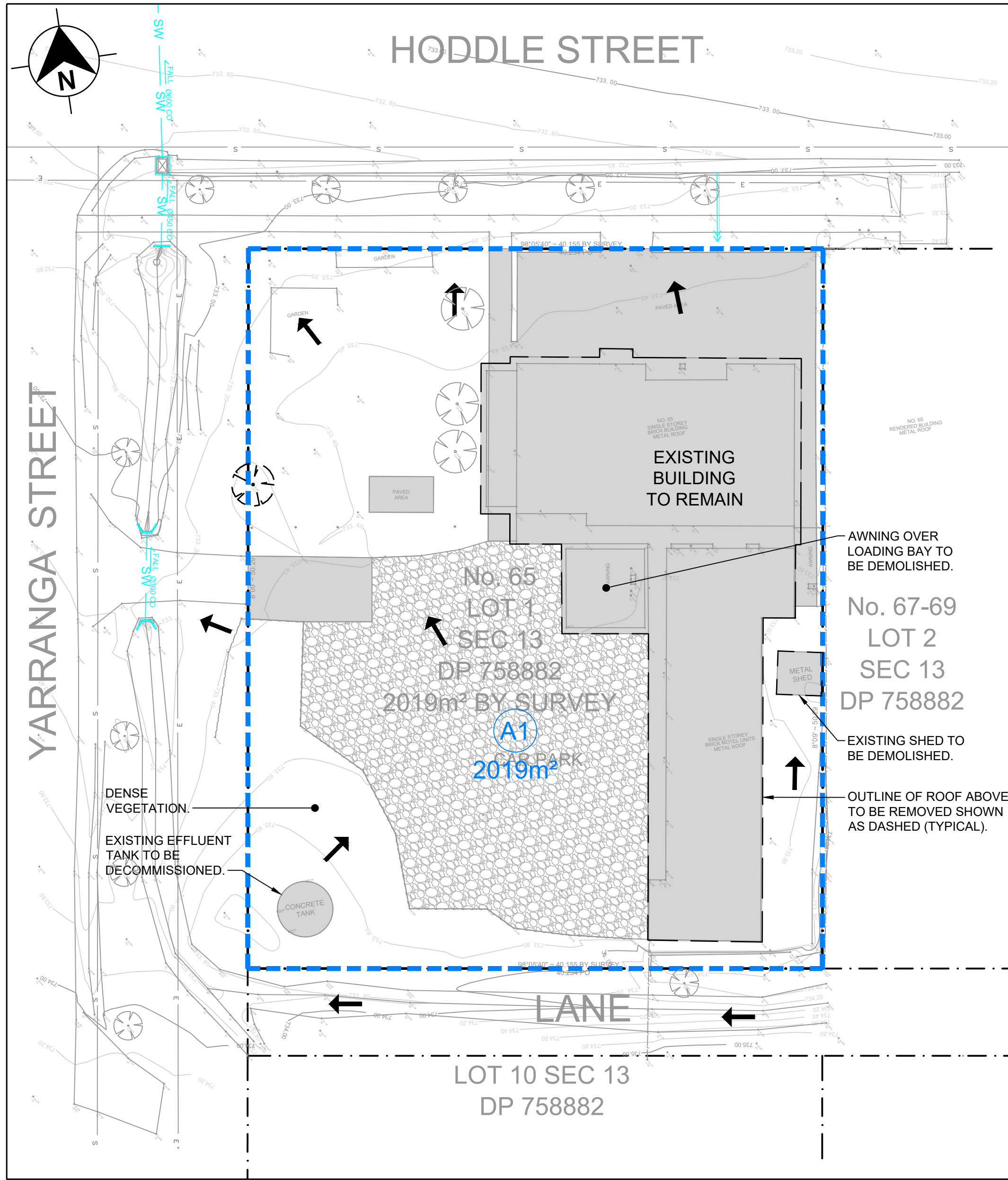
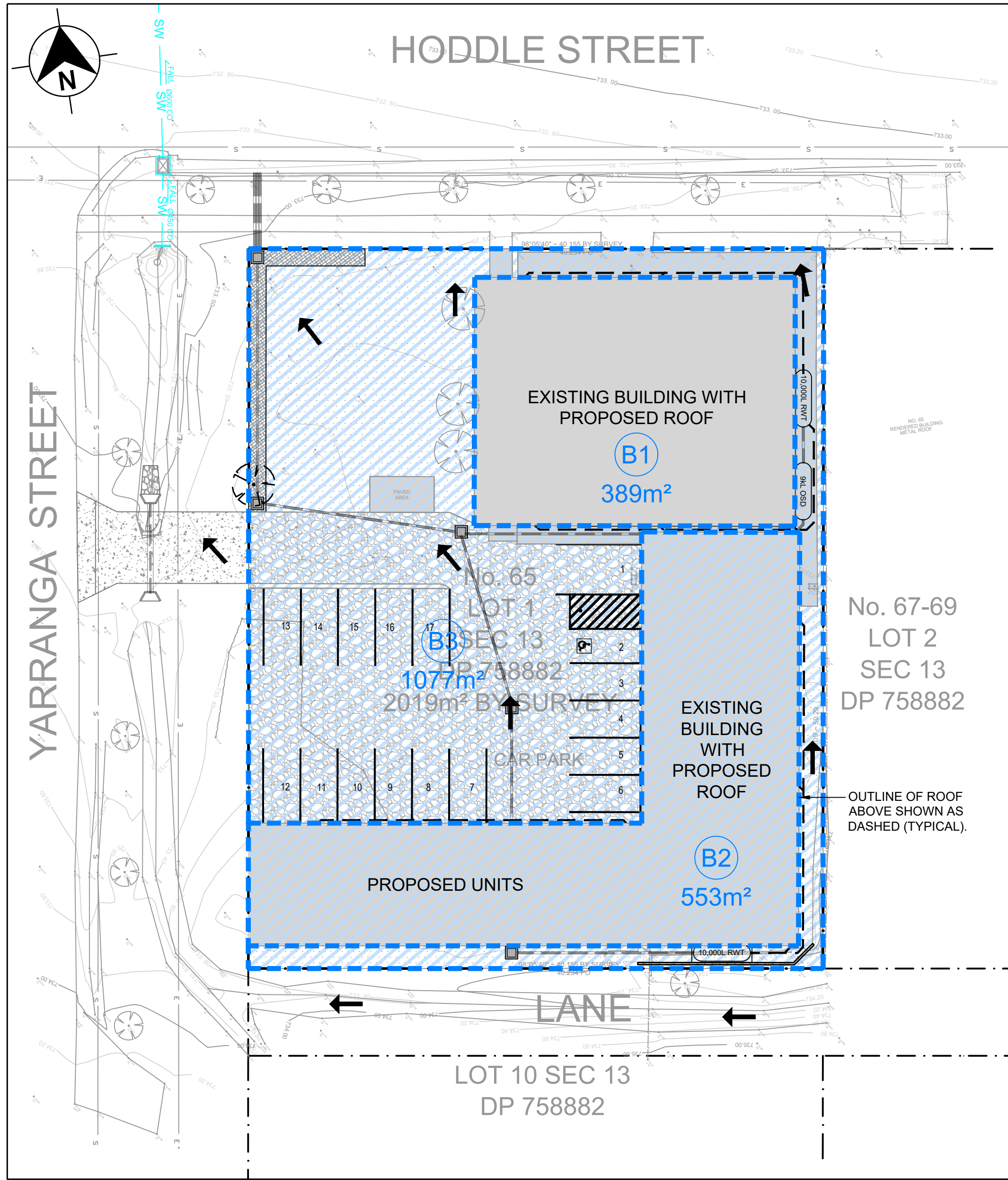


