Infrastructure & Property

Business Paper

10 JUNE 2025

muswellbrook shire council

Infrastructure and Property Committee

Terms of Reference

1. Objective

The objective of the Infrastructure and Property Committee (the Committee) is to make recommendations to Council on the community's infrastructure assets and levels of service.

2. Scope

The scope of activities to be overseen by the Committee include:

- Strategic Infrastructure Planning;
- Levels of service to be provided by Council for infrastructure, property assets and associated activities;
- Priorities for forward expenditure programs;
- Major projects
- Lifecycle of community infrastructure assets, which include:
  - Property and Building;
  - Recreation and Other Structures;
  - Roads and Drainage;
  - Waste Operations Management;
  - Water and Wastewater; and
  - Asset Management.

Council Assets

Physical	**Intellectual**
Property	Asset Management Policy
Buildings (Operational)	Asset Registers
Buildings (Community)	Strategic Asset Management Plan
Recreation Facilities	Asset Management Plans
Land Improvements and Other Structures (Sports Fields and Playgrounds)	Recreation Needs and Management Study
Rural Roads	Recreation Master Plans
Urban Roads	Plans of Management
Car Parks	Strategy and Management Plans
Footpaths and Cycleways	Muswellbrook Mine Affected Roads Network Plan

Physical	Intellectual
Flood Mitigation systems: Levee Banks and Detention basins	Flood Studies
Stormwater Management Systems	Integrated water Cycle Management system (ICWM)
Waste and Recycling Facilities	
Water and Wastewater Treatment Facilities	

3. Authority

Muswellbrook Shire Council authorises the Committee, within the scope of its role and responsibilities, to:

- Request information required to inform decision making (subject to their legal obligations to protect information and with prior consultation with the General Manager);
- Request information from employees (with approval of the General Manager) or Councillors;
- The Committee may request these persons to present information at Committee meetings to assist in understanding any matter under consideration;
- Obtain external legal or other professional advice, as considered necessary, to meet its responsibilities (in accordance with Council Budget and procurement arrangements and subject to prior consultation with the General Manager);
- Make decisions regarding the scope and design of projects for the consideration by Council; and
- Make decisions regarding levels of service.

4. Composition and Tenure

Members (voting)

The members of the Committee shall be Councillors and are listed below.

All members of the Committee are entitled to one vote and, in the event of an equal vote, the Chair has a casting vote.

Name	Department	Role
Cr Clare Bailey	Councillor	Chair
Cr Rod Scholes	Councillor	Deputy Chair
Cr Jeff Drayton	Councillor	Voting Member
Cr Louise Dunn	Councillor	Voting Member
Cr David Hartley	Councillor	Voting Member

Name	Department	Role
Cr Darryl Marshall	Councillor	Voting Member
Cr Max Morris	Councillor	Voting Member
Cr Stephen Ward	Councillor	Voting Member

Attendees (non-voting)

The following Council officers will act as liaison officers to the Committee:

Name	Department	Role
Mr Matt Lysaught	Director – Infrastructure & Property	Liaison Officer
Mr Derek Finnigan	General Manager	Attendee
Mrs Kellie Scholes	Group Manager – Infrastructure & Operations	Attendee
Mr Sergei Iagunkov	Manager – Water & Wastewater	Attendee
Ms Joann Polsen	Manager – Waste Operations	Attendee
Mr Dennis Fernandes	Project Manager – Property & Building Services	Attendee
Mrs Mardi Eriksson	Manager – Property & Building Services	Attendee
Mr Peter Ball	Manager – Works	Attendee

Invitees (non-voting) for specific Agenda items

Other officers may attend by invitation as requested by the Committee or the General Manager.

5. Responsibilities of Members

Members of the Committee are expected to:

- Agree that they are bound by Council's Code of Conduct;
- Understand the relevant legislative and regulatory requirements appropriate to Muswellbrook Shire Council;
- Contribute the time needed to study and understand the papers provided;
- Apply sound analytical skills, objectivity and judgement;
- Express opinions frankly, ask questions that consider the fundamental core of the issues, and pursue independent lines of enquiry;
- Act, and be seen to act, properly and in accordance with the requirements of the law and the terms of Council's Code of Conduct; and
- Act in good faith and fidelity in the interests of Council and the community.

6. Reporting

Following each meeting, the minutes will be reported to the next Council Meeting and the Chair will be required to provide a brief summary.

7. Meetings

- The Committee will meet at 5.30pm on the second Tuesday of every even month.
- The need for any additional meetings will be decided by the Chair of the Committee, though other Committee members may make requests to the Chair for additional or alternative meetings.
- The Committee shall comply with Council's adopted Code of Meeting Practice and Code of Conduct.

- Meetings of the Committee are open to the public to attend.

8. Attendance at Meetings and Quorums

A quorum will consist of five (5) Committee members. Meetings will be held in person. Councillors may attend and participate in meetings of the committee by audio-visual link with the approval of the committee.

9. Secretariat

The General Manager will ensure that appropriate secretariat support is provided to the Committee. The Secretariat will ensure the agenda for each meeting and supporting papers are circulated at least 5 days before the meeting and ensure minutes of the meeting are prepared and maintained.

Minutes shall be approved by the Chair and circulated to all Committee members within one week of the meeting and filed in accordance with Council's Records Management Policy.

10. Conflicts of Interest

Members of Council committees must comply with the applicable provisions of Council's Code of Conduct in carrying out their functions as Council officials. It is the personal responsibility of Council officials to comply with the standards in the Code of Conduct and regularly review their personal circumstances with this in mind.

Committee members must declare any conflict of interest at the start of each meeting or before discussion of a relevant agenda item or topic. Details of any conflict of interest should be appropriately minuted.

Where members or invitees at Committee meetings are deemed to have a real or perceived conflict of interest, it may be appropriate they be excused from Committee deliberations on the issue where the conflict of interest may exist. The final arbiter of such a decision is the Chair of the Committee.

11. Induction

New members will receive relevant information and briefings on their appointment to assist them to meet their Committee responsibilities.

12. Review of Committee Terms of Reference

At least once every two years the Committee will review this Committee's Terms of Reference and make recommendations on any changes to Council for its determination.

Any changes to the Committee Terms of Reference must be approved by Council.

MUSWELLBROOK SHIRE COUNCIL

P.O Box 122

MUSWELLBROOK

3 June 2025

Cr C. Bailey (Chair)

Cr R. Scholes (Deputy Chair)

Cr J. Drayton

Cr L. Dunn

Cr D. Hartley

Cr D. Marshall

Cr M. Morris

Cr S. Ward

Mr D. Finnigan (General Manager)

Mr M. Lysaught (Director – Infrastructure & Property)

Mrs K. Scholes (Group Manager – Infrastructure & Operations)

Mr S. Iagunkov (Manager – Water & Wastewater)

Ms J. Polsen (Manager – Waste Operations)

Mr D. Fernandes (Project Manager – Property & Building Services)

Mrs M. Eriksson (Manager – Property & Building Services)

You are hereby requested to attend the Infrastructure & Property to be held in the Meeting Room / Teams, Muswellbrook Library, 126 Bridge Street, Muswellbrook on **10 June 2025** commencing at **5:00 pm**.

Matt Lysaught

DIRECTOR – INFRASTRUCTURE & PROPERTY

Order of Business

1 Acknowledgement of Country

Acknowledgement of Country

Council would like to respectfully acknowledge the local Aboriginal people who are the Traditional Owners and custodians of the land on which this meeting takes place

2 Apologies

3 Confirmation of Minutes of Previous Meeting

RECOMMENDATION

The Minutes of the Infrastructure and Property Committee Meeting held on 8 April 2025, a copy of which has been distributed to all members, be taken as read and confirmed as a true record.

Moved: _____ **Seconded:** _____

MINUTES OF THE INFRASTRUCTURE PROPERTY COMMITTEE MEETING OF THE MUSWELLBROOK SHIRE COUNCIL HELD IN THE SEMINAR ROOMS MUSWELLBROOK LIBRARY, 126 BRIDGE STREET, MUSWELLBROOK ON TUESDAY 8 APRIL 2025 COMMENCING AT 5.05PM.

PRESENT: Cr C. Bailey (Chair), Cr R. Scholes, Cr J. Drayton, Cr L. Dunn, Cr D. Hartley, Cr D. Marshall, Cr M. Morris, and Cr S. Ward.

IN ATTENDANCE: Cr A. Barry, Cr D. Douglas, Mr D. Finnigan (General Manager), Mr M. Lysaught (Director - Infrastructure & Property), Ms K. Hamm (Manager - Governance & Risk), Mr S. Iagunkov (Manager - Water & Wastewater), Mr D. Fernandes (Project Manager - Property & Building Services), Mrs M. Eriksson (Manager - Property & Building Services), Mr P. Chandler (Technical Officer - Recreation & Property), Mr N. Mowbray (Policy Officer), Ms A. Paynter (Admin Officer - Infrastructure & Property), Mrs M. Sandell-Hay (Governance Officer) and Ms L. Ward (EA to Mayor & GM).

1 Acknowledgement of Country

The Acknowledgement of Country was read by Cr Hartley.

2 Apologies

Nil

3 Confirmation of Minutes of Previous Meeting

RESOLVED on the motion of Cr R. Scholes and Cr L. Dunn that:

The Minutes of the Infrastructure and Property Committee Meeting held on **18 February 2025**, a copy of which has been distributed to all members, be taken as read and confirmed as a true record.

In Favour	Cr C. Bailey, Cr R. Scholes, Cr J. Drayton, Cr L. Dunn, Cr D. Hartley, Cr D. Marshall, Cr M. Morris and Cr S. Ward
Against:	Nil

4 Disclosure of Any Pecuniary and Non-Pecuniary Interests

Cr R. Scholes - Declared an insignificant non-pecuniary interest in Item 6.1. Cr Scholes advised the Committee that he is the Secretary of the Muswellbrook Rugby Club.

5 Business Arising

Nil

6 Business

6.1 Muswellbrook Shire Council Sport and Recreation Small and Large Capital Grants 2024-2025

Disclosure of Interest

Cr Scholes declared an insignificant non-pecuniary interest in this item. Cr Scholes advised the Committee that he is the Secretary of the Muswellbrook Rugby Club listed in the report.

At 5.03pm Cr Scholes left the Meeting Room and therefore took no part in discussion or voting on this item.

RESOLVED on the motion of Cr D. Marshall and Cr J. Drayton that:

The Committee recommends Council award grant applications and funding for the Sport and Recreation Small and Large Capital Grants Program 2024/2025 as described in the report.

In Favour	Cr C. Bailey, Cr J. Drayton, Cr L. Dunn, Cr D. Hartley, Cr D. Marshall, Cr M. Morris and Cr S. Ward
Against:	Nil

At 5.08pm Cr Scholes returned to the Meeting Room and resumed his chair at the meeting table.

6.2 Amended Denman Tourist Park Master Plan - Public Exhibition - Response Submissions

RESOLVED on the motion of Cr D. Marshall and Cr M. Morris that:

The Committee recommends:

1. Council considers all requests in the submissions received;
2. Investigates options and develop a concept plan for the golf clubhouse to enhance its functionality and community use;
3. The Denman Tourist Park should be developed generally in accordance with the amended master plan to support increased visitation while ensuring events can still be held on the Town Green;
4. A report on the Denman Pool be submitted to Council to consider options for integrating the pool further within the Denman Recreation Area;
5. A community consultation meeting is held in Denman; and
6. A further amended master plan is provided to Council for adoption.

In Favour	Cr C. Bailey, Cr R. Scholes, Cr J. Drayton, Cr L. Dunn, Cr D. Hartley, Cr D. Marshall, Cr M. Morris and Cr S. Ward
Against:	Nil

6.3 Major Projects Status Report

RESOLVED on the motion of Cr D. Hartley and Cr M. Morris that:

Council notes the information contained in the report.

In Favour: Cr C. Bailey, Cr R. Scholes, Cr J. Drayton, Cr L. Dunn, Cr D. Hartley, Cr D. Marshall, Cr M. Morris and Cr S. Ward

Against: Nil

6.4 Denman to Sandy Hollow Pipeline - Project Update

RESOLVED on the motion of Cr J. Drayton and Cr D. Marshall that:

The information contained in this report be noted.

In Favour: Cr C. Bailey, Cr R. Scholes, Cr J. Drayton, Cr L. Dunn, Cr D. Hartley, Cr D. Marshall, Cr M. Morris and Cr S. Ward

Against: Nil

6.5 Resources for Regions 8 - Reallocation to Town Centre Works

RESOLVED on the motion of Cr R. Scholes and Cr M. Morris that:

The Committee recommends Council endorse the proposed variation.

In Favour: Cr C. Bailey, Cr R. Scholes, Cr J. Drayton, Cr L. Dunn, Cr D. Hartley, Cr D. Marshall, Cr M. Morris and Cr S. Ward

Against: Nil

7 Date of Next Meeting

10 June 2025

8 Closure

The meeting was declared closed at {time}.

.....	.....
Mr D. Finnigan	Cr C. Bailey
General Manager	**Chairperson**

4 Disclosure of Any Pecuniary and Non-Pecuniary Interests

5 Business Arising

Nil

6 Business

6.1 Concept Design Wybong Road Betterment Project

Responsible Officer:	Director - Infrastructure & Property
Author:	Group Manager - Infrastructure & Operations
Community Strategic Plan:	*5 - Community Infrastructure* Effective and efficient infrastructure that is appropriate to the needs of our community
Delivery Program Goal:	5.1.4 - Maintain and continually improve community infrastructure across the Shire.
Operational Plan Action:	5.1.4.1 - Prioritise Capital works program to demonstrate continual improvement in community infrastructure.
Attachments:	1. Wybong Mod West CB R 5 [**6.1.1** - 2 pages] 2. N 2024091 - Wybong Road Pavement Investigation and Design Report V 01 [**6.1.2** - 121 pages] 3. R R 770 Wybong Road - 20_ Concept Design [**6.1.3** - 72 pages]

PURPOSE

To discuss with the Infrastructure and Property Committee and seek support of the comments on the concept design for the proposed upgrade to Wybong Road, funded by the Regional Roads and Transport Recovery Package – BP0001 Betterment of Wybong Road, to be provided to Transport for NSW.

OFFICER'S RECOMMENDATION

The Committee supports the 20% Concept for the construction of Wybong Road ch 31.1km to ch 33.6km south of Kayuga Road, with the exception of amendments required to the typical road section to achieve a minimum sealed formation width of 9.45 m.

Moved: _____ **Seconded:** _____

EXECUTIVE SUMMARY

Council has funding in the amount of $6,526,576 to deliver improved road assets to the section of Wybong Road ch 31.1 km to 33.6 km at the western end closest to Sandy Hollow. It has been announced that this road will be gazetted as a State Road following completion of the proposed road upgrade works.

Council will enter into a memorandum of understanding with Transport for NSW, whereby Transport for NSW will design and construct the work.

Transport for NSW (TfNSW) has commenced the investigation and design, and have provided the 20% Concept and associated investigation results undertaken to inform the design. This report requests the Committee to consider the concept.

PREVIOUS RESOLUTIONS

At the 27 May 2025 Ordinary Meeting, Council resolved as follows:

1. Endorses the Memorandum of Understanding – Bengalla Link Road and Wybong Road (MR 709) February 2025; and
2. Delegates authority to the General Manager to sign the Memorandum of Understanding.

BACKGROUND

Following assessment of Council's claim for funding for road repairs and upgrading works under the NSW Disaster Recovery Funding Arrangements (DRFA), Essential Public Asset Reconstruction Works AGRN 1012 – severe weather and flooding 22 February 2022, for damaged sections of Wybong Road, the NSW government advised of the successful claim and approval of funding for the Category B and D components of the Regional Roads Transport Recovery Program (Betterment) project.

A total funding amount of $6,526,576 has been approved and accepted by Council. This amount consists of $141,939.00 made available under the approved Essential Public Asset Repair Category B funding and a total funding amount of $6,384,637 under Category D funding. The approved scope of work (the project work) is to be carried out by Council as the asset owner in accordance with the terms of the DRFA Guidelines, the Regional Roads Transport Recovery Program Guidelines, and the Funding Deed. The scope of work is to upgrade pavement on Wybong Road between chainages 31.1 km and 33.6 km, including resilience infrastructure to mitigate flooding risks through enhanced culverts and improved drainage performance.

Schedule 1 of the Deed outlines the project design and technical requirements, which stipulate that Muswellbrook Shire Council must ensure that the Project is designed and constructed in accordance with all relevant standards and guidelines, including but not limited to: Australian Standards, Austroads Guidelines, and TfNSW Technical Supplements (where directed by TfNSW). Where bridges or major structures are included as part of the works, the works must be constructed to comply with the following specific standards: AS 5100, SM 1600, or where SM 1600 is not practical, then Council must obtain the prior written approval of TfNSW to instead comply with the TfNSW Bridge Technical Standard.

At the 27 May 2025 Ordinary Meeting, Council resolved to enter into a Memorandum of Understanding (MOU) with Transport for NSW to facilitate the reclassification of Wybong Road (west). Section 2.1 of the MOU refers to the Natural Disaster/Regional Roads Transport Recovery Package (Betterment Funding), and includes agreement for:

1. Muswellbrook Shire Council (MSC) will, subject to Council approval, enter into the RRTRP Funding Deed.
2. MSC will use reasonable endeavours to comply with the terms and conditions of the RRTRP Funding Deed.
3. MSC can engage TfNSW as the contractor to complete the works required to be undertaken in accordance with the RRTRP Funding Deed. This will be the subject of a separate agreement.
4. TfNSW and MSC agree in principle that the gazettal and reclassification of Bengalla Link Road and Wybong Road West will not occur until after the satisfactory completion of the EPAR and RRTRP Funding Deed works.

CONSULTATION

Transport for NSW

Infrastructure and Property Committee

REPORT

Transport for NSW (TfNSW) has provided the attached Concept Design and associated reports to inform the design for the project.

The design scope for the project is to rehabilitate the western portion of Wybong Road and includes:

- Undertake pavement investigations (if required) and provide pavement rehabilitation and widening design options to achieve a 20-year design life.
- 1 in 20-year drainage provision for the removal of the existing causeway and replacement with box culverts,
- Current sealed width is 7.0m, targeting 3.5m travel lanes and 1m shoulders (widening required).
- Preferred options to include incorporation of existing materials.
- Provide data for replacement of causeway with box culvert.
- Consider drainage requirements.

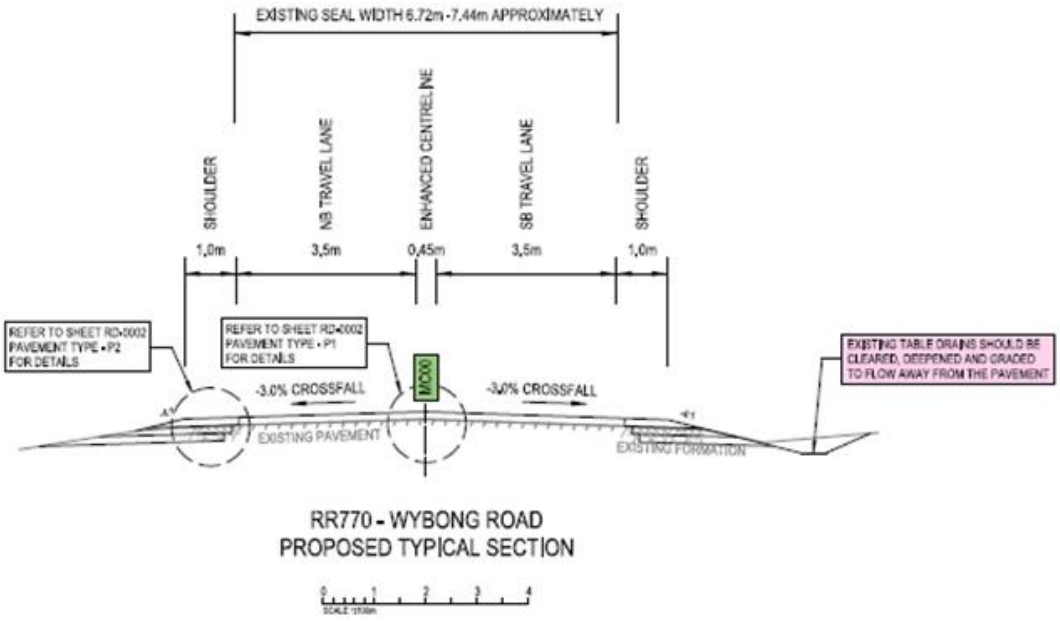
The constraints identified are:

- Available budget.
- Works within existing road reserve.
- Retain existing driveways and accesses.
- Existing culverts needing widening, existing causeway.
- AHIMS artefact.

Noting the total length of pavement to be rehabilitated and widened is 2.5km

The Concept for the typical road cross section proposed by TfNSW (shown below) is non-conforming with MSC ‘s standard for the class of road.

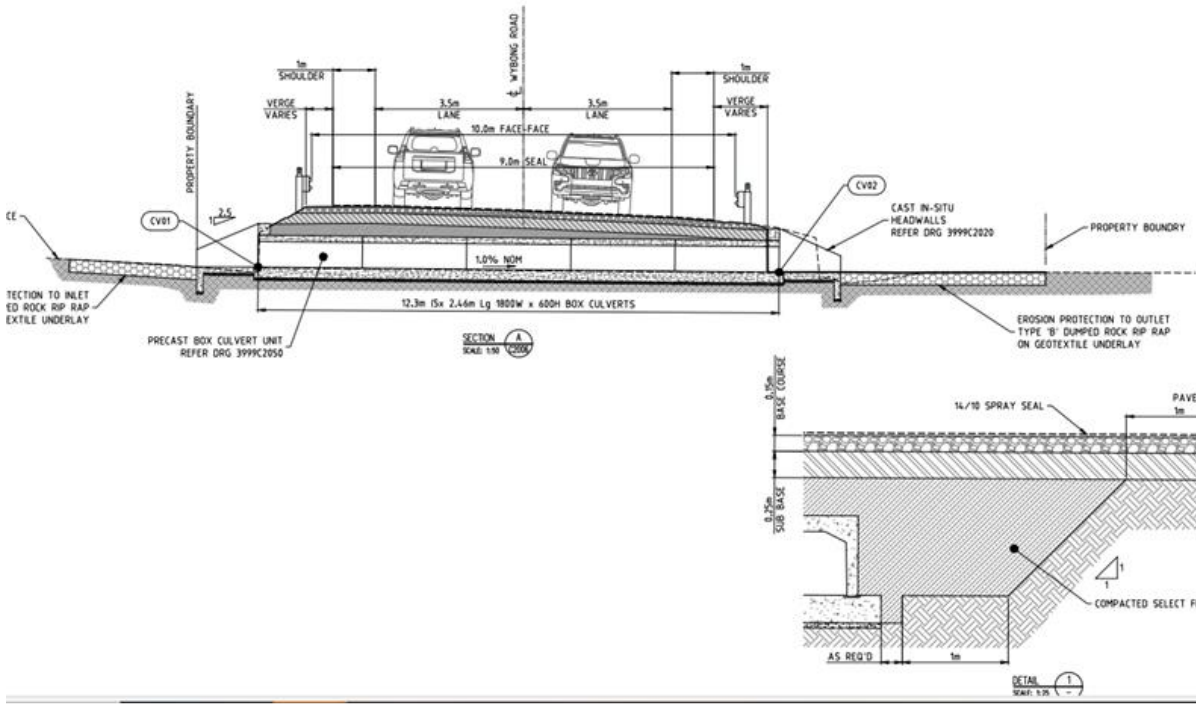
Wybong Road Betterment – Proposed Typical Section



The section of Wybong Road subject to the current design is classed as RS3M with 6.2 m travel lane, 2 x 1.0 m sealed shoulders and 2 x 1.0 m unsealed shoulder portion. Total formation width 10.2m. Although it could be argued that the function of the road is going to change, bringing it up to a Class RS2M, as the road currently is not permitted to be used for local mine related traffic including mine related heavy vehicle use.

The below typical section depicts the standard of a recent constructed section of Wybong Road West.

Wybong Road West Typical Section – recent upgraded section



The key difference between Wybong Road and other local rural roads is the function that it serves as an Over Size Over Mass (OSOM) route, and the predicted uses of the local road have been considered in the development of the mine affected road classes, with the details outlined in the Mine Affected Road Strategy and Plan.

It is important to note that the typical OSOM, carrying mine truck trays using the route, is a minimum width of 9.0 m, with the largest width having been issued a permit being 9.5 m wide. When these movements occur, there is no shoulder for contra-movement traffic to pull over on. This is an impact which needs consideration in setting formation width. It is noted that the typical section from the recently constructed work allows for 10.0 m between guardrails. During a sustained period of wet weather, Council has needed to close this route to OSOM movements for reasons of public safety and to protect the road pavement west of Mangoola Mine access, as there is no road shoulder for opposing vehicles to get off the road (high likelihood of bogged vehicles) and the heavy weight on the edge of the pavement is damaging in waterlogged subgrades. This fact is worth consideration by TfNSW when managing the road in the future.

TfNSW has indicated that they will have difficulties delivering a wider pavement to meet MSC current standard within the available funding allocation However, looking at this practically, the proposed formation is only deficient by 10.2 m - 9.45m = 700 mm, and Council may accept this non-conformance of formation width if TfNSW is comfortable with accepting the legacy road management matters.

The other main difference is the sealed road width, with the MSC standard requiring a minimum of 8.2 m and the proposed being 7.44 m bitumen seal. It is proposed that Council would not accept a non-conformance to decrease the sealed width for safety reasons.

It is recommended that Council informs TfNSW that the preference is for sealed shoulders and that, therefore, it would accept the typical section proposed with the amendment to reflect a total minimum sealed formation width of 9.45 m.

FINANCIAL CONSIDERATIONS

Ongoing Operational and Maintenance Costs Implications Associated with Capital Project

1. ***Financial Implications – Capital***

   The capital cost of the work would be to the upper limit of the available funding of $6,526,576

2. ***Financial Implications – Operational***

   There would be no operational cost to Council as the road is proposed to be gazetted as State Road following the construction work.

POLICY IMPLICATIONS

Council is the roads authority and is acting within its powers.

STATUTORY / LEGISLATIVE IMPLICATIONS

Council is the roads authority and is acting within its powers.

RISK MANAGEMENT IMPLICATIONS

Council could consider engaging Transport for NSW under contract to deliver the scope of work subject of the DRFA funding to reduce risk to delivery of the works to meet required timelines for the Port to REZ project set by Transport for NSW.

COMMUNITY CONSULTATION / COMMUNICATIONS

Consultation with both the directly impacted properties and wider users of the road will be undertaken at both the preliminary and construction stages of the project.

Flexible Pavement Design 2.0 - Summary Report

Design Filename: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\Design1.fpd2
FPD software verion: FPD 2.0 Version 1B (12 March 2020)
CIRCLY software version: 5.0u (8 April 2013)

Project Details

Project Title: Wybong Road
Location: Hollydeen
Pavement Tag: Insitu Modified
Comments: Western Zone Subgrade CBR5%
Date of Design: 3/03/2025
Designer: RTS Grafton
Project Reliability (%): 90
WMAPT (°C): 30
Design Speed (km/h): 100

Load Details

Single Axle Single Tyre (SAST) Standard Axle Load: 53 kN Tyre Contact Stress: 800 kPa
Single Axle Dual Tyre (SADT) Standard Axle Load: 80 kN Tyre Contact Stress: 750 kPa

Traffic Details

PTL report: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\WybongPTLexport.xlsx
TLD Title: 2018 Rural Presumptive TLD
Design Period (yrs): 20 Design Traffic - N_{DT} (HVAG): 3.03E+06 N_{DT} (ESAs): 3.19E+06
Annual growth rate (%): 2.0 N_{DT} for asphalt fatigue (HVAG): 3.03E+06 ESA/HVAG: 1.054

Axle Group	SAST	SADT	TAST	TADT	TRDT	QADT	From PTL
Proportions	0.3044	0.0670	0.0020	0.2781	0.3465	0.0020	Report

Layer Details

Layer No.	Description	Material	Thickness (mm)	Ev (MPa)	Ev / Eh	Poisson's Ratio	Lower Interface	% Vol. Bitumen	Sublayer?
1	DGB Class 2 (3051.1)	Granular	190	350	2.0	0.35	Rough	N/A	Yes
2	DGS20 (3051.1)	Granular	150	250	2.0	0.35	Rough	N/A	Yes
3	Selected Material (SMZ)	Selected Subgrade	250	150	2.0	0.35	Rough	N/A	Yes
4	Cohesive Subgrade	Subgrade	S/Inf	50	2.0	0.45	N/A	N/A	N/A

Layer Results

Layer No.	Description	Thickness (mm)	Vertical Modulus (MPa)	Stress Param. f (MPa)	k Factor	Failure Criterion	Maximum Microstrains			Expected Reps (ESAs)	Allowable Reps (ESAs)	CDF (Damage)	Estimated Life in Years
							SAST	SADT					
							Hor.	Hor.	Vert.				
1-2.1	S/L Granular Pavement	68	350	259	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.2	S/L Granular Pavement	68	295	219	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.3	S/L Granular Pavement	68	249	185	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.4	S/L Granular Pavement	68	211	156	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.5	S/L Granular Pavement	68	178	132	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.1	S/L Selected Material (SMZ)	50	150	111	9150	Rutting	N/A	N/A	593.2	3.19E+06	2.08E+08	0.02	>50
3.2	S/L Selected Material (SMZ)	50	120	89	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.3	S/L Selected Material (SMZ)	50	97	72	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.4	S/L Selected Material (SMZ)	50	78	57	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.5	S/L Selected Material (SMZ)	50	62	46	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	**Cohesive Subgrade**	**S/Inf**	**50**	**34**	**9150**	**Rutting**	**N/A**	**N/A**	**690.9**	**3.19E+06**	**7.15E+07**	**0.04**	**>50**

Note: For construction purposes, an additional 10mm must be added to the critical layer, the damage for which is highlighted in bold above.

Non-conformances

Layer No.	Non-conformance description	Reference
3	Thickness of SMZ less than 300mm (required minimum thickness).	RMS Supplement 5.3.6

2018 Rural Presumptive TLD						
	Axle group type					
Axle group load (kN)	SAST %	SADT %	TAST %	TADT %	TRDT %	QADT %
10	3.2524	16.4151	2.8990	0.1572	0.0071	0.0000
20	7.6949	30.3420	2.0029	0.5451	0.0310	0.0000
30	3.1258	13.3169	0.6796	0.6241	0.0541	0.0690
40	3.7531	8.7761	0.6081	0.8996	0.2116	0.2758
50	16.9342	8.1179	2.4680	1.1759	1.2353	0.3792
60	52.4934	7.4348	6.6877	2.5800	3.8528	0.8274
70	10.2776	5.8528	11.3725	4.8833	5.7266	1.2758
80	1.7075	4.5056	15.3777	6.5131	5.7878	3.2066
90	0.5852	2.3832	17.2731	6.7622	5.0538	4.3094
100	0.1759	1.1701	17.2760	7.4089	5.0639	4.1035
110	0.0000	0.7909	11.4460	8.8279	5.5024	4.4825
120	0.0000	0.4358	5.1858	8.2671	5.1903	3.8277
130	0.0000	0.3069	2.8255	8.0064	5.3248	4.3789
140	0.0000	0.1519	1.6811	8.0873	5.2651	4.7926
150	0.0000	0.0000	1.2873	8.9493	5.4725	4.2067
160	0.0000	0.0000	0.9297	9.7239	6.0876	4.7585
170	0.0000	0.0000	0.0000	7.3061	6.4428	4.8964
180	0.0000	0.0000	0.0000	4.4557	7.3920	4.8958
190	0.0000	0.0000	0.0000	2.2787	7.8481	5.0688
200	0.0000	0.0000	0.0000	1.1198	6.8469	4.5520
210	0.0000	0.0000	0.0000	0.6558	5.0767	4.6559
220	0.0000	0.0000	0.0000	0.4006	2.8196	5.3120
230	0.0000	0.0000	0.0000	0.2618	1.4952	4.5176
240	0.0000	0.0000	0.0000	0.1102	0.8706	5.6896
250	0.0000	0.0000	0.0000	0.0000	0.4962	4.1378
260	0.0000	0.0000	0.0000	0.0000	0.3567	3.9315
270	0.0000	0.0000	0.0000	0.0000	0.2215	3.3106
280	0.0000	0.0000	0.0000	0.0000	0.1391	2.4485
290	0.0000	0.0000	0.0000	0.0000	0.0998	1.5518
300	0.0000	0.0000	0.0000	0.0000	0.0281	1.3104
310	0.0000	0.0000	0.0000	0.0000	0.0000	1.1038
320	0.0000	0.0000	0.0000	0.0000	0.0000	0.6206
330	0.0000	0.0000	0.0000	0.0000	0.0000	0.3103
340	0.0000	0.0000	0.0000	0.0000	0.0000	0.3103
350	0.0000	0.0000	0.0000	0.0000	0.0000	0.4137
360	0.0000	0.0000	0.0000	0.0000	0.0000	0.0690
370	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
380	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
390	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
400	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
Group proportions	0.3044	0.0670	0.0020	0.2781	0.3465	0.0020

Northern Region
Wybong Road

Pavement Rehabilitation and Widening

Report No: N2024091
Report Issued Date: 13/3/2025
Prepared for: Stuart Austin
Prepared by: Pavements and Geotechnical North

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Report Registration

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Report Subtitle:	Wybong Road
Report Number:	N2024091
Project Reference Number:	N2024091
Responsible Capability:	Pavements and Geotechnical North
Responsible Discipline:	Geotechnical Science
Report Authorisation:	Pavements and Geotechnical Manager
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	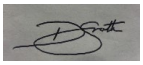
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Unit: Regional Technical Services	Unit: Regional Technical Services
Date: 7/3/2025	Date: 10/03/2025

Note: The functions of the former State Government agency Roads and Maritime Services (RMS or Roads and Maritime) are now administered by Transport for NSW.

Important Disclaimer

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Contents

1 Introduction

Client: Project Services Northern.

Summary of Brief:

The design scope for the project is to rehabilitate the western portion of Wybong Road and includes:

- Undertake pavement investigations (if required) and provide pavement rehabilitation and widening design options to achieve a **20-year** design life.
- Current sealed width is 7.0m, targeting 3.5m travel lanes and 1m shoulders (widening required).
- Preferred options to include incorporation of existing materials.
- Provide data for replacement of causeway with box culvert.
- Consider drainage requirements.

The constraints identified in the brief are:

- Works within existing road reserve.
- Retain existing driveways and accesses.
- Existing culverts and causeway.
- AHIMS artefact.

Total length of pavement to be rehabilitated and widened: 2.5km

2 Site Investigation

Test Pits and Augers: Undertaken on 13-15th January 2025 by TfNSW laboratory staff. Appendix A provides location plans of the investigation, whilst Table 1 contains location data and comments on pavement conditions.

Ten pavement test pits were undertaken and three auger holes next to the existing causeway which is proposed to be replaced by a box culvert as part of the project. A further eight DCP tests were undertaken to investigate foundation conditions for possible pipe culvert extensions.

Test Location	GPS Co-ordinates	Location/Pavement Condition
WB1	Lat: -32.33006; Long: 150.59902	Eastbound/Poor, rutting, shoving, numerous repairs.
WB2	Lat: -32.33128; Long: 150.59643	Westbound/Fair, stripping, nearby deformation.
WB3	Lat: -32.33222; Long: 150.59396	Eastbound/Poor, severe rutting, large patches, stripping.
WB4	Lat: -32.33317; Long: 150.59189	Westbound/Good, extensive stripping.
WB5	Lat: -32.33430; Long: 150.58907	Eastbound/Good, stripping, plucking.
WB6	Lat: -32.33526; Long: 150.58704	Westbound/Fair, rutting, stripping, pothole repairs.
WB7	Lat: -32.33613; Long: 150.58418	Eastbound/Poor, rutting, deformation, numerous repairs, cracking, flushing, stripping.
WB8	Lat: -32.33668; Long: 150.58216	Westbound/Poor, rutting, cracking, repairs, stripping.
WB9	Lat: -32.33772; Long: 150.57939	Eastbound/Poor, rutting, shoving, pothole repairs, open holes.
WB10	Lat: -32.33837; Long: 150.57774	Westbound/Poor, rutting, water ponding, pothole repairs, cracking, flushing, open holes.
WB C1.1	Lat: -32.33113; Long:150.59683	Pipe Culvert Inlet Westbound.
WB C1.2	Lat: -32.33103; Long: 150.59677	Pipe Culvert Outlet Eastbound.
WB C2.1	Lat: -32.33214; Long: 150.59453	Pipe Culvert Inlet Westbound.
WB C2.2	Lat: -32.33201; Long: 150.59445	Pipe Culvert Outlet Eastbound.
WB C3.2	Lat: -32.33266; Long: 150.59286	Pipe Culvert Outlet Eastbound.

Test Location	GPS Co-ordinates	Location/Pavement Condition
WB C4.1	Lat: -32.33615; Long: 150.58436	Causeway Auger Westbound/Poor, extensive concrete cracking.
WB C4.2	Lat: -32.33606; Long: 150.58440	Causeway Auger Eastbound/Poor, extensive concrete cracking.
WB C4.3	Lat: -32.33606; Long: 150.58447	Causeway Auger Eastbound/Poor, extensive concrete cracking.
WB C5.2	Lat: -32.33640; Long: 150.58264	Pipe Culvert Outlet Eastbound.
WB C6.1	Lat: -32.33721; Long: 150.58092	Pipe Culvert Inlet Westbound.
WB C6.2	Lat: -32.33710; Long: 150.58085	Pipe Culvert Outlet Eastbound.

Table 1: Test Pit and Auger Locations

2.1 Existing Pavement Condition

The existing pavement condition was observed to range from good to poor. Much of the road surface is worn, with rutting and shoving deformations and multiple patches. Shoulder widths ranged from 0-2.0m and were either sealed or grassed.

Photo 1 – Google Earth image showing patches, rutting, cracking and flushing near WB9

2.2 Test Pits – Existing Pavement Structure

The investigation encountered relatively similar pavement materials in all ten of the test pit locations. The base layer was typically logged as Granite derived Silty Sandy Gravel. Subbase and Select layers were described as Sandstone derived Gravelly Clayey Sand, or Silty Sandy Gravel. Most of the test pits contained some Silty Sand or Gravelly Sand Fill

beneath the pavement layers. Subgrade materials generally comprised Silty or Gravelly Sand.

Material properties and typical thickness of each layer are summarised below.

- Base material was found to have Plasticity Index (PI) values ranging from 9-11%, and Field Moisture Contents (FMC) ranged from 4.7% to 8.7%. The total base thickness ranged from 80mm to 320mm.
- Subbase material testing provided PI results of 3-10% and FMC results ranged from 5.6% to 10.6%. The total subbase thickness where present ranged from 120mm to 220mm.
- Select material returned CBR values of 18% & 50%; and FMC's ranging from 4.3% to 10.8%. Where present the total Select thickness ranged from 130 - 320mm.

A full summary of test results is provided in Section 3 below.

The total pavement thickness ranged from 310mm to 680mm including select layers. The test pit excavations indicated that the pavement gravel typically extends outside of the pavement edge by around 0.2-0.7m but tapers in thickness, has less compaction, and has some contamination with topsoil/organics.

Fill was encountered in most of the test pits and comprised Silt or Gravelly Sand. CBR values ranged from 25% to 60%. We note that some Clayey Sand fill was observed at the western end of the site.

In most cases the subgrade was logged as Silty Sand with CBR values of 35% in two of the samples tested. Test location WB1 and WB2 encountered Sandstone bedrock at around 0.5m depth. At the Western end of the study area (WB10) the subgrade comprised Clayey Sand which had an FMC of 15.1% and a CBR of 5%. Dynamic Cone Penetration (DCP) testing indicated similar inferred CBR values ranging from 4% to 10%.

Test pit logs, photos and a summary of strata encountered during the investigation are presented in Appendix B.

3 Laboratory Testing

Selected pavement gravel, fill and subgrade samples were subject to Particle Size Distribution (PSD or grading), Atterberg Limits (PI), Maximum Dry Density (MDD) and California Bearing Ratio (CBR) testing. The test certificates are attached in Appendix C, with results summarized in Table 2 below.

Test hole number	Sample number Depth (m) Material description	FMC (%)	OMC (%)	Moisture Ratio (%)	Moisture content (%), of CBR after soaking	MDD (t/m3)	LL (%)	PL (%)	PI (%)	Swell (%), at 10 days soaking	CBR (%), at 10 days soaking
WB1	WB1A 20-165mm Base	6.3					28	17	11		
WB1	WB1C 300-520mm Select	9.0	12.6	101	14.0	1.941				0.4	18
WB2	WB2B 100-290mm Subbase	6.1					20	14	6		
WB3	WB3A 15-170mm Base	6.2					26	17	9		
WB3	WB3C 330-730mm Fill	5.7	9.6	99	10.6	1.965				0.0	60
WB4	WB4C 340-890mm Fill	6.5	9.6	100	9.7	2.064				0.1	25
WB5	WB5B 105-280mm Subbase	8.7					25	15	10		
WB5	WB5E 810-1100mm Subgrade	6.9	10.2	100	10.5	1.966				-0.1	35

Test hole number	Sample number Depth (m) Material description	FMC (%)	OMC (%)	Moisture Ratio (%)	Moisture content (%), of CBR after soaking	MDD (t/m3)	LL (%)	PL (%)	PI (%)	Swell (%), at 10 days soaking	CBR (%), at 10 days soaking
WB6	WB6A 20-150mm Base	7.1					27	17	10		
WB7	WB7B 110-230mm Subbase	6.5					17	14	3		
WB7	WB7F 980-1190mm Subgrade	8.8	11.7	100	11.8	1.887				-0.2	35
WB8	WB8A 15-135mm Base	6.7					28	18	10		
WB9	WB9C 250-540mm Select	6.4	10.4	99	1.07	1.972				-0.2	50
WB10	WB10A 15-340mm Base	7.2					27	17	10		
WB10	WB10D 540-810mm Subgrade	15.1	14.5	100	15.9	1.887				0.9	5

Table 2 – Summary of Laboratory Test Results

3.1 Assessment of Laboratory Testing

- Base samples Atterberg Limits results: LL = 26% to 28%, PI = 9% to 11%.
- Subbase samples Atterberg Limits result: LL = 17% to 25%, PI = 3% to 10%.
- Select/Fill sample results: 10-day soaked CBR = 18% to 50%.
- Natural subgrade results: 10-day soak CBR = 5% to 35%.

Laboratory results show the existing pavement layer materials to have a range of PI values. When compared to the requirements of TfNSW Specification 3051 for DGB (Class 2) and DGS, the existing Base layer Atterberg Limit results are high; whilst the Subbase samples PI and LL's conform apart from one sample (WB5) with a slightly high LL.

Figure 1 below presents the particle size distribution (grading) results for the base layer samples compared to the requirements of TfNSW Specification 3051 for DGB (Class 2).

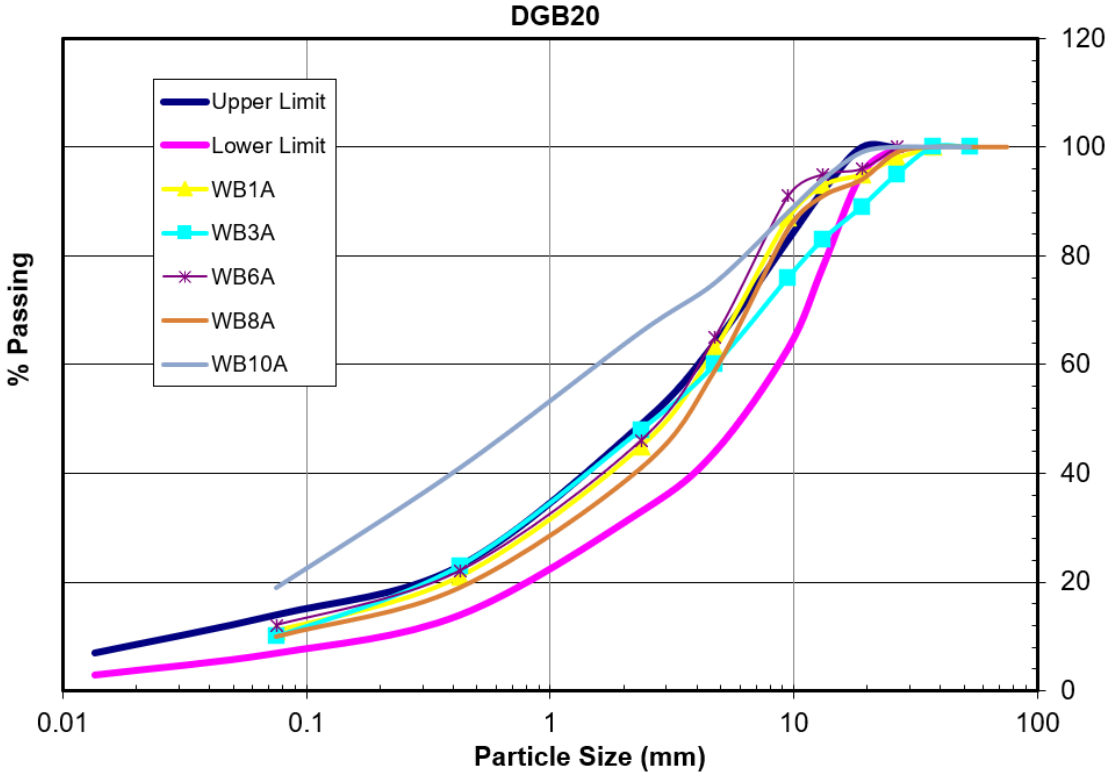


Figure 1: Base PSD analysis compared to requirements of TfNSW Specification 3051

The grading results indicate that the base material within the segment typically conforms apart from WB10 at the western end of the site which has an excess of fine particles when compared to the specification.

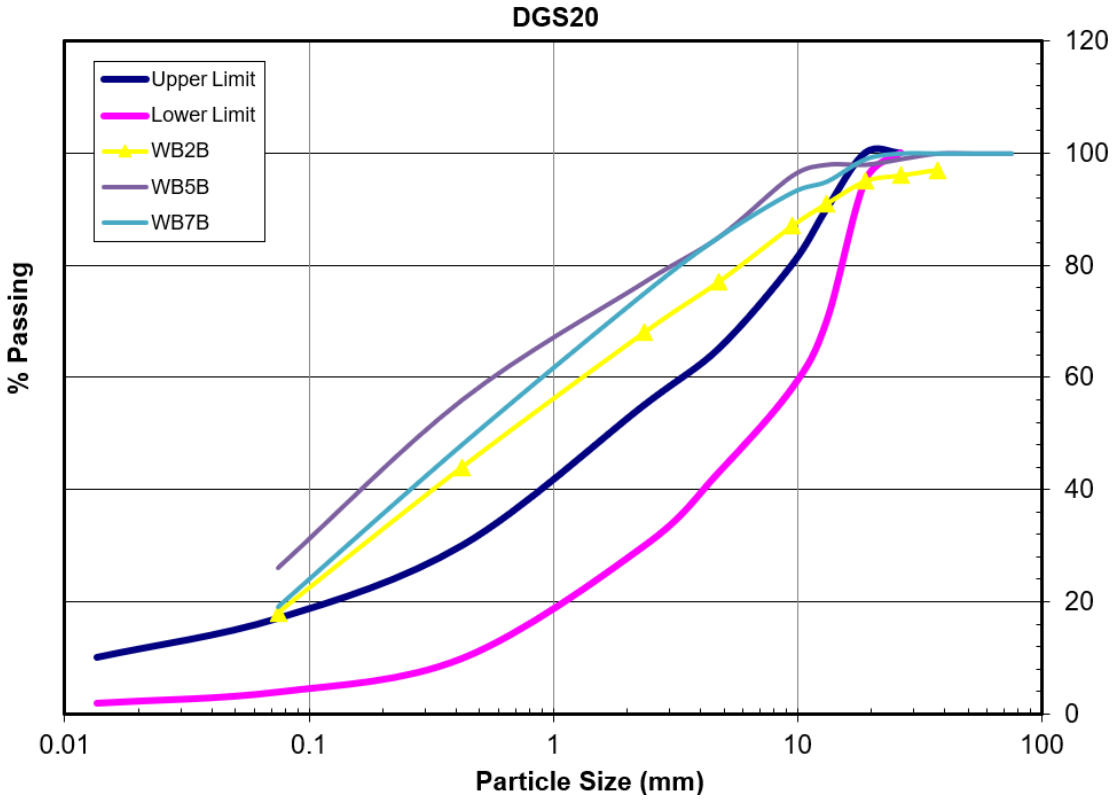


Figure 2: Subbase PSD analysis compared to requirements of TfNSW Specification 3051

Figure 2 presents grading results for the existing subbase layer compared to the specification for DGS20. The results show an excess of fine particles in all samples tested.

3.2 Typical Pavement Profile

The Typical Pavement Profile is a model interpreted from the test pit logs which represents the existing pavement layers for design purposes. Given the length of the study area, the observed poor condition of the Western end of the site (from the Causeway to the Golden Highway intersection – test locations WB 7-WB10) and the presence of clayey lower CBR fill and subgrade materials in this area, the site has been split into two distinct zones. Tables 3 & 4 show the typical pavement profiles which have been selected for the design of the pavement rehabilitation options. Figure 3 in Section 4 shows the general layout of the site.

Table 3: Typical Pavement Profile East of Causeway (WB1 – WB6)

Base: 0-150mm	Existing Base
Subbase 150-300mm	Existing Subbase
Select 300-500mm	Existing Pavement Gravels
Subgrade -500mm	Natural or Fill Subgrade CBR=10%

Table 4: Typical Pavement Profile West of Causeway (WB7 – WB10)

Base: 0-150mm	Existing Base
Subbase 150-300mm	Existing Subbase
Select 300-500mm	Existing Pavement Gravels
Subgrade -500mm	Natural or Fill Subgrade CBR=5%

The test pit investigation indicates that existing pavement material extends to between 3.9m and 6.2m from the centreline, with less compacted and potentially contaminated materials tapering beyond the edge line.

3.3 Drainage

Existing pavement layers were typically logged as being slightly moist to very moist. The natural subgrade was logged as being moist.

During the field investigation surface drainage was typically described as being in poor to fair condition. Only some of the segment has well developed open drains. Many of the drains were observed to be shallow, clogged and vegetated with areas of ponding water evident on streetview. This indicates a lack of positive flow of water away from the pavement layers. It is likely the pavement will benefit by the addition of SO kerb in areas of cut. Free water was not observed within the test pits.

4 Assessment of Issues

Overall, the pavement is in poor to fair condition. Laboratory testing of the base and subbase layer materials indicates excessive PI in the base gravels which leads to rutting and shoving style failures. Particle Size Distribution testing showed some of the Base and all of the Subbase materials to have an excess of finer particles which leads to poor interlock between particles and loss of strength.

Moist pavement materials and grassed embankment batters and shallow open drains suggest a lack of egress for moisture from the formation.

The western end of the study area (WB7 - WB10) between the existing causeway and the intersection with the Golden Highway has poor pavement conditions, areas of Clayey fill and some areas of CBR 5% Clayey Sand Subgrade which is significantly lower than the remainder of the site. The layout of pavement zones is shown below in Figure 3.

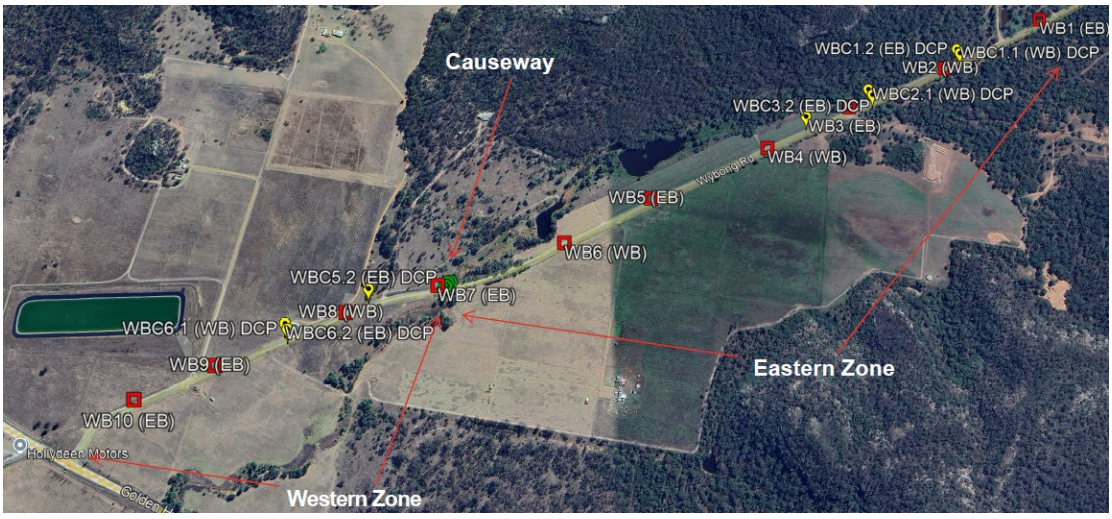


Figure 3: Layout of Pavement Zones

5 Pavement Design Options

Design Traffic

Station: Wybong Rd east of the near Mangoola Mine entrance (AADT + HV%)

Site 5 (Lat: -32.26501, Long: 150.71898) traffic counts 2024.

Design AADT: 1310

Growth Rate: 2.00%

Design Year 1: 2026

% HV: 16.0%

DESA (20 Years): 3.19×10^6

Design Subgrade CBR:

Based on results of DCP testing and 10-day soaked CBR's, a Design Subgrade CBR value of 10**%** has been selected for the portion of the Zone East of the Causeway, and 5% for the portion of Zone West of the Causeway.

5.1 Pavement Rehabilitation and Widening Options

The pavement rehabilitation design for this report is based on the representative pavement model of the existing pavement which has been derived from the test pit logs. CIRCLY analysis is presented in Appendix D.

TfNSW QA Specifications relevant to the rehabilitation design and construction include:

- TfNSW 3051 – Granular Pavement Base and Subbase Materials
- TfNSW 3071 – Selected Materials for Formation Layers
- TfNSW R71 – Construction of Unbound and Modified Pavement Course,
- TfNSW R75 – Insitu Pavement Stabilisation Using Slow Setting Binders
- TfNSW116 – Heavy Duty Dense Graded Asphalt

5.1.1 Existing Profile

CIRCLY analysis of the typical profile indicates the existing pavement profile in the Eastern portion of site (CBR 10% subgrade) achieves a >50yr design life whilst the Western portion (CBR 5% subgrade) achieves a 37-year design life.

We understand the existing pavement was constructed in the early 1990's. Much of the existing pavement is currently in poor condition with poor quality gravels and has multiple defects. The pavement is reaching the end of its life and would benefit from rehabilitation.

5.1.2 Option 1: Full Width Granular Overlay

This option involves addition of a small amount of new DGB20 (where required for shape correction), pulverization to 150mm depth (including the seal) to remove defects and provide a consistent Subbase layer, and recompaction. This is followed by addition of 140mm thick layer of new DGB20 and a sprayed seal.

This treatment option will provide a new conforming base layer (including a 10mm design tolerance) with multiple options for future rehabilitation; and sufficient cover for a >50-year design life (CIRCLY analysis is presented in Appendix D).

Potential construction risks include over-wetting of the existing material causing issues gaining compaction in overlying layers.

5.1.3 Option 2: Heavily Bound Insitu Stabilisation

Option 2 involves in-situ stabilisation (TfNSW R75) to a depth of 290mm in the Eastern section and 325mm in the Western portion (includes 10mm design tolerance), and a sprayed seal.

CIRCLY analysis indicates a design life greater than 20 years for this option.

This option is not recommended due to potential issues including:

- Presence of poor quality gravels in the existing profile causing early failures.
- Difficulty gaining compaction due to presence of a thin pavement layer under the HB layer, particularly at the eastern end of site where subgrade is shallow (WB3, WB4) .
- Cracking due to excessive strength gain.
- Limited options for future rehabilitation.

5.1.4 Option 3: Insitu Modification

This option involves addition of a minimum 100mm of new DGB20 to the existing pavement to improve the gravels mechanical properties, followed by pulverisation to 200mm depth (including the seal) and blending of approximately 1.5-2% hydrated lime to create a uniform modified layer.

Risks include:

- Thin cover over natural subgrade (WB10) which may contain weaker clayey zones .
- Difficulty gaining compaction due to presence of a thin pavement layer under the modified layer (WB3, WB4).
- Cracking due to excessive strength gain.

UCS trials would need to be undertaken if Options 2 or 3 are selected. We understand the TfNSW laboratory has sufficient sample retained for this work if requested.

5.1.5 Asphaltic Concrete Treatment Options

Asphalt designs have been generated to provide options for the Wybong Rd/Golden Highway intersection, the new box culvert pavement, or for treatment of the entire study area. The AC designs are intended to be suitable for both pavement areas, and as a future

overlay treatment after the first phase of rehabilitation has been constructed. We note pavement options for the new box culvert are presented in Section 7.1.1 below.

We have assumed that the recommended option (refer to table 5 below) has been constructed adjacent to the area to be treated with AC, and that target finished levels are the same (i.e. approximately 140mm above existing).

This option involves milling 35mm from the existing surface, proof rolling and removal/replacement of localized defective areas or AC/HBB patches with compacted DGB20. This is followed by addition of a 7mm low cutter seal, 125mm of AC20 placed in two layers (includes a 10mm design tolerance), and an AC14 wearing course.

This is outlined in Table 5 below and will achieve a minimum 20yr design life. We note the modulus of the underlying Base and Subbase has been reduced due to the presence of overlying bound layers as per “Austroads Guide to Pavement Technology Part 2: Pavement Structural Design Table 6.4”.

Pavement Layer	Depth Profile	Layer Description
Wearing Course	0-50mm	AC14 A15E
Base Course	50-175mm	125mm of AC20 C450 placed in 2 layers - includes 10mm design tolerance
Seal	175mm	7mm low cutter seal
Existing Base	175-280mm	Existing base, milled to -35mm below surface, proof rolled and repaired as needed.
Existing Subbase	280-430mm	Existing Subbase gravels
Select	430-630mm	Existing Pavement Materials
Natural or Fill Subgrade	-630mm	CBR 5% Fill or Natural materials

Table 5 – Asphaltic Concrete Option

5.1.6 Widening Options

From the scope we understand the sealed width could require widening through some of the alignment.

If widening of the sealed width within the zone where existing pavement materials are present, we recommend boxing out 100mm, inspection and proof rolling the resultant surface, addition of 100mm of new DGS20 quality material (or better) followed by a full width treatment.

Uncompacted, poor quality or loose material within the existing shoulder profile will cause challenges in gaining compaction during widening construction or early failures, and will need to be boxed out and replaced. A foundation treatment may be required to allow compaction of overlying layers. Foundation treatment options can be provided by Pavements and Geotechnical North during construction, if required.

Where existing suitable pavement materials are not present, we recommend construction of the full pavement depth profile (refer to Table 7).

6 Pavement Rehabilitation Recommendations

New pavement layers should be shaped and day-lighted to allow moisture egress. Shoulders and drains should be clear of vegetation and deepened where appropriate.

New pavement layers should be keyed or stepped into the existing formation during construction of the widening. If possible, construction joints should avoid the wheel paths.

Heavy or deep AC patches should be removed prior to treatments.

The authors preferred rehabilitation and widening options are presented in Tables 6 and 7 below.

Pavement Layer	Depth Profile	Layer Description
Wearing Course	0mm	Sprayed Seal
Base Course	0-140mm	140mm of new DBG20 - includes 10mm design tolerance
Subbase Course	140-290mm	Existing pavement gravels materials, pulverised and recompacted with additional DGB20 for shape correction where required.
Select	290-630mm	Existing pavement materials.
Natural or Fill Subgrade	-630mm	CBR 5% Fill or Natural materials

Table 6 – Option 1: Typical Pavement Rehabilitation Profile

Pavement Layer	Depth Profile	Layer Description
Wearing Course	0mm	Sprayed Seal
Base Course	0-140mm	140mm of new DBG20 – includes 10mm design tolerance
Subbase Course	140-290mm	150mm layer comprising 100mm new DGS20 or better, blended with 50mm existing gravels, or 150mm new DGS20 if existing materials are unsuitable.
Select	290-500mm	Existing pavement gravels, or 210mm of new Select if existing materials are unsuitable.
Natural or Fill Subgrade	-500mm	CBR 5% Fill or Natural materials

Table 7 – Proposed Pavement Widening Profile

7 Culvert Foundations

We understand the existing concrete causeway is to be replaced by a box culvert structure, and that extension of the existing culverts may be required as part of the project.

7.1 New Box Culvert

During the investigation three Auger boreholes (and DCP tests) were undertaken adjacent to the existing concrete causeway to inform foundation design for the new structure. A site plan, logs, photographs and test results are presented as Appendix E. Photograph 2 shows the existing causeway whilst Table 8 below summarises the new culvert investigation findings.

Photograph 2: Existing Causeway Viewed from West

Location	Likely Foundation Conditions from DCP Test
WB C4.1 Westbound	Medium dense Sand to 0.1m, underlain by dense Sand and Gravelly Sand to 1.0m depth. Wet, stiff Sandy Clay and dense Clayey Sand below 1.0m depth. Groundwater encountered from 0.9m below causeway level.
WB C4.2 Eastbound	Very loose, wet Silty Sand to 0.15m, medium dense, wet Sand to 0.5m. refusal at 0.5m on concrete.
WB C4.3 Eastbound	Medium dense, wet Sand and Silty Sand to 1.0m depth underlain by loose, wet Sand to 1.5m. Groundwater encountered at 1.0m below causeway.

Table 8 – New Culvert Foundation Conditions

The results indicate variable ground conditions are present within the new culvert footprint. It appears the existing watercourse comprises a relatively incised channel with localised zones of loose wet sand. We envisage that areas requiring mechanical compaction or a remove and replace treatment will be present within the new structure footprint.

Areas of unsuitable or deleterious material within the foundation should be replaced with controlled fill (in dry conditions) or compacted rock fill with a geotextile underlay in wet conditions.

7.1.1 Pavement Design Options for New Culvert

At the time of writing this report the new culvert design including the required amount of pavement cover was not available. We have assumed a minimum of 375mm of cover over the structures selected overlay material, however this should be checked once the design is finalised.

Asphalt and Flexible Granular options are presented in Tables 9 & 10 whilst Circly outputs are included in Appendix D.

Pavement Layer	Depth Profile	Layer Description
Wearing Course	0-50mm	AC14 A15E
Base Course AC	50-175mm	125mm of AC20 C450 placed in 2 layers - includes 10mm design tolerance
Seal	175mm	7mm low cutter seal
Subbase	175-375mm	200mm of new DGB20 placed in 2 layers.
Box Culvert Overlay	-375mm	Min CBR10% Culvert Overlay as per R11

Table 9 – Proposed AC Overlay for New Culvert

Pavement Layer	Depth Profile	Layer Description
Wearing Course	0mm	Sprayed Seal
Base Course	0-140mm	140mm of new DBG20 - includes 10mm design tolerance
Subbase Course	140-270mm	130mm new DGS20 (or better)
Select	270-375mm	105mm New Select (or better)
Natural or Fill Subgrade	-375mm	Min CBR10% Culvert Overlay as per R11

Table 10 – Proposed Flexible overlay for New Culvert

7.2 Existing Culvert Extension Foundations

We understand that five existing pipe culverts may need extending to achieve the targeted road width. During the investigation the site team undertook DCP testing within the potential extension footprint starting from the approximate invert of the existing pipes. Appendix F presents a plan showing locations, DCP results and photographs of the culvert ends. Table 11 below presents the results of the testing with comments on subsurface conditions. We note that the inlets at WB C3 and WB C5 were not accessible at the time of investigation.

Location	Likely Foundation Conditions from DCP Test
WB C1.1 Inlet	Medium dense, moist Sand to 20mm below existing invert overlying weathered Sandstone.
WB C1.2 Outlet	Medium dense, moist Sand to 50mm below invert overlying dense/very dense Sand becoming weathered Sandstone 165mm below invert.
WB C2.1 Inlet	Medium dense, moist Sand (or better) with inferred weathered Sandstone from 100mm below invert.
WB C2.2 Outlet	Medium dense, moist Sand (or better) with inferred weathered Sandstone from 100mm below invert.
WB C3.2 Outlet	Medium dense to dense, moist Sand (note inlet side not tested due to hazardous conditions).
WB C5.2 Outlet	Loose, moist Sand to 230mm below invert overlying dense to very dense Sand with weathered rock from 0.5m depth (note inlet side not tested due to access issue).
WB C6.1 Outlet	Loose, moist Sand to 235mm below invert with refusal on concrete or cobbles below this level (3 tests attempted).
WB C6.2 Inlet	Medium dense, moist Sand to 400mm below invert. Loose to very loose Sand from 400-900mm below invert underlain by medium dense to dense sand.

Table 11 – Culvert Extension Foundation Conditions

Based on the observed site conditions (potential traffic loadings, insitu materials, existing embankment heights), and experience on other projects we recommend culvert extensions be founded on materials with a minimum density index of Medium Dense (or DCP blows of 4 or better per 100mm) or Stiff Clay (Undrained Shear Strength of 100kPa). This will help avoid issues such as differential settlement, pavement damage, unit separation and internal erosion.

Based on the locations tested, foundation material with suitable bearing capacity is expected at foundation level at Culverts WB C1, C2, C3. Culverts WB C5 & C6 have a zone of loose sand within the profile and will likely require either mechanical compaction or a remove and replace treatment.

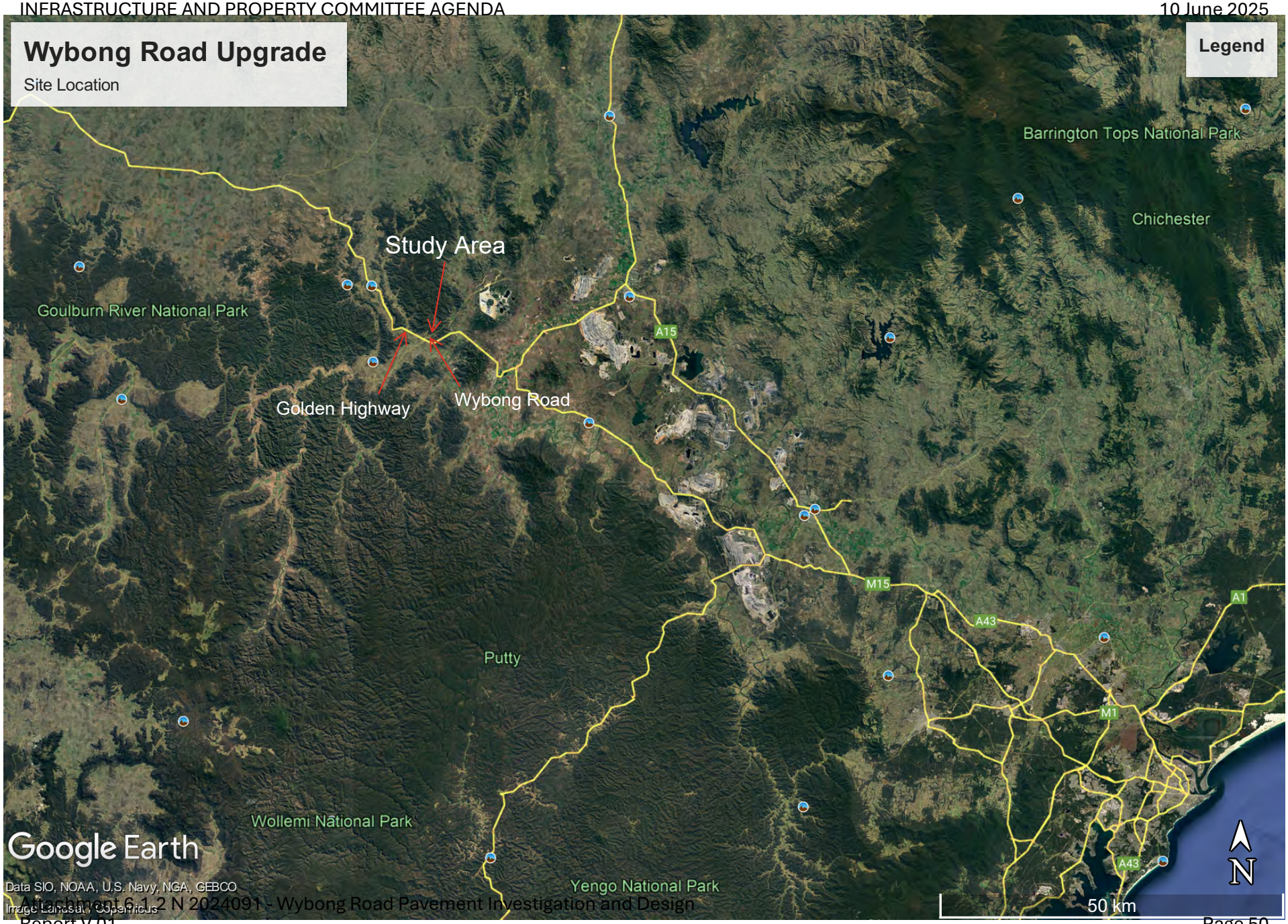
Areas of unsuitable or deleterious material within the foundation should be replaced with controlled fill (in dry conditions) or compacted rock fill with a geotextile underlay in wet conditions.

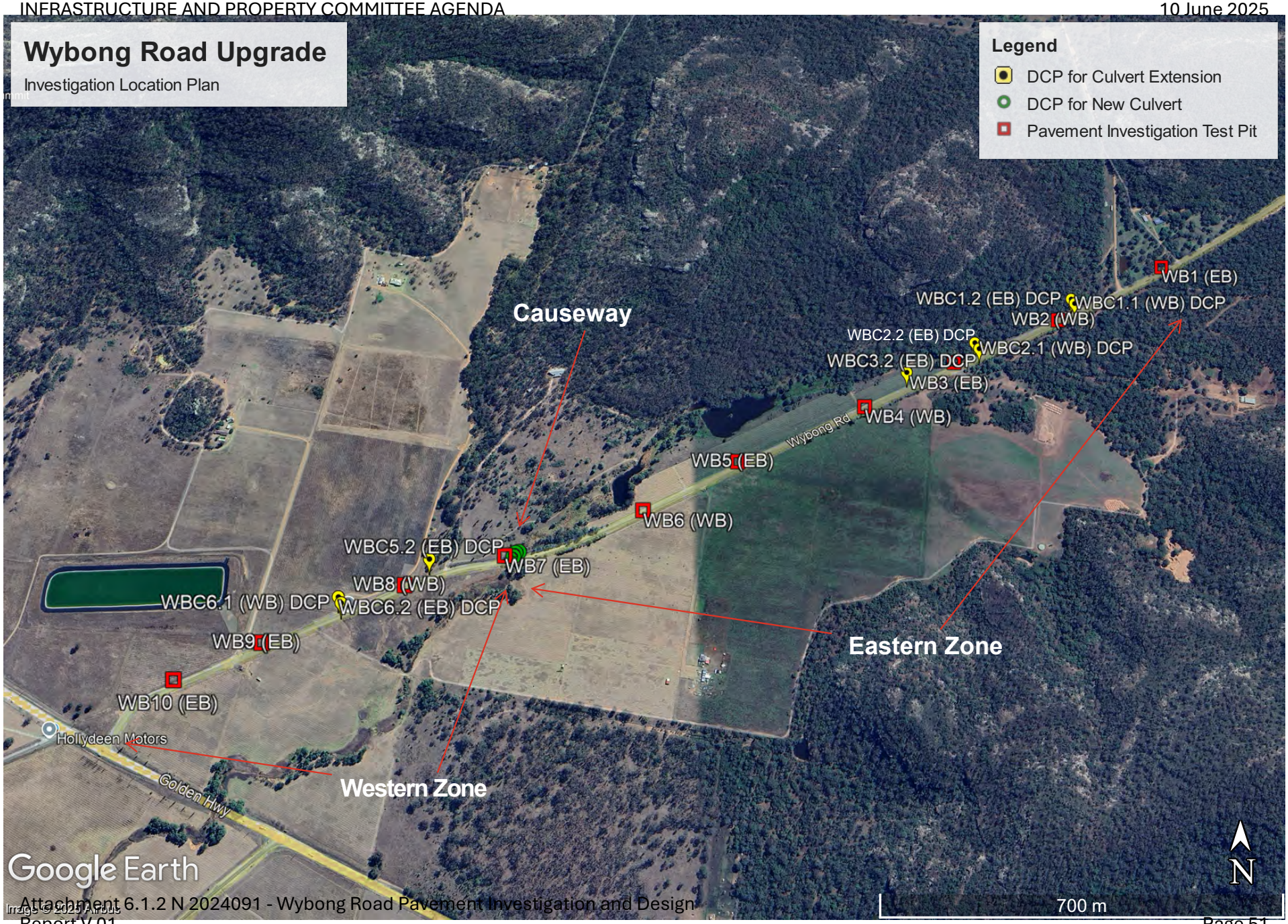
8 References

The following documents are referred to in this report:

- Austroads (2017) Pavement design – A guide to the structural design of road pavement, Austroads, Sydney, NSW.
- TfNSW (2020) Granular Pavement Base and Subbase Materials, QA Specification 3051, Ed. 7, Rev. 1, Transport for NSW, North Sydney, NSW.
- TfNSW (2020) Select Material for Formation Layers, QA Specification 3071, Ed. 2, Rev. 2, Transport for NSW, North Sydney, NSW.
- TfNSW (2020) Construction of Unbound and Modified Pavement Course, QA Specification R71, Ed. 5, Rev 1, Transport for NSW, North Sydney, NSW.
- TfNSW (2021) - Stormwater Drainage, QA Specification R11, Ed5 Rev 8, Transport for NSW, North Sydney, NSW.
- Roads and Maritime Supplement to Austroads Guide to Pavement Technology Part 2: Pavement Structural Design Version 3.0 (August 2018)
- TfNSW (2021) Heave Duty Dense Graded Asphalt – Specification D&C R116 – Ed2/Rev 2; Transport for NSW, North Sydney, NSW.

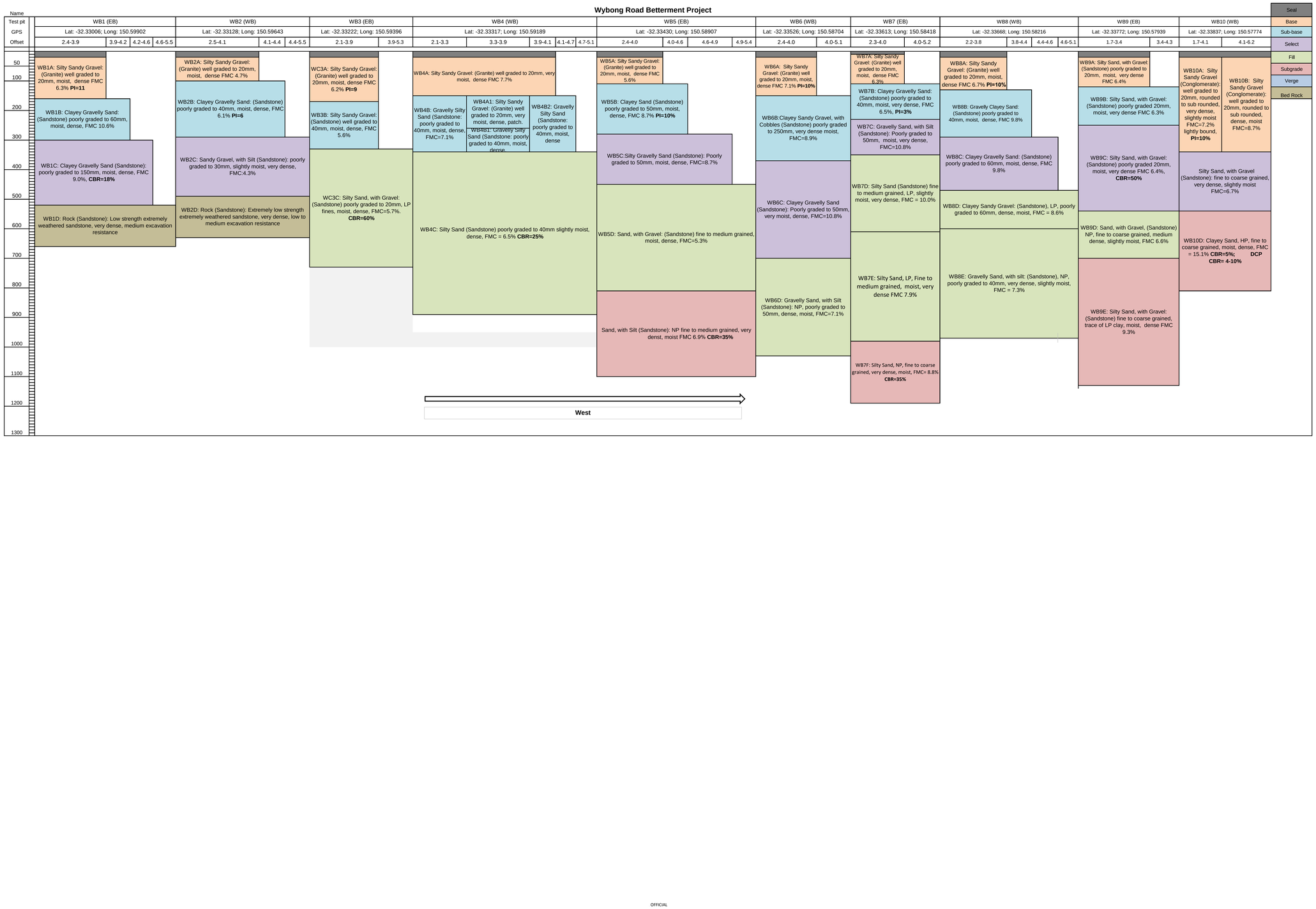
Appendix A – Location Plans


Wybong Road Upgrade
Site Location
Legend
Barrington Tops National Park
Chichester
Study Area
Goulburn River National Park
A15
Golden Highway
Wybong Road
M15
A43
A1
Putty
M1
Wollemi National Park
Yengo National Park
A43
Google Earth
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat / Copernicus
50 km
N


Wybong Road Upgrade
Investigation Location Plan
Legend
DCP for Culvert Extension
DCP for New Culvert
Pavement Investigation Test Pit
Causeway
Eastern Zone
Western Zone
WB1 (EB)
WBC1.2 (EB) DCP
WBC1.1 (WB) DCP
WB2 (WB)
WBC2.2 (EB) DCP
WBC2.1 (WB) DCP
WBC3.2 (EB) DCP
WB3 (EB)
WB4 (WB)
Wybong Rd
WB5 (EB)
WB6 (WB)
WBC5.2 (EB) DCP
WB7 (EB)
WB8 (WB)
WBC6.1 (WB) DCP
WBC6.2 (EB) DCP
WB9 (EB)
WB10 (EB)
Hollydeen Motors
Golden Hwy
Google Earth
N
700 m


Wybong Road Upgrade
New Culvert Location Plan
Legend
DCP for New Culvert
Pavement Investigation Test Pit
WBC4.3 (EB)
WBC4.2 (EB)
WB7 (EB)
WBC4.1 (WB)
Wybong Rd
Wybong Rd
Wybong Rd
Wybong Rd
Wybong Rd
Google Earth
Image © 2025 Airbus
30 m
N

Appendix B – Strata, Logs, DCP Results, Photographs


Wybong Road Betterment Project
Name
Test pit
GPS
Offset
WB1 (EB)
Lat: -32.33006; Long: 150.59902
2.4-3.9
3.9-4.2
4.2-4.6
4.6-5.5
WB2 (WB)
Lat: -32.33128; Long: 150.59643
2.5-4.1
4.1-4.4
4.4-5.5
WB3 (EB)
Lat: -32.33222; Long: 150.59396
2.1-3.9
3.9-5.3
WB4 (WB)
Lat: -32.33317; Long: 150.59189
2.1-3.3
3.3-3.9
3.9-4.1
4.1-4.7
4.7-5.1
WB5 (EB)
Lat: -32.33430; Long: 150.58907
2.4-4.0
4.0-4.6
4.6-4.9
4.9-5.4
WB6 (WB)
Lat: -32.33526; Long: 150.58704
2.4-4.0
4.0-5.1
WB7 (EB)
Lat: -32.33613; Long: 150.58418
2.3-4.0
4.0-5.2
WB8 (WB)
Lat: -32.33668; Long: 150.58216
2.2-3.8
3.8-4.4
4.4-4.6
4.6-5.1
WB9 (EB)
Lat: -32.33772; Long: 150.57939
1.7-3.4
3.4-4.3
WB10 (WB)
Lat: -32.33837; Long: 150.57774
1.7-4.1
4.1-6.2
Seal
Base
Sub-base
Select
Fill
Subgrade
Verge
Bed Rock
50
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
WB1A: Silty Sandy Gravel: (Granite) well graded to 20mm, moist, dense FMC 6.3% PI=11
WB1B: Clayey Gravelly Sand: (Sandstone) poorly graded to 60mm, moist, dense, FMC 10.6%
WB1C: Clayey Gravelly Sand (Sandstone): poorly graded to 150mm, moist, dense, FMC 9.0%, CBR=18%
WB1D: Rock (Sandstone): Low strength extremely weathered sandstone, very dense, medium excavation resistance
WB2A: Silty Sandy Gravel: (Granite) well graded to 20mm, moist, dense FMC 4.7%
WB2B: Clayey Gravelly Sand: (Sandstone) poorly graded to 40mm, moist, dense, FMC 6.1% PI=6
WB2C: Sandy Gravel, with Silt (Sandstone): poorly graded to 30mm, slightly moist, very dense, FMC:4.3%
WB2D: Rock (Sandstone): Extremely low strength extremely weathered sandstone, very dense, low to medium excavation resistance
WC3A: Silty Sandy Gravel: (Granite) well graded to 20mm, moist, dense FMC 6.2% PI=9
WB3B: Silty Sandy Gravel: (Sandstone) well graded to 40mm, moist, dense, FMC 5.6%
WC3C: Silty Sand, with Gravel: (Sandstone) poorly graded to 20mm, LP fines, moist, dense, FMC=5.7%. CBR=60%
WB4A: Silty Sandy Gravel: (Granite) well graded to 20mm, very moist, dense FMC 7.7%
WB4B: Gravelly Silty Sand (Sandstone: poorly graded to 40mm, moist, dense, FMC=7.1%
WB4A1: Silty Sandy Gravel: (Granite) well graded to 20mm, very moist, dense, patch.
WB4B1: Gravelly Silty Sand (Sandstone: poorly graded to 40mm, moist, dense
WB4B2: Gravelly Silty Sand (Sandstone: poorly graded to 40mm, moist, dense
WB4C: Silty Sand (Sandstone) poorly graded to 40mm slightly moist, dense, FMC = 6.5% CBR=25%
WB5A: Silty Sandy Gravel: (Granite) well graded to 20mm, moist, dense FMC 5.6%
WB5B: Clayey Sand (Sandstone) poorly graded to 50mm, moist, dense, FMC 8.7% PI=10%
WB5C:Silty Gravelly Sand (Sandstone): Poorly graded to 50mm, moist, dense, FMC=8.7%
WB5D: Sand, with Gravel: (Sandstone) fine to medium grained, moist, dense, FMC=5.3%
Sand, with Silt (Sandstone): NP fine to medium grained, very denst, moist FMC 6.9% CBR=35%
WB6A: Silty Sandy Gravel: (Granite) well graded to 20mm, moist, dense FMC 7.1% PI=10%
WB6B:Clayey Sandy Gravel, with Cobbles (Sandstone) poorly graded to 250mm, very dense moist, FMC=8.9%
WB6C: Clayey Gravelly Sand (Sandstone): Poorly graded to 50mm, very moist, dense, FMC=10.8%
WB6D: Gravelly Sand, with Silt (Sandstone): NP, poorly graded to 50mm, dense, moist, FMC=7.1%
WB7A: Silty Sandy Gravel: (Granite) well graded to 20mm, moist, dense FMC 6.3%
WB7B: Clayey Gravelly Sand: (Sandstone) poorly graded to 40mm, moist, very dense, FMC 6.5%, PI=3%
WB7C: Gravelly Sand, with Silt (Sandstone): Poorly graded to 50mm, moist, very dense, FMC=10.8%
WB7D: Silty Sand (Sandstone) fine to medium grained, LP, slightly moist, very dense, FMC = 10.0%
WB7E: Silty Sand, LP, Fine to medium grained, moist, very dense FMC 7.9%
WB7F: Silty Sand, NP, fine to coarse grained, very dense, moist, FMC= 8.8% CBR=35%
WB8A: Silty Sandy Gravel: (Granite) well graded to 20mm, moist, dense FMC 6.7% PI=10%
WB8B: Gravelly Clayey Sand: (Sandstone) poorly graded to 40mm, moist, dense, FMC 9.8%
WB8C: Clayey Gravelly Sand: (Sandstone) poorly graded to 60mm, moist, dense, FMC 9.8%
WB8D: Clayey Sandy Gravel: (Sandstone), LP, poorly graded to 60mm, dense, moist, FMC = 8.6%
WB8E: Gravelly Sand, with silt: (Sandstone), NP, poorly graded to 40mm, very dense, slightly moist, FMC = 7.3%
WB9A: Silty Sand, with Gravel: (Sandstone) poorly graded to 20mm, moist, very dense FMC 6.4%
WB9B: Silty Sand, with Gravel: (Sandstone) poorly graded 20mm, moist, very dense FMC 6.3%
WB9C: Silty Sand, with Gravel: (Sandstone) poorly graded 20mm, moist, very dense FMC 6.4%, CBR=50%
WB9D: Sand, with Gravel, (Sandstone) NP, fine to coarse grained, medium dense, slightly moist, FMC 6.6%
WB9E: Silty Sand, with Gravel: (Sandstone) fine to coarse grained, trace of LP clay, moist, dense FMC 9.3%
WB10A: Silty Sandy Gravel (Conglomerate): well graded to 20mm, rounded to sub rounded, very dense, slightly moist FMC=7.2% lightly bound, PI=10%
WB10B: Silty Sandy Gravel (Conglomerate): well graded to 20mm, rounded to sub rounded, dense, moist FMC=8.7%
Silty Sand, with Gravel (Sandstone): fine to coarse grained, very dense, slightly moist FMC=6.7%
WB10D: Clayey Sand, HP, fine to coarse grained, moist, dense, FMC = 15.1% CBR=5%; DCP CBR= 4-10%
West

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Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

SCHEDULE OF PAVEMENT AND SUBGRADE INVESTIGATION

Project Details

Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Sampling Method

Test Pit Number / Identification	WB1	Sampling Method	AS1289.1.2.1 cl 6.5.4
Direction of Test Pit	Transverse	Offset (m)	In 2.4 out 5.5
Logged By and Date	D.Pamment 13/01/2025		

Site Location and Road details

GPS	Latitude	-32.33006	Longitude	150.59902	Road Loc				
Road / Seg	Wybong Road		Lane / Section	EB	Road Description	2 Lane 2 Way (East/West)			
Lane / Shoulder Widths (metres)	WB Sh	0.8	WB Lane	3.5	EB Lane	3.5	EB Sh	0.4	---
	---		---		---		---		---

Pavement Description and Distress Mechanisms

Pavement Condition	Condition is Poor. - Rutting and shoving at WB OWP. Numerous small longitudinal patches and pothole repairs.
Surface Condition	Condition is Poor. - Seal - Extensive stripping. Pothole repairs. Holes open with base exposed.
Drainage	Condition is Fair. - Runoff shoulders to V-drains. Approximate depth EB 0.7m (grassed), WB 0.4m (heavily vegetated).
Features	Natural Surface - On gently sloping hillside. Transition to cut further east.
Shoulder	Seal - No fogline marked. Width measured from offset 3.5m from centreline.

Log, Material Description

Sample / Layer ID	Depth (mm)	Offsets (m) From Centre	Course	Soil Description	Remarks
WB1	Top 0 Bottom 20	2.4 3.9	***Sprayed Seal***		
WB1A	Top 20 Bottom 165	2.4 3.9	***Base*** ***Flexible***	**Silty Sandy Gravel - Brown - (Granite)** PI Higher than the specified requirement for this course , Moist , FMC = 6.3 % Well graded to 20 mm, Angular to Sub-Angular Medium strength Distinctly weathered rock, Dense.	Manufactured 20mm crushed rock. Layer extends beyond offset 3.9m but tapers, not compacted and with topsoil/roots.
WB1B	Top 165 Bottom 300	2.4 4.2	***Subbase*** ***Flexible***	**Clayey Gravelly Sand - Brown Orange - (Sandstone)** PI Higher than the specified requirement for this course , Moist , FMC = 10.6 % Poorly graded to 60 mm, Sub-Angular Very low strength Extremely weathered rock, Dense.	Pre-existing base. Remnance of old seal overlying. Some gravel broken by hand. Layer extends beyond offset 4.2m but tapers out.
WB1C	Top 300 Bottom 520	2.4 4.6	***Select*** ***Flexible***	**Clayey Gravelly Sand , trace of Cobbles - Orange Brown - (Sandstone)** PI at the middle / high end of specification for this course , Moist , FMC = 9.0 % Poorly graded to 150 mm, Sub-Angular Low strength Extremely weathered rock, Dense.	Gravelly Sand / Sandy Gravel. -60mm material sampled. Layer extends beyond offset 4.6m but tapers out.
WB1D	Top 520 Bottom 660	2.4 5.5	***Subgrade*** ***NA***	**Rock Layer - Red Pale Brown - (Sandstone)** Low strength Extremely weathered rock,	Sandstone / Conglomerate. Extremely weathered rock. Medium excavation resistance. Not sampled.

There are no DCP results attached for this schedule.

Remarks

End TP WB1 @ 0.66m. No DCP.

