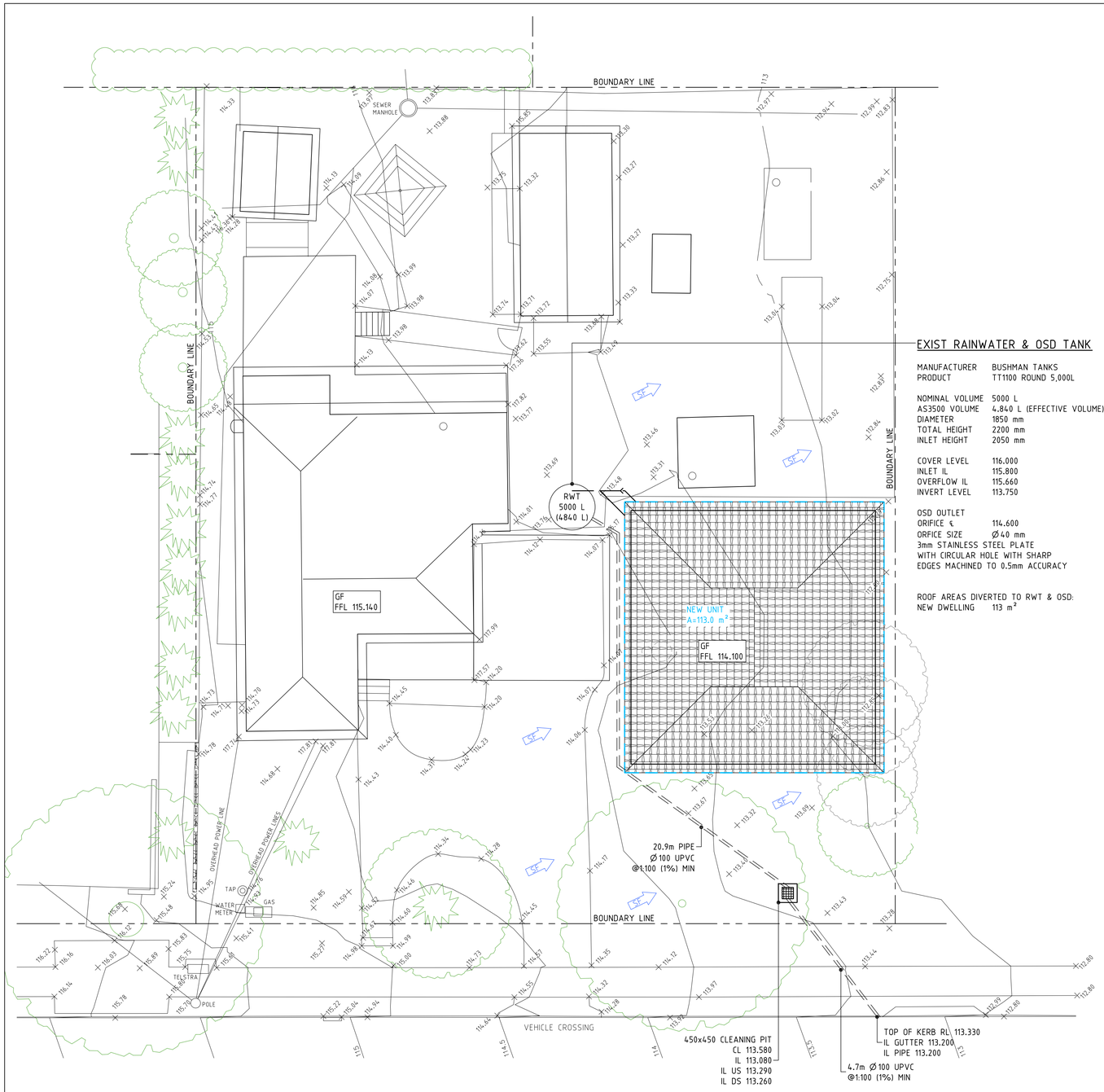

EXIST RAINWATER & OSD TANK

MANUFACTURER	BUSHMAN TANKS
PRODUCT	TT1100 ROUND 5,000L
NOMINAL VOLUME	5000 L
AS3500 VOLUME	4.840 L (EFFECTIVE VOLUME)
DIAMETER	1850 mm
TOTAL HEIGHT	2200 mm
INLET HEIGHT	2050 mm
COVER LEVEL	116.000
INLET IL	115.800
OVERFLOW IL	115.660
INVERT LEVEL	113.750