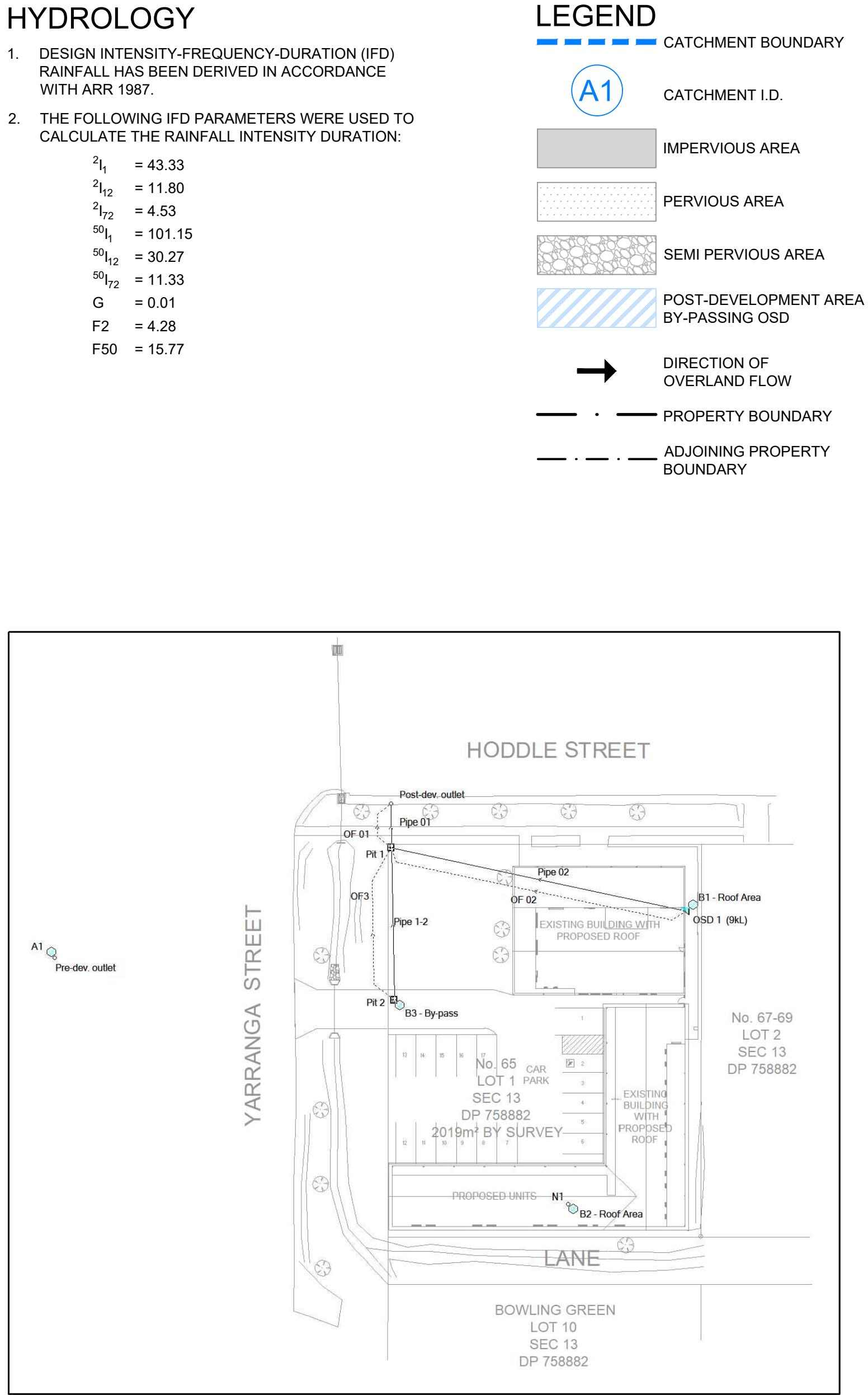
NOT FOR CONSTRUCTION



PRE-DEVELOPMENT CATCHMENT PLAN



POST-DEVELOPMENT CATCHMENT PLAN



'DRAINS' MODEL DIAGRAM

Land use/surface type	Total area (ha)	Impervious Area		Pervious Area	
		(ha)	(%)	(ha)	(%)
Pre-development Scenario					
Business area - B2	0.0913	0.0212	23	0.0701	77
Roof area	0.0569	0.0569	100	0.0000	0
Pavement area	0.0538	0.0338	63	0.0199	37
TOTAL	0.2019	0.1119	55	0.0901	45
Post-development Scenario					
Business area - B2	0.0508	0.0101	20	0.0407	80
Roof area	0.0942	0.0942	100	0.0000	0
Pavement area	0.0569	0.0342	60	0.0227	40
TOTAL	0.2019	0.1385	69	0.0634	31

TABLE '1' - SUMMARY OF SITE CATCHMENT AREAS

	Average Recurrence Interval (years)				
	5	10	20	50	100
Catchment 1 - Pre-development Scenario					
Qpre (m³/s) - PSD	0.090	0.108	0.133	0.154	0.178
Catchment 2 - Post-development Scenario					
Qpost <sub>no OSD</sub> (m³/s)	0.094	0.112	0.137	0.157	0.181
Qpost <sub>osd</sub> (m³/s) - PSD	0.072	0.093	0.121	0.139	0.161
Peak OSD storage (m³) - SSR	3.5	4.4	6.0	7.2	8.8

TABLE '2' - SUMMARY OF OSD AND PSD CALCULATION RESULTS USING 'DRAINS'

ALL DESIGN MEASURES SHOWN ON THIS DRAWING HAVE BEEN PREPARED FOR DEVELOPMENT APPLICATION PURPOSES TO DEMONSTRATE FEASIBILITY. ALL DESIGN MEASURES WILL BE SUBJECT TO DETAIL DESIGN AT THE CONSTRUCTION CERTIFICATE STAGE AND MAY BE SUBJECT TO VARIATION PROVIDED THAT THE DESIGN INTENT IS MAINTAINED.

CAD File Name: N:\(B) Projects\19XXX\19051 65 Hoddle Street, Robertson\19051\_DAO1\_Site Catchment Area Plan and 'DRAINS' Model Summary.dwg

DRAWING SHEET 01 OF 04

DESIGN	DRAWN	CHECKED	VERIFIED	DATE	AMENDMENTS/REVISION DETAILS	SCALE	COPYRIGHT	CLIENT	PROJECT
01	E.B.	E.B.	C.N.	11/12/19	ISSUED FOR CO-ORDINATION	0 2.5 5 7.5 10 12.5m	This drawing is copyright. Apart from any use permitted under the Copyright Act 1968, no part may be reproduced by any process, nor may any other exclusive right be exercised, without the permission of Novati Consulting Engineers Pty Ltd 2019.	STEVE CHOWDHURY	65 HODDLE STREET, ROBERTSON
02	E.B.	C.B.	C.N.	12/12/19	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL	SCALE: 1:250 (A1 SHEET)			
						ISSUED FOR	L.G.A.	PLANNER	DRAWING TITLE
						D.A. APPROVAL	WINGECARRIBEE SHIRE	LEP	SITE CATCHMENT AREA PLAN AND 'DRAINS' MODEL SUMMARY
								33 Holly Street Bowral NSW 2576 0408 473 857 lep.planning@gmail.com	PROJECT No. 19051
									SUB-PROJECT No. 01
									DRAWING No. DA01
									ISSUE 02
									SHEET SIZE A1



