

# PROPOSED SUBDIVISION

1A FLOWERS DRIVE CATHERINE HILL BAY  
(HAMLET A)

WALLALONG LAND DEVELOPMENTS PTY LTD

LAKE MACQUARIE CITY COUNCIL

DRAWING SCHEDULE 19259C

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A.B.N. 92 086 017 745  
1 HARTLEY DRIVE, THORNTON NSW 2322  
PO BOX 3337, THORNTON NSW 2322  
PHONE: (02) 4964 1811



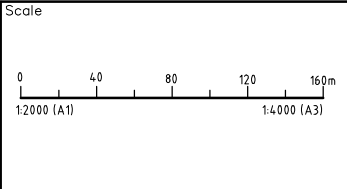
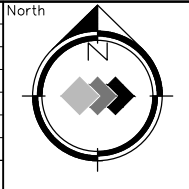
LOCALITY PLAN

PRELIMINARY ISSUE  
NOT FOR CONSTRUCTION





3	CLIENT AMENDMENTS	DB	AS	11.01.22
2	CLIENT AMENDMENTS	DB	AS	14.12.21
1	ORIGINAL ISSUE	DB	AS	02.11.21
Amendment	Description	Drawn	App'd	Date




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Designed A.M	Cad Reference 19259C dC401 r3
Scale 1:2000	A1 SHEET
Project Approval IAN HILL (B.E) Consulting Civil Engineer	

Client



**GCA**  
ENGINEERING SOLUTIONS

A.B.N. 92 086 017 745  
1 HARTLEY DRIVE, THORNTON NSW 2322  
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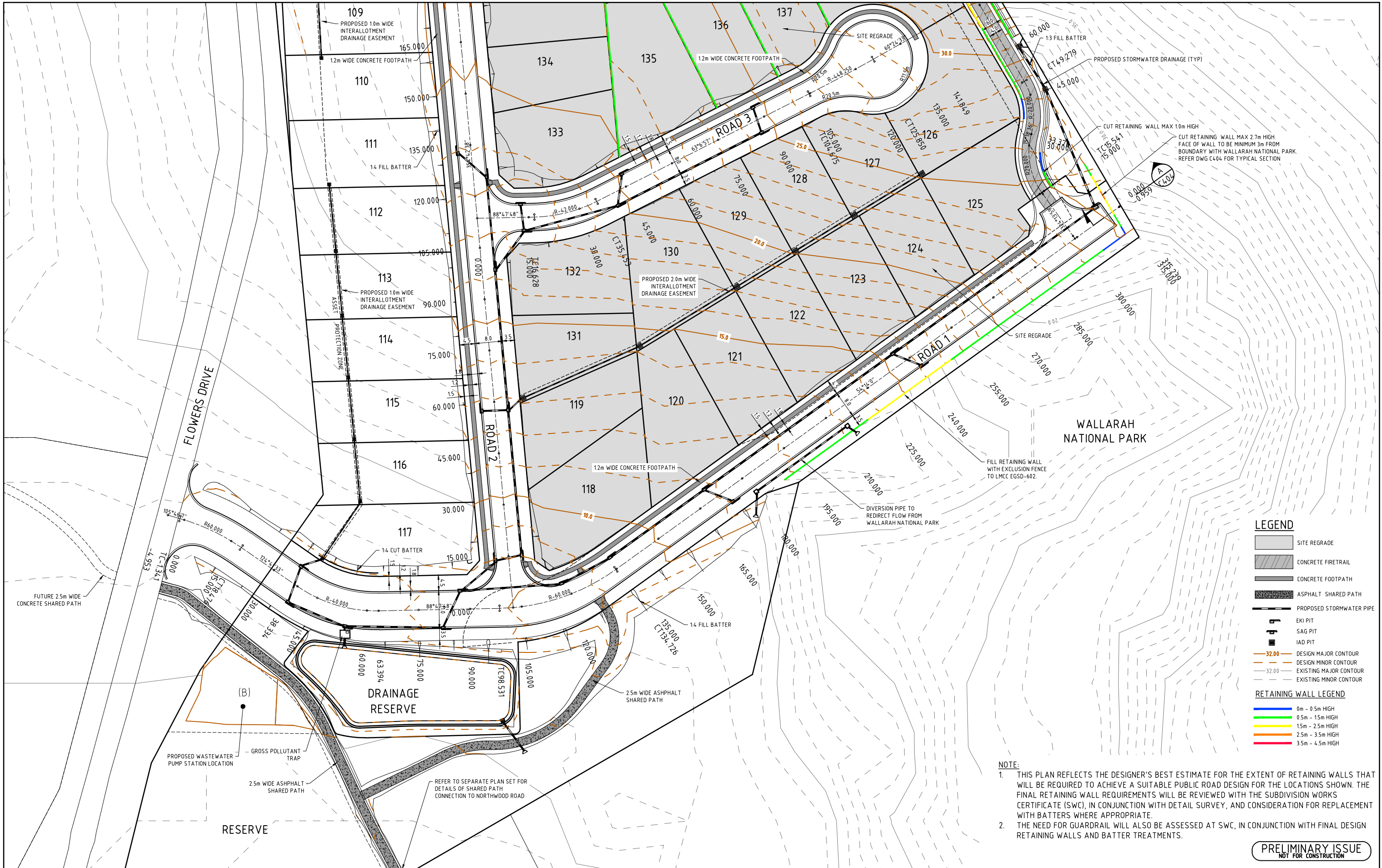
**PROPOSED SUBDIVISION**  
**1A FLOWERS DRIVE**  
**CATHERINE HILL BAY**  
(HAMLET A)  
GENERAL ARRANGEMENT PLAN

Project No <b>19259C</b>	
Drawing No <b>C401</b>	Revision <b>3</b>

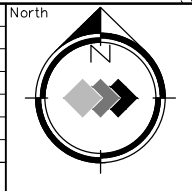




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Amendment	Description	Drawn	App'd	Date
5	DSIGN REVISION	DB	AS	31.10.22
4	RETAINING WALL HEIGHTS AMENDED	DB	AS	27.07.22
3	CLIENT AMENDMENTS	DB	AS	11.01.22
2	CLIENT AMENDMENTS	DB	AS	14.12.21
1	ORIGINAL ISSUE	D.B	A.S	02.11.21



Scale  
0 10 20 30 40m  
1:500 (A1)  
1:1000 (A3)

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Designed  
A.M  
Scale  
1:500  
Cad Reference  
19259C dC403 r5  
Project Approval  
IAN HILL (B.E)  
Consulting Civil Engineer

Client



PROPOSED SUBDIVISION  
1A FLOWERS DRIVE  
CATHERINE HILL BAY  
HAMLET A  
PLAN SHEET (2 OF 2)

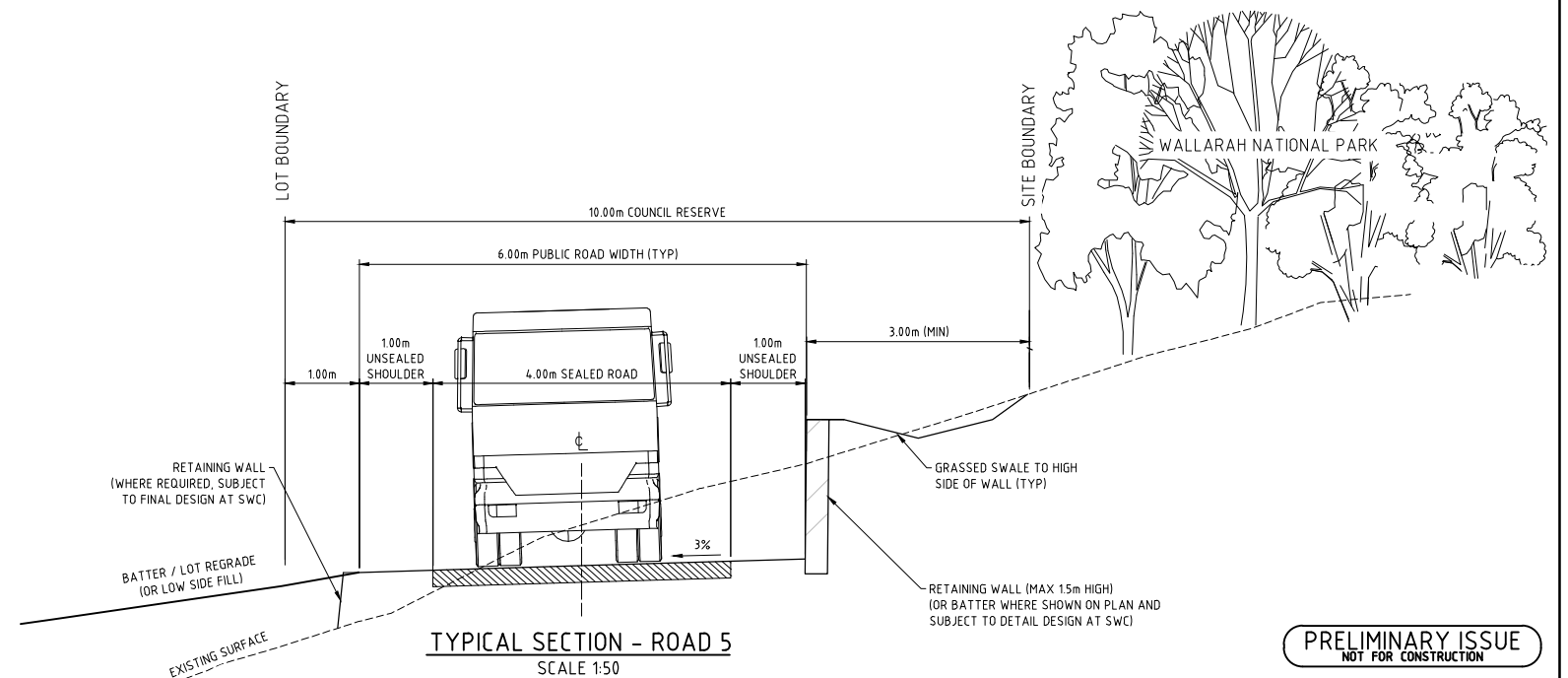
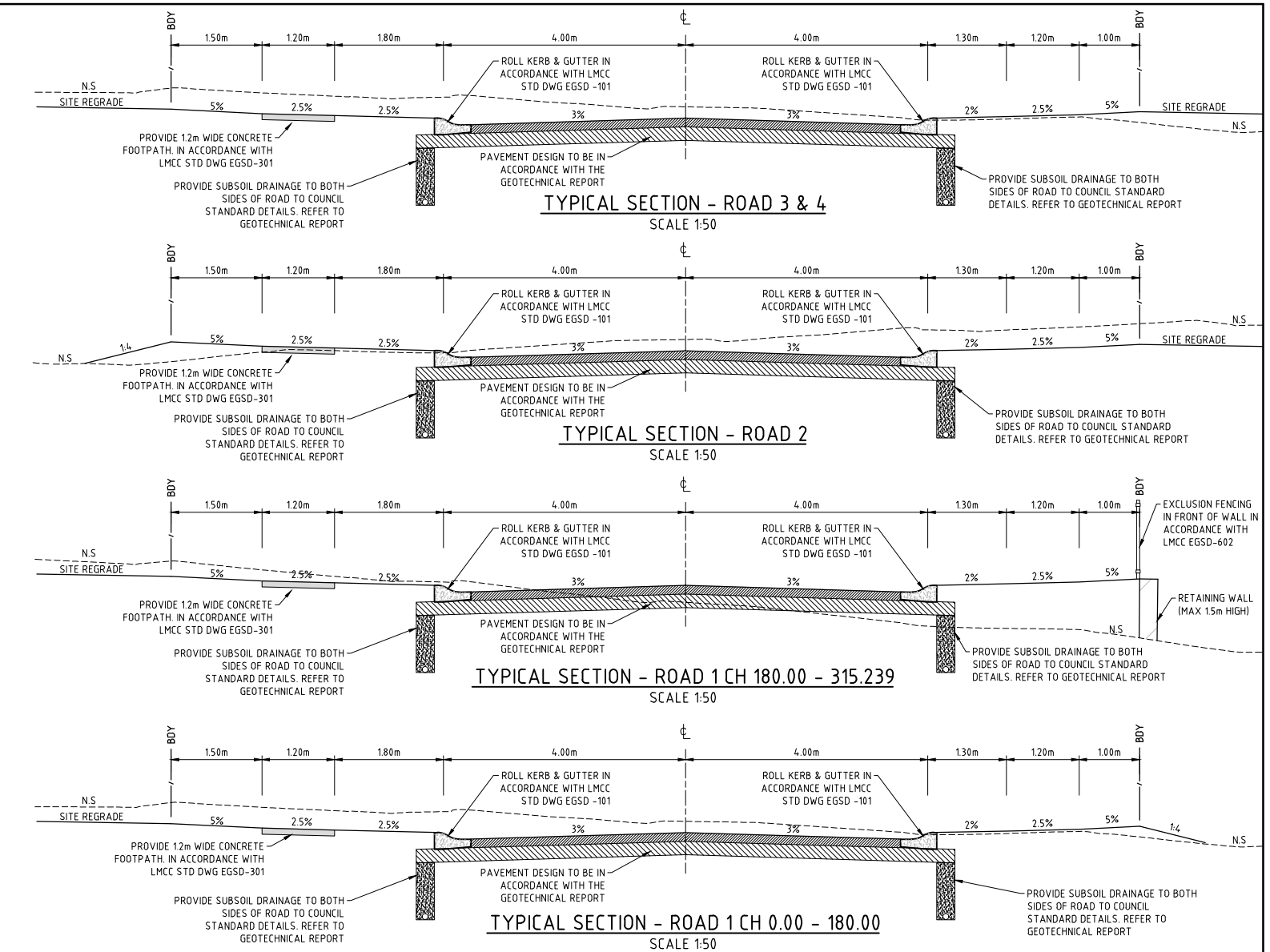
Project No	19259C
Drawing No	C403
Revision	5




1. ALL DIMENSIONS OF EASEMENTS AND LOTS ARE SUBJECT TO REGISTRATION OF DEPOSITED PLAN.
2. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH LMCC ENGINEERING GUIDELINES AND STANDARD DRAWINGS.
3. EROSION CONTROL DEVICES AND SILTATION TRAPS TO BE INSTALLED BEFORE SITE IS DISTURBED IN ACCORDANCE WITH THE ATTACHED SILTATION PLAN.
4. DENUDED AREAS TO BE STABILISED / RE-VEGETATED ON COMPLETION OF WORKS.
5. ALL REINFORCED CONC. STORMWATER DRAINAGE PIPES ARE TO BE RUBBER RING JOINTED.
6. ALL EKI PIT GRATES TO BE HOT DIPPED GALVANISED 80-85 MICRONS THICK. ALL GRATES TO BE PROVIDED WITH HINGE PINS IN ACCORDANCE WITH LMCC STD DWG EGSD-401.
7. ALL PITS DEEPER THAN 1.2m ARE TO BE CONSTRUCTED WITH STEP IRONS IN ACCORDANCE WITH AS 1657-1992.
8. SIDE WALLS OF ALL PITS GREATER THAN 1.5m DEEP TO HAVE SL82 MESH CENTRALLY PLACED FOR FULL DEPTH WITH N12 "L" CORNER BARS (450 LEGS) @ 400 CTS.
9. ALL INTERALLOTMENT DRAINAGE PIPES TO BE SEWER GRADE uPVC (UNLESS OTHERWISE SHOWN) OR AN APPROVED EQUIVALENT. THE MINIMUM SLOPE OF INTERALLOTMENT DRAINAGE LINES SHALL BE 1%. THE INTERALLOTMENT DRAINAGE LINE SHALL BE A MINIMUM OF 0.5m FROM THE BOUNDARY AND LOCATED IN AN EASEMENT 2.0m WIDE.
10. ALL INTERALLOTMENT DRAINAGE PITS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH LMCC STD DWG EGSD-402.
11. ALL EXISTING UNDERGROUND SERVICES MUST BE LOCATED AND EXPOSED PRIOR TO EARTHWORKS. COMMENCING AND IT IS THE RESPONSIBILITY OF THOSE PERSONS USING THIS PLAN TO CONFIRM BOTH POSITION & LEVEL OF THESE UTILITIES IN CONJUNCTION WITH THE APPROPRIATE AUTHORITY.
12. SUBSOIL DRAINS ARE TO BE PROVIDED TO COUNCIL INSPECTOR'S REQUIREMENTS. FLUSH POINTS TO BE PROVIDED AT MAXIMUM 60.0m INTERVALS.
13. PAVEMENT THICKNESS TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
14. WORKING HOURS ON SITE SHALL BE IN ACCORDANCE WITH EPA & COUNCIL REQUIREMENTS.
15. VEHICULAR ACCESS AND ALL SERVICES ARE TO BE MAINTAINED AT ALL TIMES TO ADJOINING PROPERTIES AFFECTED BY CONSTRUCTION WORKS.
16. MAINTENANCE ON THE SEEDED AND TURFED AREAS SHALL BE OVER A 3 MONTH PERIOD. TURF THE FULL WIDTH OF ALL EARTH DISH DRAINS. LAY 600mm WIDE TURF STRIPS TO EACH SIDE OF CONCRETE ACCESSWAYS, PATHWAYS, AT THE REAR OF ALL KERB AND GUTTERING AND AT THE TOP OF CUT BATTERS. MULCH (IF AVAILABLE FROM SITE CLEARING) AND SEED ALL OTHER DISTURBED AREAS, INCLUDING TRENCHES. WHERE ADJOINING WALLARAH NATIONAL PARK, VEGETATION TO BE IN COMPLIANCE WITH THE VEGETATION MANAGEMENT PLAN.
17. ALL PERAMBULATOR RAMPS TO BE CONSTRUCTED AS SHOWN ON PLANS AND IN ACCORDANCE WITH LMCC STANDARD DRAWINGS EGSD-101 & EGSD-102.
18. TRAFFIC CONTROL MEASURES TO BE IN ACCORDANCE WITH AS 1742.3-1996.
19. ALL LEVELS MUST BE OBTAINED FROM ESTABLISHED BENCH MARKS AS DIRECTED BY THE SUPERVISOR.
20. THE CONTRACTOR IS TO ENSURE THAT ALL THE NECESSARY SERVICE PIPE CONDUITS AND FITTINGS ARE IN PLACE PRIOR TO THE FINAL WEARING COURSE BEING LAID. 22. PROVIDE STREET NAME SIGNS AT ALL INTERSECTIONS, DOUBLE BLADED WHERE NECESSARY ON BLACK POWDER COATED POLES.
21. ALL SITE FILLING TO BE CONTROLLED FILL TO AS3798 WITH TESTING TO BE CARRIED OUT BY A NATA REGISTERED LABORATORY.
22. PROVIDE ANCHOR BLOCKS AT EACH JOINT ON DRAINAGE LINES WHERE PIPE GRADE EXCEEDS 12%.



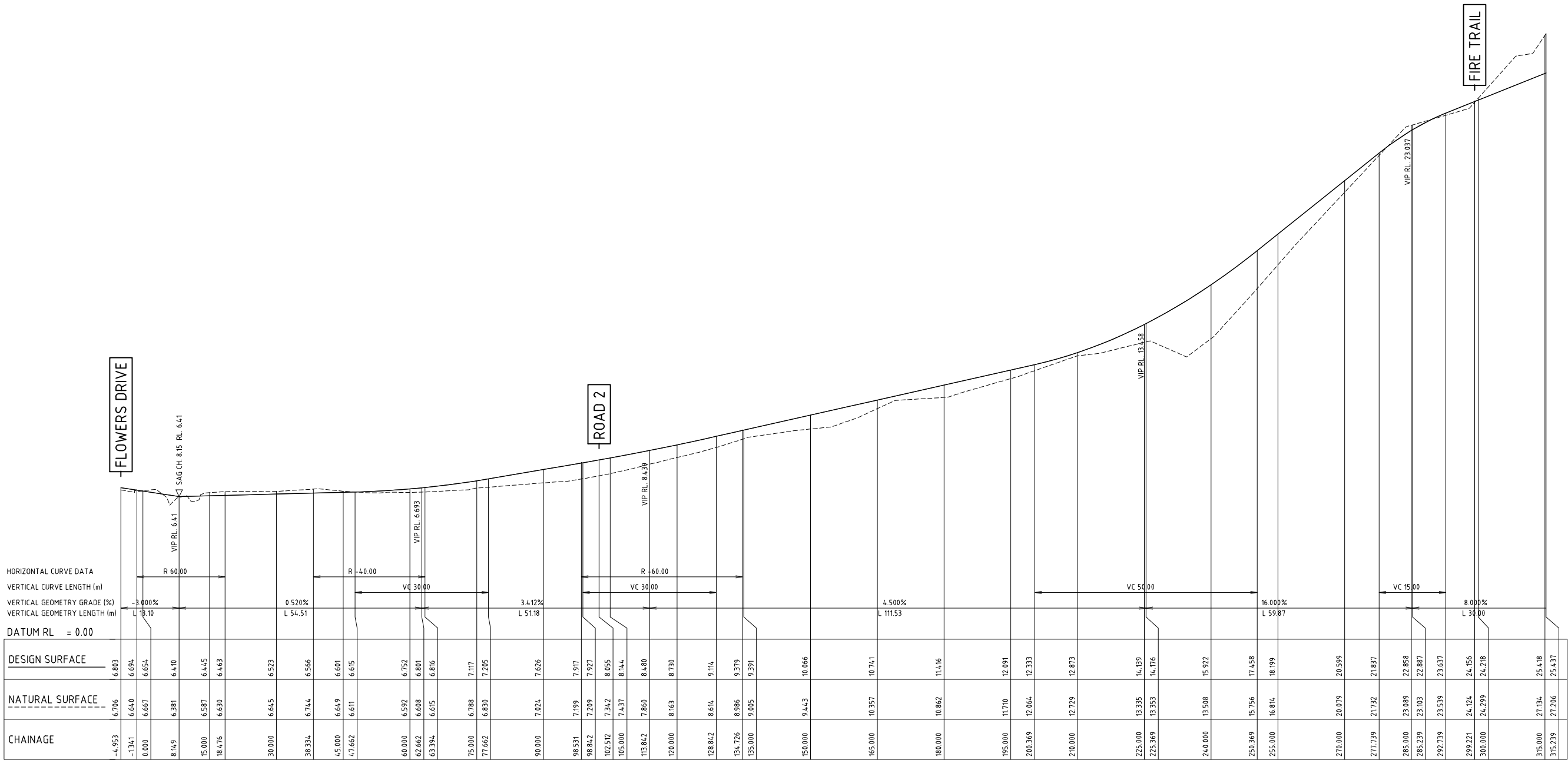
TYPICAL RETAINING WALL SECTION SECTION A  
SCALE 1:25



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						0 1 2 3 4m 150 (A1) 1:100 (A3)		Scale 1:50	<b>A1 SHEET</b>			Drawing No <b>C404</b>	Revision <b>4</b>
4	MAGNUMSTONE TYPICAL SECTION ADDED	DB	AS	27.07.22									
3	CLIENT AMENDMENTS	DB	AS	11.01.22									
2	CLIENT AMENDMENTS	DB	AS	14.12.21									
1	ORIGINAL ISSUE	DB	AS	02.11.21									
Amendment	Description	Drawn	App'd	Date				Project Approval IAN HILL (B.E.) Consulting Civil Engineer					





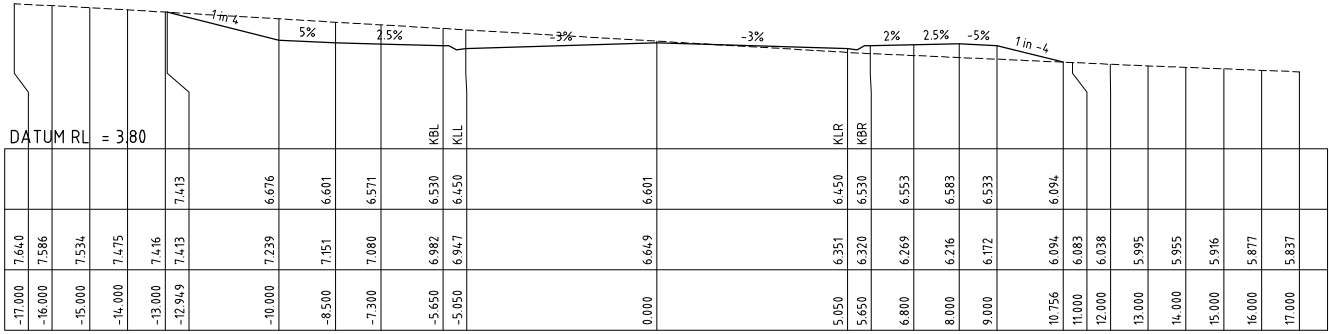
A1 SCALE: HORIZONTAL 1:500, VERTICAL 1:100

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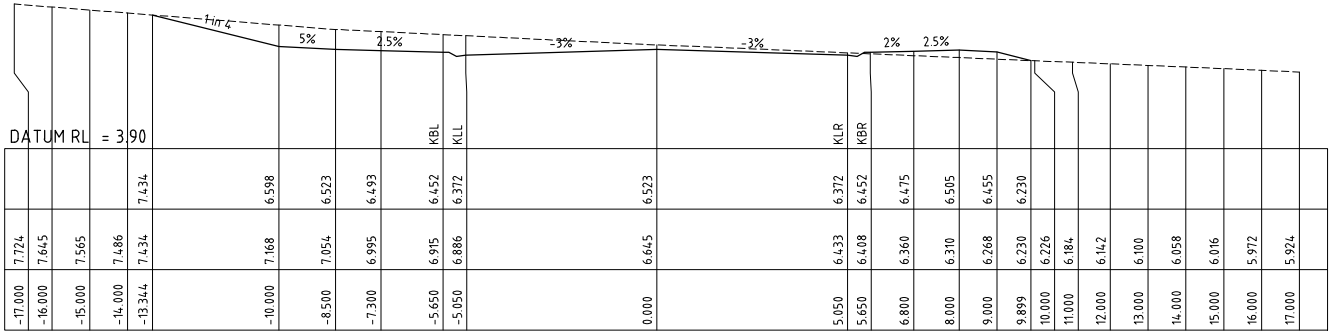
					North	<div>Scale</div> <div><div><div>02468m</div><div>1:100 (A1)</div></div><div><div>010203040m</div><div>1:500 (A1)</div></div></div>	<div>COPYRIGHT</div> <div>Copyright in the drawings, information and data recorded hereon is the property of Geoff Craig &amp; Associates Pty Ltd and may not be used, copied or reproduced in whole or part for any purpose other than that for which it is supplied without the prior consent of Geoff Craig &amp; Associates Pty Ltd.</div>	Designed	Cad Reference	Client	<div><div><div><div></div><div></div><div></div></div><div><b>GCA</b></div><div>ENGINEERING SOLUTIONS</div></div><div>A.B.N. 92 086 017 745</div><div>1 HARTLEY DRIVE, THORNTON NSW 2322</div><div>PO BOX 3337, THORNTON NSW 2322</div><div>PHONE: (02) 4964 1811</div></div>	<div>PROPOSED SUBDIVISION</div> <div>1A FLOWERS DRIVE</div> <div>CATHERINE HILL BAY</div> <div>(HAMLET A)</div> <div>ROAD 1 LONGITUDINAL SECTION</div>	Project No	
A.M		19259C dC405 r3		19259C										
Scale		A1 SHEET		Drawing No				Revision						
AS SHOWN				C405				3						
Project Approval														
IAN HILL (B.E)														
Consulting Civil Engineer														

3	ORIGINAL ISSUE	DB	AS	24.12.21
2	NOT ISSUED			
1	NOT ISSUED			
Amendment	Description	Drawn	App'd	Date

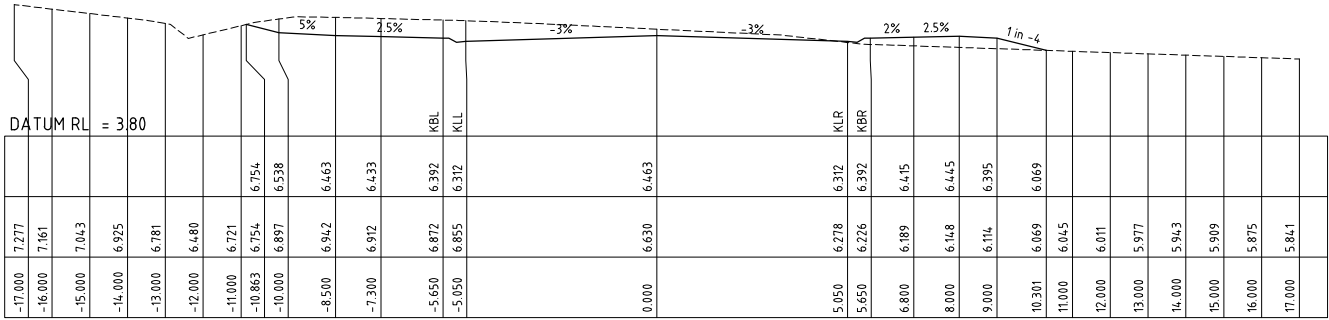




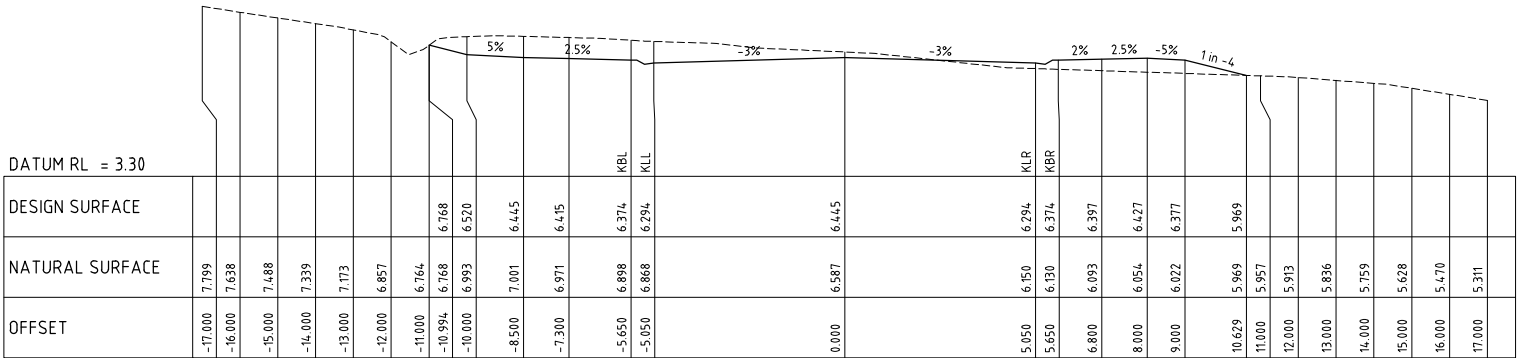
CH 45.000



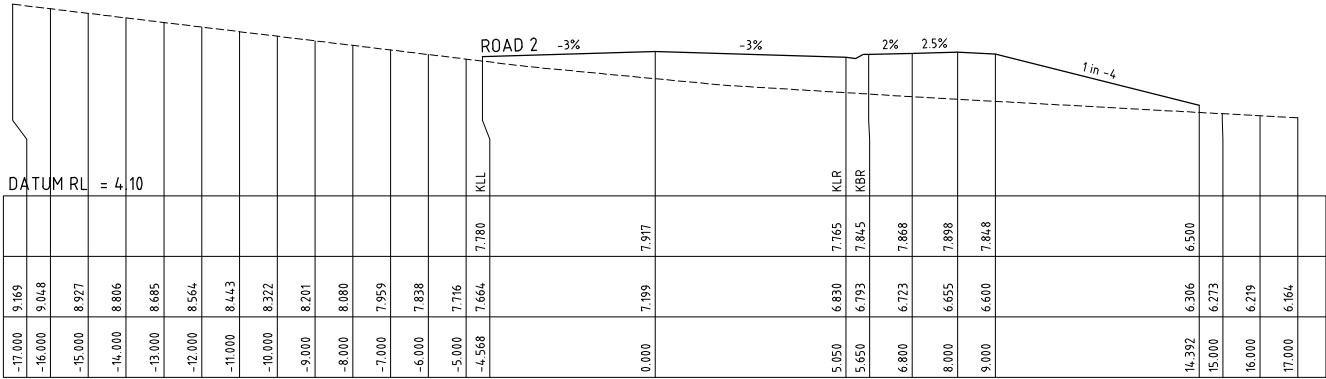
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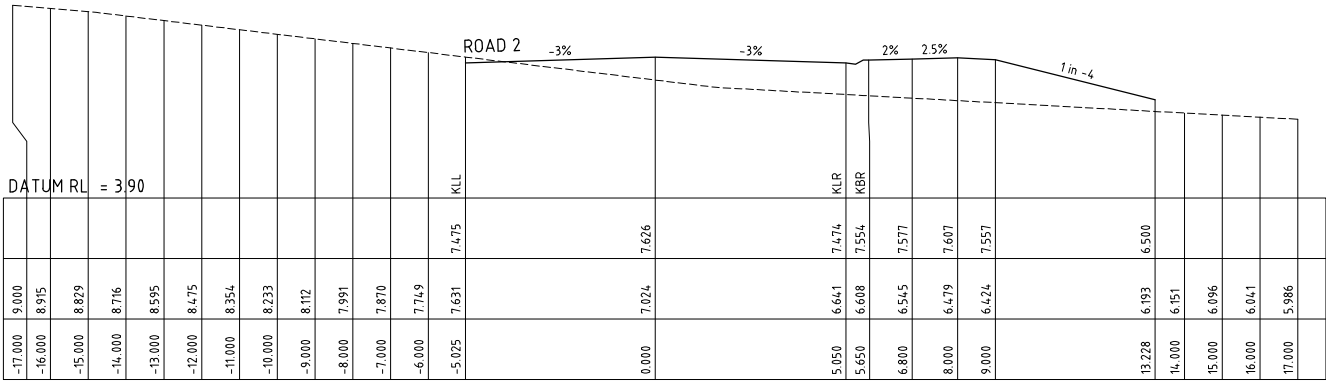
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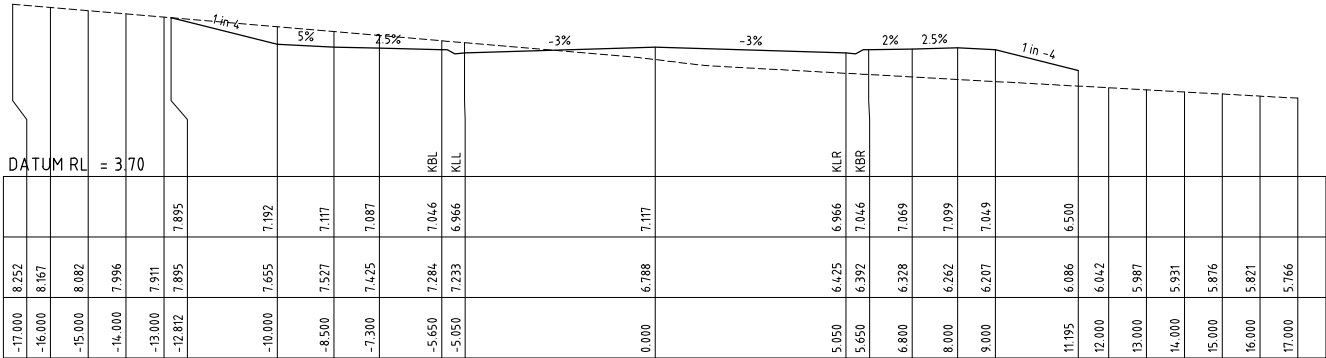
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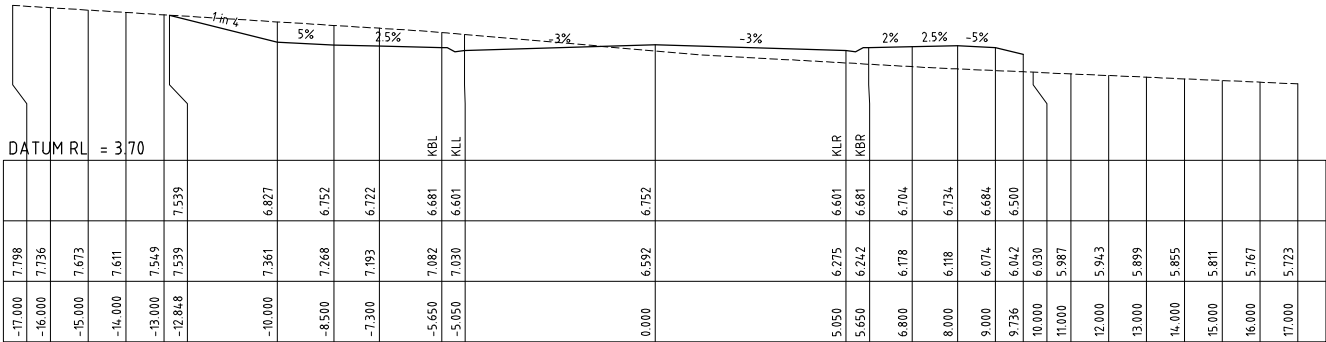
CH 98.531



