



Devonport City Council

PUBLIC NOTICE

APPLICATION FOR PLANNING PERMIT

Section 57(3) Land Use Planning Approvals Act 1993

An application for a planning permit has been made which may affect you.

Application Details

Application Number:	PA2025.0133
Proposed Use or Development:	Retaining wall and fill
Address of the Land:	57a Berrigan Road, Miandetta
Date of Notice:	18/10/2025

You are invited to view the application and any documents and plans accompanying it on the ground floor of the paranaple centre at 137 Rooke Street, Devonport or on Council's website www.devonport.tas.gov.au

Any person may make a representation relating to the application in accordance with section 57(5) of the *Land Use Planning Approvals Act 1993*, during a period of 14 days commencing on the date of this notice.

Your representation must:

- be received by close of business on **31/10/2025**;
- be in writing; and
- addressed to the Chief Executive Officer, Devonport City Council:
 - P.O. Box 604, Devonport, Tasmania, 7310; or
 - townplanning@devonport.tas.gov.au

If you make a representation then Council must consider your submission before making its decision on the application.



PA2025.0133 - 57A Berrigan Road, Miandetta

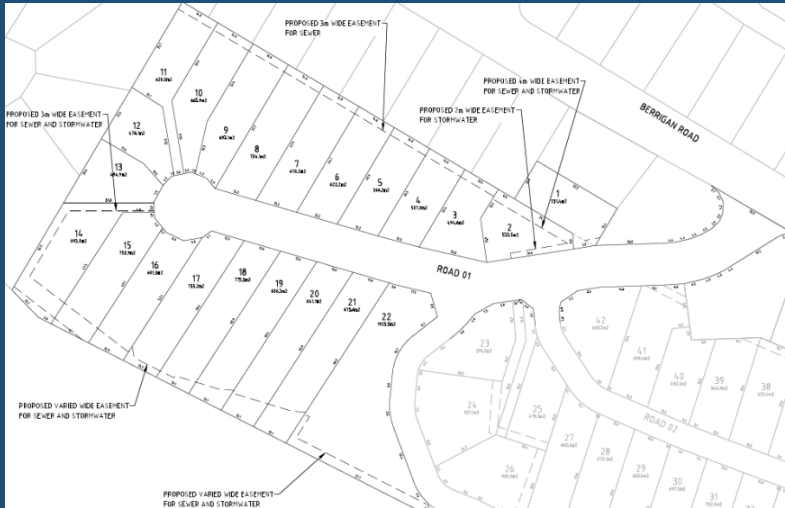


This map is made available for the purpose of providing access to Devonport City Council information and not as professional advice. The information contained on the map is diagrammatic only. All information should be verified on site, or with the appropriate State Government Department or Council Office, prior to being used for any purpose.



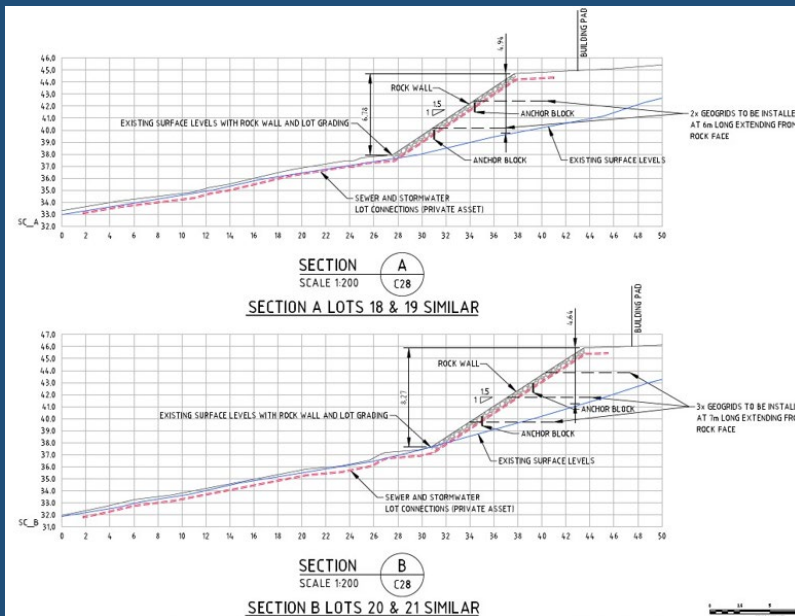
Devonport City Council

Eart



Earthworks & Retaining Structure

Lots 15-21



PLANNING Report

Development Application – Earthworks and Retaining Structure – Subdivision 57a Berrigan Road Miandetta Lots 15-21

0408 123 770
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September 2025

JDA Planning obo
Ann-Tas

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Development Application – Earthworks and Retaining Structure – Subdivision 57a Berrigan Road Miandetta

EXECUTIVE SUMMARY

The application requests a planning permit under cl.7.10 of the *Tasmanian Planning Scheme – Devonport* (the scheme) involving earthworks and a retaining structure associated with lots 15 to 21 of the approved subdivision at 57a Berrigan Road, *Permit No. PA2022.0167 as amended*.

The filled area on the southern side of the internal subdivision road provides for building envelopes on a level platform meeting the minimum standards of the scheme.



Figure 1 - Photographs approved lot levelling lots 3-11; spoil used to fill lots 15-21



Figure 2 – Plan of subdivision Stage 1

1.0 APPROVED PLAN OF SUBDIVISION

Figure 3 is an extract of the planning permit for subdivision of the site. The present application relates to Lots 15 to 21 in relation to which earthworks and retaining structures are being introduced.

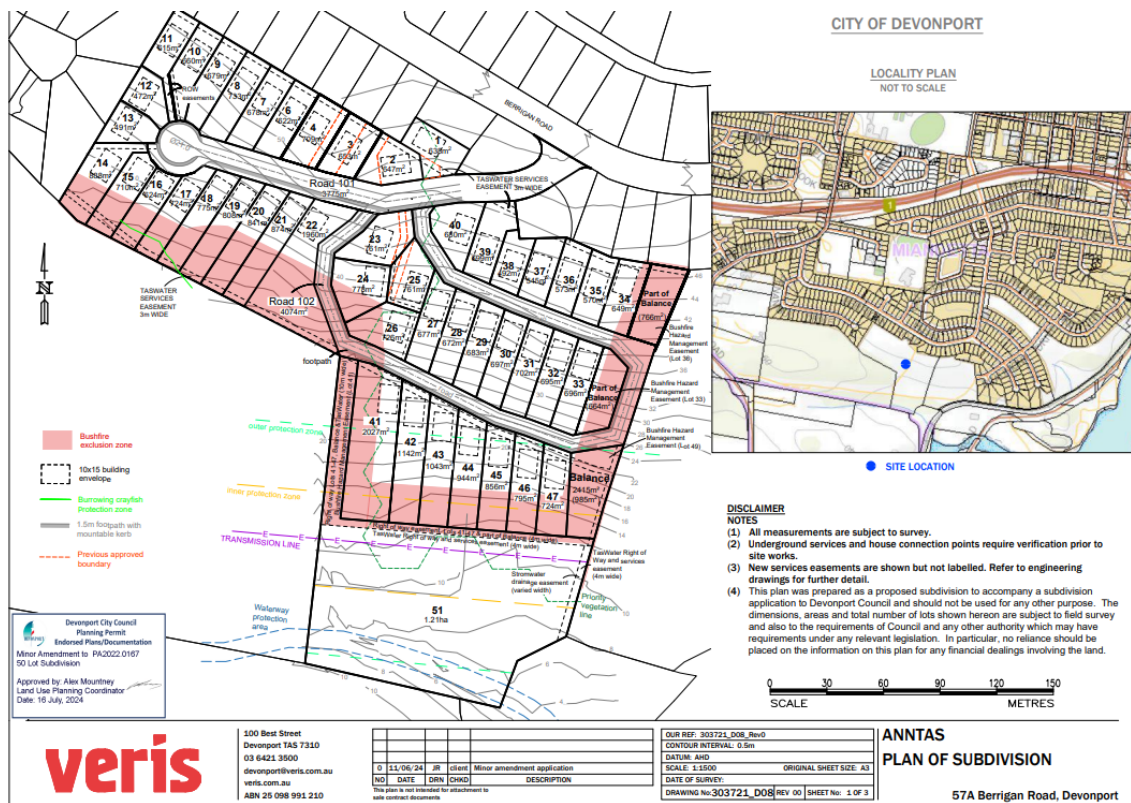


Figure 3 - Plan of subdivision Ref: Permit PA2022.0167

2. SITE DESCRIPTION

The subject site has been cleared of vegetation and construction commenced for the introduction of the internal subdivision road from Berrigan Road and the development of lots as a part of Stage 1. Figure 4 provides an aerial image of the site and current civil works.

Engineering drawings prepared by CSE Tasmania (Drawings 0306-2_C28, C29 and C30 Revision 5, 24 April 2025) demonstrate the extent of earthworks and the proposed retaining structure impacting lots 15-21, refer to Figures 6 and 7 (see Appendix C).

Tasman Geotechnics have issued a letter confirming that the documented design conforms to the recommendations referenced in the report Retaining Wall Design, Berrigan Road Subdivision, Miandetta 10 February 2025 (see Appendix E).

The filled area has been compacted and the compaction rate confirmed by the Material Test Reports undertaken by Rare Earth CMT Laboratories (see Appendix D).



Figure 4 – Aerial photograph of site [2024]

3. DEVELOPMENT PROPOSAL

The proposal to introduce fill as associated with the earthworks is to overcome the difficulty of design and build within such steep slopes. The maximum depth of fill – 4.94m is shown by reference to CSE engineering drawing C29 the cross sections of which are shown at **Figures 6 and 7**.

The introduction of fill will achieve near level development pads for future building development on lots 15-21 inclusive.

Rock floaters encountered as a part of approved site levelling (lots 3-11) on the northern side of the internal subdivision road will be used in the construction of the retaining structure. The wall is designed to function as a gravity retaining wall with reinforced earth technology to improve structural integrity. The engineering design drawings are based upon the parameters specified by a specialist geotechnical engineer who has confirmed design compliance.

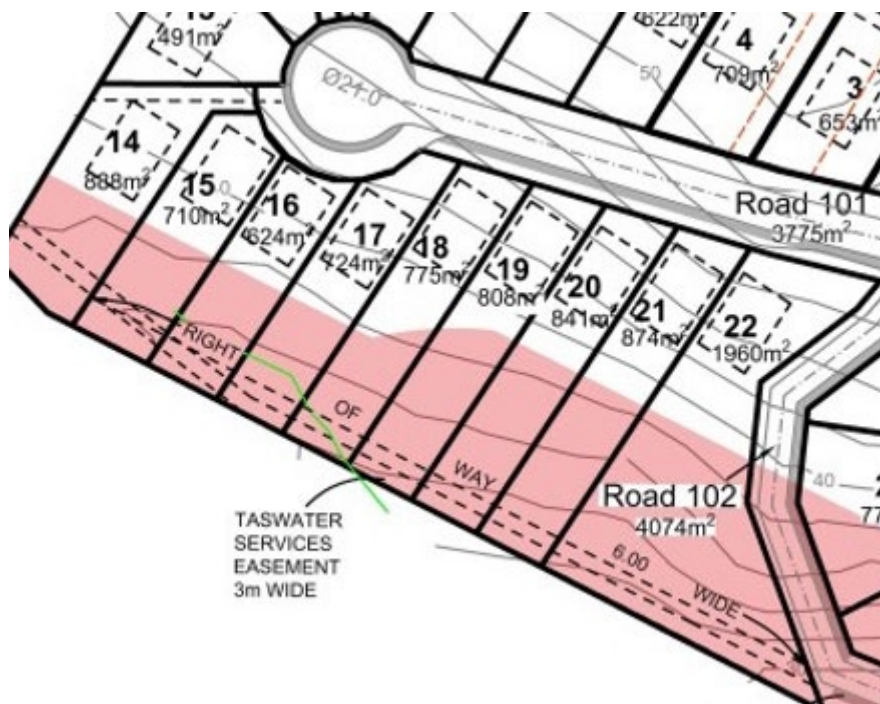


Figure 5 - Lots 15-22; BHMP exclusion zone red shade.

In reference to compaction control testing for the building pads associated with lots 15-21, compaction analysis undertaken by *Rare Earth Laboratories Pty Ltd* demonstrates a compaction rate (HDR) of between 95 and 100 per cent. This outcome achieves the 95-98% compaction ratio outlined in the National Construction Code and specified by geotechnical engineers for residential building construction.

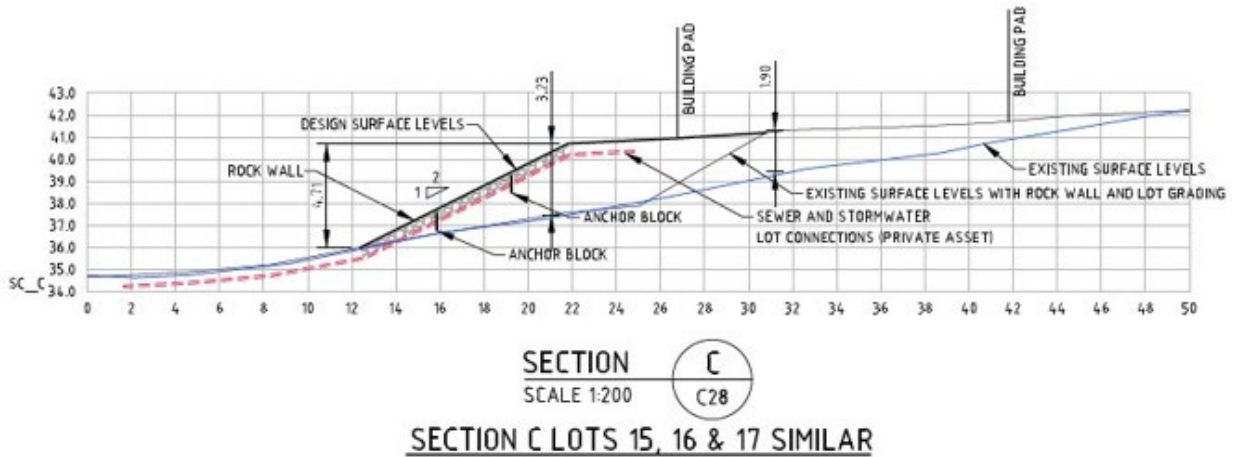


Figure 6 - Engineering Drwg No.0306-25_C29 Rev 5 – Cross section Lots 15-17 – CSE Tasmania Pty Ltd

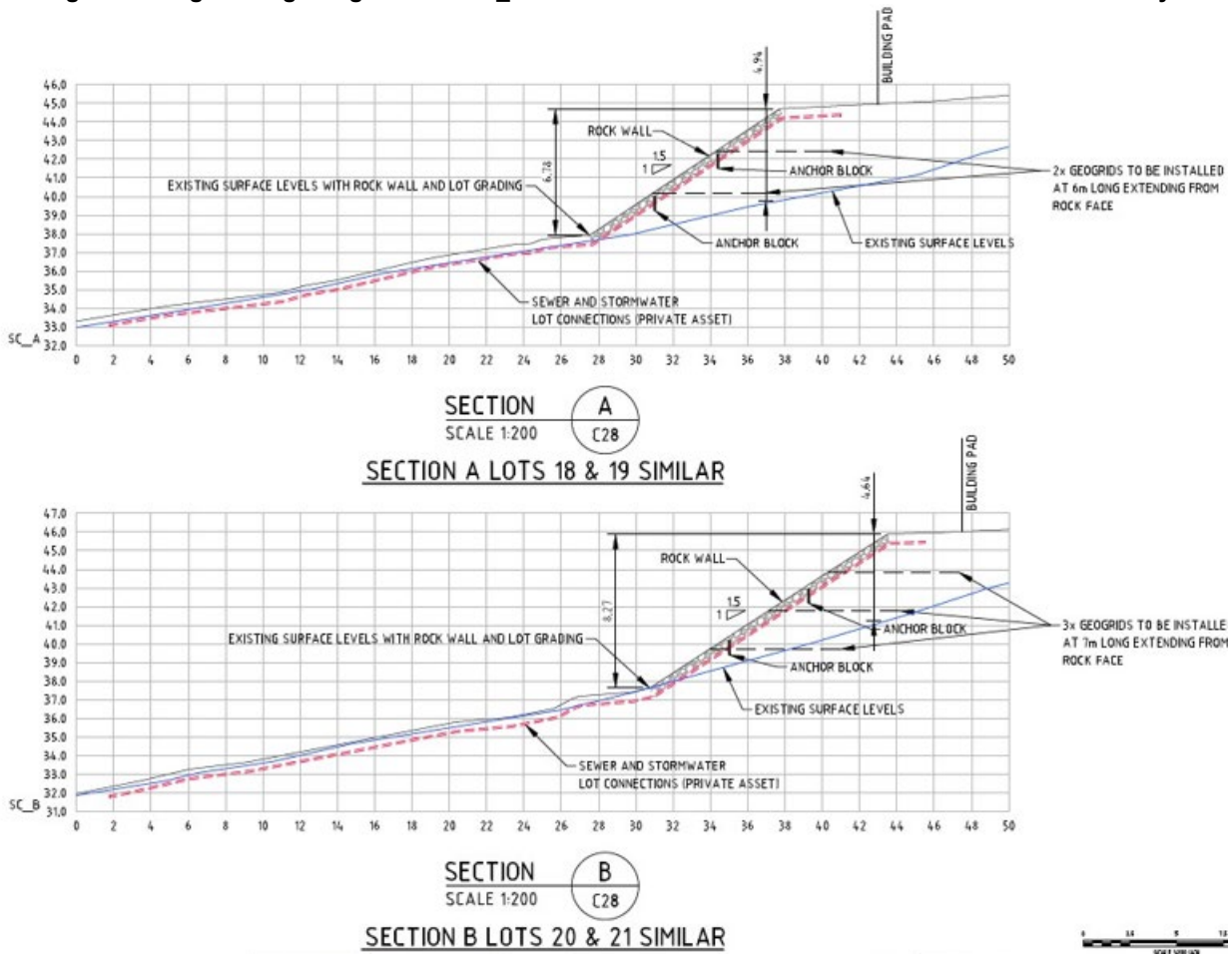


Figure 7 - Engineering Drwg No 0306-25_C30 Rev 5 – Cross section Lots 18-21 – CSE Tasmania Pty Ltd

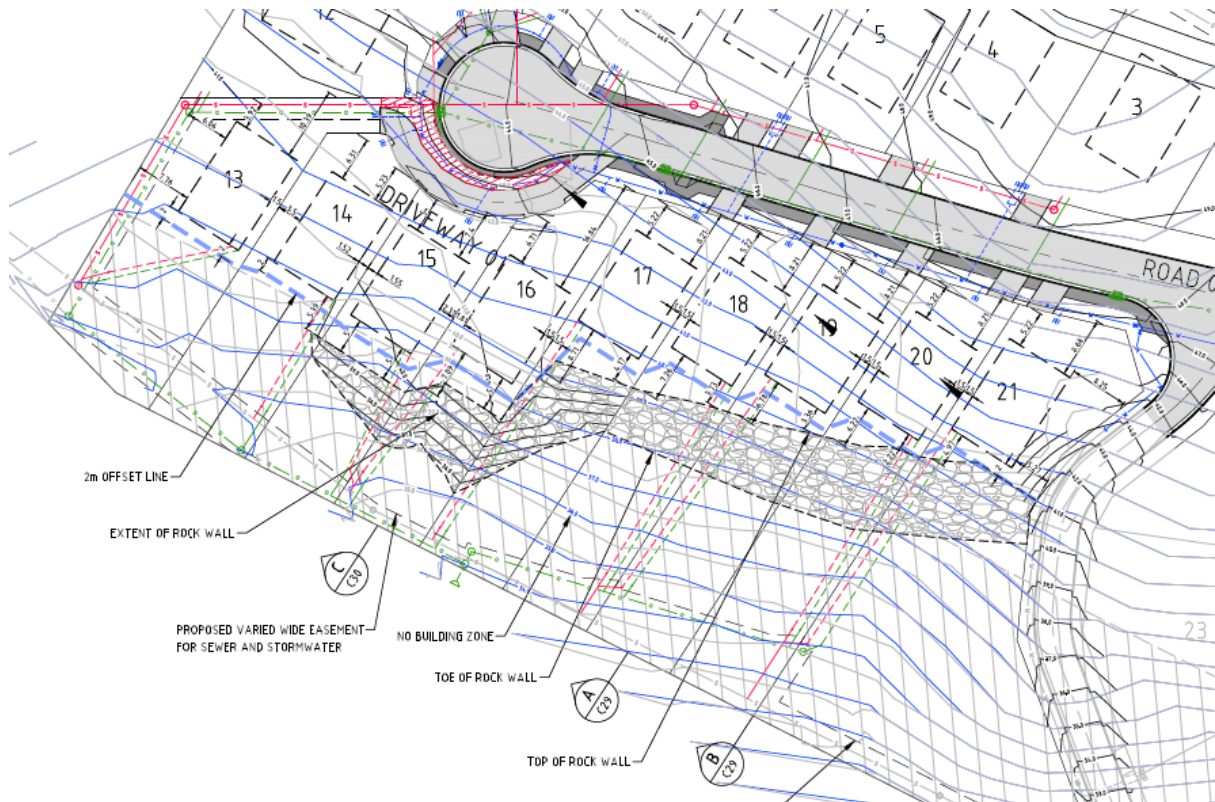


Figure 8 – Batter Slope Stability Plan Drwg No. 0306-25_C28 Rev 5 – CSE Tasmania Pty Ltd.

Figure 8 shows the position/extent of the proposed retaining wall which is designed to support the leading edge of the pads in relation to which all footings proposed within 5 metres of the retaining wall should be pierced to natural ground level.

3.1 Subdivision Impact

Regarding impact upon the approved subdivision, the introduction of fill and the retaining wall will not impact subdivision compliance particularly as this relates to cl.8.6.1 A1 which requires only that the lots have a minimum area of 450m² and that within the lot, a minimum area of 10m x 15m with a gradient no steeper than 1 in 5 is achieved.

Figure 8 above demonstrates the relationship of the retaining wall to the building envelopes on each of the lots 15-21.

All lots can be serviced with infrastructure and access achieved in accordance with the scheme requirement.

4.0 PLANNING SCHEME ASSESSMENT

4.1 Relevant scheme provisions

Cl.7.10 of the scheme applies to development involving land filling and retaining walls. Cl.7.10.1 provides that the development is discretionary. Cl.7.10.3 requires that regard be had to the purpose of the applicable zone and codes.

There is no requirement that the development be assessed against the standards of the relevant (General Residential) zone, nor are there Code provisions against which the application need be assessed.

4.2 Purpose of the General Residential Zone

Cl.8.1 Zone Purpose

- 8.1.1 *To provide for residential use or development that accommodates a range of dwelling types where full infrastructure services are available or can be provided.*
- 8.1.2 *To provide for the efficient utilisation of available social, transport and other service infrastructure.*
- 8.1.3 *To provide for non-residential use that:*
(a) primarily serves the local community; and
(b) does not cause an unreasonable loss of amenity through scale, intensity, noise activity outside of business hours, traffic generation and movement, or other off-site impacts.
- 8.1.4 *To provide for Visitor Accommodation that is compatible with residential character.*

4.3 Planning response

4.3.1 – Cl.8.1.1

Cl.8.1.1 is relevant to the consideration of the present application; however, the statement does not require that every lot within the General Residential zone should be capable of accommodating a range of dwelling types, including multiple dwelling development, only that, overall, all land within this zone provides for such accommodation.

It is submitted that all lots comply with this stated purpose, and that the introduction of fill as a part of earthworks and the inclusion of the retaining wall do not supplant the intended purpose. The lots 15 to 21 each provide the required building envelope within which residential (building) development can be achieved.

Importantly the introduced fill material has been appropriately engineered and compacted (*refer Material Test Reports Rare Earth CMT Laboratories*) and the design for the retaining wall prepared by *CSE Tasmania* (Drawing Nos. 0306-2_ C28, C29 and C30 *Revision 5 dated 5 April 2025*) has been certified by consulting geotechnical engineers *Tasman Geotechnics*.

The batter and building area correspond to the (fire) building exclusion zone and provide a building pad which is more than adequate to enable development of the lots in accordance with the relevant zone provisions (cl.8.6.1 A1). Importantly the works do not alter the shape or layout of the lots nor the relationship to the new internal road other than reducing the gradient of the lot's interface with the road.

The subdivision development achieves compliance with the zone objective in providing lots which are appropriate for residential use and which are to be provided with full infrastructure services. Introduction of the fill material and consequent construction of the retaining wall does not compromise achievement of this purpose allowing for residential development which is compatible with that zone purpose.

4.3.2 Cl.8.6.1 - Lot Design

All lots within the subdivision comply with the provisions for lot design which remains unchanged from the layout approved under the current permit PA2022.0167.

Acceptable Solutions	Performance Criteria (NA)
<p>A1</p> <p>Each lot, or a lot proposed in a plan of subdivision, must:</p> <p>(a) have an area of not less than 450m² and:</p> <p style="padding-left: 20px;">(i) be able to contain a minimum area of 10m x 15m with a gradient not steeper than 1 in 5, clear of:</p> <p style="padding-left: 40px;">a. all setbacks required by clause 8.4.2 A1, A2 and A3, and 8.5.1 A1 and A2; and</p> <p style="padding-left: 40px;">b. easements or other title restrictions that limit or restrict development; and</p> <p style="padding-left: 20px;">(ii) existing buildings are consistent with the setback required by clause 8.4.2 A1, A2 and A3, and 8.5.1 A1 and A2;</p> <p>(b) be required for public use by the Crown, a council or a State authority;</p> <p>(c) be required for the provision of Utilities; or</p> <p>(d) be for the consolidation of a lot with another lot provided each lot is within the same zone.</p>	
<p>Response: Complies with A1 (a)(i) and (ii).</p>	
<p>A2</p> <p>Each lot or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must have a frontage not less than 12m.</p>	
<p>Response: Complies with A2. Lots 15 to 21 are designed with a frontage to the internal road which exceeds 12m.</p>	
<p>A3</p> <p>Each lot, or a lot proposed in a plan of subdivision, must be provided with a vehicular access from the boundary of the lot to a road in accordance with the requirements of the road authority.</p>	

<p>Response: Complies with A3. Lots 15 to 21 will have a vehicular access from the boundary of the lot to a road as approved by Permit PA2022.0167.</p>	
<p>A4</p> <p>Any lot in a subdivision with a new road, must have the long axis of the lot between 30 degrees west of true north and 30 degrees east of true north.</p>	
<p>Response: Complies with A4. Lots 15-21 have the long axis of the lot between 30 degrees west of true north and 30 degrees east of true north.</p>	

4.3.4 Cl.7.10.2 - Unreasonable Detrimental Impact

Cl.7.10.2 states:

An application must only be approved under sub-clause 7.10.1 if there is no unreasonable detrimental impact on adjoining uses or the amenity of the surrounding area.

The site is an internal allotment with residential development adjoining its northern and western boundaries. To the south the land adjoins the property at 133 Middle Road the shared boundary of which is undeveloped. The land to the east known as 8 Beaumont Drive is also undeveloped, but zoned for residential use.

The subject site slopes from north to south at a gradient of approximately 20% from the rear boundaries of the residential properties 59-77 Berrigan Road. The residential lots at the head of Penambul Drive overlook the subject site.



Figure 9 - Properties adjoining subject site. Source: the LIST

Other than for the loss of vegetation across the site to enable the development of the land, the adjoining uses are not impacted by the proposed development which accords with the zoning intent of the land. The adjoining sites overlook the subject property which has no impact upon them other

than the effects of normal civil works to be expected as a part of the property's redevelopment, and the consequent introduction of residential housing and associated use.

The present application is for works quite properly associated with civil construction on steeper slopes, but otherwise are inconsequential in terms of impacts upon adjoining properties.

The introduction of fill, a batter and retaining wall will not have an unreasonable detrimental impact upon the adjoining (property) use, nor will it have an impact upon the amenity of the surrounding area.

The works have been designed to achieve appropriate engineering standards of structural stability and site compaction rates for the development of future housing on those lots 15-21.

The test to determine impact does not relate to 'potential' but specifically **actual** detrimental impact caused by the development the subject of the assessment.

The works are internal to the subdivision and other than altering the appearance of the cleared site in terms of contour changes, the development as proposed cannot be said to generate unreasonable detrimental impact. The purpose of the works is to improve the conditions for future residential construction on these lots, ensuring structural stability and sustainable development.

The ultimate result of the development forms an integral part of civil works associated with the residential subdivision

5. CONCLUSION

The proposal is a discretionary use subject to the requirement of cl.7.10.2 of the scheme which requires that there be no unreasonable detrimental impact upon adjoining uses or the amenity of the surrounding area.

Adjoining uses are as the term implies, those properties which adjoin the subject site. The analysis provided demonstrates that none of the adjoining uses are or will be subject to unreasonable detrimental impact, nor will the works or the retaining structure result in unreasonable detriment to the amenity of the surrounding area.

The area is zoned and has been partially developed for residential purposes, in relation to which the present application and the works associated with the development is no different.

To the extent necessary the proposed earthworks and associated structure are in harmony with the purpose statement for the General Residential zone and are compliant with cl.7.10 of the scheme.

APPENDICES

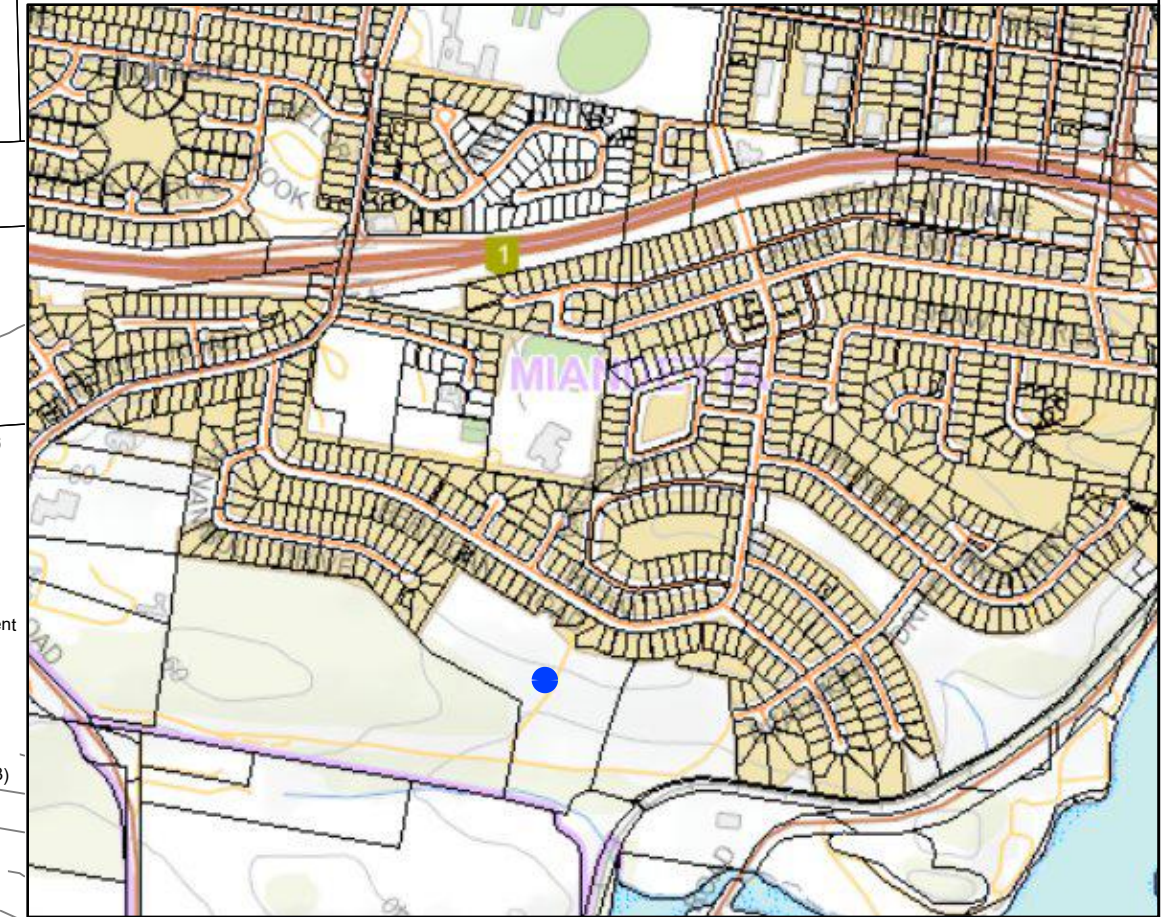
Appendix A Subject Property Title

Appendix B Approved Proposal Plan

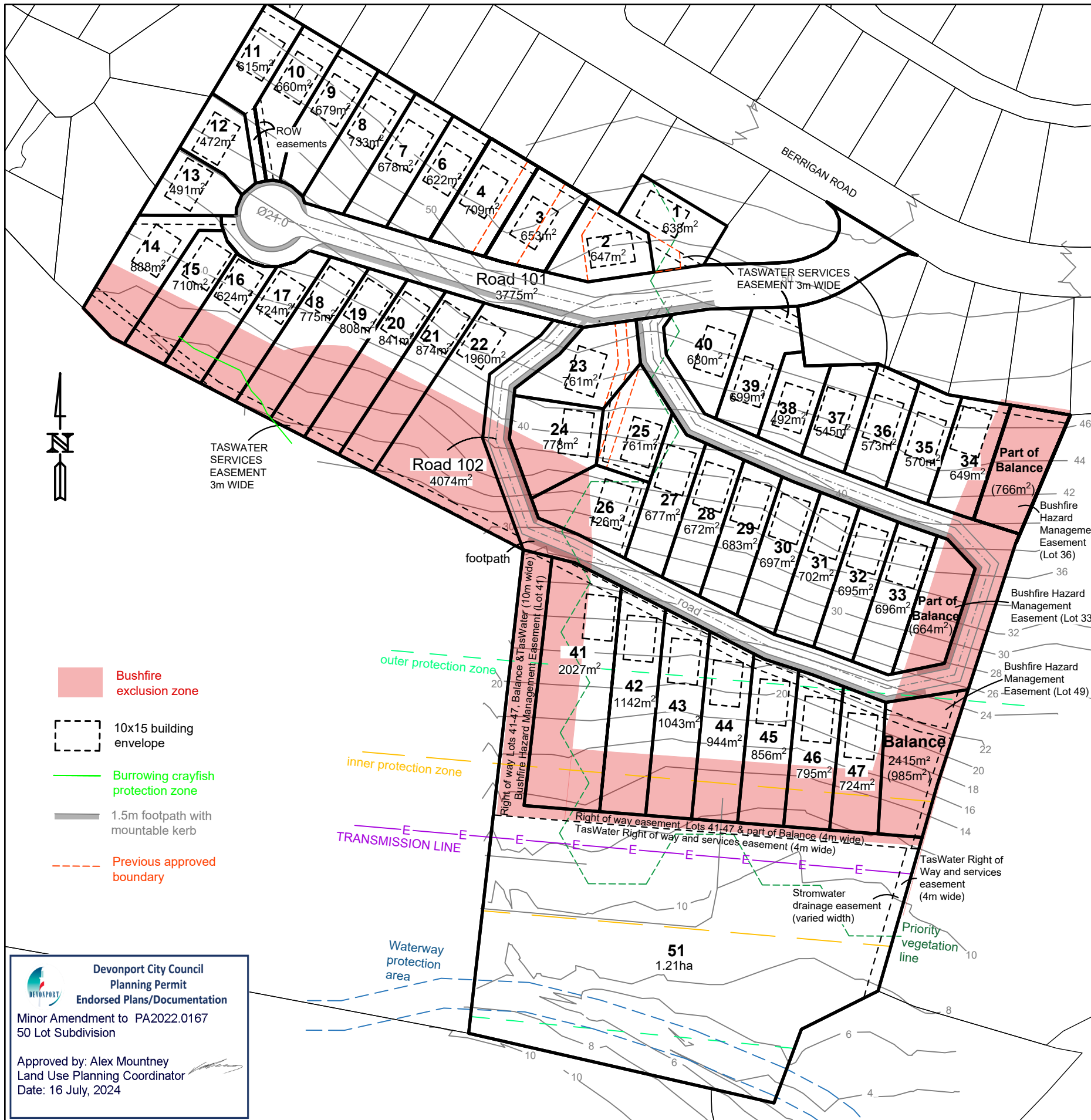
Appendix C Engineering Drawings - *CSE Tasmania*

Appendix D Compaction Report – *Rare Earth Laboratories Pty Ltd*

Appendix E Retaining Wall Design and Design confirmation advice – *Tasman Geotechnics*



● SITE LOCATION



DISCLAIMER NOTES

- (1) All measurements are subject to survey.
- (2) Underground services and house connection points require verification prior to site works.
- (3) New services easements are shown but not labelled. Refer to engineering drawings for further detail.
- (4) This plan was prepared as a proposed subdivision to accompany a subdivision application to Devonport Council and should not be used for any other purpose. The dimensions, areas and total number of lots shown hereon are subject to field survey and also to the requirements of Council and any other authority which may have requirements under any relevant legislation. In particular, no reliance should be placed on the information on this plan for any financial dealings involving the land.



