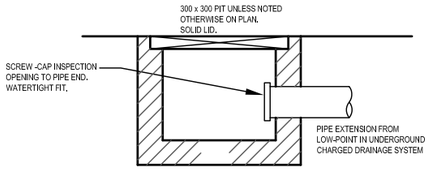
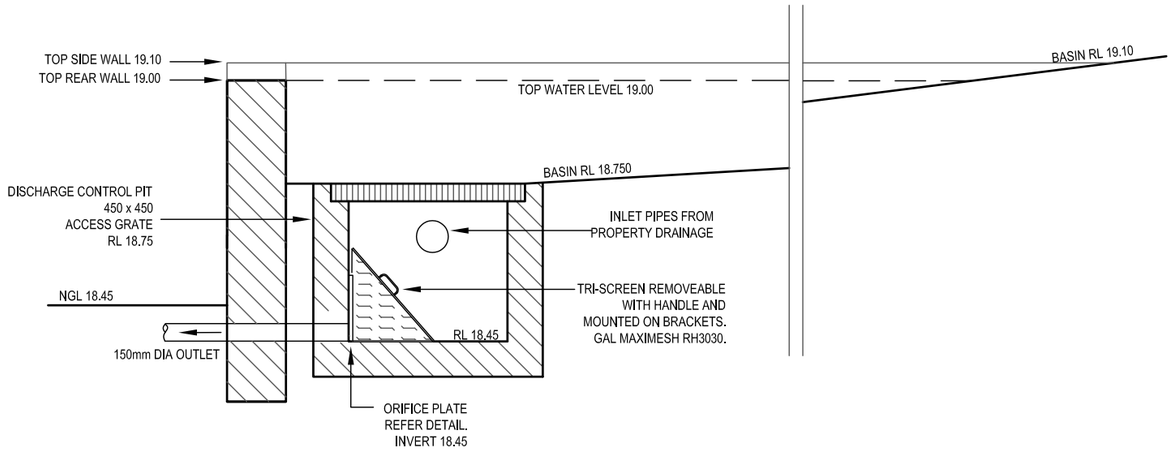
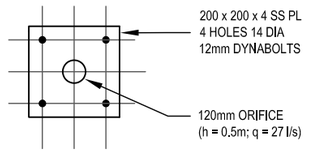
STORMWATER MANAGEMENT PLAN
PROPOSED RESIDENTIAL DEVELOPMENT
Lot 316, No 28 CARAWA ROAD, CROMER



TYPICAL DETAIL - CHARGED SYSTEM CLEANOUT PIT



TYPICAL DETAIL - DETENTION BASIN



TYPICAL DETAIL - ORIFICE PLATE

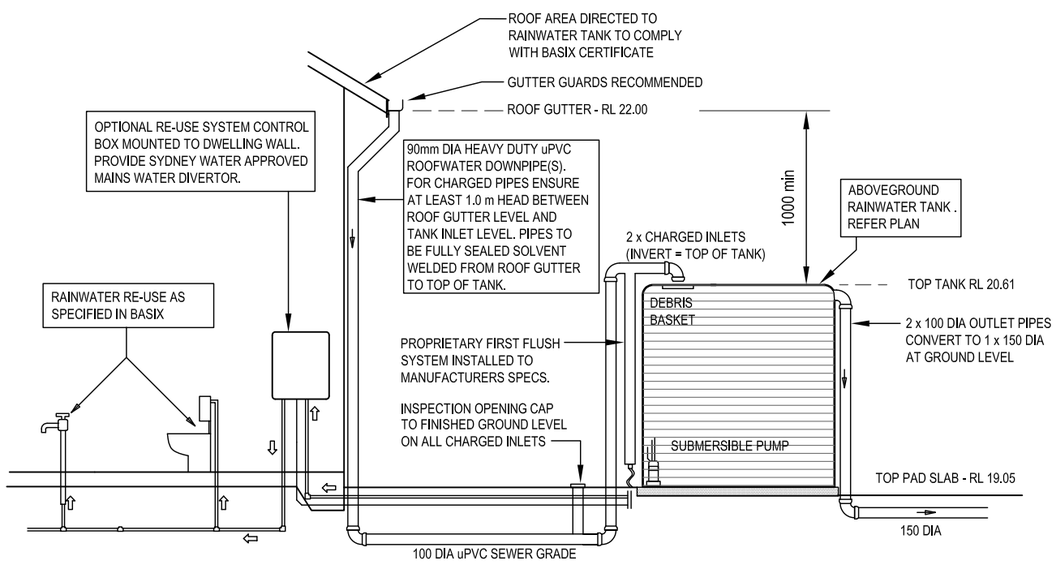
MINIMUM PIPE COVER
(FROM FINISHED SURFACE TO TOP OF PIPE)