CH 90.000



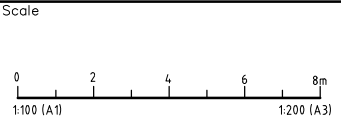
CH 75.000



CH 60.000

PRELIMINARY ISSUE  
NOT FOR CONSTRUCTION

					North
3	ORIGINAL ISSUE		DB	AS	24.12.21
2	NOT ISSUED				
1	NOT ISSUED				
Amendment	Description	Drawn	App'd	Date	

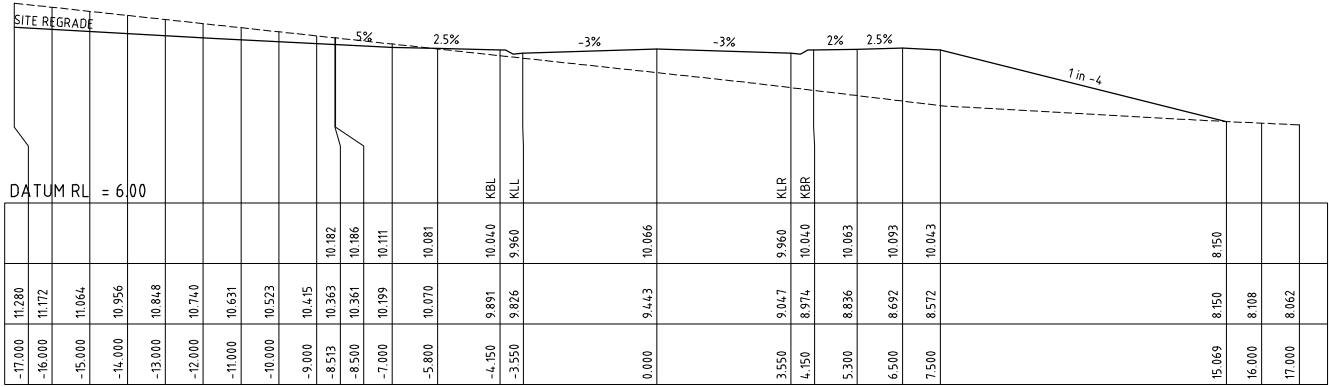


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		Scale	A1 SHEET	
		AS SHOWN		
		Project Approval		
		IAN HILL (B.E)		
		Consulting Civil Engineer		

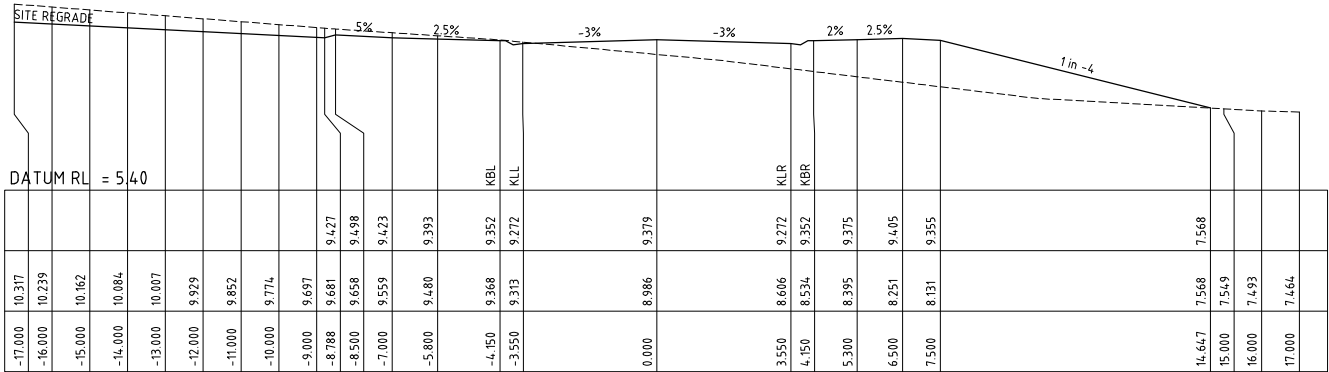
A.B.N. 92 086 017 745  
1 HARTLEY DRIVE, THORNTON NSW 2322  
PO BOX 3337, THORNTON NSW 2322  
PHONE: (02) 4964 1811

PROPOSED SUBDIVISION 1A FLOWERS DRIVE CATHERINE HILL BAY (HAMLET A) ROAD 1 CROSS SECTIONS (1 OF 3)		Project No 19259C	
Drawing No C406	Revision 3		

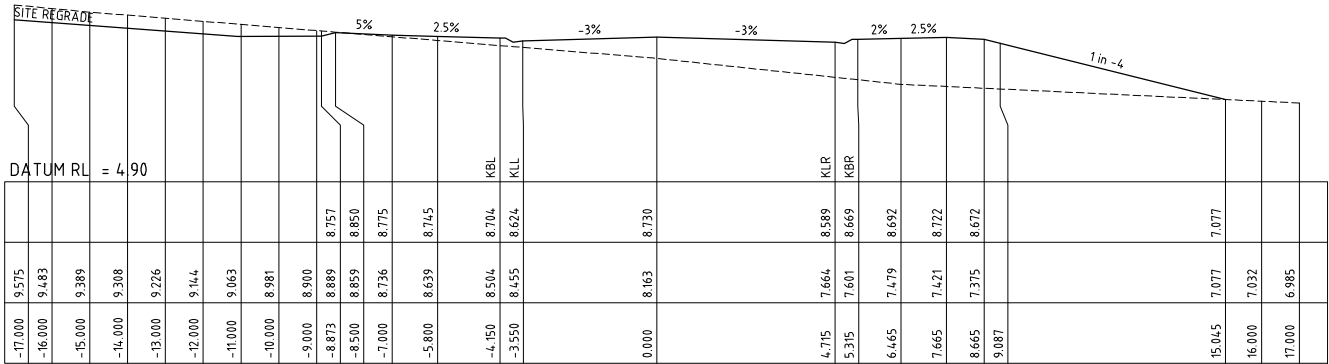




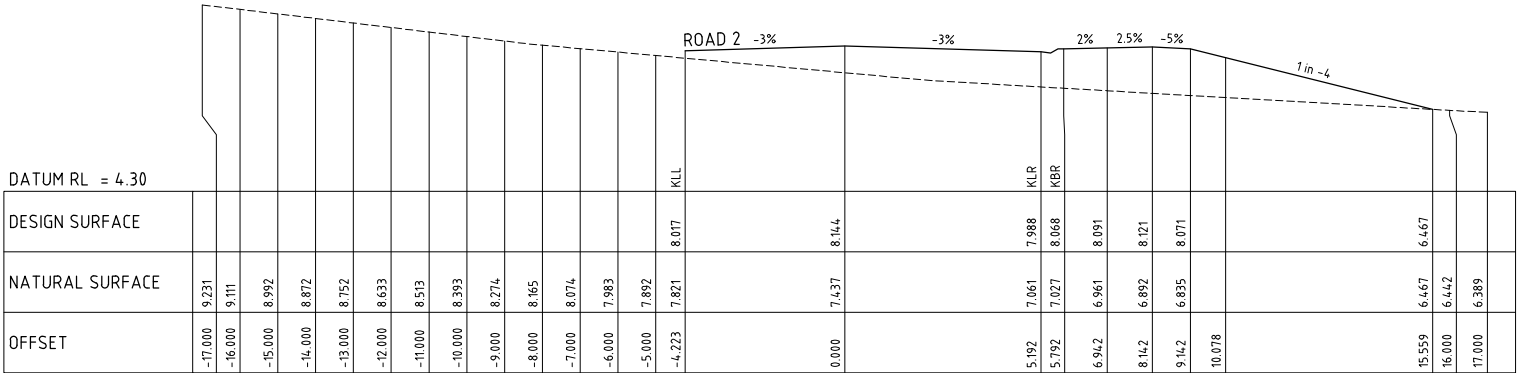
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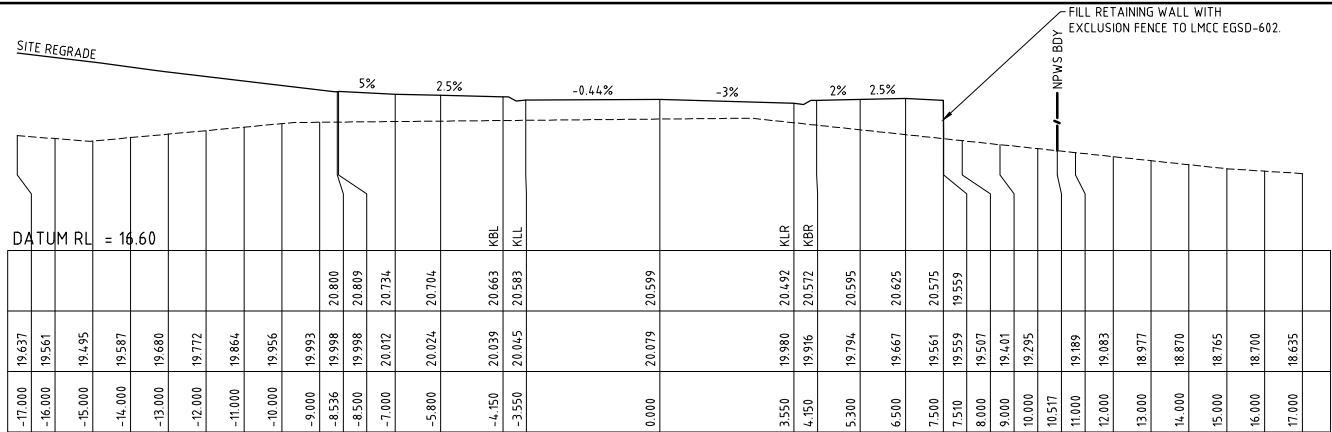
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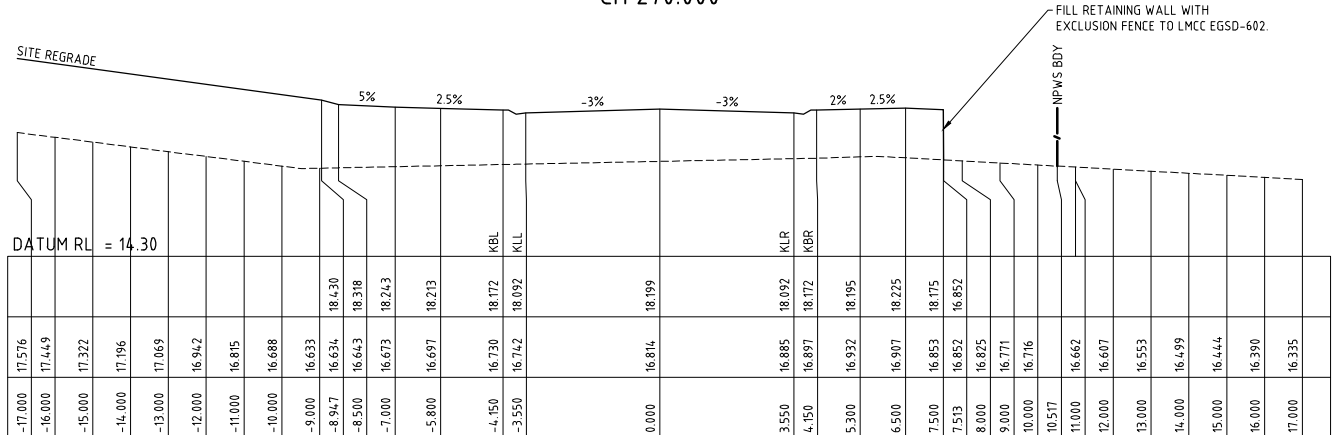
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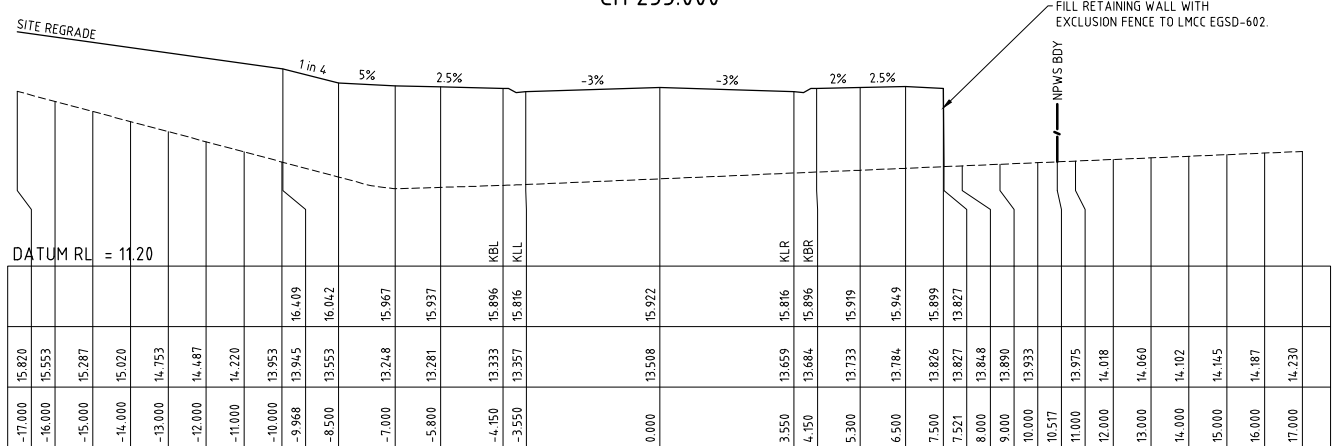




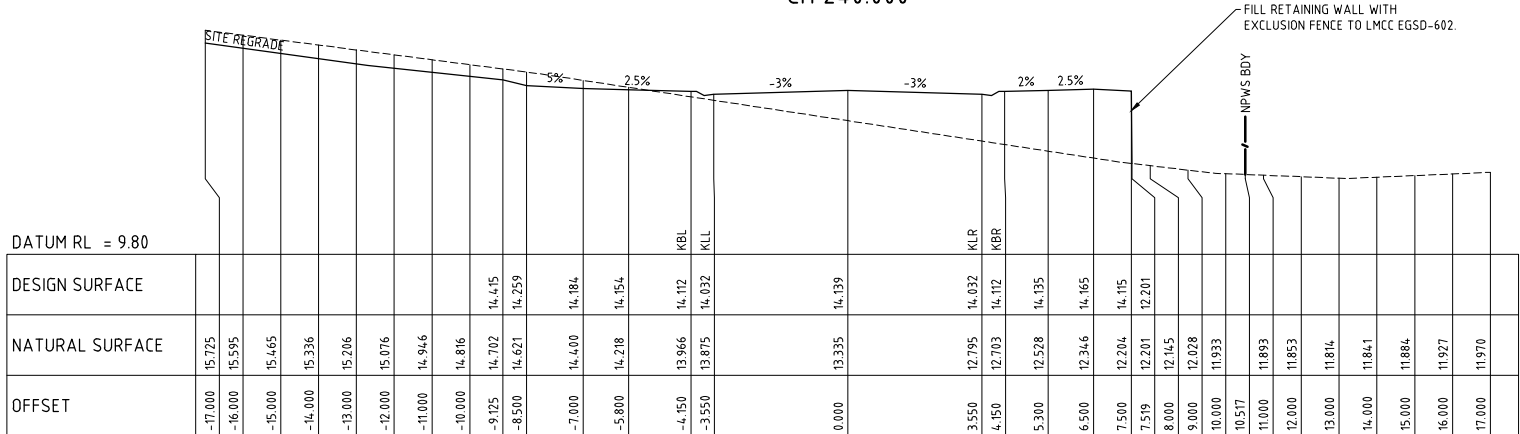
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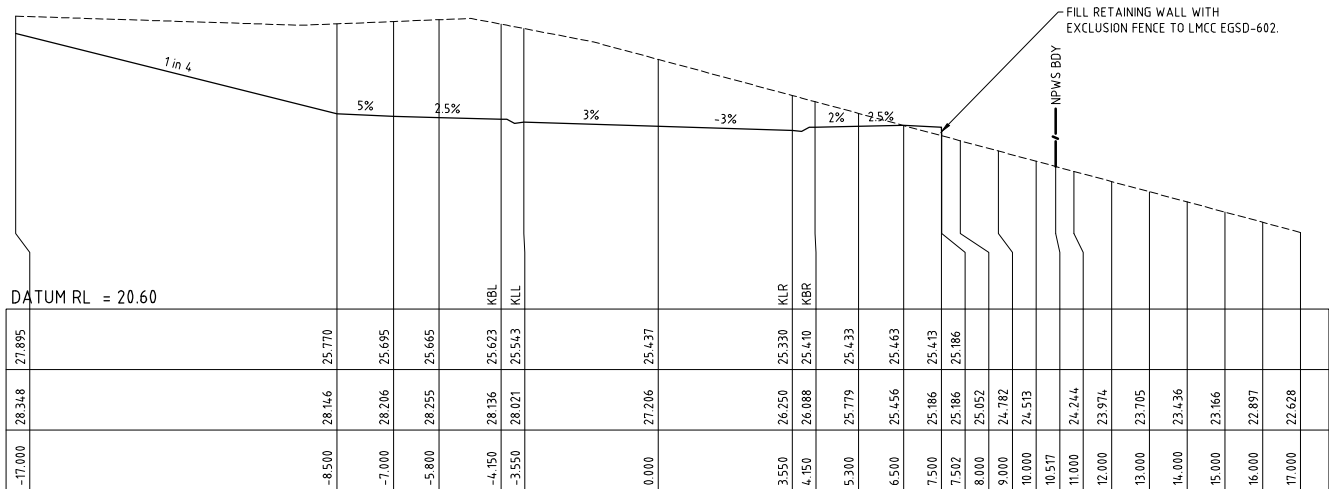
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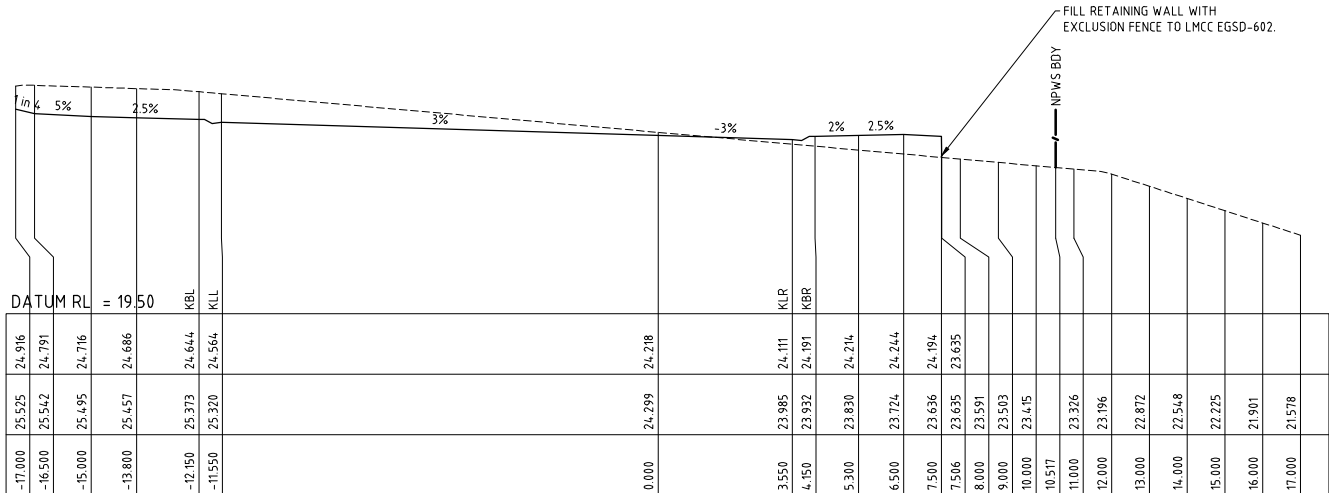
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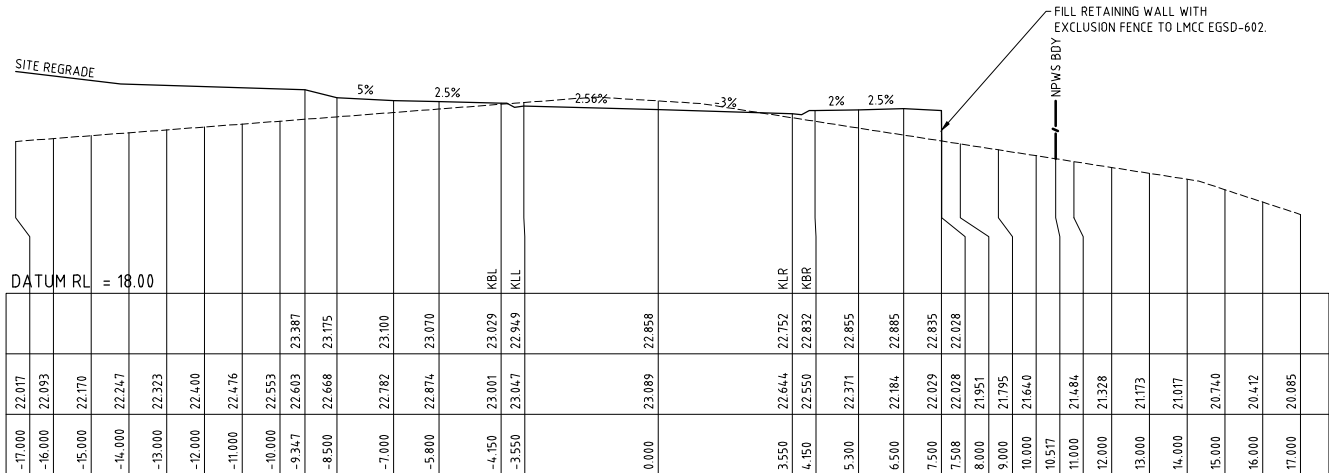
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CH 315.239





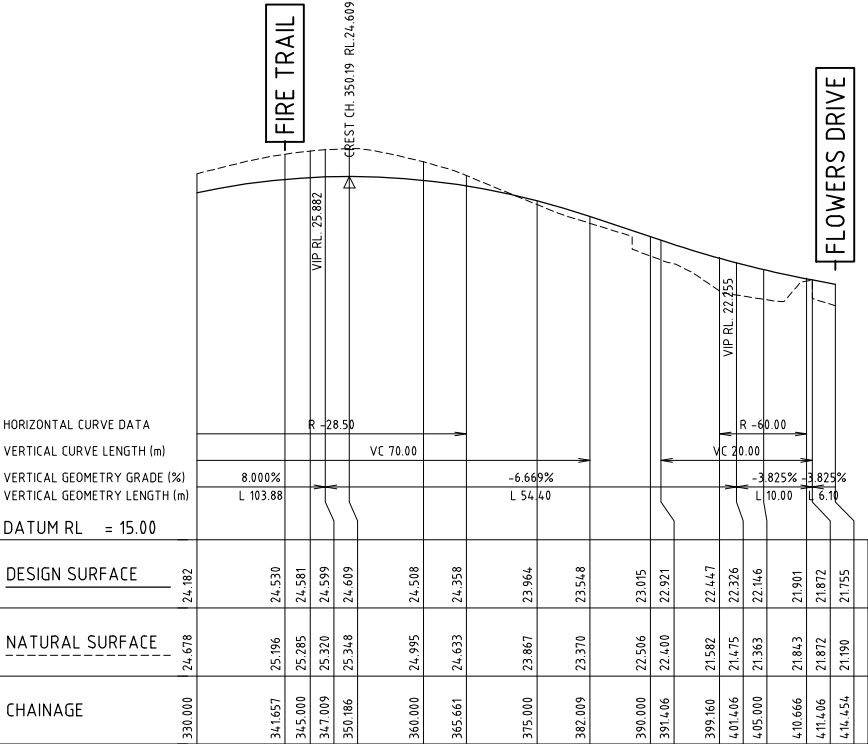
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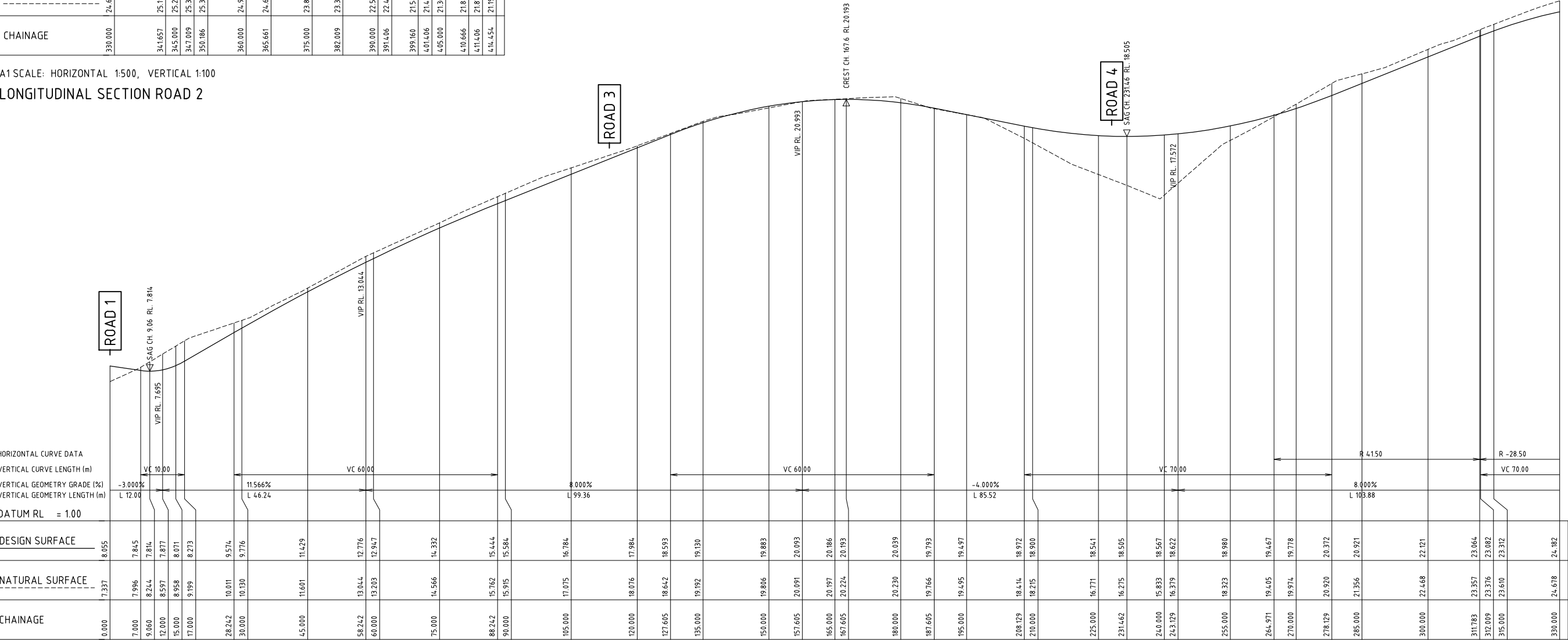
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4	NPWS BDY ADDED	DB	AS	04.08.22				Scale AS SHOWN	A1 SHEET				Drawing No C408	Revision 4
3	ORIGINAL ISSUE	DB	AS	24.12.21				Project Approval IAN HILL (B.E) Consulting Civil Engineer						
2	NOT ISSUED													
1	NOT ISSUED													
Amendment	Description	Drawn	App'd	Date										



A1 SCALE: HORIZONTAL 1:500, VERTICAL 1:100  
LONGITUDINAL SECTION ROAD 2

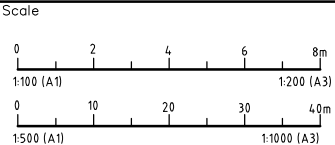


A1 SCALE: HORIZONTAL 1:500, VERTICAL 1:100  
LONGITUDINAL SECTION ROAD 2

PRELIMINARY ISSUE  
NOT FOR CONSTRUCTION

					North
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2	NOT ISSUED				
1	NOT ISSUED				
Amendment	Description	Drawn	App'd	Date	

