

DOOMADGEE ABORIGINAL SHIRE COUNCIL

TENDER DOCUMENTS FOR

**DOOMADGEE ABORIGINAL SHIRE COUNCIL - CONTRACT 2023-
002
BITUMEN SEAL MARRADGEE ROAD SUBDIVISION**

VOLUME 1

Job No. 60671714
April 2023

Tender Documents

Marradgee Rd Bitumen Seal


Ref 60671714

Date 20 April 2023

Prepared by Geoff Prior

Reviewed by Scott Snelling

Revision History

Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
0	11 October 2022	For Tender	Scott Snelling Associate Director	

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VOLUME 1	Page
Quality Assurance	1
Table of Contents	2
 Conditions of Tendering & Tender Form	
Conditions of Tendering	5
Tender Form	13
 Tender Schedules	
Schedule of Lump Sums	14
Schedule of Contractor's Details	17
Schedule of Compliance Assessment Testing	33
Code of Conduct	41
 Contract Information	
Annexure to the Australian Standard General Conditions of Contract (AS 2124–1992) – Part A	42
Formal Instrument of Agreement	45
 Specifications	
<u>Job Specifications</u>	
Non-Technical Specifications	46
Technical Specifications	88
 <u>Standard Specifications</u>	Specification Number
FNQROC Road Pavements Standard Specification	S2 (03/17)
TMR Sprayed Bituminous Treatments (Excluding Emulsion) Specification	MRTS11

Job Drawings**Drawing Name****Drawing Number**

Locality plan and drawing index	60628959-MAR-01-LP-01 Rev 2
Standard Notes	60628959-MAR-01-CN-01 Rev 0
Typical sections	60628959-MAR-01-TS-01 Rev 0
Control line and survey setout plan	60628959-MAR-01-CL-01 Rev 0
Public utilities plan sheet 1 of 2	60628959-MAR-01-PU-01 Rev 0
Public utilities plan sheet 2 of 2	60628959-MAR-01-PU-02 Rev 0
Roadworks and drainage plan sheet 1 of 2	60628959-MAR-01-RL-01 Rev 1
Roadworks and drainage plan sheet 2 of 2	60628959-MAR-01-RL-02 Rev 1
Bulk earthworks layout plan sheet 1 of 2	60628959-MAR-01-EW-01 Rev 0
Bulk earthworks layout plan sheet 2 of 2	60628959-MAR-01-EW-02 Rev 0
Road longitudinal section sheet 1 of 2	60628959-MAR-01-WP-01 Rev 0
Road longitudinal section sheet 2 of 2	60628959-MAR-01-WP-02 Rev 0
Kerb set out layout plan	60628959-MAR-01-KS-01 Rev 0
Kerb set out tables	60628959-MAR-01-KS-02 Rev 0
Water layout plan sheet 1 of 2	60628959-MAR-01-WS-01 Rev 0
Water layout plan sheet 1 of 2	60628959-MAR-01-WS-02 Rev 0
Concept erosion and sediment control plan sheet 1 of 2	60628959-MAR-01-ES-01 Rev 0
Concept erosion and sediment control plan sheet 2 of 2	60628959-MAR-01-ES-01 Rev 0
Road cross sections – MC0A10 – Sheet 1 of 1	60628959-MAR-01-XS-01 Rev 0
Road cross sections – MC0B10 – Sheet 1 of 4	60628959-MAR-01-XS-02 Rev 0
Road cross sections – MC0B10 – Sheet 2 of 4	60628959-MAR-01-XS-03 Rev 0
Road cross sections – MC0B10 – Sheet 3 of 4	60628959-MAR-01-XS-04 Rev 0
Road cross sections – MC0B10 – Sheet 4 of 4	60628959-MAR-01-XS-05 Rev 0
Road cross sections – MC0C10 – Sheet 1 of 1	60628959-MAR-01-XS-06 Rev 0
Road cross sections – MC0D10 – Sheet 1 of 1	60628959-MAR-01-XS-07 Rev 0

CONDITIONS OF TENDERING AND TENDER FORM

Table of Contents

1.0	GENERAL CONDITIONS OF TENDERING	6
2.0	COMMUNICATION PROTOCOLS	6
3.0	ADVICE GIVEN TO TENDERERS	6
4.0	FORMAT AND COMPLETENESS OF TENDER	6
5.0	IDENTIFICATION OF TENDERER	7
6.0	NATURE OF CONTRACT	7
7.0	LODGEMENT OF TENDER	7
8.0	TENDER WARRANTIES	7
9.0	OPENING OF TENDERS	8
10.0	TENDER VALIDITY PERIOD	8
11.0	ALTERNATIVE TENDERS	8
12.0	SELECTION AND ACCEPTANCE OF TENDER	8
13.0	POST-TENDER NEGOTIATIONS	9
14.0	QUALITY ASSURANCE POLICY	9
15.0	TIME FOR COMPLETION	9
16.0	SCHEDULE OF TENDER DATA	10
17.0	TENDERER'S EXPERTISE SOUGHT	10
18.0	TENDER PACKAGE	10
19.0	TENDER PRICE COMPONENT BREAKDOWNS	10
20.0	SUBCONTRACTORS	11
21.0	SUPERVISION	11
22.0	CONSTRUCTION PROGRAM	11
23.0	RISE AND FALL IN COSTS	11
24.0	EVIDENCE OF CONTRACT	11
25.0	ACCESS TO SITE	11
26.0	EMPLOYMENT AND TRAINING OF COMMUNITY LABOUR	11
27.0	AUSTRALIAN GOVERNMENT BUILDING AND CONSTRUCTION WHS ACCREDITATION SCHEME	11
28.0	BUILDING CODE (2016)	11
29.0	AVAILABILITY OF FUELS AND OTHER CONSUMABLES	12
30.0	CULTURALLY SIGNIFICANT FINDS	12
31.0	SITE FACILITIES	12

1.0 GENERAL CONDITIONS OF TENDERING

The documents upon which the Tenderer is to tender are the documents listed in the Table of Contents in the tender documents.

Tenderers must complete the Tender Form provided and lodge it with any accompanying schedules or information in a sealed envelope endorsed with the contract number at the place and by the time stated in the invitation to tender.

The Principal has the right and is not bound to accept the lowest nor any tender.

The Principal is not bound to proceed with the tender if all necessary approvals are not obtained.

The submission of a tender does not create a pre-tender process contract between the parties and that relationship between the parties is strictly pre contractual. The Principal is not bound in contract until the Contract is awarded to the successful Tenderer.

2.0 COMMUNICATION PROTOCOLS

Tenderer's queries and clarifications or requests for additional information will be in writing to the Superintendent. The Superintendent will respond in writing to the Tenderer. The query and the response will be forwarded to all other Tenderers for information in completing their tender.

Tenderers will direct all correspondence to:

AECOM Australia Pty Ltd
Level 3, 120 Bunda Street
PO Box 5971
Cairns, Queensland 4870

Phone: 0488 093 686
Facsimile: 07 4222 6001
Attention: Mr Geoff Prior
Email: cairns.tenders@aecom.com

3.0 ADVICE GIVEN TO TENDERERS

Refer to Clause 2.0.

The Principal will not be bound by any oral advice given nor any oral information furnished by the Principal or by any member, officer, employee or agent of the Principal in respect to the Contract tendered for but will be bound only by written information provided by the Principal or an authorised officer of the Principal that forms part of the Contract.

4.0 FORMAT AND COMPLETENESS OF TENDER

Further to Clause 1.0, the Tenderer is required to complete and submit the forms and schedules provided in the tender documents and such additional forms and schedules as are called for or are needed to complete the tender.

The Tenderer must sign each form and schedule (where required).

Any tender that:

- a. omits any form or schedule that is provided or called for or needed to complete the tender
- b. is not signed in each place where a signature is required
- c. is not accompanied by a tender deposit when a tender deposit is required.

will be incomplete and may not be admitted for evaluation.

5.0 IDENTIFICATION OF TENDERER

The Tenderer is required to state in the tender:

- a. In the case of an individual, their full Christian or given names, surname and address.
- b. In the case of a business, the business name, names and addresses of all proprietors and the address of the principal place of business.
- c. In the case of a company, the full name of the company and the address of the registered office of the company.

6.0 NATURE OF CONTRACT

The basis of the Contract shall be Australian Standard General Conditions of Contract (AS 2124-1992).

Any Contract made pursuant to any tender hereunder will be a Lump Sum Contract as defined by the General Conditions of Contract (with no provision for Rise and Fall). The total amount shall be obtained from the summation of the lump sums and the product of the rates and respective quantity set forth in the Tender. The total amount shall be for the performance of the whole of the works under the Contract described and intended in the Tender Documents applicable hereto.

The total amount will be full compensation for the complete construction of all works under this Contract, including any items of work not specifically mentioned but necessary to complete the work.

7.0 LODGEMENT OF TENDER

Further to Clause 1.0:

- a. Tenders are to be lodged by email by the closing time – Tuesday 16 May 2023.
- b. The tender closing time is 4pm
- c. Any tender not lodged before the time stated in the invitation to tender may not be considered unless there is evidence satisfactory to the Principal that the tender was dispatched to the place stated in the invitation to tender in sufficient time, before the time stated in the invitation to tender, to reach that place under normal circumstances but was still in the course of delivery at that time.
- d. The Principal in its discretion may reject a tender delivered after the time stated in the invitation to tender no matter what the reason be for the late delivery.
- e. Tenders sent or transmitted direct to the Principal, or the Principal's agent, by telephonic or telegraphic means, telegram, telex, facsimile or other electronic means will not be considered by the Principal.
- f. Franking machine stamps will not be accepted by the Principal as proof of the date of posting of a tender received after the time stated in the invitation of offer.

8.0 TENDER WARRANTIES

By submitting a tender, the Tenderer warrants:

- a. That it has carried out its own investigations has acquainted itself fully with the requirements of the tender documents and has fully informed itself in respect of its tender.
- b. The information contained in the tender is accurate.
- c. It has not engaged in any collusive process or any other anti-competitive processes in preparing the tender.
- d. That its tender has been submitted on the basis of its own inquiries and acknowledges that the Principal assumes no responsibility for the accuracy or adequacy of any information, statements or material provided as part of the tender process.

9.0 OPENING OF TENDERS

Tenders will not be opened publicly. Tenderers will not be permitted to be present at the opening.

Each tender opened will be registered. The register of tenders will provide a record of the name of each Tenderer, whether the tender appears to be complete, and the date and time of receipt of the tender. The register of tenders will be signed by the officer opening tenders and will be witnessed (and signed) by one other person.

The register of tenders will be kept at the AECOM Australian Cairns office.

10.0 TENDER VALIDITY PERIOD

Each tender will remain open to acceptance for a validity period of 120 days from the date of closing of tenders.

11.0 ALTERNATIVE TENDERS

The Principal is not bound to consider any alternative tender, and any Tenderer offering alternatives or qualified by any other departure from full compliance with the requirements of the tender documents should:

- a. Draw the Principal's attention to the particulars in which the alternative or qualified tender differs from the requirements of the tender documents and state the advantages and disadvantages to the Principal in accepting the alternative proposed.
- b. Lodge a tender that does comply in every respect with the requirements of the tender documents.

12.0 SELECTION AND ACCEPTANCE OF TENDER

Further to Clause 1.0, the Principal may accept (but is not bound to accept) the tender, that on a view of all the circumstances, appears to the Principal to be the most advantageous.

The Principal may accept a tender that, in minor respects, does not comply with the requirements of the tender documents.

No tender shall be deemed to be accepted other than by notice in writing given by the Principal.

EVALUATION CRITERIA

In the evaluation of a tender, the Principal can be expected to take into account:

Relevant Company Experience

Type of Work	10%
Work in Indigenous Community and Remote Locations Experience	10%
Experience of Key Staff/Resources	10%

Capacity to Carry Out the Work

QA, EMS and WH&S	5%
Financial (Past Projects)	5%

Other

Contract Price	40%
Methodology and Program	10%
Local Employment and Training Opportunities	10%

13.0 POST-TENDER NEGOTIATIONS

Post-tender negotiations are a prospect.

The Principal may:

- a. Permit a Tenderer to complete an incomplete tender.
- b. Request a Tenderer to clarify a tender.
- c. Request a Tenderer to give further information.
- d. Require a Tenderer to remove a qualification or condition of a tender as a condition of the Principal's accepting that tender.
- e. Advise a Tenderer whether an alternative Tender is acceptable.
- f. Where a construction program is called for by a Clause of the Conditions of Tendering, negotiate as provided in that Clause.
- g. Invite all Tenderers to change their tenders to take account of a change in the tender documents.

A Tenderer may:

- a. Clarify a tender.
- b. Remove a qualification or condition of a tender.
- c. Where an alternative has been Tendered, offer goods, equipment or services in accordance with the tender documents or offer a different alternative.

A Tenderer may not except with the permission of the Principal:

- a. Complete an incomplete tender.
- b. Offer new or enhanced goods, equipment or services.
- c. Amend any rate or lump sum in the Schedule of Rates.

14.0 QUALITY ASSURANCE POLICY

Refer to "Contractor's Quality Assurance" Clause of the Job Specification in these tender documents.

Assessment of a tender in which the Tenderer offers a quality system that is not fully in accordance with the requirements of the Job Specification may not be considered unless:

- a. the quality system has been established and implemented and only an external audit is required to demonstrate that it is a quality system fully in accordance with the requirements of the Job Specification
- b. no other Tenderer offers a quality system fully in accordance with the requirements of the Job Specification.

15.0 TIME FOR COMPLETION

The Principal may consider a tender that offers a time for completion shorter or longer than the Time for Completion specified in the Annexure A to the General Conditions of Contract.

The Principal may take into account any savings in price or other benefit to the Principal.

16.0 SCHEDULE OF TENDER DATA

Each Tenderer will include a completed Schedule of Tender Data giving sufficient information to identify and evaluate the materials and products offered.

Where there is no departure from the specifications, the Schedule of Tender Data may state, "In accordance with the Specification."

Where the Schedule of Tender Data indicates "Drawings to be provided", Tenderers will submit with their tender a set of Tender Drawings showing sufficient information (i.e. significant dimensions, material types, etc.) to enable a tender assessment to be undertaken.

17.0 TENDERER'S EXPERTISE SOUGHT

If, during the tender phase or after contract award, there are improvements to the design that will reduce cost and/or improve reliability of the design, the Tenderer is encouraged to make the necessary representations.

18.0 TENDER PACKAGE

The tender documents are comprised of a number of different aspects to be considered for award of the work, including, amongst others; Schedule of Contractor's Details, Schedule of Rates, Schedule of Tender Data, Undertaking of Compliance, Construction Programme, etc.

Tenderers are required to complete each schedule in accordance with these Conditions of Tendering and the Job Specification.

Complete all forms and data sheets in the tender package to submit a complying tender. State the price tendered on the form provided and indicated as Tender Summary, included with the tender documents.

19.0 TENDER PRICE COMPONENT BREAKDOWNS

While the tender is a lump sum tender, quantities have been included for some items in the Schedule of Rates. Tenderers are required to provide scheduled rates in their tender for the Lump Sum items. Scheduled rates will be used for such items as progress payments, additional work, and the like. Where quantities are provided in the tender form for scheduled rates, they are for information only and are not to be relied on. Tenderers shall make their own determination of quantities on which to construct their tenders and the works. Scheduled rates must be provided to match the measurement quantity indicated in the tender form and shall be derivable by dividing the Lump Sum for the unit by either the quantity shown in the tender form, or by that provided by the Tenderer in their tender submission.

The schedule shows a breakdown of various components considered to be relevant to the project. Tenderers shall also provide a breakdown of their lump sum price against each of these components. The sum of the amounts against each item shall be equal to the lump sum tender price included in the schedule.

The purpose of providing a component breakdown of lump sum items is to assist in the tender evaluation, as well as providing a mechanism for assessing progress against payment claims during construction. The Principal may request a Tenderer to revalue several of the components in the breakdown should it be considered that an unrealistic value has been placed against them, however, the total of the revalued items shall equal the lump sum tender schedule price.

Tenderers are encouraged to include additional component breakdowns, should they consider it beneficial.

20.0 SUBCONTRACTORS

Each Tenderer shall state in the tender the names of the subcontractors proposed to be employed and the extent of the work proposed to be carried out under subcontract.

21.0 SUPERVISION

Each Tenderer shall state in the tender the names and office addresses of the supervisory and administrative staff proposed to be employed.

22.0 CONSTRUCTION PROGRAM

Each Tenderer shall lodge a construction program as part of the tender.

The construction program will be a bar chart showing the proposed activities in each week following the date of Acceptance of Tender. The program will be submitted in MS Project 2010, in Gantt Chart View.

The Principal may require a Tenderer to amend its construction program as a condition of the Principal's accepting that tender. If the Tenderer is not prepared to make the amendment required and the Tenderer and the Principal do not agree on a construction program, then that Tenderer may withdraw its tender and the moneys deposited by the Tenderer will be returned without forfeiture or deduction.

23.0 RISE AND FALL IN COSTS

Payments under the Contract will not be subject to an adjustment for rise and fall in costs.

24.0 EVIDENCE OF CONTRACT

A Formal Instrument of Agreement will be executed. Refer to Clause 6 of the General Conditions of Contract (AS 2124-1992).

25.0 ACCESS TO SITE

Tenderers will make an assessment of access routes to the site and determine any limitations of access for the transport of equipment, materials and personnel, and any changes, which may arise to these conditions during the period of the Contract, particularly during periods of wet weather.

Refer to the Job Specification in this tender document.

26.0 EMPLOYMENT AND TRAINING OF COMMUNITY LABOUR

Employment and training of community labour is highly regarded and comprises 10% of the tender evaluation criteria for this project.

27.0 AUSTRALIAN GOVERNMENT BUILDING AND CONSTRUCTION WHS ACCREDITATION SCHEME

The Australian Government Work Health and Safety Accreditation Scheme does not apply to this contract.

28.0 BUILDING CODE (2016)

The Australian Government Building Code (2016) does not apply to this contract.

29.0 AVAILABILITY OF FUELS AND OTHER CONSUMABLES

Tenderers are advised that the availability of fuels, oils and other similar consumables may not be available for purchase in Doomadgee. Tenderers will make their own arrangement and make allowance for the delivery of fuels, oils and other similar consumables to the job site.

30.0 CULTURALLY SIGNIFICANT FINDS

The Tenderer is required at all times to comply with the Cultural Heritage Duty of Care during construction of the works set out in the Tender including preconstruction activities, construction activities and post construction activities. The Contractor shall arrange a Cultural Monitor to be present on site all the time during earthwork activities. The Contractor shall implement and comply with the Cultural Heritage Finds Procedure during construction of the works. The Cultural Heritage Finds Procedure is included in Volume 2.

31.0 SITE FACILITIES

The Contractor shall be responsible for service connections (power, water, etc.) to supply their site accommodation site and site facilities.

The Contractor shall provide any other statutory and necessary amenities and sanitary facilities for workers and other persons lawfully on the site and remove them on completion of Works. The location establishment of the Contractor's site facilities shall be subject to the final approval of the Superintendent.

MARRADGEE ROAD BITUMEN SEAL**TENDER FORM**

Name of persons, firm or company
tendering (USE BLOCK LETTERS)

Address

of

Description
of Works

hereby tender(s) to perform the work for

MARRADGEE ROAD BITUMEN SEAL

in accordance with the following Documents:

- the Documents listed in the Table of Contents
- the Addenda issued by the Principal, as listed below:

The Tenderer is to list the
Addenda received

- the additional Documents included by the Tenderer, as
listed below:

The Tenderer is to list all other
schedules and documents that are
included in his tender and are not
listed in the Table of Contents

If the Tenderer is a firm the full
names of the individual members
of the firm must be stated here.

for the lump sum of

\$ (Excl. GST)

DATED this _____ day of _____ 2022

Insert Date

Signature of Tenderer

TENDER SCHEDULES

SUMMARY

COLLECTION	Amount
SCHEDULE A - PRELIMINARIES	\$ _____
SCHEDULE B - PROPOSED WORKS	\$ _____
TOTAL (EXC. GST)	\$ _____

Notes

- 1 Item numbering in the schedule links to the clause numbering in the specifications. Refer to the specification for the work associated with each payment item.
- 2 The purpose of the schedule of lump sums is explained in Clause 5 of the Non-Technical Specification.
- 3 Notwithstanding whether there are supply only items in the schedule of lump sums, the Principal will not be obliged to make payment for these until the materials are incorporated in the works in accordance with Clause 42.4 of AS2124-1992.

SCHEDULE A - PRELIMINARIES

Item	Description	Unit	Quantity	Rate	Amount
12.0	HANDOVER DATA				
12.3	Handover Documents	LS	-	-	
18.0	QUEENSLAND GOVERNMENT				
18.2	Workplace Health and Safety Act	LS	-	-	
18.3	Building and Construction Industry (Portable Long Service Leave) Act	LS	-	-	
22.0	TRAFFIC MANAGEMENT	LS	-	-	
33.0	CONTRACTOR'S QUALITY ASSURANCE				
33.15	Contractor's Quality Assurance	LS	-	-	
51.0	SITE ESTABLISHMENT / DISESTABLISHMENT				
51.2	Establishment	LS	-	-	
51.3	Contractor's Accommodation	LS	-	-	
51.4	Disestablishment	LS	-	-	
52.0	ENVIRONMENTAL MANAGEMENT				
52.2	Environmental Management Plan	LS	-	-	
52.3	Provision for Environment	LS	-	-	
SUB-TOTAL					
GST (10%)					
TOTAL (EXC. GST)					

SCHEDULE B - PROPOSED WORKS

Item	Description	Unit	Quantity	Rate	Amount
53.0	ROAD SEAL				
53.1	Road Seal	m2	5550		
ALLOWANCE FOR ALL OTHER WORKS OR REQUIREMENTS NOT ITEMISED BUT NECESSARY FOR COMPLETION OF THE WORKS (TENDERER TO ITEMISE AND PRICE)					
SUB-TOTAL					
GST (10%)					
TOTAL (EXC. GST)					

DOOMADGEE ABORIGINAL SHIRE COUNCIL

MARRADGEE ROAD BITUMEN SEAL

SCHEDULE OF CONTRACTOR'S DETAILS

1.0 CONTRACTOR'S DETAILS

Name: _____

Address: _____

Contact Person: _____

Telephone No.: _____

Facsimile No.: _____

Email Address: _____

2.0 QUALITY ASSURANCE

The Tenderer shall submit his company's standard Quality Assurance Program with his Offer. On award the Quality Assurance Program is required to be updated, targeting this project specifically. The Tenderer's QA Program shall address at a minimum the following general headings (list items covered by the Tenderer's QA Program not included below).

QA Item	Included	Not Included
Organisation, Reporting, Records Management and Communication		
Site Security		
Safety Program and Emergency Procedures		
Surveillance, Monitoring, Testing, Testing Equipment and Inspections during construction		
Procurement (Purchasing), Suppliers, Sub-contractor and Design Control management		
Product Identification, Traceability and Materials Management		
Control and Procedures of non-conforming products, deficient work and corrective action		
Environmental Management		
Submittals to Superintendent (Document Control)		
Submittals and Inspections to / from Jurisdictions		
Start-up, Testing and Commissioning		
Defect Liability Period		

(Tick the box indicating whether QA items are included in the Contractor's QA System)

DOOMADGEE ABORIGINAL SHIRE COUNCIL

MARRADGEE ROAD BITUMEN SEAL

SCHEDULE OF CONTRACTOR'S DETAILS

3.0 SAFETY MANAGEMENT

The Tenderer shall submit an example safety management plan with his Offer. On award the Safety Management Plan (SMP) is required to be updated, targeting this project specifically. The Tenderer's SMP shall address at a minimum the following general headings (list items covered by the Tenderer's safety management system not included below).

SMP Item	Included	Not Included
Details of the construction project		
Occupational health and safety policy statement		
The plan includes all positions that involve specific WHS responsibilities		
Principal Contractor's Primary Duty of Care, processes are described		
Details are included for managing WHS incidents		
Site specific Induction		
Safe Work Method Statements (SWMS) are developed for high risk construction activities.		
Details for the management or control of plant and equipment.		
High risk construction work		
Management of Hazardous Substances.		

(Tick the box indicating whether items are included in the Contractor's SMP)

4.0 SYSTEM CERTIFICATION DETAILS

System	Name of Certifier	Accreditation (Tick Only One)		
		Self-Certified	Second Party	Third Party
Quality Assurance				
Maintenance Period Quality Assurance				
Environmental Management				
Workplace Health & Safety				

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MARRADGEE ROAD BITUMEN SEAL

SCHEDULE OF CONTRACTOR'S DETAILS

5.0 WH&S PERFORMANCE

WHS performance	
Describe your WHS strategy, objectives and targets, key performance indicators for these targets and consultative arrangements with workers and other duty holders.	
Detail how these will be integrated within this project.	
Provide full particulars of any WHS a. improvement, prohibition or infringement notices issued to the Tenderer b. (ii) convictions that are part of the Tenderer's criminal history c. enforceable undertakings within the last five years. d. LTIFR each year for last five years	

Hazard and risk management	
Detail how the Tender proposes to manage hazards and risks attributed to the construction of seawall infrastructure within a tidal area and a constrained site (i.e. remote location and proximity to environmentally significant areas).	
Further detail how the Tender will proactively fulfil its duties as a Principal Contractor with the constraints of working in and around a remote community	
If your Offer includes the use of sub-contractors to carry out any activities associated with this scope of work, detail your process for ensuring sub-contractor WHS compliance.	

DOOMADGEE ABORIGINAL SHIRE COUNCIL

MARRADGEE ROAD BITUMEN SEAL

SCHEDULE OF CONTRACTOR'S DETAILS

6.0 FINANCIAL PERFORMANCE

Financial Position				
Is the Tenderer able to pay all its debts in full as and when they fall due?		Yes / No		
If No, provide further detail.				
If the Tenderer is awarded the Contract, will it be able to fulfil the obligations of the Supplier/Contractor under the Contract from its own resources or from the resources readily available to it and remain able to pay all of its debts in full as and when they fall due?		Yes / No		
If No, provide further detail.				
Does the Tenderer have sufficient financial resources to fulfil all warranty and defect rectification obligations under the Contract, subject to any modifications to those obligations that are expressly set out in its Statement of Compliance.		Yes / No		
If No, provide further detail.				
The tenderer should provide details of any events, matters or circumstances (such as any petition, claim, action, judgement, undischarged bankruptcy, liquidation or administration) which may affect its operations or its ability to carry out and supply the goods, services and works in accordance with the Tender Documents.				
Provide Detail (if applicable)				
Tendering Entity Turnover	2020/2021	2019/2020	2018/2019	2017/2018

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MARRADGEE ROAD BITUMEN SEAL

SCHEDULE OF CONTRACTOR'S DETAILS

7.0 PROJECT MANAGER

Name: _____

Telephone No: _____

Previous Experience
Relating to Scope of
Works _____

Previous Experience
in Remote Indigenous
& Torres Strait: _____

Referees & Contact Details: _____

8.0 PROJECT SUPERVISOR/FOREMAN

Name: _____

Telephone No.: _____

Email Address: _____

Previous Experience
Relating to Scope of
Works _____

Previous Experience _____

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MARRADGEE ROAD BITUMEN SEAL

SCHEDULE OF CONTRACTOR'S DETAILS

in Remote Indigenous
& Torres Strait:

Referees & Contact Details:

Hours/week on site:

9.0 WORKPLACE SAFETY AND HEALTH OFFICER

Name:

Telephone No.:

Email Address:

Previous Experience
Relating to Scope of
Works

Previous Experience
in Remote Indigenous
& Torres Strait:

Referees & Contact Details:

Hours/week on site:

DOOMADGEE ABORIGINAL SHIRE COUNCIL

MARRADGEE ROAD BITUMEN SEAL

SCHEDULE OF CONTRACTOR'S DETAILS

10.0 QUALITY ASSURANCE REPRESENTATIVE

Name: _____

Telephone: _____

Previous Experience: _____

11.0 LICENCED SURVEYOR

Company Name: _____

Name: _____

Licence No.: _____

Telephone No.: _____

12.0 OTHER KEY PERSONNEL

Name: _____

Telephone No: _____

13.0 OTHER SUBCONTRACTORS (Excluding those supplying materials only)

Name: _____

Extent of Work: _____

Name: _____

Extent of Work: _____

Name: _____

Extent of Work: _____

DOOMADGEE ABORIGINAL SHIRE COUNCIL

MARRADGEE ROAD BITUMEN SEAL

SCHEDULE OF CONTRACTOR'S DETAILS

Name:

Extent of Work:

14.0 ESTIMATED VOLUME OF WATER TO BE USED BY CONTRACTOR

Domestic Purposes (kL)
(site facilities and camp –
if required)

Construction Water (kL)

15.0 CURRENT WORK COMMITMENTS (Contractor Only)

Project Description	Contract Sum	Completion Date	Principal

16.0 SIMILAR REMOTE WORK COMPLETED IN THE LAST 5 YEARS (Contractor and Subcontractor).

Note: all past projects in Indigenous communities to be listed.

	Project Description	Contract Sum	Contract Period	Funding department (including contact details)	Supervising Engineer (including contact details)	Community (including contact details)	Principal	Key Staff Included in This Tender (including role in past projects)	Reference for Key Staff (including contact details)
1									
2									
3									
4									
5									
6									
7									
8									
8									
9									
10									

The information provided by the Tenderer in response to this Section 16.0 of the Schedule of Contractor's Details will not form part of the Contract (either express or implied) and without limiting other terms of the Conditions of Tender, will only be used or interpreted in respect to and for the purpose of the Principal's evaluation of the Tenderer's Tender irrespective of whether it is bound into the Contract.

DOOMADGEE ABORIGINAL SHIRE COUNCIL

MARRADGEE ROAD BITUMEN SEAL

SCHEDULE OF CONTRACTOR'S DETAILS

17.0 TIME PERFORMANCE (same projects as Section 16.0)

	Project (refer Section 16.0)	Due Date for Practical Completion	Actual Date of Practical Completion	Comment
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

The information provided by the Tenderer in response to this Section 17.0 of the Schedule of Contractor's Details will not form part of the Contract (either express or implied) and without limiting other terms of the Conditions of Tender, will only be used or interpreted in respect to and for the purpose of the Principal's evaluation of the Tenderer's Tender irrespective of whether it is bound into the Contract.

SCHEDULE OF CONTRACTOR'S DETAILS

- a. Logistics and freight;
- b. Facilities and laydown;
- c. Accommodation arrangements and office space (include marked-up map);
- d. Construction works.

[illegible]

SCHEDULE OF CONTRACTOR'S DETAILS

[illegible]

Highlight all clauses in the tender contract documents that the Tenderer does not accept or will not be able to fully comply with. This table is not to be used for identifying alternative proposals.

DOOMADGEE ABORIGINAL SHIRE COUNCIL

MARRADGEE ROAD BITUMEN SEAL

SCHEDULE OF CONTRACTOR'S DETAILS

Important: Clauses or conditions of the Tender Documents (including the Contract) that are not listed below will be deemed by the Principal and the Tenderer to have fully complied with and accepted by the tenderer.

Clause Number and Name of Tender Document	Indication of Non-Compliance	Comments and Information

In this section, in addition to relevant comments by Tenderers, in respect of each clause or condition of the Tender Documents (including the Contract) listed, the Tenderer will indicate whether he:

- a. partially non-complies with the requirement. If so, this must be indicated by a 'P' under the heading 'Indication of Non-Compliance', which means:
 - i. in the case of a clause which imposes a contractual condition, the condition can only be met subject to certain qualifications. All such qualifications must be stated in full; and
 - ii. in the case of a clause which specifies a characteristic or performance standard, the condition can only be met subject to certain conditions. Where this is the case and the Tenderer is prepared to make good on the condition, characteristic or performance standard, the Tenderer must state or describe the manner in which the non-compliance is to be made good;
- b. does not comply with the requirement. If so, this must be indicated by a 'N' under the heading 'Indication of Non-Compliance'. This means that the complete contractual condition, or characteristic or performance standard of the clause is not met or totally accepted by the Tender. The Tenderer must provide full details of the non-compliance.

Responses may be grouped together (e.g. 'Clauses 1 to 15 – P') only if they are the same level of non-compliance. Alternatively, Tenderers may wish to state their non-compliance against each clause.

DOOMADGEE ABORIGINAL SHIRE COUNCIL

MARRADGEE ROAD BITUMEN SEAL

SCHEDULE OF CONTRACTOR'S DETAILS

20.0 PROJECT RESOURCES

(List all equipment and labour to be utilised for the project and the estimate of hours per week that the equipment will be utilised during the project, further list hourly and daily rates for that equipment).

Description of Equipment/Labour	Average Hours/Week	Rate Hourly/Daily (incl. profit and overheads)		Stand-down Hourly/Daily (incl. profit and overheads)	
		Hour	Day	Hour	Day

DOOMADGEE ABORIGINAL SHIRE COUNCIL

MARRADGEE ROAD BITUMEN SEAL

SCHEDULE OF CONTRACTOR'S DETAILS

21.0 ALTERNATIVE TENDER

With reference to Conditions of Tender Clause 11.0, list if any alternatives and cost saving approaches/ suggestions, clearly stating the advantages and disadvantages to the Principal in accepting the alternative proposed.

The information detailed on these pages inclusive of the Schedule of Contractors Details will be read in conjunction with and form part of my / our tender for the Marradgee Road Bitumen Seal.

Name of Tenderer: _____

Signature: _____

Address: _____

Witness: _____

Date: _____

DOOMADGEE ABORIGINAL SHIRE COUNCIL

AECOM

MARRADGEE ROAD BITUMEN SEAL

SCHEDULE OF COMPLIANCE ASSESSMENT TESTING

SPECIFICATION	LOCATION OF TEST	TESTING REQUIRED	APPLICABLE STANDARDS	FREQUENCY
Reference should be made to the FNQROC Development Manual Construction Procedures Appendix A (Test Requirements) and Department of Transport and Main Roads Specifications. Amendments and additions are provided below.				
MRTS11 (Sprayed Bituminous Surfacing)	Cover Aggregates (Quarry Tests)	Stockpile Sampling Grading Flakiness Index Aggregate Precoat	TMR Test Method Q060 TMR Test Method Q103B TMR Test Method Q201 TMR Test Method Q216	1 test per 100m ³
	Spraying	Agg Spread Rate	TMR Test Method Q711A	1 test per lot

CODE OF CONDUCT

- a. Applicable to contractors, subcontractors, suppliers and agents (the Contractor).
- b. There shall be no direct contact or liaison with elected representatives of the Council or Council staff unless initiated by the Council.
- c. No loan or gift of equipment, vehicles, food, beverages or labour shall occur to any member of the Community (including elected representatives) unless as part of employment by Contractor, under an award or over award conditions.
- d. The Contractor shall not provide goods or services not included in the contract to a community person, Council staff or employee (including elected Council members) without specific prior approval from the Superintendent.
- e. Neither the Contractor nor his staff shall be employed except on this Contract within the Community during the entire term of the Contract, with the possible exception of work for Council, but dependent upon the Superintendent's approval and any such work being properly documented and a price properly agreed upon. The Council may however approach the Contractor to undertake other work upon completion of this Contract.
- f. Any racially discriminatory behaviour by the Contractor will result in dismissal and/or removal from the site and the Community.
- g. There shall be no initiation or maintenance of sexual or close contact relationships by the Contractor with any community members. In the event of such an occurrence, instant dismissal and/or removal from the site and the Community will occur.
- h. The Contractor should be discreet in his handling of alcohol in the community and shall comply with the alcohol limits specified on the Department of Aboriginal and Torres Strait Islander Partnerships Website. i.e. alcohol brought onto the community should not be obvious and should be consumed within the Contractor's camp. The sale of alcohol to community members is prohibited and offenders will be dismissed and/or removed from the site and the Community.
- i. In the event of a dispute arising in relation to the requirements or application of this clause an independent adjudicator, nominated by the Grantee Organisation Representative, will consider representations from the Contractor and the Council. All parties shall adhere to the determination of the adjudicator.
- j. The Contractor shall not employ any Council staff members or employees without prior approval of the Council in writing.
- k. Neither the Contractor nor his employees or subcontractors will use or borrow any Council plant, fuel, vehicles, equipment, building materials, car parts etc. without prior approval of the Council in writing. The arrangements for all hiring of Council plant shall be properly documented in writing prior to use of the plant.
- l. Animals shall not be brought into the community.
- m. The costs for removal of Contractor personnel from the site and replacement by other suitable personnel shall be borne by the Contractor.

I / We have read this Code of Conduct, and agree to abide by the conditions whilst on site.

Printed Name: _____ (Contractors Representative)

Signature: _____

Date: _____

Witness Signature: _____

Date: _____

CONTRACT INFORMATION

MARRADGEE RD BITUMEN SEAL

ANNEXURE TO THE AUSTRALIAN STANDARD GENERAL CONDITIONS OF CONTRACT (AS 2124-1992)

PART A

This Annexure will be issued as part of the tender documents, attached to the General Conditions of Contract, and will be read as part of the Contract.

The law applicable is that of the State or Territory of: (Clause 1)	<u>QUEENSLAND</u>
Payments under the Contract will be made at: (Clause 1)	<u>CAIRNS</u>
The Principal: (Clause 2)	<u>DOOMADGEE ABORIGINAL SHIRE COUNCIL</u>
The address of the Principal:	<u>c/o 3/120 Bunda Street, Cairns, Queensland 4870</u>
The Superintendent: (Clause 2)	<u>AECOM AUSTRALIA PTY LTD</u>
The address of the Superintendent:	<u>c/o 3/120 Bunda Street, Cairns Queensland 4870</u>
Limits of accuracy applying to quantities for which the Principal accepted a rate or rates: (Clause 3.3(b))	<u>+/- 100% - Provisional Quantities, +/- 100% - If Ordered Items</u>
Bill of Quantities – the alternative applying: (Clause 4.1)	<u>N/A</u>
The time for lodgement of the priced copy of the Bill of Quantities: (Clause 4.2)	<u>N/A</u>
Contractor shall provide security in the amount of: (Clause 5.2)	<u>5% of Contract Sum</u>
Principal shall provide security in the amount of: (Clause 5.2)	<u>NIL</u>
The period of notice required of a party's intention to have a recourse to retention moneys and / or to convert security: (Clause 5.5)	<u>FIVE CALENDAR DAYS</u>
The percentage to which the entitlement to security and retention moneys is reduced: (Clause 5.7)	<u>SECURITY: 0% RETENTION: 100%</u>
Interest on retention moneys and security – the alternative applying: (Clause 5.9)	<u>ALTERNATIVE 2</u>
The number of copies to be supplied by the Principal: (Clause 8.3)	<u>ONE COPY</u>

MARRADGEE RD BITUMEN SEAL

ANNEXURE TO THE AUSTRALIAN STANDARD GENERAL CONDITIONS OF CONTRACT (AS 2124-1992)

PART A

The number of copies to be supplied by the Contractor: (Clause 8.4)	<u>THREE COPIES</u>
The time within which the Superintendent must give a direction as to the suitability and return the Contractors copies: (Clause 8.4)	<u>14 DAYS</u>
Work which cannot be subcontracted without approval: (Clause 9.2)	<u>WHOLE OF WORKS</u>
The percentage for profit and attendance: (Clause 11(b))	<u>10%</u>
The amount or percentage for profit and attendance: (Clause 11(c))	<u>10%</u>
Insurance of the Works – the alternative applying: (Clause 18)	<u>ALTERNATIVE 1</u>
The assessment for insurance purposes of the costs of demolition and removal of debris: (Clause 18(ii))	<u>2.5% of the Contract Sum</u>
The assessment for insurance purposes of consultants fees: (Clause 18(iii))	<u>5% of the Contract Sum</u>
The value of materials to be supplied by the Principal: (Clause 18(iv))	<u>NIL</u>
The additional amount or percentage: (Clause 18(v))	<u>10%</u>
Public Liability Insurance – the alternative applying: (Clause 19)	<u>ALTERNATIVE 1</u>
The amount of Public Liability Insurance will not be less than: (Clause 19)	<u>\$10,000,000</u>
The time for giving possession of the Site: (Clause 27.1)	<u>REFER TO CLAUSE 29 OF THE JOB SPECIFICATION – NON TECHNICAL</u>
The Date for Practical Completion: (Clause 35.2)	<u>4 WEEKS FROM LETTER OF TENDER ACCEPTANCE</u>
Liquidated Damages per day: (Clause 35.6)	<u>\$500 PER CALENDAR DAY</u>
Limit of Liquidated Damages: (Clause 35.7)	<u>NO LIMIT</u>

MARRADGEE RD BITUMEN SEAL

ANNEXURE TO THE AUSTRALIAN STANDARD GENERAL CONDITIONS OF CONTRACT (AS 2124-1992)

PART A

Bonus per day for early Practical Completion: (Clause 35.8)	<u>NIL</u>
Limit of Bonus: (Clause 35.8)	<u>N/A</u>
Extra Costs for delay or disruption: (Clause 36)	<u>NONE SPECIFIED</u>
The Defects Liability Period: (Clause 37)	<u>12 MONTHS</u>
The Charge for overheads, profits, etc. for Day work: (Clause 41(f))	<u>10%</u>
Times for Payment Claims: (Clause 42.1)	<u>EACH CALENDAR MONTH</u>
Unfixed plant and materials for which payment claims may be made notwithstanding that they are not incorporated in the Works: (Clause 42.1 (ii))	<u>NIL</u>
Retention Moneys on: (Clause 42.3)	
(a) work incorporated in the Works and any work or items for which a different amount of retention is not provided:	<u>10% of the value until</u> <u>5% of the Contract Sum is held</u>
(b) items on Site but not yet incorporated into the Works:	<u>N/A</u>
(c) items off Site but in Australia:	<u>N/A</u>
(d) items not in Australia:	<u>N/A</u>
(e) disbursements incurred by the Contractor for customs duties, freight, marine insurance, primage, landing and transportation in respect of the works under the Contract:	<u>N/A</u>
Unfixed plant or materials – the alternative applying: (Clause 42.4)	<u>ALTERNATIVE 1</u>
The rate of interest on overdue payments: (Clause 42.9)	<u>7.5% PER ANNUM</u>
The delay in giving possession of the Site which will be a substantial breach: (Clause 44.7)	<u>THREE MONTHS</u>
The alternative required in proceeding with dispute resolution: (Clause 47.2)	<u>ALTERNATIVE 2</u>

MARRADGEE RD BITUMEN SEAL

ANNEXURE TO THE AUSTRALIAN STANDARD GENERAL CONDITIONS OF CONTRACT (AS 2124-1992)

PART A

The person to nominate an arbitrator:
(Clause 47.3)

CHAIRPERSON, QUEENSLAND CHAPTER
INSTITUTE OF ARBITRATORS

Location of arbitration:
(Clause 47.3)

QUEENSLAND

AGREEMENT made this _____ day of _____ 2023

BETWEEN _____ (Called the Contractor)

AND **DOOMADGEE ABORIGINAL SHIRE COUNCIL** _____ (Called the Principal)

IT IS AGREED that:

- The documents, including Drawings, listed in the Table of Contents to the tender documents for the construction of Marradgee Rd bitumen seal works including the Table of Contents itself.
- And the Addenda issued by the Principal and included in the Contractor's tender and listed in the Tender Form lodged by the Contractor.
- And the additional documents and Drawings included in the Contractor's tender and listed in the Tender Form lodged by the Contractor.
- And the additional documents, drawings and correspondence listed in the notice in writing of acceptance of tender.
- The notice in writing of acceptance of the tender, which is the Principal's letter dated _____.

All of which are annexed hereto, together comprises the contract between the parties.

AND if the Contractor or the Principal is two or more persons then they shall be bound jointly and severally.

