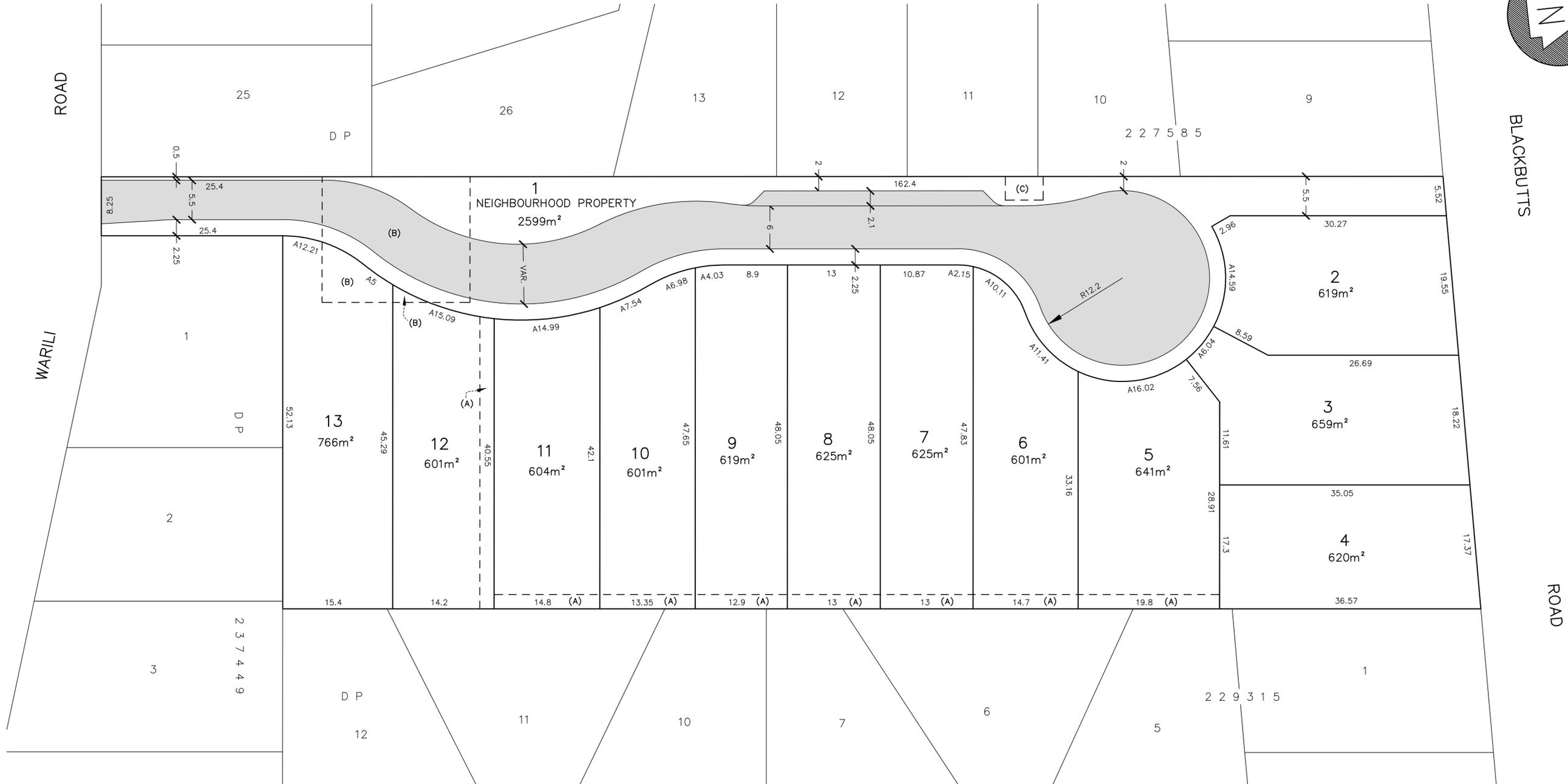
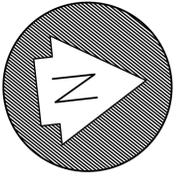



  
**THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT**
  
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- (A) EASEMENT TO DRAIN WATER 2 WIDE
- (B) POSITIVE COVENANT (OSD)
- (B) RESTRICTION ON THE USE OF LAND (OSD)
- (C) EASEMENT FOR PADMOUNT SUBSTATION 3.3 WIDE

- NOTES:**
1. FOR DA PURPOSES ONLY
  2. ALL DIMENSIONS AND AREAS SUBJECT TO REGISTRATION OF THE FINAL PLAN AT NSW LRS



DATE	REVISIONS	BY
23/1/25	EASEMENTS AMENDEND	VK
8/1/25	LOTS 5-13 AMENDEND	VK
5/9/24	GENERAL AMENDMENTS	VK

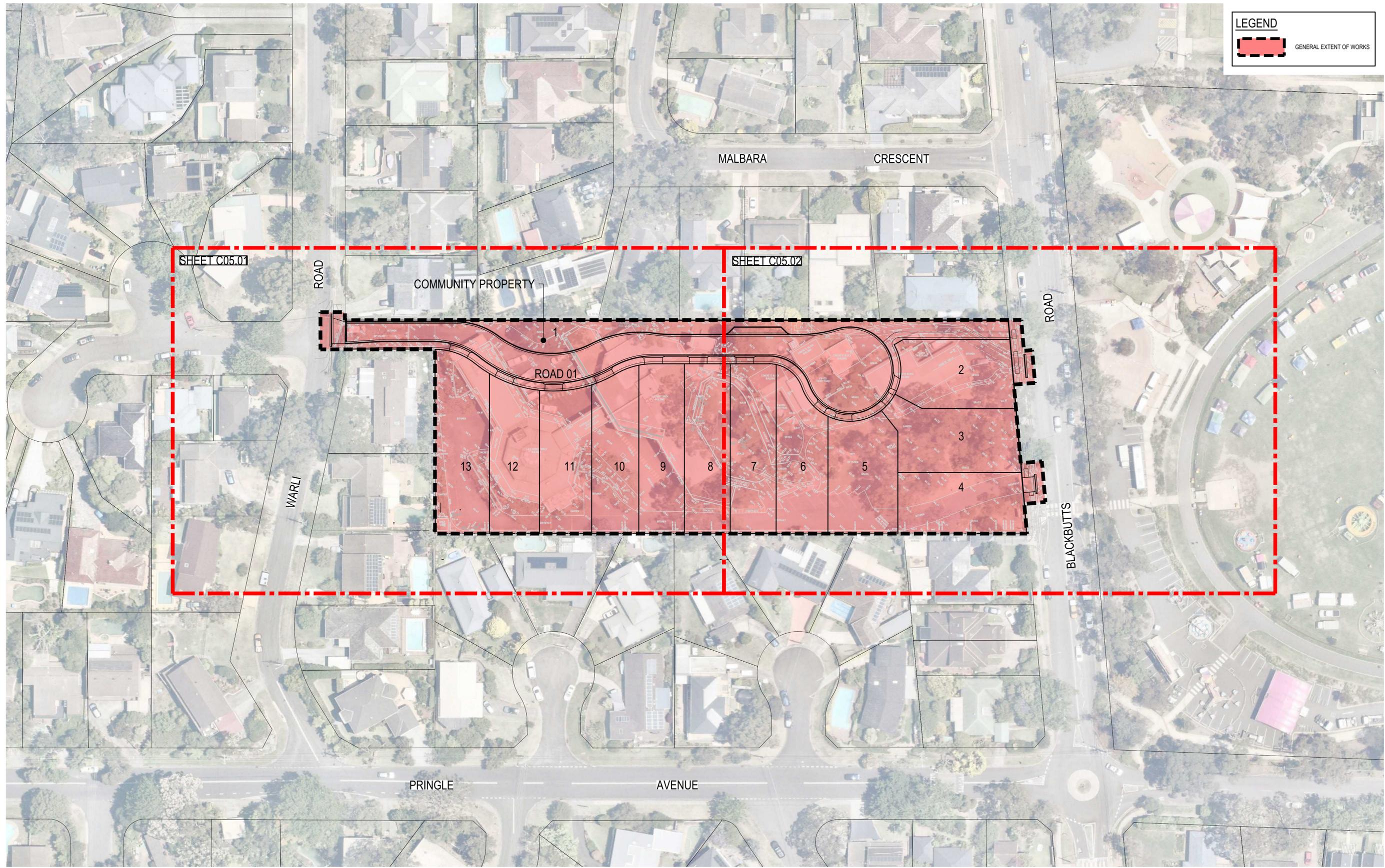


**YSCO GEOMATICS**  
**LAND RESOURCE CONSULTANTS**  
 SUITE 4, 114 HAMPDEN ROAD, ARTARMON, 2064  
 PH: 1021 94198222 FAX: (02) 94194762  
 Email : enquiries@yscogeomatics.com.au  
 Website : www.yscogeomatics.com.au  
 YOUNDALE STRUDWICK & COMPANY PTY LTD A.C.N. 002 819 865

GEOMATIC ENGINEERING  
 LAND & ENGINEERING SURVEYING  
 PROJECT MANAGEMENT  
 SOIL AND WATER MANAGEMENT  
 ENVIRONMENTAL PLANNING & DESIGN

PLAN SHOWING PROPOSED NEIGHBOURHOOD SCHEME  
 SUBDIVISION OF LOT 1 IN DP1298188 & LOT 1 IN  
 DP524083, BEING No.49 BLACKBUTT RD, FRENCHS  
 FOREST. NORTHERN BEACHES LGA.

DRAWN: 17 JANUARY 2024	CHECKED:	SCALE: 1:300 © A1	DATUM:	REFERENCE: 0923/3D
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**LEGEND**

 GENERAL EXTENT OF WORKS

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL	MKH	
2	15/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL	MKH	
1	7/03/2024	ISSUED FOR DEVELOPMENT APPLICATION	ZW	LD	MKH	

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**SEKISUI HOUSE**

2024/0492

Scale



Scale 1:500 @A1

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Project  
49 BLACKBUTTS ROAD  
FRENCHS FOREST  
CIVIL ENGINEERING WORKS

Title  
GENERAL ARRANGEMENT PLAN

Scale  
1:500

Date  
07/03/2024

Size  
A1

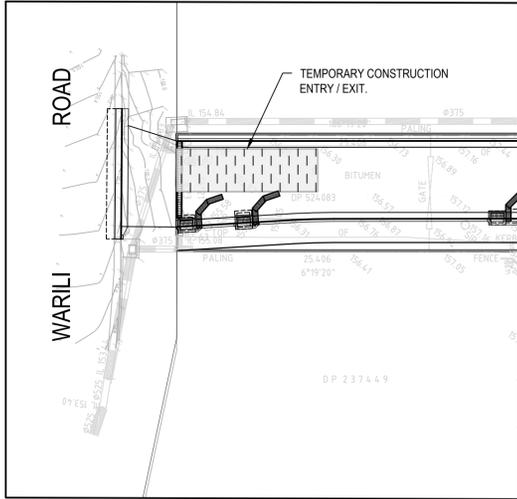
Datum  
GDA 2020

Status  
**FOR INFORMATION ONLY**  
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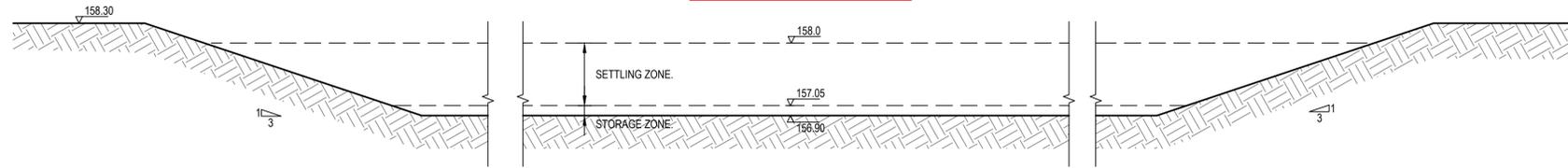
Project Number/Drawing Number  
**230057-00-DA-C01.41**

Revision  
**3**

northern beaches council  
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 DA2024/0492



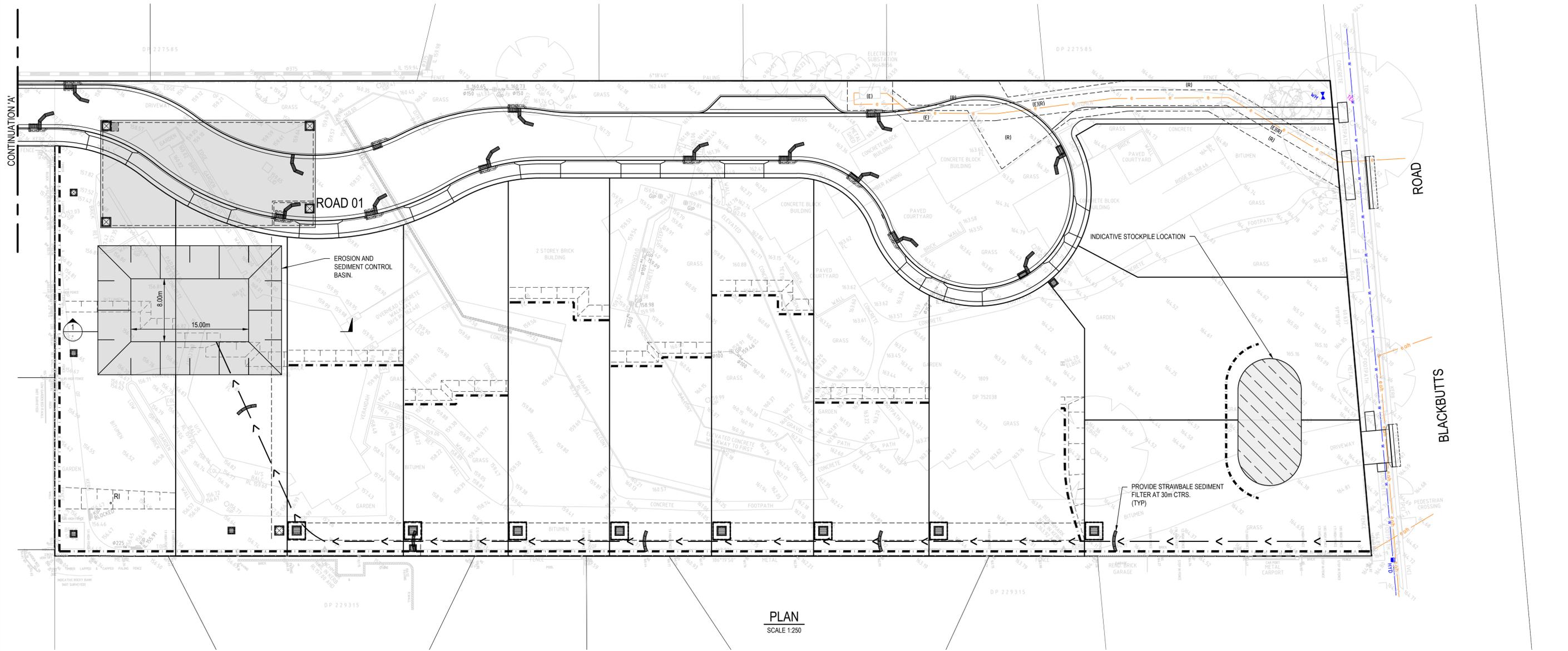
**CONTINUATION 'A'**  
SCALE 1:250



**SECTION 1**  
SCALE 1:50

**NOTE**  
REFER DRG. CC03.21 FOR EROSION AND SEDIMENT BASIN CALCULATION TABLE.

LEGEND	
	TEMPORARY CONSTRUCTION EXIT REFER TO DRG. C03.21 FOR DETAIL
	STOCKPILES (SD 4-1) REFER TO DRG. C03.21 FOR DETAIL
	SEDIMENT FENCE (SD 6-8) REFER TO DRG. C03.21 FOR DETAIL
	CATCH DRAIN REFER TO DRG. C03.21 FOR DETAIL
	SEDIMENT TRAP FOR KERB INLET (ON GRADE - SANDBAG) REFER TO DRG. C03.21 FOR DETAIL
	GEOTEXTILE INLET FILTER (SD 6-12) REFER TO DRG. C03.21 FOR DETAIL
	STRAWBALE SEDIMENT FILTER (SD 6-7) REFER TO DRG. C03.21 FOR DETAIL
	TREES TO BE REMOVED



**PLAN**  
SCALE 1:250

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
4	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL	MKH	
3	22/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL	MKH	
2	15/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL	MKH	
1	7/03/2024	ISSUED FOR DEVELOPMENT APPLICATION	ZW	LD	MKH	

Client

Scale

SCALE 1:50 @A1  
SCALE 1:250 @A1

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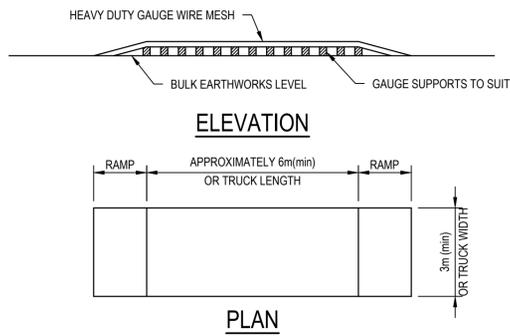
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Project  
 49 BLACKBUTTS ROAD  
 FRENCHS FOREST  
 CIVIL ENGINEERING WORKS