PLOT DATE: 31/10/2022 12:29 PM CAD FILE: Q:\19\19259 1A Flowers Drive, Catherine Hill Bay\02\_CAD\AutoCAD\Civil\400 Series - Hamlet A\19259C dC409 r3.dwg



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Designed  
A.M

Scale  
AS SHOWN

Project Approval  
IAN HILL (B.E)  
Consulting Civil Engineer

Cad Reference  
19259C dC409 r3

A1 SHEET

Client

**GCA**  
ENGINEERING SOLUTIONS

A.B.N. 92 086 017 745  
1 HARTLEY DRIVE, THORNTON NSW 2322  
PO BOX 3337, THORNTON NSW 2322  
PHONE: (02) 4964 1811

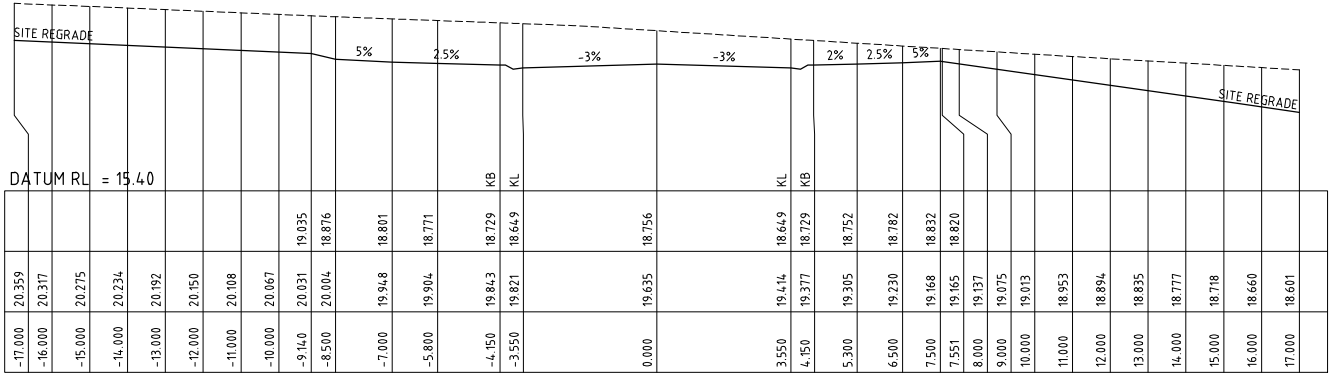
PROPOSED SUBDIVISION  
1A FLOWERS DRIVE  
CATHERINE HILL BAY  
(HAMLET A)  
ROAD 2 LONGITUDINAL SECTION

Project No  
19259C

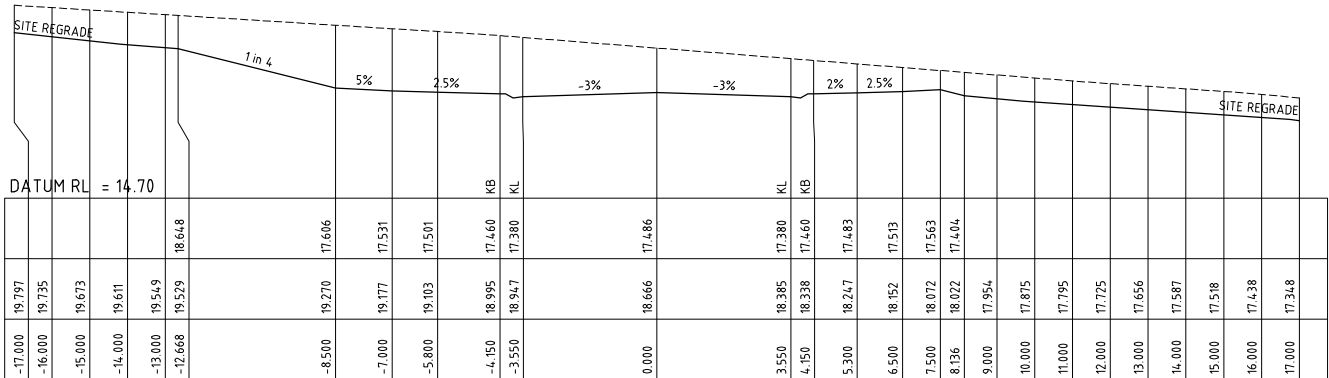
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Revision  
3

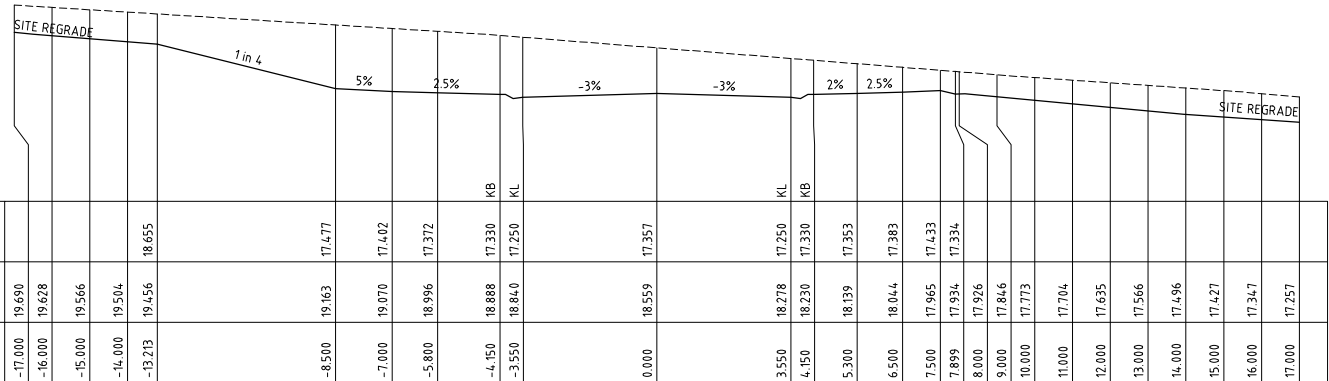




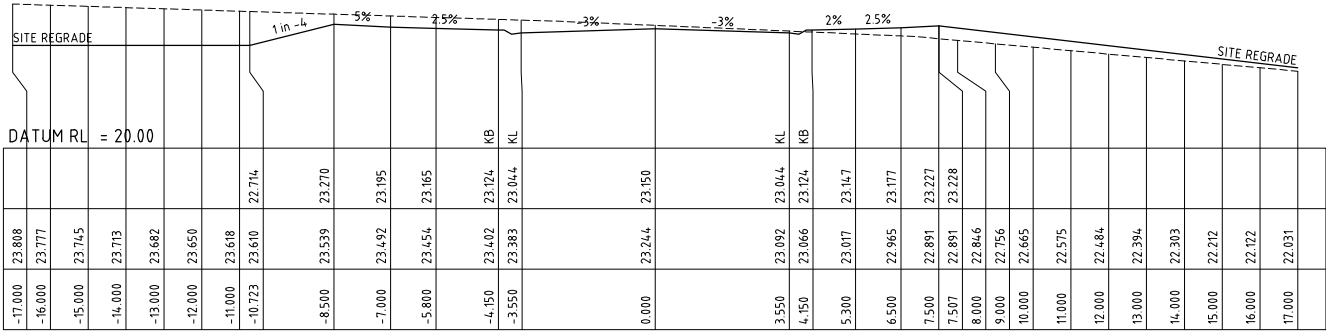
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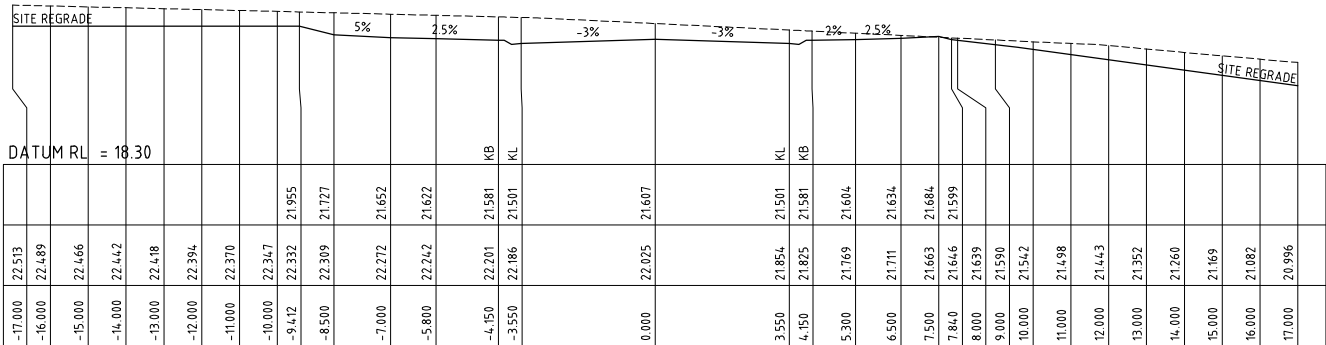
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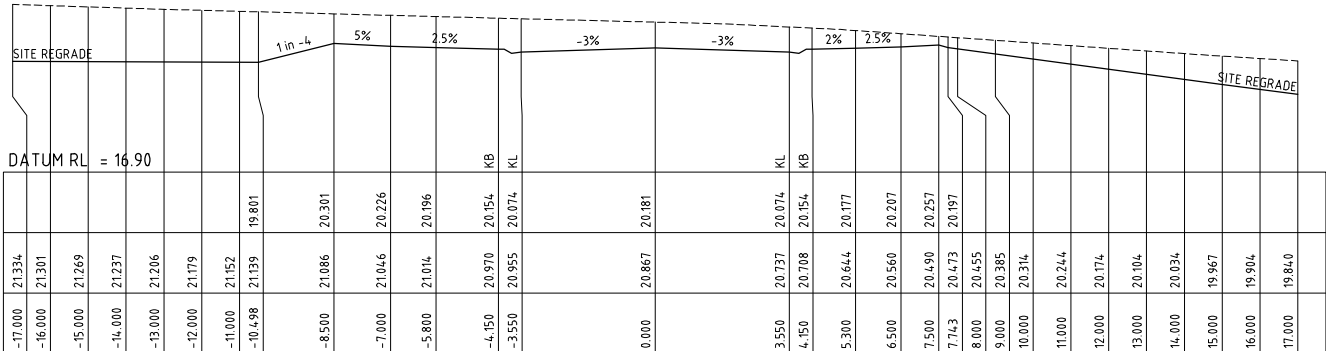
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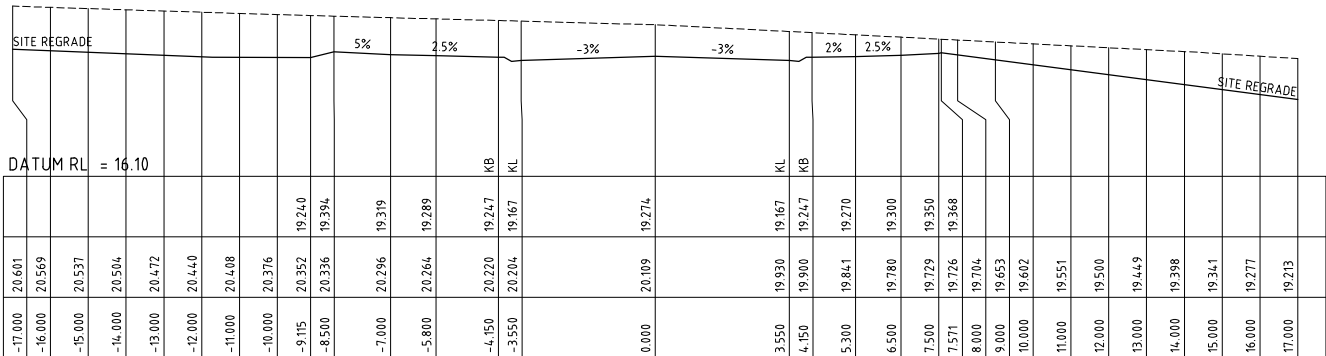
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CH 60.000



CH 45.000



CH 35.453

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2	NOT ISSUED				
1	NOT ISSUED				
Amendment	Description	Drawn	App'd	Date	

Scale

0 2 4 6 8m

1:100 (A1) 1:200 (A3)

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Designed A.M

Scale AS SHOWN

Project Approval IAN HILL (B.E) Consulting Civil Engineer

Cad Reference 19259C dC410 r3

A1 SHEET

Client

**GCA**

ENGINEERING SOLUTIONS

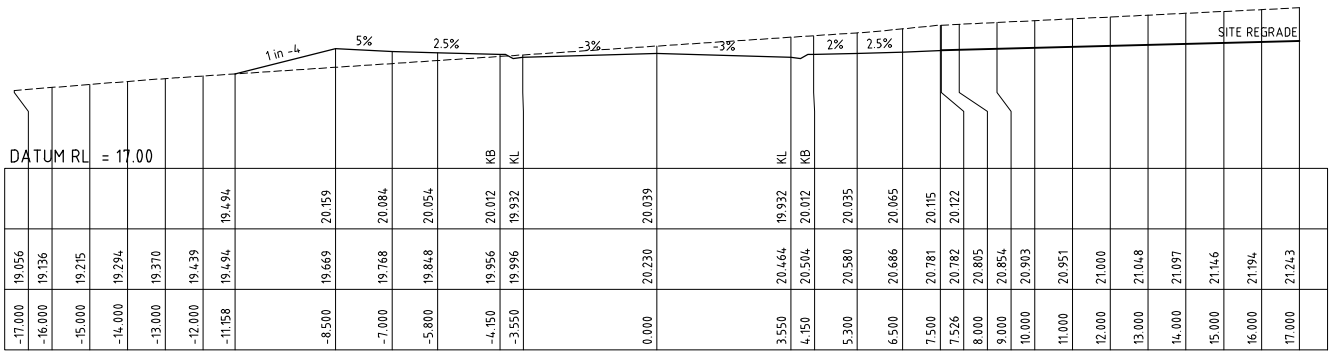
A.B.N. 92 086 017 745  
1 HARTLEY DRIVE, THORNTON NSW 2322  
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PROPOSED SUBDIVISION  
1A FLOWERS DRIVE  
CATHERINE HILL BAY  
(HAMLET A)  
ROAD 2 CROSS SECTIONS (1 OF 2)

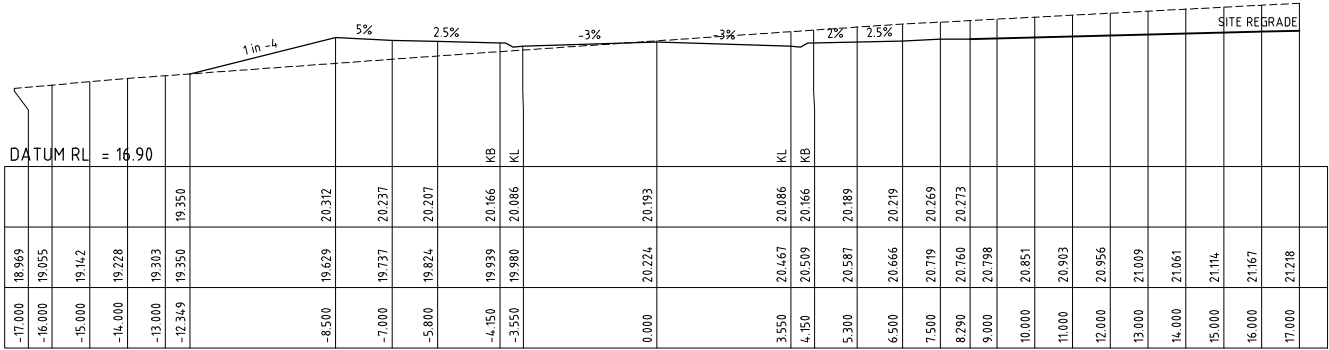
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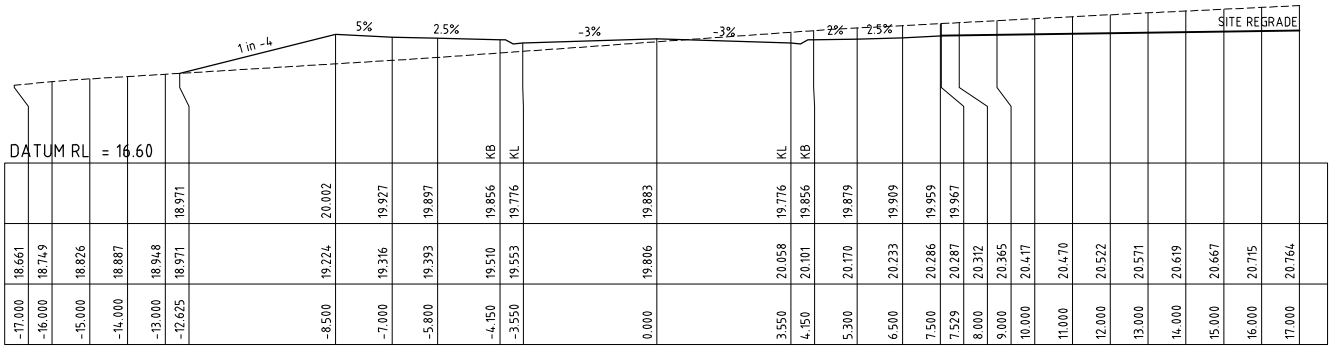
Revision 3



CH 180.000



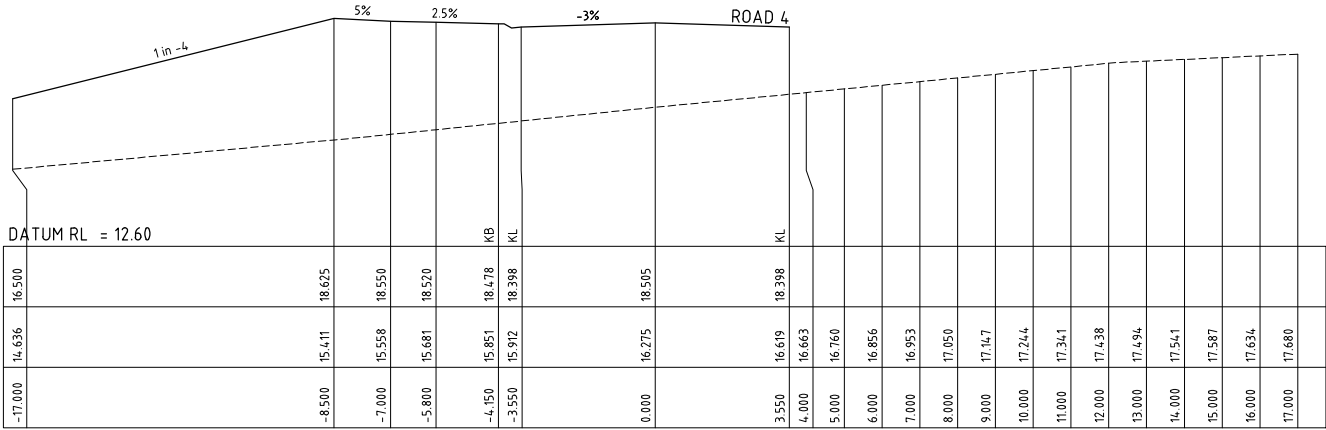
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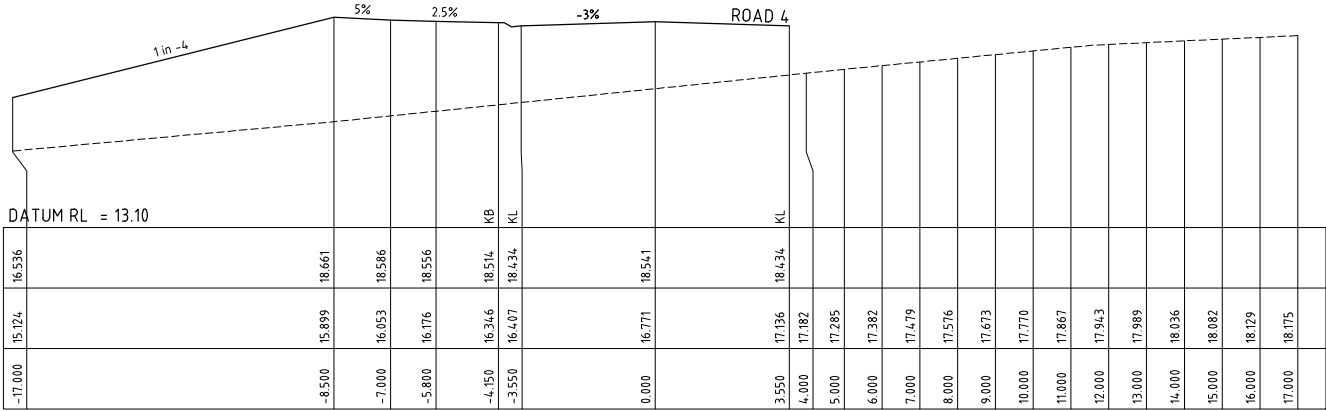
CH 150.000

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NATURAL SURFACE				
OFFSET				
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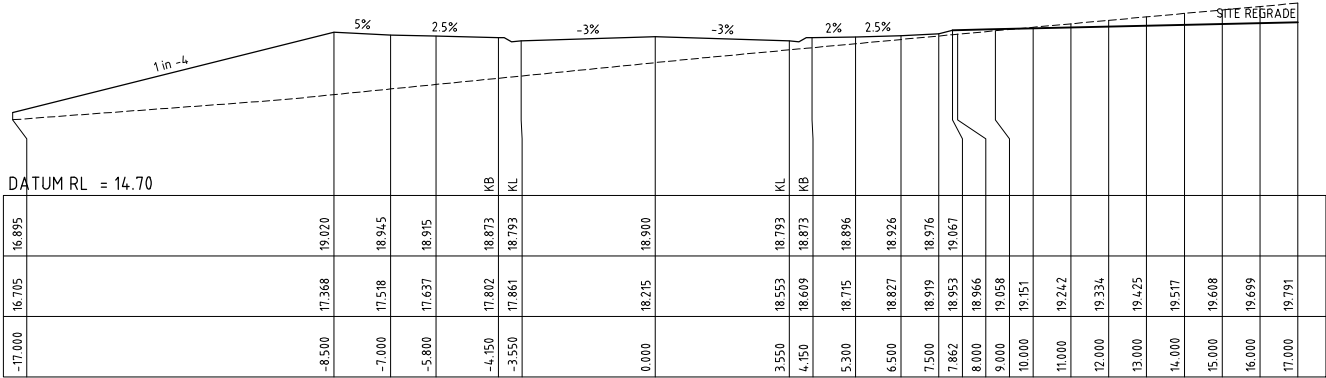
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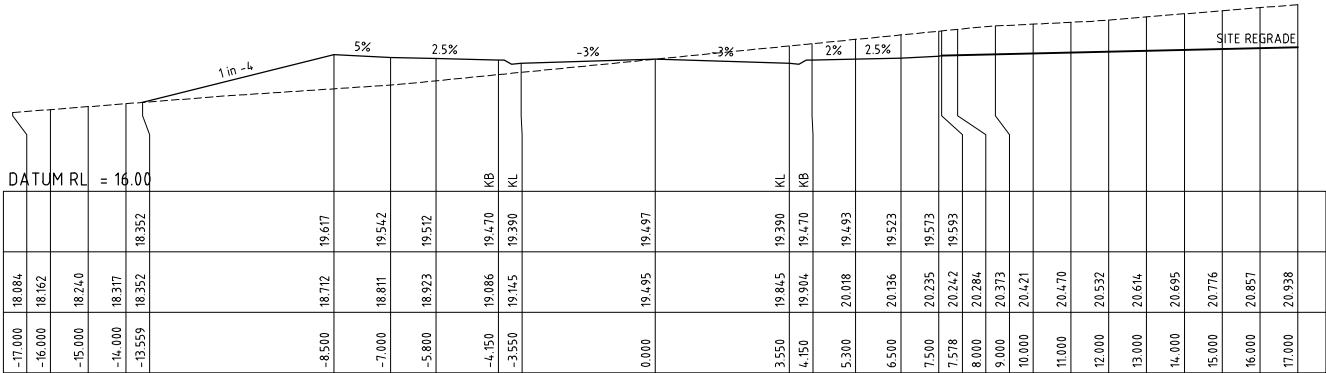
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CH 225.000



CH 210.000



CH 195.000

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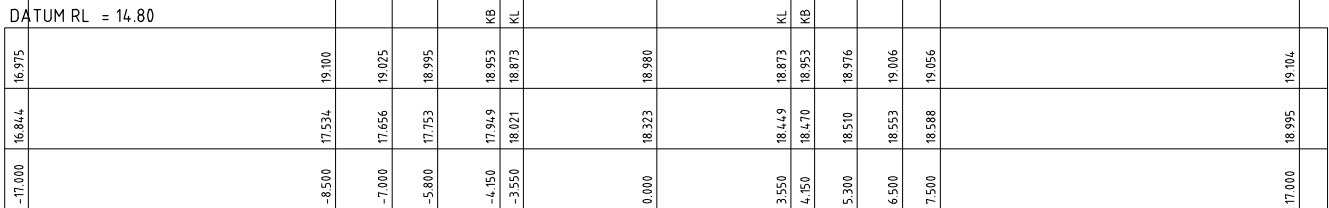
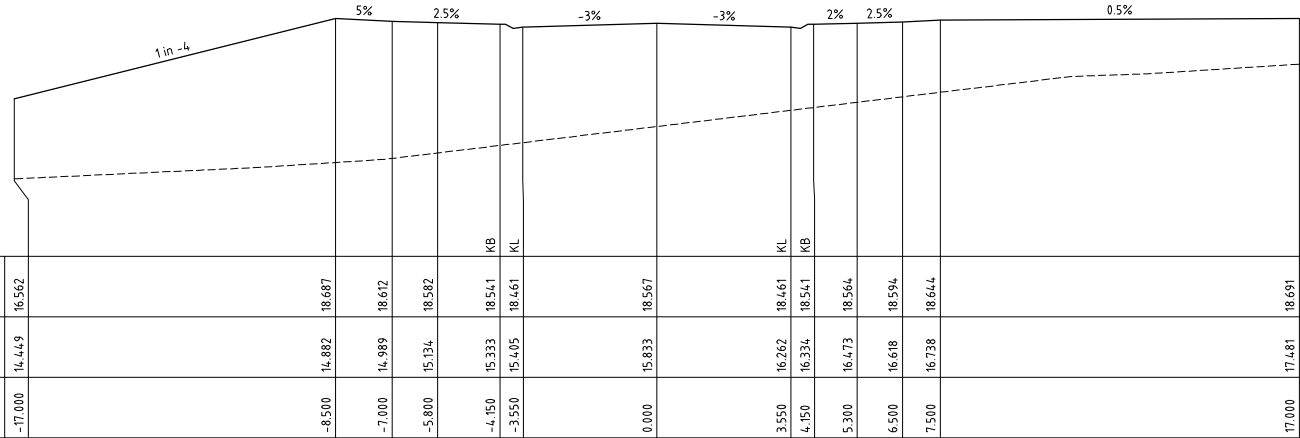
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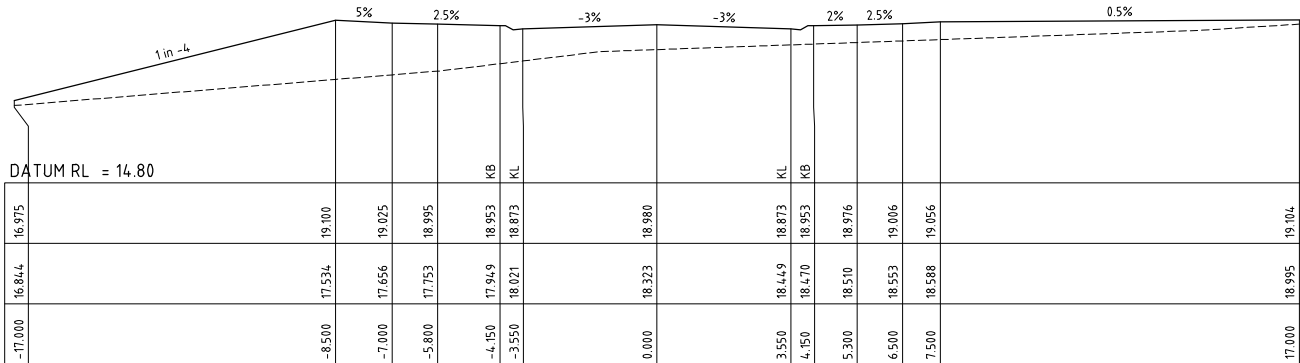
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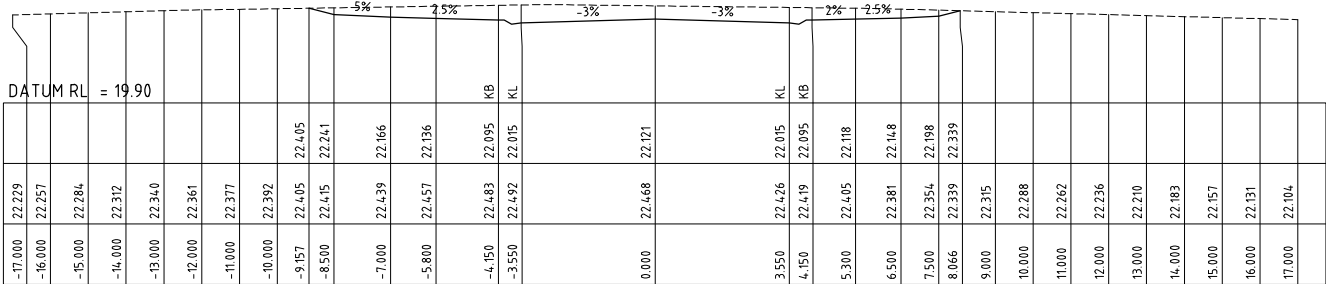
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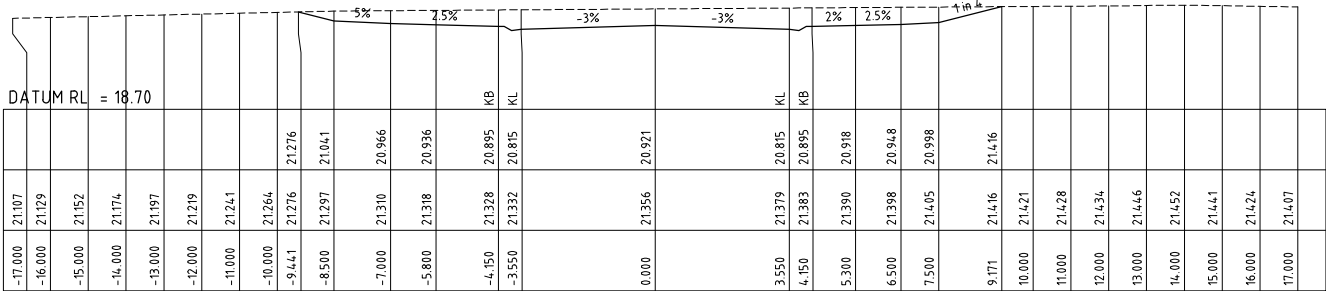
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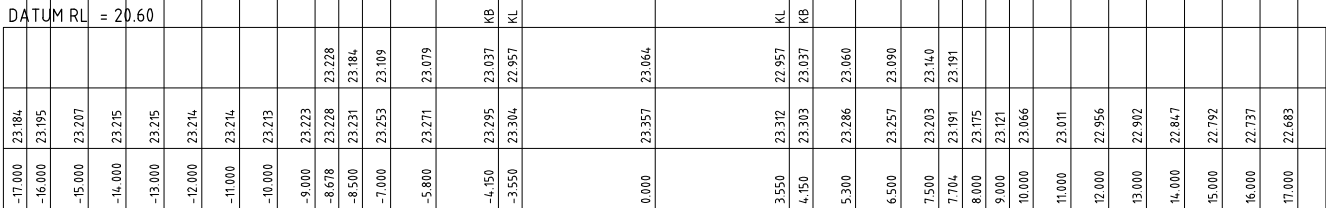
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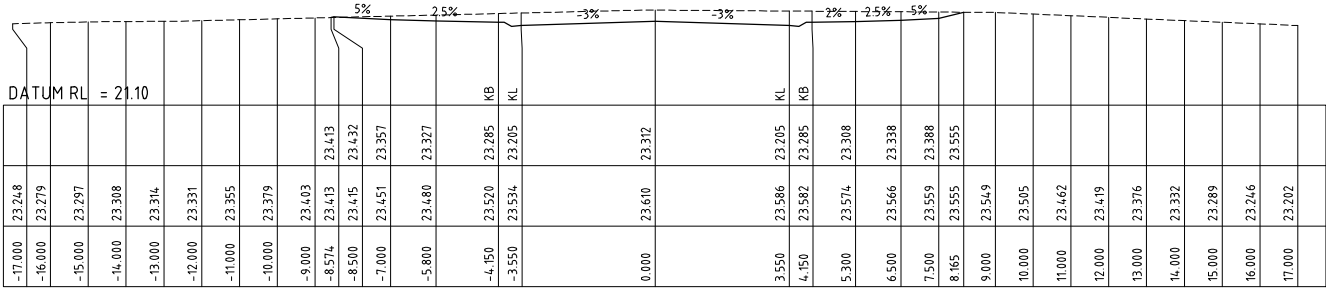
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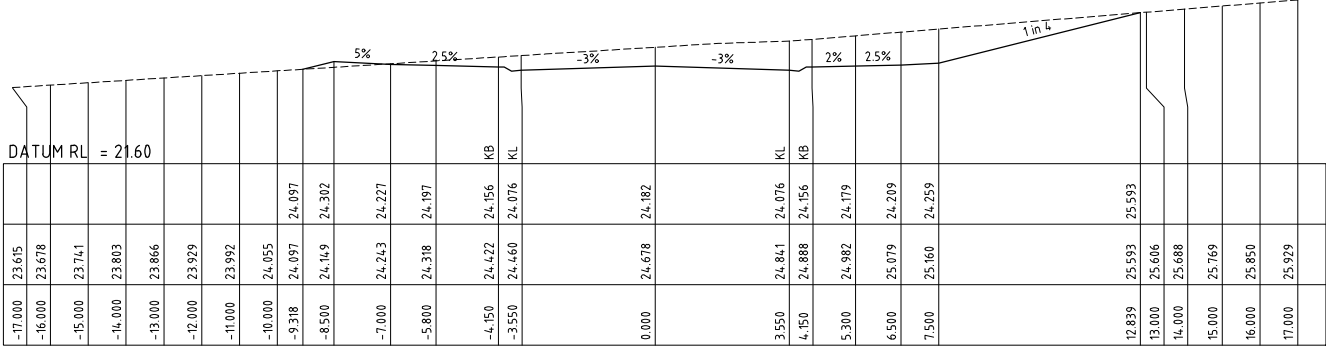
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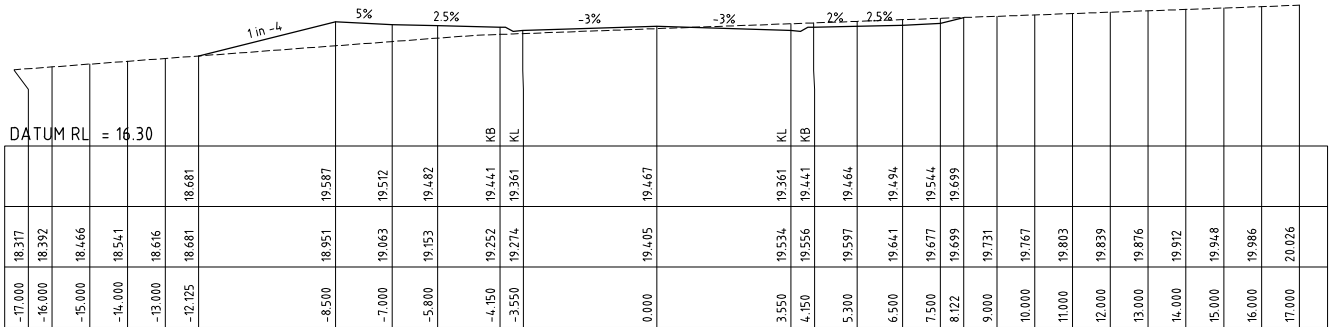
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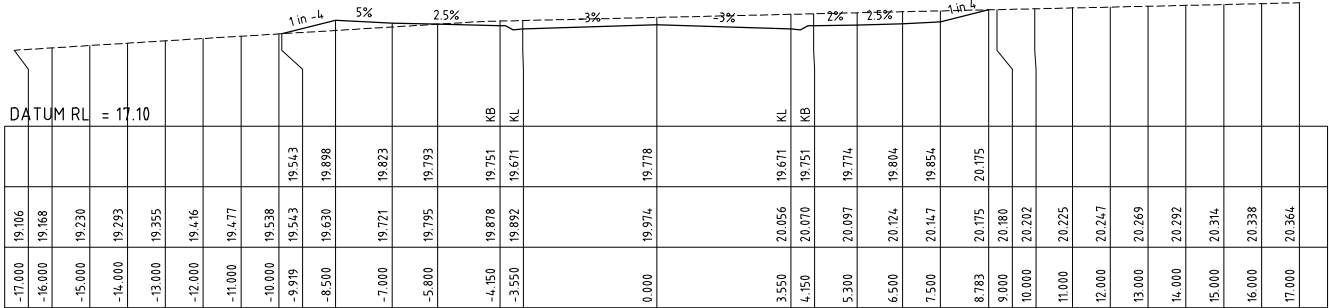
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CH 270.000