Signed by the Contractor

Signed by the Principal

Signature: _____

Signature: _____

Position: _____

Position: _____

JOB SPECIFICATIONS – NON-TECHNICAL

Job Specification Non-Technical

Marradgee Rd Doomadgee – Bitumen seal

Specification No.: Marradgee Rd Doomadgee Bitumen Seal

Client: Doomadgee Aboriginal Shire Council

ABN: 64 535 061 721

Ref 60671714

Date 20-Apr-2023

Prepared by Geoff Prior

Reviewed by Scott Snelling

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	10 October 2022	Draft for Comment	Scott Snelling Associate Director	

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Table of Contents

1.0	THE CONTRACT	50
1.1	General	50
1.2	Works	50
1.3	The site	50
1.4	General Conditions of Contract	50
1.4.1	General	50
1.4.2	Annexure	50
1.4.3	Agreement	50
2.0	INTERPRETATION	51
3.0	PRACTICAL COMPLETION	51
4.0	STANDARD SPECIFICATIONS AND DRAWINGS	52
5.0	LUMP SUM CONTRACT	52
5.1	Where no rate is shown	53
6.0	PROVISIONAL QUANTITIES AND "IF ORDERED" ITEMS	53
6.1	Provisional quantities	53
6.2	"If ordered" items	53
6.3	"Rate only" items	53
7.0	SECURITY MONEYS	54
7.1	Form of security	54
7.2	Form of retention	54
8.0	SERVICE OF NOTICES ON CONTRACTOR	54
9.0	INTERPRETATION OF THE CONTRACT DOCUMENTS	54
9.1	Tender documents	54
9.2	Discrepancies	54
9.3	On-site copy of Contract Documents	55
10.0	CONNECTION TO EXISTING WORKS AND SERVICES	55
11.0	COPYRIGHT IN DOCUMENTS SUPPLIED BY CONTRACTOR	55
12.0	HANDOVER DATA	55
12.1	General	55
12.2	Information essential	55
12.3	Documents to be submitted	55
13.0	SITE CONDITIONS	56
14.0	PRESERVATION OF PROPERTY MARKS	56
15.0	PROTECTION OF EXISTING SERVICES	56
15.1	General	56
15.2	Existing services indicated on drawings	56
15.3	Notification of authorities	56
15.4	Charges and co-operation	56
15.5	Payment for relocations	57
15.6	Avoidance of damage	57
15.7	Payment	57
16.0	INDUSTRIAL RELATIONS	57
17.0	STATUTORY REQUIREMENTS	
	PAYMENT WHERE THERE IS NO VARIATION	57
18.0	QUEENSLAND GOVERNMENT	58
18.1	General	58
18.2	Work Health and Safety Act	58
18.2.1	General	58
18.2.2	Appointment of Principal Contractor	58
18.2.3	Workplace	58
18.2.4	Contractor's Safety Officer	58
18.2.5	Responsibilities and liabilities	59
18.2.6	Notifiable incidents	59
18.2.7	Indemnities	59
18.2.8	First aid	59

	18.2.9	Work Health and Safety Management Plan	60
	18.2.10	Definition	60
	18.2.11	Preparation	60
	18.2.12	Duty to inform	60
	18.2.13	Revision and reporting	60
	18.2.14	Safety audits	61
	18.2.15	Health and safety duties	61
18.3		Building and Construction Industry (Portable Long Service Leave) Act	63
18.4		Environment Protection Act	63
	18.4.1	General	63
	18.4.2	Noise control	63
	18.4.3	Site control	63
	18.4.4	Disposal of wastes and refuse	63
	18.4.5	Dust, dirt and water	63
	18.4.6	Soil conservation	64
	18.4.7	Preservation of flora	64
	18.4.8	Measurement and payment	64
	18.5	Native Title and Cultural Heritage duty of care	64
19.0		PRINCIPAL'S RULES AND REQUIREMENTS	64
	19.1	Out of bounds	64
	19.2	Interruptions to services	64
	19.3	Normal working hours	64
	19.4	Publicity	65
	19.5	Immunisation against infectious diseases	65
	19.6	Animals	65
	19.7	Abuse and threatening behaviour	65
	19.8	Borrow pits	65
	19.9	Hunting	65
20.0		AVOIDANCE OF INTERFERENCE	65
21.0		EXPLOSIVES	66
22.0		TRAFFIC MANAGEMENT	66
	22.1	General	66
	22.2	Traffic Management Plan	66
	22.3	Access, side-tracks and detours	66
	22.4	Signs and attendance	67
	22.5	Obstructions and breakages	67
	22.6	Payment	67
23.0		SALVAGED MATERIALS	67
24.0		SUPERINTENDENT	67
	24.1	Superintendent to act as agent of the Principal	67
25.0		CONTRACTOR'S SITE FACILITIES	68
	25.1	Contractor's site office	68
26.0		CONTRACTOR'S REPRESENTATIVE – CONTACT OUTSIDE WORK HOURS	68
27.0		CONTRACTOR'S SITE SUPERVISOR/FOREMAN	68
28.0		SITE MEETINGS	68
29.0		POSSESSION OF SITE	69
30.0		WORK ON THE SITE BY OTHERS	69
31.0		MATERIALS AND WORK	70
	31.1	General	70
	31.2	Editions of Standards	70
32.0		SETTING OUT THE WORKS	70
	32.1	General	70
	32.2	Setting out	70
	32.3	Assistance to the Superintendent	70
	32.4	Measurement and payment	71
33.0		CONTRACTOR'S QUALITY ASSURANCE	71
	33.1	General	71
	33.2	Quality Assurance Representative	71

33.3	Documents to be provided at start of Contract	71
33.4	Project Quality Plan	72
33.5	Inspection and test plans	72
33.6	Identification and traceability	73
33.7	Conformance reports	73
33.8	Non-conformance reports	73
33.9	Notice for examination	74
33.10	Hold Points and Witness Points	74
	33.10.1 Hold Points	74
	33.10.2 Witness Points	75
	33.10.3 Proceeding beyond a Hold Point or Witness Point	75
33.11	Compliance inspections and testing	75
	33.11.1 General	75
	33.11.2 Tests	75
33.12	Quality records	76
33.13	Certifications	76
	33.13.1 To accompany each payment claim	76
33.14	At Practical Completion	77
33.15	Payment	77
34.0	COSTS OF INSPECTION, EXAMINATION AND TESTING OF WORK DONE OUTSIDE NORMAL WORKING HOURS	77
	34.1 General	77
	34.2 Exclusions	77
35.0	ORDER OF WORK, ACCELERATION	78
	35.1 General	78
	35.2 Acceleration	78
	35.3 Effect on extensions of time for Practical Completion	78
36.0	CONSTRUCTION PROGRAM	78
	36.1 General	78
	36.2 Form of construction program	78
	36.3 Updating	79
	36.4 Applicable revision of construction program	79
	36.5 Review of construction program	79
	36.6 Payment	80
37.0	TIME FOR PRACTICAL COMPLETION EXTENSIONS OF TIME FOR PRACTICAL COMPLETION	80
	37.1 General	80
	37.2 Time for Practical Completion	80
	37.3 Extension of the time for Practical Completion	80
38.0	CLAIM FOR EXTENSION OF TIME	81
39.0	LIQUIDATED DAMAGES FOR DELAY IN REACHING PRACTICAL COMPLETION	82
40.0	LIMIT ON LIQUIDATED DAMAGES	82
41.0	BONUS FOR EARLY PRACTICAL COMPLETION	82
42.0	DELAY OR DISRUPTION COSTS (PROVISIONAL QUANTITY)	82
	42.1 Entitlement	82
43.0	MAINTENANCE	82
	43.1 Directed maintenance	82
	43.2 Defects liability	83
44.0	VARIATIONS	83
	44.1 General	83
	44.2 "If Ordered" items	83
	44.3 Protection of existing services	83
	44.4 Maintenance	84
45.0	CERTIFICATES AND PAYMENT	84
	45.1 General	84
	45.2 Claims for payment	84
	45.3 Payment certificates	85
	45.4 Tax invoices given by the Contractor	85

	45.5	Time for certificates and payment	85
46.0		PAYMENT OF EMPLOYEES AND SUBCONTRACTORS	86
	46.1	Payment of employees	86
	46.2	Proof of Final Payments by Contractor	87
47.0		DEFAULT BY THE CONTRACTOR	87

1.0 THE CONTRACT

1.1 General

The parties involved in the Contract are as follows:

Agency	Role
Doomadgee Aboriginal Shire Council	Principal
AECOM Australia Pty Ltd.	Superintendent

1.2 Works

This Contract will include the following scope of works:

- Inspection and acceptance of Marradgee Rd pavement after its final trim
- Supply and installation of a C170 Bitumen seal to all areas of pavement works on Marradgee Rd Subdivision
- Anticipated commencement date early July 2023

1.3 The site

Refer to Clause 27 of AS 2124-1992.

The Site is located just to the east of the corner of Marradgee Road and Gunnalunja Drive, Doomadgee. The site shall comprise sufficient land to contain the Works together with such other land as the Council may make available for the storage of materials/equipment and protection of the works. The Contractor shall obtain approval in writing from Council of any proposed site camp or storage areas prior to mobilisation of plant and equipment to the site.

1.4 General Conditions of Contract

1.4.1 General

The Australian Standard General Conditions of Contract for Design and Construct AS 2124-1992 will apply. This performance specification acts to insert, replace, or amend clauses in the General Conditions of Contract.

1.4.2 Annexure

The forms of the Annexure to the Australian Standard General Conditions of Contract, Part A, published as part of AS 2124-1992 will not be used and the Annexure to the Australian Standard General Conditions of Contract, Part B, published as part of AS 2124-1992 is deleted.

The Annexure Part A to the General Conditions of Contract attached to this Job Specification is the Annexure referred to by any reference made in AS 2124-1992 or elsewhere in the Contract Documents.

1.4.3 Agreement

The Form of Formal Instrument of Agreement published with AS 2124-1992 will not be used.

The Formal Instrument of Agreement incorporated in these Contract Documents and evidencing the terms and conditions of this Contract is the Formal Instrument of Agreement referred to in the General Conditions of Contract.

2.0 INTERPRETATION

Refer to Clause 2 of AS 2124-1992.

"AS (number)" means Australian Standard (number).

"As-Constructed Drawings" means the permanent record of the completed works including the record of any modifications to, or departures from, the works as described by the drawings and specification referred to in the Contract. The term includes the drawings amended as necessary, new drawings prepared for record purposes, schedules, manuals and any other documents that may be required by the Superintendent in accordance with the Contract.

"Council" or "DASC" refers to the Doomadgee Aboriginal Shire Council.

"Engineer" means the Superintendent.

"Engineer's Representative" means the Superintendent's Representative.

"Indicated on the Drawings" refers to works and their dimensions shown explicitly on the drawings or indirectly indicated thereon and its meaning includes the meaning "directed by the Superintendent" where the Superintendent's direction is an amendment to such an indication and is or can be issued by the issue of an amended drawing or by the issue of a written order, instruction or direction amending a drawing.

"Lump Sum", except where qualified by a reference to particular items, means the aggregate of the rates and lump sums shown in the Schedule of lump sums.

"Service" means any main, cable, transmission line, pipe, sewer, duct or the like provided for the conveyance of anything, commodity or form of energy or for the removal of any discharge or waste or for communications and will include any pole, supporting structure, manhole, marker or other thing forming part of such service or ancillary to it and will include also any connection to such service.

"Specification" includes this Job Specification, the standard specifications attached hereto, and any other standard specification, Australian Standard or other documents incorporated by reference in this Job Specification or those standard specifications.

3.0 PRACTICAL COMPLETION

Refer to Clause 2 of AS 2124-1992.

The operation required by this Clause is testing referred to in Clause 31 of AS 2124-1992.

- a. The Works are complete except for minor defects:
 - i. Which do not prevent the Works from being reasonably capable of being used for their stated purpose.
 - ii. Which the Superintendent determines the Contractor has reasonable grounds for not promptly rectifying.
 - iii. The rectification of which will not prejudice the convenient use of the Works.
- b. All tests which are required by the Contract before the works reach Practical Completion have been carried out and passed.
- c. 'As Constructed' Drawings, Operation and Maintenance Manuals, Training and all other documents and other information required under the Contract which, in the Superintendent's opinion, are essential for the use, operation and maintenance of the Works have been supplied.
- d. Critical spares and other materials required under the Contract which, in the Superintendent's opinion, are essential for the use, operation and maintenance of the Works have been supplied.

4.0 STANDARD SPECIFICATIONS AND DRAWINGS

The Contractor is made aware that there are standard specifications and standard drawings which shall be abided by where applicable. These standard specifications and standard drawings are contained within this Contract Document.

5.0 LUMP SUM CONTRACT

Refer to Clause 3 of AS 2124-1992.

Clause 3.3 of AS 2124-1992 is deleted from this Contract.

Notwithstanding anything to the contrary elsewhere in these Contract Documents, work will not be measured except as is necessary for the valuation of variations and for the calculation of the amounts of progress payments prior to the issue of the Certificate of Practical Completion.

The rates shown in the Schedule of lump sums are rates referred to in paragraph (a) of Clause 40.5 of AS 2124-1992 and will be used for the valuation of variations and may be used for the calculation of the amounts of progress payments but the scheduled rates will have no other application under the Contract.

Refer to the clauses in the Technical Specification and standard specifications that specify the materials, work and other things for which full compensation shall be provided in the scheduled rates and scheduled lump sums.

As stated in Clause 1.2 works are separated in two phases. Schedules A and B reflect the works to be undertaken as part of Phase 1 and Schedule C reflects the additional works to be carried out if the works awarded include Phase 1 and 2.

“Other costs incurred in carrying out and completing the work in accordance with the Contract” include, as relevant to each section or item of the work under the Contract, the costs of:

- a. Compliance with a term of the Contract, where the Contract provides that compensation for compliance shall be included in the scheduled rates or the Contract Sum.
- b. Providing security.
- c. Supplying Contractor-supplied documents, except where expressly stated otherwise in the Contract.
- d. Satisfying legislative requirements, except as provided in Clause 14.2 of AS 2124-1992.
- e. Protecting people and property and care of the work under the Contract, including maintenance to the Date of Practical Completion and rectifying loss or damage.
- f. Insurances.
- g. Setting out.
- h. Cleaning up.
- i. Planning establishing and maintaining a quality system, except as otherwise provided in the Contract.
- j. Tests conducted by the Contractor, except as otherwise provided in the Contract.
- k. Preparing, giving and maintaining a construction program, except as otherwise provided in the Contract.
- l. On-site and off-site overheads, whether time-related or not.
- m. Any other risk, liability or obligation expressed in the Contract or necessarily to be inferred from the Contract Documents.

5.1 Where no rate is shown

Where no scheduled rate or scheduled lump sum is shown for a section or item in the Schedule of Lump Sums that scheduled rate or scheduled lump sum shall be deemed to be nil and full compensation in regard to that section or item shall be included in the scheduled lump sums.

6.0 PROVISIONAL QUANTITIES AND “IF ORDERED” ITEMS

6.1 Provisional quantities

Refer to Clause 3.2 of AS 2124-1992.

Where the description of an item of work in the Schedule of lump sums includes the qualification "(Provisional Quantity)" the item of work was not measured exactly at the time of preparing the Tender Documents.

Where the description of an item of work in the Schedule of lump sums includes the qualification "(Provisional Quantity)" the scheduled rate for that item will apply to the whole of the quantity of that item actually carried out, whether greater or lesser than the quantity shown in the Schedule of lump sums and regardless of any limits of accuracy stated in the Annexure.

6.2 “If ordered” items

Refer to Clauses 3.2 of AS 2124-1992

Refer to Clause 44.2 of this Job Specification.

Where the description of an item of work in the Schedule of lump sums includes the qualification "(If Ordered)" the item of work may not have been measured exactly at the time of preparing the Contract Documents.

If the description of an item of work in the Schedule of lump sums includes the qualification "(If Ordered)" and a scheduled rate applies to that item and:

- a. The Superintendent has directed work to a greater or lesser quantity than the quantity shown in the Schedule of lump sums.
- b. The item of work was not measured exactly at the time of preparing the Contract Documents.

Then the scheduled rate for that item will apply to the whole of the quantity of that item actually carried out pursuant to the Superintendent's direction, whether greater or lesser than the quantity shown in the Schedule of lump sums and regardless of any limits of accuracy stated in the Annexure.

The Contractor should allow for all costs and time required to complete the entire quantity of 'if ordered' items shown in the Schedule of Lump Sums. Any direction given by the Superintendent to order any part or the entire quantity shown in the Schedule of Lump Sums will not constitute a variation to the Contract, nor will the Contractor be entitled for any additional cost or time as a result of any such direction.

6.3 “Rate only” items

Refer to Clauses 3.2 of AS 2124-1992.

Where the description of an item of work in the Schedule of Lump Sums includes the qualification "(Rate Only)" the Scheduled Rate for that item will apply to the whole of the quantity of that item actually carried out (as directed by the Superintendent), regardless of any limits of accuracy stated in the Annexure.

7.0 SECURITY MONEYS

7.1 Form of security

Notwithstanding the provisions of Clause 5 of AS 2124-1992, the Principal requires the security to be in the form of an unconditional Bank Guarantee. The Bank Guarantee will not have an expiry date and a draft copy will be provided to the Superintendent for approval prior to the Bank Guarantee being finalised.

The Bank Guarantee shall be made out in the name of “*Doomadgee Aboriginal Shire Council – ABN: 64 535 061 721*” and shall be lodged with the Superintendent.

7.2 Form of retention

In lieu of withholding a cash retention, the Principal shall accept retention in the form of an Unconditional Bank Guarantee. The Bank Guarantee shall not have an expiry date and a draft copy shall be provided to the Superintendent for review prior to being finalised. The Bank Guarantee shall be made out in the amount of 5% of the Contract Sum.

The Bank Guarantee shall be made out in the name of “*Doomadgee Aboriginal Shire Council – ABN: 64 535 061 721*” and shall be lodged with the Superintendent.

8.0 SERVICE OF NOTICES ON CONTRACTOR

Refer to Clause 7 of AS 2124-1992.

In the absence of any notification to the contrary by the Contractor the address entered by the Contractor in its Tender will be deemed to be the address communicated in writing by the Contractor to the Principal.

9.0 INTERPRETATION OF THE CONTRACT DOCUMENTS

9.1 Tender documents

Refer to Clauses 8 and 12.1 of AS 2124-1992.

The Contractor will be deemed to have acquainted itself with all conditions relating to its Tender and, if it had any doubt as to the meaning of any portion of the Tender Documents, to have either:

- a. requested clarification in writing before submitting its Tender
- b. included with its Tender a statement of the interpretation upon which it relied.

Except for items so detailed and for ambiguities and discrepancies as provided in Clause 8.1 of AS 2124-1992, the Contractor will have no claim arising out of its misinterpretation of these Contract Documents.

9.2 Discrepancies

Refer to Clause 8.1 of AS 2124-1992.

This Contract does not specify the order of precedence of the documents that together comprise the Contract Documents.

In determining and directing the interpretation to be followed in the event of ambiguity or discrepancy the Superintendent will consider the following:

- a. The Contract Documents are to be read together and treated as a whole.
- b. The later-written is to be preferred to the earlier-written.
- c. The specific is to be preferred to the general.

- d. For a pictorial description of the works and for their dimensions, the Drawings are to be preferred to the Specifications.

9.3 On-site copy of Contract Documents

The Contractor will ensure a complete set of the Contract Document is retained on site at all times.

The Contractor will also supply all subcontractors with a complete set each of the Contract Document, prior to their arrival on site. Payment may be withheld for any item carried by a subcontractor who cannot produce his own full set of the Contract Document.

10.0 CONNECTION TO EXISTING WORKS AND SERVICES

Refer to Clause 8.1 of AS 2124-1992.

Before commencing any work that is to be connected or joined, directly or indirectly, to existing works or services (including parts of the works previously constructed) the Contractor will expose the existing works or services as may be necessary and will verify that the locations, lines, levels and dimensions of such existing works or services and the materials of which they are made are as indicated on the Drawings.

If the Contractor discovers any discrepancy between the locations, lines, levels, dimensions and materials actually existing and the corresponding indications on the Drawings the Contractor will notify the Superintendent of the discrepancy and will not proceed with work affected by the discrepancy until the Superintendent has directed the action, if any, that is to be taken.

11.0 COPYRIGHT IN DOCUMENTS SUPPLIED BY CONTRACTOR

Refer to Clauses 8.4 and 13 of AS 2124-1992.

In respect of rights which the Contractor may have or acquire under the Copyright Act or any Act in substitution thereof relating to the documents which the Principal is entitled to be provided with by the Contractor pursuant to the Contract, the Contractor will grant to the Principal an irrevocable licence to exercise such of those rights as are necessary to multiple copy all or any of the said documents and to use such copies for the purposes of the Contract and in the use and disposal of the works. The term of the licence will be for the duration of the copyright in the said documents.

12.0 HANDOVER DATA

12.1 General

Refer to Clause 8.4 of AS 2124-1992.

12.2 Information essential

The Handover Documents shall be deemed to be documents essential for the use of the Works and the WUC shall not have been executed to the stage of Practical Completion until Handover Documents suitable in the opinion of the Superintendent have been furnished to the Superintendent.

The manuals shall be in English only and specific to the item provided. Generic manuals covering a range of items are not acceptable.

12.3 Documents to be submitted

Prior to Practical Completion, the Contractor shall have submitted the following to the Superintendent, in accordance with the Contract:

- a. contractor's test records

- b. certificates of conformance
- c. manufacturer's testing records.

The Contractor shall submit to the Superintendent, within 2 weeks of the Date of Practical Completion, the inspection and testing records for the Contract.

13.0 SITE CONDITIONS

Refer to item (i) of paragraph (a) of Clause 12.1 of 2124-1992.

Information as to the physical conditions upon and below the surface of the site, including interpretations of field observations, made available to tenderers by inclusion in the Tender Documents or by other written or oral advice is not guaranteed to be accurate and the Principal's making such information available will not relieve the Contractor of any responsibility under Clause 12 of AS 2124-1992.

14.0 PRESERVATION OF PROPERTY MARKS

Refer to Clauses 14, 15 and 17 of AS 2124-1992.

The Contractor will be held responsible for the preservation of all property and permanent survey marks within the area of the works and will note that it is an offence under the Survey Marks Acts and Survey Co-ordination Acts to destroy such marks. The Contractor will advise the Superintendent in writing of any such marks that necessarily must be removed to allow the work to proceed and the Superintendent, if they concur, will forthwith engage a Licensed Surveyor at the Principal's expense to offset such marks.

If the Contractor disturbs or destroys any such mark without its previously having been offset as provided above, the Contractor will inform the Superintendent of such disturbance or destruction. The Superintendent will then arrange for reinstatement of the mark by a Licensed Surveyor at the Contractor's expense.

15.0 PROTECTION OF EXISTING SERVICES

15.1 General

Refer to Clauses 14, 15 and 17 of AS 2124-1992.

15.2 Existing services indicated on drawings

Existing services on the site seen at the time of survey are shown on the Drawings. Such indications are not guaranteed to be accurate or complete and will not relieve the Contractor of any responsibility under this Clause.

15.3 Notification of authorities

Before commencing work the Contractor will ascertain from the relevant authorities and owners' details of all services in the area affected by the works and will comply with all relevant requirements of the relevant authorities.

Where work is to be done adjacent to or connecting to any existing service the Contractor will notify the relevant authority or owner in writing and will obtain that authority's or owners written approval to carry out the work, giving any period of notice stipulated by the authority and in any case before commencing work.

15.4 Charges and co-operation

The Contractor will arrange for and pay all charges incurred in any interruption of service or temporary or permanent relocation of any service and will co-operate with the relevant authority or owner.

15.5 Payment for relocations

If a service that is relocated was shown on the Drawings or its presence was otherwise notified to the Contractor prior to the closing of tenders or it was visible prior to the closing of tenders then, excepting in the case of a service for which provision is made in the Schedule of lump sums or of a service that is shown on the Drawings to be relocated by others, full compensation for authorities' or owners' charges and for any other costs incurred by the Contractor will be deemed to be included in the scheduled rates and no further reimbursement will be made.

If such service was not shown on the Drawings and its presence was not otherwise notified to the Contractor prior to the closing of tenders and it was not visible prior to the closing of tenders or if such service is shown on the Drawings to be relocated by others and the Superintendent directs the Contractor to arrange for its relocation then such charges and other costs necessarily incurred by the Contractor will be valued under Clause 40.5 of AS 2124-1992.

The Contractor will coordinate, manage and carry out all relocations of services as necessary in conjunction with the relevant service authorities.

15.6 Avoidance of damage

The Contractor will exercise reasonable care in carrying out work so as to avoid damage to existing services, whether or not details of such services have been made available to the Contractor. Furthermore the Contractor will carry out such protection works as are necessary to protect existing services from damage as a result of the works, under the supervision of the relevant service authority (e.g. additional stays or support for a power pole where the works are close).

Except as provided in the paragraph below the Contractor will be held solely responsible for any damage to existing services and in the event of damage will immediately advise the relevant authority or owner and will co-operate with the authority or owner in making safe and/or restoring the service and will bear any costs so incurred.

Where damage is caused to a service of which the Contractor was unaware and the Contractor has fully complied with the requirements of Clause 15.3 of this Job Specification – Non Technical Clauses and has exercised reasonable care and has co-operated with the authority or owner and the Superintendent determines that the existence of such a service could not reasonably be inferred from available information, costs necessarily incurred by the Contractor in complying with this Clause will be valued under Clause 40.5 of AS 2124-1992.

15.7 Payment

Full compensation for carrying out protection works, will be included in the Schedule of lump sums generally; no separate payment will be made.

16.0 INDUSTRIAL RELATIONS

The legislation and subordinate legislation referred to in Clause 14.1 of AS 2124-1992 includes the industrial relations components of the National Construction Industry Code of Practice together with relevant legislation and codes of the State or Territory in which work under the Contract is carried out.

The Principal may apply sanctions as permitted by the National Code, the State or Territory code and relevant legislation.

17.0 STATUTORY REQUIREMENTS PAYMENT WHERE THERE IS NO VARIATION

Clause 14.2 of AS 2124-1992 is omitted from this Contract.

18.0 QUEENSLAND GOVERNMENT

18.1 General

Refer to Clause 14 of AS 2124-1992.

18.2 Work Health and Safety Act

18.2.1 General

For the purposes of this clause, the words “construction work”, “person with management and control”, and “notifiable incident” have the meanings assigned to them by the Work Health and Safety Act 2011 (WHS Act) and the Work Health and Safety Regulation 2011 (WHS Regulation). “Workplace” has the meaning given to it in the WHS Act, as amended from time to time; and the “regulator” is Workplace Health and Safety Queensland.

18.2.2 Appointment of Principal Contractor

Upon the Date of Acceptance of Tender, the Contractor agrees and acknowledges that, as between the parties, the Contractor is, for the purposes of the WHS Act and the WHS Regulation:

- a. The Principal Contractor as defined in the WHS Regulation.
- b. Responsible for discharging its duties as a person conducting a business or undertaking in accordance with the WHS Act and WHS Regulation.
- c. Responsible for discharging the duties of a Principal Contractor in accordance with the WHS Act and WHS Regulation.
- d. Authorised to have management and control of the workplace.
- e. Responsible for discharging the duties of work health and safety matters, in relation to or connected with the management and control of the workplace, as far as is reasonably practicable.
- f. Responsible for ensuring all risks to health and safety are eliminated, so far as is reasonably practicable and where it is not reasonably practicable to eliminate those risks to health and safety, to minimise those risks to health and safety so far as is reasonably practicable.
- g. Required to consult with the Superintendent in relation to matters of safety that the Contractor cannot resolve to the standard imposed by the WHS Act and the WHS Regulation and to cooperate and coordinate with the Superintendent to ensure any issues are resolved to the required standard.

18.2.3 Workplace

For the purpose of this Clause 18.2, “workplace” is defined as the site.

18.2.4 Contractor’s Safety Officer

The Contractor must appoint at least one person appropriately qualified to competently discharge the functions of Safety Officer as set out in this Clause and trained to at least the standard considered appropriate by the regulator as defined under the WHS Act, and consistent with legislative requirements.

The functions to be discharged include:

- a. Keep the Contractor informed and up to date about the overall state of health and safety at the workplace.
- b. Conduct regular inspections at the workplace to identify any hazards and unsafe or unsatisfactory work health and safety conditions and practices.
- c. Report in writing to the Contractor any hazard, unsafe or unsatisfactory work health and safety practice identified during inspections.
- d. Establish educational programs in work health and safety to an appropriate standard.

- e. Investigate, or assist in the investigation of, all incidents at the workplace.
- f. Assist inspectors and auditors in the performance of their duties.
- g. If any incident or immediate risk to health and safety at the workplace happens to immediately report the incident or risk to the Contractor and the Superintendent.
- h. Maintain all health and safety representatives' training and competency to the level required by the regulator under the WHS Act, and consistent with legislative requirements.

18.2.5 Responsibilities and liabilities

The Contractor is responsible for and assumes liability for the duties under the WHS Act and the WHS Regulation for which the Contractor is responsible and liable as between the parties, in accordance with this clause.

Nothing contained in this clause will in any way limit or exclude any of the Contractor's obligations or liabilities under the Contract.

18.2.6 Notifiable incidents

The Contractor will:

- a. Ensure that the regulator for work health and safety is notified of any notifiable incident immediately after becoming aware of a notifiable incident, arising out of or in connection with the conduct of the business or undertaking of the Contractor.
- b. Notify the Superintendent of every notifiable incident in relation to or in connection with the workplace as soon as possible but not more than twelve (12) hours after the occurrence.
- c. Keep the Superintendent informed of the status of any safety or health related incidents that have occurred in relation to or in connection with the site.
- d. Do all that is necessary to assist the Principal and Superintendent with any investigations into any safety or health related incident in relation to or in connection with the workplace, including requiring, to the extent possible, the Contractor's agents and subcontractors to assist the Principal and Superintendent.
- e. As soon as practicable but no later than seven (7) days of receiving a request from the Superintendent to do so, provide the Superintendent with a copy of any notification to the regulator for work health and safety of a safety or health related incident.
- f. Consult, cooperate and coordinate with the Principal and Superintendent in relation to any safety matters arising out of, or in connection with the workplace.

18.2.7 Indemnities

The Contractor indemnifies and will keep indemnified the Principal from and against all loss which may be brought against or made on the Principal or which the Principal may pay, sustain or be put to, arising by reason of or in connections with:

- a. Any breach of the WHS Act or the WHS Regulation at the workplace.
- b. Any breach by the Contractor of its obligations under this clause or its duties under the WHS Act or the WHS Regulation.
- c. The Principal being deemed under the WHS Act to be the person with management and control of the workplace, or the person with management and control of any fixtures, fittings and plant in relation to or in connection with the workplace.

It is not necessary for the Principal to incur expense or make a payment before enforcing any indemnity conferred by this clause.

18.2.8 First aid

The Contractor will ensure the workers have access to appropriate equipment, facilities and training in accordance with the provisions of the WHS Regulation.

Any first aid requirements on the site will be determined in accordance with the First Aid Code of Practice 2014.

18.2.9 Work Health and Safety Management Plan

The Contract shall prepare a Work Health and Safety Management Plan (WHS Management Plan).

Within 28 days after the Date of Acceptance of Tender the Contractor shall prepare and submit its WHS Management Plan to the Superintendent.

18.2.10 Definition

In this Clause 18.2.10, "Work Health and Safety Management Plan" or "WHS Management Plan" means a written work health and safety management plan for the workplace titled "Work Health and Safety Management Plan", which must be as a minimum (and without limitation) in compliance with the WHS Regulation, be signed by the Contractor and include the following components:

- a. The names, positions and health and safety responsibilities of all persons at the workplace whose positions or roles involve specific health and safety responsibilities in connection with the works.
- b. The arrangements in place, between any persons conducting a business or undertaking at the workplace for consultation, cooperation and the coordination of activities in relation to compliance with their duties under the WHS Act and the WHS Regulation.
- c. The arrangements in place for managing any incidents that occur.
- d. Any site-specific health and safety rules, and the arrangements for ensuring that all persons at the workplace are informed of these rules.
- e. The arrangements for the collection and any assessment, monitoring and review of safe work method statements at the workplace.

18.2.11 Preparation

The Contractor will not commence construction works until its WHS Management Plan is deemed suitable by the Superintendent. The Contractor will comply with the following:

- a. The Contractor will prepare and submit a WHS Management Plan to the Superintendent.
- b. If the Superintendent notifies the Contractor that the WHS Management Plan is not suitable, the Contractor will at its cost amend and resubmit the WHS Management Plan.
- c. The Contractor is not entitled to make any claim for additional costs or expense, adjustment to the contract sum or extension to the Date for Practical Completion or to make a claim in connection with any review, approval of, or modification to the WHS Management Plan as directed the Superintendent.

18.2.12 Duty to inform

The Contractor must ensure, so far as is reasonably practicable, that before commencing work each person who is to carry out construction work in connection with the works is made aware of:

- a. The content of the WHS Management Plan for the workplace.
- b. The person's right to inspect the WHS Management Plan under the WHS Regulation.

18.2.13 Revision and reporting

The Contractor must, under the WHS Regulation, review and, as necessary, revise the WHS Management Plan to ensure that it remains up-to-date and give written monthly reports on its WHS Management Plan outlining any:

- a. Non-compliance.
- b. Work improvement notices.
- c. Safety incidents.

- d. Any other matters relevant to the management of work health and safety or reasonably required by the Principal.
- e. During any audit, provide the Superintendent with all documents, access and assistance necessary for its completion.
- f. Any costs associated with rectifying the non-conformance and any associated delays must be borne by the Contractor.
- g. If a non-compliance is reported three times in the auditing process the Principal may give notice to the Contractor of a substantial breach of the Contract under Clause 44.2 and 44.3 of the General Conditions of Contract.

18.2.14 Safety audits

The Superintendent may audit the implementation of the WHS Management Plan at any time. During any audit the Contractor must provide the Superintendent with all documents, access and assistance necessary for completing the audit. Auditing may take one or a combination of the following forms:

- a. a check on whether the Contractor is complying with the provisions of the WHS Management Plan
- b. a check on the Contractor's individual procedures and records.

If any non-conformance in the Contractor's WHS Management Plan is detected, the Contractor will rectify the non-conformance and resubmit the amended WHS Management Plan within seven (7) days.

The Contractor must suspend construction works (or the relevant portion) until the Contractor has addressed the safety issues identified during the audit, and in the meantime continue to comply with all duties and obligations under the WHS Act and the Contract.

If the Contractor fails to rectify a non-conformance that has been identified on three (3) separate occasions in the auditing process, the Principal may give notice to the Contractor of a substantial breach of the Contract under Clause 44.2 and 44.3 of the General Conditions of Contract.

18.2.15 Health and safety duties

18.2.15.1 General duty

The parties must discharge all applicable duties under the WHS Act and (without limiting those duties) must ensure, so far as is reasonably practicable, the health and safety of all persons associated with the works, the workplace, fixtures, fittings, plant and structures associated with any of them, and that persons are not exposed to risks to health and safety in relation to or connection with the Contract, the works or the workplace.

18.2.15.2 Principal's obligations

The Principal must:

- a. Comply with its obligations under the WHS Act.
- b. As soon as reasonably possible, give the Contractor any information the Principal has in relation to hazards and risks at or in the vicinity of the workplace where any construction work is to be carried out.
- c. Provide the Contractor with copies of any construction drawings and specifications created for the Principal by its designer of any works to be constructed under this Contract.
- d. Consult, cooperate and coordinate with the Contractor in relation to any health or safety matters arising out of or in connection with the Workplace, the works or the Contract.

18.2.15.3 Contractor's obligations

The Contractor must discharge its duties and comply with all relevant obligations under the WHS Act, including (but not limited to) the following:

- a. The duties of a principal contractor.

- b. The duties of a person conducting a business or undertaking.
- c. The duties in relation to health and safety matters in relation to or connected with the management and control of the workplace.
- d. The duty to ensure all risks to health and safety are eliminated, minimised or managed.
- e. Any other duties, obligations, standards and requirements under the WHS Act which may be or become applicable in relation to or in connection with the Contract or the works.

18.2.15.4 Additional Contractor obligations

Without limiting the obligations in Clause 18.2.15.1 and 18.2.15.3 of these additional clauses, the Contractor must ensure the Contractor, its officers, employees, agents and subcontractors:

- a. Are familiar with and comply with all their obligations and exercise due diligence in discharging all their duties under the WHS Act.
- b. As a minimum comply with the Principal's reasonable policies, procedures and directions in relation to health and safety.
- c. Are suitable and competent, and must retain evidence of that verification, and provide that evidence to the Principal promptly upon written or verbal request.
- d. Where the Contractor provides or commissions any design for the works, the Contractor must:
 - i. Ensure that it and any designer discharge all duties as required under Part 6.2 of the WHS Regulation.
 - ii. Obtain a design safety report from any designer in accordance with the WHS Regulation and provide a copy to the Superintendent.
 - iii. Ensure it obtains full details of all hazards and risks from any designer and incorporates corresponding methods of controlling these in the WHS Management Plan.

18.2.15.5 Primary responsibility

As between the Principal and the Contractor, where a duty is held by both parties, and without limiting the Principal's rights under the Contract, the Contractor has the primary responsibility for ensuring that duty is discharged and any investigations are undertaken.

If the Contractor cannot discharge its work health and safety duties and obligations under the WHS Act or the Contract to the standard imposed by the WHS Act or the Contract, the Contractor must:

- a. Ensure work health and safety is preserved including, if necessary, stopping the relevant part of the works.
- b. Immediately notify the Principal and consult, cooperate and coordinate with the Principal to ensure any duties are discharged or issues resolved to the standard required.
- c. If the Contractor in its capacity as principal contractor or otherwise in relation to the Contract, the workplace or the works, creates, sends or receives any document, notice or report under the WHS Act, it must forward a copy to the Principal.

18.2.15.6 Communication, consultation and coordination

The Contractor must, before commencing the works and then on an ongoing basis, consult, cooperate and coordinate with:

- a. The Principal.
- b. All other duty holders in relation to any duty held by the Contractor.
- c. Workers (whether or not directly employed by the Contractor) who are or are likely to be directly affected.
- d. Relevant suppliers, contractors and other third parties, in relation to any health or safety matters arising out of or in connection with the workplace, the works or the Contract.

Without limiting the above obligations, the Contractor must as a minimum comply with the Principal's reasonable policies and procedures in relation to communication, consultation and coordination.

18.2.15.7 Payment

The scheduled lump sum for "Work Health and Safety Act" shall be full compensation for complying with the WHS Act, WHS Regulation, or the Project's work health and safety requirements and for all other costs incurred in executing and completing the works in accordance with the Contract.

18.3 Building and Construction Industry (Portable Long Service Leave) Act

The Building and Construction Industry (Portable Long Service Leave) Act applies to construction projects over \$150,000. The Contractor, on behalf of the Principal, will pay the long service levy pursuant to the Building and Construction Industry (Portable Long Service) Act for the building and construction work to be carried out under this Contract.

No separate payment will be made to the Contractor for compliance with this clause, but rather full compensation, including for payment of the long service levy will be included in the scheduled rates generally.

18.4 Environment Protection Act

18.4.1 General

The Contractor will observe and comply with all environmental protection requirements that apply to the area in which work under the Contract is to be carried out.

18.4.2 Noise control

The Contractor will take all practicable precautions to minimise noise arising out of or resulting from any activity associated with the works under this Contract.

18.4.3 Site control

Except as otherwise provided in the Contract, delivery of materials to the site, space for storage of such materials and for buildings sheds, offices, workshops and other temporary structures will be allowed only in accordance with the arrangements entered into between the Contractor and the Council and subject to such conditions as are **determined by the Council and/or Superintendent**.

No new tracks or roads will be formed, existing roads and tracks altered, camps erected, trees or shrubs removed, fences, water, sewerage, telephone lines or power lines cut or other things done that may affect the environment to a significant extent without the prior approval of Council or the Superintendent.

No fires will be lit on the site without the prior approval of the Superintendent.

18.4.4 Disposal of wastes and refuse

The Contractor will be responsible for the proper disposal of all solid, liquid and gaseous wastes in accordance with all statutory requirements.

Refuse will not be dropped free, but hoppers and shutters, chutes or refuse buckets will be used. All hoppers, chutes or buckets for refuse will be covered or be of such a design as to fully confine the material and prevent dissemination of dust.

18.4.5 Dust, dirt and water

The Contractor will prevent nuisance to the owners, tenants or occupiers of properties adjacent to the site and to the public generally. Nuisance includes nuisance caused by dust, dirt and water.

Some of the roads in the community are unsealed. During the course of the Contract, the Contractor's vehicles will be traversing these roads regularly, and it is likely that a dust nuisance will be caused. The Contractor will prevent dust becoming a nuisance to the community by regularly watering unsealed roads and work areas, or using other methods approved by the Superintendent.

18.4.6 Soil conservation

The Contractor will take such steps as are necessary to prevent the erosion of any lands used or occupied by the Contractor in the execution of the work under the Contract. This will include all necessary measures to prevent the runoff of silt from the works into adjoining watercourses.

18.4.7 Preservation of flora

The Contractor will not destroy, remove or clear any trees or shrubs (except those marked to be removed either on the drawings or by the Superintendent) from any lands used or occupied by the Contractor in the execution of the work under the Contract without prior approval of the Superintendent.

Trees and shrubs allowed to be removed will be identified by the Superintendent prior to construction, by marking with paint or flagging tape.

18.4.8 Measurement and payment

No separate payment will be made to the Contractor for compliance with this clause, but rather full compensation will be included in the Schedule of lump sums generally.

18.5 Native Title and Cultural Heritage duty of care

The Contractor acknowledges that a "Cultural Heritage duty of care" under the Aboriginal Cultural Heritage Act 2003 (QLD) exists in relation to works to be performed under this contract.

The Contractor is required at all times to comply with the Cultural Heritage Duty of Care during construction of the works including pre-construction activities, construction activities and post construction activities

Where items of potential cultural heritage significance are discovered, the Contractor will immediately stop work and notify the Superintendent.

No separate payment will be made to the Contractor for compliance with this clause, contractor shall invoice cost separately and cost will be reimbursed.

19.0 PRINCIPAL'S RULES AND REQUIREMENTS

19.1 Out of bounds

All workers will be required to observe the limits of the areas which they may use as laid down by the Council and they will not enter any areas laid down as 'out of bounds' or culturally sensitive areas by the Council.

19.2 Interruptions to services

Interruptions to services will be kept to a minimum and will be confined to times suitable to the Council. A minimum of 48hrs notice of all proposed interruptions must be given, in writing, to the Chief Executive Officer and the Superintendent. Council will then advise the Contractor whether the proposed timing is suitable or unsuitable. If deemed unsuitable the Contractor will amend the timing to suit Council's requirements.

19.3 Normal working hours

Working hours will be 7 am – 6 pm Monday to Saturday.

Any work carried out by the Contractor outside normal working hours, will be subject to the written approval by the Superintendent. Doomadgee Regions' gazetted holidays can be found at the following links:

<http://www.queenslandpublicholidays.com.au/qld-regional-public-holidays>

19.4 Publicity

The Contractor will not issue any information, publication, document or article for publication in any media which includes details of the work under the Contract without prior written approval of the Principal.

19.5 Immunisation against infectious diseases

The Contractor will ensure, at their own expense that all field employees and subcontractors are immunised against infectious diseases as required by the Department of Health.

19.6 Animals

The Contractor will ensure that no animals are brought into the community by their employees or subcontractors. Any of the Contractor's employees or subcontractors found to have animals in the community will be removed from site at the Contractor's expense within 24 hours of written notification from the Superintendent. Failure to comply with this clause will be a breach under the Contract.

19.7 Abuse and threatening behaviour

The Contractor will ensure that their workers and subcontractors do not abuse (verbally, physically etc.) threaten or intimidate any person whilst employed under this Contract. Where such abuse has occurred, in the opinion of the Superintendent, the Contractor will immediately confine the person(s) responsible for the abuse to the Contractor's camp until their immediate departure from the community for the remainder of the Contract. The person deemed responsible for such abuse, in the opinion of the Superintendent, will be removed from site at the Contractor's expense within 24 hours of written notification from the Superintendent. Failure to comply with this clause will be a breach under the Contract. All costs in relation to removing and replacing the person(s) responsible for the abuse, in the opinion of the Superintendent, will be borne by the Contractor. All allowances for this activity will be included in the Schedule of lump sums generally.

19.8 Borrow pits

The Contractor will not obtain quarry material, fill etc. from independent people around the community. The Contractor will only obtain quarry material from a commercially operated quarry. Appropriate records will be kept as proof of where and how quarry material, fill etc. has been obtained. The Contractor will not rely on Council having a borrow pit available for obtaining quarry material, fill etc. being available throughout the Contract period.

19.9 Hunting

Hunting is not permitted.

Any of the Contractor's employees or subcontractors found hunting, or to be in possession of firearms (or similar) or hunting dogs, on the DOGIT land will be removed from site at the Contractor's expense within 24 hours of written notification from the Superintendent. Failure to comply with this clause will be a breach under the Contract.

20.0 AVOIDANCE OF INTERFERENCE

Refer to Clauses 15 and 27.1 of AS 2124-1992.

The Contractor will minimise interference with the ongoing activities of the Community during the execution of the work under the Contract.

The Contractor will fully enclose the areas in which work is being carried out, using "PARAWEB" or a similar prominent barricade. There are a large number of children in the community and many dwellings are unfenced. For safety, backfilling of trenches, pits and other deep excavations will be completed at the end of each day's work unless otherwise approved by the Superintendent. Furthermore, no open trench will be left unattended at any time.

The Contractor will take all reasonable steps to prevent:

- a. Dust, material and rubbish blowing from the site into residential areas.
- b. Dust, material and rubbish blowing from vehicles hauling materials.
- c. Stationery, noisy plant operating near residential areas.

The Superintendent at any time he views warranted, may suspend operations of the Contractor that are causing any inconvenience to residents until such a time as the Contractor adopts methods to minimize or eliminate the problem. No claim either for an extension of time or of a financial nature from the Contractor for works necessary in conforming to this requirement will be allowed by the Superintendent.

No separate payment will be made to the Contractor for compliance with this clause and Clause 15 of AS 2124-1992, but rather full compensation will be included in the Schedule of lump sums generally.

21.0 EXPLOSIVES

Refer to Clause 15 of AS 2124-1992.

Explosives will not be used in the works.

22.0 TRAFFIC MANAGEMENT

22.1 General

Refer to Clauses 15 and 17 of AS 2124 - 1992.

22.2 Traffic Management Plan

Prior to commencement of construction, the Contractor will furnish to the Superintendent a Traffic Management Plan in accordance with the requirements of Queensland Department of Transport and Main Roads Specification MRTS02 Clause 5.6.

