

PRELIMINARY

PROPOSED RESIDENTIAL DEVELOPMENT 96-98 LETHBRIDGE STREET & 42-46 EVAN STREET, PENRITH STORMWATER CONCEPT DESIGN



LOCALITY PLAN
NOT TO SCALE
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ARCHITECT:



CLIENT :

URBAN LINK PTY LTD

DRAWINGS LIST			
SHEET No.	DWG No.	TITLE	REV
1	SW100	COVER SHEET	B
2	SW200	STORMWATER CONCEPT DESIGN - BASEMENT 2 PLAN	B
3	SW201	STORMWATER CONCEPT DESIGN - BASEMENT 1 PLAN	B
4	SW202	STORMWATER CONCEPT DESIGN - GROUND FLOOR PLAN	B
5	SW203	STORMWATER CONCEPT DESIGN - ROOF PLAN	B
6	SW300	STORMWATER CONCEPT DESIGN - DETAILS SHEET - SHEET 1 OF 2	B
7	SW301	STORMWATER CONCEPT DESIGN - DETAILS SHEET - SHEET 2 OF 2	B
8	SW400	EROSION AND SEDIMENT CONTROL - PLAN AND DETAILS	B
9	SW500	STORMWATER CONCEPT DESIGN - MUSIC CATCHMENT PLAN AND RESULT	B



PREPARED BY:

SGC Consulting Engineers
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St. Leonards, NSW 2065
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Web: www.sgce.com.au

Project 2020/2000022 0-4-6 E-6						Reference Coordination Drawing			
						Discipline	Drawing Title and Number	Date	Rev.
							ARCH		
							STRUC		
	B	PRELIMINARY ISSUE	MN	03.09.20	1				
	A	PRELIMINARY ISSUE	MN	03.12.20	2				
	P2	PRELIMINARY ISSUE	MN	20.11.20	1				
	P1	PRELIMINARY ISSUE	AA	09.03.20	1				
	Issue	Last revision title		by	Date	Status			
	Issuer internal sequence and revision history								
1-preliminary		2-development application		3-construction certificate		LANDS			
4-tender		5-construction		6-other		CIVIL			
						SURVEY			

	ENGINEERS AUSTRALIA	
	Chartered Professional Engineer MEMBER	

QUALITY CONTROL			
DRAWN	MN	DATE	03.09.20
CHECKED	SH	DATE	03.09.20
DESIGNED	MN	DATE	03.09.20
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Scales

0m 2 4 6 8 10
SCALE 1:200 ON ORIGINAL SIZE

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URBAN LINK ARCHITECTURE



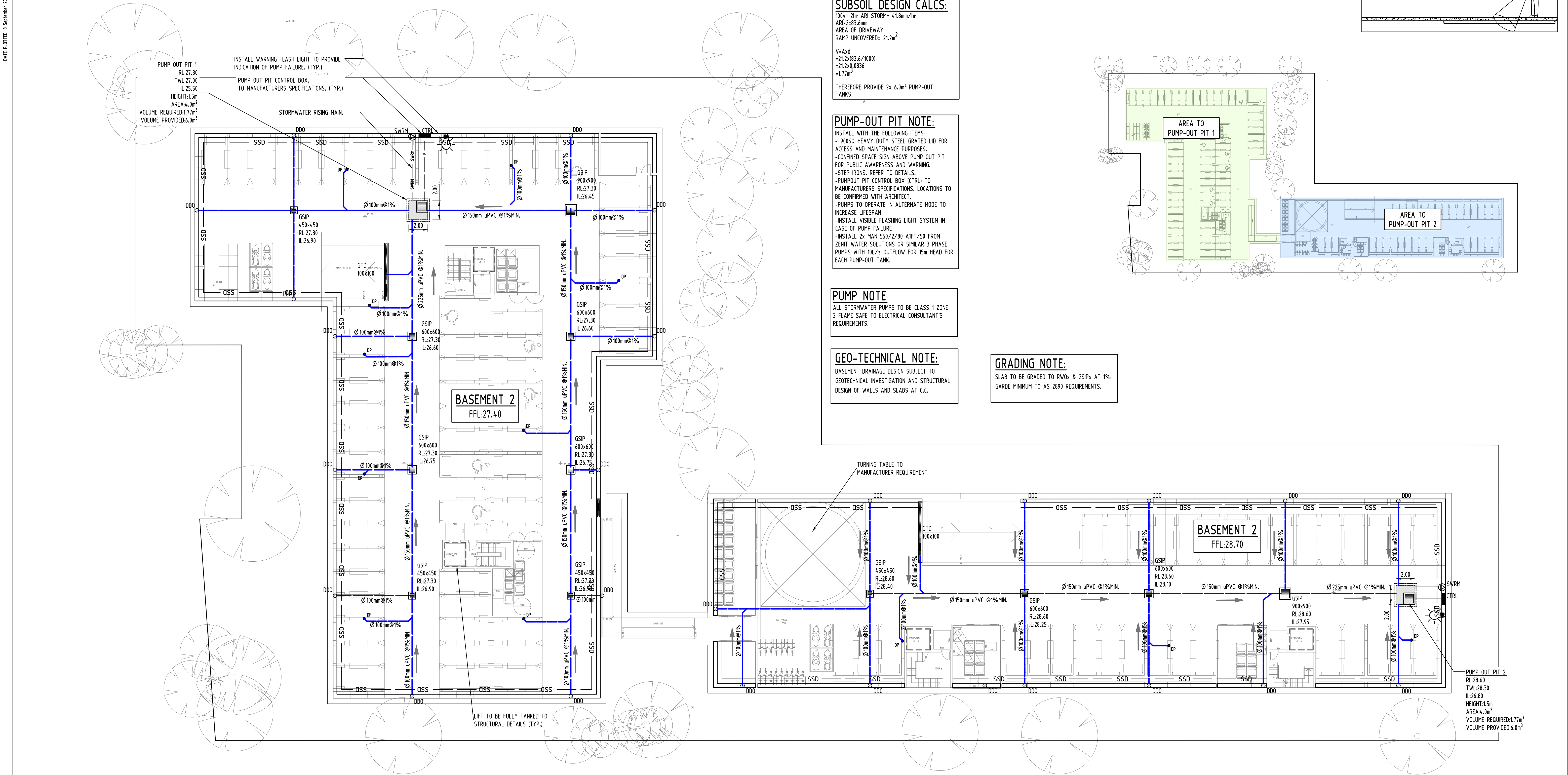
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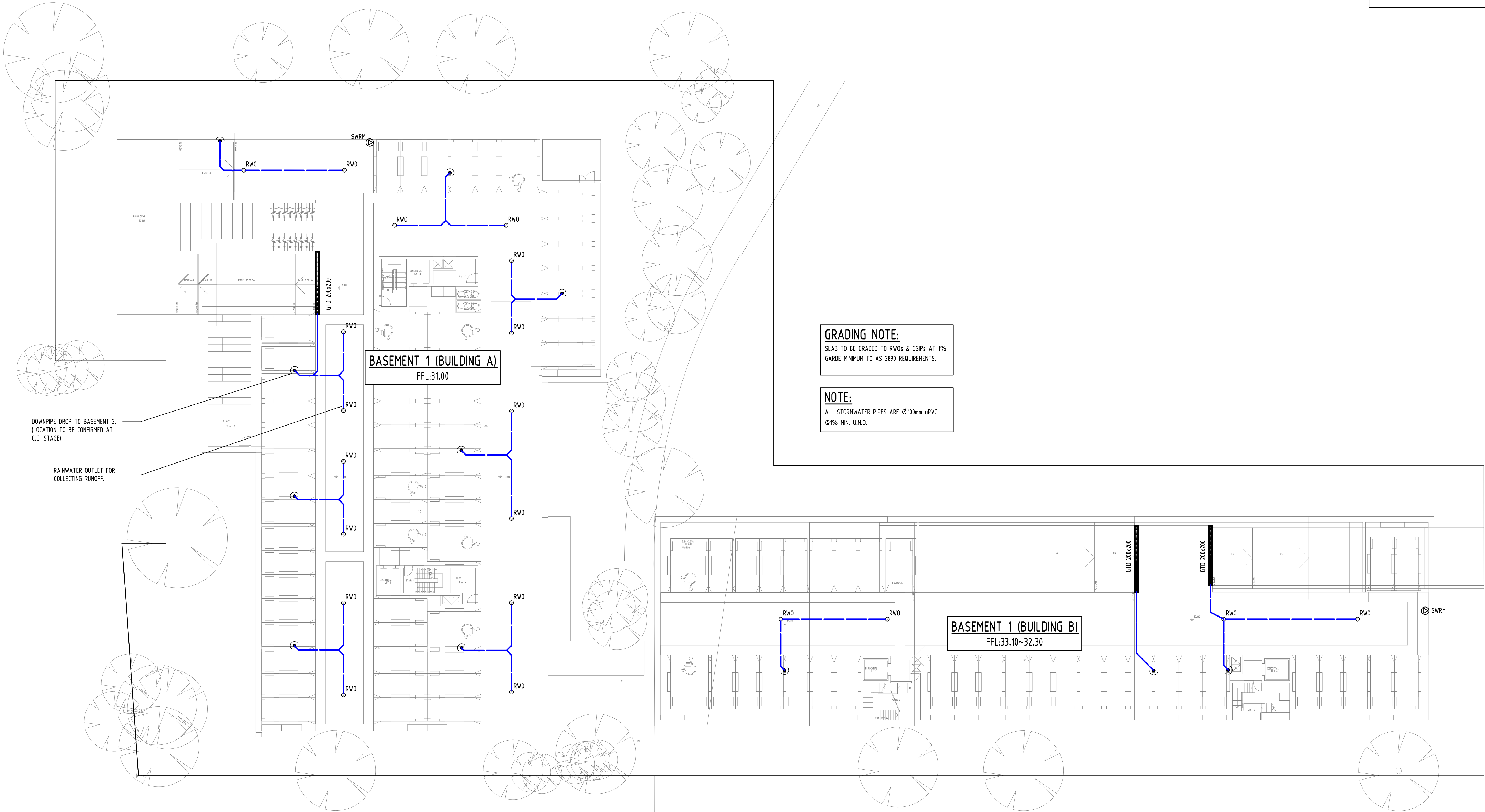
PROJECT
PROPOSED RESIDENTIAL
DEVELOPMENT
96-98 LETHBRIDGE STREET &
42-46 EVAN STREET, PENRITH

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	2 OF 9	1:200 @ A1

Drawing Status	PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Drawing Title	STORMWATER CONCEPT DESIGN BASEMENT 2 PLAN		
Project No	Drawing No	Revision No	
20200222	SW200	B	



SERVICES ON THIS DRAWING
ARE SHOWN BELOW SLAB U.N.O



GRADING NOTE:
SLAB TO BE GRADED TO RWOs & GSIPs AT 1% GARDE MINIMUM TO AS 2890 REQUIREMENTS.

NOTE:
ALL STORMWATER PIPES ARE Ø100mm uPVC @1% MIN. U.N.O.

