

272 WHALE BEACH ROAD, WHALE BEACH

STORMWATER MANAGEMENT PLAN

GENERAL

- ANY DEVIATIONS FROM LEVELS AND DETAILS SHOWN WITHIN THIS PACKAGE TO BE CONSULTED WITH THE ENGINEER CONSULTANT PRIOR TO ON-SITE CHANGES BEING MADE.
- ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH LOCAL COUNCIL ENGINEERING SPECIFICATIONS.
- FINAL LOCATION OF NEW DOWNPIPES TO BE DETERMINED BY BUILDER/ARCHITECT AT TIME OF CONSTRUCTION.
- THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE ARCHITECTS AND OTHER CONSULTANT DRAWINGS. ANY DISCREPANCIES MUST BE REFERRED TO THE ENGINEER BEFORE PROCEEDING.
- INSPECTIONS BY THE CERTIFYING AUTHORITY SHALL BE CARRIED OUT FOR ALL THE CIVIL WORKS PRIOR TO RELEASE OF THE HOLD POINTS INCLUDING THE FOLLOWING STAGES:
 - PRIOR TO INSTALLATION OF EROSION AND SEDIMENT CONTROL STRUCTURES
 - FINAL INSPECTION AFTER ALL WORKS ARE COMPLETED AND 'WORK AS EXECUTED' PLANS HAVE BEEN SUBMITTED TO COUNCIL
- MAKE SMOOTH JUNCTIONS WITH EXISTING WORKS.
- NO WORK TO BE CARRIED OUT ON COUNCIL PROPERTY OR ADJOINING PROPERTIES WITHOUT THE WRITTEN PERMISSION FROM THE OWNER/S.
- VEHICULAR ACCESS AND ALL SERVICES TO BE MAINTAINED AT ALL TIMES TO ADJOINING PROPERTIES AFFECTED BY CONSTRUCTION.
- ALL RUBBISH, BUILDINGS, SHEDS AND FENCES TO BE REMOVED TO SATISFACTION OF COUNCIL'S ENGINEER.
- THE CONTRACTOR SHALL OBTAIN ALL LEVELS FROM ESTABLISHED BENCH MARKS ONLY.

WARNING
BEWARE OF UNDERGROUND SERVICES
The locations of underground services are approximate only and their exact position should be proven on site.
No guarantee is given that all existing services are shown.
Locate all underground services before commencement of works
BEFORE YOU DIG
www.byda.com.au



TABLE 7.1
MINIMUM PIPE COVER
(from finished surface to top of pipe)

millimetres		
Location	Cast iron, ductile iron, galvanized steel	Other authorized* products
Minimum cover		
1. Not subject to vehicular loading:		
(a) without pavement—		
(i) for single dwellings	Nil	100
(ii) for other than item (i)	Nil†	300
(b) with pavement of brick or unreinforced concrete	Nil†	50†
2. Subject to vehicular loading:		
(a) other than roads—		
(i) without pavement	300	450
(ii) with pavement of—		
(A) reinforced concrete for heavy vehicular loading	Nil†‡	100†‡
(B) brick or unreinforced concrete for light vehicular loading	Nil†‡	75†‡
(b) roads—		
(i) sealed	300	500†
(ii) unsealed	300	500†
3. Subject to construction equipment loading or in embankment conditions	300	500†

* Includes overlay above the top of the pipe of not less than 50 mm thick.
† Below the underside of the pavement.
‡ Subject to compliance with AS 1762, AS 2033, AS/NZS 2566.1, AS 3725 or AS 4060.

AS3500.3

EXISTING UNDERGROUND SERVICES NOTES

CONTRACTORS SHALL TAKE DUE CARE WHEN EXCAVATING ONSITE INCLUDING HAND EXCAVATION WHERE NECESSARY. CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION WORKS. CONTRACTORS ARE TO UNDERTAKE A SERVICES SEARCH PRIOR TO COMMENCEMENT OF WORKS ON SITE. SEARCH RESULTS ARE TO BE KEPT ON SITE AT ALL TIMES.

SITEWORKS NOTES

- ORIGIN OF LEVELS-- REFER SURVEY NOTES.
- CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES TO BE REPORTED TO CARDNO.
- MAKE SMOOTH CONNECTION WITH EXISTING WORKS.
- ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
- BASE AND SUB-BASE LAYERS ARE TO BE INSPECTED AND TESTED BY AN INDEPENDENT GEOTECHNICAL TESTING AUTHORITY TO LEVEL 1 RESPONSIBILITY AS DEFINED IN AS3798.
- ALL BASECOURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH RMS FORM 3051, COMPACTED TO MINIMUM 98% MODIFIED DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m³ OF BASECOURSE MATERIAL PLACED.
- ALL SUB-BASE COURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH RMS FORM 3051, AND COMPACTED TO MINIMUM 95% MODIFIED DENSITY IN ACCORDANCE WITH A.S 1289 5.2.1. FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m³ OF SUB-BASE COURSE MATERIAL PLACED.
- SHOULD THE CONTRACTOR WISH TO USE A RECYCLED PRODUCT THIS SHALL BE CLEARLY INDICATED IN THEIR TENDER AND THE PRICE DIFFERENCE BETWEEN AN IGNEOUS PRODUCT AND A RECYCLED PRODUCT SHALL BE CLEARLY INDICATED.
- WHERE NOTED ON THE DRAWINGS THAT WORKS ARE TO BE CARRIED BY OTHERS, (eg. ADJUSTMENT OF SERVICES), THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CO-ORDINATION OF THESE WORKS.

MINIMUM GRADIENT OF SITE STORMWATER DRAINS

Nominal size	Minimum gradient		Nominal size	Minimum gradient	
	DN	NZ		DN	NZ
90	1:100	1:90	225	1:200	1:350
100	1:100	1:120	300	1:250	1:350
150	1:100	1:200	375	1:300	1:350

AS3500.3

Depth to invert of outlet	Minimum internal dimensions mm			
	Rectangular		Circular	
	Width	Length	Diameter	
≤600	450	450	600	
>600 ≤900	600	600	900	
>900 ≤1200	600	900	1 000	
> 1 200	900	900	1 000	

