

STORMWATER MANAGEMENT PLAN

PROPOSED RESIDENTIAL DEVELOPMENT

Lot 25 & B, No 7 ERIC STREET, FRESHWATER

LEGEND	
	GRATED INLET PIT
4.50x4.50	450 SQUARE INTERNAL
GRT 75.54	GRATE LEVEL = RL 75.54
IL 75.12	INVERT LEVEL = 75.12
DP05	DOWNPIPE : 90 DIA ROUND OR 100 x 50 RECTANGULAR
RWH	RAINWATER HEAD
	EXISTING TREE
CO	SUBSOIL DRAINAGE CLEANOUT CAPPED & MARKED "SW"
	GRATED TRENCH DRAIN 100mm WIDE
GTD100	
	PROPOSED ROOF GUTTER FALL
	PROPOSED STANDARD DOWNPIPE SPREADER
SP3	
FTT	
	STRUCTURE No 1
	STORMWATER DRAINAGE
BD2	BALCONY DRAIN - 150mm SQUARE WITH 90mm DIA OUTLET
IO	SCREW-CAPPED INSPECTION OPENING
RO	GRATED ROUND OUTLET 100mm DIA.

WARRINGAH DETENTION (OSD) CALCULATIONS
 RELEVANT DESIGN CODE : WARRINGAH COUNCIL "ON-SITE STORMWATER DETENTION TECHNICAL SPECIFICATION", 2012.

SITE AREA = 607 m².
 PROPOSED HARD SURFACE = ROOF + DWY = 316 m² = 52.0% > 40%
 AND SITE AREA > 450 m². NEED OSD.

DETENTION DESIGN METHOD : STREAMLINED METHOD

SITE AREA = 607 m²
 SSR = 200 x 0.0607 = 12.2 m³
 PSD = 400 x 0.0607 = 24.3 l/s

RAINWATER TANK CONSSION
 PROPOSED BASIX RAINWATER TANK REQUIREMENT = 6100 litres
 ALLOWED OSD REDUCTION IS FULL BASIX VOLUME UP TO MAXIMUM 50% OF OSD
 THEREFORE OSD STORAGE MAY BE REDUCED 12,200 - 6100 = 6100 litres

