

BAAKA CULTURAL CENTRE WILCANNIA

STORMWATER MANAGEMENT PLAN

DRAWING INDEX

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DR-100	EXISTING SHED – PIPE & ROOF LAYOUT
SD-100	EROSION AND SEDIMENT CONTROL PLAN

NOTES:

1. ALL DIMENSIONS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.

2. SITE LAYOUT BASED ON ARCHITECTURAL PLANS BY KAUNITZ YEUNG ARCHITECTURE (MAY 2020).

3. LOCATION OF ALL SERVICES MUST BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.

4. ALL STORMWATER DRAINAGE PIPES AND ASSOCIATED DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE RELEVANT STANDARDS, THE BUILDING CODE OF AUSTRALIA, MANUFACTURER’S RECOMMENDATIONS, SYDNEY CATCHMENT AUTHORITY RECOMMENDED PRACTICE, AND LOCAL COUNCIL, AS APPLICABLE.

5. ALL INVERT LEVELS PROVIDED ON THIS DRAWING ARE REDUCED TO AHD AND BASED ON INTERPOLATED SURFACE LEVELS AND SYSTEM REQUIREMENTS
6. WHERE POSSIBLE, PIPEWORK SHALL BE LOCATED EXTERNAL TO THE BUILDING.








7. DOWNPIPES AND STORMWATER LINES TO BE SEALED DN100 uPVC UNSHAS OTHERWISE NOTED.


8. STORMWATER PIPES TO BE GRADED AT A MINIMUM 1% UNSHAS NOTED OTHERWISE.

9. ALTERNATIVE GUTTER AND DOWNPIPE CONFIGURATION MAY BE INSTALLED PROVIDED IT COMPLIES WITH AS3500.



10. ALL PIPE AND CONDUITS TO BE MARKED IN ACCORDANCE WITH AS1345 – 1995.

LEGEND:

	DOWNPIPE
	STORMWATER PIPE
	RAINWATER PIPE
	SUBSOIL PIPE
	DRAINAGE PIT & SIZE (SQUARE)
	DRAINAGE PIT & SIZE (CIRCULAR)
	GRATED BOX DRAIN & SIZE (WIDTH)

This drawing is confidential and shall only be used for the purposes of this project.					Scale NA DO NOT SCALE. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED	THE SIGNING OF THIS TITLE BLOCK CONFIRMS THE DESIGN AND DRAFTING OF THIS PROJECT HAVE BEEN PREPARED AND CHECKED IN ACCORDANCE WITH THE STELLEN QUALITY ASSURANCE SYSTEM				 Stellen Stellen Consulting ABN 61 149 095 189	NORTH	BAAKA CULTURAL CENTRE WILCANNIA, WILCANNIA							
REVISIONS						DESIGNED	SHA	CHECKED	LES			LEGEND							
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No.	BY	DATE	DESCRIPTION	APPD															
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<div>REVISIONS</div> <table><tr><td>0</td><td>SHA</td><td>14/03/2022</td><td>ISSUED FOR DA SUBMISSION</td><td>LES</td></tr><tr><td>No.</td><td>BY</td><td>DATE</td><td>DESCRIPTION</td><td>APPD</td></tr></table>					0	SHA	14/03/2022	ISSUED FOR DA SUBMISSION	LES	No.	BY	DATE	DESCRIPTION	APPD	DO NOT SCALE. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED				<table><tr><td>DESIGNED</td><td>SHA</td><td>CHECKED</td><td>LES</td></tr><tr><td>DRAWN</td><td>SHA</td><td>CHECKED</td><td>LES</td></tr><tr><td>APPROVED</td><td>LES</td><td>DATE</td><td>14/03/2022</td></tr></table>		DESIGNED	SHA	CHECKED	LES	DRAWN	SHA	CHECKED	LES	APPROVED	LES	DATE	14/03/2022	PIPE LAYOUT- BASEMENT				
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NOMENCLATURE