AS3500.3

STORMWATER DRAINAGE NOTES

- ALL PIPES ON DRAWINGS TO BE MIN 1% GRADE UNLESS NOTED OTHERWISE.
- ALL DOWNPIPES TO BE 100Ø PVC UNLESS NOTED OTHERWISE.
- PIPES 375 DIA. AND LARGER TO BE REINFORCED CONCRETE CLASS '2' APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS. U.N.O.
- PIPES 300 DIA AND LESS SHALL BE DWV GRADE (CLASS SN8) uPVC WITH SOLVENT WELDED JOINTS.
- EQUIVALENT STRENGTH FRC PIPES MAY BE USED.
- ALL PIPES ARE TO BE UNIFORMLY SUPPORTED ALONG THE LENGTH OF THE BARREL BY SUITABLE FILL MATERIAL. REFER TO BEDDING SUPPORT TYPE.
- PIPES WITH SOCKETS SHALL BE LAID IN BEDDING WHERE SUITABLE RECESSES HAVE BEEN PROVIDED TO ENSURE PIPES DO NOT BEAR ON THEIR SOCKETS.
- ALL STORMWATER DRAINAGE LINES UNDER PROPOSED BUILDING SLABS TO BE uPVC PRESSURE PIPE GRADE 6. ENSURE ALL VERTICALS AND DOWNPIPES ARE uPVC PRESSURE PIPE, GRADE 6 FOR A MIN OF 3.0m IN HEIGHT.
- PIPES TO BE INSTALLED TO TYPE HS1 SUPPORT IN ACCORDANCE WITH AS 3725 (2007) IN ALL CASES BACKFILL TRENCH WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL, COMPACTED IN 150mm LAYERS TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75).
- REFER TO AS/NZS 3725:2007 TABLE B1 FOR REQUIRED FILL DEPTHS ABOVE PIPE BARREL PRIOR TO USE OF COMPACTION MACHINERY OR TRAVERSING OF PIPES BY GENERAL SITE EQUIPMENT.
- WHERE WORKING METHODS REQUIRE HIGHER CLASS PIPE, THE CONTRACTOR SHALL REFER TO AS 3725 (2007) TO DETERMINE THE APPROPRIATE PIPE CLASS.
- ALL INTERNAL WORKS WITHIN PROPERTY BOUNDARIES ARE TO COMPLY WITH THE REQUIREMENTS OF AS 3500 3.1 (2018) AND AS/NZS 3500 3.2 (2018).
- ENLARGERS, CONNECTIONS AND JUNCTIONS TO BE PREFABRICATED FITTINGS WHERE PIPES ARE LESS THAN 300 DIA.
- WHERE SUBSOIL DRAINS PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS, UNSLOTTED uPVC SEWER GRADE PIPE IS TO BE USED.
- CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
- GRATES AND COVERS SHALL CONFORM TO AS 3996.
- ALL BOX CULVERTS SHALL BE STRUCTURALLY DESIGNED BY THE MANUFACTURER AND DELIVERED TO SITE AS FIT FOR PURPOSE.
- AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
- ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN ARE TO BE INSPECTED AND CLEANED. DURING THIS PROCESS ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIR SHALL BE REPORTED TO THE SUPERINTENDENT/ENGINEER FOR FURTHER DIRECTIONS.

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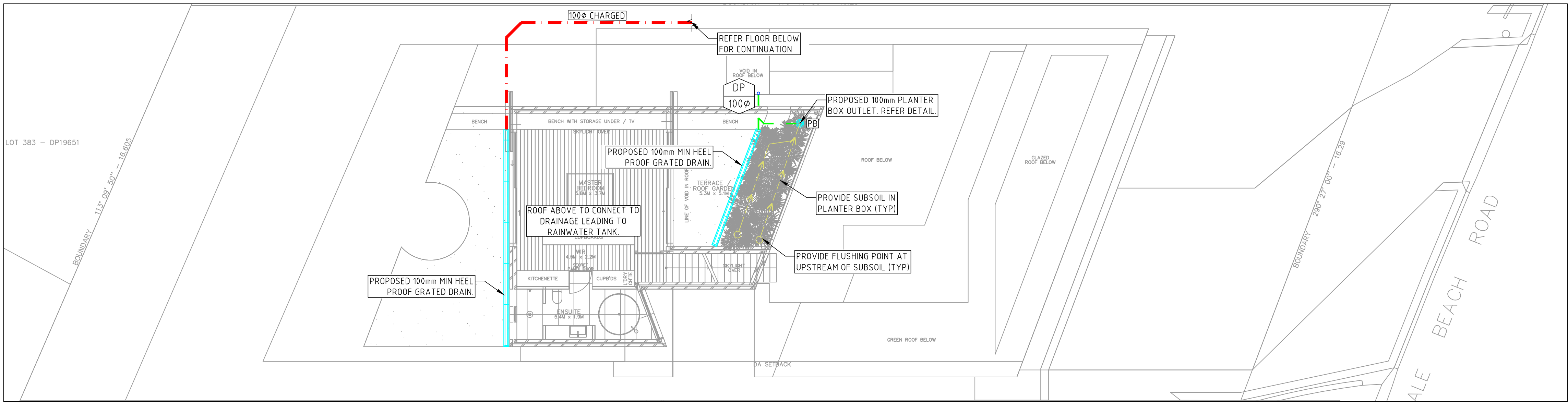
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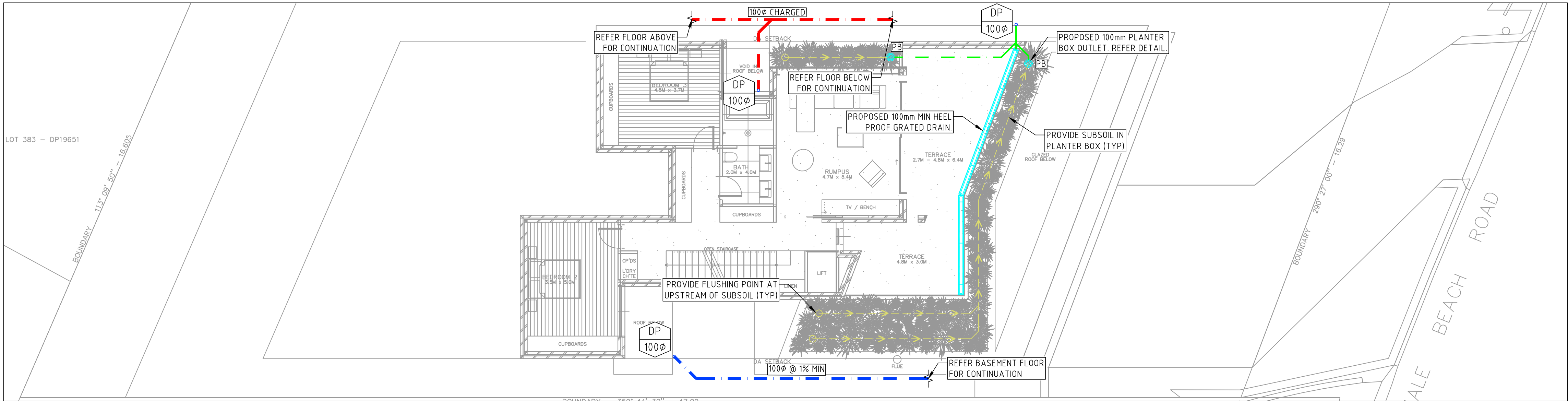


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PROJECT	272 WHALE BEACH ROAD, WHALE BEACH