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Transport for NSW - Infrastructure & Place

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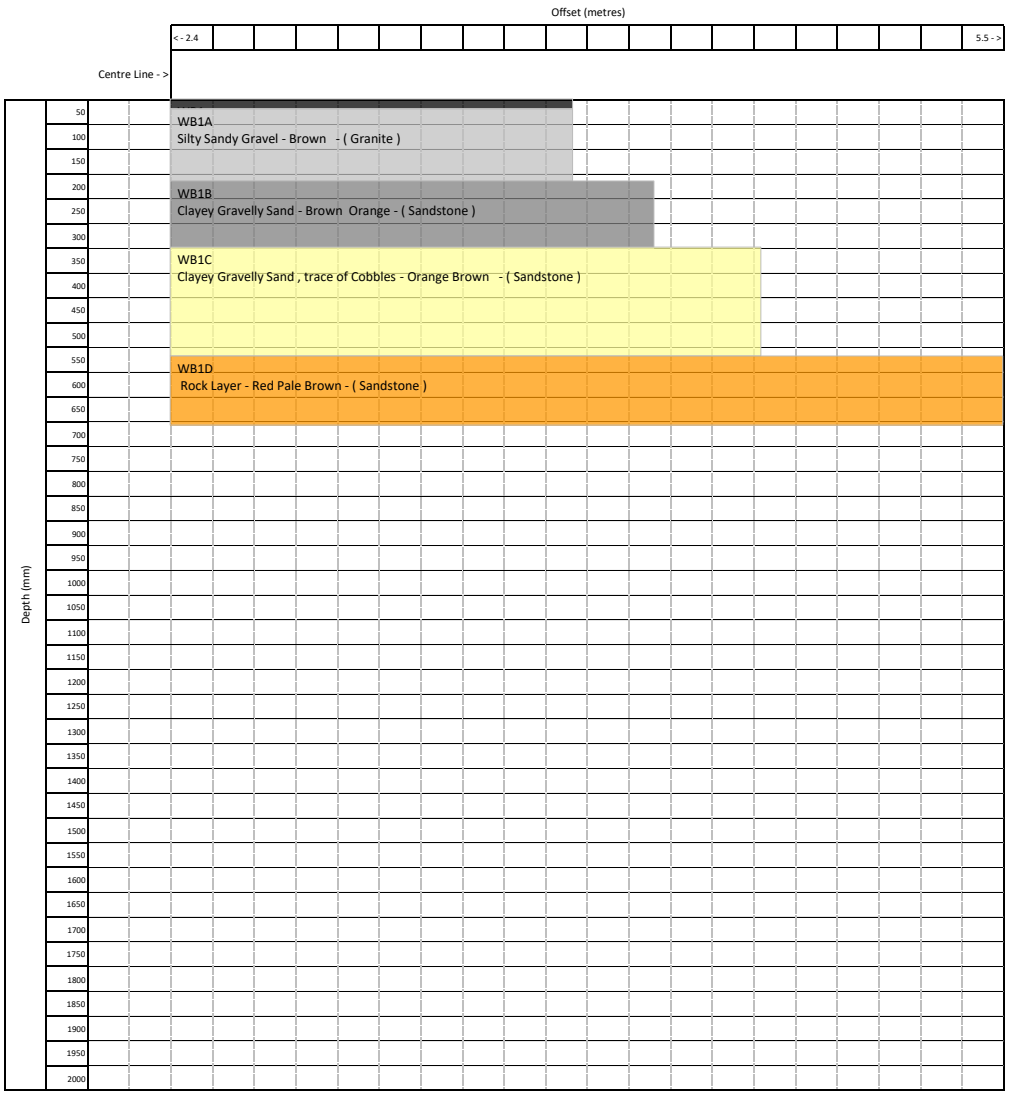
Strata Diagram

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WB1	Offset - Site - (m)	In	2.4	out	5.5



Remarks

WB1

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SCHEDULE OF PAVEMENT AND SUBGRADE INVESTIGATION

Project Details

Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Sampling Method

Test Pit Number / Identification	WB2	Sampling Method	AS1289.1.2.1 cl 6.5.4
Direction of Test Pit	Transverse	Offset (m)	In 2.5 out 5.5
Logged By and Date	D.Pamment 13/01/2025		

Site Location and Road details

GPS	Latitude	-32.33128	Longitude	150.59643	Road Loc				
Road / Seg	Wybong Road		Lane / Section	WB	Road Description	2 Lane 2 Way (East/West)			
Lane / Shoulder Widths (metres)	WB Sh	0.6	WB Lane	3.5	EB Lane	3.5	EB Sh	0.7	---
	---		---		---		---		---

Pavement Description and Distress Mechanisms

Pavement Condition	Condition is Fair. - No deformation observed, but failures evident east and west of location.
Surface Condition	Condition is Poor. - Seal - Extensive stripping.
Drainage	Condition is Poor. - Runoff shoulders to poorly formed drains <0.3m depth. Grassed and vegetated.
Features	Cutting - Approximate depth WB 1m, EB 0.6m.
Shoulder	Seal - No fogline marked. Width measured from offset 3.5m from centreline.

Log, Material Description

Sample / Layer ID	Depth (mm)	Offsets (m) From Centre	Course	Soil Description	Remarks
WB2	Top 0 Bottom 15	2.5 4.1	***Sprayed Seal***		
WB2A	Top 15 Bottom 100	2.5 4.1	***Base*** ***Flexible***	**Silty Sandy Gravel - Brown - (Granite)** PI Higher than the specified requirement for this course , Moist , FMC = 4.7 % Well graded to 20 mm, Angular to Sub-Angular Medium strength Distinctly weathered rock, Dense.	Manufactured 20mm crushed rock. Layer extends beyond offset 4.1m but tapers, not compacted and with topsoil/roots.
WB2B	Top 100 Bottom 290	2.5 4.4	***Subbase*** ***Flexible***	**Clayey Gravelly Sand - Red Brown - (Sandstone)** PI Higher than the specified requirement for this course , Moist , FMC = 6.1 % Poorly graded to 40 mm, Sub-Angular Low strength Extremely weathered rock, Dense.	Pre-existing base. Remnance of old seal overlying. Some gravel broken by hand. Layer extends beyond offset 4.4m but tapers out.
WB2C	Top 290 Bottom 490	2.5 5.5	***Select*** ***Flexible***	**Sandy Gravel , with Silt - Brown Red - (Sandstone)** PI at the lower end of specification for this course , Slightly moist , FMC = 4.3 % Poorly graded to 30 mm, Sub-angular/Sub-rounded High strength Distinctly weathered rock, Very Dense.	Sandstone / Conglomerate. Possibly non-plastic fines.
WB2D	Top 490 Bottom 630	2.5 5.5	***Subgrade*** ***NA***	**Rock Layer - Red - (Sandstone)** Extremely low strength Extremely weathered rock,	Extremely weathered fine to medium grained sandstone. Low to medium excavation resistance.

There are no DCP results attached for this schedule.

Remarks

End TP WB2 @ 0.63m. No DCP.

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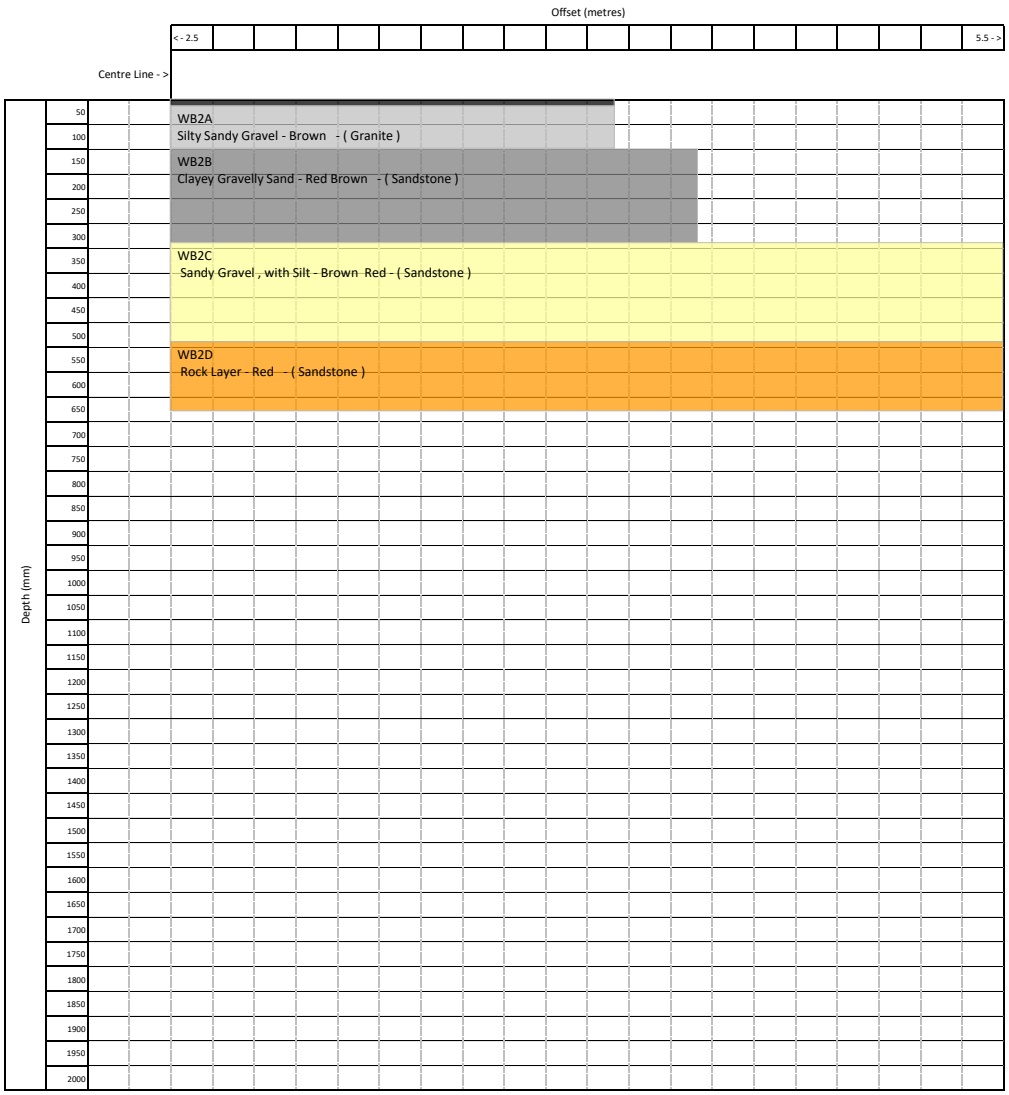
Strata Diagram

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WB2	Offset - Site - (m)	In	2.5	out	5.5



Remarks

WB2

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SCHEDULE OF PAVEMENT AND SUBGRADE INVESTIGATION

Project Details

Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Sampling Method

Test Pit Number / Identification	WB3	Sampling Method	AS1289.1.2.1 cl 6.5.4
Direction of Test Pit	Transverse	Offset (m)	In 2.1 out 5.3
Logged By and Date	D.Pamment 13/01/2025		

Site Location and Road details

GPS	Latitude	-32.33222	Longitude	150.59396	Road Loc				
Road / Seg	Wybong Road		Lane / Section	EB	Road Description	2 Lane 2 Way (East/West)			
Lane / Shoulder Widths (metres)	WB Sh	0.4	WB Lane	3.5	EB Lane	3.5	EB Sh	0.4	---
	---		---		---		---		---

Pavement Description and Distress Mechanisms

Pavement Condition	Condition is Poor. - Severe rutting at WB OWP. Numerous longitudinal patches up to 40m length at outer lanes. Pothole repairs.
Surface Condition	Condition is Poor. - Seal - Extensive stripping. Patches and pothole repairs.
Drainage	Condition is Fair. - Runoff shoulders to V-drains. Approximate depth WB 0.7m (vegetated), EB 0.5m (grassed).
Features	Cutting - Approximate depth WB 0.5m, EB 0.8m.
Shoulder	Seal - No fogline marked. Width measured from offset 3.5m from centreline.

Log, Material Description

Sample / Layer ID	Depth (mm)	Offsets (m) From Centre	Course	Soil Description	Remarks
WB3	Top 0 Bottom 15	2.1 3.9	***Sprayed Seal***		
WB3A	Top 15 Bottom 170	2.1 3.9	***Base*** ***Flexible***	**Silty Sandy Gravel - Brown - (Conglomerate)** PI Higher than the specified requirement for this course , Moist , FMC = 6.2 % Well graded to 20 mm, Sub-angular/Sub-rounded High strength Distinctly weathered rock, Dense.	Gravel used for patch repair. Manufactured 20mm crushed rock. Layer extends beyond offset 3.9m but tapers, not compacted and with topsoil/roots.
WB3B	Top 170 Bottom 330	2.1 3.9	***Subbase*** ***Flexible***	**Silty Sandy Gravel - Brown - (Sandstone)** PI at the middle / high end of specification for this course , Moist , FMC = 5.6 % Well graded to 40 mm, Sub-angular/Sub-rounded Medium strength Distinctly weathered rock, Dense.	Sandstone / Conglomerate with some high strength rounded gravels. Replaced with poorly compacted mix of sand and gravel fill with root matter beyond offset 3.9m.
WB3C	Top 330 Bottom 730	2.1 5.3	***Fill*** ***Flexible***	**Silty Sand , with Gravel - Red - (Sandstone)** Of low plasticity LL ≤ 35 , Moist , FMC = 5.7 % Poorly graded to 20 mm, Sub-angular/Sub-rounded High strength Extremely weathered rock, Dense.	Sandstone / Conglomerate fill with some high strength rounded gravels. Sand is predominantly fine to medium grained.

DCP results are displayed after the strata diagram page.

Remarks

End TP WB3 @ 0.73m. No DCP.

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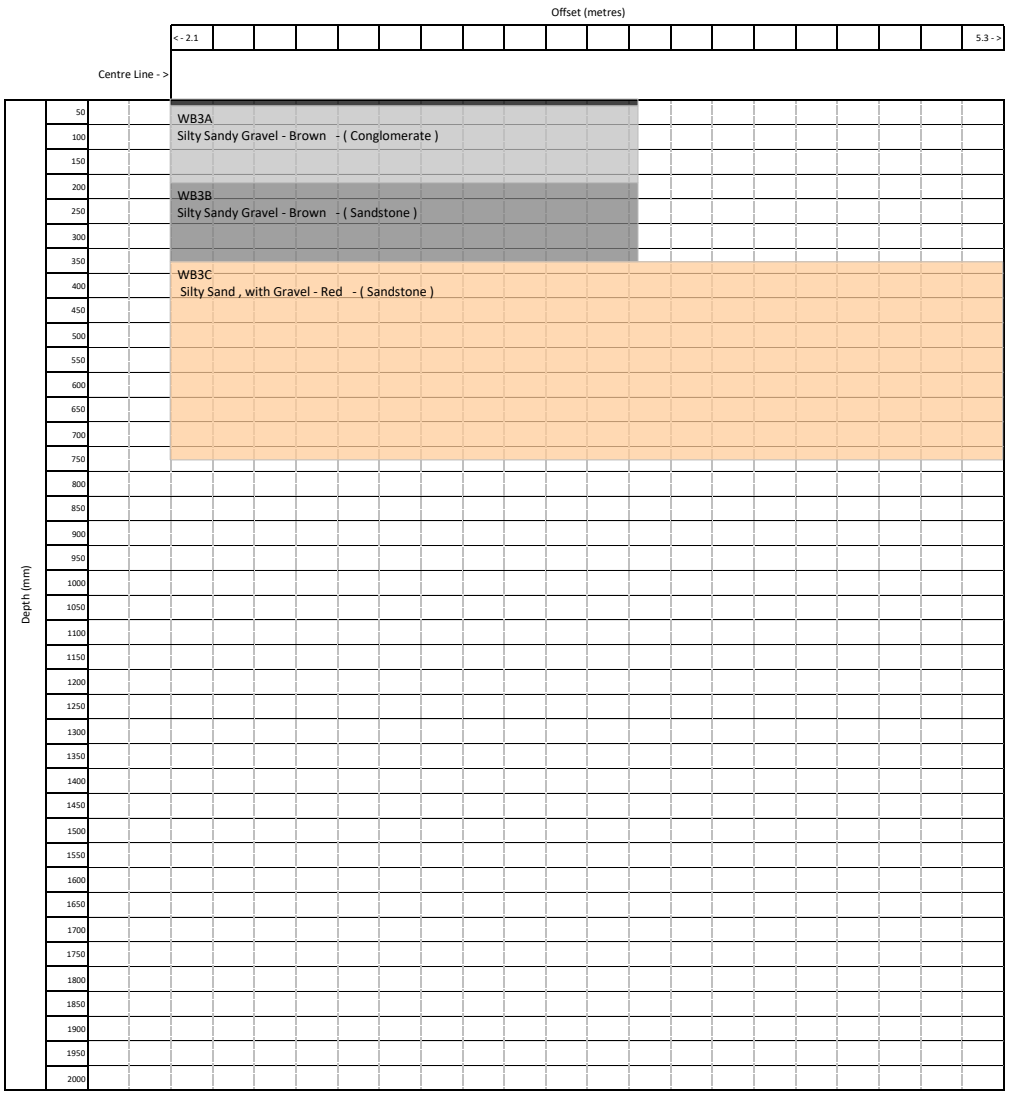
Strata Diagram

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WB3	Offset - Site - (m)	In	2.1	out	5.3



Remarks

WB3

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Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

SCHEDULE OF PAVEMENT AND SUBGRADE INVESTIGATION

Project Details

Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Sampling Method

Test Pit Number / Identification	WB4	Sampling Method	AS1289.1.2.1 cl 6.5.4
Direction of Test Pit	Transverse	Offset (m)	In 2.1 out 5.1
Logged By and Date	D.Pamment 13/01/2025		

Site Location and Road details

GPS	Latitude	-32.33317	Longitude	150.59189	Road Loc				
Road / Seg	Wybong Road		Lane / Section	WB	Road Description	2 Lane 2 Way (East/West)			
Lane / Shoulder Widths (metres)	WB Sh	0.6	WB Lane	3.5	EB Lane	3.5	EB Sh	0.5	---
	---		---		---		---		---

Pavement Description and Distress Mechanisms

Pavement Condition	Condition is Good. - No deformation observed at immediate location.
Surface Condition	Condition is Poor. - Seal - Extensive stripping.
Drainage	Condition is Fair. - Runoff WB shoulder to drain at toe of cut approximately 0.3m depth (vegetated). Runoff EB to natural slope.
Features	Cutting - Into gently sloping hillside WB approximately 1-1.5m depth. EB at natural surface level.
Shoulder	Seal - No fogline marked. Width measured from offset 3.5m from centreline.

Log, Material Description

Sample / Layer ID	Depth (mm)	Offsets (m) From Centre	Course	Soil Description	Remarks
WB4	Top 0 Bottom 15	2.1 4.1	***Sprayed Seal***		
WB4A	Top 15 Bottom 135	2.1 4.1	***Base*** ***Flexible***	**Silty Sandy Gravel - Brown - (Granite)** PI Higher than the specified requirement for this course , Very moist , FMC = 7.7 % Well graded to 20 mm, Angular to Sub-Angular Medium strength Distinctly weathered rock, Dense.	Increased moisture from OWP to edge seal. Manufactured 20mm crushed rock. Layer extends beyond offset 4.1m but tapers, not compacted and with topsoil/roots.
WB4A.1	Top 135 Bottom 260	3.3 3.9	***Subbase*** ***Flexible***	**Silty Sandy Gravel - Brown - (Granite)** PI Higher than the specified requirement for this course , Very moist Well graded to 20 mm, Angular to Sub-Angular Medium strength Distinctly weathered rock, Dense.	Same os overlying WB4A. Inferred backfill of rut during overlay construction.
WB4B	Top 135 Bottom 340	2.1 3.3	***Subbase*** ***Flexible***	**Gravelly Silty Sand - Red Brown - (Sandstone)** PI Higher than the specified requirement for this course , Moist , FMC = 7.1 % Poorly graded to 40 mm, Sub-angular/Sub-rounded Low strength Extremely weathered rock, Dense.	
WB4B.1	Top 260 Bottom 340	3.3 3.9	***Subbase*** ***Flexible***	**Gravelly Silty Sand - Red Brown - (Sandstone)** PI Higher than the specified requirement for this course , Moist Poorly graded to 40 mm, Sub-angular/Sub-rounded Low strength Extremely weathered rock, Dense.	Same as extension of layer WB4B. Upper portion removed and backfilled with layer WB4A.1.
WB4B.2	Top 135 Bottom 340	3.9 4.7	***Subbase*** ***Flexible***	**Gravelly Silty Sand - Red Brown - (Sandstone)** PI Higher than the specified requirement for this course , Moist Poorly graded to 40 mm, Sub-angular/Sub-rounded Low strength Extremely weathered rock, Dense.	Same as extension of layer WB4B.1. Layer extends beyond offset 4.7m but tapers out.
WB4C	Top 340 Bottom 890	2.1 5.1	***Fill*** ***Flexible***	**Silty Sand , with Gravel - Red - (Sandstone)** Of low plasticity LL ≤ 35 , Slightly moist , FMC = 6.5 % Poorly graded to 40 mm, Sub-angular/Sub-rounded Low strength Extremely weathered rock, Dense.	Sand is predominantly fine to medium grained. Possibly non-plastic fines. With fine to coarse, medium strength gravel. Seams of coarse rounded gravel between 0.6-0.7m depth.

There are no DCP results attached for this schedule.

Remarks

End TP WB4 @ 0.89m. No DCP.

OTN-SOP200-REP-F021-F01H- Issue 3 - 2/12/2021 - Strata.

Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

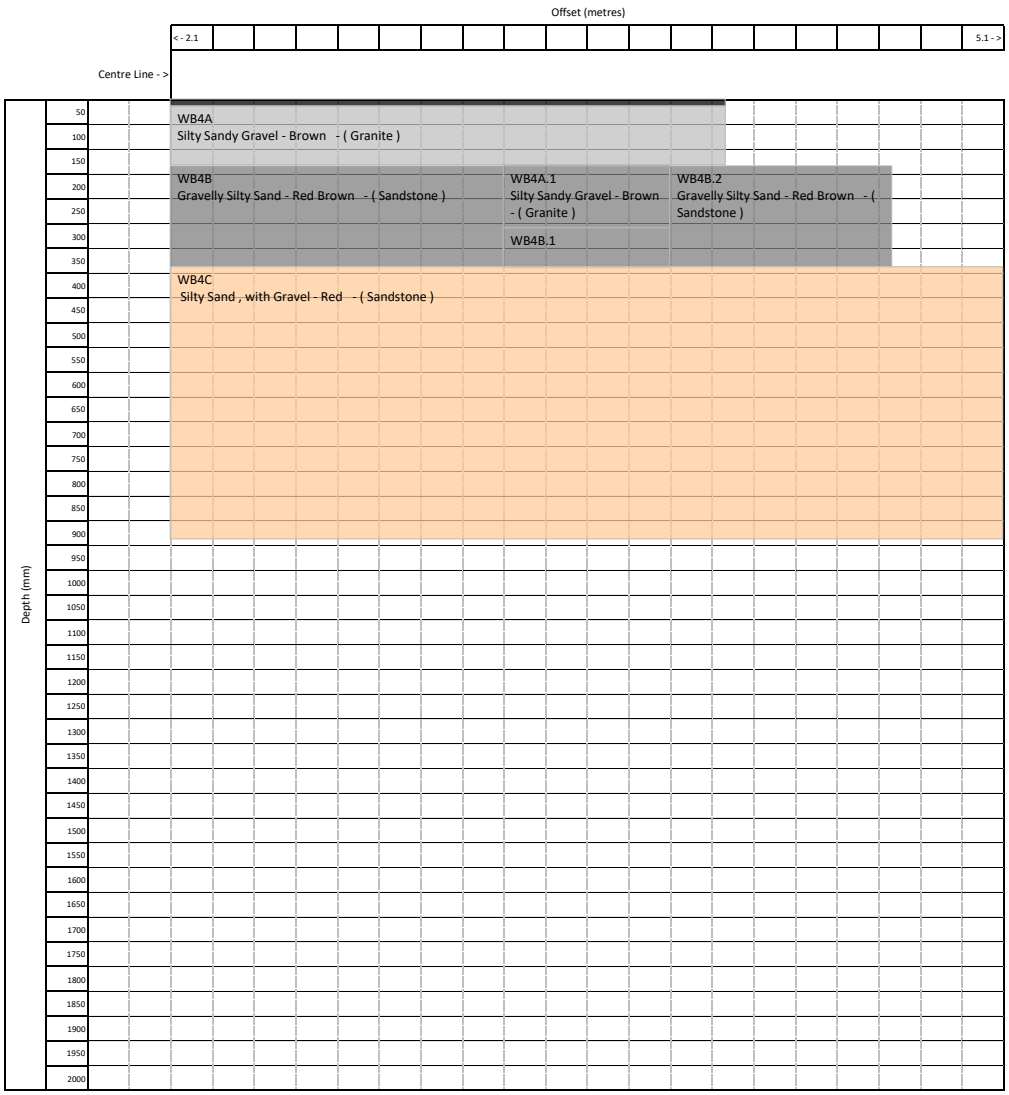
Strata Diagram

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WB4	Offset - Site - (m)	In	2.1	out	5.1



Remarks

WB4

OTN-SOP200-REP-F021-F01H- Issue 3 - 2/12/2021 - Schedule.

Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

SCHEDULE OF PAVEMENT AND SUBGRADE INVESTIGATION

Project Details

Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Sampling Method

Test Pit Number / Identification	WB5	Sampling Method	AS1289.1.2.1 cl 6.5.4
Direction of Test Pit	Transverse	Offset (m)	In 2.4 out 5.4
Logged By and Date	D.Pamment 14/01/2025		

Site Location and Road details

GPS	Latitude	-32.33430	Longitude	150.58907	Road Loc				
Road / Seg	Wybong Road		Lane / Section	EB	Road Description	2 Lane 2 Way (East/West)			
Lane / Shoulder Widths (metres)	WB Sh	0.5	WB Lane	3.5	EB Lane	3.5	EB Sh	0.5	---
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Pavement Description and Distress Mechanisms

Pavement Condition	Condition is Good. - Very minor depressions at WB WPs likely in seal.
Surface Condition	Condition is Fair. - Seal - Minor plucking / stripping at WB lane. Becomes severe east and west of locations.
Drainage	Condition is Fair. - Runoff WB to poorly formed shallow drain (grassed). Runoff EB shoulder/batter to natural surface.
Features	Fill - Approximately 0.8m depth.
Shoulder	Seal - No fogline marked. Width measured from offset 3.5m from centreline.

Log, Material Description

Sample / Layer ID	Depth (mm)	Offsets (m) From Centre	Course	Soil Description	Remarks
WB5	Top 0 Bottom 15	2.4 4.0	***Sprayed Seal***		
WB5A	Top 15 Bottom 105	2.4 4.0	***Base*** ***Flexible***	**Silty Sandy Gravel - Brown - (Granite)** PI Higher than the specified requirement for this course , Moist , FMC = 5.6 % Well graded to 20 mm, Angular to Sub-Angular Medium strength Distinctly weathered rock, Dense.	Manufactured 20mm crushed rock. Layer extends beyond offset 4.0m but tapers, not compacted and with topsoil/roots.
WB5B	Top 105 Bottom 280	2.4 4.6	***Subbase*** ***Flexible***	**Clayey Sand , with Gravel - Red - (Sandstone)** PI Higher than the specified requirement for this course , Moist , FMC = 8.9 % Poorly graded to 40 mm, Sub-Angular Low strength Extremely weathered rock, Dense.	Pre-existing base. Remnance of old seal overlying. Low to medium plasticity fines. Layer extends beyond offset 4.6m but tapers out.
WB5C	Top 280 Bottom 450	2.4 4.9	***Select*** ***Flexible***	**Silty Gravelly Sand - Red Brown - (Sandstone)** PI at the middle / high end of specification for this course , Moist , FMC = 8.7 % Poorly graded to 50 mm, Sub-Angular Low strength Extremely weathered rock, Dense.	Layer extends beyond offset 4.9m but tapers out.
WB5D	Top 450 Bottom 810	2.4 5.4	***Fill*** ***Flexible***	**Sand , with Gravel , trace of Silt - Brown - (Sandstone)** Non-plastic , Moist , FMC = 5.3 % Fine to medium grainedDense.	With fine to medium gravel.
WB5E	Top 810 Bottom 1100	2.4 5.4	***Subgrade*** ***NA***	**Sand , with Silt - Orange Brown - (Sandstone)** Non-plastic , Moist , FMC = 6.9 % Fine to medium grainedVery Dense.	Inferred extremely weathered sandstone. Low to medium excavation resistance.

There are no DCP results attached for this schedule.

Remarks

End TP WB5 @ 1.10m. No DCP.

OTN-SOP200-REP-F021-F01H- Issue 3 - 2/12/2021 - Strata.

Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

Strata Diagram

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WB5	Offset - Site - (m)	In	2.4	out	5.4

Remarks

WB5

OTN-SOP200-REP-F021-F01H- Issue 3 - 2/12/2021 - Schedule.

Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

SCHEDULE OF PAVEMENT AND SUBGRADE INVESTIGATION

Project Details

Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Sampling Method

Test Pit Number / Identification	WB6	Sampling Method	AS1289.1.2.1 cl 6.5.4
Direction of Test Pit	Transverse	Offset (m)	In 2.4 out 5.0
Logged By and Date	D.Pamment 14/01/2025		

Site Location and Road details

GPS	Latitude	-32.33526	Longitude	150.58704	Road Loc				
Road / Seg	Wybong Road		Lane / Section	WB	Road Description	2 Lane 2 Way (East/West)			
Lane / Shoulder Widths (metres)	WB Sh	0.5	WB Lane	3.5	EB Lane	3.5	EB Sh	0.6	---
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Pavement Description and Distress Mechanisms

Pavement Condition	Condition is Fair. - Rutting at WB OWP. Some pothole repairs.
Surface Condition	Condition is Poor. - Seal - Extensive stripping, most significant at WB OWP.
Drainage	Condition is Fair. - Runoff shoulders to shallow drains approximately 0.6m depth. Grassed.
Features	Fill - Greater than 1m depth.
Shoulder	Seal - No fogline marked. Width measured from offset 3.5m from centreline.

Log, Material Description

Sample / Layer ID	Depth (mm)	Offsets (m) From Centre	Course	Soil Description	Remarks
WB6	Top 0 Bottom 20	2.4 4.0	***Sprayed Seal***		
WB6A	Top 20 Bottom 150	2.4 4.0	***Base*** ***Flexible***	**Silty Sandy Gravel - Brown - (Granite)** PI Higher than the specified requirement for this course , Moist , FMC = 7.1 % Well graded to 20 mm, Angular to Sub-Angular Medium strength Distinctly weathered rock, Dense.	Manufactured 20mm crushed rock. Layer extends beyond offset 4.0m but tapers, not compacted and with topsoil/roots.
WB6B	Top 150 Bottom 370	2.4 5.1	***Subbase*** ***Flexible***	**Clayey Sandy Gravel , with Cobbles - Orange Brown - (Sandstone)** PI Higher than the specified requirement for this course , Moist , FMC = 8.9 % Poorly graded to 250 mm, Sub-angular/Sub-rounded Medium strength Extremely weathered rock, Very Dense.	Pre-existing base. Remnance of old seal overlying. Sandstone / Conglomerate. Gravel is medium to high strength, extremely to distinctly weathered. Medium plasticity fines. Poorly compacted beyond offset 4.4m.
WB6C	Top 370 Bottom 700	2.4 5.1	***Select*** ***Flexible***	**Clayey Gravelly Sand - Brown - (Sandstone)** PI at the middle / high end of specification for this course , Very moist , FMC = 10.8 % Poorly graded to 50 mm, Sub-Angular Low strength Extremely weathered rock, Dense.	Low to medium plasticity fines.
WB6D	Top 700 Bottom 1030	2.4 5.1	***Fill*** ***Flexible***	**Gravelly Sand , with Silt - Red - (Sandstone)** Non-plastic , Moist , FMC = 7.1 % Poorly graded to 50 mm, Sub-angular/Sub-rounded Low strength Extremely weathered rock, Dense.	Sandstone / Conglomerate. Sand is predominantly fine to medium grained. With some higher strength rounded gravels.

There are no DCP results attached for this schedule.

Remarks

End TP WB6 @ 1.03m. No DCP.

OTN-SOP200-REP-F021-F01H- Issue 3 - 2/12/2021 - Strata.

Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

Strata Diagram

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WB6	Offset - Site - (m)	In	2.4	out	5.0

Remarks

WB6

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Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

SCHEDULE OF PAVEMENT AND SUBGRADE INVESTIGATION

Project Details

Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Sampling Method

Test Pit Number / Identification	WB7	Sampling Method	AS1289.1.2.1 cl 6.5.4
Direction of Test Pit	Transverse	Offset (m)	In 2.3 out 5.2
Logged By and Date	D.Pamment 14/01/2025		

Site Location and Road details

GPS	Latitude	-32.33613	Longitude	150.58418	Road Loc				
Road / Seg	Wybong Road		Lane / Section	EB	Road Description	2 Lane 2 Way (East/West)			
Lane / Shoulder Widths (metres)	WB Sh	0.2	WB Lane	3.5	EB Lane	3.5	EB Sh	0.5	---
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Pavement Description and Distress Mechanisms

Pavement Condition	Condition is Poor. - Rutting and deformation with numerous pothole repairs. Extensive crocodile cracking at causeway approach. Condition better on eastern causeway approach. Water runoff hindered by surface conditions and sediment buildup at edges.
Surface Condition	Condition is Poor. - Seal - Flushing and bleeding. Stripping west of location. Pothole repairs with cold mix AC. Holes open, base exposed. Crocodile cracking.
Drainage	Condition is Fair. - Fair runoff due to slope into causeway. Drains require upgrade. Runoff to poorly formed drains <0.3m depth. Vegetated.
Features	Cutting - Approximately 1m depth transitioning to natural surface at causeway.
Shoulder	Seal - No fogline marked. Width measured from offset 3.5m from centreline.

Log, Material Description

Sample / Layer ID	Depth (mm)	Offsets (m) From Centre	Course	Soil Description	Remarks
WB7	Top 0 Bottom 10	2.3 4.0	***Sprayed Seal***		
WB7A	Top 10 Bottom 110	2.3 4.0	***Base*** ***Flexible***	**Silty Sandy Gravel - Brown - (Granite)** PI Higher than the specified requirement for this course , Moist , FMC = 6.3 % Well graded to 20 mm, Angular to Sub-Angular Medium strength Distinctly weathered rock, Dense.	Manufactured 20mm crushed rock. Layer extends beyond offset 4.0m but tapers, not compacted and with topsoil/roots.
WB7B	Top 110 Bottom 230	2.3 5.2	***Subbase*** ***Flexible***	**Clayey Gravelly Sand - Red Brown - (Sandstone)** PI at the middle / high end of specification for this course , Moist , FMC = 6.5 % Poorly graded to 40 mm, Sub-angular/Sub-rounded Medium strength Extremely weathered rock, Very Dense.	Sandstone / conglomerate. Gravel is medium to high strength distinctly to extremely weathered. Not well compacted and very moist beyond seal, offset 4.0m.
WB7C	Top 230 Bottom 350	2.3 5.2	***Select*** ***Flexible***	**Gravelly Sand , with Silt - Red Brown - (Sandstone)** Material appears to have no PI , Moist , FMC = 6.3 % Poorly graded to 40 mm, Sub-angular/Sub-rounded Medium strength Extremely weathered rock, Very Dense.	Sandstone / conglomerate. Gravel is medium to high strength distinctly to extremely weathered. Not well compacted and very moist beyond seal, offset 4.0m.
WB7D	Top 350 Bottom 610	2.3 5.2	***Fill*** ***Flexible***	**Silty Sand - Brown** Of low plasticity LL ≤ 35 , Slightly moist , FMC = 10.0 % Fine to medium grainedVery Dense.	Layer tapers and is replaced with material similar to WB7C beyond offset 4.0m.
WB7E	Top 610 Bottom 980	2.3 5.2	***Fill*** ***Flexible***	**Silty Sand - Orange Brown** Of low plasticity LL ≤ 35 , Moist , FMC = 7.9 % Fine to medium grainedVery Dense.	Pale brown and medium dense between 800-980mm depth.
WB7F	Top 980 Bottom 1190	2.3 5.2	***Subgrade*** ***NA***	**Silty Sand - Pale Brown - (Sandstone)** Non-plastic , Moist , FMC = 8.8 % Fine to coarse grainedVery Dense.	Extremely weathered sandstone recovered as described. Sand is predominantly fine to medium grained. Trace seams of grey clay.

There are no DCP results attached for this schedule.

Remarks

End TP WB7 @ 1.19m. No DCP.

OTN-SOP200-REP-F021-F01H- Issue 3 - 2/12/2021 - Strata.

Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

Strata Diagram

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WB7	Offset - Site - (m)	In	2.3	out	5.2

Remarks

WB7

OTN-SOP200-REP-F021-F01H- Issue 3 - 2/12/2021 - Schedule.

Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

SCHEDULE OF PAVEMENT AND SUBGRADE INVESTIGATION

Project Details

Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Sampling Method

Test Pit Number / Identification	WB8	Sampling Method	AS1289.1.2.1 cl 6.5.4
Direction of Test Pit	Transverse	Offset (m)	In 2.2 out 5.1
Logged By and Date	D.Pamment 14/01/2025		

Site Location and Road details

GPS	Latitude	-32.33668	Longitude	150.58216	Road Loc				
Road / Seg	Wybong Road		Lane / Section	WB	Road Description	2 Lane 2 Way (East/West)			
Lane / Shoulder Widths (metres)	WB Sh	0.3	WB Lane	3.5	EB Lane	3.5	EB Sh	0.3	---
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Pavement Description and Distress Mechanisms

Pavement Condition	Condition is Poor. - Rutting at WPs. Most significant at outer WPs. Longitudinal patches up to 10m length. Numerous pothole repairs. Crocodile cracking.
Surface Condition	Condition is Poor. - Seal - Extensive stripping. Crocodile cracking. Holes open, base exposed.
Drainage	Condition is Poor. - Runoff WB to poorly formed drain / natural surface. Runoff EB to shallow drain at toe of cut <0.3m depth (grassed).
Features	Cut / Fill - Transition. Cut west of location. Fill east of location.
Shoulder	Seal - No fogline marked. Width measured from offset 3.5m from centreline.

Log, Material Description

Sample / Layer ID	Depth (mm)	Offsets (m) From Centre	Course	Soil Description	Remarks
WB8	Top 0 Bottom 15	2.2 3.8	***Sprayed Seal***		
WB8A	Top 15 Bottom 135	2.2 3.8	***Base*** ***Flexible***	**Silty Sandy Gravel - Brown - (Granite)** PI Higher than the specified requirement for this course , Moist , FMC = 6.7 % Well graded to 20 mm, Angular to Sub-Angular Medium strength Distinctly weathered rock, Dense.	Manufactured 20mm crushed rock. Layer extends beyond offset 3.8m but tapers, not compacted and with topsoil/roots.
WB8B	Top 135 Bottom 290	2.2 4.4	***Subbase*** ***Flexible***	**Gravelly Clayey Sand - Brown Orange - (Sandstone)** PI Higher than the specified requirement for this course , Moist , FMC = 9.8 % Poorly graded to 40 mm, Sub-angular/Sub-rounded Low strength Extremely weathered rock, Dense.	Pre-existing base. Remnance of old seal overlying. Gravel is low to medium strength, extremely to distinctly weathered. Medium plasticity fines. Layer extends beyond offset 4.4m but tapers out.
WB8C	Top 290 Bottom 470	2.2 4.6	***Select*** ***Flexible***	**Clayey Gravelly Sand - Brown Mottled Grey - (Sandstone)** PI at the middle / high end of specification for this course , Moist , FMC = 9.8 % Poorly graded to 60 mm, Sub-angular/Sub-rounded Low strength Extremely weathered rock, Dense.	Sandstone / Conglomerate. Gravel is low to medium strength, extremely to distinctly weathered. 1 cobble (200mm diameter) encountered at shoulder. Layer extends beyond offset 4.6m but tapers out.
WB8D	Top 470 Bottom 600	2.2 5.1	***Fill*** ***Flexible***	**Clayey Sandy Gravel - Brown Pale Red - (Sandstone)** Of low plasticity LL ≤ 35 , Moist , FMC = 8.6 % Poorly graded to 60 mm, Sub-angular/Sub-rounded Low strength Extremely weathered rock, Dense.	Sandstone / Conglomerate.
WB8E	Top 600 Bottom 970	2.2 5.1	***Fill*** ***Flexible***	**Gravelly Sand , with Silt - Red - (Sandstone)** Non-plastic , Slightly moist , FMC = 7.3 % Poorly graded to 40 mm, Rounded to Sub-Rounded Medium strength Extremely weathered rock, Very Dense.	Sandstone / Conglomerate. Gravel is medium to high strength, extremely to distinctly weathered.

There are no DCP results attached for this schedule.

Remarks

End TP WB8 @ 0.97m. No DCP.

OTN-SOP200-REP-F021-F01H- Issue 3 - 2/12/2021 - Strata.

Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

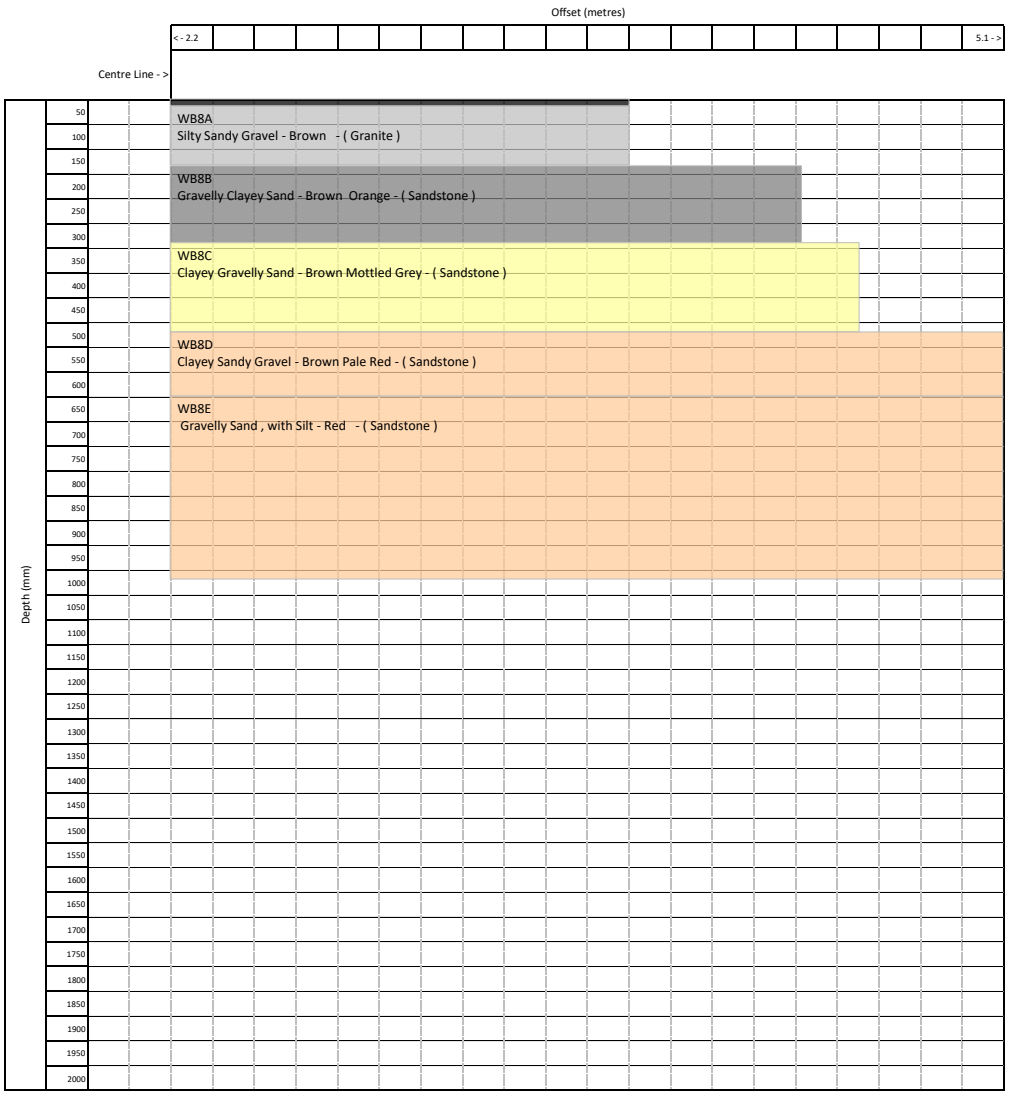
Strata Diagram

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WB8	Offset - Site - (m)	In	2.2	out	5.1



Remarks

WB8

OTN-SOP200-REP-F021-F01H- Issue 3 - 2/12/2021 - Schedule.

Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

SCHEDULE OF PAVEMENT AND SUBGRADE INVESTIGATION

Project Details

Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Sampling Method

Test Pit Number / Identification	WB9	Sampling Method	AS1289.1.2.1 cl 6.5.4
Direction of Test Pit	Transverse	Offset (m)	In 1.7 out 4.3
Logged By and Date	D.Pamment 15/01/2025		

Site Location and Road details

GPS	Latitude	-32.33772	Longitude	150.57939	Road Loc				
Road / Seg	Wybong Road		Lane / Section	EB	Road Description	2 Lane 2 Way (East/West)			
Lane / Shoulder Widths (metres)	WB Sh	0	WB Lane	3.4	EB Lane	3.4	EB Sh	0	---
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Pavement Description and Distress Mechanisms

Pavement Condition	Condition is Poor. - Rutting and shoving most prominent at OWPs. Numerous pothole repairs. No shoulders due to narrow formation width.
Surface Condition	Condition is Poor. - Seal - Pothole repairs. Holes open, base exposed.
Drainage	Condition is Poor. - Runoff to shallow drains at toe of cut <0.2m depth. Grassed/vegetated. Road surface and edges may hinder runoff.
Features	Cutting - Approximately 1.5m depth WB and EB.
Shoulder	

Log, Material Description

Sample / Layer ID	Depth (mm)	Offsets (m) From Centre	Course	Soil Description	Remarks
WB9	Top 0 Bottom 15	1.7 3.4	***Sprayed Seal***		
WB9A	Top 15 Bottom 120	1.7 3.4	***Base*** ***Flexible***	**Silty Sand , with Gravel - Orange Brown - (Sandstone)** PI at the middle / high end of specification for this course , Moist , FMC = 6.4 % Poorly graded to 20 mm, Sub-angular/Sub-rounded Medium strength Extremely weathered rock, Very Dense.	Sandstone / Conglomerate. Sand is predominantly fine to medium grained. With fine to medium gravel, medium to high strength, extremely to distinctly weathered. Extends but tapers beyond offset 3.4m.
WB9B	Top 120 Bottom 250	1.7 4.3	***Subbase*** ***Flexible***	**Silty Sand , with Gravel - Orange Brown - (Sandstone)** PI at the lower end of specification for this course , Moist , FMC = 6.3 % Poorly graded to 20 mm, Sub-angular/Sub-rounded Medium strength Extremely weathered rock, Very Dense.	Same as overlying. Sampled for depth. Not as well compacted beyond offset 3.4m.
WB9C	Top 250 Bottom 540	1.7 4.3	***Select*** ***Flexible***	**Silty Sand , with Gravel - Orange Brown - (Sandstone)** PI at the lower end of specification for this course , Slightly moist , FMC = 6.4 % Poorly graded to 20 mm, Sub-angular/Sub-rounded Medium strength Extremely weathered rock, Dense.	Similar to overlying WB9B. Possibly non-plastic fines.
WB9D	Top 540 Bottom 700	1.7 4.3	***Fill*** ***Flexible***	**Sand , with Gravel , trace of Silt - Pale Brown - (Sandstone)** Non-plastic , Slightly moist , FMC = 6.6 % Fine to coarse grainedMedium Dense.	With fine to medium gravel, subrounded to subangular, medium strength. Sample comprises enough for CBR testing.
WB9E	Top 700 Bottom 1140	1.7 4.3	***Subgrade*** ***NA***	**Silty Sand , with Gravel , trace of Clay - Orange Brown Mottled Grey - (Sandstone)** Of low plasticity LL ≤ 35 , Moist , FMC = 9.3 % Fine to coarse grainedDense.	Extremely weathered / residual sandstone/conglomerate recovered and sampled as described. With fine to medium gravel, subrounded to subangular, medium strength. Natural.

There are no DCP results attached for this schedule.

Remarks

End TP WB9 @ 1.14m. No DCP.

OTN-SOP200-REP-F021-F01H- Issue 3 - 2/12/2021 - Strata.

Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

Strata Diagram

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WB9	Offset - Site - (m)	In	1.7	out	4.3

Remarks

WB9

OTN-SOP200-REP-F021-F01H- Issue 3 - 2/12/2021 - Schedule.

Transport for NSW - Infrastructure & Place

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SCHEDULE OF PAVEMENT AND SUBGRADE INVESTIGATION

Project Details

Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Sampling Method

Test Pit Number / Identification	WB10	Sampling Method	AS1289.1.2.1 cl 6.5.4
Direction of Test Pit	Transverse	Offset (m)	In 1.7 out 6.2
Logged By and Date	D.Pamment 15/01/2025		

Site Location and Road details

GPS	Latitude	-32.33837	Longitude	150.57774	Road Loc				
Road / Seg	Wybong Road		Lane / Section	WB	Road Description	2 Lane 2 Way (East/West)			
Lane / Shoulder Widths (metres)	WB Sh	2.0	WB Lane	3.5	EB Lane	4.1	EB Sh	2.1	---
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Pavement Description and Distress Mechanisms

Pavement Condition	Condition is Poor. - Significant rutting, most prominent at OWPs. Pothole repairs. Full width patch approximately 5m length at seal change. Water ponding on road west of location. Adjustment to camber required for improved water runoff.
Surface Condition	Condition is Poor. - Seal - Flushing and bleeding at WB WPs. Crcocodile cracking. Pothole repairs. Holes open, base exposed.
Drainage	Condition is Poor. - Runoff WB to table drain approximately 0.6m depth (grassed). Runoff EB to drain at toe of cut approximately 0.3m depth.
Features	Natural Surface - Cutting - WB at natural surface level. Cut EB approximately 0.6m depth.
Shoulder	Seal - EB shoulder covered with approximately 100mm of sediment.

Log, Material Description

Sample / Layer ID	Depth (mm)	Offsets (m) From Centre	Course	Soil Description	Remarks
WB10	Top 0 Bottom 15	1.7 6.2	***Sprayed Seal***		
WB10A	Top 15 Bottom 340	1.7 4.1	***Base*** ***Lightly Bound***	**Silty Sandy Gravel - Brown - (Conglomerate)** PI Higher than the specified requirement for this course , Slightly moist , FMC = 7.2 % Well graded to 20 mm, Rounded to Sub-Rounded High strength Distinctly weathered rock, Very Dense.	Manufactured 20mm crushed rock. Not as well compacted at lower portion.
WB10B	Top 15 Bottom 340	4.1 6.2	***Base*** ***Flexible***	**Silty Sandy Gravel - Brown - (Conglomerate)** PI Higher than the specified requirement for this course , Moist , FMC = 8.7 % Well graded to 20 mm, Rounded to Sub-Rounded High strength Distinctly weathered rock, Dense.	Same as / extension of WB10A but not bound.
WB10C	Top 340 Bottom 540	1.7 6.2	***Select*** ***Flexible***	**Silty Sand , with Gravel - Pale Brown - (Sandstone)** PI at the lower end of specification for this course , Slightly moist , FMC = 6.7 % Fine to coarse grainedVery Dense.	Sandstone / Conglomerate. With fine to medium gravel, subrounded to subangular, medium to high strength.
WB10D	Top 540 Bottom 810	1.7 6.2	***Subgrade*** ***NA***	**Clayey Sand - Orange Mottled Grey** Of high plasticity LL > 50 , Moist , FMC = 15.1 % Fine to coarse grainedDense.	Residual sandstone. Clayey Sand / Sandy Clay - approximately 50:50 sand:clay. Dense to very dense. Natural.

DCP results are displayed after the strata diagram page.

Remarks

End TP WB10 @ 0.81m.
Surface, camber and sediment buildup on edges appear to hinder water runoff.
Large amounts of sediment buildup at EB shoulder (approximately 100mm thick). Road appears to have been flooded.

OTN-SOP200-REP-F021-F01H- Issue 3 - 2/12/2021 - Strata.

Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

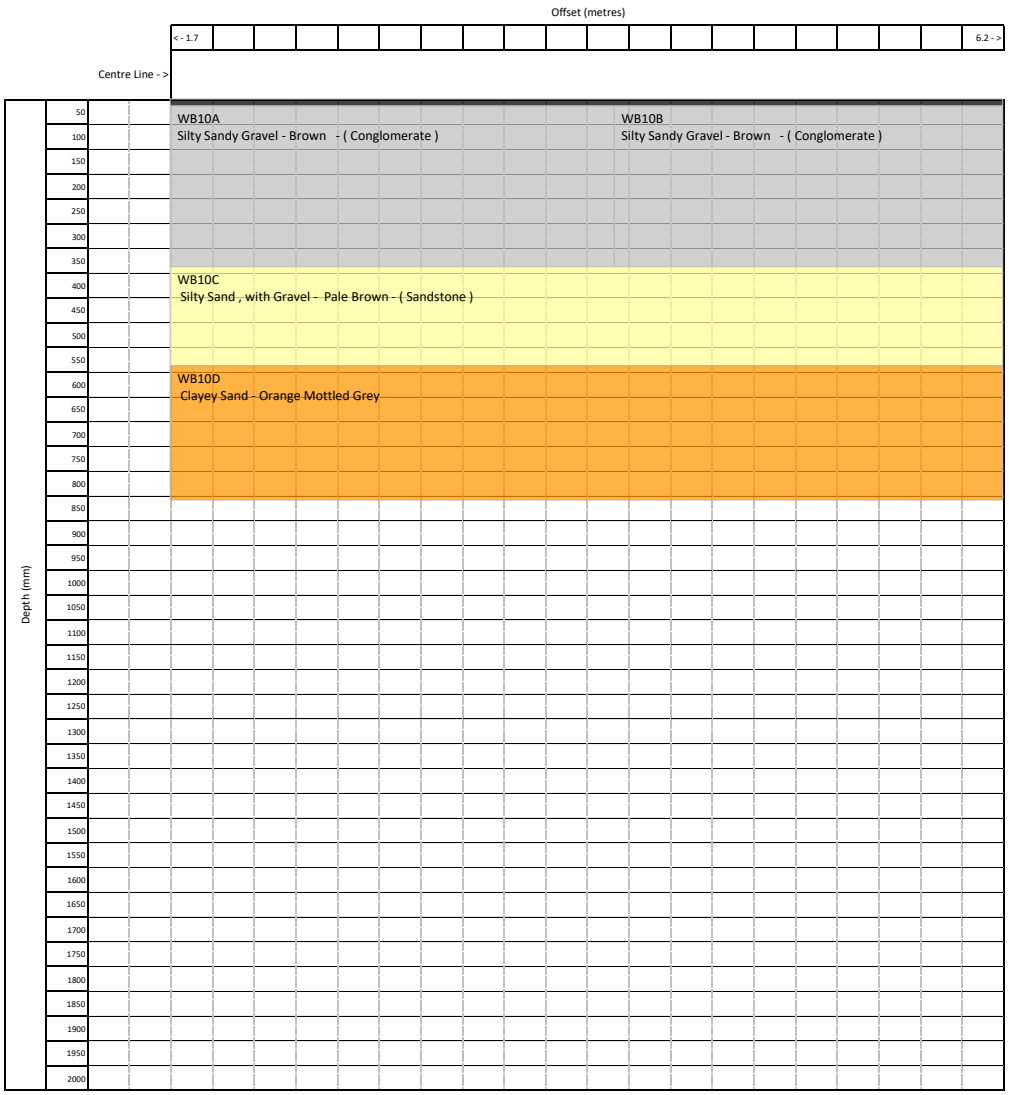
Strata Diagram

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WB10	Offset - Site - (m)	In	1.7	out	6.2



Remarks

OTN-SOP200-REP-F021-F01H- Issue 3 - 2/12/2021 - DCP.

Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

DCP

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WB10	Offset - Site - (m)	In 1.7 out 6.2

DCP 1 For this site

Offset (metres)	4.1

Data as per blow

Depth and Assumed CBR	Depth and Assumed CBR
530mm - 575mm = 4%	1125mm - 1130mm = 50%
575mm - 595mm = 10%	1130mm - 1135mm = 50%
595mm - 615mm = 10%	
615mm - 635mm = 10%	
635mm - 645mm = 22%	
645mm - 660mm = 14%	
660mm - 670mm = 22%	
670mm - 685mm = 14%	
685mm - 695mm = 22%	
695mm - 705mm = 22%	
705mm - 715mm = 22%	
715mm - 730mm = 14%	
730mm - 745mm = 14%	
745mm - 755mm = 22%	
755mm - 770mm = 14%	
770mm - 790mm = 10%	
790mm - 810mm = 10%	
810mm - 830mm = 10%	
830mm - 855mm = 8%	
855mm - 880mm = 8%	
880mm - 900mm = 10%	
900mm - 920mm = 10%	
920mm - 935mm = 14%	
935mm - 945mm = 22%	
945mm - 960mm = 14%	
960mm - 975mm = 14%	
975mm - 990mm = 14%	
990mm - 1000mm = 22%	
1000mm - 1020mm = 10%	
1020mm - 1030mm = 22%	
1030mm - 1045mm = 14%	
1045mm - 1055mm = 22%	
1055mm - 1065mm = 22%	
1065mm - 1075mm = 22%	
1075mm - 1080mm = 50%	
1080mm - 1090mm = 22%	
1090mm - 1100mm = 22%	
1100mm - 1110mm = 22%	
1110mm - 1115mm = 50%	
1115mm - 1125mm = 22%	

Zone Interpreted CBR Values

Layer / Zone	Top of Layer (mm)	Bottom of Layer (mm)	Approx CBR (%)

DCP 2 For this site

Offset (metres)	---

Data as per blow

Depth and Assumed CBR	Depth and Assumed CBR

Zone Interpreted CBR Values

Layer / Zone	Top of Layer (mm)	Bottom of Layer (mm)	Approx CBR (%)

The Calculated CBR % values are extracted from the Pavement Design Manual, AUSTROADS 92.

Remarks

WB10

Appendix C – Laboratory Test Results

Material Test Report

Report Number: **BL24092-1**
Issue Number: 1
Date Issued: 11/02/2025
Client: Transport for NSW - Stuart Austin
Level 3, 76 Victoria Street , Grafton NSW 2460
Contact: Stuart Austin
Project Number: BL24092
Project Name: Regional Road Betterment - Wybong Road RRTRP
Project Location: 25 km West of Muswellbrook
Client Reference: P.0095985
Work Request: 893
Sample Number: BL24092/001
Client Sample #: WB1A
Date Sampled: 13/01/2025
Dates Tested: 28/01/2025 - 30/01/2025
Lane: EB
Sample Location: **Off: 2.4m - 3.9m from CL, Depth: 20mm - 165mm**

Transport for NSW
Ballina Laboratory
2 Boat Harbour Road Ballina NSW 2478
Phone: 0457 837 771
Email: cary.pawson@rms.nsw.gov.au

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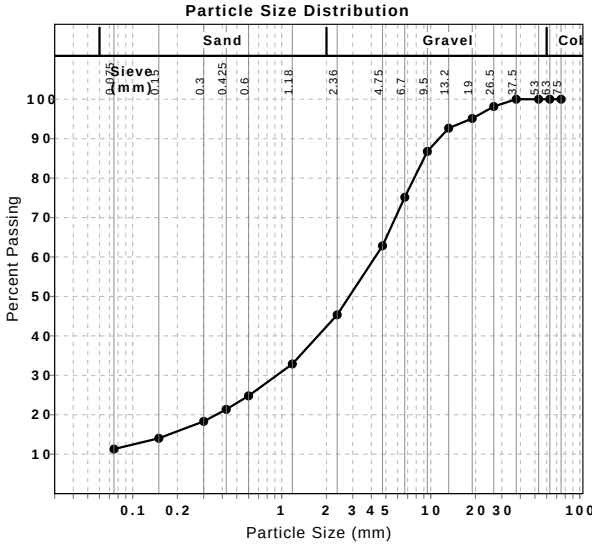
Approved Signatory: Cary Pawson
Laboratory Supervisor
NATA Accredited Laboratory Number: 2606

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**98**			2		
19 mm	**95**			3		
13.2 mm	**93**			2		
9.5 mm	**87**			6		
6.7 mm	**75**			12		
4.75 mm	**63**			12		
2.36 mm	**45**			17		
1.18 mm	**33**			12		
0.6 mm	**25**			8		
0.425 mm	**21**			3		
0.3 mm	**18**			3		
0.15 mm	**14**			4		
0.075 mm	**11**			3		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried / Air Dried / Natural / Unknown		
Preparation Method			
Liquid Limit (%)	28		
Plastic Limit (%)	17		
Plasticity Index (%)	**11**		



Material Test Report

Transport for NSW
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Phone: 0457 837 771
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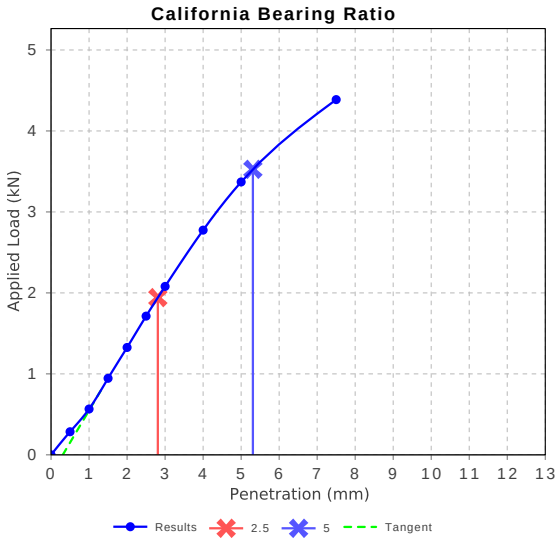
Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Cary Pawson
Laboratory Supervisor
NATA Accredited Laboratory Number: 2606

Report Number: **BL24092-1**
Issue Number: 1
Date Issued: 11/02/2025
Client: Transport for NSW - Stuart Austin
Level 3, 76 Victoria Street , Grafton NSW 2460
Contact: Stuart Austin
Project Number: BL24092
Project Name: Regional Road Betterment - Wybong Road RRTRP
Project Location: 25 km West of Muswellbrook
Client Reference: P.0095985
Work Request: 893
Sample Number: BL24092/002
Client Sample #: WB1C
Date Sampled: 28/01/2025
Dates Tested: 28/01/2025 - 10/02/2025
Lane: EB
Sample Location: **Off: 2.4m - 4.6m from CL, Depth: 300mm - 520mm**

California Bearing Ratio (TS 02795.11 & 02795.14)		Min	Max
CBR taken at	5 mm		
CBR %	**18**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	TS 02795.06 & 02795.14		
Maximum Dry Density (t/m^3)	1.941		
Optimum Moisture Content (%)	12.6		
Target Laboratory Density Ratio (%)	100		
Laboratory Density Ratio (%)	100		
Target Laboratory Moisture Ratio (%)	100		
Laboratory Moisture Ratio (%)	101		
Moisture Content Top 30mm (%)	14.5		
Moisture Content Full Depth (%)	14.0		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	10		
Swell (%)	0.4		
Material Retained on 19 mm (%)	18		
Oversize Material Included	Excluded		



Material Test Report

Report Number: **BL24092-1**
Issue Number: 1
Date Issued: 11/02/2025
Client: Transport for NSW - Stuart Austin
Level 3, 76 Victoria Street , Grafton NSW 2460
Contact: Stuart Austin
Project Number: BL24092
Project Name: Regional Road Betterment - Wybong Road RRTRP
Project Location: 25 km West of Muswellbrook
Client Reference: P.0095985
Work Request: 893
Sample Number: BL24092/003
Client Sample #: WB2B
Date Sampled: 28/01/2025
Dates Tested: 28/01/2025 - 30/01/2025
Lane: WB
Sample Location: **Off: 2.5m - 4.4m from CL, Depth: 100mm - 290mm**

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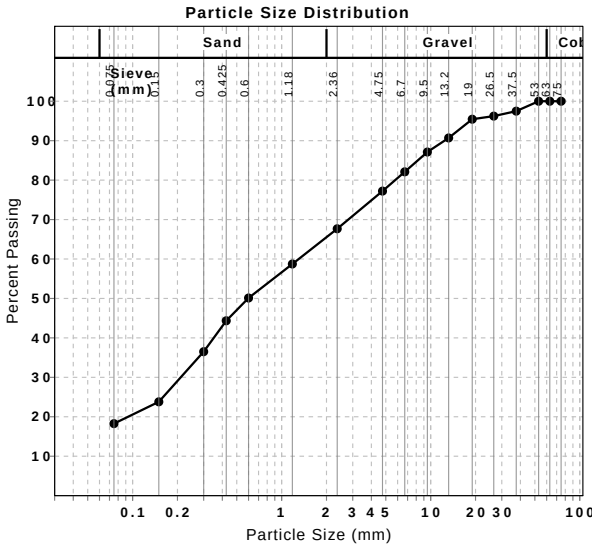
Approved Signatory: Cary Pawson
Laboratory Supervisor
NATA Accredited Laboratory Number: 2606

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**97**			3		
26.5 mm	**96**			1		
19 mm	**95**			1		
13.2 mm	**91**			5		
9.5 mm	**87**			4		
6.7 mm	**82**			5		
4.75 mm	**77**			5		
2.36 mm	**68**			10		
1.18 mm	**59**			9		
0.6 mm	**50**			9		
0.425 mm	**44**			6		
0.3 mm	**37**			8		
0.15 mm	**24**			13		
0.075 mm	**18**			6		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried / Air Dried / Natural / Unknown		
Preparation Method			
Liquid Limit (%)	20		
Plastic Limit (%)	14		
Plasticity Index (%)	**6**		



Material Test Report

Report Number: **BL24092-1**
Issue Number: 1
Date Issued: 11/02/2025
Client: Transport for NSW - Stuart Austin
Level 3, 76 Victoria Street , Grafton NSW 2460
Contact: Stuart Austin
Project Number: BL24092
Project Name: Regional Road Betterment - Wybong Road RRTRP
Project Location: 25 km West of Muswellbrook
Client Reference: P.0095985
Work Request: 893
Sample Number: BL24092/004
Client Sample #: WB3A
Date Sampled: 28/01/2025
Dates Tested: 28/01/2025 - 30/01/2025
Lane: EB
Sample Location: **Off: 2.1m - 3.9m from CL, Depth: 15mm - 170mm**

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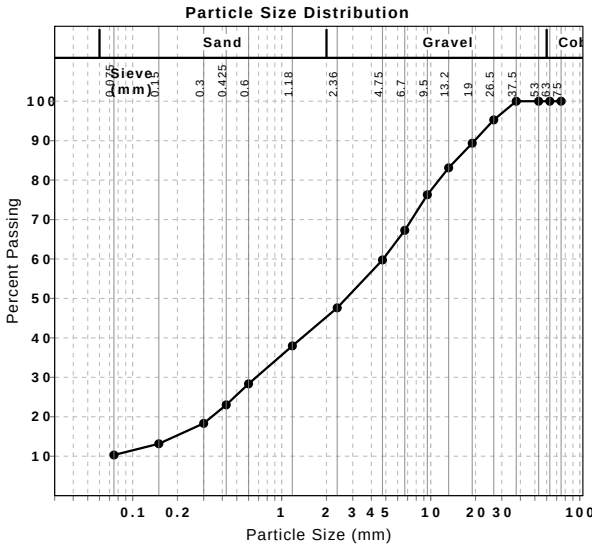
Approved Signatory: Cary Pawson
Laboratory Supervisor
NATA Accredited Laboratory Number: 2606

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**95**			5		
19 mm	**89**			6		
13.2 mm	**83**			6		
9.5 mm	**76**			7		
6.7 mm	**67**			9		
4.75 mm	**60**			8		
2.36 mm	**48**			12		
1.18 mm	**38**			10		
0.6 mm	**28**			10		
0.425 mm	**23**			5		
0.3 mm	**18**			5		
0.15 mm	**13**			5		
0.075 mm	**10**			3		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried / Air Dried / Natural / Unknown		
Preparation Method			
Liquid Limit (%)	26		
Plastic Limit (%)	17		
Plasticity Index (%)	**9**		



Material Test Report

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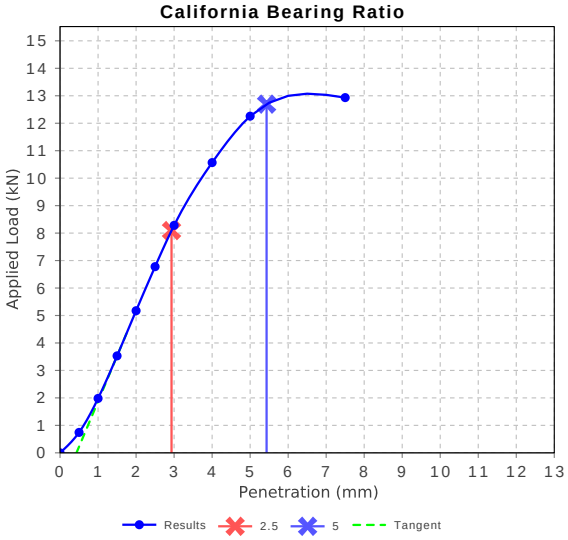
Laboratory Supervisor
NATA Accredited Laboratory Number: 2606

Report Number: **BL24092-1**
Issue Number: 1
Date Issued: 11/02/2025
Client: Transport for NSW - Stuart Austin
Level 3, 76 Victoria Street , Grafton NSW 2460
Contact: Stuart Austin
Project Number: BL24092
Project Name: Regional Road Betterment - Wybong Road RRTRP
Project Location: 25 km West of Muswellbrook
Client Reference: P.0095985
Work Request: 893
Sample Number: BL24092/005
Client Sample #: WB3C
Date Sampled: 28/01/2025
Dates Tested: 28/01/2025 - 10/02/2025
Lane: EB
Sample Location: **Off: 2.1m - 5.3m from CL, Depth: 330mm - 730mm**

California Bearing Ratio (TS 02795.11 & 02795.14)		Min	Max
CBR taken at	5 mm		
CBR %	**60**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	TS 02795.06 & 02795.14		
Maximum Dry Density (t/m^3)	1.965		
Optimum Moisture Content (%)	9.6		
Target Laboratory Density Ratio (%)	100		
Laboratory Density Ratio (%)	100		
Target Laboratory Moisture Ratio (%)	100		
Laboratory Moisture Ratio (%)	99		
Moisture Content Top 30mm (%)	11.3		
Moisture Content Full Depth (%)	10.6		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	10		
Swell (%)	0.0		
Material Retained on 19 mm (%)	3		
Oversize Material Included	Excluded		



Material Test Report

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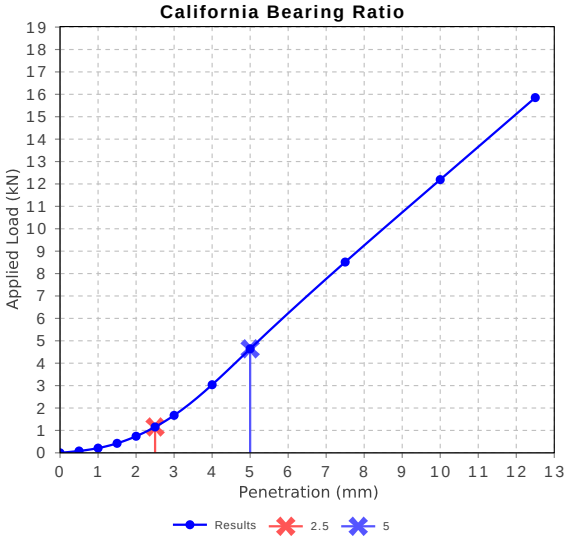
Laboratory Supervisor
NATA Accredited Laboratory Number: 2606

Report Number: **BL24092-1**
Issue Number: 1
Date Issued: 11/02/2025
Client: Transport for NSW - Stuart Austin
Level 3, 76 Victoria Street , Grafton NSW 2460
Contact: Stuart Austin
Project Number: BL24092
Project Name: Regional Road Betterment - Wybong Road RRTRP
Project Location: 25 km West of Muswellbrook
Client Reference: P.0095985
Work Request: 893
Sample Number: BL24092/006
Client Sample #: WB4C
Date Sampled: 28/01/2025
Dates Tested: 28/01/2025 - 10/02/2025
Lane: WB
Sample Location: **Off: 2.1m - 5.1m from CL, Depth: 340mm - 890mm**

California Bearing Ratio (TS 02795.11 & 02795.14)		Min	Max
CBR taken at	5 mm		
CBR %	**25**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	TS 02795.06 & 02795.14		
Maximum Dry Density (t/m^3)	2.064		
Optimum Moisture Content (%)	9.6		
Target Laboratory Density Ratio (%)	100		
Laboratory Density Ratio (%)	100		
Target Laboratory Moisture Ratio (%)	100		
Laboratory Moisture Ratio (%)	100		
Moisture Content Top 30mm (%)	10.3		
Moisture Content Full Depth (%)	9.7		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	10		
Swell (%)	0.1		
Material Retained on 19 mm (%)	1		
Oversize Material Included	Excluded		



Material Test Report

Report Number: **BL24092-1**
Issue Number: 1
Date Issued: 11/02/2025
Client: Transport for NSW - Stuart Austin
Level 3, 76 Victoria Street , Grafton NSW 2460
Contact: Stuart Austin
Project Number: BL24092
Project Name: Regional Road Betterment - Wybong Road RRTRP
Project Location: 25 km West of Muswellbrook
Client Reference: P.0095985
Work Request: 893
Sample Number: BL24092/007
Client Sample #: WB5B
Date Sampled: 28/01/2025
Dates Tested: 28/01/2025 - 30/01/2025
Lane: EB
Sample Location: **Off: 2.4m - 4.6m from CL, Depth: 105mm - 280mm**

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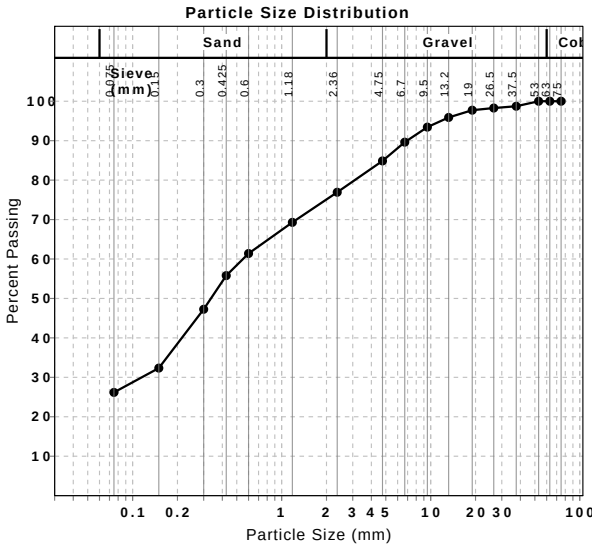
Laboratory Supervisor
NATA Accredited Laboratory Number: 2606

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**99**			1		
26.5 mm	**98**			0		
19 mm	**98**			1		
13.2 mm	**96**			2		
9.5 mm	**93**			2		
6.7 mm	**90**			4		
4.75 mm	**85**			5		
2.36 mm	**77**			8		
1.18 mm	**69**			8		
0.6 mm	**61**			8		
0.425 mm	**56**			6		
0.3 mm	**47**			9		
0.15 mm	**32**			15		
0.075 mm	**26**			6		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried / Air Dried / Natural / Unknown		
Preparation Method			
Liquid Limit (%)	25		
Plastic Limit (%)	15		
Plasticity Index (%)	**10**		



Material Test Report

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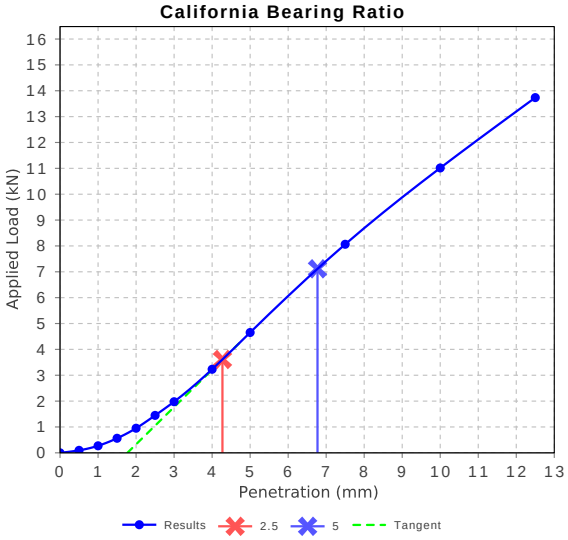
NATA Accredited Laboratory Number: 2606

Report Number: **BL24092-1**
Issue Number: 1
Date Issued: 11/02/2025
Client: Transport for NSW - Stuart Austin
Level 3, 76 Victoria Street , Grafton NSW 2460
Contact: Stuart Austin
Project Number: BL24092
Project Name: Regional Road Betterment - Wybong Road RRTRP
Project Location: 25 km West of Muswellbrook
Client Reference: P.0095985
Work Request: 893
Sample Number: BL24092/008
Client Sample #: WB5E
Date Sampled: 28/01/2025
Dates Tested: 28/01/2025 - 10/02/2025
Lane: EB
Sample Location: **Off: 2.4m - 5.4m from CL, Depth: 810mm - 1100mm**

California Bearing Ratio (TS 02795.11 & 02795.14)		Min	Max
CBR taken at	5 mm		
CBR %	**35**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	TS 02795.06 & 02795.14		
Maximum Dry Density (t/m^3)	1.966		
Optimum Moisture Content (%)	10.2		
Target Laboratory Density Ratio (%)	100		
Laboratory Density Ratio (%)	100		
Target Laboratory Moisture Ratio (%)	100		
Laboratory Moisture Ratio (%)	100		
Moisture Content Top 30mm (%)	11.0		
Moisture Content Full Depth (%)	10.5		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	10		
Swell (%)	-0.1		
Material Retained on 19 mm (%)	0		
Oversize Material Included	Excluded		



Material Test Report

Report Number: **BL24092-1**
Issue Number: 1
Date Issued: 11/02/2025
Client: Transport for NSW - Stuart Austin
Level 3, 76 Victoria Street , Grafton NSW 2460
Contact: Stuart Austin
Project Number: BL24092
Project Name: Regional Road Betterment - Wybong Road RRTRP
Project Location: 25 km West of Muswellbrook
Client Reference: P.0095985
Work Request: 893
Sample Number: BL24092/009
Client Sample #: WB6A
Date Sampled: 28/01/2025
Dates Tested: 28/01/2025 - 30/01/2025
Lane: WB
Sample Location: **Off: 2.4m - 4.0m from CL, Depth: 20mm - 150mm**

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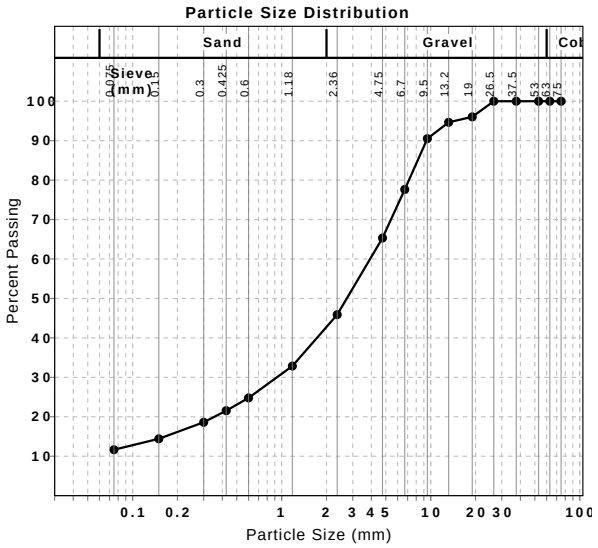
Approved Signatory: Cary Pawson
Laboratory Supervisor
NATA Accredited Laboratory Number: 2606

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**96**			4		
13.2 mm	**95**			1		
9.5 mm	**91**			4		
6.7 mm	**78**			13		
4.75 mm	**65**			12		
2.36 mm	**46**			19		
1.18 mm	**33**			13		
0.6 mm	**25**			8		
0.425 mm	**22**			3		
0.3 mm	**19**			3		
0.15 mm	**14**			4		
0.075 mm	**12**			3		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried / Air Dried / Natural / Unknown		
Preparation Method			
Liquid Limit (%)	27		
Plastic Limit (%)	17		
Plasticity Index (%)	**10**		



Material Test Report

Report Number: **BL24092-1**
Issue Number: 1
Date Issued: 11/02/2025
Client: Transport for NSW - Stuart Austin
Level 3, 76 Victoria Street , Grafton NSW 2460
Contact: Stuart Austin
Project Number: BL24092
Project Name: Regional Road Betterment - Wybong Road RRTRP
Project Location: 25 km West of Muswellbrook
Client Reference: P.0095985
Work Request: 893
Sample Number: BL24092/010
Client Sample #: WB7B
Date Sampled: 28/01/2025
Dates Tested: 28/01/2025 - 30/01/2025
Lane: EB
Sample Location: **Off: 2.3m - 5.2m from CL, Depth: 110mm - 230mm**

Transport for NSW
Ballina Laboratory
2 Boat Harbour Road Ballina NSW 2478
Phone: 0457 837 771
Email: cary.pawson@rms.nsw.gov.au

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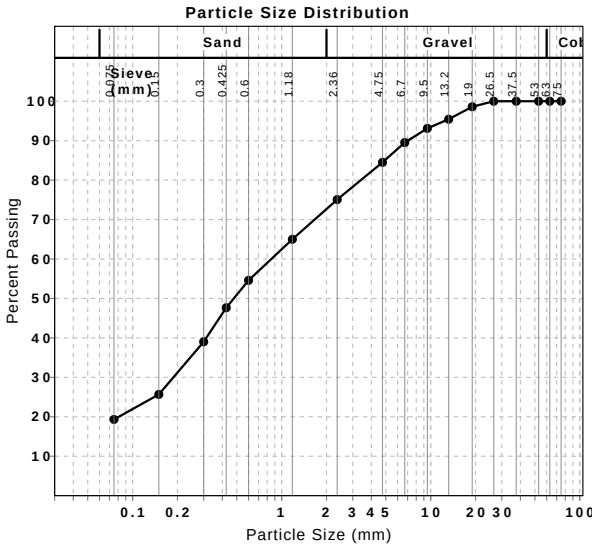
Approved Signatory: Cary Pawson
Laboratory Supervisor
NATA Accredited Laboratory Number: 2606

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**99**			1		
13.2 mm	**95**			3		
9.5 mm	**93**			2		
6.7 mm	**90**			4		
4.75 mm	**85**			5		
2.36 mm	**75**			9		
1.18 mm	**65**			10		
0.6 mm	**55**			10		
0.425 mm	**48**			7		
0.3 mm	**39**			9		
0.15 mm	**26**			13		
0.075 mm	**19**			6		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried / Air Dried / Natural / Unknown		
Preparation Method			
Liquid Limit (%)	17		
Plastic Limit (%)	14		
Plasticity Index (%)	**3**		



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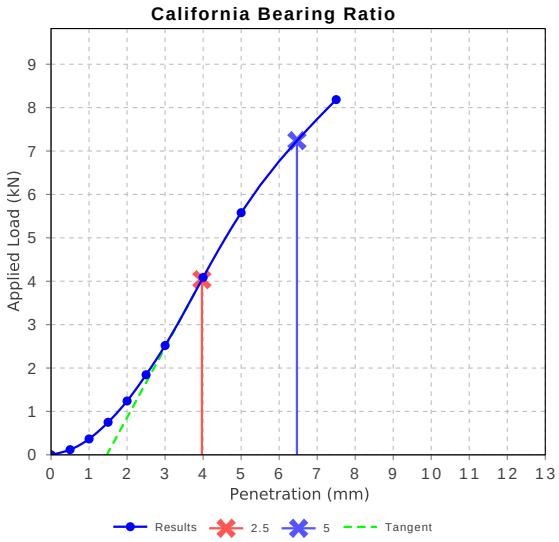
Approved Signatory: Cary Pawson
Laboratory Supervisor
NATA Accredited Laboratory Number: 2606

Report Number: **BL24092-1**
Issue Number: 1
Date Issued: 11/02/2025
Client: Transport for NSW - Stuart Austin
Level 3, 76 Victoria Street , Grafton NSW 2460
Contact: Stuart Austin
Project Number: BL24092
Project Name: Regional Road Betterment - Wybong Road RRTRP
Project Location: 25 km West of Muswellbrook
Client Reference: P.0095985
Work Request: 893
Sample Number: BL24092/011
Client Sample #: WB7F
Date Sampled: 28/01/2025
Dates Tested: 28/01/2025 - 10/02/2025
Lane: EB
Sample Location: **Off: 2.3m - 5.2m from CL, Depth: 980mm - 1190mm**

California Bearing Ratio (TS 02795.11 & 02795.14)		Min	Max
CBR taken at	5 mm		
CBR %	**35**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	TS 02795.06 & 02795.14		
Maximum Dry Density (t/m^3)	1.887		
Optimum Moisture Content (%)	11.7		
Target Laboratory Density Ratio (%)	100		
Laboratory Density Ratio (%)	100		
Target Laboratory Moisture Ratio (%)	100		
Laboratory Moisture Ratio (%)	100		
Moisture Content Top 30mm (%)	12.7		
Moisture Content Full Depth (%)	11.8		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	10		
Swell (%)	-0.2		
Material Retained on 19 mm (%)	0		
Oversize Material Included	Excluded		



Material Test Report

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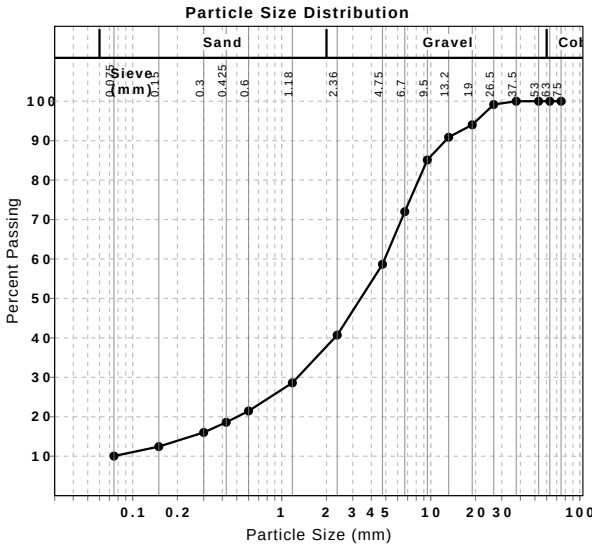
Approved Signatory: Cary Pawson
Laboratory Supervisor
NATA Accredited Laboratory Number: 2606

Report Number:	**BL24092-1**
Issue Number:	1
Date Issued:	11/02/2025
Client:	Transport for NSW - Stuart Austin
	Level 3, 76 Victoria Street , Grafton NSW 2460
Contact:	Stuart Austin
Project Number:	BL24092
Project Name:	Regional Road Betterment - Wybong Road RRTRP
Project Location:	25 km West of Muswellbrook
Client Reference:	P.0095985
Work Request:	893
Sample Number:	BL24092/012
Client Sample #:	WB8A
Date Sampled:	28/01/2025
Dates Tested:	28/01/2025 - 30/01/2025
Lane:	WB
Sample Location:	**Off: 2.2m - 3.8m from CL, Depth: 15mm - 135mm**

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**99**			1		
19 mm	**94**			5		
13.2 mm	**91**			3		
9.5 mm	**85**			6		
6.7 mm	**72**			13		
4.75 mm	**59**			13		
2.36 mm	**41**			18		
1.18 mm	**29**			12		
0.6 mm	**21**			7		
0.425 mm	**19**			3		
0.3 mm	**16**			3		
0.15 mm	**12**			4		
0.075 mm	**10**			2		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried / Air Dried / Natural / Unknown		
Preparation Method			
Liquid Limit (%)	28		
Plastic Limit (%)	18		
Plasticity Index (%)	**10**		



Material Test Report

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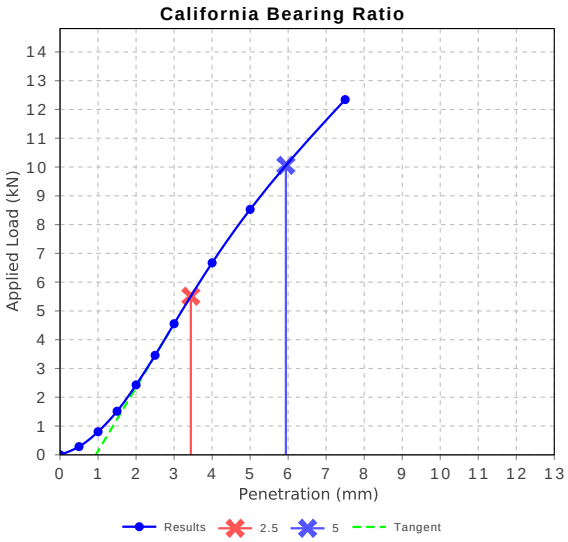
Laboratory Supervisor
NATA Accredited Laboratory Number: 2606

Report Number: **BL24092-1**
Issue Number: 1
Date Issued: 11/02/2025
Client: Transport for NSW - Stuart Austin
Level 3, 76 Victoria Street , Grafton NSW 2460
Contact: Stuart Austin
Project Number: BL24092
Project Name: Regional Road Betterment - Wybong Road RRTRP
Project Location: 25 km West of Muswellbrook
Client Reference: P.0095985
Work Request: 893
Sample Number: BL24092/013
Client Sample #: WB9C
Date Sampled: 28/01/2025
Dates Tested: 28/01/2025 - 10/02/2025
Lane: EB
Sample Location: **Off: 1.7m - 4.3m from CL, Depth: 250mm - 540mm**

California Bearing Ratio (TS 02795.11 & 02795.14)		Min	Max
CBR taken at	5 mm		
CBR %	**50**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	TS 02795.06 & 02795.14		
Maximum Dry Density (t/m^3)	1.972		
Optimum Moisture Content (%)	10.4		
Target Laboratory Density Ratio (%)	100		
Laboratory Density Ratio (%)	100		
Target Laboratory Moisture Ratio (%)	100		
Laboratory Moisture Ratio (%)	99		
Moisture Content Top 30mm (%)	11.0		
Moisture Content Full Depth (%)	10.7		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	10		
Swell (%)	-0.2		
Material Retained on 19 mm (%)	0		
Oversize Material Included	Excluded		



Material Test Report

Report Number: **BL24092-1**
Issue Number: 1
Date Issued: 11/02/2025
Client: Transport for NSW - Stuart Austin
Level 3, 76 Victoria Street , Grafton NSW 2460
Contact: Stuart Austin
Project Number: BL24092
Project Name: Regional Road Betterment - Wybong Road RRTRP
Project Location: 25 km West of Muswellbrook
Client Reference: P.0095985
Work Request: 893
Sample Number: BL24092/014
Client Sample #: WB10A
Date Sampled: 28/01/2025
Dates Tested: 28/01/2025 - 30/01/2025
Lane: WB
Sample Location: **Off: 1.7m - 4.1m from CL, Depth: 15mm - 340mm**

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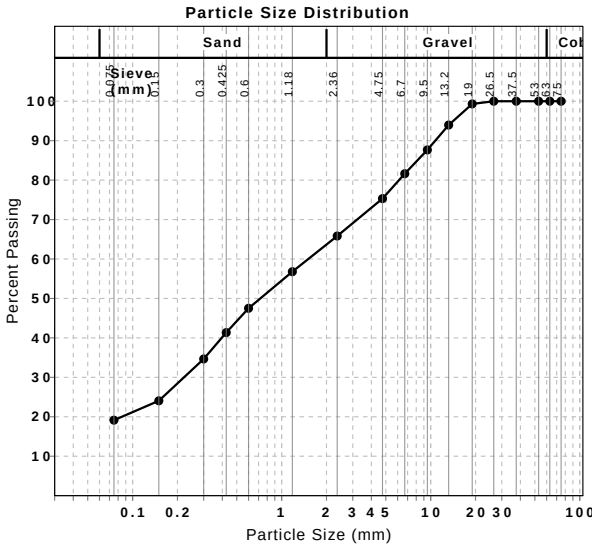
Approved Signatory: Cary Pawson
Laboratory Supervisor
NATA Accredited Laboratory Number: 2606

