

FILE: S:\CALUS PROJECTS\9124\24-00479 - GROWTH AREA ENGINEERING STANDARDS\96 - MODEL\AUTOCAD\DWG\DH-GE-0000.DWG LAST SAVED BY: J. KERR PLOTTED: 3-May-25

STANDARD DRAWING INDEX	
DRAWING NUMBER	DRAWING TITLE
ROADWORKS	
DH-RD-1000	TYPICAL RESIDENTIAL KERB
DH-RD-1010	KERB & WATERTABLE INSTALLATION ABUTTING EXISTING PAVEMENT
DH-RD-1015	STANDARD STORMWATER KERB OUTLET DETAILS-INSTALLED DURING CONSTRUCTION
DH-RD-1020	HEAVY DUTY STORMWATER KERB OUTLET DETAILS - EXISTING KERB
DH-RD-1025	KERB RAMP SPECIFICATIONS SHEET 1 OF 2
DH-RD-1030	KERB RAMP SPECIFICATIONS SHEET 2 OF 2
DH-RD-2000	TYPICAL PEDESTRIAN CROSSING ARRANGEMENT DETAIL
DH-RD-2005	TYPICAL CONCRETE FOOTPATH DETAIL SHEET 1 OF 2
DH-RD-2010	TYPICAL CONCRETE FOOTPATH DETAIL SHEET 2 OF 2
DH-RD-2015	TYPICAL HOT MIX ASPHALT FOOTPATH
DH-RD-2020	BLOCK PAVED FOOTPATH
DH-RD-2025	RETROFIT RESIDENTIAL VEHICLE CROSSING DETAIL
DH-RD-2030	RESIDENTIAL VEHICLE CROSSING DETAIL
DH-RD-2035	VEHICLE BLOCK PAVED CROSSING DETAIL
DH-RD-2045	VEHICLE CROSSING LONGITUDINAL SECTIONS
DH-RD-2050	ROUNDBOUT INSTALLATION TYPE 1
DH-RD-2055	ROUNDBOUT INSTALLATION TYPE 2
DH-RD-2060	TERMINATION ROAD TURNAROUND PROVISIONS
DH-RD-2065	TYPICAL PAVEMENT SUBSOIL DRAINAGE
DH-RD-2070	TYPICAL ROAD CROSSING TRENCH BACKFILL REQUIREMENTS
DH-RD-2075	TYPICAL BUS STOP DETAIL
DH-RD-3000	TYPICAL ROAD CROSS SECTION AND PLAN ACCESS STREET
DH-RD-3001	TYPICAL ROAD CROSS SECTION AND PLAN LEVEL 1 COLLECTOR/CONNECTOR STREET
DH-RD-3002	TYPICAL ROAD CROSS SECTION AND PLAN LEVEL 1 COLLECTOR/CONNECTOR STREET WITH INDENTED CARPARK
DH-RD-3004	TYPICAL ROAD CROSS SECTION AND PLAN LEVEL 2 COLLECTOR ROAD (ON-ROAD CYCLEWAY)
DH-RD-3005	TYPICAL ROAD CROSS SECTION AND PLAN LEVEL 2 COLLECTOR ROAD (OFF-ROAD CYCLEWAY)

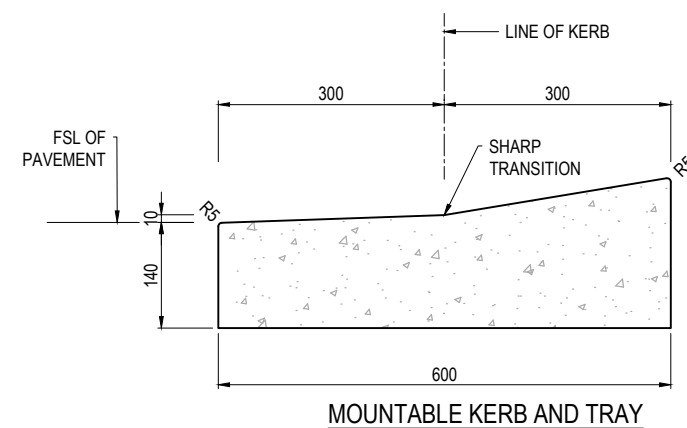
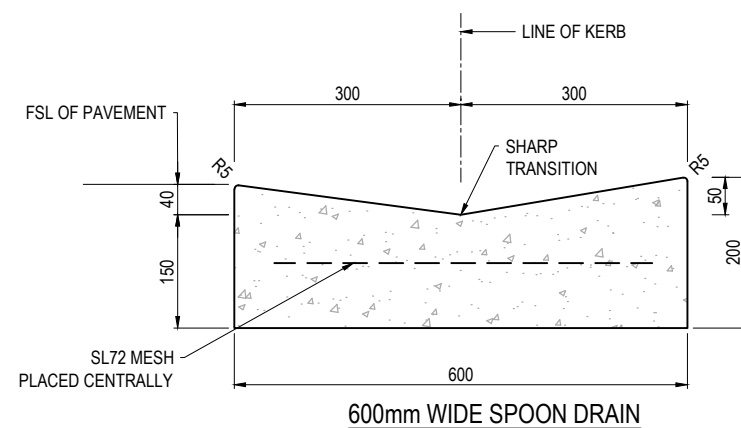
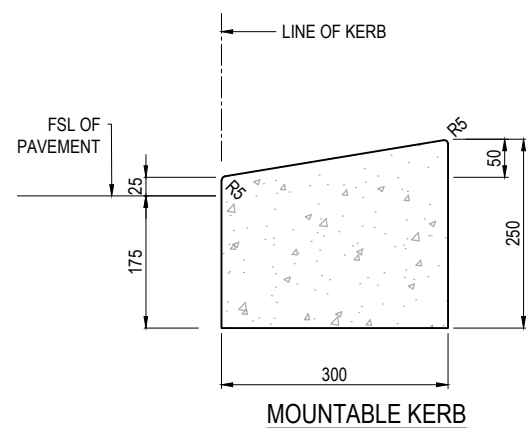
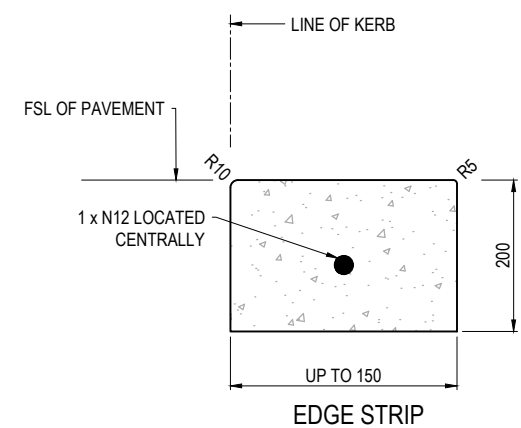
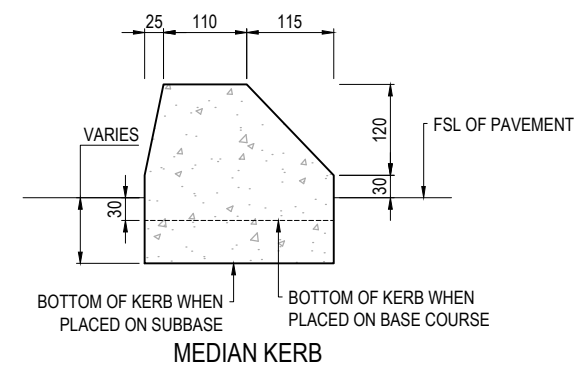
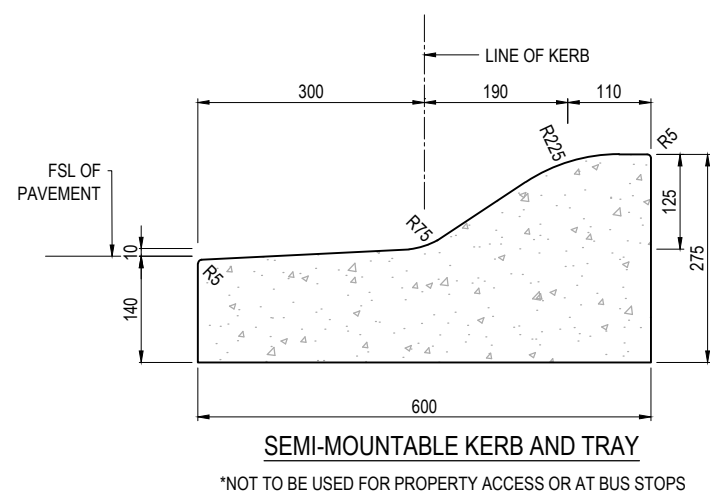
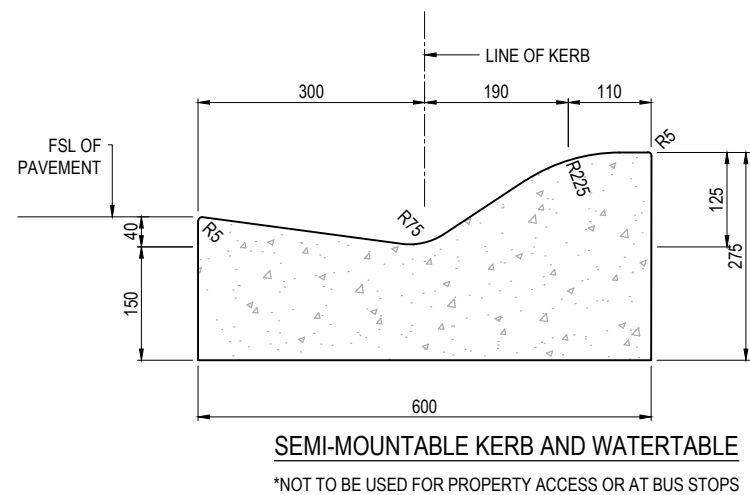
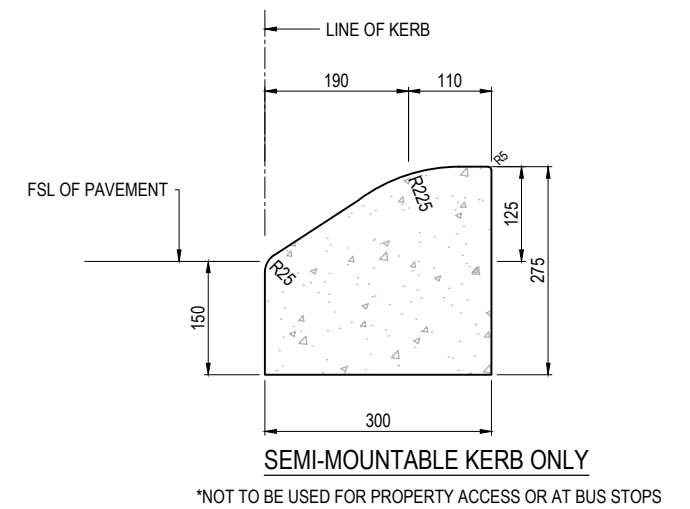
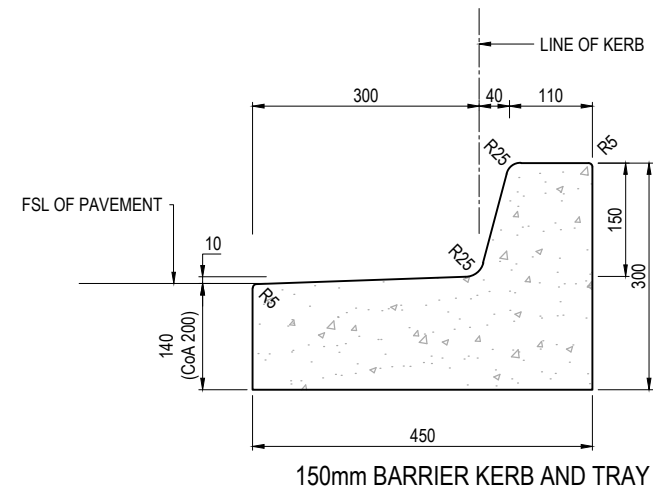
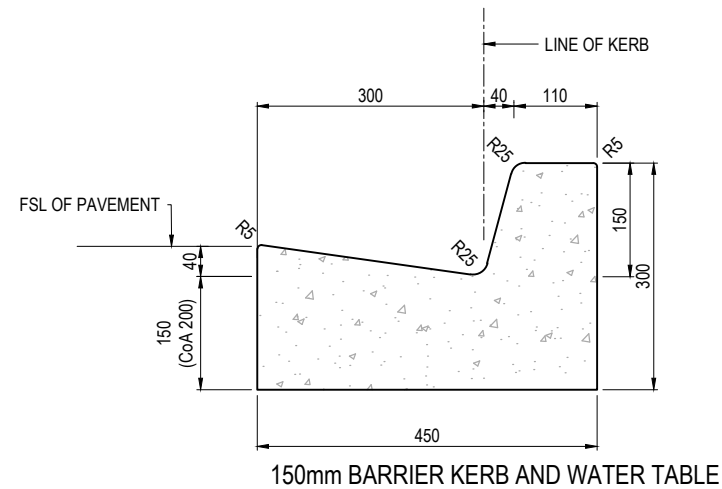
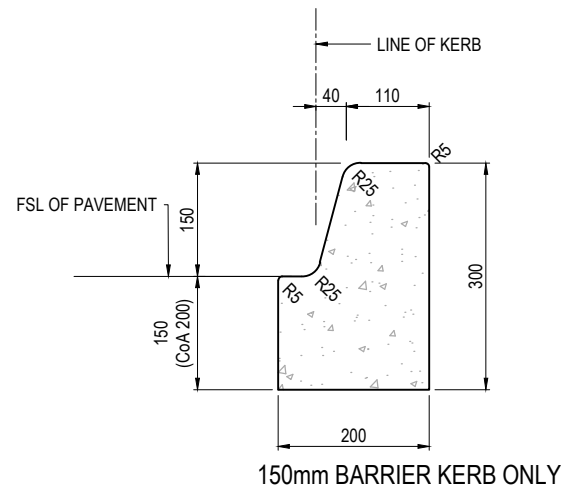
STANDARD DRAWING INDEX	
DRAWING NUMBER	DRAWING TITLE
STORMWATER	
DH-SW-3050	DRAIN STORMWATER ALLOTMENT TO KERB AND CHANNEL CONNECTION
DH-SW-3055	STORMWATER ALLOTMENT DRAIN CONNECTION TO AUTHORITY PIPELINE
DH-SW-3060	STORMWATER ALLOTMENT CONNECTION IN EASEMENT DETAIL
DH-SW-3065	SUBSOIL DRAINAGE FLUSHOUT RISER DETAIL
DH-SW-5000	STORMWATER PITS REINFORCEMENT DETAILS
DH-SW-5005	STORMWATER JUNCTION PIT
DH-SW-5010	STORMWATER DEPRESSED GRATED PIT
DH-SW-5020	STORMWATER SIDE ENTRY PIT 900mm INLET
DH-SW-5025	STORMWATER SIDE ENTRY PIT AND LIDS WITH PRECAST LINTEL
DH-SW-5030	STORMWATER DOUBLE SIDE ENTRY PIT 1900mm INLET
DH-SW-5035	PRECAST SIDE ENTRY PIT INLET WITH GRATE INLINE
DH-SW-5040	OFFSET SIDE ENTRY PIT WITH 900mm INLET GRATE
DH-SW-5100	BANDAGE JOINT
DH-SW-5200	STANDARD HEADWALL FOR PIPES 300-375 DIAMETER
DH-SW-5205	STANDARD HEADWALL FOR PIPES 450-750 DIAMETER
DH-SW-5210	STANDARD HEADWALL FOR SINGLE PIPES 675-1800 DIAMETER
DH-SW-5215	STANDARD HEADWALL FOR TWIN PIPES 675-1800 DIAMETER
DH-SW-5220	CONCRETE ENDWALL FOR PIPES UP TO Ø300mm (WALKWAYS,PATHS AND TRACKS)
DH-SW-5225	NATURAL LOOK CONCRETE AND BOULDER HEADWALL
DH-SW-5300	STORMWATER CATCH DRAIN DETAILS
DH-SW-5400	STORMWATER DRAINAGE PIPE ANCHOR BLOCK
DH-SW-5600	POST AND RAIL SAFETY BARRIER AROUND DROP ZONES
DH-SW-6100	BIORETENTION STANDARD NOTES
DH-SW-6101	BIORETENTION DRAINAGE PROFILE TYPE 1 SATURATED ZONE UNCONSTRAINED
DH-SW-6102	BIORETENTION DRAINAGE PROFILE TYPE 1 SATURATED ZONE CONSTRAINED
DH-SW-6103	BIORETENTION DRAINAGE PROFILE TYPE 2 - SEALED

STANDARD DRAWING INDEX	
DRAWING NUMBER	DRAWING TITLE
DH-SW-6104	BIORETENTION DRAINAGE PROFILE TYPE 3 - CONVENTIONAL
DH-SW-6105	BIORETENTION DRAINAGE PROFILE TYPE 4 - PIPELESS
DH-SW-6110	LARGE BIORETENTION SEDIMENT FOREBAY
DH-SW-6111	BIORETENTION WEIR
DH-SW-6113	BIORETENTION SWALE TYPICAL SECTIONS
DH-SW-6120	STREETSCAPE BIORETENTION
DH-SW-6121	BIORETENTION POD SEDIMENT FOREBAY
DH-SW-6130	BIORETENTION STREET TREE
DH-SW-6210	SEDIMENT BASIN TYPICAL PLAN AND SECTION
DH-SW-6211	CONSTRUCTED WETLAND TYPICAL PLAN AND SECTIONS
DH-SW-6220	WETLAND LOW FLOW RISER OUTLET
DH-SW-6230	TYPICAL POND/WETLAND EDGE TREATMENTS
DH-SW-6310	PORUS PAVEMENT – TYPICAL SECTION

DRAWING NUMBER	DRAWING TITLE
LANDSCAPE	
DH-LS-7000	TYPICAL TREE PLANTING VERGE DETAIL (NON IRRIGATED)
DH-LS-7001	TYPICAL TREE PLANTING VERGE DETAIL (IRRIGATED)
DH-LS-7002	TYPICAL TREE PLANTING VERGE DETAIL (DOUBLE BUNTING)
DH-LS-7003	TYPICAL TREE PLANTING VERGE DETAIL (NARROW VERGE)
DH-LS-7004	TYPICAL TREE PLANTING DETAIL (LANE WAY)
DH-LS-7005	STREET TREE PLANTING DETAIL
DH-LS-7006	STREET TREE PLANTING DETAIL (NO FOOTPATH)
DH-LS-7007	STREET TREE PLANTING DETAIL (PATH AGAINST KERB)

DRAWINGS HAVE BEEN DEVELOPED FROM IPWEA STANDARDS WITH DHUD AMENDMENTS

FIRST ISSUE A M E N D M E N T S	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	SCALE AS SHOWN	CLIENT	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY	DRAWING TITLE COVER SHEET/ DRAWING LIST
	A					19/12/24	ISSUED FOR REVIEW				
	B					20/12/24	ISSUED FOR REVIEW				
	C					02/04/25	CLIENT SUBMISSION				
	D					08/05/25	CLIENT SUBMISSION				



- ## NOTES:
1. CONCRETE SHALL BE NORMAL CLASS N25 STANDARD STRENGTH GRADE COMPLYING WITH THE REQUIREMENTS OF AS. 1379 UNLESS OTHERWISE NOTED.
 2. BEDDING TO BE PM2 / 20 COMPACTED TO 96% MMDD TO AS1289 METHOD 5.2.1. BEDDING TO EXTEND MIN. 300mm BEHIND BACK OF KERB. THICKNESS MIN. 100mm OR MATCH EXISTING PAVEMENT.
 3. CONCRETE TO BE SMOOTH TROWELLED FINISHED ON TRAY AND KERB.
 4. CONCRETE SPONGE FINISHED ON LAYBACK.
 5. SHRINKAGE CONTROL JOINTS (TOOLED JOINT) LOCATED AT 2500mm MAXIMUM SPACING. MIN. 50% OF SECTION AREA TO BE CUT. FINISHED WITH TOOLED JOINT 20mm DEPTH, 5mm WIDE.
 6. CONSTRUCTION JOINTS AS REQUIRED TO BE IN ACCORDANCE WITH AS 2876.
 7. WHERE ADJACENT PAVEMENT IS BLOCK PAVED OR CONCRETE.
 8. BACKFILL BEHIND KERB UNTIL FLUSH WITH COMPACTED APPROVED IN-SITU SITE MATERIAL OR PM2 / 20 COMPACTED TO 95% MMDD TO AS1289 METHOD 5.2.1.

ALL MEASUREMENTS IN MILLIMETRES

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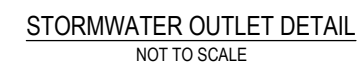
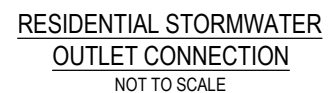
1. REFER TO DH-RD-1000 FOR KERB DETAILS.
2. FOR WIDTH MINIMUM OF 100 TO 350mm USE CONTROLLED LOW STRENGTH MATERIAL (CLSM) INFILL.
3. PM 2/20 RG TO BE USED INSTEAD OF PM 2/20 QG ONLY WHEN SPECIFICALLY APPROVED RELEVANT AUTHORITY.
4. REFER PAVEMENT DESIGN FOR PAVEMENT THICKNESS.
5. INSTALLATION OF KERBING SHALL BE IN ACCORDANCE WITH AS2876.
6. EXCAVATED MATERIAL SHALL NOT BE RE-USED IN THE BACKFILL REINSTATEMENT AND SHALL BE REMOVED OFFSITE.



ALL MEASUREMENTS IN MILLIMETRES

PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	FOR INFORMATION	SCALE AS SHOWN	CLIENT	 Government of South Australia Department for Housing and Urban Development	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE KERB & WATERABLE INSTALLATION ABUTTING EXISTING PAVEMENT	DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.	PROJECT No. 24-000479	DRAWING No. DH-RD-1010	MILESTONE C	REVISION	
	FIRST ISSUE																		
	A				19/12/24														ISSUED FOR REVIEW
	B				20/12/24														ISSUED FOR REVIEW
	C				02/04/25														CLIENT SUBMISSION

1. ALL WELDING TO HAPPEN BEFORE GALVANISING. SITE WELDING AND COLD GALVANISING ARE NOT PERMITTED.

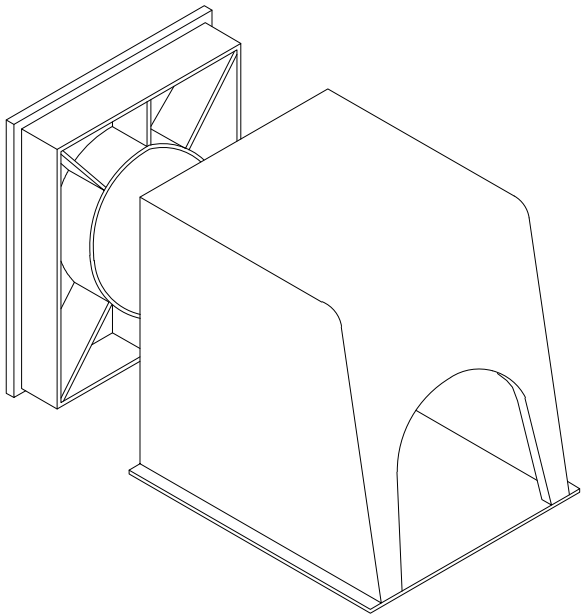


PROVIDE ONE OUTLET PER 10m OF FRONTAGE
ON LOW SIDE OF LOT (UP TO 2 OUTLETS PER LOT)

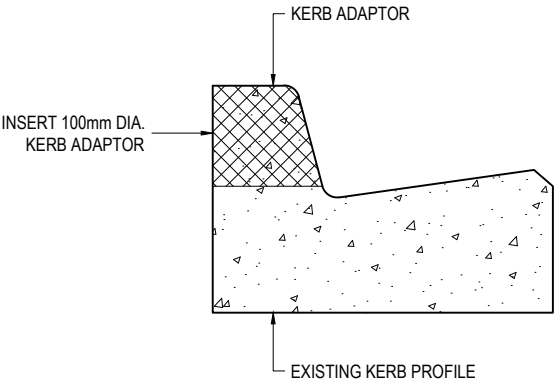
ALL MEASUREMENTS IN MILLIMETRES

	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	SCALE AS SHOWN	CLIENT	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE STANDARD STORMWATER KERB OUTLET DETAILS-INSTALLED DURING CONSTRUCTION
A					19/12/24	ISSUED FOR REVIEW	FOR INFORMATION		 Government of South Australia Department for Housing and Urban Development	DISCLAIMER: ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.	PROJECT No. 24-000479 DRAWING No. DH-RD-1015 MILESTONE B REVISION
B				02/04/25	CLIENT SUBMISSION						

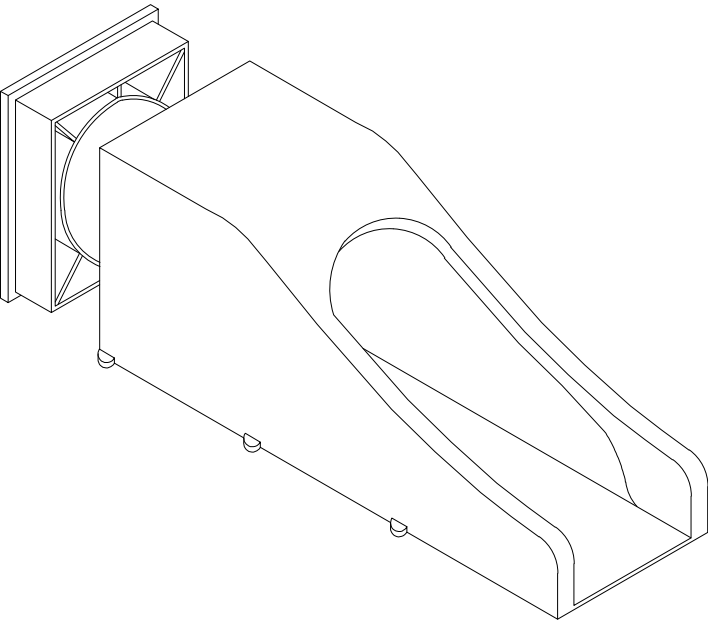
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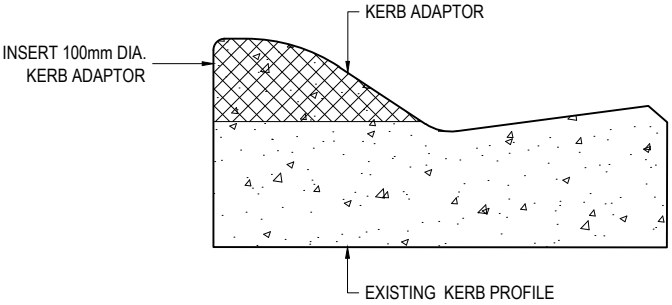
KERB ADAPTOR - UPRIGHT KERB



UPRIGHT KERB WITH KERB ADAPTOR SECTIONAL VIEW



KERB ADAPTOR - SEMI MOUNTABLE KERB



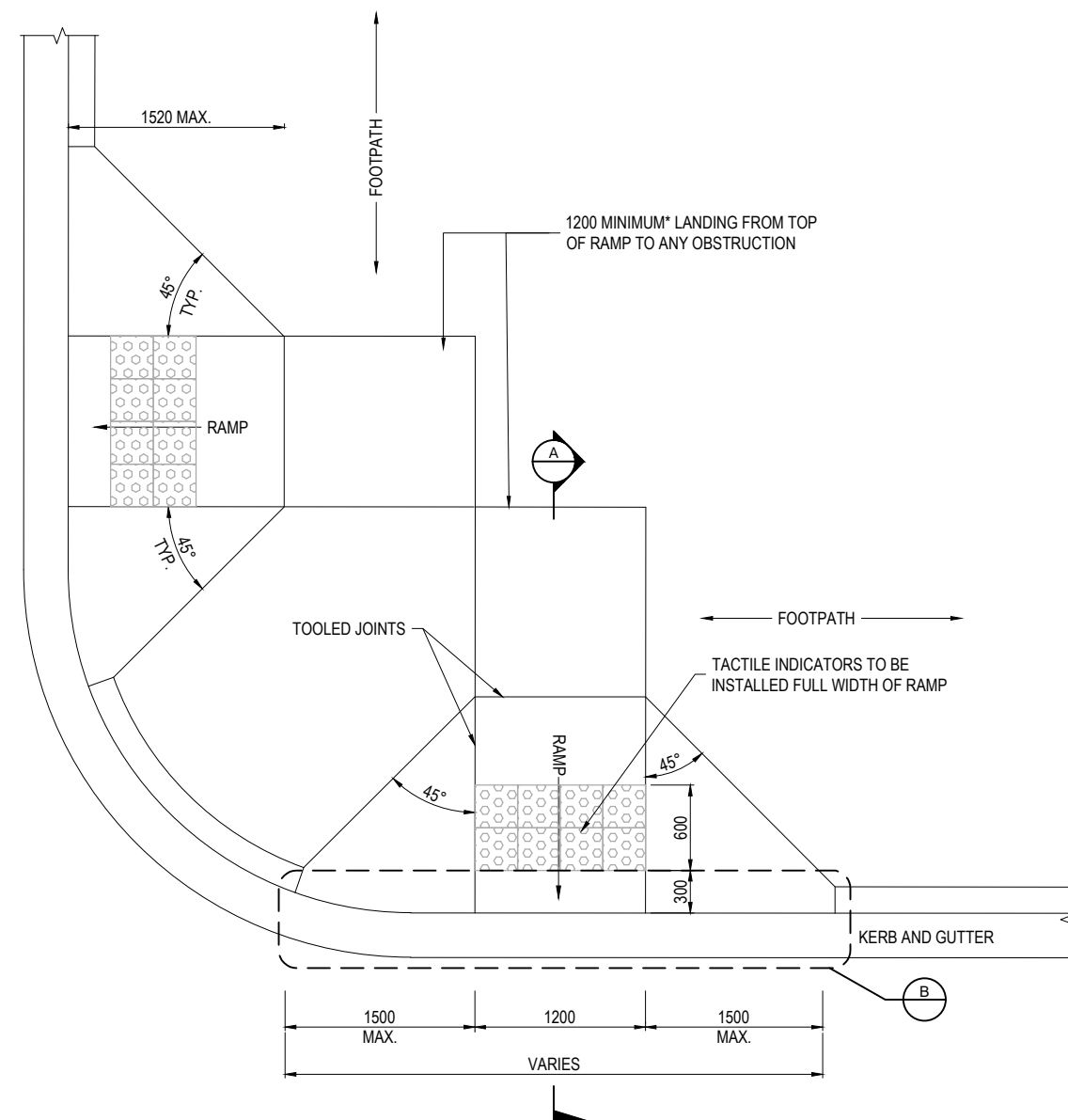
SEMI MOUNTABLE KERB WITH KERB ADAPTOR SECTIONAL VIEW

- NOTES:
1. ALL KERB ADAPTORS ARE TO BE AN APPROVED PROPRIETARY PRODUCT CONSTRUCTED FROM EITHER HEAVY DUTY UPVC OR HOT DIPPED GALVANIZED MILD STEEL.
 2. KERB IS TO BE NEATLY SAW CUT & KERB ADAPTOR EPOXIED INTO POSITION.

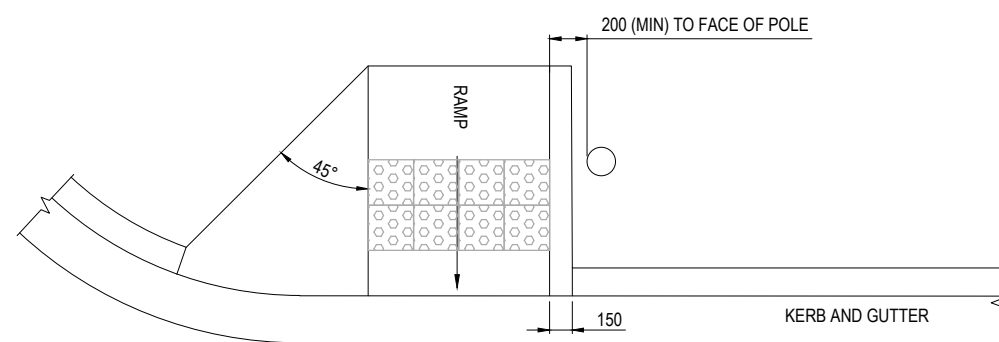
THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS TECHNICAL MANUAL

ALL MEASUREMENTS IN MILLIMETRES

FIRST ISSUE A M E N D M E N T S	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	SCALE AS SHOWN	CLIENT	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE HEAVY DUTY STORMWATER KERB OUTLET DETAILS - EXISTING KERB	
	A				19/12/24							ISSUED FOR REVIEW
	B				02/04/25							CLIENT SUBMISSION
FOR INFORMATION							 Government of South Australia Department for Housing and Urban Development					
DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY												
PROJECT No. DRAWING No. MILESTONE REVISION 24-000479 DH-RD-1020 B												



KERB RAMP PLAN
NOT TO SCALE

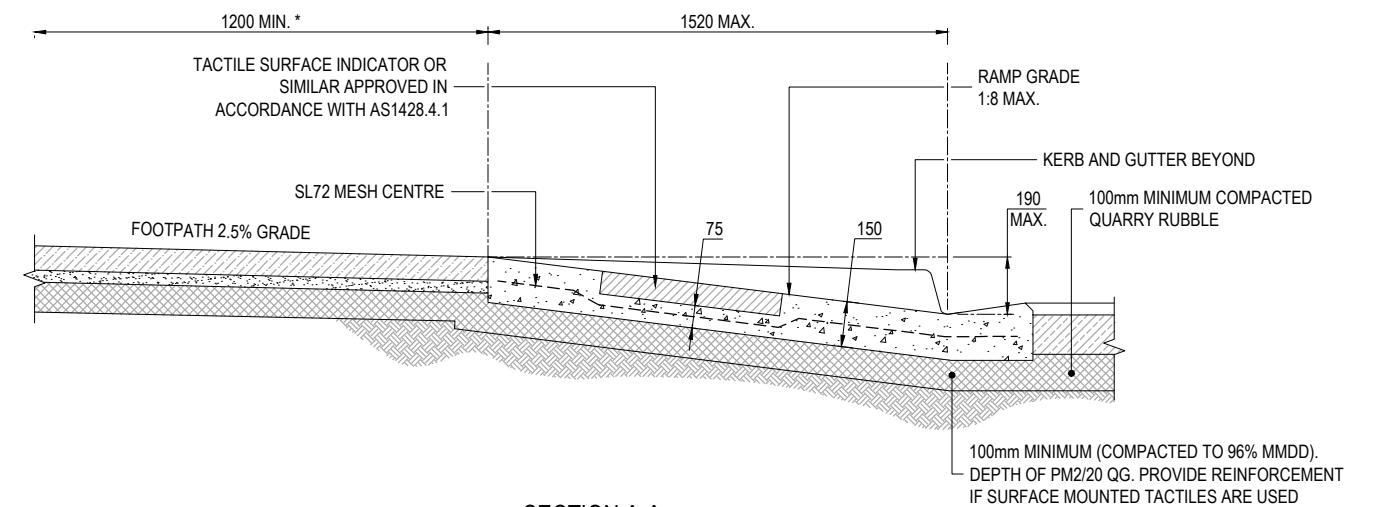


KERB RAMP WITH VERTICAL SIDE - PLAN
NOT TO SCALE

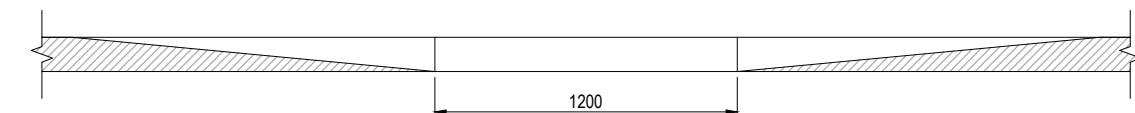
THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH
AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS
TECHNICAL MANUAL

- NOTES:

1. THE RAMP AND SLOPING SIDES SHALL BE SLIP RESISTANT WITH TACTILE SURFACE INDICATORS (CONTRASTING COLOUR), TYPE 'B' AND SHALL BE INSTALLED IN ACCORDANCE WITH AS1428.4.1. COLOUR TO BE CONFIRMED BY LOCAL AUTHORITY. REFER TO AS1428.4.1.
2. CONCRETE GRADE SHALL BE N32 FOR KERB, GUTTERS AND RAMPS.
3. KERB RAMPS MUST CONFORM WITH AS1428.4.1.
4. KERB RAMP WINGS CAN BE STEEPENED AND A HAND RAIL PROVIDED IN LOCATIONS WHERE ACCESS FROM THE SIDES IS NOT POSSIBLE, OR ON CURVES.