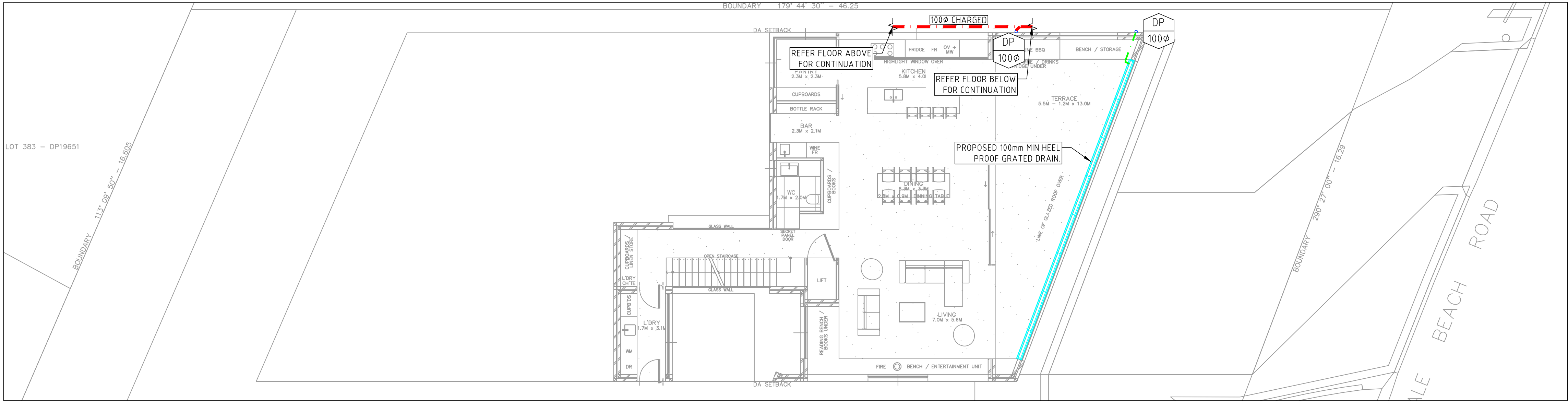
TITLE	COVER SHEET	DESIGN	M.A.	DRAWN	M.A.
ISSUED FOR	CC APPROVAL	PROJECT NUMBER	22 H 527	DRAWING NO.	SW00



SECOND FLOOR PLAN
SCALE 1:100



FIRST FLOOR PLAN
SCALE 1:100



GROUND FLOOR PLAN
SCALE 1:100

LEGEND

DRAINAGE TO RAINWATER TANK

GRAVITY PIPE
(TO BE Ø100PVC @ 1% MIN ONO)

TERRACE/PLANTER DRAINAGE
(TO BE Ø80PVC MIN ONO)

SUBSOIL AND FLUSHING POINT

DOWNPIPE SIZE
100Ø

DRAINAGE PIT

GRADED DRAIN

PLANTER BOX OUTLET

IR
INSPECTION RISER

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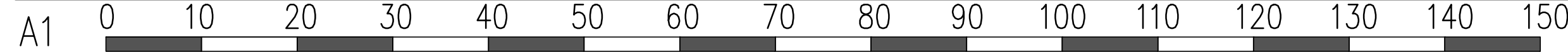
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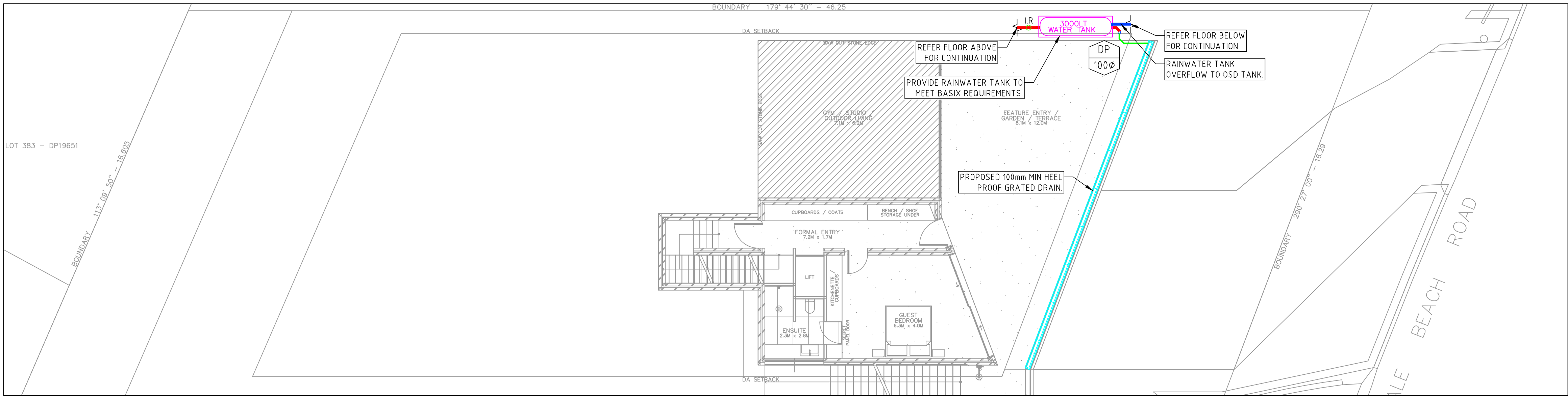
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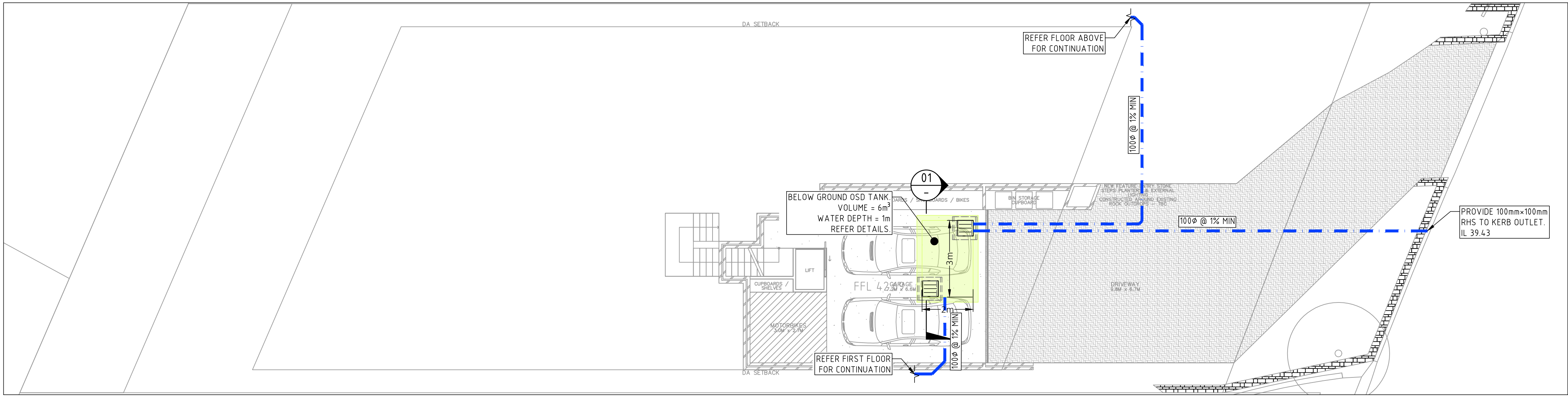
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ISSUED FOR	CC APPROVAL
PROJECT NUMBER	22 H 527