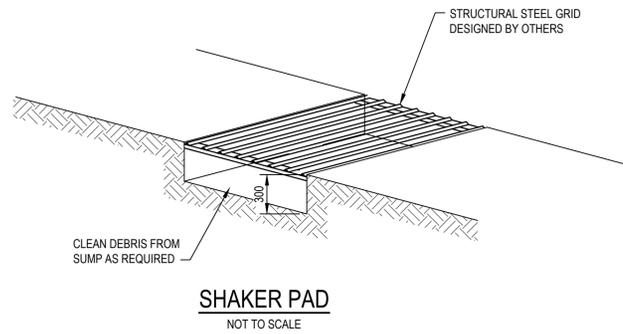
Title  
 EROSION AND SEDIMENTATION CONTROL PLAN

Scale AS SHOWN	Status <b>FOR INFORMATION ONLY</b> NOT TO BE USED FOR CONSTRUCTION
Date 07/03/2024	Project Number/Drawing Number 230057-00-DA-C03.01
Size A1	Revision 4
Datum GDA 2020	

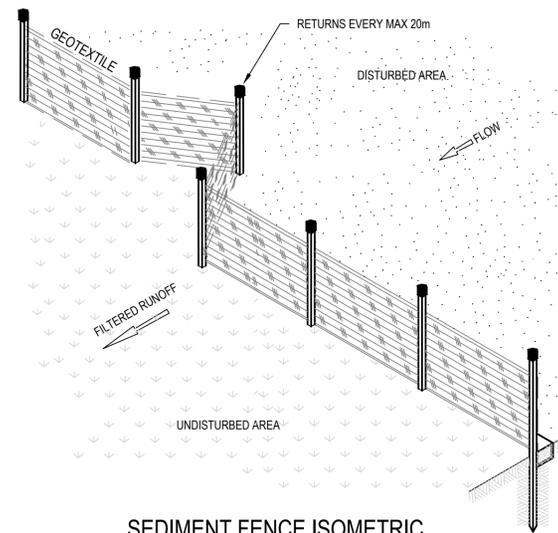


**TEMPORARY CONSTRUCTION EXIT  
(SHAKER PAD DETAIL)**

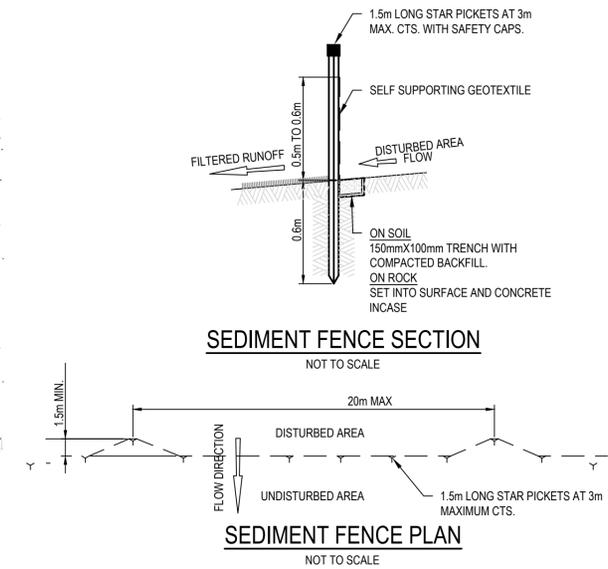
THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE REPAIR AND OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.



**SHAKER PAD  
NOT TO SCALE**



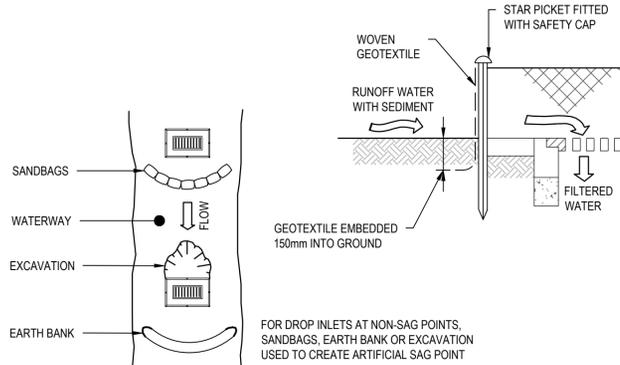
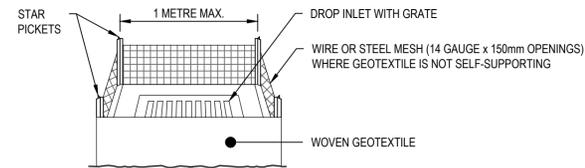
**SEDIMENT FENCE ISOMETRIC  
NOT TO SCALE**



**SEDIMENT FENCE SECTION  
NOT TO SCALE**

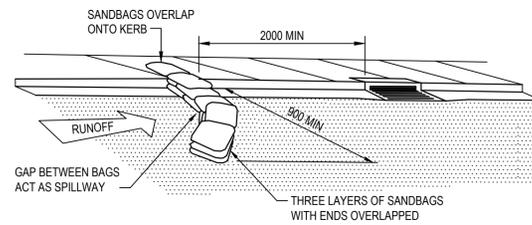
**SEDIMENT FENCE PLAN  
NOT TO SCALE**

**THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT DA2024/0492**

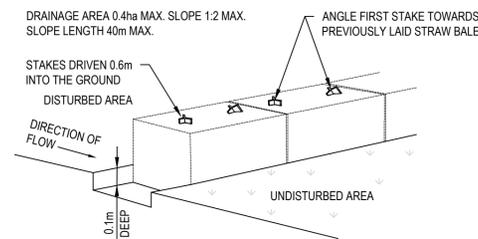


- CONSTRUCTION NOTES**
- FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
  - FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
  - IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
  - DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

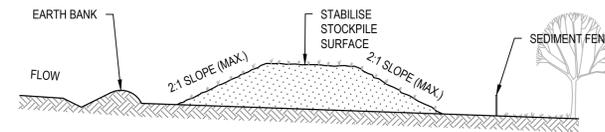
**GEOTEXTILE INLET FILTER (SD 6-12)**



**SEDIMENT TRAP FOR KERB INLET  
(ON GRADE - SANDBAG)  
NOT TO SCALE**



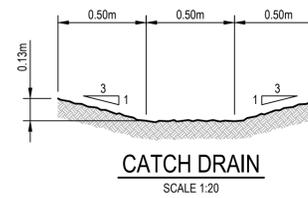
**STRAW BALE SEDIMENT FILTER  
NOT TO SCALE**



**CONSTRUCTION NOTES**

- PLACE STOCKPILES MORE THAN 2m (PREFERABLY 5m) FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
- CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
- WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
- WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
- CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) TO 2m DOWNSLOPE.

**STOCKPILES (SD 4-1)**



**CATCH DRAIN  
SCALE 1:20**

**1. Erosion Hazard and Sediment Basins**

Site Name: 49 Blackbutts Road  
Site Location: Frenchs Forest  
Precinct/Stage:  
Other Details:

Site area	Sub-catchment or Name of Structure	Notes
Total catchment area (ha)	1.017	
Disturbed catchment area (ha)	1.017	

**Soil analysis (enter sediment type if known, or laboratory particle size data)**

Sediment Type (C, F or D) if known:	C	F	D	Notes
% sand (fraction 0.02 to 2.00 mm)				From Appendix C (if known)
% silt (fraction 0.002 to 0.02 mm)				Enter the percentage of each soil fraction. E.g. enter 10 for 10%
% clay (fraction finer than 0.002 mm)				E.g. enter 10 for dispersion of 10%
Dispersion percentage				See Section 6.3.3(e). Auto-calculated
% of whole soil dispersible				Automatic calculation from above
Soil Texture Group	C			

**Rainfall data**

Design rainfall depth (no of days)	5	10	20	30	60	90	Notes
Design rainfall depth (percentile)	85						See Section 6.3.4 and, particularly, Table 6.3 on pages 6-24 and 6-25.
x-day, y-percentile rainfall event (mm)	44						
Rainfall R-factor (if known)							Only need to enter one or the other here
IFD: 2-year, 6-hour storm (if known)	14						

**RUSLE Factors**

Rainfall erosivity (R-factor)	4280						Auto-filled from above
Soil erodibility (K-factor)	0.007						
Slope length (m)	170						
Slope gradient (%)	5.5						RUSLE LS factor calculated for a high n/interill ratio.
Length/gradient (LS-factor)	2.07						
Erosion control practice (P-factor)	1.3	1.3	1.3	1.3	1.3	1.3	
Ground cover (C-factor)	1	1	1	1	1	1	

**4. Volume of Type C (Coarse) Sediment Basins**

**Type C Basin Design Criteria**

Structure Name							Auto-filled from Worksheet 1
Catchment Area (ha)	1.017						Auto-filled from Worksheet 1
Sediment type (C, F or D)	C						Auto-filled from Worksheet 1
Design rainfall event	0.5						Choose design event from dropdown
Flow volume (m <sup>3</sup> /s)	0.087						Calculated from IFD values above
Area Factor	4100	4100	4100	4100	4100	4100	Default is 4,100. See pg 6-12
Depth of settling (water zone) (m)	0.6	0.6	0.6	0.6	0.6	0.6	Minimum is 0.6m (pg 6-12)

**Type C Basin Volume Calculations**

| Basin Surface Area (m <sup>2</sup> )           | 356.7 | Not Type C | Auto-calculated |
|--|-------|------------|------------|------------|------------|------------|-----------------|
| Settling (water) zone volume (m <sup>3</sup> ) | 214   | Not Type C | Auto-calculated |
| Storage (soil) zone volume (m <sup>3</sup> )   | 10.7  | Not Type C | Auto-calculated |
| Total basin volume (m <sup>3</sup> )           | 224.7 | Not Type C | Auto-calculated |

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1	7/03/2024	ISSUED FOR DEVELOPMENT APPLICATION	ZW	LD		MKH

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Scale

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Project  
49 BLACKBUTTS ROAD  
FRENCHS FOREST  
CIVIL ENGINEERING WORKS

Scale  
N.T.S

Date  
07/03/2024

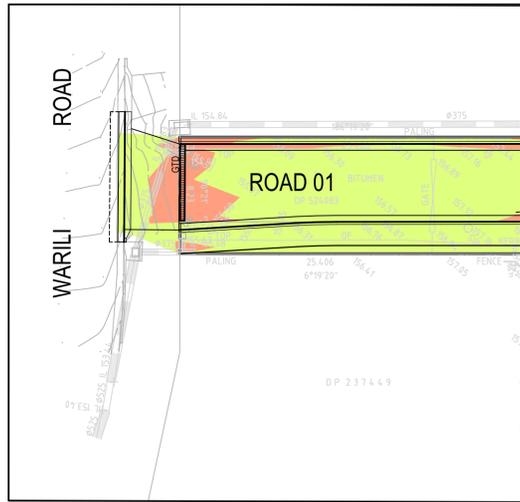
Size  
A1

Datum  
GDA 2020

Status  
**FOR INFORMATION ONLY**  
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number  
**230057-00-DA-C03.21**

Revision  
**3**



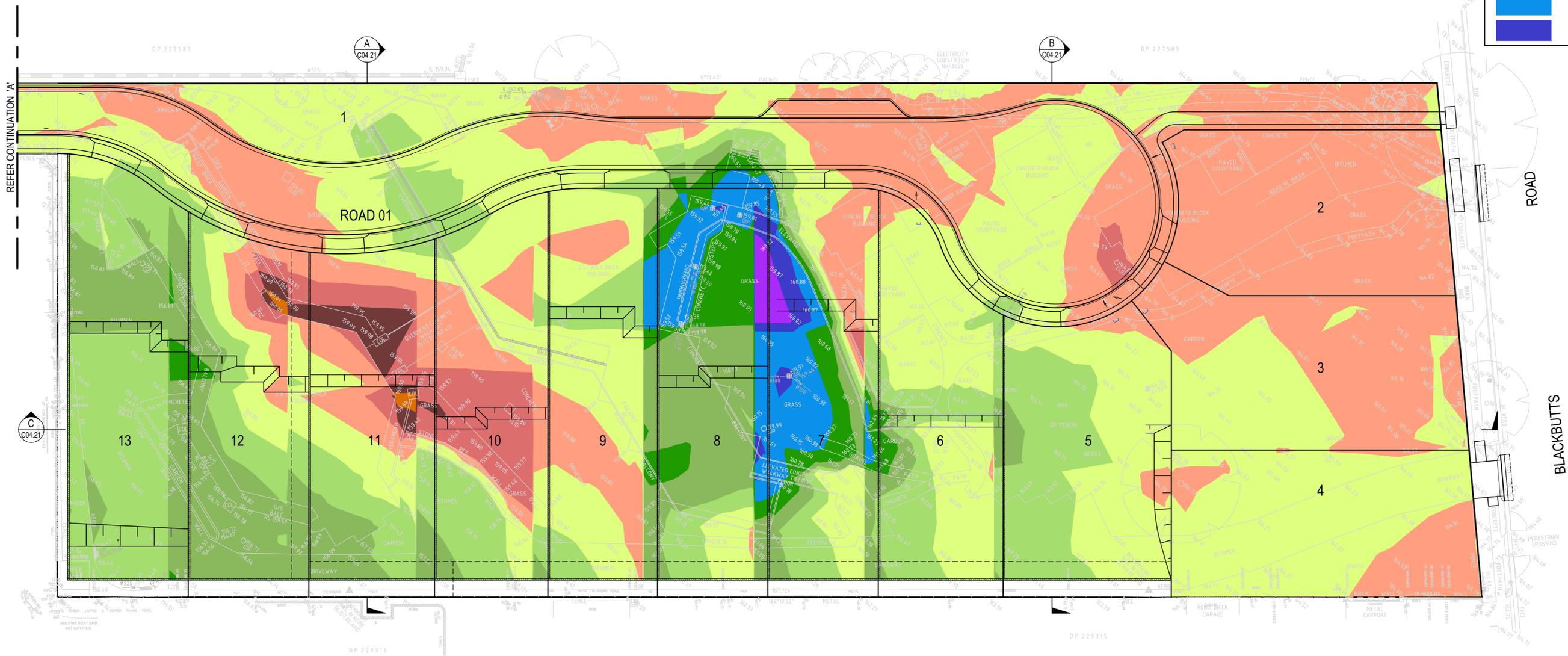
CONTINUATION 'A'  
SCALE 1:250

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DA2024/0492

- NOTES**
- NO ALLOWANCE HAS BEEN MADE FOR BULKING FACTORS. NOTE ALL VOLUMES DEPICTED ARE SOLID VOLUMES ONLY AND MAY NOT REFLECT DETAILED EARTHWORKS.
  - NO ALLOWANCE HAS BEEN MADE FOR DETAILED EARTHWORKS, ie SERVICE TRENCHING, DETAILED EXCAVATION AND THE LIKE.
  - APPROXIMATE BULK EARTHWORKS VALUES AS FOLLOWS;  
CUT 2,294m<sup>3</sup>  
FILL 4,133m<sup>3</sup>  
BALANCE 1,839m<sup>3</sup> (IMPORT)  
VOLUMES BASED ON EXISTING SURFACE LEVEL VERSUS DESIGN SURFACE LEVEL. ALLOWANCE HAS BEEN MADE FOR STRIPPING AND BULKING OF ROAD.