LOCATION	MINIMUM COVER (mm) CAST/DUCTILE IRON GAL STEEL	MINIMUM COVER (mm) OTHER AUTHORISED PRODUCTS (*)
1. NOT SUBJECT TO VEHICULAR LOADING:		
A. WITHOUT PAVEMENT:		
i. FOR SINGLE DWELLINGS -	0	100
ii. OTHER THAN SINGLE DWELLINGS -	0	300
B. WITH PAVEMENT OF BRICK/UNREINFORCED CONCRETE -	0 (**)	50 (**)
2. SUBJECT TO VEHICULAR LOADING:		
A. OTHER THAN ROADS:		
i. WITHOUT PAVEMENT -	300	450
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 4060

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 - RAINWATER RE-USE TANK

LEGEND

▦	GRATED INLET PIT	GTD100	GRATED TRENCH DRAIN 100mm WIDE
450x450	450 SQUARE INTERNAL	→	PROPOSED ROOF GUTTER FALL
GRT 75.54	GRATE LEVEL = RL 75.54	SP3	PROPOSED STANDARD DOWNPIPE SPREADER
IL 75.12	INVERT LEVEL = 75.12	S1	STRUCTURE No 1
DP05	DOWNPIPE : 90 DIA ROUND OR 100 x 50 RECTANGULAR		STORMWATER DRAINAGE
RWH	RAINWATER HEAD	BD2	BALCONY DRAIN - 150mm SQUARE WITH 90mm DIA OUTLET
	EXISTING TREE	IO	SCREW-CAPPED INSPECTION OPENING
CO	SUBSOIL DRAINAGE CLEANOUT CAPPED & MARKED "SW"	RO	GRATED ROUND OUTLET 100mm DIA.

ISS	DATE	AMENDMENT
B	10.03.2020	DA ISSUE
A	01.02.2020	DA ISSUE

ARCHITECT/BUILDER | ARCH. REF : 29913960
CLARENDON HOMES
OWNER
STREET & HILL
LGA | NORTHERN BEACHES (WARRINGAH)

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Pty Ltd. ABN 71 612 151 461

DWG TITLE
LEGEND, NOTES, DETAILS, CALCULATIONS
PROJECT TITLE
PROPOSED RESIDENTIAL DEVELOPMENT
Lot 316, No 28 CARAWA ROAD, CROMER

StormCivil
APPROVED ON BEHALF OF STORMCIVIL PTY LTD
Mark Taylor
MIE Aust CP Eng NER 1073333

JOB No	DWG No	No IN SET	ISSUE
304162	D1	3	B

RELEVANT DESIGN CODE : WARRINGAH COUNCIL "STORMWATER DRAINAGE FROM LOW LEVEL PROPERTIES" PDS-POL 136.

RELEVANT CODE SECTION : SECTION 2.2
COUNCIL HAVE ADVISED THAT OSD/SPREADER SYSTEM IS REQUIRED.

COUNCIL POLICY SECTION 2.2, STEP 3, OPTION 2 :

SITE AREA = 864 m2

DETENTION REQUIREMENT
RESTRICT ALL STORMS UP TO 100 YEAR ARI BACK TO 5 YEAR ARI "STATE OF NATURE".