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**99**			1		
13.2 mm	**94**			5		
9.5 mm	**88**			6		
6.7 mm	**82**			6		
4.75 mm	**75**			6		
2.36 mm	**66**			9		
1.18 mm	**57**			9		
0.6 mm	**48**			9		
0.425 mm	**41**			6		
0.3 mm	**35**			7		
0.15 mm	**24**			11		
0.075 mm	**19**			5		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried / Air Dried / Natural / Unknown		
Preparation Method			
Liquid Limit (%)	27		
Plastic Limit (%)	17		
Plasticity Index (%)	**10**		



Material Test Report

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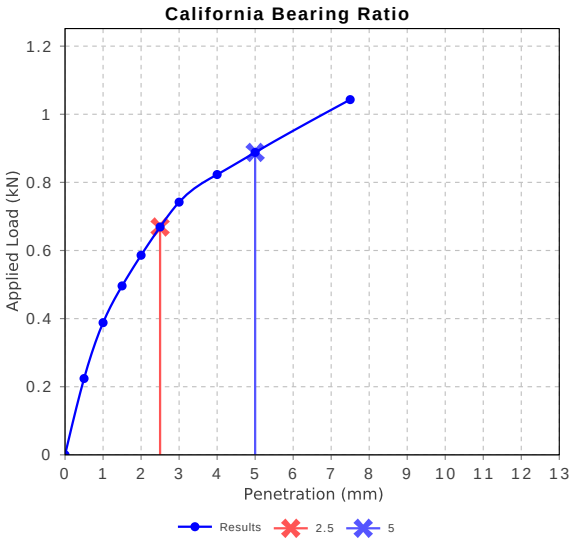
Approved Signatory: Cary Pawson
Laboratory Supervisor
NATA Accredited Laboratory Number: 2606

Report Number: **BL24092-1**
Issue Number: 1
Date Issued: 11/02/2025
Client: Transport for NSW - Stuart Austin
Level 3, 76 Victoria Street , Grafton NSW 2460
Contact: Stuart Austin
Project Number: BL24092
Project Name: Regional Road Betterment - Wybong Road RRTRP
Project Location: 25 km West of Muswellbrook
Client Reference: P.0095985
Work Request: 893
Sample Number: BL24092/015
Client Sample #: WB10D
Date Sampled: 28/01/2025
Dates Tested: 28/01/2025 - 10/02/2025
Lane: WB
Sample Location: **Off: 1.7m - 6.2m from CL, Depth: 540mm - 810mm**

California Bearing Ratio (TS 02795.11 & 02795.14)		Min	Max
CBR taken at	2.5 mm		
CBR %	**5**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	TS 02795.06 & 02795.14		
Maximum Dry Density (t/m^3)	1.887		
Optimum Moisture Content (%)	14.5		
Target Laboratory Density Ratio (%)	100		
Laboratory Density Ratio (%)	100		
Target Laboratory Moisture Ratio (%)	100		
Laboratory Moisture Ratio (%)	100		
Moisture Content Top 30mm (%)	17.5		
Moisture Content Full Depth (%)	15.9		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	10		
Swell (%)	0.9		
Material Retained on 19 mm (%)	0		
Oversize Material Included	Excluded		



Appendix D – Traffic and Pavement Design Outputs

PAVEMENT TRAFFIC LOADING 2 - TRAFFIC LOADING RESULTS

Input Details

Project title :	Wybong Road
Analysis by :	RTS North
Analysis date :	27 February 2025
Design Year 1 :	2026
Year 1 AADT :	1,310 Vehicles
DF - Direction Factor :	0.5
N_{HVAG} :	3.26 HVAG/HV
%HV - Heavy Vehicles :	16.00%
LDF - Lane Distribution Factor :	1.00
Lane capacity flow rate :	1,700 Passenger cars per hour
Number of lanes in direction of design lane :	1
Average Passenger Cars per Heavy Vehicle :	2.50
Design period :	20 years
Number of design period phases :	1

Phase	Start Year	End Year	Growth Rate	Incremental HV in first year of phase
1	1	20	2.00%	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A

ESA analysis method :	TLD data
ESA per HVAG :	N/A
TLD Title:	2018 Rural Presumptive TLD
TLD workbook filename:	\\corp.trans.internal\User\Profile\Profile043\grothd\Documents\Pavement Designs\RMS Supplement Presumptive TLDs (Aug 2018 Ver3.0).xlsx
TLD worksheet name:	2018 Rural Presumptive TLD
HVAG proportions:	TLD

SAST	SADT	TAST	TADT	TRDT	QADT
0.3044	0.0670	0.0020	0.2781	0.3465	0.0020

Analysis Details

PTL2 design filename :	
PTL2 software version :	1C (December 2021)
Design reference :	Austroads Guide AGPT02-17

Pavement Design Loadings

	Total at Year 20 (2045)
N_{DT} (HVAG) :	3.03E+06
DESA :	3.19E+06

Heavy Vehicle Capacity Details

Annual HV capacity of design lane :	1.92E+06
HV capacity reached in Design Period? :	NO
Design Year of HV capacity :	N/A

General Details

ESA per Heavy Vehicle :	3.437
ESA per HVAG :	1.054

2018 Rural Presumptive TLD						
	Axle group type					
Axle group load (kN)	SAST %	SADT %	TAST %	TADT %	TRDT %	QADT %
10	3.2524	16.4151	2.899	0.1572	0.0071	0
20	7.6949	30.342	2.0029	0.5451	0.031	0
30	3.1258	13.3169	0.6796	0.6241	0.0541	0.069
40	3.7531	8.7761	0.6081	0.8996	0.2116	0.2758
50	16.9342	8.1179	2.468	1.1759	1.2353	0.3792
60	52.4934	7.4348	6.6877	2.58	3.8528	0.8274
70	10.2776	5.8528	11.3725	4.8833	5.7266	1.2758
80	1.7075	4.5056	15.3777	6.5131	5.7878	3.2066
90	0.5852	2.3832	17.2731	6.7622	5.0538	4.3094
100	0.1759	1.1701	17.276	7.4089	5.0639	4.1035
110	0	0.7909	11.446	8.8279	5.5024	4.4825
120	0	0.4358	5.1858	8.2671	5.1903	3.8277
130	0	0.3069	2.8255	8.0064	5.3248	4.3789
140	0	0.1519	1.6811	8.0873	5.2651	4.7926
150	0	0	1.2873	8.9493	5.4725	4.2067
160	0	0	0.9297	9.7239	6.0876	4.7585
170	0	0	0	7.3061	6.4428	4.8964
180	0	0	0	4.4557	7.392	4.8958
190	0	0	0	2.2787	7.8481	5.0688
200	0	0	0	1.1198	6.8469	4.552
210	0	0	0	0.6558	5.0767	4.6559
220	0	0	0	0.4006	2.8196	5.312
230	0	0	0	0.2618	1.4952	4.5176
240	0	0	0	0.1102	0.8706	5.6896
250	0	0	0	0	0.4962	4.1378
260	0	0	0	0	0.3567	3.9315
270	0	0	0	0	0.2215	3.3106
280	0	0	0	0	0.1391	2.4485
290	0	0	0	0	0.0998	1.5518
300	0	0	0	0	0.0281	1.3104
310	0	0	0	0	0	1.1038
320	0	0	0	0	0	0.6206
330	0	0	0	0	0	0.3103
340	0	0	0	0	0	0.3103
350	0	0	0	0	0	0.4137
360	0	0	0	0	0	0.069
370	0	0	0	0	0	0
380	0	0	0	0	0	0
390	0	0	0	0	0	0
400	0	0	0	0	0	0
Total	100.00	100.00	100.00	100.00	100.00	100.00

Group proportions	0.3044	0.0670	0.0020	0.2781	0.3465	0.0020

DESIGN ASPHALT MODULUS

Project details:	Wybong Road
Date:	5 March 2025
Designer:	RTS North
AC Modulus version:	6B (01 March 2018)
Design references:	Roads and Maritime Supplement to Austroads Part 2 Roads and Maritime asphalt and material specifications Austroads Part 2: Pavement Structural Design (AGPT02-17)

Inputs

Mix type:	AC14
Binder grade:	C450
Modulus adjustment factor:	1
Total binder content (by mass):	5.2%
Binder absorption:	0.3%
Binder density:	1.043 tonnes/m3
Insitu air voids:	6.0%
Combined bulk density of mineral aggregate:	2.65 tonnes/m3
Bitumen penetration at 25° C (0.1 mm):	31 (after RTFO)
Bitumen viscosity at 60° C:	970 Pa.s (after RTFO)
Loading speed:	100 km/h
WMAPT:	30.0° C

Results

Time of loading:	0.01 seconds
Bitumen T800 pen:	58.1° C
Bitumen Penetration Index:	-0.4
Binder stiffness:	20.9 MPa
Binder volume:	10.9%
Aggregate volume:	83.1%
Nominal mix modulus:	3,209 MPa
Adjusted mix modulus:	3,200 MPa
CIRCLY (k) value:	0.003941

DESIGN ASPHALT MODULUS

Project details:	Wybong Road
Date:	5 March 2025
Designer:	RTS North
AC Modulus version:	6B (01 March 2018)
Design references:	Roads and Maritime Supplement to Austroads Part 2 Roads and Maritime asphalt and material specifications Austroads Part 2: Pavement Structural Design (AGPT02-17)

Inputs

Mix type:	AC14
Binder grade:	A40R
Modulus adjustment factor:	0.75
Total binder content (by mass):	5.2%
Binder absorption:	0.3%
Binder density:	1.043 tonnes/m3
Insitu air voids:	6.0%
Combined bulk density of mineral aggregate:	2.65 tonnes/m3
Bitumen penetration at 25° C (0.1 mm):	31 (after RTFO)
Bitumen viscosity at 60° C:	970 Pa.s (after RTFO)
Loading speed:	100 km/h
WMAPT:	30.0° C

Results

Time of loading:	0.01 seconds
Bitumen T800 pen:	58.1° C
Bitumen Penetration Index:	-0.4
Binder stiffness:	20.9 MPa
Binder volume:	10.9%
Aggregate volume:	83.1%
Nominal mix modulus:	2,407 MPa
Adjusted mix modulus:	2,400 MPa
CIRCLY (k) value:	0.004371

DESIGN ASPHALT MODULUS

Project details:	Wybong Road
Date:	5 March 2025
Designer:	RTS North
AC Modulus version:	6B (01 March 2018)
Design references:	Roads and Maritime Supplement to Austroads Part 2 Roads and Maritime asphalt and material specifications Austroads Part 2: Pavement Structural Design (AGPT02-17)

Inputs

Mix type:	AC20
Binder grade:	C450
Modulus adjustment factor:	1
Total binder content (by mass):	4.9%
Binder absorption:	0.3%
Binder density:	1.043 tonnes/m3
Insitu air voids:	6.0%
Combined bulk density of mineral aggregate:	2.65 tonnes/m3
Bitumen penetration at 25° C (0.1 mm):	31 (after RTFO)
Bitumen viscosity at 60° C:	970 Pa.s (after RTFO)
Loading speed:	100 km/h
WMAPT:	30.0° C

Results

Time of loading:	0.01 seconds
Bitumen T800 pen:	58.1° C
Bitumen Penetration Index:	-0.4
Binder stiffness:	20.9 MPa
Binder volume:	10.3%
Aggregate volume:	83.7%
Nominal mix modulus:	3,472 MPa
Adjusted mix modulus:	3,500 MPa
CIRCLY (k) value:	0.003628

Existing Pavement East Zone

Flexible Pavement Design 2.0 - Summary Report

Design Filename: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\Design1.fpd2
FPD software verion: FPD 2.0 Version 1B (12 March 2020)
CIRCLY software version: 5.0u (8 April 2013)

Project Details

Project Title: Wybong Road
Location: Hollydeen
Pavement Tag: Existing Profile
Comments: Eastern End Subgrade CBR10
Date of Design: 3/03/2025
Designer: RTS Grafton
Project Reliability (%): 90
WMAPT (°C): 30
Design Speed (km/h): 100

Load Details

Single Axle Single Tyre (SAST) Standard Axle Load: 53 kN Tyre Contact Stress: 800 kPa
Single Axle Dual Tyre (SADT) Standard Axle Load: 80 kN Tyre Contact Stress: 750 kPa

Traffic Details

PTL report: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\WybongPTLexport.xlsx
TLD Title: 2018 Rural Presumptive TLD
Design Period (yrs): 20 Design Traffic - N_{DT} (HVAG): 3.03E+06 N_{DT} (ESAs): 3.19E+06
Annual growth rate (%): 2.0 N_{DT} for asphalt fatigue (HVAG): 3.03E+06 ESA/HVAG: 1.054

Axle Group	SAST	SADT	TAST	TADT	TRDT	QADT	From PTL
Proportions	0.3044	0.0670	0.0020	0.2781	0.3465	0.0020	Report

Layer Details

Layer No.	Description	Material	Thickness (mm)	Ev (MPa)	Ev / Eh	Poisson's Ratio	Lower Interface	% Vol. Bitumen	Sublayer?
1	DGB Class 2 (3051.1)	Granular	140	300	2.0	0.35	Rough	N/A	Yes
2	DGS20 (3051.1)	Granular	150	250	2.0	0.35	Rough	N/A	Yes
3	Selected Material (SMZ)	Selected Subgrade	200	150	2.0	0.35	Rough	N/A	Yes
4	Cohesive Subgrade	Subgrade	S/Inf	100	2.0	0.45	N/A	N/A	N/A

Layer Results

Layer No.	Description	Thickness (mm)	Vertical Modulus (MPa)	Stress Param. f (MPa)	k Factor	Failure Criterion	Maximum Microstrains			Expected Reps (ESAs)	Allowable Reps (ESAs)	CDF (Damage)	Estimated Life in Years
							SAST	SADT					
							Hor.	Hor.	Vert.				
1-2.1	S/L Granular Pavement	58	300	222	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.2	S/L Granular Pavement	58	261	193	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.3	S/L Granular Pavement	58	227	168	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.4	S/L Granular Pavement	58	198	147	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.5	S/L Granular Pavement	58	172	128	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.1	**S/L Selected Material (SMZ)**	**40**	**150**	**111**	**9150**	**Rutting**	**N/A**	**N/A**	**756.6**	**3.19E+06**	**3.78E+07**	**0.08**	**>50**
3.2	S/L Selected Material (SMZ)	40	138	102	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.3	S/L Selected Material (SMZ)	40	128	94	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.4	S/L Selected Material (SMZ)	40	118	87	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.5	S/L Selected Material (SMZ)	40	108	80	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Cohesive Subgrade	S/Inf	100	69	9150	Rutting	N/A	N/A	564.2	3.19E+06	2.95E+08	0.01	>50

Note: For construction purposes, an additional 10mm must be added to the critical layer, the damage for which is highlighted in bold above.

Non-conformances

Layer No.	Non-conformance description	Reference
1	Modulus of RMS Granular material does not match prescribed modulus.	RMS Supplement 6.2.3
3	Thickness of SMZ less than 300mm (required minimum thickness).	RMS Supplement 5.3.6

Existing Pavement West Zone

Flexible Pavement Design 2.0 - Summary Report

Design Filename: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\Design1.fpd2
FPD software verion: FPD 2.0 Version 1B (12 March 2020)
CIRCLY software version: 5.0u (8 April 2013)

Project Details

Project Title: Wybong Road
Location: Hollydeen
Pavement Tag: Existing Profile
Comments: Western End
Date of Design: 3/03/2025
Designer: RTS Grafton
Project Reliability (%): 90
WMAPT (°C): 30
Design Speed (km/h): 100

Load Details

Single Axle Single Tyre (SAST) Standard Axle Load: 53 kN Tyre Contact Stress: 800 kPa
Single Axle Dual Tyre (SADT) Standard Axle Load: 80 kN Tyre Contact Stress: 750 kPa

Traffic Details

PTL report: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\WybongPTLexport.xlsx
TLD Title: 2018 Rural Presumptive TLD
Design Period (yrs): 20 Design Traffic - N_{DT} (HVAG): 3.03E+06 N_{DT} (ESAs): 3.19E+06
Annual growth rate (%): 2.0 N_{DT} for asphalt fatigue (HVAG): 3.03E+06 ESA/HVAG: 1.054

Axle Group	SAST	SADT	TAST	TADT	TRDT	QADT	From PTL
Proportions	0.3044	0.0670	0.0020	0.2781	0.3465	0.0020	Report

Layer Details

Layer No.	Description	Material	Thickness (mm)	Ev (MPa)	Ev / Eh	Poisson's Ratio	Lower Interface	% Vol. Bitumen	Sublayer?
1	DGB Class 2 (3051.1)	Granular	140	300	2.0	0.35	Rough	N/A	Yes
2	DGS20 (3051.1)	Granular	150	250	2.0	0.35	Rough	N/A	Yes
3	Selected Material (SMZ)	Selected Subgrade	200	150	2.0	0.35	Rough	N/A	Yes
4	Cohesive Subgrade	Subgrade	S/Inf	50	2.0	0.45	N/A	N/A	N/A

Layer Results

Layer No.	Description	Thickness (mm)	Vertical Modulus (MPa)	Stress Param. f (MPa)	k Factor	Failure Criterion	Maximum Microstrains			Expected Reps (ESAs)	Allowable Reps (ESAs)	CDF (Damage)	Estimated Life in Years
							SAST	SADT					
							Hor.	Hor.	Vert.				
1-2.1	S/L Granular Pavement	58	300	222	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.2	S/L Granular Pavement	58	252	187	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.3	S/L Granular Pavement	58	212	157	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.4	S/L Granular Pavement	58	178	132	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.5	S/L Granular Pavement	58	150	111	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.1	S/L Selected Material (SMZ)	40	126	93	9150	Rutting	N/A	N/A	855.2	3.19E+06	1.60E+07	0.20	>50
3.2	S/L Selected Material (SMZ)	40	105	78	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.3	S/L Selected Material (SMZ)	40	87	64	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.4	S/L Selected Material (SMZ)	40	72	54	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.5	S/L Selected Material (SMZ)	40	60	45	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	**Cohesive Subgrade**	**S/Inf**	**50**	**34**	**9150**	**Rutting**	**N/A**	**N/A**	**967.8**	**3.19E+06**	**6.75E+06**	**0.47**	**35.7**

Note: For construction purposes, an additional 10mm must be added to the critical layer, the damage for which is highlighted in bold above.

Non-conformances

Layer No.	Non-conformance description	Reference
1	Modulus of RMS Granular material does not match prescribed modulus.	RMS Supplement 6.2.3
3	Thickness of SMZ less than 300mm (required minimum thickness).	RMS Supplement 5.3.6

Flexible Granular Overlay East Zone

Flexible Pavement Design 2.0 - Summary Report

Design Filename: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\Design1.fpd2
FPD software verion: FPD 2.0 Version 1B (12 March 2020)
CIRCLY software version: 5.0u (8 April 2013)

Project Details

Project Title: Wybong Road
Location: Hollydeen
Pavement Tag: Flexible Granular Overlay
Comments: Eastern End Subgrade CBR10
Date of Design: 7/03/2025
Designer: RTS Grafton
Project Reliability (%): 90
WMAPT (°C): 30
Design Speed (km/h): 100

Load Details

Single Axle Single Tyre (SAST) Standard Axle Load: 53 kN Tyre Contact Stress: 800 kPa
Single Axle Dual Tyre (SADT) Standard Axle Load: 80 kN Tyre Contact Stress: 750 kPa

Traffic Details

PTL report: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\WybongPTLexport.xlsx
TLD Title: 2018 Rural Presumptive TLD
Design Period (yrs): 20 Design Traffic - N_{DT} (HVAG): 3.03E+06 N_{DT} (ESAs): 3.19E+06
Annual growth rate (%): 2.0 N_{DT} for asphalt fatigue (HVAG): 3.03E+06 ESA/HVAG: 1.054

Axle Group	SAST	SADT	TAST	TADT	TRDT	QADT	From PTL
Proportions	0.3044	0.0670	0.0020	0.2781	0.3465	0.0020	Report

Layer Details

Layer No.	Description	Material	Thickness (mm)	Ev (MPa)	Ev / Eh	Poisson's Ratio	Lower Interface	% Vol. Bitumen	Sublayer?
1	DGB Class 2 (3051.1)	Granular	130	300	2.0	0.35	Rough	N/A	Yes
2	DGS20 (3051.1)	Granular	150	250	2.0	0.35	Rough	N/A	Yes
3	Selected Material (SMZ)	Selected Subgrade	340	150	2.0	0.35	Rough	N/A	Yes
4	Cohesive Subgrade	Subgrade	S/Inf	100	2.0	0.45	N/A	N/A	N/A

Layer Results

Layer No.	Description	Thickness (mm)	Vertical Modulus (MPa)	Stress Param. f (MPa)	k Factor	Failure Criterion	Maximum Microstrains			Expected Reps (ESAs)	Allowable Reps (ESAs)	CDF (Damage)	Estimated Life in Years
							SAST	SADT					
							Hor.	Hor.	Vert.				
1-2.1	S/L Granular Pavement	56	300	222	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.2	S/L Granular Pavement	56	261	193	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.3	S/L Granular Pavement	56	227	168	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.4	S/L Granular Pavement	56	198	147	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.5	S/L Granular Pavement	56	172	128	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.1	**S/L Selected Material (SMZ)**	**68**	**150**	**111**	**9150**	**Rutting**	**N/A**	**N/A**	**797.6**	**3.19E+06**	**2.61E+07**	**0.12**	**>50**
3.2	S/L Selected Material (SMZ)	68	138	102	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.3	S/L Selected Material (SMZ)	68	128	94	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.4	S/L Selected Material (SMZ)	68	118	87	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.5	S/L Selected Material (SMZ)	68	108	80	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Cohesive Subgrade	S/Inf	100	69	9150	Rutting	N/A	N/A	397	3.19E+06	3.45E+09	0.00	>50

Note: For construction purposes, an additional 10mm must be added to the critical layer, the damage for which is highlighted in bold above.

Non-conformances

Layer No.	Non-conformance description	Reference
1	Modulus of RMS Granular material does not match prescribed modulus.	RMS Supplement 6.2.3

Flexible Granular Overlay West Zone

Flexible Pavement Design 2.0 - Summary Report

Design Filename: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\Design1.fpd2
FPD software verion: FPD 2.0 Version 1B (12 March 2020)
CIRCLY software version: 5.0u (8 April 2013)

Project Details

Project Title: Wybong Road
Location: Hollydeen
Pavement Tag: Flexible Granular Overlay
Comments: West End Subgrade CBR5
Date of Design: 7/03/2025
Designer: RTS Grafton
Project Reliability (%): 90
WMAPT (°C): 30
Design Speed (km/h): 100

Load Details

Single Axle Single Tyre (SAST) Standard Axle Load: 53 kN Tyre Contact Stress: 800 kPa
Single Axle Dual Tyre (SADT) Standard Axle Load: 80 kN Tyre Contact Stress: 750 kPa

Traffic Details

PTL report: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\WybongPTLexport.xlsx
TLD Title: 2018 Rural Presumptive TLD
Design Period (yrs): 20 Design Traffic - N_{DT} (HVAG): 3.03E+06 N_{DT} (ESAs): 3.19E+06
Annual growth rate (%): 2.0 N_{DT} for asphalt fatigue (HVAG): 3.03E+06 ESA/HVAG: 1.054

Axle Group	SAST	SADT	TAST	TADT	TRDT	QADT	From PTL
Proportions	0.3044	0.0670	0.0020	0.2781	0.3465	0.0020	Report

Layer Details

Layer No.	Description	Material	Thickness (mm)	Ev (MPa)	Ev / Eh	Poisson's Ratio	Lower Interface	% Vol. Bitumen	Sublayer?
1	DGB Class 2 (3051.1)	Granular	130	300	2.0	0.35	Rough	N/A	Yes
2	DGS20 (3051.1)	Granular	150	250	2.0	0.35	Rough	N/A	Yes
3	Selected Material (SMZ)	Selected Subgrade	340	150	2.0	0.35	Rough	N/A	Yes
4	Cohesive Subgrade	Subgrade	S/Inf	50	2.0	0.45	N/A	N/A	N/A

Layer Results

Layer No.	Description	Thickness (mm)	Vertical Modulus (MPa)	Stress Param. f (MPa)	k Factor	Failure Criterion	Maximum Microstrains			Expected Reps (ESAs)	Allowable Reps (ESAs)	CDF (Damage)	Estimated Life in Years
							SAST	SADT					
							Hor.	Hor.	Vert.				
1-2.1	S/L Granular Pavement	56	300	222	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.2	S/L Granular Pavement	56	261	193	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.3	S/L Granular Pavement	56	227	168	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.4	S/L Granular Pavement	56	198	147	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.5	S/L Granular Pavement	56	172	128	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.1	**S/L Selected Material (SMZ)**	**68**	**150**	**111**	**9150**	**Rutting**	**N/A**	**N/A**	**771.7**	**3.19E+06**	**3.29E+07**	**0.10**	**>50**
3.2	S/L Selected Material (SMZ)	68	120	89	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.3	S/L Selected Material (SMZ)	68	97	72	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.4	S/L Selected Material (SMZ)	68	78	57	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.5	S/L Selected Material (SMZ)	68	62	46	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Cohesive Subgrade	S/Inf	50	34	9150	Rutting	N/A	N/A	670.9	3.19E+06	8.78E+07	0.04	>50

Note: For construction purposes, an additional 10mm must be added to the critical layer, the damage for which is highlighted in bold above.

Non-conformances

Layer No.	Non-conformance description	Reference
1	Modulus of RMS Granular material does not match prescribed modulus.	RMS Supplement 6.2.3

Heavily Bound Base East Zone

Flexible Pavement Design 2.0 - Summary Report

Design Filename: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\Design1.fpd2
FPD software verion: FPD 2.0 Version 1B (12 March 2020)
CIRCLY software version: 5.0u (8 April 2013)

Project Details

Project Title: Wybong Road
Location: Hollydeen
Pavement Tag: Heavily Bound Base
Comments: East End Subgrade CBR10
Date of Design: 7/03/2025
Designer: RTS Grafton
Project Reliability (%): 90
WMAPT (°C): 30
Design Speed (km/h): 100

Load Details

Single Axle Single Tyre (SAST) Standard Axle Load: 53 kN Tyre Contact Stress: 800 kPa
Single Axle Dual Tyre (SADT) Standard Axle Load: 80 kN Tyre Contact Stress: 750 kPa

Traffic Details

PTL report: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\WybongPTLexport.xlsx
TLD Title: 2018 Rural Presumptive TLD
Design Period (yrs): 20 Design Traffic - N_{DT} (HVAG): 3.03E+06 N_{DT} (ESAs): 3.19E+06
Annual growth rate (%): 2.0 N_{DT} for asphalt fatigue (HVAG): 3.03E+06 ESA/HVAG: 1.054

Axle Group	SAST	SADT	TAST	TADT	TRDT	QADT	From PTL
Proportions	0.3044	0.0670	0.0020	0.2781	0.3465	0.0020	Report

Layer Details

Layer No.	Description	Material	Thickness (mm)	Ev (MPa)	Ev / Eh	Poisson's Ratio	Lower Interface	% Vol. Bitumen	Sublayer?
1	Heavily Bound (R73/R75)	Cemented	280	5,000	1.0	0.20	Rough	N/A	N/A
2	Selected Material (SMZ)	Selected Subgrade	210	150	2.0	0.35	Rough	N/A	Yes
3	Cohesive Subgrade	Subgrade	S/Inf	100	2.0	0.45	N/A	N/A	N/A

Layer Results

Layer No.	Description	Thickness (mm)	Vertical Modulus (MPa)	Stress Param. f (MPa)	k Factor	Failure Criterion	Maximum Microstrains			Expected Reps (ESAs)	Allowable Reps (ESAs)	CDF (Damage)	Estimated Life in Years
							SAST	SADT					
							Hor.	Hor.	Vert.				
1	**Heavily Bound (R73/R75)**	**280**	**5,000**	**N/A**	**263**	**Fatigue**	**-59.82**	**-77.83**	**N/A**	**3.19E+06**	**N/A**	**0.95**	**20.8**
2.1	S/L Selected Material (SMZ)	42	150	111	9150	Rutting	N/A	N/A	166.2	3.19E+06	1.53E+12	0.00	>50
2.2	S/L Selected Material (SMZ)	42	138	102	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2.3	S/L Selected Material (SMZ)	42	128	94	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2.4	S/L Selected Material (SMZ)	42	118	87	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2.5	S/L Selected Material (SMZ)	42	108	80	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Cohesive Subgrade	S/Inf	100	69	9150	Rutting	N/A	N/A	159.1	3.19E+06	2.08E+12	0.00	>50

Note: For construction purposes, an additional 10mm must be added to the critical layer, the damage for which is highlighted in bold above.

Non-conformances

Layer No.	Non-conformance description	Reference
1	Cemented layer thickness exceeds specified maximum of 250 mm for design in accordance with R73 after the addition of a 10mm construction tolerance. Thicker layers may be constructed using R75 in-situ stabilisation.	RMS Supplement Table 1
2	Thickness of SMZ less than 300mm (required minimum thickness).	RMS Supplement 5.3.6

Heavily Bound Base West Zone

Flexible Pavement Design 2.0 - Summary Report

Design Filename: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\Design1.fpd2
FPD software verion: FPD 2.0 Version 1B (12 March 2020)
CIRCLY software version: 5.0u (8 April 2013)

Project Details

Project Title: Wybong Road
Location: Hollydeen
Pavement Tag: Heavily Bound Base
Comments: West End Subgrade CBR5
Date of Design: 7/03/2025
Designer: RTS Grafton
Project Reliability (%): 90
WMAPT (°C): 30
Design Speed (km/h): 100

Load Details

Single Axle Single Tyre (SAST) Standard Axle Load: 53 kN Tyre Contact Stress: 800 kPa
Single Axle Dual Tyre (SADT) Standard Axle Load: 80 kN Tyre Contact Stress: 750 kPa

Traffic Details

PTL report: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\WybongPTLexport.xlsx
TLD Title: 2018 Rural Presumptive TLD
Design Period (yrs): 20 Design Traffic - N_{DT} (HVAG): 3.03E+06 N_{DT} (ESAs): 3.19E+06
Annual growth rate (%): 2.0 N_{DT} for asphalt fatigue (HVAG): 3.03E+06 ESA/HVAG: 1.054

Axle Group	SAST	SADT	TAST	TADT	TRDT	QADT	From PTL
Proportions	0.3044	0.0670	0.0020	0.2781	0.3465	0.0020	Report

Layer Details

Layer No.	Description	Material	Thickness (mm)	Ev (MPa)	Ev / Eh	Poisson's Ratio	Lower Interface	% Vol. Bitumen	Sublayer?
1	Heavily Bound (R73/R75)	Cemented	315	5,000	1.0	0.20	Rough	N/A	N/A
2	Selected Material (SMZ)	Selected Subgrade	175	150	2.0	0.35	Rough	N/A	Yes
3	Cohesive Subgrade	Subgrade	S/Inf	50	2.0	0.45	N/A	N/A	N/A

Layer Results

Layer No.	Description	Thickness (mm)	Vertical Modulus (MPa)	Stress Param. f (MPa)	k Factor	Failure Criterion	Maximum Microstrains			Expected Reps (ESAs)	Allowable Reps (ESAs)	CDF (Damage)	Estimated Life in Years
							SAST	SADT					
							Hor.	Hor.	Vert.				
1	**Heavily Bound (R73/R75)**	**315**	**5,000**	**N/A**	**263**	**Fatigue**	**-57.25**	**-78.35**	**N/A**	**3.19E+06**	**N/A**	**0.97**	**20.5**
2.1	S/L Selected Material (SMZ)	35	112	83	9150	Rutting	N/A	N/A	138.6	3.19E+06	5.47E+12	0.00	>50
2.2	S/L Selected Material (SMZ)	35	95	71	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2.3	S/L Selected Material (SMZ)	35	81	60	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2.4	S/L Selected Material (SMZ)	35	69	51	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2.5	S/L Selected Material (SMZ)	35	59	44	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Cohesive Subgrade	S/Inf	50	34	9150	Rutting	N/A	N/A	201.7	3.19E+06	3.95E+11	0.00	>50

Note: For construction purposes, an additional 10mm must be added to the critical layer, the damage for which is highlighted in bold above.

Non-conformances

Layer No.	Non-conformance description	Reference
1	Cemented layer thickness exceeds specified maximum of 250 mm for design in accordance with R73 after the addition of a 10mm construction tolerance. Thicker layers may be constructed using R75 in-situ stabilisation.	RMS Supplement Table 1
2	Thickness of SMZ less than 300mm (required minimum thickness).	RMS Supplement 5.3.6

Insitu Modified East Zone

Flexible Pavement Design 2.0 - Summary Report

Design Filename: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\Design1.fpd2
FPD software verion: FPD 2.0 Version 1B (12 March 2020)
CIRCLY software version: 5.0u (8 April 2013)

Project Details

Project Title: Wybong Road
Location: Hollydeen
Pavement Tag: Modified 200mm including 100mm new DGB20
Comments: East End Subgrade CBR10
Date of Design: 7/03/2025
Designer: RTS Grafton
Project Reliability (%): 90
WMAPT (°C): 30
Design Speed (km/h): 100

Load Details

Single Axle Single Tyre (SAST) Standard Axle Load: 53 kN Tyre Contact Stress: 800 kPa
Single Axle Dual Tyre (SADT) Standard Axle Load: 80 kN Tyre Contact Stress: 750 kPa

Traffic Details

PTL report: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\WybongPTLexport.xlsx
TLD Title: 2018 Rural Presumptive TLD
Design Period (yrs): 20 Design Traffic - N_{DT} (HVAG): 3.03E+06 N_{DT} (ESAs): 3.19E+06
Annual growth rate (%): 2.0 N_{DT} for asphalt fatigue (HVAG): 3.03E+06 ESA/HVAG: 1.054

Axle Group	SAST	SADT	TAST	TADT	TRDT	QADT	From PTL
Proportions	0.3044	0.0670	0.0020	0.2781	0.3465	0.0020	Report

Layer Details

Layer No.	Description	Material	Thickness (mm)	Ev (MPa)	Ev / Eh	Poisson's Ratio	Lower Interface	% Vol. Bitumen	Sublayer?
1	DGB Class 2 (3051.4)	Granular	190	350	2.0	0.35	Rough	N/A	Yes
2	DGS20 (3051.1)	Granular	150	250	2.0	0.35	Rough	N/A	Yes
3	Selected Material (SMZ)	Selected Subgrade	250	150	2.0	0.35	Rough	N/A	Yes
4	Cohesive Subgrade	Subgrade	S/Inf	100	2.0	0.45	N/A	N/A	N/A

Layer Results

Layer No.	Description	Thickness (mm)	Vertical Modulus (MPa)	Stress Param. f (MPa)	k Factor	Failure Criterion	Maximum Microstrains			Expected Reps (ESAs)	Allowable Reps (ESAs)	CDF (Damage)	Estimated Life in Years
							SAST	SADT					
							Hor.	Hor.	Vert.				
1-2.1	S/L Granular Pavement	68	350	259	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.2	S/L Granular Pavement	68	295	219	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.3	S/L Granular Pavement	68	249	185	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.4	S/L Granular Pavement	68	211	156	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.5	S/L Granular Pavement	68	178	132	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.1	**S/L Selected Material (SMZ)**	**50**	**150**	**111**	**9150**	**Rutting**	**N/A**	**N/A**	**617.1**	**3.19E+06**	**1.58E+08**	**0.02**	**>50**
3.2	S/L Selected Material (SMZ)	50	138	102	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.3	S/L Selected Material (SMZ)	50	128	94	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.4	S/L Selected Material (SMZ)	50	118	87	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.5	S/L Selected Material (SMZ)	50	108	80	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Cohesive Subgrade	S/Inf	100	69	9150	Rutting	N/A	N/A	414.6	3.19E+06	2.55E+09	0.00	>50

Note: For construction purposes, an additional 10mm must be added to the critical layer, the damage for which is highlighted in bold above.

Non-conformances

Layer No.	Non-conformance description	Reference
1	Modulus of RMS Granular material does not match prescribed modulus.	RMS Supplement 6.2.3
3	Thickness of SMZ less than 300mm (required minimum thickness).	RMS Supplement 5.3.6

Insitu Modified West Zone

Flexible Pavement Design 2.0 - Summary Report

Design Filename: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\Design1.fpd2
FPD software verion: FPD 2.0 Version 1B (12 March 2020)
CIRCLY software version: 5.0u (8 April 2013)

Project Details

Project Title: Wybong Road
Location: Hollydeen
Pavement Tag: Insitu Modified
Comments: Western Zone Subgrade CBR5%
Date of Design: 3/03/2025
Designer: RTS Grafton
Project Reliability (%): 90
WMAPT (°C): 30
Design Speed (km/h): 100

Load Details

Single Axle Single Tyre (SAST) Standard Axle Load: 53 kN Tyre Contact Stress: 800 kPa
Single Axle Dual Tyre (SADT) Standard Axle Load: 80 kN Tyre Contact Stress: 750 kPa

Traffic Details

PTL report: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\WybongPTLexport.xlsx
TLD Title: 2018 Rural Presumptive TLD
Design Period (yrs): 20 Design Traffic - N_{DT} (HVAG): 3.03E+06 N_{DT} (ESAs): 3.19E+06
Annual growth rate (%): 2.0 N_{DT} for asphalt fatigue (HVAG): 3.03E+06 ESA/HVAG: 1.054

Axle Group	SAST	SADT	TAST	TADT	TRDT	QADT	From PTL
Proportions	0.3044	0.0670	0.0020	0.2781	0.3465	0.0020	Report

Layer Details

Layer No.	Description	Material	Thickness (mm)	Ev (MPa)	Ev / Eh	Poisson's Ratio	Lower Interface	% Vol. Bitumen	Sublayer?
1	DGB Class 2 (3051.1)	Granular	190	350	2.0	0.35	Rough	N/A	Yes
2	DGS20 (3051.1)	Granular	150	250	2.0	0.35	Rough	N/A	Yes
3	Selected Material (SMZ)	Selected Subgrade	250	150	2.0	0.35	Rough	N/A	Yes
4	Cohesive Subgrade	Subgrade	S/Inf	50	2.0	0.45	N/A	N/A	N/A

Layer Results

Layer No.	Description	Thickness (mm)	Vertical Modulus (MPa)	Stress Param. f (MPa)	k Factor	Failure Criterion	Maximum Microstrains			Expected Reps (ESAs)	Allowable Reps (ESAs)	CDF (Damage)	Estimated Life in Years
							SAST	SADT					
							Hor.	Hor.	Vert.				
1-2.1	S/L Granular Pavement	68	350	259	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.2	S/L Granular Pavement	68	295	219	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.3	S/L Granular Pavement	68	249	185	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.4	S/L Granular Pavement	68	211	156	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.5	S/L Granular Pavement	68	178	132	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.1	S/L Selected Material (SMZ)	50	150	111	9150	Rutting	N/A	N/A	593.2	3.19E+06	2.08E+08	0.02	>50
3.2	S/L Selected Material (SMZ)	50	120	89	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.3	S/L Selected Material (SMZ)	50	97	72	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.4	S/L Selected Material (SMZ)	50	78	57	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.5	S/L Selected Material (SMZ)	50	62	46	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	**Cohesive Subgrade**	**S/Inf**	**50**	**34**	**9150**	**Rutting**	**N/A**	**N/A**	**690.9**	**3.19E+06**	**7.15E+07**	**0.04**	**>50**

Note: For construction purposes, an additional 10mm must be added to the critical layer, the damage for which is highlighted in bold above.

Non-conformances

Layer No.	Non-conformance description	Reference
3	Thickness of SMZ less than 300mm (required minimum thickness).	RMS Supplement 5.3.6

Eastern Zone AC Option

Flexible Pavement Design 2.0 - Summary Report

Design Filename: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\Design1.fpd2
FPD software verion: FPD 2.0 Version 1B (12 March 2020)
CIRCLY software version: 5.0u (8 April 2013)

Project Details

Project Title: Wybong Road
Location: Hollydeen
Pavement Tag: AC Option East ZOne
Comments: Subgrade CBR10%
Date of Design: 3/03/2025
Designer: RTS Grafton
Project Reliability (%): 90
WMAPT (°C): 30
Design Speed (km/h): 100

Load Details

Single Axle Single Tyre (SAST) Standard Axle Load: 53 kN Tyre Contact Stress: 800 kPa
Single Axle Dual Tyre (SADT) Standard Axle Load: 80 kN Tyre Contact Stress: 750 kPa

Traffic Details

PTL report: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\WybongPTLexport.xlsx
TLD Title: 2018 Rural Presumptive TLD
Design Period (yrs): 20 Design Traffic - N_{DT} (HVAG): 3.03E+06 N_{DT} (ESAs): 3.19E+06
Annual growth rate (%): 2.0 N_{DT} for asphalt fatigue (HVAG): 3.03E+06 ESA/HVAG: 1.054

Axle Group Proportions	SAST	SADT	TAST	TADT	TRDT	QADT	From PTL Report
	0.3044	0.0670	0.0020	0.2781	0.3465	0.0020	

Layer Details

Layer No.	Description	Material	Thickness (mm)	Ev (MPa)	Ev / Eh	Poisson's Ratio	Lower Interface	% Vol. Bitumen	Sublayer?
1	AC14 A15E	Asphalt	50	2,400	1.0	0.40	Rough	10.9	N/A
2	AC20 C450	Asphalt	115	3,500	1.0	0.40	Rough	10.3	N/A
3	DGB Class 2 (3051.1)	Granular	265	150	2.0	0.35	Rough	N/A	Yes
4	Selected Material (SMZ)	Selected Subgrade	150	150	2.0	0.35	Rough	N/A	Yes
5	Cohesive Subgrade	Subgrade	S/Inf	100	2.0	0.45	N/A	N/A	N/A

Layer Results

Layer No.	Description	Thickness (mm)	Vertical Modulus (MPa)	Stress Param. f (MPa)	k Factor	Failure Criterion	Maximum Microstrains			Expected Reps (ESAs)	Allowable Reps (ESAs)	CDF (Damage)	Estimated Life in Years
							SAST	SADT					
							Hor.	Hor.	Vert.				
1	AC14 A15E	50	2,400	N/A	4371	Fatigue	-10.09	-19.54	N/A	3.19E+06	N/A	0.00	>50
2	**AC20 C450**	**115**	**3,500**	**N/A**	**3628**	**Fatigue**	**-172.9**	**-182.2**	**N/A**	**3.19E+06**	**N/A**	**0.62**	**29.2**
3.1	S/L Granular Pavement	53	150	111	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.2	S/L Granular Pavement	53	150	111	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.3	S/L Granular Pavement	53	150	111	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.4	S/L Granular Pavement	53	150	111	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.5	S/L Granular Pavement	53	150	111	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4.1	S/L Selected Material (SMZ)	30	150	111	9150	Rutting	N/A	N/A	259	3.19E+06	6.87E+10	0.00	>50
4.2	S/L Selected Material (SMZ)	30	138	102	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4.3	S/L Selected Material (SMZ)	30	128	94	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4.4	S/L Selected Material (SMZ)	30	118	87	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4.5	S/L Selected Material (SMZ)	30	108	80	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	Cohesive Subgrade	S/Inf	100	69	9150	Rutting	N/A	N/A	257.2	3.19E+06	7.21E+10	0.00	>50

Note: For construction purposes, an additional 10mm must be added to the critical layer, the damage for which is highlighted in bold above.

Non-conformances

Layer No.	Non-conformance description	Reference
3	Modulus of RMS Granular material does not match prescribed modulus.	RMS Supplement 6.2.3
4	Thickness of SMZ less than 300mm (required minimum thickness).	RMS Supplement 5.3.6

Western Zone AC Option

Flexible Pavement Design 2.0 - Summary Report

Design Filename: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\Design1.fpd2
FPD software verion: FPD 2.0 Version 1B (12 March 2020)
CIRCLY software version: 5.0u (8 April 2013)

Project Details

Project Title: Wybong Road
Location: Hollydeen
Pavement Tag: AC West Zone
Comments: Subgrade CBR5%
Date of Design: 3/03/2025
Designer: RTS Grafton
Project Reliability (%): 90
WMAPT (°C): 30
Design Speed (km/h): 100

Load Details

Single Axle Single Tyre (SAST) Standard Axle Load: 53 kN Tyre Contact Stress: 800 kPa
Single Axle Dual Tyre (SADT) Standard Axle Load: 80 kN Tyre Contact Stress: 750 kPa

Traffic Details

PTL report: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\WybongPTLexport.xlsx
TLD Title: 2018 Rural Presumptive TLD
Design Period (yrs): 20 Design Traffic - N_{DT} (HVAG): 3.03E+06 N_{DT} (ESAs): 3.19E+06
Annual growth rate (%): 2.0 N_{DT} for asphalt fatigue (HVAG): 3.03E+06 ESA/HVAG: 1.054

Axle Group Proportions	SAST	SADT	TAST	TADT	TRDT	QADT
From PTL Report	0.3044	0.0670	0.0020	0.2781	0.3465	0.0020

Layer Details

Layer No.	Description	Material	Thickness (mm)	Ev (MPa)	Ev / Eh	Poisson's Ratio	Lower Interface	% Vol. Bitumen	Sublayer?
1	AC14 A15E	Asphalt	50	2,400	1.0	0.40	Rough	10.9	N/A
2	AC20 C450	Asphalt	115	3,500	1.0	0.40	Rough	10.3	N/A
3	DGB Class 2 (3051.1)	Granular	265	150	2.0	0.35	Rough	N/A	Yes
4	Selected Material (SMZ)	Selected Subgrade	200	150	2.0	0.35	Rough	N/A	Yes
5	Cohesive Subgrade	Subgrade	S/Inf	50	2.0	0.45	N/A	N/A	N/A

Layer Results

Layer No.	Description	Thickness (mm)	Vertical Modulus (MPa)	Stress Param. f (MPa)	k Factor	Failure Criterion	Maximum Microstrains			Expected Reps (ESAs)	Allowable Reps (ESAs)	CDF (Damage)	Estimated Life in Years
							SAST	SADT					
							Hor.	Hor.	Vert.				
1	AC14 A15E	50	2,400	N/A	4371	Fatigue	-12.47	-21	N/A	3.19E+06	N/A	0.00	>50
2	**AC20 C450**	**115**	**3,500**	**N/A**	**3628**	**Fatigue**	**-183.1**	**-197.8**	**N/A**	**3.19E+06**	**N/A**	**0.89**	**22.1**
3.1	S/L Granular Pavement	53	150	111	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.2	S/L Granular Pavement	53	145	107	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.3	S/L Granular Pavement	53	140	104	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.4	S/L Granular Pavement	53	135	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.5	S/L Granular Pavement	53	130	97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4.1	S/L Selected Material (SMZ)	40	126	93	9150	Rutting	N/A	N/A	283.4	3.19E+06	3.66E+10	0.00	>50
4.2	S/L Selected Material (SMZ)	40	105	78	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4.3	S/L Selected Material (SMZ)	40	87	64	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4.4	S/L Selected Material (SMZ)	40	72	54	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4.5	S/L Selected Material (SMZ)	40	60	45	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	Cohesive Subgrade	S/Inf	50	34	9150	Rutting	N/A	N/A	383.3	3.19E+06	4.42E+09	0.00	>50

Note: For construction purposes, an additional 10mm must be added to the critical layer, the damage for which is highlighted in bold above.

Non-conformances

Layer No.	Non-conformance description	Reference
3	Modulus of RMS Granular material does not match prescribed modulus.	RMS Supplement 6.2.3
4	Thickness of SMZ less than 300mm (required minimum thickness).	RMS Supplement 5.3.6

New Culvert AC Overlay

Flexible Pavement Design 2.0 - Summary Report

Design Filename: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\Design1.fpd2
FPD software verion: FPD 2.0 Version 1B (12 March 2020)
CIRCLY software version: 5.0u (8 April 2013)

Project Details

Project Title: Wybong Road
Location: Hollydeen
Pavement Tag: AC Overlay for Culvert
Comments: Subgrade assumend min 10%
Date of Design: 3/03/2025
Designer: RTS Grafton
Project Reliability (%): 90
WMAPT (°C): 30
Design Speed (km/h): 100

Load Details

Single Axle Single Tyre (SAST) Standard Axle Load: 53 kN Tyre Contact Stress: 800 kPa
Single Axle Dual Tyre (SADT) Standard Axle Load: 80 kN Tyre Contact Stress: 750 kPa

Traffic Details

PTL report: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\WybongPTLexport.xlsx
TLD Title: 2018 Rural Presumptive TLD
Design Period (yrs): 20 Design Traffic - N_{DT} (HVAG): 3.03E+06 N_{DT} (ESAs): 3.19E+06
Annual growth rate (%): 2.0 N_{DT} for asphalt fatigue (HVAG): 3.03E+06 ESA/HVAG: 1.054

Axle Group	SAST	SADT	TAST	TADT	TRDT	QADT	From PTL
Proportions	0.3044	0.0670	0.0020	0.2781	0.3465	0.0020	Report

Layer Details

Layer No.	Description	Material	Thickness (mm)	Ev (MPa)	Ev / Eh	Poisson's Ratio	Lower Interface	% Vol. Bitumen	Sublayer?
1	AC14 A15E	Asphalt	50	2,400	1.0	0.40	Rough	10.9	N/A
2	AC20 C450	Asphalt	115	3,500	1.0	0.40	Rough	10.3	N/A
3	DGB Class 2 (3051.1)	Granular	200	150	2.0	0.35	Rough	N/A	Yes
4	Cohesive Subgrade	Subgrade	S/Inf	100	2.0	0.45	N/A	N/A	N/A

Layer Results

Layer No.	Description	Thickness (mm)	Vertical Modulus (MPa)	Stress Param. f (MPa)	k Factor	Failure Criterion	Maximum Microstrains			Expected Reps (ESAs)	Allowable Reps (ESAs)	CDF (Damage)	Estimated Life in Years
							SAST	SADT					
							Hor.	Hor.	Vert.				
1	AC14 A15E	50	2,400	N/A	4371	Fatigue	-11.66	-22.58	N/A	3.19E+06	N/A	0.00	>50
2	**AC20 C450**	**115**	**3,500**	**N/A**	**3628**	**Fatigue**	**-180.4**	**-192.2**	**N/A**	**3.19E+06**	**N/A**	**0.79**	**24.2**
3.1	S/L Granular Pavement	40	150	111	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.2	S/L Granular Pavement	40	138	102	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.3	S/L Granular Pavement	40	128	94	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.4	S/L Granular Pavement	40	118	87	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.5	S/L Granular Pavement	40	108	80	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Cohesive Subgrade	S/Inf	100	69	9150	Rutting	N/A	N/A	384	3.19E+06	4.36E+09	0.00	>50

Note: For construction purposes, an additional 10mm must be added to the critical layer, the damage for which is highlighted in bold above.

Non-conformances

Layer No.	Non-conformance description	Reference
3	Modulus of RMS Granular material does not match prescribed modulus.	RMS Supplement 6.2.3

New Culvert Flexible Granular Overlay

Flexible Pavement Design 2.0 - Summary Report

Design Filename: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\Design1.fpd2
FPD software verion: FPD 2.0 Version 1B (12 March 2020)
CIRCLY software version: 5.0u (8 April 2013)

Project Details

Project Title: Wybong Road
Location: Hollydeen
Pavement Tag: New Culvert Flexible Granular Overlay
Comments: Assumed min pavement depth 375mm with CBR10 Subgrade
Date of Design: 3/03/2025
Designer: RTS Grafton
Project Reliability (%): 90
WMAPT (°C): 30
Design Speed (km/h): 100

Load Details

Single Axle Single Tyre (SAST) Standard Axle Load: 53 kN Tyre Contact Stress: 800 kPa
Single Axle Dual Tyre (SADT) Standard Axle Load: 80 kN Tyre Contact Stress: 750 kPa

Traffic Details

PTL report: C:\Users\abrown20\OneDrive - Transport for NSW\Documents\PROJECTS\Wybong\Circly\WybongPTLexport.xlsx
TLD Title: 2018 Rural Presumptive TLD
Design Period (yrs): 20 Design Traffic - N_{DT} (HVAG): 3.03E+06 N_{DT} (ESAs): 3.19E+06
Annual growth rate (%): 2.0 N_{DT} for asphalt fatigue (HVAG): 3.03E+06 ESA/HVAG: 1.054

Axle Group	SAST	SADT	TAST	TADT	TRDT	QADT	From PTL
Proportions	0.3044	0.0670	0.0020	0.2781	0.3465	0.0020	Report

Layer Details

Layer No.	Description	Material	Thickness (mm)	Ev (MPa)	Ev / Eh	Poisson's Ratio	Lower Interface	% Vol. Bitumen	Sublayer?
1	DGB Class 2 (3051.1)	Granular	130	300	2.0	0.35	Rough	N/A	Yes
2	DGS20 (3051.1)	Granular	130	250	2.0	0.35	Rough	N/A	Yes
3	Selected Material (SMZ)	Selected Subgrade	105	150	2.0	0.35	Rough	N/A	Yes
4	Cohesive Subgrade	Subgrade	S/Inf	100	2.0	0.45	N/A	N/A	N/A

Layer Results

Layer No.	Description	Thickness (mm)	Vertical Modulus (MPa)	Stress Param. f (MPa)	k Factor	Failure Criterion	Maximum Microstrains			Expected Reps (ESAs)	Allowable Reps (ESAs)	CDF (Damage)	Estimated Life in Years
							SAST	SADT					
							Hor.	Hor.	Vert.				
1-2.1	S/L Granular Pavement	52	300	222	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.2	S/L Granular Pavement	52	261	193	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.3	S/L Granular Pavement	52	227	168	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.4	S/L Granular Pavement	52	198	147	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-2.5	S/L Granular Pavement	52	172	128	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.1	**S/L Selected Material (SMZ)**	**21**	**150**	**111**	**9150**	**Rutting**	**N/A**	**N/A**	**893.6**	**3.19E+06**	**1.18E+07**	**0.27**	**>50**
3.2	S/L Selected Material (SMZ)	21	138	102	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.3	S/L Selected Material (SMZ)	21	128	94	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.4	S/L Selected Material (SMZ)	21	118	87	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.5	S/L Selected Material (SMZ)	21	108	80	9150	Rutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Cohesive Subgrade	S/Inf	100	69	9150	Rutting	N/A	N/A	815	3.19E+06	2.25E+07	0.14	>50

Note: For construction purposes, an additional 10mm must be added to the critical layer, the damage for which is highlighted in bold above.

Non-conformances

Layer No.	Non-conformance description	Reference
1	Modulus of RMS Granular material does not match prescribed modulus.	RMS Supplement 6.2.3
3	Thickness of SMZ less than 300mm (required minimum thickness).	RMS Supplement 5.3.6

Appendix E – Investigation Data for New Culvert


Wybong Road
New Culvert Test Locations
Legend
Pavement Test Pit
Test Auger & DCP
WBC4.3 (EB)
WBC4.2 (EB)
WB7 (EB)
WBC4.1 (WB)
Google Earth
Image © 2025 Airbus
N
10 m

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SCHEDULE OF PAVEMENT AND SUBGRADE INVESTIGATION

Project Details

Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Sampling Method

Test Pit Number / Identification	WBC4.1	Sampling Method	AS1289.1.2.1 cl 6.5.3
Direction of Test Pit	Borehole	Offset (m)	In 4.3 out 4.6
Logged By and Date	D.Pamment 14/01/2025		

Site Location and Road details

GPS	Latitude	-32.33615	Longitude	150.58436	Road Loc				
Road / Seg	Wybong Road - Causeway		Lane / Section	WB	Road Description	2 Lane 2 Way (East/West)			
Lane / Shoulder Widths (metres)	WB Sh	0.2	WB Lane	3.5	EB Lane	3.5	EB Sh	0.5	---
	---		---		---		---		---

Pavement Description and Distress Mechanisms

Pavement Condition	Condition is Poor. - Concrete causeway. 150mm concrete base. Extensive cracking. Western approach has rutting at WB OWP and extensive crocodile cracking.
Surface Condition	Condition is Poor. - Concrete - Extensive cracking.
Drainage	Condition is Poor. - Approach drains require upgrading and maintenance. Sediment buildup on edges of causeway hinder runoff.
Features	Natural Surface - Floodway.
Shoulder	Unsealed - Concrete. No fogline marked. Width measured from offset 3.5m from centreline.

Log, Material Description

Sample / Layer ID	Depth (mm)	Offsets (m) From Centre	Course	Soil Description	Remarks
WBC4.1T	Top 50 Bottom 100	4.3 4.6	*Topsoil*	**Silty Sand - Brown** Medium Dense.	Topsoil, grassed with root matter.
WBC4.1A	Top 100 Bottom 500	4.3 4.6	*Fill* *Flexible*	**Silty Sand , with Gravel - Orange Brown - (Sandstone)** Of low plasticity LL ≤ 35 , Moist Poorly graded to 40 mm, Sub-Angular Low strength Extremely weathered rock, Dense.	
WBC4.1B	Top 500 Bottom 750	4.3 4.6	*Fill* *Flexible*	**Sand , with Silt , trace of Gravel - Grey Brown** Non-plastic , Wet , FMC = 17.2 % Fine to medium grainedDense.	Trace fine to coarse gravel to 30mm diameter.
WBC4.1C	Top 750 Bottom 900	4.3 4.6	*Fill* *Flexible*	**Sand , trace of Gravel - Brown** Non-plastic , Wet , FMC = 15.2 % Fine to medium grainedDense.	Trace fine to coarse conglomerate gravel to 30mm diameter.
WBC4.1D	Top 900 Bottom 1000	4.3 4.6	*Fill* *Flexible*	**Gravelly Sand - Brown - (Conglomerate)** Non-plastic , Wet , FMC = 13.8 % Well graded, Sub-angular/Sub-rounded Medium strength Distinctly weathered rock, Dense.	Water entering hole at approximately 1.0m depth.
WBC4.1E	Top 1000 Bottom 1200	4.3 4.6	*Subgrade* *NA*	**Sandy Clay , trace of Gravel - Orange Mottled Grey** Of high plasticity LL > 50 , Very moist , FMC = 24.7 % Stiff.	Fine to coarse sand. Trace fine to medium gravel. Residual sandstone. Natural.
WBC4.1F	Top 1200 Bottom 1500	4.3 4.6	*Subgrade* *NA*	**Clayey Sand - Grey Mottled Orange** Of medium plasticity LL > 35 ≤ 50 , Very moist , FMC = 21.1 % Fine to coarse grainedDense.	Residual sandstone. Natural.

DCP results are displayed after the strata diagram page.

Remarks

End Auger Hole WBC4.1 @ 1.50m. Water entering hole at approximately 1.0m depth.

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Strata Diagram

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WBC4.1	Offset - Site - (m)	In	4.3	out	4.6

Remarks

OTN-SOP200-REP-F021-F01H- Issue 3 - 2/12/2021 - DCP.

Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

DCP

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WBC4.1	Offset - Site - (m)	In	4.3	out	4.6

DCP 1 For this site

Offset (metres)	4.3

DCP 2 For this site

Offset (metres)	4.3

Data as per blow

Depth and Assumed CBR	Depth and Assumed CBR
50mm - 130mm = 2%	615mm - 630mm = 14%
130mm - 170mm = 4.5%	630mm - 640mm = 22%
170mm - 190mm = 10%	640mm - 650mm = 22%
190mm - 210mm = 10%	650mm - 665mm = 14%
210mm - 225mm = 14%	665mm - 680mm = 14%
225mm - 235mm = 22%	680mm - 695mm = 14%
235mm - 245mm = 22%	695mm - 705mm = 22%
245mm - 255mm = 22%	705mm - 715mm = 22%
255mm - 265mm = 22%	715mm - 725mm = 22%
265mm - 275mm = 22%	725mm - 735mm = 22%
275mm - 285mm = 22%	735mm - 755mm = 10%
285mm - 300mm = 14%	755mm - 775mm = 10%
300mm - 315mm = 14%	775mm - 795mm = 10%
315mm - 330mm = 14%	795mm - 815mm = 10%
330mm - 340mm = 22%	815mm - 835mm = 10%
340mm - 355mm = 14%	835mm - 850mm = 14%
355mm - 365mm = 22%	850mm - 865mm = 14%
365mm - 375mm = 22%	865mm - 885mm = 10%
375mm - 385mm = 22%	885mm - 895mm = 22%
385mm - 395mm = 22%	895mm - 910mm = 14%
395mm - 400mm = 50%	910mm - 925mm = 14%
400mm - 410mm = 22%	925mm - 935mm = 22%
410mm - 420mm = 22%	935mm - 945mm = 22%
420mm - 435mm = 14%	945mm - 955mm = 22%
435mm - 445mm = 22%	955mm - 970mm = 14%
445mm - 455mm = 22%	970mm - 990mm = 10%
455mm - 470mm = 14%	990mm - 1020mm = 6.5%
470mm - 480mm = 22%	1020mm - 1055mm = 5.5%
480mm - 490mm = 22%	1055mm - 1085mm = 6.5%
490mm - 500mm = 22%	1085mm - 1120mm = 5.5%
500mm - 510mm = 22%	1120mm - 1150mm = 6.5%
510mm - 520mm = 22%	1150mm - 1180mm = 6.5%
520mm - 535mm = 14%	1180mm - 1205mm = 8%
535mm - 545mm = 22%	1205mm - 1230mm = 8%
545mm - 560mm = 14%	1230mm - 1255mm = 8%
560mm - 570mm = 22%	1255mm - 1280mm = 8%
570mm - 580mm = 22%	1280mm - 1295mm = 14%
580mm - 590mm = 22%	1295mm - 1305mm = 22%
590mm - 605mm = 14%	1305mm - 1325mm = 10%
605mm - 615mm = 22%	1325mm - 1340mm = 14%

Data as per blow

Depth and Assumed CBR	Depth and Assumed CBR
1340mm - 1355mm = 14%	
1355mm - 1375mm = 10%	
1375mm - 1395mm = 10%	
1395mm - 1415mm = 10%	
1415mm - 1430mm = 14%	
1430mm - 1445mm = 14%	
1445mm - 1465mm = 10%	
1465mm - 1480mm = 14%	
1480mm - 1495mm = 14%	
1495mm - 1505mm = 22%	
1505mm - 1520mm = 14%	
1520mm - 1535mm = 14%	

Zone Interpreted CBR Values

Layer / Zone	Top of Layer (mm)	Bottom of Layer (mm)	Approx CBR (%)

Zone Interpreted CBR Values

Layer / Zone	Top of Layer (mm)	Bottom of Layer (mm)	Approx CBR (%)

The Calculated CBR % values are extracted from the Pavement Design Manual, AUSTROADS 92.

Remarks

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SCHEDULE OF PAVEMENT AND SUBGRADE INVESTIGATION

Project Details

Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Sampling Method

Test Pit Number / Identification	WBC4.2	Sampling Method	AS1289.1.2.1 cl 6.5.3
Direction of Test Pit	Borehole	Offset (m)	In 4.4 out 4.7
Logged By and Date	D.Pamment 14/01/2025		

Site Location and Road details

GPS	Latitude	-32.33606	Longitude	150.58440	Road Loc				
Road / Seg	Wybong Road - Causeway		Lane / Section	EB	Road Description	2 Lane 2 Way (East/West)			
Lane / Shoulder Widths (metres)	WB Sh	0.2	WB Lane	3.5	EB Lane	3.5	EB Sh	0.5	---
	---		---		---		---		---

Pavement Description and Distress Mechanisms

Pavement Condition	Condition is Poor. - Concrete causeway. 150mm concrete base. Extensive cracking. Western approach has rutting at WB OWP and extensive crocodile cracking.
Surface Condition	Condition is Poor. - Concrete - Extensive cracking.
Drainage	Condition is Poor. - Approach drains require upgrading and maintenance. Sediment buildup on edges of causeway hinder runoff.
Features	Natural Surface - Floodway.
Shoulder	Unsealed - Concrete. No fogline marked. Width measured from offset 3.5m from centreline.

Log, Material Description

Sample / Layer ID	Depth (mm)	Offsets (m) From Centre	Course	Soil Description	Remarks
WBC4.2A	Top 0 Bottom 150	4.4 4.7	*Fill* *Flexible*	**Gravelly Silty Sand - Brown Grey - (Conglomerate)** Of low plasticity LL ≤ 35 , Wet Poorly graded, Sub-angular/Sub-rounded Medium strength Distinctly weathered rock, Very Loose.	Wash through sediment. Heavily vegetated with reeds.
WBC4.2B	Top 150 Bottom 500	4.4 4.7	*Fill* *Flexible*	**Sand , with Silt , trace of Gravel - Brown Mottled Grey** Non-plastic , Wet , FMC = 17.0 % Fine to medium grainedMedium Dense.	Trace fine to coarse gravel to 30mm diameter. Disturbed sample recovered for aggressivity testing on underside of concrete slab.

DCP results are displayed after the strata diagram page.

Remarks

End Auger Hole WBC4.2 @ 0.50m. Refusal on concrete. Old concrete comprising conglomerate aggregate.
DCP1 - 0-250mm sunk under hammer weight.

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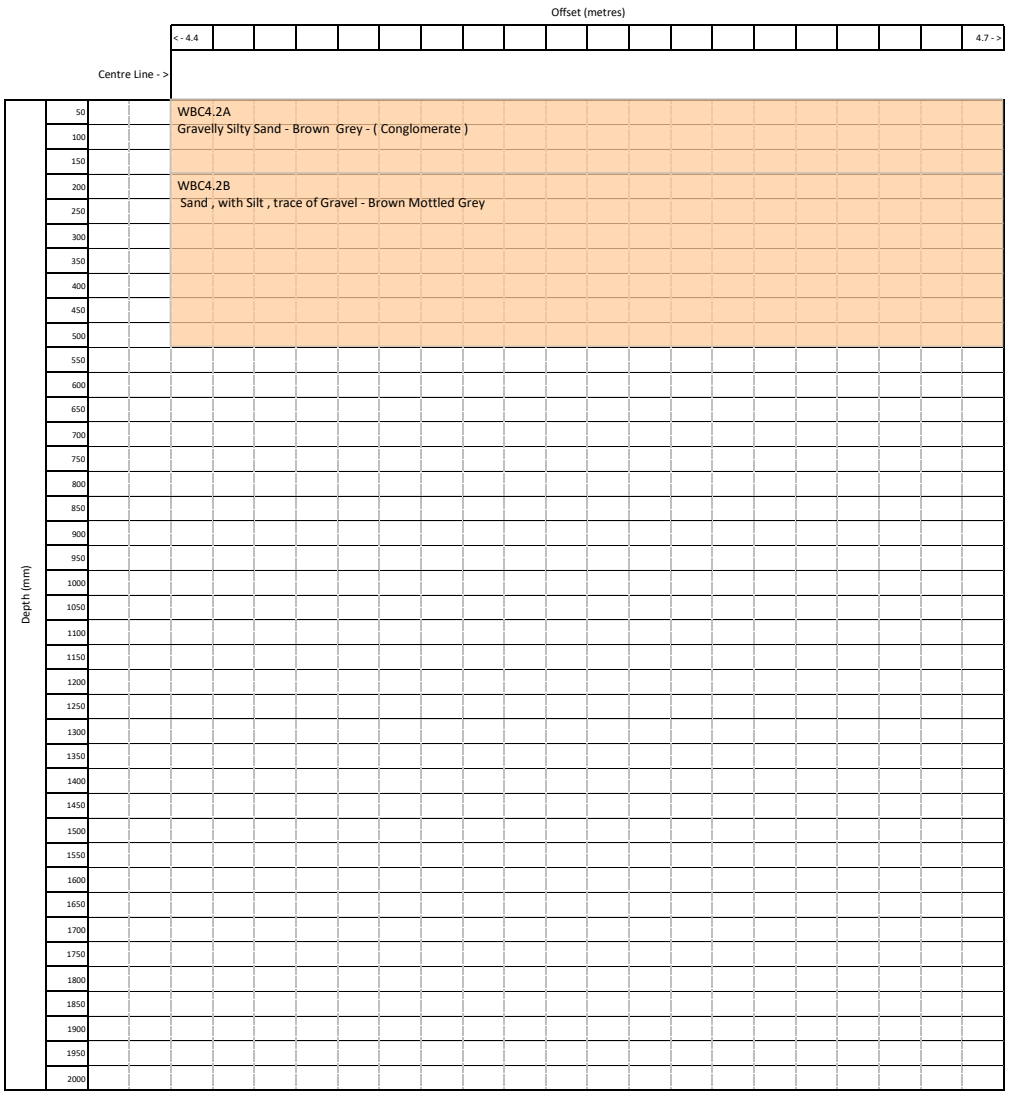
Strata Diagram

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WBC4.2	Offset - Site - (m)	In	4.4	out	4.7



Remarks

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DCP

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WBC4.2	Offset - Site - (m)	In	4.4	out	4.7

DCP 1 For this site

Offset (metres)	4.4

DCP 2 For this site

Offset (metres)	---

Data as per blow

Depth and Assumed CBR	Depth and Assumed CBR
250mm - 280mm = 6.5%	
280mm - 305mm = 8%	
305mm - 330mm = 8%	
330mm - 345mm = 14%	
345mm - 360mm = 14%	
360mm - 375mm = 14%	
375mm - 390mm = 14%	
390mm - 400mm = 22%	
400mm - 415mm = 14%	
415mm - 425mm = 22%	
425mm - 440mm = 14%	
440mm - 455mm = 14%	
455mm - 470mm = 14%	
470mm - 485mm = 14%	
485mm - 495mm = 22%	

Data as per blow

Depth and Assumed CBR	Depth and Assumed CBR

Zone Interpreted CBR Values

Layer / Zone	Top of Layer (mm)	Bottom of Layer (mm)	Approx CBR (%)

Zone Interpreted CBR Values

Layer / Zone	Top of Layer (mm)	Bottom of Layer (mm)	Approx CBR (%)

The Calculated CBR % values are extracted from the Pavement Design Manual, AUSTROADS 92.

Remarks

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SCHEDULE OF PAVEMENT AND SUBGRADE INVESTIGATION

Project Details

Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Sampling Method

Test Pit Number / Identification	WBC4.3	Sampling Method	AS1289.1.2.1 cl 6.5.3
Direction of Test Pit	Borehole	Offset (m)	In 5.5 out 5.8
Logged By and Date	D.Pamment 14/01/2025		

Site Location and Road details

GPS	Latitude	-32.33606	Longitude	150.58447	Road Loc				
Road / Seg	Wybong Road - Causeway		Lane / Section	EB	Road Description	2 Lane 2 Way (East/West)			
Lane / Shoulder Widths (metres)	WB Sh	0.2	WB Lane	3.5	EB Lane	3.5	EB Sh	0.5	---
	---		---		---		---		---

Pavement Description and Distress Mechanisms

Pavement Condition	Condition is Poor. - Concrete causeway. 150mm concrete base. Extensive cracking. Western approach has rutting at WB OWP and extensive crocodile cracking.
Surface Condition	Condition is Poor. - Concrete - Extensive cracking.
Drainage	Condition is Poor. - Approach drains require upgrading and maintenance. Sediment buildup on edges of causeway hinder runoff.
Features	Natural Surface - Floodway.
Shoulder	Unsealed - Concrete. No fogline marked. Width measured from offset 3.5m from centreline.

Log, Material Description

Sample / Layer ID	Depth (mm)	Offsets (m) From Centre	Course	Soil Description	Remarks
WBC4.3A	Top 0 Bottom 500	5.5 5.8	*Fill* *Flexible*	**Sand , with Silt , trace of Gravel - Brown Mottled Grey** Non-plastic , Wet Fine to medium grainedMedium Dense.	Trace fine to coarse gravel to 30mm diameter.
WBC4.3B	Top 500 Bottom 900	5.5 5.8	*Fill* *Flexible*	**Silty Sand , with Gravel - Orange Brown - (Sandstone)** Of low plasticity LL ≤ 35 , Very moist , FMC = 21.2 % Poorly graded to 40 mm, Sub-Angular Low strength Extremely weathered rock, Medium Dense.	
WBC4.3C	Top 900 Bottom 1000	5.5 5.8	*Fill* *Flexible*	**Sand , with Silt , trace of Gravel - Grey** Medium Dense.	Water entering hole at approximately 1.0m depth.
WBC4.3D	Top 1000 Bottom 1500	5.5 5.8	*Fill* *Flexible*	**Sand , with Silt , trace of Gravel - Grey** Loose.	Similar to overlying WBC4.3 C but wet.

DCP results are displayed after the strata diagram page.

Remarks

End Auger Hole WBC4.3 @ 1.50m. Water entering hole at approximately 1.0m depth.

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Strata Diagram

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WBC4.3	Offset - Site - (m)	In	5.5	out	5.8

Remarks

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DCP

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WBC4.3	Offset - Site - (m)	In	5.5	out	5.8

DCP 1 For this site

Offset (metres)	5.5

DCP 2 For this site

Offset (metres)	---

Data as per blow

Depth and Assumed CBR	Depth and Assumed CBR
200mm - 265mm = 2.5%	1085mm - 1130mm = 4%
265mm - 295mm = 6.5%	1130mm - 1170mm = 4.5%
295mm - 335mm = 4.5%	1170mm - 1220mm = 3.5%
335mm - 365mm = 6.5%	1220mm - 1285mm = 2.5%
365mm - 390mm = 8%	1285mm - 1335mm = 3.5%
390mm - 410mm = 10%	1335mm - 1390mm = 3.5%
410mm - 425mm = 14%	1390mm - 1455mm = 2.5%
425mm - 440mm = 14%	1455mm - 1530mm = 2%
440mm - 460mm = 10%	1530mm - 1595mm = 2.5%
460mm - 470mm = 22%	1595mm - 1640mm = 4%
470mm - 485mm = 14%	1640mm - 1680mm = 4.5%
485mm - 500mm = 14%	1680mm - 1705mm = 8%
500mm - 525mm = 8%	1705mm - 1735mm = 6.5%
525mm - 555mm = 6.5%	1735mm - 1760mm = 8%
555mm - 600mm = 4%	1760mm - 1785mm = 8%
600mm - 610mm = 22%	1785mm - 1810mm = 8%
610mm - 625mm = 14%	1810mm - 1830mm = 10%
625mm - 640mm = 14%	1830mm - 1855mm = 8%
640mm - 650mm = 22%	1855mm - 1875mm = 10%
650mm - 670mm = 10%	1875mm - 1895mm = 10%
670mm - 695mm = 8%	1895mm - 1920mm = 8%
695mm - 730mm = 5.5%	1920mm - 1945mm = 8%
730mm - 760mm = 6.5%	1945mm - 1970mm = 8%
760mm - 775mm = 14%	1970mm - 1995mm = 8%
775mm - 790mm = 14%	1995mm - 2020mm = 8%
790mm - 810mm = 10%	2020mm - 2040mm = 10%
810mm - 825mm = 14%	2040mm - 2065mm = 8%
825mm - 840mm = 14%	2065mm - 2085mm = 10%
840mm - 855mm = 14%	2085mm - 2100mm = 14%
855mm - 870mm = 14%	2100mm - 2120mm = 10%
870mm - 885mm = 14%	2120mm - 2130mm = 22%
885mm - 900mm = 14%	2130mm - 2155mm = 8%
900mm - 920mm = 10%	2155mm - 2170mm = 14%
920mm - 935mm = 14%	2170mm - 2185mm = 14%
935mm - 960mm = 8%	2185mm - 2205mm = 10%
960mm - 980mm = 10%	2205mm - 2220mm = 14%
980mm - 1000mm = 10%	2220mm - 2235mm = 14%
1000mm - 1020mm = 10%	2235mm - 2255mm = 10%
1020mm - 1045mm = 8%	2255mm - 2270mm = 14%
1045mm - 1085mm = 4.5%	2270mm - 2290mm = 10%

Data as per blow

Depth and Assumed CBR	Depth and Assumed CBR

Zone Interpreted CBR Values

Layer / Zone	Top of Layer (mm)	Bottom of Layer (mm)	Approx CBR (%)

Zone Interpreted CBR Values

Layer / Zone	Top of Layer (mm)	Bottom of Layer (mm)	Approx CBR (%)

The Calculated CBR % values are extracted from the Pavement Design Manual, AUSTROADS 92.

Remarks

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SCHEDULE OF PAVEMENT AND SUBGRADE INVESTIGATION

Project Details

Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Sampling Method

Test Pit Number / Identification	WB7	Sampling Method	AS1289.1.2.1 cl 6.5.4
Direction of Test Pit	Transverse	Offset (m)	In 2.3 out 5.2
Logged By and Date	D.Pamment 14/01/2025		

Site Location and Road details

GPS	Latitude	-32.33613	Longitude	150.58418	Road Loc				
Road / Seg	Wybong Road		Lane / Section	EB	Road Description	2 Lane 2 Way (East/West)			
Lane / Shoulder Widths (metres)	WB Sh	0.2	WB Lane	3.5	EB Lane	3.5	EB Sh	0.5	---
	---		---		---		---		---

Pavement Description and Distress Mechanisms

Pavement Condition	Condition is Poor. - Rutting and deformation with numerous pothole repairs. Extensive crocodile cracking at causeway approach. Condition better on eastern causeway approach. Water runoff hindered by surface conditions and sediment buildup at edges.
Surface Condition	Condition is Poor. - Seal - Flushing and bleeding. Stripping west of location. Pothole repairs with cold mix AC. Holes open, base exposed. Crocodile cracking.
Drainage	Condition is Fair. - Fair runoff due to slope into causeway. Drains require upgrade. Runoff to poorly formed drains <0.3m depth. Vegetated.
Features	Cutting - Approximately 1m depth transitioning to natural surface at causeway.
Shoulder	Seal - No fogline marked. Width measured from offset 3.5m from centreline.

Log, Material Description

Sample / Layer ID	Depth (mm)	Offsets (m) From Centre	Course	Soil Description	Remarks
WB7	Top 0 Bottom 10	2.3 4.0	***Sprayed Seal***		
WB7A	Top 10 Bottom 110	2.3 4.0	***Base*** ***Flexible***	**Silty Sandy Gravel - Brown - (Granite)** PI Higher than the specified requirement for this course , Moist , FMC = 6.3 % Well graded to 20 mm, Angular to Sub-Angular Medium strength Distinctly weathered rock, Dense.	Manufactured 20mm crushed rock. Layer extends beyond offset 4.0m but tapers, not compacted and with topsoil/roots.
WB7B	Top 110 Bottom 230	2.3 5.2	***Subbase*** ***Flexible***	**Clayey Gravelly Sand - Red Brown - (Sandstone)** PI at the middle / high end of specification for this course , Moist , FMC = 6.5 % Poorly graded to 40 mm, Sub-angular/Sub-rounded Medium strength Extremely weathered rock, Very Dense.	Sandstone / conglomerate. Gravel is medium to high strength distinctly to extremely weathered. Not well compacted and very moist beyond seal, offset 4.0m.
WB7C	Top 230 Bottom 350	2.3 5.2	***Select*** ***Flexible***	**Gravelly Sand , with Silt - Red Brown - (Sandstone)** Material appears to have no PI , Moist , FMC = 6.3 % Poorly graded to 40 mm, Sub-angular/Sub-rounded Medium strength Extremely weathered rock, Very Dense.	Sandstone / conglomerate. Gravel is medium to high strength distinctly to extremely weathered. Not well compacted and very moist beyond seal, offset 4.0m.
WB7D	Top 350 Bottom 610	2.3 5.2	***Fill*** ***Flexible***	**Silty Sand - Brown** Of low plasticity LL ≤ 35 , Slightly moist , FMC = 10.0 % Fine to medium grainedVery Dense.	Layer tapers and is replaced with material similar to WB7C beyond offset 4.0m.
WB7E	Top 610 Bottom 980	2.3 5.2	***Fill*** ***Flexible***	**Silty Sand - Orange Brown** Of low plasticity LL ≤ 35 , Moist , FMC = 7.9 % Fine to medium grainedVery Dense.	Pale brown and medium dense between 800-980mm depth.
WB7F	Top 980 Bottom 1190	2.3 5.2	***Subgrade*** ***NA***	**Silty Sand - Pale Brown - (Sandstone)** Non-plastic , Moist , FMC = 8.8 % Fine to coarse grainedVery Dense.	Extremely weathered sandstone recovered as described. Sand is predominantly fine to medium grained. Trace seams of grey clay.

There are no DCP results attached for this schedule.

Remarks

End TP WB7 @ 1.19m. No DCP.

OTN-SOP200-REP-F021-F01H- Issue 3 - 2/12/2021 - Strata.

Transport for NSW - Infrastructure & Place

Laboratory Northern - Ballina - 2 Boatharbour Road, Ballina, 2478

Strata Diagram

Project Details

ETN Project No.	P.0095985	Registration Number	BL24092
Project / Job Name:	Regional Road Betterment - Wybong Road RRTRP		

Site ID and Offset

Test Pit Number / Identification	WB7	Offset - Site - (m)	In	2.3	out	5.2

Remarks

Appendix F – Investigation Data for Extension of Existing Pipe Culverts

OTN/SOP200/REP/F014 Issue 4 December 2015

TRANSPORT FOR NSW - REGIONAL TECHNICAL SERVICES - NORTHERN LABORATORIES

Ballina Laboratory - 2 Boatharbour Rd, Ballina 2478.

TEST REPORT : PENETRATION RESISTANCE OF A SOIL (T161)

Project Detail:	Regional Road Betterment - Wybong Road RRTRP	Laboratory Number:	BL24092
Client Details	Transport for NSW - Stuart Austin	Page	1 of 1

Location		WBC1.1 - Culvert WB Inlet
Date Tested		13/01/2025
Soil Description		Sand
Moisture Condition		Moist
Cumulative Blows	Depth Below Surface (mm)	Calculated CBR (%)
0	1600	---
1	1615	14
2	1620	50
3	1625	50
4	1630	50
5	1635	50
6	1640	50
7	1645	50
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Location		WBC1.2 - Culvert EB Outlet
Date Tested		13/01/2025
Soil Description		Sand
Moisture Condition		Moist
Cumulative Blows	Depth Below Surface	Calculated CBR (%)
0	1550	---
1	1570	10
2	1590	10
3	1600	22
4	1615	14
5	1620	50
6	1630	22
7	1640	22
8	1650	22
9	1655	50
10	1660	50
11	1670	22
12	1675	50
13	1680	50
14	1685	50
15	1690	50
16	1695	50
17	1700	50
18	1705	50
19	1710	50
20	1715	50
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Location		---
Date Tested		---
Soil Description		---
Moisture Condition		---
Cumulative Blows	Depth Below Surface	Calculated CBR (%)
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The Calculated CBR % values are extracted from the Pavement Design Manual, AUSTROADS 92 and are not covered NATA registered scope.

Remarks	DCP WBC1.1 (WB Inlet) - Depth below road surface. Offset 6.3m from centreline. Practical refusal at 1.645m depth on inferred sandstone.
	DCP WBC1.2 (EB Outlet) - Depth below road surface. Offset 5.2m from centreline. Practical refusal at 1.715m depth on inferred sandstone.
	Refer investigation plan (BL24092 - Wybong Road RRTRP - Approximate Test Locations) and photos for more detail.

Name: David Pamment
Position: Technical Officer
Date: 22/01/2025

OFFICIAL

WB C1.1 Culvert Inlet Photo

WB C1.2 Culvert Outlet Photo

OTN/SOP200/REP/F014 Issue 4 December 2015

TRANSPORT FOR NSW - REGIONAL TECHNICAL SERVICES - NORTHERN LABORATORIES

Ballina Laboratory - 2 Boatharbour Rd, Ballina 2478.

TEST REPORT : PENETRATION RESISTANCE OF A SOIL (T161)

Project Detail:	Regional Road Betterment - Wybong Road RRTRP	Laboratory Number:	BL24092
Client Details	Transport for NSW - Stuart Austin	Page	1 of 1

Location		WBC2.1 - Culvert WB Inlet
Date Tested		13/01/2025
Soil Description		Sand
Moisture Condition		Moist
Cumulative Blows	Depth Below Surface (mm)	Calculated CBR (%)
0	1600	---
1	1610	22
2	1625	14
3	1635	22
4	1650	14
5	1665	14
6	1685	10
7	1695	22
8	1700	50
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Location		WBC2.2 - Culvert EB Outlet
Date Tested		13/01/2025
Soil Description		Sand
Moisture Condition		Moist
Cumulative Blows	Depth Below Surface	Calculated CBR (%)
0	1950	---
1	1975	8
2	1990	14
3	2005	14
4	2035	6.5
5	2060	8
6	2070	22
7	2075	50
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Location		---
Date Tested		---
Soil Description		---
Moisture Condition		---
Cumulative Blows	Depth Below Surface	Calculated CBR (%)
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The Calculated CBR % values are extracted from the Pavement Design Manual, AUSTROADS 92 and are not covered NATA registered scope.

Remarks

DCP WBC2.1 (WB Inlet) - Depth below road surface. Offset 7.4m from centreline. Practical refusal at 1.70m depth on inferred sandstone.

DCP WBC2.2 (EB Outlet) - Depth below road surface. Offset 6.5m from centreline. Practical refusal at 2.075m depth on inferred sandstone.

Refer investigation plan (BL24092 - Wybong Road RRTRP - Approximate Test Locations) and photos for more detail.

Name: David Pamment
Position: Technical Officer
Date: 22/01/2025

OFFICIAL

WB C2.1 Culvert Inlet Photo

WB C2.2 Culvert Outlet Photo

OTN/SOP200/REP/F014 Issue 4 December 2015

TRANSPORT FOR NSW - REGIONAL TECHNICAL SERVICES - NORTHERN LABORATORIES

Ballina Laboratory - 2 Boatharbour Rd, Ballina 2478.

TEST REPORT : PENETRATION RESISTANCE OF A SOIL (T161)

Project Detail:	Regional Road Betterment - Wybong Road RRTRP	Laboratory Number:	BL24092
Client Details	Transport for NSW - Stuart Austin	Page	1 of 1

Location	WBC3.2 - Culvert EB Outlet	
Date Tested	14/01/2025	
Soil Description	Sand	
Moisture Condition	Moist	
Cumulative Blows	Depth Below Surface (mm)	Calculated CBR (%)
0	1100	---
1	1125	8
2	1145	10
3	1160	14
4	1175	14
5	1190	14
6	1205	14
7	1215	22
8	1230	14
9	1245	14
10	1260	14
11	1275	14
12	1285	22
13	1295	22
14	1310	14
15	1325	14
16	1335	22
17	1350	14
18	1360	22
19	1370	22
20	1380	22
21	1390	22
22	1400	22
23	1405	50
24	1415	22
25	1425	22
26	1435	22
27	1445	22
28	1450	50
29	1460	22
30	1470	22
31	1475	50
32	1485	22
33	1495	22
34	1500	50
35	1510	22
36	1520	22
37	1530	22
38	1540	22
39	1550	22

Location	WBC3.2 (cont) - Culvert EB Outlet	
Date Tested	14/01/2025	
Soil Description	Sand	
Moisture Condition	Moist	
Cumulative Blows	Depth Below Surface	Calculated CBR (%)
0	1550	---
1	1560	22
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Location	---	
Date Tested	---	
Soil Description	---	
Moisture Condition	---	
Cumulative Blows	Depth Below Surface	Calculated CBR (%)
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The Calculated CBR % values are extracted from the Pavement Design Manual, AUSTROADS 92 and are not covered NATA registered scope.

Remarks
A DCP test could not be carried out at culvert C3 WB inlet due to overgrown vegetation and snake hazard.
DCP WBC3.2 (EB Outlet) - Depth below road surface. Offset 7.4m from centreline.
Refer investigation plan (BL24092 - Wybong Road RRTRP - Approximate Test Locations) and photos for more detail.

Name: David Pamment
Position: Technical Officer
Date: 22/01/2025

OFFICIAL

WB C3.1 Inlet Photo (no DCP undertaken due to vegetation)

WB C3.2 Outlet Photo

OTN/SOP200/REP/F014 Issue 4 December 2015

TRANSPORT FOR NSW - REGIONAL TECHNICAL SERVICES - NORTHERN LABORATORIES

Ballina Laboratory - 2 Boatharbour Rd, Ballina 2478.

TEST REPORT : PENETRATION RESISTANCE OF A SOIL (T161)

Project Detail:	Regional Road Betterment - Wybong Road RRTRP	Laboratory Number:	BL24092
Client Details	Transport for NSW - Stuart Austin	Page	1 of 1

Location		WBC5.2 - Culvert EB Outlet
Date Tested		14/01/2025
Soil Description		Sand
Moisture Condition		Moist
Cumulative Blows	Depth Below Surface (mm)	Calculated CBR (%)
0	2050	---
1	2145	<2
2	2220	2
3	2280	3
4	2295	14
5	2310	14
6	2325	14
7	2340	14
8	2360	10
9	2375	14
10	2390	14
11	2405	14
12	2410	50
13	2420	22
14	2435	14
15	2440	50
16	2450	22
17	2460	22
18	2465	50
19	2475	22
20	2485	22
21	2490	50
22	2495	50
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Location		---
Date Tested		---
Soil Description		---
Moisture Condition		---
Cumulative Blows	Depth Below Surface	Calculated CBR (%)
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Location		---
Date Tested		---
Soil Description		---
Moisture Condition		---
Cumulative Blows	Depth Below Surface	Calculated CBR (%)
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The Calculated CBR % values are extracted from the Pavement Design Manual, AUSTROADS 92 and are not covered NATA registered scope.

Remarks

A DCP test could not be carried out at culvert C5 WB inlet due to high dropoff and private fencing restricting access.

DCP WBC5.2 (EB Outlet) - Depth below road surface. Offset 6.8m from centreline. Practical refusal at 2.495m depth on inferred sandstone.

Refer investigation plan (BL24092 - Wybong Road RRTRP - Approximate Test Locations) and photos for more detail.

Name: David Pamment

Position: Technical Officer

Date: 22/01/2025

OFFICIAL

WB C5.1 Inlet Photo

WB C5.2 Outlet Photo

OTN/SOP200/REP/F014 Issue 4 December 2015

TRANSPORT FOR NSW - REGIONAL TECHNICAL SERVICES - NORTHERN LABORATORIES

Ballina Laboratory - 2 Boatharbour Rd, Ballina 2478.

TEST REPORT : PENETRATION RESISTANCE OF A SOIL (T161)

Project Detail:	Regional Road Betterment - Wybong Road RRTRP	Laboratory Number:	BL24092
Client Details	Transport for NSW - Stuart Austin	Page	1 of 1

Location		WBC6.1 - Culvert WB Outlet
Date Tested		15/01/2025
Soil Description		Sand
Moisture Condition		Moist
Cumulative Blows	Depth Below Surface (mm)	Calculated CBR (%)
0	1050	---
1	1100	3.5
2	1185	<2
3	1240	3.5
4	1285	4
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Location		WBC6.2 - Culvert EB Inlet
Date Tested		13/01/2025
Soil Description		Sand
Moisture Condition		Moist
Cumulative Blows	Depth Below Surface	Calculated CBR (%)
0	1080	---
1	1110	6.5
2	1125	14
3	1145	10
4	1170	8
5	1195	8
6	1220	8
7	1240	10
8	1255	14
9	1275	10
10	1300	8
11	1315	14
12	1340	8
13	1355	14
14	1380	8
15	1400	10
16	1425	8
17	1455	6.5
18	1480	8
19	1515	5.5
20	1545	6.5
21	1580	5.5
22	1640	3
23	1705	2.5
24	1740	5.5
25	1770	6.5
26	1795	8
27	1825	6.5
28	1850	8
29	1875	8
30	1900	8
31	1930	6.5
32	1955	8
33	1980	8
34	2005	8
35	2020	14
36	2040	10
37	2055	14
38	2070	14
39	2085	14

Location		WBC6.2 (cont) - Culvert EB Inlet
Date Tested		15/01/2025
Soil Description		Sand
Moisture Condition		Moist
Cumulative Blows	Depth Below Surface	Calculated CBR (%)
0	2085	---
1	2100	14
2	2110	22
3	2120	22
4	2135	14
5	2150	14
6	2160	22
7	2170	22
8	2185	14
9	2195	22
10	2205	22
11	2215	22
12	2225	22
13	2235	22
14	2245	22
15	2255	22
16	2265	22
17	2270	50
18	2280	22
19	2290	22
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The Calculated CBR % values are extracted from the Pavement Design Manual, AUSTROADS 92 and are not covered NATA registered scope.