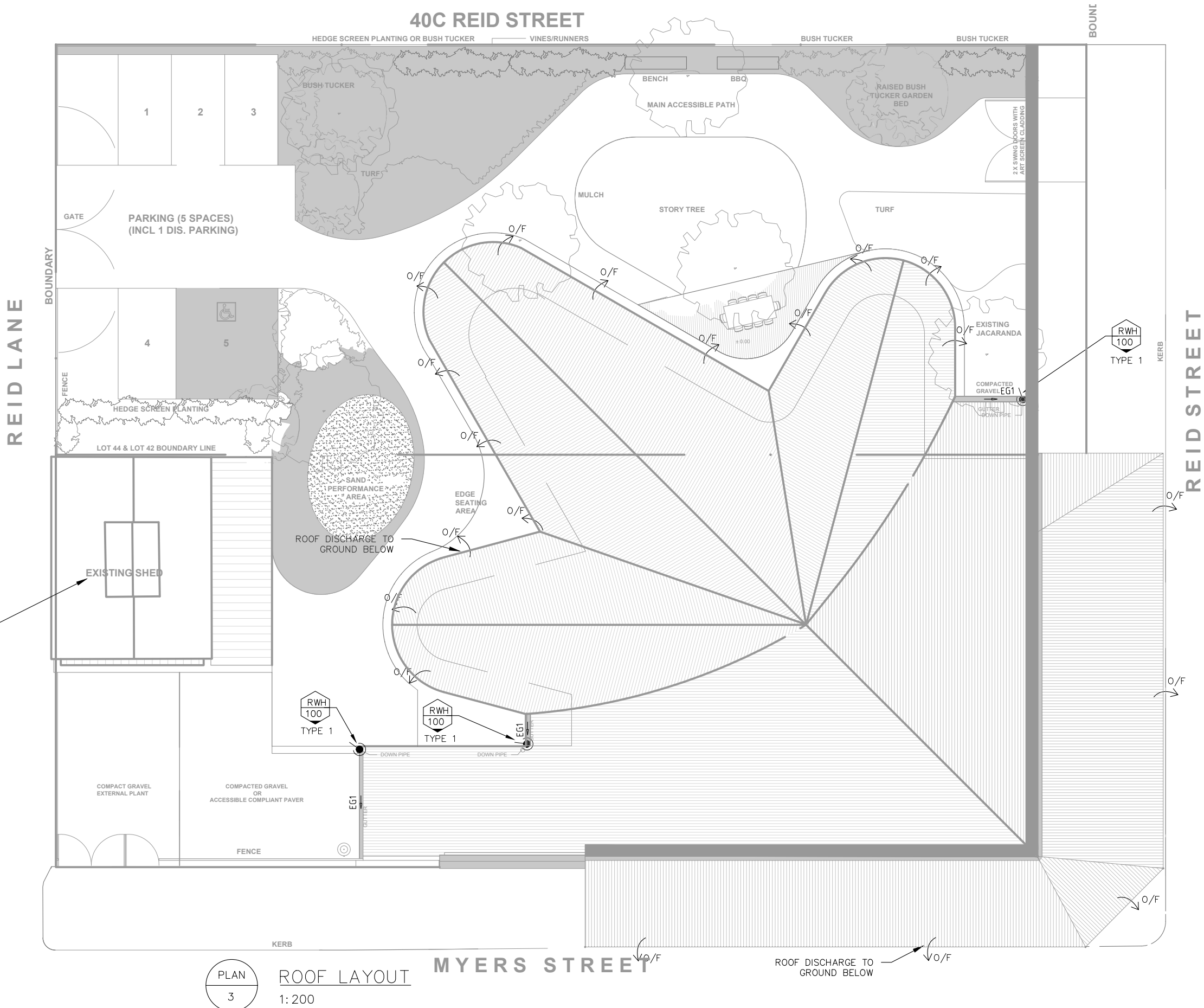
DP - DOWNPIPE
RWH - RAINWATER HEAD, REFER TO DETAILS
EG - EAVES GUTTER



GUTTER SIZING

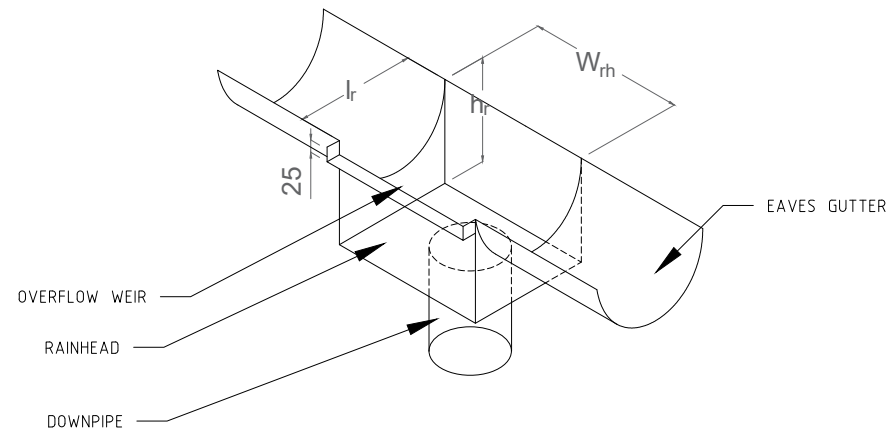
EAVES GUTTERS DESIGNED TO 5% AEP (5 MIN): 151 mm/hr
EAVES GUTTERS TO BE THE FOLLOWING MINIMUM SIZES:
EG1 - MIN CSA 21,400 mm² (REFER TO DR-004 FOR DETAIL)
EG2 - MIN CSA 7,000 mm²

LEGEND

TYPE
DIA
DOWNPIPE TYPE AND DIAMETER
DIRECTION OF FALL



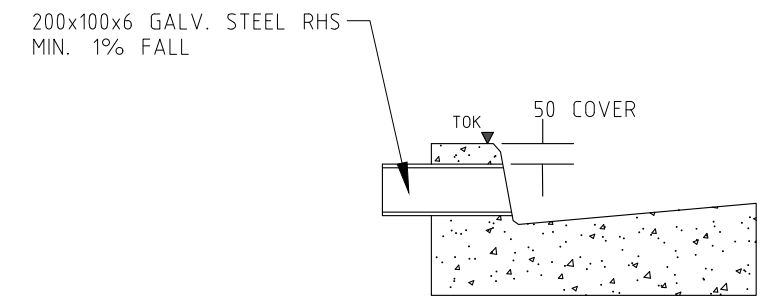
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REVISIONS						1:100	DESIGNED		SHA	CHECKED	LES		Stellen		ROOF LAYOUT			
						DRAWN		SHA	CHECKED	LES								
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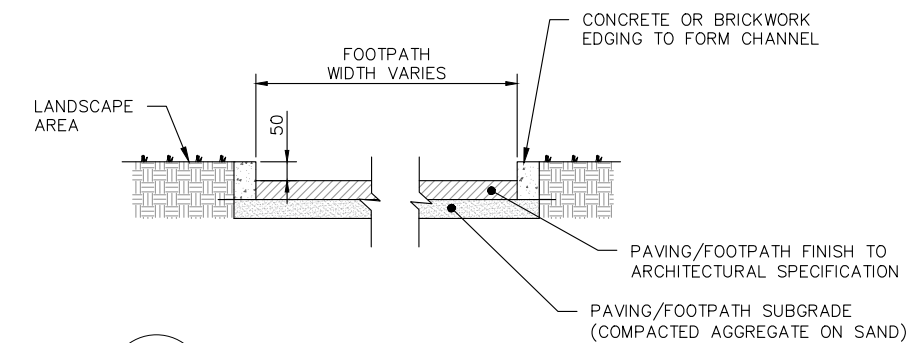
DETAIL 1
TYPE 1 – RAINWATER HEAD/EAVES GUTTER
NOT TO SCALE