DESIGN	DRAWN
M.A.	M.A.
DRAWING NO.	SW01

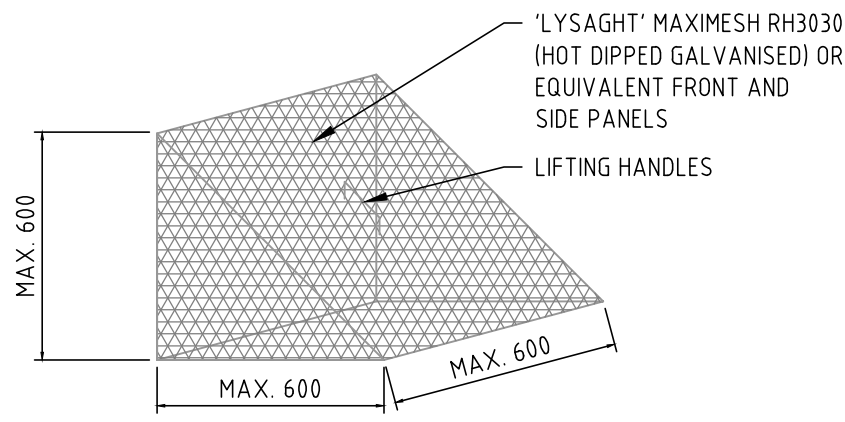




LOWER GROUND FLOOR PLAN
SCALE 1:100

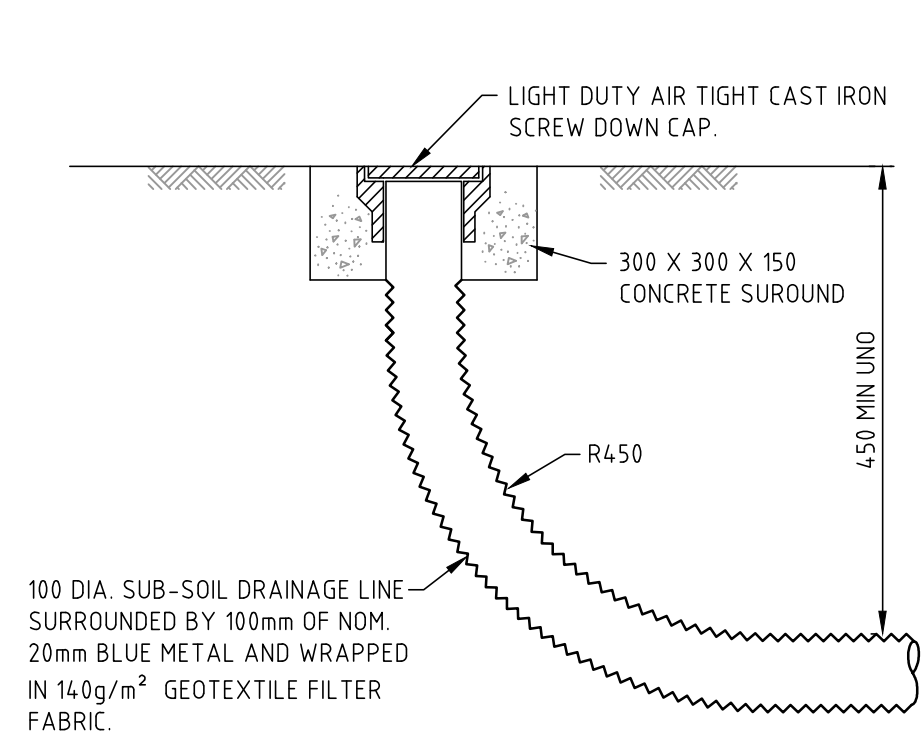


BASEMENT PLAN
SCALE 1:100

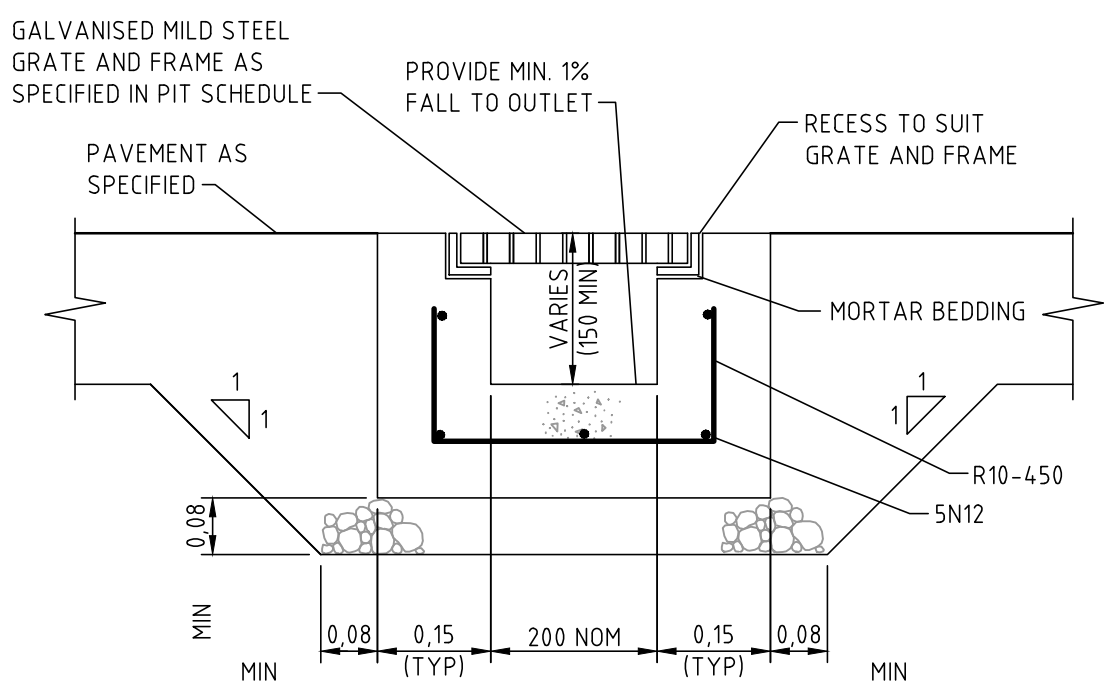


TRASH SCREEN DETAIL
NTS

- NOTES:
- MAXIMESH SCREENS MUST BE PLACED SUCH THAT THE LONG AXIS OF THE OVAL SHAPED HOLES ARE ORIENTATED HORIZONTALLY WITH THE PORTRUDING LIP ANGLED UPWARDS AND FACING TOWARDS THE OUTLET.
 - THE SCREEN IS TO BE FORMED BY WELDING TWO TRIANGULAR MAXIMESH (OR EQUIVALENT) PANELS TO A RECTANGULAR FRONT MAXIMESH PANEL (OR EQUIVALENT)



