PROPOSED DEVELOPMENT
LOT 412 NO.12 GOLDSMITH AVENUE KILLARNEY HEIGHTS

GENERAL DRAINAGE NOTES

1. THE CONTRACTOR SHALL ADEQUATELY DRAIN THE SITE DURING ALL STAGES OF CONSTRUCTION.
2. CONTRACTOR SHALL VERIFY ALL LEVELS DIMENSIONS AND SERVICES EXISTING AND REPORT ANY DISCREPANCIES TO BUILDER WITHIN 5 DAYS OF MOBILISATION TO SITE.
3. ALL APPROPRIATE PERMITS SHALL BE OBTAINED AND FEES PAID FOR BY THE CONTRACTOR.
4. ANY PAVEMENT OR FEATURES DAMAGED DURING THE COURSE OF THIS CONTRACT SHALL BE REINSTATED TO THEIR FORMER CONDITION.
5. THE CONTRACTOR SHALL ARRANGE A SITE INSPECTION WITH THE CIVIL ENGINEERING SUPERVISING OFFICER PRIOR TO THE COMMENCEMENT OF WORK TO RECORD ANY DAMAGE TO EXISTING FEATURES.
6. ALL EXISTING PIT COVERS, DOWNPIPE CONNECTIONS AND SIMILAR FEATURES IN CONSTRUCTION AREAS ARE TO BE ADJUSTED TO SUIT.
7. ALL CONCRETE PAVEMENT SHALL BE FINISHED WITH A NON SKID FLOAT, (NO BROOMED FINISH).
8. BEFORE COMMENCEMENT OF WORK A TEMPORARY BENCH MARK IS TO BE ESTABLISHED BY THE CONTRACTOR IN A POSITION ON SITE SAFE FROM DISTURBANCE.
9. ANY SHORTFALL IN INDIGENOUS TOPSOIL REQUIRED TO BRING THE GARDEN AND GRASSED AREAS TO THE DESIGN LEVELS SHALL BE MADE UP WITH APPROVED IMPORTED TOPSOIL. NO ADDITIONAL PAYMENT WILL BE MADE FOR IMPORTED TOPSOIL.
10. EXCAVATED MATERIAL SHALL BE STOCKPILED ON SITE AS DIRECTED BY THE SUPERINTENDENT. EXCESS TO BE REMOVED FROM SITE AT CONTRACTORS EXPENSE.
11. TOPSOIL TO BE STRIPPED TO A DEPTH OF 150mm UNDER FILL AREAS AND ALL OTHER AREAS. THIS TOPSOIL SHALL BE STOCKPILED ON SITE AS DIRECTED BY SUPERINTENDENT. EXCESS SOIL SHALL BE REMOVED FROM THE SITE AT THE CONTRACTORS EXPENSE.
12. ALL STORMWATER DRAINS SHALL BE BEDDED ON A MINIMUM OF 80mm COMPACTED THICKNESS 20 N.S. CLASS 3 FINE CRUSHED ROCK, IN SOIL BASED TRENCHES. INCREASE TO 200mm THICKNESS IN ROCK BASED TRENCHES.
13. 100mm AND 150mm DIAMETER STORMWATER DRAINS SHALL BE LAID AT A MINIMUM GRADE OF 1:100, UNLESS OTHERWISE SHOWN.
14. FOOTPATHS, DRIVEWAYS, ROADWAYS, KERBS, R.O.W.'S OR EXISTING FEATURES DISTURBED, BROKEN OR AFFECTED BY THE WORKS ARE TO BE REINSTATED TO THE COMPLETE SATISFACTION OF THE CITY ENGINEER OR HIS REPRESENTATIVE.
15. ALL CONCRETE TO BE SAW CUT AND BROKEN OUT TO THE NEAREST JOINT.
16. ALL NATURE STRIPS AND LAWN AREAS OUTSIDE PRIVATE PROPERTY TO BE REINSTATED WITH TOP SOIL AND SEEDED.
17. CONTRACTOR TO CONTACT LOCAL COUNCIL ENGINEERING DEPARTMENT AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION OF OUTFALL DRAINAGE TO ARRANGE FOR COUNCIL SUPERVISION AND INSPECTION IF REQUIRED BY COUNCIL.
18. THE CONTRACTOR IS TO VERIFY ALL LOCATIONS AND DEPTH OF SERVICES WITH THE RELEVANT AUTHORITIES FOR THE CONSTRUCTION OF DRAINS AND SERVICES OUTSIDE THE PROPERTY BOUNDARY PRIOR TO THE COMMENCEMENT OF WORK, AND SHALL BE FULLY RESPONSIBLE FOR RECTIFICATION OF ANY DAMAGED SERVICE.
19. ALL ADDITIONAL FILL MATERIAL REQUIRED DUE TO OVER EXCAVATION OR A SHORTFALL OF SUITABLE EXCAVATED MATERIAL SHALL BE IMPORTED AT THE CONTRACTORS EXPENSE.