CALCULATION METHOD USED :
FULL-COMPUTATION METHOD USING ILSAX TIME AREA COMPUTER MODEL

DETERMINE PRE-DEVT DISCHARGE RATE
PRE-DEVT HARD SURFACE = 0% (STATE OF NATURE)
ILSAX PIPE FILE : "PREP"
ILSAX RAINFALL FILE : "WR5"
RESULT : REFER OUTPUT FILE "INT-PRE5"
DISCHARGE RATE :
5 YEAR PRE-DEVT DISCHARGE = 27 l/s

ADOPTED PSD = 27 l/s

PROPOSED POST-DEVELOPMENT DETENTION STORAGE SYSTEM
ABOVEGROUND DETENTION BASIN REAR YARD
CATCHMENT TO OSD : AREA ABOVE BASIN TERRACE
= 814 m2 OF WHICH 445m2 = 52% IS IMPERVIOUS.
OSD BYPASS : AREA BELOW TERRACE BASIN = 50 m2 ; 0% IMPERVIOUS.
PROPOSED OSD BASIN : 16.5 m3; 0.19 m AVERAGE DEPTH

STAGE	STORAGE	DISCHARGE
18.50 m	0.0 m3	0 l/s
18.75	0.15	18
19.00	16.5	24

DETERMINE POST-DEVELOPMENT DISCHARGE RATES
ILSAX PIPE FILE : "POSTP"
ILSAX RAINFALL FILES : "WR5", "WR20", "WR100"
RESULT : REFER OUTPUT FILES "INT-POST5", INT-POST20", "INT-POST100"
DISCHARGE RATES:
5 YEAR POST-DEVT DISCHARGE = 21 l/s <= PSD. OK.
20 YEAR POST-DEVT DISCHARGE = 23 l/s <= PSD. OK.
100 YEAR POST-DEVT DISCHARGE = 26 l/s <= PSD. OK.

SUMMARY
TOTAL OSD STORAGE REQUIRED = 16.5 m3; DISCHARGE = 24.0 l/s.
POST DEVT RUNOFF <= 5 YEAR ARI "STATE OF NATURE" ALL STORMS UP TO 100 YEAR ARI. OK.

```
No 28 Carawa Rd, Cromer  - PREDEVT

*CATCHMENT
A 1 -1 -1
0 2 20 20 10000 0
10 0 0 0 0
A 2 0
0.0864  0  5  0  100  10  0


*OUTLET
A 2 -1 -1
0 1 20 20 10000 0
10 0 0 0 0
0 0 0 0 0 0 0

END
```

ILSAX FILE : "PREP"

```
No 28 Carawa Rd, Cromer  - PREDEVT
PEAK FLOWS AMONG RUNOFFS FROM 11 RAINFALL PATTERNS
(The following lines give Branch and Reach names;
 Maximum surface flow arriving at an entry point or pit,
 Maximum flow in the pit before routing through downstream
reach,
 and Maximum surface overflow (m3/s);
 Diameter (mm) and Capacity (m3/s) for circular pipe reaches.
 Other information is given for non-circular reaches
 - refer to the program code for details.)
  A   1    .027    .027    .000  10000.5004.545
  A   2    .000    .027    .000  10000.5004.545
END
```

ILSAX FILE : "INT-PRE5"

```
No 28 Carawa Rd, Cromer - POST-DEVT
PEAK FLOWS AMONG RUNOFFS FROM 11 RAINFALL PATTERNS
(The following lines give Branch and Reach names;
 Maximum surface flow arriving at an entry point or pit,
 Maximum flow in the pit before routing through downstream
reach,
 and Maximum surface overflow (m3/s);
 Diameter (mm) and Capacity (m3/s) for circular pipe reaches.
 Other information is given for non-circular reaches
 - refer to the program code for details.)
  A   1    .051    .051    .000  10000.    .000
  B   1    .003    .003    .000  10000.5004.545
  A   2    .000    .026    .000  10000.5004.545
END
```

ILSAX FILE : "INT-POST100"

```
No 28 Carawa Rd, Cromer - POST-DEVT

*UPPER SITE TO OSD
A 1 -1 -1
10 4 20 20 10000 0
A 2 0
4
18.50       0       0       0
18.75       0.15    0.018   0
19.00       16.5    0.024   0
19.10       16.5    0.024   10
0
0.0814  52  5  0  48  10  0

*BYPASS
B 1 -1 -1
0 2 20 20 10000 0
10 0 0 0 0
A 2 0
0.0050 0  5  0  100  10  0

ADD B TO A

*CATCHMENT COMBINED OUTLET
A 2 -1 -1
0 1 20 20 10000 0
10 0 0 0 0
0 0 0 0 0 0 0

END
```

