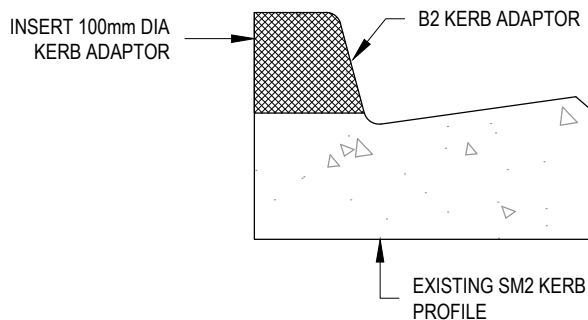
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SD 130

SCALE 1:10



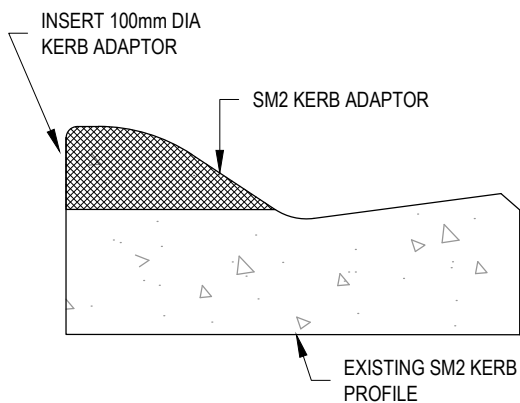
B2 KERB ADAPTOR



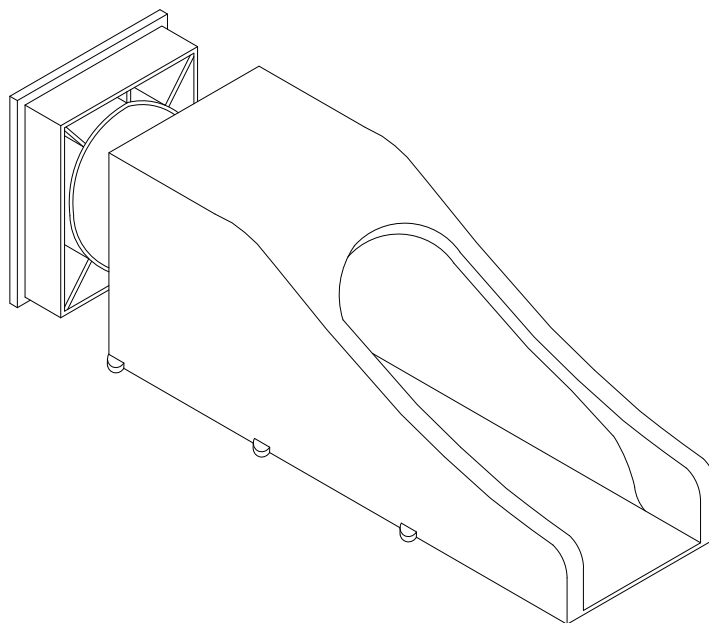
B2 KERB WITH HEAVY
DUTY KERB ADAPTOR
SECTIONAL VIEW

NOTES:

ALL KERB ADAPTORS ARE TO BE AN APPROVED PROPRIETARY PRODUCT CONSTRUCTED FROM EITHER HEAVY DUTY UPVC OR HOT DIPPED GALVANIZED MILD STEEL. KERB IS TO BE NEATLY SAW CUT & KERB ADAPTOR EPOXIED INTO POSITION. B2 KERB ADAPTOR NOW AVAILABLE IN GAL. STEEL



SM2 KERB WITH HEAVY
DUTY KERB ADAPTOR
SECTIONAL VIEW



SM2 KERB ADAPTOR

ALL MEASUREMENTS IN MILLIMETRES

HEAVY DUTY KERB ADAPTORS FOR 'B2' AND 'SM2' KERBS

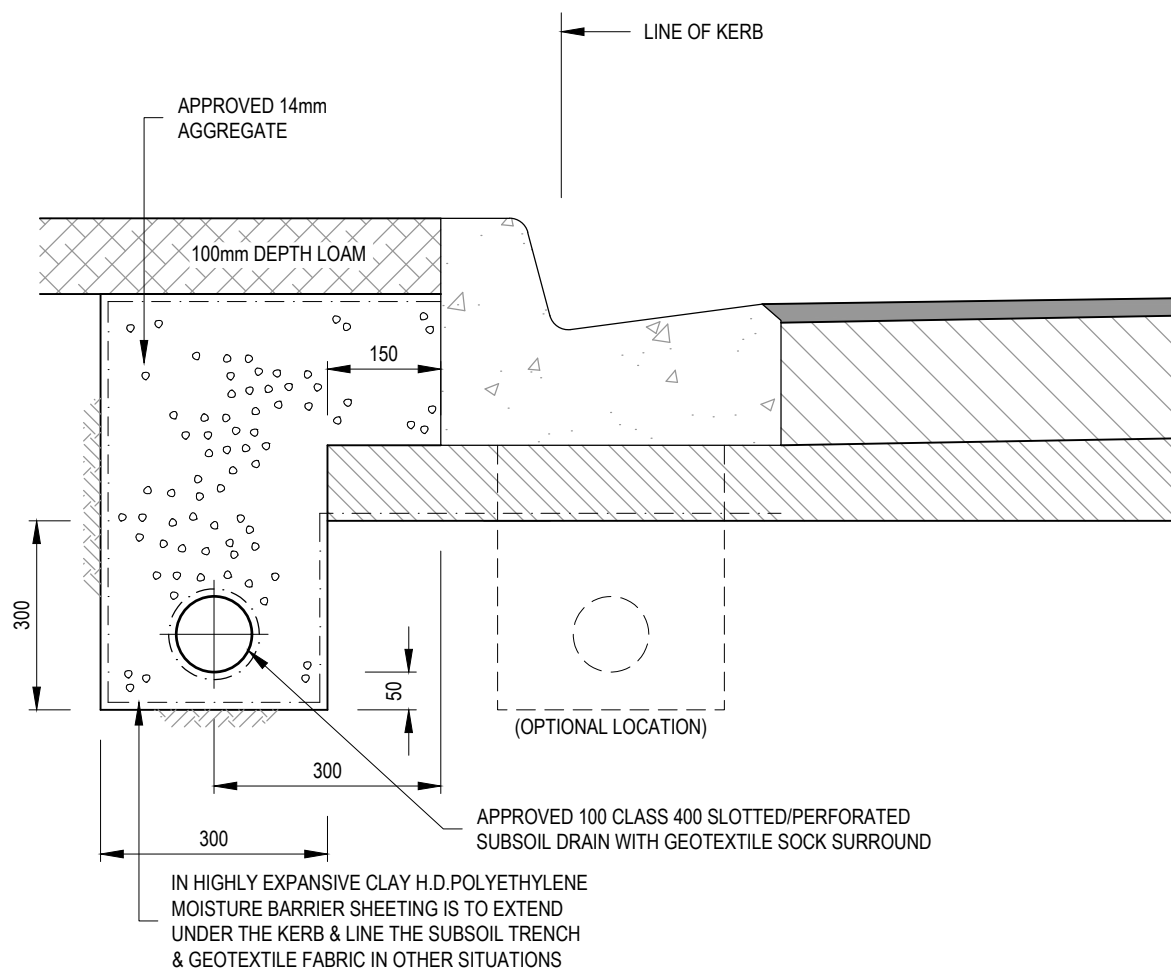
LAST UPDATED 20/03/2015

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SD 140

SCALE 1:10



TYPICAL SECTION

NOTES:

1. THE DRAINS SHALL BE LAID ON A GRADE PARALLEL TO THE FINISHED SURFACE.
2. FOR FLUSHOUT RISER DETAILS REFER TO STANDARD DRAWINGS SD530 & SD535.
3. WHERE THE SUBGRADE IS CLASSIFIED AS BEING EXPANSIVE, SUBSURFACE PAVEMENT DRAINS SHALL BE DESIGNED TO BE CONTAINED WHOLLY WITHIN THE CAPPING LAYER. IN ADDITION, NO PART OF THE SUBSURFACE DRAINAGE TRENCH SHALL BE LOCATED WITHIN 150 MM OF THE UNDERLYING SUBGRADE. IF NECESSARY, THE CAPPING LAYER MAY HAVE TO BE THICKENED TO SATISFY THIS REQUIREMENT.

ALL MEASUREMENTS IN MILLIMETRES

SUBSOIL DRAINAGE

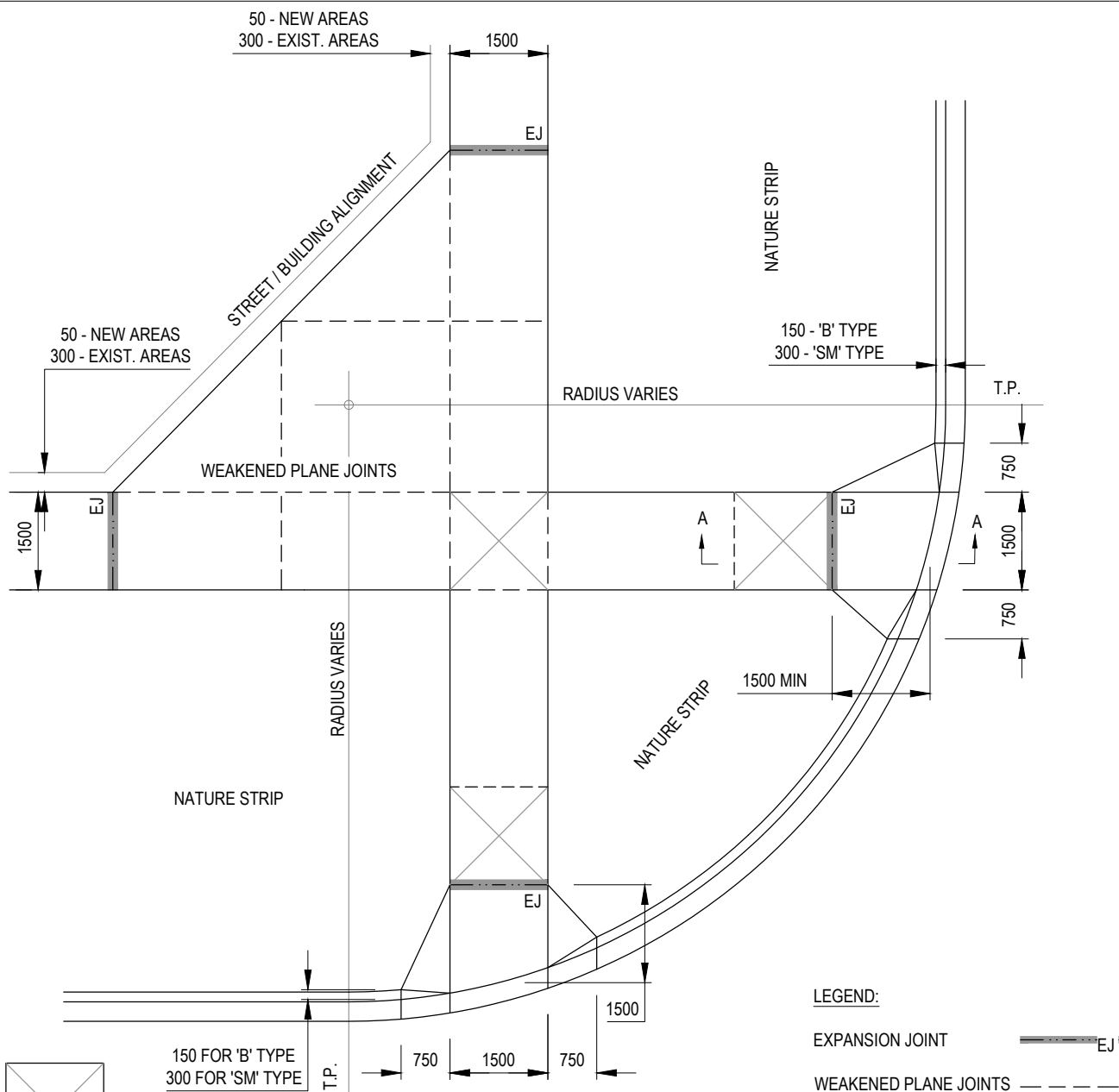
LAST UPDATED 20/03/2015

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SD 145

NOT TO SCALE



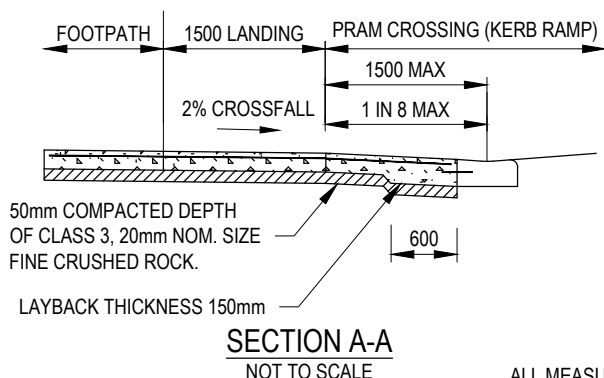
TYPICAL ARRANGEMENT PLAN

NOTE:

LANDING ZONE TO BE A MIN.
1.5m IN THE DIRECTION OF
TRAVEL AT 2% MAX GRADE.

NOTES:

1. LOCATION OF CROSSINGS TO BE CASE BY CASE & TO BE APPROVED BY COUNCIL.
2. CROSSING GENERALLY TO BE LOCATED AT TANGENT POINTS.
3. CONCRETE TO BE SMOOTH TROWELLED FINISH ON TRAY.
4. CONCRETE TO BE FINE SOFT HAIR BROOM FINISH ON LAYBACK.
5. MINIMUM CONCRETE STRENGTH TO BE 25 MPA.
6. BEDDING TO BE COMPACTED CLASS 3 (OR BETTER) F.C.R. SUPPLIED BY THE CONTRACTOR UNLESS OTHERWISE DIRECTED
7. IF SPLAY IS NOT REQUIRED FOOTPATH IS TO CONTINUE THROUGH TO LAYBACKS.
8. TGI'S (TILES), WHERE REQUIRED, ARE TO BE TO BE INSTALLED TO AS1428.4
9. WHERE ANY NEW CONCRETE ABUTS EXISTING CONCRETE INSTALL R16Ø DOWELS IN 125mm THICK CONCRETE OR R10Ø DOWELS IN 75mm THICK CONCRETE DOWELS @ MAX 600 CTS
10. REFER SD 205, SD270 FOR FURTHER FOOTPATH DETAILS



ALL MEASUREMENTS IN MILLIMETRES

PEDESTRIAN CROSSING

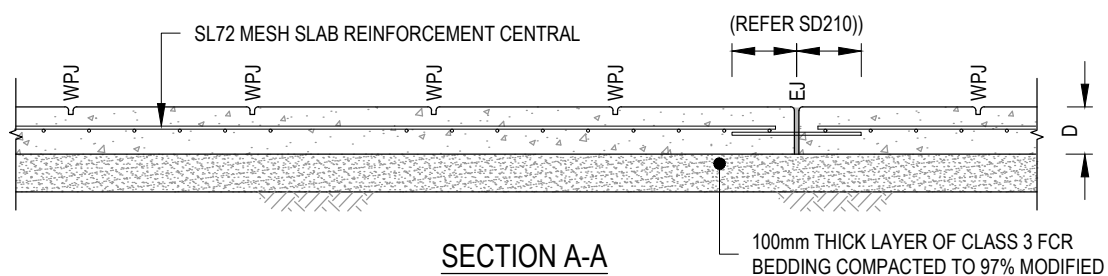
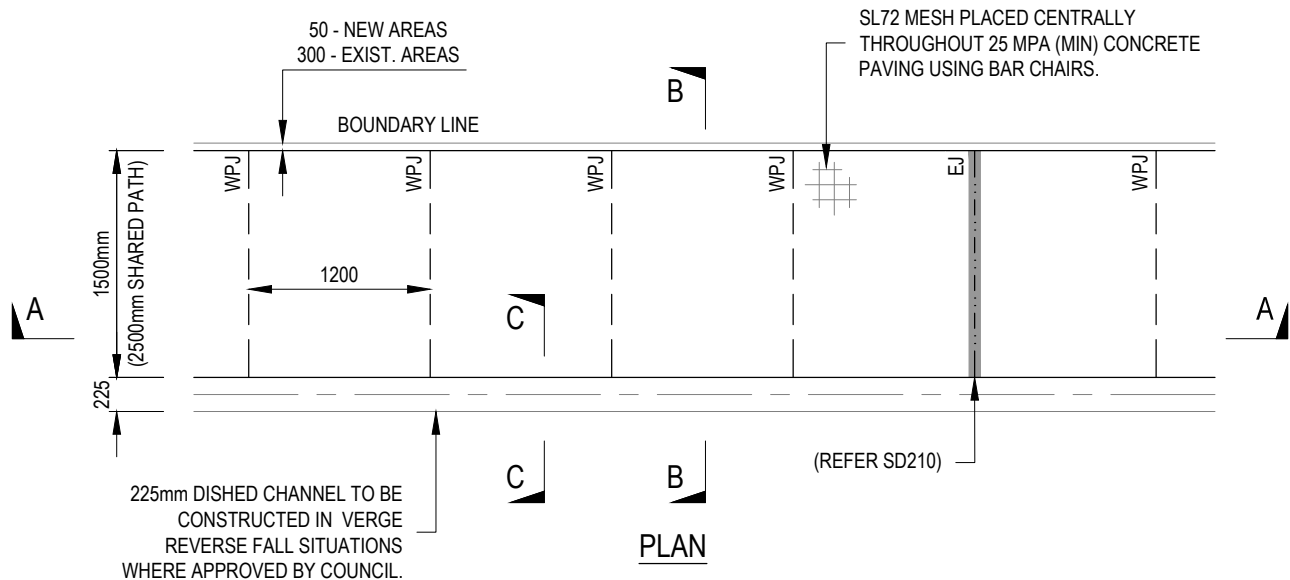
LAST UPDATED 20/02/2019

Infrastructure Design Manual Standard Drawings

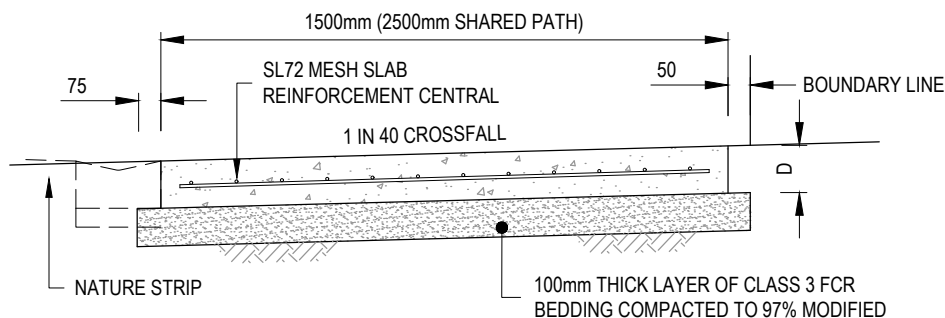
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SD 200

SCALE 1:10



TYPICAL 125mm & 150mm FOOTPATH SECTION



TYPICAL 125mm & 150mm FOOTPATH SECTION

LEGEND:

EXPANSION JOINT
(REFER SD210)

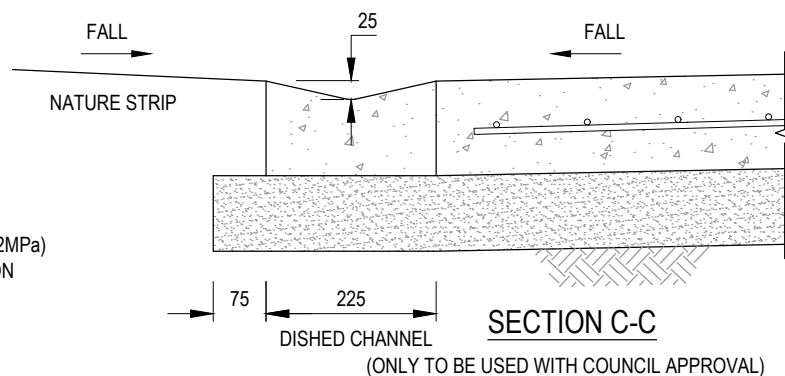
WEAKENED PLANE JOINTS
@ 1200mm CRS.



WPJ

NOTES:

1. 'D' = DEPTH OF CONCRETE FOOTPATH
TYPICAL RESIDENTIAL 'D' = 125mm THICK (25 MPa)
TYPICAL INDUSTRIAL / COMMERCIAL 'D' = 150mm (32MPa)
2. WEAKENED PLANE JOINTS TO BE MADE WITH T-IRON (OR CONCRETE SAW WITHIN 24 Hrs OF POUR).
3. REFER TO IDM CLAUSE 13.3 FOR ADDITIONAL REQUIREMENTS



ALL MEASUREMENTS IN MILLIMETRES

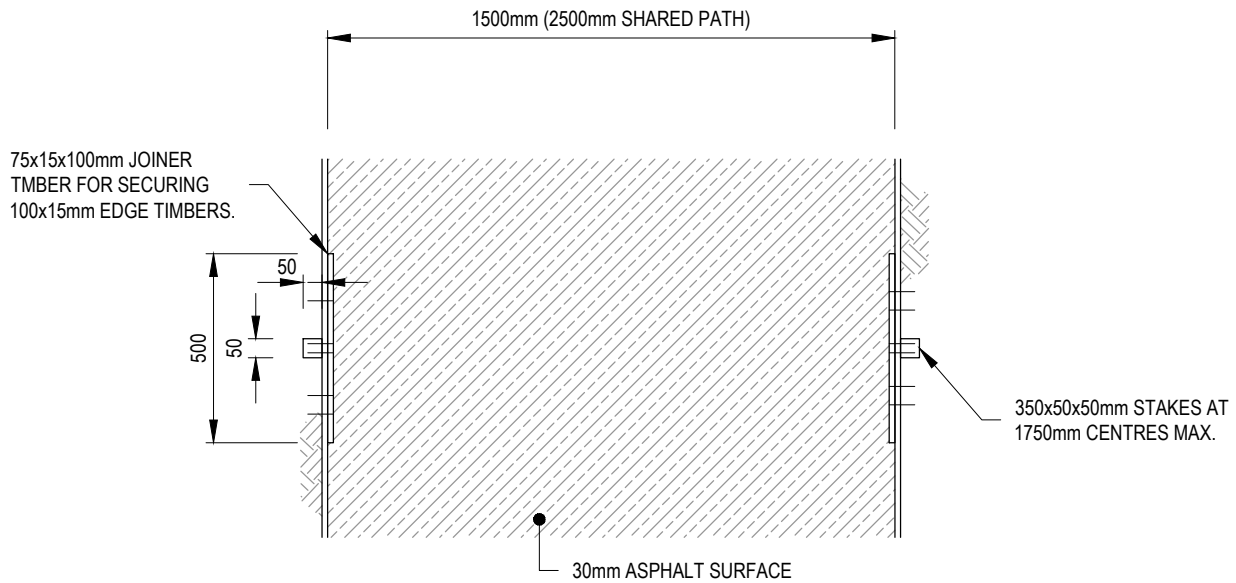
TYPICAL FOOTPATH DETAIL

LAST UPDATED 06/02/2019

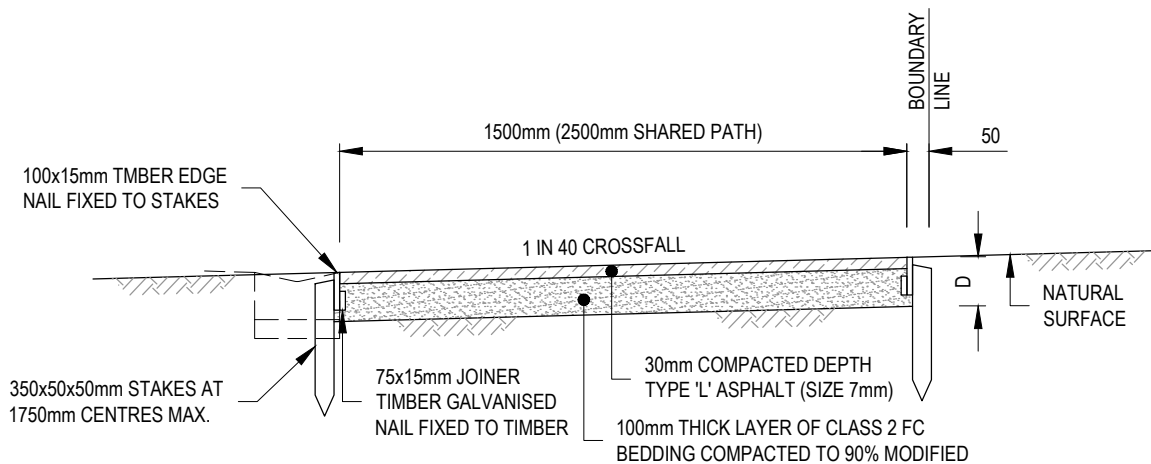
Infrastructure Design Manual Standard Drawings

SD 205

NOT TO SCALE



TYPICAL 130mm ASPHALT PATH WITH TIMBER EDGE PLAN



TYPICAL 130mm ASPHALT PATH WITH TIMBER EDGE SECTION

NOTES:

1. 'D' = DEPTH OF ASPHALT FOOTPATH
TYPICAL ASPHALT FOOTPATH DEPTH 'D' = 130mm
VARIED 'D' MAY OCCUR DEPENDANT ON CBE TYPE

ALL MEASUREMENTS IN MILLIMETRES

**TYPICAL HOT MIX
ASPHALT FOOTPATH**

LAST UPDATED 20/02/2019

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SD 206

NOT TO SCALE

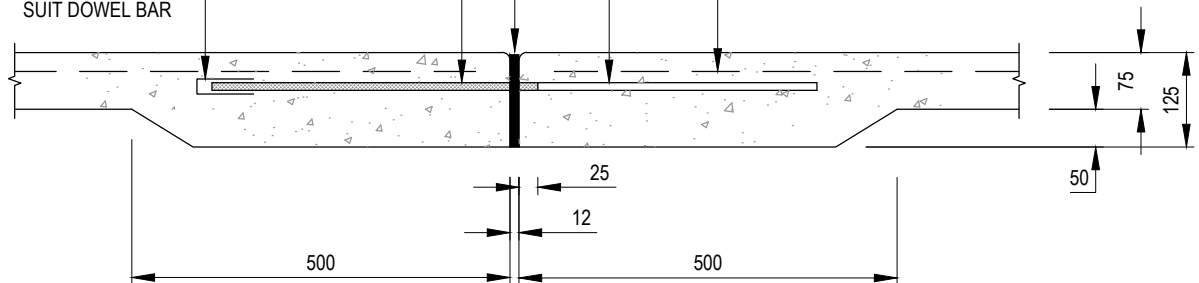
APPROVED 12mm WIDE BITUMINOUS JOINTING STRIP OR
APPROVED PROPRIETARY EXPANSION JOINT FOR FULL WIDTH
& DEPTH OF PATH BETWEEN POURS. MAX SPACING 15m

APPROVED BOND BREAKING AGENT APPLIED
TO DOWEL EXTEND 25mm BEYOND JOINT

PVC SLIP CAP TO
SUIT DOWEL BAR

R16 x 800mm LONG DOWEL
BAR AT 300 CTS MAX

SL72 MESH SLAB REINFORCEMENT



75mm FOOTPATH EXPANSION JOINT - SECTION
(EXISTING DEVELOPED AREAS ONLY)

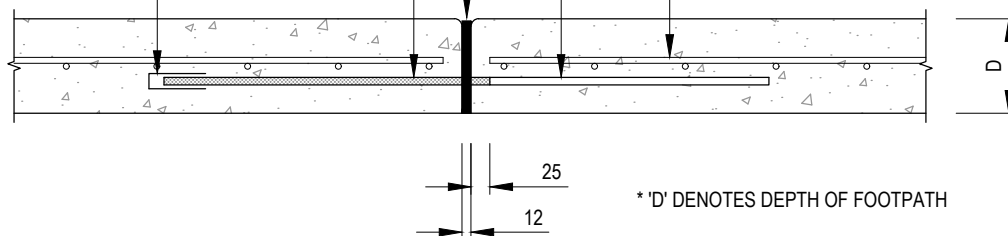
APPROVED 12mm WIDE BITUMINOUS JOINTING STRIP OR
APPROVED PROPRIETARY EXPANSION JOINT FOR FULL WIDTH
& DEPTH OF PATH BETWEEN POURS. MAX SPACING 15m

APPROVED BOND BREAKING AGENT APPLIED
TO DOWEL EXTEND 25mm BEYOND JOINT

PVC SLIP CAP TO
SUIT DOWEL BAR

R16 for 125mm, R20 for 150mm x 800mm
LONG DOWEL BAR AT 300 CTS MAX

SL72 MESH SLAB REINFORCEMENT



* 'D' DENOTES DEPTH OF FOOTPATH

125mm & 150mm FOOTPATH EXPANSION JOINT - SECTION

NOTES:

1. 'D' = DEPTH OF CONCRETE FOOTPATH
TYPICAL RESIDENTIAL 'D' = 125mm THICK (25 MPa)
TYPICAL INDUSTRIAL / COMMERCIAL 'D' = 150mm (32MPa)
2. APPROVED PROPRIETARY JOINTS CAN BE USED WITH COUNCIL
APPROVAL.