MIN. REQUIREMENTS FOR EXPANSION AND ALLOWABLE IN FITTINGS		
SITE CLASS	MIN. REQUIRED EXPANSION JOINT CAPACITY	ALLOWABLE ROTATION
'E'	150mm	15°
'H'	70mm	15°
'P'	70mm PLUS ADDITIONAL REQUIREMENTS IN THE CASE OF FILL (MIN. DEPENDENT ON SITE CONDITION)	15°
'M'	MIN. 25mm LAGGING THROUGH FOOTINGS	NOT APPLICABLE

THE CONTRACTOR TO REFER SOIL CLASSIFICATION REPORT TO DETERMINE THE TYPE OF EXPANSION JOINT TO BE USED

DRAINAGE NOTES:

1. ALL SURFACE DRAINAGE WORKS SHALL BE INSTALLED IN ACCORDANCE WITH CLAUSE 5.6.3 DRAINAGE REQUIREMENTS OF AS 2870-2011, WHEREIN FOR BUILDINGS ON MODERATELY, HIGHLY AND REACTIVE SITES:
   - SURFACE DRAINAGE SHALL BE CONTROLLED THROUGHOUT CONSTRUCTION AND BE COMPLETED BY THE FINISH OF CONSTRUCTION.
   - WHERE PIPES PASS UNDER THE FOOTING SYSTEMS, CLAY PLUGS ARE ADOPTED TO PREVENT THE INGRESS OF WATER.
2. FOR BUILDINGS ON HIGHLY AND REACTIVE SITES, DRAINER SHALL PROVIDE DRAINAGE ARTICULATION TO ALL STORMWATER, SANITARY PLUMBING DRAINS AND DISCHARGE PIPES IN ACCORDANCE WITH CLAUSE 5.6.4 PLUMBING REQUIREMENTS, WHEREIN FLEXIBLE JOINTS IMMEDIATELY OUTSIDE BUILDING AND COMMENCING WITHIN 1m OF THE BUILDING PERIMETER ARE REQUIRED TO ACCOMMODATE THE REQUIRED DIFFERENTIAL MOVEMENT BASE ON THE SOIL CLASSIFICATION, REFER TABLE 'MIN. REQUIREMENTS FOR EXPANSION AND ALLOWABLE IN FITTINGS.
3. DRAINAGE DESIGN IS IN ACCORDANCE WITH AS3500.

MATERIALS

1. PROPOSED 100Ø & 150Ø STORMWATER DRAINS SHALL BE FORMED OF UNPLASTICISED POLYVINYL CHLORIDE PIPES AND FITTINGS SN10/8 MANUFACTURED TO CONFORM TO AS.1260.
2. PROPOSED 225 DIAMETER AND LARGER STORMWATER DRAINS SHALL BE FORMED OF FIBRE REINFORCED CONCRETE CLASS 2, RUBBER RING JOINTED PIPE MANUFACTURED TO CONFORM TO AS 4058. USE UPVC TO AS1260. (CLASS SH) WHERE SHOWN ON THE DRAWINGS.

