





312 WARRINGAH ROAD, FRENCHS FOREST

STORMWATER MANAGEMENT PLAN

DRAWING INDEX:

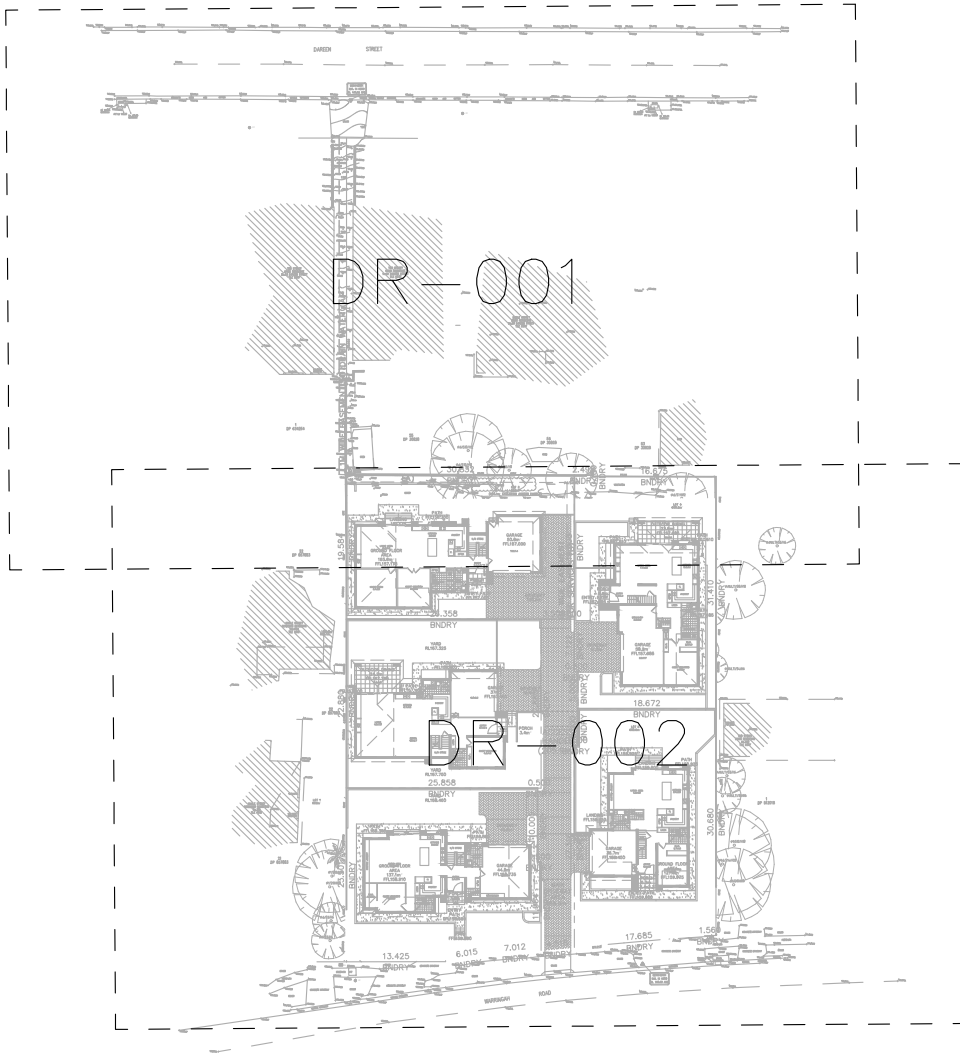
- DR-000 LEGEND
- DR-001 PIPE LAYOUT – WARRINGAH ROAD
- DR-002 PIPE LAYOUT – DAREEN STREET
- DR-100 OSD DETAILS
- DR-101 CATCHMENT PLAN & OSD DETAILS

LEGEND:

-  DOWNPIPE
-  SW STORMWATER PIPE
-  DRAINAGE PIT
-  GRATED BOX DRAIN

NOTES:

- ALL DIMENSIONS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.
- SITE LAYOUT BASED ON ARCHITECTURAL PLANS BY ALVARO ARCHITECTS (MARCH 2019).
- LOCATION OF ALL SERVICES MUST BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.
- ALL STORMWATER DRAINAGE PIPES AND ASSOCIATED DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH RELEVANT THE STANDARDS, THE BUILDING CODE OF AUSTRALIA, MANUFACTURER’S RECOMMENDATIONS, SYDNEY CATCHMENT AUTHORITY RECOMMENDED PRACTICE, AND LOCAL COUNCIL, AS APPLICABLE.
- ALL INVERT LEVELS PROVIDED ON THIS DRAWING ARE REDUCED TO AHD AND BASED ON INTERPOLATED SURFACE LEVELS AND SYSTEM REQUIREMENTS.
- WHERE POSSIBLE, PIPEWORK SHALL BE LOCATED EXTERNAL TO THE BUILDING.
- STORMWATER PIPE MATERIAL TYPES IN ACCORDANCE WITH THE FOLLOWING:
 - PIPEWORK LESS THAN OR EQUAL TO $\varnothing 225\text{mm}$ TO BE uPVC.
 - PIPEWORK GREATER THAN $\varnothing 225\text{mm}$ TO BE "BlackMAX" OR APPROVED OTHER.
- PITS GREATER THAN 1.2m IN DEPTH TO HAVE STEP IRONS AT 300 CENTRES.
- PIT GRATES TO BE MINIMUM LOAD CLASS "C" IN TRAFFICABLE AREAS.
- GUTTER AND DOWNPIPE CONFIGURATION TO BE IN ACCORDANCE WITH AS3500.
- ALL PIPE AND CONDUITS TO BE MARKED IN ACCORDANCE WITH AS1345 – 1995.
- TRENCHES AND SERVICE SEPARATIONS IN ACCORDANCE WITH AS/NZS 5601, AS/NZS 3500, AND AS/CA S009.



SITE LAYOUT – SHEET PLAN
NOT TO SCALE

NOT FOR CONSTRUCTION

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REVISIONS						NA				DESIGNED LES CHECKED IRW				<div>GZCONSULTINGENGINEERS</div> <div>A.B.N 69 168 996 585 PO Box 7220 Warringah Mall NSW 2100 mobile:0403 071 853 office: (02) 9401 4014 info@gzengineers.com.au</div>				LEGEND			
						DRAWN LES CHECKED IRW															
						APPROVED IRW DATE 12/05/2019															
							DO NOT SCALE. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED														
	0	LES	12/05/2019	DEVELOPMENT APPLICATION		IRW															
	No.	BY	DATE	DESCRIPTION		APPD															

RAINWATER TANKS:

1. EACH DEVELOPMENT TO BE PROVIDED WITH A 3,000 LITRE UNDERGROUND RAINWATER TANK WITH FIRST FLUSH DIVERTER, PUMPSET AND MAINS WATER SWITCHING.
2. RAINWATER TANKS TO BE CONNECTED TO:
 - 2.1. TOILETS FOR FLUSHING.
 - 2.2. COLD CLOTHES MACHINE WASHERS.
 - 2.3. ONE OUTDOOR TAP.
3. RAINWATER TANKS TO COLLECT ROOF WATER ONLY. ROOF DRAINAGE TO BE KEPT SEPARATE FROM SURFACE DRAINAGE SYSTEM PRIOR TO COLLECTION.
4. ALL ROOF DRAINAGE FROM EACH DEVELOPMENT SITE MUST BE DIRECTED TO THE RAINWATER TANK FOR COLLECTION.

