

28th April 2023

Attention: Development Assessment – North Team

**Re: Clarification of Flood Extent and Planning Levels
Proposed New Residence at 2A Allen Avenue, BILGOLA BEACH**

Dear Sir/Madame,

The letter below addresses the management of flood levels and flood risk assessment prepared by Partridge. It also provides response to comments circulated via email and dated 21st April 2023. Relevant extracts are present below with Council’s full correspondence included in Appendix A.

Item 1 – Habitable Floor Areas

“Regarding the applicate question, the 1% AEP at north of the site is about 7m AHD, with the flood depth of less than 300mm, the Flood Planning Level is at 7.30m AHD. Our maps shows there will be some flood within the lot. Based on geometry of the site, this flood comes from rear of the property, not the gutters and the street.”

In accordance with the “Avalon to Palm Beach FRMS&P” (2017) by Manly Hydraulics Laboratory, the maximum flood depth within the subject site boundaries is 300mm. The flood map (FRMS&P 2017) has been overlayed with the site-specific survey to assess flood levels, extent and freeboards. Refer to Figures 1 & 2 for details. Refer to Appendix B for site survey and Appendix C for 1% AEP flood depth map.

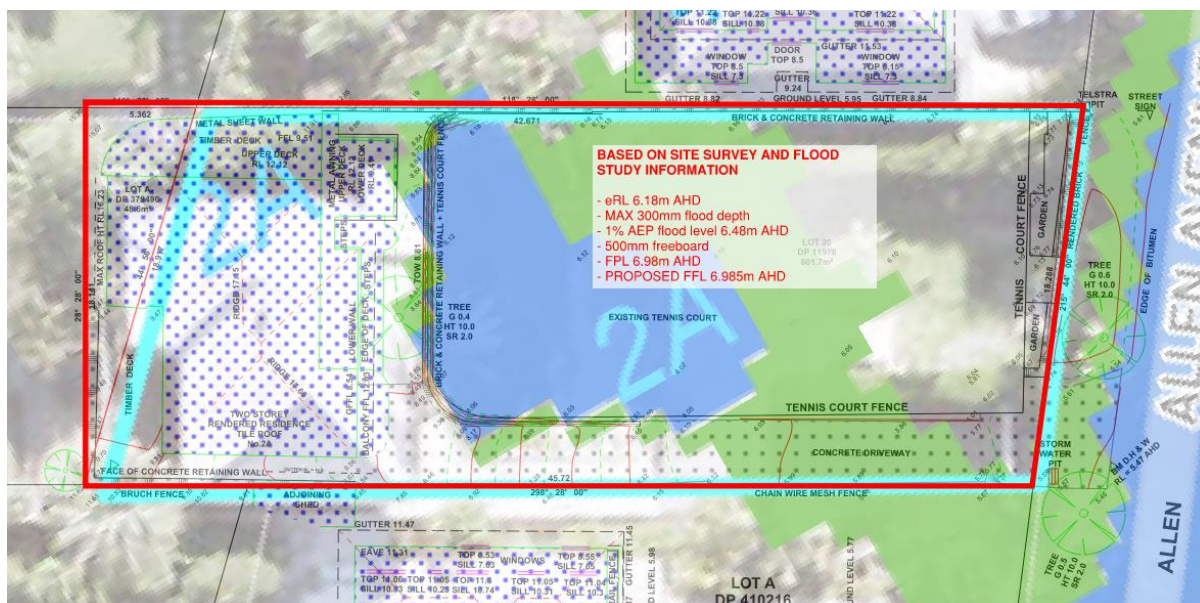


Figure 1 – 1% AEP Flood Level Overlayed with Site Survey

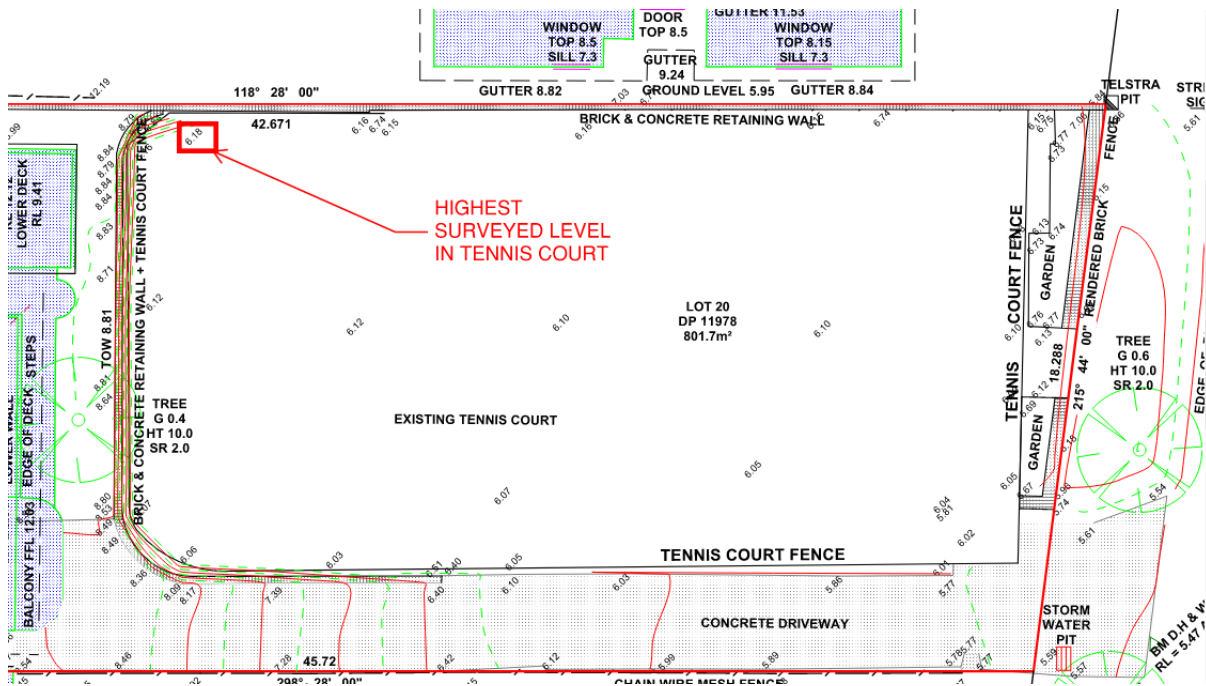


Figure 2 – Site Survey

Based on the email correspondence from Council “[...] the 1% AEP at north of the site is about 7m AHD, with the flood depth of less than 300mm, the Flood Planning Level is at 7.30m AHD [...]”, the listed ground levels and depths are interpreted as follows:

- Existing ground level within the flood area = 6.70m AHD
- Modelled flood depth = 300mm (MAX)
- Estimated 1% AEP flood level = 7.00m AHD
- Minimum freeboard = 300mm
- Flood Planning Level = 7.30m AHD

However, based on the available site-specific survey information and flood depths, we estimate the following:

- Existing ground level within the flood area = 6.18m AHD
- Modelled flood depth = 300mm (MAX)
- Estimated 1% AEP flood level = 6.48m AHD
