

CAREEL HEAD ROAD

38  
DP 11909

APPROX. LOCATION  
OF RETAINING WALL  
BY CLIENT

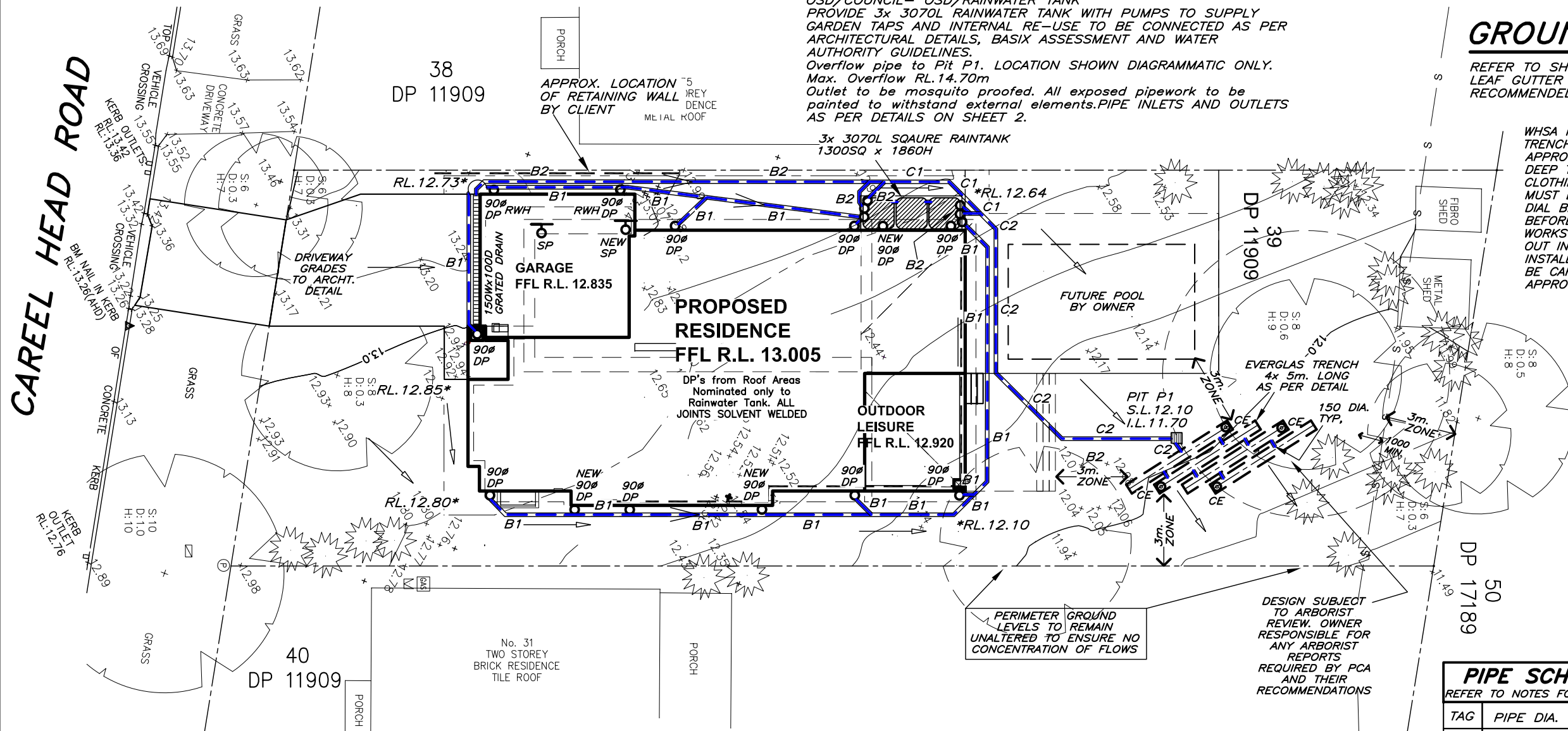
MIN. 3000L FOR BASIX, AND EFFECTIVE 5560L FOR  
OSD/COUNCIL— OSD/RAINWATER TANK  
PROVIDE 3x 3070L RAINWATER TANK WITH PUMPS TO SUPPLY  
GARDEN TAPS AND INTERNAL RE-USE TO BE CONNECTED AS PER  
ARCHITECTURAL DETAILS, BASIX ASSESSMENT AND WATER  
AUTHORITY GUIDELINES.  
Overflow pipe to Pit P1. LOCATION SHOWN DIAGRAMMATIC ONLY.  
Max. Overflow RL.14.70m  
Outlet to be mosquito proofed. All exposed pipework to be  
painted to withstand external elements. PIPE INLETS AND OUTLETS  
AS PER DETAILS ON SHEET 2.