SERVICE

1. WHERE PROPOSED SERVICES TRAVERSE EXISTING ASPHALT AND CONCRETE PAVEMENTS THE PAVEMENT IS TO BE SAW CUT TO FULL DEPTH OF PAVEMENT PRIOR TO EXCAVATION. THE INTERFACE BETWEEN EXISTING KERB AND CHANNEL (TO BE REMOVED) AND EXISTING ASPHALT SHALL BE SAWCUT.
2. THE CONTRACTOR SHALL CO-ORDINATE THE LAYING OF ALL SERVICES TO AVOID CLASHES.
3. LAY ALL SERVICES TO NOMINATED LEVELS WHERE GIVEN, OTHER SERVICES SHALL BE LAID TO COMPLY WITH MINIMUM COVER REQUIREMENTS.
4. DIFFERENT PARALLEL SERVICES THAT ARE IN CLOSE PROXIMITY TO EACH OTHER MAY BE LAID IN A COMMON TRENCH, SUBJECT TO THE APPROVAL OF THE RELEVANT AUTHORITY AND THE SUPERINTENDENT.

SITE DRAINAGE REQUIREMENTS - CONSTRUCTION STAGE:

1. PREVENT WATER PONDING AGAINST OR NEAR ANY EXISTING FOOTING.
2. THE GROUND IN THE IMMEDIATE VICINITY OF THE PERIMETER FOOTING SHALL BE GRADED TO A FALL OF 50mm MIN. AWAY FROM THE FOOTING OVER A DISTANCE OF 1000mm (1:20) AND SHAPED TO PREVENT PONDING OF WATER (THIS INCLUDES THE GROUND UPHILL FROM THE FOOTING ON A CUT/FILL SITE) - WHERE FILLING IS PLACED ADJACENT TO THE BUILDING, THE FILLING SHALL BE COMPACTED AND GRADED TO ENSURE DRAINAGE OR WATER AWAY FROM THE BUILDING.
3. ALL COLLECTED STORMWATER MUST BE DISCHARGED TO THE LPOD.
4. INSTALL SUB-SURFACE DRAINAGE TO AS2439.1 100mm DIAMETER SN8 IN A 300mm WIDE TRENCH (MIN. FALL OF 1:100), BASE OF THE TRENCH IS FILLED WITH 12mm SINGLE SIZE AGGREGATE.
   - AG DRAINS MUST BE INSTALLED AT THE BASE OF ALL SITE CUTS THAT EXCEED 400mm IN HEIGHT, ALONG THE HIGH SIDE OF A SLOPING SITE AND POSSIBLY ALONG THE LOW SIDE OF A SLOPING SITE ALONG THE BOUNDARY. TO BE CONNECTED TO STORMWATER SYSTEM VIA A SILT PIT.
   - AG DRAINS TO BE LAID APPROX. 200mm INTO UNDISTURBED CLAY OR COMPACTED CLAY.
5. TRENCHES MUST BE 'CLAY PLUGGED' OR CONCRETED WHEN PASSING PERPENDICULARLY UNDER ANY PART OF THE FOOTING AND ON ANY SLOTTED PIPE SIDE OF A CONNECTION PIT
   - ALL TRENCHES WITHIN 1500mm OF ANY FOOTING MUST BE EFFECTIVELY SEALED FROM SURFACE WATER, WITH AT LEAST THE TOP 300mm OF THE TRENCH FILLED WITH LOCAL CLAY COMPACTED TO AN IMPERMEABLE TOP LAYER. APPROVED MOISTURE BARRIER USE WITH TRENCHES IS AN OPTION.
6. FLEXIBLE PLUMBING JOINTS ARE REQUIRED FOR H1/H2/E/P SITES TO ALLOW FOR EXPECTED VERTICAL GROUND MOVEMENTS (REFER GEOTECHNICAL REPORT). THE JOINTS MUST BE SET AT THE MIDWAY POINT WHEN INSTALLED & MUST ALSO INCORPORATE SWIVEL JOINTS IN THE SYSTEM
   - DRAINS EMERGING FROM UNDER THE FOOTING REQUIRE THE FLEXIBLE JOINT TO BE WITHIN 1000mm OF THE OUTSIDE OF THE PERIMETER FOOTING
   - INSTALLATION, LOCATION AND NUMBER OF JOINTS TO COMPLY WITH MANUFACTURER'S SPECS.