Remarks
DCP WBC6.1 (WB Outlet) - Depth below road surface. Offset 7.7m from centreline. Refusal on concrete blocks and cobbles at 3 locations approximately 0.25m depth.
DCP WBC6.2 (EB Inlet) - Depth below road surface. Offset 6.9m from centreline.
Refer investigation plan (BL24092 - Wybong Road RRTRP - Approximate Test Locations) and photos for more detail.

Name: David Pamment
Position: Technical Officer
Date: 22/01/2025

OFFICIAL

WB C6.1 Inlet Photo

WB C6.2 Outlet Photo

MUSWELLBROOK SHIRE COUNCIL

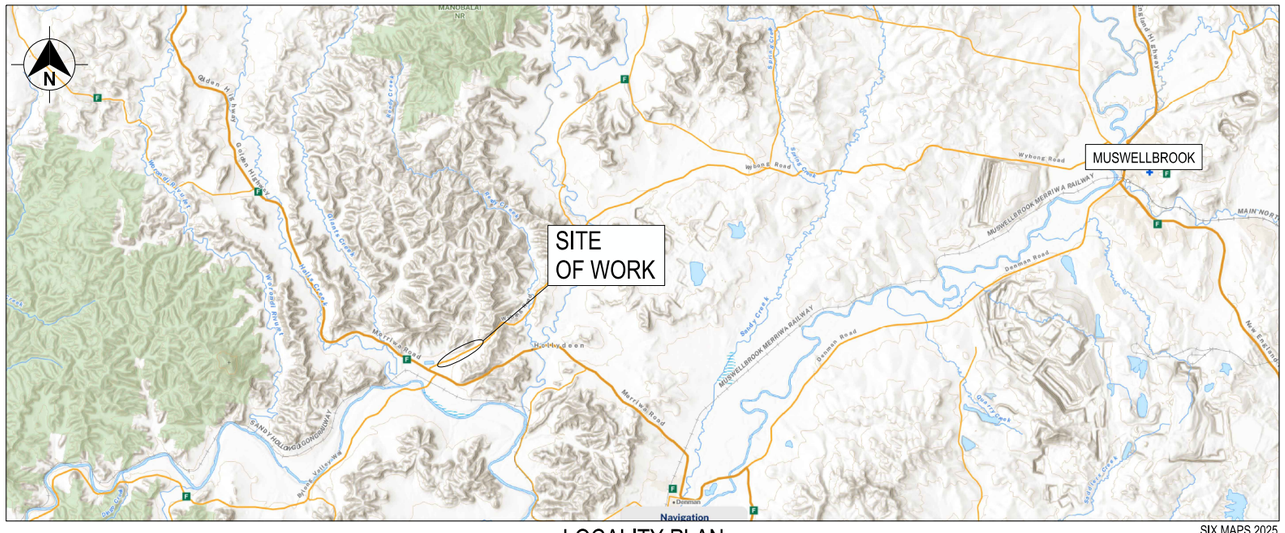
RR770 - KAYUGA ROAD

WYBONG ROAD RRTRP

PAVEMENT REHABILITATION AND CULVERT INSTALLATION
WYBONG ROAD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD

ROAD DESIGN

20% CONCEPT DESIGN



SIX MAPS 2025

LOCALITY PLAN

PART INDEX

CODE	NAME
GE	GENERAL (3 SHEETS)
RD	DETAIL AND LONG SECTIONS (23 SHEETS)
RC	ROAD CROSS SECTIONS (46 SHEETS)

NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-01-GE.dgn	LINEAR REFERENCING		PLOT DATE / TIME 28/03/2025 6:23:36 PM PLOT BY DrakeMi	CLIENT NSW GOVERNMENT Transport for NSW	MUSWELLBROOK SHIRE COUNCIL RR770 - KAYUGA ROAD PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD 31.100km TO 33.600km SOUTH OF KAYUGA ROAD A3
PREPARED BY	DESIGNED SIGNED NAME M.DRAKE TITLE PROJECT / ROAD DESIGN ENGINEER DATE	VERIFIED SIGNED NAME D.JOHNSON TITLE ROAD DESIGN MANAGER DATE	TfNSW PROJECT MANAGER NAME S.AUSTIN TITLE PROJECT CONTRACT MANAGER VALIDATION AND ACCEPTANCE OF THESE DRAWINGS AND THE DESIGN SHOWN THEREON IS TO BE CARRIED OUT UNDER SEPARATE PROCESS	PREPARED FOR PROJECT SERVICES NORTH	TfNSW PROJECT No. P.0095985.03.001.003 DESIGN PROJECT No. N2020140 TfNSW REGISTRATION No DS2025 / 000300 PART A ISSUE STATUS 20% CONCEPT DESIGN EDMS No. QA1590032 SHEET No. GE-0001 ISSUE 1

GENERAL NOTES

DESIGN INFORMATION

D1. THESE NOTES SHOULD BE READ IN CONJUNCTION WITH OTHER ENGINEERING DRAWINGS SPECIFICATIONS AND WRITTEN INSTRUCTIONS. ALWAYS REFER TO TECHNICAL SPECIFICATIONS FOR CLARIFICATION AND DETAILS.
D2. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT SPECIFICATION FOR THE WORKS TOGETHER WITH THE REQUIREMENTS OF ALL RELEVANT CODES OF PRACTICE REFERRED TO THEREIN AND THE REQUIREMENTS OF ALL STATUTORY AUTHORITIES.
D3. LEVELS AND CONTOURS ARE IN METRES (m) AND DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS NOTED OTHERWISE (UNO). SCALES AND SCALE BARS ARE FOR A3SIZE DRAWINGS. ALL LEVELS ARE TO AHD DATUM.
D4. ALL COORDINATES ARE ON MGA56 CO-ORDINATE SYSTEM.
D5. ALL STATIONS AND RADII ARE IN METRES.
D6. ALL LOCATIONS, ORIENTATION AND LEVELS SHALL BE VERIFIED ON SITE BEFORE COMMENCING ANY WORK. REFER DISCREPANCIES TO THE PRINCIPAL. DO NOT OBTAIN DIMENSIONS FROM SCALING.
D7. THE CONTRACTOR SHALL ENSURE ACCESS IS AVAILABLE TO PROPERTIES AT ALL TIMES DURING CONSTRUCTION.
D8. THESE DRAWINGS ARE BASED ON GROUND FEATURES AS AT THE DATE OF SURVEY 10/06/2021.

DRAINAGE GENERAL NOTES

G1. THE DOCUMENTED DRAINAGE SYSTEM IS DETAILED ONLY FOR NORMAL AUSTROADS TRAFFIC LOADING CONSTRUCTION VEHICLE REQUIREMENTS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
G2. UNSUITABLE FOUNDING MATERIAL FOR PIPES AND STRUCTURES SHALL BE REMOVED OR IMPROVED IN ACCORDANCE WITH THE RELEVANT SPECIFICATIONS AND TO THE PRINCIPAL'S SATISFACTION.
G3. REINFORCEMENT EXPOSED IN MODIFICATION OF PRECAST COMPONENTS SHALL BE PROTECTED WITH THE APPROVED METHOD OF COVER REPLACEMENT TO THE PRINCIPAL'S SATISFACTION.
G4. WHERE NOTED ON THE PLANS BATTERS ARE TO BE RECONTOURED AND DRAINAGE LINES.
G5. EXISTING DRAINAGE CULVERTS DEPICTED AS REMAINING MUST BE CHECKED BY THE CONTRACTOR FOR CONDITION. THE CONTRACTOR IS TO UNDERTAKE A CONDITION SURVEY. FOR DETAIL OF GUARDFENCE, HEADWALLS AND KERBS REFER TO MODEL DRAWINGS.
G6. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED. ALL LEVELS, STATIONS AND CO-ORDINATES ARE EXPRESSED IN METRES.
G7. DO NOT OBTAIN DIMENSIONS BY SCALING FROM THE DRAWINGS.
G8. ALL DRAINAGE PIPES SHALL BE MINUMUM CLASS 4 RCP PIPE OR APPROVED EQUIVALENT UNLESS NOTED OTHERWISE.
G9. PIPE INSTALLATION IS TO USE TYPE HS3 SUPPORT UNLESS THE TRENCH IS WET AND DEWATERING OF THE TRENCH IS NOT FEASIBLE THEN ALTNERATIVE BACKFILL MATERIAL SHALL BE PROPOSED FOR APPROVAL BY THE PRINCIPAL.
G10. REFER TO 'SCHEDULE OF RMS MODEL DRAWINGS' FOR RELEVENT PIT DETAIL REFERENCED ON THE PLANS.
G11. PIPE LENTHS SHOWN ARE CALCULATED BETWEEN SETOUT POINTS OF PIT/HEADWALLS WITH NO ALLOWANCE FOR PIT. TYPICALLY SET OUT IS AT THE CENTRE OF PIT.

UTILITIES

U1. THE UTILITY INFORMATION SHOWN IN THE DRAWINGS IS SCHEMATIC ONLY AND IS INTENDED TO ACCENTUATE THE PRESENCE OF PUBLIC UTILITY SERVICES ALONG THE PROJECT LENGTH. ACTUAL LOCATIONS SHOULD BE VERIFIED PRIOR TO CONSTRUCTION.
U2. OBTAIN CURRENT BEFORE YOU DIG PLANS AND INFORMATION BY VISITING THE WEBSITE www.byda.com.au TO ASCERTAIN THE EXACT LOCATION OF UTILITITES;

BEFORE YOU DIG www.byda.com.au

U3. IN ORDER TO AVOID DAMAGE TO THE SERVICES THE CONTRACTOR SHALL BE RESPONSIBLE FOR CO-ORDINATING THE WORKS ADJACENT TO ANY SERVICE WITH THE RELEVANT UTILITY AUTHORITY IN ACCORDANCE WITH THE AUTHORITY REQUIREMENTS.
U4. THE CONTRACTOR SHALL CO-ORDINATE WITH THE RELEVANT UTILITY AUTHORITIES AND THE PRINCIPAL WITH RESPECT TO ANY TEMPORARY DIVERSIONS NECESSARY FOR CONSTRUCTION STAGING WORKS.
U5. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN WORKING IN THE VICINITY OF EXISTING UTILITY SERVICES

CHANNELS TRAPEZOIDAL, TABLE DRAINS, BENCH DRAINS

C1. THE MINOR CHANNELS SETOUT IS PROVIDED IN THE (MX) DESIGN MODEL FOR INFORMATION. ALL CHANNEL SETOUT TO BE CONFIRMED ON-SITE AFTER REVIEW OF THE LOCATION AND LEVEL AGAINST TOPOGRAPHY AND ENVIRONMENTAL CONSTRAINTS.
C2. ANY SCOUR ISSUES DETECTED ON SITE SHALL BE REFERRED TO THE PRINCIPAL AND REMEDIAL RIP RAP PROVIDED WHERE DIRECTED.

EARTHWORKS

E1. EARTHWORKS SHALL BE SET OUT USING THE ROAD GEOMETRY DESIGN SET OUT DRAWINGS. THE DESIGN MODEL IS PROVIDED FOR INFORMATION. THE PRINCIPAL SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN THE DRAWINGS AND MODEL.
E2. GENERAL EARTHWORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SPECIFICATION R44.

ROAD FURNITURE GENERAL NOTES

A1. RETROREFLECTIVE RAISED PAVEMENT MARKERS (RRPMS) SHALL BE USED WITH ALL LONGITUDINAL PAVEMENT MARKINGS, TRAFFIC ISLANDS, MEDIANS AND CHEVRONS.
A2. EXISTING PAVEMENT MARKINGS, RRPMS AND SIGNAGE WHICH CONFLICT WITH THE PROPOSED WORKS SHALL BE REMOVED.
A3. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION.
A4. REFER TO RMS STANDARD DRAWINGS FOR SAFETY BARRIER DETAILS, UNLESS SPECIFIED OTHERWISE.
A5. SIGN POSTS GREATER THAN THE SIZES SHOWN BELOW NOT PROTECTED BY SAFETY BARRIER AND WITHIN THE CLEAR ZONE SHALL HAVE SLIP-BASED CONNECTIONS TO THE FOOTINGS. (REFER TO SIGN SCHEDULE FOR LOCATIONS AND DETAILS)
- MAIN CARRIAGEWAYS AND EXISTING HIGHWAY:
FOR SPEEDS > 80km/h POST SIZE 50mm DIAMETER NOMINAL BORE GRADE LIGHT (LT)
- LOCAL ROADS:
FOR SPEEDS 60-80km/h POST SIZE UP TO 65mm NOMINAL BORE GRADE EXTRA LIGHT (XL)
A6. SIGN FACE SHALL BE MINIMUM CLASS 1 RETROREFLECTIVE MATERIAL.
A7. GUIDE POSTS ON THE MAIN CARRIAGEWAYS SHALL BE PLACED AT AN OFFSET OF: FOR NEARSIDE LANE:
- 2.5m FROM EDGE LINE IF NO SO GUTTER PRESENT
- 4m FROM EDGE LINE IF SO GUTTER PRESENT
A8. GUIDE POSTS FOR LOCAL ROADS SHALL BE PLACED AT AN OFFSET OF 0.5m FROM THE EDGE OF THE SHOULDER.
A9. GUIDE POSTS SHALL BE PLACED AT MAXIMUM 60m INTERVALS ON THE MAIN CARRIAGEWAY.
A10. GUIDE POSTS ON LOCAL ROADS SHALL BE PROVIDED AT SPACINGS IN ACCORDANCE WITH AS1742.2 AND FOR AREAS SUBJECT TO FREQUENT FOGS.
A11. FOR DETAILS OF SAFETY BARRIER DELINEATIONS REFER RMS STANDARD DRG OR MANUFACTURERS DETAILS.
A12. START AND END POINTS OF BARRIERS, GUTTERS AND KERBS SCHEDULED WITHIN THIS PACKAGE DO NOT INCLUDE RELEVANT TERMINALS AND TRANSITIONS.

SAFETY BARRIERS

B1. WHERE EXISTING W BEAM SAFETY BARRIER HAS LAPS THAT ARE INCORRECT FOR THE DIRECTION OF TRAFFIC IN THE ADJACENT LANE, THE W BEAM SAFETY BARRIER SHALL BE REMOVED AND INSTALLED TO REVERSE THE LAPS. PRIOR APPROVAL MUST BE OBTAINED FROM THE PRINCIPAL, FOR REUSE OF EXISTING GUARDRAILS

CLEARING LIMITS GENERAL NOTES

C1. CLEARING SHALL BE MINIMISED WHERE POSSIBLE.
C2. NO CLEARING SHALL BE UNDERTAKEN OUTSIDE THE CONSTRUCTION FOOTPRINT WITHOUT PRIOR APPROVAL FROM THE PRINCIPAL.
C3. NOTIFY THE PRINCIPAL OF THE INTENTION TO PLACE MATERIAL IN A SPOIL SITE (OTHER THAN EARTH MOUND) AT LEAST FOUR WEEKS PRIOR TO USING A SITE.
C4. SPOIL SITES SHALL BE VEGETATED IN ACCORDANCE WITH RMS R178 AND/OR RMS R179. WHERE LANDSCAPE PLANS DO NOT PROVIDE A SEED MIX, ADOPT ADJACENT SEED MIX UNLESS DIRECTED OTHERWISE BY THE PRINCIPAL.
C5. WORKS AND IMPACTS AT WATERWAYS TO BE MANAGED IN CONSULTATION WIITH THE PRINCIPAL AND ENVIRONMENTAL AGENCIES.

LANDSCAPING

L1. ALL DISTURBED AREAS TO BE STABILISED WITH 100mm TOPSOIL LAYER AND HAND SEEDED. REFER TO SPECIFICATION R178 FOR DETAILS.

SUPPLEMENTARY DRAWING INDEX

NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-01-GE.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 4:50:35 PM

PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)

HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
GENERAL NOTES
GENERAL NOTES

A3

TfNSW REGISTRATION No. DS2025 / 000300 PART A

ISSUE STATUS: 20% CONCEPT DESIGN | EDMS No.: QA1590032 | SHEET No.: GE-0003 | ISSUE: 1

RR770 - KAYUGA ROAD - WYBONG ROAD
PAVEMENT REHABILITATION AND CULVERT INSTALLATION - INDEX

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DESIGN LOT CODE: N2020140

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SCALES ON A3 SIZE DRAWING

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MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
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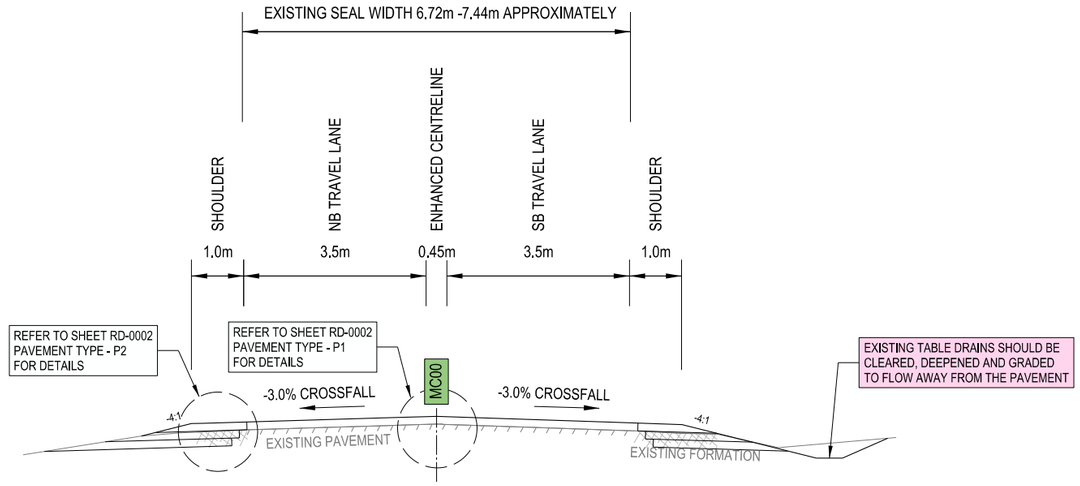
INDEX

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART A

ISSUE STATUS: 20% CONCEPT DESIGN | EDMS No.: QA1590032 | SHEET No.: GE-0002 | ISSUE: 1



RR770 - WYBONG ROAD
PROPOSED TYPICAL SECTION

0 1 2 3 4
SCALE 1:100m

NOT FOR CONSTRUCTION

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EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
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DRAWINGS / DESIGN PREPARED BY:
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

PLOT DATE / TIME: 28/03/2025 6:26:05 PM PLOT BY: DrakeMi

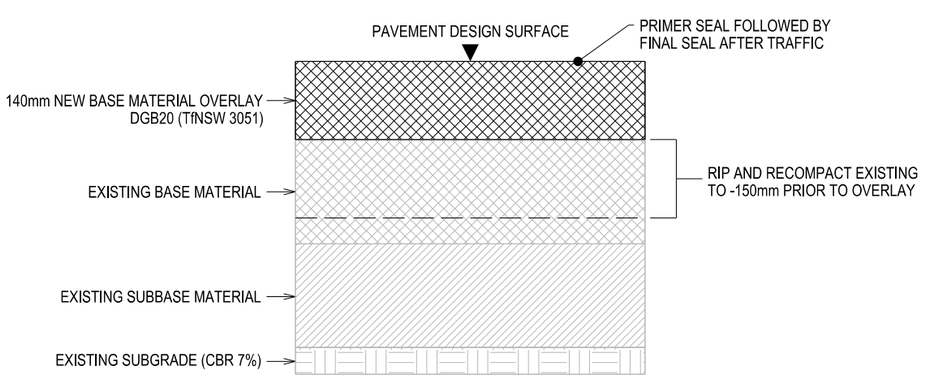
TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
TYPICAL SECTIONS
TYPICAL DETAILS - SHEET 1 OF 2

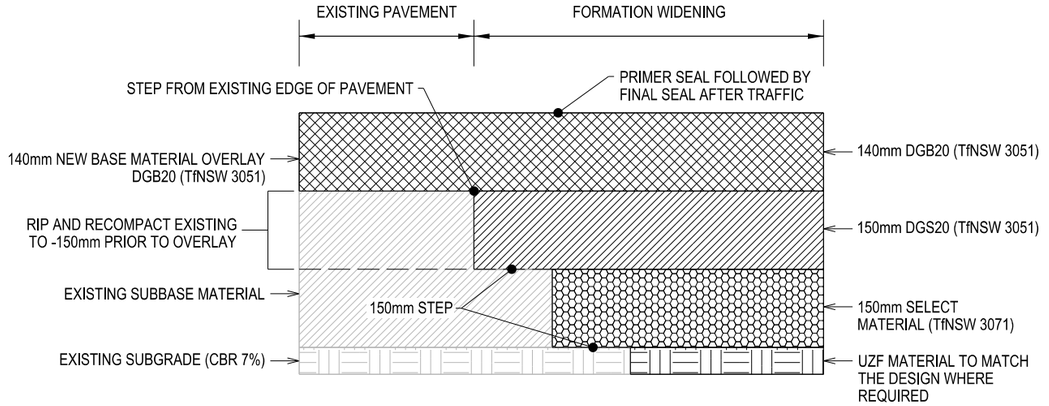
A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A
ISSUE STATUS: 20% CONCEPT DESIGN
EDMS No.: QA1590032
SHEET No.: RD-0001
ISSUE: 1



PAVEMENT TYPE - P1
150mm GRANULAR OVERLAY

NOT TO SCALE



PAVEMENT TYPE - P2
FULL DEPTH SHOULDER WIDENING

NOT TO SCALE

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SCALES ON A3 SIZE DRAWING: AS SHOWN

DRAWINGS / DESIGN PREPARED BY:

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

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MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
TYPICAL SECTIONS
TYPICAL DETAILS - SHEET 2 OF 2

A3

TfNSW REGISTRATION No: DS2025 / 000300

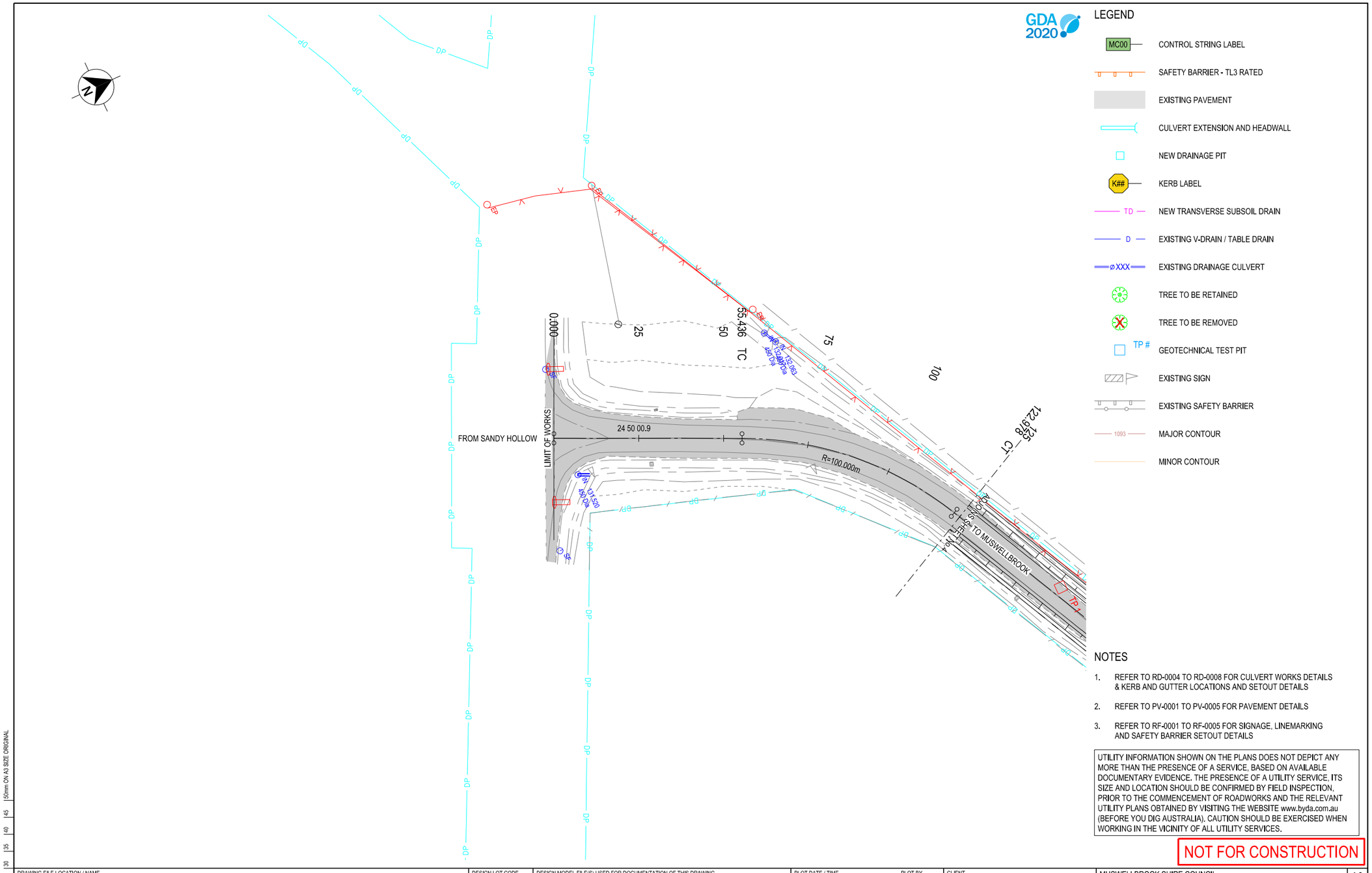
PART: A

ISSUE STATUS: 20% CONCEPT DESIGN

EDMS No.: QA1590032

SHEET No.: RD-0002

ISSUE: 1



NOTES

1. REFER TO RD-0004 TO RD-0008 FOR CULVERT WORKS DETAILS & KERB AND GUTTER LOCATIONS AND SETOUT DETAILS
2. REFER TO PV-0001 TO PV-0005 FOR PAVEMENT DETAILS
3. REFER TO RF-0001 TO RF-0005 FOR SIGNAGE, LINEMARKING AND SAFETY BARRIER SETOUT DETAILS

UTILITY INFORMATION SHOWN ON THE PLANS DOES NOT DEPICT ANY MORE THAN THE PRESENCE OF A SERVICE, BASED ON AVAILABLE DOCUMENTARY EVIDENCE. THE PRESENCE OF A UTILITY SERVICE, ITS SIZE AND LOCATION SHOULD BE CONFIRMED BY FIELD INSPECTION, PRIOR TO THE COMMENCEMENT OF ROADWORKS AND THE RELEVANT UTILITY PLANS OBTAINED BY VISITING THE WEBSITE www.byda.com.au (BEFORE YOU DIG AUSTRALIA). CAUTION SHOULD BE EXERCISED WHEN WORKING IN THE VICINITY OF ALL UTILITY SERVICES.

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DESIGN LOT CODE: N2020140
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SCALES ON A3 SIZE DRAWING: 0 10 20 30 40 SCALE 1:1000m
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD
DRAWINGS / DESIGN PREPARED BY

PLOT DATE / TIME: 28/03/2025 6:26:07 PM PLOT BY: DrakeMi

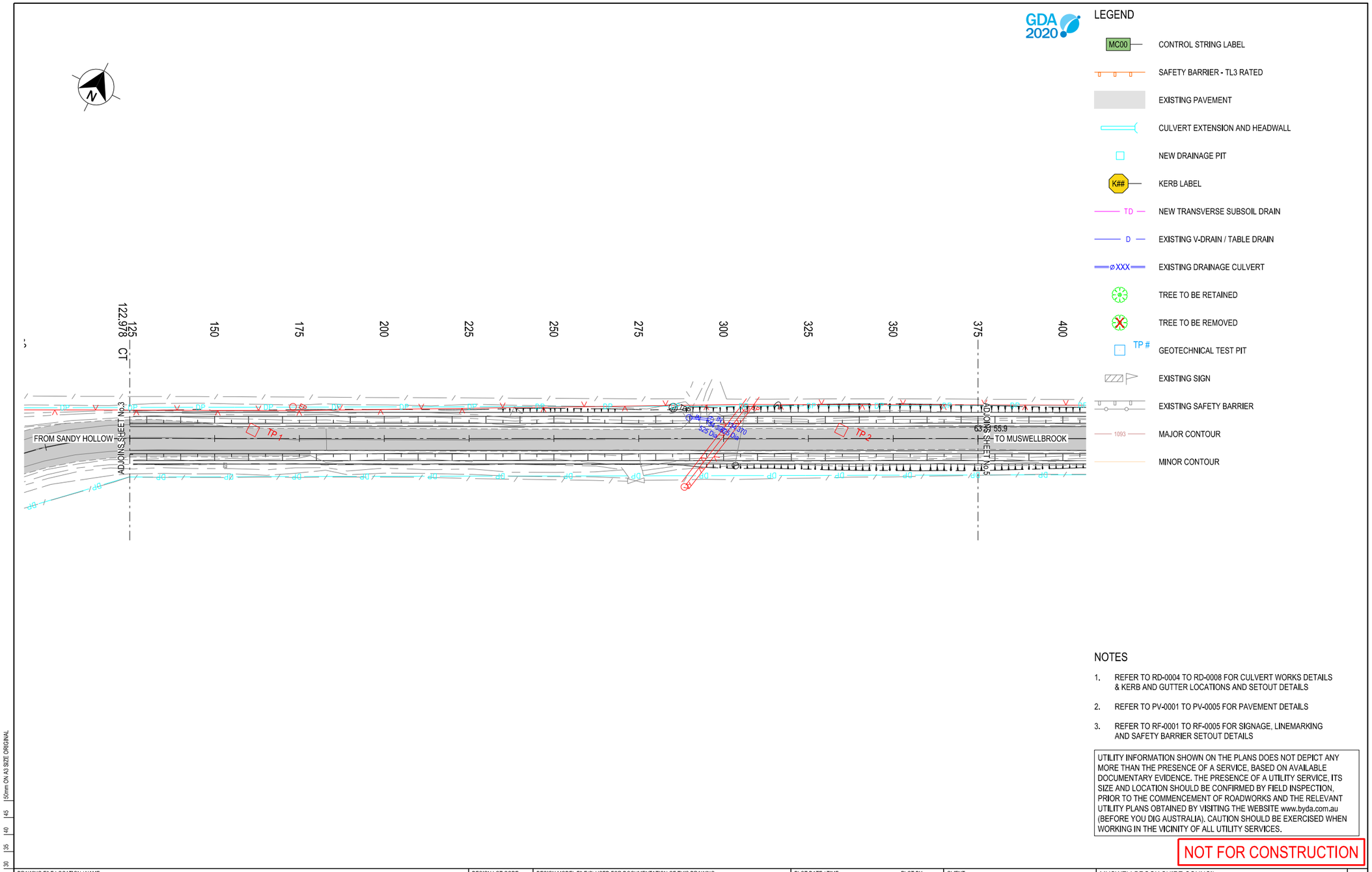
TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

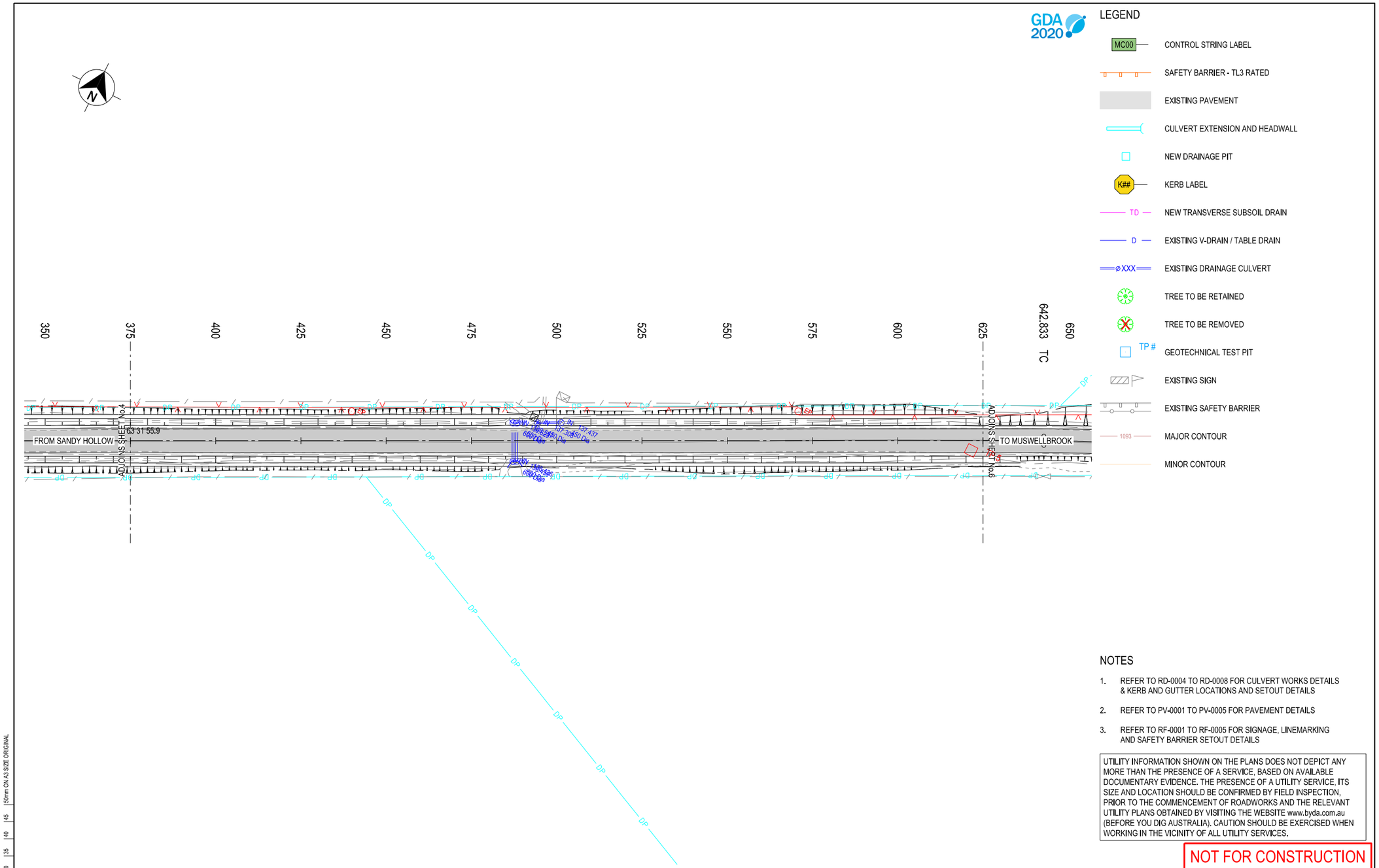
CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
DETAIL PLAN
RR770 - WYBONG ROAD - MC00 - 125 TO 250

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A
ISSUE STATUS: 20% CONCEPT DESIGN
EDMS No.: QA1590032
SHEET No.: RD-0003
ISSUE: 1




GDA 2020
LEGEND
MC00 CONTROL STRING LABEL
SAFETY BARRIER - TL3 RATED
EXISTING PAVEMENT
CULVERT EXTENSION AND HEADWALL
NEW DRAINAGE PIT
K## KERB LABEL
TD NEW TRANSVERSE SUBSOIL DRAIN
D EXISTING V-DRAIN / TABLE DRAIN
ø XXX EXISTING DRAINAGE CULVERT
TREE TO BE RETAINED
TREE TO BE REMOVED
TP # GEOTECHNICAL TEST PIT
EXISTING SIGN
EXISTING SAFETY BARRIER
1093 MAJOR CONTOUR
MINOR CONTOUR
350 375 400 425 450 475 500 525 550 575 600 625 642.833 TC 650
FROM SANDY HOLLOW
63 31 55.9
TO MUSWELLBROOK
DP
NOTES
1. REFER TO RD-0004 TO RD-0008 FOR CULVERT WORKS DETAILS & KERB AND GUTTER LOCATIONS AND SETOUT DETAILS
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DRAWING FILE LOCATION / NAME
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DESIGN LOT CODE N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING RR770 WYBONG ROAD - V01
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PLOT BY DrakeMi
CLIENT
EXTERNAL REFERENCE FILES
REV 01 | DATE 31-03-25 | AMENDMENT / REVISION DESCRIPTION 20% CONCEPT DESIGN ISSUED FOR REVIEW | WVR No. 01 | APPROVAL MD
SCALES ON A3 SIZE DRAWING
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SCALE 1:1000m
CO-ORDINATE SYSTEM MGA ZONE 56 (GDA2020)
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DRAWINGS / DESIGN PREPARED BY
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DETAIL PLAN
RR770 - WYBONG ROAD - MC00 - 500 TO 750
TfNSW REGISTRATION No DS2025 / 000300
PART A
ISSUE STATUS 20% CONCEPT DESIGN
EDMS No. QA1590032
SHEET No. RD-0005
ISSUE 1
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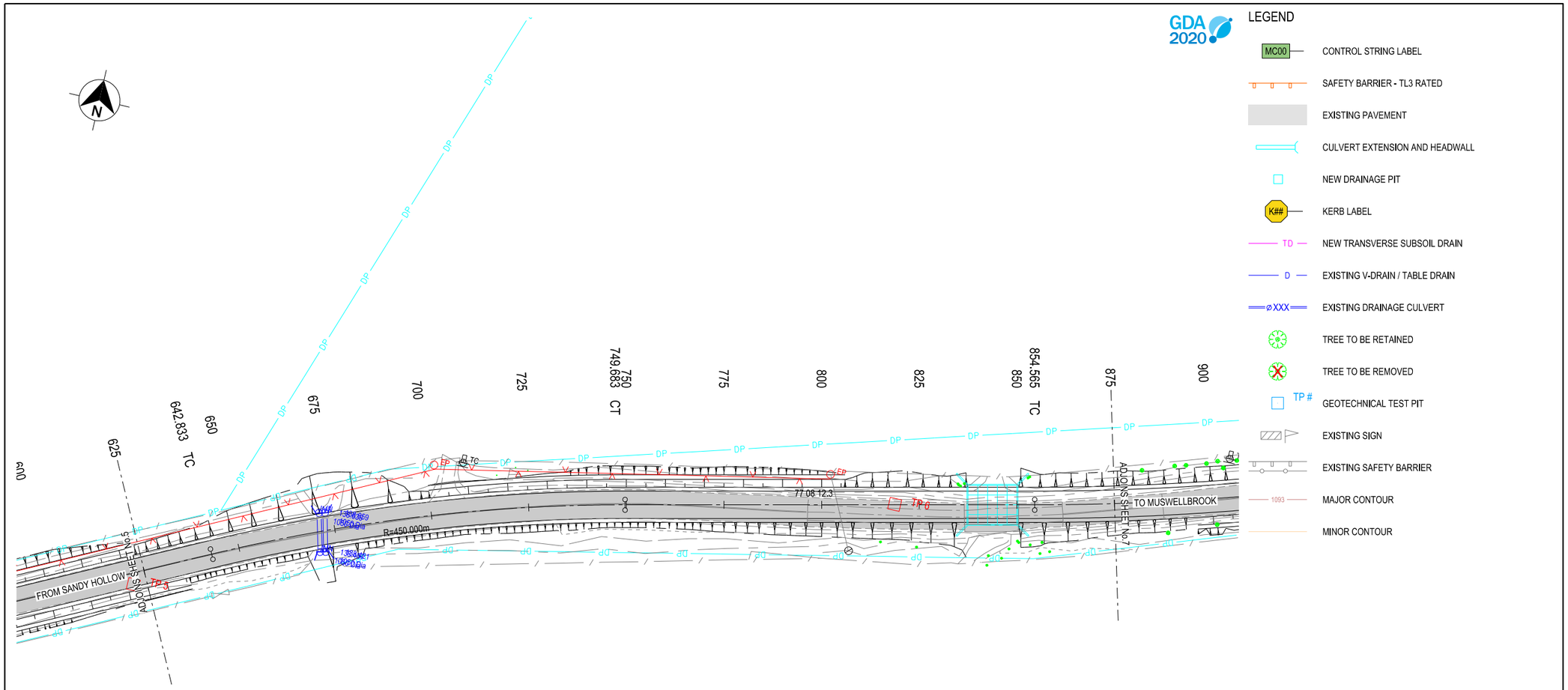

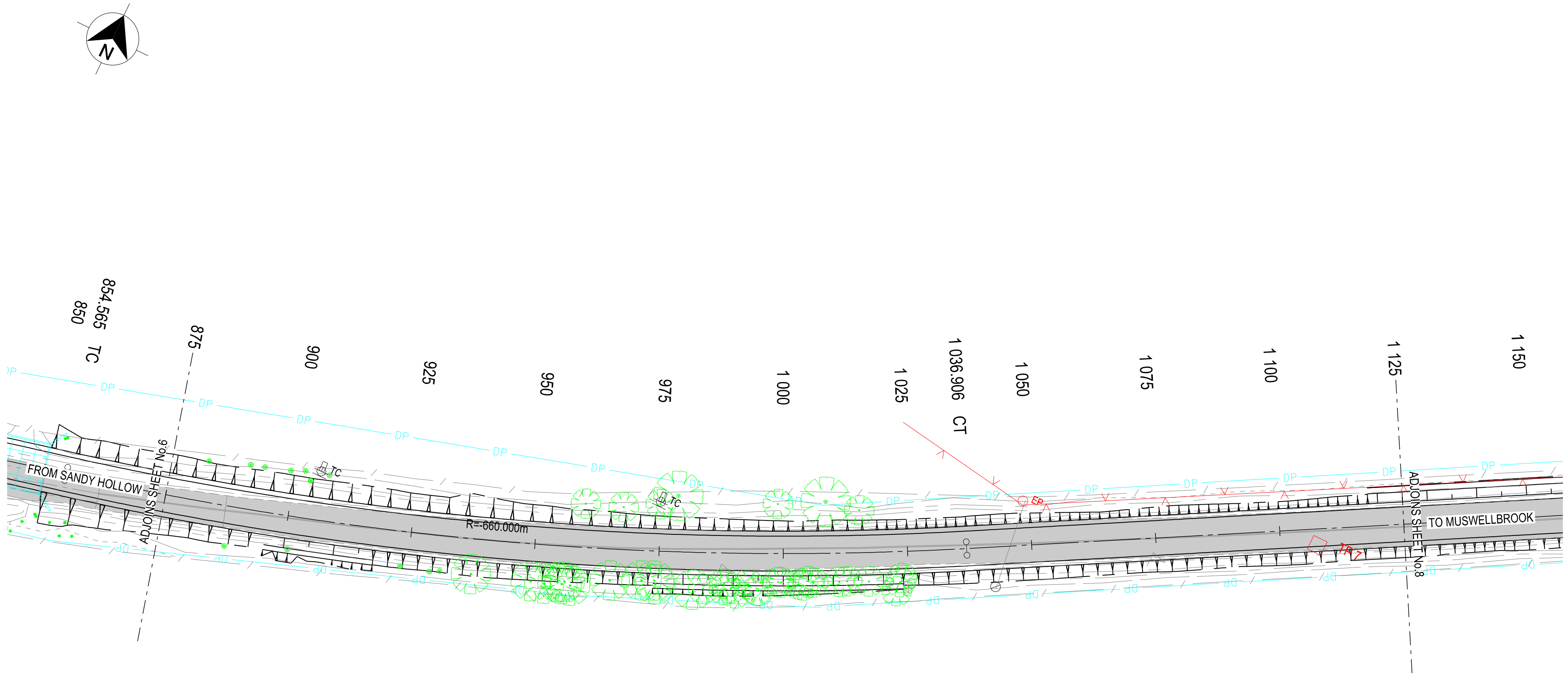

GDA 2020

LEGEND

- MC00 — CONTROL STRING LABEL
- SAFETY BARRIER - TL3 RATED
- EXISTING PAVEMENT
- CULVERT EXTENSION AND HEADWALL
- NEW DRAINAGE PIT
- K## — KERB LABEL
- TD — NEW TRANSVERSE SUBSOIL DRAIN
- D — EXISTING V-DRAIN / TABLE DRAIN
- ⌀XXX — EXISTING DRAINAGE CULVERT
- TREE TO BE RETAINED
- TREE TO BE REMOVED
- TP # — GEOTECHNICAL TEST PIT
- EXISTING SIGN
- EXISTING SAFETY BARRIER
- 1093 — MAJOR CONTOUR
- MINOR CONTOUR

NOTES

1. REFER TO RD-0004 TO RD-0008 FOR CULVERT WORKS DETAILS & KERB AND GUTTER LOCATIONS AND SETOUT DETAILS
2. REFER TO PV-0001 TO PV-0005 FOR PAVEMENT DETAILS
3. REFER TO RF-0001 TO RF-0005 FOR SIGNAGE, LINEMARKING AND SAFETY BARRIER SETOUT DETAILS

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NOT FOR CONSTRUCTION

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50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME	C:\Users\DrakeM\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-03-RD.dgn
DESIGN LOT CODE	N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING	RR770 WYBONG ROAD - V01
PLOT DATE / TIME	28/03/2025 6:26:09 PM
PLOT BY	DrakeMi

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

EXTERNAL REFERENCE FILES

SCALES ON A3 SIZE DRAWING: 0 10 20 30 40 SCALE 1:1000m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

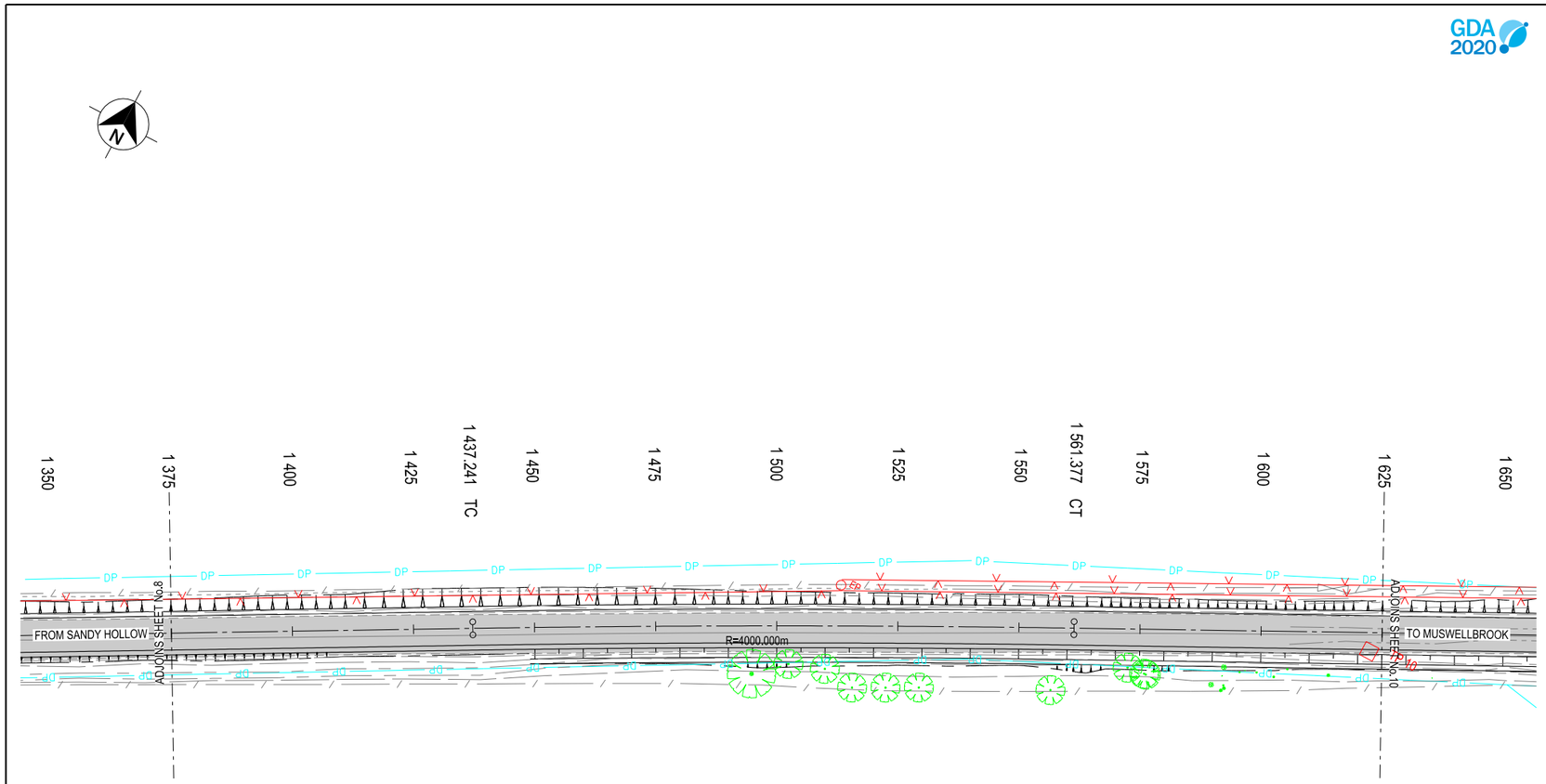
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
DETAIL PLAN
RR770 - WYBONG ROAD - MC00 - 1000 TO 1250

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RD-0007	1



GDA 2020

LEGEND

- MC00 — CONTROL STRING LABEL
- SAFETY BARRIER - TL3 RATED
- EXISTING PAVEMENT
- CULVERT EXTENSION AND HEADWALL
- NEW DRAINAGE PIT
- K## — KERB LABEL
- TD — NEW TRANSVERSE SUBSOIL DRAIN
- D — EXISTING V-DRAIN / TABLE DRAIN
- ⌀XXX — EXISTING DRAINAGE CULVERT
- TREE TO BE RETAINED
- TREE TO BE REMOVED
- TP # — GEOTECHNICAL TEST PIT
- EXISTING SIGN
- EXISTING SAFETY BARRIER
- 1093 — MAJOR CONTOUR
- MINOR CONTOUR

NOTES

1. REFER TO RD-0004 TO RD-0008 FOR CULVERT WORKS DETAILS & KERB AND GUTTER LOCATIONS AND SETOUT DETAILS
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NOT FOR CONSTRUCTION

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0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-03-RD.dgn

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

DESIGN LOT CODE: N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
SCALES ON A3 SIZE DRAWING: 0 10 20 30 40 SCALE 1:1000m
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD
DRAWINGS / DESIGN PREPARED BY

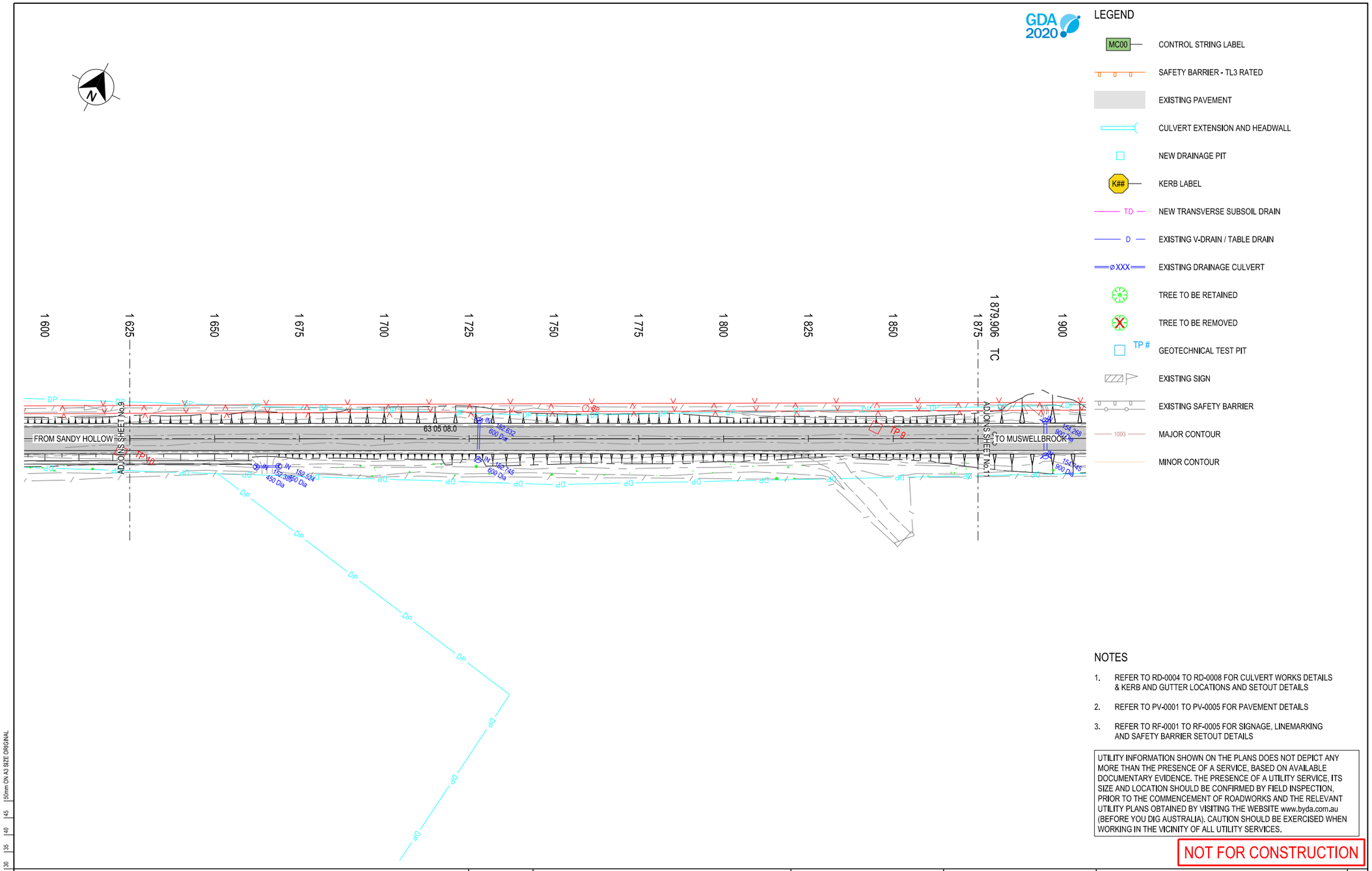
PLOT DATE / TIME	28/03/2025 6:26:10 PM
PLOT BY	DrakeMi
TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
DETAIL PLAN
RR770 - WYBONG ROAD - MC00 - 1500 TO 1750

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A
ISSUE STATUS: 20% CONCEPT DESIGN
EDMS No.: QA1590032
SHEET No.: RD-0009
ISSUE: 1


GDA 2020
LEGEND
MC00 CONTROL STRING LABEL
SAFETY BARRIER - TL3 RATED
EXISTING PAVEMENT
CULVERT EXTENSION AND HEADWALL
NEW DRAINAGE PIT
K## KERB LABEL
TD NEW TRANSVERSE SUBSOIL DRAIN
D EXISTING V-DRAIN / TABLE DRAIN
ø XXX EXISTING DRAINAGE CULVERT
TREE TO BE RETAINED
TREE TO BE REMOVED
TP # GEOTECHNICAL TEST PIT
EXISTING SIGN
EXISTING SAFETY BARRIER
1093 MAJOR CONTOUR
MINOR CONTOUR
1 600
1 625
1 650
1 675
1 700
1 725
1 750
1 775
1 800
1 825
1 850
1 879.906 TC
1 900
ADJOINS SHEET No.9
ADJOINS SHEET No.11
FROM SANDY HOLLOW
TO MUSWELLBROOK
63 05 08.0
TP 10
TP 9
DP
NOTES
1. REFER TO RD-0004 TO RD-0008 FOR CULVERT WORKS DETAILS & KERB AND GUTTER LOCATIONS AND SETOUT DETAILS
2. REFER TO PV-0001 TO PV-0005 FOR PAVEMENT DETAILS
3. REFER TO RF-0001 TO RF-0005 FOR SIGNAGE, LINEMARKING AND SAFETY BARRIER SETOUT DETAILS
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NOT FOR CONSTRUCTION
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50mm ON A3 SIZE ORIGINAL
DRAWING FILE LOCATION / NAME
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DESIGN LOT CODE N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING RR770 WYBONG ROAD - V01
PLOT DATE / TIME 28/03/2025 6:26:11 PM
PLOT BY DrakeMi
CLIENT
Transport for NSW
EXTERNAL REFERENCE FILES
REV 01 DATE 31-03-25 AMENDMENT / REVISION DESCRIPTION 20% CONCEPT DESIGN ISSUED FOR REVIEW WVR No. 01 APPROVAL MD
SCALES ON A3 SIZE DRAWING
0 10 20 30 40
SCALE 1:1000m
CO-ORDINATE SYSTEM MGA ZONE 56 (GDA2020) HEIGHT DATUM AHD
DRAWINGS / DESIGN PREPARED BY
TITLE NAME
DRAWN M.DRAKE
DRG CHECK TfNSW
DESIGN M.DRAKE
DESIGN CHECK TfNSW
DESIGN MNGR D.JOHNSON
PROJECT MNGR S.AUSTIN
PREPARED FOR PROJECT SERVICES NORTH
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
A3
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
DETAIL PLAN
RR770 - WYBONG ROAD - MC00 - 1750 TO 2000
TfNSW REGISTRATION No DS2025 / 000300
PART A
ISSUE STATUS 20% CONCEPT DESIGN
EDMS No. QA1590032
SHEET No. RD-0010
ISSUE 1
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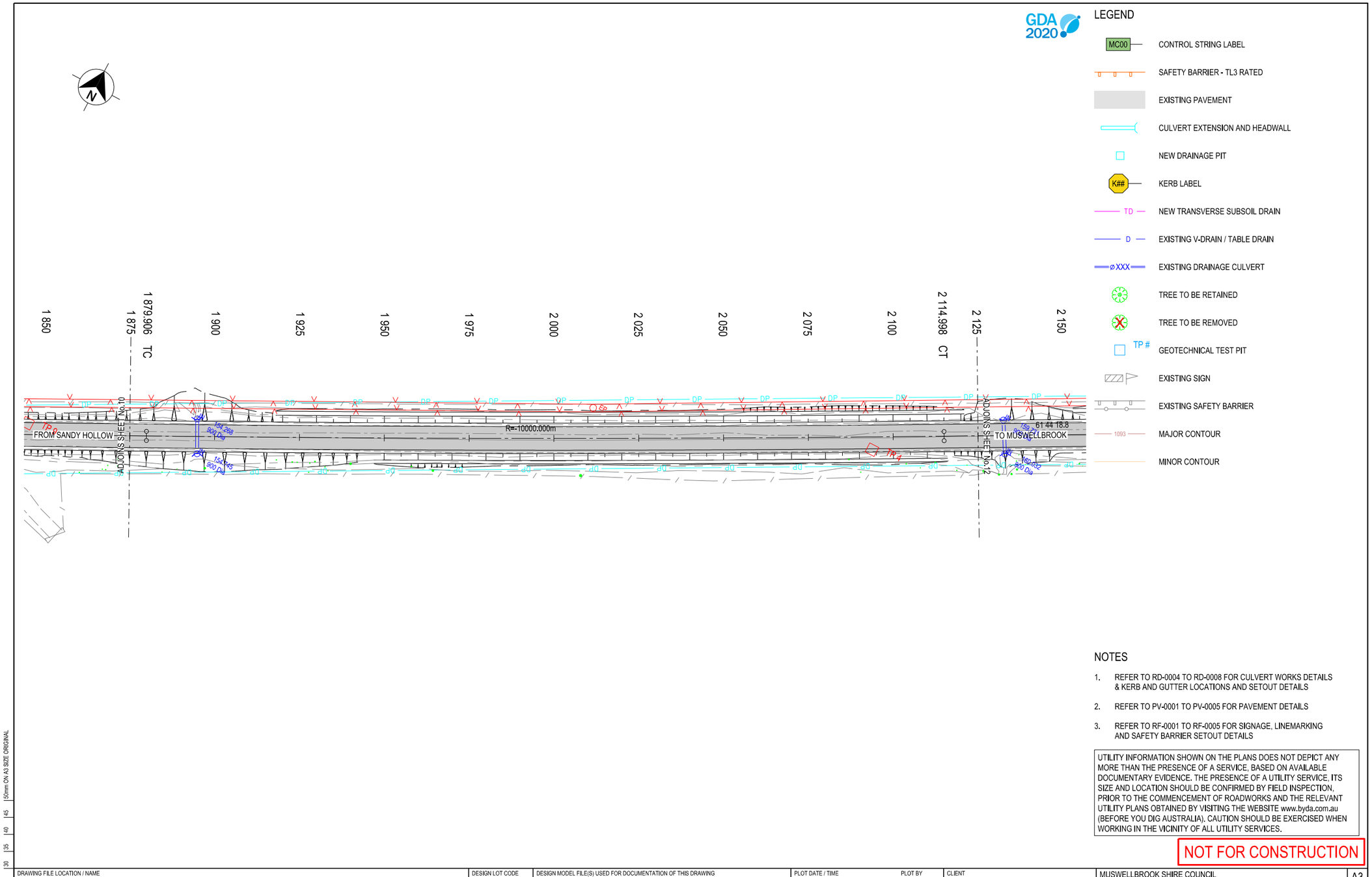
GDA 2020
LEGEND
MC00 CONTROL STRING LABEL
SAFETY BARRIER - TL3 RATED
EXISTING PAVEMENT
CULVERT EXTENSION AND HEADWALL
NEW DRAINAGE PIT
K## KERB LABEL
TD NEW TRANSVERSE SUBSOIL DRAIN
D EXISTING V-DRAIN / TABLE DRAIN
ø XXX EXISTING DRAINAGE CULVERT
TREE TO BE RETAINED
TREE TO BE REMOVED
TP # GEOTECHNICAL TEST PIT
EXISTING SIGN
EXISTING SAFETY BARRIER
1093 MAJOR CONTOUR
MINOR CONTOUR
1 850
1 875
1 879.906 TC
1 900
1 925
1 950
1 975
2 000
2 025
2 050
2 075
2 100
2 114.998 CT
2 125
2 150
R=-10000.000m
61 44 18.8
FROM SANDY HOLLOW
TO MUSWELLBROOK
ADJOINS SHEET No.10
ADJOINS SHEET No.12
NOTES
1. REFER TO RD-0004 TO RD-0008 FOR CULVERT WORKS DETAILS & KERB AND GUTTER LOCATIONS AND SETOUT DETAILS
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50mm ON A3 SIZE ORIGINAL
DRAWING FILE LOCATION / NAME
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DESIGN LOT CODE N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING RR770 WYBONG ROAD - V01
PLOT DATE / TIME 28/03/2025 6:26:11 PM
PLOT BY DrakeMi
CLIENT
EXTERNAL REFERENCE FILES
REV 01 DATE 31-03-25 AMENDMENT / REVISION DESCRIPTION 20% CONCEPT DESIGN ISSUED FOR REVIEW WVR No. 01 APPROVAL MD
SCALES ON A3 SIZE DRAWING
0 10 20 30 40
SCALE 1:1000m
CO-ORDINATE SYSTEM MGA ZONE 56 (GDA2020) HEIGHT DATUM AHD
DRAWINGS / DESIGN PREPARED BY
TITLE NAME
DRAWN M.DRAKE
DRG CHECK TfNSW
DESIGN M.DRAKE
DESIGN CHECK TfNSW
DESIGN MNGR D.JOHNSON
PROJECT MNGR S.AUSTIN
NSW GOVERNMENT Transport for NSW
PREPARED FOR PROJECT SERVICES NORTH
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
A3
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
DETAIL PLAN
RR770 - WYBONG ROAD - MC00 - 2000 TO 2250
TfNSW REGISTRATION No DS2025 / 000300
PART A
ISSUE STATUS 20% CONCEPT DESIGN
EDMS No. QA1590032
SHEET No. RD-0011
ISSUE 1
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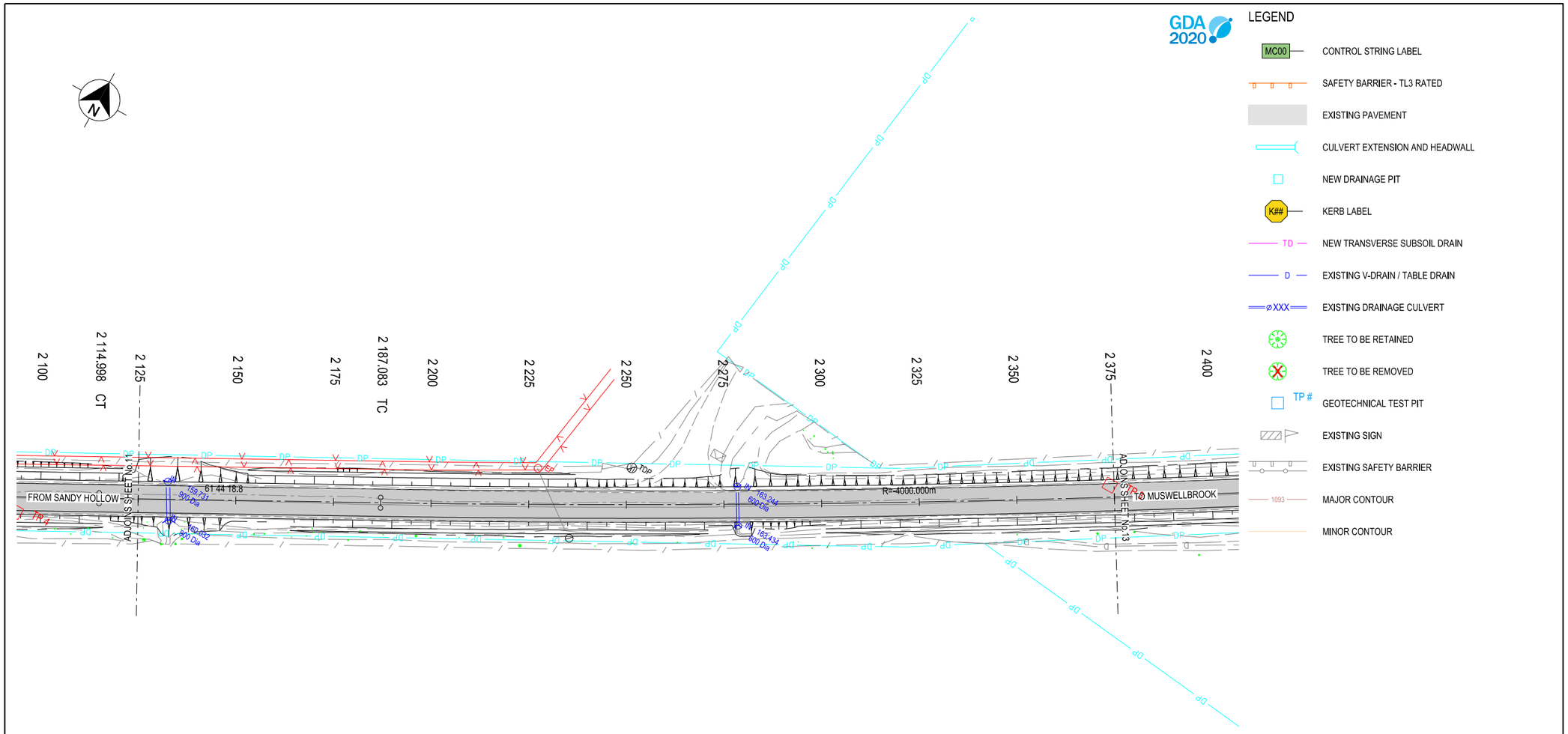

GDA 2020

LEGEND

- MC00 — CONTROL STRING LABEL
- SAFETY BARRIER - TL3 RATED
- EXISTING PAVEMENT
- CULVERT EXTENSION AND HEADWALL
- NEW DRAINAGE PIT
- K## — KERB LABEL
- TD — NEW TRANSVERSE SUBSOIL DRAIN
- D — EXISTING V-DRAIN / TABLE DRAIN
- ⌀XXX — EXISTING DRAINAGE CULVERT
- TREE TO BE RETAINED
- TREE TO BE REMOVED
- TP # — GEOTECHNICAL TEST PIT
- EXISTING SIGN
- EXISTING SAFETY BARRIER
- 1093 — MAJOR CONTOUR
- MINOR CONTOUR

NOTES

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NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-03-RD.dgn

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

DESIGN LOT CODE: N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
SCALES ON A3 SIZE DRAWING: 0 10 20 30 40 — SCALE 1:1000m
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD
DRAWINGS / DESIGN PREPARED BY

PLOT DATE / TIME: 28/03/2025 6:26:12 PM PLOT BY: DrakeMi

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

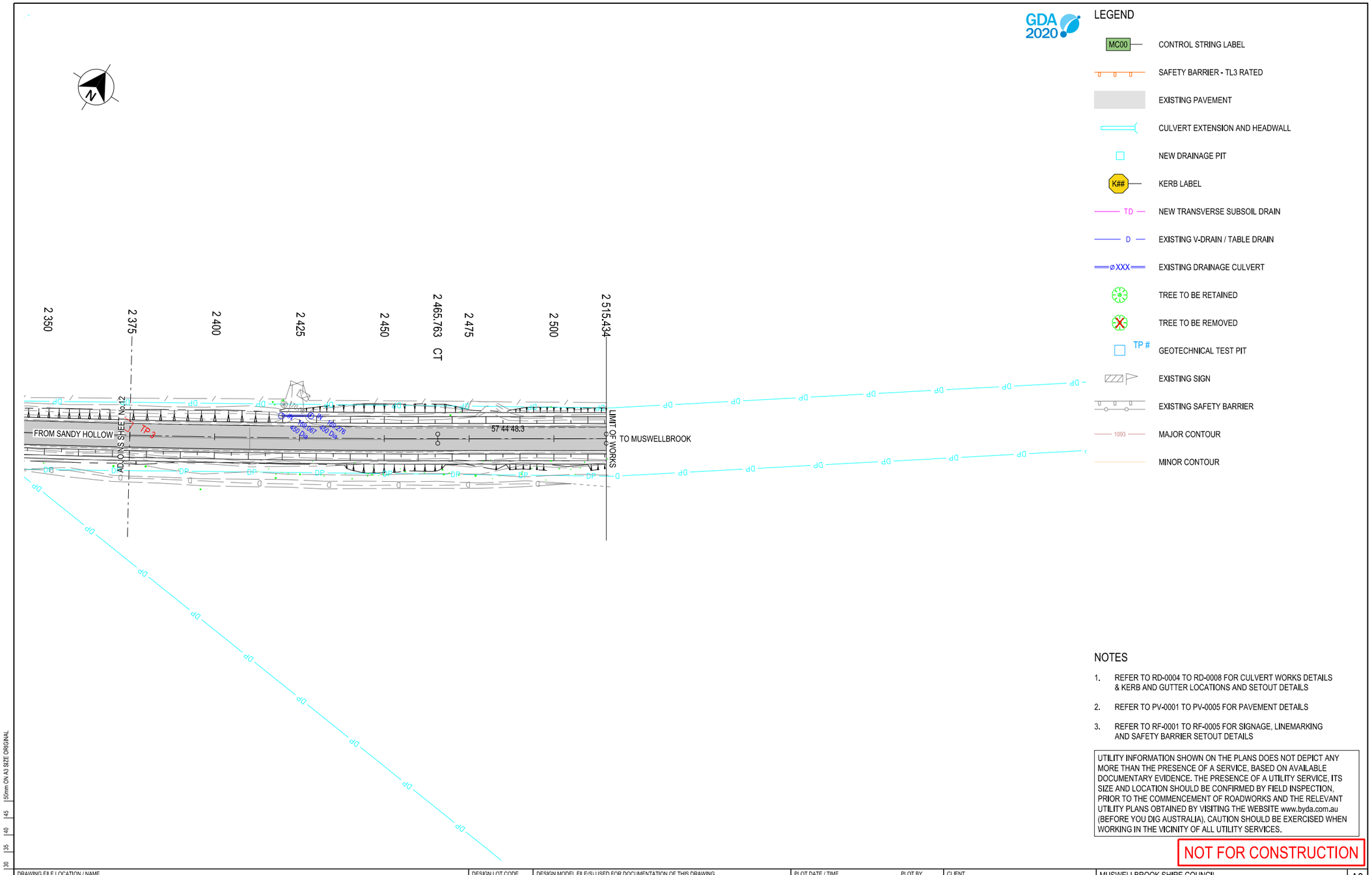
CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
DETAIL PLAN
RR770 - WYBONG ROAD - MC00 - 2250 TO 2500

A3

TfNSW REGISTRATION No	PART
DS2025 / 000300	A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RD-0012	1



LEGEND

- MC00 — CONTROL STRING LABEL
- SAFETY BARRIER - TL3 RATED
- EXISTING PAVEMENT
- CULVERT EXTENSION AND HEADWALL
- NEW DRAINAGE PIT
- K## — KERB LABEL
- TD — NEW TRANSVERSE SUBSOIL DRAIN
- D — EXISTING V-DRAIN / TABLE DRAIN
- ⌀XXX — EXISTING DRAINAGE CULVERT
- TREE TO BE RETAINED
- TREE TO BE REMOVED
- TP # — GEOTECHNICAL TEST PIT
- EXISTING SIGN
- EXISTING SAFETY BARRIER
- 1093 — MAJOR CONTOUR
- MINOR CONTOUR

NOTES

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DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-03-RD.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:12 PM PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 10 20 30 40 SCALE 1:1000m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

PREPARED FOR: PROJECT SERVICES NORTH

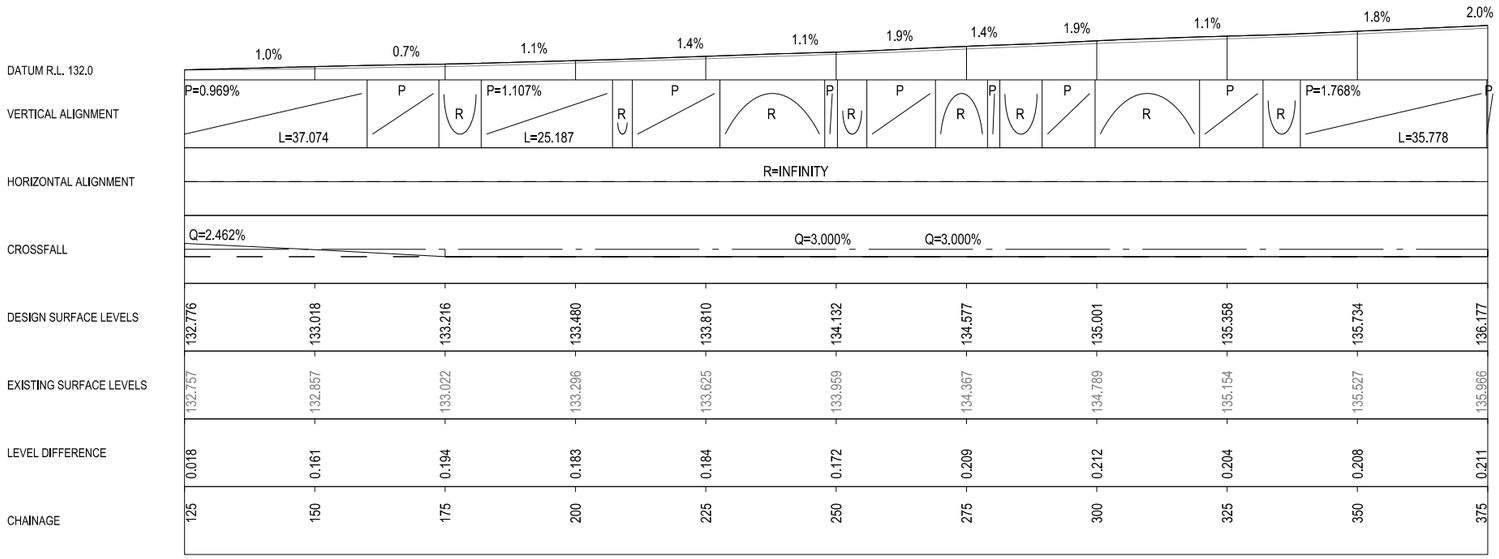
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
A3

PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD

DETAIL PLAN
RR770 - WYBONG ROAD - MC00 - 2500 TO 2515.434

TfNSW REGISTRATION No: DS2025 / 000300 PART: A

ISSUE STATUS: 20% CONCEPT DESIGN | EDMS No.: QA1590032 | SHEET No.: RD-0013 | ISSUE: 1



LONGITUDINAL SECTION - MC00

NOT FOR CONSTRUCTION

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50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-03-RD.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:13 PM

PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: HORIZONTAL SCALE 1:1000m (0 10 20 30 40); VERTICAL SCALE 1:200m (0 2 4 6 8)

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

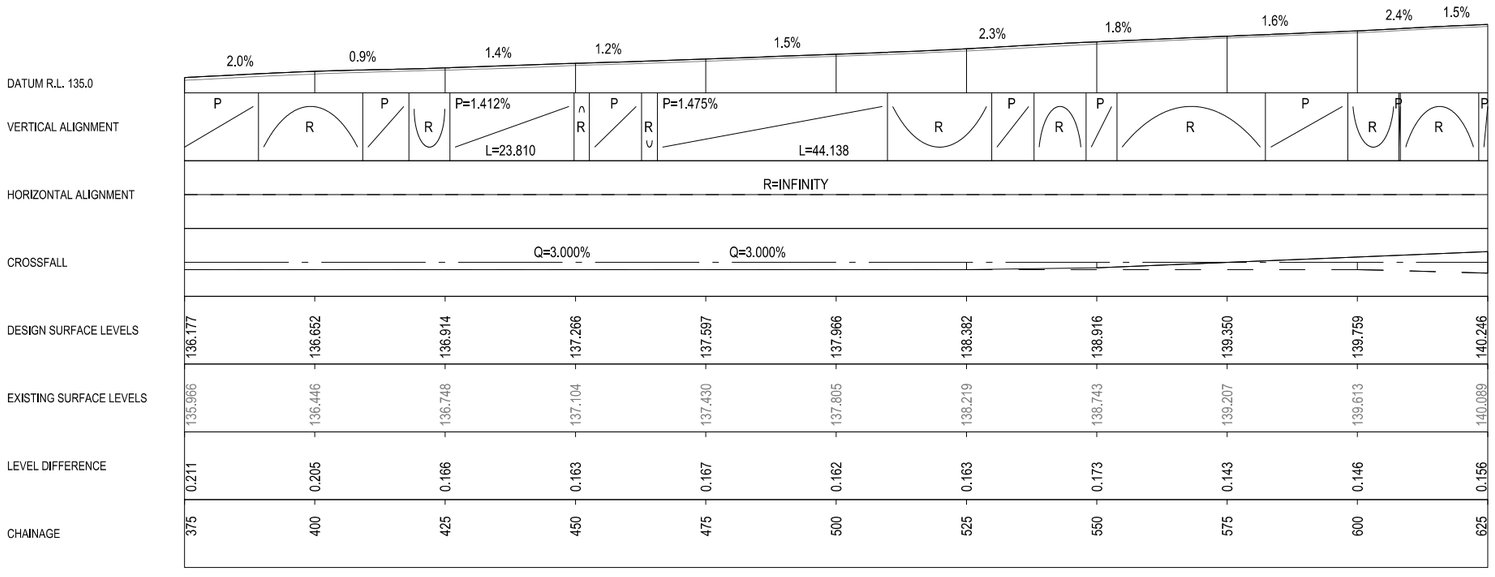
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
LONGITUDINAL SECTION
LONGITUDINAL SECTION RR770 - WYBONG ROAD - MC00 - 125 TO 375

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A

ISSUE STATUS: 20% CONCEPT DESIGN EDMS No.: QA1590032 SHEET No.: RD-0014 ISSUE: 1



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EXISTING SURFACE LEVELS	135.966	136.446	136.748	137.104	137.430	137.805	138.219	138.743	139.207	139.613	140.089
LEVEL DIFFERENCE	0.211	0.205	0.166	0.163	0.167	0.162	0.163	0.173	0.143	0.146	0.156
CHAINAGE	375	400	425	450	475	500	525	550	575	600	625

LONGITUDINAL SECTION - MC00

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50mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-03-RD.dgn

DESIGN LOT CODE: N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
PLOT DATE / TIME: 28/03/2025 6:26:13 PM
PLOT BY: DrakeMi

CLIENT: NSW GOVERNMENT Transport for NSW

PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
A3
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
LONGITUDINAL SECTION
LONGITUDINAL SECTION RR770 - WYBONG ROAD - MC00 - 375 TO 625

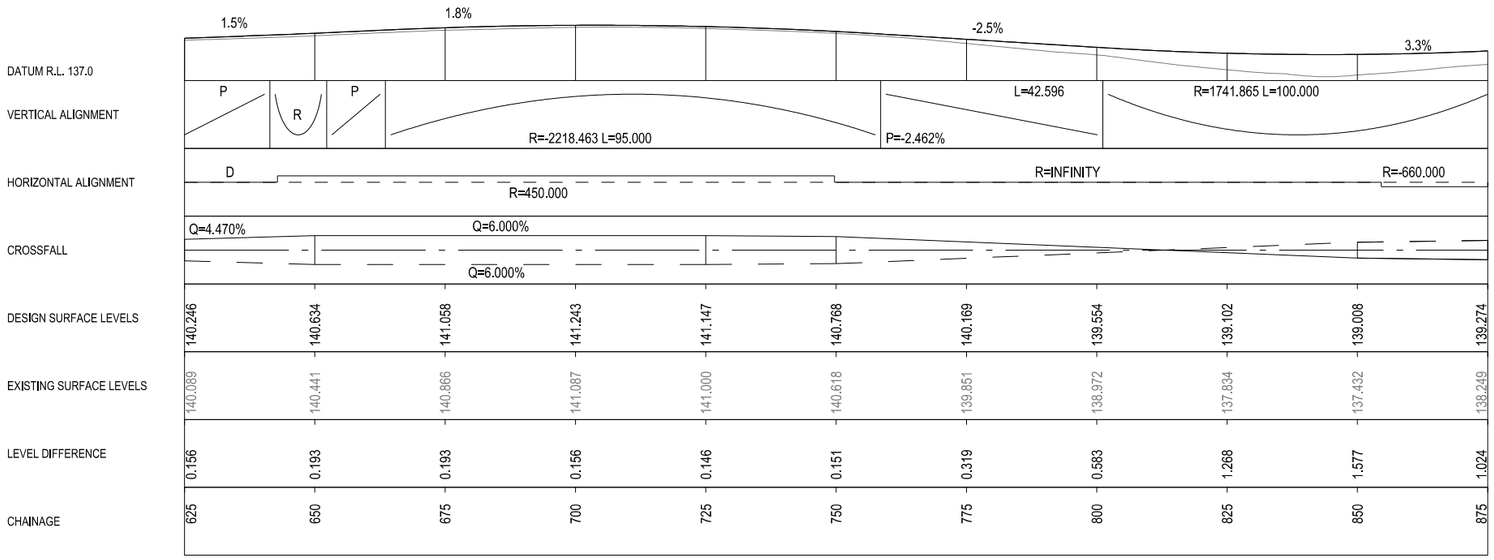
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING
HORIZONTAL SCALE 1:1000m (0 10 20 30 40)
VERTICAL SCALE 1:200m (0 2 4 6 8)
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

TfNSW REGISTRATION No: DS2025 / 000300 — PART A
ISSUE STATUS: 20% CONCEPT DESIGN
EDMS No.: QA1590032
SHEET No.: RD-0015
ISSUE: 1



LONGITUDINAL SECTION - MC00

NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-03-RD.dgn

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

DESIGN LOT CODE: N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
SCALES ON A3 SIZE DRAWING: HORIZONTAL SCALE 1:1000m (0 10 20 30 40); VERTICAL SCALE 1:200m (0 2 4 6 8)
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD
DRAWINGS / DESIGN PREPARED BY

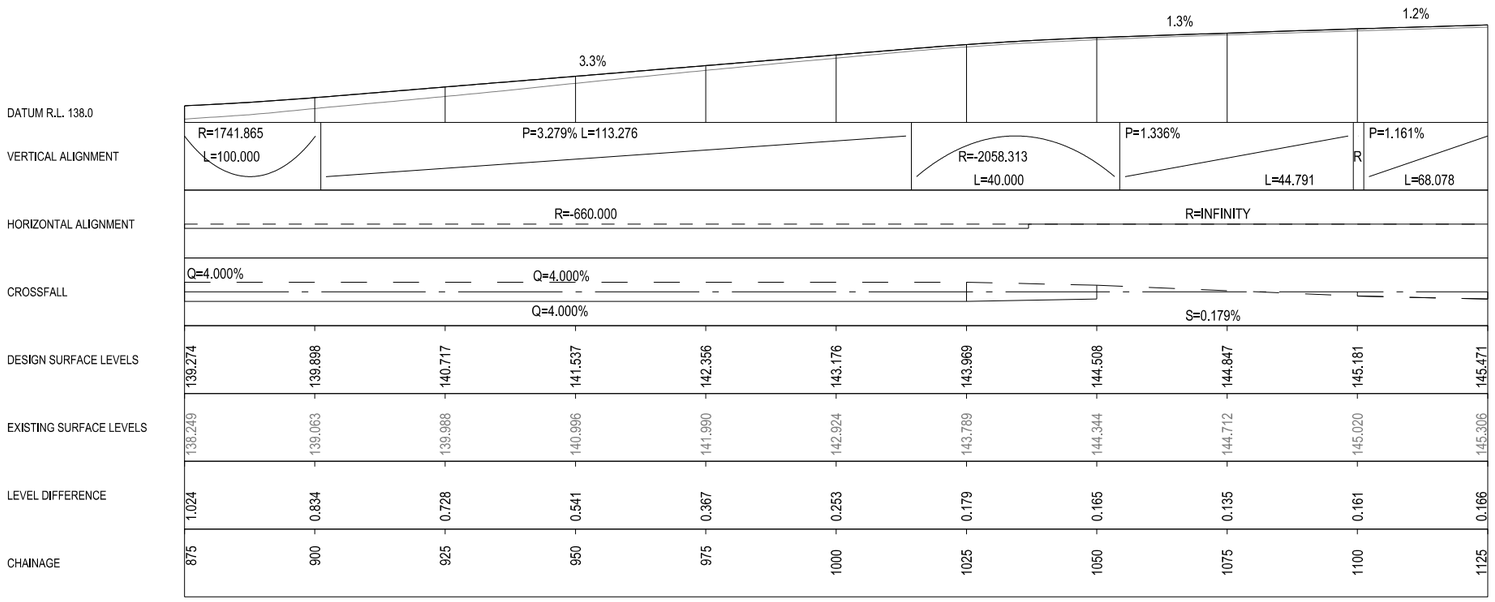
PLOT DATE / TIME: 28/03/2025 6:26:13 PM PLOT BY: DrakeMi

	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
A3
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
LONGITUDINAL SECTION
LONGITUDINAL SECTION RR770 - WYBONG ROAD - MC00 - 625 TO 875

TfNSW REGISTRATION No: DS2025 / 000300 PART A
ISSUE STATUS: 20% CONCEPT DESIGN
EDMS No.: QA1590032
SHEET No.: RD-0016
ISSUE: 1



LONGITUDINAL SECTION - MC00

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
50mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-03-RD.dgn						DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	PLOT DATE / TIME: 28/03/2025 6:26:14 PM	PLOT BY: DrakeMi	CLIENT: NSW GOVERNMENT Transport for NSW
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY	TITLE	NAME	PREPARED FOR: PROJECT SERVICES NORTH
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD	0 10 20 30 40 HORIZONTAL SCALE 1:1000m; 0 2 4 6 8 VERTICAL SCALE 1:200m		DRAWN: M.DRAKE		
								DRG CHECK: TfNSW		
								DESIGN: M.DRAKE		
								DESIGN CHECK: TfNSW		
						CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD		DESIGN MNGR: D.JOHNSON		
								PROJECT MNGR: S.AUSTIN		

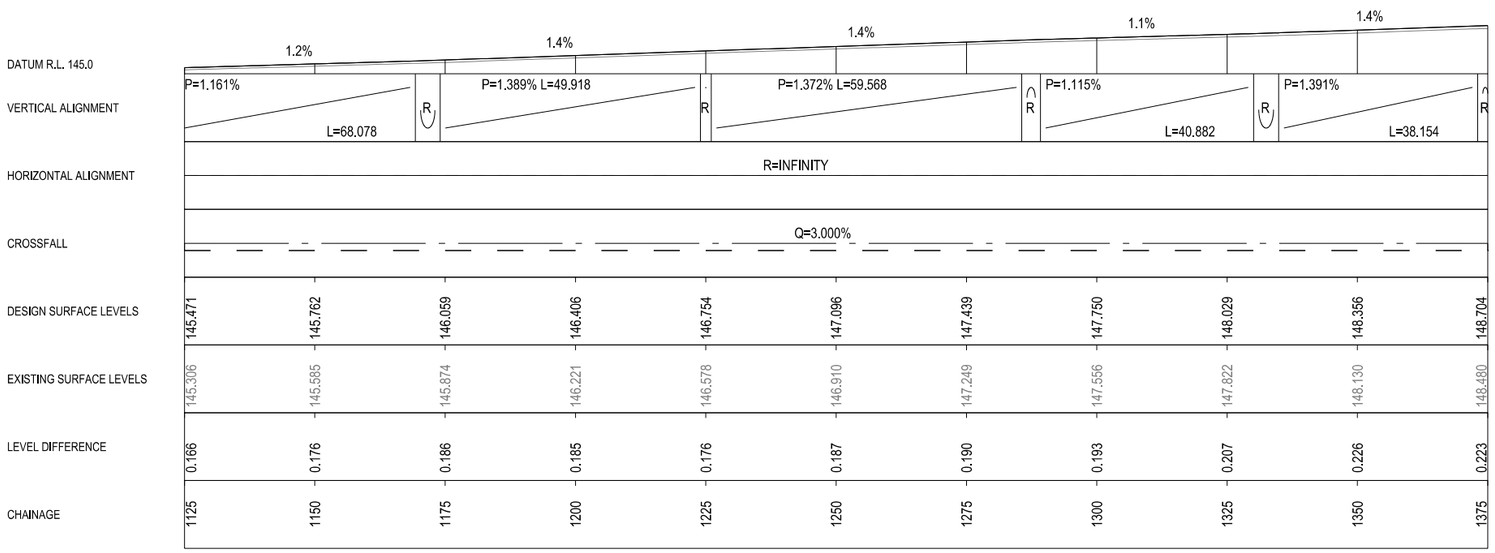
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
LONGITUDINAL SECTION
LONGITUDINAL SECTION RR770 - WYBONG ROAD - MC00 - 875 TO 1125

A3

TfNSW REGISTRATION No.	PART
DS2025 / 000300	A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RD-0017	1

