6.2.5 Sealing the Hills - Caroline Avenue, Cockatoo catchment - Special Charge Scheme declaration

Responsible GM: Peter Benazic
Author: Ken White

Recommendation(s)

That Council:

1. Notes that following the issue of the Notice of Decision by Council to declare a special charge scheme on the 17 May, 2021, to part fund the construction of Caroline Avenue, Boronia Crescent and Rouen Road, Cockatoo, no submissions or objections were received by Council in the prescribed 28 day submission period following advertising this decision.

2. That a special charge in accordance with Section 163 of the Local Government, 1989 ('the Act') be declared as follows:
   a) A special charge is declared for a period until the works have been completed and the scheme finalised.
   b) The special charge be declared for the purposes of defraying any expenses incurred by Council in relation to the construction of Caroline Avenue, Boronia Crescent and Rouen Road, Cockatoo including sealed road pavement, kerb & channel and associated drainage and incidental works. Council considers that these works will be of special benefit to those persons required to pay the special charge, (and who are described in succeeding parts of this resolution).
   c) The special benefit accruing to those properties to be levied is considered to include improved access, improved amenity and appearance, improved roadside drainage, reduced mud and dust, reduced erosion and lessened nuisance.
   d) The following be specified as the area for which the special charge is declared:
      - All those properties described in attachment 4 of this report and as highlighted on the plan included as attachment 2.
   e) The following be specified as the land in relation to which the special charge is declared:
      - All properties described in attachment 4 of this declaration.
   f) The following be specified as the criteria which form the basis of the special charge so declared:
      - Those properties fronting, abutting or adjacent to the works.
   g) The following be specified as the manner in which the special charge so declared will be assessed and levied:
      - Existing lots, either developed or vacant, that gain, or will gain, primary (vehicular) access from a road being constructed would generally be required to contribute one benefit unit.
      - Existing lots, either developed or vacant, with side or rear abuttal to a road being constructed would generally be required to contribute one half benefit unit.
      - Existing lots, either developed or vacant, that gain, or will gain, primary access and also have side or rear abuttal to roads being constructed would generally be required to contribute one benefit unit.
      - Existing lots that have the potential to be further subdivided or developed may be allocated a multiple development benefit unit charge.

- The special charge will be levied by sending a notice to the person who is liable to pay, pursuant to Section 163 (4) of the Local Government Act, 1989.

h) The total cost of the works is the amount shown in attachment 4 of this report estimated at $2,019,400.

i) The total amount of the special charge to be levied is the amount shown in attachment 4 of this report estimated at $598,500.

j) Having regard to the proceeding parts of this resolution but subject to Sections 166(1) and 167(6) of the Local Government Act, 1989, it is recorded that:

i) The owners of the land described in columns A and B of the table in attachment 4 are estimated liable for the respective amounts set out in column F of the table in attachment 4 and;

ii) Such owners may, subject to any further resolution of Council pay the special charge in the following manner:

a. The charge will become due and payable within one month of the issue of the notice requesting payment pursuant to Section 167(3) of the Local Government Act, 1989.

b. The charge may be paid by:

iii) # Lump sum within one month of the issue of the notice without incurring interest, or

iv) # Quarterly instalments of principal and interest over a period of up to seven years.

c. Interest will not be charged for three months after the issue of the notice provided the person liable makes timely payment in accordance with the payment arrangements that may be agreed on by Council.

d. In accordance with Sections 167(6)(b) and 172 of the Act, the rate of interest which is payable on instalments is set at the 180 day bank bill rate as published in the Australian Financial Review plus one percent and reviewed every three months, (provided that it will not exceed the rate fixed by the Governor in Council by order of the purposes of Section 172(2A) in which case the rate of interest shall be the maximum rate fixed by the Governor in Council by order for the purposes of this section).

k) There are no incentives for prompt payment, rebates or concessions associated with this special charge.

Attachments

1. SCS Process Declaration Check list Sealing the Hills Program [**6.2.5.1** - 2 pages]
2. Caroline Avenue Cockatoo Catchment - Special Charge Scheme (SC S) Map [**6.2.5.2** - 1 page]
3. Caroline Ave preliminary construct plans [**6.2.5.3** - 91 pages]
4. SCS Apportionment Sheet - Caroline Ave Cockatoo catchment [**6.2.5.4** - 3 pages]

Executive Summary

This report proposes to have a special charge declared to part fund the construction of Caroline Avenue, Boronia Crescent and Rouen Road, Cockatoo. It follows Council's resolution of the 17 May, 2021 to communicate its intention to declare a special charge for this purpose.

The Caroline Avenue, Cockatoo catchment is included in the Australian Government funded "Sealing the Hills" program. A recent survey of the landowners in this catchment indicated 65% landowner support to contributing to a scheme from the responses received. Included landowners will receive special benefit as a result of the works including improved resident amenity, reduction in dust and associated health issues, improved drainage, less wear and tear on vehicles, reduced road maintenance costs and overall improved liveability.

The preliminary estimated cost of the proposed works is $2,019,400 of which $598,500 is proposed to be funded via the proposed special charge contribution received from the included landowners. This will leave an approximate balance of $1,420,900 to be funded from the Australian Government grant.

Property owner contributions have been assessed on the basis of the benefit gained by each existing developed or vacant allotment, capped by Council at $7,000 per benefit unit, (refer to benefit unit definition below). Council's special rates and charges policy provides for levies to be paid in quarterly instalments that include principle and interest. For the Sealing the Hills program it has been decided that a maximum seven (7) payment period be adopted. The financial hardship provisions of this policy provide further relief to those owners demonstrating genuine financial hardship.

Following Council's resolution on the 17 May, 2021 included property owners were notified of the intention to declare a special charge by mail and by advertisement in the Pakenham Gazette and Hills Trader. No submissions or objections were received by Council in the prescribed 28 day submission period.

Background

The Caroline Avenue, Cockatoo catchment that includes Caroline Avenue, Boronia Crescent and Rouen Road is included for construction in Councils Sealing the Hills program. The properties included are shown on the plan included as attachment 2 to this report.

A survey of the property owners within the scheme boundary, (total of 77), was undertaken asking if they were in support of contributing to a special charge scheme at a capped contribution rate of $7,000 per benefit unit, with a benefit unit being defined as:

- Existing lots, either developed or vacant, that gain, or will gain, primary (vehicular) access from a road being constructed would generally be required to contribute one benefit unit ($7,000) towards the cost of construction.
- Existing lots, either developed or vacant, with side or rear abuttal to a road being constructed would generally be required to contribute one half benefit unit ($3,500) towards the cost of construction.
- Existing lots, either developed or vacant, that gain, or will gain, primary access and also have side or rear abuttal to roads being constructed would generally be required to contribute one benefit unit ($7,000) in total
- Existing lots that have the potential to be further subdivided or developed may be allocated a multiple development benefit unit charge.

Of the seventy seven properties surveyed Council received fifty, (50), responses, (or 65%). Thirty seven, (65%), of these responses indicated support to contributing to the scheme, while thirteen, (35%), indicated opposition. Both sections of Caroline Avenue, (east and west of Bell Street), and Boronia Crescent had a higher percentage of supporting owners verses opposing owners. Of the four properties in Rouen Road, one owner indicated support, two owners indicated opposition and one owner did not respond. Following consideration of the survey responses a special charge scheme has been prepared to part fund the construction of Caroline Avenue, Boronia Crescent and Rouen Road.

Following Council's resolution on the 17 May, 2021 affected property owners were notified of the intention to declare a special charge. This included the Education Department who have been levied $63,000 in relation to the additional traffic generation and parking demand associated with the Cockatoo Primary school that abuts Caroline Avenue. To date no response has been received from the department. No property owner submissions or objections were received within the prescribed 28 day submission period.

Policy Implications

The proposed special charge scheme has been developed in accordance with the provisions of the Local Government Act, Cardinia Councils Special Rate and Charge Policy and the adopted Sealing the Hills program. It is based on community benefit, health, safety, amenity and landowner support.

Section 163 of the Local Government Act provides that Council may not recover a greater portion of the cost of the works than calculated in accordance with the statutory 'benefit ratio' as set out in attachment 3 to this report. Given that Council has capped the property owner contribution at $7,000 per benefit unit, the proposed scheme is compliant.

Relevance to Council Plan

3.2 Our Environment - Transport linkages connecting towns
3.2.1 Upgrade Council roads to improve safety while considering the traffic demand of the community.
3.2.2 Continue the use of special charge schemes to finance road, drainage and footpath improvement programs.

Climate Emergency Consideration

The Sealing the Hills project will consider climate emergency reduction issues such as:

- Minimising tree removal through innovative road design.
- Use of LED lighting to reduce energy emissions.
- Utilising local contractors and local road & drainage construction materials to minimise travel.
- Investigating the reuse and use of recycled road construction materials.

Consultation/Communication

A letter was sent in January of this year to the landowners of Caroline Avenue, Boronia Crescent and Rouen Road outlining specifics in relation to their inclusion in the Sealing the Hills program and the associated special charge scheme proposal. A subsequent face to face community consultation session was held at the Cockatoo Community Centre in early February, from 4.00pm to 7.00pm in the evening, to give owners and residents an opportunity to view plans and comment of the proposal. Approximately 25 people attended.

In mid February a questionnaire was sent by registered mail to landowners asking them to indicate their support / opposition to contributing to a special charge scheme at the capped rate of $7,000 per benefit unit. When Council became aware of mail delivery issues in Cockatoo a door knock / reminder letter drop was undertaken of properties who had not responded to the questionnaire and the response date extended by one month. As outlined above 50 questionnaire responses from the 77 included properties were received.

Following the Council resolution on the 17 May, 2021 to issue a notice of intention to declare a special charge, property owners were sent a letter and advertisements outlining the proposal placed in the Pakenham Gazette and Hills Trader, providing owners with the opportunity to make a submission or objection within the prescribed 28 day period.

Financial and Resource Implications

The scheme funding arrangements are as follows:

PRELIMINARY ESTIMATED COST OF PROJECT	$2,019,400

Total Council Contribution (70%)	$1,420,900
Benefitting Landowner Contribution (30%)	$598,500

Note: the estimated project cost includes an allowance of 15% for design, supervision and administration of the scheme.

The Australian Government 150 million dollar grant will be used to fund Councils contribution.

Landowners will be offered the option of paying their contribution in full, or by quarterly instalments over seven years. Instalment payments will include principle and interest, with interest calculated at the declaration of the scheme based on Councils borrowing rate at the time plus one percent.

Council will require the first payment, either in full or by instalment to be made within six months of the practical completion of the works.

Conclusion

That Council proceed to declare a special charge over the properties listed in attachment 4 to part fund the construction of Caroline Avenue, Boronia Crescent and Rouen Road, Cockatoo, including a sealed road pavement, kerb and channel and associated drainage and ancillary works, generally in accordance with the concept plans included in attachment 3.

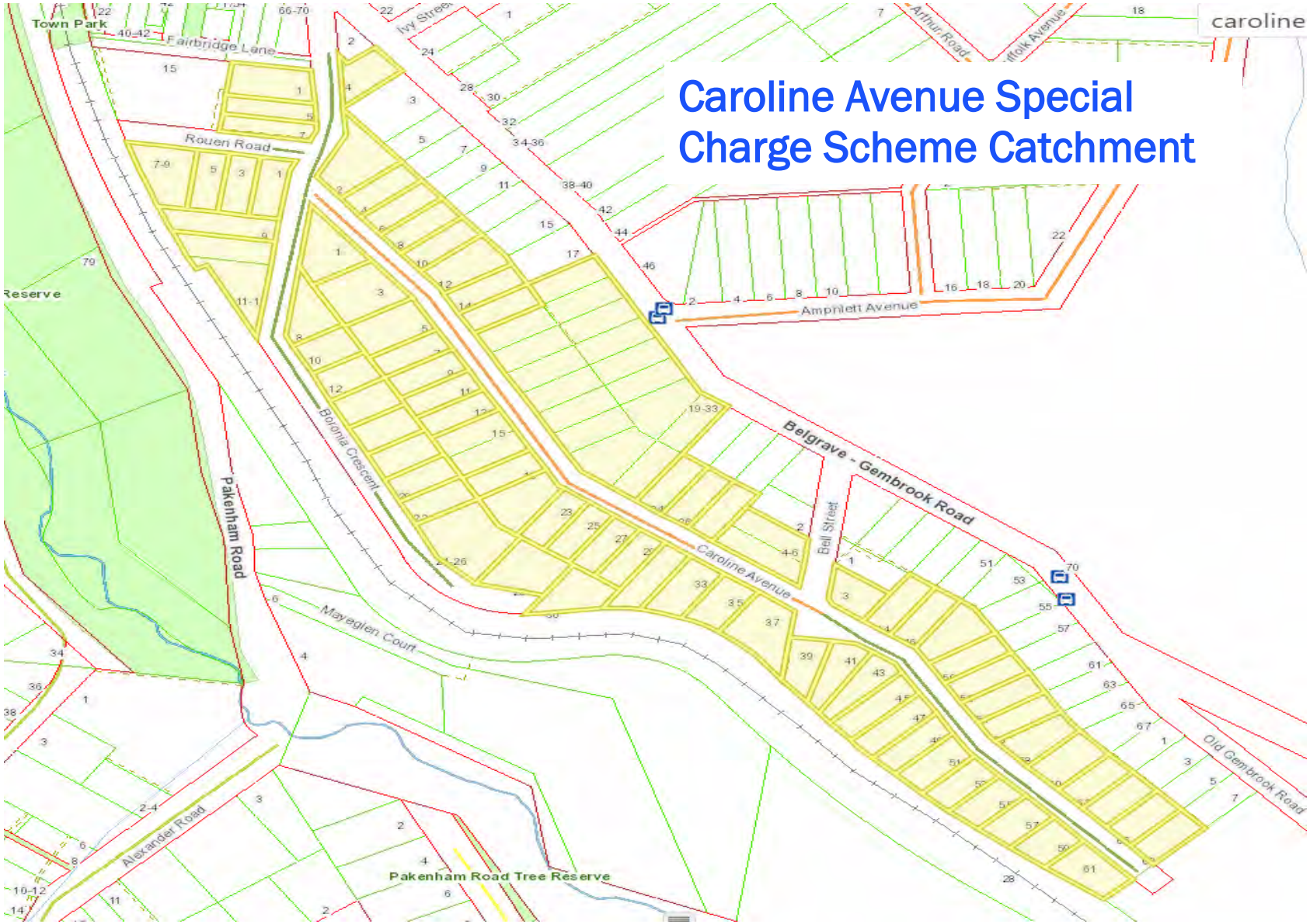
SEALING THE HILLS PROGRAM –

SPECIAL CHARGE SCHEME PROCESS CHECK LIST

SPECIAL CHARGE PROJECTS – (Section 163 – Local Government Act 1989)

	Stage	*Description*
√	***Survey of Landowners***	**Initial survey of property owners to assist in determining the need, associated issues and level of support for the proposed works and special rate/charge scheme.**
√	***Approval to prepare scheme***	**Decision made to prepare scheme or to shelve project following consideration of the survey of property owners and feed back from the community. If the decision is that the scheme should proceed, the engineering design is completed and a detailed estimate and an apportionment of costs are prepared. If a decision is made that the scheme should not proceed based on resident and community feed back, the affected residents are advised accordingly**
√	***Intention to Declare Scheme***	**Report to Council providing information on proposed scheme including advice of impending advertising of scheme and declaration of charge. Report seeks Council approval by resolution to proceed with process.**
√	***Advertisement and Notification***	**The proposed scheme is advertised in the local newspaper and all affected property owners are notified by mail of proposed works, costs and contributions. This advertisement and notification indicates Council's intention to 'declare' a scheme in a month's time and seeks submissions from affected property owners. Details of the scheme may be inspected at the Shire Offices.**
√	***Submissions***	**From the time of advertising, property owners have 28 days (as set down by the Act) to lodge submissions, either in support or opposing the proposed scheme.**
	~~***Submissions Review Panel Hearing***~~	~~**A Submissions Review Panel is convened (may be Council Committee or whole Council) and meets to consider submissions. Some submissions are written only. Submitters may also request to be heard before the Committee. The Panel makes a recommendation to Council regarding the scheme.**~~
	~~***Abandonment of scheme***~~	~~**The Panel may recommend to Council that the scheme be abandoned. After considering the Panel's report, Council may proceed to abandon the scheme following which property owners are notified and the scheme does not proceed.**~~
√	***Declaration Report***	**Alternatively the Panel may recommend to Council that the scheme proceed. After considering the Panel's report, Council may proceed to "declare" the charges in accordance with its advertised intent. Subsequent to this the Finance Manager issues the levy notices and there is a formal charge placed on the property. This is the final step in the process for Council to make a decision on the scheme.**
	Appeal	**Property owners may lodge an application for review of Council's decision with the Victorian Civil and Administrative Tribunal (VCAT) within one month of issue of the levy notice. An appeal is listed, heard**

		and determined by the Tribunal and this process generally takes four to six months. Decisions made by VCAT are binding on all parties.
	Construction	**Council may then proceed to construction. Tenders are invited and a contractor appointed to construct the works. Invoices are issued seeking payment of the declared contribution. Payment may be by instalments or lump sum. The Social Responsibility provisions of Council's Special Charge Policy provides for those facing financial difficulty.**
	Final Cost Report	**At the completion of the works the scheme is "finalised" and a report presented to Council.**


Caroline Avenue Special Charge Scheme Catchment
Town Park
Fairbridge Lane
Rouen Road
Reserve
Pakenham Road
Bolonia Crescent
Mayeglen Court
Alexander Road
Pakenham Road Tree Reserve
Amphlett Avenue
Belgrave - Gembrook Road
Caroline Avenue
Bell Street
Old Gembrook Road
caroline

ROAD RECONSTRUCTION WORKS: CAROLINE AVE & BORONIA CRESCENT, COCKATOO

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Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX PROP
SEWER EX PROP
GAS MAINS EX PROP
TELECOM CABLES AND PITS EX PROP

Design: Date: MARCH 2021
Checked: Date: MARCH 2021
Datum: AHD
Scale: AS SHOWN
Approved Date:
MELWAY Ref:

Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
FACE SHEET AND LOCALITY PLAN

Drawing No CCD. 20021– 01
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Rev A
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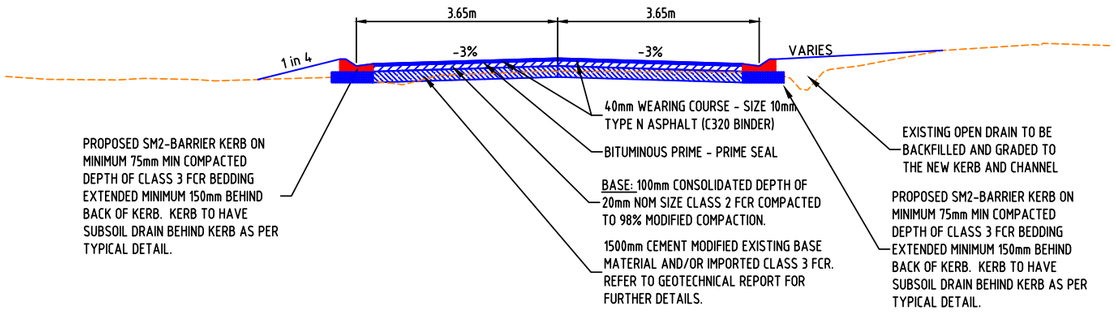
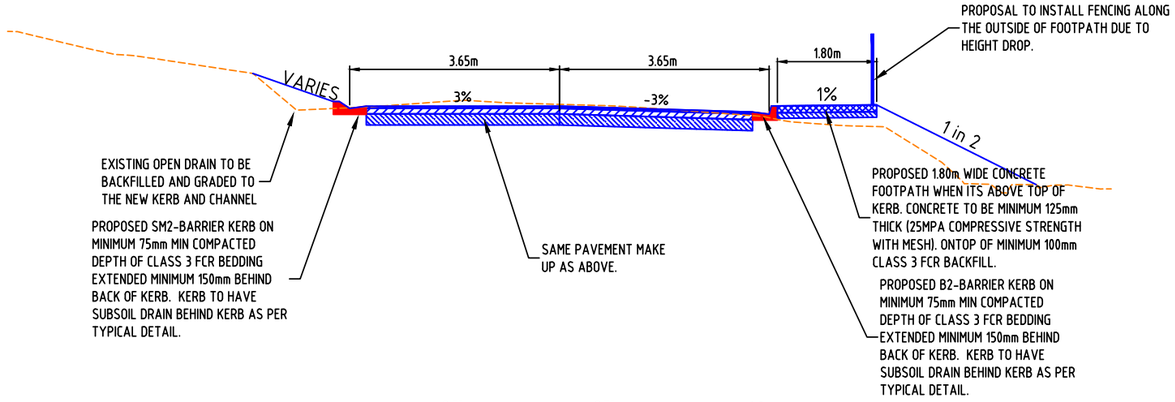
GENERAL NOTES:

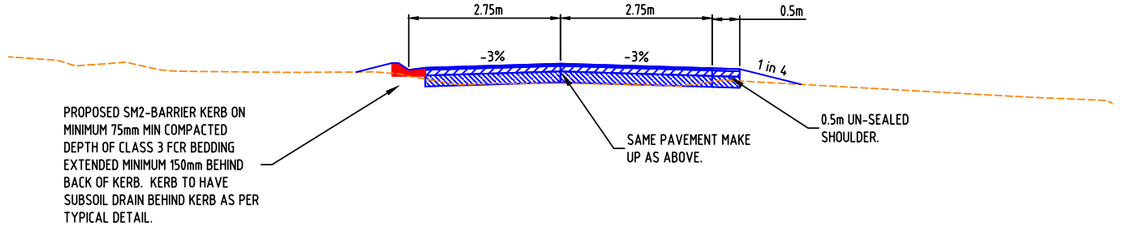
1. ALL WORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE COUNCIL STANDARD DRAWINGS, SPECIFICATIONS AND TO THE SATISFACTION OF SUPERINTENDENT SUPERVISING OFFICER OR HIS/HER APPOINTED REPRESENTATIVE.
2. COUNCIL TO BE NOTIFIED SEVEN (7) CLEAR DAYS PRIOR TO COMMENCEMENT OF WORKS.
3. ALL LEVELS SHOWN ARE TO A.H.D.
4. PRIOR TO COMMENCEMENT OF WORKS ON SITE, THE CONTRACTOR MUST ENSURE THAT ALL MATTERS RELATING TO THE OCCUPATIONAL HEALTH & SAFETY ACT 2004, INCLUDING ALL RELEVANT REGULATIONS, HAVE BEEN ADDRESSED. IN PARTICULAR, PREVENTION OF FALLS AND PLANT. DETAILS OF THE CONTRACTORS SITE MANAGEMENT PLAN INCLUDING OCCUPATIONAL HEALTH AND SAFETY PROCEDURES MUST BE LODGED WITH THE COUNCIL PRIOR TO COMMENCEMENT OF WORKS.
5. ON COMMENCEMENT OF CONSTRUCTION WORKS ON SITE, THE CONTRACTOR MUST COMPLY WITH THE RECOMMENDATIONS OF THE ENVIRONMENT PROTECTION AUTHORITY PUBLICATION "CONSTRUCTION TECHNIQUES FOR SEDIMENT POLLUTION CONTROL" (PUBLICATION NO 275). APPROPRIATE SILTATION CONTROL IS TO BE CARRIED OUT DURING THE CONSTRUCTION AND MAINTENANCE PERIOD.
6. NO EXCAVATION SHALL BE CARRIED OUT WITHIN THE CANOPY DRIP LINE OR 5.0M, WHICHEVER IS GREATER OF ANY EXISTING TREE UNTIL APPROVAL HAS BEEN GIVEN BY SUPERINTENDENT SUPERVISING OFFICER OR HIS/HER APPOINTED REPRESENTATIVE.
7. A TEMPORARY 1.8m CONSTRUCTION HIGH POST & WIRE FENCE SHALL BE ERECTED AND MAINTAINED AROUND EXISTING TREES, NOMINATED TO BE RETAINED AS PER A TREE PROTECTION ZONE (TPZ) CONDITION, AT ALL TIMES DURING CONSTRUCTION. UNDER NO CIRCUMSTANCES SHALL SITE SHEDS, VEHICLES, MACHINERY AND EQUIPMENT BE STORED OR PLACED WITHIN FENCED ZONE OF THESE TREES.
8. THE CONTRACTOR SHALL TO THE SATISFACTION OF THE CONSULTING ENGINEER AND SUPERINTENDENT REPRESENTATIVE PROVIDE AND MAINTAIN ALL NECESSARY WARNING SIGNAGE, LIGHTING AND BARRICADING TO COMPLY WITH THE REQUIREMENTS OF THE ROAD MANAGEMENT ACT.
9. THE LOCATION OF EXISTING SERVICES SHOULD BE DETERMINED BY THE CONTRACTOR PRIOR TO COMMENCING ANY EXCAVATION BY CARRYING OUT A DBYD AND CONTACTING ALL RELEVANT SERVICE AUTHORITIES AND/OR THEIR AGENTS. ANY EXISTING SERVICES SHOWN ON THE DRAWINGS ARE OFFERED AS A GUIDE ONLY AND ARE NOT GUARANTEED AS CORRECT.
10. SERVICE TRENCHES WITHIN THE ROAD RESERVE MUST BE BACKFILLED AS SPECIFIED BELOW, TO A DRY DENSITY NOT LESS THAN 97% OF THE MAXIMUM FOUND IN THE STANDARD COMPACTION TEST FOR THE FOLLOWING:
    i. SERVICE TRENCHES BENEATH THE ROAD PAVEMENT, FOOTPATH OR DRIVEWAY CROSSOVER, TO THE UNDERSIDE OF THE PAVEMENT OR CROSSOVER BEDDING WITH 20MM CLASS 3 FCR WITH 3% CEMENT ADDITIVE.
    ii. DRAINAGE PIPES ADJACENT TO KERBING OR CONCRETE STRUCTURES WITH 20MM CLASS 4 FCR TO A LEVEL THAT IS NOT AFFECTED BY A 45 DEGREE ANGLE OF REPOSE FROM THE NEAR LOWER EDGE OF SUCH STRUCTURE, OTHERWISE TO FULL DEPTH.
12. ALL EXCAVATIONS OF A DEPTH 1.5M OR GREATER MUST COMPLY WITH WORKCOVER VICTORIA. A "NOTICE OF INTENTION TO EXCAVATE..." FORM MUST BE SUBMITTED TO WORKCOVER 3 DAYS PRIOR TO THE WORK EXCAVATIONS.
    - CALL 1800 136 089 TOLL FREE **OR** 03) 9641 1444 TO OBTAIN FORM.
    - FAX FORM/S TO: 03) 9565 9400 **OR** 9941 0555.
13. ALL CONCRETE TO BE USED IN THE CONTRACT WORKS SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 25 MPA AT 28 DAYS.
14. ALL DRAINAGE PIPES ARE TO BE REINFORCED CONCRETE CLASS 2 RUBBER RING JOINTED AS A MINIMUM UNLESS OTHERWISE APPROVED. ALL PVC PIPES TO BE CLASS SH UNLESS OTHERWISE APPROVED.
15. 90mm DIA. AGRICULTURAL PIPE DRAINS TO BE PLACED BEHIND ALL KERB AND CHANNEL ON 20MM AGGREGATE BEDDING, 200MM BELOW SUBGRADE, AT GRADE AND WHERE DIRECTED BY THE CONSULTING ENGINEER.
16. MINIMUM COVER TO OBVERT OF DRAINAGE PIPES SHALL BE 300MM IN EASEMENTS AND 500MM IN ROAD RESERVES, EXCEPT WHERE PIPE CLASS '4' WILL BE INSTALLED.
17. FILL AREAS ARE TO BE STRIPPED OF TOPSOIL, FILLED USING APPROVED CLAY FILL AND THEN TOPSOIL REPLACED TO OBTAIN FINAL FILL LEVELS AS SHOWN ON PLANS. ALL FILLING TO BE CARRIED OUT IN 150MM LAYERS AND COMPACTED TO 95% OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 3798-2007: GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS. ON COMPLETION AND AT THE DIRECTION OF COUNCIL OFFICER THE CONTRACTOR SHALL PRESENT A "LEVEL 1" TYPED REPORT NOMINATING THE EXTENT OF FILL PLACED. IT'S CONFORMANCE WITH THE SPECIFICATION AND ITS CLASSIFICATION AS "CONTROLLED FILL". IF ANY SUBSTANDARD FILLING IS ENCOUNTERED ON THE SITE IT MUST BE REMOVED AND REPLACED WITH APPROVED FILL MATERIAL PROPERLY COMPACTED TO COUNCIL REQUIREMENTS. A GEO-TECHNICAL REPORT MUST BE SUBMITTED SHOWING DETAILS OF DEPTH, TYPE OF MATERIAL AND DENSITY OF THE FILL AREAS CONCERNED.
18. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL IMPORTED FILL MATERIAL, INCLUDING TOPSOIL, SATISFIES THE DESCRIPTION FOR CLEAN FILL MATERIAL IN EPA BULLETIN PUBLICATION NO. 448 (SEPT '95) AND SUBSEQUENT REVISIONS. THE CONTRACTOR SHALL PROVIDE VERIFICATION INCLUDING TEST CERTIFICATES TO THE SUPERVISING ENGINEER.
19. BATTERS SHALL BE 1 IN 6 MINIMUM UNLESS OTHERWISE APPROVED AND COVERED AND SMOOTHED WITH MINIMUM OF 100MM TOPSOIL.
20. ROAD PAVEMENTS ARE TO HAVE A MINIMUM DEPTH OF 300MM INCLUDING SURFACING.
21. OPEN SPACE RESERVES;
    - RESERVES TO BE EVENLY GRADED, SEEDED AND FREE DRAINING TO THE SATISFACTION OF RESPONSIBLE AUTHORITY.
    - DESIGN INFORMATION TO INCLUDE RETICULATED WATER SUPPLY IN U/G PIT CONFIGURATION, BOLLARDS, SEATING, PLAYGROUND EQUIPMENT AND BBQ'S ETC. WHERE REQUIRED BY THE PERMIT.
22. ALL NATURE STRIPS, EXCAVATED OR FILLED AREAS WITHIN THE ROAD RESERVE SHALL BE RESURFACED WITH A 100MM LAYER OF TOPSOIL AS SPECIFIED, FREE FROM CLAY AND STONE, EVENLY GRADED AND SEEDED TO THE SATISFACTION OF RESPONSIBLE AUTHORITY.
23. ON COMPLETION THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL BUILDING WASTE, RUBBISH AND SPOIL FROM THE SITE. NO SURPLUS TREES, VEGETATION OR OTHER MATERIALS IS TO BE BURNT ON SITE.
24. AS-CONSTRUCTED DATA INCLUDING ALTERATIONS DURING CONSTRUCTION ARE TO BE PROVIDED PRIOR TO ISSUE OF STATEMENT OF COMPLIANCE:
    - DRAWINGS ARE TO BE IN A1 AND A3 HARDCOPY AND IN AUTOCAD (2010) AND ACROBAT PDF FORMATS.

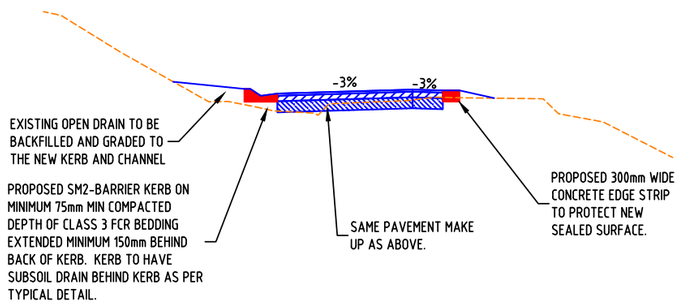
SUPERINTENDENT HOLD POINTS

25. THE FOLLOWING HOLD POINT INSPECTIONS SHALL APPLY UNTIL WORKS ARE APPROVED BY SUPERINTENDENT. CONSULTING ENGINEER/S TO BE PRESENT AT THESE HOLD POINTS;
    1) PRE-COMMENCEMENT OF WORKS SITE MEETING.
    2) SUBGRADE PROOF-ROLL PRIOR TO PLACEMENT OF SUB-BASE.
    3) SUB-BASE PROOF-ROLL PRIOR TO PLACEMENT OF BASE COURSE AND TEST RESULTS.
    4) BASE COURSE PROOF-ROLL PRIOR TO SEALING AND TEST RESULTS.
    5) PRIOR TO TRENCH BACKFILLING;
        - STORM WATER DRAINAGE, INCLUDING SUBSOIL AG DRAINS, AND
        - PROPERTY CONNECTIONS.
    6) FOOTPATH, DRIVEWAY AND KERB AND CHANNEL PRIOR TO PLACEMENT OF CONCRETE.
    7) INSPECTION AT PRACTICAL COMPLETION OF THE WORKS (COMMENCEMENT OF DEFECTS LIABILITY PERIOD).
    8) 2ND INSPECTION AT THE END OF 12 MONTHS (END OF DEFECTS LIABILITY PERIOD).









PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL	WATER MAINS AND FITTINGS	EX ---W---
PROPOSED KERB AND CHANNEL		PROP ——W——
EXISTING DRAINS AND PITS	SEWER	EX ---S---O
PROPOSED DRAINS AND PITS		PROP ——S——●
PROPOSED PROPERTY INLET P..I..	GAS MAINS	EX ---G---
		PROP ——G——
	TELECOM CABLES AND PITS	EX ---T---▭
		PROP ——T——▭

Design:	Scale:
Date:	
Checked:	Approved
Date:	Date:
Datum:	MELWAY Ref:

Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
TYPICAL SECTION & RAISED PAVEMENT MAKE UP

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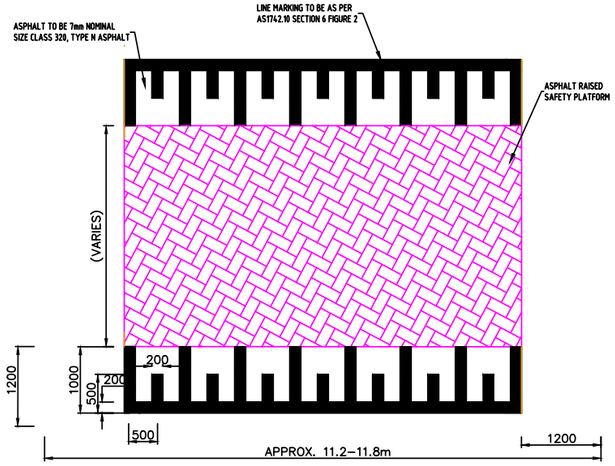
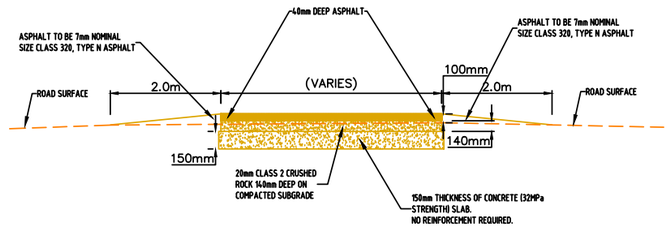
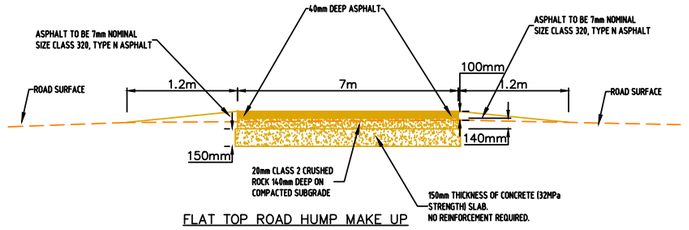


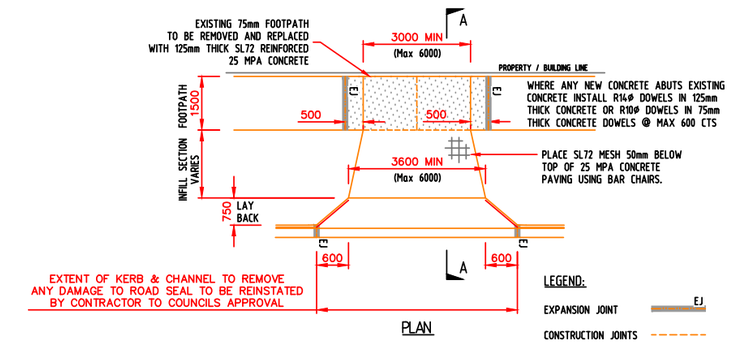
RAISED SAFETY PLATFORM (TYPICAL DETAIL)



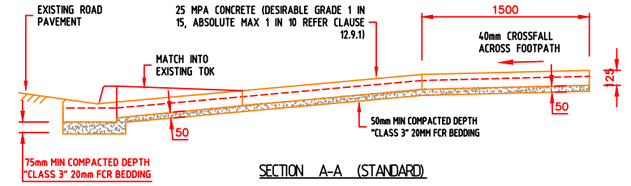
RAISED SAFETY PLATFORM (MAKE UP)



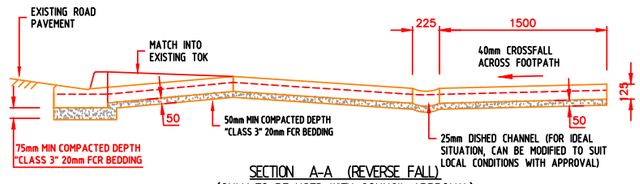
FLAT TOP ROAD HUMP MAKE UP



PLAN

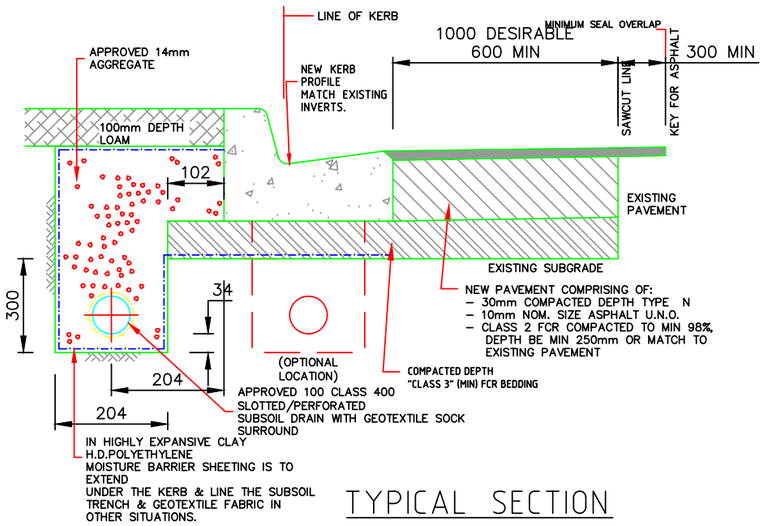


SECTION A–A (STANDARD)



SECTION A–A (REVERSE FALL)
(ONLY TO BE USED WITH COUNCIL APPROVAL)

NOTE:
FOR GRADES STEEPER THAN 1 IN 15 REFER CLAUSE 12.9.1.
LAYBACK & CROSSOVER, TO BE CONSTRUCTED IN PLAIN CONCRETE ONLY (NO COLOURED CONCRETE BEYOND PROPERTY BOUNDARY)
T.O.K. DENOTES TOP OF KERB



TYPICAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Date:	Rev.	Amendments:
01.04.2020	A	SUBMITTED FOR COMMENTS

Legend

- EXISTING KERB AND CHANNEL
- PROPOSED KERB AND CHANNEL
- EXISTING DRAINS AND PITS
- PROPOSED DRAINS AND PITS
- PROPOSED PROPERTY INLET P..I..
- WATER MAINS AND FITTINGS EX W / PROP W
- SEWER EX S / PROP S
- GAS MAINS EX G / PROP G
- TELECOM CABLES AND PITS EX T / PROP T

Design: Date: MARCH 2021	Scale: AS SHOWN	CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021– 03
Checked: Date: MARCH 2021	Approved Date:	CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Sheet 3 OF 91
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		TYPICAL SECTION & RAISED PAVEMENT MAKE UP	CCD Ref. No. 20021

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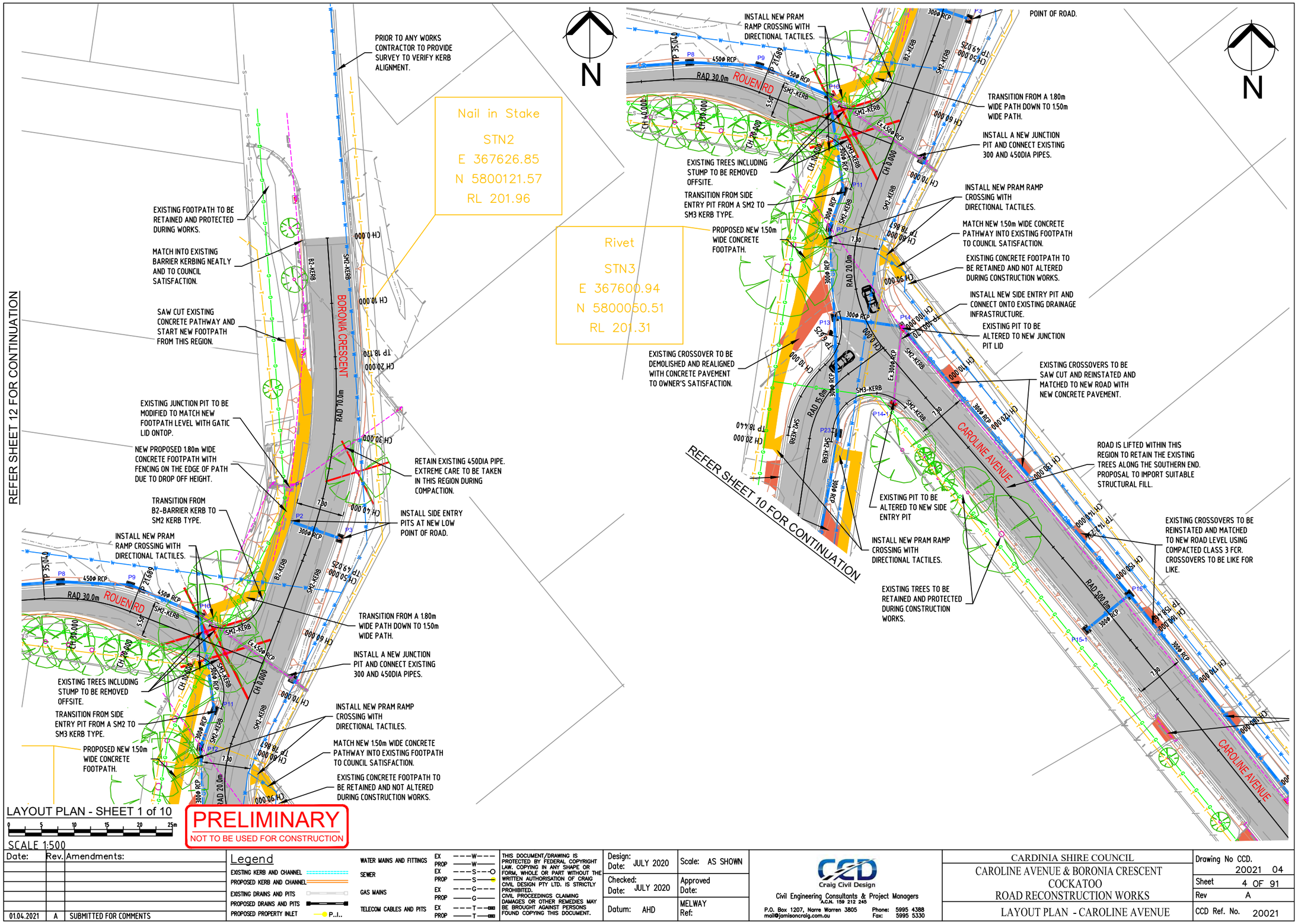
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330



Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL	WATER MAINS AND FITTINGS	EX	---W---
PROPOSED KERB AND CHANNEL		PROP	——W——
EXISTING DRAINS AND PITS	SEWER	EX	---S---O
PROPOSED DRAINS AND PITS		PROP	——S——●
PROPOSED PROPERTY INLET P...I..	GAS MAINS	EX	---G---
		PROP	——G——
	TELECOM CABLES AND PITS	EX	---T---▭
		PROP	——T——▭

Design: Date: JULY 2020	Scale: AS SHOWN	CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021 04
Checked: Date: JULY 2020	Approved Date:	CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Sheet 4 OF 91
Datum: AHD	MELWAY Ref:		Rev A
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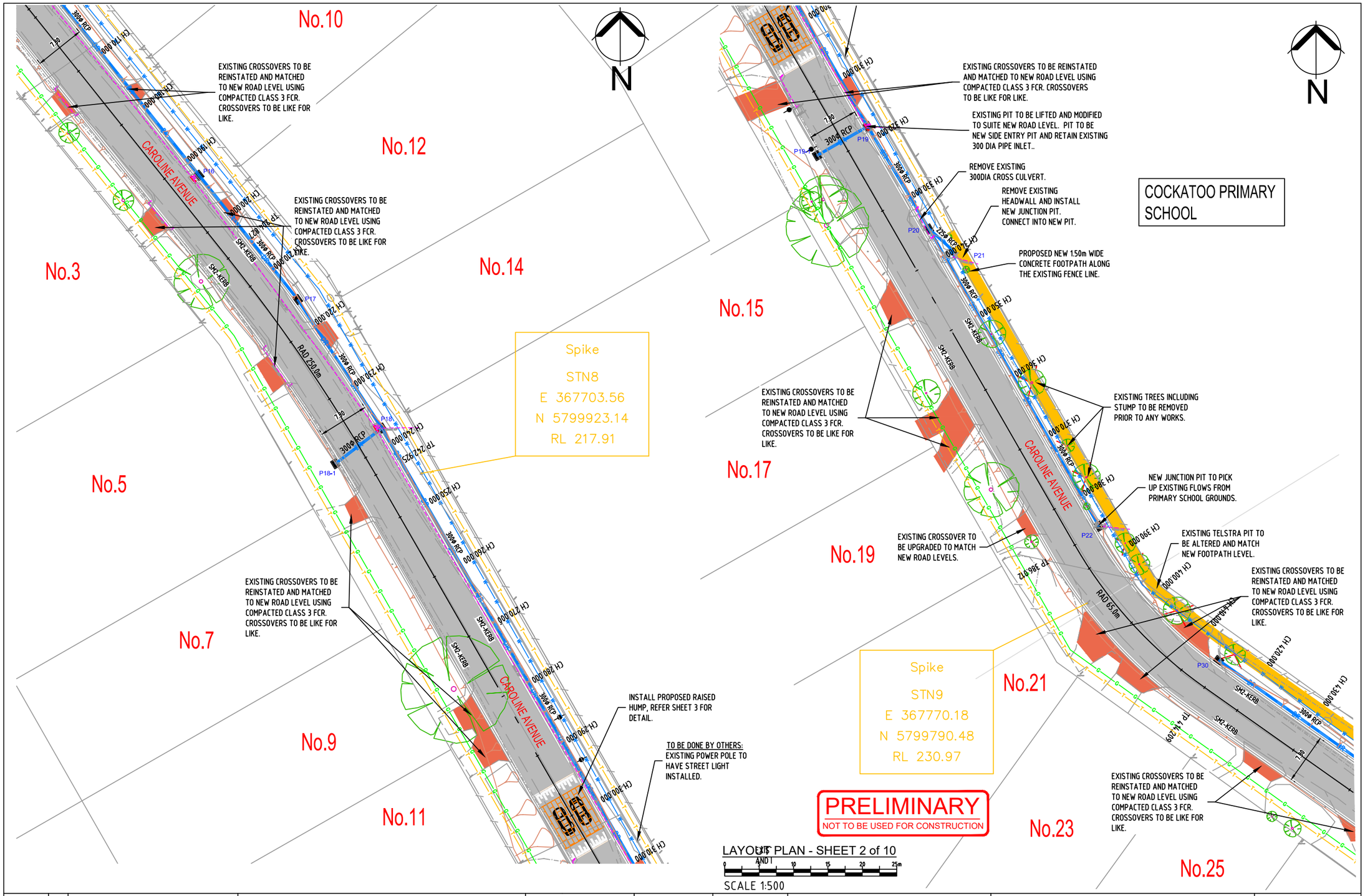
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330



Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL	WATER MAINS AND FITTINGS	EX —W— / PROP —W—
PROPOSED KERB AND CHANNEL	SEWER	EX —S—O / PROP —S—
EXISTING DRAINS AND PITS	GAS MAINS	EX —G— / PROP —G—
PROPOSED DRAINS AND PITS	TELECOM CABLES AND PITS	EX —T— / PROP —T—
PROPOSED PROPERTY INLET P..I..		

Design: Date: JULY 2020	Scale: AS SHOWN	CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021 05
Checked: Date: JULY 2020	Approved Date:	CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Sheet 5 OF 91
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		LAYOUT PLAN - CAROLINE AVENUE	CCD Ref. No. 20021

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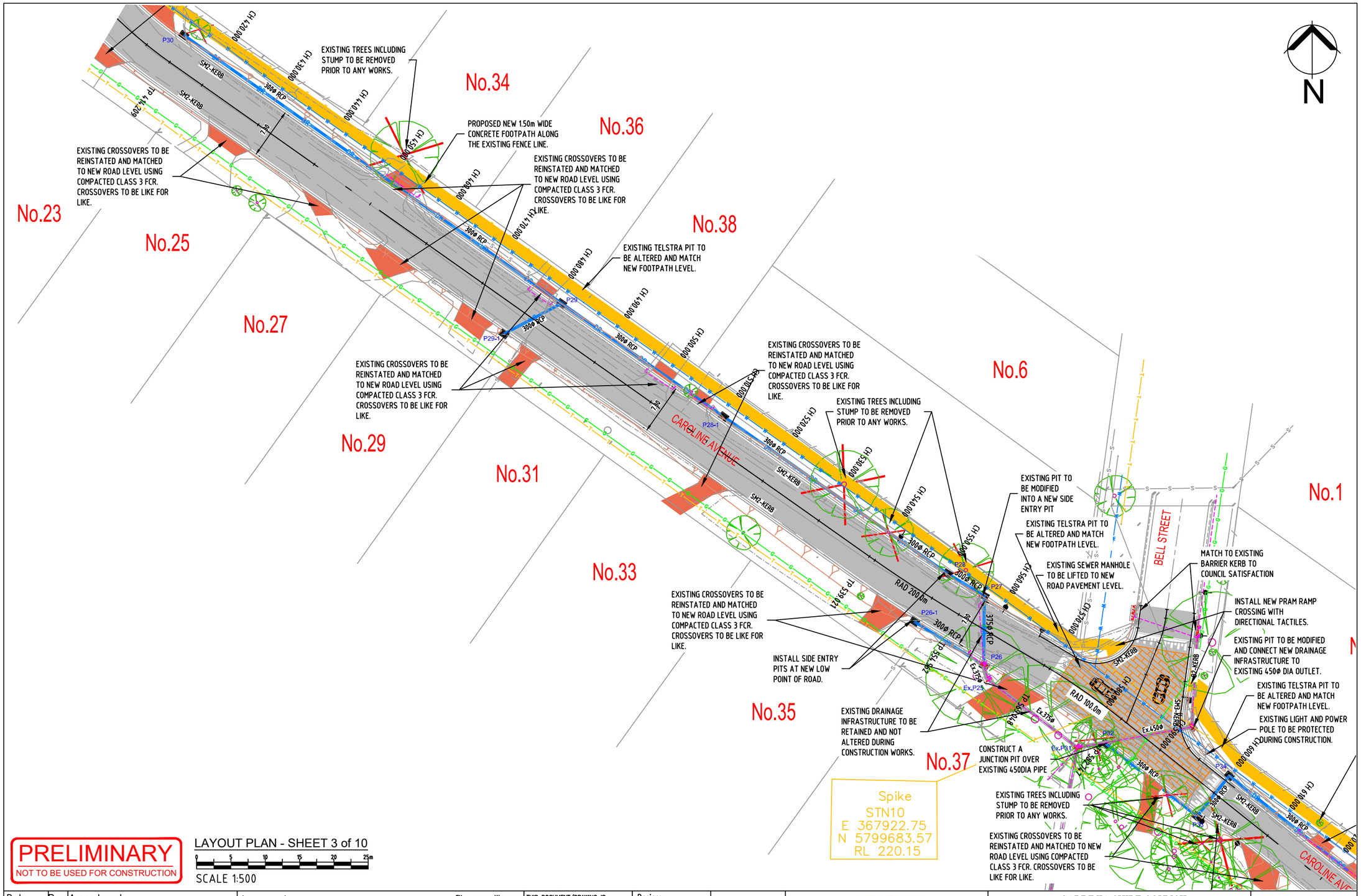
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330



PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

LAYOUT PLAN - SHEET 3 of 10

0 5 10 15 20 25m

SCALE 1:500

Date:	Rev.	Amendments:
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Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: JULY 2020	Scale: AS SHOWN
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Datum: AHD	MELWAY Ref:

Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

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CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
LAYOUT PLAN - CAROLINE AVENUE

Drawing No CCD.	20021 06
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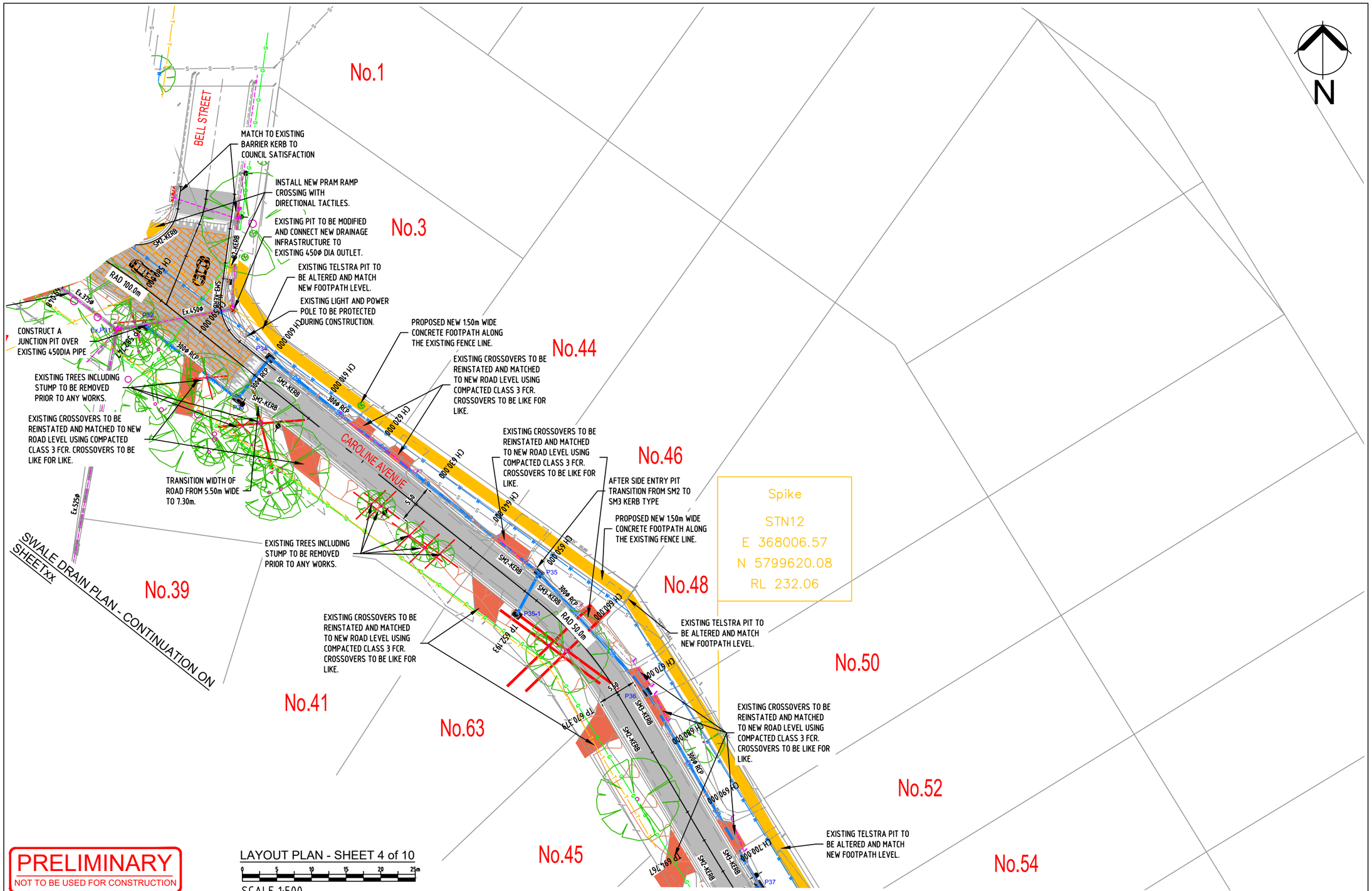

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

LAYOUT PLAN - SHEET 4 of 10

SCALE 1:500

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..
WATER MAINS AND FITTINGS EX W PROP W
SEWER EX S PROP S
GAS MAINS EX G PROP G
TELECOM CABLES AND PITS EX T PROP T

Design: Date: JULY 2020	Scale: AS SHOWN	CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021 07
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		LAYOUT PLAN - CAROLINE AVENUE	CCD Ref. No. 20021

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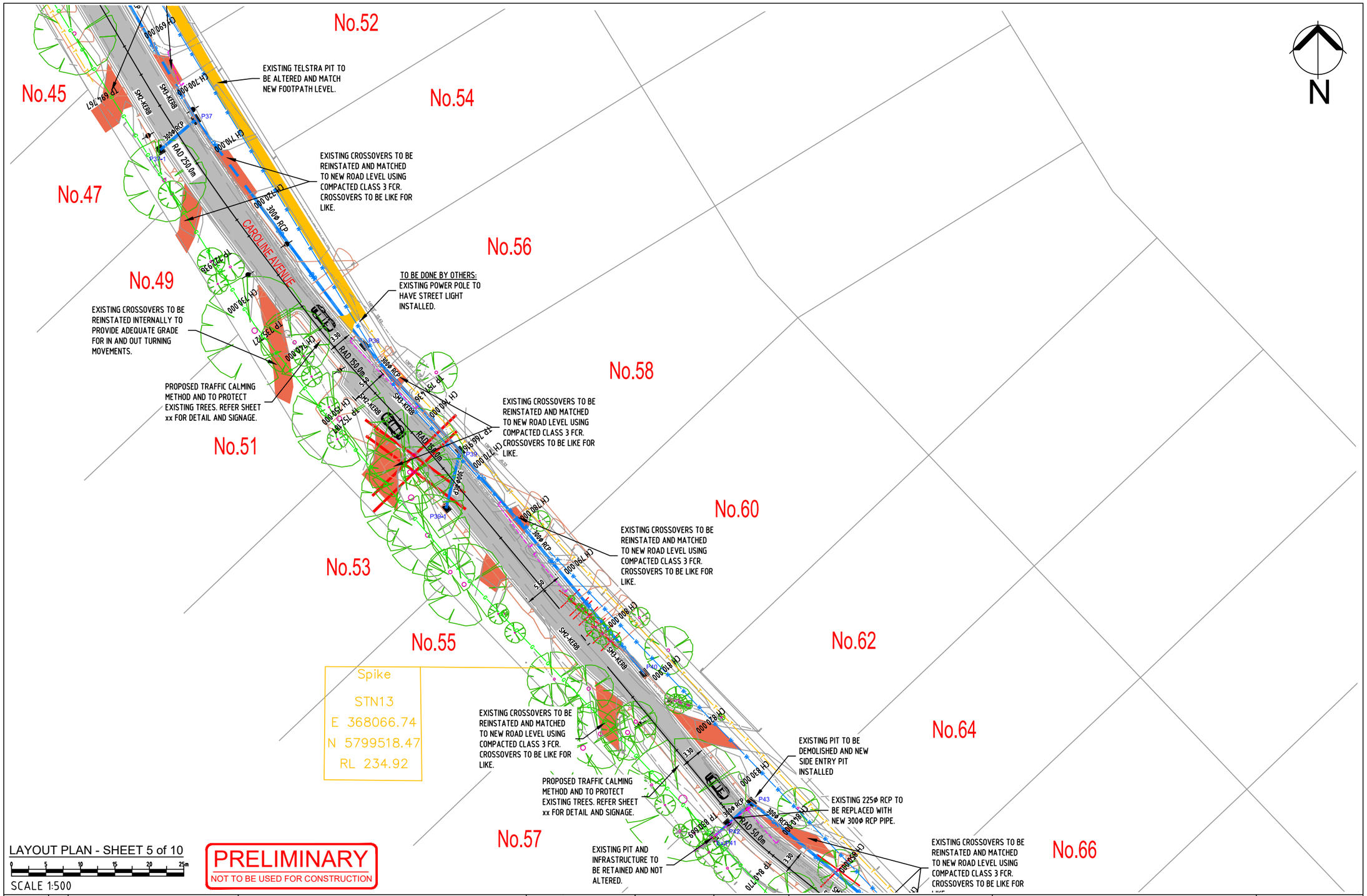
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330