NOT FOR CONSTRUCTION

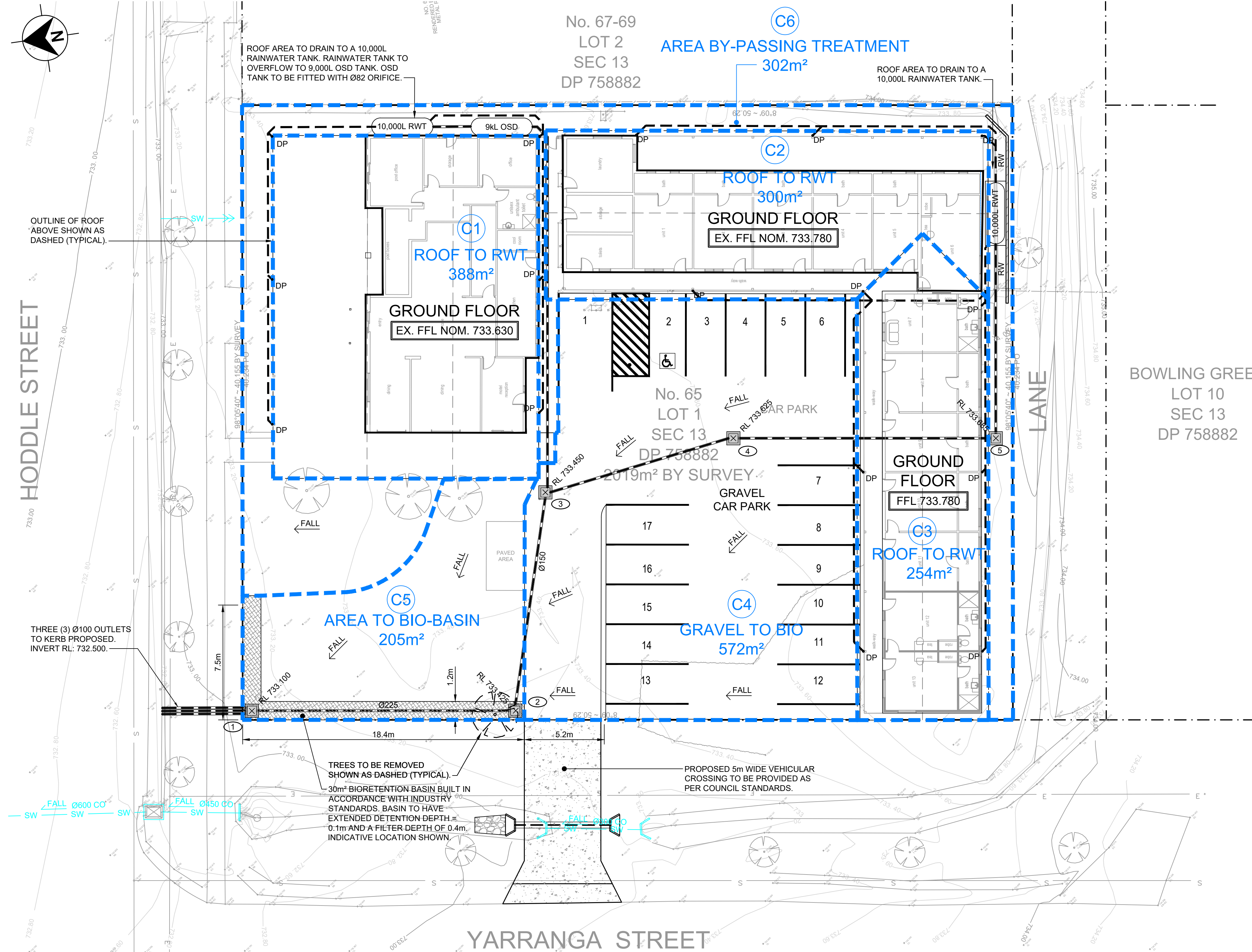


TABLE '3' - STORMWATER PIT SCHEDULE

PIT I.D.	PIT SIZE	PIT TYPE <sup>1</sup>	SURFACE R.L.	INVERT R.L.	DEPTH (m)
1	600 X 600	SIP	733.100	732.600	0.500
2	600 X 600	SIP	733.425	732.800	0.625
3	600 X 600	SIP	733.500	732.925	0.575
4	600 X 600	SIP	733.625	733.000	0.625
5	600 X 600	SIP	733.685	733.225	0.460

NOTE:  
1. DCP = DISCHARGE CONTROL PIT, JP = JUNCTION PIT, KIP = KERB INLET PIT, SIP = SURFACE INLET PIT, SP = SURCHARGE PIT.  
2. ALL PITS ARE TO BE FITTED WITH A FINE MESH IN-PIT FILTRATION BASKET SUCH AS 'ENVIROPOD 200' OR AN APPROVED EQUIVALENT.

CAD File Name: N:\(B) Projects\19XXX\19051 65 Hoddle Street, Robertson\19051\_DA02\_Concept Stormwater Drainage Plan.dwg

DESIGN	DRAWN	CHECKED	VERIFIED	DATE	AMENDMENTS/REVISION DETAILS
01	E.B.	E.B.	C.N.	11/12/19	ISSUED FOR CO-ORDINATION
02	E.B.	C.B.	C.N.	12/12/19	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL

SCALE
0 1.5 3 4.5 6 7.5m SCALE: 1:150 (A1 SHEET)
ISSUED FOR
D.A. APPROVAL

COPYRIGHT
This drawing is copyright. Apart from any use permitted under the Copyright Act 1968, no part may be reproduced by any process, nor may any other exclusive right be exercised, without the permission of Novati Consulting Engineers Pty Ltd 2019.
L.G.A.
WINGECARRIBEE SHIRE



**NCE**  
NOVATI CONSULTING ENGINEERS

Novati Consulting Engineers Pty Ltd  
CIVIL & ENVIRONMENTAL CONSULTING ENGINEERS  
ABN 56 163 789 393  
info@nceengineers.com.au | (02) 4861 2042  
Shop 25A 310-312 Bong Bong Street, Bowral NSW 2576

CLIENT  
**STEVE CHOWDHURY**

PLANNER  
**LEP**  
33 Holly Street  
Bowral NSW 2576  
0408 473 857  
lep.planning@gmail.com

PROJECT	65 HODDLE STREET, ROBERTSON				
DRAWING TITLE	CONCEPT STORMWATER DRAINAGE PLAN				
PROJECT No.	19051	SUB-PROJECT No.	01	DRAWING No.	DA02
ISSUE	02	SHEET SIZE	A1		

ALL DESIGN MEASURES SHOWN ON THIS DRAWING HAVE BEEN PREPARED FOR DEVELOPMENT APPLICATION PURPOSES TO DEMONSTRATE FEASIBILITY. ALL DESIGN MEASURES WILL BE SUBJECT TO DETAIL DESIGN AT THE CONSTRUCTION CERTIFICATE STAGE AND MAY BE SUBJECT TO VARIATION PROVIDED THAT THE DESIGN INTENT IS MAINTAINED.