22.3 Access, side-tracks and detours

The Contractor will provide and maintain in good order all access roads, side-tracks and detours required for use by their plant and personnel and authorised public or other traffic.

The Contractor will ensure that no member of the Community is prevented from pedestrian and vehicular access from that person's dwelling place to:

- a. schools and shops
- b. medical centres
- c. halls, canteens, entertainment areas
- d. churches, Council chambers, and other community meeting areas.

The Contractor will ensure that there are ample large-scale signs clearly indicating the safe access paths.

The Contractor will liaise with the Superintendent and with the Community Liaison Officer to determine when and where side-tracks are to be provided.

Side-tracks will be maintained by the Contractor in a trafficable condition at all times, including in wet conditions.

Where provision of side-tracks is not feasible, the Contractor will give the Superintendent at least one (1) week notice of temporary road closures, and will at the same time post a notice on the Council notice board advising of the location and timing of upcoming temporary road closures. The length of

road temporarily closed at any time will be minimised, and the Contractor will complete construction of the works in each section before beginning work on the next section.

The Contractor's program (as updated during construction) will clearly identify when and where temporary road closures will be necessary.

22.4 Signs and attendance

The Contractor will provide and maintain all necessary warning signs, attendance (including watchmen, flagmen and policemen), barriers and lights and will take all reasonable precautions to prevent accidents or damage to personnel, property or the works during the execution of the works. The Contractor will be held responsible for all damages arising from the neglect or insufficiency of such precautions.

At each point where the route to be followed by traffic changes direction sharply a direction sign and a red light at nights will be displayed. Lights will be displayed at night at all barriers across the road or track in use. Lights will be displayed on all heaps of un-spread stone or other obstructions and on all stationary plant left standing on or close to a road.

All "reflectors" or other signs depending on the reflection of light from head-lamp beams for their effectiveness at night, will be placed directly in the general line of traffic and at right angles to the direction from which traffic is approaching, so that adequate reflection is obtained to make the signs plainly visible at least 60m distant on straights or as far as possible on curves.

The arrangement and detail of warning devices to be erected on and near all works under construction will be in accordance with the "Manual of Uniform Traffic Control Devices" under the Traffic Act.

22.5 Obstructions and breakages

The Contractor will not unnecessarily obstruct any side road, branch tracks or property accesses nor may they break down any fences, telegraph or power lines, or gates, or obstruct any drain or watercourses; but when such obstructions or breakages cannot be avoided they will at once remove such obstructions, make adequate provision for traffic and immediately repair any damage.

22.6 Payment

The scheduled lump sum for traffic management will include full compensation for the preparation of a traffic management plan, provision and maintenance of access roads, side-tracks and detours, for the provision and maintenance of warning signs and attendance and for all other costs incurred in providing for traffic in accordance with the Contract.

23.0 SALVAGED MATERIALS

Notwithstanding anything implied by Clause 17.1 of AS 2124-1992 but except as otherwise provided elsewhere in the Contract Documents, materials salvaged by the Contractor during the carrying out of the work under the Contract and not used in work under the Contract will be the property of the Contractor.

For the purposes of Clause 38 of AS 2124-1992 such materials are surplus material.

24.0 SUPERINTENDENT

24.1 Superintendent to act as agent of the Principal

Further to Clause 23 of AS 2124-1992, for the purposes of receiving and delivering claims (including payment claims made under the Building and Construction Industry Payments Act 2004), the Superintendent will act as agent of the Principal. The Contractor must provide the Superintendent a copy of any payment claim made to the Principal under the Building and Construction Industry Payments Act 2004 at the same time the claim is made to the Principal.

25.0 CONTRACTOR'S SITE FACILITIES

25.1 Contractor's site office

Refer to Clause 25 of AS 2124 -1992.

The Contractor shall establish and maintain on the site a Contractor's Site Office that shall be attended by a Contractor's representative at all times during working hours. If a representative of the Contractor is not present, they shall be contactable by mobile phone.

No separate payment will be made to the Contractor for compliance with this clause, but rather full compensation shall be included in the Schedule of lump sums generally.

26.0 CONTRACTOR'S REPRESENTATIVE – CONTACT OUTSIDE WORK HOURS

Refer to Clause 25 of AS 2124-1992.

The Contractor shall ensure that at all times there is a Contractor's representative that the Superintendent can contact outside working hours.

The Contractor may name a single Contractor's representative to be called first but shall name additional individuals that can be contacted if the named Contractor's representative cannot be contacted; those individuals, if contacted by the Superintendent, shall be Contractor's representatives for the purposes of Clause 25 of AS 2124-1992.

The Contractor shall give the Superintendent written notice of the names and telephone numbers of the Contractor's representative and the additional individuals before commencing work under the Contract.

27.0 CONTRACTOR'S SITE SUPERVISOR/FOREMAN

Refer to Clause 25 of AS 2124-1992.

The Contractor's site supervisor / foreman will be the same person listed in the Contractor's tender, unless approved otherwise by the Superintendent. Replacement personnel for this position will be approved by the Superintendent (generally on the basis of their relevant experience and referees from previous projects), prior to arrival on site.

The Superintendent will not be required to issue a Progress Payment Certificate and the Principal may withhold payment if the Contractor has employed on site a site supervisor / foreman who has not been approved by the Superintendent. The Principal will not be held responsible for delays due to the need to find a replacement site supervisor / foreman who is acceptable to the Superintendent.

No separate payment will be made to the Contractor for compliance with this clause, but rather full compensation will be included in the Schedule of lump sums generally.

28.0 SITE MEETINGS

Refer to Clause 25 of AS 2124-1992.

The Superintendent will require the Contractor's Representative to attend meetings during the Contract period. Other stakeholders including Council, the Contracted Program Manager and the Principal will be invited to attend these meetings to assist in the dissemination of information between the Contractor and the Community.

These meetings will include, but are not limited to, the following:

- a. Post-contract award meeting (off-site) if required.
- b. Pre-start meeting on site – prior to commencement of construction.

- c. Monthly site meetings during the Contract.
- d. Practical completion, defects and commissioning meetings.

All meetings will be held on site unless directed otherwise by the Superintendent.

Additional meetings may also be required during the defects liability period/s for the works; however, these may not necessarily be held on site.

No separate payment will be made to the Contractor for compliance with this clause, but rather full compensation will be included in the Schedule of lump sums generally.

29.0 POSSESSION OF SITE

Refer to Clause 27.1 of AS 2124-1992.

The Principal may give the Contractor possession of the site (or of part of the site) conditional upon any or all of:

- a. The Contractor's having paid the training and portable long service leave levy (refer to Clause 18.3 Building and Construction of this Job Specification) as required.
- b. The Contractor's having complied with the requirements of Clause 22.1 of AS 2124-1992.
- c. The Contractor's having established a quality system in accordance with the requirements of Clause 33.0 of this Job Specification.
- d. The Contractor's having submitted to the Superintendent an approved construction program in accordance with the requirements of Clause 36.0 of this Job Specification.
- e. The Contractor having submitted safe work method statements and a safety plan in accordance with Clause 18.2 of this Job Specification.
- f. The Contractor having submitted a traffic management plan in accordance with Clause 22.0 of this Job Specification.
- g. The Contractor having submitted to the Superintendent an approved construction environmental management plan in accordance with the requirements of Clause 52 of the Job Specifications – Technical Clauses.

If the Principal gives conditional possession of the site as specified above, the Contractor will not take possession of the site and will not commence work thereon until the Contractor has complied with each condition.

30.0 WORK ON THE SITE BY OTHERS

Refer to Clause 27.2 of AS 2124-1992.

In addition to the provisions of that Clause 27.2, the Contractor will permit Telstra, Ergon Energy and any other like authority or owner of a service to have access to the site and to execute work on the site and will co-operate with such authorities and will co-ordinate their own work with that being carried out by such authorities or owners, notwithstanding that such authorities or owners may not have been engaged by the Principal.

The Principal's undertaking to ensure that the Contractor is not impeded in the work under the Contract at the site will apply only where the Principal has engaged an authority or owner of a service to carry out work on the site. The Superintendent will notify the Contractor of any such engagement.

No separate payment will be made to the Contractor for compliance with this clause, but rather full compensation will be included in the Schedule of lump sums generally.

31.0 MATERIALS AND WORK

31.1 General

Refer to Clause 30.1 of AS 2124-1992.

All materials and equipment used in the works shall be the best of their respective kinds and in accordance with the current specifications of the Standards Association of Australia for those particular classes of material, where such specifications are applicable and do not conflict with this specification. If there is no Australian Standard Specification, then the relevant British Standard Specification or others approved by the joint committee, if any, shall apply.

The Superintendent may require samples of any or all of the materials nominated to be submitted for their review prior to their use on the job. Whether the Superintendent has called for samples or not, all materials used in the work shall be subject to the Superintendent's review.

31.2 Editions of Standards

Where the edition of any Australian Standard or other standard is stated in the Specification, that edition will apply for the whole of the Contract period.

Where the edition of any Australian Standard or other standard referred to in the Specification or relevant in accordance with Clause 31.1 above is not stated in the Specification, the edition current at the time of calling tenders will apply for the whole of the Contract period.

Notwithstanding the above, the Superintendent may direct that a different edition (of any Australian Standard or other standard) from the edition specified will apply to the Contract.

Where the Contract refers to Australian Standards, the Contractor will own a copy of each relevant standard, and if he doesn't, then will purchase a copy of each standard referred to immediately, at their own expense, and send to site.

Payment may be withheld for any item carried out to an Australian Standard that the Contractor does not own or retain on site.

The Contractor may be required to produce these documents on site as evidence of compliance with this clause.

No separate payment will be made to the Contractor for compliance with this clause, but rather full compensation will be included in the Schedule of lump sums generally.

32.0 SETTING OUT THE WORKS

32.1 General

Refer to Clause 28 of AS 2124-1992.

32.2 Setting out

The Superintendent shall attend site during the pre-start meeting to set out the works with the Contractor. A representative of the Superintendent shall attend the site prior to the commencement of the pavement rehabilitation to ensure the contracted quantum of works is being remediated.

32.3 Assistance to the Superintendent

As and when required by the Superintendent the Contractor will make available such equipment, staff men and chainmen as may be required to enable the work to be checked for line and level.

No separate payment will be made in respect of such staff men and chainmen.

32.4 Measurement and payment

No separate payment will be made to the Contractor for compliance with this clause, but rather full compensation will be included in the Schedule of lump sums generally.

33.0 CONTRACTOR'S QUALITY ASSURANCE

33.1 General

Refer to Clause 30.2 of AS 2124-1992.

The Contractor shall control the quality of the Contract Works.

The Contractor shall have and shall implement a Quality System that is based on and is in accordance AS/NZS ISO 9001-2015 and is at least second party certified.

33.2 Quality Assurance Representative

The Contractor shall have named its Quality Assurance Representative (QAR) in its tender.

The QAR shall be a suitably qualified person that has authority to control effectively the complete quality assurance process. The QAR shall be site-based.

The Contractor shall confirm the name of the QAR to the Superintendent before commencing work.

33.3 Documents to be provided at start of Contract

Within 14 days after the Date of Acceptance of Tender, the Contractor shall provide to the Superintendent a copy of the following documents:

- a. quality System certification to AS/NZS ISO 9001-2015 for construction
- b. two controlled copies of the Project Quality Plan.

The Contractor shall also provide the Superintendent with access to inspect Corporate Quality Procedures applicable to this Contract.

33.4 Project Quality Plan

The Project Quality Plan (PQP) shall follow the guidelines of AS/NZS ISO 10005:2006.

The PQP shall cover all Quality System elements required by the appropriate Quality Systems Standard as specified, that are applicable to this Contract.

The PQP shall include:

Organisational structure

A Project Organisation Chart or list of nominated Project Personnel showing their positions, lines of communication and details of the responsibilities of the positions.

Details of the qualifications and experience of the following positions:

1. Project Manager.
2. Project Engineer.
3. Contractor's Quality Representative (QAR).
4. Foreman, Supervisor(s).

Inspection and test procedures

Inspection and Test Plans for the various phases during construction, as applicable to the Contract, to be submitted at least 10 working days prior to commencement of relevant activity.

Where ITPs are not developed at the same time as the PQP, the Contractor shall provide a schedule of the proposed ITPs to be used for the works. The schedule shall include target submission dates to ensure they are submitted and received 10 working days prior to the activity's commencing.

A copy of the NATA Terms of Registration for the Contractor's Compliance Testing Laboratory (internal or Contract) where applicable.

Project specific operating procedures or descriptions outlining as a minimum, details of activities, who is responsible for implementation/verification, identification of relevant Quality Records and distribution of such records, to be submitted at least 10 working days prior to commencement of relevant activities.

Filing System

A Register of all intended Quality Records to be used on the project, together with proformas.

33.5 Inspection and test plans

Inspection and Test Plans shall contain at least the following information for each significant activity identified in the relevant process:

- a. description of activity
- b. specification requirements/reference
- c. person responsible for activity (title)
- d. hold and witness points
- e. activity checklists
- f. inspection and test type
- g. tolerances or other acceptance criteria that are measurable
- h. identification of relevant procedure and quality records

- i. test/inspection frequency
- j. work item or work lot identification with the physical boundaries of each lot defined.

Inspection and Test Plans and examples of their relevant activities checklists established for this Contract shall be submitted to the Superintendent for review.

33.6 Identification and traceability

All Contractors' Activities, including manufacture, site construction and commissioning, and the Contract Works shall be subdivided into distinct work lots or work items. Work lots or work items and lot sizes shall be chosen by the Contractor, consistent with any specified requirements, but shall be subject to approval by the Superintendent.

Each work lot or work item shall be assigned a unique identification number, and the Contractor shall maintain a register of all allocated work lot or work item numbers. This register shall contain as a minimum, the following information:

- a. brief description of the work lot or work item
- b. location reference (3 dimensional where applicable)
- c. lot or item status (conforming or non-conforming).

The Contractor shall ensure that traceability is maintained throughout all documented records under this Contract. All test results where applicable under this Contract shall be positively identified with their respective work lot or work item number. The Contractor shall notify the Superintendent in writing 24 hours prior to commencing a new work lot or work item.

33.7 Conformance reports

Conformance Reports shall be made available to the Superintendent for each designated work lot or work item within 48 hours (subject to the qualification in the last paragraph of this clause) of completion of the work lot or work item.

Conformance Reports shall include a verification statement certifying that the relevant work lots or work items have been inspected and/or tested in accordance with the Contractor's Inspection and Test Plan(s) applicable to this Contract and that they comply with the specified requirements of the Contract Documents.

Conformance Reports shall consist of or make reference to the following documents:

- a. All relevant signed off Inspection and Test Plans, associated Checklists and their status at any point in time via a lot register or similar means.
- b. A monthly project assessment report that references the NATA certified test results (where applicable).
- c. Non-conformance register – (refer to Clause 33.8 of this Specification).
- d. Survey and measurement compliance data (where applicable).
- e. Certification or acceptance by others.
- f. Survey data.

33.8 Non-conformance reports

The Contractor shall submit a Non-conformance Report to the Superintendent within 24 hours of detecting nonconforming work.

The Contractor's Non-conformance Report shall clearly detail but shall not be limited to the following items:

- a. The nature and extent of the non-conformance.

- b. The work lot or work item number it relates to including the precise boundaries of the nonconforming work.
- c. Any relevant information, data, test results and/or measurements (as applicable).
- d. The corrective and preventive actions that the Contractor proposes to take.
- e. The time frame within which the non-conformance will be rectified.
- f. Potential savings or any benefits that the Principal acquires.

The method of isolating/identifying nonconforming work, applying and releasing Hold Points, etc. shall be clearly stated in the Project Quality Plan.

The proposed corrective action shall be subject to approval by the Superintendent.

33.9 Notice for examination

Refer to Clauses 31.1, 31.2 and 31.7 of AS 2124-1992.

Unless otherwise specified the Contractor shall give the Superintendent not less than seven days' notice of its intention to commence each of the following operations:

- a. Setout of limits of clearing, and protection of trees not to be cleared, prior to commencing clearing operations.
- b. Ground surface preparation prior to placing fill material.

If the Contractor does not give the notice specified by this Clause, any work covered up or made inaccessible by the work for which the notice was required shall be deemed to be work covered up or made inaccessible without a required prior direction by the Superintendent.

The Contractor has sole responsibility for constructing the works in accordance with the Contract. Failure to inspect the notified works by the Superintendent's Representative shall not in any way relieve the Contractor from their responsibility to construct the works in accordance with the Contract and does not entitle the Contractor to make any claim or in any way limit or change the Contractor's warranties, obligations or liabilities under or in connection with this Contract. Should defective work, errors or omissions in work, be identified in the completed works the subject of a prior notification, the Contractor is bound to rectify the defects in accordance with the Contract.

33.10 Hold Points and Witness Points

33.10.1 Hold Points

A Hold Point is defined as a position in the progress of the Contractor's Activities, beyond which further work shall not proceed without mandatory verification by the QAR and by the Superintendent (or nominated representative) where relevant.

If the Contractor proceeds beyond this point without the Hold Points being released, the Superintendent may direct the Contractor to halt the work and to remove any materials from the Site.

Hold Points shall apply to this Contract to ensure compliance with the intent of the designs and with other specified requirements, and to ensure that critical and/or irreversible activities are not constructed incorrectly. Hold Points shall apply prior to commencement of designated work lots or work items. Hold Points shall be verified by the Superintendent.

Except for Hold Points listed in this Clause and for additional Hold Points directed to be included pursuant to this Clause, the Contractor's Quality System shall not require verification of Hold Points by the Superintendent.

The Contractor shall be liable for the cost of any additional hold point inspections deemed necessary by the Superintendent should the works not meet the requirements of this Job Specification at the initial hold point inspection.

The Contractor's Quality System shall include at least the Hold Points outlined in the Job Specification – Technical Clauses. These are in addition to the notice to be provided by the Contractor, in accordance with Clause 33.9.

Hold points shall include:

- a. Inspection and acceptance of pavement suitable for application of bitumen seal prior to mobilising bitumen crew to site.

The Superintendent may direct that any Hold Point shown in the Contractor's Inspection and Test Plans shall not be a Hold Point.

If the Contractor's Inspection and Test Plans show a Mandatory Hold Point that is not listed as such in this Clause and has not been directed to be added by the Superintendent, that Hold Point shall not be a Mandatory Hold Point unless it is specifically accepted in writing by the Superintendent.

The Contractor has sole responsible for constructing the works in accordance with the Contract. The release of a Hold Point by the Superintendent's Representative shall not in any way relieve the Contractor from their responsibility to construct the works in accordance with the Contract and does not entitle the Contractor to make any claim or in any way limit or change the Contractor's warranties, obligations or liabilities under or in connection with this Contract. Should defective work, errors or omissions in work, be identified in the completed works following the release of a Hold Point, the Contractor is bound to rectify the defects in accordance with the Contract.

33.10.2 Witness Points

A Witness Point is defined as a position in the progress of the Contractor's Activities, where the Contractor must notify its QAR and the Superintendent prior to proceeding and the option for attendance for witnessing of inspection and test may be exercised. If any do not attend, then work may nevertheless proceed, unless otherwise instructed.

Witness Points shall apply to verify compliance of the constructed works with the Drawings.

Except as may be directed by the Superintendent, the Contractor's Quality System shall not require verification of Witness Points by the Superintendent.

The Superintendent may direct the Contractor to insert additional Witness Points in the Contractor's Inspection and Test Plans.

33.10.3 Proceeding beyond a Hold Point or Witness Point

The Contractor shall give the Superintendent not less than seven working days' notice of its intention to proceed beyond a Hold Point.

The Contractor shall give the Superintendent not less than seven days' notice of its intention to proceed beyond a Witness Point.

The Contractor shall ensure:

- a. That all work lots or work items affected by the lot or item in question are conforming.
- b. That all Conformance Reports for all work lots or work items affected by the lot or item in question have been made available to the Superintendent at least 6 working hours prior to the time the Contractor intends to proceed with the lot or item in question, thus ensuring that defective work are not built-in.

33.11 Compliance inspections and testing

33.11.1 General

Refer to Clause 31 of AS 2124-1992. Testing to demonstrate the compliance of materials and work with the Contract will be conducted by the Contractor.

33.11.2 Tests

Tests to be made are those listed in the attached Schedule of Compliance Assessment Testing or specified elsewhere in the Contract Documents.

For compliance assessment inspections the Contractor shall nominate responsible persons, who are not directly involved in performing the work.

A NATA-registered laboratory certified for the tests specified in this Contract shall carry out all compliance testing (where applicable).

The Contractor shall advise the Superintendent of the work lot or work item number and the location within the lot or item, prior to any testing of the lot or item.

The Contractor shall make available a Non-conformance Report and the proposed corrective action for any nonconforming test result. No further compliance assessment testing shall be permitted until approved by the Superintendent.

The frequency of compliance testing shall be at least in accordance with the minimum requirements of the Contract Documents. In particular, the Contractor's Quality System shall include at least the testing listed in the table below.

The Contractor shall submit to the Superintendent any preliminary results on compliance assessment tests carried out for each work lot or work item within 48 hours of the completion of the tests.

The Contractor will be solely responsible for all testing necessary to ensure compliance with or required under the Specification.

No separate payment will be made to the Contractor to cover costs associated with testing which will be deemed to be included in the Schedule of lump sums for the relevant item.

33.12 Quality records

The Contractor's Quality System shall include sufficient quality records to provide objective evidence that the requirements of the Contract are met. The evidence shall include Contractors' and Suppliers' records relevant to this Contract.

When requested by the Superintendent, the Contractor shall provide access to all quality records relevant to the Contractor's Quality System under this Contract.

Prior to Practical Completion, the Contractor shall forward a complete and bound clean copy of at least the following records to the Superintendent. Previously submitted documents may be selected as appropriate:

- a. The Work Lot or Work Item Register for the Contract.
- b. All Conformance and Non-conformance Reports.

At and after Practical Completion the Contractor, when requested, shall make copies of at least the following documents available to the Superintendent:

- a. All Inspection and Test Plans and associated checklists.
- b. All test results, analyses, reports, measurements and observations.
- c. The original Project Quality Plan and any changes made to the Contractor's Quality System.
- d. Records for equipment and parts subject to inspection and approval by the relevant regulatory authority shall be made available on site at the time of arrival of all relevant items at site, or after inspections have been carried out on site (if applicable).

33.13 Certifications

33.13.1 To accompany each payment claim

A Conformance Report shall accompany each payment claim from the Contractor in respect of the work completed to the date of the claim and the subject of the claim, certifying that the Contract Works as constructed are in full accordance with the Contract requirements.

In any statement of the amount payable in a payment certificate, the Superintendent shall not be required to include in the amount, and the Superintendent shall not be obliged to pay, the value of any work for which evidence of conformance has not been submitted as set out in this clause.

Certification and payment shall not be unreasonably withheld, however, where the relevant evidence of conformance has not been submitted due only to the normal delays in processing, testing, analysis

and reporting. In that case the Contractor's payment claim shall set forth the lots for which payment is claimed but for which Conformance Reports have not been submitted and shall certify that Conformance Reports for those lots will be submitted prior to the next payment claim.

If any work for which payment has been included in the amount payable shown in a payment certificate is found not to be in accordance with the Contract, the Superintendent may take this into account in valuing any future certificate.

33.14 At Practical Completion

Prior to the Date of Practical Completion, the Contractor shall submit a Conformance Report certifying that the Contract Works have been constructed in accordance with the Specification and Drawings or approved revisions thereto.

If any work for which payment has been made is found not to be in accordance with the Contract, the Superintendent may take this into account in valuing any future certificate.

33.15 Payment

The scheduled lump sum for "Contractors Quality Assurance" shall include full compensation for the establishment and operation of the Contractor's Quality System, including preparation of the Project Quality Plan, preparation of Inspection and Test Plans, identification and registration of work lots and work items, engagement of a NATA-registered laboratory, preparation and submission of Conformance Reports, preparation and submission of Non-conformance Reports and reporting corrective action, verification of work at Witness Points and Hold Points, compliance assessment inspections and testing, for managing the quality systems of Contractors and suppliers, for maintenance of quality records and submission of copies, for quality audits, for notifications to and liaison with the Superintendent and for all other costs incurred in executing and completing the work in accordance with the Contract.

The Contractor shall be paid 50% of this scheduled lump sums upon the approval of the management plan. The remaining 50% shall be paid throughout the execution of the Works.

34.0 COSTS OF INSPECTION, EXAMINATION AND TESTING OF WORK DONE OUTSIDE NORMAL WORKING HOURS

34.1 General

Refer to Clause 31.7 of AS 2124-1992 and Clause 19.3 of this Job Specification – Non Technical Clauses.

If the Contractor carries out work outside normal working hours or carries out work on any day that is not a working day then the Principal may recover from the Contractor any additional costs, including wages and overtime payments, travel costs and accommodation costs, incurred by the Principal in relation to the inspection, examination and testing of such work. This would only apply where the Contractor has requested the inspection.

34.2 Exclusions

This Clause 34.0 shall not apply to:

- a. additional work ordered by the Superintendent where the Superintendent directs the hours within which the work is to be done and the Superintendent determines that the need for such additional work arises from a cause beyond the control of the Contractor.

35.0 ORDER OF WORK, ACCELERATION

35.1 General

Refer to Clause 33 of AS 2124-1992.

35.2 Acceleration

If it becomes apparent to the Contractor that the completion of the Works to the stage of Practical Completion is likely to be delayed the Contractor shall notify the Superintendent forthwith.

On receipt of such a notice, or at any time that the Superintendent considers that the work is delayed or likely to be delayed, the Superintendent may direct the Contractor to accelerate the work to counter the delay.

A direction to accelerate the work may include directions to:

- a. Employ additional plant or labour.
- b. Work additional days or hours.
- c. Carry out additional work to rectify damage or otherwise to counter the effects of a cause of delay.
- d. To the extent that the cause of a delay is a cause entitling the Contractor to an extension of time under Clause 35.5 of AS 2124-1992, the Contractor shall be reimbursed for extra costs and expenses incurred by the Contractor in complying with a direction to accelerate the work to counter that delay. Refer to Clauses 11 and 33.1 of AS 2124-1992.

35.3 Effect on extensions of time for Practical Completion

Notwithstanding anything to the contrary in Clause 35.5 of AS 2124-1992, in determining whether the Contractor is or will be delayed in reaching Practical Completion the Superintendent shall have regard to the effect of acceleration directed pursuant to clause 35.2.

36.0 CONSTRUCTION PROGRAM

36.1 General

Refer to Clause 33.2 of AS 2124-1992.

The Construction Program lodged by the Contractor with its Tender (including any amendment made in accordance with the Conditions of Tendering) and accepted by the Principal will be deemed to have been furnished by the Contractor on the Date of Acceptance of Tender and will be a construction program included in the Contract.

36.2 Form of construction program

Within 14 days after the Date of Acceptance of Tender the Contractor shall furnish to the Superintendent the construction program augmented and re-presented as necessary to show:

- a. The date of tender acceptance.
- b. Any activities, including activities to be carried out by the Principal or others, that may affect the progress of the work under the Contract but are not shown in the construction program lodged by the Contractor as part of its Tender.
- c. The duration of each activity.
- d. The logical links between activities on the Gantt chart including the critical path.
- e. The Contractor, within fourteen days after the Date of Acceptance of Tender, shall furnish to the Superintendent a digital copy of the construction program in MS Project 2010.

36.3 Updating

The Contractor shall update the construction program to show progress at intervals not greater than one week and shall furnish a copy of each updated construction program to the Superintendent.

The Superintendent may give a direction under Clause 33.2 of AS 2124-1992 at any time before the expiry of the last Defects Liability Period.

The Contractor may give an updated or revised construction program to the Superintendent voluntarily but such a construction program shall not supersede an earlier construction program except as directed by the Superintendent.

36.4 Applicable revision of construction program

The Superintendent may give a direction pursuant to the fifth paragraph of Clause 33.2 of AS 2124-1992 at any time and from time to time.

If the Superintendent directs the Contractor to furnish to him a construction program the Contractor will obtain the Superintendent's direction about the construction program furnished.

If the Superintendent has not directed the Contractor to furnish to him a construction program but the Contractor considers that it has reasonable cause to depart from a construction program, the Contractor will:

- a. Give details of the cause for departure from the current construction program and obtain the Superintendent's direction whether the cause is reasonable.
- b. Furnish a new construction program to the Superintendent and obtain the Superintendent's direction about the construction program furnished.

The construction program referred to in the sixth paragraph of Clause 33.2 of AS 2124-1992, which will not be without reasonable cause be departed from, will be:

- a. Until it is superseded by a construction program that the Superintendent directs is suitable, the construction program lodged by the Contractor as part of its tender and accepted by the Principal.
- b. If the Superintendent has directed the Contractor to furnish to him a construction program and has directed that the construction program so furnished is suitable, or if the Contractor has given details of a cause for departure from a construction program and has furnished to the Superintendent a new construction program and the Superintendent has directed that the cause for departure is reasonable and that the new construction program is suitable, the latest construction program that the Superintendent has directed is suitable.

36.5 Review of construction program

The review, approval, acceptance or rejection by the Superintendent of the construction program or any amendments or changes or revisions thereof:

- a. Will not be deemed to relieve the Contractor of any of its liabilities or obligations under the Contract especially the obligation to achieve Practical Completion by the Date for Practical Completion.
- b. Shall not evidence or constitute a direction by the Principal or by the Superintendent to accelerate, disrupt, prolong or vary any or all of the work under the Contract.
- c. Shall not evidence or constitute a direction by the Superintendent.
- d. Shall not evidence or constitute the granting of an extension of time for Practical Completion.
- e. Shall not affect the time for performance of the Principal's or Superintendent's obligations.

36.6 Payment

Full compensation for all costs incurred in producing the construction program, in updating and revising the construction program and in producing any further construction program shall be included generally in the scheduled lump sum.

37.0 TIME FOR PRACTICAL COMPLETION EXTENSIONS OF TIME FOR PRACTICAL COMPLETION

37.1 General

Refer to Clause 35 of AS 2124-1992.

37.2 Time for Practical Completion

The time for Practical Completion and any extension thereof granted by the Superintendent pursuant to Clause 35.5 of AS 2124-1992 and this Clause 37.0 will be reckoned in calendar days.

37.3 Extension of the time for Practical Completion

Clause 35.5 of AS2124-1992 is deleted and replaced with the following:

When it becomes evident to the Contractor that anything, including an act or omission of the Principal, the Superintendent or the Principal's employees, consultants, other contractors or agents, may delays the work under the Contract, the Contractor shall promptly notify the Superintendent in writing with details of the possible delay and the cause.

When it becomes evident to the Principal that anything which the Principal is obliged to do or provide under the Contract may be delayed, the Principal shall give notice to the Superintendent who shall notify the Contractor in writing of the extent of the likely delay.

If the Contractor is or will be delayed in reaching Practical Completion by a cause described in the next paragraph and within seven days of the commencement of the delay the Contractor gives the Superintendent a written claim for an extension of time for Practical Completion setting out the facts on which the claim is based, the Contractor shall be entitles to an extension of time for Practical Completion.

The Causes are –

- a. Events occurring on or before the date for Practical Completion which are beyond the reasonable control of the Contractor including but not limited to:
 - i. Industrial conditions
 - ii. Inclement weather.
- b. Any of the following events occurring on or before or after the Date for Practical Completion conditional that the occurrence of the event is not a direct and, in the opinion of the Superintendent, necessary consequence of the Contractor failing to achieve Practical Completion by the Date for Practical Completion.
- c. Delays cause by:
 - i. The Principal.
 - ii. The Superintendent.
 - iii. The Principal's employees, consultants, other contractors or agents.
- d. Actual quantities of work being greater than the quantities in the Bill of Quantities / Schedule of Lump Sums or the quantities determined by reference to the upper limits of accuracy stated in the annexure (otherwise than by reason of a variation directed under Clause 40).
- e. Latent Conditions.

- f. Variations directed under Clause 40.
- g. Repudiation or abandonment by a Nominated Subcontractor.
- h. Changes in the law.
- i. Directions by municipal, public or statutory authorities but not where the direction arose from the failure of the Contractor to comply with a requirement referred to in Clause 14.1.
- j. Claims referred to in Clause 17.1(v).
- k. Any breach of Contract by the Principal.
- l. Any other cause which is expressly stated in the Contract to be a cause for extension of time for Practical completion.

Where more than one event cause concurrent delays and the cause of at least one of the events, but not all of them, is not a cause referred to in the point b (above) then to the extent that the delays are concurrent, the Contractor shall not be entitled to an extension of time for Practical Completion.

In determining whether the Contractor is or will be delayed in reaching Practical Completion regard shall not be had to –

- a. Whether the Contractor can reach Practical Completion by the Date for Practical Completion without an extension of time.
- b. Whether the Contractor can, by committing extra resources or incurring extra expenditure, make up the lost time.

With any claim for an extension of time for Practical Completion the Contractor shall give the Superintendent written notice of the number of days extension claimed. If the delay is ongoing the Contractor shall update its claim for an extension of time for Practical Completion every seven days thereafter.

If the Contractor is entitled to an extension of time for Practical Completion the Superintendent shall, within 28 days after receipt of the final extension of time claim detailing the final number of days being claimed, grant a reasonable extension of time. If within 28 days the Superintendent does not grant the full extension of time claimed, the Superintendent shall before the expiration of the 28 days give the Contractor notice in writing of the reason.

In determining a reasonable extension of time for an event causing a delay, the Superintendent shall have regard to whether the Contractor has taken all reasonable steps to preclude the occurrence of the cause and minimise the consequences of the delay.

Notwithstanding that the Contractor is not entitled to an extension of time the Superintendent in its absolute discretion and without being under any obligation to do so may at any time and from time to time before the issue of the Final Certificate by notice in writing to the Contractor extend the time for Practical Completion for any reason.

A delay by the Principal or the failure of the Superintendent to grant a reasonable extension of time or to grant an extension of time within 28 days shall not cause the Date for Practical Completion to be set at large but nothing in the paragraph shall prejudice any right of the Contractor to damages.

38.0 CLAIM FOR EXTENSION OF TIME

Refer to Clause 37.3 of this Job Specification.

The Contractor's claim for extension of time shall set out the basis of their claim, and consist of the following information:

- a. the Contractor's summary of the factual situation that has given rise to the extension of time claim
- b. the particular clause reference outlining the Contractor's entitlement to an extension of time
- c. the quantum of the claim
- d. the Contractor's substantiation of their claim

- e. impacted construction program against the agreed project baseline
- f. a copy of that updated construction program further revised to demonstrate the effect of the cause of a delay.

Neither updated construction program shall supersede an earlier construction program except as the Superintendent may direct under Clause 36.0 of this Job Specification and Clause 33.2 of AS 2124-1992.

39.0 LIQUIDATED DAMAGES FOR DELAY IN REACHING PRACTICAL COMPLETION

Refer to Clause 35.6 of AS 2124-1992.

The rate of liquidated damages stated in the Annexure Part A to AS 2124-1992 is exclusive of goods and services tax.

Any indebtedness of the Contractor to the Principal under clause 35.6 of AS 2124-1992 is immediately due upon the passing of the Date for Practical Completion and the right of the Principal to recover such debt, or deduct the amount of such debt from any money otherwise payable by the Principal to the Contractor, is not dependent upon the Contractor reaching Practical Completion, a Final Certificate being issued under clause 42.6 of AS 2124-1992 or otherwise.

To remove any doubt, upon the Contractor failing to reach Practical Completion by the Date for Practical Completion, the Principal will be immediately entitled to:

- Deduct from any payment otherwise due to the Contractor under any payment claim or claim for payment delivered by the Contractor to the Superintendent under clause 42.1 of AS 2124-1992.
- Recover from the Contractor, any amount of liquidated damages for which the Contractor is indebted to the Principal under clause 35.6 of AS 2124-1992 and this clause 39.0.

40.0 LIMIT ON LIQUIDATED DAMAGES

Clause 35.7 of AS 2124-1992 is omitted from this Contract.

41.0 BONUS FOR EARLY PRACTICAL COMPLETION

Clause 35.8 of AS 2124-1992 is omitted from this Contract.

42.0 DELAY OR DISRUPTION COSTS (PROVISIONAL QUANTITY)

42.1 Entitlement

Refer to Clause 36 of AS 2124-1992.

Where the Contractor has been granted an extension of time under Clause 35.5 of AS2124-1992 for any delay caused by any of the events referred to in Clause 35.5(b)(i) of AS2124-1992, the Contractor shall only be entitled to recover from the Principal the amounts payable based on the rates provided in the Schedule of Contractor's Details.

43.0 MAINTENANCE

43.1 Directed maintenance

In addition to the Contractor's responsibilities under Clause 37 of AS 2124-1992, during the Defects Liability Period the Contractor will carry out such other remedial work as the Superintendent may direct.

Payment for such work, to the extent that it exceeds the Contractor's responsibilities under Clause 37 of AS 2124-1992, will be calculated in accordance with Clause 11 of AS 2124-1992.

43.2 Defects liability

The Contractor's attention is drawn to Clause 37 of AS 2124-1992.

The Contractor shall allow in his scheduled rates or scheduled Lump Sums generally for rectification of defects required under Clause 37 of AS 2124-1992 during the defects liability period. It is brought to the Contractor's attention that the site is in a remote location and that significant costs will be incurred whenever he is required to visit the site to remedy a defect. No separate payment will be made for travelling expenses, freight expenses, labour, plant, materials or any other costs incurred by the Contractor in remedying defects.

During the Practical Completion, site inspection the Superintendent shall prepare a list of defects requiring the Contractor's attention. The Contractor shall make all arrangements necessary to ensure that all items on the Superintendent's defects list are addressed prior to his dis-establishing from site.

The Superintendent shall monitor the works during the respective defects liability periods and shall advise the Contractor to address any defects as required. During the respective defects liability periods the Contractor may delay remediation of non-urgent defects so that several defects may be fixed during the same visit, however such delay shall not exceed four (4) months and shall not affect the proper and efficient running of the works.

If a defect does affect the proper and efficient running of the works it shall be deemed urgent and shall be remedied without delay.

44.0 VARIATIONS

44.1 General

Refer to Clause 40 of AS 2124-1992.

The Contractor's profit and overhead margin on variations where there is no applicable item in the schedule of lump sums will be 10%.

44.2 "If Ordered" items

Refer to Clause 6.2 of this Job Specification.

Work shown on the Drawings to be "(If Ordered)" and items of work for which the description in the Schedule of lump sums includes the qualification "If Ordered" will not be carried out without the prior direction of the Superintendent.

The Superintendent may direct that such work be carried out to a greater or lesser quantity than may be shown in the Schedule of lump sums.

The Superintendent may refrain from issuing any direction.

Any variation that results from the Superintendent's issuing, or not issuing, a direction pursuant to this Clause 44.2 will be deemed to be within the general scope of the Contract.

44.3 Protection of existing services

Notwithstanding anything to the contrary contained in Clause 40.1 of AS 2124-1992, the Contractor will have the right to vary the work under the Contract despite the Superintendent's not having directed a variation order where such a variation is essential for compliance with Clause 15.0 of this Job Specification.

44.4 Maintenance

Notwithstanding the limitation as to time specified in Clause 40.1 AS 2124-1992, the Superintendent at any time prior to their issuing the Final Payment Certificate may issue a direction pursuant to Clause 43.0 of this Job Specification and the remaining provisions of Clause 40 of AS 2124-1992 thereupon will apply to the work so ordered.

45.0 CERTIFICATES AND PAYMENT

45.1 General

Refer to Clause 42 of AS 2124-1992.

45.2 Claims for payment

A claim for payment lodged by the Contractor will not be headed "tax invoice". The Contractor's tax invoice will only be submitted after the Superintendent has issued a draft progress certificate.

A complete claim for payment will include:

- a. Consecutively numbering.
- b. Every item for which payment is being claimed up to the date in the claim listed in the manner and in the order of the Schedule of lump sums.
- c. The amount of payment being claimed in respect of each item together with supporting calculations.
- d. Details of variations if any issued by the Superintendent, with the amounts to be added or deducted in respect of each. All variations will be identified by their numbers and titles.
- e. A summary of day work, if any, ordered by the Superintendent.
- f. A summary grouped in the same manner as in the Schedule of lump sums showing the total gross value of work done to the date of the payment claim.
- g. Show a deduction for retention monies.
- h. Statutory declaration complying with Clause 46.0 of this Job Specification.
- i. A progress report including employment and training progress against project requirements.
- j. Quality Assurance documents referred to in Clause 33.13.1 substantiating that the work claimed by the Contractor for payment is in accordance with the Contract requirements.

An incomplete claim for payment will not be processed. Despite any other provision of the Contract, the Contractor will not be entitled to:

- a. deliver a progress claim
- b. make any other Claim for payment.

Until satisfaction of the following conditions:

- a. the Contractor has fully complied with its obligation to provide security under Clause 5.2 of AS2124-1992
- b. the Contractor has provided satisfactory evidence of compliance with its insurance obligations in accordance with Clause 22.1 of AS2124-1992
- c. the Contractor has become entitled to Claim under Clause 42.1 of AS 2124-1992.

The Contractor is not entitled to payment of any amounts otherwise due to the Contractor under this Contract, and the Principal may refuse to make any payment otherwise due to the Contractor until the above conditions are complied with.

45.3 Payment certificates

To remove any doubt, the Superintendent will allow in any payment certificate issued pursuant to clause 42.1 of AS 2124-1992, any Final Certificate issued pursuant to clause 42.8 of AS 2124-1992 or a Certificate issued pursuant to clause 44.6 of AS 2124-1992, any amounts due from the Contractor to the Principal under clause 35.6 of AS 2124-1992 or Clause 39.0 of this Job Specification – Non-Technical.

45.4 Tax invoices given by the Contractor

Refer also to Clause 14 of AS 2124-1992.

If the Superintendent does not issue the draft payment certificate within 10 business days of receiving a claim for payment that is in accordance with Clause 45.2 of this Job Specification and Clause 42.1 of AS 2124-1992 the Contractor will submit a valid tax invoice that reflects accurately the amounts shown in the payment claim.

For the purposes of this Contract a valid tax invoice is a tax invoice that:

- a. Complies with relevant legislative requirements.
- b. Is in its original form (i.e. not faxed or photocopied).
- c. Reflects accurately the amounts shown in the payment certificate.
- d. Is addressed as follows:

Doomadgee Aboriginal Shire Council
c/- AECOM Australia Pty Ltd
PO Box 5971 CAIRNS QLD 4870

The Superintendent shall confirm the Purchase Order number to be referenced on the Contractor's invoice upon award of the Contract and also the particular tax invoice address prior to the contractor submitting a valid tax invoice.

45.5 Time for certificates and payment

In this Clause 45.0 "business day" has the meaning in the Building Industry Fairness (Security of Payments) Act.

Under Clause 42.1 of AS 2124-1992, 1st sentence of paragraph 1 will be replaced with the following text:

- a. An "Application for Payment" rather than a Progress Claim, must be submitted in the first instance. Within 10 business days after receipt of the Contractor's "Application for Payment", the Superintendent will issue to the Contractor a draft payment certificate stating the amount of the payment which, in the opinion of the Superintendent, is to be made by the Principal to the Contractor, or the Contractor to the Principal.
- b. Within 5 business days of receiving the draft payment certificate, the Contractor will submit its Progress Claim together with the original Tax Invoices to the Superintendent matching the draft payment certificate. Subject to receiving a correct original Tax Invoice, the Superintendent will issue a signed payment certificate to the Principal for payment with a copy to the Contractor.
- c. Notwithstanding anything contrary to Clause 42.1 of AS 2124-1992:
 - i. The Principal will pay not later than the earlier of:
 - 15 business days after the Principal has received the signed payment certificate (referred to in that Clause 42.1 of AS 2124-1992) provided by the Superintendent; or
 - 30 business days after the Superintendent has received the Contractor's application for payment (made in accordance with Clause 42.1 of AS 2124-1992)
 - ii. The Principal will not be obliged to pay earlier than the earlier of these dates.

46.0 PAYMENT OF EMPLOYEES AND SUBCONTRACTORS

46.1 Payment of employees

Delete Clause 43 of AS 2124-1992 and insert:

As part of the Contractor's claim for payment:

- a. The Contractor must deliver to the Superintendent an original statutory declaration completed by the Contractor, or where the Contractor is a corporation, by the representative of the Contractor who is in a position to know the facts attested to that:
 - i. All subcontractors, subconsultants and any sub subcontractors performing work under the Contract have been approved by the Superintendent in accordance with Clause 9.2 of AS2124-1992.
 - ii. All subcontractors of the Contractor have been paid all that is due and payable to such subcontractors up to the date of submission by the Contractor of a payment claim in respect of the work under the Contract.
 - iii. All its workers who at any time have been engaged on work under the Contract by the Contractor have been paid, in accordance with the relevant award or industrial instrument, all moneys due and payable to them up to the date of submission by the Contractor of a payment claim, in respect of their engagement on the work under the Contract.
 - iv. All suppliers of the Contractor have been paid all that is due and payable up to the date of submission by the Contractor of a payment claim in respect of the work under the Contract.
 - v. The Contractor has informed all subcontractors and any sub subcontractors performing work under the Contract of the existence of the Building Industry Fairness (Security of Payment) Act 2017.

