

PROPOSED DEVELOPMENT

51 REDMAN ROAD, DEE WHY

STORMWATER MANAGEMENT PLANS

GENERAL NOTES:

- THESE PLANS SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT CONSULTANTS' PLANS, SPECIFICATIONS, CONDITIONS OF DEVELOPMENT CONSENT AND CONSTRUCTION CERTIFICATE REQUIREMENTS. WHERE DISCREPANCIES ARE FOUND NASTASI & ASSOCIATES MUST BE CONTACTED IMMEDIATELY FOR VERIFICATION.
- WHERE THESE PLANS ARE NOTED FOR DEVELOPMENT APPLICATION PURPOSES ONLY, THEY SHALL NOT BE USED FOR OBTAINING A CONSTRUCTION CERTIFICATE NOR USED FOR CONSTRUCTION PURPOSES.
- SUBSOIL DRAINAGE SHALL BE DESIGNED AND DETAILED BY THE STRUCTURAL ENGINEER. SUBSOIL DRAINAGE SHALL NOT BE CONNECTED INTO THE STORMWATER SYSTEM IDENTIFIED ON THESE PLAN UNLESS APPROVED BY NASTASI & ASSOCIATES ENGINEERS.

STORMWATER CONSTRUCTION NOTES:

- ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH AS/NZS 3500 (CURRENT EDITION) AND THE REQUIREMENTS OF THE LOCAL COUNCIL'S POLICIES AND CODES.
- THE MINIMUM SIZE OF THE STORMWATER DRAINS SHALL NOT BE LESS THAN DN 90 FOR CLASS 1 BUILDINGS AND DN100 FOR OTHER CLASSES OF BUILDING OR AS REQUIRED BY REGULATORY AUTHORITY.
- THE MINIMUM GRADIENT OF STORMWATER DRAINS SHALL BE 1%, UNLESS NOTED OTHERWISE.
- COUNCIL'S TREE PRESERVATION ORDER IS TO BE STRICTLY ADHERED TO. NO TREES SHALL BE REMOVED UNTIL PERMIT IS OBTAINED.
- PUBLIC UTILITY SERVICES ARE TO BE ADJUSTED AS NECESSARY AT THE CLIENT'S EXPENSE.
- ALL PITS TO BE BENCHED AND STREAMLINED. PROVIDE STEP IRONS FOR ALL PITS OVER 1.2m DEEP.
- MAKE SMOOTH JUNCTION WITH ALL EXISTING WORK.
- VEHICULAR ACCESS AND ALL SERVICES TO BE MAINTAINED AT ALL TIMES TO ADJOINING PROPERTIES AFFECTED BY CONSTRUCTION.
- SERVICES SHOWN ON THESE PLANS HAVE BEEN LOCATED FROM INFORMATION SUPPLIED BY THE RELEVANT AUTHORITIES AND FIELD INVESTIGATIONS AND ARE NOT GUARANTEED COMPLETE NOR CORRECT. IT IS THE CLIENT & CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL PRIOR TO CONSTRUCTION.
- ANY VARIATION TO THE WORKS AS SHOWN ON THE APPROVED DRAWINGS ARE TO BE CONFIRMED BY NASTASI & ASSOCIATES PRIOR TO THEIR COMMENCEMENT.

RAINWATER RE-USE NOTES:

- RAINWATER SUPPLY PLUMBING TO BE CONNECTED TO OUTLETS WHERE REQUIRED BY BASIX CERTIFICATE (BY OTHERS).
- TOWN WATER CONNECTION TO RAINWATER TANK TO THE SATISFACTION OF THE REGULATORY AUTHORITY. THIS WAY REQUIRE PROVISION OF:
2.1 PERMANENT AIR GAP
2.2 BACKFLOW PREVENTION DEVICE
- NO DIRECT CONNECTION BETWEEN TOWN WATER SUPPLY AND THE RAINWATER SUPPLY.
- AN APPROVED STOP VALVE AND/OR PRESSURE LIMITING VALVE AT THE RAINWATER TANK.
- PROVIDE AT LEAST ONE EXTERNAL HOSE COCK ON THE TOWN WATER SUPPLY FOR FIRE FIGHTING.
- PROVIDE APPROPRIATE FLOAT VALVES AND/OR SOLENOID VALVES TO CONTROL TOWN WATER SUPPLY INLET TO TANK IN ORDER TO ACHIEVE THE TOP-UP INDICATED ON THE TYPICAL DETAIL.
- ALL PLUMBING WORKS ARE TO BE CARRIED OUT BY LICENSED PLUMBERS IN ACCORDANCE WITH AS/NZS3500.1 NATIONAL PLUMBING AND DRAINAGE CODE.
- PRESSURE PUMP ELECTRICAL CONNECTION TO BE CARRIED OUT BY A LICENSED ELECTRICIAN.
- ONLY ROOF RUN-OFF IS TO BE DIRECTED TO THE RAINWATER TANK. SURFACE WATER INLETS ARE NOT BE CONNECTED.
- PIPE MATERIALS FOR RAINWATER SUPPLY PLUMBING ARE TO BE APPROVED MATERIALS TO AS/NZS3500 PART 1 SECTION 2 AND TO BE CLEARLY AND PERMANENTLY IDENTIFIED AS 'RAINWATER'. THIS MAY BE ACHIEVED FOR BELOW GROUND PIPES USING IDENTIFICATION TAPE (MADE IN ACCORDANCE WITH AS2648) OR FOR ABOVE GROUND PIPES BY USING ADHESIVE PIPE MARKERS (MAKE IN ACCORDANCE WITH AS1945).
- EVERY RAINWATER SUPPLY OUTLET POINT AND THE RAINWATER TANK ARE TO BE LABELED 'RAINWATER' ON A METALLIC SIGN IN ACCORDANCE WITH AS31619.
- ALL INLETS AND OUTLETS TO THE RAINWATER TANK ARE TO HAVE SUITABLE MEASURES PROVIDED TO PREVENT MOSQUITO AND VERMIN ENTRY.

