

12 August 2022

S E Ell, S E Ell 9 Surrey Avenue COLLAROY NSW 2097

Our ref: S68A2022/0035

Dear Sir

Local Government Act Approval - \$68A2022/0035

Approval for drainage works under S 68 of the Local Government Act 1993 and pursuant to the Environmental Planning and Assessment Act 1979 S 109C (1), 81A (3) and 81 A (4)

I refer to the submitted Engineering drawing prepared by AMUNA Civil Engineering, project number ACE22023, page number S1 to S11, revision 4, dated 9/8/2022 approval under Section 68 of the Local Government Act 1993. You are advised that these drawings are approved subject to amendment in red detailed on the Council stamped approved plan. The approval is subject to the following conditions:

- The overland path adjacent to the eastern boundary must be maintained.
- All fencing along the frontage adjacent to eastern boundary must be open style with 100mm openings to allow overland flow.
- A practicing Consultant Civil Engineer is to supervise the construction of all works shown on the approved drawings, and as required by Council's specification and these conditions.
- Road Opening Permit to be obtained from Council prior to undertaking any works within the public road reserve.
- The developer/applicant shall be responsible for all public utilities and services in the area of his work, and as such shall notify all relevant Authorities, and bear all costs associated with any repairs and/or adjustments as those Authorities may deem necessary to accommodate the works.
- All disturbed areas adjacent to the works shall be restored to the satisfaction of Council.

You are advised that the following mandatory inspection will be required by Council:

• The filling in the road reserve prior to turfing.

Council's Senior Development Engineer is to be given 48 hours notice to arrange for suitable inspection. A practicing Consultant Civil Engineer is to supervise the construction of all works shown on the approved drawing, and as required by Council's Engineer.

If you require additional information about this matter, please contact the Development Engineering Department on 1300 434 434 or email council@northernbeaches.nsw.gov.au

Yours faithfully

Uma Shanmugalingam

Development Engineer

PROPOSED RESIDENTIAL DEVELOPMENT TYPE: ALTERATIONS AND ADDITIONS

No.9 SURREY AVENUE, COLLAROY ADDRESS:

LOT 20 (SEC 2)/DP10649 TITLE:

DRAWING SERIES: STORMWATER MANAGEMENT PLAN

GENERAL NOTES

- GN1 ALL DIMENSIONS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.
- GN2 THE CONTRACTOR SHALL LOCATE AND DETERMINE LEVELS OF ALL EXISTING SERVICES PRIOR TO COMMENCING EXCAVATION WORK. ALL SERVICES SHOWN ON THIS DRAWING ARE INDICATIVE AND FOR GUIDANCE ONLY
- GN3 THIS DRAWING SERIES IS TO BE READ IN CONCURRENCE WITH RELEVANT DRAWINGS SERIES FROM OTHER CONSULTANTS, COUNCIL OR RELEVANT SPECIFICATIONS. WHERE DISCREPANCIES ARE DETECTED THE DESIGN ENGINEER IS TO BE CONTACTED IMMEDIATELY FOR VALIDATION/ RECTIFICATION
- GN4 BUILDER AND CONTRACTORS IS TO ENSURE THAT ALL COUNCIL DEVELOPMENT CONSENT CONDITIONS, CONSTRUCTION CERTIFICATE AND BASIX REQUIREMENTS ARE MET.
- GN5 A STRUCTURAL ENGINEER IS TO DESIGN AND DETAIL SUBSOIL DRAINAGE. UNLESS APPROVED BY OUR OFFICE, SUBSOIL DRAINAGE IS NOT TO CONNECT INTO THE STORMWATER SYSTEM DISPLAYED WITHIN THIS DRAWING SERIES.
- GN6 PLANS ISSUED FOR DEVELOPMENT APPLICATION, SHALL NOT BE USED FOR OBTAINING A CONSTRUCTION CERTIFICATE.
- GN7 PLANS ISSUED FOR DEVELOPMENT APPLICATION PURPOSES, SHALL NOT BE USED FOR CONSTRUCTION PURPOSES.

NORTHERN BEACHES COUNCIL

DEVELOPMENT ENGINEERS **APPROVED**

SUBJECT TO AMENDMENTS/ ADDITIONS SHOWN IN RED

APPLICATION NO: S68A2022/0035

PAGE DIRECTORY

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STORMWATER NOTES

- SN1 ALL STORMWATER DRAINAGE PIPES AND ASSOCIATED DEVICES, ARE TO BE INSTALLED IN ACCORDANCE WITH THE RELEVANT STANDARDS, THE BUILDING CODE OF AUSTRALIA, MANUFACTURER'S RECOMMENDATIONS, SYDNEY CATCHMENT AUTHORITY RECOMMENDED PRACTICE, AND LOCAL COUNCIL, AS APPLICABLE.
- SN2 ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE AS/NZS3500 AND THE REQUIREMENTS OF THE LOCAL GOVERNMENT AREAS POLICIES, CODES AND SPECIFICATIONS. ENSURE INSPECTION OPENINGS ARE INSTALLED TO DRAINAGE LINES AT REQUIRED LOCATIONS.
- SN3 STORMWATER PIPES UP TO DN150 SHALL BE LAID AT A MINIMUM 1% GRADE UNLESS OTHERWISE NOTED.
- SN4 WHERE NECESSARY PUBLIC UTILITY SERVICES ARE TO BE ALTERED AND AMENDED AT THE CLIENT'S EXPENSE.
- SN5 ALL NEW WORK MAKE SMOOTH TRANSITIONS AND CONNECTIONS WITH EXISTING WORK.
- TO BE ABIDED BY. A PERMIT IS REQUIRED BEFORE TREE/S CAN BE REMOVED

SN6 LOCAL GOVERNMENT AREAS TREE PRESERVATION AND MANAGEMENT ORDERS

- SN7 ALL PITS TO BE STREAMLINED AND BENCHED IN ACCORDANCE WITH LOCAL GOVERNMENTS AREAS SPECIFICATIONS.
- SN8 STEP IRONS ARE TO BE PROVIDED FOR ALL PITS OVER 1.2m DEEP IN ACCORDANCE WITH AS/NZS3500 AND LOCAL GOVERNMENT AREAS CODES AND POLICES.
- SN9 DOWNPIPES, RAINWATER LINES AND STORMWATER LINES TO BE FULLY SEALED UNLESS OTHERWISE NOTED.
- SN10 ALL GRATE AND INVERT LEVELS PROVIDED ON THIS DRAWING ARE EXTRACTED FROM SURVEY AND REDUCED TO AHD. FOLLOWING EARTHWORKS, PIT INSTALLATION AND BENCHING THE LEVELS ARE TO BE VERIFIED OR ADJUSTED TO MEET THE DESIGN INTENT. IF EVER IN DOUBT CONTACT DESIGN ENGINEER.
- SN11 ALL SUSPENDED DRAINAGE PIPES ARE TO STRAPPED IN ACCORDANCE WITH AS/NZ 2032.
- SN12 LOW POINTS OF CHARGED DRAINAGE SYSTEMS REQUIRE DEVICES FOR FLUSHING AND MAINTENANCE.
- SN13 THE NUMBER AND LOCATION OF DOWNPIPES, ON THIS DRAWING SERIES, ARE SHOWN INDICATIVELY AND ARE TO BE CONFIRMED ON-SITE BY BUILDER PRIOR TO CONSTRUCTION. WHERE DISCREPANCIES/VARIATIONS ARE FOUND THE DESIGN ENGINEER IS TO BE CONTACTED IMMEDIATELY FOR VALIDATION/ RECTIFICATION.