FLUSHING POINT



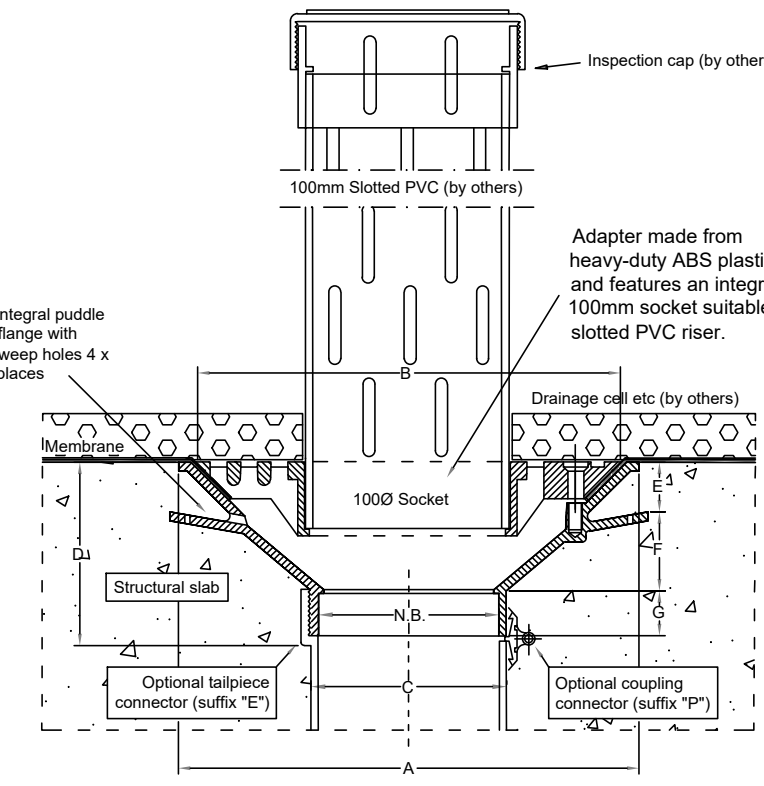
GRADED DRAIN
SCALE 1:10

LEGEND

- DRAINAGE TO RAINWATER TANK
- GRAVITY PIPE (TO BE Ø100PVC @ 1% MIN ONO)
- TERRACE/PLANTER DRAINAGE (TO BE Ø80PVC MIN ONO)
- SUBSOIL AND FLUSHING POINT
- DP 100Ø DOWNPIPE SIZE
- DRAINAGE PIT
- GRATED DRAIN
- PB PLANTER BOX OUTLET
- IR INSPECTION RISER

SPS Truflo 100mm & 150mm RWO
with All-purpose Planter Box Adapter

Specification code:
T1A100PB (100mm CI body with planter box adapter)
T1A150PB (150mm CI body with planter box adapter)



Dimensions (mm)						
N.B	A	B	C	D	E	F
100	260	240	103	106	28	45
150	260	240	151	86	28	37

Speciality Plumbing Supplies Pty Ltd
Tel: (02) 9417 1900 Fax: (02) 9417 0108 E-mail: info@spdrains.com.au

PLANTER BOX DRAINAGE (PB) DETAIL
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CLIENT JASON & TANYA

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WHALE BEACH

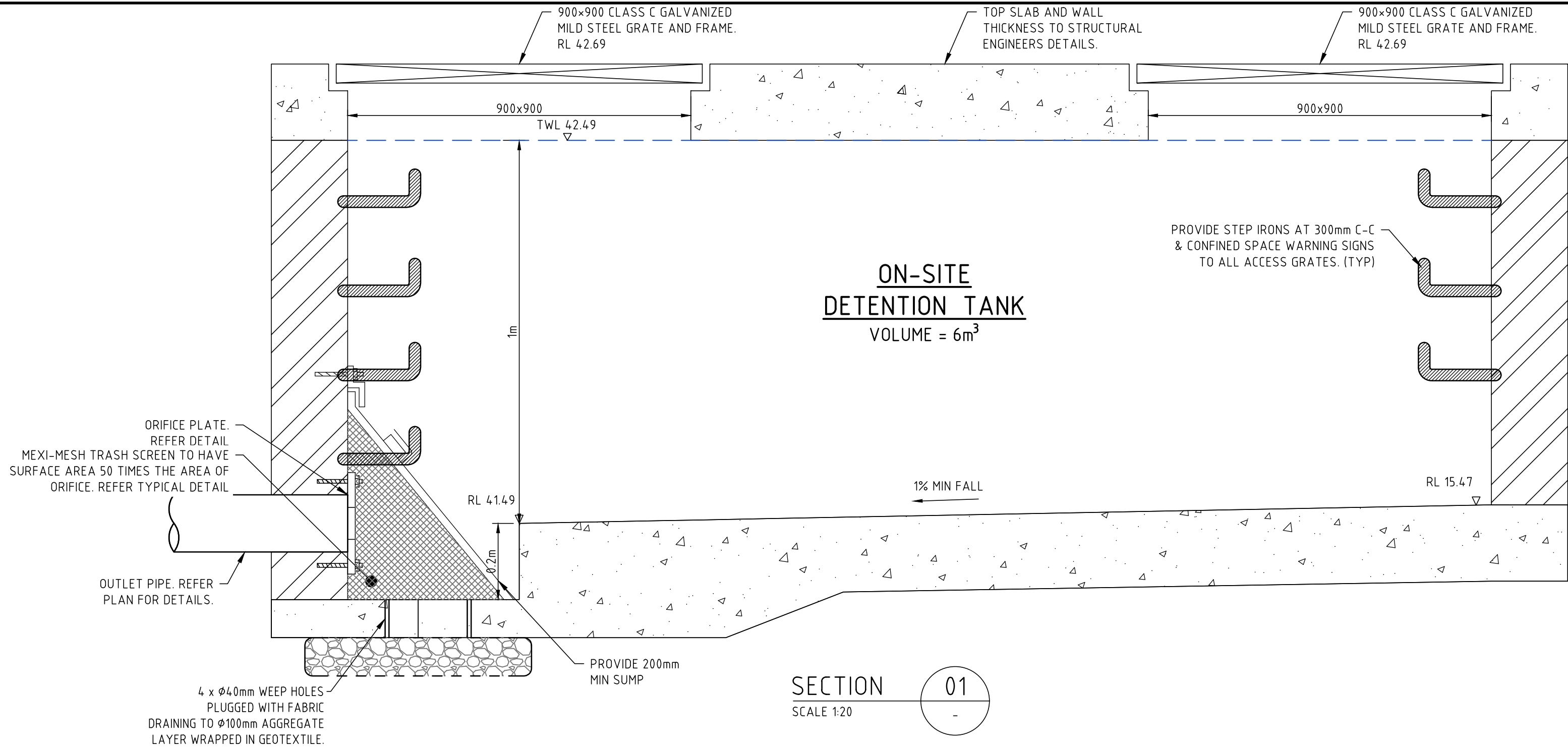
TITLE STORMWATER PLAN SHEET 2

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PROJECT NUMBER 22 H 527

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DRAWN M.A.