EROSION AND SEDIMENT NOTES:

- THESE PLANS SHALL BE READ IN CONJUNCTION WITH EROSION AND SEDIMENT CONTROL DETAILS AS ATTACHED.
- THE CONTRACTOR SHALL IMPLEMENT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURE AS NECESSARY AND TO THE SATISFACTION OF THE RELEVANT LOCAL AUTHORITY PRIOR TO THE COMMENCEMENT ANY DURING CONSTRUCTION. NO DISTURBANCE TO THE SITE SHALL BE PERMITTED OTHER THAN IN THE IMMEDIATE AREA OF THE WORKS AND NO MATERIAL SHALL BE REMOVED FROM THE SITE WITHOUT THE RELEVANT LOCAL AUTHORITY APPROVAL. ALL EROSION AND SEDIMENT CONTROL DEVICES TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH STANDARDS OUTLINED IN NSW DEPARTMENT OF HOUSING'S "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTIONS".
- TOPSOIL SHALL BE STRIPPED AND STOCKPILED OUTSIDE HAZARD AREA SUCH AS DRAINAGE LINES. THIS TOPSOIL SHALL BE RESPREAD LATER ON AREAS TO BE REVEGETATED AND STABILIZED ONLY. TOPSOIL SHALL NOT BE RESPREAD ON ANY OTHER AREA UNLESS SPECIFICALLY INSTRUCTED BY THE SUPERINTENDENT. IF THEY ARE TO REMAIN LONGER THAN ONE MONTH STOCK PILES SHALL BE PROTECTED FROM EROSION BY COVERING THEM WITH A MULCH AND HYDROSEEDING AND, IF NECESSARY, BY LOCATING BANKS OR DRAINS DOWNSTREAM OF A STOCKPILE TO RETARD SILT LADEN RUNOFF.
- THE CONTRACTOR SHALL REGULARLY MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES AND REMOVE ACCUMULATED SILT FROM SUCH DEVICES SUCH THAT MORE THAN 60% OF THEIR CAPACITY IS LOST. ALL THE SILT IS TO BE PLACED OUTSIDE THE LIMIT OF WORKS. THE PERIOD FOR MAINTAINING THESE DEVICES SHALL BE AT LEAST UNTIL ALL DISTURBED AREAS ARE REVEGETATED AND FURTHER AS MAY BE DIRECTED BY SUPERINTENDENT OR COUNCIL.
- VEHICULAR TRAFFIC SHALL BE CONTROLLED DURING CONSTRUCTION CONFINING ACCESS WHERE POSSIBLE TO NOMINATED STABILISED ACCESS POINTS.
- THE CONTRACTOR SHALL IMPLEMENT DUST CONTROL BY REGULAR WETTING DOWN DISTURBED AREA.
- ALL DRAINAGE PIPE INLETS TO BE CAPPED UNTIL:
- DOWNPIPES CONNECTED
- PITS CONSTRUCTED AND PROTECTED WITH SILT BARRIER

MINIMUM PIPE COVER NOTES:

LOCATION	MINIMUM COVER
NO SUBJECT TO VEHICLE LOADING	100mm SINGLE RESIDENTIAL
SUBJECT TO VEHICLE LOADING	450mm WHERE NOT IN A ROAD
UNDER A SEALED ROAD	600mm
UNSEALED ROAD	750mm
PAVED DRIVEWAY	100mm PLUS DEPTH OF CONCRETE

SEE AS2032 INSTALLATION OF UPVC PIPES FOR FURTHER INFORMATION.

CONCRETE PIPE COVER SHALL BE IN ACCORDANCE WITH AS3725-1989 LOADS ON BURIED CONCRETE PIPES, HOWEVER A MINIMUM COVER OF 450mm WILL APPLY.

WHERE INSUFFICIENT COVER IS PROVIDED, THE PIPE SHALL BE COVERED AT LEAST 50mm THICK OVERLAY AND SHALL BE PAVED WITH AT LEAST:
- 150 mm REINFORCED CONCRETE WHERE SUBJECT TO HEAVY VEHICLE TRAFFIC
- 75mm THICKNESS OF BRICK OR 100mm OF CONCRETE PAVING WHERE SUBJECT TO LIGHT VEHICLE TRAFFIC, OR
- 50mm THICK BRICK OR CONCRETE PAVING WHERE NOT SUBJECT TO VEHICLE TRAFFIC

SURFACE STORMWATER PIT NOTES:

PIT DEPTH (mm)	MINIMUM PIT SIZE (mm)
UP TO 600 mm	450 x 450
FROM 600mm TO LESS THAN 900mm	600 x 600
FROM 900mm	900 x 900

ALL BASEMENT PIT TO BE FITTED WITH HEAVY DUTY CLASS C GRATE & FRAME

LEGEND

	DENOTES BELOW GROUND ON-SITE DETENTION TANK
	DENOTES ON-SITE DETENTION BASIN
	DENOTES Ø150 DOWNPIPE (U.N.O)
	DENOTES INSPECTION OPENING WITH SCREW DOWN LID AT FINISHED SURFACE LEVEL
	DENOTES PLANTER BOX DRAINS
	DENOTES FLOOR DRAINS
	DENOTES CLEANING EYE
	STORMWATER PIT - SOLID COVER
	STORMWATER PIT - GRATED INLET
	DENOTES GRATED DRAIN
	DENOTES ABSORPTION TRENCH
	DENOTES NON RETURN VALVE
	DENOTES OVERLAND FLOW PATH
	INVERT LEVEL
	TOP OF KERB
	REDUCED LEVEL/SURFACE LEVEL
	PROPOSED FINISH SURFACE LEVEL
	DENOTES Ø100mm PVC (SEWER GRADE) @1% MIN. FALL U.N.O
	DENOTES Ø150mm PVC (SEWER GRADE) @1% MIN. FALL U.N.O
	DENOTES Ø100mm PVC (SEWER GRADE) @0.5% MIN. FALL U.N.O
	DENOTE AGG PIPE
	DENOTE RAINWATER TANK