GDA 2020



DATUM R.L. 145.0										
VERTICAL ALIGNMENT										
HORIZONTAL ALIGNMENT										
CROSSFALL										
DESIGN SURFACE LEVELS	145.471	145.762	146.059	146.406	146.754	147.096	147.439	147.750	148.029	148.356	148.704
EXISTING SURFACE LEVELS	145.306	145.585	145.874	146.221	146.578	146.910	147.249	147.566	147.822	148.130	148.480
LEVEL DIFFERENCE	0.166	0.176	0.186	0.185	0.176	0.187	0.190	0.193	0.207	0.226	0.223
CHAINAGE	1125	1150	1175	1200	1225	1250	1275	1300	1325	1350	1375

LONGITUDINAL SECTION - MC00

NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-03-RD.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

DRAWINGS / DESIGN PREPARED BY

PLOT DATE / TIME: 28/03/2025 6:26:14 PM

PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING
0 10 20 30 40
HORIZONTAL SCALE 1:1000m
0 2 4 6 8
VERTICAL SCALE 1:200m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)
HEIGHT DATUM: AHD

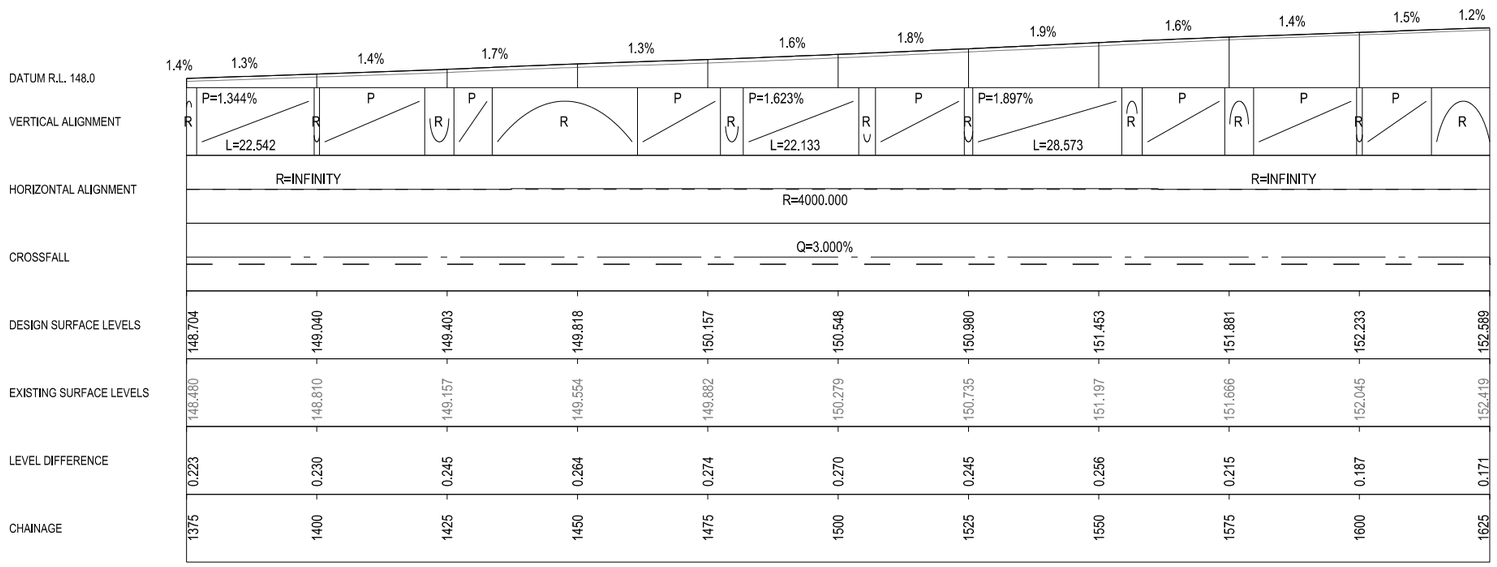
TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
A3
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
LONGITUDINAL SECTION
LONGITUDINAL SECTION RR770 - WYBONG ROAD - MC00 - 1125 TO 1375

TfNSW REGISTRATION No: DS2025 / 000300
PART: A
ISSUE STATUS: 20% CONCEPT DESIGN
EDMS No.: QA1590032
SHEET No.: RD-0018
ISSUE: 1



LONGITUDINAL SECTION - MC00

NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-03-RD.dgn

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

DESIGN LOT CODE: N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
SCALES ON A3 SIZE DRAWING: HORIZONTAL SCALE 1:1000m (0 10 20 30 40); VERTICAL SCALE 1:200m (0 2 4 6 8)
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD
DRAWINGS / DESIGN PREPARED BY

PLOT DATE / TIME: 28/03/2025 6:26:14 PM PLOT BY: DrakeMi

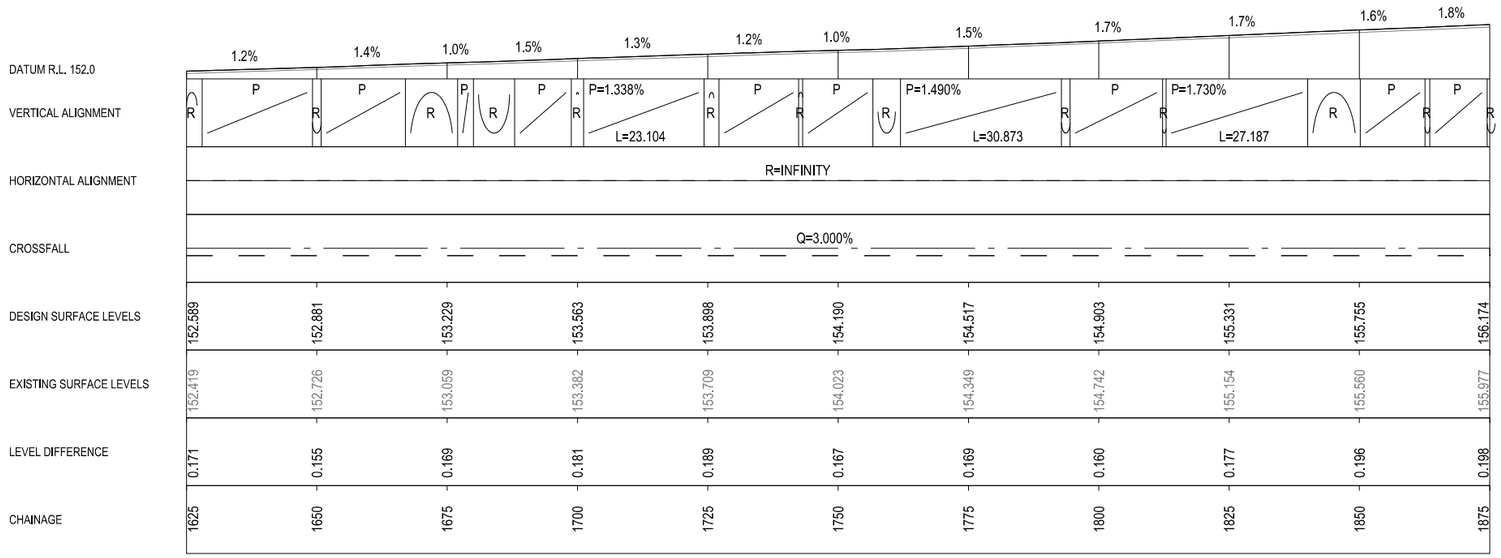
	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
LONGITUDINAL SECTION
LONGITUDINAL SECTION RR770 - WYBONG ROAD - MC00 - 1375 TO 1625

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART A
ISSUE STATUS: 20% CONCEPT DESIGN
EDMS No.: QA1590032
SHEET No.: RD-0019
ISSUE: 1



LONGITUDINAL SECTION - MC00

NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
50mm ON A3 SIZE ORIGINAL

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DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:15 PM

PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING
HORIZONTAL SCALE 1:1000m (0 10 20 30 40)
VERTICAL SCALE 1:200m (0 2 4 6 8)

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

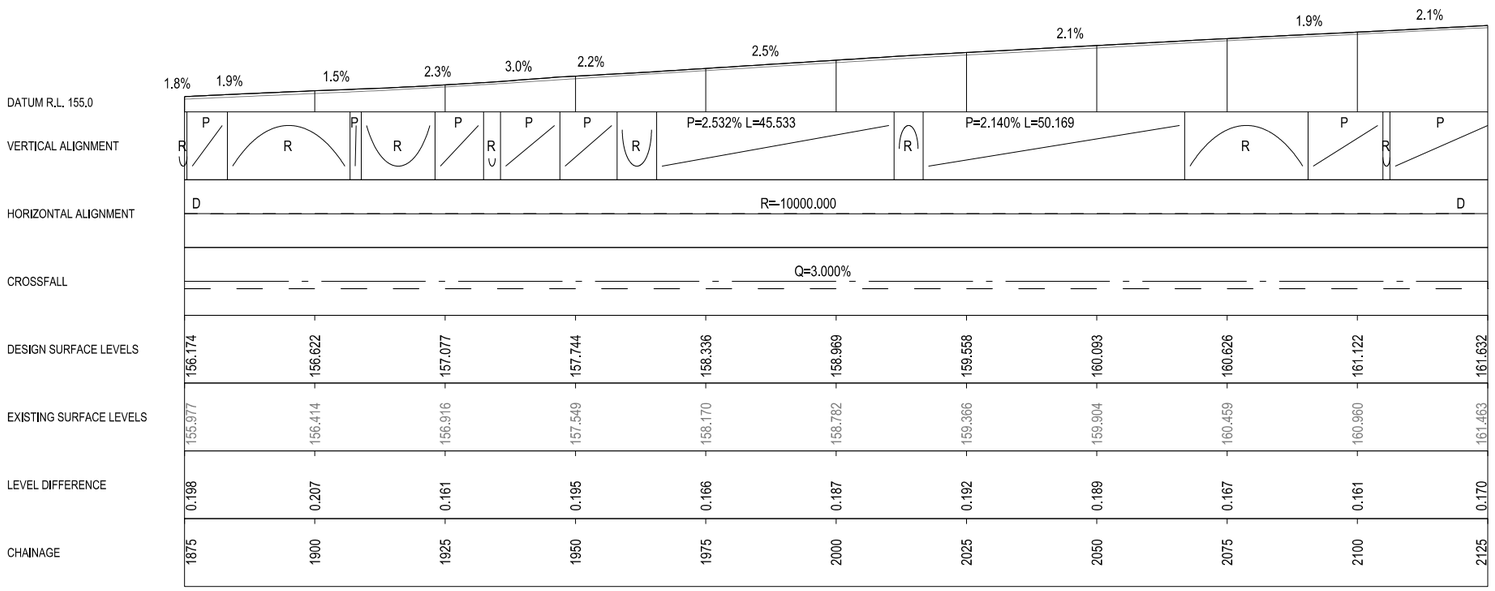
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
LONGITUDINAL SECTION
LONGITUDINAL SECTION RR770 - WYBONG ROAD - MC00 - 1625 TO 1875

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A

ISSUE STATUS: 20% CONCEPT DESIGN EDMS No.: QA1590032 SHEET No.: RD-0020 ISSUE: 1



LONGITUDINAL SECTION - MC00

NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
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DESIGN LOT CODE: N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:15 PM
PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING
0 10 20 30 40
HORIZONTAL SCALE 1:1000m
0 2 4 6 8
VERTICAL SCALE 1:200m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

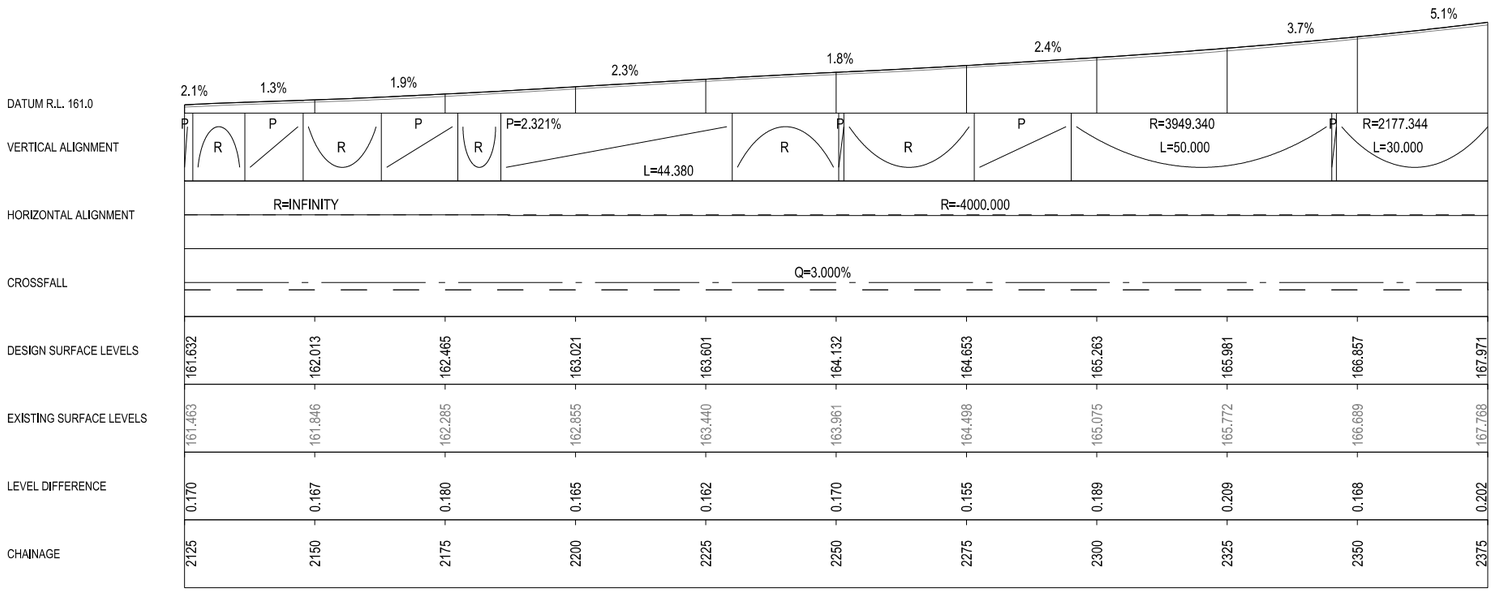
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
LONGITUDINAL SECTION
LONGITUDINAL SECTION RR770 - WYBONG ROAD - MC00 - 1875 TO 2125

A3

TfNSW REGISTRATION No: DS2025 / 000300
PART: A

ISSUE STATUS: 20% CONCEPT DESIGN
EDMS No.: QA1590032
SHEET No.: RD-0021
ISSUE: 1



LONGITUDINAL SECTION - MC00

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

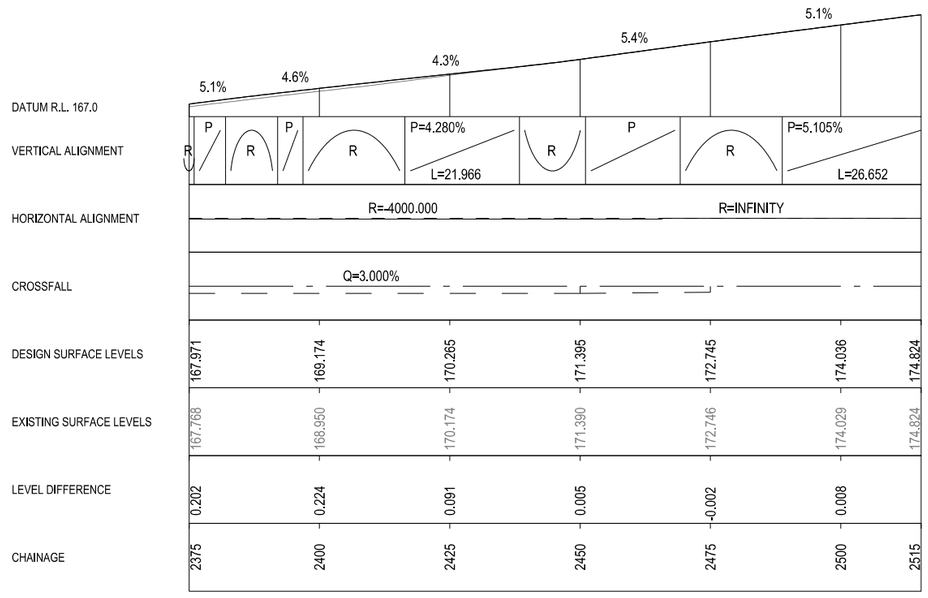
DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-03-RD.dgn	DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	PLOT DATE / TIME: 28/03/2025 6:26:15 PM; PLOT BY: DrakeMi
CLIENT: NSW GOVERNMENT Transport for NSW	MUSWELLBROOK SHIRE COUNCIL RR770 - KAYUGA ROAD PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD 31.100km TO 33.600km SOUTH OF KAYUGA ROAD LONGITUDINAL SECTION LONGITUDINAL SECTION RR770 - WYBONG ROAD - MC00 - 2125 TO 2375	A3	
PREPARED FOR: PROJECT SERVICES NORTH	TfNSW REGISTRATION No: DS2025 / 000300	PART: A	
ISSUE STATUS: 20% CONCEPT DESIGN	EDMS No.: QA1590032	SHEET No.: RD-0022	ISSUE: 1

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING
HORIZONTAL SCALE 1:1000m (0 10 20 30 40)
VERTICAL SCALE 1:200m (0 2 4 6 8)
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN



LONGITUDINAL SECTION - MC00

NOT FOR CONSTRUCTION

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50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-03-RD.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:16 PM

PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING
HORIZONTAL SCALE 1:1000m (0 10 20 30 40)
VERTICAL SCALE 1:200m (0 2 4 6 8)

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

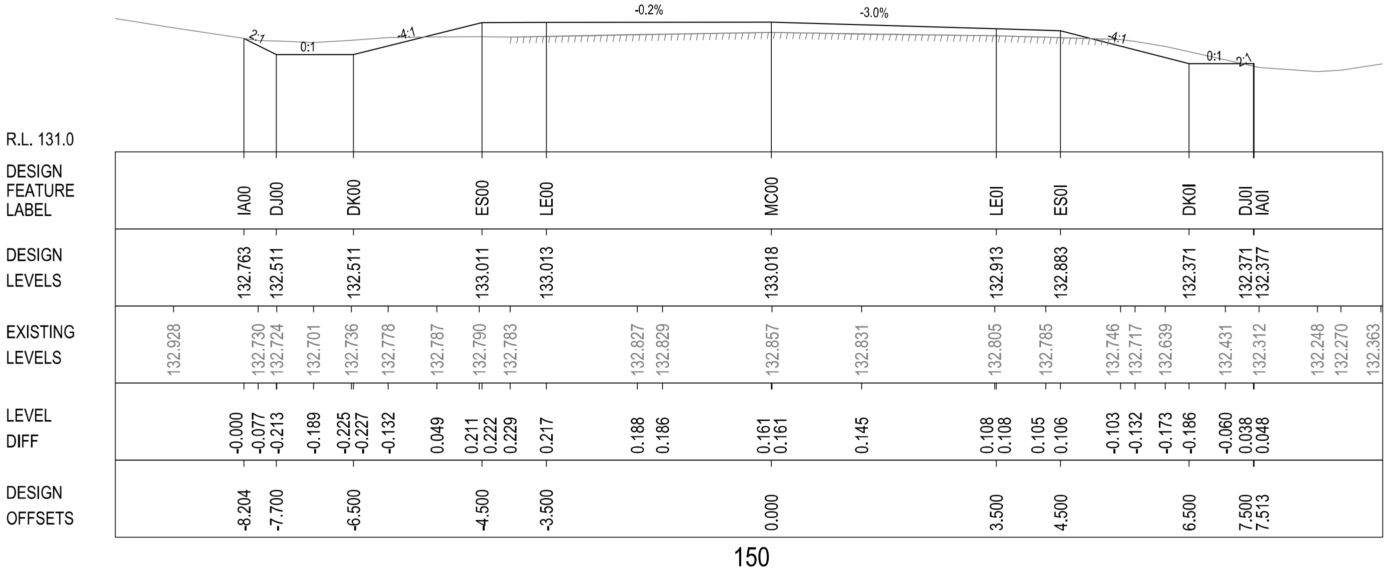
CLIENT: NSW GOVERNMENT Transport for NSW

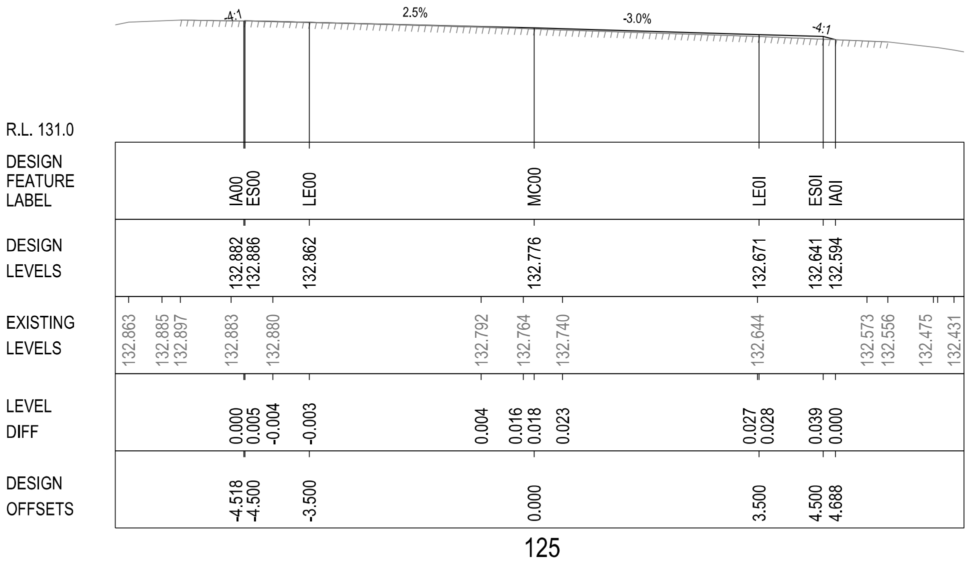
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
A3
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
LONGITUDINAL SECTION
LONGITUDINAL SECTION RR770 - WYBONG ROAD - MC00 - 2375 TO 2515

TfNSW REGISTRATION No: DS2025 / 000300 PART A

ISSUE STATUS: 20% CONCEPT DESIGN
EDMS No.: QA1590032
SHEET No.: RD-0023
ISSUE: 1





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50mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME
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EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

DRAWINGS / DESIGN PREPARED BY

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

PLOT DATE / TIME: 28/03/2025 6:26:16 PM PLOT BY: DrakeMi

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: Transport for NSW

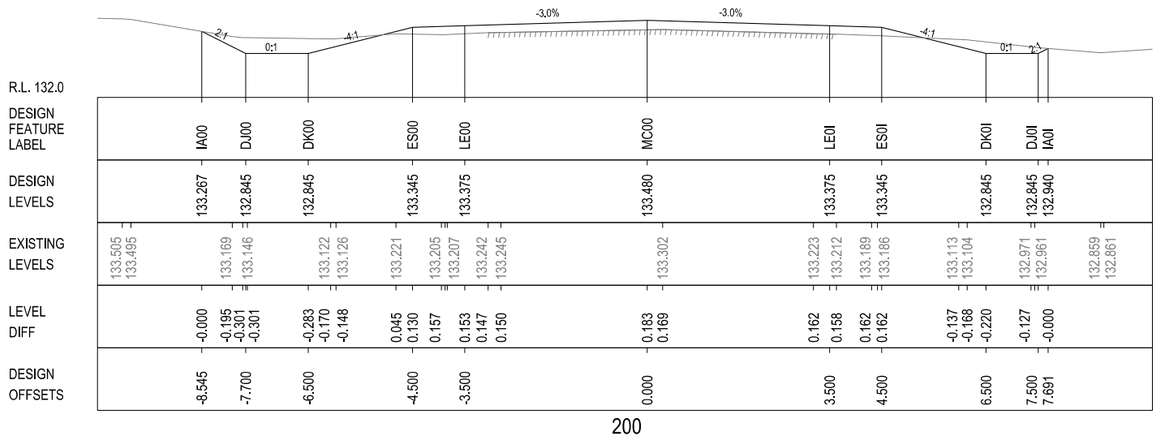
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 125 TO 150

A3

TfNSW REGISTRATION No. DS2025 / 000300 PART A

ISSUE STATUS: 20% CONCEPT DESIGN | EDMS No.: QA1590032 | SHEET No.: RC-0001 | ISSUE: 1



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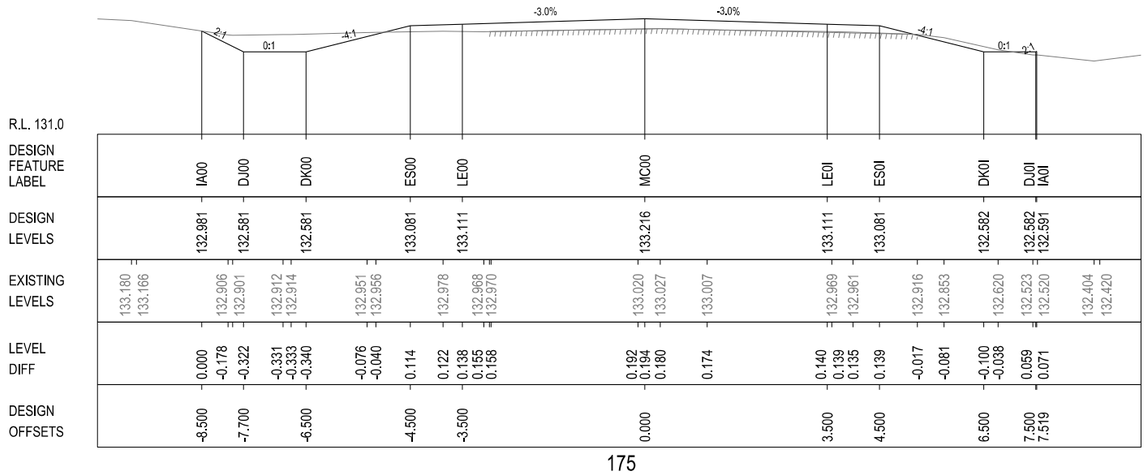

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THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:17 PM PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

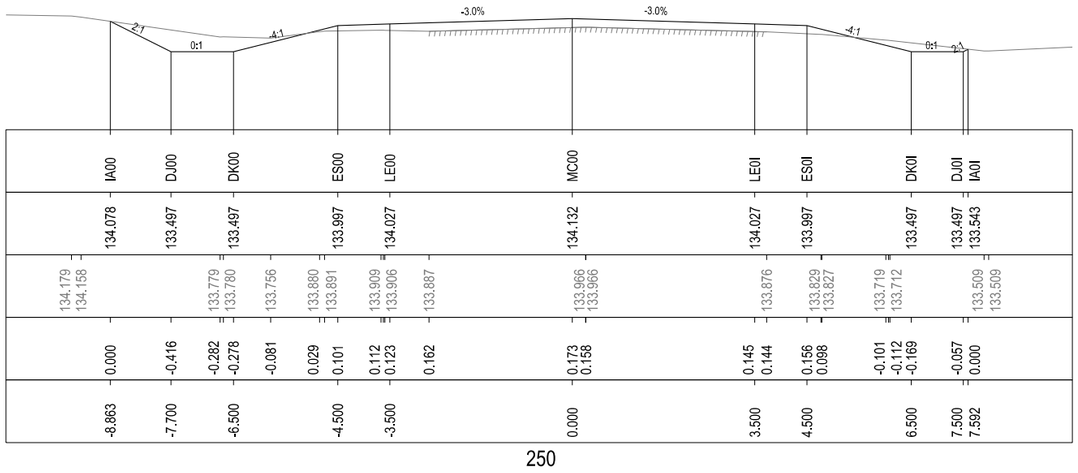
PREPARED FOR: PROJECT SERVICES NORTH

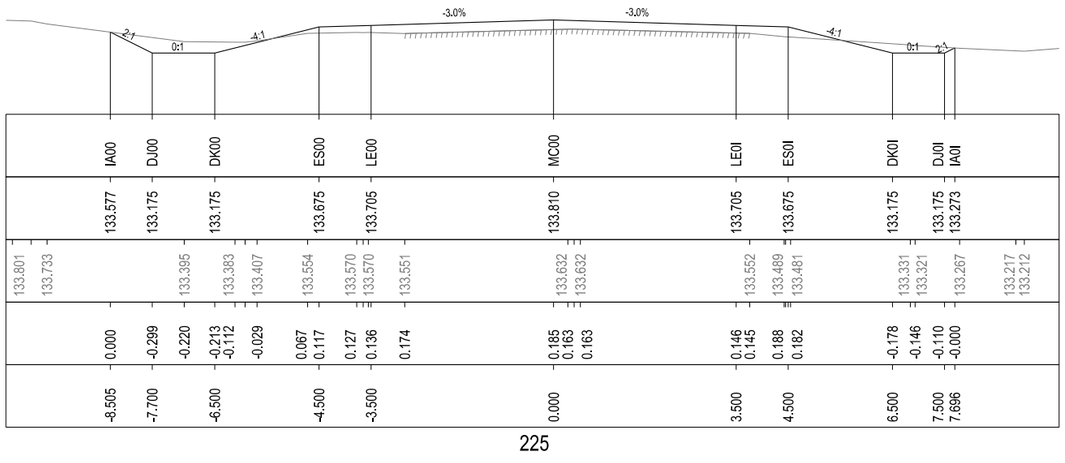
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 175 TO 200

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A

ISSUE STATUS: 20% CONCEPT DESIGN EDMS No.: QA1590032 SHEET No.: RC-0002 ISSUE: 1





THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn	DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	PLOT DATE / TIME: 28/03/2025 6:26:17 PM; PLOT BY: DrakeMi
EXTERNAL REFERENCE FILES	REV: 01	DATE: 31-03-25	AMENDMENT / REVISION DESCRIPTION: 20% CONCEPT DESIGN ISSUED FOR REVIEW
WVR No.: 01	APPROVAL: MD	SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m	DRAWINGS / DESIGN PREPARED BY
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)	HEIGHT DATUM: AHD		

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

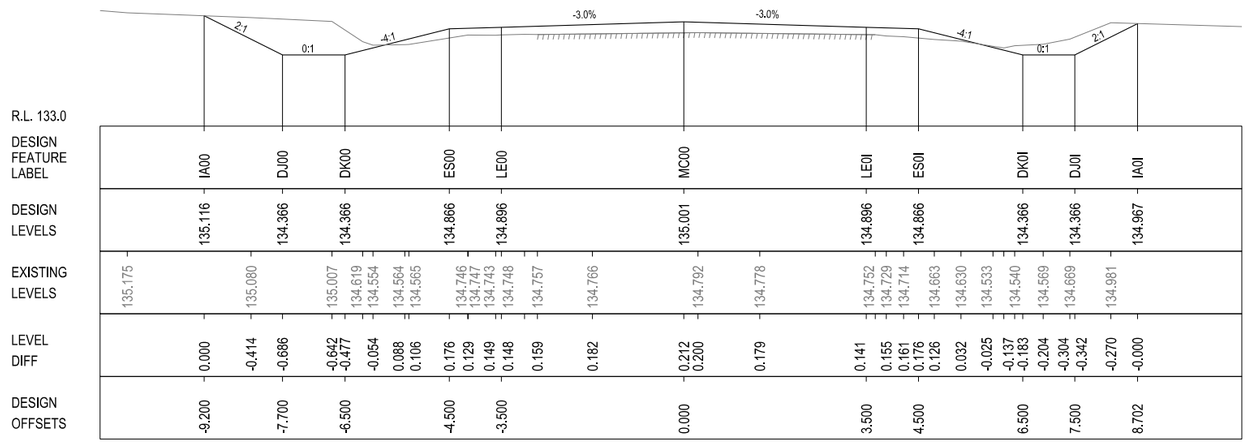
CLIENT: NSW GOVERNMENT Transport for NSW

PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 225 TO 250

A3

TfNSW REGISTRATION No: DS2025 / 000300			PART: A
ISSUE STATUS: 20% CONCEPT DESIGN	EDMS No.: QA1590032	SHEET No.: RC-0003	ISSUE: 1



NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn					DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	PLOT DATE / TIME: 28/03/2025 6:26:18 PM; PLOT BY: DrakeMi
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD	0 1 2 3 4 SCALE 1:100m	
						CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020); HEIGHT DATUM: AHD	

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

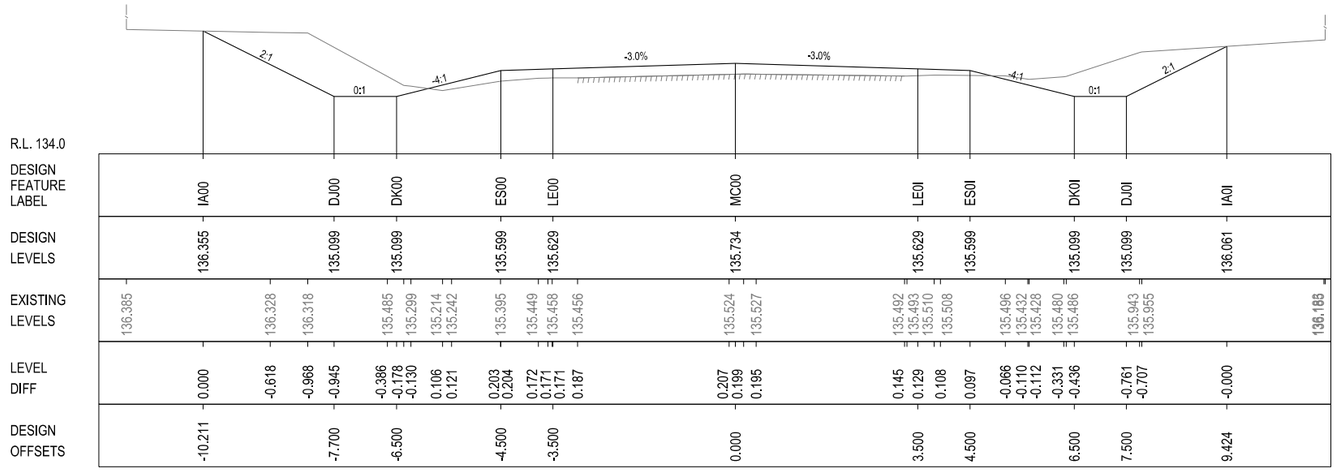
PREPARED FOR: PROJECT SERVICES NORTH

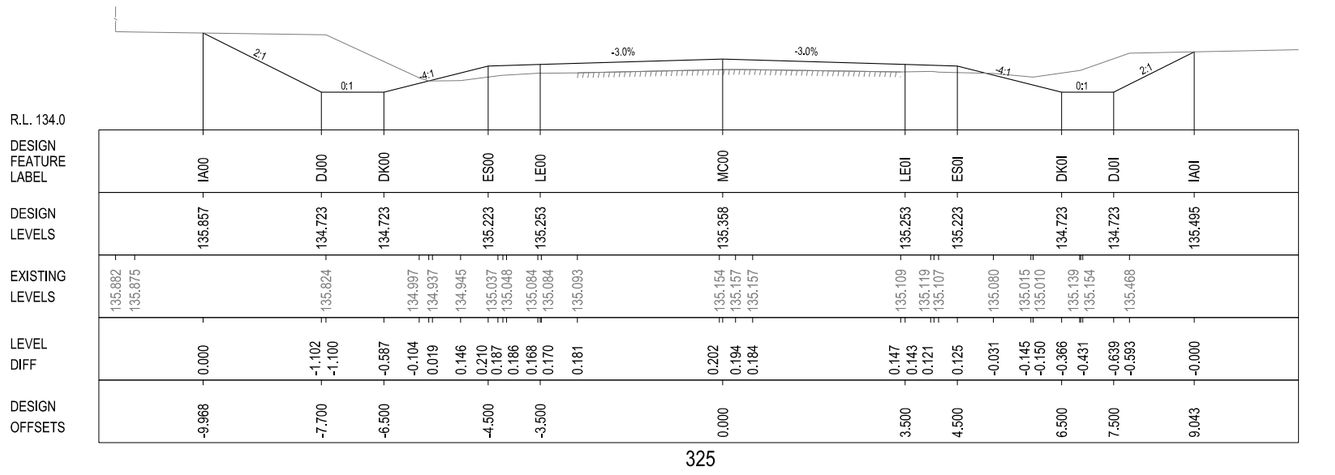
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 275 TO 300

A3

TfNSW REGISTRATION No: DS2025 / 000300 — PART: A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RC-0004	1





NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn	DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	PLOT DATE / TIME: 28/03/2025 6:26:18 PM; PLOT BY: DrakeMi
CLIENT: NSW GOVERNMENT Transport for NSW	MUSWELLBROOK SHIRE COUNCIL RR770 - KAYUGA ROAD PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD 31.100km TO 33.600km SOUTH OF KAYUGA ROAD CROSS SECTIONS RR770 - WYBONG ROAD - MC00 - 325 TO 350	A3	

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

DRAWINGS / DESIGN PREPARED BY

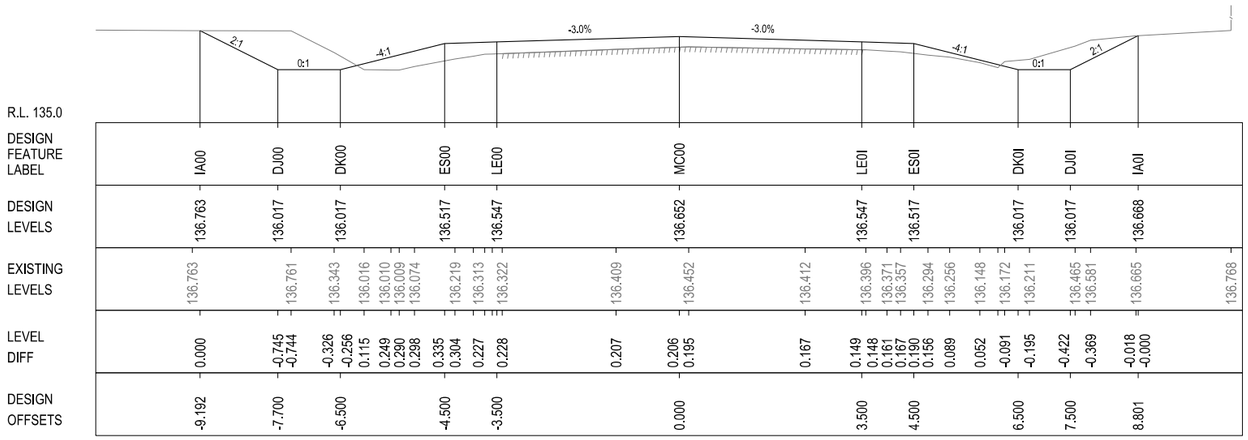
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

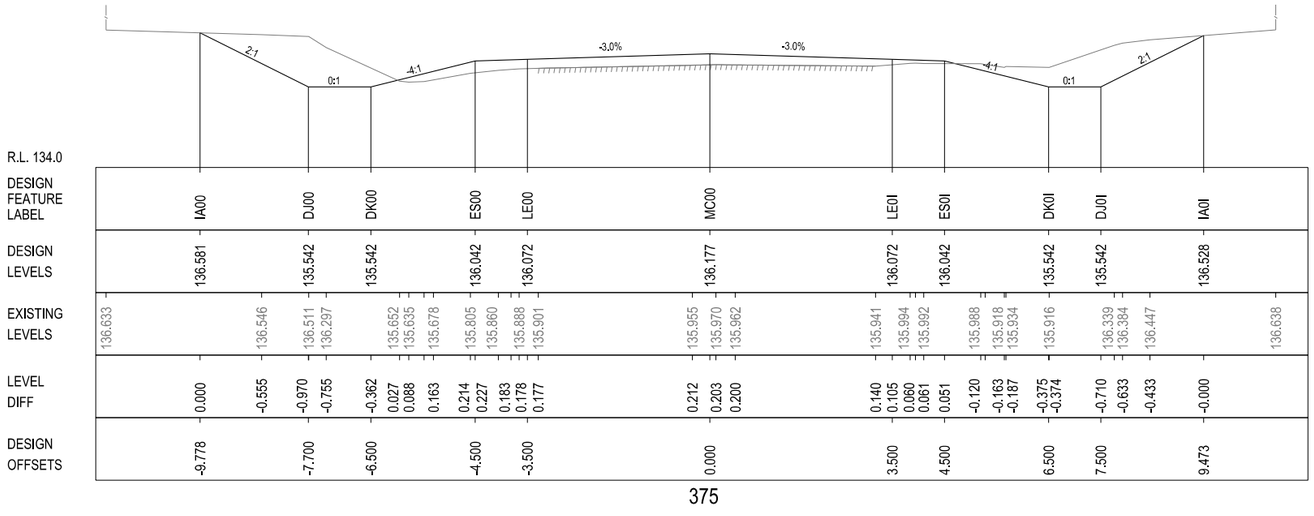
TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

PREPARED FOR: PROJECT SERVICES NORTH

TfNSW REGISTRATION No: DS2025 / 000300 — PART: A

ISSUE STATUS: 20% CONCEPT DESIGN | EDMS No.: QA1590032 | SHEET No.: RC-0005 | ISSUE: 1





NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

DESIGN LOT CODE: N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD
DRAWINGS / DESIGN PREPARED BY

PLOT DATE / TIME	28/03/2025 6:26:19 PM
PLOT BY	DrakeMi
TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

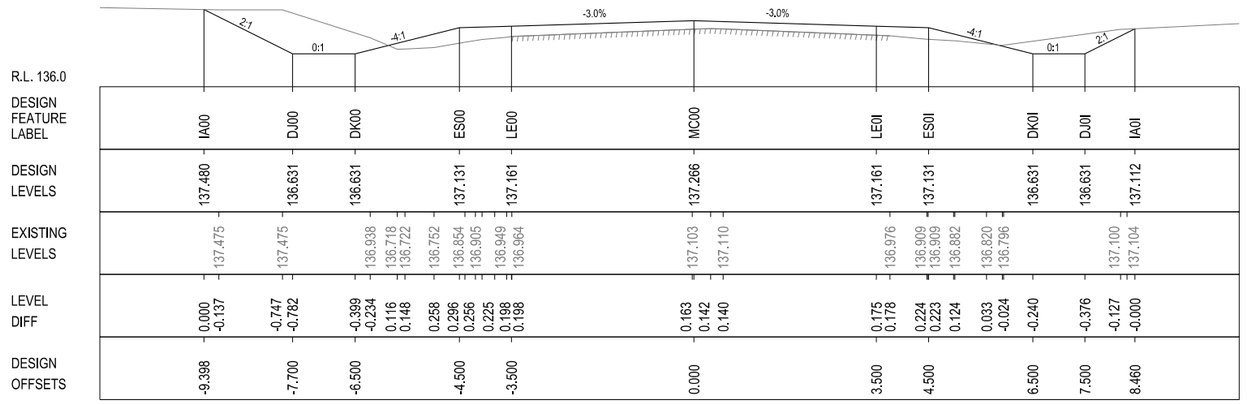
CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 375 TO 400

A3

TINSW REGISTRATION No: DS2025 / 000300 PART A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RC-0006	1



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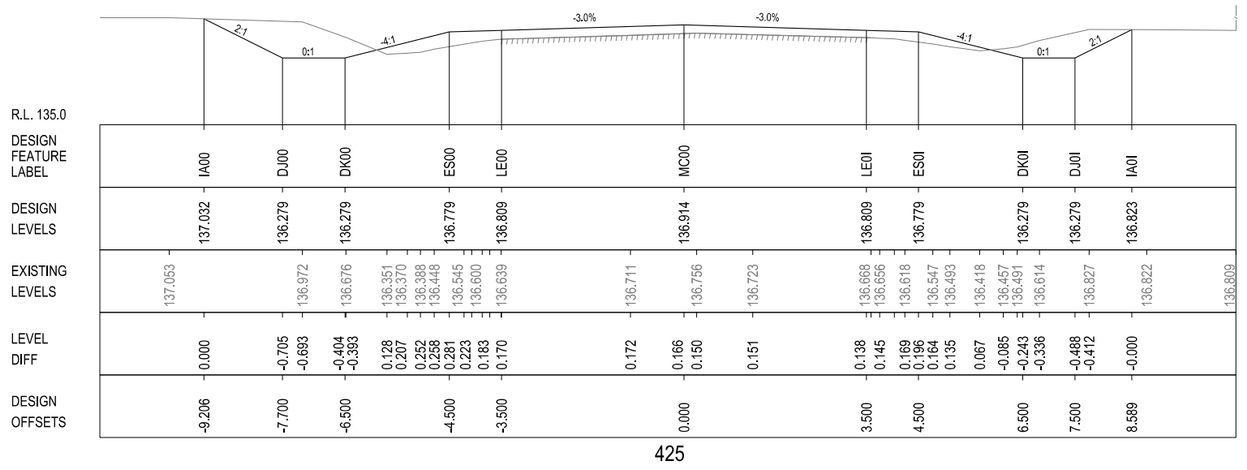


425

NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn	DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	PLOT DATE / TIME: 28/03/2025 6:26:19 PM; PLOT BY: DrakeMi
EXTERNAL REFERENCE FILES	SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m	DRAWINGS / DESIGN PREPARED BY	TITLE / NAME
REV 01 · DATE 31-03-25 · AMENDMENT / REVISION DESCRIPTION: 20% CONCEPT DESIGN ISSUED FOR REVIEW · WVR No. 01 · APPROVAL MD	CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) · HEIGHT DATUM: AHD		DRAWN M.DRAKE; DRG CHECK TfNSW; DESIGN M.DRAKE; DESIGN CHECK TfNSW; DESIGN MNGR D.JOHNSON; PROJECT MNGR S.AUSTIN

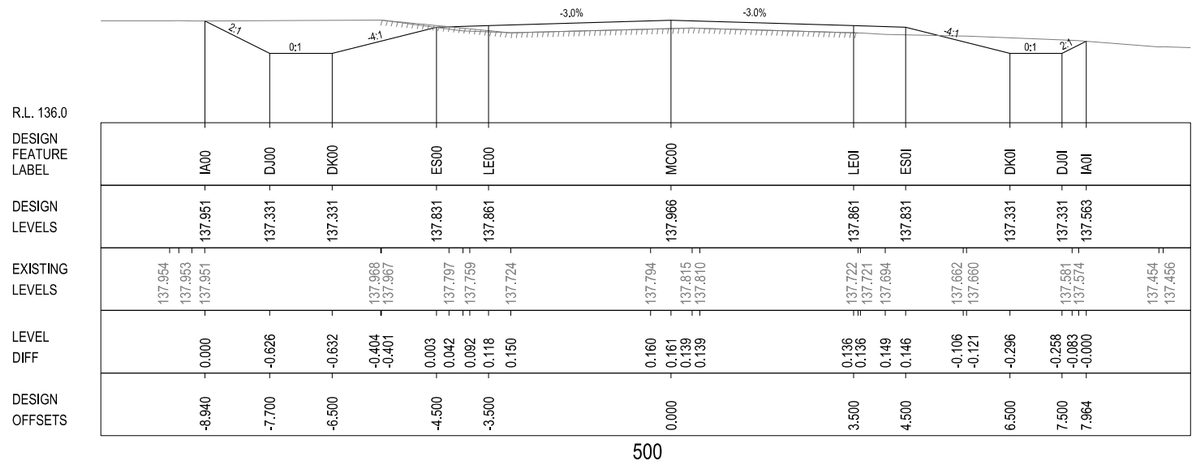
CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

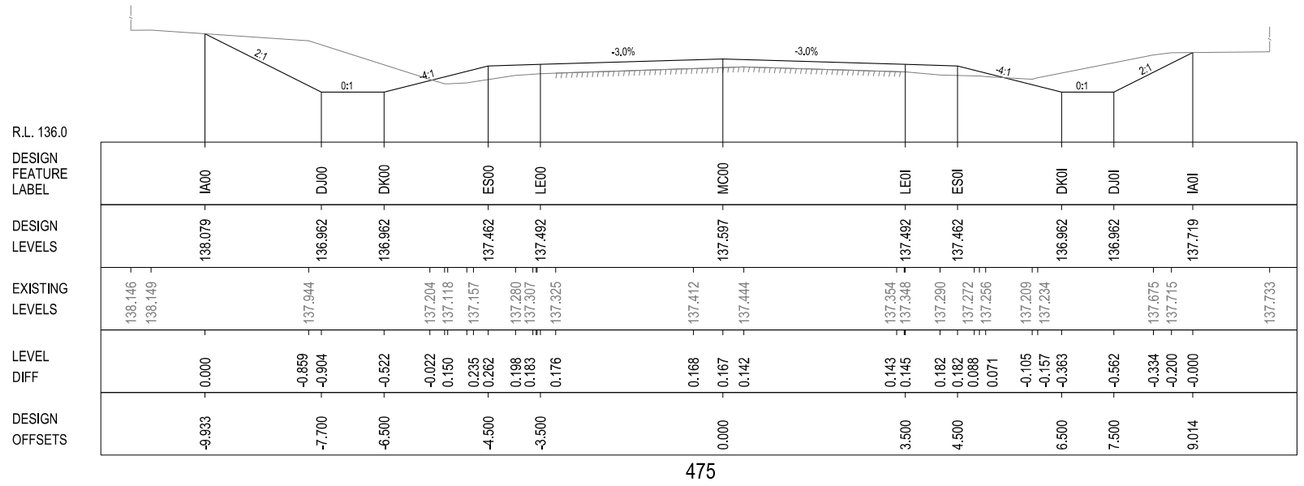
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 425 TO 450

A3

TfNSW REGISTRATION No: DS2025 / 000300 · PART A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RC-0007	1





NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

DESIGN LOT CODE: N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD
DRAWINGS / DESIGN PREPARED BY

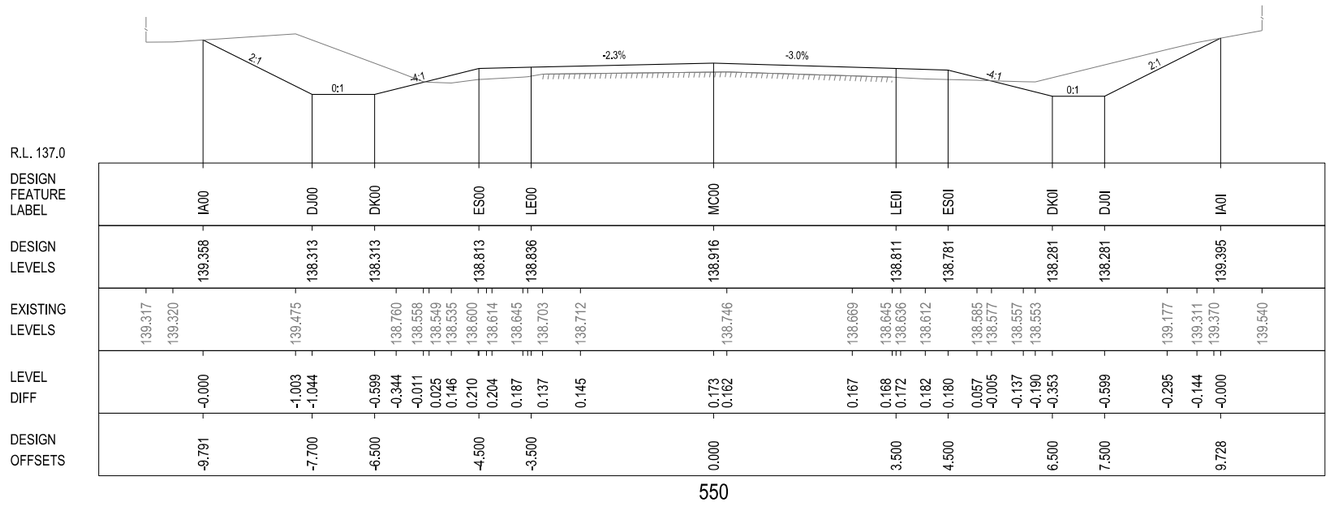
PLOT DATE / TIME	28/03/2025 6:26:19 PM	PLOT BY	DrakeMi
TITLE	NAME		
DRAWN	M.DRAKE		
DRG CHECK	TfNSW		
DESIGN	M.DRAKE		
DESIGN CHECK	TfNSW		
DESIGN MNGR	D.JOHNSON		
PROJECT MNGR	S.AUSTIN		

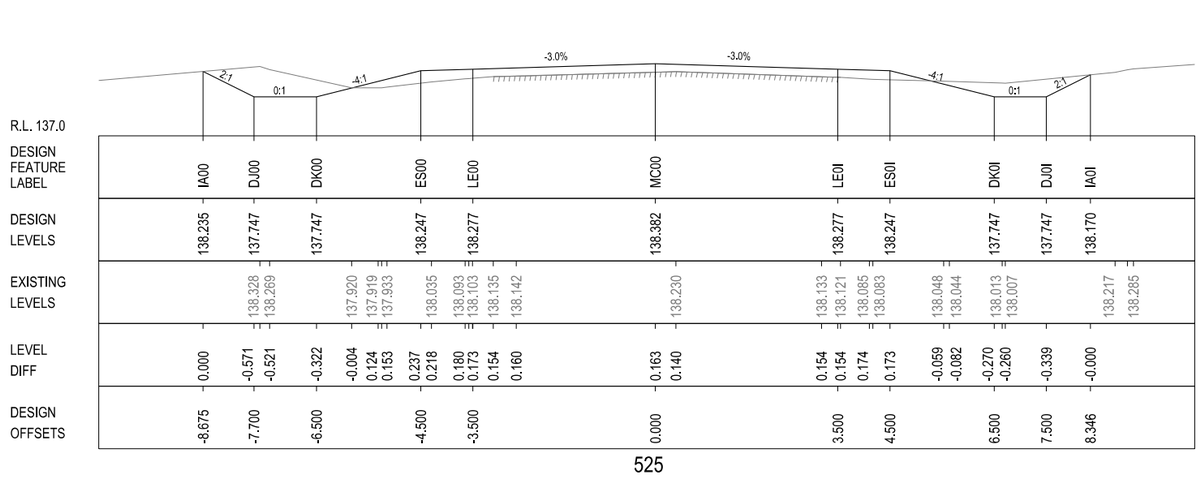
CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 475 TO 500

A3

TfNSW REGISTRATION No.	DS2025 / 000300		PART A
ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RC-0008	1





NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn					DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD	0 1 2 3 4 SCALE 1:100m	
						CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD	

PLOT DATE / TIME	PLOT BY
28/03/2025 6:26:20 PM	DrakeMi

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

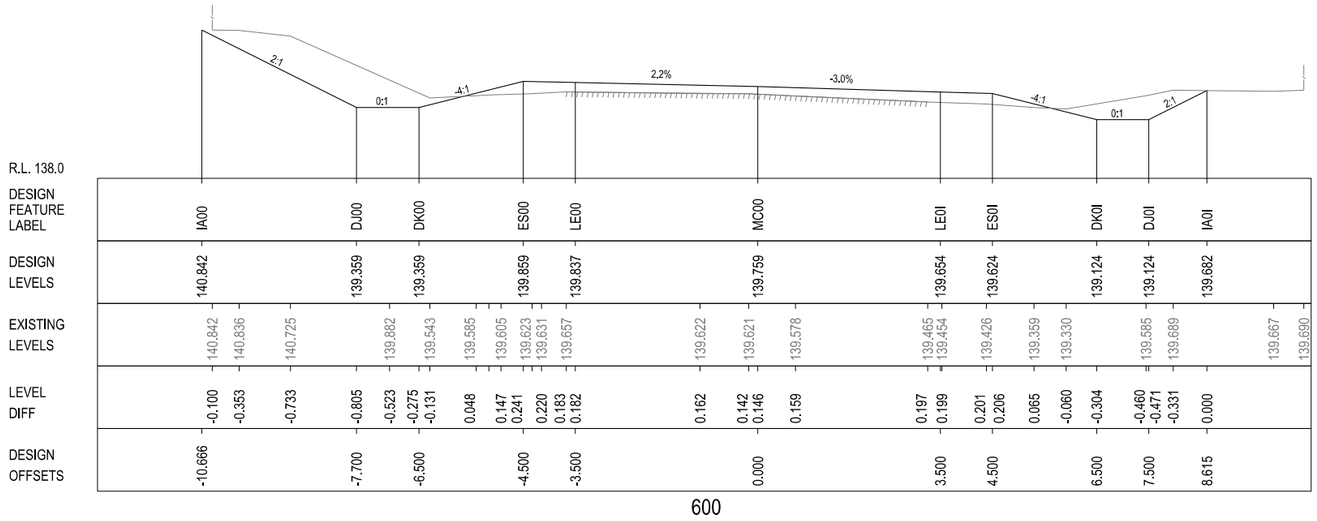
PREPARED FOR: PROJECT SERVICES NORTH

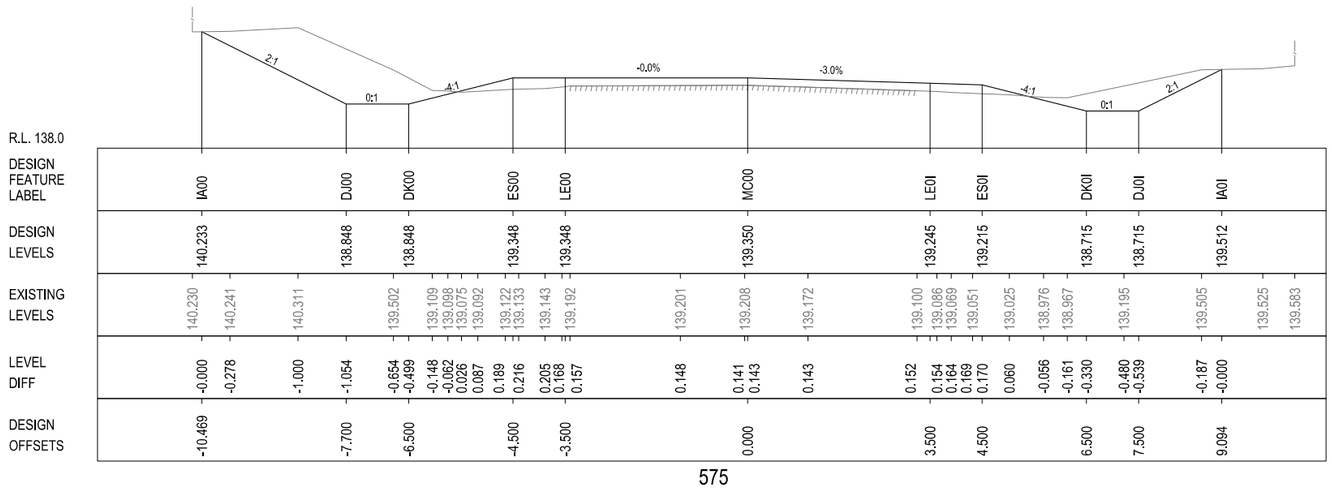
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 525 TO 550

A3

TfNSW REGISTRATION No: DS2025 / 000300 — PART: A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RC-0009	1





THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 150mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn	DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	PLOT DATE / TIME: 28/03/2025 6:26:20 PM; PLOT BY: DrakeMi
CLIENT: NSW GOVERNMENT Transport for NSW	MUSWELLBROOK SHIRE COUNCIL RR770 - KAYUGA ROAD PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD 31.100km TO 33.600km SOUTH OF KAYUGA ROAD CROSS SECTIONS RR770 - WYBONG ROAD - MC00 - 575 TO 600	A3	

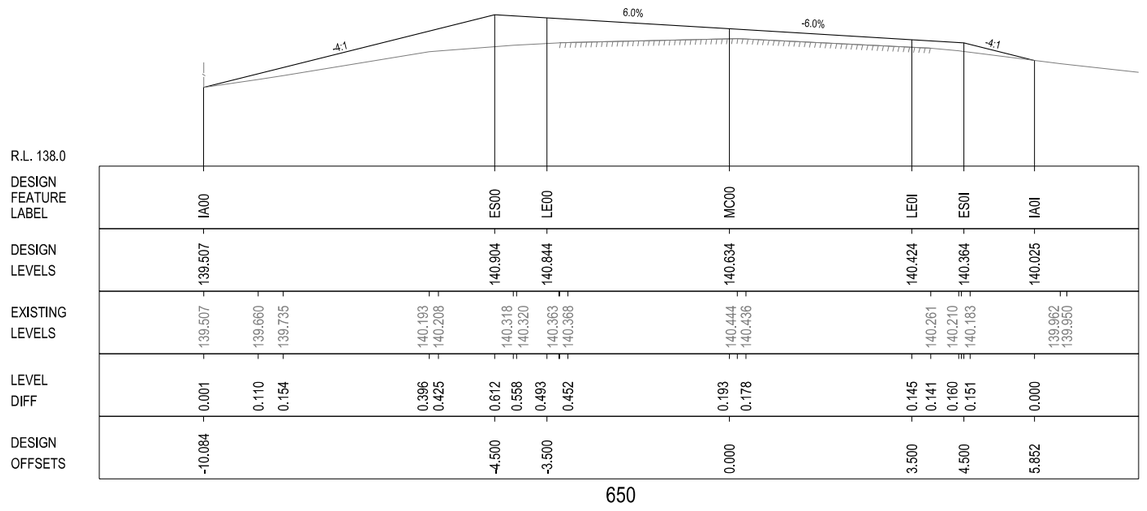
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

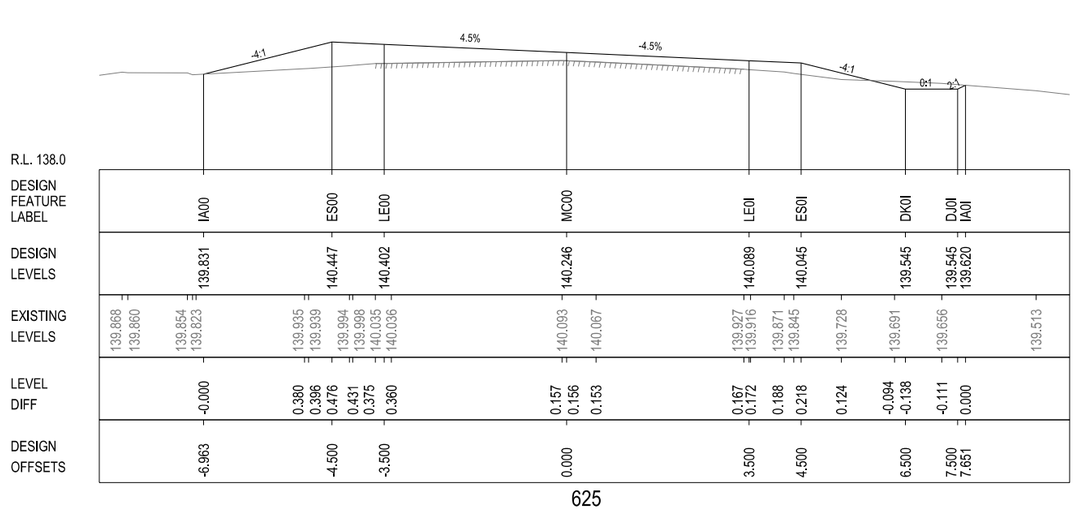
SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD
DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

PREPARED FOR: PROJECT SERVICES NORTH

TfNSW REGISTRATION No: DS2025 / 000300 PART: A
ISSUE STATUS: 20% CONCEPT DESIGN EDMS No.: QA1590032 SHEET No.: RC-0010 ISSUE: 1





NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:20 PM

PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

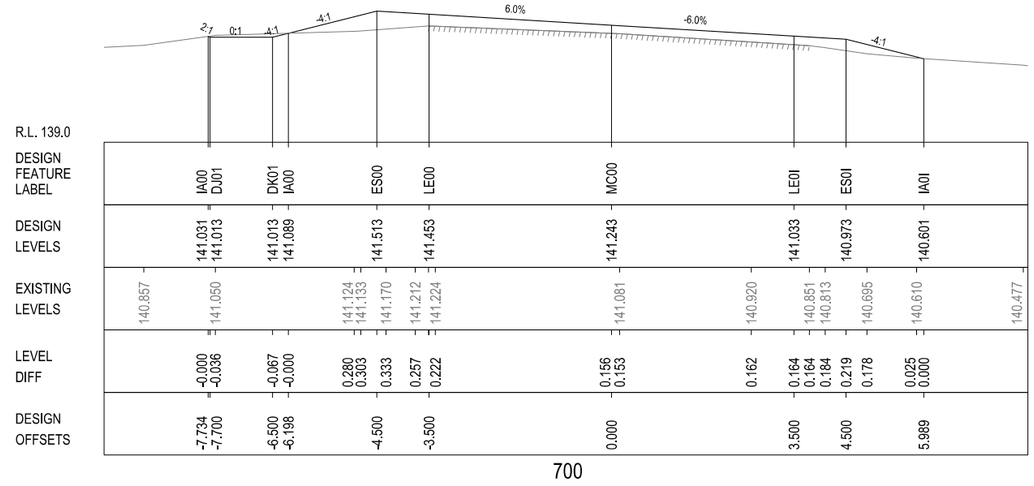
PREPARED FOR: PROJECT SERVICES NORTH

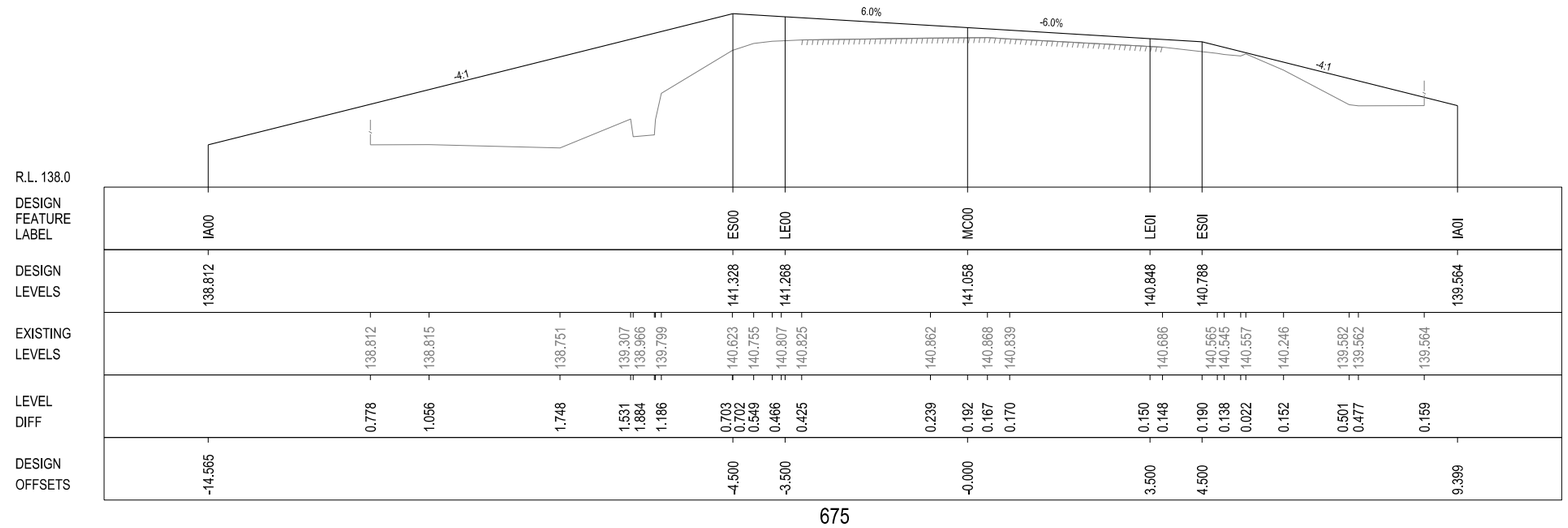
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 625 TO 650

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A

ISSUE STATUS: 20% CONCEPT DESIGN | EDMS No.: QA1590032 | SHEET No.: RC-0011 | ISSUE: 1





THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

DESIGN LOT CODE: N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD
DRAWINGS / DESIGN PREPARED BY

PLOT DATE / TIME: 28/03/2025 6:26:21 PM PLOT BY: DrakeMi

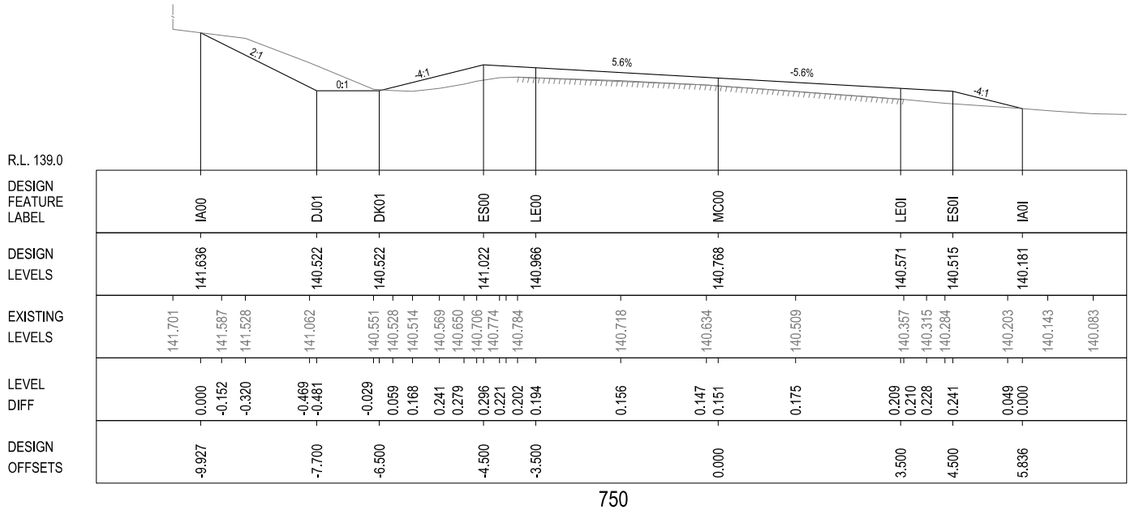
TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 675 TO 700

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A
ISSUE STATUS: 20% CONCEPT DESIGN
EDMS No.: QA1590032
SHEET No.: RC-0012
ISSUE: 1



NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:21 PM

PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

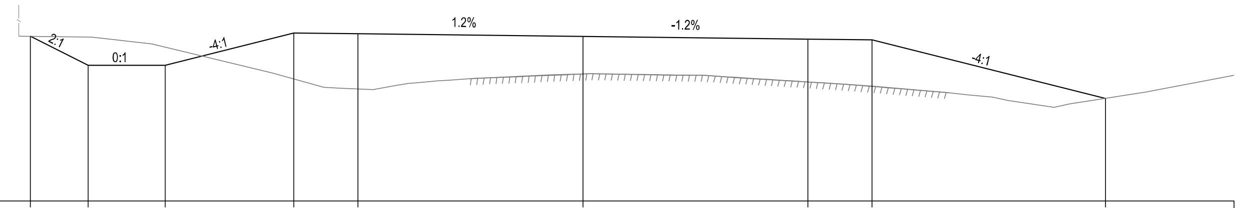
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 725 TO 750

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART A

ISSUE STATUS: 20% CONCEPT DESIGN | EDMS No.: QA1590032 | SHEET No.: RC-0013 | ISSUE: 1



R.L. 137.0

DESIGN FEATURE LABEL	IA00, DJ01, DK01, ES00, LE00, MC00, LE0I, ES0I, IA0I
DESIGN LEVELS	139.557, 139.107, 139.107, 139.607, 139.595, 139.554, 139.513, 139.501, 138.593
EXISTING LEVELS	139.560, 139.542, 139.437, 138.987, 138.764, 138.752, 138.730, 138.823, 138.835, 138.874, 138.900, 138.959, 138.975, 138.952, 138.950, 138.910, 138.813, 138.781, 138.681, 138.647, 138.614, 138.559, 138.454, 138.505, 138.689
LEVEL DIFF	0.000, -0.436, -0.435, -0.330, -0.280, 0.537, 0.712, 0.837, 0.847, 0.863, 0.763, 0.749, 0.705, 0.675, 0.601, 0.582, 0.577, 0.586, 0.582, 0.615, 0.666, 0.693, 0.719, 0.715, 0.520, 0.482, 0.418, 0.412, 0.339, 0.228, -0.000
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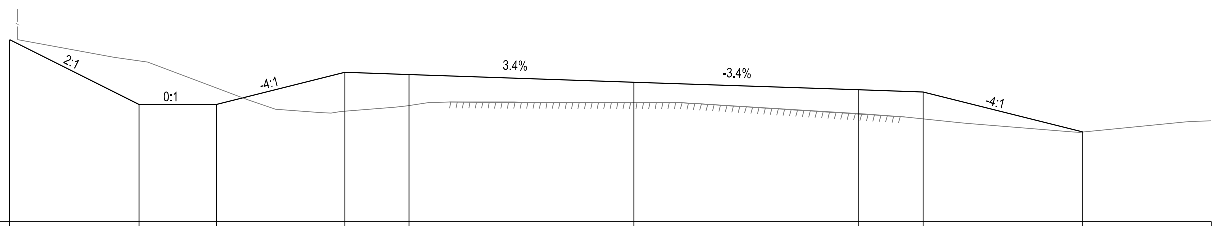
800



R.L. 138.0

DESIGN FEATURE LABEL	IA00, DJ01, DK01, ES00, LE00, MC00, LE0I, ES0I, IA0I
DESIGN LEVELS	140.831, 139.823, 139.823, 140.323, 140.289, 140.169, 140.050, 140.016, 139.394
EXISTING LEVELS	140.831, 140.556, 140.482, 139.894, 139.750, 139.694, 139.714, 139.781, 139.802, 139.859, 139.863, 139.852, 139.851, 139.675, 139.628, 139.541, 139.530, 139.395, 139.389, 139.549, 139.556
LEVEL DIFF	-0.062, -0.537, -0.677, -0.659, -0.259, 0.054, 0.304, 0.536, 0.594, 0.604, 0.515, 0.483, 0.412, 0.404, 0.385, 0.319, 0.294, 0.369, 0.372, 0.398, 0.418, 0.336, 0.319, 0.041, -0.000
DESIGN OFFSETS	-9.716, -7.700, -6.500, -4.500, -3.500, 0.000, 3.500, 4.500, 6.986

775

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50mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME
C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

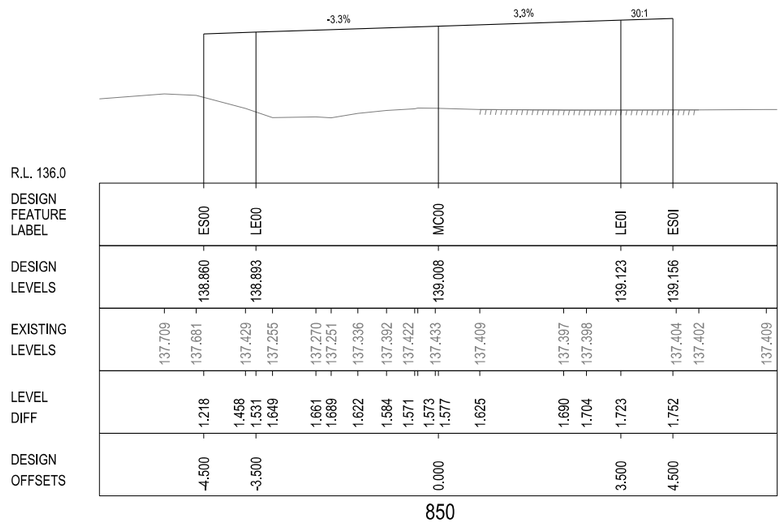
DESIGN LOT CODE: N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m
DRAWINGS / DESIGN PREPARED BY
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)
HEIGHT DATUM: AHD

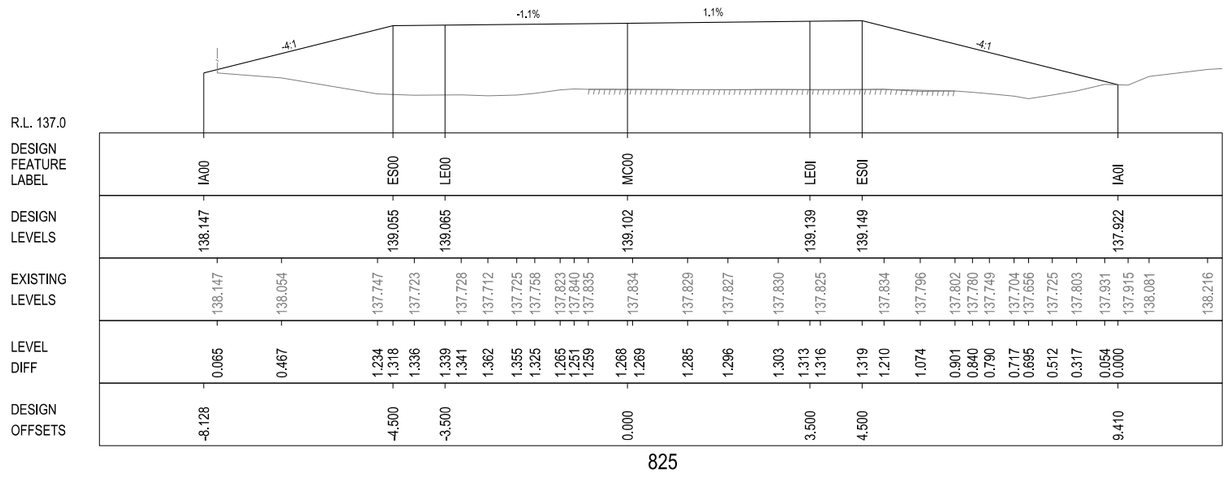
PLOT DATE / TIME: 28/03/2025 6:26:21 PM
PLOT BY: DrakeMi

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 775 TO 800
A3
TfNSW REGISTRATION No. DS2025 / 000300
PART A
ISSUE STATUS: 20% CONCEPT DESIGN
EDMS No.: QA1590032
SHEET No.: RC-0014
ISSUE: 1





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DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn						DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD	0 1 2 3 4 SCALE 1:100m	
						CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD	

PLOT DATE / TIME	PLOT BY
28/03/2025 6:26:22 PM	DrakeMi

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

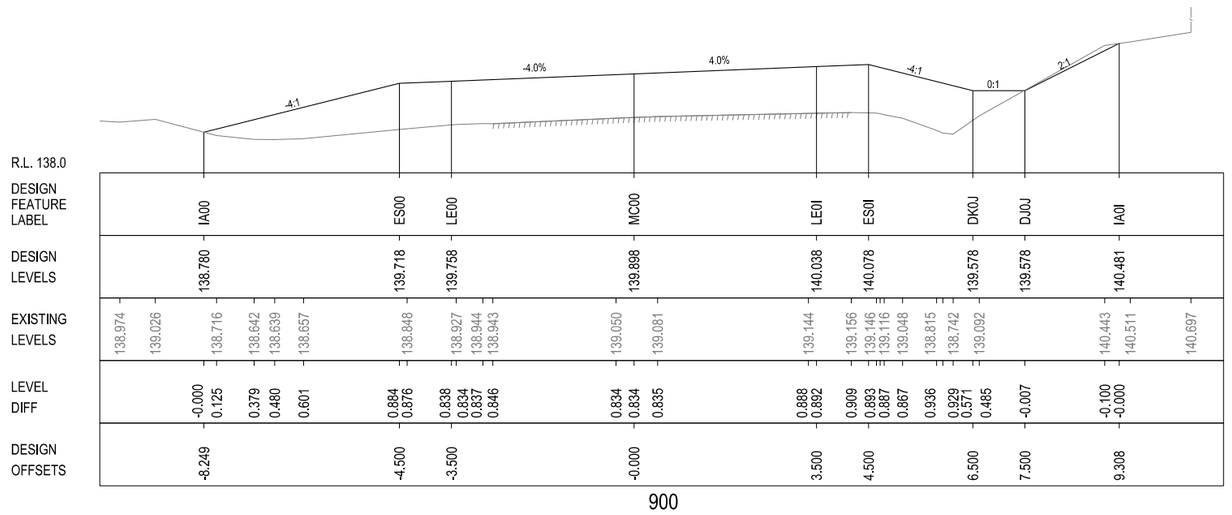
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 825 TO 850

A3

TfNSW REGISTRATION No: DS2025 / 000300 — PART: A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RC-0015	1



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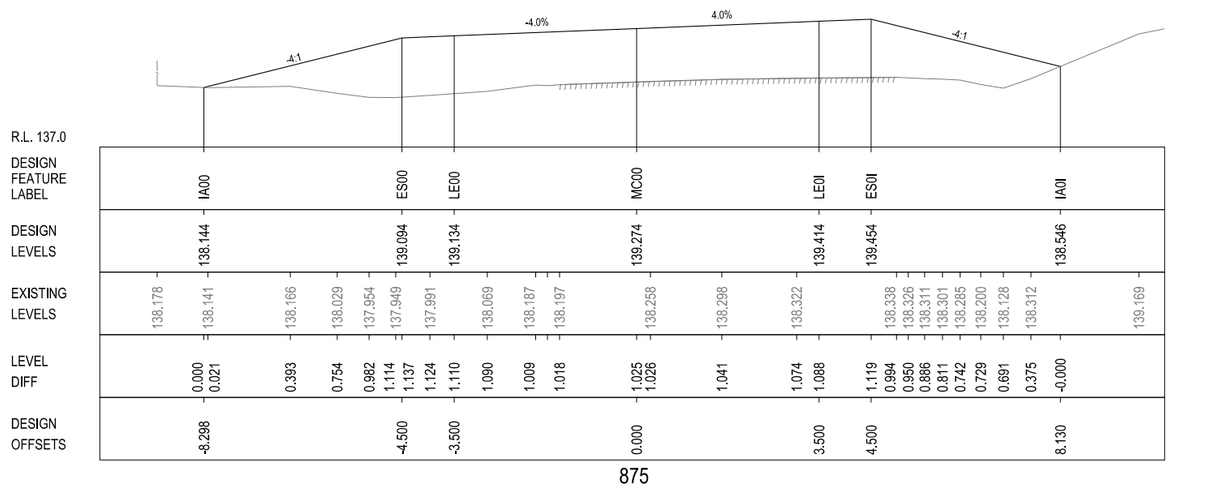

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DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:22 PM

PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

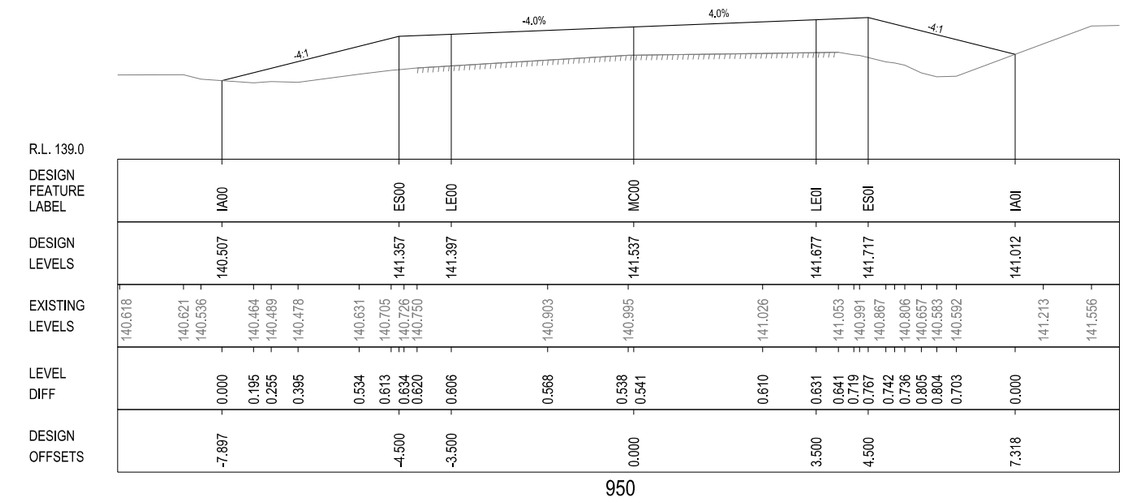
PREPARED FOR: PROJECT SERVICES NORTH

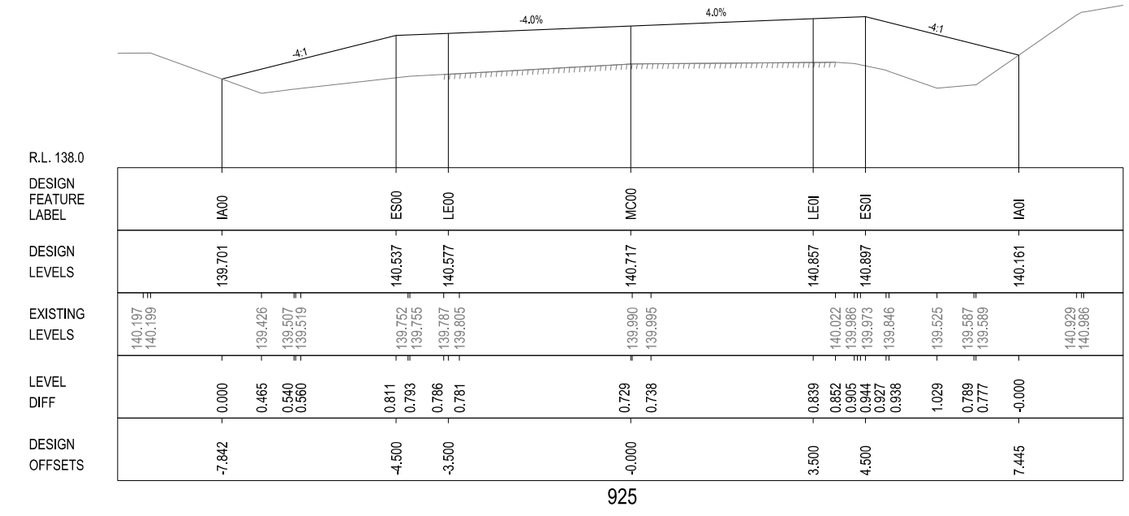
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 875 TO 900

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A

ISSUE STATUS: 20% CONCEPT DESIGN EDMS No.: QA1590032 SHEET No.: RC-0016 ISSUE: 1





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DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn	DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	PLOT DATE / TIME: 28/03/2025 6:26:22 PM; PLOT BY: DrakeMi
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		CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020); HEIGHT DATUM: AHD	

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

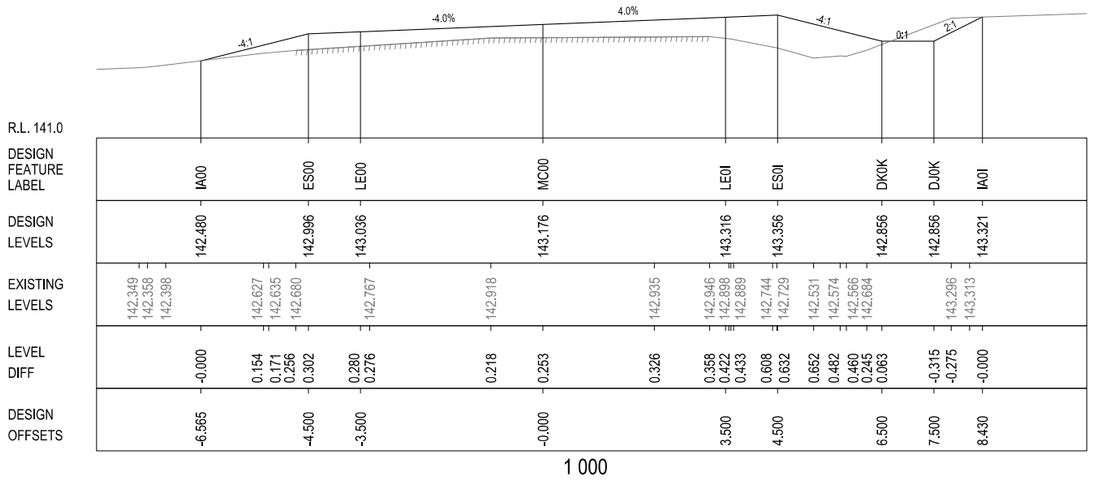
CLIENT: NSW GOVERNMENT Transport for NSW

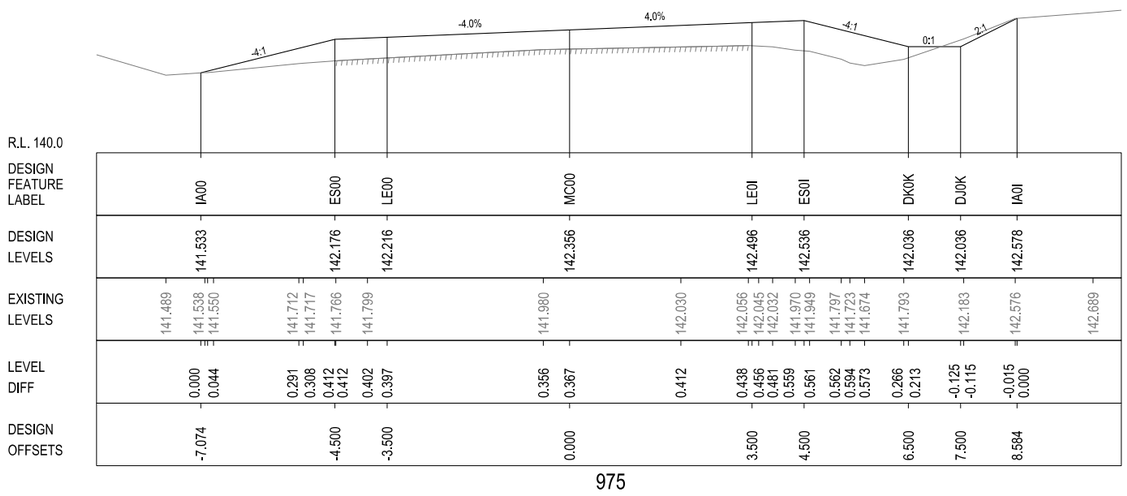
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 925 TO 950

A3

TfNSW REGISTRATION No: DS2025 / 000300				PART: A
ISSUE STATUS: 20% CONCEPT DESIGN	EDMS No.: QA1590032	SHEET No.: RC-0017	ISSUE: 1	





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DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn					DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	PLOT DATE / TIME: 28/03/2025 6:26:23 PM; PLOT BY: DrakeMi
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD	0 1 2 3 4 SCALE 1:100m	
						CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020); HEIGHT DATUM: AHD	

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
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PROJECT MNGR	S.AUSTIN

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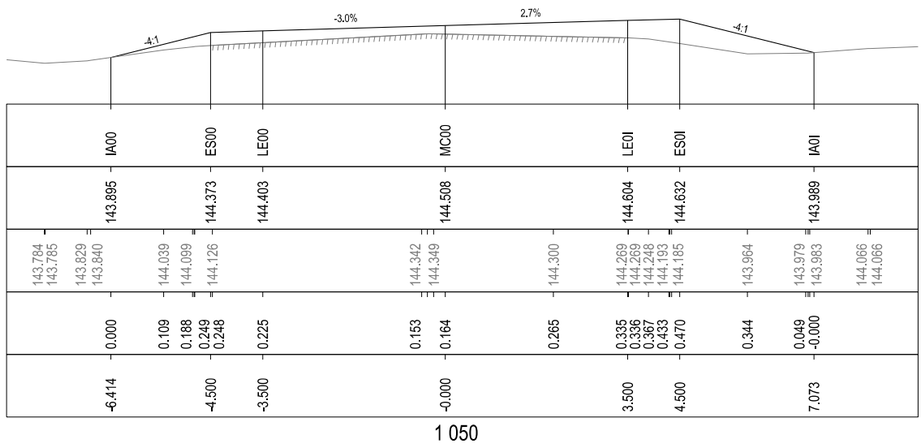
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 975 TO 1 000

