STORMWATER MANAGEMENT PLANS
PROPOSED ALTERATIONS & ADDITIONS
Lot 2, 126B PACIFIC ROAD, PALM BEACH

NOT FOR CONSTRUCTION

DRAINAGE NOTES

PIPE SIZE:
THE MINIMUM PIPE SIZE SHALL BE:
- 90mm DIA WHERE THE LINE ONLY RECEIVES ROOFWATER RUNOFF; OR
- 100mm DIA WHERE THE LINE RECEIVES RUNOFF FROM PAVED OR UNPAVED AREAS ON THE PROPERTY

THE MINIMUM PIPE VELOCITY SHOULD BE 0.6 m/s AND A MAXIMUM PIPE VELOCITY OF 6.0 m/s DURING THE DESIGN STORM.

PIPE GRADE:
THE MINIMUM PIPE GRADE SHALL BE:
- 1.0% FOR PIPES LESS THAN 225mm DIA
- 0.5% FOR ALL LARGER PIPES

PIPES WITH A GRADIENT GREATER THAN 20% WILL REQUIRE ANCHOR BLOCKS AT THE TOP AND BOTTOM OF THE INCLINED SECTION; AND AT INTERVALS NOT EXCEEDING 3.0m

ANCHOR BLOCKS ARE DESIGNED ACCORDING TO *CLAUSE 7.9 OF AS3500.3-2021*

DEPTH OF COVER FOR PVC PIPES:
MINIMUM PIPE COVER SHALL BE AS FOLLOWS:

LOCATION	MINIMUM COVER
NOT SUBJECT TO VEHICLE LOADING	100mm SINGLE RESIDENTIAL 300mm ALL OTHER DEVELOPMENTS
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 *AS3725-2007 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 THEN BE PAVED WITH AT LEAST:
- 150mm 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.

CONNECTIONS TO STORMWATER DRAINS UNDER BUILDINGS:
SHALL BE CARRIED OUT IN ACCORDANCE WITH *SECTION 6.2.8 OF AS3500.3-2021*

ABOVE GROUND PIPEWORK:
SHALL BE CARRIED OUT IN ACCORDANCE WITH *SECTION 6 OF AS3500.3-2021*

PIT SIZES AND DESIGN:

DEPTH (mm)	MINIMUM PIT SIZE (mm)
UP TO 450mm	450 x 450
450mm TO to 600mm	600 x 600
600mm TO 900mm	600 x 900
900mm TO 1500mm	900 x 900 (WITH STEP IRONS)
1500mm TO 2000mm	1200 x 1200 (WITH STEP IRONS)

ALL PIPES SHOULD BE CUT FLUSH WITH THE WALL OF THE PIT.

PITS GREATER THAN 600mm DEEP SHALL HAVE A MINIMUM ACCESS OPENING OF 600 x 600mm

THE GRATED COVERS OF PITS LARGER THAN 600 x 600mm ARE TO BE HINGED TO PREVENT THE GRATE FROM FALLING INTO THE PIT.

THE BASE OF THE DRAINAGE PITS SHOULD BE AT THE SAME LEVEL AS THE INVERT OF THE OUTLET PIPE. RAINWATER SHOULD NOT BE PERMITTED TO POND WITHIN THE STORMWATER SYSTEM

- **TRENCH DRAINS:**
  CONTINUOUS TRENCH DRAINS ARE TO BE OF WIDTH NOT LESS THAN 150mm AND DEPTH NOT LESS THAN 100mm. THE BARS OF THE GRATING ARE TO BE PARALLEL TO THE DIRECTION OF SURFACE FLOW.

- **STEP IRONS:**
  PITS BETWEEN 1.2m AND 6m ARE TO HAVE STEP IRONS IN ACCORDANCE WITH AS1657. FOR PITS GREATER THAN 6m OTHER MEANS OF ACCESS MUST BE PROVIDED.

