

31 CHARLES STREET, FRESHWATER

PROPOSED DOUBLE STOREY DWELLING

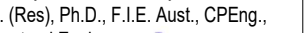
STORMWATER CONCEPT PLANS

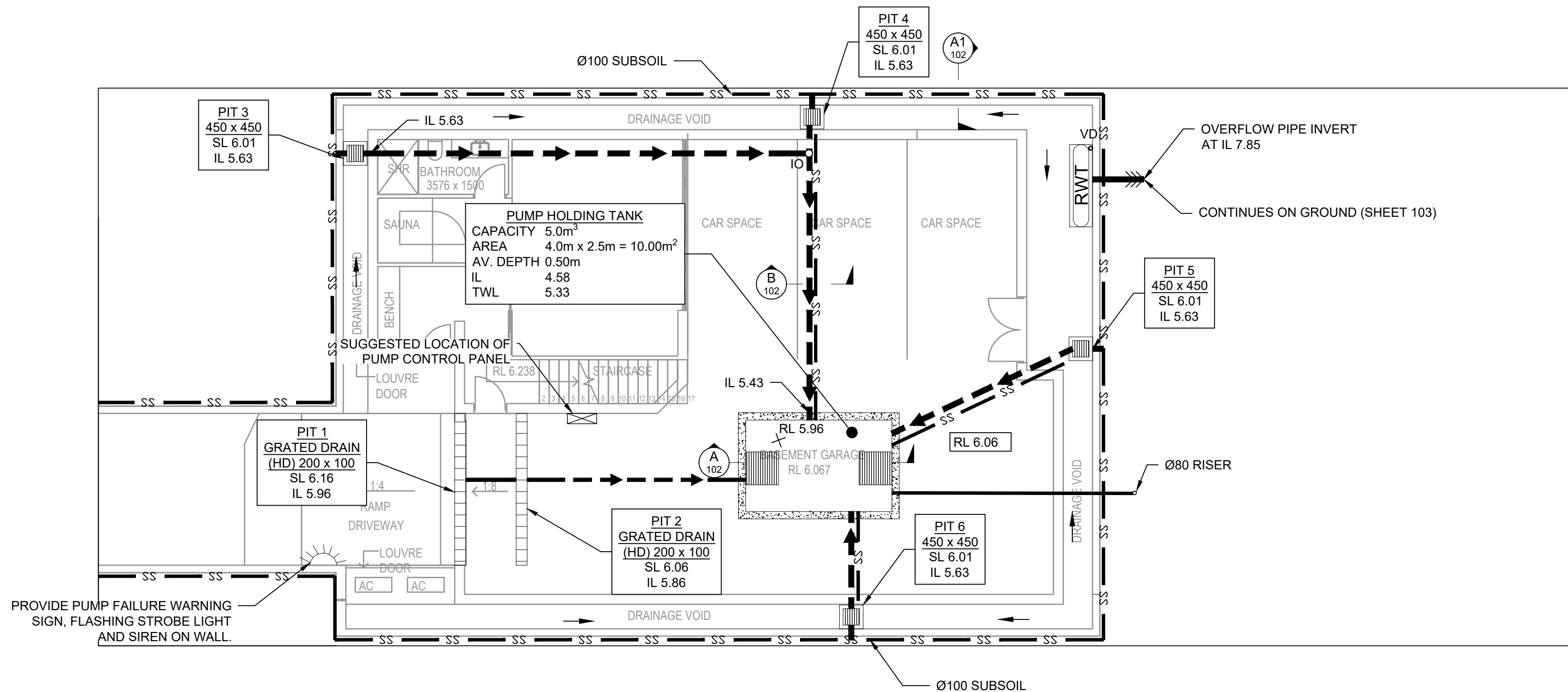


LOCALITY PLAN
N.T.S

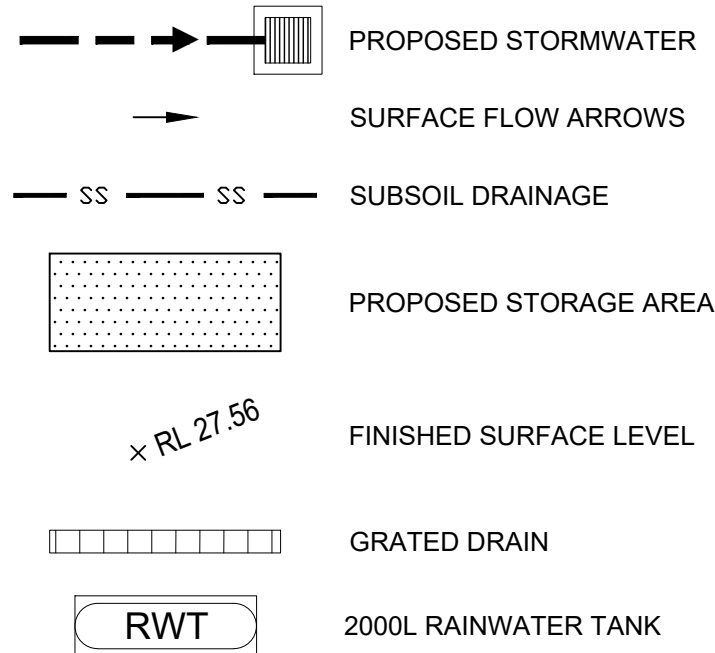
DRAWING INDEX	
Drawing No.	DESCRIPTION
000	COVER SHEET PLAN
101	STORMWATER CONCEPT PLAN BASEMENT LEVEL SHEET 1 OF 2
102	STORMWATER CONCEPT PLAN BASEMENT LEVEL SHEET 2 OF 2
103	STORMWATER CONCEPT PLAN GROUND LEVEL
104	OSD CATCHMENTS PLAN
105	ON-SITE DETENTION DETAILS AND CALCULATION SHEETS
106	MISCELLANEOUS DETAILS SHEET

NOT FOR CONSTRUCTION

				Certification By Dr. Michel Chaaya B.E., M.E. (Res), Ph.D., F.I.E. Aust., CPEng., Civil & Structural Engineer		Architect		Client		Scale		Project 31 CHARLES STREET, FRESHWATER PROPOSED DOUBLE STOREY DWELLING STORMWATER CONCEPT PLANS DEVELOPMENT APPLICATION		Drawing Title COVER SHEET PLAN			
						GILES TRIBE PTY LTD											
B		COUNCIL COMMENT		18/09/2024		GCS		JSF									
A		ISSUE FOR DEVELOPMENT APPLICATION		04/07/2024		GCS		JSF									
Issue		Description		Date		Design		Checked									
0		1cm at full size		10cm		20cm											
Scale		A1		Project No.		Dwg. No.		Issue									
N.T.S.				24150		000		B									



LEGEND



STANDARD PUMP OUT DESIGN NOTES

- THE PUMP OUT SYSTEM SHALL BE DESIGN TO BE OPERATED IN THE FOLLOWING MANNER:
- 1 - THE PUMP SHALL BE PROGRAMMED TO WORK ALTERNATELY TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE.
 - 2 - A FLOAT SHALL BE PROVIDED TO ENSURE OF THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS AT THE MINIMUM WATER LEVEL. THE SAME FLOAT SHALL BE SET TO TURN ONE OF THE PUMPS ON UPON THE WATER LEVEL IN THE TANK RISING TO APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL. THE PUMP SHALL OPERATE UNTIL THE TANK IS DRAINED TO THE MINIMUM WATER LEVEL.
 - 3 - A SECOND FLOAT SHALL BE PROVIDE AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHALL START THE OTHER PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM.
 - 4 - AN ALARM SYSTEM SHALL BE PROVIDE WITH A FLASHING STROBE LIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.
 - 5 - A CONFINED SPACE DANGER SIGN SHALL BE PROVIDED AT ALL ACCESS POINT TO THE PUMP-OUT STORAGE TANK IN ACCORDANCE WITH THE UPPER PARRAMATA RIVER CATCHMENT TRUST OSD HANDBOOK.



BASEMENT PUMP OUT FAILURE WARNING SIGN

SIGN SHALL BE PLACED IN A CLEAR AND VISIBLE LOCATION WHERE VEHICLES ENTER THE BASEMENT

COLOURS:
"WARNING" = RED
BORDER AND OTHER LETTERING = BLACK



CONFINED SPACE DANGER SIGN

A) A CONFINED SPACE DANGER SIGN SHALL BE POSITIONED IN A LOCATION AT ALL ACCESS POINTS, SUCH THAT IT IS CLEARLY VISIBLE TO PERSONS PROPOSING TO ENTER THE BELOW GROUND TANK/S CONFINED SPACE.