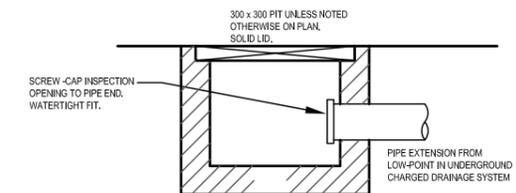
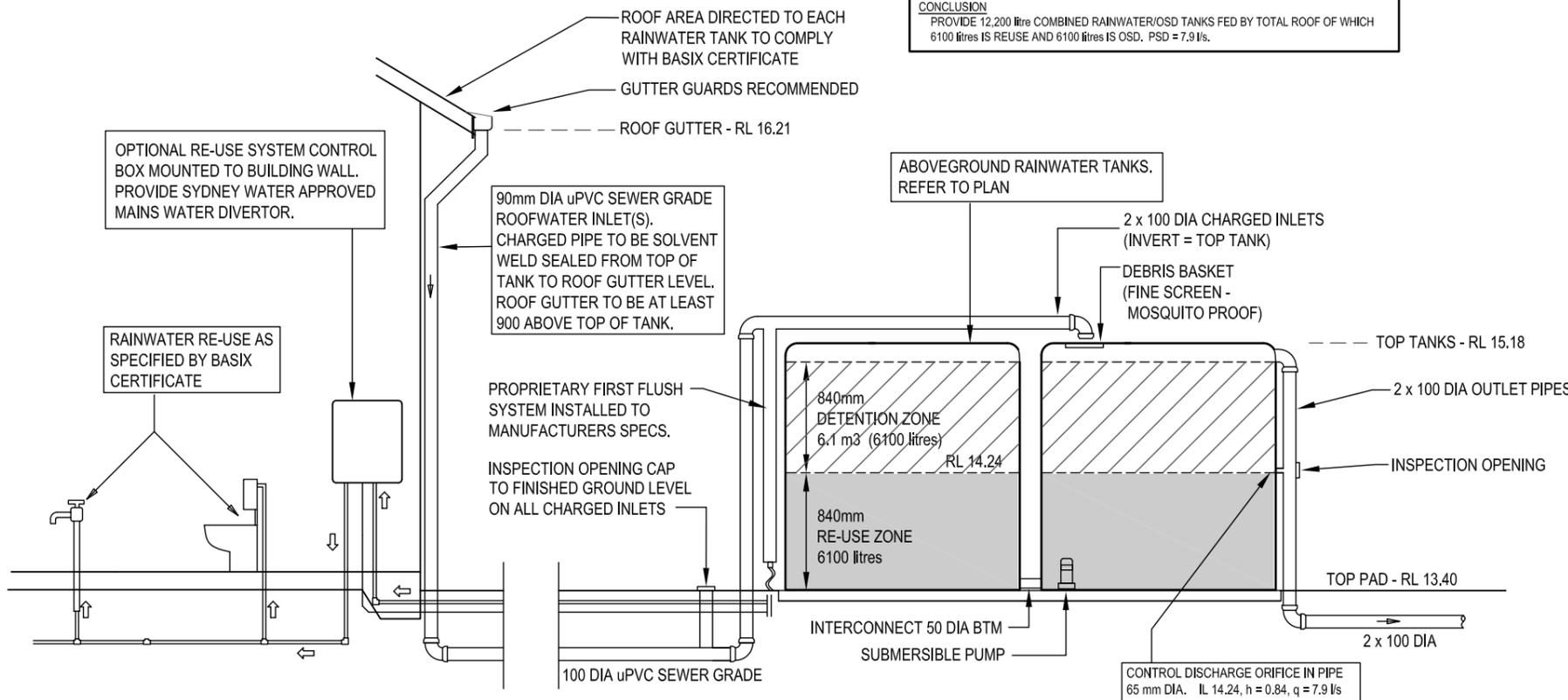
PERMISSIBLE SITE DISCHARGE
 ROOF TO OSD = 260 m²
 BALANCE SITE BYPASS = 607 - 260 = 347 m² at 25% Impervious.
 C100 = 0.74; 100 year, 10 min I = 230 mm/hr; A = 0.0347 ha THEN Q100 = 16.4 l/s.
 THEREFORE OSD PSD = 24.3 - 16.4 = 7.9 l/s

CONCLUSION
 PROVIDE 12,200 litre COMBINED RAINWATER/OSD TANKS FED BY TOTAL ROOF OF WHICH 6100 litres IS REUSE AND 6100 litres IS OSD. PSD = 7.9 l/s.

LOCATION	MINIMUM PIPE COVER (FROM FINISHED SURFACE TO TOP OF PIPE)	
	CAST/DUCTILE IRON GAL STEEL	OTHER AUTHORIZED PRODUCTS (1)
1. NOT SUBJECT TO VEHICULAR LOADING:		
A. WITHOUT PAVEMENT:	0	100
I. FOR SINGLE DWELLINGS -	0	300
II. OTHER THAN SINGLE DWELLINGS -		
B. WITH PAVEMENT OF BRICK/UNREINFORCED CONCRETE -	0 (*)	50 (*)
2. SUBJECT TO VEHICULAR LOADING:		
A. OTHER THAN ROADS:	300	450
I. WITHOUT PAVEMENT -		
- REINF. CONC. FOR HEAVY VEHICLES -	0 (** #)	100 (** #)
- BRICK/UNREINF. CONC LIGHT VEHICLES -	0 (** #)	75 (** #)
B. ROADS:	300	500 (#)
I. SEALED	300	500 (#)
II. UNSEALED	300	500 (#)
3. SUBJECT TO CONSTRUCTION VEHICLES OR IN EMBANKMENT CONDITIONS	300	500 (#)

(*) INCLUDES OVERLAY ABOVE THE TOP OF THE PIPE OF NOT LESS THAN 50mm THICK.
 (**) BELOW THE UNDERSIDE OF THE PAVEMENT.
 (#) SUBJECT TO COMPLIANCE WITH AS1762, AS2033, AS/NZS 2566.1, AS3725 OR AS 4086