TABLE 1 – RAINWATER HEAD DESIGN (5% AEP, 1:200 FALL)		
DOWNPIPE SIZE	DP	100mm
LENGTH OF RAINWATER HEAD	L _r	230mm
RAINWATER HEAD DEPTH	h _r	385mm
RAINWATER HEAD WIDTH (MIN)	W _{rh}	250mm

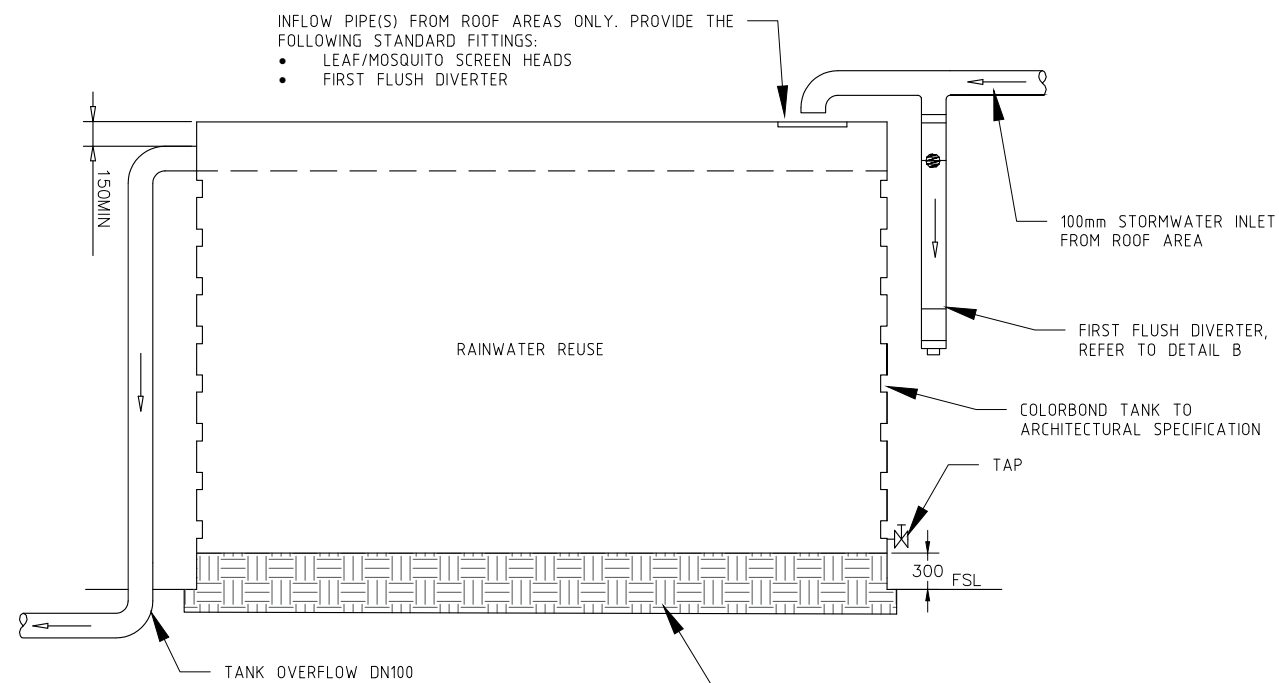
NOTES:
1. RAINWATER HEAD OVERFLOW WEIR TO BE SET 25mm BELOW OBVERT OF GUTTER.
2. GUTTERS TO HAVE MINIMUM 1:200 FALL
3. GUTTER AND RAINHEAD TO BE DESIGNED TO ARCHITECTURAL SPECIFICATION PROVIDED IT COMPLIES WITH THE MINIMUM DIMENSIONS IN TABLE 2.