WARNING
THE BUILDER/CONTRACTOR SHALL PROVE ALL EXISTING SERVICES WITHIN 3 DAYS OF MOBILISATION OR ANY WORKS OCCURRING ON SITE.

THESE PLANS ARE TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL & LANDSCAPE PLANS FOR EXTERNAL WORKS.

ALL UNDERGROUND & SURFACE DRAINAGE WORKS SHALL BE INSTALLED IN ACCORDANCE WITH CLAUSE 5.6.3 DRAINAGE REQUIREMENTS OF AS 2870-2011 & AS3500.3-2018. SURFACE DRAINAGE SHALL BE CONTROLLED THROUGHOUT CONSTRUCTION AND BE COMPLETED BY THE FINISH OF CONSTRUCTION.

ALL FINISHED SURFACE LEVEL TO BE SLOPED AWAY FROM FINISHED FLOOR LEVEL AND DRAIN TOWARDS STORMWATER PITS

ALL INTERNAL DRAINAGE TO BE CONSTRUCTED AS PER AUSTRALIAN STANDARD AS3500.3-2018

STORMWATER PIPE TO BE LAID 800mm CENTERS AWAY FROM EDGE OF SLAB UNLESS SPECIFIED OTHERWISE

PROVIDE 2-N12 BARS × 1200 LONG TOP FOR ALL RE-ENTRY CORNERS OF PITS. (TYPICAL).

IMPORTANT NOTES:
AT NO TIME IS ANY EXISTING OR PROPOSED FOOTING TO BE UNDERMINED DURING CONSTRUCTION. BUILDER TO ENSURE AND CONFIRM PRIOR TO COMMENCEMENT OF CONSTRUCTION. THIS OFFICE TO BE CONTACTED IF ANY DISCPREPANCY

PROVIDE FLEXI JOINTS AND CLAY PLUGS AS PER AS2870

NOTE:
ALL CONCRETE JOINTS ARE SAWCUT JOINTS U.N.O. REFER TYPICAL DETAIL AND NOTES

BUILDER TO CONFIRM ALL PIT LEVELS AND COVERS PRIOR TO COMMENCEMENT OF CONSTRUCTION

ALL DOWNPIPES LOCATION ARE PRELIMINARY ONLY. CONTRACTOR TO REFER LATEST ARCHITECT PLANS FOR EXACT LOCATION OF ALL DOWNPIPES. CONNECTION TO BE DONE ACCORDANCE TO PLUMBING STANDARD AS3500

AUTHORITY APPROVAL REQUIRED PRIOR TO COMMENCEMENT OF CONSTRUCTION

ALL HWS AND AC UNIT OVERFLOWS TO BE CONNECTED TO THE PROPOSED STORMWATER DRAINAGE SYSTEM

DIAL BEFORE YOU DIG www.1100.com.au

Rev.	Remark/Comment	Date:	Appr.
B	REVSIED PIT LOCATION	04.02.20	R.F.
A	FOR APPROVAL	31.01.20	R.F.