**LEGEND**

	GREATER THAN 3.5m CUT
	3.0m TO 3.5m CUT
	2.5m TO 3.0m CUT
	2.0m TO 2.5m CUT
	1.5m TO 2.0m CUT
	1.0m TO 1.5m CUT
	0.5m TO 1.0m CUT
	0.0m TO 0.5m CUT
	0.0m TO 0.5m FILL
	0.5m TO 1.0m FILL
	1.0m TO 1.5m FILL
	1.5m TO 2.0m FILL
	2.0m TO 2.5m FILL
	GREATER THAN 2.5m FILL



REV.	DATE	DESCRIPTION	DRN	DES.	VERIF.	APPD.
4	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL	MKH	
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2	15/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL	MKH	
1	7/03/2024	ISSUED FOR DEVELOPMENT APPLICATION	ZW	LD	MKH	

Client

Scale

SCALE 1:250 @A1

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Project  
49 BLACKBUTTS ROAD  
FRENCHS FOREST  
CIVIL ENGINEERING WORKS

Title  
EARTHWORKS CUT AND FILL PLAN

Scale  
1:250

Date  
07/03/2024

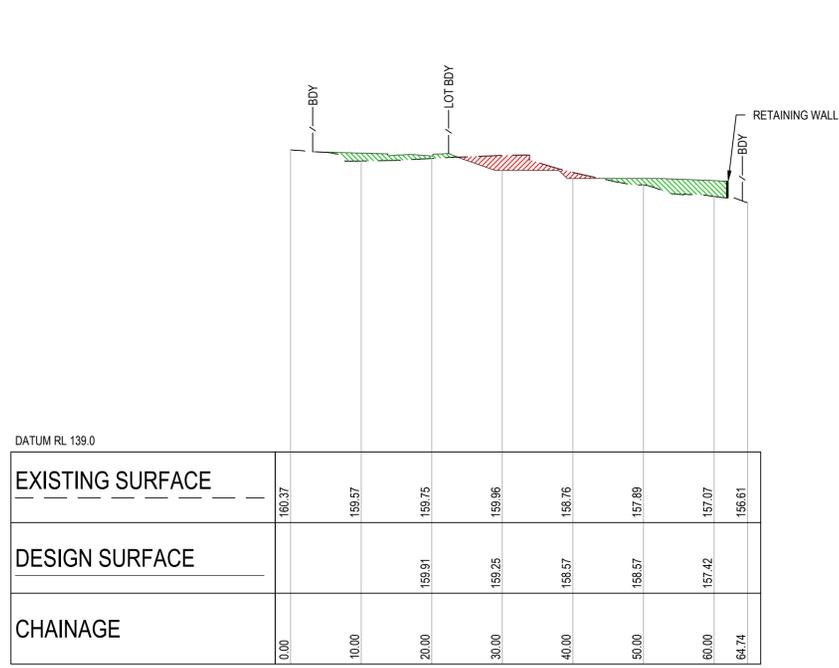
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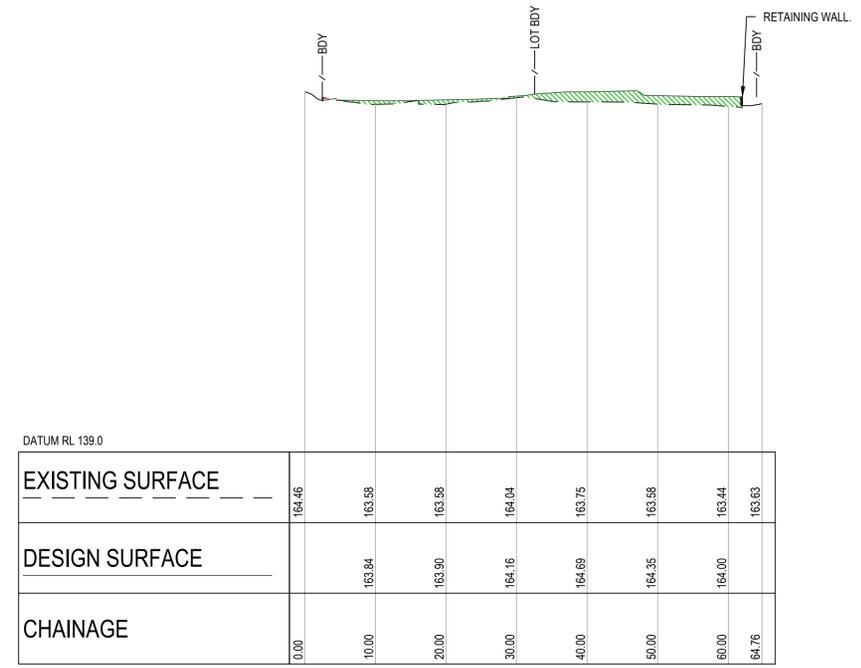
Status  
**FOR INFORMATION ONLY**  
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Project Number/Drawing Number  
230057-00-DA-C04.01

Revision  
4

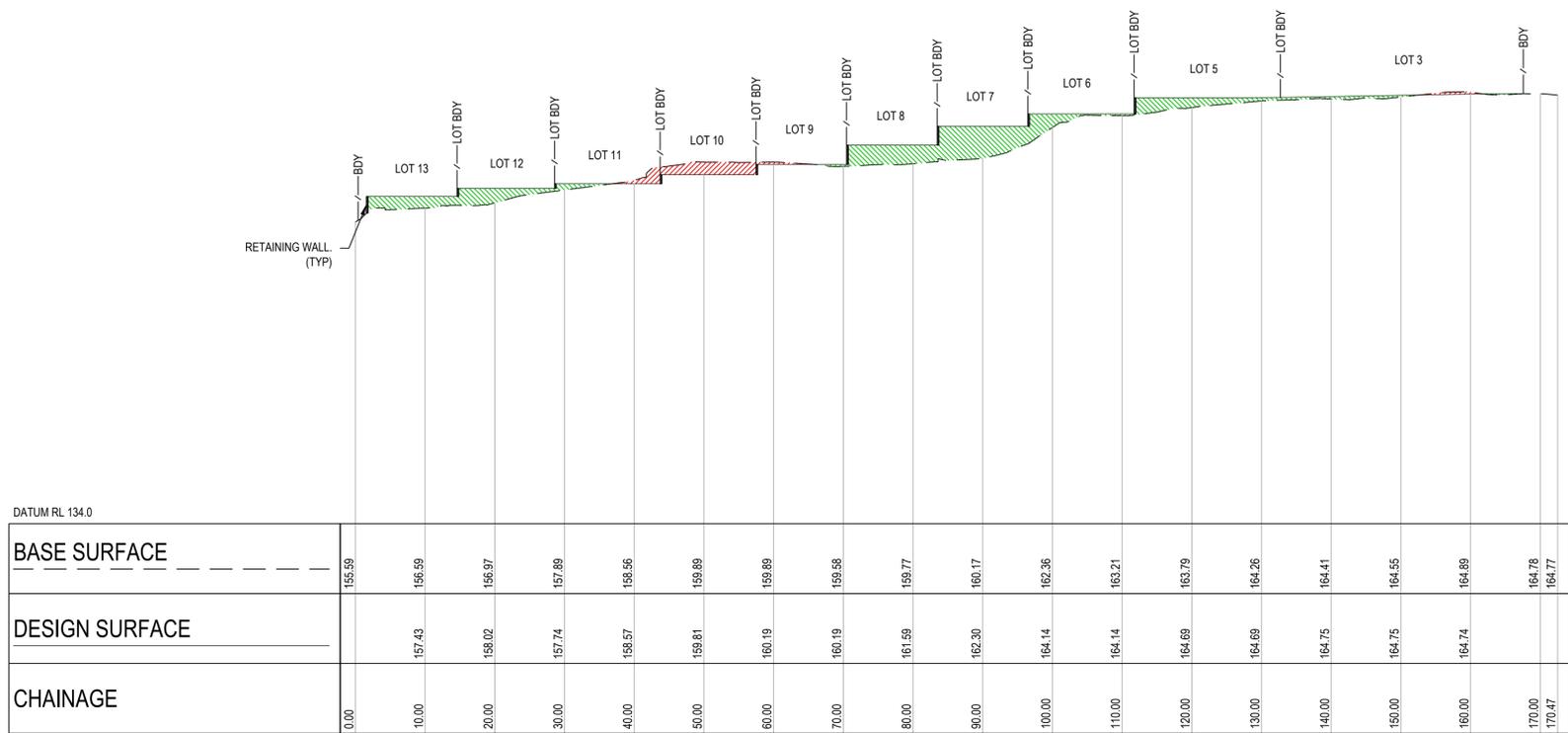


SECTION A  
 HORIZONTAL SCALE 1:500@A1  
 VERTICAL SCALE 1:250@A1  
 C04.01



SECTION B  
 HORIZONTAL SCALE 1:500@A1  
 VERTICAL SCALE 1:250@A1  
 C04.01

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 DA2024/0492



SECTION C  
 HORIZONTAL SCALE 1:500@A1  
 VERTICAL SCALE 1:250@A1  
 C04.01

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL		MKH
2	15/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL		MKH
1	7/03/2024	ISSUED FOR DEVELOPMENT APPLICATION	ZW	LD		MKH

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Project  
 49 BLACKBUTTS ROAD  
 FRENCHS FOREST  
 CIVIL ENGINEERING WORKS

Scale  
 AS SHOWN  
 Date  
 07/03/2024

Title  
 EARTHWORKS CUT AND FILL SECTIONS

Size  
 A1  
 Datum  
 GDA 2020

Status  
**FOR INFORMATION ONLY**  
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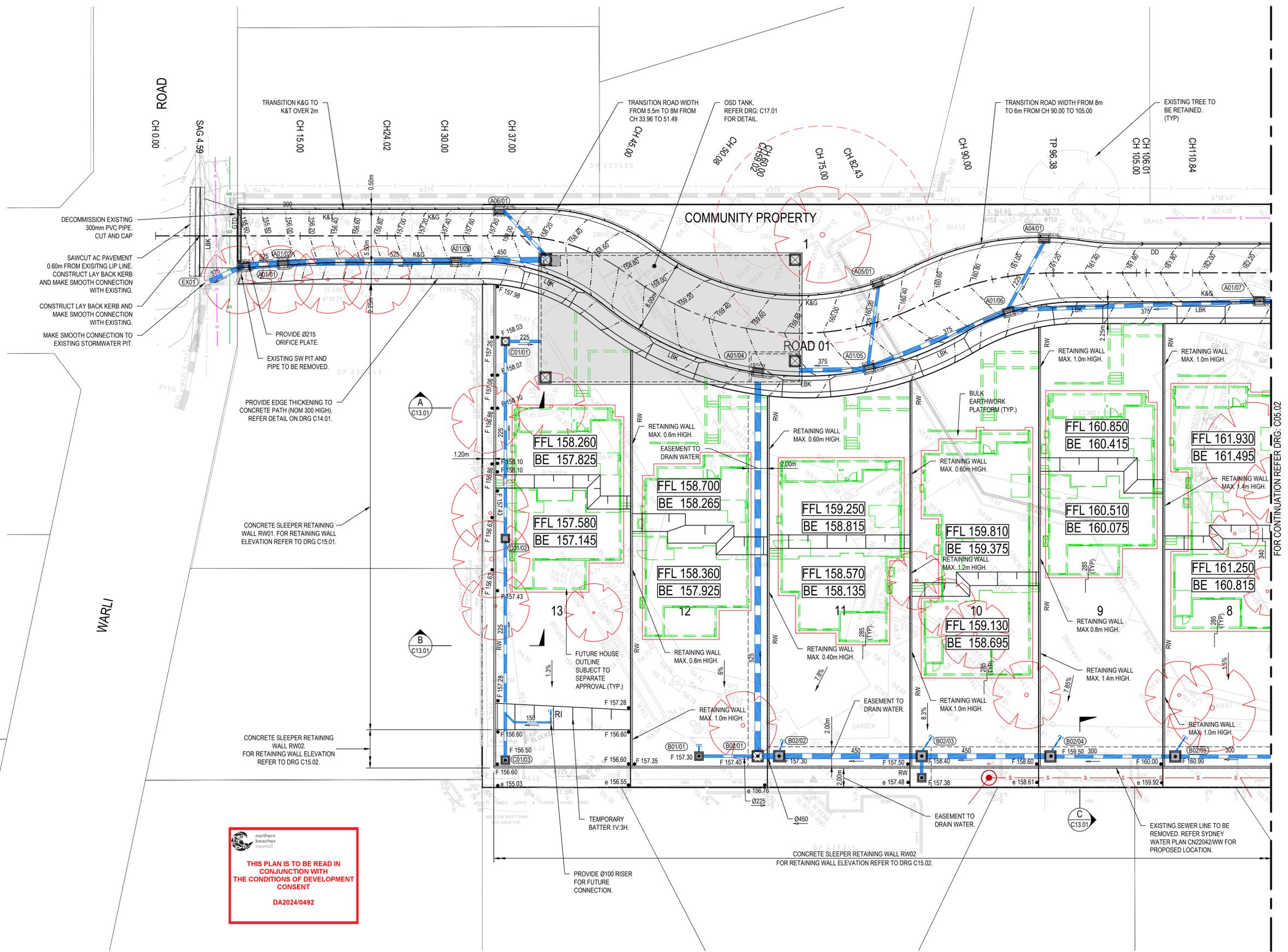
Project Number/Drawing Number  
**230057-00-DA-C04.21**

Revision  
**3**

### LEGEND

	SITE BOUNDARY
	CONTOUR
	BATTER
	RETAINING WALL
	KERB AND GUTTER
	KERB ONLY
	DISH DRAIN
	LAYBACK KERB REFER COUNCIL S003 STANDARD DETAIL
	FUTURE FINISHED FLOOR LEVEL
	BULK EARTHWORKS LEVEL
	FINISHED SURFACE LEVEL
	BULK EARTHWORKS STEP
	PIPE SIZE STORMWATER DRAINAGE LINE FLOW DIRECTION
	STORMWATER LINE/PIT NUMBER
	KERB INLET PIT
	SURFACE INLET PIT/JUNCTION PIT
	STORMWATER RISER
	TREES TO BE REMOVED
	PROPOSED SEWER
	PROPOSED SEWER MANHOLE
	PROPOSED SEWER MAINTENANCE SHAFT
	PROPOSED SEWER TERMINAL MAINTENANCE SHAFT

**NOTE**  
 PROVIDE STORMWATER FILTER BASKETS AT THE FOLLOWING PITS:  
 A01/01, A01/02, A01/04, A01/12, A02/01, A05/01, A06/01  
 B01/01, B02/02, B02/03, B02/04, B02/05, B02/06,  
 B02/07, B02/08, B02/09, C01/02, C01/03



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 DA2024/0492

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
5	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL		MKH
4	22/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL		MKH
3	15/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL		MKH
1	7/03/2024	ISSUED FOR DEVELOPMENT APPLICATION	ZW	LD		MKH
1	28/02/2024	80% ISSUED FOR INFORMATION	ZW	LD		MKH

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Project  
 49 BLACKBUTTS ROAD  
 FRENCHS FOREST  
 CIVIL ENGINEERING WORKS

Title  
 SITWORKS AND STORMWATER MANAGEMENT PLAN

SHEET 01

Scale  
 1:200

Date  
 28/02/2024

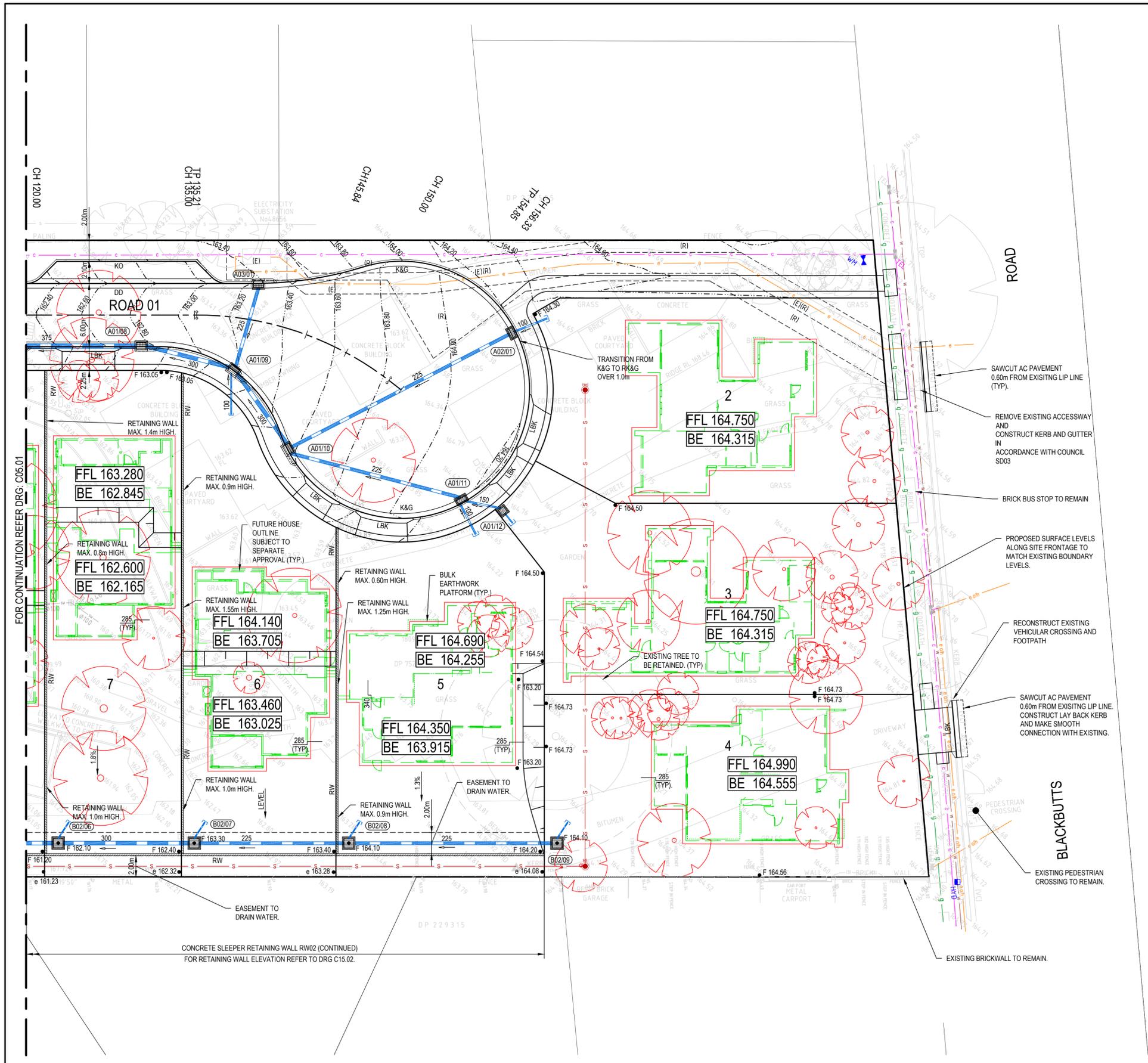
Size  
 A1

Datum  
 GDA 2020

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Revision  
**5**



LEGEND	
	SITE BOUNDARY
	CONTOUR
	BATTER
	RETAINING WALL
	K&G
	KO
	DD
	LAYBACK KERB REFER COUNCIL SD03 STANDARD DETAIL
	FFL 158.000
	BE 157.415
	F 100.00
	285
	PIPE SIZE STORMWATER DRAINAGE LINE
	FLOW DIRECTION
	A01/01
	KERB INLET PIT
	SURFACE INLET PIT/JUNCTION PIT
	RI
	TREES TO BE REMOVED
	PROPOSED SEWER
	PROPOSED SEWER MANHOLE
	PROPOSED SEWER MAINTENANCE SHAFT
	PROPOSED SEWER TERMINAL MAINTENANCE SHAFT

THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT  
 DA2024/0492

**NOTE**  
 PROVIDE STORMWATER FILTER BASKETS AT THE FOLLOWING PITS:  
 A01/01, A01/02, A01/04, A01/12, A02/01, A05/01, A06/01  
 B01/01, B02/02, B02/03, B02/04, B02/05, B02/06, B02/07, B02/08, B02/09, C01/02, C01/03

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
5	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL		MKH
4	22/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL		MKH
3	15/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL		MKH
1	7/03/2024	ISSUED FOR DEVELOPMENT APPLICATION	ZW	LD		MKH
1	28/02/2024	80% ISSUED FOR INFORMATION	ZW	LD		MKH

Client

Scale

Scale 1:200

North

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 Phone: 02 9922 6135  
[enspiresolutions.com.au](http://enspiresolutions.com.au)

Project  
 49 BLACKBUTTS ROAD  
 FRENCHS FOREST  
 CIVIL ENGINEERING WORKS

Title  
 SITESWORKS AND STORMWATER MANAGEMENT PLAN

SHEET 02

Scale  
 1:200

Date  
 28/02/2024

Size  
 A1

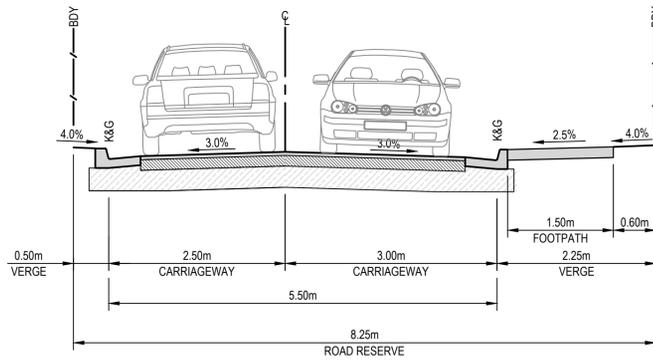
Datum  
 GDA 2020

Status  
**FOR INFORMATION ONLY**  
 NOT TO BE USED FOR CONSTRUCTION

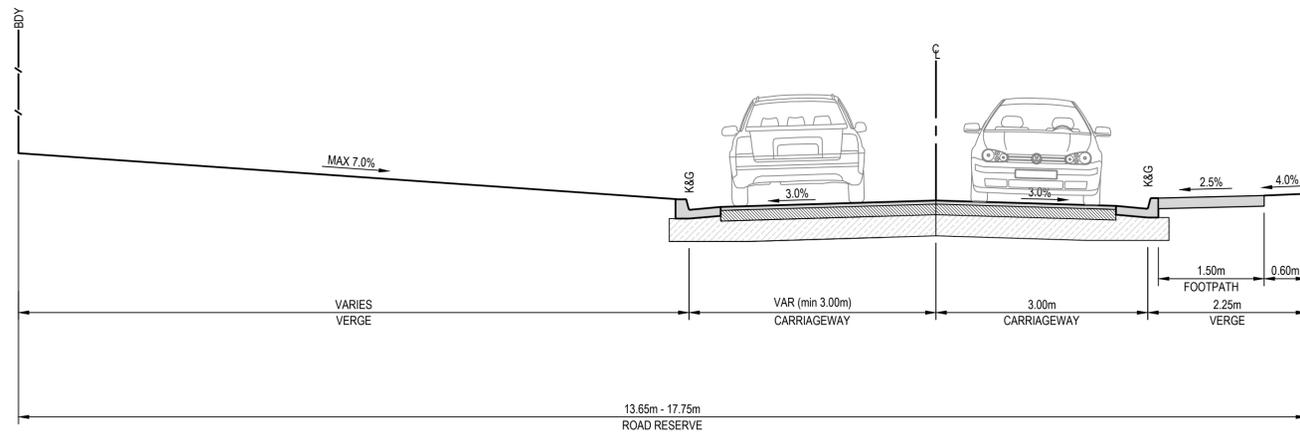
Project Number/Drawing Number  
**230057-00-DA-C05.02**

Revision  
**5**

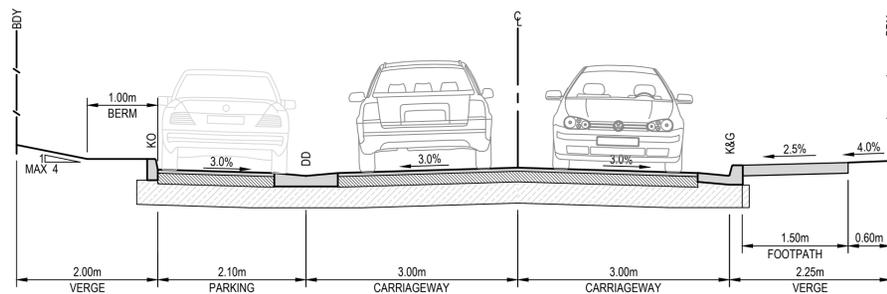

 northern beaches council  
**THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT**  
 DA2024/0492



**ROAD 01**  
 SCALE 1:50  
 CH 24.85 - CH 33.90



**ROAD 01**  
 SCALE 1:50  
 CH 30.90 - CH 120.00



**ROAD 01 WITH PARKING**  
 SCALE 1:50  
 CH 120.00 TO 135.13

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL		MKH
2	15/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL		MKH
1	7/03/2024	ISSUED FOR DEVELOPMENT APPLICATION	ZW	LD		MKH

Client



**SEKISUI HOUSE**

Scale



SCALE 1:50 @A1

North



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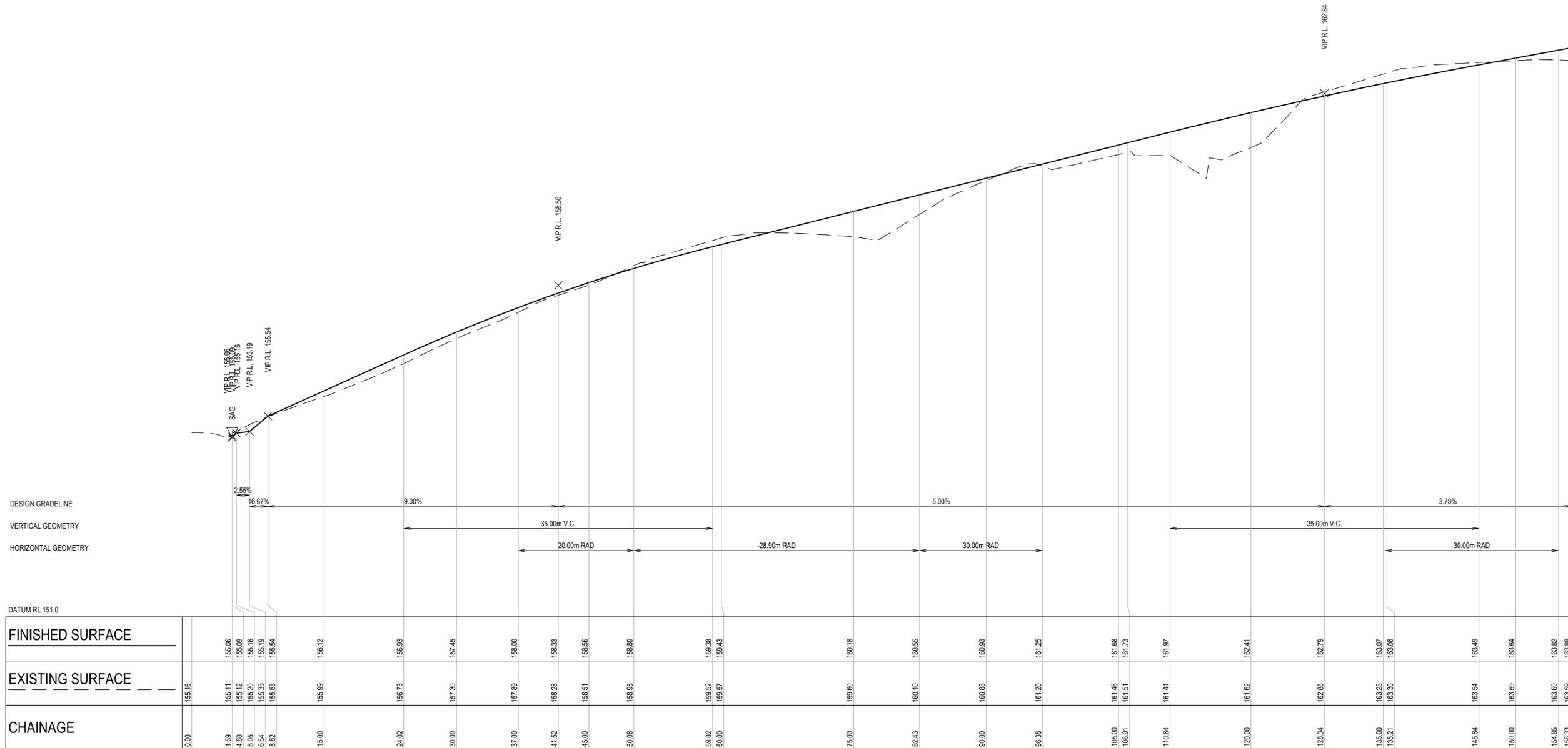
Project  
 49 BLACKBUTTS ROAD  
 FRENCHS FOREST  
 CIVIL ENGINEERING WORKS

Title  
 ROAD TYPICAL CROSS SECTIONS

Scale 1:50	Status <b>FOR INFORMATION ONLY</b> NOT TO BE USED FOR CONSTRUCTION
Date 07/03/2024	Project Number/Drawing Number 230057-00-DA-C06.01
Size A1	Revision 3
Datum GDA 2020	

**NOTE**

1. CONCRETE DRIVEWAY TO NORTHERN BEACHES COUNCIL STANDARD DRAWING No.1.
2. CONCRETE LAYBACK TO NORTHERN BEACHES COUNCIL STANDARD DRAWING No.3.



**ROAD 01 LONGITUDINAL SECTION**  
 SCALE 1:250 HORI  
 SCALE 1:50 VERT

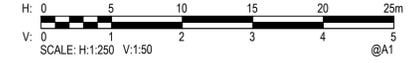
  
**THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT**  
**DA2024/0492**

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL		MKH
2	15/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL		MKH
1	7/03/2024	ISSUED FOR DEVELOPMENT APPLICATION	ZW	LD		MKH

Client



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Project  
 49 BLACKBUTTS ROAD  
 FRENCHS FOREST  
 CIVIL ENGINEERING WORKS

Title  
 ROAD LONGITUDINAL SECTION

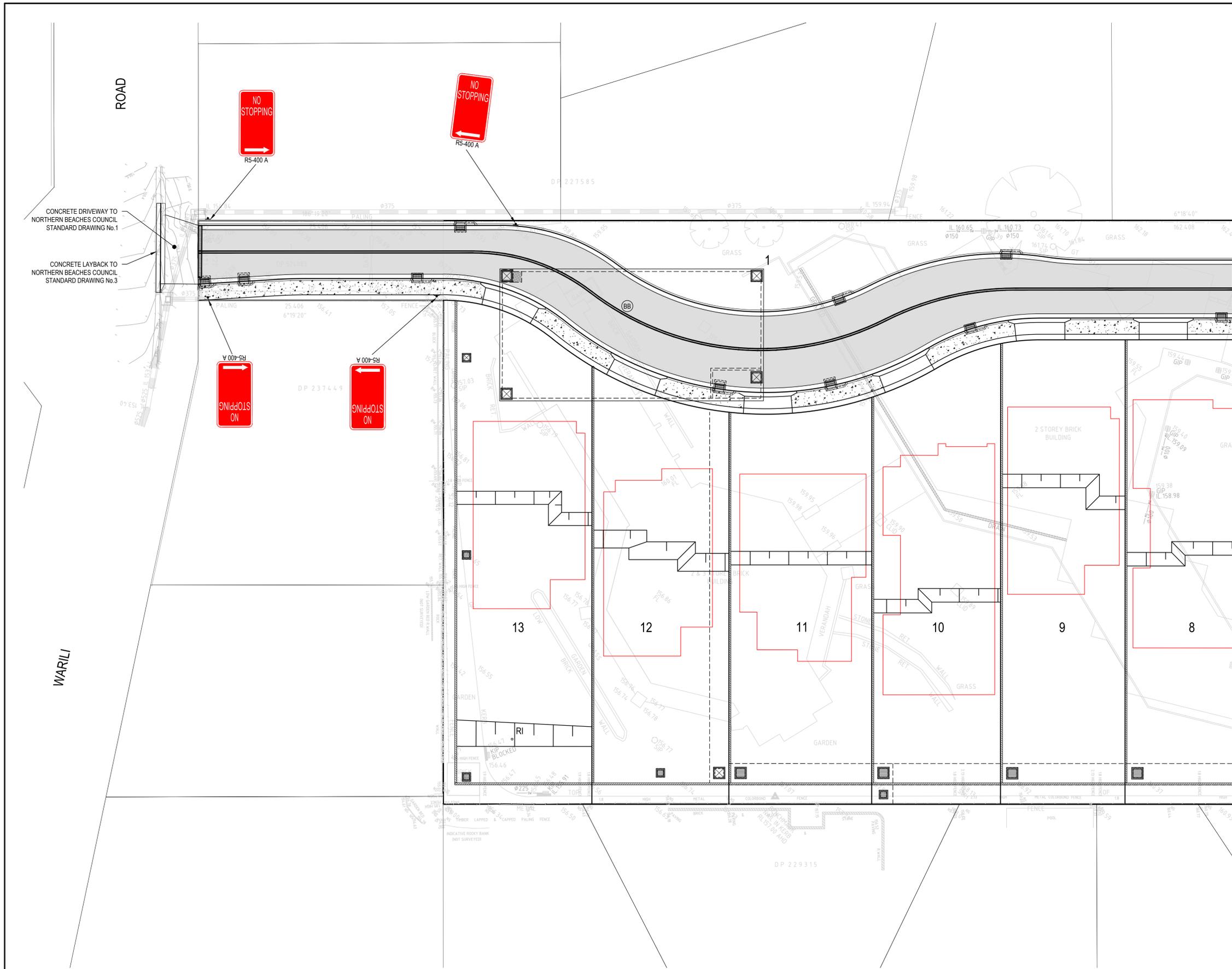
Scale  
 AS SHOWN  
 Date  
 07/03/2024

Size  
 A1  
 Datum  
 GDA 2020

Status  
**FOR INFORMATION ONLY**  
 NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number  
**230057-00-DA-C07.01**

Revision  
**3**



**LEGEND**

	PAVEMENT TYPE 1 PRIVATE ROAD
	PAVEMENT TYPE 2 PRIVATE CUL DE SAC
	PAVEMENT TYPE 3 CONCRETE FOOTPATH REFER NORTHERN BEACHES COUNCIL S004 & S005

**NOTE:**  
REFER DRG. C14.01 FOR PAVEMENT DETAILS

**PAVEMENT MARKING LEGEND**

**BARRIER LINES**

**CLEARWAY LINES**

- SIGNAGE AND LINE MARKING**
- LINE MARKING AND PAINT SHALL BE IN ACCORDANCE WITH AS 2700 AND AS 4049 AND TNSW SPECIFICATIONS.
  - ALL PAINT SHALL BE APPLIED BY MECHANICAL SPRAYER.
  - LINE MARKING SHALL BE SPOTTED OUT AND APPROVED PRIOR TO SPRAYING.
  - PAINT SHALL BE APPLIED AT A WET THICKNESS OF BETWEEN 0.35mm TO 0.40mm.
  - TRANSITION LINEMARKING TO SUIT EXISTING WHERE REQUIRED ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH AUSTRALIAN STANDARDS.
  - REMOVE ALL REDUNDANT PAVEMENT MARKING AS REQUIRED.
  - PROVIDE RETRO-REFLECTORISED PAVEMENT MARKERS TO COUNCIL AND TNSW REQUIREMENTS.
  - ALL LINEMARKING TO BE WHITE WITH THE EXCEPTION OF C2 AND C3 LINES ARE TO BE YELLOW.
  - CARPARK LINEMARKING PAINT SHALL BE TYPE 3, CLASS A, AND THE COLOUR SHALL BE WHITE AND NOT DISCOLOURED BY BITUMEN. EACH LINE SHALL BE 80mm WIDE.
  - ALL SIGNAGE TO BE IN ACCORDANCE WITH THE CURRENT VERSION OF THE TNSW REGULATORY SIGNS MANUAL.
  - RELOCATE OR REMOVE EXISTING SIGNS AS REQUIRED.
  - PROVIDE ADEQUATE APPROACH WARNING SIGNS DURING AND AFTER CONSTRUCTION.

northern beaches council

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**DA2024/0492**

FOR CONTINUATION REFER DRG. C11.02

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
4	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL	MKH	
3	22/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL	MKH	
2	15/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL	MKH	
1	7/03/2024	ISSUED FOR DEVELOPMENT APPLICATION	ZW	LD	MKH	