- **IN-SITU PITS:**
  IN-SITU PITS ARE TO BE CONSTRUCTED ON A CONCRETE BED OF AT LEAST 150mm THICK. THE WALLS ARE TO BE DESIGNED TO MEET THE MINIMUM REQUIREMENTS OF CLAUSE 7.5.5.1 OF AS3500.3-2021. PITS DEEPER THAN 1.8m SHALL BE CONSTRUCTED WITH REINFORCED CONCRETE.

- **GRATES:**
  GRATES ARE TO BE GALVANISED STEEL GRID TYPE. GRATES ARE TO BE OF HEAVY-DUTY TYPE IN AREAS WHERE THEY MAY BE SUBJECT TO VEHICLE LOADING.

CLASS		USE
A	EXTRA LIGHT DUTY	AREAS INCLUDING FOOTWAYS, ACCESSIBLE ONLY TO PEDESTRIANS, PEDAL CYCLISTS AND CLOSED TO OTHER TRAFFIC
B	LIGHT DUTY	AREAS INCLUDING FOOTWAYS AND LIGHT TRACTOR PATHS ACCESSIBLE TO VEHICLES (EXCLUDING COMMERCIAL VEHICLES) OR LIVESTOCK
C	MEDIUM DUTY	MALLS AND AREAS OPEN TO SLOW-MOVING COMMERCIAL TRAFFIC
D	HEAVY DUTY	CARRIAGEWAYS OF ROADS AND AREAS OPEN TO COMMERCIAL VEHICLES
E	EXTRA HEAVY DUTY	GENERAL DOCKS AND AIRCRAFT PAVEMENTS
F	EXTRA HEAVY DUTY	DOCK AND AIRCRAFT PAVEMENTS SUBJECT TO HIGH WHEEL LOADS
G	EXTRA HEAVY DUTY	DOCKS AND AIRCRAFT PAVEMENTS SUBJECT TO VERY HIGH WHEEL LOADS

GENERAL NOTES

1. FINAL LOCATION OF NEW DOWNPIPES TO BE DETERMINED BY BUILDER/ARCHITECT AT TIME OF CONSTRUCTION.
2. THESE DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTS AND OTHER CONSULTANTS DRAWINGS. ANY DISCREPANCIES TO BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH WORK.
3. ALL MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH AS/NZS 3500.3:2021 STORMWATER DRAINAGE, BCA AND LOCAL COUNCIL POLICY/CONSENT/REQUIREMENTS.
4. ALL DIMENSIONS AND LEVELS TO BE VERIFIED BY BUILDER ON-SITE PRIOR TO COMMENCEMENT OF WORKS. THESE DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS NOR TO BE USED FOR SETOUT PURPOSES.
5. ALL SURVEY INFORMATION AND PROPOSED BUILDING AND FINISHED SURFACE LEVELS SHOWN IN THESE DRAWINGS ARE BASED ON LEVELS OBTAINED FROM DRAWINGS BY OTHERS.
6. THESE DRAWINGS DEPICT THE DESIGN OF SURFACE STORMWATER RUNOFF DRAINAGE SYSTEMS ONLY AND DO NOT DEPICT ROOF DRAINAGE OR SUBSOIL DRAINAGE SYSTEMS UNLESS NOTED OTHERWISE. THE DESIGN OF ROOF AND SUBSOIL DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF OTHERS.
7. ALL STORMWATER DRAINAGE PIPES ARE TO BE uPVC AT MINIMUM 1% GRADE UNLESS NOTED OTHERWISE.
8. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND LEVEL ALL EXISTING SERVICES OR OTHER STRUCTURES WHICH MAY AFFECT/BE AFFECTED BY THIS DESIGN PRIOR TO COMMENCEMENT OF WORKS.
9. ALL PITS WITHIN DRIVEWAYS TO BE 150mm THICK CONCRETE OR EQUAL.
10. THIS PLAN IS THE PROPERTY OF QUANTUM ENGINEERS AND MAY NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION FROM QUANTUM ENGINEERS.