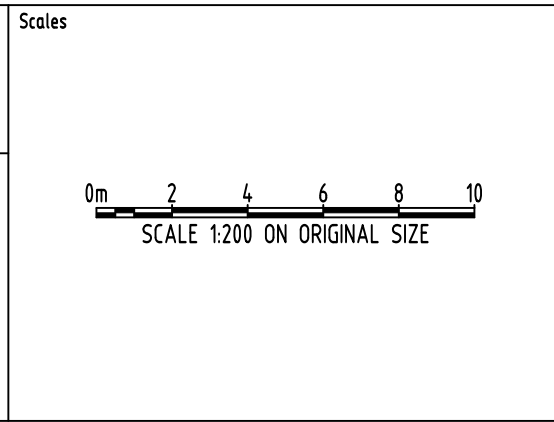
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P2	PRELIMINARY ISSUE				MN	20.11.20	1	MECH	
P1	PRELIMINARY ISSUE				AA	09.03.20	1	ELEC	
								HYD	
Issue Last revision title					by	Date	Status	FRG	
Issuer internal sequence and revision history									
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2-development application					CIVIL				
4-tender					SURVEY				
5-construction									
3-construction certificate									
6-other									

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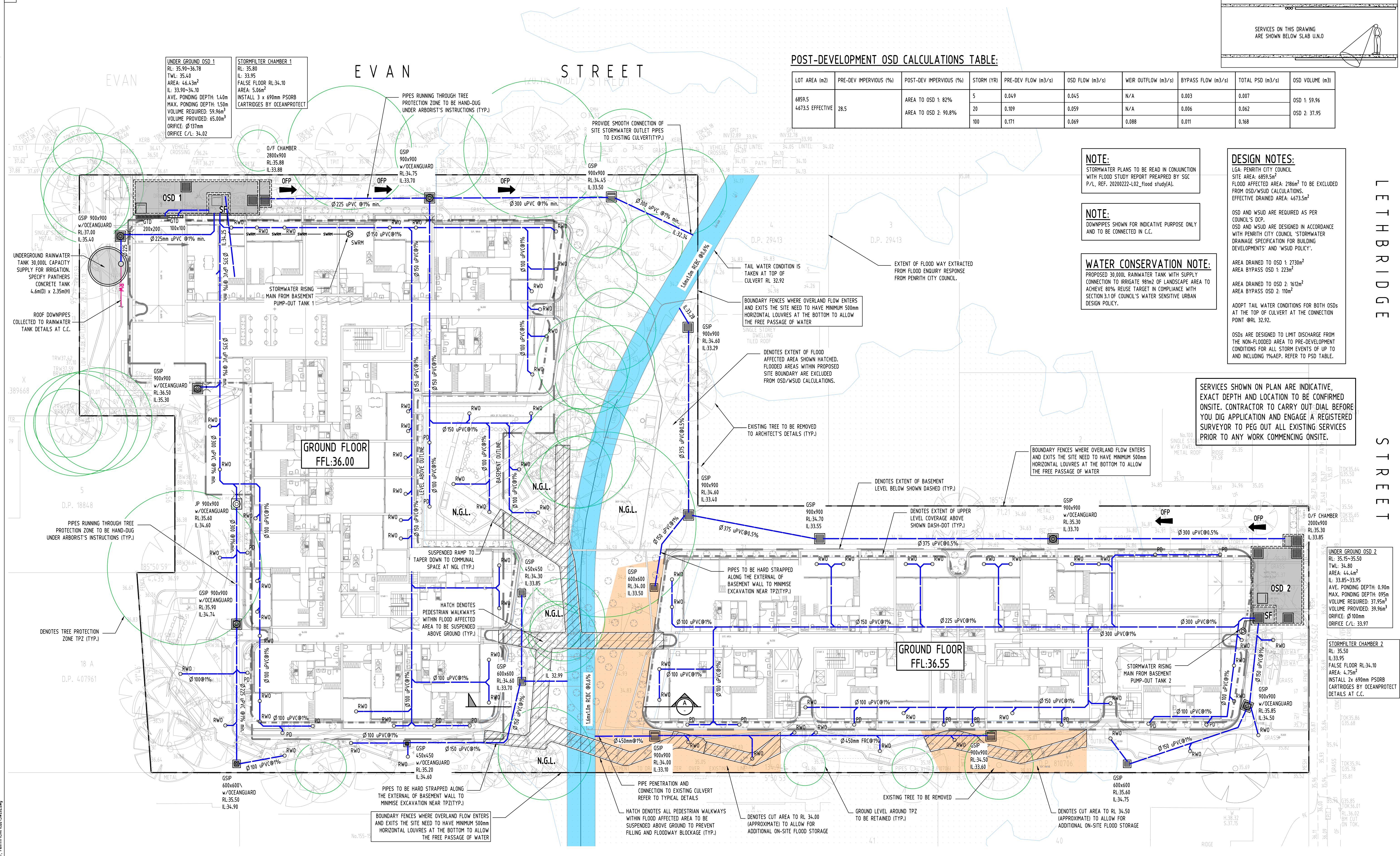
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42-46 EVAN STREET, PENRITH

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	3 OF 9	1:200 @ A1

Drawing Status	PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Drawing Title	STORMWATER CONCEPT DESIGN BASEMENT 1 PLAN		
Project No	Drawing No	Revision No	
20200222	SW200	B	



SERVICES ON THIS DRAWING
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POST-DEVELOPMENT OSD CALCULATIONS TABLE:

LOT AREA (m2)	PRE-DEV IMPERVIOUS (%)	POST-DEV IMPERVIOUS (%)	STORM (YR)	PRE-DEV FLOW (m3/s)	OSD FLOW (m3/s)	WEIR OUTFLOW (m3/s)	BYPASS FLOW (m3/s)	TOTAL PSD (m3/s)	OSD VOLUME (m3)
6859.5	28.5	AREA TO OSD 1: 82%	5	0.049	0.045	N/A	0.003	0.007	OSD 1: 59.96
4673.5 EFFECTIVE		AREA TO OSD 2: 90.8%	20	0.109	0.059	N/A	0.006	0.062	OSD 2: 37.95
			100	0.171	0.069	0.088	0.011	0.168	

NOTE:
STORMWATER PLANS TO BE READ IN CONJUNCTION
WITH FLOOD STUDY REPORT PREPARED BY SGC
P/L, REF. 20200222-L02_flood study(A).

NOTE:
DOWNPIPES SHOWN FOR INDICATIVE PURPOSE ONLY
AND TO BE CONNECTED IN C.C.

WATER CONSERVATION NOTE:
PROPOSED 30,000L RAINWATER TANK WITH SUPPLY
CONNECTION TO IRRIGATE 98m² OF LANDSCAPE AREA TO
ACHIEVE 80% REUSE TARGET IN COMPLIANCE WITH
SECTION 3.1 OF COUNCIL'S WATER SENSITIVE URBAN
DESIGN POLICY.

DESIGN NOTES:
LGA: PENRITH CITY COUNCIL
SITE AREA: 6859.5m²
FLOOD AFFECTED AREA: 2186m² TO BE EXCLUDED
FROM OSD/WSUD CALCULATIONS.
EFFECTIVE DRAINED AREA: 4673.5m²

OSD AND WSUD ARE REQUIRED AS PER
COUNCIL'S DCP.
OSD AND WSUD ARE DESIGNED IN ACCORDANCE
WITH PENRITH CITY COUNCIL 'STORMWATER
DRAINAGE SPECIFICATION FOR BUILDING
DEVELOPMENTS' AND 'WSUD POLICY'.

AREA DRAINED TO OSD 1: 2730m²
AREA BYPASS OSD 1: 223m²
AREA DRAINED TO OSD 2: 1612m²
AREA BYPASS OSD 2: 110m²

ADOPT TAIL WATER CONDITIONS FOR BOTH OSDs
AT THE TOP OF CULVERT AT THE CONNECTION
POINT @RL 32.92.

OSDs ARE DESIGNED TO LIMIT DISCHARGE FROM
THE NON-FLOODED AREA TO PRE-DEVELOPMENT
CONDITIONS FOR ALL STORM EVENTS OF UP TO
AND INCLUDING 1% AEP. REFER TO PSD TABLE.


SERVICES SHOWN ON PLAN ARE INDICATIVE,
EXACT DEPTH AND LOCATION TO BE CONFIRMED
ONSITE. CONTRACTOR TO CARRY OUT DIAL BEFORE
YOU DIG APPLICATION AND ENGAGE A REGISTERED
SURVEYOR TO PEG OUT ALL EXISTING SERVICES
PRIOR TO ANY WORK COMMENCING ONSITE.

Reference Coordination Drawing				
Discipline	Drawing Title and Number	Date	Rev.	
ARCH	ARCH			
STRUCT	STRUCT			
MECH	MECH			
ELEC	ELEC			
HYD	HYD			
FIRE	FIRE			
LANDS	LANDS			
CIVIL	CIVIL			
SURVEY	SURVEY			

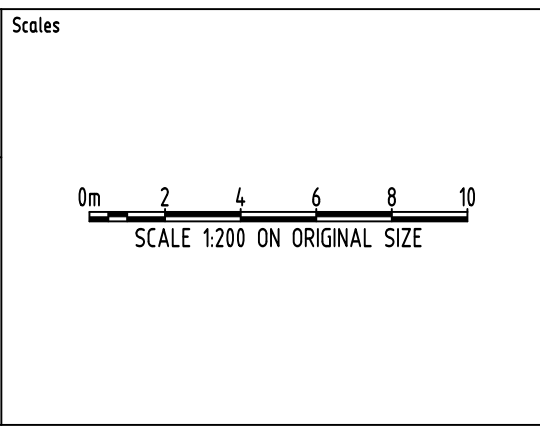
Issue Last revision title

1-preliminary	2-development application	3-construction certificate	4-tender	5-construction	6-other
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Issuer internal sequence and revision history

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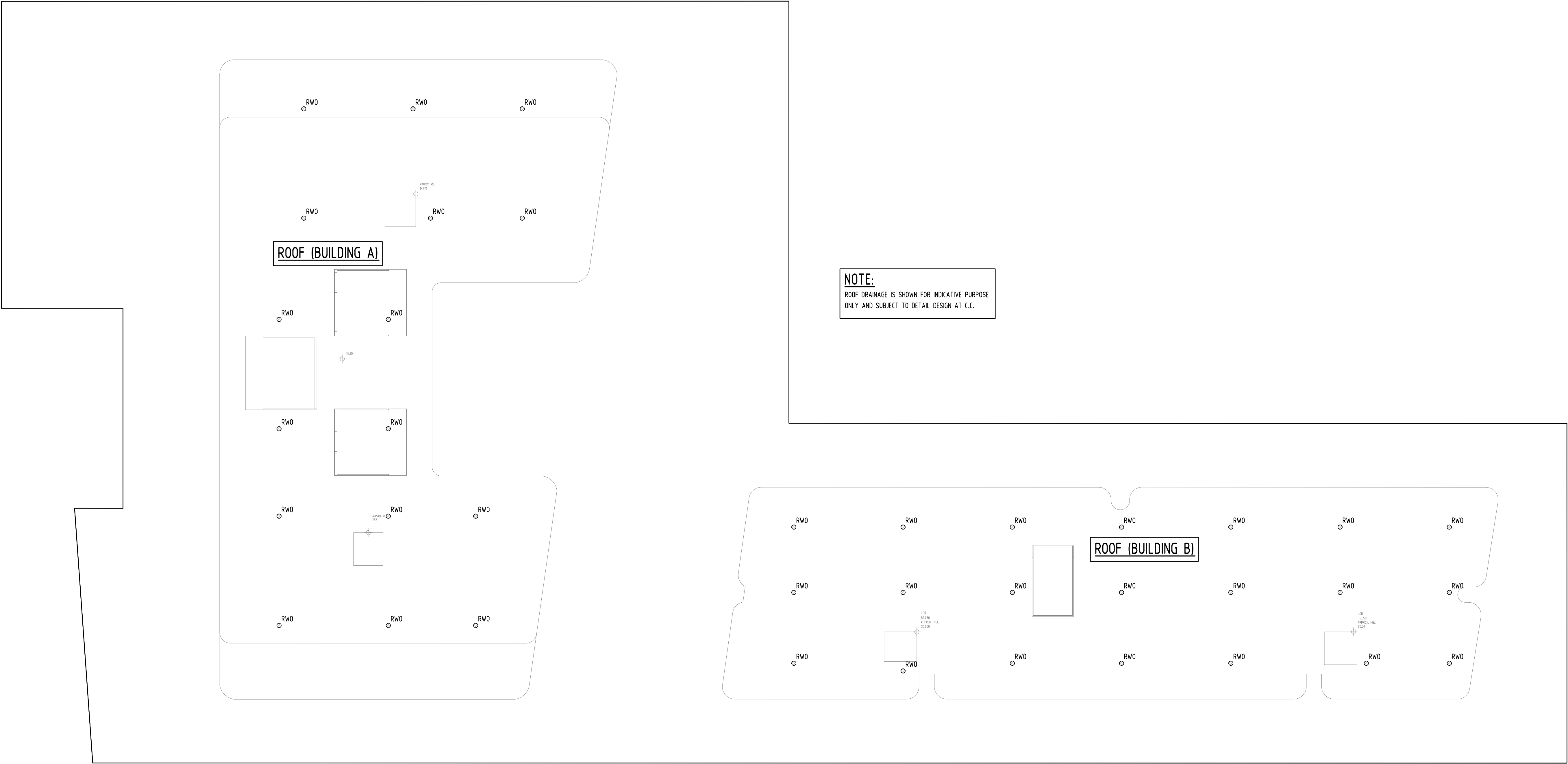
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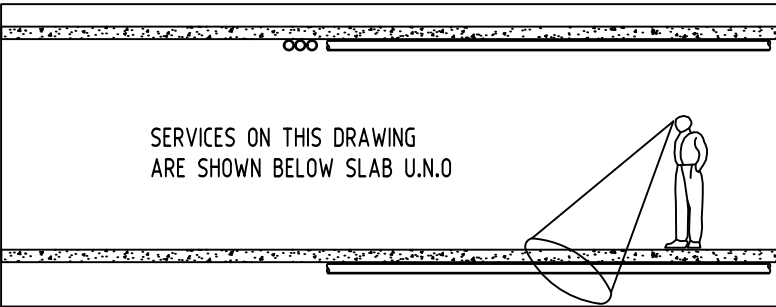
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Project No	20200222
Drawing No	SW202
Revision No	B

