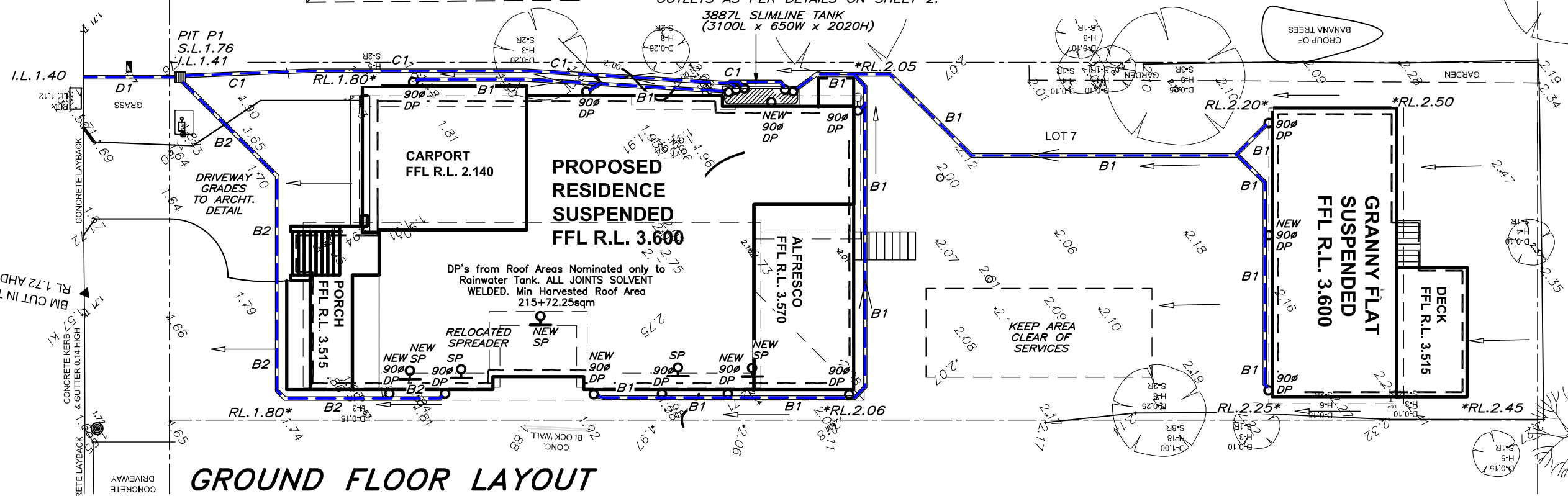


MACTIER STREET

MIN. 200L FOR BASIX AND 1782L FOR POOL BASIX RAINWATER TANK  
 PROVIDE 3887L 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.4.17m  
 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.

- ALL GROUND LEVELS TO REMAIN UNALTERED IN ACCORDANCE WITH FLOOD REPORT BY STEPHEN WYLLIE.
- ALL NEW FENCING TO BE OPEN STYLE FENCING TO RL.3.05 SATISFACTION OF COUNCIL.
- ALL MATERIALS TO BE FLOOD COMPATIBLE BELOW FPL-RL.3.55 AHD.
- ALL SERVICES BELOW THE FLOOD PLANNING LEVEL ARE TO BE FLOOD PROOFED.
- ALL STRUCTURES TO BE DESIGNED TO WITHSTAND FLOOD WATERS PER FLOOD REPORT BY S.W.



### 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.

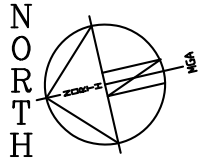
PIPE SCHEDULE		
REFER TO NOTES FOR PIPE CLASS		
TAG	PIPE DIA.	MIN.GRADE
B1	100	CHARGED
B2	100	1%
C1	150	1%
D1	200x100 GAL. PIPE	1%

LEGEND	
SYMBOL	DESCRIPTION
RL. 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
L1	PIPE LABEL
PIT P1	SURFACE INLET PIT
PIT OP1	OVERLAND FLOW PIT
—d—d—	90mm. AG. LINE
○DP	DOWNPIPE-SIZE
○GP	GULLY PIT
⊕GP	GARDEN GULLY PIT
⊕O/F	OVERFLOW-200x100
⊕RWH/S	RAIN WATER HEAD/SUMP
⊕SP	DP WITH SPREADER
⊕BG	BALCONY GULLY PIT
⊕CE	CLEANING EYE
—	GROUND FALL
)))	100 HIGH EARTH MOUNDING

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

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REVISIONS	
B	Arch. revisions
A	Raintank changed per client request