LAYOUT PLAN - SHEET 5 of 10

0 5 10 15 20 25m

SCALE 1:500

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL	WATER MAINS AND FITTINGS	EX PROP
PROPOSED KERB AND CHANNEL	SEWER	EX PROP
EXISTING DRAINS AND PITS	GAS MAINS	EX PROP
PROPOSED DRAINS AND PITS	TELECOM CABLES AND PITS	EX PROP
PROPOSED PROPERTY INLET		

Design: Date: JULY 2020	Scale: AS SHOWN	CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021 08
Checked: Date: JULY 2020	Approved Date:	CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Sheet 8 OF 91
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		LAYOUT PLAN - CAROLINE AVENUE	CCD Ref. No. 20021

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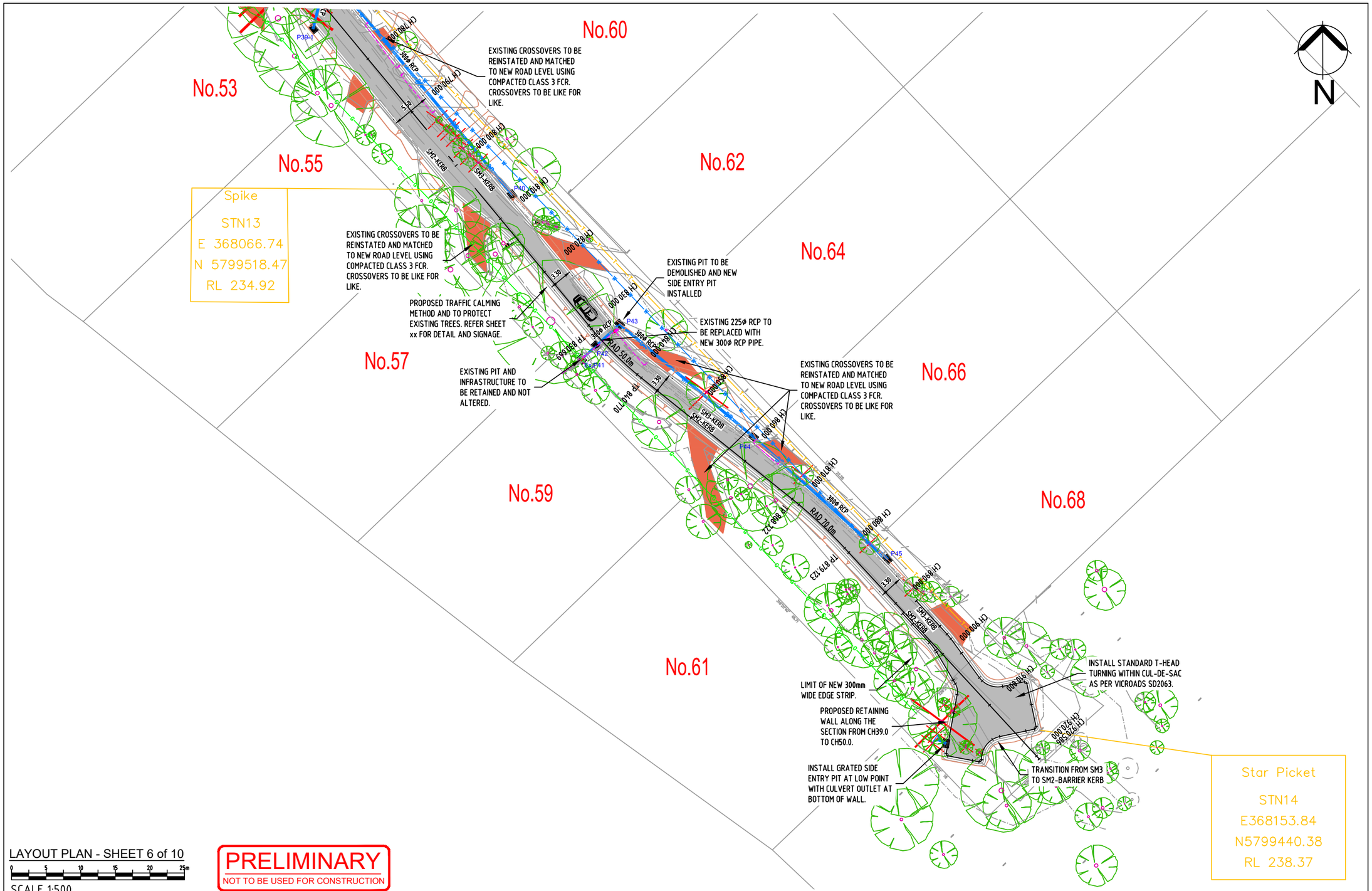

LAYOUT PLAN - SHEET 6 of 10

SCALE 1:500

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX PROP
SEWER EX PROP
GAS MAINS EX PROP
TELECOM CABLES AND PITS EX PROP

Design: Date: JULY 2020	Scale: AS SHOWN
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A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

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CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
LAYOUT PLAN - CAROLINE AVENUE

Drawing No CCD.	20021 09
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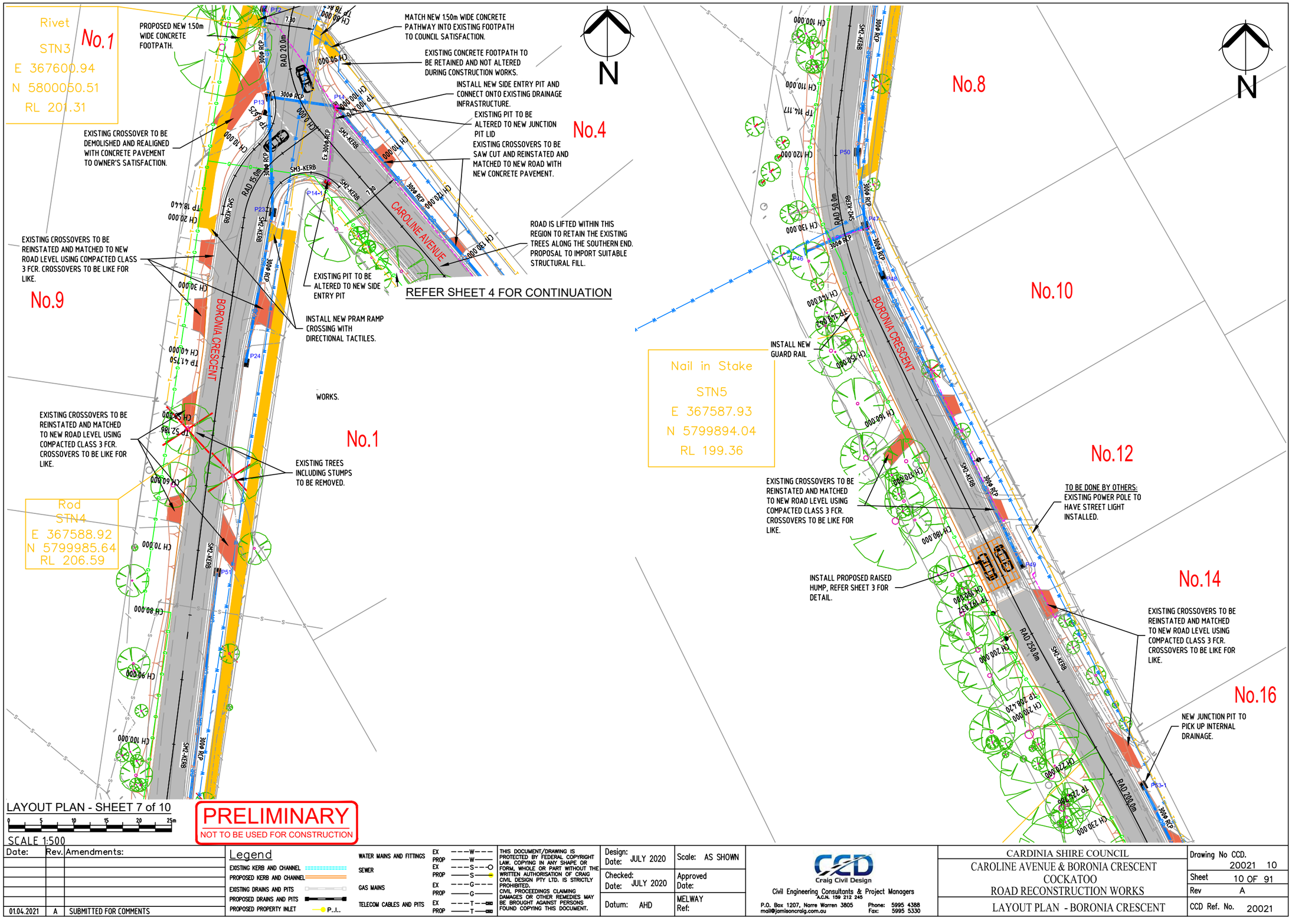

LAYOUT PLAN - SHEET 7 of 10

SCALE 1:500

PRELIMINARY
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Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: JULY 2020	Scale: AS SHOWN
Checked: Date: JULY 2020	Approved Date:
Datum: AHD	MELWAY Ref:

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A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

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COCKATOO
ROAD RECONSTRUCTION WORKS
LAYOUT PLAN - BORONIA CRESCENT

Drawing No CCD.	20021 10
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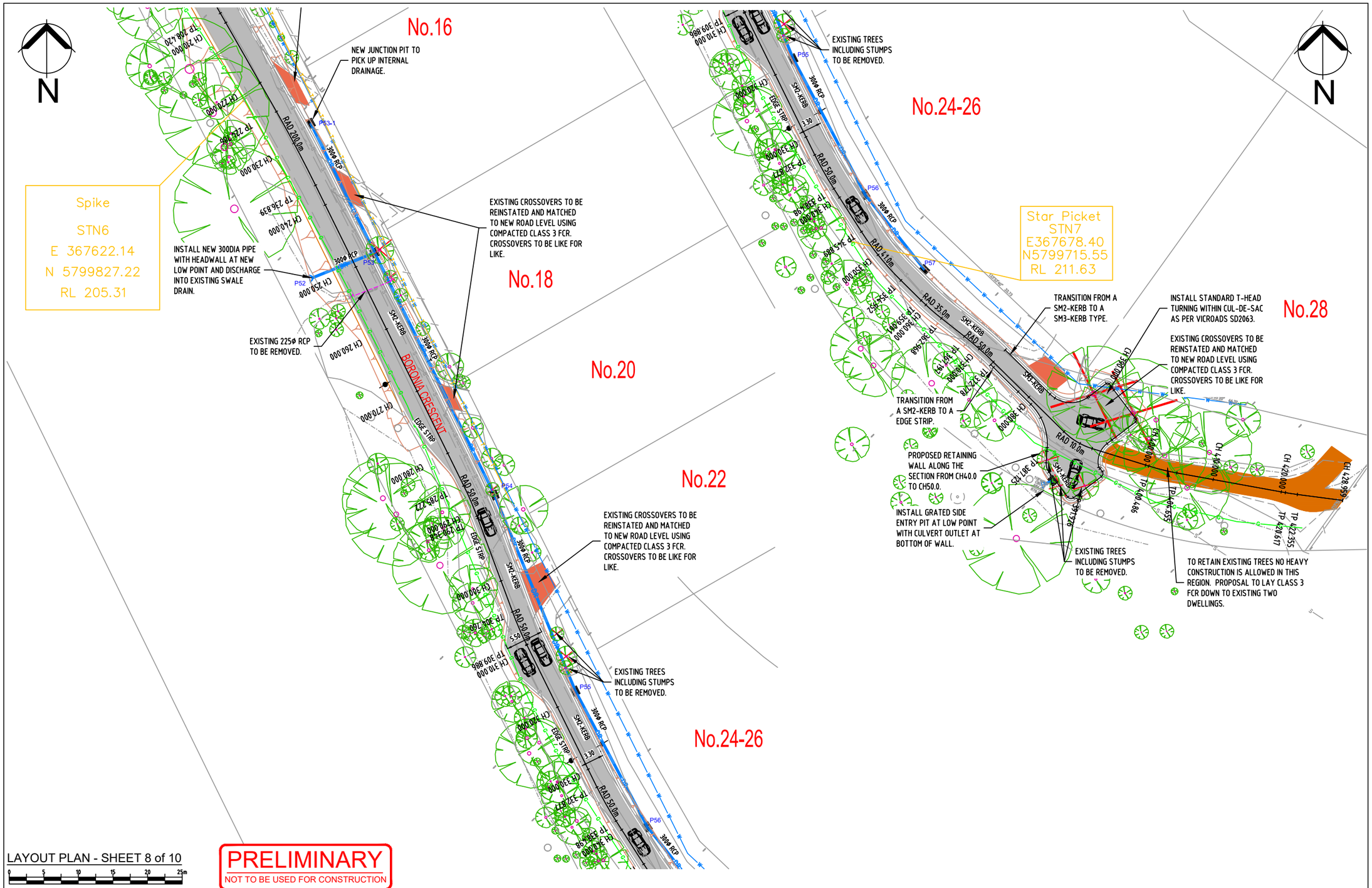

LAYOUT PLAN - SHEET 8 of 10

SCALE 1:500

PRELIMINARY
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Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET
WATER MAINS AND FITTINGS
SEWER
GAS MAINS
TELECOM CABLES AND PITS

Design: Date: JULY 2020
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A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

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COCKATOO
ROAD RECONSTRUCTION WORKS
LAYOUT PLAN - BORONIA CRESCENT

Drawing No CCD. 20021 11
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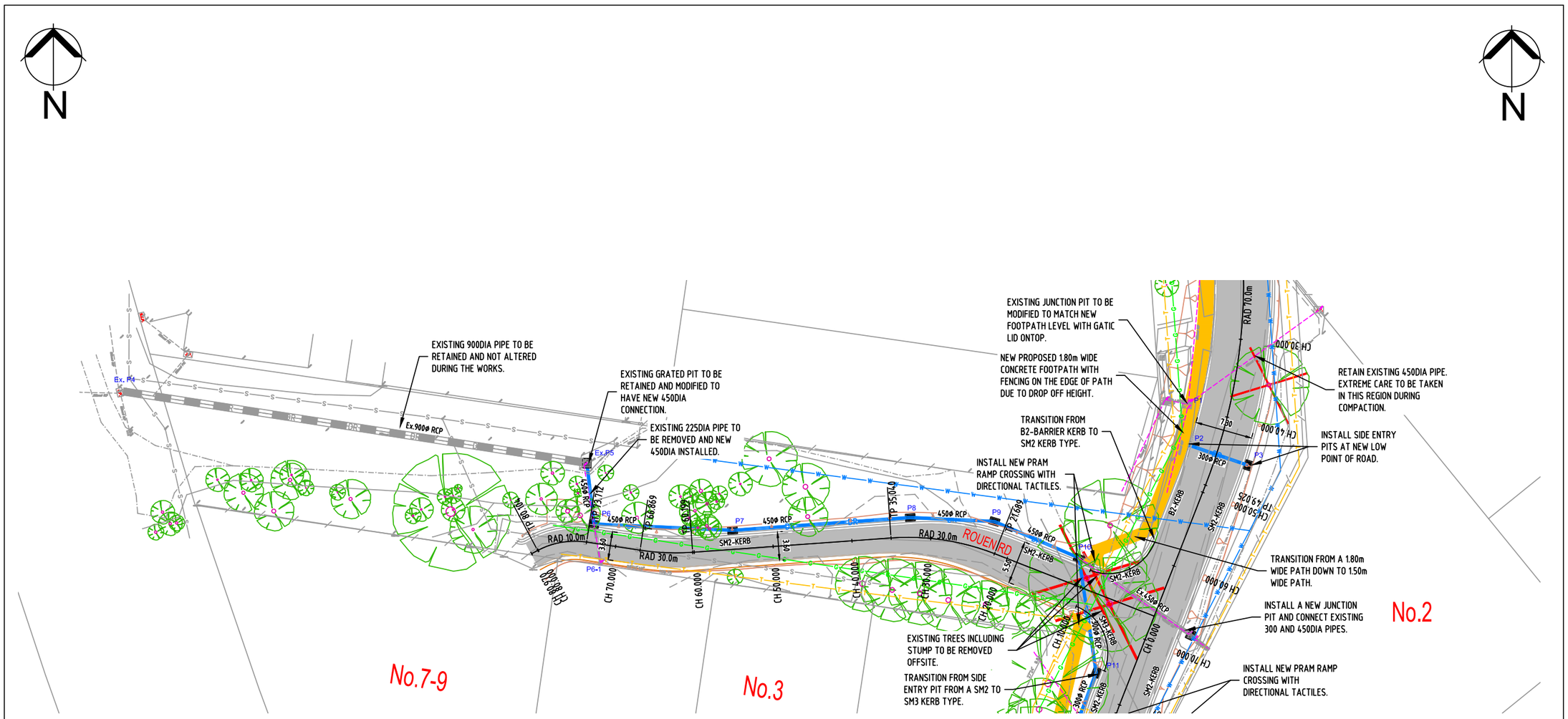
CCD Ref. No. 20021



LAYOUT PLAN - SHEET 9 of 10

0 5 10 15 20 25m

SCALE 1:500

PRELIMINARY

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Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: MARCH 2021	Scale: AS SHOWN	CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021 12
Checked: Date: MARCH 2021	Approved Date:	CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Sheet 12 OF 91
Datum: AHD	MELWAY Ref:	LAYOUT PLAN - ROUEN ROAD	Rev A
			CCD Ref. No. 20021

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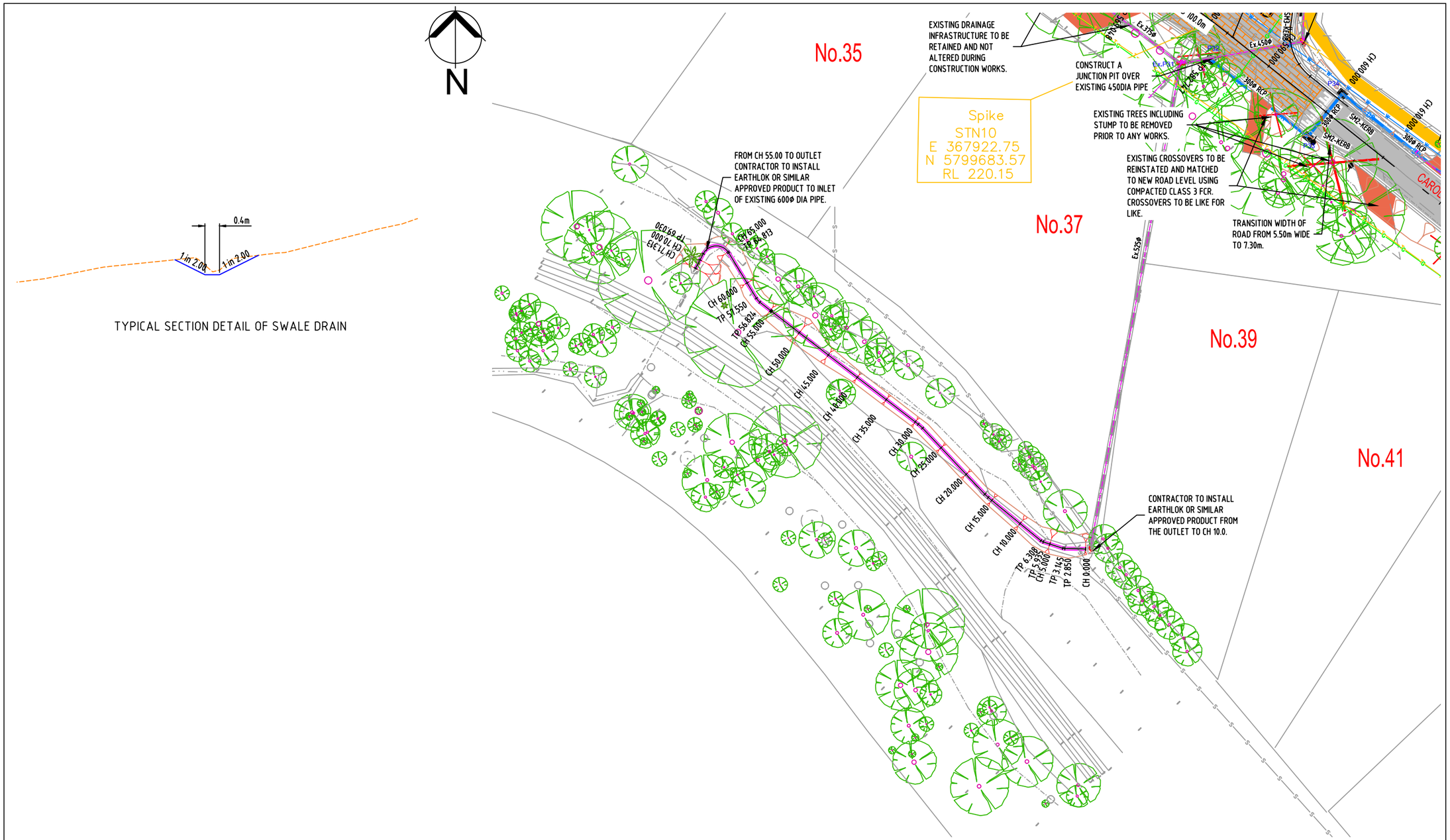
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330



LAYOUT PLAN - SHEET 10 of 10

0 5 10 15 20 25m

SCALE 1:500

PRELIMINARY

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Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX PROP
SEWER EX PROP
GAS MAINS EX PROP
TELECOM CABLES AND PITS EX PROP

Design: Date: MARCH 2021	Scale: AS SHOWN
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A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL

CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS

LAYOUT PLAN - CAROLINE AVE SWALE DRAIN

Drawing No CCD.	20021 13
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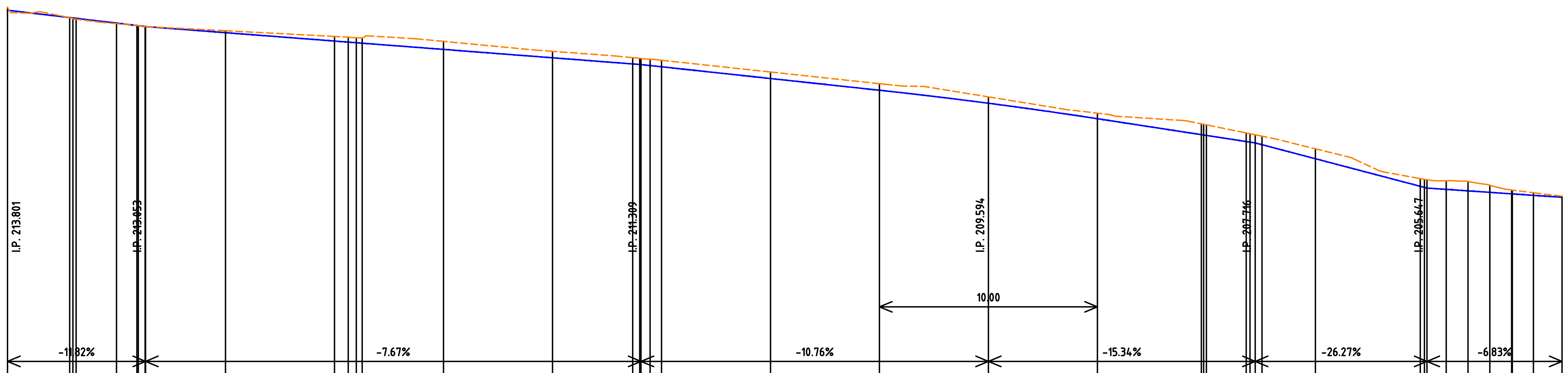

R.L. 195.200

Cut Fill	+0.136	-0.003	-0.027	-0.040	-0.026	-0.001	-0.003	-0.002	-0.000	+0.089	+0.212
Invert of Swale drain	213.801	213.465	213.447	213.430	213.210	213.100	213.092	213.056	213.053	212.772	212.388
Existing Levels	213.94	213.46	213.42	213.39	213.18	213.10	213.09	213.05	213.05	212.86	212.60
Chainage	0.00	2.85	3.00	3.15	5.00	5.93	6.00	6.31	6.33	10.00	15.00

Cut Fill	+0.227	+0.230	+0.243	+0.370	+0.295	+0.289	+0.281	+0.280	+0.290	+0.298	+0.299
Invert of Swale drain	212.340	212.311	212.291	212.004	211.621	211.338	211.314	211.309	211.265	211.208	210.670
Existing Levels	212.57	212.54	212.53	212.37	211.92	211.63	211.60	211.59	211.55	211.51	210.97
Chainage	15.63	16.00	16.27	20.00	25.00	28.68	29.00	29.06	29.48	30.00	35.00

Cut Fill	+0.301	+0.291	+0.253	+0.495	+0.490	+0.484	+0.396	+0.387	+0.374	+0.391	+0.456
Invert of Swale drain	210.132	209.536	208.827	208.096	208.079	208.060	207.780	207.753	207.716	207.635	206.991
Existing Levels	210.43	209.83	209.08	208.59	208.57	208.54	208.18	208.14	208.09	208.03	207.45
Chainage	40.00	45.00	50.00	54.76	54.87	55.00	56.82	57.00	57.24	57.55	60.00

Cut Fill	+0.354	+0.369	+0.380	+0.393	+0.426	+0.326	+0.173	+0.172	+0.119	+0.049
Invert of Swale drain	205.727	205.678	205.647	205.587	205.519	205.450	205.382	205.380	205.314	205.224
Existing Levels	206.08	206.05	206.03	205.98	205.95	205.78	205.56	205.55	205.43	205.27
Chainage	64.81	65.00	65.12	66.00	67.00	68.00	69.00	69.03	70.00	71.31

ProfileRoadSwale drain__alignFrom0.000To71.313Scales: H 1 in250V 1 in250

Swale drain__align

LONGITUDINAL PLAN - SWALE DRAIN

0 2.5 5 7.5 10 12.5m

HORIZONTAL SCALE 1:250

0 2.5 5 7.5 10 12.5m

VERTICAL SCALE 1:250

PRELIMINARY
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Date:	Rev.	Amendments:
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Legend
EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX ---W--- PROP —W—
SEWER EX ---S---O PROP —S—
GAS MAINS EX ---G--- PROP —G—
TELECOM CABLES AND PITS EX ---T--- PROP —T—

Design: Date: MARCH 2021
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A.C.N. 159 212 245
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mail@jamisoncraig.com.au
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CARDINIA SHIRE COUNCIL
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COCKATOO
ROAD RECONSTRUCTION WORKS
LONGITUDINAL PLAN - CAROLINE AVE SWALE DRAIN

Drawing No CCD. 20021 14
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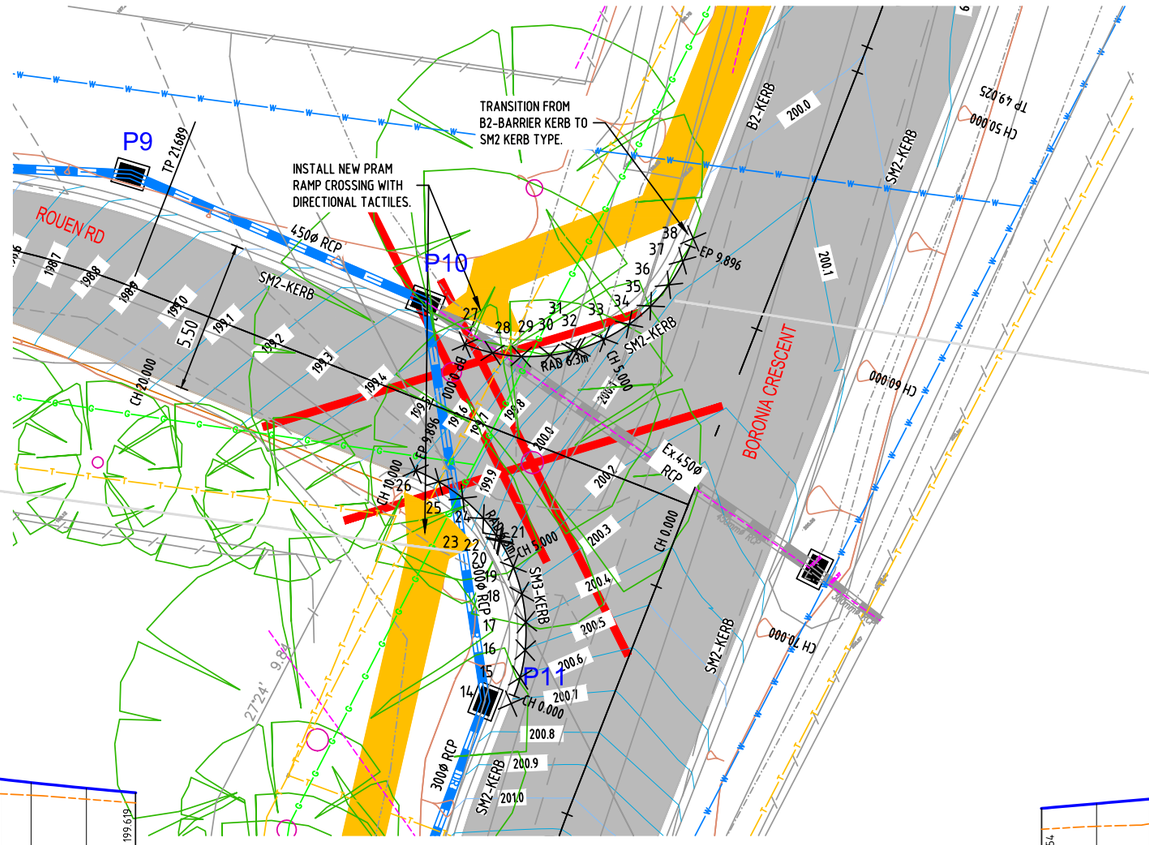
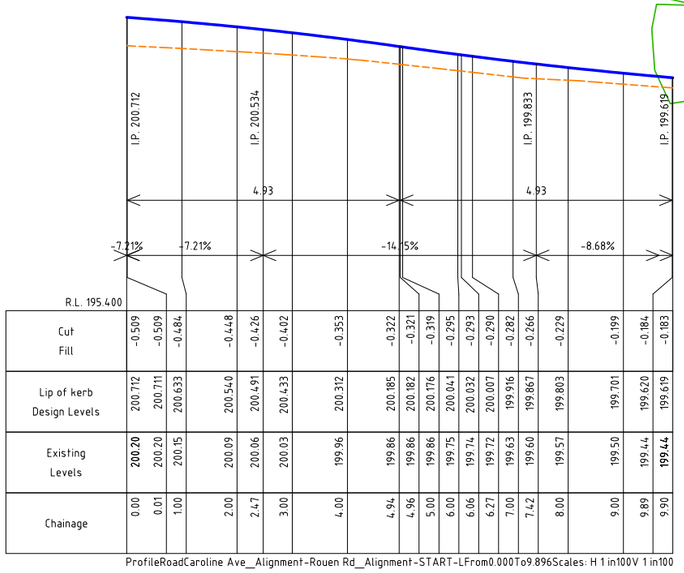


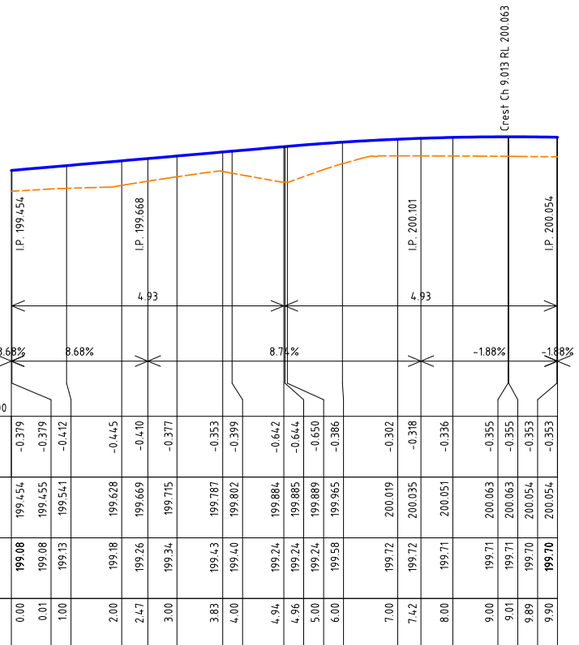
POINT No.	EASTING	NORTHING	Level
14	367603.658	5800059.098	200.712
15	367603.947	5800060.054	200.633
16	367604.082	5800061.044	200.540
17	367604.058	5800062.043	200.433
18	367603.877	5800063.025	200.312
19	367603.542	5800063.966	200.176
20	367603.064	5800064.843	200.041
21	367603.028	5800064.897	200.032
22	367602.913	5800065.062	200.007
23	367602.452	5800065.633	199.916
24	367601.723	5800066.316	199.803
25	367600.896	5800066.876	199.701
26	367600.088	5800067.261	199.619

POINT No.	EASTING	NORTHING	Level
27	367602.092	5800072.382	199.454
28	367603.048	5800072.093	199.541
29	367604.038	5800071.959	199.628
30	367605.037	5800071.983	199.715
31	367605.856	5800072.122	199.787
32	367606.019	5800072.164	199.802
33	367606.961	5800072.498	199.889
34	367607.837	5800072.977	199.965
35	367608.627	5800073.589	200.019
36	367609.311	5800074.317	200.051
37	367609.870	5800075.145	200.063
38	367610.255	5800075.953	200.054



Cut	-0.509	-0.509	-0.484	-0.448	-0.426	-0.402	-0.353	-0.322	-0.321	-0.319	-0.295	-0.293	-0.290	-0.282	-0.266	-0.229	-0.199	-0.184	-0.183
Fill																			
Lip of kerb Design Levels	200.712	200.711	200.633	200.540	200.491	200.433	200.312	200.185	200.182	200.176	200.041	200.032	200.007	199.916	199.867	199.803	199.701	199.620	199.619
Existing Levels	**200.20**	200.20	200.15	200.09	200.06	200.03	199.96	199.86	199.86	199.86	199.75	199.74	199.72	199.63	199.60	199.57	199.50	199.44	**199.44**
Chainage	0.00	0.01	1.00	2.00	2.47	3.00	4.00	4.94	4.96	5.00	6.00	6.06	6.27	7.00	7.42	8.00	9.00	9.89	9.90

ProfileRoadCaroline Ave__Alignment-Rouen Rd__Alignment-START-LFrom0.000To9.896Scales: H 1 in100V 1 in100



Cut	-0.379	-0.379	-0.412	-0.445	-0.410	-0.377	-0.353	-0.399	-0.642	-0.644	-0.650	-0.386	-0.302	-0.318	-0.336	-0.355	-0.355	-0.353	-0.353
Fill																			
Lip of kerb Design Levels	199.454	199.455	199.541	199.628	199.669	199.715	199.787	199.802	199.886	199.885	199.889	199.965	200.019	200.035	200.051	200.063	200.063	200.054	200.054
Existing Levels	**199.08**	199.08	199.13	199.18	199.26	199.34	199.43	199.40	199.24	199.24	199.24	199.58	199.72	199.72	199.71	199.71	199.71	199.70	**199.70**
Chainage	0.00	0.01	1.00	2.00	2.47	3.00	3.83	4.00	4.94	4.96	5.00	6.00	7.00	7.42	8.00	9.00	9.01	9.89	9.90

ProfileRoadCaroline Ave__Alignment-Rouen Rd__Alignment-START-RFrom0.000To9.896Scales: H 1 in100V 1 in100

HORIZONTAL SCALE 1:100
0 1 2 3 4 5m
VERTICAL SCALE 1:100
0 1 2 3 4 5m

HORIZONTAL SCALE 1:100
0 1 2 3 4 5m
VERTICAL SCALE 1:100
0 1 2 3 4 5m

INTERSECTION PLAN - ROUEN RD & BORONIA CRESCENT

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

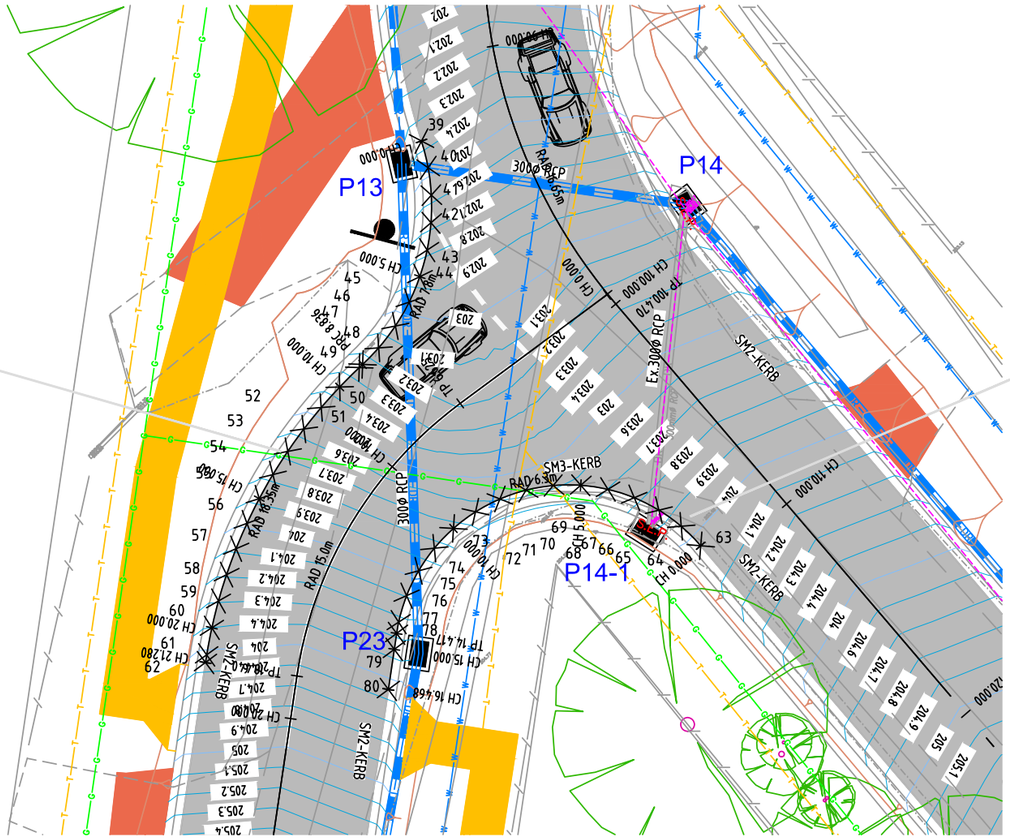
Design: Date: JULY 2020 | Scale: AS SHOWN
Checked: Date: JULY 2020 | Approved Date:
Datum: AHD | MELWAY Ref:

Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
INTERSECTION PLAN - BORONIA CRESC & ROUEN RD

Drawing No CCD. 20021 15
Sheet 15 OF 91
Rev A
CCD Ref. No. 20021

POINT No.	EASTING	NORTHING	Level
39	367602.064	5800040.713	202.363
40	367602.305	5800039.743	202.460
41	367602.421	5800038.750	202.563
42	367602.409	5800037.751	202.665
43	367602.269	5800036.762	202.767
44	367602.004	5800035.798	202.870
45	367601.618	5800034.876	202.972
46	367601.118	5800034.012	203.074
47	367600.510	5800033.218	203.177
48	367599.929	5800032.619	203.262
49	367599.808	5800032.507	203.279
50	367599.099	5800031.802	203.382
51	367598.430	5800031.059	203.484
52	367597.802	5800030.281	203.586
53	367597.217	5800029.470	203.689
54	367596.678	5800028.628	203.791
55	367596.185	5800027.758	203.893
56	367595.740	5800026.863	203.996
57	367595.344	5800025.944	204.098
58	367594.999	5800025.006	204.201
59	367594.706	5800024.050	204.303
60	367594.465	5800023.079	204.407
61	367594.278	5800022.097	204.532
62	367594.235	5800021.820	204.551



SCALE 1:200

N

POINT No.	EASTING	NORTHING	Level
63	367612.185	5800026.050	203.978
64	367611.478	5800026.755	203.932
65	367610.668	5800027.340	203.859
66	367609.776	5800027.790	203.780
67	367608.824	5800028.093	203.702
68	367607.836	5800028.242	203.642
69	367606.837	5800028.232	203.612
70	367605.852	5800028.065	203.612
71	367604.906	5800027.745	203.642
72	367604.023	5800027.279	203.702
73	367603.224	5800026.679	203.792
74	367602.530	5800025.960	203.912
75	367601.959	5800025.141	204.044
76	367601.524	5800024.241	204.176
77	367601.237	5800023.284	204.308
78	367601.162	5800022.874	204.363
79	367601.077	5800022.297	204.440
80	367600.864	5800020.845	204.543

INTERSECTION PLAN - CAROLINE AVENUE & BORONIA CRESCENT

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

- EXISTING KERB AND CHANNEL
- PROPOSED KERB AND CHANNEL
- EXISTING DRAINS AND PITS
- PROPOSED DRAINS AND PITS
- PROPOSED PROPERTY INLET P..I..
- WATER MAINS AND FITTINGS EX —W— PROP —W—
- SEWER EX —S— PROP —S—
- GAS MAINS EX —G— PROP —G—
- TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: JULY 2020	Scale: AS SHOWN
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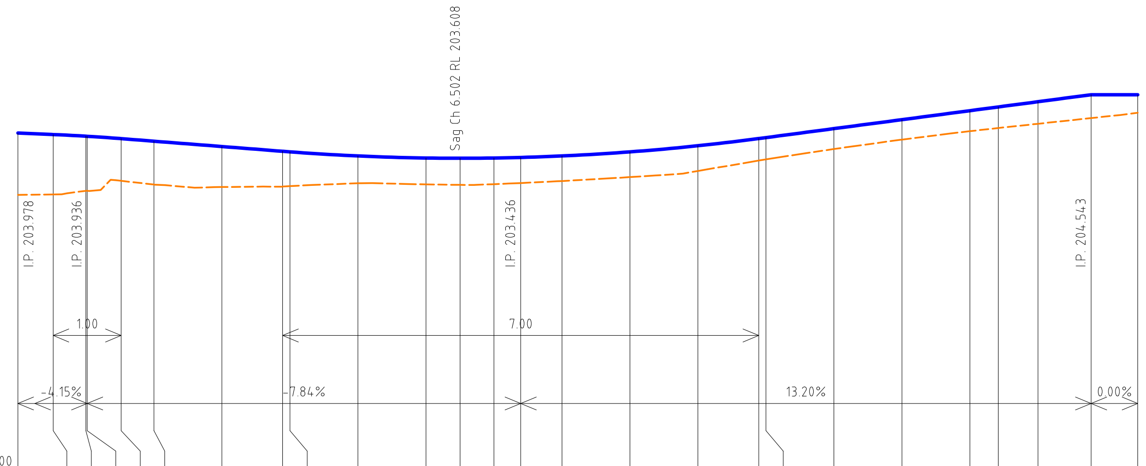
CARDINIA SHIRE COUNCIL

CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS

INTERSECTION PLAN - BORONIA CRESC & CAROLINE AVE

Drawing No CCD.	20021 16
Sheet	16 OF 91
Rev	A
CCD Ref. No.	20021



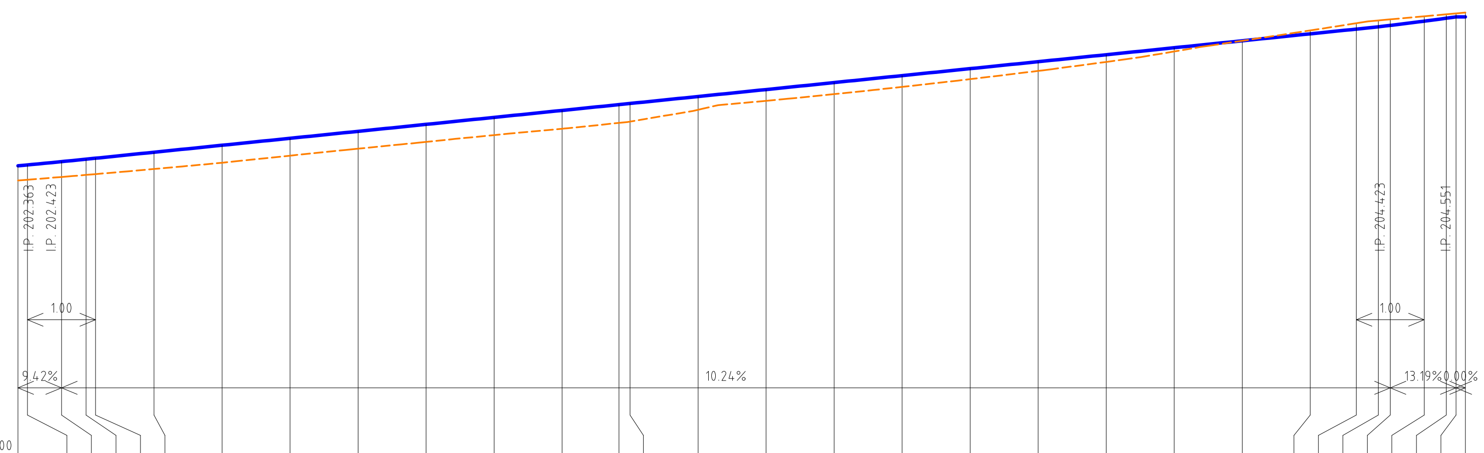
Cut Fill	-0.910	-0.880	-0.803	-0.800	-0.622	-0.637	-0.595	-0.518	-0.504	-0.402	-0.389	-0.392	-0.386
Lip of kerb Design Levels	203.978	203.956	203.932	203.931	203.897	203.859	203.780	203.710	203.702	203.642	203.612	203.608	203.612
Existing Levels	203.07	203.08	203.13	203.13	203.28	203.22	203.18	203.19	203.20	203.24	203.22	203.22	203.23
Chainage	0.00	0.52	1.00	1.02	1.52	2.00	3.00	3.89	4.00	5.00	6.00	6.50	7.00

Cut Fill	-0.377	-0.369	-0.372	-0.371	-0.324	-0.321	-0.300	-0.293	-0.302	-0.310	-0.325	-0.344	-0.266
Lip of kerb Design Levels	203.620	203.642	203.702	203.792	203.898	203.912	204.044	204.176	204.308	204.363	204.440	204.543	204.543
Existing Levels	203.24	203.27	203.33	203.42	203.57	203.59	203.74	203.88	204.01	204.05	204.12	204.20	204.28
Chainage	7.39	8.00	9.00	10.00	10.89	11.00	12.00	13.00	14.00	14.42	15.00	15.78	16.47

ProfileRoadBoronia__Left LOK__alignFrom0.000To16.468Scales: H 1 in100V 1 in100

HORIZONTAL SCALE 1:100

VERTICAL SCALE 1:100



Cut Fill	-0.216	-0.218	-0.225	-0.231	-0.233	-0.247	-0.257	-0.255	-0.255	-0.258	-0.259
Lip of kerb Design Levels	202.363	202.376	202.424	202.460	202.474	202.563	202.665	202.767	202.870	202.972	203.074
Existing Levels	202.15	202.16	202.20	202.23	202.24	202.32	202.41	202.51	202.61	202.71	202.81
Chainage	0.00	0.14	0.64	1.00	1.14	2.00	3.00	4.00	5.00	6.00	7.00

Cut Fill	-0.269	-0.268	-0.266	-0.195	-0.166	-0.170	-0.166	-0.154	-0.135	-0.106
Lip of kerb Design Levels	203.177	203.262	203.279	203.382	203.484	203.586	203.689	203.791	203.893	203.996
Existing Levels	202.91	202.99	203.01	203.19	203.32	203.42	203.52	203.64	203.76	203.89
Chainage	8.00	8.84	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00

Cut Fill	-0.054	-0.000	+0.050	+0.086	+0.092	+0.088	+0.071	+0.057	+0.051	+0.064
Lip of kerb Design Levels	204.098	204.201	204.303	204.372	204.407	204.427	204.489	204.532	204.551	204.551
Existing Levels	204.04	204.20	204.35	204.46	204.50	204.52	204.56	204.59	204.60	204.61
Chainage	17.00	18.00	19.00	19.68	20.00	20.18	20.68	21.00	21.14	21.28

ProfileRoadBoronia Cresc__Right LOK__alignFrom0.000To21.280Scales: H 1 in100V 1 in100

HORIZONTAL SCALE 1:100

VERTICAL SCALE 1:100

INTERSECTION PLAN - CAROLINE AVENUE & BORONIA CRESCENT

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET — P..I..

WATER MAINS AND FITTINGS — EX ---W--- / PROP ——W——
SEWER — EX ---S---O / PROP ——S——
GAS MAINS — EX ---G--- / PROP ——G——
TELECOM CABLES AND PITS — EX ---T--- / PROP ——T——

Design: Date: JULY 2020
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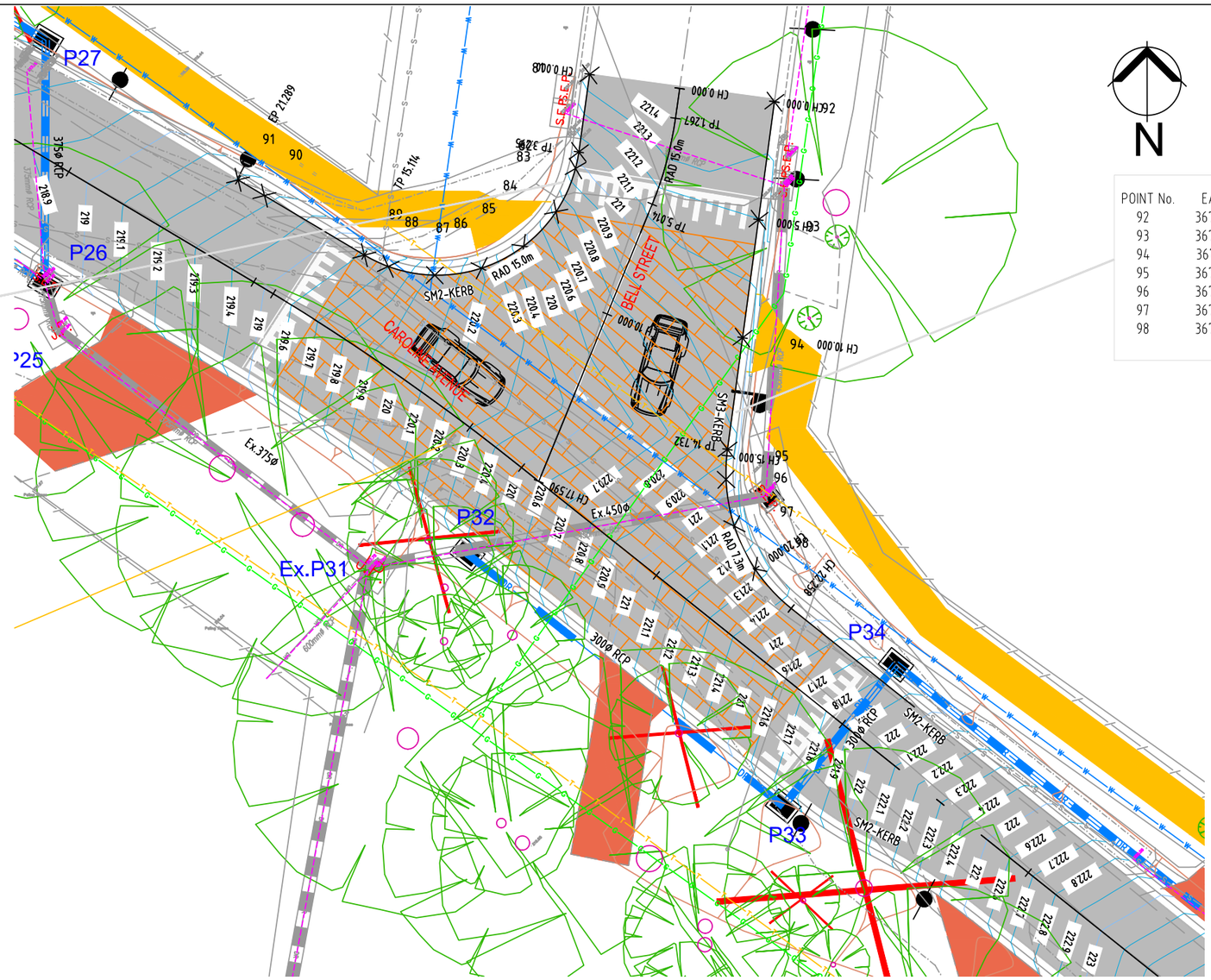
Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805
mail@jamisoncraig.com.au
Phone: 5995 4388
Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
INTERSECTION PLAN - BORONIA CRESC & CAROLINE AVE

Drawing No CCD. 20021 17
Sheet 17 OF 91
Rev A
CCD Ref. No. 20021

POINT No.	EASTING	NORTHING	Level
81	367928.757	5799699.075	221.362
82	367928.303	5799695.811	221.033
83	367928.165	5799695.120	220.957
84	367927.349	5799693.304	220.704
85	367925.984	5799691.855	220.439
86	367924.220	5799690.933	220.174
87	367922.251	5799690.638	219.965
88	367920.294	5799691.004	219.759
89	367919.290	5799691.482	219.654
90	367915.092	5799693.982	219.269
91	367913.985	5799694.641	219.170



POINT No.	EASTING	NORTHING	Level
92	367936.521	5799697.923	221.381
93	367935.852	5799692.968	221.197
94	367935.183	5799688.013	221.013
95	367934.549	5799683.323	220.878
96	367934.489	5799682.059	220.958
97	367934.839	5799680.096	221.114
98	367935.707	5799678.301	221.270

0 1 2 3 4 5 6 7 8 9 10m

SCALE 1:200

INTERSECTION PLAN - CAROLINE AVENUE & BELL STREET

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

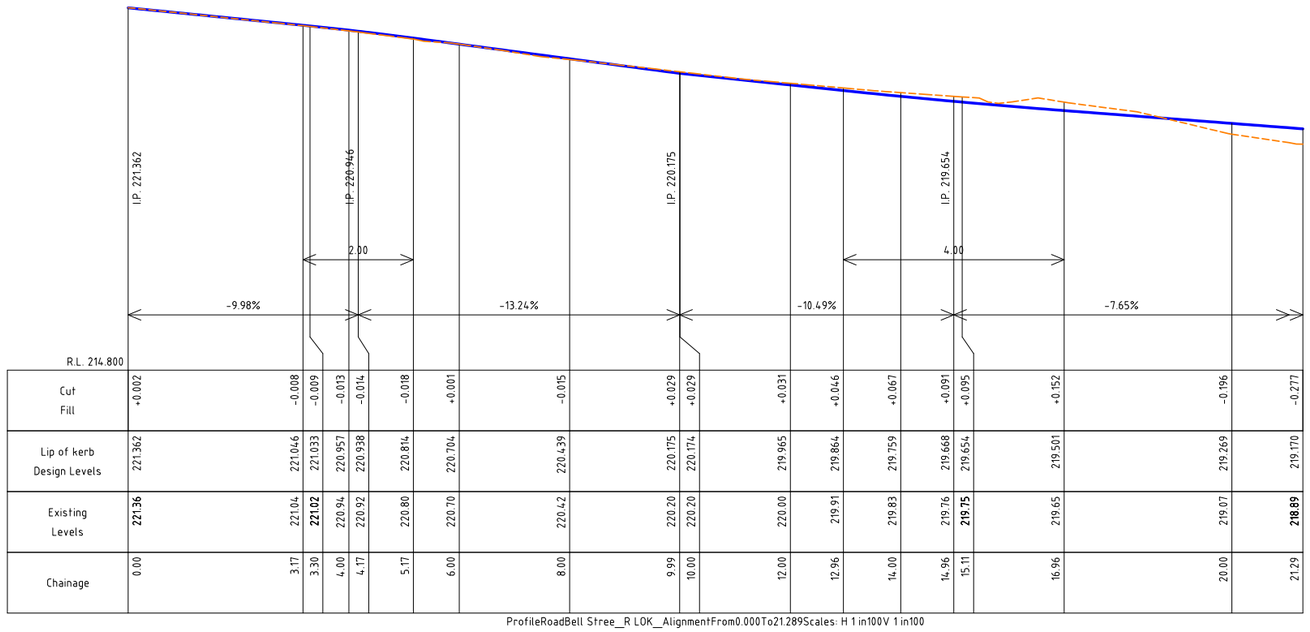
Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P...I...