3x 3070L SQUARE RAINWATER TANK  
1300SQ x 1860H

## GROUND FLOOR LAYOUT

REFER TO SHEET 2 FOR RAINWATER TANK DETAILS.  
LEAF GUTTER GUARDS OR SIMILAR SCREENING  
RECOMMENDED TO ALL GUTTERS.

WHSA HAZARD IDENTIFICATION:  
TRENCHING—ALL PERSONS TO FOLLOW THEIR  
APPROVED SWMS IN RELATION TO BARRICADING  
DEEP TRENCHES AND WEARING APPROPRIATE  
CLOTHING. ANY PERSON WORKING INSIDE A TRENCH  
MUST BE SUPERVISED BY ANOTHER PERSON.  
DIAL BEFORE YOU DIG 1100 MUST BE CHECKED  
BEFORE ANY TRENCHING COMMENCES ON SITE. ANY  
WORKS NEAR IDENTIFIED SERVICES TO BE CARRIED  
OUT IN ACCORDANCE WITH THE TRADES SWMS.  
INSTALLATION OF DOWNPIPES AND GUTTERING TO  
BE CARRIED OUT IN ACCORDANCE WITH INSTALLERS  
APPROVED SWMS.



### STORMWATER LAYOUT NOTES

—PITS UP TO 600 DEEP TO BE 450 x 450 U.N.O., PITS UP TO 900 DEEP TO BE 600 x 600 U.N.O., PITS UP TO 1200 DEEP TO BE 900 x 600 U.N.O., PITS EXCEEDING 1200 DEEP TO BE 900 SQ. U.N.O. PITS TO BE PRECAST CONCRETE OR RENDERED BRICK WITH CONCRETE HEAVY DUTY GRATES. U.N.O. LIGHT DUTY PITS AND GRATES MAY BE USED ONLY IN LIGHT/FOOT TRAFFICABLE AREAS. U.N.O. ALL PITS TO BE BENCH TO DISCHARGE PIPES U.N.O. GAL. STEP IRONS TO ALL PITS EXCEEDING 900 DEPTH.  
—COVER AND SUMP GRATES SHALL COMPLY WITH AS2733 & AS4198.  
—DOWNPIPES TO BE 90 DIA IF CHARGED AND 100 x 50 BOX IF GRAVITY. U.N.O. DP'S SHALL BE INSTALLED IN ACCORDANCE WITH AS3500.3.2.4.11 & AS4198. ROOF AREA PER DOWNPIPE WITH A NOMINATED GUTTER SIZE TO BE DETERMINED USING MANUFACTURERS SPECIFICATIONS WITH OVERFLOW PROVISIONS BY INSTALLERS.  
—PIPES TO HAVE 1% MIN.GRADE U.N.O. BY PIT INVERTS. PIPES TO BE V.C. CLASS 'X' OR U.P.V.C. CLASS STORMWATER PIPE TO AS1254,1260,1273,1477,2179.2 AND WHERE EXPOSED TO DIRECT SUNLIGHT TO HAVE ADEQUATE PROTECTION TO U.V. RADIATION IN ACCORDANCE WITH AS2032. SEWER GRADE/GAL. PIPES AND KERB ADAPTORS TO BE USED WHERE COUNCIL POLICY OR CONSENT REQUIRE SUCH.  
—GUTTER OUTLETS SHALL BE FITTED VERTICALLY TO THE SOLE OF THE EAVE GUTTERS. RAINHEADS TO HAVE AN OVERFLOW DUCT OR WEIR 50mm BELOW THEIR CREST.  
—PROVIDE OVERFLOW SPITTERS TO ALL COVERED BALCONIES/ TERRACES. NOT TO BE DIRECTED ON TO ROOF SURFACES  
—SUBSOIL DRAINS TO BE IN ACCORDANCE WITH AS2439.1 CLASS 100 TO BE USED ONLY IN SINGLE DWELLINGS.  
—RISING MAINS (PRESSURE PIPE) TO BE IN ACCORDANCE WITH AS3500.1:2.  
—ALL PIPE JOINTS, VALVES TO BE IN ACCORDANCE WITH AS3500.3.2.2.7 & AS3500.3.2  
—EXPANSION JOINTS SHALL COMPLY WITH AS3500.3.2:TABLE 4.1 PVC JOINTS AND ACCESSORIES TO COMPLY WITH AS2179.2 & AS4198.