SCHEDULE OF DRAWING

DESCRIPTION	SHEET NUMBER
COVER SHEET & NOTES	C1
DRAINAGE PLANS	C2
OSD/RWT 3 PLAN & DETAILS	C3
OSD/RWT 2 PLAN & DETAILS	C4
OSD/RWT 1 PLAN & DETAILS	C5
ABSORPTION SYSTEM DETAILS	C6
SPREADER SYSTEM DETAILS	C7

DESIGN SUMMARY

NORTHERN BEACH COUNCIL - WARRINGAH DCP
STORMWATER DRAINAGE FROM LOW LEVEL PROPERTIES

SITE AREA = 1114.70 m²
EXISTING IMPERVIOUS AREA = 130.24 m² (12.00%)

THE PROPOSED DEVELOPMENT IS SINGLE DWELLING AND GRANNY FLAT. DUE TO THE SITE IS SLOPED TOWARD THE REAR AND DOWNSTREAM EASEMENT CANNOT BE ACHIEVED, THEREFORE COMBINATION BETWEEN OSD SYSTEM, ABSORPTION SYSTEM AND LEVEL SPREADER HAS BEEN PROPOSED.

SITE DISCHARGE ASSESSMENT BY DRAINS ILSAX MODEL

- MAIN HOUSE ROOF AREA = 146 m² TO RWT 1
- WORKSHOP ROOF AREA = 77.00 m² TO RWT 2
- GRANNY FLAT AREA = 62.00 m² TO RWT 3
- DRIVEWAY & FRONT LANDSCAPE AREA = 624 m² TO ABSORPTION SYSTEM
- ABSORPTION SYSTEM HYDRAULIC CONDUCTIVITY K = 4.5x10⁻⁵
- ABSORPTION SYSTEM FLOOR IS IMPERMEABLE ON DRAINS MODEL

ARI	PRE DEV		POST DEV				
	Q _{PRE} (l/s)	Q _{ABSORPTION} (l/s)	Q _{RWT 1} (l/s)	Q _{RWT 2} (l/s)	Q _{RWT 3} (l/s)	Q _{BYPASS} (l/s)	Q _{TOTAL} (l/s)
5	25	0	3.0	2.0	2.0	4.0	11
100	47	5.0	4.0	3.0	2.0	9.0	23

OSD/RWT 1 VOLUME REQUIRED = 2.15m³ AT 1% AEP 15min STORM
OSD/RWT 2 VOLUME REQUIRED = 0.51m³ AT 1% AEP 11min STORM
OSD/RWT 3 VOLUME REQUIRED = 0.57m³ AT 1% AEP 14min STORM
ORIFICE DIAMETER = 50mm

ISSUE FOR APPROVAL

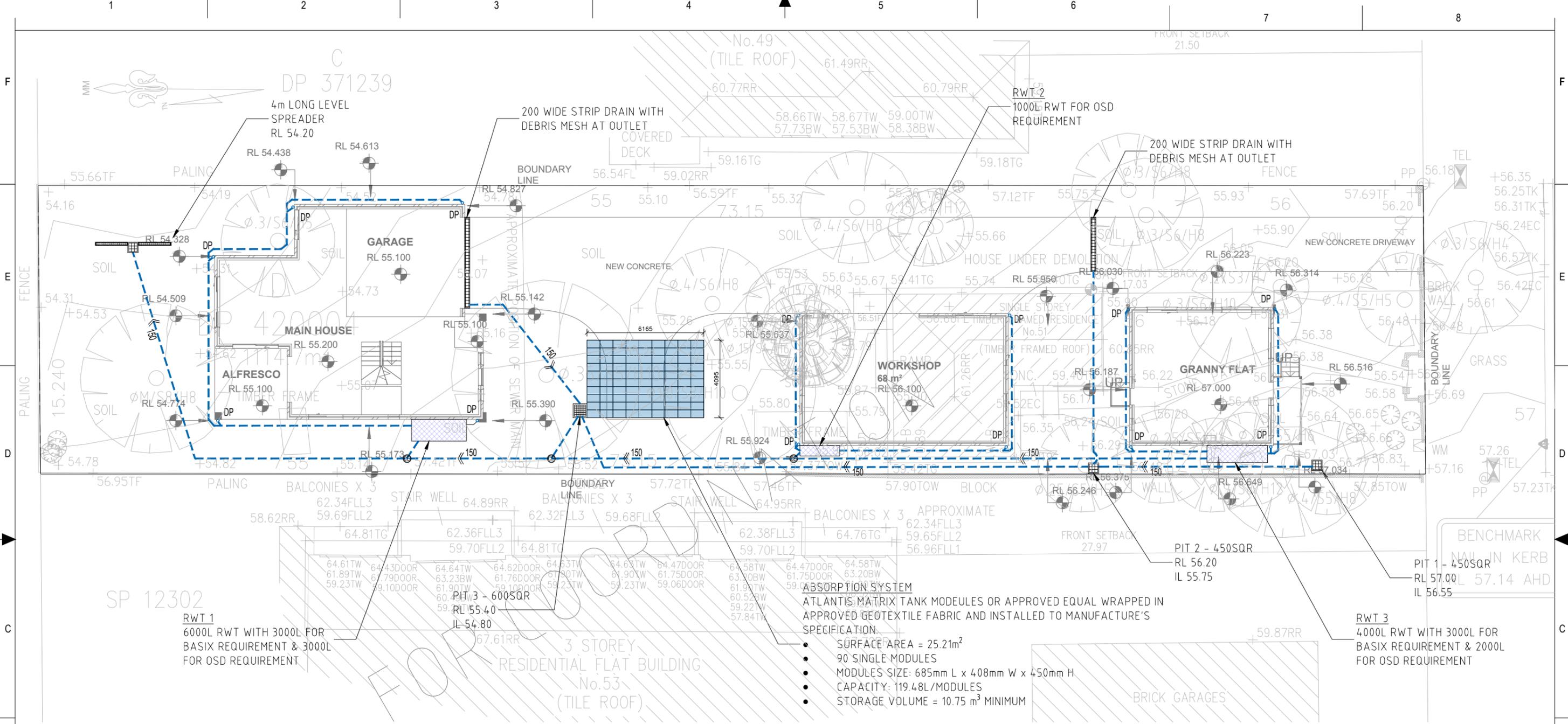


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ARCH.	GJ09090 - 230250					MD	08.06.2019				GARDNER HOMES		SCALE (AT ORIGINAL SIZE)
STRUCT.						CHECKED	DATE	S. NASTASI		TITLE:	COVER SHEET & NOTES	PROJECT NO.	DRAWING NO.
MECH.								B.E., M.I.E., CpEng, Nper-3			18177	C1	REVISION NO.
ELEC.													A
HYD.													
A	ISSUED FOR REVIEW	08.06.2019											
ISSUE	REVISION	DATE											



