

6 NIELD AVENUE, BALGOWLAH

STORMWATER MANAGEMENT PLAN

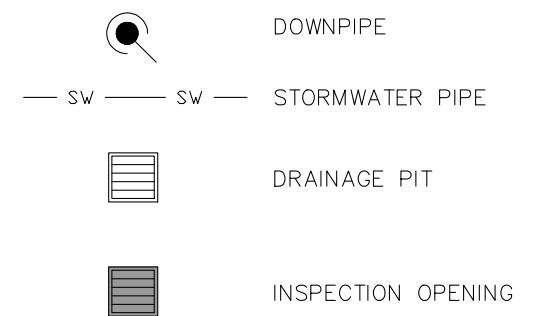
DRAWING INDEX:

DR-000	LEGEND
DR-001	PIPE LAYOUTS
DR-002	ROOF LAYOUT
DR-003	DETAILS SHEET 1
DR-004	DETAILS SHEET 2
DR-005	SITE AREAS

NOTES:

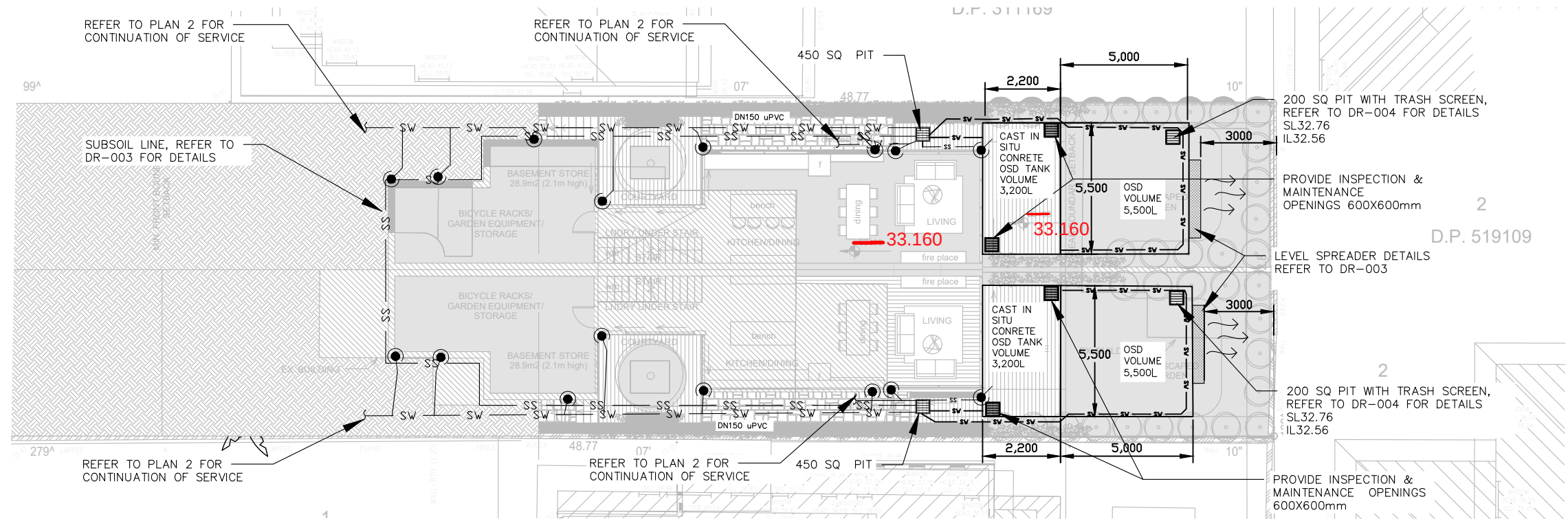
1. ALL DIMENSIONS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.
2. SITE LAYOUT BASED ON ARCHITECTURAL PLANS BY SEAN SMYTH DESIGN PTY LTD (NOVEMBER 2023). SURVEY BY BEE & LETHBRIDGE PTY LTD (AUGUST 2020)
3. LOCATION OF ALL SERVICES MUST BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.
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 UNLESS OTHERWISE NOTED.
8. STORMWATER PIPES TO BE GRADED AT A MINIMUM 1% UNLESS 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.
11. TRENCHES AND SERVICE SEPARATIONS IN ACCORDANCE WITH AS/NZS 5601, AS/NZS 3500, AND AS/CA S009.