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S— PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: JULY 2020	Scale: AS SHOWN	CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021 18
Checked: Date: JULY 2020	Approved Date:	CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Sheet 18 OF 91
Datum: AHD	MELWAY Ref:		Rev A
		INTERSECTION PLAN - BELL STREET & CAROLINE AVE	CCD Ref. No. 20021

Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

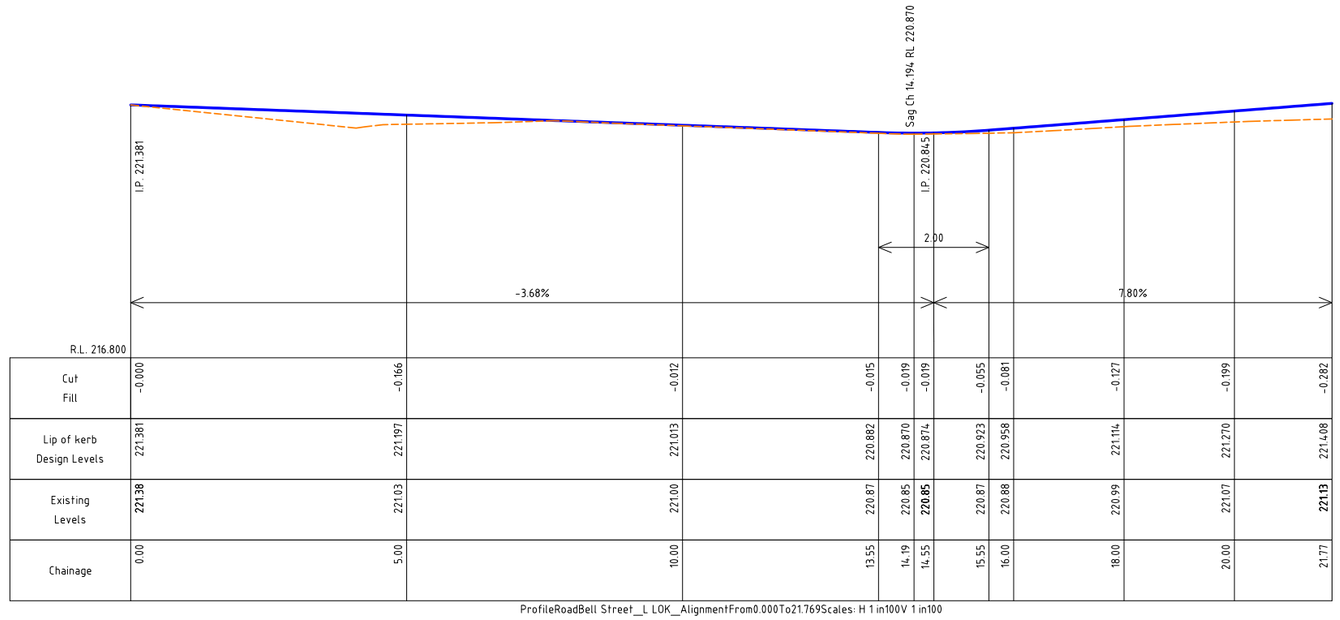


0 1 2 3 4 5m

HORIZONTAL SCALE 1:100

0 1 2 3 4 5m

VERTICAL SCALE 1:100



0 1 2 3 4 5m

HORIZONTAL SCALE 1:100

0 1 2 3 4 5m

VERTICAL SCALE 1:100

INTERSECTION PLAN - CAROLINE AVENUE & BELL STREET

PRELIMINARY

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Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S— PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

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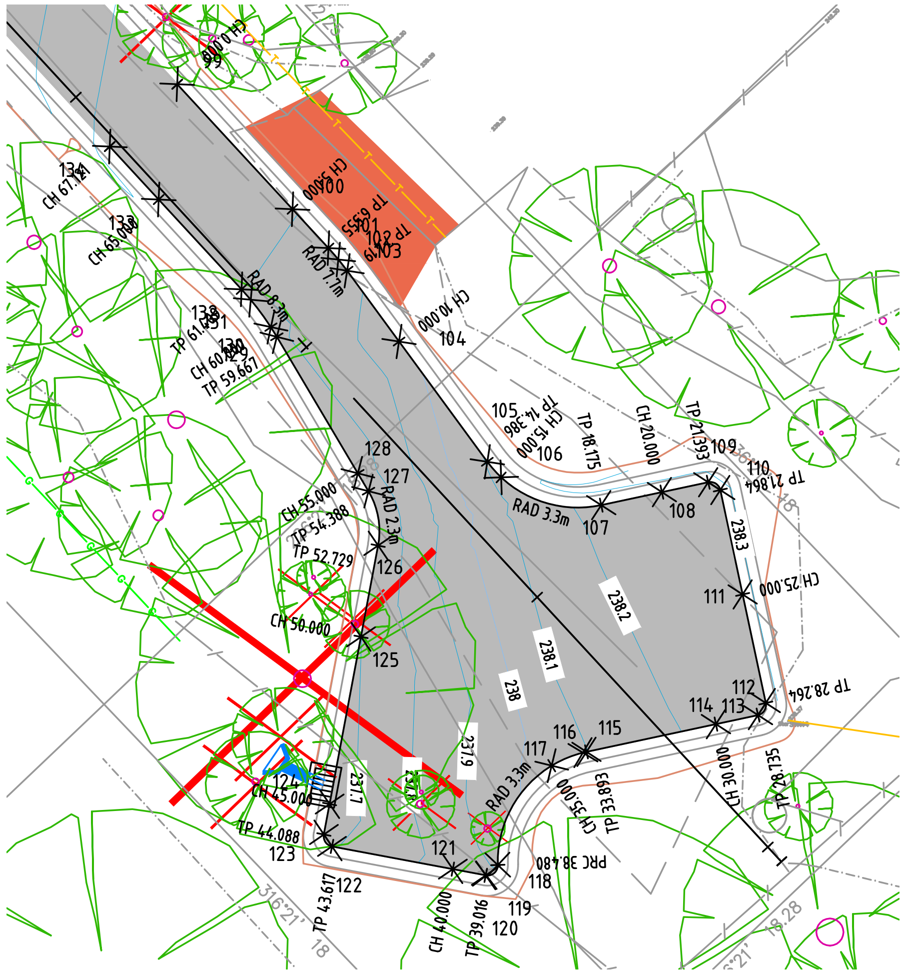
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL

CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS

INTERSECTION PLAN - BELL STREET & CAROLINE AVE

Drawing No CCD.	20021 19
Sheet	19 OF 91
Rev	A
CCD Ref. No.	20021



N

POINT No.	EASTING	NORTHING	Level
99	368135.863	5799459.080	237.613
100	368139.255	5799455.407	237.793
101	368140.310	5799454.264	237.845
102	368140.602	5799453.929	237.860
103	368140.860	5799453.598	237.874
104	368142.387	5799451.518	237.960
105	368144.984	5799447.983	238.107
106	368145.391	5799447.525	238.127
107	368148.334	5799446.709	238.220
108	368150.119	5799447.091	238.256
109	368151.480	5799447.382	238.275
110	368151.836	5799447.152	238.279
111	368152.493	5799444.085	238.288
112	368153.175	5799440.893	238.258
113	368152.945	5799440.537	238.250
114	368151.708	5799440.273	238.225
115	368147.901	5799439.458	238.098
116	368147.797	5799439.434	238.094
117	368146.877	5799439.051	238.052
118	368145.293	5799436.132	237.907
119	368144.954	5799435.826	237.885
120	368144.938	5799435.828	237.884
121	368143.971	5799436.010	237.843
122	368140.416	5799436.678	237.692
123	368140.176	5799437.028	237.673

124	368140.345	5799437.924	237.652
125	368141.268	5799442.838	237.699
126	368141.772	5799445.520	237.728
127	368141.489	5799447.119	237.741
128	368141.177	5799447.645	237.746
129	368138.795	5799451.658	237.782
130	368138.619	5799451.940	237.785
131	368138.025	5799452.744	237.793
132	368137.755	5799453.051	237.796
133	368135.319	5799455.690	237.823
134	368133.879	5799457.248	237.773

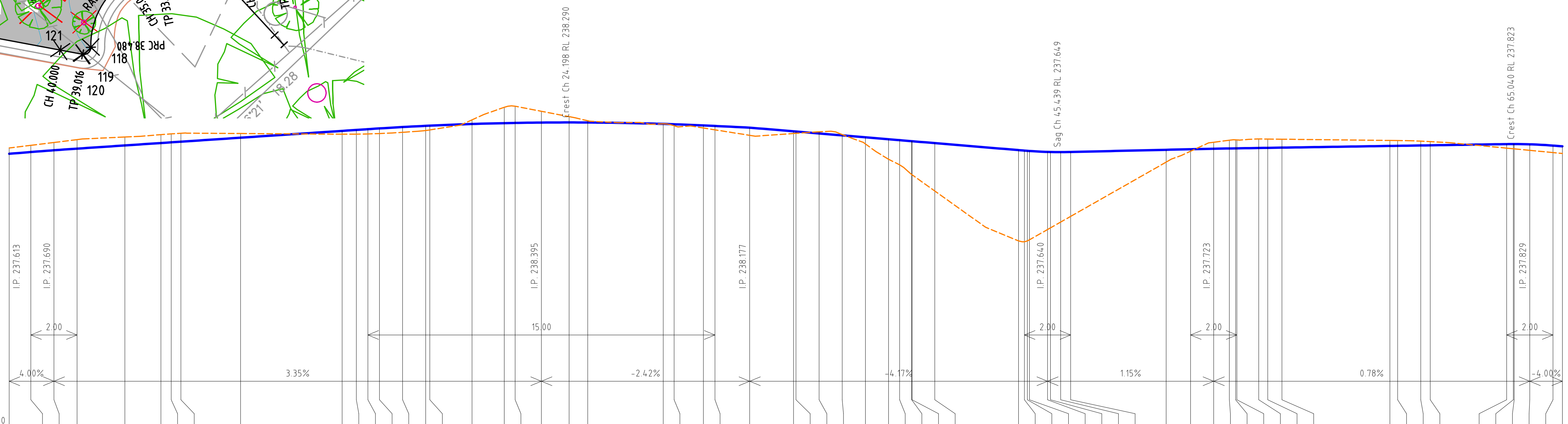
INTERSECTION PLAN - CAROLINE AVENUE COURT HEAD SETOUT

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

VERTICAL SCALE 1:100

HORIZONTAL SCALE 1:200

SCALE 1:200



R.L. 231.700

Chainage	Cut / Fill	Lip of kerb Design Levels	Existing Levels
0.00	+0.124	237.613	237.74
0.93	+0.145	237.650	237.80
1.93	+0.168	237.689	237.86
2.93	+0.195	237.724	237.92
5.00	+0.182	237.793	237.98
6.56	+0.181	237.845	238.03
7.00	+0.183	237.860	238.04
7.42	+0.182	237.874	238.06
10.00	+0.090	237.960	238.05
14.39	-0.071	238.107	238.04
15.00	-0.090	238.127	238.04
15.50	-0.103	238.144	238.04
16.00	-0.110	238.160	238.05
17.00	-0.114	238.190	238.08
18.00	-0.101	238.216	238.11
18.18	-0.092	238.220	238.13
20.00	+0.090	238.256	238.35
21.39	+0.342	238.275	238.62
21.86	+0.361	238.279	238.64
23.00	+0.244	238.287	238.53
24.20	+0.125	238.290	238.41
25.00	+0.038	238.288	238.33
28.26	+0.002	238.258	238.26
28.73	-0.032	238.250	238.22
30.00	-0.056	238.225	238.17
30.50	-0.083	238.213	238.13
32.00	-0.166	238.177	238.01
33.89	-0.047	238.098	238.05
34.00	-0.039	238.094	238.05
35.00	+0.035	238.052	238.09
36.00	+0.018	238.010	238.03
37.00	-0.143	237.968	237.82
38.00	-0.433	237.927	237.49
38.48	-0.532	237.907	237.37
39.00	-0.720	237.885	237.17
39.02	-0.725	237.884	237.16
40.00	-1.034	237.843	236.81
43.62	-1.961	237.692	235.73
43.87	-1.969	237.682	235.71
44.00	-1.945	237.677	235.73
44.09	-1.919	237.673	235.75
44.87	-1.676	237.653	235.98
45.00	-1.639	237.652	236.01
45.44	-1.511	237.649	236.14
45.87	-1.390	237.651	236.26
50.00	-0.266	237.699	237.43
51.05	-0.043	237.711	237.67
52.05	+0.140	237.722	237.86
52.73	+0.178	237.728	237.91
53.00	+0.183	237.730	237.91
53.05	+0.182	237.730	237.91
54.00	+0.195	237.738	237.93
54.39	+0.190	237.741	237.93
55.00	+0.181	237.746	237.93
59.67	+0.118	237.782	237.90
60.00	+0.113	237.785	237.90
61.00	+0.093	237.793	237.89
61.41	+0.080	237.796	237.88
64.71	-0.087	237.822	237.73
65.00	-0.102	237.823	237.72
65.04	-0.104	237.823	237.72
65.71	-0.130	237.817	237.69
66.71	-0.150	237.789	237.64
67.12	-0.154	237.773	237.62

ProfileRoadCaroline Ave__Court Head__LOK alignmentFrom0.000To67.121Scales: H 1 in200V 1 in100

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

- EXISTING KERB AND CHANNEL
- PROPOSED KERB AND CHANNEL
- EXISTING DRAINS AND PITS
- PROPOSED DRAINS AND PITS
- PROPOSED PROPERTY INLET — P..I..
- WATER MAINS AND FITTINGS — EX ---W--- / PROP ——W——
- SEWER — EX ---S---O / PROP ——S——
- GAS MAINS — EX ---G--- / PROP ——G——
- TELECOM CABLES AND PITS — EX ---T--- / PROP ——T——

Design: Date: JULY 2020
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CCD Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805
mail@jamisoncraig.com.au
Phone: 5995 4388
Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
INTERSECTION PLAN - CAROLINE AVE COURT HEAD

Drawing No CCD. 20021 20
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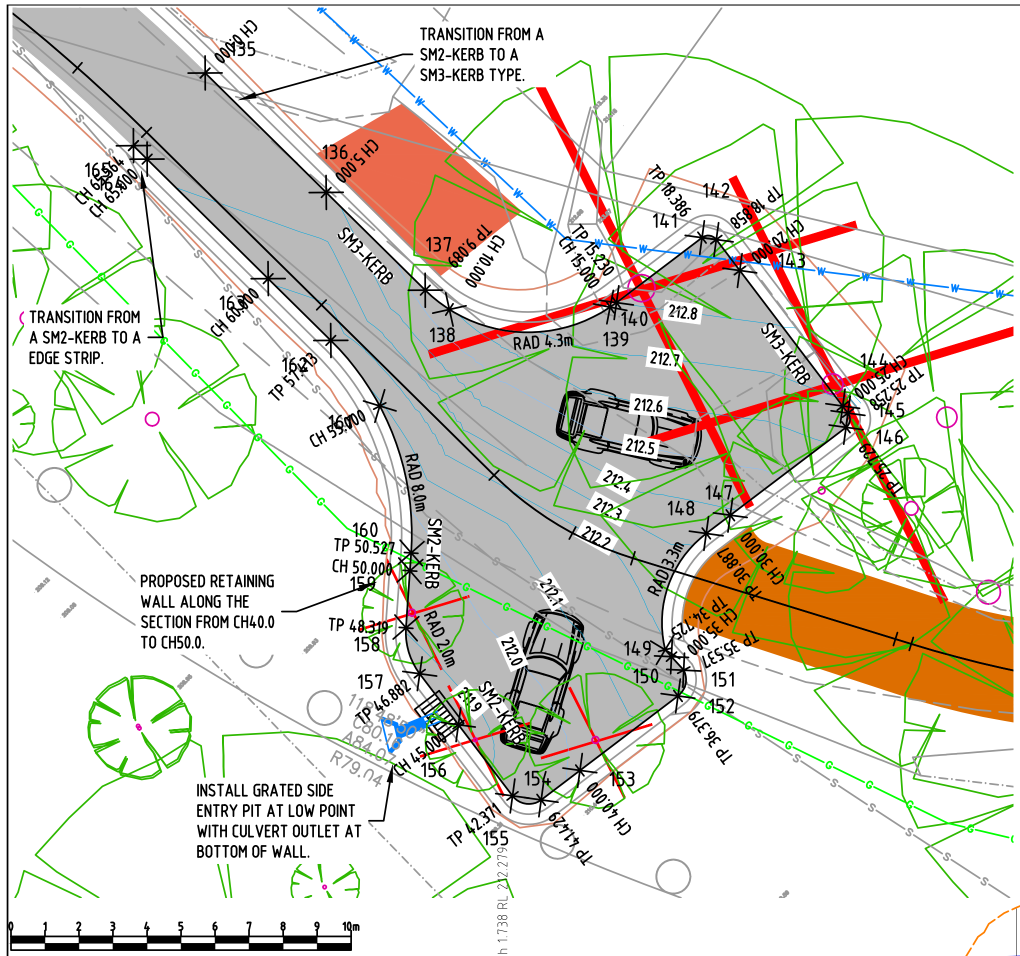

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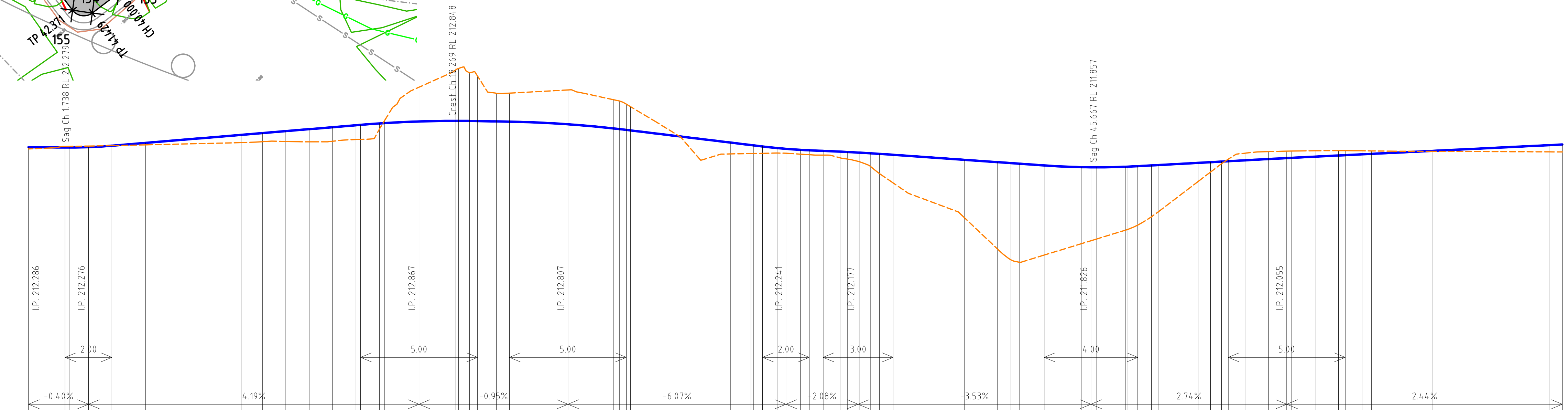

INTERSECTION PLAN - BORONIA CRESCENT COURT HEAD SETOUT

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

VERTICAL SCALE 1:100

HORIZONTAL SCALE 1:200

R.L. 205.800

Chainage	Cut / Fill	Lip of kerb Design Levels	Existing Levels
0.00	-0.038	212.286	212.25
1.56	+0.022	212.280	212.30
1.74	+0.025	212.279	212.30
2.56	+0.024	212.287	212.31
3.56	+0.001	212.318	212.32
5.00	-0.043	212.378	212.34
9.09	-0.166	212.549	212.38
10.00	-0.185	212.587	212.40
11.00	-0.222	212.629	212.41
12.00	-0.270	212.671	212.40
13.00	-0.299	212.713	212.41
14.00	-0.306	212.755	212.45
14.19	-0.310	212.763	212.45
15.00	-0.122	212.793	212.67
15.23	+0.058	212.801	212.86
16.69	+0.731	212.835	213.57
18.27	+1.089	212.848	213.94
18.39	+1.120	212.848	213.97
18.86	+1.027	212.846	213.87
19.19	+0.961	212.844	213.81
20.00	+0.597	212.836	213.43
20.56	+0.609	212.831	213.44
23.06	+0.732	212.775	213.51
25.00	+0.614	212.687	213.30
25.26	+0.600	212.673	213.27
25.56	+0.549	212.655	213.20
25.73	+0.507	212.645	213.15
30.00	-0.243	212.385	212.14
30.89	-0.180	212.331	212.15
31.00	-0.173	212.325	212.15
31.38	-0.147	212.302	212.15
32.00	-0.106	212.268	212.16
32.38	-0.093	212.251	212.16
33.00	-0.092	212.229	212.14
33.38	-0.094	212.220	212.13
33.96	-0.091	212.208	212.12
34.00	-0.090	212.207	212.12
34.73	-0.136	212.191	212.05
35.00	-0.151	212.184	212.03
35.46	-0.188	212.171	211.98
35.54	-0.195	212.169	211.97
36.00	-0.285	212.156	211.87
36.38	-0.422	212.144	211.72
36.96	-0.601	212.124	211.52
40.00	-1.232	212.017	210.78
41.43	-1.858	211.967	210.11
42.00	-2.066	211.946	209.88
42.37	-2.103	211.933	209.83
43.42	-1.913	211.896	209.98
45.00	-1.634	211.860	210.23
45.42	-1.568	211.857	210.29
45.67	-1.529	211.857	210.33
46.88	-1.354	211.868	210.51
47.00	-1.338	211.871	210.53
47.42	-1.258	211.881	210.62
48.00	-1.098	211.897	210.80
48.32	-0.990	211.905	210.91
50.00	-0.397	211.952	211.56
50.53	-0.210	211.966	211.76
51.00	-0.046	211.979	211.93
51.29	+0.044	211.987	212.03
52.00	+0.152	212.006	212.16
53.00	+0.159	212.033	212.19
53.79	+0.149	212.053	212.20
54.00	+0.145	212.059	212.20
55.00	+0.127	212.084	212.21
56.00	+0.104	212.109	212.21
56.29	+0.096	212.116	212.21
57.00	+0.076	212.134	212.21
57.41	+0.063	212.144	212.21
60.00	-0.010	212.207	212.20
65.00	-0.142	212.329	212.19
65.56	-0.158	212.343	212.19

ProfileRoadBoronia Rd__Court Head__LOK alignmentFrom0.000To65.564Scales: H 1 in200V 1 in100

Date:	Rev.	Amendments:
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Legend

EXISTING KERB AND CHANNEL	
PROPOSED KERB AND CHANNEL	
EXISTING DRAINS AND PITS	
PROPOSED DRAINS AND PITS	
PROPOSED PROPERTY INLET	P..I..
WATER MAINS AND FITTINGS	EX ---W--- / PROP ——W——
SEWER	EX ---S---O / PROP ——S——
GAS MAINS	EX ---G--- / PROP ——G——
TELECOM CABLES AND PITS	EX ---T--- / PROP ——T——

Design: Date: JULY 2020	Scale: AS SHOWN
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Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805
mail@jamisoncraig.com.au
Phone: 5995 4388
Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS

INTERSECTION PLAN - BORONIA CRESCENT COURT HEAD

Drawing No CCD.	20021 21
Sheet	21 OF 91
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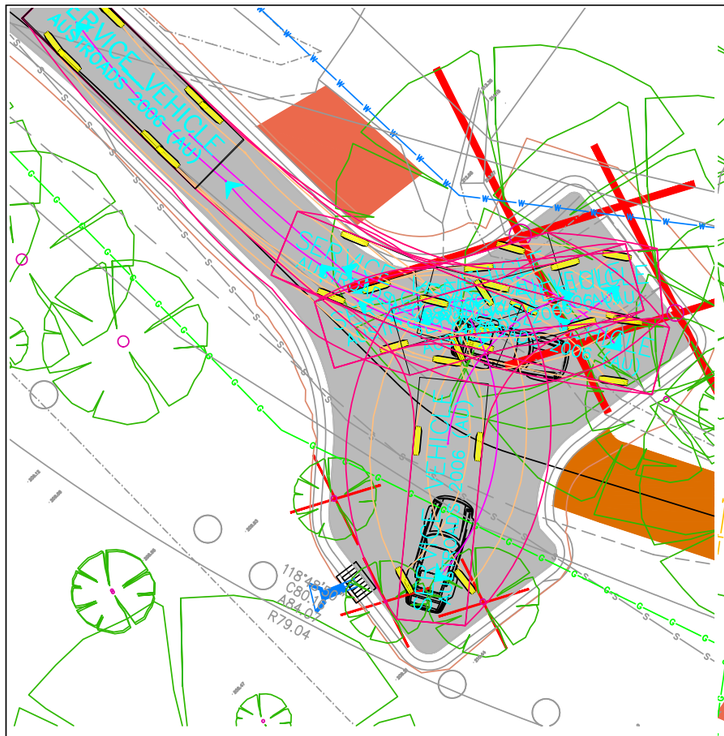
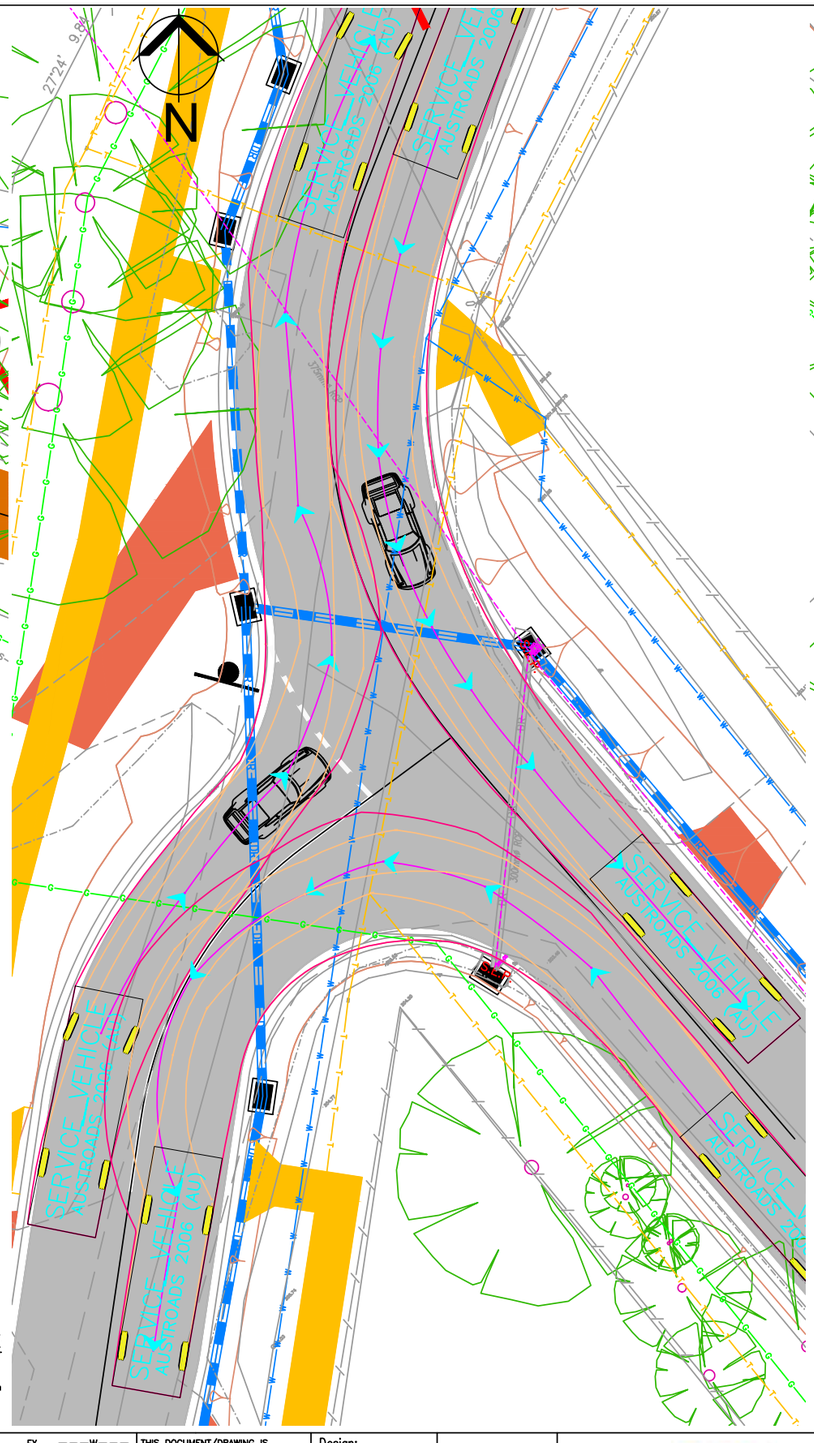


BORONIA CRESCENT- COURT HEAD

0 1 2 3 4 5 6 7 8 9 10m

SCALE 1:200



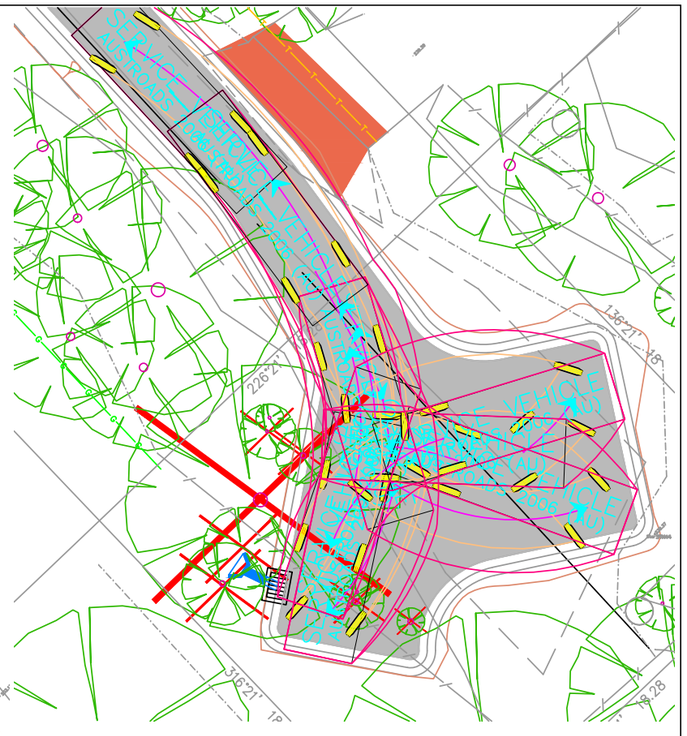
TURNING MOVEMENT - TRUCK
TURNING CIRCLE IN COURT HEADS
AND BENDS

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

BORONIA CRESC & CAROLINE AVE INTERSECTION

0 1 2 3 4 5 6 7 8 9 10m

SCALE 1:200



CAROLINE AVENUE - COURT HEAD

0 1 2 3 4 5 6 7 8 9 10m

SCALE 1:200

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: JULY 2020	Scale: AS SHOWN	
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A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

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ROAD RECONSTRUCTION WORKS

TURNING MOVEMENTS

Drawing No CCD.	20021 22
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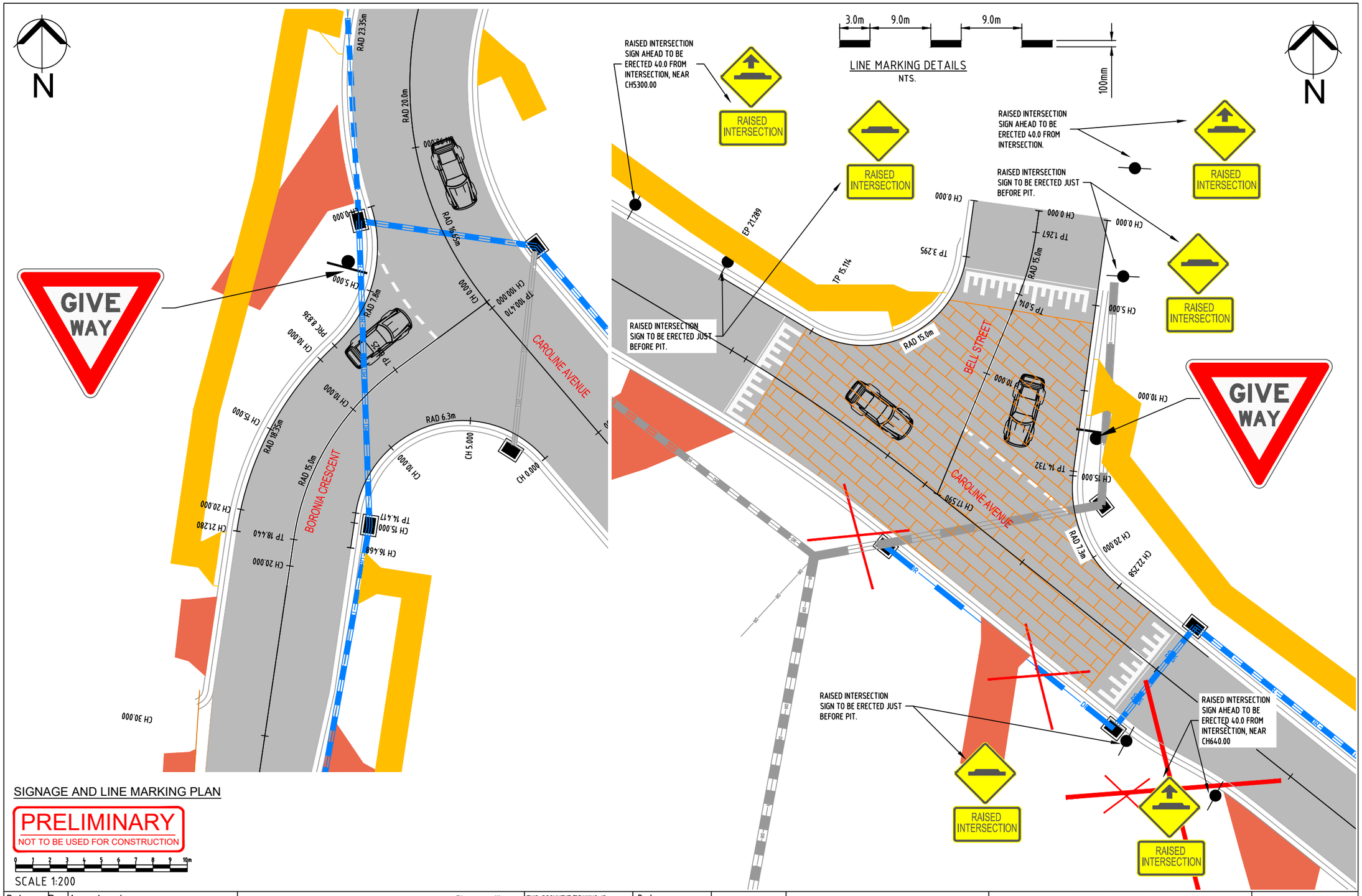
CCD Ref. No.	20021



SIGNAGE AND LINE MARKING PLAN

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 1 2 3 4 5 6 7 8 9 10m

SCALE 1:200

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P...I...

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: JULY 2020	Scale: AS SHOWN
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P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

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CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
SIGNAGE AND LINE MARKING PLAN

Drawing No CCD.	20021 23
Sheet	23 OF 91
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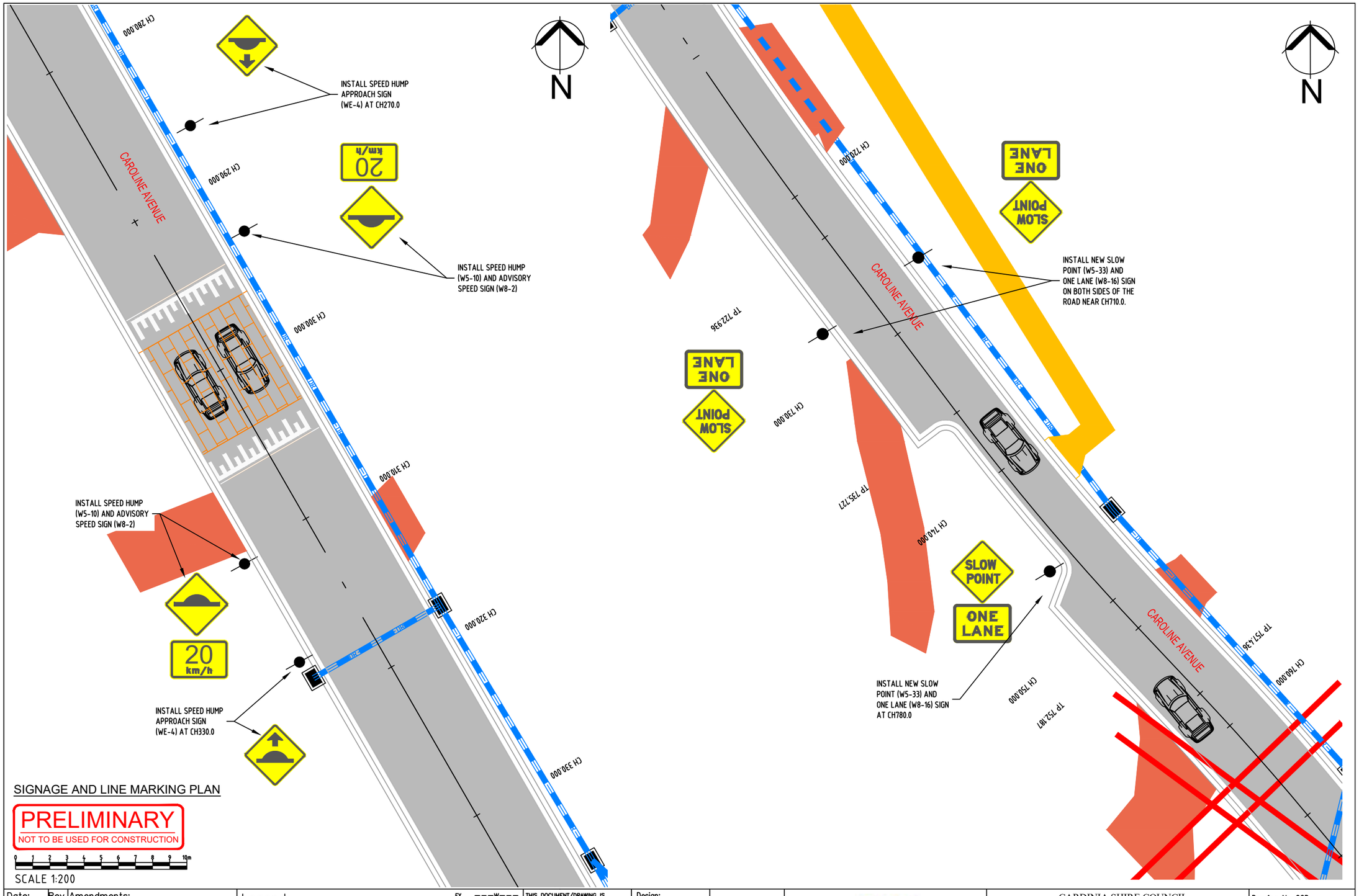
CCD Ref. No.	20021



SIGNAGE AND LINE MARKING PLAN

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

SCALE 1:200

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

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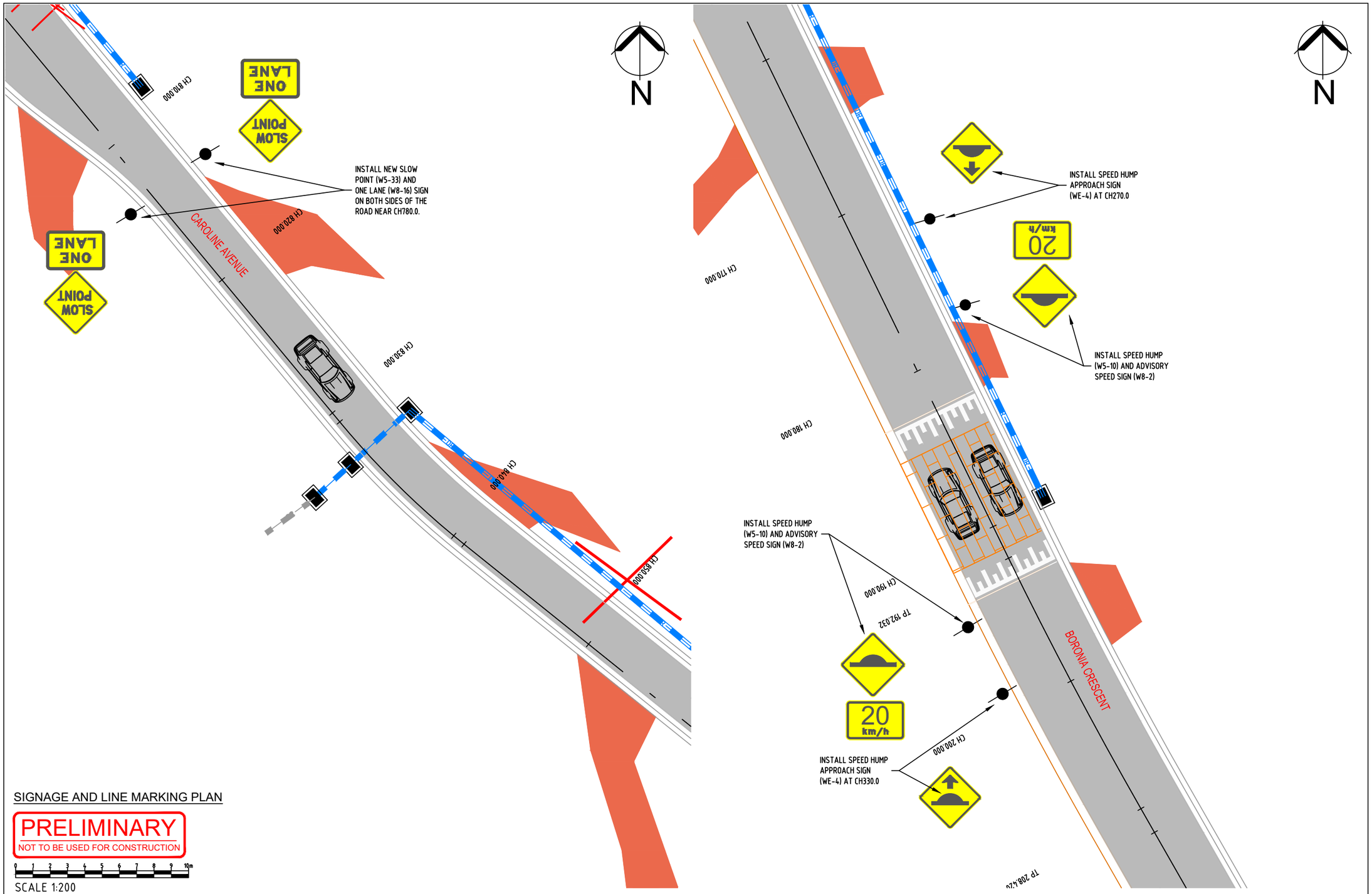
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL

CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS

SIGNAGE AND LINE MARKING PLAN

Drawing No CCD.	20021 24
Sheet	24 OF 91
Rev	A
CCD Ref. No.	20021



SIGNAGE AND LINE MARKING PLAN

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 1 2 3 4 5 6 7 8 9 10m
SCALE 1:200

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P...I...

WATER MAINS AND FITTINGS	EX	---W---
	PROP	——W——
SEWER	EX	---S---○
	PROP	——S——●
GAS MAINS	EX	---G---
	PROP	——G——
TELECOM CABLES AND PITS	EX	---T---▭
	PROP	——T——▭

Design: Date:	JULY 2020	Scale:	AS SHOWN
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mail@jamisoncraig.com.au Fax: 5995 5330

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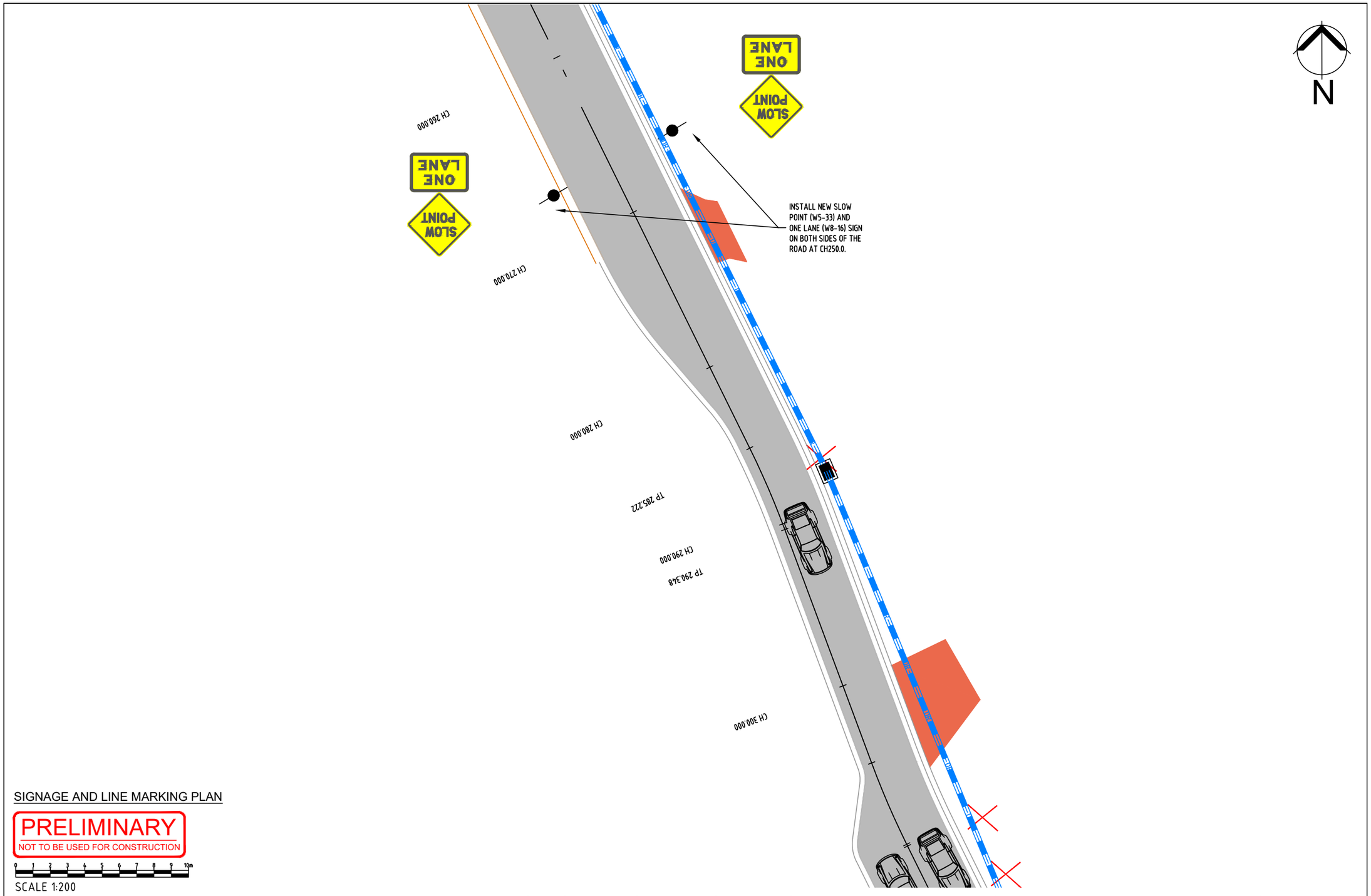
COCKATOO
ROAD RECONSTRUCTION WORKS
SIGNAGE AND LINE MARKING PLAN

Drawing No CCD.	20021 25
Sheet	25 OF 91
Rev	A
CCD Ref. No.	20021



SIGNAGE AND LINE MARKING PLAN

PRELIMINARY
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0 1 2 3 4 5 6 7 8 9 10m
SCALE 1:200

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL	WATER MAINS AND FITTINGS	EX —W—
PROPOSED KERB AND CHANNEL		PROP —W—
EXISTING DRAINS AND PITS	SEWER	EX —S—O
PROPOSED DRAINS AND PITS		PROP —S—
PROPOSED PROPERTY INLET P..I..	GAS MAINS	EX —G—
		PROP —G—
	TELECOM CABLES AND PITS	EX —T—
		PROP —T—

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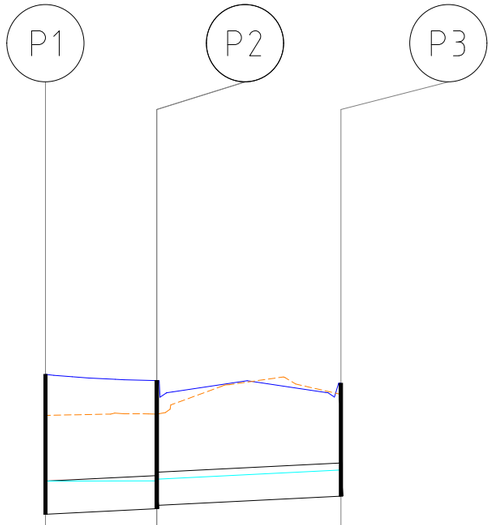
ROAD RECONSTRUCTION WORKS
SIGNAGE AND LINE MARKING PLAN

Drawing No CCD.	20021 26
Sheet	26 OF 91
Rev	A
CCD Ref. No.	20021



CAPACITY (l/sec)	97	97	
VELOCITY (m/s)	1.17	0.94	
PIPE DETAILS	300Ø Class 2 RRJ	300Ø Class 2 RRJ	
SLOPE/GRADE	1:100.0	1:100.0	
DATUM RL 196.2			
HGL	199.060	199.062 / 199.077	199.188
DEPTH TO INVERT	1.266	1.160 / 1.130	1.022
INVERT LEVEL	198.760	198.810 / 198.840	198.923
FINISHED SURFACE	200.026	199.970	199.945
EXISTING SURFACE	199.655	199.667	199.845
CHAINAGE	0.000	5.041 / 5.041	13.388 / 8.347

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

DRAINAGE LONGITUNDINAL SECTION FOR LINE 1
SCALES: HORIZONTAL 1:250 VERTICAL 1:50

0 0.5 1 1.5 2 2.5m
VERTICAL SCALE 1:50

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

Date:	Rev.	Amendments:
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EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX ---W--- PROP ——W——
SEWER EX ---S--O PROP ——S——
GAS MAINS EX ---G--- PROP ——G——
TELECOM CABLES AND PITS EX ---T--[T] PROP ——T——[T]

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CARDINIA SHIRE COUNCIL
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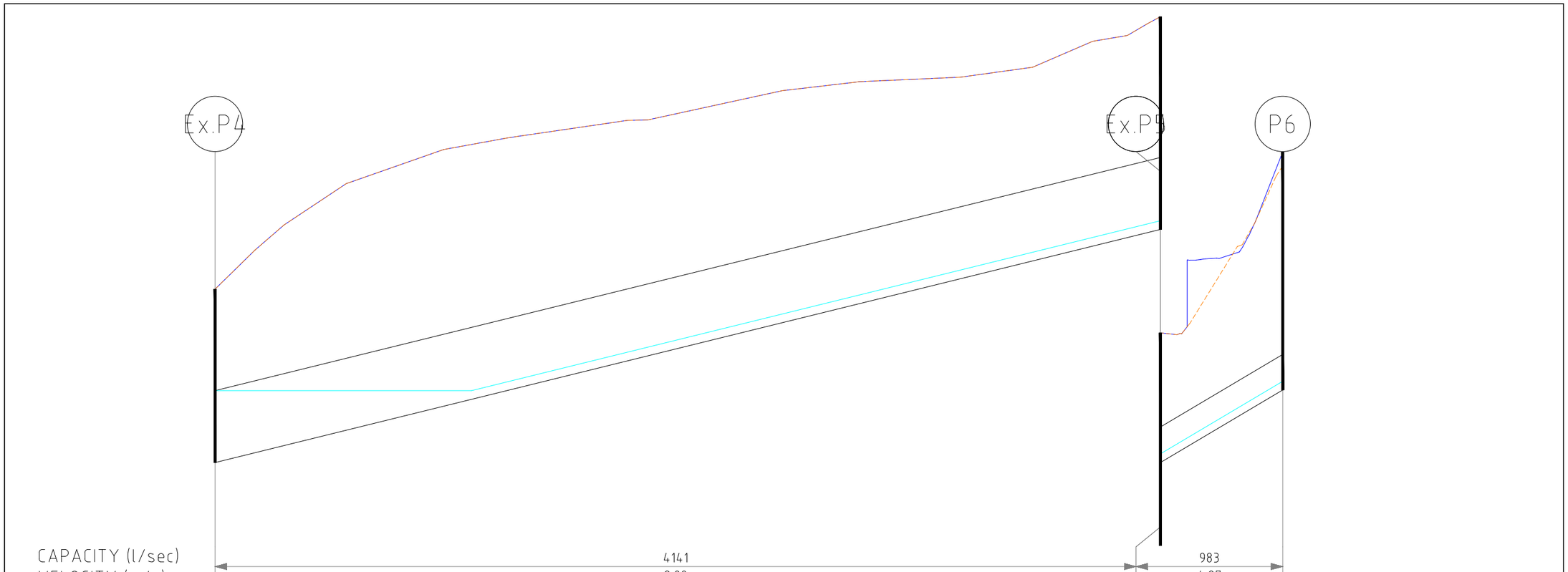
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD. 20021 27
Sheet 27 OF 91
Rev A
CCD Ref. No. 20021



CAPACITY (l/sec)		4141	983
VELOCITY (m/s)		2.88	4.27
PIPE DETAILS		900Ø Class 2 RRJ	450Ø Class 2 RRJ
SLOPE/GRADE		1:20.3	1:8.4
DATUM RL 183.7			RL 187.7
HGL	187.150	189.300	190.350 191.269
DEPTH TO INVERT	2.194	2.692	1.642 3.012
INVERT LEVEL	186.240	189.190	190.240 191.159
FINISHED SURFACE	188.434	191.882	194.171
EXISTING SURFACE	188.434	191.882	193.996
CHAINAGE	0.000	59.789	67.527
		59.789	7.738

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 0.5 1 1.5 2 2.5m
VERTICAL SCALE 1:50

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

Date:	Rev.	Amendments:
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Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX ---W--- PROP ——W——
SEWER EX ---S---O PROP ——S——
GAS MAINS EX ---G--- PROP ——G——
TELECOM CABLES AND PITS EX ---T--- PROP ——T——

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CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

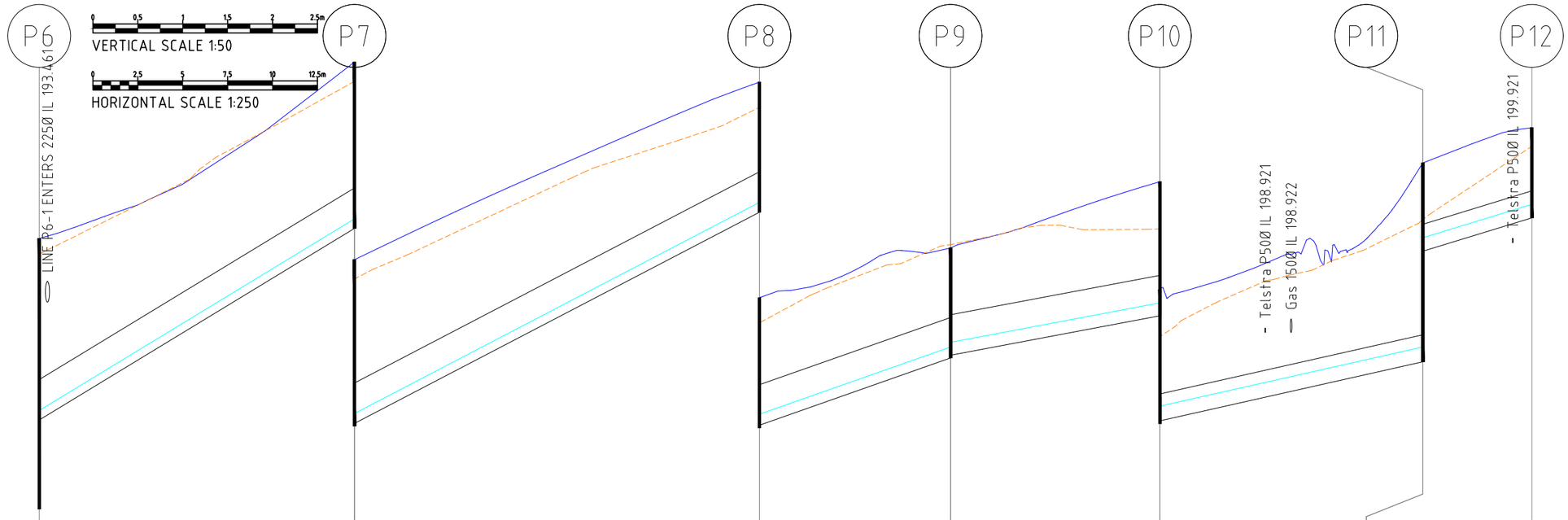
Drawing No CCD.	20021 28
Sheet	28 OF 91
Rev	A
CCD Ref. No.	20021

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

VERTICAL SCALE 1:50

HORIZONTAL SCALE 1:250



	P6		P7		P8		P9		P10		P11		P12
CAPACITY (l/sec)		994		920		756		553		205		239	
VELOCITY (m/s)		4.23		4.01		3.49		2.79		3.01		3.39	
PIPE DETAILS		450Ø Class 2 RRJ		450Ø Class 2 RRJ		450Ø Class 2 RRJ		450Ø Class 2 RRJ		300Ø Class 2 RRJ		300Ø Class 2 RRJ	
SLOPE/GRADE		1:8.2		1:9.6		1:14.2		1:26.5		1:22.2		1:16.3	
DATUM RL 189.6			RL 191.8			RL 194.2			RL 195.4				
HGL	192.256	194.388	194.422	196.772	196.814	197.563	197.614	198.053	198.104	198.762	199.978	200.350	
DEPTH TO INVERT	2.021	1.852	1.822	1.449	1.419	1.223	1.193	1.492	1.462	2.212	0.982	1.003	
INVERT LEVEL	192.150	194.282	194.312	196.662	196.692	197.441	197.471	197.910	197.940	198.598	199.828	200.200	
FINISHED SURFACE	194.171	196.134		198.111		198.664		199.402		200.810		201.203	
EXISTING SURFACE	193.996	195.919		197.830		198.702		198.878		200.183		200.997	
CHAINAGE	67.527	85.077		107.625		118.273		129.924		144.562		150.635	
		17.550		22.548		10.648		11.651		14.638		6.073	

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

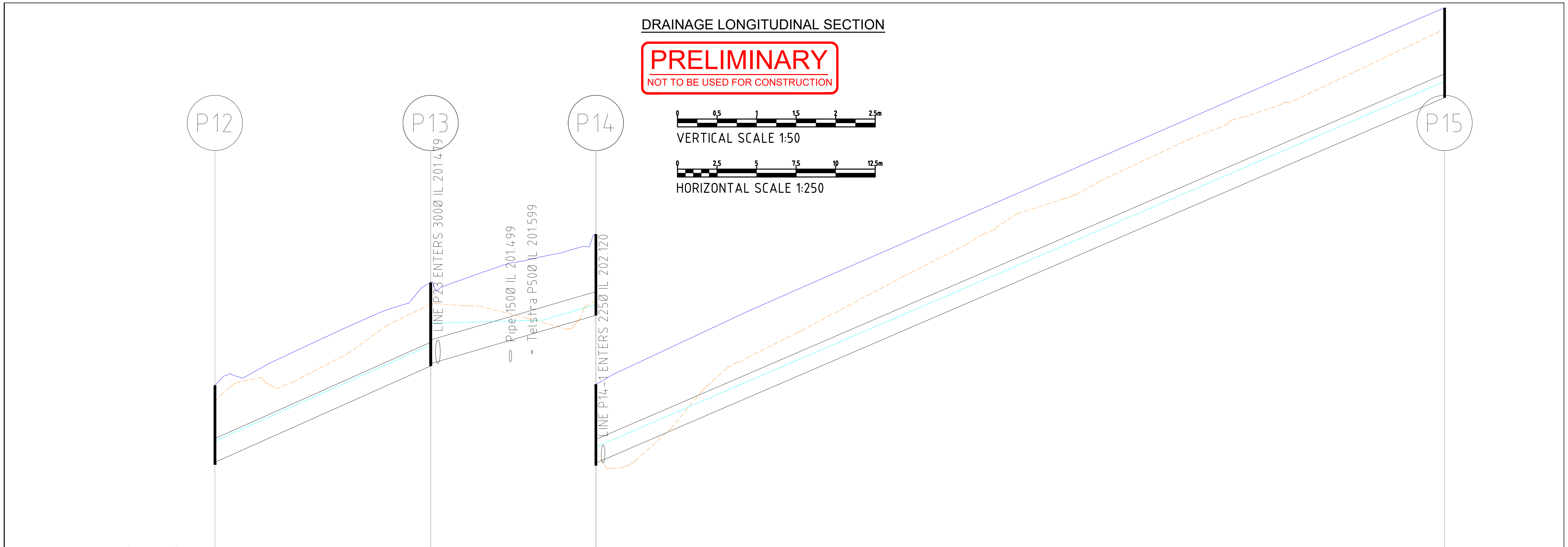
WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: JULY 2020	Scale: AS SHOWN
Checked: Date: JULY 2020	Approved Date:
Datum: AHD	MELWAY Ref:

Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD.	20021 29
Sheet	29 OF 91
Rev	A
CCD Ref. No.	20021



	P12 – P13	P13 – P14	P14 – P15
CAPACITY (l/sec)	289	234	284
VELOCITY (m/s)	3.87	3.17	3.43
PIPE DETAILS	300Ø Class 2 RRJ	300Ø Class 2 RRJ	300Ø Class 2 RRJ
SLOPE/GRADE	1:11.2	1:17.1	1:11.6

DATUM RL 197.7 | RL 199.6

	P12	P13	P14	P15
HGL	200.496	201.715 / 201.991	202.226 / 202.325	206.950
DEPTH TO INVERT	0.973	1.055 / 1.025	1.026 / 0.996	1.135
INVERT LEVEL	200.230	201.449 / 201.479	202.090 / 202.120	206.746
FINISHED SURFACE	201.203	202.504	203.116	207.881
EXISTING SURFACE	200.997	202.231	202.247	207.612
CHAINAGE	150.635	164.271	174.714	228.370

Chainage lengths: 13.636 (P12–P13), 10.443 (P13–P14), 53.655 (P14–P15)

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend: EXISTING KERB AND CHANNEL; PROPOSED KERB AND CHANNEL; EXISTING DRAINS AND PITS; PROPOSED DRAINS AND PITS; PROPOSED PROPERTY INLET P.I.; WATER MAINS AND FITTINGS (EX / PROP) W; SEWER (EX / PROP) S; GAS MAINS (EX / PROP) G; TELECOM CABLES AND PITS (EX / PROP) T

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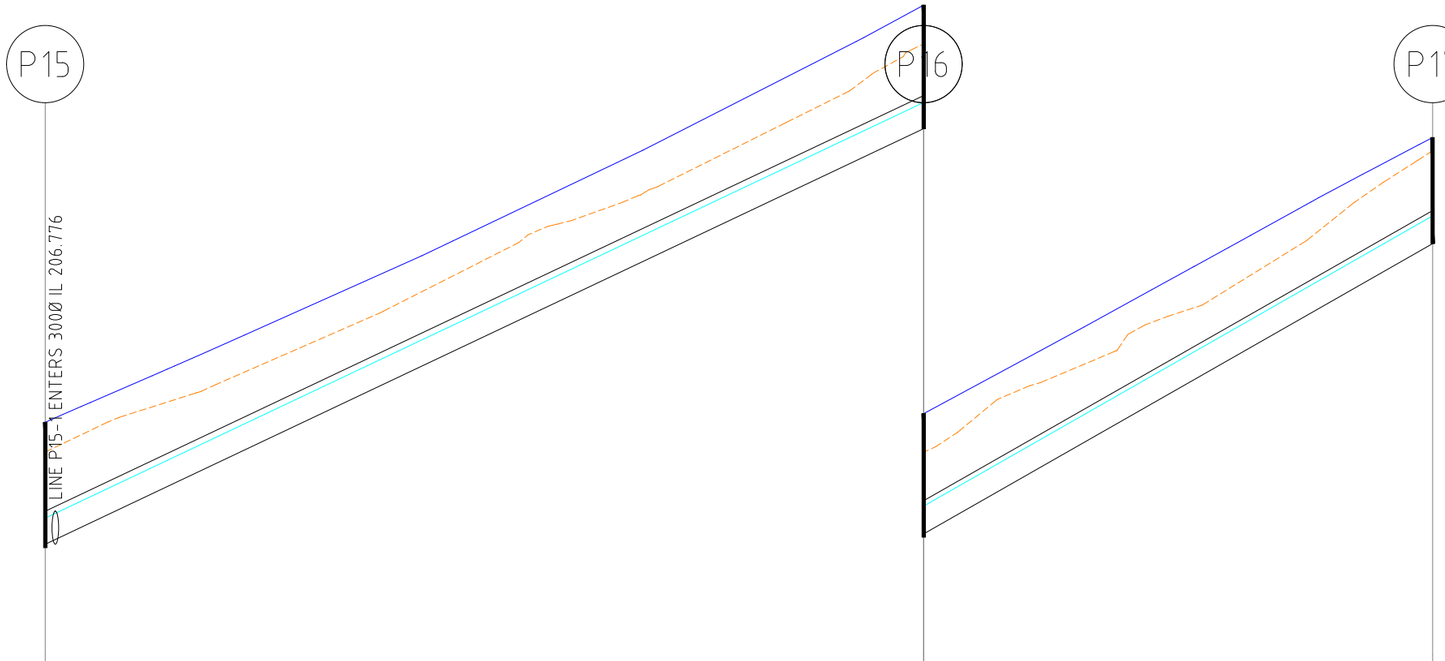
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD. 20021 30
Sheet 30 OF 91
Rev A
CCD Ref. No. 20021



CAPACITY (l/sec)		297	327
VELOCITY (m/s)		3.38	3.46
PIPE DETAILS		300Ø Class 2 RRJ	300Ø Class 2 RRJ
SLOPE/GRADE		1:10.6	1:8.8
DATUM RL 204.3			RL 208
HGL	207.013	210.778	210.822 213.451
DEPTH TO INVERT	1.105	1.118	1.088 0.961
INVERT LEVEL	206.776	210.540	210.570 213.199
FINISHED SURFACE	207.881	211.658	214.160
EXISTING SURFACE	207.612	211.308	214.041
CHAINAGE	228.370	39.798 268.168	23.058 291.226

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 0.5 1 1.5 2 2.5m
VERTICAL SCALE 1:50

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

Date:	Rev.	Amendments:
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Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

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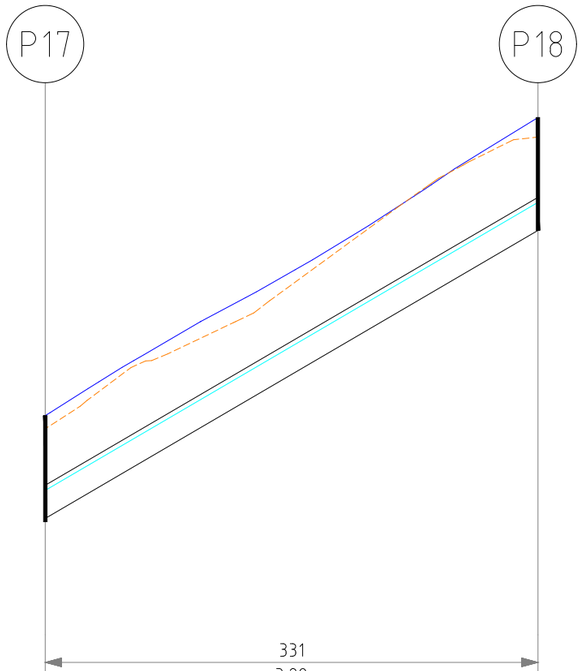
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD. 20021 31
Sheet 31 OF 91
Rev A
CCD Ref. No. 20021



CAPACITY (l/sec)		331
VELOCITY (m/s)		3.29
PIPE DETAILS		300Ø Class 2 RRJ
SLOPE/GRADE		1:8.6
DATUM RL 210.7		
HGL	213.483	216.091
DEPTH TO INVERT	0.931	1.023
INVERT LEVEL	213.229	215.837
FINISHED SURFACE	214.160	216.860
EXISTING SURFACE	214.041	216.683
CHAINAGE	291.226	313.549
	22.322	

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 0.5 1 1.5 2 2.5m
VERTICAL SCALE 1:50

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

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COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD.	20021 32
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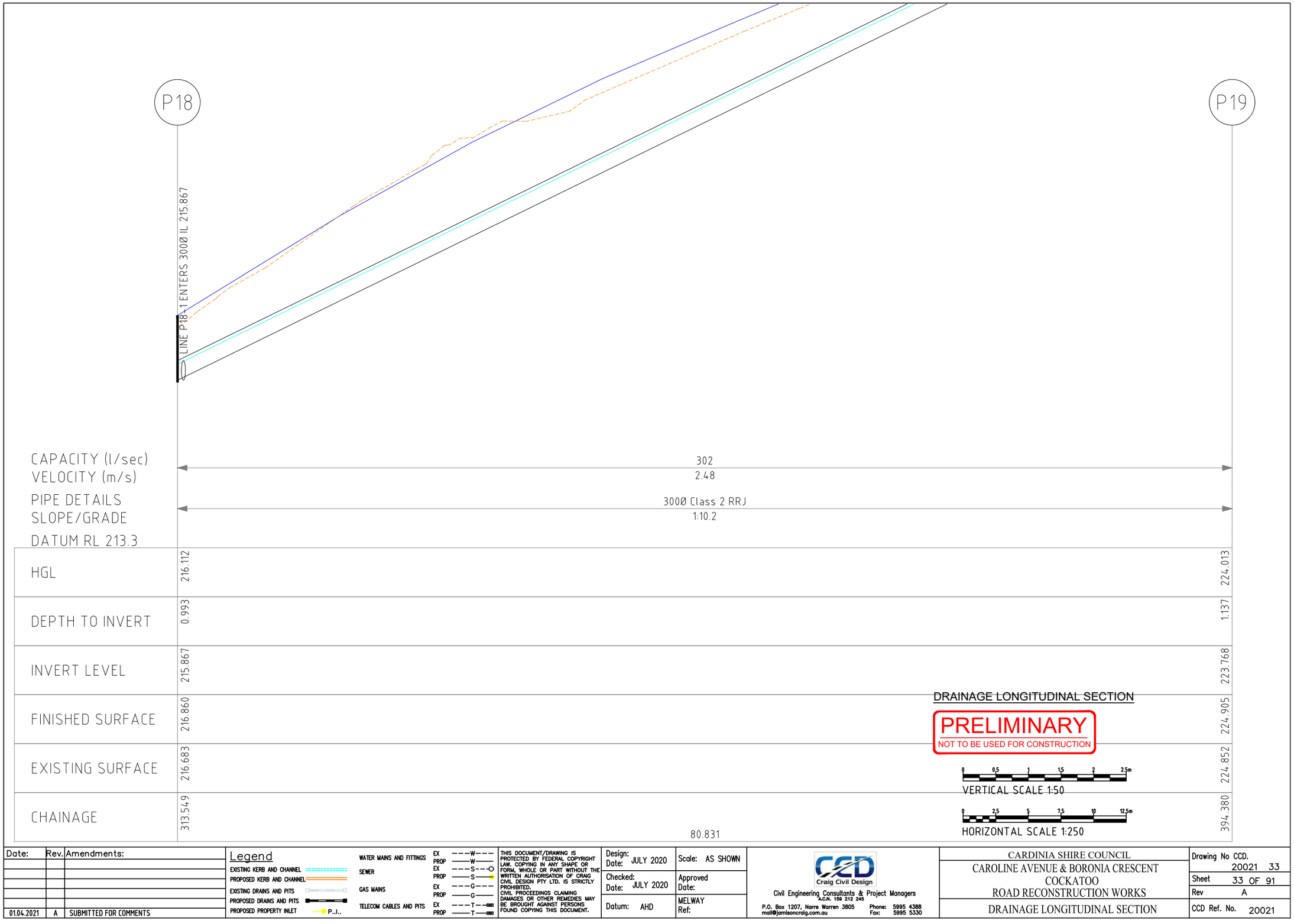
Rev	A
CCD Ref. No.	20021



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EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX ---W--- PROP ——W——
SEWER EX ---S---O PROP ——S——
GAS MAINS EX ---G--- PROP ——G——
TELECOM CABLES AND PITS EX ---T--- PROP ——T——

Design: Date: JULY 2020	Scale: AS SHOWN
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COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD.	20021 33
Sheet	33 OF 91
Rev	A
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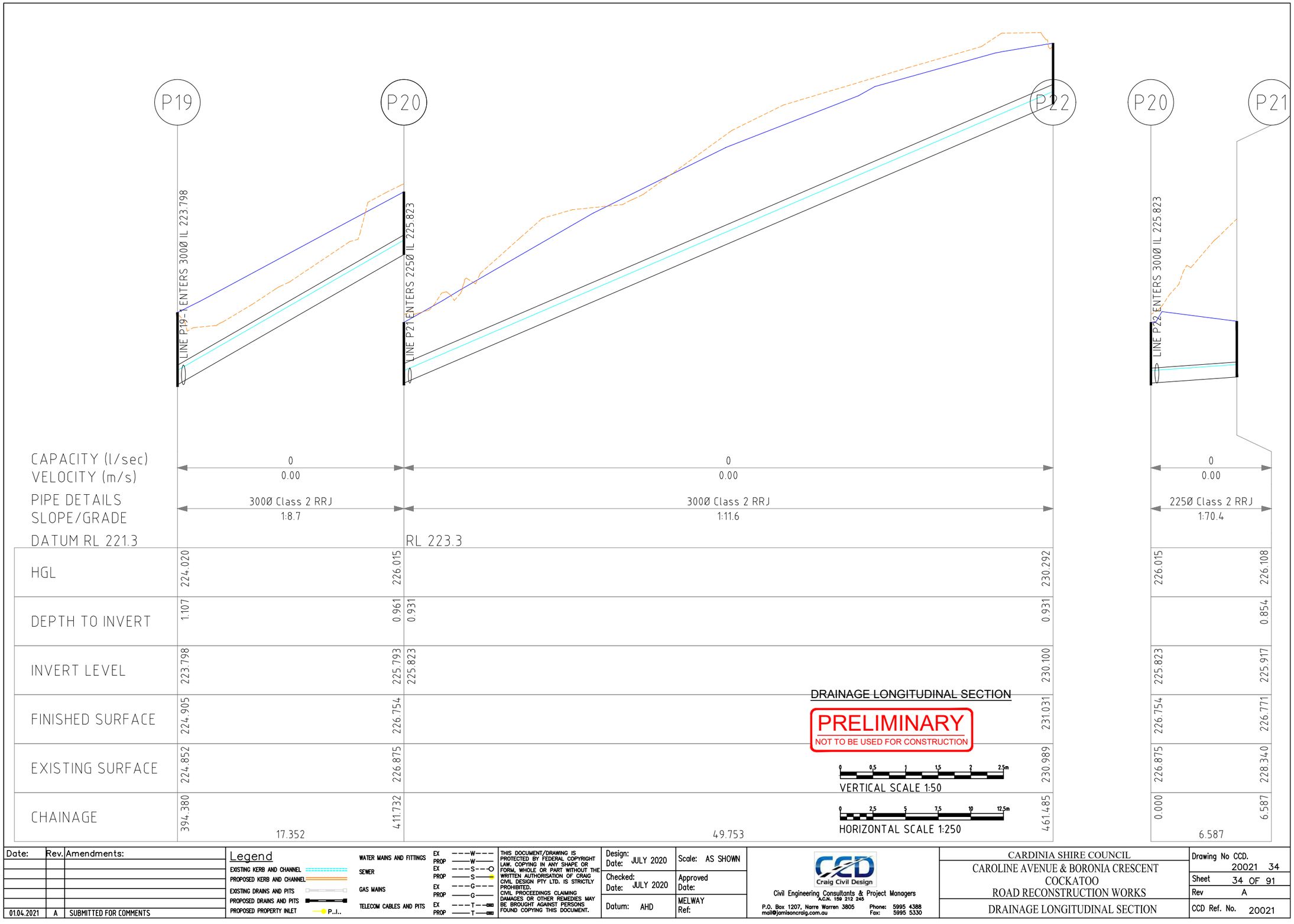

Date:	Rev.	Amendments:
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EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

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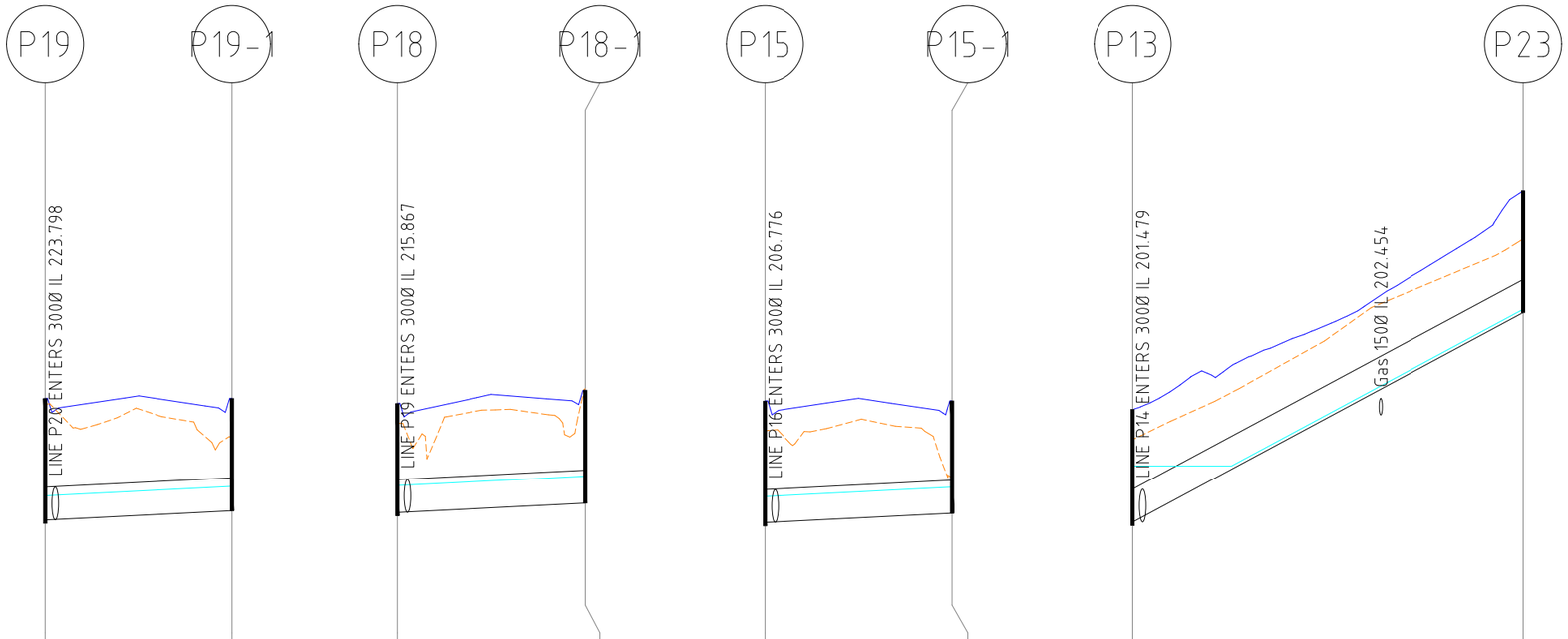
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD.	20021 34
Sheet	34 OF 91
Rev	A
CCD Ref. No.	20021



CAPACITY (l/sec)	97	97	97	317
VELOCITY (m/s)	0.78	0.83	0.83	1.81
PIPE DETAILS	300Ø Class 2 RRJ	300Ø Class 2 RRJ	300Ø Class 2 RRJ	300Ø Class 2 RRJ
SLOPE/GRADE	1:100.0	1:100.0	1:100.0	1:9.3
DATUM RL 221.3		RL 213.3	RL 204.3	RL 199
HGL	224.020 / 224.113	216.112 / 216.211	207.013 / 207.111	201.991 / 203.415
DEPTH TO INVERT	1.107 / 1.022	0.993 / 1.026	1.105 / 1.022	1.025 / 1.101
INVERT LEVEL	223.798 / 223.883	215.867 / 215.953	206.776 / 206.861	201.479 / 203.385
FINISHED SURFACE	224.905 / 224.905	216.860 / 216.979	207.881 / 207.883	202.504 / 204.486
EXISTING SURFACE	224.852 / 224.550	216.683 / 216.993	207.612 / 207.184	202.231 / 204.052
CHAINAGE	0.000 / 8.500	0.000 / 8.553	0.000 / 8.503	0.000 / 17.747
	8.500	8.553	8.503	17.747

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 0.5 1 1.5 2 2.5m
VERTICAL SCALE 1:50

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

Date:	Rev.	Amendments:
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Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: JULY 2020	Scale: AS SHOWN
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mail@jamisoncraig.com.au Fax: 5995 5330

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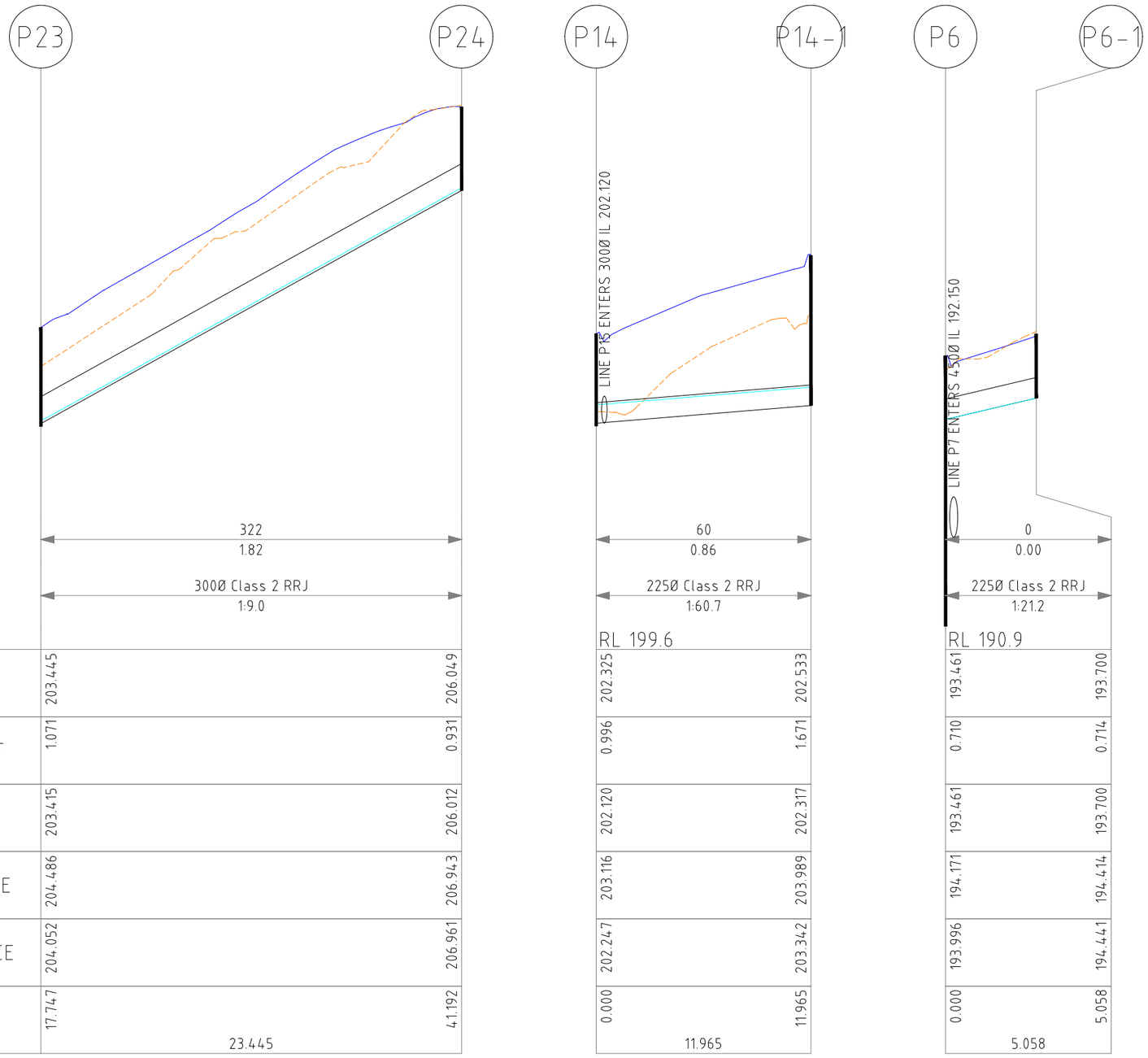
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD.	20021 35
Sheet	35 OF 91
Rev	A
CCD Ref. No.	20021



CAPACITY (l/sec)		322		60		0
VELOCITY (m/s)		1.82		0.86		0.00
PIPE DETAILS		300Ø Class 2 RRJ		225Ø Class 2 RRJ		225Ø Class 2 RRJ
SLOPE/GRADE		1:9.0		1:60.7		1:21.2
DATUM RL 200.9				RL 199.6		RL 190.9
HGL	203.445	206.049		202.325	202.533	193.461	193.700
DEPTH TO INVERT	1.071	0.931		0.996	1.671	0.710	0.714
INVERT LEVEL	203.415	206.012		202.120	202.317	193.461	193.700
FINISHED SURFACE	204.486	206.943		203.116	203.989	194.171	194.414
EXISTING SURFACE	204.052	206.961		202.247	203.342	193.996	194.441
CHAINAGE	17.747	41.192		0.000	11.965	0.000	5.058
		23.445			11.965		5.058

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 0.5 1 1.5 2 2.5m
VERTICAL SCALE 1:50

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

Date:	Rev.	Amendments:
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Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX ---W--- PROP ——W——
SEWER EX ---S--O PROP ——S——
GAS MAINS EX ---G--- PROP ——G——
TELECOM CABLES AND PITS EX ---T--▭ PROP ——T——▭

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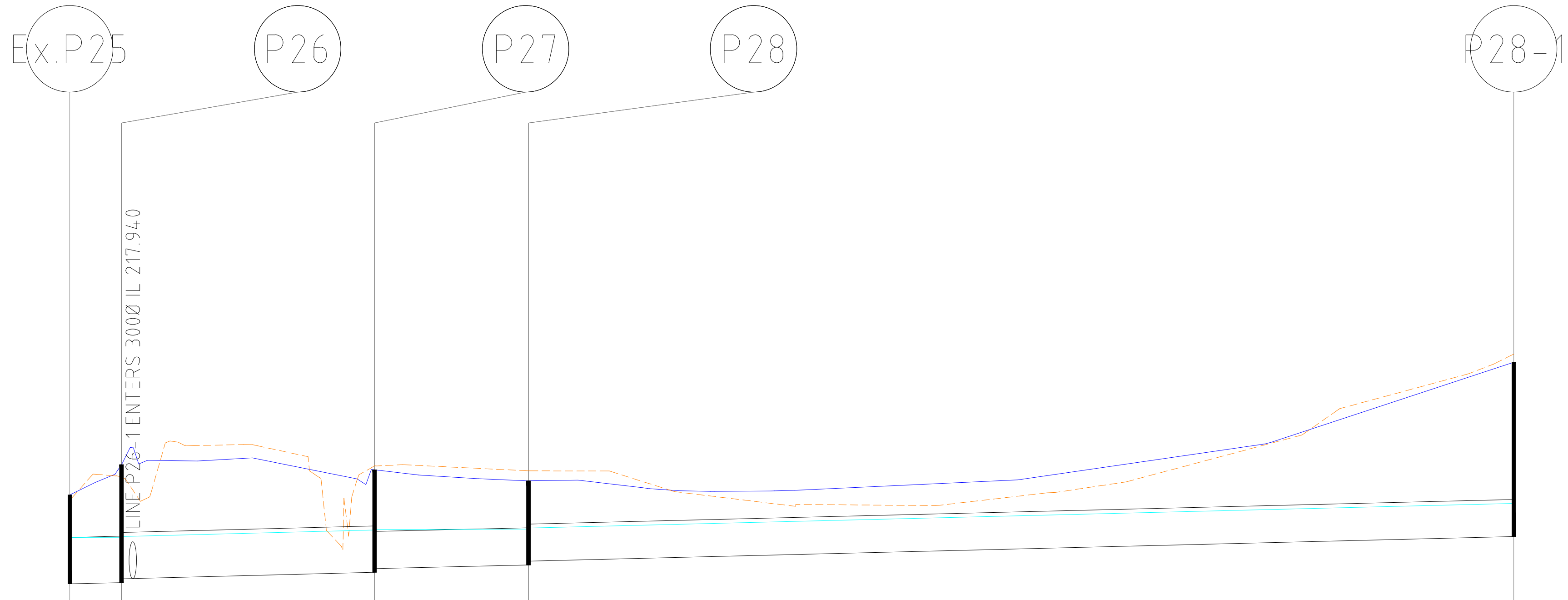
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD. 20021 36
Sheet 36 OF 91
Rev A
CCD Ref. No. 20021



CAPACITY (l/sec)	121		126		67		68	
VELOCITY (m/s)	0.98		0.95		0.89		0.82	
PIPE DETAILS	375Ø Class 2 RRJ		375Ø Class 2 RRJ		300Ø Class 2 RRJ		300Ø Class 2 RRJ	
SLOPE/GRADE	1:209.1		1:193.0		1:208.4		1:200.2	
DATUM RL 215.4								
HGL	218.275	218.276	218.282	218.335	218.340	218.342	218.350	218.549
DEPTH TO INVERT	0.719	0.953	0.923	0.829	0.799	0.679	0.649	1.409
INVERT LEVEL	217.900	217.910	217.940	217.993	218.023	218.053	218.083	218.282
FINISHED SURFACE	218.619	218.863		218.822		218.732		219.691
EXISTING SURFACE	218.576	218.763		218.854		218.813		219.757
CHAINAGE	0.000	2.091		12.320		18.548		58.390
	2.091		10.229		6.227		39.842	

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 0.5 1 1.5 2 2.5m
VERTICAL SCALE 1:50

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

Date:	Rev.	Amendments:
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Legend
EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET — P.I..
WATER MAINS AND FITTINGS EX ---W--- PROP ——W——
SEWER EX ---S---O PROP ——S——
GAS MAINS EX ---G--- PROP ——G——
TELECOM CABLES AND PITS EX ---T--- PROP ——T——

Design: Date: JULY 2020
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CARDINIA SHIRE COUNCIL
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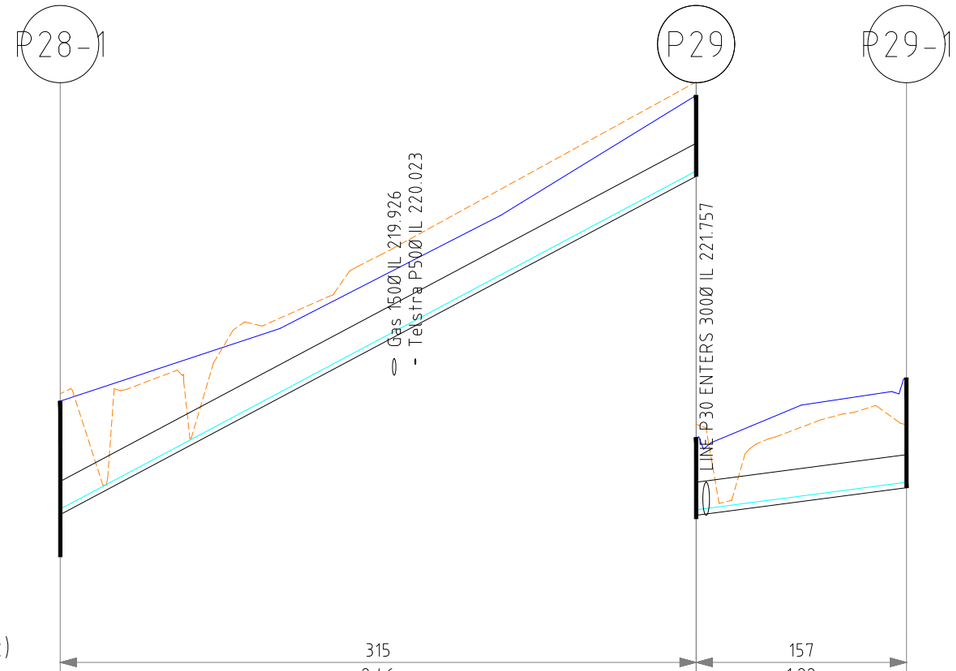
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD. 20021 37
Sheet 37 OF 91
Rev A
CCD Ref. No. 20021



CAPACITY (l/sec)			315			157		
VELOCITY (m/s)			2.46			1.22		
PIPE DETAILS			300Ø Class 2 RRJ			300Ø Class 2 RRJ		
SLOPE/GRADE			1:9.4			1:38.1		
DATUM RL 216.1						RL 219.2		
HGL	218.714			221.777	221.807		222.073	
DEPTH TO INVERT	1.027			0.734	0.704		0.994	
INVERT LEVEL	218.664			221.727	221.757		222.007	
FINISHED SURFACE	219.691			222.461			223.001	
EXISTING SURFACE	219.757			222.582			222.577	
CHAINAGE	58.390		28.808	87.198	96.729	9.531		

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 0.5 1 1.5 2 2.5m
VERTICAL SCALE 1:50

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

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COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD. 20021 38
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Rev A
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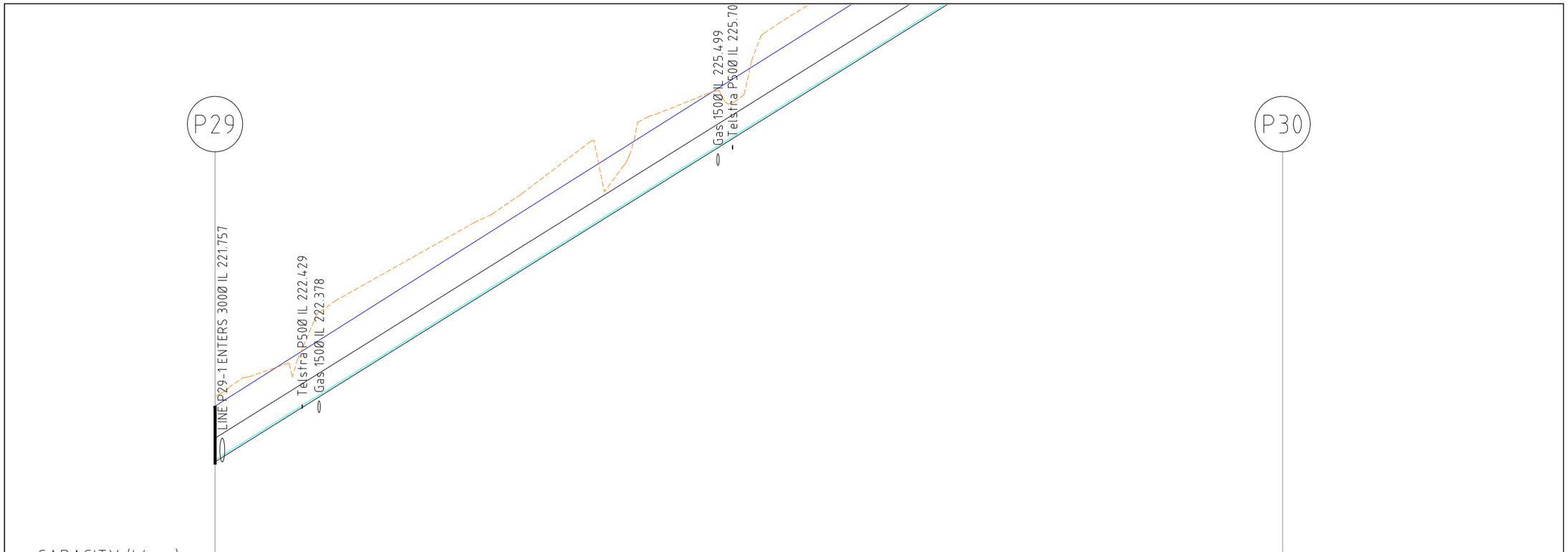

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 0.5 1 1.5 2 2.5m
VERTICAL SCALE 1:50

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

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EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
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ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD.	20021 39
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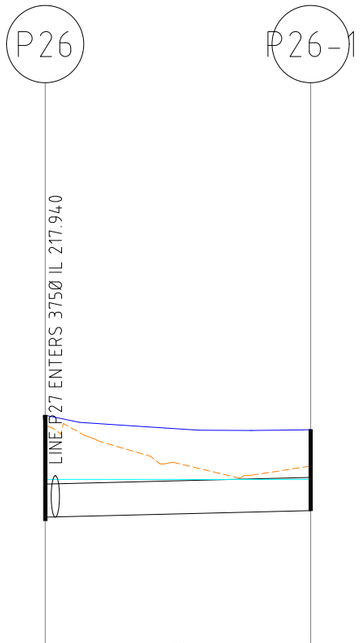
CCD Ref. No.	20021



CAPACITY (l/sec)	68	
VELOCITY (m/s)	0.61	
PIPE DETAILS	300Ø Class 2 RRJ	
SLOPE/GRADE	1:200.0	
DATUM RL 215.4		
HGL	218.282	218.290
DEPTH TO INVERT	0.923	0.732
INVERT LEVEL	217.940	218.000
FINISHED SURFACE	218.863	218.733
EXISTING SURFACE	218.763	218.403
CHAINAGE	0.000	12.025
	12.025	

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 0.5 1 1.5 2 2.5m
VERTICAL SCALE 1:50

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

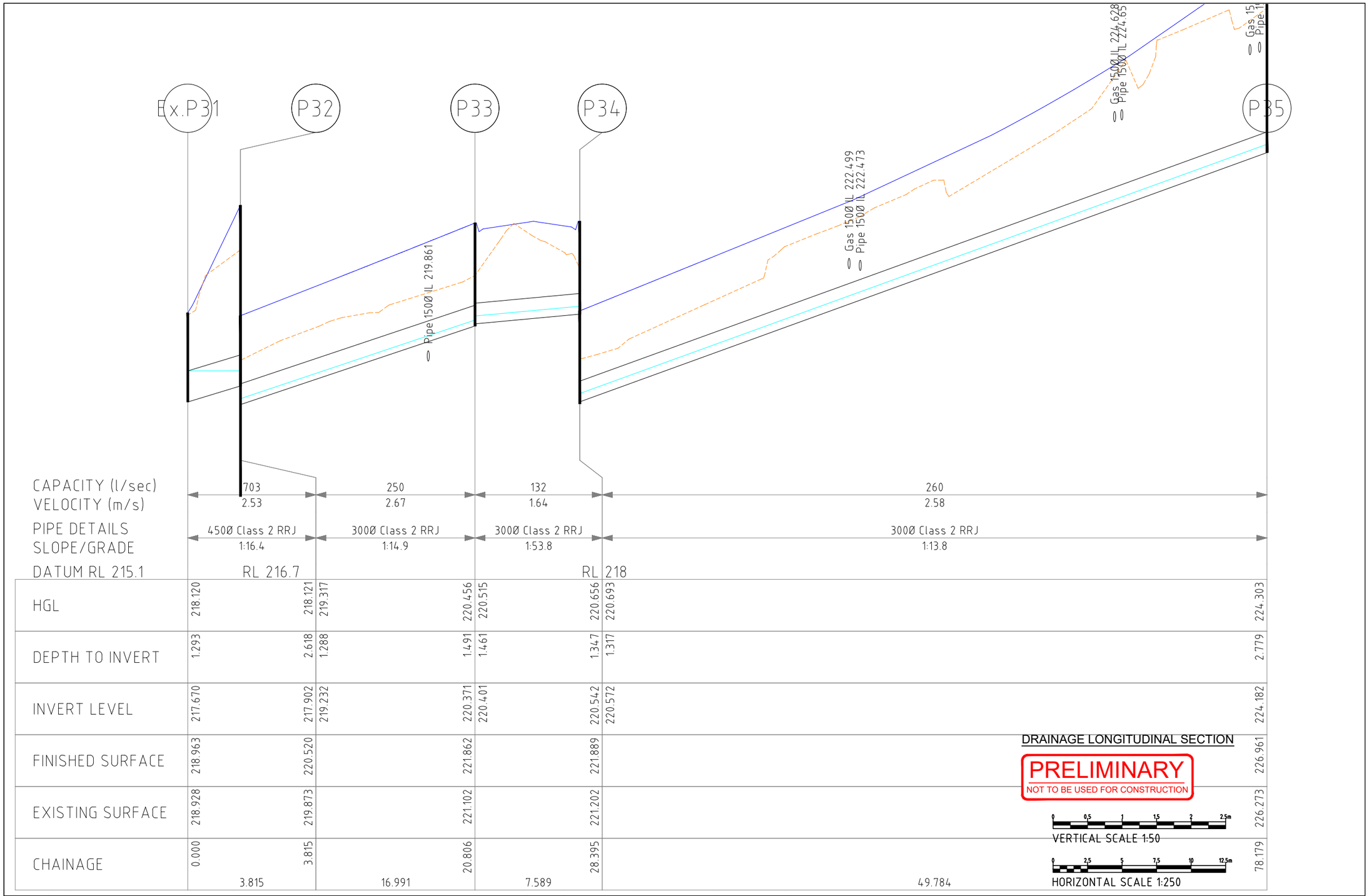
WATER MAINS AND FITTINGS EX ---W--- PROP ——W——
SEWER EX ---S---O PROP ——S——
GAS MAINS EX ---G--- PROP ——G——
TELECOM CABLES AND PITS EX ---T--- PROP ——T——

Design: Date: JULY 2020	Scale: AS SHOWN
Checked: Date: JULY 2020	Approved Date:
Datum: AHD	MELWAY Ref:

Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD.	20021 40
Sheet	40 OF 91
Rev	A
CCD Ref. No.	20021



CAPACITY (l/sec)	703	250	132	260	
VELOCITY (m/s)	2.53	2.67	1.64	2.58	
PIPE DETAILS	450Ø Class 2 RRJ	300Ø Class 2 RRJ	300Ø Class 2 RRJ	300Ø Class 2 RRJ	
SLOPE/GRADE	1:16.4	1:14.9	1:53.8	1:13.8	
DATUM RL 215.1	RL 216.7		RL 218		
HGL	218.120 / 218.121	219.317 / 220.456	220.515 / 220.656	220.693 / 224.303	
DEPTH TO INVERT	1.293 / 2.618	1.288 / 1.491	1.461 / 1.347	1.317 / 2.779	
INVERT LEVEL	217.670 / 217.902	219.232 / 220.371	220.401 / 220.542	220.572 / 224.182	
FINISHED SURFACE	218.963 / 220.520		221.862 / 221.889		226.961
EXISTING SURFACE	218.928 / 219.873		221.102 / 221.202		226.273
CHAINAGE	0.000 / 3.815		20.806 / 28.395		78.179
	3.815	16.991	7.589	49.784	

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 0.5 1 1.5 2 2.5m
VERTICAL SCALE 1:50

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

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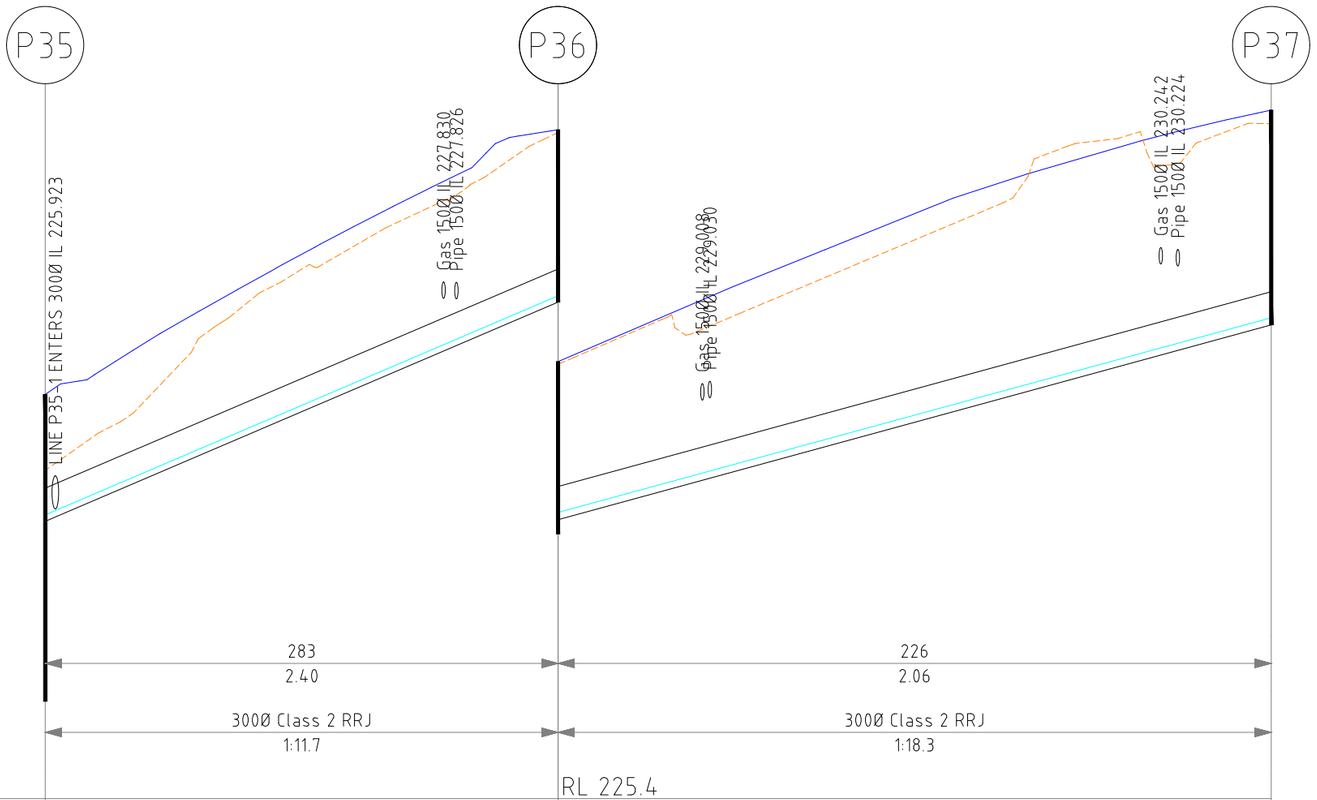
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD. 20021 41
Sheet 41 OF 91
Rev A
CCD Ref. No. 20021



CAPACITY (l/sec)		283	226
VELOCITY (m/s)		2.40	2.06
PIPE DETAILS		300Ø Class 2 RRJ	300Ø Class 2 RRJ
SLOPE/GRADE		1:11.7	1:18.3
DATUM RL 223.3		RL 225.4	
HGL	225.870	227.855	227.992 229.756
DEPTH TO INVERT	1.149	1.561	1.431 1.945
INVERT LEVEL	225.812	227.797	227.927 229.691
FINISHED SURFACE	226.961	229.358	231.636
EXISTING SURFACE	226.273	229.335	231.513
CHAINAGE	78.179	101.414	133.721
	23.234		32.307

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 0.5 1 1.5 2 2.5m
VERTICAL SCALE 1:50

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

Date:	Rev.	Amendments:
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Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: JULY 2020	Scale: AS SHOWN
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COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD.	20021 42
Sheet	42 OF 91
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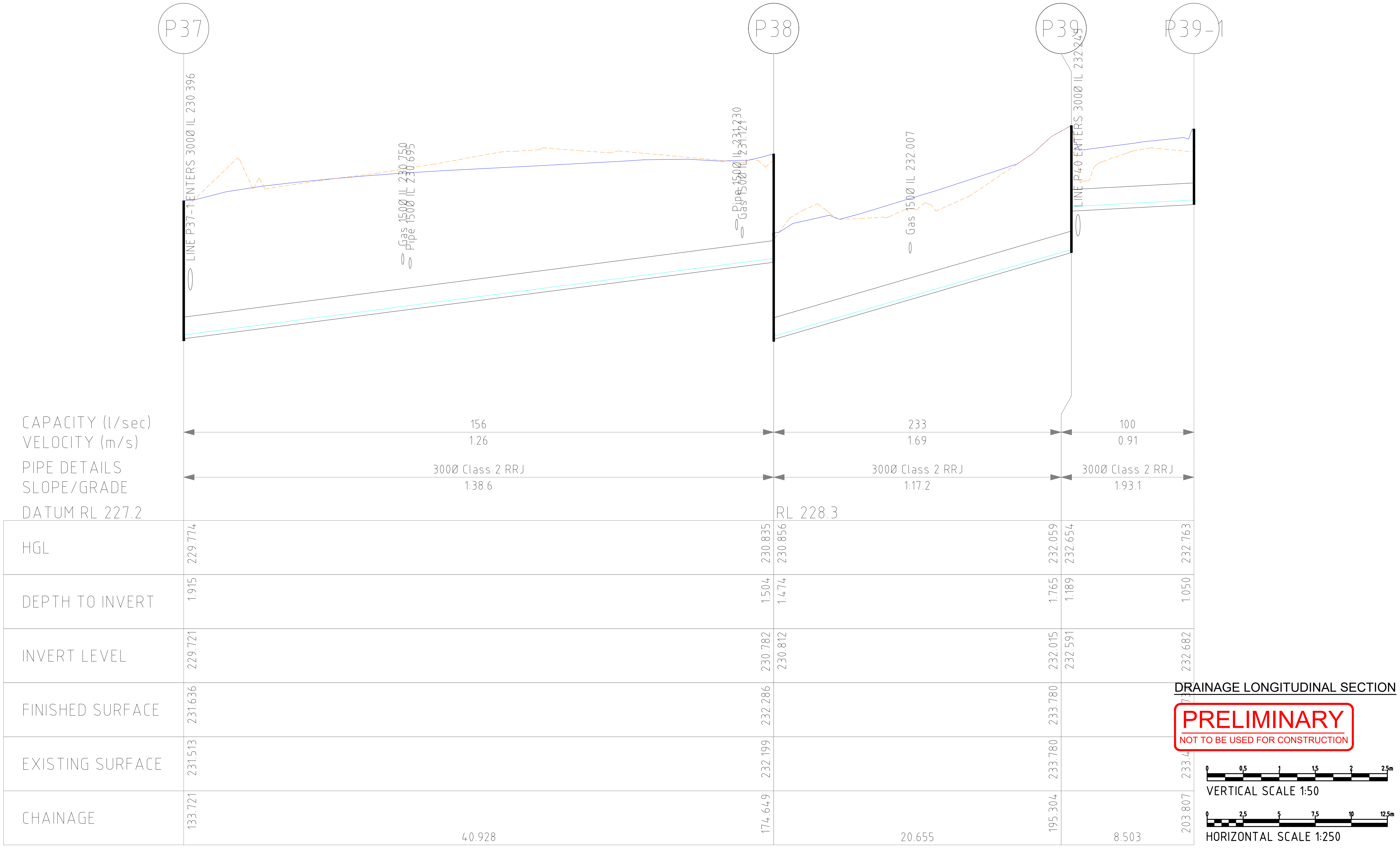
CCD Ref. No.	20021



DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend: EXISTING KERB AND CHANNEL; PROPOSED KERB AND CHANNEL; EXISTING DRAINS AND PITS; PROPOSED DRAINS AND PITS; PROPOSED PROPERTY INLET P.I.; WATER MAINS AND FITTINGS EX/PROP; SEWER EX/PROP; GAS MAINS EX/PROP; TELECOM CABLES AND PITS EX/PROP

Design: Date: JULY 2020 | Scale: AS SHOWN
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CCD Craig Civil Design
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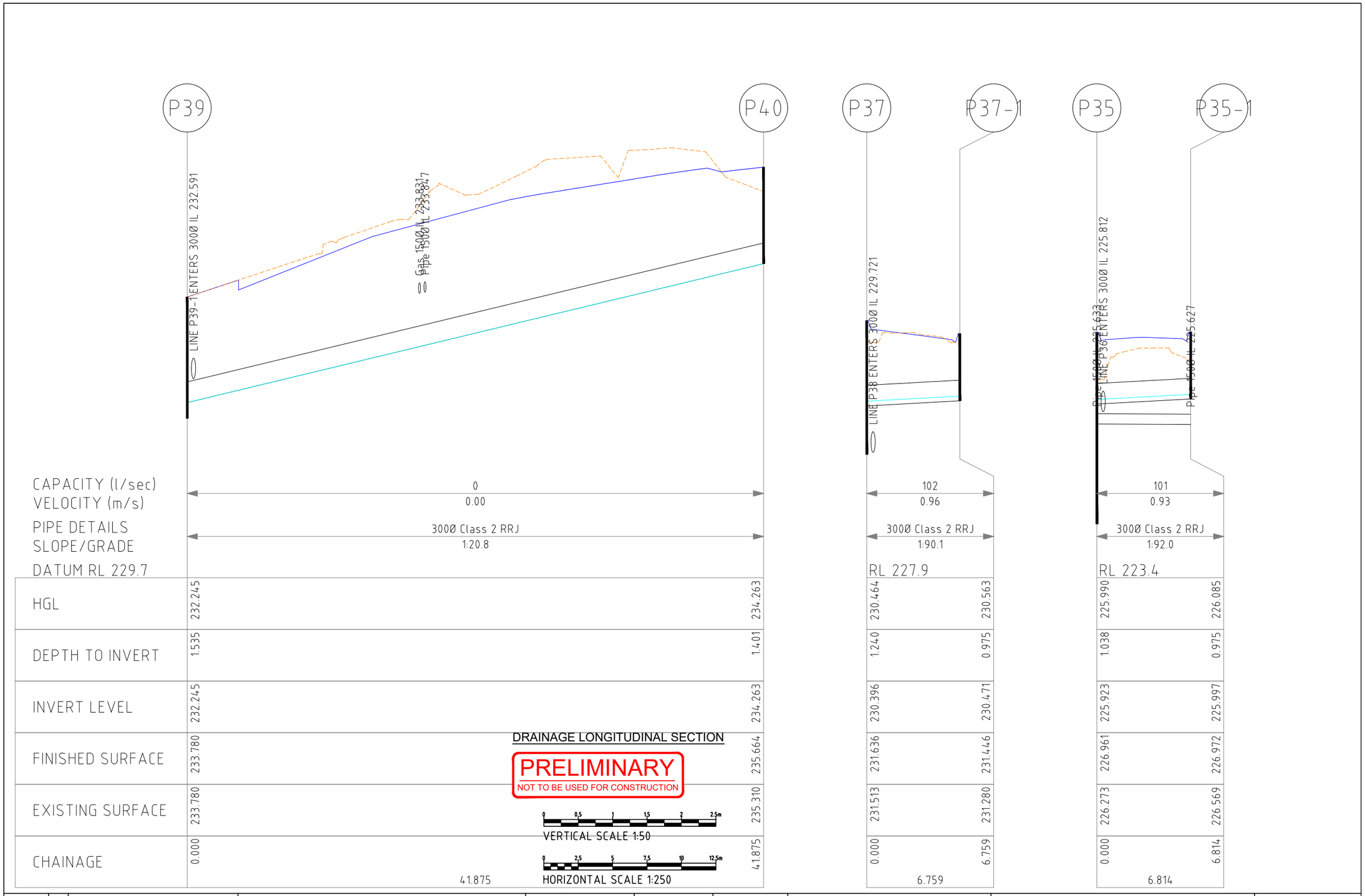
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388 Fax: 5995 5330
mail@jamisoncraig.com.au

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD. 20021 43
Sheet 43 OF 91
Rev A
CCD Ref. No. 20021



Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P...I...

