

STORMWATER MANAGEMENT IN  
LOT 10 AND DP 1036457  
67 MARS ROAD  
LANE COVE WEST NSW 2066



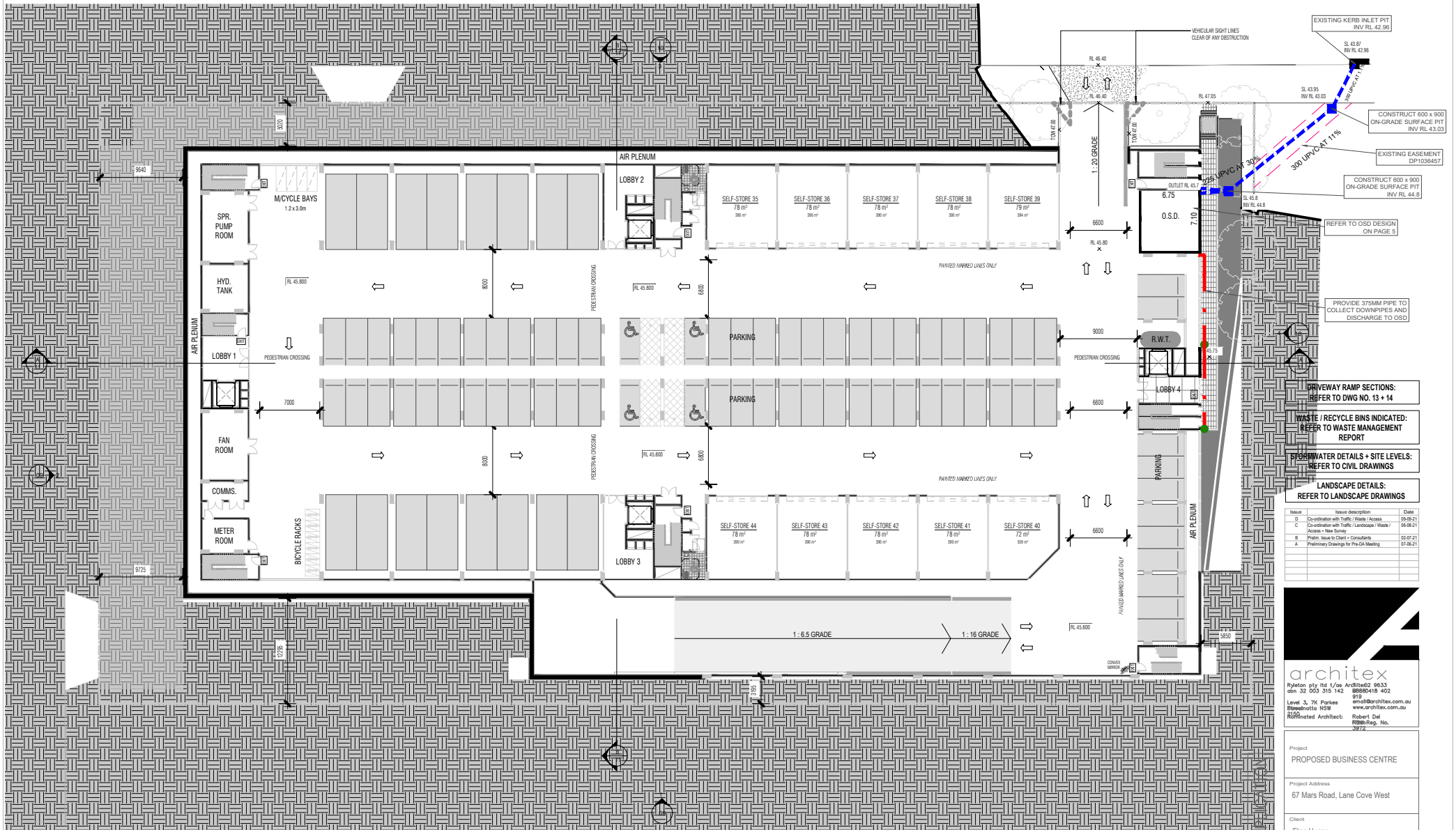
LOCALITY SKETCH

SHEET NO.	TITLE	REFERENCE	REV.
SHEET 1	BASEMENT LEVEL 1	210009 E1	A
SHEET 2	LEVEL 1	210009 E1	A
SHEET 3	LEVEL 2	210009 E1	A
SHEET 4	SITE SECTIONS	210009 E1	A
SHEET 5	BASIN DETAIL	210009 E1	A
SHEET 6	OSD CALCULATIONS	210009 E1	A
SHEET 7	CATCHMENT PLAN	210009 E1	A
SHEET 8	DRAINAGE LONG SECTION	210009 E1	A
SHEET 9	DRAINAGE CALCULATIONS	210009 E1	A
SHEET 10	DRAINAGE CALCULATIONS	210009 E1	A