ILSAX FILE : "POSTP"

```
No 28 Carawa Rd, Cromer - POST-DEVT
PEAK FLOWS AMONG RUNOFFS FROM 11 RAINFALL PATTERNS
(The following lines give Branch and Reach names;
 Maximum surface flow arriving at an entry point or pit,
 Maximum flow in the pit before routing through downstream
reach,
 and Maximum surface overflow (m3/s);
 Diameter (mm) and Capacity (m3/s) for circular pipe reaches.
 Other information is given for non-circular reaches
 - refer to the program code for details.)
  A   1    .030    .030    .000  10000.    .000
  B   1    .002    .002    .000  10000.5004.545
  A   2    .000    .021    .000  10000.5004.545
END
```

ILSAX FILE : "INT-POST5"

```
No 28 Carawa Rd, Cromer - POST-DEVT
PEAK FLOWS AMONG RUNOFFS FROM 11 RAINFALL PATTERNS
(The following lines give Branch and Reach names;
 Maximum surface flow arriving at an entry point or pit,
 Maximum flow in the pit before routing through downstream
reach,
 and Maximum surface overflow (m3/s);
 Diameter (mm) and Capacity (m3/s) for circular pipe reaches.
 Other information is given for non-circular reaches
 - refer to the program code for details.)
  A   1    .041    .041    .000  10000.    .000
  B   1    .002    .002    .000  10000.5004.545
  A   2    .000    .023    .000  10000.5004.545
END
```

ILSAX FILE : "INT-POST20"

```
3 2 11
10 MINUTE 5 YEAR DESIGN STORM
2 2 -1 0 -0.3 0  300 0.3
1 5 2.5 3 1 0 0
1
5 10 5 1 1.0
1 5 130
0
15 MINUTE 5 YEAR DESIGN STORM
2 0 3
1
5 15 5 1 1
1 5 110
0
20 MINUTE 5 YEAR DESIGN STORM
2 0 3
1
5 20 5 1 1
1 5 97
0
25 MINUTE 5 YEAR DESIGN STORM
2 0 3
1
5 25 5 1 1
1 5 87
0
30 MINUTE 5 YEAR DESIGN STORM
2 0 3
1
5 30 5 1 1
1 5 80
0
45 MINUTE 5 YEAR DESIGN STORM
2 0 3
1
5 45 5 1 1
1 5 65
0
60 MINUTE 5 YEAR DESIGN STORM
2 0 3
1
5 60 5 1 1
1 5 55
0
90 MINUTE 5 YEAR DESIGN STORM
2 0 3
1
5 90 5 2 1
1 5 44
0
120 MINUTE 5 YEAR DESIGN STORM
2 0 3
1
5 120 5 2 1
1 5 37
0
180 MINUTE 5 YEAR DESIGN STORM
2 0 3
1
5 180 15 2 1
1 5 29
0
270 MINUTE 5 YEAR DESIGN STORM
2 0 3
1
5 270 15 5 1
1 5 22
0
```