If requested in writing, reasonable supporting documentary evidence thereof:

- a. If previously requested by the Superintendent, the Contractor must deliver to the Superintendent an original statutory declaration in the form attached to these Conditions completed by any subcontractor or subconsultant, or where the subcontractor is a corporation, by a representative of the subcontractor who is in a position to know the facts attested to:
 - i. That all workers who have been engaged by a subcontractor of the Contractor have been paid, in accordance with the relevant award or industrial instrument, all moneys due and payable to them up to the date of submission by the Contractor of a payment claim in respect of their engagement on the work under the Contract.
 - ii. All suppliers of the subcontractor have been paid all that is due and payable up to the date of submission by the Contractor of a payment claim in respect of the work under the Contract.
 - iii. That all subcontractors of the subcontractor have been paid all that is due and payable to such subcontractors up to the date of submission by the Contractor of a payment claim in respect of the work under the Contract.

If requested in writing, reasonable supporting documentary evidence thereof.

- a. Notwithstanding Clause 42.1 of AS2124-1992, the Principal may withhold payment of moneys due to the Contractor until the statutory declaration or documentary evidence (as the case may be) is received by the Superintendent.
- b. If the Contractor provides to the Superintendent, satisfactory proof of the maximum amount due and payable to workers, suppliers and subcontractors by the Contractor, the Principal shall not be entitled to withhold any amount in excess of the maximum amount.

- c. The Contractor acknowledges that the Principal may release to a subcontractor details of payments in percentage terms made by the Principal to the Contractor in respect of the Works or any part thereof unless the Contractor shows reasonable grounds why such details should not be released or satisfies the Principal that all payments due and payable to the subcontractor by the Contractor have been paid.

46.2 Proof of Final Payments by Contractor

Upon the issue of the Final Certificate, the Contractor will deliver to the Superintendent a statutory declaration made before a Justice of the Peace to the effect that all claims for royalties on timber, gravel or other materials or for damage or injury arising out of the Contract have been satisfied and that wages and allowances of workmen employed on or about the works, including subcontractors and workmen of subcontractors, and any other person working for the Contractor have been paid in full to the date of such statutory declaration, in accordance with the various Industrial Awards that are applicable.

In addition, the statutory declaration will contain a statement to the effect that no subcontractors or piece workers have been employed other than those approved in accordance with Clause 9 of AS 2124-1992.

47.0 DEFAULT BY THE CONTRACTOR

Refer to Clause 44.2 of AS 2124-1992.

Substantial breaches also include failing to establish, within three months after the Date of Acceptance of Tender, a quality system that is in accordance with the Contract, in breach of Clause 30.2 of AS 2124-1992.

JOB SPECIFICATIONS – TECHNICAL



Table of Contents

48.0	STANDARDS	89
49.0	MATERIALS AND FITTINGS	89
	49.1 General	89
	49.2 Equivalent components	89
50.0	MISCELLANEOUS ISSUES COMMON TO WORK ITEMS	89
	50.1 Construction water	89
	50.2 Restoration	90
	50.3 Maintenance of roads	90
51.0	ESTABLISHMENT AND DISESTABLISHMENT	90
	51.1 General	90
	51.2 Establishment	90
	51.3 Contractor's accommodation	91
	51.4 Disestablishment	91
52.0	ENVIRONMENTAL MANAGEMENT	92
	52.1 General	92
	52.2 Environmental Management Plan	92
	52.3 Provision for environment	93
	..	94
53.0	ROAD SEAL	93

48.0 STANDARDS

Unless specified differently, carry out the work in accordance with the, FNQROC and TMR standards, specifications and drawings, generally and the following standard specifications. Refer:

- a. FNQROC Standard Specification S2 – Road Pavements
- b. MRTS11 – Sprayed Bituminous Treatments (Excluding Emulsion)

Separate payment shall be made for the Contractor complying with this clause, but rather full compensation shall be provided in the scheduled rates generally.

49.0 MATERIALS AND FITTINGS

49.1 General

All materials and equipment used in the works shall be the best of their respective kinds and in accordance with the current specifications of the Standards Association of Australia for those particular classes of material, where such specifications are applicable and do not conflict with this specification. If there is no Australian Standard Specification, then the relevant British Standard Specification or others approved by the joint committee, if any, shall apply.

The Superintendent may require samples of any or all of the materials nominated to be submitted for their review prior to their use on the job. Whether the Superintendent has called for samples or not, all materials used in the work shall be subject to the Superintendent's review.

No separate payment shall be made for the Contractor complying with this clause, but rather full compensation shall be provided in the Contractor's lump sum generally.

49.2 Equivalent components

Where a component or product has been specified on the drawings or in this Specification by brand name and model number or part number, the Contractor may offer a component or product deemed by the Contractor to be equivalent. All "equivalent" components and products offered shall be approved in writing by the Superintendent. Failure to comply with this provision gives the Superintendent the unconditional right to direct the Contractor to remove the offending component or product and replace it with the component or product specified on the drawings or in this Specification, totally at the Contractor's cost.

50.0 MISCELLANEOUS ISSUES COMMON TO WORK ITEMS

50.1 Construction water

Unless agreed in writing by Council and the Superintendent, construction water shall not be sourced from the town water supply. The Contractor shall liaise with Council to determine an appropriate location to source construction water. The contractor shall submit details of the location to the Superintendent. The Contractor shall be responsible for procurement of all necessary environmental approvals to gain access to water for construction prior to use. Should the Superintendent direct the Contractor to source construction water from the town water supply, the Contractor shall pay all Council fees and charges for its use. The contractor will bear all cost for the transport of water.

No separate payment shall be made for the Contractor complying with this clause but rather full compensation shall be provided in the Contractor's lump sum generally.

50.2 Restoration

At completion of the works the Contractor shall restore the site to its pre-existing condition (including pavement line marking removed to repair the damaged sections of airstrip and road). The Contractor shall document, with photographs or video, the existing site conditions prior to commencing the works on site.

The Contractor shall not unreasonably destroy or damage any existing infrastructure, property, fences, gardens, walls, paved areas, concrete surfaces, paths, trees, roads, gravelled areas & grassed / landscaped areas. Items, vegetation or surfaces disturbed shall be restored to the same or better condition than before commencement of the work.

Where existing grassed areas are disturbed during construction, the soil shall be graded, prepared, and then seeded. The Contractor shall also fertilise, water and maintain such areas to ensure the regrowth of grass.

As soon as practicable, remove off-site surplus spoil, construction materials and cleared waste. As soon as practicable, make good disturbed areas to the satisfaction of the Superintendent. Failure to complete cleaning up and restoration shall not be considered a minor omission. The Superintendent may withhold portions of intermediate payments and the issuance of the Certificate of Practical Completion until restoration is complete.

No separate payment shall be made for the Contractor complying with this clause but rather full compensation shall be provided in the lump sum amount generally.

50.3 Maintenance of roads

The Contractor shall make all reasonable efforts (in accordance with that outlined in the Contractor's Schedule of Tender Data) to minimise damage to roads traversed in the course of executing the Contract. No track machinery shall be permitted to travel on paved roads without suitable protection for the road.

The Contractor shall manage dust generation, making every effort to suppress dust

The Contractor shall make good damage to roads.

No separate payment shall be made for the Contractor complying with this clause but rather full compensation shall be provided in the Contractor's lump sum generally.

51.0 ESTABLISHMENT AND DISESTABLISHMENT

51.1 General

The scheduled lump sum for "Site Establishment / Disestablishment" shall not be more than 20% of the total Contract amount. The scheduled lump sum for "Site Establishment / Disestablishment" shall be divided among three distinct components comprised of establishment on site, maintaining the contractor's accommodation and disestablishment from site.

51.2 Establishment

The Contractor shall arrange for and provide such transport of employees and plant to the Site, establish accommodation, shelters, storage facilities and the like as are required for the Contractor's establishment on the Site and execution of the work under the Contract.

The scheduled lump sum for "Establishment" shall include full compensation for all transport, establishment of accommodation, shelters and the provision of facilities and for all costs incurred in the Contractor fully establishing on site including construction of the contractor's camp.

25% of the scheduled lump sum for "Establishment" shall be paid once the Contractor has fully established on site and has substantially commenced construction work. The balance of the lump sum shall be paid progressively throughout the duration of the Contract (proportional to progress payments).

51.3 Contractor's accommodation

Refer Clause 1.3 of the Job Specification – Non Technical clauses.

Throughout the project the Contractor will be required to maintain and manage accommodation for employees, subcontractors and workers on an ongoing basis. The Contractor may use Council guesthouses and motels, however the Principal does not guarantee that sufficient rooms will be available.

Where a Contractor's Camp is provided the Contractor will be responsible for payment of water and sewerage services, electrical supply as well as all other ongoing costs of providing accommodation, food and entertainment for all employees under the Contract.

The Contractor shall inform the Superintendent of water requirements for the camp. The Contractor may connect the sewer to the reticulated networks where they are available at the site. Otherwise, the Contractor shall install a septic tank.

If any services are limited during the construction phase or any fees are charged to connect into the existing system the Contractor is responsible for all associated costs and no additional payment shall be made for the Contractor complying with the Contract.

Notwithstanding whether the Principal has nominated a suitable site for the Contractor's camp, the Contractor shall liaise with the Traditional Owners and the Prescribed Body Corporate to confirm that the land is available and whether any rental costs apply for its use.

The Contractor shall establish and maintain a lockable, fenced compound for the camp and site office, for storage of all materials for the duration of the Contract, and for storage of plant when not in use for significant periods. Within 24 hours of delivery to the site, all the Contractor's materials shall be transported to the compound for storage, unless approved otherwise by the Superintendent.

Suitable erosion and sedimentation controls shall be provided for the compound by the Contractor. Refuse arising from the execution of work (including household waste) under the Contract shall be disposed of at the Council's dump.

The scheduled lump sum for "Contractor's Accommodation" will include full compensation for all ongoing costs of maintaining the contractor's accommodation (including provision of a contractor's camp where deemed necessary by the Contractor and any rental costs for the site) and will be deemed to cover all costs associated with maintaining the Contractor's workforce on site. The lump sum will be paid progressively throughout the duration of the Contract.

51.4 Disestablishment

The Contractor shall arrange for and provide such transport of employees and plant away from site and shall reinstate any land used for the contractor's camp, accommodation, shelters and other facilities. All plant and equipment shall be removed from site and the site reinstated to pre-establishment condition or better.

The scheduled lump sum for "Disestablishment" shall include full compensation for all transport, disestablishment of accommodation, shelters and facilities, reinstatement of land used and for all other costs incurred in the Contractor fully disestablishing from site. The schedule lump sum for "Disestablishment" shall not be paid until the Superintendent is satisfied that the Contractor has returned the project site to pre-establishment condition.

52.0 ENVIRONMENTAL MANAGEMENT

52.1 General

The Contractor shall meet the Statutory Requirements of all relevant legislation including:

- a. The Environmental Protection Act 1994
- b. The Environmental Protection Regulation
- c. The Environmental Protection Policy for Water
- d. The Environmental Protection Policy for Air
- e. The Environmental Protection Policy for Noise
- f. The Environmental Protection Policy for Waste Management
- g. Coastal Protection and Management Act
- h. The Environmental Protection Regulation for Interim Waste
- i. Guidelines of the Department of Environment and Heritage Protection (DEHP)
- j. Authorised persons of the Department of Environment and Resource Management (DERM).

The Contractor shall be responsible for the protection of the environment, to minimise the risk of environmental harm, and the management of environmental impacts during the Contractor's possession of the Site and carrying out of the work under the Contract.

The Contractor shall be required to undertake the works in accordance with the relevant project environmental approvals bound into the Tender Document in Volume 2.

52.2 Environmental Management Plan

The Contractor shall submit a Contractor's Environmental Management Plan (EMP) to the Superintendent for review and shall gain approval prior to work commencing on the site. The Contractor shall adjust his EMP in accordance with the Superintendent's review comments, until the EMP is satisfactory.

The EMP shall include as a minimum:

- a. A description of the project and existing environment.
- b. The Contractor's environmental policy and the objectives to be attained.
- c. A listing of applicable licences and their conditions.
- d. A statement of the role and responsibilities of supervisory personnel, with particular reference to responsibility for dealing with environmental incidents.
- e. The process for dealing with incidents, including clean-up and mitigations.
- f. Procedures for training and awareness of all site personnel.
- g. Construction procedures to minimise the risk of environmental harm.
- h. A management plan for each environmental element.
- i. A monitoring program. The monitoring program shall identify each issue, the action and parameter to be monitored and the frequency of monitoring, and the reporting mechanism for monitoring results.
- j. Erosion control of work site during and after construction.
- k. Revegetation of site after pipeline construction, including grass and plant types, application method (e.g., turfing, hydromulch, seagrass etc) and watering methods and schedule.
- l. Drainage and sediment and erosion control.
- m. Weed and pest invasion.

- n. Storage and handling of chemicals.
- o. Soil contamination.
- p. Noise, dust and air quality.
- q. Flora and fauna.
- r. Cultural and heritage.
- s. Bank stabilisation.
- t. Waste management.
- u. Storage and handling of fuels, including dealing with fuel spills.

The Scheduled Lump Sum for “Environmental Management Plan” shall include full compensation for preparation of an approved Environmental Management Plan, for any and all environmental protection measures, all site management issues, testing, monitoring, investigations, reporting and all other costs incurred in executing and completing the works in accordance with the Contract.

52.3 Provision for environment

The Contractor shall undertake works in accordance with the requirements of the approved EMP (including but not limited to erosion and sediment control). Costs involved with implementing the sediment and erosion control plan shall be excluded from this clause.

The scheduled Lump Sum for “Provision for Environment” shall include full compensation for implementation of an approved Environmental Management Plan (excluding sediment and erosion control), for any and all environmental protection measures, all site management issues, testing, monitoring, investigations, reporting and all other costs incurred in executing and completing the works in accordance with the Contract.

53.0 ROAD SEAL

53.1.1 General

Reference should be made to FNQROC Development Manual Operational Works Specification S2 Road Pavements Clause S2.18.

The bituminous road seal to be installed under the Contract includes the following:

- a. First Coat Seal:
 - i. Bitumen Class C170
 - ii. Spray Rate 1.5 L/m²
 - iii. Aggregate size 14 mm (precoated)
 - iv. Spread Rate 1 m³/115m².
- b. Second Coat Seal:
 - i. Bitumen Class C170
 - ii. Spray Rate 0.75 L/m²
 - iii. Aggregate size 7 mm (precoated)
 - iv. Spread Rate 1 m³/270m².

Spray rates and aggregate spread rates are indicative only for the purpose of pricing the works. The Contractor must confirm the actual binder application rates and aggregate spread rates prior to commencement of sealing works.

The extent of the Bitumen Seal is to all areas of pavement noted on drawings as ‘Pavement Works’.

The Contractor shall confirm binder and aggregate application rates, based on:

- a. Aggregate ALDs and flakiness test results for the aggregates to be used in sealing works and ball penetration test.
- b. Site specific conditions (soundness of finished pavement surface, aggregate embedment potential etc).

Notwithstanding the confirmation of spray rates and spread rates, the Contractor or their sealing subcontractor shall also confirm spray and spread rates on site by way of small trial sections prior to full-scale commencement of sealing works.

Prior to mobilisation of the Contractor's bitumen crew to site, the Contractor shall arrange an inspection of the pavement to be sealed and confirm that it is acceptable for the proposed works. This represents a hold point in the Contractor's program which will be released by the Superintendent once the Contractor provides notification that it is suitable to proceed.

The lump sum for "Road Seal" shall include: brooming of the trimmed pavement surface prior to application of the seal, supply, delivery, stockpiling and spreading of cover aggregate, preparation of the surface prior to spraying, supply and transportation of binder and additives, where stated, loading materials into the sprayer, incorporating, mixing and heating materials as necessary, spraying of bitumen, unloading materials from the sprayer, if necessary, cleaning roadside items and for all other costs incurred in executing and completing the works in accordance with the Contract.

STANDARD SPECIFICATION

Technical Specification

**Transport and Main Roads Specifications
MRTS11 Sprayed Bituminous Treatments (Excluding
Emulsion)**

July 2019

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Contents

1	Introduction	1
2	Definition of terms	1
3	Referenced documents	4
4	Standard test methods	5
5	Quality system requirements	5
5.1	Hold Points, Witness Points and Milestones	5
5.2	Construction procedures.....	6
5.3	Conformance requirements	7
6	Seal design	7
6.1	General	7
6.1.1	Scope	7
6.1.2	Use of an alternative binder class	8
6.1.3	Seal Designer and Seal Designer's delegate.....	9
6.2	Seal design by the Principal	10
6.3	Seal design by the Contractor	11
6.3.1	Seal design inputs	11
6.3.2	Seal design report	11
7	Materials	12
7.1	Specifications.....	12
7.2	Supply of material	13
7.3	Transport of material.....	13
8	Care of materials.....	13
8.1	Bitumen cutter oil	13
8.2	Cover aggregate	13
8.3	Bituminous materials	13
8.3.1	Delivery (storage and transport).....	13
8.3.2	Heating	14
8.3.3	Incorporation of additives	14
9	Plant	14
10	Preparation prior to spraying	15
10.1	Surface preparation	15
10.1.1	General.....	15
10.1.2	Initial treatments	15
10.1.3	Secondary treatments and retreatments	16
10.1.4	Disposal of foreign and/or loose material	16
10.2	Protection of road furniture and roadside facilities	16
10.3	Limit of work and setting out	16
10.4	Programming spray operations.....	16
11	Restrictions to spraying.....	16
11.1	Availability of cover aggregate.....	16
11.2	Pavement surface temperature	17

11.3 Weather conditions	17
11.4 Minimum period between bituminous treatments	19
12 Spraying.....	20
12.1 General	20
12.2 Method of application.....	20
12.3 Joints between spray runs	20
12.4 Spraybar nozzles	20
12.5 Spraying temperature	21
12.6 Faults during spraying	21
12.7 Cutting back binder.....	21
12.8 Spray rate	23
12.9 Quantities retained in sprayer tank.....	23
12.10 Tolerances	23
13 Spreading prime cover material	23
13.1 General	23
13.2 Spread rate	23
13.3 Time limit.....	24
13.4 Spreading.....	24
13.5 Removal of excess cover material.....	24
14 Spreading cover aggregate	24
14.1 General	24
14.2 Spread rate	24
14.3 Time limit.....	24
14.4 Spreading.....	25
14.5 Rolling	25
14.5.1 General.....	25
14.5.2 Minimum number of rollers.....	26
14.5.3 Rolling speed.....	26
14.5.4 Roller coverage	26
14.5.5 Number of roller passes	26
14.6 Removal of loose aggregate after rolling.....	27
14.7 Protection of fresh seals from traffic	28
14.8 Early trafficking minimum requirements	28
15 Geotextile reinforced seals.....	28
16 Measurement and recording.....	28
17 Construction compliance.....	30
17.1 General	30
17.2 Surface texture.....	31
18 Supplementary requirements	31

1 Introduction

This Technical Specification applies to the application of sprayed bituminous treatments, but excludes the use of bituminous emulsions. It covers the treatment types listed in Table 1.

Table 1 – Treatment types

Treatment Type	Treatment Label
Initial Treatments	
Prime	P
Initial Single/Single Seal	I-S/S
Initial Double/Double Seal	I-D/D
Secondary Treatments and Retreatments	
Single/Single Seal	S/S
Double/Double Seal	D/D
High Stress Single/Single Seal for medium traffic loadings	HSS1-M
High Stress Single/Single Seal for heavy traffic loadings	HSS1-H
High Stress Double/Double Seal for medium traffic loadings	HSS2-M
High Stress Double/Double Seal for heavy traffic loadings	HSS2-H
Extreme Stress Double/Double Seal	XSS
Strain Alleviating Membrane for slow moving cracks	SAM-S
Strain Alleviating Membrane for rapid moving cracks	SAM-R
Strain Alleviating Membrane Interlayer	SAMI
Waterproofing Seal under asphalt ¹	WP-A
Geotextile Reinforced Seal with a Single/Single Seal	GRS-S/S
Geotextile Reinforced Seal with a Double/Double Seal	GRS-D/D
Surface Enrichment	SE
Scatter Coat	SC

Note

¹ The WP-A treatment type is typically used to waterproof the underlying pavement when an open graded or stone mastic asphalt surfacing is used. It may also be used to waterproof pavements that contain a lightly bound base. For unbound pavements with an asphalt surfacing, a S/S treatment is typically used to waterproof the pavement prior to placement of the asphalt surfacing.

This Technical Specification shall be read in conjunction with MRTS01 *Introduction to Technical Specifications*, MRTS50 *Specific Quality System Requirements* and other Technical Specifications as appropriate. This Technical Specification forms part of the Transport and Main Roads Specifications Manual.

2 Definition of terms

The terms used in this Technical Specification shall be as defined in Clause 2 of MRTS01 *Introduction to Technical Specifications*. Further definitions are as defined in Table 2.

Table 2 – Definition of terms

Term	Definition
AAPA	Australian Asphalt Pavement Association
Actual Spray Rate	The spray rate of bituminous material actually achieved during the surfacing operation
Actual Spread Rate	The spread rate of cover aggregate or prime cover material actually achieved during the surfacing operation
Additive	Cutter oil, flux oil and/or adhesion agent
Adjusted Designed Spray Rate	The spray rate of bituminous binder as adjusted by the Seal Designer's Delegate in accordance with Clause 6
Adjusted Designed Spread Rate	The aggregate spread rate as adjusted by the Seal Designer's Delegate in accordance with Clause 6
Binder	Bitumen, cutback bitumen and/or polymer modified binder
Bituminous material	Bitumen, cutback bitumen, bitumen with cutter oil and/or flux oil and/or adhesion agent, and polymer modified binder (which includes crumb rubber modified binder)
Cover aggregate	Aggregate complying with the requirements of MRTS22 Supply of Cover Aggregate, and which forms a permanent wearing surface on a pavement
Cutting back bitumen	The temporary reduction of binder viscosity by the addition of cutter oil
Crumb Rubber Modified Binder	Bitumen blended with crumb rubber. The bitumen is generally C170 and the crumb rubber is generally obtained from the shredding and grinding of scrap rubber from vehicle tyres.
Designed Spray Rate	The spray rate of bituminous binder as calculated by the Seal Designer in accordance with Clause 6
Designed Spread Rate	The aggregate spread rate as calculated by the Seal Designer in accordance with Clause 6
Double/double seal	Two applications of binder, each followed by an application of aggregate
Estimated Spray Rate	The estimated spray rate of bituminous binder stated in Clause 2 of Annexure MRTS11.1. It is not to be used as an actual designed spray rate.
Estimated Spread Rate	The estimated spread rate for cover aggregate or prime cover material stated in Clause 2 of Annexure MRTS11.1. It is not to be used as an actual designed spread rate.
Geotextile reinforced seal (GRS)	An application of a bituminous binder into which both aggregate and geotextile are incorporated to provide a durable wearing surface. A layer of binder is applied first, followed by a layer of geotextile fabric, then a single/single or double/double seal is applied.
Homogeneous section	<p>A continuous section of carriageway in one direction where:</p> <ul style="list-style-type: none"> the Adjusted Designed Spray Rate, when designed in accordance with the design procedure stated in Clause 6.1.1, does not vary by more than 0.2 L/m² in the longitudinal section, and the underlying surface type does not change within the longitudinal section. <p>For the purpose of testing for determining seal design inputs, the maximum size of each homogeneous section is one lot.</p>

Term	Definition
Initial seal	An application of a sprayed seal to a prepared base course, which has not been primed. It is intended to adhere to the base, whilst providing a temporary wearing course for traffic and consists of either a single/single seal, a single/single seal with a scatter coat or a double/double seal. Cutback bitumen binders (AMC4, AMC5, AMC6 or AMC7) or emulsion bitumen binders are typically used for initial seals.
Initial treatment	An application of a prime (prime coat) or initial seal to a prepared base course
Lot	A spray run or series of spray runs applied on any calendar day
Parts of additive	The number of parts by volume of additive to be added to 100 parts by volume of binder measured at 15°C
Pavement temperature	The temperature measured at the surface of the pavement to be sprayed
Prime	An application of a primer to a prepared base, with or without cover aggregate, to provide penetration of the surface, temporary waterproofing and to obtain a bond between the pavement and the subsequent seal or asphalt. It is a preliminary treatment to a more permanent bituminous treatment.
Reseal	A seal applied to an existing seal or asphalt surface
Retreatment	An application of a sprayed bituminous treatment on an existing bituminous surfacing
Roller Pass	One pass of both axles of a roller over a specific point in one direction
Scatter coat	A light application of small size aggregate to temporarily 'lock in' a larger size aggregate seal to reduce aggregate movement during rolling and initial trafficking
Seal	A thin layer of sprayed bituminous material into which aggregate is incorporated
Seal Designer	A competent, trained designer who shall complete the seal design and shall determine the Designed Spray Rate and the Designed Spread Rate. The Seal Designer shall have successfully attained the Australian Asphalt Pavement Association (AAPA) Statement of Successful Completion of Written Assignment (or equivalent) for the course titled Sprayed Sealing Selection and Design.
Seal Designer's Delegate	<p>A competent, trained nominee of the seal designer who may modify, on behalf of the Seal Designer, the Designed Spray Rate and/or the Designed Spread Rate as follows:</p> <ul style="list-style-type: none"> • determine the Adjusted Designed Spray Rate • determine the Adjusted Designed Spread Rate, and • determine the parts of cutter oil to add prior to spraying. <p>The Seal Designer's Delegate shall have successfully attained the Australian Asphalt Pavement Association (AAPA) <i>Certificate of Attendance</i> at the course titled Sprayed Sealing Selection and Design.</p>
Secondary treatment	An application of a sprayed bituminous treatment on an initial treatment
Single/single seal	One layer of binder covered with a single layer of aggregate
Spray run	The area of pavement selected for coverage with a bituminous material during one continuous operation of a sprayer

Term	Definition
Spray sheet	Contractor's Bituminous Material Spraying Record Sheet
Sprayed bituminous treatment	An initial treatment, surface enrichment, secondary treatment or retreatment
Strain Alleviating Membrane (SAM)	A sprayed bituminous treatment with a polymer modified binder which is used to delay the onset of reflection cracking on existing cracked surfaces or where the potential for cracking exists
Strain Alleviating Membrane Interlayer (SAMI)	A sprayed bituminous treatment with a polymer modified binder which is used as an interlayer between asphalt and the underlying pavement. A SAMI is used to delay the onset of reflection cracking on existing cracked surfaces or where the potential for cracking exists.

3 Referenced documents

References used in this Technical Specification include, but are not limited to the latest versions, listed in Table 3.

Table 3 – Referenced documents

Reference	Title
Advisory Note 7	<i>Guide to the Heating and Storing of Binders for Sprayed Sealing and Asphalt Manufacture, AAPA</i>
AP-G41	<i>Bituminous Materials Safety Guide</i>
AP-T236-13	<i>Update of Double/Double Design for Austroads Sprayed Seal Design Methods</i>
AP-T68-06	<i>Update of the Austroads Sprayed Seal Design Method</i>
AS 2008	<i>Bitumen for Pavements</i>
HSE Guide 5	<i>Guide to the Manufacture, Storage and Handling of Polymer Modified Binders and Multigrade Bitumens, AAPA</i>
MRTS02	<i>Provision for Traffic</i>
MRTS17	<i>Bitumen</i>
MRTS18	<i>Polymer Modified Binder (including Crumb Rubber)</i>
MRTS57	<i>Geotextiles for Paving Applications</i>
PWT14-10	<i>Sprayed Seal Cutting Practice, Austroads/AAPA</i>
PWT24-00	<i>Sprayed Sealing – Rolling of Cover Aggregate, Austroads/AAPA</i>
PWT27-13	<i>Sprayed Sealing – Cutting Back of Polymer Modified Binders, Austroads/AAPA</i>
PWT33-14	<i>Sprayed Sealing – Selection of Spraying Nozzles, Austroads/AAPA</i>
TN175	<i>Selection and Design of Sprayed Bituminous Treatments, Transport and Main Roads</i>
TN186	<i>Sealing in Cold Weather Conditions, Transport and Main Roads</i>

4 Standard test methods

The standard test methods given in Table 4 shall be used in this Technical Specification.

Further details of test numbers and test descriptions are given in Clause 4 of MRTS01 *Introduction to Technical Specifications*.

Table 4 – Standard test methods

Property to be Tested	Method No.
Average Least Dimension	AS 1141.20.3
Ball Penetration	AGPT/T251
Binder Stripping Value – Modified Plate	Q212B
Degree of Aggregate Precoating	Q216
Field spread rate of cover aggregate	Q711A
Flakiness Index	AS 1141.15
Loose aggregate on sprayed seals	Q720
Particle Size Distribution	AS 1141.11.1
Sampling of bitumen	AS 2008 Appendix B
Sampling of polymer modified binders	AGPT/T101
Texture Depth (Sand Patch)	AGPT/T250

5 Quality system requirements

5.1 Hold Points, Witness Points and Milestones

General requirements for Hold Points, Witness Points and Milestones are specified in Clause 5.2 of MRTS01 *Introduction to Technical Specifications*.

The Hold Points, Witness Points and Milestones applicable to this Technical Specification are summarised in Table 5.1.

Table 5.1 – Hold Points, Witness Points and Milestones

Clause	Hold Point	Witness Point	Milestone
5.2	1. Permission to use construction procedures		Construction procedures submitted to the Administrator
6.1.2			Notification of binder class substitution
6.2	2. Contractor notified of Principal's seal design		Contractor provides Administrator with Ball Penetration test results
6.3.2	3. Consideration of the Contractor's seal design		Contractor seal design report submitted to the Administrator
8.2		1. Care of cover aggregate	

Clause	Hold Point	Witness Point	Milestone
8.3.1		2. Binder storage temperature measured and recorded at delivery to site	
8.3.2		3. Heating of bituminous materials	
9	4. Plant to be used		
10.1.2	5. Excessive Ball Penetration test results		
11.1	6. Cover aggregate availability		
11.2		4. Pavement temperature above minimum specified	
11.3	7. Permission to implement additional measures to reduce the risk of early life stripping when sealing in cold weather		
12.4		5. Current Queensland Sprayer Certificate to be sighted	
12.7		6. Nomination and recording of cutting requirements	
14.1		7. Loading of cover aggregate into aggregate spreader	
14.8	8. Loose aggregate/signage requirements prior to opening to traffic		

5.2 Construction procedures

The Contractor shall prepare documented procedures for all required processes as defined in Clause 5 of MRTS50 *Specific Quality System Requirements*. These shall include, but are not limited to, procedures for handling, storage, transport, heating and transfer of binder in accordance with the requirements of Clause 8 of MRTS17 *Bitumen* or Clauses 5.2 and 8 of MRTS18 *Polymer Modified Binder (including Crumb Rubber)* and this Technical Specification as appropriate.

The Contractor shall establish an Inspection and Test Plan (ITP) for supply and delivery of binder. The Inspection and Test Plan shall address at least:

- a) traceability
- b) conformance of binder supplied to the Site, and
- c) sampling and testing at the Site.

The Contractor shall submit the documented procedures and the ITP to the Administrator not less than seven days prior to their proposed use. **Milestone**

Documented procedures and the ITP shall not be implemented until permission to use has been granted by the Administrator. **Hold Point 1**

5.3 Conformance requirements

The conformance requirements which apply to lots of work covered by this Technical Specification are detailed in Clauses 7.2, 8, 10, 11, 12, 13 and 14. Materials shall conform to the requirements of Table 7.1. The conformance records for all lots of work shall be compiled on a spraying record sheet as specified in Clause 16.

6 Seal design

6.1 General

6.1.1 Scope

Sprayed bituminous treatments shall be designed in accordance with the requirements of the department's Technical Note TN175 *Selection and Design of Sprayed Bituminous Treatments* and any additional requirements stated in Clause 3.1 and Clause 3.2 of Annexure MRTS11.1.

Unless otherwise stated in Clause 1 of Annexure MRTS11.1, the seal design will be carried out by the Principal.

The specific treatments for work under this Contract shall be as set out in Clause 2 of Annexure MRTS11.1 and the Drawings. Acceptable binder classes that may be used for each treatment type are defined in Table 6.1.1.

Table 6.1.1 – Acceptable binder classes for initial treatments, secondary treatments and retreatments

Treatment Type	Technical Specification	Acceptable Binder Class
Initial Treatments		
Prime	MRTS20	AMC00, AMC0 or AMC1 <small>Note 1</small>
I-S/S or I-D/D	MRTS20, MRTS17	AMC4, AMC5, AMC6, AMC7 or C170 <small>Note 2</small>
Secondary Treatments and Retreatments		
S/S or D/D	MRTS17	C170, C320 or M500 <small>Note 3</small>
HSS1-M	MRTS18	S10E, S35E, S45R or S15RF
HSS1-H	MRTS18	S15E, S45R or S15RF
HSS2-M	MRTS18	S10E, S35E, S45R or S15RF
HSS2-H	MRTS18	S15E, S45R or S15RF
XSS	MRTS18	S20E, S45R, S15RF
SAM-S	MRTS18	S10E, S35E, S45R or S15RF
SAM-R	MRTS18	S15E, S45R or S15RF
SAMI	MRTS18	S25E or S18RF
WP-A	MRTS18	S20E, S25E, S45R, S15RF or S18RF

Treatment Type	Technical Specification	Acceptable Binder Class
GRS-S/S or GRS-D/D	MRTS17	C170, C320 or M500 ^{Note 3}
SE	MRTS20	AMC4

^{Note 1} Where no indication is given in Clause 2 of Annexure MRTS11.1 or on the Drawings, AMC0 shall be used.

^{Note 2} Where no indication is given in Clause 2 of Annexure MRTS11.1 or on the Drawings, AMC6 shall be used.

^{Note 3} Where no indication is given in Clause 2 of Annexure MRTS11.1 or on the Drawings, C170 shall be used.

For all treatments to be incorporated into the Works, the treatment type, binder class, cover aggregate nominal size(s) and estimated application rates are specified in Clause 2 of Annexure MRTS11.1.

6.1.2 Use of an alternative binder class

Where a particular polymer modified binder class has been specified for a sprayed bituminous treatment, the Contractor may use an equivalent alternative binder class provided:

- it complies with the requirements of Table 6.1.2(a)
- the sprayed bituminous treatment conforms with all the requirements of this Technical Specification (including uniformity of binder application and limits for cutter oil content)
- its use does not impact on the construction program, and
- its use does not increase the cost of the sprayed bituminous treatment.

The equivalent alternative binder classes listed in Table 6.1.2(a) can be used as an alternative to the binder class specified without the need for Administrator approval for the following reasons:

- they will provide equivalent long term performance as the binder class specified, and
- they can be applied at the same spray rate as the binder class specified as the same 'polymer factor' is used for the seal design.

Table 6.1.2(a) – Acceptable alternative binder classes

Treatment Type	Binder Class Specified	Equivalent Alternative Binder Class
HSS1-M, HSS2-M, SAM-S	S10E	S35E
	S45R	S15RF
	S15RF	S45R
HSS1-H, HSS2-H, SAM-R	S45R	S15RF
	S15RF	S45R
XSS	S20E	S45R or S15RF
	S45R	S20E or S15RF
	S15RF	S20E or S45R
SAMI	S25E	S18RF
	S18RF	S25E

Treatment Type	Binder Class Specified	Equivalent Alternative Binder Class
WP-A	S20E	S45R or S15RF
	S45R	S20E or S15RF
	S15RF	S20E or S45R
	S25E	S18RF
	S18RF	S25E

The Contractor shall notify the Administrator of the binder class substitution not less than 14 days prior to the commencement of spraying. **Milestone**

Approval to use alternative polymer modified binder classes not listed in Table 6.1.2(a)

The alternative binder classes listed in Table 6.1.2(b) are typically considered to be acceptable alternatives to the binder class specified. However, as the use of these alternative binder classes will result in a change to the binder application rate, such a change would constitute a variation to the contract and Administrator approval is required prior to use.

The Administrator would typically use the following criteria to evaluate these proposals:

- compliance with Clause 6.1.2 requirements,
- no increase in the cost of the treatment (\$/m²), and
- no increase in the unit rate for the binder (\$/L).

The Administrator should refer to the department's Technical Note TN175 for appropriate 'polymer factors' when evaluating the cost implications of these proposals.

Table 6.1.2(b) – Acceptable alternative binder classes requiring the Administrator's approval prior to use

Treatment Type	Binder Class Specified	Acceptable Alternative Binder Class
HSS1-M, HSS2-M, SAM-S	S10E	S45R or S15RF
	S35E	S45R or S15RF
	S45R	S35E
	S15RF	S35E
HSS1-H, HSS2-H, SAM-R	S15E	S45R or S15RF
	S45R	S15E
	S15RF	S15E

6.1.3 Seal Designer and Seal Designer's delegate

The seal design shall be undertaken by the Seal Designer. Prior to undertaking any seal design, the Seal Designer shall inspect each site in order to identify site-specific conditions for inclusion in the design.

The Seal Designer's delegate shall have facilities to be in communication with the Seal Designer at all times and shall be supervised by the Seal Designer.

The Seal Designer or the Seal Designer's delegate shall be on site during spraying to check designed rates. They shall adjust the Designed Spray Rate and Designed Spread Rate where this is required for the existing field conditions including, but not limited to, adjustments for test results from the ball penetration tests. These adjusted rates shall be called the Adjusted Designed Spray Rate and the Adjusted Designed Spread Rate.

6.2 Seal design by the Principal

Where the Principal is nominated to undertake the seal design, unless otherwise stated in Clause 3.1 of Annexure MRTS11.1, testing shall be undertaken by the Contractor at the test locations and minimum test frequencies detailed in Table 6.2 for the following properties:

- a) Particle Size Distribution, Flakiness Index and Average Least Dimension of the cover aggregate (where cover aggregate is supplied by the Contractor)
- b) Texture Depth (Sand Patch), and
- c) Ball Penetration.

Test results for the cover aggregate and texture depth shall be submitted to the Administrator with sufficient lead time to allow a period of seven days following submission of the test results for the Principal to carry out the seal design. **Milestone**

The Contractor shall test and report the Ball Penetration in accordance with the requirements of Table 6.2 and Clause 10.1.2. Ball Penetration test results shall be forwarded to the Administrator on the day of testing. **Milestone**

Spraying operations shall not commence until the Contractor has been notified by the Administrator of the Designed Spray Rate and Designed Spread Rate. **Hold Point 2**

Table 6.2 – Testing for determining seal design inputs

Property to be Tested	Test Location(s)	Minimum Test Frequency
Particle Size Distribution Flakiness Index Average Least Dimension (ALD)	The test samples shall be sourced from the stockpiles to be directly used for the works.	Test frequency shall be: <ul style="list-style-type: none"> 1 test for each aggregate type, nominal size and source, and repeat tests at every 1000 tonnes.
Texture Depth	In and between the wheelpaths – that is, 3 tests at each test chainage per direction	Test frequency shall be the lesser of: <ul style="list-style-type: none"> every 400 m, or 3 test chainages per homogeneous section where the test sites selected are representative of the homogeneous section.

Property to be Tested	Test Location(s)	Minimum Test Frequency
Ball Penetration	<p>In the inner and outer wheelpaths – that is, 2 tests at each test chainage per direction</p> <p>Testing is required only for:</p> <ul style="list-style-type: none"> pavements in accordance with Clause 10.1.2 primed or initial sealed surfaces, and asphalt or slurry surfacing less than 6 months old. 	<p>Test frequency shall be 5 test chainages per homogeneous section where the test sites selected are representative of the homogeneous section.</p> <p>Testing shall be completed between 24 to 48 hours prior to spraying.</p>

6.3 Seal design by the Contractor

6.3.1 Seal design inputs

Where the Contractor is nominated to undertake the seal design, the Contractor shall inspect each site and select inputs and associated design factors to be used in the seal design procedure. These inputs and factors shall be determined from:

- a) the traffic stated in Clause 3.2 of Annexure MRTS11.1
- b) project site conditions, and
- c) sampling and testing by the Contractor in accordance with the requirements of Table 6.2 noting that:
 - i. testing shall be sufficient to comply with the design procedure requirements, and
 - ii. aggregate samples shall be taken from the material that is to be used on the project.

As part of the seal design, the Contractor shall review the selections of treatment types, binder classes, and aggregate nominal sizes nominated in Clause 2 of Annexure MRTS11.1 and, prior to commencing the design, shall notify the Administrator if the Contractor does not agree with any of the selections.

Where the Principal intends to apply aggregate size combinations not recommended by Austroads Design Method 'AP-T68-06 - Update of the Austroads Sprayed Seal Design Method' and 'AP-T236-13 - Update of Double/Double Design for Austroads Sprayed Seal Design Methods' based on local experience (such as using 14/10 or 16/10 mm combinations of aggregates for D/D seal), the seal design then should be conducted by the Principal.

Surface Enrichment treatment should always be designed by the Principal.

6.3.2 Seal design report

The Contractor shall submit the seal design report to the Administrator at least seven days prior to the commencement of bituminous spraying operations. **Milestone**

The seal design report shall detail:

- a) separate seal designs for variations in any and each of:
 - i. test results for seal design inputs stated in Table 6.2
 - ii. binder class
 - iii. cover aggregate size and source
 - iv. homogeneity of sections of carriageway impacting on design in accordance with the design procedure, and
 - v. underlying pavement type on which sprayed bituminous surfacing is to be applied
- b) test results, assumptions, inputs, the design method and calculations that were used to determine the Designed Spray Rate and the Designed Spread Rate
- c) for each unique combination of treatment type, binder class, aggregate size and location, the following in a tabular form:
 - i. binder class, aggregate types, reference location, and
 - ii. Designed Spray Rate of bituminous material and the Designed Spread Rate of cover aggregate
- d) for seals involving multiple layers of binder and/or aggregate (e.g. double/double seals), the minimum and maximum period between bituminous treatments
- e) documentary evidence of the Seal Designer's successful attainment of the AAPA *Statement of Successful Completion of Written Assignment* (or equivalent) for the course titled *Sprayed Sealing Selection and Design*, and
- f) nomination of the Seal Designer's Delegate and documentary evidence of this delegate's successful attainment of AAPA's *Certificate of Attendance for the course titled Sprayed Sealing Selection and Design*.

The seal design report shall include a statement signed by the Seal Designer that the seal design complies with the seal design method for the test results, assumptions and inputs used.

The Administrator will have three days to consider the seal design report and spraying operations shall not commence prior to the Administrator releasing a hold point for this consideration. **Hold Point 3**

For each lot or homogeneous section, at the time before spraying commences, the Seal Designer's Delegate shall determine the adjustments to be made to arrive at the Adjusted Designed Spray Rates and any addition of additives including cutter and the Adjusted Designed Spread Rates. The Seal Designer's Delegate shall record these adjustments and modifications on the Contractor's spray sheet. If no adjustments or modifications are made to the designed rates, the spray sheet record shall record the non-adjusted rates accordingly. The Contractor shall certify with a signature that the Seal Designer's Delegate has approved the spray sheet record of the adjustments and modifications.

7 Materials

7.1 Specifications

Contractor-supplied materials shall comply with the requirements of the relevant Technical Specifications stated in Table 7.1.

Table 7.1 – Material Technical Specifications

Material	Specification
Bitumen and multigrade bitumen	MRTS17
Polymer modified binder (including crumb rubber)	MRTS18
Bitumen cutter oils and flux oils	MRTS19
Cutback bitumen	MRTS20
Adhesion agent	As specified in Clause 4.1 of Annexure MRTS11.1
Prime cover material and cover aggregate	MRTS22
Geotextiles for paving applications	MRTS57

7.2 Supply of material

The Principal will supply the materials stated in the Principal Supplied Material List (Form C7827). All other materials shall be supplied by the Contractor.

7.3 Transport of material

The responsibility for transport to the Site of materials supplied by the Principal will be as stated in the Principal Supplied Material List (Form C7827). Transport to the Site of all other materials shall be the responsibility of the Contractor.

8 Care of materials**8.1 Bitumen cutter oil**

Bitumen cutter oil shall be handled and stored in a way which prevents any ingress of water. Water detection paste shall be available at all times and used if water contamination of the cutter oil is suspected.

Bitumen cutter oil which is suspected as being water contaminated shall be investigated and, if found to be water contaminated, shall not be used.

8.2 Cover aggregate

Cover aggregate shall not be exposed to contaminating agents, particularly dust, and shall be handled so as to avoid contamination and any other deleterious effects. Unless otherwise stated in Clause 4.2 of Annexure MRTS11.1, cover aggregate shall be protected with a light plastic or similar material to prevent the ingress of moisture and other contaminants. The protective material shall be sufficiently anchored to ensure the optimal fixture that can be achieved consistent with the protective material properties. **Witness Point 1**

8.3 Bituminous materials**8.3.1 Delivery (storage and transport)**

Binder shall be delivered to the Works in accordance with Clause 8 of MRTS17 *Bitumen* or Clause 8 of MRTS18 *Polymer Modified Binder (including Crumb Rubber)* as appropriate.

The temperature at delivery to site shall be measured and recorded. **Witness Point 2**

8.3.2 Heating

The Contractor shall ensure that strict controls are applied to heating of bituminous materials in accordance with the requirement of Austroads AP-G41 *Bituminous Materials Safety Guide*, Section 7: Heating, and the Contractor's Safety Plan and Clause 8.3 of MRTS18 *Polymer Modified Binder (including Crumb Rubber)*.