SECTION A-A
NOT TO SCALE

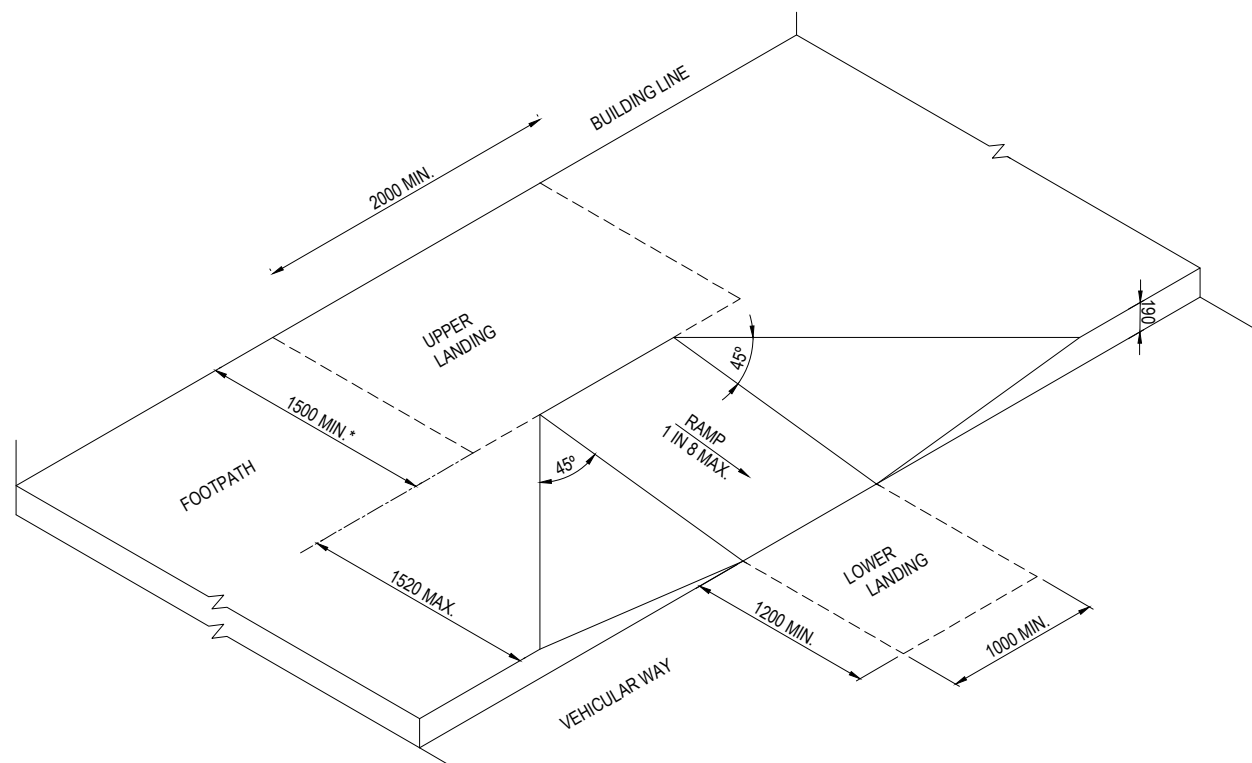


ELEVATION B
NOT TO SCALE

* DENOTES MINIMUM DIMENSION. TO BE 1500 IF A TURN IN DIRECTION OF TRAVEL IS REQUIRED.

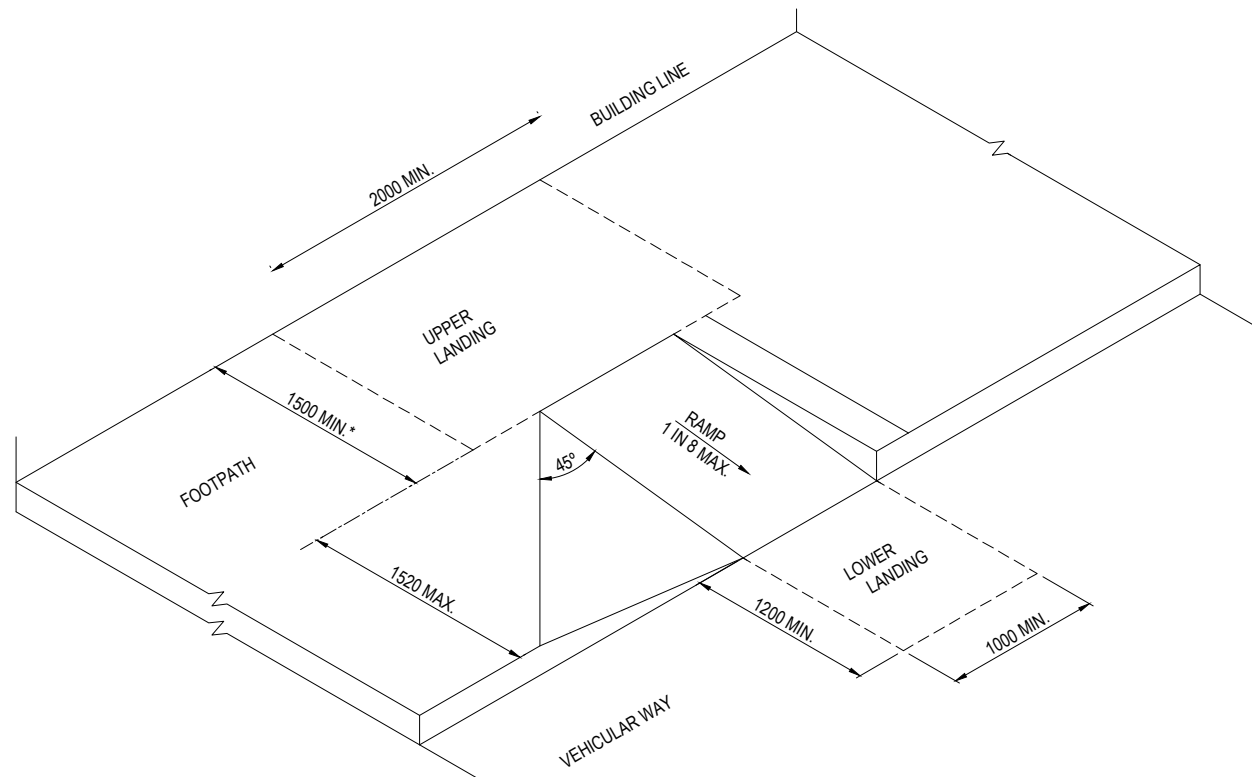
ALL MEASUREMENTS IN MILLIMETRES

AMENDMENTS	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	FOR INFORMATION	SCALE AS SHOWN	CLIENT	 Government of South Australia Department for Housing and Urban Development	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE KERB RAMP SPECIFICATIONS SHEET 1 OF 2		
	A				19/12/24	ISSUED FOR REVIEW									
	B				02/04/25	CLIENT SUBMISSION									
												PROJECT No. 24-000479	DRAWING No. DH-RD-1025	MILESTONE B	REVISION



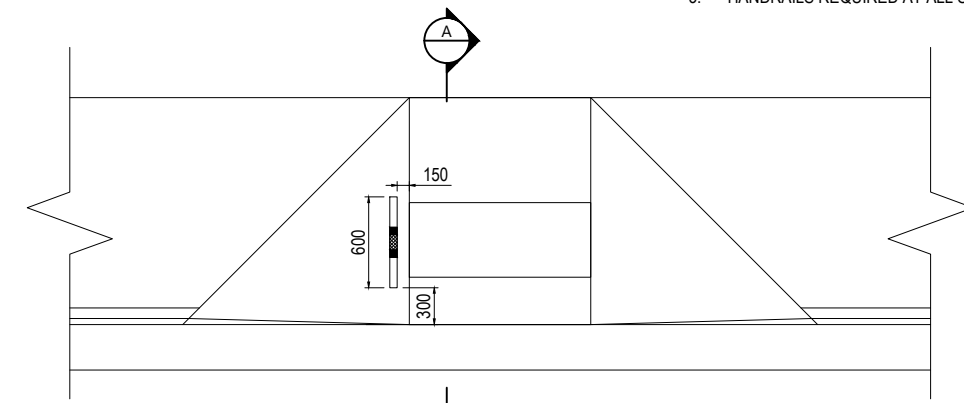
KERB RAMP ISOMETRIC VIEW
SCALE AS SHOWN

* WHERE THERE IS NO TURN INVOLVED, TOP LANDING MAY BE REDUCED TO 1200mm MIN. IN LENGTH



KERB RAMP WITH VERTICAL SIDE - ISOMETRIC VIEW
SCALE AS SHOWN

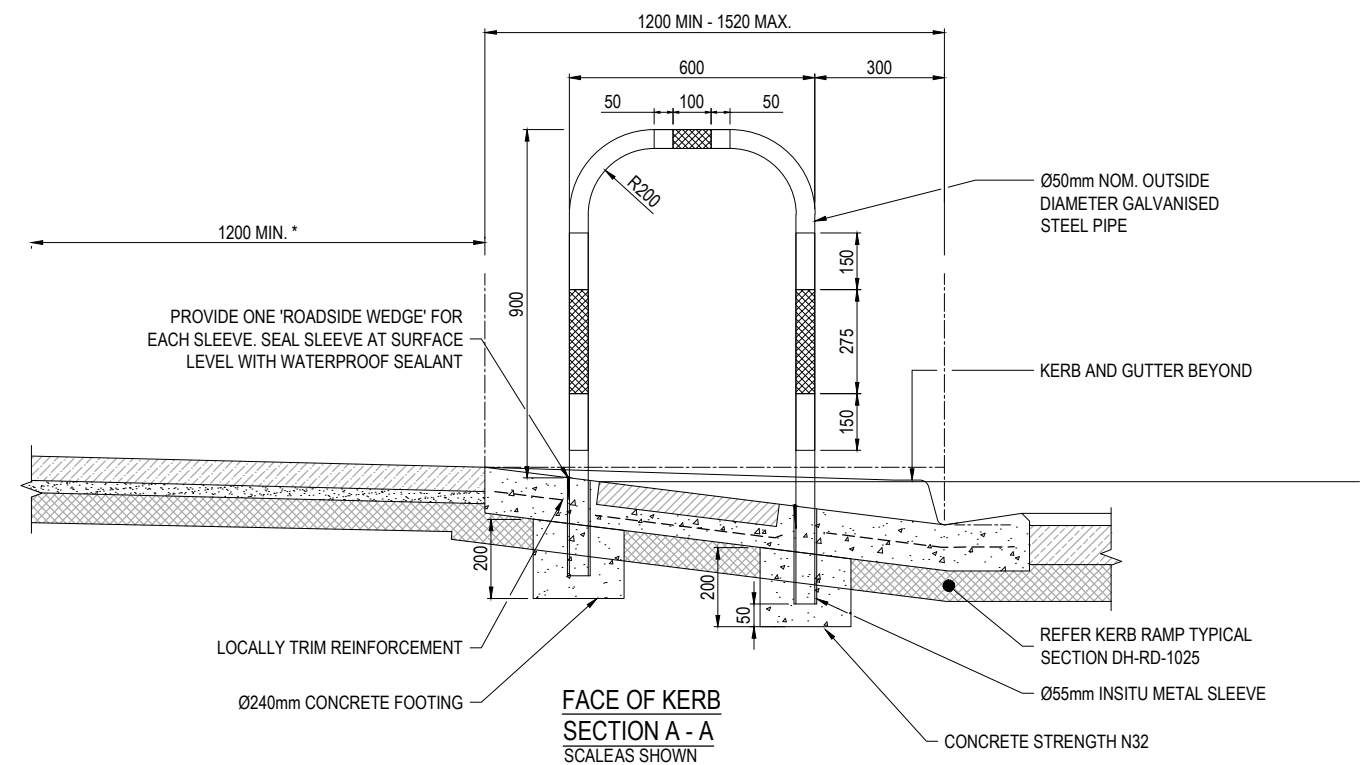
* WHERE THERE IS NO TURN INVOLVED, TOP LANDING MAY BE REDUCED TO 1200mm MIN. IN LENGTH



KERB RAMP HAND RAIL DETAIL
SCALE AS SHOWN

NOTE:

1. REFER DH-RD-1025 FOR DETAILS.
2. HANDRAIL REQUIRED AT JUNCTIONS FOR ALL COLLECTOR ROADS AND ROUNDABOUTS.
3. HANDRAILS REQUIRED AT ALL SHARED PATH CROSSINGS.



THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH
AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS
TECHNICAL MANUAL

ALL MEASUREMENTS IN MILLIMETRES

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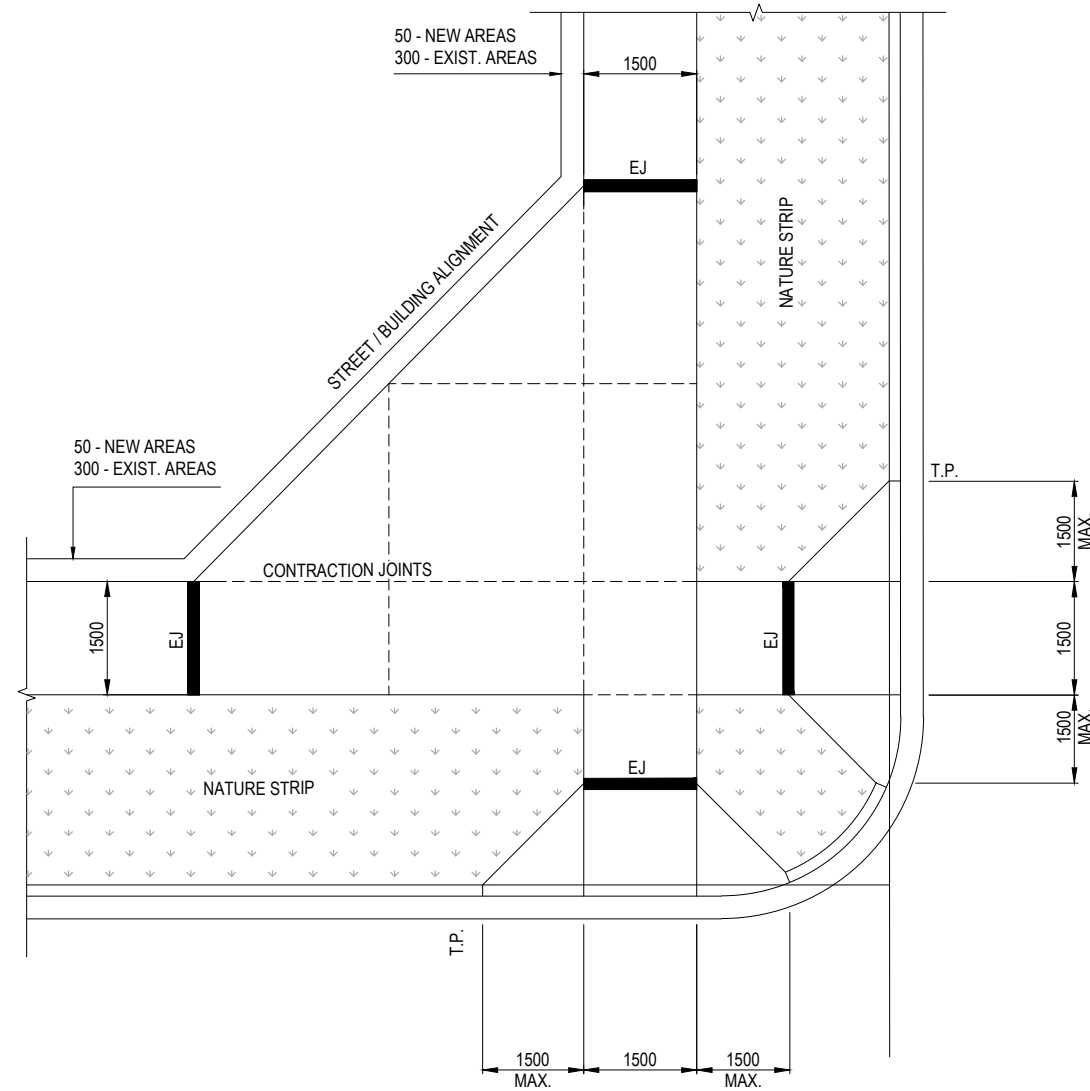
LEGEND:

EXPANSION JOINT EJ

CONTRACTION JOINTS - - - - -

NOTES:

1. LOCATION OF CROSSINGS TO BE CASE BY CASE & ONLY WHERE APPROVED.
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 32 MPA.
6. BEDDING TO BE COMPACTED PM2/20 QG 100mm MIN. THICKNESS.
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.

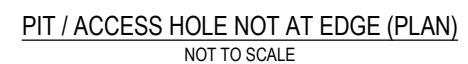
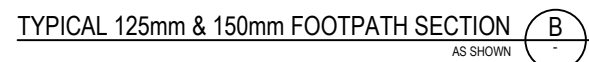
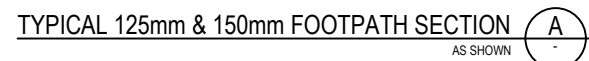


TYPICAL ARRANGEMENT PLAN
SCALE AS SHOWN

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH
AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS
TECHNICAL MANUAL

ALL MEASUREMENTS IN MILLIMETRES

PROJECTS DRAWINGS	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS		STATUS	SCALE AS SHOWN	CLIENT	PROJECT	DRAWING TITLE			
	A				19/12/04	ISSUED FOR REVIEW									
	B				02/04/25	CLIENT SUBMISSION		FOR INFORMATION		SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	TYPICAL PEDESTRIAN CROSSING ARRANGEMENT DETAIL				
											DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.	PROJECT No. 24-000479	DRAWING No. DH-RD-2000	MILESTONE	REVISION B



ALL MEASUREMENTS IN MILLIMETRES

REVISED AMENDMENTS	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	SCALE: AS SHOWN	CLIENT	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE TYPICAL CONCRETE FOOTPATH DETAIL SHEET 1 OF 2		
	A				19/12/24							ISSUED FOR REVIEW	
	B				02/04/25							CLIENT SUBMISSION	
						FOR INFORMATION		 Government of South Australia Department for Housing and Urban Development	DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. <u>NOT FOR CONSTRUCTION</u> UNLESS STAMPED BY CERTIFYING AUTHORITY.	PROJECT No. 24-000479	DRAWING No. DH-RD-2005	MILESTONE	REVISION B

TYPICAL CONTRACTION / TOOLED JOINT
SCALE 1:5

A schematic diagram of a beam with an induced crack. The beam is represented by a horizontal rectangle with a stippled texture. A vertical crack is shown in the center, with a wavy line indicating its irregular shape. A dashed horizontal line runs through the center of the beam, with arrows at both ends pointing outwards. Below the beam, the text "INDUCED CRACK" is written, with an arrow pointing up to the crack. To the right of the beam, there is a vertical line and a horizontal line, with the letter "D" next to the horizontal line.

Figure 1: Typical cross-section of a slab edge. The diagram illustrates the cross-section of a slab edge, showing the concrete structure, reinforcement, and dimensions. The total width of the slab is 410 mm (10 mm + 100 mm + 300 mm). The slab thickness is D+50 mm. The slab edge thickness is 75 mm. The slab reinforcement is shown as a dashed line. The slab edge thickening is indicated by a hatched area. The slab is supported by a structure/slab. The slab is reinforced with steel bars. The slab is made of concrete. The slab is shown in a cross-section view.

APPROVED 10mm WIDE BITUMINOUS JOINTING STRIP OR APPROVED PROPRIETARY EXPANSION JOINT FOR FULL WIDTH & DEPTH OF PATH BETWEEN POURS. MAX SPACING 12m

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

PVC SLIP CAP TO SUIT DOWEL BAR

R12 x 450mm LONG DOWEL BAR AT 300mm CRS. MAX. ENSURE DOWELS ARE ACCURATELY ALIGNED PERPENDICULAR TO THE JOINT TO PREVENT 'LOCK UP' DURING EXPANSION/CONTRACTION

MESH SLAB REINFORCEMENT REFER DH-RD-2005 FOR SIZE

600

25

10

600

50

125 MIN

NOTE:
LOCALLY DEEPEN WHERE $D \leq 125\text{mm}$

1. PROPRIETARY EXPANSION JOINTS (DANLEY/CONNOLLY) CAN BE USED WHERE APPROVED IN REACTIVE SOILS OR WHERE TREE ROOTS MAY AFFECT PATHS. THE SEPARATION OF JOINTS SHALL BE EVERY 6 METRES AND TOOL JOINTS EVERY 1.2m

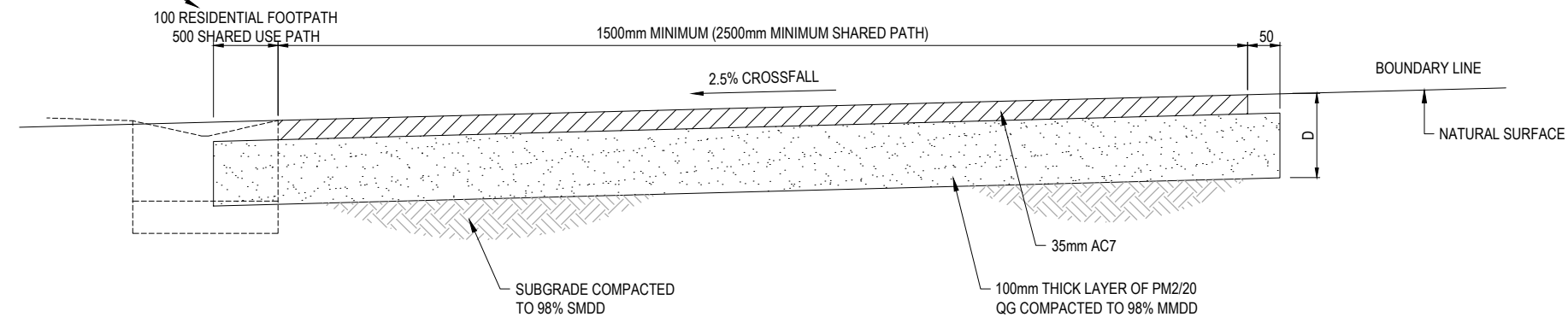
ALL MEASUREMENTS IN MILLIMETRES

REVISIONS AMENDMENTS A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE BF BG BH BI BJ BK BL BM BN BO BP BQ BR BS BT BU BV BW BX BY BZ CA CB CC CD CE CF CG CH CI CJ CK CL CM CN CO CP CQ CR CS CT CU CV CW CX CY CZ DA DB DC DD DE DF DG DH DI DJ DK DL DM DN DO DP DQ DR DS DT DU DV DW DX DY DZ EA EB EC ED EE EF EG EH EI EJ EK EL EM EN EO EP EQ ER ES ET EU EV EW EX EY EZ FA FB FC FD FE FF FG FH FI FJ FK FL FM FN FO FP FQ FR FS FT FU FV FW FX FY FZ GA GB GC GD GE GF GG GH GI GJ GK GL GM GN GO GP GQ GR GS GT GU GV GW GX GY GZ HA HB HC HD HE HF HG HH HI HJ HK HL HM HN HO HP HQ HR HS HT HU HV HW HX HY HZ IA IB IC ID IE IF IG IH II IJ IK IL IM IN IO IP IQ IR IS IT IU IV IW IX IY IZ JA JB JC JD JE JF JG JH JI JJ JK JL JM JN JO JP JQ JR JS JT JU JV JW JX JY JZ KA KB KC KD KE KF KG KH KI KJ KK KL KM KN KO KP KQ KR KS KT KU KV KW KX KY KZ LA LB LC LD LE LF LG LH LI LJ LK LL LM LN LO LP LQ LR LS LT LU LV LW LX LY LZ MA MB MC MD ME MF MG MH MI MJ MK ML MM MN MO MP MQ MR MS MT MU MV MW MX MY MZ NA NB NC ND NE NF NG NH NI NJ NK NL NM NN NO NP NQ NR NS NT NU NV NW NX NY NZ OA OB OC OD OE OF OG OH OI OJ OK OL OM ON OO OP OQ OR OS OT OU OV OW OX OY OZ PA PB PC PD PE PF PG PH PI PJ PK PL PM PN PO PP PQ PR PS PT PU PV PW PX PY PZ QA QB QC QD QE QF QG QH QI QJ QK QL QM QN QO QP QQ QR QS QT QU QV QW QX QY QZ RA RB RC RD RE RF RG RH RI RJ RK RL RM RN RO RP RQ RR RS RT RU RV RW RX RY RZ SA SB SC SD SE SF SG SH SI SJ SK SL SM SN SO SP SQ SR SS ST SU SV SW SX SY SZ TA TB TC TD TE TF TG TH TI TJ TK TL TM TN TO TP TQ TR TS TU TV TW TX TY TZ UA UB UC UD UE UF UG UH UI UJ UK UL UM UN UO UP UQ UR US UT UU UV UW UX UY UZ VA VB VC VD VE VF VG VH VI VJ VK VL VM VN VO VP VQ VR VS VT VU VV VW VX VY VZ WA WB WC WD WE WF WG WH WI WJ WK WL WM WN WO WP WQ WR WS WT WU WV WW WX WY WZ XA XB XC XD XE XF XG XH XI XJ XK XL XM XN XO XP XQ XR XS XT XU XV XW XX XY XZ YA YB YC YD YE YF YG YH YI YJ YK YL YM YN YO YP YQ YR YS YT YU YV YW YX YY YZ ZA ZB ZC ZD ZE ZF ZG ZH ZI ZJ ZK ZL ZM ZN ZO ZP ZQ ZR ZS ZT ZU ZV ZW ZX ZY ZZ	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS		STATUS <
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NOTES:

1. 'D' = DEPTH OF ASPHALT FOOTPATH TYPICAL ASPHALT FOOTPATH DEPTH 'D'= 130mm TYPICAL 'D' MAY VARY DEPENDANT ON SUBGRADE CBR AND POSSIBLE MAINTENANCE OR EMERGENCY VEHICLE TRAFFIC ACCESS.
2. ASPHALT FOOTPATHS/ SHARED USE PATHS ARE REQUIRED TO HAVE A PAVEMENT DESIGN UNDERTAKEN BASED ON PROPOSED LOADING AND SITE CONDITIONS INCLUDING INVESTIGATION INTO THE GEOTECHNICAL REVIEW.

RESIDENTIAL FOOTPATHS ARE REQUIRED TO HAVE 100mm MIN. WIDE RUBBLE SHOULDER ON EDGE OF PATH, SHARED USE PATHS ARE REQUIRED TO HAVE 500mm WIDE SHOULDERS



TYPICAL ASPHALT FOOTPATH SECTION

SCALE 1:5

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH
AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS
TECHNICAL MANUAL

ALL MEASUREMENTS IN MILLIMETRES

A M E N D M E N T S	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS					STATUS	SCALE AS SHOWN					CLIENT	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS					DRAWING TITLE TYPICAL HOT MIX ASPHALT FOOTPATH							
	FIRST ISSUE										FOR INFORMATION	00.050.10.150.200.250.300.350.400 SCALE 1:5 (A1)SCALE 1:10 (A3)					Government of South Australia Department for Housing and Urban Development					DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. UNLESS OTHERWISE SPECIFIED, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.					PROJECT No. DRAWING No. MILESTONE REVISION 24-000479 DH-RD-2015 B			
	A				19/12/04	ISSUED FOR REVIEW																								
	B				02/04/25	CLIENT SUBMISSION																								



FOR INFORMATION

STATUS	
	FOR INFORMATION

CLIENT



PROJECT No.	DRAWING No.	MILESTONE	REVISION
24-000479	DH-RD-2025		B

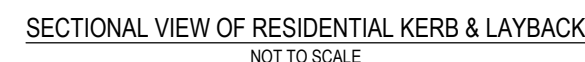
1. THIS DRAWING DETAILS DIMENSIONS FOR STANDARD RESIDENTIAL CROSSINGS ONLY.
2. CROSSING WIDTHS EXCEEDING THE MAXIMUM ALLOWABLE WILL REQUIRE APPLICATION FOR SPECIAL CONSIDERATION.
3. JOINTS AND DOWEL BARS ARE REQUIRED ON BOTH SIDES OF THE CROSSING AT THE INTERFACE WITH THE CONCRETE FOOTPATH. PROVISION SHALL BE MADE IN EXISTING CONCRETE SECTIONS BY DRILLING HOLES TO A MINIMUM DEPTH OF 150mm AND INSERTING Ø12x300mm LONG DOWEL BARS.
4. AN APPROVED JOINT FILLER SHALL BE PLACED ON BOTH SIDES 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 DH-RD-2010.
5. ADDITIONAL TOOLED JOINT REQUIRED IF DISTANCE FROM BACK OF KERB TO FOOTPATH IS GREATER THAN 3000 AND SHALL BE PLACED AT THE MIDPOINT OF THE DISTANCE.
6. THE MAXIMUM NUMBER OF CROSSINGS, WHERE ANY CROSSING EXCEEDS 3.6m WIDTH, SHALL BE ONE (1) CROSSING WITH THE MAXIMUM WIDTH OF THAT CROSSING TO BE 6.6m. CROSSINGS TO ADJACENT PROPERTIES SHALL BE EITHER FULLY COMBINED, WITH A MAXIMUM WIDTH OF 6.6m, OR ELSE HAVE A MINIMUM SEPARATION OF 9m.
7. IF REVERSE FALL IS REQUIRED, DESIGN OF VEHICLE Crossover TO BE ON A SITE SPECIFIC BASIS.
8. LOCATION AND DEPTH OF ANY UNDERGROUND SERVICES WITHIN FOOTWAY AREA MUST BE ESTABLISHED BEFORE COMMENCEMENT OF EXCAVATION.
9. TRANSITION AREA TO CONFORM TO AS2890.1. ANY CHANGES OF GRADE GREATER THAN 12.5% TO BE CHECKED USING THE TEMPLATE IN APPENDIX C AS2890.1
10. A MINIMUM CLEARANCE OF 1m MUST BE ACHIEVED FROM THE DRIVEWAY EDGE TO ANY STREET ASSET. THIS INCLUDES STREET TREES, LIGHT POLES, SIDE ENTRY PITS, PEDESTRIAN RAMPS AND STOBIE POLES.
11. DRIVEWAY INVERTS FOR CORNER ALLOTMENTS SHALL BE LOCATED NO CLOSER THAN 6m FROM THE INTERSECTION OF THE PROJECTED ROAD FRONTAGE BOUNDARIES UNLESS APPROVED BY COUNCIL.
12. LOCATE DRIVEWAY ON LOW SIDE OF ALLOTMENT 1.0m FROM THE PROJECTED SIDE BOUNDARY OR AS SPECIFIED.



ALL MEASUREMENTS IN MILLIMETRES

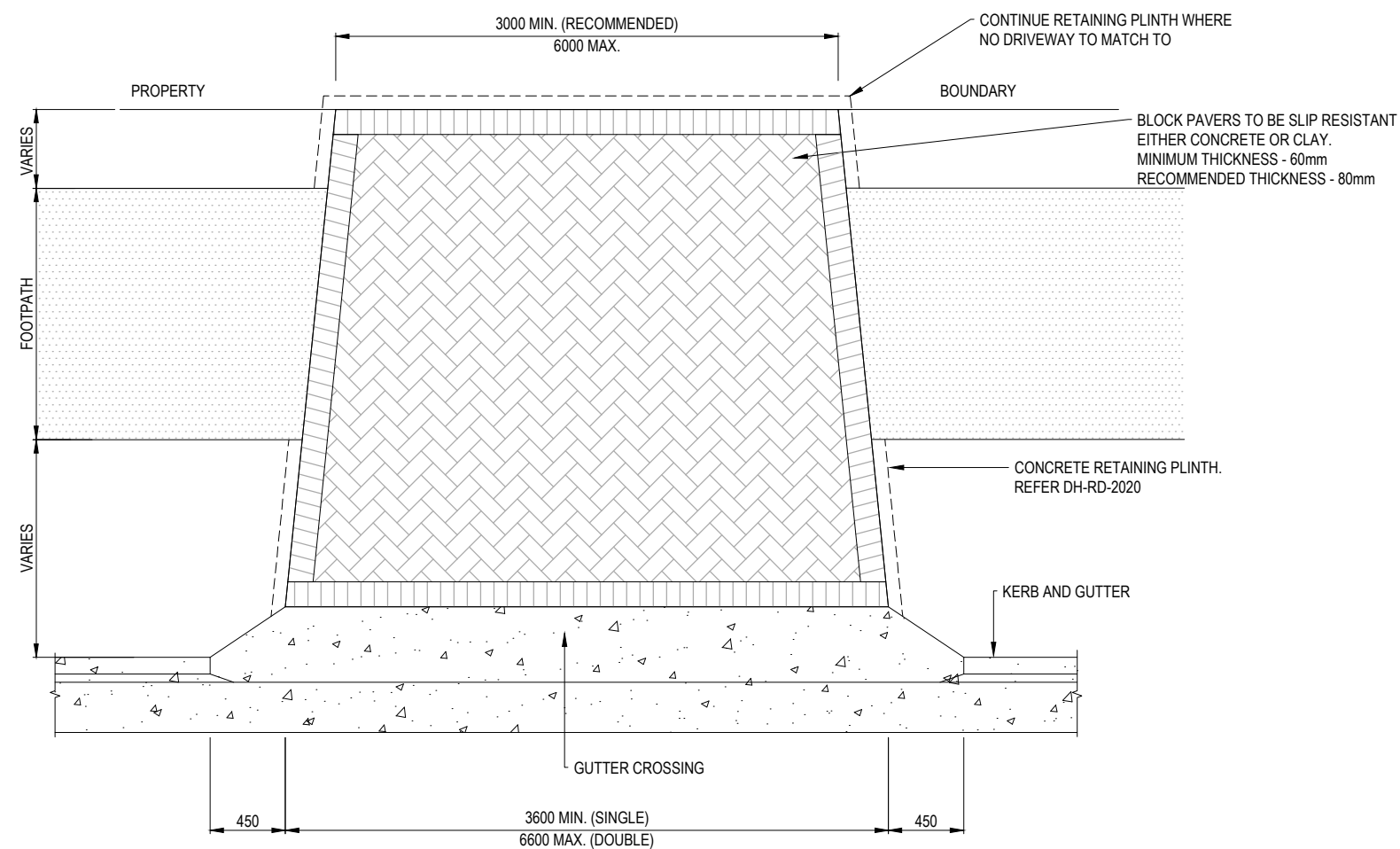
EXPANSION JOINT	EJ
TOOLED JOINTS (REFER TO DH-RD-2010)	TJ

1. THIS DRAWING DETAILS DIMENSIONS FOR STANDARD RESIDENTIAL CROSSINGS ONLY.
2. CROSSING WIDTHS EXCEEDING THE MAXIMUM ALLOWABLE WILL REQUIRE APPLICATION FOR SPECIAL CONSIDERATION.
3. JOINTS AND DOWEL BARS ARE REQUIRED ON EITHER SIDE OF THE CROSSING AT THE INTERFACE WITH THE CONCRETE FOOTPATH.
4. 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 DH-RD-2010.
5. ADDITIONAL TOOLED JOINT REQUIRED IF DISTANCE FROM BACK OF KERB TO FOOTPATH IS GREATER THAN 3000 AND SHALL BE PLACED AT THE MIDPOINT OF THE DISTANCE.
6. THE MAXIMUM NUMBER OF CROSSINGS, WHERE ANY CROSSING EXCEEDS 3.6m WIDTH, SHALL BE ONE (1) CROSSING WITH THE MAXIMUM WIDTH OF THAT CROSSING TO BE 6.6m. CROSSINGS TO ADJACENT PROPERTIES SHALL BE EITHER FULLY COMBINED, AND OF MAXIMUM WIDTH OF 6.6m, OR ELSE HAVE A MINIMUM SEPARATION OF 9m.
7. FOOTPATHS OF 100mm 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.
8. IF REVERSE FALL IS REQUIRED, DESIGN OF VEHICLE CROSSOVER TO BE ON A SITE SPECIFIC BASIS.
9. LOCATION AND DEPTH OF ANY UNDERGROUND SERVICES WITHIN FOOTWAY AREA MUST BE ESTABLISHED BEFORE COMMENCEMENT OF EXCAVATION.
10. TRANSITION AREA TO CONFORM TO AS2890.1. ANY CHANGES OF GRADE GREATER THAN 12.5% TO BE CHECKED USING THE TEMPLATE IN APPENDIX C AS2890.1
11. A MINIMUM CLEARANCE OF 1m MUST BE ACHIEVED FROM THE DRIVEWAY EDGE TO ANY STREET ASSET. THIS INCLUDES STREET TREES, LIGHT POLES, SIDE ENTRY PITS, PEDESTRIAN RAMPS AND STOBIE POLES.