DIAL BEFORE YOU DIG



THE MOST UP TO DATE DIAL BEFORE YOU DIG (DBYD) PLANS MUST BE KEPT ON-SITE AT ALL TIMES. ANY PERSON ABOUT TO DIG MUST READ DBYD PLANS PRIOR TO THE COMMENCEMENT OF WORK.

DRAWINGS SERIES TO BE PRINTED IN COLOUR

SECTION 68 ISSUE NOT FOR CONSTRUCTION

DRAWING LEGEND

INDICATES RAINWATER TANK

INDICATES PROPOSED ROOF

O DP

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RWO

PBO

OR <u></u> ⇒

→ DN150

→ DN150

→ DN150

→ DN150

PAGE S1

DP-RW 🔫

100

 \circ

INDICATES PROPOSED BALCONY

INDICATES ABSORPTION SYSTEM

INDICATES RAINWATER OUTLET

INDICATES PLANTER BOX OUTLET

INDICATES EAVE OPENING

INDICATES PIPE DROPPER

INDICATES PROPOSED DOWNPIPE/RISER

BOX GUTTER SUMP/RAINWATER HEAD SUMP

INDICATES GRATED BOX DRAIN WITH OUTLET

INDICATES DRAINAGE PIT GRATED OPENING

INDICATES STORMWATER PIPE INVERT LEVELS. UNLESS OTHERWISE NOTED PIT BASE IS TO EQUAL PIPE BASE

INDICATES DN100 SEWER GRADE CHARGED STORMWATER PIPE

INDICATES SIZE AND DIRECTION OF RAINWATER PIPE

INDICATES SIZE AND DIRECTION OF EXISTING

INDICATES SIZE AND DIRECTION OF SEWER GRADE

STORMWATER PIPE GREATER THAN DN100.

PIPE LINE CONTINUES TO REFERENCED PAGE

INDICATES SIZE AND DIRECTION OF STORMWATER PIPE

INDICATES DRAINAGE PIT SEALED COVER

INDICATES EAVE TYPE AND DIRECTION

INDICATES DOWNPIPE SPREADER

INDICATES DN100 RAINWATER PIPE.

GREATER THAN DN100.

GREATER THAN DN100.

CHARGED STORMWATER PIPE.

PENETRATION DIRECTION

PENETRATION DIRECTION

SERVICE TYPE

INDICATES DN100 STORMWATER PIPE.

INDICATES EXISTING STORMWATER PIPE.

INDICATES INSPECTION OPENING WITH SCREW DOWN LID

INDICATES EXISTING DOWNPIPE/RISER

INDICATES EXTENT OF EXISTING DWELLING

INDICATES EXTENT OF PROPOSED EXTENSION

INDICATES EXTENT OF PROPOSED DRIVEWAY

INDICATES ON-SITE DETENTION TANK

SITE SUMMARY OF COUNCIL SPECIFICATION

- 1. COUNCIL: NORTHERN BEACHES COUNCIL (WARRINGAH)
- 2. RELEVANT SPECIFICATIONS:
- 2.1. NORTHERN BEACHES COUNCIL WATER MANAGEMENT FOR DEVELOPMENT POLICY
- 2.2. NORTHERN BEACHES COUNCIL STORMWATER DRAINAGE FROM LOW LEVEL PROPERTIES **TECHNICAL SPECIFICATION**

2.3. AS/NZS 3500.3

- 3. AREA CALCULATION: POST-DEVELOPMENT PROPOSES A 91m² DECREASE IN IMPERVIOUS AREA, REFER TO PAGE S5
- 4. ENGINEERING COMMENTS:

WE NOTE THIS DRAWING SERIES HAS BEEN PREPARED IN GENERAL ACCORDANCE WITH THE **ABOVE SPECIFICATIONS:**

STORMWATER OVERVIEW

A DRAINAGE EASEMENT WAS NOT GRANTED FROM THE DOWNSTREAM NEIGHBOUR. ADDITIONALLY THE GEOTECH REPORT RECORDED A LOW INFILTRATION RATE. BASED ON THE ABOVE THE SITE PROPOSES A CHARGED STORMWATER SYSTEM TO A RAISED PIT AT THE FRONT EASTERN BOUNDARY. THE STORMWATER THEN A GRAVITY DISCHARGE TO THE STREET.

CHARGED SYSTEMS

A NEW CHARGED LINE IS PROPOSED FOR THE EXISTING AND NEW DEVELOPMENT. BOTH STORMWATER SYSTEMS HAVE BEEN CHECKED AND DESIGNED FOR THE 100YR STORMEVENT EVENT AND BOTH HAVE ADEQUATE CAPACITY TO DRAIN TO THE STREET. MAINTENANCE MEASURES SUCH AS INSPECTION OPENINGS AND CLEAN OUT PITS AREA HAVE BEEN PROPOSED. REFER TO HYDRAULIC GRADE ANALYSIS ON PAGE S6

KERB FLOWS

AN ACCEPTABLE COMBINED DISCHARGE FLOW OF 25L/S IS EXPECTED DURING THE 100YR STORMEVENT IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL WATER MANAGEMENT FOR DEVELOPMENT POLICY - CLAUSE 6.6.2. ADDITIONALLY THE STREET FLOWS ON SITE WERE ASSESSED AND ARE NOT EXPECTED TO ADVERSELY IMPACT ADJOINING AND DOWNSTREAM PROPERTIES.

ABSORPTION SYSTEM

THE DEVELOPMENT PROPOSES 33m² OF IMPERVIOUS AREA DRAINING TO THE ABSORPTION SYSTEM. THE SYSTEM WAS SIZED WITH AN INFILTRATION RATE OF 0.1L/sec/m2. THE ABSORPTION TRENCH WAS DESIGN FOR THE 100 YEAR STORM EVENT TO REDUCE THE RISK OF OVERLAND FLOW. REFER TO PAGE S4 FOR ABSORPTION CALCULATIONS. IN THE EVENT OF A BLOCKAGE OVERLAND FLOW IS EXPECTED TO DRAIN AROUND THE EXISTING DWELLING AS PER EXISTING CONDITIONS.

AN ON-SITE DETENTION SYSTEM DRAINING TO THE ABSORPTION SYSTEM IS NOT RECOMMEND AS IT WOULD CREATE ADDITIONAL FLOWS TOWARDS FLOW THE EXISTING DWELLING GIVEN THE LOW INFILTRATION RATE.

CUT AND FILL

TO DRAIN THE DEVELOPMENT BY GRAVITY, THE SITE PROPOSES A NATURAL FILLED RIDGE AT FRONT BOUNDARY. THE CUT AND FILL DIAGRAM WITH DESIGN LEVELS (PAGE S7) DEMONSTRATES THE FOLLOWING:

- 1. THE PROPOSED FILL AVOIDS THE EXISTING SERVICE PIT
- 2. THE EXISTING TREE IS PREDOMINANTLY UNAFFECTED BY THE PROPOSED FILL
- 3. THE OVERLAND FLOW AT FRONT BOUNDARY REMAINS AS PER EXISTING CONDITION, NOTE THE EXISTING WALL ON EASTERN BOUNDARY. AS A RESULT NO AFFECTS TO NEIGHBOURING PROPERTIES ARE EXPECTED
- 4. A FUTURE FOOTPATH WOULD NOT WORK NEAR THE FRONT BOUNDARY GIVEN THE EXISTING GRADES AND TREE. GIVEN THE LOW LYING VEHICLE CROSSING ITS RECOMMEND THAT THE FUTURE FOOTPATH BE PLACED AT BACK OF KERB.