DRAWING SHEET 02 OF 04

DESIGN SUMMARY

- PROPOSED ALTERATIONS AND ADDITIONS TO EXISTING COMMERCIAL BUILDING INCLUDING A SIX (6) UNIT DWELLING, A SECOND LEVEL ABOVE THE EXISTING MOTEL, THREE (3) RETAIL SPACES, A POST OFFICE AND A CAFE.
- A SUMMARY OF THE SITE CATCHMENT AREAS IS AS FOLLOWS:  
TOTAL SITE AREA = 2019 m<sup>2</sup>  
PRE-DEVELOPMENT -  
- IMPERVIOUS AREA = 1119 m<sup>2</sup>  
- PERVIOUS AREA = 901 m<sup>2</sup>  
POST-DEVELOPMENT -  
- IMPERVIOUS AREA = 1385 m<sup>2</sup>  
- PERVIOUS AREA = 634 m<sup>2</sup>
- TOTAL INCREASE IN IMPERVIOUS AREA = 266 m<sup>2</sup> (REFER TO 19051\_DA01).
- THE VOLUME REQUIRED FOR ON-SITE STORMWATER DETENTION (OSD) WAS CALCULATED IN ACCORDANCE WITH COUNCIL'S DCP, THE OSD HAS BEEN DESIGNED TO ENSURE THAT THE POST-DEVELOPMENT FLOWS DO NOT EXCEED THE PRE-DEVELOPMENT FLOWS FOR ALL STORM EVENTS.
- TO SATISFY COUNCIL'S CRITERIA ABOVE, THE SITE REQUIRES A MINIMUM OF 8.8 m<sup>3</sup> ON-SITE STORMWATER DETENTION STORAGE (REFER TO 19051\_DA01 FOR CALCULATIONS). THE OSD STORAGE IS TO BE PROVIDED WITHIN THE OSD TANKS AS SHOWN ON THIS PLAN.
- 100% OF THE ROOF AREA FROM THE BUILDINGS ARE TO DRAIN TO THE RAINWATER/OSD TANKS.
- WATER FROM THE RAINWATER TANKS IS TO BE USED FOR TOILET FLUSHING (FOR ALL PROPOSED TOILETS WITHIN THE DEVELOPMENT) AND IRRIGATION PURPOSES.

LEGEND

- CATCHMENT BOUNDARY
- CATCHMENT I.D.
- RL 100.000 PROPOSED REDUCED LEVEL
- GENERAL SURFACE FALL
- FINISHED FLOOR LEVEL
- PROPOSED STORMWATER PIT I.D. - REFER TO TABLE '3'
- PROPOSED ON-SITE STORMWATER DETENTION OR RAINWATER TANK
- PROPOSED STORMWATER PIT
- EXISTING STORMWATER PIT
- PROPOSED HEADWALL WITH RIP-RAP
- EXISTING STORMWATER PIPE
- PROPOSED STORMWATER PIPE
- PROPOSED PIPE TO RAINWATER TANK
- PROPOSED RETAINING WALL
- EXTENT OF BIORETENTION BASIN
- EXTENT OF PROPOSED GRAVEL PAVEMENT AREA
- PROPERTY BOUNDARY
- ADJOINING PROPERTY BOUNDARY