- Minimum freeboard = 500mm
- Flood Planning Level = 6.98m AHD
- Proposed habitable area FFL = 6.985m AHD

Therefore, based on the available survey and flood information, it is our opinion that the proposed habitable area FFL satisfies the flood risk management controls outlined in Council’s DCP.

Item 2 – Non-habitable Floor Areas (Basement Carpark)

“Based on our DCP “All enclosed car parks (including basement car parks) must be protected from inundation up to the Flood Planning Level. All access, ventilation, driveway crests and any other potential water entry points to any enclosed car parking shall be above the Flood Planning Level“. Regarding the basement flood protection, the crest should be above FPL which is 300mm above 1% AEP at the street (5.7m AHD +0.3m).”

Noted and agreed. The driveway has been updated to include a crest to RL 6.00m AHD to provide protection to water that may affect the basement as per Council's request. Refer to Partridge drawings 2021H0040 CDA 1.1 Rev 2 and 2021H0040 SWDA 1.5 Rev 2.

I trust the above and enclosed is satisfactory and answers all of the Council's queries and concerns. However, do not hesitate to contact our office if further clarification is required.

Yours faithfully,

Partridge Hydraulic Services Pty Ltd



Kevin Chiem

Civil Design Engineer

Att.

1. Cover Letter
2. Council's Correspondence Email (Appendix A)
3. Site Survey by John Lowe & Associates dated 4/3/21 (Appendix B)
4. 1% AEP Storm Flood Depth Map (FRMS&P 2017) (Appendix C)
5. Partridge Stormwater & Civil Drawings (Appendix D)
2021H0040 CDA 1.1 Rev 2
2021H0040 SWDA 1.5 Rev 2

APPENDIX A – Council’s Correspondence Email

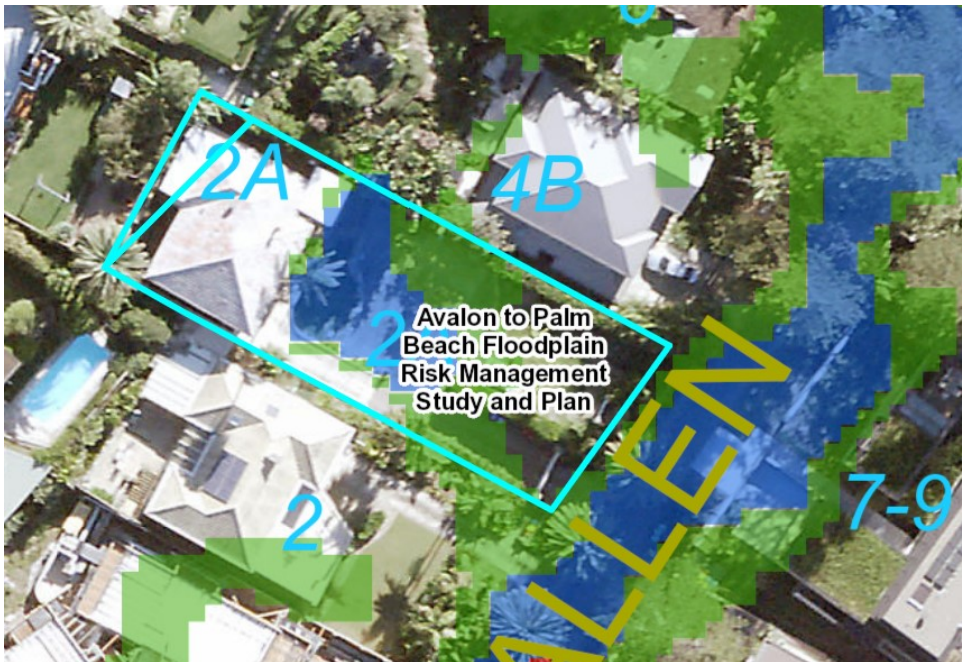
Kevin Chiem

From: Adam Croft <adam.croft@northernbeaches.nsw.gov.au>
Sent: Friday, 21 April 2023 10:58 AM
To: Kevin Chiem
Cc: Joseph Ormaechea
Subject: RE: Att: [External] Adam Croft - DA2022/1494 - 2A Allen Avenue - Flood Assessment Enquiry

Hi Kevin,

Thank you for your email and apologies for the delay in response – I was awaiting comments from the assessing flood officer. See below.