PROPOSED DRIVEWAY

THE DEVELOPMENT PROPOSES A 3m WIDE DRIVEWAY. THE PROPOSED DRIVEWAY LEVELS ADOPTED COUNCILS NORMAL LOW STANDARD VEHICLE CROSSING PROFILE (A4/3330/3).

BASED ON THE FOREGOING AND GIVEN THE SITE CONSTRAINTS, THE PROPOSED DESIGN SIGNIFICANTLY IMPROVES THE SITES SITUATION AS WELL AS THE TO THE DOWNSTREAM NEIGHBOURS. WE RECOMMEND THE PROPOSED STORMWATER DESIGN AS A SAFE AND PRACTICAL SOLUTION TO SUPPORT THE DEVELOPMENT.

MR STUART STEINLE-DAVIES BEng (Civil) (Hons) (MIEAust) (CPEng) (NER) DATE: 09.08.2022

AMUNA

Revision Drawn Date

SSD 09.08.22 REFERRAL RESPONSE V3 SSD 04.08.22 REFERRAL RESPONSE V2 Description

SSD 29.07.22 REFERRAL RESPONSE SSD 29.06.22 ISSUED FOR SECTION 68 APPLICATION

SSD SC SSD SC SSD SSD SC

Checked Approved

BELLRIVER Client: ELL

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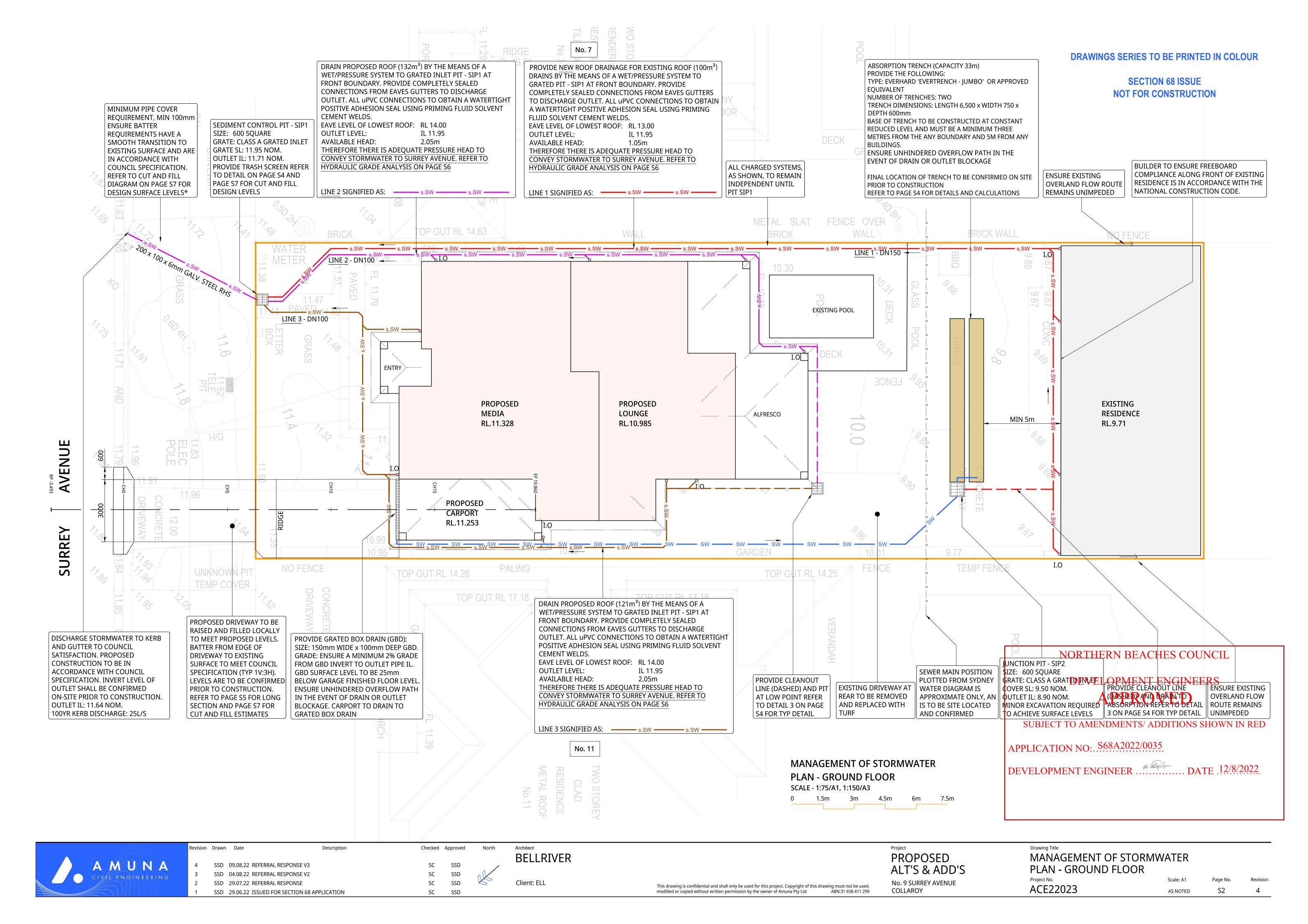
PROPOSED ALT'S & ADD'S No. 9 SURREY AVENUE