LEGEND:



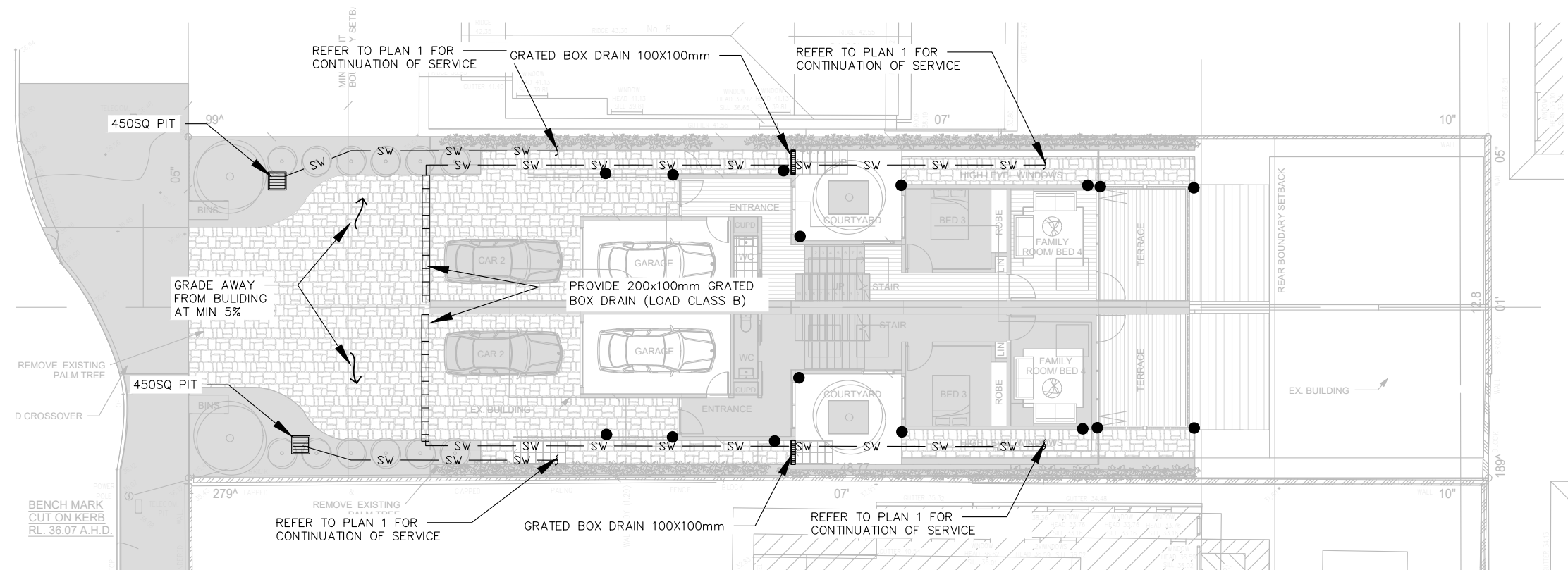
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This drawing is confidential and shall only be used for the purposes of this project.					Scale		THE SIGNING OF THIS TITLE BLOCK CONFIRMS THE DESIGN AND DRAFTING OF THIS PROJECT HAVE BEEN PREPARED AND CHECKED IN ACCORDANCE WITH THE STELLEN QUALITY ASSURANCE SYSTEM				 Stellen Stellen Consulting ABN 61 149 095 189		This design complies with: AS3500.3:2021				6 NIELD AVENUE, BALGOWLAH			
REVISIONS		NA			DO NOT SCALE. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED				LEGEND											
		No. BY DATE DESCRIPTION APPD							Size A3		Status FOR DA SUBMISSION		Drg No. DR-000		Rev. 2					



PLAN
1

PIPE LAYOUT- LOWER GROUND
1: 200



PLAN
2

PIPE LAYOUT-UPPER GROUND
1: 200

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Scale

1:200

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DESIGNED	DD	CHECKED	LES
DRAWN	DD	CHECKED	LES
APPROVED	LES	DATE	27/02/2024