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DRAINAGE PLAN
SCALE 1:200

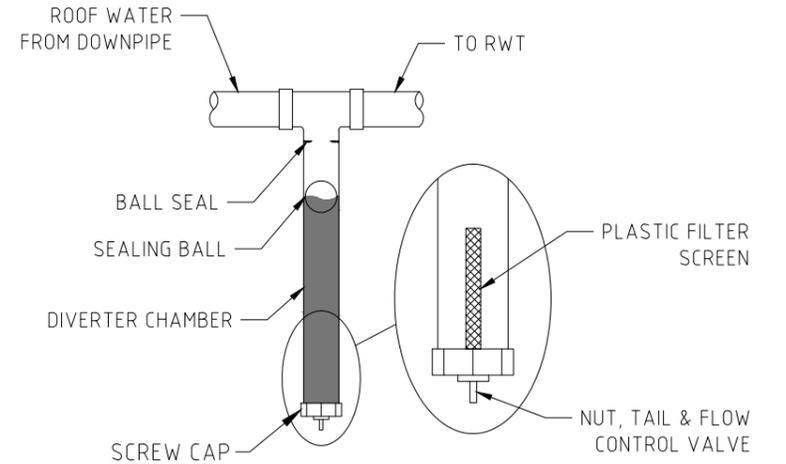
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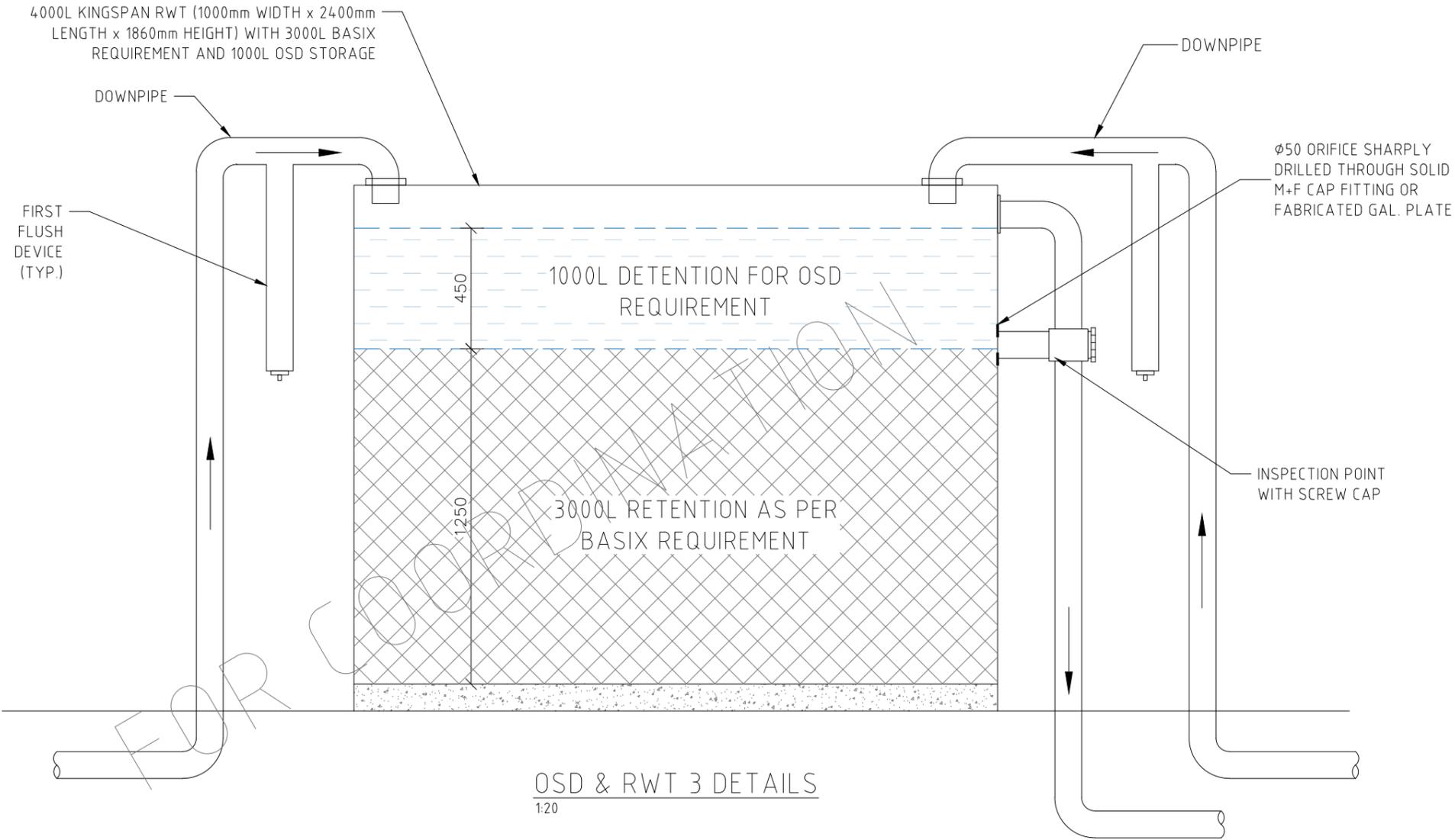
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RAINWATER TANK NOTES:

1. RAINWATER TANKS BY KINGSPAN (TEL: 1300 736 562) OR SIMILAR.
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3. A FIRST FLUSH DEVICE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS SHALL BE FITTED TO RAINWATER TANK SYSTEM TO FLUSH OUT THE FIRST 0.5mm OF RUN-OFF FROM THE ROOF AREA THAT DRAINED INTO THE TANK (E.G. 0.5L/m²).
4. PUMP SIZE & SPECIFICATION TO BE NOMINATED BY MANUFACTURER
5. ORIFICE PLATE INSTALLATION TO BE PERFORMED BY QUALIFIED PLUMBER AND TO BE MADE WATERTIGHT BY WASHER OR SUITABLE SEALANT.