A1

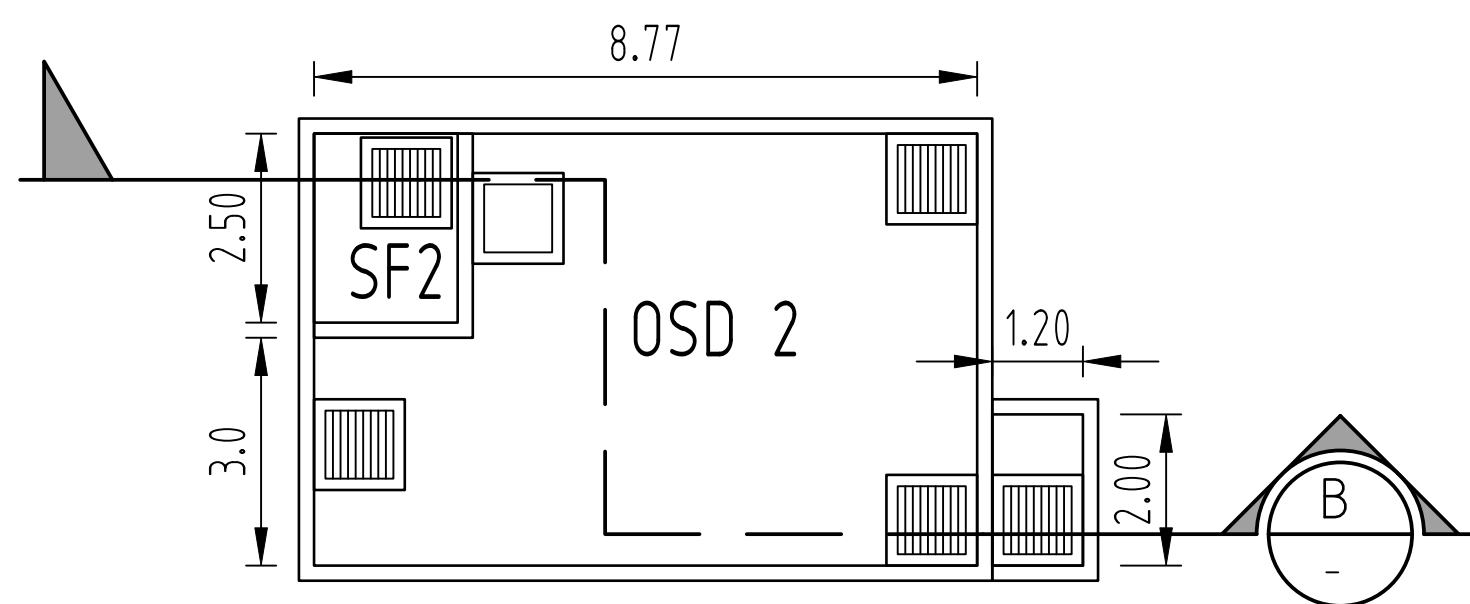
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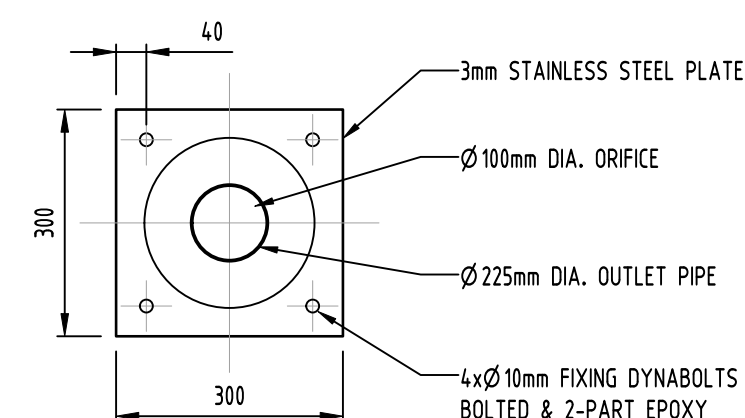
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Discipline	Drawing Title and Number	Date	Rev.																																																																																																								
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A SECTION
- OSD TANK 1
SCALE 1:20



PLAN VIEW - OSD TANK 2
SCALE 1:100




ORIFICE PLATE 2

SCALE 1:10

B SECTION
- OSD TANK 2
SCALE 1:20

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The logo consists of a blue circle with a black stylized arrow pointing to the right. Inside the arrow, there is a white stylized letter 'S'. The entire logo is centered within the bottom right cell of the table.

0m 1 2 3 4 5
SCALE 1:100 ON ORIGINAL SIZE

ARCHITECT

URBAN  **LINK**

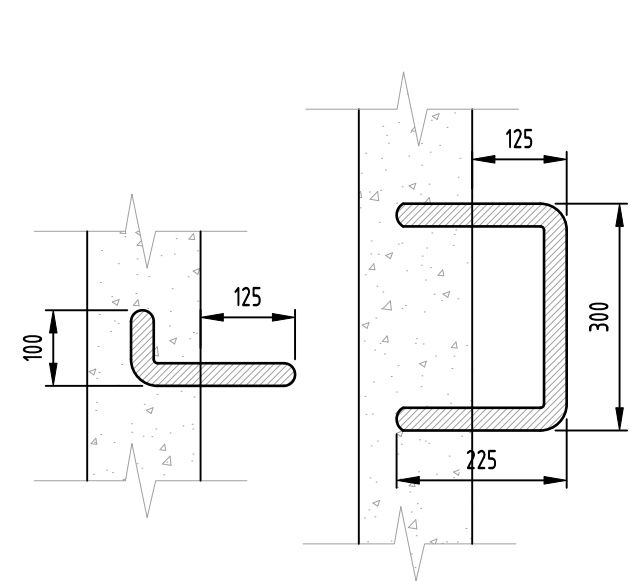
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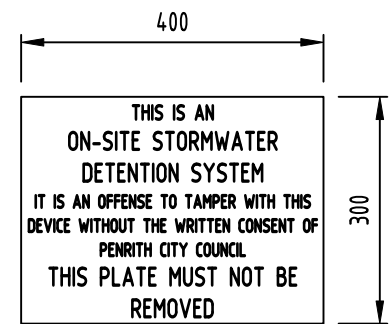
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Grid	Datum	Sheet	Scale (at original size)
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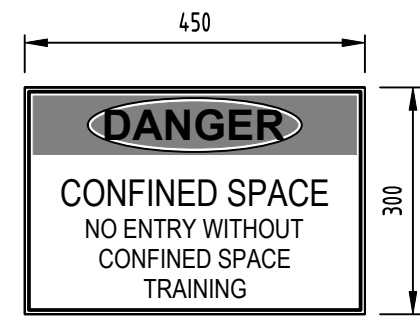
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DETAILS SHEET			
1 OF 2			
Project No	Drawing No	Revision No	
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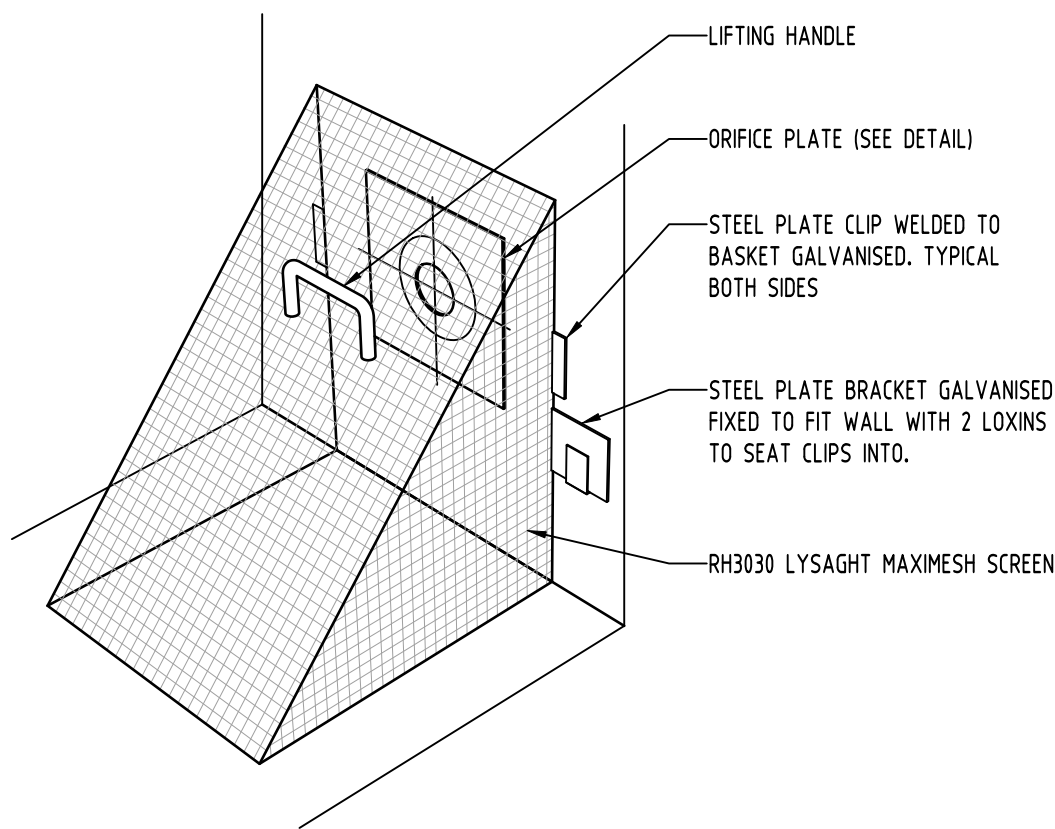
STEP IRONS
SCALE 1:10



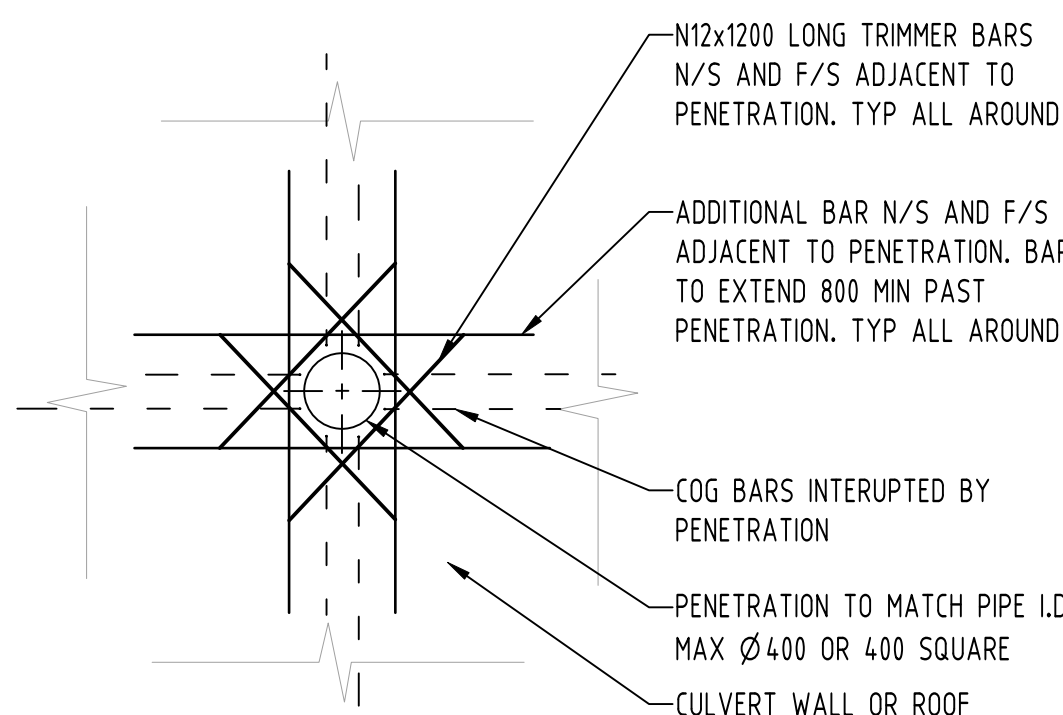
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CONFINED SPACE SIGN
SCALE 1:10