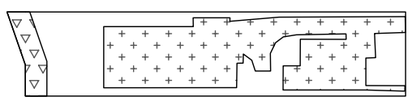
ILSAX FILE : "WR5"

```
3 2 11
10 MINUTE 20 YEAR DESIGN STORM
2 2 -1 0 -0.3 0  300 0.3
1 5 2.5 3 1 0 0
1
5 10 5 1 1.0
1 20 166
0
15 MINUTE 20 YEAR DESIGN STORM
2 0 3
1
5 15 5 1 1
1 20 142
0
20 MINUTE 20 YEAR DESIGN STORM
2 0 3
1
5 20 5 1 1
1 20 125
0
25 MINUTE 20 YEAR DESIGN STORM
2 0 3
1
5 25 5 1 1
1 20 112
0
30 MINUTE 20 YEAR DESIGN STORM
2 0 3
1
5 30 5 1 1
1 20 104
0
45 MINUTE 20 YEAR DESIGN STORM
2 0 3
1
5 45 5 1 1
1 20 85
0
60 MINUTE 20 YEAR DESIGN STORM
2 0 3
1
5 60 5 1 1
1 20 73
0
90 MINUTE 20 YEAR DESIGN STORM
2 0 3
1
5 90 5 2 1
1 20 58
0
120 MINUTE 20 YEAR DESIGN STORM
2 0 3
1
5 120 5 2 1
1 20 49.2
0
180 MINUTE 20 YEAR DESIGN STORM
2 0 3
1
5 180 15 2 1
1 20 38.7
0
270 MINUTE 20 YEAR DESIGN STORM
2 0 3
1
5 270 15 5 1
1 20 28
0
```

ILSAX FILE : "WR20"

```
3 2 11
10 MINUTE 100 YEAR DESIGN STORM
2 2 -1 0 -0.3 0 300 0.3
1 5 2.5 3 1 0 0
1
5 10 5 1 1.0
1 100 213
0
15 MINUTE 100 YEAR DESIGN STORM
2 0 3
1
5 15 5 1 1
1 100 184
0
20 MINUTE 100 YEAR DESIGN STORM
2 0 3
1
5 20 5 1 1
1 100 163
0
25 MINUTE 100 YEAR DESIGN STORM
2 0 3
1
5 25 5 1 1
1 100 149
0
30 MINUTE 100 YEAR DESIGN STORM
2 0 3
1
5 30 5 1 1
1 100 135
0
45 MINUTE 100 YEAR DESIGN STORM
2 0 3
1
5 45 5 1 1
1 100 112
0
60 MINUTE 100 YEAR DESIGN STORM
2 0 3
1
5 60 5 1 1
1 100 96
0
90 MINUTE 100 YEAR DESIGN STORM
2 0 3
1
5 90 5 2 1
1 100 77
0
120 MINUTE 100 YEAR DESIGN STORM
2 0 3
1
5 120 5 2 1
1 100 65
0
180 MINUTE 100 YEAR DESIGN STORM
2 0 3
1
5 180 15 2 1
1 100 52
0
270 MINUTE 100 YEAR DESIGN STORM
2 0 3
1
5 270 15 5 1
1 100 40.1
0
```

ILSAX FILE : "WR100"



IMPERVIOUS TO OSD = 445 m2

PERVIOUS TO OSD = 369 m2

PERVIOUS BYPASS = 50 m2

DETENTION AREA DIAGRAM

SCALE 1:500 at A3

ISS	DATE	AMENDMENT
B	10.03.2020	DA ISSUE
A	01.02.2020	DA ISSUE

ARCHITECT/BUILDER | ARCH. REF : 29913960
CLARENDON HOMES
OWNER
STREET & HILL
LGA | NORTHERN BEACHES (WARRINGAH)

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Consulting Engineers
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Stormwater Management.
3 Gresham Street,
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ph/fax (02) 9456 7233
mobile : 0424023047
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DWG TITLE
STORMWATER DETENTION CALCULATIONS

PROJECT TITLE
PROPOSED RESIDENTIAL DEVELOPMENT
Lot 316, No 28 CARAWA ROAD, CROMER

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

JOB No	DWG No	No IN SET	ISSUE
304162	D2	3	B

DIAL 1100 BEFORE YOU DIG

STORMWATER DETENTION BASIN - ABOVE GROUND
EXTENT OF BASIN SHOWN SHADED.
DESIGN AREA = 110 m2
AVERAGE DEPTH = 190 mm
MAXIMUM DEPTH = 250 mm
TOP WATER LEVEL = RL 19.00
DESIGN VOLUME = 110 x 0.19 = 20.0 m3
(REQUIRED VOLUME = 16.5 x 1.2 = 20.0 m3)
PROVIDE EVEN GRADES BETWEEN SPOT LEVELS SHOWN.
DISCHARGE CONTROL PIT : REFER DETAIL DRAWING D1.
BASIN OVERFLOW : REAR WALL RL 19.00.
TOP SIDE WALLS : RL 19.10 min AS SHOWN.
PERIMETER WALL TO BE WATERTIGHT MASONRY.
BASIN AREA TO BE GRASS/ GROUND COVERS/
SHRUBS WITH NO FLOATABLE MULCHES.