COLLAROY

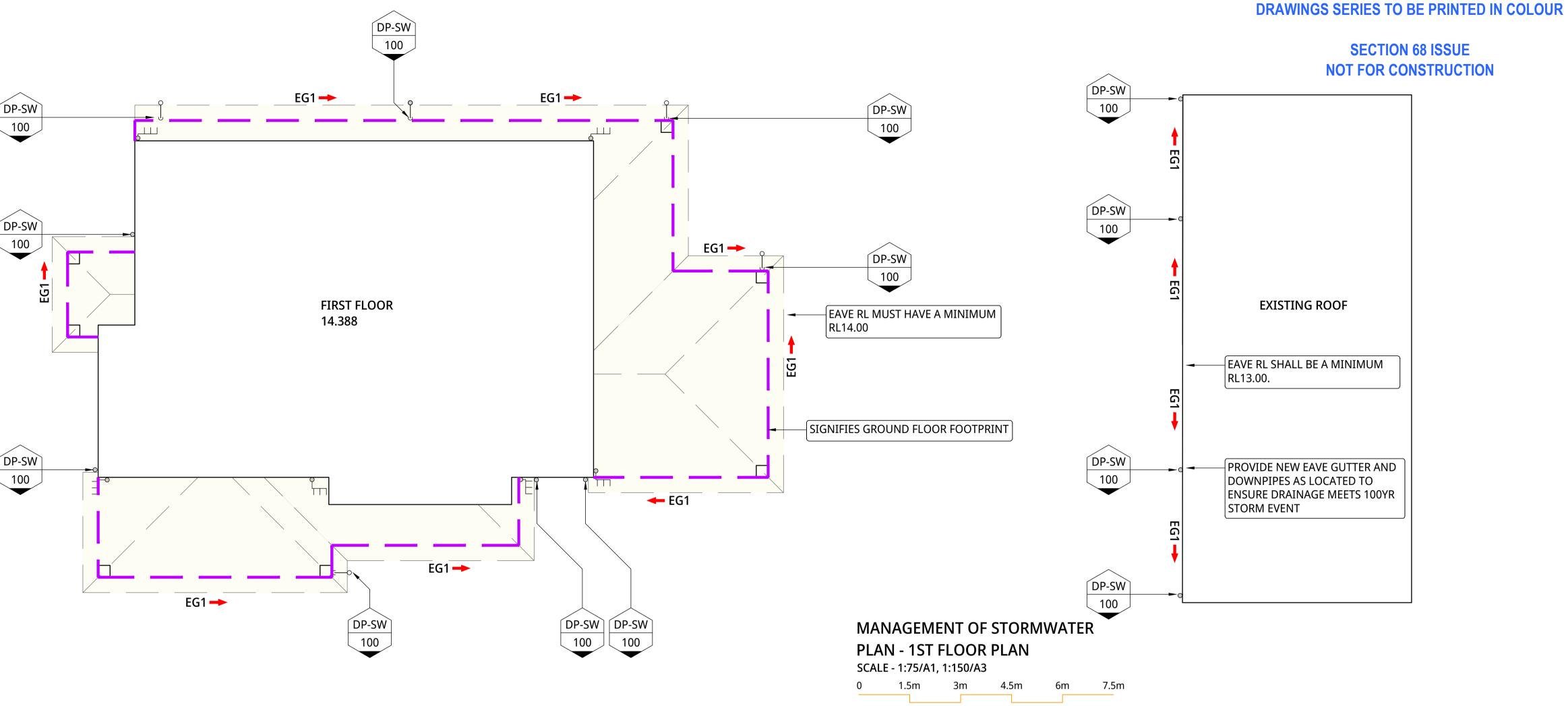
TITLE PAGE & NOTES

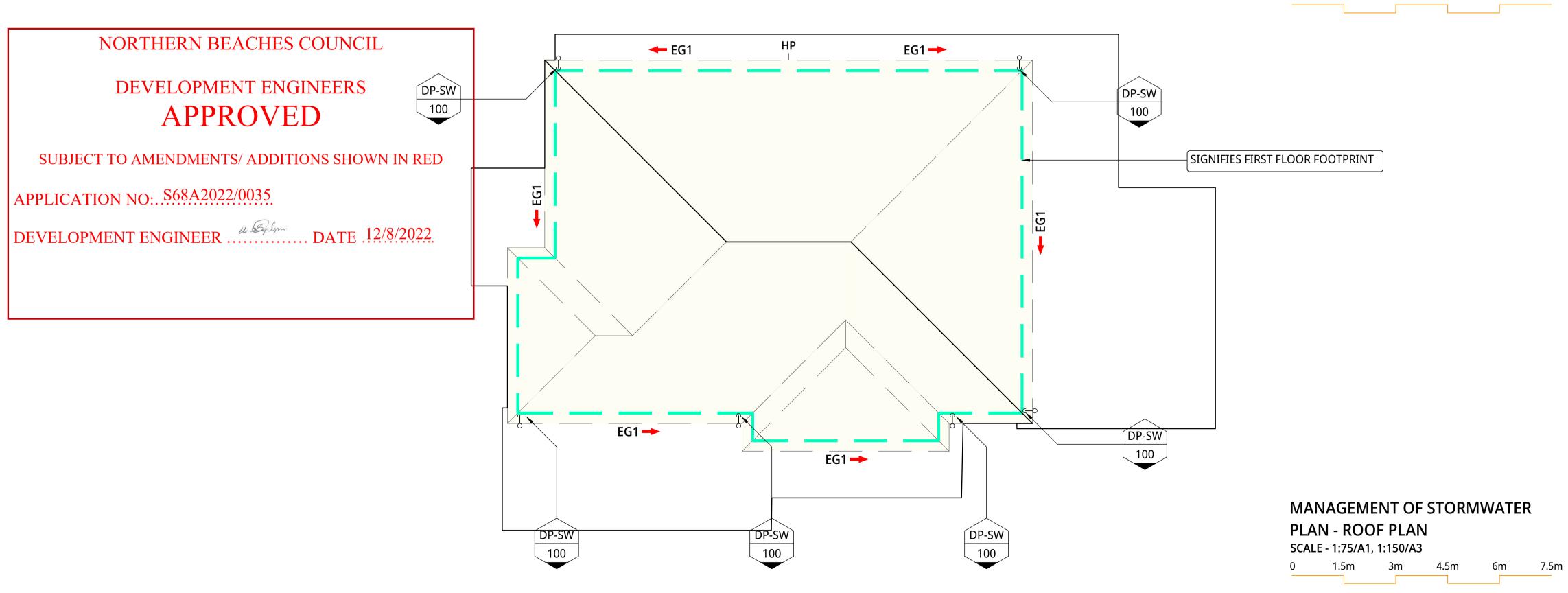
Project No. ACE22023

AS NOTED



ROOF LEGEND: INDICATIVE EAVES GUTTER ORIFICE LOCATION PIPE RISER 100 PIPE DROPPER DOWNPIPE SPREADER DP-SW EG1 → EG1 → BOX GUTTER/RAINWATER HEAD SUMP LOCATIONS DP-SW DP-SW 100 100 100 RWO RAINWATER OUTLET **GUTTER HIGH POINT DIRECTION OF FLOW** DP-RW 🚤 — SERVICE TYPE 100 DP-SW 100 DIRECTION OF FLOW 100 EG1 → **ROOF NOTES:** DP-SW 100 ROOFER, PLUMBER, BUILDER, TO INSTALL EAVES GUTTERS TO MANUFACTURES SPECIFICATION AND ENSURE EAVE GUTTER FIRST FLOOR EAVE RL MUST HAVE A MINIMUM OVERFLOWS MECHANISM ARE INSTALLED AS PER NCC 14.388 RL14.00 CLAUSE 3.5.3.4. EAVES GUTTER TO BE DESIGNED TO ARCHITECTURAL SPECIFICATION PROVIDED IT COMPLIES WITH THE MINIMUM CSA REQUIREMENTS AND MANUFACTURES SPECIFICATIONS. CROSS SECTIONAL AREA (CSA) OF EAVES GUTTER TO BE A SIGNIFIES GROUND FLOOR FOOTPRINT MINIMUM 8200mm². DP-SW DP-SW 100 100 **←** EG1







Revision Drawn Date

BELLRIVER SSD 09.08.22 REFERRAL RESPONSE V3 SSD SSD SSD 04.08.22 REFERRAL RESPONSE V2 SC SSD SSD 29.07.22 REFERRAL RESPONSE SC Client: ELL This drawing is confidential and shall only be used for this project. Copyright of this drawing must not be used, modified or copied without written permission by the owner of Amuna Pty Ltd