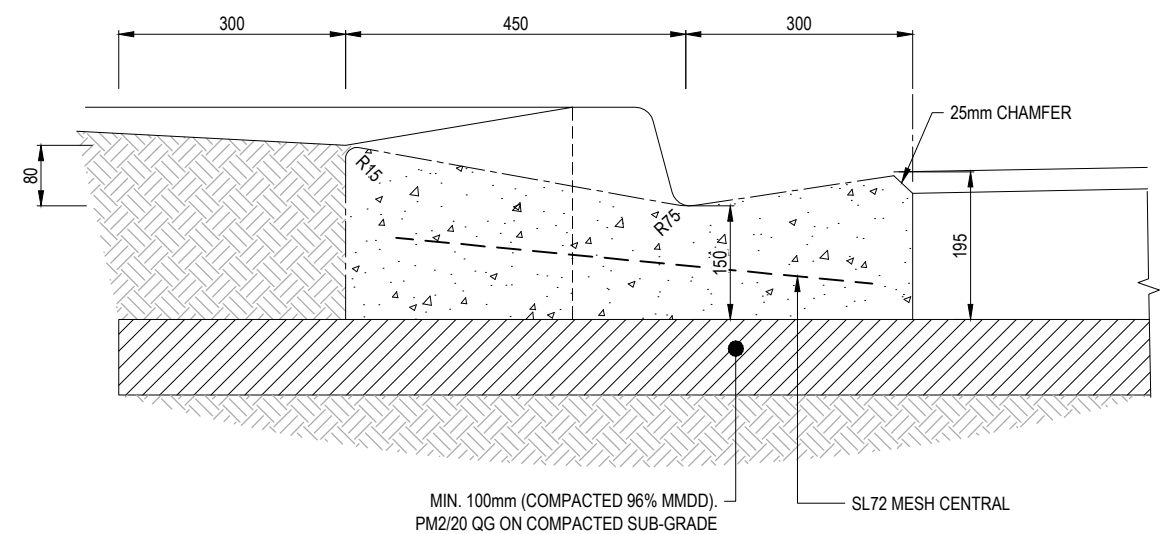


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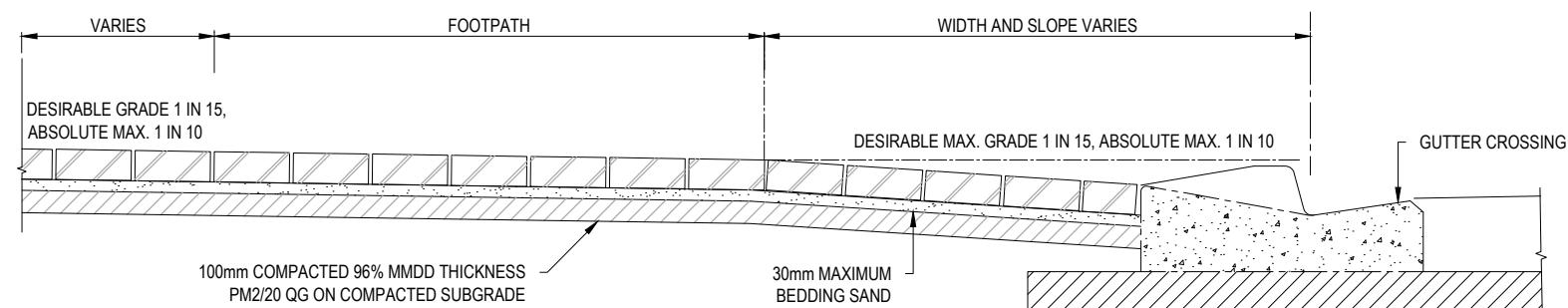
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PLAN OF BLOCK PAVED VEHICLE CROSS-OVER
SCALE 1:20



SECTIONAL VIEW OF RESIDENTIAL KERB & LAYBACK
SCALE 1:5



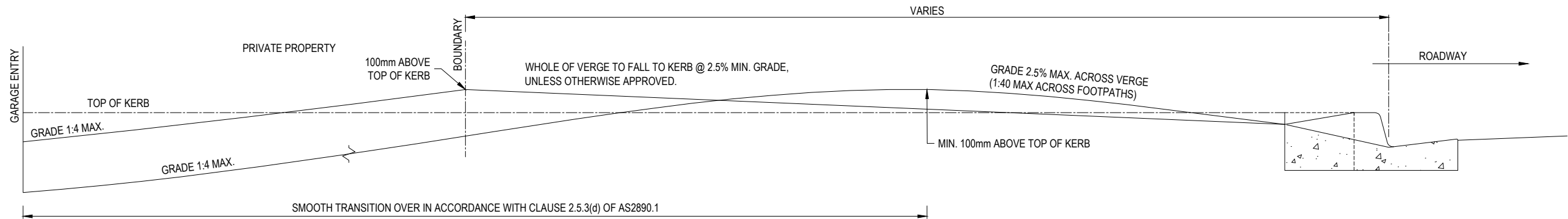
SECTIONAL VIEW OF VEHICLE CROSSOVER
SCALE 1:10
(HIGH SIDE OF STREET)

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH
AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS
TECHNICAL MANUAL

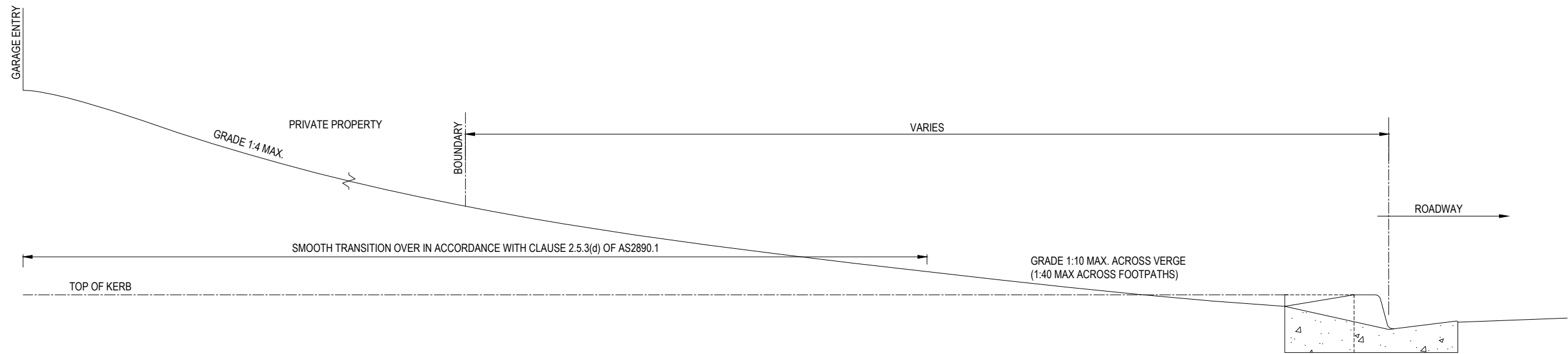
ALL MEASUREMENTS IN MILLIMETRES

A M B E N D S	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS						STATUS	SCALE AS SHOWN	CLIENT	PROJECT	BRAWING TITLE
	FIRST ISSUE											FOR INFORMATION		 Government of South Australia Department for Housing and Urban Development	SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.	VEHICLE BLOCK PAVED CROSSING DETAIL PROJECT No. DRAWING No. MILESTONE REVISION 24-000479 DH-RD-2035 B
	A				19/12/24	ISSUED FOR REVIEW										
	B				02/04/25	CLIENT SUBMISSION										

- NOTES:
1. LOCATION AND DEPTH OF ANY UNDERGROUND SERVICES WITHIN FOOTWAY AREA MUST BE ESTABLISHED BEFORE COMMENCEMENT OF EXCAVATION.
 2. UNDERTAKE A 'DIAL BEFORE YOU DIG' SEARCH (PH: 1100) TO LOCATE SERVICES PRIOR TO COMMENCING EXCAVATION.
 3. TRANSITION AREA TO CONFORM TO AS2890.1 (2004) FIGURE 2.10. ANY CHANGES OF GRADE GREATER THAN 12.5% TO BE CHECKED USING THE TEMPLATE IN APPENDIX C AS2890.1
 4. MAXIMUM TRANSITION OF 12.5% OVER 2m.



LONGITUDINAL DRIVEWAY SECTION - LOWER SIDE OF STREET
NOT TO SCALE



LONGITUDINAL DRIVEWAY SECTION - HIGHER SIDE OF STREET
NOT TO SCALE

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS TECHNICAL MANUAL

ALL MEASUREMENTS IN MILLIMETRES

AMENDMENTS	FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS		STATUS	FOR INFORMATION	SCALE AS SHOWN	CLIENT	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE VEHICLE CROSSING LONGITUDINAL SECTIONS
	A					19/12/24	ISSUED FOR REVIEW							
	B					02/04/25	CLIENT SUBMISSION		DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY	PROJECT No. 24-000479	DRAWING No. DH-RD-2045	MILESTONE	REVISION B	
Government of South Australia Department for Housing and Urban Development														

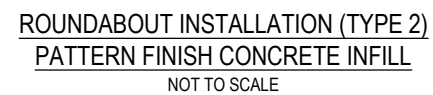
1. INSTALLATION OF ROUNDABOUT KERBING SHALL BE IN ACCORDANCE WITH AS 1742, AS 3876 AUSTRROADS 'GUIDE TO TRAFFIC MANAGEMENT' AND 'GUIDE TO ROAD DESIGN'.
2. REFER TO THE DESIGN PLANS FOR ROUNDABOUT KERB LOCATION, SIZE & SETOUT DATA.
3. ROUNDABOUT KERB FACES SHALL BE PAINTED REFLECTORISED WHITE AS REQUIRED.
4. ALL NIGHT ROAD LIGHTING SHALL BE IN ACCORDANCE WITH AS 1158.
5. ROUNDABOUT KERBING SHALL BE DELINEATED WITH AN OUTLINE MARKING SEPARATED FROM THE KERB BY 100mm.
6. PATTERN FINISH CONCRETE INFILL COLOUR & TYPE TO BE ADVISED BY RELEVANT AUTHORITY. INFILL CONCRETE TO BE 32MPa UNLESS NOTED OTHERWISE.
7. CONCRETE STRENGTH TO BE 32MPa, 200mm THICKNESS.



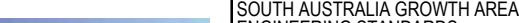
ALL MEASUREMENTS IN MILLIMETRES

	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS		STATUS	SCALE AS SHOWN	CLIENT	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE ROUNDABOUT INSTALLATION TYPE 1
FIRST ISSUE					19/12/24	ISSUED FOR REVIEW		FOR INFORMATION		 Government of South Australia Department for Housing and Urban Development	DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.	PROJECT No. 24-000479
A											DRAWING No. DH-RD-2050	
B					20/12/24	ISSUED FOR REVIEW					MILESTONE	
C					02/04/25	CLIENT SUBMISSION					REVISION C	

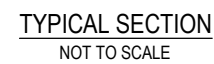
1. INSTALLATION OF ROUNDABOUT KERBING SHALL BE IN ACCORDANCE WITH AS 1742, AS 2876 AUSTRROADS 'GUIDE TO TRAFFIC MANAGEMENT' AND 'GUIDE TO ROAD DESIGN'.
2. REFER TO THE DESIGN PLANS FOR ROUNDABOUT KERB LOCATION, SIZE & SETOUT DATA.
3. ROUNDABOUT KERB FACES SHALL BE PAINTED REFLECTORISED WHITE AS REQUIRED BY THE 'PAVEMENT MARKING MANUAL'.
4. ALL NIGHT ROAD LIGHTING SHALL BE IN ACCORDANCE WITH AS 1158.
5. ROUNDABOUT KERBING SHALL BE DELINEATED WITH AN OUTLINE MARKING SEPARATED FROM THE KERB BY 100mm.
6. PATTERN FINISH CONCRETE INFILL COLOUR & TYPE TO BE ADVISED BY RELEVANT AUTHORITY. INFILL CONCRETE TO BE 32MPa UNLESS NOTED OTHERWISE.



ALL MEASUREMENTS IN MILLIMETRES

PROJECTS DESIGN DRAWN CHECK APPD. DATE AMENDMENTS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS		STATUS	FOR INFORMATION	SCALE AS SHOWN	CLIENT		PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.	DRAWING TITLE ROUNABOUT INSTALLATION TYPE 2			
	A					19/12/04	ISSUED FOR REVIEW								PROJECT No.	DRAWING No.	MILESTONE	REVISION
	B					20/12/04	ISSUED FOR REVIEW								24-000479	DH-RD-2055		C
	C					02/04/25	CLIENT SUBMISSION											

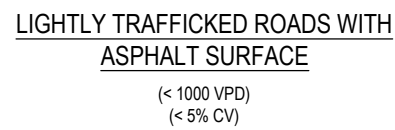
1. THE DRAINS SHALL BE LAID ON A GRADE PARALLEL TO THE FINISHED SURFACE.
2. FOR FLUSHOUT RISER DETAILS REFER TO STANDARD DRAWINGS DH-SW-3065.
3. WHERE THE SUBGRADE IS CLASSIFIED AS BEING EXPANSIVE, SUBSURFACE PAVEMENT DRAINS SHALL BE DESIGNED TO BE CONTAINED WHOLLY WITHIN THE CAPPING LAYER. IN ADDITION, NO PART OF THE SUBSURFACE DRAINAGE TRENCH SHALL BE LOCATED WITHIN 150mm OF THE UNDERLYING SUBGRADE. IF NECESSARY, THE CAPPING LAYER MAY HAVE TO BE THICKENED TO SATISFY THIS REQUIREMENT.



ALL MEASUREMENTS IN MILLIMETRES

PROJECTS/ISSUES/AMENDMENTS	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	SCALE AS SHOWN	CLIENT	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE TYPICAL PAVEMENT SUBSOIL DRAINAGE			
	FIRST ISSUE													
	FOR INFORMATION													
	A				19/12/24	ISSUED FOR REVIEW								
	B				02/04/25	CLIENT SUBMISSION								
										DISCLAIMER: ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.	PROJECT No. 24-000479	DRAWING No. DH-RD-2065	MILESTONE	REVISION B

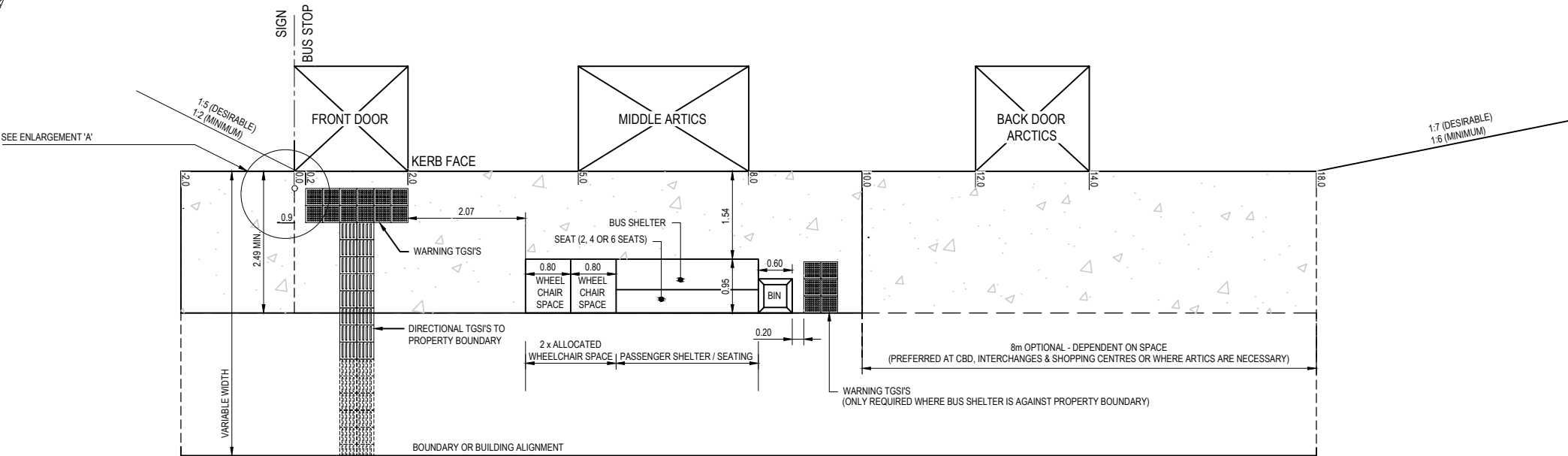
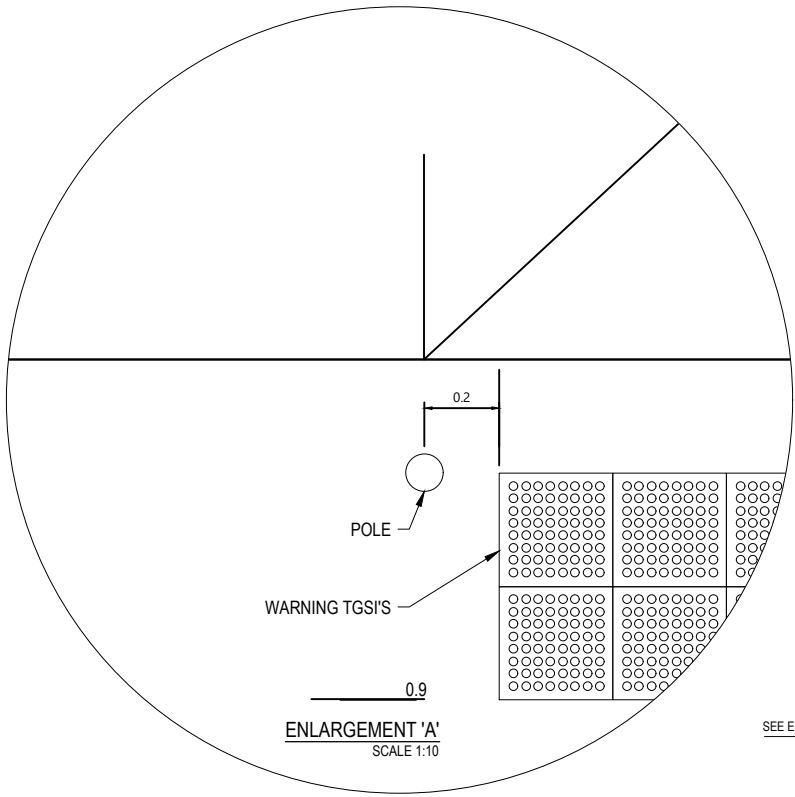
1. ROADS WITH TRAFFIC VOLUMES OR CV EXCEEDING THOSE SHOWN, REFER TO DIT PAVEMENT REINSTATEMENT CONFIGURATIONS.
2. THE MINIMUM PAVEMENT THICKNESS OF THE REINSTATED PAVEMENT LAYERS SHALL BE AS DETAILED OR SHALL MATCH THE EXISTING PAVEMENT LAYERS. WHICHEVER IS GREATER.
3. EXCAVATED MATERIAL SHALL NOT BE REUSED IN THE REINSTATEMENT OF THE TRENCHES AND SHALL BE REMOVED OFFSITE.
4. ALL LINE MARKING, PAVEMENT MARKING AND ROAD FURNITURE SHALL BE REINSTATED TO MATCH EXISTING.
5. THE FINISHED SERVICE LEVEL OF ALL SERVICE COVERS SHALL BE FLUSH WITH THE FINISHED SURFACE OF THE REINSTATED PAVEMENT.
6. NEW ASPHALT TO BE HEATED AND BLENDED INTO THE EXISTING ASPHALT SEAL.



ALL MEASUREMENTS IN MILLIMETRES

FILE: S:\CAL\05_PROJECTS\SYD\24\24-000479 - GROWTH AREA ENGINEERING STANDARDS\06_MODEL\AUTOCAD\CIVIL\DH-RD-2070.DWG LAST SAVED BY: JO KERR PLOTTED: 9-May-25

NOTE:
1. MINIMUM FOOTPATH WIDTH SHOWN AS 4m (TOTAL) WITH SHELTER -
MINIMUM FOOTPATH WIDTH WITHOUT SHELTER REDUCED TO 2.5m.



TYPICAL BUS STOP LAYOUT
SCALE 1:50

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH
AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS
TECHNICAL MANUAL

ALL MEASUREMENTS IN MILLIMETRES

FILE: S:\CAUS PROJECTS\91024\24-00479 - GROWTH AREA ENGINEERING STANDARDS\6. MODEL\AUTOCAD\DWG\RD-2075.DWG LAST SAVED BY: JO KERR PLOTTED: 9-May-25

AMENDMENT DETAILS						STATUS	FOR INFORMATION	SCALE AS SHOWN	CLIENT	PROJECT	DRAWING TITLE
FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE						
A					19/12/24	ISSUED FOR REVIEW				SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	TYPICAL BUS STOP DETAIL
B					02/04/25	CLIENT SUBMISSION					
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0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0
SCALE 1:50 (A1) SCALE 1:100 (A3)

**Government of South Australia**
Department for Housing
and Urban Development

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR
PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO
NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY
CERTIFYING AUTHORITY

PROJECT No.	DRAWING No.	MILESTONE	REVISION
24-000479	DH-RD-2075		B

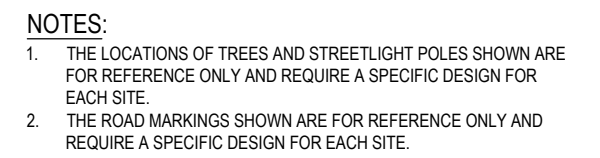


Diagram illustrating the typical cross-section of an access street, showing various zones and dimensions.

Key Dimensions and Zones:

- ROAD RESERVE (MIN. 15.0m):** The total width of the road reserve.
- VERGE (MIN. 2.6m):** The width of the verge area on both sides.
- TRAFFIC / PARKING LANE (MIN 3.6m):** The width of the traffic and parking lanes on both sides.
- NATURE STRIP:** A strip of land adjacent to the traffic lane, with a width of 0.750m.
- LINE OF KERB:** The boundary between the traffic lane and the nature strip.
- BACK OF KERB:** The boundary between the nature strip and the property boundary, with a width of 1.000m.
- TREE:** A tree planted in the nature strip, with a width of 1.500m.
- PROPERTY BDY:** The boundary between the property and the road reserve, with a width of 0.500m.
- COMMON SERVICE TRENCH:** A trench located within the property boundary, with a width of 0.500m.
- Legend:**
 - COMMS (pink circle)
 - GAS (blue circle)
 - ELEC (red circles)

Typical Cross Section - Access Street
NOT TO SCALE



ROAD RESERVE (MIN. 18.0m)
SUBJECT TO APPROVAL

VERGE (MIN. 2.5m)

1.500 F/PATH

NATURE STRIP

PARKING (MIN. 2.5m)

TRAFFIC / PARKING LANE (MIN. 3.5m)

TRAFFIC LANE (MIN. 3.5m)

VERGE (MIN. 6.0m)

1.500 F/PATH

LINE OF KERB

0.750

0.500

2.5%

3.0%

3.0%

2.5%

0.500

PROPERTY B'DY

COMMON SERVICE TRENCH

COMMS
GAS
ELEC

BACK OF KERB

1.000

1.500 TREE

0.500

COMMON SERVICE TRENCH

COMMS
GAS
ELEC

TYPICAL CROSS SECTION A - LEVEL 1 COLLECTOR/CONNECTOR STREET WITH INDENTED PARKING

NOT TO SCALE

FILE: S:\CAL05_PROJECTS\SYD24\24-000479 - GROWTH AREA ENGINEERING STANDARDS\06_MODEL\AUTOCAD\CIVIL\DH-RD-3002.DWG LAST SAVED BY: JO KERR PLOTTED: 9-May-25

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	SCALE AS SHOWN	CLIENT	PROJECT	DRAWING TITLE
A					09/05/25	CLIENT SUBMISSION	FOR INFORMATION			SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	TYPICAL ROAD CROSS SECTION AND PLAN LEVEL 1 COLLECTOR/CONNECTOR STREET (WITH INDENTED CARPARK)
										DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY	PROJECT No. 24-000479 DRAWING No. DH-RD-3002 MILESTONE REVISION A

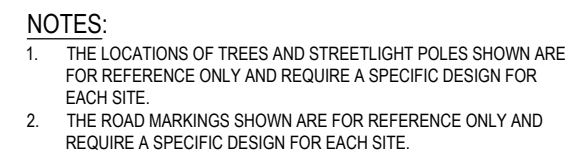


Diagram illustrating the cross-section of a road reserve (MIN 24.0m) showing various lanes and dimensions.

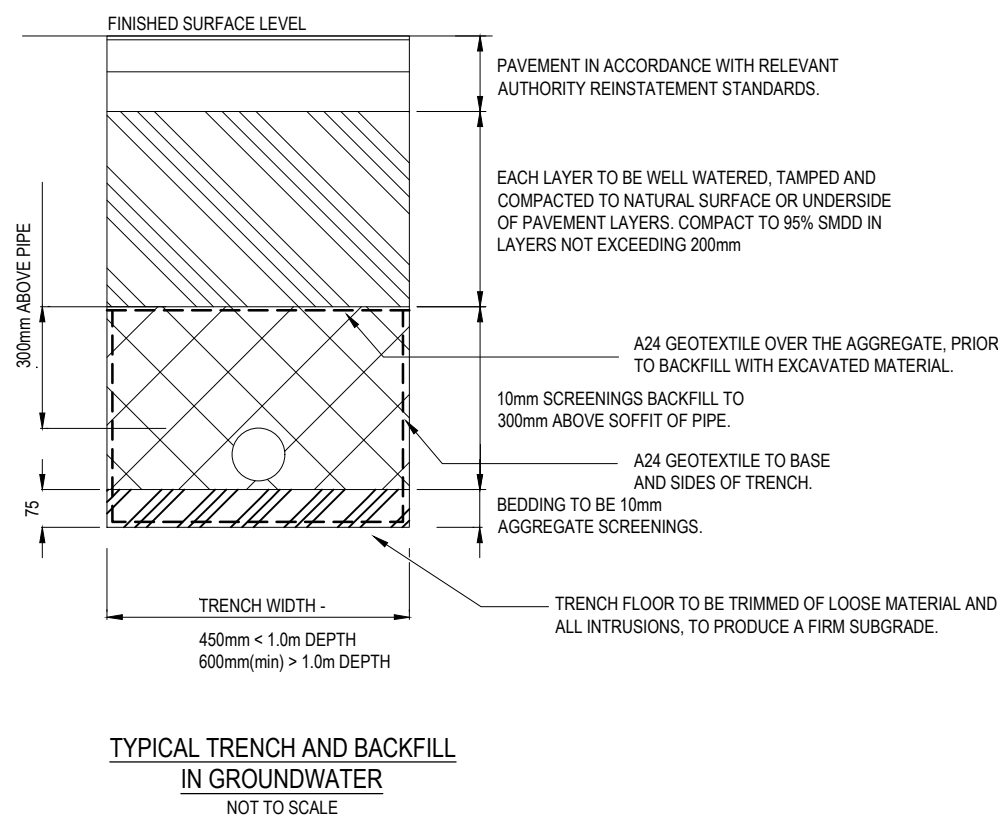
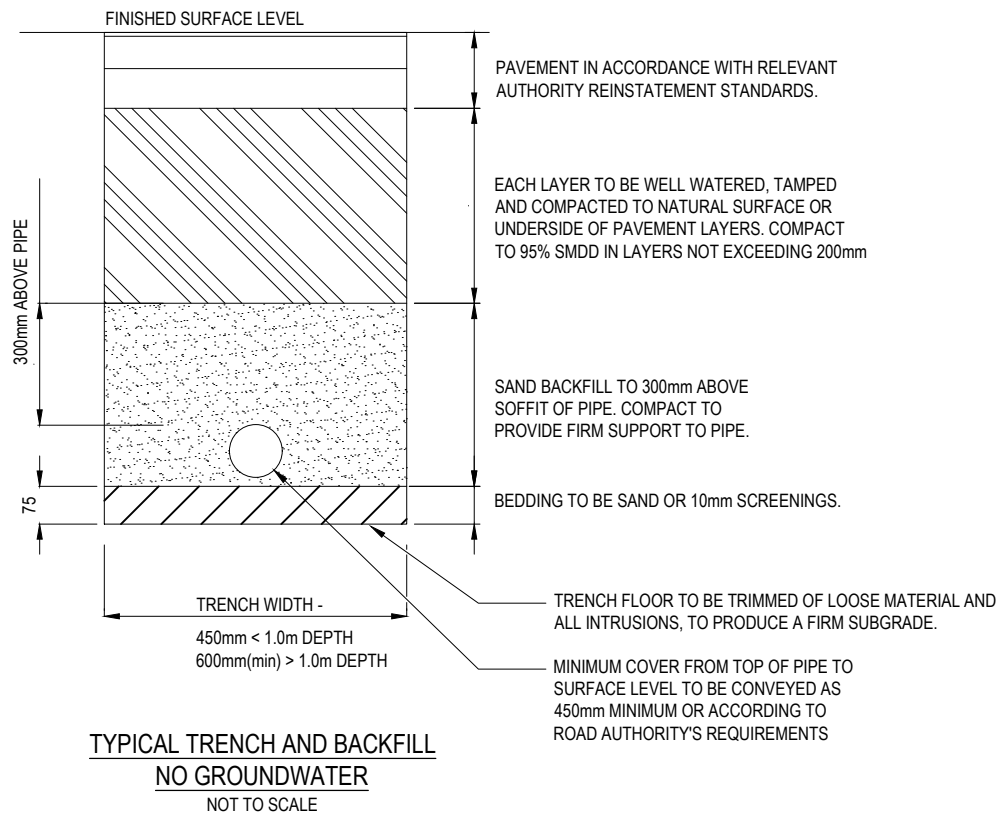
Key Components and Dimensions:

- ROAD RESERVE (MIN 24.0m):** Total width of the reserve.
- VERGE (MIN 3.5m):** Width of the verge on both sides.
- NATURE STRIP:** Area between the verge and the footpath.
- F/PATH (1.500):** Footpath width on both sides.
- PARKING LANE (MIN 3.5m):** Width of the parking lane on both sides.
- CYCLE LANE (MIN 1.5m):** Width of the cycle lane on both sides.
- TRAFFIC LANE (MIN 3.5m):** Width of the traffic lane in the center.
- LINE OF KERB:** Boundary line separating the road from the property.
- PROPERTY BDY (0.50):** Property boundary width on both sides.
- COMMON SERVICE TRENCH (1.000):** Width of the common service trench on both sides.
- BACK OF KERB (1.500):** Distance from the back of the kerb to the property boundary.
- TREE (1.000):** Width of the tree area on both sides.
- COMMONS:** Area between the property boundary and the common service trench.
- Light Poles / Tress:** Located on the verges.
- Slopes:** 3.0% slope indicated for the road surface.

ALL MEASUREMENTS IN MILLIMETRES

[illegible]

- NOTES:
- PIPES TO BE LOCATED CENTRALLY IN TRENCH.
 - TRENCH BASE TO BE FIRM AND TO HAVE CONSTANT GRADE.
 - UNEVEN TRENCHES ARE NOT ACCEPTABLE.
 - DEWATER TRENCH DURING CONSTRUCTION.

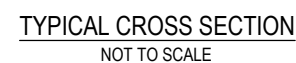


THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS TECHNICAL MANUAL

ALL MEASUREMENTS IN MILLIMETRES

FILE: S:\CAUS PROJECTS\91024\24-00479 - GROWTH AREA ENGINEERING STANDARDS\6. MODEL\AUTOCAD\DWG\RD-3015.DWG LAST SAVED BY: JO KERR PLOTTED: 9-May-25

AMENDMENTS	FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	SCALE: AS SHOWN	CLIENT	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE TRENCH AND BACKFILL DETAILS - CWMS						
	A					19/12/24	ISSUED FOR REVIEW											
	B					20/12/24	ISSUED FOR REVIEW											
	C					02/04/25	CLIENT SUBMISSION											
FOR INFORMATION																		
DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY																		
											PROJECT No. 24-000479		DRAWING No. DH-RD-3015		MILESTONE	REVISION C		

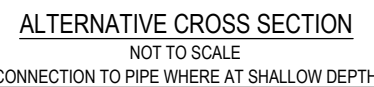
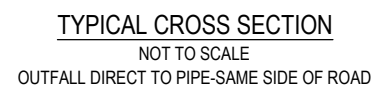
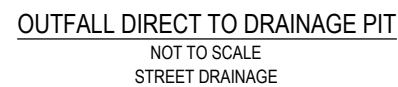
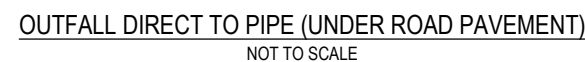


ALL MEASUREMENTS IN MILLIMETRES

- 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. PM2/20 QG OR DOLOMITE SAND BACKFILL TO BE USED.
 3. REFER DH-RD-1015 FOR DETAILS OF KERB ADAPTOR.
 4. PROPRIETARY GALVANISED 'TOP HAT' SECTION IS SUITABLE ALTERNATIVE.

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH
AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS
TECHNICAL MANUAL

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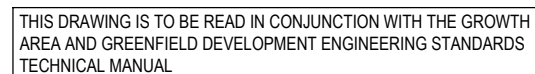
- NOTES:**
1. PM2/20 QG BACKFILL TO BE USED UNDER ROAD PAVEMENT.
 2. CONCRETE KERB TO BE STAMPED WHEN CURING WITH THE LETTER 'D' ADJACENT THE HOUSE DRAIN CONNECTION POINT.

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AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS
TECHNICAL MANUAL

ALL MEASUREMENTS IN MILLIMETRES

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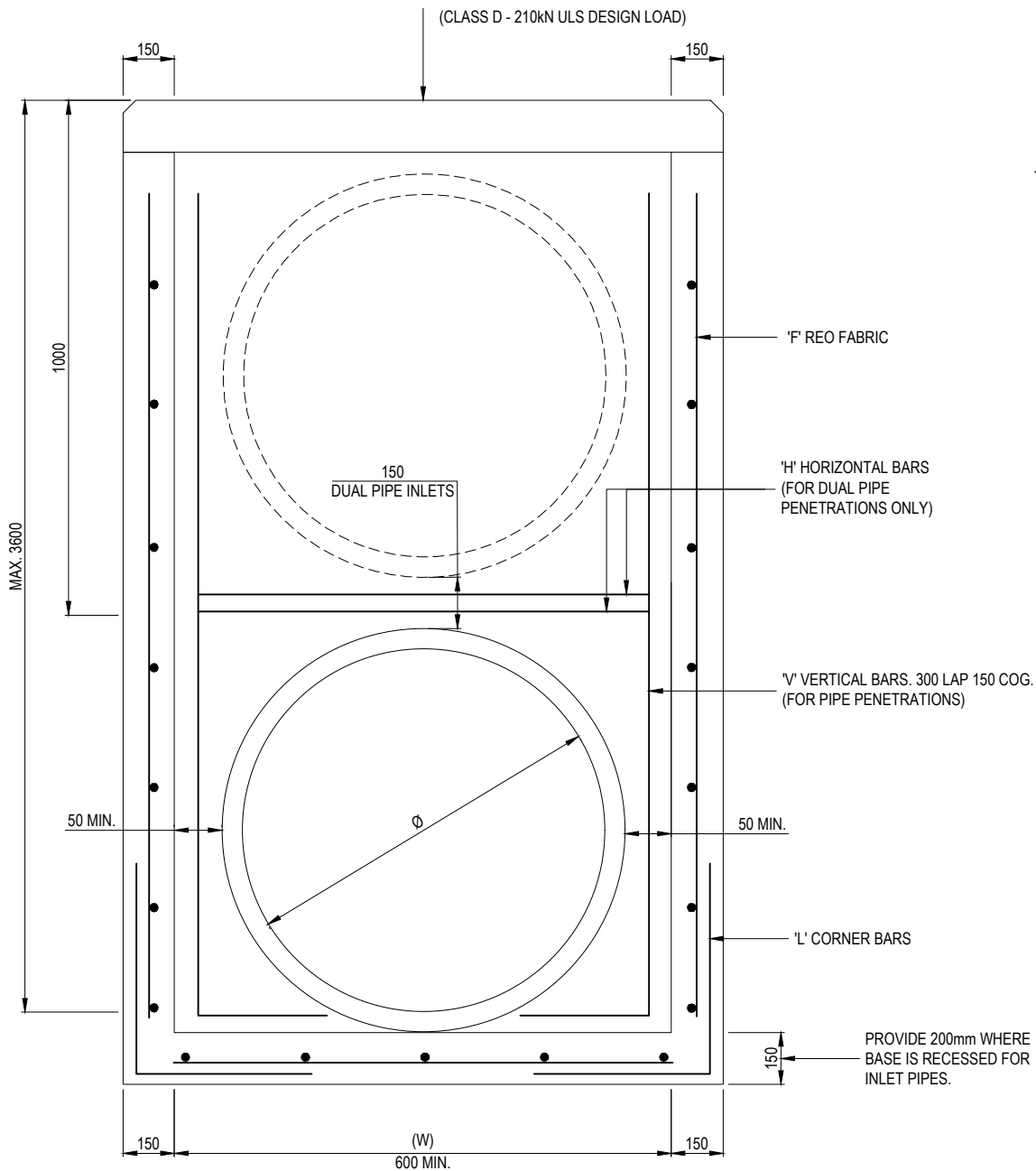
1. MINIMUM COVER TO PIPES TO BE 300mm.
2. ALL STORMWATER PIPES TO BE PVC SN8 (Ø150mm)
SN6 (Ø100mm).