Stellen Consulting ABN 61 149 095 189

This design complies with:
AS3500.3:2021

6 NIELD AVENUE, BALGOWLAH

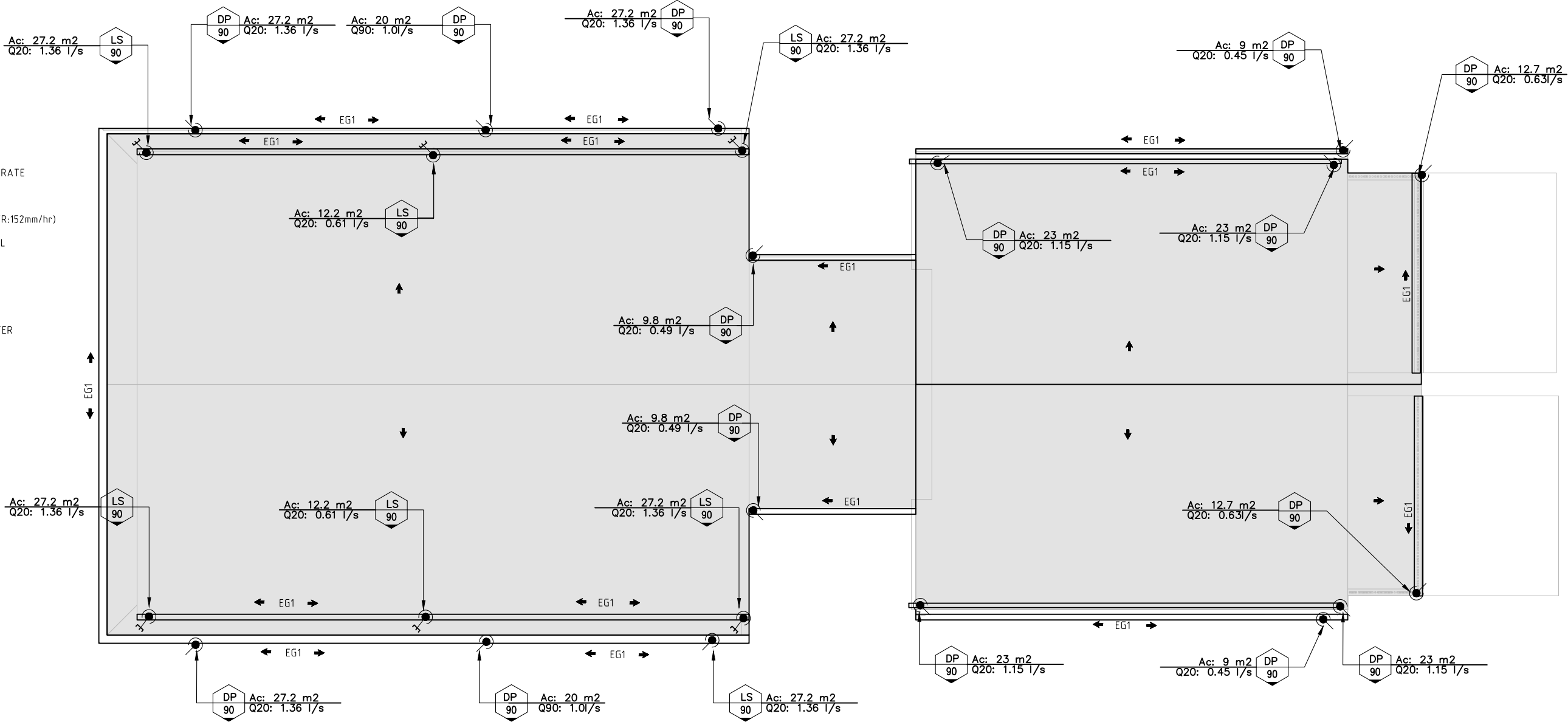
PIPE LAYOUTS

Size	A3	Status	FOR DA SUBMISSION	Drng No.	DR-001	Rev.	4
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NOMENCLATURE
DP - DOWNPIPE
LS - LEVEL SPREADER
A_c - PLAN CATCHMENT AREA
Q₂₀ - 20YR 5 MINUTE ARI FLOW RATE