ALL MEASUREMENTS IN MILLIMETRES

TYPICAL FOOTPATH JOINTS

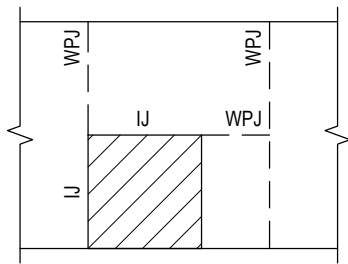
LAST UPDATED 06/02/2019

Infrastructure Design Manual Standard Drawings

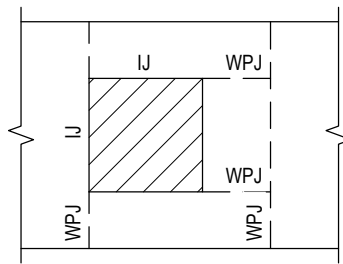
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SD 210

NOT TO SCALE



PIT / ACCESS HOLE AT EDGE (PLAN)

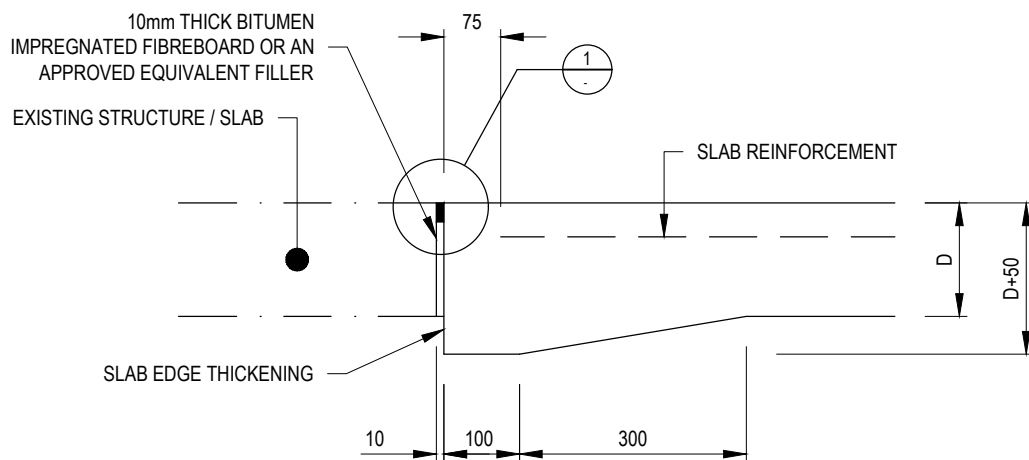


PIT / ACCESS HOLE NOT AT EDGE (PLAN)

LEGEND:

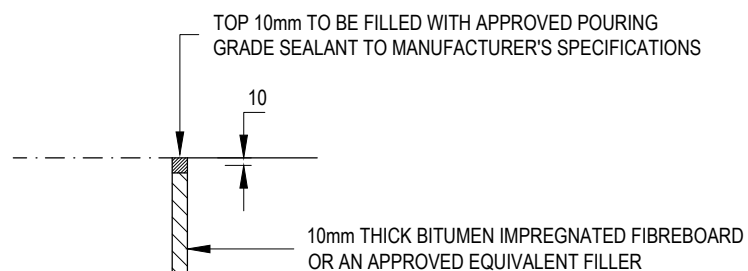
ISOLATION JOINT ——— IJ

TOOLED JOINTS — — — WPJ



TYPICAL SECTION

SCALE 1:10



DETAIL
SCALE 1:5

* 'D' DENOTES DEPTH OF PAVEMENT

ALL MEASUREMENTS IN MILLIMETRES

REINFORCED CONCRETE PAVEMENT ISOLATION JOINT

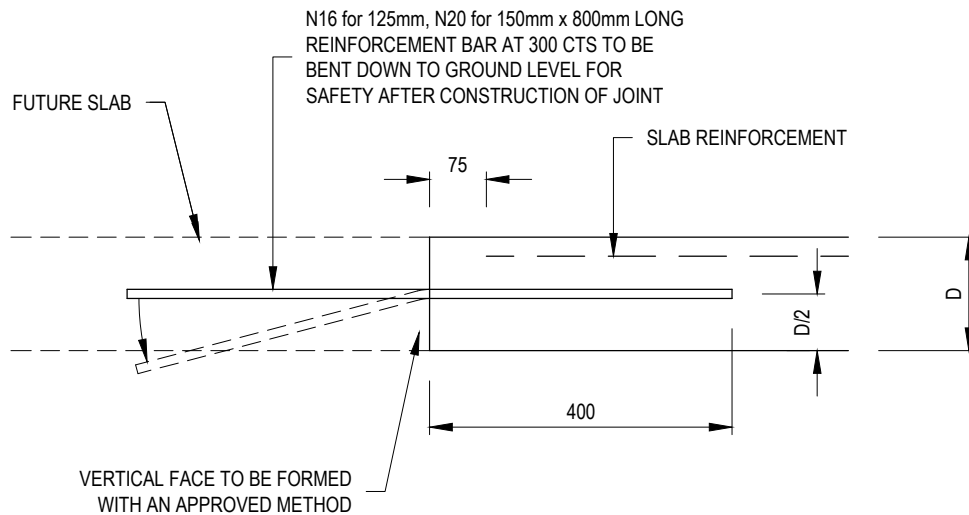
LAST UPDATED 06/02/2019

Infrastructure Design Manual Standard Drawings

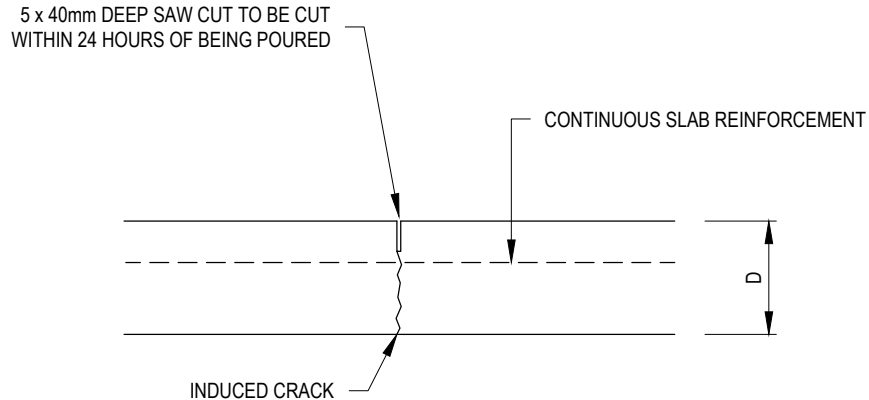
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SD 220

SCALE 1:10



TYPICAL FUTURE CONSTRUCTION JOINT



TYPICAL SAWN WEAKENED PLANE JOINT

* 'D' DENOTES DEPTH OF FOOTPATH

ALL MEASUREMENTS IN MILLIMETRES

REINFORCED CONCRETE PAVEMENT TYPICAL JOINT DETAILS

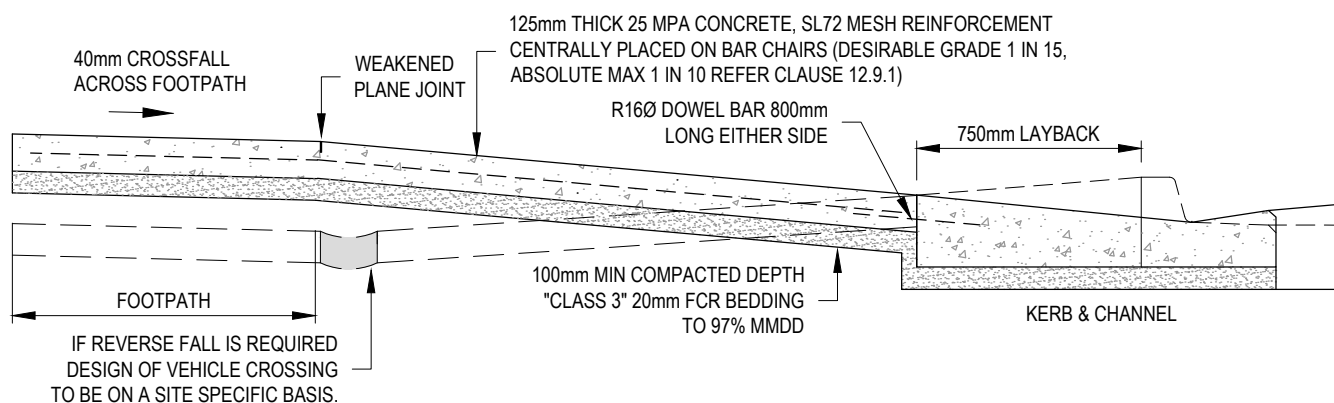
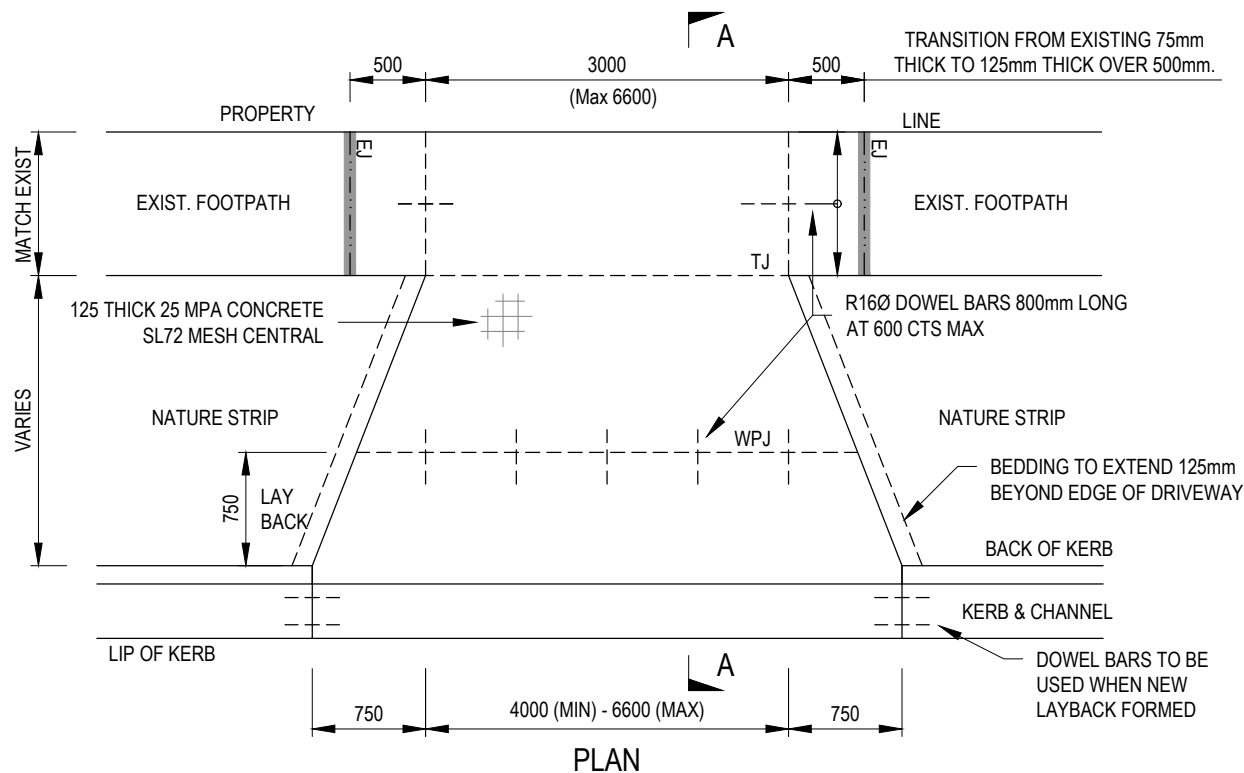
LAST UPDATED 06/02/2019

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SD 225

SCALE 1:10





CROSS SECTION A-A

NOTES:

- CROSS REFERENCES:
INDUSTRIAL CROSSINGS - SD250
RURAL CROSSINGS - SD255 / SD260
IDM - SECTION 12.9.1.
- THIS DRAWING DETAILS DIMENSIONS FOR STANDARD RESIDENTIAL CROSSINGS ONLY.
- CROSSING WIDTHS EXCEEDING THE MAXIMUM ALLOWABLE WILL REQUIRE APPLICATION FOR SPECIAL CONSIDERATION.
- JOINTS AND DOWEL BARS ARE REQUIRED ON EITHER SIDE OF THE CROSSING AT THE INTERFACE WITH THE FOOTPATH. PROVISION SHALL BE MADE IN EXISTING CONCRETE SECTIONS BY DRILLING HOLES TO A MINIMUM DEPTH OF 150mm AND INSERTING R10 DOWEL BARS.
- AN APPROVED JOINT FILLER SHALL BE PLACED ON EITHER SIDE OF THE CROSSING AGAINST FOOTPATH SLABS. DOWEL BARS ARE TO HAVE AN APPROVED BOND BREAKER APPLIED TO THE END OF THE BAR INSERTED INTO THE EXISTING CONCRETE FOOTPATH SECTIONS REFER SD220.
- ADDITIONAL WEAKENED PLANE JOINTS REQUIRED IF DISTANCE FROM BACK OF KERB TO FOOTPATH IS GREATER THAN 3000 AND SHALL BE PLACED AT THE MIDPOINT OF THE DISTANCE.
- THE MAXIMUM NUMBER OF CROSSINGS, WHERE ANY CROSSING EXCEEDS 3.5 METRES WIDTH, SHALL BE ONE (1) CROSSING WITH THE MAXIMUM WIDTH OF THAT CROSSING TO BE 6.0 METRES. CROSSINGS TO ADJACENT PROPERTIES SHALL BE EITHER FULLY COMBINED, AND OF MAXIMUM WIDTH OF 6.0 METRES, OR ELSE HAVE A MINIMUM SEPARATION AS APPROVED BY COUNCIL.
- FOOTPATHS OF 75mm THICKNESS ARE ACCEPTABLE ONLY WHERE THE LOTS ARE DEVELOPED ALREADY AND THE RISK OF SITE CONSTRUCTION DAMAGE IS NEGLIGIBLE. WHERE GREENFIELD SITES AND FUTURE HOUSING IS STILL TO BE DONE, THEN THE DEPTH OF THE FOOTPATH SHALL BE 125mm THROUGHOUT.

LEGEND:

EXPANSION JOINT  EJ
WEAKENED PLANE JOINTS  WPJ

ALL MEASUREMENTS IN MILLIMETRES

RETROFIT RESIDENTIAL VEHICLE CROSSING DETAIL

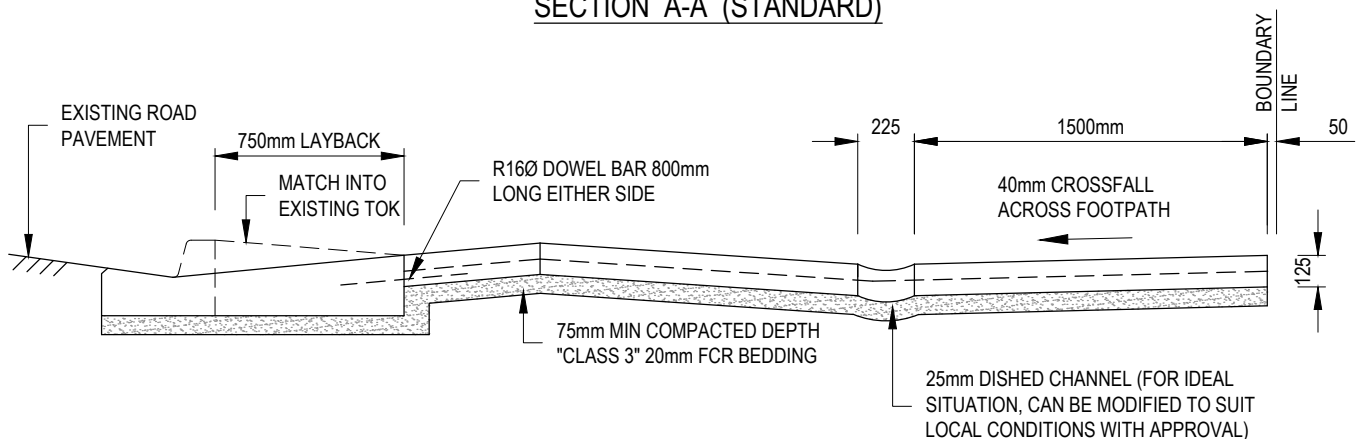
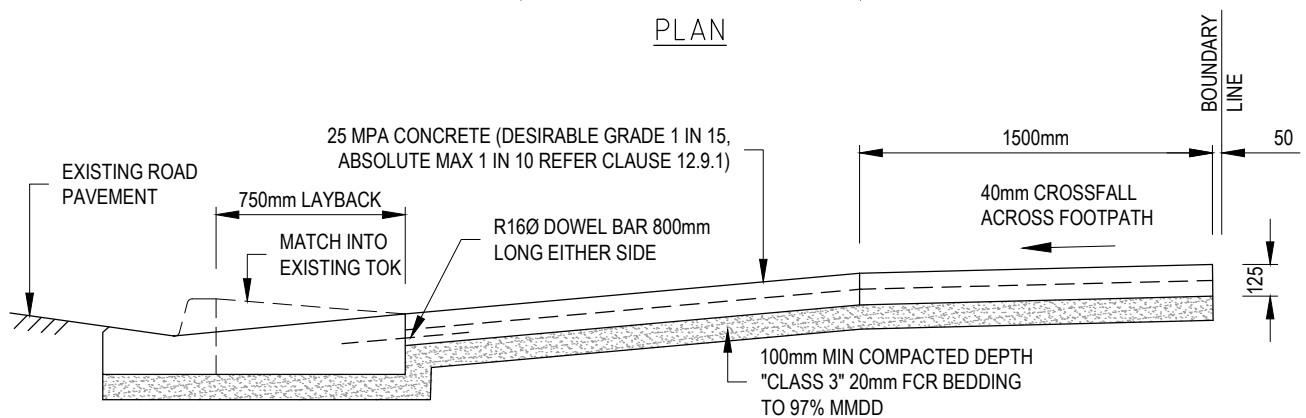
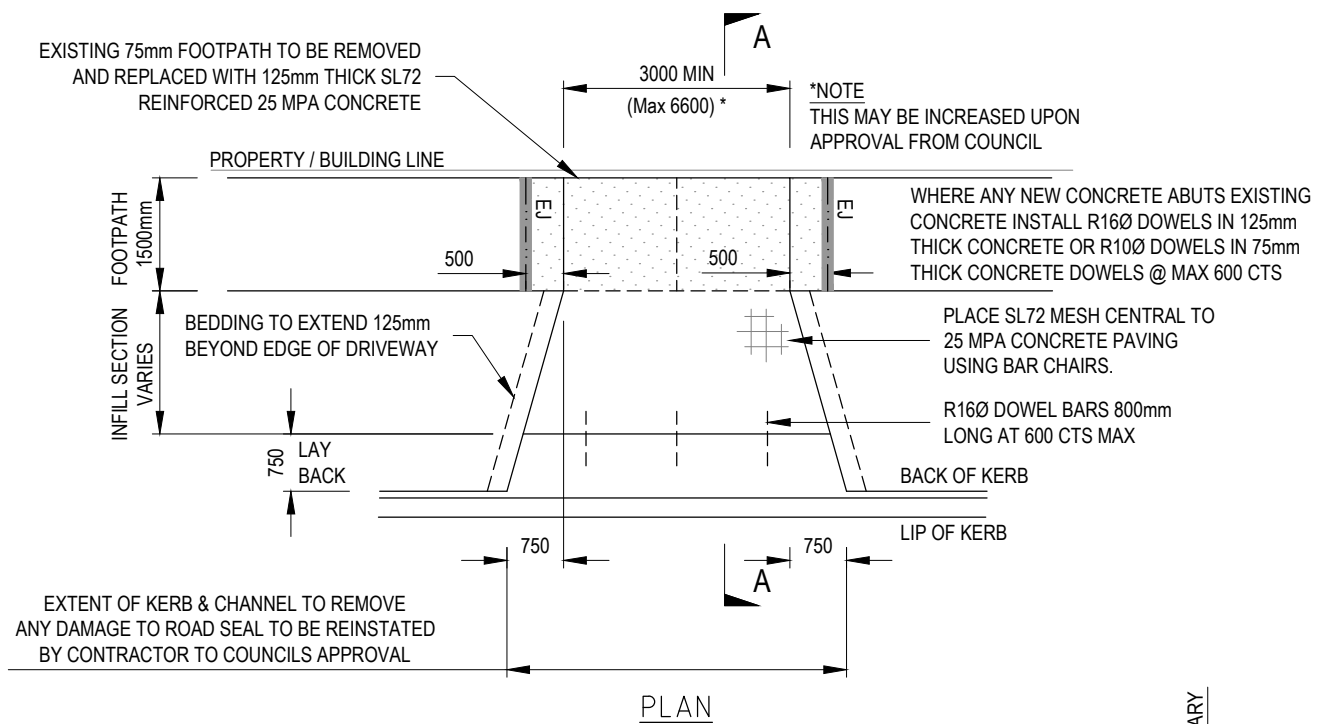
LAST UPDATED 06/02/2019

Infrastructure Design Manual Standard Drawings

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SD 235

NOT TO SCALE



NOTE:

1. FOR GRADES STEEPER THAN 1 IN 15 REFER CLAUSE 12.9.1. LAYBACK & CROSSOVER, TO BE CONSTRUCTED IN PLAIN CONCRETE ONLY (NO COLOURED CONCRETE BEYOND PROPERTY BOUNDARY)
2. T.O.K. DENOTES TOP OF KERB
3. FOR STEEP TERRAIN CONTACT THE COUNCIL FOR GUIDANCE.

ALL MEASUREMENTS IN MILLIMETRES

LEGEND:

EXPANSION JOINT

WEAKENED PLANE JOINTS



NEW RESIDENTIAL SINGLE VEHICLE CROSSING DETAIL

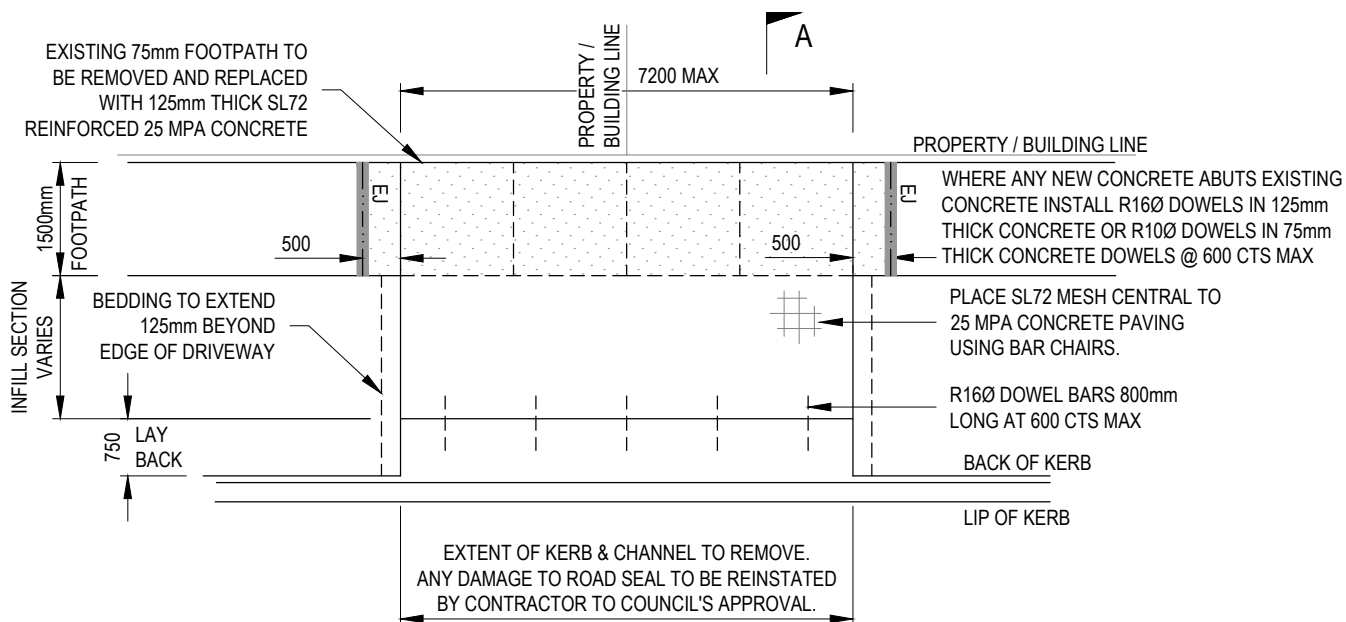
LAST UPDATED 29/03/2016

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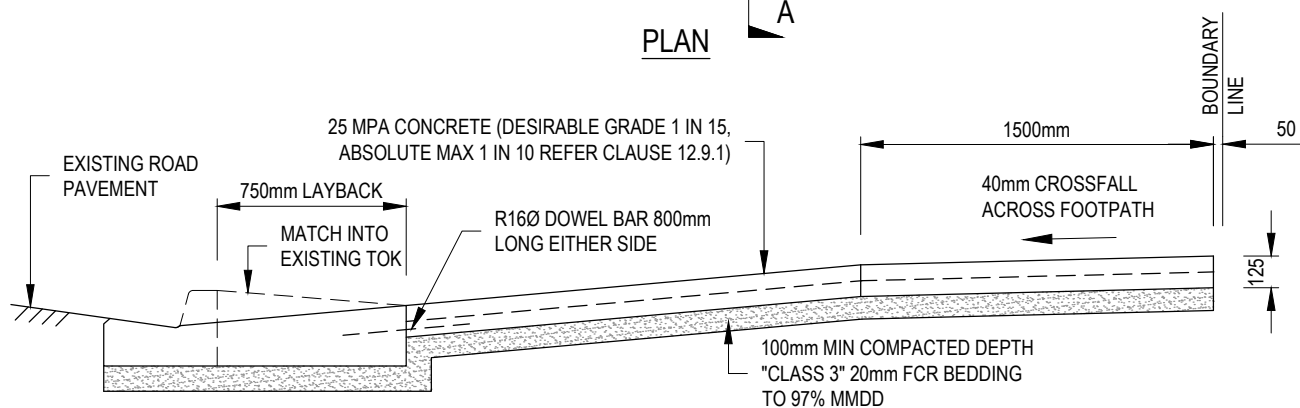
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SD 240

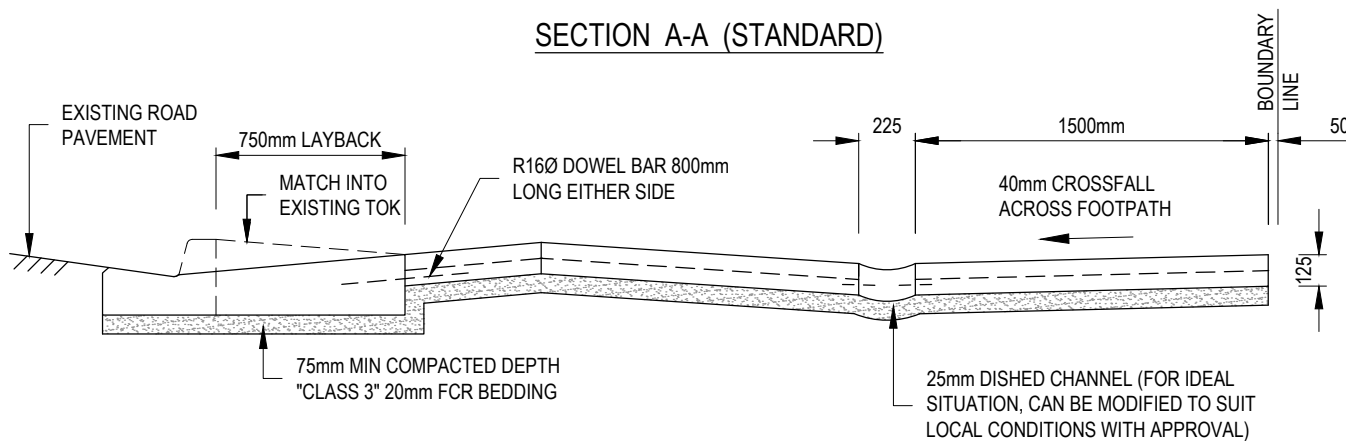
NOT TO SCALE



PLAN



SECTION A-A (STANDARD)



SECTION A-A (REVERSE FALL)
(ONLY TO BE USED WITH COUNCIL APPROVAL)

NOTE:

1. FOR GRADES STEEPER THAN 1 IN 15 REFER CLAUSE 12.9.1. LAYBACK & CROSSOVER, TO BE CONSTRUCTED IN PLAIN CONCRETE ONLY (NO COLOURED CONCRETE BEYOND PROPERTY BOUNDARY)
2. T.O.K. DENOTES TOP OF KERB
3. FOR STEEP TERRAIN CONTACT THE COUNCIL FOR GUIDANCE.

LEGEND:

EXPANSION JOINT

WEAKENED PLANE JOINTS



ALL MEASUREMENTS IN MILLIMETRES

NEW RESIDENTIAL SHARED / DOUBLE VEHICLE
CROSSING DETAILS FOR ADJACENT PROPERTIES

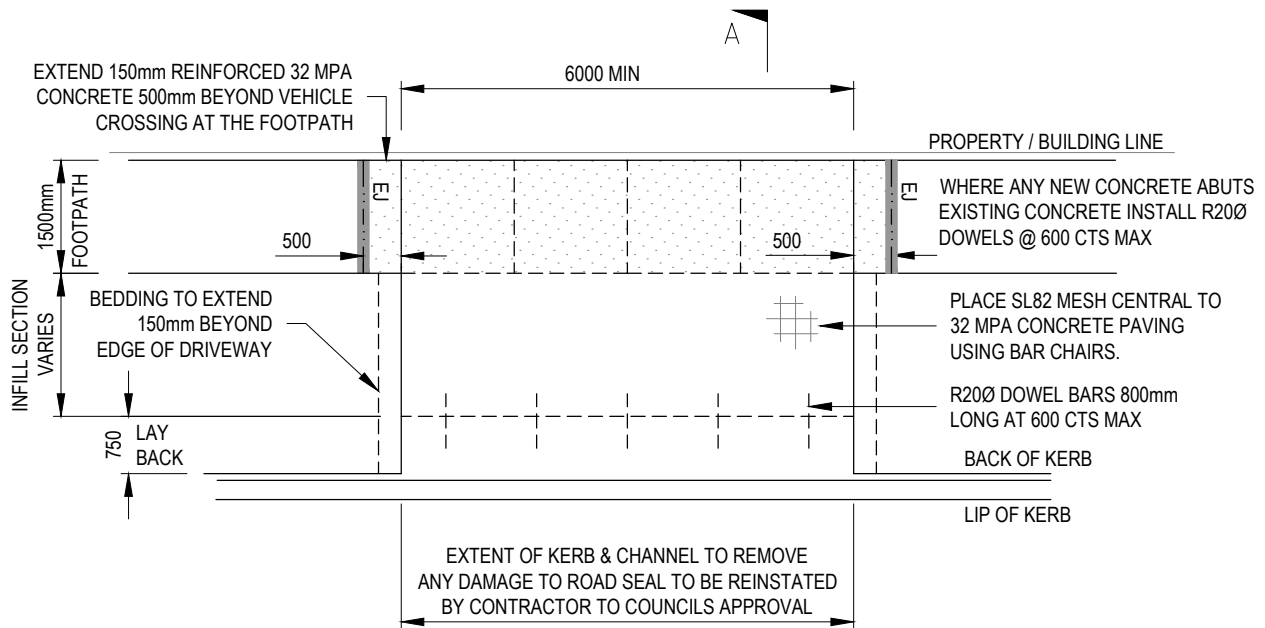
LAST UPDATED 06/02/2019

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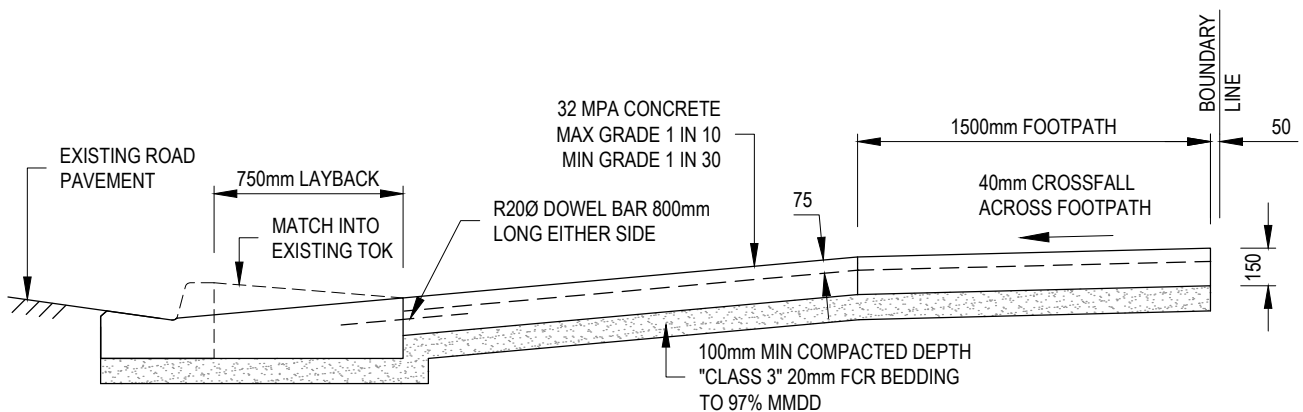
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www.designmanual.com.au

SD 245

NOT TO SCALE



PLAN



SECTION A-A

NOTE:

1. T.O.K. DENOTES TOP OF KERB
2. WHERE THERE ARE EXPANSIVE SOILS AN ADDITIONAL LAYER OF REINFORCEMENT MAY BE REQUIRED AT 60mm COVER FROM THE BOTTOM OF THE SLAB.
3. FOR STEEP TERRAIN CONTACT THE COUNCIL FOR GUIDANCE.