DETAIL 3
TYPICAL KERB CONNECTION
NOT TO SCALE

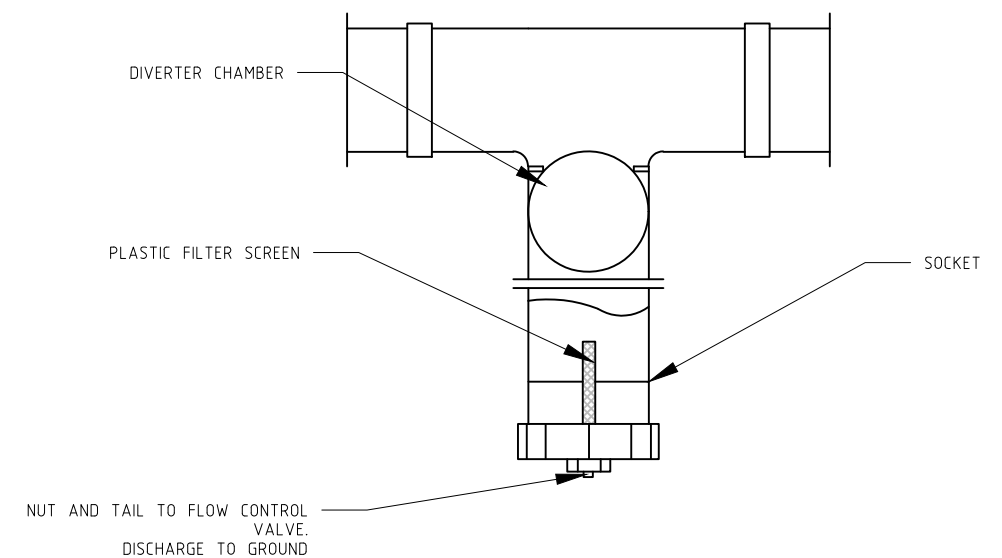


SECTION AA
TYPICAL FOOTPATH SECTION
NOT TO SCALE

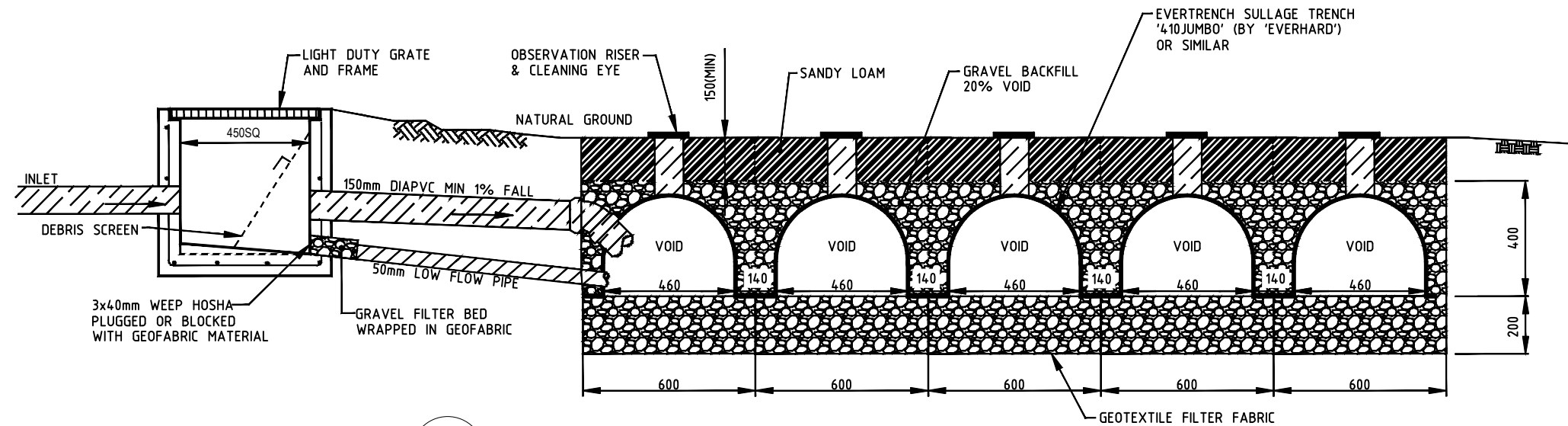


DETAIL 2
RAINWATER REUSE SYSTEM
NOT TO SCALE

NOTES:
1. RAINWATER TANKS TO:
1.1. SUPPLY AT LEAST ONE OUTDOOR TAP EACH
1.2. BE PROVIDED WITH A FIRST FLUSH DIVERTER
1.3. INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS



DETAIL B
FIRST FLUSH DIVERTER
NOT TO SCALE



TYPICAL ABSORPTION SYSTEM DETAIL
NOT TO SCALE

NOTES:

1. TYPICAL ABSORPTION TRENCH ONLY, NUMBER OF TRENCHES AND TRENCH LENGTH MAY VARY. SEE SYSTEM CALCULATIONS FOR DETAIL. REFER TO SITE PLAN FOR SETOUT DETAILS.
2. ASSUMED NOMINAL ABSORPTION RATE (AR_n) USED IN CALCULATION. AR_n TO BE VERIFIED ON SITE BY BUILDER PRIOR TO INSTALLATION.
3. LOCATION OF ALL SERVICES MUST BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.
4. ALL STORMWATER DRAINAGE PIPES AND ASSOCIATED DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH RELEVANT STANDARDS, THE BUILDING CODE OF AUSTRALIA, MANUFACTURER'S RECOMMENDATIONS, SYDNEY WATER AND LOCAL COUNCIL REQUIREMENTS, AS APPLICABLE.

Absorption System Calculations									
Site Details				Required Absorption System Volume Calculation for 5% AEP storm event (BOM)					
Site Area		-	m2	Time (min)	Rainfall Intensity (mm/hr)	Runoff (l/s)	Runoff Volume (m3)	Infiltration Volume (m3)	Required Absorption System
Impervious Area to Absorption Pit (IA)		484	m2						
Nominal Absorption Rate (AR _n)		0.1	l/m2/sec						
Reduction Factor (Fr)		0.5	-	t	I (5% AEP)	R = I x DA/3600 x 0.9	RV = R x t x 60/1000	IV = BA x AR _d x t x 60/1000	V _{req} = RV - IV
				5	151.0	18.27	5.48	0.50	4.98
				6	143.0	17.30	6.23	0.60	5.63
				10	119.0	14.40	8.64	1.00	7.64
				20	83.3	10.08	12.10	2.01	10.09
				30	64.9	7.85	14.14	3.01	11.12
				60	40.5	4.90	17.64	6.03	11.62
				120	24.8	3.00	21.61	12.05	9.55
				Maximum Required Absorption System Volume (MRASV) (m3)					11.62
Design Details				Proposed Absorption System Volume					
Design Impervious Area (DA)		484	m2	Total Volume of pits above top of base level (m3)				(0.6 x 0.6 x 0.6m)	0.182
Design Absorption Rate (AR _d)	AR _d =AR _n x Fr	0.05	l/m2/sec	Volume of half round Evertrench 410 'Jumbo' (m3)				(0.175m2 x 9.3m x 6 off)	9.77
Base Area of Absorption Pit (BA)		33.48	(0.6m x 9.3m x 6 off)	Gravel void Volume (20% of gravel volume) (m3)				(20% x ((0.6m x 0.6m - 0.175m2) x 9.3m) x 6 off)	2.06
				Total Proposed Absorption System Volume (TPASV) (m3)					12.01