A3

TfNSW REGISTRATION No: DS2025 / 000300				PART: A
ISSUE STATUS: 20% CONCEPT DESIGN	EDMS No.: QA1590032	SHEET No.: RC-0018	ISSUE: 1	



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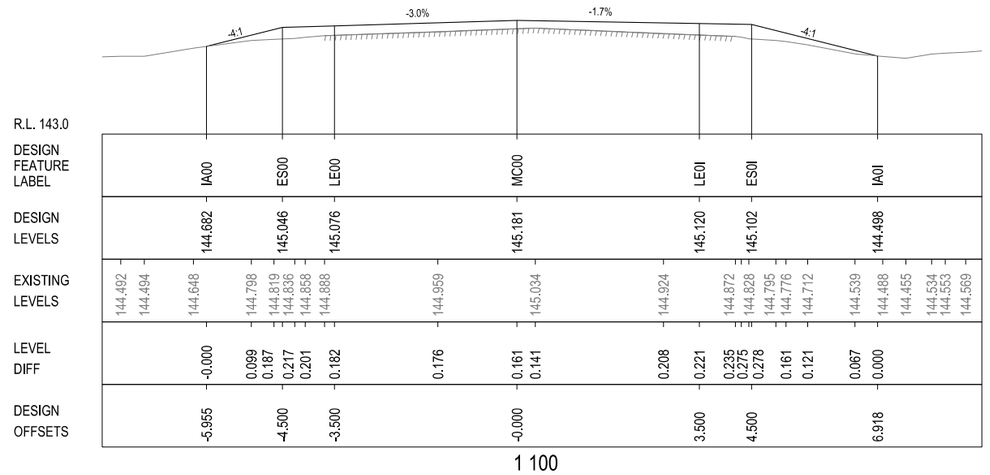

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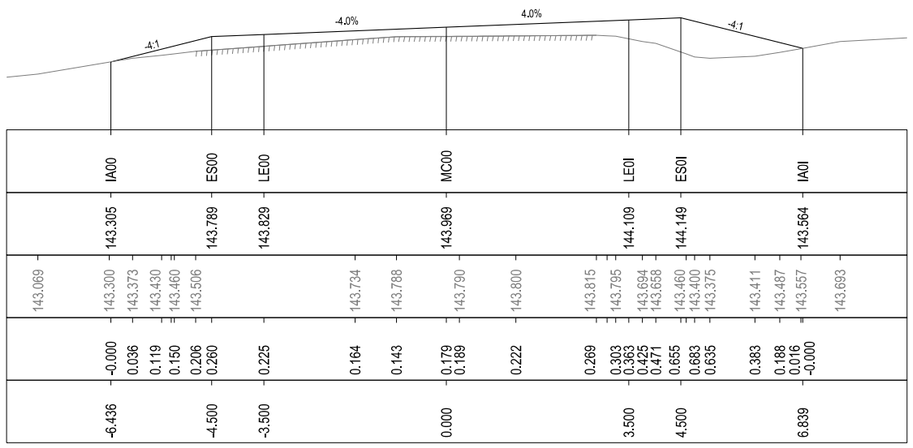

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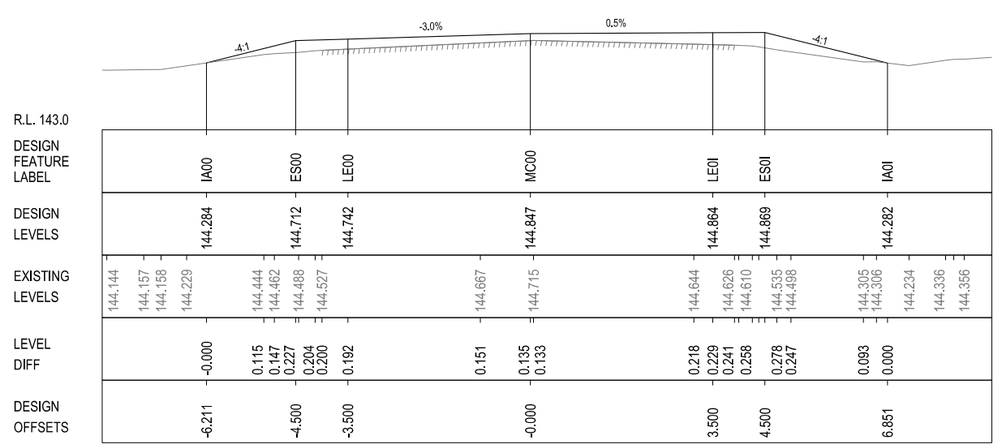

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DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

DESIGN LOT CODE: N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD
DRAWINGS / DESIGN PREPARED BY

PLOT DATE / TIME: 28/03/2025 6:26:23 PM PLOT BY: DrakeMi

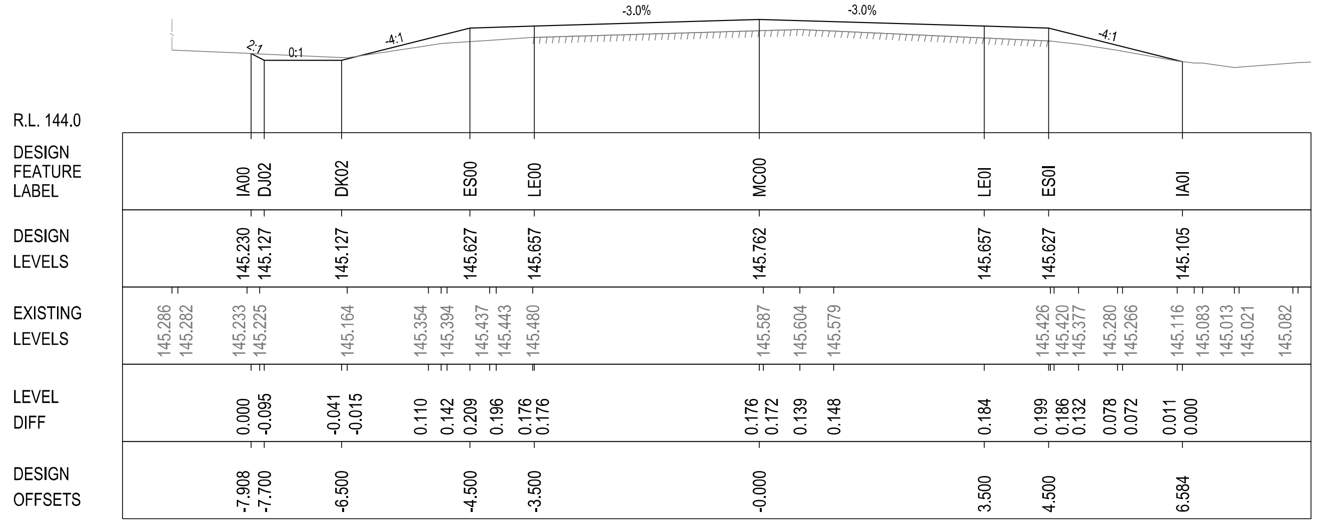
	NAME
TITLE	
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 1 025 TO 1 100

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A
ISSUE STATUS: 20% CONCEPT DESIGN
EDMS No.: QA1590032
SHEET No.: RC-0019
ISSUE: 1



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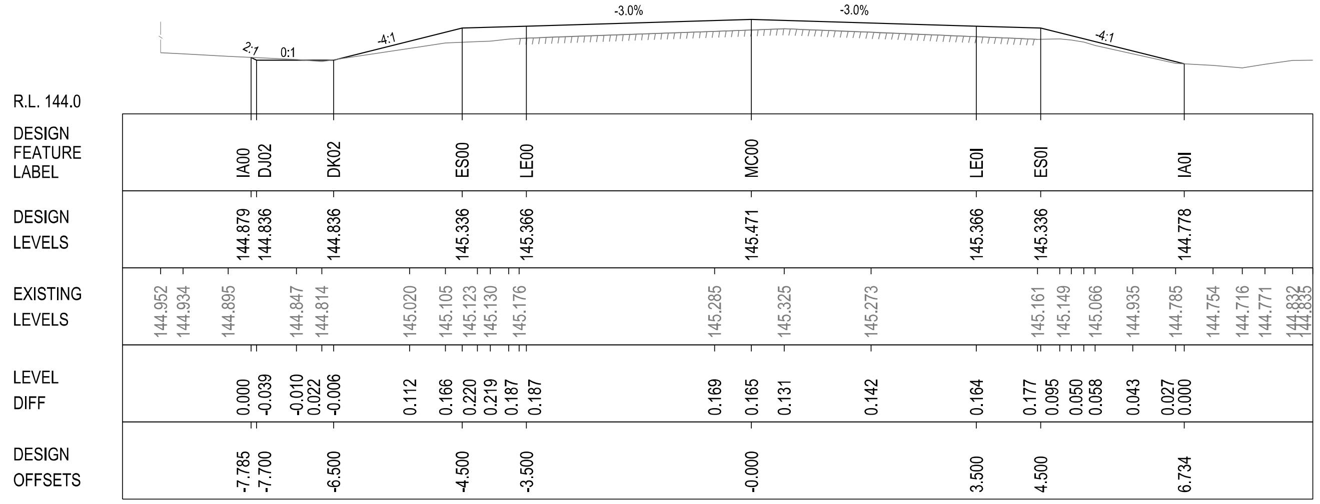

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DRAWING FILE LOCATION / NAME
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EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

DESIGN LOT CODE: N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m
DRAWINGS / DESIGN PREPARED BY
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)
HEIGHT DATUM: AHD

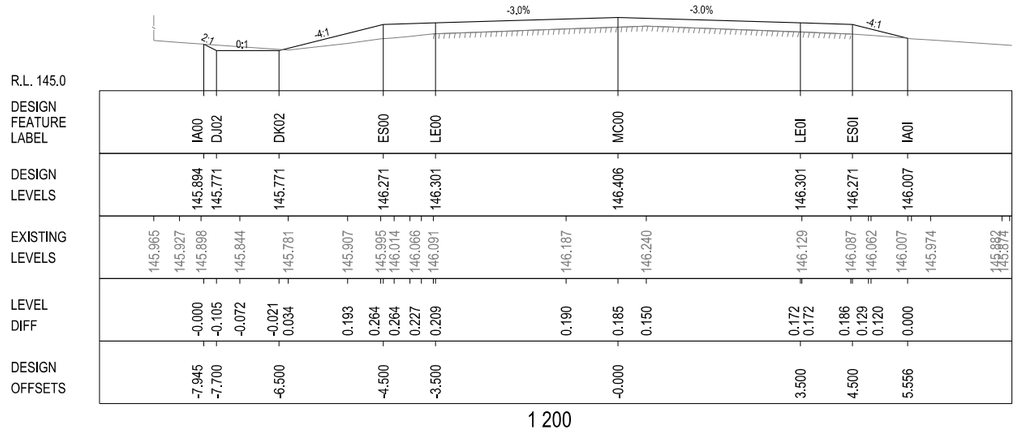
PLOT DATE / TIME: 28/03/2025 6:26:24 PM
PLOT BY: DrakeMi

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 1 125 TO 1 150
A3

TfNSW REGISTRATION No. DS2025 / 000300 | PART A
ISSUE STATUS: 20% CONCEPT DESIGN | EDMS No.: QA1590032 | SHEET No.: RC-0020 | ISSUE: 1



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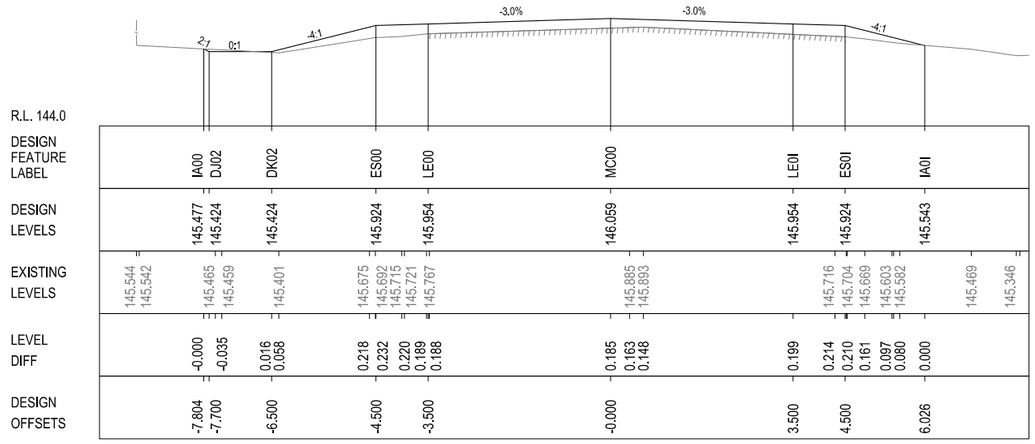

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DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:24 PM PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

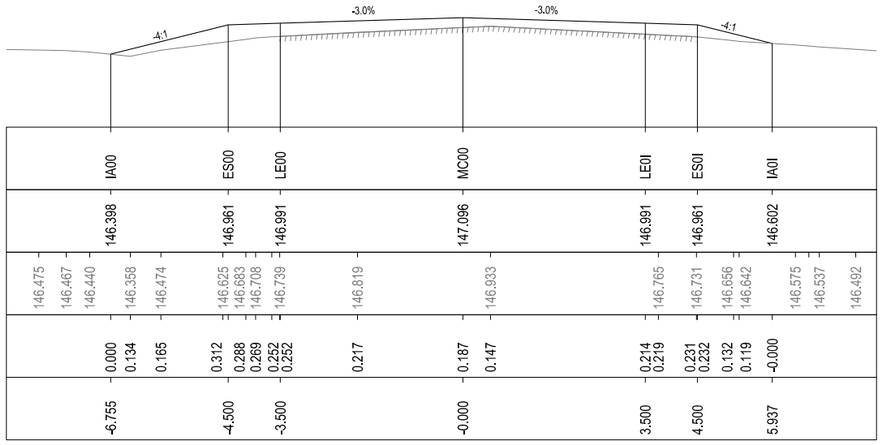
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 1 175 TO 1 200

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A

ISSUE STATUS: 20% CONCEPT DESIGN | EDMS No.: QA1590032 | SHEET No.: RC-0021 | ISSUE: 1



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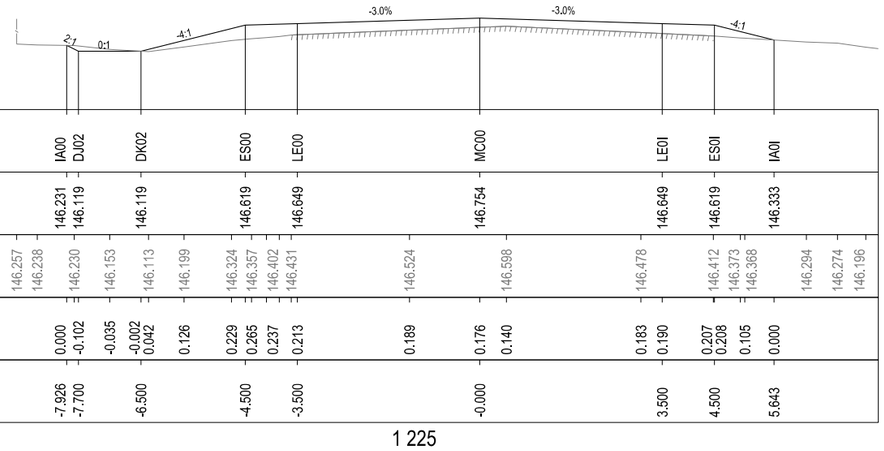

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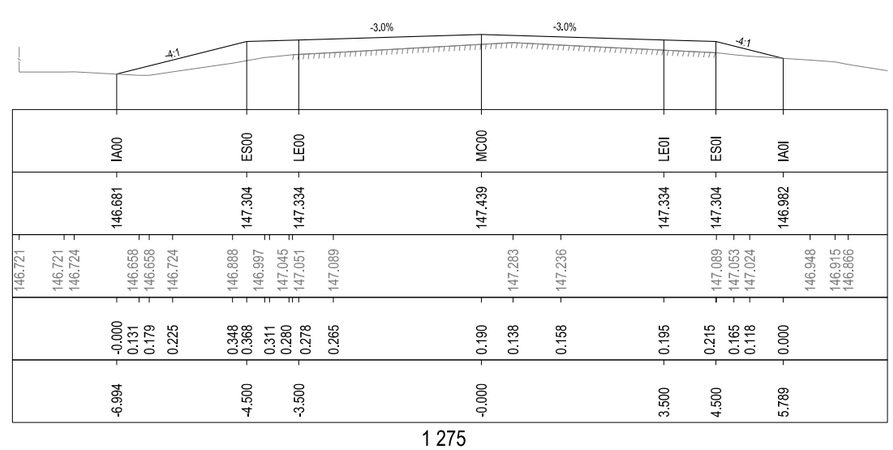

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DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn					DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	PLOT DATE / TIME: 28/03/2025 6:26:24 PM; PLOT BY: DrakeMi
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD	0 1 2 3 4 SCALE 1:100m	
						CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020); HEIGHT DATUM: AHD	

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

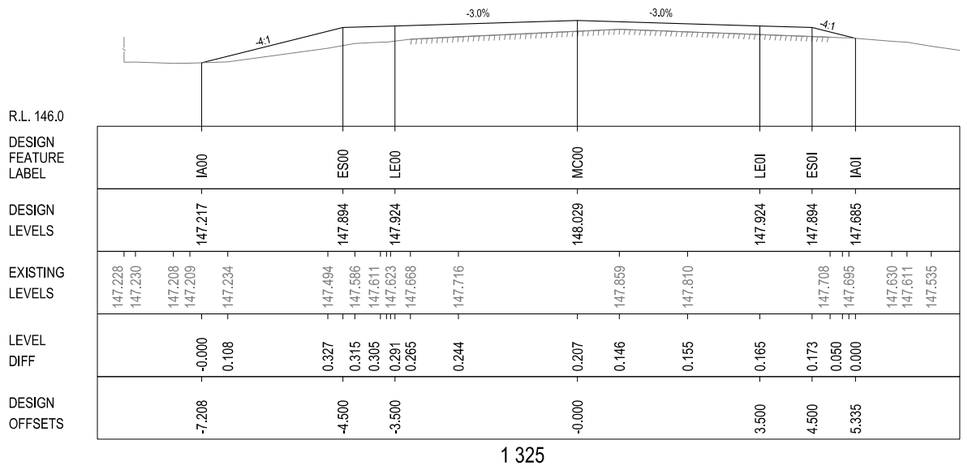
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 1 225 TO 1 275

A3

TfNSW REGISTRATION No	PART
DS2025 / 000300	A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RC-0022	1



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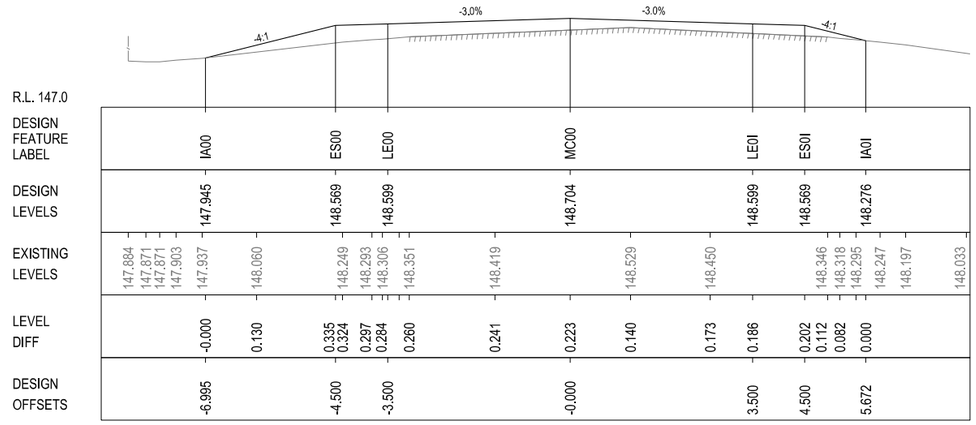

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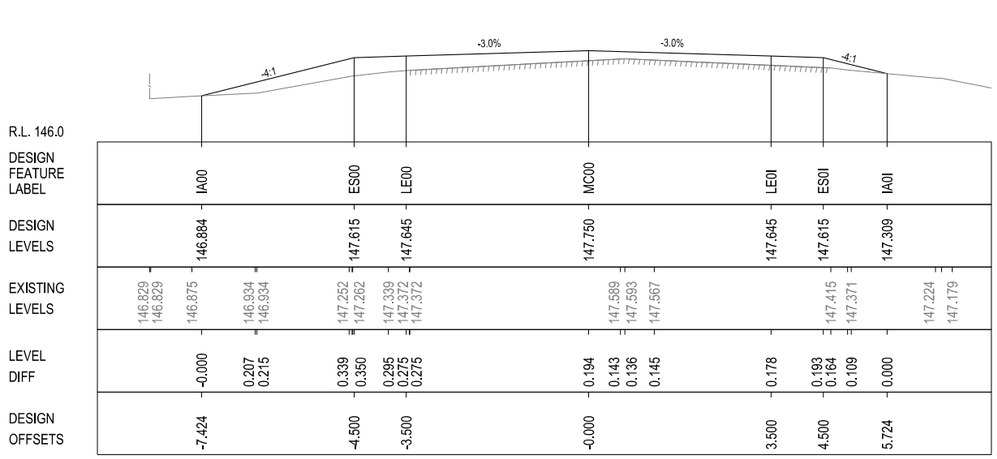

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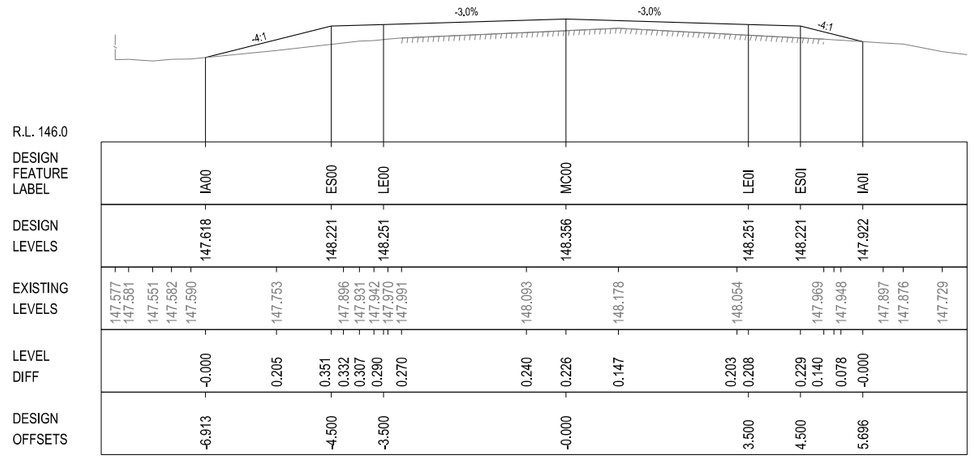

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50mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

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DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:25 PM

PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

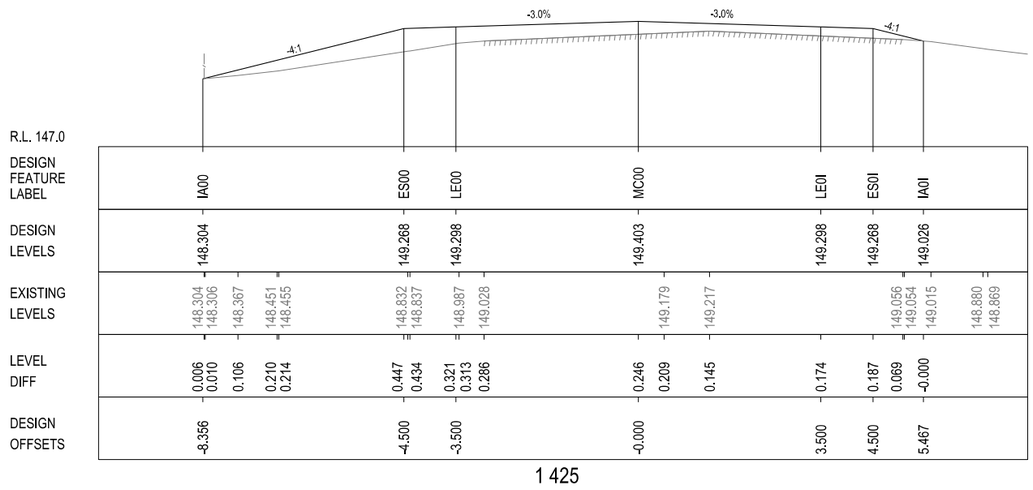
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 1 300 TO 1 375

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A

ISSUE STATUS: 20% CONCEPT DESIGN EDMS No.: QA1590032 SHEET No.: RC-0023 ISSUE: 1



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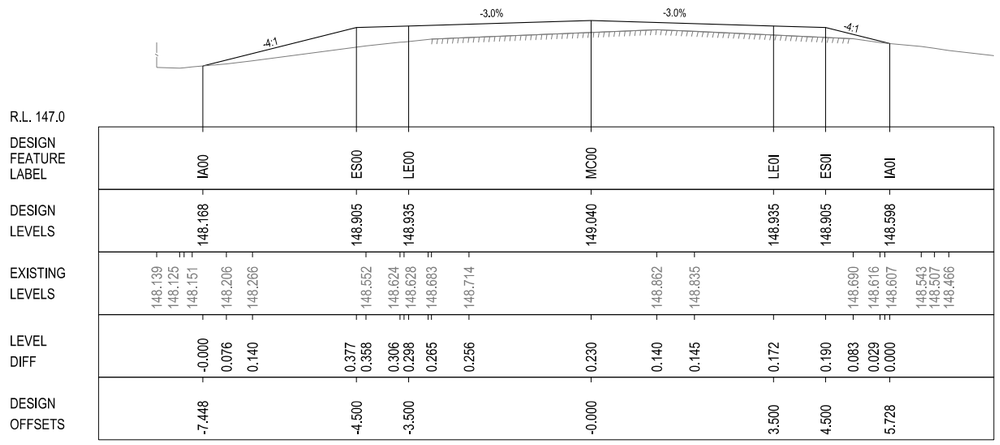

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150mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn	DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	PLOT DATE / TIME: 28/03/2025 6:26:25 PM; PLOT BY: DrakeMi
EXTERNAL REFERENCE FILES	REV: 01; DATE: 31-03-25; AMENDMENT / REVISION DESCRIPTION: 20% CONCEPT DESIGN ISSUED FOR REVIEW; WVR No.: 01; APPROVAL: MD	SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m; CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020); HEIGHT DATUM: AHD	DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

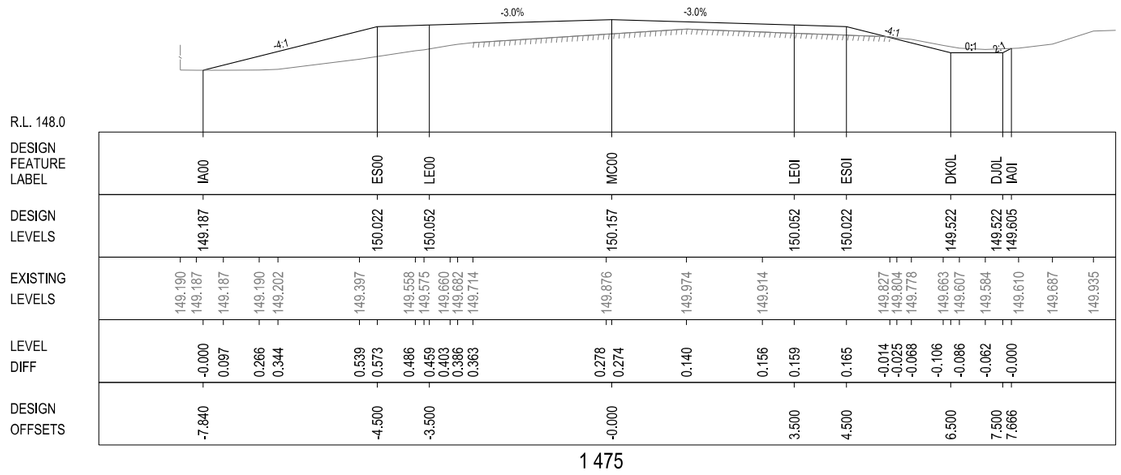
CLIENT: NSW GOVERNMENT Transport for NSW

PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 1 400 TO 1 425

A3

TfNSW REGISTRATION No: DS2025 / 000300			PART: A
ISSUE STATUS: 20% CONCEPT DESIGN	EDMS No.: QA1590032	SHEET No.: RC-0024	ISSUE: 1



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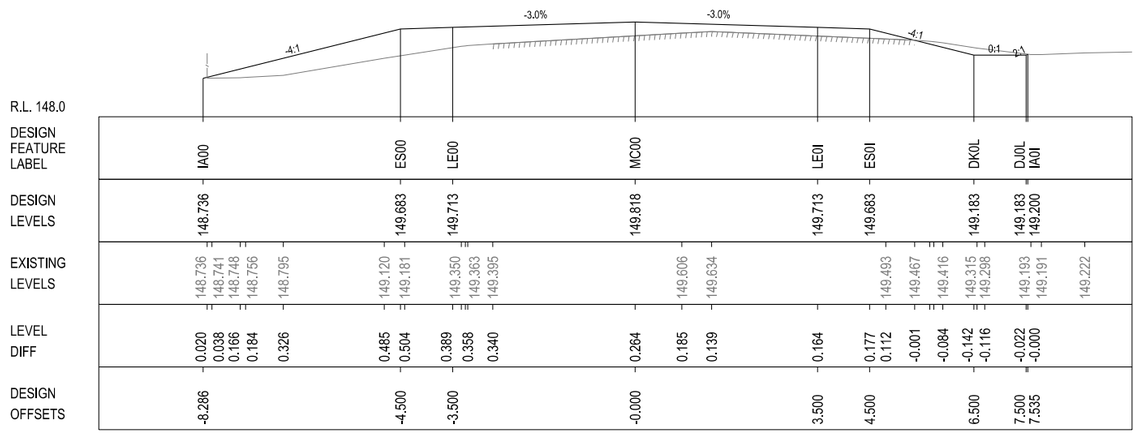

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NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
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DESIGN LOT CODE N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING RR770 WYBONG ROAD - V01
PLOT DATE / TIME 28/03/2025 6:26:25 PM
PLOT BY DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m
CO-ORDINATE SYSTEM MGA ZONE 56 (GDA2020) HEIGHT DATUM AHD
DRAWINGS / DESIGN PREPARED BY

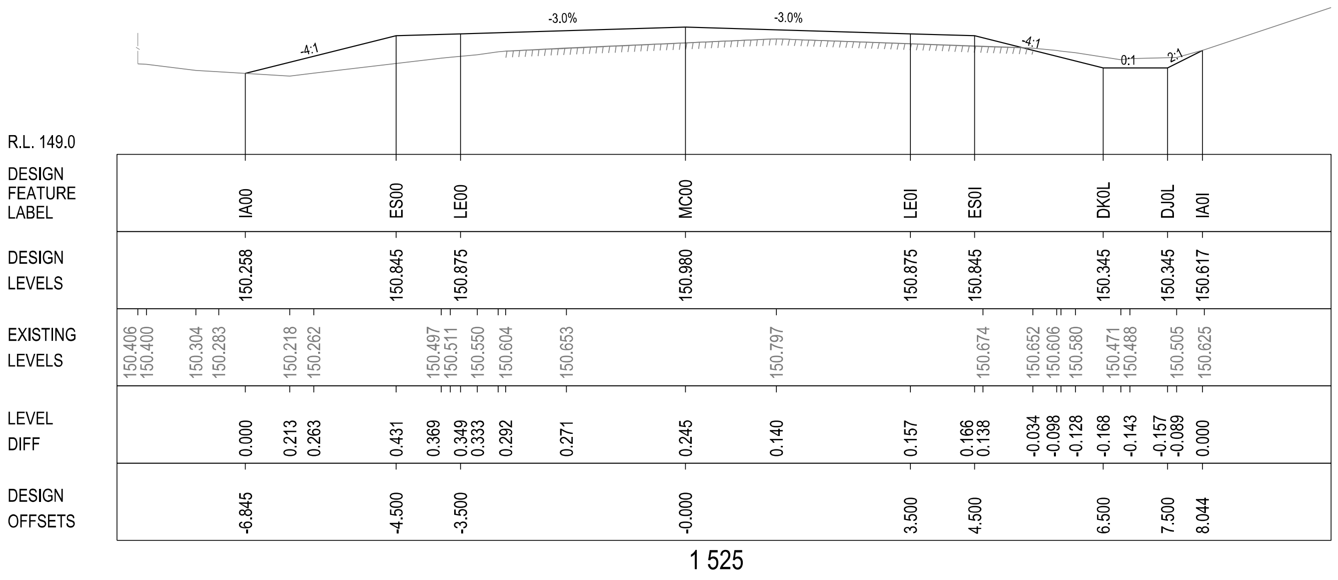
TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

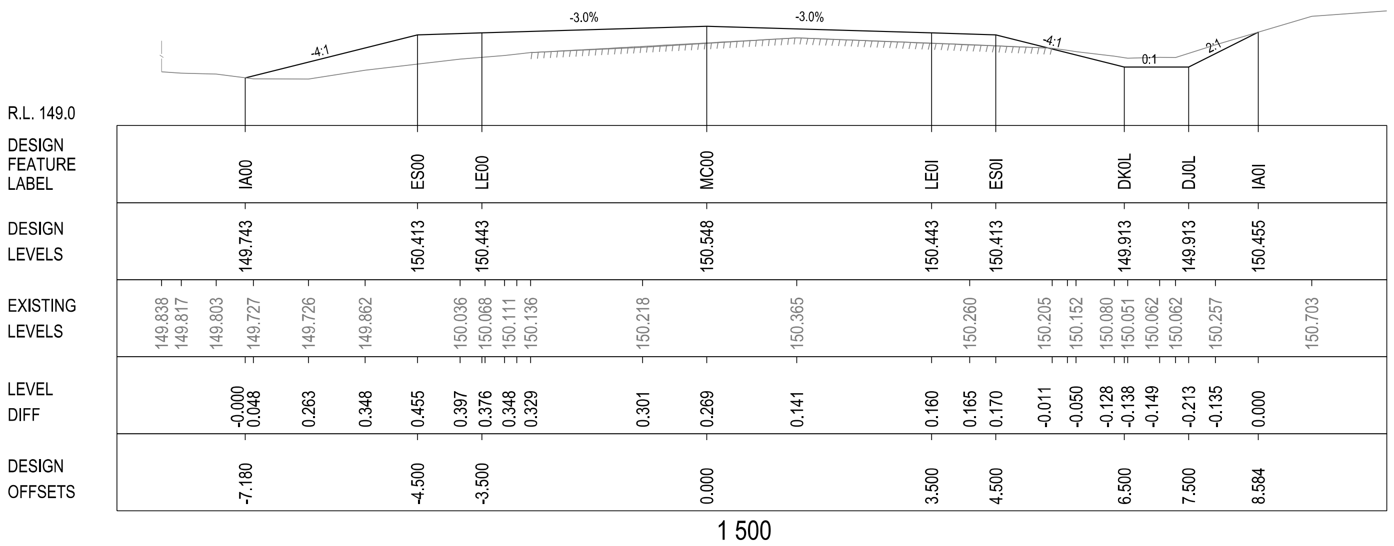
CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 1 450 TO 1 475

A3

TfNSW REGISTRATION No DS2025 / 000300 PART A
ISSUE STATUS 20% CONCEPT DESIGN
EDMS No. QA1590032
SHEET No. RC-0025
ISSUE 1





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50mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:26 PM

PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

DRAWINGS / DESIGN PREPARED BY

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)

HEIGHT DATUM: AHD

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 1 500 TO 1 525

A3

TfNSW REGISTRATION No: DS2025 / 000300

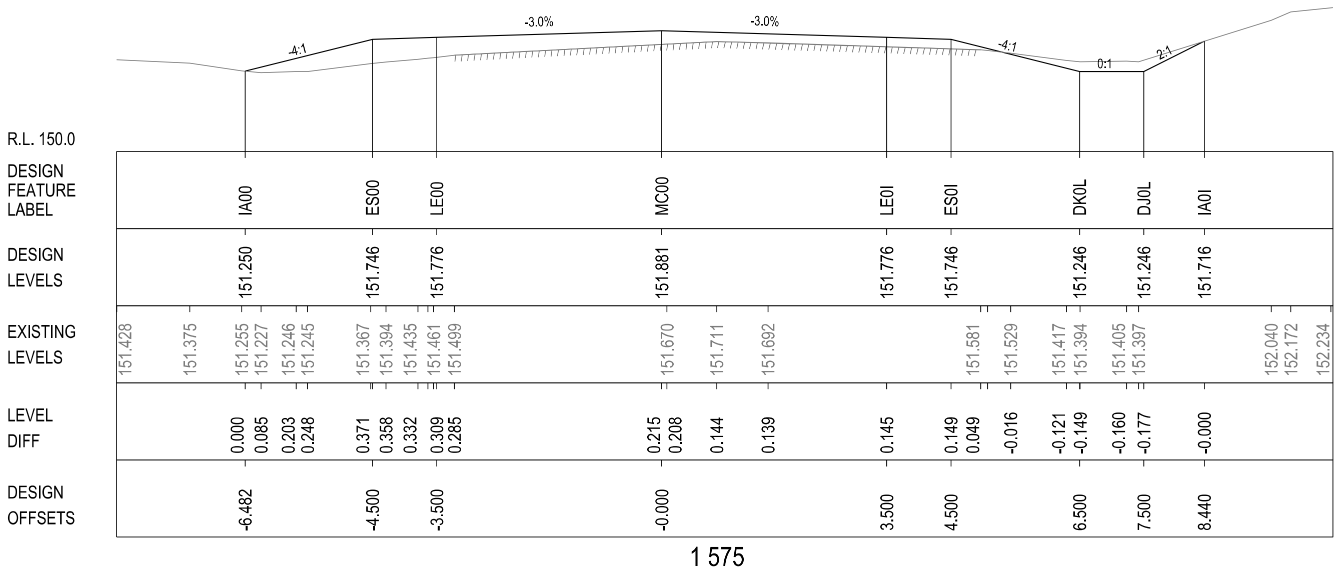
PART: A

ISSUE STATUS: 20% CONCEPT DESIGN

EDMS No.: QA1590032

SHEET No.: RC-0026

ISSUE: 1



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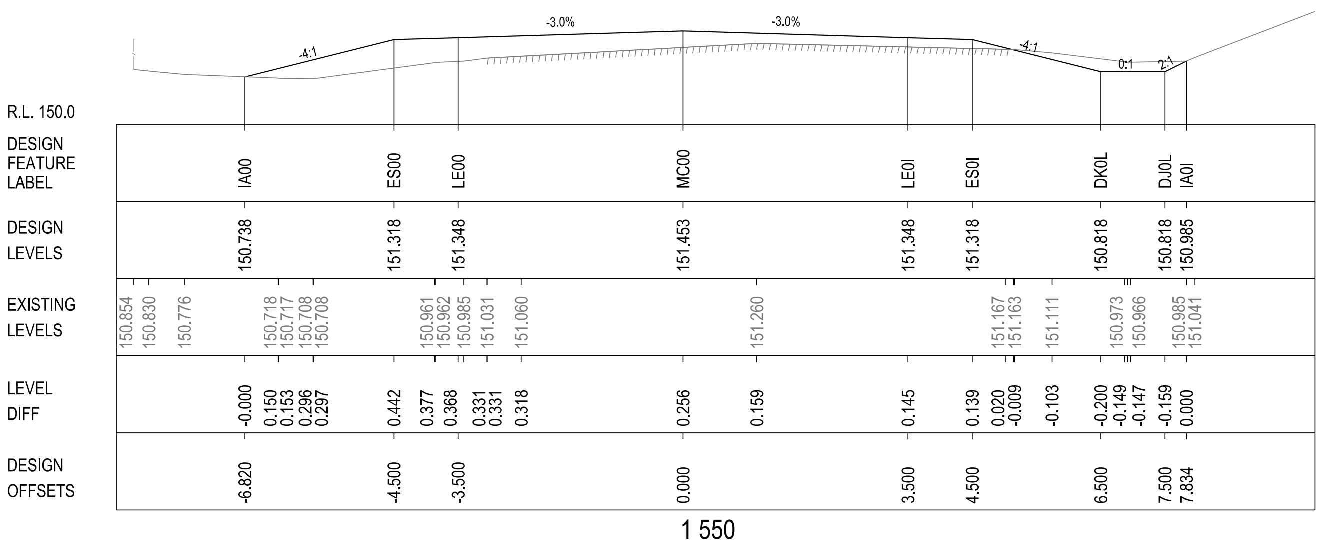

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50mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn						
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD	

DESIGN LOT CODE	N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING	RR770 WYBONG ROAD - V01
SCALES ON A3 SIZE DRAWING	SCALE 1:100m (0 1 2 3 4)
DRAWINGS / DESIGN PREPARED BY	
CO-ORDINATE SYSTEM	MGA ZONE 56 (GDA2020)
HEIGHT DATUM	AHD
PLOT DATE / TIME	28/03/2025 6:26:26 PM
PLOT BY	DrakeMi

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

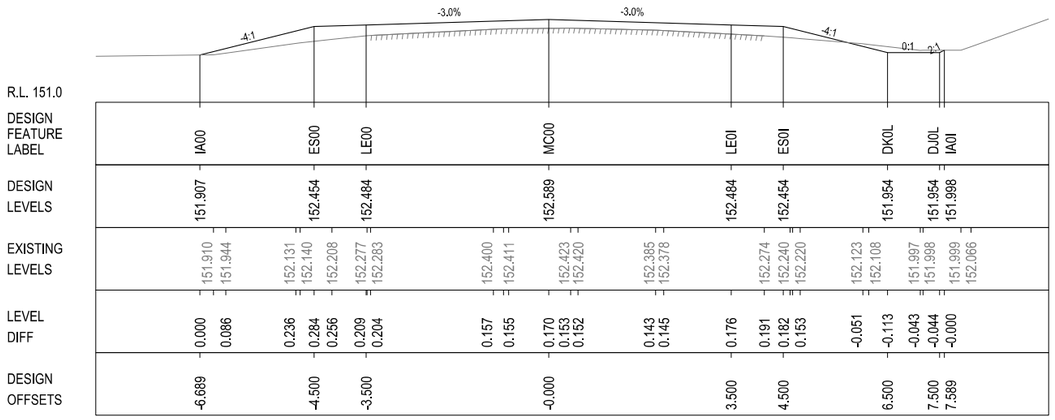
PREPARED FOR: PROJECT SERVICES NORTH

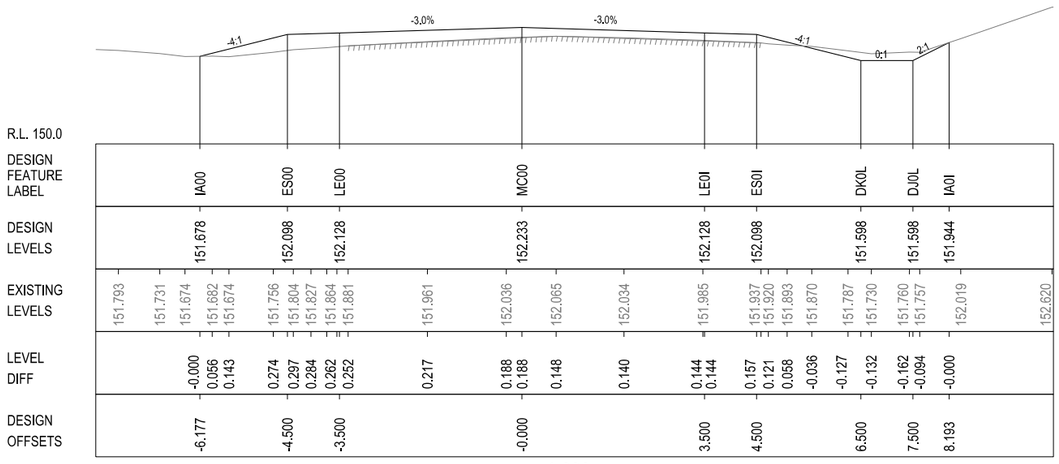
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 1 550 TO 1 575

A3

TfNSW REGISTRATION No	PART
DS2025 / 000300	A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RC-0027	1





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50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:27 PM

PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

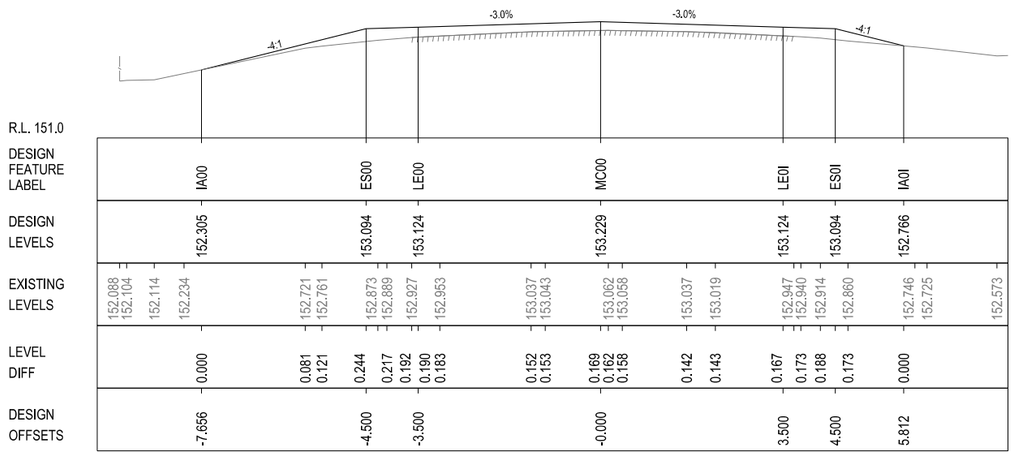
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 1 600 TO 1 625

A3

TINSW REGISTRATION No: DS2025 / 000300 PART A

ISSUE STATUS: 20% CONCEPT DESIGN EDMS No.: QA1590032 SHEET No.: RC-0028 ISSUE 1



NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
150mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:27 PM

PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

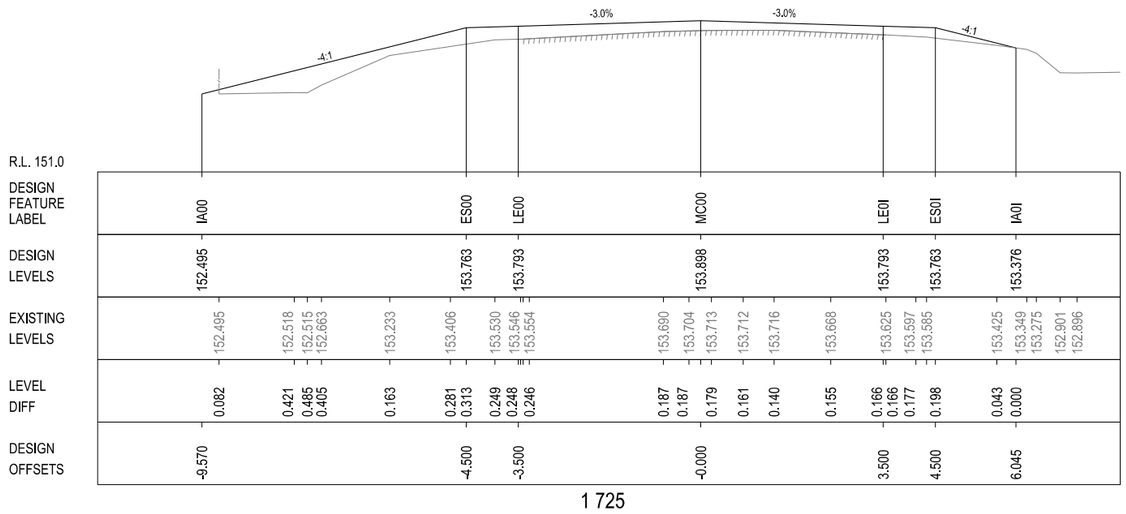
PREPARED FOR: PROJECT SERVICES NORTH

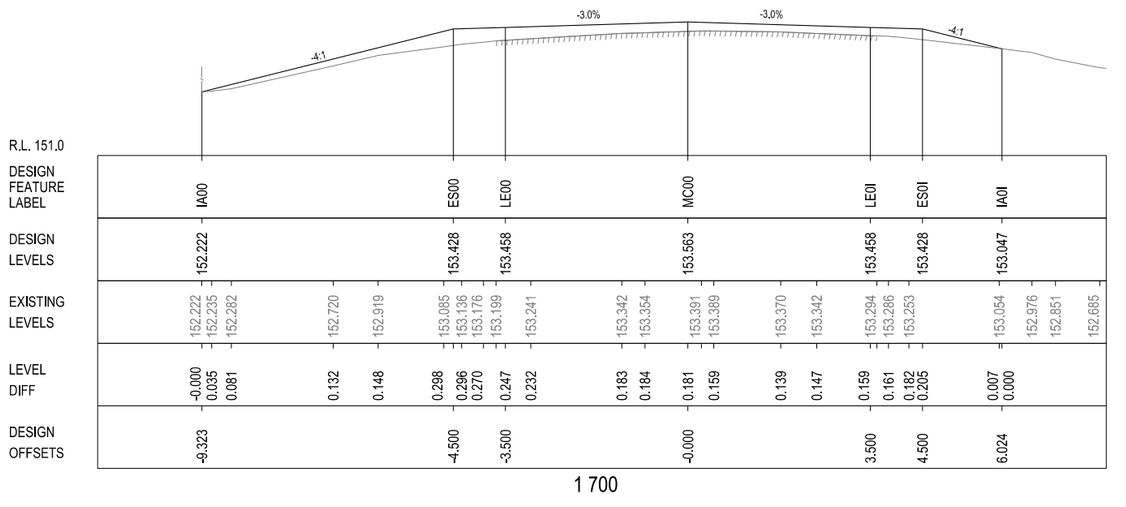
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 1 650 TO 1 675

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A

ISSUE STATUS: 20% CONCEPT DESIGN EDMS No.: QA1590032 SHEET No.: RC-0029 ISSUE: 1





THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME
C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

DESIGN LOT CODE: N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD
DRAWINGS / DESIGN PREPARED BY

PLOT DATE / TIME	PLOT BY
28/03/2025 6:26:27 PM	DrakeMi

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

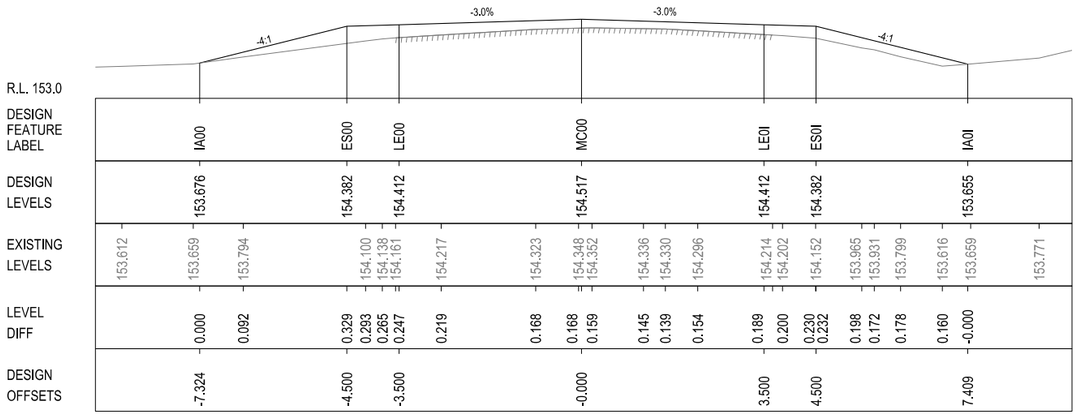
CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

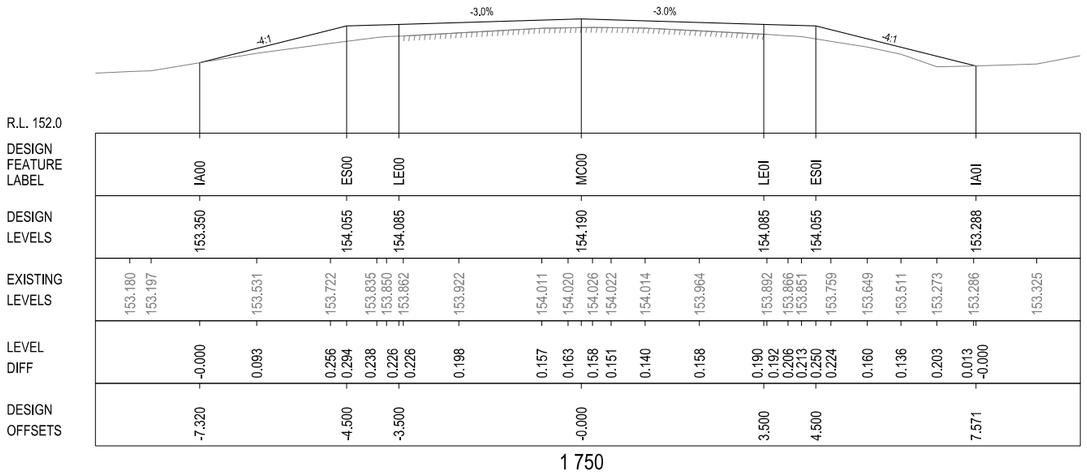
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 1 700 TO 1 725

A3

TfNSW REGISTRATION No.	PART
DS2025 / 000300	A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RC-0030	1





NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

DESIGN LOT CODE: N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD
DRAWINGS / DESIGN PREPARED BY

PLOT DATE / TIME	PLOT BY
28/03/2025 6:26:33 PM	DrakeMi

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

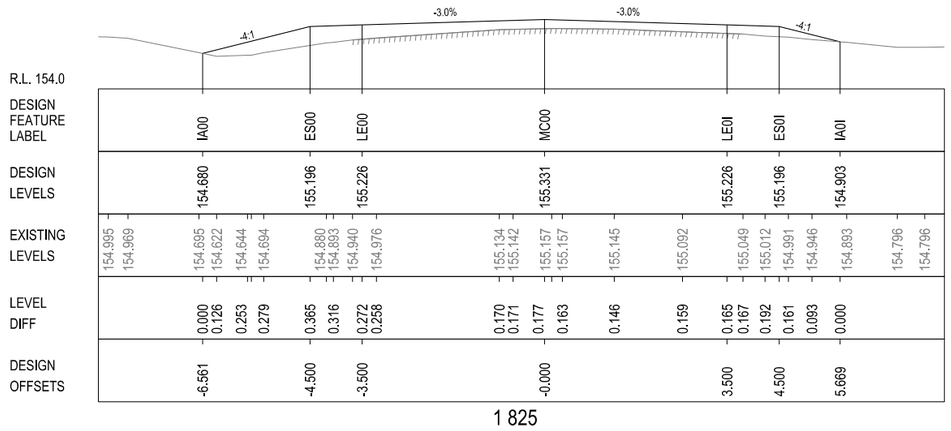
CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

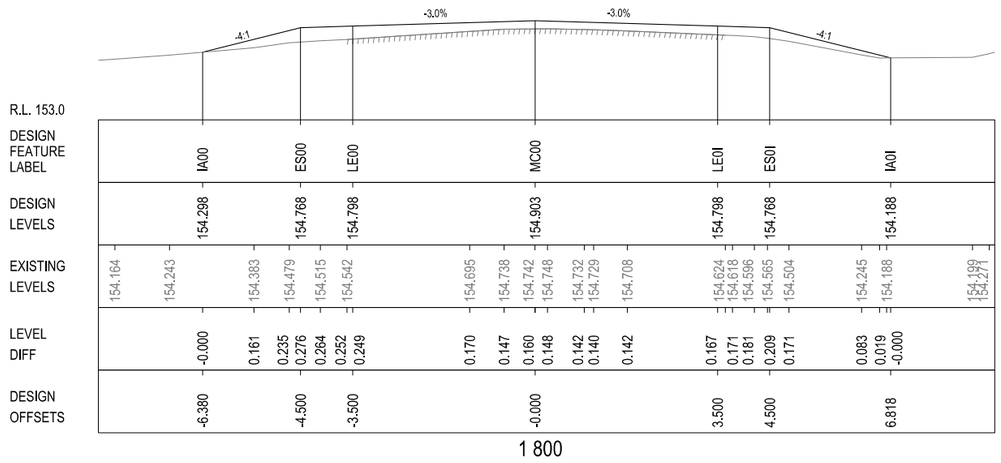
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 1 750 TO 1 775

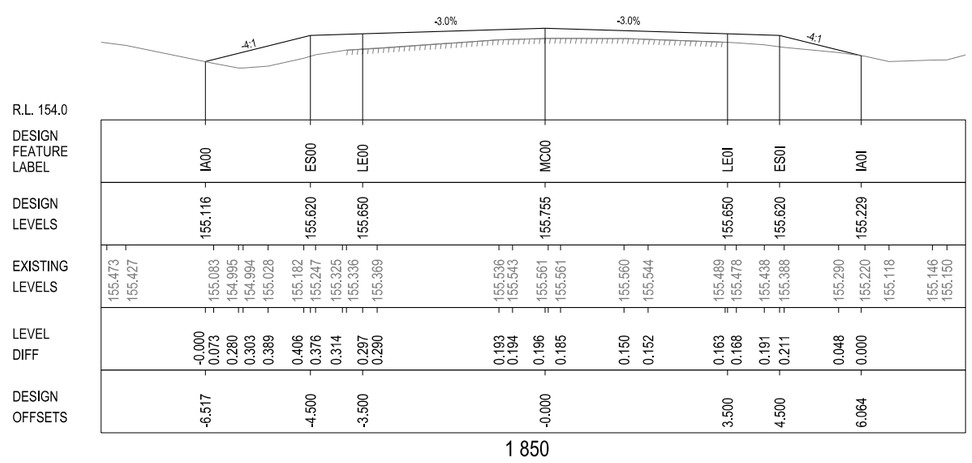
A3

TINSW REGISTRATION No.	PART
DS2025 / 000300	A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RC-0031	1







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50mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

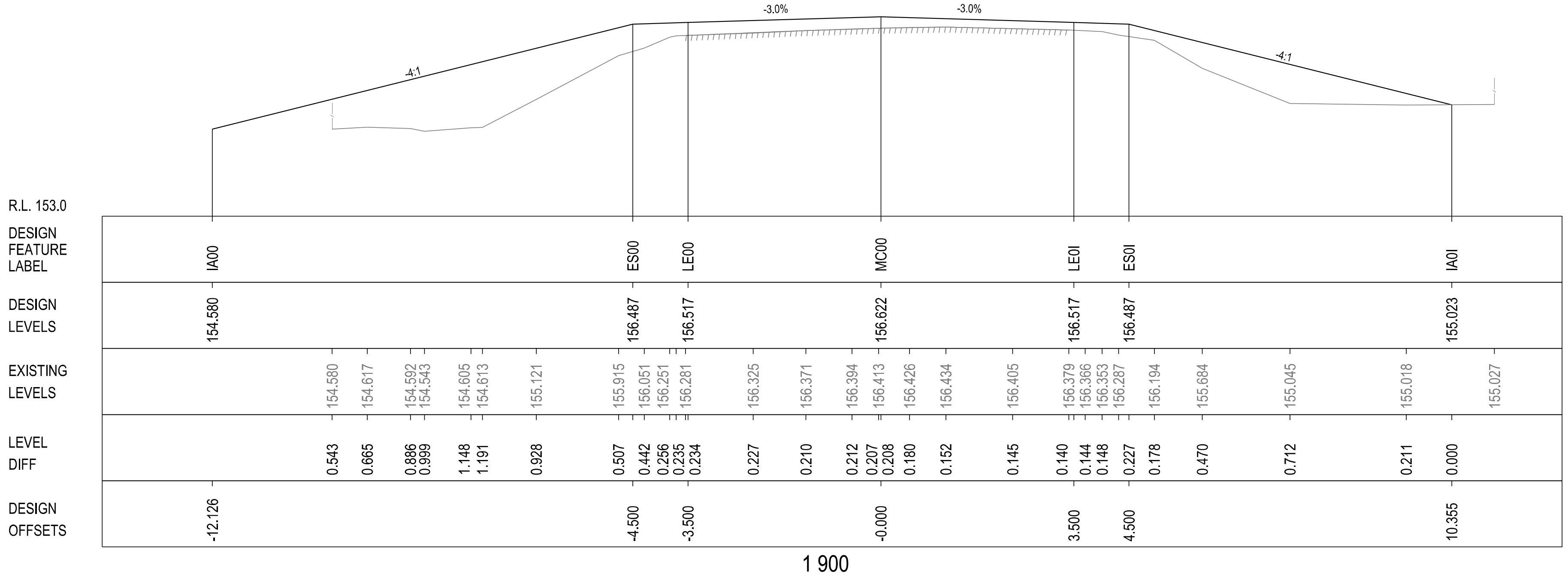
DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn	DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	PLOT DATE / TIME: 28/03/2025 6:26:34 PM; PLOT BY: DrakeMi
EXTERNAL REFERENCE FILES:	SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m	DRAWINGS / DESIGN PREPARED BY	TITLE / NAME: DRAWN M.DRAKE; DRG CHECK TfNSW; DESIGN M.DRAKE; DESIGN CHECK TfNSW; DESIGN MNGR D.JOHNSON; PROJECT MNGR S.AUSTIN
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD	CLIENT: NSW GOVERNMENT Transport for NSW	PREPARED FOR: PROJECT SERVICES NORTH	MUSWELLBROOK SHIRE COUNCIL; RR770 - KAYUGA ROAD; PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD; 31.100km TO 33.600km SOUTH OF KAYUGA ROAD; CROSS SECTIONS; RR770 - WYBONG ROAD - MC00 - 1 800 TO 1 850

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

A3

TINSW REGISTRATION No: DS2025 / 000300 — PART A

ISSUE STATUS: 20% CONCEPT DESIGN | EDMS No.: QA1590032 | SHEET No.: RC-0032 | ISSUE: 1



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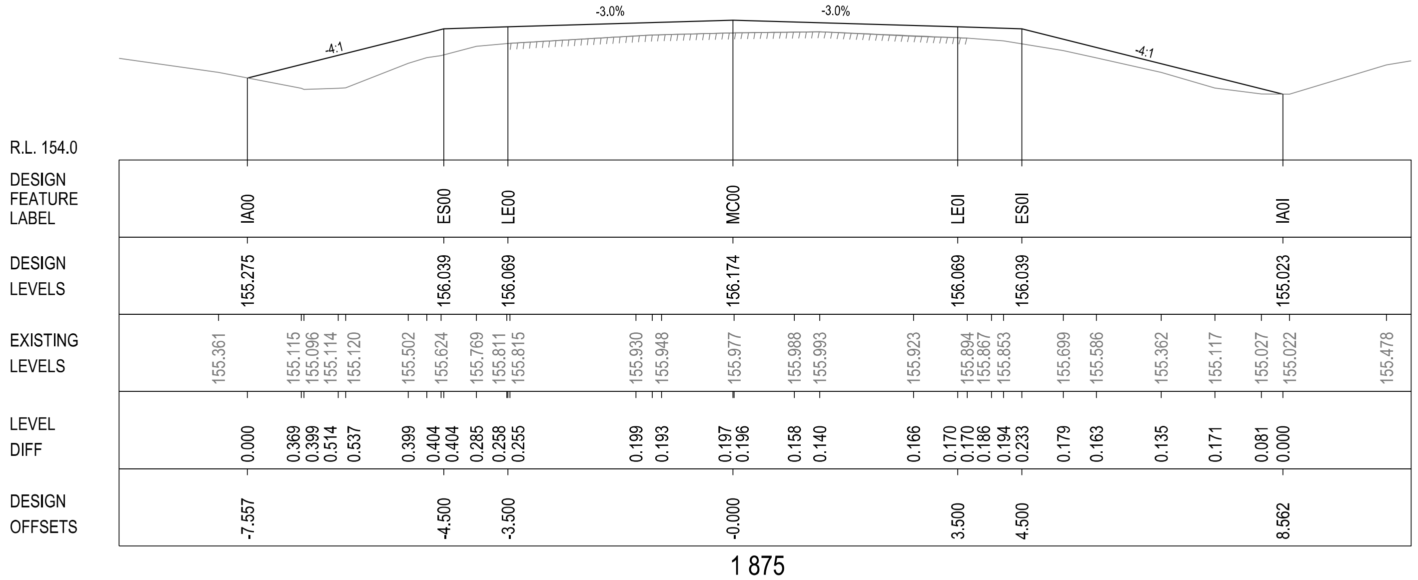


1 875

NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:34 PM

PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

DRAWINGS / DESIGN PREPARED BY

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)

HEIGHT DATUM: AHD

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

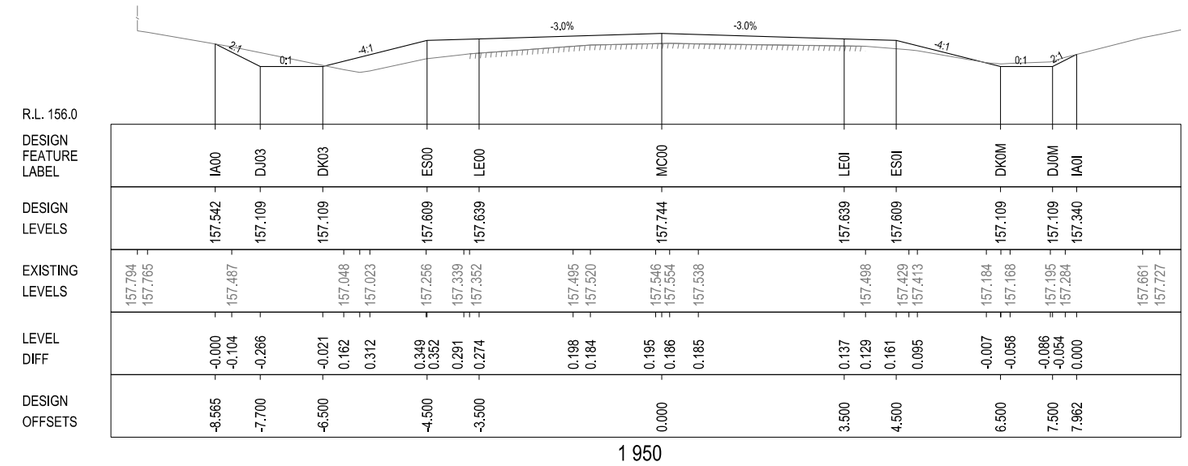
PREPARED FOR: PROJECT SERVICES NORTH

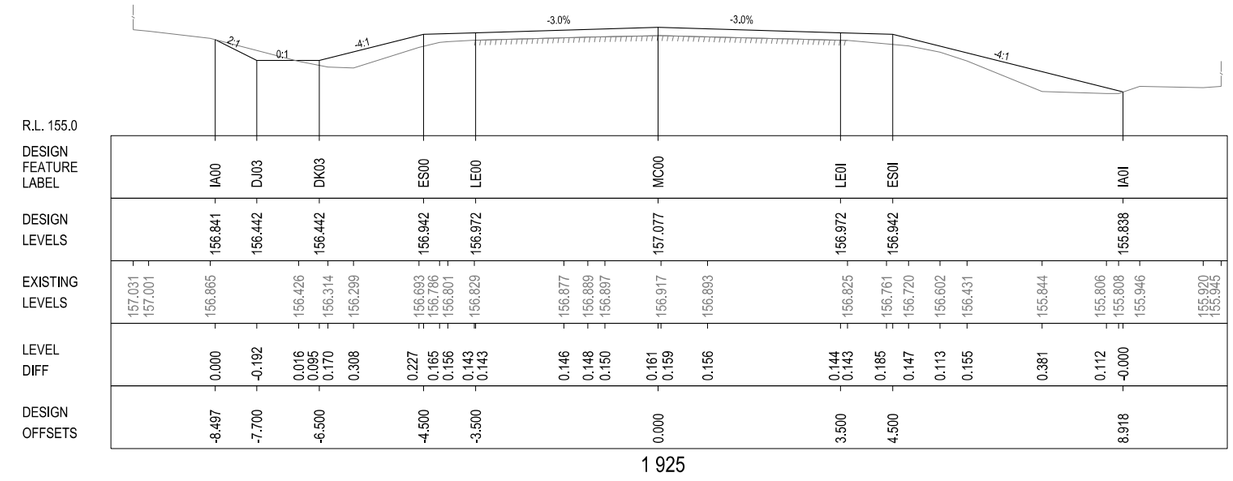
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 1 875 TO 1 900

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART A

ISSUE STATUS: 20% CONCEPT DESIGN | EDMS No.: QA1590032 | SHEET No.: RC-0033 | ISSUE: 1





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50mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn	DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	PLOT DATE / TIME: 28/03/2025 6:26:34 PM; PLOT BY: DrakeMi
CLIENT: NSW GOVERNMENT Transport for NSW	MUSWELLBROOK SHIRE COUNCIL RR770 - KAYUGA ROAD PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD 31.100km TO 33.600km SOUTH OF KAYUGA ROAD CROSS SECTIONS RR770 - WYBONG ROAD - MC00 - 1 925 TO 1 950	A3	
PREPARED FOR: PROJECT SERVICES NORTH	TfNSW REGISTRATION No: DS2025 / 000300	PART: A	
ISSUE STATUS: 20% CONCEPT DESIGN	EDMS No.: QA1590032	SHEET No.: RC-0034	ISSUE: 1

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
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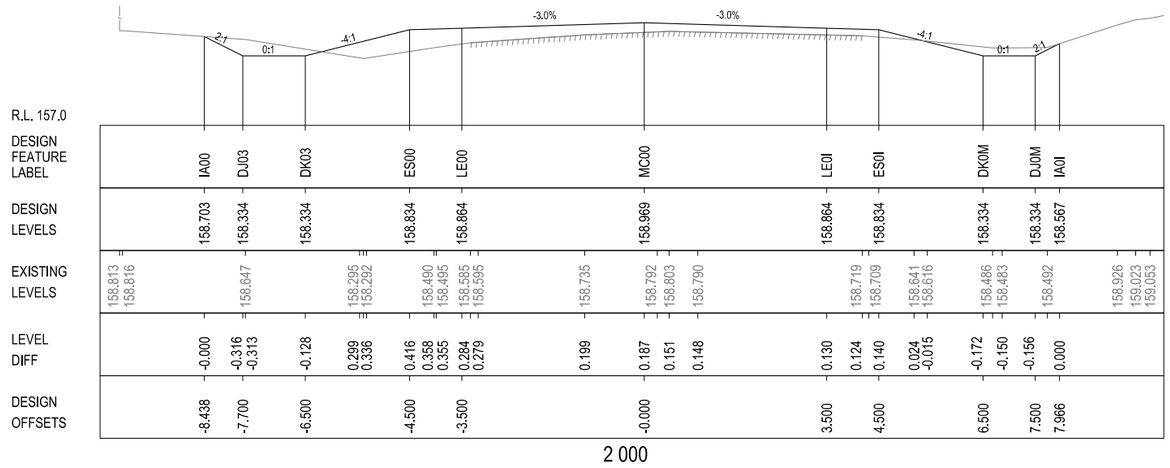
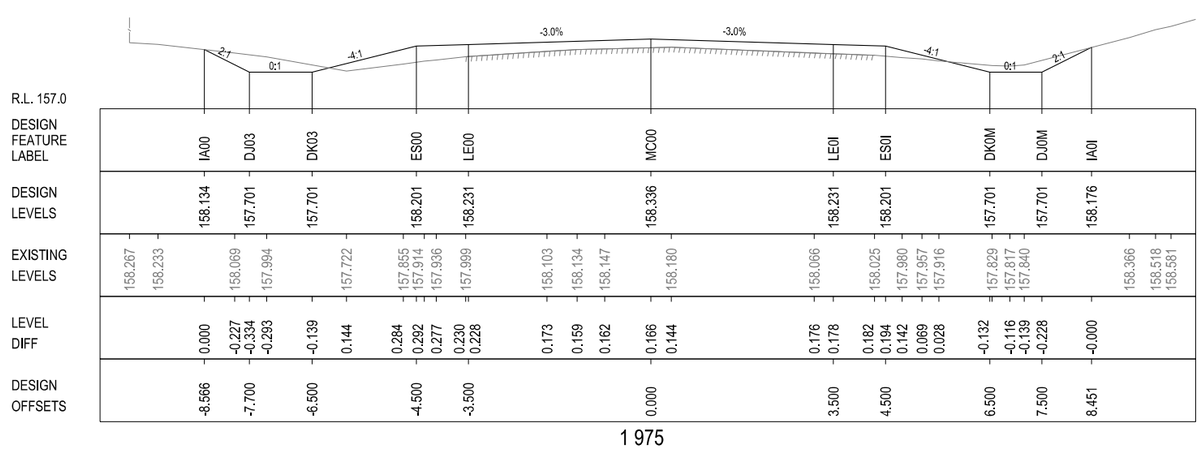
SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN





NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn					DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	SCALES ON A3 SIZE DRAWING
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD	0 1 2 3 4 SCALE 1:100m
						CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

PLOT DATE / TIME	PLOT BY
28/03/2025 6:26:35 PM	DrakeMi

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

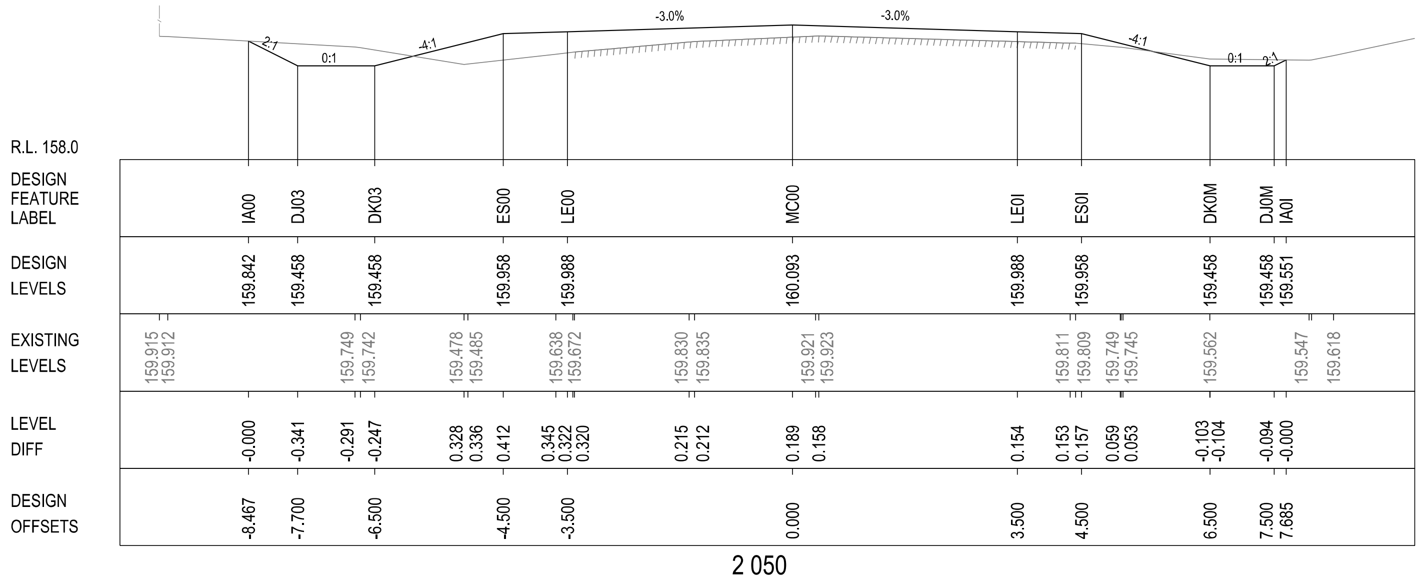
PREPARED FOR: PROJECT SERVICES NORTH

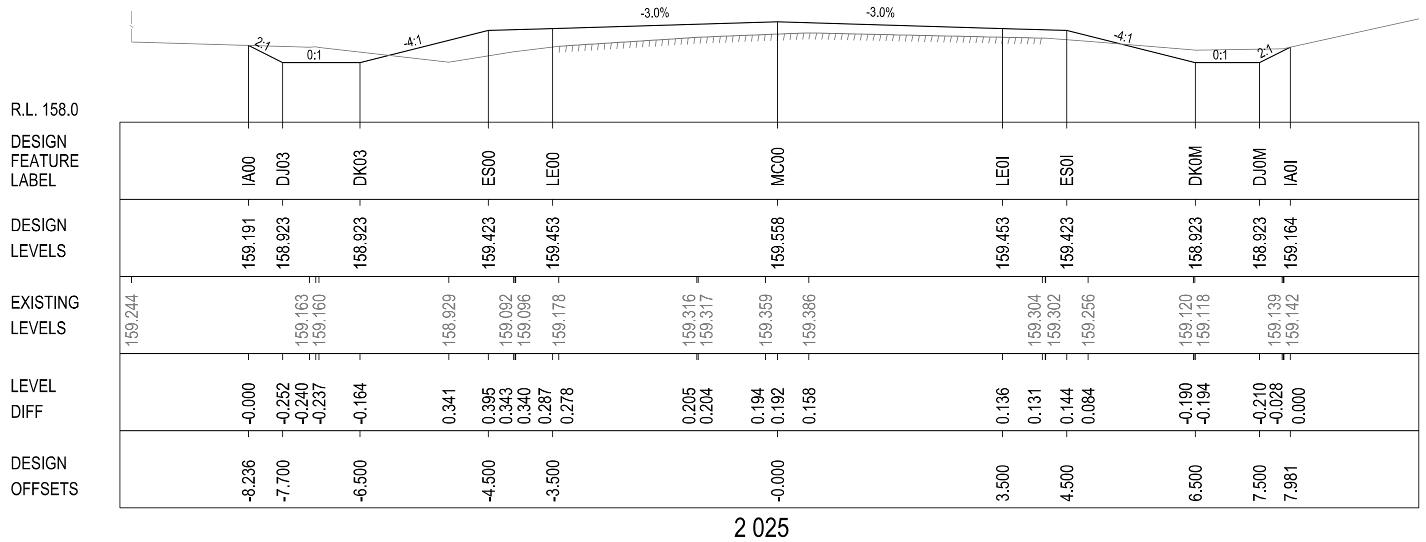
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 1 975 TO 2 000

A3

TfNSW REGISTRATION No: DS2025 / 000300 — PART: A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RC-0035	1





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NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME: C:\Users\DrakeM\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

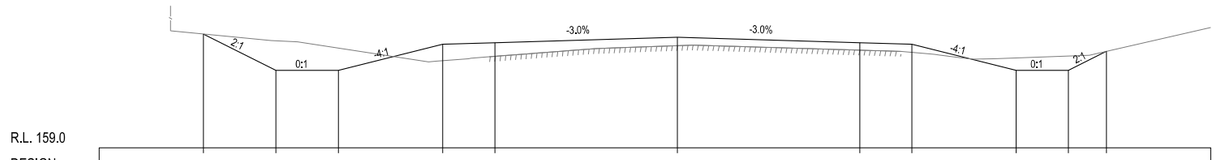
DESIGN LOT CODE: N2020140
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m
DRAWINGS / DESIGN PREPARED BY
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)
HEIGHT DATUM: AHD

PLOT DATE / TIME: 28/03/2025 6:26:35 PM
PLOT BY: DrakeMi

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 2 025 TO 2 050
A3
TfNSW REGISTRATION No: DS2025 / 000300
PART: A
ISSUE STATUS: 20% CONCEPT DESIGN
EDMS No.: QA1590032
SHEET No.: RC-0036
ISSUE: 1



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R.L. 159.0	DESIGN LEVELS	161.183	160.487	160.487	160.987	161.017	161.122	161.017	160.987	160.487	160.487	160.852
	EXISTING LEVELS	161.243	161.058	161.032	160.712	160.647	160.663	160.710	160.748	160.772	160.903	160.916	160.971	160.948	160.850	160.805	160.779	160.712	160.701	160.708	160.777	161.300
	LEVEL DIFF	0.000	-0.526	-0.566	-0.545	-0.425	0.102	0.272	0.314	0.292	0.265	0.252	0.172	0.169	0.162	0.142	0.143	0.143	0.143	0.154	0.085	0.076	0.011	-0.010	-0.115	-0.238	-0.275	-0.089	0.000
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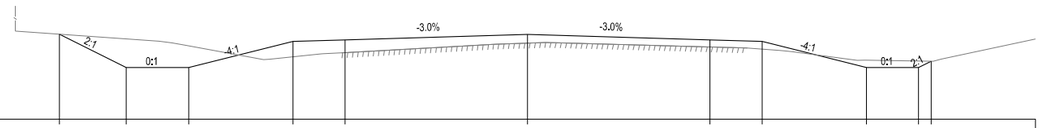
2 100



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R.L. 159.0	DESIGN LEVELS	160.631	159.991	159.991	160.491	160.521	160.626	160.521	160.491	159.991	159.991	160.113
	EXISTING LEVELS	160.690	160.496	160.422	160.142	160.151	160.251	160.272	160.416	160.439	160.471	160.459	160.366	160.319	160.294	160.127	160.131	160.112	160.154
	LEVEL DIFF	-0.000	-0.550	-0.506	-0.432	-0.417	0.208	0.227	0.294	0.255	0.247	0.245	0.179	0.169	0.167	0.144	0.142	0.135	0.133	0.146	0.075	0.051	-0.093	-0.140	-0.125	-0.000
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2 075

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THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeM\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:36 PM

PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

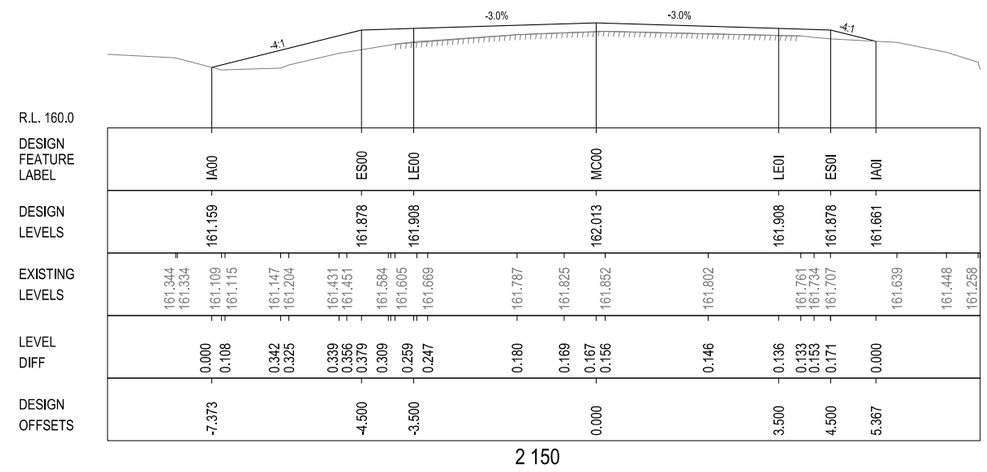
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 2 075 TO 2 100

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A

ISSUE STATUS: 20% CONCEPT DESIGN EDMS No.: QA1590032 SHEET No.: RC-0037 ISSUE: 1



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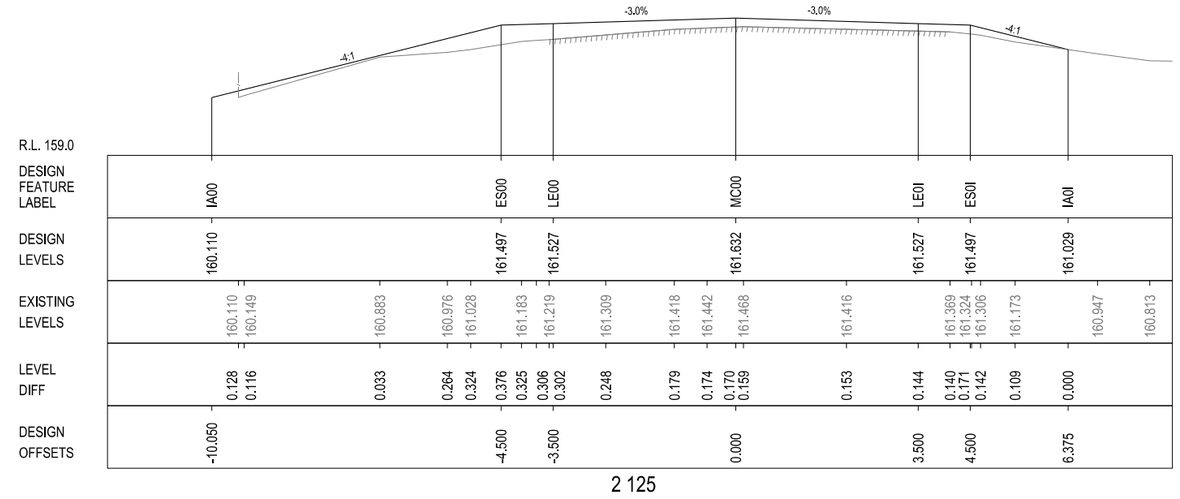

2 125

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150mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn					DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	PLOT DATE / TIME: 28/03/2025 6:26:36 PM; PLOT BY: DrakeMi
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD	0 1 2 3 4 SCALE 1:100m	
						CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020); HEIGHT DATUM: AHD	

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

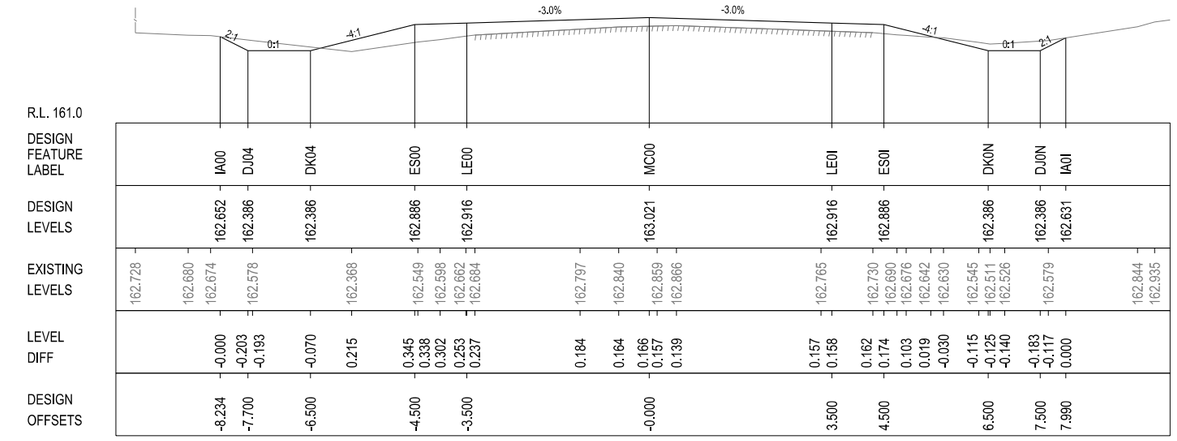
PREPARED FOR: PROJECT SERVICES NORTH

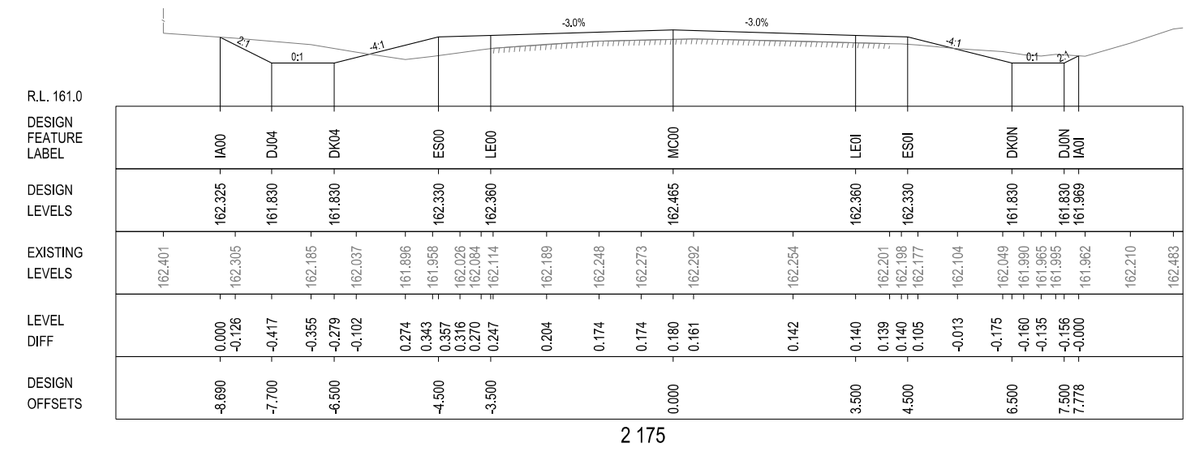
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 2 125 TO 2 150

A3

TfNSW REGISTRATION No: DS2025 / 000300 — PART A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RC-0038	1





NOT FOR CONSTRUCTION

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50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn					DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	SCALES ON A3 SIZE DRAWING
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD	0 1 2 3 4 SCALE 1:100m
						CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

PLOT DATE / TIME	PLOT BY
28/03/2025 6:26:36 PM	DrakeMi

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

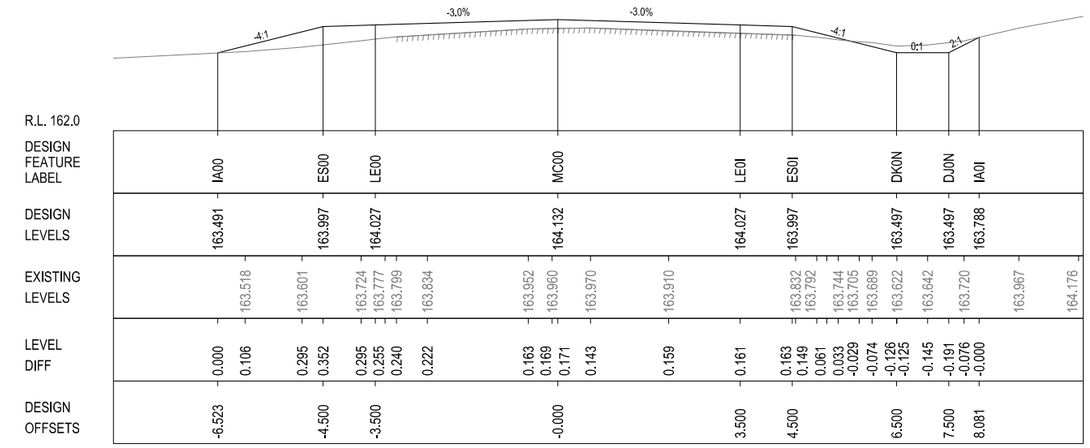
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 2 175 TO 2 200

A3

TfNSW REGISTRATION No: DS2025 / 000300 — PART: A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
20% CONCEPT DESIGN	QA1590032	RC-0039	1