CH 264.971

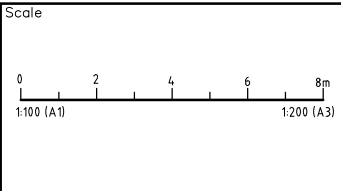


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North



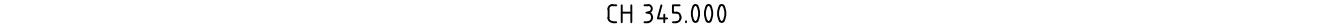
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Designed A.M	Cad Reference 19259C d\412 r3
Scale AS SHOWN	A1 SHEET
Project Approval IAN HILL (B.E) Consulting Civil Engineer	

Client

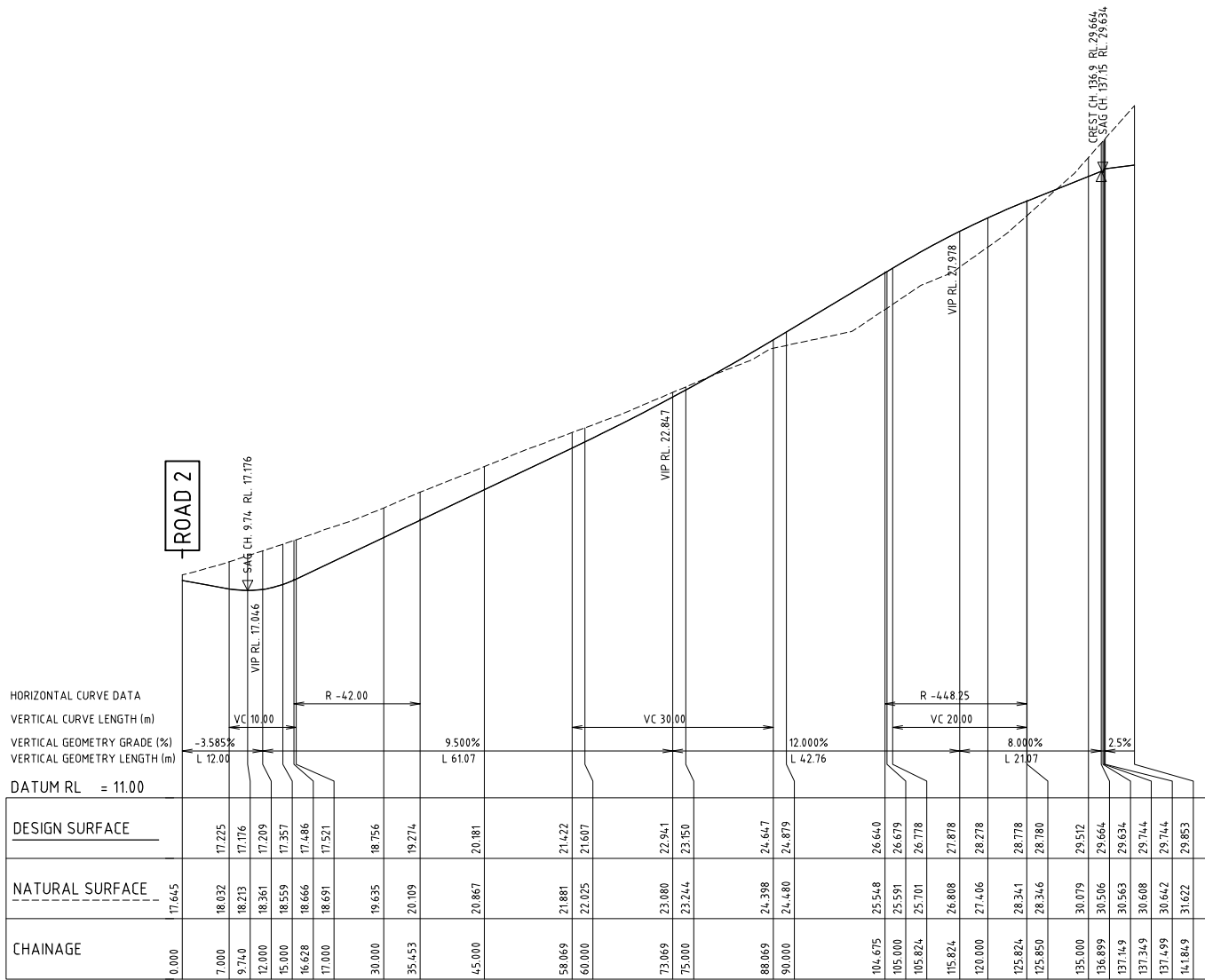
**GCA**  
ENGINEERING SOLUTIONS  
A.B.N. 92 086 017 745  
1 HARTLEY DRIVE, THORNTON NSW 2322  
PO BOX 3337, THORNTON NSW 2322  
PHONE: (02) 4964 1811

PROPOSED SUBDIVISION 1A FLOWERS DRIVE CATHERINE HILL BAY (HAMLET A) ROAD 2 CROSS SECTIONS (3 OF 4)		Project No 19259C	
Drawing No C412	Revision 3		



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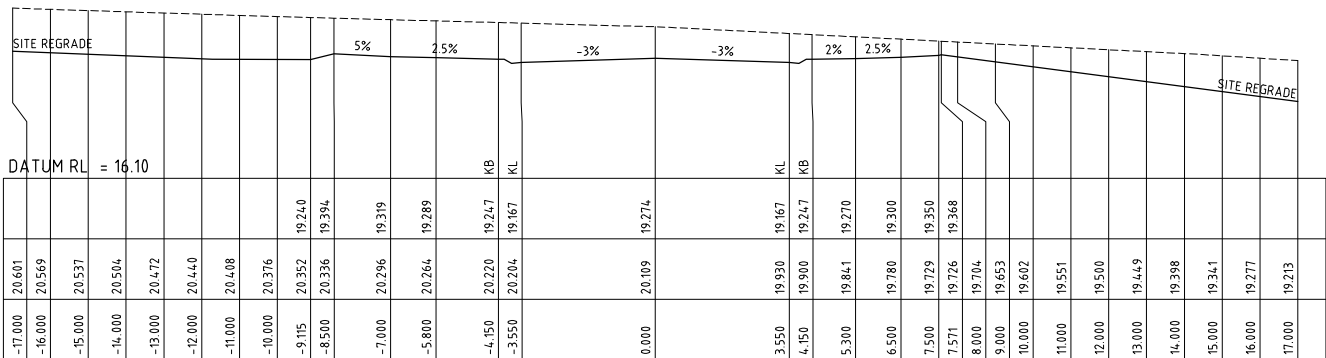
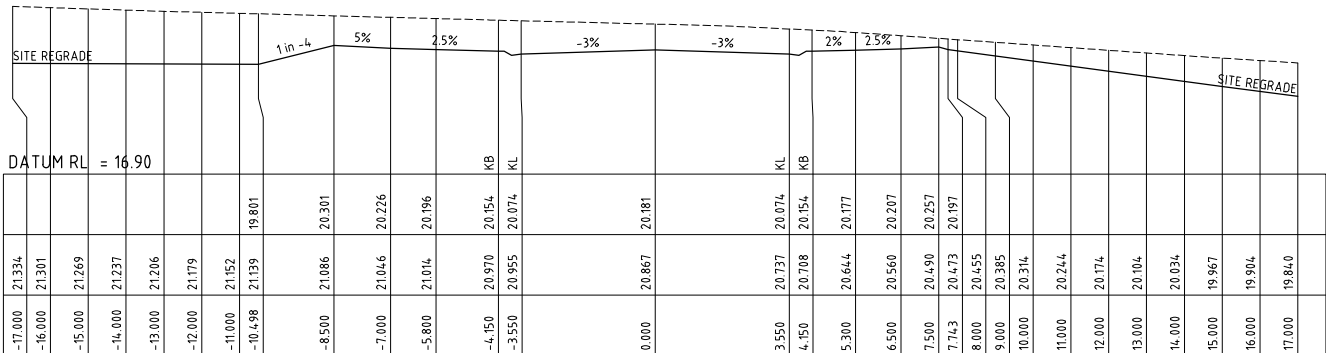
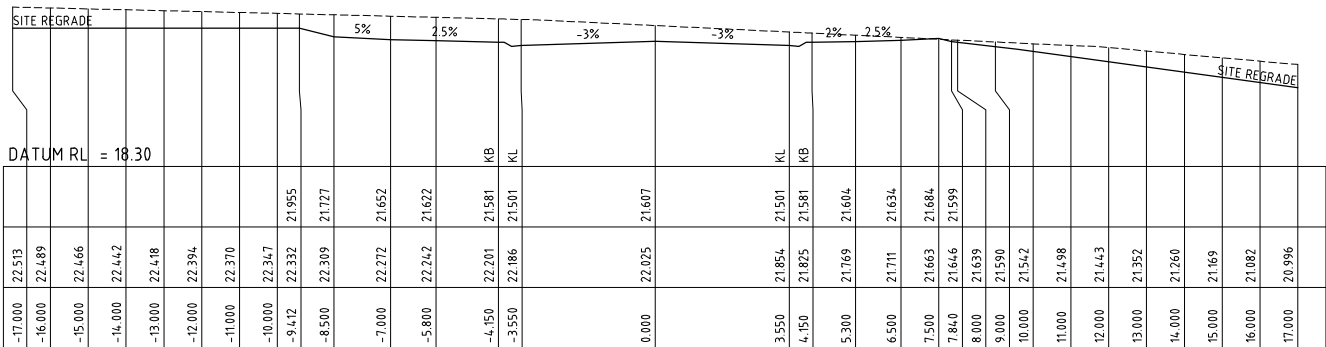
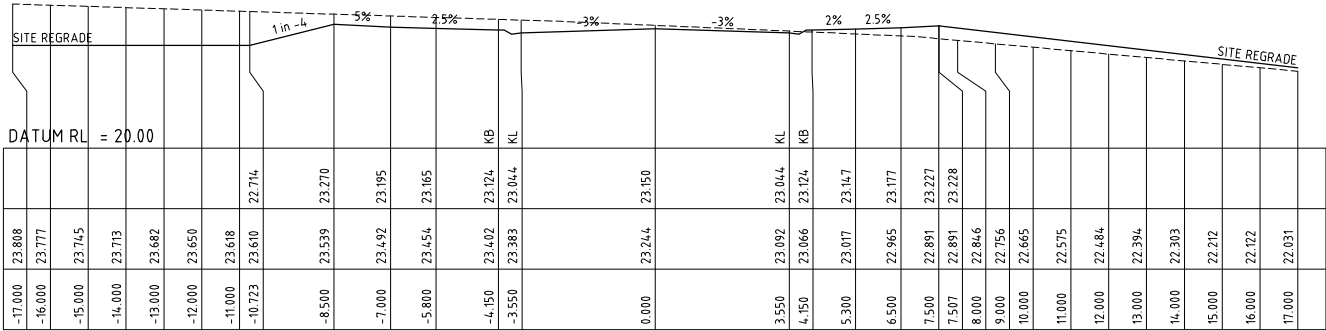
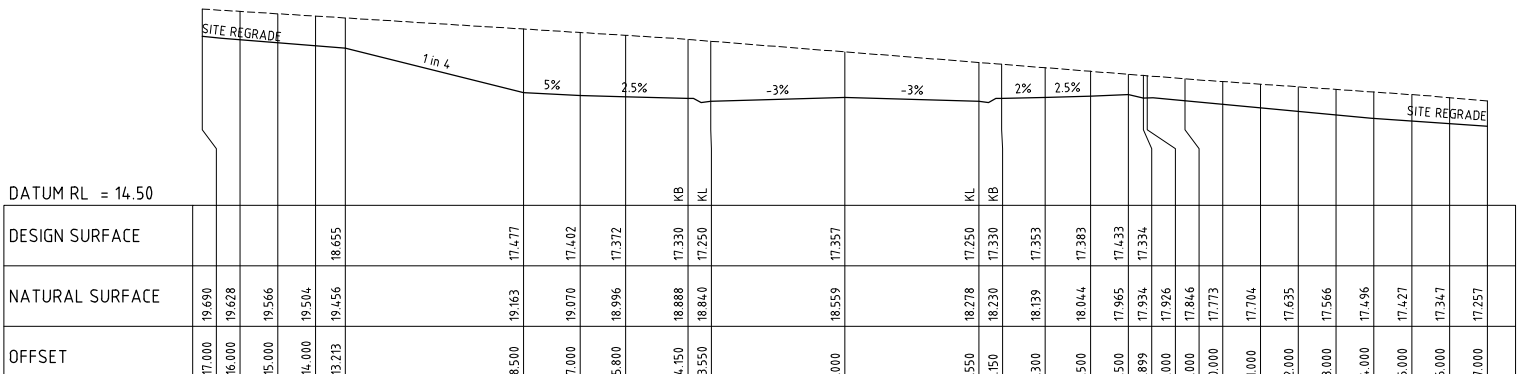
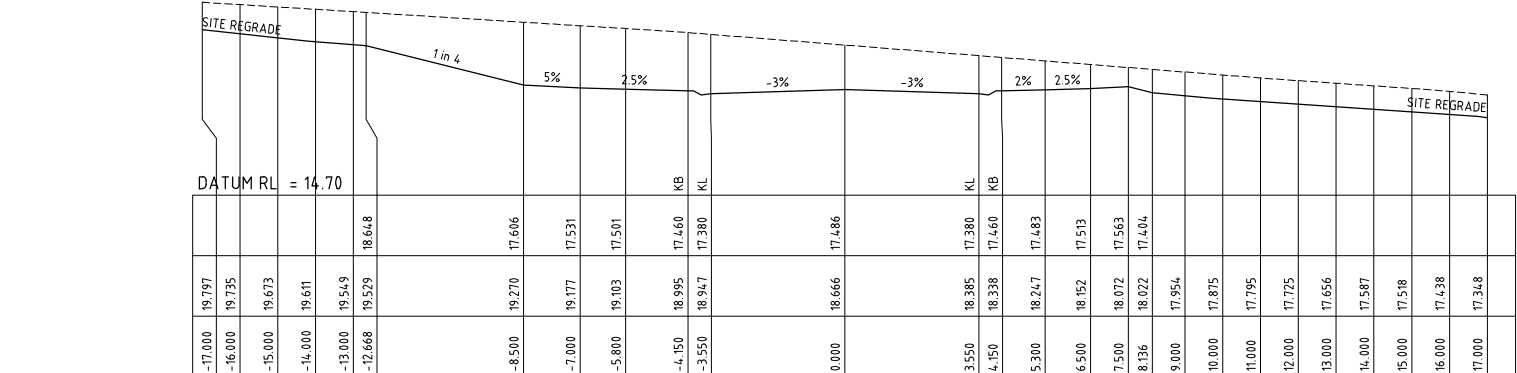
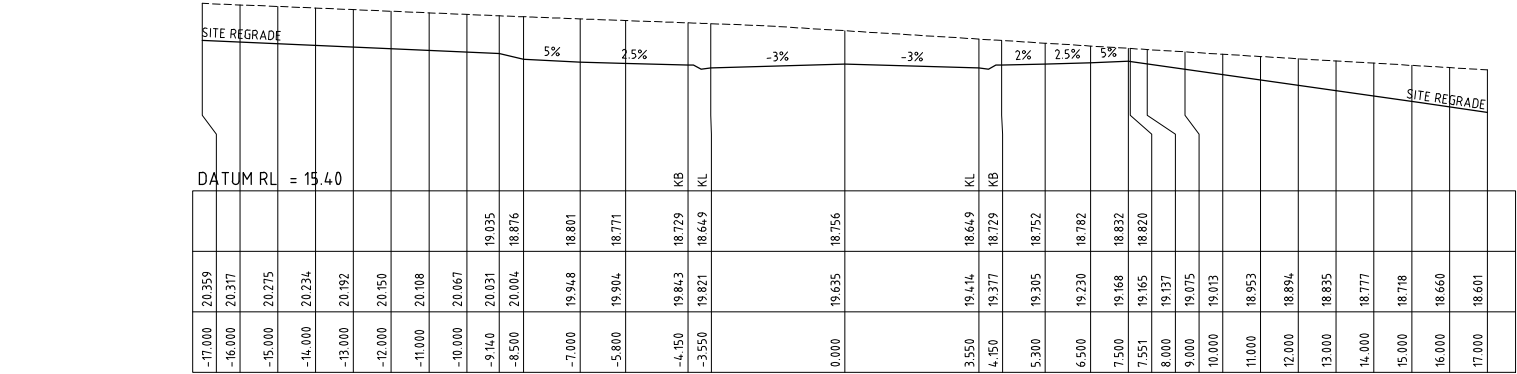




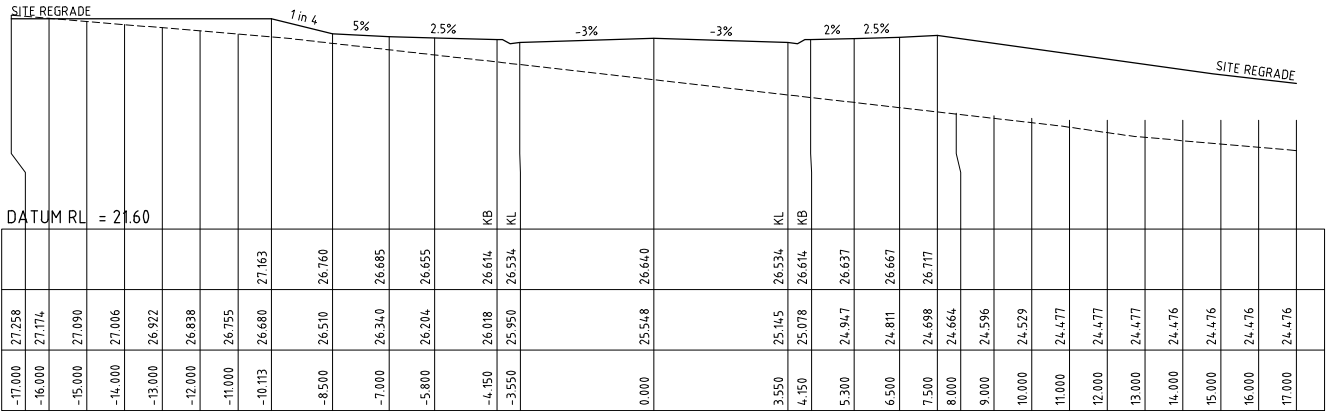
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LONGITUDINAL SECTION ROAD 3

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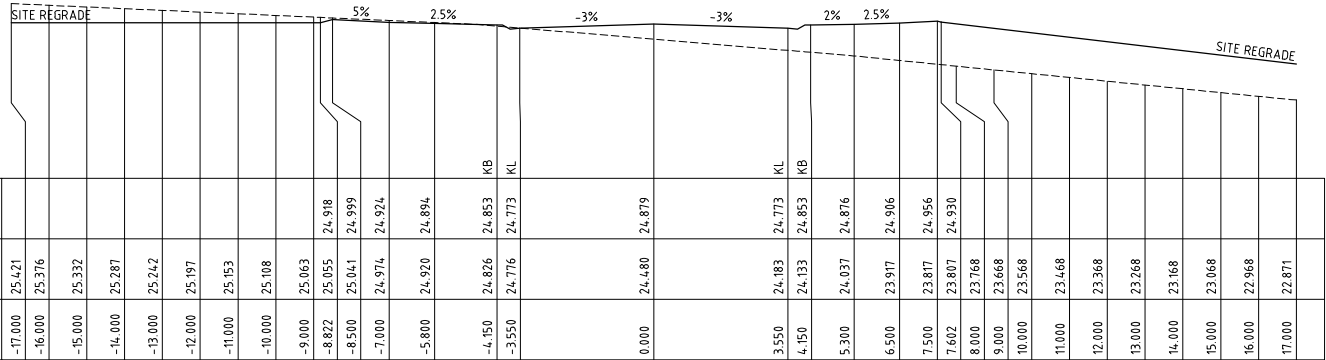
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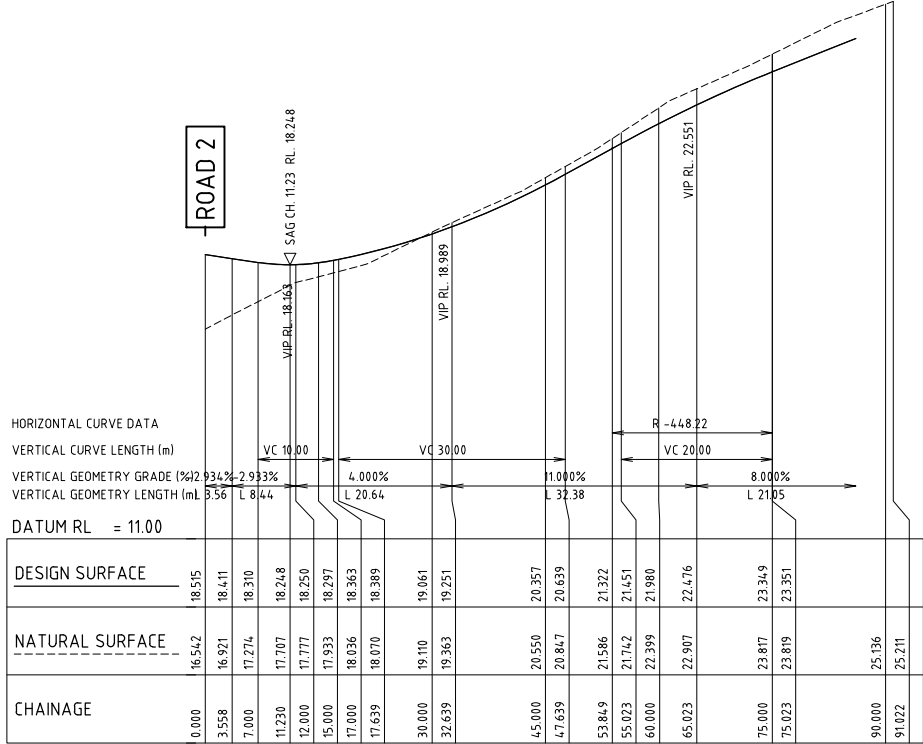
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CH 90.000