LEGEND:

EXPANSION JOINT

WEAKENED PLANE JOINTS



ALL MEASUREMENTS IN MILLIMETRES

NEW INDUSTRIAL VEHICLE CROSSING DETAIL

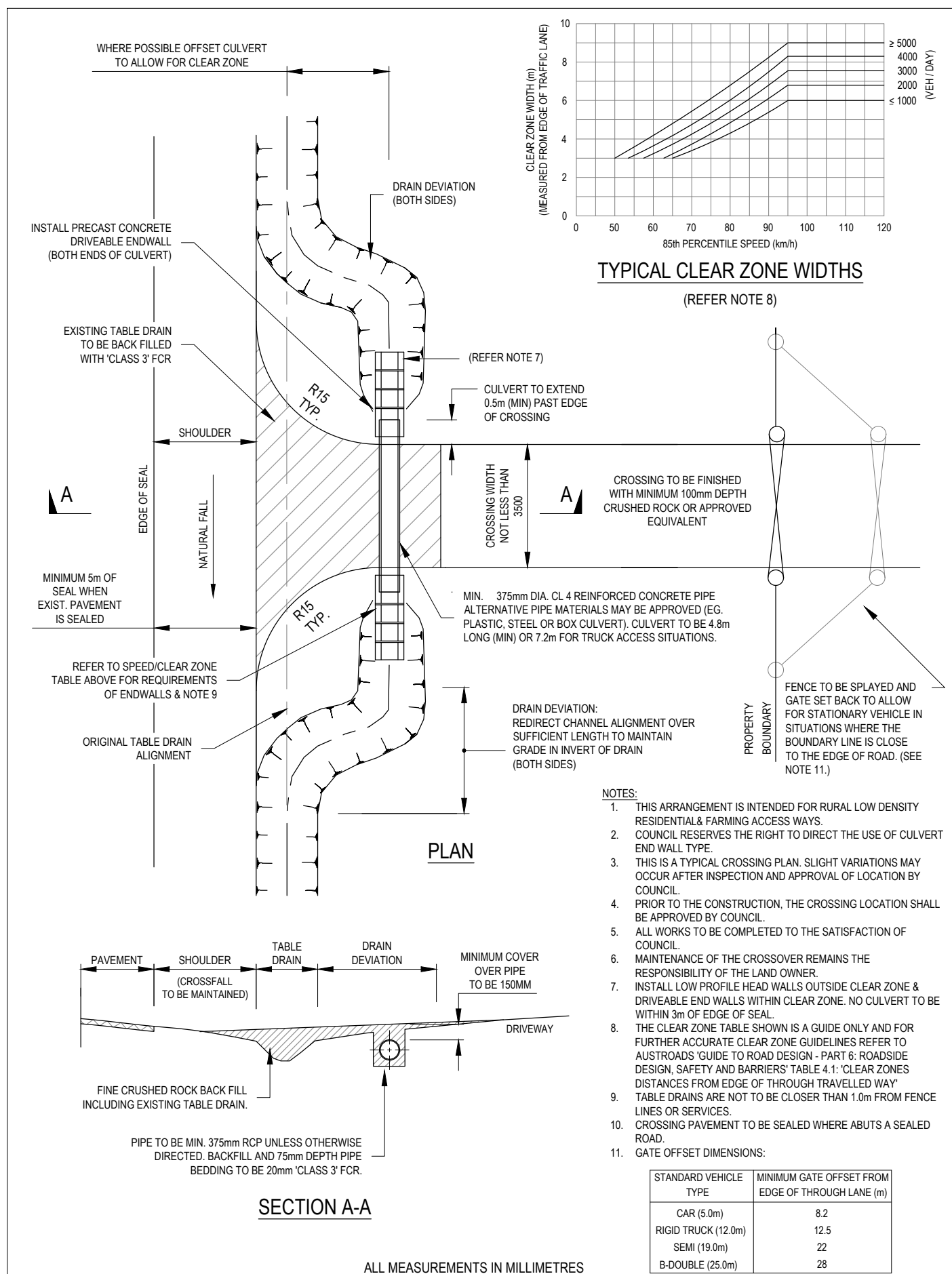
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SD 250

NOT TO SCALE



TYPICAL SWALE DRAIN VEHICLE CROSSING (RURAL ENTRANCE)

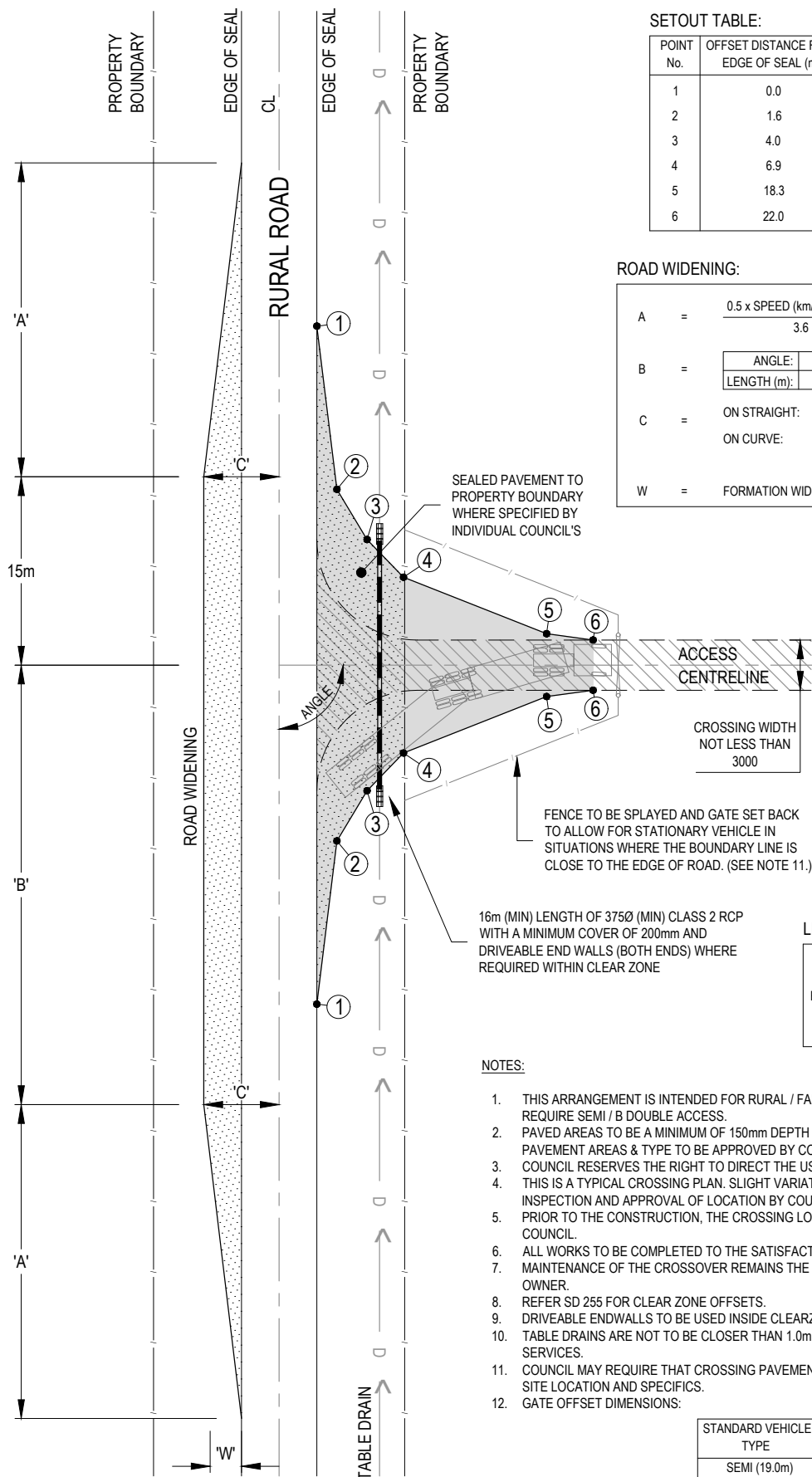
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SD 255

NOT TO SCALE



SETOUT TABLE:

POINT No.	OFFSET DISTANCE FROM EDGE OF SEAL (m)	OFFSET DISTANCE FROM ACCESS CENTRELINE (m)
1	0.0	27.0
2	1.6	14.0
3	4.0	10.0
4	6.9	7.0
5	18.3	2.5
6	22.0	2.0

ROAD WIDENING:

A	=	$\frac{0.5 \times \text{SPEED (km/h)} \times W \text{ (m)}}{3.6}$								
B	=	<table><tr><td>ANGLE:</td><td>70°</td><td>90°</td><td>110°</td></tr><tr><td>LENGTH (m):</td><td>40</td><td>35</td><td>30</td></tr></table>	ANGLE:	70°	90°	110°	LENGTH (m):	40	35	30
ANGLE:	70°	90°	110°							
LENGTH (m):	40	35	30							
C	=	ON STRAIGHT: 6.0m (MIN) ON CURVE: 2 x (3.0m + CORRESPONDING WIDENING FOR CURVE RADIUS)								
W	=	FORMATION WIDENING (IF REQUIRED BY COUNCIL)								

LEGEND:

TYPICAL EXISTING ACCESS =	
RECOMMENDED ACCESS SPLAY =	
AREA TO BE SEALED =	

NOTES:

- THIS ARRANGEMENT IS INTENDED FOR RURAL / FARMING ACCESS WAYS THAT REQUIRE SEMI / B DOUBLE ACCESS.
- PAVED AREAS TO BE A MINIMUM OF 150mm DEPTH COMPACTED GRAVEL.
- PAVEMENT AREAS & TYPE TO BE APPROVED BY COUNCIL.
- COUNCIL RESERVES THE RIGHT TO DIRECT THE USE OF CULVERT END WALL TYPE. THIS IS A TYPICAL CROSSING PLAN. SLIGHT VARIATIONS MAY OCCUR AFTER INSPECTION AND APPROVAL OF LOCATION BY COUNCIL.
- PRIOR TO THE CONSTRUCTION, THE CROSSING LOCATION SHALL BE APPROVED BY COUNCIL.
- ALL WORKS TO BE COMPLETED TO THE SATISFACTION OF COUNCIL.
- MAINTENANCE OF THE CROSSOVER REMAINS THE RESPONSIBILITY OF THE LAND OWNER.
- REFER SD 255 FOR CLEAR ZONE OFFSETS.
- DRIVEABLE ENDWALLS TO BE USED INSIDE CLEARZONE.
- TABLE DRAINS ARE NOT TO BE CLOSER THAN 1.0m FROM FENCE LINES OR SERVICES.
- COUNCIL MAY REQUIRE THAT CROSSING PAVEMENT BE SEALED DEPENDING ON SITE LOCATION AND SPECIFICS.
- GATE OFFSET DIMENSIONS:

STANDARD VEHICLE TYPE	MINIMUM GATE OFFSET FROM EDGE OF THROUGH LANE (m)
SEMI (19.0m)	22
B-DOUBLE (25.0m)	28

ALL MEASUREMENTS IN MILLIMETRES

TYPICAL B DOUBLE VEHICLE CROSSING (RURAL ENTRANCE)

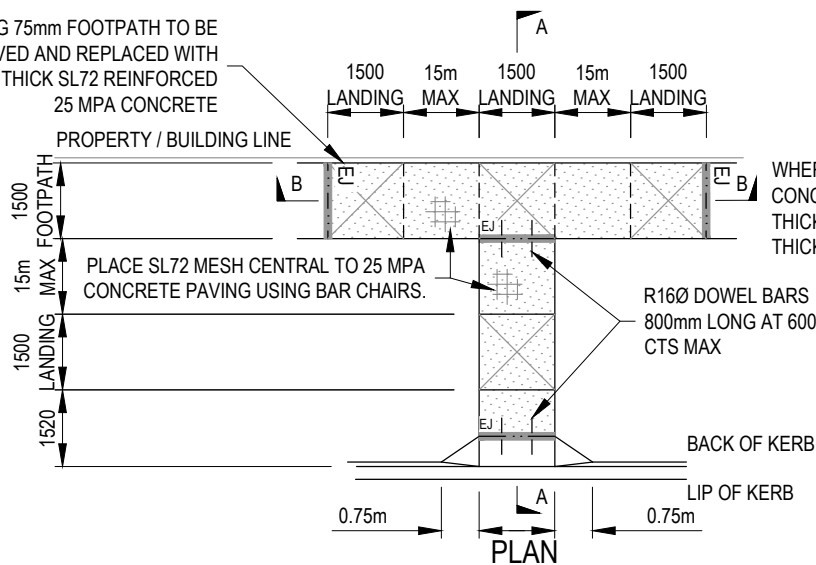
LAST UPDATED 20/03/2015

Infrastructure Design Manual Standard Drawings

SD 265

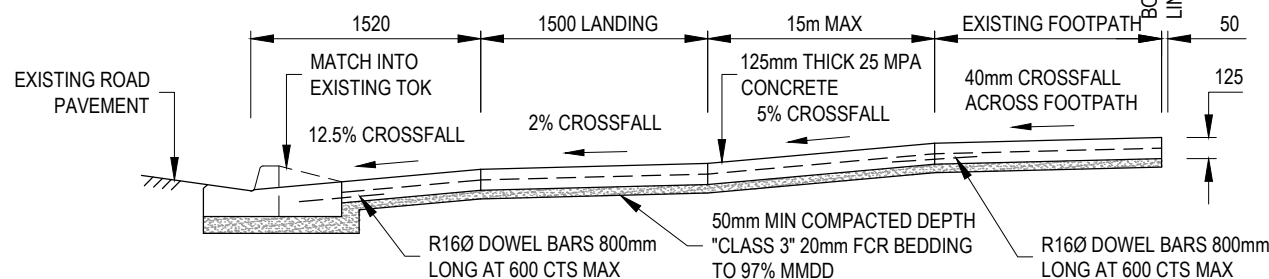
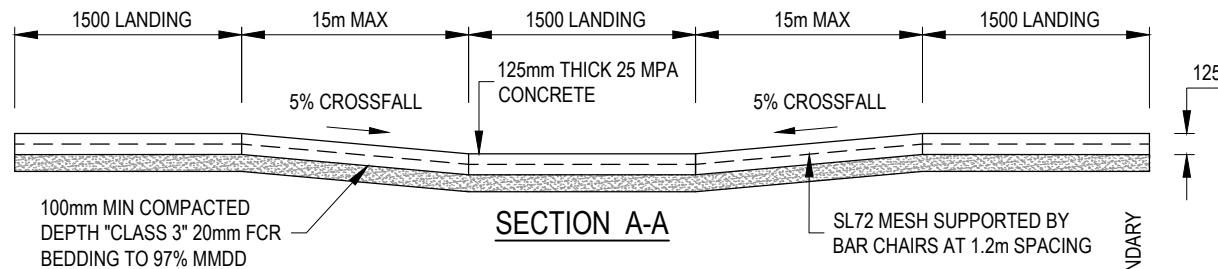
NOT TO SCALE

EXISTING 75mm FOOTPATH TO BE REMOVED AND REPLACED WITH 125mm THICK SL72 REINFORCED 25 MPA CONCRETE



NOTES:

1. LANDING ZONE TO BE A MIN. 1.5m IN THE DIRECTION OF TRAVEL AT 2% MAX GRADE.
2. NEW FOOTPATH SHALL HAVE 2.5% CROSSFALL AWAY FROM THE PROPERTY LINE.
3. NEW FOOTPATH LEVEL SHALL MATCH INTO THE EXISTING LEVELS.
4. NEW FOOTPATH SHALL BE 125mm THICK 25 MPa CONCRETE ON A BASE OF MIN. 100mm THICK, MECHANICALLY COMPACTED CLASS 3 FCR.
5. FOOTPATH GRADES ARE APPROXIMATE AND REQUIRE CONFIRMATION ON SITE.
6. FOOTPATH CROSS OVERS SHALL BE CONSTRUCTED AS PER THE TYPICAL LAYBACK CONFIGURATION



LEGEND:

EXPANSION JOINT

WEAKENED PLANE JOINTS - - - - -

NOTE:

1. T.O.K. DENOTES TOP OF KERB

ALL MEASUREMENTS IN MILLIMETRES

PRAM CROSSINGS DDA COMPLIANCE DETAILS

Infrastructure Design Manual Standard Drawings

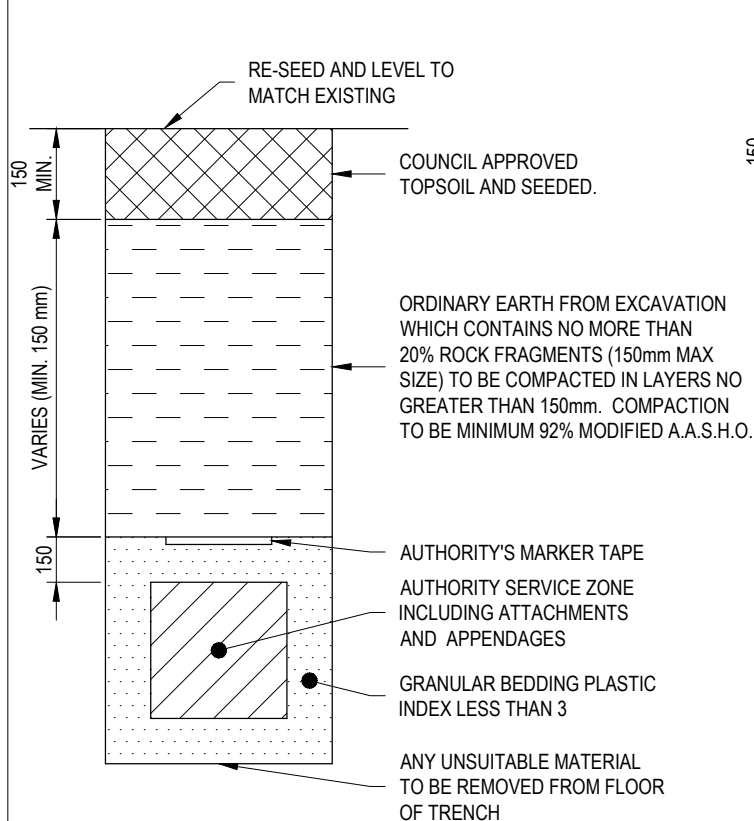
IDM Local Government
Infrastructure Design Association

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www.designmanual.com.au

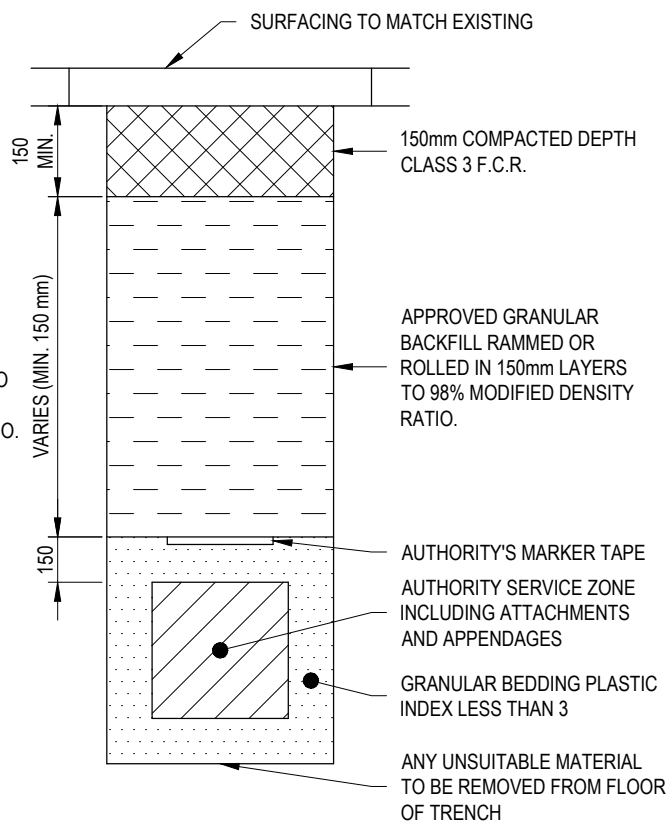
LAST UPDATED 06/02/2019

SD 270

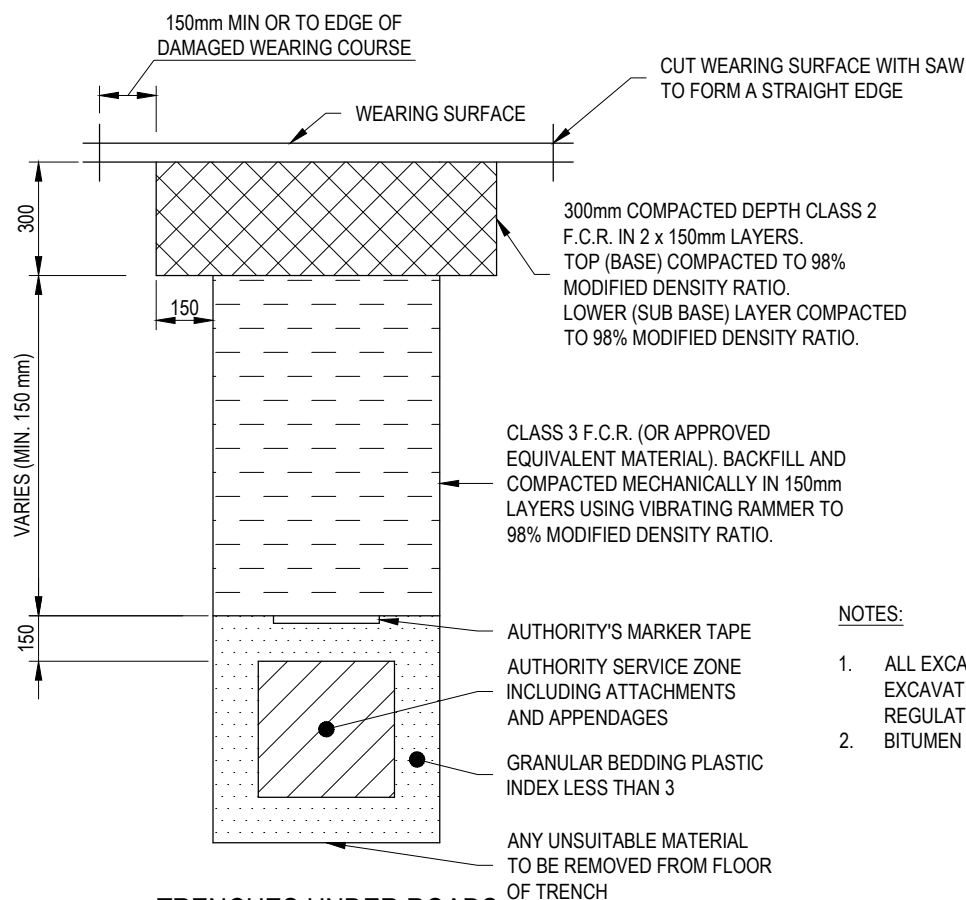
NOT TO SCALE



TRENCHES UNDER SWALES



TRENCHES UNDER FOOTPATHS



TRENCHES UNDER ROADS

ALL MEASUREMENTS IN MILLIMETRES

NOTES:

1. ALL EXCAVATIONS ARE TO COMPLY WITH THE EXCAVATION CODE OF PRACTICE 2018-05, O.H.&S. REGULATIONS 2017 & O.H.&S. ACT 2004.
2. BITUMEN ROAD SURFACE SHALL BE CUT WITH A SAW.

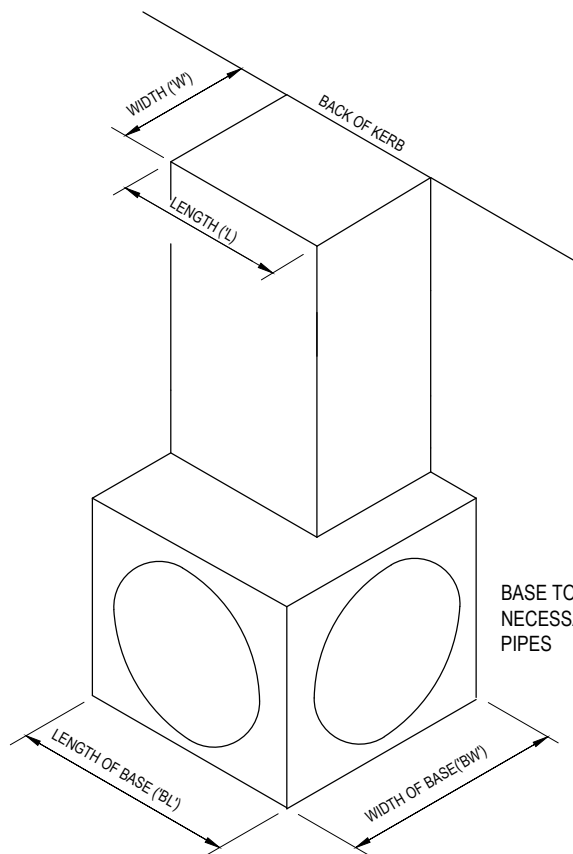
TRENCHING BACKFILL (TRENCHES WITHIN 1m OF COUNCIL ASSETS)

Infrastructure Design Manual Standard Drawings

LAST UPDATED 20/02/2019

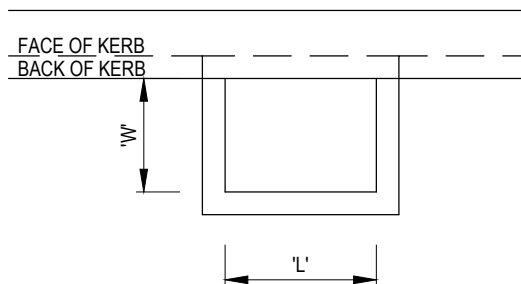
SD 310

NOT TO SCALE



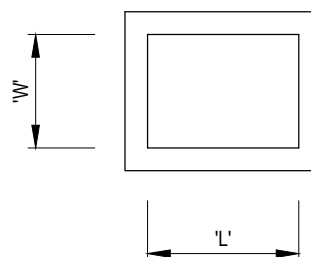
INTERNAL PIT DIMENSIONS

BASE TO BE HAUNCHED IF NECESSARY TO FIT LARGE PIPES



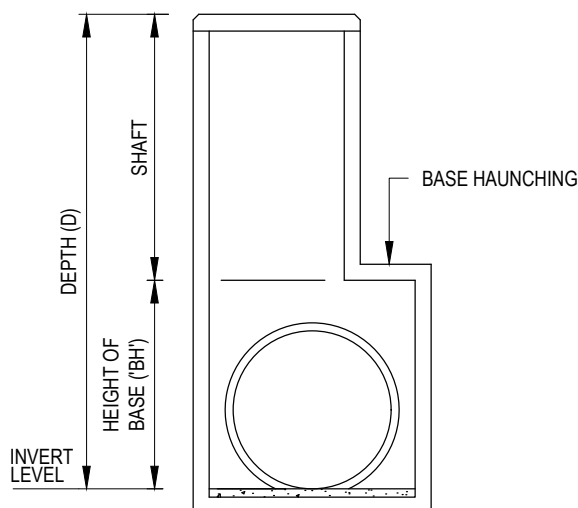
PLAN

SIDE ENTRY PIT



PLAN

JUNCTION PIT, GRATED PIT AND INLET CATCH PIT



SHAFT CONFIGURATIONS

PIT WITH HAUNCHED BASE

STANDARD PIT LISTING

PIT TYPE	COVER TYPE	SD DRG. NO.
UNHAUNCHED		SD405
HAUNCHED		SD410
JUNCTION	CAST IRON CONCRETE FIBREGLASS	SD425
GRATED	MILD STEEL/CAST IRON	SD425
SIDE ENTRY	CAST IRON CONCRETE FIBREGLASS	SD430, SD435, SD440, SD445, SD450
DEPRESSED GRATE	MILD STEEL/CAST IRON	SD455
INLET CATCH	CONCRETE	SD460

NOTES:

REFER SPECIFIC STANDARD DRAWINGS FOR FULL DIMENSIONS.

ALL MEASUREMENTS IN MILLIMETRES

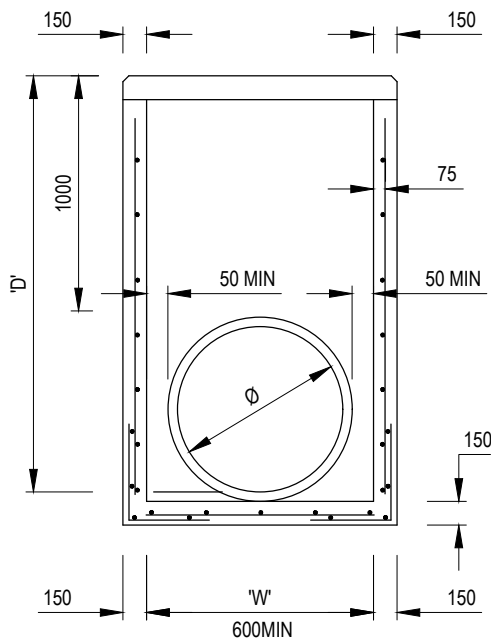
TYPICAL PIT DIMENSIONING AND SETTING OUT DETAIL

LAST UPDATED 20/03/2015

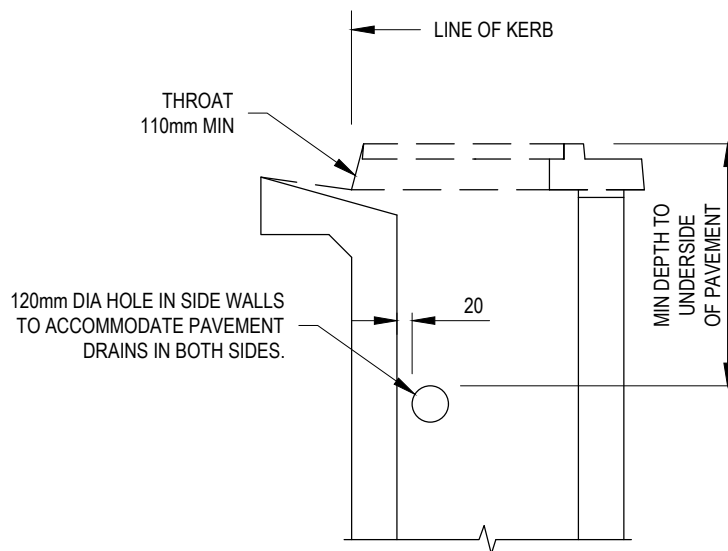
Infrastructure Design Manual Standard Drawings

SD 400

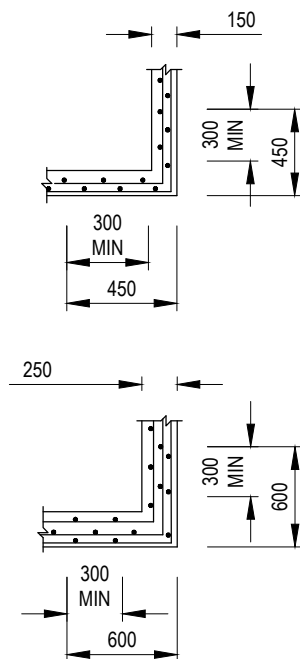
NOT TO SCALE



PITS UP TO 3600mm DEPTH



PRECAST PIT



PLAN VIEW
CORNER DETAILS

REINFORCEMENT DETAILS

PIT LENGTH 'L' OR WIDTH 'W'	REINFORCEMENT
UP TO 1200	SL92
1201 TO 1800	RL918
1801 TO 2400	RL1218

NOTES:

1. MINIMUM PIT SIZES:

PIPE DIAMETER		BASE DIMENSIONS 'W'
JP	SEP	
UP TO 450Ø	UP TO 450Ø	600
450Ø & UPWARDS	450Ø & UPWARDS	900

- PIPES GREATER THAN 450mm DIA. MAY REQUIRE HAUNCHING. REFER TO SD410.
- FOR DETAILS OF SPECIFIC PITS, REFER TO PIT SCHEDULE.
- PIT REINFORCEMENT SHALL HAVE 300mm MIN LAPS. CLEAR COVER TO BE 50mm MIN. CORNER RETURN REINFORCEMENT MAY BE FABRIC OR EQUIVALENT BARS.
- FOR TOP OF PIT DETAILS, REFER TO PIT SCHEDULE AND RELEVANT STANDARD DRAWINGS.
- PRECAST PITS WITH THINNER WALLS AND LESS STEEL MAY BE ACCEPTED WHERE THE MANUFACTURER CAN DEMONSTRATE THAT THE PITS HAVE ADEQUATE CAPACITY TO SUPPORT A COMBINATION OF THE FOLLOWING LOADS:
LATERAL LOADS - EARTH PRESSURE WITH 210 kN SURCHARGE
- HYDROSTATIC PRESSURE
- COMPACTION PRESSURE (25 kPa MIN)
- VERTICAL LOAD 210 kN
- SUBSURFACE DRAIN HOLES TO BE SEALED IF NOT USED.
- PIT LENGTH 'L' REFER TO SD400.
- CONCRETE STRENGTH F'C = 25MPa. (MIN) AT 28 DAYS.

ALL MEASUREMENTS IN MILLIMETRES

UNHAUNCHED PITS (450Ø MAX. PIPE)

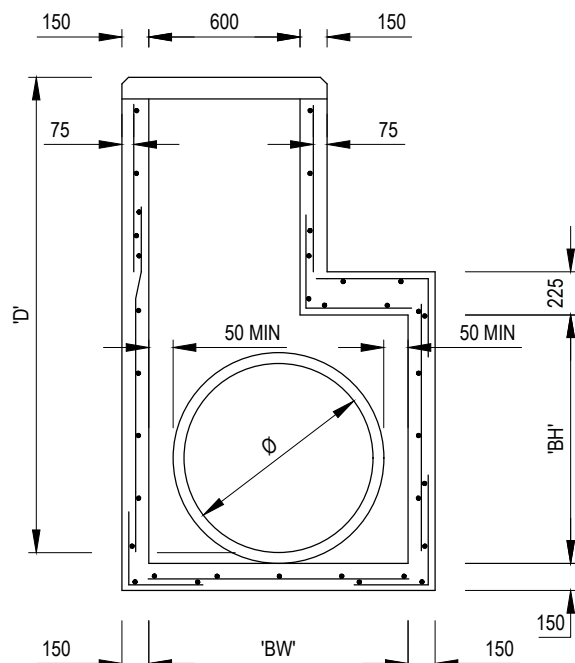
LAST UPDATED 20/03/2015

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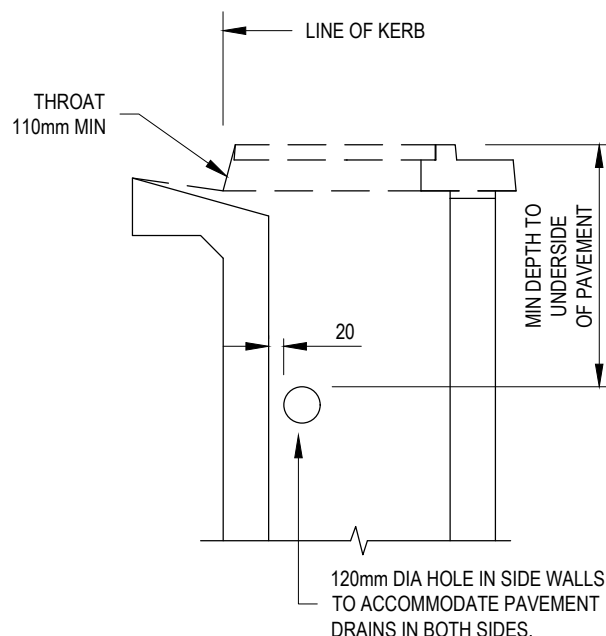
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SD 405

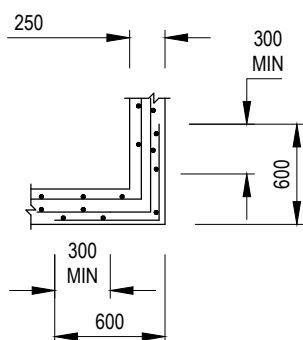
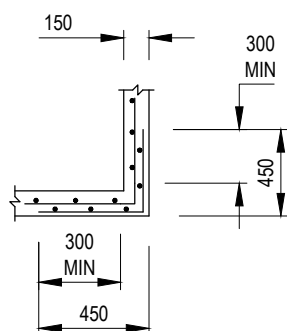
NOT TO SCALE



PITS UP TO 3600mm DEPTH



PRECAST PIT



**PLAN VIEW
CORNER DETAILS**

NOTES:

1. PIPES LESS THAN 525mm DIA. MAY NOT REQUIRE HAUNCHING. REFER SD405.
2. PITS WITH HAUNCHING IN TWO DIRECTIONS REQUIRE SPECIAL STRUCTURAL DESIGN.
3. FOR DETAILS OF SPECIFIC PITS, REFER TO PIT SCHEDULE.
4. PIT REINFORCEMENT SHALL HAVE 300mm MIN LAPS. CLEAR COVER TO BE 50mm MIN. CORNER RETURN REINFORCEMENT MAY BE FABRIC OR EQUIVALENT BARS.
5. FOR TOP OF PIT DETAILS, REFER TO PIT SCHEDULE AND RELEVANT STANDARD DRAWINGS.
6. PRECAST PITS WITH THINNER WALLS AND LESS STEEL MAY BE ACCEPTED WHERE THE MANUFACTURER CAN DEMONSTRATE THAT THE PITS HAVE ADEQUATE CAPACITY TO SUPPORT A COMBINATION OF THE FOLLOWING LOADS:
LATERAL LOADS - EARTH PRESSURE WITH 210kN SURCHARGE
- HYDROSTATIC PRESSURE
- COMPACTION PRESSURE (25 kPa MIN)
- VERTICAL LOAD 210 kN
7. SUBSURFACE DRAIN HOLES TO BE SEALED IF NOT USED.
8. CONCRETE STRENGTH F'C = 25MPa. (MIN) AT 28 DAYS.