COMBINED ON-SITE DETENTION TANK WITH HIGH EARLY DISCHARGE AND STORMWATER FILTRATION CARTRIDGES, REFER TO DR-100 & DR-101 FOR DETAILS

600mm BOUNDARY PIT WITH PIT BASKET

RAINWATER TANK OVERFLOW TO BE CONNECTED TO ADJACENT PIT. REFER TO RAINWATER TANK NOTES FOR ADDITIONAL DETAILS

600mm BOUNDARY PIT WITH PIT BASKET

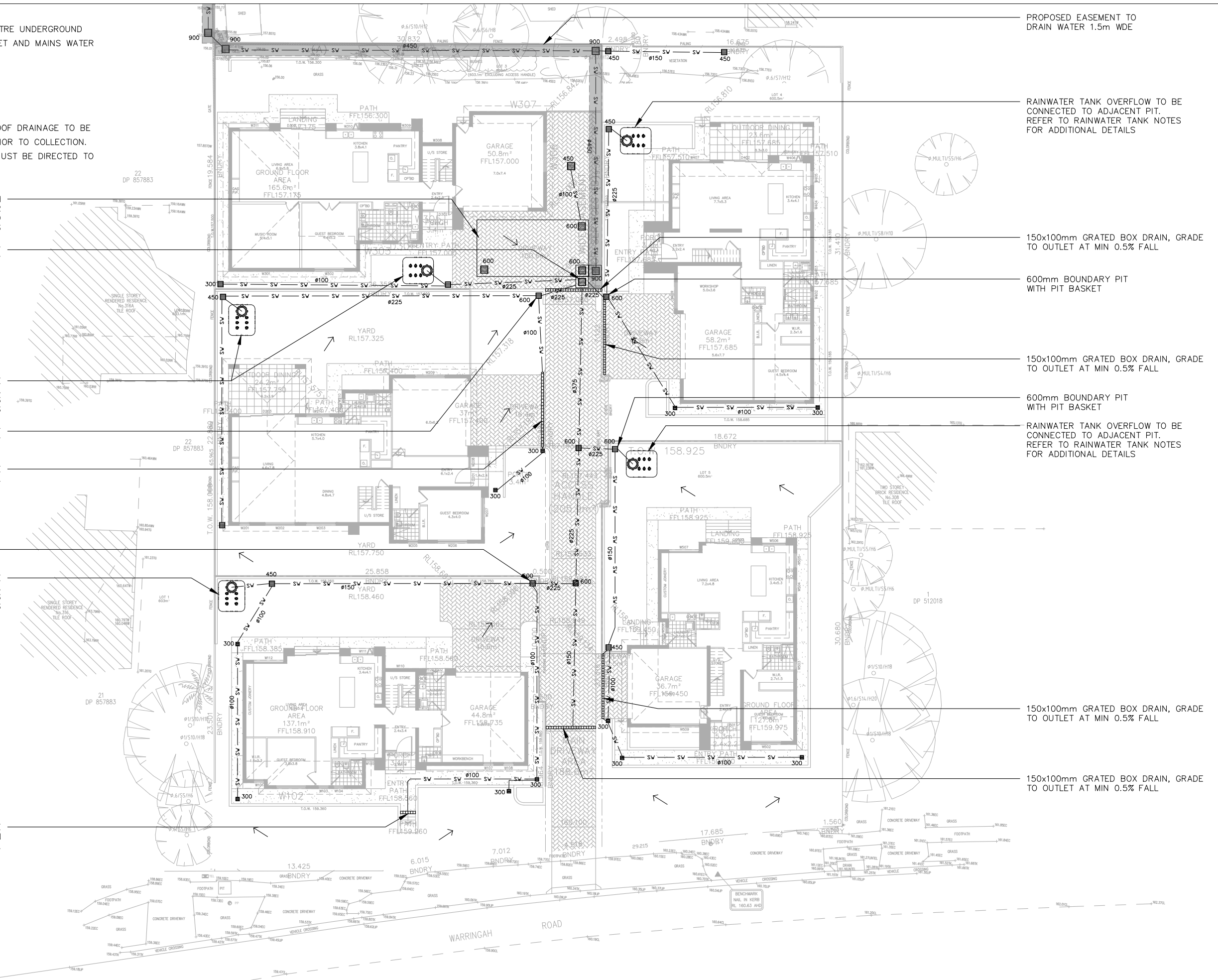
150x100mm GRATED BOX DRAIN, GRADE TO OUTLET AT MIN 0.5% FALL