“Regarding the applicate question, the 1% AEP at north of the site is about 7m AHD, with the flood depth of less than 300mm, the Flood Planning Level is at 7.30m AHD. Our maps shows there will be some flood within the lot. Based on geometry of the site, this flood comes from rear of the property, not the gutters and the street.”



Thus, all the habitable floor area needs to be above 7.30m AHD. Flood information can be requested from Council via a [Flood Information Report](#).

*Based on our DCP “All enclosed car parks (including basement car parks) must be protected from inundation up to the **Flood Planning Level**. All access, ventilation, driveway crests and any other potential water entry points to any enclosed car parking shall be above the Flood Planning Level”. Regarding the basement flood protection, the crest should be above FPL which is 300mm above 1% AEP at the street (5.7m AHD +0.3m).”*

Hope this helps. Please let me know if you require any clarification.

Kind Regards,

Adam Croft
Principal Planner

Development Assessment - North Team
t 02 8495 6496

adam.croft@northernbeaches.nsw.gov.au
northernbeaches.nsw.gov.au



From: Kevin Chiem <kevin.chiem@partridge.com.au>
Sent: Thursday, 6 April 2023 10:51 AM
To: Council Northernbeaches Mailbox <Council.Northernbeaches@northernbeaches.nsw.gov.au>
Cc: Joseph Ormaechea <josephwallhouse@gmail.com>
Subject: Att: Adam Croft - DA2022/1494 - 2A Allen Avenue - Flood Assessment Enquiry

Hi Adam,

I am writing to you in regards to Council's Natural Environment Referral Response for a DA at 2A Allen Avenue, Bilgola Beach. Refer to attached.

Application Number: DA2022/1494

As part of the application, Partridge have prepared a flood risk management report, stormwater management plans and civil driveway plans. Plans Habitable floor levels have been designed to be above the flood planning level (1% AEP flood level + 500mm freeboard).

However, due to site topography, the non-habitable basement carpark level cannot be above the flood planning level.

As such, we have proposed a crest on the driveway crossover to provide protection to the flood planning level. Review of Council's DCP and stormwater design manuals, there is no freeboard specified for non-habitable areas (typically 300mm). Could you please confirm what the minimum freeboard for the basement?

The driveway crossover will be updated to provide an adequate level of protection to the basement to protect it from flood inundation.

Should you have any queries or require additional information, please do not hesitate to contact me further.