EROSION AND SEDIMENT CONTROL NOTES

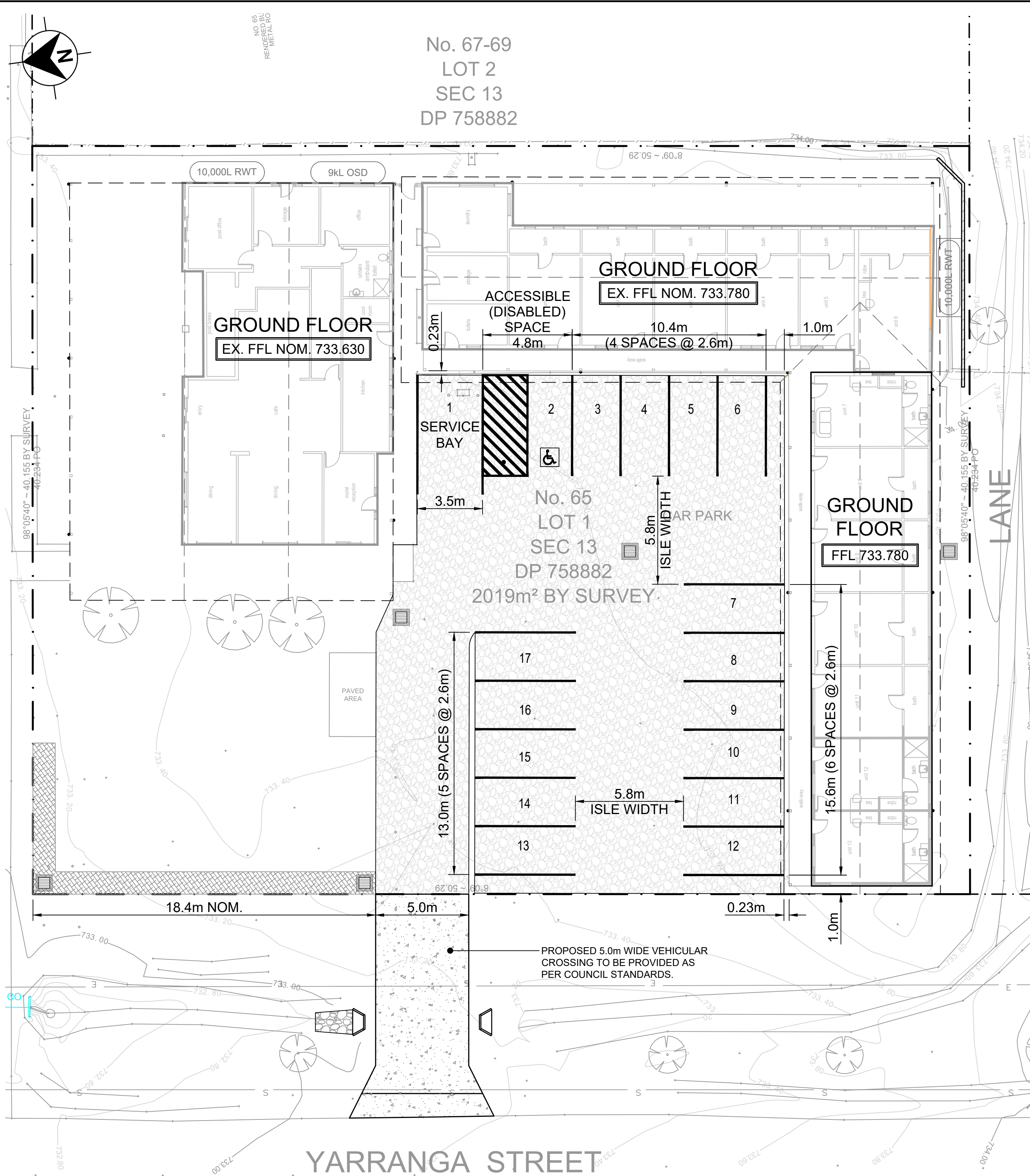
- EROSION AND SEDIMENT CONTROL MEASURES AS REQUIRED BY COUNCIL ARE TO BE PROVIDED ON-SITE.
- TOTAL AREA OF DISTURBANCE TO BE KEPT TO A MINIMUM. 'NO-GO' AREAS FOR WORKERS ARE TO BE SET OUT TO ENSURE DISTURBED AREAS ARE KEPT AT A MINIMUM.
- SITE WORKS WILL NOT START UNTIL THE EROSION AND SEDIMENT CONTROL WORKS OUTLINED IN CLAUSES 2 TO 4 BELOW, ARE INSTALLED AND FUNCTIONAL.
- THE INGRESS TO AND EGRESS FROM THE SITE WILL BE CONFINED TO ONE STABILISED POINT. SEDIMENT OR BARRIER FENCING WILL BE USED TO RESTRICT ALL VEHICULAR MOVEMENTS TO THAT POINT. STABILISATION WILL BE ACHIEVED BY EITHER:
  - CONSTRUCTING A SEALED (e.g. CONCRETE OR ASPHALT) DRIVEWAY TO THE STREET; OR
  - CONSTRUCTING A STABILISED SITE ACCESS, ACCORDING TO STANDARD DRAWING SD 6-14 OR OTHER SUITABLE TECHNIQUE APPROVED BY THE COUNCIL.
- SEDIMENT (SD 6-8) AND BARRIER FENCES TO BE INSTALLED.
- MESH AND GRAVEL "SAUSAGE" PROTECTION (SD 6-11) TO BE PROVIDED TO PROTECT GUTTER INLETS NEAR THE ALLOTMENT.
- TOPSOIL TO BE STRIPPED AND STOCKPILED (SD 4-11) FOR LATER USE IN LANDSCAPING THE SITE.
- ALL STOCKPILES TO BE PLACED IN THE LOCATION SHOWN ON THE ESCP AND AT LEAST 2 METRES CLEAR OF ALL AREAS OF POSSIBLE AREAS OF CONCENTRATED WATER FLOW, INCLUDING DRIVEWAYS.