DRAWING NO. SW02



STORMWATER NOTES:

IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL - WATER MANAGEMENT FOR DEVELOPMENT POLICY FEB 2021 THIS SITE FALLS WITHIN THE NORTHERN STORMWATER REGION, REGION 1 CATCHMENT AS SHOWN ON COUNCIL MAP 2 - "NORTHERN BEACHES STORMWATER REGIONS".

WITHIN REGION 1, ON SITE DETENTION (OSD) IS DETERMINED BY THE DIFFERENCE IN IMPERVIOUS AREA BETWEEN PRE AND POST. THE TOTAL INCREASE IN IMPERVIOUS AREA IS 90m² (REFER CATCHMENT PLAN).

THEREFORE IN ACCORDANCE WITH TABLE 7, FOR ADDITIONAL IMPERVIOUS AREA OF BETWEEN 75-100m² THE FOLLOWING APPLIES:

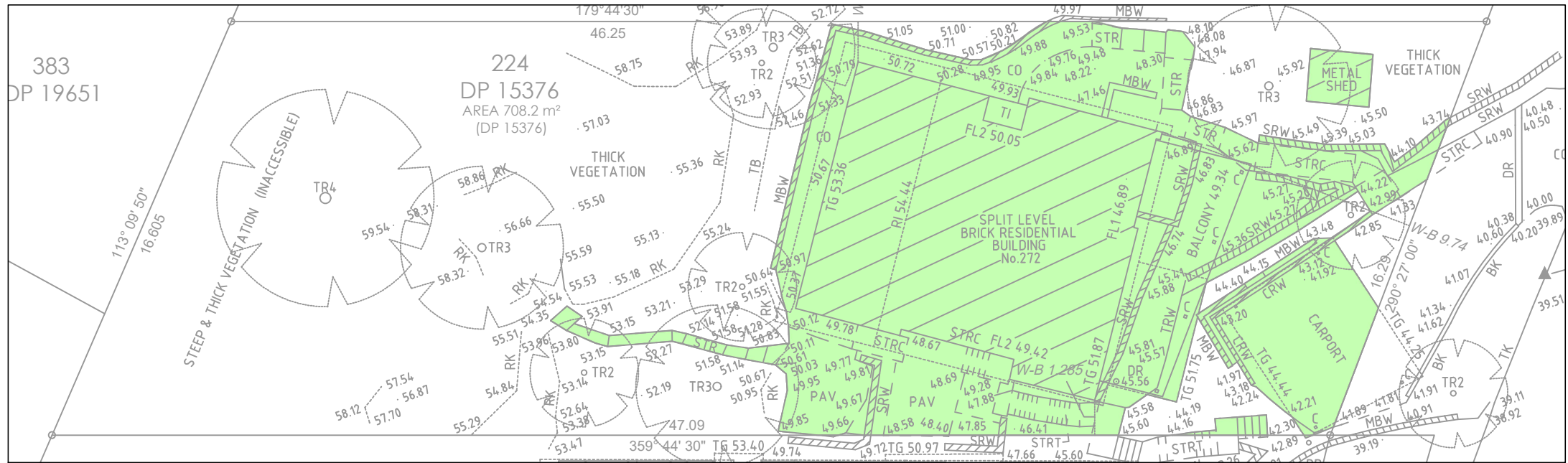
- 6,000L REQUIRED; AND
- 3L/s PERMITTED DISCHARGE.

Orifice Sizing

BASIN No	OUTLET DIAMETER	DISCHARGE COEFFICIENT	HEAD OF WATER	OUTLET X-SECTIONAL AREA	PSD
	mm	C	m	m²	m³/s
1	37	0.62	1.000	0.001	0.0030

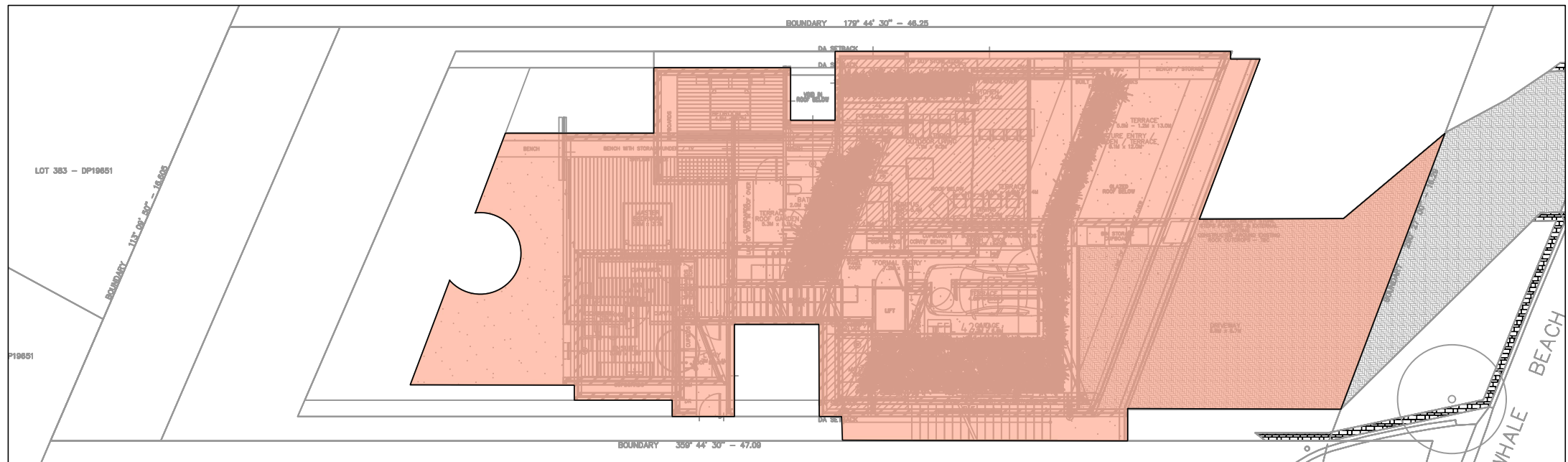
Orifice formula used $Q = C.A.(2.g.h)^{0.5}$