NOMENCLATURE

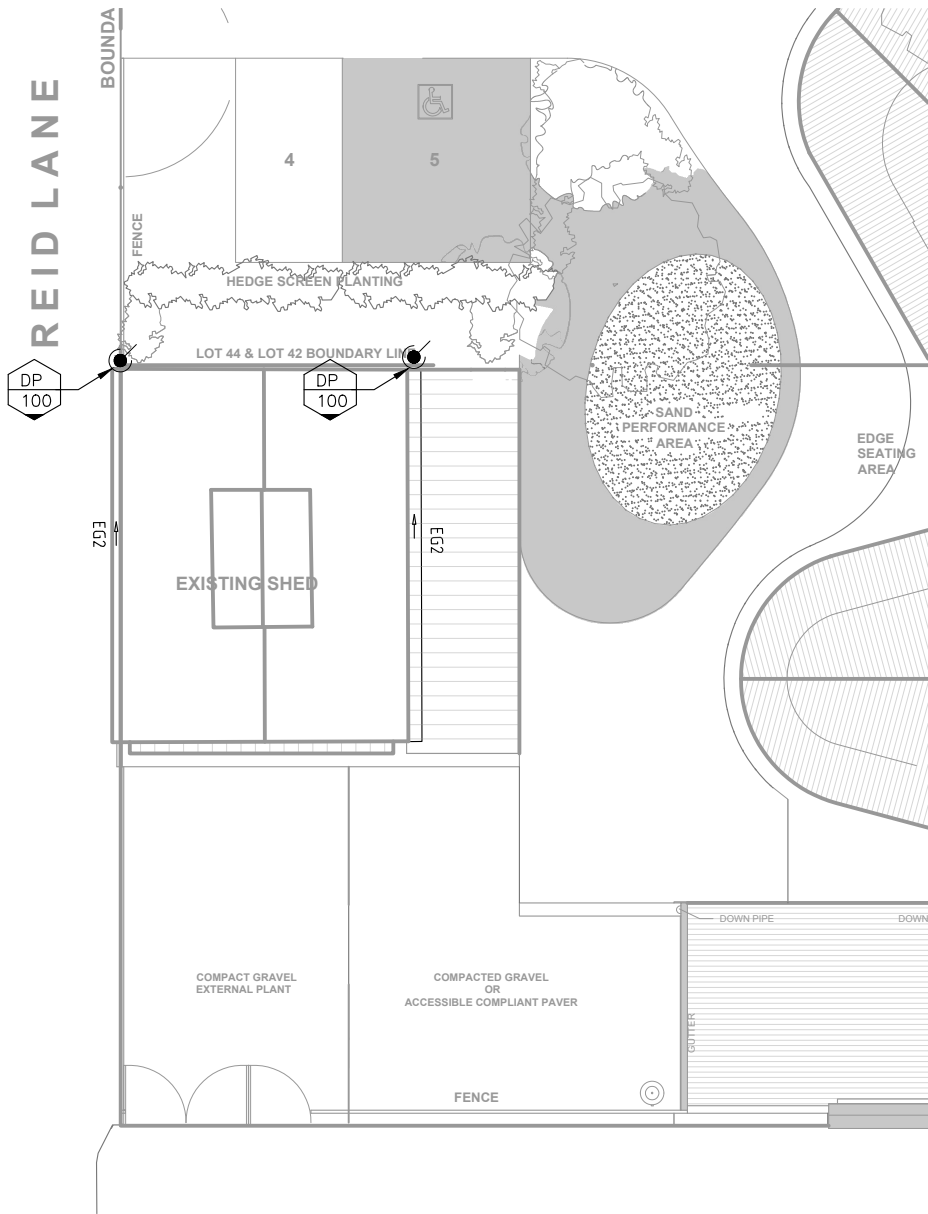
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RWH - RAINWATER HEAD, REFER TO DETAILS
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GUTTER SIZING

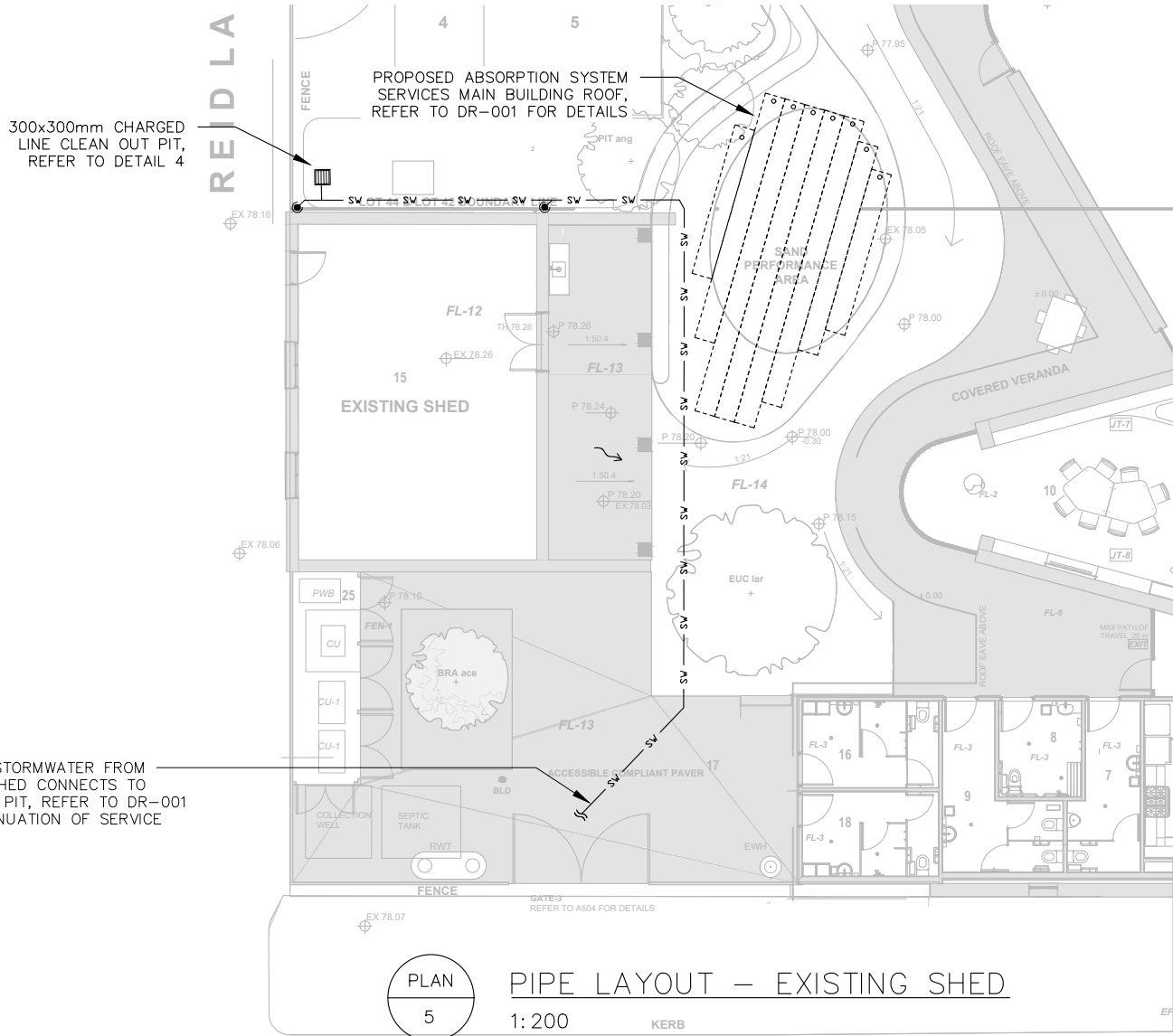
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EG1 - MIN CSA 21,400 mm² (REFER TO DR-004 FOR DETAIL)
EG2 - MIN CSA 7,000 mm²