REINFORCEMENT DETAILS

PIT BASE LENGTH 'BL' OR BASE WIDTH 'BW'	REINFORCEMENT
UP TO 1200	SL92
1201 TO 1800	RL918
1801 TO 2400	RL1218

PIT SIZING

'BW' & 'BH' (mm)	'Ø' (mm)
900	525
"	600
"	675
"	750
"	825
1200	900
"	975
"	1050
"	1125
1500	1200

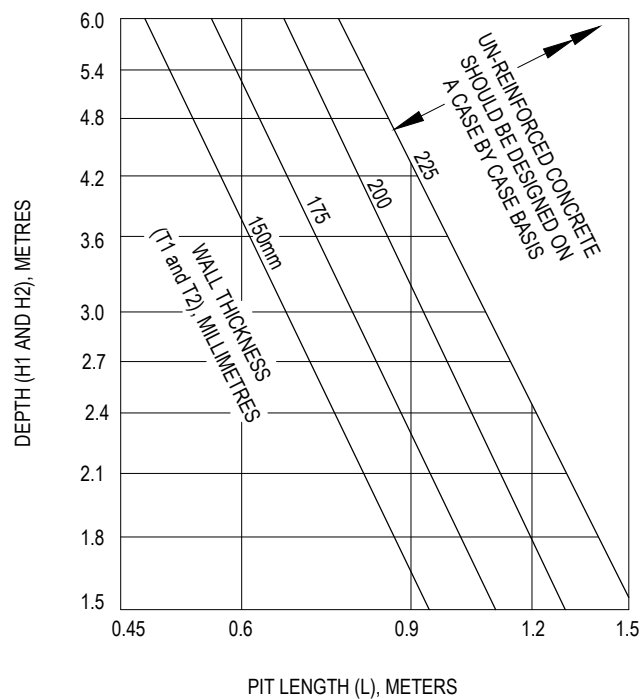
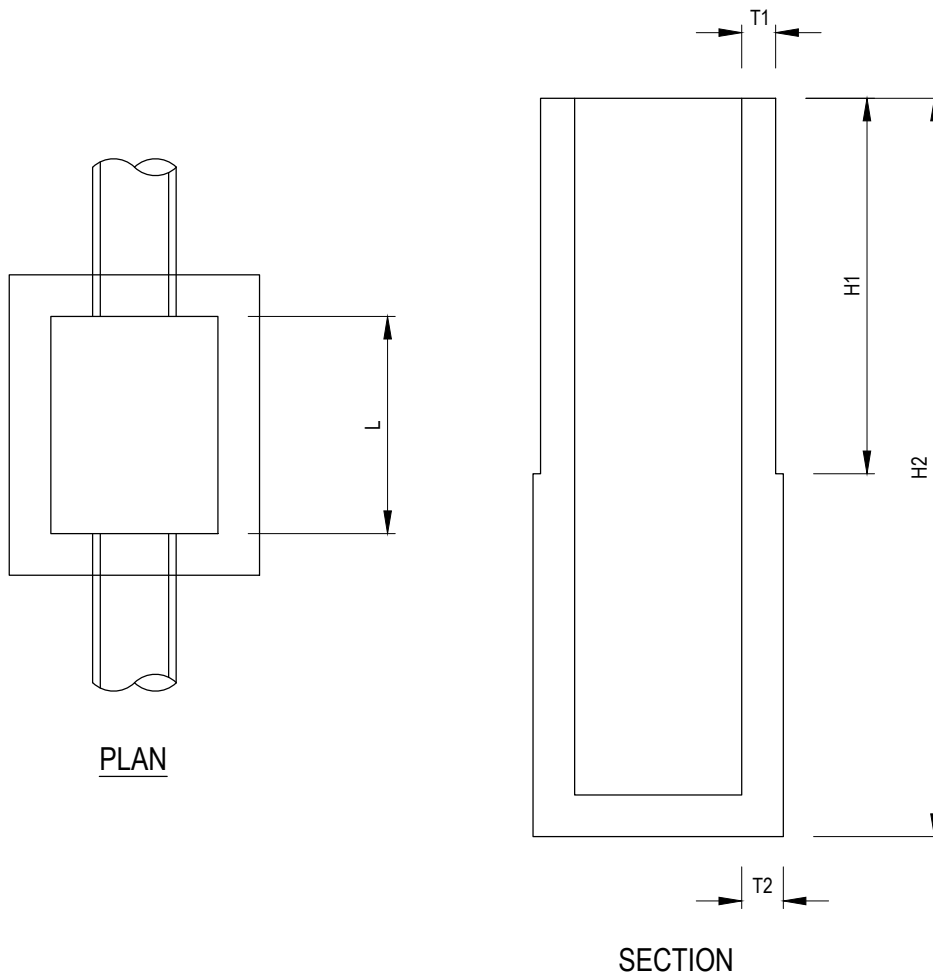
ALL MEASUREMENTS IN MILLIMETRES

HAUNCHED PITS

LAST UPDATED 20/03/2015

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ALL MEASUREMENTS IN MILLIMETRES

MIN. WALL THICKNESS FOR REINFORCEMENT IN MASS CONCRETE PITS (CAST IN-SITU)

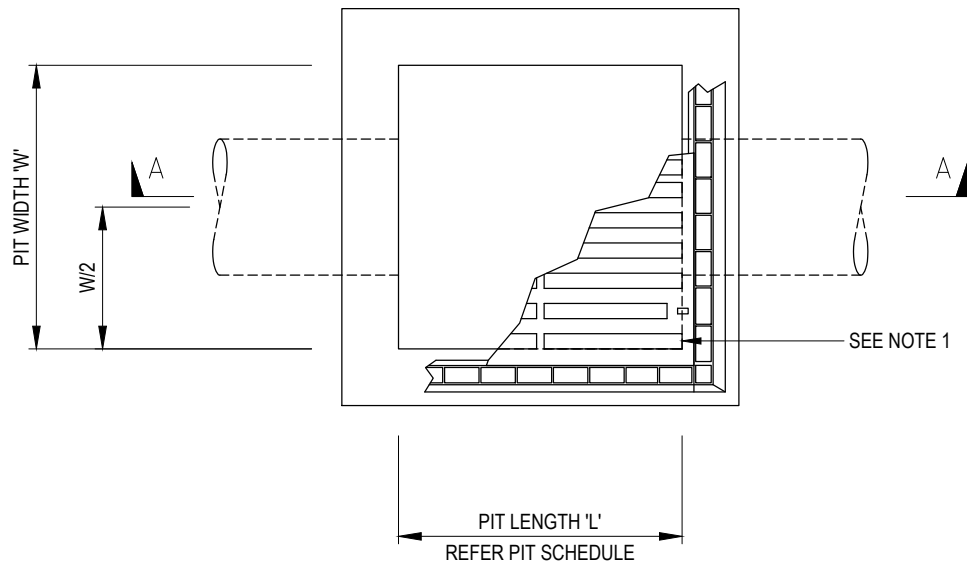
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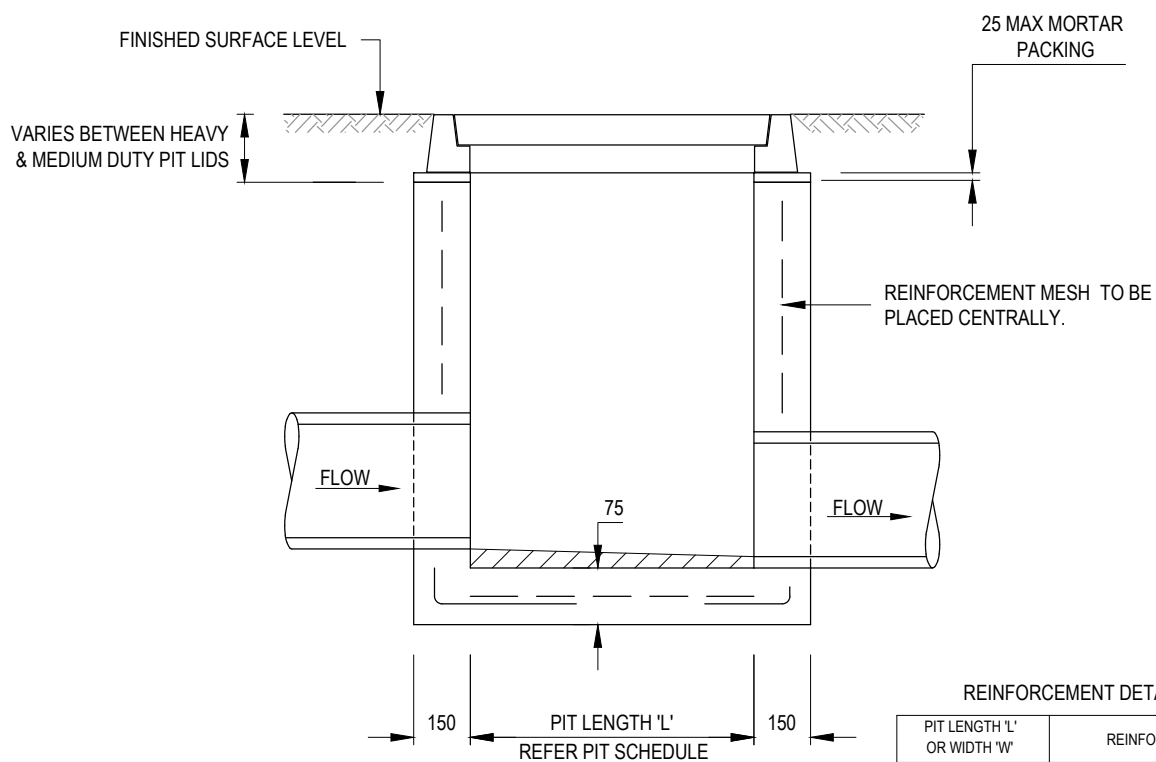
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SD 415

NOT TO SCALE



PLAN



SECTION A-A

NOTES:

1. HEAVY DUTY COVERS TO BE USED WHEN SUBJECT TO TRAFFICABLE LOADS (AS3996 CLASS D - 210kN) OR APPROVED EQUIVALENT. MEDIUM DUTY COVERS TO BE USED IN OFF ROAD USE (AS3996 CLASS B - 80kN) OR APPROVED EQUIVALENT.
2. CONCRETE STRENGTH $f'c = 25\text{MPa}$. (MIN) AT 28 DAYS.
3. JUNCTION PIT IN ROAD RESERVE TO HAVE MINIMUM INTERNAL PIT DIMENSIONS OF 600 X 900.

REINFORCEMENT DETAILS

PIT LENGTH 'L' OR WIDTH 'W'	REINFORCEMENT
UP TO 1200	SL92
1201 TO 1800	RL918
1801 TO 2400	RL1218

MINIMUM PIT SIZES (EASEMENTS)

PIT DEPTH	PIT SIZE
<1000	600 x 600
>1000	600 x 900

MINIMUM PIT SIZES (ROAD RESERVE)

PIT DEPTH	PIT SIZE
ALL PITS	600 x 900

ALL MEASUREMENTS IN MILLIMETRES

JUNCTION PIT IN ROAD RESERVE

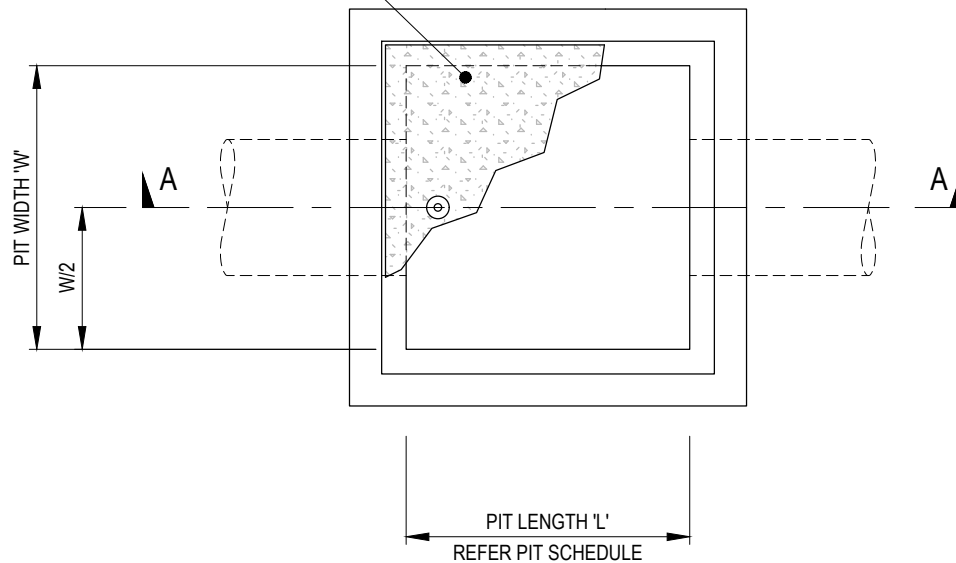
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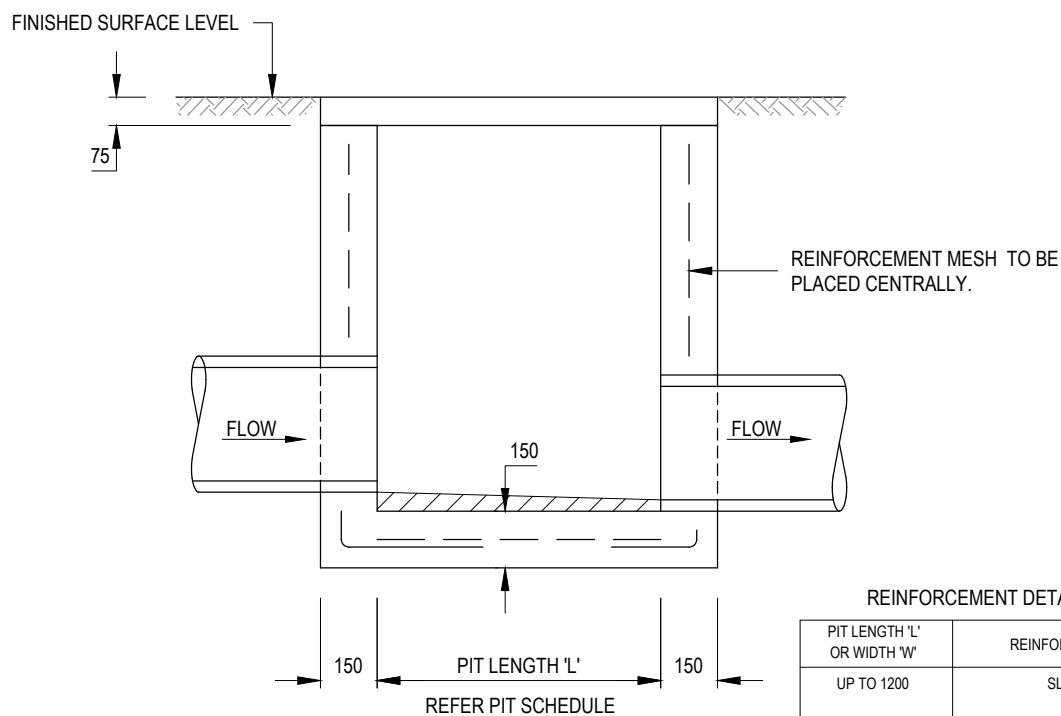
SD 420

NOT TO SCALE

CONCRETE OR EQUIVALENT COVER
WITH APPROVED LIFTING ANCHORS.
REFER TO PIT SCHEDULE FOR DETAILS.



PLAN



SECTION A-A

NOTES:

1. CONCRETE STRENGTH $f'c = 25\text{MPa}$. (MIN) AT 28 DAYS.

REINFORCEMENT DETAILS

PIT LENGTH 'L' OR WIDTH 'W'	REINFORCEMENT
UP TO 1200	SL92
1201 TO 1800	RL918
1801 TO 2400	RL1218

MINIMUM PIT SIZES (EASEMENTS)

PIT DEPTH	PIT SIZE
<1000	600 x 600
>1000	600 x 900

MINIMUM PIT SIZES (ROAD RESERVE)

PIT DEPTH	PIT SIZE
ALL PITS	600 x 900

ALL MEASUREMENTS IN MILLIMETRES

**JUNCTION PIT WITH CONCRETE COVER
(NON TRAFFICABLE AREAS)**

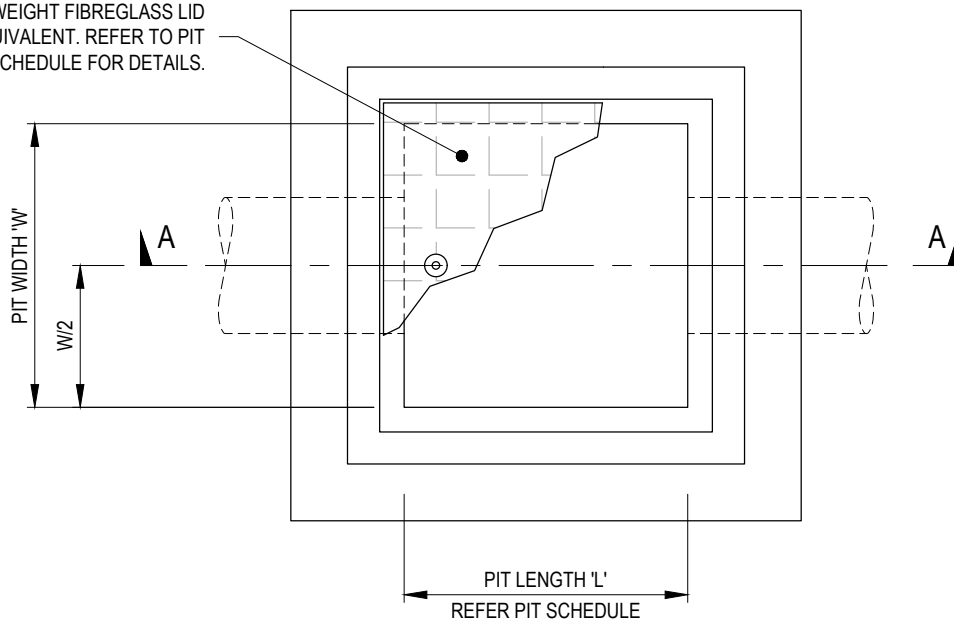
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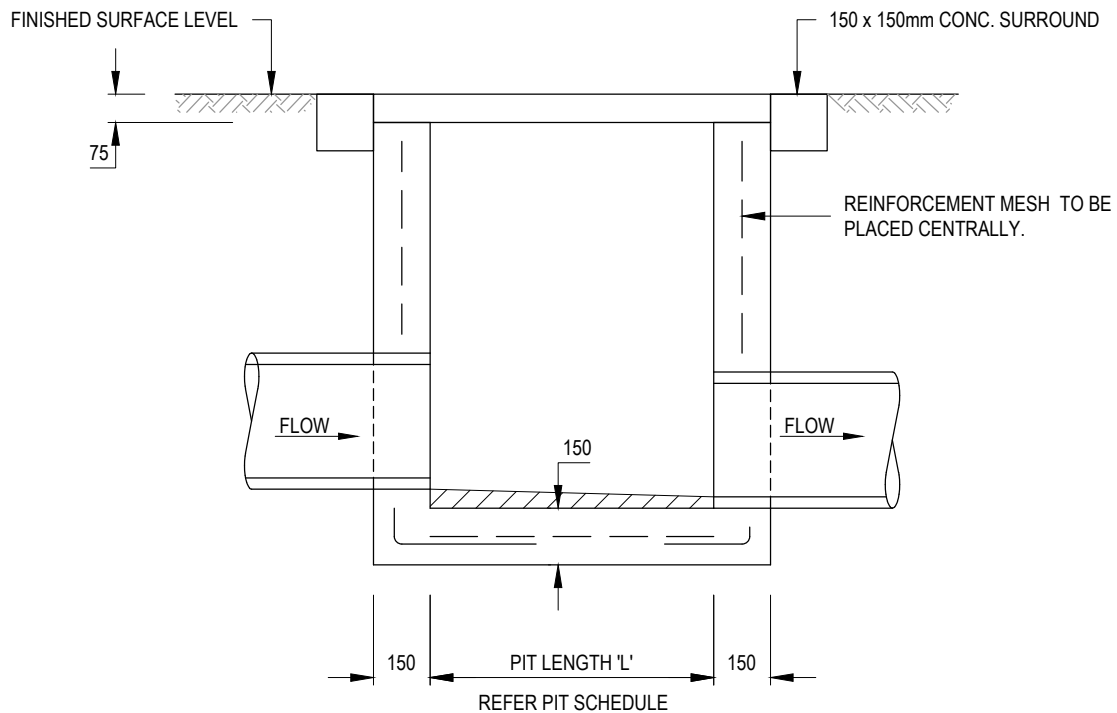
SD 425

NOT TO SCALE

LIGHT WEIGHT FIBREGLASS LID
OR EQUIVALENT. REFER TO PIT
SCHEDULE FOR DETAILS.



PLAN



SECTION A-A

NOTES:

1. CONCRETE STRENGTH F'C = 25MPa. (MIN) AT 28 DAYS.
2. FOR DEPTHS OF INVERT GREATER THAN 1.5m WALL THICKNESS TO BE 200mm AND BASE TO BE 900 x 900mm.
3. SL82 REINFORCING MESH FOR PITS GREATER THAN 1.2m IN DEPTH
4. PIT LID TO BE LIGHT WEIGHT FIBREGLASS TYPE, OR APPROVED EQUIVALENT. PROVIDE REBATE IN PIT WALL FOR LID LOCKING.
5. IF PIT IS TO BE CONSTRUCTED INSIDE AN EASEMENT THE WORDS "NOT TO BE COVERED OR BUILT OVER" ARE TO BE STAMPED IN LID WITH A MIN TEXT HEIGHT OF 50mm.

ALL MEASUREMENTS IN MILLIMETRES

**JUNCTION PIT WITH NON-CONCRETE COVER
(NON TRAFFICABLE AREAS)**

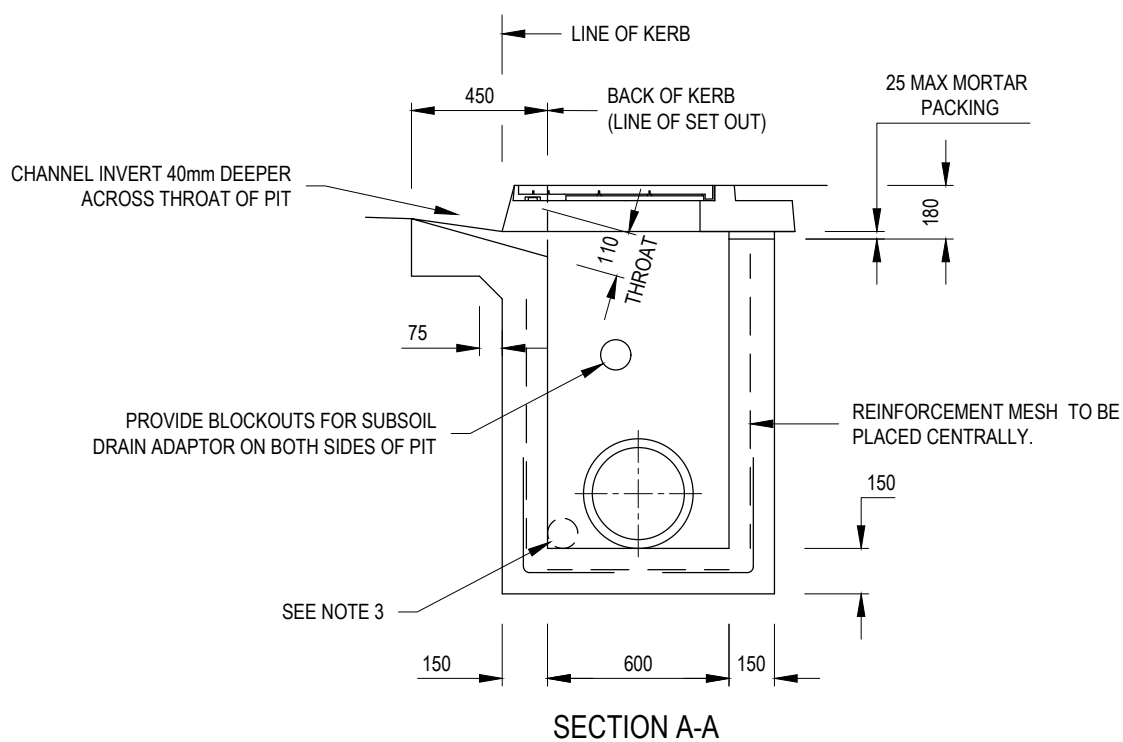
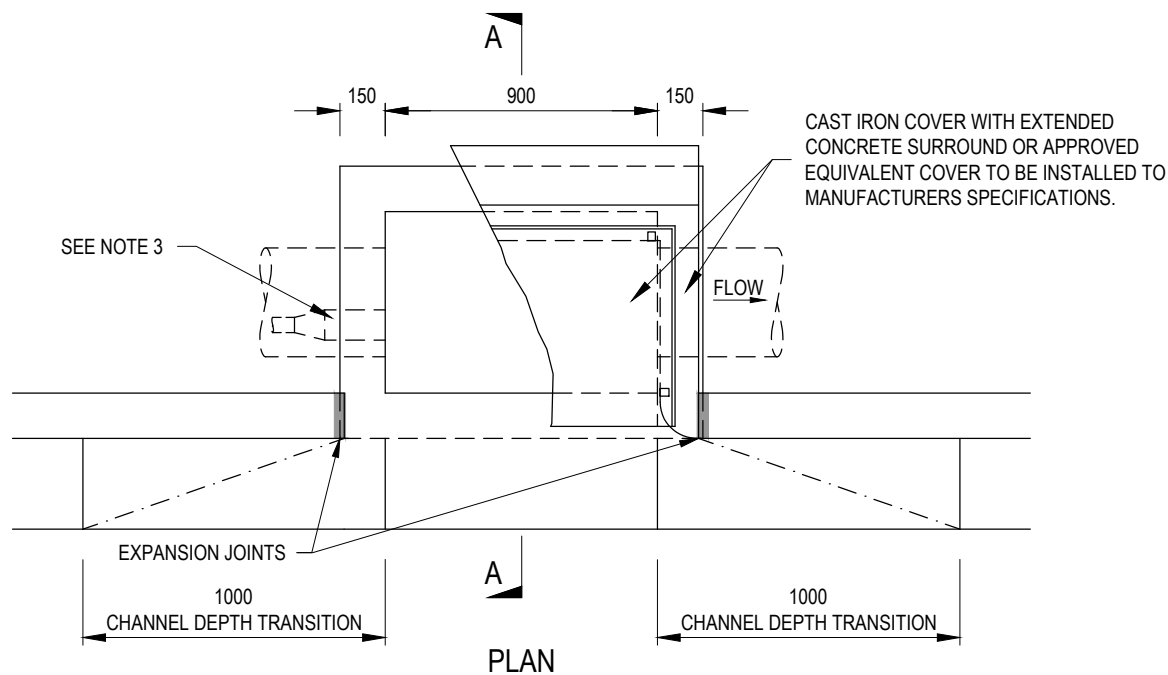
LAST UPDATED 29/03/2016

Infrastructure Design Manual Standard Drawings

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Design Manual website
www.designmanual.com.au

SD 426

NOT TO SCALE



REINFORCEMENT DETAILS

PIT LENGTH 'L' OR WIDTH 'W'	REINFORCEMENT
UP TO 1200	SL92
1201 TO 1800	RL918
1801 TO 2400	RL1218

NOTES:

1. REFER TO SD100 FOR KERB DETAILS.
2. CONCRETE STRENGTH $f'c = 25\text{MPa}$. (MIN) AT 28 DAYS.
3. WHERE NO SUBSOIL DRAIN INSTALLED, OR WHERE GRAVEL BACKFILL IS USED, OR WHERE EXPANSIVE CLAYS ARE PRESENT; INSTALL 1m LONG SUBSOIL DRAIN AT THE BOTTOM OF THE PIT.

ALL MEASUREMENTS IN MILLIMETRES

SIDE ENTRY PIT 900mm INLET WITH CAST IRON COVER & CONCRETE SURROUND FOR 'B2'

LAST UPDATED 08/08/2016

Infrastructure Design Manual Standard Drawings

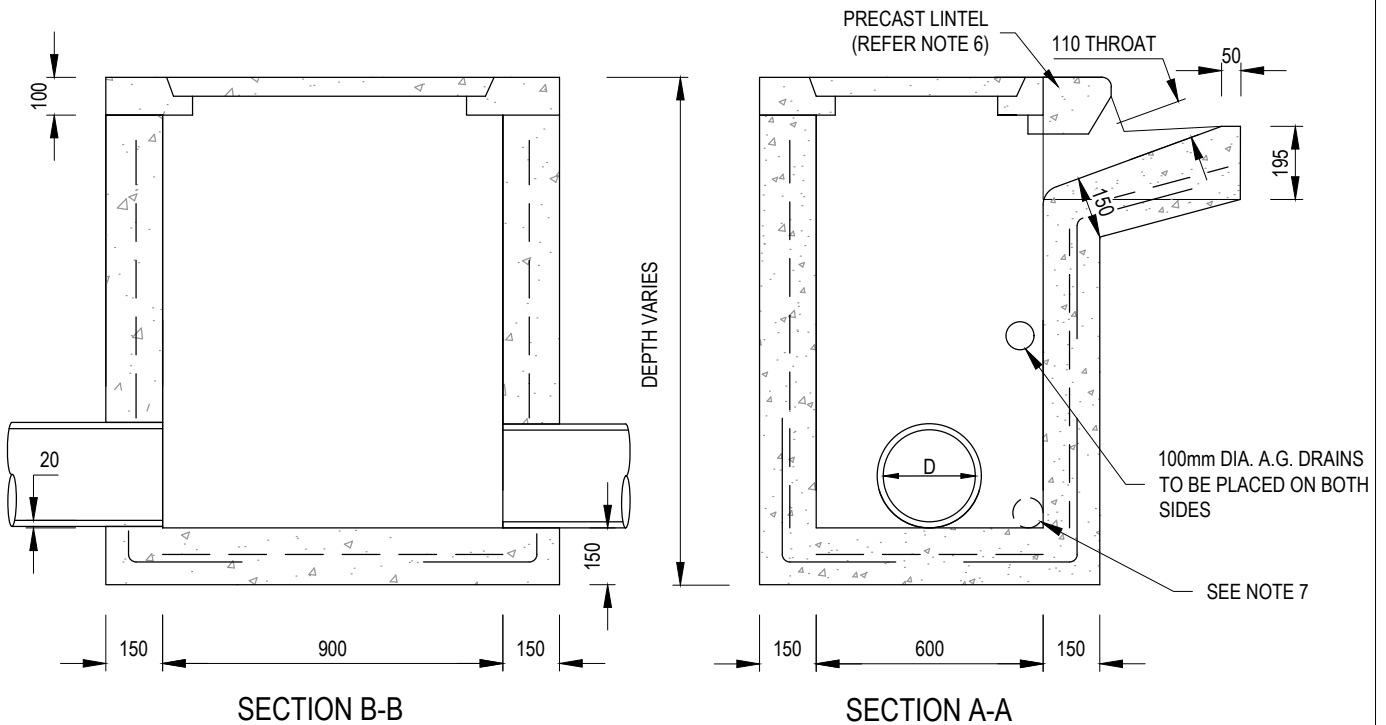
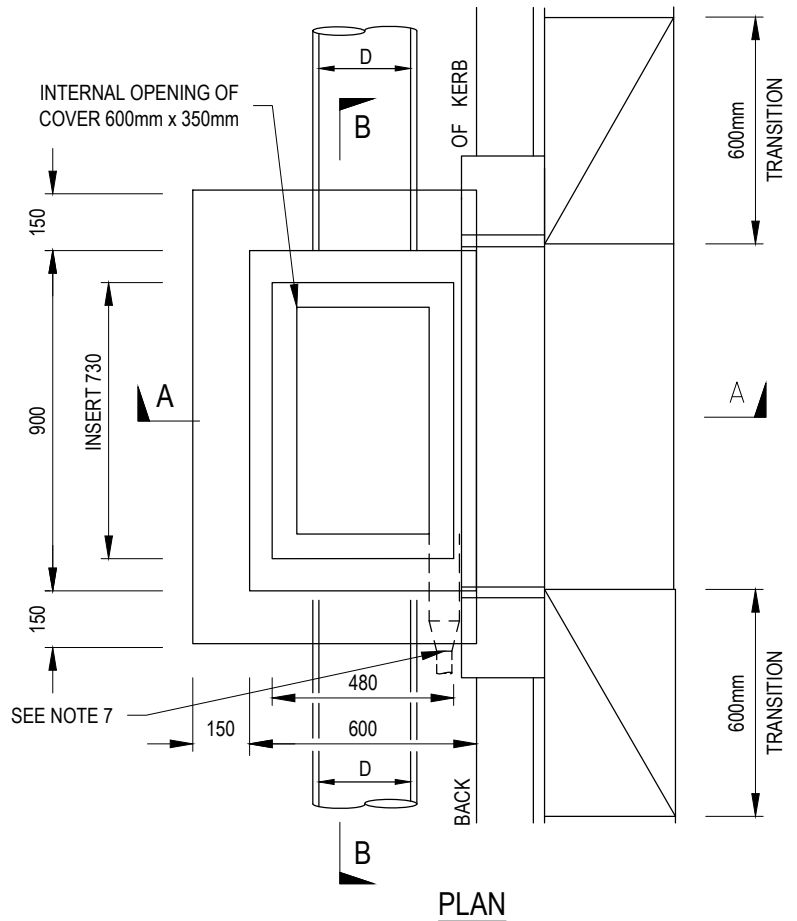
A copy of the Infrastructure Design Manual can be viewed on the Design Manual website
www.designmanual.com.au

SD 430

NOT TO SCALE

NOTES:

1. PIT TO BE CONSTRUCTED IN 2 STAGES. STAGE 2-TOP 500mm OF PIT IN CONJUNCTION WITH KERB AND CHANNEL.
2. WHERE PIT AT LOW POINT CONSTRUCT-100mm DIA. P.V.C. PIPE WITH CONSTRUCTION WORKS TO DRAIN WATER FROM PAVEMENT.
3. AT LOW POINT TRANSITION 600mm BOTH SIDES.
4. CONCRETE STRENGTH F'C = 25MPa. (MIN) AT 28 DAYS.
5. FIBREGLASS PIT LIDS WITH EA FRAME AND LIGHTWEIGHT LOCKING LID OR APPROVED EQUIVALENT CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH AS3996 MAY BE USED INSTEAD OF CONCRETE.
6. PRECAST LINTEL TO MATCH REQUIRED KERB TYPE (SM2, B2)
7. WHERE NO SUBSOIL DRAIN INSTALLED, OR WHERE GRAVEL BACKFILL IS USED, OR WHERE EXPANSIVE CLAYS ARE PRESENT; INSTALL 1m LONG SUBSOIL DRAIN AT THE BOTTOM OF THE PIT.