Client:
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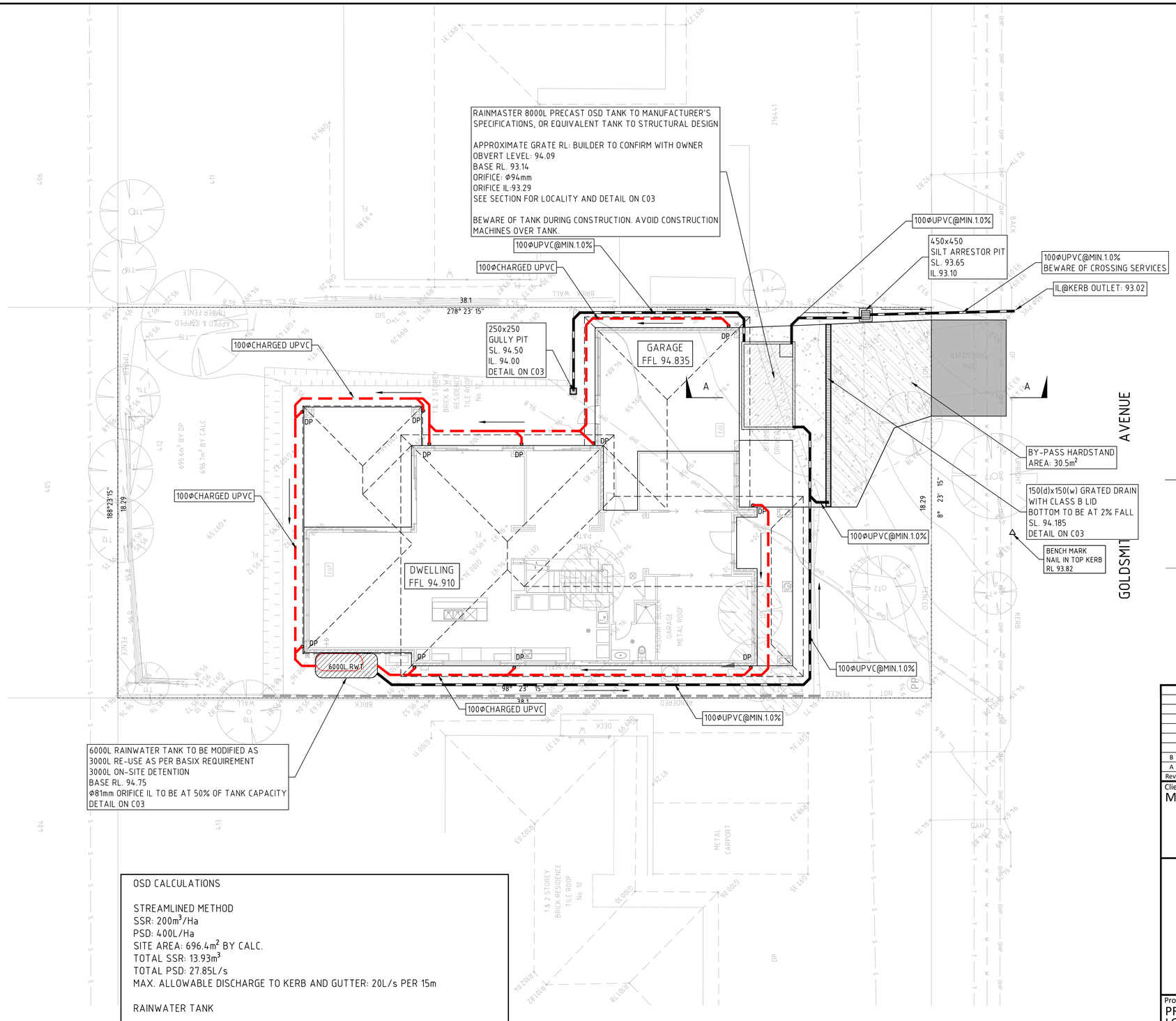
Project:
PROPOSED DEVELOPMENT
LOT 412 NO.12 GOLDSMITH AVENUE
KILLARNEY HEIGHTS

Drawing:
GENERAL NOTES & LOCALITY PLAN

FOR APPROVAL
NOT FOR CONSTRUCTION

Date: JAN.2020	Engineer: D.Y.	Drawn: J.T.	
Scale @ A1: N/A	Checked: J.S.	Sheets: 1 OF 3	
Reference No. 130186	Drawing No. C01	Rev. B	