PLAN NOTES

1. **ROOF DRAINAGE NOTE:** AS 3500 ROOF DRAINAGE REQUIRES EAVES GUTTERS TO BE SIZED FOR 20 YEAR 5 MIN. STORM = 205mm/hr. FOR EAVES GUTTERS, AS 3500.3:2021 THEN HAS THE FOLLOWING REQUIREMENTS:
   - 1.1. FOR TYPICAL STANDARD QUAD GUTTER WITH Ae = 6000mm² AND GUTTER SLOPE 1:500 AND STEEPER, THIS REQUIRES ONE DOWNPIPE PER 30m² ROOF AREA.
   - 1.2. DOWNPIPES TO BE MINIMUM 90mm DIA. OR 100 x 50mm FOR GUTTERS SLOPE 1:500 AND STEPPER.
   - 1.3. OVERFLOW METHOD TO FIGURE F.1 OF AS 3500.3:2021 IT IS THE RESPONSIBILITY OF THE PLUMBER AND / OR BUILDER TO COMPLY WITH THIS. THIS DRAWING SHOWS PRELIMINARY LOCATIONS / NUMBERS OF DOWNPIPES ONLY WHICH ARE TO BE VERIFIED BY BUILDER / PLUMBER
2. **TREE PRESERVATION:** IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ANY PRIOR APPROVAL REQUIRED FROM COUNCIL WITH RESPECT TO POTENTIAL IMPACT ON TREES FOR ANY WORKS SHOWN ON THIS DRAWING PRIOR TO THE COMMENCEMENT OF THOSE WORKS
3. ALL ROOF GUTTERS TO HAVE OVERFLOW PROVISION IN ACCORDANCE WITH AS 3500.3:2021 AND SECTIONS 3.5, 3.7.7 AND APPENDIX G OF AS 3500.3:2021
4. THIS DRAWING IS NOT TO BE USED FOR SET-OUT PURPOSES - REFER TO ARCHITECTURAL DRAWINGS
5. LOCATION OF SURFACE STORMWATER GRATED INLET PITS MAY BE VARIED OR NEW PITS INSTALLED AT THE CONSTRUCTION STAGE PROVIDED DESIGN INTENT OF THIS DRAWING IS MAINTAINED

		LEGEND	
SURFACE INLET PIT		GRATED TRENCH DRAIN	
SURFACE INLET PIT (WITH ENVIROPOD 200 MICRON)		ABSORPTION TRENCH	
ACCESS GRATE (WITH ENVIROPOD 200 MICRON)		PROPOSED ROOF GUTTER FALL	
ACCESS GRATE (TO HED PIT)		PROPOSED DOWNPIPE SPREADER	SP
450 SQUARE INTERVAL	450 X 450	STORMWATER PIPE 100mm DIA. MIN. UNO	
GRATE LEVEL = 75.50	SL 75.50	SUBSOIL PIPE	a a
INVERT LEVEL = RL 75.20	IL 75.20	EXISTING STORMWATER PIPE	SW SW
PROPOSED DOWNPIPE 90mm DIA. PVC	DP 90	INSPECTION RISER	IR
		RAINWATER HEAD	RWH

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CLIENT
SIMONE ZIMMERMANN
ARCHITECT
MIKE HANNA CURVE 9

DRAWING TITLE
DETAILS, NOTES & LEGEND
PROPOSED ALTERATIONS & ADDITIONS
Lot 2, 126B PACIFIC ROAD, PALM BEACH

REVISION	DRAWN	DESCRIPTION	DATE
A	DB	PRELIMINARY ISSUE FOR REVIEW	19.04.2024
B	DB	ISSUED FOR DA	09.05.2024

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SCALE - SIZE	**REVISION**
-	B
JOB NUMBER	**DRAWING No.**
230432_SW	D1

OSD WARRANT

LGA: NORTHERN BEACHES COUNCIL
RELEVANT CODE: WATER MANAGEMENT FOR DEVELOPMENT POLICY

APPENDIX 16 - ON SITE DETENTION CHECKLIST (PART 4.1, REGION 1):

- SITE AREA 1094m²
- PRE-DEV IMPERVIOUS AREA 516.0m²
- POST-DEV IMPERVIOUS AREA 515.4m²

"OSD IS NOT REQUIRED IF THE ADDITIONAL IMPERVIOUS AREA OF THE DEVELOPMENT IS NOT MORE THAN 50m² CUMULATIVE OF 1996"