B) MINIMUM DIMENSIONS OF THE SIGN - 300mm x 450mm (LARGE ENTRIES, SUCH AS DOORS) - 250mm x 180mm (SMALL ENTRIES SUCH AS GRATES & MANHOLES)

C) THE SIGN SHALL BE MANUFACTURED FROM COLOUR BONDED ALUMINUM OR POLYPROPYLENE

D) SIGN SHALL BE AFFIXED USING SCREWS AT EACH CORNER OF THE SIGN

COLOURS:
"DANGER" & BACKGROUND = WHITE
ELLIPTICAL AREA = RED
RECTANGLE CONTAINING ELLIPSE = BLACK
BORDER AND OTHER LETTERING = BLACK

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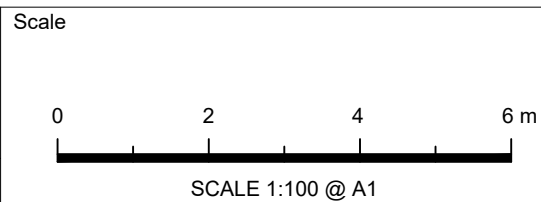
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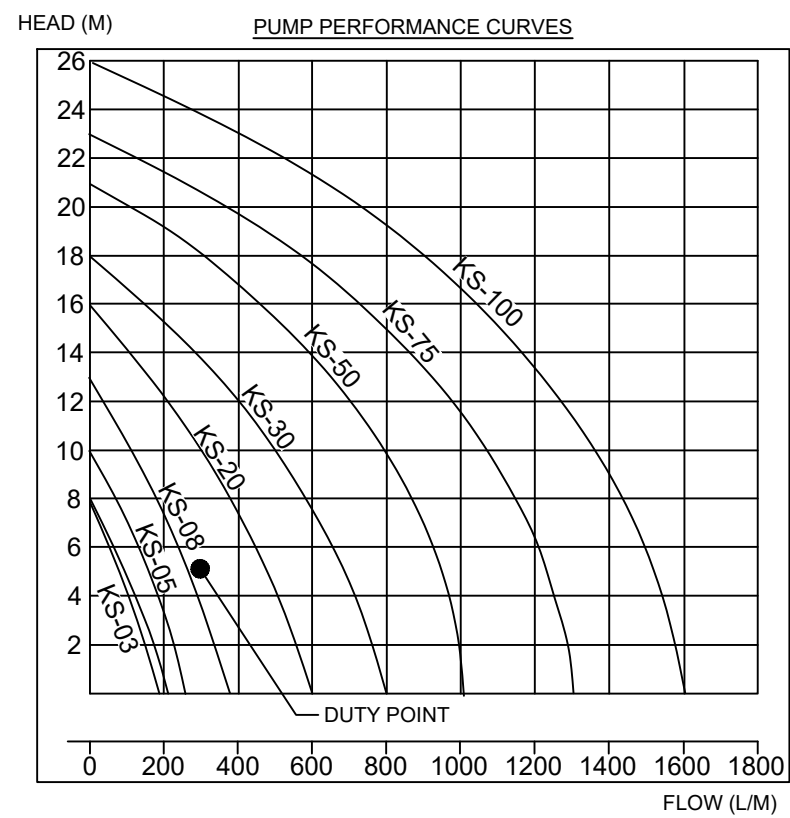
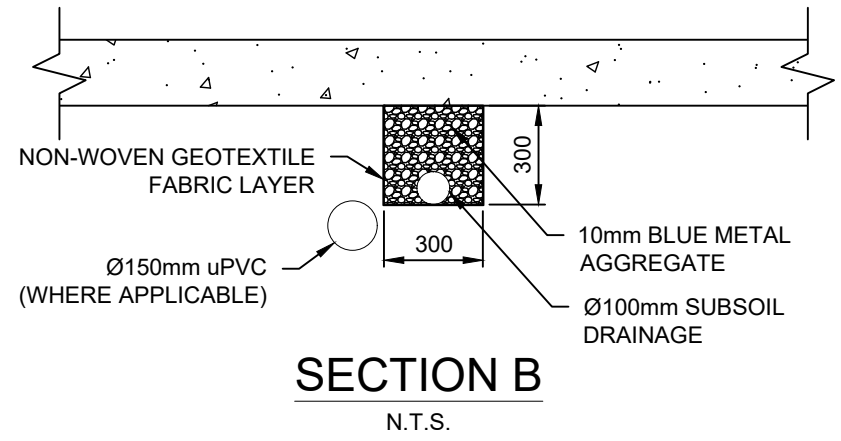
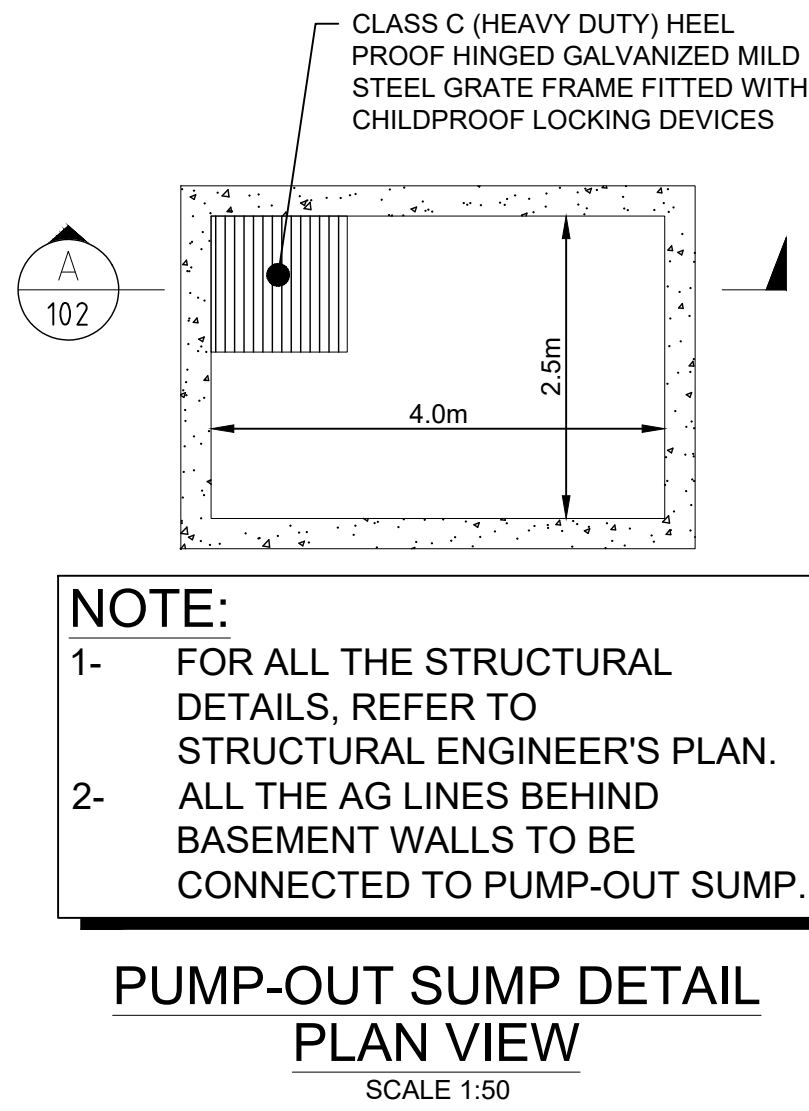
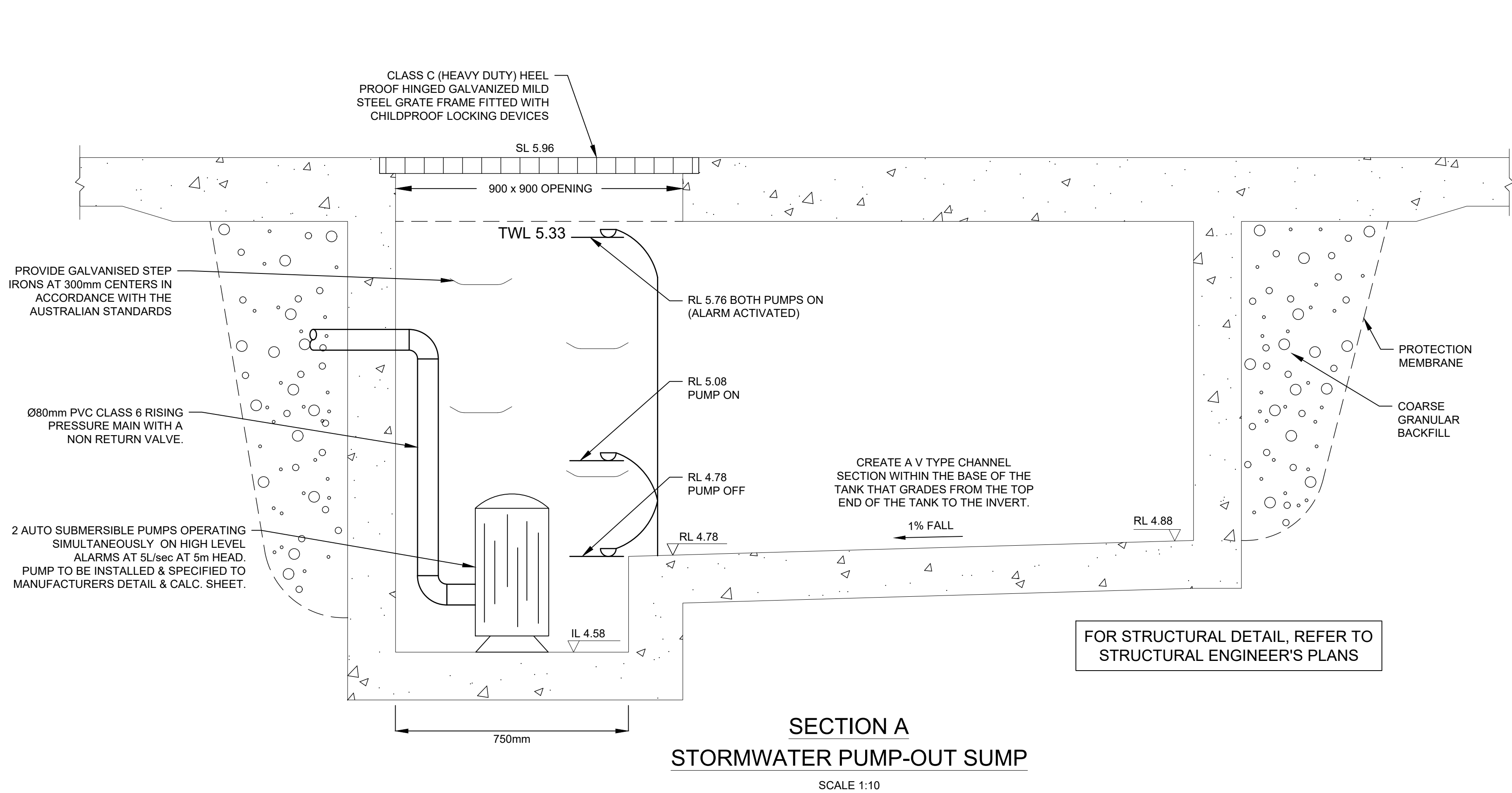
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Project
**31 CHARLES STREET, FRESHWATER
PROPOSED DOUBLE STOREY DWELLING
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION**

Drawing Title	STORMWATER CONCEPT PLAN BASEMENT LEVEL SHEET 1 OF 2			
Scale	A1 1:100	Project No. 24150	Dwg. No. 101	Issue B