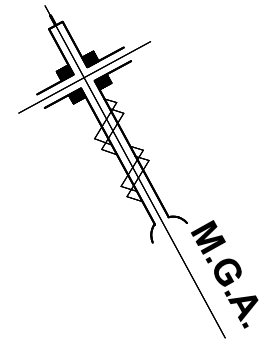
Kind regards

Kevin Chiem
Civil Design Engineer | GradIEAust

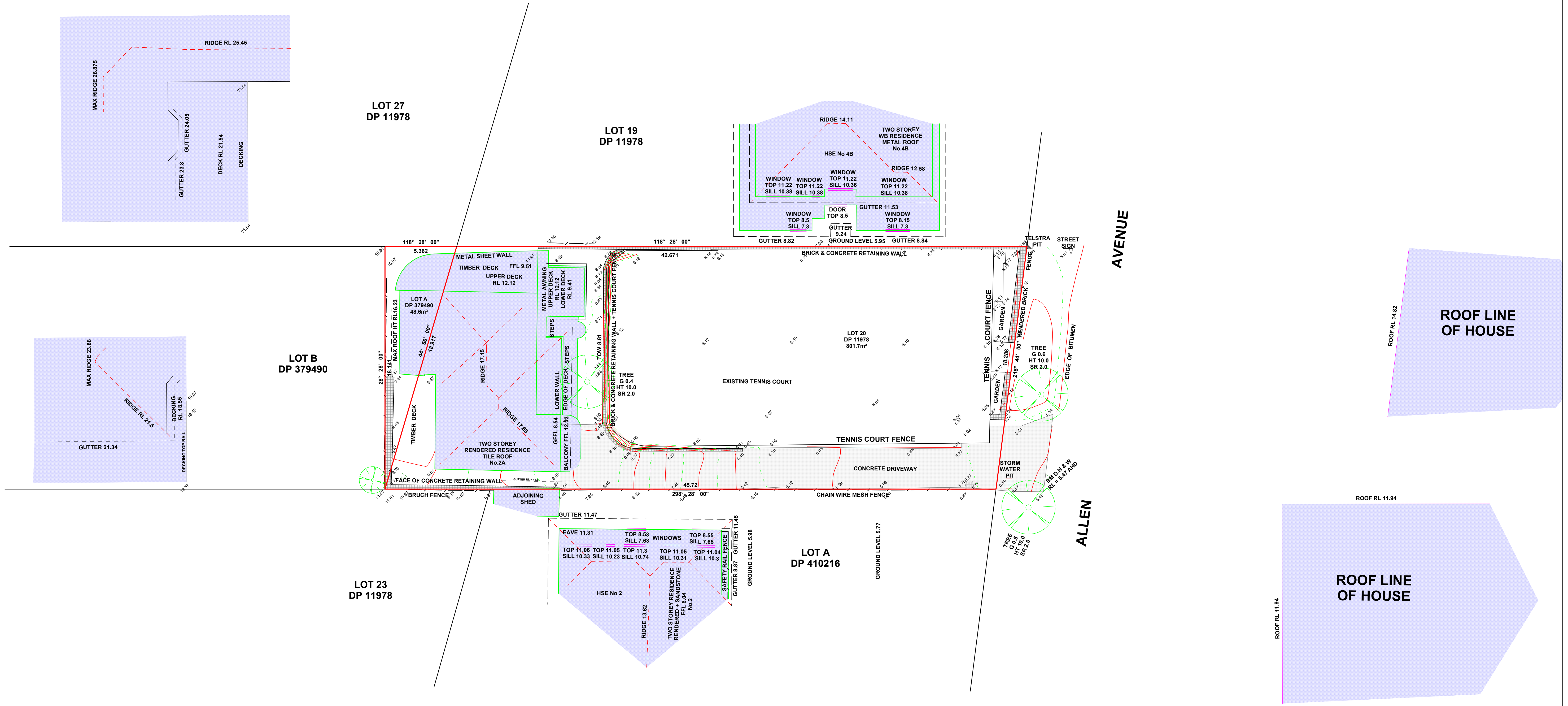


e Kevin.Chiem@partridge.com.au | www.partridge.com.au

APPENDIX B – Site Survey



NOTE: LOT A & LOT 20 WILL NEED TO BE CONSOLIDATED INTO ONE LOT AS SOON AS POSSIBLE TO ALLOW ANY DEVELOPMENT OF THE SITE TO TAKE PLACE.



LEGEND:
 FFL - FINISH FLOOR LEVEL
 RL - REDUCED LEVEL
 TOW - TOP OF WALL

TREE:
 G - GIRTH
 HT - HEIGHT
 SR - SPREAD RADIUS



NOTE-DO NOT SCALE OFF THIS PLAN
 ALL LEVELS SHOULD BE TAKEN FROM THE BENCHMARK SHOWN ON PLAN
 NO BOUNDARY DEFINITION HAS BEEN MADE - THIS PLAN HAS BEEN PREPARED UNDER cl9 OF THE S&S.I. REGULATION 2017.
 THE LOCATION OF ANY BUILDINGS OR IMPROVEMENTS SHOWN ARE APPROX ONLY
 ONLY VISIBLE SERVICES HAVE BEEN LOCATED. NO ATTEMPT HAS BEEN MADE TO LOCATE UNDERGROUND SERVICES

DIAL BEFORE YOU DIG 1100

JOB No : 99541	#38524	PLOT DATE : 19th MARCH 2021
CLIENT : WALLHOUSE HOLDINGS		DATE OF SURVEY : 4th MARCH 2021
LOCATION : BIGGOLA BEACH		DATUM : AHD PM61800 (CLASS E)
SCALE : 1:150	A1 SHEET	DRAWN BY : J.L.

**2A ALLEN AVENUE
 DETAIL SURVEY
 LOT A DP 379490
 LOT 20 DP 11978**

[Signature]
 CHECKED BY JOHN LOWE/CANDICE LOWE
 REGISTERED SURVEYOR UNDER THE SURVEYING ACT 2002

NARELLAN
 1/4 GRAHAMS HILL RD, NARELLAN
 PHONE : 9602-4582, 9602-40104
 PO BOX 409 NARELLAN NSW 2567
 candice@jlsurveys.com.au