600mm BOUNDARY PIT WITH PIT BASKET

RAINWATER TANK OVERFLOW TO BE CONNECTED TO ADJACENT PIT. REFER TO RAINWATER TANK NOTES FOR ADDITIONAL DETAILS

100x100mm GRATED BOX DRAIN AT BASE OF STAIRS, GRADE TO OUTLET AT MIN 0.5% FALL

NOT FOR CONSTRUCTION



PROPOSED EASEMENT TO DRAIN WATER 1.5m WDE

RAINWATER TANK OVERFLOW TO BE CONNECTED TO ADJACENT PIT. REFER TO RAINWATER TANK NOTES FOR ADDITIONAL DETAILS

150x100mm GRATED BOX DRAIN, GRADE TO OUTLET AT MIN 0.5% FALL

600mm BOUNDARY PIT WITH PIT BASKET

150x100mm GRATED BOX DRAIN, GRADE TO OUTLET AT MIN 0.5% FALL

600mm BOUNDARY PIT WITH PIT BASKET

RAINWATER TANK OVERFLOW TO BE CONNECTED TO ADJACENT PIT. REFER TO RAINWATER TANK NOTES FOR ADDITIONAL DETAILS

150x100mm GRATED BOX DRAIN, GRADE TO OUTLET AT MIN 0.5% FALL

150x100mm GRATED BOX DRAIN, GRADE TO OUTLET AT MIN 0.5% FALL

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Scale

1:300

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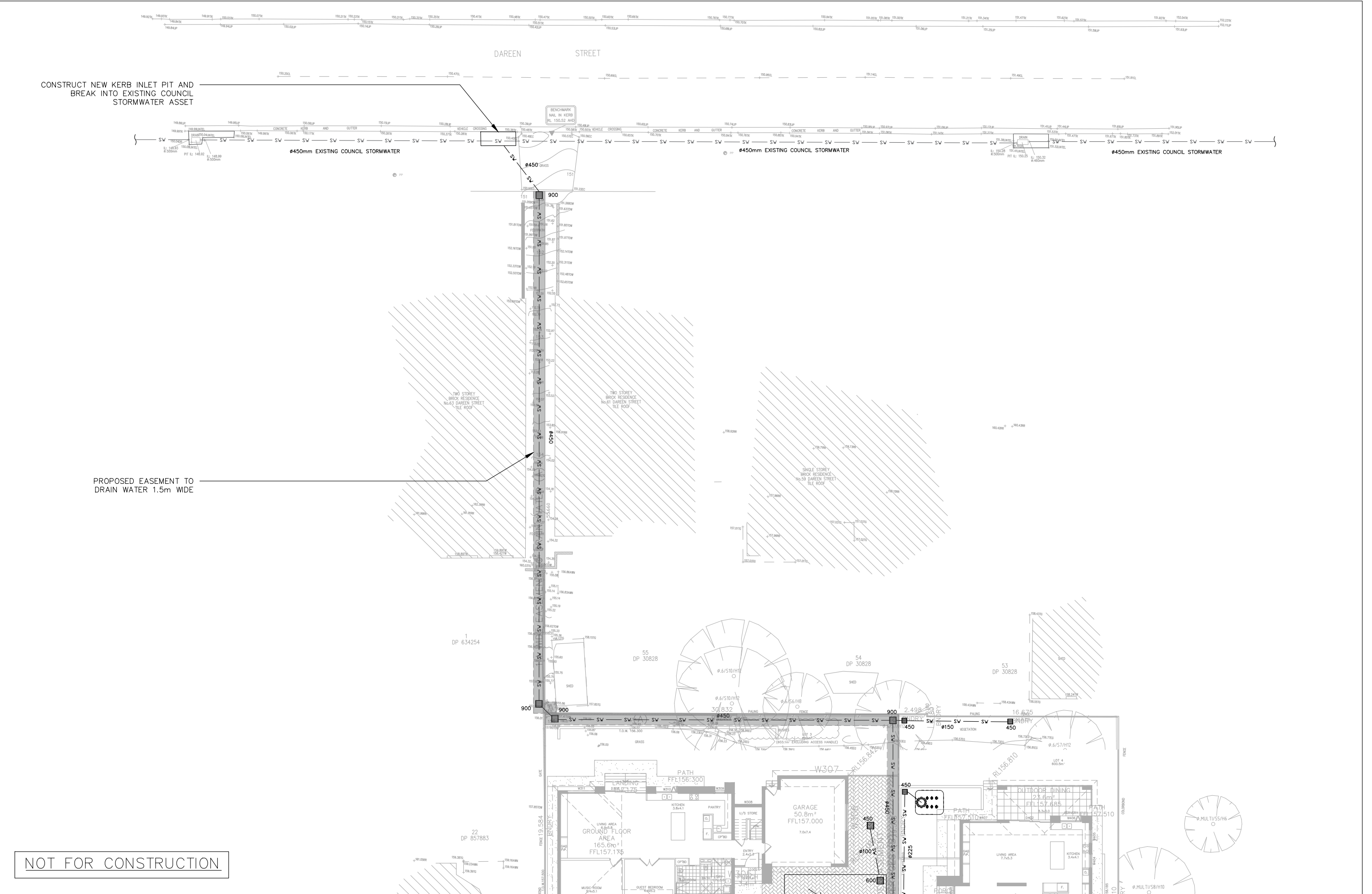
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312 WARRINGAH ROAD, FRENCHS FOREST