ALL MEASUREMENTS IN MILLIMETRES

900 x 600mm SIDE ENTRY PIT PIPES UP TO 450mmØ
(PRECAST CONCRETE LINTEL)

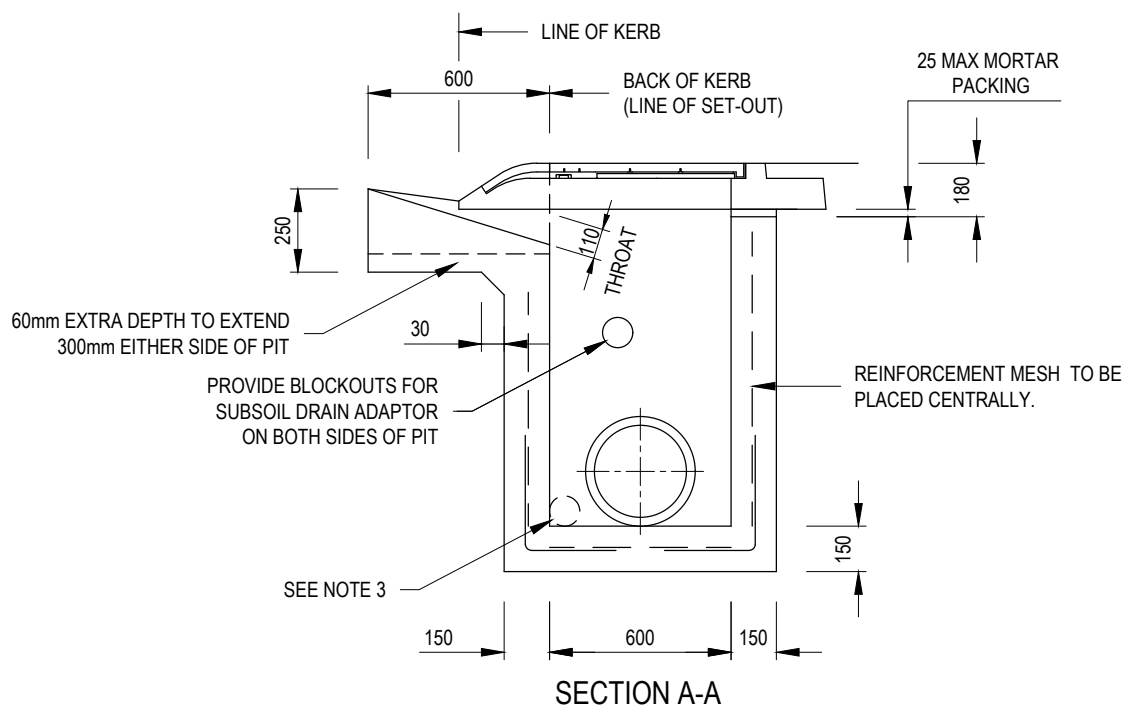
LAST UPDATED 08/08/2016

Infrastructure Design Manual Standard Drawings

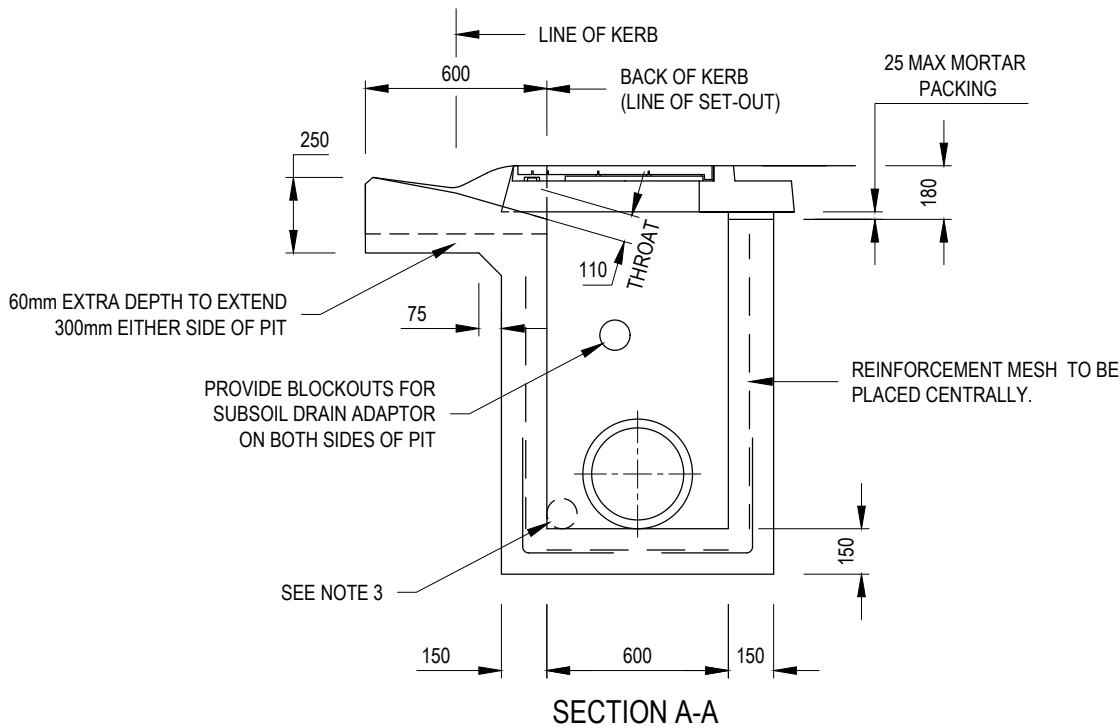
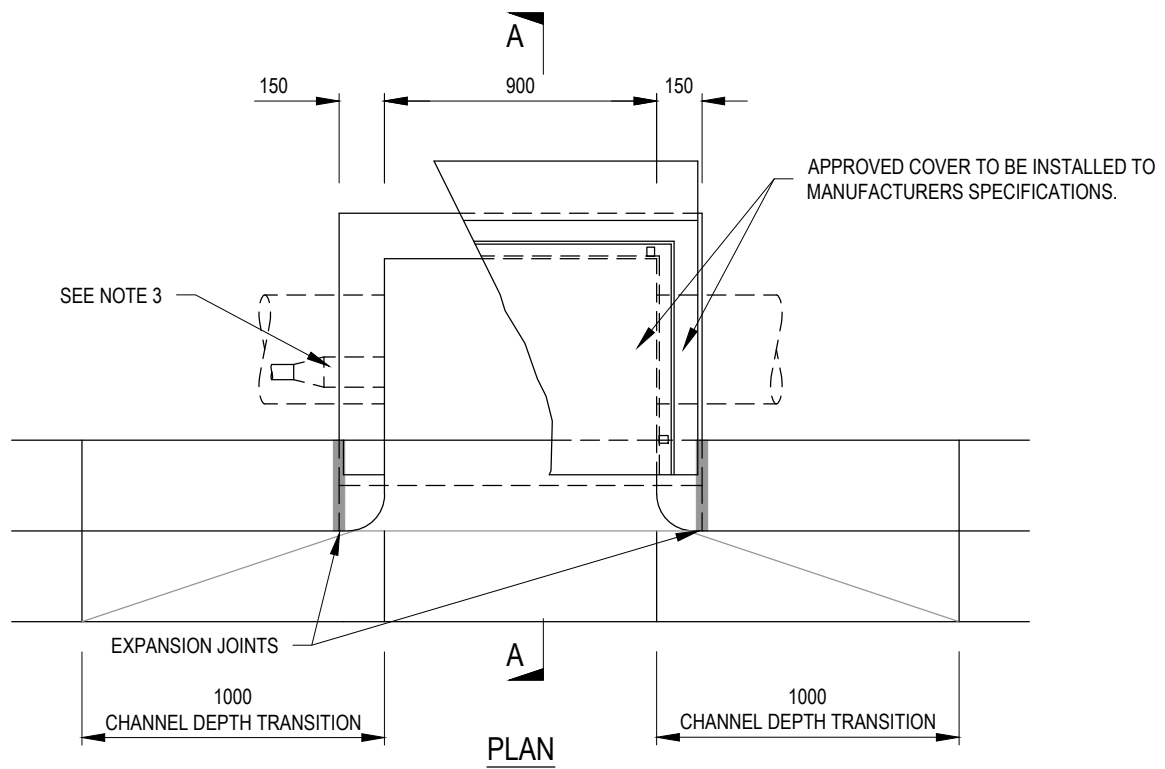
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www.designmanual.com.au

SD 431

NOT TO SCALE



NOT TO SCALE



REINFORCEMENT DETAILS

PIT LENGTH 'L' OR WIDTH 'W'	REINFORCEMENT
UP TO 1200	SL92
1201 TO 1800	RL918
1801 TO 2400	RL1218

NOTES:

1. REFER TO SD100 FR KERB DETAILS.
2. CONCRETE STRENGTH $f'c = 25\text{MPa}$. (MIN) AT 28 DAYS.
3. WHERE NO SUBSOIL DRAIN INSTALLED, OR WHERE GRAVEL BACKFILL IS USED, OR WHERE EXPANSIVE CLAYS ARE PRESENT; INSTALL 1m LONG SUBSOIL DRAIN AT THE BOTTOM OF THE PIT.

ALL MEASUREMENTS IN MILLIMETRES

SIDE ENTRY PIT 900mm INLET WITH CAST IRON COVER & CONCRETE SURROUND FOR 'SM2-M'

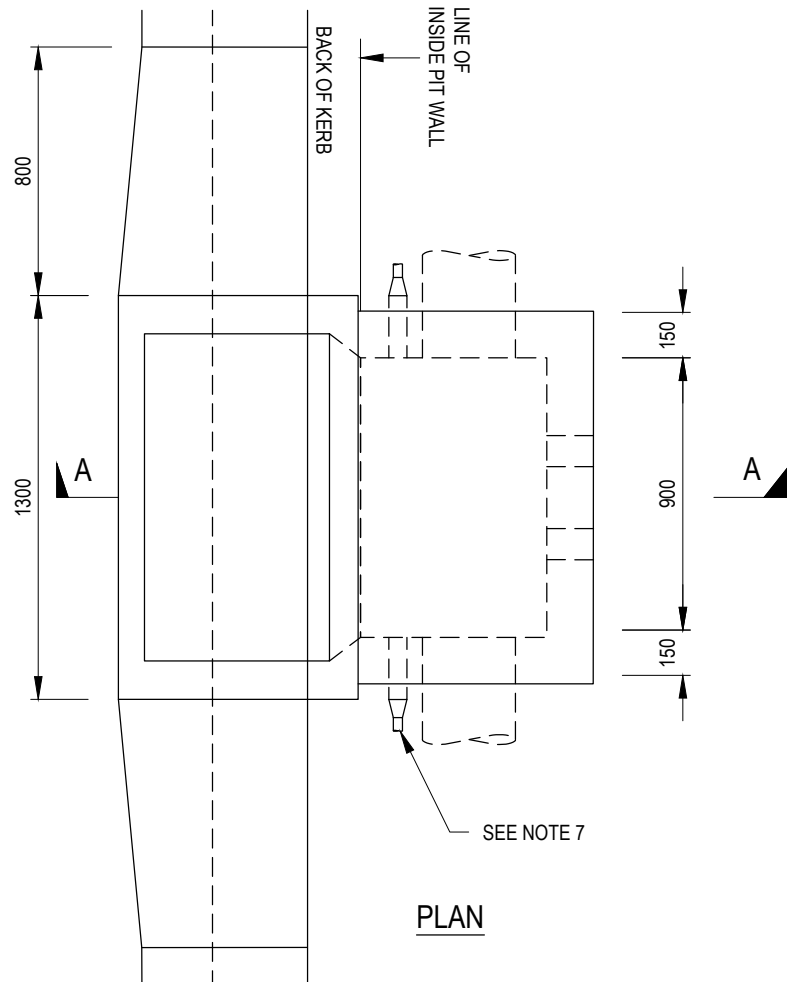
LAST UPDATED 08/08/2016

Infrastructure Design Manual Standard Drawings

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SD 440

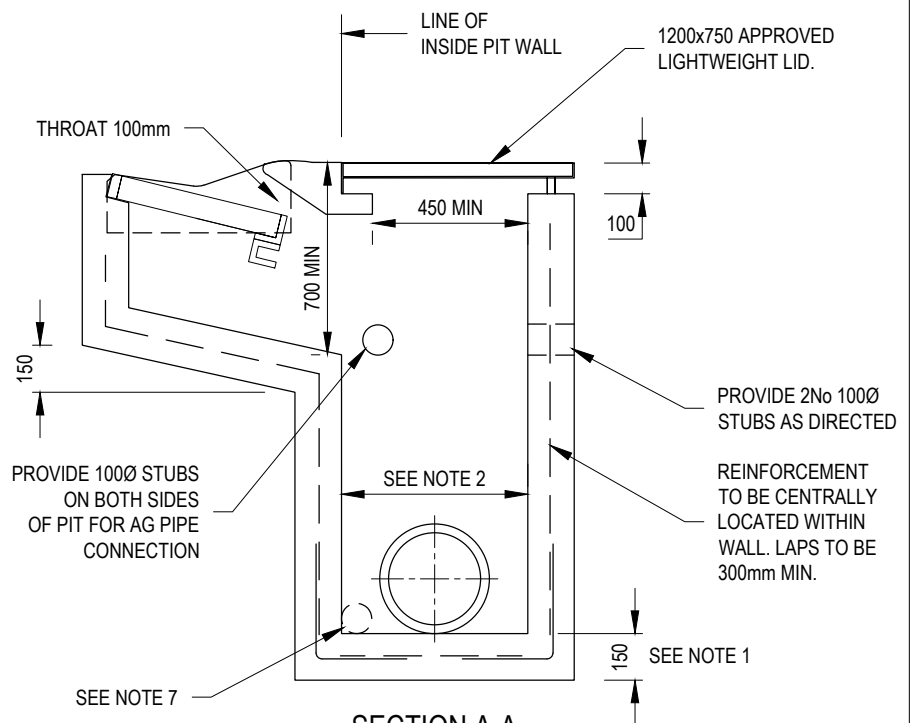
NOT TO SCALE



PLAN

NOTES:

1. FOR DEPTH OF INVERT GREATER THAN 1.5m, MIN. WALL & BASE THICKNESS TO BE 200mm AND BASE TO BE CORBELLED OUT TO 900x900mm.
2. MIN. INTERNAL PIT DIMENSION = EXTERNAL PIPE Ø + 150mm. FOR PIPE Ø GREATER THAN 450mm CORBEL PIT TOP TO A MIN. OF 600mm.
3. SL82 REINFORCING IS REQUIRED FOR PITS GREATER THAN 1200 DEEP.
4. PIT LID TO BE LIGHTWEIGHT FIBREGLASS TYPE, OR APPROVED EQUIVALENT. GRATE & FRAME TO BE HINGED.
5. CONCRETE STRENGTH SHALL BE 25MPa AT 28 DAYS.
6. WHERE NO AG PIPES EXIST, SEAL STUBS WITH GEOFABRIC.
7. WHERE NO SUBSOIL DRAIN INSTALLED, OR WHERE GRAVEL BACKFILL IS USED, OR WHERE EXPANSIVE CLAYS ARE PRESENT; INSTALL 1m LONG SUBSOIL DRAIN AT THE BOTTOM OF THE PIT.



SECTION A-A

ALL MEASUREMENTS IN MILLIMETRES

GRATED SIDE ENTRY PIT WITH LIGHTWEIGHT COVER & CONCRETE SURROUND FOR 'SM2-M'

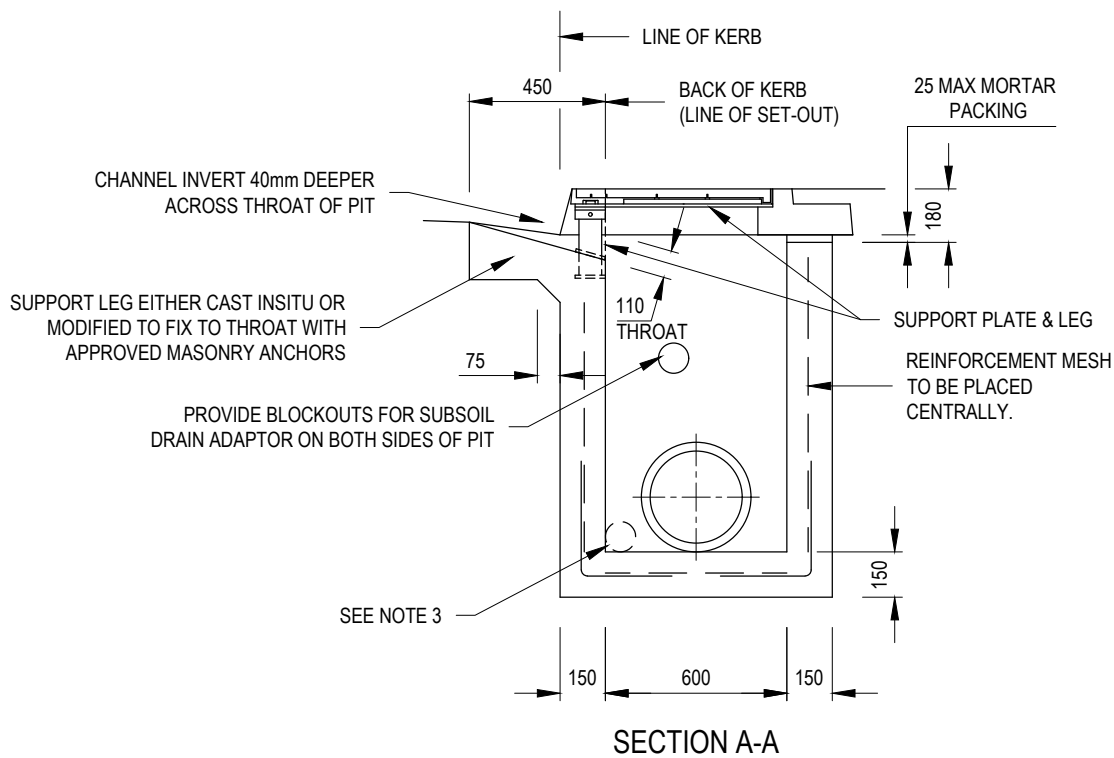
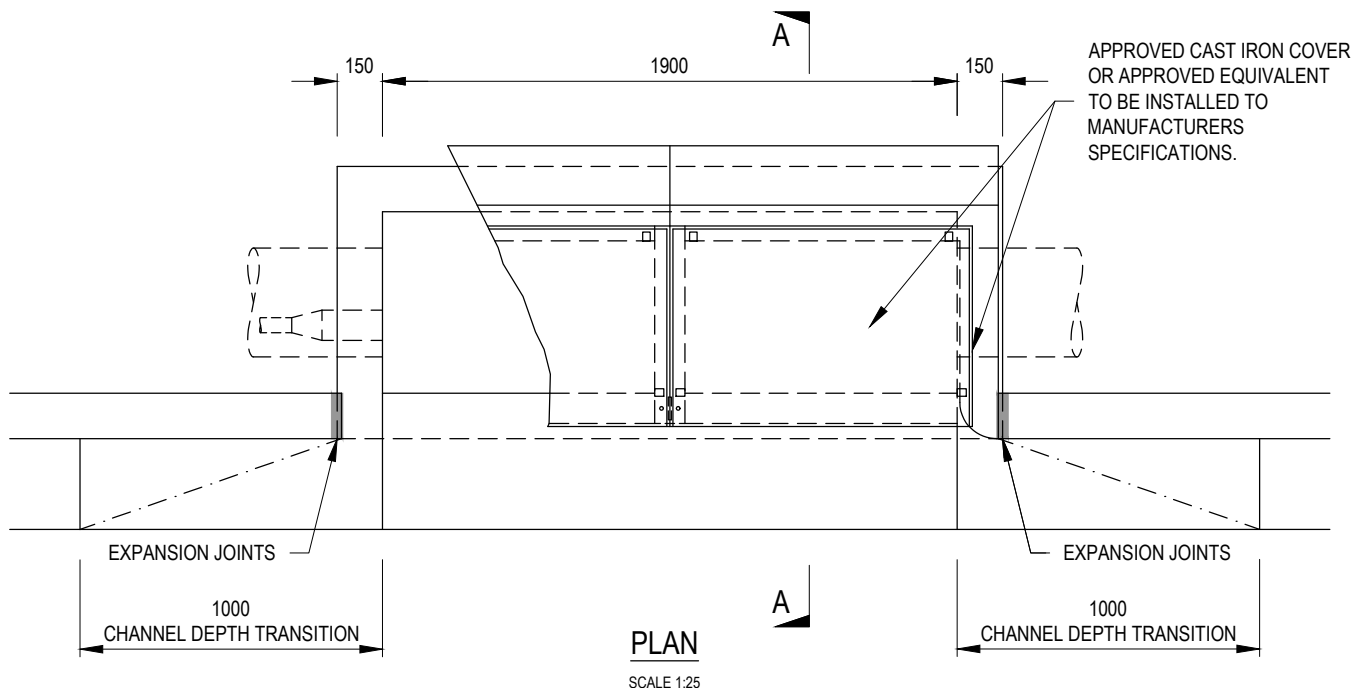
LAST UPDATED 10/05/2017

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SD 441

NOT TO SCALE



REINFORCEMENT DETAILS

PIT LENGTH 'L' OR WIDTH 'W'	REINFORCEMENT
UP TO 1200	SL92
1201 TO 1800	RL918
1801 TO 2400	RL1218

NOTES:

1. REFER TO SD100 FR KERB DETAILS.
2. CONCRETE STRENGTH F'C = 25MPa. (MIN) AT 28 DAYS.
3. WHERE NO SUBSOIL DRAIN INSTALLED, OR WHERE GRAVEL BACKFILL IS USED, OR WHERE EXPANSIVE CLAYS ARE PRESENT; INSTALL 1m LONG SUBSOIL DRAIN AT THE BOTTOM OF THE PIT.

ALL MEASUREMENTS IN MILLIMETRES

DOUBLE SIDE ENTRY PIT 1900mm INLET WITH APPROVED COVER & CONCRETE SURROUND FOR 'B2'

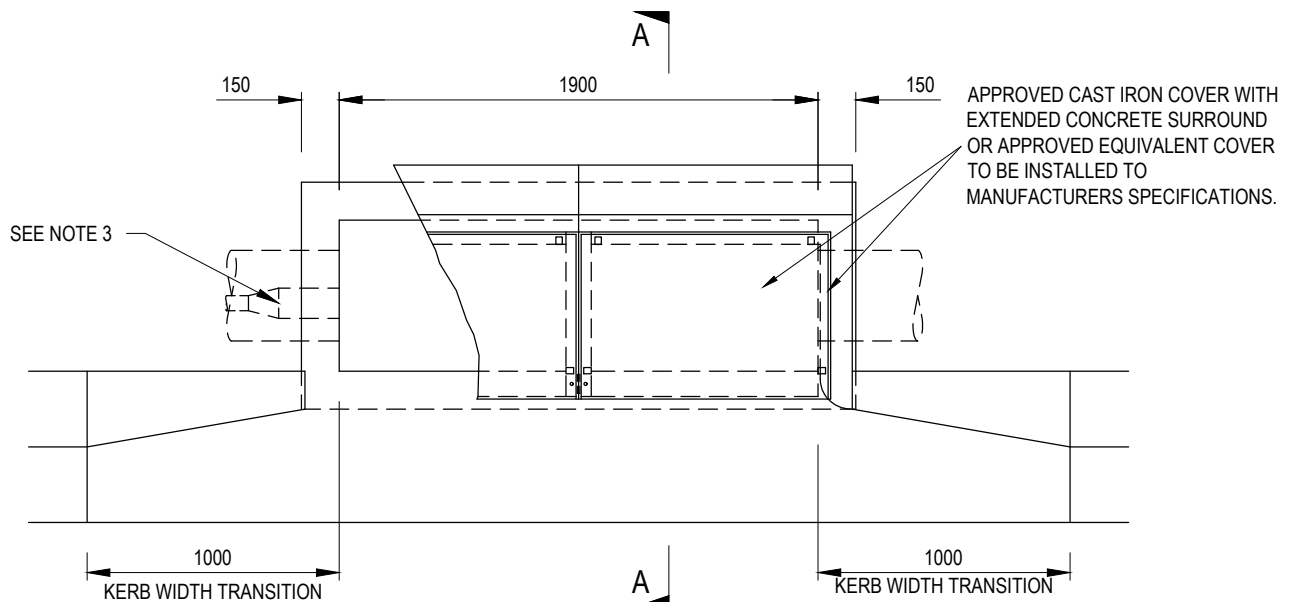
LAST UPDATED 08/08/2016

Infrastructure Design Manual Standard Drawings

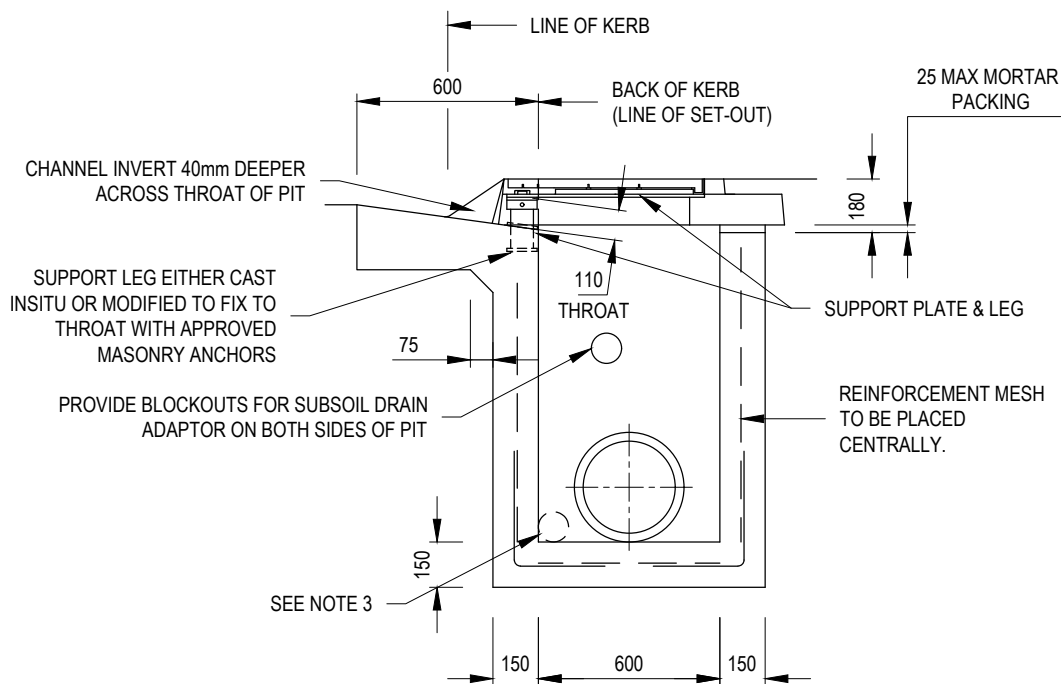
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www.designmanual.com.au

SD 445

NOT TO SCALE



PLAN



SECTION A-A

NOTES:

1. REFER TO SD100 FR KERB DETAILS.
2. CONCRETE STRENGTH $f'c = 25\text{MPa}$. (MIN) AT 28 DAYS.
3. WHERE NO SUBSOIL DRAIN INSTALLED, OR WHERE GRAVEL BACKFILL IS USED, OR WHERE EXPANSIVE CLAYS ARE PRESENT; INSTALL 1m LONG SUBSOIL DRAIN AT THE BOTTOM OF THE PIT.

REINFORCEMENT DETAILS

PIT LENGTH 'L' OR WIDTH 'W'	REINFORCEMENT
UP TO 1200	SL92
1201 TO 1800	RL918
1801 TO 2400	RL1218

ALL MEASUREMENTS IN MILLIMETRES

DOUBLE SIDE ENTRY PIT 1900mm INLET WITH CAST IRON COVER & CONCRETE SURROUND FOR 'SM2'

LAST UPDATED 08/08/2016

Infrastructure Design Manual Standard Drawings

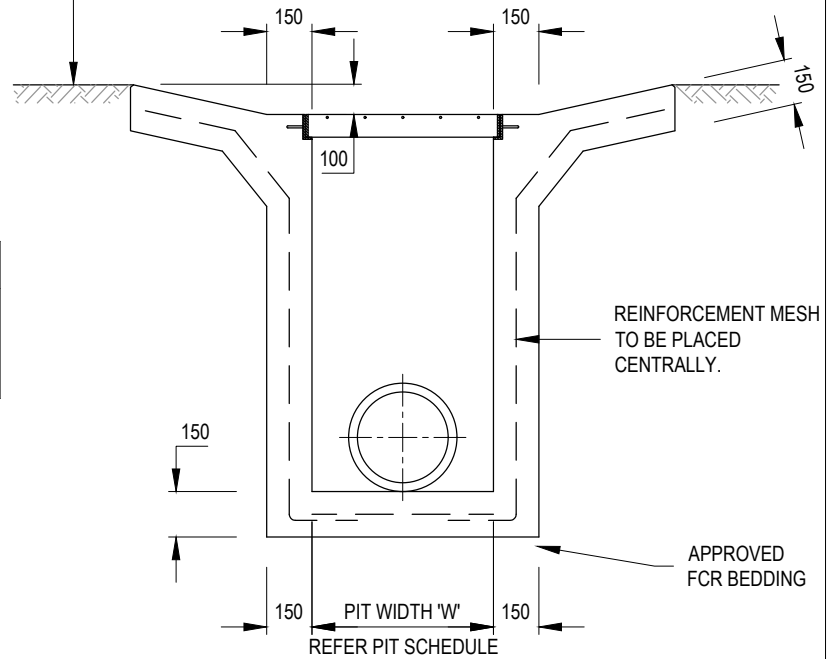
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SD 450

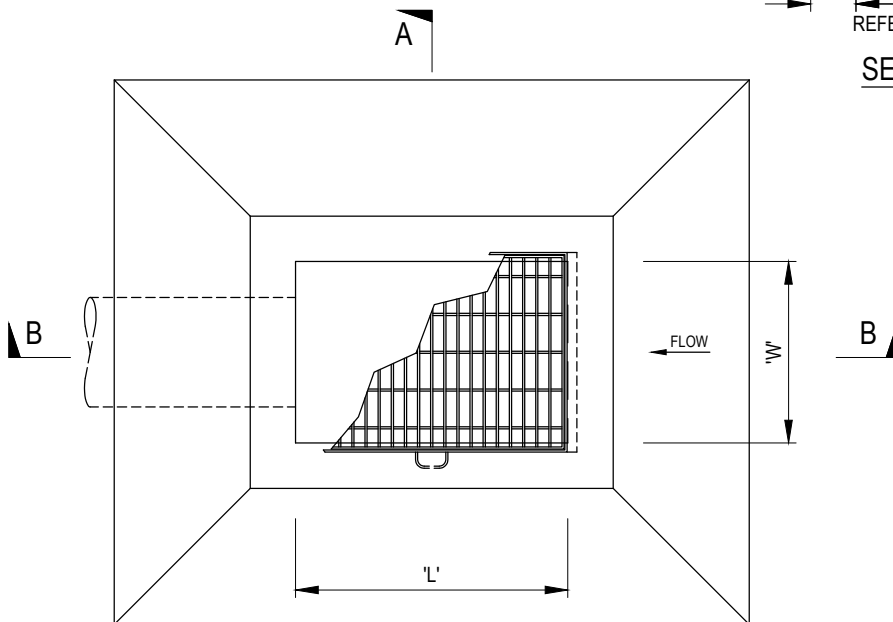
NOT TO SCALE

FINISHED SURFACE LEVEL

PIT LENGTH 'L' OR WIDTH 'W'	REINFORCEMENT
UP TO 1200	SL92
1201 TO 1800	RL918
1801 TO 2400	RL1218



SECTION A-A



PLAN

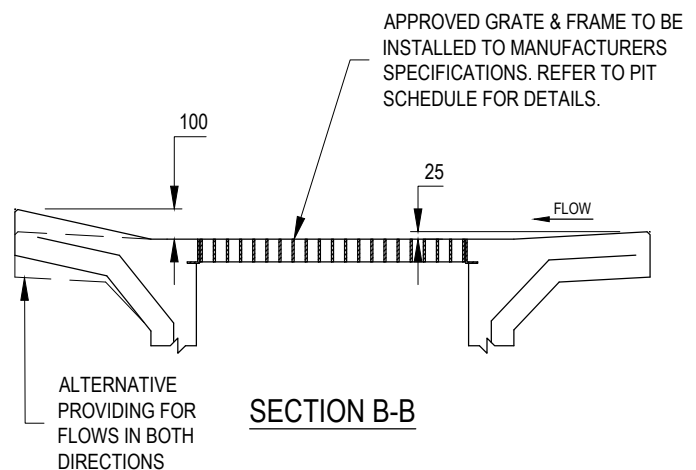
SCALE 1:25

NOTES:

1. CONCRETE STRENGTH $f'c = 25\text{MPa}$. (MIN) AT 28 DAYS.

NOTES:

1. HEAVY DUTY COVERS TO BE USED WHEN SUBJECT TO TRAFFICABLE LOADS (AS3996 CLASS D - 210kN) OR APPROVED EQUIVALENT. MEDIUM DUTY COVERS TO BE USED IN OFF ROAD USE (AS3996 CLASS B - 80kN) OR APPROVED EQUIVALENT.
2. CONCRETE STRENGTH $f'c = 25\text{MPa}$. (MIN) AT 28 DAYS.