GUTTER SIZING
EAVES GUTTER DESIGNED TO ARI (20YR:152mm/hr)
EG1 - MIN CSA 7,200 mm²
GUTTERING TO HAVE A MIN 1:200 FALL

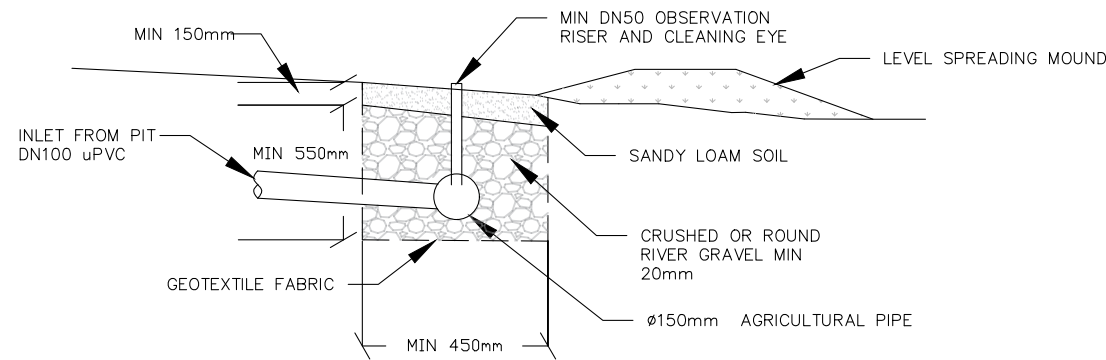
LEGEND
TYPE
DIA DOWNPIPE TYPE AND DIAMETER
DIRECTION OF FALL



PLAN 3 ROOF LAYOUT
1:100

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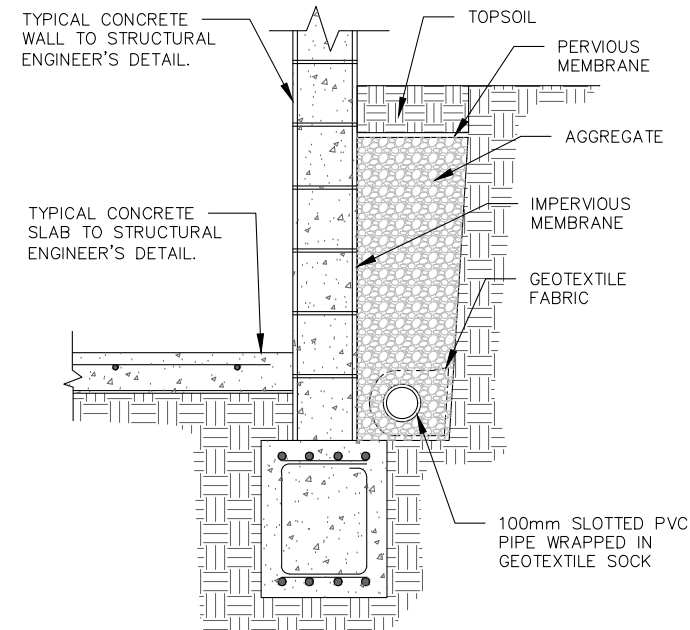
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													ROOF LAYOUT					
REVISIONS	3	DD	27/02/2024	FOR DA SUBMISSION		LES	DO NOT SCALE. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED								Size A3	Status FOR DA SUBMISSION	Dwg No. DR-002	Rev. 3
	2	SHA	01/12/2023	FOR DA SUBMISSION		LES												
	1	SHA	25/05/2022	FOR DA SUBMISSION		LES												
	0	SHA	28/04/2022	FOR DA SUBMISSION		LES												
No.		BY	DATE	DESCRIPTION		APPD												



