

STORMWATER MANAGEMENT PLAN

PROPOSED RESIDENTIAL DEVELOPMENT

Lot 33, No 12 SPRINGVALE AVENUE, FRENCHS FOREST

LEGEND			
	GRATED INLET PIT		GRATED TRENCH DRAIN 100mm WIDE
450x450	450 SQUARE INTERNAL	GTD100	
GRT 75.54	GRATE LEVEL = RL 75.54	SP3	PROPOSED ROOF GUTTER FALL
IL 75.12	INVERT LEVEL = 75.12		PROPOSED STANDARD DOWNPIPE SPREADER
DP05	DOWNPIPE : 90 DIA ROUND OR 100 x 50 RECTANGULAR		STRUCTURE No 1
RWH	RAINWATER HEAD	-----	STORMWATER DRAINAGE
	EXISTING TREE	BD2	BALCONY DRAIN - 150mm SQUARE WITH 90mm DIA OUTLET
CO	SUBSOIL DRAINAGE CLEANOUT CAPPED & MARKED "SW"	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 = 698 m².
PROPOSED HARD SURFACE = ROOF + DWY + POOL = 378.6 m² = 54.2% > 40%
AND SITE AREA > 450 m². NEED OSD.

DETENTION DESIGN METHOD : STREAMLINED METHOD

SITE AREA = 698 m²

SSR = 200 x 0.0698 = 14.0 m³

PSD = 400 x 0.0698 = 28.0 l/s

RAINWATER TANK CONCESSION

PROPOSED BASIX RAINWATER TANK REQUIREMENT = 7000 litres

ALLOWED OSD REDUCTION IS FULL BASIX VOLUME UP TO MAXIMUM 50% OF OSD

THEREFORE OSD STORAGE MAY BE REDUCED 14,000 - 7000 = 7000 litres

PERMISSIBLE SITE DISCHARGE

ROOF TO OSD = 272 m²

BALANCE SITE BYPASS = 698 - 272 = 426 m² at 25% Impervious.

C100 = 0.74; 100 year, 10 min I = 230 mm/hr; A = 0.0426 ha THEN Q100 = 20.1 l/s.

THEREFORE OSD PSD = 28.0 - 20.1 = 7.9 l/s

CONCLUSION

PROVIDE 14,000 litre COMBINED RAINWATER/OSD TANKS FED BY TOTAL ROOF OF WHICH 7000 litres IS REUSE AND 7000 litres IS OSD. PSD = 7.9 l/s.

MINIMUM PIPE COVER		
(FROM FINISHED SURFACE TO TOP OF PIPE)		
LOCATION	MINIMUM COVER (mm)	
	CAST/DUCTILE IRON GAL STEEL	OTHER AUTHORIZED PRODUCTS (*)
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 -		
II. WITH PAVEMENT OF -		
- REINF. CONC. FOR HEAVY VEHICLES -	0 (**) #	100 (**) #
- BRICK/UNREINF. CONC LIGHT VEHICLES -	0 (**) #	75 (**) #
B. ROADS:		
I. SEALED	300	500 (#)
II. UNSEALED	300	500 (#)
3. SUBJECT TO CONSTRUCTION VEHICLES OR IN EMBANKMENT CONDITIONS	300	500 (#)