THEREFORE, NO OSD REQUIRED

SITE PLAN
1:400

N

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SITE PLAN
PROPOSED ALTERATIONS & ADDITIONS
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SITE AREA CALCULATIONS		
TOTAL SITE AREA	1094	m²
EXISTING DEVELOPMENT		
BUILDING FOOTPRINT AREA	286.4	m²
PAVED AREA	126.2	m²
DRIVEWAY AREA	103.4	m²
TOTAL IMPERVIOUS AREA	516.0	m²
IMPERVIOUS AREA PERCENTAGE	47.2%	
PROPOSED DEVELOPMENT		
BUILDING FOOTPRINT AREA	284.3	m²
PAVED AREA	135.8	m²
DRIVEWAY AREA	95.3	m²
TOTAL IMPERVIOUS AREA	515.4	m²
INCREASE IN IMPERVIOUS AREA	-0.6	m²
TOTAL IMPERVIOUS AREA PERCENTAGE	47.1%	

AREA CALCULATIONS HAVE TAKEN INTO ACCOUNT THE REMOVED IMPERVIOUS AREA AS NOTED ON THE ARCHITECTURAL PLANS

LEGEND

- PROPOSED WORKS
- EXISTING STRUCTURE

NOTE: ALL PROPOSED GRATED DRAINS (GD) TO BE 200mm WIDE (UNO)

NOTE: ALL PROPOSED LINEAR DRAINS (LD) TO BE 100mm WIDE (UNO)

NOTE: ALL PROPOSED 'ZERO THRESHOLD' LINEAR DRAINS (ZT) TO BE 100mm WIDE (UNO)

DOWNPIPE LEGEND

- RP 150 — INDICATES DOWNPIPE TO RWT
- INDICATES DOWNPIPE DIAMETER
- DP 150 — INDICATES DOWNPIPE DIRECTLY TO KERB OUTLET
- INDICATES DOWNPIPE DIAMETER
- DOWNPIPE PENETRATING FLOOR SLAB
- DOWNPIPE COMMENCING BELOW FLOOR SLAB
- SPREADER

NOTE: PRIOR TO CONNECTING TO EXISTING DRAINAGE SYSTEM, BUILDER MUST VERIFY SYSTEM IS FUNCTIONING SATISFACTORILY. ADVISE CIVIL DESIGN ENGINEER IF NOT SATISFACTORY