FIRST FLUSH DEVICE DETAIL
1:20



OSD & RWT 3 DETAILS
1:20

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DESIGNED	DATE
MD	08.06.2019
CHECKED	DATE

APPROVED:

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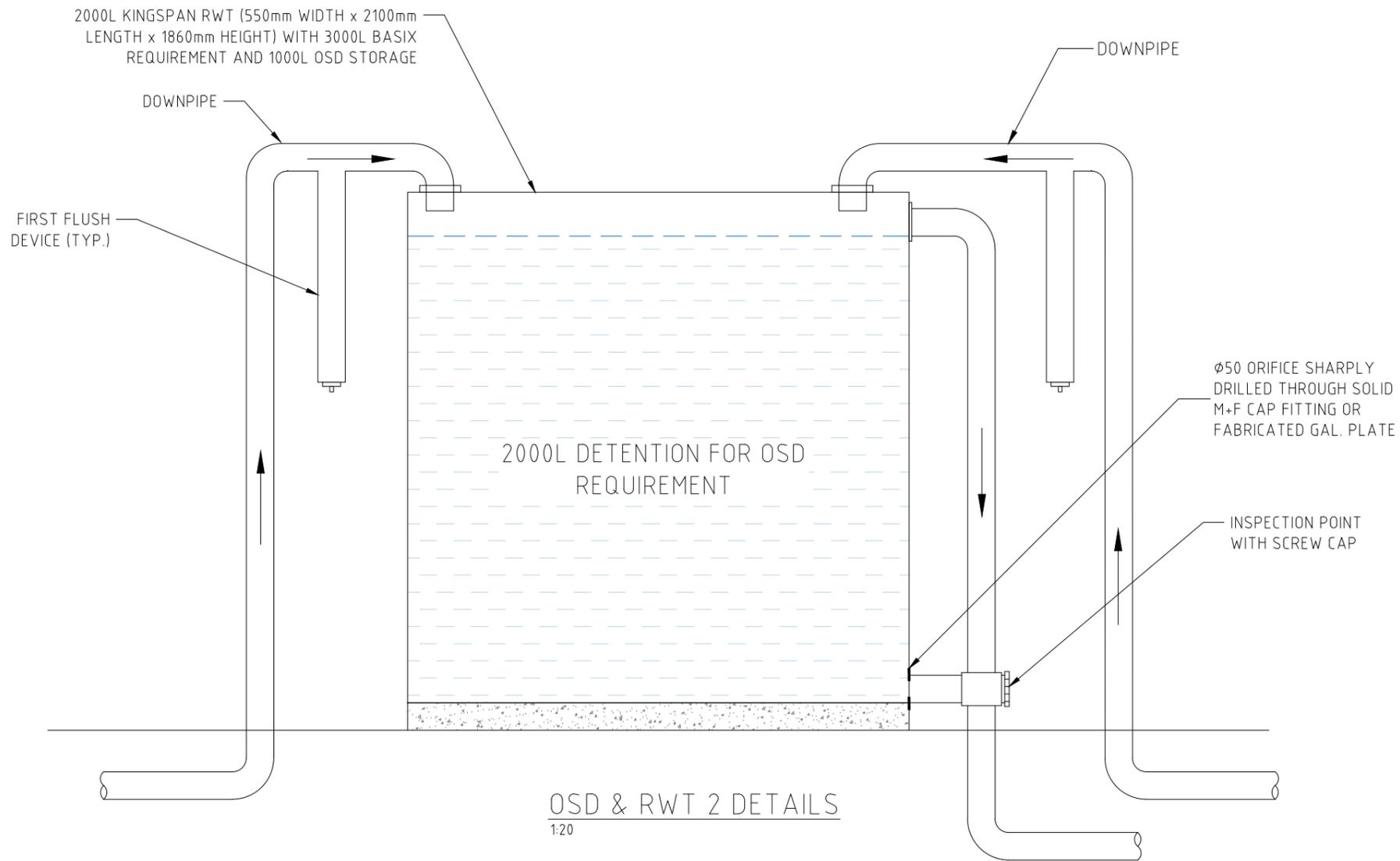
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 ARCHITECT: GARDNER HOMES

ADDRESS: 51 REDMAN ROAD, DEE WHY
 TITLE: OSD/RWT 3 DETAILS

DRAWING STATUS		
CONCEPT PLAN FOR APPROVAL		
SCALE (AT ORIGINAL SIZE)	AS NOTED	
PROJECT NO.	DRAWING NO.	REVISION NO.
18177	C3	A