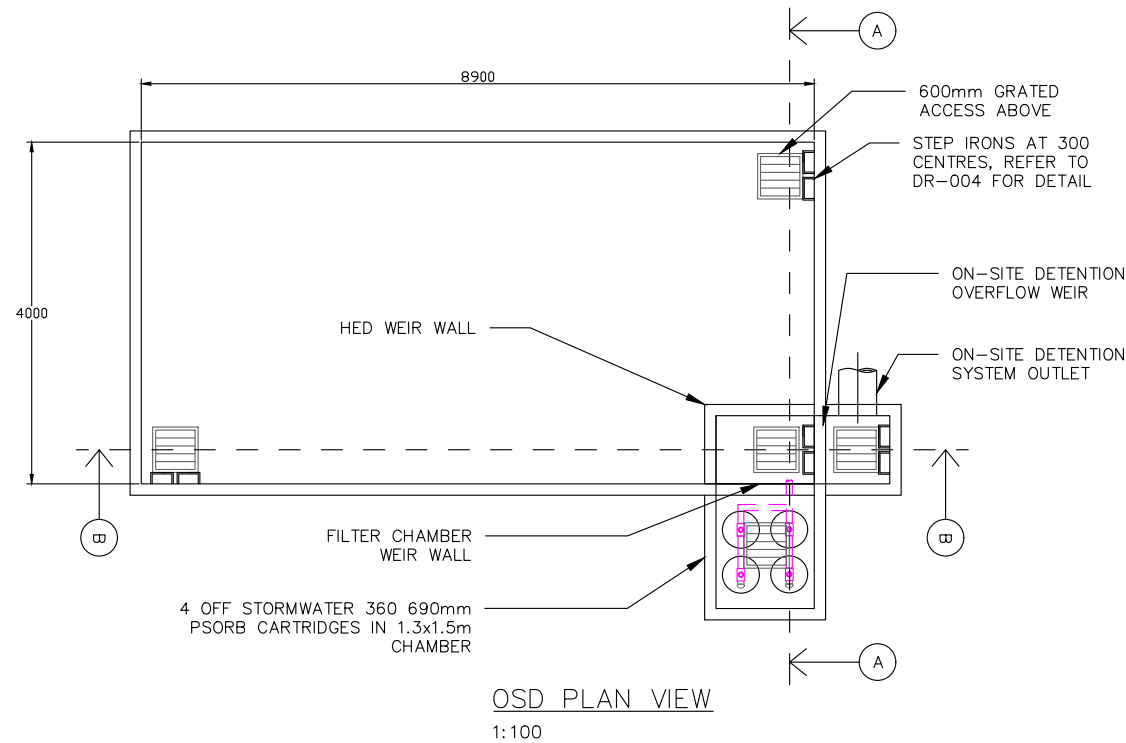
PIPE LAYOUT - WARRINGAH ROAD

Size	A3	Status	DEVELOPMENT APPLICATION	Org No.	