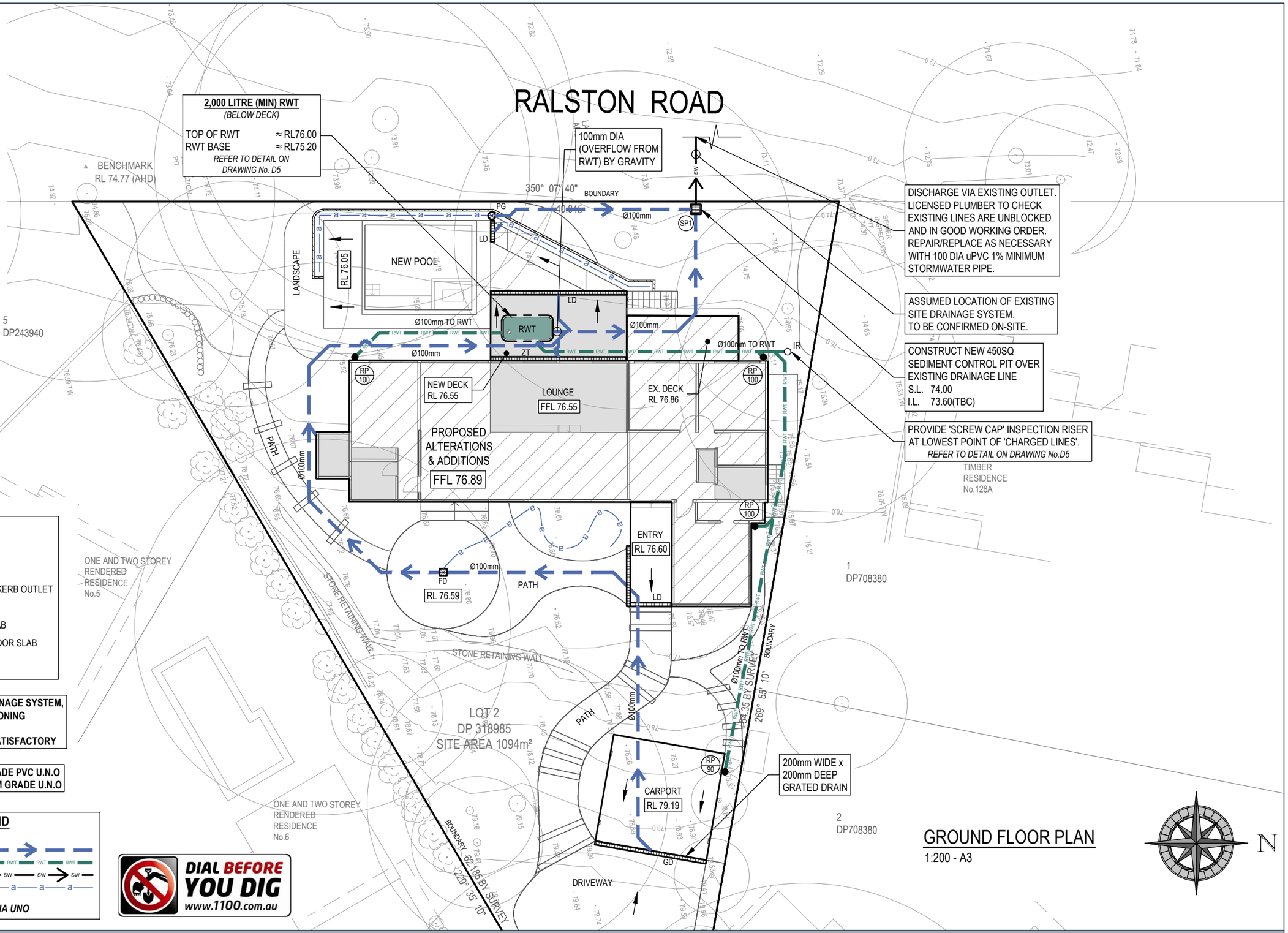
ALL STORMWATER DRAINAGE TO BE SEWER GRADE PVC U.N.O
ALL STORMWATER DRAINAGE TO BE 1% MINIMUM GRADE U.N.O

DRAINAGE PIPE LEGEND

- DRAINAGE PIPES VIA GRAVITY
- DRAINAGE PIPES TO RAINWATER TANK (RWT)
- EXISTING STORMWATER PIPE (SW)
- SUBSOIL DRAINAGE (AGG. LINE)

NOTE: ALL PIPES TO BE 100mm DIA UNO

DIAL BEFORE YOU DIG www.1100.com.au



GROUND FLOOR PLAN

1:200 - A3

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DRAWING TITLE **GROUND FLOOR PLAN** **PROPOSED ALTERATIONS & ADDITIONS** Lot 2, 126B PACIFIC ROAD, PALM BEACH		

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DRAINAGE PIPE LEGEND

- DRAINAGE PIPES VIA GRAVITY
- DRAINAGE PIPES TO RAINWATER TANK
- EXISTING STORMWATER PIPE
- SUBSOIL DRAINAGE (AGG. LINE)