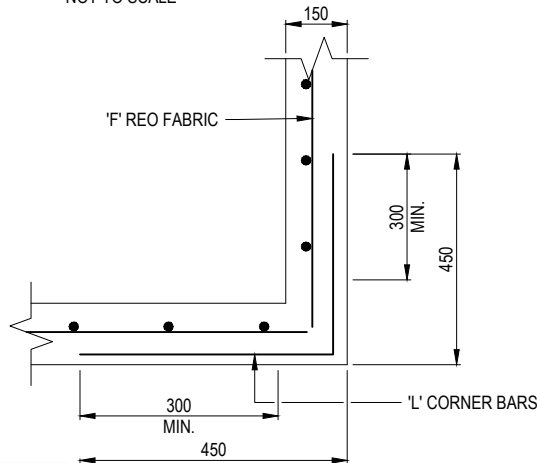
ALL MEASUREMENTS IN MILLIMETRES

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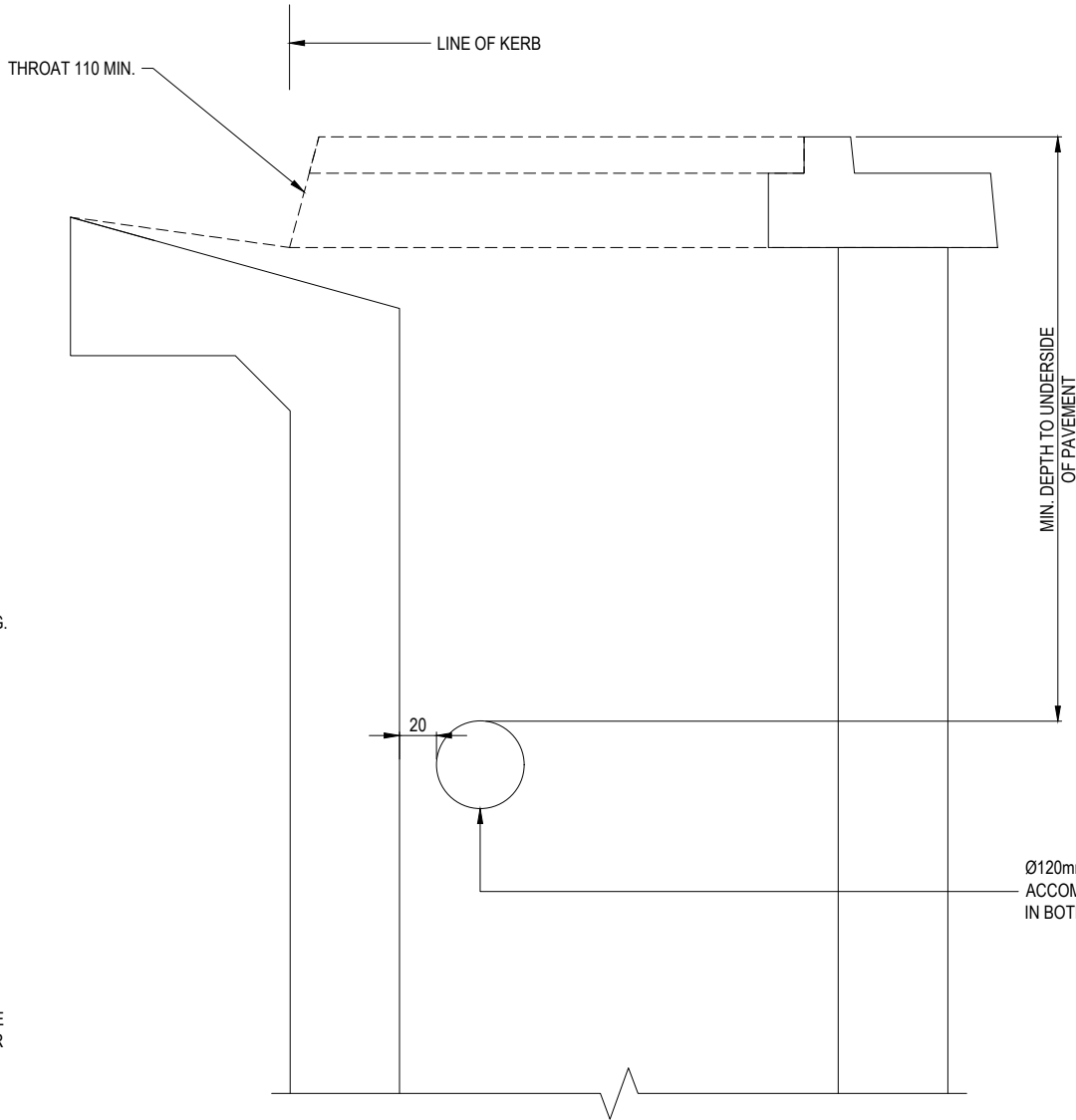
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TYPICAL PIT DETAIL
NOT TO SCALE



150mm CORNER DETAIL
NOT TO SCALE



PRECAST PIT
NOT TO SCALE

NOTES:

- 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 RELEVANT STANDARD DRAWINGS.
- PRECAST PITS WITH THINNER WALLS AND LESS STEEL OR FIBRE REINFORCED PITS 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 APPROPRIATE SURCHARGE LIVE LOAD CLASS
 - HYDROSTATIC PRESSURE
 - COMPACTION PRESSURE (25kPa MIN.)
 - VEHICLE LOADS - DESIGN VEHICLE LOAD.
- SUBSURFACE DRAIN HOLES TO BE SEALED IF NOT USED. ANY CONCRETE FORMWORK, REINFORCEMENT, POURING AND CURING SHALL COMPLY WITH AS 3600 AND THE ASSOCIATED CODES.
- CONCRETE STRENGTH F'C - 32 MPa. (MIN.) AT 28 DAYS. SLUMP TO BE 80mm.
- ALL RL FABRIC MAIN BARS SHOULD BE PLACED HORIZONTALLY.
- VEHICLE LOADS TO DESIGN LOAD CLASS.

REINFORCEMENT DETAILS

LOAD CLASS	MAX WIDTH (W) (mm)	'F' FABRIC	'H' HORIZONTAL BARS	'V' VERTICAL BARS	'L' CORNER BARS
B	600	SL82 (c)	2/N10	1/N10	N10 @ 300 (c)
B	900	SL82 (c)	2/N10	1/N10	N10 @ 300 (c)
B	1200	SL92 (c)	2/N12	1/N12	N10 @ 200 (c)
B	1500	SL92 (50 INTERNAL COVER)	2/N12	1/N16	N10 @ 200 (c) (50 INTERNAL COVER)
B	1800	SL92 (50 INTERNAL COVER)	2/N16	1/N16	N12 @ 200 (c) (50 INTERNAL COVER)
D	600	SL82 (c)	2/N10	1/N10	N10 @ 300 (c)
D	900	SL92 (50 INTERNAL COVER)	2/N10	1/N10	N10 @ 200 (c) (50 INTERNAL COVER)
D	1200	RL818 (50 INTERNAL COVER)	2/N12	1/N12	N12 @ 200 (c) (50 INTERNAL COVER)
D	1500	RL1018 (50 INTERNAL COVER)	2/N12	1/N16	N12 @ 200 (c) (50 INTERNAL COVER)
D	1800	RL1218 (50 INTERNAL COVER)	2/N16	1/N16	N12 @ 200 (c) (50 INTERNAL COVER)

NOTE:

- PROVIDE REINFORCEMENT AS PER TABLE FOR WALL WITH CORRESPONDING WIDTH (W).
- IF ADJACENT WALLS HAVE DIFFERENT WIDTHS, ADOPT 'L' CORNER BARS CORRESPONDING TO HIGHER WIDTH.

ALL MEASUREMENTS IN MILLIMETRES

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS
A					19/12/24	ISSUED FOR REVIEW
B					02/04/25	CLIENT SUBMISSION
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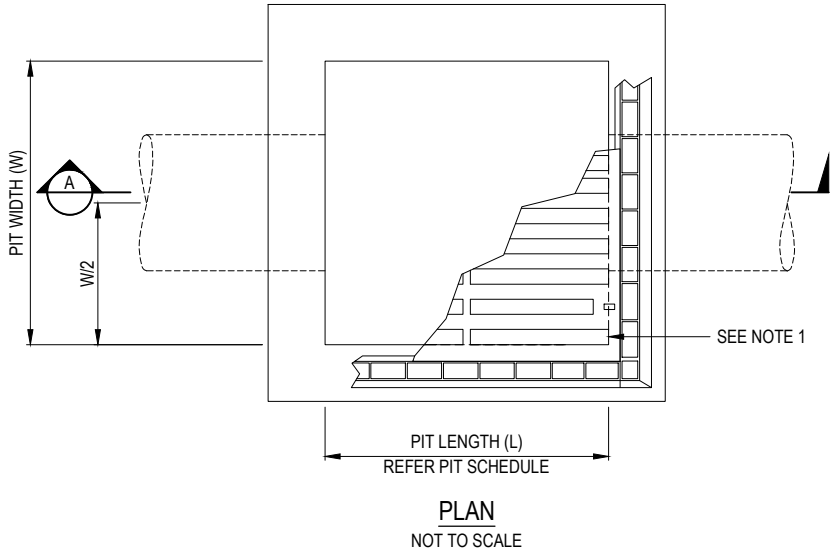
STATUS
FOR INFORMATION

SCALE
AS SHOWN

CLIENT
 Government of South Australia Department for Housing and Urban Development

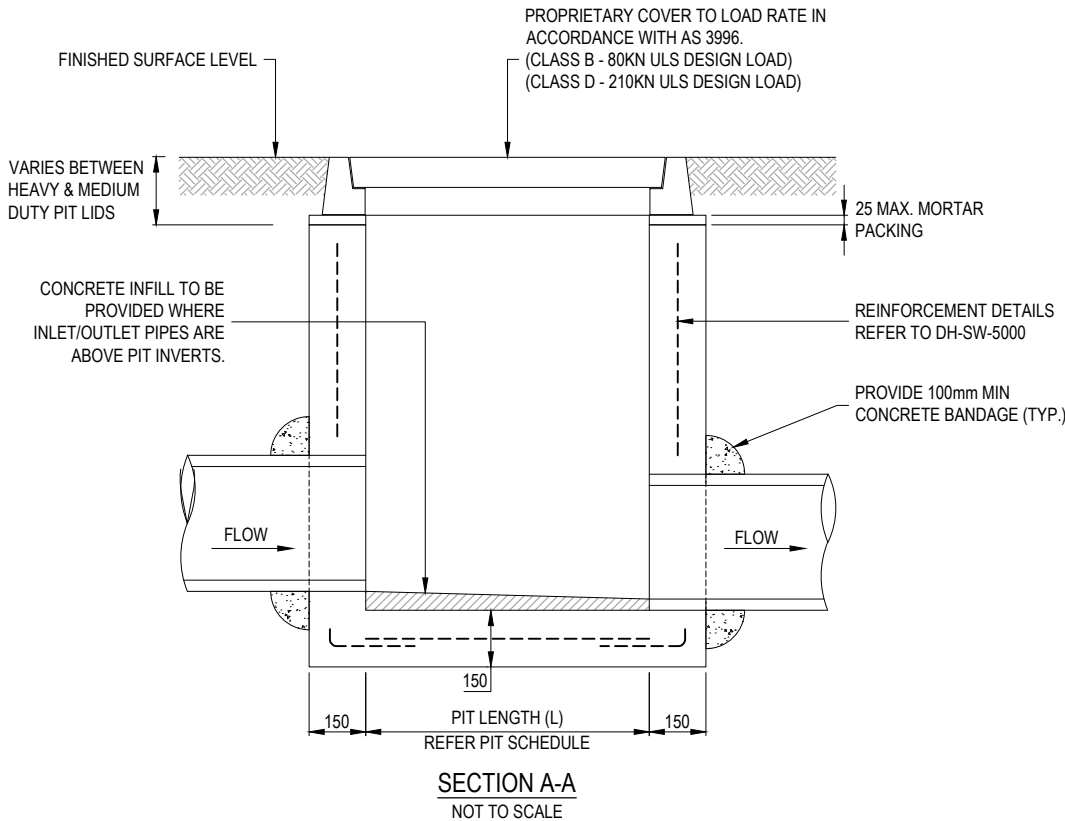
PROJECT
SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS
DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

DRAWING TITLE			
STORMWATER PITS REINFORCEMENT DETAILS			
PROJECT No.	DRAWING No.	MILESTONE	REVISION
24-000479	DH-SW-5000		B



- ## 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 PIT STREAMLINING TO BE PROVIDED WHERE SHOWN ON DRAWINGS.
 3. INTERNAL PIT DIMENSIONS SHALL ALLOW FOR THE PIPE OUTER DIAMETER AT CUT ANGLE PLUS CONSTRUCTION TOLERANCE PLUS 50mm EACH SIDE.
 4. MINIMUM PIT LID OPENING SIZE TO BE 600mm DIAMETER FOR ALL PITS GREATER THAN 600mm DEPTH.
 5. ALL GRATED COVERS TO BE HOT DIP GALVANISED FOR INSTALLATIONS IN NON-TRAFFICKED AREAS.
 6. ROUND PIT LIDS PREFERRED TO REDUCE RISK OF FALL INTO THE PITS.
 7. REINFORCED PITS CAN BE USED FOR STANDARD SIZES.
 8. HEAVY DUTY COVER (ALL JBS) - 600mm (MIN. SIZE) HEAVY DUTY CAST IRON NON-ROTATING COVER BY 'BIANCO' OR SIMILAR APPROVED BOLTED TO COVER SLAB. LID TO HAVE CAST IRON LIFTING SOCKET.
 9. GRATED INLET PIT COVER HEAVY DUTY GALVANISED GRATE AND FRAME WITH 600x600mm CLEAR OPENING. HEELSAFE IN PEDESTRIAN AREAS.
 10. COVER SLAB 'BIANCO' OR SIMILAR APPROVED 32MPa, SL82 REINFORCEMENT.
 11. MINIMUM SIZE 900x900mm IN COUNCIL ROAD RESERVE.
 12. GROUT BETWEEN LID AND COVER TO BE SPECIFIED ON DRAWING. GROUT TO CONSIST OF 2 PARTS SAND, 1 PART CEMENT AND SUFFICIENT WATER TO PRODUCE MIX OF SUITABLE CONSISTENCY.
 13. STEP IRONS REQUIRED IN PITS >1.2m DEEP.
 14. CONFINED SPACE WARNING SIGN REQUIRED IN ALL NEW PITS.

PIT DEPTH	MINIMUM PIT SIZE
$d \leq 600$	450 x 450
$600 < d \leq 900$	600 x 600
$900 < d \leq 1200$	600 x 900
$d \geq 1200$	900 x 900

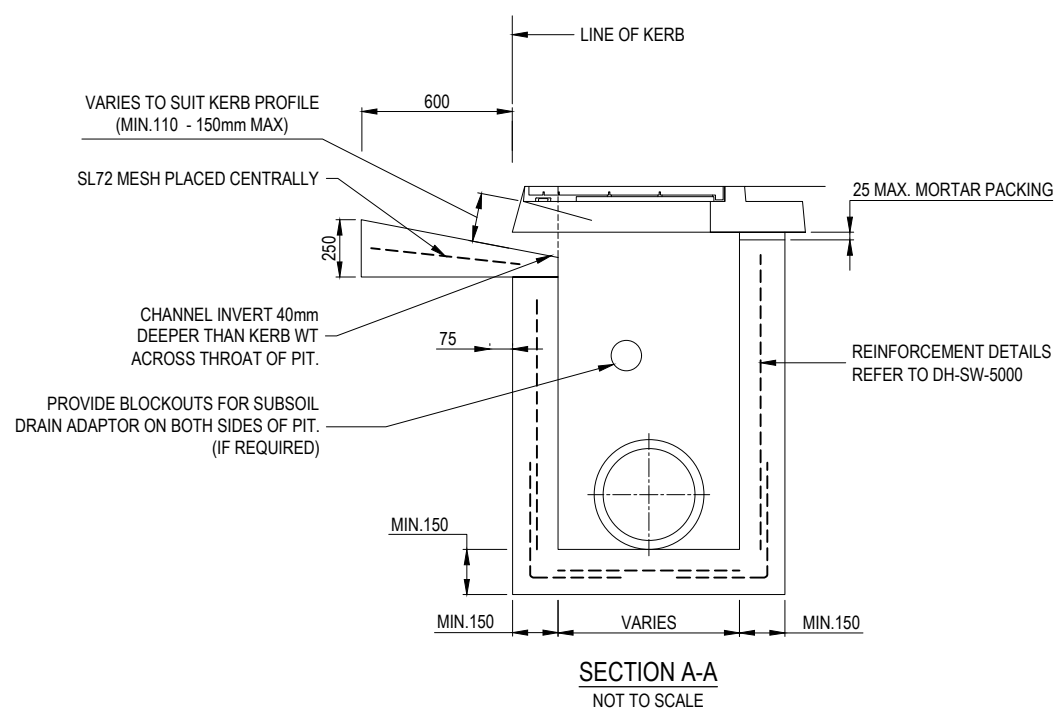


THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH
AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS
TECHNICAL MANUAL

ALL MEASUREMENTS IN MILLIMETRES

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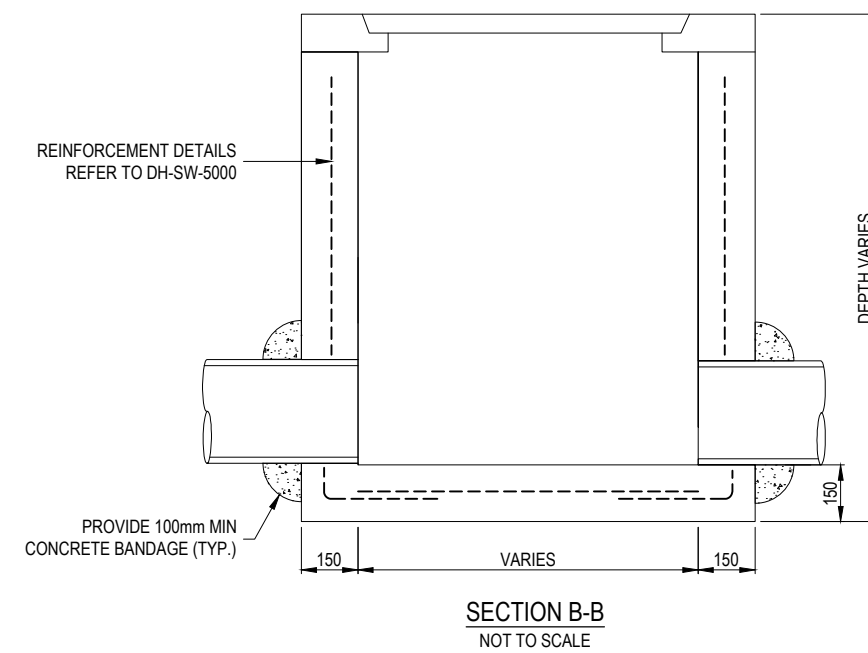
1. REFER TO DH-RD-1000 FOR KERB DETAILS.
2. CHANNEL DEPTH TRANSITION TO BE INCREASED TO 1200mm BOTH SIDES AT LOW POINT (SAG) LOCATIONS.



ALL MEASUREMENTS IN MILLIMETRES

[illegible]

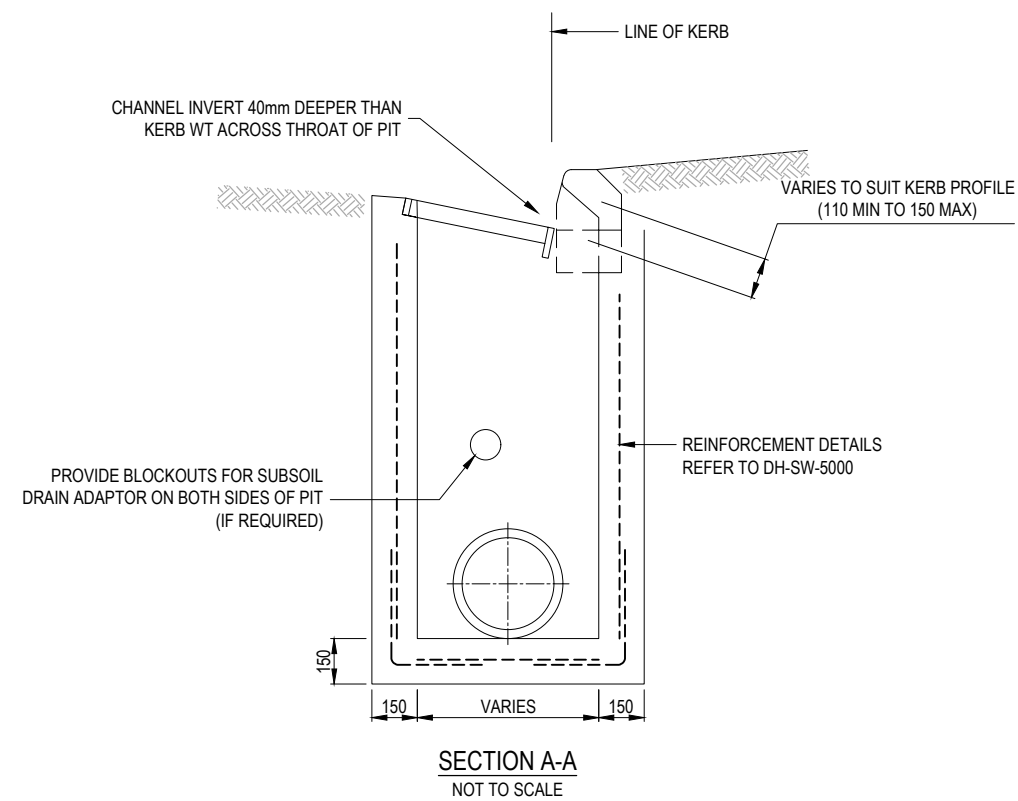
1. PRECAST LINTEL FRAME AND LIDS AS APPROVED BY RELEVANT AUTHORITY TO BE INSTALLED TO MANUFACTURERS RECOMMENDATIONS.
2. CONSTRUCT - Ø100mm P.V.C. PIPE WITH CONSTRUCTION WORKS TO DRAIN WATER FROM PAVEMENT. AS DIRECTED BY RELEVANT AUTHORITY.
3. AT LOW POINT TRANSITION 1200mm BOTH SIDES.
4. PRECAST LINTEL TO MATCH REQUIRED KERB TYPE.



ALL MEASUREMENTS IN MILLIMETRES

PROJECTS DRAWING SHEET TITLE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	FOR INFORMATION	SCALE AS SHOWN	CLIENT	 Government of South Australia Department for Housing and Urban Development	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE STORMWATER SIDE ENTRY PIT AND LIDS WITH PRECAST LINTEL	DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.	PROJECT No. 24-000479	DRAWING No. DH-SW-5025	MILESTONE	REVISION C
	A					19/12/24	ISSUED FOR REVIEW											
	B					20/12/24	ISSUED FOR REVIEW											
	C					02/04/25	CLIENT SUBMISSION											

1. REFER TO DH-RD-1000 FOR KERB DETAILS.
2. CLASS D LOAD RATING REQUIRED.
3. CHANNEL DEPTH TRANSITION TO BE INCREASED TO 1200mm ON BOTH SIDES AT LOW POINT (SAG) LOCATIONS.



FILE: S:\CAL\05_PROJECTS\SYD\24\24-000479 - GROWTH AREA ENGINEERING STANDARDS\06_MODEL\AUTOCAD\CIVIL\DH-SW-5035.DWG LAST SAVED BY: JO.KERR PLOTTED: 9-May-25

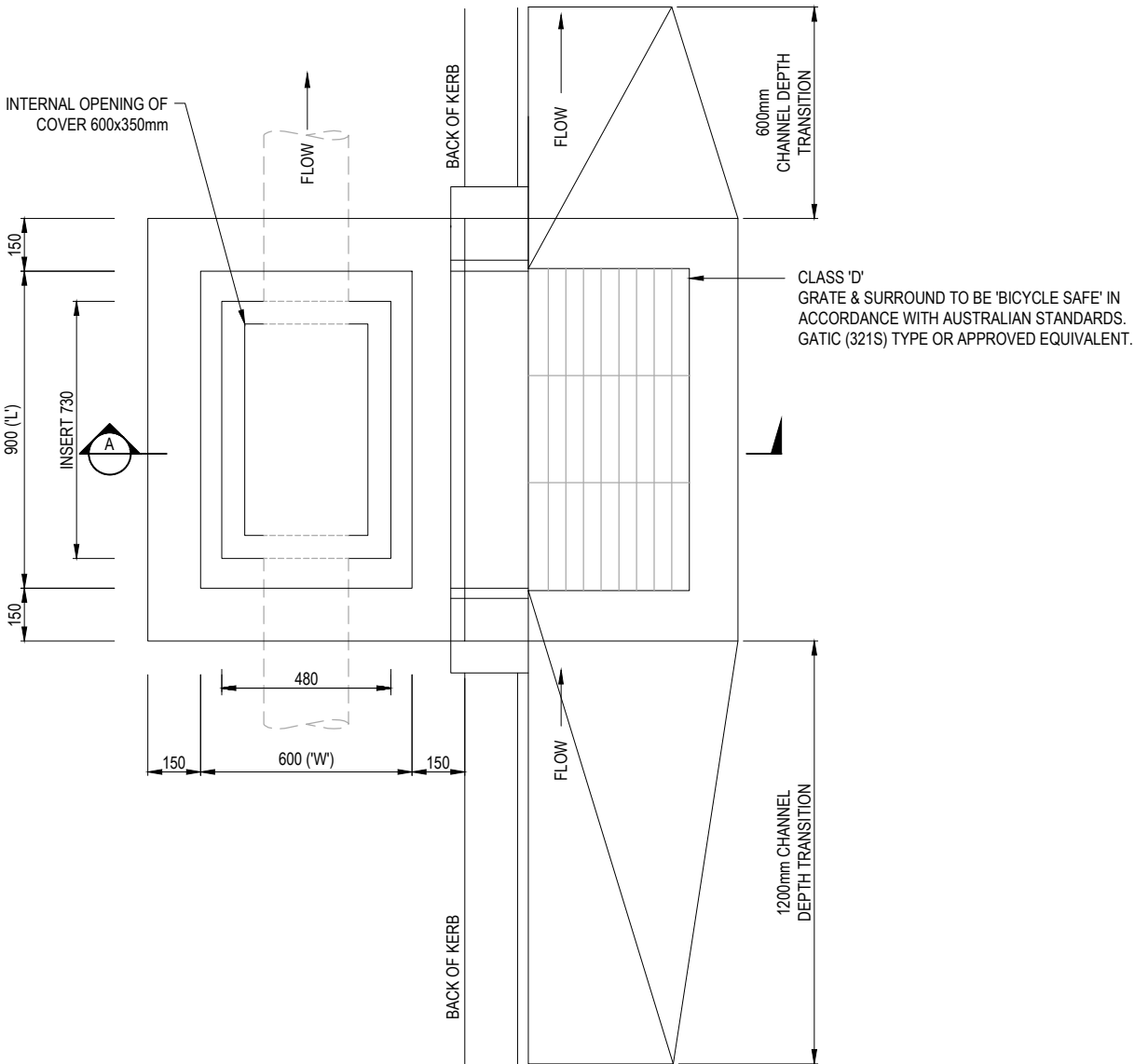
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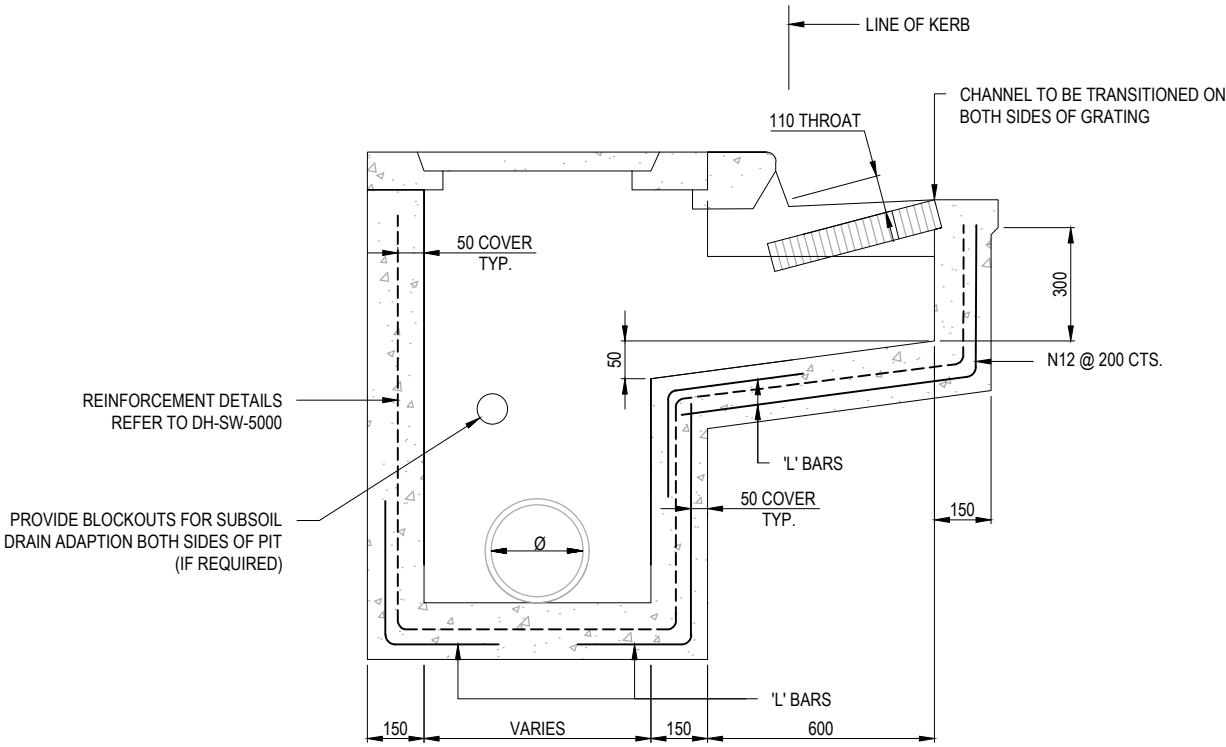
- NOTES:
1. CLASS D LOAD RATING REQUIRED FOR GRATE. COVERS TO BE CLASS B OR HIGHER IF LIKELY TO BE DRIVEN OVER.
 2. PRECAST LINTEL AND GRATES APPROVED BY RELEVANT AUTHORITY TO BE INSTALLED BY MANUFACTURERS RECOMMENDATIONS.
 3. CHANNEL DEPTH TRANSITION TO BE INCREASED TO 1200mm ON BOTH SIDES AT LOW POINT (SAG) LOCATIONS.

NOTE:
COVER INSERT 730x480mm
TAPER ON SIDE LIFTING
HOLE/S TO BE PROVIDED

NOTE:
DRAWING TO BE UTILISED WHERE NO OTHER
SERVICES ARE WITHIN THE NATURESTRIP.



PLAN



SECTION A-A

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH
AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS
TECHNICAL MANUAL

ALL MEASUREMENTS IN MILLIMETRES

	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS
FIRST						
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A					19/12/24	ISSUED FOR REVIEW
B					20/12/24	ISSUED FOR REVIEW
C					02/04/25	CLIENT SUBMISSION
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STATUS
FOR INFORMATION

SCALE: AS SHOWN
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8
SCALE 1:10 (A1) SCALE 1:20 (A3)

CLIENT
 Government of South Australia Department for Housing and Urban Development

PROJECT
SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS
DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

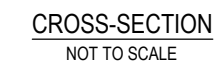
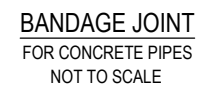
DRAWING TITLE
OFFSET SIDE ENTRY PIT WITH 900mm INLET GRATE
PROJECT No. 24-000479
DRAWING No. DH-SW-5040
MILESTONE
REVISION C

1. ALL CONCRETE WORKS TO BE 32MPa UNLESS NOTED OTHERWISE.
2. 'DENSO 600' TAPE OR SIMILAR APPROVED SHALL BE USED. TAPE TO BE 200mm MIN. WIDTH AND LAPPED 100mm MIN. TAPE IS TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
3. MORTAR MIX TO CONSIST OF 3 PARTS SAND TO 1 PART CEMENT BY VOLUME.

PIPE SIZE	MAXIMUM DEFLECTION ANGLE
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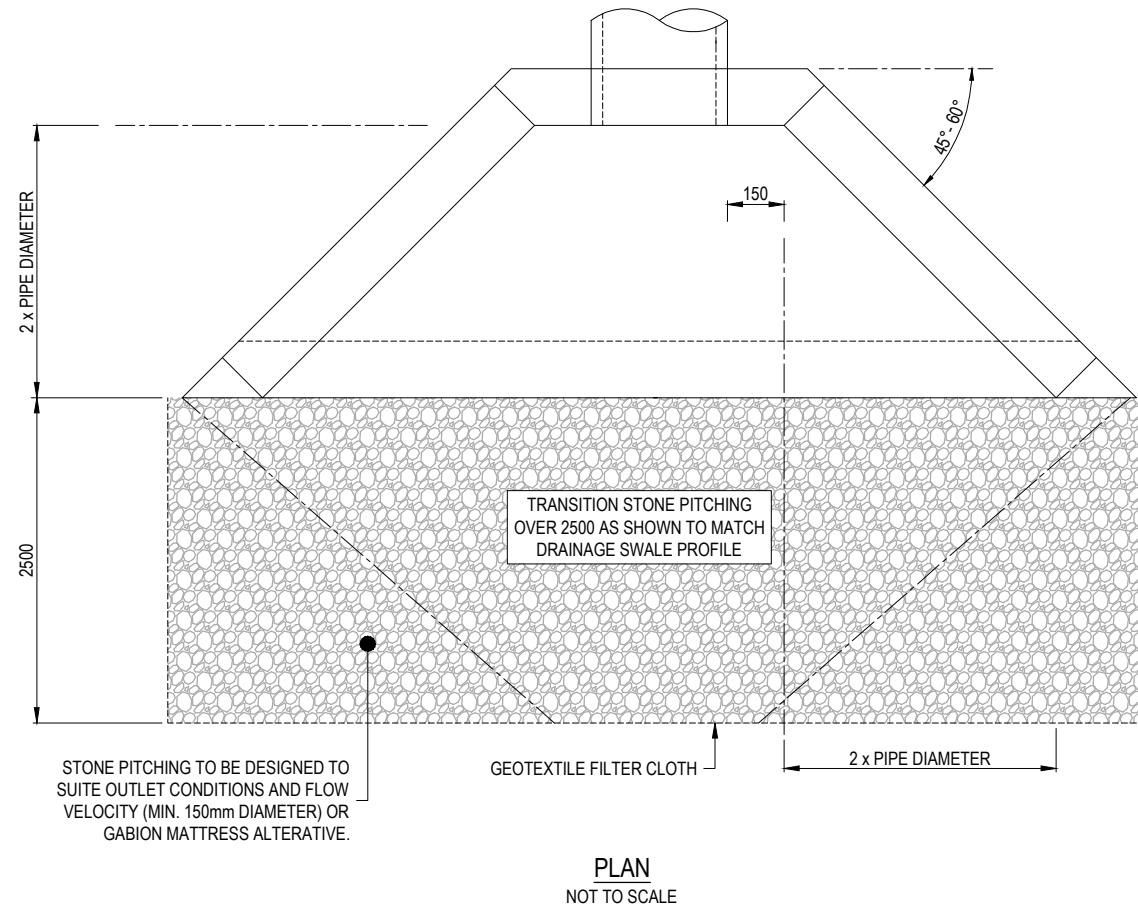
- PREFABRICATED SPLAYS SHALL BE USED WHERE DEFLECTION EXCEED ABOVE ANGLES.