Devonport City Council
Planning Permit
Endorsed Plans/Documentation
Minor Amendment to PA2022.0167
50 Lot Subdivision
Approved by: Alex Mountney
Land Use Planning Coordinator
Date: 16 July, 2024



100 Best Street
Devonport TAS 7310
03 6421 3500
devonport@veris.com.au
veris.com.au
ABN 25 098 991 210

NO	DATE	DRN	CHKD	DESCRIPTION
0	11/06/24	JR	client	Minor amendment application

This plan is not intended for attachment to sale contract documents

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**ANNTAS
PLAN OF SUBDIVISION**

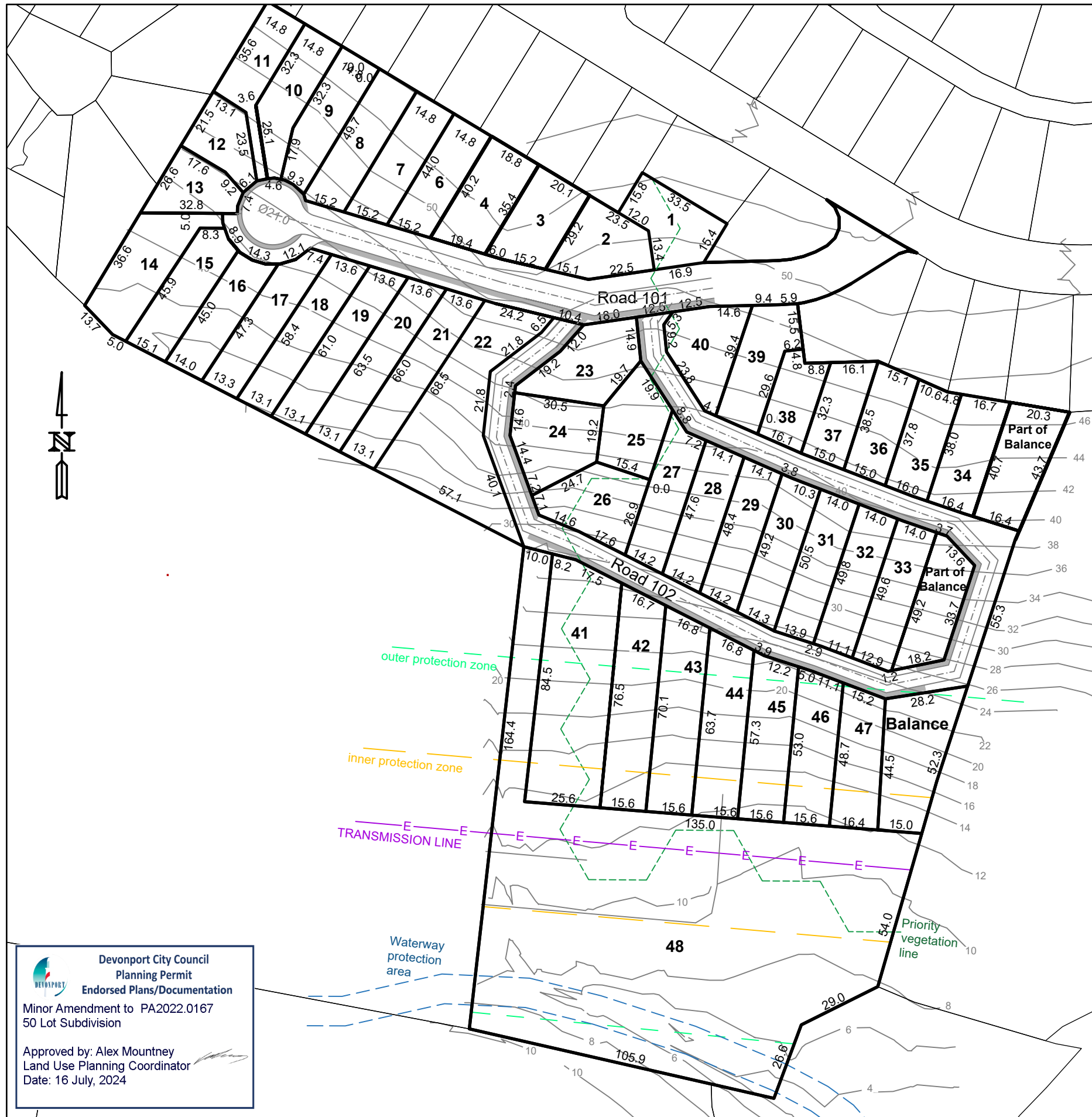
57A Berrigan Road, Devonport

CITY OF DEVONPORT

LOCALITY PLAN
NOT TO SCALE



● SITE LOCATION



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ANNTAS
PLAN OF SUBDIVISION

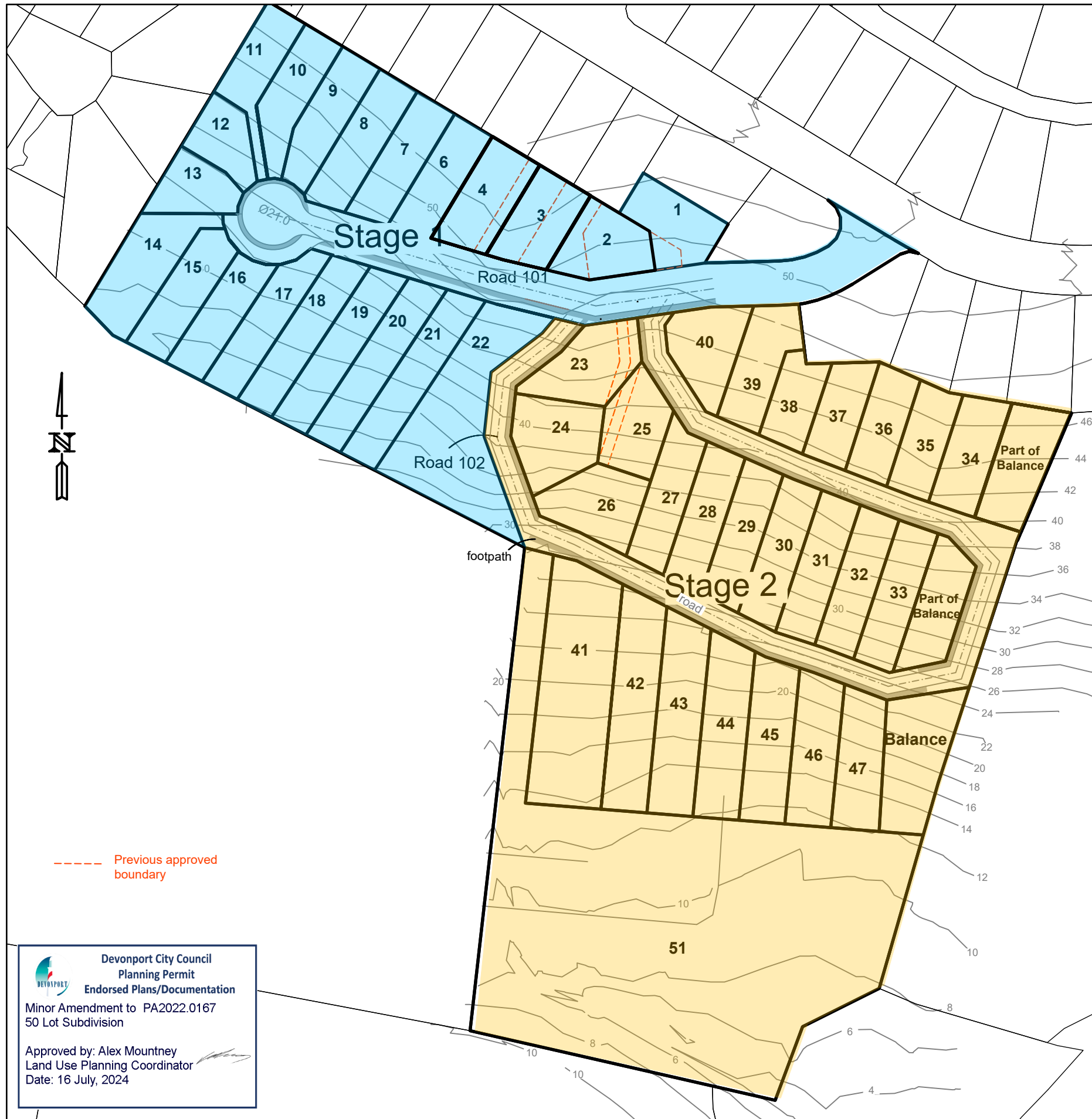
57A Berrigan Road, Devonport

CITY OF DEVONPORT

LOCALITY PLAN
NOT TO SCALE



● SITE LOCATION



----- Previous approved boundary

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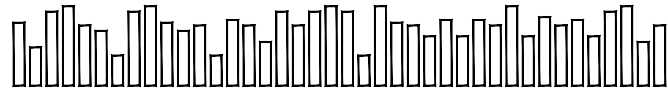
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ANNTAS
PLAN OF SUBDIVISION

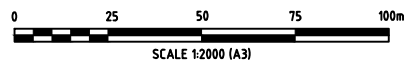
57A Berrigan Road, Devonport



ANN-TAS
57A BERRIGAN ROAD, STAGE 01
MIANDETTA
CSE TASMANIA REF: 0306-25
SEPTEMBER / 2023



LOCALITY PLAN
SCALE: 1:2000



DRAWING SCHEDULE		
DRAWING No.	DRAWING NAME	REVISIONS
0306-25_G01	COVER SHEET AND LOCALITY PLAN	Rev 5
0306-25_G02	GENERAL DETAILS PLAN	Rev 5
0306-25_G03	GENERAL NOTES PLAN	Rev 5
0306-25_G04	GENERAL ARRANGEMENT LAYOUT PLAN	Rev 5
0306-25_G05	LOT LAYOUT PLAN	Rev 5
0306-25_C01	ROAD 01 LAYOUT AND LONG SECTION PLAN SHEET 01	Rev 5
0306-25_C02	ROAD 01 LAYOUT AND LONG SECTION PLAN SHEET 02	Rev 5
0306-25_C03	ROAD 01 CROSS SECTIONS PLAN SHEET 01	Rev 5
0306-25_C04	ROAD 01 CROSS SECTIONS PLAN SHEET 02	Rev 5
0306-25_C05	ROAD 01 CROSS SECTIONS PLAN SHEET 02	Rev 5
0306-25_C06	ROAD 02 LAYOUT AND LONG SECTION PLAN SHEET 01	Rev 5
0306-25_C07	ROAD 02 LAYOUT AND LONG SECTION PLAN SHEET 02	Rev 5
0306-25_C08	ROAD 02 CROSS SECTIONS PLAN	Rev 5
0306-25_C09	KERB RETURN LAYOUT AND LONG SECTIONS PLAN SHEET 01	Rev 5
0306-25_C10	KERB RETURN LAYOUT AND LONG SECTIONS PLAN SHEET 02	Rev 5
0306-25_C11	CUL DE SAC LAYOUT AND LONG SECTION PLAN	Rev 5
0306-25_C12	CONSTRUCTION DETAILS PLAN	Rev 5
0306-25_C13	STORMWATER LAYOUT PLAN	Rev 5
0306-25_C14	STORMWATER LONG SECTION PLAN SHEET 01	Rev 5
0306-25_C15	STORMWATER LONG SECTION PLAN SHEET 02	Rev 5
0306-25_C16	STORMWATER LONG SECTION PLAN SHEET 03	Rev 5
0306-25_C17	STORMWATER LONG SECTION PLAN SHEET 04	Rev 5
0306-25_C18	SEWER RETICULATION LAYOUT PLAN	Rev 5
0306-25_C19	SEWER RETICULATION LONG SECTIONS PLAN SHEET 01	Rev 5
0306-25_C20	SEWER RETICULATION LONG SECTIONS PLAN SHEET 02	Rev 5
0306-25_C21	SEWER RETICULATION LONG SECTIONS PLAN SHEET 03	Rev 5
0306-25_C22	SEWER RETICULATION LONG SECTIONS PLAN SHEET 04	Rev 5
0306-25_C23	SEWER RETICULATION LONG SECTIONS PLAN SHEET 05	Rev 5
0306-25_C24	SEWER CONNECTION LONG SECTION PLAN	Rev 5
0306-25_C25	WATER RETICULATION LAYOUT PLAN	Rev 5
0306-25_C26	WATER RETICULATION CUL DE SAC LAYOUT PLAN	Rev 5
0306-25_C27	DRIVEWAY 01 LAYOUT, LONG AND CROSS SECTIONS PLAN	Rev 5
0306-25_C28	LOT BATTER SLOPE STABILITY LAYOUT PLAN	Rev 5
0306-25_C29	LOT BATTER SLOPE STABILITY DETAILS PLAN SHEET 01	Rev 5
0306-25_C30	LOT BATTER SLOPE STABILITY DETAILS PLAN SHEET 02	Rev 5

DO NOT SCALE	Original Size A3	Scale 1:2000	Designed CHRIS MARTIN
FOR CONSTRUCTION	Drawn CJG	Accred. No. CC4109V	
	Approved CHRIS MARTIN	Date SEPTEMBER 2023	

4	DRAWING UPDATED WITH EXTRA LOT GRADING	CJG	24/02/25
3	DRAWING UPDATED WITH MINOR STORMWATER CHANGES	CJG	7/10/24
2	DRAWING UPDATED WITH INTERNAL COMMENTS	CJG	2/07/24
1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	CJG	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25
No	Revision	Drawn	Date

Client	ANN-TAS
Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	COVER SHEET AND LOCALITY PLAN
Drawing No:	0306-25_G01
Revision:	5

TYPICAL LEGEND:

	PROPOSED LOT BOUNDARIES
	EXISTING LOT BOUNDARIES
	PROPOSED EASEMENTS
	PROPOSED BUILDING ENVELOPES
	PROPOSED PAVEMENT SAW CUT EDGE
	PROPOSED CONCRETE DRIVEWAY/FOOTPATHS
	PROPOSED CONTOURS
	EXISTING CONTOURS
	EXISTING FENCE LINE
	EXISTING GATE
	EXISTING TOP OF BANK
	EXISTING TOE OF BANK
	PROPOSED STORMWATER DRAINAGE LINE
	PROPOSED STORMWATER PIT
	PROPOSED STORMWATER MANHOLE
	EXISTING STORMWATER DRAINAGE LINE
	EXISTING STORMWATER MANHOLE
	PROPOSED WATER MAIN
	PROPOSED WATER METER
	PROPOSED WATER STOP VALVE
	EXISTING WATER MAIN
	PROPOSED SEWER MAIN
	PROPOSED SEWER MANHOLE
	EXISTING SEWER MAIN
	EXISTING SEWER MANHOLE
	EXISTING ELECTRICAL LINE
	EXISTING ELECTRICAL POLE
	EXISTING TREES
	EXISTING TREES TO BE REMOVED

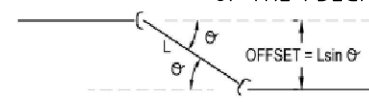
STANDARD ROAD, DRAINAGE SEWER & WATER DOCUMENTS

- DOCUMENTS AS LISTED IN TASWATER SUPPLEMENTS TO
- WATER SUPPLY CODE OF AUSTRALIA (WSA 03-2011-3.1 MRWA V2.0 ISSUE NUMBER PUBLIC 05)
 - SEWERAGE SUPPLY CODE OF AUSTRALIA (WSA 02-2014-3.1 MRWA GRAVITY CODE OF AUSTRALIA (MRWA EDITION) VERSION 2.0)

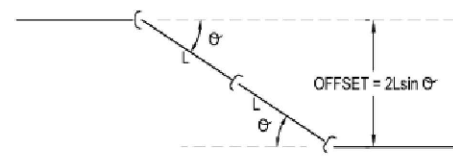
DOCUMENTS AS LISTED FOR ROAD AND STORMWATER DRAWINGS (TSD)

- TASMANIAN STANDARD DRAWINGS (TSD)-v3
- TASMANIAN SUBDIVISION GUIDELINES (2020)
- TASMANIAN MUNICIPAL STANDARD SPECIFICATIONS (MARCH 2020)

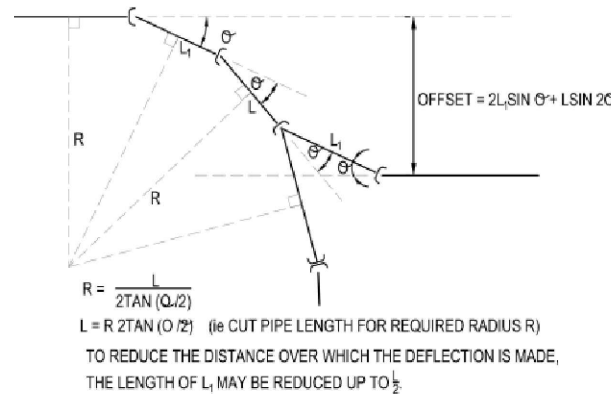
NOTE - FOLLOWING DEFLECTION VALUES MUST BE AMENDED FOR TASWATER TO 0.75% OF THE 1 DEGREE MANUFACTURERS DEFLECTION



DETAIL A: 1 PIPE DEFLECTION OFFSET



DETAIL B: 2 PIPE DEFLECTION OFFSET



DETAIL C: 3 PIPE DEFLECTION OFFSET or CURVED MAIN

TABLE 3: DEFLECTIONS

	PIPE / JOINT TYPE			COMMENTS
	TYPICAL RETIC PVC PIPE	TYPICAL RETIC DI PIPE	TYPICAL PVC PIPE + DOUBLE SOC CONNECTOR	
TYPICAL FULL LENGTH FOR L (m)	6	5.5	6 (PVC)	
TYPICAL MINIMUM LENGTH FOR L (m)	3	2.25	3 (PVC)	
TYPICAL θ MAX (degrees)	1	3.5	7	VARIES DEPENDING ON MANUFACTURER
MAX 1 PIPE MAX OFFSET (mm) ¹	100	340	730	HORIZONTAL OR VERTICAL DEFLECTION
MAX 2 PIPE MAX OFFSET (mm) ¹	210	670	1460	2 or 3 PIPE HORIZONTAL DEFLECTION USUALLY NOT PREFERRED ALONG STRAIGHT ROADS DUE TO DISRUPTION OF OTHER ASSETS
MAX 3 PIPE MAX OFFSET (mm) ¹	420	1340	2910	
TYPICAL MIN R (m)	344	90	49	ASSUMING USE OF FULL PIPE LENGTHS
VERTICAL BLOCKING REQUIREMENTS	NO THRUST BLOCK REQUIRED	THRUST CALCULATION REQUIRED ²	THRUST CONTROL REQUIRED ³	VERTICAL BLOCKS REQUIRE WATER AGENCY APPROVAL ⁵
HORIZONTAL BLOCKING REQUIREMENTS	NO THRUST BLOCK REQUIRED	THRUST CALCULATION REQUIRED ²	THRUST BLOCK REQUIRED ⁴	

NOTES ON TABLE 3:

- ALL FIGURES HAVE BEEN CALCULATED ASSUMING FULL PIPE LENGTHS
- MAX OFFSETS CALCULATED USING FULL LENGTH PIPES.
 - THRUST CONTROL REQUIREMENTS NEED TO BE CALCULATED AS PER THE METHOD DESCRIBED IN MRWA-W-204.
 - BLOCK AS PER TABLE 1 OF MRWA-W-205A USING 1/2 OF THE MASS VOLUME OF THE 11.25° BEND.
 - BLOCK AS PER 6 DEG BENDS OF MRWA-W-204.
 - FLANGED OR WELDED BENDS PREFERRED TO VERTICAL BLOCKS.

TO REDUCE EXCAVATION DEPTHS AND / OR LIMIT DISRUPTION TO HORIZONTAL ALIGNMENTS, THE FOLLOWING ARRANGEMENTS ARE GENERALLY PREFERRED:

- FIGURES IN CIRCLES INDICATED THAT THIS OFFSET IS NORMALLY BETTER ACHIEVED USING 22 1/2° BENDS (FOR 300 TO 600 OFFSETS).
- FIGURES IN DIAMONDS INDICATE THAT THIS OFFSET IS NORMALLY BETTER ACHIEVED USING 45° BENDS (FOR > 600 OFFSETS).

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Scale	N.T.S.	Designed	CHRIS MARTIN
Drawn	CJG	Accred. No.	CC4109V
Approved	CHRIS MARTIN	Date	SEPTEMBER 2023

4	DRAWING UPDATED WITH EXTRA LOT GRADING	CJG	24/02/25
3	DRAWING UPDATED WITH MINOR STORMWATER CHANGES	CJG	7/10/24
2	DRAWING UPDATED WITH INTERNAL COMMENTS	CJG	2/07/24
1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	CJG	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25
No	Revision	Drawn	Date

Client	ANN-TAS
Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	GENERAL DETAILS PLAN
Drawing No:	0306-25_G02
Revision:	5

NOTES (GENERAL, EARTHWORKS & LANDSCAPING)

GENERAL

1. T.W. - TAS WATER
2. ALL SETOUT BY A LICENSED SURVEYOR.
3. LEVEL DATUM - AHD
4. PRIOR TO ANY EXCAVATION, CONTRACTOR IS TO LOCATE ALL EXISTING UNDERGROUND SERVICES
5. ALL EXISTING MANHOLES AND SERVICE PITS / LIDS AFFECTED BY THE WORKS TO BE RAISED TO SUIT DESIGN LEVELS. WORK TO BE CARRIED OUT BY THE RELEVANT AUTHORITY AT DEVELOPERS EXPENSE.
6. CONTRACTOR TO ARRANGE PROVISION OF 'AS CONSTRUCTED' INFORMATION. SURVEY CO-ORDINATES TO BE RECORDED IN GDA94 & AHD AND PROVIDED IN ELECTRONIC AND HARD COPY FORMAT IN ACCORDANCE WITH THE REQUIREMENTS OF COUNCIL & T.W.
7. SERVICE OFFSETS AS PER TAS STANDARD DRAWINGS.
8. ALL ROAD AND STORMWATER WORKS IN ACCORDANCE WITH TAS STANDARD DRAWINGS.

EARTHWORKS

9. STRIP TOPSOIL FROM ENTIRE AREA OF ROADWAYS AND EXTERNAL AREAS THAT ARE TO BE CUT OR FILLED. TOPSOIL SHALL BE STOCKPILED ON SITE WHERE DIRECTED.
10. REDUNDANT OPEN DRAINS TO BE FILLED TO SUIT SURROUNDING NATURAL SURFACE. CONTRACTOR TO PROVIDE REPORT OF SITE CLASSIFICATION AND CERTIFICATION OF LEVEL 2 COMPACTION TO AS 3798.
11. AREAS OF FILL GREATER THAN 300MM IN DEPTH SHALL BE FILLED AND COMPACTED IN ACCORDANCE WITH AS3798.
12. NO FILLING OVER SERVICE MAINS IS PERMITTED. ALL FILLING TO BE DONE PRIOR TO PIPE TRENCHING AND INSTALLATION.

LANDSCAPING

13. ALL DISTURBED SURFACES SHALL BE REVEGETATED AND STABILISED WITH STABILISATION GRASS MIX.
14. GOOD QUALITY TOPSOIL TO BE USED ON NATURE STRIP AREAS. GRASS SEED TYPES TO BE ADVISED BY COUNCIL
15. ADVISORY NOTE - LANDSCAPING DESIGN, INCLUDING STREET FURNITURE AND BOLLARDS TO BE CONFIRMED.

NOTES (ROADWORKS & DRAINAGE)

ROADWORKS

1. SERVICE TRENCHES UNDER TRAFFICKED AREAS SHALL BE BACKFILLED WITH COMPACTED PAVEMENT SUB BASE MATERIAL.
2. ALL DRIVEWAYS TO BE TYPE KCS AS PER TASMANIAN STANDARD DRAWING TSD-R14.
3. KCM MODIFIED KERB TO BE USED FROM PRAM RAMPS AROUND CUL-DE-SAC HEADS, FOOTPATH TO BE DRIVEWAY STANDARD IN THESE AREAS.

STORMWATER

1. FULL HEIGHT BENCHING TO BE USED IN ACCORDANCE WITH TSD SW03.
2. PROVIDE ELECTROMAGNETIC, METAL IMPREGNATED TAPE IN ALL NON METALLIC PIPE TRENCHES. ENSURE TAPE TERMINATIONS ARE ACCESSIBLE.
3. TOPS OF MANHOLES SHALL BE FINISHED TO MATCH ADJACENT FINISHED SURFACE LEVELS AND GRADES.
4. PIPE BEDDING AND HAUNCHING - AS PER TSD-G01.
5. 20mm CRUSHED ROCK BEDDING TO BE USED IN STORMWATER TRENCHES WITH SUB-SOIL DRAINS.
6. NEW PIPEWORK SHALL BE:
 - AS SPECIFIED ON STORMWATER LONG SECTIONS
 - PROPERTY CONNECTIONS: 150mm ϕ P.V.C. (SN8) AS PER TSD-SW25.
7. ALL PIPES GREATER THAN 100mm ϕ ARE TO BE RUBBER RING JOINTED AND LAID ON A MINIMUM OF 75mm SAND BEDDING EXTENDING TO 150mm ABOVE THE TOP OF PIPE.
8. ALL STORMWATER LOT CONNECTIONS SHALL BE BROUGHT NOMINALLY 100mm ABOVE SURROUNDING SURFACE AND SEALED WITH A GLUED END CAP. CAPS SHALL BE PAINTED GREEN. LOCATIONS OF CONNECTION POINTS TO BE MARKED WITH STAR PICKETS.
9. PROVIDE ELECTROMAGNETIC, METAL IMPREGNATED TAPE IN ALL NON CONDUCTIVE PIPE TRENCHES. ENSURE TAPE TERMINATIONS ARE ACCESSIBLE.
10. STORM WATER MANHOLE BENCHING IN ACCORDANCE WITH TSD-SW03.
11. SIDE ENTRY PITS TO TSD-SW10 - TYPE 4 UNLESS UNO.
12. MANHOLE, LIDS AND SURROUNDS:
 - IN THE ROAD RESERVATION AND TRAFFICKED AREAS - CLASS D - 'GATIC' HEAVY DUTY OR APPROVED EQUIVALENT.
 - NON TRAFFICKED AREAS - 'GATIC' LIGHT DUTY OR APPROVED EQUIVALENT.

NOTES (SEWER & WATER)

SEWER

1. ALL SEWER SUPPLY CONSTRUCTION TO:
 - SEWERAGE SUPPLY CODE OF AUSTRALIA (WSA 02 2014 3.1 MRWA) - PART 3: CONSTRUCTION AS AMENDED BY THE TASWATER SUPPLEMENT
2. NEW PIPEWORK SHALL BE:
 - AS SPECIFIED ON SEWER LONG SECTIONS
3. PROPERTY CONNECTIONS: 100 DIA. P.V.C. (SN10) SCJ AND IN ACCORDANCE WITH TYPE 4 ... MRWA-S-304 INCLUDING A SURFACE AS SHOWN.

NOTE - INSPECTION OPENINGS SHALL BE 0.5m INSIDE THE PROPERTY BOUNDARY NOT OUTSIDE THE BOUNDARY.

 - TASWATER APPROVED PRODUCTS ARE CONTAINED ON THE CITY WEST WATER WEBSITE [HTTP://WWW.MRWA.COM.AU/PAGES/PRODUCTS.ASPX](http://www.mrwa.com.au/pages/products.aspx)
 - INSPECTED PRIOR TO BACKFILL
4. PROVIDE ELECTROMAGNETIC, METAL IMPREGNATED TAPE IN ALL NON METALLIC PIPE TRENCHES. ENSURE TAPE TERMINATIONS ARE ACCESSIBLE.
5. ALL LIVE CONNECTIONS BY TW AT DEVELOPERS COST.

WATER

1. ALL WATER SUPPLY CONSTRUCTION TO:
 - WATER SUPPLY CODE OF AUSTRALIA (WSA 03-2011-3.1 VERSION MRWA EDITION V2.0) - PART 2: CONSTRUCTION AS AMENDED BY THE THE TASWATER SUPPLEMENT.
 - TASWATER'S STANDARD DRAWINGS TWS-W-0002 SERIES
 - WATER METERING POLICY/METERING GUIDELINES
 - BOUNDARY BACKFLOW CONTAINMENT REQUIREMENTS AND AS3500.1:2018.
2. NEW PIPEWORK SHALL BE:
 - SERIES 2 OPVC PN16 - SIZE AS INDICATED ON THE DRAWINGS
 - 63mm O.D. PE100 PN16 (SDR11)
 - ALL FITTINGS SHALL BE PN16 RATED
 - TASWATER APPROVED PRODUCTS ARE CONTAINED ON THE CITY WEST WATER WEBSITE [HTTP://WWW.MRWA.COM.AU/PAGES/PRODUCTS.ASPX](http://www.mrwa.com.au/pages/products.aspx)
 - INSPECTED PRIOR TO BACKFILL
 - BACKFILLED UNDER ROADWAYS IN COMPACTED SUBBASE 1 GRAVEL AT OMC COMPACTED IN 150mm LAYERS.
3. PROVIDE THRUST BLOCKS AT ALL BENDS AND TEES.
4. ALL LIVE CONNECTIONS BY TW AT DEVELOPERS COST.
5. ALL STOP VALVES TO BE CLOCKWISE CLOSING, EXCEPT FOR DEVONPORT CITY COUNCIL WHICH REQUIRE COUNTER CLOCKWISE CLOSING.
6. PROVIDE C.I. VALVE BOX COVERS TO ALL VALVES AND FIRE PLUG.
7. STOP VALVES AND FIRE PLUGS SHALL BE MARKED IN ACCORDANCE WITH THE IPWEA FIRE HYDRANT GUIDELINES: TASMANIA DIVISION.
8. FIRE PLUGS AND VALVE POSITIONS TO BE MARKED IN ACCORDANCE WITH THE WSA CODE AND TASWATER SUPPLEMENT.
9. PROVIDE ELECTROMAGNETIC, METAL IMPREGNATED TAPE IN ALL NON METALLIC PIPE TRENCHES. ENSURE TAPE TERMINATIONS ARE ACCESSIBLE.
10. MINIMUM COVER:- UNDER ROADWAYS (EXCLUDING MAJOR ROADS) FOR PIPES UP TO AND INCLUDING 225 DIA 600mm. COVER IN RESIDENTIAL PIPELINE EASEMENTS CAN REDUCE TO 450mm.
11. ALL PROPERTY CONNECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH TASWATER STANDARD DRAWING TWS-W-0002 SERIES. THEY SHALL BE DN25(I.D.20) HDPE (PE100) SDR 11 PN16 PIPE FOR LOTS LESS THAN 700m² AND DN32 (I.D.25) FOR LOTS LARGER THAN 700m².
12. ALL FITTINGS TO BE F.B.E.
13. FIRE PLUGS TO HAVE 100mm RISERS WITH SPRING TYPE PLUGS.
14. TASWATER TO WITNESS PRESSURE TEST TO 1200KPa PRIOR TO BACKFILL AT JOINTS.
15. MAIN TO BE DISINFECTED PRIOR TO CONNECTION TO THE RETICULATION NETWORK. REFER TO WSA CODE FOR DETAILS.
16. PLACEMENT OF WATER MAINS IN FILL REQUIRES THE CONTRACTOR TO PROVIDE DOCUMENTARY EVIDENCE INCLUDING:-
 - 16.1. THE COMPOSITION OF FILL MATERIAL, VERIFYING THAT IT CONTAINS NO ORGANIC OR OTHER MATERIALS THAT DECOMPOSE OR OTHERWISE LEAD TO LONG TERM SETTLEMENT
 - 16.2. THE PLACED LAYER THICKNESS
 - 16.3. THE COMPACTION METHOD USED
 - 16.4. THE DEPTH BELOW THE SURFACE OF EACH COMPACTED LAYER AT WHICH EACH FIELD DENSITY WAS MEASURED.
 - 16.5. THE FIELD DENSITY CALCULATION SHEETS AND RESULTS FOR ALL OF THE FILL BELOW THE INVERT OF THE PROPOSED WATER MAIN, VERIFYING THAT IT HAS AN IN-SITU DENSITY OF NOT LESS THAN 95% OF ITS STANDARD MAXIMUM DRY DENSITY (AS1289.5.1.1).

NOTES FOR SURVEYOR

- FOR ALL SEWER SERVICES THAT ARE NOT DEEMED TO CONTROL THE LOT THE PLAN OF SUBDIVISION COUNCIL ENDORSEMENT PAGE IS TO NOTE, PURSUANT TO SECTION 83 OF THE LOCAL GOVERNMENT (BUILDING AND MISCELLANEOUS PROVISIONS) ACT 1993, THAT TASWATER CANNOT GUARANTEE CUSTOMERS SANITARY DRAINS WILL BE ABLE TO DISCHARGE VIA GRAVITY INTO TASWATER'S SEWERAGE SYSTEM.
- TASWATER EASEMENTS SHALL BE CREATED IN ACCORDANCE WITH TASWATER'S PIPELINE AND SERVICES EASEMENT DEFINITION - SEE TASWATER WEBSITE [HTTP://WWW.TASWATER.COM.AU/ARTICLEDOCUMENTS/489/PIPELINE%20AND%20SERVICES%20EASEMENT%20PRECEDENT%20FOR%20USE%20WITH%20SCHEDULE%20OF%20EASEMENTS.PDF.ASPX](http://www.taswater.com.au/article/documents/489/pipeline%20and%20services%20easement%20precedent%20for%20use%20with%20schedule%20of%20easements.pdf.aspx)
- COUNCIL STORMWATER EASEMENT TO BE PROVIDED AS PER SURVEY PLAN

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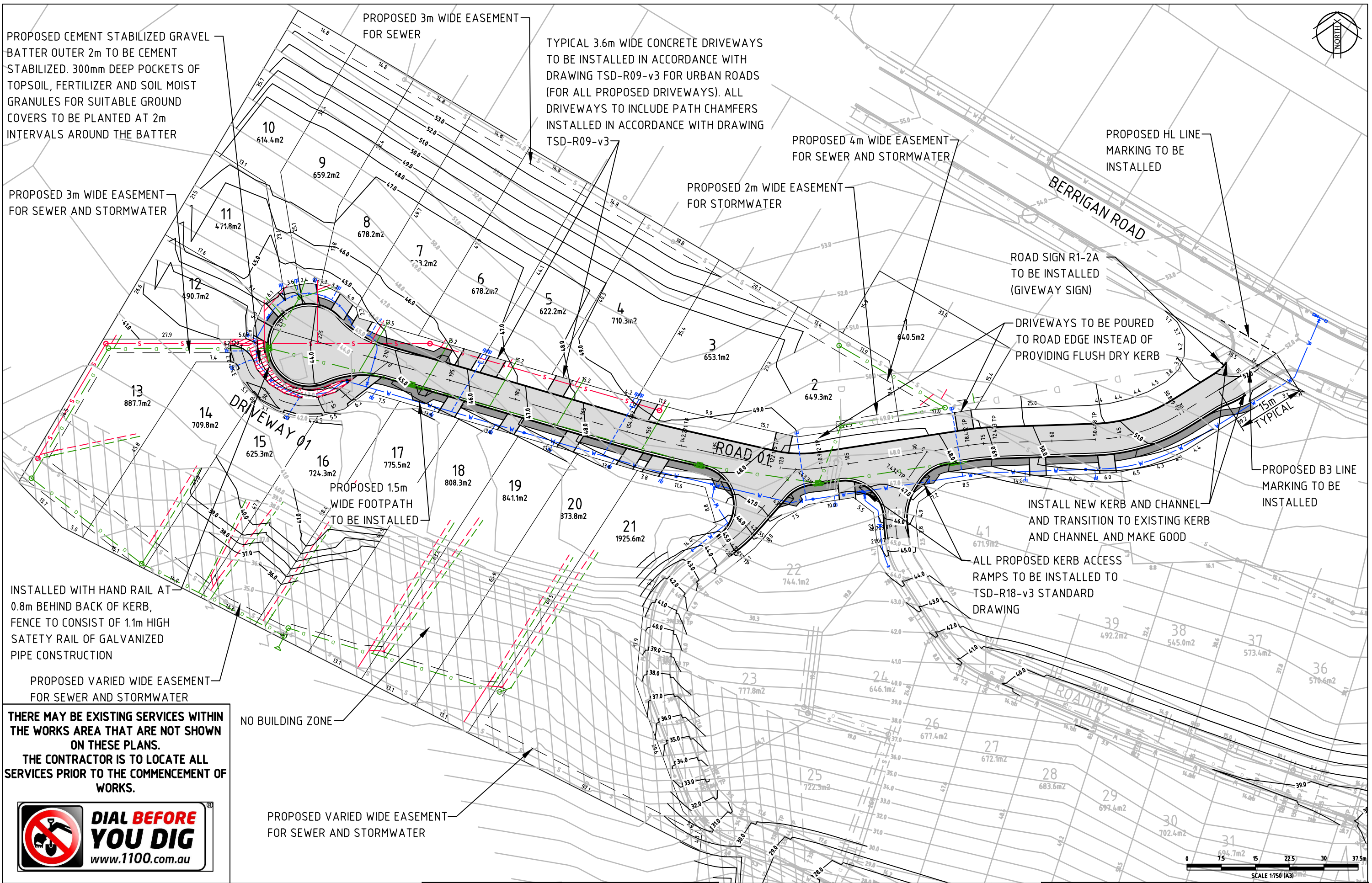
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Original Size	A3
Scale	N.T.S.
Designed	CHRIS MARTIN
Drawn	C.J.G.
Accred. No.	CC4109V
Approved	CHRIS MARTIN
Date	SEPTEMBER 2023

4	DRAWING UPDATED WITH EXTRA LOT GRADING	C.J.G.	24/02/25
3	DRAWING UPDATED WITH MINOR STORMWATER CHANGES	C.J.G.	7/10/24
2	DRAWING UPDATED WITH INTERNAL COMMENTS	C.J.G.	2/07/24
1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	C.J.G.	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	C.J.G.	24/04/25
No	Revision	Drawn	Date

Client	ANN-TAS
Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	GENERAL NOTES PLAN
Drawing No:	0306-25_G03
Revision:	5



PROPOSED CEMENT STABILIZED GRAVEL BATTER OUTER 2m TO BE CEMENT STABILIZED. 300mm DEEP POCKETS OF TOPSOIL, FERTILIZER AND SOIL MOIST GRANULES FOR SUITABLE GROUND COVERS TO BE PLANTED AT 2m INTERVALS AROUND THE BATTER

PROPOSED 3m WIDE EASEMENT FOR SEWER AND STORMWATER

TYPICAL 3.6m WIDE CONCRETE DRIVEWAYS TO BE INSTALLED IN ACCORDANCE WITH DRAWING TSD-R09-v3 FOR URBAN ROADS (FOR ALL PROPOSED DRIVEWAYS). ALL DRIVEWAYS TO INCLUDE PATH CHAMFERS INSTALLED IN ACCORDANCE WITH DRAWING TSD-R09-v3

PROPOSED 4m WIDE EASEMENT FOR SEWER AND STORMWATER

PROPOSED HL LINE MARKING TO BE INSTALLED

PROPOSED 2m WIDE EASEMENT FOR STORMWATER

ROAD SIGN R1-2A TO BE INSTALLED (GIVEWAY SIGN)

DRIVEWAYS TO BE POURED TO ROAD EDGE INSTEAD OF PROVIDING FLUSH DRY KERB

PROPOSED 1.5m WIDE FOOTPATH TO BE INSTALLED

PROPOSED B3 LINE MARKING TO BE INSTALLED

INSTALL NEW KERB AND CHANNEL AND TRANSITION TO EXISTING KERB AND CHANNEL AND MAKE GOOD

ALL PROPOSED KERB ACCESS RAMPS TO BE INSTALLED TO TSD-R18-v3 STANDARD DRAWING

INSTALLED WITH HAND RAIL AT 0.8m BEHIND BACK OF KERB, FENCE TO CONSIST OF 1.1m HIGH SATETY RAIL OF GALVANIZED PIPE CONSTRUCTION

PROPOSED VARIED WIDE EASEMENT FOR SEWER AND STORMWATER

THERE MAY BE EXISTING SERVICES WITHIN THE WORKS AREA THAT ARE NOT SHOWN ON THESE PLANS. THE CONTRACTOR IS TO LOCATE ALL SERVICES PRIOR TO THE COMMENCEMENT OF WORKS.