MARCH 2022

*ROBERT MOORE AND ASSOCIATES P/L*  
ENGINEERS, SURVEYING AND DEVELOPMENT CONSULTANTS

- GENERAL NOTES:**
- ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL'S STANDARD SPECIFICATION AND TO THE REQUIREMENTS OF COUNCIL'S ENGINEER.
  - CONDUITS TO BE LAID AS DIRECTED BY THE RELEVANT AUTHORITY CLEAR OF VEHICULAR CROSSINGS.
  - PRE-CAST KERB INLETS TO BE USED IN GULLY PITS. LENGTH OF LINTEL SHOWN INDICATES CLEAR LENGTH OF OPENING.
  - PROVIDE 150mm TOPSOIL WITH TURF STRIP AND GRASS SEEDING ON ALL FOOTPATHS, FILLED AREAS AND DISTURBED AREAS.
  - PROVIDE AGRICULTURAL DRAINS WITH FLUSHING POINTS AND STANDARD COVERS AT MAX. 60m INTERVALS AND ELSEWHERE AS DIRECTED BY COUNCIL'S ENGINEER. MARK FACE OF KERB ADJACENT TO COVERS "SS".
  - COUNCIL'S TREE PRESERVATION ORDER IS TO BE STRICTLY ADHERED TO.
  - EARTHWORKS TO BE CARRIED OUT TO THE SATISFACTION OF COUNCIL'S ENGINEER. UNSOUND MATERIALS ARE TO BE REMOVED FROM ROADS AND LOTS PRIOR TO FILLING.
  - PUBLIC UTILITY SERVICES ARE TO BE ADJUSTED AS NECESSARY.
  - ALL PIPELINES ARE TO BE LAID IN TRENCH CONDITIONS (TYPE B BEDDING).
  - ALL LONGITUDINAL PIPELINES IN ROADS TO BE LOCATED UNDER KERB AND GUTTER AND TO BE BACKFILLED GDB20 WITH GEOTEXTILE.
  - ALL PITS CAST IN-SITU CONCRETE 25 MPa.
  - ALL PITS TO BE BENCHED AND STREAMLINED. PROVIDE STEP IRONS FOR ALL PITS OVER 1.2m DEEP.
  - CATCH DRAINS TO BE CONSTRUCTED AS REQUIRED BY COUNCIL'S ENGINEER.
  - MAKE SMOOTH JUNCTIONS WITH EXISTING WORKS.
  - SEPARATE VEHICULAR CROSSING TO BE PROVIDED WHERE SHOWN THUS.
  - GUIDE POSTS WITH ATTACHED REFLECTORS TO BE PLACED WHERE DIRECTED.
  - WORKING HOURS:  
A SUBDIVIDER OR SUBCONTRACTOR CARRYING OUT CONSTRUCTIONAL WORKS ON A SUBDIVISION SHALL RESTRICT SUCH ACTIVITY TO WITHIN THE HOURS OF 7.00 AM AND 5.00 PM ON MONDAYS TO SATURDAYS INCLUSIVE. NO WORK SHALL BE UNDERTAKEN OUTSIDE THE HOURS SPECIFIED ABOVE, OR ON SUNDAYS, WITHOUT THE WRITTEN APPROVAL OF COUNCIL.
  - VEHICULAR ACCESS AND ALL SERVICES TO BE MAINTAINED AT ALL TIMES TO THE EXISTING DWELLING.
  - SUITABLE EASEMENTS TO DRAIN WATER TO BE PROVIDED OVER DRAINAGE LINES THROUGH ALLOTMENTS.
  - PROVISIONS TO BE MADE FOR SUITABLE PROTECTION OF ROAD PAVEMENT, KERB AND GUTTER AND FOOTPATH FORMATION.
  - WHERE KERB AND GUTTER IS LAID BY THE USE OF A KERB AND GUTTER MACHINE THE CONTRACTOR WILL BE RESPONSIBLE FOR THE TAKING AND TESTING OF CORE SAMPLES, FORWARDING TEST RESULTS TO COUNCIL AND REMOVAL OF KERBS AND GUTTER, ALL AT HIS OWN EXPENSE, WHERE THE MINIMUM STRENGTH IS NOT ACHIEVED IN ACCORDANCE WITH COUNCIL'S STANDARD SPECIFICATIONS.
  - WHERE LOT FILLING IN EXCESS OF 300mm IS PROPOSED, LEVELS MUST BE TAKEN ON THE STRIPPED SURFACE PRIOR TO THE COMMENCEMENT OF FILLING AND ON THE FINISHED SURFACE. SUCH LEVELS BEING SHOWN ON THE WORK-AS-EXECUTED PLAN.
  - SUBGRADE IN ROCK IS TO BE RIPPED, SCARIFIED, SPREAD AND COMPACTED TO A MINIMUM DEPTH OF 300mm BELOW THE FINISHED SUBGRADE LEVEL.
  - ALL RUBBISH AND FENCES TO BE REMOVED. ALL FENCES TO BE DEMOLISHED AND STOCKPILED ON SITE.
  - SERVICES SHOWN ON THIS PLAN HAVE BEEN LOCATED FROM INFORMATION SUPPLIED BY THE RELEVANT AUTHORITIES AND FIELD INVESTIGATIONS AND ARE TO BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
  - ADEQUATE PROVISION TO BE MADE AGAINST SCOURING AND SEDIMENTATION TO ALL DRAINAGE WORKS AS DIRECTED.
  - NO TOPSOIL TO BE REMOVED FROM LOCALITY.
  - PUBLIC UTILITY SUBMAINS TO BE INSTALLED PRIOR TO THE PREPARATION OF SUB-GRADE WHERE REQUIRED BY COUNCIL.
  - PROVIDE SUITABLE ACCESS TO ALL LOTS.
  - CONDUIT TRENCHES, SUBSOIL DRAINS AND STORMWATER DRAINAGE LINES TO BE BACKFILLED WITH APPROVED WASHED RIVER SAND, FLOODED AND VIBRATED. CONDUIT TRENCHES TO BE GRADED AT A MINIMUM OF ONE PERCENT (1%) GRADE TO EITHER SUBSOIL OR STORM WATER DRAINAGE LINES.
  - WHERE THE SLOPE OF THE NATURAL SURFACE EXCEEDS ONE IN FOUR (1:4) AT FILL EMBANKMENTS, BENCHES ARE TO BE CUT TO PREVENT SLIPPING OF THE FILL MATERIAL AS REQUIRED BY COUNCIL'S ENGINEER.
  - DETAILS OF THE SOIL TEST AND THE PAVEMENT DESIGN ARE TO BE SUBMITTED TO COUNCIL PRIOR TO INSPECTION OF SUBGRADE.
  - CENTRELINE OF INLET PIPES TO MEET CENTRELINE OF OUTLET PIPE AT DOWNSTREAM FACE OF PIT.
  - SILT ARRESTORS TO BE ESTABLISHED PRIOR TO COMMENCEMENT OF ENGINEERING CONSTRUCTION. A SUITABLE MAINTENANCE BOND IS TO BE LODGED AND THEN RELEASED UPON STABILISATION OF THE CATCHMENT FOLLOWING BUILDING/SERVICING WORKS.
  - SUITABLE WARNING SIGNS AND BARRICADES TO BE PROVIDED TO AUSTRALIAN STANDARDS AND AS DIRECTED.
  - SOIL EROSION CONTROL BY SILT FENCING, IS TO BE PLACED ON THE DOWNHILL SIDE OF ALL CONSTRUCTIONS.
  - MARK FACE AND PAINT KERB WITH W.E.T. ETC. ACCORDING TO INSTALLED SERVICE RELOCATION AND COUNCIL'S STANDARD.
  - ALL BUILDINGS AND STRUCTURES SHOULD BE DEMOLISHED AND REMOVED FROM THE SITE.
  - PROTECTION OF EXISTING TREES:  
THE TREE/S THAT IS/ARE TO BE RETAINED IS/ARE TO BE PROTECTED DURING ALL WORKS WITH FENCING WHICH IS TO BE ERECTED AT LEAST THREE (3) METRES FROM THE BASE OF EACH TREE AND IS TO BE IN PLACE PRIOR TO WORKS COMMENCING TO RESTRICT THE FOLLOWING OCCURRING:
    - STOCKPILING OF MATERIALS WITHIN THE ROOT PROTECTION ZONE
    - PLACEMENT OF FILL WITHIN THE ROOT PROTECTION ZONE
    - PARKING OF VEHICLES WITHIN THE ROOT PROTECTION ZONE
    - COMPACTION OF SOIL WITHIN THE ROOT PROTECTION ZONE
- ALL AREAS WITHIN THE ROOT PROTECTION ZONE ARE TO BE MULCHED WITH COMPOSTED LEAF MULCH TO A DEPTH OF NOT LESS THAN 100mm.
- THE INSTALLATION OF SERVICES WITHIN THE ROOT PROTECTION ZONE IS NOT TO BE UNDERTAKEN WITHOUT CONSULTATION WITH COUNCIL'S TREE MANAGEMENT OFFICER.