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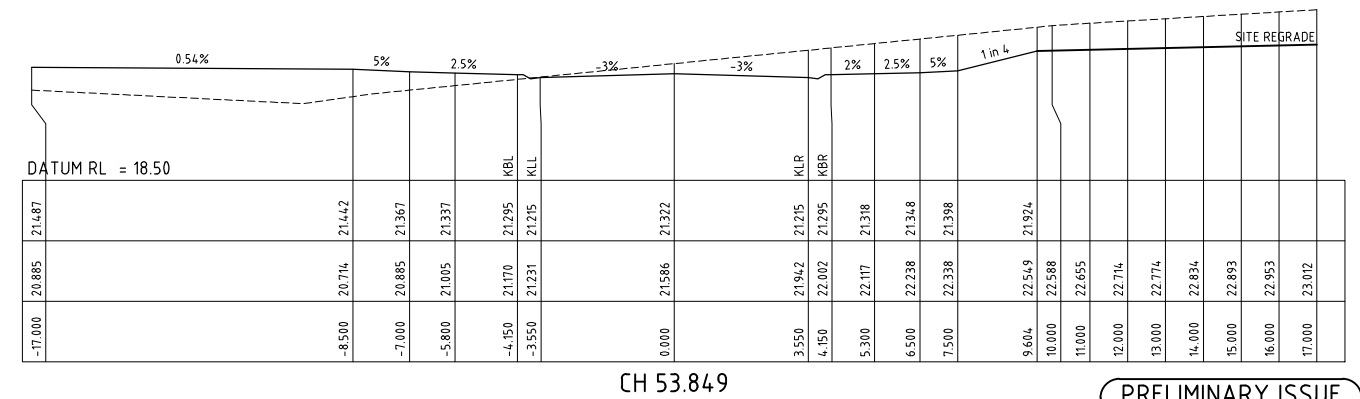
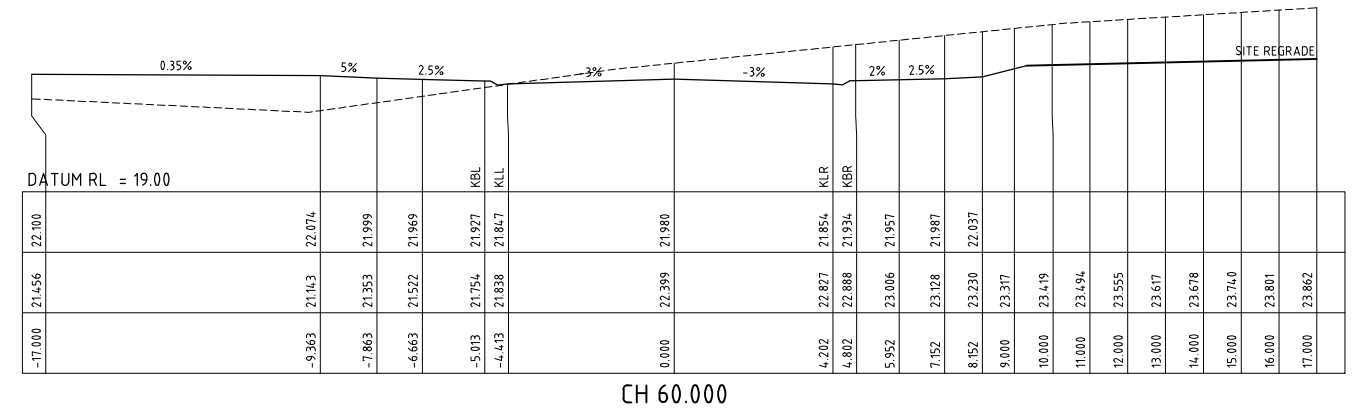
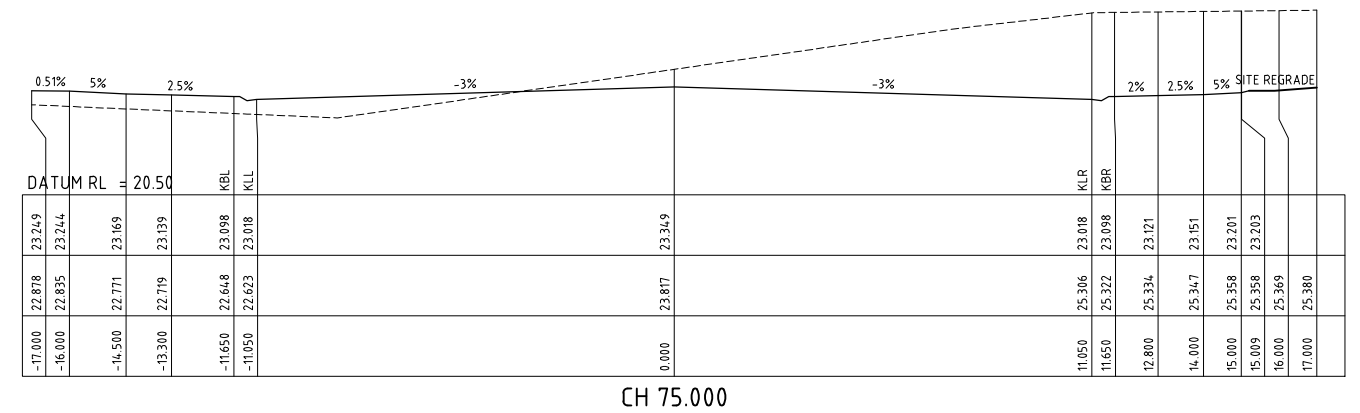
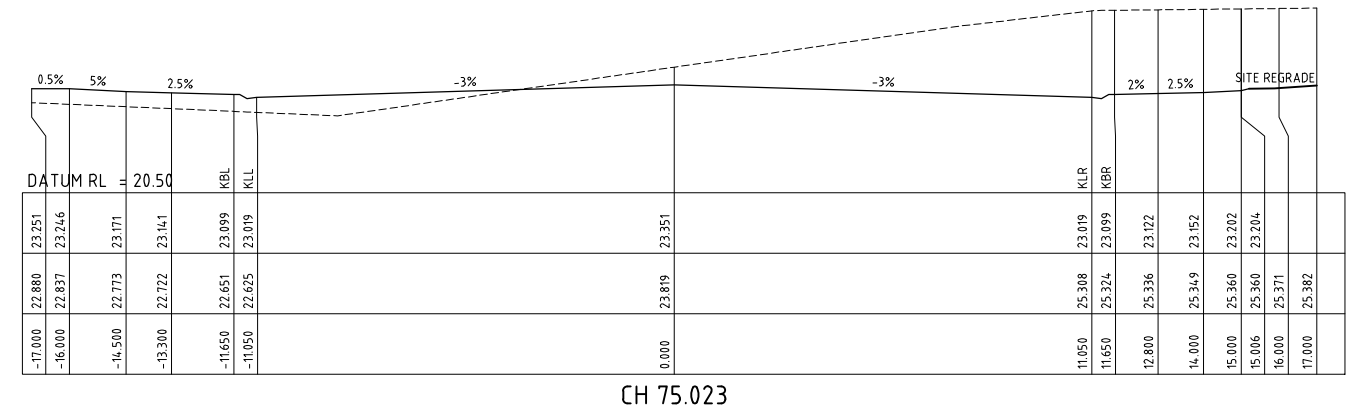
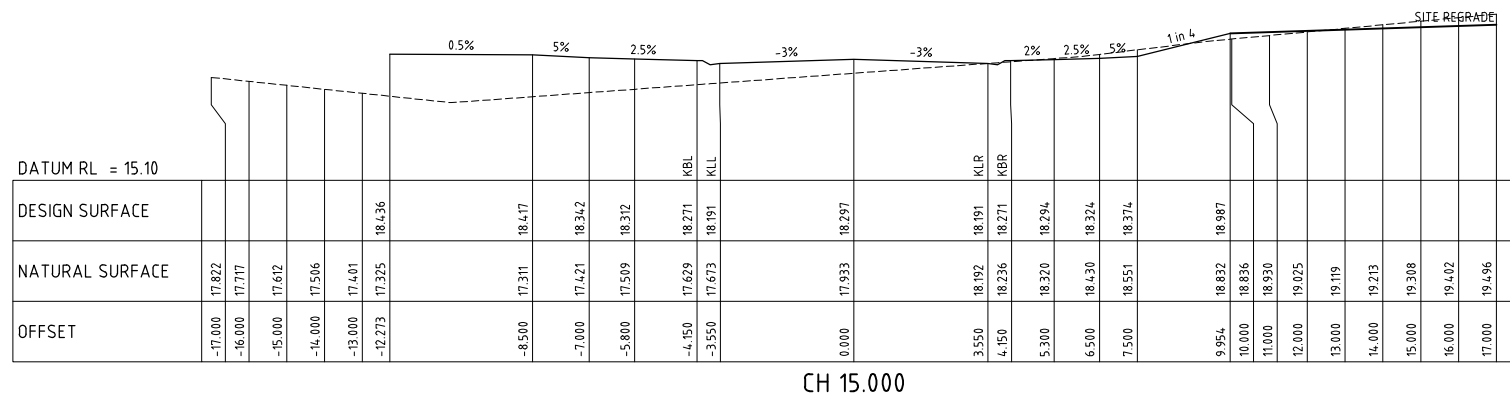
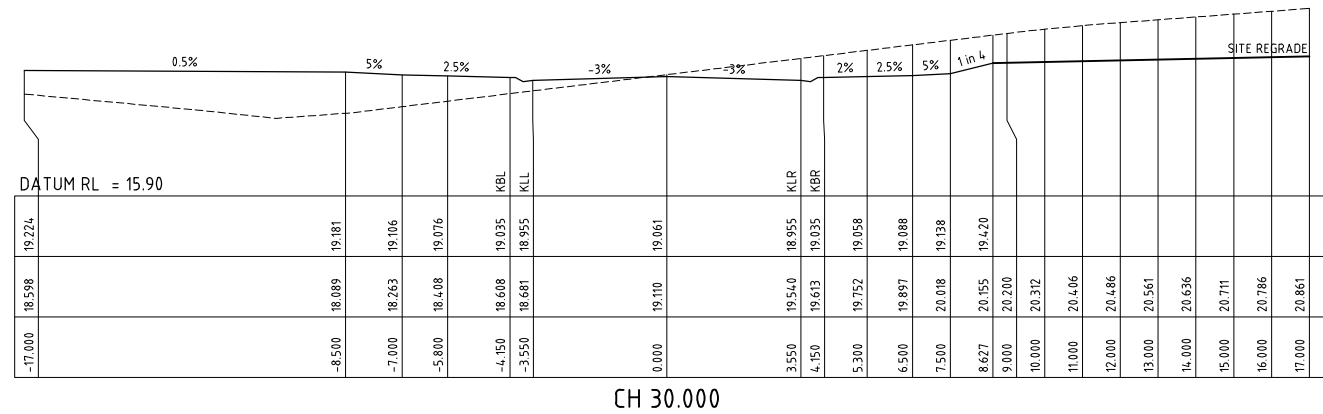
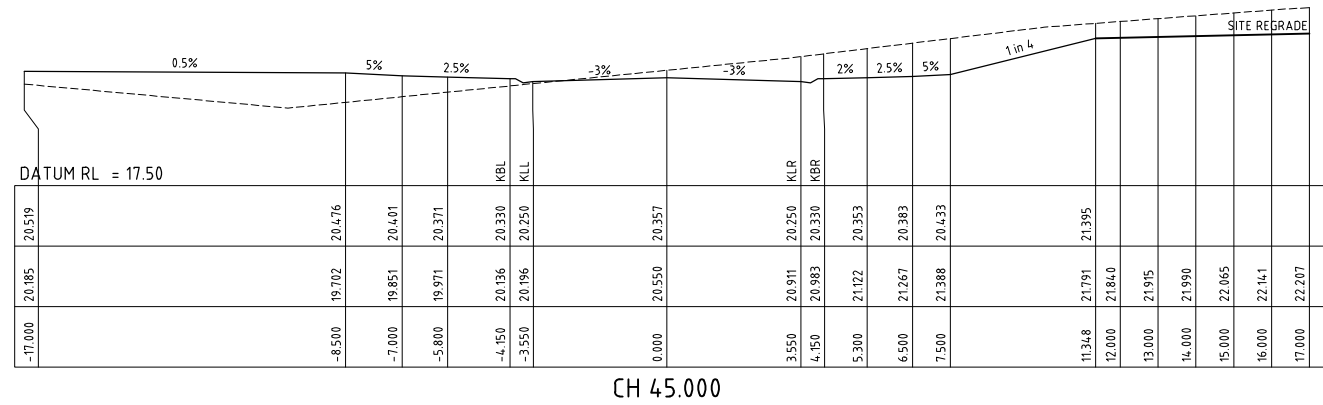
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3	ORIGINAL ISSUE		DB	AS	24.12.21			Scale	A1 SHEET				Drawing No	Revision
2	NOT ISSUED							AS SHOWN					C416	3
1	NOT ISSUED							Project Approval						
Amendment	Description	Drawn	App'd	Date				IAN HILL (B.E) Consulting Civil Engineer						



A1 SCALE: HORIZONTAL 1:500, VERTICAL 1:100  
LONGITUDINAL SECTION ROAD 4

PRELIMINARY ISSUE  
NOT FOR CONSTRUCTION

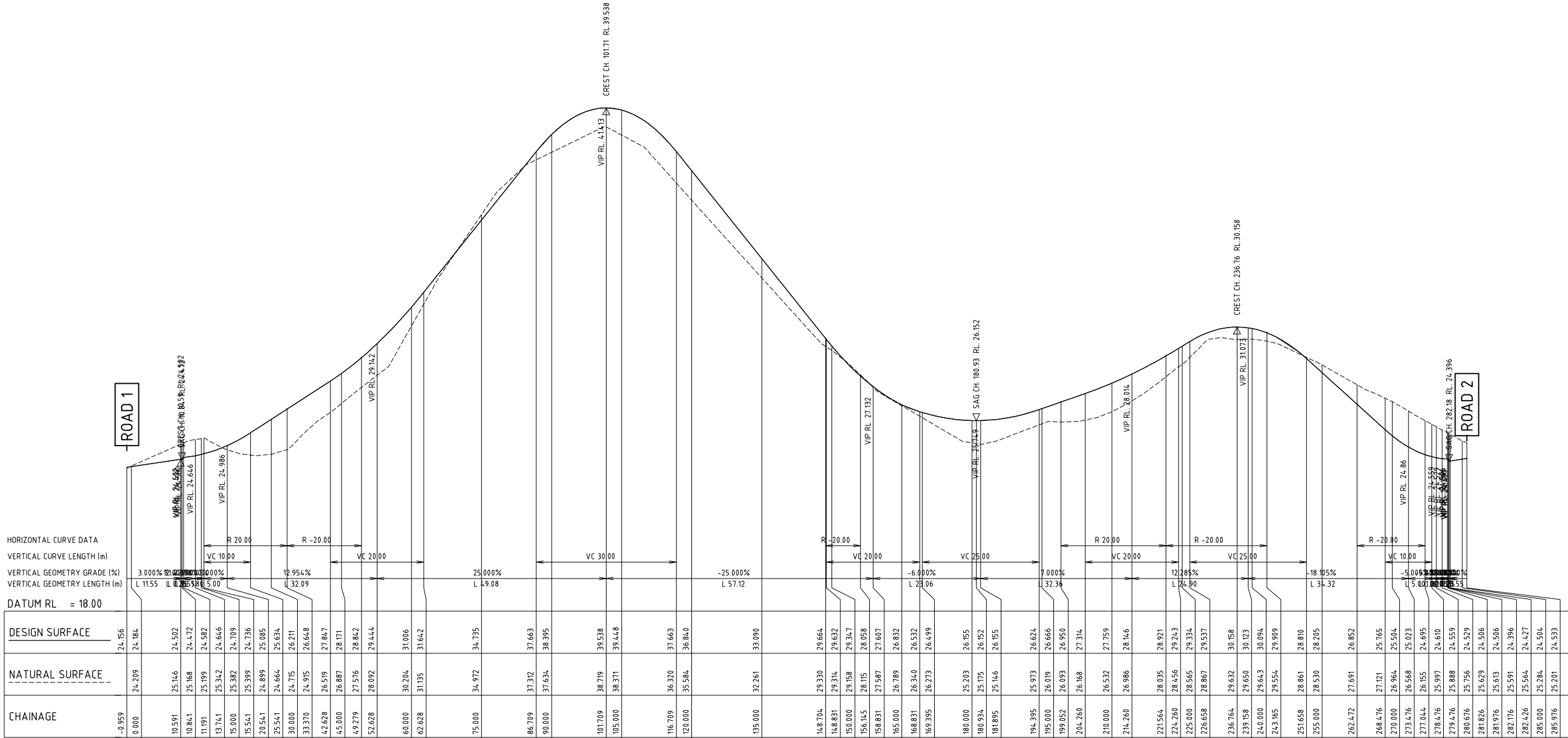
						North	Scale	COPYRIGHT	Designed	Cad Reference	<div><div><div></div><div></div><div></div></div><div><b>GCA</b></div><div>ENGINEERING SOLUTIONS</div><div>A.B.N. 92 086 017 745 1 HARTLEY DRIVE, THORNTON NSW 2322 PO BOX 3337, THORNTON NSW 2322 PHONE: (02) 4964 1811</div></div>	PROPOSED SUBDIVISION 1A FLOWERS DRIVE CATHERINE HILL BAY (HAMLET A) ROAD 4 LONGITUDINAL SECTION	Project No	
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Amendment	Description	Drawn	App'd	Date										



PRELIMINARY ISSUE  
NOT FOR CONSTRUCTION

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2	NOT ISSUED											
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Amendment	Description	Drawn	App'd	Date								





A1 SCALE: HORIZONTAL 1:500, VERTICAL 1:100

LONGITUDINAL SECTION FIRE TRAIL

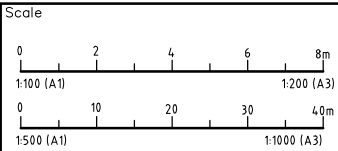
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Designed  
A.M

Scale  
AS SHOWN

Project Approval  
IAN HILL (B.E)  
Consulting Civil Engineer

Cad Reference  
19259C dC419 r3

A1 SHEET

Client

**GCA**

ENGINEERING SOLUTIONS

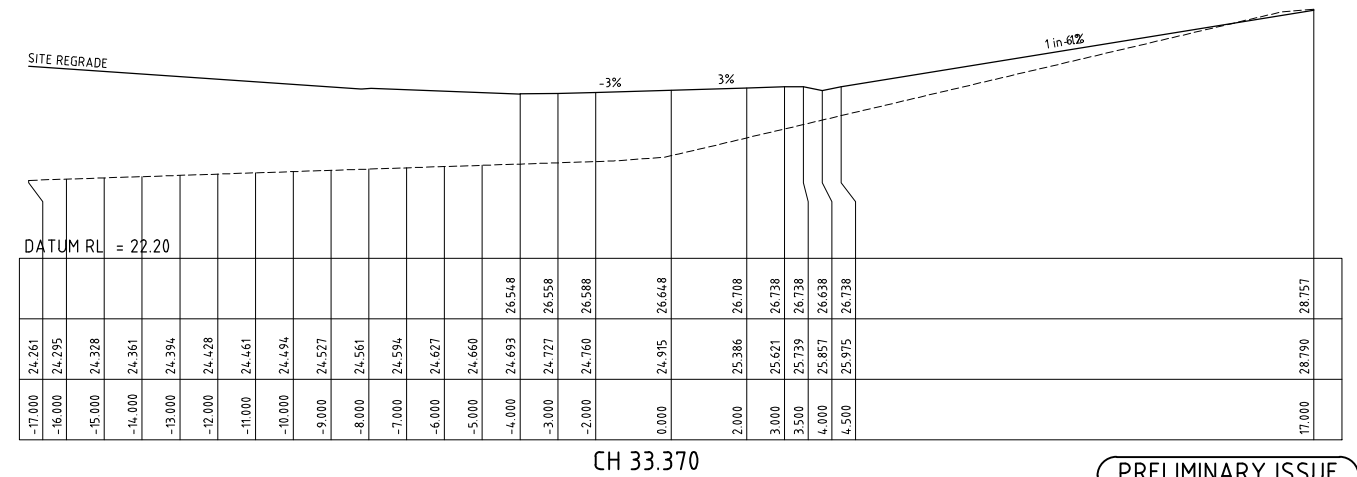
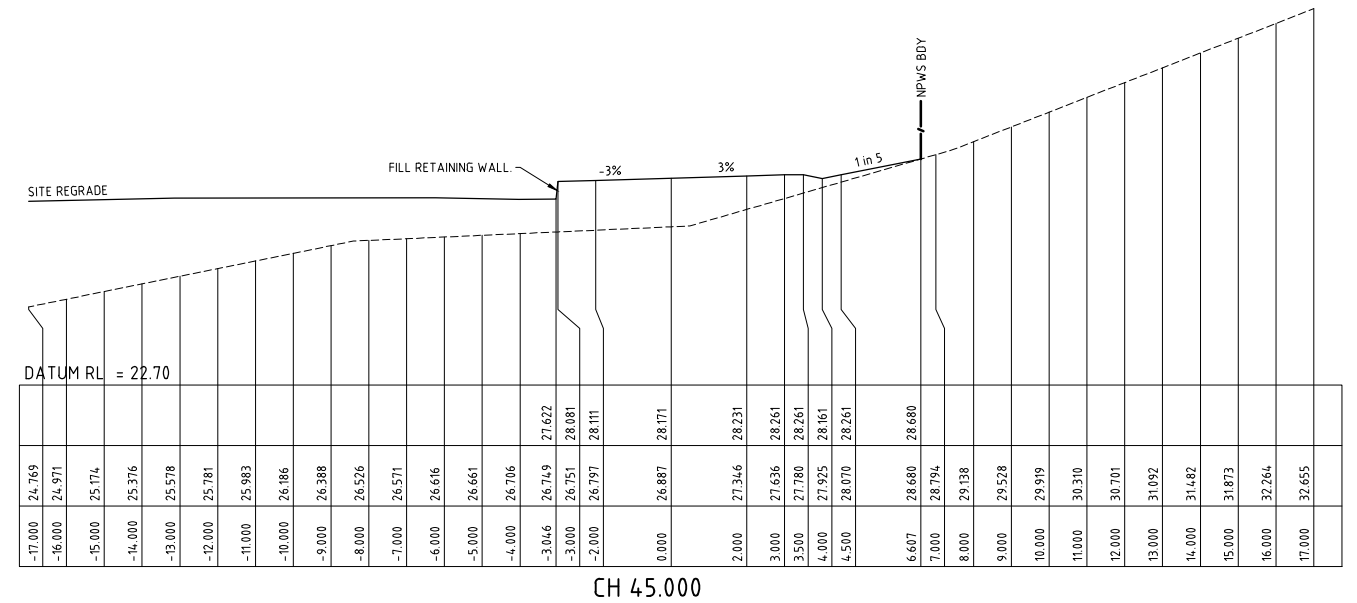
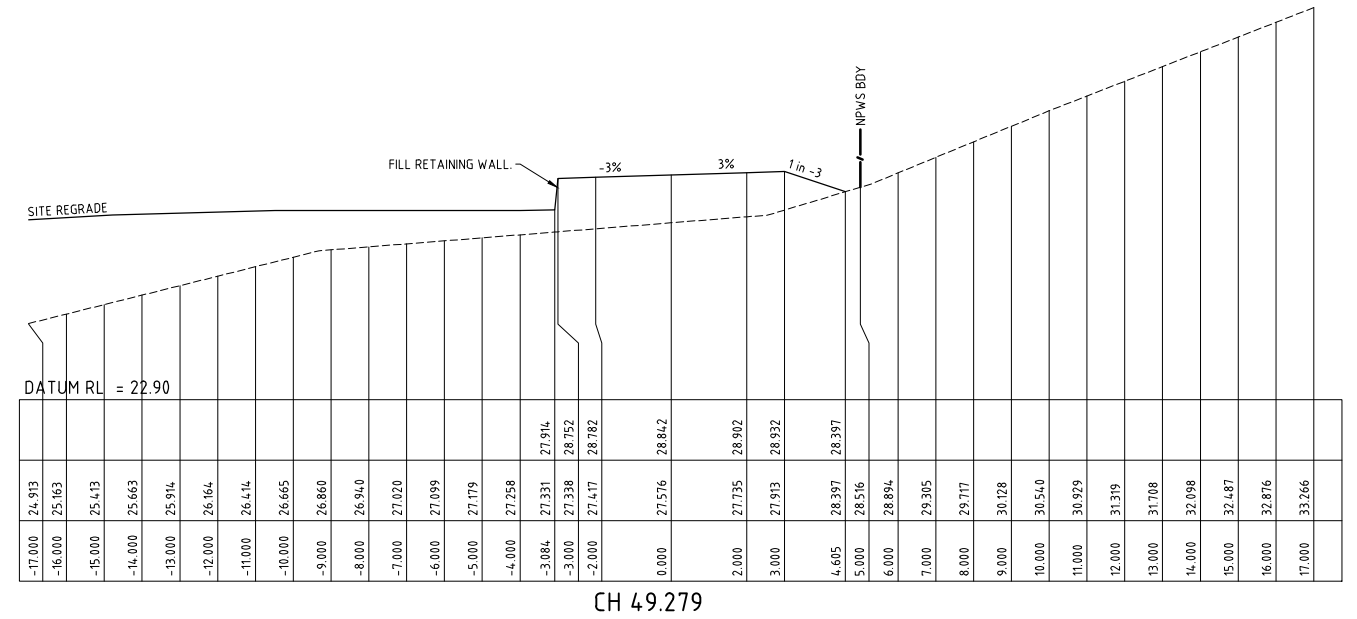
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1 HARTLEY DRIVE, THORNTON NSW 2322  
PO BOX 3337, THORNTON NSW 2322  
PHONE: (02) 4964 1811

PROPOSED SUBDIVISION  
1A FLOWERS DRIVE  
CATHERINE HILL BAY  
(HAMLET A)  
ROAD 5 LONGITUDINAL SECTION

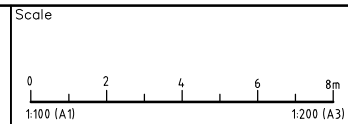
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Drawing No  
C419

Revision  
3



4	NPWS BDY ADDED	DB	AS	04.08.22
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Amendment	Description	Drawn	App'd	Date



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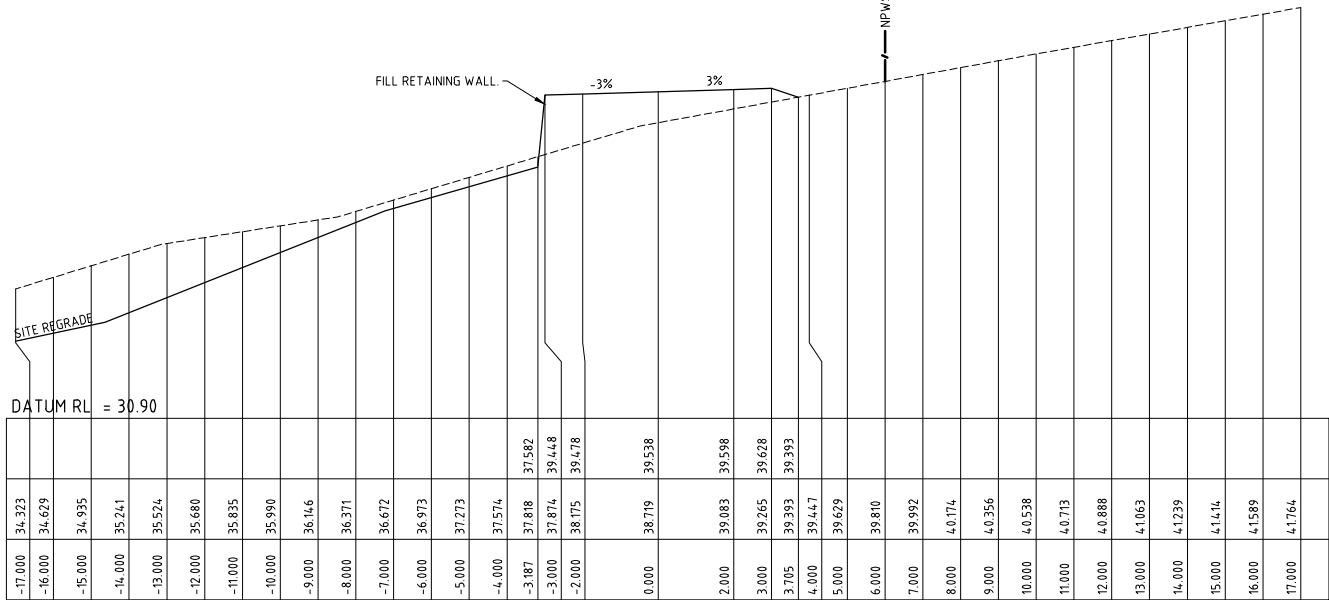
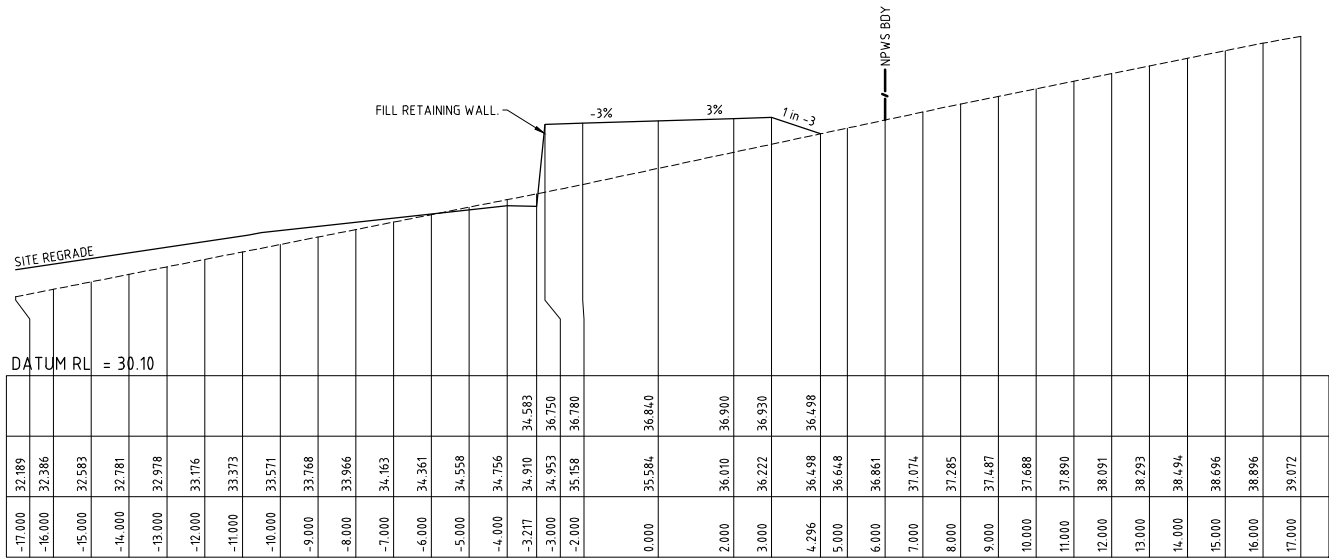
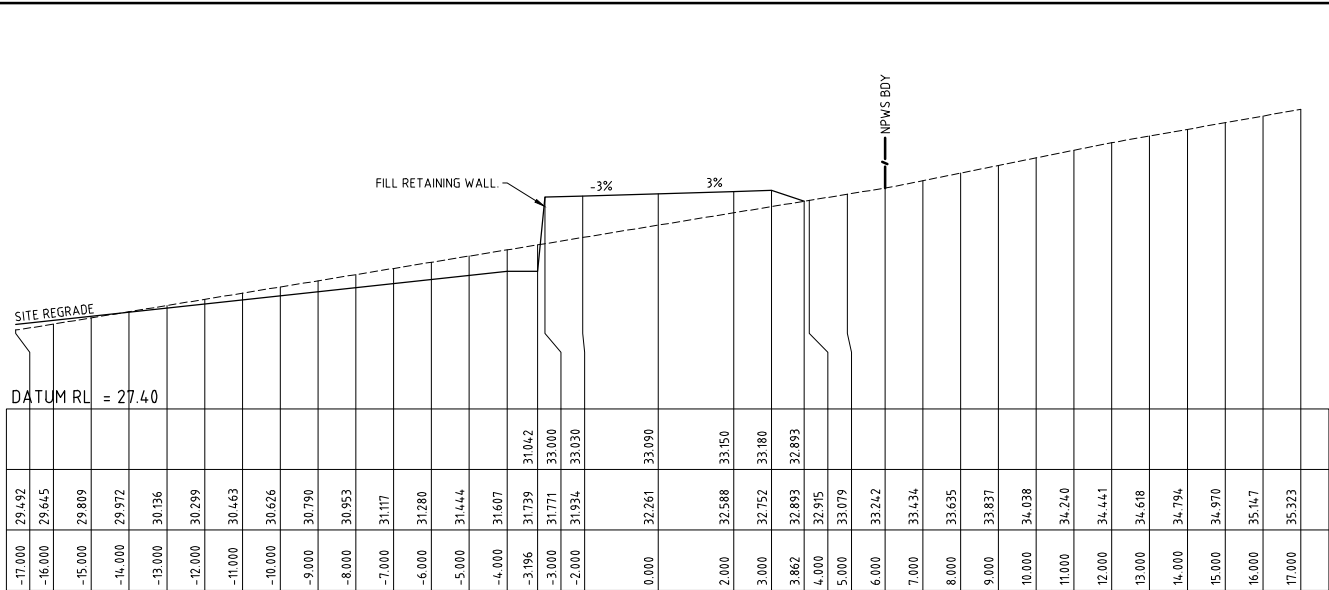
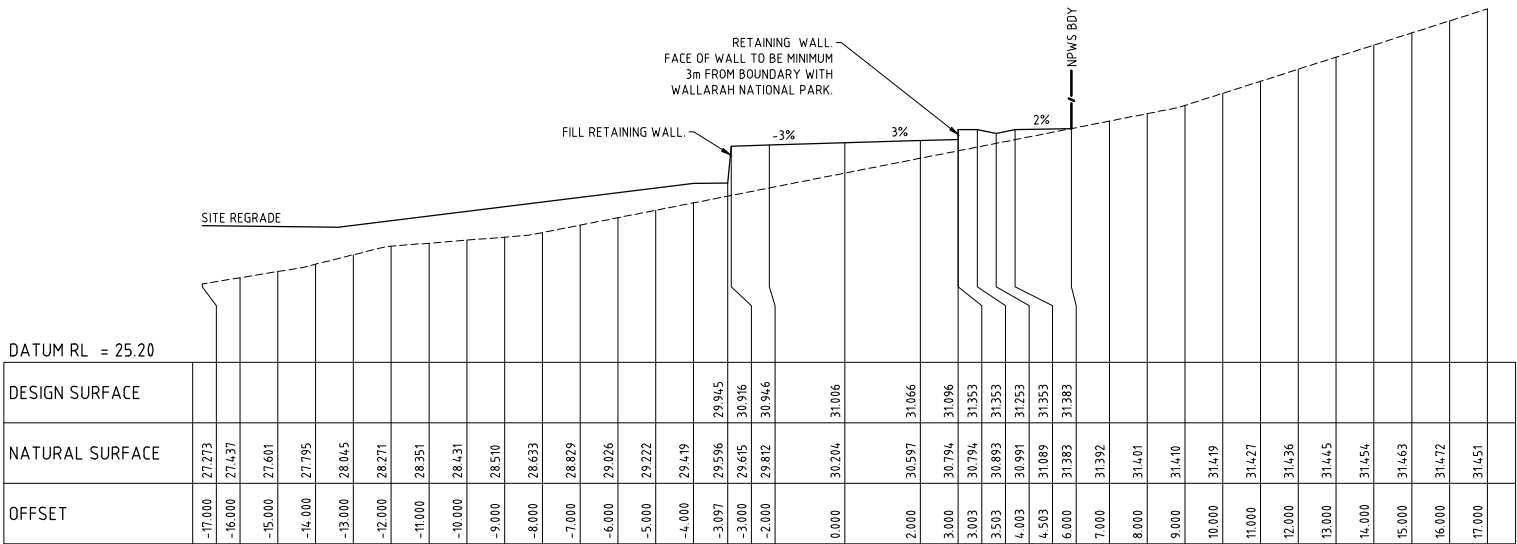
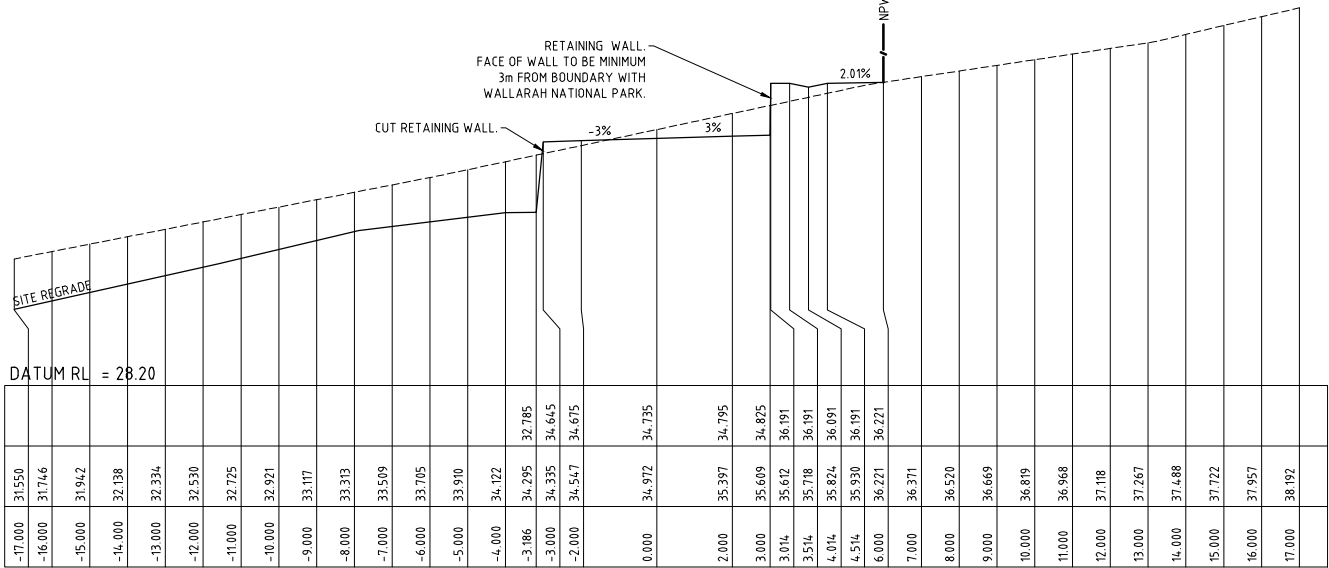
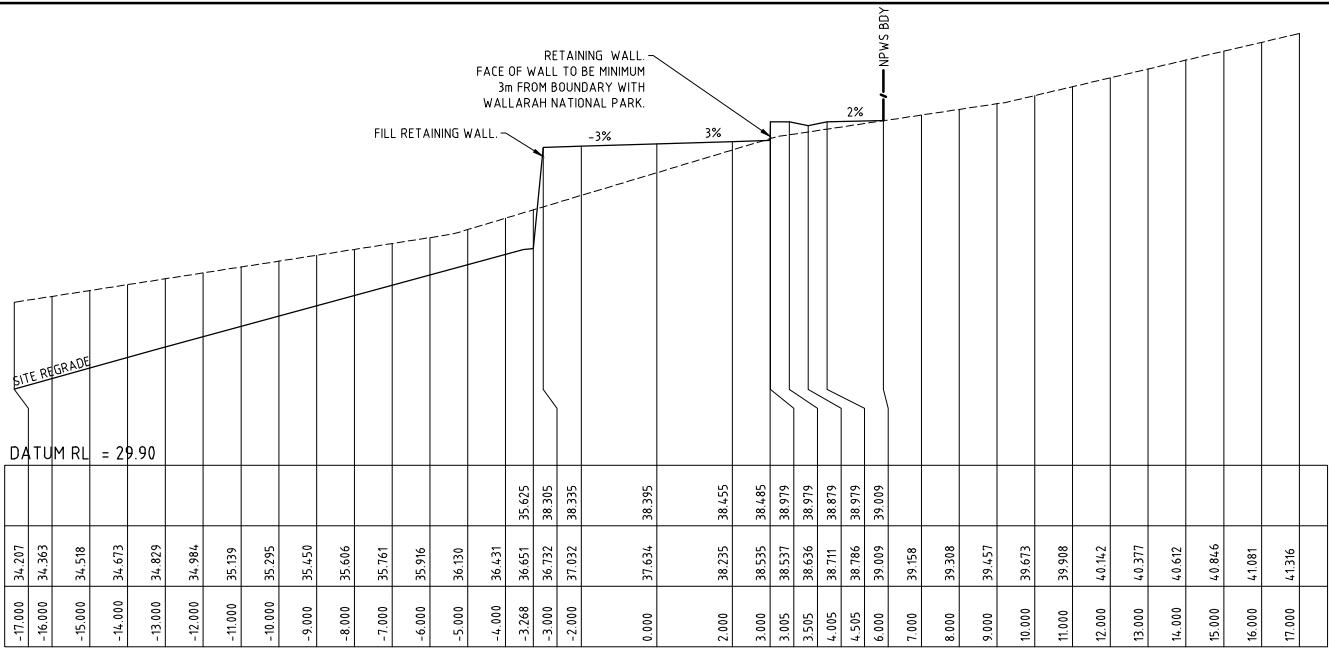
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Designed A.M	Cad Reference 19259C dC420 r4
Scale AS SHOWN	A1 SHEET
Project Approval IAN HILL (B.E) Consulting Civil Engineer	