DR-001	Rev	0
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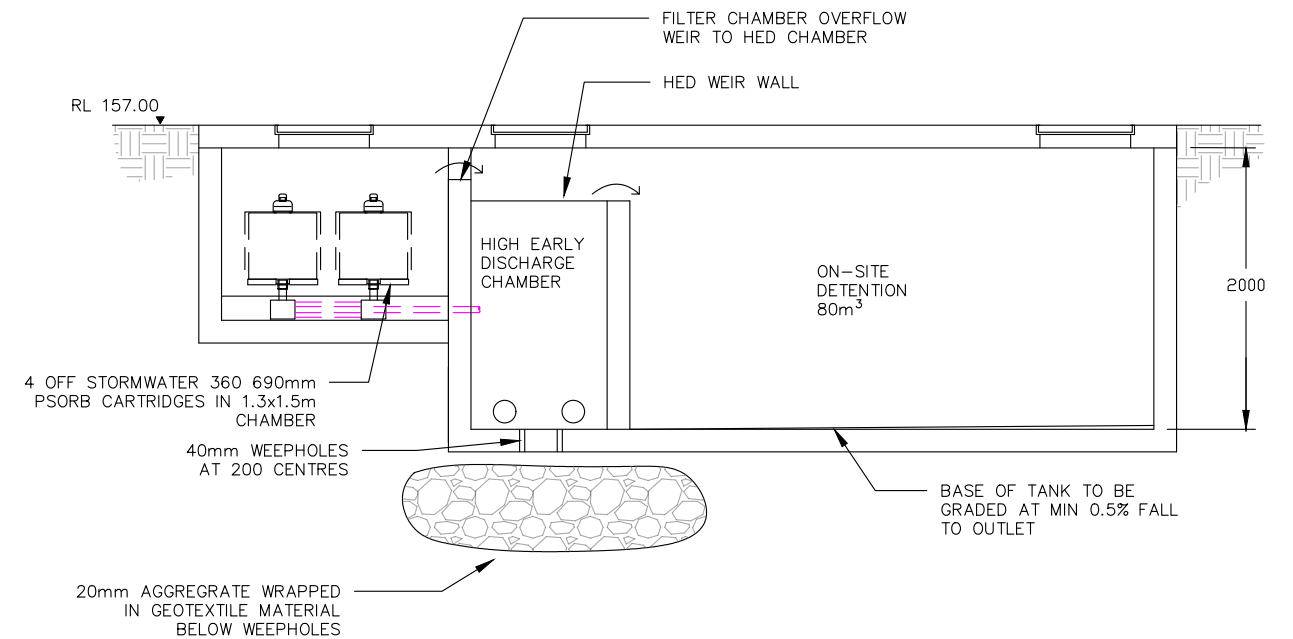