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S— PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

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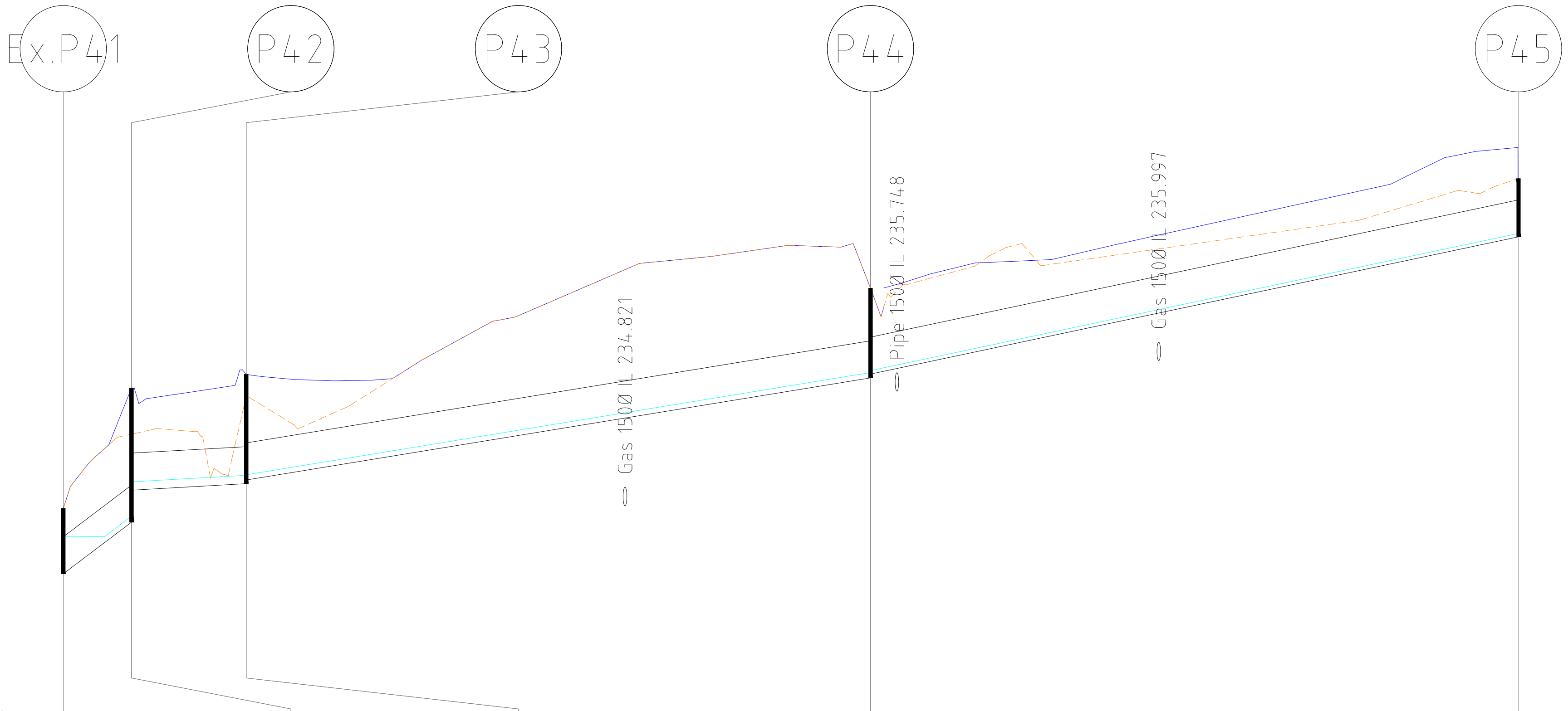
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD.	20021 44
Sheet	44 OF 91
Rev	A
CCD Ref. No.	20021



	Ex.P41 – P42	P42 – P43	P43 – P44	P44 – P45
CAPACITY (l/sec)	376	103	175	199
VELOCITY (m/s)	2.92	0.96	1.23	1.11
PIPE DETAILS	300Ø Class 2 RRJ	300Ø Class 2 RRJ	300Ø Class 2 RRJ	300Ø Class 2 RRJ
SLOPE/GRADE	1:6.6	1:88.4	1:30.5	1:23.6
Length	2.761	4.645	25.280	26.242

DATUM RL 231.7

	Ex.P41	P42	P43	P44	P45
HGL	234.570	234.738 / 235.015	235.067 / 235.073	235.901 / 235.916	237.031
DEPTH TO INVERT	0.530	1.086 / 0.826	0.885 / 0.855	0.725 / 0.695	0.473
INVERT LEVEL	234.270	234.688 / 234.947	235.000 / 235.030	235.858 / 235.888	237.000
FINISHED SURFACE	234.800	235.774	235.885	236.583	237.473
EXISTING SURFACE	234.800	235.401	235.709	236.583	237.473
CHAINAGE	0.000	2.761	7.407	32.687	58.929

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 0.5 1 1.5 2 2.5m
VERTICAL SCALE 1:50

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

Date:	Rev.	Amendments:
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Legend

- EXISTING KERB AND CHANNEL
- PROPOSED KERB AND CHANNEL
- EXISTING DRAINS AND PITS
- PROPOSED DRAINS AND PITS
- PROPOSED PROPERTY INLET — P..I..
- WATER MAINS AND FITTINGS — EX / PROP — W
- SEWER — EX / PROP — S
- GAS MAINS — EX / PROP — G
- TELECOM CABLES AND PITS — EX / PROP — T

Design: Date: JULY 2020
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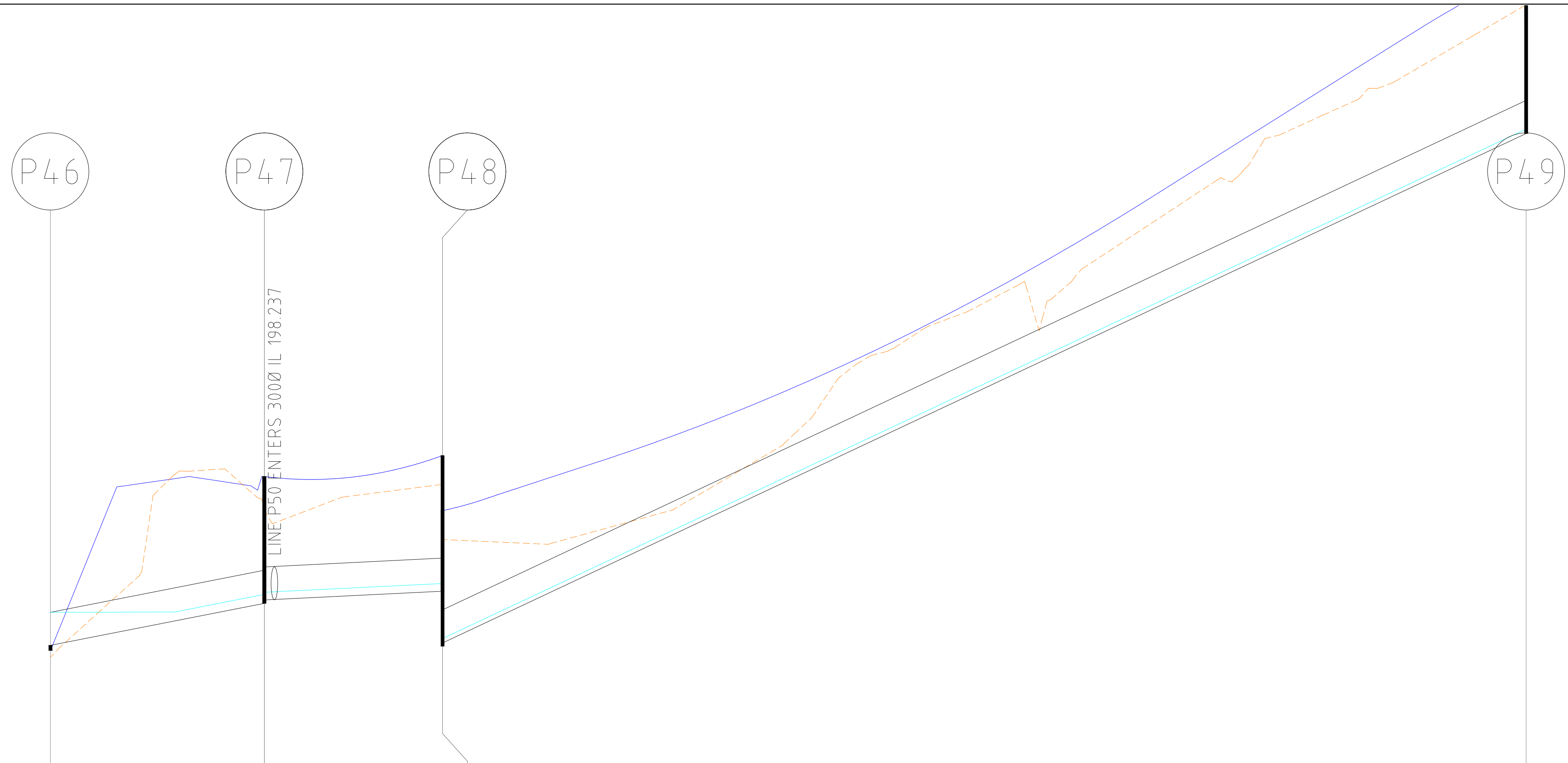
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD. 20021 45
Sheet 45 OF 91
Rev A
CCD Ref. No. 20021



	P46 to P47	P47 to P48	P48 to P49
CAPACITY (l/sec)	192	96	296
VELOCITY (m/s)	1.99	0.80	1.78
PIPE DETAILS	300Ø Class 2 RRJ	300Ø Class 2 RRJ	300Ø Class 2 RRJ
SLOPE/GRADE	1:25.4	1:101.5	1:10.6

DATUM RL 195.3 RL 195.8

	P46	P47 (in)	P47 (out)	P48 (in)	P48 (out)	P49
HGL	198.125	198.288	198.307	198.386	198.387	203.020
DEPTH TO INVERT	-0.046	1.151	1.121	1.231	1.200	1.501
INVERT LEVEL	197.825	198.207	198.237	198.317	198.347	202.970
FINISHED SURFACE	197.779	199.358		199.547		204.471
EXISTING SURFACE	197.716	199.053		199.286		204.137
CHAINAGE	0.000	9.710		17.798		66.988

Lengths: 9.710 8.088 49.190

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

VERTICAL SCALE 1:50 (0, 0.5, 1, 1.5, 2, 2.5m)

HORIZONTAL SCALE 1:250 (0, 2.5, 5, 7.5, 10, 12.5m)

Date:	Rev.	Amendments:
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Legend
EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET — P.I..
WATER MAINS AND FITTINGS EX ---W--- PROP —W—
SEWER EX ---S---O PROP —S—
GAS MAINS EX ---G--- PROP —G—
TELECOM CABLES AND PITS EX ---T--- PROP —T—

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A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805
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Phone: 5995 4388
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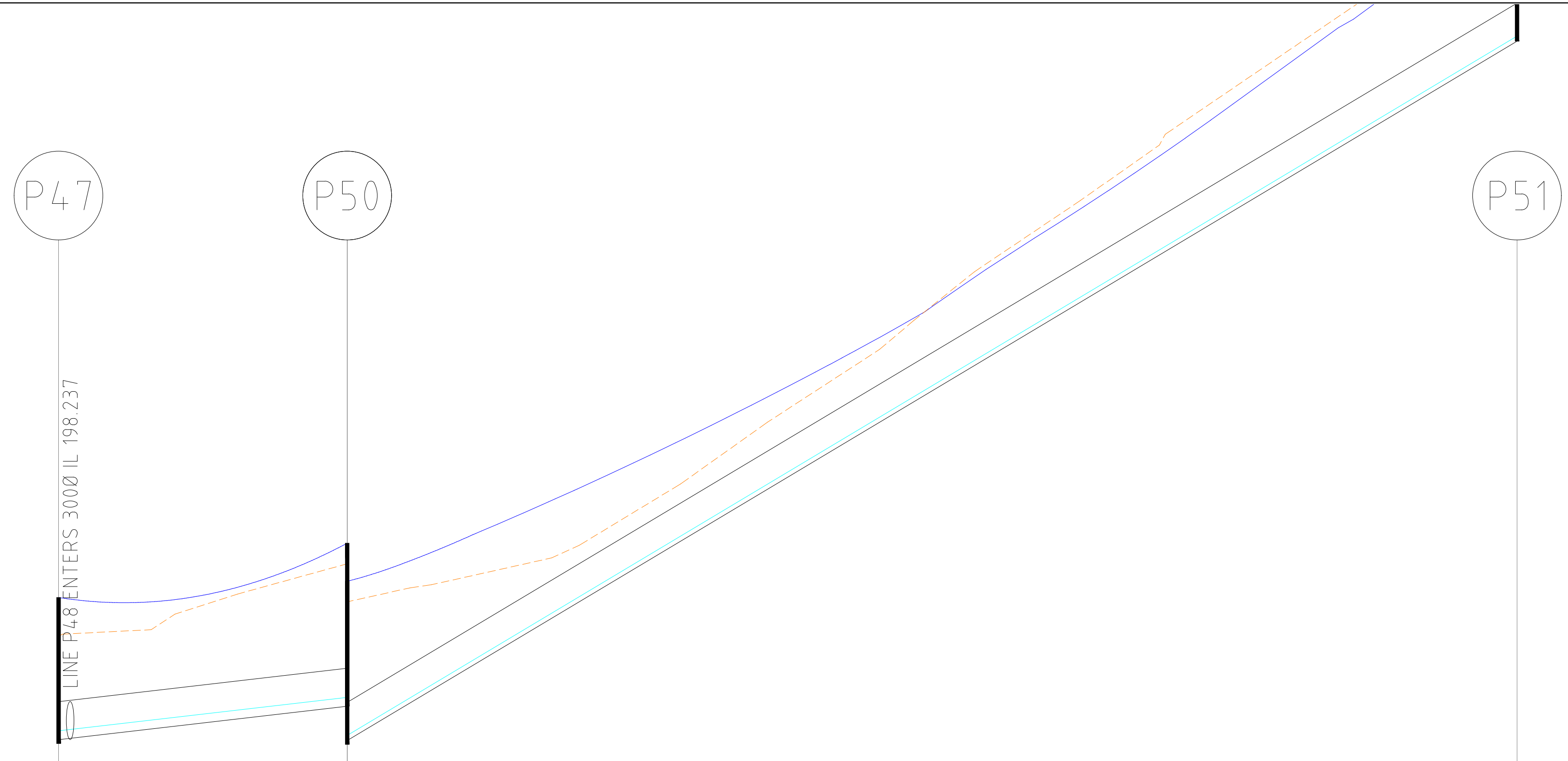
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD. 20021 46
Sheet 46 OF 91
Rev A
CCD Ref. No. 20021



	P47 – P50	P50 – P51
CAPACITY (l/sec)	147	334
VELOCITY (m/s)	1.09	1.53
PIPE DETAILS	300Ø Class 2 RRJ	300Ø Class 2 RRJ
SLOPE/GRADE	1:43.2	1:8.4
DATUM RL 195.7		RL 196

	P47	P50 (in)	P50 (out)	P51
HGL	198.307	198.570	198.571	204.084
DEPTH TO INVERT	1.121	1.285	1.254	1.124
INVERT LEVEL	198.237	198.501	198.531	204.042
FINISHED SURFACE	199.358	199.785		205.166
EXISTING SURFACE	199.053	199.623		205.127
CHAINAGE	0.000	11.373		57.474
(length)	11.373		46.101	

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

VERTICAL SCALE 1:50 (0, 0.5, 1, 1.5, 2, 2.5m)

HORIZONTAL SCALE 1:250 (0, 2.5, 5, 7.5, 10, 12.5m)

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Legend
EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET — P.I..
WATER MAINS AND FITTINGS EX ---W--- PROP —W—
SEWER EX ---S---O PROP —S—
GAS MAINS EX ---G--- PROP —G—
TELECOM CABLES AND PITS EX ---T--- PROP —T—

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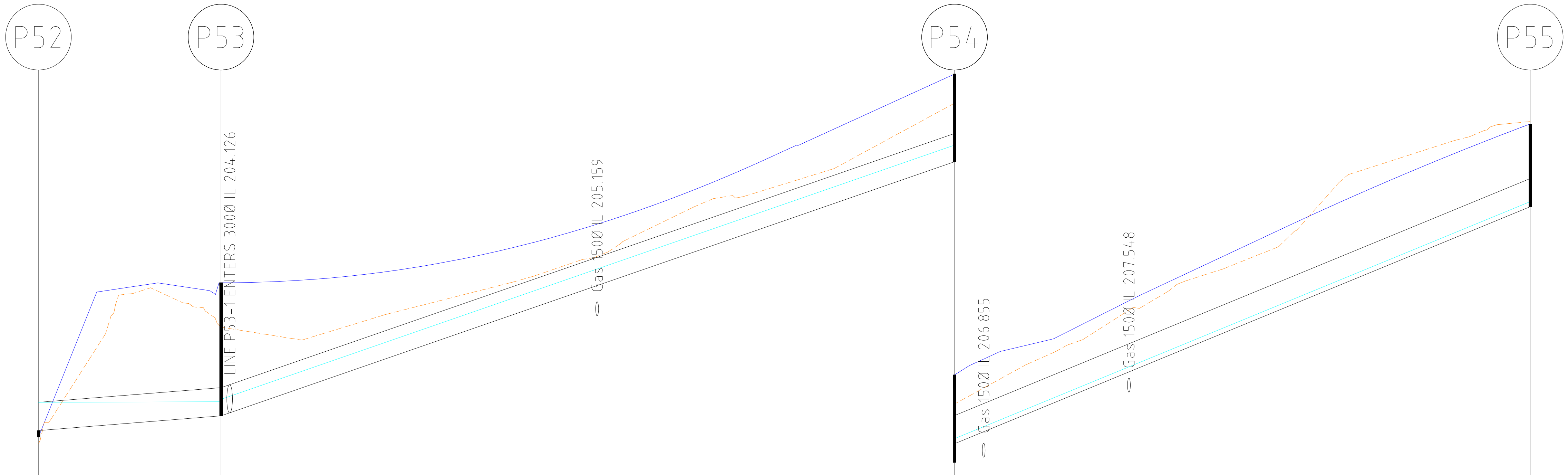
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD. 20021 47
Sheet 47 OF 91
Rev A
CCD Ref. No. 20021



	P52–P53	P53–P54	P54–P55
CAPACITY (l/sec)	123	254	277
VELOCITY (m/s)	1.48	2.13	2.28
PIPE DETAILS	300Ø Class 2 RRJ	300Ø Class 2 RRJ	300Ø Class 2 RRJ
SLOPE/GRADE	1:62.3	1:14.4	1:12.2

DATUM RL 201.3 | RL 204.5

	P52	P53	P54	P55
HGL	204.240	204.247 / 204.273	206.976 / 207.054	209.575
DEPTH TO INVERT	-0.069	1.417	0.933 / 0.732	0.881
INVERT LEVEL	203.940	204.096	206.800 / 207.000	209.521
FINISHED SURFACE	203.871	205.513	207.732	210.402
EXISTING SURFACE	203.796	205.039	207.423	210.427
CHAINAGE	0.000	9.715	48.757	79.394

Segment lengths: 9.715 | 39.042 | 30.637

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 0.5 1 1.5 2 2.5m
VERTICAL SCALE 1:50

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

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Legend
EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET — P.I..

WATER MAINS AND FITTINGS EX ---W--- PROP ——W——
SEWER EX ---S---O PROP ——S——
GAS MAINS EX ---G--- PROP ——G——
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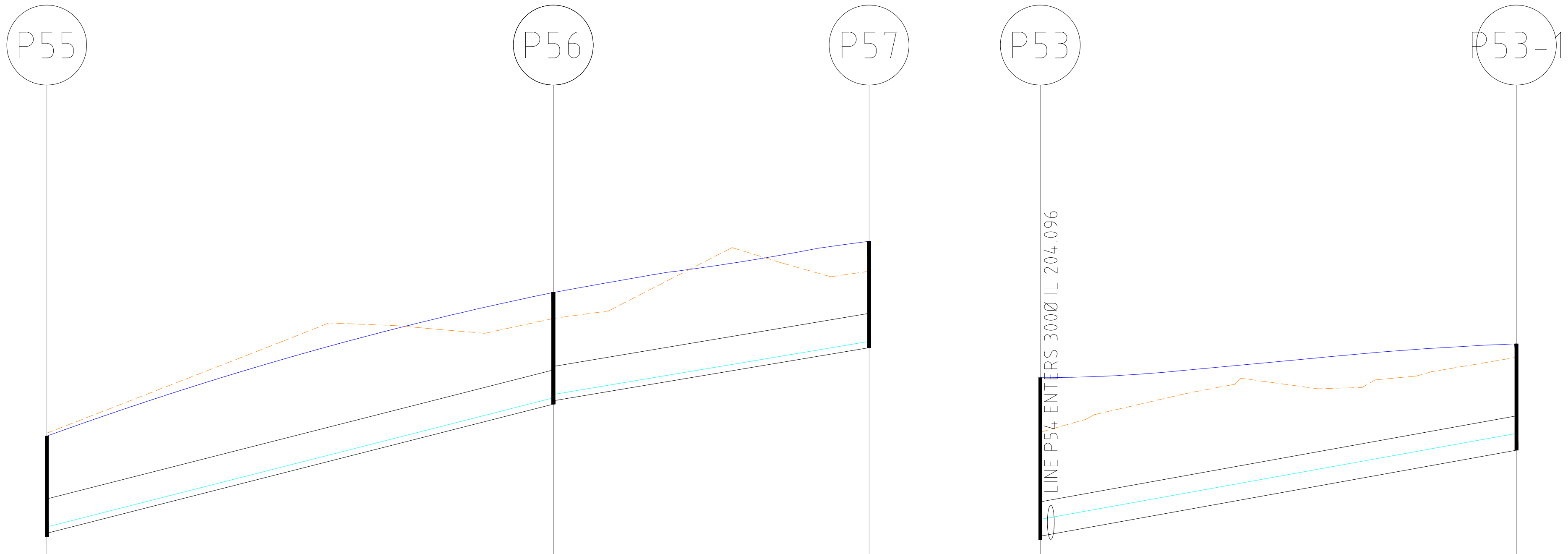
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD. 20021 48
Sheet 48 OF 91
Rev A
CCD Ref. No. 20021



	P55	P55–P56	P56	P56	P56–P57	P57	P53	P53–P53-1	P53-1
CAPACITY (l/sec)		218			177			184	
VELOCITY (m/s)		1.81			1.47			1.07	
PIPE DETAILS		300Ø Class 2 RRJ			300Ø Class 2 RRJ			300Ø Class 2 RRJ	
SLOPE/GRADE		1:19.6			1:29.8			1:27.7	
DATUM RL 207							RL 201.6		
HGL	209.606		210.736	210.766		211.259	204.273		205.028
DEPTH TO INVERT	0.851		0.978	0.948		0.931	1.387		0.931
INVERT LEVEL	209.551		210.681	210.711		211.176	204.126		204.878
FINISHED SURFACE	210.402		211.659			212.107	205.513		205.809
EXISTING SURFACE	210.427		211.431			211.845	205.039		205.691
CHAINAGE	79.394	22.179	101.573		13.827	115.400	0.000	20.848	20.848

DRAINAGE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

VERTICAL SCALE 1:50

HORIZONTAL SCALE 1:250

Date:	Rev.	Amendments:
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Legend

EXISTING KERB AND CHANNEL		WATER MAINS AND FITTINGS	EX ---W--- / PROP —W—
PROPOSED KERB AND CHANNEL		SEWER	EX ---S---O / PROP —S—
EXISTING DRAINS AND PITS		GAS MAINS	EX ---G--- / PROP —G—
PROPOSED DRAINS AND PITS		TELECOM CABLES AND PITS	EX ---T--- / PROP —T—
PROPOSED PROPERTY INLET	P.I..		

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ROAD RECONSTRUCTION WORKS
DRAINAGE LONGITUDINAL SECTION

Drawing No CCD. 20021 49
Sheet 49 OF 91
Rev A
CCD Ref. No. 20021

Pit Schedule - Drainage Network 2

Pit No.	Pit Type	Pit Width	Pit Length	Outlet Diameter	Outlet Invert RL	Inlet Diameter	Inlet Invert RL	Pit Depth	Pit Lid Level	Easting	Northing	Comment
		(mm)	(mm)	(mm)	(m)	(mm)	(m)	(m)	(m)	(m)	(m)	
Ex.P4	EXISTING GRATED JUNCTION	750	900	Ex.900	Ex.185.37	Ex.900	186.240	2.194	188.434	367479.20	5800094.587	
Ex.P5	EXISTING GRATED JUNCTION	750	900	Ex.900	189.190	450	190.240	2.692	191.882	367538.31	5800085.644	
P6	SIDE ENTRY PIT	600	900	450	191.159	375	192.150	3.012	194.171	367539.20	5800077.958	
						225	193.461					
P7	SIDE ENTRY PIT	600	900	375	194.282	375	194.312	1.852	196.134	367556.74	5800077.155	
P6-1	SIDE ENTRY PIT	600	900	225	193.700			0.714	194.414	367540.02	5800072.966	
P8	SIDE ENTRY PIT	600	900	375	196.662	375	196.692	1.449	198.111	367579.22	5800078.777	
P9	JUNCTION PIT	600	900	375	197.441	375	197.471	1.223	198.664	367589.86	5800078.275	
P10	SIDE ENTRY PIT	600	900	375	197.910	300	197.940	1.411	199.321	367598.45	5800074.453	
P11	SIDE ENTRY PIT	600	900	300	198.598	300	199.828	2.212	200.810	367602.73	5800059.188	
P12	JUNCTION PIT	600	900	300	200.200	300	200.230	1.003	201.203	367600.59	5800053.501	
P13	SIDE ENTRY PIT	600	900	300	201.449	300	201.479	1.055	202.504	367601.35	5800039.886	
						300	201.479					
P14	SIDE ENTRY PIT	600	900	300	202.090	300	202.120	1.026	203.116	367611.68	5800038.402	
						225	202.120					
P23	SIDE ENTRY PIT	600	900	300	203.385	300	203.415	1.101	204.486	367601.97	5800022.150	
P15	SIDE ENTRY PIT	900	1000	300	206.746	300	206.776	1.135	207.881	367646.42	5799997.508	
						300	206.776					
P14-1	SIDE ENTRY PIT	600	900	225	202.317			1.671	203.989	367610.21	5800026.529	
P24	SIDE ENTRY PIT	600	900	300	206.012			0.931	206.943	367597.81	5799999.075	
P16	SIDE ENTRY PIT	600	900	300	210.540	300	210.570	1.118	211.658	367671.30	5799966.445	
P15-1	SIDE ENTRY PIT	600	900	300	206.861			1.022	207.883	367639.84	5799992.129	
P17	JUNCTION PIT	600	900	300	213.199	300	213.229	0.961	214.160	367685.64	5799948.385	
P18	SIDE ENTRY PIT	600	900	300	215.837	300	215.867	1.023	216.860	367697.89	5799929.725	
						300	215.867					
P19	SIDE ENTRY PIT	600	900	300	223.768	300	223.798	1.137	224.905	367738.26	5799859.698	
						300	223.798					
P18-1	SIDE ENTRY PIT	600	900	300	215.953			1.026	216.979	367691.10	5799924.525	
P20	SIDE ENTRY PIT	600	900	300	225.793	225	225.823	0.961	226.754	367747.17	5799844.811	
						300	225.823					
P19-1	SIDE ENTRY PIT	600	900	300	223.883			1.022	224.905	367730.89	5799855.458	
P21	JUNCTION PIT	600	900	225	225.917			0.854	226.771	367752.06	5799840.393	
P22	JUNCTION PIT	600	900	300	230.100			0.931	231.031	367771.86	5799801.616	

Pit Schedule - Drainage Network 3

Pit No.	Pit Type	Pit Width	Pit Length	Outlet Diameter	Outlet Invert RL	Inlet Diameter	Inlet Invert RL	Pit Depth	Pit Lid Level	Easting	Northing	Comment
		(mm)	(mm)	(mm)	(m)	(mm)	(m)	(m)	(m)	(m)	(m)	
Ex.P25	EXISTING JUNCTION PIT	600	900		Ex. 375	375	217.900	0.719	218.619	367906.50	5799688.269	
P26	SIDE ENTRY PIT	600	900	375	217.910	300	217.940	0.953	218.863	367905.89	5799690.269	
						300	217.940					
P27	SIDE ENTRY PIT	600	900	300	217.993	300	218.023	0.829	218.822	367905.91	5799700.498	
P26-1	SIDE ENTRY PIT	600	900	300	218.000			0.732	218.733	367895.74	5799696.729	
P28	SIDE ENTRY PIT	600	900	300	218.053	300	218.083	0.679	218.732	367900.58	5799703.728	
P28	SIDE ENTRY PIT	600	900	300	218.282	300	218.664	1.409	219.691	367867.95	5799726.587	
P29	SIDE ENTRY PIT	600	900	300	221.727	300	221.757	0.734	222.461	367844.33	5799743.079	
						300	221.757					
P30	JUNCTION PIT	600	900	300	230.183			0.481	230.664	367789.26	5799782.151	
P29-1	SIDE ENTRY PIT	600	900	300	222.007			0.994	223.001	367835.90	5799738.623	

DRAINAGE PIT SCHEDULE

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: JULY 2020	Scale: AS SHOWN
Checked: Date: JULY 2020	Approved Date:
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Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE PIT SCHEDULE

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Pit Schedule - Drainage Alignment 1

Pit No.	Pit Type	Pit Width	Pit Length	Outlet Diameter	Outlet Invert RL	Inlet Diameter	Inlet Invert RL	Pit Depth	Pit Lid Level	Easting	Northing	Comment
		(mm)	(mm)	(mm)	(m)	(mm)	(m)	(m)	(m)	(m)	(m)	
P1	EXISTING JUNCTION PIT	600	900		800x600 BC	300	198.760	1.266	200.026	367614.35	5800093.097	
P2	SIDE ENTRY PIT	600	900	300	198.810	300	198.840	1.160	199.970	367614.06	5800088.063	
P3	SIDE ENTRY PIT	600	900	300	198.923			1.022	199.945	367621.97	5800085.383	

Pit Schedule - Drainage Network 4

Pit No.	Pit Type	Pit Width	Pit Length	Outlet Diameter	Outlet Invert RL	Inlet Diameter	Inlet Invert RL	Pit Depth	Pit Lid Level	Easting	Northing	Comment
		(mm)	(mm)	(mm)	(m)	(mm)	(m)	(m)	(m)	(m)	(m)	
Ex.P31	JUNCTION PIT			Ex. 525		450	217.670	1.293	218.963	367919.84	5799678.402	
P32	SIDE ENTRY PIT	600	900	450	217.902	300	219.232	2.618	220.520	367923.61	5799678.945	
P33	SIDE ENTRY PIT	600	900	300	220.371	300	220.401	1.491	221.862	367936.89	5799668.349	
P34	SIDE ENTRY PIT	600	900	300	220.542	300	220.572	1.347	221.889	367941.63	5799674.278	
P35	SIDE ENTRY PIT	600	900	300	224.182	300	225.812	2.779	226.961	367980.53	5799643.205	
						300	225.923					
P36	JUNCTION PIT	600	900	300	227.797	300	227.927	1.561	229.358	367996.15	5799626.012	
P35-1	SIDE ENTRY PIT	600	900	300	225.997			0.975	226.972	367977.32	5799637.195	
P37	SIDE ENTRY PIT	600	900	300	229.691	300	229.721	1.945	231.636	368012.35	5799598.055	
						300	230.396					
P38	JUNCTION PIT	600	900	300	230.782	300	230.812	1.504	232.286	368036.83	5799565.261	
P37-1	SIDE ENTRY PIT	600	900	300	230.471			0.975	231.446	368007.20	5799593.666	
P39	SIDE ENTRY PIT	600	900	300	232.015	300	232.245	1.765	233.780	368050.68	5799549.938	
						300	232.591					
P40	JUNCTION PIT	600	900	300	234.263			1.401	235.664	368077.43	5799517.721	
P39-1	SIDE ENTRY PIT	600	900	300	232.682			1.050	233.732	368048.65	5799541.683	

Pit Schedule - Drainage Network 5

Pit No.	Pit Type	Pit Width	Pit Length	Outlet Diameter	Outlet Invert RL	Inlet Diameter	Inlet Invert RL	Pit Depth	Pit Lid Level	Easting	Northing	Comment
		(mm)	(mm)	(mm)	(m)	(mm)	(m)	(m)	(m)	(m)	(m)	
Ex.P41	EX. JUNCTION PIT	600	900	Ex. 300		300	234.270	0.530	234.800	368087.52	5799494.021	
P42	SIDE ENTRY PIT	600	900	300	234.688	300	234.947	1.086	235.774	368089.55	5799495.886	
P43	JUNCTION PIT	600	900	300	235.000	300	235.030	0.885	235.885	368092.96	5799499.038	
P44	JUNCTION PIT	600	900	300	235.858	300	235.888	0.725	236.583	368112.31	5799482.759	
P45	JUNCTION PIT	600	900	300	237.000			0.473	237.473	368131.73	5799465.109	

DRAINAGE PIT SCHEDULE

PRELIMINARY
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PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX ---W--- PROP ——W——
SEWER EX ---S--O PROP ——S——
GAS MAINS EX ---G--- PROP ——G——
TELECOM CABLES AND PITS EX ---T--- PROP ——T——

Design: Date: JULY 2020
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Craig Civil Design
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A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE PIT SCHEDULE

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Pit Schedule - Drainage Network 6

Pit No.	Pit Type	Pit Width	Pit Length	Outlet Diameter	Outlet Invert RL	Inlet Diameter	Inlet Invert RL	Pit Depth	Pit Lid Level	Easting	Northing	Comment
		(mm)	(mm)	(mm)	(m)	(mm)	(m)	(m)	(m)	(m)	(m)	
P46	CULVERT WITH HEADWALL					300	197.825			367580.24	5799905.960	
P47	SIDE ENTRY PIT	600	900	300	198.207	300	198.237	1.151	199.358	367589.15	5799909.816	
						300	198.237					
P50	SIDE ENTRY PIT	600	900	300	198.501	300	198.531	1.285	199.785	367587.98	5799921.129	
P48	JUNCTION PIT	600	900	300	198.317	300	198.347	1.231	199.547	367591.77	5799902.166	
P51	SIDE ENTRY PIT	600	900	300	204.042			1.124	205.166	367593.47	5799966.901	
P49	SIDE ENTRY PIT	600	900	300	202.970			1.501	204.471	367613.12	5799857.848	

Pit Schedule - Drainage Network 7

Pit No.	Pit Type	Pit Width	Pit Length	Outlet Diameter	Outlet Invert RL	Inlet Diameter	Inlet Invert RL	Pit Depth	Pit Lid Level	Easting	Northing	Comment
		(mm)	(mm)	(mm)	(m)	(mm)	(m)	(m)	(m)	(m)	(m)	
P52	CULVERT WITH HEADWALL AT END					300	203.940			367632.07	5799801.596	
P53	SIDE ENTRY PIT	600	900	300	204.096	300	204.126	1.417	205.513	367641.09	5799805.222	
						300	204.096					
P53-1	SIDE ENTRY PIT	600	900	300	204.878			0.931	205.809	367631.84	5799823.907	
P54	JUNCTION PIT	600	900	300	206.800	300	207.000	0.933	207.732	367658.42	5799770.237	
P55	SIDE ENTRY PIT	600	900	300	209.521	300	209.551	0.881	210.402	367670.11	5799741.918	
P56	SIDE ENTRY PIT	600	900	300	210.681	300	210.711	0.978	211.659	367680.50	5799722.324	
P57	JUNCTION PIT	600	900	300	211.176			0.931	212.107	367689.08	5799711.478	

DRAINAGE PIT SCHEDULE

PRELIMINARY
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PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

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CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
DRAINAGE PIT SCHEDULE

Drawing No CCD. 20021 52
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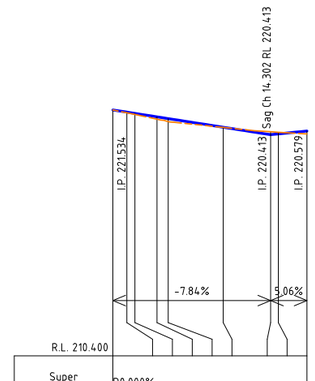
Rev A
CCD Ref. No. 20021



Cut Fill	-0.000	-0.031	-0.049	-0.106	-0.135	-0.008	+0.133	+0.075	-0.131
Design Levels	221.534	221.435	221.377	221.220	221.141	220.750	220.413	220.448	220.579
Existing Levels	221.53	221.40	221.33	221.11	221.01	220.74	220.55	220.52	220.45
Chainage	0.00	1.27	2.00	4.00	5.01	10.00	14.30	15.00	17.59

ProfileRoadBell Street_Main AlignmentFrom0.000To17.590Scales: H 1 in500V 1 in250

BELL ST LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
VERTICAL SCALE 1:250

0 5 10 15 20 25m
HORIZONTAL SCALE 1:500

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX ---W--- PROP ——W——
SEWER EX ---S---O PROP ——S——
GAS MAINS EX ---G--- PROP ——G——
TELECOM CABLES AND PITS EX ---T--- PROP ——T——

Design: Date: JULY 2020	Scale: AS SHOWN
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CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
BELL ST LONGITUDINAL SECTION

Drawing No CCD.	20021 53
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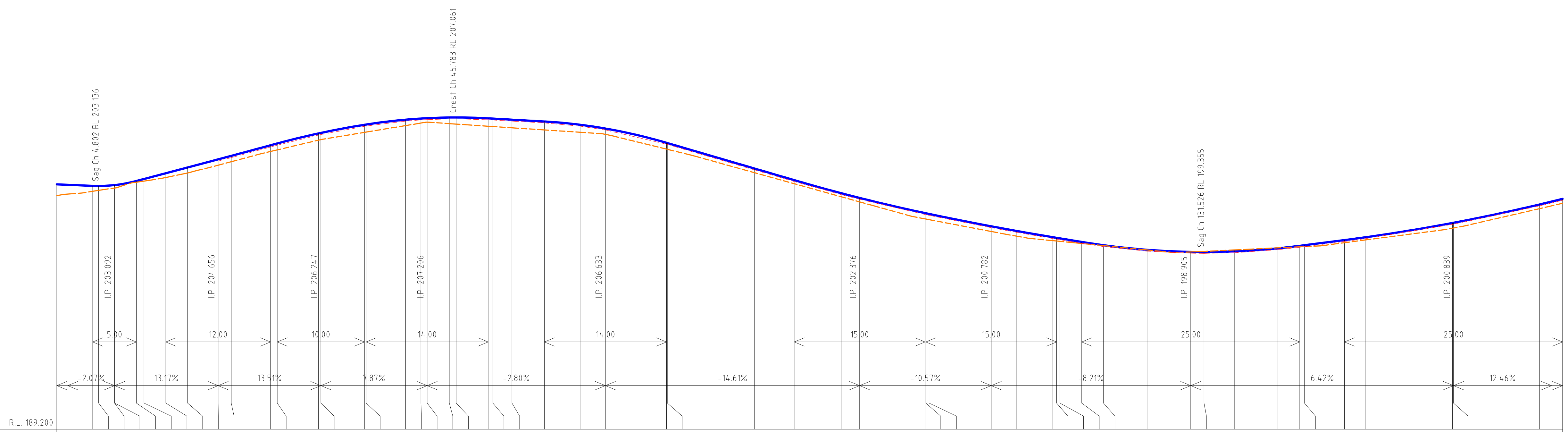

Super Elevation: R0.000% L0.000% — R-3.000% L-3.000%

Chainage	0.00	4.12	4.80	6.62	6.62	9.12	10.00	12.50	15.00	18.50	20.00	24.50	25.28	30.00	30.28	35.28	35.46	40.00	41.75
REB Levels										204.561	204.761	205.366	205.471	206.049	206.080	206.551	206.566	206.851	206.917
LEB Levels										204.561	204.761	205.366	205.471	206.051	206.081	206.557	206.572	206.860	206.926
Cut Fill	-0.643	-0.312	-0.251	-0.171	-0.171	-0.068	-0.123	-0.243	-0.315	-0.335	-0.335	-0.356	-0.368	-0.387	-0.383	-0.433	-0.433	-0.338	-0.257
Design Levels	203.229	203.143	203.136	203.187	203.187	203.421	203.536	203.866	204.196	204.661	204.861	205.467	205.571	206.147	206.176	206.640	206.655	206.934	206.999
Existing Levels	202.59	202.83	202.89	203.02	203.02	203.35	203.41	203.62	203.88	204.33	204.53	205.11	205.20	205.76	205.79	206.21	206.22	206.60	206.74

Chainage	42.46	45.00	45.78	49.46	50.00	52.19	55.90	60.00	62.90	69.90	70.00	80.00	84.54	90.00	92.04	99.54	99.63	100.00	107.13
REB Levels	206.937	206.976	206.979	206.927	206.912	206.851	206.747	206.561	206.344	205.528	205.513	204.052	203.389	202.632	202.369	201.501	201.492	201.453	200.744
LEB Levels	206.946	206.985	206.988	206.936	206.921	206.860	206.756	206.570	206.353	205.537	205.522	204.061	203.398	202.641	202.378	201.510	201.501	201.462	200.753
Cut Fill	-0.229	-0.351	-0.380	-0.453	-0.456	-0.466	-0.483	-0.430	-0.334	-0.360	-0.358	-0.239	-0.205	-0.205	-0.226	-0.332	-0.331	-0.327	-0.296
Design Levels	207.019	207.059	207.061	207.010	206.995	206.933	206.829	206.643	206.426	205.610	205.595	204.135	203.471	202.714	202.452	201.584	201.575	201.535	200.826
Existing Levels	206.79	206.71	206.68	206.56	206.54	206.47	206.35	206.21	206.09	205.25	205.24	203.90	203.27	202.51	202.23	201.25	201.24	201.21	200.53

Chainage	110.00	114.12	114.63	115.00	117.50	120.00	125.00	130.00	131.53	135.00	140.00	142.50	143.04	147.62	150.00	160.00	160.12	170.00	172.62
REB Levels	200.481	200.126	200.084	200.054	199.848	199.662	199.397	199.280	199.273	199.308	199.483	199.625	199.660	199.954	200.113	200.934	200.945	201.996	202.314
LEB Levels	200.490	200.135	200.093	200.063	199.857	199.671	199.406	199.289	199.282	199.317	199.492	199.634	199.669	199.963	200.122	200.943	200.954	202.005	202.323
Cut Fill	-0.300	-0.202	-0.184	-0.171	-0.087	-0.024	-0.009	-0.005	+0.035	+0.081	+0.027	-0.056	-0.078	-0.150	-0.154	-0.298	-0.299	-0.239	-0.253
Design Levels	200.563	200.209	200.167	200.136	199.931	199.744	199.480	199.362	199.355	199.391	199.565	199.708	199.742	200.037	200.196	201.016	201.028	202.078	202.397
Existing Levels	200.26	200.01	199.98	199.97	199.84	199.72	199.47	199.36	199.39	199.47	199.59	199.65	199.66	199.89	200.04	200.72	200.73	201.84	202.14

ProfileRoadBoronia Cresc__AlignmentFrom0.000To172.623Scales: H 1 in500V 1 in250

BORONIA CRESCENT LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
VERTICAL SCALE 1:250

0 5 10 15 20 25m
HORIZONTAL SCALE 1:500

Date:	Rev.	Amendments:
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Legend
- EXISTING KERB AND CHANNEL
- PROPOSED KERB AND CHANNEL
- EXISTING DRAINS AND PITS
- PROPOSED DRAINS AND PITS
- PROPOSED PROPERTY INLET — P.I..
- WATER MAINS AND FITTINGS — EX ---W--- PROP ——W——
- SEWER — EX ---S---O PROP ——S——
- GAS MAINS — EX ---G--- PROP ——G——
- TELECOM CABLES AND PITS — EX ---T--- PROP ——T——

Design: Date: JULY 2020
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CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
BORONIA CRESC LONGITUDINAL SECTION

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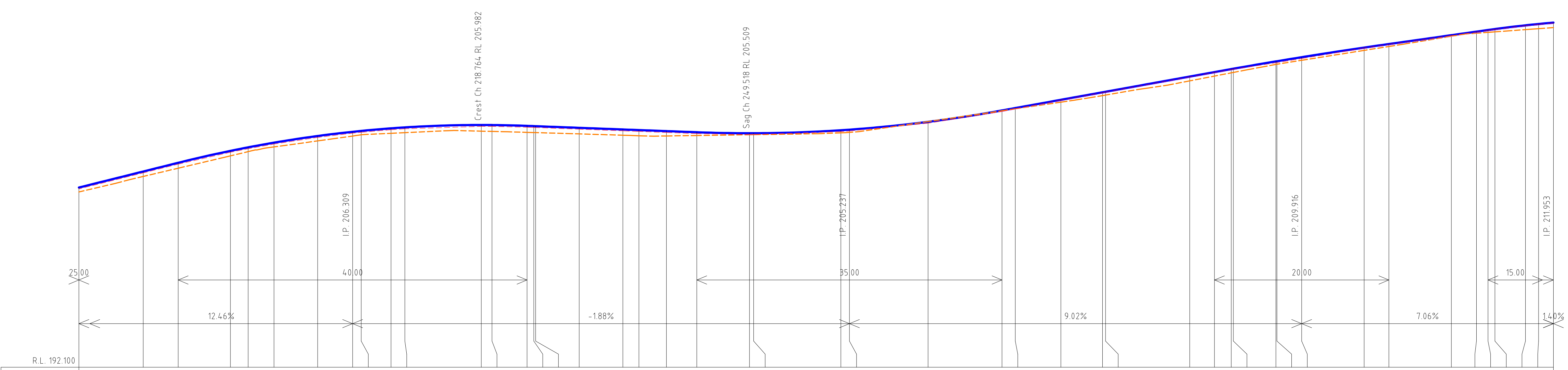
Rev A
CCD Ref. No. 20021



Super Elevation: R-3.000% L-3.000%

Chainage	REB Levels	LEB Levels	Cut Fill	Design Levels	Existing Levels
172.62	202.314	202.323	-0.253	202.397	202.14
180.00	203.234	203.243	-0.283	203.316	203.03
184.01	203.734	203.743	-0.310	203.816	203.51
190.00	204.416	204.425	-0.286	204.498	204.21
192.03	204.618	204.627	-0.245	204.700	204.45
195.00	204.887	204.896	-0.243	204.969	204.73
200.00	205.268	205.277	-0.281	205.350	205.07
204.01	205.509	205.518	-0.243	205.592	205.35
205.00	205.560	205.569	-0.224	205.642	205.42
208.42	205.707	205.716	-0.285	205.790	205.51
210.00	205.762	205.771	-0.302	205.844	205.54
218.76	205.899	205.908	-0.353	205.982	205.63
220.00	205.897	205.906	-0.365	205.979	205.61
224.01	205.850	205.859	-0.372	205.932	205.56
224.79	205.835	205.844	-0.369	205.918	205.55
225.00	205.831	205.840	-0.368	205.914	205.55
230.00	205.737	205.746	-0.348	205.820	205.47
235.00	205.643	205.652	-0.330	205.726	205.40
236.84	205.609	205.618	-0.327	205.691	205.36
240.00	205.549	205.558	-0.279	205.632	205.35
243.48	205.484	205.493	-0.187	205.566	205.38
249.52	205.427	205.436	-0.084	205.509	205.42
250.00	205.427	205.436	-0.081	205.510	205.43
260.00	205.598	205.607	-0.148	205.680	205.53
260.98	205.631	205.640	-0.156	205.714	205.56
270.00	206.080	206.089	+0.016	206.163	206.18
278.48	206.761	206.742	-0.019	206.816	206.80
280.00	206.910	206.880	-0.045	206.953	206.91
285.22	207.408	207.351	-0.136	207.424	207.29
290.00	207.839	207.782	-0.189	207.855	207.67
290.35	207.870	207.813	-0.191	207.887	207.70
300.00	208.741	208.684	-0.248	208.758	208.51
302.84	208.997	208.940	-0.230	209.014	208.78
304.76	209.169	209.112	-0.216	209.185	208.97
305.00	209.190	209.133	-0.215	209.207	208.99
309.89	209.543	209.552	-0.171	209.625	209.45
310.00	209.552	209.561	-0.171	209.635	209.46
312.84	209.785	209.794	-0.178	209.867	209.69
320.00	210.401	210.344	-0.162	210.418	210.26
322.84	210.605	210.548	-0.141	210.622	210.48
330.00	211.111	211.054	-0.063	211.128	211.07
332.88	211.314	211.257	-0.091	211.331	211.24
334.20	211.408	211.351	-0.135	211.424	211.29
335.00	211.463	211.406	-0.161	211.479	211.32
338.50	211.676	211.619	-0.245	211.692	211.45
340.00	211.753	211.696	-0.268	211.770	211.50
341.70	211.831	211.774	-0.284	211.847	211.56

ProfileRoadBoronia Cresc__AlignmentFrom172.623To341.701Scales: H 1 in500V 1 in250

BORONIA CRESCENT LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

VERTICAL SCALE 1:250 (0, 2.5, 5, 7.5, 10, 12.5m)

HORIZONTAL SCALE 1:500 (0, 5, 10, 15, 20, 25m)

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend
- EXISTING KERB AND CHANNEL
- PROPOSED KERB AND CHANNEL
- EXISTING DRAINS AND PITS
- PROPOSED DRAINS AND PITS
- PROPOSED PROPERTY INLET — P..I..
- WATER MAINS AND FITTINGS — EX / PROP
- SEWER — EX / PROP
- GAS MAINS — EX / PROP
- TELECOM CABLES AND PITS — EX / PROP

Design: Date: JULY 2020
Checked: Date: JULY 2020
Datum: AHD
Scale: AS SHOWN
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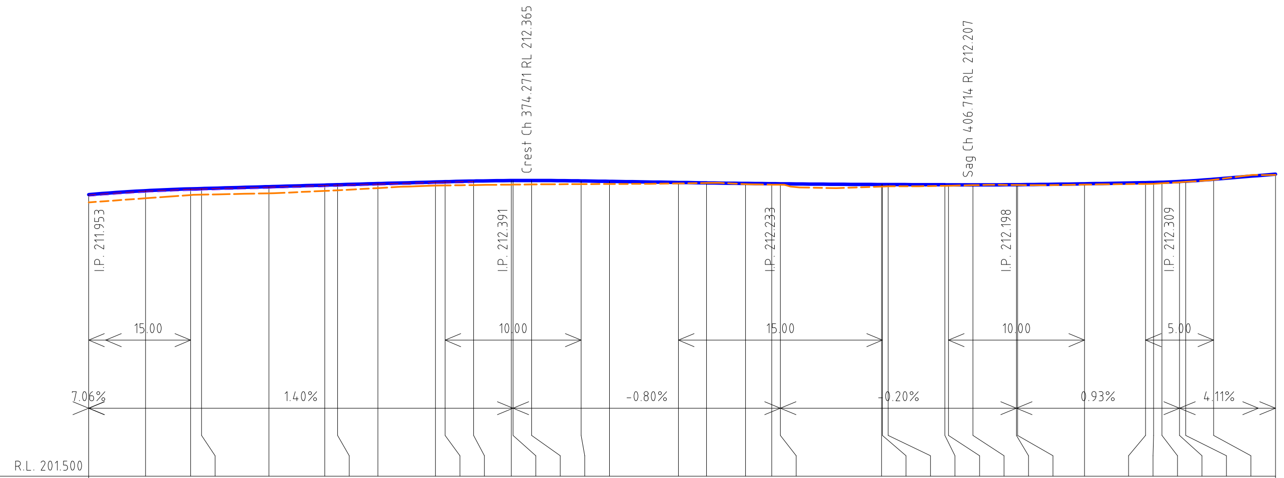
MELWAY Ref:

Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805
mail@jamisoncraig.com.au
Phone: 5995 4388
Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
BORONIA CRESC LONGITUDINAL SECTION

Drawing No CCD. 20021 55
Sheet 55 OF 91
Rev A
CCD Ref. No. 20021



Super Elevation	R-3.000% L-3.000%											R-50.000% L-50.000%							
REB Levels	211.831	211.975	212.042	212.053	212.123	212.180	212.193	212.235	212.294	212.304	212.329								
LEB Levels	211.774	211.918	211.985	211.996	212.066	212.123	212.136	212.178	212.237	212.247	212.272								
Cut Fill	-0.284	-0.279	-0.227	-0.225	-0.245	-0.214	-0.204	-0.165	-0.133	-0.138	-0.147	-0.149	-0.148	-0.143	-0.118	-0.097	-0.034	-0.004	-0.026
Design Levels	211.847	211.991	212.059	212.070	212.139	212.197	212.210	212.252	212.311	212.321	212.345	212.363	212.363	212.365	212.351	212.334	212.293	212.278	212.259
Existing Levels	211.56	211.71	211.83	211.85	211.89	211.98	212.01	212.09	212.18	212.18	212.20	212.21	212.21	212.22	212.23	212.24	212.26	212.27	212.23
Chainage	341.70	345.89	349.20	350.00	354.95	359.06	360.00	362.97	367.20	367.91	370.00	372.78	372.91	374.27	377.91	380.00	385.06	387.12	390.00

Super Elevation																		
REB Levels																		
LEB Levels																		
Cut Fill	-0.034	-0.034	-0.075	-0.074	-0.065	-0.038	-0.035	-0.014	-0.013	-0.014	-0.030	-0.046	-0.048	-0.039	-0.026	-0.024	-0.021	-0.027
Design Levels	212.248	212.245	212.218	212.218	212.217	212.209	212.208	212.207	212.212	212.213	212.245	212.286	212.293	212.302	212.329	212.341	212.412	212.599
Existing Levels	212.21	212.21	212.14	212.14	212.15	212.17	212.17	212.19	212.20	212.20	212.22	212.24	212.24	212.26	212.30	212.32	212.39	212.57
Chainage	391.93	392.56	400.00	400.06	400.49	404.65	404.92	406.71	409.92	410.00	414.92	419.41	420.00	420.62	421.91	422.36	424.41	428.96

ProfileRoadBoronia Cresc_AlignmentFrom341.701To428.959Scales: H 1 in500V 1 in250

BORONIA CRESCENT LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

VERTICAL SCALE 1:250 (0, 2.5, 5, 7.5, 10, 12.5m)

HORIZONTAL SCALE 1:500 (0, 5, 10, 15, 20, 25m)

Date:	Rev.	Amendments:
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Legend
- EXISTING KERB AND CHANNEL
- PROPOSED KERB AND CHANNEL
- EXISTING DRAINS AND PITS
- PROPOSED DRAINS AND PITS
- PROPOSED PROPERTY INLET — P..I..
- WATER MAINS AND FITTINGS — EX ---W--- / PROP ——W——
- SEWER — EX ---S---O / PROP ——S——
- GAS MAINS — EX ---G--- / PROP ——G——
- TELECOM CABLES AND PITS — EX ---T--- / PROP ——T——

Design: Date: JULY 2020
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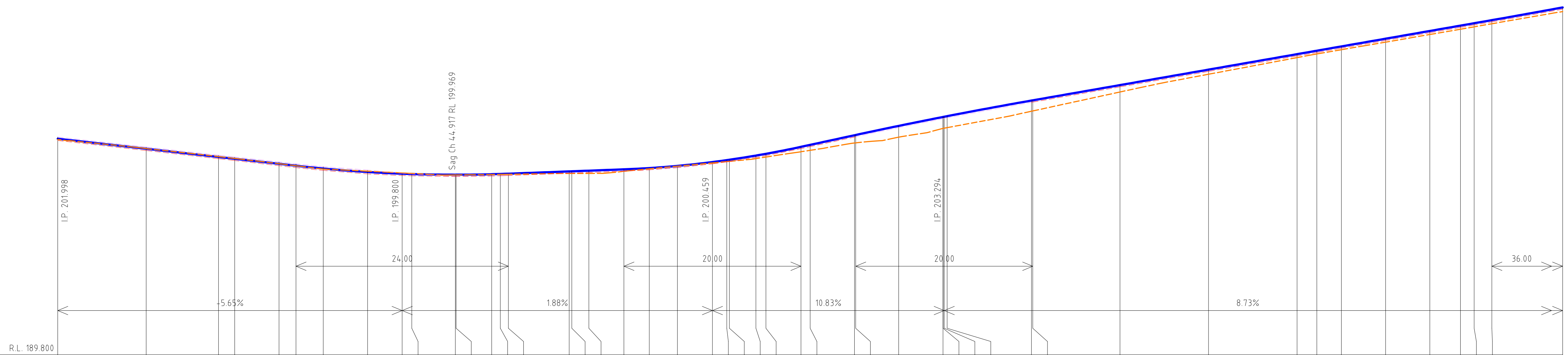
Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805
mail@jamisoncraig.com.au
Phone: 5995 4388
Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
BORONIA CRESC LONGITUDINAL SECTION

Drawing No CCD. 20021 56
Sheet 56 OF 91
Rev A
CCD Ref. No. 20021



Super Elevation: L3.000% R-3.000% L0.652% L0.000% L-2.950% R0.000% R-3.000%

Chainage	REB Levels	LEB Levels	Cut Fill	Design Levels	Existing Levels
0.00	201.898	202.099	-0.041	201.998	201.96
10.00	201.333	201.534	+0.009	201.433	201.44
18.17	200.871	201.072	+0.021	200.972	200.99
20.00	200.768	200.969	+0.019	200.868	200.89
25.00	200.476	200.695	+0.005	200.586	200.59
26.91	200.368	200.587	-0.002	200.478	200.48
30.00	200.209	200.428	-0.034	200.318	200.28
35.00	200.014	200.233	+0.045	200.123	200.17
38.91	199.920	200.049	+0.043	200.026	200.07
40.00	199.902	200.007	+0.033	200.007	200.04
44.92	199.869	199.870	-0.012	199.969	199.96
45.00	199.869	199.869	-0.012	199.969	199.96
49.02	199.895	199.895	-0.018	199.996	199.98
50.00	199.909	199.909	-0.025	200.010	199.99
50.91	199.925	199.925	-0.032	200.025	199.99
57.78	200.054	200.054	-0.115	200.155	200.04
58.08	200.060	200.060	-0.120	200.160	200.04
60.00	200.096	200.096	-0.153	200.196	200.04
63.96	200.170	200.170	-0.111	200.271	200.16
66.83	200.243	200.243	-0.043	200.343	200.30
70.00	200.366	200.366	-0.017	200.466	200.45
73.96	200.582	200.582	-0.048	200.683	200.63
75.58	200.691	200.691	-0.081	200.791	200.71
75.88	200.712	200.712	-0.089	200.813	200.72
78.87	200.948	200.948	-0.170	201.049	200.88
80.00	201.048	201.048	-0.180	201.148	200.97
83.96	201.442	201.442	-0.276	201.542	201.27
85.00	201.554	201.554	-0.308	201.655	201.35
90.00	202.096	202.096	-0.438	202.196	201.76
90.14	202.111	202.111	-0.446	202.212	201.77
95.00		202.625	-0.636	202.725	202.09
100.00		203.127	-0.645	203.228	202.58
100.01		203.128	-0.645	203.229	202.58
100.14		203.142	-0.646	203.242	202.60
100.47		203.173	-0.647	203.274	202.63
110.00	204.055	204.055	-0.603	204.155	203.55
110.14	204.067	204.067	-0.600	204.168	203.57
120.00	204.928	204.928	-0.388	205.028	204.64
130.00	205.801	205.801	-0.259	205.901	205.64
140.00	206.674	206.674	-0.193	206.774	206.58
142.23	206.869	206.869	-0.179	206.969	206.79
145.00	207.111	207.111	-0.184	207.211	207.03
150.00	207.547	207.547	-0.193	207.648	207.45
155.00	207.984	207.984	-0.198	208.084	207.89
158.46	208.286	208.286	-0.201	208.386	208.19
160.00	208.420	208.420	-0.202	208.521	208.32
162.00	208.595	208.595	-0.202	208.695	208.49
170.00	209.314	209.314	-0.237	209.414	209.18

ProfileRoadCaroline Ave__AlignmentFrom0.000To170.000Scales: H 1 in500V 1 in250

CAROLINE AVENUE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
VERTICAL SCALE 1:250

0 5 10 15 20 25m
HORIZONTAL SCALE 1:500

Date:	Rev.	Amendments:
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Legend
- EXISTING KERB AND CHANNEL
- PROPOSED KERB AND CHANNEL
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- GAS MAINS — EX ---G--- / PROP —G—
- TELECOM CABLES AND PITS — EX ---T--- / PROP —T—

Design: Date: JULY 2020 | Scale: AS SHOWN
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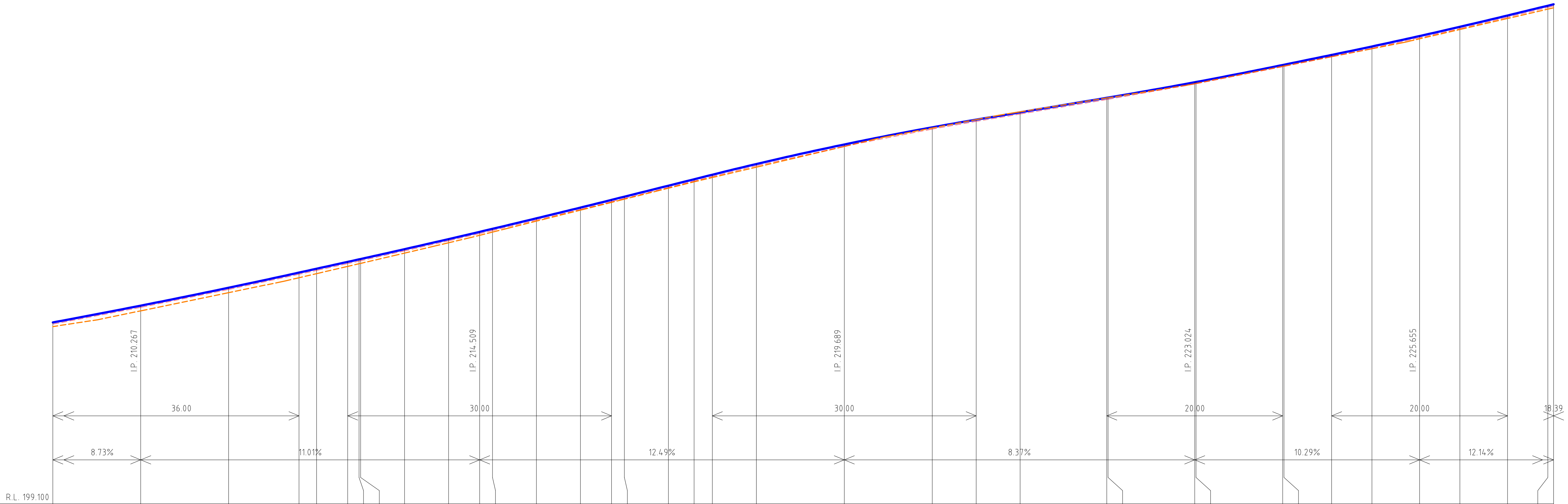
Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805
mail@jamisoncraig.com.au
Phone: 5995 4388
Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
CAROLINE AVE LONGITUDINAL SECTION

Drawing No CCD. 20021 57
Sheet 57 OF 91
Rev A
CCD Ref. No. 20021



Super Elevation	R-3.000% L-3.000%												
REB Levels	209.314	210.269	211.288	212.148	212.368	212.757	212.900	212.919	213.479	214.052	214.464	214.637	215.234
LEB Levels	209.314	210.269	211.288	212.148	212.368	212.757	212.900	212.919	213.479	214.052	214.464	214.637	215.234
Cut Fill	-0.237	-0.296	-0.281	-0.292	-0.280	-0.257	-0.249	-0.248	-0.224	-0.208	-0.196	-0.185	-0.158
Design Levels	209.414	210.369	211.388	212.248	212.469	212.858	213.000	213.020	213.580	214.152	214.565	214.737	215.335
Existing Levels	209.18	210.07	211.11	211.96	212.19	212.60	212.75	212.77	213.36	213.94	214.37	214.55	215.18
Chainage	170.00	180.00	190.00	198.00	200.00	203.54	204.83	205.00	210.00	215.00	218.54	220.00	225.00

REB Levels	215.844	216.282	216.465	217.090	217.455	217.714	218.322	219.434	220.408	220.844	221.262	222.086
LEB Levels	215.844	216.282	216.465	217.090	217.455	217.714	218.322	219.434	220.408	220.844	221.262	222.086
Cut Fill	-0.143	-0.140	-0.141	-0.142	-0.144	-0.158	-0.177	-0.112	-0.039	+0.002	+0.028	-0.011
Design Levels	215.944	216.383	216.566	217.190	217.556	217.815	218.422	219.534	220.509	220.944	221.363	222.187
Existing Levels	215.80	216.24	216.43	217.05	217.41	217.66	218.25	219.42	220.47	220.95	221.39	222.18
Chainage	230.00	233.54	235.00	240.00	242.93	245.00	250.00	260.00	270.00	275.00	280.00	289.85

REB Levels	222.099	222.971	222.986	223.952	223.968	224.525	225.007	225.600	226.124	226.768	227.324	227.404
LEB Levels	222.099	222.971	222.986	223.952	223.968	224.525	225.007	225.600	226.124	226.768	227.324	227.404
Cut Fill	-0.012	-0.084	-0.083	-0.077	-0.077	-0.100	-0.128	-0.159	-0.151	-0.168	-0.195	-0.198
Design Levels	222.200	223.072	223.086	224.053	224.068	224.626	225.107	225.701	226.224	226.868	227.425	227.505
Existing Levels	222.19	222.99	223.00	223.98	223.99	224.53	224.98	225.54	226.07	226.70	227.23	227.31
Chainage	290.00	299.85	300.00	309.85	310.00	315.42	320.00	325.42	330.00	335.42	340.00	340.66

ProfileRoadCaroline Ave__AlignmentFrom170.000To340.659Scales: H 1 in500V 1 in250

CAROLINE AVENUE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
VERTICAL SCALE 1:250

0 5 10 15 20 25m
HORIZONTAL SCALE 1:500

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend
EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET — P..I..