Client



<b>PROPOSED SUBDIVISION</b> <b>1A FLOWERS DRIVE</b> <b>CATHERINE HILL BAY</b> (HAMLET A) ROAD 5 CROSS SECTIONS (1 OF 5)	Project No	
	19259C	
	Drawing No	Revision
	C420	4

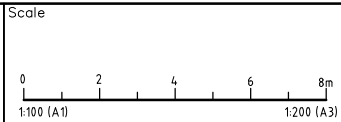


PRELIMINARY ISSUE  
NOT FOR CONSTRUCTION

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3	ORIGINAL ISSUE		DB	AS	24.12.21
2	NOT ISSUED				
1	NOT ISSUED				
Amendment	Description	Drawn	App'd	Date	

PLOT DATE: 31/10/2022 12:00 PM

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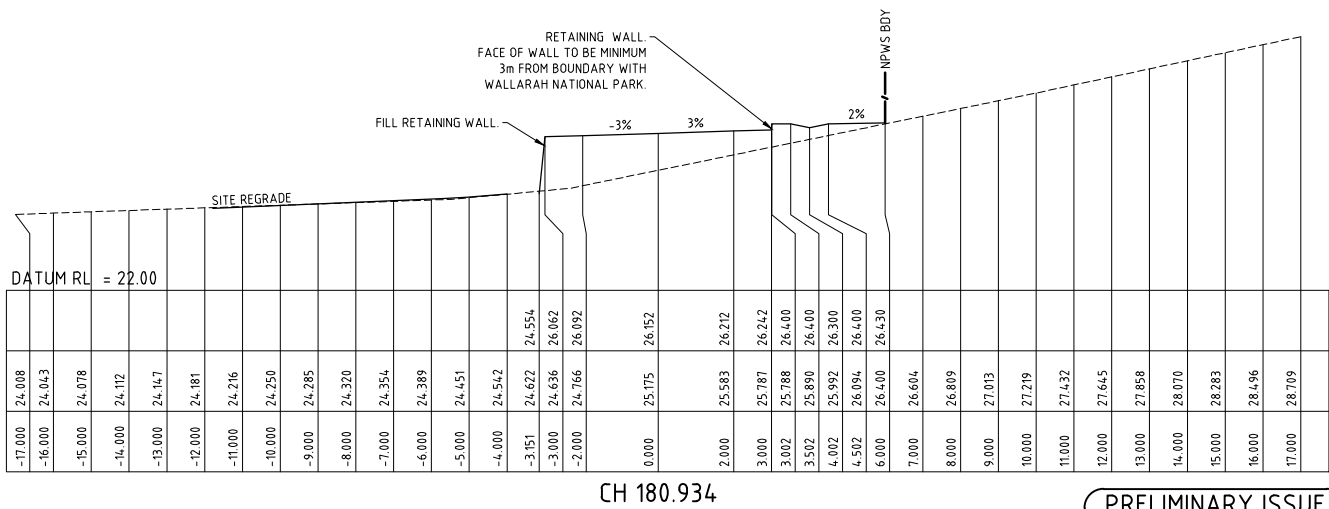
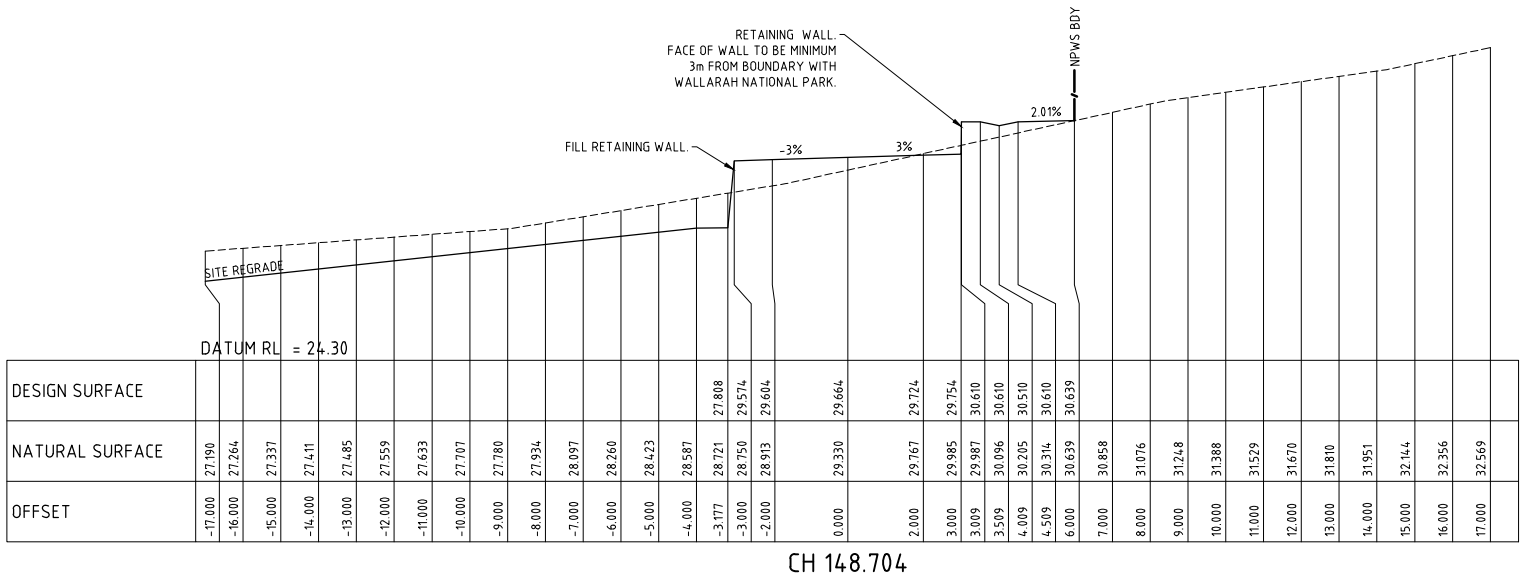
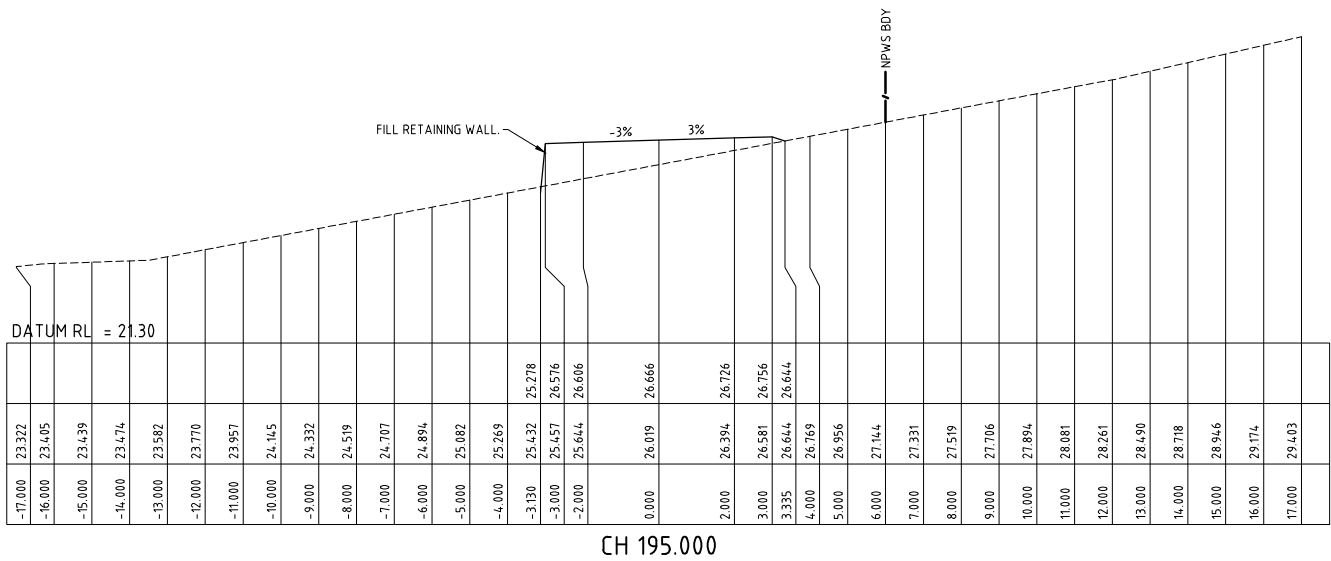
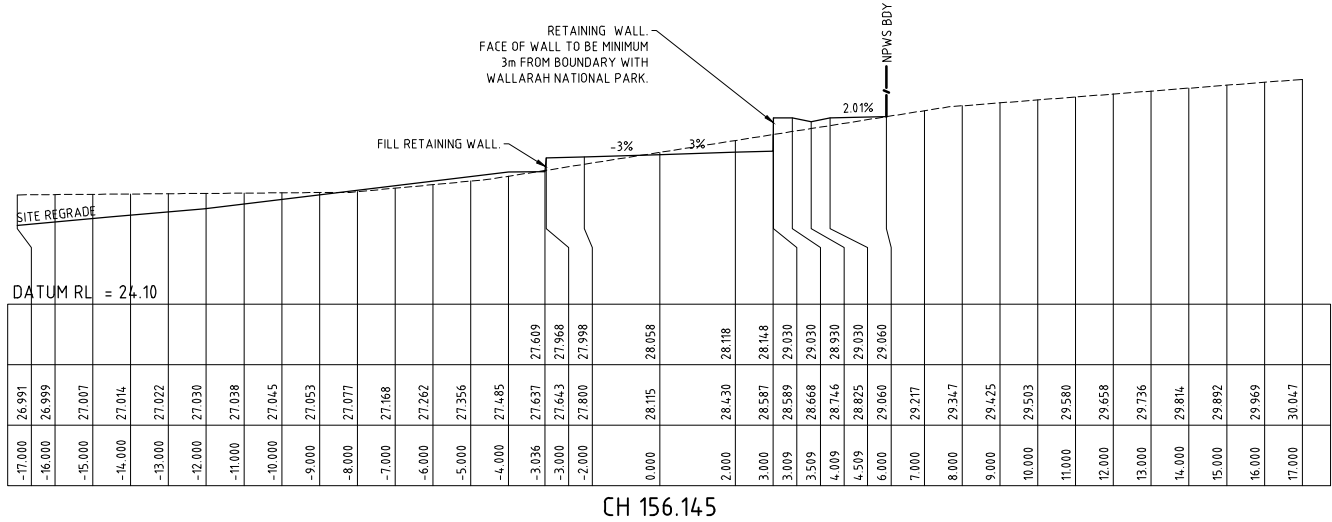
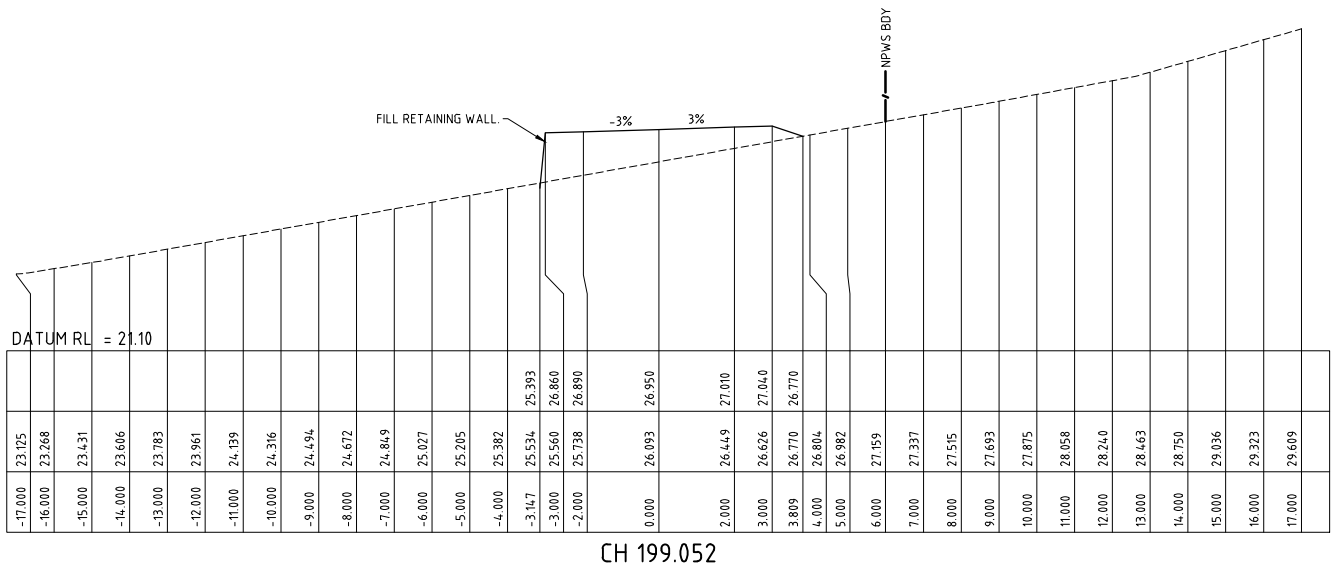
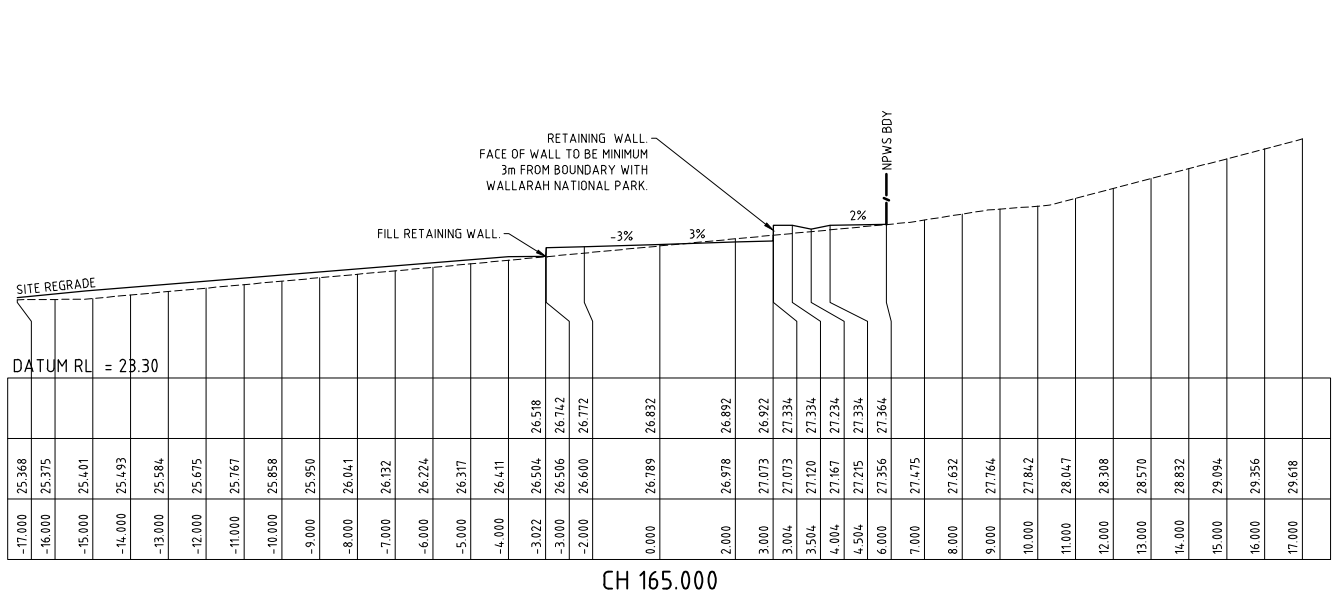


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		Scale	A1 SHEET	Project Approval IAN HILL (B.E) Consulting Civil Engineer
		AS SHOWN		



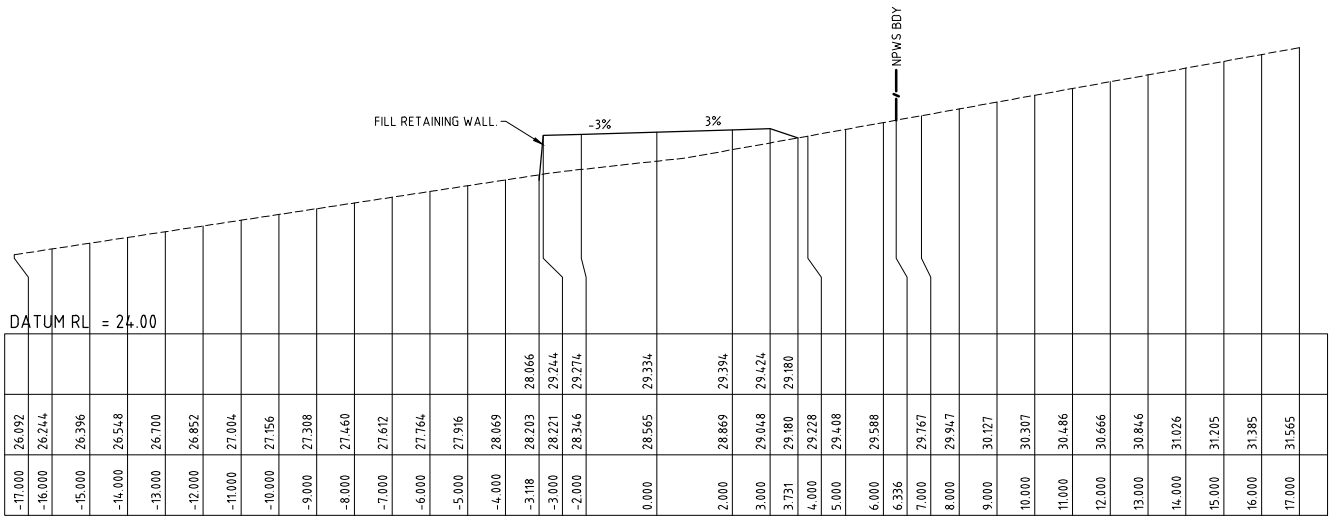
PROPOSED SUBDIVISION  
1A FLOWERS DRIVE  
CATHERINE HILL BAY  
(HAMLET A)  
ROAD 5 CROSS SECTIONS (2 OF 5)

Project No	
19259C	
Drawing No	Revision
C421	4

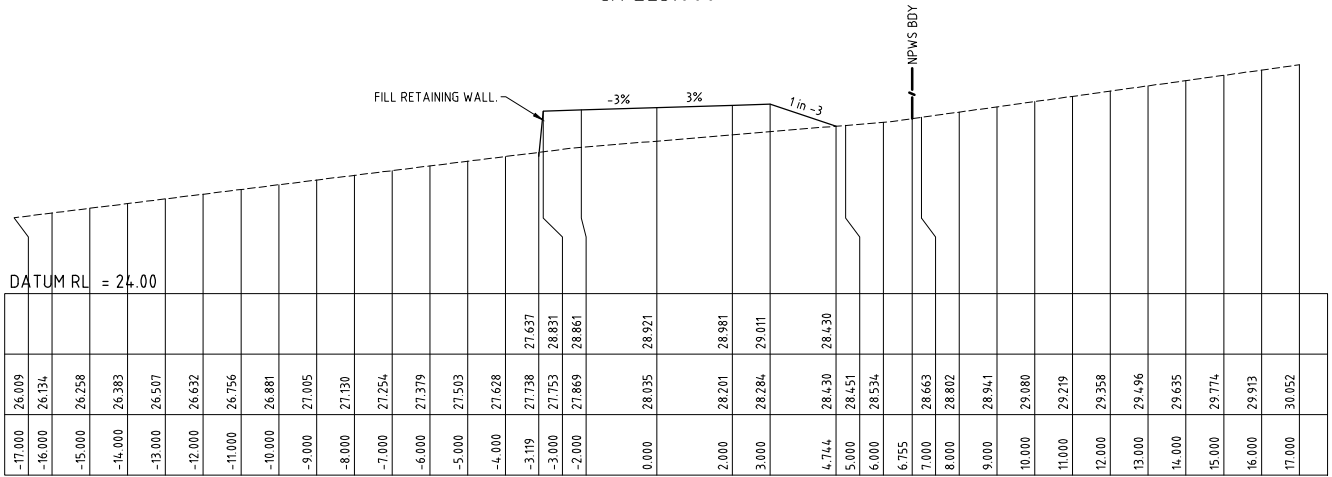


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A.M	19259C dC422 r4	19259C													
Scale	A1 SHEET	Drawing No	Revision												
AS SHOWN		C422	4												
Project Approval															
IAN HILL (B.E) Consulting Civil Engineer															
<div>Amendment</div> <div>Description</div> <div>Drawn</div> <div>App'd</div> <div>Date</div>															
4	NPWS BODY ADDED	DB	AS	04.08.22											
3	ORIGINAL ISSUE	DB	AS	24.12.21											
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1	NOT ISSUED														

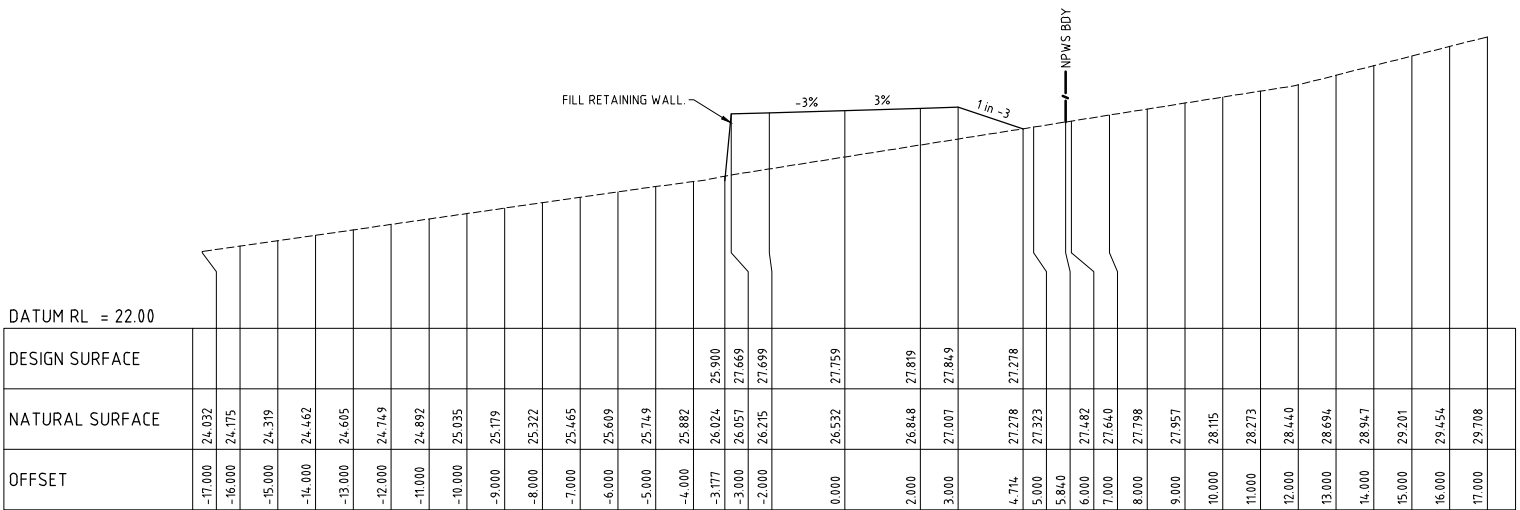




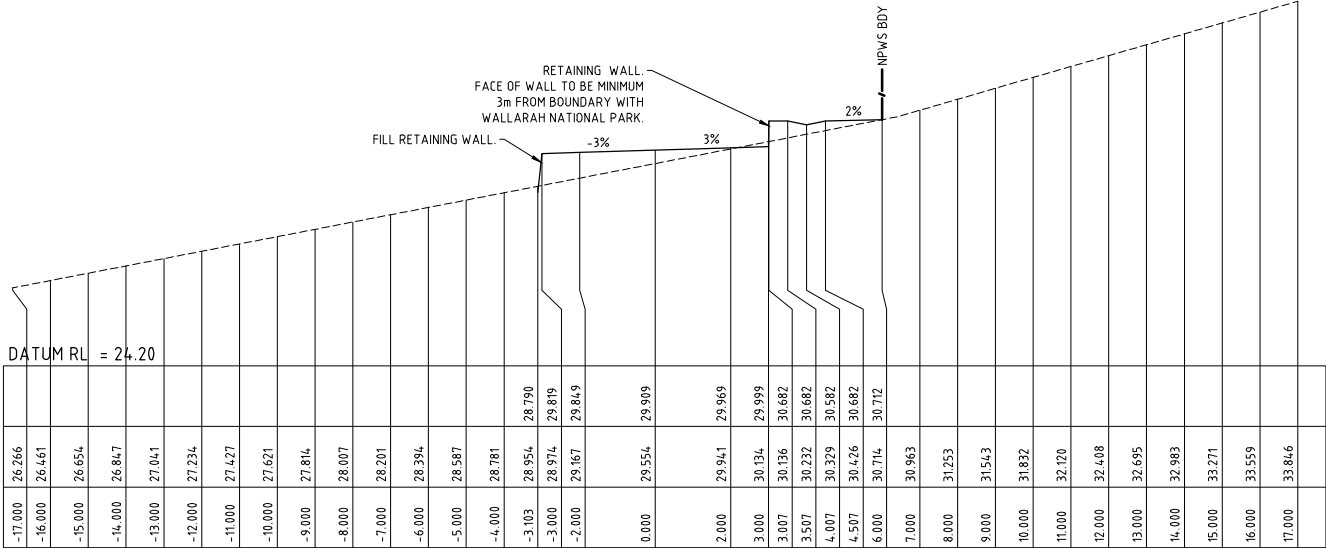
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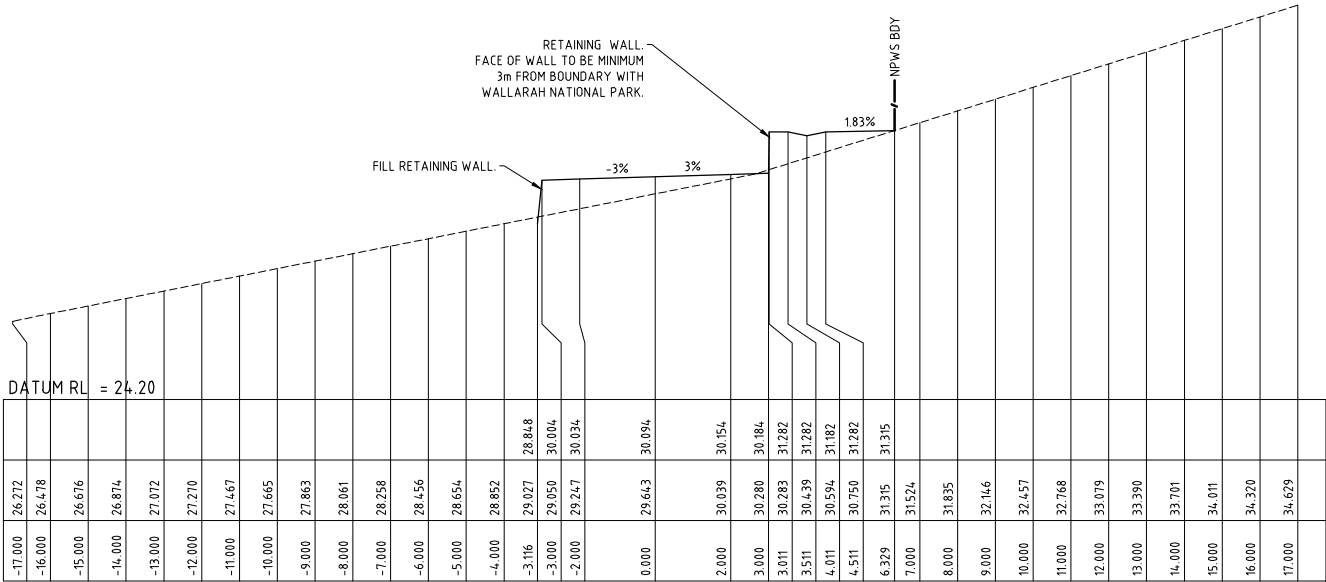
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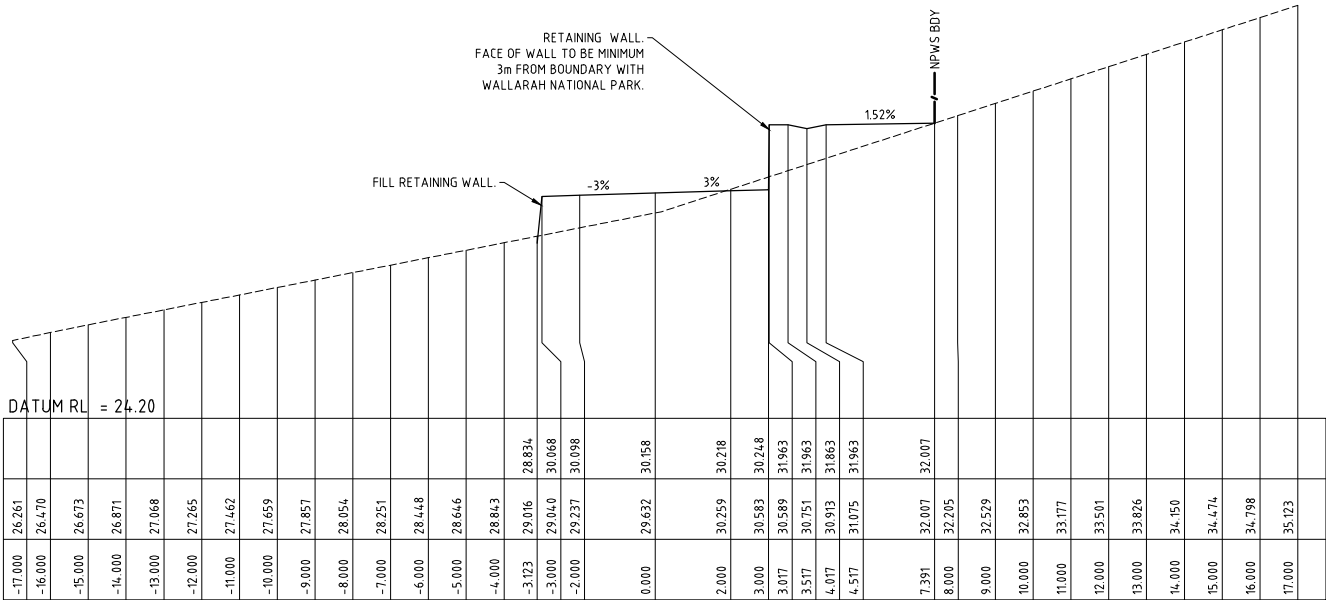
CH 210.000