SECTION B-B

ALL MEASUREMENTS IN MILLIMETRES

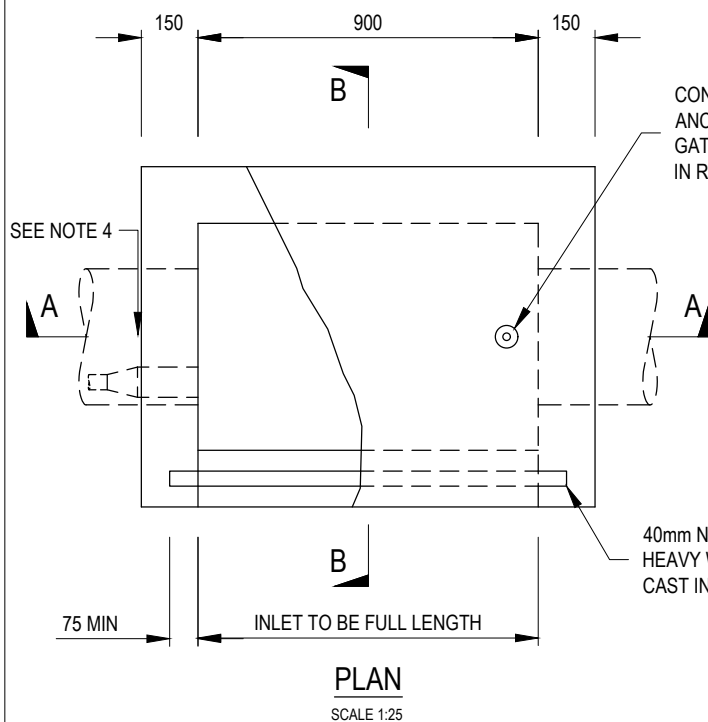
DEPRESSED GRATED PIT

LAST UPDATED 20/03/2015

Infrastructure Design Manual Standard Drawings

SD 455

NOT TO SCALE

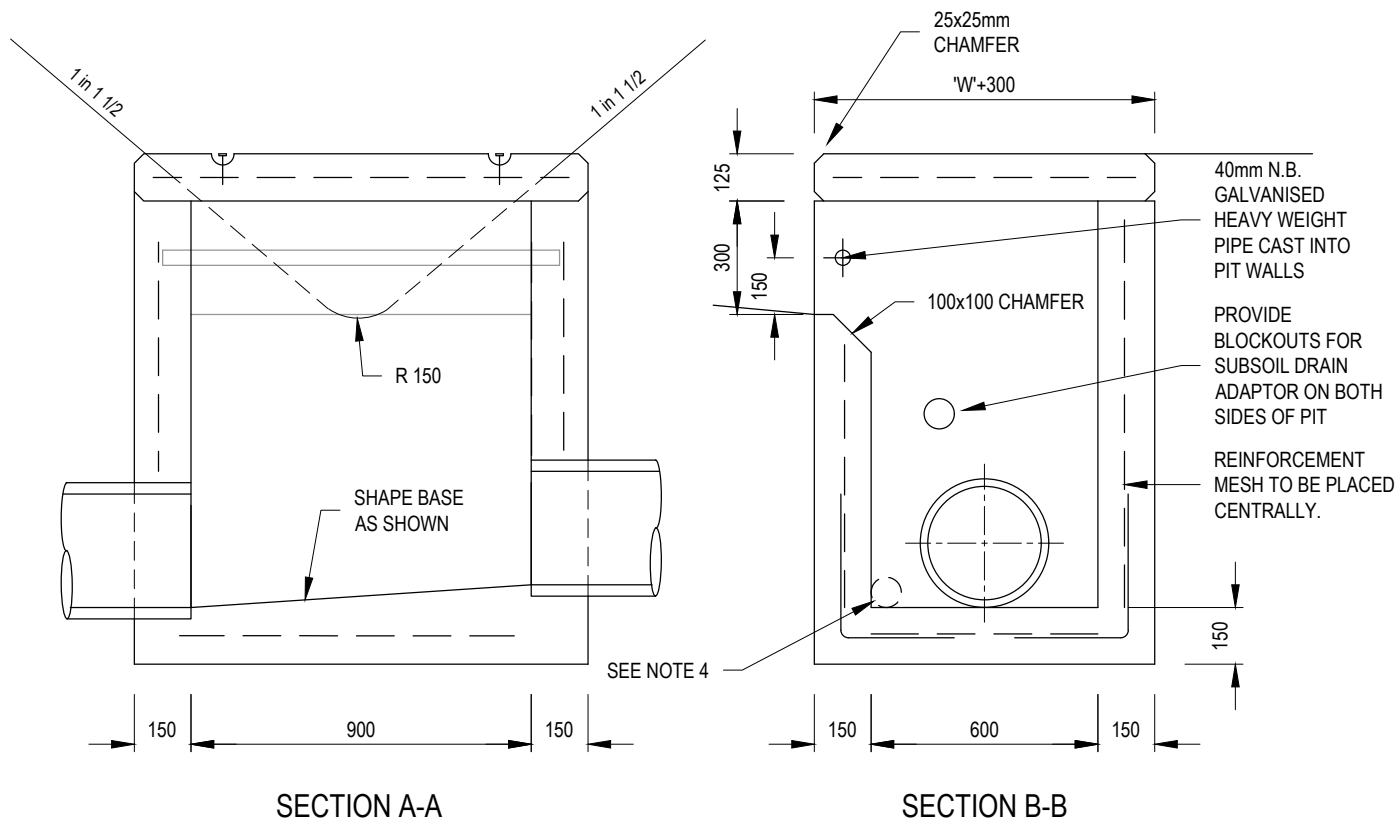


REINFORCEMENT DETAILS

PIT LENGTH 'L' OR WIDTH 'W'	REINFORCEMENT
UP TO 1200	SL92
1201 TO 1800	RL918
1801 TO 2400	RL1218

NOTES:

1. PLACEMENT OF PIT WITHIN ROAD RESERVE / MUNICIPAL RESERVE SUBJECT TO COUNCIL APPROVAL.
2. REFER TO PIT SCHEDULE FOR CORRECT PIT ORIENTATION.
3. CONCRETE STRENGTH $f'c = 25\text{MPa}$. (MIN) AT 28 DAYS.
4. WHERE NO SUBSOIL DRAIN INSTALLED, OR WHERE GRAVEL BACKFILL IS USED, OR WHERE EXPANSIVE CLAYS ARE PRESENT; INSTALL 1m LONG SUBSOIL DRAIN AT THE BOTTOM OF THE PIT.



ALL MEASUREMENTS IN MILLIMETRES

INLET CATCH PIT

LAST UPDATED 08/08/2016

Infrastructure Design Manual Standard Drawings

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SD 460

NOT TO SCALE

DIMENSIONS

TYPE 1 *SLOPE AT 1.5:1				TYPE 2 *SLOPE AT 2:1				TYPE 3 *SLOPE AT 3:1			
B	C	D	F	B	C	D	F	B	C	D	F
138	1037	197	240	138	1129	262	320	275	1312	393	480
221	1286	315	385	294	1433	420	513	441	1727	630	769
307	1547	438	535	409	1752	584	713	613	2161	876	1069
394	1804	563	687	525	2066	750	916	788	2591	1125	1373

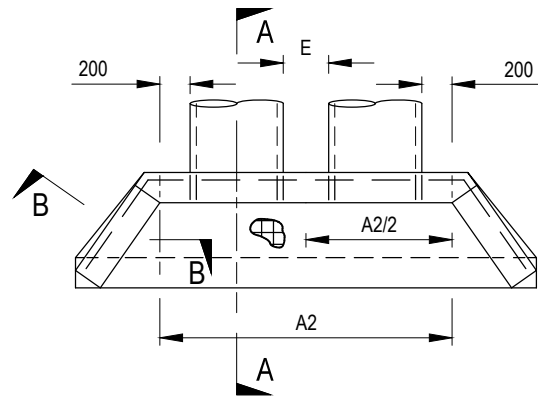
* THEORETICAL SLOPE OF WINGWALL MEASURED AT RIGHT ANGLES TO THE ROADWAY.

** $A2 = A + E$ + EXTERNAL DIAMETER OF PIPE

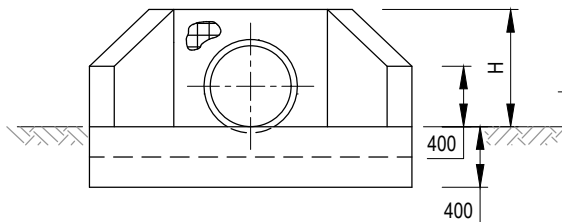
APPROXIMATE ONLY

NOM PIPE DIA	EXTERNAL PIPE DIA#	A**	E	H
300	362	762	300	531
375	445	845	300	610
450	534	934	300	692
525	616	1016	300	775

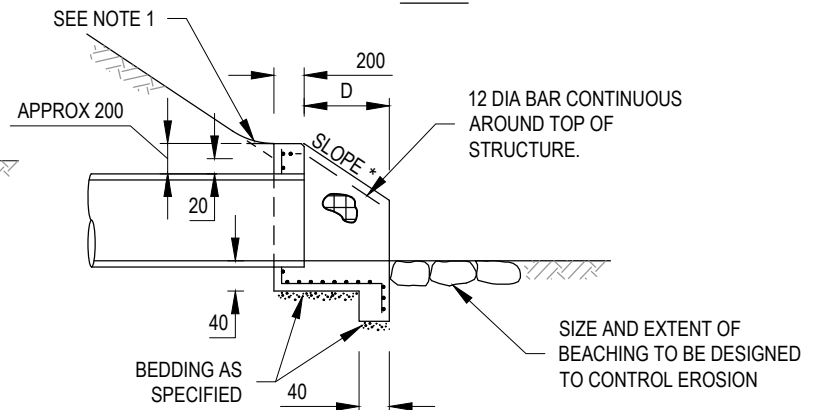
FOR LARGER PIPE DIAMETERS REFER
TO VICROADS SD1931 REV B



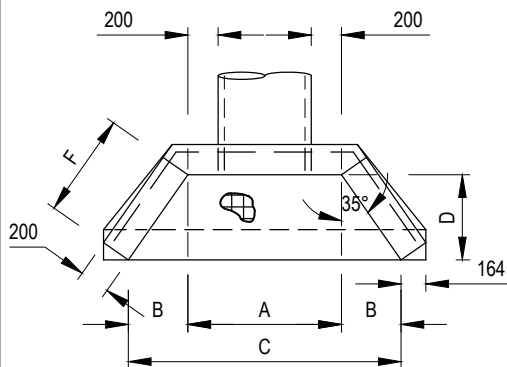
PLAN



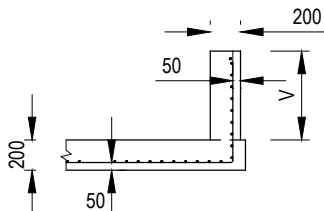
END ELEVATION



SECTION A-A



PLAN



SECTION B-B

V = VARIABLE HEIGHT OF
THE WINGWALL

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, F82 UNLESS OTHERWISE SPECIFIED, SHALL BE CONTINUOUS AROUND CORNERS AND LOCATED AS SHOWN ON SECTIONS A-A AND B-B. CLEAR COVER 50 MIN. LAPS: FABRICS 300 MIN, BARS 25 X BAR DIAMETER MIN.
3. DISTRIBUTION BARS 12 DIA AT 200 CENTRES.
4. CONCRETE SHALL BE NORMAL-CLASS N32 STANDARD STRENGTH GRADE OR HIGHER COMPLYING WITH THE REQUIREMENTS OF AS 1379. EXPOSURE CLASSIFICATION UP TO AND INCLUDING B1.
5. EXPOSED EDGES SHALL HAVE 20 x 20 CHAMFERS.
6. COMPACTION PRESSURE BEHIND WALLS NOT TO EXCEED 15 kPa. (1.5 TONNE VIBRATORY ROLLER OR 300 kg VIBRATING PLATE WITHIN 0.5m OF WALL).
7. ENDWALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT PROVISIONS OF AS 3600.
8. CONCRETE STRENGTH $f'_{c} = 25\text{MPa}$. (MIN) AT 28 DAYS.

ALL MEASUREMENTS IN MILLIMETRES

REINFORCED CONCRETE WINGWALL (IN-SITU)

LAST UPDATED 20/03/2015

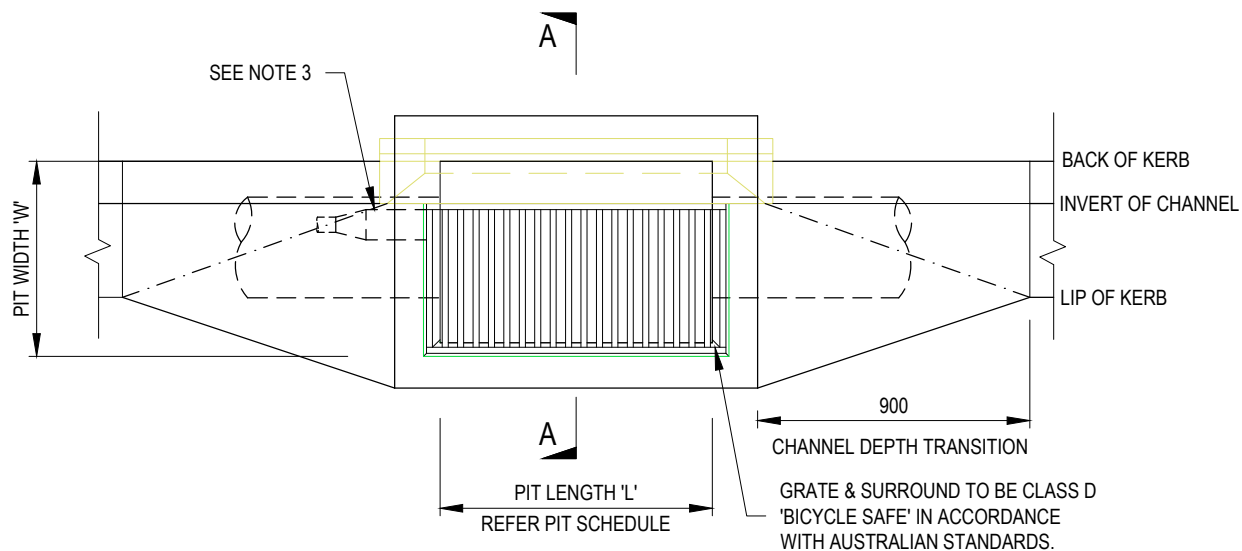
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SD 465

NOT TO SCALE

NOT TO SCALE

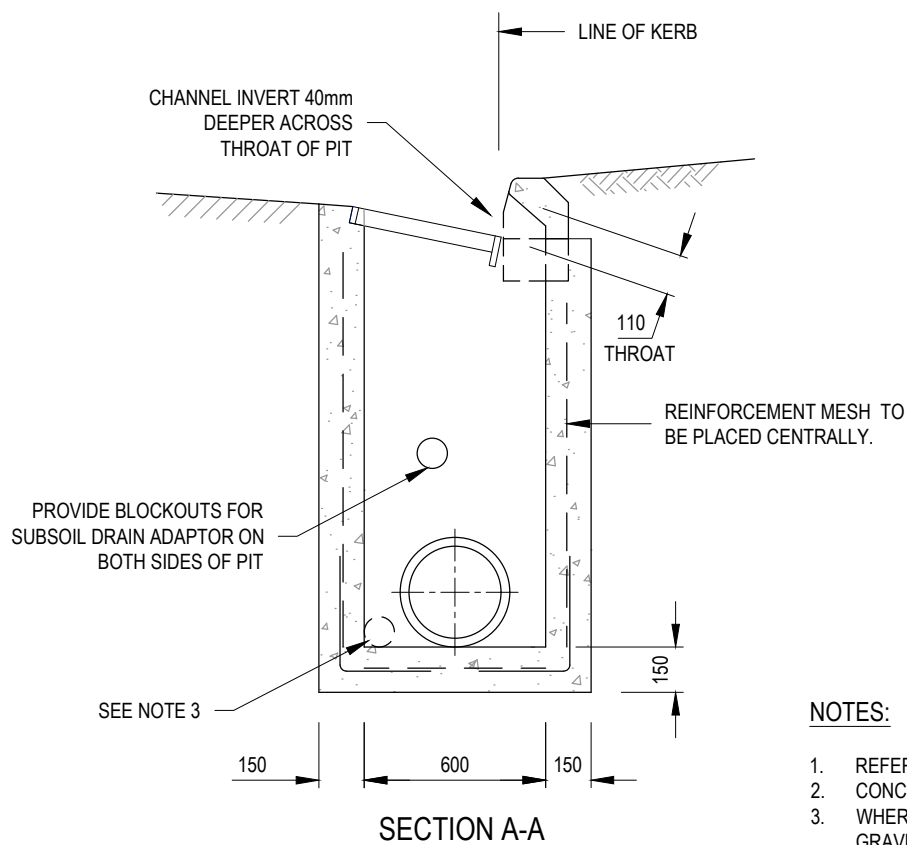


PLAN

SCALE 1:25

REINFORCEMENT DETAILS

PIT LENGTH 'L' OR WIDTH 'W'	REINFORCEMENT
UP TO 1200	SL92
1201 TO 1800	RL918
1801 TO 2400	RL1218



SECTION A-A

NOTES:

1. REFER TO SD100 FOR KERB DETAILS.
2. CONCRETE STRENGTH F'C = 25MPa. (MIN) AT 28 DAYS.
3. WHERE NO SUBSOIL DRAIN INSTALLED, OR WHERE GRAVEL BACKFILL IS USED, OR WHERE EXPANSIVE CLAYS ARE PRESENT; INSTALL 1m LONG SUBSOIL DRAIN AT THE BOTTOM OF THE PIT.

ALL MEASUREMENTS IN MILLIMETRES

GRATED SIDE ENTRY PIT INLET 900mm WITH CONCRETE SURROUND FOR 'B2'

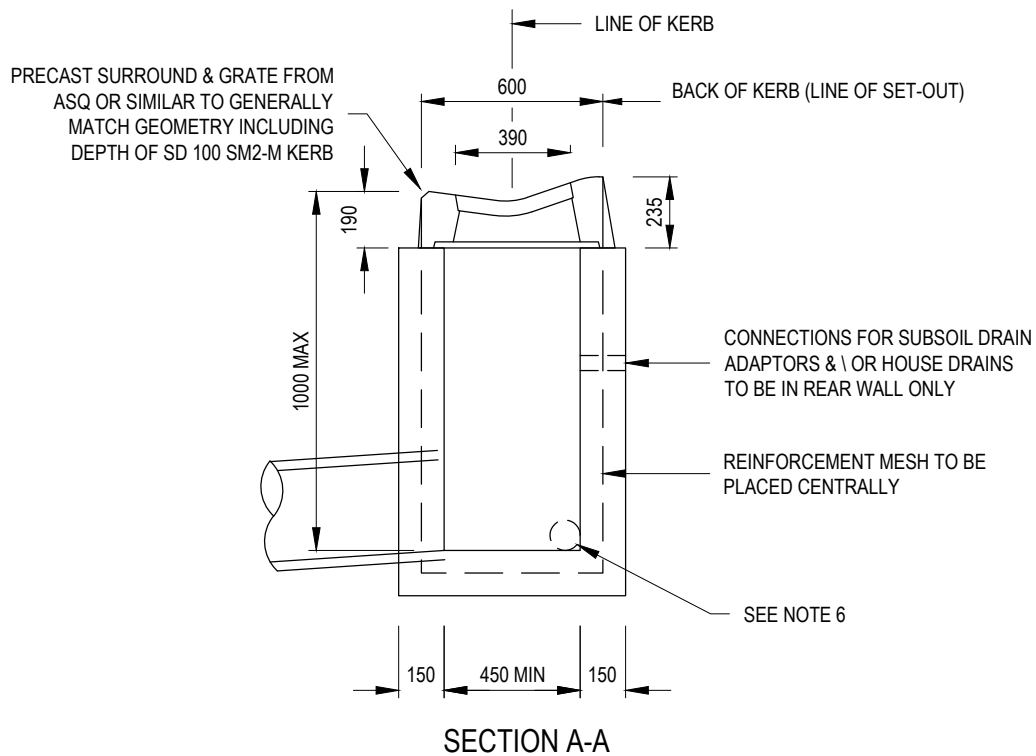
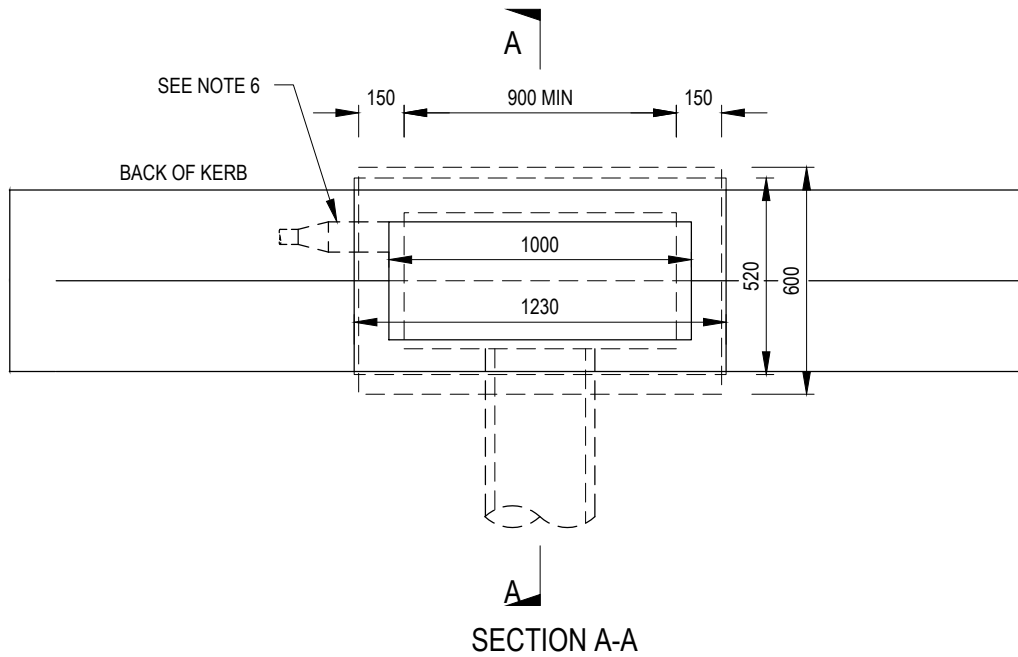
LAST UPDATED 08/08/2016

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SD 475

NOT TO SCALE



NOTES:

1. FOR USE AS UPSTREAM PIT ONLY
2. MAXIMUM PIT DEPTH 1000mm
3. GRATE & SURROUND AS PER ASQ PRODUCT OR SIMILAR APPROVED
4. GRATE & SURROUND TO BE CLASS 'D' ("BICYCLE SAFE")
5. CONCRETE STRENGTH SHALL BE 25MPa AT 28 DAYS.
6. WHERE NO SUBSOIL DRAIN INSTALLED, OR WHERE GRAVEL BACKFILL IS USED, OR WHERE EXPANSIVE CLAYS ARE PRESENT; INSTALL 1m LONG SUBSOIL DRAIN AT THE BOTTOM OF THE PIT.

ALL MEASUREMENTS IN MILLIMETRES

ALTERNATE GRATED PIT FOR SM2 MODIFIED KERB & CHANNEL 'SM2-M' - UPSTREAM PIT ONLY

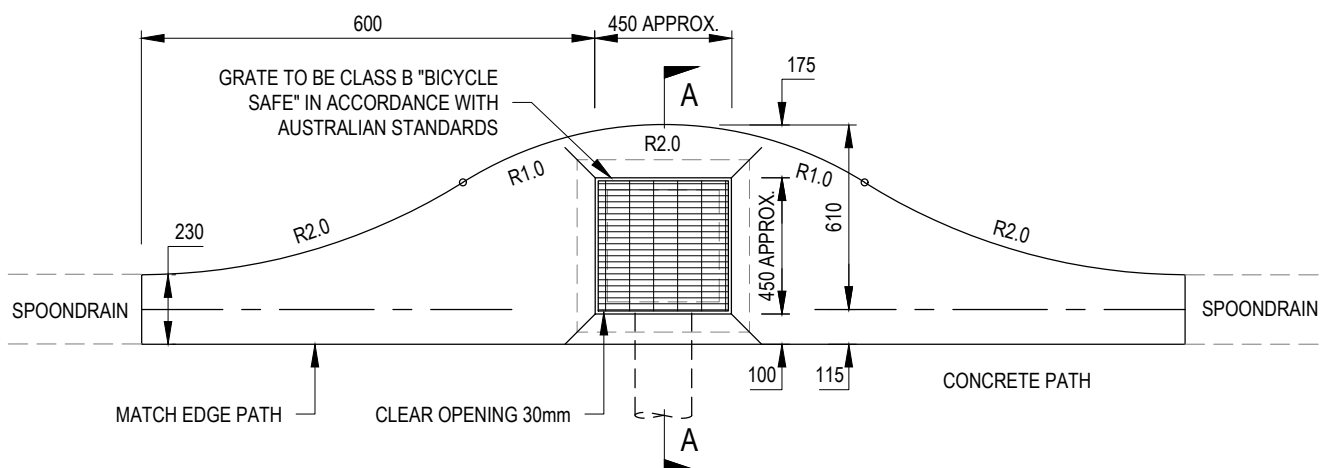
LAST UPDATED 08/08/2016

Infrastructure Design Manual Standard Drawings

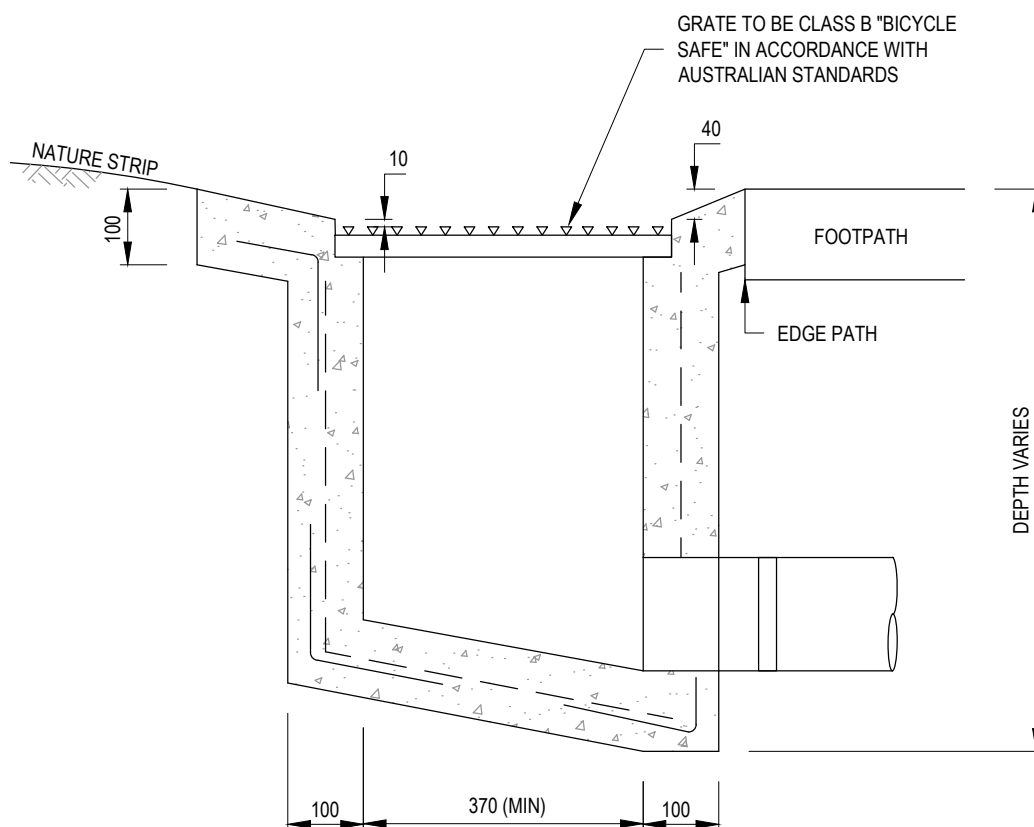
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SD 481

NOT TO SCALE



PLAN



SECTION A-A

NOTES:

1. EDGE CONCRETE AROUND PERIMETER OF GRATE.
2. TOP OF GRATE 50mm BELOW EDGE OF PATH.
3. DO NOT BOND GRATE TO CONCRETE TO ALLOW EASY ACCESS TO PIT.
4. CONCRETE TO BE SMOOTH TROWELLED FINISH.
5. GRATE FRAME TO BE OILED IF INSTALLED IN WET CONCRETE.
6. CONCRETE STRENGTH F'C = 25MPa. (MIN) AT 28 DAYS

ALL MEASUREMENTS IN MILLIMETRES

SPOON PIT WITH GRATING

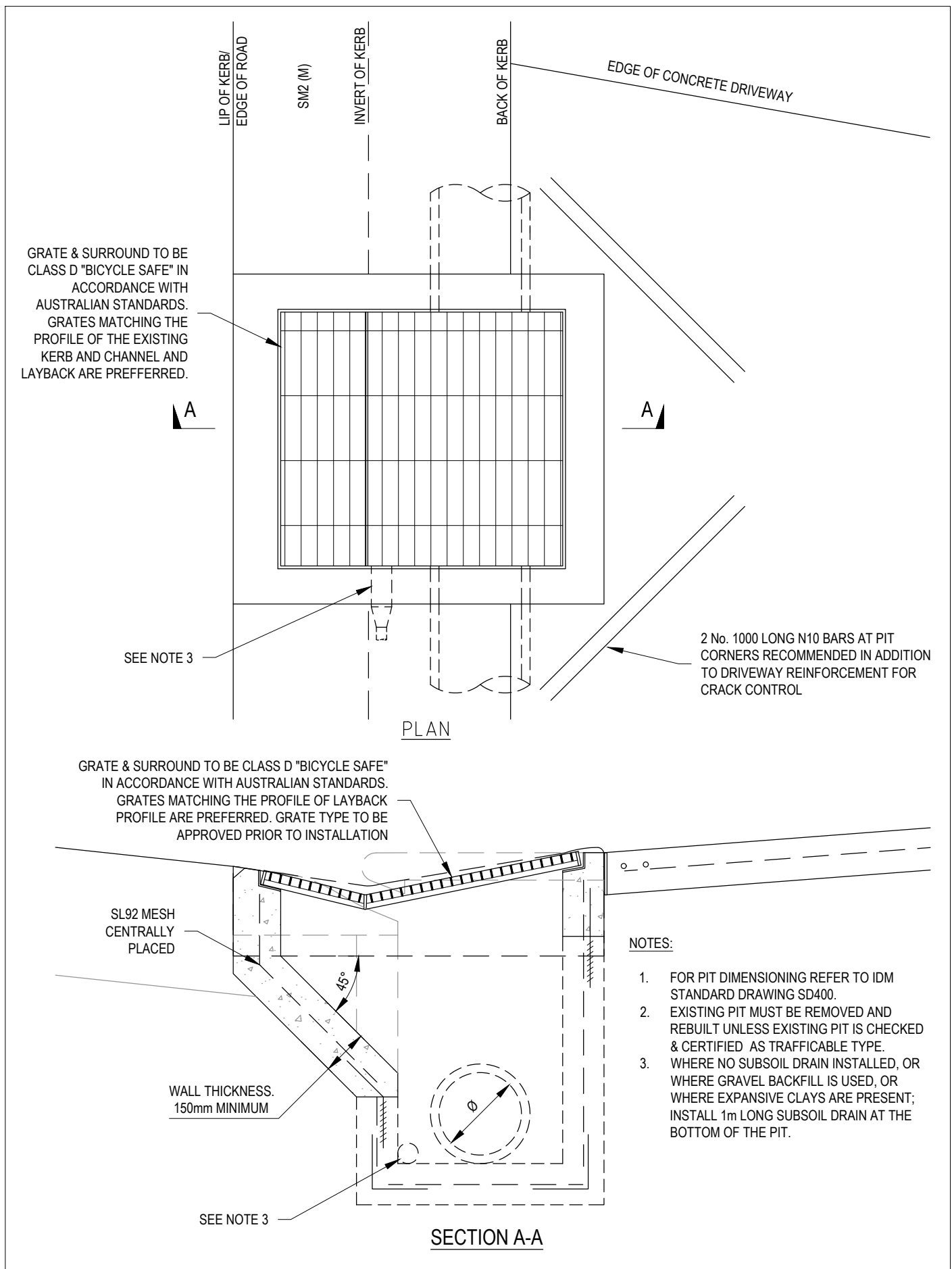
LAST UPDATED 08/08/2016

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SD 495

NOT TO SCALE



MODIFIED EXISTING PIT TO GRATED PIT IN VEHICLE CROSSING / LAYBACK

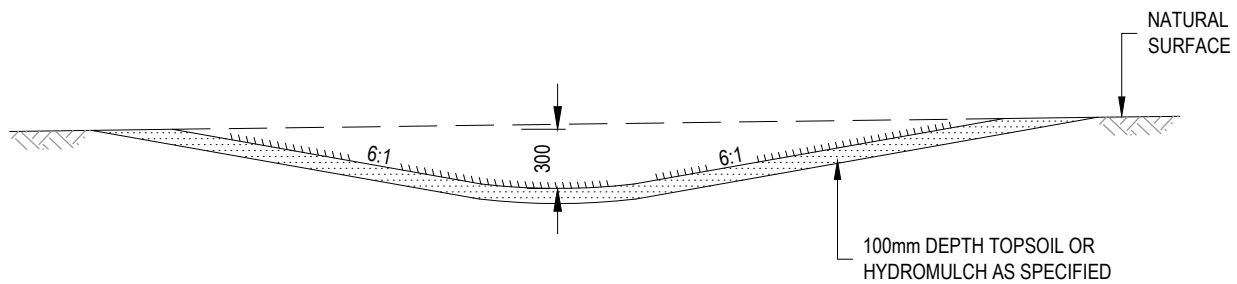
LAST UPDATED 01/03/2019

Infrastructure Design Manual Standard Drawings

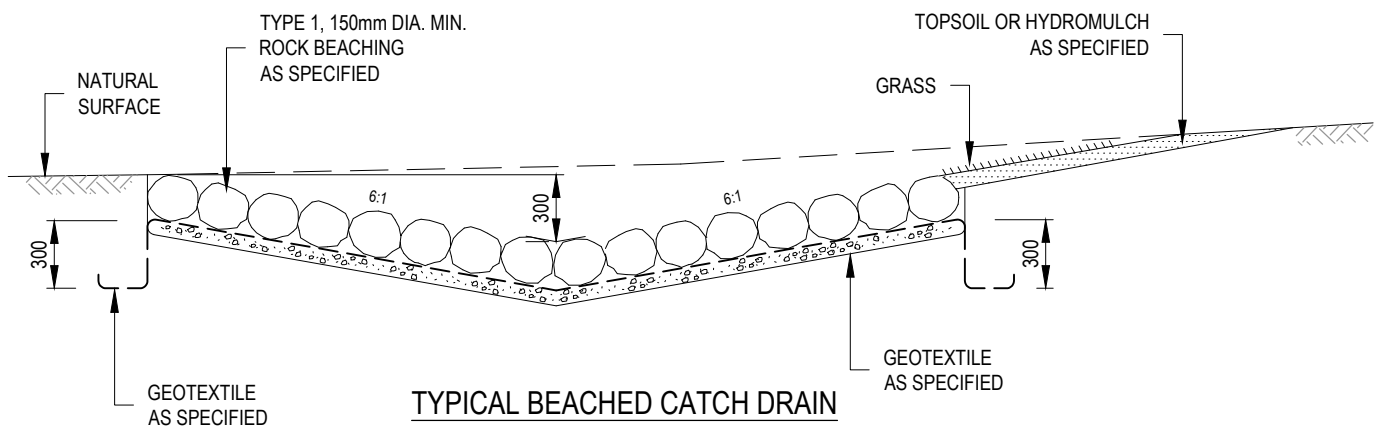
A copy of the Infrastructure Design Manual can be viewed on the Design Manual website
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SD 496