ABN:31 658 411 299 SC SSD SSD 29.06.22 ISSUED FOR SECTION 68 APPLICATION

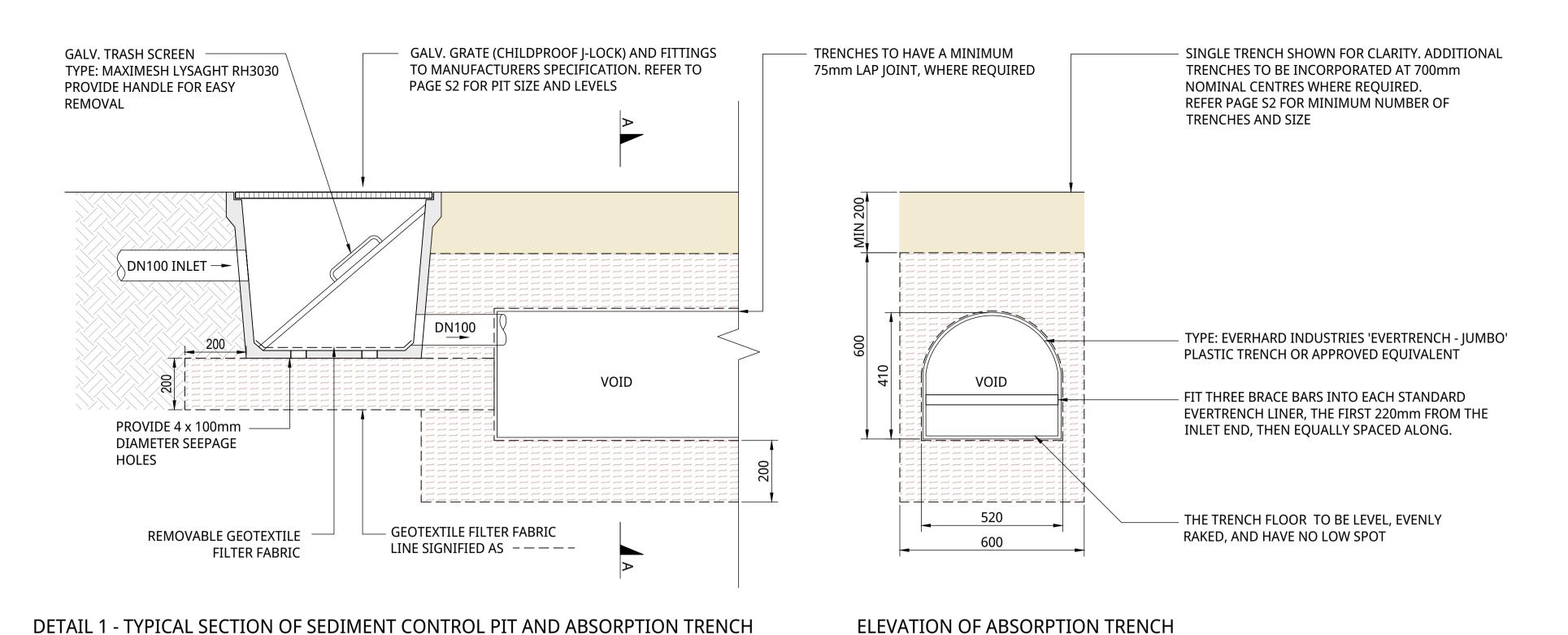
Checked Approved

PROPOSED ALT'S & ADD'S No. 9 SURREY AVENUE COLLAROY

MANAGEMENT OF STORMWATER PLAN - 1ST FLOOR & ROOF Project No.

ACE22023

S3 AS NOTED



CALCULATIONS - ABSORPTION SYSTEM

SCALE: NTS

SCALE: 1:10/A1, 1:20/A3

LEGEND:

BACKFILL WITH FREE DRAINING

AGGREGATE SIZE: 20-40mm

PROVIDED WASHED AGGREGATE AND SURROUND ENTIRELY BY GEOTEXTILE

MATERIAL

FILTER FABRIC

EXISTING EARTH

ELEVATION OF ABSORPTION TRENCH SCALE: NTS

SCALE: 1:10/A1, 1:20/A3

1. S	ite Parameters			4. Requir	red Absorption System	Volume Calculat	tion for 10	0 year ARI stor	m		
						Rainfall		Runoff	Infiltration	Volume Required	
Description	Symbol	Inputs	Units	Description	Time	Intensity	Runoff	Volume	Volume	(MRASV)	
Impervious Area to Absorption Pit	IA		33 m2	Symbol	t	I	$R = I \times DA$	$/3 RV = R \times t \times 60/$	IV = BA x ARd	x Vreq = RV - IV	
Nominal Absorption Rate	ARn		0.01 I/m2/sec	Units	min	mm/hr	I/s	m3	m3	m3	
Reduction Factor	Fr		0.5 -		0 5	26	51 2.3	9 0.72	0.00	1	0.71
					0 6	5 25	52 2.3	1 0.83	0.0:	1	0.82
2. Tre	nch Parameters				0 10	21	7 1.9	9 1.19	0.00	2	1.17
Description		Inputs	Units		0 20	15	66 1.4	3 1.72	0.09	5	1.67
Trench Manufacture		Evertrench 410 'Jumbo'			0 30	12	22 1.1	2 2.01	0.0	7	1.94
Trench Cross-Sectional Area	0.	.175 m2		0 60	75.	.4 0.6	9 2.49	0.14	4	2.35	
imber of Trenches			2 off		0 120) 4	16 0.4	2 3.04	0.2	8	2.76
Trench Length			6.5 m								
Trench Width			0.6 m								
Rainfall Intensity Year			100 year								
Inlet Pit Size			0.6 square	5. Proposed Absorptio	n System Volume						
Inlet Pit Depth			0.8 m	Description	Value	Units					
				0 Total Volume of pits above top of base level	0.288	m3					
3. De:	sign Calculations	S		0 Volume of half round Evertrench 410 'Jumbo'	2.275	m3					
Description	Symbol	Value	Units	Gravel Void Volume (20% of gravel volume)	0.312	2 m3					
Design Impervious Area	DA		33 m2	Total Proposed Absorption System Volume (TPASV)	2.875	m3					
Design Absorption Rate	ARd = ARn*Fr	0.	.005 I/m2/sec	Check TPASV > MRASV	ok						
Base Area of Absorption Pit	BA		7.8 (0.6m x 6.5m x 2 off)								

NORTHERN BEACHES COUNCIL

DRAWINGS SERIES TO BE PRINTED IN COLOUR

SECTION 68 ISSUE

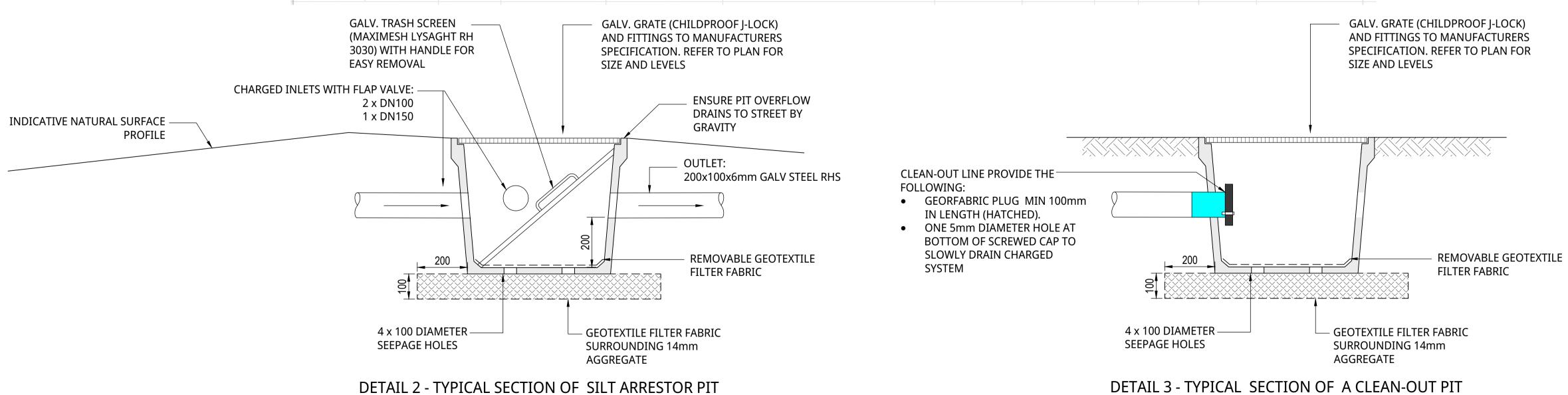
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DEVELOPMENT ENGINEERS APPROVED