NO BUILDING ZONE

PROPOSED VARIED WIDE EASEMENT FOR SEWER AND STORMWATER

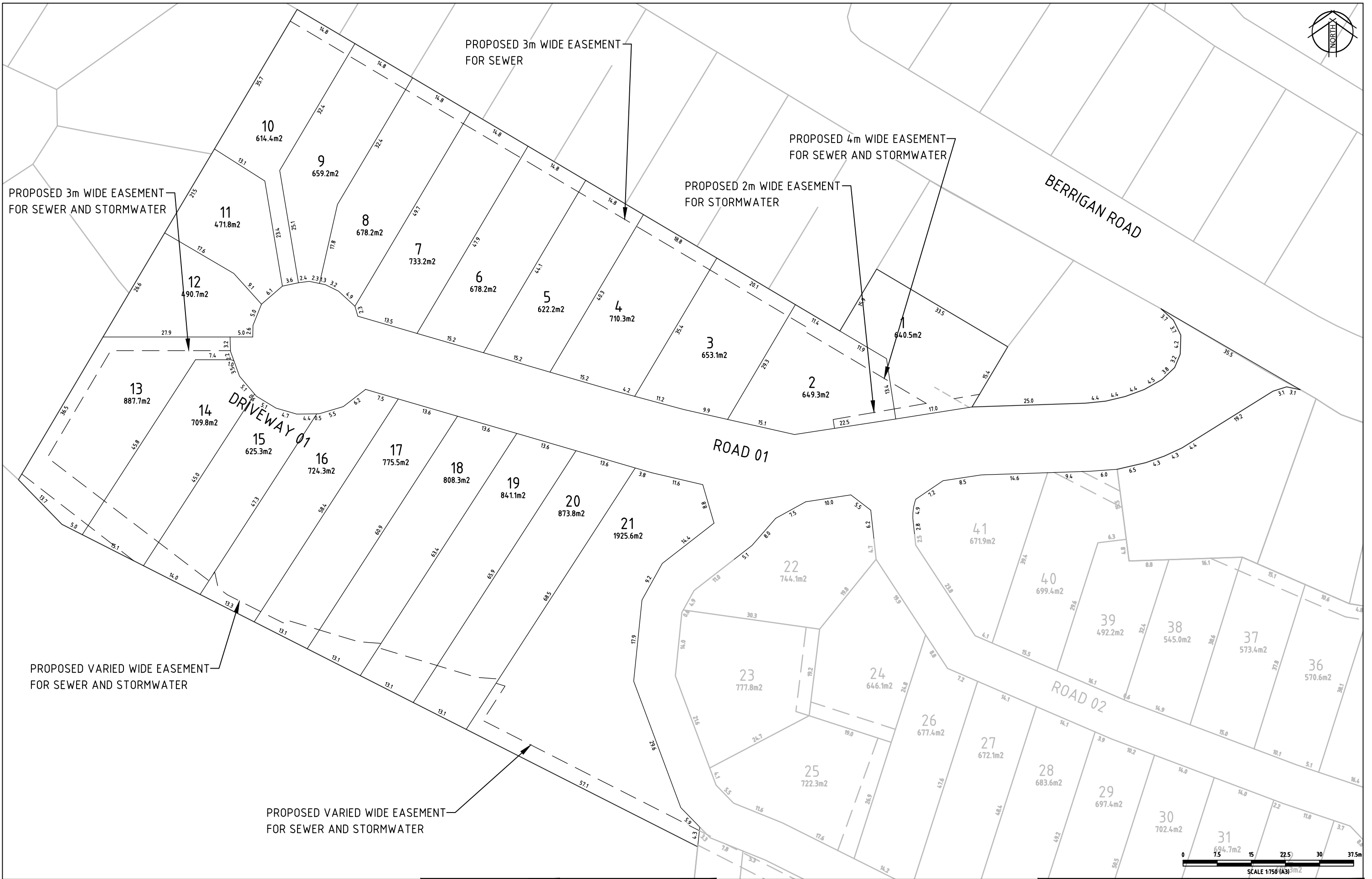
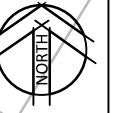


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DO NOT SCALE	Original Size A3	Scale 1:750	Designed CHRIS MARTIN
FOR CONSTRUCTION	Drawn CJG	Accred. No. CC4109V	4 DRAWING UPDATED WITH EXTRA LOT GRADING
	Approved CHRIS MARTIN	Date SEPTEMBER 2023	3 DRAWING UPDATED WITH MINOR STORMWATER CHANGES
			2 DRAWING UPDATED WITH INTERNAL COMMENTS
			1 DRAWING UPDATED WITH COMMENTS FROM TASWATER
			5 UPDATED ROCK WALL DETAILS AS PER COMMENTS

Drawn	Date	Client
CJG	24/02/25	ANN-TAS
	7/10/24	Project
	2/07/24	57A BERRIGAN ROAD, MIANETTA STAGE 01
	7/06/24	Title
	24/04/25	GENERAL ARRANGEMENT LAYOUT PLAN
		Drawing No:
		0306-25_G04
		Revision:
		5



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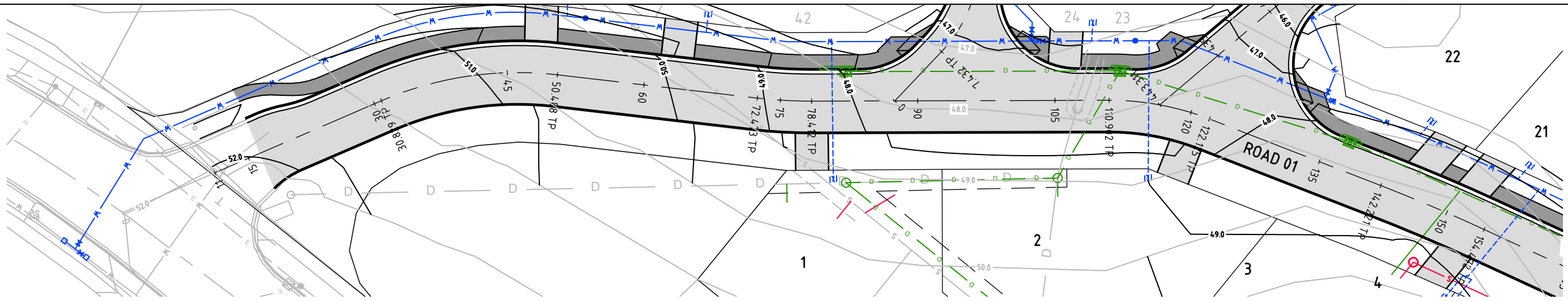
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Drawn	CJG
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Approved	CHRIS MARTIN
Date	SEPTEMBER 2023

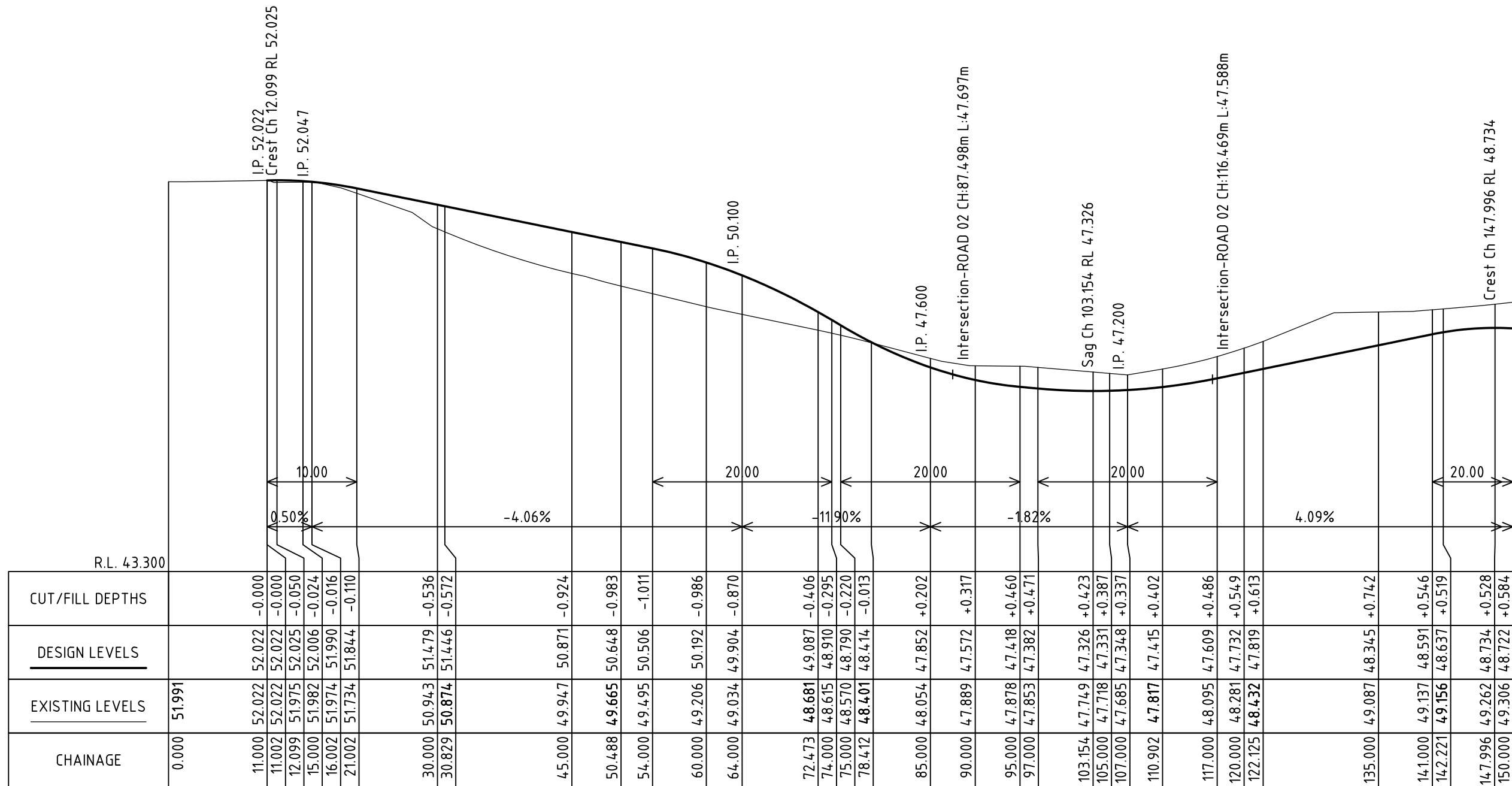
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2	DRAWING UPDATED WITH INTERNAL COMMENTS	CJG	2/07/24
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5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25
No	Revision	Drawn	Date

Client	ANN-TAS
Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	LOT LAYOUT PLAN
Drawing No:	0306-25_G05
Revision:	5

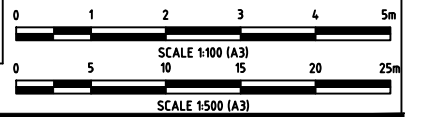




LAYOUT PLAN
SCALE 1:500



LONGITUDINAL SECTION ROAD 01 CH 0.000 TO 150.000
SCALES: HORIZ 1:500 VERT 1:100



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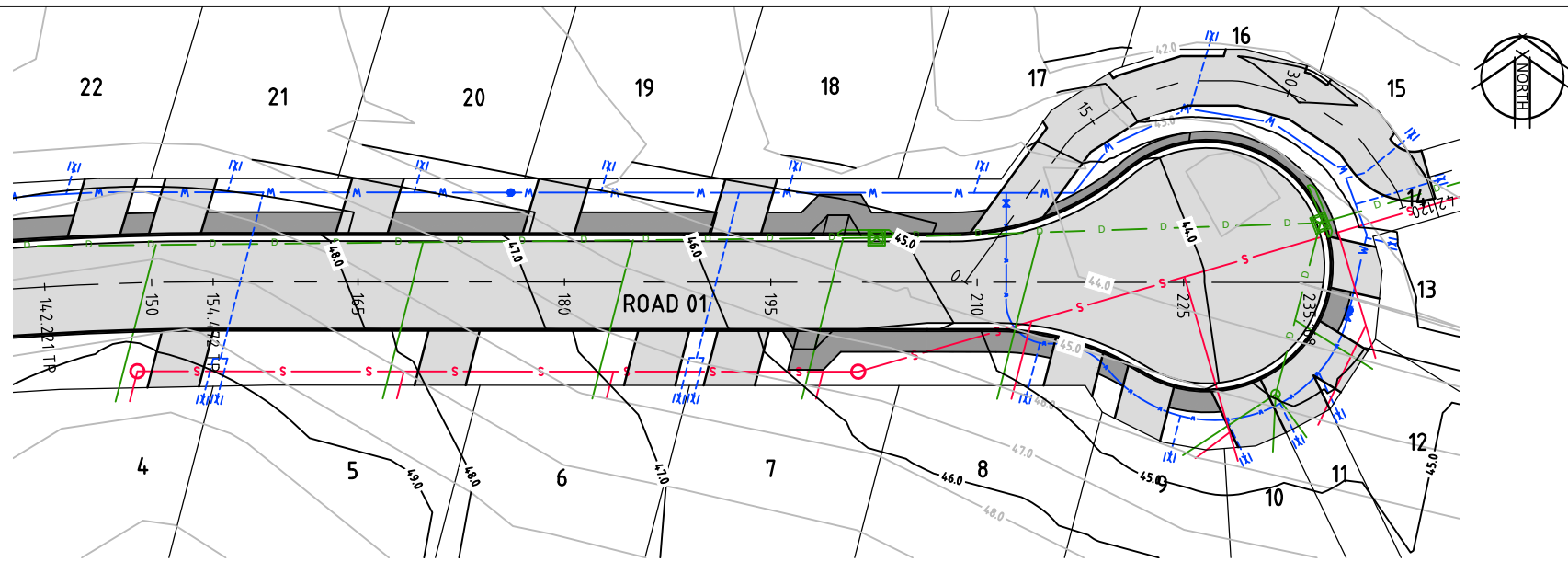
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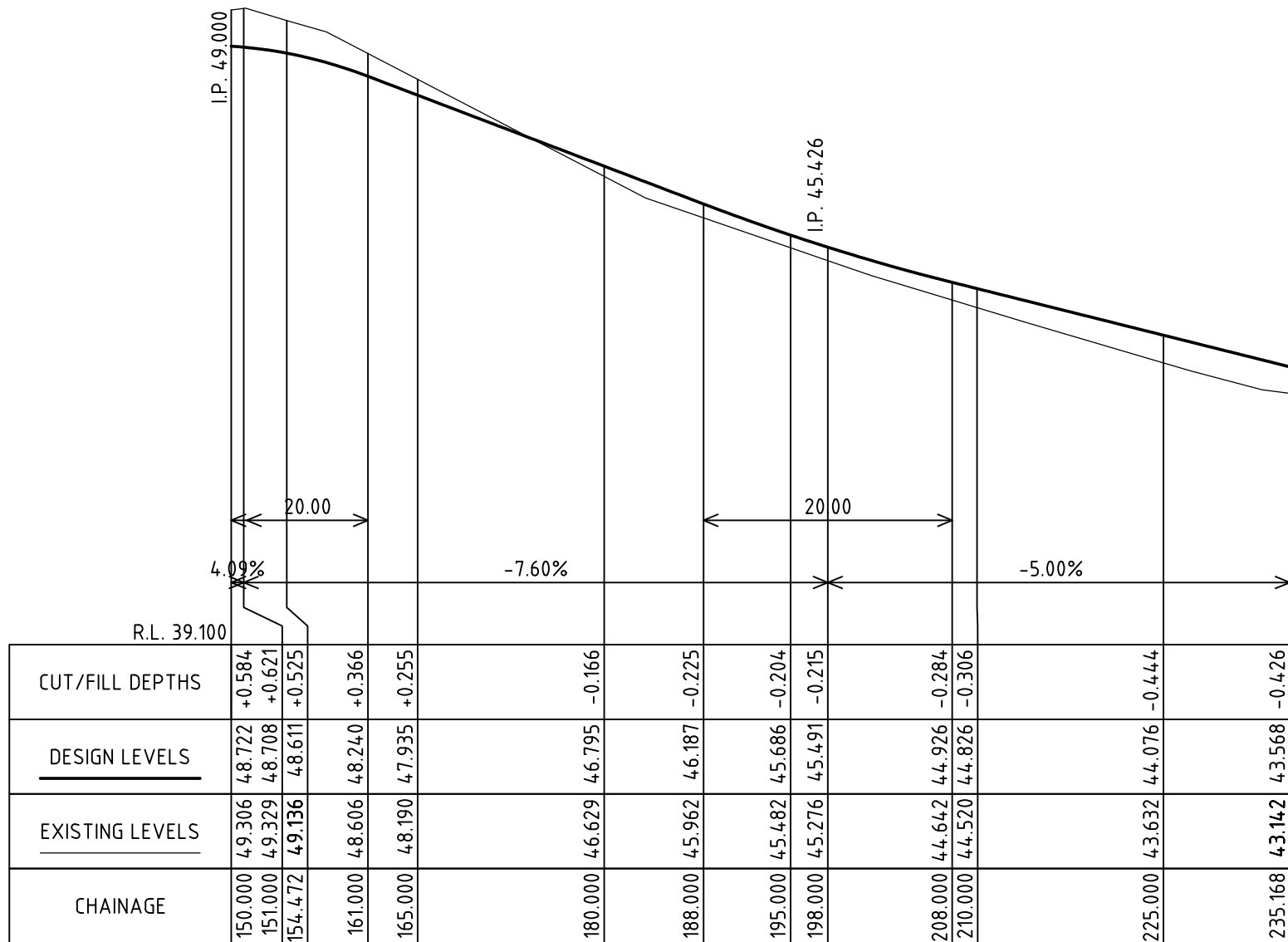
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	Drawn CJG	Accred. No. CC4109V
	Approved CHRIS MARTIN	Date SEPTEMBER 2023

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5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25
No	Revision	Drawn	Date

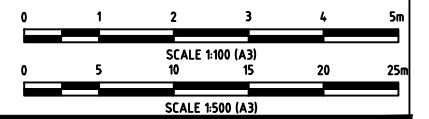
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Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	ROAD 01 LAYOUT AND LONG SECTION PLAN SHEET 01
Drawing No:	0306-25_C01
Revision:	5



LAYOUT PLAN
SCALE 1:500



LONGITUDINAL SECTION ROAD 01 CH 150.000 TO 235.168
SCALES: HORIZ 1:500 VERT 1:100



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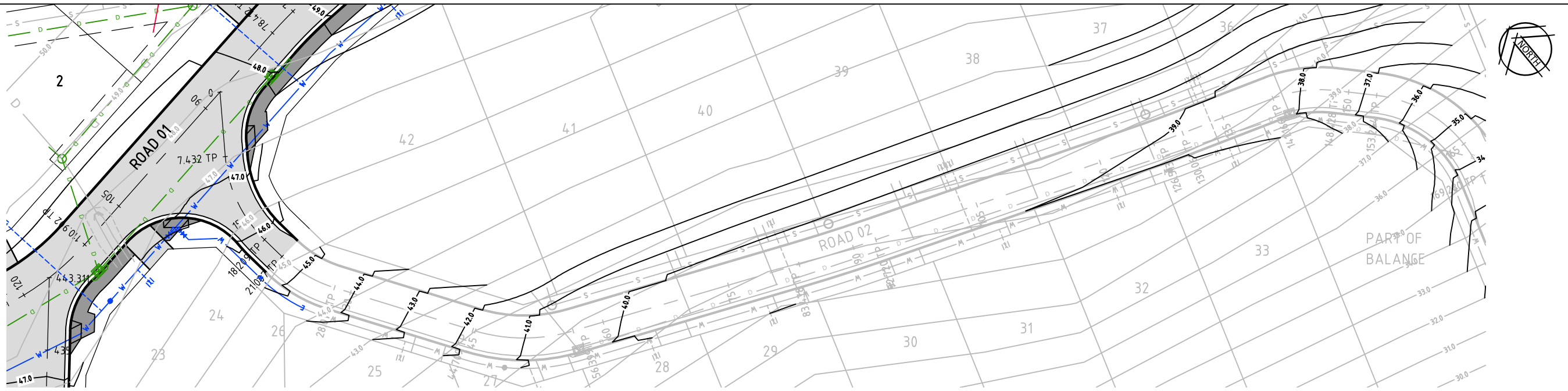
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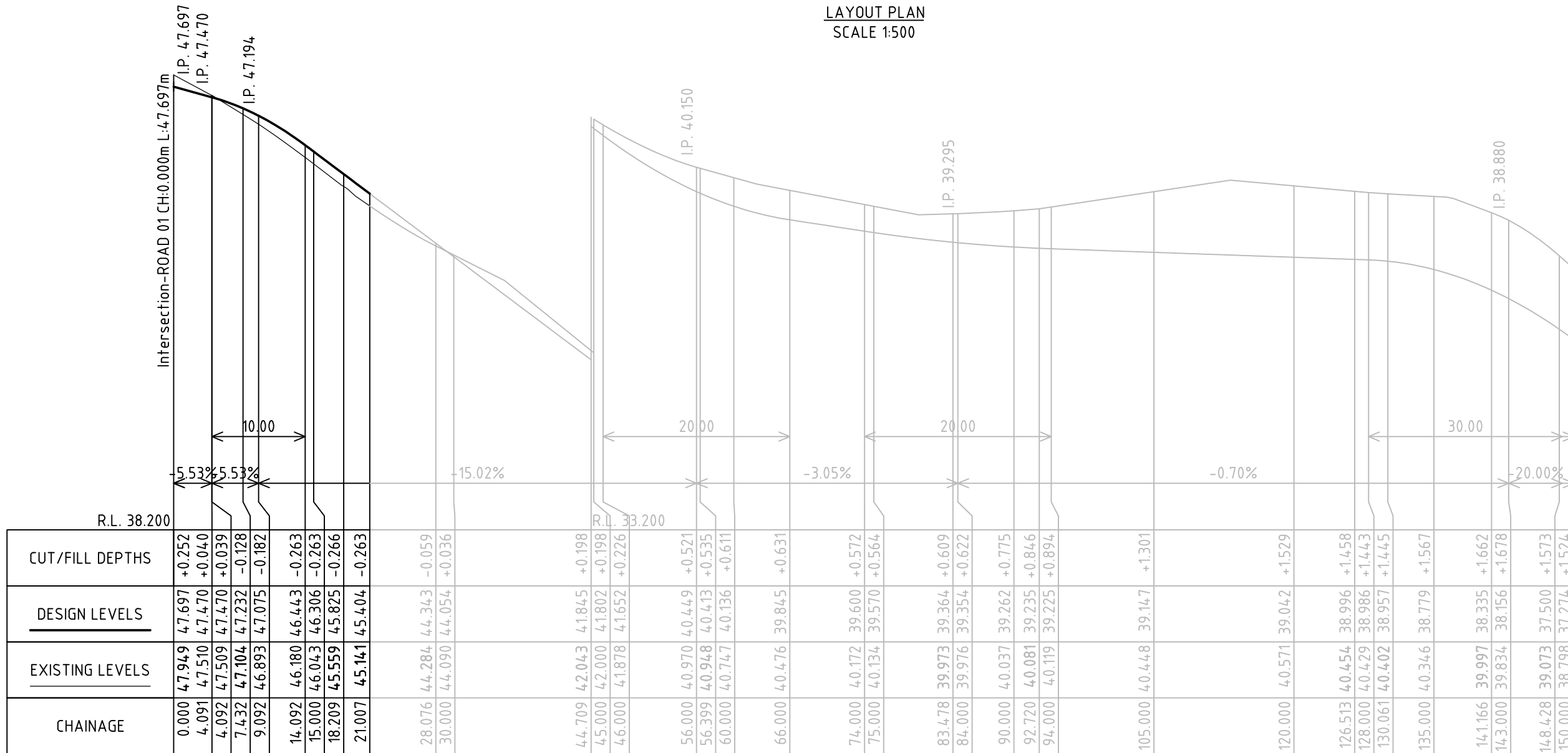
Scale	AS NOTED	Designed	CHRIS MARTIN
Drawn	CJG	Accred. No.	CC4109V
Approved	CHRIS MARTIN		
Date	SEPTEMBER 2023		

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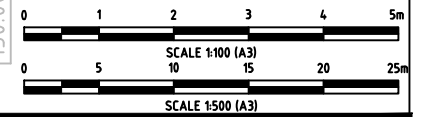
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Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	ROAD 01 LAYOUT AND LONG SECTION PLAN SHEET 02
Drawing No:	0306-25_C02
Revision:	5



LAYOUT PLAN
SCALE 1:500



LONGITUDINAL SECTION ROAD 02 CH 0.000 TO 150.000
SCALES: HORIZ 1:500 VERT 1:100



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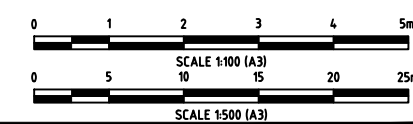
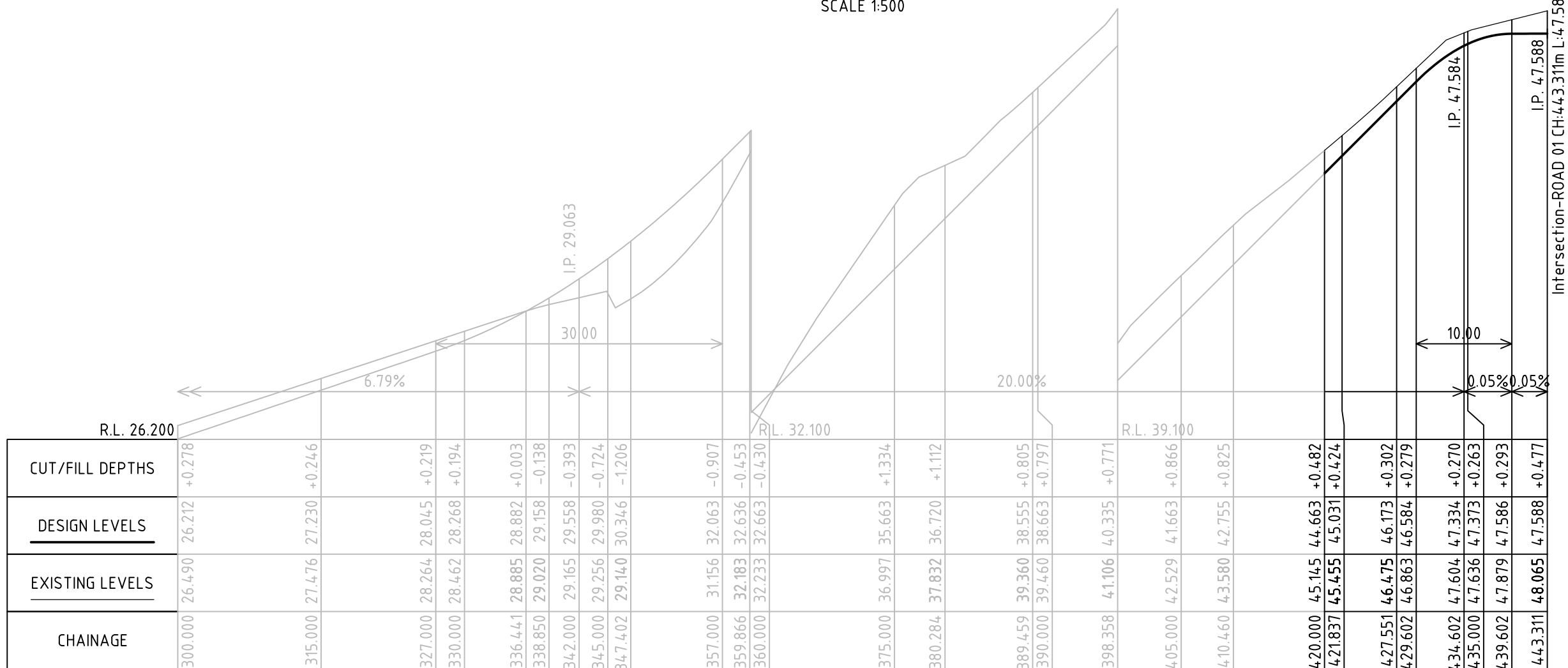
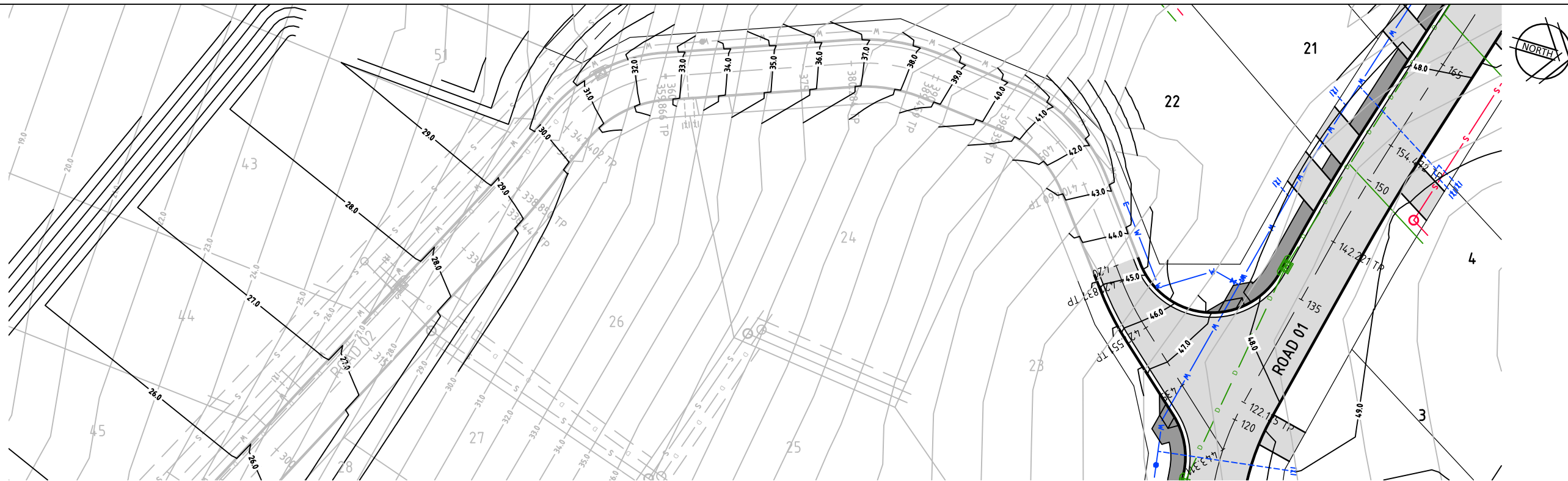
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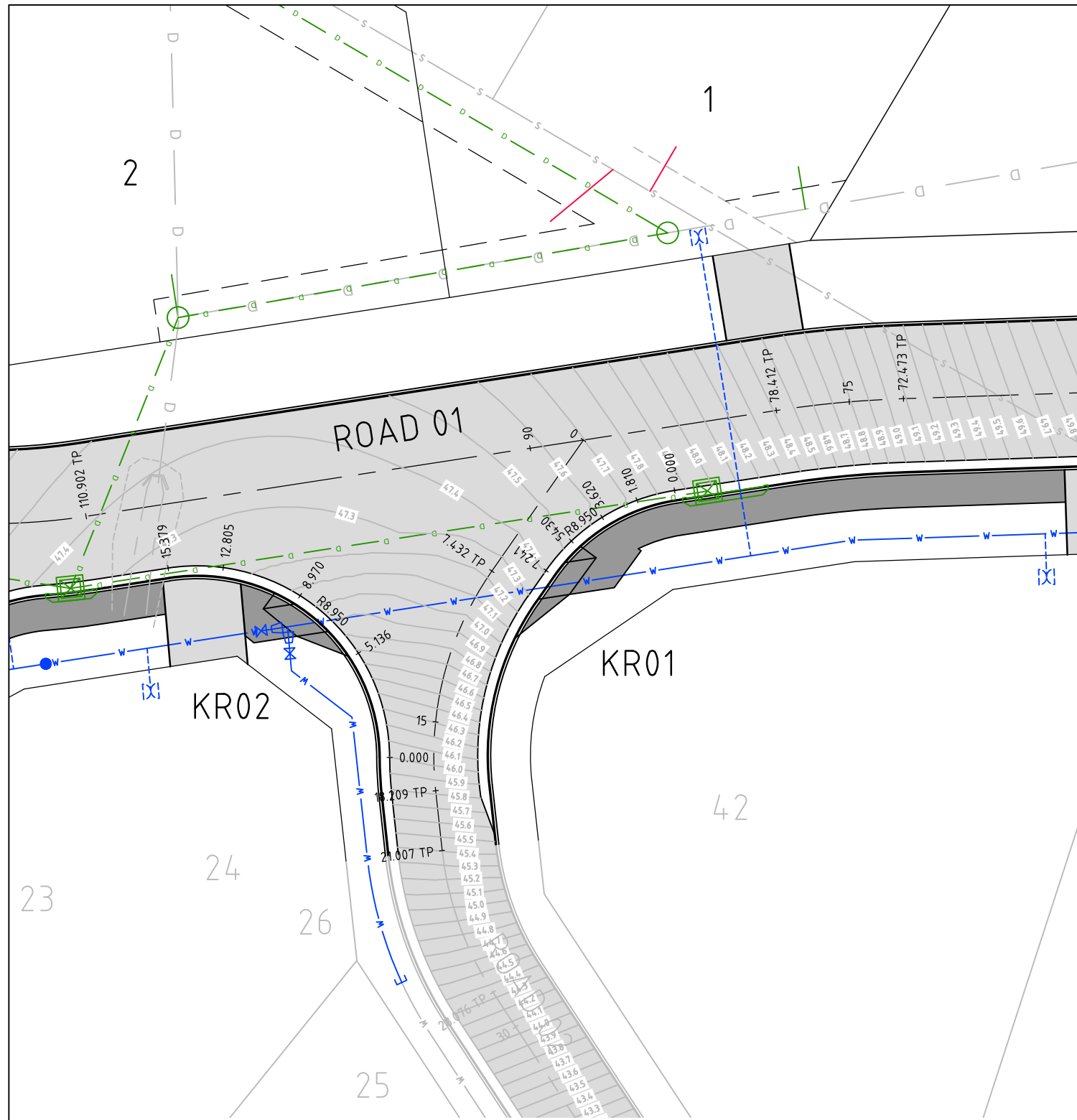
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FOR CONSTRUCTION

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	Drawn CJG	Accred. No. CC4109V
	Approved CHRIS MARTIN	Date SEPTEMBER 2023

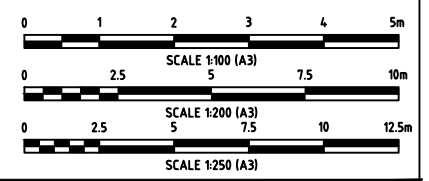
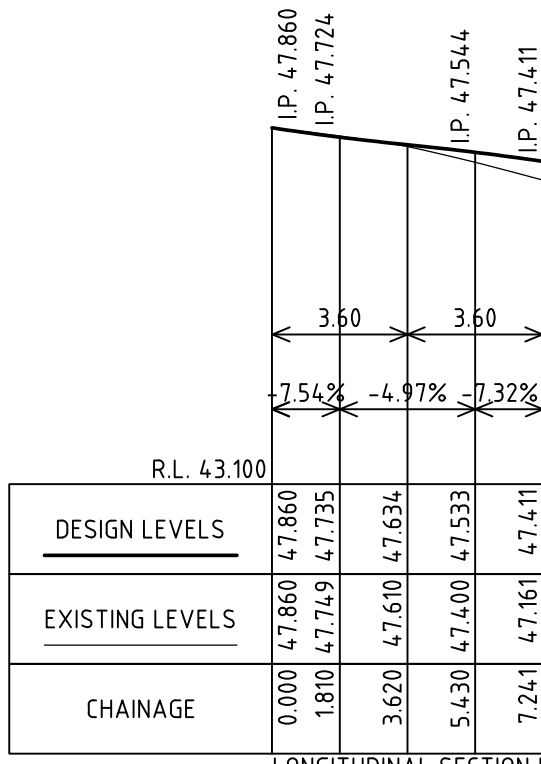
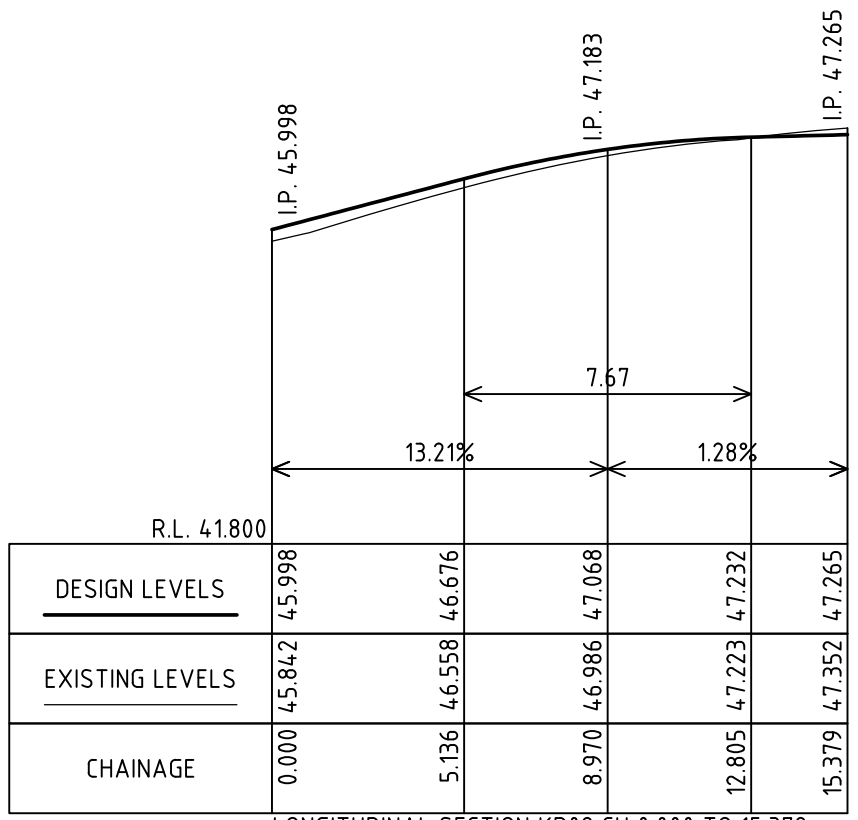
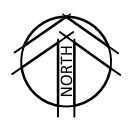
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3	DRAWING UPDATED WITH MINOR STORMWATER CHANGES	CJG	7/10/24
2	DRAWING UPDATED WITH INTERNAL COMMENTS	CJG	2/07/24
1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	CJG	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25
No	Revision	Drawn	Date

Client	ANN-TAS
Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	ROAD 02 LAYOUT AND LONG SECTION PLAN SHEET 01
Drawing No:	0306-25_C06
Revision:	5





INTERSECTION LAYOUT PLAN
SCALE 1:250



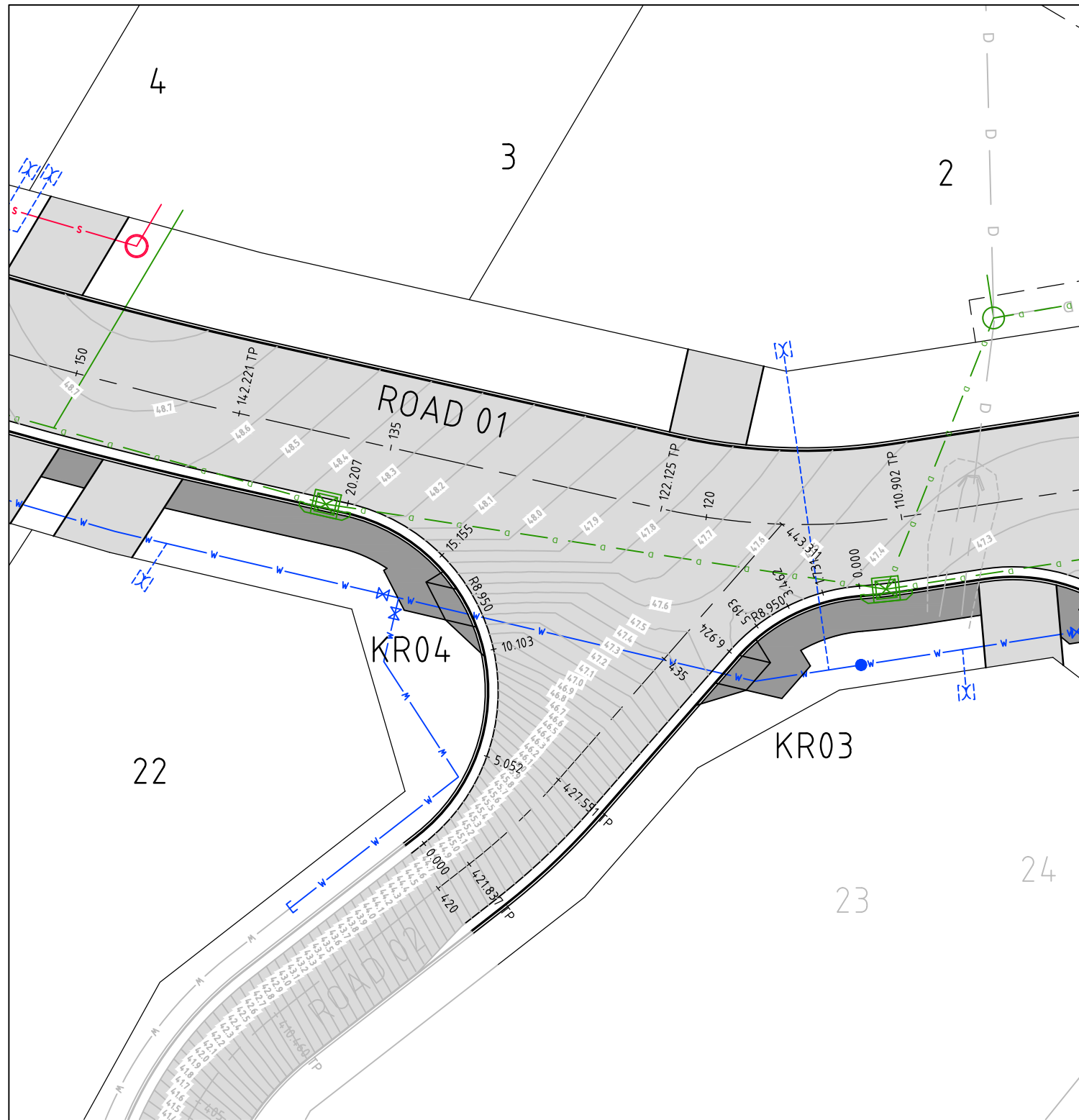
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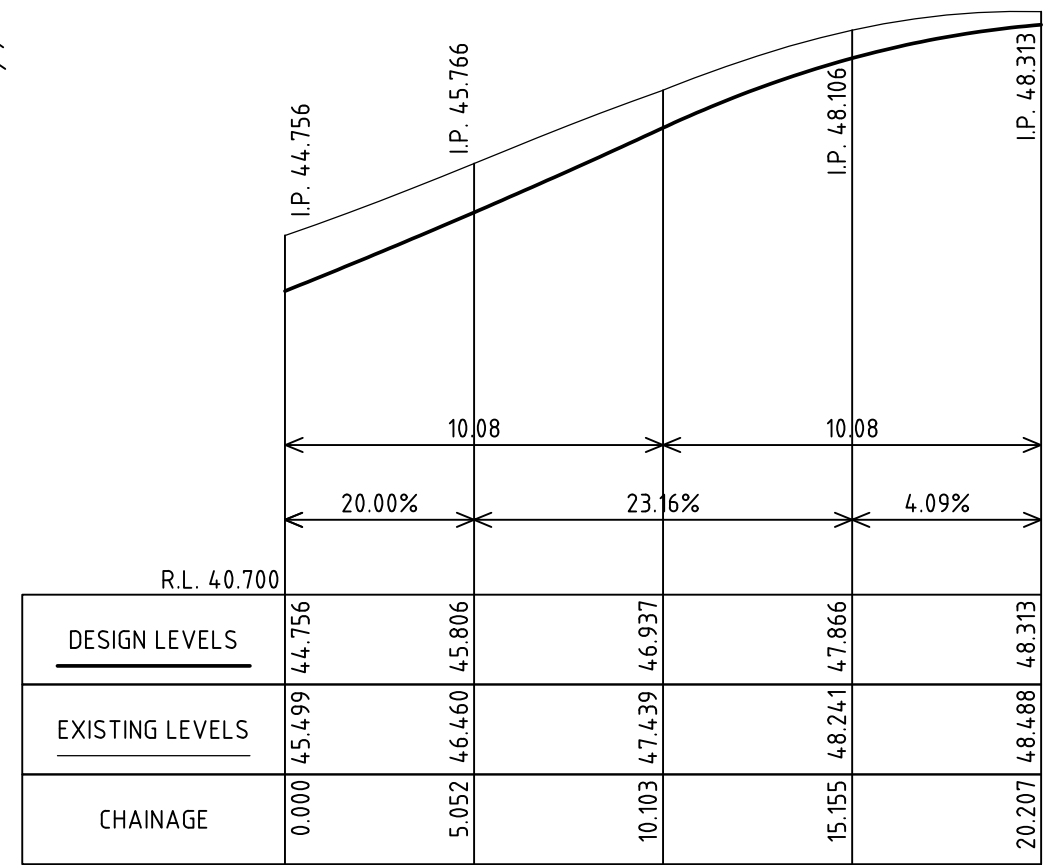
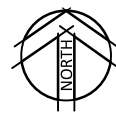
DO NOT SCALE	Original Size A3	Scale AS NOTED	Designed CHRIS MARTIN
FOR CONSTRUCTION	Drawn CJG	Accred. No. CC4109V	4 DRAWING UPDATED WITH EXTRA LOT GRADING
	Approved CHRIS MARTIN	Date SEPTEMBER 2023	3 DRAWING UPDATED WITH MINOR STORMWATER CHANGES
			2 DRAWING UPDATED WITH INTERNAL COMMENTS
			1 DRAWING UPDATED WITH COMMENTS FROM TASWATER