OSD OUTLET
ORIFICE ℄ 114.600
ORFICE SIZE Ø 40 mm
3mm STAINLESS STEEL PLATE
WITH CIRCULAR HOLE WITH SHARP
EDGES MACHINED TO 0.5mm ACCURACY

ROOF AREAS DIVERTED TO RWT & OSD:
NEW DWELLING 113 m²

STORMWATER - EXISTING SITE & ROOF PLAN
EXISTING OSD

SCALE = 1:100

REV	DATE	CHANGE	BY
C	2/2020	RE-ISSUED FOR DA	MC
B	5/2019	ISSUED FOR DA	MC
A1	5/2019	PRELIMINARY	MC

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PROJECT NAME
ALTERATIONS & ADDITIONS
39 STARKEY STREET
FORESTVILLE

CLIENT
Mr. David Lin
39 STARKEY STREET
FORESTVILLE

ENGINEER
Martin Cerny
BEng. MEng. (Civil) MIEAust. PEng.

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PROJECT / DESIGN
STORMWATER MANAGEMENT PLAN

DRAWING
EXIST SITE / ROOF PLAN & NEW ROOF PLAN

DATE	REVISION
FEB/2020	C
DESIGN STAGE: DA	SCALE: 1:100
JOB REFERENCE: 322 - 18/19	DRAWING No.: SMP-02

NORTH

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0 1 2 3 4 5 6 7 8 9 10m

SOURCE: SIX MAPS

LOCATION PLAN
NOT TO SCALE

GUIDING DOCUMENTS

NORTHERN BEACHES (WARRINGAH) COUNCIL DOCUMENTS
- On-site Stormwater Detention Technical Specification
- Stormwater Drainage from Low Level Properties Technical Specification

OTHER DOCUMENTS
- BCA / NCC
- AS 3500-2003 - Plumbing and drainage
- Australian Rainfall and Runoff (2001 edition)
- Sydney Water handbook HB230-2008 - Rainwater Tank Design and Installation Handbook

ON-SITE DETENTION IS NOT REQUIRED FOR ALTERATIONS AND ADDITIONS DEVELOPMENTS IN ACCORDANCE WITH NORTHERN BEACHES (WARRINGAH) COUNCIL 'ON-SITE STORMWATER DETENTION TECHNICAL SPECIFICATION'

GRANNY FLAT
ALTERATION AND ADDITION PROPOSED
EXISTING OSD TANK REMOVED AND REINSTATED

RESIDENTIAL UNIT
ALTERATION AND ADDITION PROPOSED
OSD NOT REQUIRED

STORMWATER NOTES - GENERAL:

1. READ THESE DRAWINGS IN CONJUNCTION WITH ARCHITECTURAL AND ALL OTHER CONSULTANTS' DRAWINGS, SPECIFICATION AND ASSOCIATED DOCUMENTATION.
2. ALL WORKS SHALL COMPLY WITH AS 2032 AND AS 3500.
3. ALL STRUCTURAL COMPONENTS OF STORMWATER SYSTEM ARE SUBJECT OF DESIGN AND CERTIFICATION BY STRUCTURAL ENGINEER.
4. MANUFACTURER'S CERTIFICATE TO BE PROVIDED FOR PIPES, PRE-CAST PITS AND GRATES TO CONFIRM STRUCTURAL ADEQUACY.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY PROTECTION TO ALL PIPEWORK UNTIL ALL BUILDING WORKS ARE COMPLETE.
6. NO DIMENSIONS SHALL BE OBTAINED BY SCALING THE DRAWINGS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES ON THE SITE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMATION OF THE LEVELS WHERE SPECIFIED.
9. ALL AREAS ADJACENT TO FOOTINGS TO COMPLY WITH BCA (CL. 3.1.2.3)
10. ALL STORMWATER EXCAVATIONS TO COMPLY WITH BCA (CL. 3.1.2.2)

ROOF DRAINAGE NOTES:

1. ALL ROOF DRAINAGE INSTALLATION SHALL COMPLY WITH AS 3500-3 (2015).
2. ALL OVERFLOW DEVICES, NAMELY RAINHEADS AND SUMPS SHALL COMPLY WITH AS 3500-3 (2015).
3. MATERIAL AND COLOR TO SUIT ARCH DESIGN.