RWT RWT RWT
SW SW SW
a a a

NOTE: ALL PIPES TO BE 100mm DIA UNO

LEGEND

- PROPOSED WORKS
- EXISTING STRUCTURE

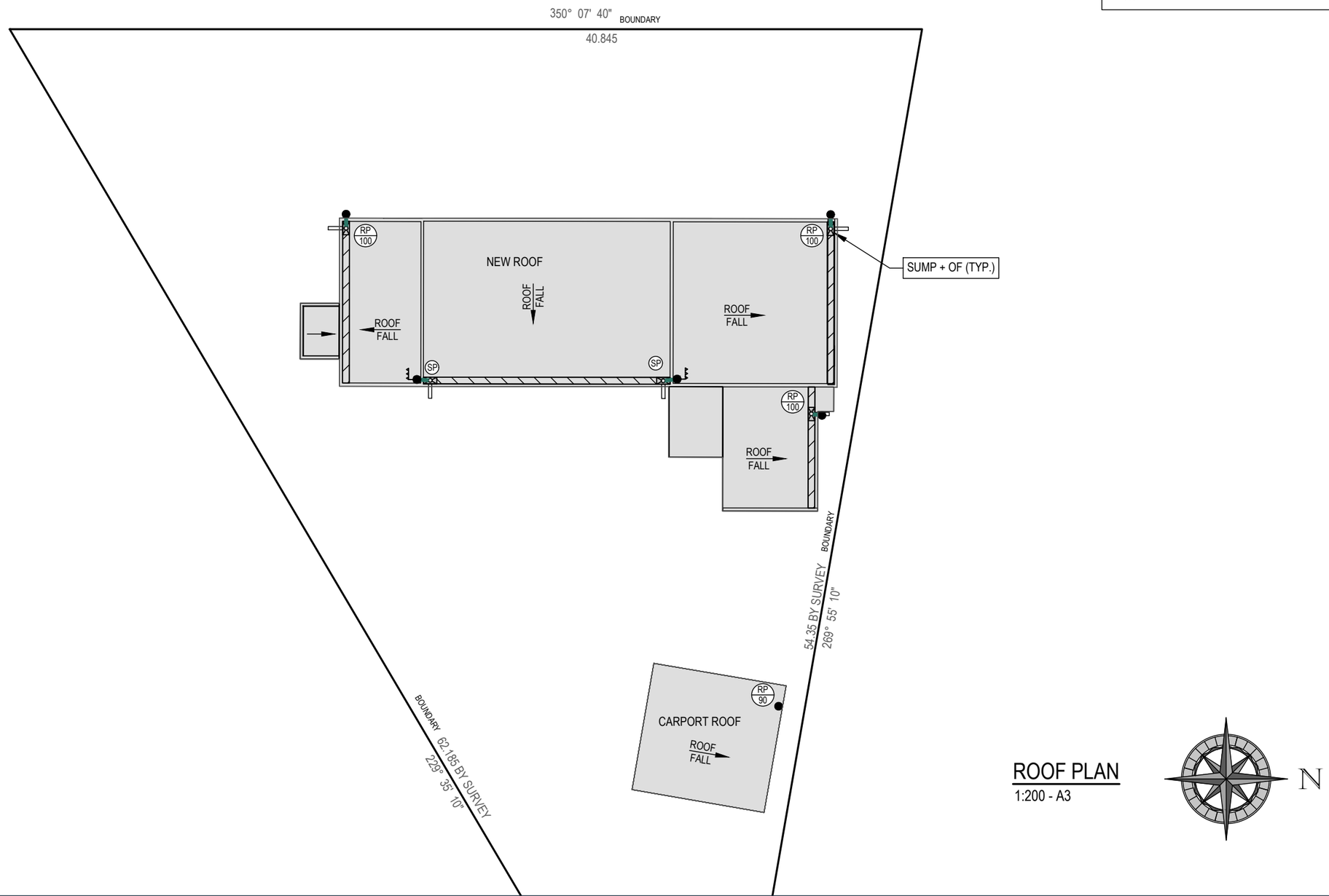
BOX GUTTER

BOX GUTTER TO BE CONSTRUCTED IN ACCORDANCE WITH *AS/NZS 3500.3.2:2021: SECTION J2*

- BOX GUTTER - 300mm WIDTH x 200mm DEPTH (MIN)
- SUMP - 400mm LENGTH x 300mm WIDTH x 100mm DEPTH (MIN)
- OVERFLOW (OF) - 150mm WIDE x 100mm HIGH (MIN)

DOWNPIPE LEGEND

- RP 150 — INDICATES DOWNPIPE TO RWT
- 150 — INDICATES DOWNPIPE DIAMETER
- DP 150 — INDICATES DOWNPIPE DIRECTLY TO KERB OUTLET
- 150 — INDICATES DOWNPIPE DIAMETER
- DOWNPIPE PENETRATING FLOOR SLAB
- DOWNPIPE COMMENCING BELOW FLOOR SLAB
- SPREADER