SECTION
1

LEVEL SPREADER CROSS-SECTION

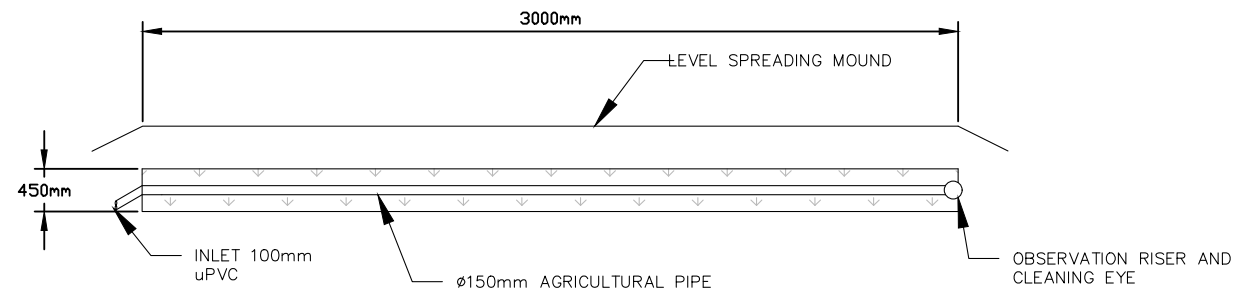
NA



DETAIL
1

TYPICAL SUBSOIL DETAIL

NA



PLAN
4

LEVEL SPREADER PLAN VIEW

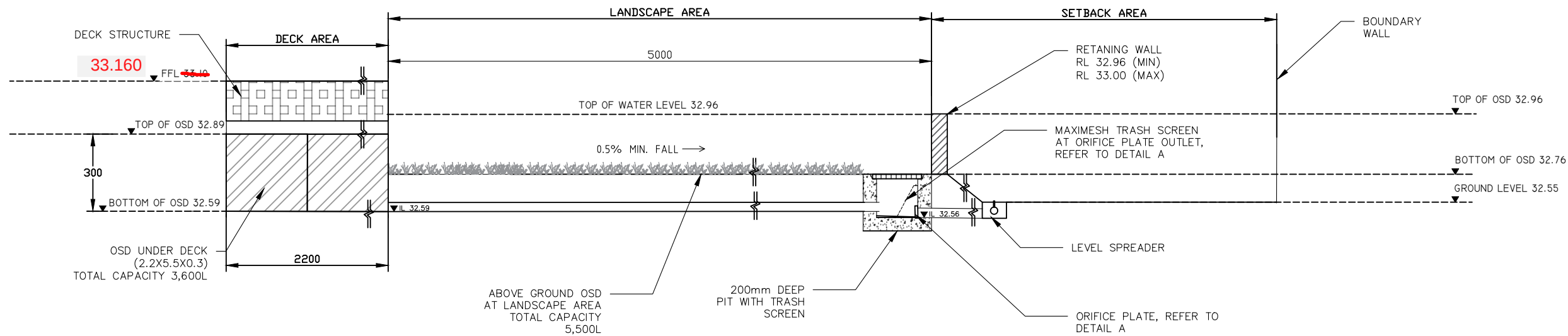
NA

LEVEL SPREADER TRENCH CONSTRUCTION

1. THE BASE OF THE BED MUST BE LEVEL TO ENSURE EVEN DISTRIBUTION OF STORMWATER. IT MUST ALSO BE SCARIFIED TO OVERCOME ANY SMEARING DURING EXCAVATION. BASE LEVELS SHOULD BE CHECKED WITH A DUMPY / LASER LEVEL.
2. LEVEL SPREADING MOUND TO BE CONSTRUCTED PARALLEL TO THE NATURAL CONTOURS OF THE GROUND
3. INSPECTION PORT ON DOWNHILL SIDE OF THE BED. MADE FROM 50 MM PVC PIPE WITH PERFORATIONS AT THE AGGREGATE LEVEL OF THE BED.
4. BED DIMENSIONS ARE TYPICAL ONLY.