PIPEWORK NOTES:

1. ALL PIPES AND FITTINGS SHALL COMPLY WITH AS 1254, 1260, 1273.
2. ALL PIPE INSTALLATION SHALL COMPLY WITH AS 3500.
3. ALL PIPEWORK COVER SHALL COMPLY WITH AS 3500 - ALL TRENCHES SHALL AS A MINIMUM BE BACKFILLED IN ACCORDANCE WITH AS 3500. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER BEFORE INSTALLATION.
4. ALL PIPES ARE PVC UNO. ALL PVC PIPES UNDER VEHICULAR TRAFFIC AREA TO BE CLASS 6 TO AS1477.
5. ALL CHARGED OR PRESSURIZED PIPES SEALED TO AS 3500.
6. ALL REINFORCED CONCRETE PIPES SHALL BE OF RUBBER RING JOINTS.
7. CONNECTION OF DISCHARGE PIPE TO EXISTING COUNCIL KERB & GUTTER, PIPE OR KERB INLET PIT SHALL BE CARRIED OUT IN ACCORDANCE WITH COUNCIL REQUIREMENT.

PIT NOTES:

1. PROVIDE 450x450 CLEAR OPENING FOR PITS NO DEEPER THAN 600mm UNO.
2. PROVIDE 600x600 CLEAR OPENING FOR PITS NO DEEPER THAN 900mm UNO.
3. PROVIDE 900x900 CLEAR OPENING FOR PITS DEEPER THAN 900mm UNO.
4. ALL PITS SHALL HAVE A MINIMUM OF 30mm CROSS FALL TO OUTLET. ALL PITS SHALL BE BENCHED AND STREAM LINED TO HALF PIPE HEIGHT.
5. MIN FALL OF PAVED AREAS SHALL BE 0.5% GRADED TO PIT. MIN FALL OF LANDSCAPED AREAS SHALL BE 1% GRADED TO PIT.

PIT / CHANNEL COVER NOTES:

1. PIT / CHANNEL COVERS SHALL CONFORM TO AS 3996.
2. ALL COVERS AND THEIR FRAMES SHALL BE MILD STEEL HOT DIPPED GALVANIZED (Z600 - AS 1650).
3. PROVIDE LIGHT DUTY GRATES FOR NON-VEHICULAR TRAFFIC AREAS.
4. PROVIDE HEAVY DUTY GRATES FOR VEHICULAR TRAFFIC AREAS.
5. ALL DISCHARGE CONTROL PITS SHALL HAVE A MIN 900x900 CLEAR OPENING.
6. PROVIDE STEP IRONS TO PITS DEEPER THAN 1,000mm. PROVIDE STEP IRONS 'MASCOT SI.104' OR SIMILAR. STEP IRONS TO BE STAGGERED 300mm VERTICALLY AND 220mm HORIZONTALLY.

MISC - NOTES:

1. THE ON-SITE DRAINAGE, DETENTION STORAGE AND DISCHARGE CONTROLS SHALL BE MAINTAINED AT REGULAR INTERVALS. FOR DETAILS REFER TO MAINTENANCE SCHEDULE.
2. ALL FENCES SHALL BE KEPT MIN 100mm ABOVE THE GROUND AND/OR WALL TO FACILITATE THE FREE PASSAGE FOR STORMWATER OVERLAND FLOW.
3. THE FINISHED GROUND LEVELS FOLLOW THE EXISTING LEVELS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE

KEY - SYMBOLS

RWT NOM L (EFF L)	ABOVE GROUND RAINWATER TANK NOMINAL VOLUME AS3500 (EFFECTIVE VOLUME)
RWT NOM L (EFF L)	UNDER GROUND RAINWATER TANK NOMINAL VOLUME AS3500 (EFFECTIVE VOLUME)
	NEW ROOF WATER
Ø 150 UPVC @1:100	STORMWATER PIPES DIAMETER MATERIAL GRADIENT
	EXISTING STORMWATER
	SUBSOIL DRAINAGE (AGGLINE)
	DISH DRAIN
FGL 54.220	LEVEL TAG
16	EXISTING CONTOURS
42.13	EXISTING SPOT LEVELS
	BOUNDARY LINE
	FALL
	WATER LEVEL
	PONDING / SAGGING ZONE
	OVERFLOW
SF	SURFACE FLOW
	IMPERVIOUS AREAS (CONCRETE)
	IMPERVIOUS AREAS (METAL ROOF)
	IMPERVIOUS AREAS (TILED ROOF)
	IMPERVIOUS AREAS (TILES)
	PERVIOUS AREAS AND LANDSCAPE
	PERVIOUS AREAS (PERMEABLE PAVERS)
	CATCHMENT / SUBCATCHMENT
GSIP 600x600 600 DEEP CL 10.400 IL 9.800	GULLY SURFACE INLET PIT DIMENSIONS & LEVELS
GD 150 100-150 DEEP CL 10.400	GRATED DRAIN DIMENSIONS & LEVELS
Q20max = 16 L/s Q100max = 2 L/s	PIPE FLOWRATE SURFACE (OVERFLOW) FLOWRATE
	REMOVED TREES
	EXISTING / NEW TREES
1 RWT VOLUME INCREASED TO 7,500 L	REVISION TAG