- ### GENERAL NOTES
- FINAL LOCATION OF NEW DOWNPIPES TO BE DETERMINED BY BUILDER/ARCHITECT AT TIME OF CONSTRUCTION.
 - 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.
 - ALL MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH AS/NZS 3500.3:2003 STORMWATER DRAINAGE, BCA AND LOCAL COUNCIL POLICY/CONSENT/REQUIREMENTS.
 - 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.
 - ALL SURVEY INFORMATION AND PROPOSED BUILDING AND FINISHED SURFACE LEVELS SHOWN IN THESE DRAWINGS ARE BASED ON LEVELS OBTAINED FROM DRAWINGS BY OTHERS.
 - 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.
 - ALL STORMWATER DRAINAGE PIPES ARE TO BE 100mm DIAMETER uPVC AT MINIMUM 1% GRADE UNLESS NOTED OTHERWISE.
 - 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.
 - ALL PITS WITHIN DRIVEWAYS TO BE 150mm THICK CONCRETE OR EQUAL.
 - THIS PLAN IS THE PROPERTY OF STORMCIVIL AND MAY NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION FROM STORMCIVIL.



TYPICAL DETAIL - COMBINED DETENTION/RAINWATER RE-USE TANK

NTS

ISS	DATE	AMENDMENT
C	04.02.2020	MINOR ARCH. AMEND - DA ISSUE
B	14.01.2020	MINOR ARCH. AMEND - DA ISSUE
A	11.12.2019	DA ISSUE

ARCHITECT/BUILDER	ARCH. REF : 29913947
CLARENDON HOMES	
OWNER	CONISBEE
LGA	NORTHERN BEACHES (WARRINGAH)

StormCivil

Consulting Engineers
 Civil & Environmental,
 Stormwater Management.