No	Revision	Drawn	Date
4	DRAWING UPDATED WITH EXTRA LOT GRADING	CJG	24/02/25
3	DRAWING UPDATED WITH MINOR STORMWATER CHANGES	CJG	7/10/24
2	DRAWING UPDATED WITH INTERNAL COMMENTS	CJG	2/07/24
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5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25

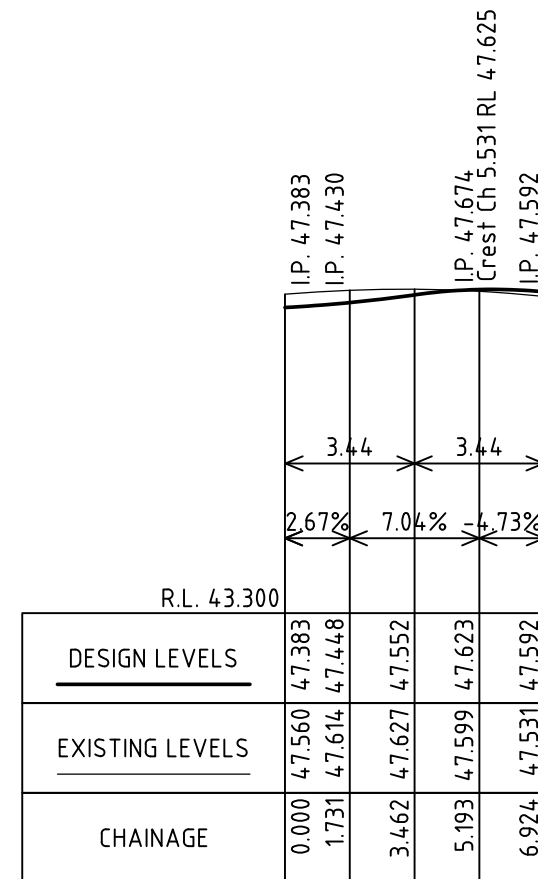
Client	ANN-TAS
Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	KERB RETURN LAYOUT AND LONG SECTIONS PLAN SHEET 01
Drawing No:	0306-25_C09
Revision:	5



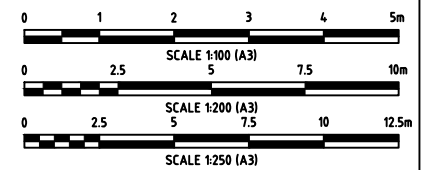
INTERSECTION LAYOUT PLAN
SCALE 1:250



LONGITUDINAL SECTION KR04 CH 0.000 TO 20.207
SCALES: HORIZ 1:200 VERT 1:100



LONGITUDINAL SECTION KR03 CH 0.000 TO 6.924
SCALES: HORIZ 1:200 VERT 1:100



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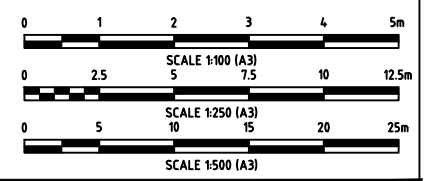
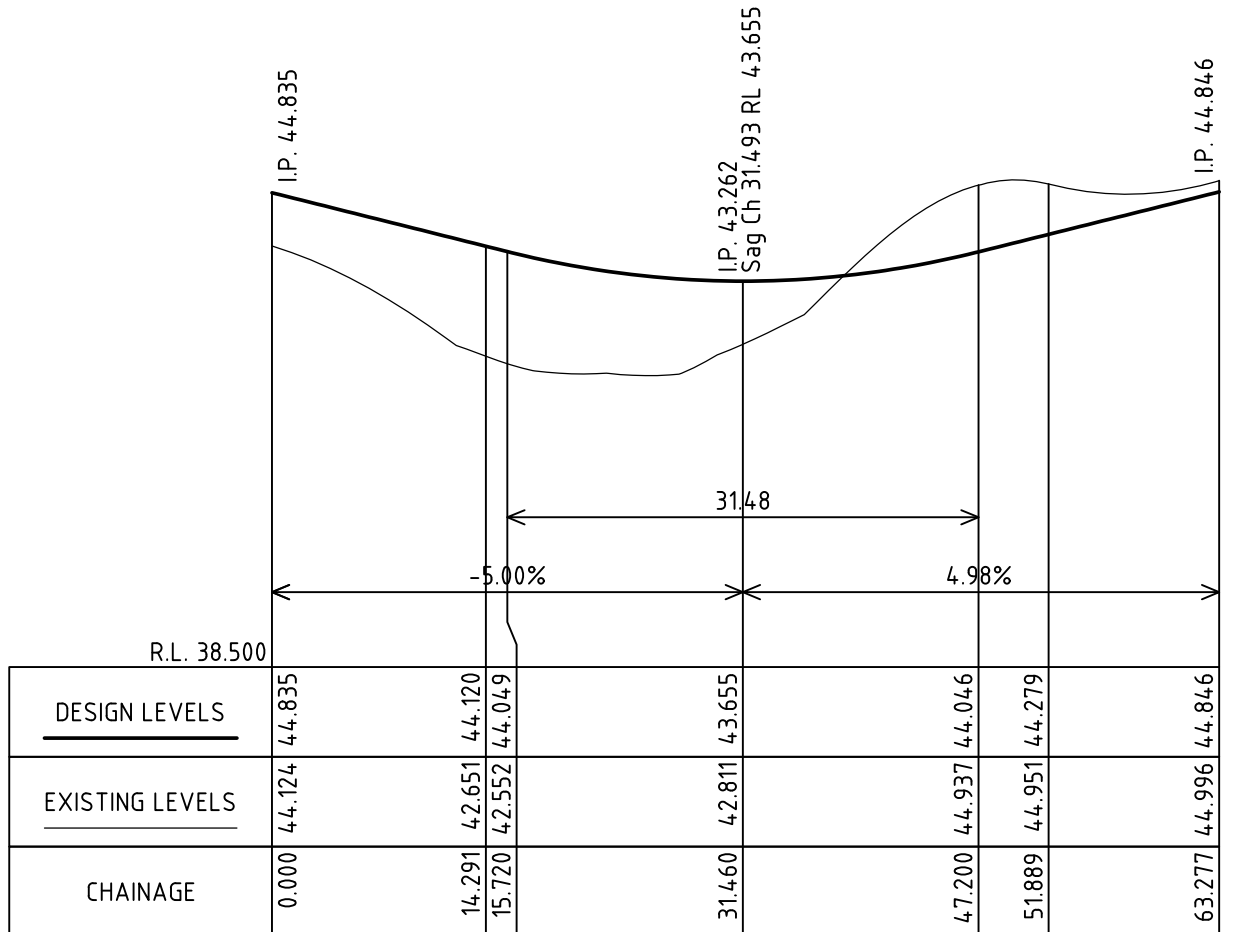
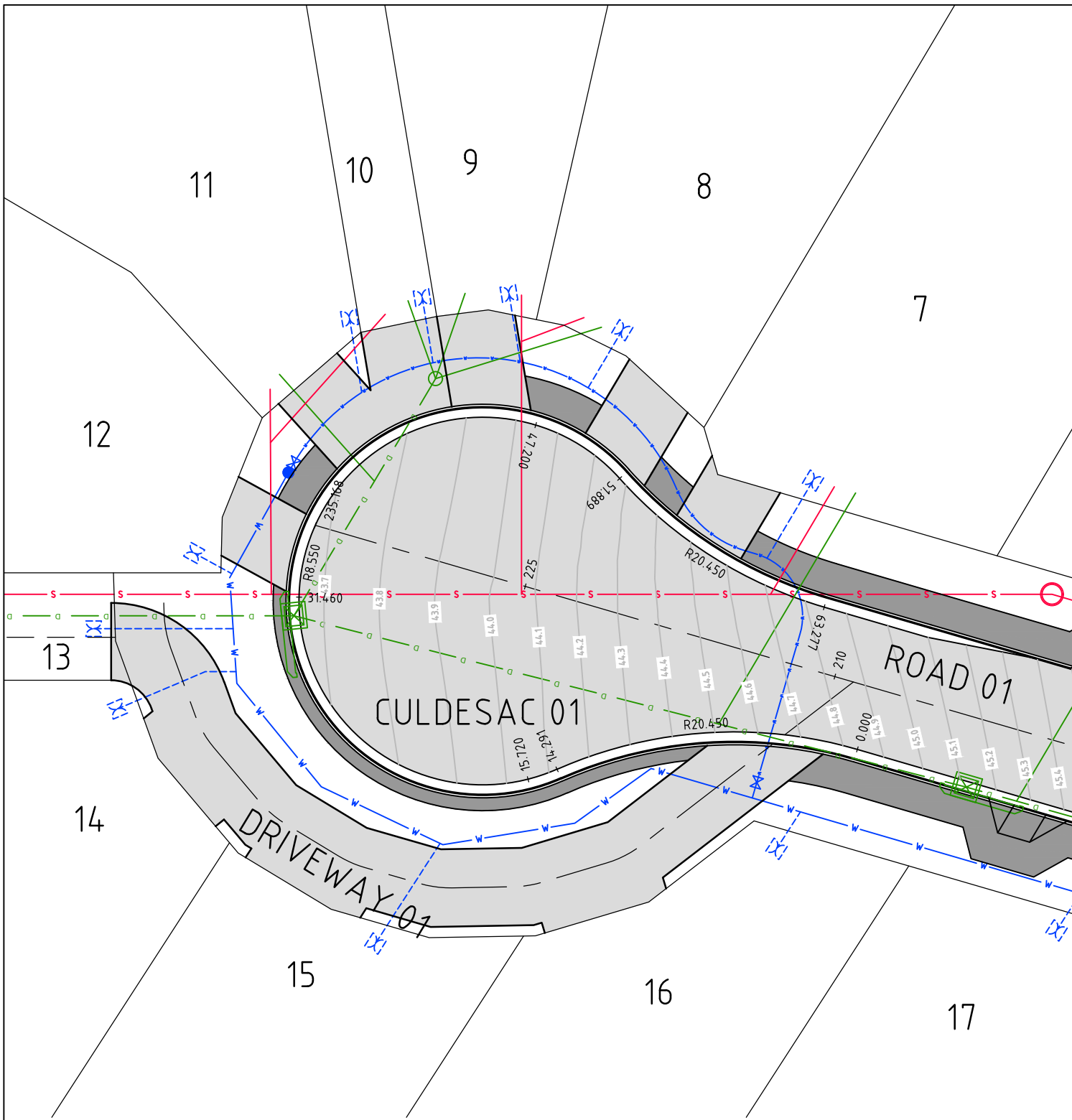
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Original Size A3	Scale AS NOTED	Designed CHRIS MARTIN
	Drawn CJG	Accred. No. CC4109V
	Approved CHRIS MARTIN	Date SEPTEMBER 2023

4	DRAWING UPDATED WITH EXTRA LOT GRADING	CJG	24/02/25
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5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25
No	Revision	Drawn	Date

Client	ANN-TAS
Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	KERB RETURN LAYOUT AND LONG SECTIONS PLAN SHEET 02
Drawing No:	0306-25_C10
Revision:	5



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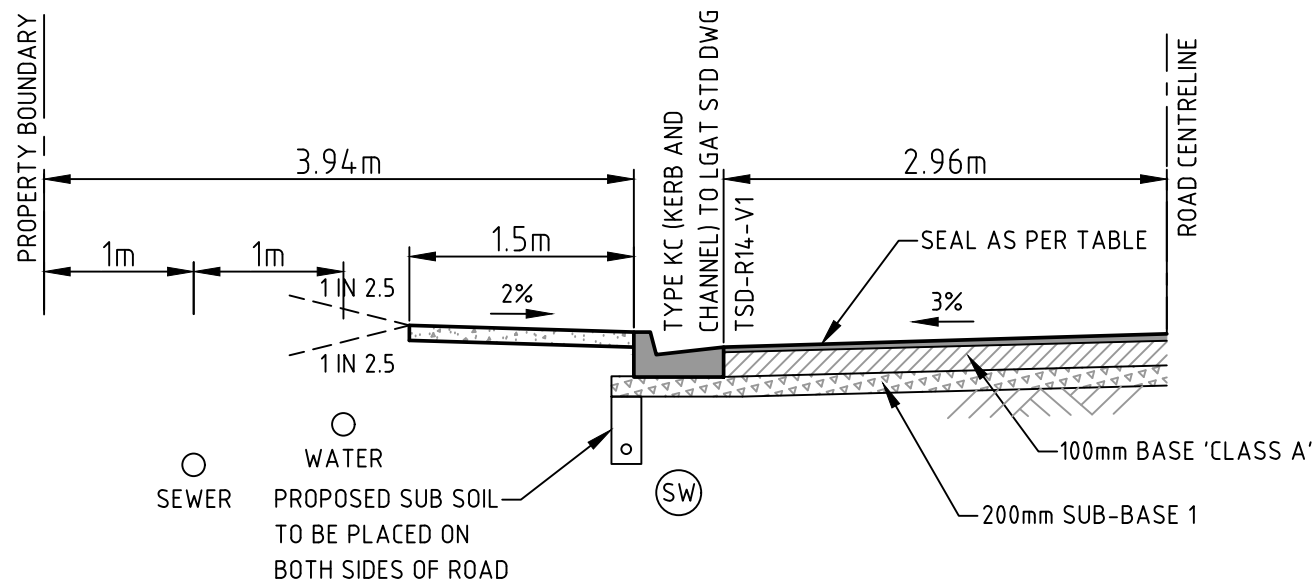
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DO NOT SCALE Original Size **A3**
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Approved	CHRIS MARTIN	Date	SEPTEMBER 2023

4	DRAWING UPDATED WITH EXTRA LOT GRADING	CJG	24/02/25
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1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	CJG	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25
No	Revision	Drawn	Date

Client **ANN-TAS**
Project **57A BERRIGAN ROAD, MIANDETTA STAGE 01**
Title **CUL DE SAC LAYOUT AND LONG SECTION PLAN**
Drawing No: **0306-25_C11** Revision: **5**



TYPICAL HALF WIDTH ROAD 01 CROSS SECTION

SCALE: 1:50

NOTES FOR DRAINAGE WORKS:

ALL WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT SECTIONS OF THE PLUMBING AND DRAINAGE CODE. WITH PARTICULAR REFERENCE TO THE SPECIFIC CLAUSES BELOW.

THE CIVIL CONTRACTOR SHALL ENGAGE A PLUMBER FAMILIAR WITH THE PLUMBING CODES TO OVERSEE AND SIGN OFF THE WORKS.

FOR INTERNAL DRAINAGE (SECTION 8.5 OF AS 3500.3:2003)

- INSPECTION OPENINGS SHALL BE EXTENDED TO AND CAPPED AT THE FINISHED SURFACE LEVEL INSTALLED AT:
 - EACH POINT OF CONNECTION;
 - EVEN SPACINGS NOT MORE THAN 30m APART;
 - EACH END OF ANY INCLINED JUMP-UP THAT EXCEEDS 6m IN LENGTH;
 - EACH CONNECTION TO AN EXISTING SITE STORMWATER DRAIN AND;
 - AT ANY CHANGE OF DIRECTION GREATER THAN 45 DEGREES.

NOTE - THE COUNCIL PLUMBING INSPECTOR MAY PERMIT IO'S TO REMAIN BURIED.

INSPECTION OPENINGS MAY BE REPLACED BY AN INLET OR PIT

SIZE SHALL BE DN150 FOR PIPES 150 DIA AND LESS AND NOT LESS THAN DN 150 FOR LARGER PIPES

SECTION 8.8 - JUNCTIONS SHALL BE MADE BY MEANS OF

- AN OBLIQUE JUNCTION OR SWEEP JUNCTION AT AN UPSTREAM ANGLE OF NOT GREATER THAN 60 DEGREES AND PREFERABLY LESS THAN 45 DEGREES, OR;
- AN OPENING COMPLIANT WITH FIG 8.7 FOR PIPES GREATER THAN 375mm DIA, OR;
- A PIT

SECTION 8.10 - WHERE THE GRADIENT OF A SITE DRAIN EXCEEDS 1 IN 5 ANCHOR BLOCKS SHALL BE INSTALLED AT THE BEND OR JUNCTION AT THE TOP OF THE INCLINED SITE DRAIN AND AT INTERVALS NOT EXCEEDING 3m. REFER TO CLAUSE FOR DETAILS OF ANCHOR DIMENSIONS.

NOTES FOR SEWER WORKS:

ALL WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT SECTIONS OF THE PLUMBING AND DRAINAGE CODE. WITH PARTICULAR REFERENCE TO THE SPECIFIC CLAUSES BELOW.

THE CIVIL CONTRACTOR SHALL ENGAGE A PLUMBER FAMILIAR WITH THE PLUMBING CODES TO OVERSEE AND SIGN OFF THE WORKS.

FOR INTERNAL SEWER (AS3500.2:2003 - EXCERPTS RELEVANT TO THIS PROJECT)

- ANCHOR BLOCKS AS FOR STORMWATER - REFERENCE FIGURE 3.2
- SEPARATION FROM OTHER SERVICES SHALL GENERALLY BE 100mm MIN - REFER CLAUSE 3.6 FOR SPECIFICS.
- MINIMUM DEPTH OF COVER WHERE VEHICULAR TRAFFIC IS POSSIBLE IS 500mm.

CL 4.7.1.1 EXCEPT WHERE INSPECTION CHAMBERS ARE PROVIDED, INSPECTION OPENINGS FOR MAINTENANCE PURPOSES SHALL BE PROVIDED

- AT EACH END OF THE STRAIGHT SECTION OF A MAIN DRAIN AND AT INTERVALS OF NOT MORE THAN 30m;
- AT EVERY CHANGE IN HORIZONTAL DIRECTION OF GREATER THAN 45 DEGREES;
- AT EVERY CHANGE IN GRADIENT GREATER THAN 45 DEGREES

CL 4.9.1 GENERAL DRAINS SHALL BE JOINED AT GRADE TO EACH OTHER BY MEANS OF A SWEEP JUNCTION OR AN OBLIQUE JUNCTION FITTING AT AN UPSTREAM ANGLE OF NOT GREATER THAN 60 DEGREES. ALL JUNCTIONS SHALL BE SWEEPED IN THE DIRECTION OF FLOW AS PER THE 45 DEGREE SWEEP JUNCTION IN FIGURE 4.6.

NOTES:

PAVEMENT

- SUBGRADE - PASS PROOF ROLL AND WHERE MOVEMENT EXISTS UNDERTAKE CBR TESTING TO VERIFY ADDITIONAL PAVEMENT DEPTH.
- DESIGN PAVEMENT DEPTHS BASED ON CBR 4 - FINAL PAVEMENT DEPTHS TO BE DEEPENED IN ACCORDANCE WITH THE ON SITE CBR TESTING DETAILS AND TABLE AS DIRECTED BY THE SUPERINTENDENT.
- ALL BATTERS TO BE CONSTRUCTED IN ACCORDANCE WITH THE B.C.A. - TABLE 3.1.1.1

CBR TESTING NOTES:

CBR TESTING TO BE UNDERTAKEN WHEN BOX OUT TO 340mm BELOW FSL IS COMPLETED.

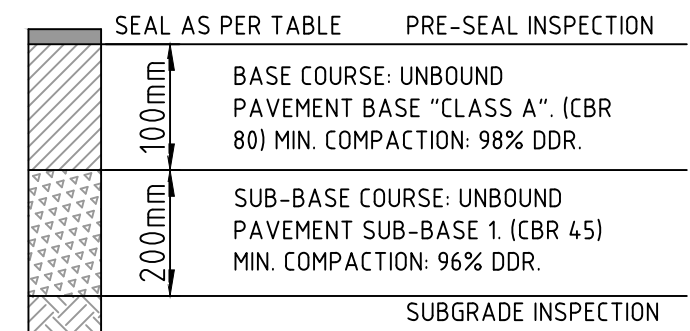
ALL IN-SITU CBR READINGS ARE TO BE ADJUSTED IN ACCORDANCE WITH THE TABLE R23.2 OF DEPARTMENT OF STATE GROWTH SPECIFICATION R23 (REPRODUCED RIGHT) WHERE SUBGRADE IS IN A DRY CONDITION TO ACCOUNT FOR STRENGTH DECREASE WHEN SATURATED.

CBR TESTS TO BE PERFORMED EVERY 200m² OF PAVEMENT AREA BY THE DESIGN ENGINEER. SOFT AREAS MAY BE PLOTTED ON SITE FOR ADDITIONAL EXCAVATION.

PROVIDE MINIMUM 24 HOURS NOTICE TO THE ENGINEER PRIOR TO STRIPPING THE SITE TO SUB-GRADE LEVEL TO FACILITATE CBR TESTING.

PENETROMETER CBR ADJUSTMENT

SOURCE: STATE GROWTH SPECIFICATION R23 - TABLE R23.2	
IN-SITU CBR FROM PENETROMETER (CORRELATION FROM CONE RESISTANCE)	ADJUSTED CBR VALUE
2	1
3	2
4	3
5	4
6	4
7	5
8	6



NATURAL SUBGRADE MIN. COMPACTION: 95% DDR FOR FILL PLACED TO WITHIN 300mm OF LEVEL AND 97% DDR FOR THE TOP 300mm BELOW THE Finished SUBGRADE LEVEL.

TYPICAL PAVEMENT DETAIL

SCALE: N.T.S.

SEALED PAVEMENT CONSTRUCTION DETAILS

BASED ON CBR4 & DESA OF 4x10⁴
TOTAL DEPTH - 300mm MIN
WEARING COURSE - 40mm DG10 AC

STABILISATION GRASS MIX FOR SURFACE DRAINS & BATTERS:

STERILE RYECORN:	3.0 g/m ²
RYEGRASS VAR VICTORIAN:	1.5 g/m ²
RYECORN VAR CONCORDE:	1.5 g/m ²
CHEWING FESCUE:	0.5 g/m ²
HARD FESCUE:	0.5 g/m ²
SHEEP FESCUE:	0.5 g/m ²
WHITE CLOVER VAR HUIA:	1.0 g/m ²
SUB CLOVER VAR TRIKKALA:	0.5 g/m ²
BROWNTOP BENT:	0.5 g/m ²
RED CREEPING FESCUE:	0.5 g/m ²
TOTAL:	10.0 g/m ²

FERTILISER

N : P : K = 8 : 4 : 10 @ 50.0g/m²



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Scale

AS NOTED

Designed
CHRIS MARTIN

FOR CONSTRUCTION

Drawn
CJG

Accred. No.
CC4109V

Approved
CHRIS MARTIN

Date
SEPTEMBER 2023

4

DRAWING UPDATED WITH EXTRA LOT GRADING

CJG

24/02/25

3

DRAWING UPDATED WITH MINOR STORMWATER CHANGES

CJG

7/10/24

2

DRAWING UPDATED WITH INTERNAL COMMENTS

CJG

2/07/24

1

DRAWING UPDATED WITH COMMENTS FROM TASWATER

CJG

7/06/24

5

UPDATED ROCK WALL DETAILS AS PER COMMENTS

CJG

24/04/25

No

Revision

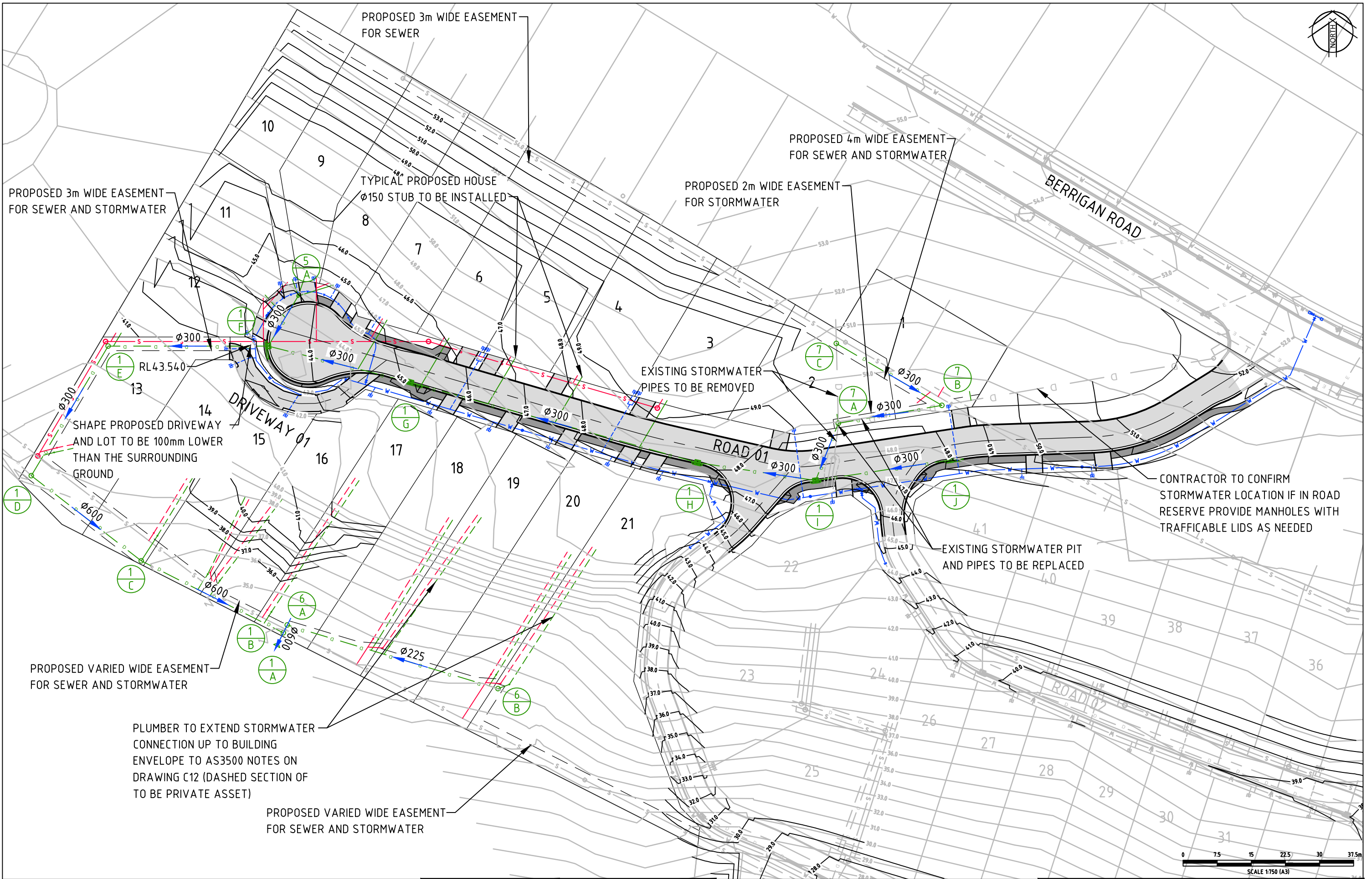
Drawn

Date

Client **ANN-TAS**
Project **57A BERRIGAN ROAD, MIANDETTA STAGE 01**
Title **CONSTRUCTION DETAILS PLAN**

Drawing No: **0306-25_C12**

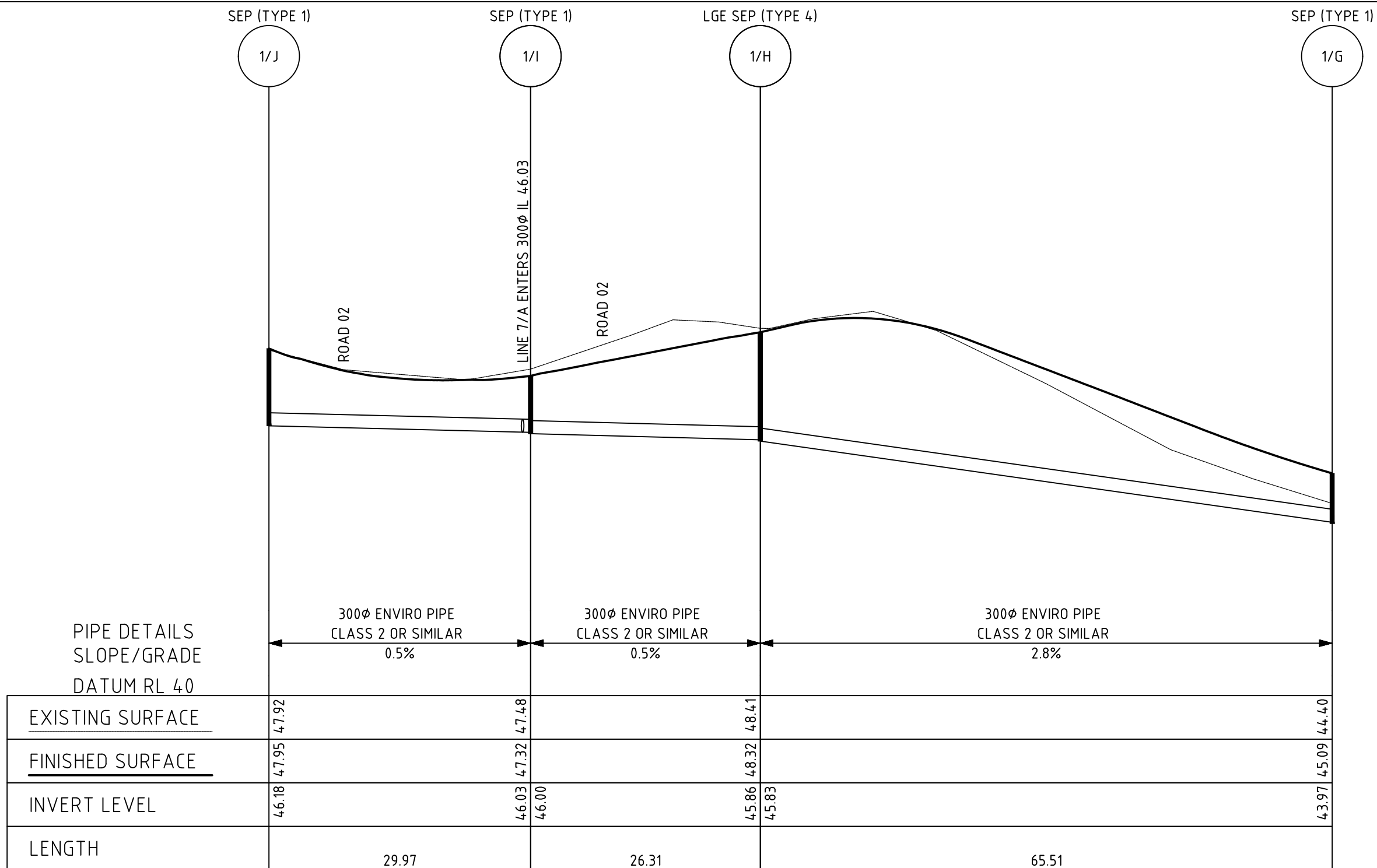
Revision: **5**



FOR CONSTRUCTION	DO NOT SCALE	Original Size A3	Scale 1:750	Designed CHRIS MARTIN
			Drawn C.J.G	Accred. No. CC4109V
			Approved CHRIS MARTIN	Date SEPTEMBER 2023

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3	DRAWING UPDATED WITH MINOR STORMWATER CHANGES	C.J.G	7/10/24
2	DRAWING UPDATED WITH INTERNAL COMMENTS	C.J.G	2/07/24
1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	C.J.G	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	C.J.G	24/04/25
No	Revision	Drawn	Date

Client	ANN-TAS
Project	57A BERRIGAN ROAD, MIANETTA STAGE 01
Title	STORMWATER LAYOUT PLAN
Drawing No:	0306-25_C13
Revision:	5



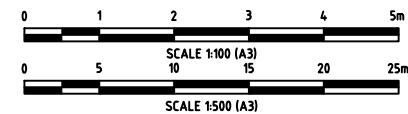
DRAINAGE LONGITUDINAL SECTION FOR LINE 1
 SCALES: HORIZONTAL 1:500 VERTICAL 1:100

LEGEND:

- EX SEP EXISTING SIDE ENTRY PIT
- SEP SIDE ENTRY PIT WITH 1.2m LINTEL
- ALL LINTELS ARE TO BE:
 - TYPE 1 FOR ALL PITS ON-GRADE
 - TYPE 3 FOR ALL SAG PITS UNO.
- LGE LINTEL TYPE 2 FOR ALL PITS ON GRADE
- LGE SEP TYPE 4 FOR ALL SAG PITS
- GP REFER TSD-SW30 (1.55x0.90 PIT)
- MH GRATED PIT TO TSD-SW15
- IC φ1050 SHAFT MANHOLE U.N.O.
- INSPECTION CHAMBER

NOTES:

1. ALL SEP's GREATER THAN 1500mm DEEP TO BE CONSTRUCTED TO THE LARGE SIDE ENTRY PIT DETAIL TSD-SW30.
2. ALL MANHOLES THAT DO NOT HAVE TRAFFIC LOADING TO HAVE LIGHT DUTY COVER.
3. ALL TRAFFICABLE MANHOLES TO HAVE CLASS D IC LIDS.
4. FCR BACKFILL UNDER ALL ROADWAYS.
5. ALL LOT CONNECTIONS TO BE 150φ UPVC.