CH 243.165



CH 240.000



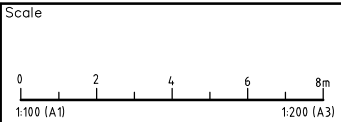
CH 236.764

PRELIMINARY ISSUE  
NOT FOR CONSTRUCTION

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3	ORIGINAL ISSUE		DB	AS	24.12.21
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Amendment	Description	Drawn	App'd	Date	

PLOT DATE: 31/10/2022 12:22 PM

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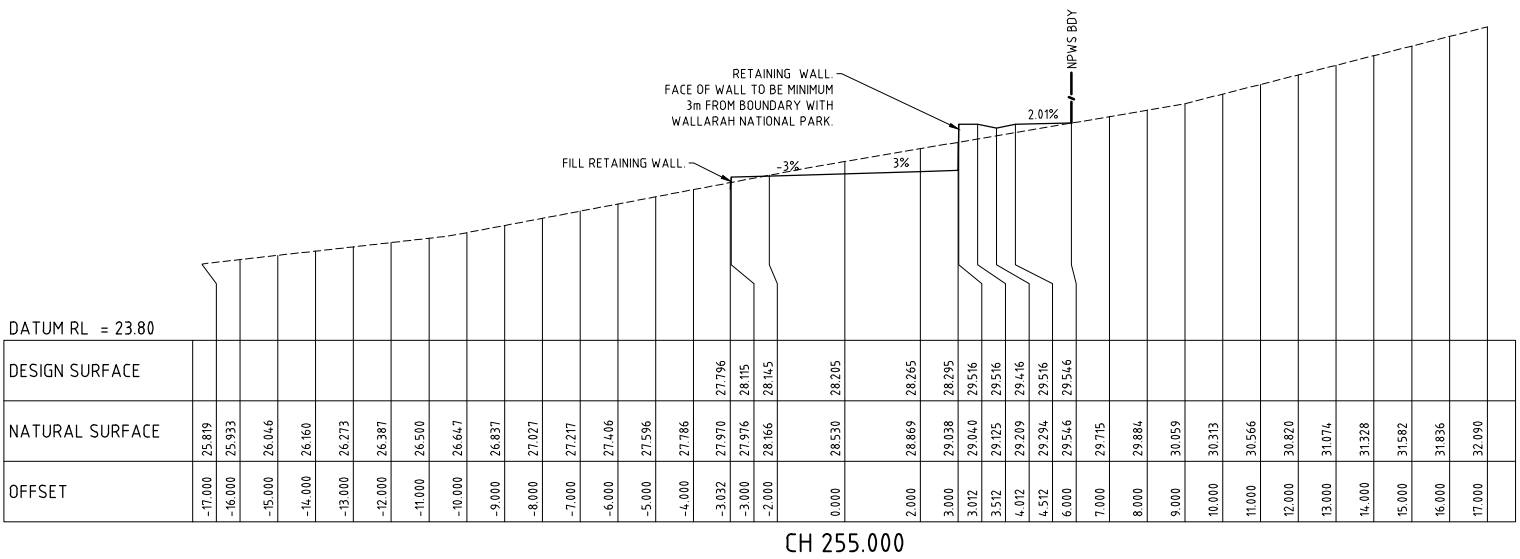
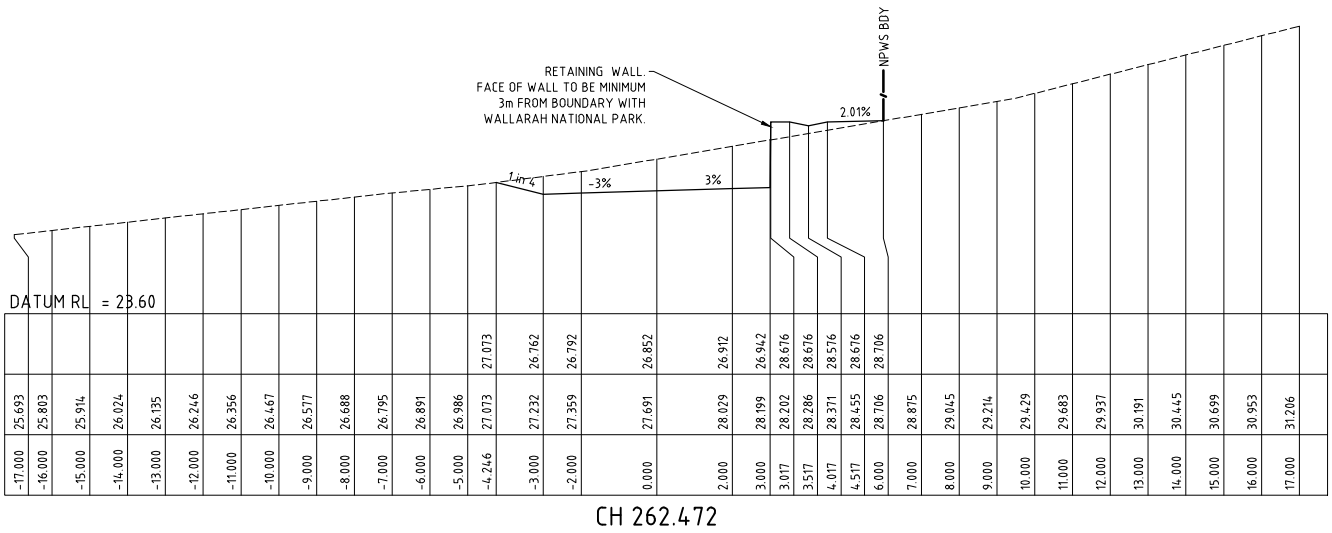
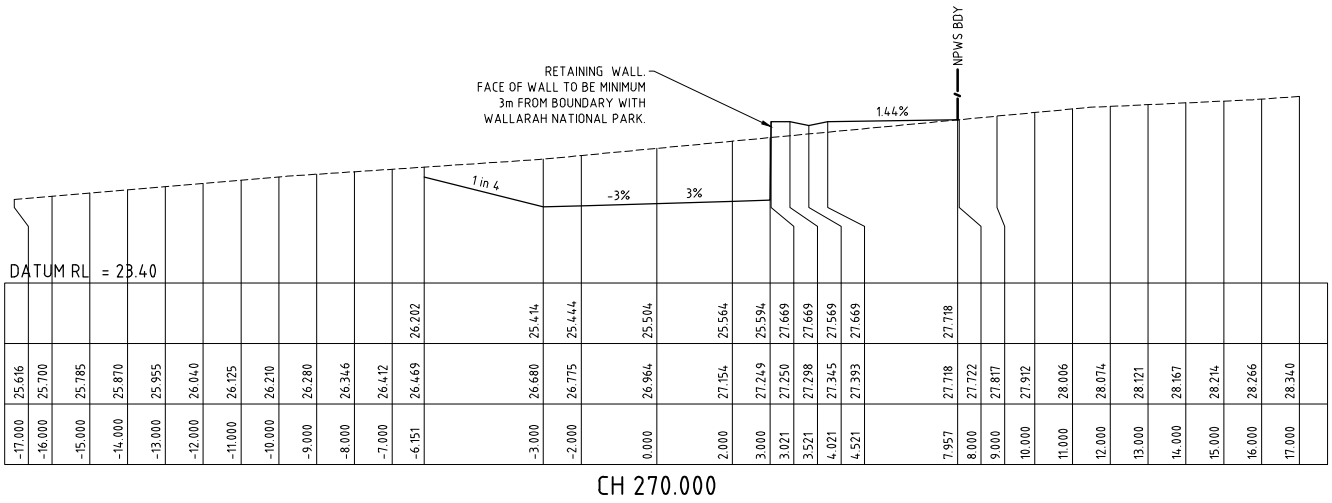


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		Scale	A1 SHEET	
		AS SHOWN		
		Project Approval		
		IAN HILL (B.E)		
		Consulting Civil Engineer		

**GCA**  
ENGINEERING SOLUTIONS

A.B.N. 92 086 017 745  
1 HARTLEY DRIVE, THORNTON NSW 2322  
PO BOX 3337, THORNTON NSW 2322  
PHONE: (02) 4964 1811

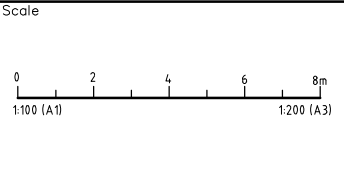
PROPOSED SUBDIVISION 1A FLOWERS DRIVE CATHERINE HILL BAY (HAMLET A) ROAD 5 CROSS SECTIONS (4 OF 5)		Project No 19259C	
		Drawing No C423	Revision 4



PRELIMINARY ISSUE  
NOT FOR CONSTRUCTION

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3	ORIGINAL ISSUE		DB	AS	24.12.21
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Amendment	Description	Drawn	App'd	Date	

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Designed A.M	Cad Reference 19259C dC424 r4
Scale AS SHOWN	A1 SHEET
Project Approval IAN HILL (B.E) Consulting Civil Engineer	

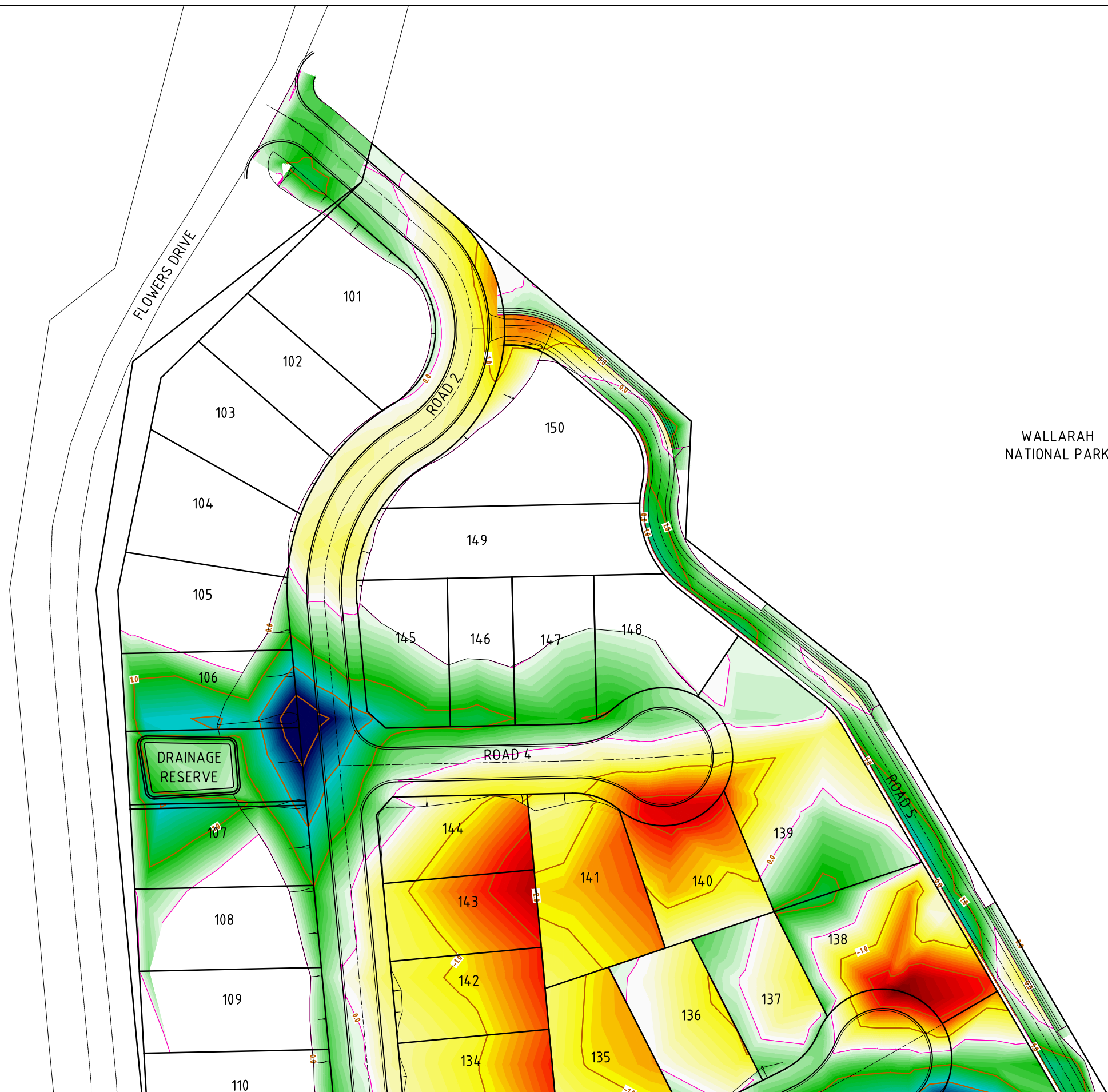
Client
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1 HARTLEY DRIVE, THORNTON NSW 2322  
PO BOX 3337, THORNTON NSW 2322  
PHONE: (02) 4964 1811

PROPOSED SUBDIVISION 1A FLOWERS DRIVE CATHERINE HILL BAY (HAMLET A) ROAD 5 CROSS SECTIONS (5 OF 5)		Project No 19259C
Drawing No C424	Revision 4	



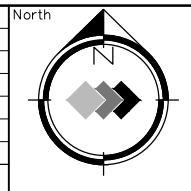
WALLARAH  
NATIONAL PARK

**NOTE**  
THIS PLAN SHOWS CUT / FILL DEPTH  
CONTOURS FROM THE CONCEPT FINISHED  
SURFACE TO EXISTING NATURAL SURFACE.

CUT/FILL DEPTH		
to -2.90 m	0.00	to 0.10 m
-2.90 to -2.80 m	0.10	to 0.20 m
-2.80 to -2.70 m	0.20	to 0.30 m
-2.70 to -2.60 m	0.30	to 0.40 m
-2.60 to -2.50 m	0.40	to 0.50 m
-2.50 to -2.40 m	0.50	to 0.60 m
-2.40 to -2.30 m	0.60	to 0.70 m
-2.30 to -2.20 m	0.70	to 0.80 m
-2.20 to -2.10 m	0.80	to 0.90 m
-2.10 to -2.00 m	0.90	to 1.00 m
-2.00 to -1.90 m	1.00	to 1.10 m
-1.90 to -1.80 m	1.10	to 1.20 m
-1.80 to -1.70 m	1.20	to 1.30 m
-1.70 to -1.60 m	1.30	to 1.40 m
-1.60 to -1.50 m	1.40	to 1.50 m
-1.50 to -1.40 m	1.50	to 1.60 m
-1.40 to -1.30 m	1.60	to 1.70 m
-1.30 to -1.20 m	1.70	to 1.80 m
-1.20 to -1.10 m	1.80	to 1.90 m
-1.10 to -1.00 m	1.90	to 2.00 m
-1.00 to -0.90 m	2.00	to 2.10 m
-0.90 to -0.80 m	2.10	to 2.20 m
-0.80 to -0.70 m	2.20	to 2.30 m
-0.70 to -0.60 m	2.30	to 2.40 m
-0.60 to -0.50 m	2.40	to 2.50 m
-0.50 to -0.40 m	2.50	to 2.60 m
-0.40 to -0.30 m	2.60	to 2.70 m
-0.30 to -0.20 m	2.70	to 2.80 m
-0.20 to -0.10 m	2.80	to 2.90 m
-0.10 to 0.00 m	2.90	to

**PRELIMINARY ISSUE**  
NOT FOR CONSTRUCTION

Amendment	Description	Drawn	App'd	Date
3	CLIENT AMENDMENTS	DB	AS	11.01.22
2	CLIENT AMENDMENTS	DB	AS	14.12.21
1	ORIGINAL ISSUE	DB	AS	02.11.21



Scale
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1:500 (A1)
1:1000 (A3)

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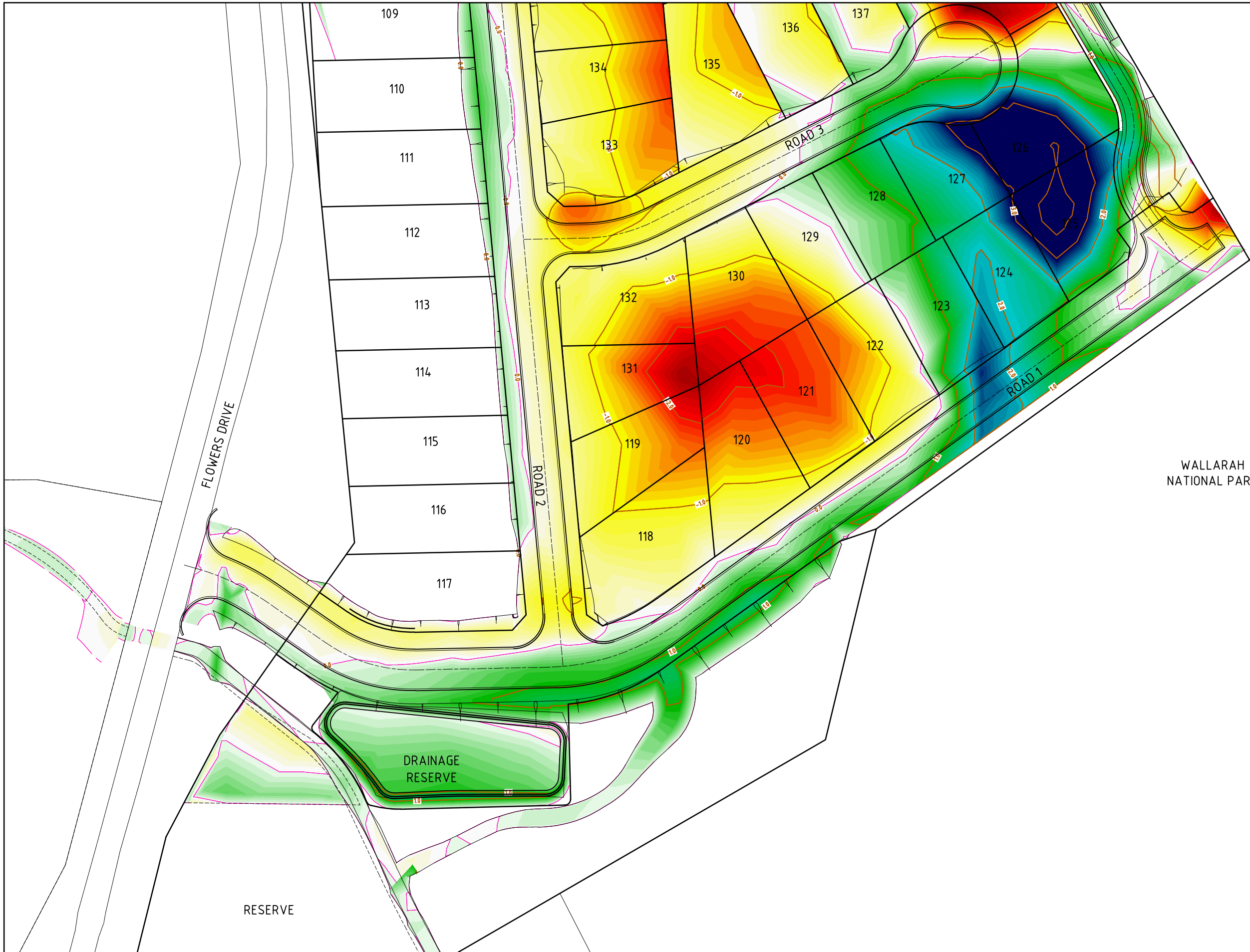
Designed A.M	Cad Reference 19259C dC425 r3
Scale 1:500	<b>A1 SHEET</b>
Project Approval IAN HILL (B.E) Consulting Civil Engineer	

Client

A.B.N. 92 086 017 745  
1 HARTLEY DRIVE, THORNTON NSW 2322  
PO BOX 3337, THORNTON NSW 2322  
PHONE: (02) 4964 1811

<b>PROPOSED SUBDIVISION 1A FLOWERS DRIVE CATHERINE HILL BAY HAMLET A SITE REGRADING PLAN (1 OF 2)</b>		Project No <b>19259C</b>
Drawing No <b>C425</b>	Revision <b>3</b>	





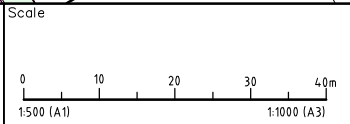
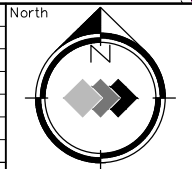
WALLARAH  
NATIONAL PARK

NOTE  
THIS PLAN SHOWS CUT / FILL DEPTH  
CONTOURS FROM THE CONCEPT FINISHED  
SURFACE TO EXISTING NATURAL SURFACE.

CUT/FILL DEPTH	
to -2.90 m	0.00 to 0.10 m
-2.90 to -2.80 m	0.10 to 0.20 m
-2.80 to -2.70 m	0.20 to 0.30 m
-2.70 to -2.60 m	0.30 to 0.40 m
-2.60 to -2.50 m	0.40 to 0.50 m
-2.50 to -2.40 m	0.50 to 0.60 m
-2.40 to -2.30 m	0.60 to 0.70 m
-2.30 to -2.20 m	0.70 to 0.80 m
-2.20 to -2.10 m	0.80 to 0.90 m
-2.10 to -2.00 m	0.90 to 1.00 m
-2.00 to -1.90 m	1.00 to 1.10 m
-1.90 to -1.80 m	1.10 to 1.20 m
-1.80 to -1.70 m	1.20 to 1.30 m
-1.70 to -1.60 m	1.30 to 1.40 m
-1.60 to -1.50 m	1.40 to 1.50 m
-1.50 to -1.40 m	1.50 to 1.60 m
-1.40 to -1.30 m	1.60 to 1.70 m
-1.30 to -1.20 m	1.70 to 1.80 m
-1.20 to -1.10 m	1.80 to 1.90 m
-1.10 to -1.00 m	1.90 to 2.00 m
-1.00 to -0.90 m	2.00 to 2.10 m
-0.90 to -0.80 m	2.10 to 2.20 m
-0.80 to -0.70 m	2.20 to 2.30 m
-0.70 to -0.60 m	2.30 to 2.40 m
-0.60 to -0.50 m	2.40 to 2.50 m
-0.50 to -0.40 m	2.50 to 2.60 m
-0.40 to -0.30 m	2.60 to 2.70 m
-0.30 to -0.20 m	2.70 to 2.80 m
-0.20 to -0.10 m	2.80 to 2.90 m
-0.10 to 0.00 m	2.90 to

PRELIMINARY ISSUE  
NOT FOR CONSTRUCTION

Amendment	Description	Drawn	App'd	Date
3	CLIENT AMENDMENTS	DB	AS	11.01.22
2	CLIENT AMENDMENTS	DB	AS	14.12.21
1	ORIGINAL ISSUE	DB	AS	02.11.21



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Designed A.M	Cad Reference 19259C dC426 r3
Scale 1:500	<b>A1 SHEET</b>
Project Approval IAN HILL (B.E) Consulting Civil Engineer	

Client

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1 HARTLEY DRIVE, THORNTON NSW 2322  
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PHONE: (02) 4964 1811

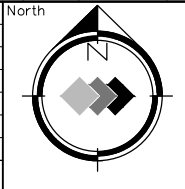
**PROPOSED SUBDIVISION  
1A FLOWERS DRIVE  
CATHERINE HILL BAY  
HAMLET A  
SITE REGRADING PLAN (2 OF 2)**

Project No <b>19259C</b>	Drawing No <b>C426</b>	Revision <b>3</b>
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Amendment	Description	Drawn	App'd	Date
4	GENERAL REVISION	DB	AS	27.07.22
3	CLIENT AMENDMENTS	DB	AS	11.01.22
2	CLIENT AMENDMENTS	DB	AS	14.12.21
1	ORIGINAL ISSUE	D.B	A.S	02.11.21



Scale  
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1:500 (A1)  
1:1000 (A3)

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Designed  
A.M  
Scale  
1:500  
Project Approval  
IAN HILL (B.E)  
Consulting Civil Engineer

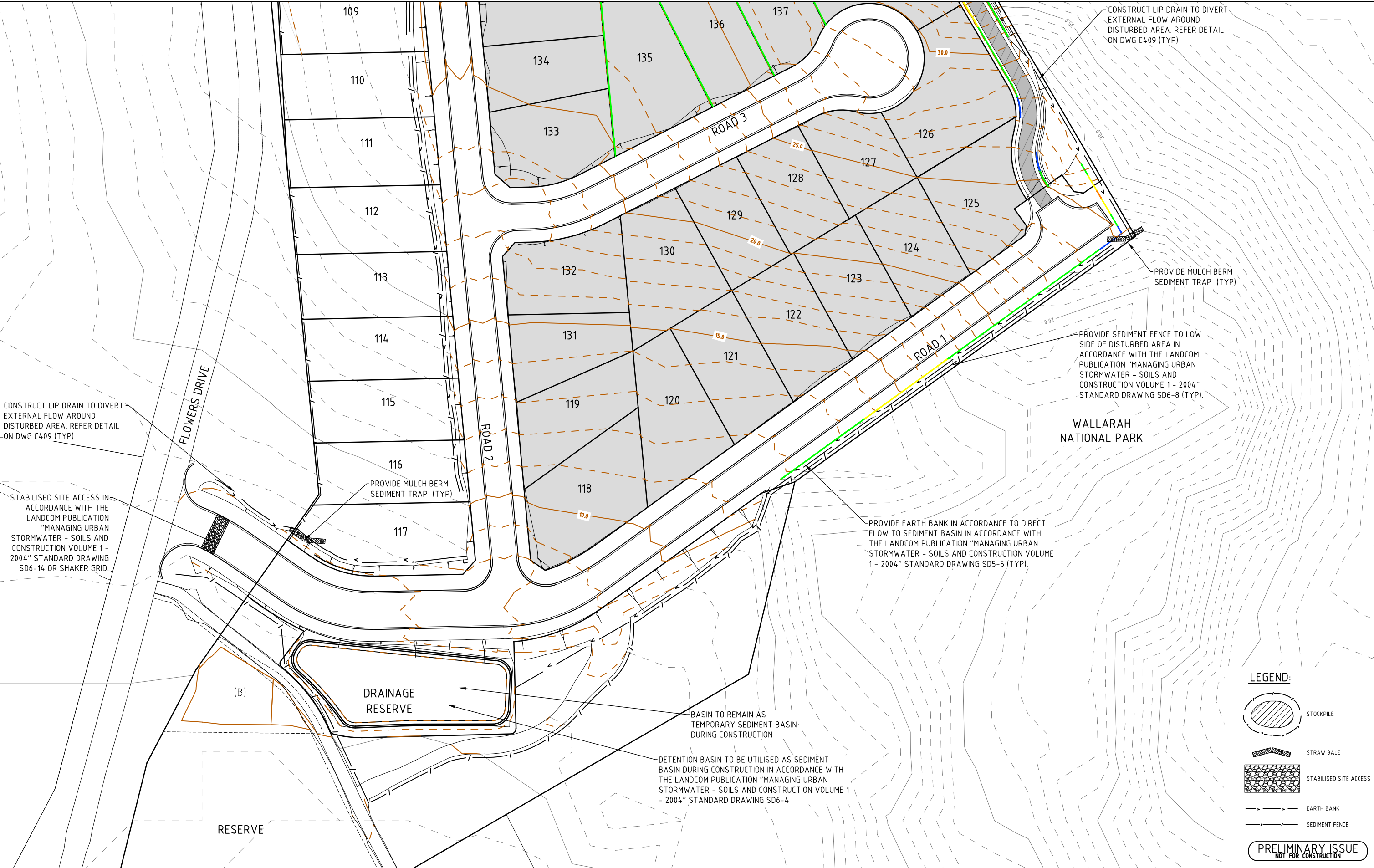
Cad Reference  
19259C dC427 r4  
Client

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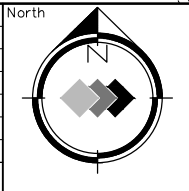
A.B.N. 92 086 017 745  
1 HARTLEY DRIVE, THORNTON NSW 2322  
PO BOX 3337, THORNTON NSW 2322  
PHONE: (02) 4964 1811

PROPOSED SUBDIVISION  
1A FLOWERS DRIVE  
CATHERINE HILL BAY  
HAMLET A  
SOIL AND WATER MANAGEMENT PLAN (1 OF 2)

Project No	19259C
Drawing No	C427
Revision	4



Amendment	Description	Drawn	App'd	Date
4	GENERAL REVISION	DB	AS	27.07.22
3	CLIENT AMENDMENTS	DB	AS	11.01.22
2	CLIENT AMENDMENTS	DB	AS	14.12.21
1	ORIGINAL ISSUE	D.B	A.S	02.11.21



Scale  
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1:1000 (A3)

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Designed A.M	Cad Reference 19259C dC428 r4
Scale 1:500	<b>A1 SHEET</b>
Project Approval IAN HILL (B.E) Consulting Civil Engineer	

Client

**GCA**  
ENGINEERING SOLUTIONS

A.B.N. 92 086 017 745  
1 HARTLEY DRIVE, THORNTON NSW 2322  
PO BOX 3337, THORNTON NSW 2322  
PHONE: (02) 4964 1811

**PROPOSED SUBDIVISION  
1A FLOWERS DRIVE  
CATHERINE HILL BAY**  
HAMLET A  
SOIL AND WATER MANAGEMENT PLAN (2 OF 2)

Project No <b>19259C</b>	
Drawing No <b>C428</b>	Revision <b>4</b>



THE FOLLOWING NOTES MAY NOT BE RELEVANT TO EACH DEVELOPMENT.