- LANDS TO THE REAR AND SIDES OF THE ALLOTMENT AND ON THE FOOTPATH WILL NOT BE DISTURBED DURING WORKS EXCEPT WHERE ESSENTIALS, e.g. DRAINAGE WORKS ACROSS THE FOOTPATH. WHERE WORKS ARE NECESSARY, THEY WILL BE UNDERTAKEN IN SUCH A WAY TO LEAVE THE LANDS IN A CONDITION OF HIGH EROSION HAZARDS FOR AS SHORT A PERIOD AS PRACTICABLE. THEY WILL BE REHABILITATED AS SOON AS POSSIBLE. STOCKPILES WILL NOT BE PLACED ON THESE LANDS AND THEY WILL NOT BE USED AS VEHICLE PARKING AREAS.
- ALL PIPE TRENCHES TO BE BACKFILLED AS QUICKLY AS POSSIBLE. IF TRENCH IS TO REMAIN OPEN WHILE SITE IS UNATTENDED/AFTER THE END OF A SHIFT, CONTRACTOR IS TO ENSURE THAT THE TRENCH IS APPROPRIATELY COVERED TO NOT ALLOW THE INGRESS OF WATER.
- APPROVED BINS FOR BUILDING WASTE, CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS AND LITTER WILL BE PROVIDED AND ARRANGEMENTS MADE FOR REGULAR COLLECTION AND DISPOSAL.
- TOPSOIL WILL BE RE-SPREAD AND ALL DISTURBED AREAS TO BE REHABILITATED WITHIN 20 WORKING DAYS OF THE COMPLETION OF WORKS.
- COUNCIL'S PERMISSION WILL BE SOUGHT IF ANY MATERIALS NEED TO BE PLACED ON FOOTPATHS OR NATURE STRIPS. SUCH MATERIALS WILL BE PLACED ON PLASTIC AND COVERED.