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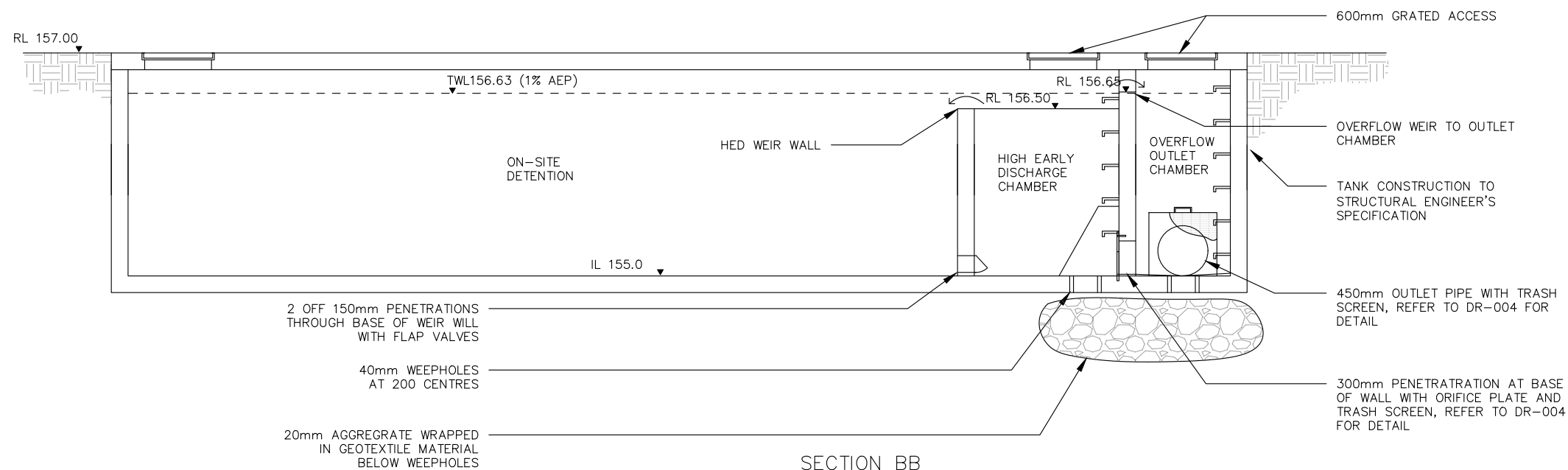
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REVISIONS						DESIGNED	LES	CHECKED	IRW			PIPE LAYOUT - DAREEN STREET											
						DRAWN	LES	CHECKED	IRW														
						APPROVED	IRW	DATE	12/04/2019														
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No.	BY	DATE	DESCRIPTION		APPD									Size	A3	Status	DEVELOPMENT APPLICATION		Dwg No.	DR-002		Rev.	0



OSD PLAN VIEW
1:100



SECTION AA
1:50



SECTION BB
1:50

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REVISIONS					NA		DESIGNED	LES	CHECKED	IRW	<div>GZCONSULTING ENGINEERSPTY LTD</div> <div>A.B.N 69 168 996 585 PO Box 7220 Warringah Mall NSW 2100 mobile:0403 071 853 office: (02) 9401 4014 info@gzengineers.com.au</div>				OSD DETAILS			
					DRAWN	LES	CHECKED	IRW										
					APPROVED	IRW	DATE	12/05/2019										
	0	LES	12/05/2019	DEVELOPMENT APPLICATION		IRW	DO NOT SCALE. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED											
	No.	BY	DATE	DESCRIPTION	APPD													
Size		A3		Status		DEVELOPMENT APPLICATION		Drg No.		DR-100		Rev.		0				



LOT 1
SITE AREA: 605.0 m² (EXCLUDES ACCESS)
IMPERVIOUS: 415.0 m² (TO OSD)
PERVIOUS: 28.0 m² (TO OSD)
OSD BYPASS: 162.0 m² (96% PERVIOUS)

LOT 4
SITE AREA: 600.5 m²
IMPERVIOUS: 369.0 m² (TO OSD)
PERVIOUS: 138.5 m² (TO OSD)
OSD BYPASS: 93m² (100% PERVIOUS)