LEGEND

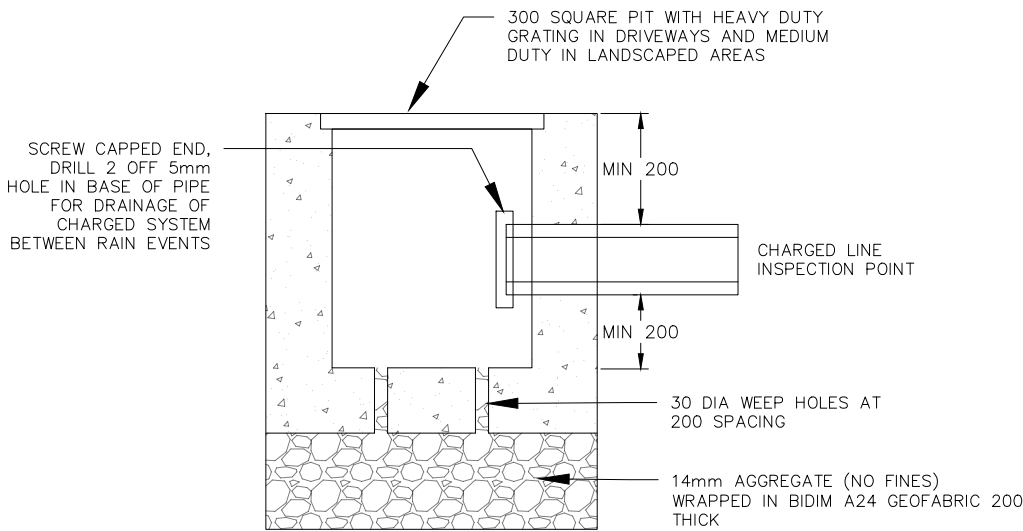
TYPE
DIA
DOWNPIPE TYPE AND DIAMETER
DIRECTION OF FALL



PLAN 4
ROOF LAYOUT - EXISTING SHED
1:200



PLAN 5
PIPE LAYOUT - EXISTING SHED
1:200



DETAIL 5
CHARGED SYSTEM CLEAN-OUT
NOT TO SCALE

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REVISIONS				1:100				DESIGNED SHA CHECKED LES				Stellen				EXISTING SHED - PIPE & ROOF LAYOUT			
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No. BY DATE DESCRIPTION APPD								APPROVED LES DATE 14/03/2022								Drng No. DR-100			
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GENERAL REQUIREMENTS

THE FOLLOWING EROSION AND SEDIMENT CONTROL PLAN (ESCP) HAS BEEN DEVELOPED IN GENERAL ACCORDANCE WITH LANDCOM (2004) - MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION, OTHERWISE KNOWN AS "THE BLUE BOOK". THIS PLAN SHOULD ALSO BE READ IN CONJUNCTION WITH MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION (VOLUME 2A INSTALLATION OF SERVICES).

SITE ESTABLISHMENT

PRIOR TO THE COMMENCEMENT OF EARTHWORKS ON THE SITE THE FOLLOWING SHALL BE UNDERTAKEN AS A MINIMUM:

1. ERECT SAFETY FENCING WITH SIGNAGE CLEARLY INDICATING THAT THE SITE IS A CONSTRUCTION ZONE AND ACCESS IS RESTRICTED AS DEEMED NECESSARY.
2. ERECT CLEARLY VISIBLE BARRIER FENCING AT LOCATIONS SHOWN OR IF NOT SHOWN AT THE DISCRETION OF THE SITE SUPERINTENDENT TO ENSURE TRAFFIC IS CONTROLLED AND TO PROHIBIT UNNECESSARY SITE DISTURBANCE.
3. WHERE REQUIRED AT THE DISCRETION OF THE SITE SUPERINTENDENT, INSTALL STABILISED SITE ACCESS AT SITE ACCESS POINT TO PREVENT CONSTRUCTION EQUIPMENT FROM CARRYING SEDIMENT OFF THE SITE ONTO SURROUNDING ROADS.
4. PROVIDE GERNI PRESSURE CLEANER AT SITE EXIT POINT FOR TYRE WASH DOWN AT THE DISCRETION OF THE SITE SUPERINTENDENT.
5. INSTALL SEDIMENT AND EROSION CONTROL DEVICES IN ACCORDANCE WITH THE CONSTRUCTION DETAILS SPECIFIED IN THIS DRAWING SET AND/OR THE REQUIREMENTS OF THE 'BLUE BOOK'.