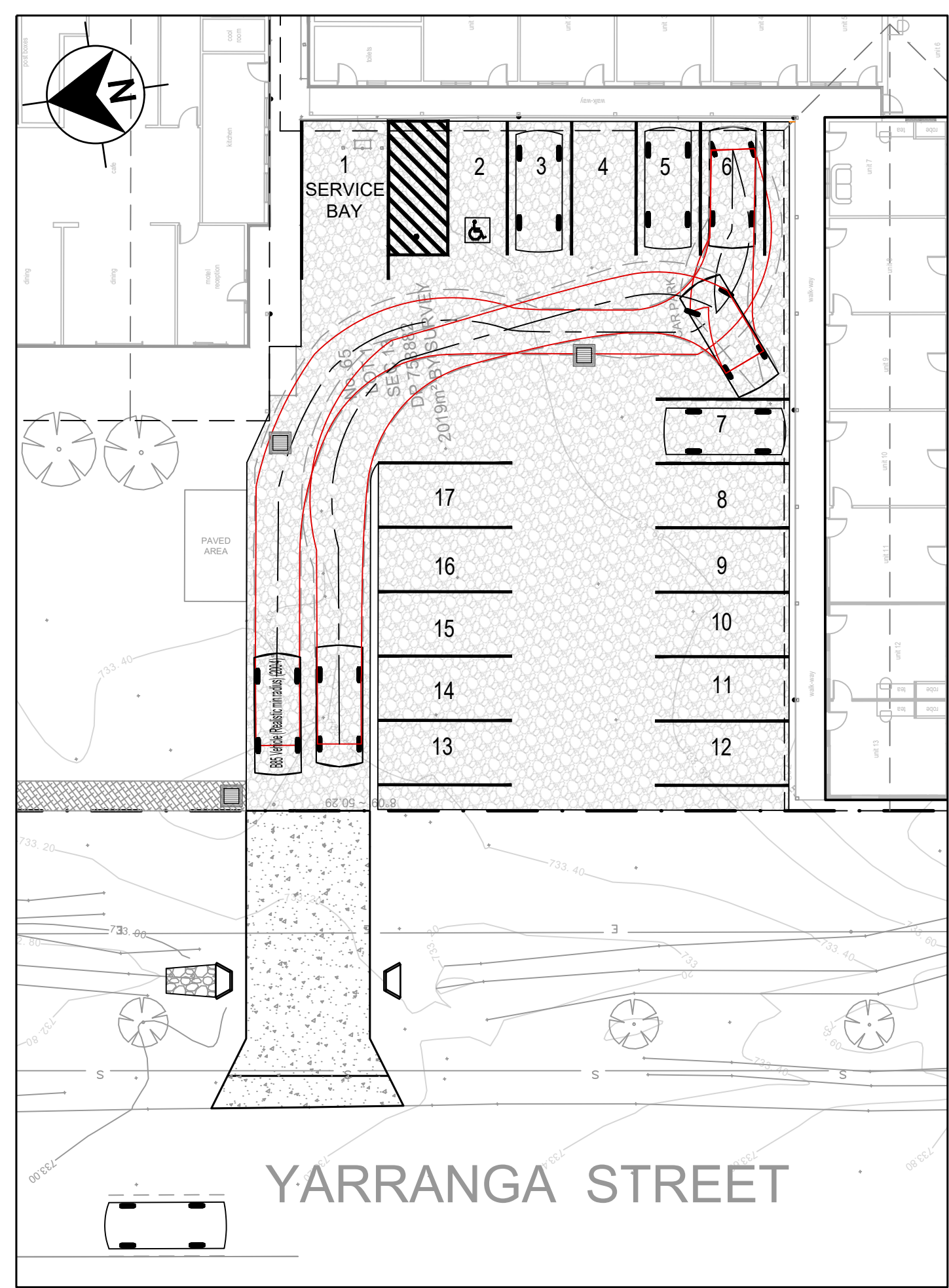




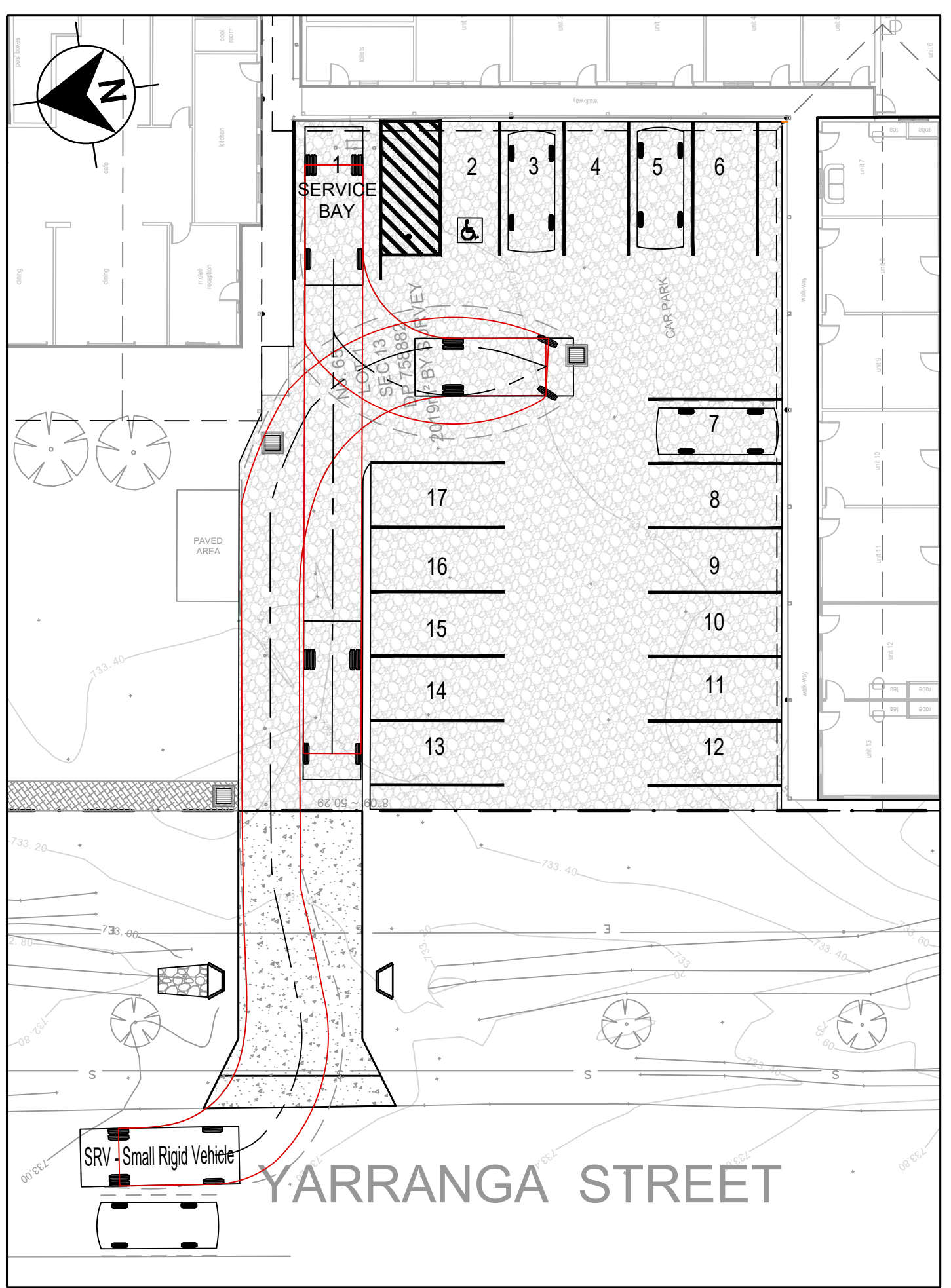
NOT FOR CONSTRUCTION



- LEGEND**
- EXTENT OF VEHICLE CHASSIS
  - EXTENT OF WHEEL PATH
  - CENTERLINE VEHICLE ALIGNMENT PATH
  - EXTENT OF PAVEMENT
  - PROPERTY BOUNDARY
  - ADJOINING PROPERTY BOUNDARY



B85 ENTRY/EXIT TURNING PATH  
SCALE 1:200



SRV ENTRY/EXIT TURNING PATH  
SCALE 1:200

**CARPARK DESIGN NOTES**

- CAR PARKING BAYS DESIGNED FOR USER CLASS '3' AS PER AUSTRALIAN STANDARD AS 2890.1:2004.
- AS2890.2:2002 SMALL RIGID VEHICLE (SRV) TEMPLATE USED TO REPRESENT DELIVERY VEHICLE TURNING PATH TO THE SITE. ALLOWANCE FOR ONE (1) SPACE FOR LOADING/UNLOADING IS PROVIDED.

ALL DESIGN MEASURES SHOWN ON THIS DRAWING HAVE BEEN PREPARED FOR DEVELOPMENT APPLICATION PURPOSES TO DEMONSTRATE FEASIBILITY. ALL DESIGN MEASURES WILL BE SUBJECT TO DETAIL DESIGN AT THE CONSTRUCTION CERTIFICATE STAGE AND MAY BE SUBJECT TO VARIATION PROVIDED THAT THE DESIGN INTENT IS MAINTAINED.

CAD File Name: N:\(B) Projects\19XXX\19051 65 Hoddle Street, Robertson\ (E) Drawings\19051\_DA04\_Vehicle Movement and Parking Plan.dwg