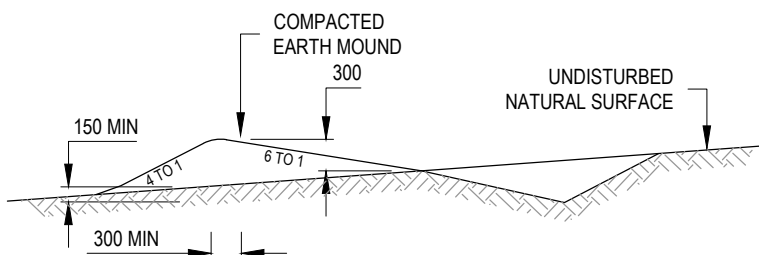
NOT TO SCALE



TYPICAL GRASS CATCH DRAIN SECTIONS



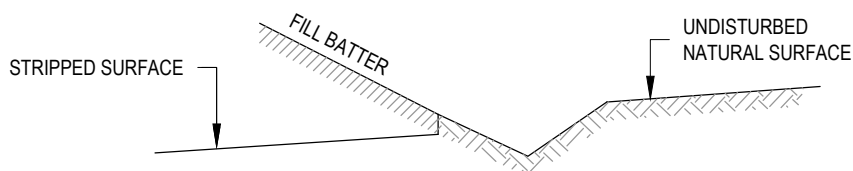
TYPICAL BEACHED CATCH DRAIN



**TYPICAL MOUNDED CATCH DRAIN
(ERODABLE TERRAIN)**

NOTES:

1. CATCH DRAINS SHALL BE CONSTRUCTED WHERE INDICATED ON ALIGNMENT PLANS.
2. CATCH DRAINS LOCATION RELATIVE TO THE BATTER SHALL BE DETERMINED BY THE COUNCIL REPRESENTATIVE.
3. CATCH DRAINS SHALL BE GRADED TO CULVERTS OR EXISTING LOW POINTS.
4. CATCH DRAINS SHALL BE LINED WITH TOPSOIL OR HYDROMULCH AS SHOWN.
5. REFER SD460 FOR INLET CATCH PIT DETAILS.



TYPICAL CATCH DRAIN AT TOE OF BATTER

ALL MEASUREMENTS IN MILLIMETRES

CATCH DRAIN DETAILS

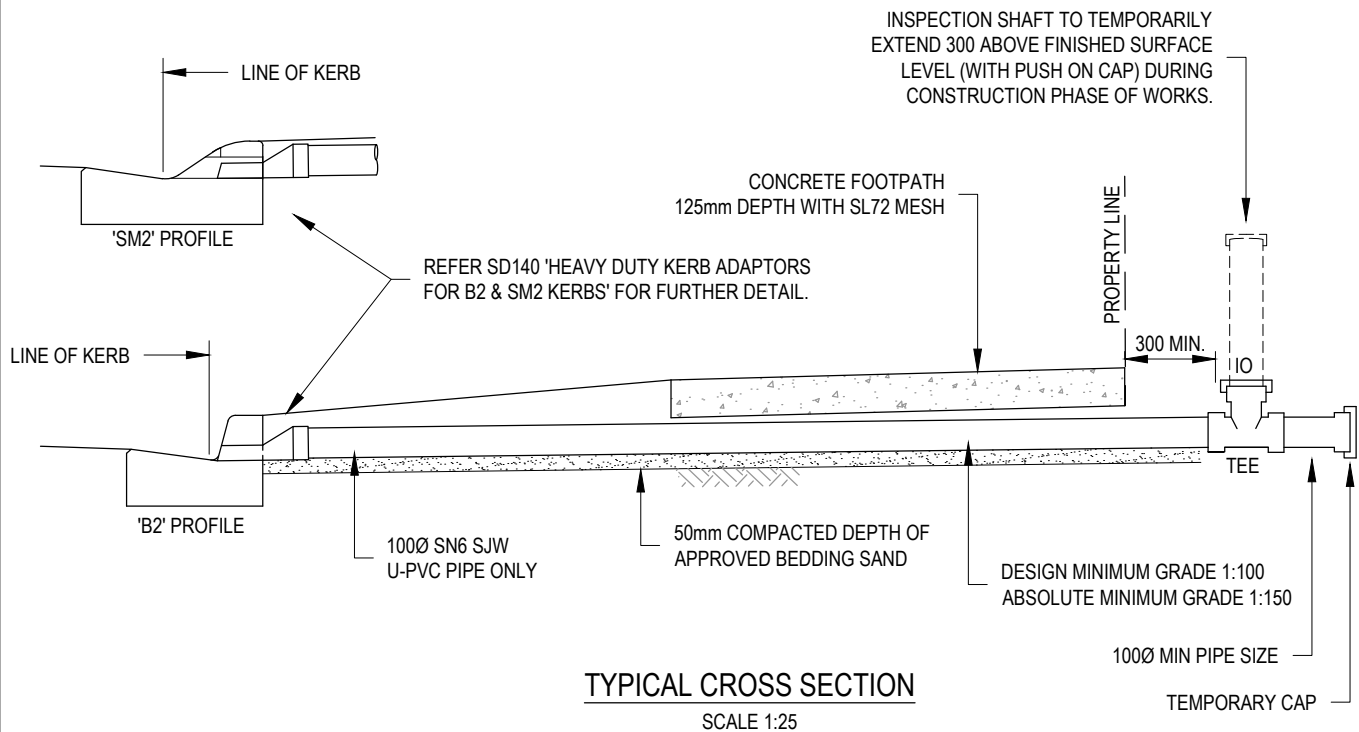
LAST UPDATED 20/03/2015

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SD 500

NOT TO SCALE



NOTES:

1. LOCATION OF HOUSE DRAINS WITHIN PROPERTY BOUNDARY TO BE MARKED WITH AN APPROVED TAPE TIED TO EXTEND THROUGH FINISHED SURFACE FOR EASY LOCATION BY BUILDERS.
2. F.C.R. BACKFILL TO BE USED UNDER ROAD PAVEMENT.
3. AS PER AS 2032:2006 TABLE 5.1: WHERE SUBJECT TO VEHICLE LOADING, THE MINIMUM COVER FOR PVC PIPES IS 0.45m. WHERE NOT SUBJECT TO VEHICLE LOADING THE MINIMUM COVER FOR PVC PIPES 0.3m.
4. REFER TO PLUMBING CODE OF AUSTRALIA FOR ALL PIPE LAYING AND JOINTING REQUIREMENTS.

ALL MEASUREMENTS IN MILLIMETRES

HOUSE DRAIN TO KERB & CHANNEL

LAST UPDATED 29/03/2016

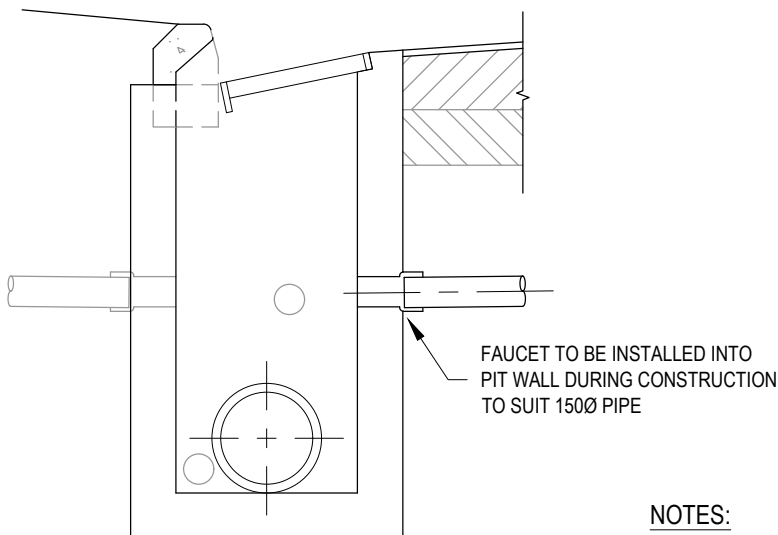
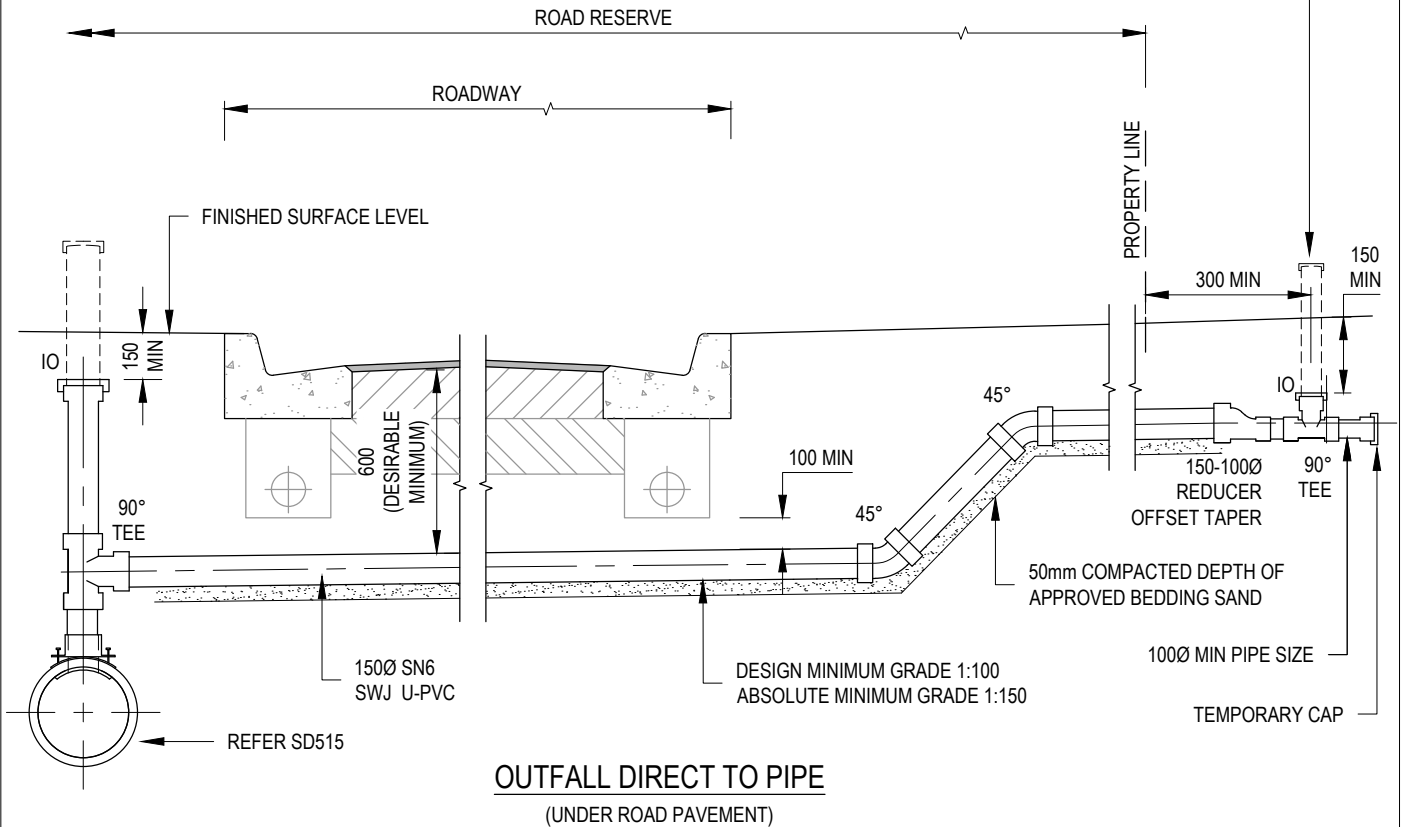
Infrastructure Design Manual Standard Drawings

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SD 505

NOT TO SCALE

INSPECTION SHAFT TO TEMPORARILY EXTEND 300 ABOVE FINISHED SURFACE LEVEL (WITH PUSH ON CAP) DURING CONSTRUCTION PHASE OF WORKS.



OUTFALL DIRECT TO DRAINAGE PIT
(STREET DRAINAGE)

NOTES:

1. 20mm CLASS 3 F.C.R. BACKFILL TO BE USED UNDER ROAD PAVEMENT.
2. CONCRETE KERB TO BE STAMPED WHEN CURING WITH THE LETTER 'D' ADJACENT THE HOUSE DRAIN CONNECTION POINT.
3. REFER TO PLUMBING CODE OF AUSTRALIA FOR ALL PIPE LAYING AND JOINTING REQUIREMENTS.

ALL MEASUREMENTS IN MILLIMETRES

HOUSE DRAIN UNDER ROAD PAVEMENT

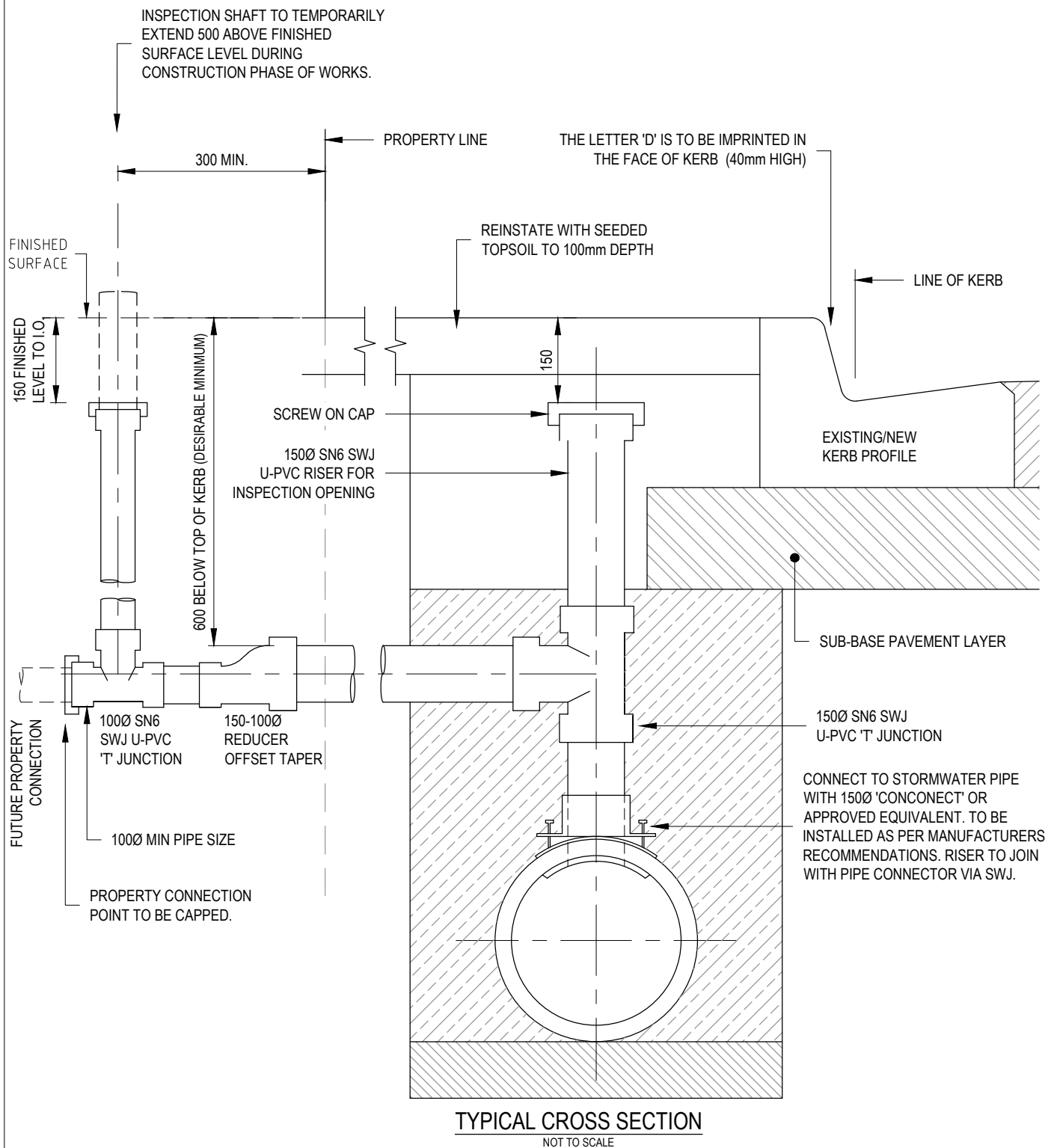
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SD 510

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NOTES:

1. REFER TO PLUMBING CODE OF AUSTRALIA FOR ALL PIPE LAYING AND JOINTING REQUIREMENTS.

ALL MEASUREMENTS IN MILLIMETRES

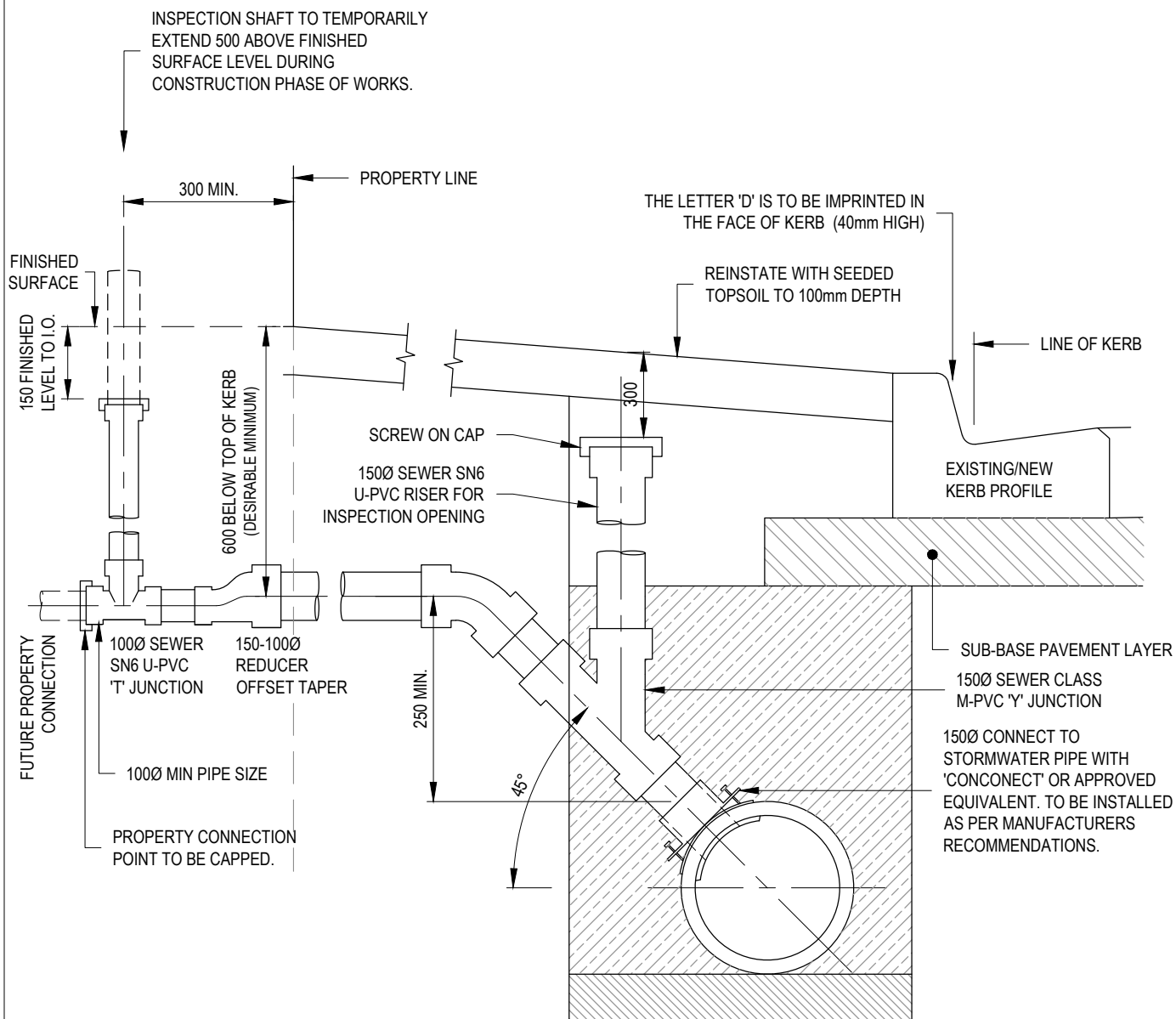
STREET DRAIN CONNECTION

LAST UPDATED 29/03/2016

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TYPICAL CROSS SECTION

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NOTES:

1. REFER TO PLUMBING CODE OF AUSTRALIA FOR ALL PIPE LAYING AND JOINTING REQUIREMENTS.

ALL MEASUREMENTS IN MILLIMETRES

**STREET DRAIN CONNECTION
(45° TO PIPE WHERE COVER LIMITED)**

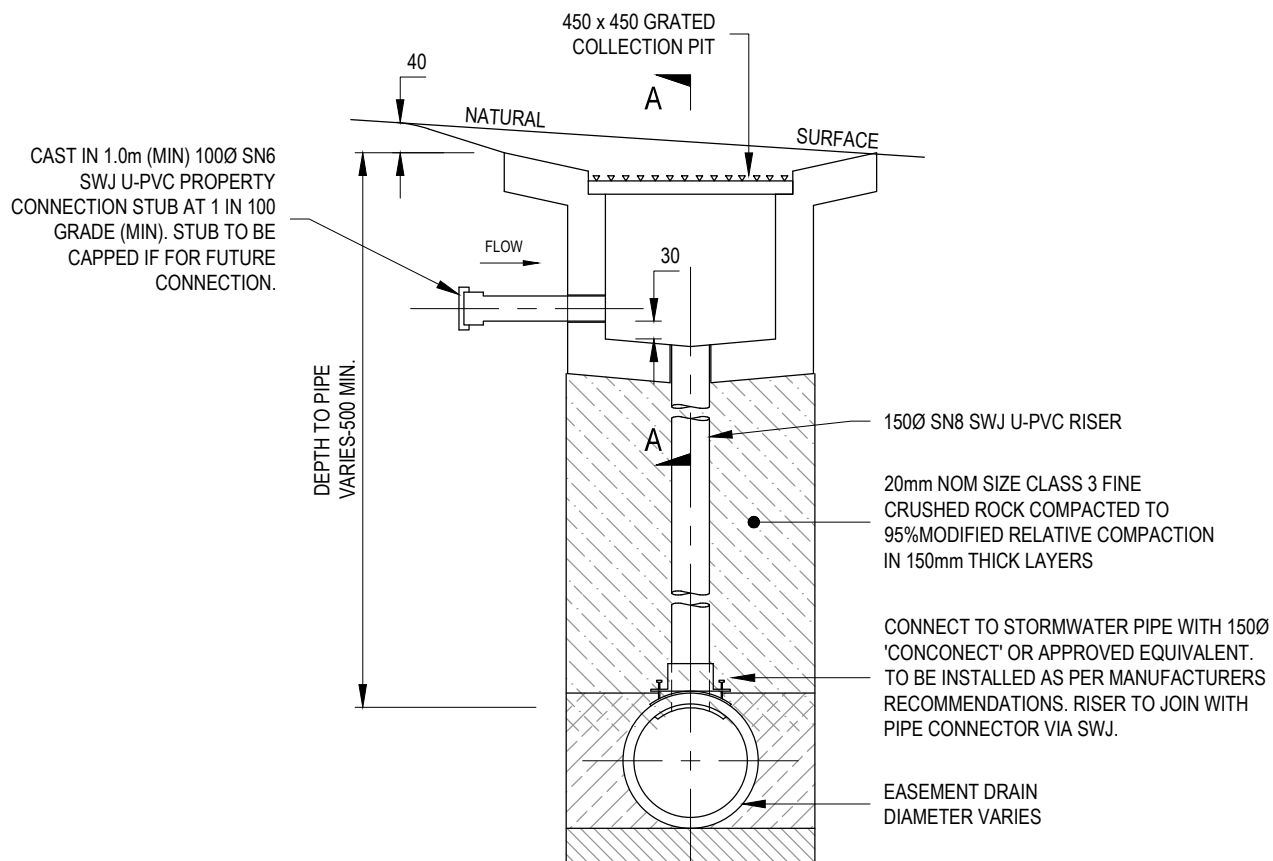
LAST UPDATED 29/03/2016

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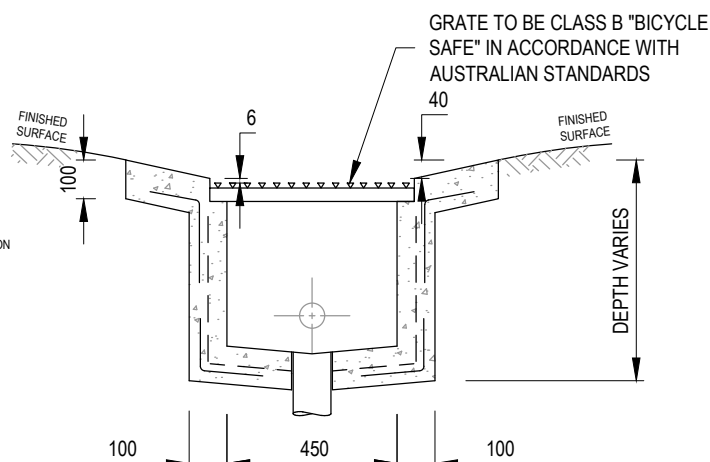
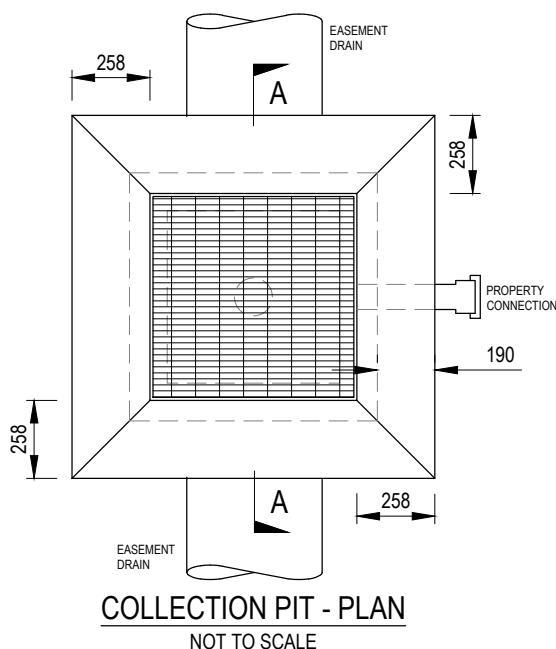
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SIDE ELEVATION
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SECTION A-A
NOT TO SCALE

NOTES:

1. EDGE CONCRETE AROUND PERIMETER OF GRATE.
2. TOP OF GRATE 40mm (min) BELOW FINISHED SURFACE.
3. DO NOT BOND GRATE TO CONCRETE TO ALLOW EASY ACCESS TO PIT.
4. CONCRETE TO BE SMOOTH TROWELLED FINISH.
5. GRATE FRAME TO BE OILED IF INSTALLED IN WET CONCRETE.
6. CONCRETE STRENGTH F'C = 25MPa. (MIN) AT 28 DAYS
7. SEAL UP AND MAKE GOOD PIPE CONNECTION / INSERTION TO PIT.
8. PROPERTY CONNECTION MIN 1000 PIPE AS PER CLAUSE 16.10.2 (PIPE DIAMETERS).