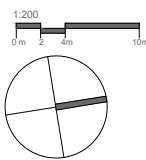
- EXISTING KERB INLET PIT  
INV RL 42.96
- CONSTRUCT 600 x 900  
ON-GRADE SURFACE PIT  
INV RL 43.03
- EXISTING EASEMENT  
DP1038457
- CONSTRUCT 600 x 900  
ON-GRADE SURFACE PIT  
INV RL 44.9
- REFER TO OSD DESIGN  
ON PAGE 5
- PROVIDE 375MM PIPE TO  
COLLECT DOWNPIPES AND  
DISCHARGE TO OSD
- DRIVEWAY RAMP SECTIONS:  
REFER TO DWG NO. 13 + 14
- WASTE / RECYCLE BINS INDICATED:  
REFER TO WASTE MANAGEMENT  
REPORT
- STORMWATER DETAILS + SITE LEVELS:  
REFER TO CIVIL DRAWINGS
- LANDSCAPE DETAILS:  
REFER TO LANDSCAPE DRAWINGS

Issue	Issue description	Date
D	Co-ordination with Traffic / Waste / Access	09-09-21
C	Co-ordination with Traffic / Landscaping / Waste / Access + New Survey	06-08-21
B	Final Issue to Client - Consultants	02-07-21
A	Preliminary Drawings for Pre-CA Meeting	07-06-21

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 RU/Registered Architect: Robert Del  
 15/0 R/Reg. No. 3972

Project	PROPOSED BUSINESS CENTRE	
Project Address	67 Mars Road, Lane Cove West	
Client	Eton Huang	
Title	Basement Level 01	
Drawn VGF	Scale 1 : 200	Checked PDP
Job No 2538	Drawing No. 05	Issue D

PARKING SCHEDULE - BASEMENT 01		
Description	Count	
Visitor	66	
Visitor - Disabled	4	
Truck Parking Bay	16	
Motorcycle Bay	4	
Visitor Bicycle Rack (Fits 2 Bikes)	6	



Do not scale, check and verify dimensions before commencing new work, ground levels may vary due to site conditions.

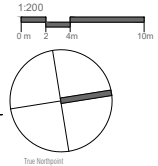
LEGEND	
	COLLECTING STORMWATER PIPE
	200 x 150mm BOX GRATED DRAIN CONNECTING TO DOWN PIPE
	DISHED ROOF GUTTER AND FLOW DIRECTION
	DOWN PIPE
	COLLECTING STORMWATER PIPE CLIPPED UNDER EAVE
	LOWER ROOF OVER LOBBY AREA

3 Basement 01  
1:200

DEVELOPMENT APPLICATION



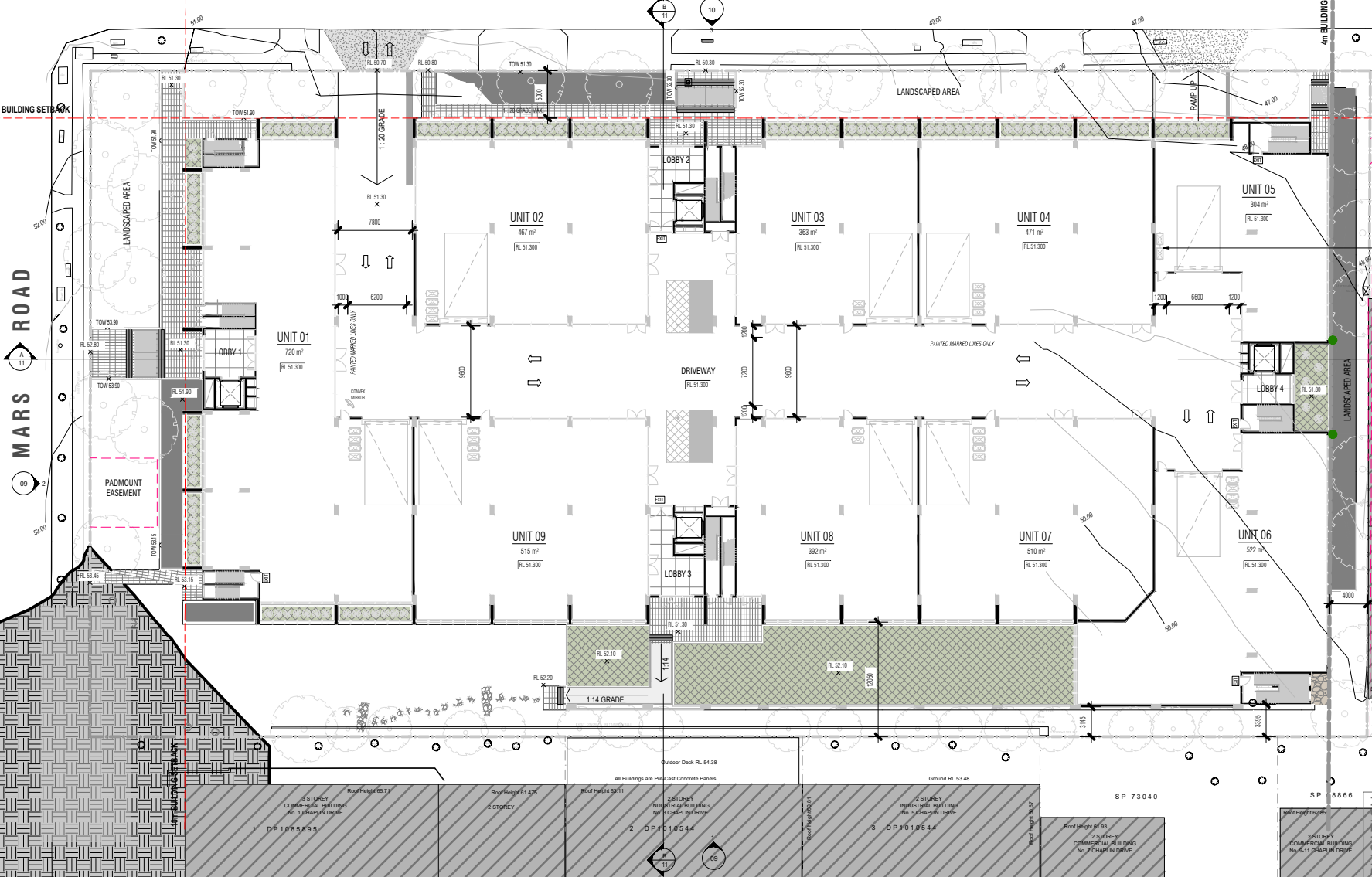
# SIRIUS ROAD



Do not scale, check and verify dimensions before commencing new work, ground levels may vary due to elevations.

MARS ROAD

5m BUILDING SETBACK



LEGEND	
	COLLECTING STORMWATER PIPE
	200 x 150mm BOX GRATED DRAIN CONNECTING TO DOWN PIPE
	DISHED ROOF GUTTER AND FLOW DIRECTION
	DOWN PIPE
	COLLECTING STORMWATER PIPE CLIPPED UNDER EAVE
	LOWER ROOF OVER LOBBY AREA