Client

**SEKISUI HOUSE**

Scale

SCALE 1:200 @A1

North

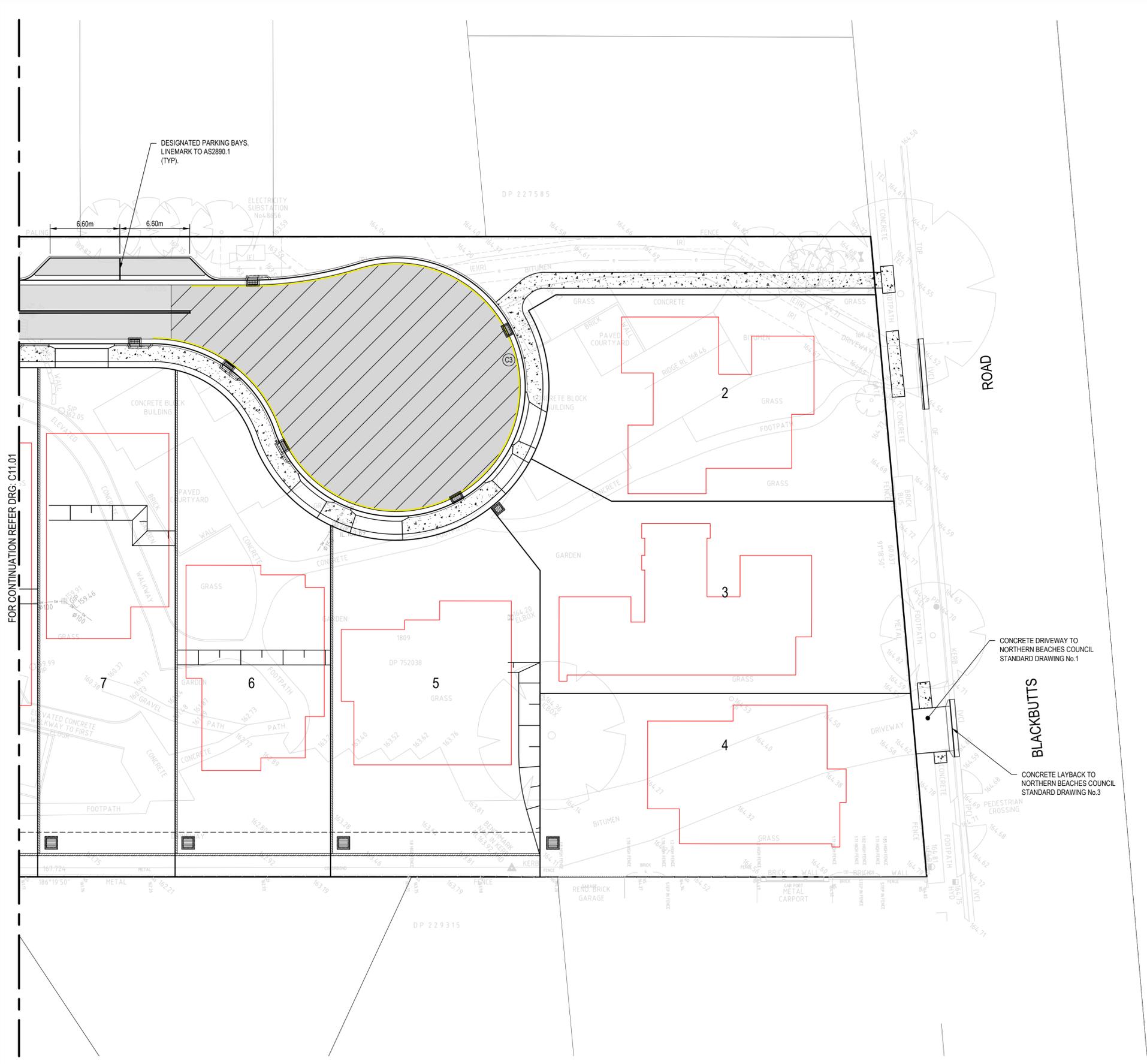
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ABN: 71 624 801 690  
Phone: 02 9922 6135  
enspiresolutions.com.au

Project  
49 BLACKBUTTS ROAD  
FRENCHS FOREST  
CIVIL ENGINEERING WORKS

Title  
PAVEMENT, SIGNAGE AND LINEMARKING PLAN

SHEET 01

Scale 1:200	Status <b>FOR INFORMATION ONLY</b> NOT TO BE USED FOR CONSTRUCTION
Date 07/03/2024	Project Number/Drawing Number 230057-00-DA-C11.01
Size A1	Revision 4
Datum GDA 2020	



**LEGEND**

	PAVEMENT TYPE 1 PRIVATE ROAD
	PAVEMENT TYPE 2 PRIVATE CUL DE SAC
	PAVEMENT TYPE 3 CONCRETE FOOTPATH REFER NORTHERN BEACHES COUNCIL S004 & S005

**NOTE:**  
REFER DRG. C14.01 FOR PAVEMENT DETAILS

**PAVEMENT MARKING LEGEND**

**BARRIER LINES**

**CLEARWAY LINES**

- SIGNAGE AND LINE MARKING**
1. LINE MARKING AND PAINT SHALL BE IN ACCORDANCE WITH AS 2700 AND AS 4049 AND TNSW SPECIFICATIONS.
  2. ALL PAINT SHALL BE APPLIED BY MECHANICAL SPRAYER.
  3. LINE MARKING SHALL BE SPOTTED OUT AND APPROVED PRIOR TO SPRAYING.
  4. PAINT SHALL BE APPLIED AT A WET THICKNESS OF BETWEEN 0.35mm TO 0.40mm.
  5. TRANSITION LINEMARKING TO SUIT EXISTING WHERE REQUIRED ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH AUSTRALIAN STANDARDS.
  6. REMOVE ALL REDUNDANT PAVEMENT MARKING AS REQUIRED.
  7. PROVIDE RETRO-REFLECTORISED PAVEMENT MARKERS TO COUNCIL AND TNSW. REQUIREMENTS.
  8. ALL LINEMARKING TO BE WHITE IN COLOUR WITH THE EXCEPTION OF C2 AND C3 LINES ARE TO BE YELLOW.
  9. CARPARK LINEMARKING PAINT SHALL BE TYPE 3, CLASS A, AND THE COLOUR SHALL BE WHITE AND NOT DISCOLOURED BY BITUMEN. EACH LINE SHALL BE 80mm WIDE.
  10. ALL SIGNAGE TO BE IN ACCORDANCE WITH THE CURRENT VERSION OF THE TNSW. REGULATORY SIGNS MANUAL.
  11. RELOCATE OR REMOVE EXISTING SIGNS AS REQUIRED.
  12. PROVIDE ADEQUATE APPROACH WARNING SIGNS DURING AND AFTER CONSTRUCTION.

**THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT DA2024/0492**

FOR CONTINUATION REFER DRG. C11.01

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL		MKH
2	15/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL		MKH
1	7/03/2024	ISSUED FOR DEVELOPMENT APPLICATION	ZW	LD		MKH

Client

**SEKISUI HOUSE**

Scale

Scale 1:200

North

enspire

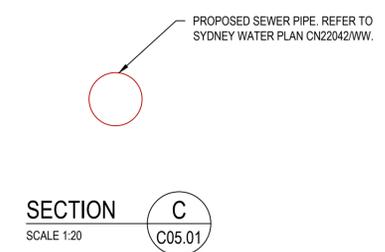
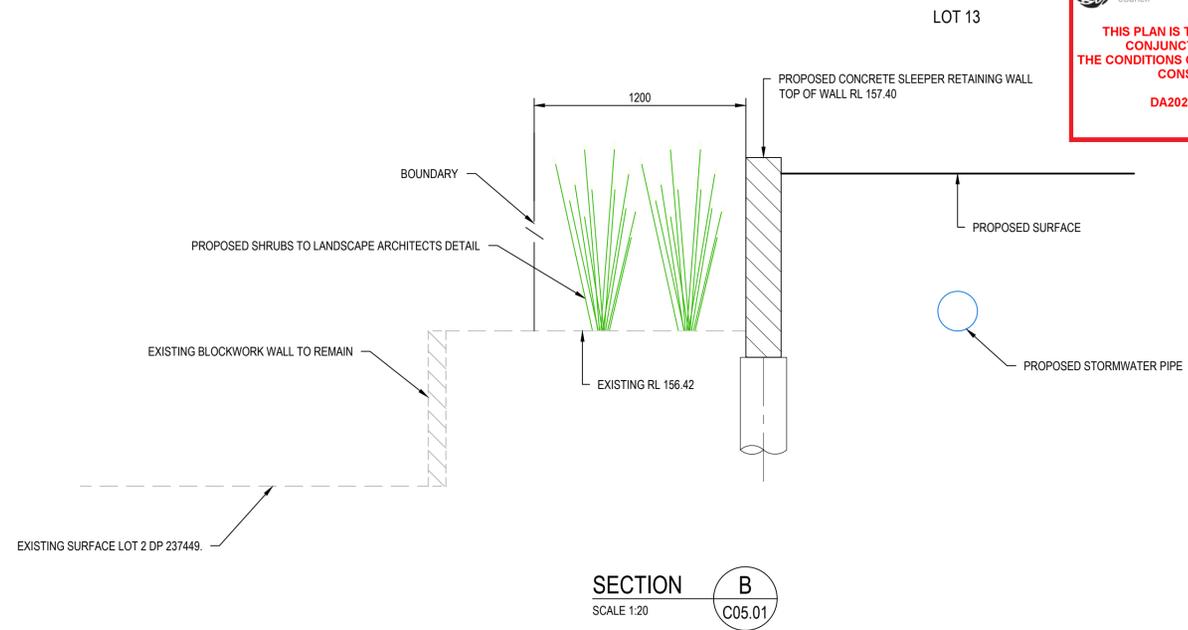
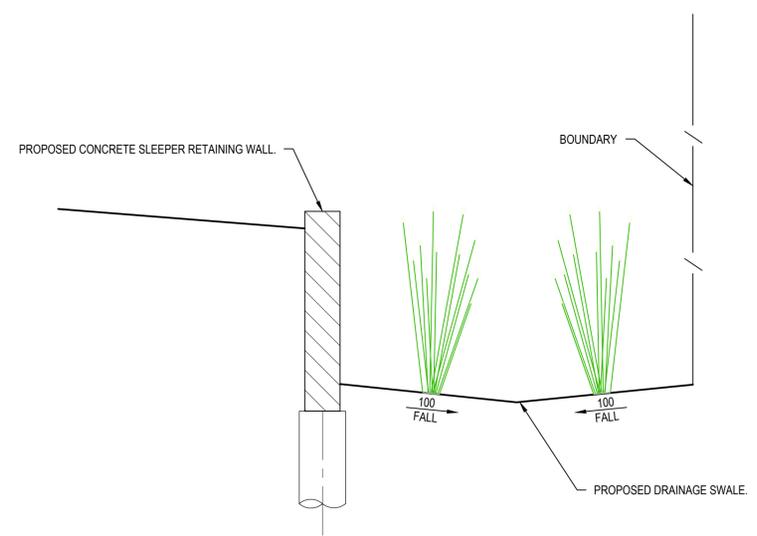
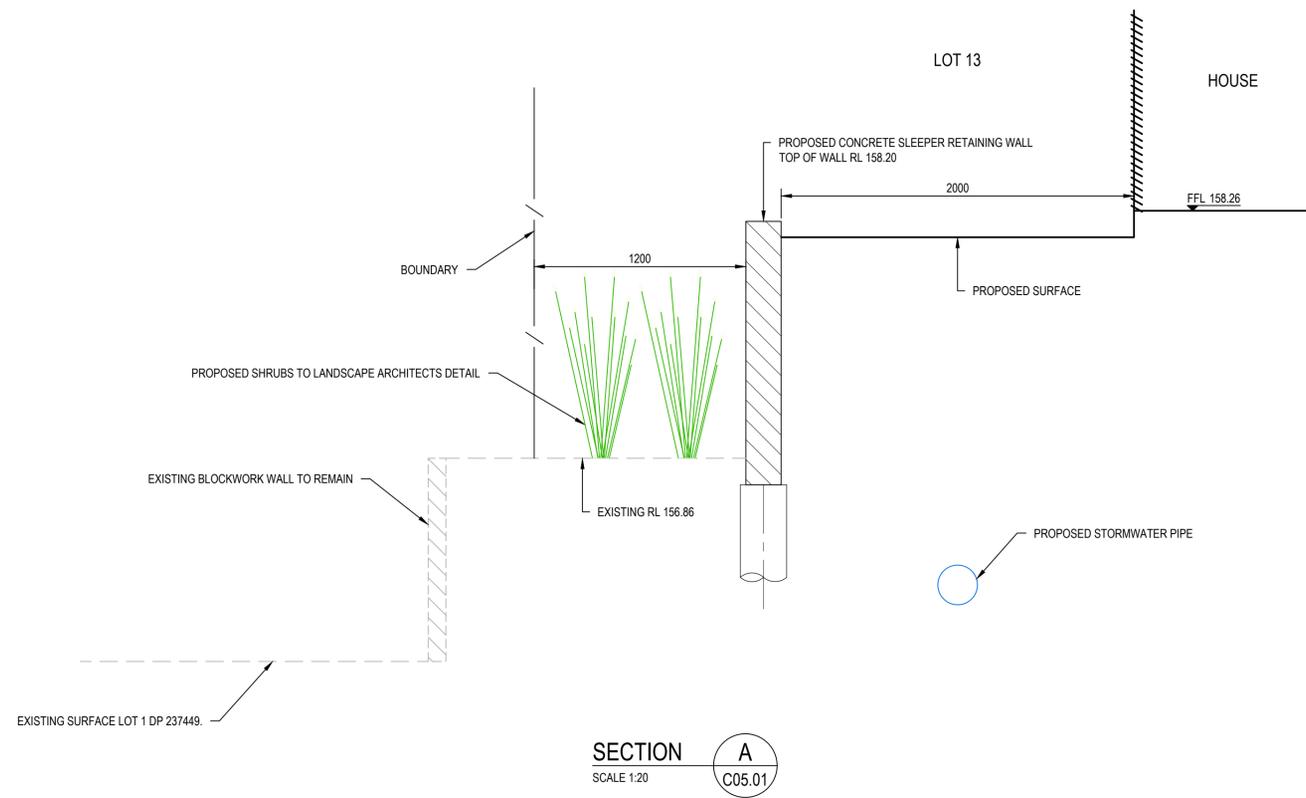
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Project  
49 BLACKBUTTS ROAD  
FRENCHS FOREST  
CIVIL ENGINEERING WORKS

Title  
PAVEMENT, SIGNAGE AND LINEMARKING PLAN

SHEET 02

Scale 1:200	Status <b>FOR INFORMATION ONLY</b> NOT TO BE USED FOR CONSTRUCTION
Date 07/03/2024	Project Number/Drawing Number <b>230057-00-DA-C11.02</b>
Size A1	Revision <b>3</b>
Datum GDA 2020	




  
**THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT**  
**DA2024/0492**

REV	DATE	DESCRIPTION	DRN	DES.	VERIF.	APPD.
2	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL		MKH
1	15/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL		MKH

Client



Scale



North

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Project  
 49 BLACKBUTTS ROAD  
 FRENCHS FOREST  
 CIVIL ENGINEERING WORKS

Title  
 SITE SECTIONS

Scale  
 1:20

First Issue Date  
 15/01/2025

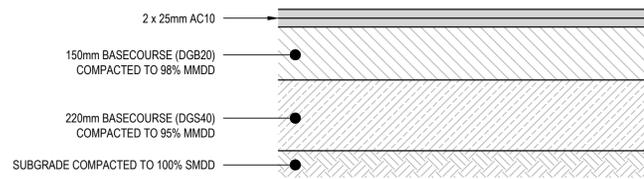
Size  
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Datum  
 GDA 2020

Status  
**FOR INFORMATION ONLY**  
 NOT TO BE USED FOR CONSTRUCTION

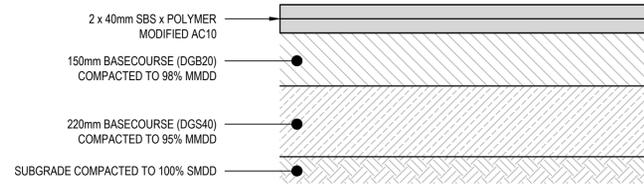
Project Number/Drawing Number  
**230057-00-DA-C13.01**

Revision  
**2**



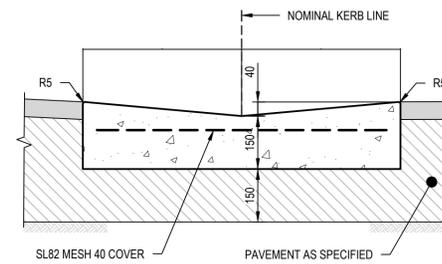
**PAVEMENT TYPE 1 - ROAD No 1**  
SCALE 1:10

- NOTES:
1. MIN CBR 4% (CONTRACTOR TO CONFIRM ONSITE).
  2. DESIGN LOADING = 5x10<sup>6</sup> ESA'S
  3. PRIME AND TACK COAT BASECOURSE SURFACE PRIOR TO PLACEMENT OF AC WEARING COURSE.



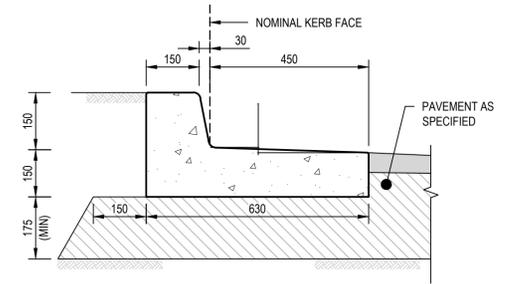
**PAVEMENT TYPE 2 - CUL DE SAC**  
SCALE 1:10

- NOTES:
1. MIN CBR 4% (CONTRACTOR TO CONFIRM ONSITE).
  2. DESIGN LOADING = 5x10<sup>6</sup> ESA'S
  3. PRIME AND TACK COAT BASECOURSE SURFACE PRIOR TO PLACEMENT OF AC WEARING COURSE.