SUBJECT TO AMENDMENTS/ ADDITIONS SHOWN IN RED

APPLICATION NO: S68A2022/0035

DEVELOPMENT ENGINEER ... DATE 12/8/2022



Revision Drawn Date Checked Approved Description **BELLRIVER** PROPOSED MANAGEMENT OF STORMWATER SSD 09.08.22 REFERRAL RESPONSE V3 SSD SC ALT'S & ADD'S DETAILS SHEET 1 OF 2 SC SSD SSD 04.08.22 REFERRAL RESPONSE V2 Project No. SSD 29.07.22 REFERRAL RESPONSE SC SSD Client: ELL No. 9 SURREY AVENUE This drawing is confidential and shall only be used for this project. Copyright of this drawing must not be used, ACE22023 COLLAROY AS NOTED SSD 29.06.22 ISSUED FOR SECTION 68 APPLICATION SC SSD modified or copied without written permission by the owner of Amuna Pty Ltd

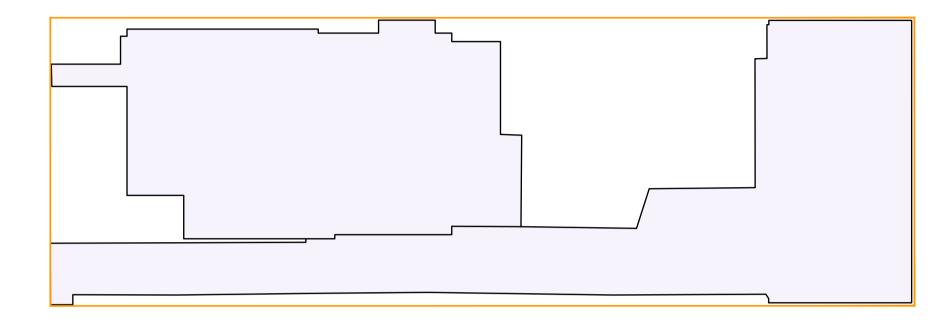
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IMPERVIOUS AREA CALCULATIONS:

PRE-DEVELOPMENT = 471m²

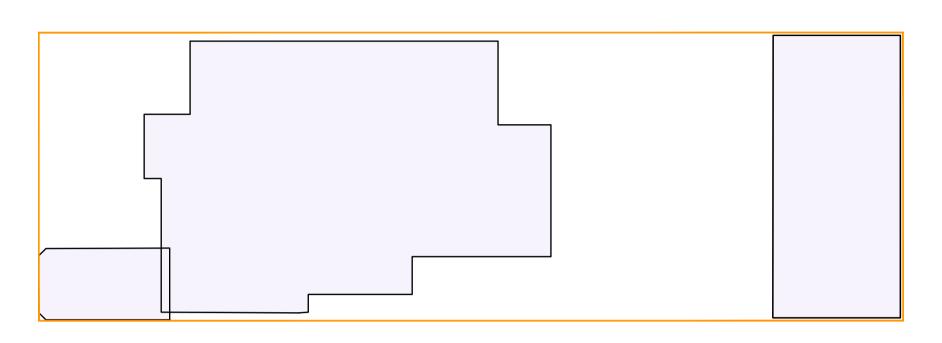
POST-DEVELOPMENT = 379m^2

SITE PROPOSES A 92m² DECREASES IN IMPERVIOUS AREA



MANAGEMENT OF STORMWATER PLAN - PRE DEVELOPMENT

SCALE - 1:200/A1, 1:400/A3 0 4m 8m 12m 16m 18



MANAGEMENT OF STORMWATER

PLAN - POST DEVELOPMENT

SCALE - 1:200/A1, 1:400/A3

) 4m 8m 12m 16m 18n

NORTHERN BEACHES COUNCIL

DEVELOPMENT ENGINEERS

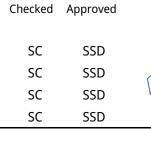
APPROVED

SUBJECT TO AMENDMENTS/ ADDITIONS SHOWN IN RED

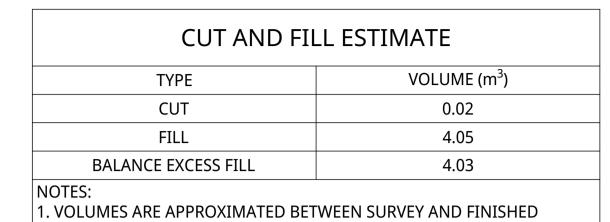
APPLICATION NO: S68A2022/0035

DEVELOPMENT ENGINEER DATE .12/8/2022

	CHARGED LINE - HYDRAULIC GRADE LINE ANALYSIS													
Pipe Total Head Difference Pipe Length Pipe size Total Flow Pipe Velocity Pipe Friction Loss Bend Losses Total Loss Remaining head Sufficient head to drive														
Formula	Low est eave RL- Pit SL	L	d	Q = A x I	V = Q/A	$hf = \frac{10.67xLxQ^{1.852}}{C^{1.852} * d^{4.8704}}$	$hb = \frac{KV^2}{2g}$	hL = hf + hb	hr = ht-hl					
Units	m	m	mm	I/s m/s		m m		m	m					
Line 1	1.08	54.00	150	7.50	0.42	0.06	0.04	0.11	0.97	YES				
Line 2	2.08	31.00	100	9.90	1.26	0.44	0.38	0.83	1.25	YES				
Line 3	2.08	35.00	100	9.08	1.16	0.43	0.32	0.75	1.33	YES				



SECTION 68 ISSUE NOT FOR CONSTRUCTION



3. ESTIMATED VOLUMES EXCLUDED STRIPPING OF EXISTING SURFACE.

2. COMPACTION AND BULKING FACTORS ARE EXCLUDED

	Surface Analysis: Elevation Ranges												
Number	Color	Minimum Elevation (m)	Maximum Elevation (m)										
1		-0.150	-0.040										
2		0.040	0.150										
3		0.150	0.300										
4		0.300	0.500										