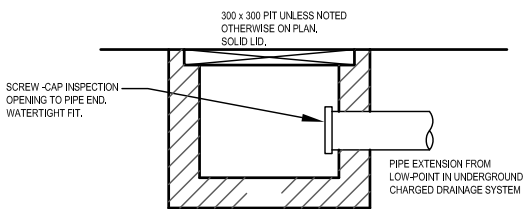
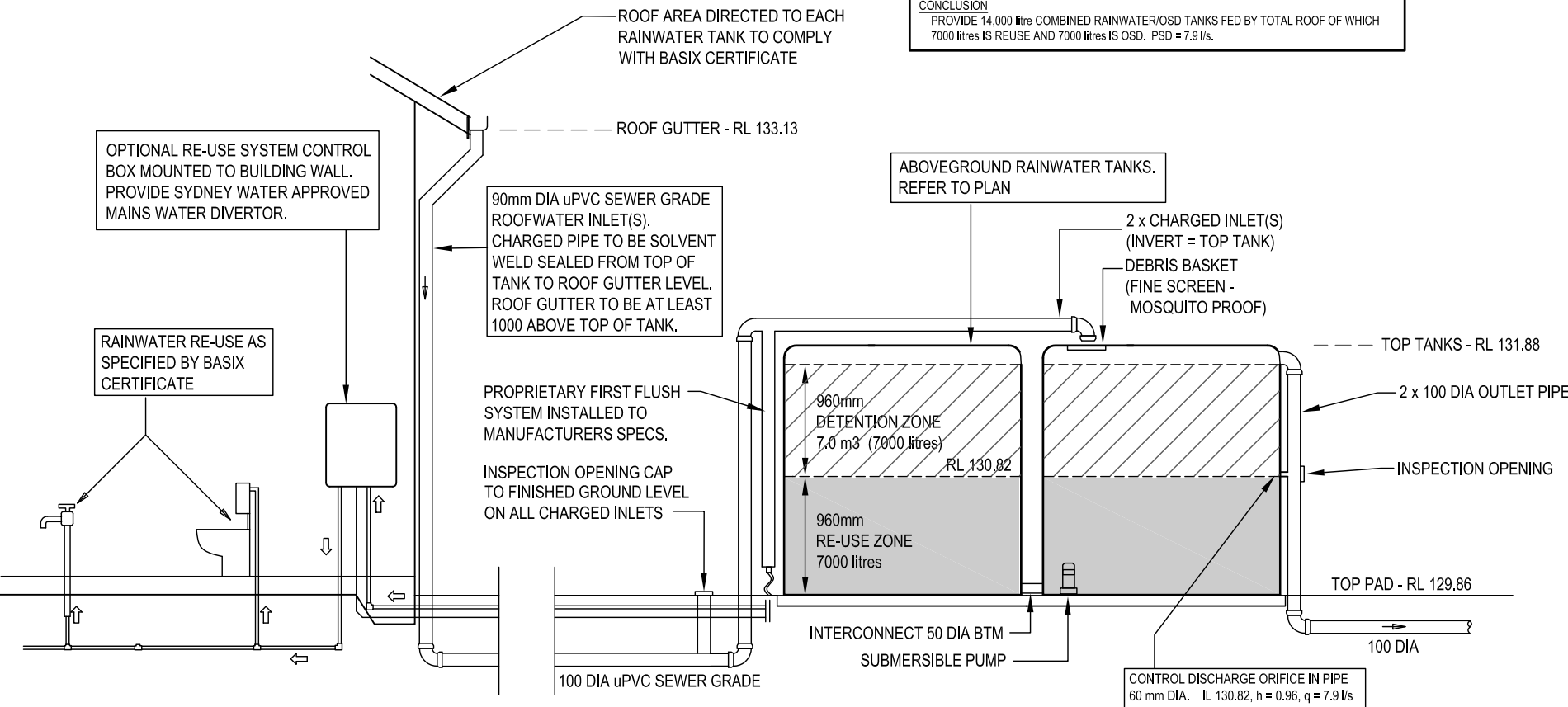
(*) INCLUDES OVERLAY ABOVE THE TOP OF THE PIPE OF NOT LESS THAN 50mm THICK.

(**) BELOW THE UNDERSIDE OF THE PAVEMENT

(#) SUBJECT TO COMPLIANCE WITH AS1762, AS2033, AS/NZS 2566.1, AS3725 OR AS 4090

GENERAL NOTES

1. FINAL LOCATION OF NEW DOWNPIPES TO BE DETERMINED BY BUILDER/ARCHITECT AT TIME OF CONSTRUCTION.
2. 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.
3. ALL MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH AS/NZS 3500.3:2003 STORMWATER DRAINAGE, BCA AND LOCAL COUNCIL POLICY/CONSENT/REQUIREMENTS.
4. 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.
5. ALL SURVEY INFORMATION AND PROPOSED BUILDING AND FINISHED SURFACE LEVELS SHOWN IN THESE DRAWINGS ARE BASED ON LEVELS OBTAINED FROM DRAWINGS BY OTHERS.
6. 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.
7. ALL STORMWATER DRAINAGE PIPES ARE TO BE 100mm DIAMETER uPVC AT MINIMUM 1% GRADE UNLESS NOTED OTHERWISE.
8. 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.
9. ALL PITS WITHIN DRIVEWAYS TO BE 150mm THICK CONCRETE OR EQUAL.
10. THIS PLAN IS THE PROPERTY OF STORMCIVIL AND MAY NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION FROM STORMCIVIL.