BANDAGE JOINT REQUIREMENTS		
PIPE DIAMETER (D)	THICKNESS (T)	WIDTH (W)
D < 900	150	1000
D ≥ 900	200	1500

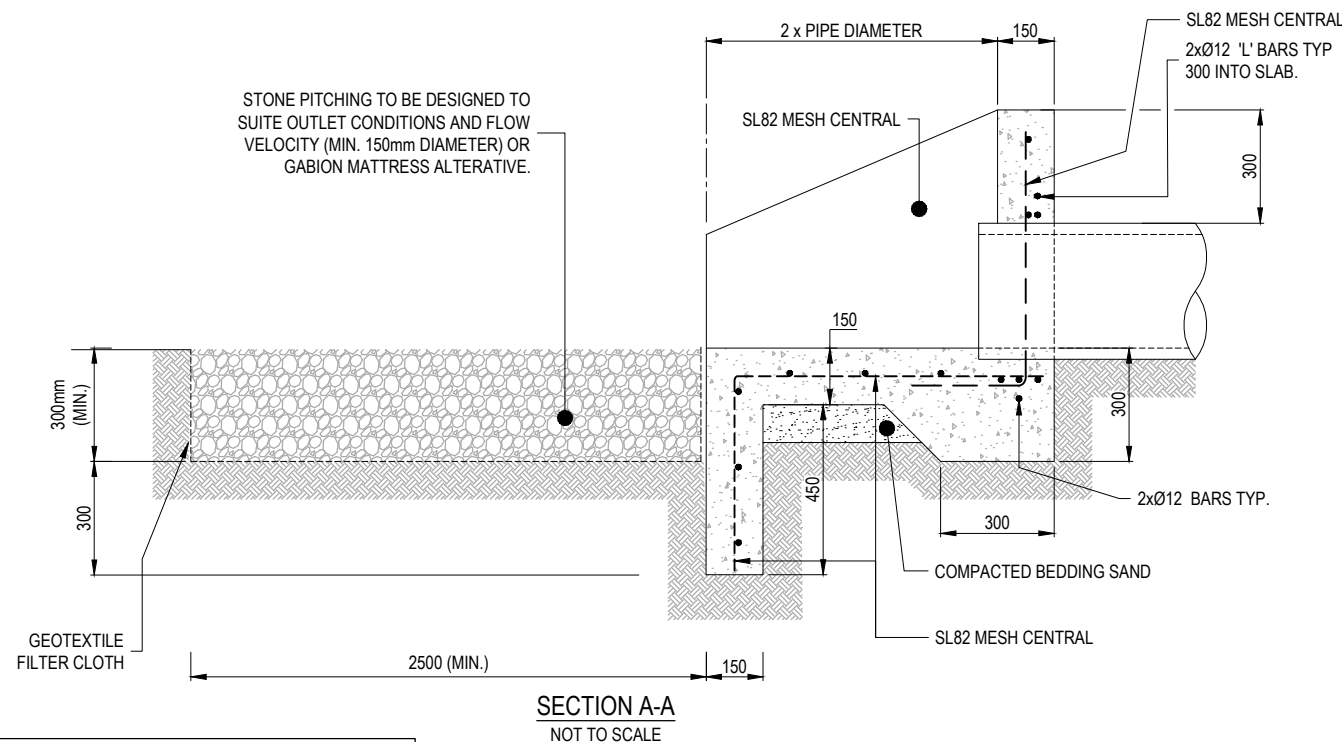


ALL MEASUREMENTS IN MILLIMETRES

FIRST ISSUE A M B N D Z S	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	SCALE AS SHOWN	CLIENT	PROJECT	BROWSING TITLE				
							FOR INFORMATION		 Government of South Australia Department for Housing and Urban Development	SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	BANDAGE JOINT				
					19/12/04	ISSUED FOR REVIEW					DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE ONLY WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.	PROJECT No. 24-000479	DRAWING No. DH-SW-5100	MILESTONE	REVISION
					02/04/25	CLIENT SUBMISSION								B	



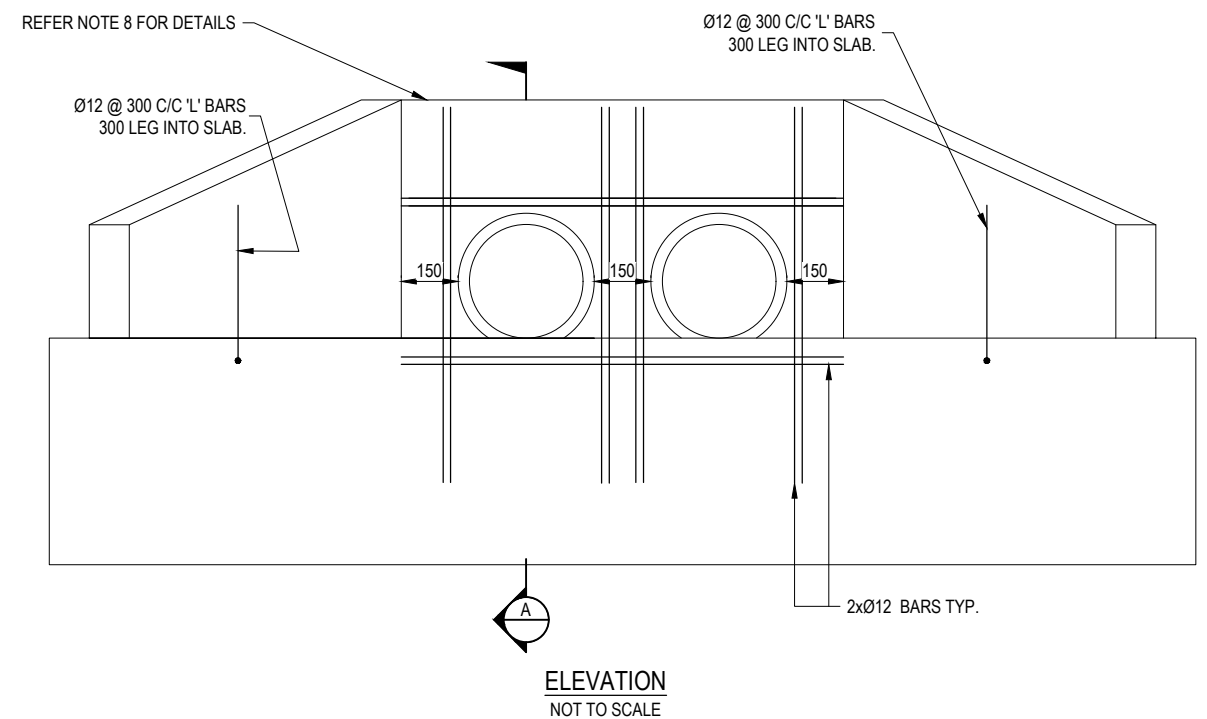
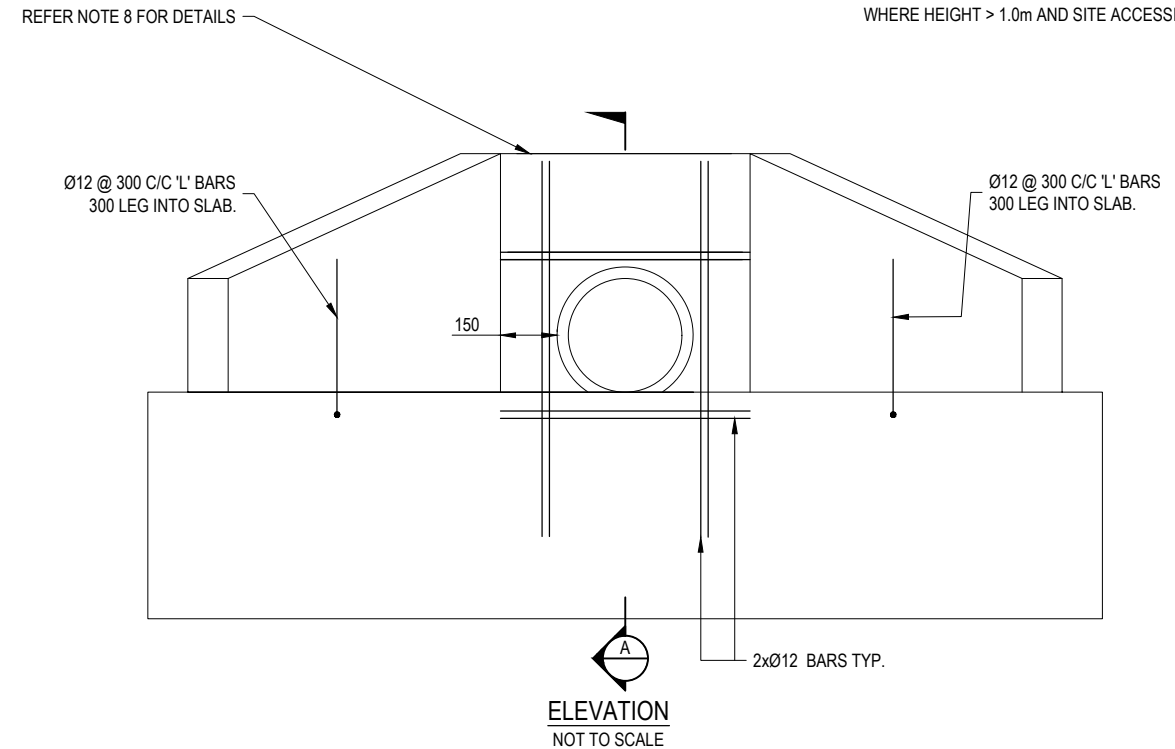
PLAN
NOT TO SCALE



SECTION A-A
NOT TO SCALE

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS TECHNICAL MANUAL

- NOTES:
1. STREAMLINING AT UPSTREAM END ONLY.
 2. SCOUR PROTECTION AT OUTLET AS SHOWN, UNLESS OTHERWISE APPROVED.
 3. APPROVED PRECAST HEADWALLS MAY BE USED AS AN ALTERNATIVE.
 4. MINIMUM COVER TO PIPES TO BE 300mm.
 5. MINIMUM FABRIC LAP 300mm.
 6. CONCRETE GRADE TO BE N32, SLUMP 80mm IN ACCORDANCE WITH AS3600.
 7. MAXIMUM BATTER SLOPE ABOVE HEADWALL 1 IN 6.
 8. FENCING AT TOP OF HEADWALL MAY BE REQUIRED IN LOCATION WHERE HEIGHT > 1.0m AND SITE ACCESSIBLE TO THE PUBLIC.



ALL MEASUREMENTS IN MILLIMETRES

FILE: S:\CAUS PROJECTS\191224\24-00475 - GROWTH AREA ENGINEERING STANDARDS\DWG\AUTOCAD\DWG\SW-5200.DWG LAST SAVED BY: JO KERR PLOTTED: 24-May-25

AMENDMENT DETAILS						STATUS	SCALE: AS SHOWN	CLIENT	PROJECT	DRAWING TITLE
FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE					
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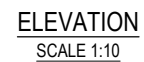
FOR INFORMATION	
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Government of South Australia Department for Housing and Urban Development	
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SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	
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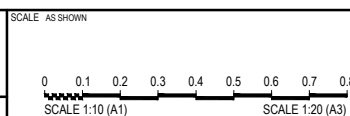
PROJECT No. 24-000479	DRAWING No. DH-SW-5200	MILESTONE	REVISION B
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THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH
AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS
TECHNICAL MANUAL

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FOR INFORMATION



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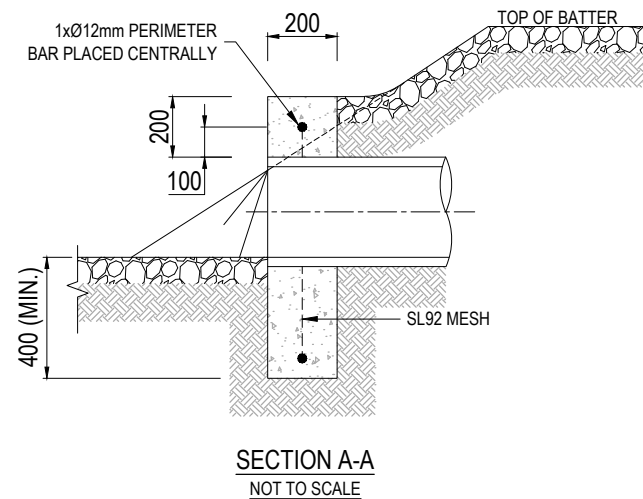
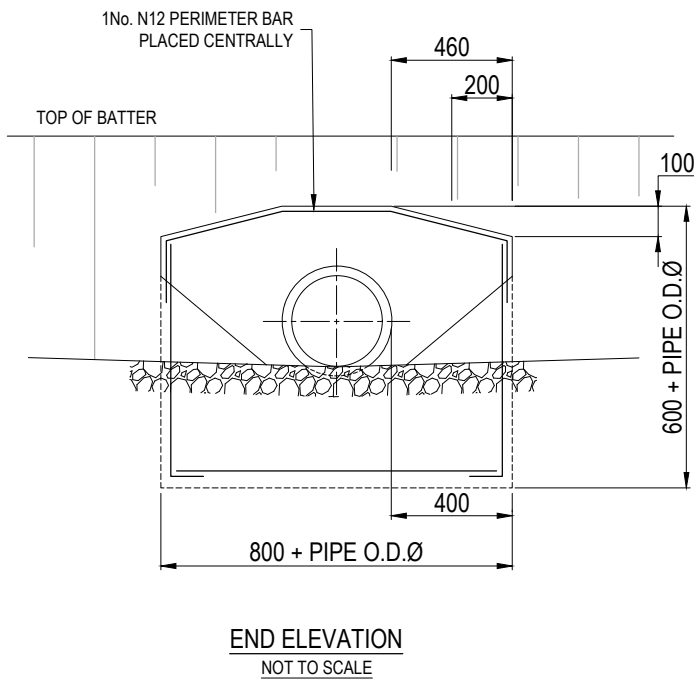
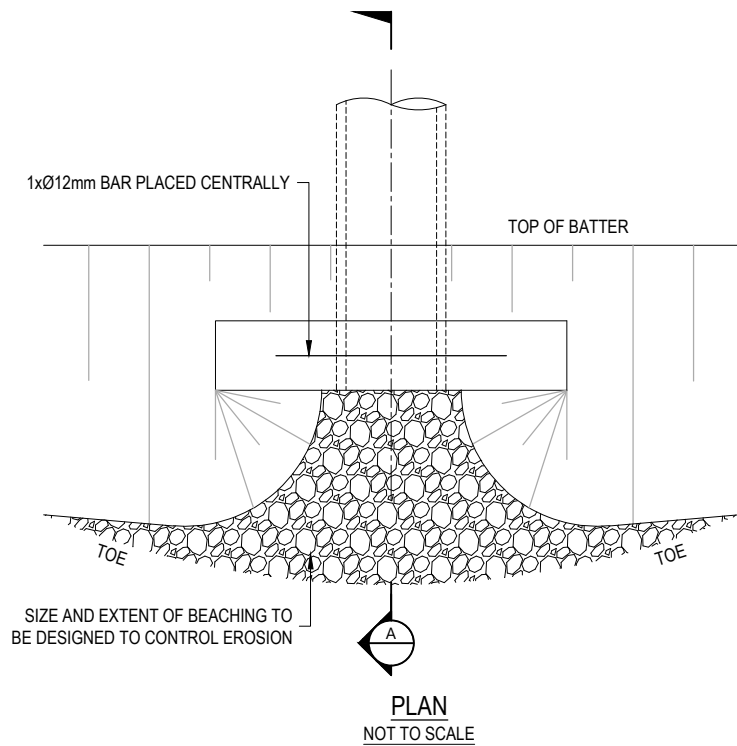
**SOUTH AUSTRALIA GROWTH AREAS
ENGINEERING STANDARDS**

DISCLAIMER

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CERTIFYING AUTHORITY

DRAWING TITLE			
STANDARD HEADWALL FOR PIPES 450-750 DIAMETER			
PROJECT No.	DRAWING No.	MILESTONE	REVISION
24-000479	DH-SW-5205		B

- NOTES:
1. COMPACTION PRESSURE BEHIND ENDWALLS IS NOT TO EXCEED 12.5kPa.
REFER (1.5 TONNE VIBRATORY ROLLER).
 2. A MAXIMUM PIPE SIZE OF Ø300mm FOR THIS ENDWALL ARRANGEMENT.
 3. NOT TO BE USED WHERE GENERAL VEHICULAR TRAFFIC IS PRESENT (MAINTENANCE OR EMERGENCY VEHICLES EXCEPTED).
 4. ALTERNATIVELY PRECAST ENDWALL MAY BE USED WHERE APPROVED BY RELEVANT AUTHORITY.
 5. CONCRETE STRENGTH F'C = 25 MPa (MIN.) AT 28 DAYS.
 6. MAXIMUM BATTER SLOPE 1V : 6H.



THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS TECHNICAL MANUAL

ALL MEASUREMENTS IN MILLIMETRES

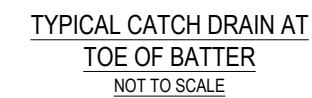
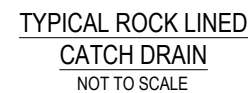
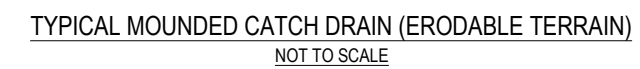
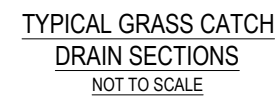
AMENDMENTS	FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	SCALE AS SHOWN	CLIENT	PROJECT	DRAWING TITLE			
	A					19/12/24	ISSUED FOR REVIEW								
	B					20/12/24	ISSUED FOR REVIEW								
	C					02/04/25	CLIENT SUBMISSION								
FOR INFORMATION															
DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY												PROJECT No. 24-000479	DRAWING No. DH-SW-5220	MILESTONE	REVISION C

1. MAXIMUM OUTLET PIPE DIAMETER 600mm.



FIRST ISSUE A M B E N D I N G I S S U E S (E.G. SCALED PROJECTS)	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS FOR INFORMATION	STATUS SCALE: AS SHOWN	CLIENT 	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE NATURAL LOOK CONCRETE AND BOULDER HEADWALL	
					19/12/24						ISSUED FOR REVIEW
					02/04/25						CLIENT SUBMISSION
DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.						PROJECT No. 24-000479	DRAWING No. DH-SW-5225	MILESTONE B	REVISION B		

1. CATCH DRAINS SHALL BE CONSTRUCTED WHERE INDICATED ON ALIGNMENT PLANS.
2. CATCH DRAINS LOCATION RELATIVE TO THE BATTER SHALL BE DETERMINED BY THE RELEVANT AUTHORITY.
3. CATCH DRAINS SHALL BE GRADED TO CULVERTS OR EXISTING LOW POINTS.
4. CATCH DRAINS SHALL BE SPECIFIED BY THE DESIGNER AND THE LINING DETAILS BASED ON DESIGN FLOW VELOCITY, SCOUR POTENTIAL AND SOIL TYPE.



ALL MEASUREMENTS IN MILLIMETRES

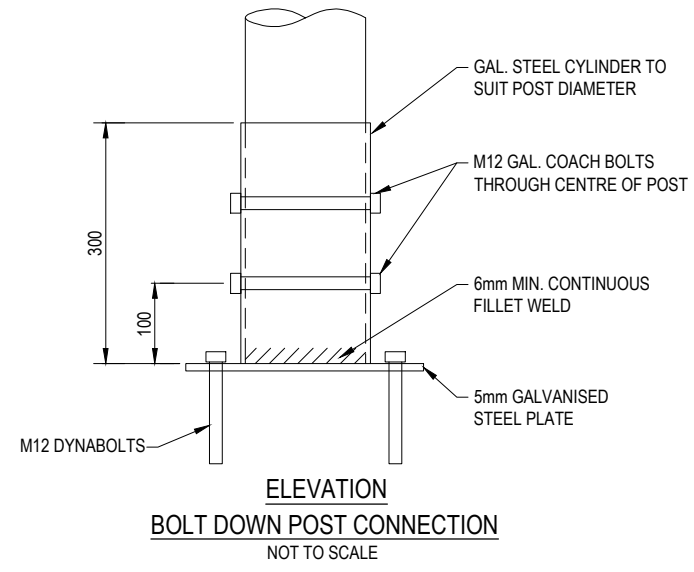
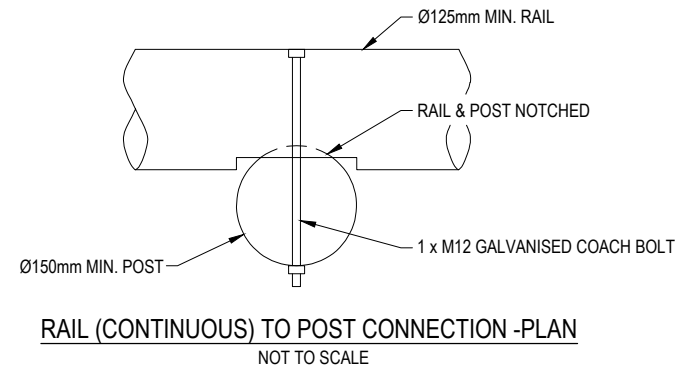
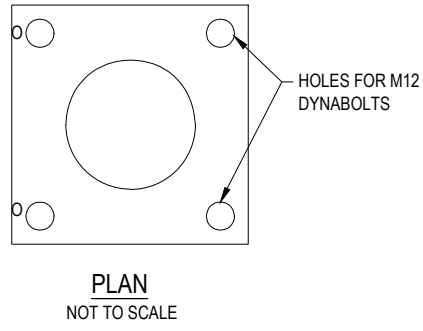
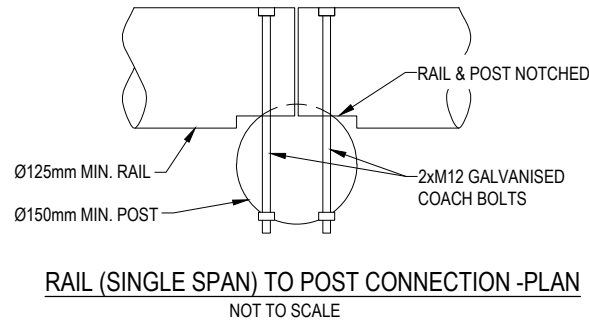
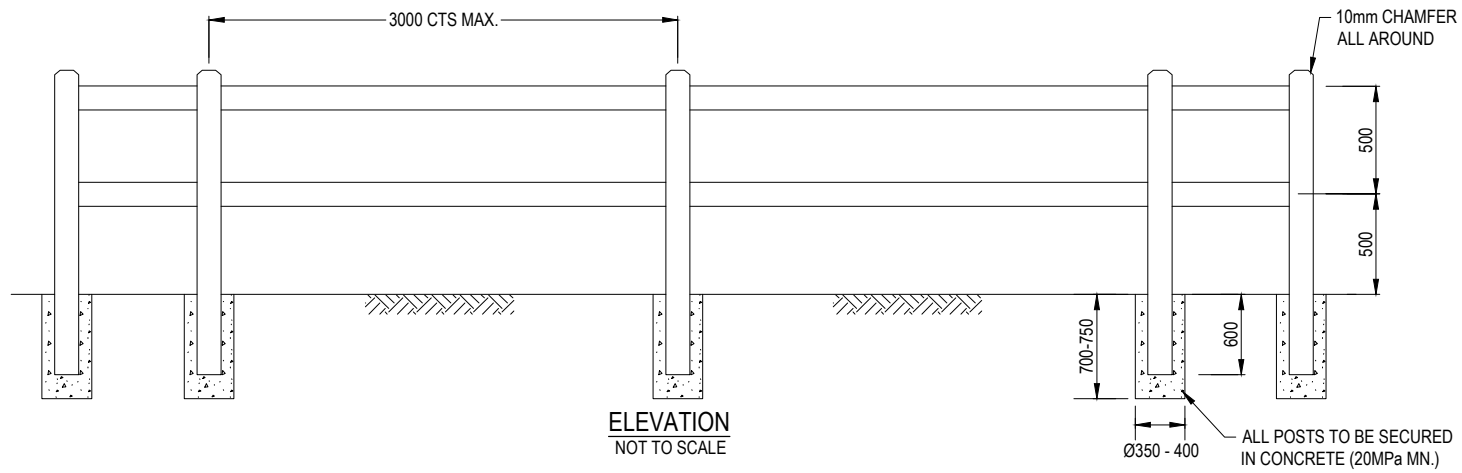
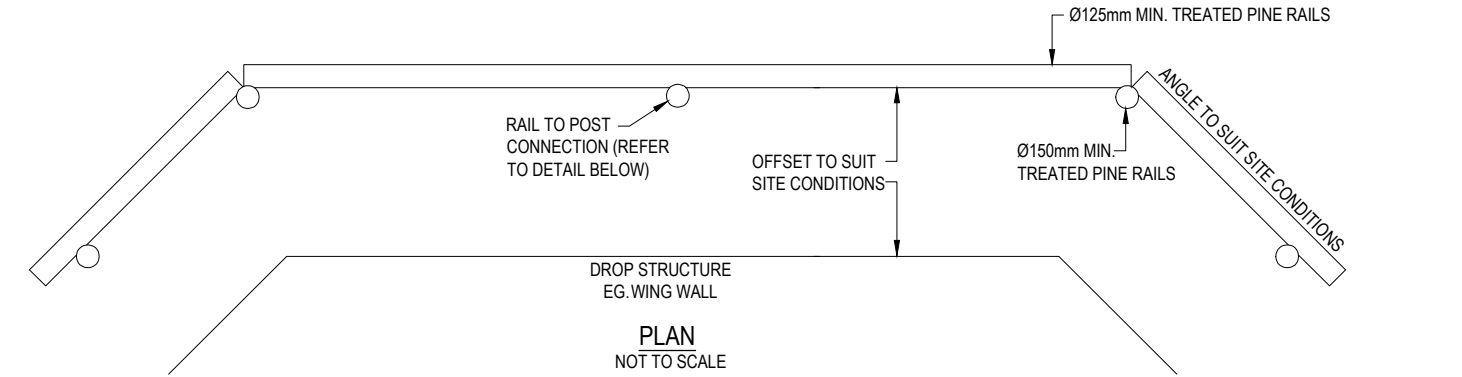
AMENDMENTS	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	FOR INFORMATION	SCALE AS SHOWN	CLIENT	 Government of South Australia Department for Housing and Urban Development	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE STORMWATER CATCH DRAIN DETAILS			
	FIRST ISSUE															
	A				19/12/24									ISSUED FOR REVIEW		
	B				20/12/24									ISSUED FOR REVIEW		
	C				02/04/25									CLIENT SUBMISSION		
												DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.	PROJECT No. 24-000479	DRAWING No. DH-SW-5300	MILESTONE	REVISION C

1. FOR USE ON STORMWATER DRAINAGE PIPE DIAMETERS UP TO 600mm AT GRADES OF 1 IN 5 OR GREATER. LARGER PIPES TO BE DESIGNED BASED ON SOIL TYPE AND DESIGN FLOW.
2. TO BE CONSTRUCTED AT A MIN EVERY 5TH JOINT AND AT ALL STRUCTURES.
3. CONCRETE STRENGTH TO BE 25MPa.
4. RRP PIPES TO BE USED.



ALL MEASUREMENTS IN MILLIMETRES

PROJECTS/2024/04 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE BF BG BH BI BJ BK BL BM BN BO BP BQ BR BS BT BU BV BW BX BY BZ CA CB CC CD CE CF CG CH CI CJ CK CL CM CN CO CP CQ CR CS CT CU CV CW CX CY CZ DA DB DC DD DE DF DG DH DI DJ DK DL DM DN DO DP DQ DR DS DT DU DV DW DX DY DZ EA EB EC ED EE EF EG EH EI EJ EK EL EM EN EO EP EQ ER ES ET EU EV EW EX EY EZ FA FB FC FD FE FF FG FH FI FJ FK FL FM FN FO FP FQ FR FS FT FU FV FW FX FY FZ GA GB GC GD GE GF GG GH GI GJ GK GL GM GN GO GP GQ GR GS GT GU GV GW GX GY GZ HA HB HC HD HE HF HG HH HI HJ HK HL HM HN HO HP HQ HR HS HT HU HV HW HX HY HZ IA IB IC ID IE IF IG IH II IJ IK IL IM IN IO IP IQ IR IS IT IU IV IW IX IY IZ JA JB JC JD JE JF JG JH JI JJ JK JL JM JN JO JP JQ JR JS JT JU JV JW JX JY JZ KA KB KC KD KE KF KG KH KI KJ KK KL KM KN KO KP KQ KR KS KT KU KV KW KX KY KZ LA LB LC LD LE LF LG LH LI LJ LK LL LM LN LO LP LQ LR LS LT LU LV LW LX LY LZ MA MB MC MD ME MF MG MH MI MJ MK ML MM MN MO MP MQ MR MS MT MU MV MW MX MY MZ NA NB NC ND NE NF NG NH NI NJ NK NL NM NN NO NP NQ NR NS NT NU NV NW NX NY NZ OA OB OC OD OE OF OG OH OI OJ OK OL OM ON OO OP OQ OR OS OT OU OV OW OX OY OZ PA PB PC PD PE PF PG PH PI PJ PK PL PM PN PO PP PQ PR PS PT PU PV PW PX PY PZ QA QB QC QD QE QF QG QH QI QJ QK QL QM QN QO QP QQ QR QS QT QU QV QW QX QY QZ RA RB RC RD RE RF RG RH RI RJ RK RL RM RN RO RP RQ RR RS RT RU RV RW RX RY RZ SA SB SC SD SE SF SG SH SI SJ SK SL SM SN SO SP SQ SR SS ST SU SV SW SX SY SZ TA TB TC TD TE TF TG TH TI TJ TK TL TM TN TO TP TQ TR TS TU TV TW TX TY TZ UA UB UC UD UE UF UG UH UI UJ UK UL UM UN UO UP UQ UR US UT UZ VA VB VC VD VE VF VG VH VI VJ VK VL VM VN VO VP VQ VR VS VT VZ WA WB WC WD WE WF WG WH WI WJ WK WL WM WN WO WP WQ WR WS WT WZ XA XB XC XD XE XF XG XH XI XJ XK XL XM XN XO XP XQ XR XS XT XU XV XW XX XY XZ YA YB YC YD YE YF YG YH YI YJ YK YL YM YN YO YP YQ YR YS YT YZ ZA ZB ZC ZD ZE ZF ZG ZH ZI ZJ ZK ZL ZM ZN ZO ZP ZQ ZR ZS ZT ZU ZV ZW ZX ZY ZZ	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	SCALE AS SHOWN	CLIENT	PROJECT	DRAWING TITLE			
	A					19/12/24	ISSUED FOR REVIEW	FOR INFORMATION	00.050.10.150.20.250.30.350.4 SCALE 1:5 (A1)SCALE 1:10 (A3)	Government of South Australia Department for Housing and Urban Development	SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	STORMWATER DRAINAGE PIPE ANCHOR BLOCK		
	B				02/04/25	CLIENT SUBMISSION								
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- NOTES:**
1. ALL TIMBER SHALL BE TREATED PINE OR WOOD EQUIVALENT (COMPOSITE PRODUCT), FREE OF BARK AND SPLINTERS, RELATIVELY STRAIGHT AND UNIFORM IN DIAMETER.
 2. LAYOUT AND OFFSET OF BARRIER WILL VARY ACCORDING TO THE DROP STRUCTURE LAYOUT AND SITE CONDITIONS.
 3. FIXINGS TO BE ANTI-THEFT.

FILE: S:\CAUS PROJECTS\9124\24-00479 - GROWTH AREA ENGINEERING STANDARDS\6. MODEL\AUTOCAD\DWG\14-SW-5600.DWG LAST SAVED BY: J KERR PLOTTED: 9 May 25

AMENDMENT DETAILS						STATUS	SCALE: AS SHOWN	CLIENT	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE POST AND RAIL SAFETY BARRIER AROUND DROP ZONES
FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE					
A					19/12/24	FOR INFORMATION		 Government of South Australia Department for Housing and Urban Development	DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY	
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BIORETENTION STANDARD NOTES

BIORETENTION SYSTEM SPECIFICATION

1. REFERENCED DOCUMENTS.
- THE FOLLOWING DOCUMENTS ARE INCORPORATED INTO THIS SPECIFICATION BY REFERENCE:
- 1.1. STANDARDS
- 1.1.1. AS 1289-METHODS OF TESTING SOILS FOR ENGINEERING PURPOSES.
- 1.1.2. AS 1289.5.4.1 -SOIL COMPACTION AND DENSITY TESTS--COMPACTION CONTROL TEST-DRY DENSITY RATIO, MOISTURE VARIATION AND MOISTURE RATIO.
- 1.1.3. AS 1289.5.7.1 -SOIL COMPACTION AND DENSITY TESTS--COMPACTION CONTROL TEST-HLF DENSITY RATIO AND HLF MOISTURE VARIATION (RAPID METHOD).
- 1.1.4. AS 2758 -AGGREGATES AND ROCK FOR ENGINEERING PURPOSES.
- 1.1.5. AS 4419 -SOILS FOR LANDSCAPING AND GARDEN USE.
- 1.1.6. 1.1.6 AS4454 -COMPOSTS, SOIL CONDITIONERS AND MULCHES.
- 1.2. OTHER PUBLICATIONS
- 1.2.1. GUIDELINES FOR SOIL FILTER MEDIA IN BIORETENTION SYSTEMS-THE CURRENT VERSION OF THE GUIDELINE CAN BE FOUND AT <https://watersensitivecities.org.au/wp-content/uploads/2016/1/O/AGSBS-C1-Appendix.pdf>
- 1.2.2. CONSTRUCTION AND ESTABLISHMENT GUIDELINES -SWALES, BIORETENTION SYSTEMS AND WETLANDS (WATER BY DESIGN) <https://waterbydesign.com.au/download-category/water-sensitive-urban-design/page/2>
- 1.2.3. TRANSFERRING OWNERSHIP OF VEGETATED STORMWATER ASSETS (WATER BY DESIGN) <https://waterbydesign.com.au/download-category/water-sensitive-urban-design/page/2>
- 1.2.4. BIORETENTION TECHNICAL DESIGN GUIDELINES (WATER BY DESIGN) <https://waterbydesign.com.au/download-category/water-sensitive-urban-design/page/2>
- 1.2.5. WATER SENSITIVE URBAN DESIGN FIELD GUIDE (WATER BY DESIGN).
2. ABBREVIATIONS AND DEFINITIONS
- 2.1. THE BIORETENTION SYSTEM SPECIFICATION CONSISTS OF THE FOLLOWING ABBREVIATIONS AND DEFINITIONS:
- 2.2. FILTER: SOIL LAYER WHICH ACTS AS A POLLUTANT FILTER AND SUPPORTS PLANT GROWTH.
- 2.3. IMPERMEABLE LINERS: THE LINER THAT PREVENTS WATER MOVEMENT BETWEEN THE FILTER AND THE SURROUNDING SOILS AND DEFINES THE EDGE OF THE SYSTEM.
- 2.4. TRANSITION LAYER: LAYER TO SEPARATE FILTER LAYER FROM THE DRAINAGE LAYER TO AVOID MIGRATION OF SOILS FROM THE FILTER TO THE DRAINAGE LAYER.
- 2.5. DRAINAGE LAYER: RELATIVELY FREE DRAINING LAYER TO CONVEY INFILTRATED WATER TO THE UNDERDRAINAGE.
- 2.6. UNDER-DRAINS: SLOTTED DRAINS COLLECT TREATED STORMWATER FROM THE DRAINAGE LAYERATTHE BASE OF THE BIORETENTION SYSTEM.
3. TEST METHODS AND STANDARDS
- 3.1. THE FOLLOWING TEST METHODS AND STANDARDS ARE TO BE USED AS SPECIFIED IN THE ABOVE GUIDELINES WHEN CONDUCTING TESTS ASSOCIATED WITH THIS SPECIFICATION:
- 3.2. THE HYDRAULIC CONDUCTIVITY OF POTENTIAL FILTER MEDIA SHALL BE MEASURED USINGTHEASTM F1815-11 METHOD.
- 3.3. PARTICLE SIZE DISTRIBUTION: AS 1289.3.6.1.
- 3.4. SOILS FOR LANDSCAPING AND GARDEN USE: AS4419.
4. MATERIALS
- 4.1. MATERIALS SHALL MEET THE REQUIRED SPECIFICATIONS DETAILED IN SECTION 8 FILTER MEDIA, SECTION 9 TRANSITION LAYER, SECTION 10 DRAINAGE LA YER, SECTION 11 UNDER DRAINAGE, SECTION 12 PERMEABLE LINER, SECTION 13 IMPERMEABLE LINER AND SECTION 14 LANDSCAPING OF THIS DOCUMENT.
- 4.2. ALL MATERIALS MUST BE CERTIFIED BY THE SUPPLIER WITH CERTIFICATION AND DELIVERY SUPPLY DOCKETS SHALL BE PROVIDED ON REQUEST TO CERTIFY THE MATERIAL DELIVERED IS THE MATERIAL TESTED.
5. TIMING AND EROSION AND SEDIMENT CONTROL
- 5.1. THE TIMING OF CIVIL AND LANDSCAPE WORKS FOR BIORETENTION SYSTEMS MUST BE CAREFULLY PLANNED TO ENSURE THAT BOTH THE BIORETENTION SYSTEM AND THE DOWNSTREAM WATERWAYS, ARE NOT IMPACTED BY STORMWATER AND SEDIMENT (E.G. THROUGH BEST PRACTICE EROSION AND SEDIMENT CONTROL). IN PARTICULAR, THE DRAINAGE LAYER, TRANSITION LAYER AND FILTER MEDIA MUST NOT BE PLACED UNTIL THE RISK OF HIGH SEDIMENT LOADING FROM UPSTREAM CONSTRUCTION ACTIVITIES HAS BEEN MITIGATED. THE CONSTRUCTION SEQUENCE MUST BE APPROVED BY THE SUPERINTENDENT.
- 5.2. EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION MUST BE DELIVERED IN ACCORDANCE WITH ALL LEGISLATIVE REQUIREMENTS INCLUDING, WHERE REQUIRED, THE PREPARATION OF SITE-SPECIFIC ESC PLANSIN ACCORDANCE WITH CURRENT BEST PRACTICE EROSION AND SEDIMENT CONTROL (E.G. IECA 2008, OR LATER VERSION).
6. EARTHWORKS AND HYDRAULIC STRUCTURES
- 6.1. THE CONSTRUCTION OF HYDRAULIC STRUCTURES MUST ENSURE THE DESIGN LEVELS ARE ACHIEVED. BLINDS/ EMBANKMENTS SURROUNDING THE SYSTEM SHALL BE AT CORRECT LEVELS. THE BELOW TABLE SUMMARISES THE CONSTRUCTION TOLERANCES FOR EACH ELEMENT OF A TYPICAL BIORETENTION SYSTEM.
- 6.2. BIORETENTION SYSTEMS TOLERANCES.