NORTHERN BEACHES COUNCIL

DEVELOPMENT ENGINEERS **APPROVED**

SUBJECT TO AMENDMENTS/ ADDITIONS SHOWN IN RED

APPLICATION NO: S68A2022/0035

DEVELOPMENT ENGINEER DATE .12/8/2022

4m3 OF FILL PROPOSED. INSTALLED IN ACCORDANCE WITH NORTHERN BEACHES COUNCILS MINOR	CRETE	NCREI	GF _
WORK SPECIFICATION		ARROW INDICATES EXISTING OVERLAND ELOW PATH	
Extent of Approval		BRICK	TOP G
3		WATER MEDERAL	GAS METER
PROPOSED FILL TO BE IN ACCORDANCE WITH COUNCILS MINOR WORK SPECIFICATION. ENSURE A MINIMUM 100mm PIPE COVER	17.8		
	ASS	11.47 PAVED 4.46	H 11 17 9
	nd flow path must be ined adjacent to the eastern	11 PAVSU 11.49 -	
TREE TO REMAIN: PROPOSED FILL TO BE INSTALLED WITH ARBORIST SUPERVISION. TREE PROTECTION MEASURES ARE TO	Juinian Juin		
COMPLY WITH NORTHERN BEACHES COUNCILS SPECIFICATIONS.		S	ENTRY
NO FILL PROPOSED ON SERVICE PIT			
PROPOSED DRIVEWAY TO BE RAISED AND FILLED LOCALLY TO MEET PROPOSED LEVELS. BATTER	H/O		11.15
FROM EDGE OF DRIVEWAY TO EXISTING SURFACE TO MEET COUNCIL SPECIFICATION (TYP 1V:3H). LEVELS ARE TO BE CONFIRMED PRIOR TO			10.9
CONSTRUCTION. REFER TO PAGE S5 FOR DRIVEWAY LONG SECTION CHO CHO CHO CHO CHO CHO CHO C	11.96 CHS	CH10	CH15
7-03	11.75	11.30	10.99
$\frac{1}{2}$		NO FENCE	10.95
77.00 4 77.07	UNKNOWN PIT TEMP COVER		TOP GUT R
Revision Drawn Date 4 SSD 09.08.22 REFERRAL RESPONSE	Description Checked Approved No V3 SC SSD	rth Architect BELLRIVER	

SSD 09.08.22 REFERRAL RESPONSE V3 SSD 04.08.22 REFERRAL RESPONSE V2 2 SSD 29.07.22 REFERRAL RESPONSE SSD 29.06.22 ISSUED FOR SECTION 68 APPLICATION

SSD SSD SSD SC SSD

DLLLIIIVLI Client: ELL

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ABN:31 658 411 299

PROPOSED ALT'S & ADD'S No. 9 SURREY AVENUE COLLAROY

MANAGEMENT OF STORMWATER CUT AND FILL ESTIMATE Project No. ACE22023

AS NOTED

SECTION 68 ISSUE NOT FOR CONSTRUCTION

	DRIVEWAY EDGE		PIPE C/L OFFSET= -12.356				PROPOSED DRIVEWAY CENTERLINE
R.L. 10.000							
PROPOSED LEVELS		11.780	11.870	11.785		12.006	
EXISTING LEVELS		11.772	11.781	11.785	11.923	11.946	
LEVEL DIFFERENCE		0.008	0.049	0.000	0.000	0.061	
OFFSETS		-13.076	-12.242	-11.739	-2.000	-1.500	

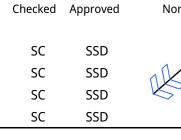
MC01 - CH 02.000

	— DRIVEWAY EDGE	PIPE C/L OFFSET= -12.868 PIPE IL =11.658	NORTHERN BEACHES COUNCIL DEWELOPMENT ENGINEERS PPROVED SUBJECT TO AMENDMENTS/ ADDITIONS SHOWN IN RED
			APPLICATION NO: . S68A2022/0035.
			DEVELOPMENT ENGINEER DATE .12/8/2022.
R.L. 10.000			
		82 00	-
PROPOSED LEVELS		2	 ? -
EXISTING LEVELS	11.800	11.804	
LEVEL DIFFERENCE	0.000	0.007	
OFFSETS	-13.343	-12.892	

MC01 - CH 01.000

	AMUNA
	CIVIL ENGINEERING
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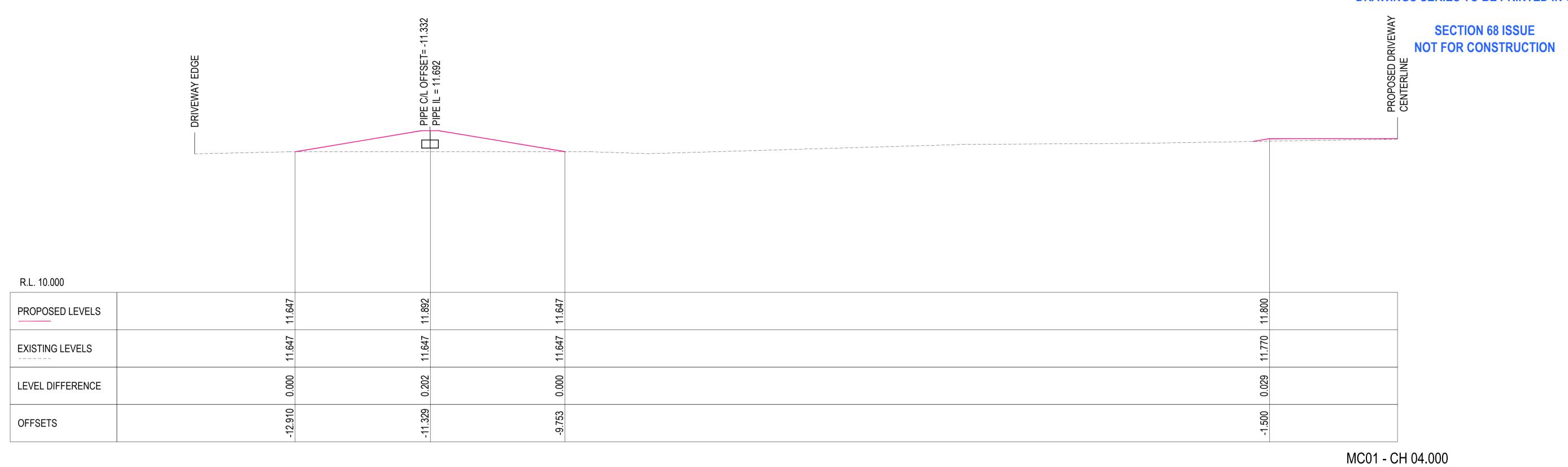
Revision	Drawn	Date Description
4	SSD	09.08.22 REFERRAL RESPONSE V3
3	SSD	04.08.22 REFERRAL RESPONSE V2
2	SSD	29.07.22 REFERRAL RESPONSE
1	SSD	29.06.22 ISSUED FOR SECTION 68 APPLICATION