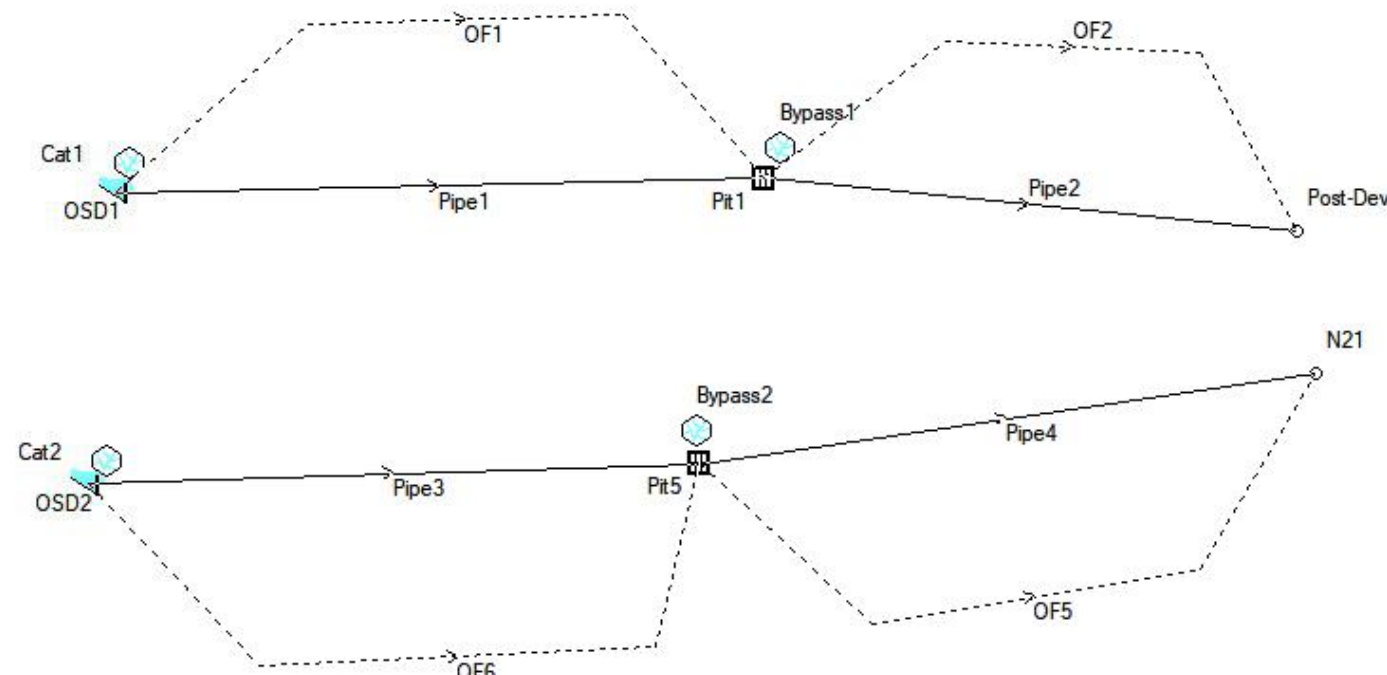
DEBRIS SCREEN
NTS



DETAIL

TYPICAL PIPE PENETRATION THROUGH CULVERT
NOT TO SCALE

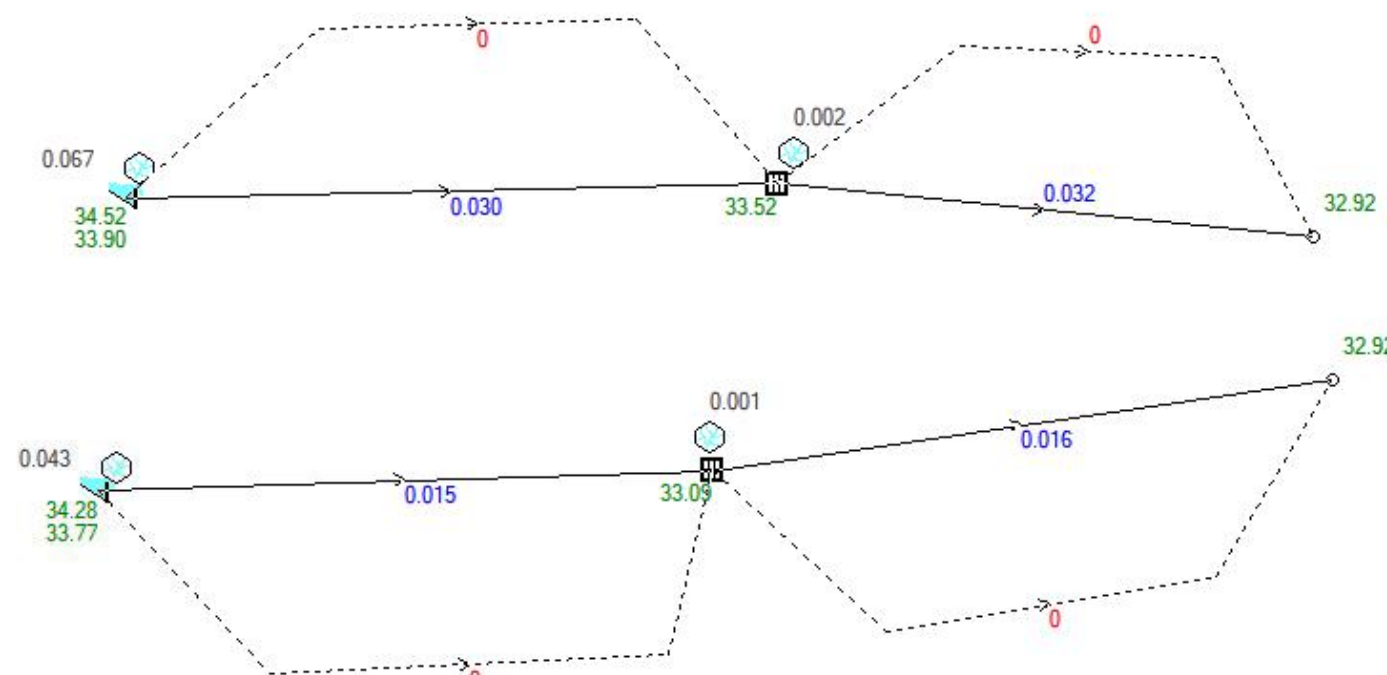
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Pre-Dev



DRAINS MODEL

Results for median storm in critical 20% AEP ensembles using Standard hydraulic model.

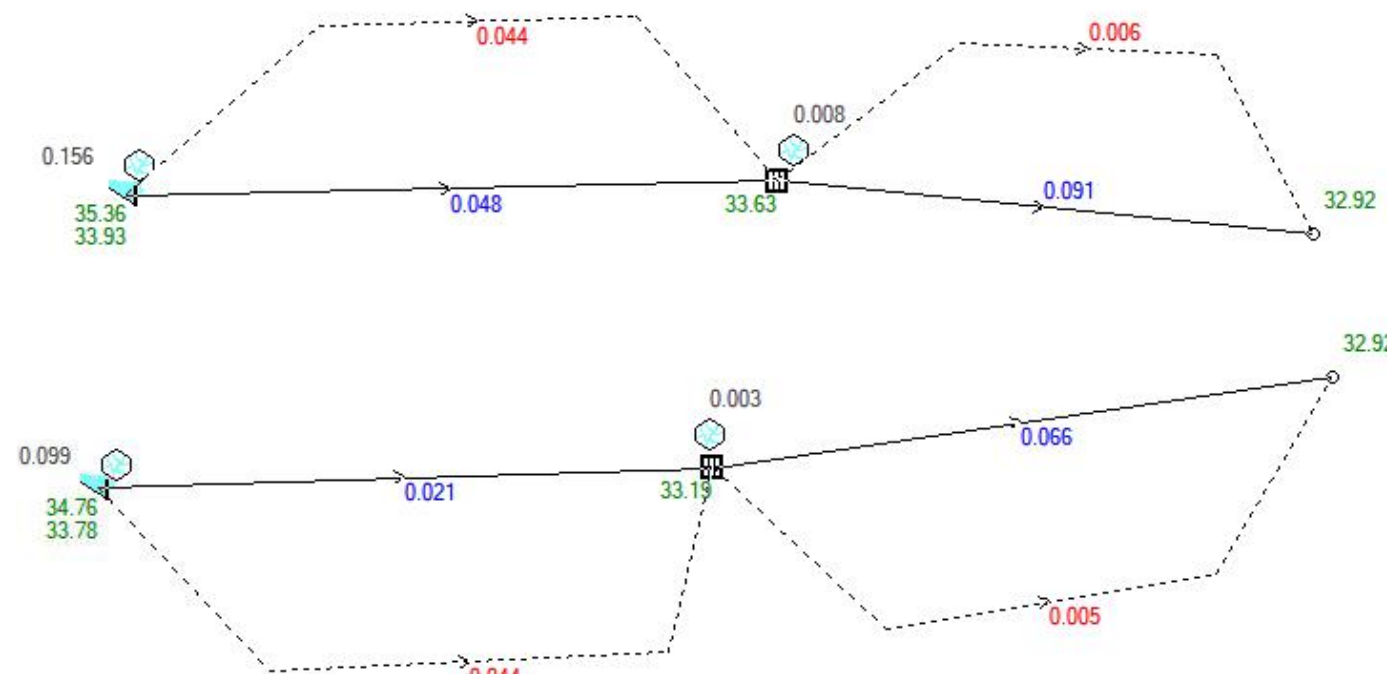
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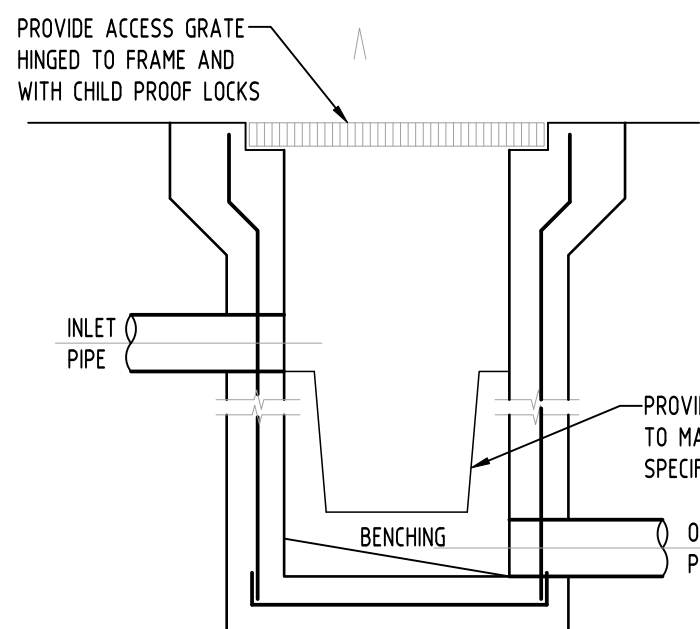
DRAINS RESULT - 20% AEP

Results for median storm in critical 1% AEP ensembles using Standard hydraulic model.