WATER MAINS AND FITTINGS EX ---W--- PROP —W—
SEWER EX ---S---O PROP —S—
GAS MAINS EX ---G--- PROP —G—
TELECOM CABLES AND PITS EX ---T--- PROP —T—

Design: Date: JULY 2020
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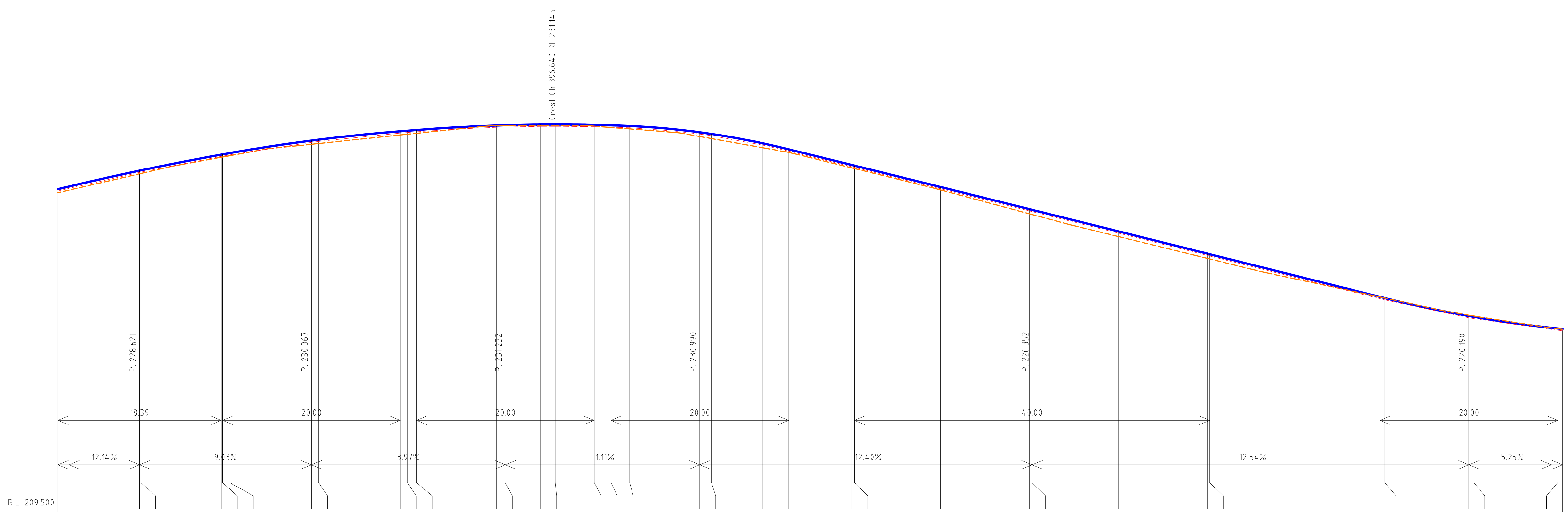
COCKATOO
ROAD RECONSTRUCTION WORKS
CAROLINE AVE LONGITUDINAL SECTION

Drawing No CCD. 20021 58
Sheet 58 OF 91
Rev A
CCD Ref. No. 20021



Super Elevation	R-3.000% L-3.000%																			
REB Levels	227.404	228.449	228.464	229.350	229.363	229.436	230.140	230.191	230.663	230.695	230.735	230.902	230.989	231.005	231.041	231.045	231.031	231.021	231.000	230.964
LEB Levels	227.404	228.449	228.464	229.350	229.363	229.436	230.140	230.191	230.663	230.695	230.735	230.902	230.989	231.005	231.041	231.045	231.031	231.021	231.000	230.964
Cut Fill	-0.198	-0.178	-0.177	-0.149	-0.149	-0.147	-0.206	-0.216	-0.207	-0.197	-0.185	-0.090	+0.002	-0.008	-0.054	-0.060	-0.052	-0.069	-0.121	-0.165
Design Levels	227.505	228.549	228.565	229.451	229.464	229.536	230.240	230.292	230.763	230.795	230.835	231.002	231.089	231.105	231.142	231.145	231.131	231.121	231.100	231.064
Existing Levels	227.31	228.37	228.39	229.30	229.31	229.39	230.03	230.08	230.56	230.60	230.65	230.91	231.09	231.10	231.09	231.08	231.08	231.05	230.98	230.90
Chainage	340.66	349.85	350.00	359.05	359.19	360.00	369.19	370.00	379.19	380.00	381.01	386.01	390.00	391.01	395.00	396.64	400.00	401.01	402.89	405.00

Super Elevation																				
REB Levels	230.778	230.607	230.513	229.984	229.649	228.768	228.732	227.526	226.281	226.245	225.033	223.781	223.745	222.527	221.343	221.274	220.272	220.223	219.565	219.536
LEB Levels	230.778	230.607	230.513	229.984	229.649	228.768	228.732	227.526	226.281	226.245	225.033	223.781	223.745	222.527	221.343	221.274	220.272	220.223	219.565	219.536
Cut Fill	-0.178	-0.235	-0.259	-0.248	-0.175	-0.162	-0.162	-0.165	-0.263	-0.266	-0.293	-0.267	-0.265	-0.181	-0.004	+0.005	+0.041	+0.044	-0.011	-0.016
Design Levels	230.879	230.707	230.613	230.085	229.750	228.868	228.832	227.627	226.382	226.346	225.133	223.882	223.845	222.628	221.444	221.375	220.373	220.324	219.666	219.637
Existing Levels	230.70	230.47	230.35	229.84	229.57	228.71	228.67	227.46	226.12	226.08	224.84	223.62	223.58	222.45	221.44	221.38	220.41	220.37	219.65	219.62
Chainage	410.00	412.89	414.21	420.00	422.89	430.00	430.29	440.00	450.00	450.29	460.00	470.00	470.29	480.00	489.44	490.00	499.44	500.00	509.44	510.00

ProfileRoadCaroline Ave__AlignmentFrom340.659To510.000Scales: H 1 in500V 1 in250

CAROLINE AVENUE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
VERTICAL SCALE 1:250

0 5 10 15 20 25m
HORIZONTAL SCALE 1:500

Date:	Rev.	Amendments:
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Legend
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PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P.I..
WATER MAINS AND FITTINGS EX ---W--- PROP —W—
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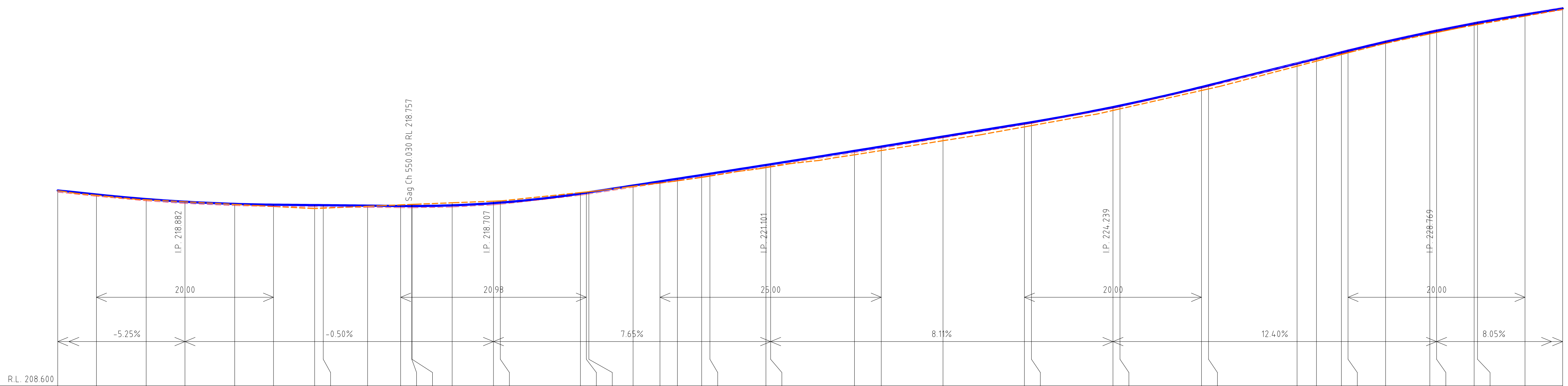
CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
CAROLINE AVE LONGITUDINAL SECTION

Drawing No CCD. 20021 59
Sheet 59 OF 91
Rev A
CCD Ref. No. 20021



Super Elevation	R-3.000% L-3.000%														
REB Levels	219.536	219.306	219.049	218.900	218.776	218.732	218.708	218.703	218.678	218.659	218.656	218.656	218.696	218.820	218.849
LEB Levels	219.536	219.306	219.049	218.900	218.776	218.732	218.708	218.703	218.678	218.659	218.656	218.656	218.696	218.820	218.849
Cut Fill	-0.016	-0.044	-0.039	-0.006	-0.029	-0.098	-0.195	-0.168	-0.034	+0.063	+0.092	+0.093	+0.143	+0.111	+0.097
Design Levels	219.637	219.407	219.149	219.001	218.877	218.832	218.809	218.804	218.779	218.760	218.757	218.757	218.797	218.921	218.950
Existing Levels	219.62	219.36	219.11	219.00	218.85	218.73	218.61	218.64	218.74	218.82	218.85	218.85	218.94	219.03	219.05
Chainage	510.00	514.38	520.00	524.38	530.00	534.38	539.02	540.00	545.00	548.74	550.00	550.03	554.56	559.22	560.00

Super Elevation	L50.000%			L0.000%							L-3.000%				
REB Levels	219.359	219.409	219.431	219.813	220.045	220.196	220.407	220.479	220.973	221.015	221.770	222.018	222.607	223.354	223.419
LEB Levels											221.788	222.034	222.607	223.354	223.419
Cut Fill	+0.057	+0.041	+0.034	-0.040	-0.085	-0.114	-0.131	-0.131	-0.150	-0.148	-0.218	-0.222	-0.234	-0.197	-0.192
Design Levels	219.459	219.509	219.531	219.913	220.145	220.296	220.508	220.579	221.074	221.116	221.870	222.115	222.681	223.427	223.493
Existing Levels	219.52	219.55	219.57	219.87	220.06	220.18	220.38	220.45	220.92	220.97	221.65	221.89	222.45	223.23	223.30
Chainage	569.05	569.71	570.00	575.00	578.03	580.00	582.75	583.67	590.00	590.53	600.00	603.03	610.00	619.20	620.00

Super Elevation					L1.000%0.877%3.000%										
REB Levels	224.272	224.354	225.405	225.503	226.743	227.015	227.363	227.456	227.963	228.509	228.587	229.001	229.036	229.500	229.842
LEB Levels	224.272	224.354	225.405	225.503	226.841	227.134	227.510	227.603	228.110	228.656	228.734	229.148	229.183	229.647	229.989
Cut Fill	-0.188	-0.180	-0.194	-0.203	-0.159	-0.145	-0.119	-0.116	-0.087	-0.101	-0.099	-0.099	-0.100	-0.084	-0.045
Design Levels	224.346	224.428	225.478	225.577	226.816	227.088	227.436	227.529	228.036	228.583	228.660	229.075	229.110	229.574	229.915
Existing Levels	224.16	224.25	225.28	225.37	226.66	226.94	227.32	227.41	227.95	228.48	228.56	228.98	229.01	229.49	229.87
Chainage	629.20	630.00	639.20	640.00	650.00	652.19	655.00	655.75	660.00	665.00	665.75	670.00	670.38	675.75	680.00

ProfileRoadCaroline Ave__AlignmentFrom510.000To680.000Scales: H 1 in500V 1 in250

CAROLINE AVENUE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

VERTICAL SCALE 1:250

HORIZONTAL SCALE 1:500

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend
EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET — P.I..
WATER MAINS AND FITTINGS — EX / PROP
SEWER — EX / PROP
GAS MAINS — EX / PROP
TELECOM CABLES AND PITS — EX / PROP

Design: Date: JULY 2020
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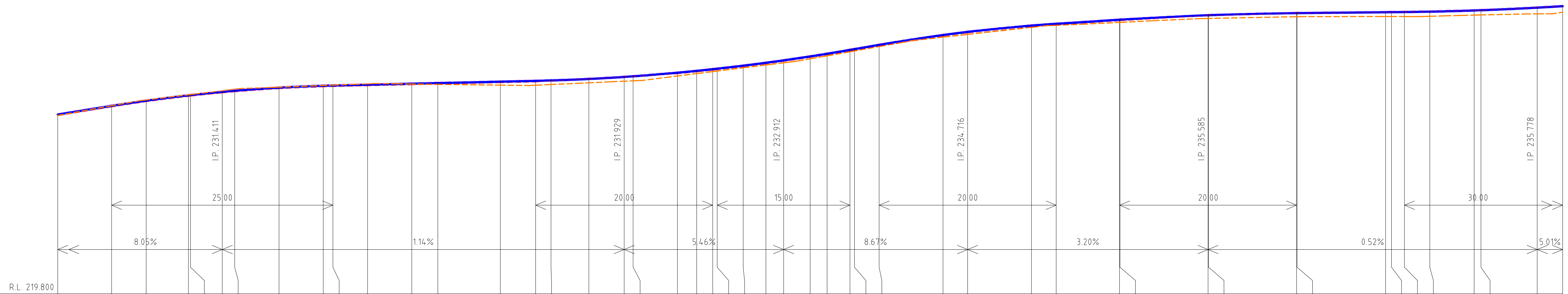
Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805
mail@jamisoncraig.com.au
Phone: 5995 4388
Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
CAROLINE AVE LONGITUDINAL SECTION

Drawing No CCD. 20021 60
Sheet 60 OF 91
Rev A
CCD Ref. No. 20021



Super Elevation: L3.000% / R-3.000%

Chainage	REB Levels	LEB Levels	Cut Fill	Design Levels	Existing Levels
680.00	229.842	229.989	-0.045	229.915	229.87
686.09	230.332	230.479	+0.009	230.405	230.41
690.00	230.625	230.772	+0.044	230.699	230.74
694.77	230.926	231.073	+0.030	231.000	231.03
695.00	230.939	231.086	+0.031	231.013	231.04
698.59	231.122	231.269	+0.066	231.195	231.26
700.00	231.184	231.331	+0.090	231.257	231.35
705.00	231.360	231.507	+0.028	231.433	231.46
710.00	231.466	231.613	+0.015	231.540	231.55
711.09	231.480	231.627	+0.022	231.554	231.58
715.00	231.525	231.672	+0.051	231.598	231.65
720.00	231.582	231.729	-0.015	231.655	231.64
722.94	231.615	231.762	-0.068	231.689	231.62
730.00	231.696	231.843	-0.193	231.769	231.58
733.99	231.741	231.888	-0.244	231.815	231.57
735.73	231.817	231.911	-0.228	231.838	231.61
740.00	231.915	231.996	-0.216	231.922	231.71
743.99	232.029	232.110	-0.240	232.037	231.80
745.00	232.064	232.145	-0.252	232.071	231.82
750.00	232.201	232.348	-0.183	232.274	232.09
752.19	232.307	232.454	-0.153	232.380	232.23
753.99	232.401	232.548	-0.136	232.475	232.34
754.50	232.429	232.576	-0.132	232.503	232.37
757.44	232.599	232.746	-0.120	232.673	232.55
760.00	232.762	232.909	-0.124	232.836	232.71
762.00	232.899	233.046	-0.137	232.973	232.84
765.00	233.121	233.268	-0.132	233.194	233.06
766.92	233.273	233.420	-0.116	233.346	233.23
769.50	233.490	233.637	-0.102	233.563	233.46
770.00	233.533	233.680	-0.100	233.606	233.51
772.79	233.775	233.922	-0.093	233.848	233.76
780.00	234.329	234.476	-0.120	234.403	234.28
782.79	234.505	234.652	-0.141	234.579	234.44
790.00	234.862	235.009	-0.099	234.936	234.84
792.79	234.962	235.109	-0.082	235.036	234.95
799.95	235.191	235.338	-0.149	235.265	235.12
800.00	235.193	235.340	-0.150	235.267	235.12
809.95	235.493	235.591	-0.179	235.518	235.34
810.00	235.494	235.592	-0.179	235.519	235.34
819.95	235.629	235.710	-0.201	235.637	235.44
820.00	235.630	235.711	-0.201	235.637	235.44
830.00	235.681	235.762	-0.239	235.689	235.45
830.67	235.685	235.766	-0.243	235.692	235.45
832.13	235.692	235.773	-0.254	235.700	235.45
835.00	235.714	235.795	-0.260	235.721	235.46
840.00	235.780	235.861	-0.260	235.787	235.53
840.77	235.793	235.874	-0.265	235.801	235.54
847.13	235.939	236.020	-0.349	235.946	235.60
850.00	236.024	236.105	-0.340	236.032	235.69

ProfileRoadCaroline Ave__AlignmentFrom680.000To850.000Scales: H 1 in500V 1 in250

CAROLINE AVENUE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
VERTICAL SCALE 1:250

0 5 10 15 20 25m
HORIZONTAL SCALE 1:500

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend
EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET — P..I..
WATER MAINS AND FITTINGS EX ---W--- PROP ——W——
SEWER EX ---S---O PROP ——S——
GAS MAINS EX ---G--- PROP ——G——
TELECOM CABLES AND PITS EX ---T--- PROP ——T——

Design: Date: JULY 2020 | Scale: AS SHOWN
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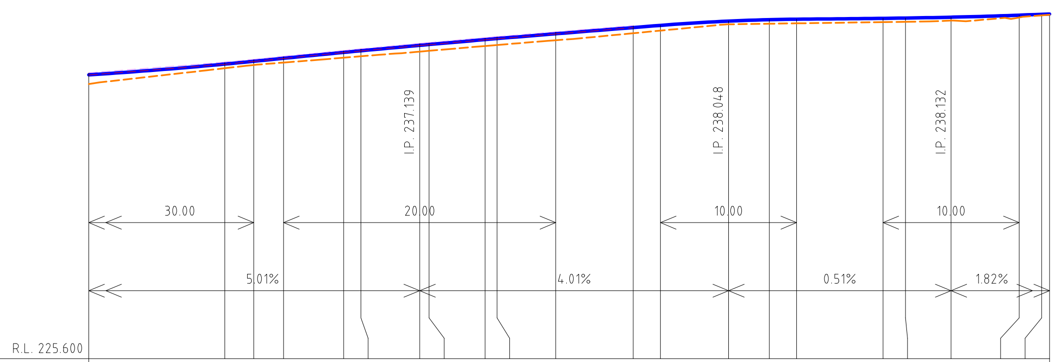
Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805
mail@jamisoncraig.com.au
Phone: 5995 4388
Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
CAROLINE AVE LONGITUDINAL SECTION

Drawing No CCD. 20021 61
Sheet 61 OF 91
Rev A
CCD Ref. No. 20021



Super Elevation	R 3.000% L3.000%												R=35.000%									
REB Levels	236.024	236.418	236.522	236.631	236.847	236.908	237.107	237.138	237.318	237.355	237.532	237.760										
LEB Levels	236.105	236.499	236.603	236.712	236.928	236.989	237.188	237.219	237.399	237.436	237.613	237.841										
Cut Fill	-0.340	-0.153	-0.137	-0.155	-0.194	-0.202	-0.231	-0.232	-0.235	-0.236	-0.238	-0.208	-0.192	-0.118	-0.148	-0.151	-0.138	-0.137	-0.124	-0.084	-0.038	-0.027
Design Levels	236.032	236.426	236.529	236.638	236.854	236.915	237.114	237.145	237.325	237.363	237.540	237.768	237.848	238.005	238.057	238.074	238.107	238.117	238.149	238.223	238.253	238.264
Existing Levels	235.69	236.27	236.39	236.48	236.66	236.71	236.88	236.91	237.09	237.13	237.30	237.56	237.66	237.89	237.91	237.92	237.97	237.98	238.02	238.14	238.21	238.24
Chainage	850.00	860.00	862.13	864.31	868.72	870.00	874.31	875.00	879.12	880.00	884.31	890.00	892.00	897.00	900.00	902.00	908.35	910.00	913.35	918.35	920.00	920.59

ProfileRoadCaroline Ave__AlignmentFrom850.000To920.586Scales: H 1 in500V 1 in250

CAROLINE AVENUE LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
VERTICAL SCALE 1:250

0 5 10 15 20 25m
HORIZONTAL SCALE 1:500

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend
EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX ---W--- PROP ——W——
SEWER EX ---S--- PROP ——S——
GAS MAINS EX ---G--- PROP ——G——
TELECOM CABLES AND PITS EX ---T--- PROP ——T——

Design: Date: JULY 2020
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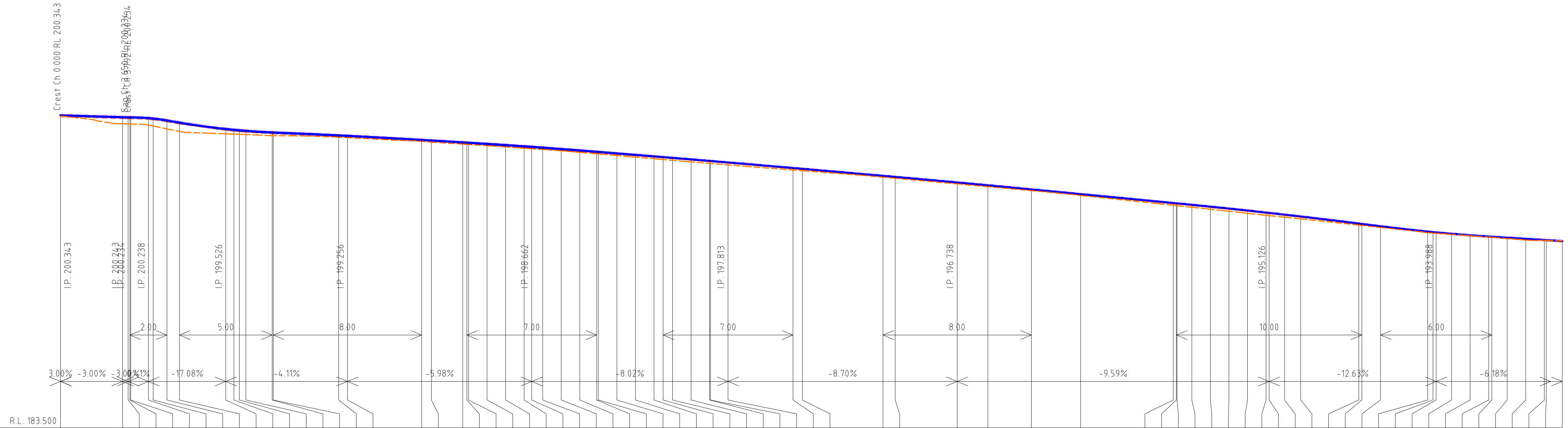
Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805
mail@jamisoncraig.com.au
Phone: 5995 4388
Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
CAROLINE AVE LONGITUDINAL SECTION

Drawing No CCD. 20021 62
Sheet 62 OF 91
Rev A
CCD Ref. No. 20021



Super Elevation: L3.000% R-3.000%

REB Levels	200.261	200.160	200.151	200.152	200.152	200.112	200.088	199.985	199.871	199.525	199.481	199.454	199.425	199.341	199.338
LEB Levels	200.426	200.325	200.316	200.317	200.317	200.277	200.253	200.150	200.036	199.690	199.646	199.619	199.590	199.506	199.503
Cut Fill	-0.043	-0.353	-0.353	-0.356	-0.358	-0.377	-0.402	-0.454	-0.469	-0.256	-0.228	-0.212	-0.196	-0.172	-0.170
Design Levels	200.343	200.243	200.234	200.234	200.234	200.194	200.170	200.067	199.953	199.607	199.563	199.536	199.507	199.423	199.421
Existing Levels	200.30	199.89	199.88	199.88	199.88	199.82	199.77	199.61	199.48	199.35	199.33	199.32	199.31	199.25	199.25
Chainage	0.00	3.35	3.65	3.75	3.79	4.75	5.00	5.75	6.41	8.91	9.35	9.65	10.00	11.41	11.47

REB Levels	199.179	199.155	198.935	198.903	198.803	198.790	198.785	198.725	198.662	198.596	198.569	198.528	198.457	198.383	198.314
LEB Levels	199.344	199.320	199.100	199.068	198.967	198.954	198.948	198.886	198.820	198.751	198.721	198.678	198.603	198.525	198.451
Cut Fill	-0.090	-0.091	-0.075	-0.078	-0.087	-0.088	-0.089	-0.094	-0.096	-0.097	-0.097	-0.096	-0.093	-0.102	-0.109
Design Levels	199.261	199.238	199.017	198.986	198.885	198.871	198.866	198.805	198.740	198.673	198.644	198.602	198.529	198.453	198.381
Existing Levels	199.17	199.15	198.94	198.91	198.80	198.78	198.78	198.71	198.64	198.58	198.55	198.51	198.44	198.35	198.27
Chainage	15.00	15.47	19.47	20.00	21.69	21.91	22.00	23.00	24.00	25.00	25.41	26.00	27.00	28.00	28.91

REB Levels	198.307	198.229	198.152	198.075	198.037	197.997	197.917	197.836	197.833	197.754	197.455	197.411	197.033	196.975	196.676
LEB Levels	198.444	198.361	198.279	198.197	198.156	198.114	198.031	197.946	197.943	197.862	197.563	197.519	197.141	197.083	196.784
Cut Fill	-0.110	-0.117	-0.123	-0.128	-0.130	-0.132	-0.135	-0.136	-0.136	-0.135	-0.110	-0.105	-0.073	-0.075	-0.079
Design Levels	198.374	198.294	198.214	198.134	198.094	198.053	197.972	197.890	197.887	197.808	197.509	197.465	197.087	197.029	196.730
Existing Levels	198.26	198.18	198.09	198.01	197.96	197.92	197.84	197.75	197.75	197.67	197.40	197.36	197.01	196.95	196.65
Chainage	29.00	30.00	31.00	32.00	32.49	33.00	34.00	35.00	35.04	35.99	39.49	40.00	44.34	45.00	48.34

REB Levels	196.523	196.301	196.046	195.567	195.552	195.548	195.470	195.370	195.267	195.161	195.052	195.034	194.940	194.840	194.461
LEB Levels	196.631	196.409	196.154	195.675	195.660	195.656	195.578	195.478	195.375	195.269	195.160	195.142	195.048	194.948	194.569
Cut Fill	-0.076	-0.067	-0.072	-0.124	-0.126	-0.126	-0.133	-0.142	-0.148	-0.151	-0.147	-0.145	-0.138	-0.130	-0.086
Design Levels	196.577	196.355	196.100	195.621	195.606	195.602	195.524	195.424	195.321	195.215	195.106	195.088	194.994	194.894	194.515
Existing Levels	196.50	196.29	196.03	195.50	195.48	195.48	195.39	195.28	195.17	195.06	194.96	194.94	194.86	194.76	194.43
Chainage	50.00	52.34	55.00	60.00	60.16	60.20	61.00	62.00	63.00	64.00	65.00	65.16	66.00	66.87	70.00

REB Levels	194.441	194.313	194.027	193.999	193.983	193.908	193.828	193.759	193.749	193.697	193.636	193.574	193.567	193.514
LEB Levels	194.549	194.421	194.135	194.107	194.091	194.016	193.936	193.867	193.857	193.805	193.744	193.682	193.675	193.622
Cut Fill	-0.084	-0.064	-0.061	-0.053	-0.048	-0.035	-0.029	-0.032	-0.034	-0.046	-0.067	-0.027	-0.023	+0.007
Design Levels	194.495	194.367	194.081	194.053	194.037	193.962	193.882	193.813	193.803	193.751	193.690	193.628	193.621	193.568
Existing Levels	194.41	194.30	194.02	194.00	193.99	193.93	193.85	193.78	193.77	193.71	193.62	193.60	193.60	193.58
Chainage	70.16	71.17	73.71	74.00	74.17	75.00	76.00	77.00	77.17	78.00	79.00	80.00	80.10	80.97

ProfileRoadRouen Rd__AlignmentFrom0.000To80.970Scales: H 1 in250V 1 in250

ROUEN ROAD LONGITUDINAL SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

VERTICAL SCALE 1:250

HORIZONTAL SCALE 1:250

Date:	Rev.	Amendments:
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Legend
EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..
WATER MAINS AND FITTINGS EX / PROP
SEWER EX / PROP
GAS MAINS EX / PROP
TELECOM CABLES AND PITS EX / PROP

Design: Date: JULY 2020
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Datum: AHD
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Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805
mail@jamisoncraig.com.au
Phone: 5995 4388
Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
ROUEN ROAD LONGITUDINAL SECTION

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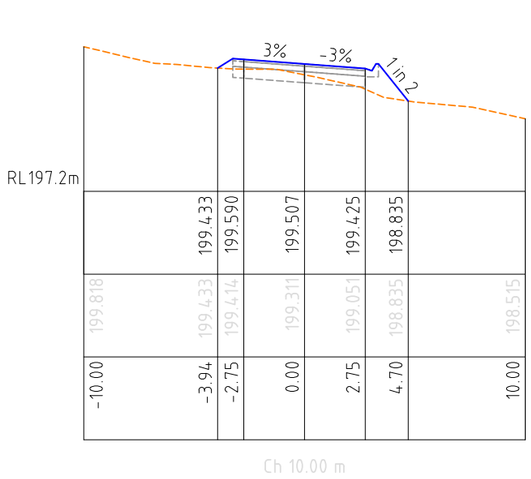
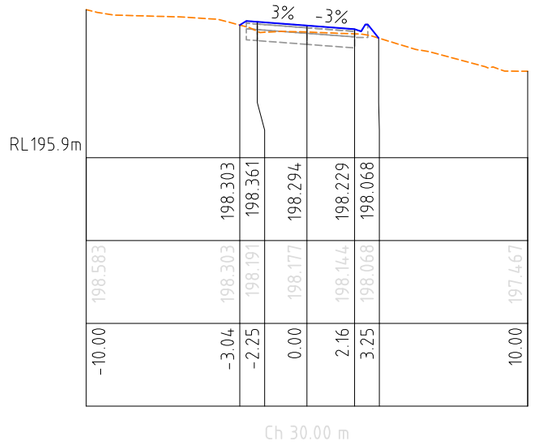
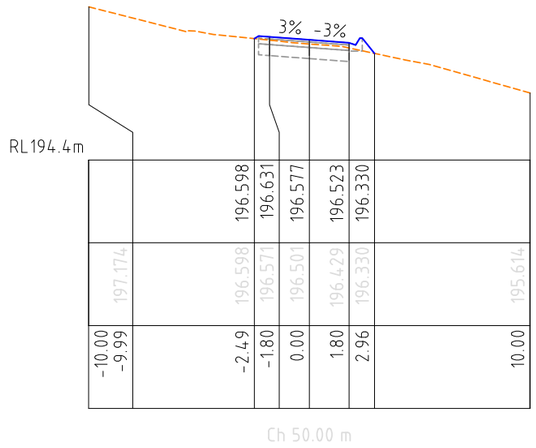
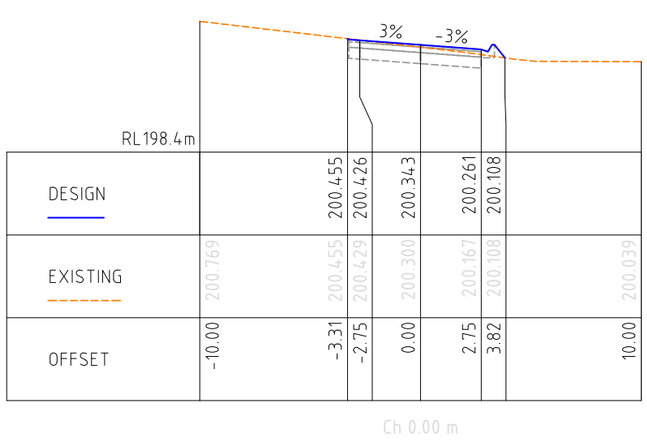
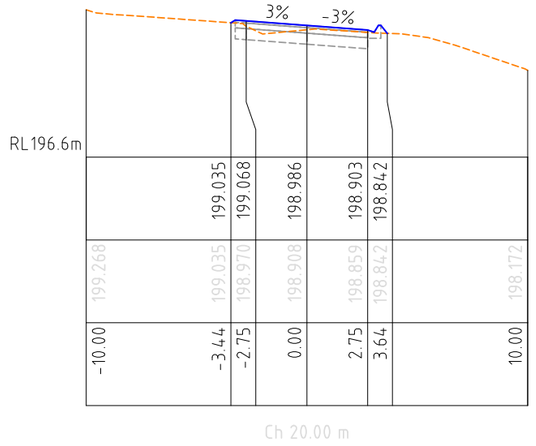
Sheet 63 OF 91
Rev A
CCD Ref. No. 20021

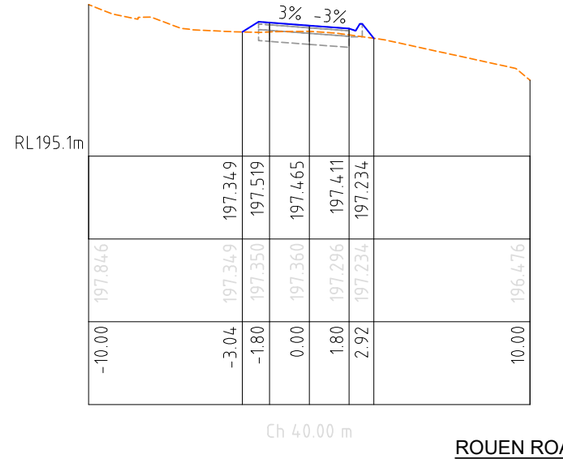












ROUEN ROAD CROSS SECTION

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m

HORIZONTAL SCALE 1:250

0 1 2 3 4 5m

VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL

PROPOSED KERB AND CHANNEL

EXISTING DRAINS AND PITS

PROPOSED DRAINS AND PITS

PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—

SEWER EX —S—O PROP —S—

GAS MAINS EX —G— PROP —G—

TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: JULY 2020	Scale: AS SHOWN
Checked: Date: JULY 2020	Approved Date:
Datum: AHD	MELWAY Ref:

Craig Civil Design

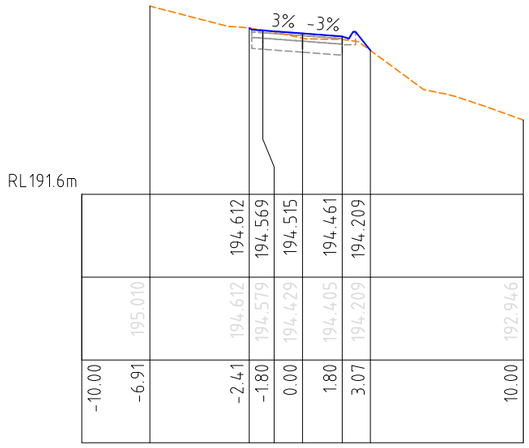
Civil Engineering Consultants & Project Managers

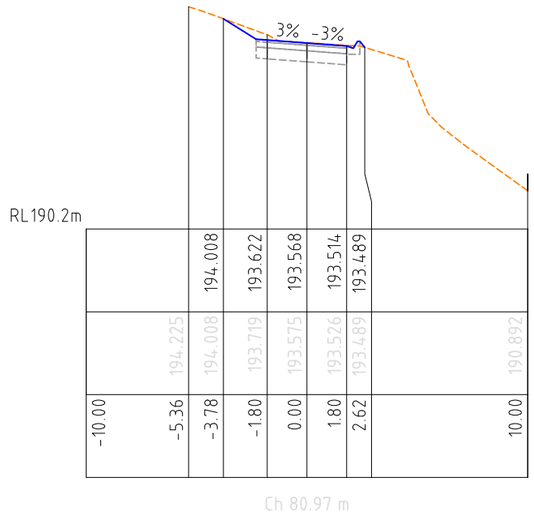
A.C.N. 159 212 245

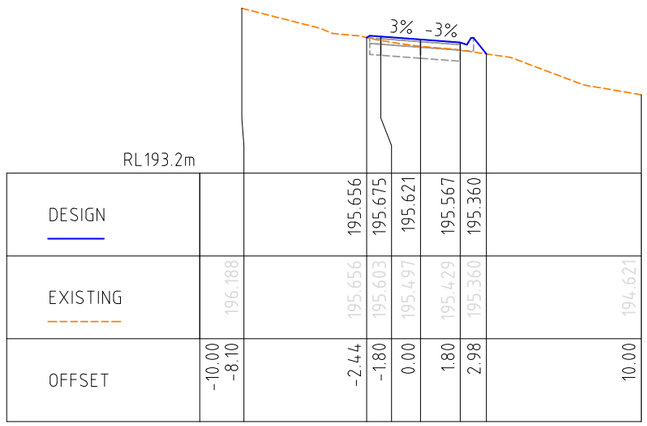
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388

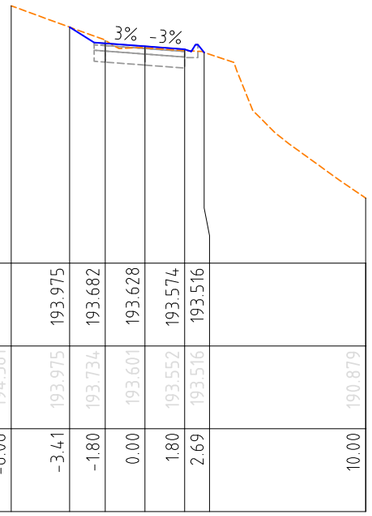
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021 64
CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Sheet 64 OF 91
	Rev A
ROUEN ROAD CROSS SECTION	CCD Ref. No. 20021









ROUEN ROAD CROSS SECTION

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m

HORIZONTAL SCALE 1:250

0 1 2 3 4 5m

VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS	EX	---W---
	PROP	——W——
SEWER	EX	---S---O
	PROP	——S——▶
GAS MAINS	EX	---G---
	PROP	——G——
TELECOM CABLES AND PITS	EX	---T--▭
	PROP	——T——▭

Design: Date:	JULY 2020
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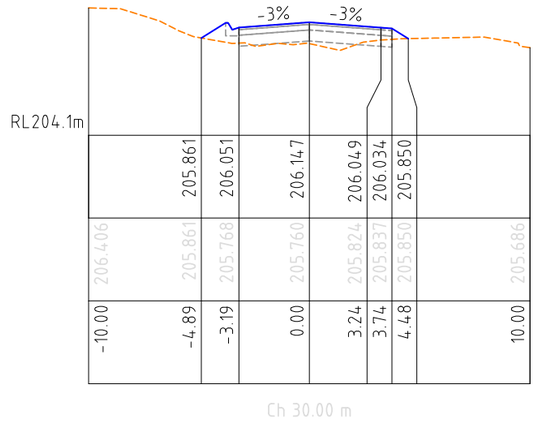
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

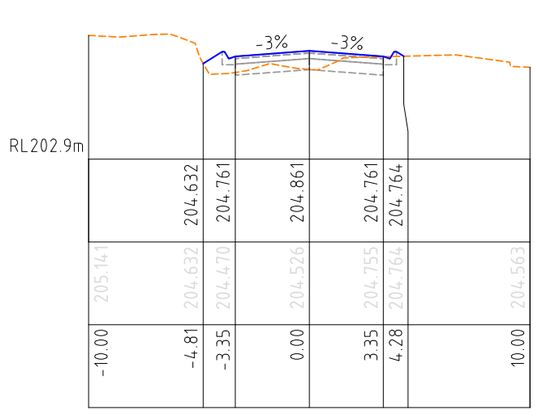
CARDINIA SHIRE COUNCIL

CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS

ROUEN ROAD CROSS SECTION

Drawing No CCD.	20021 65
Sheet	65 OF 91
Rev	A
CCD Ref. No.	20021





BORONIA CRESCENT CROSS SECTION

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m

HORIZONTAL SCALE 1:250

0 1 2 3 4 5m

VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
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Legend

EXISTING KERB AND CHANNEL

PROPOSED KERB AND CHANNEL

EXISTING DRAINS AND PITS

PROPOSED DRAINS AND PITS

PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX ---W--- PROP ——W——

SEWER EX ---S--O PROP ——S——

GAS MAINS EX ---G--- PROP ——G——

TELECOM CABLES AND PITS EX ---T--▭ PROP ——T——▭

Design: Date: JULY 2020	Scale: AS SHOWN
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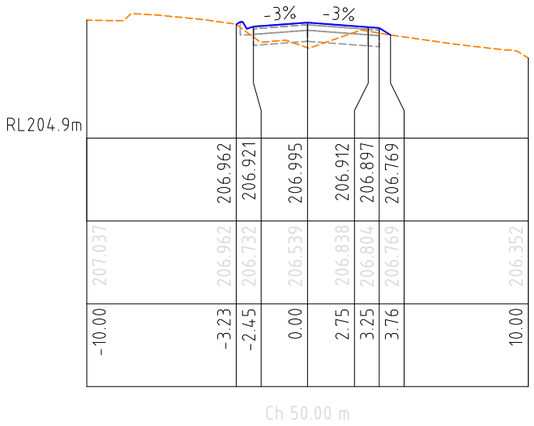
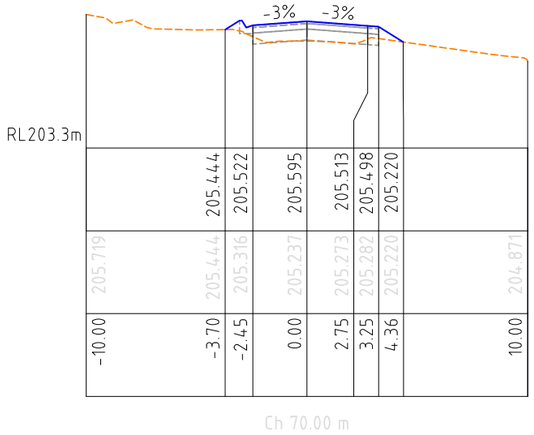
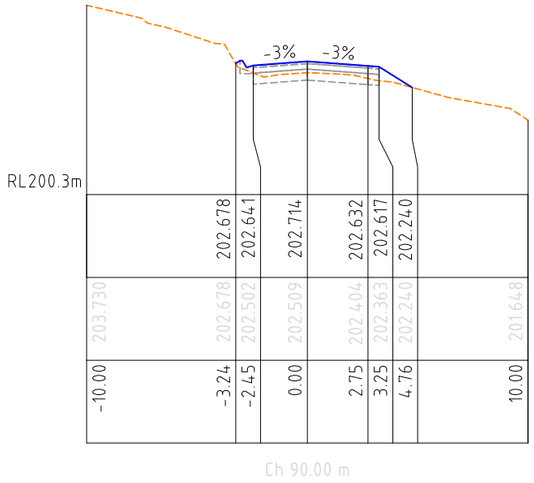
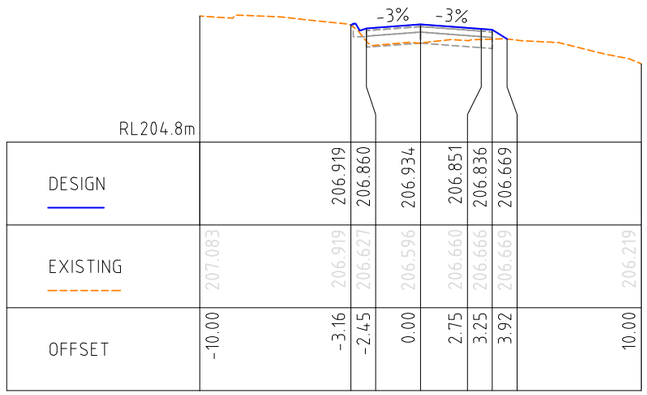
mail@jamisoncraig.com.au Fax: 5995 5330

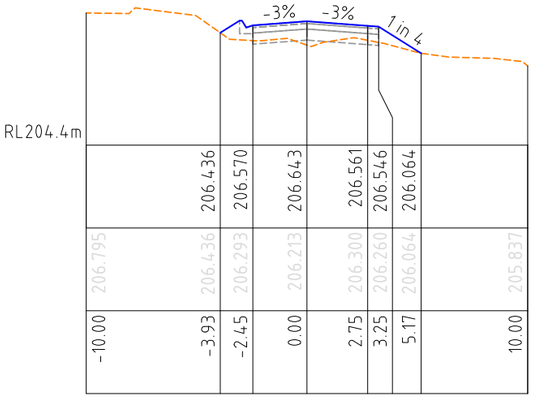
CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021 66
CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Sheet 66 OF 91
	Rev A
BORONIA CRESCENT CROSS SECTION	CCD Ref. No. 20021

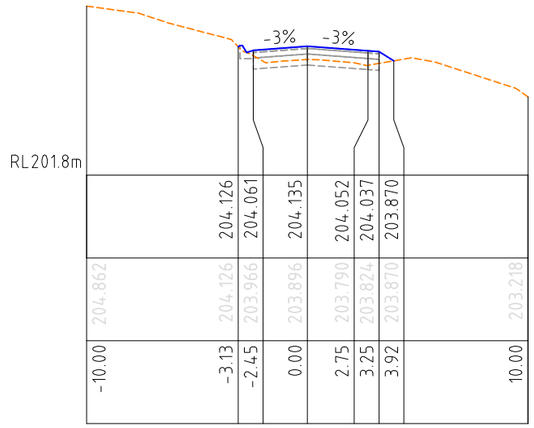












BORONIA CRESCENT CROSS SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

0 1 2 3 4 5m
VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
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Legend

EXISTING KERB AND CHANNEL	WATER MAINS AND FITTINGS	EX ---W---
PROPOSED KERB AND CHANNEL		PROP ——W——
EXISTING DRAINS AND PITS	SEWER	EX ---S---O
PROPOSED DRAINS AND PITS		PROP ——S——▶
PROPOSED PROPERTY INLET P..I..	GAS MAINS	EX ---G---
		PROP ——G——
	TELECOM CABLES AND PITS	EX ---T---▭
		PROP ——T——▭

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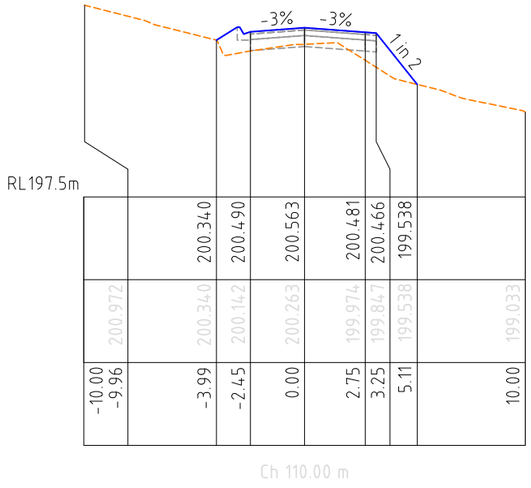
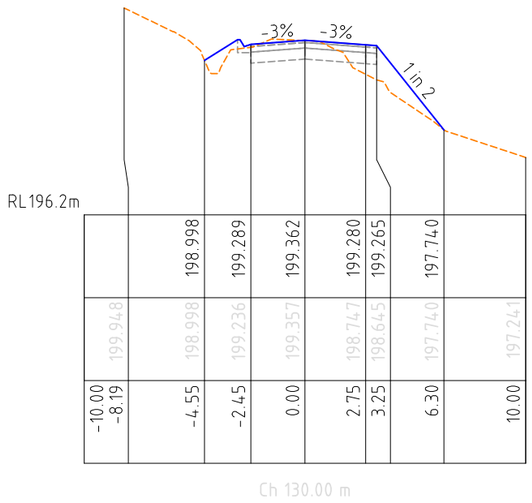
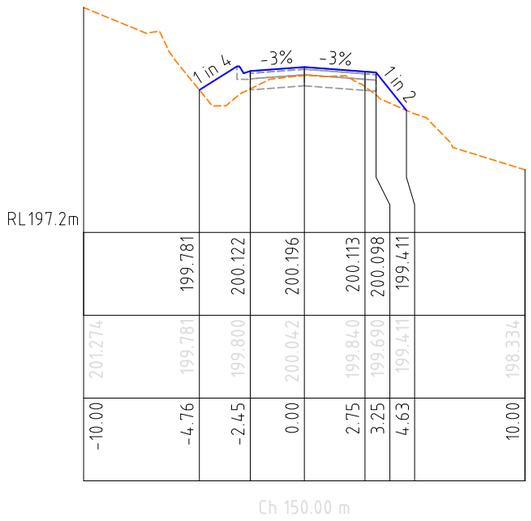
mail@jamisoncraig.com.au Fax: 5995 5330

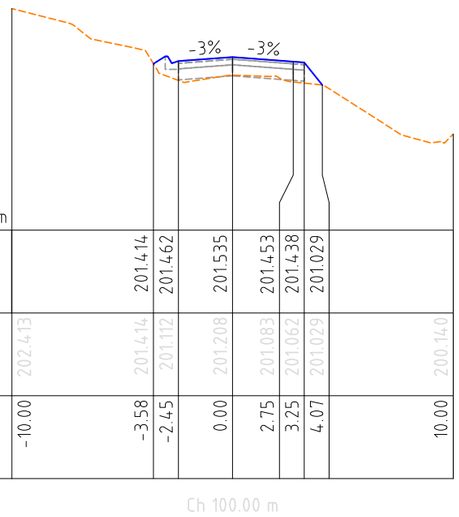
CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
BORONIA CRESCENT CROSS SECTION

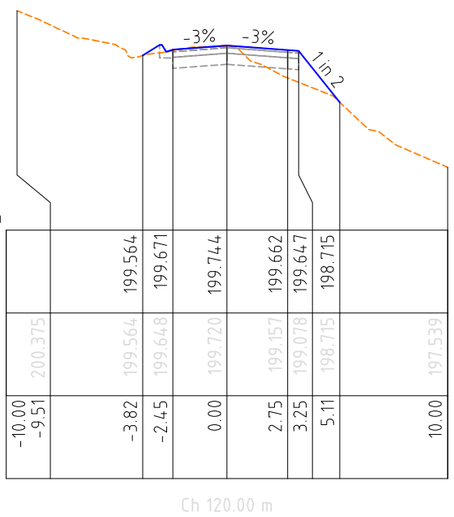
Drawing No CCD.	20021 67
Sheet	67 OF 91
Rev	A
CCD Ref. No.	20021

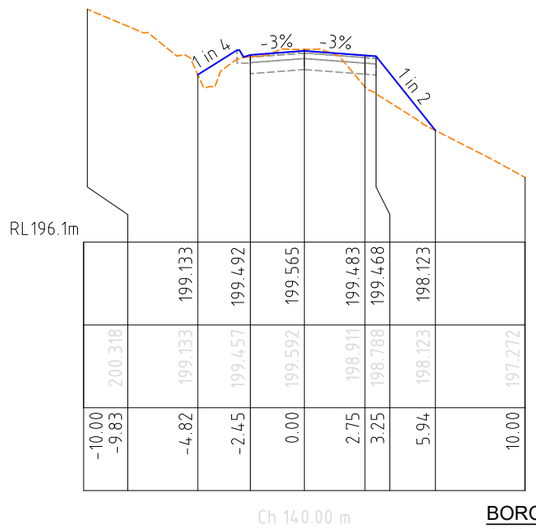












BORONIA CRESCENT CROSS SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

0 1 2 3 4 5m
VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
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Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS	EX	---W---
	PROP	——W——
SEWER	EX	---S---○
	PROP	——S——●
GAS MAINS	EX	---G---
	PROP	——G——
TELECOM CABLES AND PITS	EX	---T---▭
	PROP	——T——▭

Design: Date: JULY 2020	Scale: AS SHOWN
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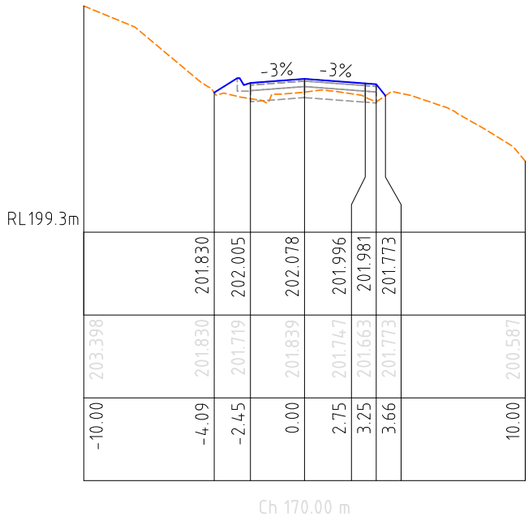
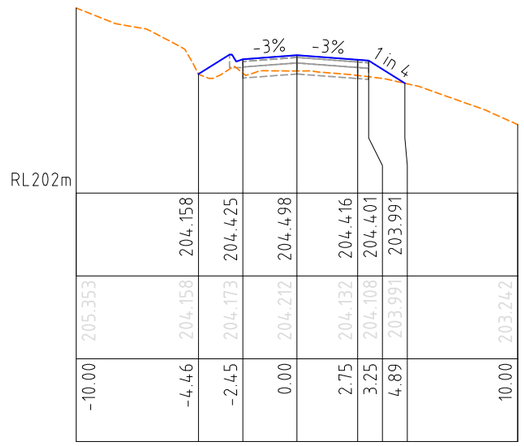
Civil Engineering Consultants & Project Managers
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021 68
CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Sheet 68 OF 91
BORONIA CRESCENT CROSS SECTION	Rev A
	CCD Ref. No. 20021



Ch 170.00 m



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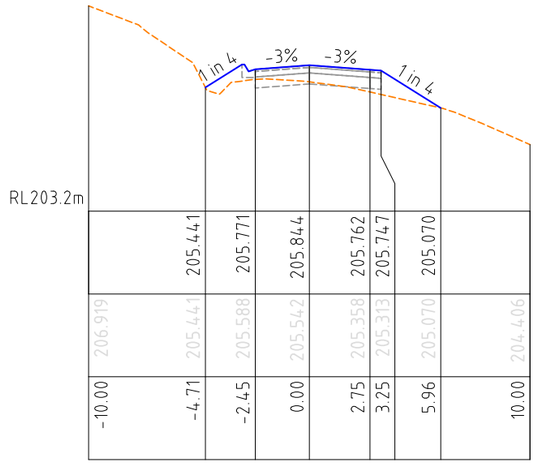

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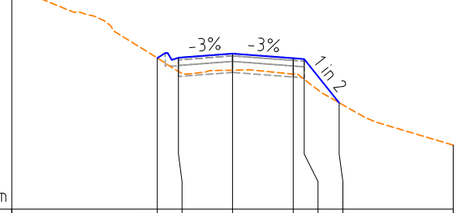

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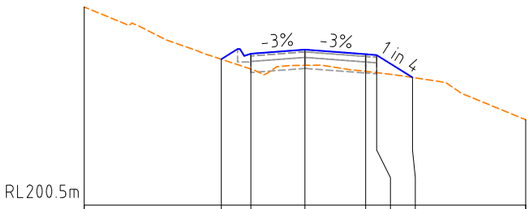

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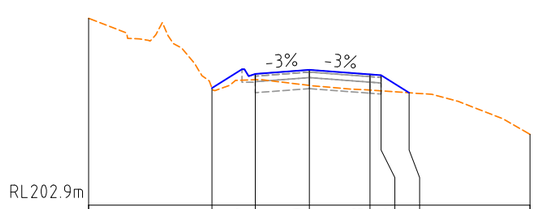

Ch 200.00 m

BORONIA CRESCENT CROSS SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

0 1 2 3 4 5m
VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX W PROP W
SEWER EX S PROP S
GAS MAINS EX G PROP G
TELECOM CABLES AND PITS EX T PROP T

Design: Date: JULY 2020	Scale: AS SHOWN
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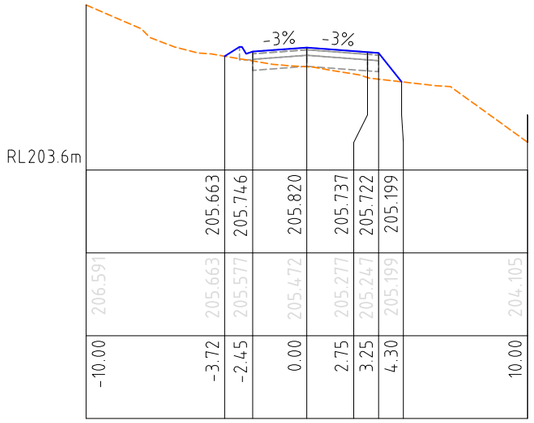
CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
BORONIA CRESCENT CROSS SECTION