4 Level 01  
1:200

DRIVEWAY RAMP SECTIONS:  
REFER TO DWG NO. 13 + 14

WASTE / RECYCLE BINS INDICATED:  
REFER TO WASTE MANAGEMENT REPORT

STORMWATER DETAILS + SITE LEVELS:  
REFER TO CIVIL DRAWINGS

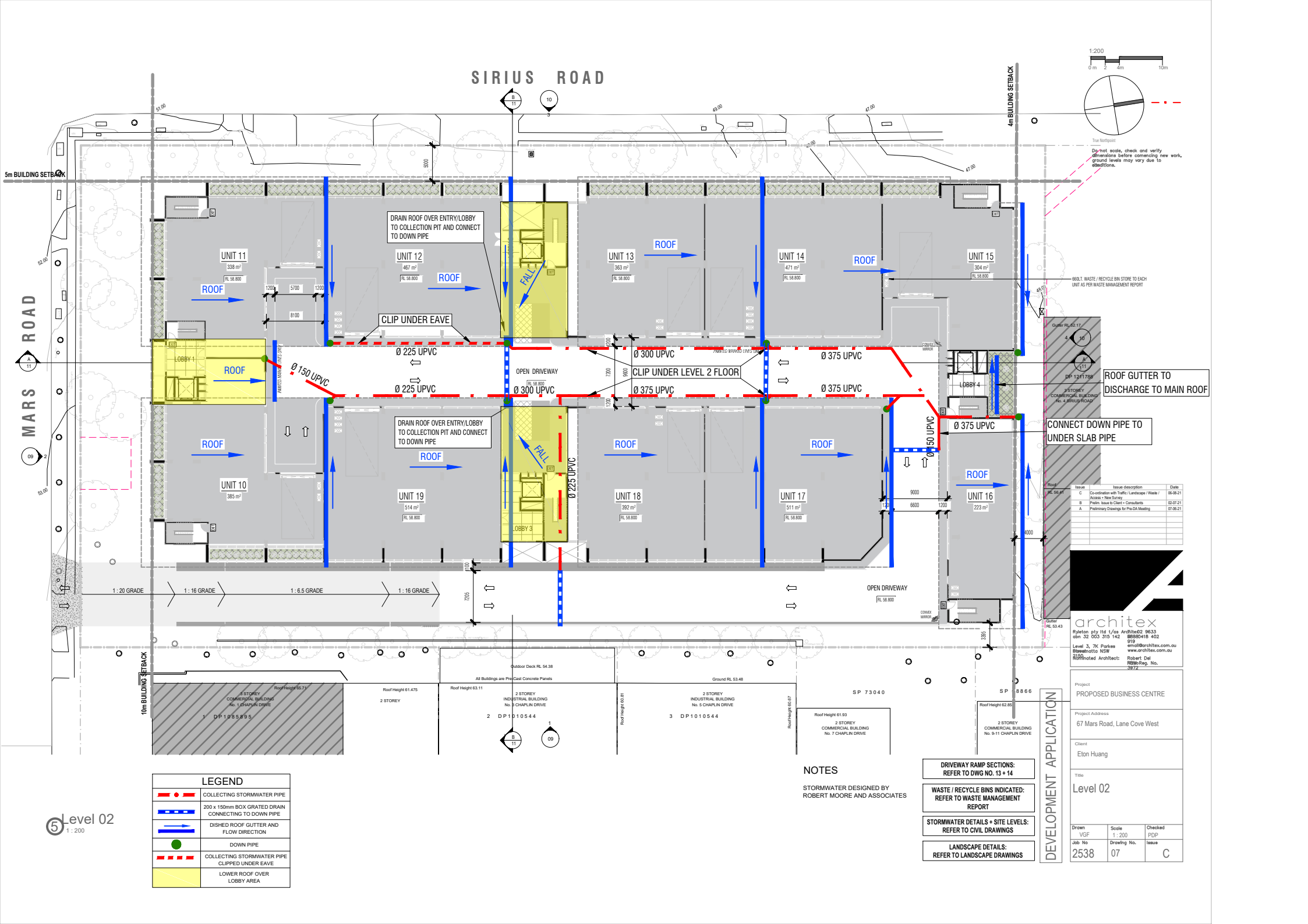
LANDSCAPE DETAILS:  
REFER TO LANDSCAPE DRAWINGS

DEVELOPMENT APPLICATION

Issue	Issue description	Date
D	Co-ordination with Traffic / Waste / Access	09-09-21
C	Co-ordination with Traffic / Landscape / Views / Access + New Survey	06-09-21
B	Practise Issue to Client + Consultants	05-09-21
A	Preliminary Drawings for Pre-DA Meeting	07-08-21

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Robynne Architects: Robert Del

Project	PROPOSED BUSINESS CENTRE		
Project Address	67 Mars Road, Lane Cove West		
Client	Eton Huang		
Title	Level 01		
Drawn	Scale	Checked	
VGf	1 : 200	PDP	
Job No	Drawing No.	Issue	
2538	06	D	



Level 02  
1:200

LEGEND	
	COLLECTING STORMWATER PIPE
	200 x 150mm BOX GRATED DRAIN CONNECTING TO DOWN PIPE
	DISHED ROOF GUTTER AND FLOW DIRECTION
	DOWN PIPE
	COLLECTING STORMWATER PIPE CLIPPED UNDER EAVE
	LOWER ROOF OVER LOBBY AREA

NOTES  
STORMWATER DESIGNED BY  
ROBERT MOORE AND ASSOCIATES

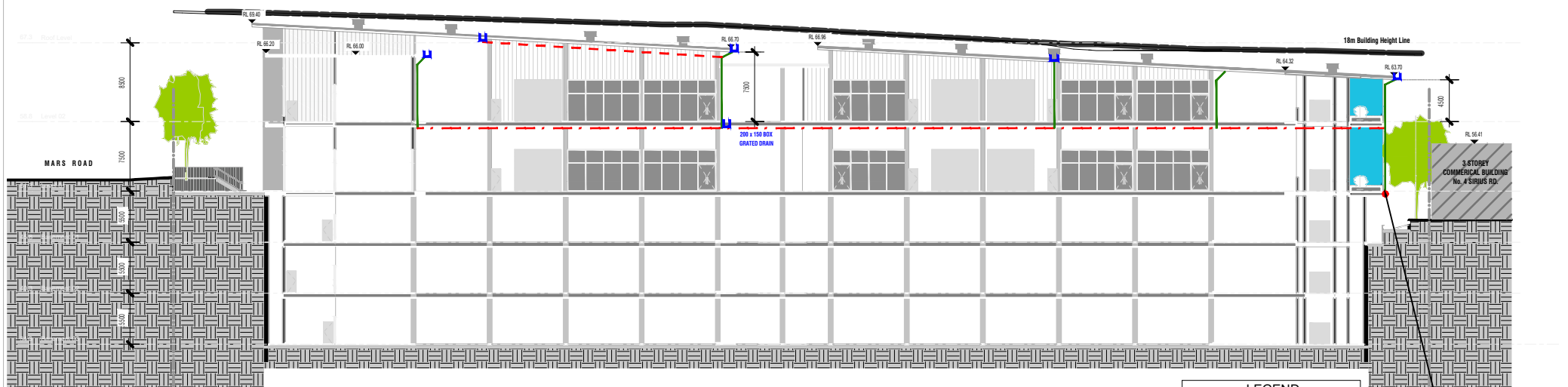
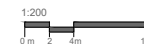
DRIVEWAY RAMP SECTIONS: REFER TO DWG NO. 13 + 14
WASTE / RECYCLE BINS INDICATED: REFER TO WASTE MANAGEMENT REPORT
STORMWATER DETAILS + SITE LEVELS: REFER TO CIVIL DRAWINGS
LANDSCAPE DETAILS: REFER TO LANDSCAPE DRAWINGS