—ALL TRENCHES TO BE IN ACCORDANCE WITH AS3500.3.2.7.2.8–14. EMBEDMENT MATERIAL AND TRENCH FILL TO ALL PIPES & SUBSOIL DRAINS TO BE IN ACCORDANCE WITH AS3500.3.2.7. ALL WORKS TO BE IN ACCORDANCE WITH AS1254, 1741, 2032, 2733, 2865, 3996, 1260, 1477, 2179.1 & 2,2566, 6367, 8301, ARR97 & BCA.  
—IT IS THE BUILDER'S RESPONSIBILITY TO CONFIRM THAT LEVELS AND SURVEYS ARE IN ACCORDANCE WITH LEVELS ON SITE & ARE APPROVED BY COUNCIL & ARCHITECT BEFORE COMMENCING WORK.  
—NO SEWER VENTS, GULLY PITS OR SIMILAR TO BE LOCATED BELOW THE MAXIMUM WATER SURFACE LEVEL IN DETENTION BASINS. ALL BASIN WALLS TO BE WATERTIGHT & STRUCTURALLY DESIGNED BY A STRUCTURAL ENGINEER.  
—ALL FENCES WHICH MAY DIVERT FLOW FROM PROPOSED DIRECTION TO BE RAISED 100mm.  
—BUILDER TO ENSURE ALL DRAINAGE AREAS INCLUDING EXPOSED BALCONIES TO HAVE OVERFLOW MECHANISM IN PLACE IN THE EVENT OF BLOCKAGE WITH ADEQUATE OVERFLOW SECTION THROUGH PLANTERS, PARAPETS ETC.  
—ALL EXTERIOR FINISHED GROUND LEVELS TO BE SLOPING AWAY FROM PERIMETER WALLS IN ALL CASES.  
—ALL HEADROOM CLEARANCES TO BE COORDINATED BETWEEN BUILDER & ARCHITECT. NOTIFY ENGINEER FOR APPROVAL IF ANY CHANGES OCCUR.  
—ALL GULLY POSITIONS ARE DIAGRAMMATIC ONLY— BUILDER SHOULD CONSULT ARCHITECTURALS FOR DIMENSIONS TO LOCATE STORMWATER ELEMENTS U.N.O.  
—FIRE RATING TO ARCHITECT'S SPECIFICATION.  
—ALL FINISHED FLOOR LEVELS ARE NOMINATED BY ARCHITECT.  
—ALL SITE SAFETY MEASURES AND WORK METHOD STATEMENTS PREPARED BY BUILDER/SUB-CONTRACTORS ARE TO BE IMPLEMENTED DURING CONSTRUCTION. NO WORK IS TO COMMENCE UNTIL ALL WORKERS CARRY OUT SITE INDUCTION, PREPARED AND CARRIED OUT BY BUILDER. ANY HAZARD IDENTIFICATION TO BE REPORTED IMMEDIATELY TO SITE SUPERVISOR TO CARRY OUT NECESSARY PROCEDURES TO ELIMINATE HAZARD, PRIOR TO PROCEEDING WITH WORK. STRUCTURAL AND GEOTECHNICAL ADVICE SHOULD BE SOUGHT IN ALL CASES.  
—CONFINED SPACES SIGNAGE TO BE INSTALLED IN ACCESSIBLE UNDERGROUND TANKS TO WORK COVER SPECIFICATIONS. ALL PITS EXCEEDING 600mm DEPTH TO HAVE 'J' BOLTS INSTALLED TO GRATES.  
—MAINTENANCE DEVICES REQ'D BY AUTHORITIES ARE NOT TO BE ASSUMED SHOWN ON DRAWINGS.  
—EARTH MOUNDING SHOWN AS TEMPORARY MEASURE UNTIL LANDSCAPING COMPLETED TO DIRECT FLOWS AS SHOWN.