Heating requirements shall be strictly observed. **Witness Point 3**

8.3.3 Incorporation of additives

Volatile additives, e.g. cutter and flux oils, shall not be heated and shall be introduced into the sprayer tank through the sprayer's pumping system. Volatile additives shall not be added to the top of hot bitumen.

Non-volatile additives, e.g. adhesion agent, shall be introduced into the sprayer tank through the sprayer's pumping system in accordance with any relevant standards and/or manufacturer's instructions.

Where additive is used:

- a) the additive shall be dissolved in hot binder, and
- b) the hot binder and additive shall be circulated, after the addition of the last component, at a rate of at least 1000 litres per minute for a period until the sprayer contents have been circulated twice.

Where adhesion agent is to be used, the binder shall then be sprayed as promptly as field circumstances allow and within three hours. If the binder and adhesion agent has not been sprayed within three hours, additional adhesion agent may be added to the remaining binder at a dosage concentration then equivalent to one third of the original adhesion agent dosage.

9 Plant

The Contractor shall have on the Site and in use as required the plant necessary for the performance of the particular operation. The respective minimum requirements for the plant listed in Table 9 shall apply. Additional minimum requirements for plant shall apply if such are specified in Clause 5 of Annexure MRTS11.1.

Not less than three days prior to sealing operations, the Contractor shall submit details of all plant to be used in the operations. **Hold Point 4**

Table 9 – Minimum requirements for plant

Plant Item	Minimum Requirements
Aggregate spreader	A mechanical spreader capable of accurately spreading a uniform layer of aggregate and, on the day of spreading, satisfactorily meets the requirements of the field spread rate of cover aggregate test (Q711A). Additional requirements are detailed in Clause 14.4.
Bitumen tank	A tank suitable for the storage and/or transport of bitumen
Road broom	A drawn rotary broom or self-propelled rotary broom suitable for sweeping or cleaning road surfaces. Where suitable, a vacuum system may be used.
Rubber-tyred roller	A dual axle, multi-wheeled roller with a minimum load of one tonne per tyre. Tyres shall be smooth and be able to operate at a pressure of at least 550 kPa.
Sprayer	A bitumen sprayer which has a current Queensland Sprayer Certificate issued by Department of Transport and Main Roads, Queensland. The spray bar width of the bitumen sprayer shall not operate beyond the width range for which the spray bar has been certified.
Field production of Crumb Rubber Modified Binder	For field produced crumb rubber modified binders, mobile plant consisting of a crumb rubber modified binder blending mill and agitated digestion and storage tanks

10 Preparation prior to spraying

10.1 Surface preparation

10.1.1 General

The surface to be prepared shall include the surface to be sprayed plus either an area which is a minimum of 250 mm beyond the surface to be sprayed, or one which extends to the edge of the formation, whichever is the lesser.

The preparation work shall be carried out in a manner which will promote the adhesion of the bituminous material to the surface of the pavement. Such preparation work shall include that set out in Clauses 10.1.2 to 10.1.4 inclusive.

10.1.2 Initial treatments

All foreign and loose material, including lenses of pavement material, shall be removed from the surface. The surface shall be swept with a road broom until the larger particles in the surface of the pavement are slightly exposed but ensuring excessive erosion of the surrounding finer material does not occur.

A light watering shall be carried out on dry or dusty surfaces just prior to spraying.

For initial seals on new granular, stabilised or lightly bound pavement layers, Ball Penetration testing shall be completed in accordance with the requirements of Table 6.2 on the following surfaces:

- a) after priming, or
- b) before application of an initial seal.

Where a Ball Penetration test result exceeds 3.0 mm, the surface shall not be sprayed unless otherwise approved by the Administrator. **Hold Point 5**

10.1.3 Secondary treatments and retreatments

All foreign and loose material shall be removed from the surface using a road broom.

On surfaces where a prime coat has been covered by a cover material, all loose cover material shall be removed without damage to the prime coat.

10.1.4 Disposal of foreign and/or loose material

All foreign and/or loose material shall be removed from the road formation and utilised/disposed of in accordance with the requirements of Clause 10 of MRTS01 *Introduction to Technical Specifications*.

10.2 Protection of road furniture and roadside facilities

The Contractor shall take all necessary precautions to prevent any bituminous or other material used on the work from entering or adhering to any road furniture or roadside facility.

If any bituminous material does adhere to any road furniture or roadside facility, the Contractor shall remove all such bituminous material so that the road furniture or roadside facility is left in an as-found condition.

Any damage or defacement shall be made good by the Contractor at no cost to the Principal immediately after surfacing work on a section has been completed.

10.3 Limit of work and setting out

The Contractor shall set out sufficient marks on the pavement surface to permit the spraying of bituminous material on the sections of pavement described in the Contract and in accordance with the requirements of this Technical Specification.

The Contractor shall set out the work so that longitudinal joints coincide with lane lines, unless shown otherwise in the Contract. Tapers may be sprayed separately.

The start and finish point of each spray run shall be marked.

Unless otherwise specified, the Works shall include all existing traffic lanes, sealed shoulders, pavement widenings (turn lanes), tapers, and bell mouths at intersecting roads.

10.4 Programming spray operations

The Contractor shall program the operations to ensure that:

- a) sufficient loaded aggregate trucks are ready to follow the sprayer to cover the spray run immediately (refer to Clause 14.3), and
- b) not less than the minimum specified rolling is achieved (refer to Clause 14.5).

Additional requirements, if any, relating to programming of spray operations are given in Clause 6.1 of Annexure MRTS11.1.

11 Restrictions to spraying

11.1 Availability of cover aggregate

Prior to commencement of bitumen spraying operations on any day, the Contractor shall provide the Administrator with evidence that sufficient uncontaminated, precoated cover aggregate of the relevant category, nominal size and specified properties is available for the extent of bitumen spraying work to be undertaken on that day. **Hold Point 6**

11.2 Pavement surface temperature

Spraying shall not commence until the temperature of the pavement surface is above the temperature given in Clause 6.2 of Annexure MRTS11.1 or, if not so given, the pavement surface temperature listed below for at least one hour before spraying commences:

- a) 10°C for primes
- b) 15°C for initial seals containing cutback bitumen (i.e. AMC4 to AMC7), or
- c) 20°C for treatments containing bitumen (i.e. Class 170 and 320 bitumen), multigrade bitumen (i.e. M500 bitumen) and crumb rubber binders (i.e. S45R, S15RF and S18RF binder classes), and
- d) 25°C for treatments containing polymer modified binders (other than crumb rubber binders) (i.e. S10E, S15E, S20E, S25E and S35E binder classes), unless the Administrator has given written permission to relax the temperature to a minimum of 20°C. **Witness Point 4**

Spraying shall not continue unless all operations up to the completion of the minimum rolling, as specified in Clause 14.5, can be completed before the temperature of the pavement surface drops below the temperature given in Clause 6.2 of Annexure MRTS11.1 or, if not so given, the minimum temperatures listed in this clause.

These minimum pavement surface temperature limits do not apply to WP-A and SAMI treatments that are:

- a) placed over an existing seal or asphalt, and
- b) overlaid with asphalt prior to trafficking.

The minimum pavement temperatures given in Clause 11.2 represent good practice.

In some situations, the project designer may limit the maximum amount of cutter to be used for long term performance reasons. In these situations, consideration should be given to increasing the minimum pavement temperature limits for spraying in Clause 6.2 of Annexure MRTS11.1 using Austroads/AAPA PWT14-10 – *Sprayed Seal Cutting Practice* and Austroads/AAPA PWT27-13 – *Sprayed Sealing – Cutting Back of Polymer Modified Binders* as guidance.

11.3 Weather conditions

Generally, sprayed bituminous treatments should be programmed for construction during favourable (i.e. warm and dry) conditions. Technical Note 186 *Sealing in Cold Weather Conditions* provides guidance on the time of year when sprayed sealing works should be programmed to minimise the risk of stripping (early failure by loss of aggregate) due to cold weather early in the life of a sprayed bituminous treatment.

Spraying shall not take place during rain or if rain is likely to fall prior to the spreading of cover aggregate and the completion of rolling.

The Contractor shall stop sealing immediately if rainfall occurs during sealing operations. Any seal sprayed during rainfall or on a wet surface shall be rejected.

Spraying shall not take place during winds of greater than 30 km/hr or during dust storms.

Clause 6.3 of Annexure MRTS11.1 nominates the time of year when the application of sprayed bituminous treatments, that will be trafficked by the public at speeds greater than 40 km/h, is either:

- a) not permitted, or
- b) requires the implementation of additional measures as nominated in Clause 6.3 of Annexure MRTS11.1 to minimise the risk of early life stripping. The risk mitigation measures nominated in Clause 6.3 of Annexure MRTS11.1 are minimum requirements and the Contractor may choose to implement additional measures to manage risks associated with sealing during cold weather conditions.

The months of the year when application of sprayed bituminous treatments is not permitted and the months of the year when additional measures must be implemented to minimise the risk of stripping due to cold weather should be determined for each project location in accordance with Technical Note 186 *Sealing in Cold Weather Conditions*. Relying on the default requirements in Clause 11.3 is not recommended.

Where no indication is given in Clause 6.3 of Annexure MRTS11.1, the following shall apply for sprayed bituminous treatments (other than initial seals) that will be trafficked at speeds greater than 40 km/h by the public:

- a) spraying is not permitted during the months of June to August (inclusive), and
- b) requires the implementation of additional measures during the months of May and September to minimise the risk of early life stripping.

Where the implementation of additional measures is required to minimise the risk of early life stripping, the contractor must submit their procedures to the Administrator for review not less than 14 days prior to the commencement of spraying.

Spraying shall not commence until these procedures have been deemed suitable by the Administrator.

Hold Point 7

Technical Note 186 *Sealing in Cold Weather Conditions* provides guidance regarding possible risk mitigation measures when sealing during cold weather conditions.

Where sealing is to occur during the time of year when the “Sealing Risk Level” is Level 2, the Administrator must review the additional measures to be implemented by the Contractor to reduce the risk of early life stripping.

Where sealing is to occur during the time of year when the “Sealing Risk Level” is Level 3 (i.e. the highest risk level) in accordance with Technical Note 186 *Sealing in Cold Weather Conditions*, the Administrator must obtain approval from the District Director prior to the commencement of spraying. If approved by the District Director, appropriate risk mitigation measures, consistent with the requirements for “Sealing Risk Level 2”, must be implemented.

The relevant details of this procedure are to be documented by the Administrator in the “Project Details” and “Authority to Proceed” forms contained in Technical Note 186 *Sealing in Cold Weather Conditions*.

11.4 Minimum period between bituminous treatments

Unless otherwise stated in Clauses 6.4 and 6.5 of Annexure MRTS11.1, the minimum periods of time between bituminous treatments shall be:

- a) a prime shall not be covered with a secondary treatment and/or asphalt until both of the following conditions are satisfied:
 - i. the prime shall be completely dry and trafficable by light construction traffic (< 20 vehicles per day), and
 - ii. the prime has been placed for a minimum period of three days.

All traffic shall be kept off the primed surface unless prime cover material has been applied.
- b) between an initial seal, secondary treatment or retreatment containing > 2% by volume cutter oil and subsequent bituminous treatment (such as a secondary treatment, retreatment or asphalt) at the same location, the minimum period is:
 - i. three months in warm weather (minimum nightly temperatures > 10°C), and
 - ii. at least six months in cooler conditions (minimum nightly temperatures ≤ 10°C).

The minimum curing periods to be adopted should be based on local experience and must consider the environmental conditions and traffic loading during the curing period as well as the binder class/category, amount of cutter oil, and nominal size(s) of aggregate used. The default minimum periods between an initial seal and a secondary treatment typically results in adequate curing of the initial seal binder to avoid performance related issues associated with insufficient curing.

Adoption of shorter curing periods (than the default minimums) may require an adjustment (i.e. a reduction in the binder application rate) to the seal design based on local experience.

Insufficient curing may lead to bleeding of the overlying treatment during the next period of significant hot weather.

Delaying the application of a secondary treatment to an initial seal excessively may lead to deterioration of the initial seal by the action of traffic, particularly during periods of hot weather, where the initial seal is subject to heavy traffic and/or high shear stresses (such as intersections or sharp curves).

- c) prior to asphalt overlay, SAMI treatments shall not be left exposed for more than two days when subject to traffic other than construction vehicles. Where SAMI treatments are trafficked by only construction traffic, aggregate removed from the SAMI binder by construction traffic shall be replaced prior to asphalt overlay
- d) for single/single seals with a scatter coat, the scatter coat aggregate shall be applied on the same day, and
- e) for seals with multiple layers of binder and/or aggregate (e.g. double/double seals), the period shall not exceed one day.

12 Spraying

12.1 General

The Contractor shall spray the bituminous material in a uniform manner and in a way which promotes adhesion of the material to the pavement surface and to the cover aggregate, in accordance with Clauses 12.2 to 12.9 inclusive.

The sprayer shall maintain a constant road speed throughout the length of each sprayer run (except where permitted by an approved Construction Procedure for achieving a specified variable application rate).

12.2 Method of application

Bituminous materials shall be applied by a certified bitumen sprayer. Hand spraying is only permitted for areas where the bitumen sprayer cannot access.

12.3 Joints between spray runs

All joints, transverse and longitudinal, shall abut in a manner to ensure that the Adjusted Designed Spray Rate is applied uniformly across the joint.

Spraying on each spray run shall start on a protective strip of heavy paper, with a minimum mass of 120 g/m² and a minimum width of 500 mm. The paper shall be laid across the pavement surface for the full width of the spray run and shall be held securely in place.

The sprayer shall commence moving at a sufficient distance in advance of the protective strip to ensure that the road speed for correct application is attained prior to the commencement of spraying.

The spraying for each spray run shall terminate on a protective strip of paper as specified above.

After spraying, the protective strips of paper shall be removed ensuring no excess bituminous material is deposited on the pavement surface. The Contractor shall dispose of the strips of paper at the end of each day's operation in accordance with the waste management requirements of MRS51 *Environmental Management*.

12.4 Spraybar nozzles

The spraybar nozzles used shall be appropriate for each spray run and shall comply with the Queensland Sprayer Certificate for the sprayer. **Witness Point 5**

Any nozzles that are damaged or become unduly worn or defective shall be replaced by new nozzles of the same type and size. A sufficient number of nozzles for this purpose shall be available on site at all times.

The type and positioning of spray nozzles to be used on the spray bar of the sprayer shall be compatible with the nature of the binder to be sprayed and its application rate.

Austrroads/AAPA PWT33-14 – *Sprayed Sealing – Selection of Spraying Nozzles* provides guidance on the appropriate selection of nozzles for sprayed sealing.

Where either blockages or partial blockages of nozzle/s occur, spraying shall cease immediately. If the blockage is due to the condition of the binder being sprayed, the condition shall be rectified sufficiently to avoid future blockages.

12.5 Spraying temperature

The acceptable temperature range for spraying bituminous material is listed in Table 12.5. Spraying of bituminous material shall not occur below the relevant minimum temperature nor heated on site above the relevant maximum temperature in Table 12.5. However, when cutback bitumen is delivered to the Works above the maximum temperature indicated in Table 12.5, spraying is permitted within the temperature range of the minimum given in Table 12.5 and the delivered temperature provided no further heating occurs. Any binder delivered to site at a temperature above 200°C shall be rejected.

Table 12.5 – Spraying temperature range

Material	Grade	Spraying Temperature Range (°C)	
		Minimum	Maximum
Cutback bitumen	AMC00	Ambient	Ambient
	AMC0	35	55
	AMC1	60	80
	AMC2	75	100
	AMC3	95	115
	AMC4	110	135
	AMC5	120	150
	AMC6	135	160
	AMC7	150	175
Bitumen	Class 170	160	190
	Class 320	170	195
Multigrade bitumen	Class M500	175	200
Crumb rubber modified binder	S45R, S15RF and S18RF	190	200
Polymer modified binder (other than crumb rubber modified binder)	†	†	†

† Refer to AAPA Advisory Note 7 or manufacturer's recommendations.

12.6 Faults during spraying

Spraying shall cease immediately if any fault develops in the spraying equipment or operation and shall not recommence until the fault has been rectified.

12.7 Cutting back binder

The first application of binder in a geotextile reinforced seal or any secondary treatments or retreatments placed immediately below a layer of asphalt shall not be cut back unless otherwise specified in Clause 6.6 of Annexure MRTS11.1 or approved by the Administrator. Notwithstanding the requirements of Clause 6.6 of Annexure MRTS11.1, secondary treatments or retreatments placed immediately below asphalt shall not be cut by more than the addition of 2.0 parts of cutter by volume.

Assessment of pavement temperatures shall take into account the cooler condition inherent in shaded areas of pavement.

Where the road pavement and/or surface temperature is such that a temporary reduction in binder viscosity is necessary to enhance initial adhesion between the binder and the cover aggregate, cutter oil shall be added to the binder for initial seals, secondary treatments and retreatments. The amount of cutter oil to be used shall be determined by the Seal Designer's Delegate and be appropriate to:

- a) achieve a strong bond between the binder and the cover aggregate, and
- b) avoid stripping or flushing/bleeding of the seal or overlying asphalt during the first year of operation, or the defects liability period, whichever is the longer.

The binder must have a sufficiently low viscosity at the time of sealing to achieve adequate initial wetting of aggregate. Where the pavement and/or surface temperature is too low to achieve the necessary viscosity for the particular binder, cutting of the binder may be required to achieve this viscosity.

Austrroads/AAPA PWT14-10 – *Sprayed Seal Cutting Practice* and Austrroads/AAPA PWT27-13 – *Sprayed Sealing – Cutting Back of Polymer Modified Binders* provides guidance on appropriate cutter rates for bitumen and polymer modified binders for applications other than SAMI seals.

In addition to the guidance provided in these pavement work tips:

- For double/double seal applications, where the second application is applied with little or no trafficking between applications, the proportion of cutter oil in the first application should be reduced to:
 - 0 – 2 parts for bitumen and polymer modified binders (other than crumb rubber modified binders), and
 - 2 – 4 parts for crumb rubber modified binders.
- Consider reducing the recommended proportion of cutter oil given in PWT14-10 by up to 2 parts when pavement temperatures are rising (e.g. early morning and/or during abnormally cool days in warmer seasons).

Use of excessive cutter oil can lead to poor cohesive strength of the binder and flushing and/or bleeding of the treatment during subsequent warm/hot weather.

Use of insufficient cutter oil can lead to poor wetting of the aggregate and aggregate loss (stripping) during initial trafficking of the seal.

In addition, use of insufficient cutter oil in initial seals and/or poor pavement surface preparation can lead to poor bonding of the initial seal and the underlying pavement.

Incorporation of cutter oil into the binder shall be carried out in accordance with Clause 8.3.3. The cutter oil, without previously being heated, shall be sucked into the hot bitumen in the sprayer. Before spraying, after the addition of the last component, the Contractor shall circulate the full sprayer load of cutback bitumen at a rate of at least 1000 litres per minute for a period until the sprayer contents have been circulated twice.

Prior to each operation, the Seal Designer's Delegate shall nominate the cutter oil adjustments, which shall be recorded. **Witness Point 6**

12.8 Spray rate

For all applications other than primes, initial seals and surface enrichments using cutback bitumen, the Estimated Spray Rate, Designed Spray Rate, Adjusted Designed Spray Rate and Actual Spray Rate referred to in this Technical Specification shall be the quantities, at 15°C, of the bitumen or polymer modified binder as appropriate.

For primes, initial seals and surface enrichments using cutback bitumen, the Estimated Spray Rate, Designed Spray Rate, Adjusted Designed Spray Rate and Actual Spray Rate referred to in this Technical Specification shall be the quantity, at 15°C, of cutback bitumen.

Any spray rates given in Clause 2 of Annexure MRTS11.1 are Estimated Spray Rates.

The Actual Spray Rate shall be within $\pm 5\%$ of the Adjusted Designed Spray Rate defined in the nominated seal design as determined in accordance with Clause 6.

To comply with the above requirements, the Contractor shall make adjustments to the operation of the sprayer to account for the following:

- a) the increased volume of the material to be sprayed where the temperature of the material is higher than 15°C (Refer to Table 16(a)), and
- b) the increased volume of the material to be sprayed where there are other materials to be added to the binder for the relevant operation (e.g. cutter oil and/or adhesion agent in a sealing operation).

12.9 Quantities retained in sprayer tank

To ensure a uniform spray rate, each sprayer run shall be programmed so that the bituminous material retained in the tank at the completion of the spray run shall be the greater of 250 litres and the manufacturer's recommended minimum limit.

12.10 Tolerances

The sprayed binder edges shall not deviate from the specified edge by more than – 0 mm and + 150 mm.

13 Spreading prime cover material

13.1 General

The Contractor shall spread the prime cover material, where specified, so as to produce a complete and even distribution. Wet cover material containing free surface water shall not be used.

13.2 Spread rate

The spread rates stated in Clause 2 of Annexure MRTS11.1 are Estimated Spread Rates.

The Designed Spread Rate shall be that nominated in the seal design determined in accordance with Clause 6. The Designed Spread Rate may be adjusted by the Seal Designer's Delegate during the spreading operation to ensure a complete and even distribution. The adjusted rate shall then be the Adjusted Designed Spread Rate.

13.3 Time limit

To permit penetration of the prime, at least two hours shall elapse between priming and the application of the cover material unless traffic requirements dictate otherwise, and approval is granted by the Administrator.

13.4 Spreading

Bare or insufficiently covered areas shall be re-treated as soon as possible with a further light application or by hand spreading.

The Actual Spread Rate shall not vary outside the range of plus or minus 10% of the Adjusted Designed Spread Rate.

13.5 Removal of excess cover material

Unless otherwise stated in Clause 7.1 of Annexure MRTS11.1, all excess cover material shall be lightly swept and/or vacuumed from the pavement surface with a road broom and/or vacuum truck and completely removed from the road formation. All excess material shall be utilised/disposed of in accordance with the requirements of Clause 10 of MRTS01 *Introduction to Technical Specifications*.

14 Spreading cover aggregate

14.1 General

Wet cover aggregate containing free surface water shall not be loaded into the aggregate spreader.

Witness Point 7

The Administrator may order that wet aggregate be tested using the Binder Stripping Value – Modified Plate test (Q212B). Test results shall be reported to the Administrator.

During spreading and rolling, the Contractor shall ensure that the aggregate effectively adheres to the binder without breaking down or crushing the aggregate particles.

The Contractor shall spread the cover aggregate in a uniform manner, which after rolling and initial trafficking shall:

- a) produce a generally dense tight mat, and
- b) form a single layer on the pavement surface, the aggregate being partly interlocked.

14.2 Spread rate

The spread rates stated in Clause 2 of Annexure MRTS11.1 are Estimated Spread Rates. The Designed Spread Rate shall be that nominated in the seal design determined in accordance with Clause 6.

In order to achieve the requirements of Clause 14.4, the Seal Designer's Delegate may adjust the Designed Spread Rate during the spreading operation. This Adjusted Designed Spread Rate shall be recorded on the spray sheet.

14.3 Time limit

The spreading of cover aggregate shall commence as soon as possible after the spraying of the binder. Under no circumstances shall any portion of the binder be left without cover aggregate after spraying for longer than the following:

- a) ten minutes for treatments containing cutback bitumen, bitumen and multigrade bitumen binders, or
- b) five minutes for treatments containing polymer modified binders.

In the event that cover aggregate is not applied to any one spray run within this time limit, the Contractor shall demonstrate to the Administrator that arrangements have been made to prevent a recurrence of the nonconformance before bitumen spraying may continue. **Nonconformance**

14.4 Spreading

Spreading of cover aggregate shall be carried out with suitable mechanical aggregate spreaders. Minimum requirements for aggregate spreaders shall be as stated in Clause 7.2 of Annexure MRTS11.1. If no indication is given a Type A or Type B spreader, as defined in Clause 7.2 of Annexure MRTS11.1, shall be used.

On each day of spreading, each spreader shall be tested in accordance with the Field Spread Rate of Cover Aggregate test (Q711A) and shall comply with the spread rate tolerance requirements of this clause. The test frequency shall be one test per spreader per day.

Every attempt shall be made to achieve the required spread pattern on the first spreading pass. Bare or insufficiently covered areas shall be re-treated as soon as possible with a further light spreading run or by hand spreading. Over spreading or under spreading of the aggregate shall be avoided.

If there is an uneven distribution of cover aggregate, it shall be broomed until it is evenly distributed with minimum dislodgment of any embedded cover aggregate. Areas of under-spread aggregate shall be filled in immediately behind the normal spreading operation and these areas shall receive additional rolling.

Any initial under spreading shall be rectified by a further light spreading of aggregate and brooming until it is evenly distributed with minimum dislodgement of any embedded cover aggregate.

The amount of aggregate spread shall be calculated from either:

- a) the volume used as recorded on the spray sheets, or
- b) by using Test Method Q711A.

The Actual Spread Rate shall not vary outside the range of plus or minus 10% of the Adjusted Designed Spread Rate.

14.5 Rolling

14.5.1 General

Steel-wheeled or rubber coated steel wheel rollers shall not be used unless approved by the Administrator.

For treatments with multiple layers of binder and/or aggregate (e.g. double/double seals), the rolling shall comply with the requirements of this clause for each application of aggregate. Any damage to the first coat shall be repaired by the Contractor at no cost to the Principal prior to spraying the binder for the second and subsequent coats.

14.5.2 Minimum number of rollers

The minimum number of rubber-tyred rollers to be available and in use on the Site shall be the greater of:

- a) two, and
- b) the number required to complete the minimum amount of rolling required for the average coverage rate per hour as a continuous operation with successive spray runs in accordance with Clause 14.5.3 and Clause 14.5.4.

Additionally, for polymer modified binders, there shall be enough rollers to cover the full width of the spray run with one pass.

14.5.3 Rolling speed

The initial passes shall be done at a low speed (5 – 10 km/h) to achieve the aim of pressing the aggregate into the binder. After that, the rolling speed shall be increased to between 15 – 25 km/h to move and reorientate the aggregate particles to their correct position.

14.5.4 Roller coverage

For bitumen and multigrade binders, Table 14.5.4 specifies the maximum sprayed area (m²) that can be effectively rolled per hour, taking into account the effect of traffic and aggregate size.

For polymer modified binders the maximum sprayed area (m²) that can be effectively roller per hour shall be two thirds of the rate specified in Table 14.5.4, taking into account the effect of traffic and aggregate size.

Table 14.5.4 – Area that can be effectively rolled per hour with each self-propelled multi-wheeled roller for cutback bitumen, bitumen and multigrade bitumen binders

Aggregate Size (mm)	Traffic Volume (Vehicles per Lane per Day)		
	< 300	300 – 1200	> 1200
	Area - m ² per roller hour ¹		
7 or smaller	4000 – 4500	5000 – 5500	6000 – 6500
10	3000 – 3500	3500 – 4000	4500 – 5000
14	2500 – 3000	3000 – 3500	3500 – 4000

Note

¹ 'roller hours' is defined as the product of the number of specified rollers by hours of application.

Examples of the use of Table 14.5.4 can be found in Austroads/AAPA Pavement Work Tip No. 24.

14.5.5 Number of roller passes

After spreading, the cover aggregate shall be rolled as soon as practicable with multi-tyred rollers with a sufficient number of roller passes to ensure adhesion of the cover aggregate to the binder.

The minimum number of roller passes shall be as stated in Clause 7.3 of Annexure MRTS11.1, or if not so stated:

- a) Six passes for cutback bitumen, bitumen and multigrade bitumen binders, and
- b) Nine passes for polymer modified binders.

14.6 Removal of loose aggregate after rolling

Loose aggregate shall be lightly swept and/or vacuumed from the pavement surface without dislodgment of the embedded aggregate. A rotary broom is permitted to remove loose aggregate from the pavement surface. Loose aggregate shall not be removed until the aggregate is properly embedded into the binder by either trafficking or additional rolling.

Areas of aggregate that have been overspread (generally at joins, turnouts and overlaps) shall be broomed off on the same day with hand brooms or mechanical sweepers.

For seals of nominal size greater than or equal to 10 mm, the number of loose aggregate particles (in any square metre of pavement) after sweeping and before opening to traffic shall not exceed the values shown in Clause 7.4 of Annexure MRTS11.1. If values are not specified in Clause 7.4 of Annexure MRTS11.1, the values shown in Table 14.6 shall apply. The number of loose particles shall be determined in accordance with Test Method Q720 at locations that are representative of each homogeneous section and as agreed by the Administrator. Testing for loose aggregate particles is exempt from the requirement for NATA registration.

Table 14.6 – Maximum allowable loose aggregate particles by area prior to opening to traffic

Location	Maximum Allowable Loose Aggregate Particles
Urban area	20 particles/m ²
Other medium to high traffic (greater than or equal to 250 vehicles/lane/day)	30 particles/m ²
Other low traffic (less than 250 vehicles/lane/day)	40 particles/m ²

Loose aggregate in excess of the maximum allowable loose aggregate particle requirement shall be removed and transported from the job site as follows:

- a) from trafficked lanes and sealed shoulders within a time period that ensures compliance with the requirements of Clause 14.8 and MRTS02 *Provision for Traffic*
- b) from concrete channels, traffic islands, open drains, footpaths, nature strips or verges within 24 hours, and
- c) all other areas within five days.

Loose aggregate shall be utilised/disposed of in accordance with the requirements of Clause 10 of MRTS01 *Introduction to Technical Specifications*.

Any damage to the seal resulting from removal of loose aggregate shall be repaired by the Contractor at no cost to the Principal.

During the Defects Liability Period up to the issue of the Final Certificate, where the Contractor is the nominated Seal Designer, the Contractor is required, at no cost to the Principal, to ensure that the maximum allowable loose aggregate particles requirement given in Table 14.6 is met.

14.7 Protection of fresh seals from traffic

The Contractor shall take precautions to protect the work from damage until such time as the prime or seal (including initial seals, secondary treatments and retreatments) has developed sufficient strength to carry normal traffic without dislodgement of the cover aggregate or cover material, as applicable.

Special attention is required at intersections.

14.8 Early trafficking minimum requirements

Unless otherwise stated in Clause 8 of Annexure MRTS11.1, the Contractor shall complete the following early trafficking minimum requirements in order to address both loose stone considerations in accordance with Clause 14.6 and the protection of the fresh seal from traffic in accordance with the requirements of Clause 14.7:

- a) in areas where the posted speed limit is equal to or less than 60 km/h and which are opened to traffic prior to final sweeping, the Contractor shall install temporary 'loose stones' and 'slippery' warning signs and temporary 40 km/h speed signs until the maximum allowable loose aggregate requirements of Clause 14.6 are met
- b) in areas where the posted speed limit exceeds 60 km/h and which are opened to traffic prior to final sweeping, the Contractor shall install temporary 'loose stones' and 'slippery' warning signs and temporary speed signs not exceeding 60 km/h until the maximum allowable loose aggregate requirements of Clause 14.6 are met, and
- c) for a period of between 24 hours and 48 hours after the maximum allowable loose aggregate requirements of Clause 14.6 have been met, the temporary speed limit shall be not greater than 80 km/h and the posted speed limit, and the Contractor shall install signs accordingly.

For primes, traffic including construction traffic shall not be permitted on the surface where the traffic exceeds 50 v/l/d. Where the traffic is less than 50 v/l/d, traffic including construction traffic shall not be permitted on the surface:

- a) within 24 hours of spraying or until the prime has dried sufficiently so as not to be damaged by vehicles, and
- b) until prime cover material is applied.

All signage shall comply with the requirements of MRTS02 Provision for Traffic.

The requirements of Clause 14.8 are **Hold Point 8** and the road shall not be opened to traffic until the release of this Hold Point by the Administrator.

15 Geotextile reinforced seals

The geotextile used in a GRS shall be supplied and constructed in accordance with the requirements of MRTS57 *Geotextiles for Paving Applications*.

16 Measurement and recording

The volume of bituminous material sprayed of each run shall be determined by dipping the tank after each run and recording the volume of bituminous material in the tank to the nearest 50 L. The sprayer shall be dipped whilst parked on level ground. Sprayers with electronic process control and data recording may, with the approval of the Administrator, be exempt from this requirement.

For each spray run, the Contractor shall record all details of the sealing operations on an appropriate spray sheet, which shall include details of at least the following:

- a) Job Number
- b) The Queensland Sprayer Certificate number and its expiry date
- c) Date, start time and end time of the spray run
- d) Description of the weather throughout the spray run
- e) Name and signature of the Spray Seal Designer's Delegate determining the Adjusted Designed Spray Rate and Adjusted Designed Spread Rate
- f) Pavement temperature at the start and end of the spray run, and when there is significant change in temperature (record time/ temperature degrees Celsius)
- g) Gazettal chainages for start and finish of the spray run
- h) Area of the spray run (m²)
- i) Hot volume of binder prior to addition of cutter and additives (L)
- j) Binder type/s used on the spray run
- k) Additive (including adhesion agent and cutter) types used, if any
- l) Design cutter oil proportions (parts per 100 parts of binder) used, if any (refer Clause 12.7)
- m) Actual cutter oil proportions (parts per 100 parts of binder) used, if any
- n) Quantity of adhesion agent (parts per 100 parts of binder)) used, if any
- o) Temperature of mixture at start of the spray run
- p) Adjusted Designed Spray Rate/s and Actual Spray Rate/s for each run (at 15°C)
- q) Nominal aggregate size used for the spray run
- r) Quantity of aggregate spread for the spray run
- s) Adjusted Designed Spread Rate/s and Actual Spread Rate/s
- t) Number of and type of rollers used, and
- u) A statement of whether the spray rate complied with the tolerance requirements detailed in Clause 12.8, and whether the aggregate spread rate complied with the tolerance requirements detailed in Clause 13.4 and Clause 14.4.

The bituminous materials spraying record sheet shall be made available to the Administrator for verification, within one day of the sealing operations applicable to the run.

All records shall be such that the actual spray rate for each spray run shall be calculated at 15°C prior to the next spray run.

All volume conversions, in relation to changes in temperature of bituminous materials, shall be carried out in accordance with the relevant factors listed in Table 16(a) and Table 16(b).

Table 16(a) – Equivalent volumes at higher temperatures of 1 Litre of bituminous material measured at 15°C

Temp (°C)	Factor	Temp (°C)	Factor	Temp (°C)	Factor
15	1.0000	80	1.0420	145	1.0861
20	1.0031	85	1.0453	150	1.0897
25	1.0062	90	1.0487	155	1.0932
30	1.0094	95	1.0520	160	1.0967
35	1.0126	100	1.0553	165	1.1003
40	1.0158	105	1.0587	170	1.1038
45	1.0191	110	1.0620	175	1.1074
50	1.0223	115	1.0655	180	1.1109
55	1.0255	120	1.0689	185	1.1145
60	1.0288	125	1.0723	190	1.1180
65	1.0321	130	1.0757	195	1.1216
70	1.0354	135	1.0792	200	1.1252
75	1.0387	140	1.0827	205	1.1287

Table 16(b) – Equivalent volumes at 15°C of 1 Litre of bituminous material measured at higher temperatures

Temp (°C)	Factor	Temp (°C)	Factor	Temp (°C)	Factor
15	1.0000	80	0.9597	145	0.9207
20	0.9969	85	0.9566	150	0.9177
25	0.9938	90	0.9536	155	0.9148
30	0.9907	95	0.9506	160	0.9118
35	0.9876	100	0.9476	165	0.9089
40	0.9844	105	0.9446	170	0.9060
45	0.9813	110	0.9416	175	0.9031
50	0.9782	115	0.9385	180	0.9002
55	0.9751	120	0.9355	185	0.8973
60	0.9720	125	0.9326	190	0.8945
65	0.9689	130	0.9296	195	0.8916
70	0.9658	135	0.9266	200	0.8888
75	0.9627	140	0.9236	205	0.8860

17 Construction compliance

17.1 General

Material compliance shall be tested and checked in accordance with the requirements of the material technical specifications detailed in Table 7.1.

The process requirements shall be checked for compliance with the specified requirements during and after construction for each lot.

In the event of any fuel or oil leaks or spillages by the Contractor onto the newly sealed surface, or any other damage to the newly sealed surface, the Contractor shall reinstate the surface and the underlying base course to its pre-damage condition at no cost to the Principal.

The Contractor and Administrator shall jointly investigate and provide the Principal with a written report on the causes where any of the following occurs on more than 10% of any wheel path length of any run at any time to the end of the Defects Liability Period:

- a) stripping which is defined as areas where more than 10% cover aggregate has been lost from the seal's aggregate matrix
- b) flushing which is defined as where surface texture depth is < 0.5 mm when tested by AGPT/T250, and/or
- c) debonding which is defined as separation of the seal from the underlying layer.

17.2 Surface texture

Where the seal is the final surfacing or shall be opened to public traffic, surface texture shall be tested, recorded and reported to the Administrator as follows:

- a) surface texture shall be assessed by the Modified Surface Texture Depth (Pestle Method)
- b) testing shall be carried out:
 - i. at sections of through pavement that have a homogeneous visual appearance, and
 - ii. at each of the following locations:
 - pedestrian crossings, railway level crossings, roundabouts, intersections including the maximum 50 m approaches and departures to these
 - curves with radius ≤ 250 m
 - gradients $\geq 5\%$ and ≥ 50 m long
 - on/off ramps, including merge and diverge areas, and/or
 - merge and diverge areas of overtaking lanes and intersections
- c) Testing shall be completed after the loose aggregate requirements of Clause 14.6 are met.

All surface texture depths shall achieve the requirements stated in Clause 9 of Annexure MRTS11.1.

18 Supplementary requirements

The requirements of MRTS11 *Sprayed Bituminous Treatments (Excluding Emulsion)* are varied by the supplementary requirements given in Clause 10 of Annexure MRTS11.1.



FNQROC DEVELOPMENT MANUAL

OPERATIONAL WORKS

SPECIFICATION

S2

ROAD PAVEMENTS

Version No. 01/09

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TABLE OF CONTENTS

CLAUSE	CONTENTS	PAGE
GENERAL		1
S2.01	SCOPE.....	1
S2.02	REFERENCE DOCUMENTS.....	1
MATERIALS.....		2
S2.03	PAVEMENT MATERIAL	2
S2.04	ASPHALTIC CONCRETE SURFACING	2
S2.05	SPRAYED BITUMEN SURFACING	3
S2.06	CONCRETE INTERLOCKING PAVERS	3
S2.07	ROAD FURNITURE	3
S2.08	PAVEMENT MARKING.....	3
CONSTRUCTION.....		4
S2.09	INSPECTION, SAMPLING AND TESTING	4
S2.10	SETOUT.....	4
S2.11	CLEARING AND GRUBBING	4
S2.12	TOPSOIL OPERATIONS.....	4
S2.13	EARTHWORKS	4
S2.14	TRIM AND COMPACT SUBGRADE	4
S2.15	PAVEMENT COURSES.....	5
S2.16	FINAL TRIM	6
S2.17	ASPHALTIC CONCRETE SURFACING	6
S2.18	SPRAYED BITUMEN SURFACING	6
S2.19	CONCRETE SEGMENTAL PAVERS.....	7
S2.20	KERBING AND CHANNELLING.....	7
S2.21	SUBSOIL DRAINAGE.....	7
S2.22	TRIM VERGES AND BATTERS	8

TABLE OF CONTENTS

CLAUSE	CONTENTS	PAGE
S2.23	ROAD FURNITURE AND PAVEMENT MARKING	8

GENERAL

S2.01 SCOPE

1. This specification details all requirements pertaining to the construction of flexible road pavements, including kerbing, subsoil drainage and trimming of verges.
2. Where there is any conflict determined between the requirements specified herein and the requirements of any referenced Australian Standard, Statutory Authority Standards or otherwise, the requirements specified herein shall apply.

S2.02 REFERENCE DOCUMENTS

Note: Where Acts or reference documents are updated, reference should be made to the current version.

Australian Standards

- AS 1289 Methods of Testing Soils for Engineering Purposes
- AS 2439.1 Perforated Drainage Pipe and Associated Fittings
- AS 3706.7 Determination of Pore-size Distribution - Dry Sieving Method

All Australian Standards referenced in this specification shall be the current edition.

Queensland Department of Main Roads Standard Specifications

- MRS 11.03 Drainage, Retaining Structures and Protective Treatments
- MRS 11.04 General Earthworks
- MRS 11.05 Unbound Pavements
- MRS 11.11 Sprayed Bitumen Surfacing (Excluding Emulsions)
- MRS11.14 Road Furniture
- MRS 11.17 Bitumen
- MRS 11.19 Bitumen Cutter and Flux Oils
- MRS 11.20 Cutback Bitumen
- MRS 11.22 Supply of Cover Aggregate
- MRS 11.30 Dense Graded Asphalt Pavements
- MRS 11.45 Pavement Marking

Queensland Department of Main Roads Publication

- Manual of Uniform Traffic Control Devices

Australian Asphalt Pavement Association (Qld. Branch)

- Asphalt Specification for Subdivision Pavements -

MATERIALS

S2.03 PAVEMENT MATERIAL

1. Pavement materials used for pavement construction shall comply with Table S2.1 unless otherwise approved by the relevant authority.

Table S2.1 Pavement Materials

Pavement Material	Type of Material Permissible	Grading	CBR (Minimum)
Subgrade Replacement	Type 2.5	B,C or D	15
Access Places, Access Streets, Residential Streets and Minor Collector			
Sub-base	Type 2.3	B,C or D	45
Base	Type 2.2	B,C or D	60
For all roads of Major Collector or higher in the hierarchy			
Sub-Base	Type 2.2	B, C or D	60
Base	Type 2.1	B or C	80

2. All references to material type in the above table refer to the Main Roads Standard Specification MRS11.05 "Unbound Pavements".
3. All materials shall be sourced from a Quality Assured material supplier and the results of the manufacturer's testing to assure the quality of the product shall be incorporated with the Contractor's Quality records.

S2.04 ASPHALTIC CONCRETE SURFACING

1. For surfacing on pavements with depth 30mm, the material quality requirements, material quality compliance testing requirements and all other matters pertaining to Asphaltic Concrete road pavement surfacing shall conform to the requirements as specified in the "Asphalt Specification for Subdivision Pavements", published by the Australian Asphalt Pavement Association (Queensland Branch).
2. For surfacing on pavements with depths greater than 30mm, the material quality requirements, material quality compliance testing requirements and all other matters pertaining to Asphaltic Concrete road pavement surfacing shall conform to the appropriate Main Roads Standard Specification.
 - Main Roads Specification MRS 11.30 "Dense Graded Asphalt Pavements".

S2.05 SPRAYED BITUMEN SURFACING

1. For surfacing of pavements with sprayed bitumen. the material quality requirements, material quality compliance testing requirements and all other matters pertaining to hot bitumen road pavement surfacing shall conform to the appropriate Queensland Department of Main Roads Specification.
 - Main Roads Specification MRS 11.11 "Sprayed Bitumen Surfacing (Excluding Emulsions)"
 - Main Roads Specification MRS 11.17 " Bitumen"
 - Main Roads Specification MRS 11.19 " Bitumen Cutter and Flux Oils"
 - Main Roads Specification MRS 11.20 " Cutback Bitumen"
 - Main Roads Specification MRS 11.22 "Supply of Cover Aggregate" (Only Category A or B as specified, Table 7 – Particle Quality, will be accepted)

S2.06 CONCRETE INTERLOCKING PAVERS

1. Concrete interlocking pavers shall be manufactured and supplied in accordance with the requirements of Specification S3 SEGMENTAL PAVING

S2.07 ROAD FURNITURE

1. The manufacture, supply and material requirements appropriate to the specification for Road Signs and guidepost shall be as per the Main Roads Standard Specification "MRS11.14 Road Furniture".
2. All signs to be Class 1 reflectivity
3. Signs located in concrete islands or medians shall be supplied with the "V Loc" socket system and fitted with anti-theft bolts.

S2.08 PAVEMENT MARKING

1. The manufacture, supply and material requirements appropriate to the specification for Pavement Marking shall be as per the Main Roads Standard Specification "MRS11.45 Pavement Marking".

CONSTRUCTION

S2.09 INSPECTION, SAMPLING AND TESTING

1. Inspection, sampling and testing of the pavement shall be in accordance with the requirements of this specification before, during and after the construction of the pavement.
2. All testing shall be carried out by a NATA registered laboratory with appropriate accreditation and suitably qualified personnel.

S2.10 SETOUT

1. The construction setout for roadworks construction shall be by reference to a datum line established by a Registered Surveyor (Consulting). The datum line may be either the road centreline, a pegged chainage offset line or any alternative datum suitable for the purposes of accurately setting out the roadworks in accordance with the drawings for the works.

S2.11 CLEARING AND GRUBBING

1. All clearing and grubbing works shall be in accordance with the Specification for S1 EARTHWORKS.

S2.12 TOPSOIL OPERATIONS

1. All topsoil operations associated with roadworks construction (topsoil stripping, stockpiling and re-spreading), shall be in accordance with the Specification for S1 EARTHWORKS.

S2.13 EARTHWORKS

1. All earthworks operations up to subgrade level shall comply with the requirements detailed in Main Roads Standard Specification MRS11.04 "General Earthworks".