0.171

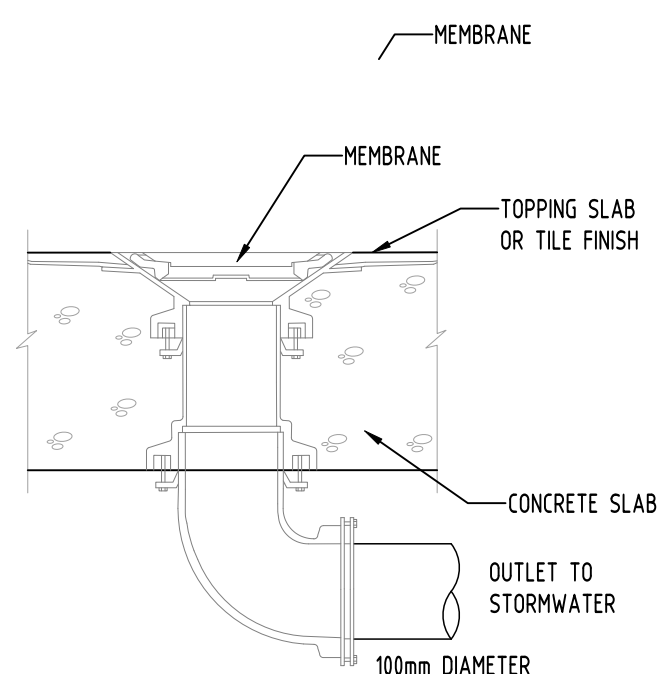


DRAINS RESULT - 1% AEP

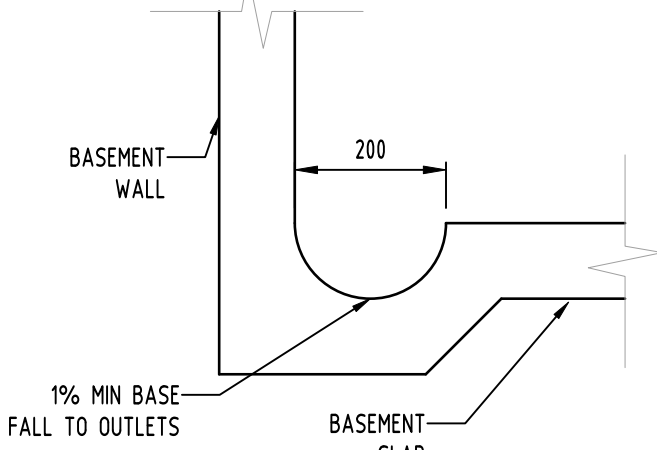


DETAIL

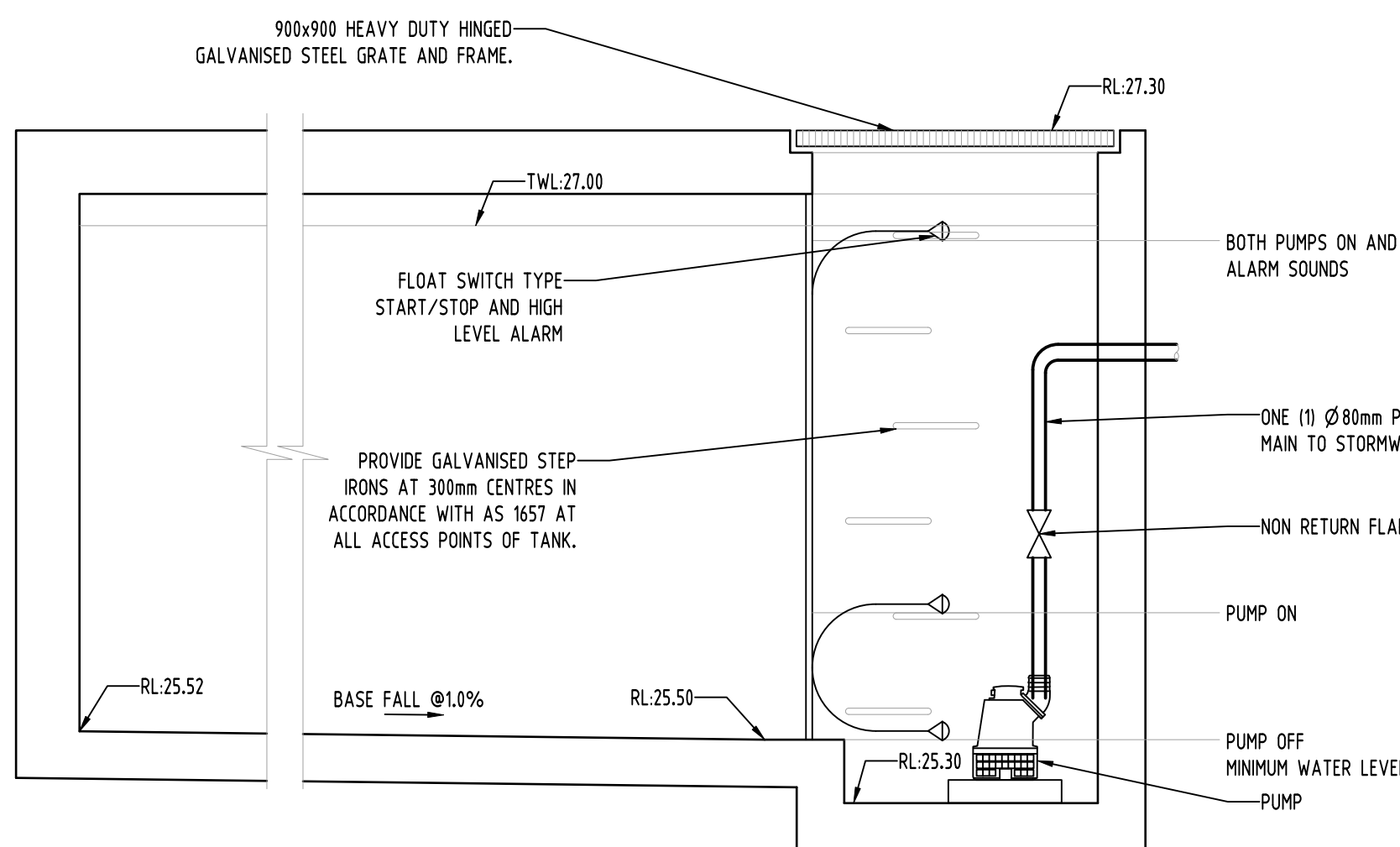
STORMWATER PIT
WITH OCEANGUARD BASKET
SCALE 1:20



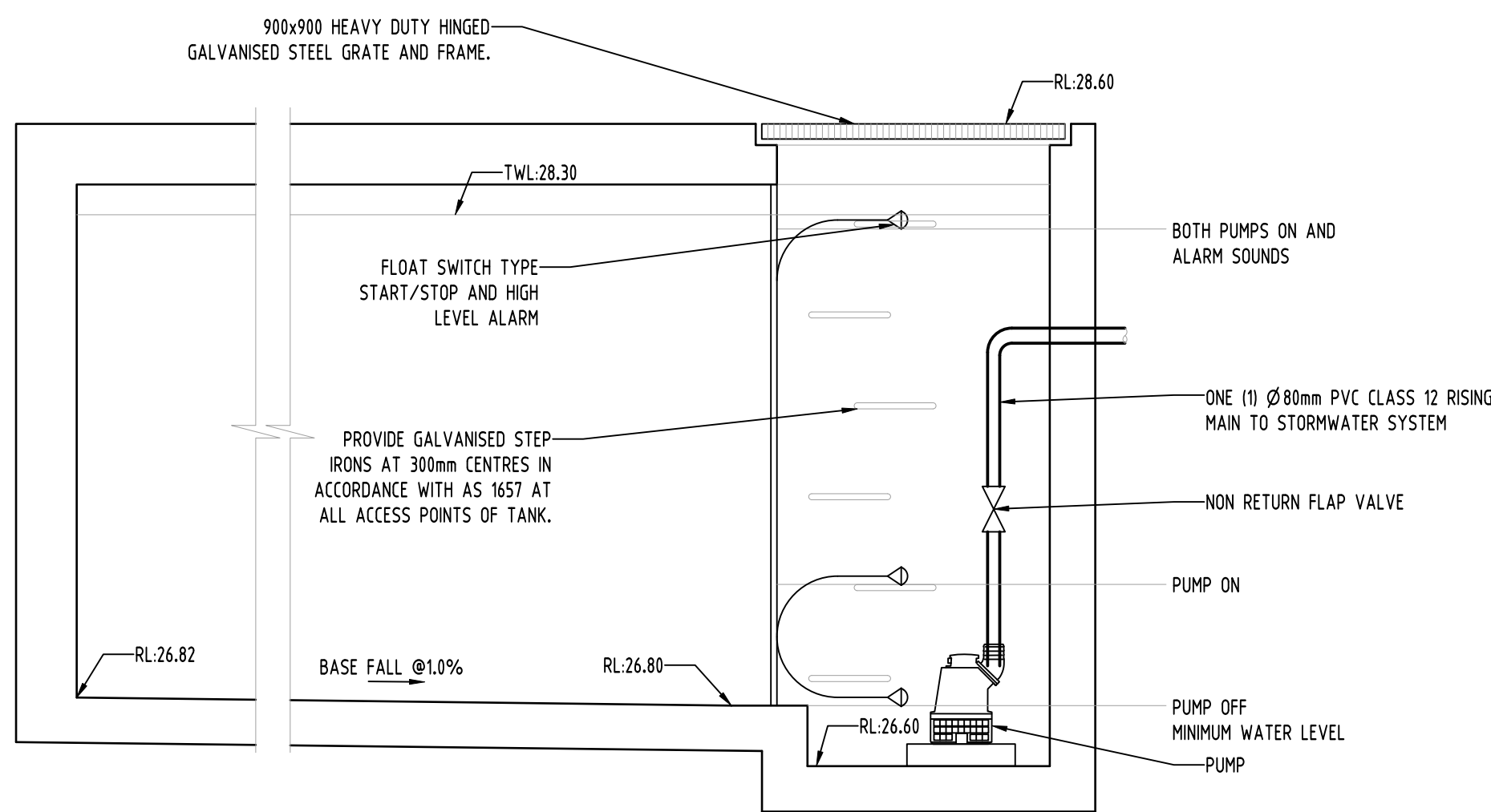
RAINWATER OUTLET
NTS



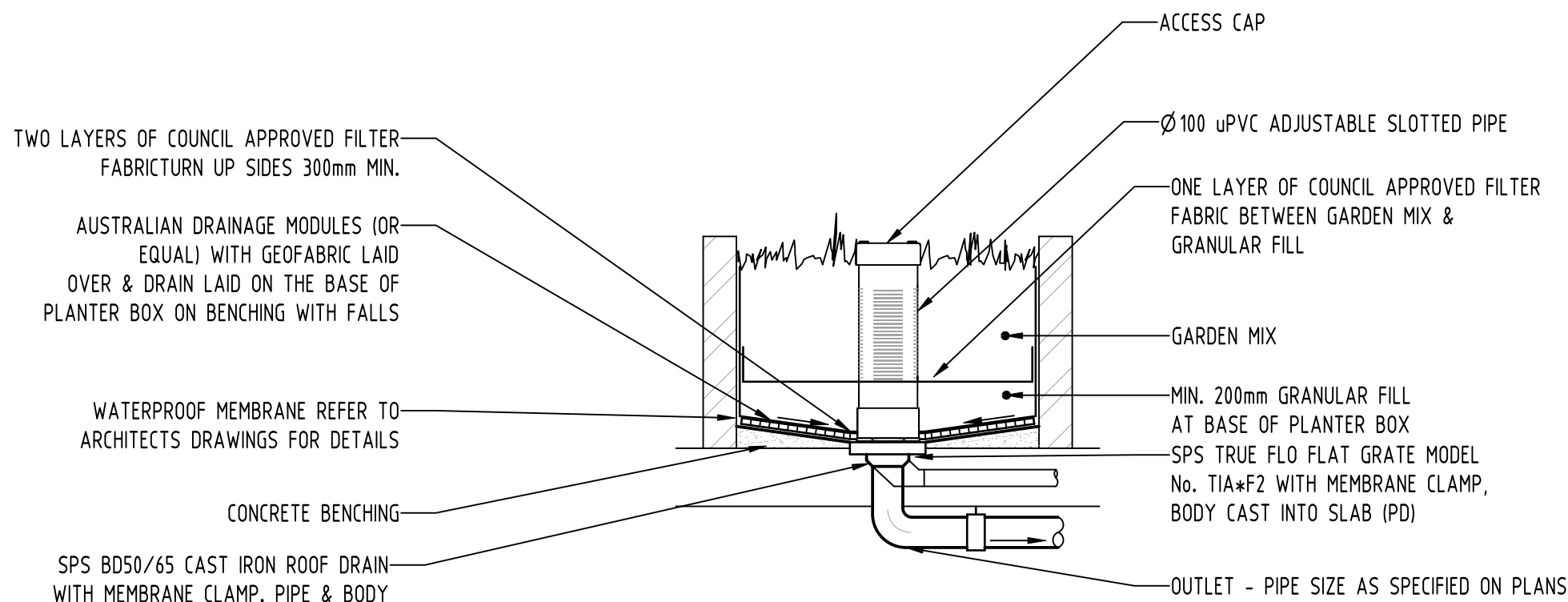
DISH DRAIN
SCALE 1:10



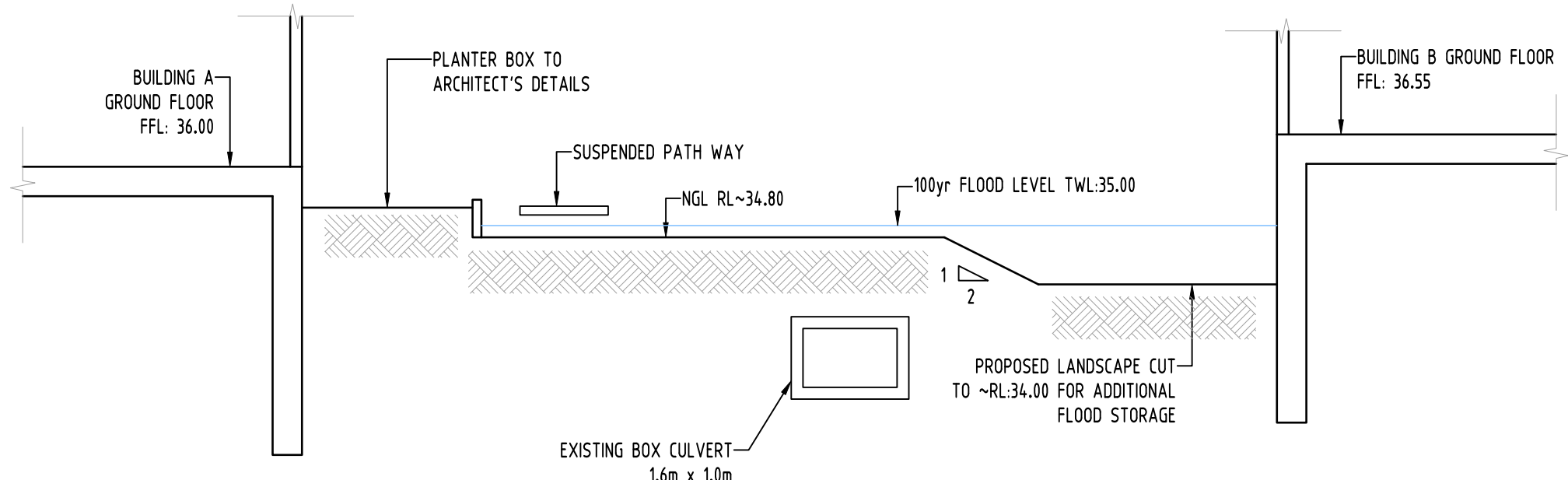
SUBSOIL PUMP OUT PIT 1
SCALE 1:20



SUBSOIL PUMP OUT PIT 2
SCALE 1:20



PLANTER DRAIN DETAIL
SCALE 1:20



SECTION
SW202
SCALE 1:100

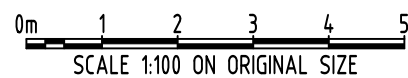
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Qualified Professional Engineer
MEMBER