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.

RAINWATER/RE-USE BASIX TANK
3000 litre min. ABOVE GROUND TANK.
CATCHMENT = ROOF AREA AS PER BASIX
(TO BE CONFIRMED PRIOR COMMENCEMENT WORKS).
TANK : USE "KINGSPAN SLIMLINE" OR SIMILAR
DIMENSIONS : 1560 h x 2700 lg x 870 w = 3000 litres
FOR RE-USE AS SPECIFIED BY BASIX CERTIFICATE.
REFER TYPICAL DETAIL DRAWING D1.
TANK INVERT = TOP OF PAD = RL 19.05
TANK TOP = RL 20.61
ROOF GUTTER = RL 22.00
NOTES : 1. TANK HAS 2 x CHARGED INLET PIPES AS SHOWN.
2. TANK HAS 2 x 100 DIA OVERFLOW PIPES CONVERTING TO 1 x 150 DIA AT GROUND LEVEL.

TANK TO BE INSTALLED BY LICENSED PLUMBER TO MANUFACTURERS SPECIFICATIONS, AS/NZS 3500:2003 AND NSW CODE OF PRACTICE PLUMBING AND DRAINAGE 2006.

GRATED TRENCH DRAIN.
200 WIDE CHAMBER.
150 DIA OUTLET.
DRAIN TO BE SET 0.3 m FROM GARAGE FACE WITH DOWN-GRADE FROM GARAGE TO DRAIN.
FINISHED DRIVEWAY SURFACE TO BE GRADED SO THAT DRIVEWAY RUNOFF IS DIRECTED DOWN SIDE PASSAGEWAY AND NOT INTO GARAGE SHOULD GRATED TRENCH DRAIN BLOCK.

INTERCEPT AND CONNECT ALL EXISTING GRANNY FLAT DOWNPIPES TO PROPOSED PIT P3 (BY OWNER)

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.

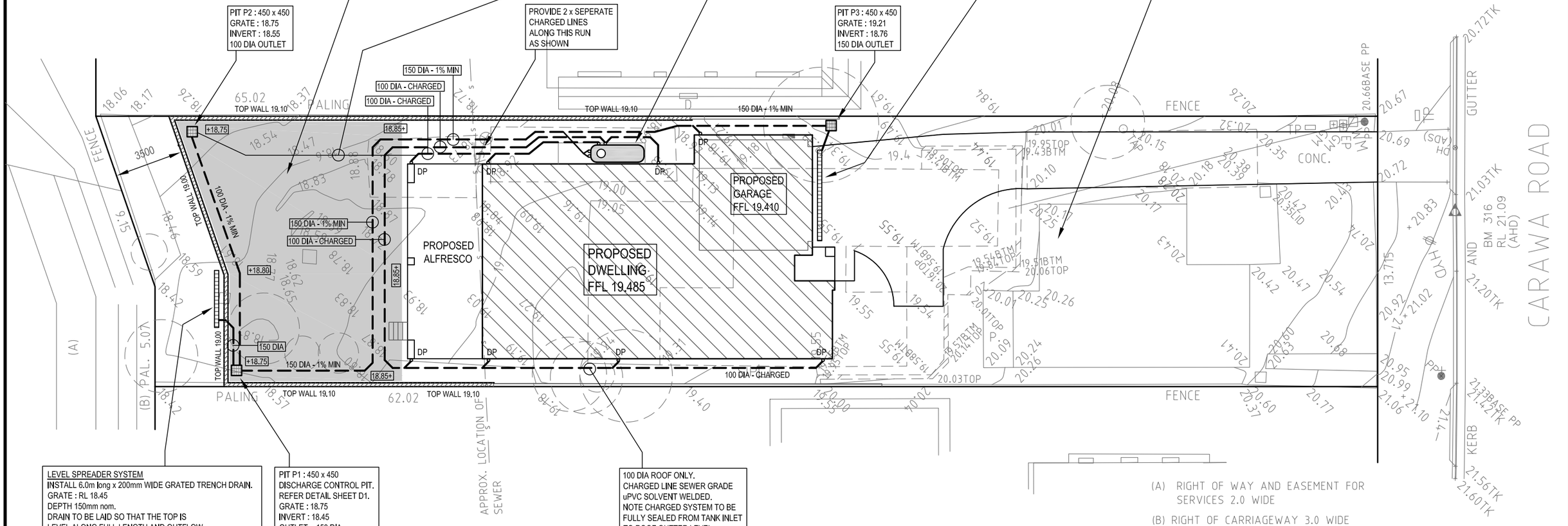
NOTE
THIS DRAWING DOES NOT INCLUDE ROOF GUTTER/DOWNPIPE OR SUBSOIL DRAINAGE DESIGN UNLESS NOTED OTHERWISE.
THE DESIGN OF ROOF AND SUBSOIL DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF OTHERS.