BIORETENTION ELEMENT	TOLERANCE (UNLESS SPECIFIED OTHERWISE)
HYDRAULIC STRUCTURES	+ 1-25 mm (+/-15 mm FOR STREETSCAPE SYSTEMS)
EARTHWORKS	+/-50mm
UNDER-DRAINAGE	+/-25mm
DRAINAGE AND TRANSITION LAYERS	+ 25mm
SURFACE LEVEL	+/-25 mm +/-40 mm FOR FILTER MEDIA >300 M ² PROVIDED THE AVERAGE EXTENDED DETENTION REQUIREMENT IS WITHIN 25 mm OF THE DESIGN REQUIREMENT.
EMBANKMENTS AND BLINDS	-25 mm, + 50 mm

7. MAINTENANCE ACCESS.
- MAINTENANCE ACCESS IS PROVIDED IN ACCORDANCE WITH THE DESIGN DRAWINGS.
8. FILTER MEDIA
- 8.1. MATERIALS
- A FUNDAMENTAL PART OF BIORETENTION SYSTEMS IS THE FILTER MEDIA. THE MAIN ROLE OF THE FILTER MEDIA IS TO SUPPORT VEGETATION AND REMOVE POLLUTANTS. FILTER MEDIA SHOULD BE LOAMY SAND THAT HAS HIGH PERMEABILITY WHEN COMPACTED. IT SHOULD NOT CONTAIN ANY RUBBISH OR DELETERIOUS MATERIAL. THE LOAMY SAND SHOULD CONTAIN SOME ORGANIC MATTER TO IMPROVE WATER-HOLDING CAPACITY AND PLANT HEALTH, BUT IT SHOULD BE LOW IN NUTRIENT CONTENT. THE FILTER MEDIA MUST BE COMPLIANT WITH AS 4419 -SOILS FOR LANDSCAPING AND GARDEN USE, AND MEET THE FOLLOWING REQUIREMENTS:

PARAMETER	TEST METHOD IN ACCORDANCE WITH	REQUIREMENT
SATURATED HYDRAULIC CONDUCTIVITY	ASTM F1815-11	50 • 500 mm/HR (200 PREFERRED)
PH	AS 4419	5.5-7.5
ELECTRICAL CONDUCTIVITY	AS 4419	<1.2 DS/M
NITROGEN CONTENT	AS 4419	<800 MG/KG <40 MG/KG
PHOSPHORUS CONTENT	AS 4419	3%-10% WHERE ORGANIC CONTENT IS BELOW THIS THRESHOLD, THE FILTER MEDIA MAY BE AMELIORATED BY ADDING 50 mm OF COMPOST AND TINING IT INTO THE TOP 150 mm OF FILTER MEDIA
ORGANIC CONTENT	AS 4419	
PARTICLE SIZE DISTRIBUTION	AS 1289.3.6.1	CLAY & SILT 3 -6% (<0.05 mm) VERY FINE SAND 5 -30% (0.05 -0.15 mm) FINE SAND 10-30% (0.15-0.25 mm) MEDIUM TO COARSE SAND 40-60% (0.25 • 1.0 mm) COARSE SAND 7 -10% (1.0 -2.0 mm) FINE GRAVEL <3% (2.0 • 3.4%)

SOURCE: GUIDELINES FOR SOIL FILTER MEDIA IN BIORETENTION SYSTEMS AND BIORETENTION TECHNICAL DESIGN GUIDELINES (WATER BY DESIGN)

FILTER MEDIA MUST BE FREE OF WEEDS AND PROPAGATES. OTHER CHARACTERISTICS OF THE FILTER MEDIA REQUIRED FOR PLANT GROWTH SHOULD BE CONFIRMED WITH A SOIL ANALYSIS OR CONFIRMED WITH A HORTICULTURIST/LANDSCAPE ARCHITECT.

- 8.2. TESTING FREQUENCY
- SUITABLE FILTER MEDIA CAN BE DELIVERED TO SITE OR IMPORTED SAND CAN BE AMELIORATED TO MEET THE ABOVE SPECIFICATION. IN EITHER CASE, THE MEDIA SHALL BE TESTED AGAINST THE ABOVE PARAMETERS AT ONE SAMPLE PER 500M3 OF FILTER MEDIA. FOR SOIL SUPPLIED TO SITE, TESTING MUST BE UNDERTAKEN ON THE ACTUAL MATERIAL TO BE DELIVERED TO THE BIORETENTION SYSTEM. THE SUPPLIER AND CONTRACTOR WILL BE RESPONSIBLE FOR ENSURING THE FILTER MEDIA MEETS THE SPECIFICATION AND THE CORRECT MATERIAL IS DELIVERED TO SITE PRIOR TO INSTALLATION.
- 8.3. INSTALLATION AND COMPACTION
- WHEN INSTALLING, THE FOLLOWING SPECIFICATIONS SHALL BE APPLIED:
- 8.3.1. FILTER MEDIA SHALL BE INSTALLED AND COMPACTED IN TWO LIFTS FOR DEPTHS OF OVER 500mm. COMPACTION SHALL BE LIGHT AND EVEN ACROSS THE SURFACE.
- 8.3.2. THE TOP SURFACE OF THE DRAINAGE LAYER, TRANSITION LAYER AND THE FILTER MEDIA LAYER SHALL BE LEVEL AND FREE FROM LOCALISED DEPRESSIONS TO ENSURE EVEN DISTRIBUTION OF STORMWATER FLOWS ACROSS THE SURFACE AND PREVENT LOCALISED PONDING.
- 8.3.3. FILTER FABRIC MUST NOT BE USED BETWEEN DRAINAGE LAYER, TRANSITION LAYER AND THE FILTER MEDIA LAYERS OR WRAPPED AROUND THE UNDER-DRAINAGE.

9. TRANSITION LAYER (WHERE SPECIFIED)
- 9.1. TRANSITION LAYERS PREVENT FILTER MEDIA MIGRATING INTO THE DRAINAGE LAYER.
- 9.1.1. MATERIALS
- 9.1.1.1. TRANSITION LAYER SHALL BE MINIMUM THICKNESS OF 100mm COARSE SAND UNLESS OTHERWISE SPECIFIED (TYPICALLY 1 mm PARTICLE SIZE DIAMETER) WITH <2% FINES.
- 9.1.1.2. A PARTICLE SIZE DISTRIBUTION FOR THE SAND SHALL BE OBTAINED TO ENSURE THAT IT MEETS THE FOLLOWING CRITERIA (VICROADS).
- 9.1.1.3. D15 (TRANSITION LAYER); 5 X D85 (FILTER MEDIA).
- 9.2. TESTING
- A SAMPLE OF THE PROPOSED TRANSITION LAYER IS TO BE PROVIDED TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO INSTALLATION. THE SUPERINTENDENT MAY REQUIRE THE TRANSITION LA YER TO BE TESTED TO ENSURE ITS PARTICLE SIZE MEETS THE REQUIREMENTS.

10. DRAINAGE LAYER
- DRAINAGE LAYERS CONVEY INFILTRATED WATER INTO THE SLOTTED UNDER-DRAINAGE PIPES.
- 10.1. MATERIALS
- 10.1.1. DRAINAGE LAYER SHALL BE COMPRISED OF FINE GRAVEL (NOMINAL 2-5mm) WITH <2% FINES AND A MINIMUM SATURATED HYDRAULIC CONDUCTIVITY OF 400mm/HR. THE DEPTH OF THE DRAINAGE LAYER SHALL ENSURE AT LEAST 50mm OF AGGREGATE COVER OVERALL. PERFORATED UNDER-DRAINAGE PIPES.
- 10.1.2. A PARTICLE SIZE DISTRIBUTION FOR THE GRAVEL SHALL BE OBTAINED TO ENSURE THAT IT MEETS THE FOLLOWING BRIDGING CRITERIA (VICROADS): D15 (DRAINAGE LAYER); 5 X D85 (TRANSITION LAYER).
- 10.2. TESTING
- A SAMPLE OF THE PROPOSED DRAINAGE LAYER IS TO BE PROVIDED TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO INSTALLATION. THE SUPERINTENDENT MAY REQUIRE THE DRAINAGE LAYER TO BE TESTED TO ENSURE ITS PARTICLE SIZE MEETS THE REQUIREMENTS.
11. UNDER-DRAINAGE (WHERE SPECIFIED)
- 11.1. MATERIALS
- EITHER SLOTTED RIGID PIPE (HDPE OR SIMILAR) OR AG-PIPE CAN BE USED FOR UNDER-DRAINAGE AS SPECIFIED IN THE CONSTRUCTION DRAWINGS. WHEN INSTALLING, THE FOLLOWING SPECIFICATIONS SHALL BE CONSIDERED:
- 11.1.1. TYPICALLY 100mm -SLOTTED HDPE PIPE IS THE PREFERRED TYPE OF RIGID PIPE.
- 11.1.2. THE SLOTS IN THE PIPE SHALL NOT ALLOW THE DRAINAGE LAYER AGGREGATE TO FREELY ENTER THE PIPE (UNDER-DRAINAGE WITH SLOT WIDTH OF 2mm OR SMALLER IS PREFERRED).
- 11.1.3 UNDER-DRAINAGE PIPES MUST NOT BE SURROUNDED BY ANY GEOFABRIC OR SOCK.
- 11.2. INSTALLATION
- 11.2.1. THE MAXIMUM SPACING OF UNDER-DRAINS FOR BIO-RETENTION SYSTEMS <100 M2 IS 1.5M FROM CENTRE TO CENTRE. FOR BIORETENTION SYSTEMS >100M2 THE MAXIMUM SPACING CAN BE INCREASED TO 2.0 -2.5M IF SPECIFIED IN THE CONSTRUCTION DRAWINGS.
- 11.2.2. THE UNDER-DRAINS SHALL BE SLOPED TOWARDS THE OUTLET PIT (MIN. 0.5% LONGITUDINAL GRADE) AND THE BASE OF FILTRATION TRENCH SHALL BE FREE FROM LOCALISED DEPRESSIONS. FOR BIORETENTION SYSTEMS WITH A SATURATED ZONE A 0% PIPE GRADE IS ACCEPTABLE.
- 11.2.3. ALL JUNCTIONS AND CONNECTIONS SHALL BE APPROPRIATELY SEALED.
- 11.2.4. UNDER-DRAINAGE PIPES SHALL BE SEALED INTO THE OVERFLOW PIT.
- 11.2.5. ALL UNDER DRAINAGE PIPES TO HAVE RAISED CLEAN OUT POINTS CONSTRUCTED FROM NON-SLOTTED PIPES WHICH EXTEND TO 150mm ABOVE FILTER MEDIA SURFACE.
12. PERMEABLE LINER (WHERE SPECIFIED)
- 12.1. A PERMEABLE GEOTEXTILE LINER FABRIC MUST BE USED TO LINE THE OUTSIDE OF THE BIORETENTION SYSTEM.
- 12.2. THE LINER MUST EXTEND AT LEAST 500mm BEYOND THE TOP OF THE SIDES AND MUST BE KEYED INTO BATTER AND COVERED BY AT LEAST 200mm OF TOPSOIL.
- 12.3. THE LINER MUST BE RESISTANT TO ALL SOIL ACIDS AND ALKALIS, RESISTANT TO MICROORGANISMS AND COMPLY WITH THE REQUIREMENTS OF AS3706.12 AND AS3706.13.
13. IMPERMEABLE LINER (WHERE SPECIFIED)
- 13.1. MATERIALS
- LINER OPTIONS INCLUDE CLAY, GEOSYNTHETIC BENTONITE CLAY LINERS OR HIGH-DENSITY POLY ETHYLENE (HDPE) LINERS. REFER TO THE PROJECT DRAWINGS FOR LINER DETAILS.
- 13.2. INSTALLATION
- INSTALLATION MUST BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND DESIGN DRAWINGS AND ACHIEVE THE FOLLOWING:
- 13.2.1. THE LINERS SHALL BE KEYED INTO THE BATTERS AND TO THE EMBANKMENTS.
- 13.2.2. LINERS MUST BE SEALED AROUND PROTRUSIONS SUCH AS OUTLET PIPES.
- 13.2.3 MUST ACHIEVE A MAXIMUM PERMEABILITY OF 1X10⁻⁹M/S
14. LANDSCAPING
- 14.0. REFER TO LANDSCAPE DESIGN DRAWINGS.
- 14.1. BATTER SLOPES MUST HAVE MIN 200mm TOPSOIL WHICH MUST BE TESTED BY A NATA-ACCREDITED LABORATORY IN ACCORDANCE WITH AS 4419.
- 14.2. SUBSOILS TO BE CULTIVATED TO 150mm PRIOR TO PLACING TOPSOIL ON BATTER SLOPES.
- 14.3. PLANTING DENSITIES AND SPECIES MUST BE CONSISTENT WITH THE LANDSCAPE DESIGN DRAWINGS. NO SUBSTITUTIONS SHOULD BE MADE UNLESS APPROVED BY THE SUPERINTENDENT.
- 14.4. PLANTS SUPPLIED TO SITE MUST:
- 14.4.1. BE GROWN IN CLEAN, WEED-AND PEST-FREE CONDITIONS;
- 14.4.2. BE WELL DEVELOPED, SUN-HARDENED AND CONTAIN A FULLY ESTABLISHED ROOT BALL THAT DOES NOT CRUMBLE WHEN REMOVED FROM ITS CONTAINER.
- 14.4.3. BE AT LEAST 200mm HIGH.
- 14.4.4. SHOW NO SIGN OF PEST AND DISEASE.
- 14.4.5. SHOW NO SIGNS OF NUTRIENT DEFICIENCY.
- 14.4.6. BE FREE FROM WEEDS.

- 14.4.7. BE CLEARLY LABELLED.
- 14.4.8. BE SUPPLIED IN A CONTAINER THAT IS AT LEAST: 90mm HIGH X 50mm WIDE.
- 14.5. PREPARING FILTER MEDIA: UNLESS SPECIFIED OTHERWISE, EACH PLANT MUST RECEIVE AT LEAST 10G OF SLOW-RELEASE NATIVE FERTILIZER IN GRANULAR OR TABLET FORM. PRE-HYDRATED WATER CRYSTALS MAY BE APPLIED AT 1-2% BY WEIGHT.
- 14.6. MULCH MUST BE APPLIED IN ACCORDANCE WITH THE DESIGN DRAWINGS. BE APPLIED PRIOR TO PLANTING. PROVIDE COVERAGE OF THE SOIL AND NOT EXCEED 75mm THICKNESS, AND BE KEPT 50mm CLEAR OF PLANT STEMS. UNLESS OTHERWISE SPECIFIED, MULCH SHOULD BE FINE SUGAR CANE MULCH SECURED IN PLACE BY A LOOSE WEAVE JUTE NET PINNED AT 500mm CENTRES.
14. 7. FILTER MEDIA SURFACE AND PLANT STOCK ARE TO BE WATERED IMMEDIATELY PRIOR TO PLANTING. UNLESS OTHERWISE SPECIFIED, PLANTS SHOULD BE PLANTED IN CLUMPS OF THE SAME SPECIES, AND LARGE MONOCUL TURES AVOIDED.
- 14.8. PLANT METHOD MUST MINIMISE SOIL COMPACTION AND ENSURE THAT ALL ROOTS ARE COVERED BY AT LEAST 10 -20mm OF SOIL, AVOID COVERING PLANT CROWNS.
- 14.9. UNLESS SPECIFIED OTHERWISE, THE FOLLOWING IRRIGATION SCHEDULE APPLIES DURING PLANT ESTABLISHMENT (AT2.5-5L PER PLANT PER WEEK);
- WEEK 1-5 FIVE WATERINGS PER WEEK
- WEEK6-10 THREE WATERINGS PER WEEK
- WEEK11-15 TWO WATERINGS PER WEEK
- THEREAFTER AS REQUIRED TO SUSTAIN PLANTS UNTIL SUCCESSFUL ESTABLISHMENT
- 14.10. REPLANTING MUST OCCUR DURING THE ESTABLISHMENT PERIOD IF LESS THAN 90% OF PLANTS SURVIVE.
- 14.11. SUCCESSFUL PLANT ESTABLISHMENT IN BIORETENTION SYSTEMS IS CONSIDERED WHEN THE PLANTS ARE ROBUST AND SELF-SUSTAINING, AND MEET THE FOLLOWING CRITERIA;
- VEGETATION MUST COVER AT LEAST 90% OF THE BIORETENTION SURFACE WITH MULCH COVERING THE REMAINDER(< 10% MULCH VISIBLE FROM ABOVE)
- AVERAGE GROUNDCOVER PLANT HEIGHT MUST BE GREATER THAN 500mm.
- PLANTS MUST BE HEAL THY AND FREE FROM DISEASE.
- NO WEEDS OR LITTER TO BE PRESENT.
15. CERTIFICATION AND CHAIN OF CUSTODY
- 15.1. THE FOLLOWING CERTIFICATION AND THE CHAIN OF CUSTODY APPLIES TO BIORETENTION MEDIA:
- 15.1.1. THE SUPPLIER AND CONTRACTOR ARE RESPONSIBLE FOR ENSURING THE BIORETENTION MEDIA MEETS THE SPECIFICATIONS OUTLINED IN THESE GUIDELINES AND THAT THE CORRECT MATERIAL IS DELIVERED TO SITE. THE SUPPLIER MUST ARRANGE FOR TESTING OF THE FILTER MEDIA BY A SOIL LABORATORY CERTIFIED FOR THE METHODS IN ACCORDANCE WITH THE REQUIREMENTS LISTED ABOVE. ON THE BASIS OF THE TESTING, THE SOIL LABORATORY AND SUPPLIER MUST CERTIFY THE MATERIAL MEETS THESE SPECIFICATIONS. THE SUPPLIER MUST PROVIDE THE CERTIFICATION AND LABORATORY TEST RESULTS TO THE CONTRACTOR WITH THE SUPPLY DOCKET.
- 15.1.2. THE CONTRACTOR PROVIDES A COPY OF THE SUPPLIER'S CERTIFICATION, TEST RESULTS AND SUPPLY DOCKET TO THE SITE SUPERINTENDENT OR BIORETENTION DESIGNER FOR REVIEW.
- 15.1.3. FOLLOWING REVIEW OF THE CERTIFICATION, TEST RESULTS AND THE SUPPLY DOCKET, THE SITE SUPERINTENDENT OR BIORETENTION DESIGNER APPROVES INSTALLATION OF THE BIORETENTION MEDIA.
- 15.1.4. THE RELEVANT SECTIONS OF THE BIORETENTION MEDIA SIGN-OFF FORM AS PER THE CONSTRUCTION AND ESTABLISHMENT GUIDELINES (WATER BY DESIGN) SHOULD BE COMPLETED AND SIGNED. THIS SIGN-OFF FORM IS PROVIDED AS PART OF THE CONSTRUCTION CERTIFICATION BY THE SITE SUPERINTENDENT OR BIORETENTION DESIGNER.
16. HOLD POINTS
- 16.1. THE FOLLOWING HOLD POINTS MUST BE OBSERVED IN ACCORDANCE WITH THE MOST RECENT WATER BY DESIGN CONSTRUCTION CHECKLISTS AND SUPERINTENDENT APPROVAL IS REQUIRED FOR WORKS TO PROCEED:
- 16.1.1. PRESTARTMEETING.
- 16.1.2. COMPLETION OF HYDRAULIC STRUCTURES AND UNDER-DRAINAGE.
- 16.1.3 PRIOR TO PLACING FILTER MEDIA.
- 16.1.4. AFTER PLACEMENT OF FILTER MEDIA (PRIOR TO APPLYING MULCH AND PLANTING).
17. COMPLIANCE TESTING (FOR ON-MAINTENANCE OR OFF-MAINTENANCE)
- 17.1. COMPLIANCE TESTING MUST BE IN ACCORDANCE WITH CHAPTER 5 OF TRANSFERRING OWNERSHIP OF VEGETATED STORMWATER ASSETS (WATER BY DESIGN). CHECKLISTS MUST BE COMPLETED AND SIGNED BY THE SUPERINTENDENT.

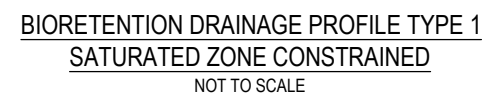
DISCLAIMER: IT IS THE RESPONSIBILITY OF THE CERTIFYING REGISTERED PROFESSIONAL ENGINEER TO ENSURE THESE STANDARD NOTES ARE ADAPTED TO THE SPECIFIC NEEDS OF THE PROJECT. IT IS EXPECTED THAT ADDITIONAL DRAWING NOTES WOULD BE REQUIRED TO COVER OTHER IMPORTANT PROJECT ISSUES (E.G. WORKPLACE HEAL TH AND SAFETY, ENVIRONMENTAL PROTECTION, EROSION AND SEDIMENT CONTROL, ETC). HEALTHY WATERWAYS, IPWEA AND ALL CONTRIBUTORS TO THIS DOCUMENT ACCEPT NO LIABILITY FOR THE USE, MISUSE OR ANY OMISSION OR INACCURACY IN THIS DOCUMENT.

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FILE: S:\CAUS PROJECTS\924\24-00479 - GROWTH AREA ENGINEERING STANDARDS\06 - MODEL\AUTOCAD\DWG\10 - DWG\LAST SAVED BY JO KERR - SLOTTED 3.dwg-25

FIRST ISSUE A M E N D M E N T S	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS		STATUS	SCALE: AS SHOWN	CLIENT	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS
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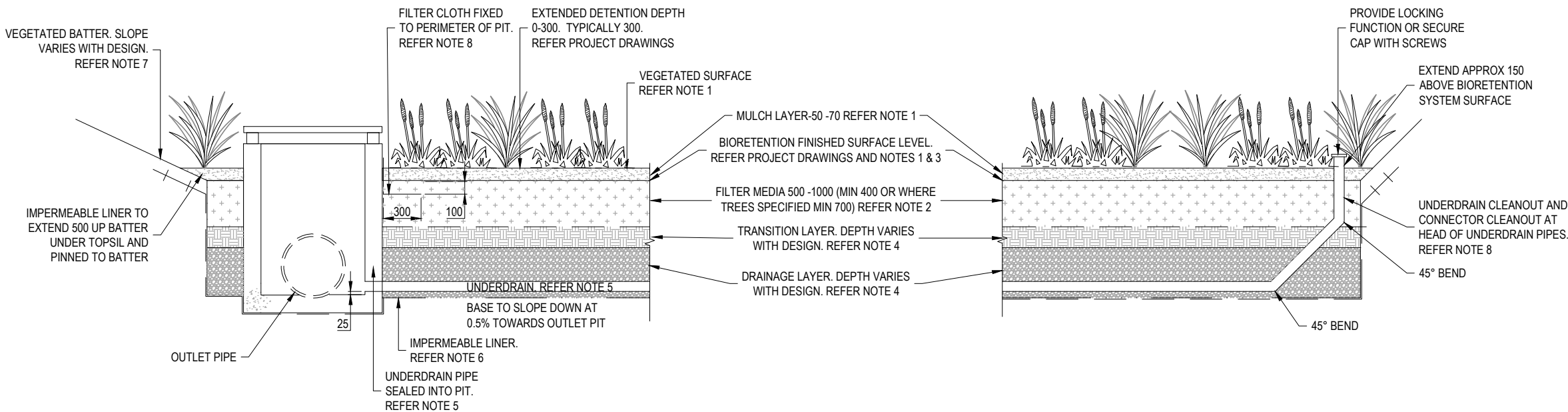
1. BIORETENTION SYSTEM SURFACE REFER NOTE 1 DH-SW-6101.
2. FILTER MEDIA SPECIFICATION REFER NOTE 2 D DH-SW-6101.
3. CONSTRUCTION TOLERANCES REFER NOTE 3 DH-SW-6101.
4. TRANSITION LAYER AND DRAINAGE LAYER REFER NOTE 4 DH-SW-6101.
5. UNDERDRAIN REFER NOTE 5 DH-SW-6101.
6. IMPERMEABLE LINER REFER NOTE 6 DH-SW-6101.
7. VEGETATED BATTER REFER NOTE 8 DH-SW-6101.
8. INSPECTION/CLEANOUT POINT REFER NOTE 9 DH-SW-6101.
9. FILTER CLOTH REFER NOTE 10 DH-SW-6101.
10. FOR GENERAL DESIGN AND CONSTRUCTION NOTES REFER TO DH-SW-6100.



ALL MEASUREMENTS IN MILLIMETRES

FIRST ISSUE A M E N D M E N T S	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	FOR INFORMATION	SCALE AS SHOWN	CLIENT	 Government of South Australia Department for Housing and Urban Development	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.	DRAWING TITLE BIORETENTION DRAINAGE PROFILE TYPE 1 SATURATED ZONE CONSTRAINED PROJECT No. 24-000479 DRAWING No. DH-SW-6102 MILESTONE REVISION B	
					18/12/24									ISSUED FOR REVIEW
					27/03/25									CLIENT SUBMISSION

- NOTES:
1. BIORETENTION SYSTEM SURFACE. REFER NOTE 1 DH-SW-6101.
 2. FILTER MEDIA SPECIFICATION. REFER NOTE 2 DH-SW-6101.
 3. CONSTRUCTION TOLERANCES. REFER NOTE 3 DH-SW-6101.
 4. TRANSITION LAYER AND DRAINAGE LAYER. REFER NOTE 4 DH-SW-6101.
 5. UNDERDRAIN. REFER NOTE 5 DH-SW-6101.
 6. IMPERMEABLE LINER. REFER NOTE 6 DH-SW-6101.
 7. VEGETATED BATTER. REFER NOTE 8 DH-SW-6101.
 8. INSPECTION/CLEANOUT POINT. REFER NOTE 9 DH-SW-6101.
 9. FILTER CLOTH REFER NOTE 10 DH-SW-6101.
 10. FOR GENERAL DESIGN AND CONSTRUCTION NOTES REFER TO DH-SW-6100.



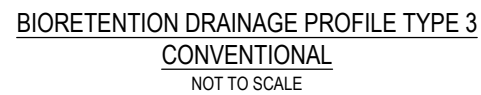
BIORETENTION DRAINAGE PROFILE TYPE 2
SEALED
NOT TO SCALE

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ALL MEASUREMENTS IN MILLIMETRES

AMENDMENTS	FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	SCALE	AS SHOWN	CLIENT	PROJECT	DRAWING TITLE			
	A					19/12/24	ISSUED FOR REVIEW	FOR INFORMATION			 Government of South Australia Department for Housing and Urban Development	SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	BIORETENTION DRAINAGE PROFILE TYPE 2 - SEALED			
	B					27/03/25	CLIENT SUBMISSION									
												DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY	PROJECT No. 24-000479	DRAWING No. DH-SW-6103	MILESTONE	REVISION B

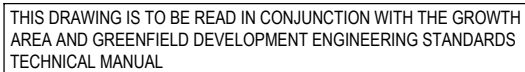
1. BIORETENTION SYSTEM SURFACE. REFER NOTE 1 DH-SW-6101.
2. FILTER MEDIA SPECIFICATION. REFER NOTE 2 DH-SW-6101.
3. CONSTRUCTION TOLERANCES. REFER NOTE 3 DH-SW-6101.
4. TRANSITION LAYER AND DRAINAGE LAYER .REFER NOTE 4 DH-SW-6101.
5. UNDERDRAIN. REFER NOTE 5 DH-SW-6101.
6. PERMEABLE LINER. NON-WOVEN GEOTEXTILE FILTER CLOTH TO BASE AND SIDES OF BIORETENTION SYSTEM. FILTER CLOTH NOT TO BE PLACED BETWEEN ANY FILTER LAYERS. PERMEABLE LINER AS PER PROJECT DRAWINGS AND 'BIORETENTION TECHNICAL DESIGN GUIDELINES' (WATER BY DESIGN).
7. VEGETATED BATTER REFER NOTE 8 DH-SW-6101.
8. INSPECTION/CLEANOUT POINT. REFER NOTE 9 DH-SW-6101.
9. FILTER CLOTH REFER NOTE 10 DH-SW-6101.
10. FOR GENERAL DESIGN AND CONSTRUCTION NOTES REFER TO DH-SW-6100.



ALL MEASUREMENTS IN MILLIMETRES

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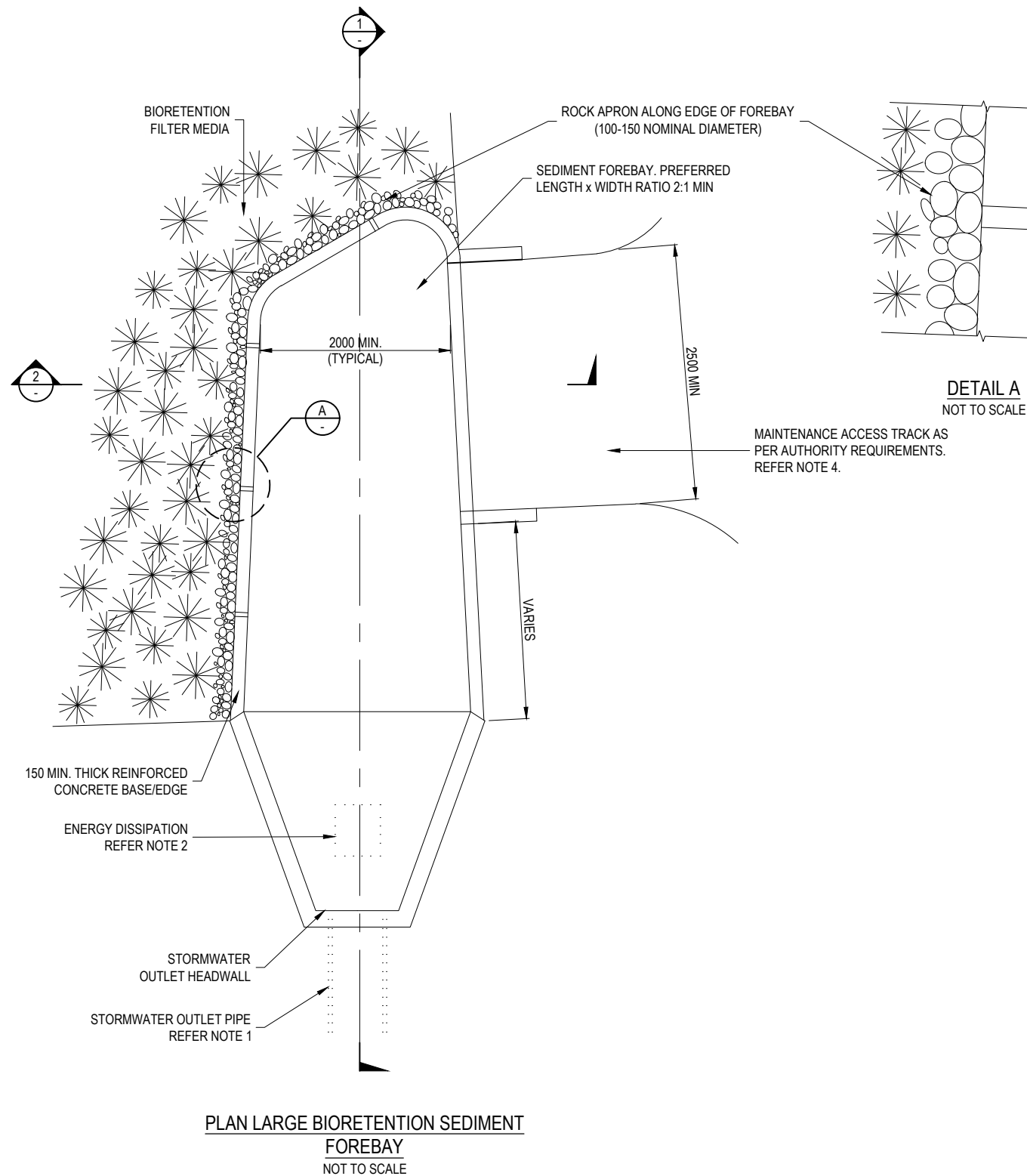
1. BIORETENTION SYSTEM SURFACE. REFER NOTE 1 DH-SW-6101.
2. FILTER MEDIA SPECIFICATION. REFER NOTE 2 DH-SW-6101.
3. CONSTRUCTION TOLERANCES. REFER NOTE 3 DH-SW-6101.
4. TRANSITION LAYER DEPTH VARIES WITH DESIGN. DEPTH AND SPECIFICATION TO BE IN ACCORDANCE WITH PROJECT DRAWINGS AND THE 'BIORETENTION TECHNICAL DESIGN GUIDELINES' (WATER BY DESIGN).
5. PERMEABLE LINER. REFER NOTE 6 DH-SW-6104.
6. VEGETATED BATTER. REFER NOTE 8 DH-SW-6100.
7. FILTER CLOTH REFER NOTE 10 DH-SW-6101.
8. FOR GENERAL DESIGN AND CONSTRUCTION NOTES REFER TO DH-SW-6100.