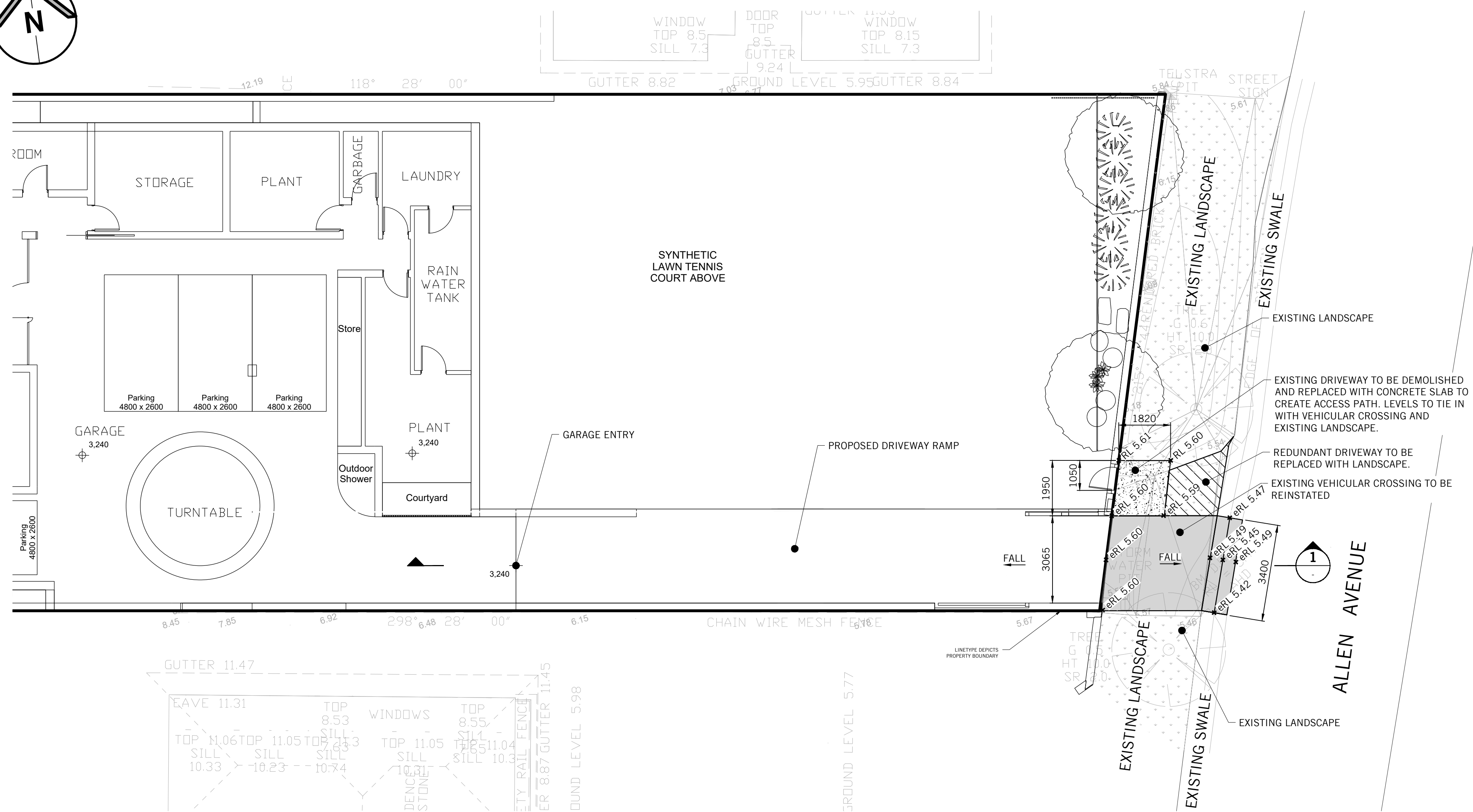
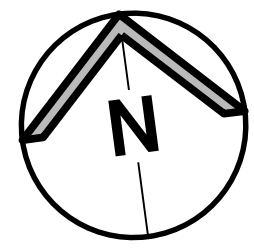
JOHN LOWE AND ASSOCIATES PTY LTD
 CONSULTING LAND AND ENGINEERING SURVEYORS
TAHMOOR
 146 LYREBIRD RD, PHEASANTS NEST
 PHONE : 4684-3227
 john@jlsurveys.com.au
 A.B.N. 76 071 037 959