TYPICAL DETAIL - CHARGED SYSTEM CLEANOUT PIT

TYPICAL DETAIL - COMBINED DETENTION/RAINWATER RE-USE TANK

NTS

A	20.07.2019	DA ISSUE
ISS	DATE	AMENDMENT

ARCHITECT/BUILDER	ARCH. REF : 29913581
CLARENDON HOMES	
OWNER	
Mr & Ms LALLOTIS	
LGA	NORTHERN BEACHES (WARRINGAH)

StormCivil

Consulting Engineers
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Pty Ltd. ABN 71 612 151 461

DWG TITLE	LEGEND, NOTES, DETAILS, CALCULATIONS
PROJECT TITLE	PROPOSED RESIDENTIAL DEVELOPMENT Lot 33, No 12 SPRINGVALE AVENUE, FRENCHS FOREST

StormCivil		APPROVED ON BEHALF OF STORMCIVIL PTY LTD	
JOB No	DWG No	No IN SET	ISSUE
304015	D1	2	A

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.



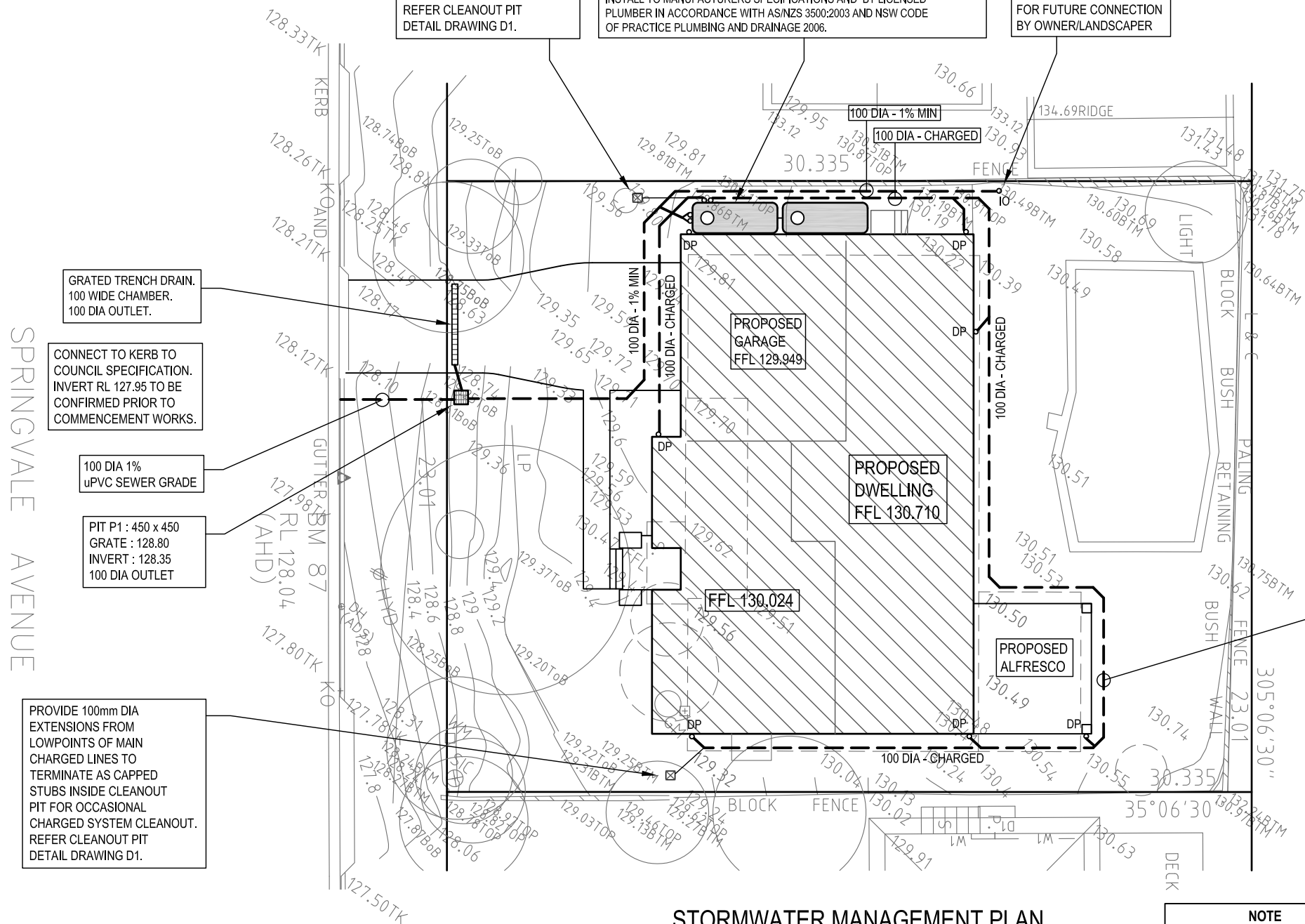
PROVIDE 100mm DIA
EXTENSIONS FROM
LOWPOINTS OF MAIN
CHARGED LINES TO
TERMINATE AS CAPPED
STUBS INSIDE CLEANOUT
PIT FOR OCCASIONAL
CHARGED SYSTEM CLEANOUT.
REFER CLEANOUT PIT
DETAIL DRAWING D1.