PUMP STORAGE VOLUME CALCULATION

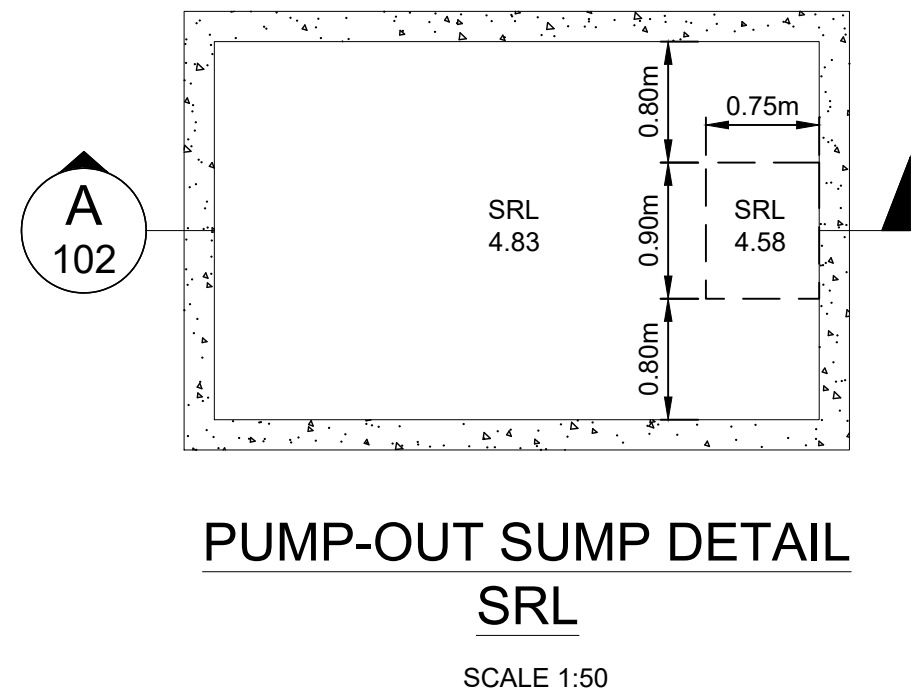
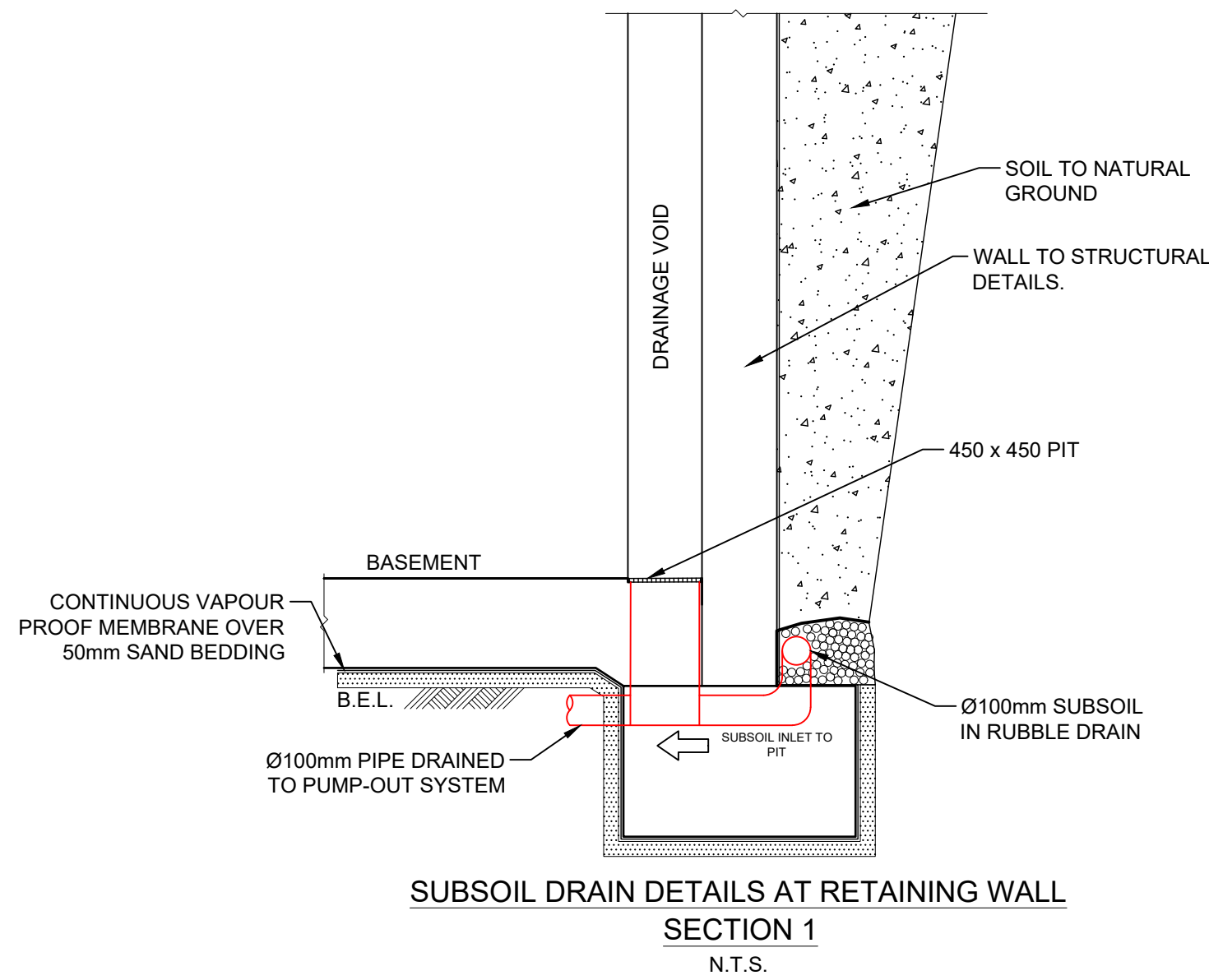
AREA DRAINING TO EACH SUMP = 23.72 m²

SUMP SIZE BASED ON 100 YEAR 2 HR STORM, I = 47.50 mm/hr,
Q = CIA/3600 = 1 x 47.50 x 23.72/3600 = 0.31 L/sec
VOLUME REQUIRED = 0.31 x (2x60x60) = 2232 L = 2.232 m³
STORAGE PROVIDED = 4.0x2.5x0.50 = 5.00 m³

PUMP OUT RATE BASED ON 100 YR 5MIN STORM, I = 264 mm/hr
(MIN RATE REQUIRED AS PER AS3500.3 IS 10 L/sec)
Q = CIA/3600 = 1 x 264 x 23.72/3600 = 1.74 L/sec

DUAL KS-20 PUMP OR EQUIVALENT TO BE INSTALLED IN SUMP AND CONNECTED TO CONTROL PANEL WHICH WILL ALLOW FOR THE PUMP TO OPERATE SIMULTANEOUSLY ON HIGH LEVEL WITH ALARM AT 10 L/sec AT 5m HEAD.

Type	Output		Outlet		Rated		Maximum		Weigh	Dimension		
	HP	kW	mm	Inch	M	LPM	M	LPM		L(mm)	W(mm)	H(mm)
KS-03	1/3	0.25	40	1 1/2"	3	130	8	180	9	188	141	305
KS-04	1/2	0.4	50	2"	5	150	8	220	11	208	140	359
KS-05	1/2	0.4	50	2"	5	160	10	260	14	230	156	375
KS-08	1	0.75	50	2"	6	240	13	380	21	290	180	425
KS-20	2	1.5	80	3"	10	300	16	600	31	278	182	475
KS-30	3	2.2	80	3"	10	500	18	800	42	390	250	450
KS-50	5	3.7	100	4"	10	800	21	1100	48	450	240	530
KS-75	7 1/2	5.6	100	4"	15	800	23	1300	60	550	310	590
KS-100	10	7.5	150	6"	18	900	25	1600	70	550	310	610



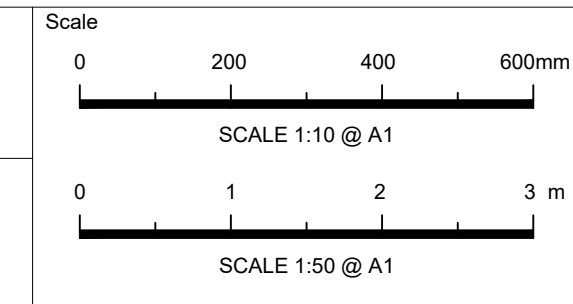
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31 CHARLES STREET, FRESHWATER PROPOSED DOUBLE STOREY DWELLING STORMWATER CONCEPT PLANS DEVELOPMENT APPLICATION

Drawing Title	STORMWATER CONCEPT PLAN BASEMENT LEVEL SHEET 2 OF 2			
Scale	A1	Project No.	Dwg. No.	Issue
As Shown		24150	102	1

LEGEND

- PROPOSED STORMWATER BYPASSING OSD
- PROPOSED STORMWATER DRAINING TO RWT
- PROPOSED STORMWATER DRAINING TO OSD
- PIPE OVERCROSSING MINIMUM 150mm CLEARANCE
- EXISTING SEWER MAIN
- EXISTING TELSTRA MAIN
- EXISTING GAS MAIN
- GUTTER DOWNPIPE
- RAINWATER OUTLET
- VERTICAL DROP
- SURFACE FLOW ARROWS
- DESIGN SURFACE LEVEL
- EXISTING SURFACE LEVEL
- INVERT LEVEL OF PIPE JUNCTION
- PROPOSED OSD STORAGE
- ROOF AREA TO RAINWATER TANK
- AREA BYPASSING OSD
- TILED AREA
- TREES TO BE RETAINED
- TREES TO BE REMOVED
- Ø50mm HDPE CAST IN SLAB
- Ø50mm EMERGENCY OVERFLOW SPITTERS/PIPES