2 250

2 225

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
50mm ON A3 SIZE ORIGINAL

NOT FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn	DESIGN LOT CODE: N2020140	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01	PLOT DATE / TIME: 28/03/2025 6:26:37 PM; PLOT BY: DrakeMi
EXTERNAL REFERENCE FILES	REV: 01	DATE: 31-03-25	AMENDMENT / REVISION DESCRIPTION: 20% CONCEPT DESIGN ISSUED FOR REVIEW
WVR No.: 01	APPROVAL: MD	SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m	DRAWINGS / DESIGN PREPARED BY
CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)	HEIGHT DATUM: AHD		

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

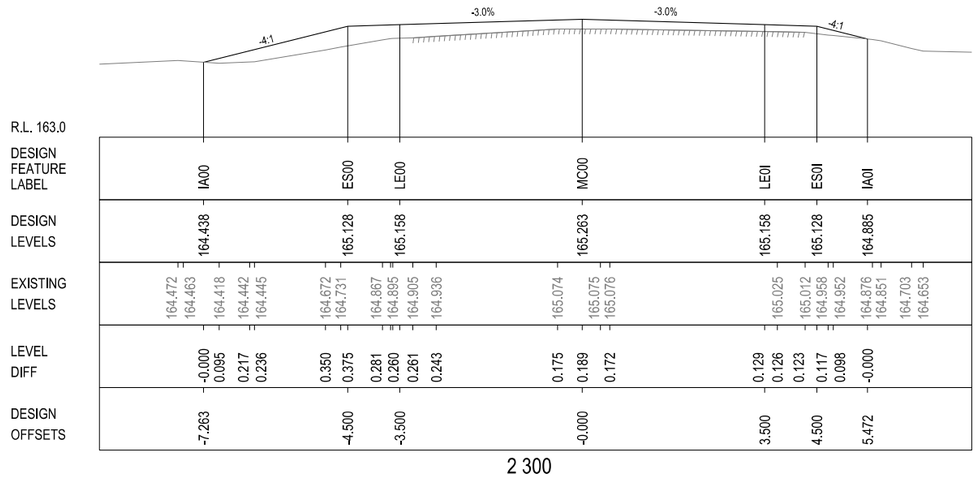
PREPARED FOR: PROJECT SERVICES NORTH

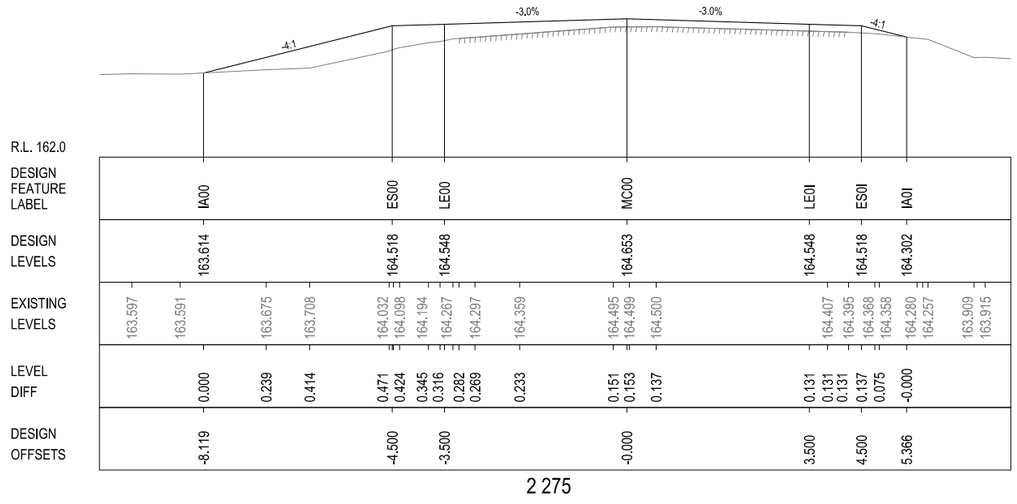
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 2 225 TO 2 250

A3

TfNSW REGISTRATION No: DS2025 / 000300 — PART: A

ISSUE STATUS: 20% CONCEPT DESIGN | EDMS No.: QA1590032 | SHEET No.: RC-0040 | ISSUE: 1





NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Users\DrakeMi\Drake Roads\Contracts\TfNSW\RR770 Wybong Road\Drawings\Detail Design\DS2025-000300-04-RC.dgn

DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

PLOT DATE / TIME: 28/03/2025 6:26:37 PM

PLOT BY: DrakeMi

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

DRAWINGS / DESIGN PREPARED BY

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

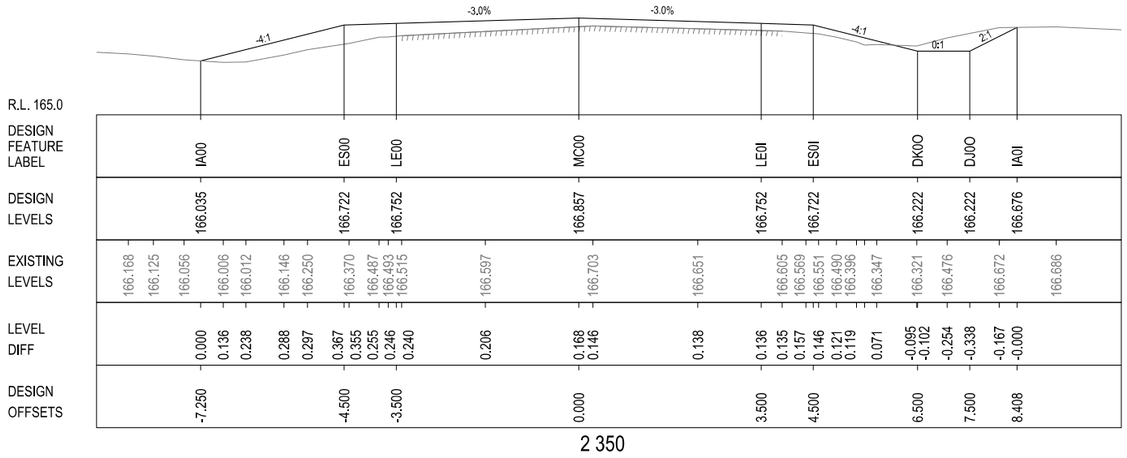
PREPARED FOR: PROJECT SERVICES NORTH

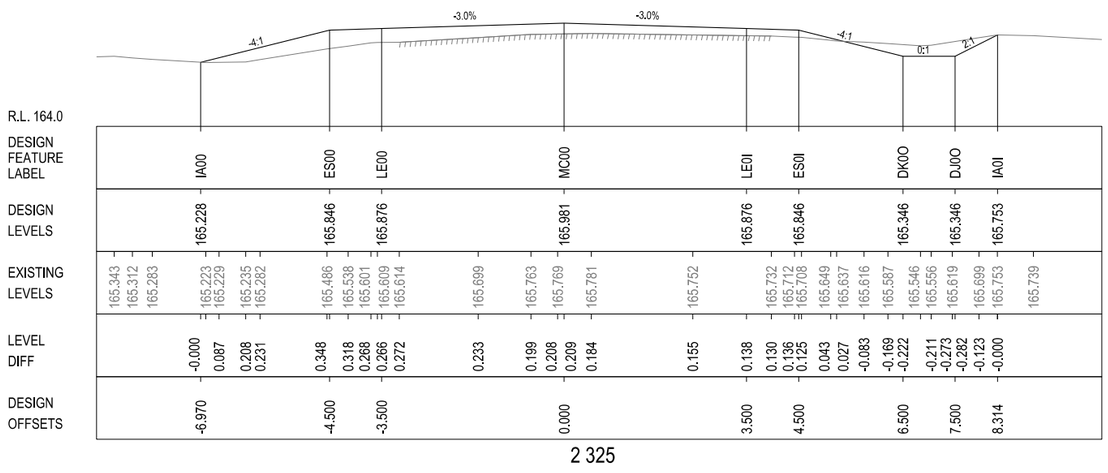
MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 2 275 TO 2 300

A3

TfNSW REGISTRATION No: DS2025 / 000300 PART: A

ISSUE STATUS: 20% CONCEPT DESIGN EDMS No.: QA1590032 SHEET No.: RC-0041 ISSUE: 1





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CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD
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PLOT DATE / TIME	PLOT BY
28/03/2025 6:26:37 PM	DrakeMi

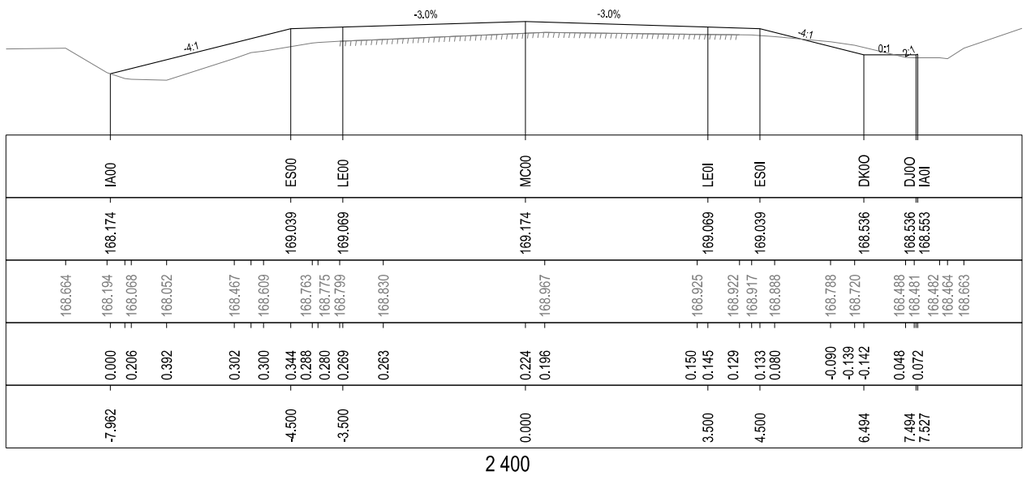
TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

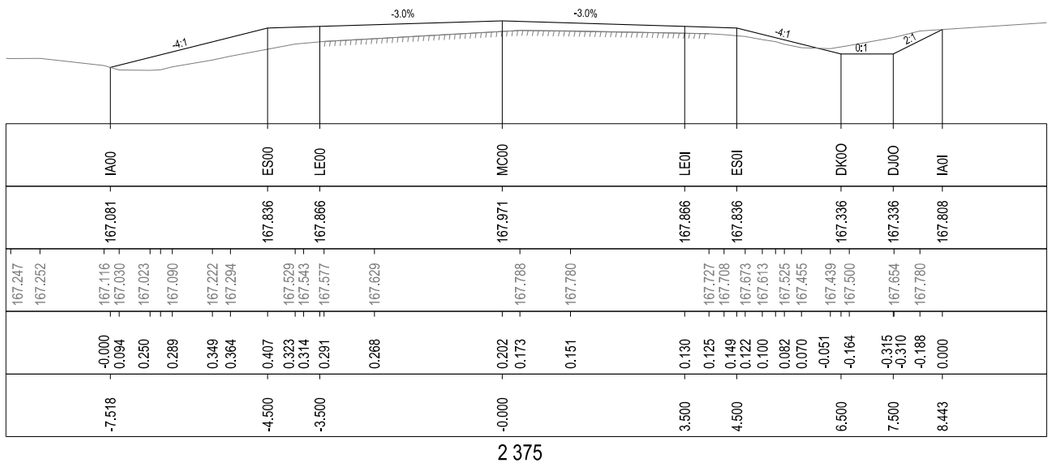
CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 2 325 TO 2 350

A3

TfNSW REGISTRATION No: DS2025 / 000300 — PART: A
ISSUE STATUS: 20% CONCEPT DESIGN
EDMS No.: QA1590032
SHEET No.: RC-0042
ISSUE: 1





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						CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020); HEIGHT DATUM: AHD	

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
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A3

TfNSW REGISTRATION No: DS2025 / 000300 — PART: A

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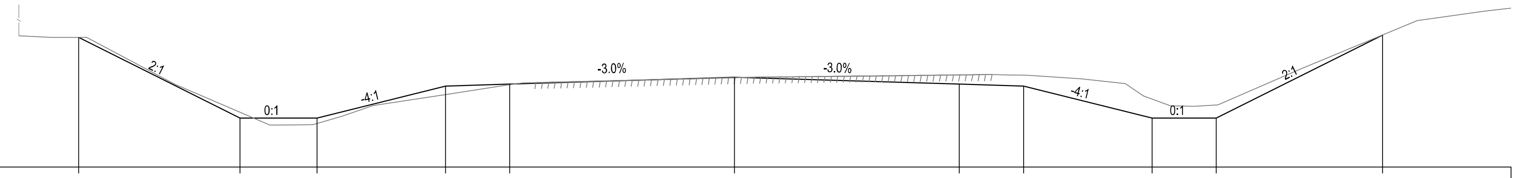

R.L. 170.0

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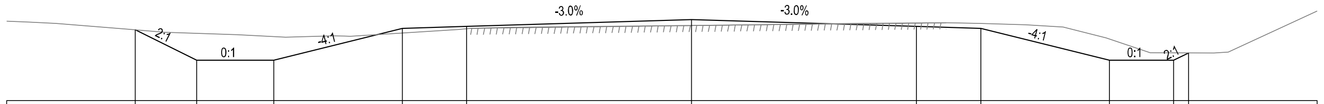

R.L. 169.0

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EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
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DESIGN LOT CODE: N2020140

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING: RR770 WYBONG ROAD - V01

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

PLOT DATE / TIME: 28/03/2025 6:26:38 PM PLOT BY: DrakeMi

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW

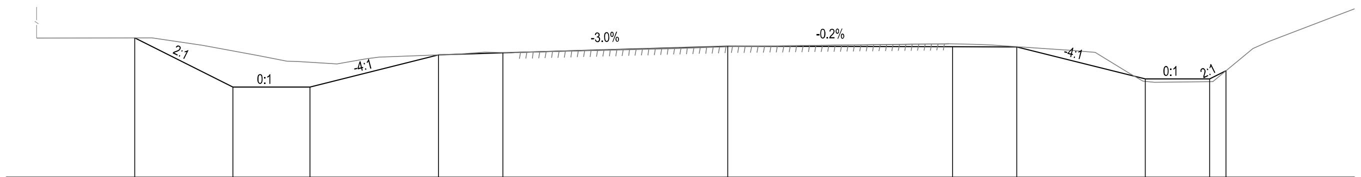
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 2 425 TO 2 450

A3

TfNSW REGISTRATION No. DS2025 / 000300 PART A

ISSUE STATUS: 20% CONCEPT DESIGN | EDMS No.: QA1590032 | SHEET No.: RC-0044 | ISSUE: 1



R.L. 172.0

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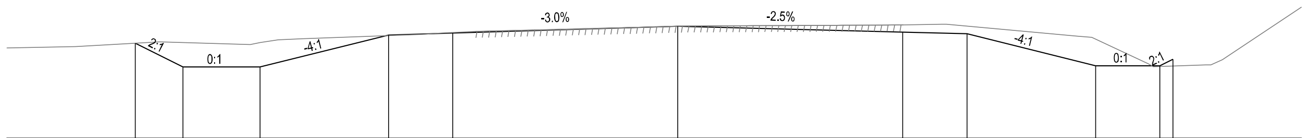
2 500



R.L. 171.0

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2 475

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EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	01	31-03-25	20% CONCEPT DESIGN ISSUED FOR REVIEW	01	MD

SCALES ON A3 SIZE DRAWING: 0 1 2 3 4 SCALE 1:100m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: Transport for NSW

PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
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CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 2 475 TO 2 500

A3

TfNSW REGISTRATION No. DS2025 / 000300 PART A

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
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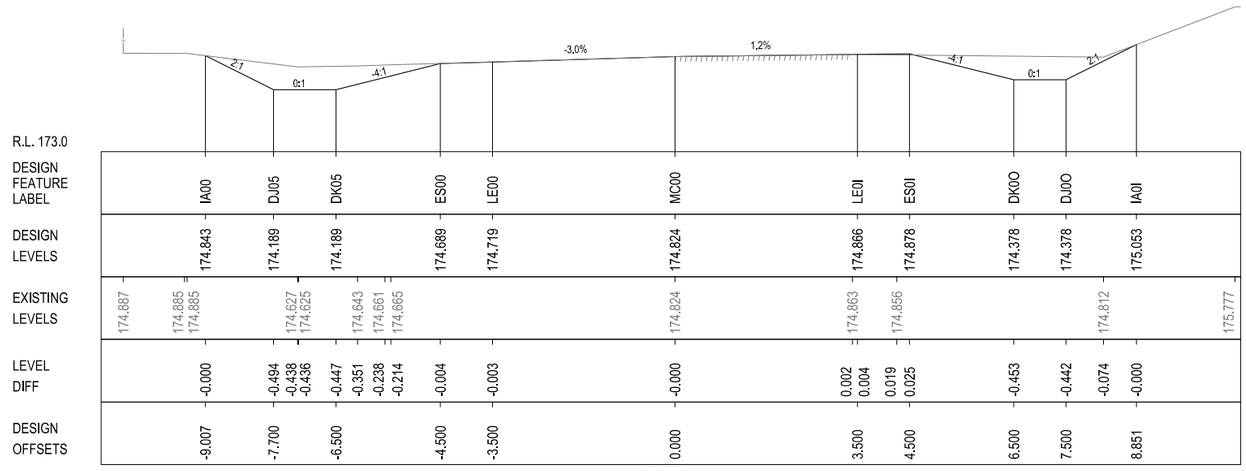

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EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
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DRAWINGS / DESIGN PREPARED BY

PLOT DATE / TIME	PLOT BY
28/03/2025 6:26:39 PM	DrakeMi

TITLE	NAME
DRAWN	M.DRAKE
DRG CHECK	TfNSW
DESIGN	M.DRAKE
DESIGN CHECK	TfNSW
DESIGN MNGR	D.JOHNSON
PROJECT MNGR	S.AUSTIN

CLIENT: NSW GOVERNMENT Transport for NSW
PREPARED FOR: PROJECT SERVICES NORTH

MUSWELLBROOK SHIRE COUNCIL
RR770 - KAYUGA ROAD
A3
PAVEMENT REHABILITATION & CULVERT INSTALLATION WYBONG RD
31.100km TO 33.600km SOUTH OF KAYUGA ROAD
CROSS SECTIONS
RR770 - WYBONG ROAD - MC00 - 2 515

TfNSW REGISTRATION No: DS2025 / 000300 PART A
ISSUE STATUS: 20% CONCEPT DESIGN
EDMS No.: QA1590032
SHEET No.: RC-0046
ISSUE: 1

6.2 Regional Entertainment Conference Centre

Responsible Officer: Director - Infrastructure & Property

Author: Project Manager - Property & Building Services

Community Strategic Plan: *5 - Community Infrastructure*

Effective and efficient infrastructure that is appropriate to the needs of our community

Delivery Program Goal: 1.4.1 - Complete current infrastructure projects and identify future opportunities for the Shire.

Operational Plan Action: 4.2.1.1 - Progress resubmission of the Regional Entertainment Centre Development Application.

Attachments:

1. Regional Entertainment Centre Revised Design Scope - January 2025 [**6.2.1** - 3 pages]
2. Regional Entertainment Centre Revised Feasibility layout Plans [**6.2.2** - 10 pages]
3. Regional Entertainment Centre - Revised Feasibility Cost Summary [**6.2.3** - 3 pages]
4. Regional Entertainment Centre - Revised Design Program [**6.2.4** - 1 page]
5. Regional Entertainment Centre - FJC and Subconsultants Fees 2025 - Rev B [**6.2.5** - 1 page]
6. Regional Entertainment Centre - FJC and Subconsultants - Allowances and Exclusions Table [**6.2.6** - 1 page]

PURPOSE

To provide the Infrastructure and Property Committee with an update on the progress of the revised concept design to meet a construction cost of $23 million for the Regional Entertainment Centre, and seek direction for the revised architect and sub-consultants fee variation for design phases 1–7 of the project.

OFFICER'S RECOMMENDATION

The Committee:

1. Notes the progress of the revised concept design and updated cost plan for the Regional Entertainment Centre;
2. Supports the revised architect and sub-consultants fee variation of $140,731 (excluding GST) for design phases 1–7;
3. Approves the continuation of design development to construction tender stage, with further engagement of architect and sub-consultants subject to additional Council approval; and
4. Recommends that Council receives a further report in July 2025 including the full revised Capital Expenditure Review.

Moved: _____ **Seconded:** _____

EXECUTIVE SUMMARY

At the 28 January 2025 Ordinary Council meeting, Council resolved as follows:

160	RESOLVED on the motion of Cr R. Scholes and Cr D. Douglas that: Council: 1. Supports the revised design scope for the Regional Entertainment Centre (Stage 1 – Theatre) as described in the report and under 'key changes'; 2. Proceed with the submission of a development application based on the revised design scope; and 3. Support a Stage 2 – Studio and additional back of house for concept only.
In Favour	Cr C. Bailey, Cr A. Barry, Cr D. Douglas, Cr J. Drayton, Cr L. Dunn, Cr D. Hartley, Cr G. McNeill, Cr R. Mahajan, Cr D. Marshall, Cr M. Morris, Cr R. Scholes and Cr S. Ward
Against:	Nil

In compliance with Council's resolution, the design development process has progressed to incorporate the 'key changes' endorsed at the January 2025 Ordinary Council meeting, and Quantity Surveyor cost revisions to meet a construction budget of $23 million. This has been the focus of the design work, and is an iterative process.

The principal design consultant (FJC Studio) has requested a variation fee proposal for revised design and sub consultant scopes and fees, to meet the revised project scope, budget, and timescale, for review by Council.

REPORT

The design team, FJC Studio, cost consultant – quantity surveyor Slattery Australia Pty Ltd, theatre consultant Richard Stuart, and council staff have continued design coordination meetings to ensure that the 'key changes' endorsed by Council are included for a construction budget of $23 million. This has included adjusting the design to include the 'key changes' and meet the nominated construction budget.

The 'key changes' reported to the January Ordinary Council included:

The key changes identified include but are not limited to:

1) Building Footprint and Budget

   The Quantity Surveyor's revised cost estimate (Attachment 3), which incorporates market escalation, suggests that the theatre's footprint should not exceed 1,500 m² to meet the $20 million budget. Current designs propose an area of 2,166m² (or 2,396m² with the grid mesh floor to the half fly tower), which exceeds the nominated budget and the need to continue rationalising of space where possible.

2) Consultant Reviews

   Additional assessments were undertaken to refine the theatre's functionality. The design and project team looked at the seating arrangements and the types of events hosted at similar regional theatres such as Ulumburra, Goulburn, and Batemans Bay. This review did confirm that 400 seats is sufficient to meet the expected demand in the community, based on the catchment sizes and event types.

3) Stage 1 Adjustments

   Following a detailed consultant review, the following design changes were recommended:

   a) Retain 400 seats to ensure a functional theatre.

   b) Stage dimensions to be retained as originally proposed.

   c) Maintain the fixed orchestra pit for appropriate performance capabilities. Review option of including orchestra pit void for future hydraulic lift.

   d) An external covered connection to the Muswellbrook Library seminar space to function as a studio space for performers and for dance groups. This studio space will be designed to function autonomously from the theatre, enabling independent operations and usage.

   e) External caged waste area to be deleted.

   f) Stage door and office spaces to be rationalised.

   g) The green room to be designed to include staff kitchen to optimise multi-use space.

   h) Colonnade and foyer/amenities space to be optimised to accommodate the needs of 400 people and allow equitable access.

   i) Move the building forward (towards the North) as currently extends in two-way traffic.

   j) Include storage proximate to the loading dock and an office for a theatre technician.

   Stage 2 (Studio)

   The design for the studio (Stage 2) will be developed separately and independent of the Theatre's Stage 1, in that it is concept only. Subject to any anticipated delay, Stage 2 may or may not be included in the development application.

4) Balcony and Administration Adjustments

   a) The scale of the balcony space will be reduced to minimise unnecessary costs. Review option of removing balcony and stairs and including lift access only.

   b) Include manager's office between ticket box and cloakroom.

   c) Cloak room to be reduced.

   d) The layout will be adjusted to ensure equitable access to toilets from both sides, ensuring improved accessibility.

5) Revised Layout Adjustments - Dressing Rooms and Green Room Relocation

   The dressing rooms and green room will be relocated between the rear corridor and the loading dock driveway to make the building design more streamlined. This allows for easier access and the potential for future expansion.

6) Loading Dock Adjustments

   The undercover loading dock will be deleted, with the loading dock flipped to the north (towards the library) to facilitate streamlined truck movements and easier access for performance logistics.

7) Fly Tower

   It is proposed to retain the half fly tower, reducing the building's height and associated costs in comparison to a full fly tower. This approach is based on the need to provide a cost-effective solution, while addressing the functionality requirements for the community's theatre needs.

A copy of the Revised Feasibility Layout Plans and the Revised Feasibility Cost Plan are attached to this report (Attachment 2 and 3). The Revised Design Scope from January 2025 is also attached (Attachment 1).

REVISED FEASIBILITY LAYOUT PLANS

The revised concept design schematic inclusions are summarised below.

Stage 1 Adjustments:

- 400-seat capacity retained to ensure theatre functionality,
- Original stage dimensions maintained,
- Fixed orchestra pit retained for performance capability, with provision for a future hydraulic lift,
- External covered connection established to the Muswellbrook Library seminar rooms, functioning as a studio for larger groups of performers, dance, and school groups,
- External caged waste area deleted,
- Stage door and office spaces rationalised for optimisation,
- Green room designed to include a staff kitchen for multipurpose use,
- Colonnade and foyer/amenities space optimised to accommodate 400 people across spaces,
- Building shifted forward (east) out of traffic corridor,
- Storage space situated near the loading dock and a theatre technician office integrated,
- Office placed at ticket box and cloakroom,
- Reduced cloakroom size to accommodate manager's office,
- Layout adjusted for equitable access to toilets from both sides, pending further Building Code Australia (BCA) review,
- Dressing rooms and green room relocated between the rear corridor and loading dock driveway to streamline the building layout,
- Deleted undercover loading dock and repositioned the loading dock to the north (towards the library).
- Retained half-fly tower, and
- The scale of the balcony space remains under review for further cost reductions.

REVISED FEASIBILITY COST PLAN

The Quantity Surveyor has revised the cost estimates based on the updated concepts, estimating the total building cost, as at April 2025, to be $24,084,000. Design contingency, contract contingency, including cost escalation allowance to Quarter 2 of 2026, are estimated at $2.869 million. A total cost estimate of $26,953,000, including contingencies.

At a construction cost of $24,084,000, the revised estimate is $1,084,000, approximately 5%, over the targeted $23 million construction budget. The design and theatre consultant team expect to identify further cost-saving measures of $1.5 million during ongoing design development to meet the construction budget of $23 million.

The following initiatives will be undertaken during the design process:

- Rationalising extent of steel framing compared to previous design scheme,
- Simplify facades to the 'back of house' areas of the new site (at sides and rear – not street facing),
- Investigate alternative materials and construction techniques for feature colonnade/ entry forecourt space,
- New designs will be developed for building services, excluding previous inclusions for studio theatre and commercial catering kitchen, and
- Fire protection requirements will be further reviewed, with input from the consultant building surveyor.

These initiatives are envisaged to introduce cost savings and facilitate meeting the targeted budget. Future cost plans will be delivered at 30%, 60%, and 90% of design milestones and at

tender. The Theatre Consultant will provide technical equipment cost inputs for each update.

REGIONAL ENTERTAINMENT CENTRE RELOCATION

The design team is required to reuse the prior design work from 2021, utilising the design and sub-consultants work as much as practicable from the previous design work completed in order to minimise expenditure on fees. However, changes in site, scope, and regulatory and BCA code requirements do mean all prior work must be reviewed and augmented, re-coordinated, and re-documented. A full multidisciplinary design effort is still required.

VARIATION FEE PROPOSAL

FJC Studio has submitted a fee variation request for the revised project scope (Attachment 5) and timeline/programme (Attachment 4). The variation covers Phases 1-7 (70% detailed design and tender documentation stage), Phase 8 (post tender construction documentation), and Phase 9-11 (construction phase services). A copy of the FJC studio's exclusions and allowances is also attached for reference (Attachment 6).

The fee variation to the existing scope for Architect and Principal Design Consultant, including sub-consultants, to deliver Phases 1-11 is summarised below.

Fee Summary Table (All fees excluding GST)	**Previously Agreed Fees to 2024**	**Revised FJC Fees**	**Revised sub-consultants Fees**	**Proposed Variation Amount**
Phases 1-7: Concept Design, Schematic Design, DA, Tender	$1,825,485.50	$639,000.00	$856,414.00	$1,495,414.00
Phases 8: Construction Documentation	$262,086.00	$130,000.00	$231,898.20	$361,898.20
Phases 9-11: Post Tender Construction Documentation & Construction Services	$649,034.00	$261,000.00	$300,093.00	$561,093.00
Other Consultant Variations	$201,545.00	$0	-$10,880.00	-$10,880.00
Sub Total	$2,938,150.50	$1,030,000.00	$1,377,525.20	$2,407,525.20
Unexpended Fees				-$1,354,683.00
Total Variation				**$1,052,842.20**

The net total variation fee proposal of $1,052,842, exclusive of GST, is to undertake the design and tender documentation process, and to deliver the subsequent phases of work through to construction completion.

As subsequent phases of work post construction award may be best represented either through

a design and construct contract, with possible consideration of a design team novation option, or the builder makes other design arrangements, it is recommended to approve only phases 1-7 to tender phase and design and construct contract award. Post-contract award (phases 8-11) will be subject to future review. Below is a summary of the variation proposal for phases 1-7 only.

Phases 2-7: Concept Design, Schematic Design, DA, Tender	$1,825,485.50	$639,000.00	$856,414.00	$1,495,414.00
Unexpended Fees				-$1,354,683.00
Total Variation				**$140,731**

The phases 1-7 variation net total fee is $140,731, exclusive of GST, to finalise the new design and tender documentation process for construction, following deduction of unexpended fees as per the original agreement.

It is recommended that Council approves only phases 1-7 at this stage, $140,731 exclusive of GST. Post-contract award (phases 8-11) will be subject to future feasibility and budget review.

REVISED DESIGN PROJECT PROGRAM

A draft program is attached with this report (Attachment 5), outlining a high-level activity breakdown of design and review processes leading to a tender process in Q2 2026, with theatre completion targeted for the end of 2027. The Design Development and DA phases are proposed to proceed concurrently, subject to approval authority timeframes.

Key Milestones detailed in the program include:

- Tender Documentation: Q2 2026
- Tender Period: 2 months
- Construction Mobilisation: 2 months
- Construction Period: 18 months
- Completion: End of 2027

FINANCIAL CONSIDERATIONS

Ongoing Operational and Maintenance Costs Implications Associated with Capital Project

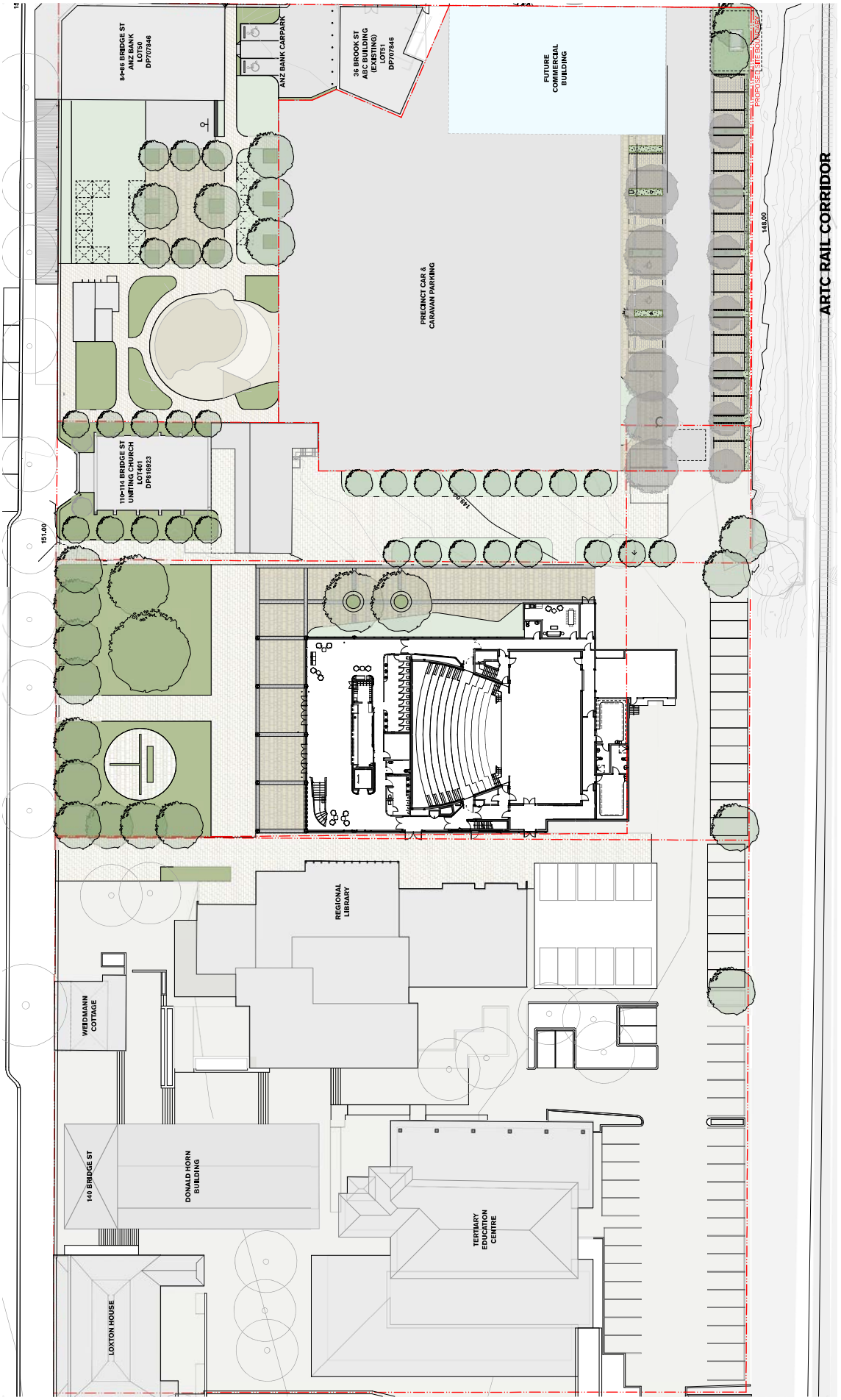
1. ***Financial Implications – Capital***

   - Proposed Variation (phases 1-7 only) = $1,495,414.00 (architect and sub-consultants fees)
   - Unexpended Fees (status as of 30 May 2025) = $1,354,683
   - Variation amount to be approved accounting for unexpended fees = $140,731 (excludes landscape design fees)

   The recommended variation amount can be accommodated in the existing capital budget allocation under the Special Rate Variation #3690.5433. for the Regional Entertainment Centre.

2. ***Financial Implications – Operational***

A full Capital Expenditure Review will be presented to Council in July 2025.



Updated Precinct Plan

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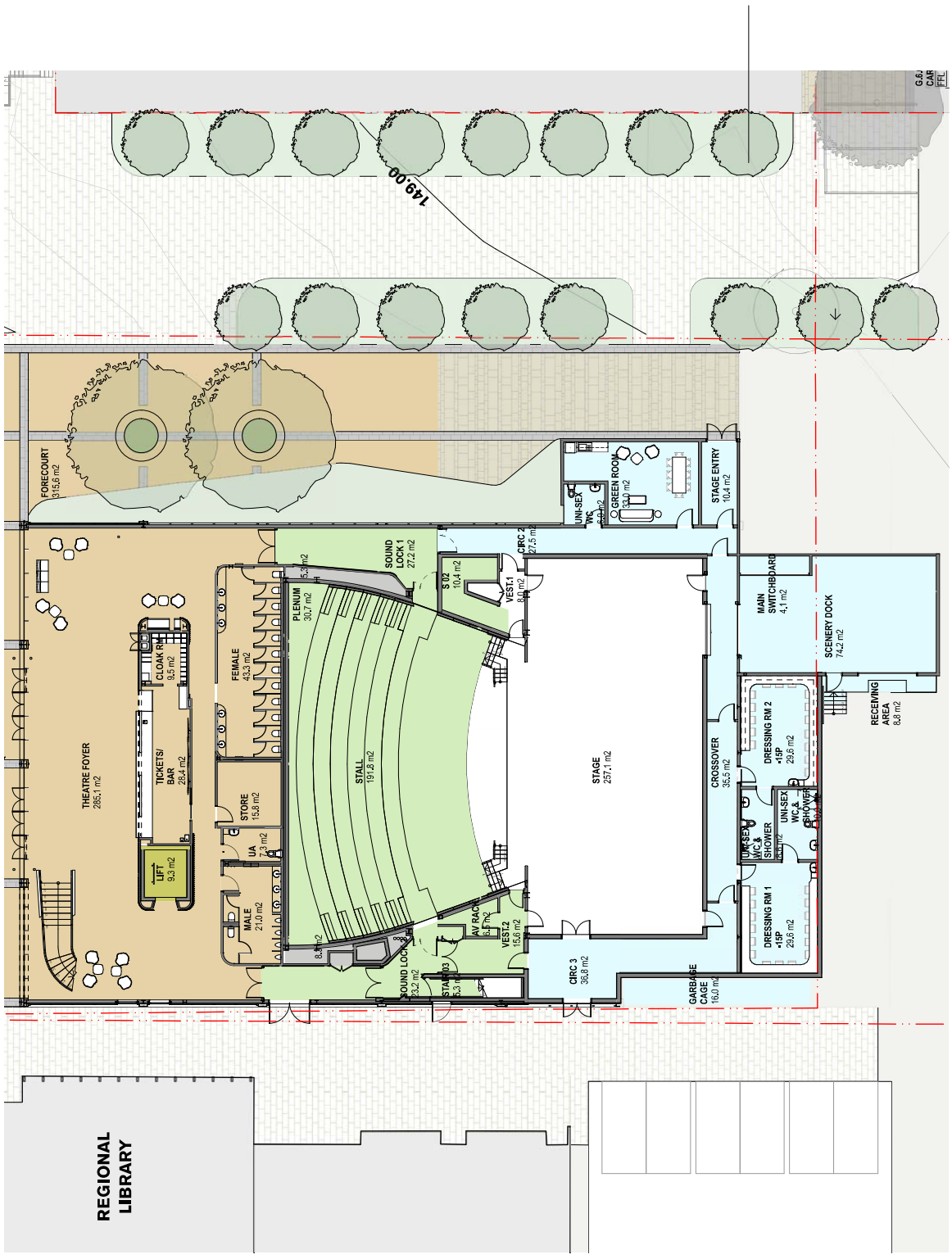
Zone Plan - Ground Floor



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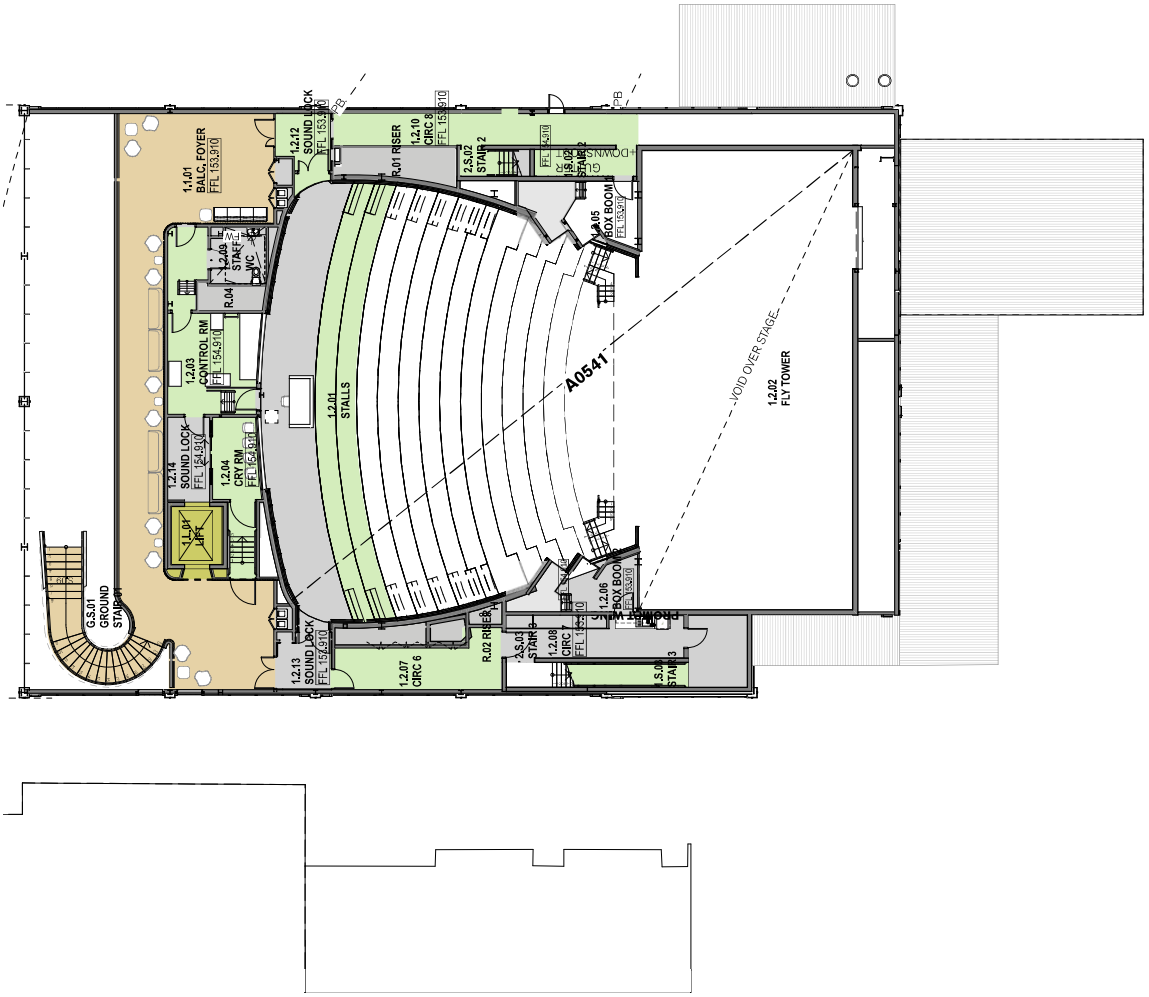
Zone Plan - Level 1



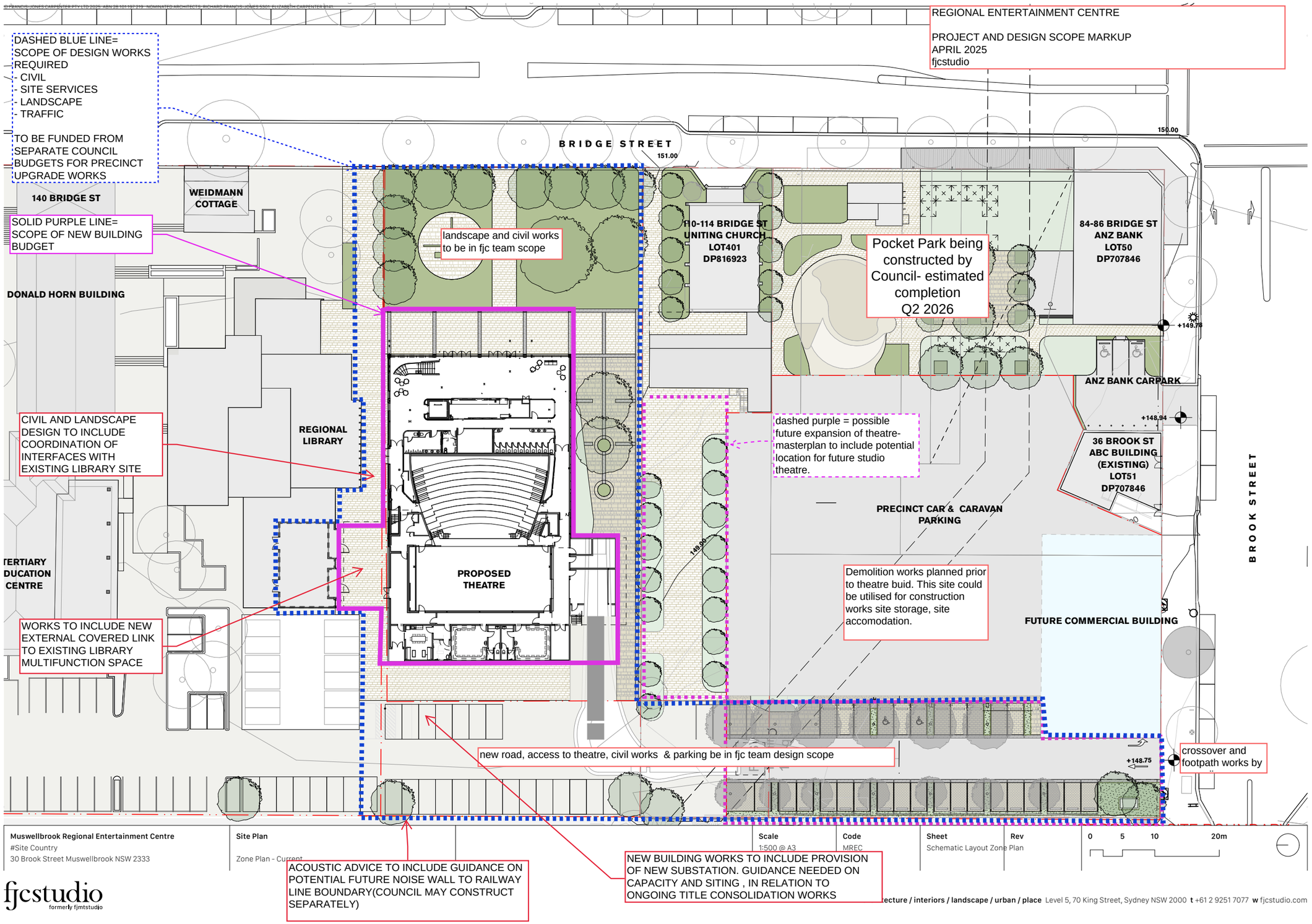
Area Schedule

SP Zone Schedule Concept copy 1

Story	Zone No.	Room Name	Area m2
Basement 1			
			18,18
	B.2.01	LIFT PIT	216,86
	B.2.05	PLENUM	191,57
			236,61 m²
Ground Floor			
	G.1.01	THEATRE FOYER	286,08
	G.1.02	TICKETS/ BAR	28,40
	G.1.03	CLOAK RM	9,45
	G.1.04	STORE	15,84
	G.1.05	UA	7,21
	G.1.07	FEMALE	43,33
	G.1.08	MALE	20,08
	G.2.01	STALL	191,76
	G.2.03	STAGE	257,08
	G.2.04	SOUND LOCK 1	27,15
	G.2.05	SOUND LOCK 2	23,19
	G.2.06	VEST1	7,98
	G.2.07	VEST2	15,56
	G.2.08	PLENUM	30,74
	G.2.10	AV PACK	6,45
	G.4.01	CIRC 2	27,50
	G.4.01	CIRC 3	36,76
	G.4.02	CROSSOVER	35,46
	G.4.08	DRESSING RM 1 - 15P	29,56
	G.4.08	DRESSING RM 2 - 15P	29,56
	G.4.10	GREEN ROOM	33,01
	G.4.11	STAGE ENTRY	10,42
	G.4.14	MAIN SWITCHBOARD	4,13
	G.4.14	SCENERY DOCK	74,16
	G.4.15	RECEIVING AREA	8,82
	G.4.16	GARBAGE CAGE	16,01
	G.4.19	UNI-SEX WC	6,03
	G.4.20	UNI-SEX WC & SHOWER	10,04
	G.4.21	UNI-SEX WC & SHOWER	8,61
	G.4.01	FORECOURT	315,59
	G.4.02	COLONNADE	192,64
	G.4.03	CAR DROP OFF ZONE	282,39
	G.4.04	CARPARK	963,34
	G.4.01	LIFT	9,28
	G.5.02	S 02	10,41
	G.5.03	STAIR 03	5,30
	R.01 RISER		5,35
	R.02 RISER		8,32
			3,098,49...
Level 1			
			9,34
	1.1.01	BALC.FOYER	113,45
	1.2.01	STALLS	95,20
	1.2.02	FLY TOWER	238,43
	1.2.03	CONTROL RM	29,80
	1.2.04	CRY RM	14,86
	1.2.05	BOX BOOM 1	9,29
	1.2.06	BOX BOOM 2	9,18
	1.2.07	CIRC 6	19,06
	1.2.08	CIRC 7	15,73
	1.2.09	STAFF WC	7,02
	1.2.10	CIRC 8	29,25
	1.2.12	SOUND LOCK	8,00
	1.2.13	SOUND LOCK	8,18
	1.2.14	SOUND LOCK	8,23

MREC Area Schedule GFA

Story	Zone No.	Room Name	Area m2
	1.1.01	LIFT	10,24
	1.S.02	STAIR 2	6,83
	1.S.03	STAIR 2	6,76
	2.S.02	STAIR 2	3,41
	2.S.03	STAIR 3	3,60
	G.S.01	GROUND STAIR 01	16,33
	R.01 RISER		8,49
	R.02 RISER		8,35
	R.03		1,40
	R.04		3,77
			676,02 m²
Level 2			
	2.2.01A	FLY GALLERY EAST	33,99
	2.2.01B	FLY GALLERY WEST	12,53
	2.2.02	FOLLOW SPOT	25,20
	2.2.03A	LB1	30,03
	2.2.03B	LB2	44,08
	2.2.04	CIRC 11	30,00
	2.2.05	CIRC 10	6,09
	2.2.06	CIRC 9	7,55
	2.2.07	FLY TOWER	164,58
	2.4.01	FOH LIFT OVER RUN TO LV.1	7,01
	2.S.02	STAIR 2	10,49
	2.S.03	STAIR 3	13,48
	R.01 RISER		8,85
	R.02 RISER		8,36
	R.04 RISER		4,42
			409,06 m²
Level 3			
	3.2.01	FLY TOWER	209,52
	3.4.01	PLANTDECK	539,34
			748,86 m²
Fly Tower Deck			
	4.4.01	ROOF	245,41
			245,41 m²
			5,415,15...


REGIONAL ENTERTAINMENT CENTRE
PROJECT AND DESIGN SCOPE MARKUP
APRIL 2025
fjcstudio
DASHED BLUE LINE= SCOPE OF DESIGN WORKS REQUIRED
- CIVIL
- SITE SERVICES
- LANDSCAPE
- TRAFFIC
TO BE FUNDED FROM SEPARATE COUNCIL BUDGETS FOR PRECINCT UPGRADE WORKS
SOLID PURPLE LINE= SCOPE OF NEW BUILDING BUDGET
CIVIL AND LANDSCAPE DESIGN TO INCLUDE COORDINATION OF INTERFACES WITH EXISTING LIBRARY SITE
WORKS TO INCLUDE NEW EXTERNAL COVERED LINK TO EXISTING LIBRARY MULTIFUNCTION SPACE
BRIDGE STREET
151.00
150.00
140 BRIDGE ST
WEIDMANN COTTAGE
DONALD HORN BUILDING
landscape and civil works to be in fjc team scope
110-114 BRIDGE ST UNITING CHURCH LOT401 DP816923
Pocket Park being constructed by Council- estimated completion Q2 2026
84-86 BRIDGE ST ANZ BANK LOT50 DP707846
+149.76
ANZ BANK CARPARK
+148.94
REGIONAL LIBRARY
PROPOSED THEATRE
dashed purple = possible future expansion of theatre- masterplan to include potential location for future studio theatre.
36 BROOK ST ABC BUILDING (EXISTING) LOT51 DP707846
PRECINCT CAR & CARAVAN PARKING
Demolition works planned prior to theatre buid. This site could be utilised for construction works site storage, site accomodation.
FUTURE COMMERCIAL BUILDING
BROOK STREET
TERTIARY EDUCATION CENTRE
new road, access to theatre, civil works & parking be in fjc team design scope
+148.75
crossover and footpath works by
ACOUSTIC ADVICE TO INCLUDE GUIDANCE ON POTENTIAL FUTURE NOISE WALL TO RAILWAY LINE BOUNDARY(COUNCIL MAY CONSTRUCT SEPARATELY)
NEW BUILDING WORKS TO INCLUDE PROVISION OF NEW SUBSTATION. GUIDANCE NEEDED ON CAPACITY AND SITING , IN RELATION TO ONGOING TITLE CONSOLIDATION WORKS
Muswellbrook Regional Entertainment Centre
#Site Country
30 Brook Street Muswellbrook NSW 2333
Site Plan
Zone Plan - Current
Scale
1:500 @ A3
Code
MREC
Sheet
Schematic Layout Zone Plan
Rev
0 5 10 20m
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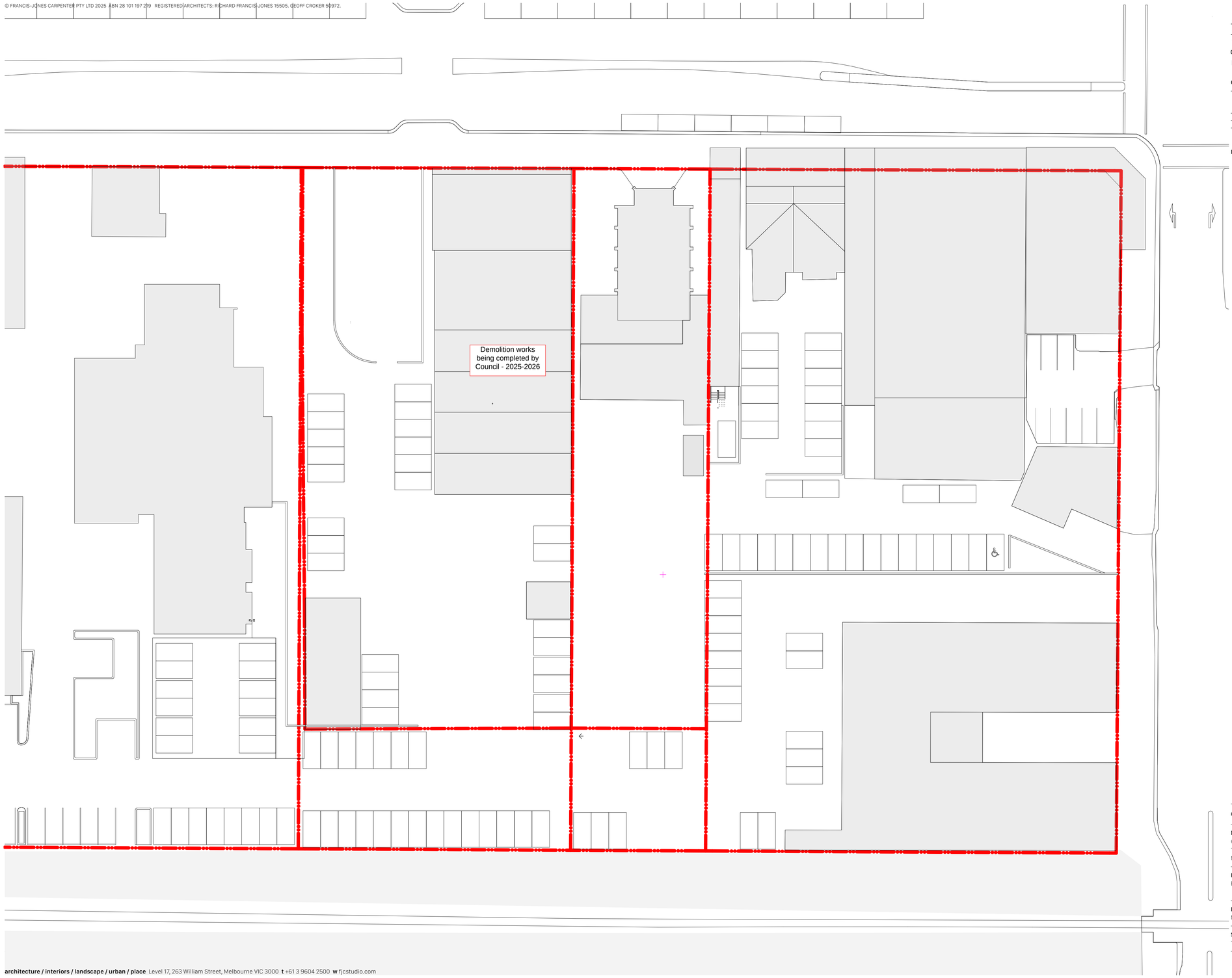

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0 1 2 5m

General notes
- All dimensions and existing conditions shall be checked and verified by the contractor before proceeding with the work.
- All levels relative to 'Australian Height Datum'.
- Do not scale drawings.
- Use figured dimensions only.

Legend

Rev	Date	Description	By	Chk

Muswellbrook Regional Entertainment Centre
#Site Country
116 Bridge Street
Muswellbrook NSW 2333

Existing Locality Plan — **Scale**
Existing Locality Plan — 1:100 @ A1

Project Code — **First Issued**
MREC — DD/MM/YYYY

Sheet No. — **Rev**
1200

<drawing status>

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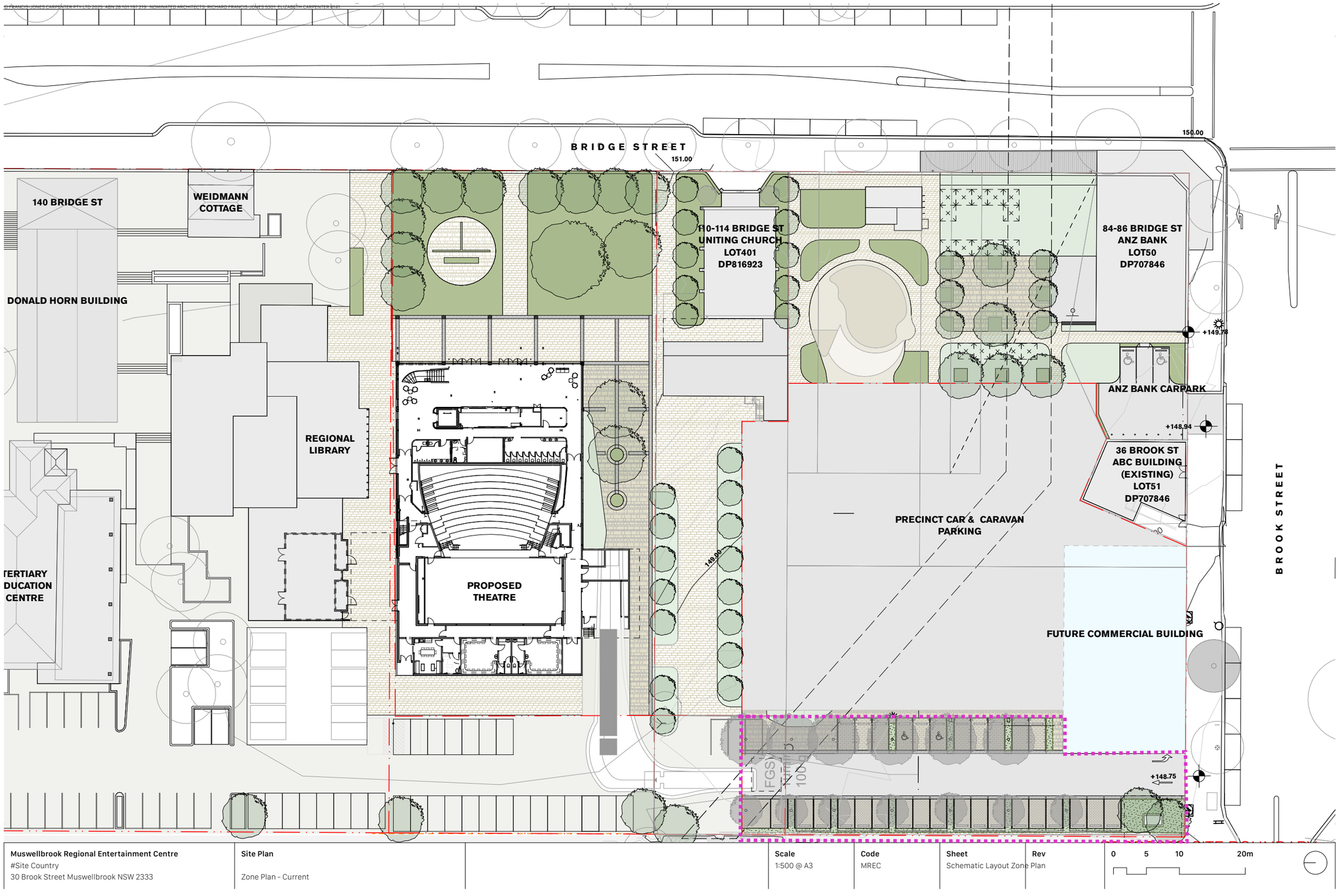
© FRANCIS-JONES CARPENTER PTY LTD 2025 ABN 28 101 162 219 NOMINATED ARCHITECTS: RICHARD FRANCIS-JONES 5591, ELIZABETH CARPENTER 8121
BRIDGE STREET
151.00
150.00
140 BRIDGE ST
WEIDMANN COTTAGE
DONALD HORN BUILDING
REGIONAL LIBRARY
TERTIARY EDUCATION CENTRE
PROPOSED THEATRE
110-114 BRIDGE ST UNITING CHURCH LOT401 DP816923
84-86 BRIDGE ST ANZ BANK LOT50 DP707846
ANZ BANK CARPARK
+149.74
+148.94
36 BROOK ST ABC BUILDING (EXISTING) LOT51 DP707846
PRECINCT CAR & CARAVAN PARKING
149.00
FUTURE COMMERCIAL BUILDING
+148.75
BROOK STREET
Muswellbrook Regional Entertainment Centre
#Site Country
30 Brook Street Muswellbrook NSW 2333
Site Plan
Zone Plan - Current
Scale
1:500 @ A3
Code
MREC
Sheet
Schematic Layout Zone Plan
Rev
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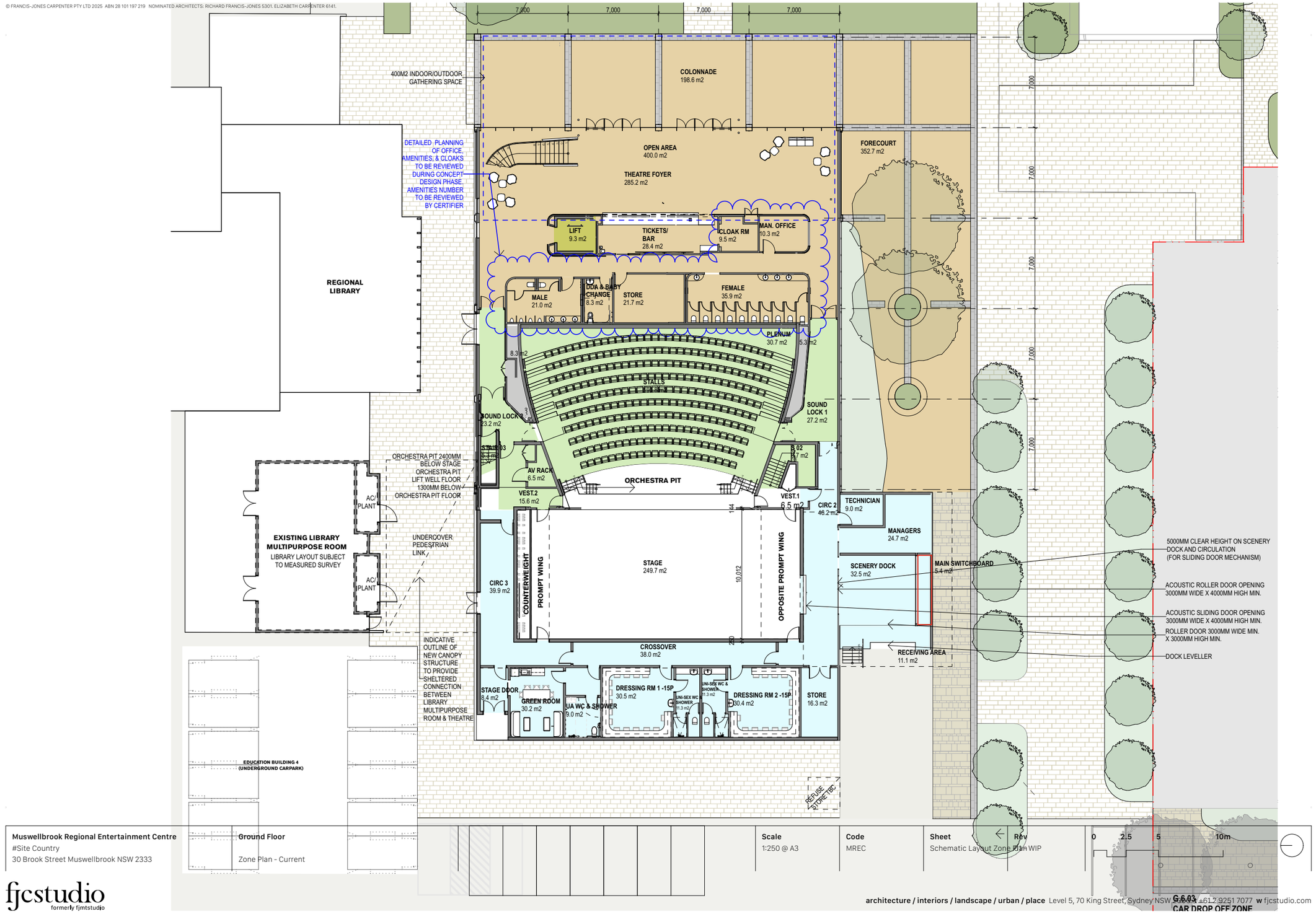
© FRANCIS-JONES CARPENTER PTY LTD 2025 ABN 28 101 197 219 NOMINATED ARCHITECTS: RICHARD FRANCIS-JONES 5301, ELIZABETH CARPENTER 6141.
400M2 INDOOR/OUTDOOR GATHERING SPACE
COLONNADE 198.6 m2
DETAILED PLANNING OF OFFICE, AMENITIES, & CLOAKS TO BE REVIEWED DURING CONCEPT DESIGN PHASE. AMENITIES NUMBER TO BE REVIEWED BY CERTIFIER
OPEN AREA 400.0 m2
THEATRE FOYER 285.2 m2
FORECOURT 352.7 m2
LIFT 9.3 m2
TICKETS/ BAR 28.4 m2
CLOAK RM 9.5 m2
MAN. OFFICE 10.3 m2
REGIONAL LIBRARY
MALE 21.0 m2
UNISEX DDA & BABY CHANGE 8.3 m2
STORE 21.7 m2
FEMALE 35.9 m2
PLENUM 30.7 m2
STALLS
SOUND LOCK 3 23.2 m2
SOUND LOCK 1 27.2 m2
ORCHESTRA PIT 2400MM BELOW STAGE
ORCHESTRA PIT LIFT WELL FLOOR 1300MM BELOW ORCHESTRA PIT FLOOR
AV RACK 6.5 m2
ORCHESTRA PIT
VEST.2 15.6 m2
VEST.1 6.5 m2
CIRC 2 46.2 m2
TECHNICIAN 9.0 m2
MANAGERS 24.7 m2
AC PLANT
EXISTING LIBRARY MULTIPURPOSE ROOM
LIBRARY LAYOUT SUBJECT TO MEASURED SURVEY
UNDERCOVER PEDESTRIAN LINK
CIRC 3 39.9 m2
COUNTERWEIGHT
PROMPT WING
STAGE 249.7 m2
OPPOSITE PROMPT WING
SCENERY DOCK 32.5 m2
MAIN SWITCHBOARD 5.4 m2
5000MM CLEAR HEIGHT ON SCENERY DOCK AND CIRCULATION (FOR SLIDING DOOR MECHANISM)
ACOUSTIC ROLLER DOOR OPENING 3000MM WIDE X 4000MM HIGH MIN.
ACOUSTIC SLIDING DOOR OPENING 3000MM WIDE X 4000MM HIGH MIN.
ROLLER DOOR 3000MM WIDE MIN. X 3000MM HIGH MIN.
DOCK LEVELLER
CROSSOVER 38.0 m2
RECEIVING AREA 11.1 m2
INDICATIVE OUTLINE OF NEW CANOPY STRUCTURE TO PROVIDE SHELTERED CONNECTION BETWEEN LIBRARY MULTIPURPOSE ROOM & THEATRE
STAGE DOOR 8.4 m2
GREEN ROOM 30.2 m2
UA WC & SHOWER 9.0 m2
DRESSING RM 1 -15P 30.5 m2
UNI-SEX WC & SHOWER 11.3 m2
DRESSING RM 2 -15P 30.4 m2
STORE 16.3 m2
EDUCATION BUILDING 4 (UNDERGROUND CARPARK)
REFUSE STORE TBC
G.6.03 CAR DROP OFF ZONE
Muswellbrook Regional Entertainment Centre
#Site Country
30 Brook Street Muswellbrook NSW 2333
Ground Floor
Zone Plan - Current
Scale 1:250 @ A3
Code MREC
Sheet Schematic Layout Zone Plan WIP
Rev
0 2.5 5 10m
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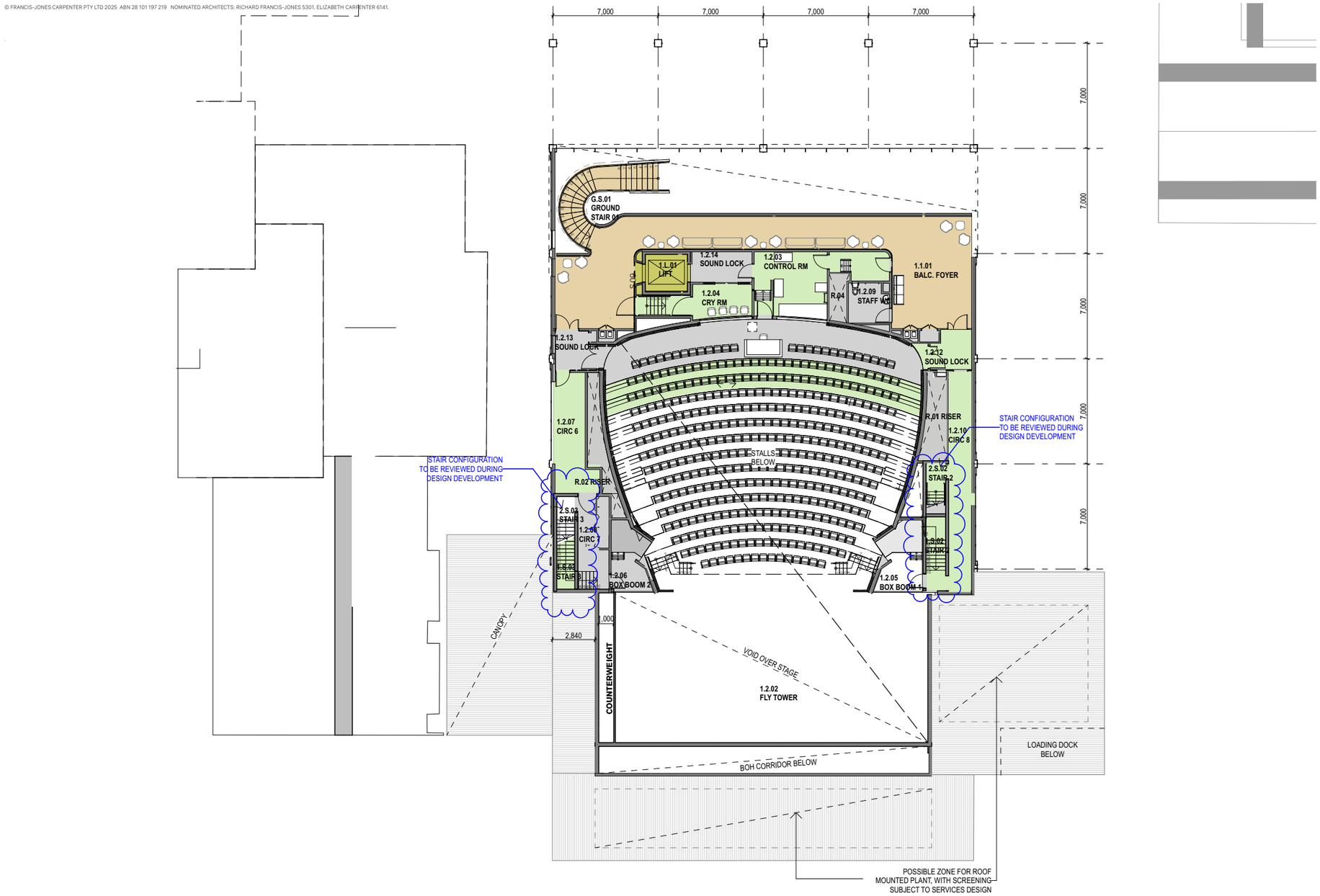

Muswellbrook Regional Entertainment Centre #Site Country 30 Brook Street Muswellbrook NSW 2333	**Level 1** Zone Plan - Current		**Scale** 1:250 @ A3	**Code** MREC	**Sheet** Schematic Layout Zone Plan	**Rev** WIP	0 2.5 5 10m

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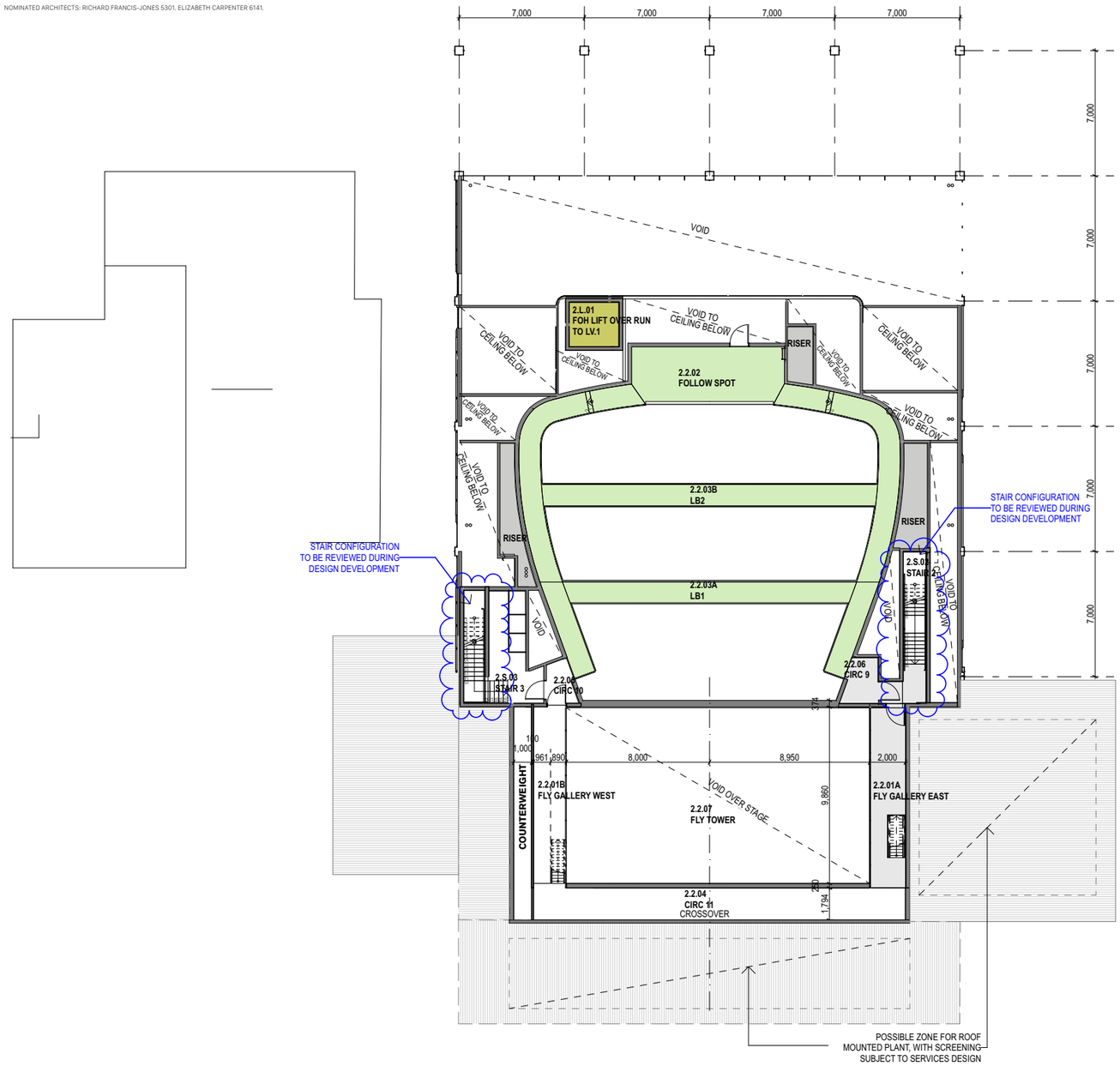

Muswellbrook Regional Entertainment Centre #Site Country 30 Brook Street Muswellbrook NSW 2333	**Level 2** Zone Plan - Current		**Scale** 1:250 @ A3	**Code** MREC	**Sheet** Schematic Layout Zone Plan	**Rev** P3 - WIP	0 2.5 5 10m

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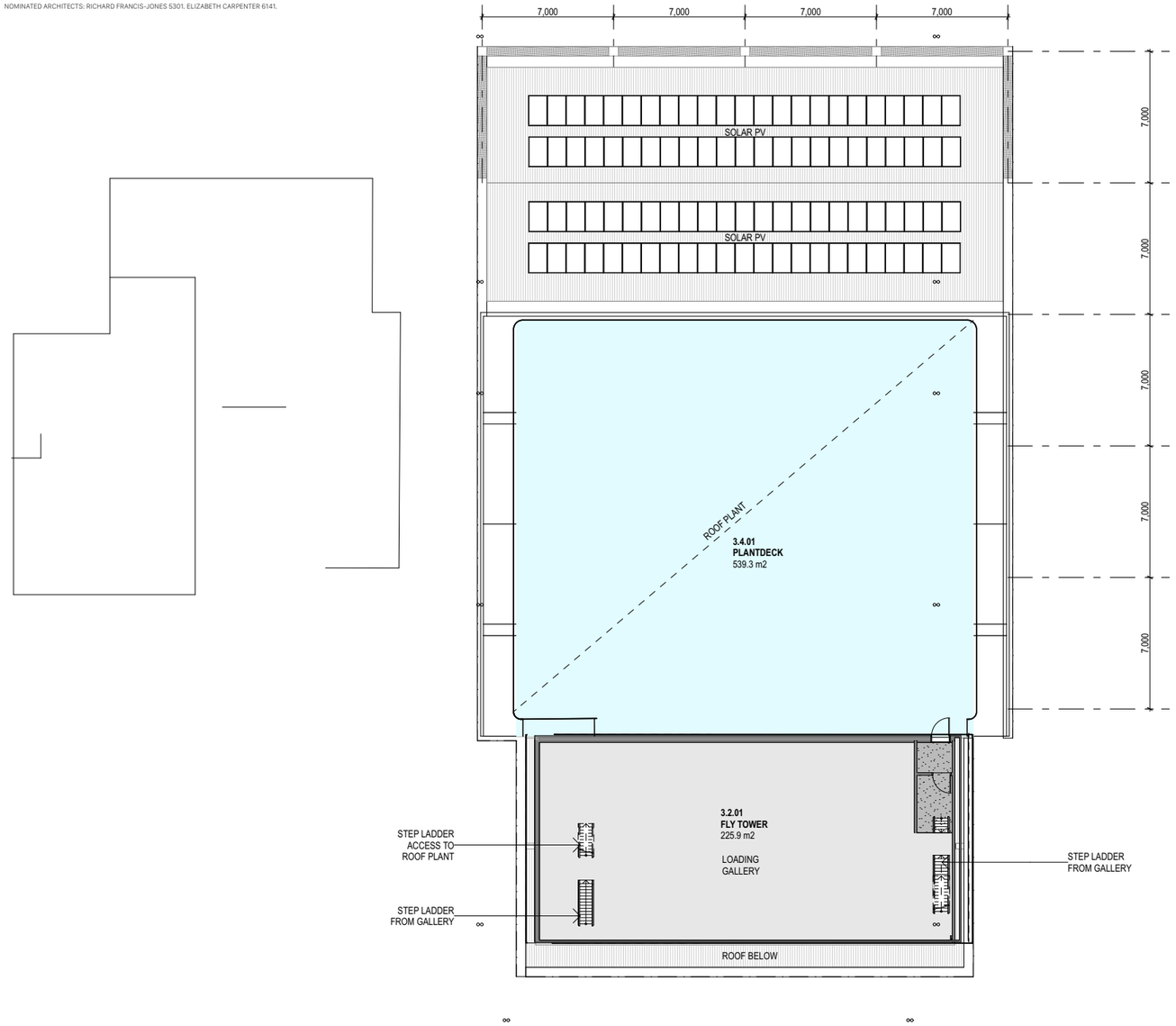

Muswellbrook Regional Entertainment Centre #Site Country 30 Brook Street Muswellbrook NSW 2333	**Level 3** Zone Plan - Current		**Scale** 1:250 @ A3	**Code** MREC	**Sheet** Schematic Layout Zone Plan	**Rev**	0 2.5 5 10m

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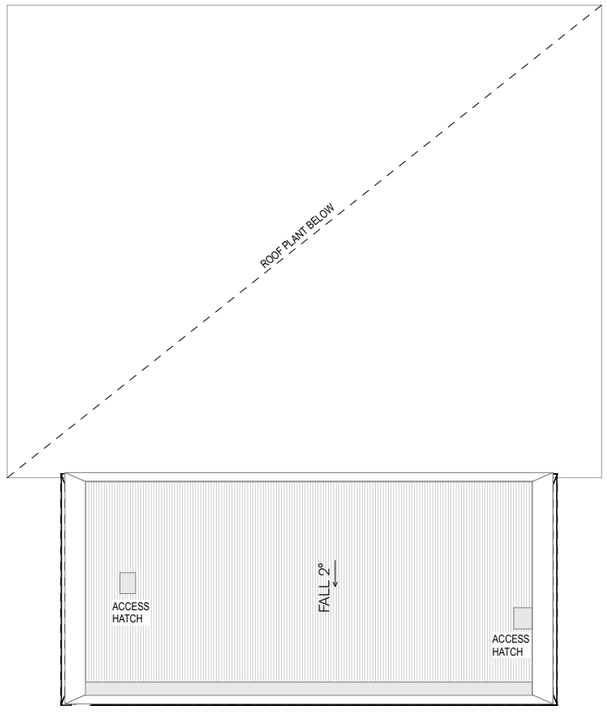

Muswellbrook Regional Entertainment Centre #Site Country 30 Brook Street Muswellbrook NSW 2333	**Fly Tower Deck** Zone Plan - Current		**Scale** 1:250 @ A3	**Code** MREC	**Sheet** Schematic Layout Zone Plan	**Rev**	0 2.5 5 10m

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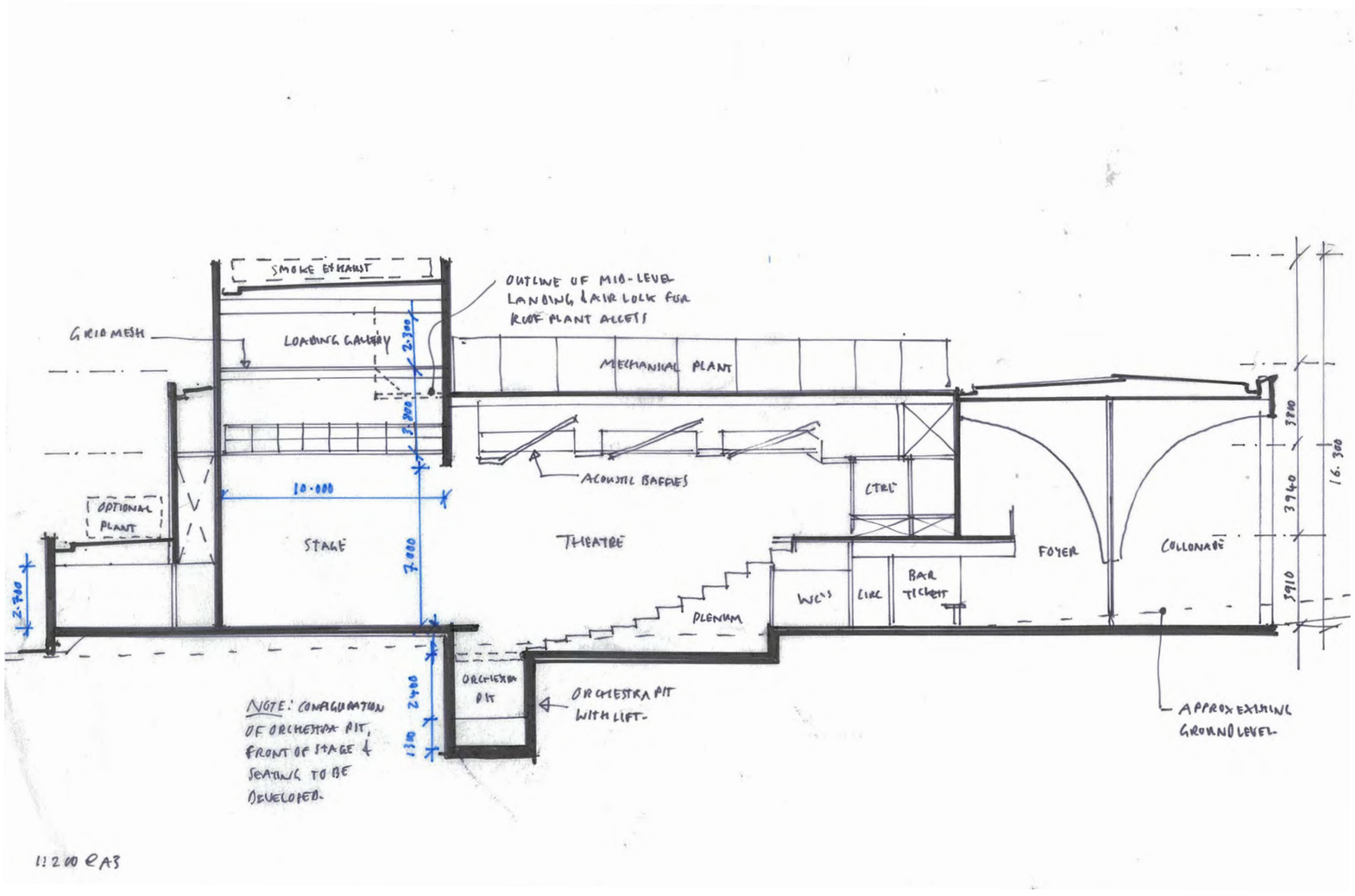

Muswellbrook Regional Entertainment Centre #Site Country 30 Brook Street Muswellbrook NSW 2333	**Section A** Sections - Current		**Scale** 1:200 @ A3	**Code** MREC	**Sheet** Sketch	**Rev**	0 2 5 10m

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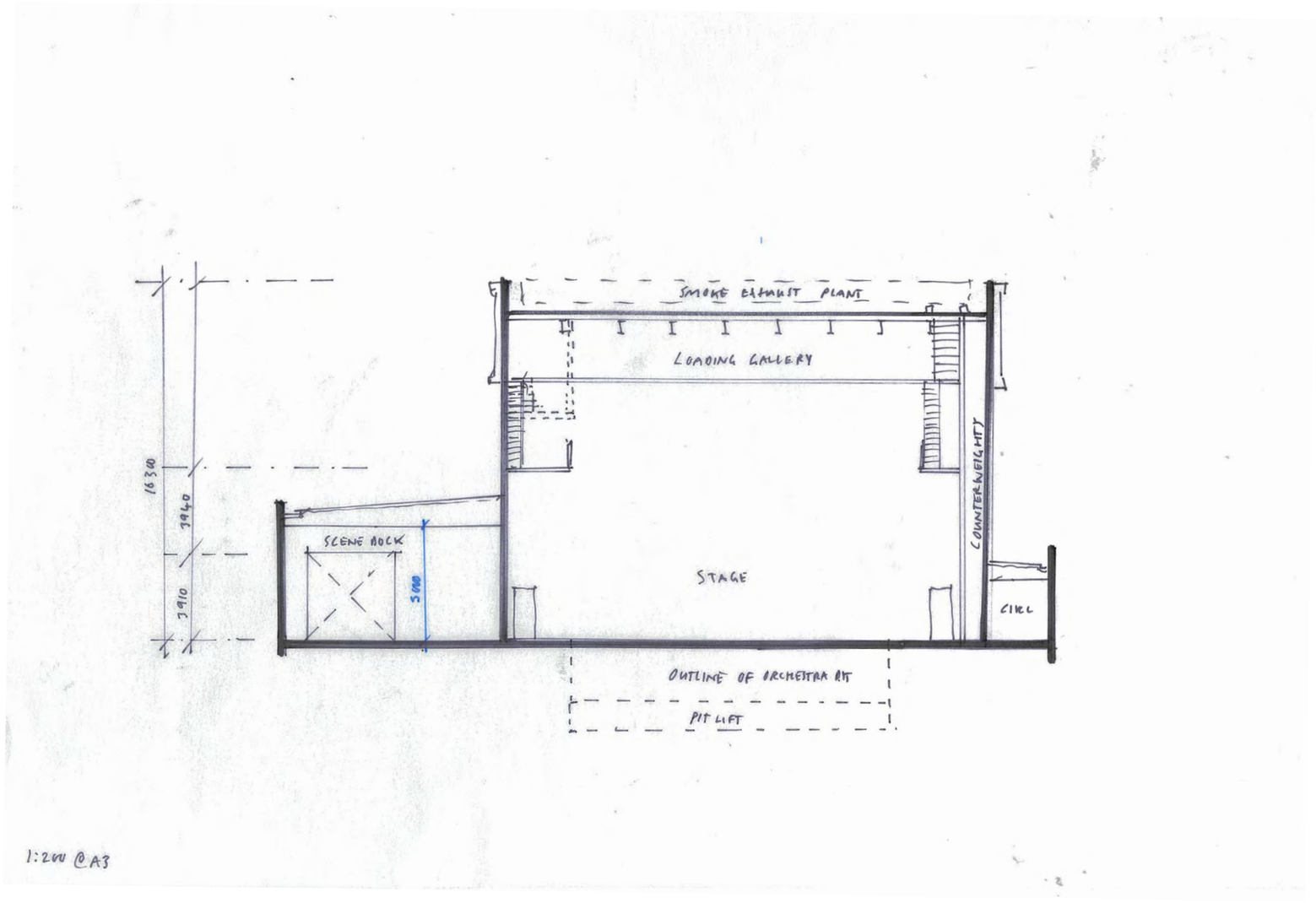

Muswellbrook Regional Entertainment Centre #Site Country 30 Brook Street Muswellbrook NSW 2333	**Section B** Sections - Current		**Scale** 1:200 @ A3	**Code** MREC	**Sheet** Sketch	**Rev**	0 2 5 10m

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Muswellbrook Regional Entertainment Centre
Muswellbrook Shire Council, 60-82 Bridge Street, Muswellbrook, NSW, 2333
Revised Feasibility Cost Plan 1 **7 April, 2025**

Functional Area	Scope	Area (m2)	Rate ($/m2)	Total ($)
Muswellbrook Theatre				
Site Piling		2,037	496	1,010,000
Theatre		2,037	10,417	21,219,000
New Canopy Structure to Library		2,037	77	156,000
Loose Furniture, Fittings & Equipment		2,037	59	120,000
ICT & AV		2,037	304	620,000
Theatre Equipment		2,037	471	959,000
Total Building Cost (at April, 2025)		**2,037**	**11,823**	**24,084,000**
Provisional allowance for demolition		Item		157,000
Provisional allowance for External Works and Services to facilitate new build - Precinct Works fun		Item		982,000
Allowance for PV		Item		52,000
Provisional allowance for carparking		Item		Excluded
Allowance for works outside site boundary, etc.		Item		Excluded
Allowance for abnormal ground conditions / site decontamination / remediation		Item		Excluded
Total Building and External Works & Services Cost (at April, 2025)			**12,408**	**25,275,000**
Design Contingency		Item	1.0%	253,000
Contract Contingency		Item	5.0%	1,276,000
Cost Escalation Allowance (Assumed Q2, 2026)		Item	5.0%	1,340,000
Total Construction Cost (at April, 2025)			**13,816**	**28,144,000**
Consultants Fees		Item		3,330,000
Council Management Fees		Item		
Authority & Headwork's Charges		Item		
Other Project Costs		Item	2.00%	563,000
Goods & Services Tax		Item		
Total End Cost (at April, 2025)			**15,728**	**32,037,000**

This cost plan is based on preliminary information and therefore should be regarded as indicative only of the possible order of cost. All components of the cost plan will require confirmation once further documentation is available. Refer to the accompanying letter for details of basis of cost plan and exclusions from above costs.