ISSUE	PRINTS	ISSUED TO	DATE
1	EMAIL	BUILDER/CLIENT	19-8-19
2	EMAIL	BUILDER/CLIENT	21-8-19
3	EMAIL	BUILDER/CLIENT	3-4-20

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



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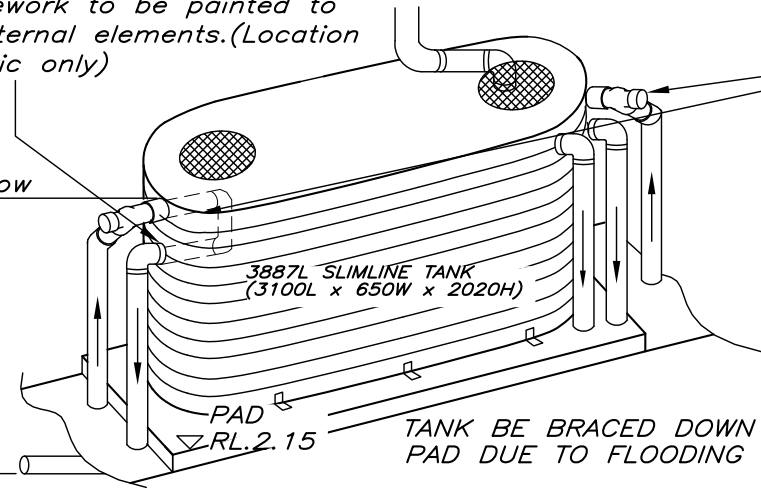
PROJECT  
**PROPOSED RESIDENCE AT 62 MACTIER STREET NARRABEEN FOR A & M POPOVSKI**

THIS DRAWING JOB NUMBER  
**STORMWATER LAYOUT SH.1 T8939-7292**  
 BUILDER TULLIPAN HOMES SHEET No. REVISION  
**1 of 2 B**

TRI 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.4.17

IL.1.70



TANK BE BRACED DOWN TO  
PAD DUE TO FLOODING

3887L Rainwater tank/s, to  
manufacturer's and Water  
Authority's specifications.

Leaf Gutter Guard or  
Downpipe Guard  
recommended.

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  
architecturals.

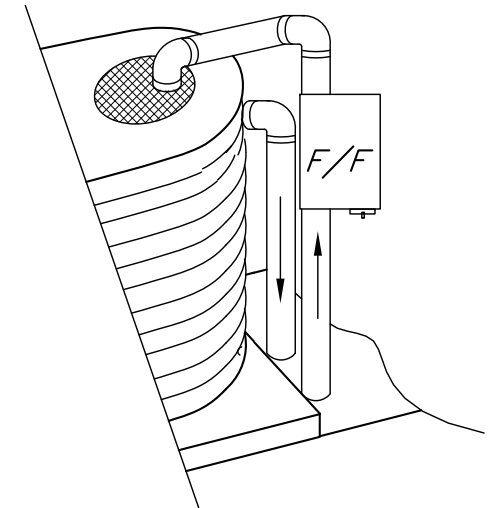
1450  
MIN

Charged pipes  
shown

INLET LEVEL  
OF CHARGED  
LINES TO BE  
A MINIMUM AS  
SHOWN  
BELOW ALL  
CONNECTED  
GUTTERS.

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

I.O. – Cleaning  
eye to all  
charged  
pipelines for  
maintenance of  
charged system.



TYPICAL ALTERNATIVE  
INLET SYSTEM SHOWN  
DIAGRAMMATICALLY ONLY

## RAINWATER TANK

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 Water Authority 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 Water Authority Guidelines.

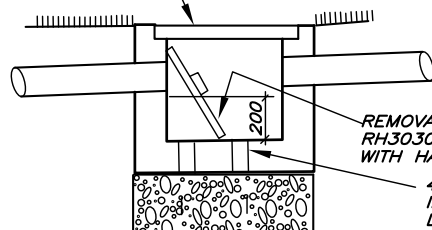
Client to be responsible for maintenance system of charged pipelines. Debris accumulation significantly affects systems performance. Maintenance program essential.

Structural details for tank base by manufacturer or others.

WHSA HAZARD IDENTIFICATION:

INSTALLATION OF RAIN TANKS: 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.

450 x 450 PIT WITH  
HINGED GRATED LID



REMOVABLE MAXIMESH  
RH3030 MESH SCREEN,  
WITH HANDLES

4x100 DIA.WEEPHOLES  
IN BASE OF PIT TO  
DRAIN PIT

450x450x1000 GRAVEL  
WRAPPED IN  
GEOTEXTILE FABRIC.

## SILT ARRESTOR PIT – P1

WHSA

ALL NEARBY SERVICES TO BE LOCATED PRIOR EXCAVATIONS.  
ALL PIPES TO BE CUT FLUSH WITH PIT WALLS AND SPARGED.  
PITS EXCEEDING 600mm IN DEPTH TO HAVE LOCK DOWN MECHANISM.  
SAFETY GEAR TO BE WORN AT ALL TIMES. INCLUDING FOOTWEAR, CLOTHING  
AND GLOVES AS PER SWMS.

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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

NO.	REVISION
B	Arch. revisions
A	Raintank changed per client request

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SCALE(A3) 1:200,100 u.n.o.

SCALE BAR – 1m INTERVALS

DATE MAY 2019

DRAWN M.I.

DESIGNED M.I.

APPROVED



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PROJECT

**PROPOSED RESIDENCE  
AT 62 MACTIER STREET  
NARRABEEN  
FOR A & M POPOVSKI**

THIS DRAWING

**STORMWATER  
DETAILS SH.1**

BUILDER  
TULLIPAN HOMES

JOB NUMBER

**T8939-7292**

SHEET No.

**2 of 2**

REVISION

**B**