S2.14 TRIM AND COMPACT SUBGRADE

1. The subgrade material is defined as the top 300mm of earthworks profiled and compacted upon which pavement materials are to be placed. The subgrade material shall be compacted in accordance with the requirements detailed in Main Roads Standard Specification MRS11.04 "General Earthworks", with the testing frequency and requirements are detailed herein:
2. The subgrade material shall be compacted to provide a relative compaction determined by AS1289 for a standard compactive effort as follows:
 - Minimum Dry Density Ratio (Cohesive soils) - 97%
 - Minimum Density Index (Cohesion less soils) - 80%
3. Testing frequency not less than one (1) test per 1000m² with a minimum number of three (3) tests per sample area being tested.
4. At least one (1) sample area shall be tested for type of subgrade material evident on site.

5. The subgrade material shall not include any "Unsuitable Material" as defined in Main Roads Standard Specification MRS 11.04 "General Earthworks" and shall be trimmed to the profile required to conform with the Project Drawings and the tolerances specified herein.
6. Where unsuitable material is encountered in the subgrade, a suitable "Subgrade Replacement Material" in accordance with the requirements of this specification shall be incorporated in the works.
7. In this instance, the unsuitable material shall be excavated to a level sufficient to obtain a sound foundation for the pavement. The compaction requirements and testing frequency noted previously shall apply to all operations involving any subgrade replacement material required for the works.
8. The tolerances appropriate to the construction of subgrade and to subgrade replacement material shall comply with the following:
 - Design Level Tolerance +15mm, - 30mm
 - Shape Tolerance of 25mm maximum deviation from a 3m straight edge laid in any direction.
 - Horizontal Tolerances as per MRS11.04,
9. Following completion of subgrade compaction, trimming, and satisfactory density testing, the whole of the subgrade area shall be inspected by proof rolling with a fully loaded single rear axle truck with a minimum axle loading of 8 tonne (or acceptable equivalent). Acceptable proof rolling shall be taken to be no visible signs of deformation or instability in the subgrade.

S2.15 PAVEMENT COURSES

1. The pavement course materials (Base Course and Sub-base Course) shall be transported from the material supplier to the spreading area without segregation and shall be placed at the correct moisture content.
2. The pavement course materials shall be spread in uniform loose layers on the prepared subgrade, subgrade replacement, or sub-base course and compacted to conform with the grades, profiles and cross sections as indicated on the Project Drawings and to the tolerances and compaction standards specified herein.
3. The thickness of any loose layers shall be such that after compaction it shall not be less than 100mm nor more than 200mm thick. Appropriate compaction equipment shall immediately follow the spreading and shaping of the loose materials and under no circumstances shall the materials be allowed to dry out before compaction.
4. After compaction of each pavement course, the whole of the surface shall be watered and rolled with a steel drum roller to give a hard, dense, tightly packed surface free of lenses, compaction planes and caking, in accordance with the tolerances specified herein.
5. No placement of base course material on the sub-base shall commence until the compaction standards and tolerances for construction of the lower layer have been inspected and confirmed satisfactory.
6. The pavement course material shall be compacted to provide a relative compaction determined by AS1289 for a standard compactive effort as follows:
 - Base Course - 100%
 - Sub-base Courses - 100%
7. Testing frequency not less than one test per 500m² with a minimum of four (4) tests per sample area being tested for sand replacement method and two tests per 500 m² with a minimum of eight (8) tests per sample for nuclear test.

8. The vertical tolerances for the construction of the pavement courses shall comply with Table S2.2.
9. Horizontal tolerances are to comply with MRS11.05

Table S2.2 Construction Tolerances

Course	Design Level Tolerance	Layer Thickness Tolerance	Shape Tolerance
Sub-base	+ 20mm - 20mm	+ 40mm - 20mm	25mm in 3m Maximum
Base	+ 10mm - 10mm	+ 15mm - 15mm	15mm in 3m Maximum
Overall	+20mm -10mm	+20mm -10mm	

S2.16 FINAL TRIM

1. Following placement and compaction of the base course material, the whole of the surface of the base course shall be final graded and trimmed to the specified tolerances so as to leave a hard, dense, tightly packed surface free of lenses, compaction planes and caking.
2. Sprayed bituminous or asphaltic concrete surfacing works shall not be commenced until the profile, surface, compaction, quality and finish of the base course has been inspected and confirmed satisfactory.

S2.17 ASPHALTIC CONCRETE SURFACING

1. For Asphaltic Concrete surfacing with a nominal depth 30mm, the construction requirements, method of construction works, and compliance testing requirements for Asphaltic Concrete surfacing, shall be in accordance with the "Asphalt Specification for Subdivision Pavements" Edition 1 November 1993, published by the Australian Asphalt Pavement Association (Queensland Branch).
2. For Asphaltic Concrete surfacing with a nominal depth greater than 30mm, the construction requirements, method of construction works, and compliance testing requirements for Asphaltic Concrete surfacing, shall be in accordance with Main Roads Specification MRS 11.30 "Dense Graded Asphalt Pavements".
3. All roads greater than 10% gradient shall have a 10mm primer seal or applied to the base course prior to the placement of the Asphaltic Concrete. Alternate methods where approved by Council shall be as noted on the approved Project Drawings.
4. The tolerances appropriate to Asphaltic Concrete surfacing shall comply with the following:
 - Design Level Tolerance - +10mm, - 10mm
 - Layer Thickness Tolerance - +15mm, - 0mm
 - Shape Tolerance - 7mm in 3m Maximum (Any direction).

S2.18 SPRAYED BITUMEN SURFACING

1. The construction requirements, method of construction works, and compliance testing requirements for Hot Sprayed Bitumen surfacing, shall be in accordance with the following Queensland Department of Main Roads Specifications.

- Main Roads Specification MRS 11.11 "Sprayed Bitumen Surfacing (Excluding Emulsions)"
- Main Roads Specification MRS 11.17 "Bitumen"
- Main Roads Specification MRS 11.19 "Bitumen Cutter and Flux Oils"
- Main Roads Specification MRS 11.20 "Cutback Bitumen"
- Main Roads Specification MRS 11.22 "Supply of Cover Aggregate"

S2.19 CONCRETE SEGMENTAL PAVERS

1. Concrete interlocking pavers shall be constructed in accordance with the requirements of Specification S3 SEGMENTAL PAVING

S2.20 KERBING AND CHANNELLING

1. Concrete kerb, kerb and channel shall be constructed by a continuous slip form extrusion machine true to line and grade and to the profile for each kerb type in accordance with the Standard Drawing S1000.
2. Kerbing shall be constructed on sub base material compacted to 100% standard compaction as determined in accordance with the relevant Test Methods contained in AS 1289.
3. The finished kerbing shall be well compacted and shall have exposed surfaces free from voids and honeycombing.
4. Contraction joints shall be made at regular intervals not exceeding 3m. The joints shall be made by forming grooves 40mm deep and not more than 6mm wide in all exposed surfaces of the kerb and kerb and channel. All grooves shall be normal to the top surfaces and square to the alignments of the kerb and kerb and channel.
5. The horizontal and vertical alignments of the kerb and kerb and channel shall not vary from the design level by more than $\pm 10\text{mm}$, provided that:
 - The difference between the deviations from correct levels at any two points 30m apart shall not exceed 30mm
 - The deviation from a straight edge laid parallel to the centreline shall not exceed 10mm in 3m.
6. The invert of all channels shall be finished true to grade and alignment and no channelling in which water is found to pond will be accepted.
7. Any kerb or kerb and channel not true to line or with noticeable kinks, bends or other faults, or not of the required dimensions (considering the tolerances specified herein), may be condemned and shall be broken out and removed from site.

S2.21 SUBSOIL DRAINAGE

1. Unless otherwise detailed on the Project Drawings subsoil drainage shall be constructed beneath the kerbing on an alignment as shown on Standard Drawing S1095.
2. Subsoil drainage trenches, drainage pipe, backfill material, geotextile shall be constructed in accordance with the requirements of Main Roads Standard Specification MRS 11.03 "Drainage, Retaining Structures and Protective Treatments".
3. Subsoil Drainage cleanouts shall be constructed in accordance with the requirements of Standard Drawing S1095 and shall preferably, be located with the upstream flushing point internally within a stormwater gully pit or manhole.

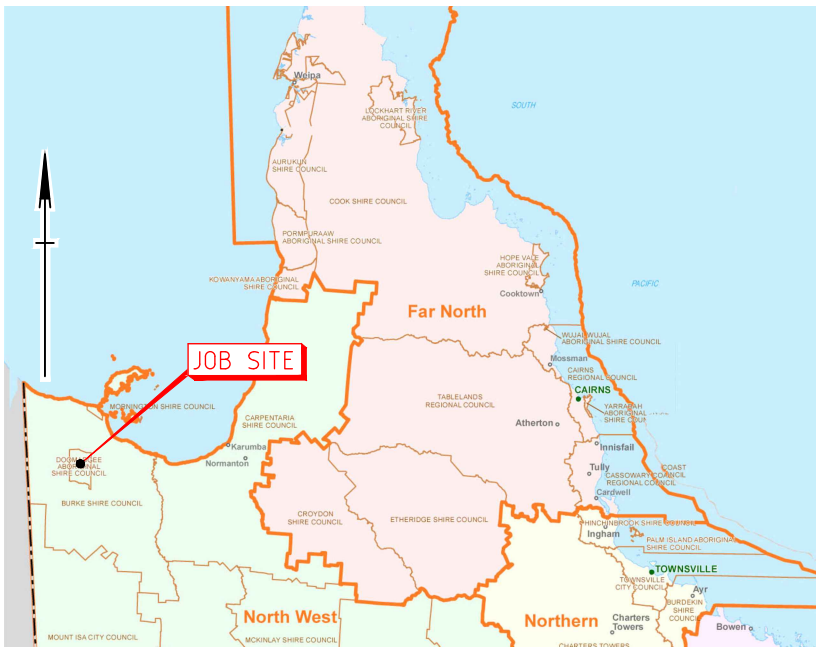
S2.22 TRIM VERGES AND BATTERS

1. Following completion of all earthworks operations associated with roadworks construction, all verges and fill batters shall be graded and trimmed to the line and level indicated on the Project Drawings. Allowance shall be made in the final trimming operations for topsoiling and grassing activities.
2. Cut batters shall be lightly tined to a depth of 25 - 50mm prior to resspreading of topsoil material

S2.23 ROAD FURNITURE AND PAVEMENT MARKING

1. The construction of all Road Signs and associated Road Furniture shall comply with the requirements of the following:
 - Main Roads Standard Specification MRS 11.14 "Road Furniture"
 - Main Roads "Manual of Uniform Traffic Control Devices"
 - Standard Drawing S1040 for Street Name Signs.
 - Standard Drawing S1041 for Traffic Control Devices.
2. All Pavement Marking shall comply with the requirements of Main Roads Standard Specification MRS 11.45 "Pavement Marking"

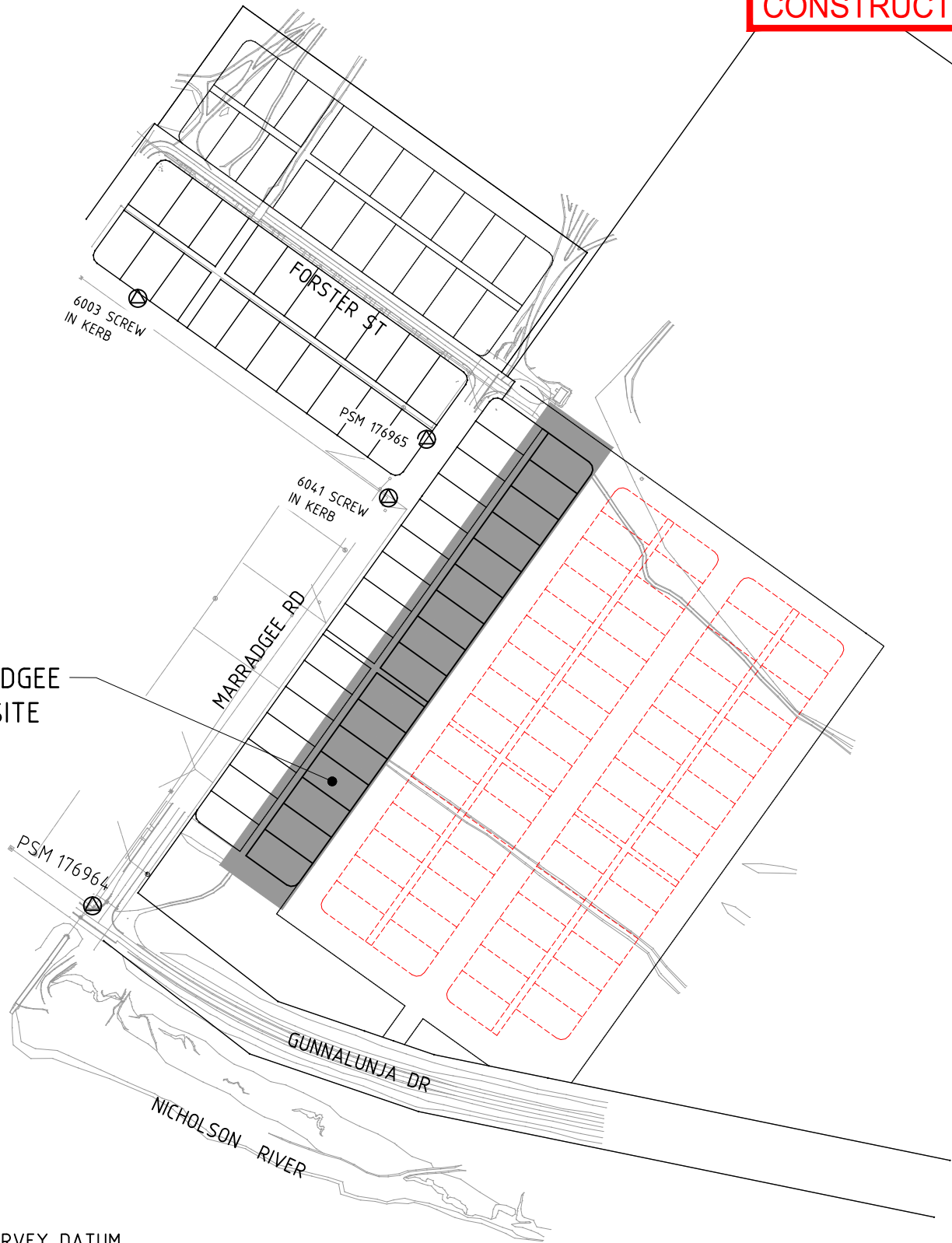
JOB DRAWINGS



LOCALITY PLAN
NOT TO SCALE

DRAWING LIST					
Drawing Number	Rev.	Date	Series Number	Drawing Description	Design Approved
60628959-MAR-01-LP-01	2	27/09/2022	1	LOCALITY PLAN AND DRAWING INDEX	J.JENTZ
60628959-MAR-01-SN-01	0	27/09/2022	2	STANDARD NOTES	J.JENTZ
60628959-MAR-01-TS-01	0	27/09/2022	3	TYPICAL SECTIONS	J.JENTZ
60628959-MAR-01-CL-01	0	27/09/2022	4	CONTROL LINE AND SURVEY SETOUT PLAN	J.JENTZ
60628959-MAR-01-PU-01	0	27/09/2022	5	PUBLIC UTILITIES PLAN SHEET 1 OF 2	J.JENTZ
60628959-MAR-01-PU-02	0	27/09/2022	6	PUBLIC UTILITIES PLAN SHEET 2 OF 2	J.JENTZ
60628959-MAR-01-RL-01	1	27/09/2022	7	ROADWORKS AND DRAINAGE PLAN 1 OF 2	J.JENTZ
60628959-MAR-01-RL-02	1	27/09/2022	8	ROADWORKS AND DRAINAGE PLAN 2 OF 2	J.JENTZ
60628959-MAR-01-EW-01	0	27/09/2022	9	BULK EARTHWORKS LAYOUT PLAN SHEET 1 OF 2	J.JENTZ
60628959-MAR-01-EW-02	0	27/09/2022	10	BULK EARTHWORKS LAYOUT PLAN SHEET 2 OF 2	J.JENTZ
60628959-MAR-01-WP-01	0	27/09/2022	11	ROAD LONGITUDINAL SECTION SHEET 1 OF 2	J.JENTZ
60628959-MAR-01-WP-02	0	27/09/2022	12	ROAD LONGITUDINAL SECTION SHEET 2 OF 2	J.JENTZ
60628959-MAR-01-KS-01	0	27/09/2022	13	KERB SETOUT LAYOUT PLAN	J.JENTZ
60628959-MAR-01-KS-02	0	27/09/2022	14	KERB SETOUT TABLES	J.JENTZ
60628959-MAR-01-DC-01	A	25/08/2022	15	DRAINAGE CATCHMENT PLAN	
60628959-MAR-01-DL-01	0	25/08/2022	16	STORMWATER DRAINAGE LONGITUDINAL SECTION SHEET 1 OF 5	J.JENTZ
60628959-MAR-01-DL-02	0	25/08/2022	17	STORMWATER DRAINAGE LONGITUDINAL SECTION SHEET 2 OF 5	J.JENTZ
60628959-MAR-01-DL-03	0	25/08/2022	18	STORMWATER DRAINAGE LONGITUDINAL SECTION SHEET 3 OF 5	J.JENTZ
60628959-MAR-01-DL-04	0	25/08/2022	19	STORMWATER DRAINAGE LONGITUDINAL SECTION SHEET 4 OF 5	J.JENTZ
60628959-MAR-01-DL-05	0	25/08/2022	20	STORMWATER DRAINAGE LONGITUDINAL SECTION SHEET 5 OF 5	J.JENTZ
60628959-MAR-01-WS-01	1	27/09/2022	21	WATER LAYOUT PLAN SHEET 1 OF 2	J.JENTZ
60628959-MAR-01-WS-02	1	27/09/2022	22	WATER LAYOUT PLAN SHEET 2 OF 2	J.JENTZ
60628959-MAR-01-WS-03	0	9/09/2022	23	WATER MAIN CONNECTION DETAILS	J.JENTZ
60628959-MAR-01-ES-01	0	27/09/2022	24	CONCEPT EROSION AND SEDIMENT CONTROL PLAN SHEET 1 OF 2	J.JENTZ
60628959-MAR-01-ES-02	0	27/09/2022	25	CONCEPT EROSION AND SEDIMENT CONTROL PLAN SHEET 2 OF 2	J.JENTZ
60628959-MAR-01-XS-01	0	27/09/2022	26	ROAD CROSS SECTIONS - MC0A10 - SHEET 1 OF 1	J.JENTZ
60628959-MAR-01-XS-02	0	27/09/2022	27	ROAD CROSS SECTIONS - MC0B10 - SHEET 1 OF 4	J.JENTZ
60628959-MAR-01-XS-03	0	27/09/2022	28	ROAD CROSS SECTIONS - MC0B10 - SHEET 2 OF 4	J.JENTZ
60628959-MAR-01-XS-04	0	27/09/2022	29	ROAD CROSS SECTIONS - MC0B10 - SHEET 3 OF 4	J.JENTZ
60628959-MAR-01-XS-05	0	27/09/2022	30	ROAD CROSS SECTIONS - MC0B10 - SHEET 4 OF 4	J.JENTZ
60628959-MAR-01-XS-06	0	27/09/2022	31	ROAD CROSS SECTIONS - MC0C10 - SHEET 1 OF 1	J.JENTZ
60628959-MAR-01-XS-07	0	27/09/2022	32	ROAD CROSS SECTIONS - MC0D10 - SHEET 1 OF 1	J.JENTZ

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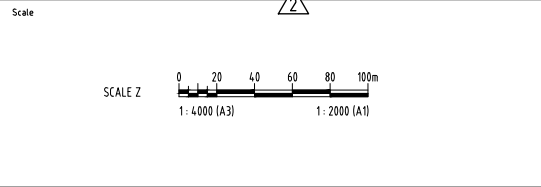


SURVEY DATUM

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ORIGIN OF LEVELS: PSM 108084 RL 46.131
ORIGIN OF COORDINATES: PSM 81257 E 269051.076 N 8014992.612
MERIDIAN: MGA ZONE 54

TRAVERSE STATION CO-ORDINATES AND DETAILS				
POINT	EASTING	NORTHING	HEIGHT	DESCRIPTION
6003	270678.008	8014662.595	45.588	SCREW IN KERB
6041	270848.450	8014526.915	45.777	SCREW IN KERB
176964	270647.197	8014249.471	46.279	PSM 176964
176965	270874.365	8014566.750	45.844	PSM 176965

REVISIONS				
No.	BY	DATE	DESCRIPTION	APPD
2	BM	27.09.22	DRAWINGS ISSUED	*JJ
1	BM	9.09.22	DRAWINGS ISSUED	*JJ
0			CONSTRUCTION ISSUE	



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DESIGNED	K. TAYLER/L. LAOURIS	CHECKED	A. BORZI
DRAWN	B. MOOREHEAD	CHECKED	A. BORZI
APPROVED	J. JENTZ	DATE	25.08.22

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DOOMADGEE ABORIGINAL SHIRE COUNCIL
DOOMADGEE SERVICED ALLOTMENTS
MARRADGEE ROAD SUBDIVISION - STAGE 1
LOCALITY PLAN AND DRAWING INDEX

Plan 1 of 32

NOTES

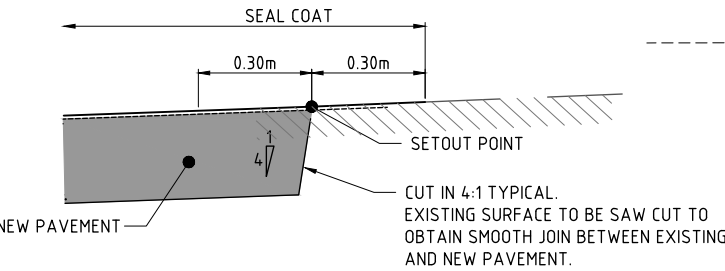
1. FOR STANDARD NOTES REFER TO DRG. No. 60628959-MAR-01-SN-01
2. CONTRACTOR TO REFER TO DIAL BEFORE YOU DIG AND CONFIRM LOCATION OF EXISTING SERVICES PRIOR TO CONSTRUCTION.
3. CONCRETE, CONCRETE WORKS AND STEEL REINFORCEMENT SHALL CONFORM TO A.S. 3600 , CONCRETE STRUCTURES.
4. FOR BITUMEN SEAL DESIGN REFER TO JOB SPECIFICATION

LEGEND

- ROAD PAVEMENT
- SEAL DESIGN, REFER NOTE 6
100mm TYPE 2.1 (CBR 80)
- 120mm TYPE 2.3 (CBR 45)
- GRASS SEEDING TO DISTURBED AREAS

PAVEMENT DESIGN ASSUMPTIONS

DESIGN CBR - 15
DESIGN TRAFFIC - 1x10⁸ ESA



PAVEMENT CUTBACK DETAIL
NOT TO SCALE

REFER TO DRG 60628959-MAR-01-EW-01
AND EW-02 FOR EARTHWORKS SETOUT
AND LEVELS

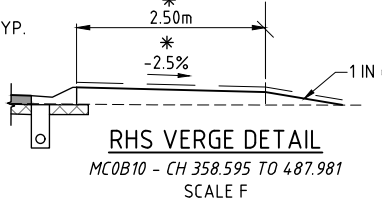
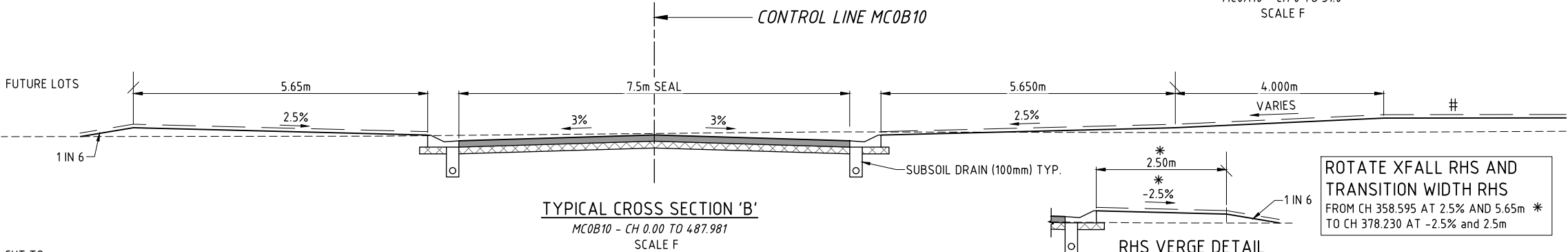
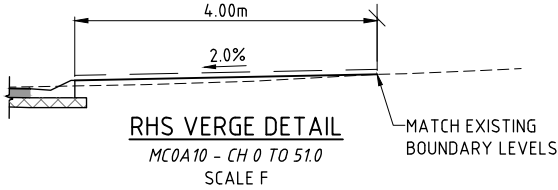
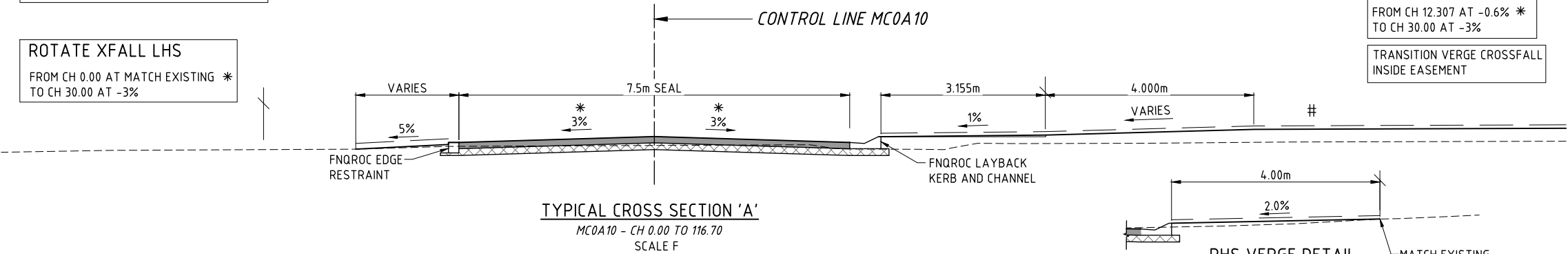
ROTATE XFALL LHS
FROM CH 0.00 AT MATCH EXISTING *
TO CH 30.00 AT -3%

CONSTRUCTION

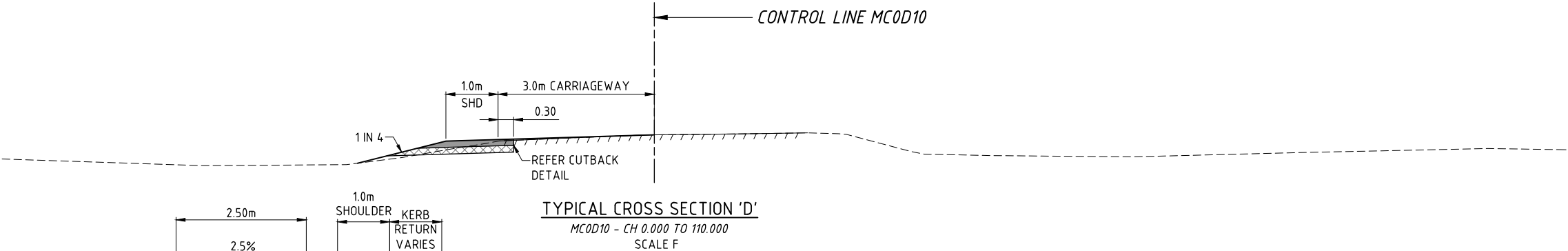
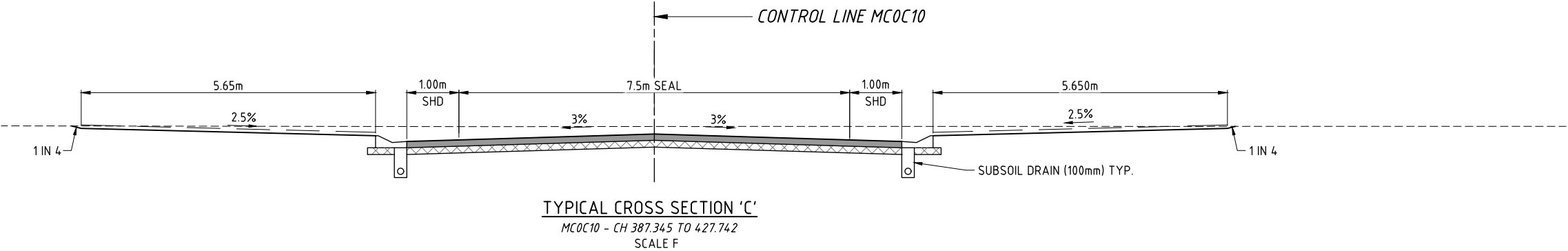
ROTATE XFALL RHS

FROM CH 12.307 AT -0.6% *
TO CH 30.00 AT -3%

TRANSITION VERGE CROSSFALL
INSIDE EASEMENT



ROTATE XFALL RHS AND
TRANSITION WIDTH RHS
FROM CH 358.595 AT 2.5% AND 5.65m *
TO CH 378.230 AT -2.5% and 2.5m



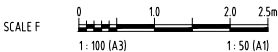
LHS VERGE DETAIL
MC0D10 - CH 26.148 TO 75.000
SCALE F

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Scale



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DESIGNED	K. TAYLER	CHECKED	A. BORZI
DRAWN	B. MOOREHEAD	CHECKED	A. BORZI
APPROVED	J. JENTZ	DATE	27.09.22

* DENOTES SIGNATURE ON
ORIGINAL DRAWING ONLY

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DOOMADGEE ABORIGINAL SHIRE COUNCIL

Plan 3 of 32

DOOMADGEE SERVICED ALLOTMENTS
MARRADGEE ROAD SUBDIVISION - STAGE 1
TYPICAL SECTIONS

Status CONSTRUCTION

Drg No. 60628959-MAR-01-TS-01

Rev. 0

LEGEND

- SURVEYED PROPERTY BOUNDARY
PROPOSED PROPERTY BOUNDARY
FUTURE STAGE PROPERTY BOUNDARY
EXTENT OF WORKS

CONTROL LINE MCOA10 SETOUT							
PT	CHAINAGE	X COORD	Y COORD	BEARING	RADIUS	A.LENGTH	D.ANGLE
IP	0.000	270921.473	8014607.545	125°36'10.16"			
TC	34.767	270949.742	8014587.304	125°36'10.16"			
IP	39.997	270953.995	8014584.259		250.000	10.460	2°23'49.84"
CT	45.227	270958.116	8014581.039	128°00'00.00"			
TC	64.081	270972.973	8014569.431	128°00'00.00"			
IP	69.310	270977.095	8014566.211		-250.000	10.460	2°23'49.84"
CT	74.540	270981.348	8014563.166	125°36'10.16"			
IP	200.000	271087.788	8014486.955	125°36'10.16"			

CONTROL LINE MCOB10 SETOUT							
PT	CHAINAGE	X COORD	Y COORD	BEARING	RADIUS	A.LENGTH	D.ANGLE
IP	0.000	271002.415	8014548.082	215°36'10.85"			
TC	358.595	270793.653	8014256.519	215°36'10.85"			
IP	368.412	270786.376	8014246.356		-12.500	19.635	90°00'00.75"
CT	378.230	270796.540	8014239.079	125°36'10.10"			
IP	500.000	270895.547	8014168.189	125°36'10.10"			

CONTROL LINE MCOC10 SETOUT							
PT	CHAINAGE	X COORD	Y COORD	BEARING	RADIUS	A.LENGTH	D.ANGLE
IP	300.000	270913.139	8014243.033	215°36'10.10"			
IP	427.742	270838.772	8014139.170	215°36'10.10"			

CONTROL LINE MCOD10 SETOUT							
PT	CHAINAGE	X COORD	Y COORD	BEARING	RADIUS	A.LENGTH	D.ANGLE
IP	0.000	270794.703	8014154.201	111°23'49.08"			
IP	17.254	270810.774	8014147.904		-500.000	34.508	3°57'15.58"
CC	34.508	270827.241	8014142.730	107°26'33.50"			
IP	72.254	270863.262	8014131.412		-1250.000	75.492	3°27'37.07"
IP	110.000	270899.901	8014122.289	103°58'56.44"			

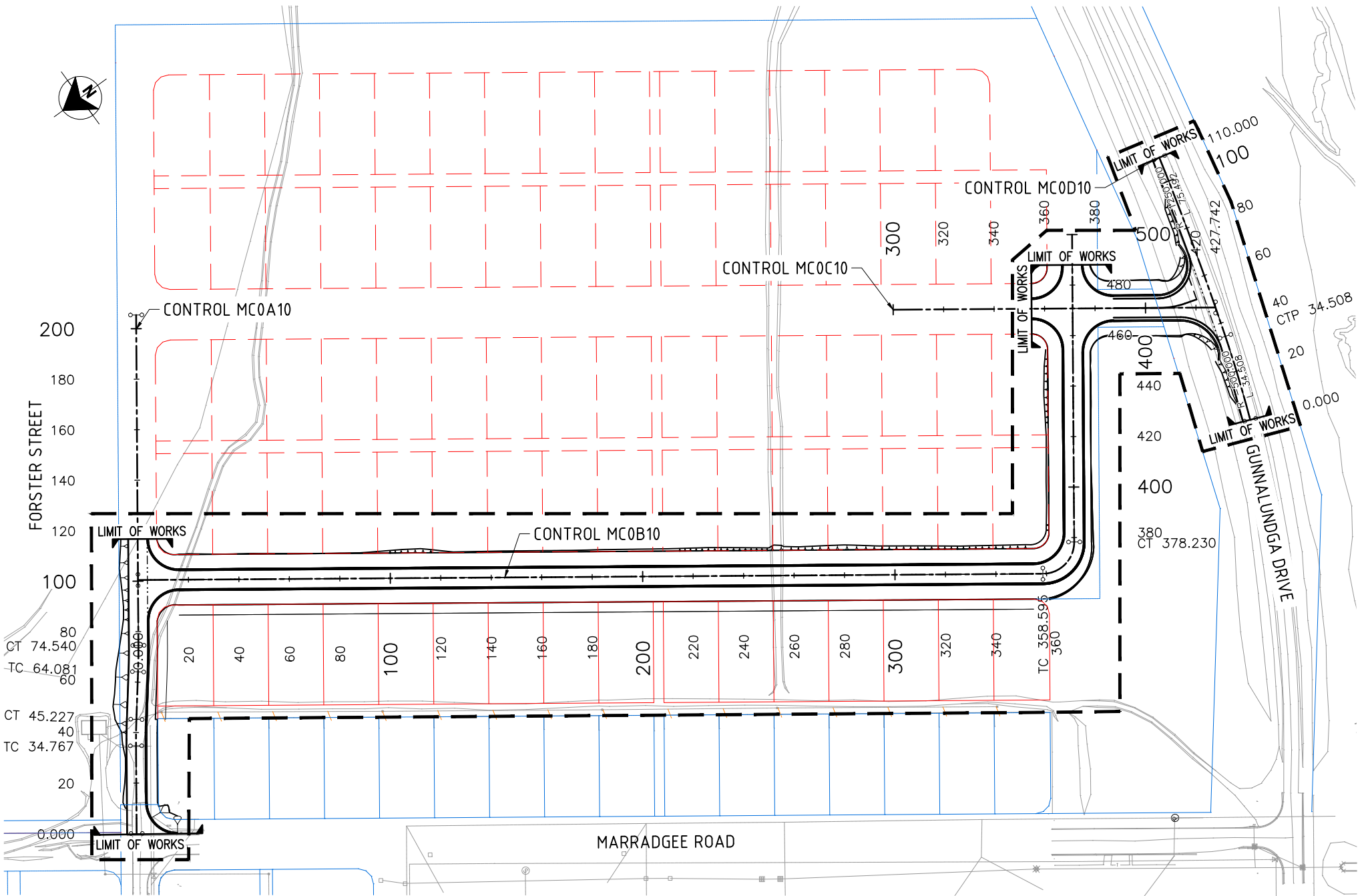
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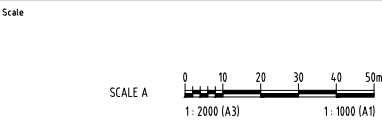
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NO UNORDINARY ISSUES IDENTIFIED

- FOR STANDARD NOTE REFER TO DRG 60628959-MAR-01-SN-01.
- FOR ROADWORKS AND DRAINAGE REFER TO DRG 60628959-MAR-01-RL-01 AND RL-02.
- FOR EROSION AND SEDIMENT CONTROL STRATEGY REFER TO DRG 60628959-MAR-01-ES-01 AND ES-02.



REVISIONS				
No.	BY	DATE	DESCRIPTION	APPD
0			CONSTRUCTION ISSUE	



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DESIGNED	K. TAYLER	CHECKED	A. BORZI
DRAWN	B. MOOREHEAD	CHECKED	A. BORZI
APPROVED	J. JENTZ	DATE	27.09.22
* DENOTES SIGNATURE ON ORIGINAL DRAWING ONLY			

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DOOMADGEE ABORIGINAL SHIRE COUNCIL		Plan 4 of 32
DOOMADGEE SERVICED ALLOTMENTS MARRADGEE ROAD SUBDIVISION - STAGE 1 CONTROL LINE AND SURVEY SETOUT PLAN		
Status	CONSTRUCTION	Rev. 0
Dwg No.	60628959-MAR-01-CL-01	

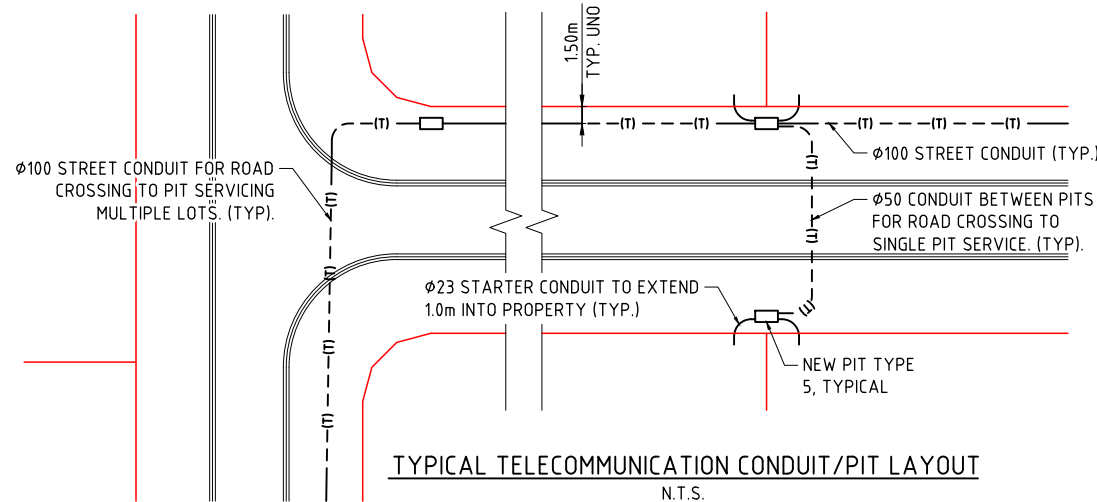
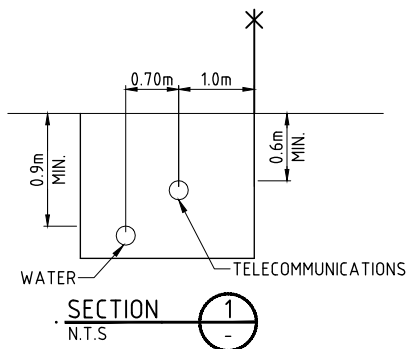


- NOTES**
- FOR TYPICAL CROSS SECTION REFER TO DRG. 60628959-MAR-01-TS-01
 - FOR ROAD LONG SECTIONS REFER TO DRG. 60628959-MAR-01-WP-01 AND WP-02

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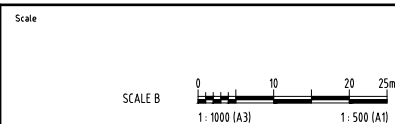
NO UNORDINARY ISSUES IDENTIFIED



LEGEND

- PROPERTY BOUNDARY
- FUTURE PROPERTY BOUNDARY
- FUTURE ROAD EXTENTS
- PAVEMENT WORKS
- EXISTING SEWER MAIN
- NEW WATER MAIN
- EXISTING STORMWATER DRAINAGE LINE
- EXISTING WATER
- EXISTING OVERHEAD ELECTRICITY
- EXTENT OF WORKS
- EXISTING TELSTRA
- NEW TELSTRA PIT AND 100mm CONDUIT
- SERVICES CONFLICT POINT
- NEW STORMWATER DRAINAGE LINE
- NEW SEWER CONNECTION

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REVISIONS				
No.	BY	DATE	DESCRIPTION	APPD
0			CONSTRUCTION ISSUE	



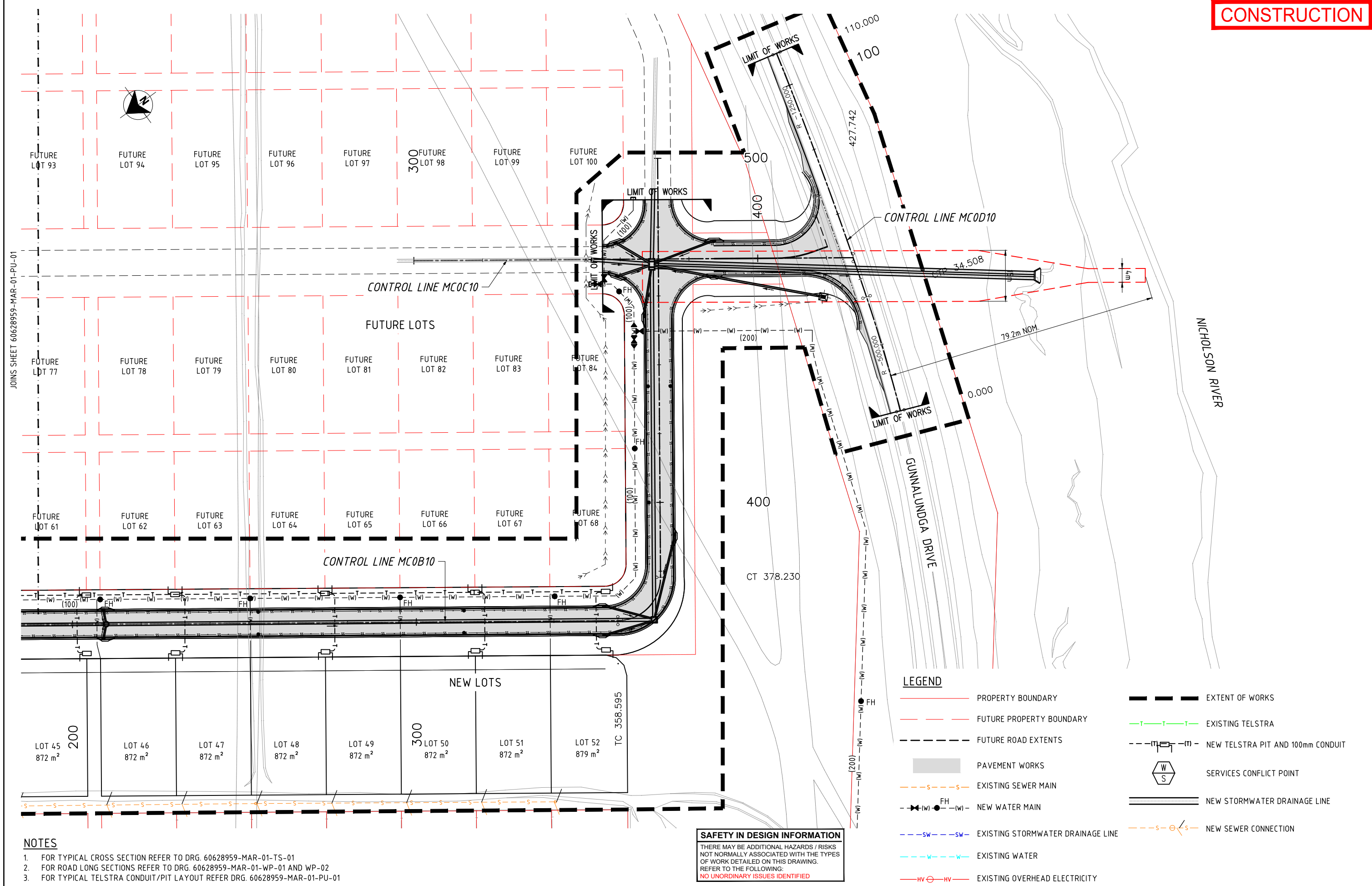
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DRAWN	B. MOOREHEAD	CHECKED	A. BORZI
APPROVED	J. JENTZ	DATE	27.09.22

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DOOMADGEE ABORIGINAL SHIRE COUNCIL		Plan 5 of 32
DOOMADGEE SERVICED ALLOTMENTS MARRADGEE ROAD SUBDIVISION - STAGE 1 PUBLIC UTILITIES PLAN SHEET 1 OF 2		
Status	CONSTRUCTION	Rev. 0
Drng No.	60628959-MAR-01-PU-01	



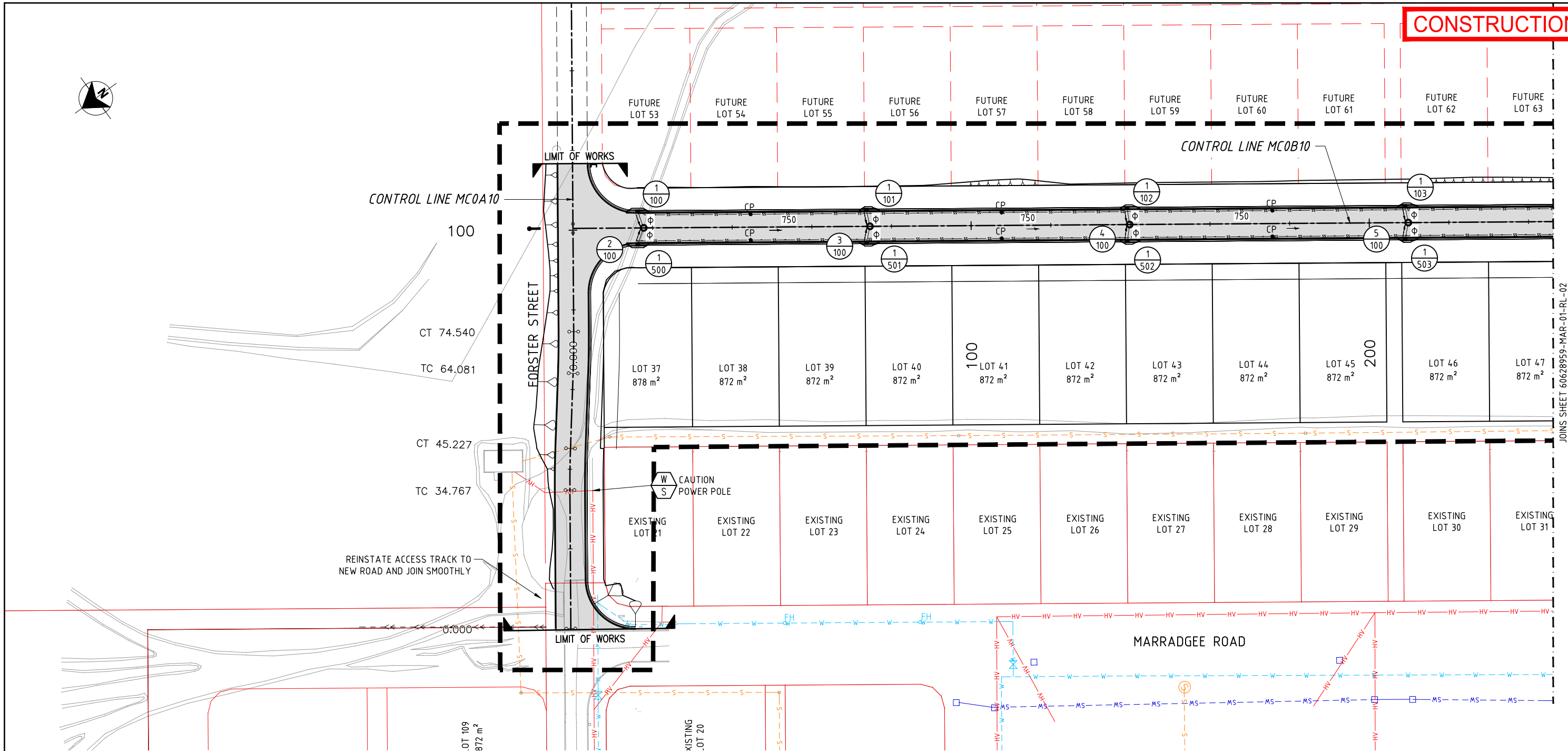
- NOTES
- FOR TYPICAL CROSS SECTION REFER TO DRG. 60628959-MAR-01-TS-01
 - FOR ROAD LONG SECTIONS REFER TO DRG. 60628959-MAR-01-WP-01 AND WP-02
 - FOR TYPICAL TELSTRA CONDUIT/PIT LAYOUT REFER DRG. 60628959-MAR-01-PU-01

SAFETY IN DESIGN INFORMATION

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NO UNORDINARY ISSUES IDENTIFIED

- LEGEND**
- PROPERTY BOUNDARY
 - FUTURE PROPERTY BOUNDARY
 - FUTURE ROAD EXTENTS
 - PAVEMENT WORKS
 - EXISTING SEWER MAIN
 - NEW WATER MAIN
 - EXISTING STORMWATER DRAINAGE LINE
 - EXISTING WATER
 - EXISTING OVERHEAD ELECTRICITY
 - EXTENT OF WORKS
 - EXISTING TELSTRA
 - NEW TELSTRA PIT AND 100mm CONDUIT
 - SERVICES CONFLICT POINT
 - NEW STORMWATER DRAINAGE LINE
 - NEW SEWER CONNECTION



LEGEND

- SURVEYED PROPERTY BOUNDARY
- PAVEMENT WORKS
- ROCK SCOUR PROTECTION
- EXISTING SEWER MAIN
- EXISTING STORMWATER DRAINAGE LINE
- EXISTING WATER
- EXISTING OVERHEAD ELECTRICITY
- EXTENT OF WORKS
- SUBSOIL DRAIN WITH CLEAN OUT POINT
- NEW STREET NAME AND ROAD SIGNS
- NEW $\phi 100$ PVC SERVICE CONDUITS
- DIVERSION DRAIN
- NEW STORMWATER PIPE AND SIZE
- NEW $\phi 375$ PIPE
- NEW SIDE GULLY INLET PIT
- NEW STORMWATER ACCESS CHAMBER
- NEW STRUCTURE NUMBER

THE LOCATIONS OF UNDERGROUND SERVICES HAVE BEEN APPROXIMATED FROM THE KNOWN POSITIONS OF VALVES, MANHOLES ETC, AND INFORMATION SUPPLIED BY THE SERVICE AUTHORITIES, AND NO RESPONSIBILITY IS TAKEN FOR THE COMPLETENESS OF THE INFORMATION SUPPLIED.