Feb 04, 2020 - 10:41am



LEGEND

PL. 0.00	PAVEMENT LEVEL
TOP 0.000	TOP OF PIT
INLET 0.000	INVERT LEVEL OF INLET PIPE
OUTLET 0.000	OUTLET INVERT LEVEL
FFL xx.xxx	FINISHED FLOOR LEVEL
	EXISTING STORMWATER DRAIN
	STORMWATER DRAIN 100Ø AT 1 IN 100
	GRATED PIT, GP
SCJ	SAW CUT JOINT
DP	DOWNPIPE (100Ø U.N.O.)
Slope / Slope	DIRECTION OF SURFACE RUNOFF
10	PIT NUMBER
Ex.WM	EXISTING WATER MAIN
	CHARGED STORMWATER LINE
10	INSPECTION SHAFT
CR	CAPPED RISER

- PROVIDE INSPECTION OUTLET CAPPED RISERS EVERY MIN. 10m CTS. BETWEEN PITS
- ALL CONCRETE JOINTS ARE SAWCUT JOINTS TO DETAIL U.N.O.
- 100Ø OVERFLOW FROM WATER TANKS TO BE CONNECTED TO UNDERGROUND DRAINAGE SYSTEM (TYPICAL)
- WATER TANK STORAGE TO BE REUSED FOR TOILET FLUSHING AND IRRIGATION ONLY
- REFER TO ENDORSED PLAN FOR REMOVAL & PROTECTION OF TREES.

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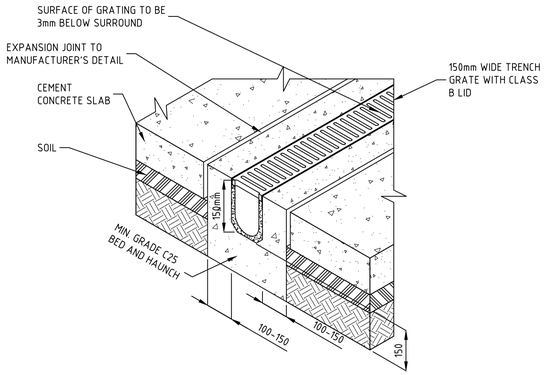
PROPOSED DEVELOPMENT
LOT 412 NO.12 GOLDSMITH AVENUE
KILLARNEY HEIGHTS

Drawing:
DRAINAGE LAYOUT PLAN

FOR APPROVAL
NOT FOR CONSTRUCTION

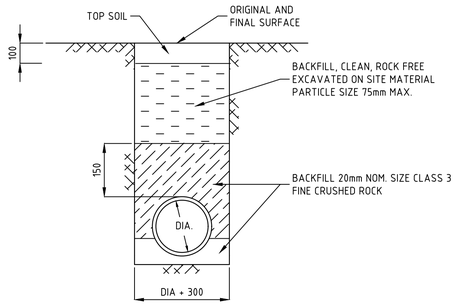
Date: JAN.2020	Engineer: D.Y.	Drawn: J.T.
Scale @ A1: 1:100	Checked: J.S.	Sheets: 2 OF 3
Reference No. 130186	Drawing No. C02	Rev. B

Feb 04, 2020 - 10:41am



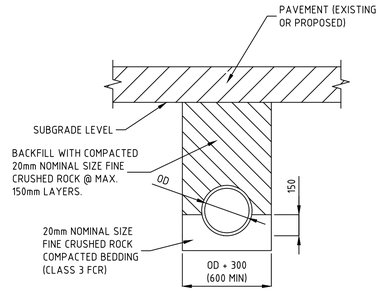
TYPICAL GRATED TRENCH INSTALLATION

NOT TO SCALE



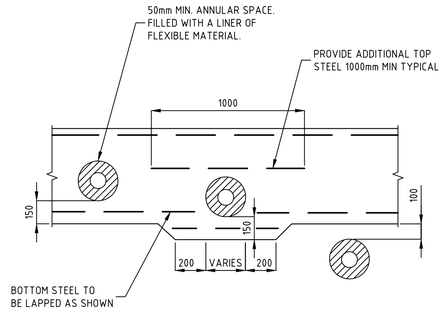
TRENCH CONDITIONS FOR DRAINAGE PIPE INSTALLATION (NOT UNDER PAVEMENTS)