DEVELOPMENT APPLICATION

Project		PROPOSED BUSINESS CENTRE	
Project Address		67 Mars Road, Lane Cove West	
Client		Eton Huang	
Title		Level 02	
Drawn	Scale	Checked	
Job No	1:200	PDP	
2538	07	Issue	C

Issue	Issue description	Date
C	Co-ordination with Traffic / Landscape / Waste / Access - New Survey	06-08-21
B	Prelim. Issue to Client + Consultants	02-07-21
A	Primary Drawings for Pre-Site Meeting	07-06-21

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Section A - A  
1:200

LEGEND	
	COLLECTING STORMWATER PIPE
	200 x 150mm BOX GRATED DRAIN CONNECTING TO DOWN PIPE
	DISHED ROOF GUTTER AND FLOW DIRECTION
	DOWN PIPE
	COLLECTING STORMWATER PIPE CLIPPED UNDER EAVE
	LOWER ROOF OVER LOBBY AREA

375MM PIPE SLUNG UNDER LEVEL 01 SLAB  
CONNECTING DOWN PIPES SHOW IN GREEN

Issue	Issue description	Date
C	Co-ordination with Traffic / Landscape / Waste / Access - New Survey	06-08-21
B	Prulin Issue to Client - Consultants	02-07-21
A	Preliminary Drawings for Pre-CA Meeting	07-06-21

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R/Plotted Architect: Robert Del  
R/Plotted No. 3972

Project  
PROPOSED BUSINESS CENTRE

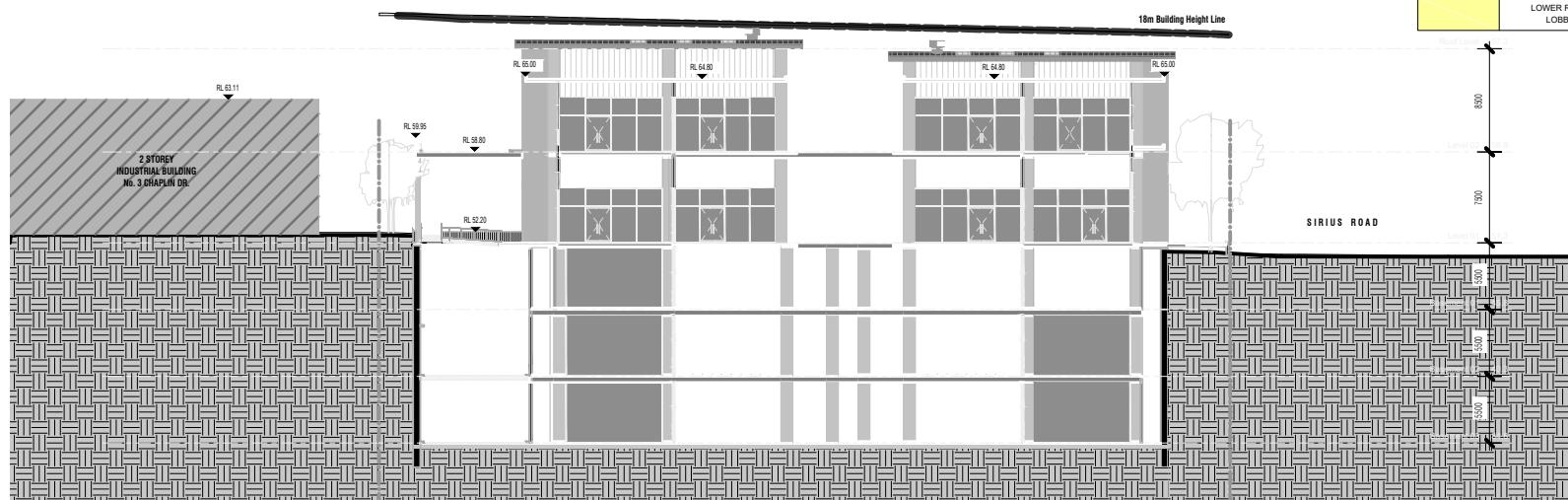
Project Address  
67 Mars Road, Lane Cove West

Client  
Elton Huang

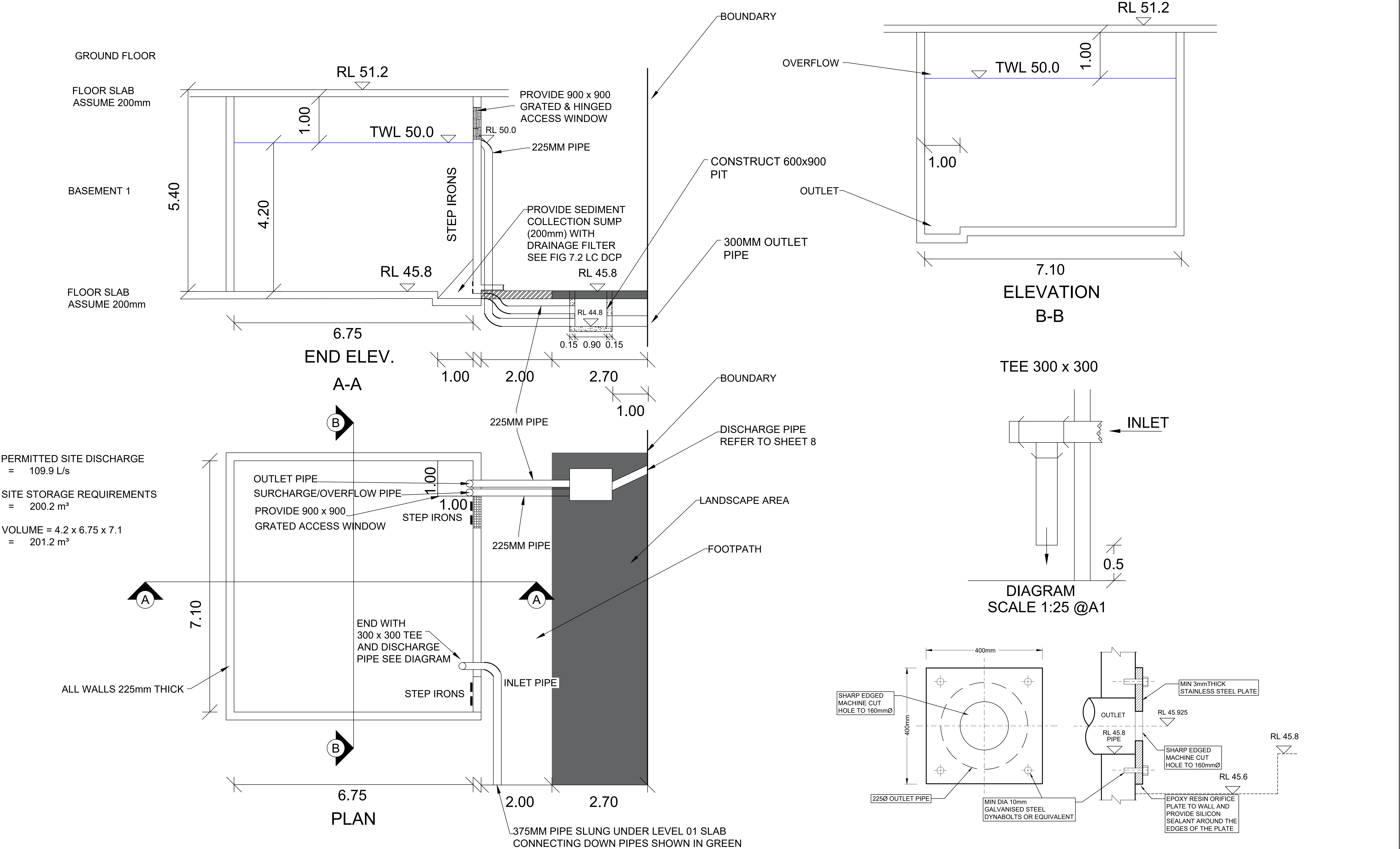
Title  
Site Sections

Drawn VGF	Scale 1:200	Checked PDP
Job No 2538	Drawing No. 11	Issue C

DEVELOPMENT APPLICATION



Section B - B  
1:200



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Ver.	Description	Date	By
A	FIRST ISSUE	7/02/22	J.B.