GENERAL NOTES

- ALL LINES ARE TO BE Ø90 uPVC 1.0% GRADE UNLESS NOTED OTHERWISE. CHARGED LINES TO BE SEWERGRADE & SEALED.
- EXISTING SERVICES LOCATIONS SHOWN INDICATIVE ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE & LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS.
- ALL PIPES TO HAVE MIN 150mm COVER IF LOCATED WITHIN PROPERTY.
- ALL PITS IN DRIVEWAYS TO BE 450x450 CONCRETE AND ALL PITS IN LANDSCAPED AREAS TO BE 450x450 PLASTIC.
- PITS LESS THAN 600mm DEEP MAY BE BRICK, PRECAST OR CONCRETE.
- ALL BALCONIES AND ROOFS TO BE DRAINED AND TO HAVE SAFETY OVERFLOWS IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
- ALL EXTERNAL SLABS TO BE WATERPROOFED.
- ALL GRATES TO HAVE CHILD PROOF LOCKS.
- ALL DRAINAGE WORKS TO AVOID TREE ROOTS.
- ALL DP's TO HAVE LEAF GUARDS.
- ALL EXISTING LEVELS TO BE CONFIRMED BY BUILDER PRIOR TO CONSTRUCTION.
- ALL WORK WITHIN COUNCIL RESERVE TO BE INSPECTED BY COUNCIL PRIOR TO CONSTRUCTION.
- COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY COUNCIL.
- ALL WORK SHALL BE IN ACCORDANCE WITH B.C.A. AND A.S.3500.3.
- REFER TO LANDSCAPE ARCHITECT'S DRAWINGS FOR LANDSCAPING.
- CARE TO BE TAKEN AROUND EXISTING SEWER. STRUCTURAL ADVICE IS REQUIRED FOR SEWER PROTECTION AGAINST ADDITIONAL LOADING FROM NEW PITS, PIPES, RETAINING WALLS AND OSD BASIN WATER LEVELS.

PIPES NOTE:

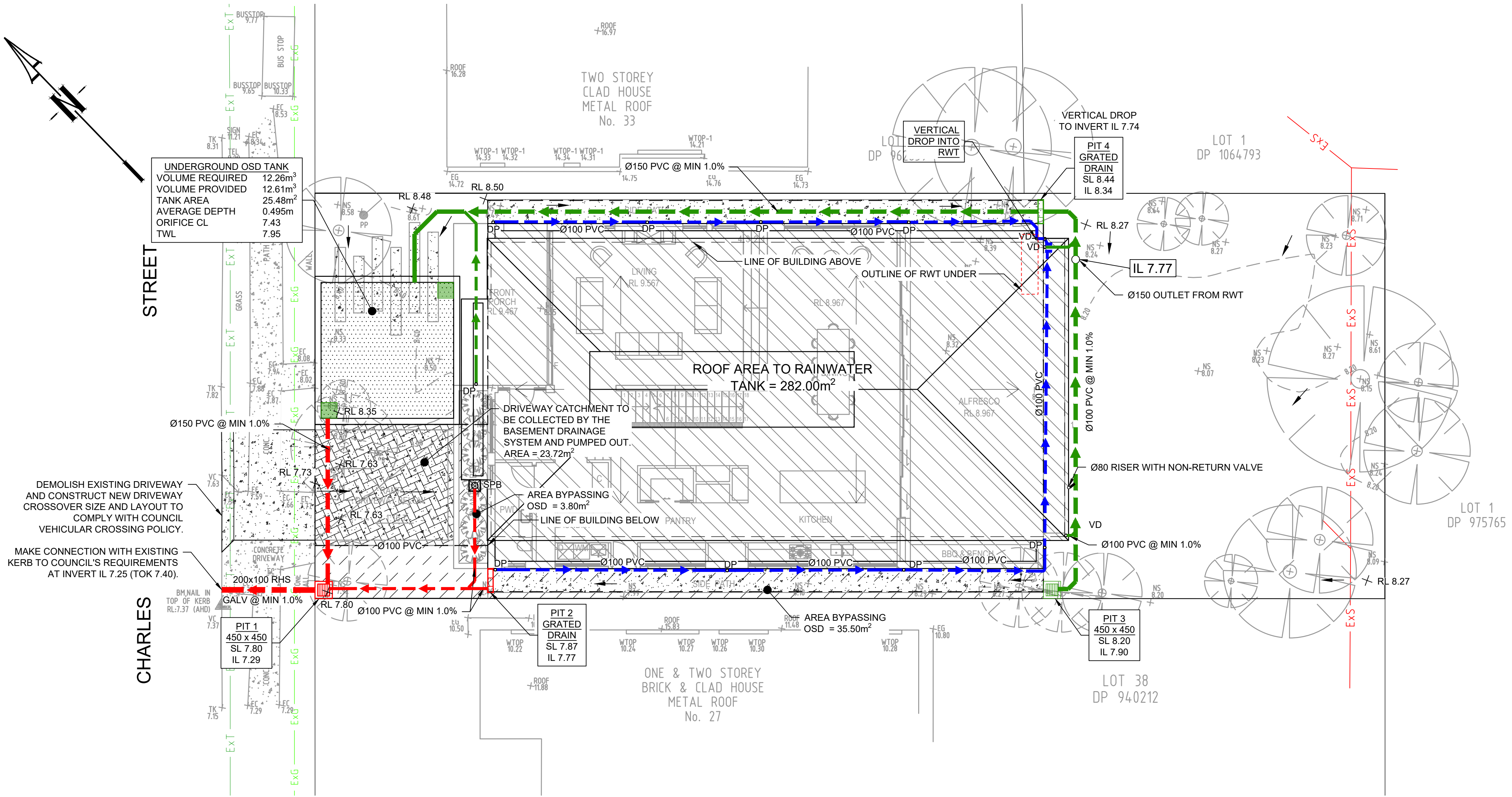
Ø65 PVC @ MIN 1.0%
Ø90 PVC @ MIN 1.0%
Ø100 PVC @ MIN 1.0%
Ø150 PVC @ MIN 1.0%
Ø225 PVC @ MIN 0.5%
Ø300 PVC @ MIN 0.4%
UNLESS NOTED OTHERWISE

RAINWATER TANK NOTE:

RAINWATER RE-USE AS SPECIFIED BY BASIX CERTIFICATE TO OUTDOOR TAPS AND/OR TOILETS AND/OR WASHING MACHINE.

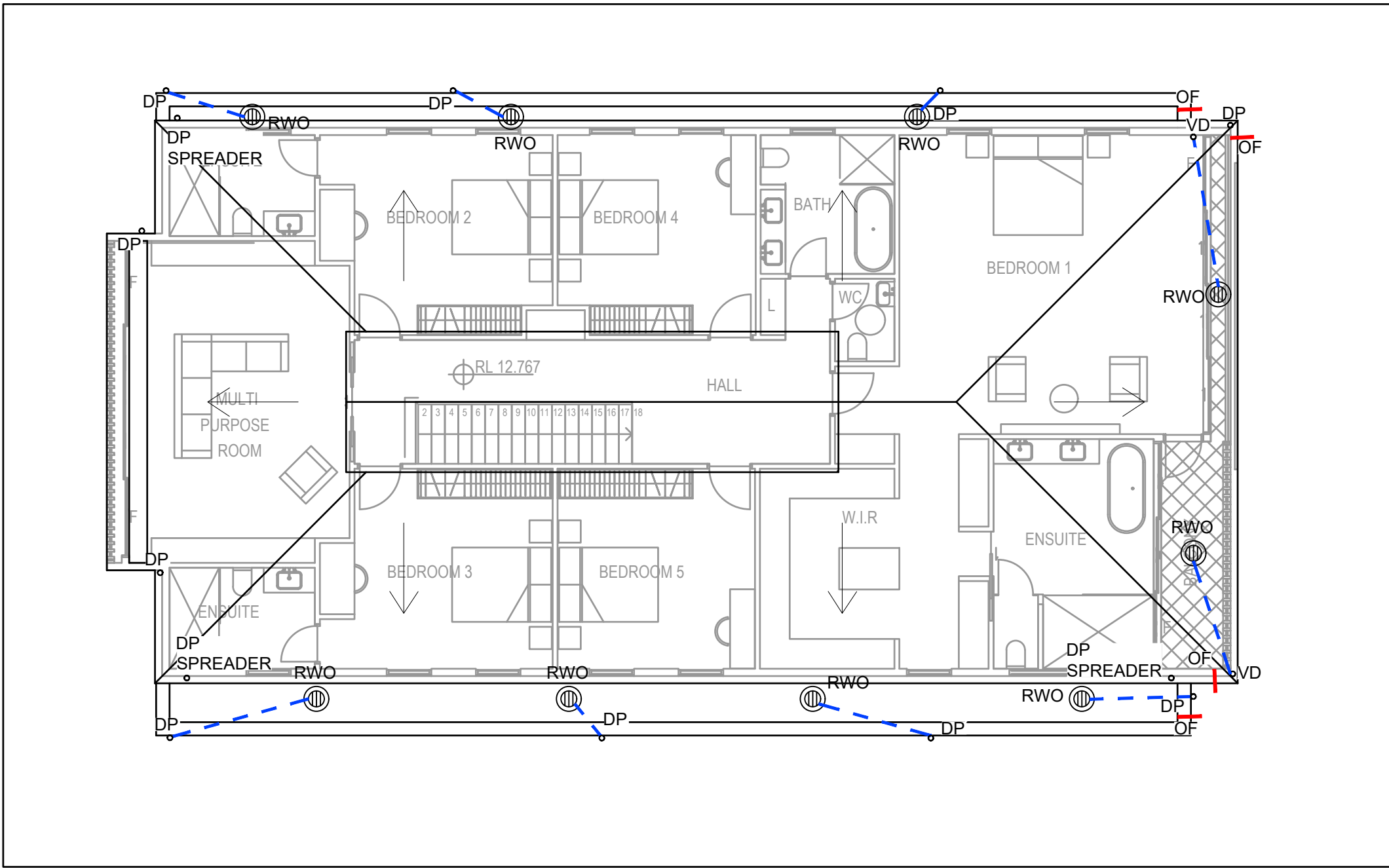
ROOF NOTE:

IT IS CONTRACTOR'S RESPONSABILITY TO ENSURE MINIMUM 30 TO 40mm OF PONDING IS ACHIEVED OVER THE FLOOR WASTES BY GRADING CATCHMENT'S SURFACES AT MINIMUM 1% FALL.