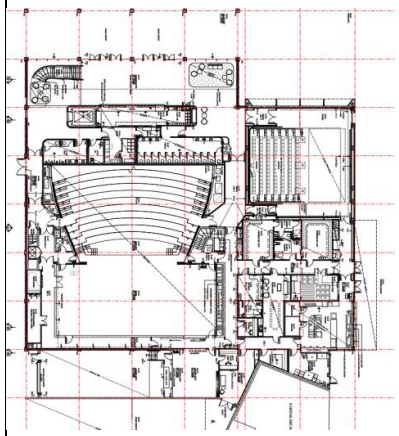
Muswellbrook Regional Entertainment Centre
Muswellbrook Shire Council, 60-82 Bridge Street, Muswellbrook, NSW, 2333
Revised Feasibility Cost Plan 1
Elemental Summary **7 April, 2025**

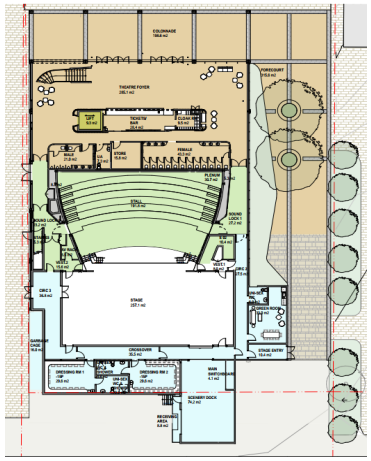
Element	TOTAL		
	FECA		2,037
	%	$ / m2	$ Total
Substructure		**658**	**1,340,223**
Superstructure		**4,391**	**8,943,916**
Columns		331	674,877
Upper Floors		401	817,165
Stairs		180	367,305
Roof		796	1,620,964
External Walls / Windows / Doors		1,832	3,732,225
Internal Walls		640	1,303,498
Internal Screens		79	160,212
Internal Doors		131	267,669
Finishes		**668**	**1,360,981**
Wall Finishes		355	723,600
Floor Finishes		155	315,076
Ceiling Finishes		158	322,306
Fitments		**320**	**652,085**
Fitments		346	704,126
Special Equipment (including theatre seating)		286	583,534
Services		**2,452**	**4,993,747**
Hydraulics (inc. Sanitary Fixtures)		161	328,031
Mechanical		1,063	2,164,836
Fire Protection		207	421,053
Electrical / Communications / Security		901	1,835,409
Lifts		72	146,500
BWIC with Services	2.5%	48	97,917
Preliminaries and Overheads	**18%**	**1,528**	**3,112,372**
Builder's Margin	**4%**	**401**	**816,133**
Total		**10,417**	**21,219,000**

20075
Muswellbrook Regional Entertainment Centre
Muswellbrook Shire Council, 60-82 Bridge Street, Muswellbrook, NSW, 2333
Revised Feasibility Cost Plan 1

Functional Area	July 2021 (PTE)			July 2024			April 2025		
	Area (m2)	Rate ($/m2)	Total ($)	Area (m2)	Rate ($/m2)	Total ($)	Area (m2)	Rate ($/m2)	Total ($)
Muswellbrook Theatre									
Site Piling	2,202	442	972,419	2,254	430	969,000	2,037	496	1,010,000
Theatre	2,677	7,344	19,661,175	2,254	9,157	20,640,000	2,037	10,417	21,219,000
New Canopy Structure to Library	2,677	-	-	2,254	-	-	2,037	77	156,000
Loose Furniture, Fittings & Equipment	2,677	56	150,000	2,254	51	116,000	2,037	59	120,000
ICT & AV	2,677	288	770,000	2,254	263	593,000	2,037	304	620,000
Theatre Equipment	2,677	276	739,690	2,254	304	686,000	2,037	471	959,000
Total Building Cost	2,677	8,328	22,293,285	2,254	10,206	23,004,000	2,037	11,823	24,084,000

Ground Floor Plan





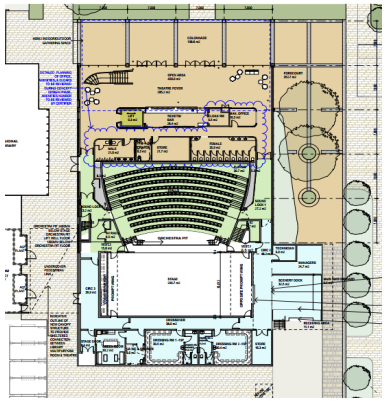


Table 1-1

MREC - MuswellBrook Regional Entertainment Centre, New Site DRAFT Programme 7/5/2025					2025												2026												2027												2028											
	Calendar Year																																																
	Calendar Month	Timescale	Start	End	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
	Programme Month				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
	Programme Weeks				5	4	5	4	4	4	5	4	4	4	4	5	5	4	5	4	4	4	5	4	4	4	4	5	5	4	5	4	4	4	5	4	4	4	4	5	5	4	5	4	4	4	5	4	4	4	4	5
0.0	**Project Administration and Governance**																																																	
1.0	**Pre-Design Phase**	6 weeks	**25/02/2025**	**11/04/2025**	Pre-Design Phase																																														
	Site Investigations - new site (Feasibility Layout				Pre-Design Phase																																													
	Cost Plan Update					QS																																											
	Review & Approval to Proceed						Appr																																										
2.0	**Concept Design & Return Brief**	3-4 months	**14/04/2025**	**08/08/2025**				Concept Design Phase																																												
	Engage Consultants		14/04/2025	07/05/2025				Wildlife																																										
	Produce Concept Design		07/05/2025	02/07/2025					Concept Design																																									
	Cost Plan Update		07/07/2025	25/07/2025							QS																																						
	Review & Approval to Proceed		25/07/2025	08/08/2025								Approv																																						
3.0	**Schematic Design**	3-4 months	**01/08/2025**	**05/11/2025**									Schematic Design Phase																																									
	Produce Schematic Design (Single design option only)	9 weeks											Schematic Design																																									
	Cost Plan Update	3 weeks												QS																																				
	Review & Approval to Proceed	2 weeks													Approval																																			
4.0	***Early Works Documentation***	To be advised by MSC											Early Works TBC																																						
	Services Diversions / Adjacent Demolition / Site Access Setup												Demolition & Site Preparation																																							
	Scope TBC																																																
5.0	**Documentation - Development Application**	4-6 months	**01/10/2025**	**01/03/2026**										Development Application Phase																																						
	Design Development for DA Application	3 weeks												DA Docs																																				
	Consultant Reports	3 weeks													DA Reports																																			
	Review & Approval to Proceed	2 weeks														Rp																																		
	DA Lodgement & Assessment	3-4 months														Council Assessment Period																																		
6.0	**Documentation - BCA Compliance**	Concurrent	**01/11/2025**	**15/12/2025**											Compliance Reviews																																				
	BCA Compliance Reports & Reviews														BCA Reports																																			
7.0	**Documentation - Tender**	4 months	**01/11/2025**	**28/02/2026**											Design Development & Tender Documentation																																			
	Design Development & D&C Tender Pack	10 weeks													Detailed Design & Documentation - Construction Tender																																			
	Pre tender Estimate	3 weeks														QS																																		
	Review & Approval to Proceed	2 weeks															Approval																																		
	Tender Process	2 months	**01/03/2026**	**30/04/2026**													Tender Process																																		
	D&C Contractor Selection & Negotiations	Consultant Novation															Pre Tender Shortlist, ROIs																																		
	Note: Managed by client																																															
8.0	**Documentation - Construction & Certification**	18-24 Months	**01/05/2026**	**30/11/2027**																																													
	Construction Documentation (Excl VM Changes)	3- 5 months																											Construction Documentation																				
	Building Certification	2 months																											Documentation - Construction																				
9.0	**Construction Phase Services**	18-24 Months	**01/05/2026**	**30/11/2027**																									Building Certification																				
	Construction Phase Design Team Assistance																												Construction																				
																					Mobilisation		1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24													
10.0	**Handover & Post Completion**	12 months	**01/12/2027**	**01/12/2028**																																													Completion / Defect Period				
	Defects Liability Period - DLP Post-Construction Activities (12 months)																																															Commissioning and Handover	Defects Liability Period 12 Months				
11.0	**Specialist Workstreams**																																																	
	Scope TBC																																																	

MREC - Muswellbrook Regional Entertainment Centre, New Site
Fee Variation Breakdown 29th May 2025 (Rev B)

Note: All figures shown exclude GST

Phase	Item	Service Component	Total Base Fee Agreement (GST Excl) 31/8/2018 Incl $23k Geotech	Variations prior to 2023	AV10 Variation Partial Scope Revisit Phases 1-7	AV10 Variation Package 20/9/2023 fjc Fees	AV10 Variation Package 20/9/2023 Consultant Fees	Total Previously Agreed Fees A	Status as of 30th May 2025	Expended Amount as of 30/5/2025	Unexpended Fees C	Revised Scope (New Fee Package Stages 2-11 New Site, Revised Brief 2025)	fjcstudio Principal Consultant, Architect	Sub Consultant Team Fees Incl External Works	Total Fees Consultant Team B	Total Fees 2025 Variation PLUS Previously Agreed LESS Unexpended Fees = A+B-C	Expended Amount as of 30/5/2025
	0.0	Project Administration and Governance			Revisit stages 1-7	$29,000.00			Partially Expended	$19,000.00	$10,000.00	Project admin & governance through phases 2-11 for new site and brief.	$29,000.00	$0.00	$29,000.00		
	0.1	Internal Management			As above							As above		$0.00	$0.00		
	0.2	Design Team Management			As above							As above		$0.00	$0.00		
	0.3	Design Review - Internal			As above							As above		$0.00	$0.00		
	0.4	Meeting Attendance (additional to site attendance below)			As above							As above		$0.00	$0.00		
	0.5	Project Reporting			As above							As above		$0.00	$0.00		
	0.6	QA/WHS/Risk Management			As above							As above		$0.00	$0.00		
	0.7	Safety in Design - implement/maintain SID Register across all proejct			As above							As above		$0.00	$0.00		
	0.8	Document Management			As above							As above		$0.00	$0.00		
	0.9	Documentation Quality Assurance			As above							As above		$0.00	$0.00		
	0.10	Cost Management			As above							Excluded- by client		$0.00	$0.00		
	0.11	Early Tenderer Involvement Activities			Excluded							Excluded		$0.00	$0.00		
		Sub Total	$62,830.00						Partially Expended	$45,430.00	$17,400.00						
		Project Administration and Governance Fee (excluding GST)						$91,830.00		$64,430.00	$27,400.00		$29,000.00	$0.00	$29,000.00	$93,430.00	$64,430.00
	1.0	Pre-Design Phase			Repeat Stage 1: Architect & Theatre Consultant Only	$25,800.00			Expended	$25,800.00		Fjc tasks completed under previous variation. Consultant teams tasks pending		$17,000.00	$17,000.00		
	1.1	Briefing Meetings/Workshops			As above		$800.00		Expended	$800.00		Completed under previous variation		$0.00	$0.00		
	1.2	Site Investigations/Due Diligence Activities			As above		$9,000.00		Expended	$9,000.00		Completed under previous variation		$0.00	$0.00		
	1.3	Functional Design Brief - Facility			As above							Completed under previous variation		$0.00	$0.00		
	1.4	Reverse Briefs - Technical (Acoustics, Performance Space, Building Services etc)			As above		$1,200.00		Expended	$1,200.00		Excluded		$0.00	$0.00		
	1.5	Servicing Strategy			Excluded							Excluded		$0.00	$0.00		
	1.6	Site Survey + **Geotechnical**			Land Survey Additions		$16,410.00		Expended	$16,410.00		Excluded		$0.00	$0.00		
	1.7	Sustainability Strategy/Targets			Excluded							Completed under previous variation		$0.00	$0.00		
	1.8	Meeting/Workshop with Community Stakeholders			Excluded							Excluded		$0.00	$0.00		
	1.9	Site Analysis Report (constraints and opportunities)			As above							Completed under previous variation		$0.00	$0.00		
		Sub Total	$94,540.00						Expended	$94,540.00							
Variation:	AV1	Precinct Analysis Study		$15,170.00					Expended	$15,170.00							
Variation:	AV2	Management of Extra Scope		$1,053.00					Expended	$1,053.00							
Variation:	AV11	Demolition Plan Update For Pocket Park		$832.50					Expended	$832.50							
Variation:	AV12	Reference Site Visit management Fee		$120.00					Expended	$120.00							
		Pre-Design Phase Fee (excluding GST)						$164,925.50		$164,925.50	$0.00		$0.00	$17,000.00	$17,000.00	$181,925.50	$164,925.50
	2.0	Concept Design | Consultant Design Reports & Reverse Brief			Repeat Stage 2: Architect, Building Regulations Consult, Theatre Consultant Only. $10k Concept Design Reports for other Consultants	$24,000.00	$91,430.00		Partially Expended	$64,990.00	$50,440.00	Prepare concept design for new site and revised brief	$95,000.00	$94,047.00	$189,047.00		
	2.1	Prepare Concept Design Options (1 no.)			As above							Included- as above		$0.00	$0.00		
	2.2	Final Concept Design Options for Stakeholder / Community Consultation (Presentation materials and report outlining options)			Excluded							Excluded		$0.00	$0.00		
	2.3	Present Concept Design options to MSC			As above							Included- as above		$0.00	$0.00		
	2.4	Community Consultation			Excluded							Excluded		$0.00	$0.00		
	2.5	Opportunity for Public Art Integration Strategy			Excluded							Excluded		$0.00	$0.00		
		Sub Total	$67,980.00						Expended	$67,980.00							
		Concept Design Fee (excluding GST)						$183,410.00		$132,970.00	$50,440.00		$95,000.00	$94,047.00	$189,047.00	$322,017.00	$132,970.00
	3.0	Schematic Design			Partial Scope For: Architect, Theatre Consultant, Building Regulations Consultant, Access Consultant, Fire Engineer, Kitchen Consultant. All Other Consultants Excluded	$30,000.00	$24,710.00		Unexpended	$0.00	$54,710.00	Prepare schematic design for new site and revised brief	$125,000.00	$177,920.50	$302,920.50		
	3.1	Develop preferred Concept Design to Schematic Design Level (all disciplines)			As above							Included- as above		$156.80	$156.80		
	3.2	Green Star Feasibility Analysis and Life Cycle Cost Report			As above							Included- as above		$0.00	$0.00		
	3.3	Develop Concept Design documentation for MSC review and Cost Estimate			As above							Included- as above		$0.00	$0.00		
	3.4	Final Concept / Schematic Design			As above							Included- as above		$0.00	$0.00		
		Sub Total	$113,250.00						Expended	$113,250.00				$0.00	$0.00		
Variation:	AV3	VM1 Scope Reduction		$12,500.00					Partially Expended	$6,250.00	$6,250.00			$0.00	$0.00		
Variation:	AV4	VM2 Scope Reduction		$7,000.00					Expended	$7,000.00				$0.00	$0.00		
Variation:	AV5	Precinct Plan Amendments		$2,880.00					Expended	$2,880.00				$0.00	$0.00		
Variation:	AV6	Pro Rata Scope to DA		$195,000.00					Expended	$195,000.00				$0.00	$0.00		
		Preferred Schematic Design Fee (excluding GST)						$385,340.00		$324,380.00	$60,960.00		$125,000.00	$178,077.30	$303,077.30	$627,457.30	$324,380.00
	4.0	Early Works Documentation			Excluded							Civil Early Works only		$12,500.00	$12,500.00		
	4.1	Early Works Reverse Brief (all disciplines)			Excluded							Excluded		$0.00	$0.00		
	4.2	Preliminary EW Documentation (50%) For MSC review for DA/Complying Dev't Certificate			Excluded							Excluded		$0.00	$0.00		
	4.3	Preliminary EW Documentation (90%) for review and QS			Excluded							Excluded		$0.00	$0.00		
	4.4	Early Works Documentation for Tender (all disciplines incorporating Consent Authority conditions)			Excluded							Excluded		$0.00	$0.00		
	4.5	Early Works Documentation for Construction (all disciplines incorporating post tender amendments)			Excluded							Excluded		$0.00	$0.00		
		Sub Total	$90,140.00		Excluded				Partially Expended	$64,647.00	$25,493.00						
		Early Works Fee (excluding GST)						$90,140.00		$64,647.00	$25,493.00		$0.00	$12,500.00	$12,500.00	$77,147.00	$64,647.00
	5.0	Documentation - Development Application			Variations to Architect, Theatre Consultant, Building Regulations Consultant, Building Certifier, Access Consultant, Fire Engineer, Heritage Consultant (P Sum), Waste Consultant (P Sum). All Other Consultants Excluded	$38,500.00	$37,310.00		Not used- Superseded	$0.00	$75,810.00	Prepare DA submission for new site and revised brief	$85,000.00	$119,036.00	$204,036.00		
	5.1	Architectural Documentation to meet DA Requirements (including 3D representations and model if required)			As above							Included- as above		$0.00	$0.00		
	5.2	Traffic and Transport Report - DA			As above							Included- as above		$0.00	$0.00		
	5.3	Hydraulic Engineering Report (site water management)			As above							Included- as above		$0.00	$0.00		
	5.4	Structural and Civil Engineering Documentation - DA			As above							Included- as above		$0.00	$0.00		
	5.5	Acoustic Impacts Report - DA			As above							Included- as above		$0.00	$0.00		
	5.6	Services Strategy - DA			As above							Included- as above		$0.00	$0.00		
	5.7	Waste Management Report - DA			As above		$7,500.00		Not used- Superseded	$0.00	$7,500.00	Included- as above		$0.00	$0.00		
	5.8	ESD / Sustainability Report - DA			As above							Included- as above		$0.00	$0.00		
	5.9	Landscape Architecture Documentation - DA			As above							Included- as above		$0.00	$0.00		
	5.10	Visual Impact Assessment			As above							Included- as above		$4,600.00	$4,600.00		
	5.11	Signage Details - DA			As above							Included- as above		$0.00	$0.00		
		Sub Total	$122,260.00						Expended	$122,260.00							
		Documentation - Development Application Fee (excluding GST)						$205,570.00		$122,260.00	$83,310.00		$85,000.00	$123,636.00	$208,636.00	$330,896.00	$122,260.00
	6.0	Documentation - BCA Compliance			Partial Scope for Architect, Building Regulations Consultant, Building Certifier, Access Consultant, Fire Engineer. All Other Consultants Excluded	$45,500.00	$54,210.00		Not used- Superseded	$0.00	$99,710.00	Prepare BCA compliance information for new site and revised brief	$95,000.00	$79,690.00	$174,690.00		
	6.1	Architectural Documentation (includes all specialist areas)			As above							Included- as above		$134.40	$134.40		
	6.2	Structural Engineering Documentation			As above							Included- as above		$0.00	$0.00		
	6.3	Civil Engineering Documentation			As above							Included- as above		$0.00	$0.00		
	6.4	Building Services Engineering (all disciplines - mech/elec/hydraulic/lift/fire/security)			As above							Included- as above		$0.00	$0.00		
	6.5	Accessibility/DDA Report			As above							Included- as above		$10,000.00	$10,000.00		
	6.6	JV3/Sustainability Assessment Report			As above							Included- as above		$0.00	$0.00		
	6.7	Coordinate all disciplines into documentation			As above							Included- as above		$0.00	$0.00		
	6.8	BCA Documentation for Principal Review and QS Check			As above							Included- as above		$0.00	$0.00		
	6.9	BCA Compliance (s109R Certificate for whole project/project stages)			As above							Included- as above		$8,250.00	$8,250.00		
		Sub Total	$142,900.00						Expended	$142,900.00				$0.00	$0.00		
		Documentation - BCA Compliance Fee (excluding GST)						$242,610.00		$142,900.00	$99,710.00		$95,000.00	$98,074.40	$193,074.40	$335,974.40	$142,900.00
	7.0	Documentation - Construction Tender (70%DD)			Partial Scope for: Architect, Theatre Consultant, Building Regulations Consultant, Building Certifier, Access Consultant, Kitchen Consultant. All Other Consultants Excluded	$63,000.00	$30,860.00		Not used- Superseded	$0.00	$93,860.00	Prepare DD tender pack for new site and revised brief	$210,000.00	$332,978.50	$542,978.50		
	7.1	Tender Documentation - Architectural			As above							Included- as above		$100.80	$100.80		
	7.2	Tender Documentation - Structural Engineering			As above							Included- as above		$0.00	$0.00		
	7.3	Tender Documentation - Civil Engineering			As above							Included- as above		$0.00	$0.00		
	7.4	Tender Documentation - Mechanical Services Engineering (HVAC - Buildings)			As above							Included- as above		$0.00	$0.00		
	7.5	Tender Documentation - Mechanical Services Engineering (Vertical Transport - Buildings)			As above							Included- as above		$0.00	$0.00		
	7.6	Tender Documentation - Electrical Services Engineering (power supply and reticulation, lighting - general lighting - specialised, security systems, communications, solar infrastructure)			As above							Included- as above		$0.00	$0.00		
	7.7	Tender Documentation - Hydraulic Services Engineering (water supply and reticulation, sewer, roof water, rainwater harvesting and re-use)			As above							Included- as above		$0.00	$0.00		
	7.8	Tender Documentation - Fire Protection Systems Engineering			As above							Included- as above		$0.00	$0.00		
	7.9	Tender Documentation - Specialist ICT and AV Systems			As above							Included- as above		$0.00	$0.00		
	7.10	Tender Documentation - Landscape Architecture			As above							Included- as above		$0.00	$0.00		
	7.11	Coordination of all disciplines (Inclusion of all design requirements for access, acoustic performance, environmental performance, Green Star Rating, Traffic and Transport, Other)			As above							Included- as above		$0.00	$0.00		
		Sub Total	$202,600.00						Expended	$202,600.00				$0.00	$0.00		
Variation:	AV7	Pre Novation IFC Documentation		$165,200.00					Expended	$165,200.00				$0.00	$0.00		
		Documentation - Construction Tender Fee (excluding GST)						$461,660.00		$367,800.00	$93,860.00		$210,000.00	$333,079.30	$543,079.30	$910,879.30	$367,800.00
		Sub Total Phases 1-7						$1,825,485.50				Sub Total Phases 1-7	$639,000.00	$856,414.00	$1,495,414.00	$2,879,726.50	$1,384,312.50
	8.0	Documentation - Construction & Pre Construction Certification			Partial Scope Variations for: Theatre Consultant, Building Regulations Consultant. All other consultants excluded		$11,520.00		Not used- Superseded	$0.00	$11,520.00	Revised fee adjusted to 2025 rates & adjusted to revised scope.	$130,000.00	$226,845.00	$356,845.00		
														$5,053.20	$5,053.20		
		Sub Total	$186,630.00						Not used: Superseded	$0.00	$186,630.00			$0.00	$0.00		
Variation:	AV8	Post Novation IFC Documentation		$63,936.00					Not used- Superseded	$0.00	$63,936.00			$0.00	$0.00		
		Documentation - Construction Fee (excluding GST)						$262,086.00		$0.00	$262,086.00		$130,000.00	$231,898.20	$361,898.20	$361,898.20	$0.00
		Sub Total Phase 8						$262,086.00				Phase 8	$130,000.00	$231,898.20	$361,898.20	$361,898.20	$0.00
	9.0	Construction Phase Services			Partial Scope Variations to: Building Regulations Consultant, Building Certifier, Kitchen Consultant. All other consultants excluded		$21,340.00		Not used- Superseded	$0.00	$21,340.00	Revised fee adjusted to 2025 rates & adjusted to revised scope.	$225,000.00	$258,493.00	$483,493.00		
	9.1	RFI/Design Resolution			As above									$0.00	$0.00		
	9.2	Contractor submissions review (shop drawings, commissioning data)			As above									$0.00	$0.00		
	9.3	Site inspection - PDC monthly during construction including pre-handover (min 6 hours on site per visit)			As above									$0.00	$0.00		
	9.4	Principal Certifying Authority Site Inspections during construction			As above									$0.00	$0.00		
	9.5	Sub-Consultants site inspections during construction			As above									$0.00	$0.00		
	9.6	PDC Defects Inspection - pre-handover			As above									$0.00	$0.00		
	9.7	Sub-Consultant Commissioning and Defects Inspections			As above									$0.00	$0.00		
		Sub Total	$351,470.00						Not used: Superseded	$0.00	$351,470.00			$0.00	$0.00		
Variation:	AV9	Novated Construction Services		$135,864.00					Not used- Superseded	$0.00	$135,864.00			$0.00	$0.00		
		Construction Phase Services Fee (excluding GST)						$508,674.00		$0.00	$508,674.00		$225,000.00	$258,493.00	$483,493.00	$483,493.00	$0.00
	10.0	Completion/Handover			Partial Scope Variations for Building Certifier, Access Consultant, Fire Engineer. All other consultants excluded		$40,960.00		Not used- Superseded	$0.00	$40,960.00	Revised fee adjusted to 2025 rates & adjusted to revised scope.	$36,000.00	$41,600.00	$77,600.00		
	10.1	Principal CA Site Inspection and Handover Documentation			As above									$0.00	$0.00		
	10.2	PDC Site Inspection - Handover			As above									$0.00	$0.00		
	10.3	Building Services Engineering - Site Attendance and Defects Inspection			As above									$0.00	$0.00		
	10.4	Contractor Submissions - Review Handover Documentation			As above									$0.00	$0.00		
		Sub Total	$66,700.00						Not used- Superseded	$0.00	$66,700.00			$0.00	$0.00		
		Completion/Handover Fee (excluding GST)						$107,660.00		$0.00	$107,660.00		$36,000.00	$41,600.00	$77,600.00	$77,600.00	$0.00
	11.0	Specialist Workstreams										Excluded		$0.00	$0.00		
	11.1	Green Star Consultant, All Documentation Required for formal GBCA submission			Excluded							Incl in ESD Consultant Scope		$0.00	$0.00		
	11.2	Smart Cities Technology Design Consultant			Excluded									$0.00	$0.00		
	11.3	Drawing and Documentation Coordination			Excluded									$0.00	$0.00		
		Sub Total	$32,700.00						Expended	$32,700.00				$0.00	$0.00		
		Specialist Workstreams Fee (excluding GST)						$32,700.00		$32,700.00	$0.00		$0.00	$0.00	$0.00	$32,700.00	$32,700.00
		Sub Total Phases 9-11						$649,034.00				Sub Total Phases 9-11	$261,000.00	$300,093.00	$561,093.00	$593,793.00	$32,700.00
		Consultant Variations															
	CV1	Land Survey Culvert		$3,243.00					Expended	$3,243.00							
	CV2	Geotechnical Extra		$3,475.00					Expended	$3,475.00							
	CV3	Ausgrid Application by Connect		$682.00					Expended	$682.00							
	CV4	Ausgrid Design Services		$4,582.00					Expended	$4,582.00							
	CV5	Possum Gulley investigation		$4,140.00					Expended	$4,140.00							
	CV6	Fire Engineering		$77,000.00					Partially Expended	$65,000.00	$12,000.00	Unused balance Credited		-$12,000.00	-$12,000.00		
	CV7	Precedent project Site Visit		$1,750.00					Expended	$1,750.00							
	CV8	Kitchen Documentation		$16,000.00					Unexpended	$0.00	$16,000.00	Unused balance Credited		-$16,000.00	-$16,000.00		
	CV9	Facade Consultant		$40,000.00					Expended	$40,000.00							
	CV10	Civil Works North of Grid A		$8,800.00					Expended	$8,800.00							
	CV11	Additional DA Traffic Survey		$4,400.00					Expended	$4,400.00							
	CV12	Ausgrid Authority Fees		$5,356.00					Expended	$5,356.00							
	CV13	Title Consolidation & Contextual RLs		$6,397.00					Expended	$6,397.00							
	CV14	Brook Street Civil Works		$7,400.00					Expended	$7,400.00							
	CV15	RSTC Variation MREC Relocation Reviews		$17,120.00					Partially Expended	$10,030.00	$7,090.00			$17,120.00			
	CV16	RSTC Reference Site Visit		$1,200.00					Expended	$1,200.00							
		Sub Total:						$201,545.00		$166,455.00	$35,090.00			-$10,880.00	-$28,000.00	$138,455.00	$166,455.00
								$649,034.00				Sub Total Phases 9-11	$261,000.00	$300,093.00	$561,093.00	$593,793.00	$32,700.00
		Lump Sum (excluding GST)	$1,534,000.00	$801,100.50		$255,800.00	$347,250.00	$2,938,150.50		$1,583,467.50	$1,354,683.00		$1,030,000.00	$1,377,525.20	$2,390,405.20	$3,973,872.70	$1,583,467.50

Note: This includes AV11 and AV12

Note: $137,200 of AV10 Invoiced as of May 2025

Note: The scope of design and consultant services for AV10 was based on adjusting the previous design, with minimal changes, to suit the new site and preparing updated DA and tender documentation.

The scope included Architect, Theatre Consultant, Kitchen, Access, BCA, and Fire consultant input. The scope of engineering and other consultants works was not known, therefore there was an allowance for provision of concept design reports from these consultants which would then be used to determine the full scope of design work.

This scope did not include full services through to completion. Refer to variation package and cover letter issued 20/9/2023.

Subsequent to this proposed scope, the project brief changed further, as has subsequently been documented on revised feasibility studies in 2024 and 2025.

Check = 0 $0.00

Check = 0 $0.00

Note: FJC Invoicing to end of May 2025 should total $1,583,467.50

Based on $137,200 invoiced for AV10 + $832.50 previously invoiced Av12

Consultant Fees: Refer to Consultant Scopes Documents for Further Details and Description of Scope (all amounts: Total $ Amount (GST Excl))

Row	fjcstudio Landscape Architect	Specification McGraw Consulting	Northrop Structural Engineer Consultant	Northrop Civil Engineer Consultant	Services Northrop Mechanical	Services Northrop Electrical	Services Northrop Hydraulic	Services Northrop Fire Protection Engineer	Northrop Environmentally Sustainable Design Consultant	Northrop Acoustics Engineer	Northrop Vertical Transport	JHA Engineers ICT / AV	JHA Engineers Specialist Lighting	Richard Stuart Theatre & Production Consultant	Group DLA BCA Consulting RBS	SWP Certifying RBS	Jenson Huges Access Consultant Incl $10000k provisional sum allowance for access 4 no. Performance Solutions.	FCA Kitchen Consultant	Focussed Fire Fire Safety Engineer	Surface Design Facade Engineer	Genevieve Lilley Heritage Impact Statement	Studio Semaphore Signage & Wayfinding Consultant	TTPP Traffic Consultant	Salt Waste Consultant	Travers Bushfrie & Ecology Biodiversity development assessment report	Substation Designer Level 3 Electrical Designer *Provisional Sum*
Project Administration and Governance Fee	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
1.0 Pre-Design Phase			$1,500.00	$1,500.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$6,500.00	$1,500.00															
Pre-Design Phase Fee	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2.0 Concept Design	$19,586.00		$8,500.00	$6,000.00	$7,560.00	$2,250.00	$5,500.00	$5,500.00	$4,000.00	$1,200.00		$6,200.00	$2,800.00	Claimed	$6,851.00		$2,000.00	$2,900.00	$10,700.00				$2,500.00			
Concept Design Fee	$19,586.00	$0.00	$8,500.00	$6,000.00	$7,560.00	$2,250.00	$5,500.00	$5,500.00	$4,000.00	$1,200.00	$0.00	$6,200.00	$2,800.00	$0.00	$6,851.00	$0.00	$2,000.00	$2,900.00	$10,700.00	$0.00	$0.00	$0.00	$2,500.00	$0.00	$0.00	$0.00
3.0 Schematic Design	$21,795.00		$10,000.00	$7,500.00	$6,500.00	$5,200.00	$5,200.00	$5,200.00	7800	$13,000.00		$7,500.00	$4,500.00	$4,480.00	$8,695.50	$3,500.00		$5,400.00	$12,200.00	$16,500.00		$12,500.00		$5,450.00		$15,000.00
3.1														$156.80												
Preferred Schematic Design Fee	$21,795.00	$0.00	$10,000.00	$7,500.00	$6,500.00	$5,200.00	$5,200.00	$5,200.00	$7,800.00	$13,000.00	$0.00	$7,500.00	$4,500.00	$4,636.80	$8,695.50	$3,500.00	$0.00	$5,400.00	$12,200.00	$16,500.00	$0.00	$12,500.00	$0.00	$5,450.00	$0.00	$15,000.00
4.0 Early Works Documentation				$12,500.00																						
Early Works Fee	$0.00	$0.00	$0.00	$12,500.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
5.0 Documentation - Development Application	$24,500.00		$9,000.00	$15,000.00					$10,800.00	$8,000.00					$6,851.00		$5,000.00						$21,200.00		$18,685.00	
5.10																					$4,600.00					
Documentation - Development Application Fee	$24,500.00	$0.00	$9,000.00	$15,000.00	$0.00	$0.00	$0.00	$0.00	$10,800.00	$8,000.00	$0.00	$0.00	$0.00	$0.00	$6,851.00	$0.00	$5,000.00	$0.00	$0.00	$0.00	$4,600.00	$0.00	$21,200.00	$0.00	$18,685.00	$0.00
6.0 Documentation - BCA Compliance			$18,000.00	$5,000.00	$3,000.00	$2,250.00	$2,000.00	$2,000.00	$14,800.00	$2,000.00				$3,840.00					$11,300.00	$14,000.00			$1,500.00			
6.1														$134.40						FP1.4 Report			allowance			
6.5																	$10,000.00									
6.9																$8,250.00										
Documentation - BCA Compliance Fee	$0.00	$0.00	$18,000.00	$5,000.00	$3,000.00	$2,250.00	$2,000.00	$2,000.00	$14,800.00	$2,000.00	$0.00	$0.00	$0.00	$3,974.40	$0.00	$8,250.00	$10,000.00	$0.00	$11,300.00	$14,000.00	$0.00	$0.00	$1,500.00	$0.00	$0.00	$0.00
7.0 Documentation - Construction Tender (70%DD)	$44,710.00	$3,800.00	$30,000.00	$20,000.00	$39,500.00	$25,000.00	$30,500.00	$23,000.00	$1,200.00	$8,500.00	$1,200.00	$11,700.00	$10,200.00	$2,880.00	$8,168.50		$8,000.00	$5,820.00	$7,200.00	$38,500.00		$11,100.00	$2,000.00			
7.1														$100.80									allowance			
Documentation - Construction Tender Fee	$44,710.00	$3,800.00	$30,000.00	$20,000.00	$39,500.00	$25,000.00	$30,500.00	$23,000.00	$1,200.00	$8,500.00	$1,200.00	$11,700.00	$10,200.00	$2,980.80	$8,168.50	$0.00	$8,000.00	$5,820.00	$7,200.00	$38,500.00	$0.00	$11,100.00	$2,000.00	$0.00	$0.00	$0.00
Sub Total Phases 1-7	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
8.0 Documentation - Construction & Pre Construction Certification	$21,000.00		$55,000.00	$17,500.00	$7,500.00	$7,500.00	$4,500.00	$3,500.00	$4,000.00	$5,000.00		$8,300.00	$6,500.00	$1,520.00	$13,175.00	$28,750.00	$6,000.00		$24,500.00			$11,100.00	$1,500.00			
8.0 (additional row)														$53.20					$5,000.00				allowance			
Documentation - Construction Fee	$21,000.00	$0.00	$55,000.00	$17,500.00	$7,500.00	$7,500.00	$4,500.00	$3,500.00	$4,000.00	$5,000.00	$0.00	$8,300.00	$6,500.00	$1,573.20	$13,175.00	$28,750.00	$6,000.00	$0.00	$29,500.00	$0.00	$0.00	$11,100.00	$1,500.00	$0.00	$0.00	$0.00
9.0 Construction Phase Services	$23,200.00		$45,000.00	$20,000.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$4,000.00	$3,600.00		$10,800.00			$4,743.00	$10,550.00	$15,000.00	$4,100.00		$49,500.00		$3,000.00	$3,000.00			
9.1																							allowance			
Construction Phase Services Fee	$23,200.00	$0.00	$45,000.00	$20,000.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$4,000.00	$3,600.00	$0.00	$10,800.00	$0.00	$0.00	$4,743.00	$10,550.00	$15,000.00	$4,100.00	$0.00	$49,500.00	$0.00	$3,000.00	$3,000.00	$0.00	$0.00	$0.00
10.0 Completion/Handover	$3,400.00				$2,500.00	$2,500.00	$2,500.00	$2,500.00	$1,200.00							$16,000.00	$11,000.00									
Completion/Handover Fee	$3,400.00	$0.00	$0.00	$0.00	$2,500.00	$2,500.00	$2,500.00	$2,500.00	$1,200.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$16,000.00	$11,000.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Specialist Workstreams Fee	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Sub Total Phases 9-11	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$53.20	$0.00	$0.00	$0.00	$0.00	$5,000.00	$0.00	$0.00	$0.00		$0.00	$0.00	$0.00
Sub Total Phases 9-11	$26,600.00	$0.00	$45,000.00	$20,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$5,200.00	$3,600.00	$0.00	$10,800.00	$0.00	$0.00	$4,743.00	$26,550.00	$26,000.00	$4,100.00	$0.00	$49,500.00	$0.00	$3,000.00	$3,000.00	$0.00	$0.00	$0.00
Lump Sum (excluding GST)	$158,191.00	$3,800.00	$175,500.00	$103,500.00	$82,060.00	$60,200.00	$65,700.00	$57,200.00	$47,800.00	$41,300.00	$1,200.00	$44,500.00	$24,000.00	$13,165.20	$48,484.00	$67,050.00	$57,000.00	$18,220.00	$70,900.00	$118,500.00	$4,600.00	$37,700.00	$31,700.00	$5,450.00	$18,685.00	$15,000.00

	Effective Fee Variation Excl GST
Including Landscape Fees Associated With External Works Scope	$1,035,722.20
Excluding Landscape Fees Associated With External Works Scope	$877,531.20
Total Fees Remaining to Invoice	$2,390,405.20

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Allowances, Exclusions & Clarifications	
1	Should Construction Budget substantially increase we would seek to re-negotiate our fee in consideration of the revised construction value subject to consideration of any additional scope of works related to or generated by the change.
2	Architecture fees are based on our understanding of the described scope of works, tied to the draft programme dates as proposed by fjc. Alterations to scope may incur additional costs and fees. We note that our Construction Phase Fee is based on a 18 month construction timeframe and our fee will be split equally per month. Any prolongation or extension to the construction programme will attract additional fees. This fee will be derived from a monthly pro-rata fee rate for the extended construction duration.
3	Artist Impressions & 3D images will be generated by fjc's 3D BIM model for use in design reviews and concept plan deliverables only. Impressions for marketing purposes are excluded. Co-ordination and review of external professional high-res renders & animations will be a 10% management fee.
4	No allowance has been made for provision of or management of an integrated BIM Model. If this service is required, fjc would be delighted to seek / provide fees for these services upon request. Please note the fjc 3D Model is not a 'BIM Model' and would only be issued upon request and issued as .ifc file for information purposes only.
5	We have assumed a conventional Town Planning/ DA process and have not allowed for protracted or appeal processes. Should design changes and re-documentation of the DA submission documents be required, or substantial additional documentation in response to RFI's we would seek to re-negotiate our fee according to the additional scope of work required. We have allowed to respond to clarification requests on the DA submission, subject to the above. We have not allowed for engagement of a specialist town planning consultant- this is not anticipated to be required. Lodgement of DA documents and management of RFIs during DA process to be by Muswellbrook Shire Council.
6	Staff travel costs including airfares, car hire and accommodation and per diem costs will be charged as a disbursement and are not included within our fee proposal.
7	The hourly rates outlined are applicable for Variations only - specific work undertaken at short notice and out of sequence.
8	Engagement by fjc of sub-consultants not listed in this proposed scope will incur a 15% administration and management fee.
9	Please refer to Sub-consultant proposals for specific allowances, exclusions and designation of hourly rates.
10	Any Asbestos, HazMat or environmental assessment or inspections excluded.
11	Architectural and facade secondary structure design and documentation is excluded.
12	All Authority Fees, Taxes, Levies, Costs and Charges are excluded.
13	Third party independent Structural Certification [if requested] excluded. Note, the Structural Engineer has included for provision of certification. Third party certification not anticipated to be required for this project.
14	Hourly rates will be reviewed annually from 1 July of each year.
15	No allowance has been made for a physical model.
16	Surveys and QS are not included within the proposed scope, as these are to be procured directly by Council.
17	NABERS Embodied Emissions Form, SEPP ESD Forms at CC and OC Stages- by others- eg QS
18	Additional site and certification inspections beyond those listed in this proposal and attached scopes.

6.3 Major Projects Status Report

Responsible Officer:	Director - Infrastructure & Property
Author:	{position}
Community Strategic Plan:	*5 - Community Infrastructure* Effective and efficient infrastructure that is appropriate to the needs of our community
Delivery Program Goal:	5.1.4 - Maintain and continually improve community infrastructure across the Shire.
Operational Plan Action:	Not applicable
Attachments:	1. Major Project Status Report - June 2025 [**6.3.1** - 6 pages]

PURPOSE

To provide for the Infrastructure and Property Committee's information the Major Projects Status Report as of 30 May 2025.

OFFICER'S RECOMMENDATION

The Committee notes the information contained in the report.

Moved: _____ **Seconded:** _____

EXECUTIVE SUMMARY

The Major Projects Status Report is reported to the Committee to provide the status of respective capital projects. The recurrent report has been updated to include additional detail on associated funding and expenditure for projects.

PREVIOUS RESOLUTIONS

Not applicable.

BACKGROUND

A monthly tabular report is provided with status updates and information on major community infrastructure projects.

CONSULTATION

Respective project managers.

REPORT

The Major Projects Status Report is attached for the information of the Committee as of 30 May 2025.

Each iteration of the report is reviewed to improve the communication of status updates against Council's Delivery Program and 2024–2025 Operational Plan, providing a clear representation of each project's expected and actual progress.

FINANCIAL CONSIDERATIONS

Nil known.

POLICY IMPLICATIONS

Nil known.

STATUTORY / LEGISLATIVE IMPLICATIONS

Nil known.

RISK MANAGEMENT IMPLICATIONS

Risk implications are considered and assessed for major projects.

COMMUNITY CONSULTATION / COMMUNICATIONS

Subject to the type and scale of the project, Council consults and provides communications to the community.

PROJECT	PROJECT STAGE INVESTIGATION (I) DESIGN (D) CONSTRUCTION (C)	GL NUMBER	PROJECT COST ESTIMATE	Revised Total Estimate	FY BUDGET ALLOCATION AM	QBR March 25 Change	ACTUALS Lifetime for the project	FY ACTUALS live (incl Commitments)	PREVIOUS YEARS EXPENDITURE Query	FUNDING SOURCES	FUNDING AMOUNT	FUNDING DEADLINES	TOTAL FUNDING	Funding Shortfall	WORKS INSURANCE	PROCUREMENT STATUS	PLANNED START	PLANNED COMPLETION	ACTUAL START	STATUS AT 30 May 2025
GENERAL FUND																				
MULTIPLE YEAR PROJECTS:																				
Denman Recreation Area and Tourist Park Prec																				
Bell Street Upgrade	C	3500.7862	$800,000		$728,538	$0	$651,546	$580,084	$71,462	Resources for Regions 9 - Local Roads and Community Infrastructure	$728,538	29/08/2025	$800,000		Contractor has arranged project insurance	Contracted	Oct-24	Feb-25	Oct-24	**Bell Street Upgrade** Contract awarded August 2024 to Contractors KCE Pty Ltd. Construction is now complete.
Carpark Denman Rec. and Internal Roads	C	3500.7863	$325,000		$392,541	$0	$321,792	$314,333	$7,459	Resources for Regions 9 - Local Roads and Community Infrastructure	$392,541.00	29/08/2025	$392,541.00		Contractor has arranged project insurance	Contracted	45,566	45,689	Oct-24	**Carpark Denman Rec. & Internal Road** The internal roads and carpark as Stage 2 of the overall Denman Recreation Reserve Project are completed
Denman Netball Courts (Earthworks, Drainage)	C	3710.7844	$479,147		$437,954	**0**	$683,679.80	$671,633.80	$12,046.00	Resources for Regions 9	$437,954.00	29/08/2025	$437,954.00		Contractor has arranged project insurance	Contracted	1/10/2024	1/02/2025	1/10/2024	**Netball Courts Denman Earthwork Drainage** The works to construct the courts including installation of lighting, the internal road and courts including drainage are complete. This project is completed.
Denman Netball Courts- Budget consolidated with #3710.7844	D&C	3710.7825	$311,451		$280,173	$0	$683,680	$0	$31,279	Stronger Country Communities - Women's Participation	$206,286	31/03/2025	$311,451		Contractor has arranged project insurance	Contracted	Oct-21	Feb-25	Sep-22	**Denman Netball Courts** As above.
										Bengalla VPA Funding	$105,165	n/a								
Mountain Bike Trail Denman Rec	I	3710.7845	$250,000		$134,823	-$230,719	$9,553	$0	$9,553	Resources for Regions 9	$134,823	29/08/2025	$134,823	$115,177		N/A	Mar-25			**Mountain Bike Trail Denman Rec** Route options over Crown Land being investigated.
New Amenities Denman Rec	I & D	3910.5969	$550,000		$138,690	-$526,336	$11,310	$0	$11,310	Resources for Regions 9	$138,690	29/08/2025	$138,690	$411,310		N/A	Mar-25			**New Amenities Denman Rec** Location and scope to be developed as part of the Denman Tourist Park Masterplan returning to Council from public exhibition..
Denman Tourist Park	D	3710.7849	$10,500,000		$546,766	-$546,766	$55,850	$55,850	$0	Mangoola VPA Funding	$546,766	29/08/2025	$546,766	$9,953,234		N/A	Mar-25			**Denman Tourist Park** Changes to the concept design currently underway for consideration. December Council - Amended Master Plan placed on public exhibition for 42 days. A further report together with design options and submissions received during public exhibition reported to Council's Infrastructure and Property Committee.
Muswellbrook Town Centre Precinct																				
CBD STAGE 7 (A) **(Median - Marektplace Laneway)**	C	3500.4591	$1,450,000	$1,450,000	$828,733	$550,000	$806,098	$782,776	$23,322	Resources for Regions Round 7	$704,532	31/12/2025	$1,450,000		Contractor has arranged project insurance	Contracted	Jan-22	Dec-24	Nov-24	**CBD Stage 7 (Town Centre) Bridge Street Footpath** Stage 7 CBD Footpath western side Bridge St is now complete. Marketplace laneway -negotiations with property owners in regard to land matters is complete and process to dedicate as road is continuing. PCIP funding reserve allocation of $550,000 to be made towards the project for Laneway option. Tenders have been received for the construction of the laneway. The tenders are being assessed and will be reported to the June 2025 meeting of Council.
										Priority Community infrastructure Program (PCIP)	$745,468	1/10/2026								
Hunter Innovation CID Pilot Program (Operational)	D & C	0833.2978	$316,666		$316,666	$158,333	$263,193	$263,193	$0	Community Improvement District Pilot Program (CID) Department of Transport	$316,666	1/05/2025	$316,666		Council has arranged project insurance	Contracted	Jun-24	May-25		**Hunter Innovation CID Pilot Program** Milestone 4 report submitted. Physical installations are complete. Community Reference Group (CRG) meetings completed. Activation event completed.
Civic Precinct (Town Square) **Includes:** - Temporary Carpark West of Pocket Park - Brook Street Plaza Demolition & Ausgrid Kiosk Relocation - Town Centre Car Park - Public Domain External Services & Relocation - Stormwater Drainage for Precinct (Hill Street to Brooke Street) - Town Centre Square Development (Remediation & Early Works 116 Bridge Street Demo & Site Rehab)	D & C	3690.5498	$6,025,000		$3,085,362	-$1,760,452	$2,679,778	-$253,410	$2,933,189	Priority Community Infrastructure Program (PCIP)	$6,025,000	Various projects	$6,025,000				Oct-21	Dec-25	Oct-21	**Civic Precinct (Town Square)** Developing a project plan including staging construction work.
										Mount Pleasant VPA	$1,180,300									
Loxton House Refurbishment	D	3665.4910	$1,250,000	$3,200,000	$0	$268,125	$1,018,741	$136,067	$882,674	Resources for Regions Round 7	$295,468	1/12/2025	$1,250,000	$1,950,000		Request for tender	Dec-22	Dec-24	Dec-22	**Loxton House** Development Approval modification application lodged to integrate s60 heritage applications for ground and lower ground floor and is currently under assessment. Procurement documentation to progress in readiness for approval and tender roll-out.
										Priority Community Infrastructure Program (PCIP)	$954,532	1/09/2026								
Demolition for Civic Precinct	I	3690.5434	$1,000,000	$1,478,277	$650,000		$367,653	$367,653	$0	Resources for Regions 9	$425,000	29/08/2025	$1,150,950	$367,653		Contracted	Oct-24	Mar-25	Jun- 25	**Demolition for Civic Precinct** Tender negotiations completed and reported to March 2025 Council meeting. It was resolved to award Precision Demolition the contract for the demolition works. Demolition Contracts executed. Site establishment to tentatively commence 10 June 2025.
										Priority Community infrastructure Program (PCIP)	$725,950									
Pocket Park - Construction	D	3710.5496	$2,300,000		$250,000	$215,000	$195,768	$195,768	$0	Stronger Communities	$250,000	2/02/2026	$2,300,000			Request for tender	Oct-21	Dec-25	2025	**Pocket Park - Construction Works** Detailed design completed with construction works to be timed to follow demolition works. A project estimate and bill of quantities is being prepared. Tender documents being prepared.
										Priority Community Infrastructure Program (PCIP)	$2,050,000	1/09/2026								
Possum Gully Realignment -West Rail Corridor	D & C	3710.5454	$1,500,000			$200,000	$114,539	$114,539	$0	AGRN 1025 Office of Local Government	$1,000,000	30/06/2026	$1,500,000				Mar-25			**Possum Gully Realignment** Design feasibility options were investigated. Based on this information Request for Quote (RFQ) is being drafted for the investigation and design of the realignment.
										Priority Community Infrastructure Program (PCIP)	$500,000	1/09/2026								
Regional Entertainment and Conference Centre	D & C	3690.5433	$16,500,000	$23,000,000	$3,102,747	#REF!	$2,473,669	$54,845	$2,418,824	Resources for Regions Round 8	$6,394,854	31/12/2025	$15,675,000	$7,325,000	Contractor has arranged project insurance	N/A	Oct-21	Dec-26	TBA	**Regional Entertainment and Conference Centre** At the January 2025 Council meeting. Council endorsed to progress with revised design scope for the Stage 1 Theatre and proceed with development application based on the revised design scope with the inclusion of a half fly tower and support a Stage 2 Studio and additional back of house for concept only. Area schedule prepared for Quantity Schedule interim reviews and aligns with the proposed budget for construction. Planning for regulatory pre - DA meeting in progress. The Principal design team have proposed a variation for developing design with the inflormed scope. The design variation is currently being assessed and will be reported to Council.
										Mt Pleasant, Mt Arthur, Ridgelands VPA Funding	$2,280,146									
										Special Rate Variation	$7,000,000									
Olympic Park Precinct																				
										Special Rate Variation	$4,800,000									**Olympic Park Amenities and Grandstand**
										Priority Community Infrastructure Program (PCIP)	$5,500,000	1/09/2026								
										NSW Gov - Office of Sport - Regional Sport Facility Funds 2020/21	$1,000,000	31/12/2025 Variation submitted for Oct 2026								

Olympic Park Amenities and Grandstand	D & C	3710.7824	$8,150,000		$4,110,326	-$3,193,438	$1,322,394	$601,980	$720,414	NSW Stronger Country Communities	$486,992	31/10/2025 Will request variation early 2025	$14,511,992		Contractor has arranged project insurance	Request for tender	Jan-21	Apr-26	Jan-21	**Olympic Park Amenities and Grandstand** December Council endorsed design Option 4 (renew option) to allow detailed design documents to be completed to proceed for construction tender. DA modification is required to progress with Option 4. These are being progressed concurrently. Whiteman Welding Pty Ltd notified of RFQ success for the 2024-2025 - Sports Field Storage Sheds. DA modification is being lodged.
										Stronger Country Communities R4 - Intelligent Lighting	$125,000	Completed								
										2019-2020 Active Transport Program - Shared Pathway	$150,000	Completed								
										Resources for Regions Round 5 - Wilder Street Bridge	$1,250,000	Completed								
										VPA Funding - Bengalla 2017/2018 $710k - AGL $238k - Bengalla 21/22 $226,193	$1,200,000									
Olympic Park Field Improvements	D & C	3710.7829	$1,500,000		$911,087	#REF!	$88,914	$0	$88,914	Regional Sport Facility Fund 2021/22 - Office of Sport - Field Improvements $1M	$1M	Variation submitted for Oct 2026	$1,000,000	$500,000			Jul-22	Apr-26	Jul-22	**Olympic Park Field Improvements** Draft drainage and irrigation designs have been prepared for Olympic Park field improvements. Field works to be tendered and awarded to be completed concurrently with construction of buildings. The field works are envisaged to start following the majority of construction that encroaches near the fields are completed. Field design is being approved as a variation to Barnson contract to ensure consistency in both grandstand and field design.
Olympic Park Projects (multiple)	D	3710.1405	TBD		$43,292	$0	$573,314	$37	$573,277	Special Rate Variation							Jul-22	Apr-26	Jan-21	**Olympic Park Projects** Funding for Olympic Park Precinct has been allocated for investigation and design of other precinct stages, including precinct landscape design, for example, fencing has been installed around the Olympic Park Bridge. The Olympic Park Precinct Plan of Management has been adopted.
Wollombi Precinct Master Plan (Operational)																				
Adventure Playground - Wollombi Park Pump Track	I, D & C	3710.7831	$480,000		$24,000	$0	$479,462	$20,661	$458,801	Open Spaces Program: Places to Play Department of Planning, Industry & Environment					Contractor has arranged project insurance	N/A	Jan-24	Jun-24	Feb-24	**Adventure Playground - Wollombi Park Pump Track** Works completed, Practical Completion issued and currently under the defects liability period. **Completed.**
Wollombi Precinct Master Plan (Operational)	I & D	0475.2868	$120,000		$120,000	-$120,000	$0	$0	$0	Mt Arthur VPA Funding	$120,000						Mar-25			**Wollombi Precinct Master Plan** Total is $150,000 to fund development of design for Wollombi Precinct Master Plan including business case for childcare centre options.
PROPERTY & BUILDING:																				
Denman Children Centre (operational)	C	0475.0216	$1,229,714		$1,735,351	$0	$1,196,473	$1,149,871	$46,601	Ridgelands Community Fund	$470,000		$1,986,797		Contractor has arranged project insurance	Contracted	Jun-18	Sep-25	Mar-21	**Denman Children's Centre** Council has accepted the tender from Westbury Constructions Pty Ltd and the Contract has been awarded and executed. Site established. Demolition works completed. Construction Certificate application to include changes to the Building Code Australia (BCA) received. Construction works underway. A variation has been received from Westbury for additional scope following the BCA code changes and CC receipt. The variation was lodged to the funding body to seek possibility of variation approval for additional funding following advice from the grant funding authority's project officer and has now been approved. Construction progressing as per plan. Funding body has approved the variation for additional scope to BCA changes.
										Council Co-contribution	$150,153									
										Denman Children Centre	$68,870									
										2021 Start Strong Capital Works Grant	$540,690	28/09/2025								
										Resources for Regions Round 9	$120,000	29/08/2025								
										Local Roads & Community Infrastructure Rd 4	$337,084	30/06/2025								
										Mangoola VPA	$300,000									
Arts Centre Programme																				
Arts Centre Offsite Storage	D & C	3910.5972	$821,893		$821,893	#REF!	$0	$0	$0	Darbrook VPA Funding	$821,893		$821,893				Mar-25			**Art Centre Offsite Storage** Preliminary concept to be developed.
Buildings New and Replacement Programme	C	3910.5800 / 3910.5815 / 3910.5819 / 3910.5855 / 3910.5877 / 3910.5883 / 3910.5907 / 3910.5955 / 3910.5964 / 3910.5956	$250,000		$440,254	-$202,138	$495,874	$98,986	$396,888	General Revenue							Oct-22	Jun-24	Jul-23	**Buildings New and Replacement Programme** November 2024 Council approved General Building Renewal Programme The following work ongoing: Muswellbrook Library Renewals $20,550 Security Provisions & Improvements $70,000 - Quotation in progress Muswellbrook Child Care Centre Door $10,000 Muswellbrook Works Depot - Fire Safety & Security $15,000 SES - Industrial Close Termite Damage $15,000 Denman Memorial Hall floor repair $3,000 Admin Building Roof $10,000 Admin Building Renewal $28,766 Regional Art Gallery $24,934 Accessibility Upgrades $58,534 Art Centre Renewal $75,000 QEII Floor Covering Replacement $11,229 Industrial Close Precinct $20,650 **Completed work:** Library Seminar Room Upgrade Donald Horne Building Restaurant Finishes Staff Housing minor capital improvements/renewal Vietnam Memorial Toilets - New vandal resistant toilet suite
										Stronger Country Communities Rd 5 - Footpath/ramp for CWA; Vic Park, Library, etc	$100,000	2/02/2026								
Muswellbrook Animal Care & Sustainability Hub	D & C	3910.5887	$150,000		$150,000	$0	$4,742,515	$59,938	$4,682,577	General Revenue		30/062025					Sep-24	Jan-25		**Muswellbrook Animal Care & Sustainability Hub** The prioritized works are being executed, with some already completed including shade structures, mesh sheeting to the kennel hebel walls and security improvements. Installation of vents in the kennel doors to commence next week.
Muswellbrook Indoor Sport Centre - Youth Centre	D & C	3910.5844	$2,354,286		$1,332,994	-$232,994	$326,048	$76,170	$249,878	NSW Stronger Country Communities R3	$500,000	31/10/2025	$2,105,730	$574,604		Assessment Period	Oct-19	Jun-24	Oct-19	**Upper Hunter Youth Centre** Tenders reported to January 2025 Ordinary Council meeting. Council resolved to award construction contract to Cerak Constructions subject to funding allocation. Construction Certificate Application underway. s68 approvals, NABERS Emissions Form and Fire Engineering design reports received. PEER review being finalised. S68 approval review underway to finalise CC. Additional budget allocation to be finalised of $1,021,291.82 including contingency and overheads. Confirmation from the Department of Primary Industries and Regional development received with time extension granted to October. Contract execution underway.
										UIHYS	$215,000	1/01/2025								
										Bengalla ($250,000), Mt Arthur ($603,730), Dartbrook ($522,000) VPA Funding	$1,375,730									
										Council Contribution (General Fund)	$15,000									
MSC Depot Construction	D &C	3910.5939	$14,000,000		$4,513,714	-$4,263,714	$759,475	$227,266	$532,209	Resources for Regions Round 9	$4,800,000	29/08/2025	$4,800,000	$9,200,000			Jul-21	Dec-25	Jul-21	**MSC Depot Construction** The amended Concept and associated estimates of cost has been reported to the July 2024 Ordinary Meeting of Council. The Council approved the detailed Concept Plan in principle, accepted dividing the project into two stages and approved the preparation of the Development Application (DA). Also, Council delegated the authority to General Manager for the submission of the development application. An additional report was submitted by Planning and Environmental section to the July 2024 Ordinary Council Meeting seeking approval from Department of Planning, Housing and Infrastructure, if required. Development Application submitted in April 2025.
Reactivation of Campbells Corner Retail for Muswellbrook	D & C	3910.5966	$1,600,000		$867,521	-$717,521	$187,092	$79,926	$107,166	Resources for Regions Round 9; Allocation from General Fund for residual?	$974,686	29/08/2025	$974,686	$625,314		Request for tender	Jan-23	Jul-25	Jan-23	**Reactivation of Campbells Corner** 70% detailed design development has been reached, and the architectural and engineering plans are currently being reviewed.
Recreation Capital Works																				
Aquatic Centre Programme 2024 - Solar	C	3700.5151/ 3700.5312			$409,953	-$204,660	$1,020,265	$188,311	$831,954	General Revenue		30/06/2025				N/A				**Aquatic Centre Programme 2024** Dehumidifier installation and commissioning completed. Gym equipment, shelter, BBQ and furniture installed October. Solar Panel RFQ to be rolled out.
	C	3722.5297	$90,000		$232,453	-$20,000	$516,397	$100,656	$415,741	General Revenue		30/06/2025			Not insured	N/A				**Cemetery General Programme** Stage 1 and 2 of concrete paths have been completed. Quotes received for next stage.
General Recreation Programme	C	3710.5293	$100,000		$100,000	-$97,200	$101,230	$88,807	$12,423	General Revenue		30/06/2025			Not insured	N/A				**General Recreation Programme** Programme to be confirmed at November Council meeting.
Outdoor Pool Plant Upgrade	I	OPPU				$0	$0		$0	Source to confirm										
Highbrook Park - Capital, Asset Acquisitions / Sales		3710.5221			$17,081	$0	$61,767	$0	$61,767	General Revenue		30/06/2025			Not insured	N/A				**Highbrook Park** Allocation for minor capital improvements.

Landscaping and Tree Management Programme	C	3710.5311	$90,000		$100,000	$0	$339,669	$69,957	$269,712	General Revenue		30/06/2025			Not insured	N/A	Jul-24	Jun-25	Jul-24	**Landscaping and Tree Management Programme** Street tree applications have been received and planting as programmed..
Lighting for Weeraman Fields	C	3710.7836	$350,000		$354,991	$0	$572,044	$434,275	$137,769	Female Friendly Community Sport Facilities & Lighting upgrades - NSW Sport	$492,760	31/10/2024	$492,760		Yes	Contracted	Jul-24	Oct-24	Aug-24	**Lighting for Weeraman Fields** Conduits and solar complete. Lighting and solar installed. commissioning complete.
Lighting for Highbrook Park	C	3710.7837	$350,000		$381,093	$0	$446,746	$380,799	$65,948	Female Friendly Community Sport Facilities & Lighting upgrades - NSW Sport	$447,040	31/10/2024	$447,040		Yes	Contracted	Jul-24	Oct-24	Jul-24	**Lighting for Highbrook Park** Lights, poles, and solar installed, conduits and control board installed. Highbrook Lighting and Solar is complete.
Major Large Capital Grants Programme (Dollar for Dollar Grant Programme)	C	3710.5494	$90,000		$75,000	$0	$357,362	$72,927	$284,435	Malabar VPA Funding	$75,000				Not insured		Nov-24			**Major Large Capital Grants Programme (Dollar for Dollar Grant Programme)** Applications for 2024-2025 round to be advertised December 24 - Jan 25. March Council
Playground Upgrades	C	3710.5251			$6,270	$0	$49,156	$5,178	$43,978			30/06/2025			Not insured	N/A				**Playground Upgrades** Minor works to follow playground inspections. Some minor upgrades completed and further equipment ordered.
Karoola Park - Resilience Works	D & C	3624.2859	$973,974		$443,014	-$430,374	$61,651	$20,491	$41,160	NSW Office of Sport Essential Community Sports Assets Program	$973,974	Variation underway 30/06/2025					Sep-23	Jun-25		**Karoola Park - Resilience Works** A comprehensive master plan has been prepared and reported to the July council meeting. Currently, the master plan is on public exhibition. Reported to November 2024 Council Meeting. Footpath construction underway.
Karoola Park - Community Assets Program (CAP) **Drainage & Path**		3590.4445	$1,151,047		$1,151,047	$0	$1,006,393	$1,006,393	$0	Community Assets Program - Regional NSW	$1,569,375	Variation underway 30/05/2025					Sep-23	Jun-25		**Karoola Park - Community Assets Program Drainage & Path** Detailed design for basin and drain in progress.
Karoola Park - Playgrounds	D & C	3710.7855	$418,328		$418,328	$0	$394,322	$394,322	$0								Sep-23	Jun-25		**Karoola Park - Playground** The tender has been awarded and the detailed design completed, including the additions of a water bubbler and shade sails. Site works commenced this week 26 May 2025 and are expected to be completed by the end of July.
Simpson Park - Softfall Replacement	I	3710.7847	$150,000		$150,000	-$100,000	$5,537	$5,537	$0	Bengalla VPA		30/06/2025								**Simpson Park - Softfall replacement** Currently working with a Landscape Architect to prepare the concept design for softfall, considering two options: (1) Renewal of "dropped ice-cream" design and (2) an alternate concept featuring creative and innovative design elements. An Initial draft concept design has been received, and a request has been made for imagery/3D plan for clarity.
Simpson Park - Amenities Design	D	3710.7848	$253,871		$253,871	-$203,871	$5,432	$5,432	$0	Bengalla VPA Changing Places -T3	$403,871 $140,000	30/06/2025								**Simpson Park - Amenities Design** The concept design completed and reported to May 2025 Council meeting.
ROADS & DRAINAGE:																				
Purchase of vehicles (light fleet)	I	3900.5660	$342,558		$607,993	$10,264	$2,096,810	$489,539	$1,607,271			30/06/2025					Jul-24	Jun-25	Jul-24	**Purchase of vehicles** Council uses the NSW Gov Scheme to purchase vehicles, expanding who we can buy from. Several purchases have been completed. Further purchases programmed.
Transportation Vehicles (Works light fleet)	I	3980.5850			$360,000	$0	$579,850	$156,789	$423,061			30/06/2025					Jul-24	Jun-25	Jul-24	**Transportation Vehicles** Several purchases completed. Further purchases of tool of trade vehicles (4 of) are underway.
Baerami Creek Causeway	D & C	3500.4498	$650,000		$672,039	$0	$17,636	$0	$17,636	Natural Disaster Funding	$689,654	Variation requested								**Baerami Creek Causeway** A tender was awarded to KCE pty ltd. Work at the site commence early May 2025.
Bridges Renewal Program	I	3530.4131	$290,000		$342,496	-$142,496	$668,778	$252,930	$415,848			30/06/2025					Jul-24	Jun-25	Feb-25	**Bridges Renewal Program** Design of abutment protection renewal - Widden Bridge, Bylong Valley way, Muscle Creek Bridge, Bell Street, and Peberdys Bridge. Quotations for design have been accepted and the consultant has prepared designs and methodology. A quotation has been accepted for the remediation of the western abutment of Widden Bridge. Consultants Agilus are conducting a presentation with staff in May to inform the outcome of the recommended design for future abutment protection works on the Muscle Creek, and Peberdys bridge.
Bylong Valley Way Road Safety Project	I & D	3500.4317	$3,930,000		TBA	$200,000	$56,154	$56,154	$0	NSW Road Safety Program Transport for NSW; looking for $2.5M for 27/28	$3,930,000 ($4,602,549 available)	30/04/2026					Jul-25	Mar-26	Mar-25	**Bylong Valley Way Road Safety Program** Tenders were received for the road design and will be reported to the February Meeting of Council. 32.4 to 34.4 chainage near Kerrabe House. Council awarded the contract for Investigation and Design and 13 March a project inception meeting was held. The design phase of the project is continuing. A variation to the schedule has been submitted to TfNSW for approval.
Carpark Renewal Program	C	3580.4234	$85,000		$100,000	$0	$189,436	$0	$189,436			30/06/2025					Nov-24	Jun-25		**Carpark Renewal Program** Karoola Park - Pavement renewal and drainage improvements.
CPTIGS - Bus Shelter Program	D & C	3500.2781	$321,964		$198,916	$0	$289,601	$160,850	$128,751	Stronger Country Communities R5 CPTIGS 19/21 CPTIGS 21/23	$267,767 $41,930 $12,267	2/02/2026 Variation Submitted for 30/04/2025 Variation Submitted for 30/04/2025			Contractor has arranged project insurance	Contracted	Oct-24	Mar-25	Oct-24	**CPTIGS - Bus Shelter Programme** An In-kind source of funding for the upgrade of the Bus Stop in Tindale St has been provided through development in the street. Tenders were received by Council and reported to 27 April 2023 Council meeting where Council determined to not accept any Tender. A Councillor workshop was held in September 2023 to provide information regarding the bus shelter concept. This matter was reported to the October 2023 meeting of Council where Council endorsed to seek quotations for the design and supply of shelters. Quotations have been received and a contractor has been engaged to manufacture the shelters. The bus boarding stops have been constructed and are ready for installation of the shelters. *Note: CPTIGS is the Country Passenger Transport Infrastructure Grants Scheme.* At manufacturing stage, met with manufacturer w/c 30 September 2024, Quotes for boardings pads required.
Drainage Devices Programme	C	3540.4065			$500,000	$0	$872,591	$494,709	$377,881			30/06/2025					Sep-24	Jun-25	May-25	**Drainage Device Programme** The scope of works included pit repairs and raising of the pit and construction of a new lid in Rutherford now completed.
Dry Creek Road- Replacement of Road Causeway		3540.4613			$705,157	0	$660,430	$660,430	$0	Natural Disaster Funding					Contractor has arranged project insurance	Contracted		May-25		**Dry Creek Causeway** Replacement of road causeway Dry Creek Road has been **completed**.
Flood Warning Systems		3590.4444			$147,856	$0	$122,189	$120,045	$2,144	NSW Department of Planning Industry and Environment	$150,000							Sep-24		**Flood Warning Systems** Installation and commissioning of the flood warning system completed. Additionally, a community information session was held to provide information on the operation of the siren system **completed**
Footpath & Cycleway Renewals	C	3500.4072	$185,625		$200,000	$0	$1,377,506	$200,000	$1,177,506								Jul-24	Sep-24	Aug-24	**Footpath & Cycleway Renewals** A prioritised program was endorsed by Council at the August 2024 Meeting. In accordance with the program, sections of footpath have been renewed in Hill Street and Mill Street. Currently renewal work happening along Maitland Street **completed.**
Heavy Patching Programme	C	3500.4035	$637,500		$750,000	$0	$3,735,389	$598,180	$3,137,208			30/06/2025					Sep-24	Jun-25		**Heavy Patching Programme** A prioritised program was reported endorsed by Council at the July 2024 Ordinary Council Meeting. Tenders were received to enable completion of the program. These tenders will be reported to the February meeting of Council.
Kerb & Gutter Replacement	C	3560.4065	$454,750		$535,000	-$180,000	$1,250,573	$202,260	$1,048,314			30/06/2025					Sep-24	Jun-25	Sep-24	**Kerb & Gutter Replacement** A prioritised program was reported and endorsed by Council at the July 2024 Ordinary Council Meeting. This program of work is continuing.
New Kerb and Gutter		NKG				$0														

Large Plant Items	D	3985.5870	$2,207,245		$1,923,878	$0	$3,938,860	$747,199	$3,191,662	General Revenue	General Revenue	30/06/2025					Jul-23	Jun-24	Jul-23	**Large Plant Items** The following items have been purchased this financial year. 1. Tractor and attachments $337,050 has been delivered, 2. 2 x Zero Turn Mowers $82,254 have been delivered, 3. Line Marking machine $39,612, received. 4.Truck and Chassis to replace Parks - Water Cart purchased however needs fitting out. December 2024 Council supported the 2024/2025 Large Plant Replacement Program and approves the transfer of funds from the Plant reserve to proceed with the purchase of the Compact Footpath Sweeper. This program is being implemented accordingly to the limit of available funding. Received quotations for a sports field mower and staff are currently assessing. Recieved quotations for 4.5T transport vehicles (2 off) and staff are assessing. RFQ is being advertised for a tracked loader and closes late May.
Hunter Beach to CBD Pathway		3500.7864			$600,000	-$400,000	$0	$0	$0	Dartbrook ($400k) & AGL ($200k) VPA Funding	$600,000						Sep-24	Jun-25		**Hunter Beach to CBD Pathway** Design and construction (Wilkins Street to Hunter Beach). The design is scheduled to be undertaken in the fourth quarter of the financial year.
Merton Street Drainage, Denman	C	3540.4596	$1,326,952		$1,326,952	$0	$1,079,374	$993,743	$85,632	Resources for Regions 9	$1,412,582	29/082025	$1,412,582		Contractor has arranged project insurance	Contracted	Apr-24	Oct-24	May-24	**Merton Street drainage, Denman** Stormwater drainage, road works, and water main relocation works reached partial completion in December 2024 **completed.**
Palace / Merton Street Upgrade Denman	C	3540.4599	$360,870		$360,870	$0	$1,179,633	$360,870	$818,763	Disaster Ready Fund Rd 1	$1,179,631	29/08/2025	$1,179,631		Contractor has arranged project insurance	Contracted	Apr-24	Oct-24	Nov-24	**Palace Street Upgrade, Denman** Works have commenced on site and the construction is progressing. The construction of the stormwater drainage is complete. Construction will now move onto the second phase to remove and reconstruct new kerb and gutter.
Muscle Creek Emergency Stabilisation	I	3920.5973			$250,000	$0	$0	$0	$0	Dartbrook VPA Funding	$250,000									**Muscle Creek Emergency Stabilisation** Awaiting recommendations of Catchment Management Plan.
New Footpath and Cycleway Programme	C	3500.4073	$123,250		$145,000	-$144,000	$1,131,811	$310	$1,131,501	General Revenue		30/06/2025					Jan-25	Jun-25		**New Footpath and Cycleway Programme** A prioritised program was reported endorsed by Council at the July 2024 Ordinary Council Meeting. Programme delivery to follow Karoola Park footpath works.
Rainbow Creek Bridge	C	3530.4610	$616,113		$374,687	$0	$336,442	$316,223	$20,219	Transport NSW Fixing Country Bridges	$666,113	31/05/2025					Jan-25	Jun-25		**Rainbow Creek Bridge** Fully executed variation deed has been received for the amount of $616,113. Preparing tender documents for box culvert on Sandy Creek Road. Reported to December Council 2024 Meeting accepted tender submitted by KCE Pty Ltd for lump sum of $363,800.00 ex gst. The contractor has been inducted to the site ordered precast box culverts and the construction works commenced March 2025.
Regional Road Renewal Programme	C	3502.4135	$69,000		$69,000	$69,000	$1,352,333	$0	$1,352,333	Transport NSW	69,000						Oct-24	Jun-25		**Regional Road Renewal Programme** This budget will be used for Heavy Patching Works as per the submitted programme**.** The contractor has advised that work will commence 24 March 2025.
Road Resealing Program	C	3500.4030	$1,000,000		$1,000,000	$0	$8,736,651	$996,779	$7,739,872			30/06/2025					Oct-24	Mar-25	Oct-24	**Road Resealing Program** A prioritised programme was endorsed at the July 2024 meeting of Council as part of the Capital Works Programme. Resealing works commenced October 2024. This program is now complete with line marking to be undertaken at the same time of TfNSW.
Roads to Recovery Programme	I	3500.2068	$577,898		$1,155,796	-$751,270	-$7,928	-$7,928	$0	Roads to Recovery	$751,270	31/12/2025					Sep-24	Dec-24	Oct-24	**Roads to Recovery Programme** A project is yet to be formally nominated for this funding. The priority in accordance with the Council endorsed priority list is for a section of Thomas Mitchell Drive ch 50 to ch 1.6km. Potentially allocating reserves for sufficient budget in next financial year.
Rural Roads Regravelling Programme	C	3500.4055	$283,815		$250,000	$0	$2,710,701	$189,276	$2,521,425			30/06/2025					Jul-24	Jun-25		**Rural Roads Regravelling** Rolling programme is continuing. Currently working on Dorset Road, Wilton's Lane and moving to Beggary Creek road.
Rural Roads Renewal Programme	C	3502.4125	$650,153		$764,886	$0	$1,295,753	$428,943	$866,809			30/06/2025					Aug-24	Dec-24	Aug-24	**Urban Road Renewal** Carl Street upgrade works reported to November 2024 Ordinary Council meeting. This project is now complete. This program is now complete.
Urban Road Renewal Programme	C	3500.4050	$700,000		$755,132	-$201,617	$3,592,616	$664,075	$2,928,542			30/06/2025					Nov-24	Jun-25	Nov-24	**Urban Road Renewal** Carl Street upgrade works reported to November 2024 Ordinary Council meeting. This project is now complete. This program is now complete with line marking to be undertaken at the same time of TfNSW.
Wybong Road - Betterment	I	Wybong	**$**		$6,526,576	$0	$0	$0	$0							Pending EPAR approval				**Wybong Road Betterment** Council was successful in receiving funding for the "betterment" component to widen and improve Wybong Road in three nominated sections at the western end. Damaged in the recent natural disaster events. Council is liaising with TfNSW on road management and funding arrangements. Council has reviewed the funding agreement and returned to TfNSW with some suggested amendments. MSC is awaiting TfNSW acceptance prior to signing. In addition a contract has been prepared to accept TfNSW to undertake the construction work. Council has exchanged the draft contract with TfNSW to seek their agreement and signing of the document.
Stormwater Drainage		3540.4612			$150,000	$0	$0	$0	$0			30/06/2025								**Stormwater Drainage** This project is for the relining of the existing RCP in Crinoline St Denman. A contractor has been engaged to undertake the works in June - July 2025. Other works programmed to occur at this time are the renewal of stormwater pits Rutherford Road Muswellbrook and repairs to stormwater drainage in Skellatar St.
FUTURE FUND:																				
Blue Flame Restaurant Works		3690.5711	$250,000		$208,059	$0	$249,978	$208,036	$41,942	Future Fund Reserve										**Blue Flame Restaurant Works** Blue Flame Restaurant fit-out works. **Completed.**
Marketplace Asset Renewal (incl. Lift)	D & C	3690.5540	$331,194		$221,539	$0	$393,224	$105,962	$287,262								Jun-24			**Muswellbrook Marketplace Asset Renewal** Heavy goods lift specification drafted ready for tender issue. Council is undertaking an independent review of transportation services at the Marketplace now complete. Tenders to be called for lift.
Renewal of Existing Assets	D & C	3690.5421	$331,938		$235,814	$0	$2,141,726	$63,293	$2,078,433								Jul-24	Jul-24		**Renewal of Existing Assets** Combination of commercial building renewal projects and capital works for new tenancies. Replacement of split air-conditioning systems at Sam Adams. Fire detection renewal at Tertiary Education Centre.
WASTE OPERATIONS:																				
Waste & Recycling Centre Leachate Dam	D & C	3653.4530	$475,795		$475,795	$0	$30,417	$0	$30,417	Waste Reserve	$450,000						Jul-23	Dec-26	Jul-23	**Waste & Recycling Centre Leachate Dam** Design and construction cost estimates complete (~$500,000). Biodiversity Assessment completed. Geotechnical report for project area received, which has triggered a dam design revision due to lack of winnable clay on site. Currently preparing development application (DA) lodgement.
WATER AND WASTEWATER:																				
Sewer Fund																				
Access and Security Improvements	D&C	6340.4475	$150,000		$150,000	$0	$458,038	$51,981	$406,057			30/06/2025				Request for tender	Nov-24	Jun-25		**Access and Security Improvements** Fencing and automation of gates for Recycled Water Treatment Works (RWTW) at Muswellbrook. RFQ closed on 19 May. 4 out of 11 companies put in a proposal. Submissions being reviewed and evaluated. Security Improvements for Recycled Water Treatment Works (RWTW) at Muswellbrook key system upgrade. Intercom, Cameras RFQ. Expected completion June 2025. Current works for installation of power for intercom & security. - Power cabling & trenching have been put on hold until weather clears - Security company starting installation of intercoms and access devices 26th May 2025. Denman Sewer Treatment Plant (DSTP) one-tonne concrete wall along the levee bank. Completed
Mains Renewal and Replacement	I, D & C	6310.4340	$260,000		$200,000	$0	$3,273,166	$7,209	$3,265,957			30/06/2025				Request for tender	Mar-25	Jun-25		**Mains Renewal and Replacement** December Council approved $150,000 funding to be reallocated from Sewer Fund GL 6310.4340.504 to Water Fund GL 5330.4378.504 for procurement of a non-destructive digger.

Solar Array	D & C	6310.4493	$644,773		$699,622	$0	$704,318	$603,939	$100,379	Section 64 Funding	$750,000	N/A			Contractor has arranged project insurance	Contracted	Mar-24	Feb-25	Apr-24	**Solar Array** Solar Array is operational and online. Water & Wastewater staff connected to online monitoring system. Site rundown/handover to Operations team requested to contractor. Completion certificate received and awaiting final payment claim.
Sewer Operational Contingency	I,D&C	6340.4494	$40,000		$50,000	$0	$329,840	$68,249	$261,591			30/06/2025				N/A	Jul-24	Jun-25	Jul-24	**Sewer Operational Contingency** Replaced failed, obsolete connector at Muswellbrook Sewer Pumping Station (MSPS) 4. Purchasing 88kVa power generator is planned before Financial Year end.
System Plant Asset Renewals	I, D & C	6340.4488	$650,000		$528,017	$0	$1,896,551	$177,404	$1,719,147			30/06/2025					Jul-24	Jun-25	Jul-24	**System Plant Asset Renewals** Muswellbrook Sewer Pumping Station (MSPS) No. 5 - Audit Report finlizied - Operations Maintenance to follow up with critical repairs. MSPS 7 & MSPS 5 Electrical Board upgrade ,-Beca's proposal has been reviewed and has confirmed to proceed on proposal. Construction expected to be completed by August 2025.
Transportation System Improvements	I, D & C	6340.4485	$300,000		$595,964	$0	$1,299,445	$201,876	$1,097,569			30/06/2025				Request for tender	Feb-24	Oct-25		**Transportation System Improvements** Telemetry Hardware upgrade for pumping stations: - Contractor to provide updated Proposal on changes suggested by the Team. MSPS 2-7 MSPS 9-13 In process of concept design and scope. IT/OT network and telemetry hardware segregation in process of preparing Tender documents. Expected to go to Tender/RFQ in June 2025. Completion estimate is October 2025. Telemetry Software is planned to be replaced for 8 sites in total. Investigation and design for procurement of correct equipment is to be integrated to the system. Expected replacement start by May 2025. Expected completion by June 2025. Odour Control Unit: MSPS4-Condition assessment report received. Discussion in place with Bioaction for remedial works and costs. Pumpstation Protection - Quotes received, WHS to approve Contractors on Besafe system for work to be started. Works expected start in March 2025. Completion estimate is April 2025
Upgrade Sewer Pumping Station-1	I, D & C	6310.4364	$3,920,367		$1,987,094	-$987,094	$54,013	$41,106	$12,907	Revenue / Section 64 Funding	$3,920,367					Contracting	Jun-24	Nov-25	Jun-24	**Upgrade Muswellbrook Sewer Pumping Station 1** December Council Meeting 2024 - Approved the transfer of $1,933,273 from the Sewerage Account (section 64 sewer reserves) to enable fulfilment of the contract project budget. Tender submitted by KCE Pty Ltd accepted for total cost of $3,266,971.00. Contract executed on 7th March 2025. Project kick-off and site visit done on 10th March 2025. Milestone-1-50% Design reviewed on 1 May. Milestone-2-80% Design and Workshop with Operations team expected by mid of June 2025 . Beca engaged to support design review of electrical/telemetry.
Sewer Plant and Equipment	I	6340.4380			$180,000	$0	$119,452	$0	$119,452			30/06/2025					Jun-24	Jul-25		**Sewer and Plant Equipment** Investigations underway for purchase of Vacuum Truck Plant Equipment. Procurement and Works Team in process of procuring. Procurement Date TBA. Networks to update on procurement process.
Water Fund																				
Asbestos Removal, Earthwork and Security	C	5310.4586	$150,000		$150,000	$0	$355,807	$46,499	$309,308			30/06/2025					Feb-25	Jun-25		**Asbestos Removal, Earthworks and Security** - Tender will go out on 27 May 2025 for Water main earth works and asbestos pipe removals planned for the following water mains: Scott Street Ford Street Flanders Ave Provisional Items included in Tender Mill Street, Roger Street, Koombhala Street
BP0154 Betterment Denman	D&C	5310.3870	$1,113,000			$445,200		$73,486	$0	Infrastructure Betterment Fund	$1,113,000	20/05/2026	$1,113,000			Request for tender	TBA	TBA		**D&C of Denman River intake** Tender documentation prepared to go to market. Tender results is planned to be reported in July Council meeting.
BP0156 Betterment Muswellbrook	C	5310.3871	$761,318			$262,122		$69,228	$0	Infrastructure Betterment Fund	$761,318	20/05/2026	$761,318			Request for tender	Jul-25	Oct-25		**MWTP Filter Refurbishment Work** Tender documentation prepared and Tender advertised. Tender closing date 28-May-25. Pre-tender meeting completed with potential tenderers visited site. Tender results is planned to be reported in June Council meeting.
Corrosive Chemicals Facilities Audit	C	5310.4308	$300,000		$300,000	$300,000	$0	$0	$0	Water Fund	$300,000		$300,000			Request for tender	Apr-25	Jun-25		**Corrosive Chemical Facilites Audit** March 2025 Council meeting - Council resolved to progress with post chemical audit remediation works at water/wastewater treatment plants. $300,000 to be moved from Water Reserve to the 2024/25 Financia; Year Capital Budget. Documents for Tender is under review.
GLE Pipeline	D&C	5310.0492	$26,500,000		$18,362,625	-$862,625	$604,711	$69,134	$535,576	Restart NSW - Growing Local Economies Safe & Secure (committed but not allocated)	$18.9M $1.6M	Apr-25 Negotiations with INSW	$18,900,000	$7,600,000		Request for tender	Jun-19	Jun-26	Feb-20	**GLE Pipeline** Council approved progression of the project at Council meeting on 26th November. Project schedule has been updated. Negotiations held with Infrastructure NSW regarding funding conditions. Discussions on the approach to Procurement stage and Delivery. External PM assistance sought and initial meeting with external contractor was held on 12th February. Land acquisition of all the land parcels for this project is complete. National Water Grid EOI application has been submitted and was successful. Main grant application to be submitted to National Water Grid by 30 May. Response to additional enquiries from Infrastructure NSW to be submitted by 30 May. Tender documents prepared and under review wit PWA.
Mains Renewal And Replacement	I, D & C	5320.4340	$650,000		$890,285	$0	$5,545,338	$347,582	$5,197,755			30/06/2025				Request for tender	Feb-25	Jun-25		**Mains Renewal and Replacement** Planned water main replacements:submission to Council planned for July 2025. Scott Street Ford Street Flanders Ave Provisional Streets: Roger Street, Mill Street and Koombahla Street **Tender will go out on 27 May for 3 weeks.** **Sth MBK Main** DN300 Design Drawing, Water Main Specification and Schedules sent to Procurement to be added into Tender 2024-2025-0656 - Detailed Design and Construction of Olympic Park Grandstand and Amenities.
Replacement of Water Meters	C	5320.4376	$65,000		$65,000	$0	$550,008	$48,417	$501,591			30/06/2025					Jul-24	Jun-25		**Replacement of Water Meters** Ongoing ageing water meter replacement programme. Networks to update on works and budget.
System Plant Asset Renewals	I, D & C	5340.4400	$730,474		$881,398	$0	$4,314,455	$330,132	$3,984,323			30/06/2025					Feb-25	Jun-25		**Systems Plant Asset Renewals** MWTP- Back Wash Pump and Motor - Estimation quotes received - RFQ to go out on 23/May/25 - Expected Supplied equipment Lead Time 26 weeks- likely completion by Aug 25. MWTP Chemical Bund and Shed- Contract awarded - Demo of site completed. Construction of concrete bund completed. The application of the epoxy coatings to be finished Late - May. (Weather Permitting). The engineered design shed is currently on order, with an estimated delivery time June 2025. Telemetry Hardware replacement is underway with Investigation of compatibility and design of right equipment to be integrated to the W&W systems: MWTP, Pumping Stations and reservoirs, Denman WTP - Awaiting updated Proposal from contractor and once recieved Shahzad can re-review. DWTP - Reservoir Staircase Installation - Draft design now been sent to engineers for pricing on certification. Procurement process will proceed once the design is finalised. MWTP Driveway and footpath-Contractor award – Start TBC (Weather Permitting)
Upgrade Fluoride Dosing System	I, D & C	5310.4577	$294,732		$150,598	$0	$278,123	$51,918	$226,205	NSW Health		n/a					Apr-24	Apr-25	Apr-24	**Upgrade Fluoride Dosing System** The fluoride upgrade project installation completed June 2024. The old fluoride dosing plant was dismantled and removed, the floor and walls were repainted and a new air conditioner was installed. Electrical cabling works have been completed. Installed galvanized platform over confined space sump in the fluoride room. Installed 2000 L fluoride liquid trade waste tank. Pre-commissioning stage currently with commissioning expected in late May 2025 with expected completion in June 2025. AVE were onsite on 21/May. S.A.T testing needs to be completed.
Vehicle - Equipment Replacement	C	5330.4378	$65,000		$165,000	$0	$157,803	$41,552	$116,251			30/06/2025					Oct-24	Jun-25		**Vehicle - Equipment Replacement** Programme is prepared. December Council approved for $150,000 to be moved from Sewer fund GL 6310.4340.504 to GL 5330.4378.504 for the procurement of a Non-Destructive digger. Network team to update on procurement

Water Operations Contingency Project	I	5340.4406	$56,000		$50,000	$0	$251,896	$35,280	$216,616			30/06/2025					Mar-25	Jun-25		**Water Operations Contingency Project** Proposed purchase of 65kVa power generator with heavy duty trailer. Expected completion in June 2025.
Water Stop Valve Replacement Programme	I, D & C	5320.4379	$200,000		$200,000	$0	$599,146	$39,740	$559,406			30/06/2025					Mar-25	Jun-25		**Water Stop Valve Replacement Programme** Humphries Street Valve replacement. Brook Street redundant Water Main end capping and valve closure. Tender will go out on 27 May

7 Adjournment into Closed Committee

RECOMMENDATION

The Infrastructure and Property Committee adjourns into Closed Session, and access to the correspondence and reports relating to the items considered during the course of the Closed Session be withheld unless declassified by separate resolution. This action is taken in accordance with Section 10A(2) of the Local Government Act, 1993 as the items listed come within the following provisions:

Moved: _____ **Seconded:** _____

8 Closed Committee

8.1 Asphalt Heavy Patching on The Denman Road (MR 209)

9 Resumption of Open Committee

10 Date of Next Meeting

12 August 2025

11 Closure