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CONTRACTOR TO CONFIRM SERVICES ON SITE.



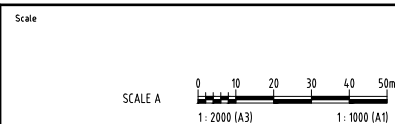
SAFETY IN DESIGN INFORMATION

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NOTES

- FOR STANDARD NOTE REFER TO DRG 60628959-MAR-01-SN-01.
- FOR STREET NAME SIGN DETAILS REFER FNRQOC STD DRG S1040.
- FOR ROAD LONGITUDINAL SECTION REFER TO DRG No. 60628959-MAR-01-WP-01 AND WP-02.
- CONTRACTOR TO TEST INSITU SUBGRADE TO CONFIRM SOAKED CBR VALUE AND PROOF ROLL PRIOR TO PAVEMENT CONSTRUCTION.
- FOR KERB SETOUT AND ROAD SIGNS REFER TO DRG No. 60628959-MAR-01-KS-01.
- LOTS 37 TO 52 TO HAVE ROOF WATER CONNECTION TO KERB AND CHANNEL.

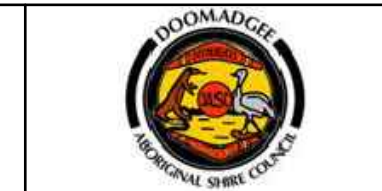
REVISIONS				
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No.	BY	DATE	DESCRIPTION	APPD
1	BM	27.09.22	MINOR CHANGES	*JJ
0			CONSTRUCTION ISSUE	



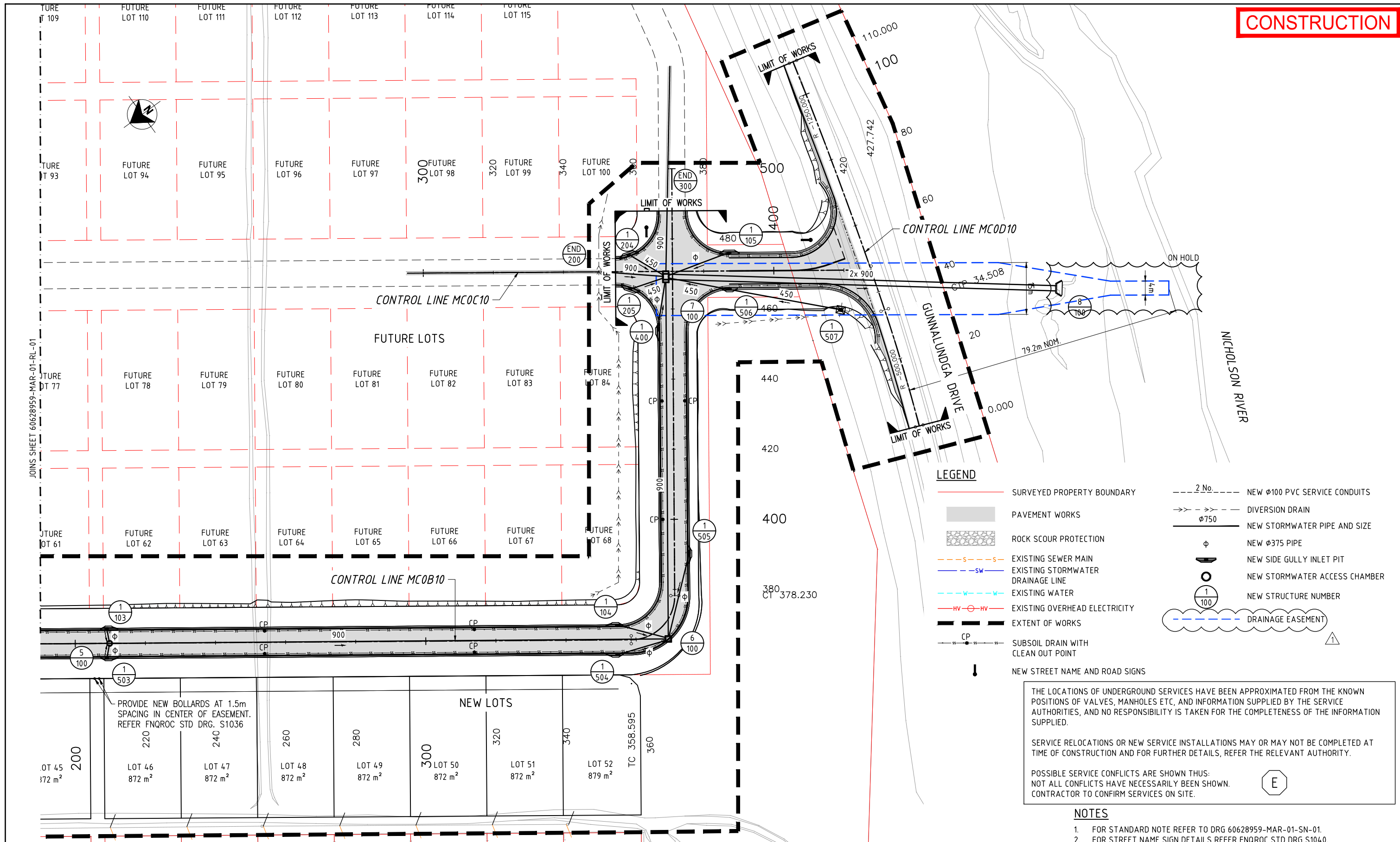
THE SIGNING OF THIS TITLE BLOCK CONFIRMS THE DESIGN AND DRAFTING OF THIS PROJECT HAVE BEEN PREPARED AND CHECKED IN ACCORDANCE WITH THE AECOM QUALITY ASSURANCE SYSTEM TO ISO 9001:2000				
DESIGNED	K. TAYLER/L. LAOURIS	CHECKED	A. BORZI	
DRAWN	B. MOOREHEAD	CHECKED	A. BORZI	
APPROVED	J. JENTZ	DATE	25.08.22	
* DENOTES SIGNATURE ON ORIGINAL DRAWING ONLY				

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DOOMADGEE ABORIGINAL SHIRE COUNCIL		Plan 7 of 32
DOOMADGEE SERVICED ALLOTMENTS MARRADGEE ROAD SUBDIVISION - STAGE 1 ROADWORKS AND DRAINAGE PLAN SHEET 1 OF 2		
Status	CONSTRUCTION	Rev. 1
Org No.	60628959-MAR-01-RL-01	



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REVISIONS				
No.	BY	DATE	DESCRIPTION	APPD
1	BM	27.09.22	MINOR CHANGES	*JJ
0			CONSTRUCTION ISSUE	

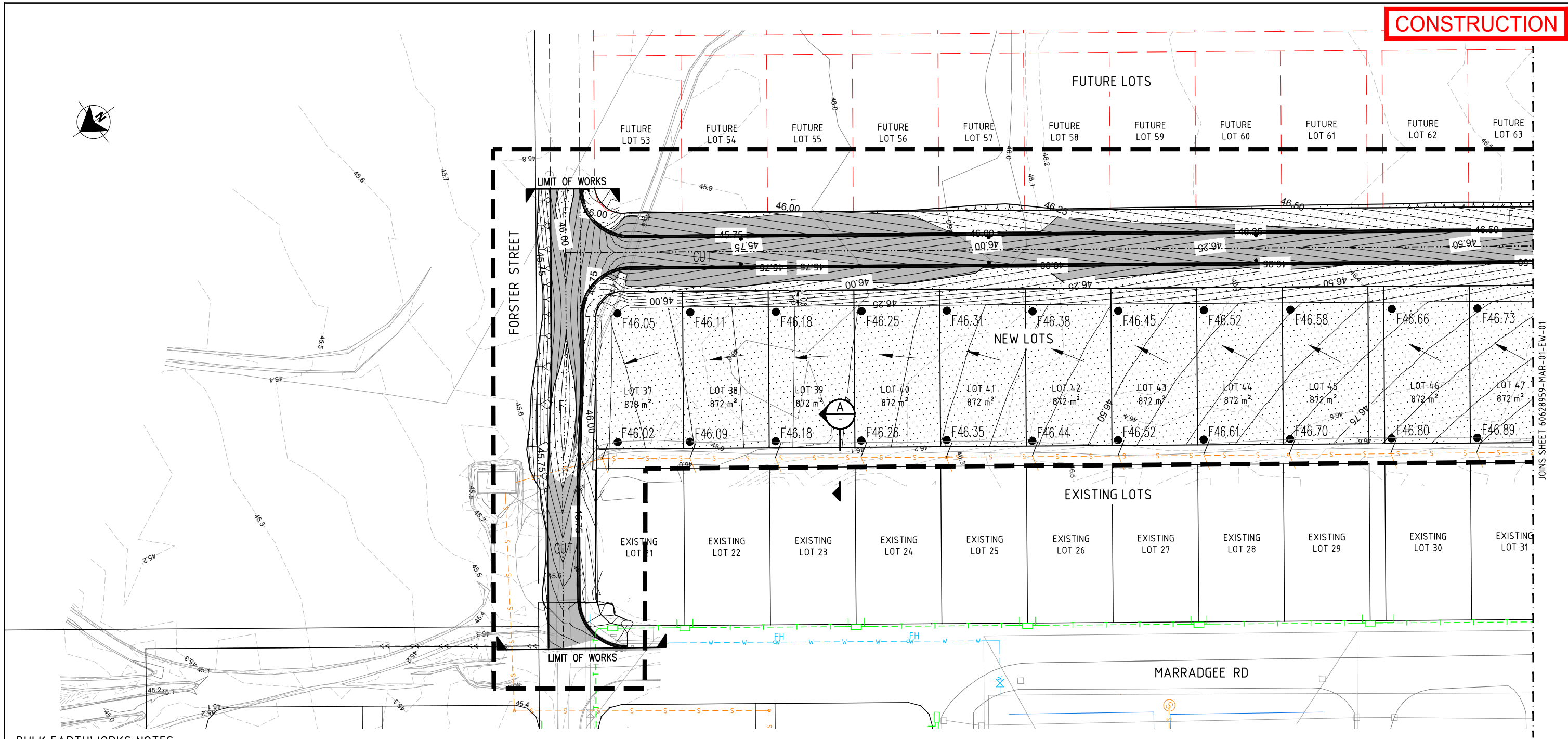
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DRAWN	B. MOOREHEAD	CHECKED	A. BORZI	
APPROVED	J. JENTZ	DATE	25.08.22	

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DOOMADGEE ABORIGINAL SHIRE COUNCIL	
DOOMADGEE SERVICED ALLOTMENTS MARRADGEE ROAD SUBDIVISION - STAGE 1 ROADWORKS AND DRAINAGE PLAN SHEET 2 OF 2	

Status	CONSTRUCTION
Org No	60628959-MAR-01-RL-02
Rev	1

DOOMADGEE ABORIGINAL SHIRE COUNCIL	
DOOMADGEE SERVICED ALLOTMENTS MARRADGEE ROAD SUBDIVISION - STAGE 1 ROADWORKS AND DRAINAGE PLAN SHEET 2 OF 2	



BULK EARTHWORKS NOTES

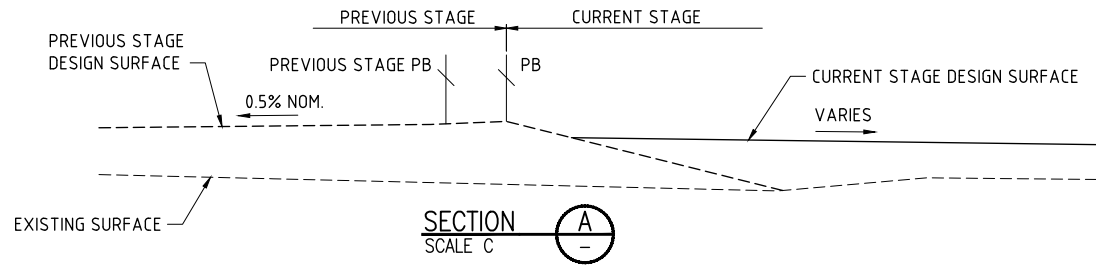
1. ALL BULK EARTHWORKS SETOUT FROM BOUNDARY LINES
2. ALL BATTERS AT A SLOPE OF 4 (H) :1 (V) MAX
3. CONTRACTOR SHALL PLACE SAFETY BARRIERS AROUND EXCAVATIONS IN ACCORDANCE WITH RELEVANT SAFETY REGULATIONS.
4. ALL EARTHWORKS AREAS TO BE STRIPPED OF 50MM TOPSOIL & STOCKPILED TO BE RESPREAD OVER EARTHWORK AREAS.
5. GRADE DOWN FROM END OF ROADS AT LIMIT OF WORKS LINE NEATLY AT A SLOPE OF 6 (H):1 (V) MAX.

LOCATION OF EXISTING SERVICES SHOWN HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. CONTRACTOR TO CONFIRM LOCATION OF SERVICE ON SITE - PRIOR TO CONSTRUCTION

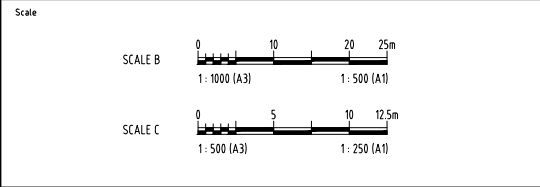
EARTHWORKS LEGEND

- SURVEYED PROPERTY BOUNDARY
- GFIS PROPERTY BOUNDARY
- FUTURE PROPERTY BOUNDARY
- BATTER
- DESIGN CONTOUR LEVEL.
- FINISHED SPOT LEVEL.
- EXISTING CONTOUR LEVEL.
- EXISTING SPOT LEVEL.
- FILL AREA
- CUT AREA
- DUMPED ROCK SCOUR PROTECTION 200mm NOM. SIZE AT 300mm DEEP
- EXISTING SEWER MAIN WITH HOUSE CONNECTION BRANCH
- EXISTING ELECTRICAL MAIN
- EXISTING WATER MAIN
- NEW LOT FALL DIRECTION
- EXTENT OF WORKS
- DIVERSION DRAIN

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DRAWN	B. MOOREHEAD	CHECKED	A. BORZI
APPROVED	J. JENTZ	DATE	27.09.22
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DOOMADGEE ABORIGINAL SHIRE COUNCIL

DOOMADGEE ABORIGINAL SHIRE COUNCIL

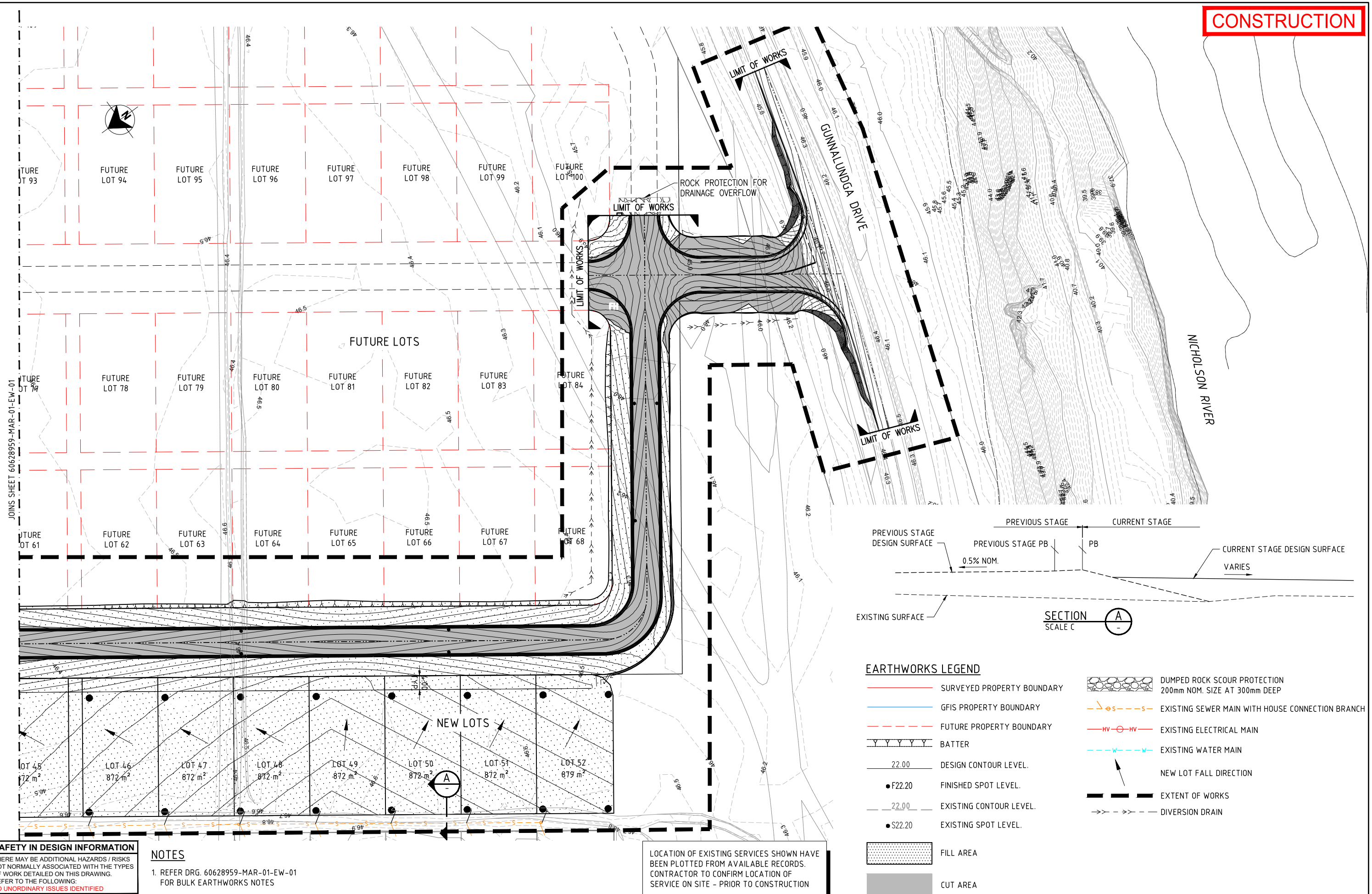
Plan 9 of 32

DOOMADGEE SERVICED ALLOTMENTS
MARRADGEE ROAD SUBDIVISION - STAGE 1
BULK EARTHWORKS LAYOUT PLAN SHEET 1 OF 2

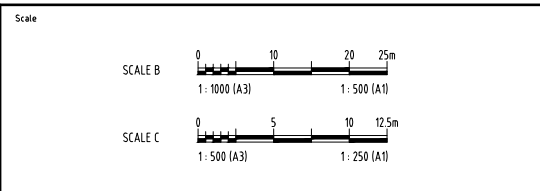
Status: CONSTRUCTION







Org No: 60628959-MAR-01-EW-01

Rev: 0



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REVISIONS					
	0			CONSTRUCTION ISSUE	
	No.	BY	DATE	DESCRIPTION	APPROVED



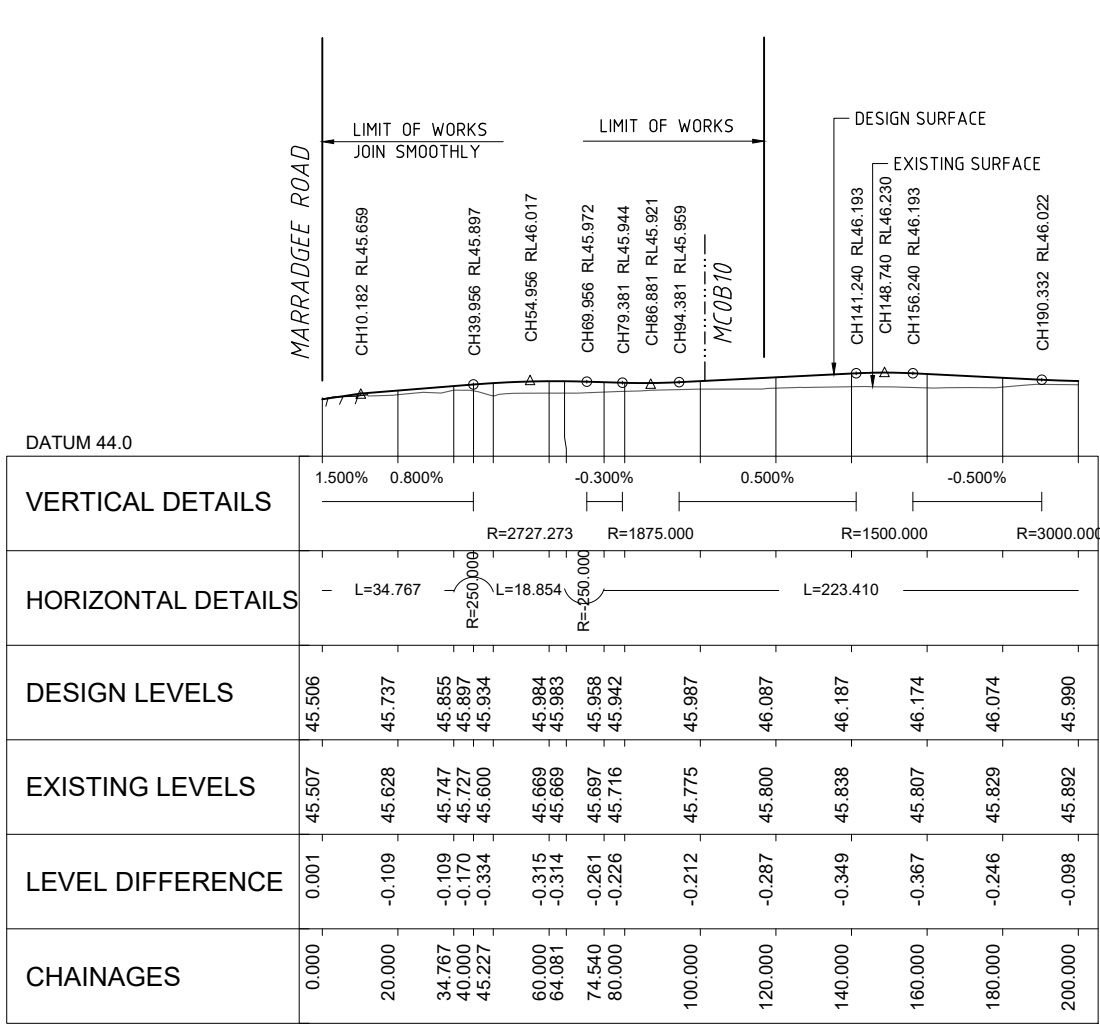
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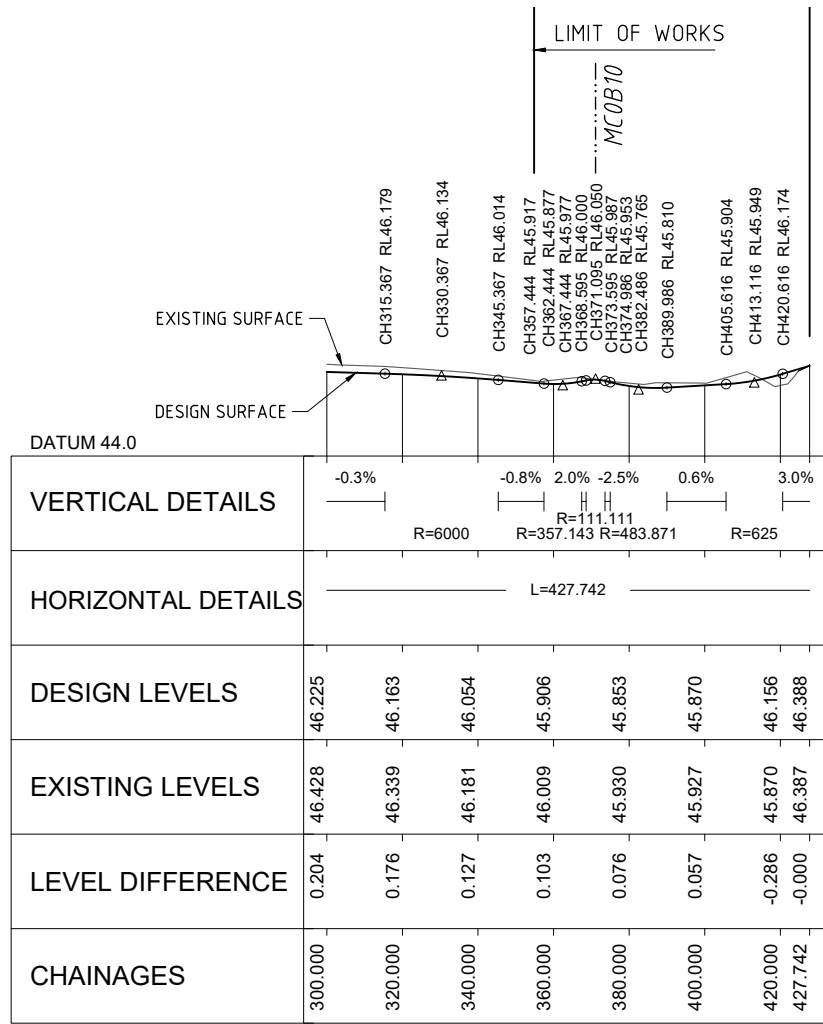
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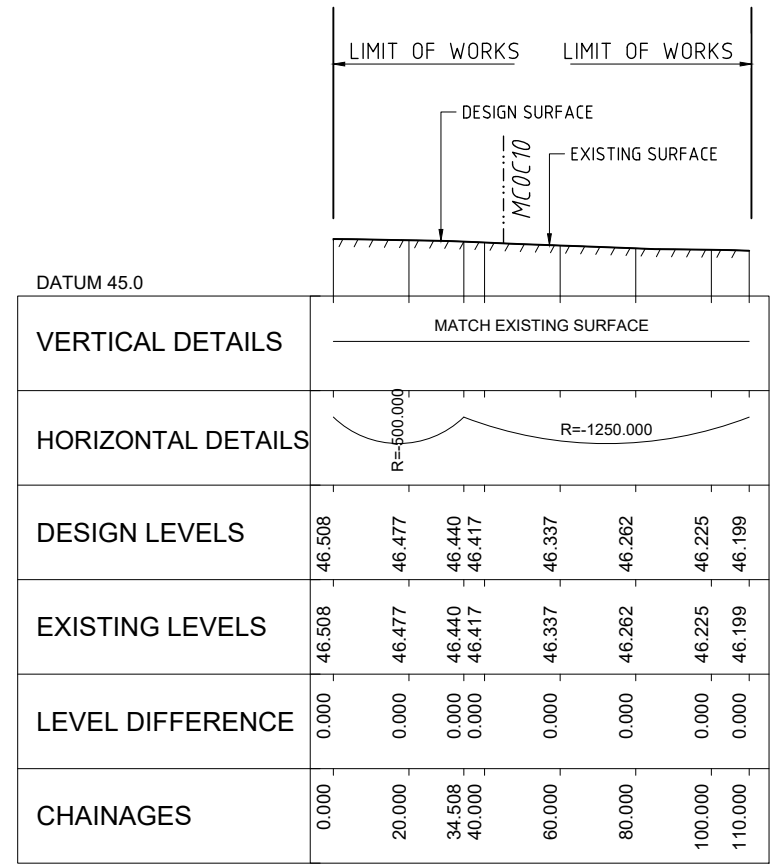
DOOMADGEE ABORIGINAL SHIRE COUNCIL		Plan	10	of	32
DOOMADGEE SERVICED ALLOTMENTS MARRADGEE ROAD SUBDIVISION - STAGE 1 BULK EARTHWORKS LAYOUT PLAN SHEET 2 OF 2					
Status	CONSTRUCTION	Dwg No.	60628959-MAR-01-EW-02		Rev.
					0



CONTROL LINE MC0A10
(FORSTER STREET)



CONTROL LINE MC0C10



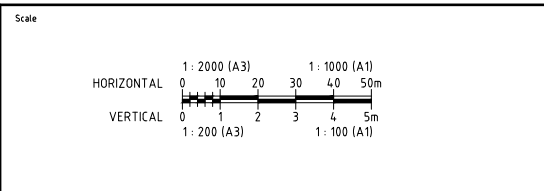
CONTROL LINE MC0D10
(GUNNALUNDGA DRIVE)

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NOTES

1. FOR STANDARD NOTE REFER TO DRG 60628959-MAR-01-SN-01.

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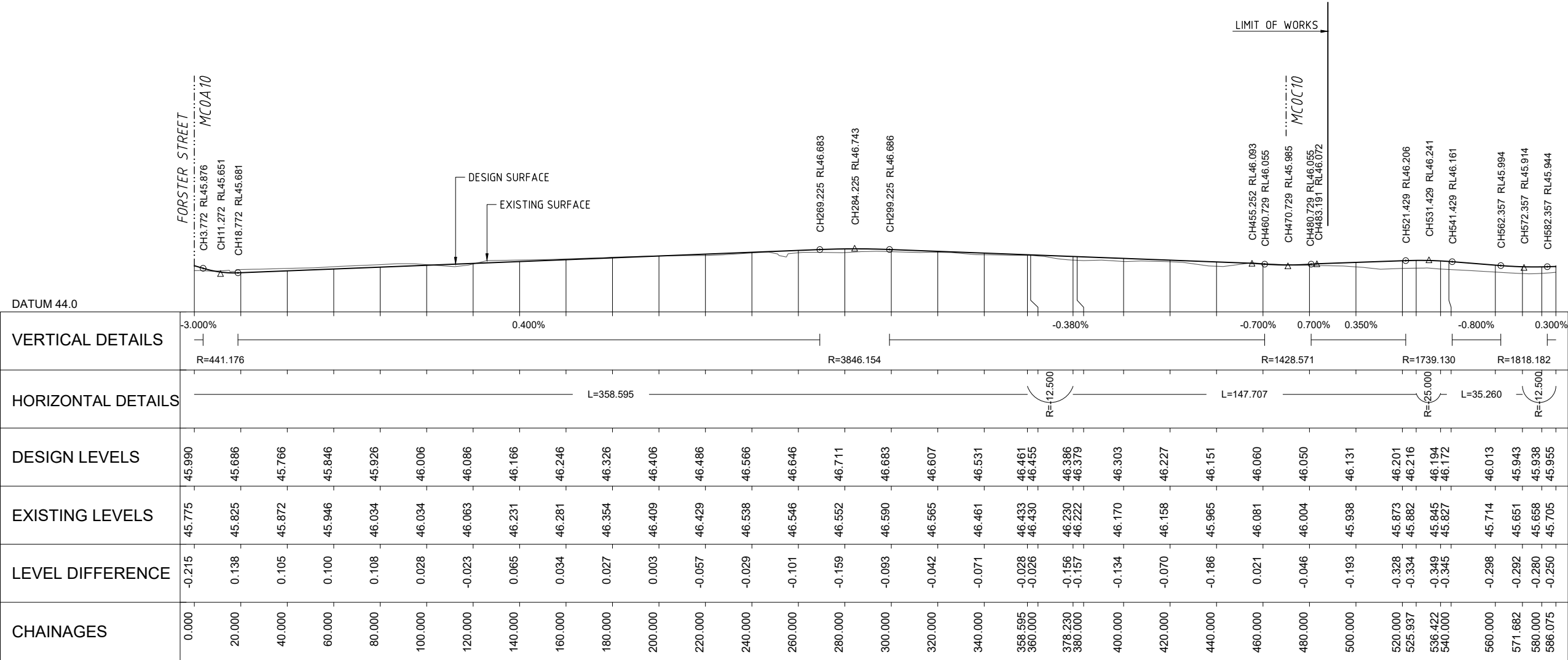
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DOOMADGEE ABORIGINAL SHIRE COUNCIL		Plan 11 of 32
DOOMADGEE SERVICED ALLOTMENTS MARRADGEE ROAD SUBDIVISION - STAGE 1 ROAD LONGITUDINAL SECTION SHEET 1 OF 2		
Status	CONSTRUCTION	Rev. 0
Drg No.	60628959-MAR-01-WP-01	



CONTROL LINE MC0B10

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Scale

HORIZONTAL

VERTICAL

1: 2000 (A3)
0 10 20 30 40 50m

1: 1000 (A1)
0 1 2 3 4 5m

1: 200 (A3)
0 1 2 3 4 5m

1: 100 (A1)

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DOOMADGEE ABORIGINAL SHIRE COUNCIL

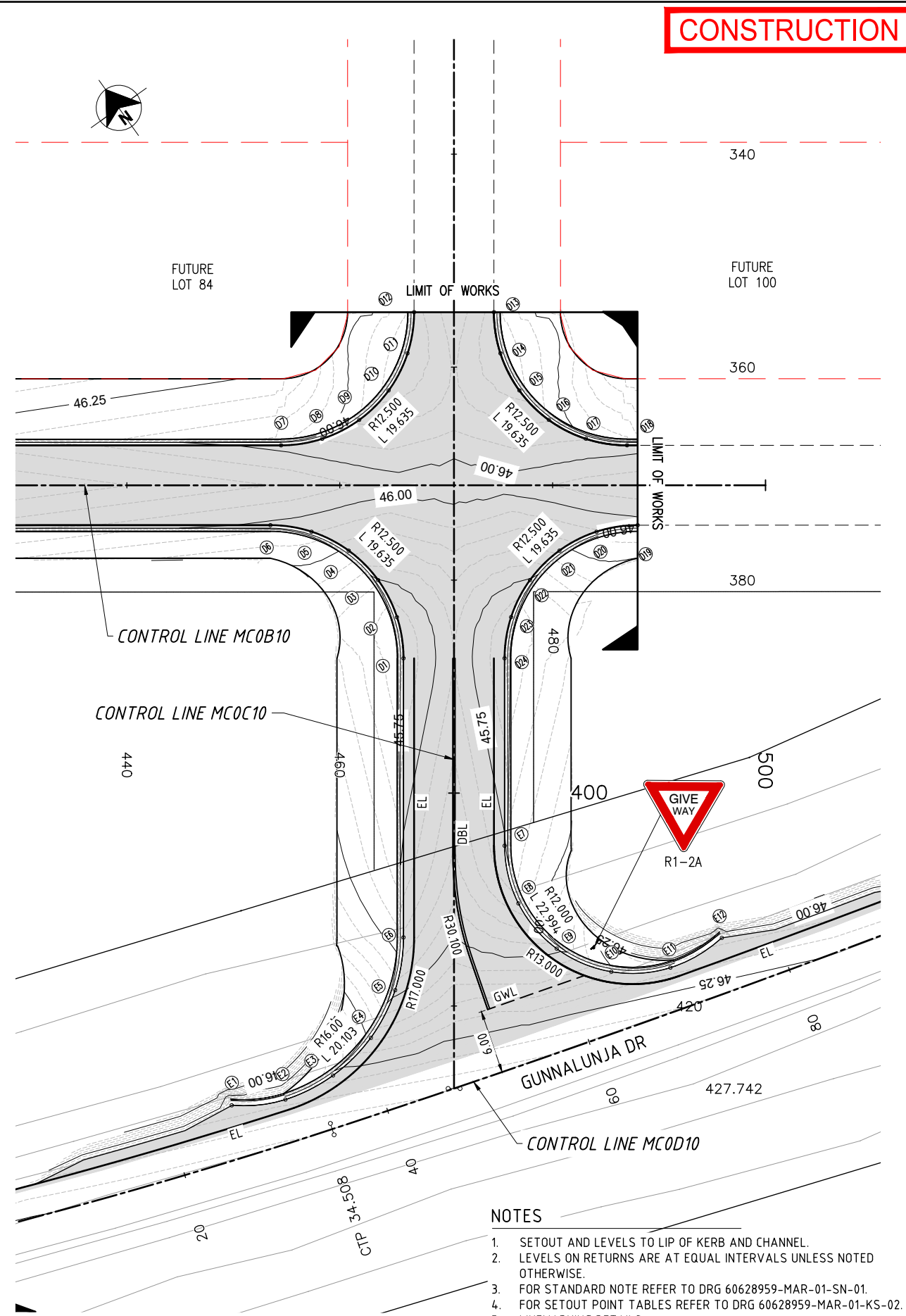
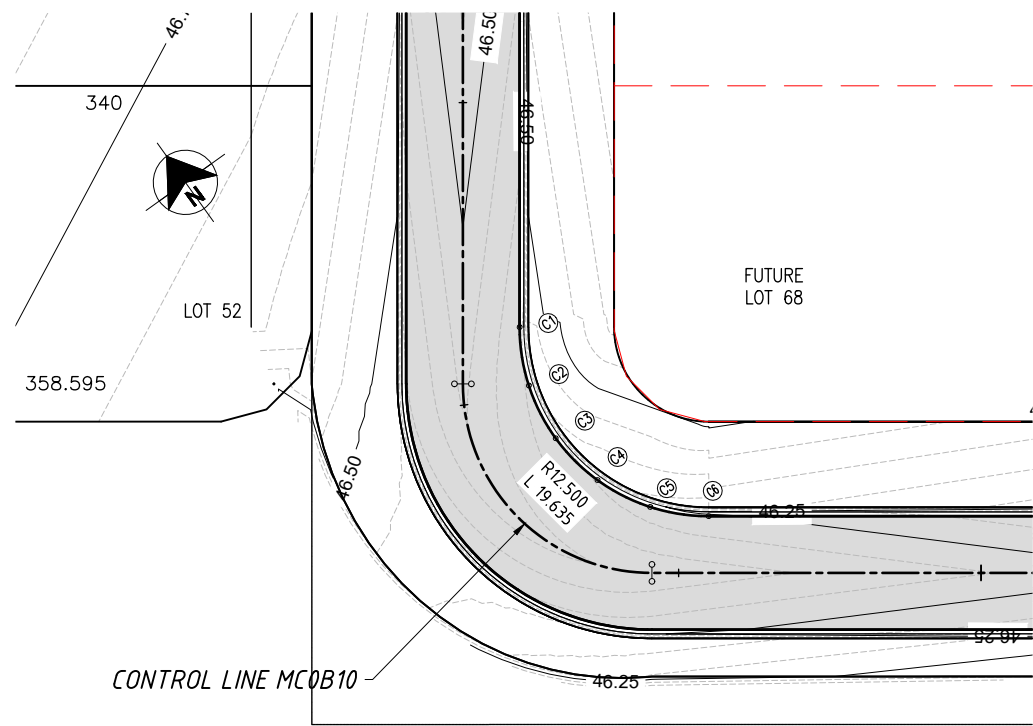
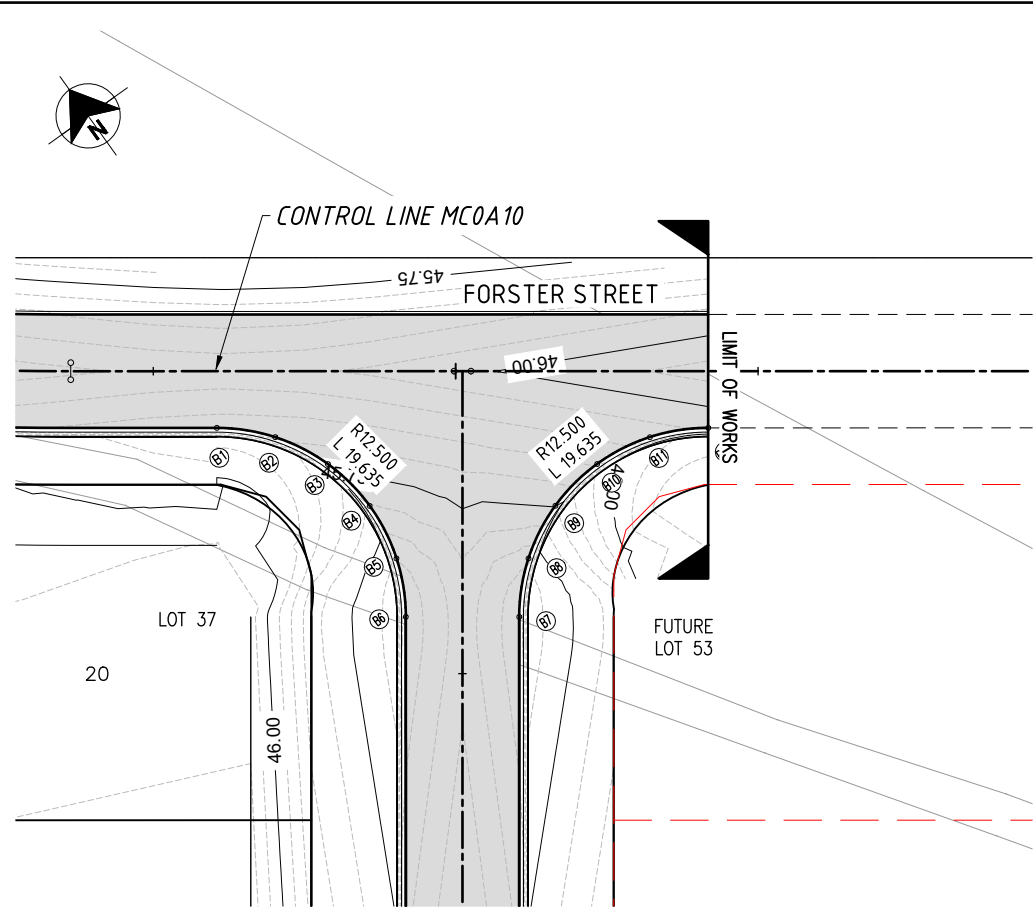
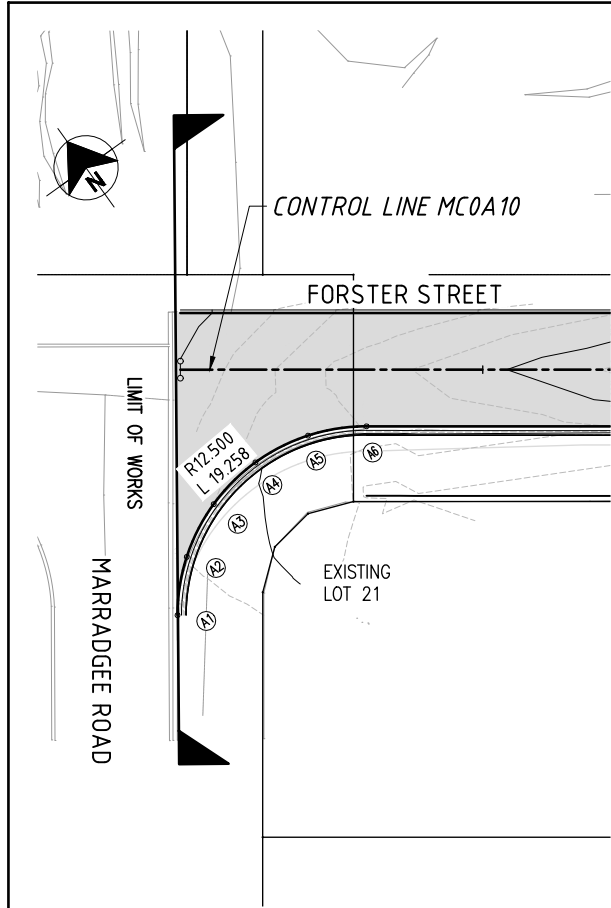
DOOMADGEE SERVICED ALLOTMENTS
MARRADGEE ROAD SUBDIVISION - STAGE 1
ROAD LONGITUDINAL SECTION SHEET 2 OF 2