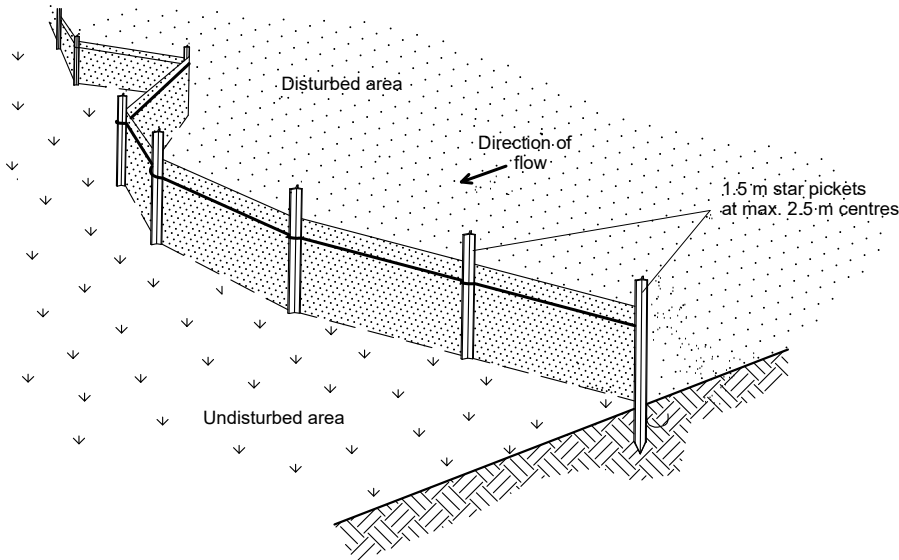
CONSTRUCTION

6. EROSION AND SEDIMENT CONTROLS WILL NEED TO BE ADJUSTED AS EXCAVATION OCCURS AND IS COMPLETED.
7. USE SANDBAGS, HAY BALES AND/OR GRAVEL FILLED GEOTEXTILE SOCKS TO FILTER AND CONVEY STORMWATER RUNOFF WITHIN THE SITE.
8. ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AND STABILISED AS EARLY AS POSSIBLE DURING DEVELOPMENT.
9. INLET FILTERS SHALL BE INSTALLED WHERE SHOWN TO PREVENT WATER FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE. IF THE LOCATION OF INLET FILTERS ARE NOT SHOWN ON THE PLAN THEIR LOCATION SHALL BE AT THE DISCRETION OF THE SUPERINTENDENT.
10. STAGE WORK AND PROGRAMMING OF CONSTRUCTION ACTIVITIES TO MINIMISE THE EXTENT AND DURATION OF OPEN EXCAVATION. AVOID OPENING TRENCHES WHENEVER THE RISKS OF STORMS ARE HIGH.

11. DIVERT SURFACE WATER AWAY FROM EXCAVATION AREAS WITH SANDBAGS OR EQUIVALENT.
12. FOR DEWATERING OF EXCAVATION AREAS SET UP TEMPORARY DEWATERING PUMP OUT SYSTEM AS REQUIRED AND ENSURE FLOCCULATION IS USED IF WATER IS NOT CLEAR (i.e. SEDIMENT > 50mg/L). FOR RATES AND AGENTS REFER APPENDIX E NSW DEPARTMENT OF HOUSING "MANAGING URBAN STORMWATER SOILS & CONSTRUCTION". DISCHARGE SHALL BE DIRECTLY TO COUNCIL'S PIPED DRAINAGE SYSTEM WHERE POSSIBLE.
13. STOCKPILES SHALL BE LOCATED NO CLOSER THAN 2m (PREFERABLY 5m) FROM CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS. PROTECT STOCKPILES FROM EROSION BY RAIN AND SURFACE FLOWS.
14. ENSURE CHEMICAL AND FUELS ARE STORED WITHIN BUNDED AREAS AND ELEVATED ABOVE POTENTIAL FLOW PATHS.

MAINTENANCE

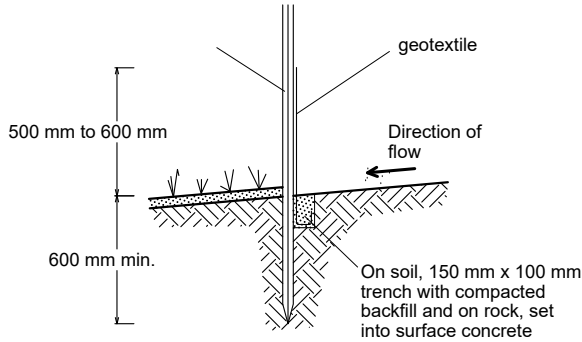
15. ALL DEDICATED SEDIMENT STORAGE ZONES WITHIN TRAPS SHALL BE CLEANED WHEN A MAXIMUM OF 60% FULL OF SOLID MATERIALS AND DISPOSED OF IN A MANNER THAT PREVENTS FURTHER POLLUTION OF THE SITE.
16. TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES WILL BE RETAINED UNTIL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS STABILISED.
17. THE CONTRACTOR SHALL INSPECT THE SITE AT LEAST WEEKLY AND AFTER ANY STORM EVENT AND WILL:
 - 17.1. ENSURE THAT DRAINS OPERATE PROPERLY AND TO EFFECT ANY NECESSARY REPAIRS;
 - 17.2. REMOVE SPILLED SAND OR OTHER MATERIALS FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS (ESPECIALLY DRAINS AND TEMPORARY FLOW PATHS)
 - 17.3. REMOVE TRAPPED SEDIMENT WHENEVER LESS THAN DESIGN CAPACITY REMAINS WITHIN THE STRUCTURE;
 - 17.4. CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS REQUIRED;
 - 17.5. MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS STABILISED; AND
 - 17.6. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL STRUCTURES AS THE LAST ACTIVITY IN THE CONSTRUCTION PROGRAM.