ROOF PLAN

1:200 - A3

N

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DRAWING TITLE
ROOF PLAN
PROPOSED ALTERATIONS & ADDITIONS
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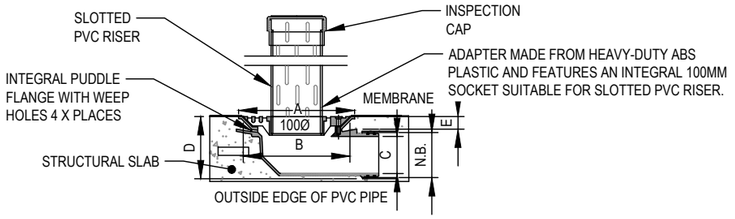
SPS TRUFLO 80MM & 100MM 90° RWO
WITH ALL-PURPOSE PLANTER BOX ADAPTER

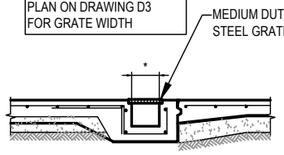
SPECIFICATION CODE:
TIA80/90PB (80MM CI BODY WITH PLANTER BOX INSERT)
TIA100/90PB (100MM CI BODY WITH PLANTER BOX INSERT)



N.B.	A	B	C	D	E
80	260	240	62	115	28
100	260	240	83	140	28

PLANTER GRATE (SPS) - PG
NTS

* - REFER TO STORMWATER PLAN ON DRAWING D3 FOR GRATE WIDTH



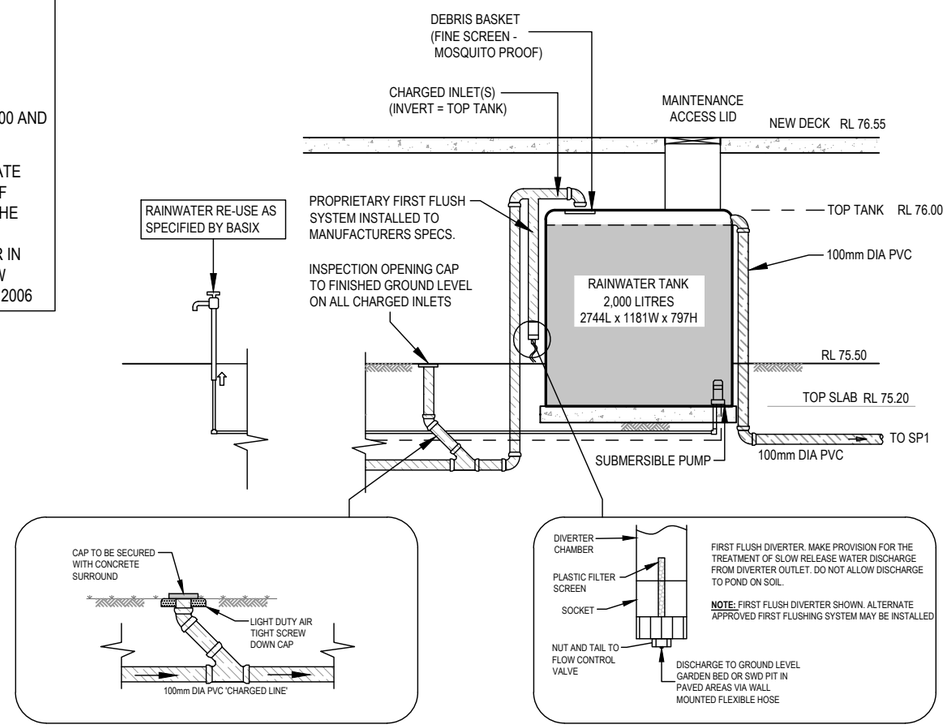
NOTE:
CONCRETE TRENCH WITH GALVANISED STEEL GRATING MAY BE SUBSTITUTED FOR U.V STABILISED POLYPROPYLENE U CHANNEL & GRATE SUBJECT TO ENGINEERS APPROVAL