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DO NOT SCALE Original Size **A3**
FOR CONSTRUCTION

Scale 1:500H 1:100V
 Drawn C.J.G.
 Accred. No. CC4109V
 Approved CHRIS MARTIN
 Date SEPTEMBER 2023

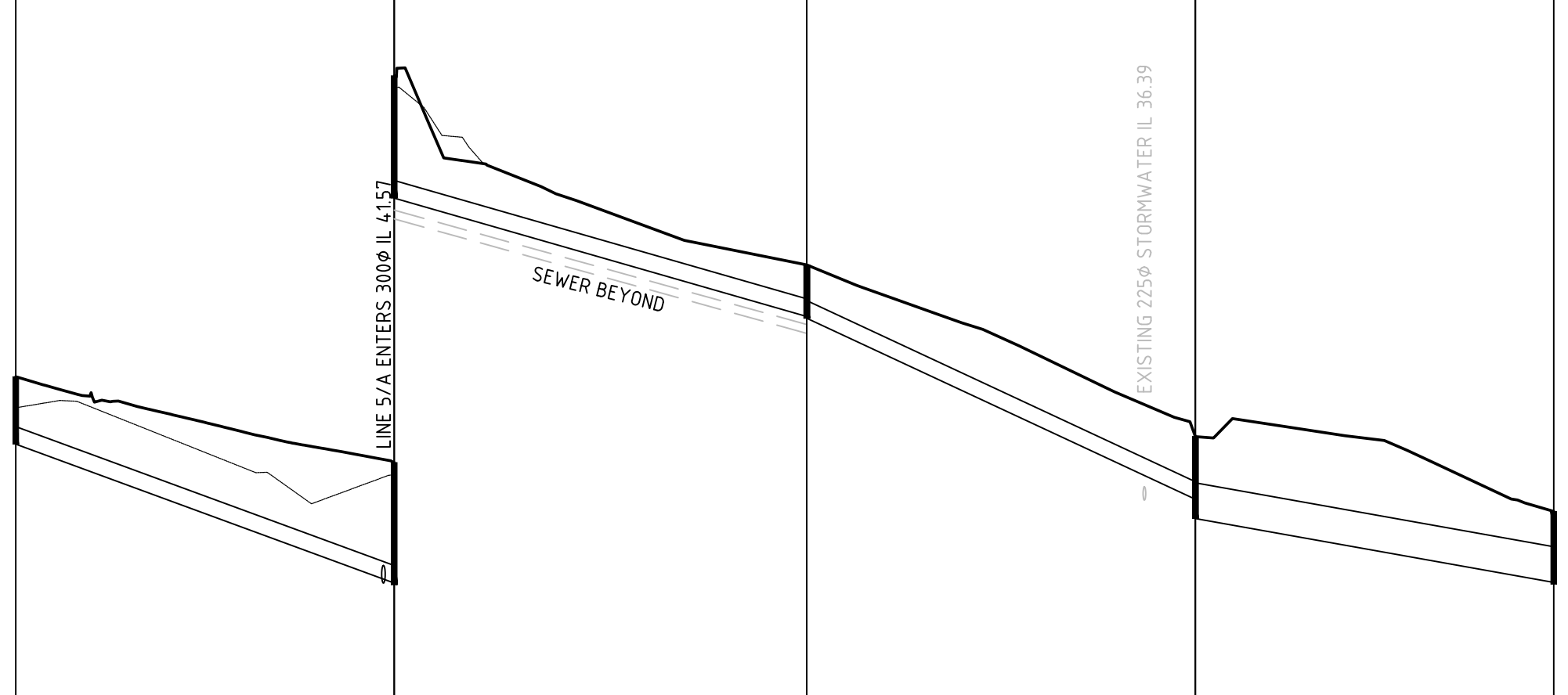
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3	DRAWING UPDATED WITH MINOR STORMWATER CHANGES	C.J.G.	7/10/24
2	DRAWING UPDATED WITH INTERNAL COMMENTS	C.J.G.	2/07/24
1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	C.J.G.	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	C.J.G.	24/04/25
No	Revision	Drawn	Date

Client **ANN-TAS**
 Project **57A BERRIGAN ROAD, MIANDETTA STAGE 01**
 Title **STORMWATER LONG SECTION PLAN SHEET 01**

Drawing No: **0306-25_C14**

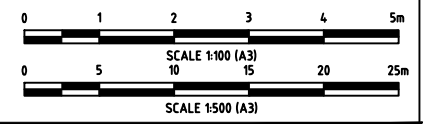
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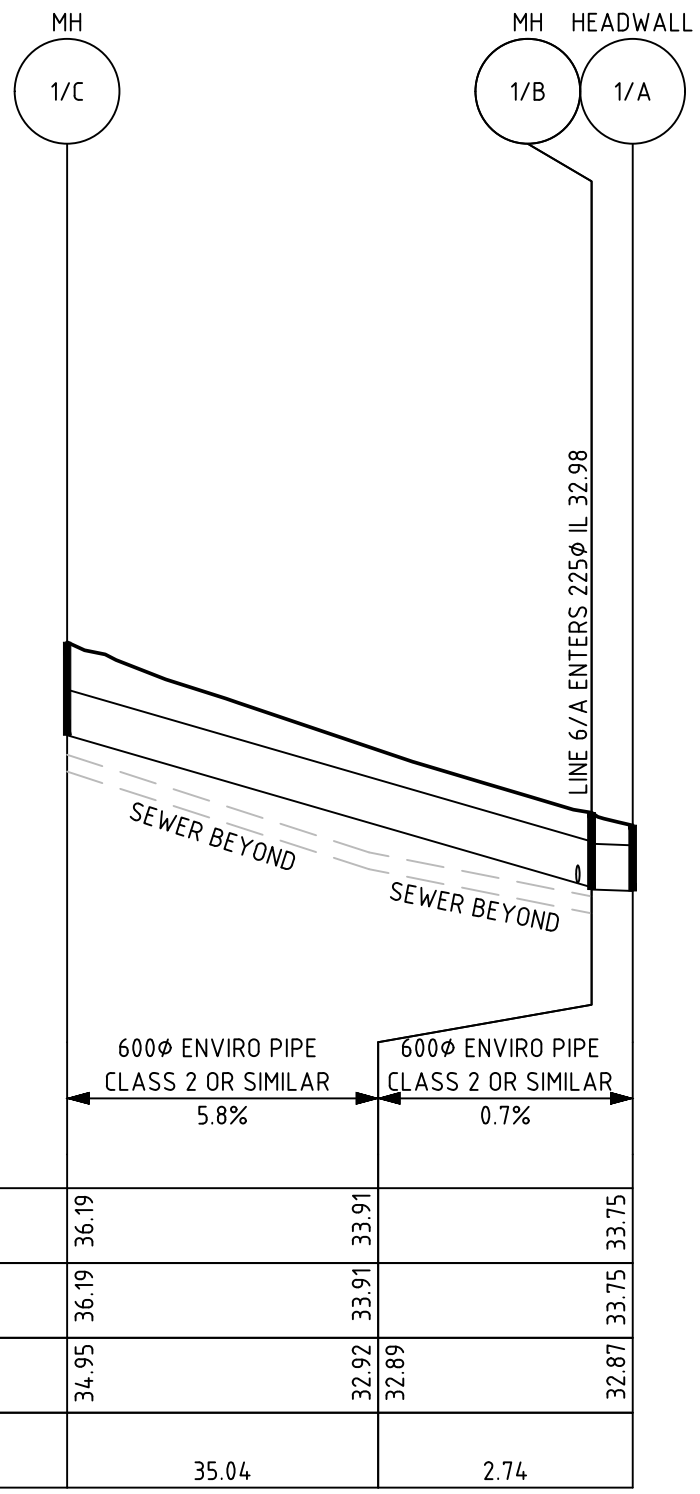
SEP (TYPE 1) 1/G SEP (TYPE 3) 1/F MH 1/E MH 1/D MH 1/C



PIPE DETAILS SLOPE/GRADE DATUM RL 37.6	300Ø ENVIRO PIPE CLASS 2 OR SIMILAR 7.3%	300Ø ENVIRO PIPE CLASS 2 OR SIMILAR 5.7%	300Ø ENVIRO PIPE CLASS 2 OR SIMILAR 9.3%	600Ø ENVIRO PIPE CLASS 2 OR SIMILAR 3.6%
EXISTING SURFACE	44.56	43.42	40.40	36.19
FINISHED SURFACE	45.09	43.63	40.40	36.19
INVERT LEVEL	43.94	41.57 41.54	39.52 39.49	36.40 36.07
LENGTH	32.28	35.20	33.15	30.57

DRAINAGE LONGITUDINAL SECTION FOR LINE 1
 SCALES: HORIZONTAL 1:500 VERTICAL 1:100

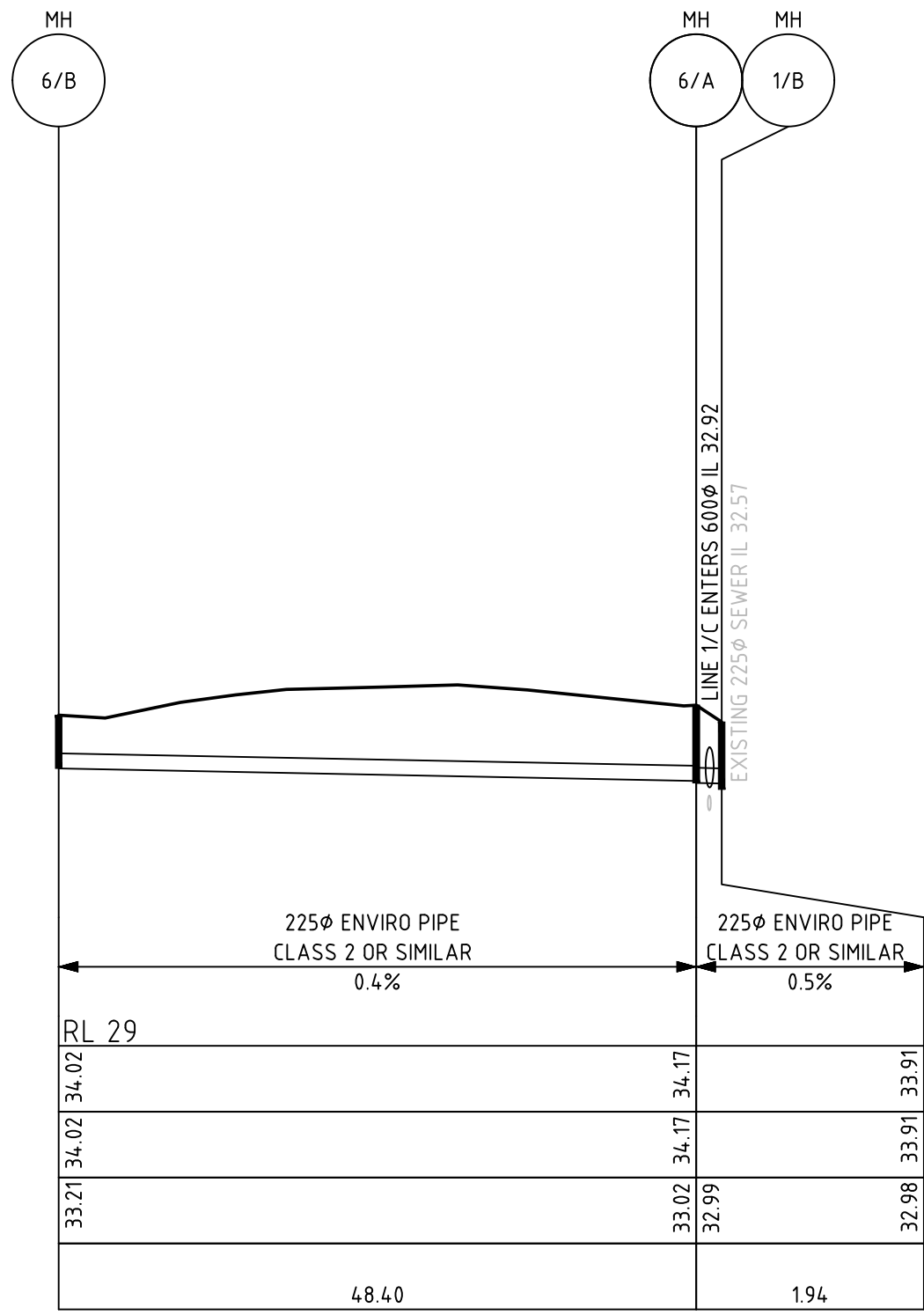




PIPE DETAILS
SLOPE/GRADE
DATUM RL 28.9

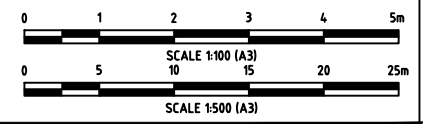
EXISTING SURFACE	36.19	33.91	33.75
FINISHED SURFACE	36.19	33.91	33.75
INVERT LEVEL	34.95	32.92 32.89	32.87
LENGTH	35.04	2.74	

DRAINAGE LONGITUDINAL SECTION FOR LINE 1
SCALES: HORIZONTAL 1:500 VERTICAL 1:100

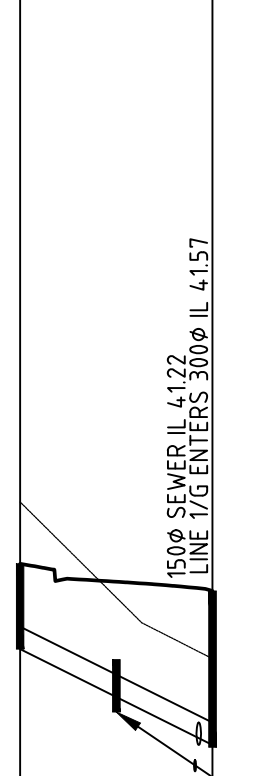
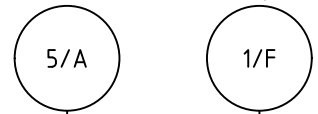


EXISTING SURFACE	34.02	34.17	33.91
FINISHED SURFACE	34.02	34.17	33.91
INVERT LEVEL	33.21	33.02 32.99	32.98
LENGTH	48.40	1.94	

DRAINAGE LONGITUDINAL SECTION FOR LINE 6
SCALES: HORIZONTAL 1:500 VERTICAL 1:100



Ø225 MS WITH TRAFFICABLE LID LGE SEP (TYPE 4) VEE DRIVEABLE LID (900x600)



150Ø SEWER IL 4.122
LINE 1/G ENTERS 300Ø IL 4.157

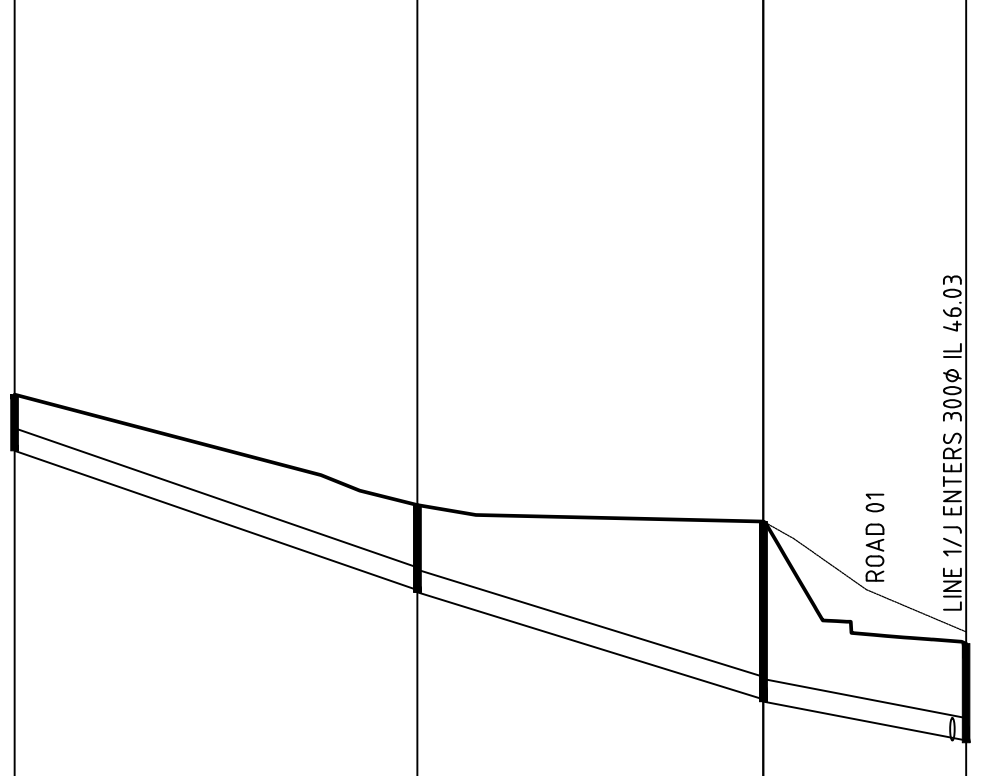
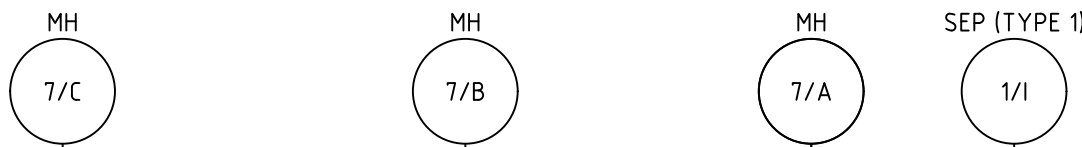
STORMWATER PIPE GREATER
THEN 10% GRADE, ANCHOR BLOCKS
TO BE INSTALLED AT 12.0m CENTERS

PIPE DETAILS
SLOPE/GRADE
DATUM RL 37.6

300Ø ENVIRO PIPE
CLASS 2 OR SIMILAR
10.0%

EXISTING SURFACE	44.82	42.72
FINISHED SURFACE	43.99	43.63
INVERT LEVEL	42.85	41.57
LENGTH	12.85	

DRAINAGE LONGITUDINAL SECTION FOR LINE 5
SCALES: HORIZONTAL 1:500 VERTICAL 1:100



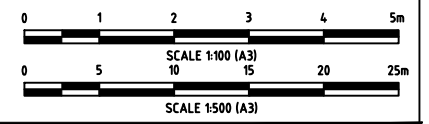
ROAD 01

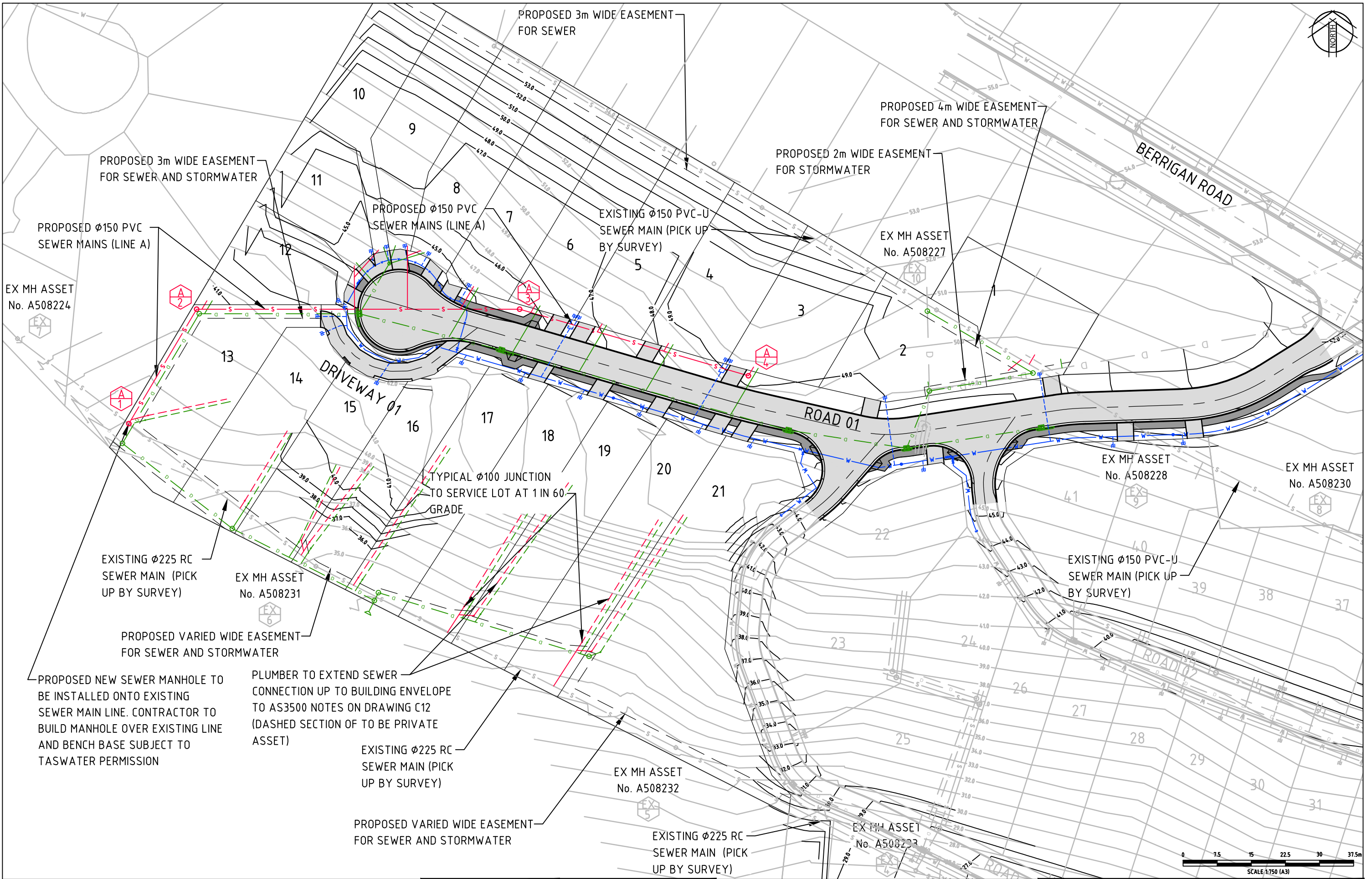
LINE 1/J ENTERS 300Ø IL 46.03

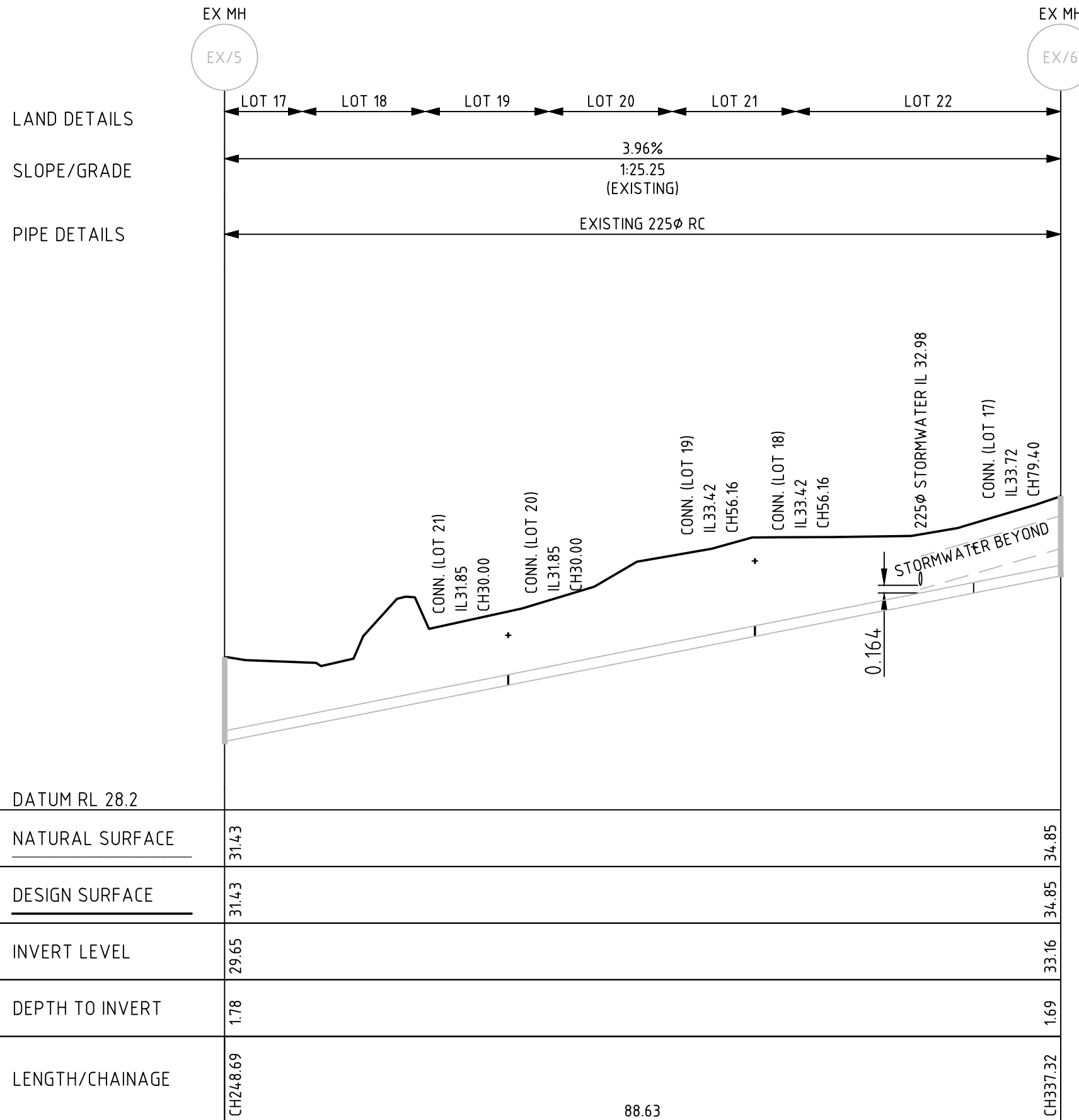
300Ø ENVIRO PIPE CLASS 2 OR SIMILAR 6.9%
300Ø ENVIRO PIPE CLASS 2 OR SIMILAR 6.2%
300Ø ENVIRO PIPE CLASS 2 OR SIMILAR 3.8%

RL 42			
50.65	49.17	48.95	47.48
50.65	49.17	48.95	47.32
49.90	48.04 48.01	46.58 46.55	46.03
	26.91	23.11	13.55

DRAINAGE LONGITUDINAL SECTION FOR LINE 7
SCALES: HORIZONTAL 1:500 VERTICAL 1:100







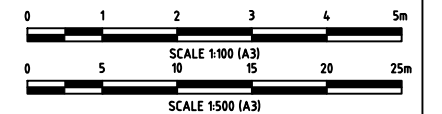
SEWER LONGITUDINAL SECTION FOR LINE EX
 SCALES: HORIZONTAL 1:500 VERTICAL 1:100

LEGEND:

- MH 1050φ MANHOLE.
REFER MRWA-S-300
- MS 300φ MAINTENANCE SHAFT.
REFER MRWA-S-300

NOTES:

1. ALL SEWER MANHOLES 1050 φ MASTIC JOINTED SHAFT TYPE P2 WITH CONVERSION SLAB TO MRWA-S-309 AND MRWA-S-313. FINISH 75mm ABOVE GROUND FSL UNO
2. ALL INSPECTION SHAFTS THAT DO NOT HAVE TRAFFIC LOADING TO HAVE LIGHT DUTY COVER AS PER MRWA-S-305-C.
3. ALL TRAFFICABLE INSPECTION SHAFTS TO HAVE CLASS D CI LIDS AS PER MRWA-S-305-C.
4. ALL PROPERTY SEWER CONNECTIONS TO BE TYPE 4 AS PER MRWA-S-304 WITH I.O. NOMINALLY 1.2m WITHIN EACH LOT UNO.
5. FCR BACKFILL UNDER ALL TRAFFICABLE PAVEMENT INCLUDING DRIVEWAY CROSS OVERS AND ROADWAYS.
6. ALL SEWERAGE PIPES SCJ UNO.
7. STEP IRONS ARE NOT REQUIRED ON MANHOLES
8. ALL INSPECTION SHAFTS TO BE TYPE 1 IN ACCORDANCE WITH MRWA-S-302 UNO.
9. ALL HOUSE CONNECTIONS TO HAVE A MINIMUM COVER OF 450mm AND HAVE A MINIMUM GRADE OF 1 IN 60.
10. CONCRETE BULKHEADS SHALL BE KEYED INTO THE SIDE AND BOTTOM OF THE TRENCH AGAINST BEARING SURFACE OF UNDISTURBED SOIL.
11. SLOPING MAINS AND TRENCH DRAINAGE AS PER STANDARD DRAWING MRWA-S-205.



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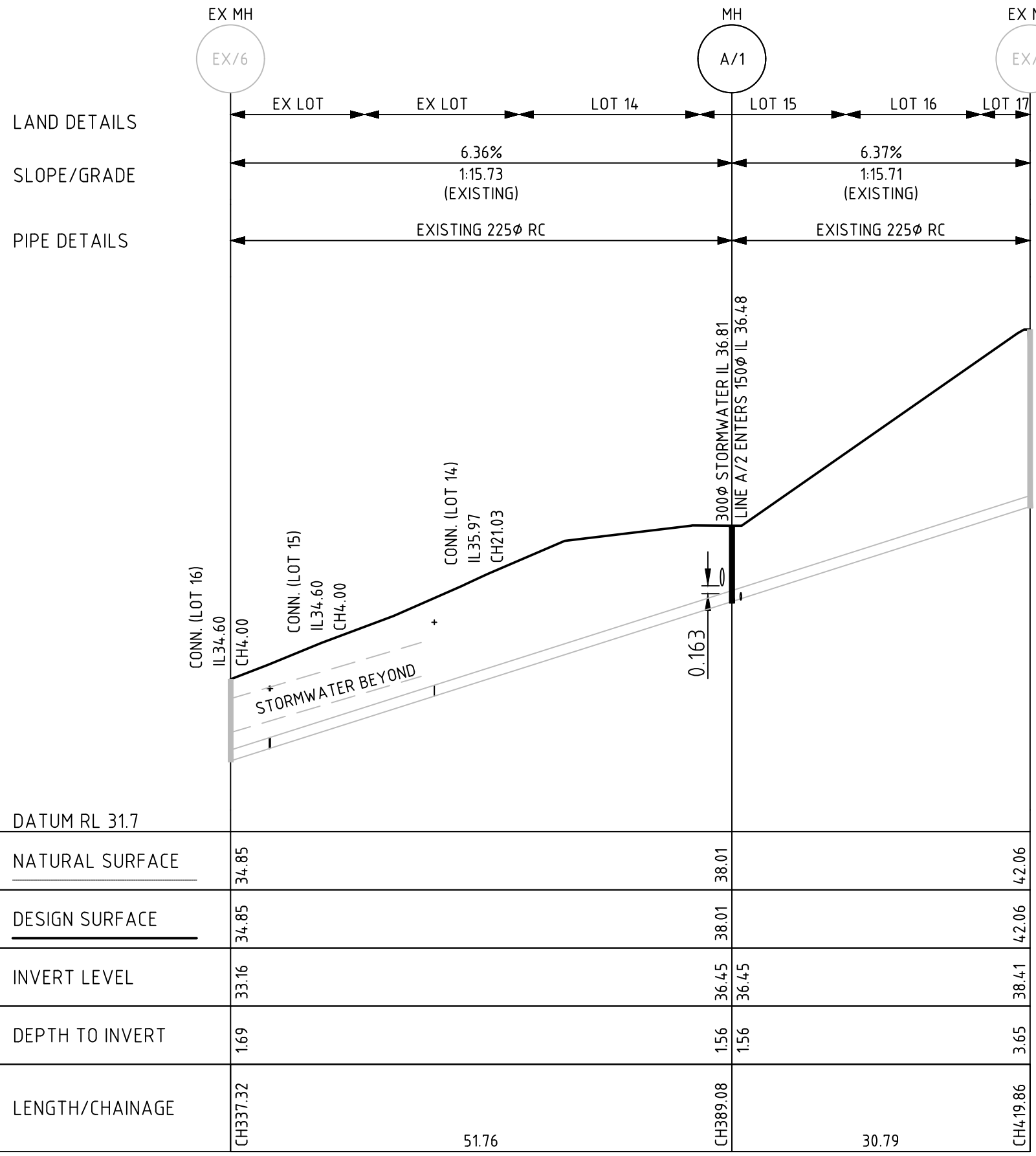
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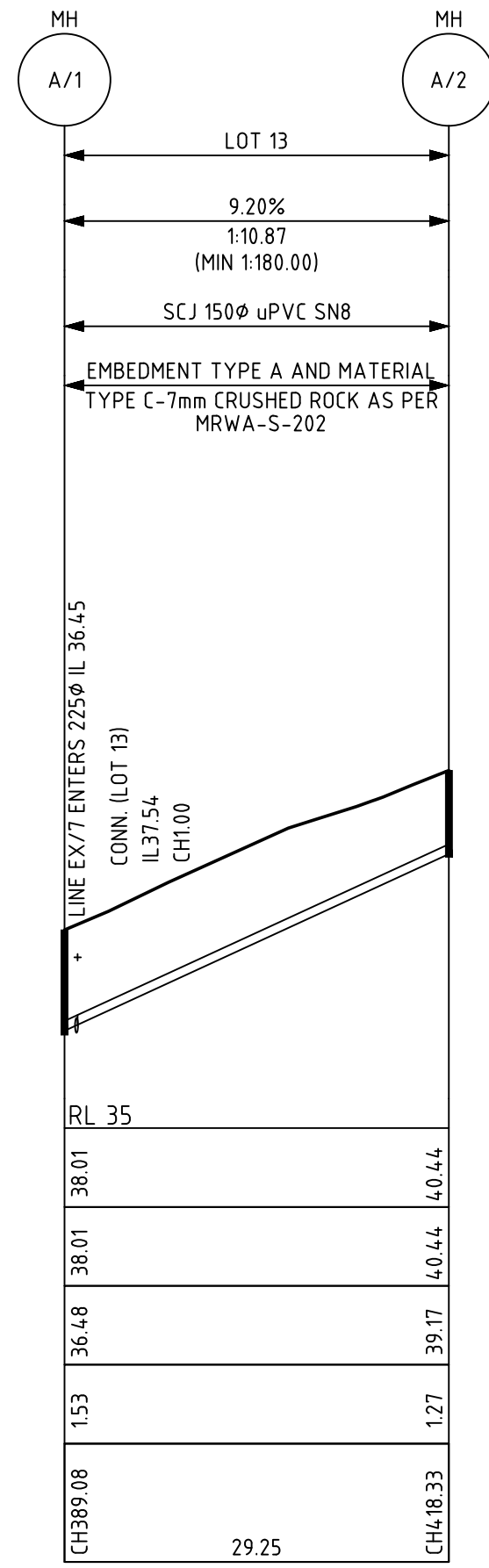
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	Drawn CJG	Accred. No. CC4109V
	Approved CHRIS MARTIN	Date SEPTEMBER 2023

4	DRAWING UPDATED WITH EXTRA LOT GRADING	CJG	24/02/25
3	DRAWING UPDATED WITH MINOR STORMWATER CHANGES	CJG	7/10/24
2	DRAWING UPDATED WITH INTERNAL COMMENTS	CJG	2/07/24
1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	CJG	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25
No	Revision	Drawn	Date

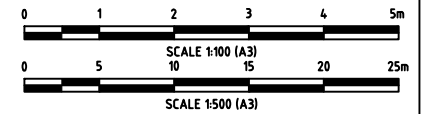
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Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	SEWER RETICULATION LONG SECTIONS PLAN SHEET 01
Drawing No:	0306-25_C19
Revision:	5

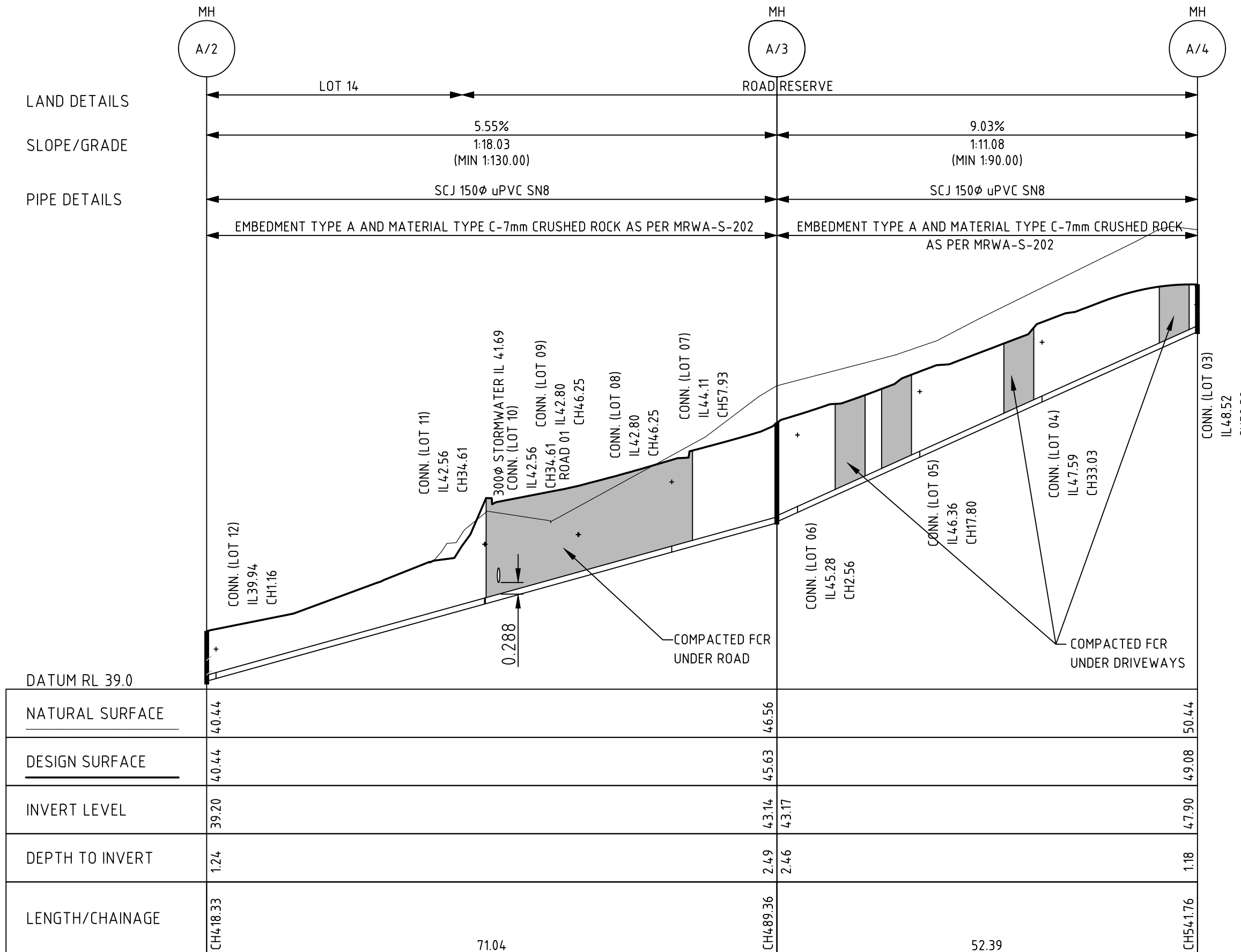


SEWER LONGITUDINAL SECTION FOR LINE EX
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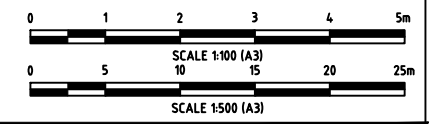


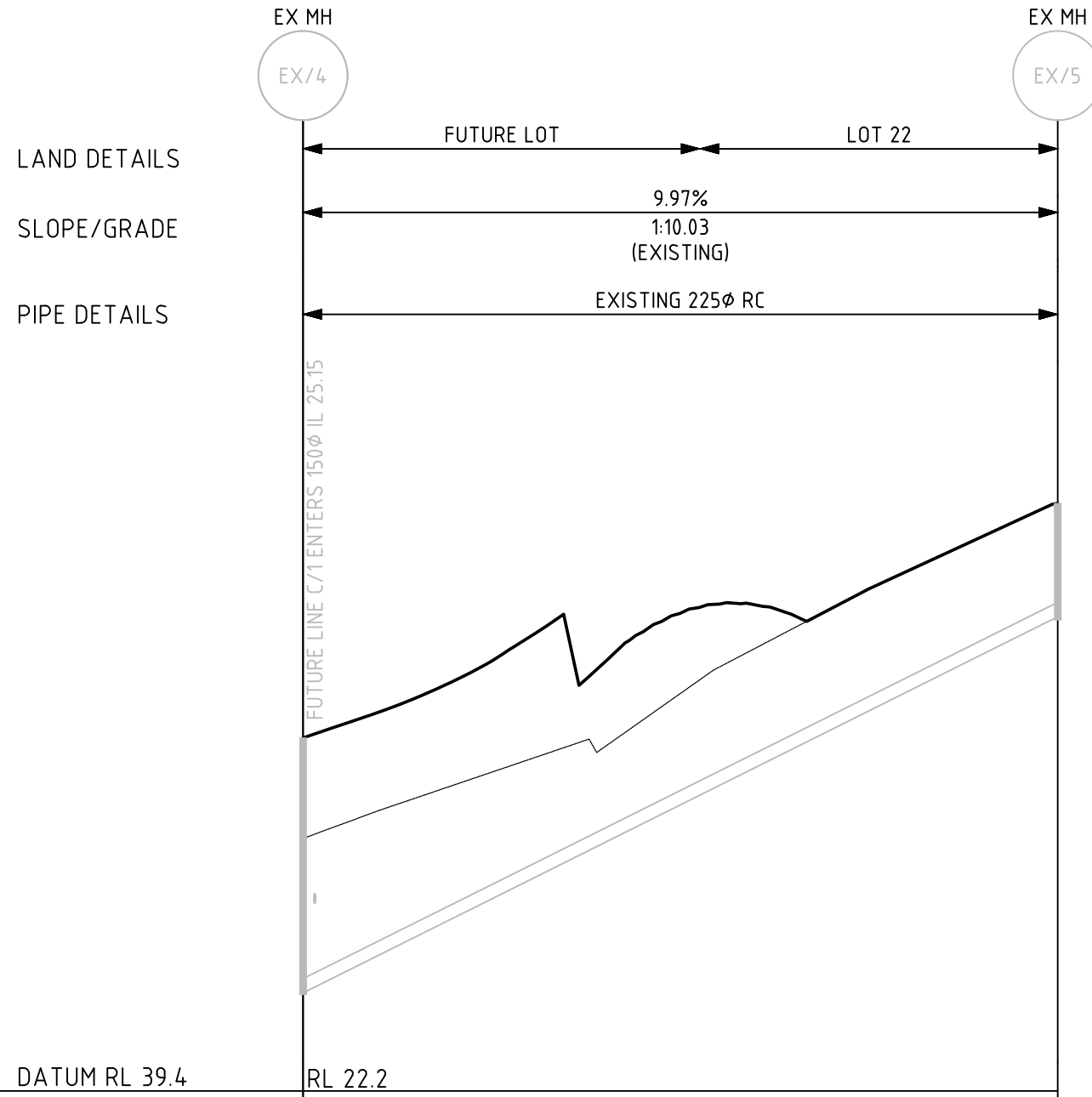
SEWER LONGITUDINAL SECTION FOR LINE A
 SCALES: HORIZONTAL 1:500 VERTICAL 1:100





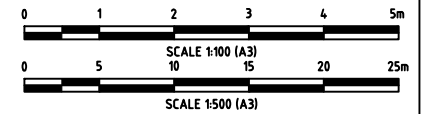
SEWER LONGITUDINAL SECTION FOR LINE A
 SCALES: HORIZONTAL 1:500 VERTICAL 1:100





DATUM RL 39.4	RL 22.2	
NATURAL SURFACE	26.17	31.43
DESIGN SURFACE	27.75	31.43
INVERT LEVEL	23.74	29.65
DEPTH TO INVERT	4.01	1.78
LENGTH/CHAINAGE	CH189.40	CH248.69
	59.29	