1. ESCP REFERS TO EROSION AND SEDIMENT CONTROL PLAN AND SWMP REFERS TO SOIL AND WATER MANAGEMENT PLAN.
2. ESCP REFERS TO EROSION AND SEDIMENT CONTROL.
3. SEDIMENT INCLUDES, BUT IS NOT LIMITED TO, CLAY, SILT, SAND, GRAVEL, SOIL, MUD, CEMENT, AND CERAMIC WASTE.
4. ANY REFERENCE TO THE BLUE BOOK REFERS TO MANAGING URBAN STORMWATER- SOILS AND CONSTRUCTION, LANDCOM, 2004.
5. ANY REFERENCE TO THE IECA WHITE BOOKS(2008) REFERS TO IECA2008BEST PRACTICE EROSION AND SEDIMENT CONTROL BOOKS 1-6. INTERNATIONAL EROSION CONTROL ASSOCIATION (AUSTRALASIA) PACTION NSW.
6. ANY MATERIAL DEPOSITED IN AN CONSERVATION AREA FROM WORKS ASSOCIATED WITH THE DEVELOPMENT SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF THE DEVELOPMENT. ANY DEPOSIT OF MATERIAL IN THE DISTURBANCE AND NO MACHINERY OR FOLLOWING DIRECTIONS BY COUNCIL AND/OR WITHIN A TIMEFRAME ADVISED BY COUNCIL.

THE ESCP AND ITS ASSOCIATED ESC MEASURES SHALL BE CONSTANTLY MONITORED, REVIEWED, AND MODIFIED AS REQUIRED TO CORRECT DEFICIENCIES. COUNCIL HAS THE RIGHT TO DIRECT CHANGES IF, IN ITS OPINION, THE MEASURES THAT ARE PROPOSED OR HAVE BEEN INSTALLED ARE INADEQUATE TO PREVENT POLLUTION.

8. PRIOR TO ANY ACTIVITIES ONSITE, THE RESPONSIBLE PERSON(S) IS TO BE NOMINATED. THE RESPONSIBLE PERSON(S) SHALL BE RESPONSIBLE FOR THE ESC MEASURES ONSITE. THE NAME, ADDRESS AND 24 HOUR CONTACT DETAILS OF THE PERSON(S) SHALL BE PROVIDED TO COUNCIL IN WRITING. COUNCIL SHALL BE ADVISED WITHIN 48 HOURS OF ANY CHANGES TO THE RESPONSIBLE PERSON(S) OR THEIR CONTACT DETAILS, IN WRITING.

9. AT LEAST 14 DAYS BEFORE THE NATURAL SURFACE IS DISTURBED IN ANY NEW STAGE, THE CONTRACTOR SHALL SUBMIT TO THE CERTIFIER, A PLAN SHOWING ESC MEASURES FOR THAT STAGE. THE DEGREE OF DESIGN DETAIL SHALL BE BASED ON THE DISTURBED AREA.

10. AT ANY TIME, THE ESC MEASURES ONSITE SHALL BE APPROPRIATE FOR THE AREA OF DISTURBANCE AND ITS CHARACTERISTICS INCLUDING SOILS (IN ACCORDANCE WITH THOSE REQUIRED FOR THE SITE AS PER DCP).

11. THE IMPLEMENTATION OF THE ESCP SHALL BE SUPERVISED BY PERSONNEL WITH APPROPRIATE QUALIFICATIONS AND/OR EXPERIENCE IN ESC ON CONSTRUCTION SITES.

12. THE APPROVED ESCP SHALL BE AVAILABLE ON-SITE FOR INSPECTION BY COUNCIL OFFICERS WHILE WORK ACTIVITIES ARE OCCURRING.

13. THE APPROVED ESCP SHALL BE UP TO DATE AND SHOW A TIMELINE OF INSTALLATION, MAINTENANCE AND REMOVAL OF ESC MEASURES.

14. ALL ESCP MEASURES SHALL BE APPROPRIATE FOR THE SEDIMENT TYPE(S) OF THE SOILS ONSITE, IN ACCORDANCE WITH THE BLUE BOOK, IECA WHITE BOOKS OR OTHER CURRENT RECOGNISED INDUSTRY STANDARD FOR ESC FOR AUSTRALIAN CONDITIONS.

15. ADEQUATE SITE DATA, INCLUDING SOIL DATA FROM A NATA APPROVED LABORATORY, SHALL BE OBTAINED TO ALLOW THE PREPARATION OF AN APPROPRIATE ESCP, AND ALLOW THE SELECTION, DESIGN AND SPECIFICATION OF REQUIRED ESC MEASURES.

16. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE APPROVED ESCP (AS AMENDED FROM TIME TO TIME) UNLESS CIRCUMSTANCES ARISE WHERE:

A) COMPLIANCE WITH THE ESCP WOULD INCREASE THE POTENTIAL FOR ENVIRONMENTAL HARM; OR

B) CIRCUMSTANCES CHANGE DURING CONSTRUCTION AND THOSE CIRCUMSTANCES COULD NOT HAVE BEEN FORESEEN; OR

C) A COUNCIL DETERMINES THAT UNACCEPTABLE OFF-SITE SEDIMENTATION IS OCCURRING AS A RESULT OF A LAND-DISTURBING

ACTIVITY. IN EITHER CASE, THE PERSON(S) RESPONSIBLE MAY BE REQUIRED TO TAKE ADDITIONAL, OR ALTERNATIVE PROTECTIVE ACTION, AND/OR UNDERTAKE REASONABLE RESTORATION WORKS WITHIN THE TIMEFRAME SPECIFIED BY THE COUNCIL.

17. ADDITIONAL ESC MEASURES SHALL BE IMPLEMENTED, AND A REVISED ESCP SUBMITTED FOR APPROVAL TO THE CERTIFIER (WITHIN FIVE BUSINESS DAYS OF ANY SUCH AMENDMENTS) IN THE EVENT THAT:

A) THERE IS A HIGH PROBABILITY THAT SERIOUS OR MATERIAL ENVIRONMENTAL HARM MAY OCCUR AS A RESULT OF SEDIMENT LEAVING THE SITE; OR

B) THE IMPLEMENTED WORKS FAIL TO ACHIEVE COUNCIL'S WATER QUALITY OBJECTIVES SPECIFIED IN THESE CONDITIONS;

OR

C) SITE CONDITIONS SIGNIFICANTLY CHANGE; OR

D) SITE INSPECTIONS INDICATE THAT THE IMPLEMENTED WORKS ARE FAILING TO ACHIEVE THE "OBJECTIVE" OF THE ESCP.

18. A COPY OF ANY AMENDED ESCP SHALL BE FORWARDED TO AN APPROPRIATE COUNCIL OFFICER, WITHIN FIVE BUSINESS DAYS OF ANY SUCH AMENDMENTS.

19. NO LAND CLEARING SHALL BE UNDERTAKEN UNLESS PRECEDED BY THE INSTALLATION OF ADEQUATE DRAINAGE AND SEDIMENT CONTROL MEASURES, UNLESS SUCH CLEARING IS REQUIRED FOR THE PURPOSE OF INSTALLING SUCH MEASURES, IN WHICH CASE ONLY THE MINIMUM CLEARING REQUIRED TO INSTALL SUCH MEASURES SHALL OCCUR.
20. BULK TREE CLEARING AND GRUBBING OF THE SITE SHALL BE IMMEDIATELY FOLLOWED BY SPECIFIED TEMPORARY EROSION CONTROL MEASURES (E.G. TEMPORARY GRASSING OR MULCHING) PRIOR TO COMMENCEMENT OF EACH STAGE OF CONSTRUCTION WORKS.
21. TREES AND VEGETATION CLEARED FROM THE SITE SHALL BE MULCHED ON-SITE WITHIN 7 DAYS OF CLEARING.
22. APPROPRIATE MEASURES SHALL BE UNDERTAKEN TO CONTROL ANY DUST ORIGINATING DUE TO THE MULCHING OF CLEARED MATERIALS.
23. ALL OFFICE FACILITIES AND OPERATIONAL ACTIVITIES SHALL BE LOCATED SUCH THAT ANY EFFLUENT, INCLUDING WASH-DOWN WATER, CAN BE TOTALLY CONTAINED AND TREATED WITHIN THE SITE.
24. ALL REASONABLE AND PRACTICABLE MEASURES SHALL BE TAKEN TO ENSURE STORMWATER RUNOFF FROM ACCESS ROADS AND STABILISED ENTRY/EXIT SYSTEMS, DRAINS TO AN APPROPRIATE SEDIMENT CONTROL DEVICE.
25. SITE EXIT POINTS SHALL BE APPROPRIATELY MANAGED TO MINIMISE THE RISK OF SEDIMENT BEING TRACKED ONTO SEALED PUBLIC ROADSWAYS.
26. STORMWATER RUNOFF FROM ACCESS ROADS AND STABILISED ENTRY/EXIT POINTS SHALL DRAIN TO AN APPROPRIATE SEDIMENT CONTROL DEVICE.
27. THE APPLICANT SHALL ENSURE AN ADEQUATE SUPPLY OF ESC, AND APPROPRIATE POLLUTION CLEAN-UP MATERIALS ARE AVAILABLE ON-SITE AT ALL TIMES.
28. ALL TEMPORARY EARTH BANKS, FLOW DIVERSION SYSTEMS, AND SEDIMENT BASIN EMBANKMENTS SHALL BE MACHINE-COMPACTED, SEEDED AND MULCHED WITHIN TEN (10) DAYS OF FORMATION FOR THE PURPOSE OF ESTABLISHING A VEGETATIVE COVER, OR LINED APPROPRIATELY.
29. SEDIMENT DEPOSITED OFF-SITE AS A RESULT OF ON-SITE ACTIVITIES SHALL BE COLLECTED AND THE AREA CLEARED/REHABILITATED AS SOON AS REASONABLE AND PRACTICABLE.
30. CONCRETE WASTE AND CHEMICAL PRODUCTS, INCLUDING PETROLEUM AND OIL-BASED PRODUCTS, SHALL BE PREVENTED FROM ENTERING ANY INTERNAL OR EXTERNAL WATER BODY, OR ANY EXTERNAL DRAINAGE SYSTEM, EXCLUDING THOSE ON-SITE WATER BODIES SPECIFICALLY DESIGNED TO CONTAIN AND/OR TREAT SUCH MATERIAL. APPROPRIATE MEASURES SHALL BE INSTALLED TO TRAP THESE MATERIALS ON-SITE.
31. BRICK, TILE OR MASONRY CUTTING SHALL BE CARRIED OUT ON A PEROUS SURFACE (E.G. GRASS OR OPEN SOIL) AND IN SUCH A MANNER THAT ANY RESULTING SEDIMENT-LADEN RUNOFF IS PREVENTED FROM DISCHARGING INTO A GUTTERDRAIN OR WATER. APPROPRIATE MEASURES SHALL BE INSTALLED TO TRAP THESE MATERIALS ON-SITE.
32. NEWLY SEALED HARD-STAND AREAS (E.G. ROADS, DRIVEWAYS AND CAR PARKS) SHALL BE SWEEP THOROUGHLY AS SOON AS PRACTICABLE AFTER SEALING/SURFACING TO MINIMISE THE RISK OF COMPONENTS OF THE SURFACING COMPOUND ENTERING STORMWATER DRAINS.
33. STOCKPILES OF ERODIBLE MATERIAL SHALL BE PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC OR ORGANIC) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 10 DAYS.
34. STOCKPILES, TEMPORARY OR PERMANENT, SHALL NOT BE LOCATED IN AREAS IDENTIFIED AS NO-GO ZONES (INCLUDING, BUT NOT LIMITED TO, RESTRICTED ACCESS AREAS, BUFFER ZONES, OR AREAS OF NON-DISTURBANCE) ON THE ESCP.
35. NO MORE THAN 150MM OF A STORMWATER SEWER LINE OR OTHER SERVICE TRENCH SHALL TO BE OPEN AT ANY ONE TIME.
36. SITE SOIL SHALL BE LAWFULLY DISPOSED OF IN A MANNER THAT DOES NOT RESULT IN ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
37. WHEREVER REASONABLE AND PRACTICABLE, STORMWATER RUNOFF ENTERING THE SITE FROM EXTERNAL AREAS, AND NON-SEDIMENT LADEN (CLEAN) STORMWATER RUNOFF ENTERING A WORK AREA OR AREA OF SOIL DISTURBANCE, SHALL BE DIVERTED AROUND OR THROUGH THAT AREA IN A MANNER THAT MINIMISES SOIL EROSION AND THE CONTAMINATION OF THAT WATER FOR ALL DISCHARGES UP TO THE SPECIFIED DESIGN STORM DISCHARGE.

38. PRIORITY SHALL BE GIVEN TO THE PREVENTION/OR AT LEAST THE MINIMISATION OF SOIL EROSION, RATHER THAN THE TRAPPING OF DISPLACED SEDIMENT. SUCH A CLAUSE SHALL NOT REDUCE THE RESPONSIBILITY TO APPLY AND MAINTAIN, AT ALL TIMES, ALL NECESSARY ESC MEASURES.

39. MEASURES USED TO CONTROL WIND EROSION SHALL BE APPROPRIATE FOR THE LOCATION AND PREVENT SOIL EROSION AND EMISSIONS FROM SITE AT ALL TIMES, INCLUDING WORKING HOURS, OUT OF HOURS, WEEKENDS, PUBLIC HOLIDAYS, AND DURING ANY OTHER SHUTDOWN PERIODS.

40. THE APPLICATION OF LIQUID OR CHEMICAL-BASED DUST SUPPRESSION MEASURES SHALL ENSURE THAT SEDIMENT-LADEN RUNOFF RESULTING FROM SUCH MEASURES DOES NOT CREATE A TRAFFIC OR ENVIRONMENTAL HAZARD.

41. ALL CUT AND FILL EARTH BATTERS LESS THAN 3M IN ELEVATION SHALL BE TOPSOILED, AND GRASS SEEDED/HYDROMULCHED WITHIN 10 DAYS OF COMPLETION OF GRADING IN CONSULTATION WITH COUNCIL.

42. ALL DISTURBED AREAS SHALL BE STABILISED IN ACCORDANCE WITH TIMELINES IN THE BLUE BOOK.

43. ALL REASONABLE AND PRACTICABLE MEASURES SHALL BE TAKEN TO PREVENT/OR AT LEAST MINIMISE, THE RELEASE OF SEDIMENT FROM THE SITE.

44. SUITABLE ALL-WEATHER MAINTENANCE ACCESS SHALL BE PROVIDED TO ALL SEDIMENT CONTROL DEVICES.

45. SEDIMENT CONTROL DEVICES OTHER THAN SEDIMENT BASINS SHALL BE DE-SILTED AND MADE FULLY OPERATIONAL AS SOON AS REASONABLE AND PRACTICABLE AFTER A SEDIMENT-PRODUCING EVENT, WHETHER NATURAL OR ARTIFICIAL, IF THE DEVICE'S SEDIMENT RETENTION CAPACITY FALLS BELOW 75% OF ITS DESIGN RETENTION CAPACITY.

46. ALL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE CONTROL MEASURES, SHALL BE MAINTAINED IN PROPER WORKING ORDER AT ALL TIMES DURING THEIR OPERATIONAL LIVES.

47. WASHING/FLUSHING OF SEALED ROADWAYS SHALL ONLY OCCUR WHERE SWEEPING HAS FAILED TO REMOVE SUFFICIENT SEDIMENT AND THERE IS A COMPELLING NEED TO REMOVE THE REMAINING SEDIMENT (E.G. FOR SAFETY REASONS). IN SUCH CIRCUMSTANCES, ALL REASONABLE AND PRACTICABLE SEDIMENT CONTROL MEASURES SHALL BE USED TO PREVENT/OR AT LEAST MINIMISE, THE RELEASE OF SEDIMENT INTO RECEIVING WATERS, ONLY THOSE MEASURES THAT WILL NOT CAUSE FLOOD PROBLEMS TO FLOOD PROPERTIES SHALL BE EMPLOYED. SEDIMENT REMOVED FROM ROADWAYS SHALL BE DISPOSED OF IN A LAWFUL MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.

48. SEDIMENT REMOVED FROM SEDIMENT TRAPS AND PLACES OF SEDIMENT DEPOSITION SHALL BE DISPOSED OF IN A LAWFUL MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HA

AS-CONSTRUCTED PLANS SHALL BE PREPARED FOR ALL CONSTRUCTED SEDIMENT BASINS AND ASSOCIATED EMERGENCY SPILLWAYS. SUCH PLANS SHALL VERIFY THE BASIN'S DIMENSIONS, LEVELS AND VOLUMES COMPLY WITH THE APPROVED DESIGN DRAWINGS. THESE PLANS MAY BE REQUESTED BY THE CERTIFIER OR COUNCIL.

50. SEDIMENT BASINS SHALL BE CONSTRUCTED AND FULLY OPERATIONAL PRIOR TO ANY OTHER SLOE DISTURBANCE IN THEIR CATCHMENT.

51. INSTALL AN INTERNAL GATED VALVE, OR SIMILAR, IN ANY OUTLET PIPE ONCE PIPES INSTALLED,OR INSTALL A SACRIFICIAL PIPE FROM BASIN THROUGH VALVE TO EXTERNAL OUTLET POINT. THE VALVE SHALL BE CONNECTED TO A RISER MADE FROM SLOTTED PIPE IN THE BASIN. THE VALVE MAY BE OPENED ONCE CAPTURED WATER MEETS WATER QUALITY REQUIREMENTS THE FINAL SETUP FOR TEMPORARY INTERNAL OUTLET STRUCTURES TO BE CONFIRMED PRIOR TO CONSTRUCTION WITH COUNCIL. THIS SETUP WILL ENABLE DISCHARGE OF TREATED WATER FROM SITE WITHOUT NEED FOR PUMPING.

52. A SEDIMENT STORAGE LEVEL MARKER POST SHALL BE WITH A CROSS MEMBER SET JUST BELOW THE TOP OF THE SEDIMENT STORAGE ZONE (AS SPECIFIED ON THE APPROVED ESCP). AT LEAST A 75mm wide POST SHALL BE FIRMLY SET INTO THE BASIN FLOOR.

53. THE SITE MANAGER SHALL OBTAIN THE RELEVANT APPROVALS FROM THE RELEVANT ORGANISATIONS TO DISCHARGE TREATED WATER FROM ANY EXISTING BASINS. ORGANISATIONS MAY INCLUDE, BUT NOT BE LIMITED TO, HUNTER WATER, AND COUNCIL.

54. WHERE MORE THAN ONE STAGE IS TO BE DEVELOPED AT ONETIME,OR BEFORE THE PRECEDING STAGE IS COMPLETE,THE SEDIMENT BASIN(S) FOR THESE STAGES SHALL HAVE SUFFICIENT CAPACITY TO CATER FOR ALL AREA DIRECTED TO THE BASIN(S).

55. PRIOR TO ANY FORECAST WEATHER EVENT LIKELY TO RESULT IN RUNOFF, ANY BASINS/TRAPS SHALL BE DEWATERED TO PROVIDE SUFFICIENT CAPACITY TO CAPTURE SEDIMENT LAIDEN WATER FROM THE SITE.

56. SUFFICIENT QUANTITIES OF CHEMICALS/AGENTS TO TREAT CAPTURED WATER SHALL BE PLACED SUCH THAT WATER ENTERING THE BASIN MIXES WITH THE CHEMICAL/AGENTS AND IS CARRIED INTO THE BASIN TO SPEED UP CLARIFICATION.

57. ANY BASIN SHALL BE DEWATERED WITHIN THE X-DAY RAINFALL DEPTH USED TO CALCULATE THE CAPACITY OF THE BASIN, AFTER A RAINFALL EVENT.

58. SUFFICIENT QUANTITIES OF CHEMICALS/AGENTS TO TREAT TURBID WATER SHALL BE SECURELY STORED ON-SITE TO PROVIDE FOR AT LEAST THREE COMPLETE TREATMENTS OF ALL BASINS REQUIRING CHEMICALLY TREATMENT ONSITE.

59. PRIOR TO THE CONTROLLED DISCHARGE/EG DE-WATERING ACTIVITIES/FROM SITE INCLUDING EXCAVATIONS AND/OR SEDIMENT BASINS,THE FOLLOWING WATER QUALITY OBJECTIVES SHALL BE ACHIEVED:

A) TOTAL SUSPENDED SOLIDS (TSS) TO A MAXIMUM 50 MILLIGRAMS/L;  
B) WATER PH BETWEEN 6.5 AND 8.5, UNLESS OTHERWISE REQUIRED BY THE COUNCIL;  
C) TURBIDITY (MEASURED IN NTU) TO A MAXIMUM OF 60 NTU; AND  
D) EC LEVELS NO GREATER THAN BACKGROUND LEVELS

60. THE DEVELOPMENT APPROVAL MAY REQUIRE TESTING OF ADDITIONAL WATER QUALITY ELEMENTS PRIOR TO DISCHARGE.E.G. INCLUDING BUT NOT LIMITED TO METALS, ORGANIC SUBSTANCES, CHEMICALS OR BACTERIOLOGICAL INDICATORS. 61

61. A SAMPLE OF THE RELEASED TREATED WATER SHALL BE KEPT ONSITE IN A CLEAR CONTAINER WITH THE SAMPLE DATE RECORDED ON IT.

62. WATER QUALITY SAMPLES SHALL BE TAKEN AT A DEPTH NO LESS THAN 200MM BELOW THE WATER SURFACE OF THE BASIN.

63. NO ALUMINIUM BASED PRODUCTS MAY BE USED TREAT CAPTURED WATER ONSITE WITHOUT THE PRIOR WRITTEN PERMISSION FROM AN APPROPRIATE COUNCIL OFFICER. THE APPLICANT SHALL HAVE A DEMONSTRATED ABILITY TO USE SUCH PRODUCTS CORRECTLY AND WITHOUT ENVIRONMENTAL HARM PRIOR TO ANY APPROVAL.

64. THE CHEMICAL/AGENT USED IN TYPE D AND TYPE F BASINS TO TREAT CAPTURED WATER CAPTURED IN THE BASIN SHALL BE APPLIED IN CONCENTRATIONS SUFFICIENT TO ACHIEVE COUNCIL'S WATER QUALITY OBJECTIVES WITHIN THE X-DAY RAINFALL DEPTH USED TO CALCULATE THE CAPACITY OF THE BASIN, AFTER A RAINFALL EVENT.

65. ALL MANUFACTURERS' INSTRUCTIONS SHALL BE FOLLOWED FOR ANY CHEMICALS/AGENTS USED ONSITE, EXCEPT WHERE APPROVED BY THE RESPONSIBLE PERSON OR AN APPROPRIATE COUNCIL OFFICER.

66. THE APPLICANT SHALL ENSURE THAT ON EACH OCCASION A TYPE F OR TYPE D BASIN WAS NOT DE-WATERED PRIOR TO BEING SURCHARGED BY A FOLLOWING RAINFALL EVENT.A REPORT IS PRESENTED TO AN APPROPRIATE COUNCIL OFFICER WITHIN 5 DAYS IDENTIFYING THE CIRCUMSTANCES AND PROPOSED AMENDMENTS, IF ANY, TO THE BASIN'S OPERATING PROCEDURES.

67. SETTLED SEDIMENT SHALL BE REMOVED AS SOON AS REASONABLE AND PRACTICABLE FROM ANY SEDIMENT BASIN IF:

A) IT IS ANTICIPATED THAT THE NEXT STORM EVENT IS LIKELY TO CAUSE SEDIMENT TO SETTLE ABOVE THE BASIN'S SEDIMENT STORAGE ZONE; OR

B) THE ELEVATION OF SETTLED SEDIMENT IS ABOVE THE TOP OF THE BASIN'S SEDIMENT STORAGE ZONE; OR

C) THE ELEVATION OF SETTLED SEDIMENT IS ABOVE THE BASIN'S SEDIMENT MARKER LINE.

68. SCOUR PROTECTION MEASURES PLACED ON SEDIMENT BASIN EMERGENCY SPILLWAYS SHALL APPROPRIATELY PROTECT THE SPILLWAY CHUTE AND ITS SIDE BATTERS FROM SCOUR,AND SHALL EXTEND A MINIMUM OF 3m BEYOND THE DOWNSTREAM TOE OF THE BASIN'S EMBANKMENT.

69. SUITABLE ALL-WEATHER MAINTENANCE ACCESS SHALL BE PROVIDED TO ALL SEDIMENT CONTROL DEVICES.

70. MATERIALS,WHETHER LIQUID OR SOLID, REMOVED FROM ANY ESC MEASURE OR EXCAVATION DURING MAINTENANCE OR DECOMMISSIONING,SHALL BE DISPOSED OF IN A MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION, WATER POLLUTION OR ENVIRONMENTAL HARM.

71. ALL SEDIMENT BASINS SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES UNTIL THE BASIN'S DESIGN CATCHMENT ACHIEVES 70% GROUND COVER OR SURFACE STABILISATION ACCEPTABLE TO COUNCIL.

72. THE ESC MEASURES INSTALLED DURING THE DECOMMISSIONING AND REHABILITATION OF A SEDIMENT BASIN SHALL COMPLY WITH SAME STANDARDS SPECIFIED FOR THE NORMAL CONSTRUCTION WORKS.

73. A SEDIMENT BASIN SHALL NOT BE DECOMMISSIONED UNTIL ALL UP-SLOPE SITE STABILISATION MEASURES HAVE BEEN IMPLEMENTED AND ARE APPROPRIATELY WORKING TO CONTROL SOIL EROSION AND SEDIMENT RUN

74. IMMEDIATELY PRIOR TO THE CONSTRUCTION OF THE PERMANENT STORMWATER TREATMENT DEVICE, APPROPRIATE FLOW BYPASS CONDITIONS SHALL BE ESTABLISHED TO PREVENT SEDIMENT-LADEN WATER ENTERING THE DEVICE

75. TEMPORARY STABILISATION MAY BE ATTAINED USING VEGETATION, NON RETWEETABLE SOIL POLYMERS, OR PNEUMATICALLY  
APPLIED EROSION CONTROLS.

76. ALL CUT AND FILL EARTH BATTERS LESS THAN 3M IN ELEVATION SHALL BE TOPSOILED, AND GRASS  
SEEDING/HYDROMULCHED WITHIN 10 DAYS OF COMPLETION OF GRADING IN CONSULTATION WITH COUNCIL.

77. AT THE COMPLETION OF FORMATION IN ANY SECTION, ALL DISTURBED AREAS SHALL BE STABILISED IN ACCORDANCE WITH  
TIME LINES IN THE BLUE BOOK.

78. THE LMCC SEED MIX SHALL BE USED UNLESS STATED ON THE ESCP/SWMP.

79. THE PH LEVEL OF TOPSOIL SHALL BE APPROPRIATE TO ENABLE ESTABLISHMENT AND GROWTH OF SPECIFIED VEGETATION  
PRIOR TO INITIATING THE ESTABLISHMENT OF VEGETATION.

80. NON RETWEETABLE BINDER SHALL BE USED IN ALL HYDROMULCH/HYDROSEED/POLYMER MIXES ON SLOPES OR WORKS  
ADJACENT TO A WATER COURSE.

81. SOIL AMELIORANTS SHALL BE ADDED TO THE SOIL IN ACCORDANCE WITH AN APPROVED LANDSCAPE PLAN, VEGETATION  
MANAGEMENT PLAN, AND/OR SOIL ANALYSIS.

82. SURFACE SOIL DENSITY, COMPACTION AND SURFACE ROUGHNESS SHALL BE ADJUSTED PRIOR TO SEEDING/PLANTING IN  
ACCORDANCE WITH AN APPROVED LANDSCAPE PLAN, VEGETATION MANAGEMENT PLAN, AND/OR SOIL ANALYSIS.

83. PROCEDURES FOR INITIATING A SITE SHUTDOWN, WHETHER PROGRAMMED OR UN-PROGRAMMED, SHALL INCORPORATE  
REVEGETATION OF ALL SOIL DISTURBANCES UNLESS OTHERWISE APPROVED BY COUNCIL. THE STABILISATION WORKS SHALL  
NOT RELY ON THE LONGEVITY OF NON-VEGETATED EROSION CONTROL BLANKETS OR TEMPORARY SOIL BINDERS

84. THE APPLICANT SHALL ENSURE THAT APPROPRIATE PROCEDURES AND SUITABLY QUALIFIED PERSONNEL ARE ENGAGED TO PLAN AND CONDUCT SITE INSPECTIONS AND WATER QUALITY MONITORING THROUGHOUT THE CONSTRUCTION AND MAINTENANCE PHASE.

85. ALL ESC MEASURES SHALL BE INSPECTED AND ANY MAINTENANCE UNDERTAKEN IMMEDIATELY:

- A) AT LEAST DAILY (WHEN WORK IS OCCURRING ON-SITE); AND
- B) AT LEAST WEEKLY (WHEN WORK IS NOT OCCURRING ON-SITE); AND
- C) WITHIN 24HRS OF EXPECTED RAINFALL; AND
- D) WITHIN 18HRS OF A RAINFALL EVENT THAT CAUSES RUNOFF ON THE SITE.

86. WRITTEN RECORDS SHALL BE KEPT ONSITE OF ESC MONITORING AND MAINTENANCE ACTIVITIES CONDUCTED DURING THE CONSTRUCTION AND MAINTENANCE PERIODS, AND BE AVAILABLE TO COUNCIL OFFICERS ON REQUEST.

87. ALL ENVIRONMENTALLY RELEVANT INCIDENTS SHALL BE RECORDED IN A FIELD LOG THAT SHALL REMAIN ACCESSIBLE TO ALL RELEVANT REGULATORY AUTHORITIES.

88. ALL WATER QUALITY DATA, INCLUDING DATES OF RAINFALL, DATES OF TESTING, TESTING RESULTS AND DATES OF WATER RELEASE, SHALL BE KEPT IN AN ON-SITE REGISTER. THE REGISTER IS TO BE MAINTAINED UP TO DATE FOR THE DURATION OF THE APPROVED WORKS AND BE AVAILABLE ON-SITE FOR INSPECTION BY ALL RELEVANT REGULATORY AUTHORITIES ON REQUEST.

89. AT NOMINATED INSTREAM WATER MONITORING SITES, A MINIMUM OF 3 WATER SAMPLES SHALL BE TAKEN AND ANALYSED, AND THE AVERAGE RESULT USED TO DETERMINE QUALITY.


90. ALL INSTREAM WORKS (INCLUDING IN OR ADJACENT TO WATERCOURSES NATURAL OR MANMADE, FLOWING OR NOT) SHALL BE CARRIED OUT IN ACCORDANCE WITH THE IECA WHITE BOOKS.



REFER TO DWG SK215-SK216 FOR LANDCOM BLUE  
BOOK EROSION AND SEDIMENT STANDARD DRAWINGS

	WEEK							
	1	2	3	4	5	6	7	8
CONSTRUCT ALL TEMPORARY SEDIMENT BASINS								
PLACE SILT FENCE ALONG ROAD BOUNDARIES AS SHOWN								
PLACE SILT FENCE BELOW AREAS TO BE REGRADED								
CONSTRUCT ALL DIVERSION BANKS CATCHING CLEAN WATER								
ROAD CONSTRUCTION AND REGRAIDING								
PLACE SILT FENCE AROUND TOPSOIL STOCKPILES								
PLACE SEDIMENT BARRIERS AROUND STORMWATER PITS AT COMPLETION OF DRAINAGE								
PLACE STRIP TURF PARALLEL TO DESIGN CONTOURS ALONG ROAD AS SHOWN								

PRELIMINARY ISSUE  
NOT FOR CONSTRUCTION

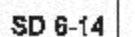
						North	Scale	<div><div>COPYRIGHT</div><div>Copyright in the drawings, information and data recorded hereon is the property of Geoff Craig &amp; Associates Pty Ltd and may not be used, copied or reproduced in whole or part for any purpose other than that for which it is supplied without the prior consent of Geoff Craig &amp; Associates Pty Ltd.</div></div>	<div><div>Designed A.M</div><div>Scale -</div><div>Project Approval IAN HILL (B.E) Consulting Civil Engineer</div></div>	<div><div>Cad Reference 19259C dC429 r3</div><div>A1 SHEET</div></div>	Client	<div><div></div><div>A.B.N. 92 086 017 745 1 HARTLEY DRIVE, THORNTON NSW 2322 PO BOX 3337, THORNTON NSW 2322 PHONE: (02) 4964 1811</div></div>	<div><div>PROPOSED SUBDIVISION 1A FLOWERS DRIVE CATHERINE HILL BAY HAMLET A SOIL AND WATER MANAGEMENT DETAILS</div></div>	<div><div>Project No 19259C</div><div><div>Drawing No C429</div><div>Revision 3</div></div></div>
3	CLIENT AMENDMENTS	DB	AS	11.01.22										
2	CLIENT COMMENTS	DB	AS	17.12.21										
1	NOT ISSUED													
Amendment	Description	Drawn	App'd	Date										

SD 4-1

SD 5-5

SD 6-7





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