Drawing No CCD.	20021 69
Sheet	69 OF 91
Rev	A
CCD Ref. No.	20021



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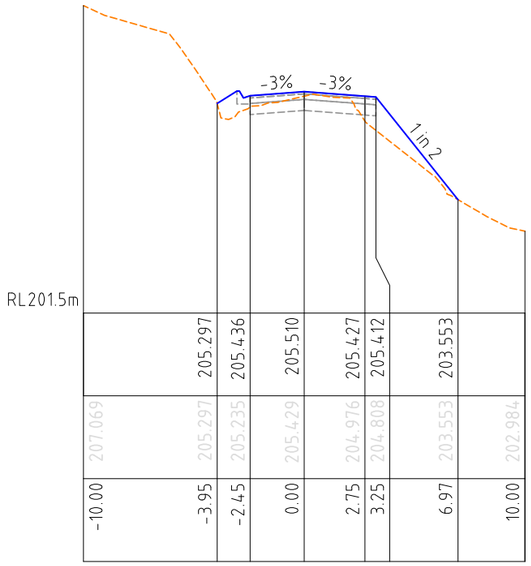
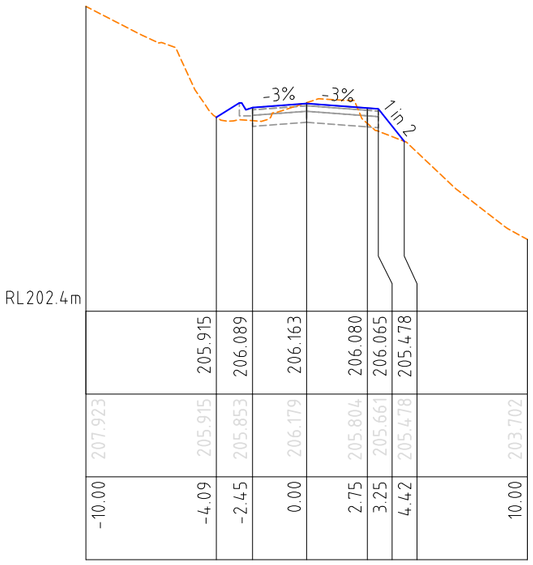


Ch 250.00 m



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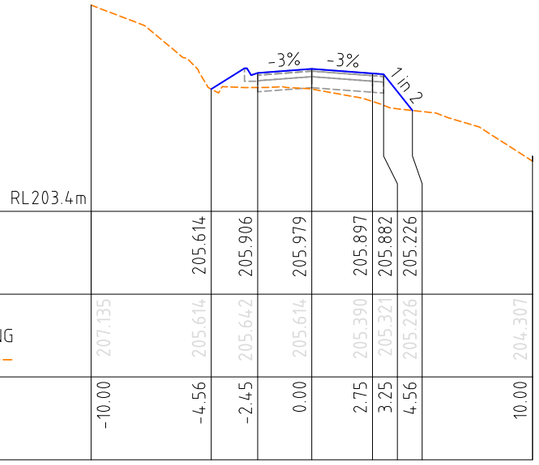

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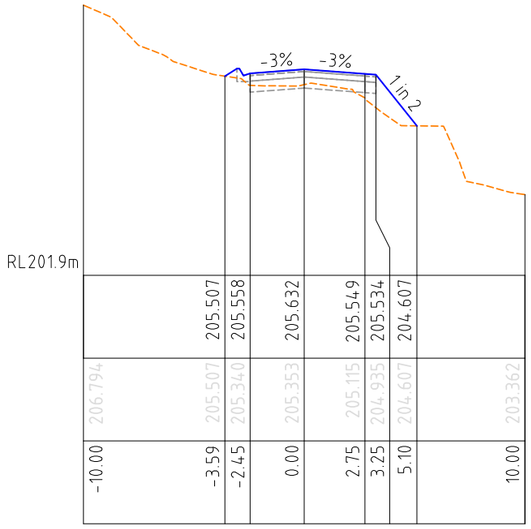

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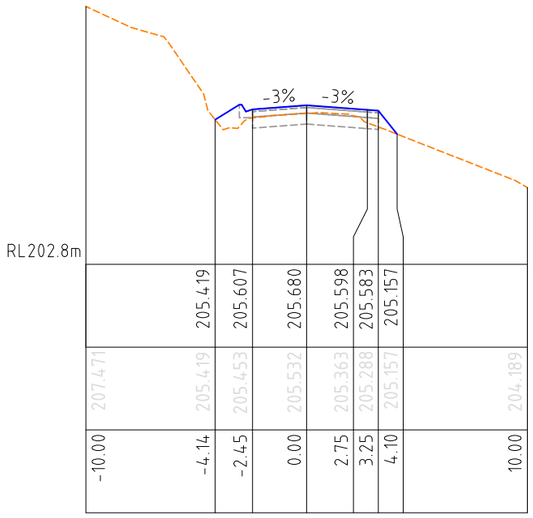

Ch 260.00 m

BORONIA CRESCENT CROSS SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

0 1 2 3 4 5m
VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
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Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS	EX	W
	PROP	W
SEWER	EX	S
	PROP	S
GAS MAINS	EX	G
	PROP	G
TELECOM CABLES AND PITS	EX	T
	PROP	T

Design: Date:	JULY 2020	Scale:	AS SHOWN
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COCKATOO
ROAD RECONSTRUCTION WORKS
BORONIA CRESCENT CROSS SECTION

Drawing No CCD.	20021 70
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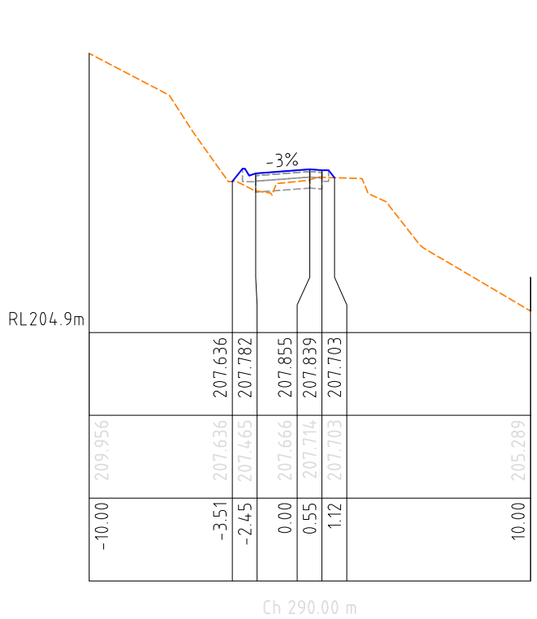
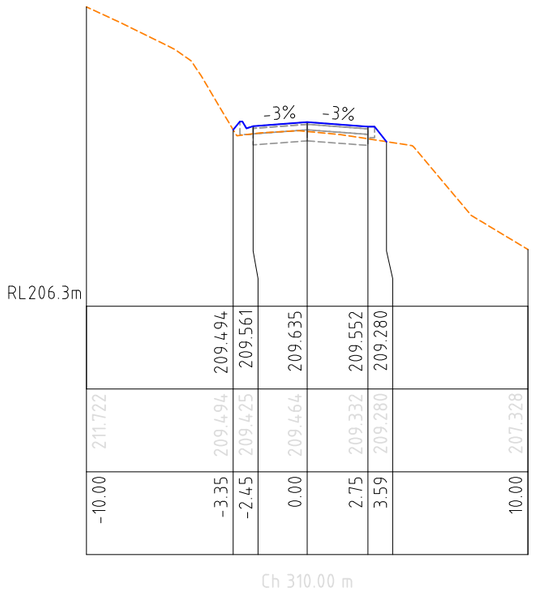
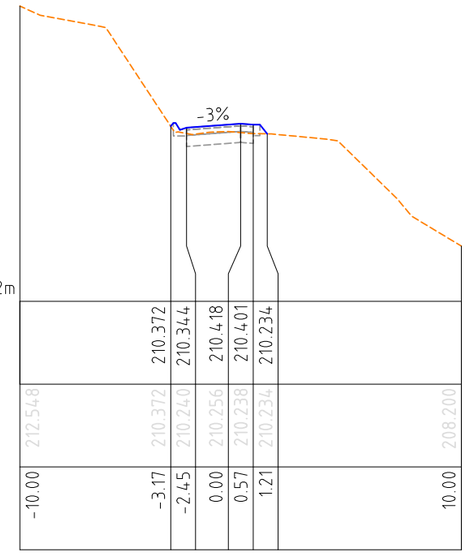
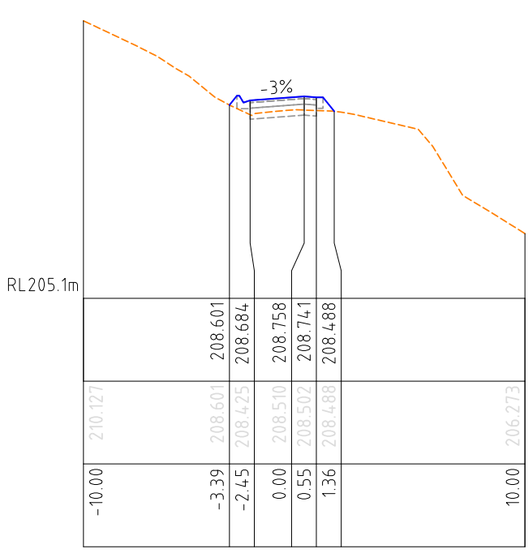
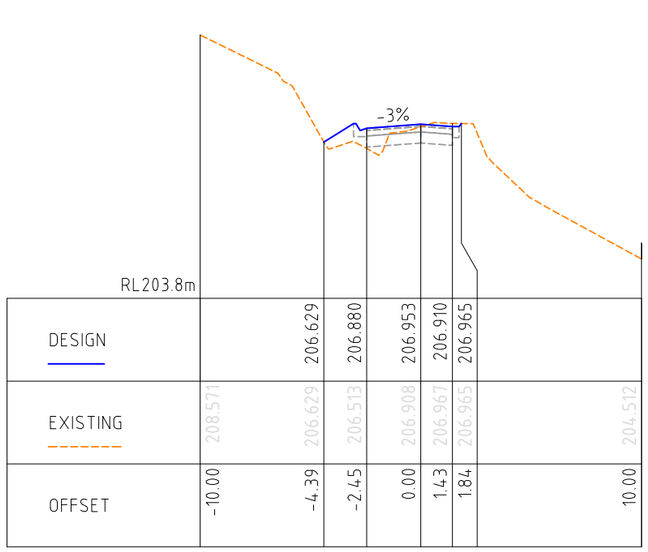
CCD Ref. No.	20021











BORONIA CRESCENT CROSS SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

0 1 2 3 4 5m
VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

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BORONIA CRESCENT CROSS SECTION

Drawing No CCD.	20021 71
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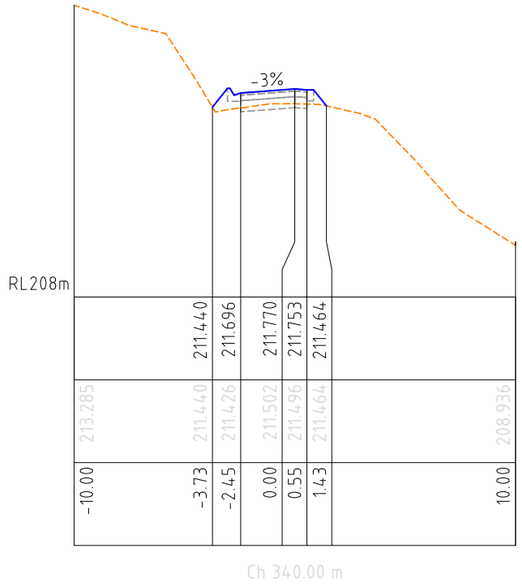

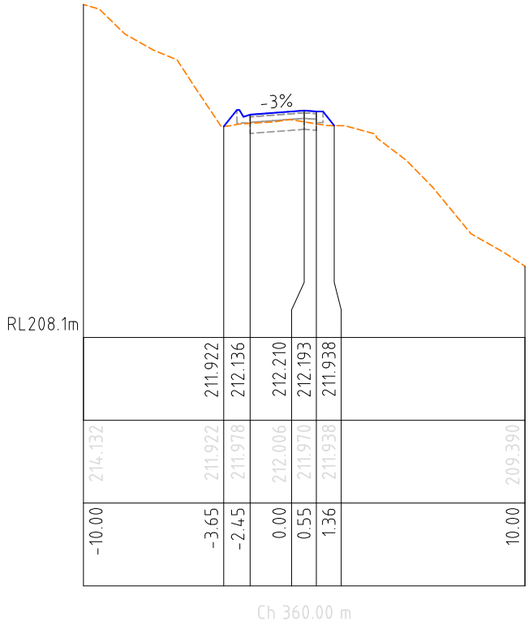

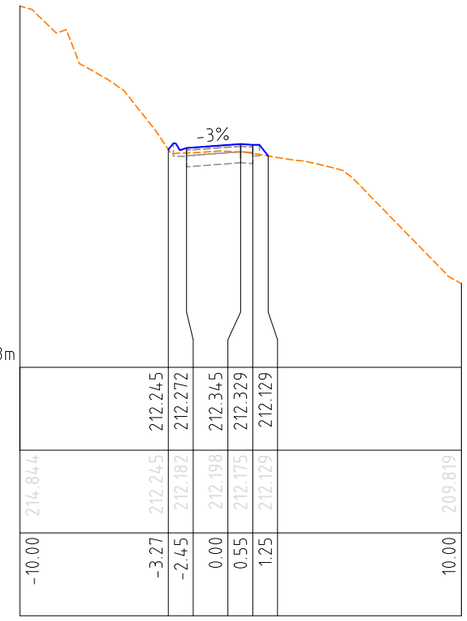

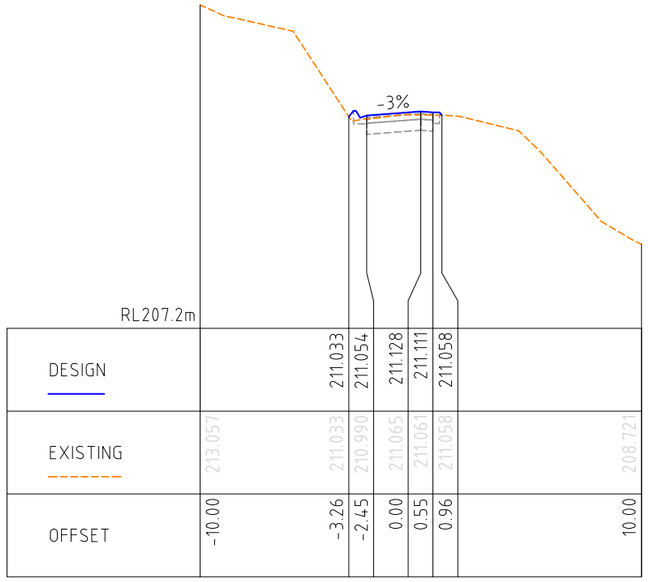

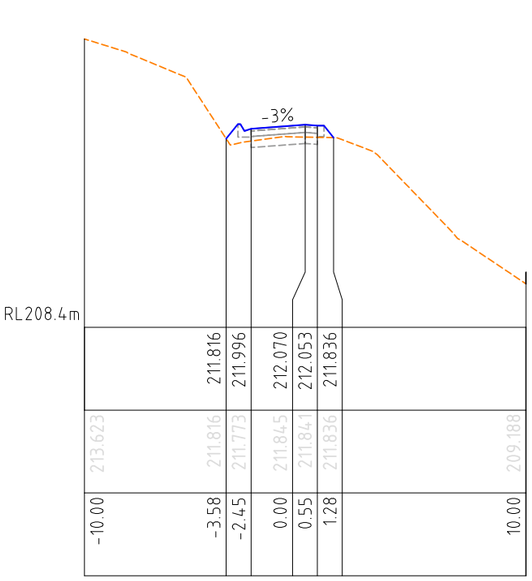

BORONIA CRESCENT CROSS SECTION

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

HORIZONTAL SCALE 1:250

VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX W PROP W
SEWER EX S PROP S
GAS MAINS EX G PROP G
TELECOM CABLES AND PITS EX T PROP T

Design: Date: JULY 2020	Scale: AS SHOWN
Checked: Date: JULY 2020	Approved Date:
Datum: AHD	MELWAY Ref:

Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
BORONIA CRESCENT CROSS SECTION

Drawing No CCD. 20021 72
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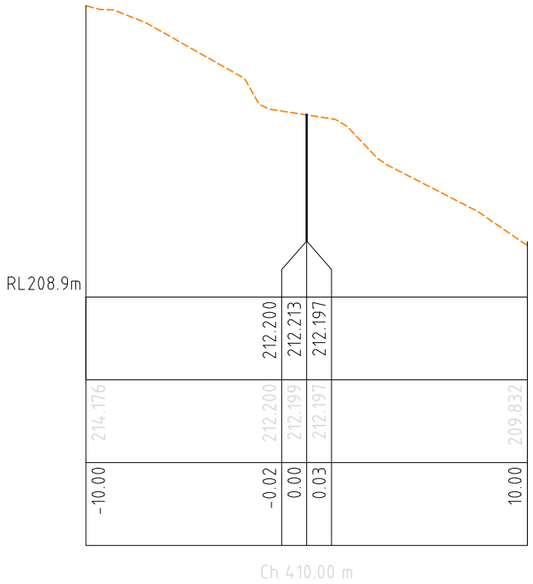
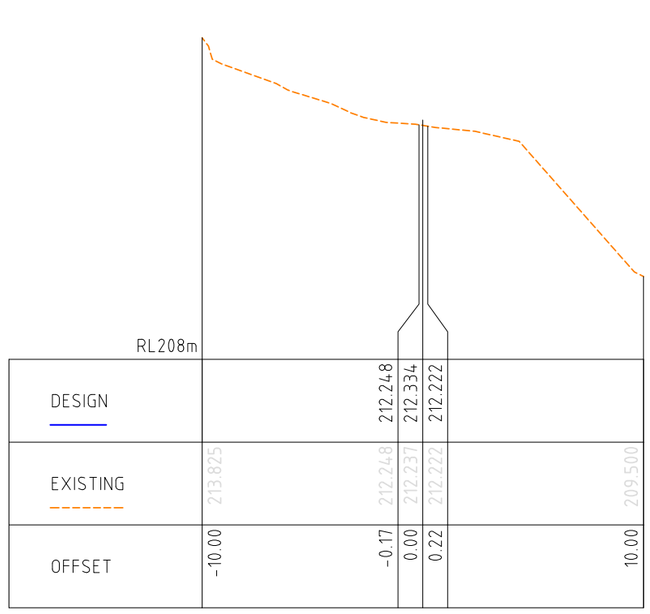
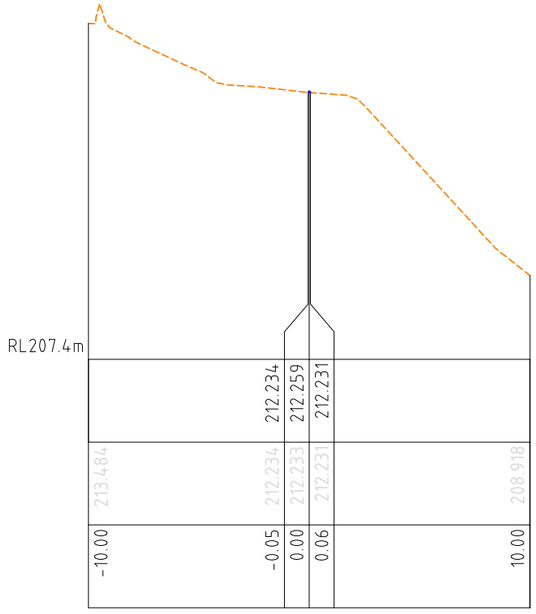
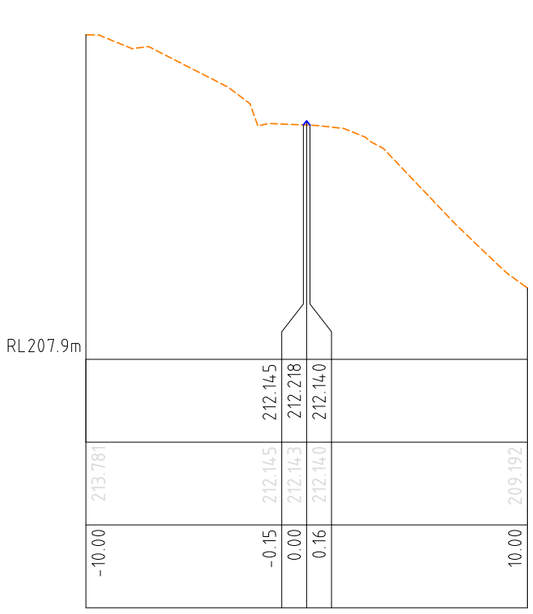
Rev A
CCD Ref. No. 20021









BORONIA CRESCENT CROSS SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

0 1 2 3 4 5m
VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P...I...

WATER MAINS AND FITTINGS	EX	W
	PROP	W
SEWER	EX	S
	PROP	S
GAS MAINS	EX	G
	PROP	G
TELECOM CABLES AND PITS	EX	T
	PROP	T

Design: Date:	JULY 2020	Scale:	AS SHOWN
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P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
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CARDINIA SHIRE COUNCIL	
CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	
BORONIA CRESCENT CROSS SECTION	
Drawing No CCD.	20021 73
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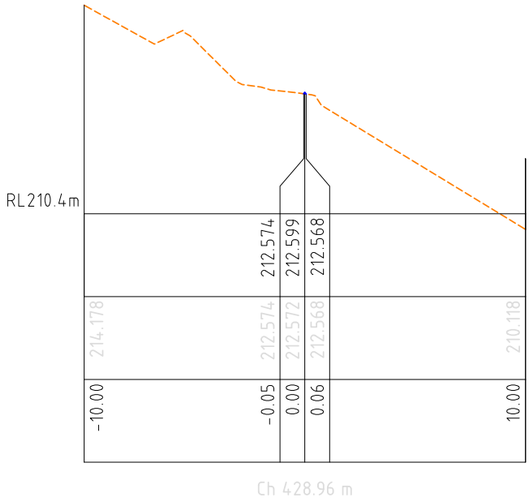

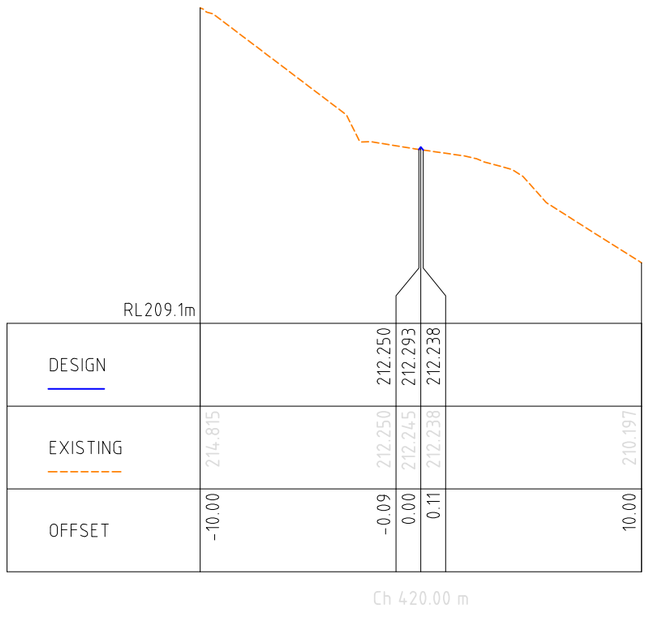

BORONIA CRESCENT CROSS SECTION

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

HORIZONTAL SCALE 1:250

VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
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EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX W PROP W
SEWER EX S PROP S
GAS MAINS EX G PROP G
TELECOM CABLES AND PITS EX T PROP T

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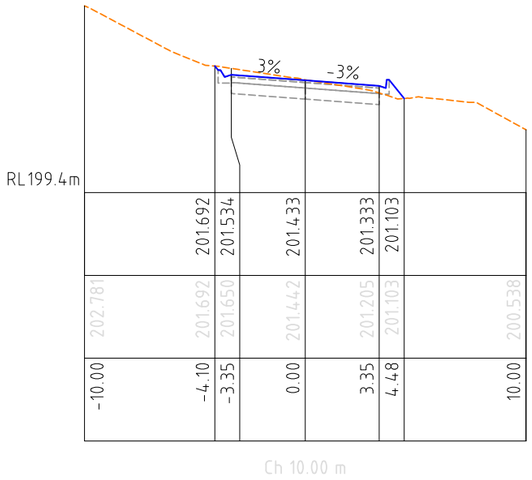
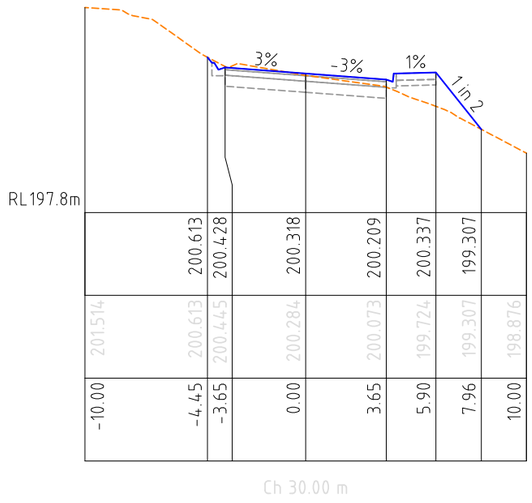
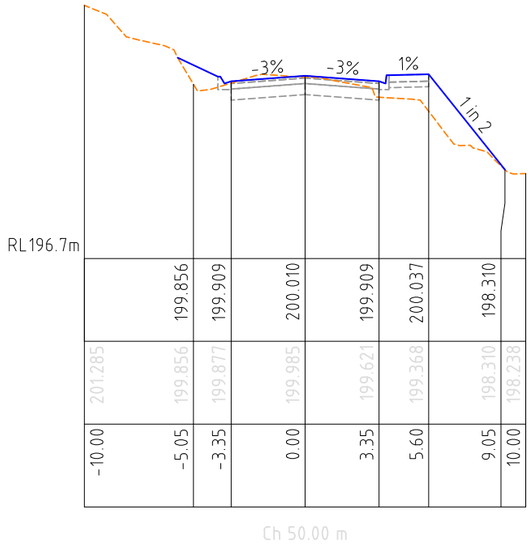
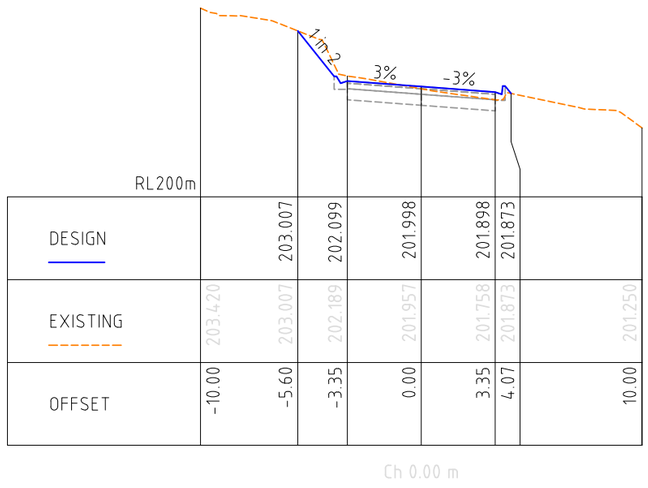
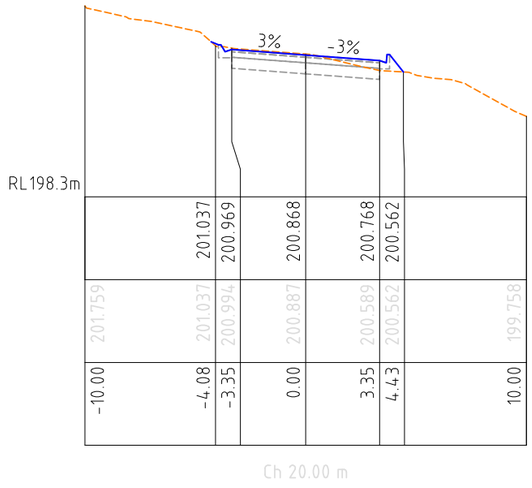
CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021 74
CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Sheet 74 OF 91
	Rev A
BORONIA CRESCENT CROSS SECTION	CCD Ref. No. 20021

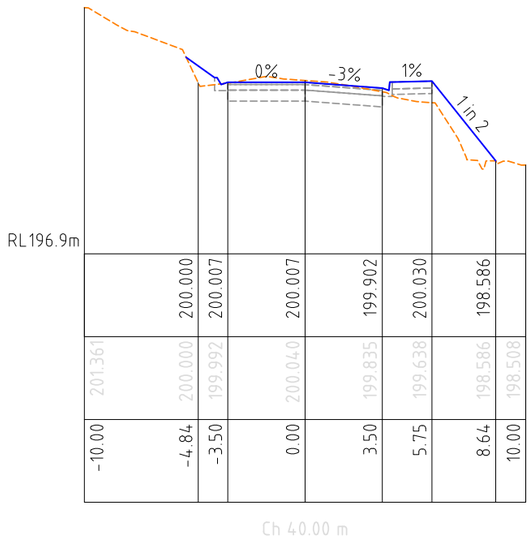












CAROLINE AVENUE CROSS SECTION

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m

HORIZONTAL SCALE 1:250

0 1 2 3 4 5m

VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
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Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: JULY 2020	Scale: AS SHOWN
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mail@jamisoncraig.com.au Fax: 5995 5330

CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
CAROLINE AVENUE CROSS SECTION

Drawing No CCD.	20021 75
Sheet	75 OF 91
Rev	A
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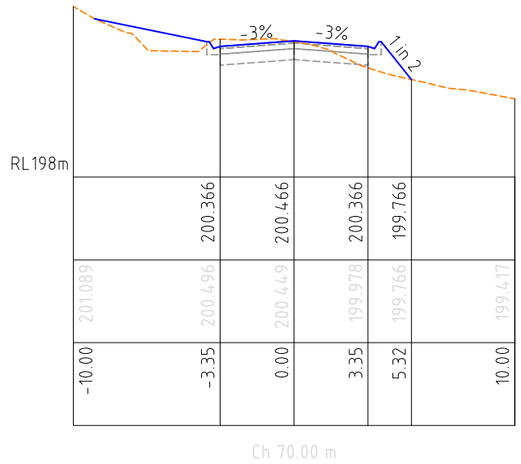

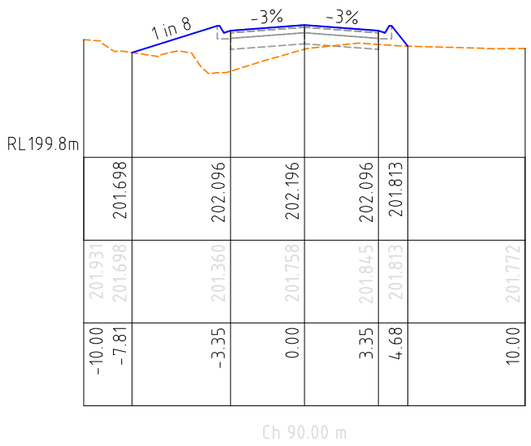

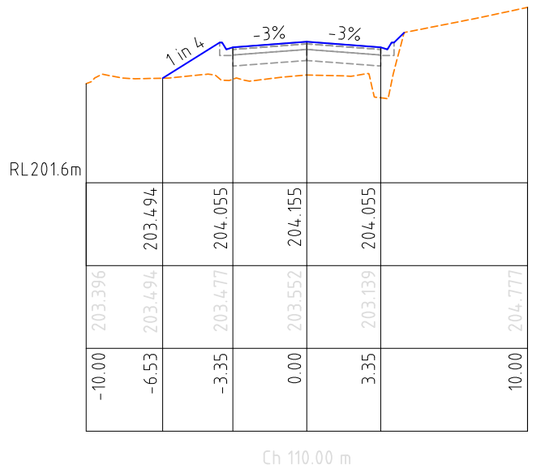

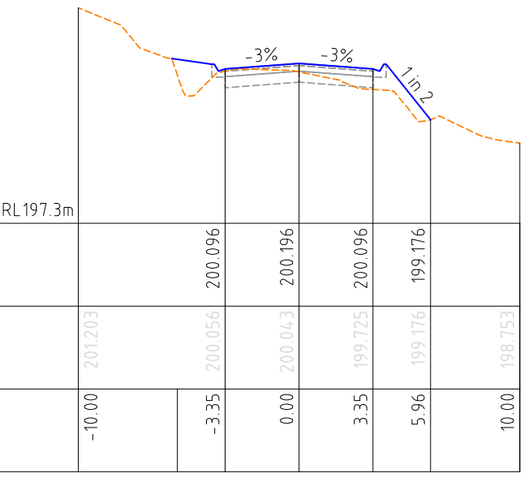

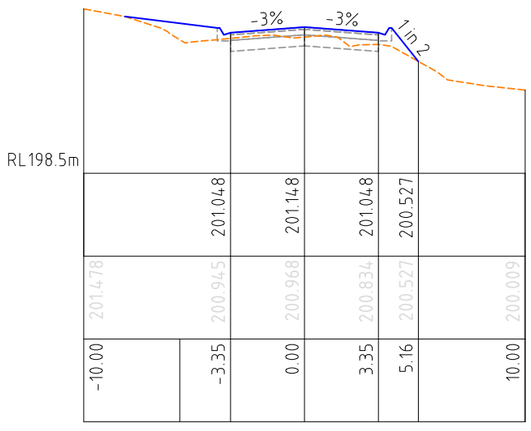

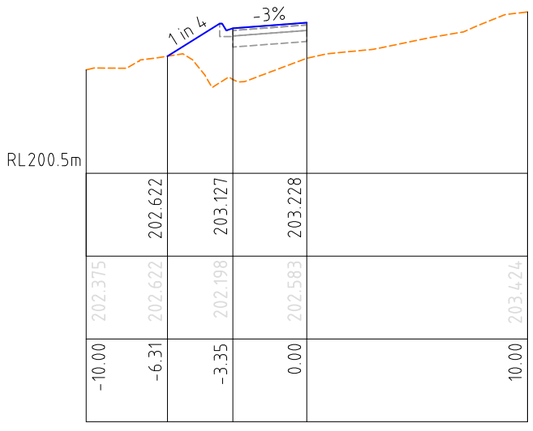

CAROLINE AVENUE CROSS SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

0 1 2 3 4 5m
VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
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EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

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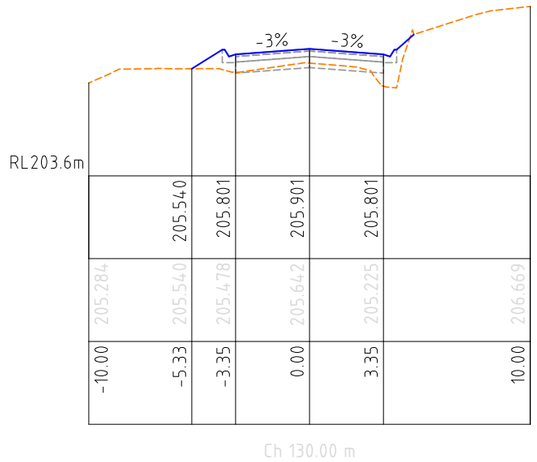
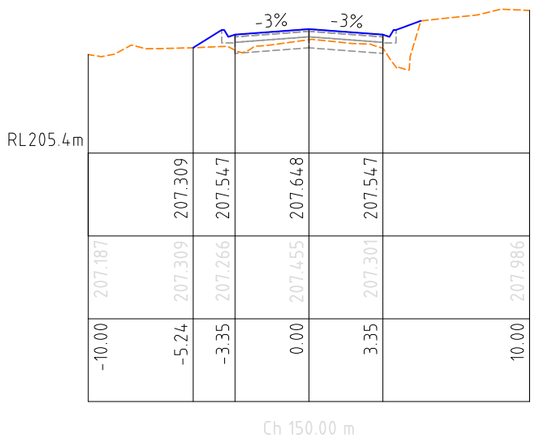
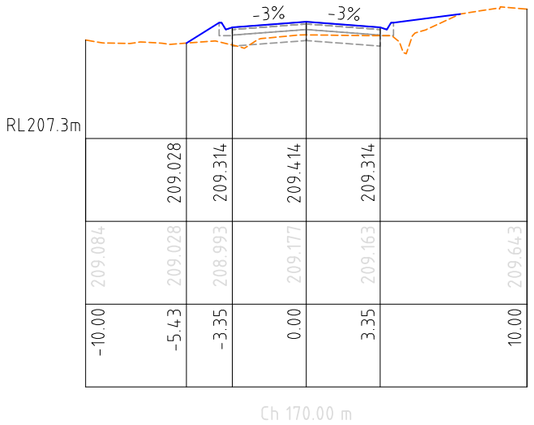
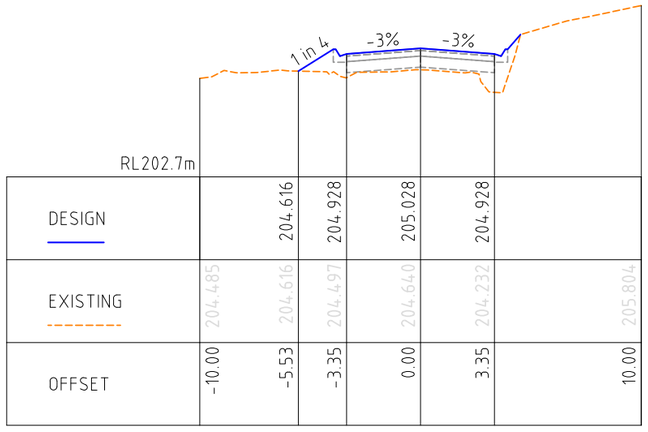
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

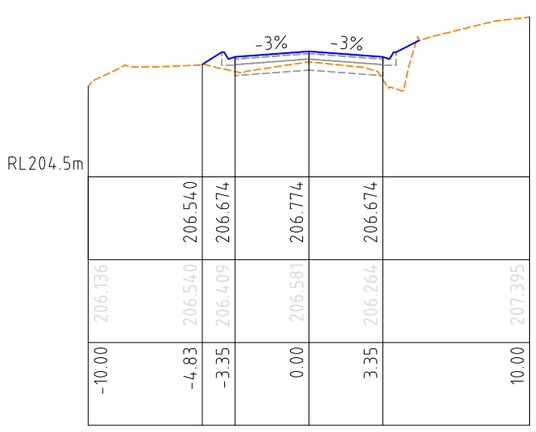
CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021 76
CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Sheet 76 OF 91
CAROLINE AVENUE CROSS SECTION	Rev A
	CCD Ref. No. 20021

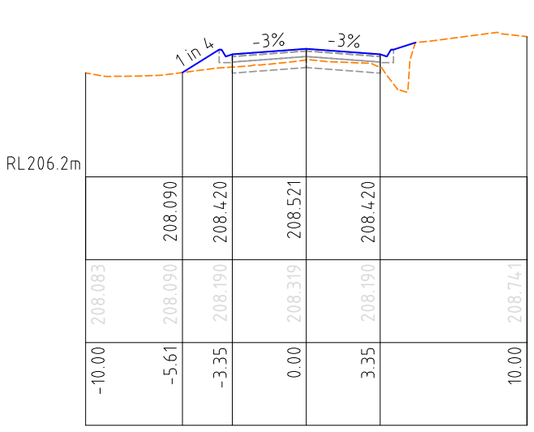












CAROLINE AVENUE CROSS SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

0 1 2 3 4 5m
VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
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Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX W PROP W
SEWER EX S PROP S
GAS MAINS EX G PROP G
TELECOM CABLES AND PITS EX T PROP T

Design: Date: JULY 2020	Scale: AS SHOWN	CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021 77
Checked: Date: JULY 2020	Approved Date:	CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Sheet 77 OF 91
Datum: AHD	MELWAY Ref:		Rev A
		CAROLINE AVENUE CROSS SECTION	CCD Ref. No. 20021

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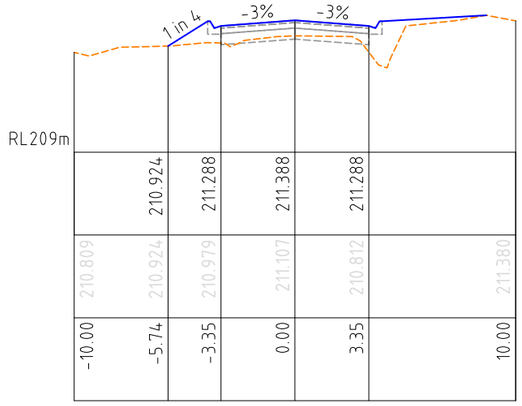

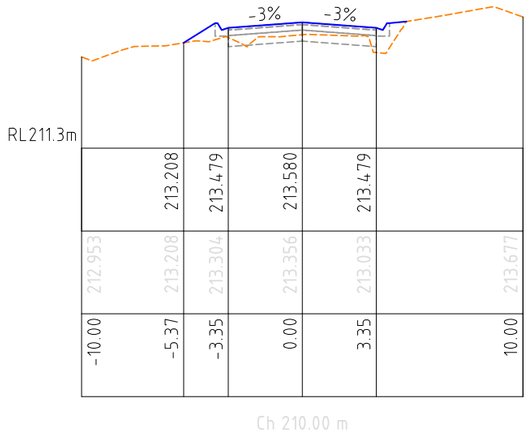

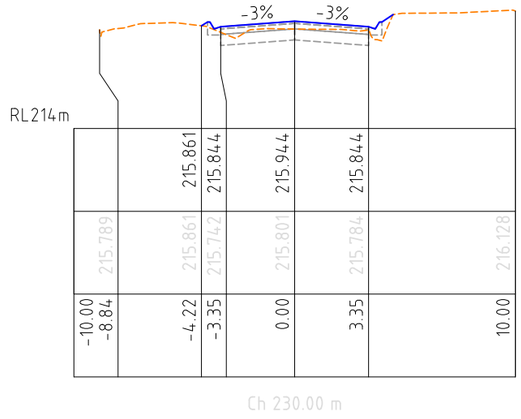

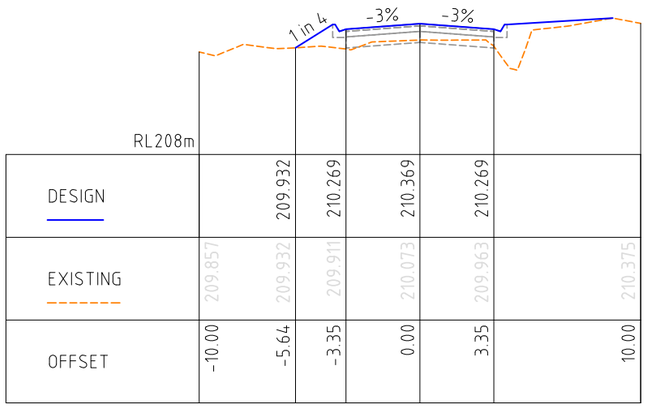

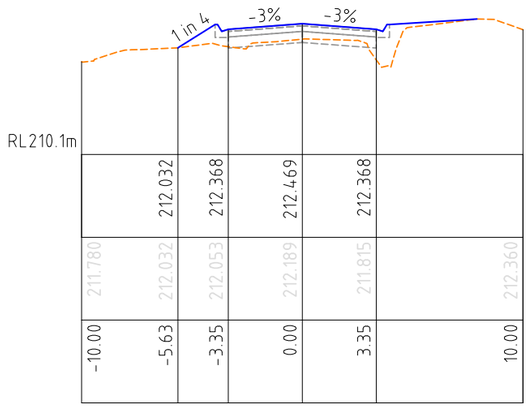

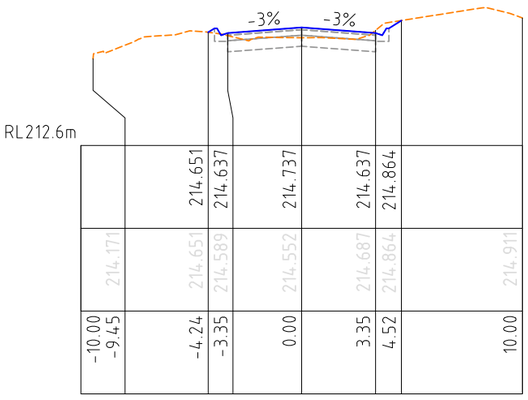

CAROLINE AVENUE CROSS SECTION

PRELIMINARY
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HORIZONTAL SCALE 1:250

0 1 2 3 4 5m
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PROPOSED DRAINS AND PITS
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WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S— PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

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COCKATOO
ROAD RECONSTRUCTION WORKS
CAROLINE AVENUE CROSS SECTION

Drawing No CCD.	20021 78
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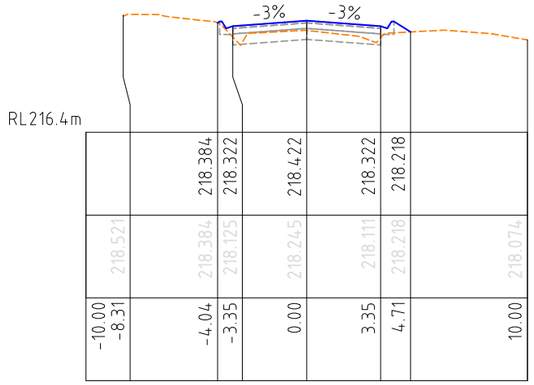
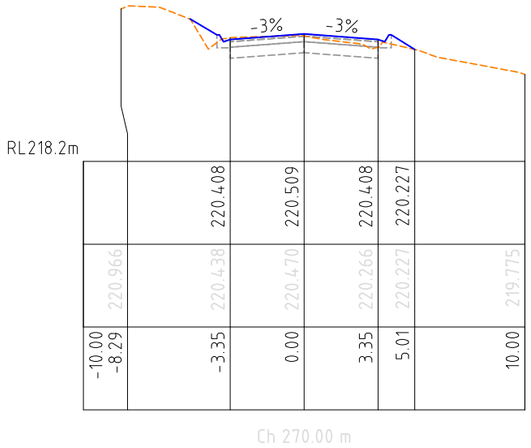
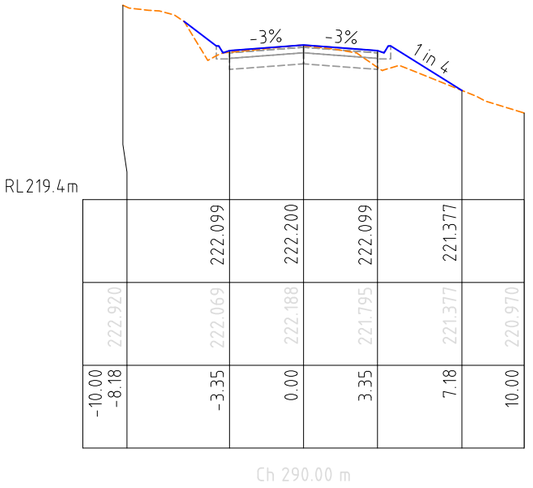
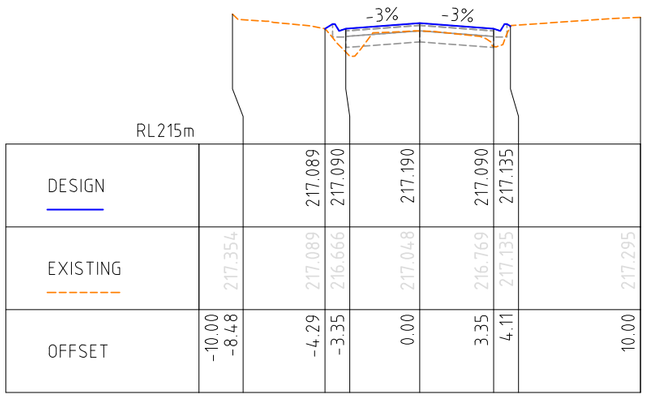
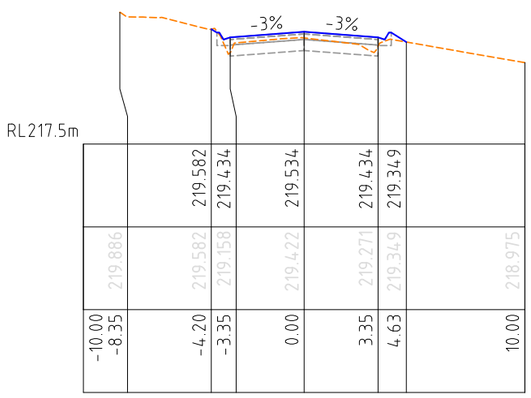
Rev	A
CCD Ref. No.	20021

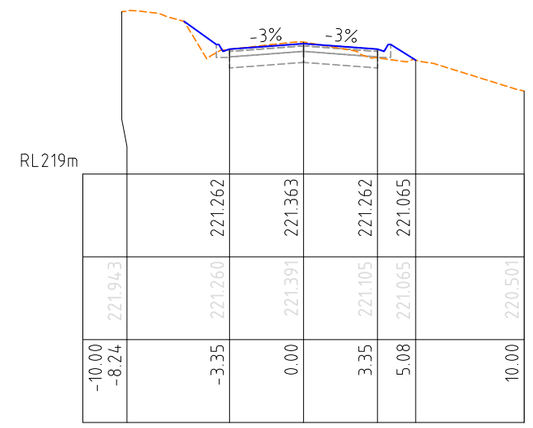












CAROLINE AVENUE CROSS SECTION

PRELIMINARY
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0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

0 1 2 3 4 5m
VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
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PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX ---W--- PROP ——W——
SEWER EX ---S---O PROP ——S——
GAS MAINS EX ---G--- PROP ——G——
TELECOM CABLES AND PITS EX ---T---▭ PROP ——T——▭

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MELWAY Ref:

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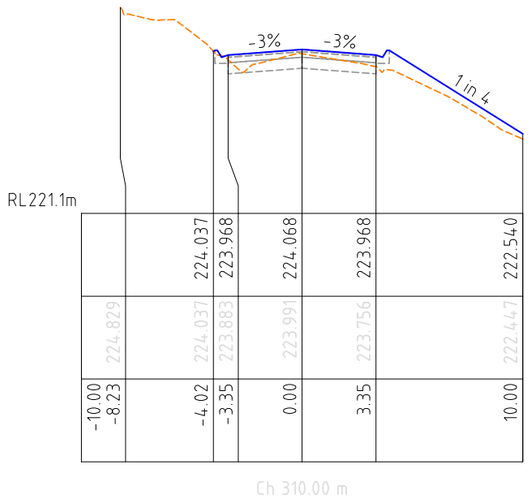
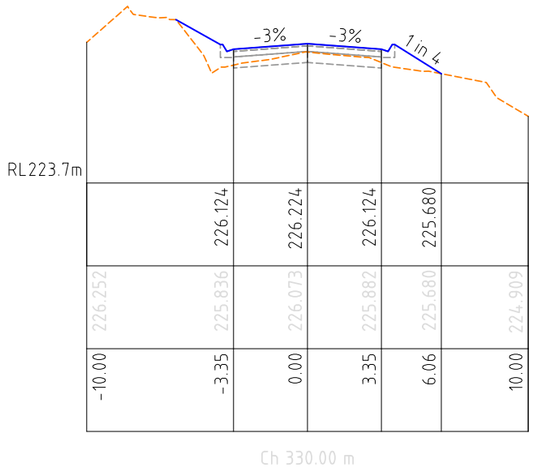
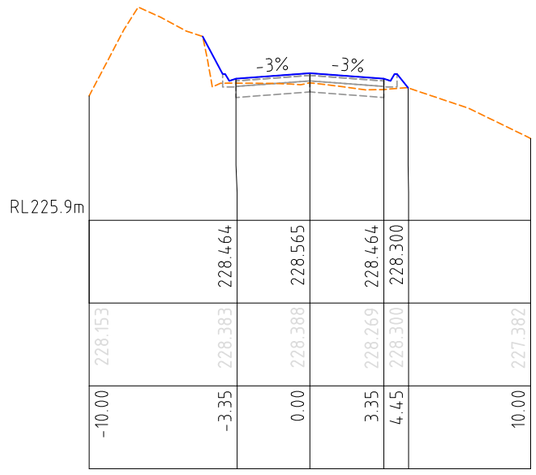
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

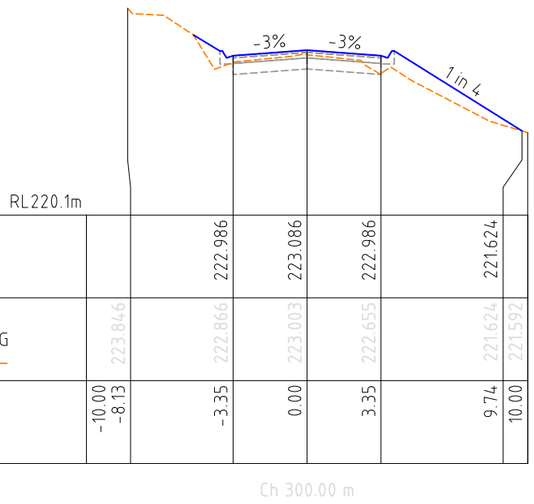
CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
CAROLINE AVENUE CROSS SECTION

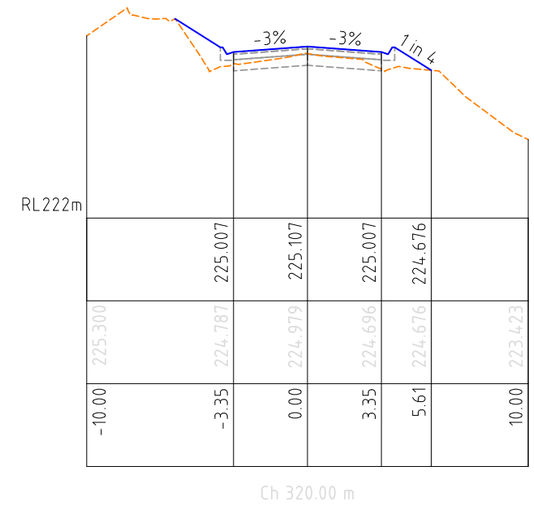
Drawing No CCD. 20021 79
Sheet 79 OF 91
Rev A
CCD Ref. No. 20021

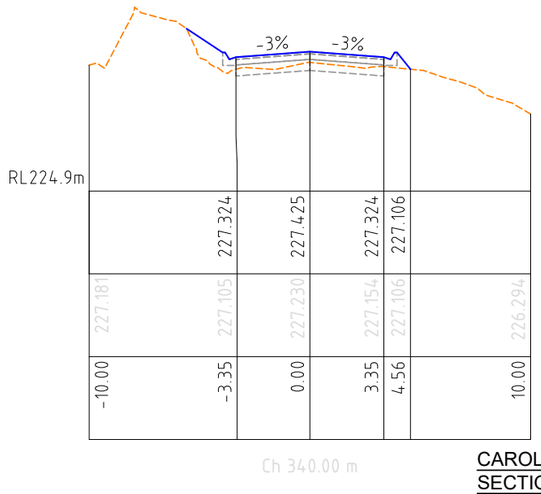












CAROLINE AVENUE CROSS SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

0 1 2 3 4 5m
VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: JULY 2020	Scale: AS SHOWN
Checked: Date: JULY 2020	Approved Date:
Datum: AHD	MELWAY Ref:

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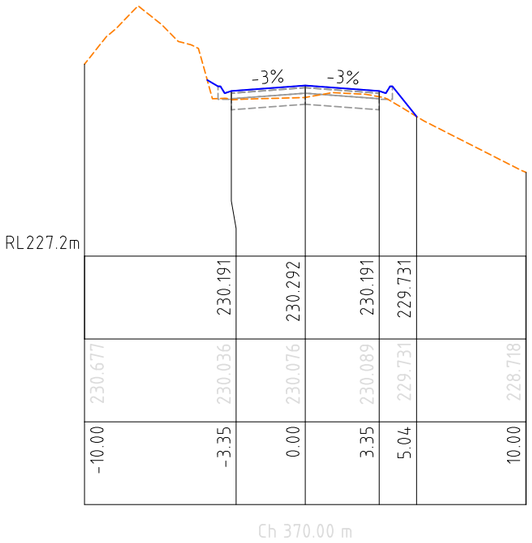
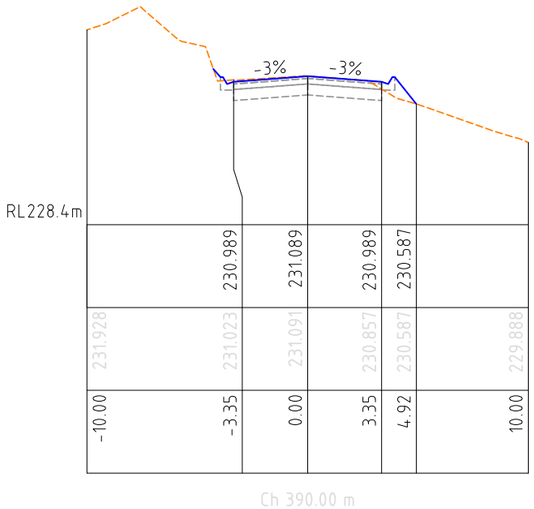
CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
CAROLINE AVENUE CROSS SECTION

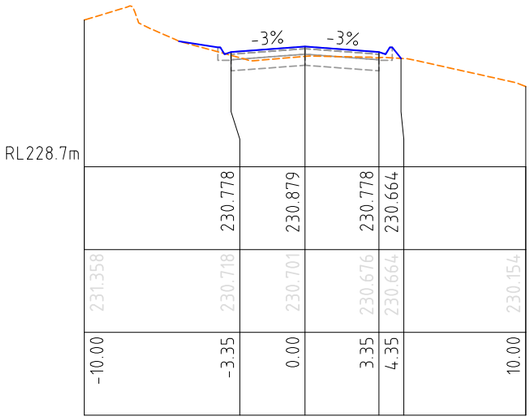
Drawing No CCD.	20021 80
Sheet	80 OF 91
Rev	A
CCD Ref. No.	20021



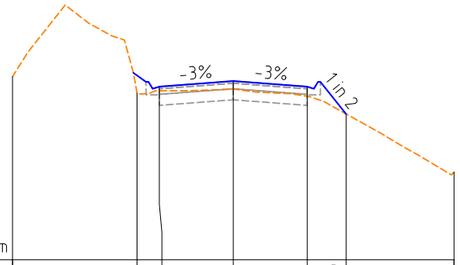
Ch 370.00 m



Ch 390.00 m



Ch 410.00 m



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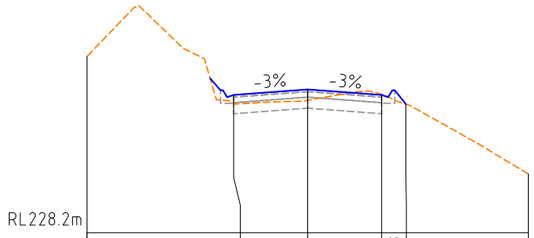
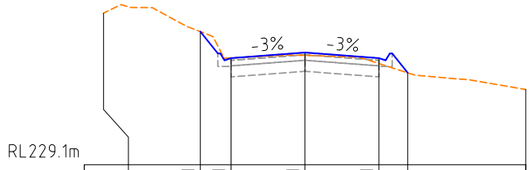


Ch 380.00 m



Ch 400.00 m

CAROLINE AVENUE CROSS SECTION

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m

HORIZONTAL SCALE 1:250

0 1 2 3 4 5m

VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
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Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S— PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