SEWER LONGITUDINAL SECTION FOR LINE EX
 SCALES: HORIZONTAL 1:500 VERTICAL 1:100



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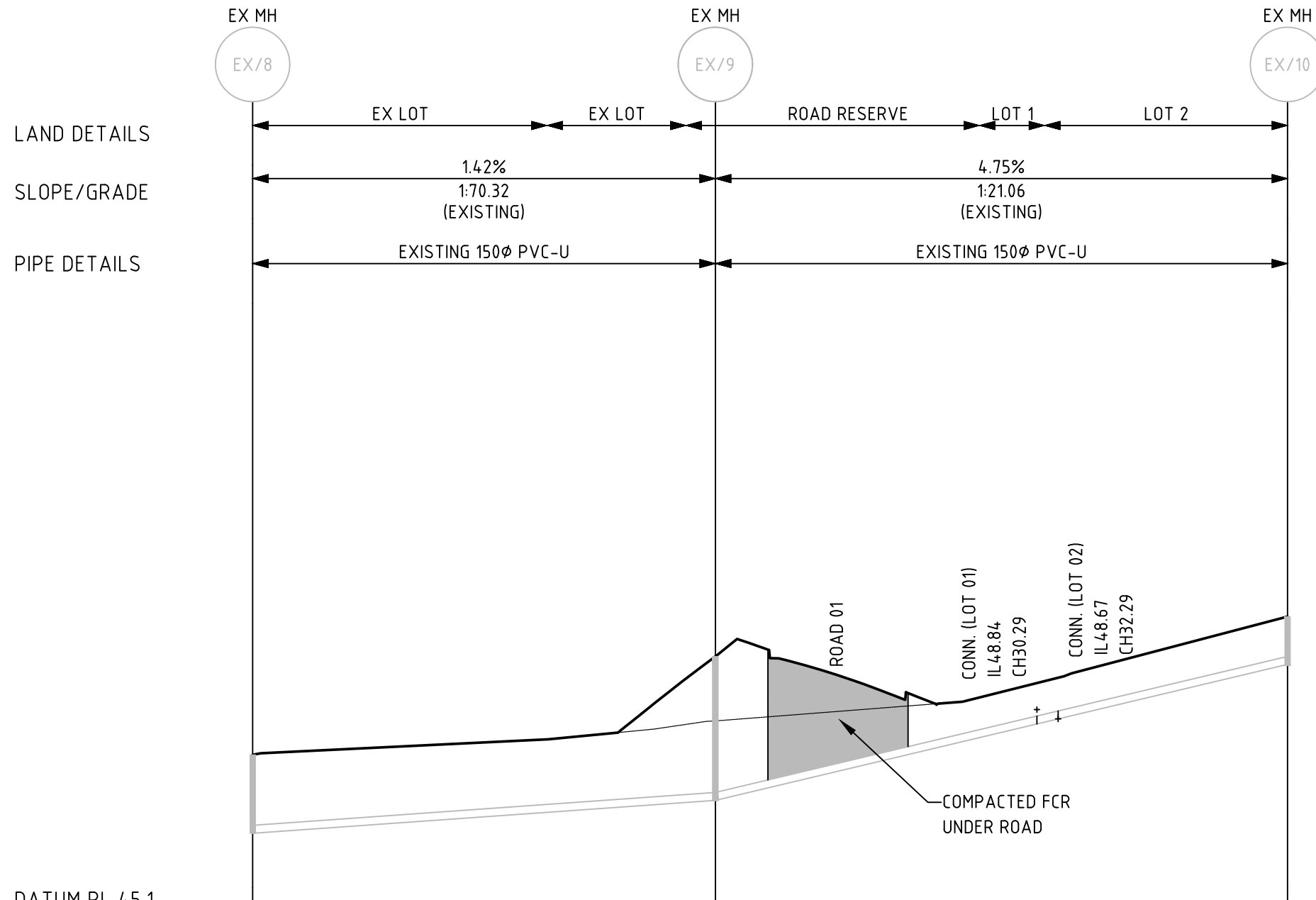
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Original Size A3	Scale 1:500H 1:100V	Designed CHRIS MARTIN
	Drawn CJG	Accred. No. CC4109V
	Approved CHRIS MARTIN	
	Date SEPTEMBER 2023	

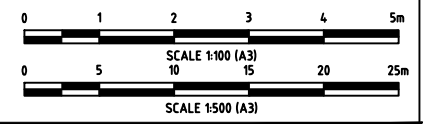
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3	DRAWING UPDATED WITH MINOR STORMWATER CHANGES	CJG	7/10/24
2	DRAWING UPDATED WITH INTERNAL COMMENTS	CJG	2/07/24
1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	CJG	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25
No	Revision	Drawn	Date

Client	ANN-TAS
Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	SEWER RETICULATION LONG SECTIONS PLAN SHEET 04
Drawing No:	0306-25_C22
Revision:	5



DATUM RL 45.1				
NATURAL SURFACE	48.05	48.69		50.65
DESIGN SURFACE	48.05	49.90		50.65
INVERT LEVEL	46.57	47.19	47.19	49.75
DEPTH TO INVERT	1.48	2.71	2.71	0.90
LENGTH/CHAINAGE	CH0.00		CH43.60	CH97.51
		43.60		53.91

SEWER LONGITUDINAL SECTION FOR LINE EX
 SCALES: HORIZONTAL 1:500 VERTICAL 1:100



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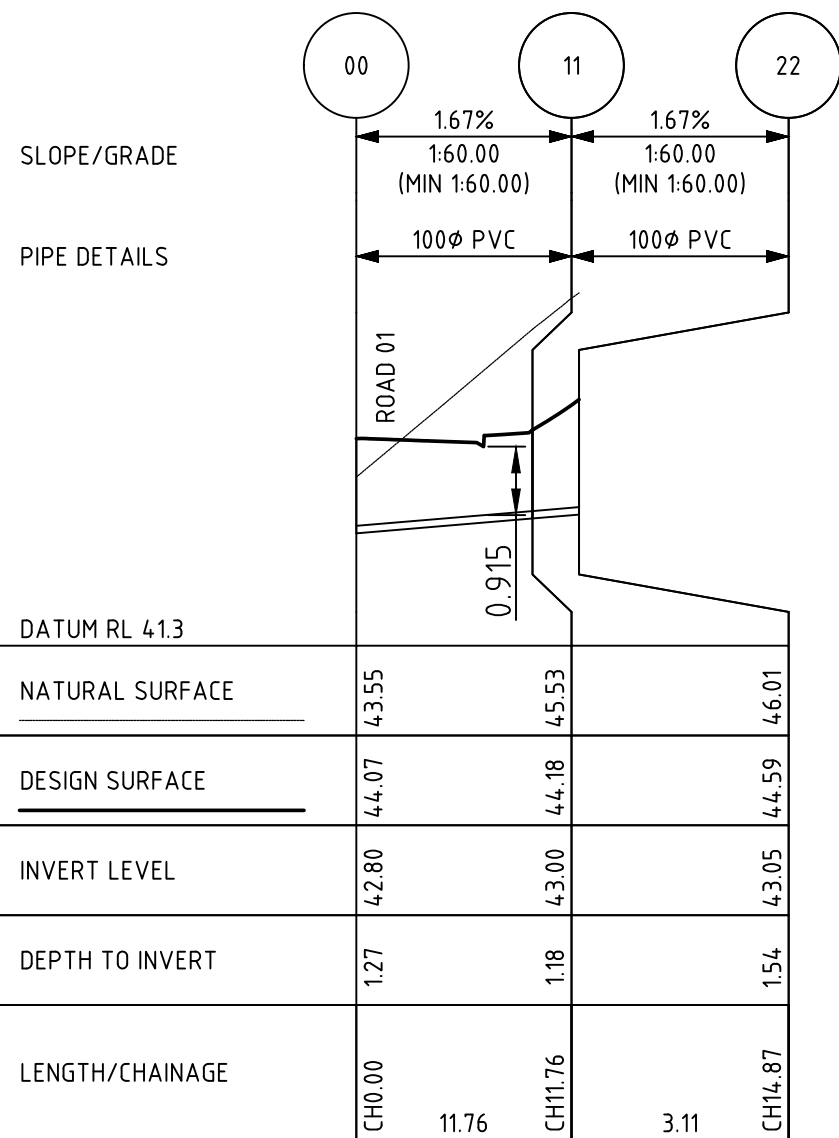
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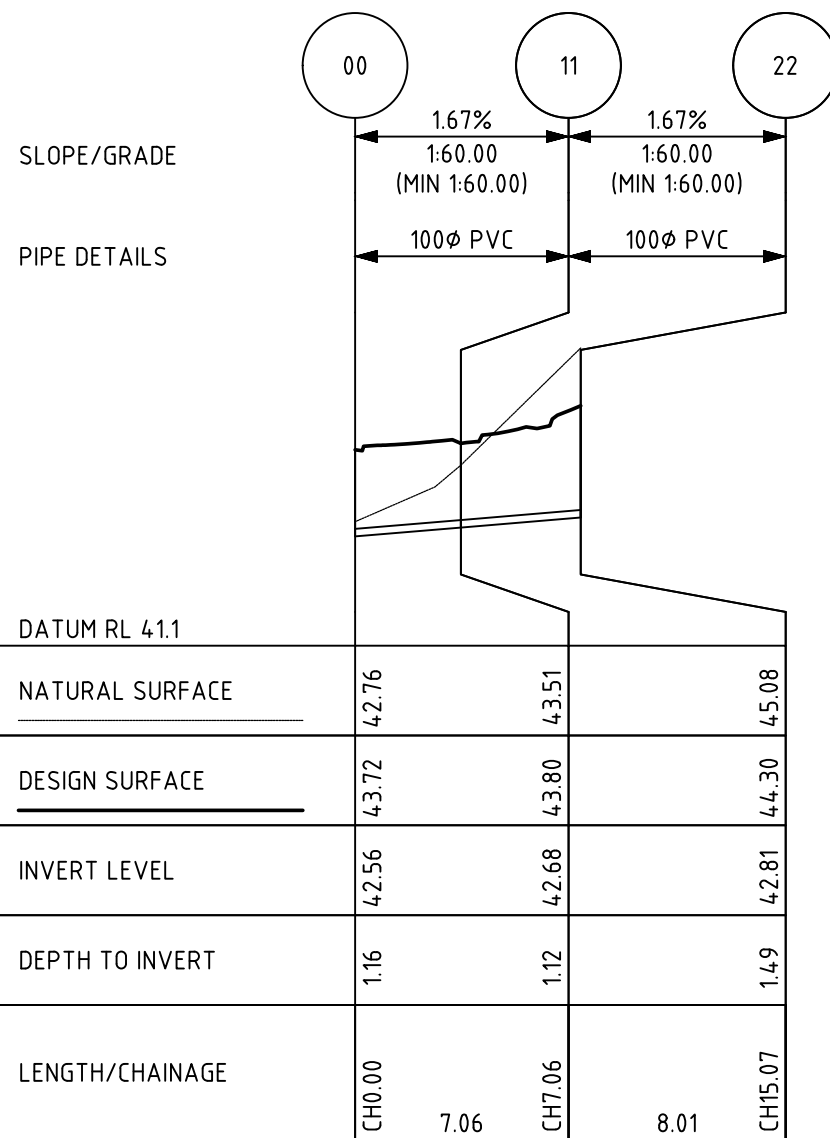
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No	Revision	Drawn	Date
4	DRAWING UPDATED WITH EXTRA LOT GRADING	CJG	24/02/25
3	DRAWING UPDATED WITH MINOR STORMWATER CHANGES	CJG	7/10/24
2	DRAWING UPDATED WITH INTERNAL COMMENTS	CJG	2/07/24
1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	CJG	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25

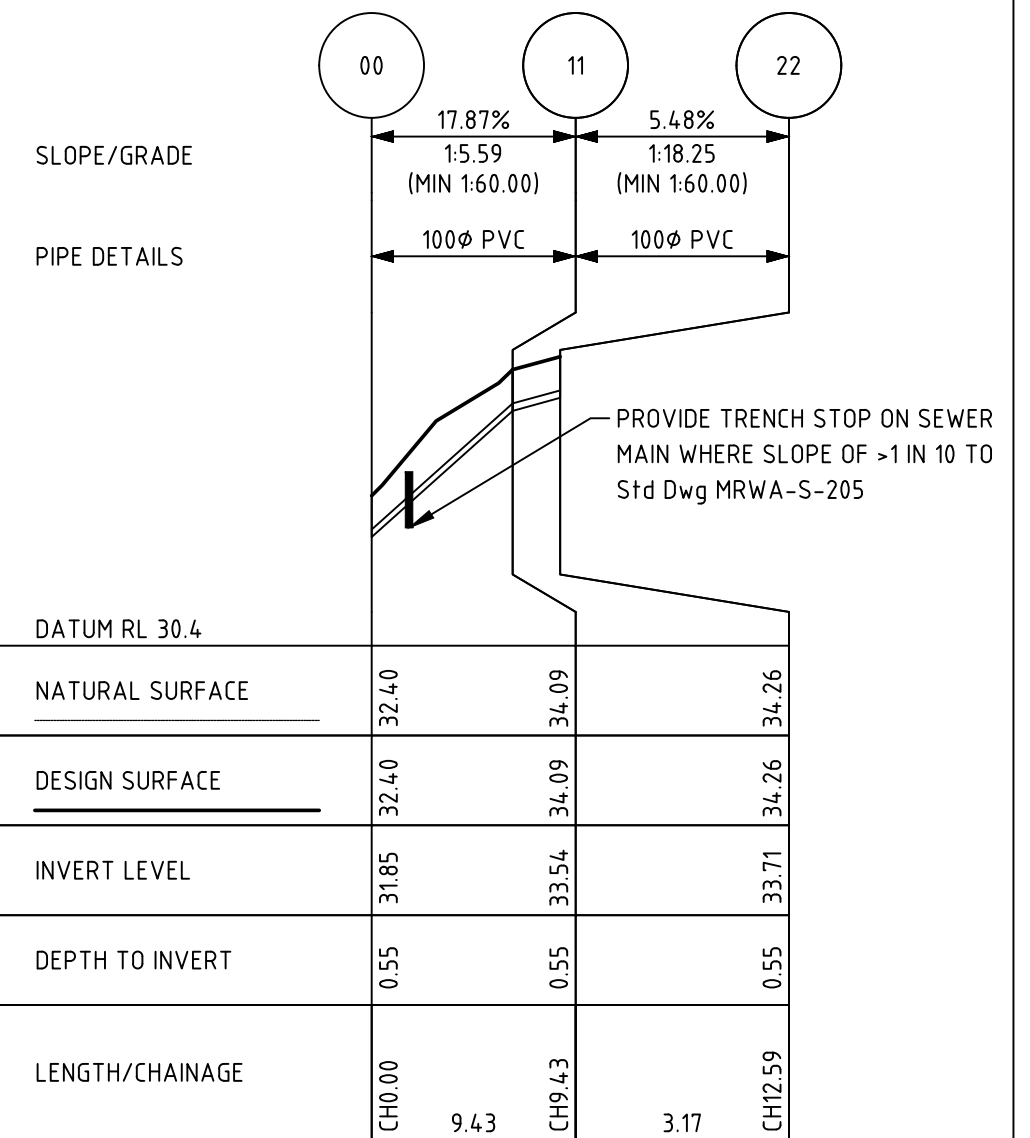
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 Project **57A BERRIGAN ROAD, MIANDETTA STAGE 01**
 Title **SEWER RETICULATION LONG SECTIONS PLAN SHEET 05**
 Drawing No: **0306-25_C23** Revision: **5**



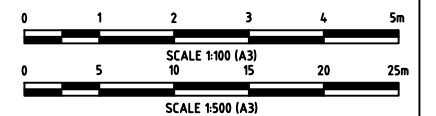
SEWER LONGITUDINAL SECTION HOUSE CONNECTION FOR LOTS 8 AND 9
 SCALES: HORIZONTAL 1:500 VERTICAL 1:100



SEWER LONGITUDINAL SECTION HOUSE CONNECTION FOR LOTS 10 AND 11
 SCALES: HORIZONTAL 1:500 VERTICAL 1:100



SEWER LONGITUDINAL SECTION HOUSE CONNECTION FOR LOT 20 AND 21
 SCALES: HORIZONTAL 1:500 VERTICAL 1:100



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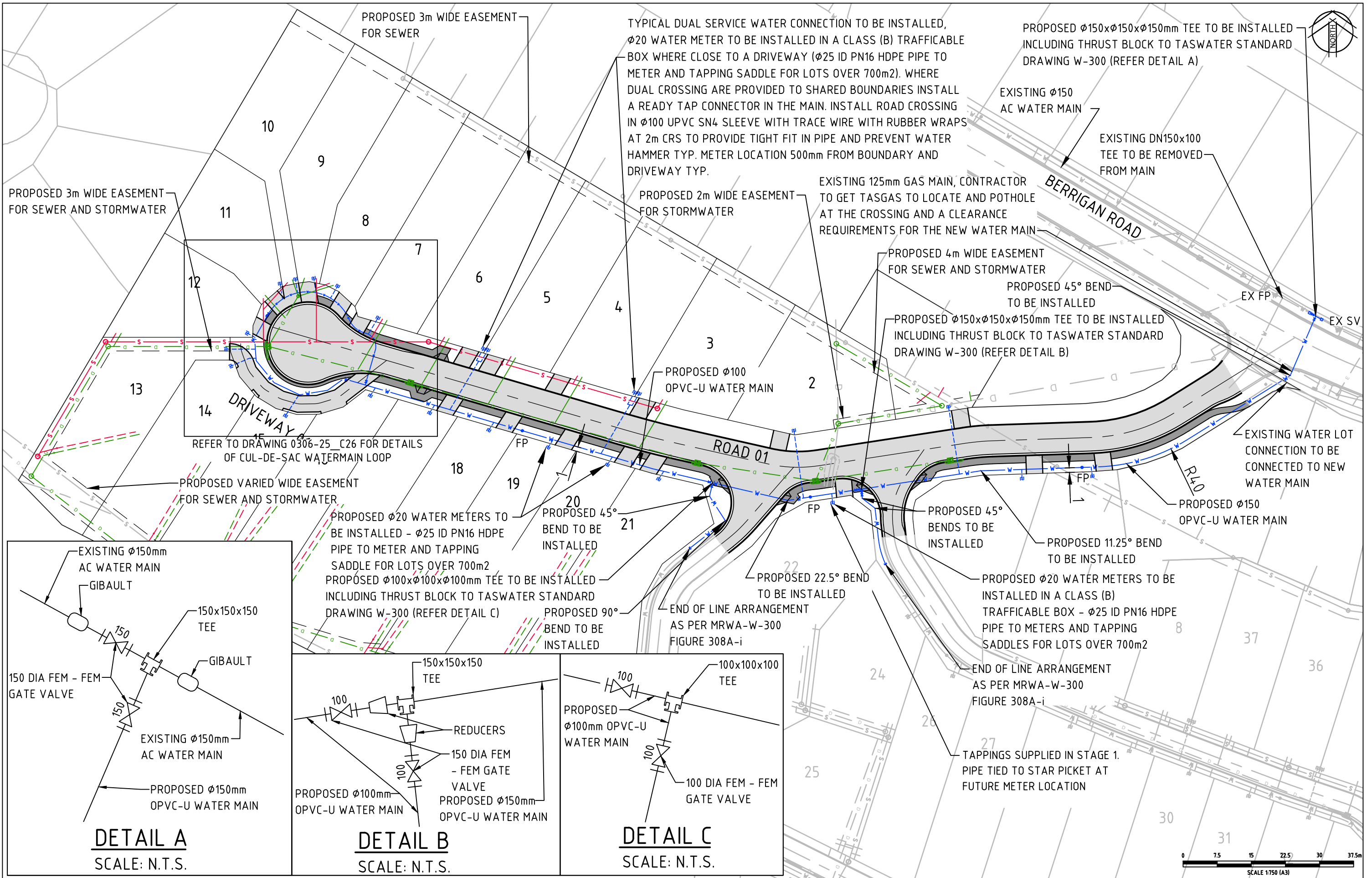
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Original Size	A3
Scale	1:500H 1:100V
Designed	CHRIS MARTIN
Drawn	CJG
Accred. No.	CC4109V
Approved	CHRIS MARTIN
Date	SEPTEMBER 2023

4	DRAWING UPDATED WITH EXTRA LOT GRADING	CJG	24/02/25
3	DRAWING UPDATED WITH MINOR STORMWATER CHANGES	CJG	7/10/24
2	DRAWING UPDATED WITH INTERNAL COMMENTS	CJG	2/07/24
1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	CJG	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25
No	Revision	Drawn	Date

Client	ANN-TAS
Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	SEWER CONNECTION LONG SECTION PLAN
Drawing No:	0306-25_C24
Revision:	5



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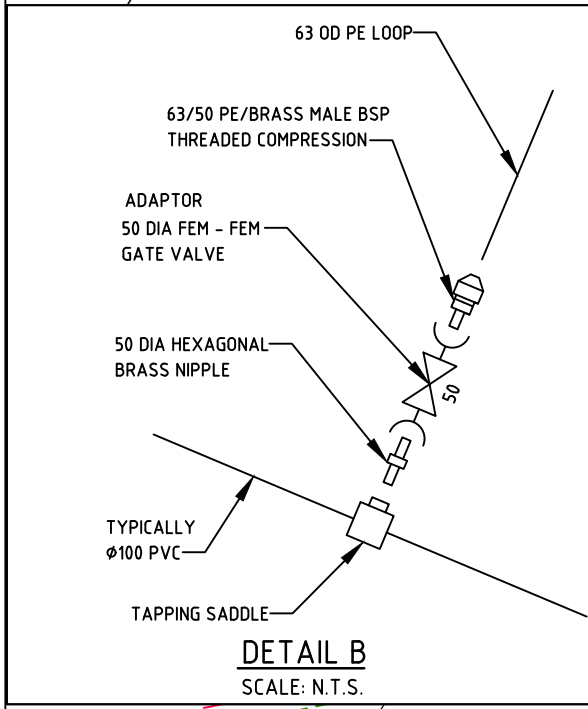
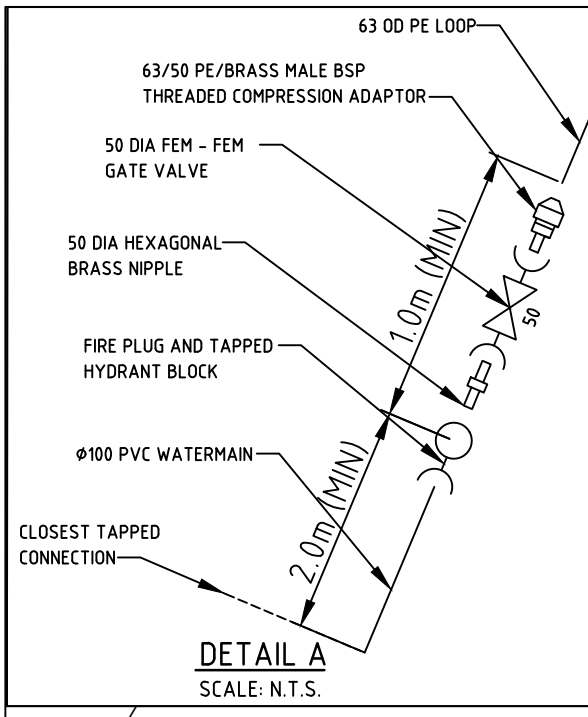
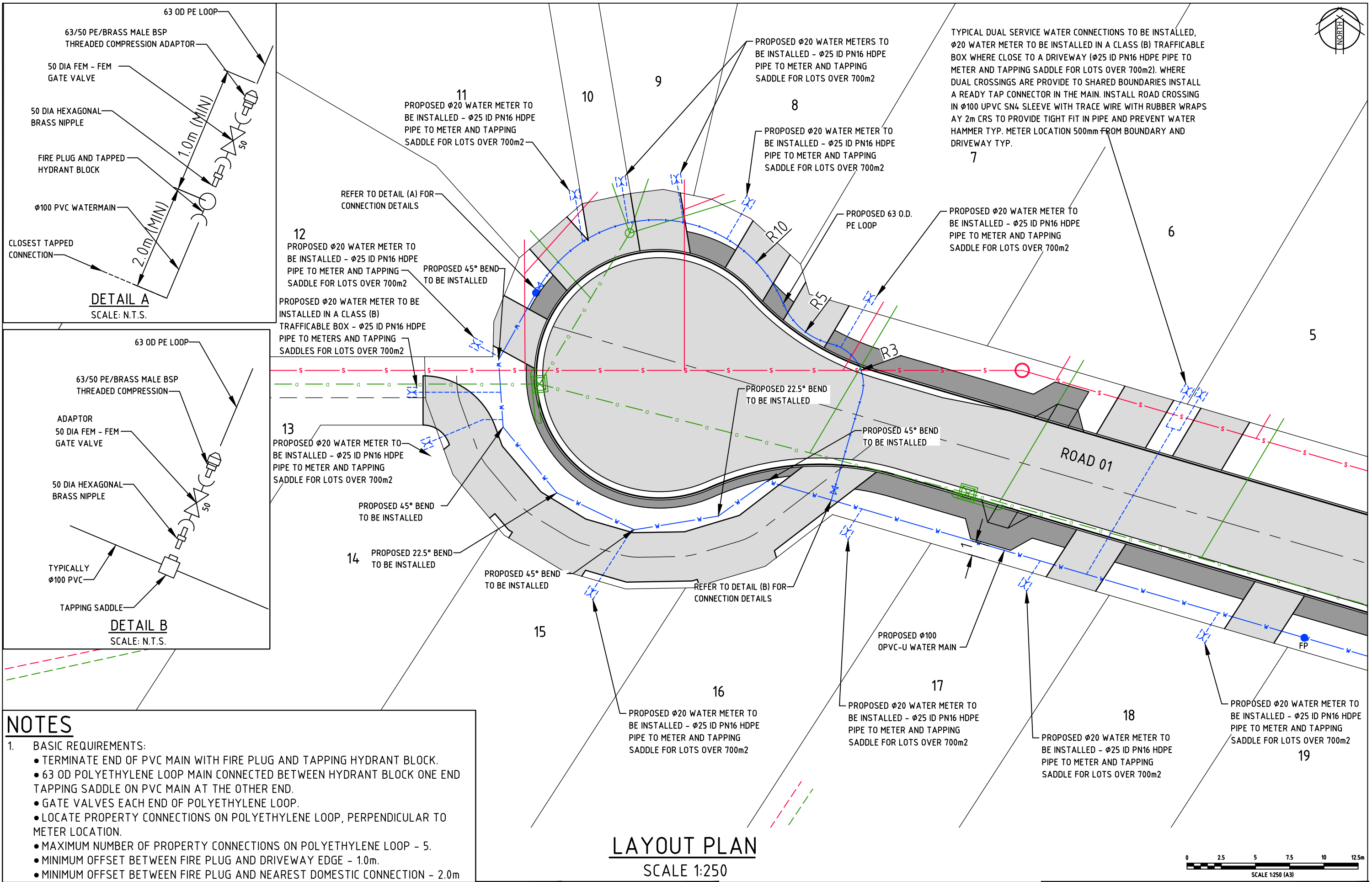
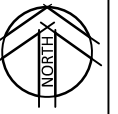
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Accred. No.	CC4109V
Drawn	CJG
Approved	CHRIS MARTIN
Date	SEPTEMBER 2023

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3	DRAWING UPDATED WITH MINOR STORMWATER CHANGES	CJG	7/10/24
2	DRAWING UPDATED WITH INTERNAL COMMENTS	CJG	2/07/24
1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	CJG	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25
No	Revision	Drawn	Date

Client **ANN-TAS**
Project **57A BERRIGAN ROAD, MIANETTA STAGE 01**
Title **WATER RETICULATION LAYOUT PLAN**

Drawing No: **0306-25_C25**

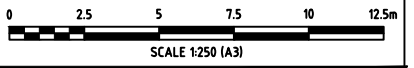
Revision: **5**



- ### NOTES
- BASIC REQUIREMENTS:
 - TERMINATE END OF PVC MAIN WITH FIRE PLUG AND TAPPING HYDRANT BLOCK.
 - 63 OD POLYETHYLENE LOOP MAIN CONNECTED BETWEEN HYDRANT BLOCK ONE END TAPPING SADDLE ON PVC MAIN AT THE OTHER END.
 - GATE VALVES EACH END OF POLYETHYLENE LOOP.
 - LOCATE PROPERTY CONNECTIONS ON POLYETHYLENE LOOP, PERPENDICULAR TO METER LOCATION.
 - MAXIMUM NUMBER OF PROPERTY CONNECTIONS ON POLYETHYLENE LOOP - 5.
 - MINIMUM OFFSET BETWEEN FIRE PLUG AND DRIVEWAY EDGE - 1.0m.
 - MINIMUM OFFSET BETWEEN FIRE PLUG AND NEAREST DOMESTIC CONNECTION - 2.0m

LAYOUT PLAN

SCALE 1:250



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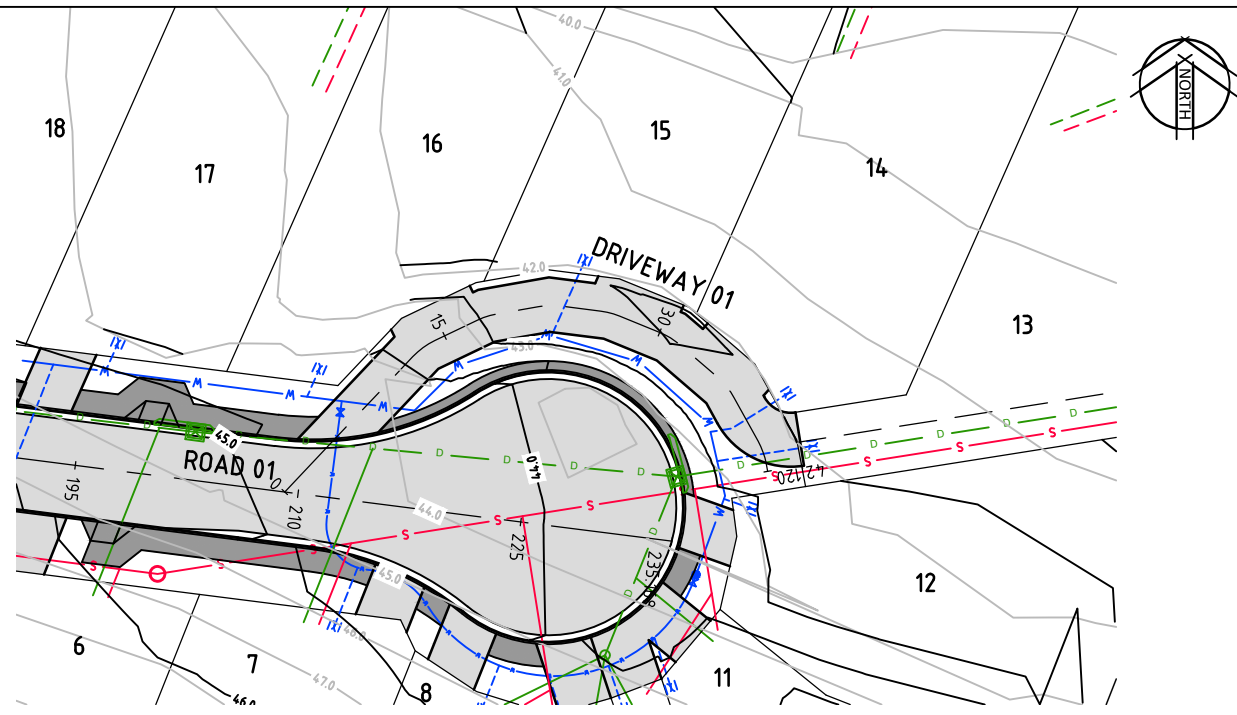
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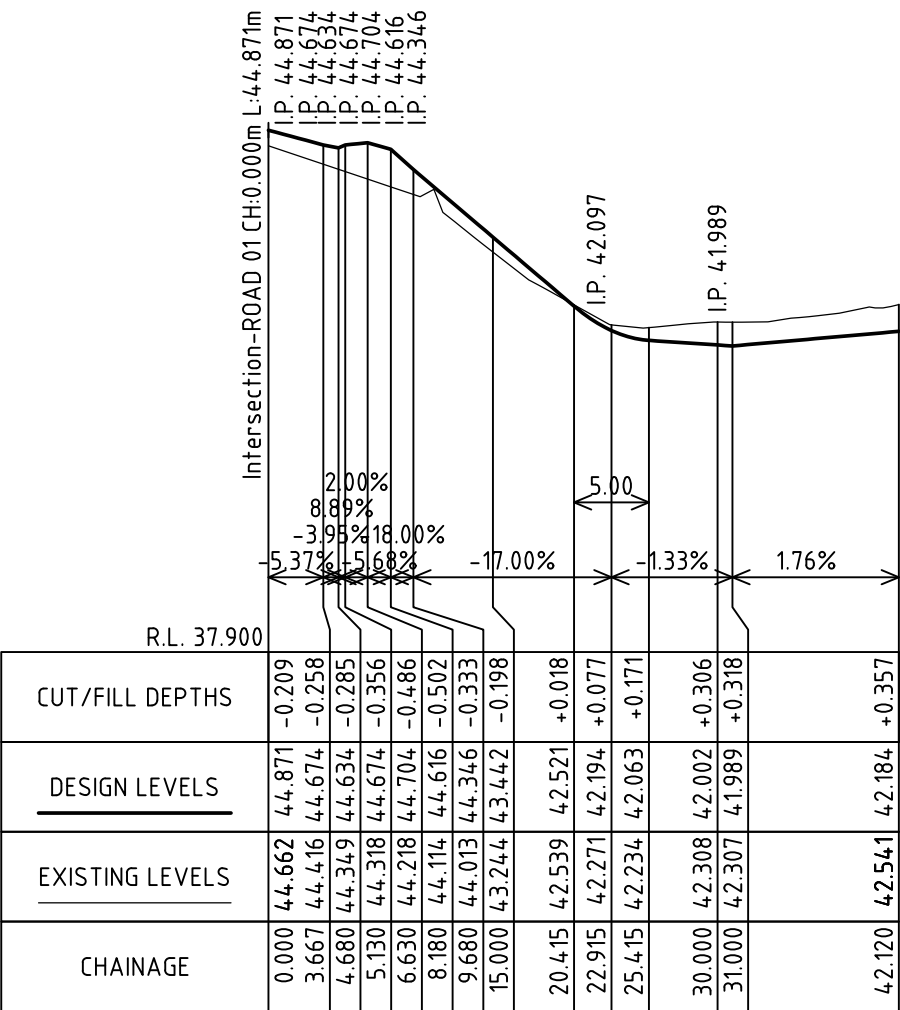
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FOR CONSTRUCTION	Drawn CJG	Accred. No. CC4109V	4 DRAWING UPDATED WITH EXTRA LOT GRADING
	Approved CHRIS MARTIN	Date SEPTEMBER 2023	3 DRAWING UPDATED WITH MINOR STORMWATER CHANGES
			2 DRAWING UPDATED WITH INTERNAL COMMENTS

1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	CJG	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25
No	Revision	Drawn	Date

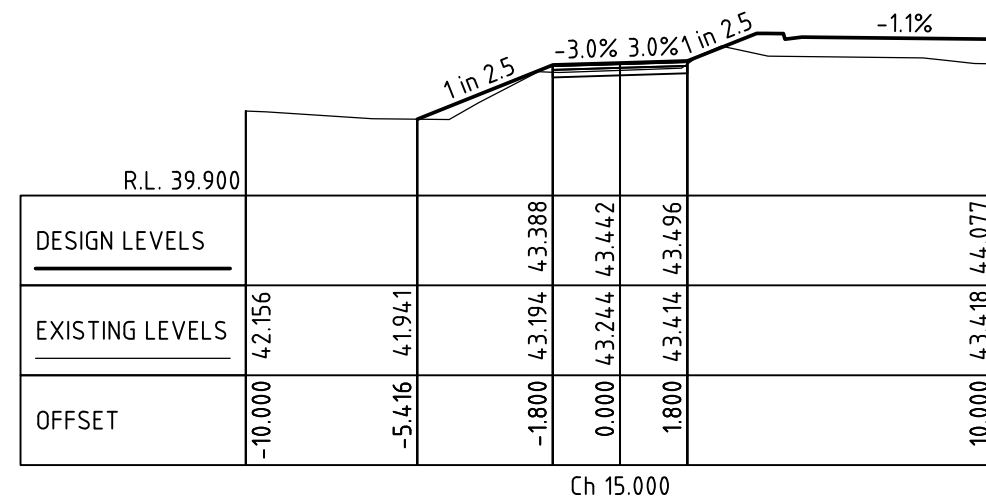
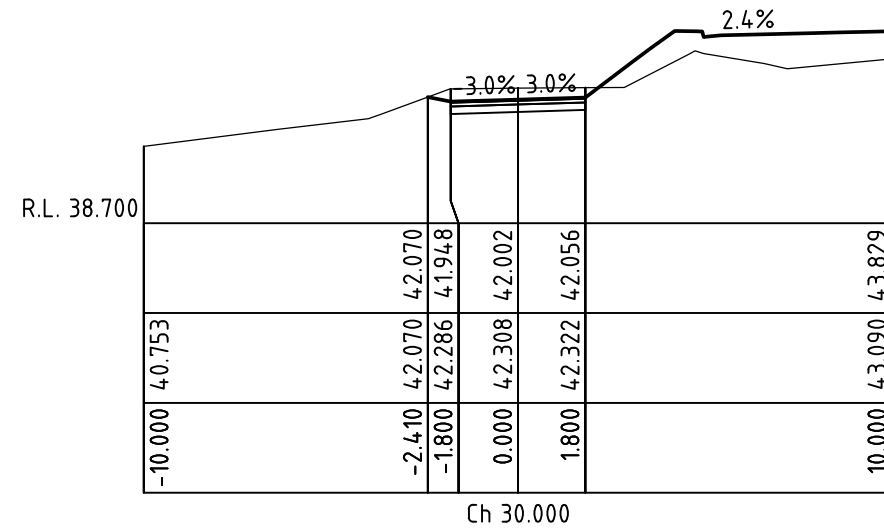
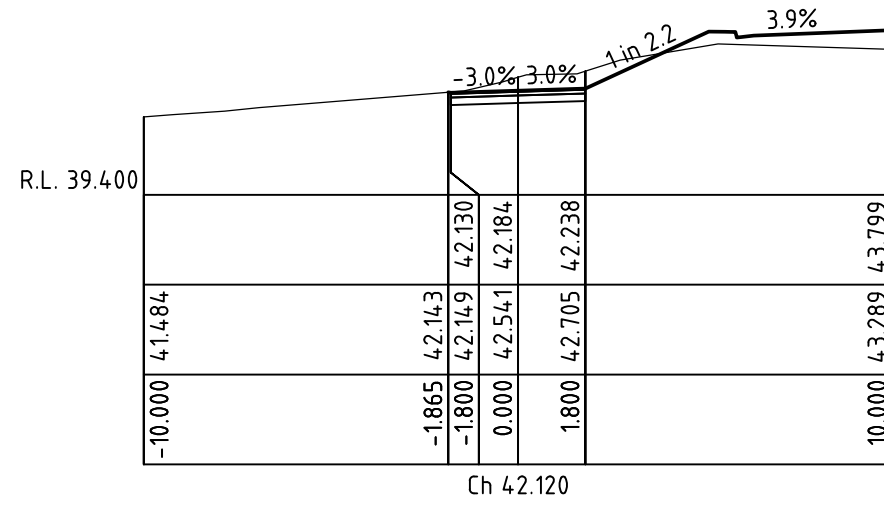
Client	ANN-TAS
Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	WATER RETICULATION CUL DE SAC LAYOUT PLAN
Drawing No:	0306-25_C26
Revision:	5