ALL MEASUREMENTS IN MILLIMETRES

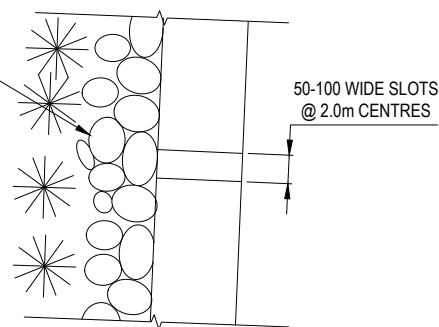
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	A				19/12/24	ISSUED FOR REVIEW						
	B				27/03/25	CLIENT SUBMISSION						
	C											
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FILE: S:\CALUS PROJECTS\91024\04-00479 - GROWTH AREA ENGINEERING STANDARDS\6. MODEL AUTOCAD\DWG\DH-SW-6110.DWG LAST SAVED BY: JO KERR PLOTTED: 24-May-25

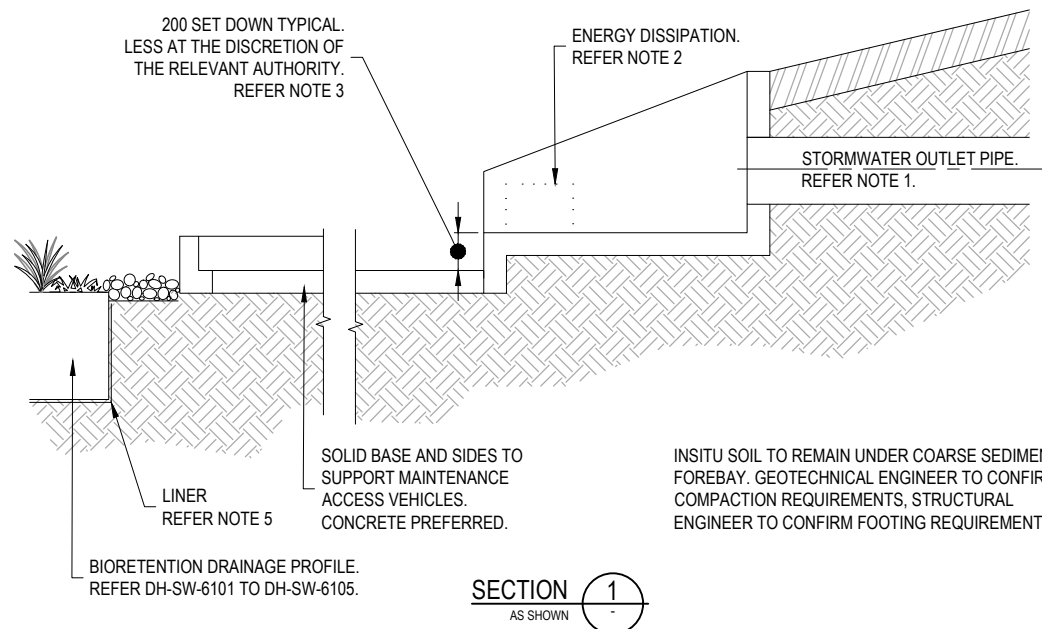
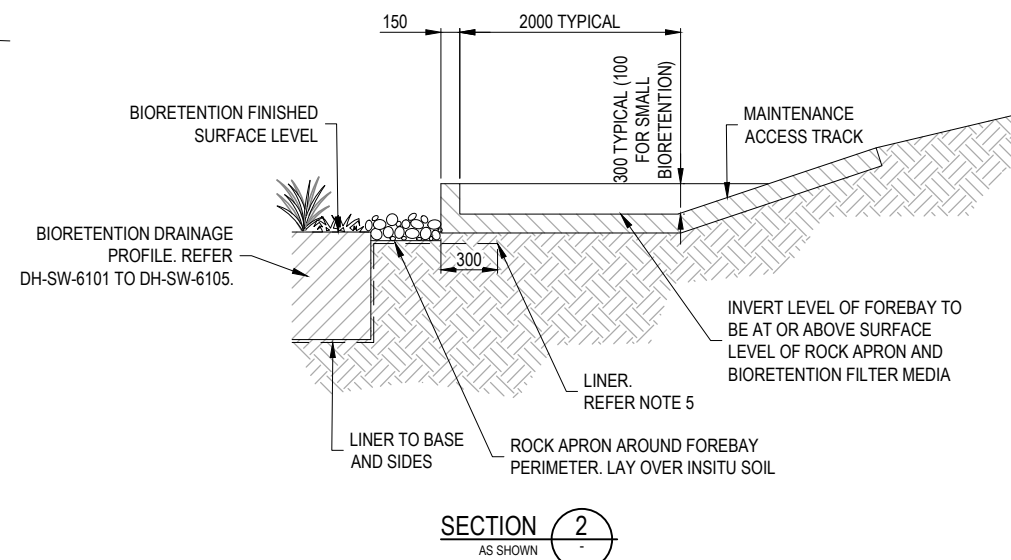


PLAN LARGE BIORETENTION SEDIMENT FOREBAY
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DETAIL A
NOT TO SCALE



- NOTES:
1. STORMWATER CUTLET PIPE. REFER PROJECT DRAWINGS FOR DIAMETER AND INVERT LEVEL. PIPE TO BE ALIGNED TO WITHIN 40° MAX OF LONG AXIS OF THE COARSE SEDIMENT FOREBAY.
 2. ENERGY DISSIPATION TO BE IN ACCORDANCE WITH THE PROJECT DRAWINGS.
 3. SET DOWN FOR SEDIMENT ACCUMULATION REQUIRED SUBJECT TO RELEVANT AUTHORITY REQUIREMENTS AND SITE CONSTRAINTS. SET DOWN OF UP TO 200mm IS TYPICAL. CAN BE FLUSH AT RELEVANT AUTHORITY DISCRETION.
 4. MAINTENANCE ACCESS TRACK REFER WSUD DESIGN STANDARD.
 5. LINER MAY BE PERMEABLE OR IMPERMEABLE DEPENDING ON DESIGN REFER TO PROJECT DRAWINGS. LAY LINER OVER INSITU SOIL PIN LINER UNDERNEATH SEDIMENT FOREBAY 300mm MINIMUM.
 6. FOR GENERAL DESIGN AND CONSTRUCTION NOTES REFER TO DH-SW-6100.

ALL MEASUREMENTS IN MILLIMETRES

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS
A					19/12/24	ISSUED FOR REVIEW
B					20/12/24	ISSUED FOR REVIEW
C					27/03/25	CLIENT SUBMISSION

STATUS
FOR INFORMATION

SCALE
AS SHOWN

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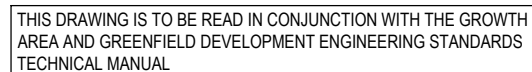
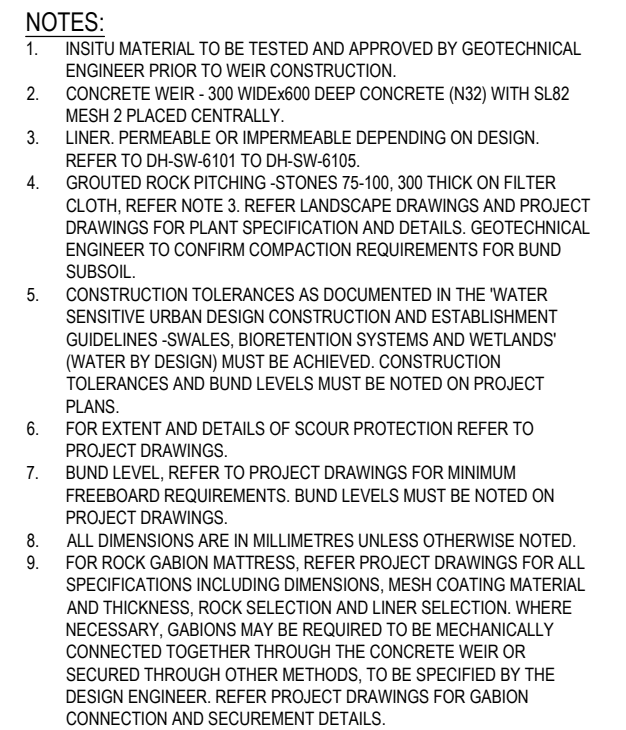
 **Government of South Australia**
Department for Housing and Urban Development

PROJECT

SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS

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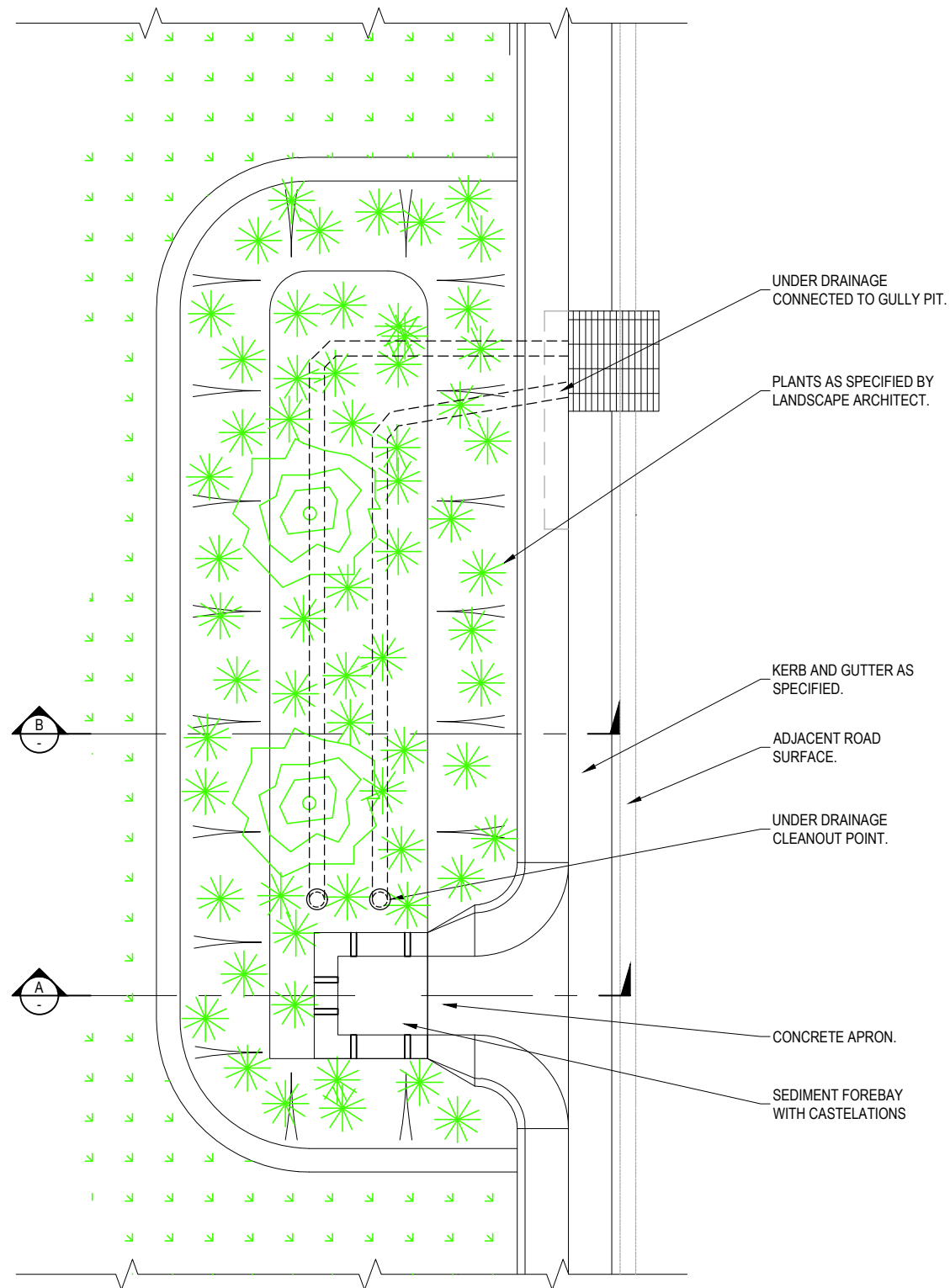
DRAWING TITLE	PROJECT No.	DRAWING No.	MILESTONE	REVISION
LARGE BIORETENTION SEDIMENT FOREBAY	24-000479	DH-SW-6110		C



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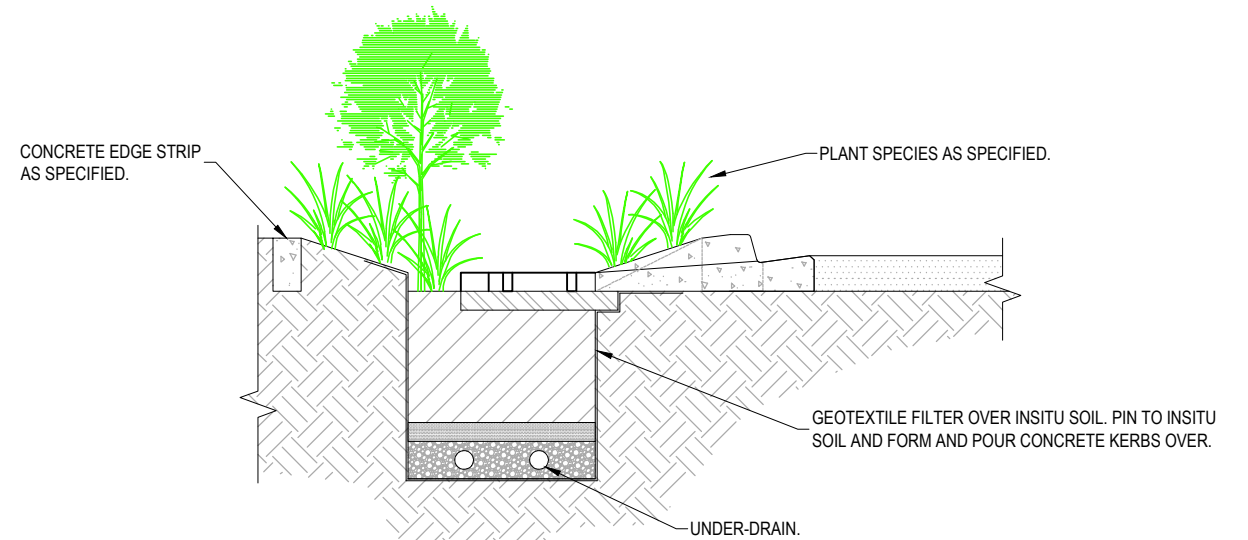
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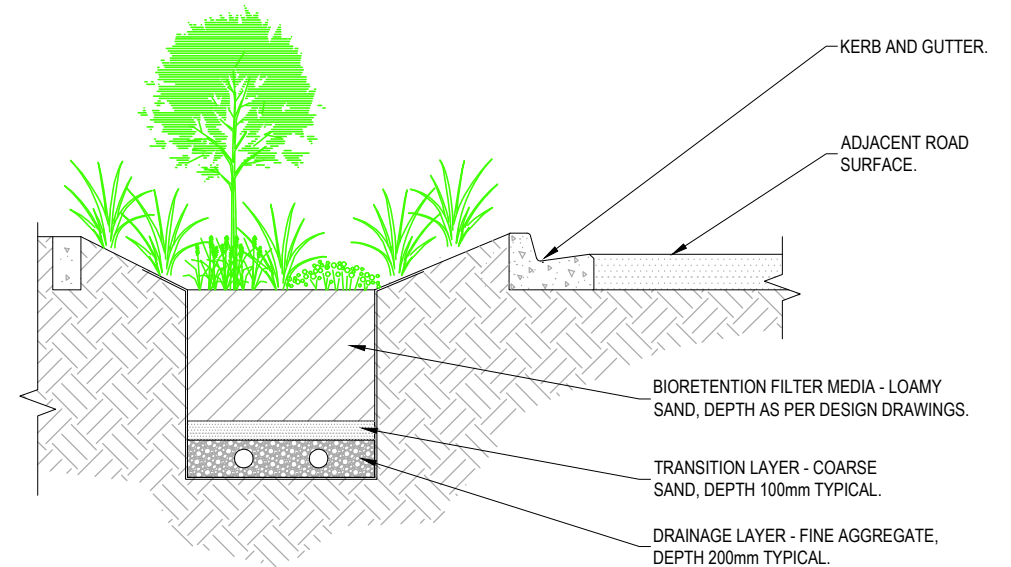


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SECTION A-A
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SECTION B-B
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ALL MEASUREMENTS IN MILLIMETRES

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B					27/03/25	CLIENT SUBMISSION

STATUS
FOR INFORMATION

SCALE AS SHOWN

CLIENT

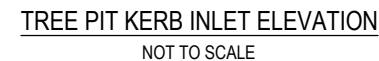
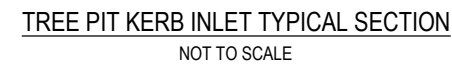
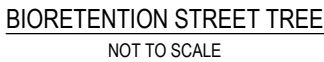
 **Government of South Australia**
Department for Housing and Urban Development

PROJECT

SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS

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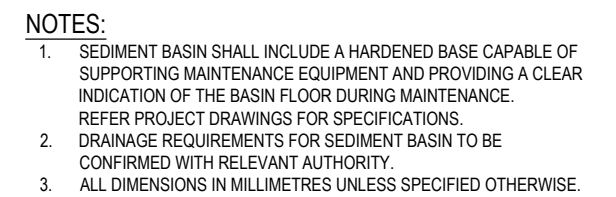
DRAWING TITLE			
STREETSCAPE BIORETENTION			
PROJECT No.	DRAWING No.	MILESTONE	REVISION
24-000479	DH-SW-6120		B



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AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS
TECHNICAL MANUAL

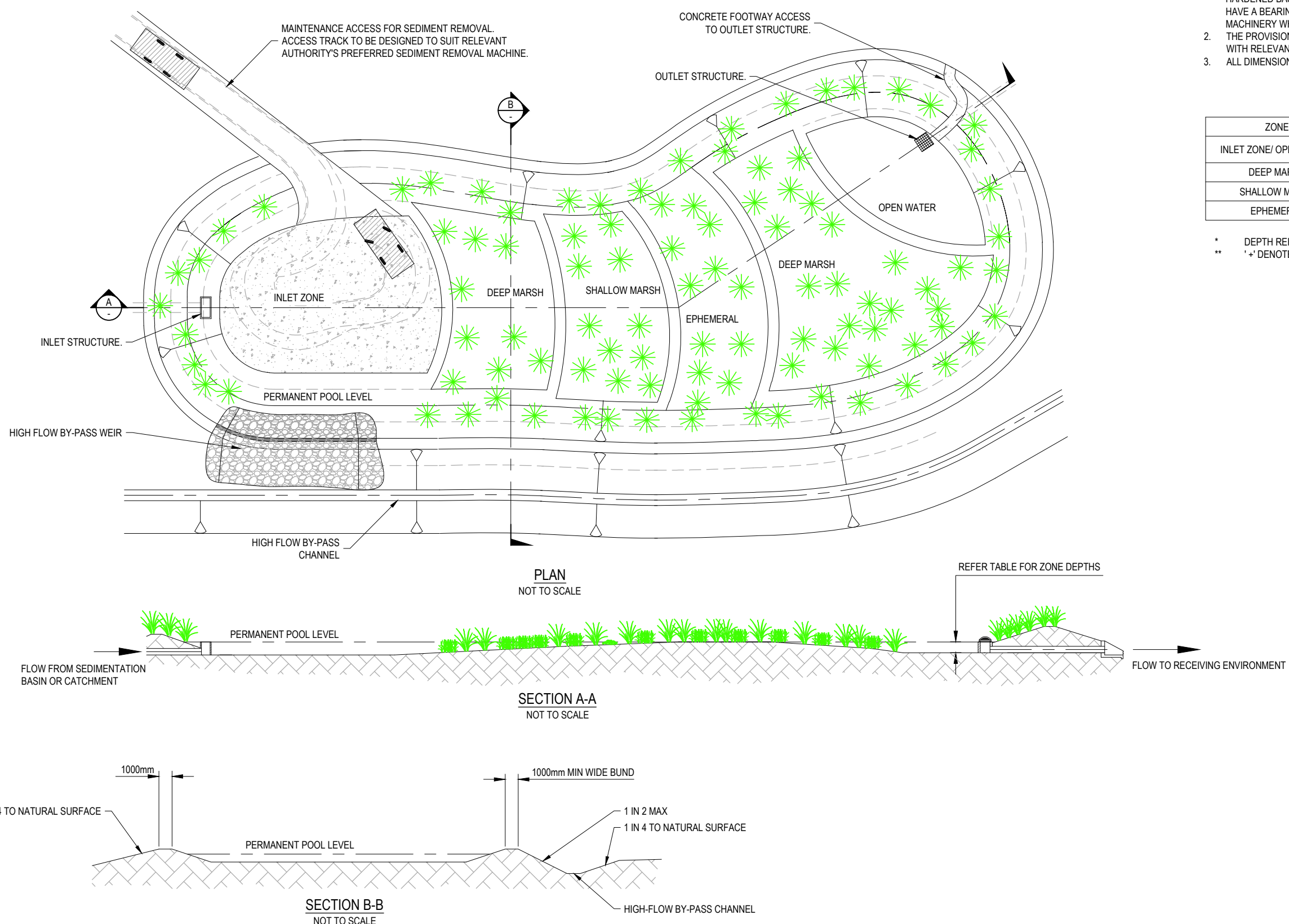
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ALL MEASUREMENTS IN MILLIMETRES

FIRST ISSUE A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE BF BG BH BI BJ BK BL BM BN BO BP BQ BR BS BT BU BV BW BX BY BZ CA CB CC CD CE CF CG CH CI CJ CK CL CM CN CO CP CQ CR CS CT CU CV CW CX CY CZ DA DB DC DD DE DF DG DH DI DJ DK DL DM DN DO DP DQ DR DS DT DU DV DW DX DY DZ EA EB EC ED EE EF EG EH EI EJ EK EL EM EN EO EP EQ ER ES ET EU EV EW EX EY EZ FA FB FC FD FE FF FG FH FI FJ FK FL FM FN FO FP FQ FR FS FT FU FV FW FX FY FZ GA GB GC GD GE GF GG GH GI GJ GK GL GM GN GO GP GQ GR GS GT GU GV GW GX GY GZ HA HB HC HD HE HF HG HH HI HJ HK HL HM HN HO HP HQ HR HS HT HU HV HW HX HY HZ IA IB IC ID IE IF IG IH II IJ IK IL IM IN IO IP IQ IR IS IT IU IV IW IX IY IZ JA JB JC JD JE JF JG JH JI JJ JK JL JM JN JO JP JQ JR JS JT JU JV JW JX JY JZ KA KB KC KD KE KF KG KH KI KJ KK KL KM KN KO KP KQ KR KS KT KU KV KW KX KY KZ LA LB LC LD LE LF LG LH LI LJ LK LL LM LN LO LP LQ LR LS LT LU LV LW LX LY LZ MA MB MC MD ME MF MG MH MI MJ MK ML MN MO MP MQ MR MS MT MU MV MW MX MY MZ NA NB NC ND NE NF NG NH NI NJ NK NL NM NO NP NQ NR NS NT NU NV NW NX NY NZ OA OB OC OD OE OF OG OH OI OJ OK OL OM ON OO OP OQ OR OS OT OU OV OW OX OY OZ PA PB PC PD PE PF PG PH PI PJ PK PL PM PN PO PP PQ PR PS PT PU PV PW PX PY PZ QA QB QC QD QE QF QG QH QI QJ QK QL QM QN QO QP QQ QR QS QT QU QV QW QX QY QZ RA RB RC RD RE RF RG RH RI RJ RK RL RM RN RO RP RQ RR RS RT RU RV RW RX RY RZ SA SB SC SD SE SF SG SH SI SJ SK SL SM SN SO SP SQ SR SS ST SU SV SW SX SY SZ TA TB TC TD TE TF TG TH TI TJ TK TL TM TN TO TP TQ TR TS TT TU TV TW TX TY TZ UA UB UC UD UE UF UG UH UI UJ UK UL UM UN UO UP UQ UR US UT UU UV UW UX UY UZ VA VB VC VD VE VF VG VH VI VJ VK VL VM VN VO VP VQ VR VS VT VU VV VW VX VY VZ WA WB WC WD WE WF WG WH WI WJ WK WL WM WN WO WP WQ WR WS WT WU WV WW WX WY WZ XA XB XC XD XE XF XG XH XI XJ XK XL XM XN XO XP XQ XR XS XT XU XV XW XX XY XZ YA YB YC YD YE YF YG YH YI YJ YK YL YM YN YO YP YQ YR YS YT YU YV YW YX YZ ZA ZB ZC ZD ZE ZF ZG ZH ZI ZJ ZK ZL ZM ZN ZO ZP ZQ ZR ZS ZT ZU ZV ZW ZX ZY ZZ	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS		STATUS	FOR INFORMATION	SCALE: AS SHOWN	CLIENT	 Government of South Australia Department for Housing and Urban Development	PROJECT	SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS				DRAWING TITLE	SEDIMENT BASIN TYPICAL PLAN AND SECTION							
														DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. <u>NOT FOR CONSTRUCTION</u> UNLESS STAMPED BY CERTIFYING AUTHORITY.				PROJECT No.	DRAWING No.	MILESTONE	REVISION					
														24-000479DH-SW-6210B												



- NOTES:**
1. WETLAND INLET ZONE SHALL BE CONSTRUCTED WITH A HARDENED BASE TO ASSIST WITH MAINTENANCE. THE BASE MUST HAVE A BEARING CAPACITY TO SUPPORT MAINTENANCE MACHINERY WHEN ACCESS IS REQUIRED INTO THE BASIN.
 2. THE PROVISION FOR A MAINTENANCE DRAIN SHALL BE CONFIRMED WITH RELEVANT AUTHORITY.
 3. ALL DIMENSIONS IN MILLIMETRES UNLESS SPECIFIED OTHERWISE.

ZONE	DEPTH* (M)
INLET ZONE/ OPEN WATER	0.5 TO 1.5
DEEP MARSH	0.35 TO 0.5
SHALLOW MARSH	0.2 TO 0.35
EPHEMERAL	0.0 TO +0.2**

* DEPTH REFERS TO DEPTH BELOW PERMANENT POOL LEVEL.
** '+' DENOTES LEVEL ABOVE PERMANENT POOL LEVEL.

FILE: S:\CAUS PROJECTS\1924\24-00479 - GROWTH AREA ENGINEERING STANDARDS\6. MODEL AUTOCAD\DWG\19-SW-6211.DWG LAST SAVED BY: JO KERR PLOTTED: 24-May-25

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GROWTH AREA AND GREENFIELD DEVELOPMENT ENGINEERING STANDARDS TECHNICAL MANUAL

ALL MEASUREMENTS IN MILLIMETRES

AMENDMENT DETAILS						STATUS	SCALE AS SHOWN	CLIENT	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE CONSTRUCTED WETLAND TYPICAL PLAN AND SECTIONS
FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE					
A					19/12/24	ISSUED FOR REVIEW				
B					27/03/25	CLIENT SUBMISSION				
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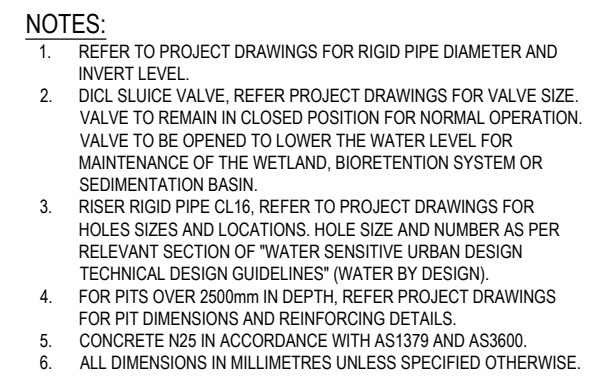
FOR INFORMATION

Government of South Australia
Department for Housing
and Urban Development

DISCLAIMER

ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

PROJECT No.	DRAWING No.	MILESTONE	REVISION
24-000479	DH-SW-6211		B



ALL MEASUREMENTS IN MILLIMETRES

	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	SCALE AS SHOWN	CLIENT	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE WETLAND LOW FLOW RISER OUTLET
FIRST ISSUE							FOR INFORMATION		 Government of South Australia Department for Housing and Urban Development	DISCLAIMER: ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.	PROJECT No. 24-000479 DRAWING No. DH-SW-6220 MILESTONE B
A				19/12/24	ISSUED FOR REVIEW						
B				27/03/25	CLIENT SUBMISSION						

The diagram illustrates a cross-section of a vegetated embankment. The structure consists of several layers: a topsoil layer (200mm) and a clay liner (300mm). The embankment is divided into three horizontal zones: a terrestrial batter (left), an ephemeral batter (middle), and a safety bench (right). The safety bench is labeled 'SAFETY BENCH VARIES'. The embankment is planted with emergent macrophytes, which are shown as green grass-like plants. The plants are planted 350mm below the natural water level (NWL). The diagram also shows the top of the embankment (TED) and the natural water level (NWL) with a minimum depth of 500mm between them. Slope ratios are indicated: 1.6 for the terrestrial batter, 1.8 for the ephemeral batter, and 1.3 for the safety bench. A 500mm dimension is also shown for the safety bench area.

The diagram illustrates a cross-section of a pond wall edge. Key components include:

- OPEN WATER ZONE:** Indicated by a double-headed arrow at the top of the pond area.
- TED (Temporary Embankment Depth):** A dashed horizontal line representing the water level.
- NWL (Normal Water Level):** A dashed horizontal line below the TED.
- EDD (Embankment Depth):** The vertical distance between the TED and NWL.
- WATER EDGE:** The vertical line separating the water from the embankment.
- HANDRAIL:** A vertical post with a circular top at the water's edge.
- WALL:** A vertical structure at the water's edge.
- 1:6 MAX:** The maximum slope ratio of the embankment.
- 150mm DEPTH TOPSOIL TO PROTECT LINER:** A layer of topsoil above the clay liner.
- 300mm CLAY LINER:** The main liner material, shown with a cross-hatch pattern.
- 1:3:** The slope ratio of the rock base.
- ROCK BASE TO PREVENT ESTABLISHMENT OF MACROPHYTES:** A layer of rocks at the bottom of the embankment.

POND - INFORMAL WALL EDGE

NOT TO SCALE

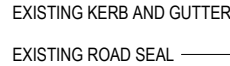
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1. BEDDING AGGREGATE MATERIAL SHALL MEET MATERIAL AND GRADING COMPATIBILITY CRITERIA IN TECHNICAL SPECIFICATION FOR THE WORKS AND/ OR THE PAVEMENT MANUFACTURER'S TECHNICAL SPECIFICATIONS.
2. THE RETENTION STORAGE MEDIA SHALL COMPRISE COARSE, SOUND, CLEAN STONE OR ROCK OF GENERALLY UNIFORM PARTICLE SIZE (TYPICALLY 10-63mm SIZE) AND FREE FROM SILT/CLAY FINES OR OTHER DELETERIOUS MATTER, OR AS SPECIFIED IN THE PAVEMENT MANUFACTURER'S TECHNICAL SPECIFICATION.
3. NON-WOVEN GEOTEXTILE FILTER MEDIA NOT TO BE PLACED BETWEEN ANY FILTER LAYERS. IMPERVIOUS LINER MAY BE REQUIRED SUBJECT TO SOIL TESTING REQUIREMENTS IN ACCORDANCE WITH THE 'WATER SENSITIVE URBAN DESIGN TECHNICAL GUIDELINES' (WATER BY DESIGN).
4. SUB-GRADE TO BE RIPPED/ HARROWED PRIOR TO PLACEMENT OF GEOTEXTILE FILTER.
5. WHERE POSSIBLE, ANY RUNOFF DIRECTED TO POROUS PAVEMENTS SHALL BE PRE-TREATED TO REMOVE COARSE TO MEDIUM SEDIMENTS.
6. REFER TO MANUFACTURE'S SPECIFICATION FOR MAXIMUM TRAFFIC LOADING.
7. UNDER-DRAINAGE - SLOTTED PVC PIPE (uPVC OR SIMILAR TO AS2439.1) OR APPROVED EQUIVALENT, 0.5% MINIMUM GRADE, INSTALLED AT 1500mm MAXIMUM CENTRES. DIAMETER TYPICALLY 100-500mm. PIPE JOINTS SHOULD BE GLUED WITH PLUMBING CEMENT. UNDER-DRAINAGE PIPE SHALL BE SEALED INTO PITS USING GROUT OR OTHER APPROVED WATERTIGHT SEAL. 50mm DRAINAGE LAYER (FINE AGGREGATE) COVER OVER SLOTTED PIPE.
8. POROUS PAVEMENT CAN PROVIDE AN ALTERNATIVE TO CONVENTIONAL IMPERMEABLE PAVEMENT IN LOCATIONS SUCH AS COMMERCIAL CAR PARK BAYS, RESIDENTIAL OR LIGHT COMMERCIAL DRIVEWAYS, INDUSTRIAL STORAGE AREAS OR LOADING ZONES, FOOTPATHS, CYCLEWAYS, PARKING PADS (E.G. MAINTENANCE ACCESS) AND TREE PIT SURROUNDS. THE FOLLOWING AREAS, HOWEVER, ARE NOT SUITABLE FOR PERMEABLE PAVING SYSTEMS:
 - WHERE A WATER TABLE IS LOCATED WITHIN 2m OF THE PROPOSED PAVEMENT SURFACE.
 - AREAS WITH HIGH TRAFFIC VOLUMES OR WITH REGULAR HEAVY VEHICLE TRAFFIC.
 - LOCATIONS WITH CLAY SOILS OR SOILS WITH A HYDRAULIC CONDUCTIVITY OF LESS THAN 0.36mm/hr.
 - AREAS WHERE IMPERMEABLE ROCK IS LOCATED WITHIN 2m OF THE PROPOSED PAVEMENT SURFACE.
 - LOCATIONS SUBJECT TO RUN-OFF WITH A HIGH SEDIMENT LOAD.
9. ALL DIMENSIONS IN MILLIMETRES UNLESS SPECIFIED OTHERWISE.
10. REFER PROJECT DRAWINGS FOR ALL DIMENSIONS, SPECIFICATIONS AND MATERIAL SELECTION.