QUALITY CONTROL				DATE			
DRAWN				MN			
CHECKED				SH			
DESIGNED				MN			
VERIFIED				SH			
APPROVED				SH			

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Scales



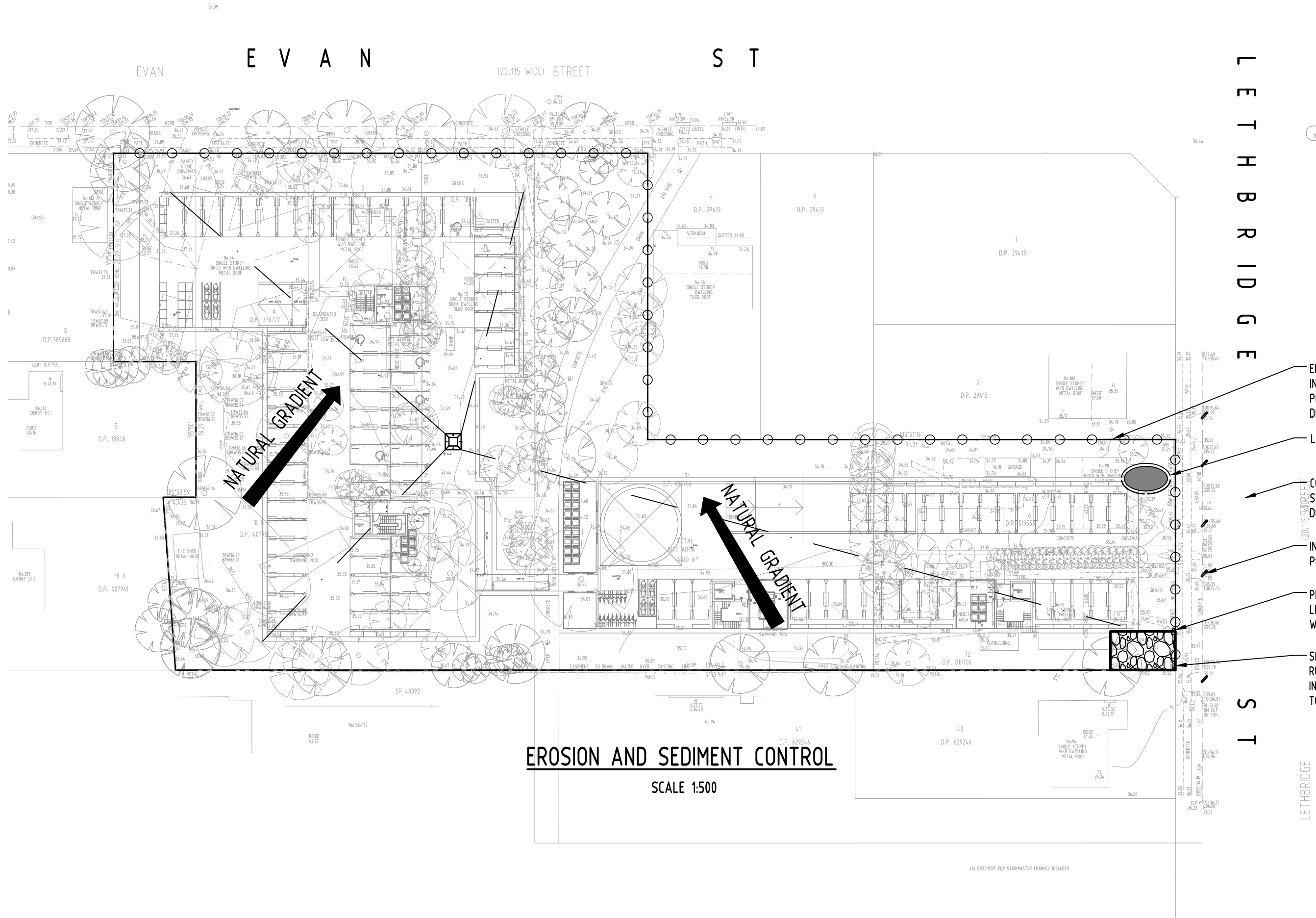
CLIENT
URBAN LINK PTY LTD

ARCHITECT
URBAN LINK ARCHITECTURE

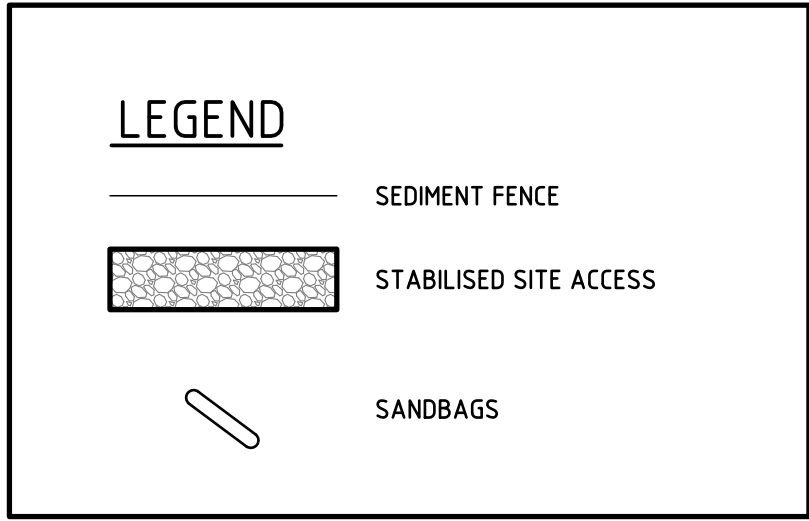
SGC Engineering Value
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Email: office@sgce.com.au
Web: www.sgce.com.au
A.B.N. 21 118 222 530

PROJECT
PROPOSED RESIDENTIAL
DEVELOPMENT
96-98 LETHBRIDGE STREET &
42-46 EVAN STREET, PENRITH

Drawing Status			PRELIMINARY		
Drawing Title			NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Project No			20200222		
Drawing No			SW301		
Revision No			B		

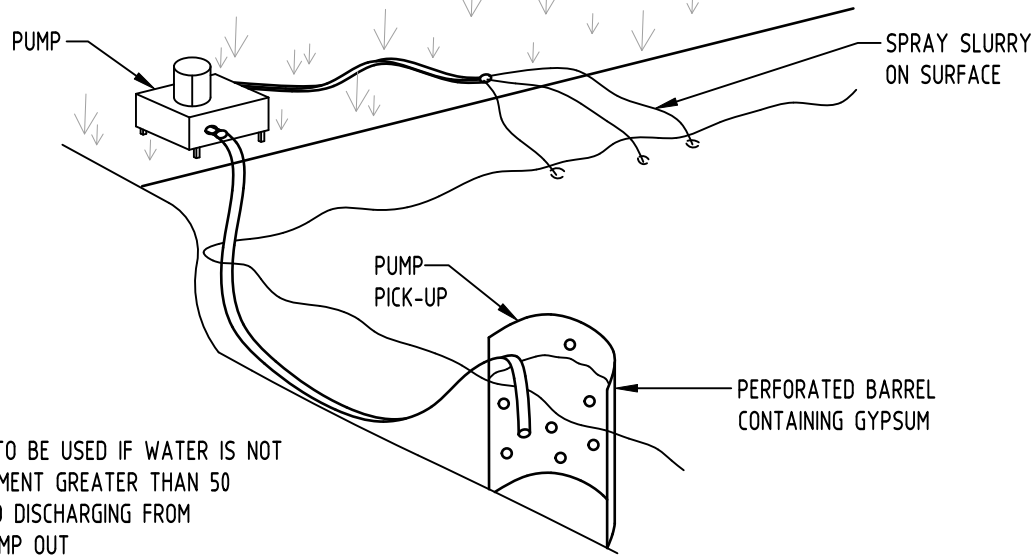


EROSION AND SEDIMENT CONTROL
SCALE 1500

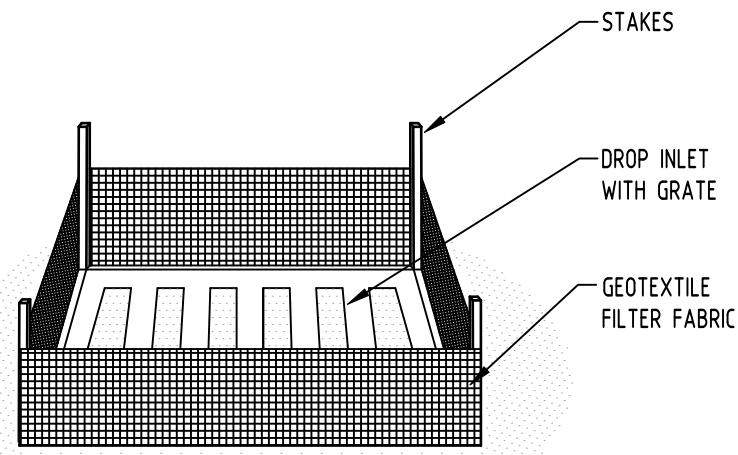


NOTE:

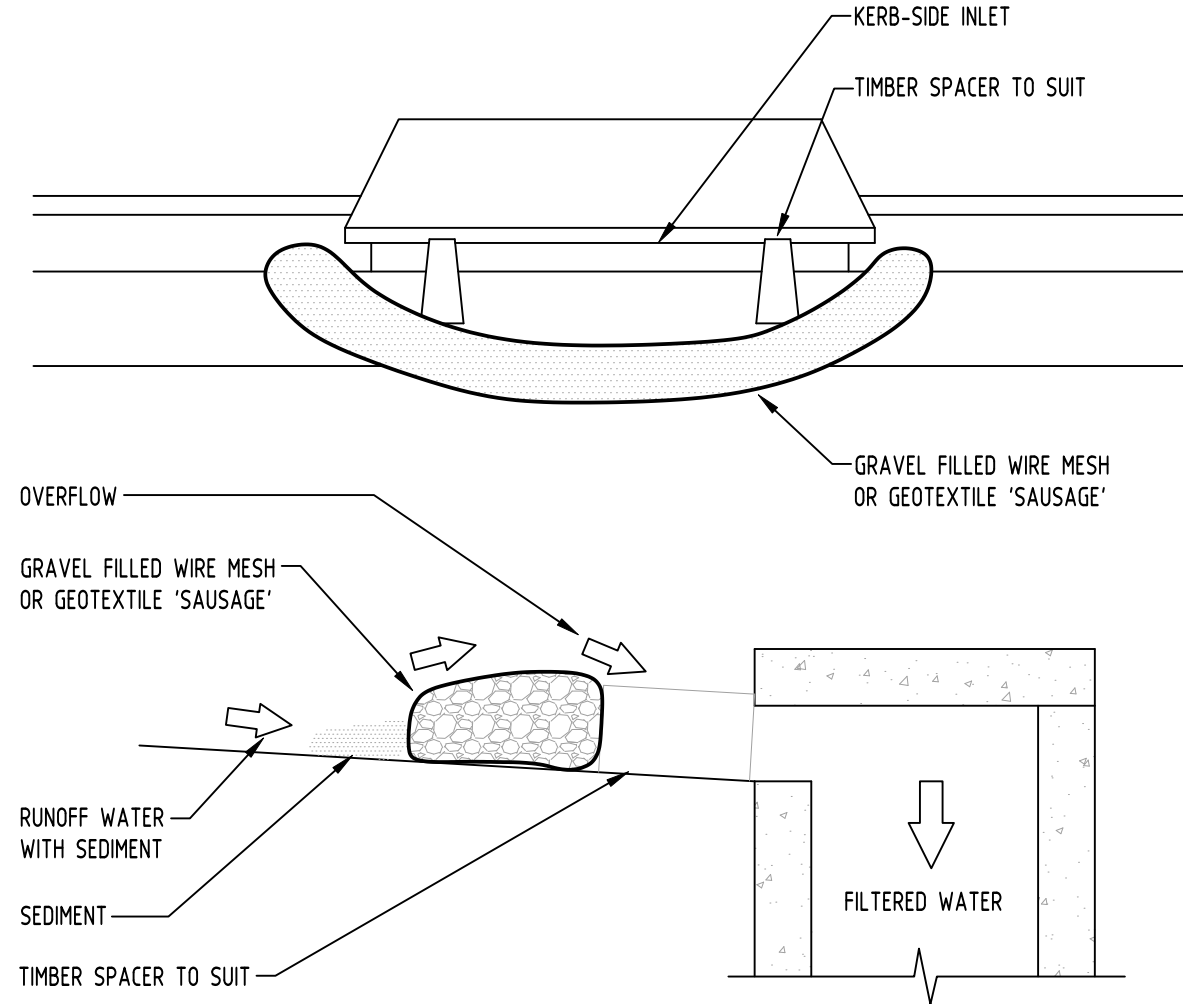
- FLOCCULATION TO BE USED IF WATER IS NOT CLEAR I.e. SEDIMENT GREATER THAN 50 mg/L) PRIOR TO DISCHARGING FROM TEMPORARY PUMP OUT
- FOR RATES & AGENTS SEE APPENDIX E OF NEW SOUTH WALES DEPARTMENT OF HOUSING "MANAGING URBAN STORMWATER SOILS & CONSTRUCTION".