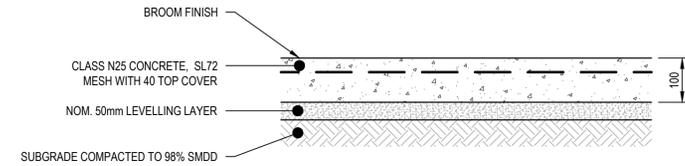
**DISH DRAIN (DD)**  
SCALE 1:10

- NOTE:
1. PROVIDE TOOL JOINTS AT MAX. 3.0m CTRS.
  2. PROVIDE SUBSOIL BELOW DISH DRAIN. REFER DETAIL.

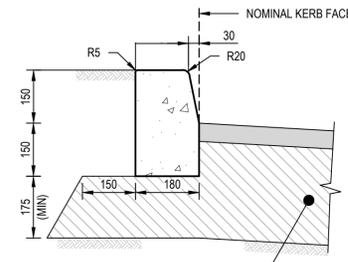


**KERB AND TOE (K&T)**  
SCALE 1:10

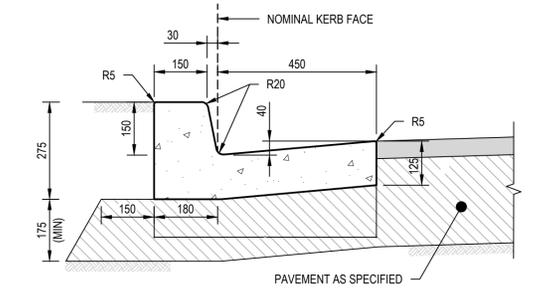
- NOTE:
1. PROVIDE TOOL JOINTS AT MAX. 3.0m CTRS.



**PAVEMENT TYPE 3 - CONCRETE FOOTPATH**  
SCALE 1:10

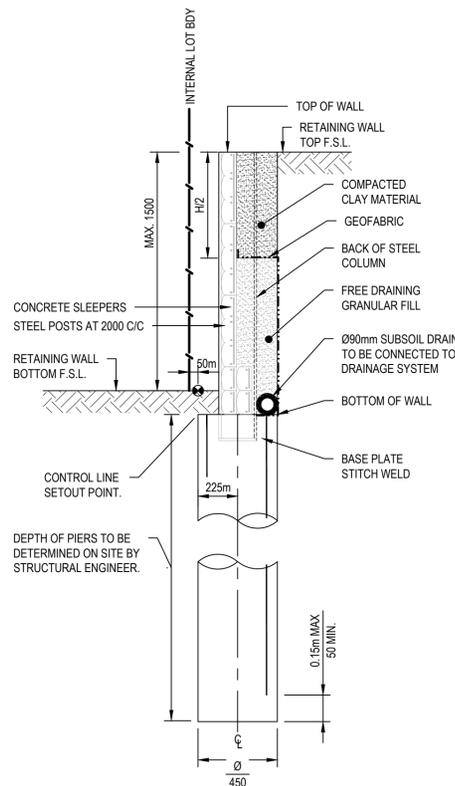


**KERB ONLY (KO)**  
SCALE 1:10



**KERB AND GUTTER (K&G)**  
SCALE 1:10

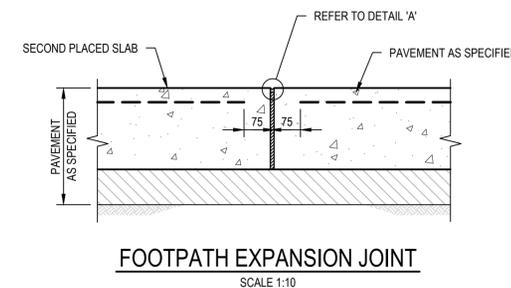
- NOTE:
1. PROVIDE TOOL JOINTS AT MAX. 3.0m CTRS.



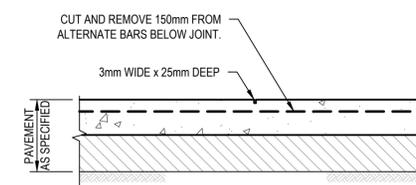
**RETAINING WALL TYPE 1**  
SCALE 1:20

- NOTE:
1. FOR WALL DETAILS REFER TO CONCRIB TECHNICAL DRAWING 'CONCRIB SLEEPERWALL 2006 SYSTEM DETAILS-S1'
  2. WALLS TO BE STRUCTURALLY CERTIFIED BY WALL SUPPLIER PRIOR TO CONSTRUCTION.
  3. FACE OF WALL TO BE 2000mm FROM EASTERN BOUNDARY.
  4. FACE OF WALL TO BE 1200mm FROM SOUTHERN BOUNDARY.

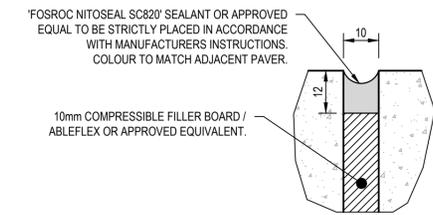
  
**THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT**  
 DA2024/0492



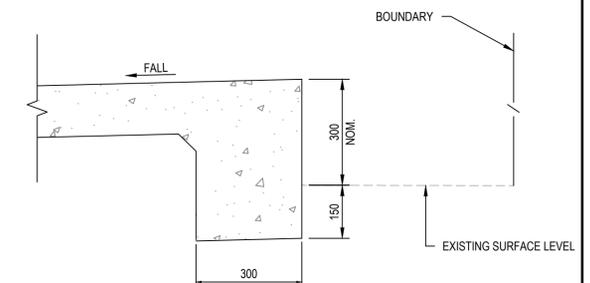
**FOOTPATH EXPANSION JOINT**  
SCALE 1:10



**FOOTPATH TOOL JOINT (TJ)**  
SCALE 1:10



**DETAIL 'A'**  
N.T.S



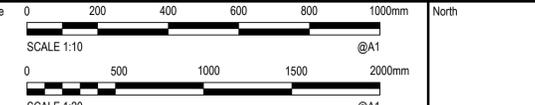
**TYPICAL DROP EDGE BEAM**  
SCALE 1:10

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL	MKH	
2	15/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL	MKH	
1	7/03/2024	ISSUED FOR DEVELOPMENT APPLICATION	ZW	LD	MKH	

Client



Scale



North

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Project  
49 BLACKBUTTS ROAD  
FRENCHS FOREST  
CIVIL ENGINEERING WORKS

Scale  
AS SHOWN

Date  
07/03/2024

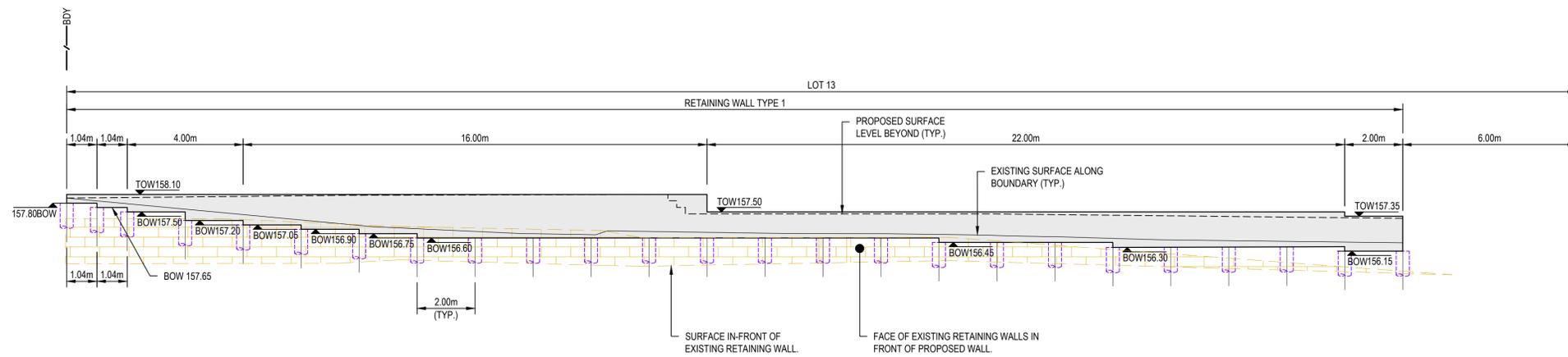
Size  
A1

Datum  
GDA 2020

Status  
**FOR INFORMATION ONLY**  
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number  
**230057-00-DA-C14.01**

Revision  
**3**



**RETAINING WALL ELEVATION RW01**  
SCALE 1:100

 northern beaches council

**THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT**

**DA2024/0492**

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
2	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL		MKH
1	15/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL		MKH

Client



**SEKISUI HOUSE**

Scale



SCALE 1:100 @A1

North

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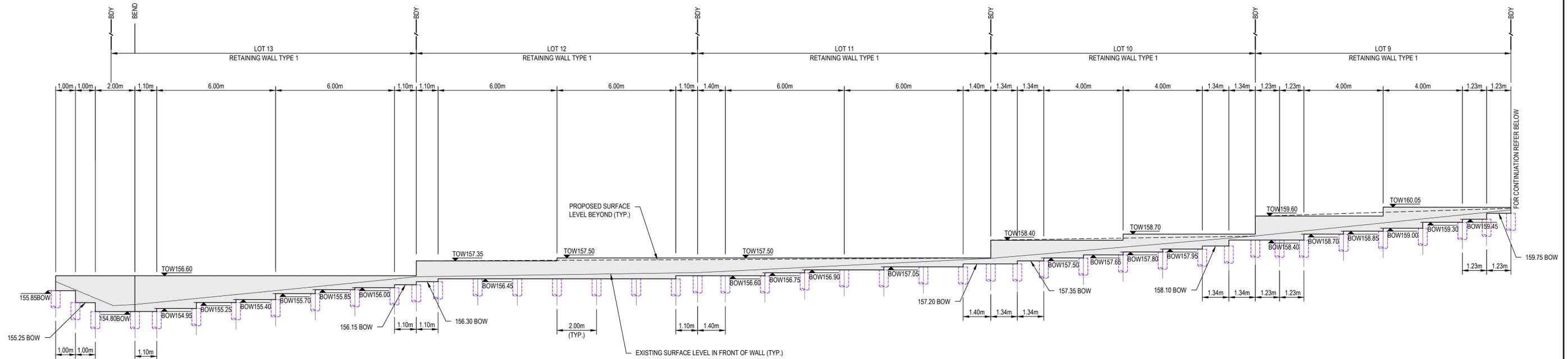
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Project  
49 BLACKBUTTS ROAD  
FRENCHS FOREST  
CIVIL ENGINEERING WORKS

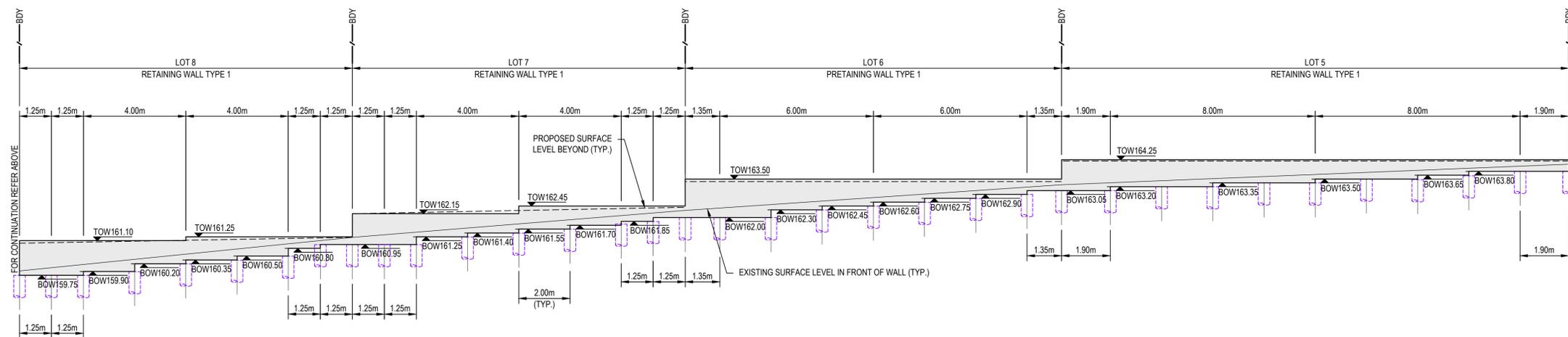
Title  
RETAINING WALL ELEVATIONS  
SHEET 01

Scale 1:100	Status <b>FOR INFORMATION ONLY</b> NOT TO BE USED FOR CONSTRUCTION
First Issue Date 15/01/2025	Project Number/Drawing Number 230057-00-DA-C15.01
Size A1	Revision 2
Datum GDA 2020	

  
**THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT**  
 DA2024/0492



**RETAINING WALL ELEVATION RW02**  
SCALE 1:100



**RETAINING WALL ELEVATION RW02**  
SCALE 1:100

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
2	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL		MKH
1	15/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL		MKH

Client



**SEKISUI HOUSE**

Scale



SCALE 1:100 @A1

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Phone: 02 9922 6135  
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Project  
49 BLACKBUTTS ROAD  
FRENCHS FOREST  
CIVIL ENGINEERING WORKS

Title  
RETAINING WALL ELEVATIONS

SHEET 02

Scale  
1:100

First Issue Date  
15/01/2025

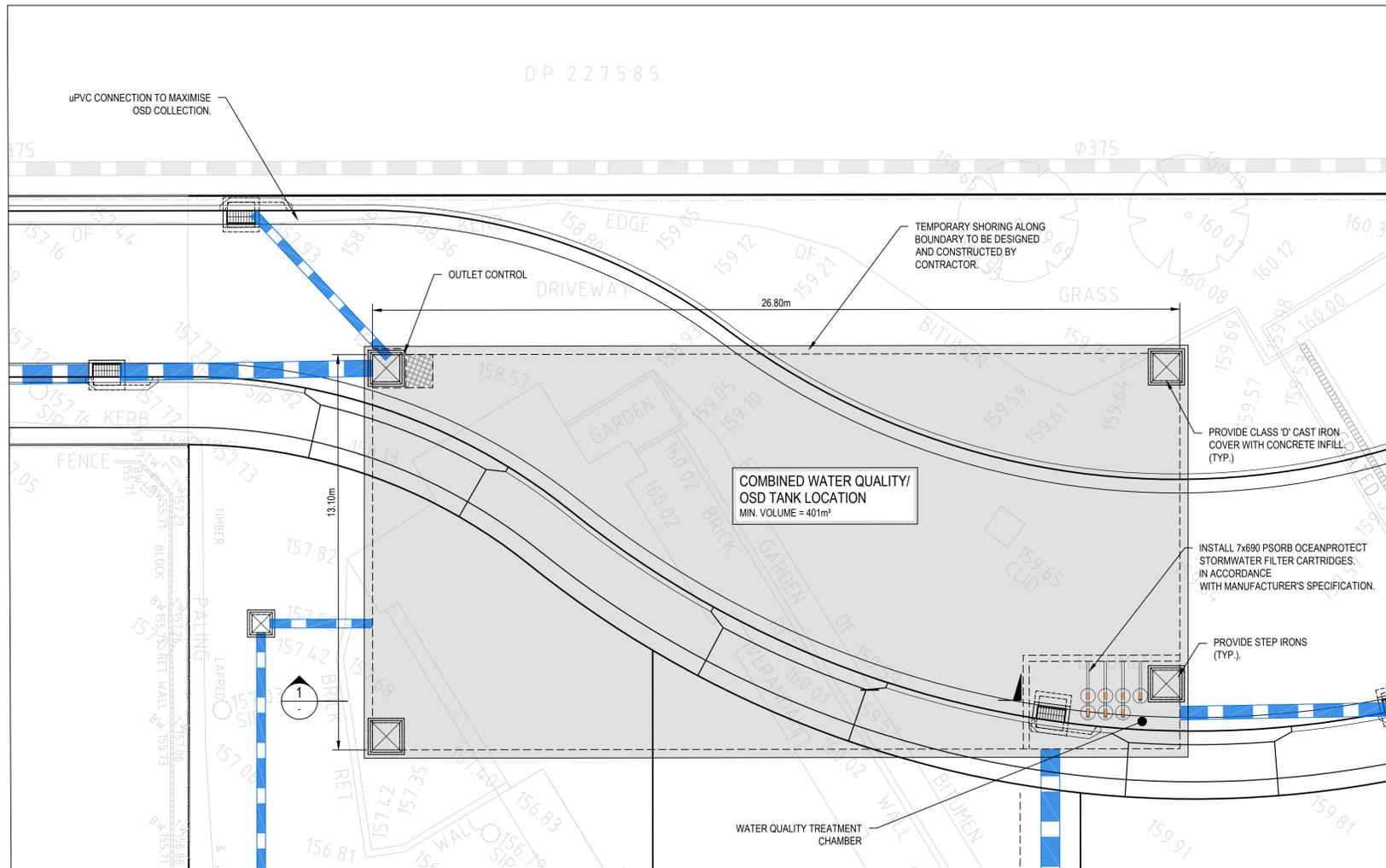
Size  
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Status  
**FOR INFORMATION ONLY**  
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number  
**230057-00-DA-C15.02**