GROUND FLOOR PLAN

SCALE 1:100



LEVEL 1 PLAN

SCALE 1:100

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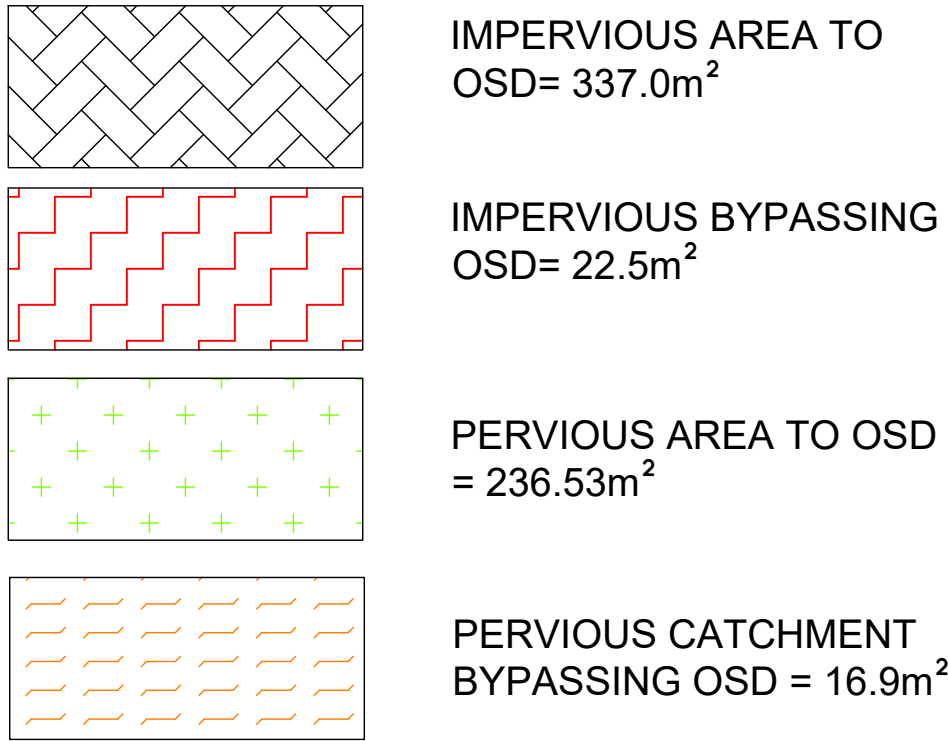
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SCALE 1:100 @ A1

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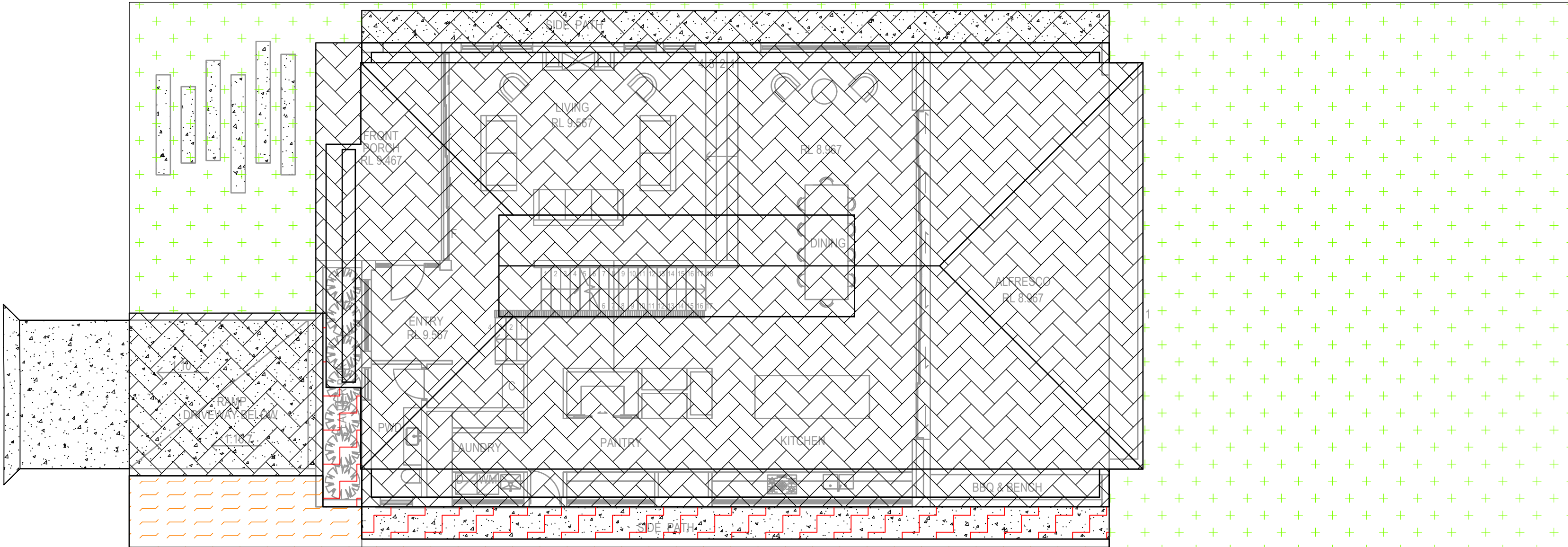
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Scale	A1	Project No.	Dwg. No.	Issue
1:100		24150	103	B

OSD CATCHMENT LEGEND



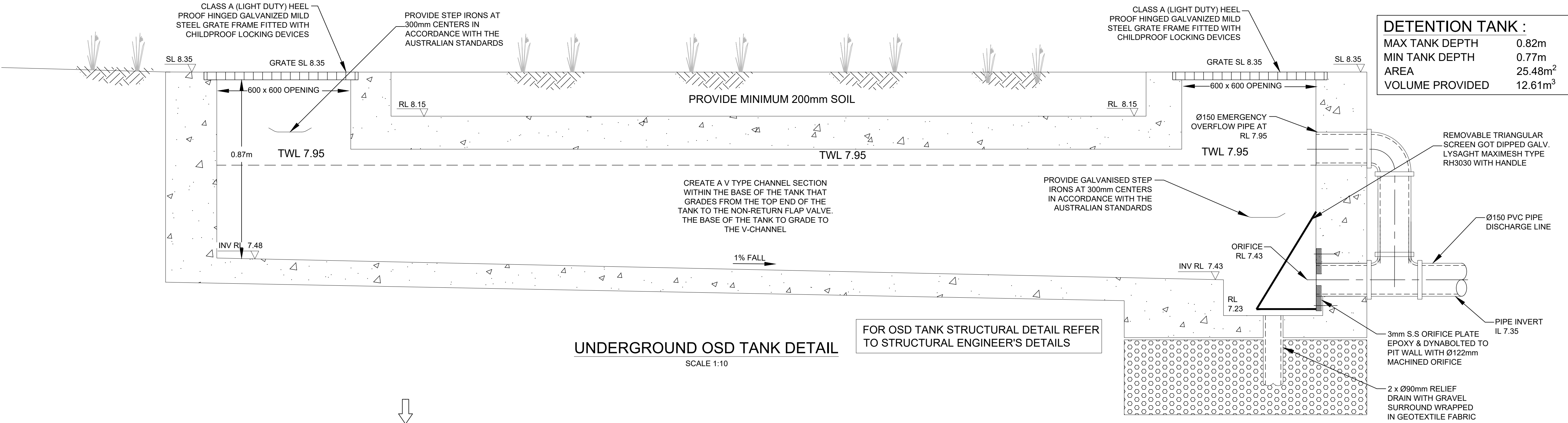
SITE AREA: 613.02 m2



OSD CATCHMENTS PLAN
SCALE 1:100

NOT FOR CONSTRUCTION

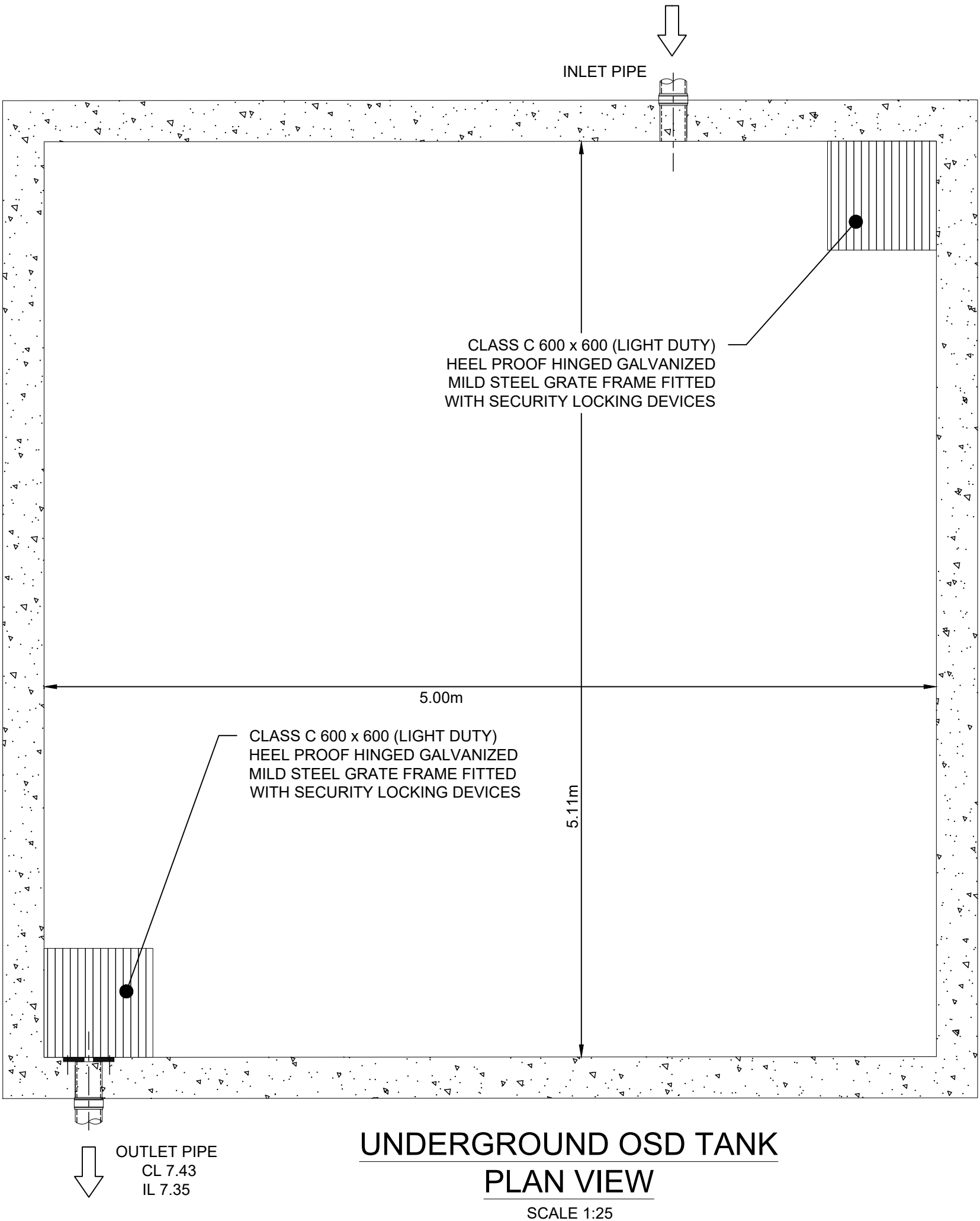
SUBMERGED ORIFICE:
THE 100yr ARI LEVEL IN THE ADJACENT ROAD IS ASSUMED TO BE AT THE TOP OF THE KERB AT RL 7.40 MAKING THIS ORIFICE NON-SUBMERGED.