NOT TO SCALE



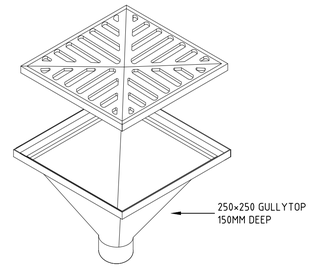
PIPE TRENCH UNDER PAVEMENT

NOT TO SCALE



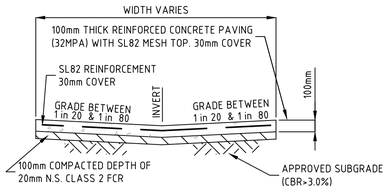
TYPICAL PIPE PENETRATION DETAIL

SCALE 1:20



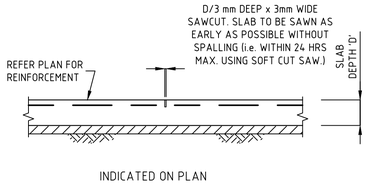
GULLYTOP CLASS A COVER (EVERHARD OR APPROVED EQUIVALENT)

NOT TO SCALE



TYPICAL DRIVEWAY PAVEMENT CROSS-SECTION

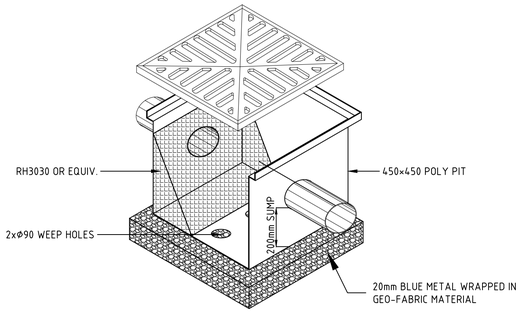
NOT TO SCALE -ABOVE UNDERGROUND FUEL TANK



INDICATED ON PLAN

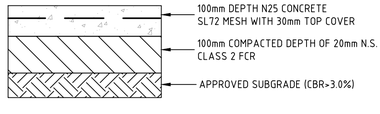
TYPICAL SAWCUT DETAIL (SCJ)

NOT TO SCALE



TYPICAL 450x450 SILT ARRESTOR PIT DETAIL

SCALE 1:20



CONCRETE FOOTPATH PAVEMENT

NOT TO SCALE- PROVIDE 35mm DEEP SAWCUT FOR EVERY 1.5m SPACING AND CONSTRUCTION JOINT FOR EVERY NEW POUR
REFER STRUCTURAL DRAWING FOR ISOLATION JOINT DETAILS