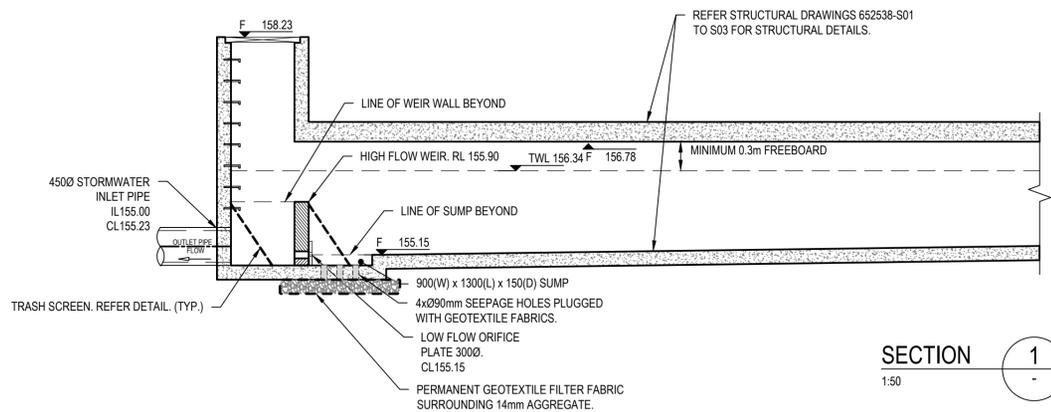
Revision  
**2**



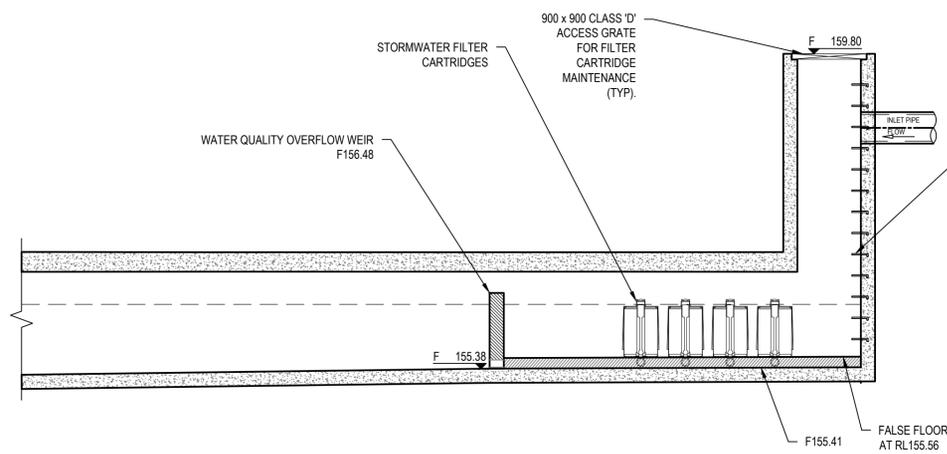
**WATER QUALITY TREATMENT AND OSD TANK PLAN**

SCALE 1:100

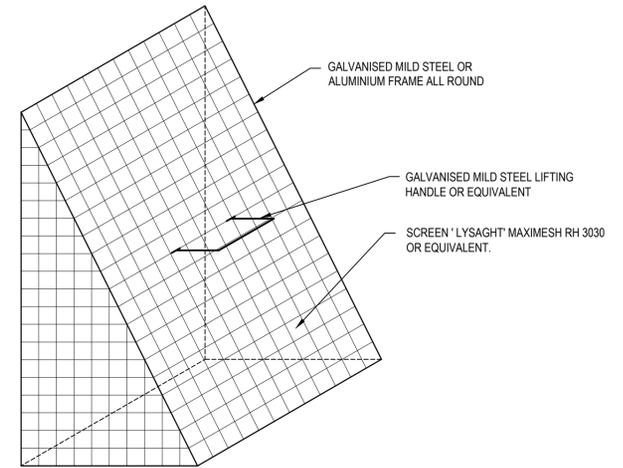

  
**THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT DA2024/0492**



**SECTION 1**  
SCALE 1:50

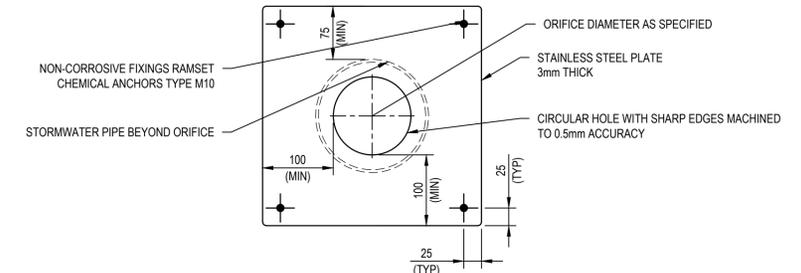


STORM (AEP%)	PSD (m³/s)	PIPED POST-DEVELOPMENT Q <sub>OUT</sub> (m³/s)	OVERLAND FLOW POST-DEVELOPMENT Q <sub>OUT</sub> (m³/s)	BYPASS	TOTAL POST-DEVELOPMENT Q <sub>OUT</sub> (m³/s)	BASIN TWL (mAHD)	BASIN VOLUME
20	0.126	0.103	0.000	0.005	0.108	155.740	197.500
5	0.226	0.107	0.106	0.007	0.220	156.040	299.200
1	0.357	0.11	0.162	0.009	0.281	156.340	400.200



**TYPICAL TRASH SCREEN DETAIL**  
NOT TO SCALE

**NOTE**  
PROVIDE FIXING CLIPS OR BRACKETS TO WALL OF PIT AT OUTLET. ALLOW FOR EASE OF REMOVAL



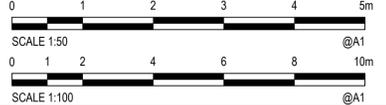
**NOTE:**  
ORIFICE DIAMETER TO BE ENGRAVED ON THE PLATE SURFACE. ORIFICE TO BE EPOXY SEALED AROUND OUTER EDGES.

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
4	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL	MKH	
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2	15/01/2025	ISSUED FOR DEVELOPMENT APPLICATION	DK	AL	MKH	
1	7/03/2024	ISSUED FOR DEVELOPMENT APPLICATION	ZW	LD	MKH	

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Scale



SCALE 1:50 @A1  
SCALE 1:100 @A1

North




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Project  
49 BLACKBUTTS ROAD  
FRENCHS FOREST  
CIVIL ENGINEERING WORKS

Scale  
AS SHOWN

Date  
07/03/2024

Size  
A1

Datum  
GDA 2020

Status  
**FOR INFORMATION ONLY**  
NOT TO BE USED FOR CONSTRUCTION

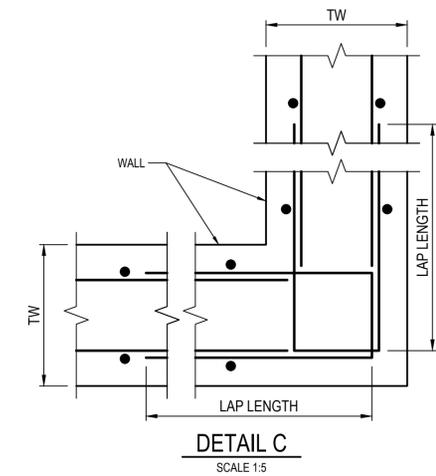
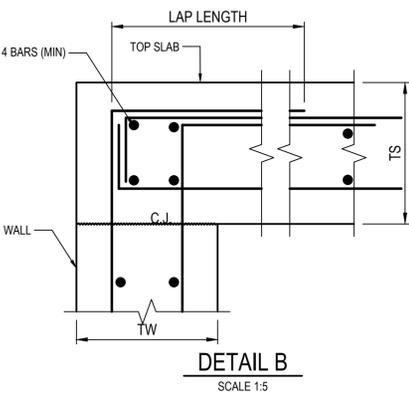
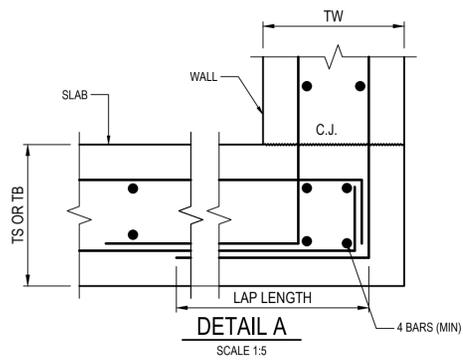
Project Number/Drawing Number  
**230057-00-DA-C17.01**

Revision  
**4**

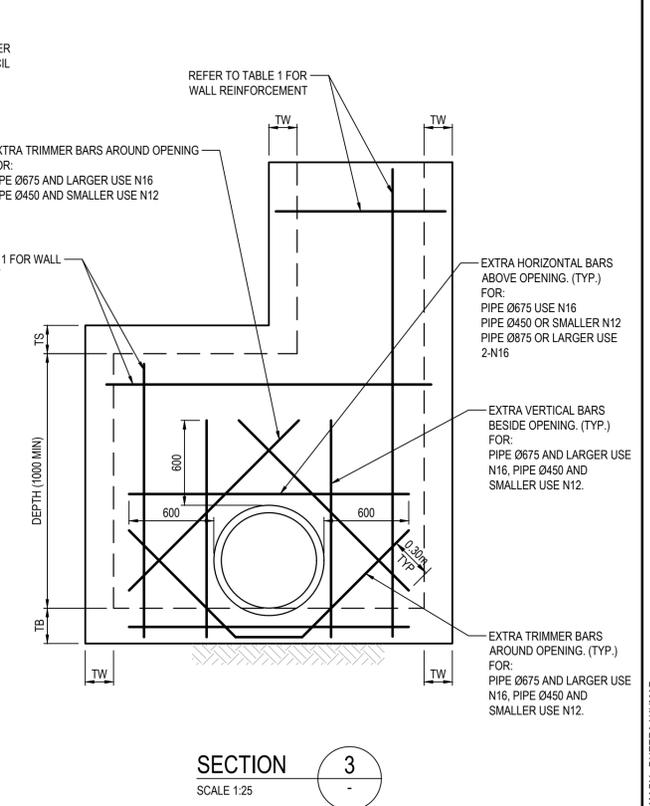
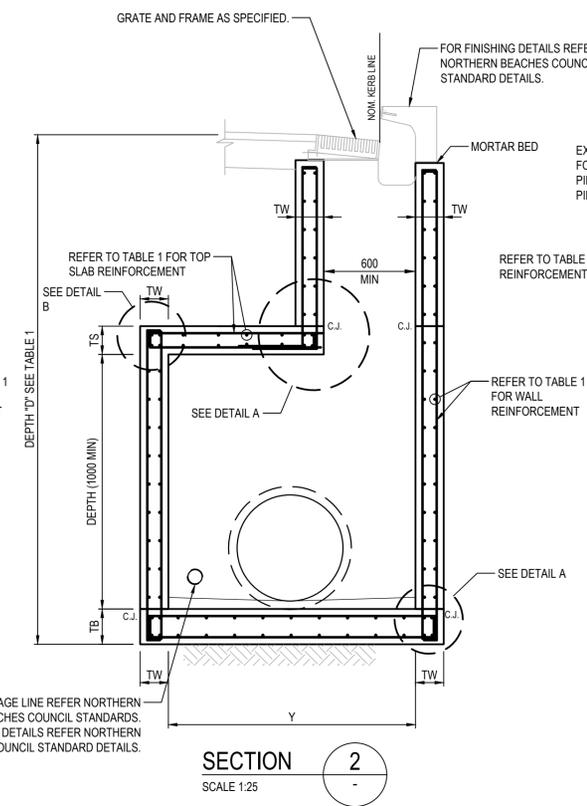
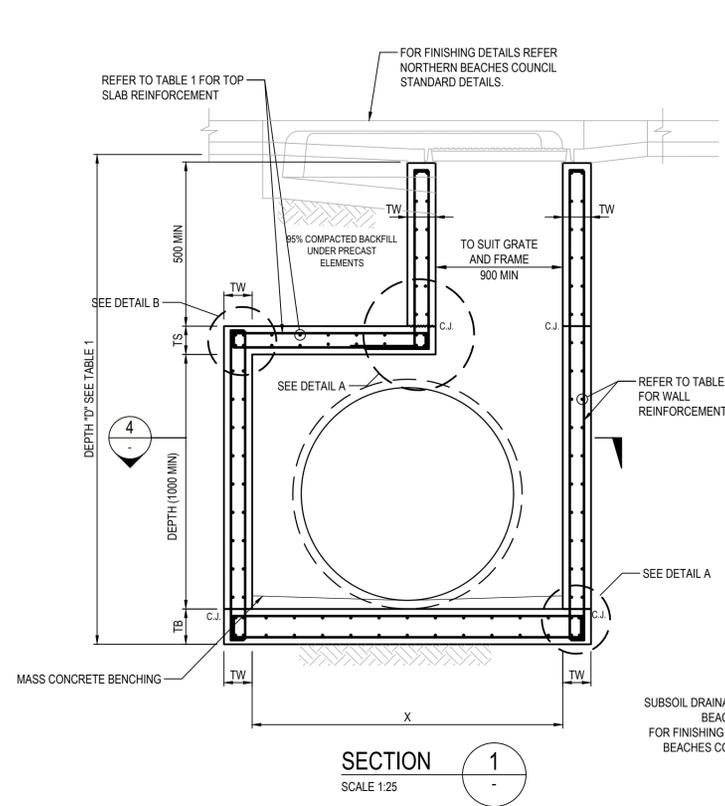
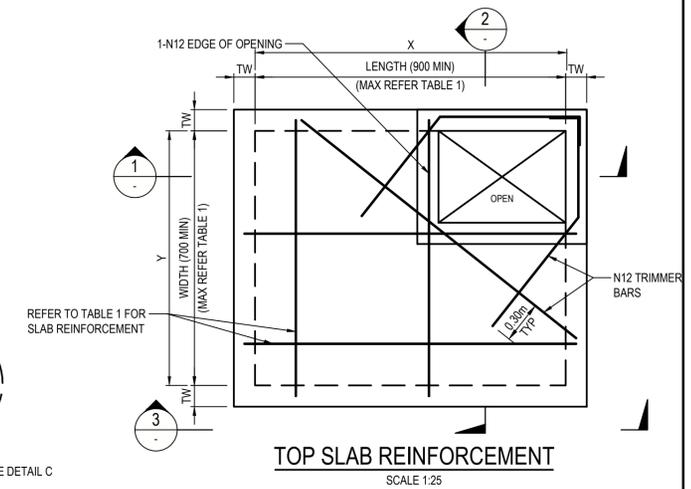
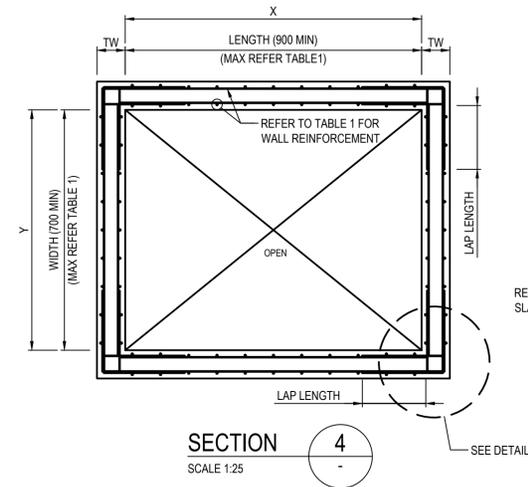
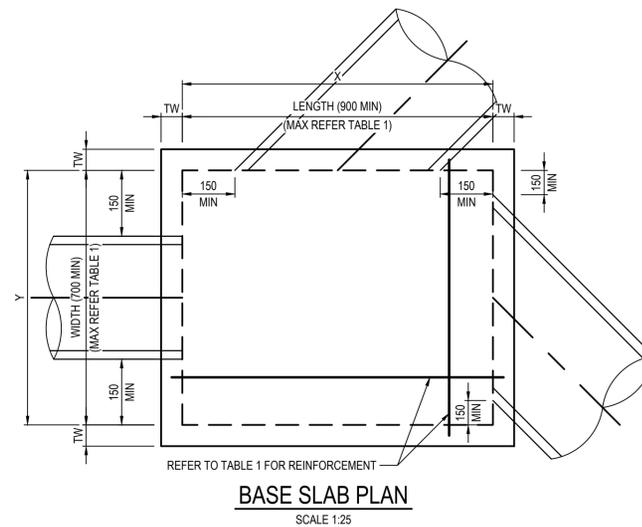
TABLE 1 - REINFORCEMENT AND WALL THICKNESS							
DEPTH "D" SEE TABLE 1 (m)	WIDTH/LENGTH (m)	TW (mm)	WALL REINFORCEMENT	TS (mm)	TOP SLAB REINFORCEMENT	TB (mm)	BASE REINFORCEMENT
1.5 - 3.0	2 / 2	200	2 LAYERS N12 - 200 EACH FACE	200	2 LAYERS N12 - 200 EACH FACE	200	2 LAYERS N12 - 200 EACH FACE
1.5 - 3.0	3 / 3	200	2 LAYERS N16 - 200 EACH FACE	250	2 LAYERS N16 - 200 EACH FACE	250	2 LAYERS N16 - 200 EACH FACE
3.0 - 4.5	2 / 2	250	2 LAYERS N12 - 200 EACH FACE	200	2 LAYERS N12 - 200 EACH FACE	200	2 LAYERS N12 - 200 EACH FACE
4.5 - 6.0	2 / 2	250	2 LAYERS N16 - 200 EACH FACE	200	2 LAYERS N16 - 200 EACH FACE	200	2 LAYERS N16 - 200 EACH FACE

NOTES:

1. CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS  $f'_c = 40\text{MPa}$
2. YIELD STRENGTH OF STEEL  $f_y = 500\text{MPa}$
3. ASSUMED SOIL BEARING CAPACITY = 150 kPa (MAX 3m DEPTH), 200kPa (MAX 6m DEPTH)
4. ALL CONCRETE COVER = 55mm
5. THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER ABOUT ACTUAL SOIL CONDITION ON SITE.
6. PITS TO BE CONSTRUCTED IN ACCORDANCE WITH LANE COVE COUNCIL STANDARDS AND DETAILS.
7. STEP IRONS WHERE THE PIT EXCEEDS 1200 IN DEPTH AS PER LANE COVE COUNCIL STANDARDS AND DETAILS.
8. PITS WHICH WILL HAVE PIPES GREATER THAN 525mm, 2N16 TRIMMER BARS ARE REQUIRED AROUND THE EDGES OF THE PIPE.
9. CONTACT ENGINEER IF PIT IS WITHIN WATER TABLE.