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Survey : A' O C	DATUM : AHD
Drawn : J.B.	Date : FEBRUARY 2022
	L G A : LANE COVE COUNCIL

Client : ETON HUANG	Project : ONSITE DETENTION BASIN DETAIL
	67 MARS RD
	LANE COVE WEST

Sheet No. 5	Ver.
of 10 Sheets	
Project No.	210009 E1A

## Appendix 14 – OSD Calculation Sheet

## ON-SITE DETENTION CALCULATION SHEET

DEVELOPMENT TYPE: CommercialADDRESS: 67 Mars Road, Lane Cove West, 2066Site Area (m<sup>2</sup>) 9431.0 (A)Total Impervious Area (roofs, driveways, hardstand etc) (m<sup>2</sup>) 7851.0 (B)Total Area draining to the Storage Facility (m<sup>2</sup>) (impervious and pervious areas) 7851.0 (C)New Impervious Area bypassing the Storage Facility 0 (D)

$$\frac{(B)+(D)}{(B)} = \underline{1.} \quad (E)$$

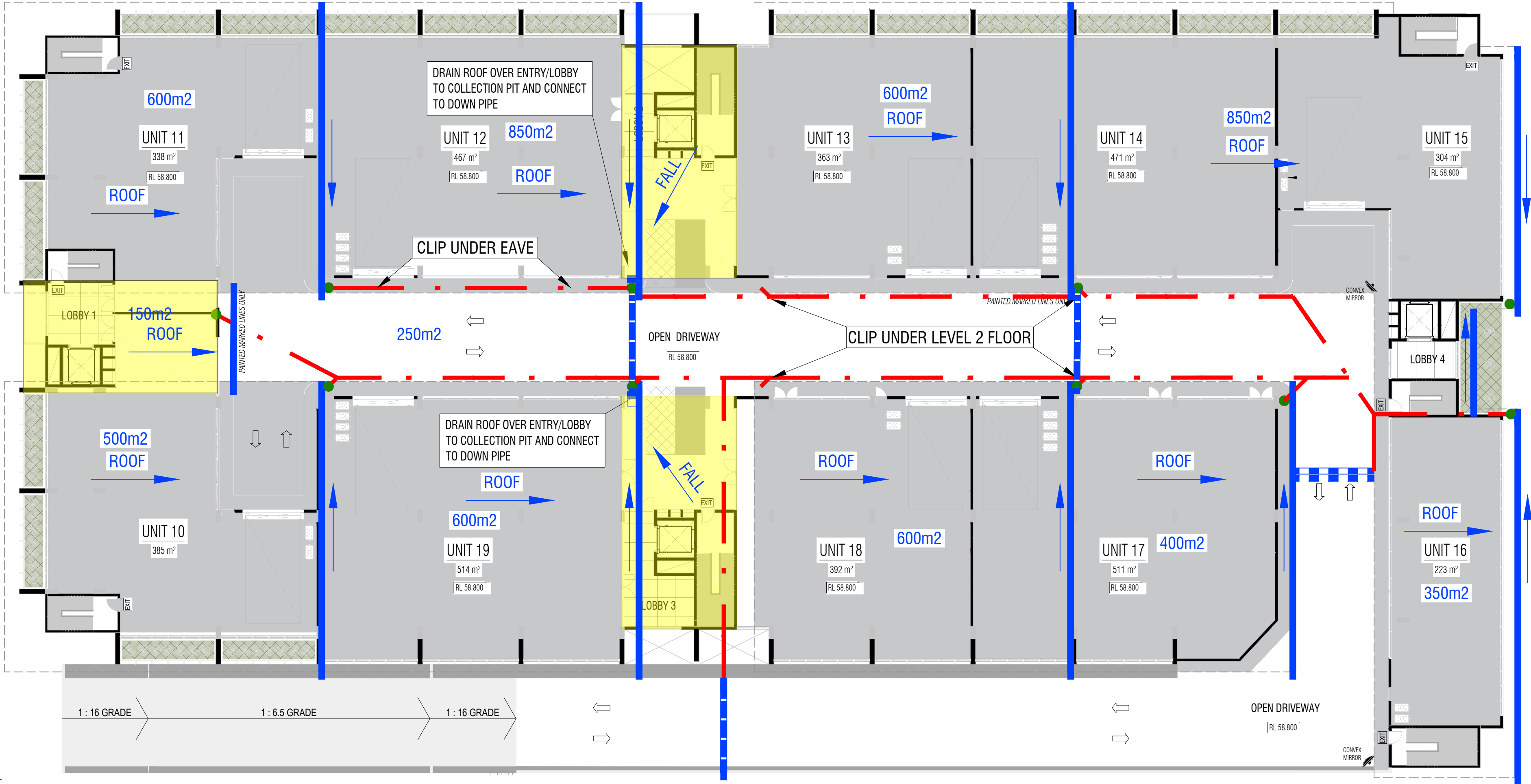
cannot be greater than 1.25.

**Permitted Site Discharge (PSD) rate per m<sup>2</sup>**If (D) = 0 then PSD = 0.014 l/sec/m<sup>2</sup>If (D) ≠ 0 then PSD = 0.014x(E)<sup>-1.37</sup> l/sec/m<sup>2</sup> 0.014 (F)**PERMITTED SITE DISCHARGE** (l/s) (C) x (F)**109.9 l/s****Storage Volume per m<sup>2</sup>**(G) = 0.0255 m<sup>3</sup>/m<sup>2</sup> for all Catchments0.0255 (G)**SITE STORAGE REQUIREMENT** (m<sup>3</sup>) ((C) + (D)) x (G)**200.2 m<sup>3</sup>****OUTLET CONTROL - using a Sharp Edged Orifice Plate**Height Difference between top water level and Centre of Orifice (m) 4.20 (H)**ORIFICE DIAMETER** (mm)**160 mm**

$$= 21.9 \sqrt{\frac{PSD}{\sqrt{H}}}$$

Should pipe and pit losses be used to control outflow, the calculations are to be attached.