KEY - ABBREVIATIONS

OSD	ON SITE DETENTION
OSA	ON SITE ABSORPTION
RWT	RAIN WATER TANK
FL	FLOOR LEVEL / FINISHED LEVEL
EGL	EXISTING GROUND LEVEL
FGL	FINISHED GROUND LEVEL
DP	DOWNPIPE
HP	HIGH POINT
CL	COVER LEVEL
OL	OBVERT LEVEL
IL	INVERT LEVEL
OF	OVERFLOW
RV	REFLUX VALVE
EG	EAVE GUTTER
BG	BOX GUTTER
RH	RAINHEAD
WL	WATER LEVEL

DRAWING LIST

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FORESTVILLE

CLIENT
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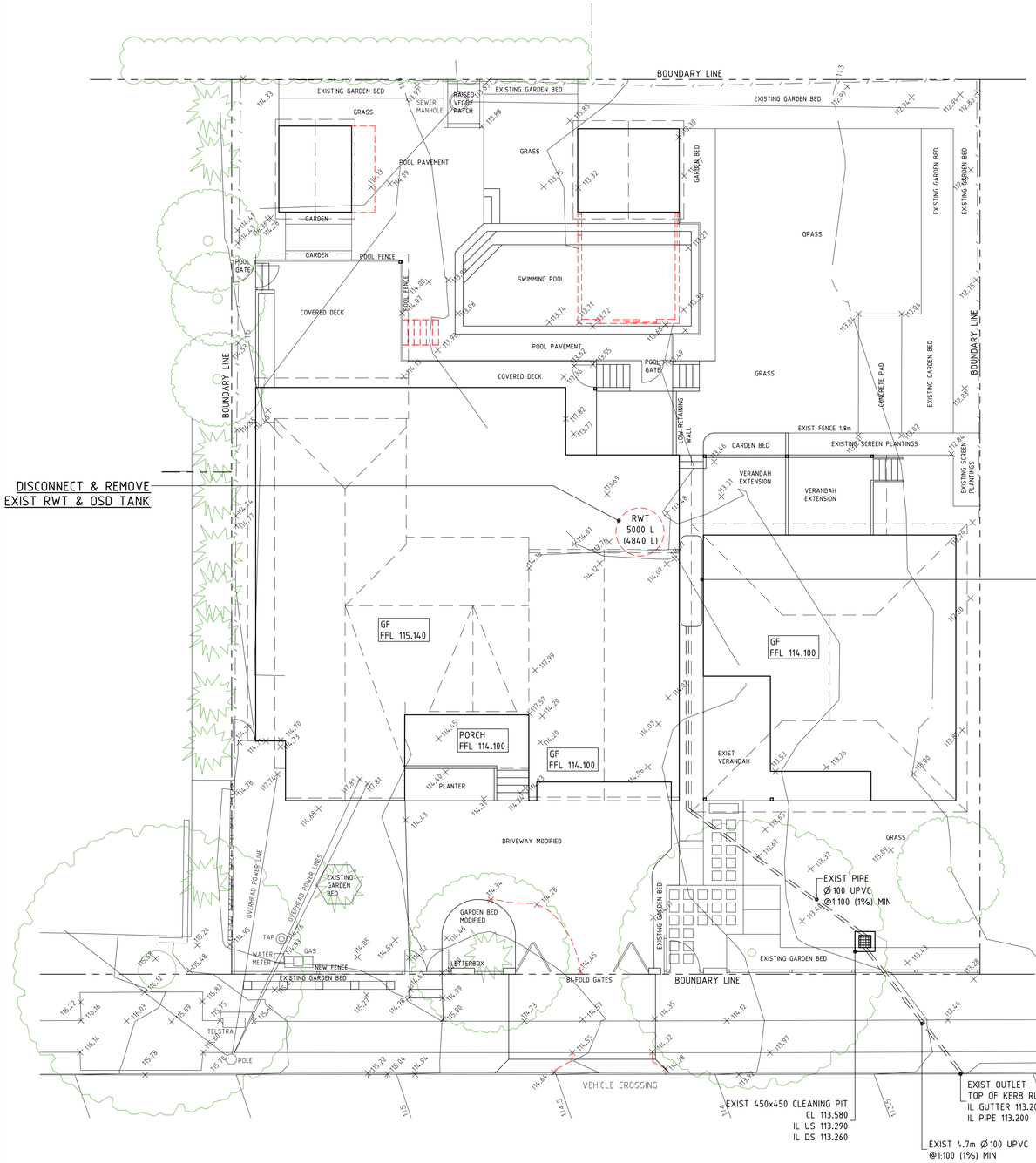
PROJECT / DESIGN
STORMWATER MANAGEMENT PLAN