NOT FOR CONSTRUCTION

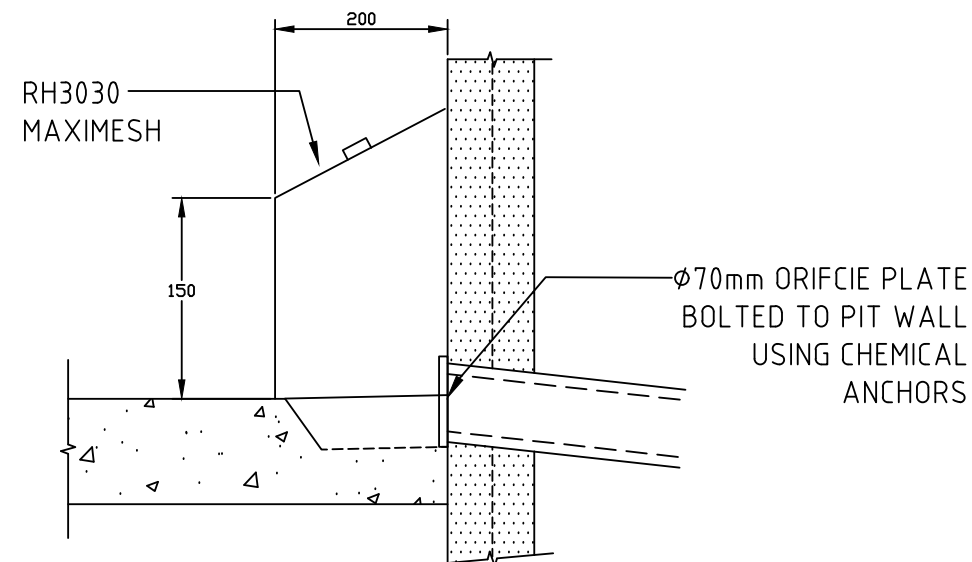
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REVISIONS						DESIGNED SHA CHECKED LES						DETAILS SHEET 1			
	3	SHA	01/12/2023	FOR DA SUBMISSION	LES	DRAWN SHA CHECKED LES									
	2	SHA	01/12/2023	FOR DA SUBMISSION	LES	APPROVED LES DATE 01/12/2023									
	1	SHA	25/05/2022	FOR DA SUBMISSION	LES										
	0	SHA	28/04/2022	FOR DA SUBMISSION	LES										
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No.	BY	DATE	DESCRIPTION	APPD											