SC

BELLRIVER	
Client: ELL	





PROPOSED LEVELS

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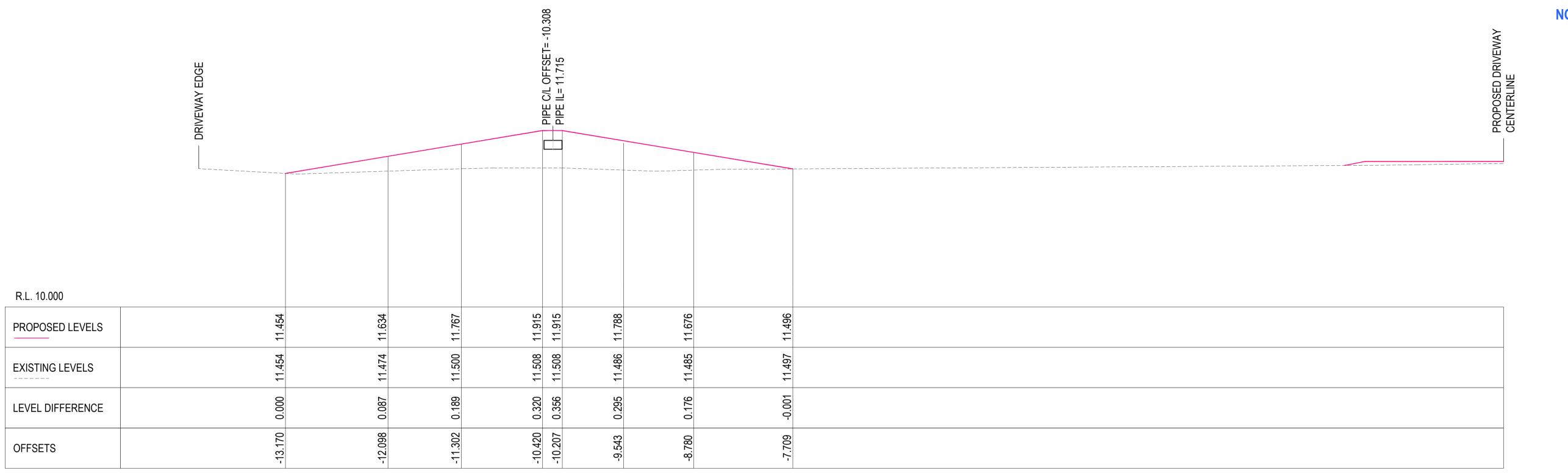
1909

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MC01 - CH 03.000

		Revision	Drawn Date	Description	Checked Appro	oved North	Architect		Project	Drawing Title			
							BELLRIVER		PROPOSED	ROAD RESERVE			
	AMUNA	4	SSD 09.08.22 REFERRAL RESPONSE V3		SC SS	D			ALT'S & ADD'S	CROSS SECTION SHEET	2 OF /		
	CLV ENGINEERING	3	SSD 04.08.22 REFERRAL RESPONSE V2		SC SS	D			ALI 3 & ADD 3	CROSS SECTION SHEET		5	
		2	SSD 29.07.22 REFERRAL RESPONSE		SC SS	D 🚫	Client: ELL	This drawing is confidential and shall only be used for this project. Converget of this drawing must not be used	No. 9 SURREY AVENUE	Project No.	Scale: A1	Page No.	Revision
7		1	SSD 29.06.22 ISSUED FOR SECTION 68 A	PPLICATION	SC SS	D		This drawing is confidential and shall only be used for this project. Copyright of this drawing must not be used, modified or copied without written permission by the owner of Amuna Pty Ltd ABN:31 658 411 299	COLLAROY	ACE22023	AS NOTED	S9	4

SECTION 68 ISSUE NOT FOR CONSTRUCTION



MC01 - CH 06.000



MC01 - CH 05.000

		Revision	n Drawn Date	Description	Checked A	pproved Nort	rth	Architect			Project	Drawing Title			
								BELLRIVER			PROPOSED	ROAD RESERVE			
	AMUNA	4	SSD 09.08.22 REFERRAL RESPONSE V3		SC	SSD	/				ALT'S & ADD'S	CROSS SECTION SHEET 3 C)E /I		
	CIVILENGINEERING	3	SSD 04.08.22 REFERRAL RESPONSE V2		SC	SSD					ALI 3 & ADD 3				
		2	SSD 29.07.22 REFERRAL RESPONSE		SC	SSD	>	Client: ELL	This drawing is confidential and shall only be used for this project. Copyright of this	drawing must not be used	No. 9 SURREY AVENUE	Project No.	Scale: A1	Page No.	Revision
H		1	SSD 29.06.22 ISSUED FOR SECTION 68 A	APPLICATION	SC	SSD			modified or copied without written permission by the owner of Amuna Pty Ltd	ABN:31 658 411 299	COLLAROY	ACE22023	AS NOTED	S10	4

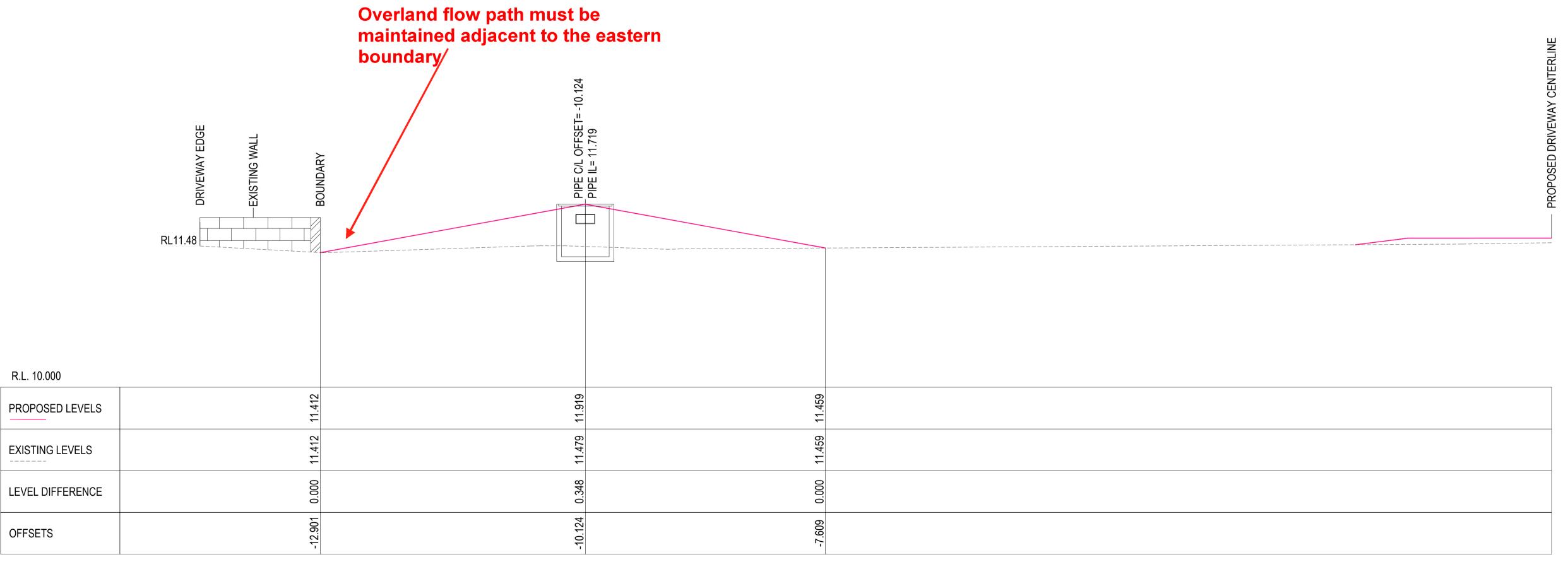
NORTHERN BEACHES COUNCIL

DEVELOPMENT ENGINEERS **APPROVED**

SUBJECT TO AMENDMENTS/ ADDITIONS SHOWN IN RED

APPLICATION NO: S68A2022/0035

DEVELOPMENT ENGINEER ... DATE .12/8/2022



MC01 - CH 06.360 (BOUNDARY)

AMUNA
CIVIL ENGINEERING

ision	Drawn	Date	Description
	SSD	09.08.22	REFERRAL RESPONSE V3
1	SSD	04.08.22	REFERRAL RESPONSE V2
	SSD	29.07.22	REFERRAL RESPONSE
	SSD	29.06.22	ISSUED FOR SECTION 68 APPLICATION

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