LOT 5
SITE AREA: 600.5m²
IMPERVIOUS: 276.0 m² (TO OSD)
PERVIOUS: 324.5 m² (TO OSD)
OSD BYPASS: NIL

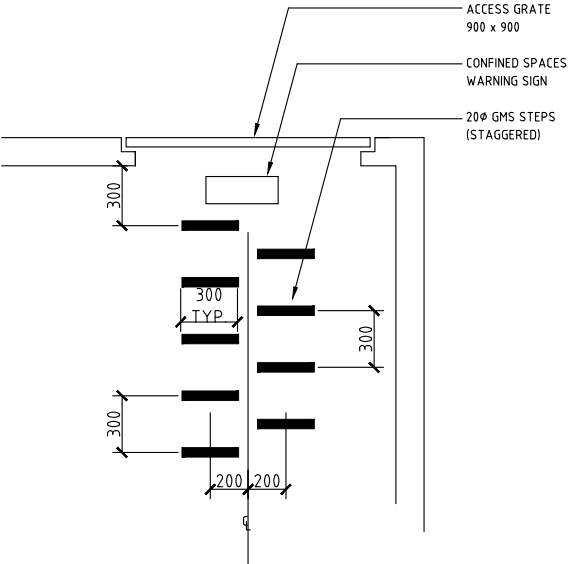
SITE ACCESS AREA:
AREA: 205.0m²
IMPERVIOUS: 205.0 m² (TO OSD)
PERVIOUS: NIL
OSD BYPASS: NIL

CATCHMENT PLAN
1: 400

TABLE 1 – OSD FLOWS					
RAIN EVENT	PSD (l/s)	OSD (l/s)	BYPASS FLOW (l/s)	TOTAL FLOW (l/s)	PIPED FLOW CHECK
0.5 EY	66 ⁽¹⁾	61	5	66	OK ≤0.5 EY PSD
0.2 EY	87 ⁽²⁾	61	7	68	OK ≤0.2 EY PSD
5% AEP	140	62	12	74	OK ≤0.2 EY PSD
1% AEP	186	63	15	78	OK ≤0.2 EY PSD

NOTES:

- PSD FLOWS CALCULATED AS "STATE OF NATURE" (100% PERVIOUS) FOR 0.5 AND 0.2 EY CHECK
- MAX PIPED FLOW SET AT CALCULATED USING STATE OF NATURE 0.2EY CASE
- REFER TO POST DEVELOPMENT CATCHMENT PLAN FOR SITE AREAS
- OSD DESIGNED USING HYDRAULIC MODELING SOFTWARE "DRAINS" BY WATERCOM, REFER TO STORMWATER REPORT (P170654-RP-001) FOR ADDITIONAL DETAILS.

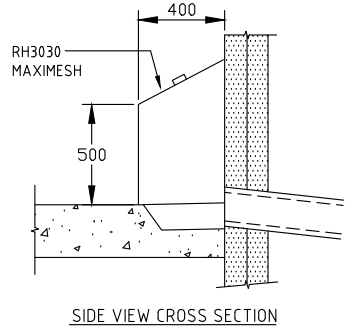
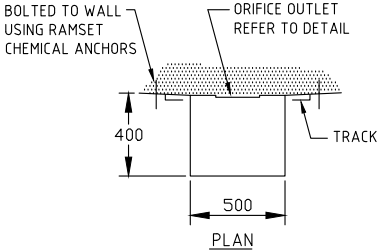


DETENTION TANK ACCESS GRATE AND STEP IRON DETAIL
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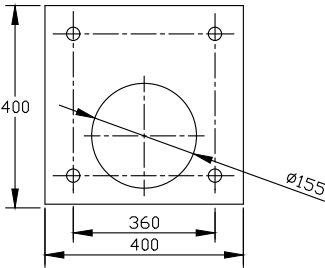


CONFINED SPACE WARNING SIGN TO BE LOCATED AT EACH PIT ENTRANCE OF UNDERGROUND TANK INCLUDING CONTROL PIT.
COLOURS: "DANGER" AND BACKGROUND WHITE
ELLIPTICAL AREA RED
RECTANGLE CONTAINING ELLIPSE BLACK
OTHER LETTERING AND BORDER BLACK
MATERIAL: POLYPROPYLENE

CONFINED SPACE WARNING SIGN
NOT TO SCALE



TRASH SCREEN DETAIL
NOT TO SCALE



ORIFICE PLATE DETAIL
NOT TO SCALE
3mm THICK STAINLESS STEEL SECURELY FIXED TO OSD WALL WITH 4 OFF 12mm DYNA BOLTS

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0	LES	12/05/2019	DEVELOPMENT APPLICATION

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AS NOTED

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CATCHMENT PLAN & OSD DETAILS			
Size	Status	Dwg No.	Rev.
A3	DEVELOPMENT APPLICATION	DR-101	0