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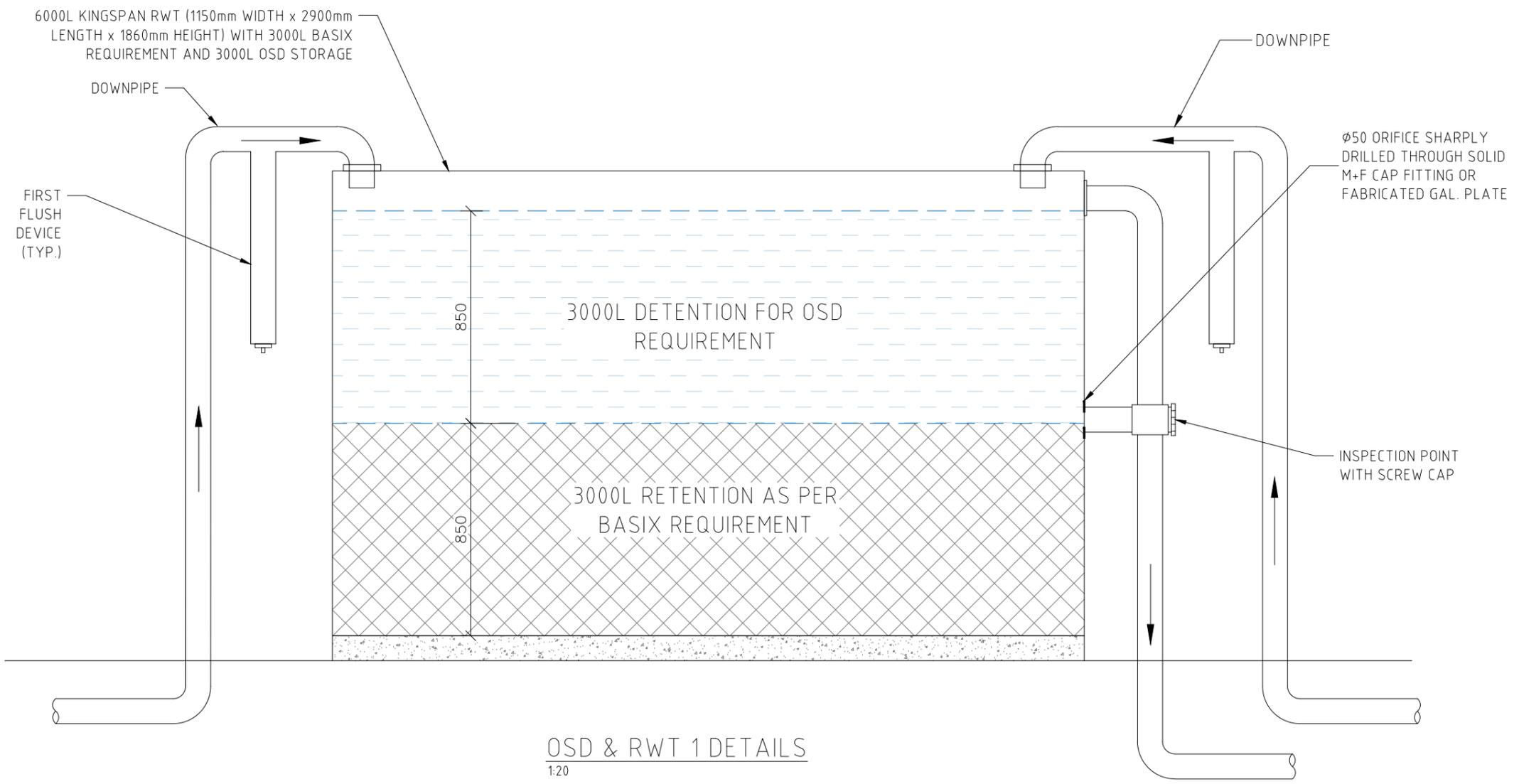
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OSD & RWT 1 DETAILS
1:20