GRATED DRAIN
NTS

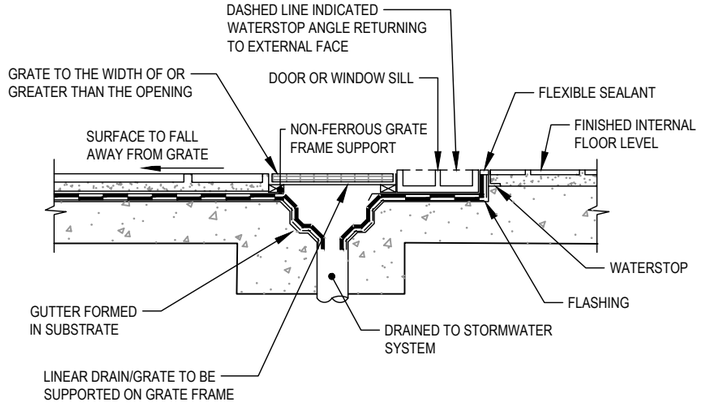
RAINWATER RE-USE TANK - RWT
(AS PER BASIX REQUIREMENTS)

SIZE: 2,000 LITRES (MIN)
UNDERDECK TANK BY "ASC" OR SIMILAR
(2744L x 1181W x 797H)
INSTALL TO MANUFACTURES SPECIFICATIONS, AS3500 AND COUNCIL REQUIREMENTS

- FOR RE-USE AS SPECIFIED BY BASIX CERTIFICATE
- ENSURE TOP OF TANK IS MIN 0.6m BELOW ROOF GUTTERS TO ENSURE SUFFICIENT HEAD FOR THE SYSTEM
- TANK TO BE INSTALLED BY LICENSED PLUMBER IN ACCORDANCE WITH AS/NZS 3500:2021 AND NSW CODE OF PRACTICE PLUMBING AND DRAINAGE 2006



RAINWATER RE-USE TANK - BELOW DECK
NTS

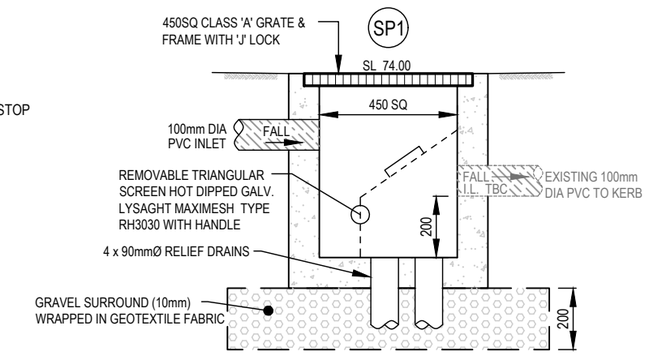


AS 4654.2-2012, CLAUSE 2.8.4:

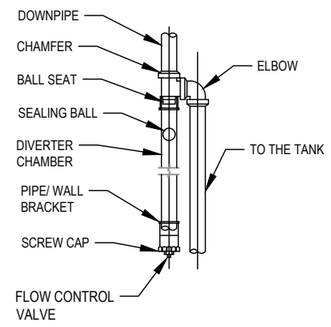
ANY FIXINGS THAT PENETRATE THE MEMBRANE SHALL BE SEALED. THE SEALANT SHALL BE COMPATIBLE WITH THE SURFACE MATERIAL.

WHERE BACKING RODS ARE USED TO SUPPORT THE SEALANT, THEY SHALL BE A MINIMUM OF 12mm.

'ZERO' THRESHOLD LINEAR DRAIN DETAIL
NTS



SEDIMENT CONTROL PIT - SP1
NTS



FIRST FLUSH DIVERTER
NTS

TYPICAL WARNING SIGN
NTS

EVERY EXTERNAL SUPPLY OUTLET FROM RAINWATER RE-USE TANK TO BE LABELED WITH METALLIC WARNING SIGN

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STORMWATER DETAILS
PROPOSED ALTERATIONS & ADDITIONS
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