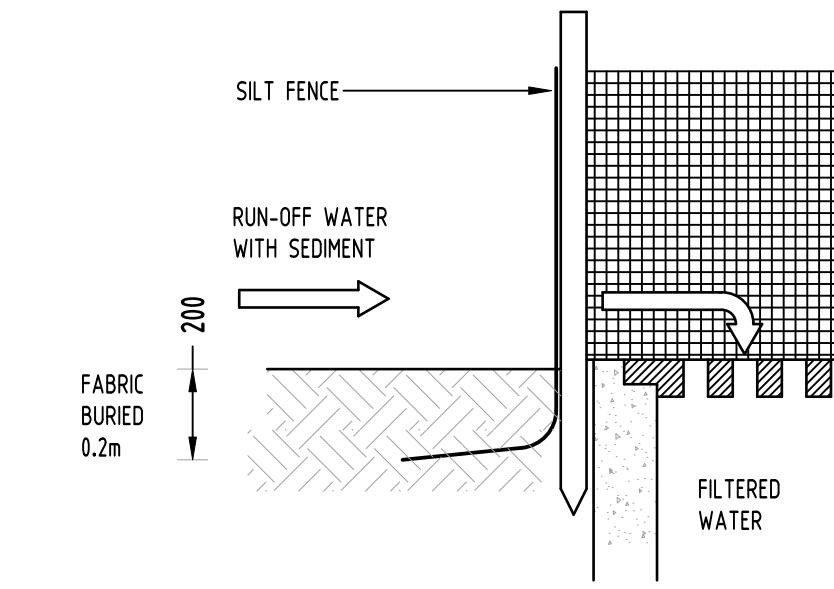
FLOCCULATION DETAIL
NOT TO SCALE



GEOTEXTILE INLET FILTER
NOT TO SCALE



GRAVEL INLET FILTER (SAUSAGE)
NOT TO SCALE



GEOTEXTILE INLET FILTER
NOT TO SCALE

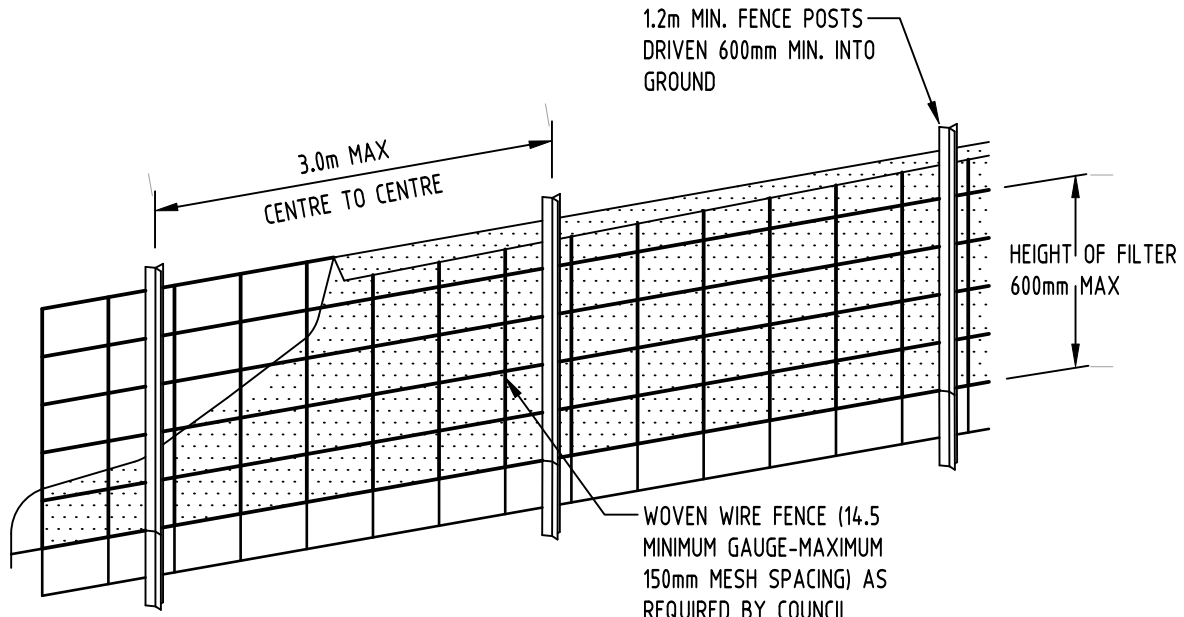
GENERAL NOTES

- THIS PLAN IS A CONCEPT PLAN ONLY FOR STORMWATER DISPOSAL & EROSION CONTROL. IT IS NOT SUITABLE FOR CONSTRUCTION. THIS PLAN SHOULD BE ADAPTED BY THE BUILDER DURING DEMOLITION, EXCAVATION & CONSTRUCTION PHASES TO ENSURE ADEQUATE PERFORMANCE.
- ALL DRAINAGE LAYOUT & DETAILS ARE DIAGRAMMATIC & INDICATIVE ONLY. ACTUAL LOCATION, SIZES, LEVELS & GRADES MAY ALTER WHEN DETAIL DESIGN WORKS ARE DOCUMENTED.

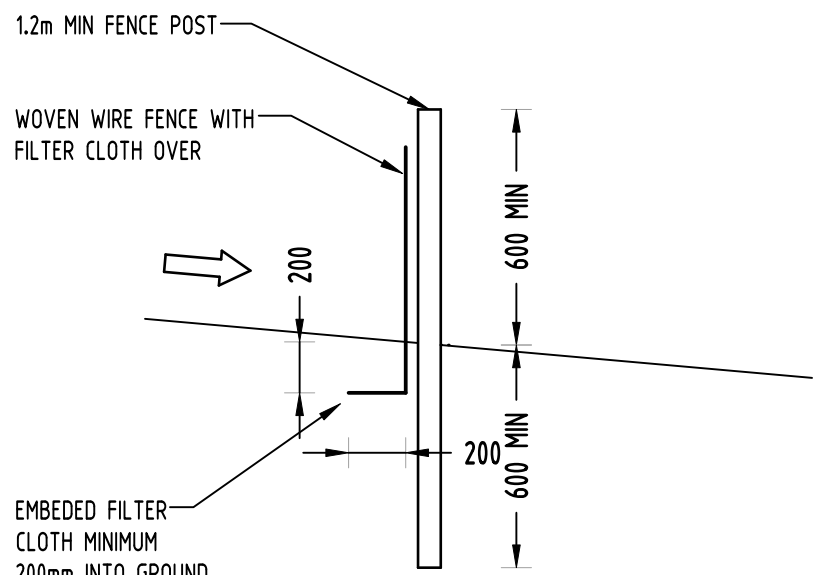
CLAY SOILS

A SYSTEM SHALL BE INSTALLED TO EITHER:

- TRANSPORT STORMWATER RUNOFF WITH SUSPENDED SOLIDS FROM SITE VIA PUMP TRUCKS.
- TREAT THE STORMWATER RUNOFF WITH SUSPENDED SOLIDS SO THE DISCHARGE WATER QUALITY TO COUNCIL STORMWATER DRAINAGE SYSTEM HAS A MAXIMUM CONCENTRATION OF SUSPENDED SOLIDS THAT DOES NOT EXCEED 50 MILLIGRAMS PER LITRE IN ACCORDANCE WITH THE PROTECTION OF THE ENVIRONMENT OPERATION ACT (POEO 1997) AND SHALL BE APPROVED BY LOCAL COUNCIL



DIAGRAMMATIC VIEW

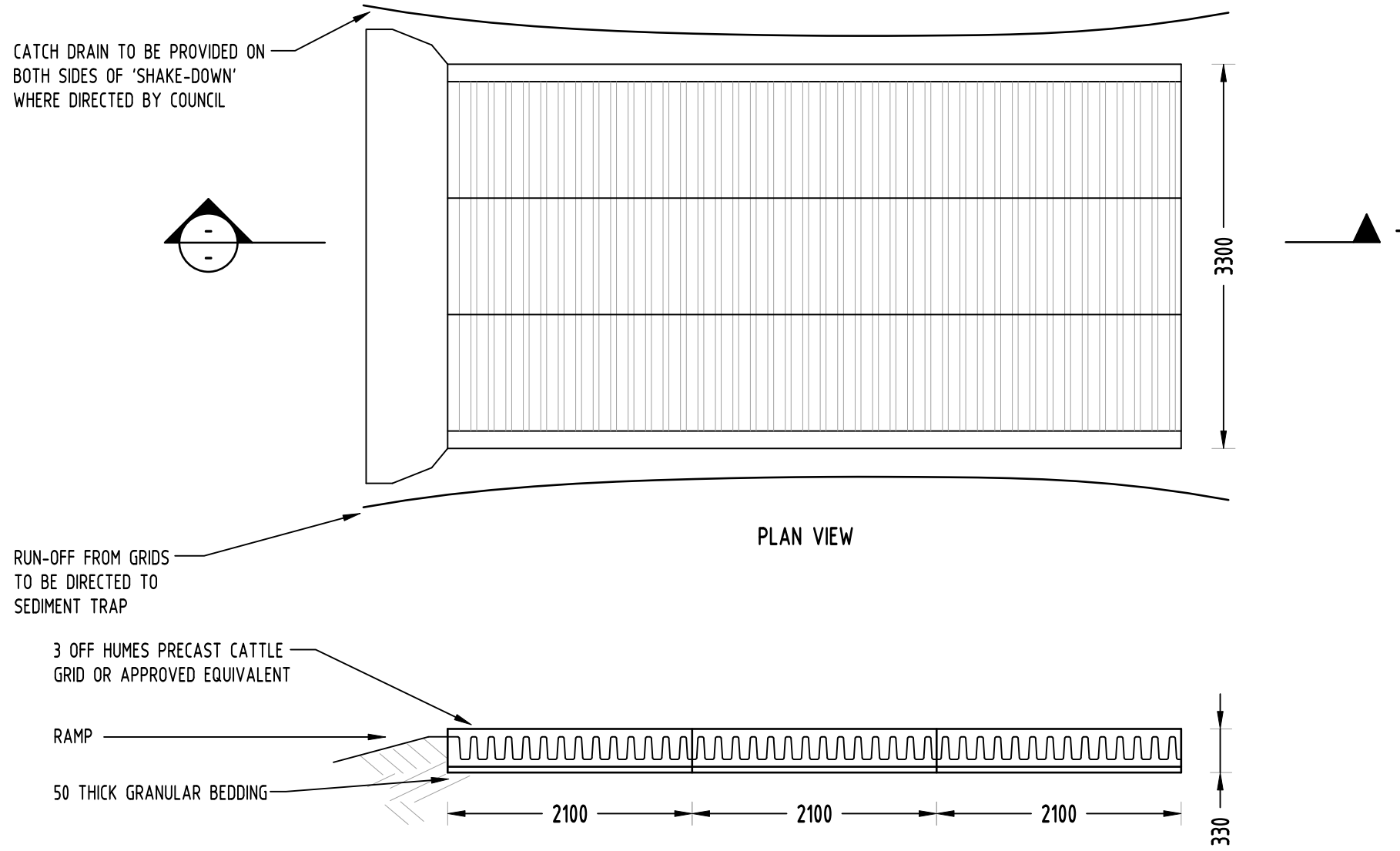


TYPICAL SECTION

SEDIMENT FENCE
NOT TO SCALE

GEOTEXTILE INLET FILTER

GEOTEXTILE INLET FILTER IS PLACED IN EVERY PIT WITHIN THE SITE TO ENSURE THE RUNOFF WATER DURING CONSTRUCTION NOT ENTER THE PITS.