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

PIT P2 : 450 x 450
GRATE : 18.75
INVERT : 18.55
100 DIA OUTLET

PROVIDE 2 x SEPERATE CHARGED LINES ALONG THIS RUN AS SHOWN

PIT P3 : 450 x 450
GRATE : 19.21
INVERT : 18.76
150 DIA OUTLET



(A) RIGHT OF WAY AND EASEMENT FOR SERVICES 2.0 WIDE

(B) RIGHT OF CARRIAGEWAY 3.0 WIDE

LEVEL SPREADER SYSTEM
INSTALL 6.0m long x 200mm WIDE GRATED TRENCH DRAIN.
GRATE : RL 18.45
DEPTH 150mm nom.
DRAIN TO BE LAID SO THAT THE TOP IS LEVEL ALONG FULL LENGTH AND OUTFLOW IS EVENLY SPREAD ACROSS FULL LENGTH. WILL REQUIRE MINOR GROUND RESHAPING TO ACHIEVE.

PROVIDE 30mm DIA. nom WEEPHOLES THRU BASE AT 300mm CTS.
PROVIDE 300 wide x 150 deep AGGREGATE BASE UNDER FULL LENGTH OF DRAIN COMPRISING 14mm AGG. WRAPPED GEOFABRIC.

DRAIN TO BE MINIMUM 3.0m FROM DOWNSLOPE REAR AND SIDE BOUNDARIES

PIT P1 : 450 x 450
DISCHARGE CONTROL PIT.
REFER DETAIL SHEET D1.
GRATE : 18.75
INVERT : 18.45
OUTLET = 150 DIA
INSTALL ORIFICE PLATE AND TRASH SCREEN OVER OUTLET.

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 = 22.00
TANK INLET RL = 20.61
DIFFERENTIAL HEAD = 1.39 m

STORMWATER MANAGEMENT PLAN

SCALE 1:200 at A3

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.

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

NOTE
THIS DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS BY :
CLARENDON HOMES
REF : 29913960

NORTH
0 10m
SCALE 1:200 at A3

ISS	DATE	AMENDMENT
B	10.03.2020	DA ISSUE
A	01.02.2020	DA ISSUE

ARCHITECT/BUILDER | ARCH. REF : 29913960
CLARENDON HOMES
OWNER
STREET & HILL
LGA | NORTHERN BEACHES (WARRINGAH)

StormCivil
Pty Ltd. ABN 71 612 151 461
Consulting Engineers
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Stormwater Management.
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Cowan NSW 2081
ph/fax (02) 9456 7233
mobile : 0424023047
mark@stormcivil.com.au

DWG TITLE
STORMWATER MANAGEMENT PLAN
PROJECT TITLE
PROPOSED RESIDENTIAL DEVELOPMENT
Lot 316, No 28 CARAWA ROAD, CROMER

StormCivil
APPROVED ON BEHALF OF STORMCIVIL PTY LTD
Mark Taylor
MIE Aust CP Eng NER 1173333

JOB No	DWG No	No IN SET	ISSUE
304162	D3	3	B