DETENTION TANK :	
MAX TANK DEPTH	0.82m
MIN TANK DEPTH	0.77m
AREA	25.48m ²
VOLUME PROVIDED	12.61m ³

UNDERGROUND OSD TANK DETAIL
SCALE 1:10

FOR OSD TANK STRUCTURAL DETAIL REFER TO STRUCTURAL ENGINEER'S DETAILS



OSD CALCULATIONS:

SITE AREA = 613.02 m²
= 0.061302 ha

PSD = 400 l/s/ha
SSR = 200 m³/ha

THEREFORE:
PSD = 400 x 0.061302
= 24.52 l/s

SSR = 200 x 0.061302
= 12.26 m³

ORIFICE CALCULATIONS:

THE POST-DEVELOPMENT FLOWS Q₁₀₀
BYPASSING THE OSD ARE:

Q₁₀₀ = C x I x A / 360
= 0.9 x 264 x 0.00394 / 360
= 2.60 l/s

THEREFORE, THE PERMITTED OSD
DISCHARGE IS:
Q = 24.52 - 2.60
= 21.92 l/s

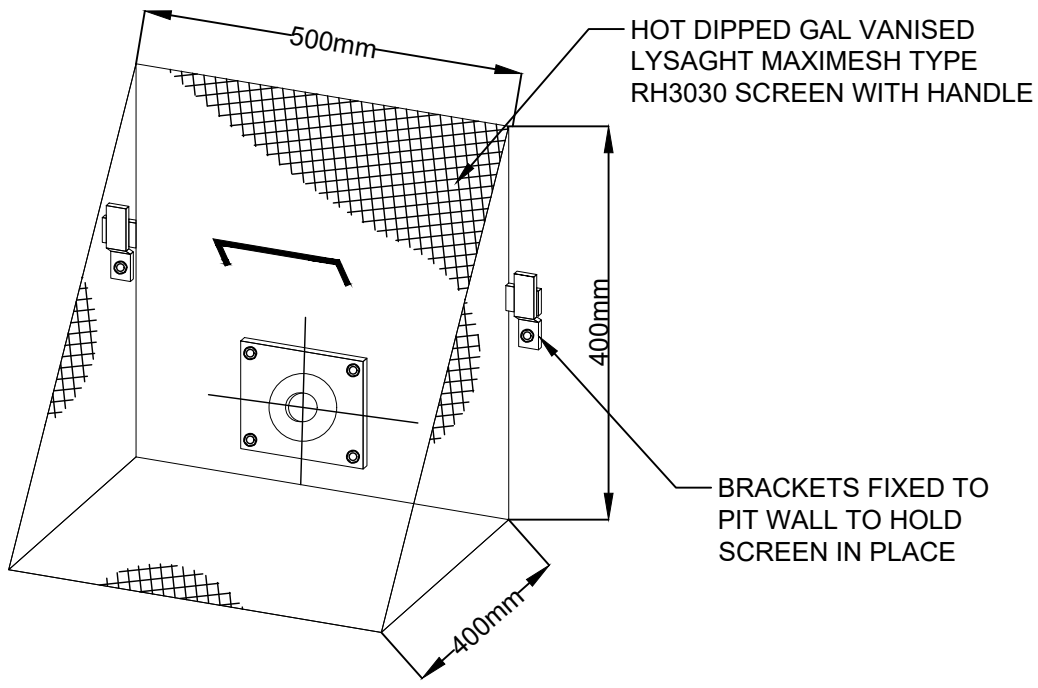
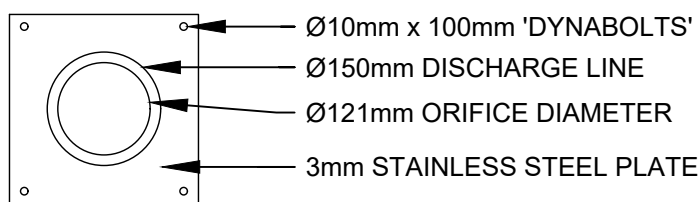
Q = C x A x (2 x g x h)^{0.5}

SO: A = Q / (C x sqrt(2 x g x h))
= 0.02192 / (0.60 x sqrt(2 x 9.8 x 0.52))
= 0.011444m²

THEREFORE:
d = sqrt(4 x A / pi)
= sqrt(4 x 0.011444 / 3.14159)
= 120.71mm

UNDERGROUND OSD TANK
STAGED STORAGE CALCULATIONS

DEPTH (mm)	AREA (m ²)	CUMULATIVE VOLUME (m ³)
0	25.48	0
100	25.48	1.911
200	25.48	4.459
300	25.48	7.007
400	25.48	9.555
500	25.48	12.103
520	25.48	12.6126



TRASH SCREEN DETAIL
N.T.S.

ORIFICE PLATE DETAIL
N.T.S.