SECTION
2

OSD CROSS-SECTION

NA



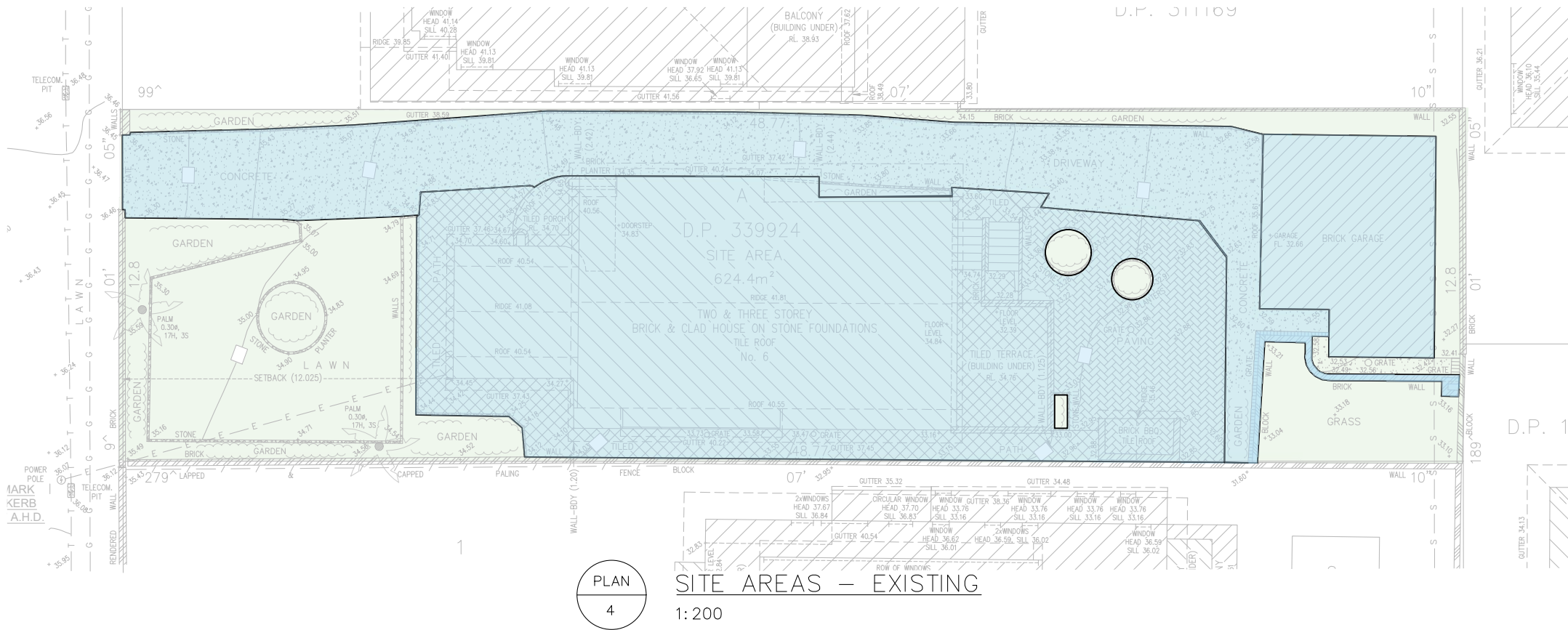
DETAIL
A

ORIFICE PLATE-SECTION

NA

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REVISIONS						DESIGNED	DD	CHECKED	LES			DETAILS SHEET 2				
						DRAWN	DD	CHECKED	LES							
						APPROVED	LES	DATE	03/05/2024							
0	DD	03/05/2024	FOR DA SUBMISSION	LES								Size	A3	Status	FOR DA SUBMISSION	Drwg No.
No.	BY	DATE	DESCRIPTION	APPD												



EXISTING

SITE AREA: 624.4m²
PERVIOUS: 161.56m² (25.9%)
IMPERVIOUS: 462.84m² (74.1%)