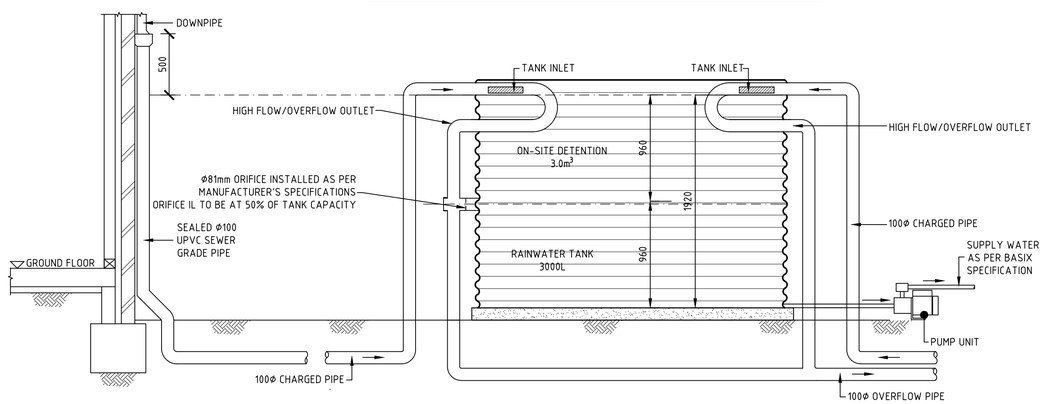
$$A = \frac{Q}{C_D\sqrt{2g \times h}}$$

V		m^2
Q=	15.7	l/s
Cd=	0.70	
g=	9.8	m/s^2
h=	0.96	m
A=	0.005171	m
D=	0.081	m

ABOVE GROUND TANK ORIFICE CALCULATION

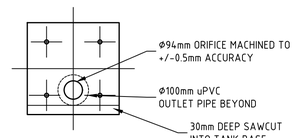
NOTES:

1. THIS CHARGED SYSTEM DOES NOT PERMIT ANY SURFACE WATER TO BE DISCHARGING INTO.
2. THIS TECHNICAL SOLUTION SHOULD BE READ IN CONJUNCTION WITH 'TECHNICAL SOLUTION 5' COLD WATER PLUMBING-RAINWATER TANKS CURRENT AS AT JULY 2004.
3. ALL PLUMBING/ DRAINAGE WORKS TO BE CONSTRUCTED AS PER RELEVANT AUTHORITIES OR TO BUILDING SURVEYOR SATISFACTION.
4. ALL DOWNPIPES AND FITTING ON CHARGED SYSTEM TO BE INSTALLED AS PER AUSTRALIA STANDARDS AS/NZS 1260 AND TO BE FULLY SOLVENT CEMENT WELDED.
5. FOR NUMBER, TYPE AND DIMENSIONS OF TANK REFER TO ARCHITECTURAL DRAWINGS.



6000L KINGSPAN HIGH-FLOW SYSTEM RWT/OSD

TANK DIMENSION: 2900(L)x1150(W)x2020(H),
SEEK ENGINEER'S ADVICE IF DIFFERENT TANK IS TO BE USED



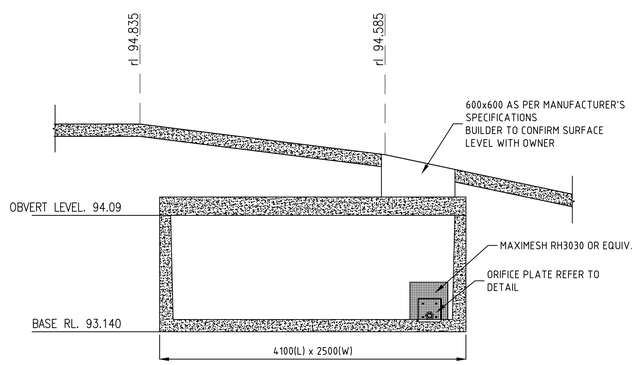
ORIFICE PLATE

SCALE: NTS

$$A = \frac{Q}{C_D\sqrt{2g \times h}}$$

V		m^2
Q=	20.0	l/s
Cd=	0.70	
g=	9.8	m/s^2
h=	0.85	m
A=	0.007000	m
D=	0.094	m

UNDERGROUND TANK ORIFICE CALCULATION



RAIN MASTER 8000L RECTANGULAR DETENTION TUB OR EQUIVALENT TO STRUCTURAL DESIGN

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KILLARNEY HEIGHTS

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DRAINAGE DETAILS

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Date: JAN.2020	Engineer: D.Y.	Drawn: J.T.	
Scale @ A1: AS SHOWN	Checked: J.S.	Sheets: 3 OF 3	
Reference No. 130186	Drawing No. C03	Rev. B	

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