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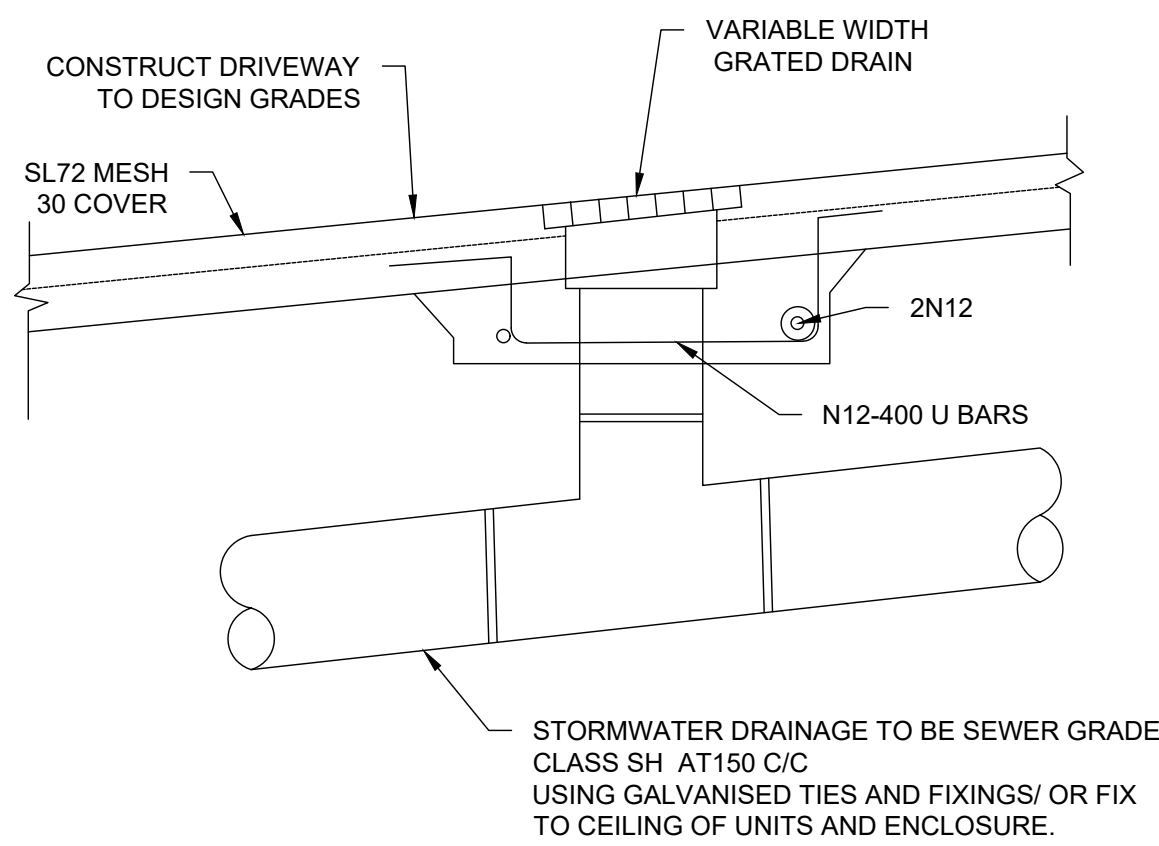
Client
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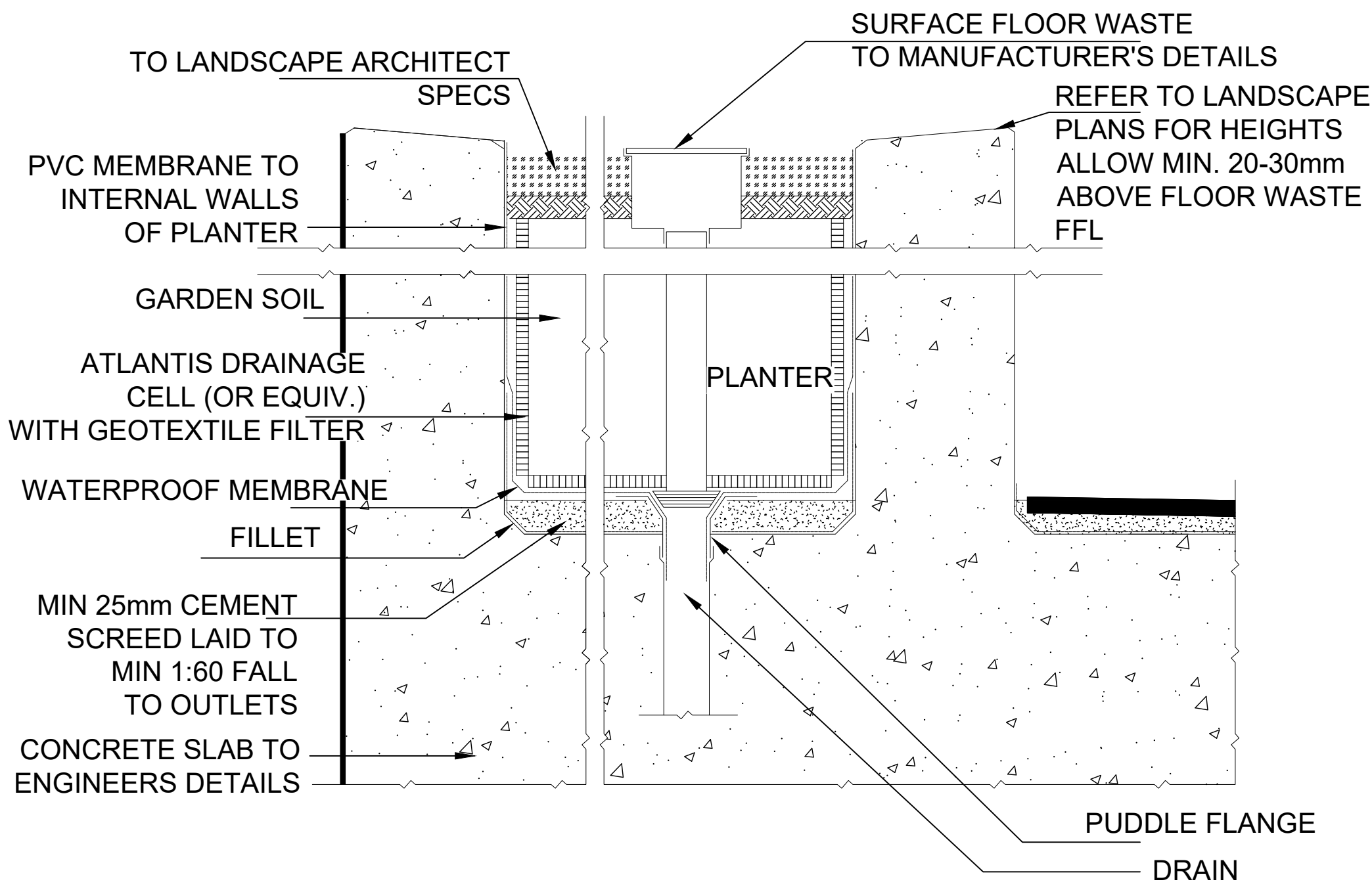
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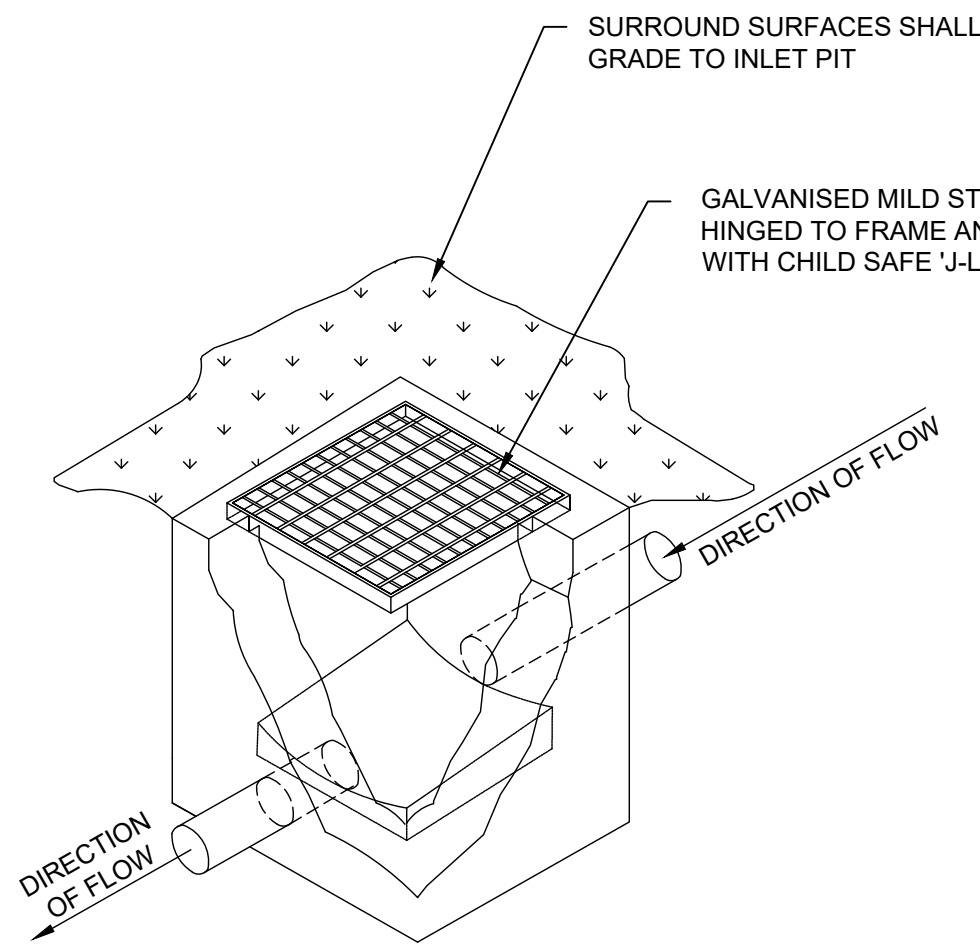
Drawing Title
**ON-SITE DETENTION DETAILS
AND CALCULATION SHEETS**
Scale A1 Project No. 24150 Dwg. No. 105 Issue B



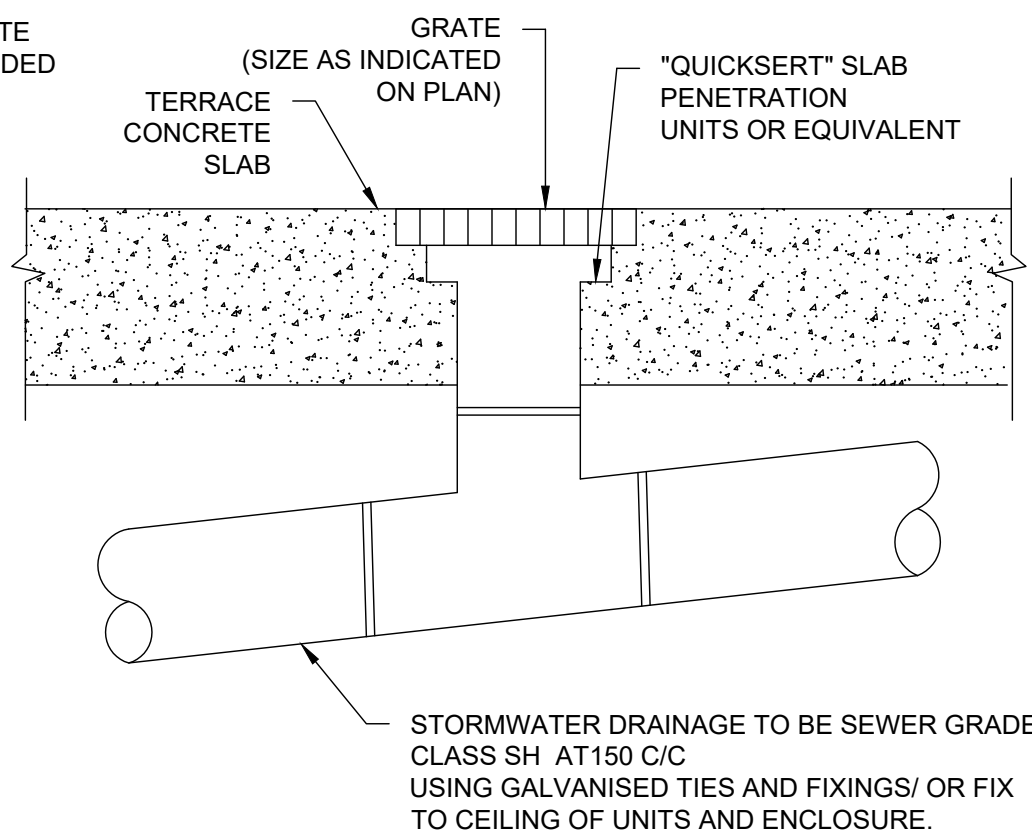
GRADED DRAIN DETAIL
N.T.S.