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Client

Scale 0 0.1 0.2 0.3 0.4 0.5m North

SCALE 1:5 @A1

0 0.5 1 1.5 2 2.5m

SCALE 1:25 @A1

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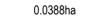
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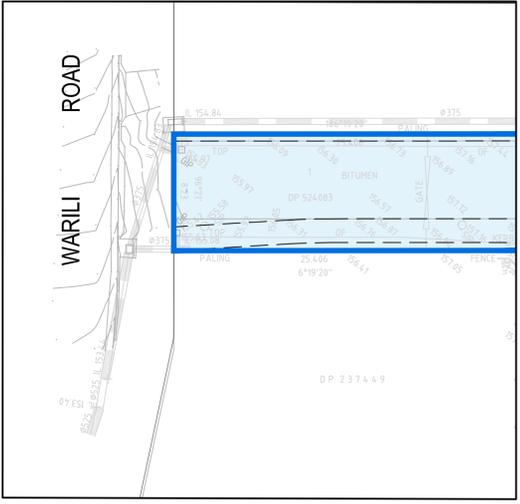
Project  
49 BLACKBUTTS ROAD  
FRENCHS FOREST  
CIVIL ENGINEERING WORKS

Title  
STORMWATER DETAILS

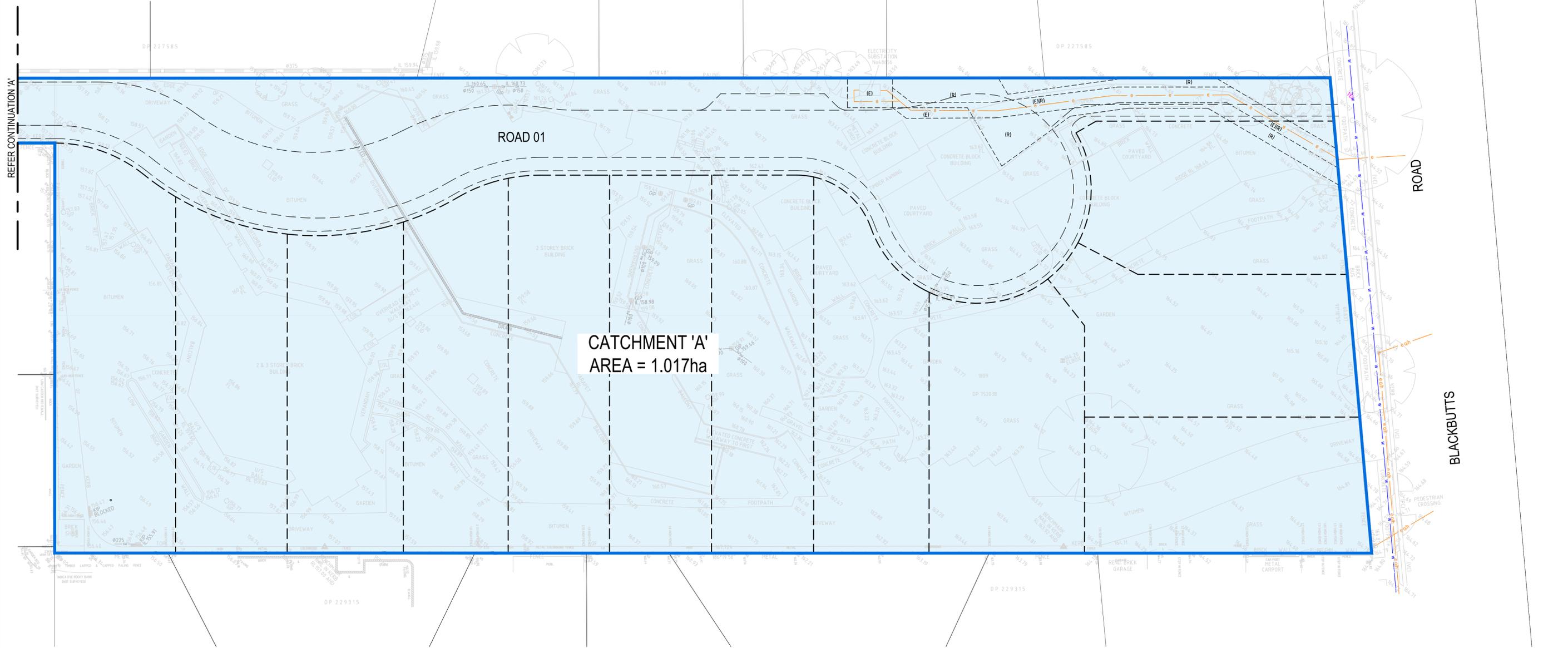
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Date 07/03/2024	Project Number/Drawing Number 230057-00-DA-C18.01
Size A1	Revision 3
Datum GDA 2020	


 northern beaches council  
**THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT**  
 DA2024/0492

LEGEND	
	CATCHMENT BOUNDARY
	CATCHMENT AREA
	CATCHMENT 'A'



CONTINUATION 'A'  
SCALE 1:250



REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL		MKH
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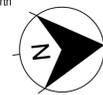


**SEKISUI HOUSE**

Scale



North



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Project  
49 BLACKBUTTS ROAD  
FRENCHS FOREST  
CIVIL ENGINEERING WORKS

Title  
PRE-DEVELOPMENT CATCHMENT PLAN

Scale  
1:250

Date  
07/03/2024

Size  
A1

Datum  
GDA 2020

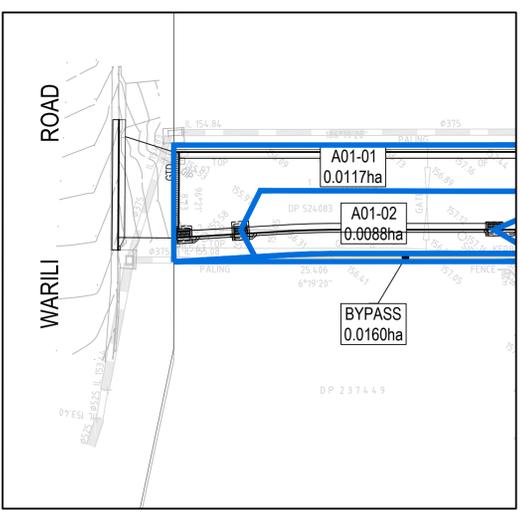
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**230057-00-DA-C20.01**

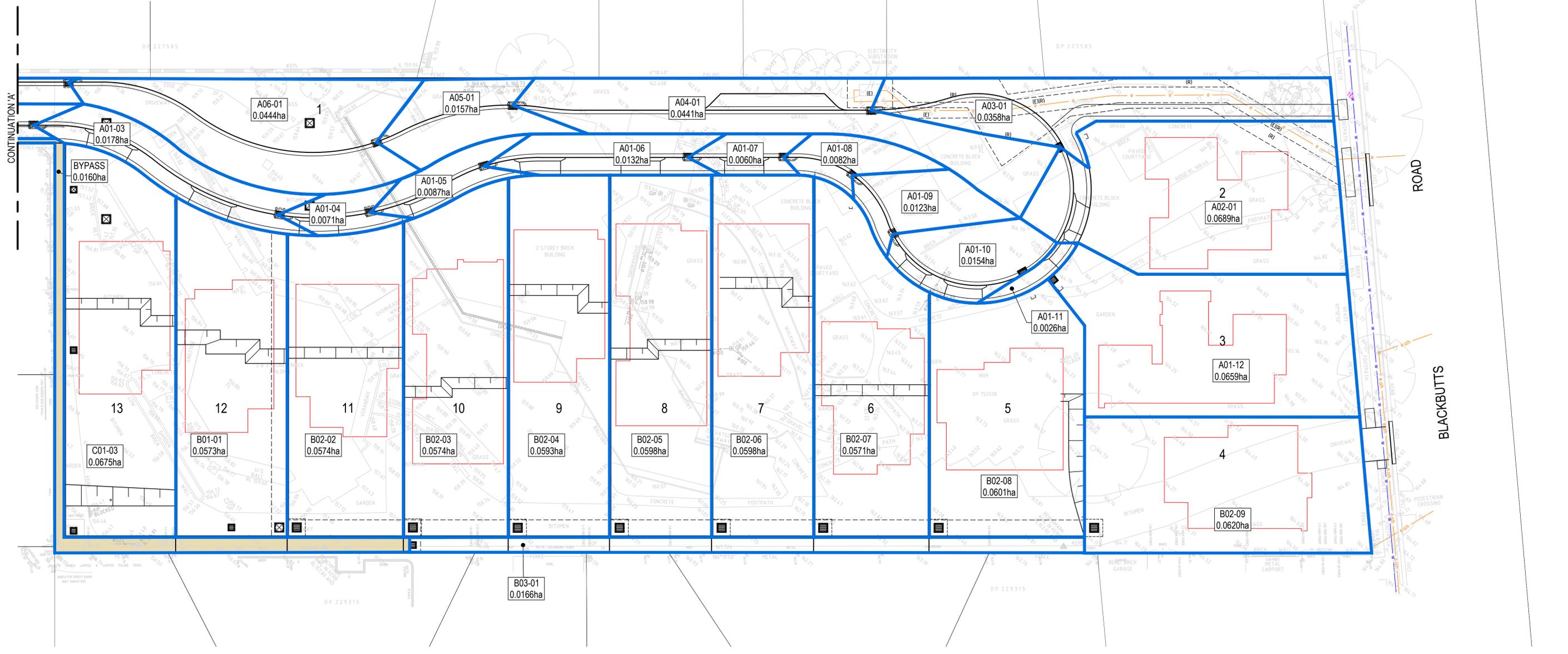
Revision  
**3**


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 DA2024/0492

LEGEND	
	CATCHMENT BOUNDARY
	PIT NO.
	CATCHMENT AREA



CONTINUATION 'A'  
SCALE 1:250



REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
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**SEKISUI HOUSE**

Scale



SCALE 1:250 @A1

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Project  
49 BLACKBUTTS ROAD  
FRENCHS FOREST  
CIVIL ENGINEERING WORKS

Title  
POST-DEVELOPMENT CATCHMENT PLAN

Scale  
1:250

Date  
07/03/2024

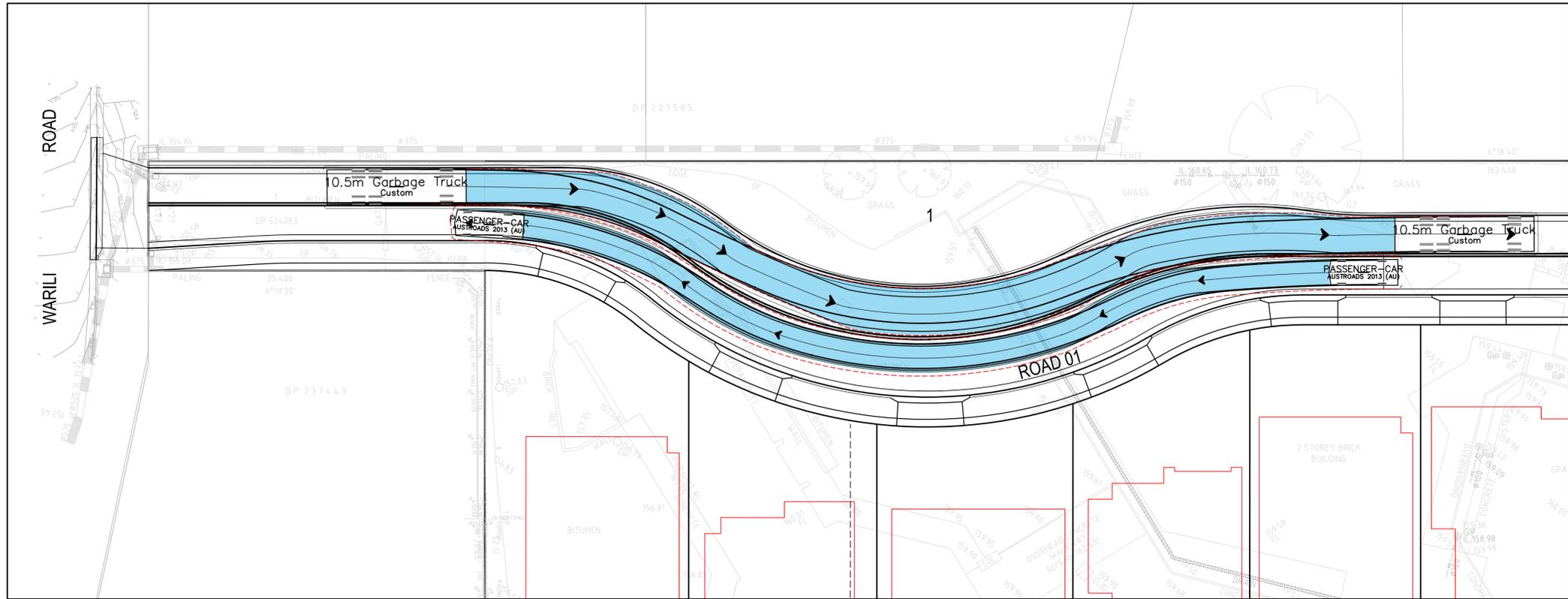
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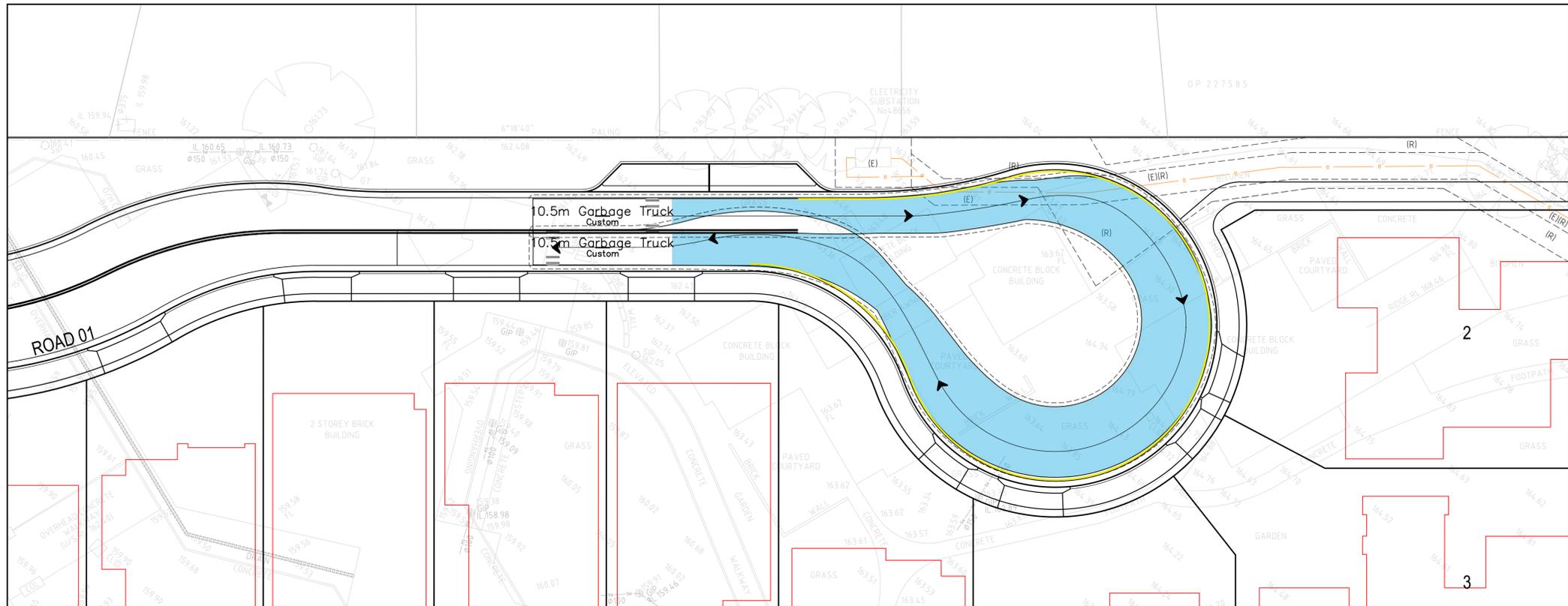
Revision  
**4**



TURN PATH 01 - 10.5m GARBAGE TRUCK PASSING B99 CAR WAITING AT GIVEWAY LINE

SCALE 1:200

 northern beaches council  
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 DA2024/0492



TURN PATH 02 - 10.5m GARBAGE TRUCK AT CUL-DE-SAC

SCALE 1:200

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3	31/03/2025	UPDATES ADDRESSING COUNCIL COMMENTS DA ISSUE	DK	AL	MKH	
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Client



**SEKISUI HOUSE**

Scale



SCALE 1:200 @A1

North



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Project  
 49 BLACKBUTTS ROAD  
 FRENCHS FOREST  
 CIVIL ENGINEERING WORKS

Title  
 TURNING PATH PLAN

Scale  
 1:200

Date  
 07/03/2024

Size  
 A1

Datum  
 GDA 2020

Status  
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Project Number/Drawing Number  
**230057-00-DA-C22.01**

Revision  
**3**