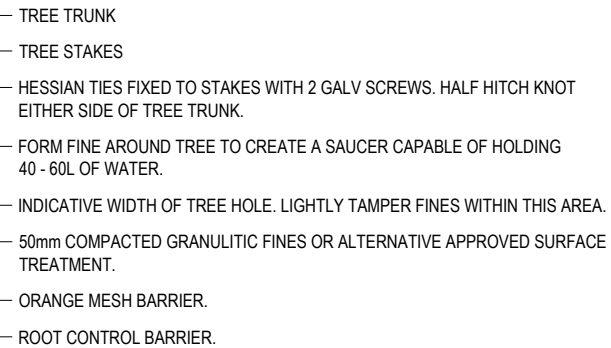


ALL MEASUREMENTS IN MILLIMETRES

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FOOTPATH BY OTHERS

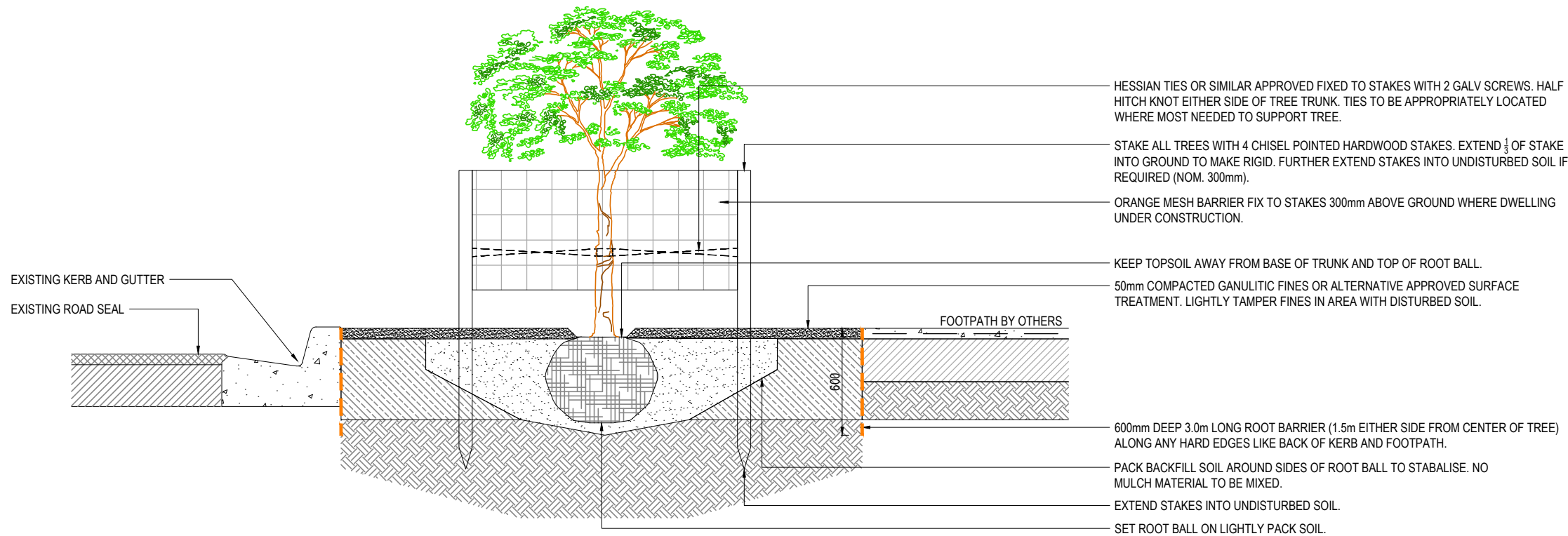


PLAN

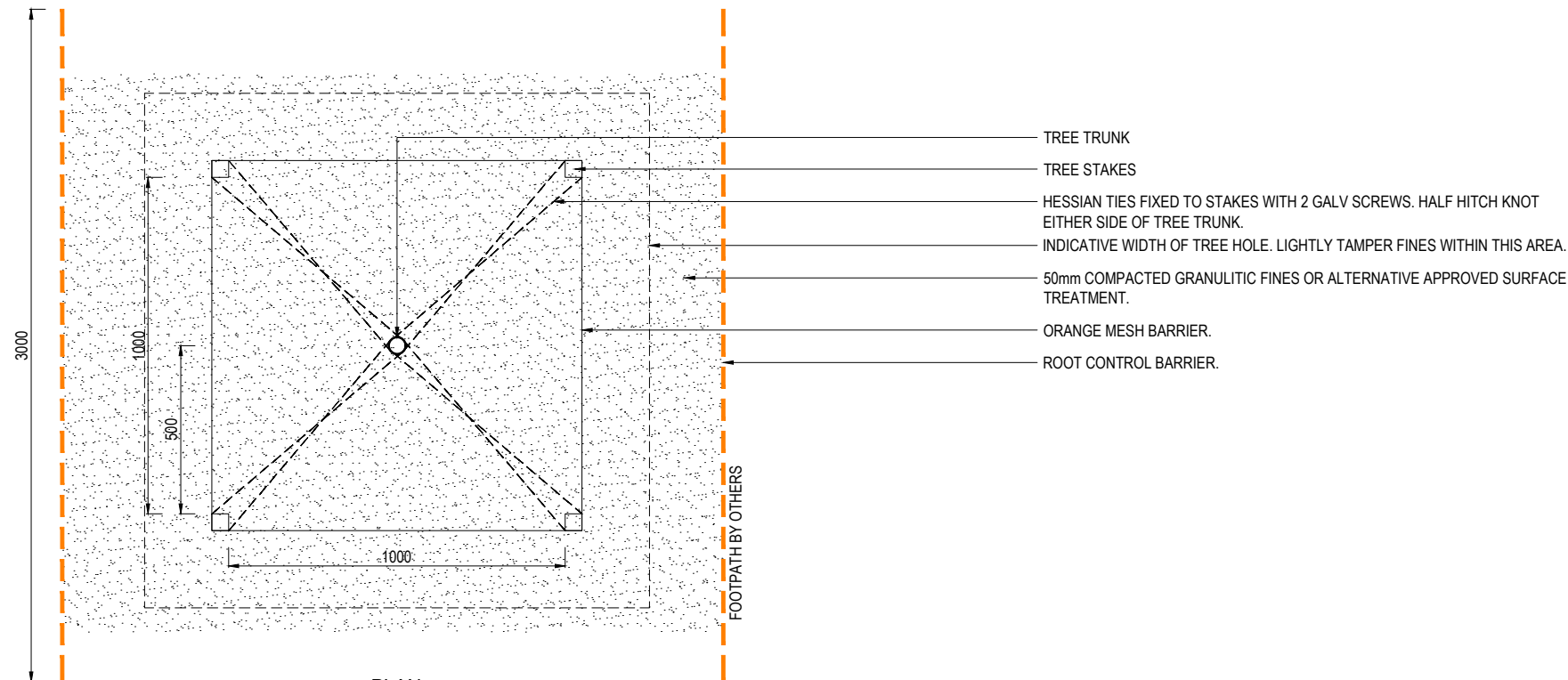
- ALL MEASUREMENTS IN MILLIMETRES

AMENDMENTS	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS		STATUS	PROJECT SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	DRAWING TITLE TYPICAL TREE PLANTING VERGE DETAIL (NON IRRIGATED)				
	A				21/02/25	ISSUED FOR REVIEW								
	B				04/04/25	CLIENT SUBMISSION								
	C				08/05/25	CLIENT SUBMISSION								
								SCALE: AS SHOWN	CLIENT	DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY	PROJECT No. 24-000479	DRAWING No. DH-LS-7000	MILESTONE C	REVISION

FILE:VEGETATION LOCAL BATHING TYPICAL 100 - GROWTH AREA ENGINEERING STANDARDS 100 - MODEL AUTOCAD 2014 LAYOUTS 7001 DWG LAST SAVED BY: AROY PLOTTED: 8 May 25



SECTION



TYPICAL TREE PLANTING - VERGE
IRRIGATED

NOTES:

- ORANGE MESH BARRIER ONLY REQUIRED WHEN PROPERTIES ARE UNDER CONSTRUCTION.
- VERGES UNDER 1.0m TO BE EXCAVATED TO A DEPTH OF 1m x 3m TO ALLOW ROOT DEVELOPMENT.
- EXCAVATE ENTIRE TREE PIT - EXISTING SOIL TO BE MADE FRIABLE AND REPLACE BACK WITHIN EXCAVATED AREA.
- LIGHTLY TAMPER SOIL SO NOT TO COMPACT BUT ENOUGH TO REDUCE SHRINKAGE.
- FORM WATERING BERM AROUND TREE CAPABLE TO HOLD 40 - 60L OF WATER. WATER INDIRECTLY TO SETTLE FILL ADJUST FILL AS REQUIRED.
- ADD TERRACOTTEM OR SIMILAR APPROVED AS PER MANUFACTURERS SPECIFICATION TO ALL TREES.
- WHERE TREE LOCATED WITHIN 1.0m OF HARD SURFACE SUCH AS FOOTPATHS, KERB OR SEP. 600mm DEEP ROOT BARRIER TO BE INSTALLED 1.5m EITHER SIDE OF CENTRE OF TREE.
- WHERE TREE ARE PLANTED ADJACENT TO SIDE FENCELINES, ROOT BARRIER MUST BE INSTALLED 1.5m EITHER SIDE OF TREE.
- TERRAWELL TREE GUARD CAN BE INSTALLED TO NON-IRRIGATED TREES AS AN ALTERNATIVE TO MULCH BOWL.
- BACKFILL AND PLANTING AROUND TREEBALL TO CONSIST OF APPROPRIATE PLANTING MATERIAL

ALL MEASUREMENTS IN MILLIMETRES

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS
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B					04/04/25	CLIENT SUBMISSION
C					08/05/25	CLIENT SUBMISSION

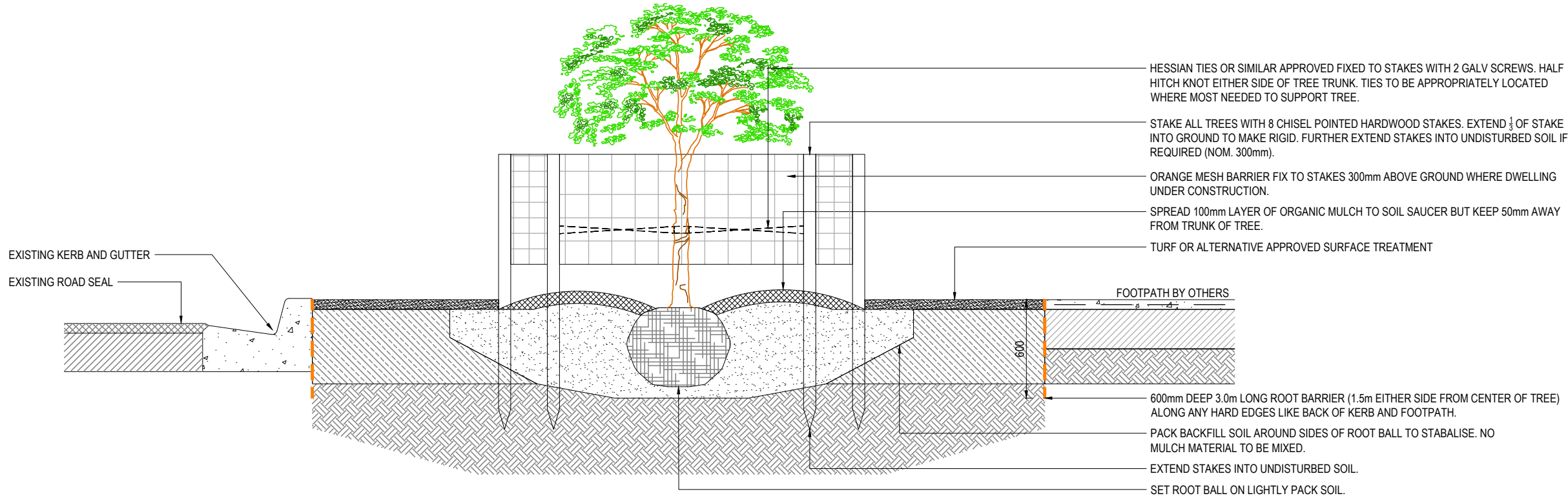
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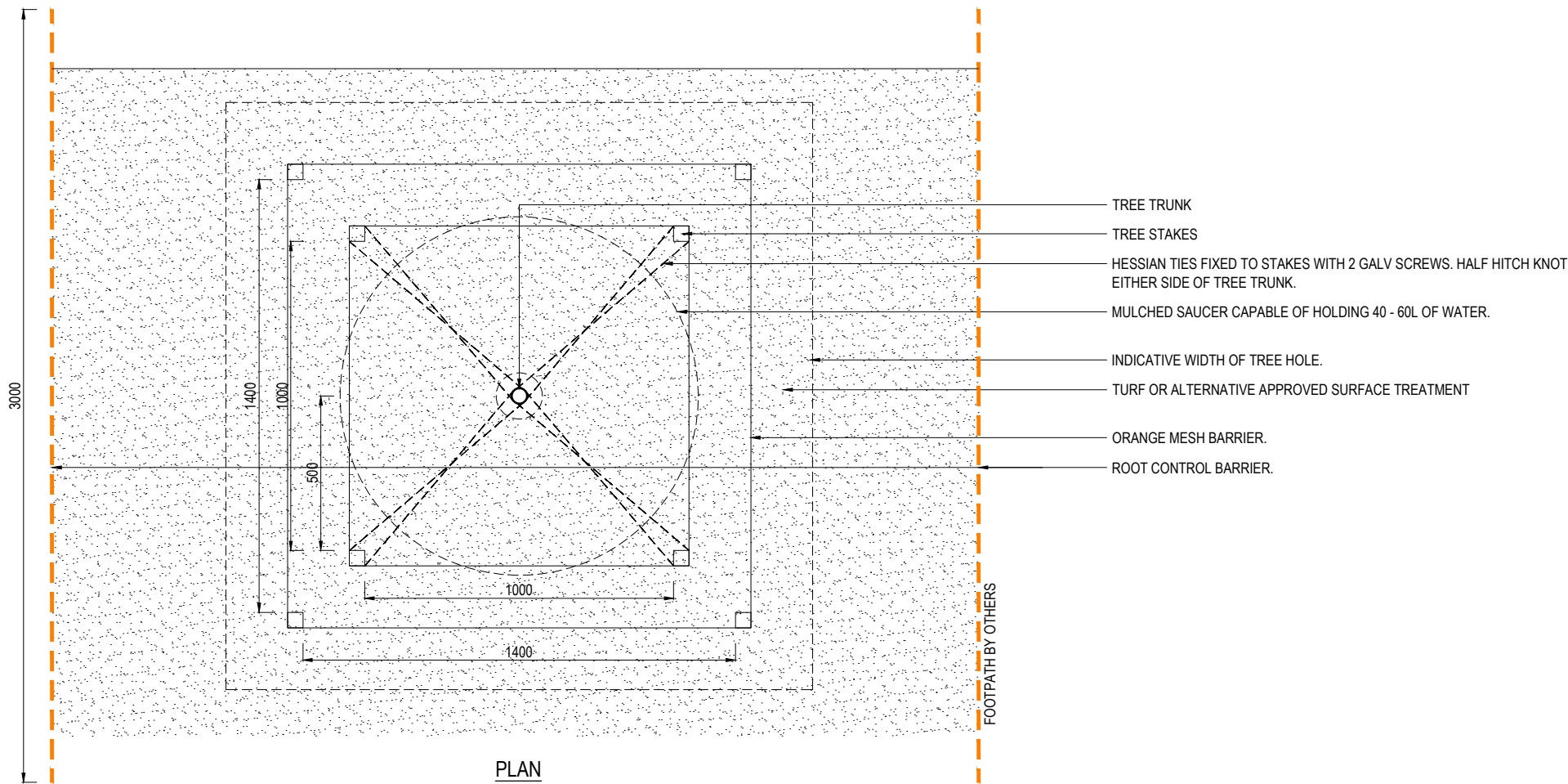
CLIENT
 Government of South Australia Department for Housing and Urban Development

PROJECT
SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS
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DRAWING TITLE			
TYPICAL TREE PLANTING VERGE DETAIL (IRRIGATED)			
PROJECT No.	DRAWING No.	MILESTONE	REVISION
24-000479	DH-LS-7001		C



SECTION



PLAN
TYPICAL TREE PLANTING - VERGE
DOUBLE BUNTING

NOTES:

1. ORANGE MESH BARRIER ONLY REQUIRED WHEN PROPERTIES ARE UNDER CONSTRUCTION.
2. VERGES UNDER 1.0m TO BE EXCAVATED TO A DEPTH OF 1m x 3m TO ALLOW ROOT DEVELOPMENT.
3. EXCAVATE ENTIRE TREE PIT - EXISTING SOIL TO BE MADE FRIABLE AND REPLACE BACK WITHIN EXCAVATED AREA.
4. LIGHTLY TAMPER SOIL SO NOT TO COMPACT BUT ENOUGH TO REDUCE SHRINKAGE.
5. FORM WATERING BERM AROUND TREE CAPABLE TO HOLD 40 - 60L OF WATER. WATER INDIRECTLY TO SETTLE FILL ADJUST FILL AS REQUIRED.
6. ADD TERRACOTTEM OR SIMILAR APPROVED AS PER MANUFACTURERS SPECIFICATION TO ALL TREES.
7. WHERE TREE LOCATED WITHIN 1.0m OF HARD SURFACE SUCH AS FOOTPATHS, KERB OR SEP. 600mm DEEP ROOT BARRIER TO BE INSTALLED 1.5m EITHER SIDE OF CENTRE OF TREE.
8. WHERE TREE ARE PLANTED ADJACENT TO SIDE FENCELINES, ROOT BARRIER MUST BE INSTALLED 1.5m EITHER SIDE OF TREE.
9. TERRAWELL TREE GUARD CAN BE INSTALLED TO NON-IRRIGATED TREES AS AN ALTERNATIVE TO MULCH BOWL.
10. BACKFILL AND PLANTING AROUND TREEBALL TO CONSIST OF APPROPRIATE PLANTING MATERIAL.

ALL MEASUREMENTS IN MILLIMETRES

FILE:VEGETATION LOCAL BAYMONTICALUG PROJECTS\SD\24-000479 - GROWTH AREA ENGINEERING STANDARDS\6 MODEL\AUTOCAD\DWG\LS-7002.DWG LAST SAVED BY: AROY PLOTTED: 8-May-25

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS
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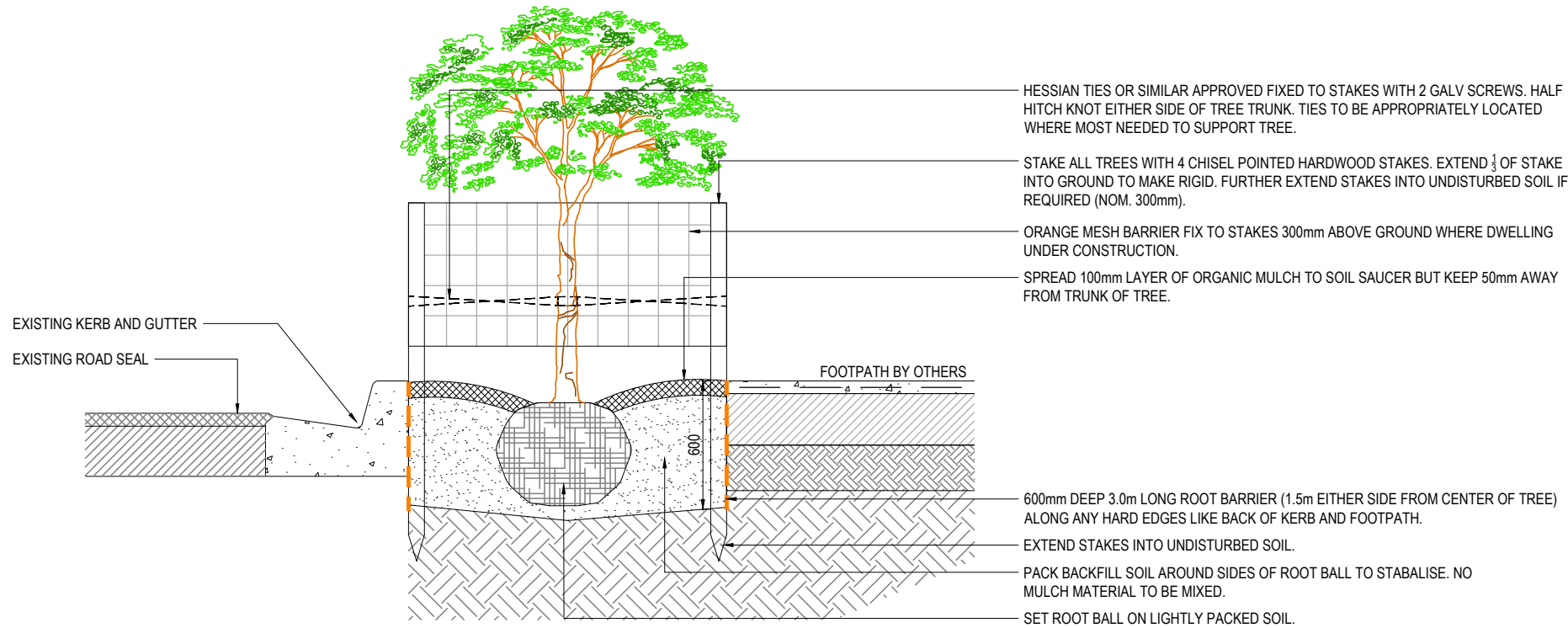
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CLIENT	
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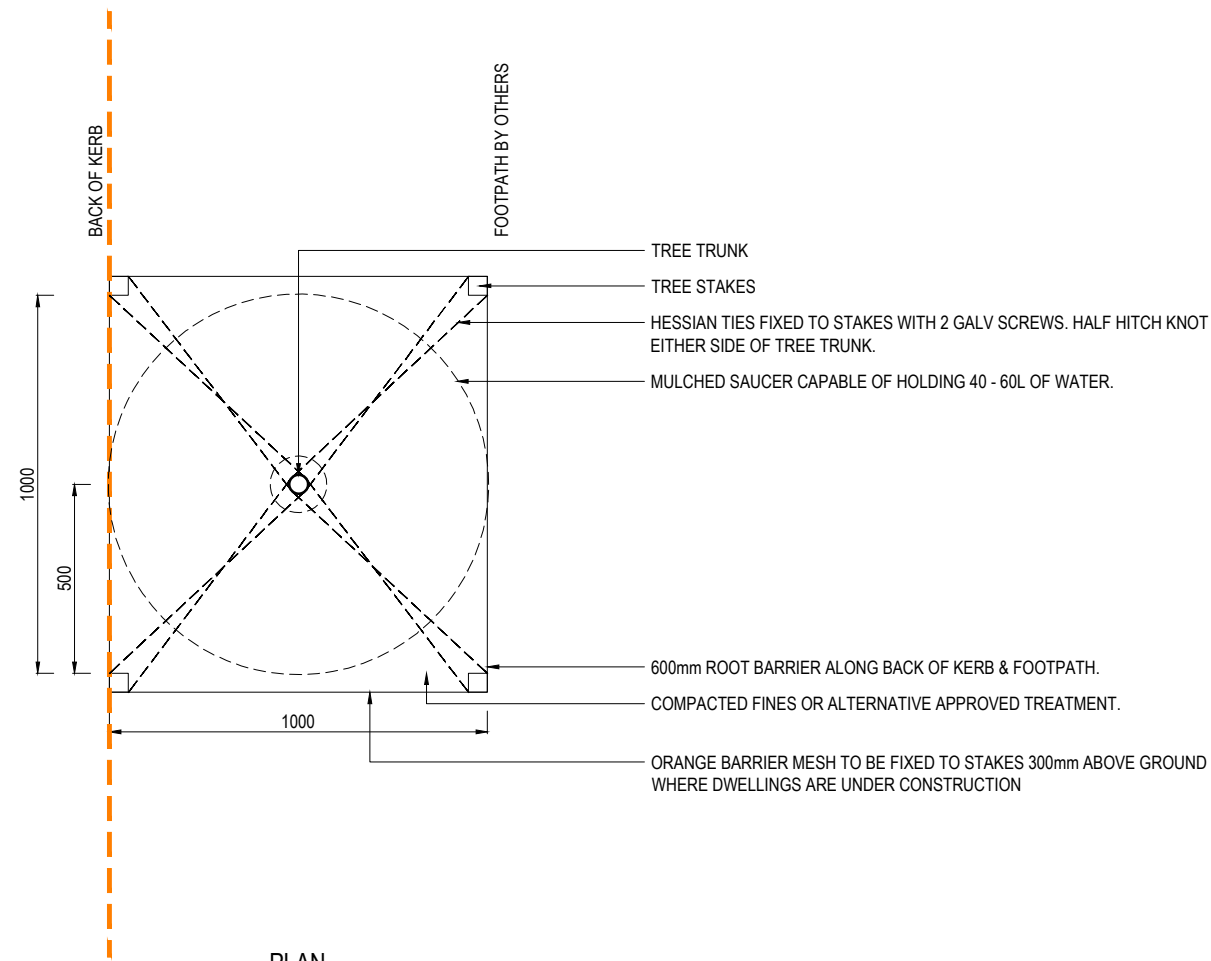
PROJECT	
SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS	
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DRAWING TITLE			
TYPICAL TREE PLANTING VERGE DETAIL (DOUBLE BUNTING)			
PROJECT No.	DRAWING No.	MILESTONE	REVISION
24-000479	DH-LS-7002		C

FILE: S:\CAUS PROJECTS\91024\24-00479 - GROWTH AREA ENGINEERING STANDARDS\6. MODEL\AUTOCAD\DWG\LS-7003.DWG, LAST SAVED BY: A ROY, PLOTTED: 3 May 25



SECTION



PLAN

TYPICAL TREE PLANTING - NARROW VERGE

NOTES:

- ORANGE MESH BARRIER ONLY REQUIRED WHEN PROPERTIES ARE UNDER CONSTRUCTION.
- VERGES UNDER 1.0m TO BE EXCAVATED TO A DEPTH OF 1m x 3m TO ALLOW ROOT DEVELOPMENT.
- EXCAVATE ENTIRE TREE PIT - EXISTING SOIL TO BE MADE FRIABLE AND REPLACE BACK WITHIN EXCAVATED AREA.
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- WHERE TREE LOCATED WITHIN 1.0m OF HARD SURFACE SUCH AS FOOTPATHS, KERB OR SEP: 600mm DEEP ROOT BARRIER TO BE INSTALLED 1.5m EITHER SIDE OF CENTRE OF TREE.
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ALL MEASUREMENTS IN MILLIMETRES

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C					06/05/25	CLIENT SUBMISSION

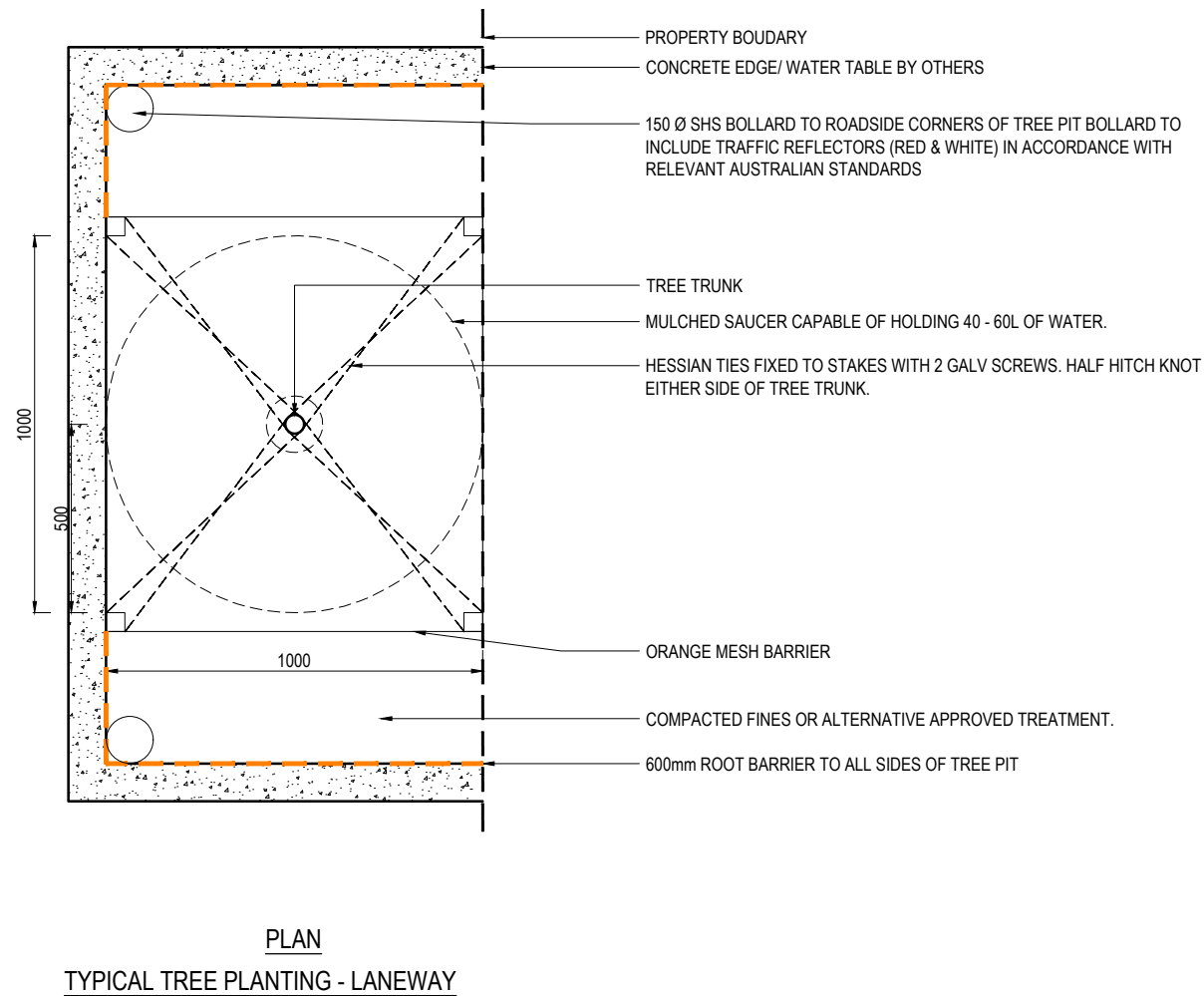
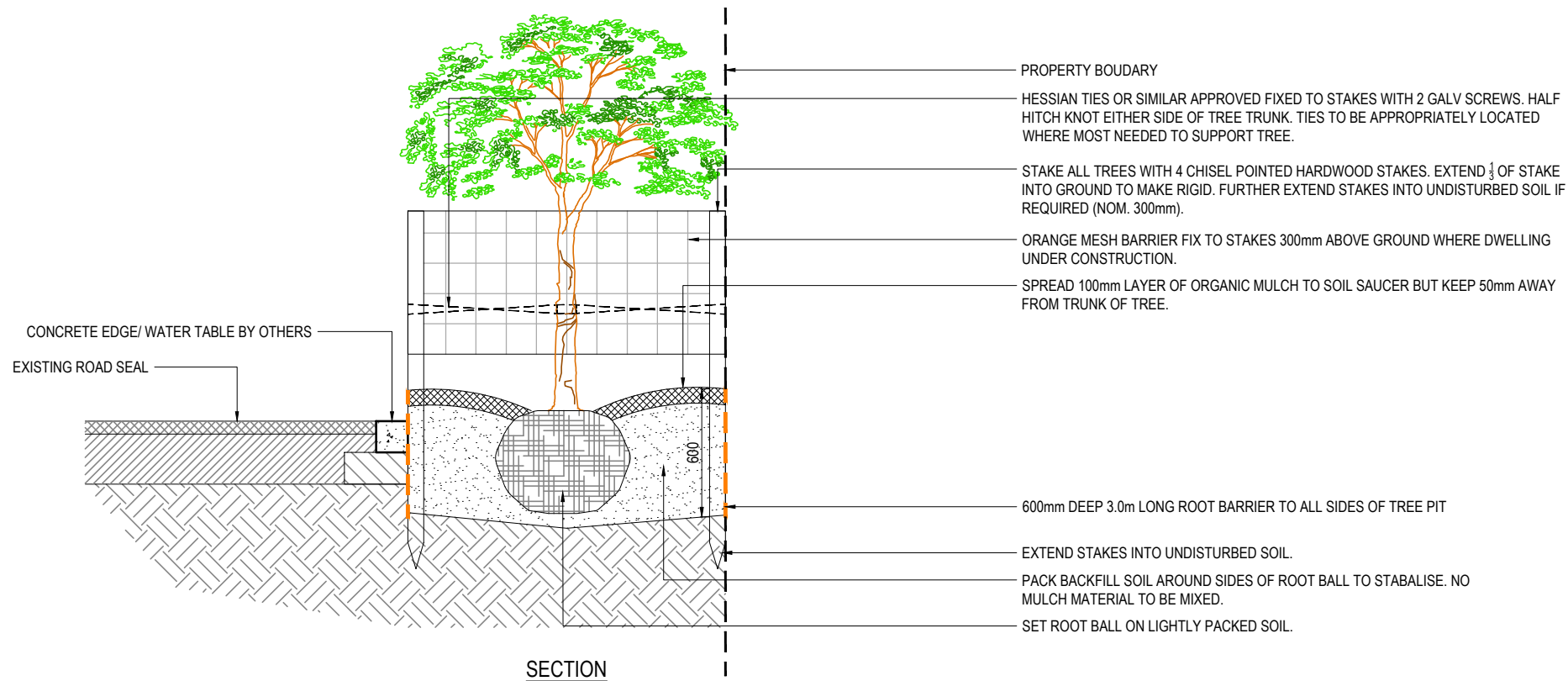
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FOR INFORMATION

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CLIENT
 Government of South Australia Department for Housing and Urban Development

PROJECT
SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS
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DRAWING TITLE			
TYPICAL TREE PLANTING VERGE DETAIL (NARROW VERGE)			
PROJECT No.	DRAWING No.	MILESTONE	REVISION
24-000479	DH-LS-7003		C



NOTES:

1. ORANGE MESH BARRIER ONLY REQUIRED WHEN PROPERTIES ARE UNDER CONSTRUCTION.
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ALL MEASUREMENTS IN MILLIMETRES

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SCALE 1:10 (A1)											
SCALE 1:20 (A3)											

											
Government of South Australia											
Department for Housing and Urban Development											

DISCLAIMER											
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.											

PROJECT No.											
24-000479											

DRAWING No.											
DH-LS-7004											

MILESTONE											

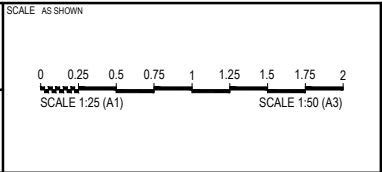
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ALL MEASUREMENTS IN MILLIMETRES

FIRST ISSUE		DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS
A M E N D M E N T S	A					21/02/25	ISSUED FOR REVIEW
	B					04/04/25	CLIENT SUBMISSION
	C					08/05/25	CLIENT SUBMISSION

STATUS	FOR INFORMATION

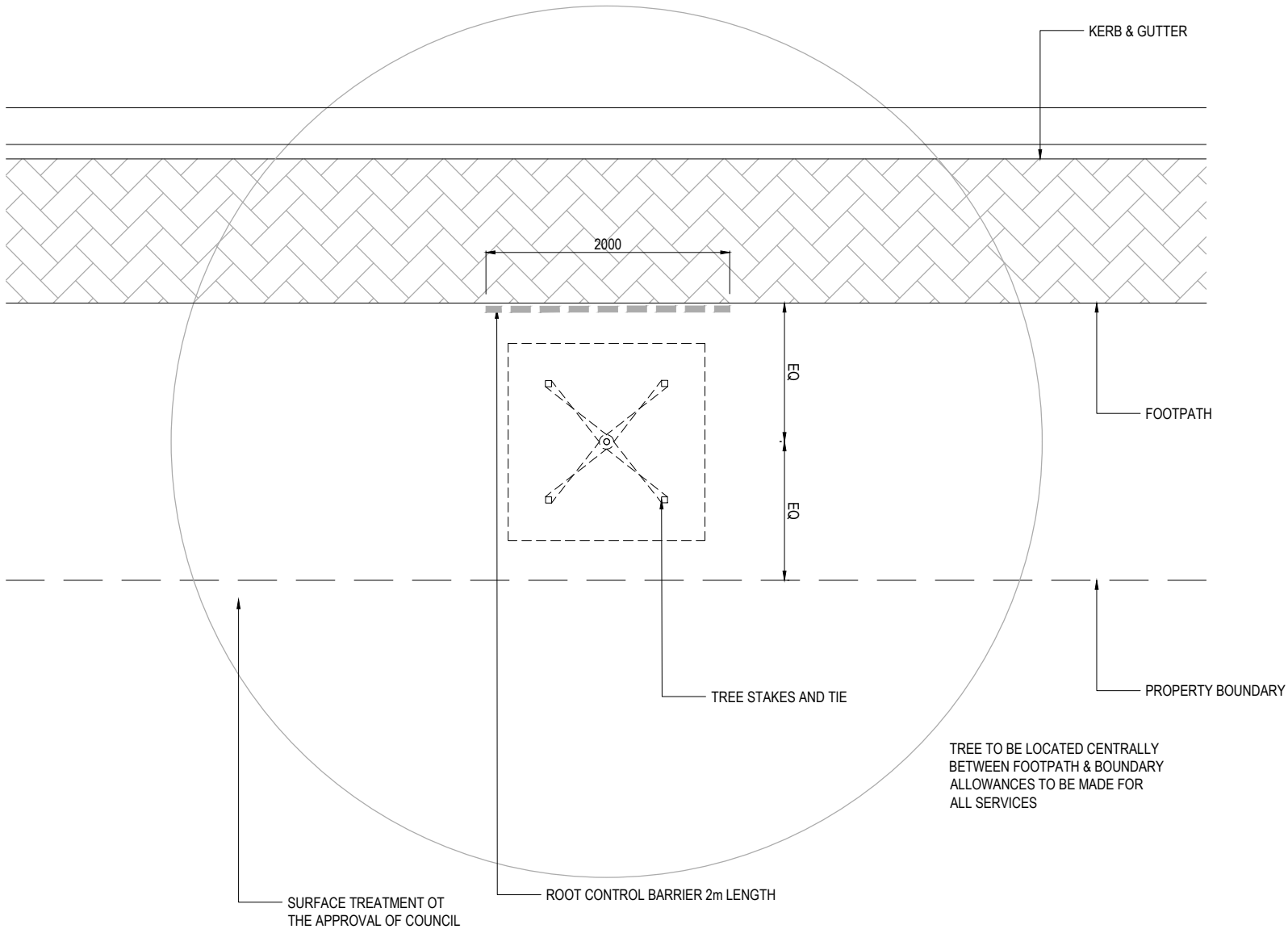


PROJECT
**SOUTH AUSTRALIA GROWTH AREAS
 ENGINEERING STANDARDS**

DISCLAIMER
 ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR
 PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO
 NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY
 CERTIFYING AUTHORITY

DRAWING TITLE			
STREET TREE PLANTING DETAIL			
PROJECT No.	DRAWING No.	MILESTONE	REVISION
24-000479	DH-LS-7005		C

FILE: S:\CAUS PROJECTS\9124\24-00479 - GROWTH AREA ENGINEERING STANDARDS\6. MODEL\AUTOCAD\DWG\LS-707.DWG, LAST SAVED BY: A ROY, PLOTTED: 3 May 25



STREET TREE PLANTING PLAN - NO FOOTPATH

NOTE:
1. 600mm DEEP ROOT CONTROL BARRIER TO BE INSTALLED WHERE DISTANCE TO KERB >1000mm

ALL MEASUREMENTS IN MILLIMETRES

AMENDMENTS	FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS		STATUS	SCALE AS SHOWN	CLIENT	PROJECT	DRAWING TITLE				
	A					21/02/25	ISSUED FOR REVIEW										
	B					04/04/25	CLIENT SUBMISSION										
	C					08/05/25	CLIENT SUBMISSION										
								FOR INFORMATION		0 0.25 0.5 0.75 1 1.25 1.5 1.75 2 SCALE 1:25 (A1) SCALE 1:50 (A3)		 Government of South Australia Department for Housing and Urban Development		SOUTH AUSTRALIA GROWTH AREAS ENGINEERING STANDARDS			
												DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY		STREET TREE PLANTING DETAIL (PATH AGAINST KERB)			
												PROJECT No. 24-000479		DRAWING No. DH-LS-7007		MILESTONE REVISION C	