DRAWING
LOCATION, NOTES, SCHEMA, REQUIREMENTS

DATE: FEB/2020	REVISION: C
DESIGN STAGE: DA	SCALE: ---
JOB REFERENCE: 322 - 18/19	DRAWING No.: SMP-01



NOTE - GRANNY FLAT DRAINAGE

DISCONNECT AND REMOVE EXISTING RWT & OSD TANK.
REINSTATE NEW RWT & OSD TANK AS SPECIFIED.
RECONNECT EXIST DOWNPIPES TO FEED NEW RWT & OSD.
CONNECT NEW RWT & OSD TO EXIST DISCHARGE PIPE INCL. ORIFICE.

NEW RWT & OSD TANK IS DESIGNED TO DELIVER SAME HYDRAULICS AS THE EXISTING ONE.

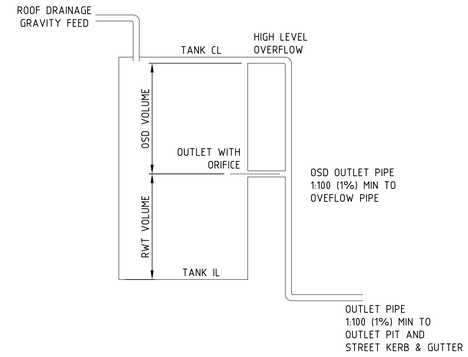
INSTALL NEW RAINWATER & OSD TANK

MANUFACTURER	WATER TANK FACTORY OR KINGSPAN
PRODUCT	SLIMLINE 5,050L
NOMINAL VOLUME	5000 L
WIDTH	800 mm
LENGTH	3300 mm
BASE AREA	2.6 m^2
HEIGHT	2200 mm
INLET HEIGHT	2020 mm (TOP FEED)
COVER LEVEL	115.450
HL OVERFLOW IL	115.160
INVERT LEVEL	113.250
OSD OUTLET ORIFICE ℄	114.100
ORFICE SIZE	Ø 40 mm HEAD
	3mm STAINLESS STEEL PLATE WITH CIRCULAR HOLE WITH SHARP EDGES MACHINED TO 0.5mm ACCURACY
RWT VOLUME	
OSD VOLUME	
ROOF AREAS DIVERTED TO RWT & OSD:	
GRANNY FLAT	113 m^2 MIN

ALL RAINWATER TANK INSTALLATIONS TO SYDNEY WATER GUIDELINES

OSD COMPARISON:

ITEM	EXISTING OSD	NEW OSD
BASE AREA (m^2)	2.67	2.69
HEIGHT (mm)	2200	2200
OSD HEAD (mm)	1060	1060
ORIFICE Ø (mm)	40	40
OSD VOLUME (m^3)	2.85	2.86
RWT HEIGHT (mm)	850	850
RWT VOLUME (m^3)	2.28	2.295



RAINWATER & OSD TANK - SCHEME

NTS

STORMWATER - PROPOSED SITE PLAN
RELOCATION AND RECONFIGURATION OF EXIST OSD

SCALE = 1:100

NOTE - RESIDENTIAL DWELLING DRAINAGE

INSTALL ROOF DRAINAGE - EAVE GUTTERS AND DOWNPIPES.
ROOF DRAINAGE SIZING AND INSTALLATION TO AS3500.
CONNECT INTO EXISTING ON-SITE DRAINAGE.

EXISTING ON-SITE DRAINAGE SHALL BE INSPECTED / CHECKED, CAPACITY AND GOOD WORKING CONDITION CONFIRMED.

ISSUED FOR DA ONLY
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0 1 2 3 4 5 6 7 8 9 10m

NORTH

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PROJECT / DESIGN
STORMWATER MANAGEMENT PLAN

DRAWING
PROPOSED SITE PLAN & OSD RELOCATION

DATE	REVISION
FEB/2020	C
DESIGN STAGE: DA	SCALE: 1:100 1:50
JOB REFERENCE: 322 - 18/19	DRAWING No.: SMP-03