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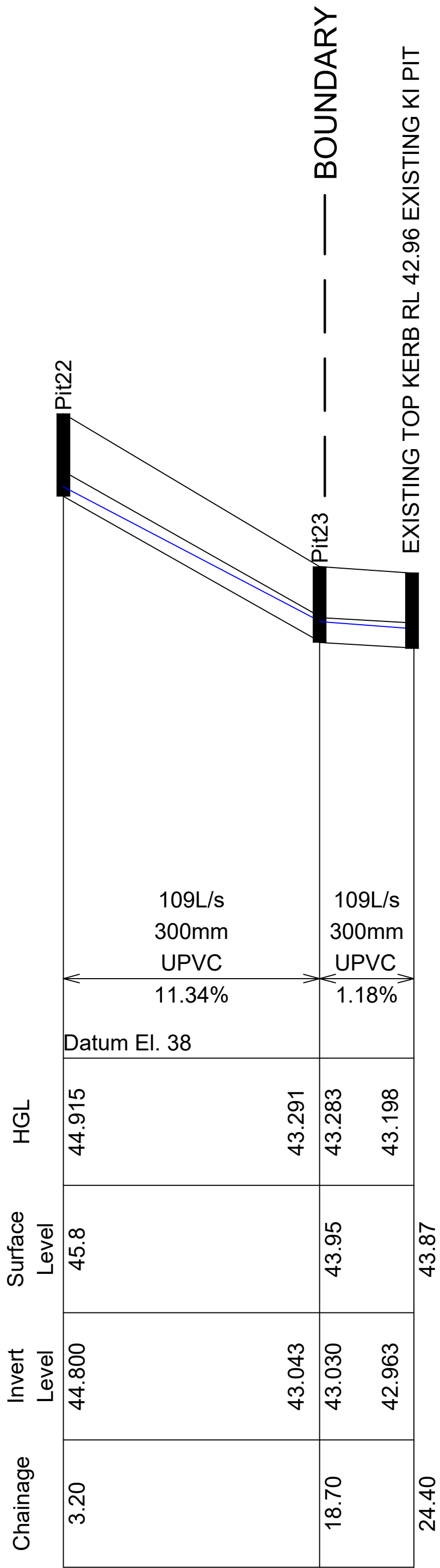
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Survey : A' O' C	DATUM : AHD
Drawn :	Date : MARCH 2022
	L G A : LANE COVE COUNCIL

Client : ETON HUANG
Project : CATCHMENT PLAN 67 MARS RD LANE COVE WEST

Sheet No. 7 of 10 Sheets	Ver.
Project No. 210009 E1	A





BASEMENT LEVEL 1

HORIZONTAL 1:500  
VERTICAL 1:250



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Survey : A' O C	DATUM : AHD
Drawn : J.B.	Date : FEBRUARY 2022
	L G A : LANE COVE COUNCIL

Client : ETON HUANG	Project : DRAINAGE LONG SECTION 67 MARS RD LANE COVE WEST
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Sheet No. 8 of 10 Sheets	Project No. 210009 E1	Ver. A
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EXTENDED RATIONAL METHOD (ERM) CALCULATION SUMMARY SHEET

DRAINS results prepared from Version 2021.031

		Entire Catchment Area	
Impervious C <sub>10</sub>	0.9	Impervious	1.182 ha (100%)
Pervious C <sub>10</sub>	0.65	Pervious	0 ha (0%)
		Total Area	1.182 ha

LOCATION AND LAND-USE					TIME AND RUNOFF					INLET DESIGN					PIPE SYSTEM DESIGN										PIT RESULTS										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	29a	29b	30	31	32	33	34
AEP	Pit, Node or Basin Name	Sub-Catchment Area (ha)	Land-Use Type (ERM)	Percentage (%)	Constant Flow Time (minutes)	Kinematic Length (m)	Wave or Formula Slope (%)	Friends Parameters Roughness n	Total Entry Time, t <sub>e</sub> (minutes)	Peak Sub-Catchment Flowrate (m <sup>3</sup> /s)	Origin of Approach Flows	Overflows Peak Flowrate(s) (m <sup>3</sup> /s)	Approaching Pit Width (m)	Depth x Velocity (m <sup>2</sup> /s)	Inlet Family	Inlet Size	Peak Approach Flow (m <sup>3</sup> /s)	Bypass Flow(s) (m <sup>3</sup> /s)	Peak Flow in Pipe (m <sup>3</sup> /s)	Reach Length (m)	Pipe Slope (%)	Pipe Diameter (mm)	U/S Pipe Invert Level (m)	D/S Pipe Invert Level (m)	U/S HGL in Pipe (m)	D/S HGL in Pipe (m)	Pipe Flow Velocity (m/s)	Pressure Change Coeff. Ku	QUDM Chart No. [2016]	QUDM Chart Ratios	Water Surface Elevation (m)	Ground Surface Level (m)	Pit Free-board (m)	Pit Name	Remarks
20%	Pit11	0.015	Impervious Pervious	100 0	6 6				6 6	0.004					Downpipe	Downpipe	0.004		0.005	8.663	5.48	100	99.567	99.092	99.638	99.134	1.54	5.86	A1-4 [A2-3]0.0	Vo2/(2gDc	99.66	100	0.34	Pit11	
1%	Pit11	0.015	Impervious Pervious	<-----		as above			6 6	0.008					< --- as above --- >		0.008		0.008	<----- as above ----->					99.657	99.325	1.06	3.54	A1-4 [A2-3]0.0	Vo2/(2gDc	99.74	100	0.26	Pit11	
20%	Pit12	0.05	Impervious Pervious	100 0	6 6				6 6	0.014					Interallotr	600 x 600	0.014	0	0.018	25.809	1	225	98.953	98.695	99.074	98.787	1.1	5.93	A1-4 [A2-3]0.0	Vo2/(2gDc	99.07	99.5	0.43	Pit12	
1%	Pit12	0.05	Impervious Pervious	<-----		as above			6 6	0.028					< --- as above --- >		0.028	0	0.036	<----- as above ----->					99.163	99.075	0.85	5.62	A1-4 [A2-3]0.0	Vo2/(2gDc	99.32	99.5	0.18	Pit12	
20%	Pit15	0.0815	Impervious Pervious	100 0	6 6				6 6	0.022	Pit12	0	0	0	Interallotr	600 x 600	0.022	0	0.04	8	1	300	98.56	98.48	98.713	98.608	1.38	5.93	A1-4 [A2-3]0.0	Vo2/(2gDc	98.78	99.37	0.59	Pit15	
1%	Pit15	0.0815	Impervious Pervious	<-----		as above			6 6	0.045	Pit12	0	0	0	< --- as above --- >		0.045	0	0.082	<----- as above ----->					98.801	98.76	1.33	4.76	A1-4 [A2-3]0.0	Vo2/(2gDc	99.07	99.37	0.3	Pit15	
20%	Pit42		Impervious Pervious								Pit15	0.029	4	0.01	Downpipe	Downpipe	0		0.055	35.041	1	375	98.367	98.017	98.534	98.183	1.14	0.87	H-O'L	2o=0.26, S/Dc	98.53	99.3	0.77	Pit42	
1%	Pit42		Impervious Pervious								Pit15	0.059	4	0.02	< --- as above --- >		0		0.109	<----- as above ----->					98.725	98.634	0.96	0.86	H-O'L	2o=0.26, S/Dc	98.76	99.3	0.54	Pit42	
20%	Pit17	0.0725	Impervious Pervious	100 0	6 6				6 6	0.02					Interallotr	600 x 600	0.02		0.072	18.101	1	375	97.987	97.806	98.181	97.996	1.25	1.36	A1-5 [A2-4]0.0	Qg/Qo=0.26	98.18	99.2	1.02	Pit17	
1%	Pit17	0.0725	Impervious Pervious	<-----		as above			6 6	0.04					< --- as above --- >		0.04		0.141	<----- as above ----->					98.552	98.481	1.2	1.31	A1-5 [A2-4]0.0	Qg/Qo=0.26	98.63	99.2	0.57	Pit17	
20%	Pit18	0.04	Impervious Pervious	100 0	6 6				6 6	0.011					Interallotr	600 x 600	0.011		0.081	18.408	1	375	97.776	97.592	97.982	97.761	1.65	0.81	A1-5 [A2-4]0.0	Qg/Qo=0.14	98	99.11	1.11	Pit18	
1%	Pit18	0.04	Impervious Pervious	<-----		as above			6 6	0.022					< --- as above --- >		0.022		0.16	<----- as above ----->					98.398	98.27	1.37	0.77	A1-5 [A2-4]0.0	Qg/Qo=0.14	98.48	99.11	0.63	Pit18	
20%	Pit19	0.035	Impervious Pervious	100 0	6 6				6 6	0.01					Interallotr	600 x 600	0.01		0.156	1.5	24.2	375	97.37	97.007	97.657	97.11	6.26	2.97	H-O'L	2o=0.49, S/Dc	97.75	99	1.25	Pit19	
1%	Pit19	0.035	Impervious Pervious	<-----		as above			6 6	0.019					< --- as above --- >		0.019		0.317	<----- as above ----->					97.738	97.157	7.54	2.3	H-O'L	2o=0.50, S/Dc	98.27	99	0.73	Pit19	
20%	Pit13	0.06	Impervious Pervious	100 0	6 6				6 6	0.017					Interallotr	600 x 600	0.017	0	0.018	25.8	1	225	99.453	99.195	99.561	99.334	0.9	5.93	A1-4 [A2-3]0.0	Vo2/(2gDc	99.59	100	0.41	Pit13	
1%	Pit13	0.06	Impervious Pervious	<-----		as above			6 6	0.033					< --- as above --- >		0.033	0	0.034	<----- as above ----->					99.603	99.458	1.13	5.78	A1-4 [A2-3]0.0	Vo2/(2gDc	99.71	100	0.29	Pit13	
20%	Pit14	0.1065	Impervious Pervious	100 0	6 6				6 6	0.029	Pit13				Interallotr	600 x 600	0.029		0.045	35.113	1	375	99.165	98.814	99.334	98.981	0.92	5.93	A1-4 [A2-3]0.0	Vo2/(2gDc	99.33	99.87	0.54	Pit14	
1%	Pit14	0.1065	Impervious Pervious	<-----		as above			6 6	0.059	Pit13				< --- as above --- >		0.059		0.092	<----- as above ----->					99.385	99.091	1.34	5.93	A1-4 [A2-3]0.0	Vo2/(2gDc	99.46	99.87	0.41	Pit14	