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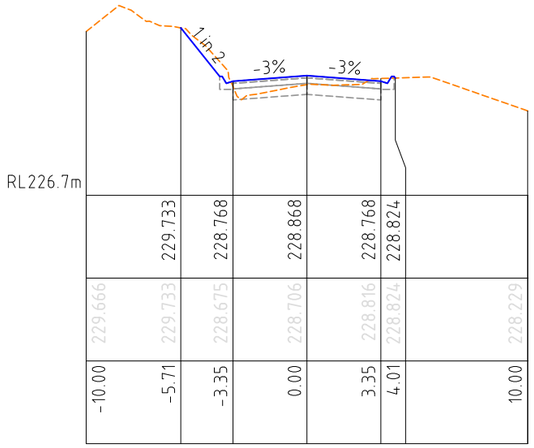
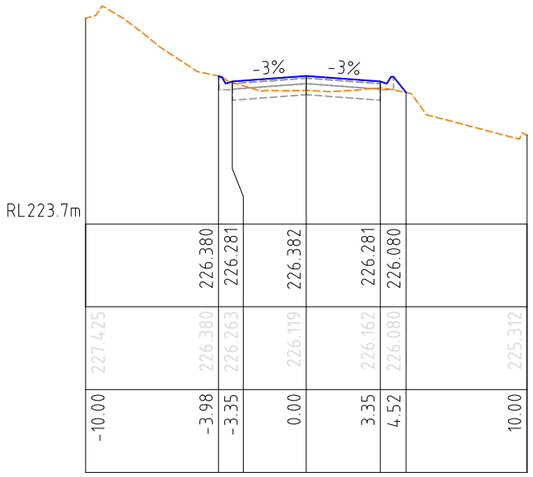
CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021 81
CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Sheet 81 OF 91
CAROLINE AVENUE CROSS SECTION	Rev A
	CCD Ref. No. 20021



RL226.7m

229.666	229.733	228.675	228.706	228.816	228.824	228.229
-10.00	-5.71	-3.35	0.00	3.35	4.01	10.00

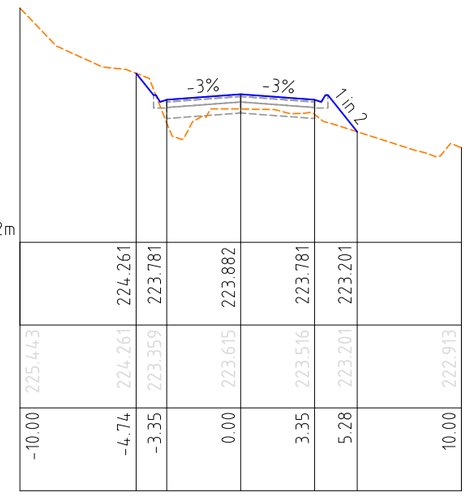
Ch 430.00 m



RL223.7m

227.425	226.380	226.263	226.119	226.162	226.080	225.312
-10.00	-3.98	-3.35	0.00	3.35	4.52	10.00

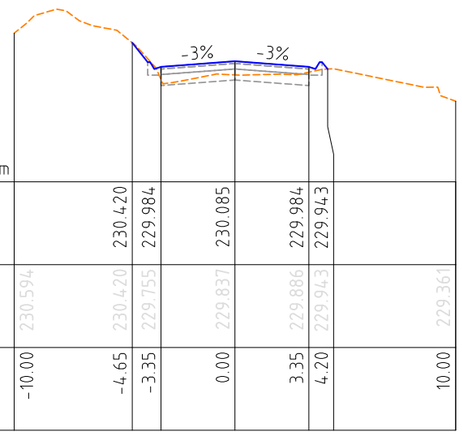
Ch 450.00 m



RL221.2m

225.443	224.261	223.359	223.615	223.516	223.201	222.913
-10.00	-4.74	-3.35	0.00	3.35	5.28	10.00

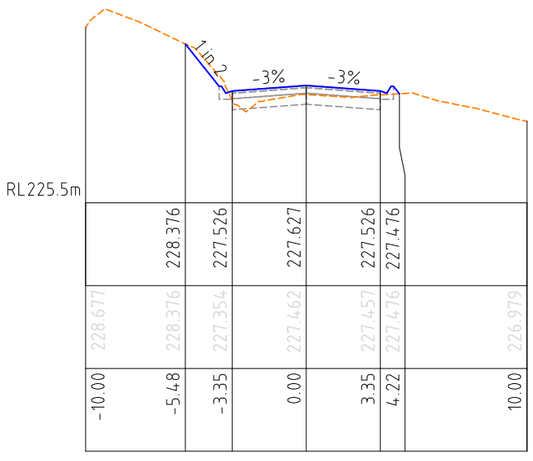
Ch 470.00 m



RL227.9m

DESIGN		230.420	229.984	230.085	229.984	229.943	
EXISTING	230.594	230.420	229.755	229.837	229.886	229.943	229.361
OFFSET	-10.00	-4.65	-3.35	0.00	3.35	4.20	10.00

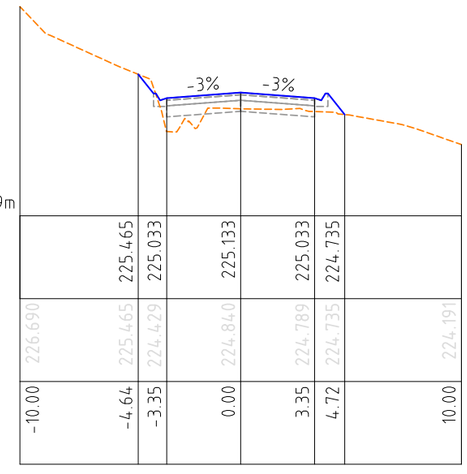
Ch 420.00 m



RL225.5m

228.677	228.376	227.354	227.462	227.457	227.476	226.979
-10.00	-5.48	-3.35	0.00	3.35	4.22	10.00

Ch 440.00 m



RL222.9m

226.690	225.465	224.429	224.840	224.789	224.735	224.191
-10.00	-4.64	-3.35	0.00	3.35	4.72	10.00

Ch 460.00 m

CAROLINE AVENUE CROSS SECTION

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m

HORIZONTAL SCALE 1:250

0 1 2 3 4 5m

VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL

PROPOSED KERB AND CHANNEL

EXISTING DRAINS AND PITS

PROPOSED DRAINS AND PITS

PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—

SEWER EX —S— PROP —S—

GAS MAINS EX —G— PROP —G—

TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: JULY 2020	Scale: AS SHOWN
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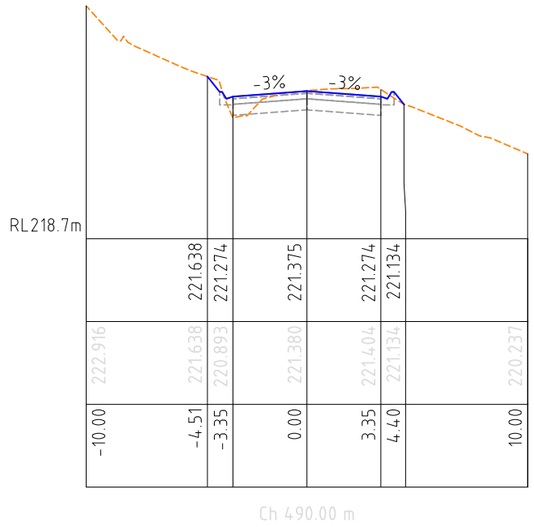
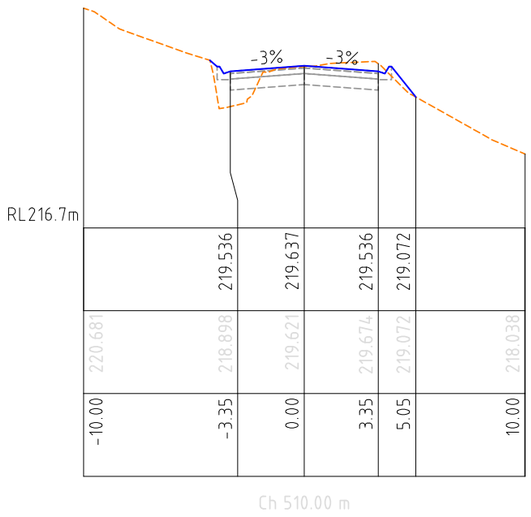
CARDINIA SHIRE COUNCIL

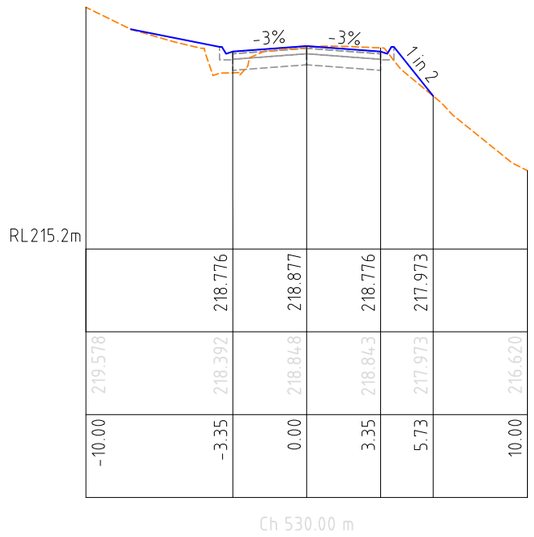
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS

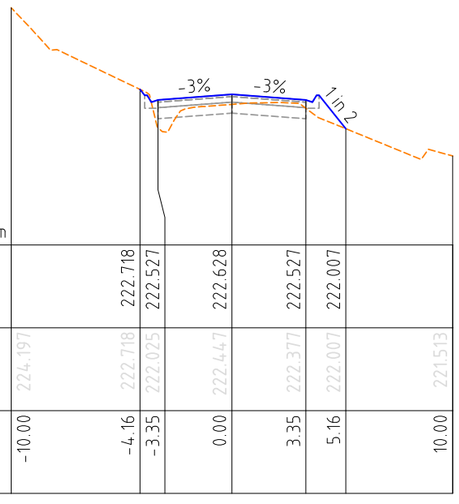
CAROLINE AVENUE CROSS SECTION

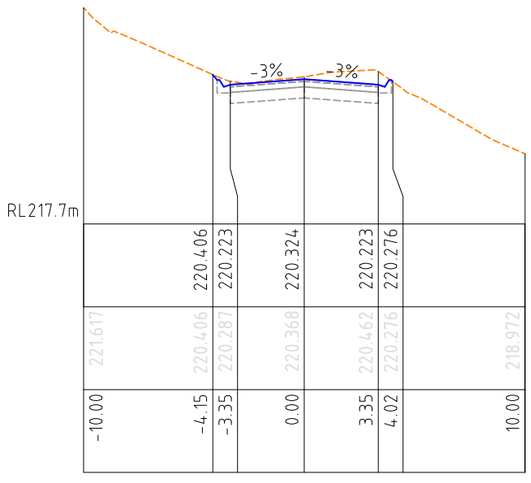
Drawing No CCD.	20021 82
Sheet	82 OF 91
Rev	A
CCD Ref. No.	20021

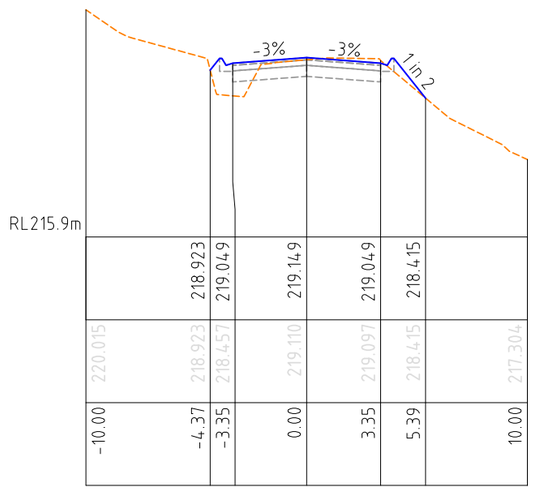












CAROLINE AVENUE CROSS SECTION

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

0 2,5 5 7,5 10 12,5m

HORIZONTAL SCALE 1:250

0 1 2 3 4 5m

VERTICAL SCALE 1:100

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EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

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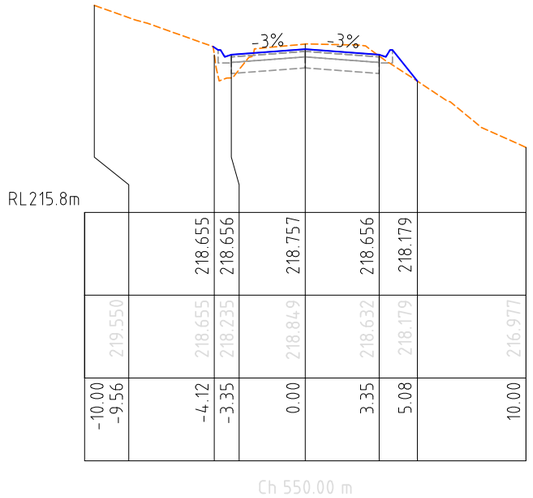
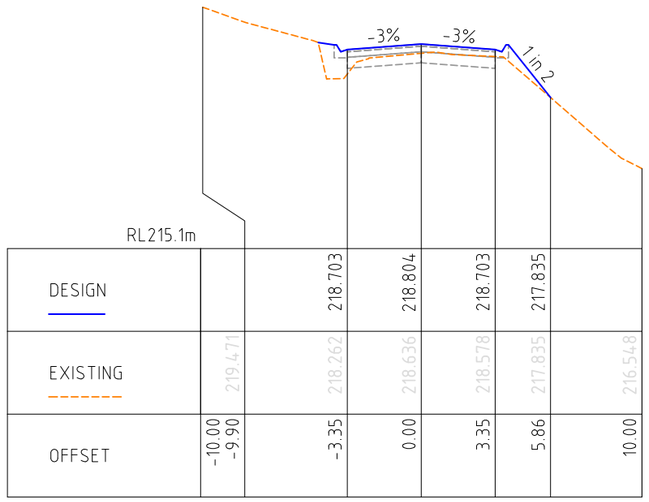
CARDINIA SHIRE COUNCIL

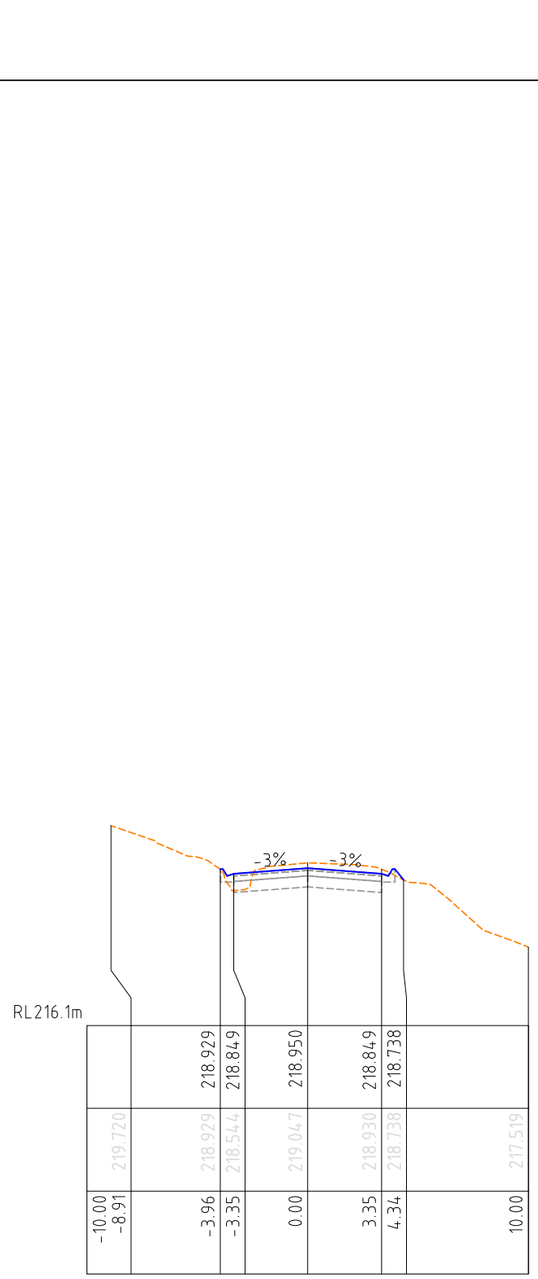
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS

CAROLINE AVENUE CROSS SECTION

Drawing No CCD.	20021 83
Sheet	83 OF 91
Rev	A
CCD Ref. No.	20021







CAROLINE AVENUE CROSS SECTION

PRELIMINARY

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0 2.5 5 7.5 10 12.5m

HORIZONTAL SCALE 1:250

0 1 2 3 4 5m

VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
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EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX W PROP W
SEWER EX S PROP S
GAS MAINS EX G PROP G
TELECOM CABLES AND PITS EX T PROP T

Design: Date:	JULY 2020	Scale:	AS SHOWN
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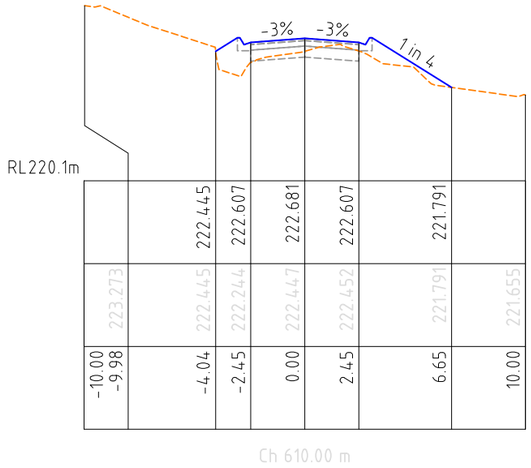
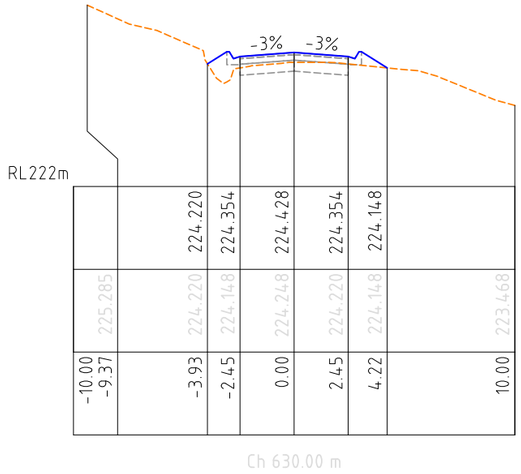
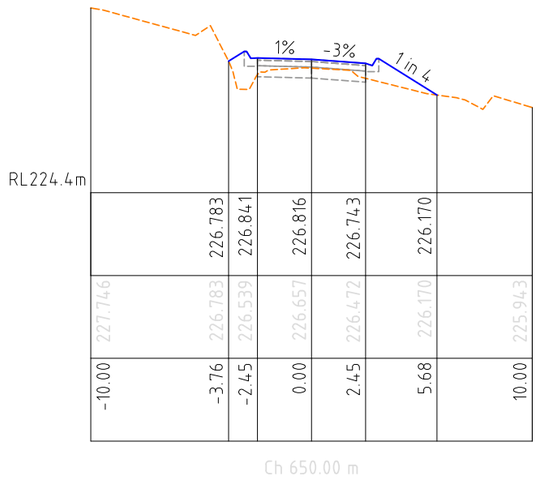
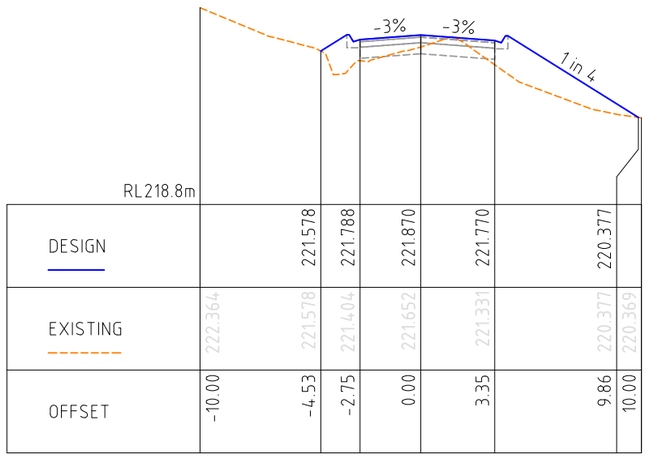
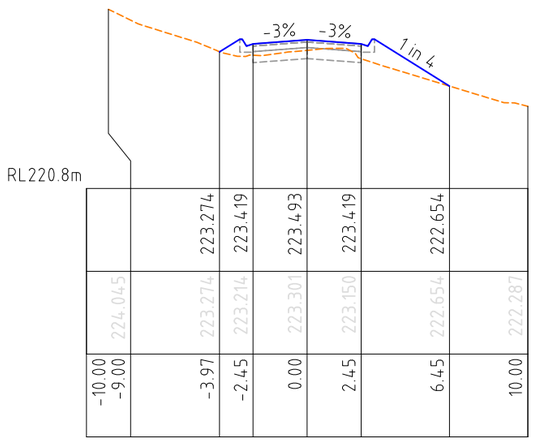
CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021 84
CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Sheet 84 OF 91
	Rev A
CAROLINE AVENUE CROSS SECTION	CCD Ref. No. 20021

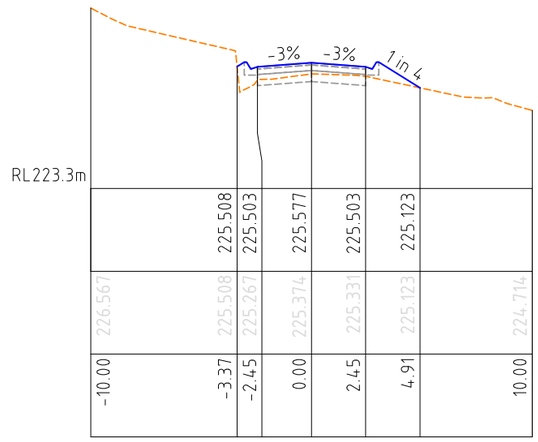












CAROLINE AVENUE CROSS SECTION

PRELIMINARY
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0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

0 1 2 3 4 5m
VERTICAL SCALE 1:100

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PROPOSED KERB AND CHANNEL
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PROPOSED DRAINS AND PITS
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Design: Date: JULY 2020	Scale: AS SHOWN	CARDINIA SHIRE COUNCIL	Drawing No CCD. 20021 85
Checked: Date: JULY 2020	Approved Date:	CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Sheet 85 OF 91
Datum: AHD	MELWAY Ref:	CAROLINE AVENUE CROSS SECTION	Rev A
			CCD Ref. No. 20021

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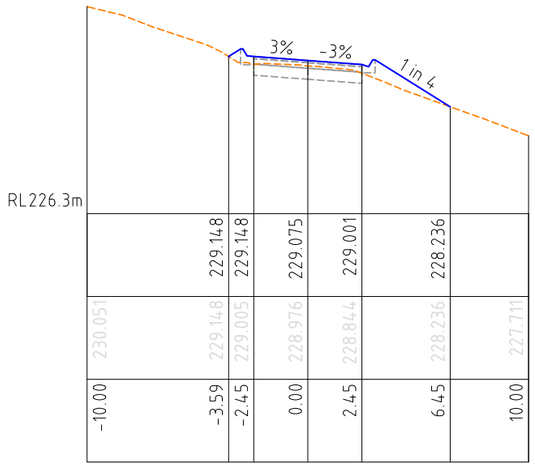

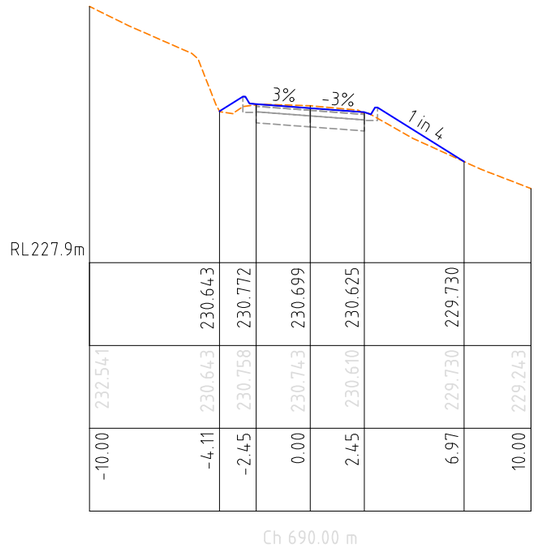

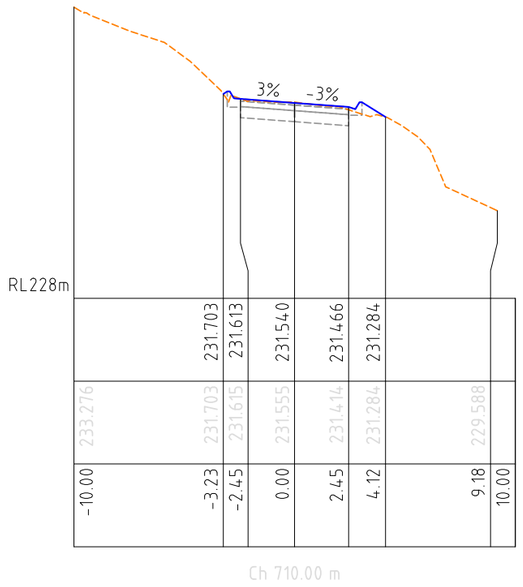

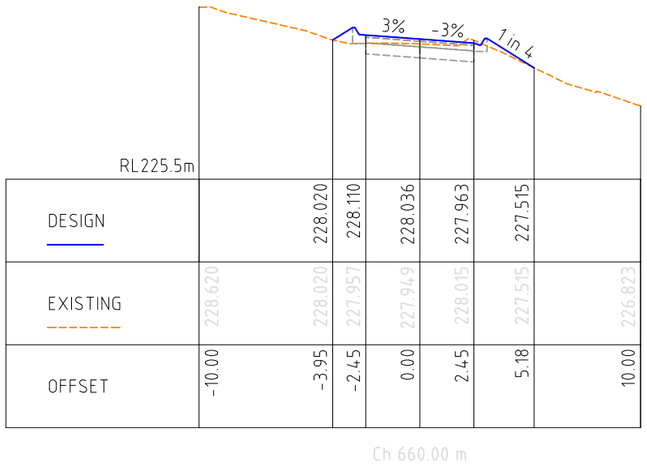

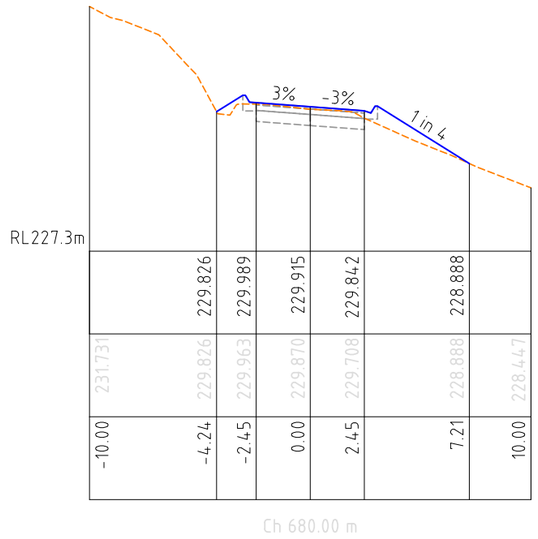

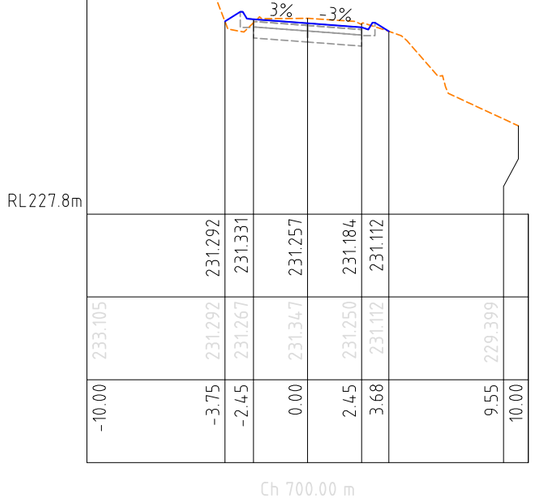

CAROLINE AVENUE CROSS SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

0 1 2 3 4 5m
VERTICAL SCALE 1:100

Date:	Rev.	Amendments:
01.04.2021	A	SUBMITTED FOR COMMENTS

Legend

EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX —W— PROP —W—
SEWER EX —S—O PROP —S—
GAS MAINS EX —G— PROP —G—
TELECOM CABLES AND PITS EX —T— PROP —T—

Design: Date: JULY 2020	Scale: AS SHOWN
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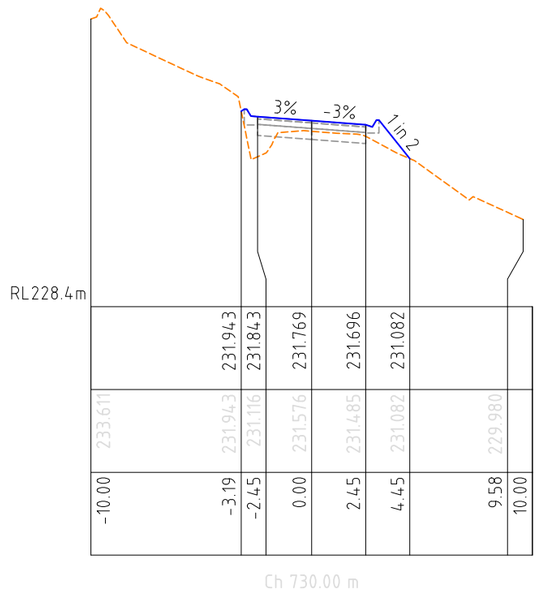
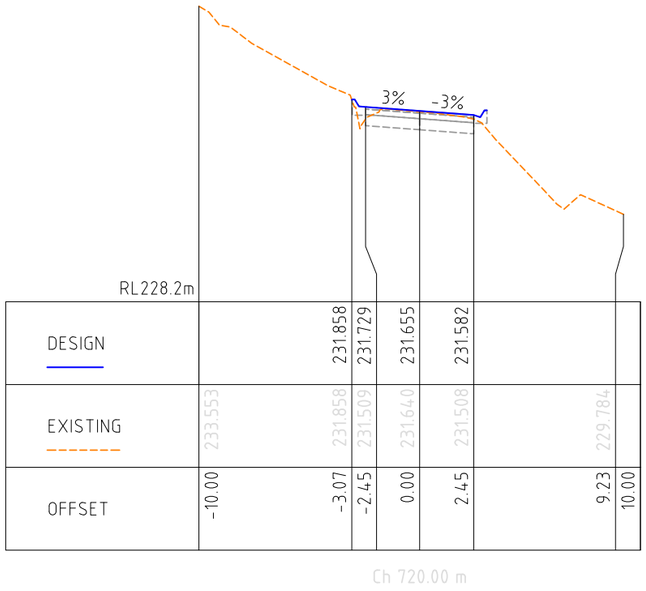
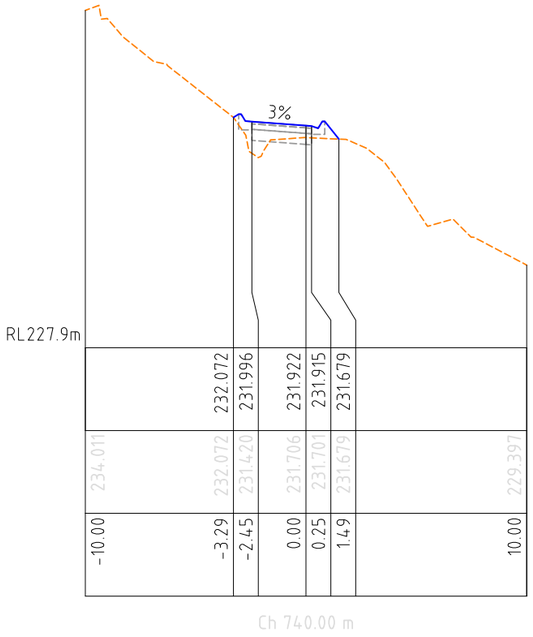
Craig Civil Design
Civil Engineering Consultants & Project Managers
A.C.N. 159 212 245
P.O. Box 1207, Narre Warren 3805 Phone: 5995 4388
mail@jamisoncraig.com.au Fax: 5995 5330

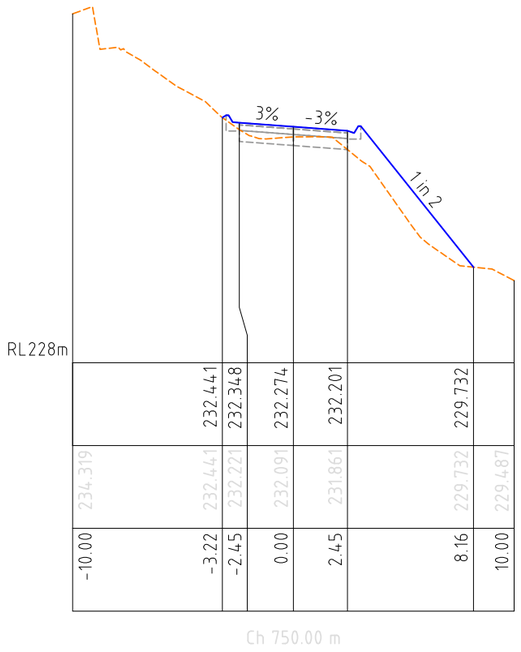
CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
CAROLINE AVENUE CROSS SECTION

Drawing No CCD.	20021 86
Sheet	86 OF 91
Rev	A
CCD Ref. No.	20021









CAROLINE AVENUE CROSS SECTION

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

0 1 2 3 4 5m
VERTICAL SCALE 1:100

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EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P...I...

WATER MAINS AND FITTINGS	EX	---W---
	PROP	——W——
SEWER	EX	---S---○
	PROP	——S——●
GAS MAINS	EX	---G---
	PROP	——G——
TELECOM CABLES AND PITS	EX	---T--▭
	PROP	——T——▭

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CARDINIA SHIRE COUNCIL
CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS
CAROLINE AVENUE CROSS SECTION

Drawing No CCD.	20021 87
Sheet	87 OF 91
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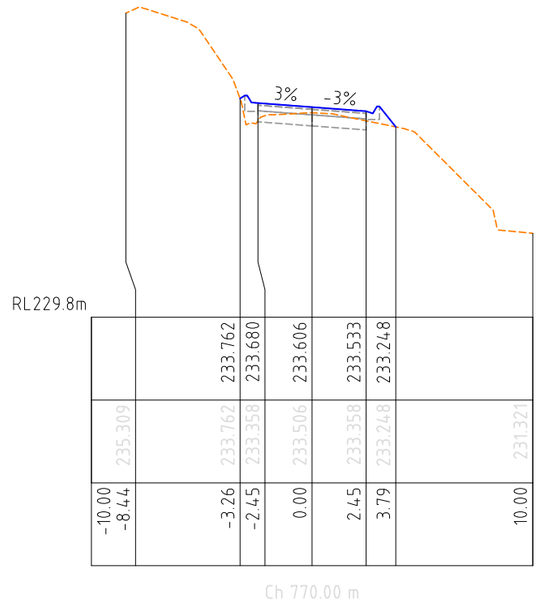
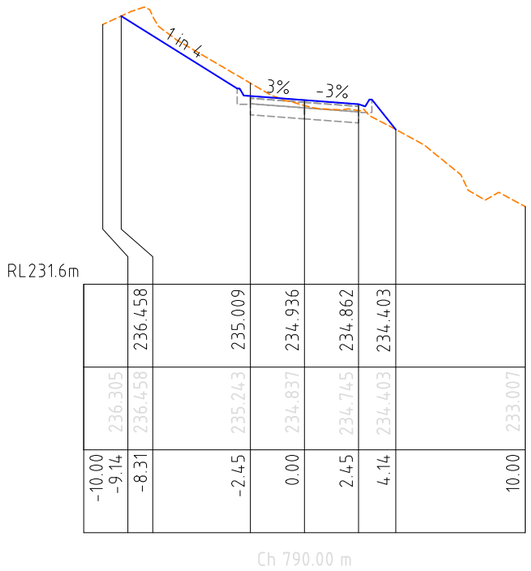
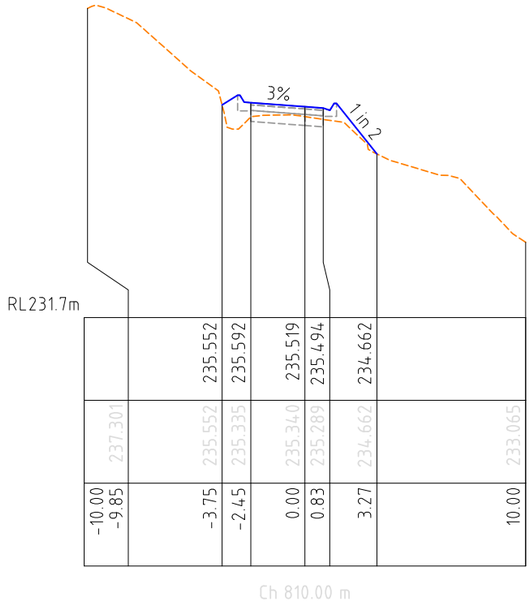
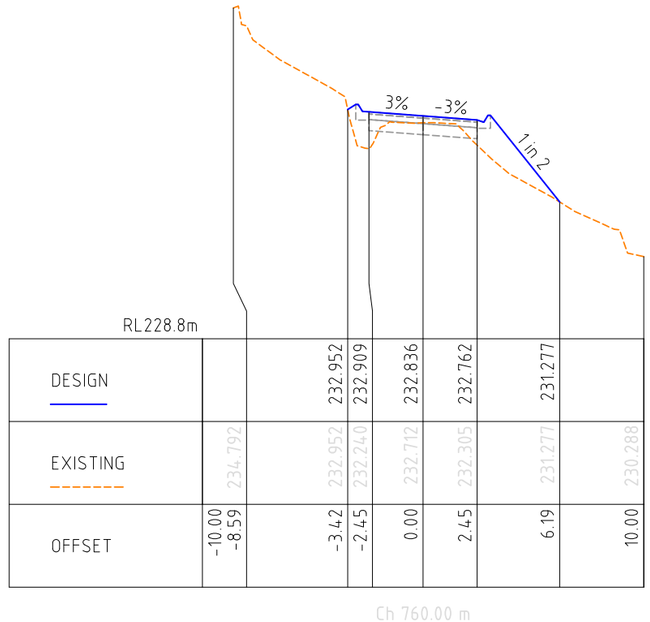
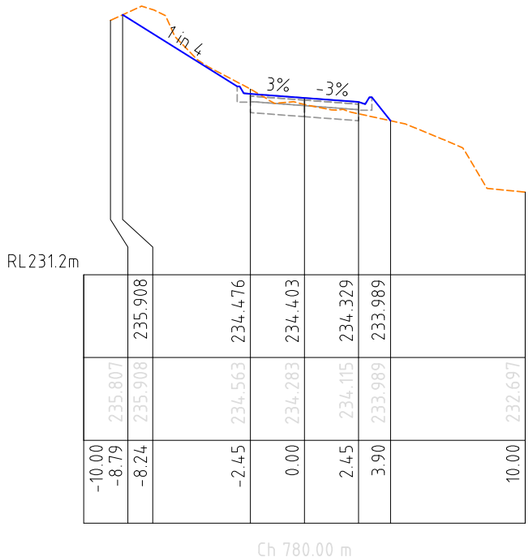
CCD Ref. No.	20021

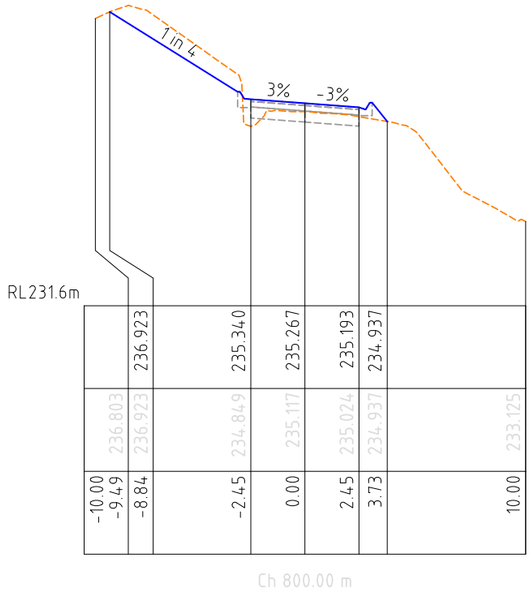












CAROLINE AVENUE CROSS SECTION

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

0 2.5 5 7.5 10 12.5m

HORIZONTAL SCALE 1:250

0 1 2 3 4 5m

VERTICAL SCALE 1:100

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EXISTING KERB AND CHANNEL
PROPOSED KERB AND CHANNEL
EXISTING DRAINS AND PITS
PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET

WATER MAINS AND FITTINGS — EX ---W--- PROP ——W——
SEWER — EX ---S---O PROP ——S——
GAS MAINS — EX ---G--- PROP ——G——
TELECOM CABLES AND PITS — EX ---T--- PROP ——T——

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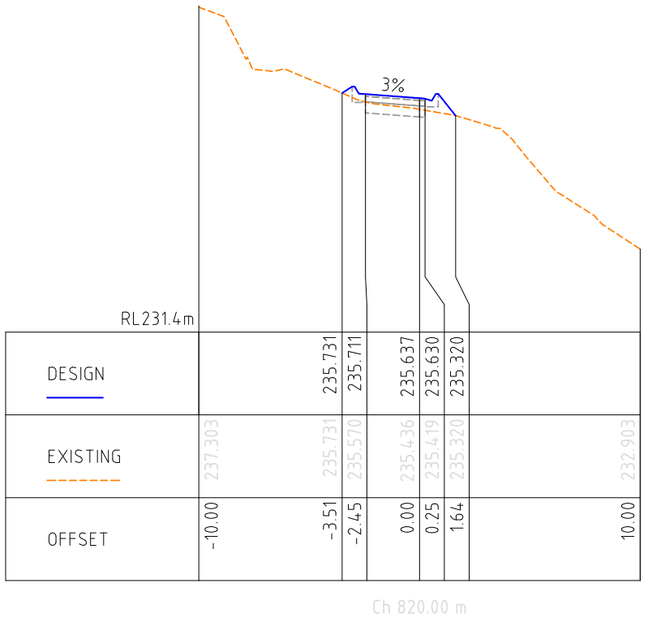
CARDINIA SHIRE COUNCIL	
CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	
CAROLINE AVENUE CROSS SECTION	
Drawing No CCD.	20021 88
Sheet	88 OF 91
Rev	A
CCD Ref. No.	20021



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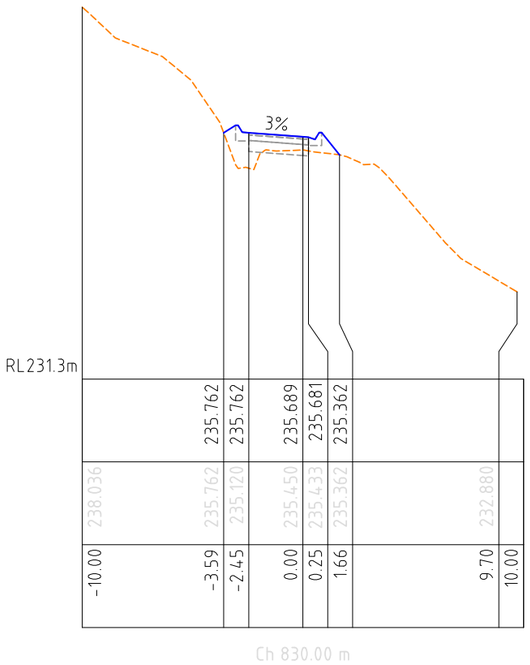
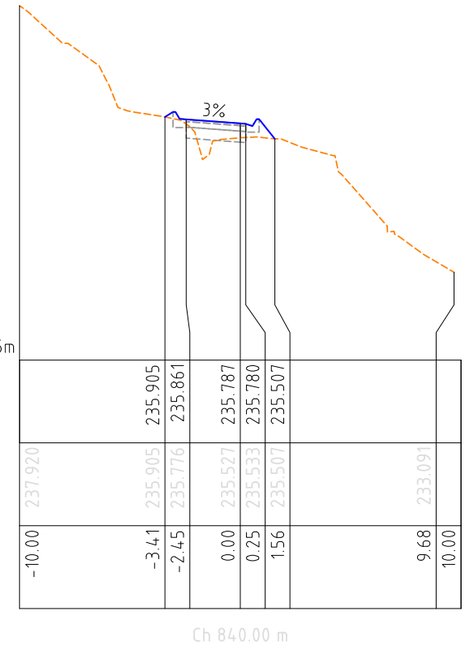
EXISTING	237.303	235.731	235.570	235.436	235.419	235.320	232.903
OFFSET	-10.00	-3.51	-2.45	0.00	0.25	1.64	10.00

Ch 820.00 m



DESIGN		235.762	235.762	235.689	235.681	235.362	
EXISTING	238.036	235.762	235.120	235.450	235.433	235.362	232.880
OFFSET	-10.00	-3.59	-2.45	0.00	0.25	1.66	9.70	10.00

Ch 830.00 m



DESIGN		235.905	235.861	235.787	235.780	235.507	
EXISTING	237.920	235.905	235.776	235.527	235.533	235.507	233.091
OFFSET	-10.00	-3.41	-2.45	0.00	0.25	1.56	9.68	10.00

Ch 840.00 m

CAROLINE AVENUE CROSS SECTION

PRELIMINARY
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0 2.5 5 7.5 10 12.5m
HORIZONTAL SCALE 1:250

0 1 2 3 4 5m
VERTICAL SCALE 1:100

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PROPOSED KERB AND CHANNEL
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PROPOSED PROPERTY INLET P...I...

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TELECOM CABLES AND PITS EX —T— PROP —T—

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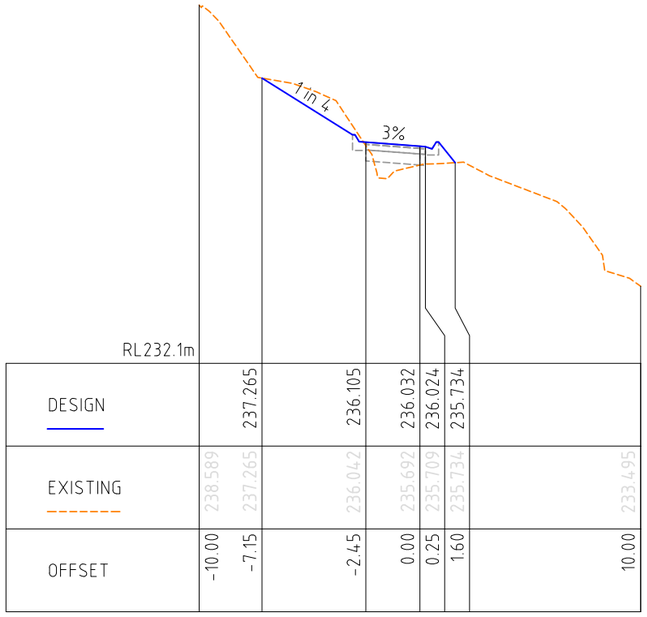
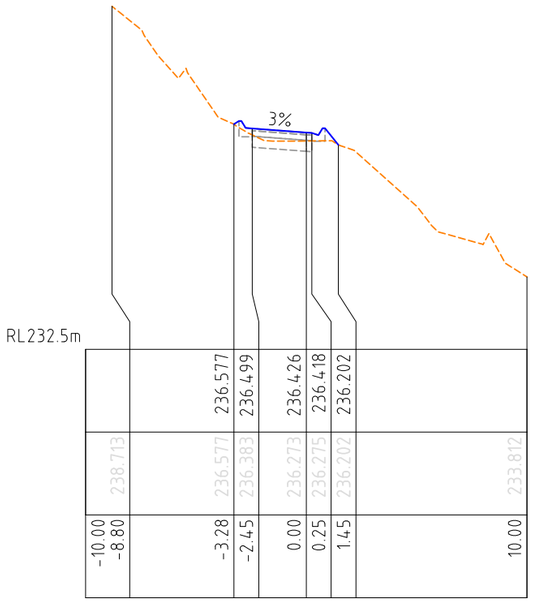
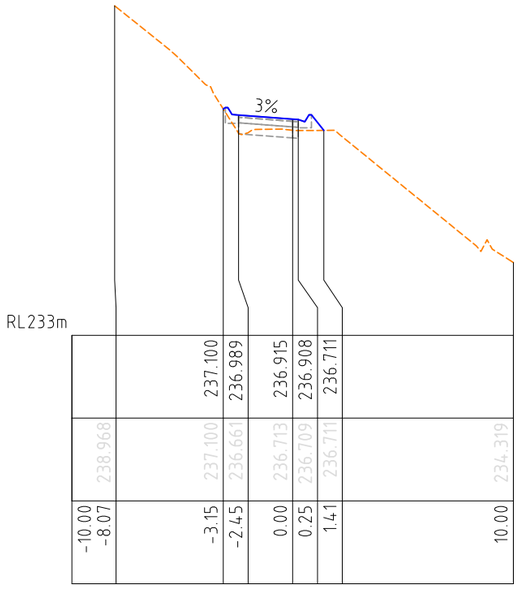
CARDINIA SHIRE COUNCIL	
CAROLINE AVENUE & BORONIA CRESCENT COCKATOO ROAD RECONSTRUCTION WORKS	Drawing No CCD. 20021 89
	Sheet 89 OF 91
	Rev A
CAROLINE AVENUE CROSS SECTION	CCD Ref. No. 20021







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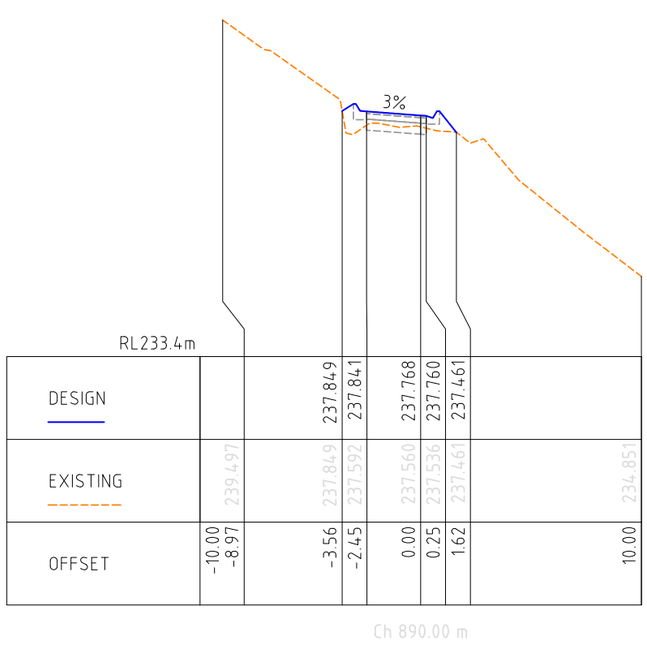
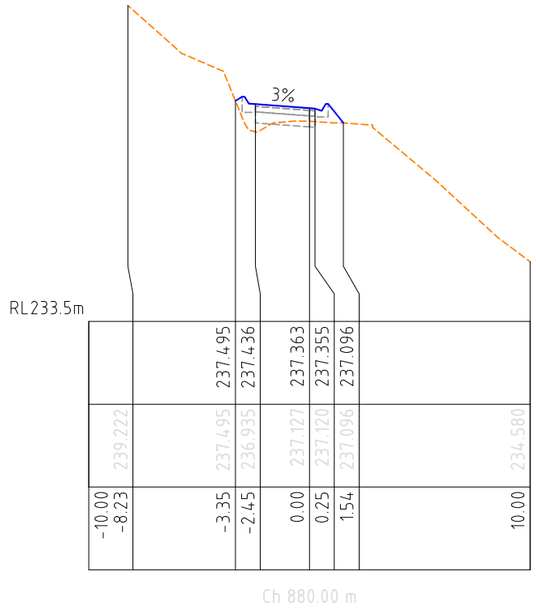
COCKATOO
ROAD RECONSTRUCTION WORKS
CAROLINE AVENUE CROSS SECTION

Drawing No CCD. 20021 90
Sheet 90 OF 91
Rev A
CCD Ref. No. 20021





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PROPOSED DRAINS AND PITS
PROPOSED PROPERTY INLET P..I..

WATER MAINS AND FITTINGS EX PROP
SEWER EX PROP
GAS MAINS EX PROP
TELECOM CABLES AND PITS EX PROP

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CARDINIA SHIRE COUNCIL

CAROLINE AVENUE & BORONIA CRESCENT
COCKATOO
ROAD RECONSTRUCTION WORKS

CAROLINE AVENUE CROSS SECTION

Drawing No CCD.	20021 91
Sheet	91 OF 91
Rev	A
CCD Ref. No.	20021

Major Roads Program - Special Charge Scheme (SCS) Apportionment Sheet

Caroline Avenue, Boronia Crescent, Rouen Road Cockatoo Catchment

Project Cost Summary:	
Total Project Cost (Inc. Design, Supervision/Admin & Offset)	$2,019,400
Total Council Contribution	$1,420,900
Total Landowner Contribution	$ 598,500.00
Financing Costs	$52,369

Council Cost Summary:	
Council 30% Contribution	$605,820
Subsidy for costs above FedFund ceiling	$ 815,080.00
Total Council Cost	$ 1,420,900.00

Apportionment Summary:	
Unit Ratio =	100%
Total Landowner Units =	85.5
Total Council Units =	Nil
$ / Unit =	16,533
FedFund Ceiling $/ Unit =	$7,000

DESCRIPTION	PROPERTY ADDRESS	ASSESSMENT NO.	DEVELOPMENT / BENEFIT UNIT	CHARGE FOR THE WORKS	ADJUSTED FOR CEILING	FINANCING CHARGE	TOTAL CHARGE	YEARLY CHARGE
L2 PS731198 V11610 F978	1 Boronia Cres	5000020665	0.5	$ 8,266.50	$ 3,500.00	$ 306.25	$ 3,806.25	$ 543.75
L1 TP617875	4 Boronia Cres	2113450200	0.5	$ 8,266.50	$ 3,500.00	$ 306.25	$ 3,806.25	$ 543.75
L2 PS745379 V11641 F676	5 Boronia Cres	2113400300	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L3 PS745379 V11641 F677	7 Boronia Cres	2113400400	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP101474	8 Boronia Cres	2113450300	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP86938 V9628 F9521	9 Boronia Cres	2113400500	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L101 LP9628	10 Boronia Cres	2113450400	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L26 LP9628;L1 TP198797	11-13 Boronia Cres	2113400601	2	$ 33,066.00	$ 14,000.00	$ 1,225.00	$ 15,225.00	$ 2,175.00
L100 LP9628 V6921 F075	12 Boronia Cres	2113450500	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP94036	14 Boronia Cres	2113450600	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L98 LP9628 V7097 F237	16 Boronia Cres	2113450700	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L97 LP9628 V7530 F063	18 Boronia Cres	2113450800	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L96 LP9628 V7097 F241	20 Boronia Cres	2113450900	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP579887 V9526 F727	22 Boronia Cres	2113451000	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
CP150472	24-26 Boronia Cres	2113451100	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L92 LP9628	28 Boronia Cres	2113451200	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L91 LP9628 V371 F8989	30 Boronia Cres	2113451300	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L32 LP22184	3 Bell St	2085550100	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1-2 TP551821	4-6 Bell St	2085500200	0.5	$ 8,266.50	$ 3,500.00	$ 306.25	$ 3,806.25	$ 543.75
L1 TP142119	3 Belgrave-Gembrook Rd	5000005528						
L37-44 55-62 P9628	19-33 Belgrave-Gembrook Rd	2084659200	9	$ 148,797.00	$ 63,000.00	$ 5,512.50	$ 68,512.50	$ 9,787.50
L71 LP9628	1 Caroline Ave	2165600100	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L70 LP9628	2 Caroline Ave	2165650100	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP555113	3 Caroline Ave	2165600200	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L69 LP9628	4 Caroline Ave	2165650200	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
CP156159	5 Caroline Ave	2165600300	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP577831	6 Caroline Ave	2165650300	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L75 LP9628 V6921 F074	7 Caroline Ave	2165600400	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L67 LP9628	8 Caroline Ave	2165650400	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP654341 V9406 F515	9 Caroline Ave	2165600500	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L66 LP9628 V7332 F311	10 Caroline Ave	2165650500	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L77 LP9628	11 Caroline Ave	2165600600	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L65 LP9628 V7307 F336	12 Caroline Ave	2165650600	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L78 LP9628	13 Caroline Ave	2165600700	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L64 LP9628	14 Caroline Ave	2165650700	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50

L1 TP166496;L1 TP188641	15 Caroline Ave	2165600800	2	$ 33,066.00	$ 14,000.00	$ 1,225.00	$ 15,225.00	$ 2,175.00
L1 TP106069 V9666 F993	19 Caroline Ave	2165600900	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L82 LP9628	21 Caroline Ave	2165601000	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L83 LP9628 V7179 F731	23 Caroline Ave	2165601100	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L84 LP9628 V7141 F191	25 Caroline Ave	2165601200	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L85 P9628	27 Caroline Ave	2165601300	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L86 LP9628 V8844 F759	29 Caroline Ave	2165601400	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L87 LP9628	31 Caroline Ave	2165601500	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L88 P9628 GEM	33 Caroline Ave	2165601600	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP115452	34 Caroline Ave	2165650900	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L89 LP9628	35 Caroline Ave	2165601700	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP196531 V9231 F487	36 Caroline Ave	2165651000	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L90 LP9628	37 Caroline Ave	2165601800	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP165940	38 Caroline Ave	2165651100	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L33 P22184	39 Caroline Ave	2165601900	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L34 LP22184	41 Caroline Ave	2165602000	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L35 LP22184 V8683 F861	43 Caroline Ave	2165602100	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L30 LP22184	44 Caroline Ave	2165651200	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L36 LP22184 V8142 F738	45 Caroline Ave	2165602200	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L29 LP22184	46 Caroline Ave	2165651300	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP111293 V9541 F852	47 Caroline Ave	2165602300	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L28 LP22184 V8117 F830	48 Caroline Ave	2165651400	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP99412	49 Caroline Ave	2165602400	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L27 LP22184 V8808 F382	50 Caroline Ave	2165651500	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L39 LP22184	51 Caroline Ave	2165602500	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L26 LP22184 V8421 F427	52 Caroline Ave	2165651600	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L40 LP22184	53 Caroline Ave	2165602600	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP134289 V9528 F624	54 Caroline Ave	2165651700	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L41 LP22184 V8500 F176	55 Caroline Ave	2165602700	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L24 LP22184 V8612 F292	56 Caroline Ave	2165651800	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L42 LP22184	57 Caroline Ave	2165602800	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L23 LP22184	58 Caroline Ave	2165651900	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L43 LP22184 V8612 F291	59 Caroline Ave	2165602900	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP107620	60 Caroline Ave	2165652000	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L44 LP22184	61 Caroline Ave	2165603000	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L21 LP22184	62 Caroline Ave	2165652100	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP166553	64 Caroline Ave	2165652200	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP181179	66 Caroline Ave	2165652300	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L18 LP22184	68 Caroline Ave	2165652400	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L24 LP9628	1 Rouen Rd	2742550100	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L23 LP9628 V4966 F154	3 Rouen Rd	2742550200	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
L1 TP144947 V9989 F384	5 Rouen Rd	2742550300	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
PC350371 V10106 F309	7-9 Rouen Rd	2742550400	1	$ 16,533.00	$ 7,000.00	$ 612.50	$ 7,612.50	$ 1,087.50
		Total	**85.5**	**$ 1,413,571.50**	**$ 598,500.00**	**$ 52,368.75**	**$ 650,868.75**	**$ 92,981.25**

Notes

Total project cost includes 15% design/supervision/admin allowance

Financing charge estimated on 5% interest paid in quarterly installments over a 7 year repayment period

2 benefit units attributed to properties/assessments containing 2 titles.

No 1 & No 4 Borinia Crescent attributed half a benefit unit as half of frontage already fully constructed

* Uncertainity of including 3 Belgrave/Gembrook Road as only 1.49m rear abuttal to Boronia Crescent