ALL MEASUREMENTS IN MILLIMETRES

EASEMENT DRAIN CONNECTION

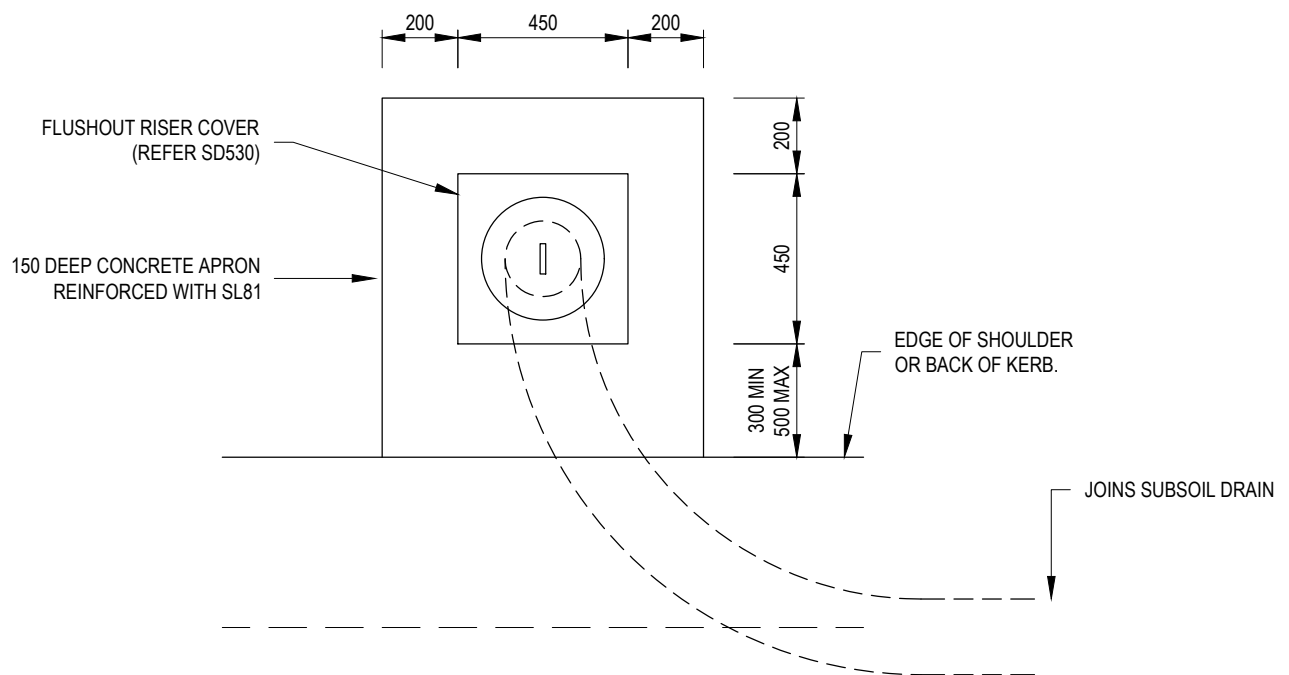
LAST UPDATED 08/08/2016

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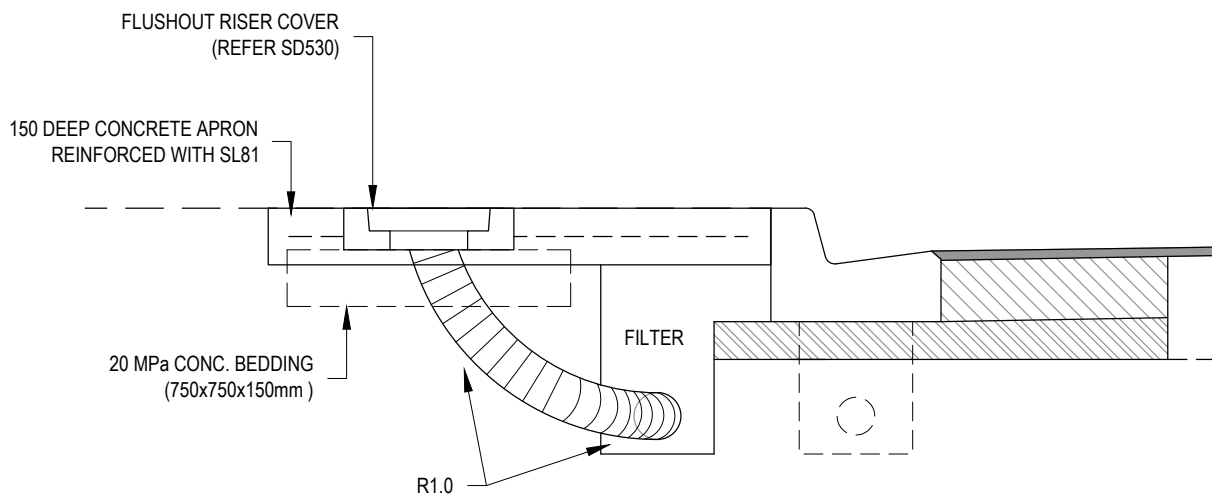
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TYPICAL FLUSHOUT RISER PLAN



TYPICAL FLUSHOUT RISER SECTION

ALL MEASUREMENTS IN MILLIMETRES

FLUSHOUT RISER DETAIL

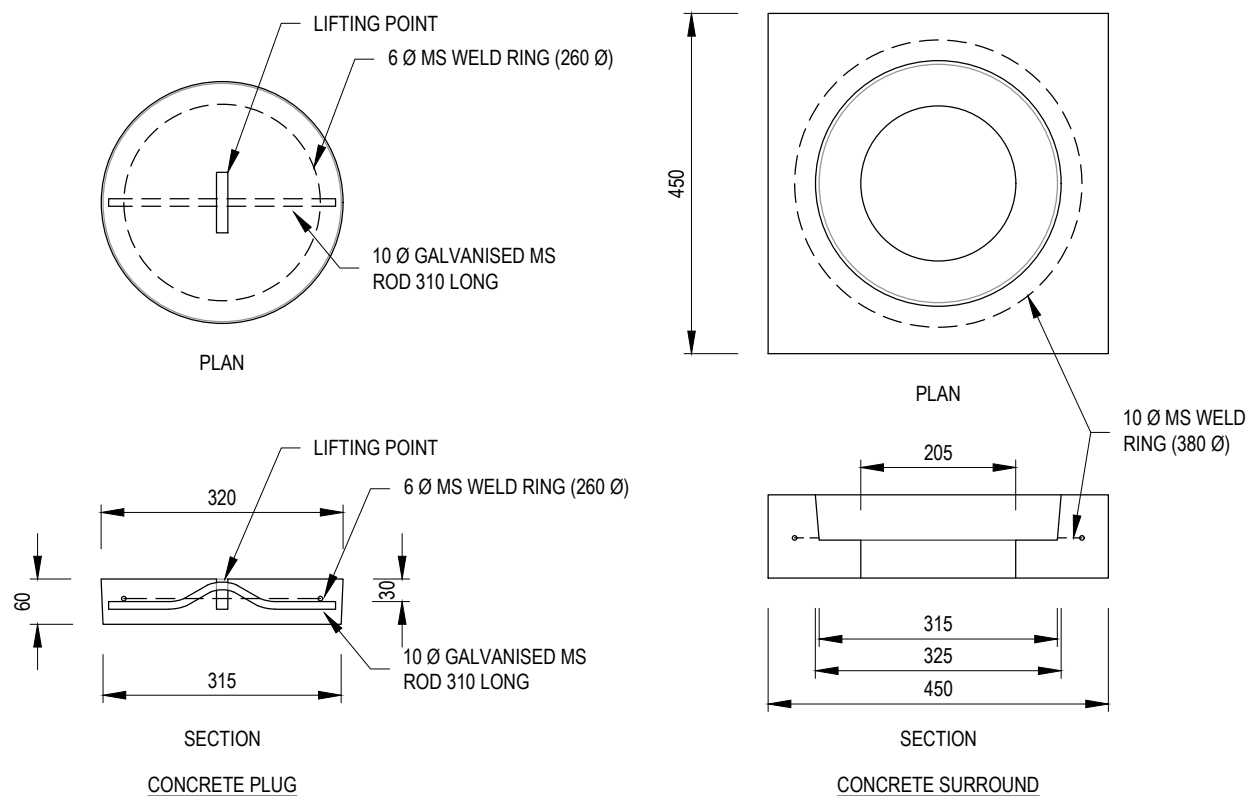
LAST UPDATED 20/03/2015

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FLUSHOUT RISER COVER DETAIL

ALL MEASUREMENTS IN MILLIMETRES

FLUSHOUT RISER COVER DETAIL

LAST UPDATED 20/03/2015

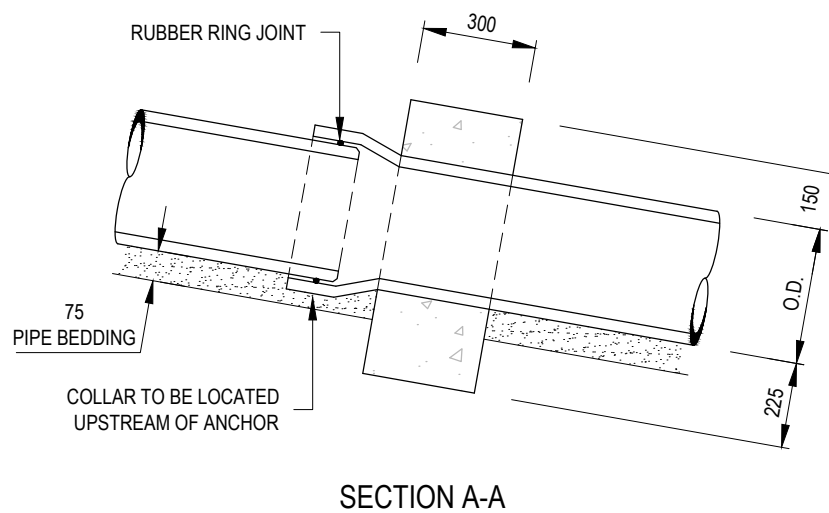
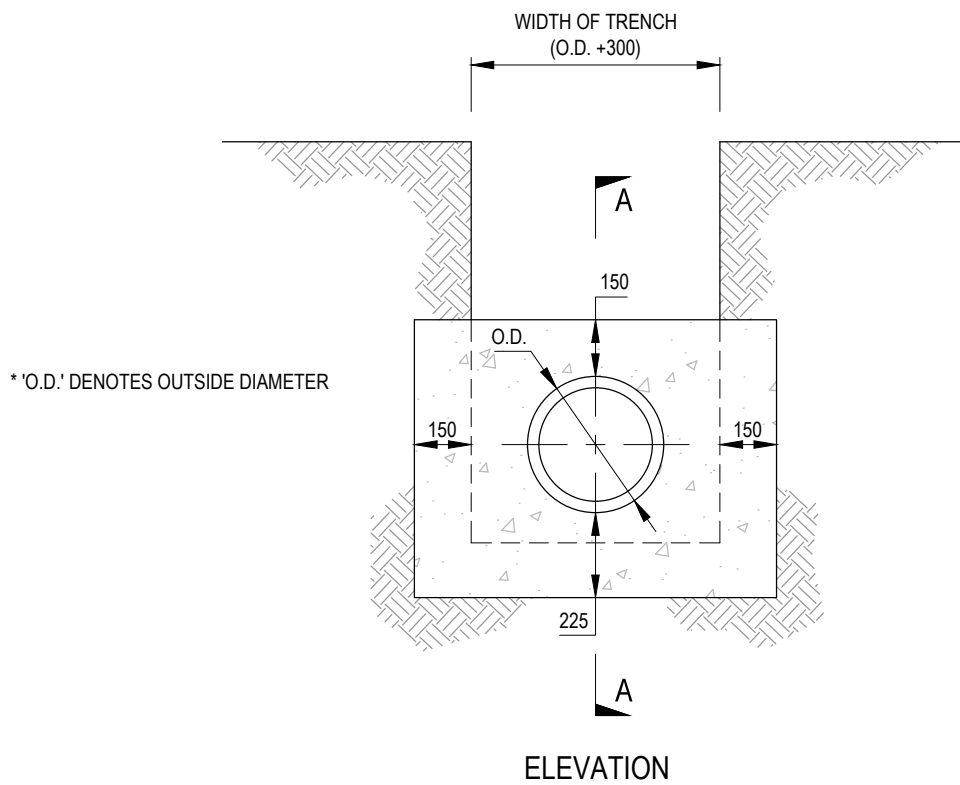
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SD 530

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NOTES:

1. FOR USE ON PIPE AT GRADES OF 1 IN 10 OR GREATER.
2. TO BE CONSTRUCTED AT A MAXIMUM OF 10m CTRS.
3. CONCRETE STRENGTH TO BE 25MPa.

ALL MEASUREMENTS IN MILLIMETRES

DRAINAGE PIPE ANCHOR BLOCK

LAST UPDATED 20/03/2015

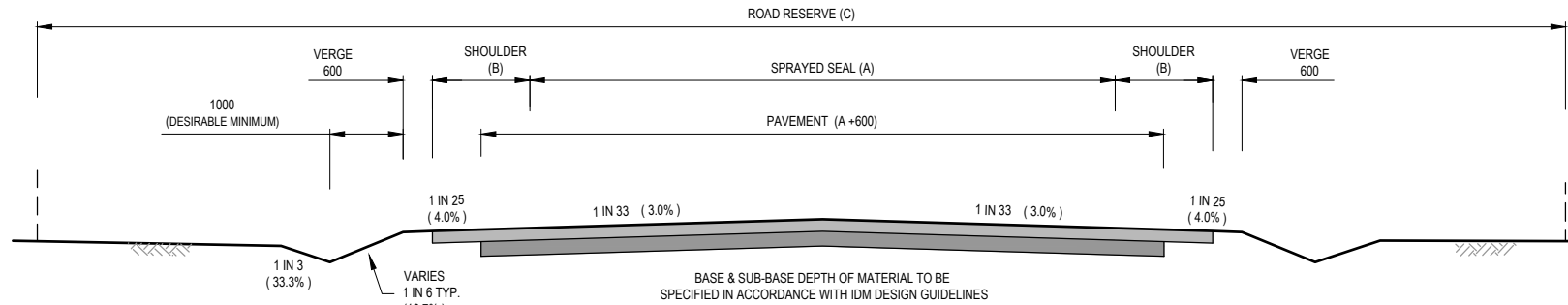
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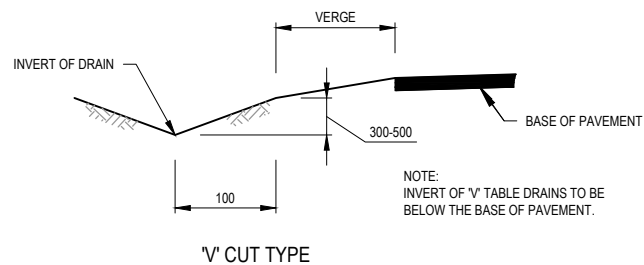
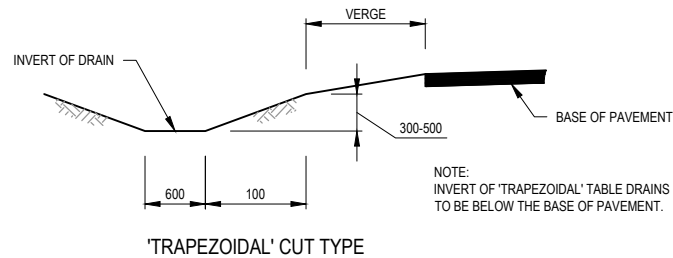
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FOR DIMENSIONS (A) (B) & (C) REFER TO IDM DESIGN GUIDELINES:
CLAUSE 12.4 TABLE 6 - 'RURAL ROAD CHARACTERISTICS'.

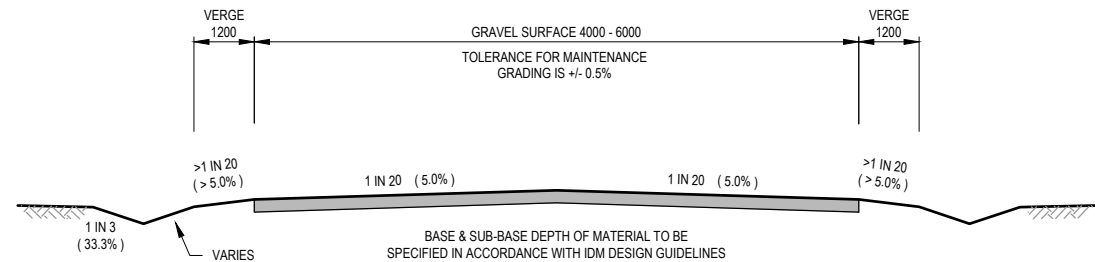


TYPICAL CROSS SECTION
SEALED ROAD



TYPICAL OPEN TABLE DRAINS

ALL MEASUREMENTS IN MILLIMETRES



TYPICAL CROSS SECTION
GRAVEL ROAD

TYPICAL ROAD PROFILES RURAL

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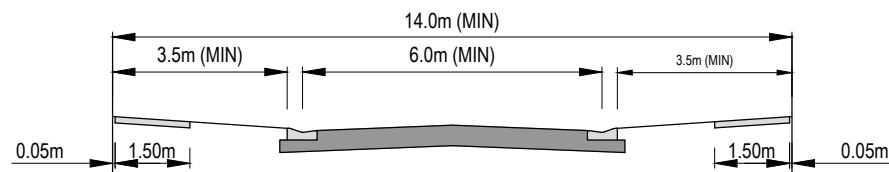


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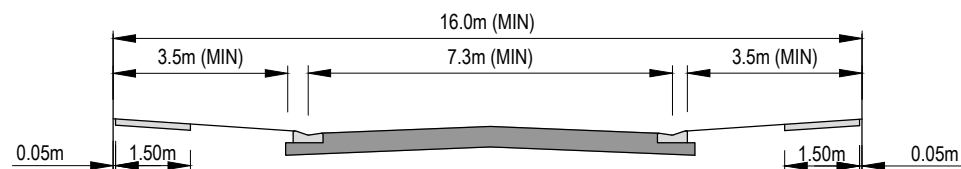
LAST UPDATED 20/03/2015

SD 600

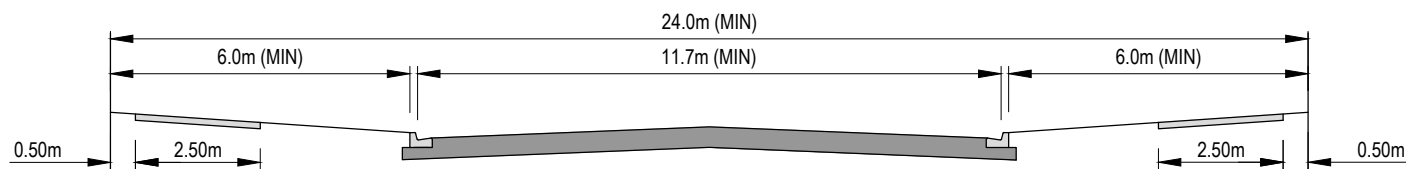
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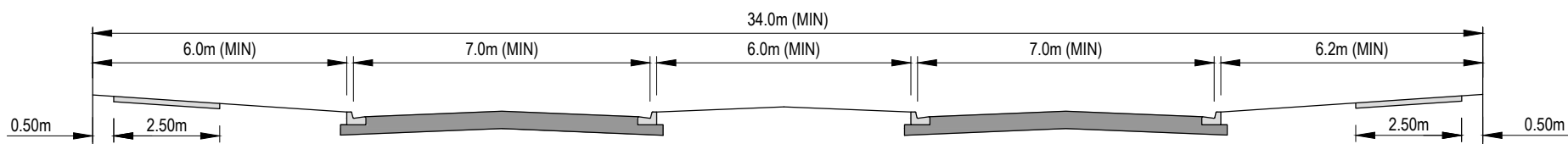
ACCESS PLACE



ACCESS STREET



COLLECTOR STREET - LEVEL 1



COLLECTOR STREET - LEVEL 2

NOTES:

1. REFER TO IDM DESIGN GUIDELINES: SECTION 12, TABLE 2 - 'URBAN ROAD / STREET CHARACTERISTICS'.
2. PROFILES TO BE USED FOR LOW DENSITY RESIDENTIAL ZONES - RURAL ONLY. FOR LOW DENSITY RESIDENTIAL ZONES - URBAN SEE PROFILES FOR URBAN ROADS.

TYPICAL ROAD PROFILES ACCESS PLACE & STREET / COLLECTOR LEVEL 1 & 2

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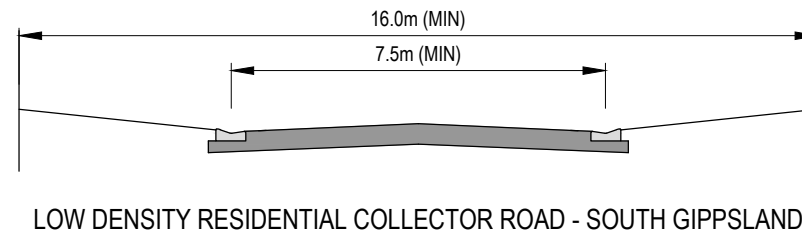
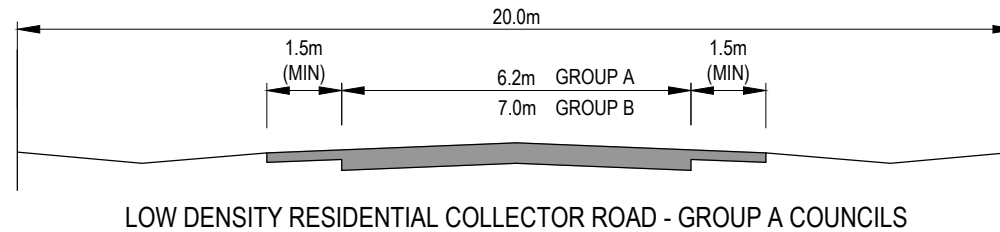
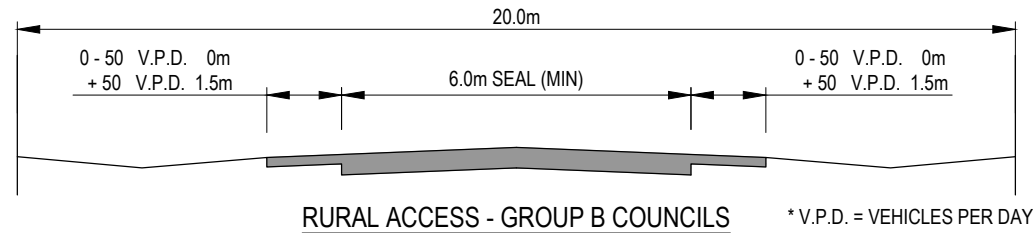
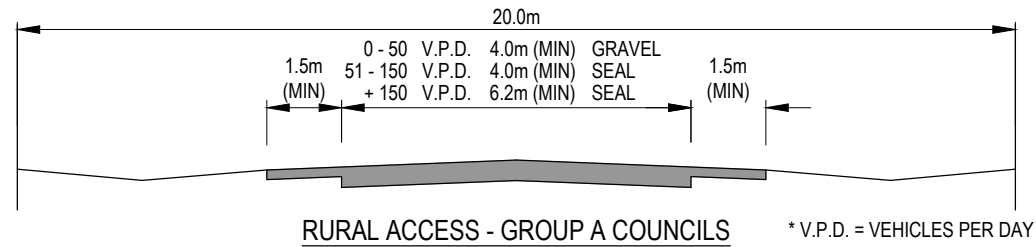


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LAST UPDATED 20/02/2019

SD 605

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NOTES:

1. REFER TO IDM DESIGN GUIDELINES: SECTION 12, TABLE 6 - 'RURAL ROAD CHARACTERISTICS'.
2. PROFILES TO BE USED FOR LOW DENSITY RESIDENTIAL ZONES - RURAL ONLY. FOR LOW DENSITY RESIDENTIAL ZONES - URBAN SEE PROFILES FOR URBAN ROADS.

**TYPICAL ROAD PROFILES LOW DENSITY
RESIDENTIAL COLLECTOR / RURAL ACCESS**

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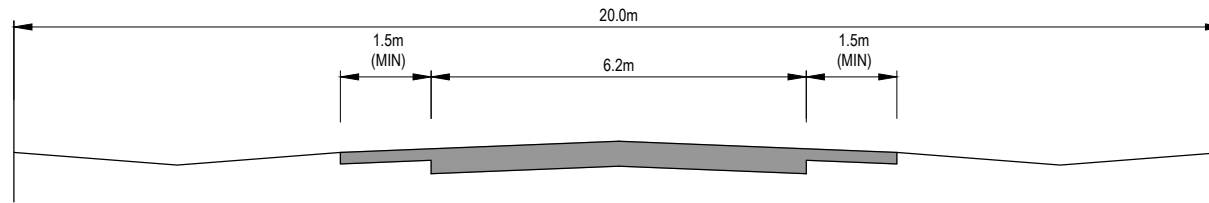


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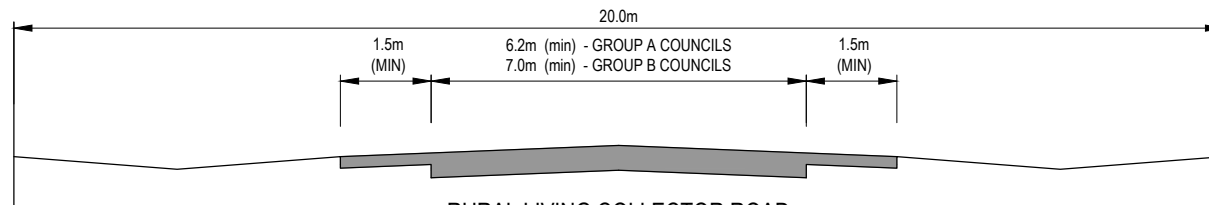
LAST UPDATED 08/08/2016

SD 610

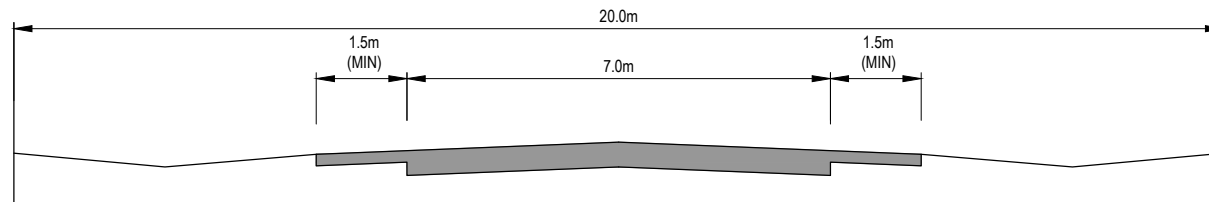
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RURAL LIVING ACCESS ROAD



RURAL LIVING COLLECTOR ROAD



LOW DENSITY RESIDENTIAL ACCESS ROAD

NOTES:

1. REFER TO IDM DESIGN GUIDELINES: SECTION 12, TABLE 6 - 'RURAL ROAD CHARACTERISTICS'.
2. PROFILES TO BE USED FOR LOW DENSITY RESIDENTIAL ZONES - RURAL ONLY. FOR LOW DENSITY RESIDENTIAL ZONES - URBAN SEE PROFILES FOR URBAN ROADS.

TYPICAL ROAD PROFILES RURAL LIVING ACCESS & COLLECTOR / LOW DENSITY RESIDENTIAL ACCESS

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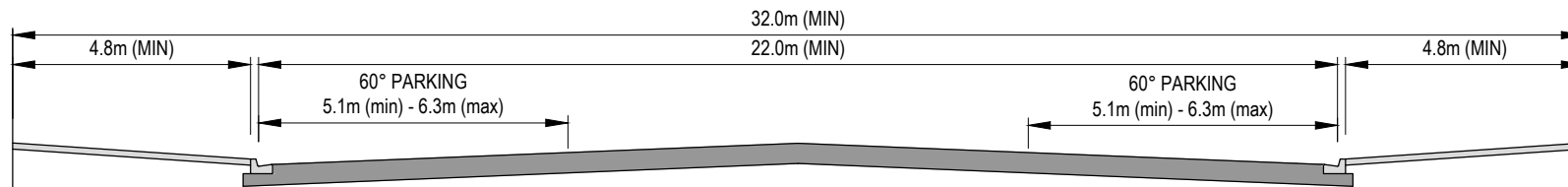


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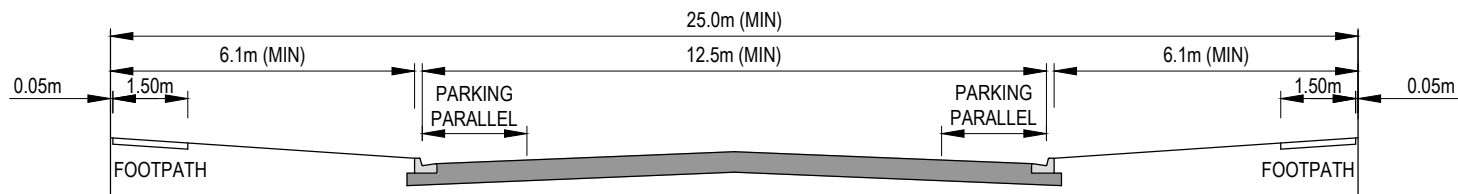
LAST UPDATED 08/08/2016

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COMMERCIAL STREET



INDUSTRIAL STREET

NOTE:
REFER TO IDM DESIGN GUIDELINES: SECTION 12, TABLE 2 -
'URBAN ROAD / STREET CHARACTERISTICS'.

TYPICAL ROAD PROFILES COMMERCIAL STREET/ INDUSTRIAL STREET

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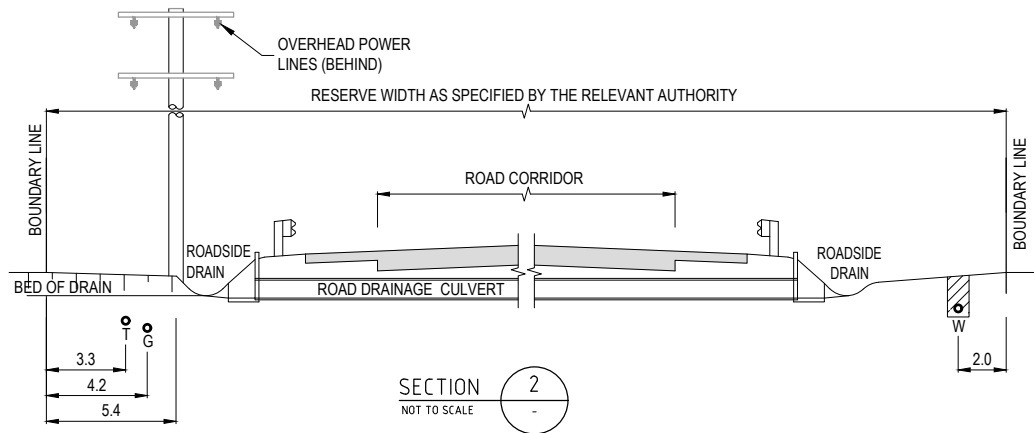
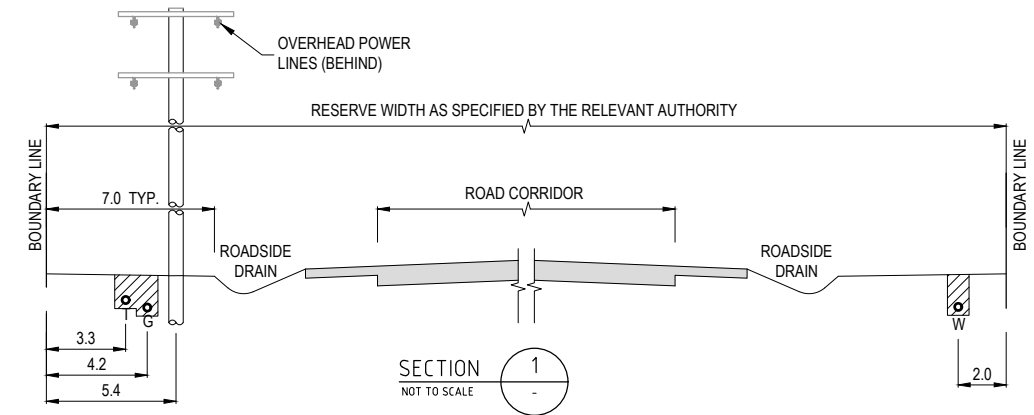
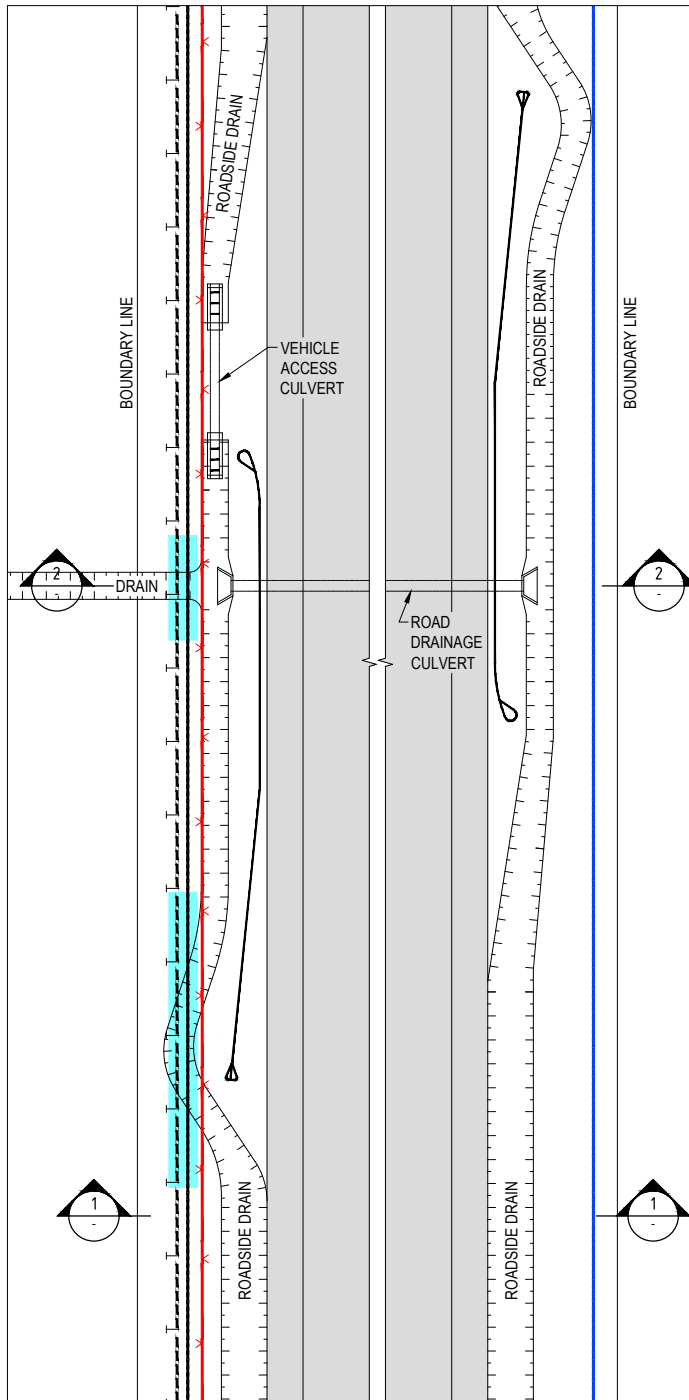
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LAST UPDATED 04/04/2016

SD 620

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NOTES

1. MINIMUM DEPTH OF COVER TO ALL UTILITY SERVICES WITH THE EXCEPTION OF TELECOMMUNICATIONS SERVICES TO BE 600mm.
2. TELECOMMUNICATIONS SERVICES ARE TO HAVE A MINIMUM DEPTH OF COVER OF 450mm. REFER TABLE A5 FOR FURTHER DETAILS.
3. MINIMUM DEPTH OF COVER SHALL BE BELOW THE NATURAL SURFACE LEVEL, WITH THE EXCEPTION OF WHERE UNDERGROUND SERVICES PASS UNDER OR IN CLOSE VICINITY TO OPEN DRAINS.
4. WHEN PASSING UNDER OR IN CLOSE PROXIMITY TO OPEN DRAINS, MINIMUM DEPTH OF COVER FOR UNDERGROUND
5. SERVICES SHALL BE BELOW BED OF DRAIN LEVEL.
6. FOR LOW DENSITY RESIDENTIAL INCORPORATING KERB AND CHANNEL, REFER TO FIGURE 1 FOR DETAILS.

LEGEND

- OVERHEAD POWER LINES
- G GAS
- W WATER
- TELECOMMUNICATIONS
- Denotes locations where underground pass under or in close vicinity of open drain.

PREFERRED SERVICE LOCATIONS FOR RURAL ACCESS STREETS

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