2.95 L/s



PRE-DEVELOPMENT CATCHMENT PLAN

SCALE 1:200

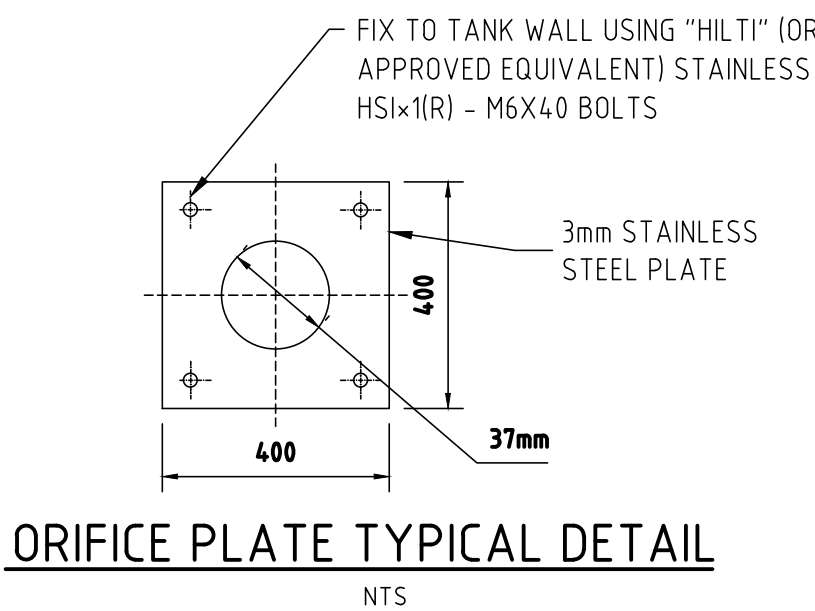


POST-DEVELOPMENT CATCHMENT PLAN

SCALE 1:200

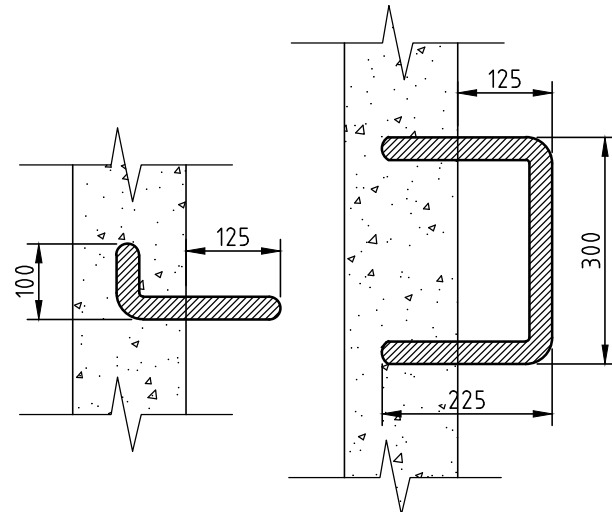
PRE-DEVELOPMENT
IMPERVIOUS
AREA = 280m²

POST-DEVELOPMENT
IMPERVIOUS
AREA = 376m²



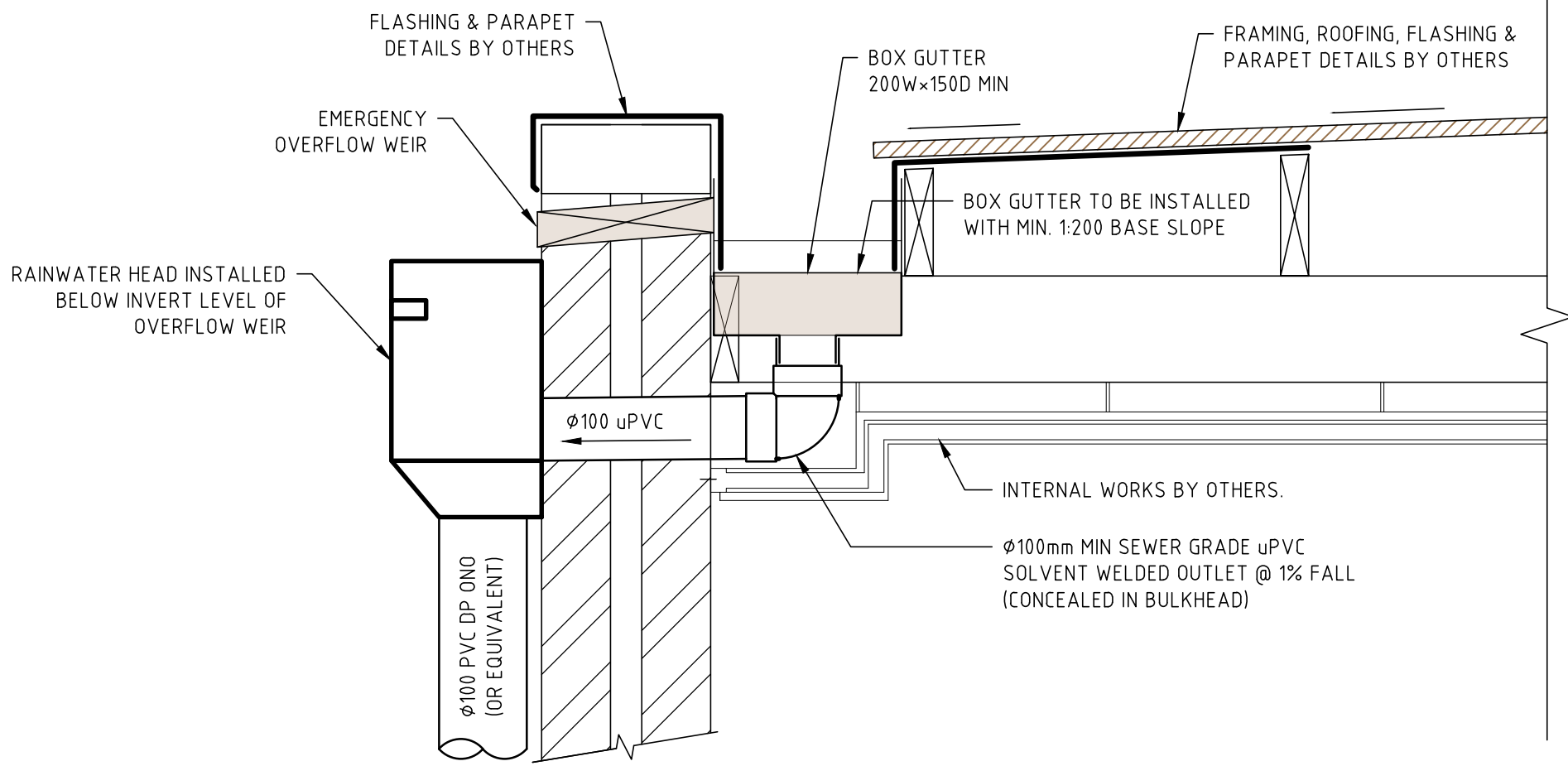
ORIFICE PLATE TYPICAL DETAIL

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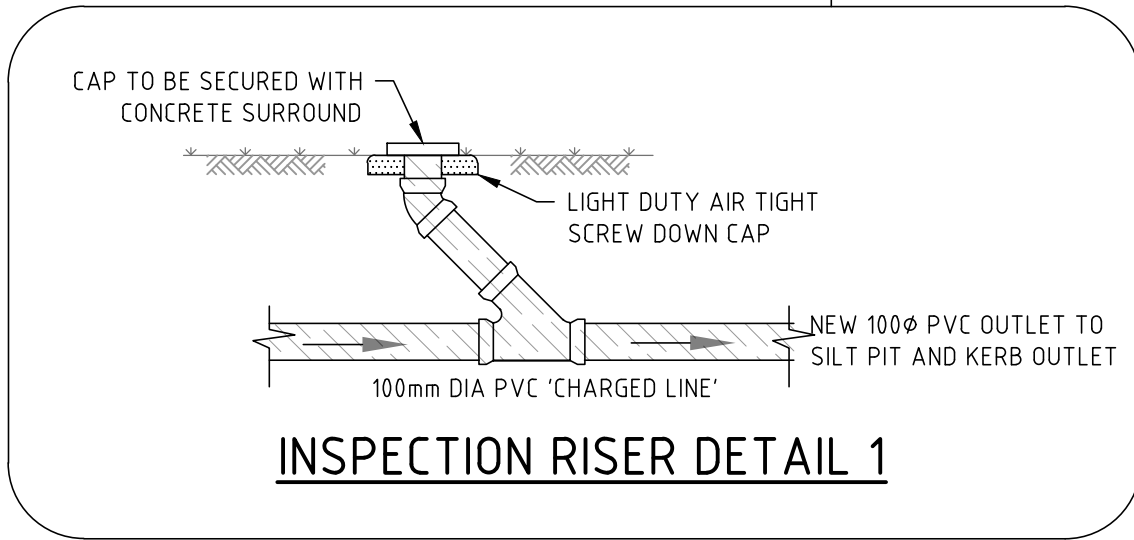
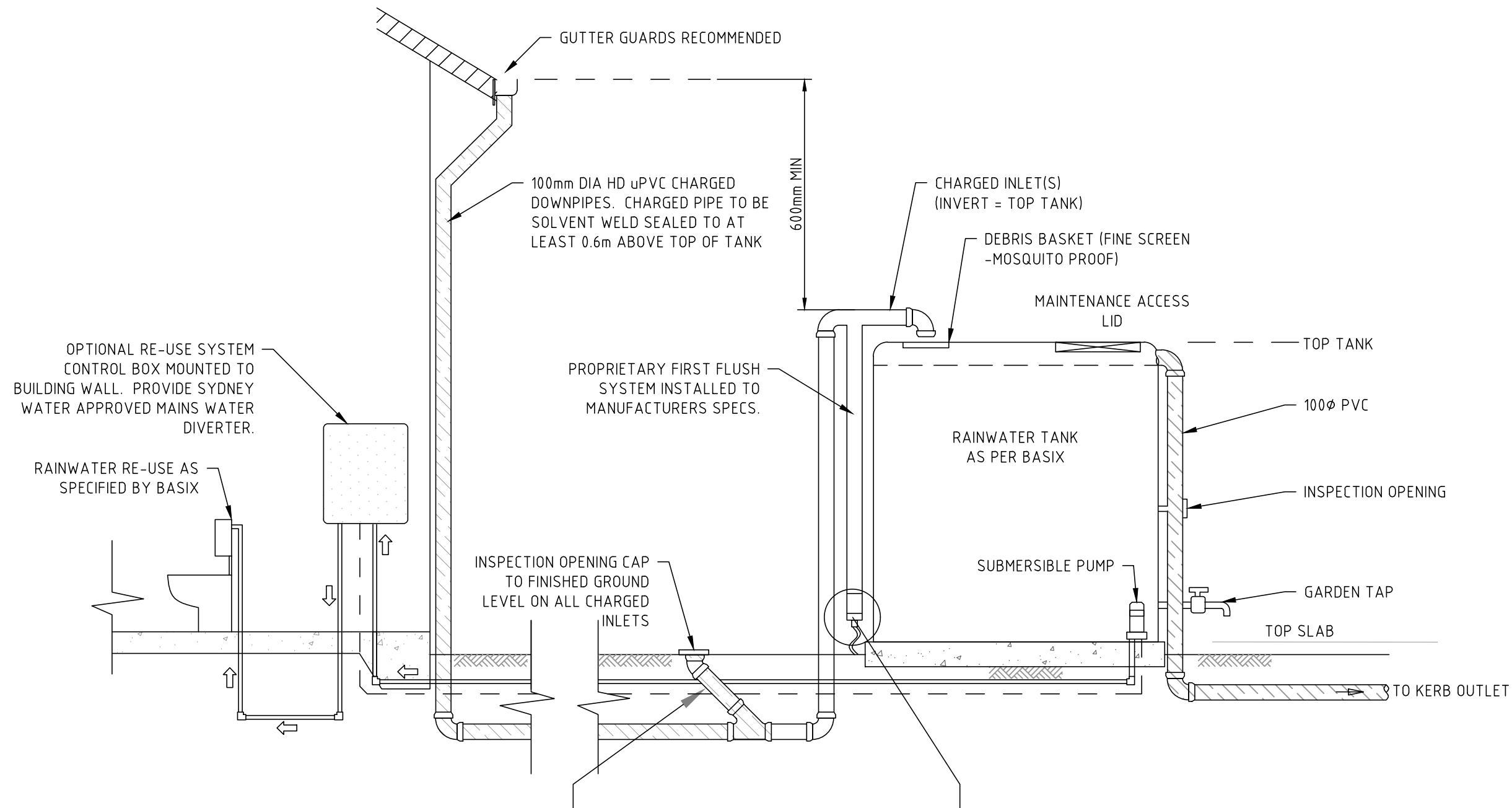
STEP IRON DETAIL

SCALE 1:10