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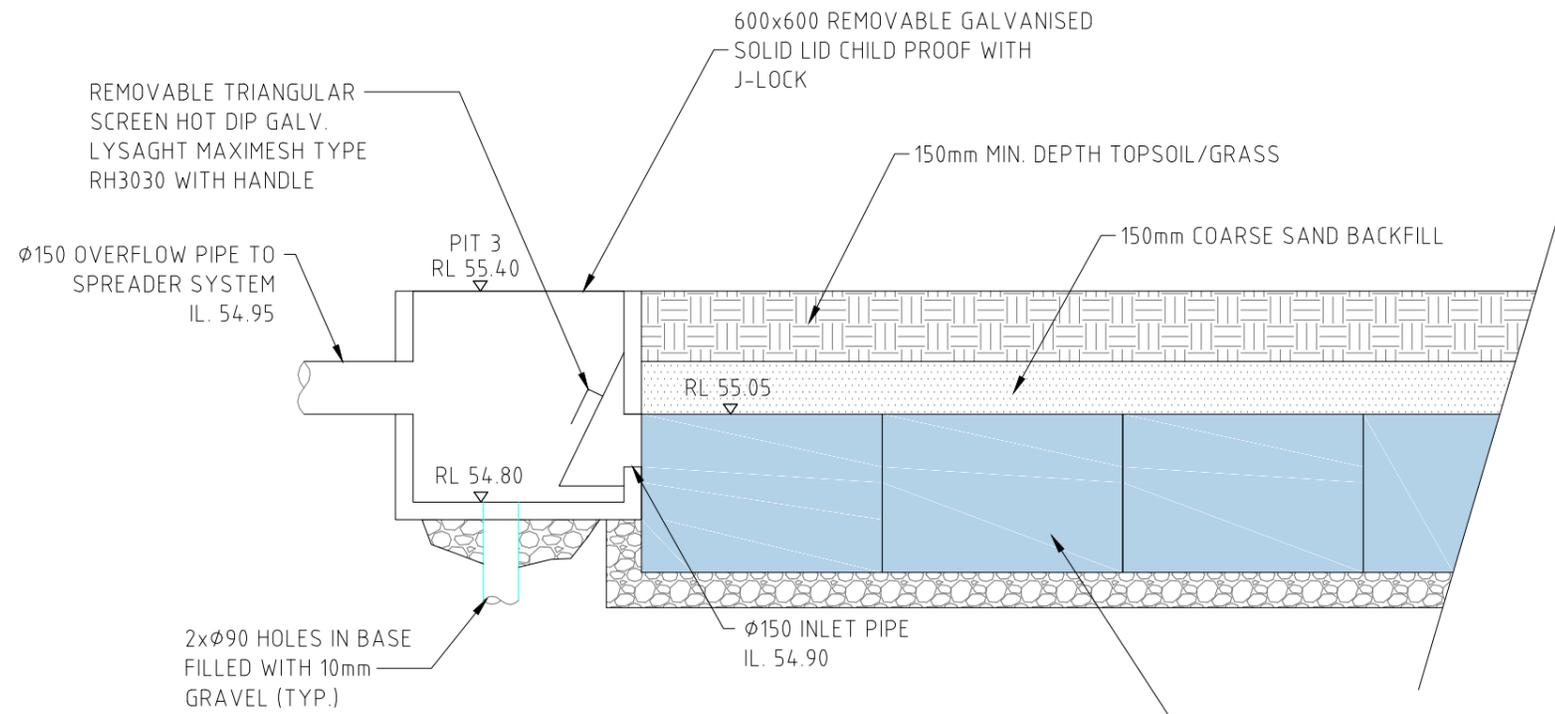
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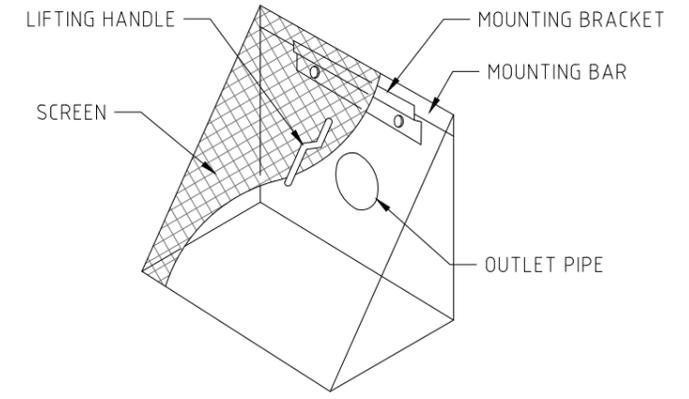
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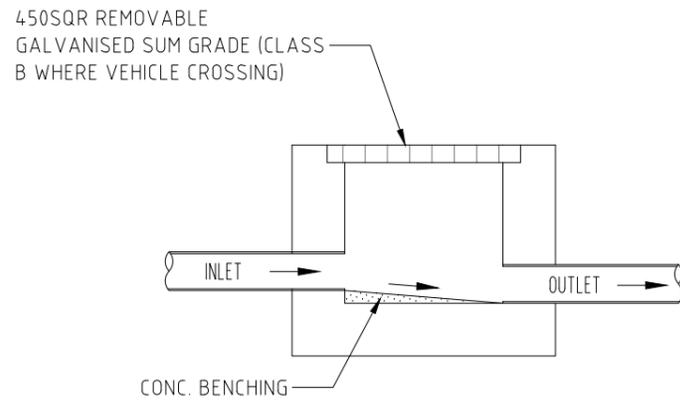
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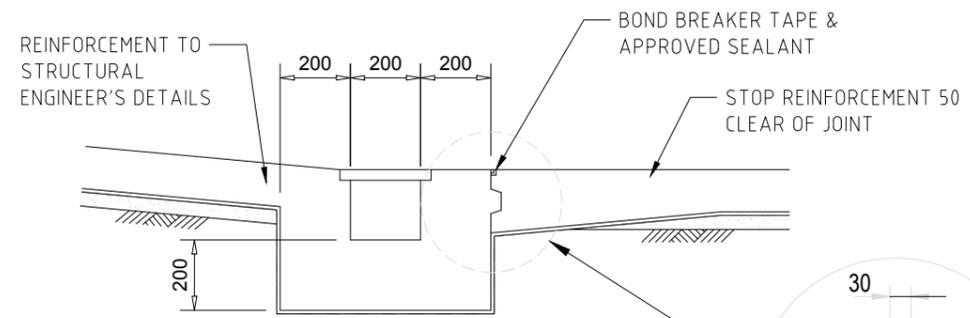
ABSORPTION SYSTEM DETAILS
1:20



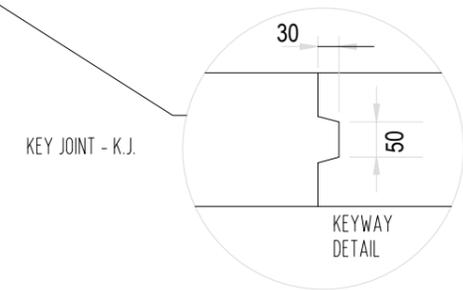
DEBRIS SCREEN DETAILS
SCALE 1:20



TYPICAL SURFACE PIT
NTS



TYPICAL GRATED DRAINS
SCALE 1:20



REFERENCE COORDINATION DRAWING	
DISCIPLINE	DRAWING TITLE AND NUMBER DATE REV.
ARCH.	GJ09090 - 230250
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QUALITY CONTROL	
DESIGNED	DATE
MD	08.06.2019
CHECKED	DATE

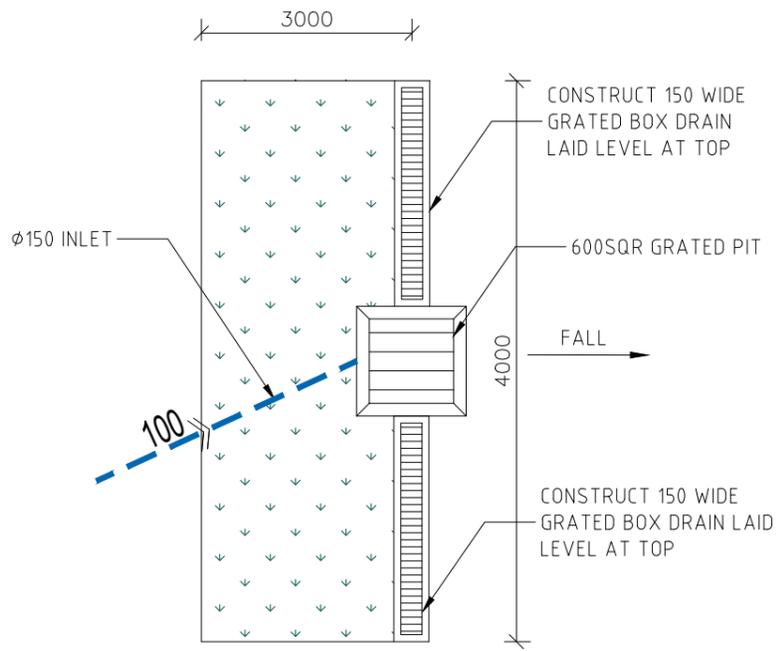
APPROVED:

 S. NASTASI
 B.E., M.I.E., CpEng, Nper-3

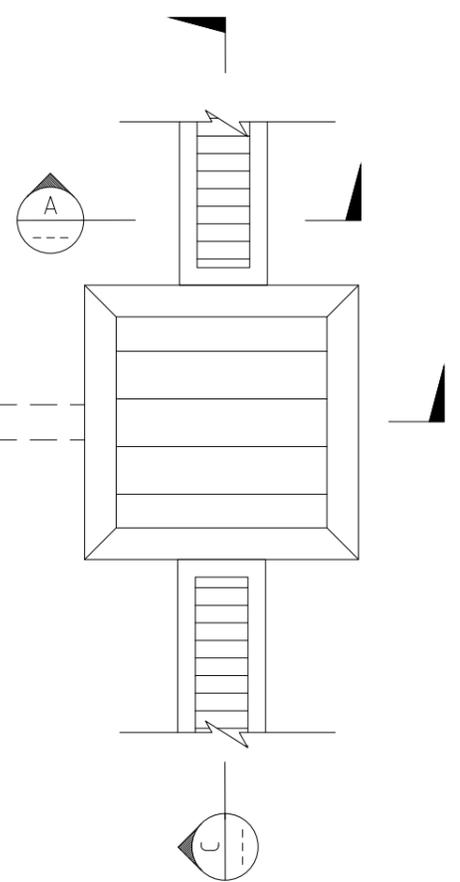
CLIENT: WOHL
ARCHITECT: GARDNER HOMES

ADDRESS: 51 REDMAN ROAD, DEE WHY
TITLE: ABSORPTION SYSTEM DETAILS

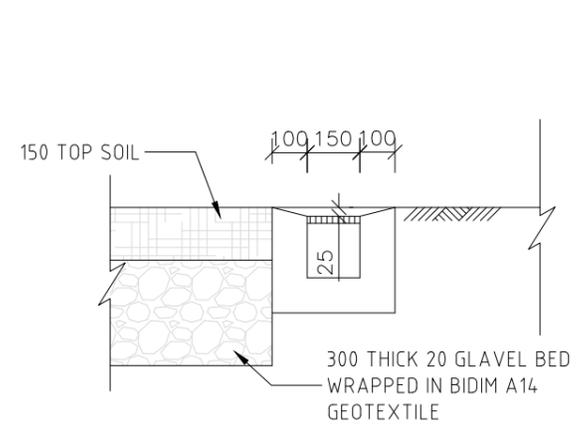
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CONCEPT PLAN FOR APPROVAL		
SCALE (AT ORIGINAL SIZE)	AS NOTED	
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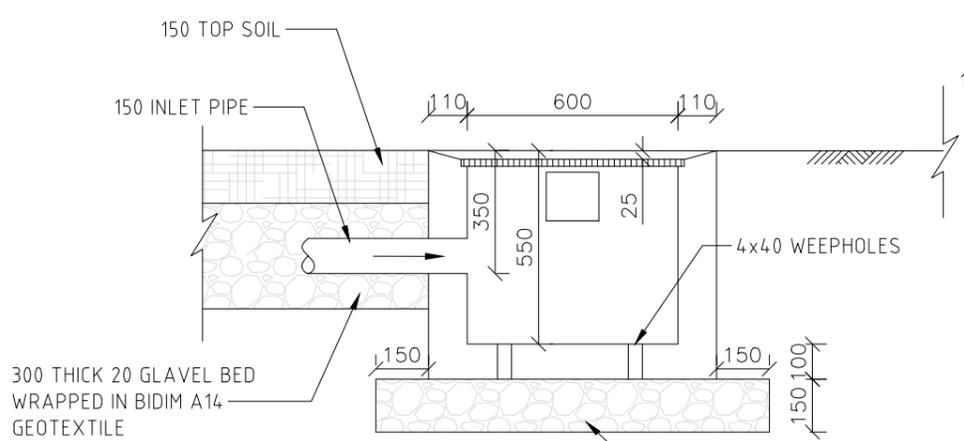
TRANSPIRATION BED/SPREADER SYSTEM PLAN
SCALE 1:50



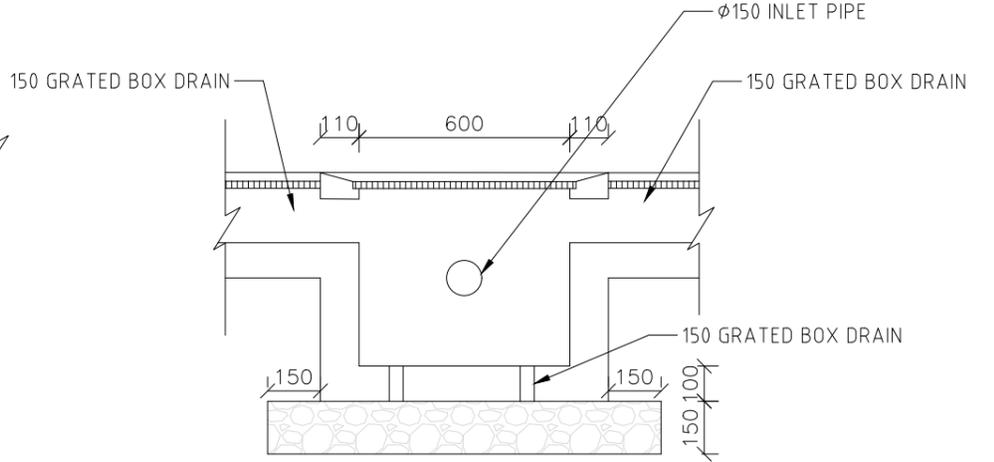
SPREADER SYSTEM PLAN
SCALE 1:20



SECTION A
SCALE 1:20



SECTION B
SCALE 1:20



SECTION C
SCALE 1:20



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