APPENDIX C – 1% AEP STORM FLOOD DEPTH MAP



Approx. scale: kilometres

APPENDIX D – PARTRIDGE STORMWATER AND CIVIL DRAWINGS



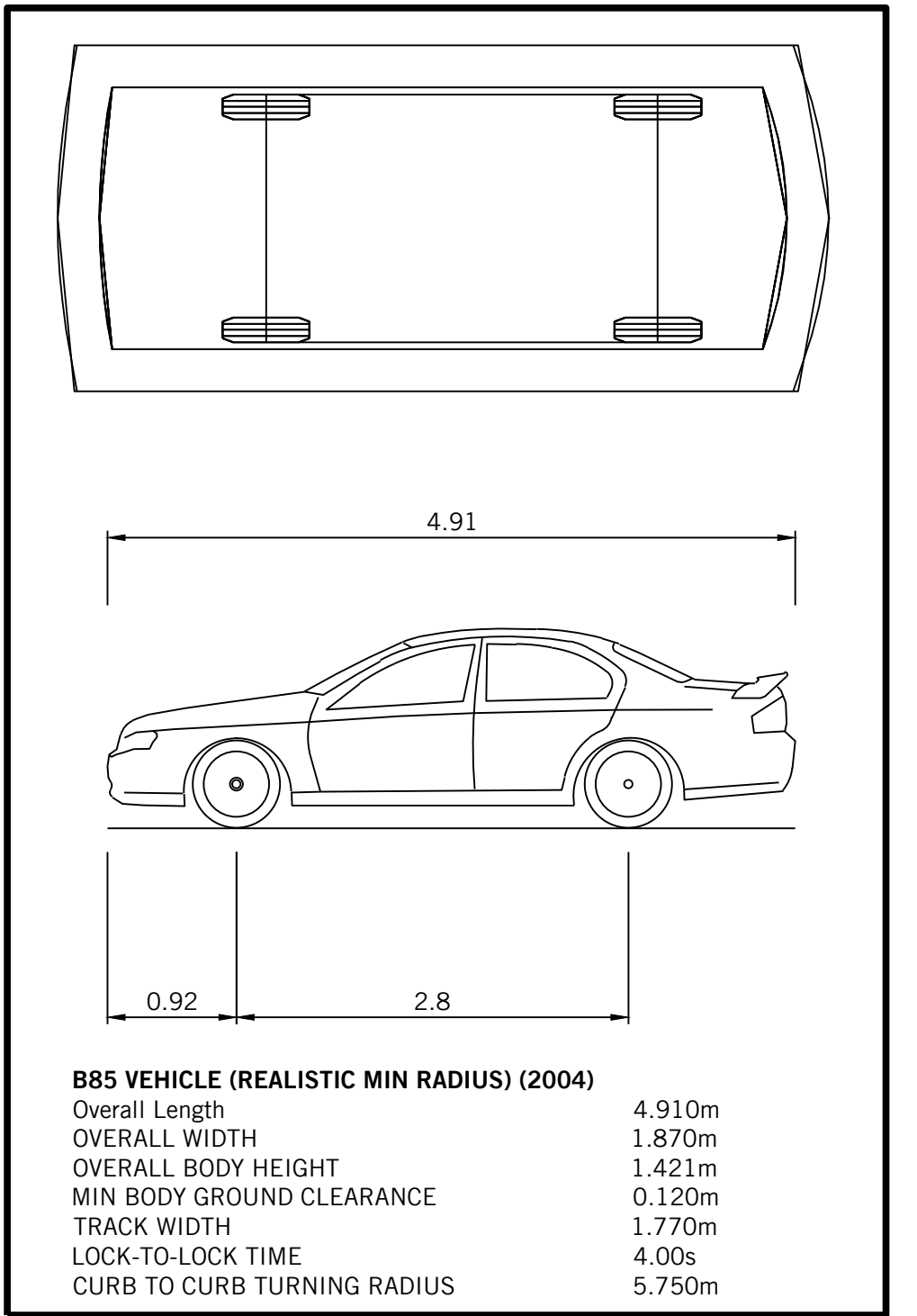
DRIVEWAY ACCESS LAYOUT
SCALE 1:100

LEGEND HATCHES	
	EXISTING CROSSOVER TO BE REINSTATED.
	PROPOSED NEW CONCRETE SLAB
	LANDSCAPE
	REDUNDANT DRIVEWAY TO BE REMOVED

LEGEND PROPOSED	
+RL 0.000	FINISHED SURFACE LEVEL
+CH 0.000	CENTRELINE CHAINAGE
	STORMWATER DRAINAGE LINE
	STORMWATER DRAINAGE PIT
SWP	PIT NAME
300 x 300	SIZE
RL 0.000	REDUCED LEVEL
IL 0.000	INVERT LEVEL
	PIT/DP NUMBERING AND SIZING
KO	KERB ONLY
K&G	KERB AND GUTTER
DD	DISH DRAIN
	DIRECTION OF OVERLAND FLOW

LEGEND EXISTING	
+RL 0.000	FINISHED SURFACE LEVEL
+CH 0.000	CENTRELINE CHAINAGE
	STORMWATER DRAINAGE PIT
KO	KERB ONLY
K&G	KERB AND GUTTER
DD	DISH DRAIN
eC	DENOTES TELSTRA SERVICE
eS	DENOTES SEWER SERVICE
eG	DENOTES GAS SERVICE
eW	DENOTES WATER SERVICE
eSS	DENOTES SUBSOIL

- GENERAL NOTES:**
- THIS PLAN IS AN EXTERNAL WORKS PAVEMENT PLAN ONLY.
 - SMOOTH ALL TRANSITIONS BETWEEN NEW AND EXISTING WORK IN BOTH LEVELS AND ALIGNMENT.
 - STANDARD KERBING DETAILS TO BE IN ACCORDANCE WITH COUNCIL STANDARD DRAWING PROFILES.
 - CONTRACTOR TO FOLLOW TRAFFIC MANAGEMENT PLANS PREPARED BY OTHERS. CONTRACTOR TO PROVIDE ALL REQUIRED TRAFFIC CONTROL MEASURES INCLUDING SAFETY FENCES, WARNING SIGNS, PROVISIONS OF RESIDENT ACCESS, TRAFFIC DIVERSION, ECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY ROAD CLOSURE/ROAD OCCUPANCY PERMITS WITH RELEVANT AUTHORITIES.
 - NO TREES SHALL BE REMOVED, CUT BACK OR RELOCATED WITHOUT WRITTEN INSTRUCTION FROM THE SUPERINTENDENT.
 - THE CONTRACTOR SHALL CONFIRM ALL LEVELS AND DIMENSIONS ON SITE PRIOR TO COMMENCEMENT OF WORK. REPORT ANY DISCREPANCIES OR SERVICE CLASHES TO SUPERINTENDENT IMMEDIATELY.
 - IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND DEPTH ALL SERVICES PRIOR TO COMMENCEMENT OF WORKS INCLUDING THOSE EXTERNAL TO THE SITE.



885 VEHICLE (REALISTIC MIN RADIUS) (2004)

Overall Length	4.91m
Overall Width	1.87m
Overall Body Height	1.42m
Min Body Ground Clearance	0.12m
Track Width	1.77m
Lock-to-Lock Time	4.00s
Curb to Curb Turning Radius	5.750m

2	RE-ISSUED FOR DA	NVH	KC	28.04.23
1	ISSUED FOR DA	NVH	ES	29.07.22
Rev.	Issue / Amendment	By	App.	Date



PARTRIDGE HYDRAULIC SERVICES ABN 11 608 027 578
Level 5, 1 Chandos Street, St Leonards NSW 2065 Australia
t 612 9460 9000 f 612 9460 9090
email: partridge@partridge.com.au web: www.partridge.com.au

CIVIL SERVICES

Client
WIMBLEDON 1963 PTY LTD

ARCHITECT
DESIGN KING COMPANY
UNIT 2, 3B VICTORIA STREET, PADDINGTON
T: 9261 3062 F: 9261 3175 W: www.designking.com.au