### PIPE SCHEDULE

REFER TO NOTES FOR PIPE CLASS

TAG	PIPE DIA.	MIN.GRADE
B1	100	CHARGED
B2	100	2%
C1	150	1%
C2	150	2%

ALL OTHER SURFACE WATERS  
TO BE STRICTLY CONNECTED  
TO A SEPARATE SYSTEM BY  
OWNER IN ACCORDANCE WITH  
AS 3500:3:2003 AND BCA  
PART 3.1.2.3.

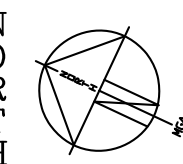
RAINWATER TANKS WITH PUMPS  
TO SUPPLY GARDEN TAPS AND  
INTERNAL RE-USE AS PER  
BASIX ASSESSMENT

### LEGEND

R.L. 0.00	NEW REDUCED LEVEL (NEW FINISHED GROUND LEVEL)
+ 00.00	EXISTING LEVEL
S.L. 0.00	SURFACE LEVEL
I.L. 0.00	INVERT LEVEL
T.O.W.	TOP OF WALL LEVEL
G.F.L. 0.00	GARAGE FLOOR LEVEL
F.F.L. 0.00	FINISHED FLOOR LEVEL
A,B,C etc.	SEE PIPE SCHEDULE PIPE LABEL
PIT P1	SURFACE INLET PIT
PIT OP1	OVERLAND FLOW PIT
90mm AG. LINE	90mm AG. LINE
ODP	DOWNPIPE—SIZE
GP	GULLY PIT
GP	GARDEN GULLY PIT
O/F	OVERFLOW—200x100
RWH/S	RAIN WATER HEAD/SUMP
SP	DP WITH SPREADER
BC	BALCONY GULLY PIT
CE	CLEANING EYE
GROUND FALL	GROUND FALL
100 HIGH EARTH MOUNDING	100 HIGH EARTH MOUNDING

THIS DRAWING IS DIAGRAMMATIC ONLY & NOT TO BE SCALED. IT IS NOT A PART 4A CERT.  
REFER TO ARCHITECTS DRAWINGS FOR DIMENSIONS. COPYRIGHT IN THIS DRAWING IS THE  
PROPERTY OF IBRAHIM STORMWATER CONSULTANTS AND THE DRAWING SHALL NOT BE  
REPRODUCED OR COPIED, WHOLE OR IN PART, IN ANY FORM, WITHOUT THE PRIOR  
WRITTEN APPROVAL OF IBRAHIM STORMWATER CONSULTANTS

NORTH



REVISIONS

ISSUE	PRINTS	ISSUED TO	DATE
1	EMAIL	BUILDER/CLIENT	1-11-19

SCALE (A3) 1:200, 100 u.n.o.  
SCALE BAR - 1m INTERVALS  
DATE OCT. 2019  
DRAWN M.I.  
DESIGNED M.I.  
APPROVED



**IBRAHIM STORMWATER CONSULTANTS**  
**CONSULTING CIVIL ENGINEERS**

P.O. BOX 400 CHERRYBROOK NSW 2126  
TELEPHONE: (02) 9980 5515 FAX: (02) 9980 6114  
www.stormwater.net.au email: mail@stormwater.net.au

PROJECT  
**PROPOSED RESIDENCE  
AT 33 CAREEL HEAD ROAD  
AVALON BEACH  
FOR MRS F CARLILE**

THIS DRAWING  
**STORMWATER  
LAYOUT SH.1**  
BUILDER  
WISDOM HOMES  
JOB NUMBER  
**W8948-180504**  
SHEET No.  
**1 of 2**  
REVISION

**QUAD 100Dia. Overflow pipes to Pit P1. Outlet to be mosquito proofed. All exposed pipework to be painted to withstand external elements.(Location shown generic only)**

**Max. Overflow RL.14.70m**

**ORIFICE IL.13.47**

**PAD RL.12.84**

**IL.12.30**

**3110L for Basix and EFFECTIVE 5610L for OSD USE 3 x 5560L Dual Rainwater tank/s, to manufacturer's and Sydney Water's specifications.**

**Leaf Gutter Guard or Downpipe Guard recommended.**

**880 MIN**

**Mosquito proof strainer or cover – regular cleaning/maintenance by owner essential**

**Internal submersible or external pumps to supply garden taps and internal re-use per Basix assessment. Location as per architectural.**

**Charged pipes shown**

- Mosquito proof strainer  
or cover - regular  
cleaning/maintenance  
by owner essential

*Charged pipes  
shown*

First flush water  
diverter at tank  
as req'd by  
L.G.A. F/F

THIS IS AN  
**ON-SITE STORMWATER  
DETENTION SYSTEM**  
REQUIRED BY YOUR LOCAL COUNCIL

IT IS AN OFFENSE TO REDUCE THE  
VOLUME OR TO INTERFERE WITH THE  
ORIFICE PLATE THAT CONTROLS THE  
OUTFLOW

THE BASE OF THE OUTLET CONTROL  
PIT AND DEBRIS SCREEN MUST BE  
CLEANED OF DEBRIS AND SEDIMENT  
ON A REGULAR BASIS BY THE OWNER.