3 Gresham Street,
 Cowan NSW 2081
 ph/fax (02) 9456 7233
 mobile : 0424023047
 mark@stormcivil.com.au

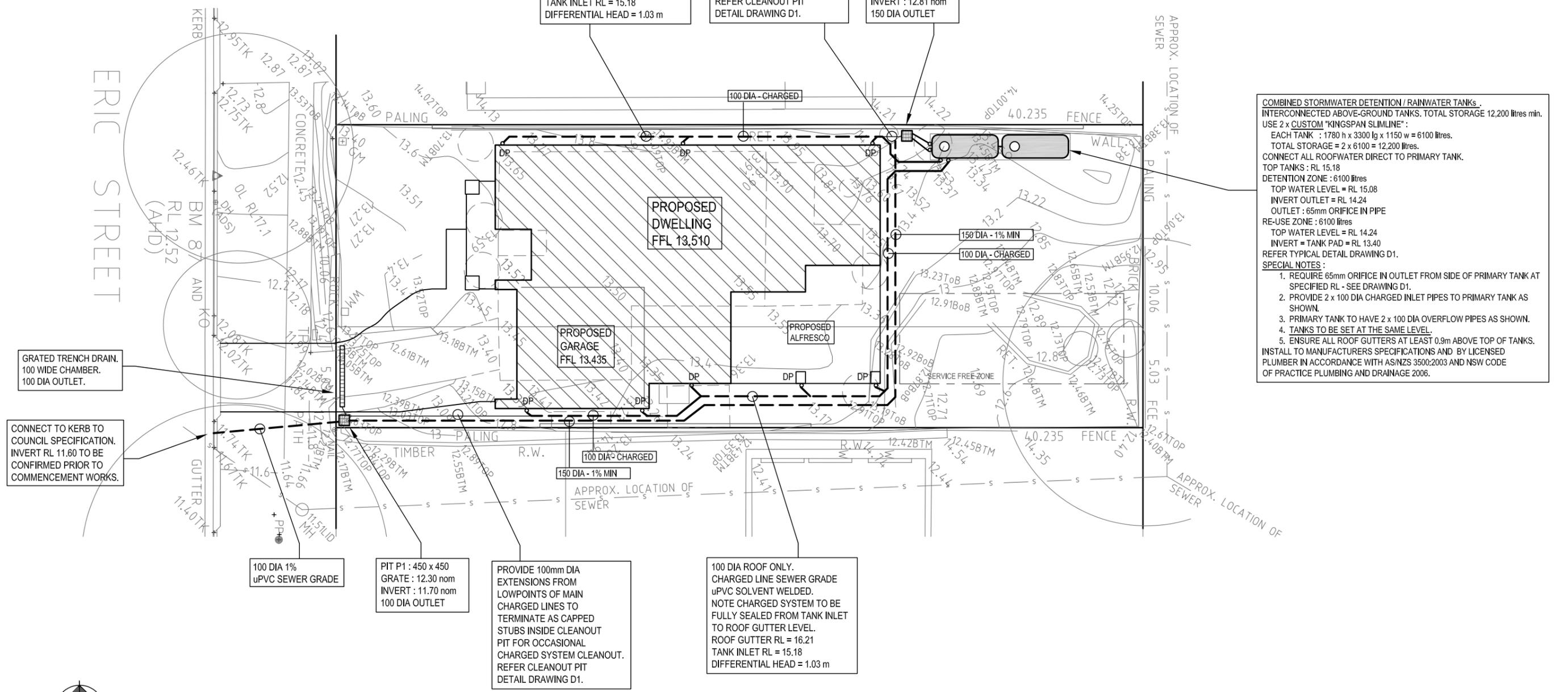
Pty Ltd. ABN 71 612 151 461

DWG TITLE	LEGEND, NOTES, DETAILS, CALCULATIONS
PROJECT TITLE	PROPOSED RESIDENTIAL DEVELOPMENT Lot 25 & B, No 7 ERIC STREET, FRESHWATER

StormCivil		APPROVED ON BEHALF OF STORMCIVIL PTY LTD	
		Mark Taylor MIE Aust CP Eng NER 173333	
JOB No	DWG No	No IN SET	ISSUE
304136	D1	2	C



TREE PRESERVATION NOTE
 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.



COMBINED STORMWATER DETENTION / RAINWATER TANKS
 INTERCONNECTED ABOVE-GROUND TANKS. TOTAL STORAGE 12,200 litres min.
 USE 2 x CUSTOM "KINGSPAN SLIMLINE":
 EACH TANK : 1780 h x 3300 lg x 1150 w = 6100 litres.
 TOTAL STORAGE = 2 x 6100 = 12,200 litres.
 CONNECT ALL ROOFWATER DIRECT TO PRIMARY TANK.
 TOP TANKS : RL 15.18
 DETENTION ZONE : 6100 litres
 TOP WATER LEVEL = RL 15.08
 INVERT OUTLET = RL 14.24
 OUTLET : 65mm ORIFICE IN PIPE
 RE-USE ZONE : 6100 litres
 TOP WATER LEVEL = RL 14.24
 INVERT = TANK PAD = RL 13.40
 REFER TYPICAL DETAIL DRAWING D1.
SPECIAL NOTES :
 1. REQUIRE 65mm ORIFICE IN OUTLET FROM SIDE OF PRIMARY TANK AT SPECIFIED RL - SEE DRAWING D1.
 2. PROVIDE 2 x 100 DIA CHARGED INLET PIPES TO PRIMARY TANK AS SHOWN.
 3. PRIMARY TANK TO HAVE 2 x 100 DIA OVERFLOW PIPES AS SHOWN.
 4. TANKS TO BE SET AT THE SAME LEVEL.
 5. ENSURE ALL ROOF GUTTERS AT LEAST 0.9m ABOVE TOP OF TANKS.
 INSTALL TO MANUFACTURERS SPECIFICATIONS AND BY LICENSED PLUMBER IN ACCORDANCE WITH AS/NZS 3500:2003 AND NSW CODE OF PRACTICE PLUMBING AND DRAINAGE 2006.

GRATED TRENCH DRAIN.
 100 WIDE CHAMBER.
 100 DIA OUTLET.