ALL DISCHARGE TO THE REAR UNCONTROLLED

LEGEND

PERVIOUS

IMPERVIOUS

LEGEND

PERVIOUS TO OSD

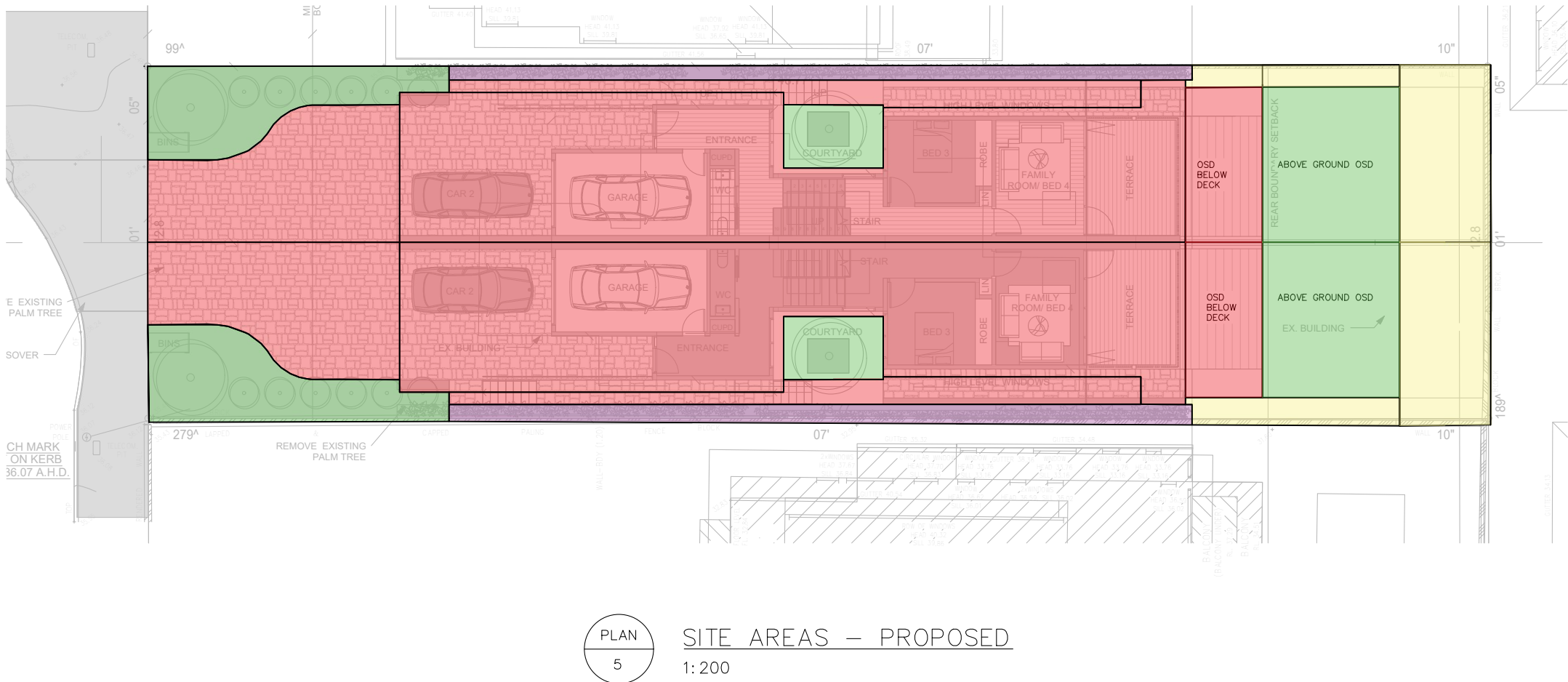
IMPERVIOUS TO OSD

PERVIOUS TO BYPASS

IMPERVIOUS TO BYPASS

PROPOSED - LOT 1

SITE AREA: 312.2m²
IMPERVIOUS TO OSD: 213.55m² (79%)
PERVIOUS TO OSD: 56.78m² (21%)
IMPERVIOUS TO BYPASS: 14.32m² (34%)
PERVIOUS TO BYPASS: 27.55m² (66%)



PROPOSED - LOT 2

SITE AREA: 312.2m²
IMPERVIOUS TO OSD: 213.55m² (79%)
PERVIOUS TO OSD: 56.78m² (21%)
IMPERVIOUS TO BYPASS: 14.32m² (34%)
PERVIOUS TO BYPASS: 27.55m² (66%)

TABLE 1 – PSD (SON), POST DEVELOPMENT FLOWS					
ARI	PSD STATE OF THE NATURE (l/s)	PSD STATE OF THE NATURE (l/s)	POST DEVELOPED FLOWS (l/s)		
			OSD (l/s)	BYPASS OSD (l/s)	TOTAL
0.2EY	7	7	4	1	5
20 YEAR	7	12	5	2	7
100 YEAR	7	17	5	2	7

AS PER CONDITION 9.10.5 OF NORTHERN BEACH COUNCIL'S WATER MANAGEMENT FOR DEVELOPMENT POLICY :
STORAGE IN LANDSCAPE AREA REQUIRES FIRST 20% VOLUME IN A AREA ABLE TO TOLERATE FREQUENT INUNDATION AND ADDITIONAL 20% VOLUME TO COMPENSATE FOR LOSS

TOTAL STORAGE REQUIRED = 7,755L
TOTAL STORAGE PROVIDED = 8,700L
MADE UP OF THE FOLLOWING
STORABLE FREQUENCY WETTABLE ZONE REQUIRED = (20% OF REQUIRED OSD) = 20% OF 7,755L = 1,551L
STORABLE FREQUENCY WETTABLE ZONE PROVIDED
OSD UNDER DECK OF SIZE (Width:2.2m Length: 5.5m Height : 0.3m) = 2.2x5.5x0.3 = 3,600L

LANDSCAPE AREA REQUIRED STORAGE = (20% OF 4,555L) + 4,555L
LANDSCAPE AREA REQUIRED STORAGE = 911L + 4,555L = 5,466L
LANDSCAPE AREA PROVIDED STORAGE = (0.20m X 5.5m X 5.0m) = 5,500L

TOTAL STORAGE PROVIDED = 3,600L + 5,500L = 9,100L

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REVISIONS						1:200		DESIGNED	DD	CHECKED	LES			SITE AREAS							
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