**THIS PLATE MUST NOT BE REMOVED**

Signage to be provided  
adjacent tanks Size: 110 mm  
x 80mm

TANK DETAILS SHOWN ARE A SUGGESTED CONFIGURATION ONLY. ANY MODIFICATIONS TO TANK VOLUME OR INLET AND OUTLET LEVELS MUST BE APPROVED BY ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION. TANK SHAPE, & DEVICES SHOWN ARE DIAGRAMMATIC ONLY. MINIMUM OF 450 CLEARANCE (UNLESS L.G.A. REQUIRES LARGER SETBACK) TO SIDE BOUNDARIES MUST BE MAINTAINED. CLIENT IS RESPONSIBLE TO ENSURE COMPLIANCE WITH THIS IN THE INSTALLED STATE.

Charged stormwater lines from Roof Areas ONLY to rainwater tank.

All joints to be solvent welded. All exposed pipework to be painted to withstand external elements.

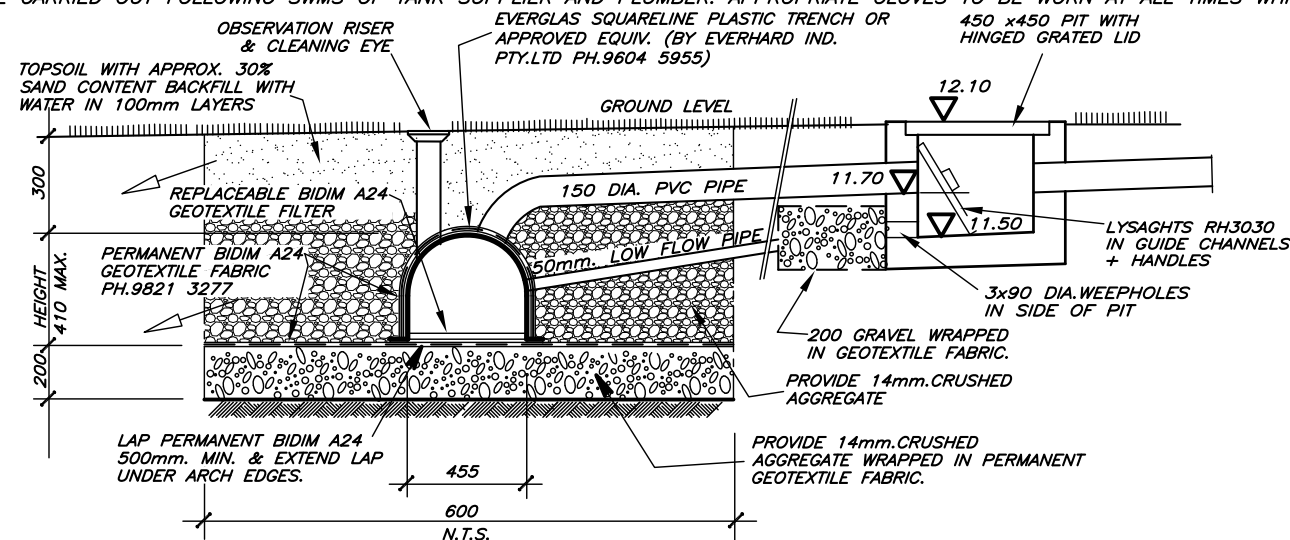
First flush water diverter at tank to comply with Sydney Water and council DCP's. An approved switch system similar to 'Rainbank' to be used via mains. Pumps to manuf. specs.

Rain Tank to be installed and maintained to manufacturers specifications and to comply with all Sydney Water Guidelines.

Client to be responsible for maintenance system of charged pipelines. Debris accumulation significantly affects systems performance. Maintenance program essential.

Structural details for tank base by manufacturer or others.