CONNECT TO KERB TO COUNCIL SPECIFICATION.
 INVERT RL 11.60 TO BE CONFIRMED PRIOR TO COMMENCEMENT WORKS.

100 DIA 1%
 uPVC SEWER GRADE

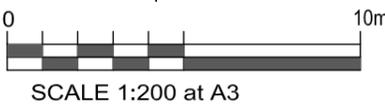
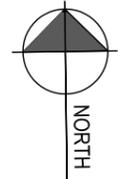
PIT P1 : 450 x 450
 GRATE : 12.30 nom
 INVERT : 11.70 nom
 100 DIA OUTLET

PROVIDE 100mm DIA
 EXTENSIONS FROM
 LOWPOINTS OF MAIN
 CHARGED LINES TO
 TERMINATE AS CAPPED
 STUBS INSIDE CLEANOUT
 PIT FOR OCCASIONAL
 CHARGED SYSTEM CLEANOUT.
 REFER CLEANOUT PIT
 DETAIL DRAWING D1.

100 DIA ROOF ONLY.
 CHARGED LINE SEWER GRADE
 uPVC SOLVENT WELDED.
 NOTE CHARGED SYSTEM TO BE
 FULLY SEALED FROM TANK INLET
 TO ROOF GUTTER LEVEL.
 ROOF GUTTER RL = 16.21
 TANK INLET RL = 15.18
 DIFFERENTIAL HEAD = 1.03 m

STORMWATER MANAGEMENT PLAN

SCALE 1:200 at A3



NOTE
 THIS DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS BY: CLARENDON HOMES REF : 29913947

NOTE
 THIS DRAWING IS NOT TO BE USED FOR SETOUT PURPOSES - REFER TO ARCHITECTURAL DRAWINGS

NOTE
 ALL ROOF GUTTERS TO HAVE OVERFLOW PROVISION IN ACCORDANCE WITH AS 3500.3:2003 AND SECTIONS 3.5.3, 3.7.5 AND APPENDIX G OF AS 3500.3:2003.

NOTE
 THIS DRAWING DEPICTS THE DESIGN OF SURFACE STORMWATER RUNOFF DRAINAGE SYSTEMS ONLY AND DOES NOT DEPICT ROOF DRAINAGE OR SUBSOIL DRAINAGE SYSTEMS UNLESS NOTED OTHERWISE. THE DESIGN OF ROOF AND SUBSOIL DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF OTHERS.

NOTE
 THIS PLAN MANAGES STORMWATER RUNOFF DERIVED FROM ROOF AND DRIVEWAY SURFACES ONLY AS SHOWN ON ARCHITECTURAL DRAWINGS. ANY OTHER SURFACE RUNOFF WATER TO BE MANAGED BY SEPARATE SYSTEM BY OWNER IN ACCORDANCE WITH AS 3500.3 AND BCA PART 3.1.2

ISS	DATE	AMENDMENT
C	04.02.2020	MINOR ARCH. AMEND - DA ISSUE
B	14.01.2020	MINOR ARCH. AMEND - DA ISSUE
A	11.12.2019	DA ISSUE

ARCHITECT/BUILDER	ARCH. REF : 29913947
CLARENDON HOMES	
OWNER	CONISBEE
LGA	NORTHERN BEACHES (WARRINGAH)

StormCivil
 Consulting Engineers
 Civil & Environmental.
 Stormwater Management.
 3 Gresham Street,
 Cowan NSW 2081
 ph/fax (02) 9456 7233
 mobile : 0424023047
 mark@stormcivil.com.au
 Ply Ltd. ABN 71 612 151 461

DWG TITLE	STORMWATER MANAGEMENT PLAN
PROJECT TITLE	PROPOSED RESIDENTIAL DEVELOPMENT Lot 25 & B, No 7 ERIC STREET, FRESHWATER

StormCivil
 APPROVED ON BEHALF OF STORMCIVIL PTY LTD
 Mark Taylor
 MIE Aust CP Eng NER 173333

JOB No	DWG No	No IN SET	ISSUE
304136	D2	2	C