DETAIL
C

SEDIMENT CONTROL FENCE

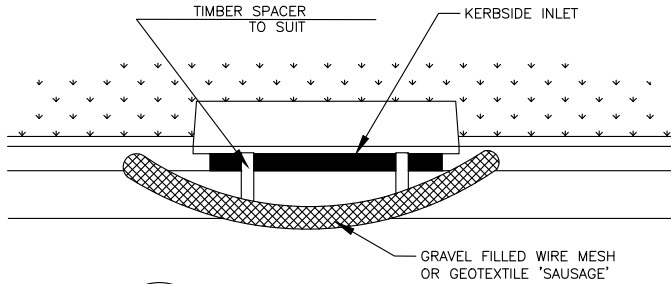
NOT TO SCALE



DETAIL
A

SECTION DETAIL

NOT TO SCALE



DETAIL
B

FILTER ROLL, TYP.

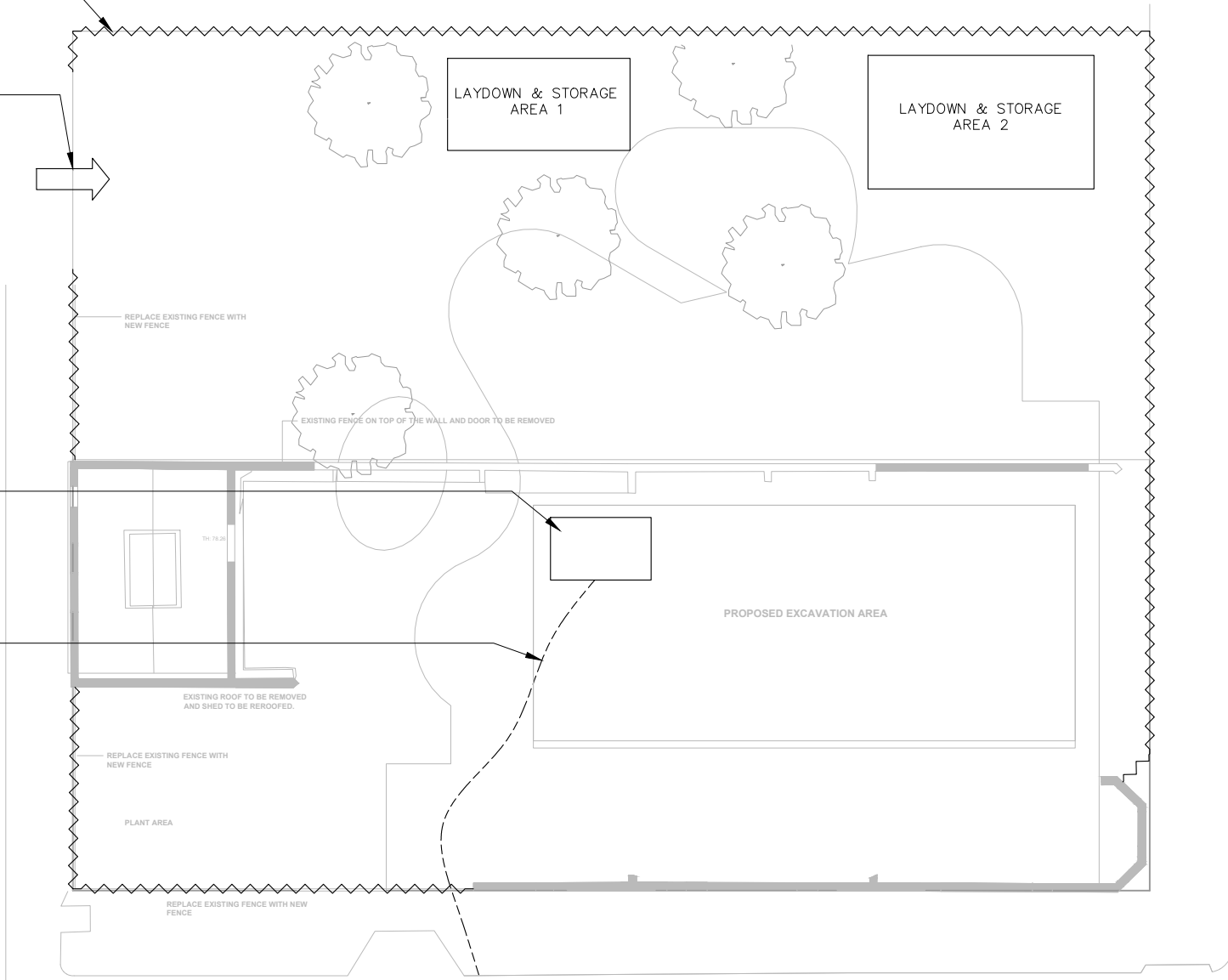
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PROVIDE SEDIMENT FENCE TO PERIMETER OF SITE AS INDICATED, REFER TO DETAIL A & C

PROPOSED SITE ACCESS

PROVIDE SUMP IN EXCAVATION FOR DEWATERING, REFER TO NOTE 12 FOR DEWATERING DETAILS INCLUDING FLOCCULENT REQUIREMENTS

PROVIDE RISING MAIN FROM SUMP AND DISCHARGE TO KERB



PLAN
6

EROSION & SEDIMENT CONTROL PLAN

1:300

REVISIONS				
No.	BY	DATE	DESCRIPTION	APPD
0	SHA	14/03/2022	ISSUED FOR DA SUBMISSION	LES

Scale
1:100
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Stellen Consulting ABN 61 149 095 189

NORTH



BAAKA CULTURAL CENTRE WILCANNIA, WILCANNIA			
EROSION AND SEDIMENT CONTROL PLAN			
Size	Status	Dwg No.	Rev.
A1	ISSUED FOR DA	SD-100	0