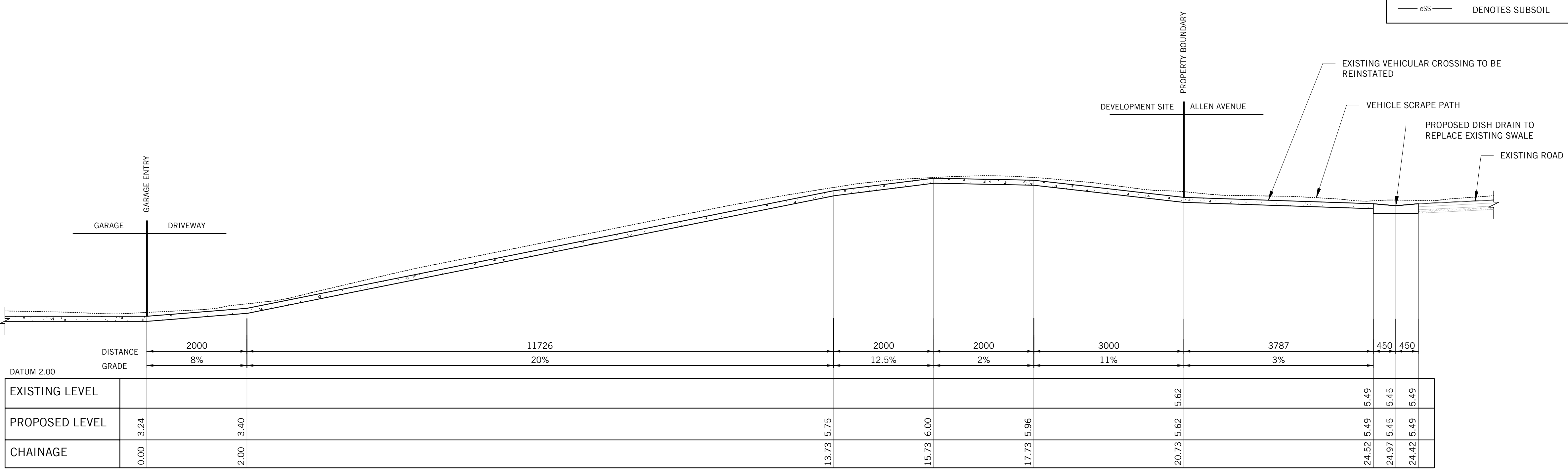
Project
**NEW RESIDENCE
2A ALLEN AVENUE
BILGOLA BEACH**

DRIVEWAY ACCESS LAYOUT & LONGITUDINAL SECTION

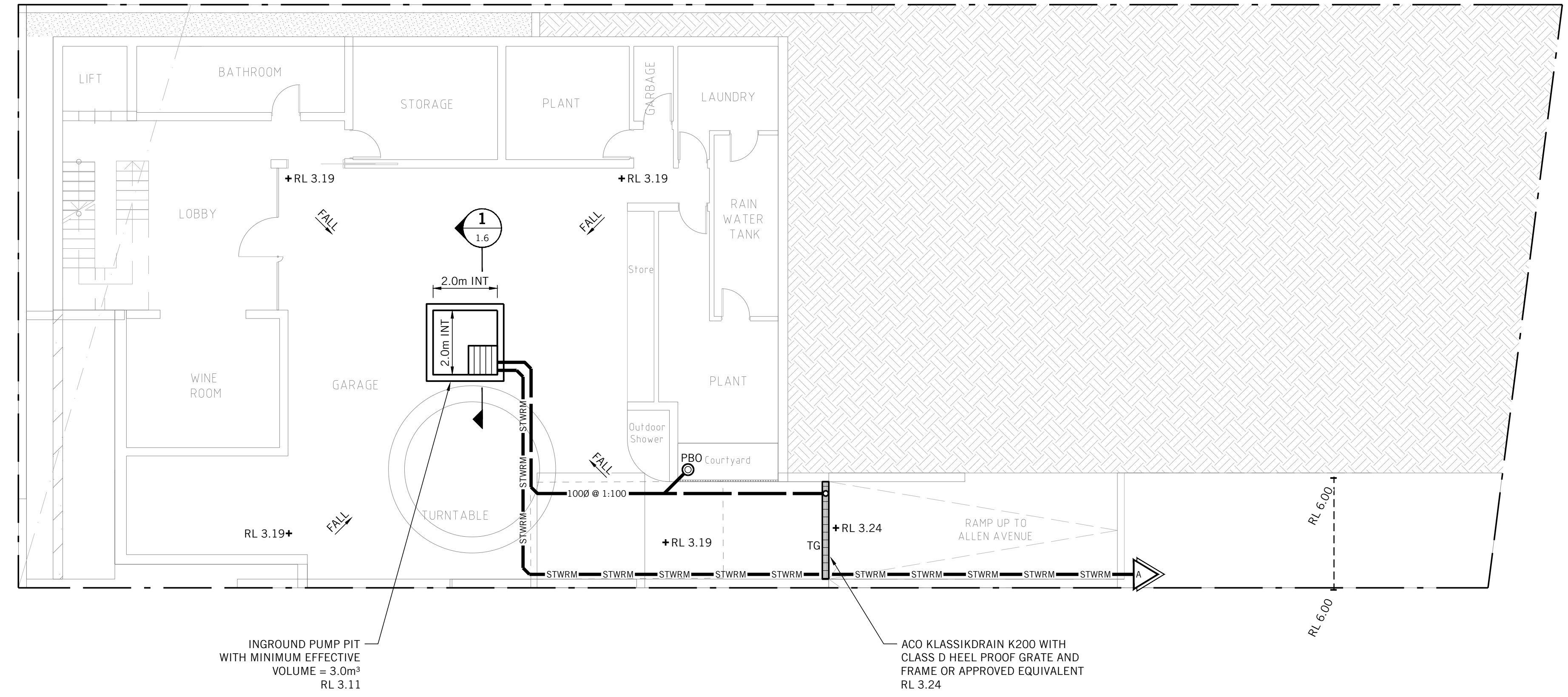
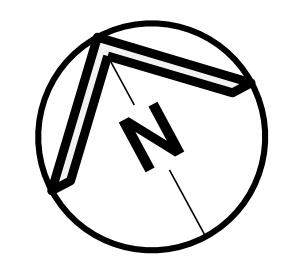
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Electronic Code	Signature Date	Designed
.	.	NVH
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AS SHOWN	JULY 2022	NVH
Job No.	Drawing No.	Revision
2021H0040 CDA 1.1		2