INSTALLATION OF RAINTANKS: PLUMBER/SITE SUPERVISOR TO ASSESS ACCESS SUITABILITY PRIOR OR POST SLAB CONSTRUCTION. INSTALLATION OF TANKS TO BE CARRIED OUT FOLLOWING SWMS OF TANK SUPPLIER AND PLUMBER. APPROPRIATE GLOVES TO BE WORN AT ALL TIMES WHILE HANDLING TANKS.



WHSA HAZARD IDENTIFICATION:  
DEEP TRENCHING--ALL PERSONS TO FOLLOW THEIR SWMS IN RELATION TO BARRICADING DEEP TRENCHES AND WEARING APPROPRIATE CLOTHING. ANY PERSON WORKING INSIDE A TRENCH MUST BE SUPERVISED BY ANOTHER PERSON IN ACCORDANCE WITH WORK COVER AND WORKING IN CONFINED SPACES.  
DIAL BEFORE YOU DIG 1100 MUST BE CHECKED BEFORE ANY TRENCHING COMMENCES ON SITE. ANY WORKS NEAR IDENTIFIED SERVICES TO BE CARRIED OUT IN ACCORDANCE WITH THE TRADES SWMS.  
GEOTECHNICAL INVESTIGATIONS FOR TRENCHING TO BE CARRIED OUT BY APPROPRIATELY QUALIFIED PERSONAL IN RELATION TO SUITABLE BATTERS OR SHORING.

CLEANING EYE AS CLOSE AS  
POSSIBLE TO ORIFICE

3110L FOR

### OSD OUTLET DETAIL

TRENCHES TO BE LOCATED PARALLEL TO NATURAL CONTOURS OF SITE. SURFACE OF TRENCHES TO ACT OR LEVEL SPREADER OR LEVEL SPREADER TO BE CONSTRUCTED DOWNSTREAM OF TRENCHES.  
STRICTLY NO PAVING OR HARD SURFACES TO BE CONSTRUCTED OVER TRENCHES.  
Geotech Engineers Recommendation for construction of the trench to incorporate roughening of the base and sides of the trench to reduce smearing that may be caused during excavation. Roughening could be achieved by tying the base of the trench and vertical grooving the sides.  
Trafficking of the base of the trench should be avoided during construction of the absorption trench. Trench design and construction should incorporate suitable geofabric lining to the base, sides and top of the trench.

THIS DRAWING IS DIAGRAMMATIC ONLY & NOT TO BE SCALED. IT IS NOT A PART 4A CERT.  
REFER TO ARCHITECTS DRAWINGS FOR DIMENSIONS. COPYRIGHT IN THIS DRAWING IS THE  
PROPERTY OF IBRAHIM STORMWATER CONSULTANTS AND THE DRAWING SHALL NOT BE  
REPRODUCED OR COPIED, WHOLE OR IN PART, IN ANY FORM, WITHOUT THE PRIOR  
WRITTEN APPROVAL OF IBRAHIM STORMWATER CONSULTANTS

**BUILDER/CLIENT TO ENSURE THAT ALL SAFETY MEASURES ARE TAKEN DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO, SAFETY FENCING, SIGNAGE, OBTAINING STRUCTURAL AND GEOTECHNICAL ADVICE WHERE EXCAVATIONS ARE NEAR STRUCTURES OR SERVICES, SAFETY MEASURES RECOMMENDED BY PRODUCT SUPPLIERS ETC.**

REVISIONS	

ISSUE	PRINTS	ISSUED TO	DATE
1	EMAIL	BUILDER/CLIENT	1-11-19

SCALE(A3)1:200,100 u.n.o.  
SCALE BAR - 1m INTERVALS  
DATE OCT. 2019  
DRAWN M.I.  
DESIGNED M.I.  
APPROVED



**IBRAHIM STORMWATER CONSULTANTS**  
**CONSULTING CIVIL ENGINEERS**

P.O. BOX 400 CHERRYBROOK NSW 2126  
TELEPHONE: (02) 9980 5515 FAX: (02) 9980 6114  
www.stormwater.net.au email: mail@stormwater.net.au

PROJECT  
***PROPOSED RESIDENCE  
AT 33 CAREEL HEAD ROAD  
AVALON BEACH  
FOR MRS F CARLILE***

THIS DRAWING  
**STORMWATER  
DETAILS SH.1**  
BUILDER  
WISDOM HOMES

JOB NUMBER  
**W8948-180504**

SHEET No. **2 of 2** REVISION