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Survey : A' O C	DATUM : AHD	Project : DRAINAGE CALCULATIONS 67 MARS RD LANE COVE WEST	Project No.	Ver.
	Date : MARCH 2022		210009 E1A	
Drawn : J.B.	L G A : LANE COVE COUNCIL			





20%	Pit16	0.0725	Impervious Pervious	100 0	6 6				6 6	0.02					Interallotrn 600 x 600	0.02		0.061	37.388	1.28	375	98.784	98.307	98.964	98.442	1.67	1.77	7 [A2-8 & A0, Qg/Qo=0.33]	98.98	99.69	0.71	Pit16		
1%	Pit16	0.0725	Impervious Pervious	<-----	as above	----->			6 6	0.04					<---as above---	0.04		0.13	<-----as above----->					99.046	98.512	2.06	1.72	7 [A2-8 & A0, Qg/Qo=0.33]	99.09	99.69	0.6	Pit16		
20%	Pit44	0.052	Impervious Pervious	100 0	6 6				6 6	0.014					Downpipe Downpipe	0.014		0.014	24	1	225	98.853	98.613	98.959	98.693	1.06	5.93	A1-4 [A2-3]0.0, Vo2/(2gDc	98.96	99.4	0.44	Pit44		
1%	Pit44	0.052	Impervious Pervious	<-----	as above	----->			6 6	0.029					<---as above---	0.029		0.029	<-----as above----->					98.991	98.76	1.06	5.93	A1-4 [A2-3]0.0, Vo2/(2gDc	99.03	99.4	0.37	Pit44		
20%	Pit48	0.022	Impervious Pervious	100 0	6 6				6 6	0.006					Downpipe Downpipe	0.006		0.006	3.2	4.31	150	98.593	98.455	98.665	98.497	1.54	5.93	A1-4 [A2-3]0.0, Vo2/(2gDc	98.68	99.05	0.37	Pit48		
1%	Pit48	0.022	Impervious Pervious	<-----	as above	----->			6 6	0.012					<---as above---	0.012		0.013	<-----as above----->					98.696	98.517	1.78	5.26	A1-4 [A2-3]0.0, Vo2/(2gDc	98.73	99.05	0.32	Pit48		
20%	Pit20	0.085	Impervious Pervious	100 0	6 6				6 6	0.023					Interallotrn 600 x 600	0.023		0.023	1.687	84.35	225	99.376	97.953	99.5	97.987	5.91	5.93	A1-4 [A2-3]0.0, Vo2/(2gDc	99.55	100	0.45	Pit20		
1%	Pit20	0.085	Impervious Pervious	<-----	as above	----->			6 6	0.047					<---as above---	0.047		0.047	<-----as above----->					99.554	98.001	7.24	4.71	A1-4 [A2-3]0.0, Vo2/(2gDc	99.66	100	0.34	Pit20		
20%	Pit22		Impervious Pervious											Interallotrn 600 x 600	0		0.067	15.5	11.34	300	44.8	43.043	44.889	43.217	3.84	0	A1-6 [A2-5]0.0, Qg/Qo=0.00	44.89	45.8	0.91	Pit22			
1%	Pit22		Impervious Pervious											<---as above---	0		0.109	<-----as above----->					44.914	43.291	4.4	0	A1-6 [A2-5]0.0, Qg/Qo=0.00	44.91	45.8	0.89	Pit22			
20%	Pit23		Impervious Pervious											Interallotrn 600 x 600	0			5.7	1.18	300	43.03	42.963				0.2	A1-5 [A2-4]0.0, Qg/Qo=0.00	43.22	43.95	0.73	Pit23			
1%	Pit23		Impervious Pervious											<---as above---	0			<-----as above----->								0.2	A1-5 [A2-4]0.0, Qg/Qo=0.00	43.29	43.95	0.66	Pit23			
20%	Basin2	0.49	Impervious Pervious	100 0	6 6				6 6	0.135						0.135			3.2	29.69	225	45.8	44.85									Basin2		
1%	Basin2	0.49	Impervious Pervious	<-----	as above	----->			6 6	0.272						0.272			<-----as above----->														Basin2	

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