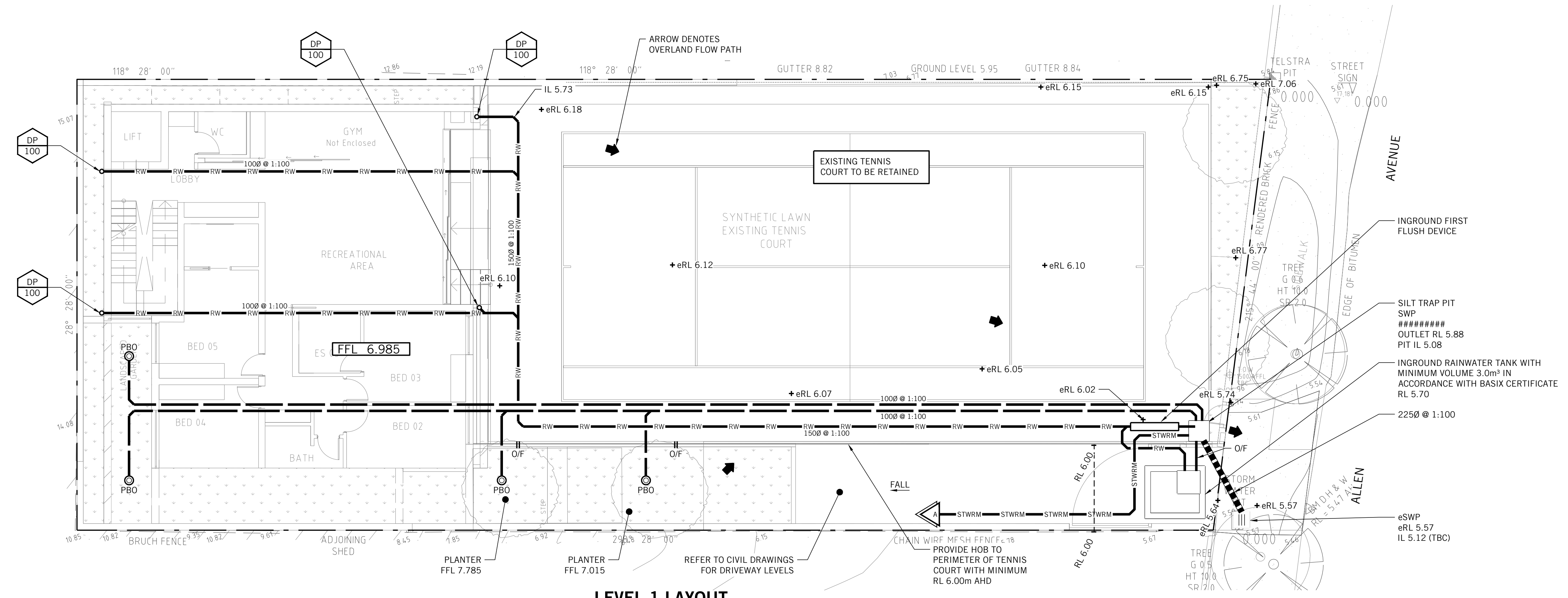
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SECTION 1
SCALE 1:50



BASEMENT LAYOUT



LEVEL 1 LAYOUT

2	RE-ISSUED FOR DA	NVH	KC	28.04.23
1	ISSUED FOR DA	SP	KC	29.07.22
Rev.	Issue / Amendment	By	App.	Date



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 t 612 9460 9000 f 612 9460 9090
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STORMWATER SERVICES

Client
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ARCHITECT
DESIGN KING COMPANY

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 T: 9261 3062 F: 9261 3175 W: www.designking.com.au

Project
**NEW RESIDENCE
 2A ALLEN AVENUE
 BILGOLA BEACH**

Title
**PROPOSED STORMWATER DRAINAGE
 BASEMENT AND LEVEL 1 FLOOR
 LAYOUTS**

ELECTRONIC SIGNATURE: THIS DRAWING HAS BEEN ASSIGNED AN ELECTRONIC SIGNATURE CODE. THE PRESENCE OF THIS CODE SIGNIFIES THAT THIS IS THE CERTIFIED DRAWING ISSUED FOR CONSTRUCTION. DO NOT SCALE DRAWINGS USE FIGURED DIMENSIONS

Electronic Code	Signature Date	Designed
.		K.C.
Scale at A1	Date	Drawn
1:100	JULY 2022	S.P.
Job No.	Drawing No.	Revision
2021H0040 SWDA 1.5		2

NOT FOR CONSTRUCTION