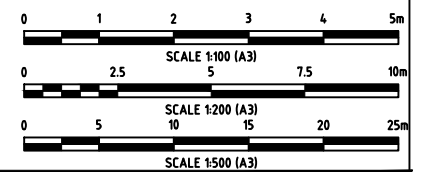
LAYOUT PLAN
SCALE 1:500



LONGITUDINAL SECTION DRIVEWAY 01 CH 0.000 TO 42.120
SCALES: HORIZ 1:500 VERT 1:100



DRIVEWAY 01 CROSS SECTIONS
SCALE 1:200H 1:200V



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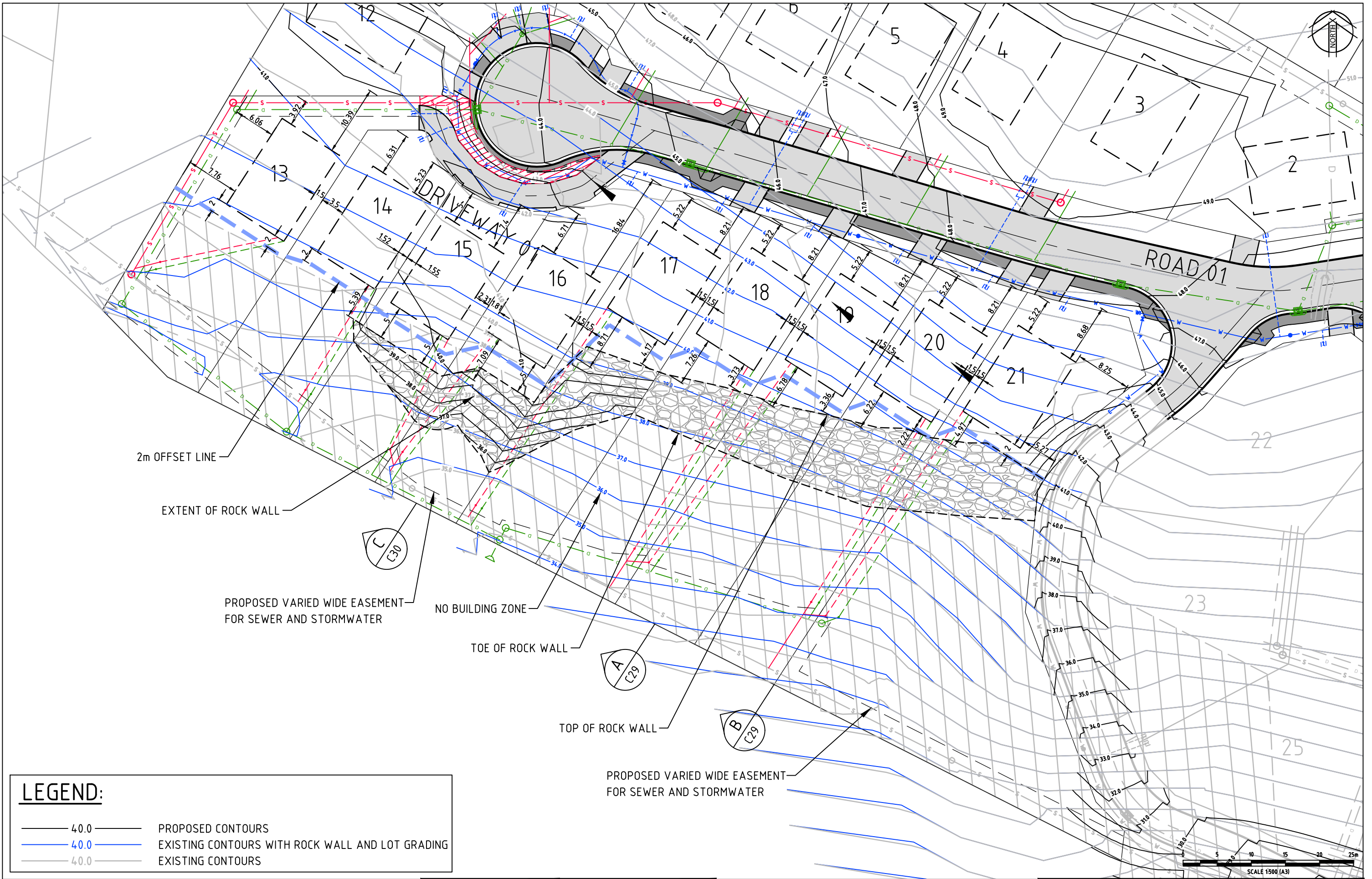
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Original Size A3	Scale AS NOTED	Designed CHRIS MARTIN
	Drawn CJG	Accred. No. CC4109V
	Approved CHRIS MARTIN	Date SEPTEMBER 2023

4	DRAWING UPDATED WITH EXTRA LOT GRADING	CJG	24/02/25
3	DRAWING UPDATED WITH MINOR STORMWATER CHANGES	CJG	7/10/24
2	DRAWING UPDATED WITH INTERNAL COMMENTS	CJG	2/07/24
1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	CJG	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25
No	Revision	Drawn	Date

Client	ANN-TAS
Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	DRIVEWAY 01 LAYOUT, LONG AND CROSS SECTIONS PLAN
Drawing No:	0306-25_C27
Revision:	5



LEGEND:

— 4.00 —	PROPOSED CONTOURS
— 4.00 —	EXISTING CONTOURS WITH ROCK WALL AND LOT GRADING
— 4.00 —	EXISTING CONTOURS

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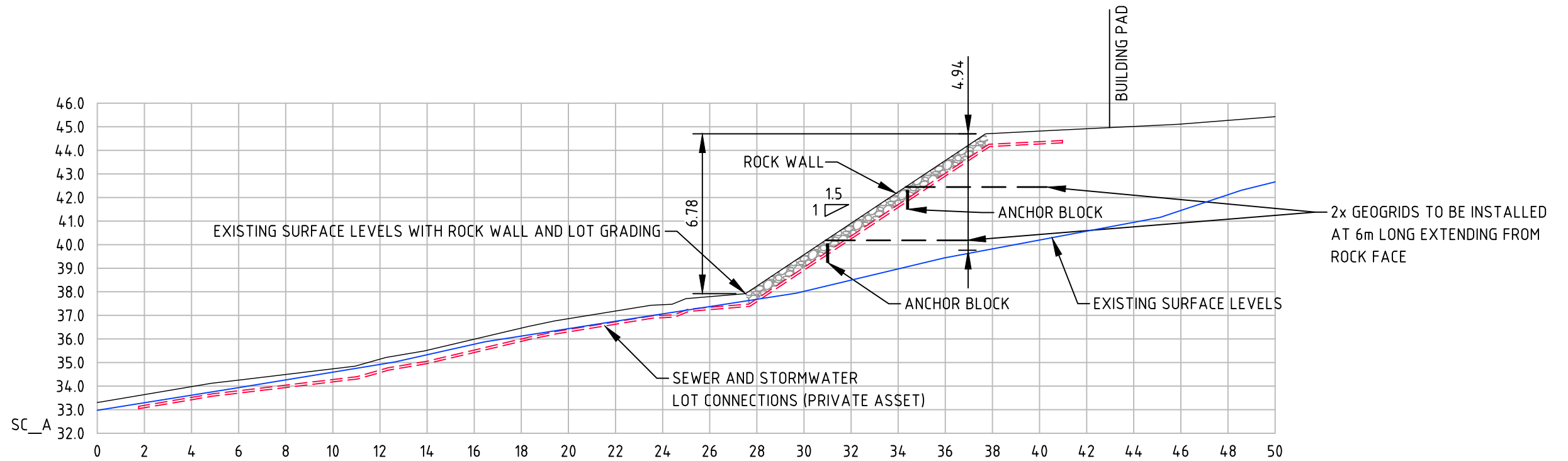
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FOR CONSTRUCTION

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Approved	CHRIS MARTIN		
Date	SEPTEMBER 2023		

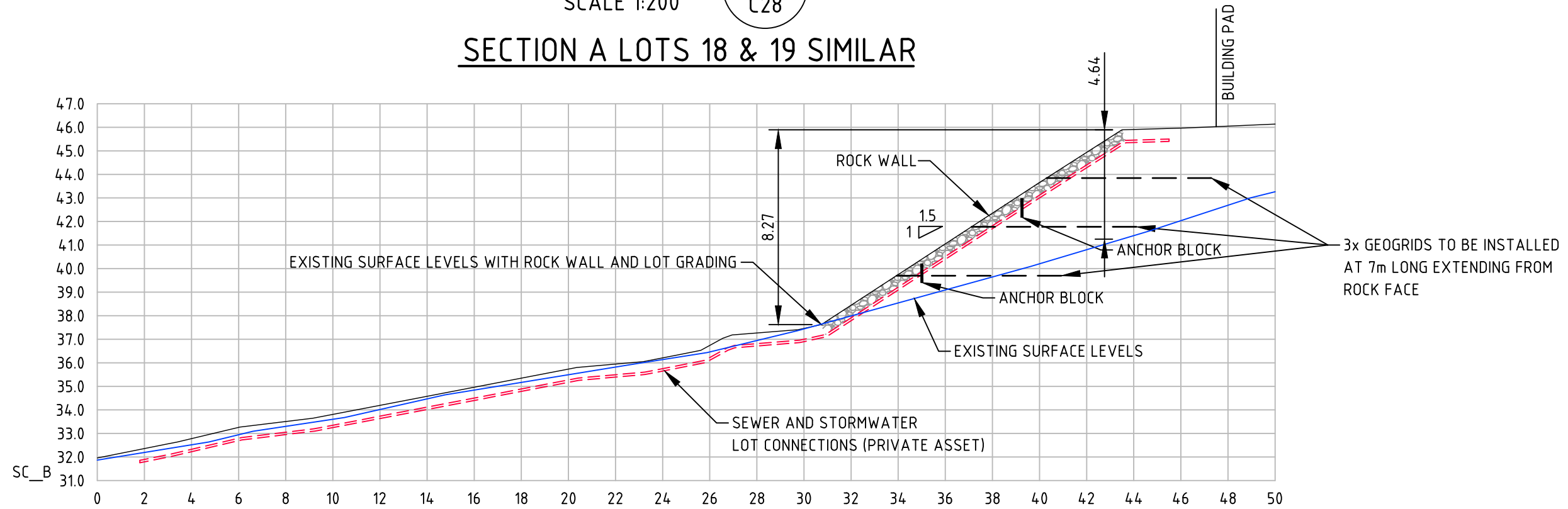
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3	DRAWING UPDATED WITH MINOR STORMWATER CHANGES	CJG	7/10/24
2	DRAWING UPDATED WITH INTERNAL COMMENTS	CJG	2/07/24
1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	CJG	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25
No	Revision	Drawn	Date

Client	ANN-TAS
Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	LOT BATTER SLOPE STABILITY LAYOUT PLAN
Drawing No:	0306-25_C28
Revision:	5



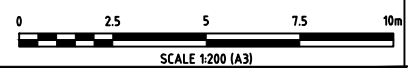
SECTION **A**
SCALE 1:200
C28

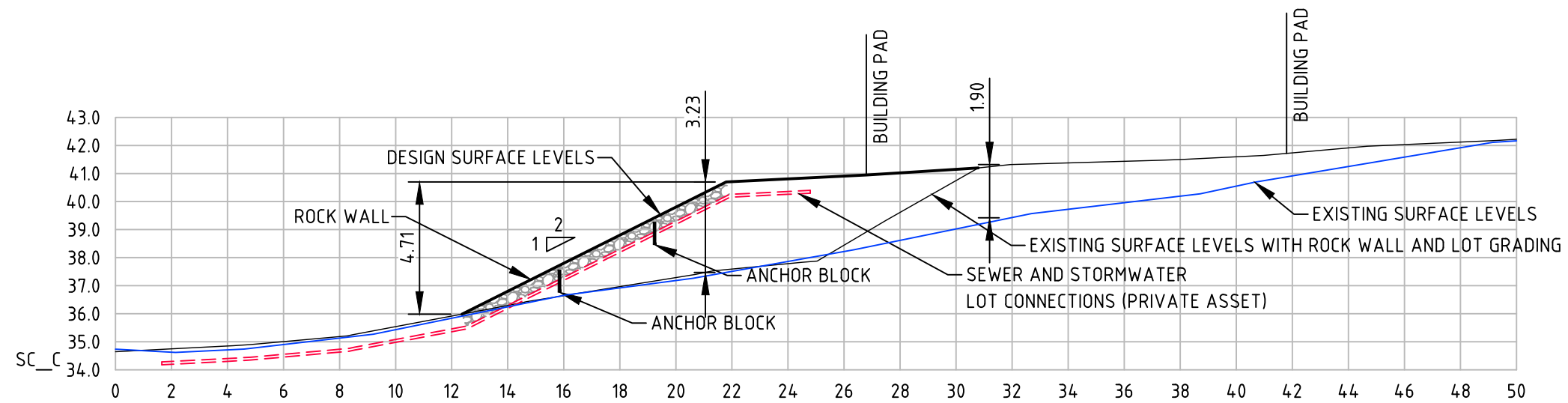
SECTION A LOTS 18 & 19 SIMILAR



SECTION **B**
SCALE 1:200
C28

SECTION B LOTS 20 & 21 SIMILAR





SECTION C
SCALE 1:200 C28

SECTION C LOTS 15, 16 & 17 SIMILAR

THE FOLLOWING SPECIFICATION APPLIES TO THE CONSTRUCTION OF THE ROCK FACING:-

THE AREA TO BE FILLED SHOULD BE BENCHED WITH A MAXIMUM VERTICAL STEP HEIGHT OF 0.5m. AS THE EXISTING FILL PLATFORM EXTENDS OVER MOST OF THE AREA TO BE FILLED, WE WOULD REQUIRE PHOTOGRAPHIC EVIDENCE OF THE BENCHING.

- FILL MATERIAL SHOULD NOT CONTAIN COBBLES AND BOULDERS GREATER THAN 150mm DIAMETER,
- FILL SHOULD BE PLACED AT MOISTURE CONTENT WITHIN 2% OF OPTIMUM MOISTURE CONTENT AND COMPACTED IN LAYERS NO GREATER THAN 200mm THICK,
- FILL SHOULD ACHIEVE A DRY DENSITY RATIO OF AT LEAST 95% (STANDARD COMPACTION),
- ROCKS TO BE USED FOR THE FACING SHOULD HAVE A MINIMUM DIMENSION OF AT LEAST 0.6m,
- ROCK FACE SHOULD HAVE AT LEAST 2m WIDTH (FOR 1V:2H FACE), EXCEPT FOR TOP ROW OF ROCKS, FOR WHICH 0.5m WIDTH IS ACCEPTABLE.
- ROCKS LAYERS SHALL BE AT LEAST 1m HIGH
- BOTTOM LAYER OF ROCKS SHOULD BE EMBEDDED AT LEAST 0.4m BELOW GROUND LEVEL,
- NO VIBRATORY COMPACTION IS TO BE CARRIED OUT WITHIN 2m OF BACK OF ROCK WALL. NON-VIBRATORY COMPACTION IS ALLOWED WITHIN 2m OF THE ROCK WALL
- THE LOWEST GEOGRID LAYER SHOULD BE PLACED AT LEAST 2m ABOVE THE BASE OF THE ROCK WALL,
- GEOGRID LAYERS SHALL HAVE A LONG-TERM TENSILE STRENGTH OF 40KN/m,
- GEOGRIDS SHALL BE INCLUDED ACROSS THE FULL WIDTH OF THE LOTS AS FOLLOWS:

THE CONTRACTOR SHALL OBTAIN HOLD POINT INSPECTIONS AT THE FOLLOWING HOLD POINTS DURING CONSTRUCTION OF THE WALL:-

1. EXCAVATION FOR BOTTOM LAYER AT LEAST 0.4M BELOW GROUND LEVEL
2. HORIZONTAL BENCHES FOR PLACING FILL
3. ROCK SIZES TO BE AT LEAST 0.6m
4. MATERIAL USED TO BACKFILL TO BE SMALLER THAN 150mm DIAM.
5. GEOGRID TO HAVE LONG-TERM TENSILE STRENGTH AT LEAST 40KN/m
6. GEOGRID LENGTH IS AS PER TABLE IN OUR LETTER
HAVING AT LEAST 48 HOUR NOTIFICATION WOULD BE PREFERRED.

LOT NUMBER	MINIMUM NUMBER AND (LENGTH) OF GEOGRID LAYERS 1V:1.5H ROCK FACE
13, 14	0
15, 16	0
17	1 (5m)
18	2 (6m)
19	3 (8m)
20	3 (7m)
21	3 (7m)



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DO NOT SCALE
FOR CONSTRUCTION

Original Size	A3
Scale	AS NOTED
Designed	CHRIS MARTIN
Drawn	CJG
Accred. No.	CC4109V
Approved	CHRIS MARTIN
Date	SEPTEMBER 2023

4	DRAWING UPDATED WITH EXTRA LOT GRADING	CJG	24/02/25
3	DRAWING UPDATED WITH MINOR STORMWATER CHANGES	CJG	7/10/24
2	DRAWING UPDATED WITH INTERNAL COMMENTS	CJG	2/07/24
1	DRAWING UPDATED WITH COMMENTS FROM TASWATER	CJG	7/06/24
5	UPDATED ROCK WALL DETAILS AS PER COMMENTS	CJG	24/04/25
No	Revision	Drawn	Date

Client	ANN-TAS
Project	57A BERRIGAN ROAD, MIANDETTA STAGE 01
Title	LOT BATTER SLOPE STABILITY DETAILS PLAN SHEET 02
Drawing No:	0306-25_C30
Revision:	5

Material Test Report



Rare Earth CMT Laboratories Pty Ltd

Ulverstone Laboratory

2/6 Kilowatt Court Ulverstone Tasmania 7315

Phone: 0477 477 157

Email: matthew@rareearthcmt.com.au

Report Number: RU24/294-1
Issue Number: 1
Date Issued: 02/10/2024
Client: Walters Contracting
 11 East Goderich Street, Deloraine TAS 7304
Contact: Mark Porter
Project Number: RU24/294
Project Name: Berrigan Road Subdivision
Project Location: Miendetta
Work Request: 1346
Date Sampled: 30/09/2024
Dates Tested: 30/09/2024 - 01/10/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: In accordance with the test method
Location: Devonport
Material: Embankment Fill

Accredited for compliance with ISO/IEC 17025 - Testing



M Ansell

Approved Signatory: Matthew Ansell

General Manager

NATA Accredited Laboratory Number: 20328

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	S1346A	S1346B	S1346C	S1346D
Date Tested	30/09/2024	30/09/2024	30/09/2024	30/09/2024
Time Tested	11:21	11:30	11:37	11:47
Test Request #/Location	1	2	3	4
Easting	445526.72	445508.16	445632.42	445646.87
Northing	5439160.35	5439166.72	5439148.79	5439148.74
Elevation (m)	46.38	45.00	48.24	49.02
Layer / Reduced Level	Embankment Fill	Embankment Fill	Embankment Fill	Embankment Fill
Thickness of Layer (mm)	325	325	325	325
Soil Description	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay
Test Depth (mm)	300	300	300	300
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	5	0	0	0
Field Wet Density (FWD) t/m ³	1.86	2.03	2.02	2.03
Field Moisture Content %	33.6	25.8	33.2	33.2
Field Dry Density (FDD) t/m ³	1.40	1.61	1.52	1.53
Peak Converted Wet Density t/m ³	**	2.00	1.87	1.90
Adjusted Peak Converted Wet Density t/m ³	1.85	**	**	**
Moisture Variation (Wv) %	**	-2.5	-1.0	-2.5
Adjusted Moisture Variation %	-2.5	**	**	**
Hilf Density Ratio (%)	100.5	101.5	108.0	107.0
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Rare Earth CMT Laboratories Pty Ltd

Ulverstone Laboratory

2/6 Kilowatt Court Ulverstone Tasmania 7315

Phone: 0477 477 157

Email: matthew@rareearthcmt.com.au

Report Number: RU24/294-2
Issue Number: 1
Date Issued: 02/10/2024
Client: Walters Contracting
 11 East Goderich Street, Deloraine TAS 7304
Contact: Mark Porter
Project Number: RU24/294
Project Name: Berrigan Road Subdivision
Project Location: Miendetta
Work Request: 1349
Date Sampled: 01/10/2024
Dates Tested: 01/10/2024 - 02/10/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: In accordance with the test method
Location: Devonport
Material: Embankment Fill

Accredited for compliance with ISO/IEC 17025 - Testing



M Ansell

Approved Signatory: Matthew Ansell

General Manager

NATA Accredited Laboratory Number: 20328

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	S1349A	S1349B	S1349C	S1349D	S1349E
Date Tested	01/10/2024	01/10/2024	01/10/2024	01/10/2024	01/10/2024
Time Tested	10:37	10:46	10:57	11:09	11:18
Test Request #/Location	1	2	3	4	5
Easting	445645.16	445634.63	445518.52	445502.30	445486.56
Northing	5439151.03	5439149.06	5439162.65	5439166.37	5439169.32
Elevation (m)	49.29	48.58	45.58	44.54	43.20
Layer / Reduced Level	Embankment Fill	Embankment Fill	Embankment Fill	Embankment Fill	Embankment Fill
Thickness of Layer (mm)	325	325	325	325	325
Soil Description	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay
Test Depth (mm)	300	300	300	300	300
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	5	15	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**
Field Wet Density (FWD) t/m ³	1.79	1.94	1.96	1.94	1.84
Field Moisture Content %	46.5	38.0	33.1	31.8	34.6
Field Dry Density (FDD) t/m ³	1.22	1.41	1.49	1.52	1.37
Peak Converted Wet Density t/m ³	1.78	1.82	**	**	1.87
Adjusted Peak Converted Wet Density t/m ³	**	**	1.87	1.88	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	29.1	25.0	**
Adj. Field Moisture Content % (AS1289.5.4.1)	46.5	38.0	31.5	27.2	34.6
Moisture Ratio % (AS1289.5.4.1)	109.0	107.0	**	**	109.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	108.0	108.5	**
Moisture Variation (Wv) %	-3.5	-2.5	**	**	-3.0
Adjusted Moisture Variation %	**	**	-2.5	-2.0	**
Hilf Density Ratio (%)	100.5	106.5	104.5	103.0	98.5
Compaction Method	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Rare Earth CMT Laboratories Pty Ltd

Ulverstone Laboratory

2/6 Kilowatt Court Ulverstone Tasmania 7315

Phone: 0477 477 157

Email: matthew@rareearthcmt.com.au

Report Number: RU24/294-3
Issue Number: 1
Date Issued: 04/10/2024
Client: Walters Contracting
 11 East Goderich Street, Deloraine TAS 7304
Contact: Mark Porter
Project Number: RU24/294
Project Name: Berrigan Road Subdivision
Project Location: Miendetta
Work Request: 1357
Date Sampled: 02/10/2024 11:15
Dates Tested: 02/10/2024 - 03/10/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: In accordance with the test method
Location: Devonport
Material: Embankment Fill

Accredited for compliance with ISO/IEC 17025 - Testing



Alastair Baird

Approved Signatory: Alastair Baird
 Laboratory Manager

NATA Accredited Laboratory Number: 20328

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S1357A	S1357B	S1357C
Date Tested	02/10/2024	02/10/2024	02/10/2024
Time Tested	11:15	11:21	11:30
Test Request #/Location	1	2	3
Easting	445659.16	445654.00	445640.45
Northing	5439152.38	5439151.34	5439151.98
Elevation (m)	50.50	50.08	49.50
Layer / Reduced Level	Embankment Fill	Embankment Fill	Embankment Fill
Thickness of Layer (mm)	325	325	325
Soil Description	Red/Brown Gravelly Silty Clay	Red/Brown Gravelly Silty Clay	Red/Brown Gravelly Silty Clay
Test Depth (mm)	300	300	300
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	10	7	7
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m ³	1.91	1.86	1.90
Field Moisture Content %	37.5	36.5	36.4
Field Dry Density (FDD) t/m ³	1.43	1.39	1.42
Peak Converted Wet Density t/m ³	**	**	**
Adjusted Peak Converted Wet Density t/m ³	1.85	1.82	1.85
Adj. Optimum Moisture Content % (AS1289.5.4.1)	32.2	31.8	31.8
Adj. Field Moisture Content % (AS1289.5.4.1)	33.7	33.8	33.7
Moisture Ratio % (AS1289.5.4.1)	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	105.0	106.5	106.0
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	-1.5	-2.0	-2.0
Hilf Density Ratio (%)	103.5	102.0	102.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Rare Earth CMT Laboratories Pty Ltd

Ulverstone Laboratory

2/6 Kilowatt Court Ulverstone Tasmania 7315

Phone: 0477 477 157

Email: matthew@rareearthcmt.com.au

Report Number: RU24/294-4
Issue Number: 1
Date Issued: 07/10/2024
Client: Walters Contracting
 11 East Goderich Street, Deloraine TAS 7304
Contact: Mark Porter
Project Number: RU24/294
Project Name: Berrigan Road Subdivision
Project Location: Miendetta
Work Request: 1367
Date Sampled: 04/10/2024
Dates Tested: 04/10/2024 - 04/10/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: In accordance with the test method
Location: Devonport
Material: Select Fill

Accredited for compliance with ISO/IEC 17025 - Testing



Alastair Baird

Approved Signatory: Alastair Baird
 Laboratory Manager

NATA Accredited Laboratory Number: 20328

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S1367A	S1367B	S1367C
Date Tested	04/10/2024	04/10/2024	04/10/2024
Time Tested	08:40	08:47	09:02
Test Request #/Location	1	2	3
Line / Offset	Lot 17	Lot 18	Lot 19
Offset	DT1	DT2	DT3
Layer / Reduced Level	Select Fill	Select Fill	Select Fill
Thickness of Layer (mm)	350	350	350
Soil Description	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay
Test Depth (mm)	300	300	300
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	5	3	4
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m ³	1.79	1.84	1.87
Field Moisture Content %	30.5	35.1	29.1
Field Dry Density (FDD) t/m ³	1.39	1.37	1.46
Peak Converted Wet Density t/m ³	**	**	**
Adjusted Peak Converted Wet Density t/m ³	1.88	1.82	1.90
Adj. Optimum Moisture Content % (AS1289.5.4.1)	27.5	33.5	26.5
Adj. Field Moisture Content % (AS1289.5.4.1)	29.1	34.0	28.0
Moisture Ratio % (AS1289.5.4.1)	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	106.0	101.5	105.5
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	-1.5	-0.5	-1.5
Hilf Density Ratio (%)	95.0	101.5	98.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report




Report Number: RU24/294-5
Issue Number: 1
Date Issued: 16/10/2024
Client: Walters Contracting
 11 East Goderich Street, Deloraine TAS 7304
Contact: Mark Porter
Project Number: RU24/294
Project Name: Berrigan Road Subdivision
Project Location: Miendetta
Work Request: 1381
Dates Tested: 10/10/2024 - 14/10/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: In accordance with the test method
Location: Devonport
Material: Select Fill
Material Source: Brown Gravelly Silty Clay

Rare Earth CMT Laboratories Pty Ltd
 Ulverstone Laboratory
 2/6 Kilowatt Court Ulverstone Tasmania 7315
 Phone: 0477 477 157
 Email: matthew@rareearthcmt.com.au

Accredited for compliance with ISO/IEC 17025 - Testing




 Approved Signatory: Alastair Baird
 Laboratory Manager

NATA Accredited Laboratory Number: 20328

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	S1381A	S1381B	S1381C	S1381D	S1381E	S1381F
Date Tested	10/10/2024	10/10/2024	10/10/2024	10/10/2024	10/10/2024	10/10/2024
Time Tested	10:44	10:52	10:57	11:06	11:18	11:24
Test Request #/Location	1	2	3	4	5	6
Line / Offset	Lot 19	Lot 18	Lot 17	Lot 16	Lot 15	Lot 19
Offset	DT4	DT5	DT6	DT7	DT8	DT9
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill
Thickness of Layer (mm)	350	350	350	350	350	350
Soil Description	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay
Test Depth (mm)	300	300	300	300	300	300
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	1	11	4	3	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**	**
Field Wet Density (FWD) t/m ³	1.89	1.84	1.81	1.95	2.00	1.92
Field Moisture Content %	41.6	38.7	35.1	38.3	33.5	32.5
Field Dry Density (FDD) t/m ³	1.34	1.33	1.38	1.43	1.51	1.45
Peak Converted Wet Density t/m ³	1.77	**	**	**	**	1.87
Adjusted Peak Converted Wet Density t/m ³	**	1.82	1.87	1.84	1.88	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	35.7	29.8	33.2	31.7	**
Adj. Field Moisture Content % (AS1289.5.4.1)	41.6	38.2	31.4	36.6	32.7	32.5
Moisture Ratio % (AS1289.5.4.1)	106.0	**	**	**	**	105.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	107.0	105.0	110.0	103.0	**
Moisture Variation (Wv) %	-2.5	**	**	**	**	-1.5
Adjusted Moisture Variation %	**	-2.5	-1.5	-3.5	-1.0	**
Hilf Density Ratio (%)	107.0	101.0	97.0	106.0	106.5	102.5
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report




Report Number: RU24/294-5
Issue Number: 1
Date Issued: 16/10/2024
Client: Walters Contracting
 11 East Goderich Street, Deloraine TAS 7304
Contact: Mark Porter
Project Number: RU24/294
Project Name: Berrigan Road Subdivision
Project Location: Miendetta
Work Request: 1381
Dates Tested: 10/10/2024 - 14/10/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: In accordance with the test method
Location: Devonport
Material: Select Fill
Material Source: Brown Gravelly Silty Clay

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Accredited for compliance with ISO/IEC 17025 - Testing




 Approved Signatory: Alastair Baird
 Laboratory Manager

NATA Accredited Laboratory Number: 20328

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	S1381G	S1381H	S1381I	S1381J	S1381K	
Date Tested	10/10/2024	10/10/2024	10/10/2024	10/10/2024	10/10/2024	
Time Tested	11:30	11:38	11:47	12:00	12:10	
Test Request #/Location	7	8	9	10	11	
Line / Offset	Lot 18	Lot 18	Lot 18	Lot 17	Lot 17	
Offset	DT10	DT11	DT12	DT13	DT14	
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill	
Thickness of Layer (mm)	350	350	350	350	350	
Soil Description	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	
Test Depth (mm)	300	300	300	300	300	
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	
Percentage of Wet Oversize (%)	8	0	0	0	0	
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**	
Field Wet Density (FWD) t/m ³	1.97	1.89	1.93	1.83	1.82	
Field Moisture Content %	33.0	38.4	33.9	40.6	36.9	
Field Dry Density (FDD) t/m ³	1.51	1.37	1.44	1.30	1.33	
Peak Converted Wet Density t/m ³	**	1.83	1.84	1.83	1.85	
Adjusted Peak Converted Wet Density t/m ³	1.94	**	**	**	**	
Adj. Optimum Moisture Content % (AS1289.5.4.1)	28.2	**	**	**	**	
Adj. Field Moisture Content % (AS1289.5.4.1)	30.3	38.4	33.9	40.6	36.9	
Moisture Ratio % (AS1289.5.4.1)	**	109.0	105.5	109.5	110.0	
Adjusted Moisture Ratio % (AS1289.5.4.1)	107.5	**	**	**	**	
Moisture Variation (Wv) %	**	-3.0	-1.5	-3.5	-3.0	
Adjusted Moisture Variation %	-2.0	**	**	**	**	
Hilf Density Ratio (%)	101.5	103.5	105.0	100.5	98.5	
Compaction Method	Standard	Standard	Standard	Standard	Standard	
Report Remarks	**	**	**	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report



Rare Earth CMT Laboratories Pty Ltd

Ulverstone Laboratory

2/6 Kilowatt Court Ulverstone Tasmania 7315

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Email: matthew@rareearthcmt.com.au

Report Number: RU24/294-6
Issue Number: 1
Date Issued: 18/10/2024
Client: Walters Contracting
 11 East Goderich Street, Deloraine TAS 7304
Contact: Mark Porter
Project Number: RU24/294
Project Name: Berrigan Road Subdivision
Project Location: Miendetta
Work Request: 1389
Date Sampled: 15/10/2024
Dates Tested: 15/10/2024 - 17/10/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: In accordance with the test method
Location: Devonport
Material: Select Fill

Accredited for compliance with ISO/IEC 17025 - Testing



M Ansell

Approved Signatory: Matthew Ansell

General Manager

NATA Accredited Laboratory Number: 20328

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	S1389A	S1389B	S1389C	S1389D	S1389E
Date Tested	15/10/2024	15/10/2024	15/10/2024	15/10/2024	15/10/2024
Time Tested	11:52	12:04	12:11	12:19	12:26
Test Request #/Location	1	2	3	4	5
Line / Offset	Lot 20	Lot 19	Lot 19	Lot 18	Lot 17
Offset	DT15	DT16	DT17	DT18	DT19
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill
Thickness of Layer (mm)	3350	3350	3350	3350	3350
Soil Description	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay
Test Depth (mm)	300	300	300	300	300
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	3
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**
Field Wet Density (FWD) t/m ³	1.80	1.79	1.80	1.91	1.88
Field Moisture Content %	34.2	35.6	37.0	33.3	32.8
Field Dry Density (FDD) t/m ³	1.34	1.32	1.31	1.43	1.43
Peak Converted Wet Density t/m ³	1.77	1.72	1.82	1.83	**
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	1.86
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**	29.8
Adj. Field Moisture Content % (AS1289.5.4.1)	34.2	35.6	37.0	33.3	31.9
Moisture Ratio % (AS1289.5.4.1)	102.5	103.0	106.0	100.5	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	107.5
Moisture Variation (Wv) %	-1.0	-1.0	-2.0	0.0	**
Adjusted Moisture Variation %	**	**	**	**	-2.0
Hilf Density Ratio (%)	102.0	104.5	99.0	104.5	101.0
Compaction Method	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Report Number: RU24/294-6
Issue Number: 1
Date Issued: 18/10/2024
Client: Walters Contracting
 11 East Goderich Street, Deloraine TAS 7304
Contact: Mark Porter
Project Number: RU24/294
Project Name: Berrigan Road Subdivision
Project Location: Miendetta
Work Request: 1389
Date Sampled: 15/10/2024
Dates Tested: 15/10/2024 - 17/10/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: In accordance with the test method
Location: Devonport
Material: Select Fill

Rare Earth CMT Laboratories Pty Ltd
 Ulverstone Laboratory
 2/6 Kilowatt Court Ulverstone Tasmania 7315
 Phone: 0477 477 157
 Email: matthew@rareearthcmt.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



M Ansell

Approved Signatory: Matthew Ansell
 General Manager

NATA Accredited Laboratory Number: 20328

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	S1389F	S1389G	S1389H	S1389I	
Date Tested	15/10/2024	15/10/2024	15/10/2024	15/10/2024	
Time Tested	12:33	12:36	12:48	12:59	
Test Request #/Location	6	7	8	9	
Line / Offset	Lot 16	Lot 16	Lot 15	Lot 14	
Offset	DT20	DT21	DT22	DT23	
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill	
Thickness of Layer (mm)	3350	3350	3350	3350	
Soil Description	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	
Test Depth (mm)	300	300	300	300	
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	0	0	
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	
Field Wet Density (FWD) t/m ³	1.80	1.80	1.85	1.76	
Field Moisture Content %	38.4	32.9	38.0	42.6	
Field Dry Density (FDD) t/m ³	1.30	1.35	1.34	1.23	
Peak Converted Wet Density t/m ³	1.81	1.81	1.81	1.78	
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**	
Adj. Field Moisture Content % (AS1289.5.4.1)	38.4	32.9	38.0	42.6	
Moisture Ratio % (AS1289.5.4.1)	107.5	103.0	107.5	110.5	
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	
Moisture Variation (Wv) %	-2.5	-1.0	-2.5	-4.0	
Adjusted Moisture Variation %	**	**	**	**	
Hilf Density Ratio (%)	100.0	99.5	102.5	98.5	
Compaction Method	Standard	Standard	Standard	Standard	
Report Remarks	**	**	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report



Rare Earth CMT Laboratories Pty Ltd

Ulverstone Laboratory

184 Stony Rise Road Stony Rise Tasmania 7310

Phone: 0477 477 157

Email: matthew@rareearthcmt.com.au

Report Number: RU24/294-7
Issue Number: 1
Date Issued: 30/10/2024
Client: Walters Contracting
 11 East Goderich Street, Deloraine TAS 7304
Contact: Mark Porter
Project Number: RU24/294
Project Name: Berrigan Road Subdivision
Project Location: Miendetta
Work Request: 1410
Date Sampled: 22/10/2024
Dates Tested: 22/10/2024 - 29/10/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: In accordance with the test method
Location: Devonport
Material: Select Fill

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M Ansell

Approved Signatory: Matthew Ansell
 General Manager

NATA Accredited Laboratory Number: 20328

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	S1410A	S1410B	S1410C	S1410D	S1410E	S1410F
Date Tested	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024
Time Tested	12:02	12:07	12:14	12:22	12:26	12:29
Test Request #/Location	1	2	3	4	5	6
Line / Offset	Lot 20	Lot 20	Lot 20	Lot 19	Lot 19	Lot 19
Offset	DT26	DT25	DT24	DT29	DT28	DT27
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill
Thickness of Layer (mm)	350	350	350	350	350	350
Soil Description	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay
Test Depth (mm)	300	300	300	300	300	300
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**	**
Field Wet Density (FWD) t/m ³	1.96	1.84	1.82	1.88	1.79	1.89
Field Moisture Content %	27.5	34.3	42.2	34.8	40.1	42.9
Field Dry Density (FDD) t/m ³	1.54	1.37	1.28	1.39	1.28	1.32
Peak Converted Wet Density t/m ³	1.95	1.85	1.78	1.88	1.81	1.78
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	27.5	34.3	42.2	34.8	40.1	42.9
Moisture Ratio % (AS1289.5.4.1)	108.0	107.0	109.5	106.5	110.0	109.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**	**
Moisture Variation (Wv) %	-2.0	-2.0	-3.5	-2.0	-3.5	-3.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	100.5	99.5	102.5	100.0	99.0	106.0
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report



Report Number: RU24/294-7
Issue Number: 1
Date Issued: 30/10/2024
Client: Walters Contracting
 11 East Goderich Street, Deloraine TAS 7304
Contact: Mark Porter
Project Number: RU24/294
Project Name: Berrigan Road Subdivision
Project Location: Miendetta
Work Request: 1410
Date Sampled: 22/10/2024
Dates Tested: 22/10/2024 - 29/10/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: In accordance with the test method
Location: Devonport
Material: Select Fill

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M Ansell

Approved Signatory: Matthew Ansell
 General Manager

NATA Accredited Laboratory Number: 20328

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	S1410G	S1410H	S1410I	S1410J	S1410K	S1410L
Date Tested	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024
Time Tested	12:37	12:46	12:53	13:04	13:14	13:26
Test Request #/Location	7	8	9	10	11	12
Line / Offset	Lot 18	Lot 18	Lot 18	Lot 18	Lot 17	Lot 17
Offset	DT33	DT32	DT31	DT30	DT37	DT36
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill
Thickness of Layer (mm)	350	350	350	350	350	350
Soil Description	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay
Test Depth (mm)	300	300	300	300	300	300
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**	**
Field Wet Density (FWD) t/m ³	1.95	1.89	1.89	1.85	1.90	1.87
Field Moisture Content %	31.0	38.9	42.2	36.2	36.8	40.4
Field Dry Density (FDD) t/m ³	1.49	1.36	1.33	1.36	1.39	1.33
Peak Converted Wet Density t/m ³	1.90	1.82	1.80	1.82	1.82	1.80
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	31.0	38.9	42.2	36.2	36.8	40.4
Moisture Ratio % (AS1289.5.4.1)	108.5	109.5	107.5	106.5	107.0	110.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**	**
Moisture Variation (Wv) %	-2.5	-3.5	-3.0	-2.0	-2.5	-3.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	102.5	103.5	105.0	102.0	105.0	104.0
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report