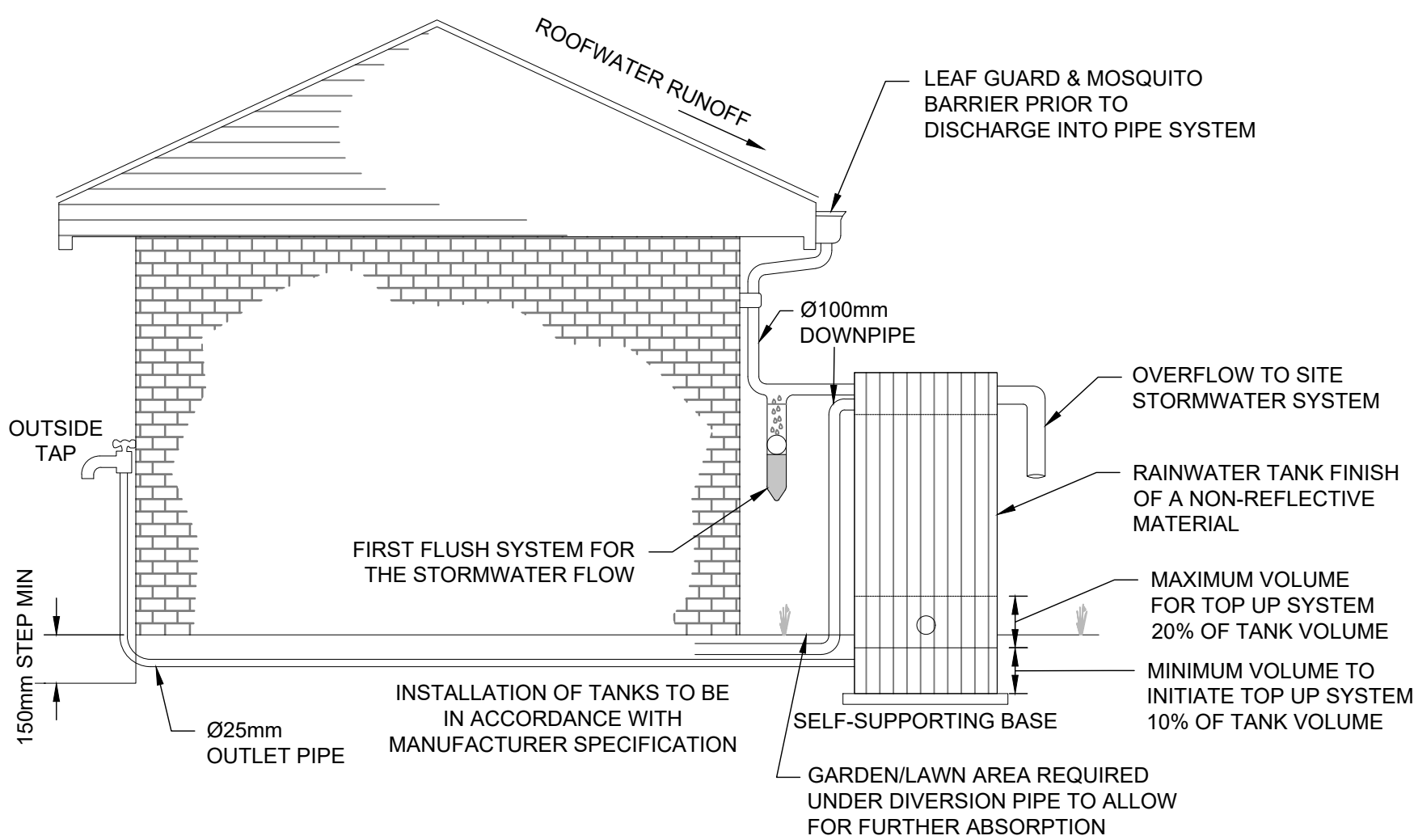
TYPICAL SUSPENDED PLANTER
BOX FLOOR WASTE DETAIL
N.T.S.



TYPICAL GRATED
INLET PIT DETAIL
N.T.S.



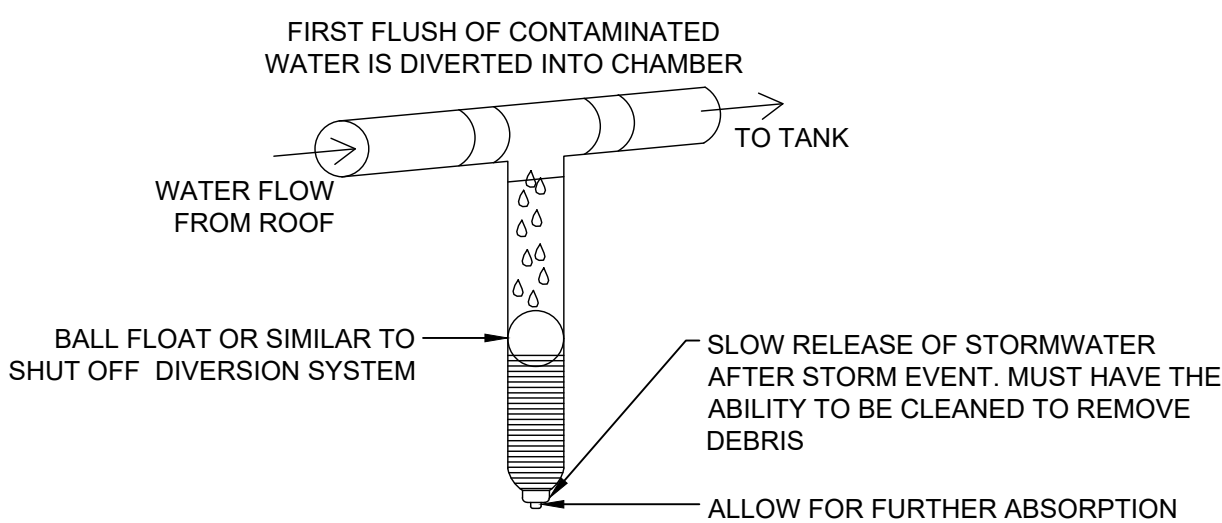
RAINWATER OUTLET DETAIL
N.T.S.



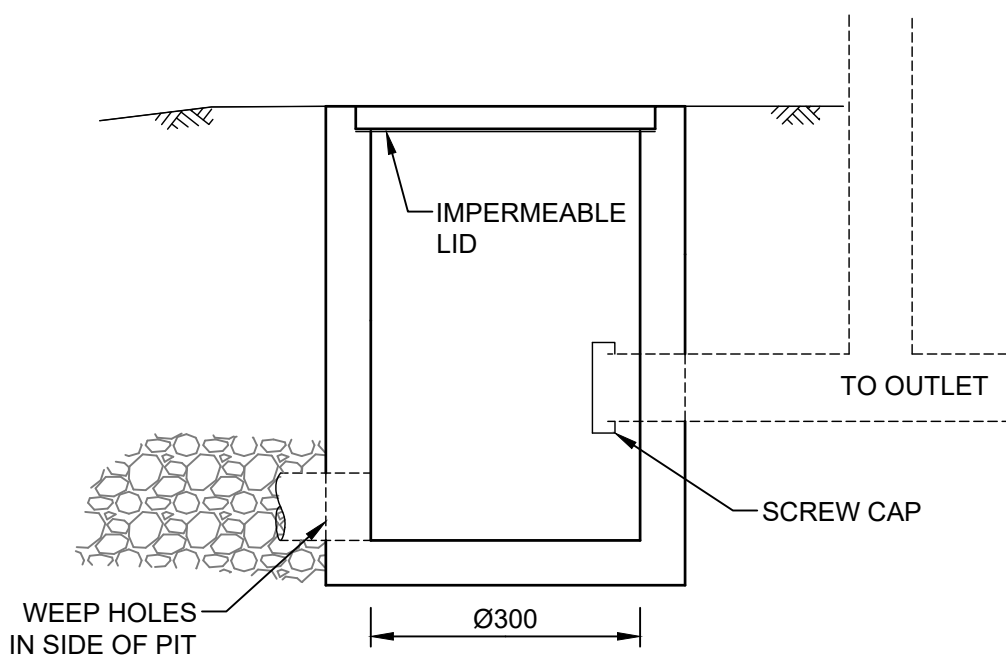
RAINWATER TANK DETAIL
N.T.S.

STORAGE TANK NOTES:

1. TANK WATER TAPS SHALL BE MARKED "RAINWATER NOT TO HUMAN CONSUMPTION".
2. RAINWATER TANKS SHALL BE CONNECTED TO MAINS WATER SUPPLY AS BACKUP.
3. THE PUMPS ARE TO BE INSULATED IN ACCORDANCE WITH COUNCIL POLICY.
4. PUMPS SHALL PROVIDE MINIMUM 150 kPa PRESSURE.
5. EACH TANK TO BE CONNECTED TO AN OUTDOOR TAP FOR IRRIGATION USE.
6. RAINWATER TANKS TO BE CLEANED OUT EVERY 6 MONTHS.
7. WATER TANK AND ASSOCIATED STRUCTURE TO BE THE SAME COLOR, OR A COLOR COMPLEMENTARY TO THE DWELLING.
8. TOP TANK TO BE BELOW TOP OF NEAREST FENCE, OR 1.8 METERS WHICHEVER IS LESS.
9. THE WATER TANK SHOULD BE LOCATED AT LEAST 900mm FROM ANY PROPERTY BOUNDARY.
10. PLUMBING FROM THE WATER TANK IS TO BE KEPT SEPARATED FROM THE RETICULATED WATER SUPPLY SYSTEM.
11. TANK TO BE BUILT ON SELF-SUPPORTING BASE.
12. PROVIDE BACK-FLOW PREVENTION DEVICE AT MAINS WATER METER.
13. ROOF DRAINING TO TANK MUST NOT CONTAIN LEAD, TAR BASED PAINTS OR ASBESTOS.
14. WATER TO BE DRAWN FROM ANAEROBIC ZONE OF TANK.



FIRST FLUSH WATER
DIVERTER DETAIL
N.T.S.



CLEANING EYE DETAIL
N.T.S.

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Project
**31 CHARLES STREET, FRESHWATER
PROPOSED DOUBLE STOREY DWELLING
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION**

Drawing Title
**MISCELLANEOUS
DETAILS SHEET**

Scale	A1	Project No.	Dwg. No.	Issue
N.T.S.		24150	106	B