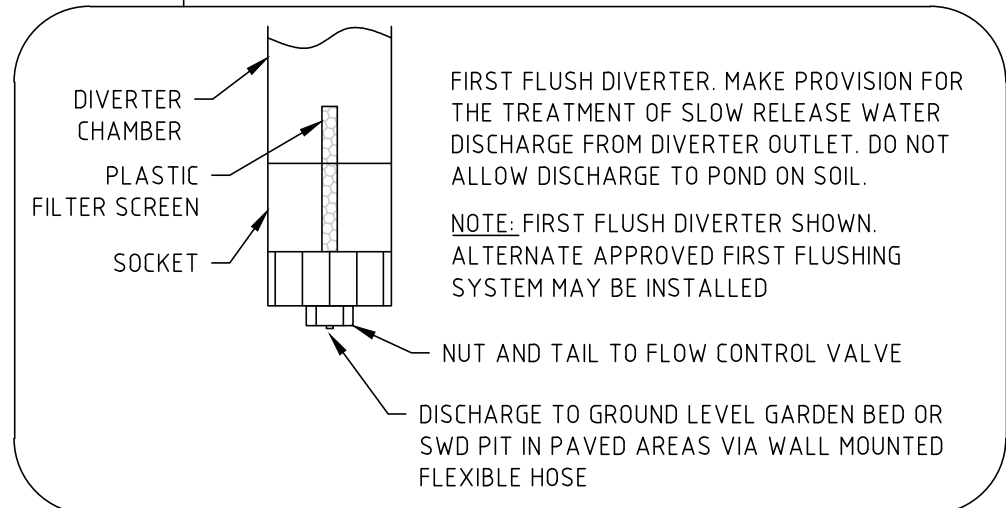
TYPICAL BOX GUTTER SUMP TO EXTERNAL RAINWATER HEAD TYPICAL DETAIL

SCALE 1:10



INSPECTION RISER DETAIL 1

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INSPECTION RISER DETAIL 2

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RAINWATER RE-USE TANK - ABOVE GROUND

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TITLE	STORMWATER DETAILS
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PROJECT NUMBER	22 H 527

DESIGN	DRAWN
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