Report Number: RU24/294-7
Issue Number: 1
Date Issued: 30/10/2024
Client: Walters Contracting
 11 East Goderich Street, Deloraine TAS 7304
Contact: Mark Porter
Project Number: RU24/294
Project Name: Berrigan Road Subdivision
Project Location: Miendetta
Work Request: 1410
Date Sampled: 22/10/2024
Dates Tested: 22/10/2024 - 29/10/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: In accordance with the test method
Location: Devonport
Material: Select Fill

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M Ansell

Approved Signatory: Matthew Ansell
 General Manager

NATA Accredited Laboratory Number: 20328

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	S1410M	S1410N	S1410O	S1410P	S1410Q	S1410R
Date Tested	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024
Time Tested	13:38	13:44	13:50	14:04	14:11	14:18
Test Request #/Location	13	14	15	16	17	18
Line / Offset	Lot 17	Lot 17	Lot 15	Lot 14	Lot 14	Lot 16
Offset	DT35	DT34	DT38	DT39	DT40	DT41
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill
Thickness of Layer (mm)	350	350	350	350	350	350
Soil Description	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay
Test Depth (mm)	300	300	300	300	300	300
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**	**
Field Wet Density (FWD) t/m ³	1.82	1.89	2.01	1.85	1.88	1.83
Field Moisture Content %	47.6	35.6	32.9	33.5	31.5	36.4
Field Dry Density (FDD) t/m ³	1.23	1.39	1.51	1.39	1.43	1.34
Peak Converted Wet Density t/m ³	1.73	1.82	1.86	1.85	1.85	1.84
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	47.6	35.6	32.9	33.5	31.5	36.4
Moisture Ratio % (AS1289.5.4.1)	108.5	106.5	106.5	104.5	105.0	105.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**	**
Moisture Variation (Wv) %	-4.0	-2.0	-2.0	-1.5	-1.5	-2.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	105.0	104.0	108.0	100.0	102.0	99.5
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report



Rare Earth CMT Laboratories Pty Ltd

Ulverstone Laboratory

184 Stony Rise Road Stony Rise Tasmania 7310

Phone: 0477 477 157

Email: matthew@rareearthcmt.com.au

Report Number: RU24/294-8
Issue Number: 1
Date Issued: 08/11/2024
Client: Walters Contracting
 11 East Goderich Street, Deloraine TAS 7304
Contact: Mark Porter
Project Number: RU24/294
Project Name: Berrigan Road Subdivision
Project Location: Miendetta
Work Request: 1438
Date Sampled: 29/10/2024
Dates Tested: 29/10/2024 - 06/11/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: In accordance with the test method
Location: Devonport
Material: Select Fill
Material Source: Brown Gravelly Silty Clay

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M Ansell

Approved Signatory: Matthew Ansell
 General Manager

NATA Accredited Laboratory Number: 20328

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	S1438A	S1438B	S1438C	S1438D	S1438E
Date Tested	29/10/2024	29/10/2024	29/10/2024	29/10/2024	29/10/2024
Time Tested	11:04	11:13	11:16	11:22	11:25
Test Request #/Location	1	2	3	4	5
Line / Offset	Lot 13	Lot 17	Lot 17	Lot 18	Lot 18
Offset	DT42	DT43	DT44	DT45	DT46
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill
Thickness of Layer (mm)	350	350	350	350	350
Soil Description	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay
Test Depth (mm)	300	**	**	**	**
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**
Field Wet Density (FWD) t/m ³	1.75	1.74	1.76	1.84	1.84
Field Moisture Content %	34.5	39.1	40.7	37.8	41.3
Field Dry Density (FDD) t/m ³	1.30	1.25	1.25	1.34	1.30
Peak Converted Wet Density t/m ³	1.77	1.74	1.77	1.79	1.76
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	34.5	39.1	40.7	37.8	41.3
Moisture Ratio % (AS1289.5.4.1)	97.0	102.5	102.5	104.5	106.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**
Moisture Variation (Wv) %	1.0	-1.0	-1.0	-1.5	-2.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	98.5	100.0	99.5	103.0	104.5
Compaction Method	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Report Number: RU24/294-8
Issue Number: 1
Date Issued: 08/11/2024
Client: Walters Contracting
 11 East Goderich Street, Deloraine TAS 7304
Contact: Mark Porter
Project Number: RU24/294
Project Name: Berrigan Road Subdivision
Project Location: Miendetta
Work Request: 1438
Date Sampled: 29/10/2024
Dates Tested: 29/10/2024 - 06/11/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: In accordance with the test method
Location: Devonport
Material: Select Fill
Material Source: Brown Gravelly Silty Clay

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Approved Signatory: Matthew Ansell
 General Manager

NATA Accredited Laboratory Number: 20328

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	S1438F	S1438G	S1438H	S1438I	S1438J
Date Tested	29/10/2024	29/10/2024	29/10/2024	29/10/2024	29/10/2024
Time Tested	11:33	11:38	11:47	11:51	11:57
Test Request #/Location	6	7	8	9	10
Line / Offset	Lot 19	Lot 19	Lot 20	Lot 20	Lot 20
Offset	DT47	DT48	DT49	DT50	DT51
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill
Thickness of Layer (mm)	350	350	350	350	350
Soil Description	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay
Test Depth (mm)	**	**	**	**	**
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**
Field Wet Density (FWD) t/m ³	1.74	1.77	1.77	1.74	1.85
Field Moisture Content %	38.7	35.1	39.9	37.0	33.9
Field Dry Density (FDD) t/m ³	1.25	1.31	1.26	1.27	1.38
Peak Converted Wet Density t/m ³	1.77	1.77	1.79	1.76	1.85
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	38.7	35.1	39.9	37.0	33.9
Moisture Ratio % (AS1289.5.4.1)	102.0	98.0	107.0	100.5	109.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**
Moisture Variation (Wv) %	-1.0	0.5	-2.5	0.0	-2.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	98.5	100.0	99.0	98.5	99.5
Compaction Method	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Report Number: RU24/294-9
Issue Number: 1
Date Issued: 15/11/2024
Client: Walters Contracting
 11 East Goderich Street, Deloraine TAS 7304
Contact: Mark Porter
Project Number: RU24/294
Project Name: Berrigan Road Subdivision
Project Location: Miendetta
Work Request: 1461
Date Sampled: 06/11/2024
Dates Tested: 06/11/2024 - 14/11/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: In accordance with the test method
Location: Devonport
Material: Select Fill
Material Source: Brown Gravelly Silty Clay

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M Ansell

Approved Signatory: Matthew Ansell
 General Manager

NATA Accredited Laboratory Number: 20328

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	S1461A	S1461B	S1461C	S1461D	S1461E	S1461F
Date Tested	06/11/2024	06/11/2024	06/11/2024	06/11/2024	06/11/2024	06/11/2024
Time Tested	11:42	11:49	11:53	11:59	12:08	12:14
Test Request #/Location	1	2	3	4	5	6
Line / Offset	Lot 20	Lot 20	Lot 19	Lot 19	Lot 19	Lot 19
Offset	DT52	DT53	DT57	DT56	DT55	DT54
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill
Thickness of Layer (mm)	350	350	350	350	350	350
Soil Description	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay
Test Depth (mm)	300	300	300	300	300	300
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**	**
Field Wet Density (FWD) t/m ³	1.72	1.73	1.85	1.74	1.72	1.90
Field Moisture Content %	32.6	36.4	34.6	35.9	30.5	38.6
Field Dry Density (FDD) t/m ³	1.30	1.27	1.37	1.28	1.32	1.37
Peak Converted Wet Density t/m ³	1.68	1.81	1.74	1.75	1.78	1.74
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	32.6	36.4	34.6	35.9	30.5	38.6
Moisture Ratio % (AS1289.5.4.1)	97.5	105.0	98.0	99.5	98.5	97.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**	**
Moisture Variation (Wv) %	1.0	-1.5	1.0	0.0	0.5	1.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	102.5	96.0	106.0	99.0	96.5	109.0
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Report Number: RU24/294-9
Issue Number: 1
Date Issued: 15/11/2024
Client: Walters Contracting
 11 East Goderich Street, Deloraine TAS 7304
Contact: Mark Porter
Project Number: RU24/294
Project Name: Berrigan Road Subdivision
Project Location: Miendetta
Work Request: 1461
Date Sampled: 06/11/2024
Dates Tested: 06/11/2024 - 14/11/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: In accordance with the test method
Location: Devonport
Material: Select Fill
Material Source: Brown Gravelly Silty Clay

Rare Earth CMT Laboratories Pty Ltd
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Accredited for compliance with ISO/IEC 17025 - Testing



M Ansell

Approved Signatory: Matthew Ansell
 General Manager

NATA Accredited Laboratory Number: 20328

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	S1461G	S1461H	S1461I	S1461J	S1461K	S1461L
Date Tested	06/11/2024	06/11/2024	06/11/2024	06/11/2024	06/11/2024	06/11/2024
Time Tested	12:19	12:23	12:28	12:32	12:38	12:44
Test Request #/Location	7	8	9	10	11	12
Line / Offset	Lot 18	Lot 18	Lot 18	Lot 18	Lot 17	Lot 17
Offset	DT58	DT59	DT60	DT61	DT62	DT63
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill
Thickness of Layer (mm)	350	350	350	350	350	350
Soil Description	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay	Brown Gravelly Silty Clay
Test Depth (mm)	300	300	300	300	300	300
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**	**
Field Wet Density (FWD) t/m ³	1.77	1.78	1.73	1.75	1.77	1.72
Field Moisture Content %	39.1	36.4	37.1	36.3	41.4	31.8
Field Dry Density (FDD) t/m ³	1.27	1.31	1.26	1.29	1.25	1.31
Peak Converted Wet Density t/m ³	1.76	1.79	1.78	1.79	1.76	1.74
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	39.1	36.4	37.1	36.3	41.4	31.8
Moisture Ratio % (AS1289.5.4.1)	100.0	104.5	105.0	102.0	105.0	91.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**	**
Moisture Variation (Wv) %	0.0	-1.5	-2.0	-0.5	-2.0	3.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	100.5	99.5	97.5	98.0	101.0	99.5
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC



TASMAN geotechnics

17 September 2025

Ann-Tas
Level 26, 1 Bligh Street
SYDNEY NSW 2000

Attention: David Calgaro

**RE: Review of Drawings
Berrigan Road Subdivision, Miandetta**

Tasman Geotechnics was commissioned by David Calgaro on behalf of Ann-Tas to provide a retaining wall design for the 49 lot subdivision at 57a Berrigan Road, Miandetta. The design was presented in our letter TG25008/1 – 01letter Rev01, dated 10 February 2025.

The retaining wall design has been included by CSE Tasmania in drawings 0306-2_C29 and C30, Revision 5 (dated 25 April 2025).

We have reviewed the drawings and conclude that the drawings and construction notes reflect the recommendations of our design report

Should you require further information or clarification of any details, please do not hesitate to contact undersigned.

For and on behalf of Tasman Geotechnics Pty Ltd

Dr Wayne Griffioen
Principal Geotechnical Engineer

Attachments: none



10 February 2025

Ann-Tas
Level 26, 1 Bligh Street
SYDNEY NSW 2000

Attention: David Calgaro

**RE: Retaining Wall Design
Berrigan Road Subdivision, Miandetta**

1 INTRODUCTION

Tasman Geotechnics was commissioned by David Calgaro on behalf of Ann-Tas to provide a retaining wall design for the 49 lot subdivision at 57a Berrigan Road, Miandetta.

The retaining wall is located in the lower part of the subdivision. The aim of the retaining wall is to provide a (relatively) level area near the subdivision road on Lots 13 to 21 for house construction.

This letter presents our revised design for the retaining wall.

2 BACKGROUND INFORMATION

A geotechnical investigation has been carried out by Geoton for the 49 lot subdivision (report GL23544Ab, dated 12 January 2024).

The investigation involved excavating 20 test pits to depths ranging from 0.6m to 3.2m as well as DCP testing and laboratory testing for soil classification purposes and 4-day soaked CBR testing.

Excavations terminated due to refusal in 14 of the test pits. Refusal was due to insitu bedrock (dolerite or large boulders). The depth to bedrock in the test pits was typically between 0.6m and 3.2m below ground level, with an average of 1.6m.

Groundwater inflow was observed in one test pit (TP1) at 1m below ground level, however, no groundwater inflow was observed in the other test pits.

Laboratory testing of selected soil samples indicates the soils are high plasticity silt, with Liquid Limit generally > 50%. Based on published correlations between the plasticity index and angle of internal friction, Geoton noted that the peak internal friction angle of the soil would be between 28° and 31°. An effective internal friction angle of 30° was considered appropriate for design.

3 RETAINING WALL

3.1 Slope Stability Modelling

An acceptable retaining wall design should be based on a slope stability assessment. A slope stability analysis gives a numerical value for the Factor of Safety (FOS) against failure of a nominated failure surface. In simple terms the FOS is a ratio of sliding (activating) forces to resisting forces along the failure surface. Activating forces are generally weight of soil at the high end of a slope, while resisting forces derive from the shear strength of the materials intersected by the failure surface, and the weight of material at the toe of a slope. A FOS of 1.0 represents a condition of incipient failure or limiting equilibrium. A FOS of greater than 1.0 indicates that resisting forces are greater than activating forces and thus the slope is not likely to fail, while a FOS of less than 1.0 indicates that failure is likely to occur. In this case, a FOS of 1.5 would be considered acceptable for long-term stability.

The aim of the slope stability analysis presented here is to develop a retaining wall design with an acceptable FOS for long-term stability.

Slope stability analyses were undertaken using the 2D limit equilibrium computer program SLIDE version 5 by Rocscience.

3.2 Input Parameters

Besides choosing an appropriate geometry for the proposed retaining wall, a stability analysis requires understanding the strength characteristics of the materials involved, defining the interface between the layers and specifying the groundwater table.

The test pits showed that there was no groundwater inflow to 3m below ground level. Assuming drainage is incorporated behind the wall, the long-term effect of groundwater has been ignored in the analysis.

Based on the investigation by Geoton, the material types are shown in Table 1 together with strength characteristics.

The strength characteristics were chosen based on descriptions of materials in the Geoton test pits, supplemented with engineering judgment. The chosen values are considered representative strengths.

Table 1. Material types and strength

Material	Density (kN/m ³)	Friction angle (°)	Effective cohesion (kPa)
Engineered FILL	19	30	1
Existing clay	20	30	1
Extremely weathered dolerite	22	35	5
Rock wall components	22	100	30

CSE Tasmania provided an as-constructed contour plan for fill at Lots 13 to 21. Based on these contours and the pre-development contours from Lidar, we developed cross sections for Lots 15/16, 17, 18, 19 and 20/21.

Three designs for retaining the fill were considered:

1. Fill placed at 1V:2.5H, as per Geoton report,
2. Fill retained with 1V:1.5H rock wall,
3. Fill retained with 1V:1.5H rock wall and reinforced with geogrids (long term tensile strength of 40kN/m), and

4. Fill retained with 1V:2H rock wall, possibly reinforced with geogrids (long term tensile strength of 40kN/m).

3.3 Stability Results

The slope stability results are summarised in Table 2. Selected graphical results are attached: the 1V:2H slope with rock facing for all Lots, and the 1V:2H slope with rock facing and geogrids for Lots 19 and 20/21.

Table 2. Slope stability results

Cross Section (vertical height of fill)	Lot 15/16 (1.5m)	Lot 17 (3.2m)	Lot 18 (4.4m)	Lot 19 (4.8m)	Lot 20/21 (4.0m)
Retaining option					
1V:2.5H slope	1.83	1.71	1.65	1.59	1.60
1V:2H rocks only	1.78	1.63	1.55	1.41	1.40
1V:2H rocks + geogrids	-	-	-	1.56 (3 grids x 7m)	1.52 (2 grids x 6m)
1V:1.5H rocks only	1.69	1.38	1.26	1.19	1.22
1V:1.5H rocks + geogrids	-	1.66 (1 grid x 5m)	1.58 (2 grids x 6m)	1.55 (3 grids x 8m)	1.51 (3 grids x 7m)

Based on the above results we note the following:

-) The 1V:2.5H fill slope achieves an acceptable overall FOS for long term stability (FOS > 1.5).
-) The 1V:2H fill slope achieves an acceptable overall FOS for long term stability for Lots 15 to 18. Thus, slope reinforcement is required for this geometry at Lots 19 and 20/21
-) The 1V:2H fill slope with rocks achieves an acceptable overall FOS for long term stability for Lots 15/16, 17 and 18. Thus, slope reinforcement is required for this geometry at Lots 19 to 21.
-) The 1V:1.5H fill slope with rocks achieves an acceptable overall FOS for long term stability for Lot 15/16 only. Thus, slope reinforcement is required for this geometry at Lots 17 to 21.
-) There is an inconsistent relationship between the vertical height of the fill and the number of geogrid layers required. For the 1V:1.5H batter, Lot 18 has 4.4m of fill with 2 geogrid layers, compared to Lots 20/21 which have 4.0m of fill but require 3 geogrid layers. This is attributed to the steeper natural slope below the rock wall at Lots 20/21 (14° slope) compared to Lot 18 (7° slope).

4 RECOMMENDATIONS

A 1V: 1.5H or 1V:2H rock wall can be constructed along the rear of Lots 13 to 21, provided the following are adopted in the design and construction:

-) The area to be filled should be benched with a maximum vertical step height of 0.5m. As the existing fill platform extends over most of the area to be filled, we would require photographic evidence of the benching.
-) Fill material should not contain cobbles and boulders greater than 150mm diameter,
-) Fill should be placed at moisture content within 2% of Optimum Moisture Content and compacted in layers no greater than 200mm thick,

-) Fill should achieve a Dry Density Ratio of at least 95% (Standard Compaction),
-) Rocks to be used for the facing should have a minimum dimension of at least 0.6m,
-) Rock face should have at least 1.5m width of rocks (for 1V:1.5H face) or 2m width (for 1V:2H face), except for top row of rocks, for which 0.5m width is acceptable.
-) Rocks layers shall be at least 1m high
-) Bottom layer of rocks should be embedded at least 0.4m below ground level,
-) No vibratory compaction is to be carried out within 2m of back of rock wall. Non-vibratory compaction is allowed within 2m of the rock wall
-) The lowest geogrid layer should be placed at least 2m above the base of the rock wall,
-) Geogrid layers shall have a long-term tensile strength of 40kN/m,
-) Geogrids shall be included in the lots as follows:

Lot Number	Minimum Number and Length of Geogrid Layers	
	1V:1.5H rock face	1V:2H rock face
13, 14	0	0
15, 16	0	0
17	1 (5m)	0
18	2 (6m)	0
19	3 (8m)	3 (7m)
20	3 (7m)	2 (6m)
21	3 (7m)	2 (6m)

Upon completion of the fill, we recommend that:

-) Buildings with high level footings shall not be placed within 5m of the crest of the rock wall, unless they are founded on bored piers or screw piles into the natural soil below the fill.
-) No fill is placed within 5m of the crest of the rock wall.
-) Light weight structures, such as garden sheds and gazebos, may be placed up to the crest.

Should you require further information or clarification of any details, please do not hesitate to contact undersigned.

For and on behalf of Tasman Geotechnics Pty Ltd

Wayne Griffioen

Principal Geotechnical Engineer

Attachments: Important Information About Your Report (1 page)
Graphical stability results (4 pages)



TASMAN geotechnics

Important information about your report

These notes are provided to help you understand the limitations of your report.

Project Scope

Your report has been developed on the basis of your unique project specific requirements as understood by Tasman Geotechnics at the time, and applies only to the site investigated. Tasman Geotechnics should be consulted if there are subsequent changes to the proposed project, to assess how the changes impact on the report's recommendations.

Subsurface Conditions

Subsurface conditions are created by natural processes and the activity of man.

A site assessment identifies subsurface conditions at discrete locations. Actual conditions at other locations may differ from those inferred to exist, because no professional, no matter how qualified, can reveal what is hidden by earth, rock and time.

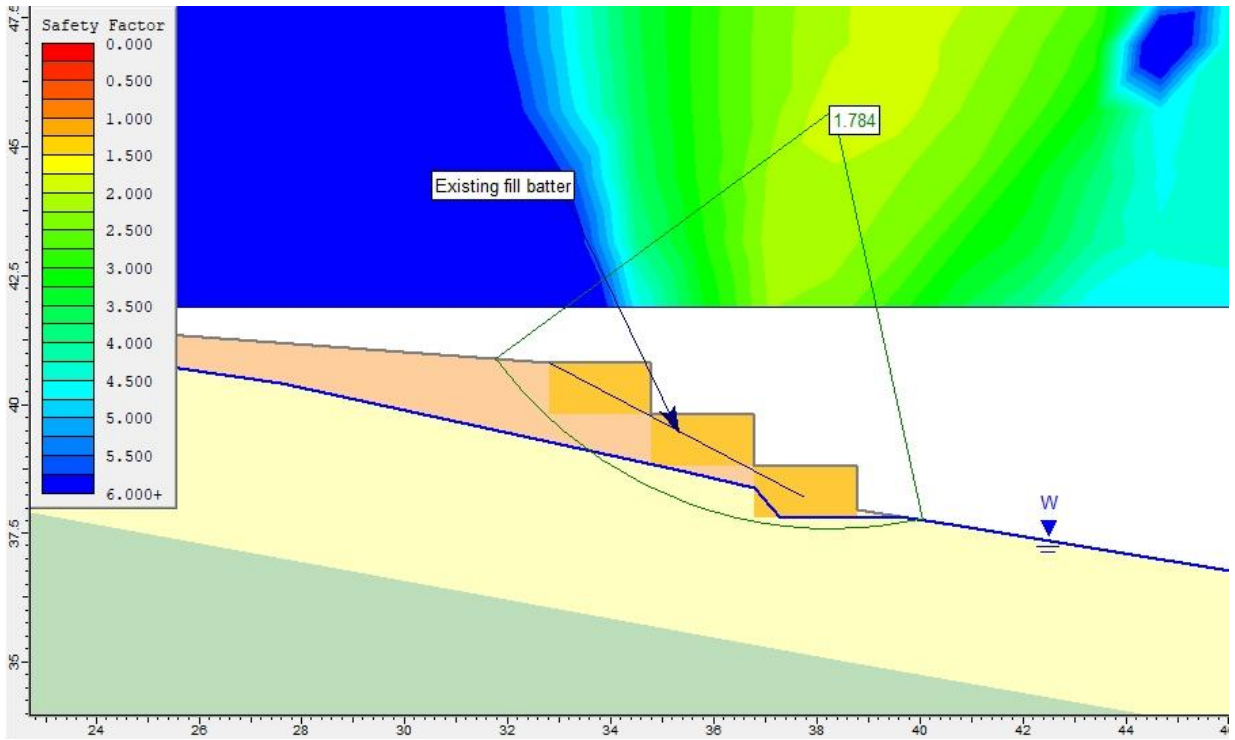
Nothing can be done to change the conditions that exist, but steps can be taken to reduce the impact of unexpected conditions. For this reason, the services of Tasman Geotechnics should be retained throughout the project, to identify variable conditions, conduct additional investigation or tests if required and recommend solutions to problems encountered on site.

Advice and Recommendations

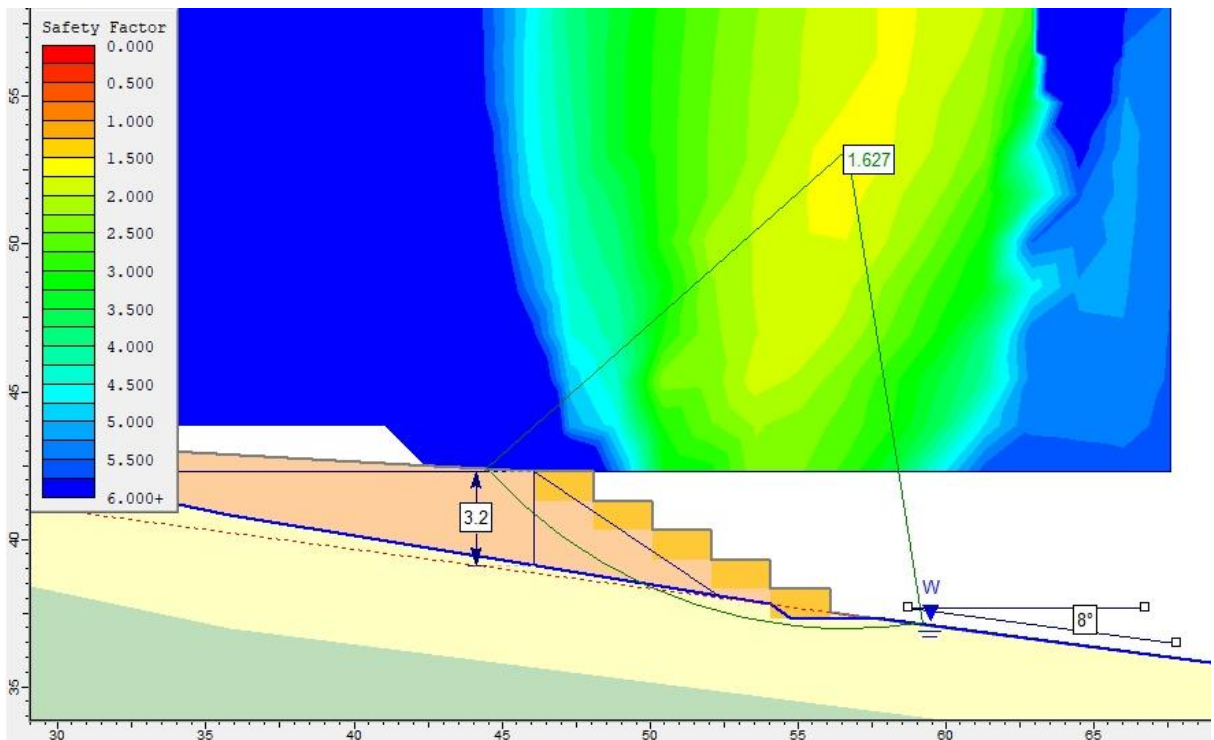
Your report contains advice or recommendations which are based on observations, measurements, calculations and professional interpretation, all of which have a level of uncertainty attached.

The recommendations are based on the assumption that subsurface conditions encountered at the discrete locations are indicative of an area. This can not be substantiated until implementation of the project has commenced. Tasman Geotechnics is familiar with the background information and should be consulted to assess whether or not the report's recommendations are valid, or whether changes should be considered.

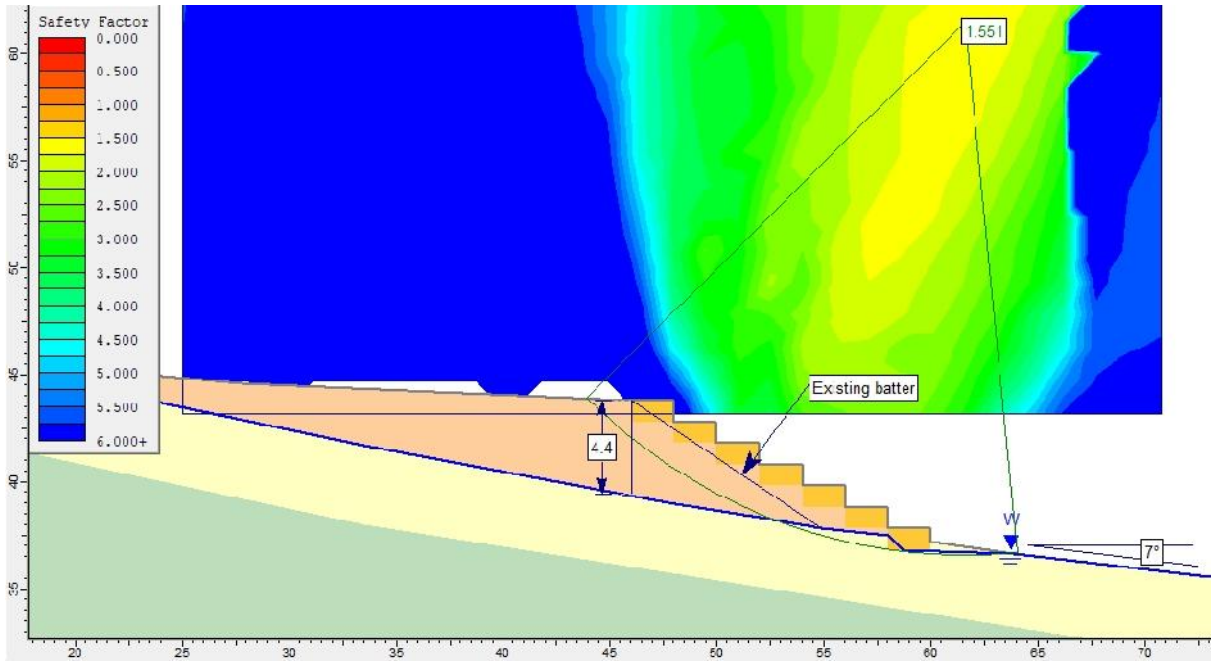
The report as a whole presents the findings of the site assessment, and the report should not be copied in part or altered in any way.



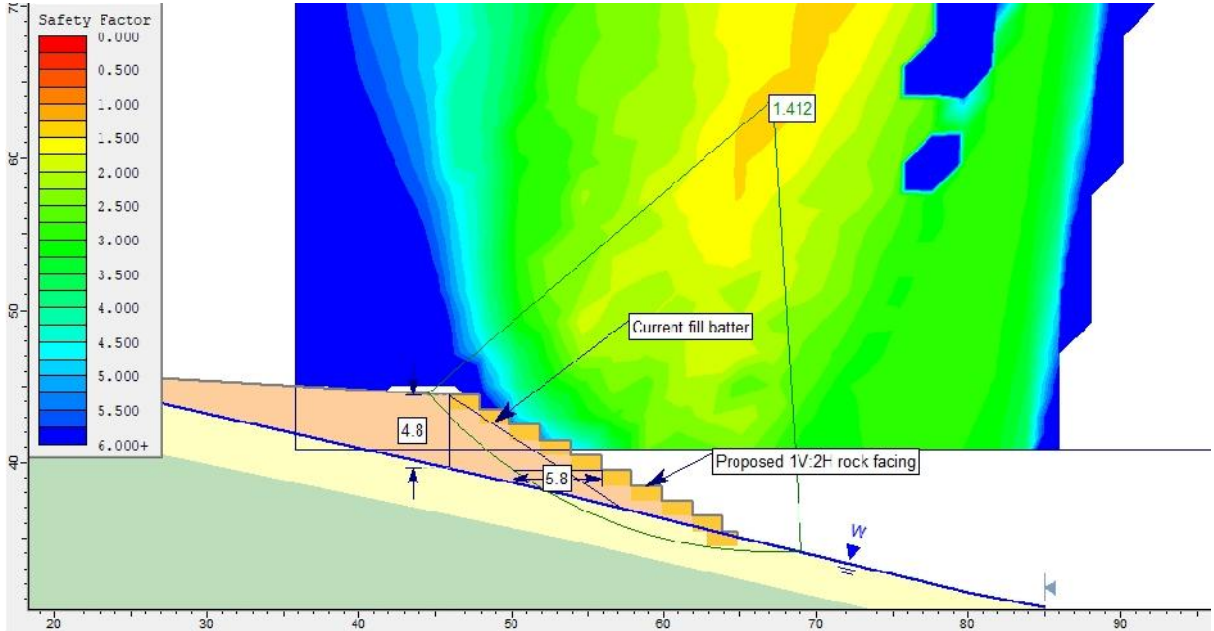
Lot 15/16, 1V:2H rock fill batter, no geogrids



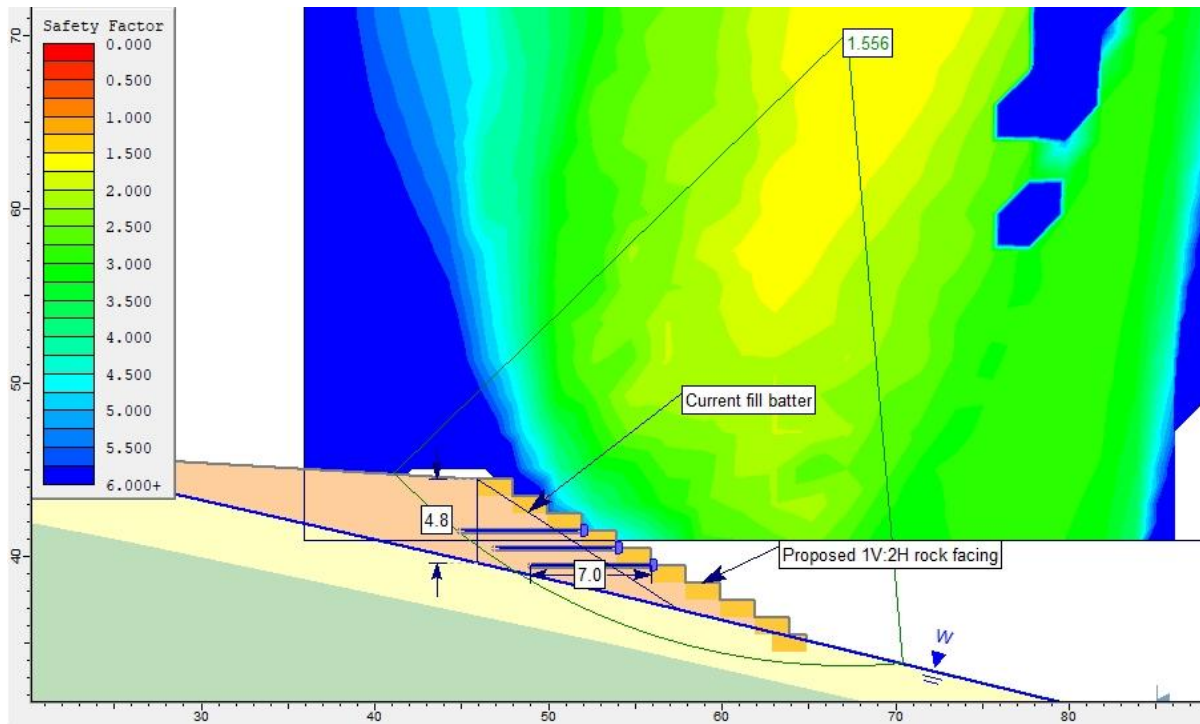
Lot 17, 1V:2H rock fill batter, no geogrids



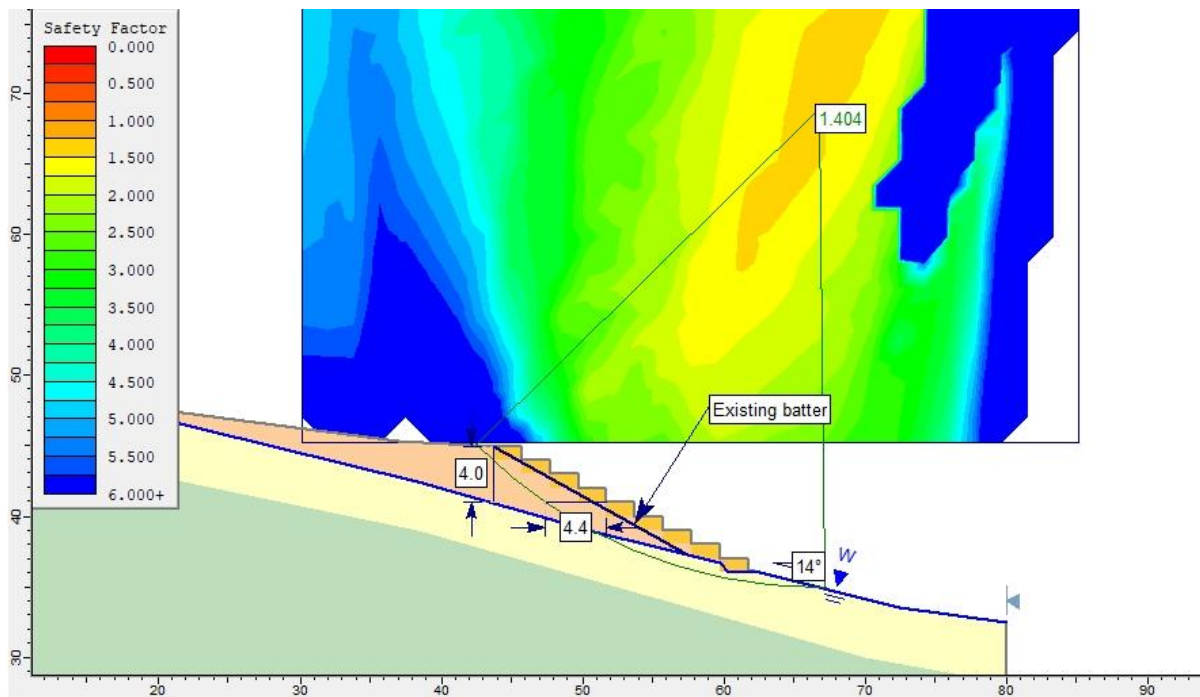
Lot 18, 1V:2H rock fill, no geogrids



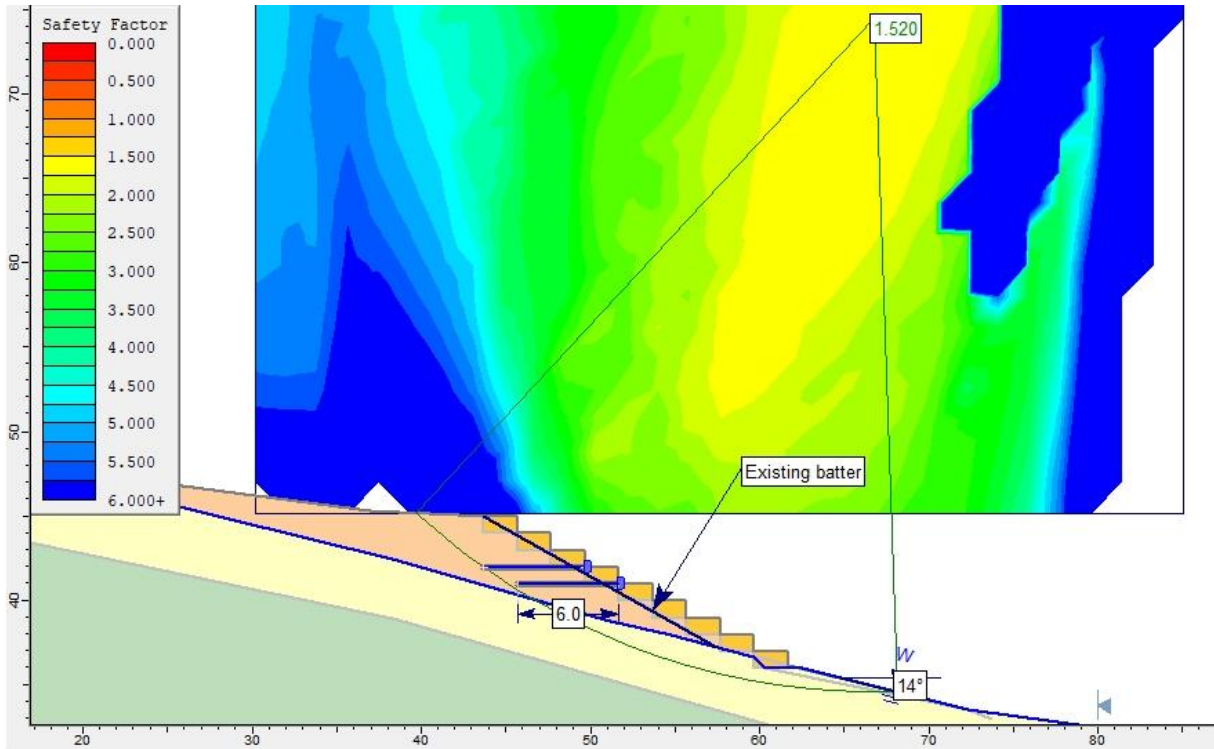
Lot 19, 1V:2H rock face, no geogrids



Lot 19, 1V:2H, rock face and 3 geogrid layers (7m)



Lot 20/21, 1V:2H rock face, no geogrids



Lot 20/21, 1V:2H rock face and 2 geogrid layer (6m)