DESIGN	DRAWN	CHECKED	VERIFIED	DATE	AMENDMENTS/REVISION DETAILS
01	E.B.	E.B.	C.N.	11/12/19	ISSUED FOR CO-ORDINATION
02	E.B.	C.B.	C.N.	12/12/19	ISSUED FOR DEVELOPMENT APPLICATION APPROVAL

SCALE
0 1.5 3 4.5 6 7.5m
SCALE: 1:150 (A1 SHEET)
ISSUED FOR
D.A. APPROVAL

COPYRIGHT
This drawing is copyright. Apart from any use permitted under the Copyright Act 1968, no part may be reproduced by any process, nor may any other exclusive right be exercised, without the permission of Novati Consulting Engineers Pty Ltd 2019.
L.G.A.
WINGECARRIBEE SHIRE



**NCE**  
NOVATI CONSULTING ENGINEERS

Novati Consulting Engineers Pty Ltd  
CIVIL & ENVIRONMENTAL CONSULTING ENGINEERS  
ABN 56 163 789 393  
info@nceengineers.com.au | (02) 4861 2042  
Shop 25A, 310-312 Bong Bong Street, Bowral NSW 2576

CLIENT  
**STEVE CHOWDHURY**

PLANNER  
**LEP**  
33 Holly Street  
Bowral NSW 2576  
0408 473 857  
lep.planning@gmail.com

PROJECT	65 HODDLE STREET, ROBERTSON			
DRAWING TITLE	VEHICLE MOVEMENT AND PARKING PLAN			
PROJECT No.	SUB-PROJECT No.	DRAWING No.	ISSUE	SHEET SIZE
19051	01	DA04	02	A1

DRAWING SHEET 04 OF 04