COMBINED STORMWATER DETENTION / RAINWATER TANKS .
INTERCONNECTED ABOVE-GROUND TANKS. TOTAL STORAGE 14,000 litres min.
USE 2 x CUSTOM "KINGSPAN MODLINE":
EACH TANK : 2020 h x 3200 lg x 1150 w = 7000 litres.
TOTAL STORAGE = 2 x 7000 = 14,000 litres.
CONNECT ALL ROOFWATER DIRECT TO PRIMARY TANK.
TOP TANKS : RL 131.88
DETENTION ZONE : 7000 litres
TOP WATER LEVEL = RL 131.78
INVERT OUTLET = RL 130.82
OUTLET : 60mm ORIFICE IN PIPE
RE-USE ZONE : 7000 litres (EQUALS BASIX)
TOP WATER LEVEL = RL 130.82
INVERT = TANK PAD = RL 129.86
REFER TYPICAL DETAIL DRAWING D1.
SPECIAL NOTES :
1. REQUIRE 60mm ORIFICE IN OUTLET FROM SIDE OF PRIMARY TANK AT SPECIFIED RL - SEE DRAWING D1.
2. PROVIDE 2 x 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 1.0m 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.

PROVIDE CAPPED UPTURN
FOR FUTURE CONNECTION
BY OWNER/LANDSCAPER

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.

THIS PLAN MANAGES STORMWATER RUNOFF DERIVED FROM ROOF AND DRIVEWAY SURFACES ONLY AS SHOWN ON ARCHITECTURALS 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



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 = 133.13
TANK INLET RL = 131.88
DIFFERENTIAL HEAD = 1.25 m
SUFFICIENT TO DRIVE SYSTEM.

SCALE 1:200 at A3

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

THIS DRAWING TO BE
READ IN CONJUNCTION WITH
ARCHITECTURAL DRAWINGS BY :
CLARENDON HOMES
REF : 29913581



SCALE 1:200 at A3

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ARCHITECT/BUILDER		ARCH. REF : 29913581
CLARENDON HOMES		
OWNER		
Mr & Ms LALIOTIS		
LGA	NORTHERN BEACHES (WARRINGAH)	



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<h1>StormCivil</h1>		APPROVED ON BEHALF OF STORMCIVIL PTY LTD	
		 Mark Taylor MIE Aust CP Eng NER 173333	
JOB No	DWG No	No In SET	ISSUE
304015	D2	2	A