TYPICAL SECTION
'CATTLE GRID' ALTERNATIVE
TEMPORARY CONSTRUCTION EXIT
NOT TO SCALE

Reference Coordination Drawing				Discipline				Drawing Title and Number				Date				Rev.			
B				PRELIMINARY ISSUE				MN				03.09.20				1			
A				PRELIMINARY ISSUE				MN				03.12.20				2			
P2				PRELIMINARY ISSUE				MN				20.11.20				1			
P1				PRELIMINARY ISSUE				AA				09.03.20				1			
Issue				Last revision title				by				Date				Status			
1-preliminary				2-development application				3-construction certificate				4-tender				5-construction			
1-preliminary				2-development application				3-construction certificate				4-tender				5-construction			

ENGINEERS AUSTRALIA				Chartered Professional Engineer			
MEMBER							

QUALITY CONTROL				Discipline				Drawing Title and Number				Date				Rev.			
DRAWN				MN				DATE				03.09.20							
CHECKED				SH				DATE				03.09.20							
DESIGNED				MN				DATE				03.09.20							
VERIFIED				SH				DATE				03.09.20							
APPROVED				SH				DATE				03.09.20							

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Scales				0m 5 10 15 20 25			
				SCALE 1500 ON ORIGINAL SIZE			

CLIENT				URBAN LINK PTY LTD			
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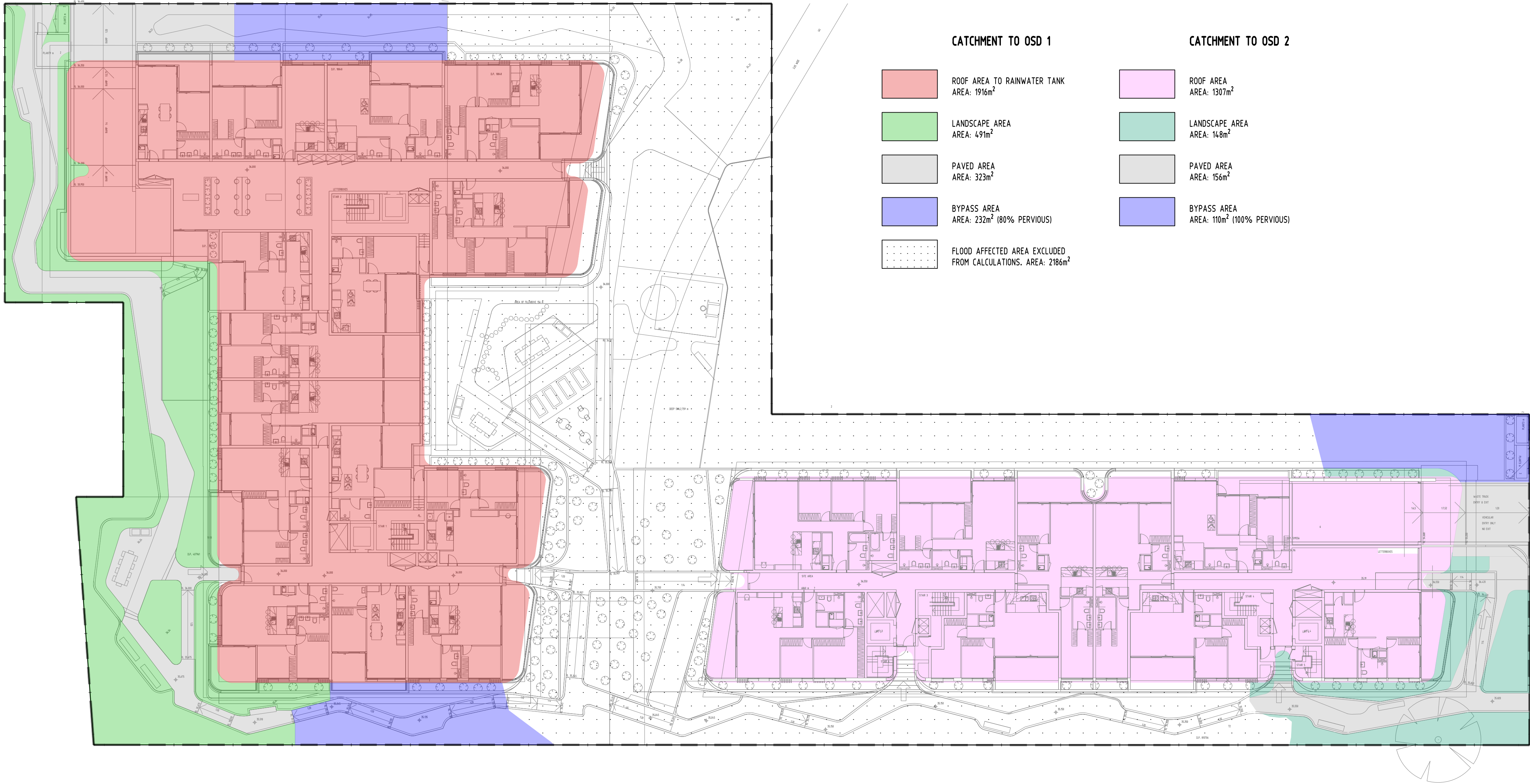
ARCHITECT				URBAN LINK ARCHITECTURE			
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				A.B.N. 21.118.222.530			

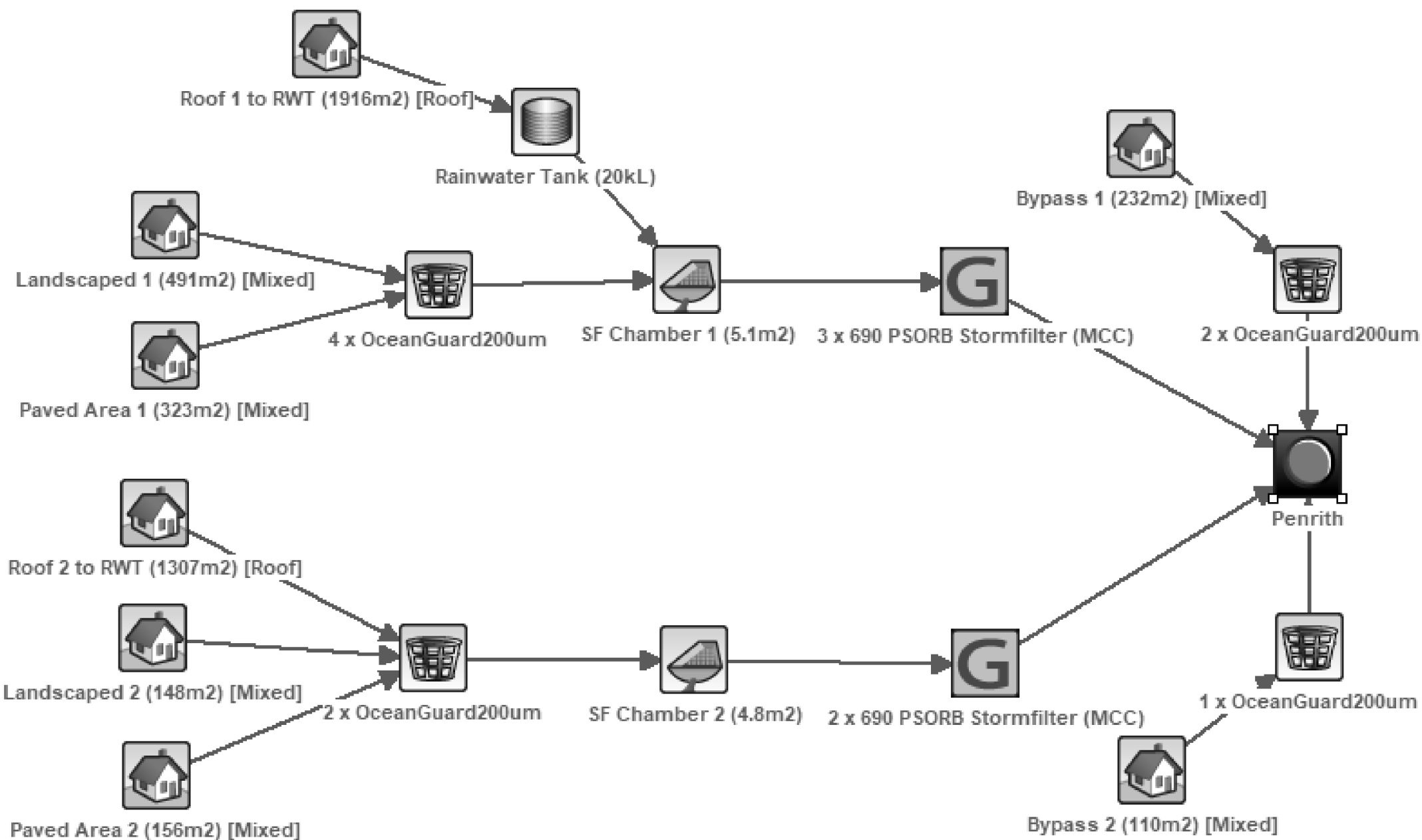
PROJECT				PROPOSED RESIDENTIAL DEVELOPMENT			
				96-98 LETHBRIDGE STREET & 42-46 EVAN STREET, PENRITH			

Drawing Status				PRELIMINARY			
				NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Drawing Title				EROSION AND SEDIMENT CONTROL PLAN AND DETAILS			
Project No				20200222			
Drawing No				SW400			
Revision No				B			

SERVICES ON THIS DRAWING
ARE SHOWN BELOW SLAB U.N.O



CATCHMENT TO OSD 1		CATCHMENT TO OSD 2	
	ROOF AREA TO RAINWATER TANK AREA: 1916m ²		ROOF AREA AREA: 1307m ²
	LANDSCAPE AREA AREA: 491m ²		LANDSCAPE AREA AREA: 148m ²
	PAVED AREA AREA: 323m ²		PAVED AREA AREA: 156m ²
	BYPASS AREA AREA: 232m ² (80% PERVIOUS)		BYPASS AREA AREA: 110m ² (100% PERVIOUS)
	FLOOD AFFECTED AREA EXCLUDED FROM CALCULATIONS. AREA: 2186m ²		



Treatment Train Effectiveness - Penrith			
	Sources	Residual Load	% Reduction
Flow (ML/yr)	2.39	2.07	13.4
Total Suspended Solids (kg/yr)	115	14.1	87.8
Total Phosphorus (kg/yr)	0.411	0.111	73
Total Nitrogen (kg/yr)	5.22	2.34	55.1
Gross Pollutants (kg/yr)	65.9	0	100

Node Water Balance - Rainwater Tank (20kL)					
	Flow (ML/yr)	TSS (kg/yr)	TP (kg/yr)	TN (kg/yr)	GP (kg/yr)
Flow In	1.18	31.05	0.18	2.57	33.59
ET Loss	0.00	0.00	0.00	0.00	0.00
Infiltration Loss	0.00	0.00	0.00	0.00	0.00
Low Flow Bypass Out	0.00	0.00	0.00	0.00	0.00
High Flow Bypass Out	0.00	0.00	0.00	0.00	0.00
Pipe Out	0.86	19.45	0.13	1.83	0.00
Weir Out	0.00	0.00	0.00	0.00	0.00
Transfer Function Out	0.00	0.00	0.00	0.00	0.00
Reuse Supplied	0.32	4.89	0.04	0.64	0.00
Reuse Requested	0.39	0.00	0.00	0.00	0.00
% Reuse Demand Met	82.05	0.00	0.00	0.00	0.00
% Load Reduction	27.04	37.34	29.36	28.85	100.00

Reference Coordination Drawing			
Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUC			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

ENGINEERS
AUSTRALIA
Chartered Professional Engineer
MEMBER

QUALITY CONTROL			
DRAWN	MN	DATE	03.09.20
CHECKED	SH	DATE	03.09.20
DESIGNED	MN	DATE	03.09.20
VERIFIED	SH	DATE	03.09.20
APPROVED	SH	DATE	03.09.20

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Scales

0m 2.5 5 7.5 10 12.5
SCALE 1:250 ON ORIGINAL SIZE

CLIENT
URBAN LINK PTY LTD

ARCHITECT
URBAN LINK
ARCHITECTURE

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PROJECT
PROPOSED RESIDENTIAL
DEVELOPMENT
96-98 LETHBRIDGE STREET &
42-46 EVAN STREET, PENRITH

Drawing Status	PRELIMINARY	
NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Drawing Title	STORMWATER CONCEPT DESIGN MUSIC CATCHMENT PLAN AND RESULT	
Project No	Drawing No	Revision No
20200222	SW500	B