StatusCONSTRUCTION

Dwg No.60628959-MAR-01-WP-02

Rev.0

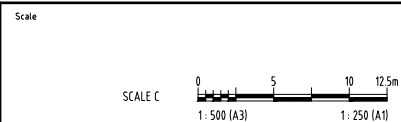
Plan 12 of 32



- NOTES
1. SETOUT AND LEVELS TO LIP OF KERB AND CHANNEL.
 2. LEVELS ON RETURNS ARE AT EQUAL INTERVALS UNLESS NOTED OTHERWISE.
 3. FOR STANDARD NOTE REFER TO DRG 60628959-MAR-01-SN-01.
 4. FOR SETOUT POINT TABLES REFER TO DRG 60628959-MAR-01-KS-02.
 5. LINEMARKING DETAILS:
EL - EDGE LINE
DBL - DOUBLE BARRIER LINE
GWL - GIVE WAY LINE

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DOOMADGEE ABORIGINAL SHIRE COUNCIL		Plan 13 of 32
DOOMADGEE SERVICED ALLOTMENTS MARRADGEE ROAD SUBDIVISION - STAGE 1 KERB SETOUT LAYOUT PLAN		
Status	CONSTRUCTION	Rev. 0
Org No.	60628959-MAR-01-KS-01	

SETOUT POINTS A#

POINT No.	COORDINATES		
	EASTING	NORTHING	LEVEL
A1	270911.864	8014594.455	45.544
A2	270914.610	8014597.235	45.574
A3	270918.082	8014599.031	45.599
A4	270921.938	8014599.667	45.619
A5	270925.802	8014599.081	45.634
A6	270929.297	8014597.331	45.653

SETOUT POINTS B#

POINT No.	COORDINATES		
	EASTING	NORTHING	LEVEL
B1	270987.019	8014554.493	45.823
B2	270989.802	8014551.745	45.808
B3	270991.599	8014548.273	45.766
B4	270992.235	8014544.417	45.697
B5	270991.649	8014540.552	45.604
B6	270989.906	8014537.053	45.566
B7	270996.004	8014532.687	45.566
B8	270998.752	8014535.469	45.617
B9	271002.225	8014537.266	45.753
B10	271006.080	8014537.902	45.856
B11	271009.944	8014537.317	45.923
B12	271013.444	8014535.573	45.958

SETOUT POINTS B#

POINT No.	COORDINATES		
	EASTING	NORTHING	LEVEL
B1	270987.019	8014554.493	45.823
B2	270989.802	8014551.745	45.808
B3	270991.599	8014548.273	45.766
B4	270992.235	8014544.417	45.697
B5	270991.649	8014540.552	45.604
B6	270989.906	8014537.053	45.566
B7	270996.004	8014532.687	45.566
B8	270998.752	8014535.469	45.617
B9	271002.225	8014537.266	45.753
B10	271006.080	8014537.902	45.856
B11	271009.944	8014537.317	45.923
B12	271013.444	8014535.573	45.958

SETOUT POINTS C#

POINT No.	COORDINATES		
	EASTING	NORTHING	LEVEL
C1	270798.885	8014257.385	46.362
C2	270797.134	8014253.888	46.344
C3	270796.550	8014250.021	46.321
C4	270797.188	8014246.163	46.295
C5	270798.988	8014242.691	46.274
C6	270801.772	8014239.945	46.259

SETOUT POINTS D#

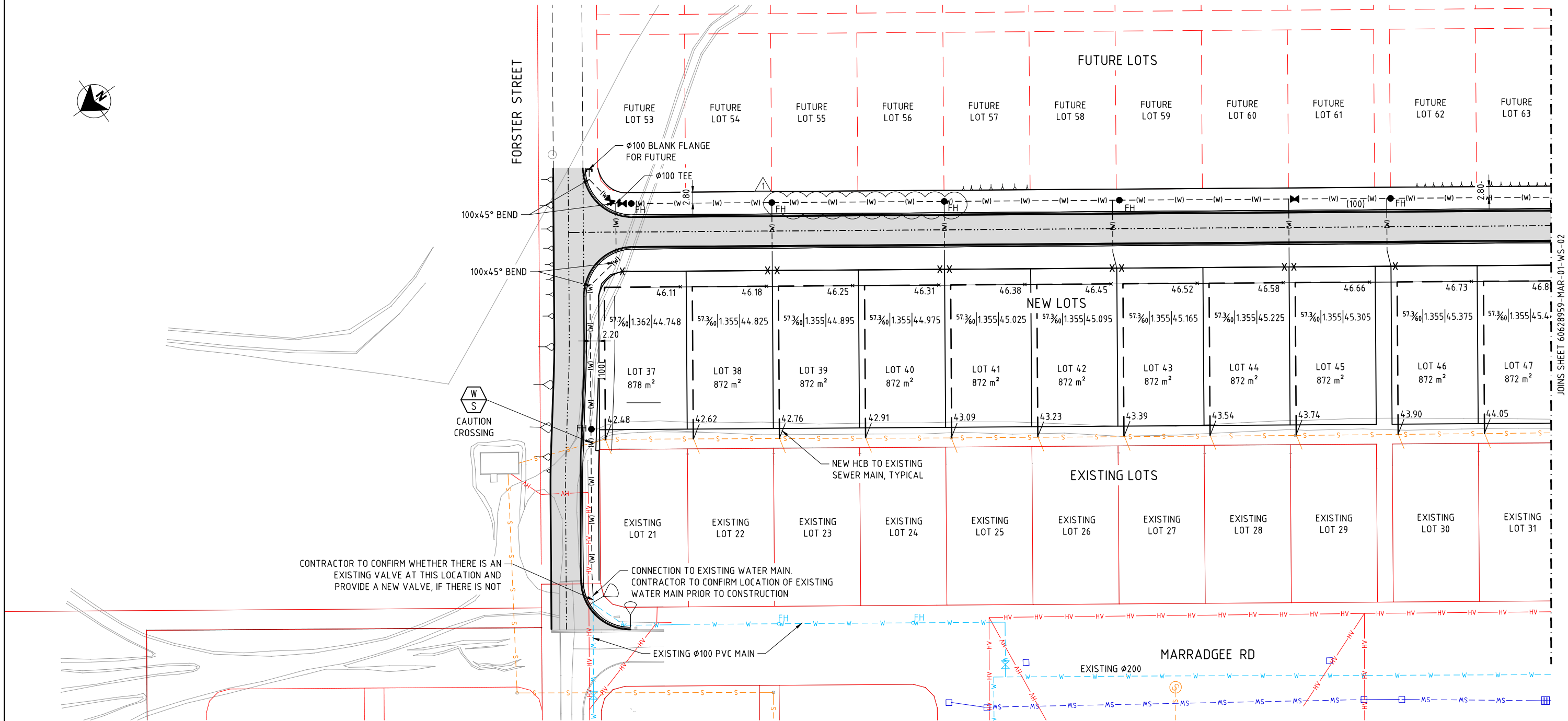
POINT No.	COORDINATES		
	EASTING	NORTHING	LEVEL
D7	270860.720	8014197.737	45.984
D8	270864.219	8014195.988	45.947
D9	270868.085	8014195.406	45.891
D10	270871.940	8014196.046	45.827
D11	270875.409	8014197.845	45.802
D12	270878.161	8014200.623	45.825
D13	270884.259	8014196.257	45.825
D14	270882.510	8014192.759	45.803
D15	270881.928	8014188.893	45.830
D16	270882.567	8014185.038	45.896
D17	270884.367	8014181.568	45.947
D18	270887.145	8014178.817	45.973
D19	270883.592	8014172.137	45.977
D20	270880.092	8014173.880	45.944
D21	270876.227	8014174.466	45.862
D22	270872.370	8014173.832	45.745
D23	270868.900	8014172.033	45.673
D24	270866.152	8014169.250	45.659
D1	270858.428	8014174.781	45.659
D2	270860.171	8014178.280	45.674
D3	270860.762	8014182.144	45.748
D4	270860.121	8014186.000	45.869
D5	270858.324	8014189.472	45.953
D6	270855.541	8014192.221	45.988

SETOUT POINTS E#

POINT No.	COORDINATES		
	EASTING	NORTHING	LEVEL
E1	270820.865	8014150.047	46.316
E2	270825.279	8014147.546	46.334
E3	270830.236	8014146.782	46.277
E4	270835.187	8014147.593	46.141
E5	270839.643	8014149.897	45.979
E6	270843.167	8014153.467	45.860
E7	270855.905	8014154.938	45.757
E8	270853.804	8014149.780	45.821
E9	270854.258	8014144.232	45.983
E10	270857.167	8014139.486	46.143
E11	270861.906	8014136.561	46.182
E12	270867.458	8014136.021	46.131

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LEGEND

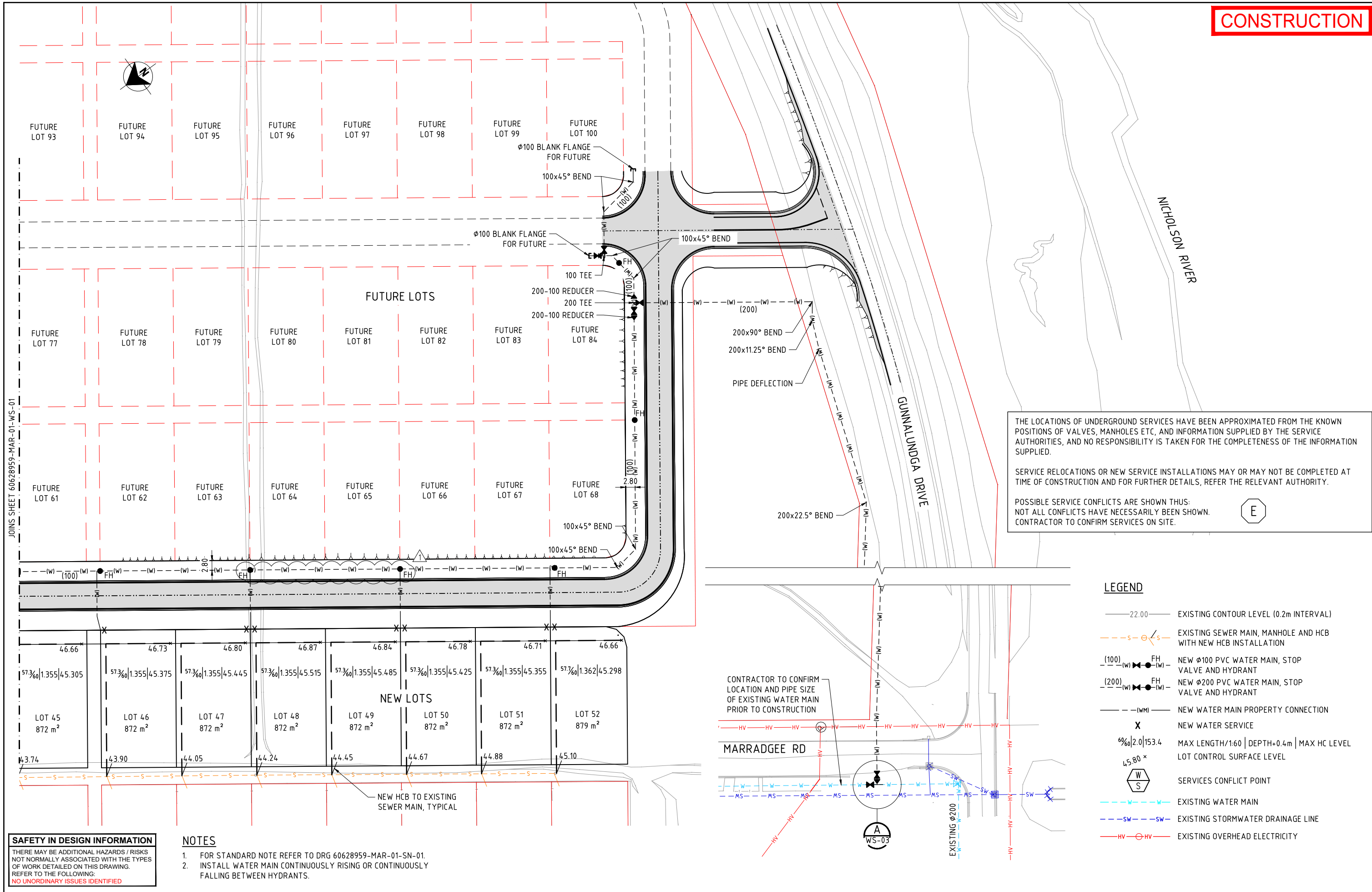
- 22.00 — EXISTING CONTOUR LEVEL (0.2m INTERVAL)
- S — S — EXISTING SEWER MAIN, MANHOLE AND HCB WITH NEW HCB INSTALLATION
- (100) — (W) — FH — NEW Ø100 PVC WATER MAIN, STOP VALVE AND HYDRANT
- (200) — (W) — FH — NEW Ø200 PVC WATER MAIN, STOP VALVE AND HYDRANT
- (WM) — NEW WATER MAIN PROPERTY CONNECTION
- X NEW WATER SERVICE
- 6%|2.0|153.4 MAX LENGTH/1:60 | DEPTH+0.4m | MAX HC LEVEL
- 45.80 * LOT CONTROL SURFACE LEVEL
- W S SERVICES CONFLICT POINT
- W — W — EXISTING WATER MAIN
- SW — SW — EXISTING STORMWATER DRAINAGE LINE
- HV — HV — EXISTING OVERHEAD ELECTRICITY

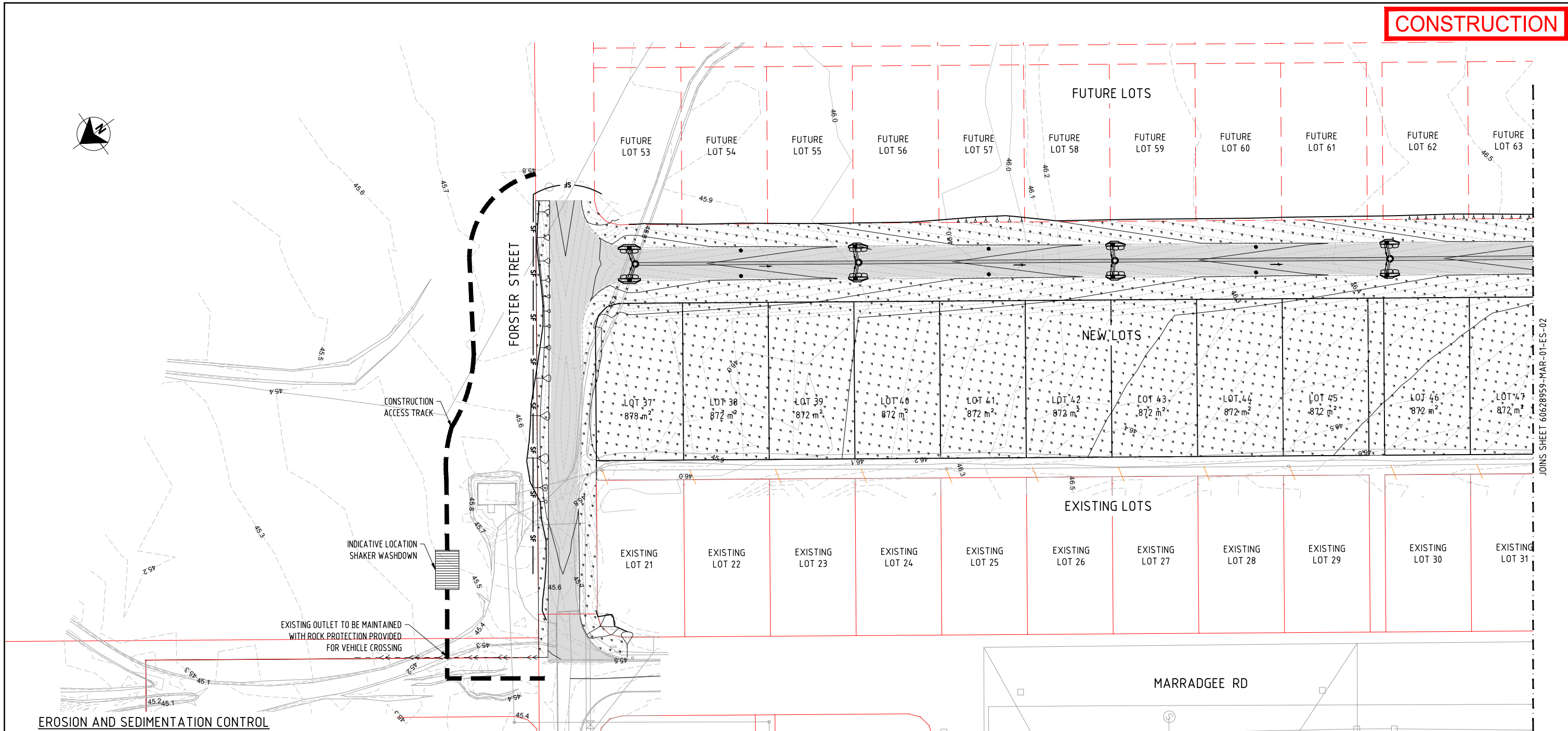
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NO UNORDINARY ISSUES IDENTIFIED

- NOTES**
- FOR STANDARD NOTE REFER TO DRG 60628959-MAR-01-SN-01.
 - INSTALL WATER MAIN CONTINUOUSLY RISING OR CONTINUOUSLY FALLING BETWEEN HYDRANTS.





EROSION AND SEDIMENTATION CONTROL

- E1. SOIL AND EROSION CONTROL MEASURES ARE INDICATIVE ONLY.
- E2. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PROVIDED WHERE SHOWN ON THE DRAWINGS, IN ACCORDANCE WITH THE SPECIFICATION AND TO THE SATISFACTION OF THE DOOMADGEE ABORIGINAL SHIRE COUNCIL. ALL WORKS SHALL BE ERECTED AND CONSTRUCTED IN ACCORDANCE WITH THE CONTRACTOR'S ENVIRONMENTAL MANAGEMENT PLAN.
- E3. AN ON-SITE MEETING SHALL BE HELD WITH THE CONTRACTOR AND THE SITE SUPERINTENDENT PRIOR TO ANY SITE WORKS COMMENCING. ALL ENVIRONMENTAL ASPECTS OF THE PROJECT WILL BE DISCUSSED INCLUDING STAGING OF CONSTRUCTION WORKS, STOCKPILE SITES, AND PROPOSED VEHICULAR AND PLANT ACCESS.
- E4. ALL CONTROL WORK INCLUDING DIVERSION BANKS AND CATCH DRAINS, V-DRAINS AND SILT FENCES SHALL BE COMPLETED BEFORE EARTHWORKS BEGINS.
- E5. SILT FENCES SHALL BE ERECTED CONVEX TO THE CONTOUR TO POND WATER AND SHALL BE LOCATED 1m AWAY FROM THE TOE OF FILL BATTERS. SILT FENCES SHALL BE OF WOVEN CONSTRUCTION AND SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF EARTHWORKS, IMMEDIATELY AFTER CLEARING OF VEGETATION AND BEFORE REMOVAL OF TOPSOIL.
- E6. ALL TOPSOIL IS TO BE STOCKPILED ON SITE FOR REUSE (AWAY FROM TREES AND DRAINAGE LINES). MEASURES SHALL BE APPLIED TO PREVENT EROSION OF STOCKPILE.
- E7. ALL TEMPORARY EARTH BERMS, DIVERSION AND SILT DAM EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED AND MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED.
- E8. CLEAR WATER IS TO BE DIVERTED AWAY FROM DISTURBED GROUND AND INTO THE DRAINAGE SYSTEM.
- E9. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROVIDING ON GOING ADJUSTMENT TO EROSION CONTROL MEASURES AS REQUIRED DURING CONSTRUCTION.
- E10. ALL SEDIMENT TRAPPING STRUCTURES AND DEVICES ARE TO BE INSPECTED AFTER STORMS FOR STRUCTURAL DAMAGE OR CLOGGING, TRAPPED MATERIAL IS TO BE REMOVED TO A SAFE, APPROVED LOCATION.
- E11. ALL FINAL EROSION PREVENTION MEASURES INCLUDING THE ESTABLISHMENT OF GRASSING ARE TO BE MAINTAINED UNTIL THE END OF THE DEFECTS LIABILITY PERIOD.
- E12. ALL TOPSOIL IS TO BE STOCKPILED ON SITE FOR REUSE (AWAY FROM TREES AND DRAINAGE LINES). MEASURES SHALL BE APPLIED TO PREVENT EROSION OF STOCKPILE.
- E13. ALL EARTHWORKS AREAS SHALL BE ROLLED EACH EVENING TO SEAL THE EARTHWORKS.
- E14. ALL FILL AREAS ARE TO BE LEFT WITH A BUND AT THE TOP OF THE SLOPE AT THE END OF EACH DAYS EARTHWORKS. THE HEIGHT OF THE BUND SHALL BE A MINIMUM OF 200mm.
- E15. AFTER REVEGETATION OF THE SITE IS COMPLETE AND THE SITE IS STABLE IN THE OPINION OF THE SITE SUPERINTENDENT ALL TEMPORARY WORK SUCH AS SILT FENCE, DIVERSION DRAINS ETC SHALL BE REMOVED.
- E16. ALL TOPSOIL STOCKPILES ARE TO BE SUITABLY COVERED TO THE SATISFACTION OF THE SITE SUPERINTENDENT TO PREVENT WIND AND WATER EROSION.
- E17. CONTRACTOR TO PROVIDE AN EROSION SEDIMENT CONTROL PLAN TO THE SATISFACTION OF THE SITE SUPERINTENDENT AND THE DOOMADGEE ABORIGINAL SHIRE COUNCIL PRIOR TO THE COMMENCEMENT OF WORKS.

SAFETY IN DESIGN INFORMATION

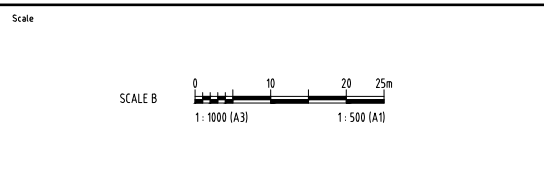
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EROSION AND SEDIMENT CONTROL LEGEND

- SF SILTATION FENCE
- GULLY INLET PROTECTION
- ROCK CHECK DAM
- TOPSOIL AND GRASS SEEDING
- DUMPED ROCK SCOUR PROTECTION 200mm NOM. SIZE AT 300mm DEEP
- ENTRY / EXIT SHAKER WASHDOWN

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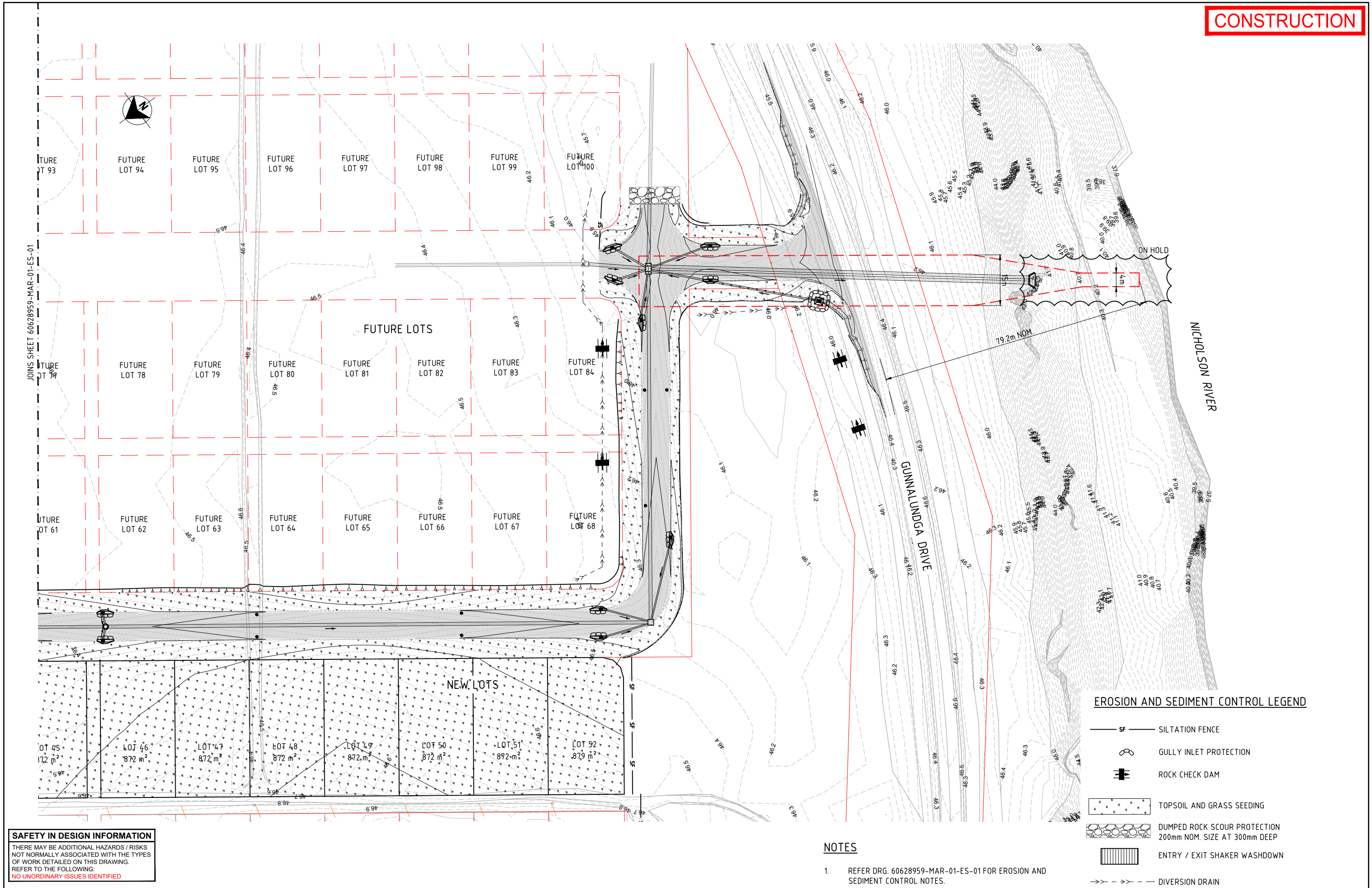
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DRAWN	B. MOOREHEAD	CHECKED	A. BORZI
APPROVED	J JENTZ	DATE	27.09.22
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DOOMADGEE ABORIGINAL SHIRE COUNCIL		Plan 24 of 32
DOOMADGEE SERVICED ALLOTMENTS MARRADGEE ROAD SUBDIVISION - STAGE 1 CONCEPT EROSION AND SEDIMENT CONTROL PLAN SHEET 1 OF 2		
Status	CONSTRUCTION	Rev. 0
Org No.	60628959-MAR-01-ES-01	

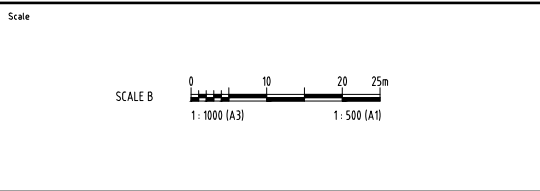


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NOTES

1. REFER DRG. 60628959-MAR-01-ES-01 FOR EROSION AND SEDIMENT CONTROL NOTES.

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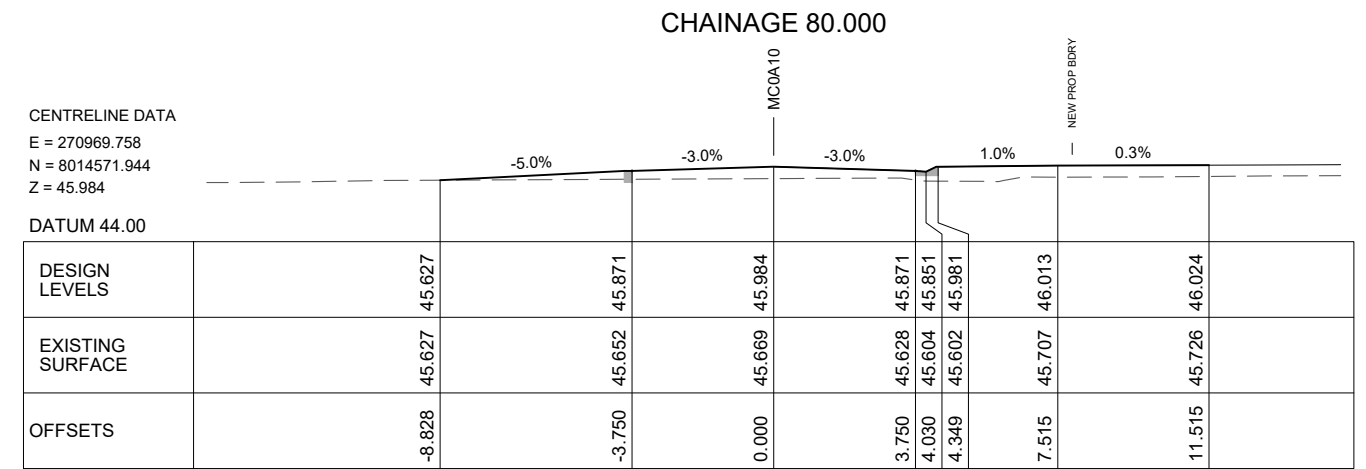
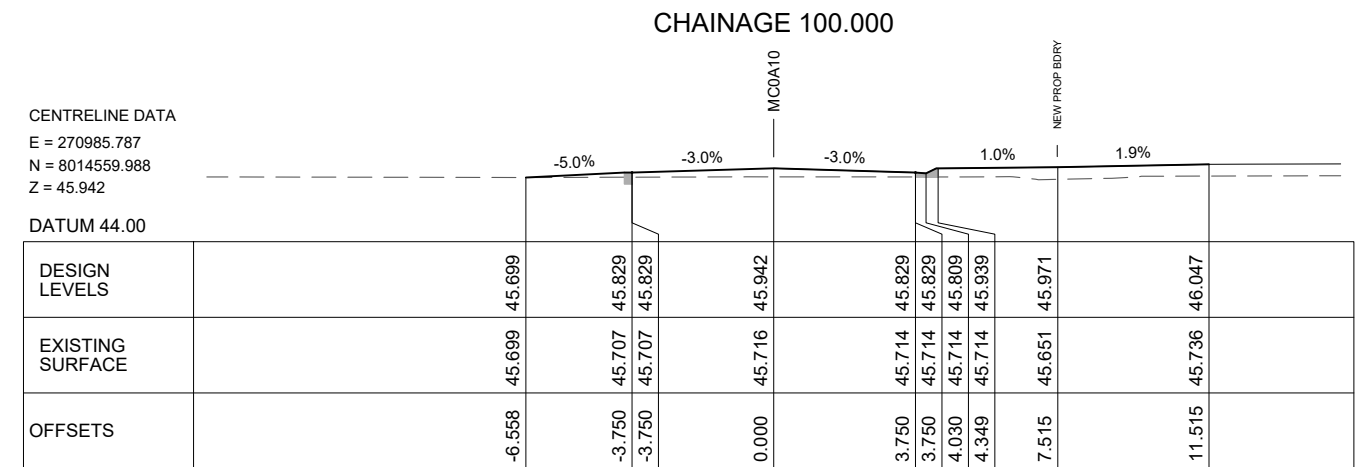
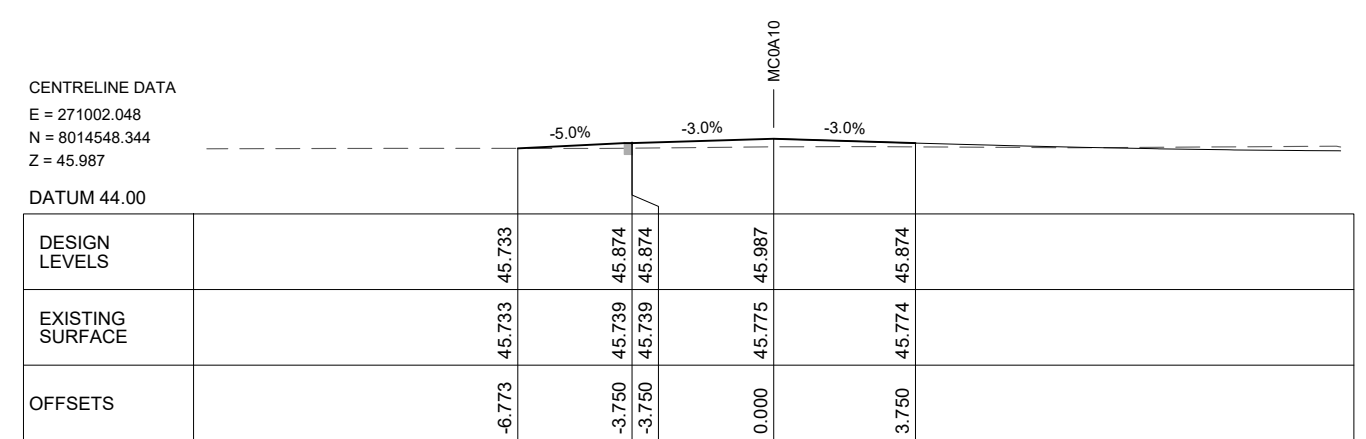
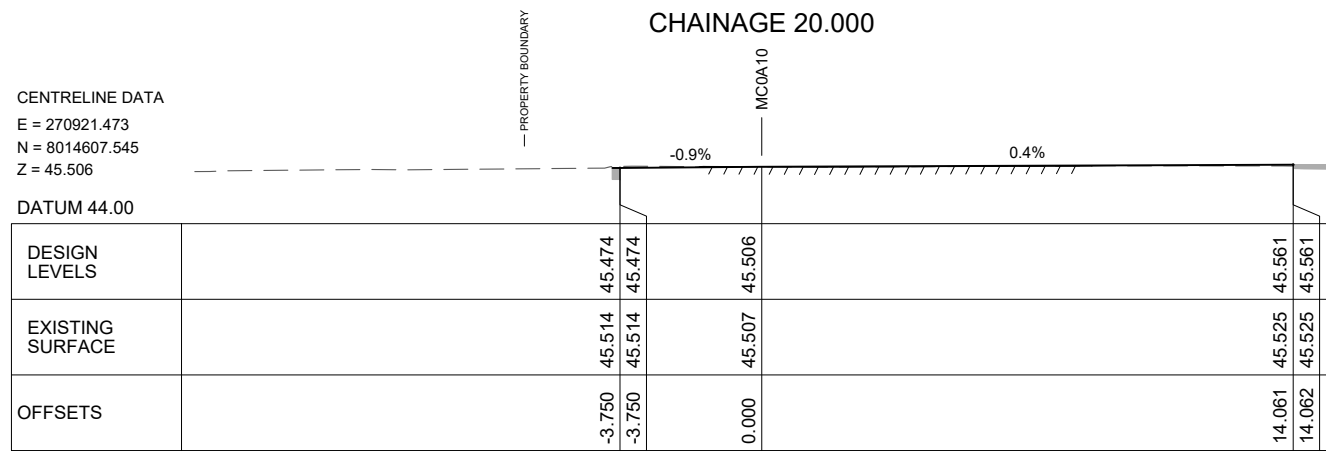
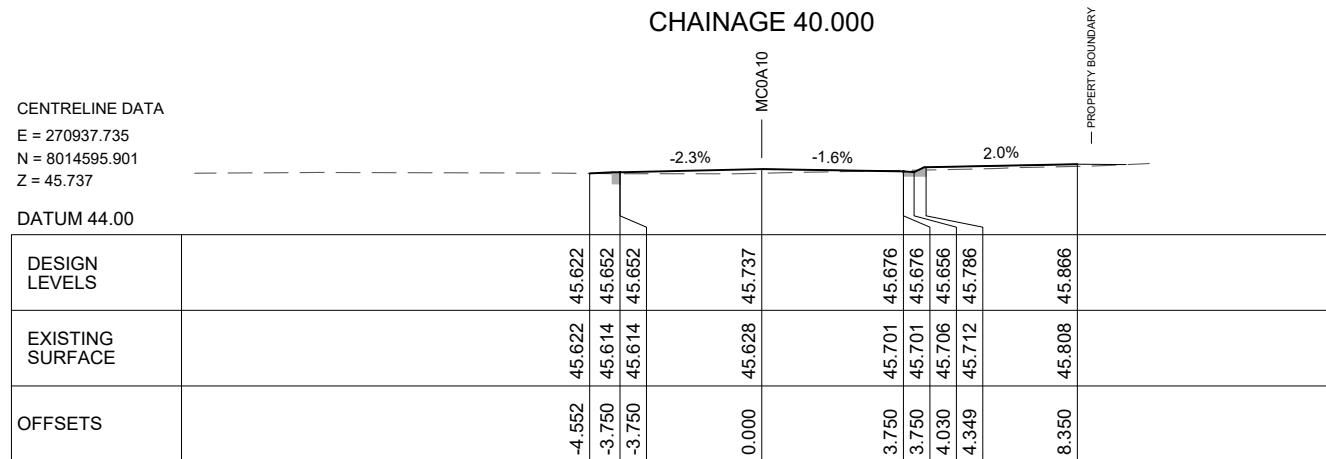
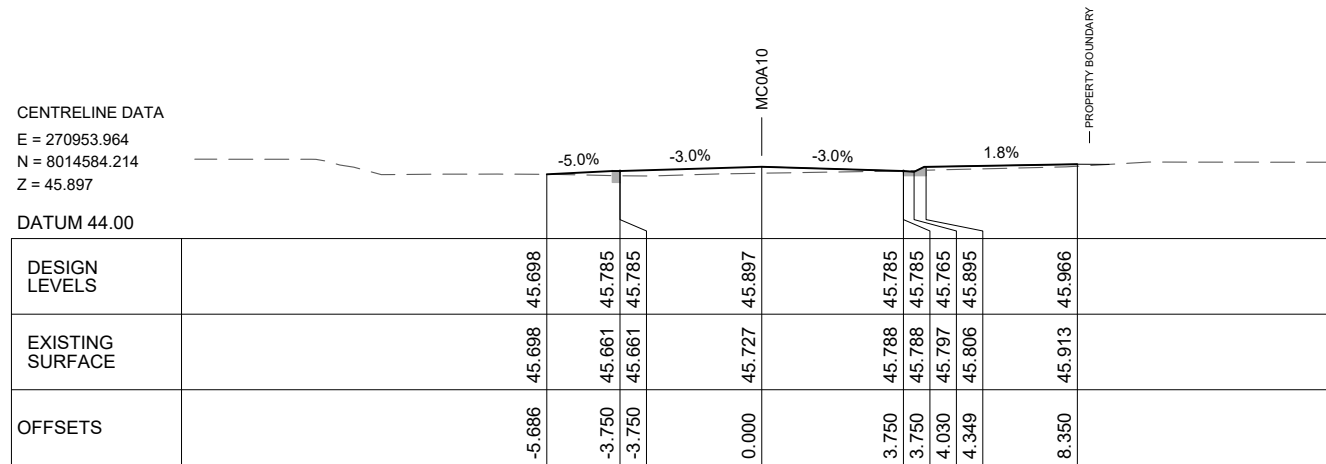
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APPROVED	J JENTZ	DATE	27.09.22
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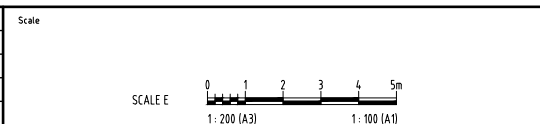


DOOMADGEE ABORIGINAL SHIRE COUNCIL		Plan 25 of 32
DOOMADGEE SERVICED ALLOTMENTS MARRADGEE ROAD SUBDIVISION - STAGE 1 CONCEPT EROSION AND SEDIMENT CONTROL PLAN SHEET 2 OF 2		
Status	CONSTRUCTION	Rev. 0
Org No.	60628959-MAR-01-ES-02	



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No.	BY	DATE		DESCRIPTION	APPD.



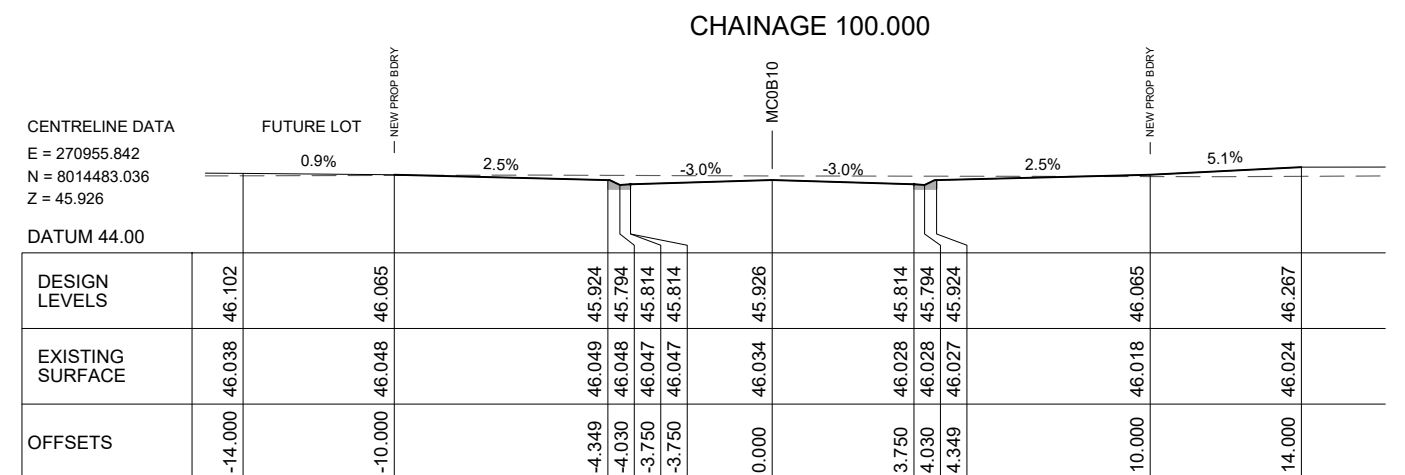
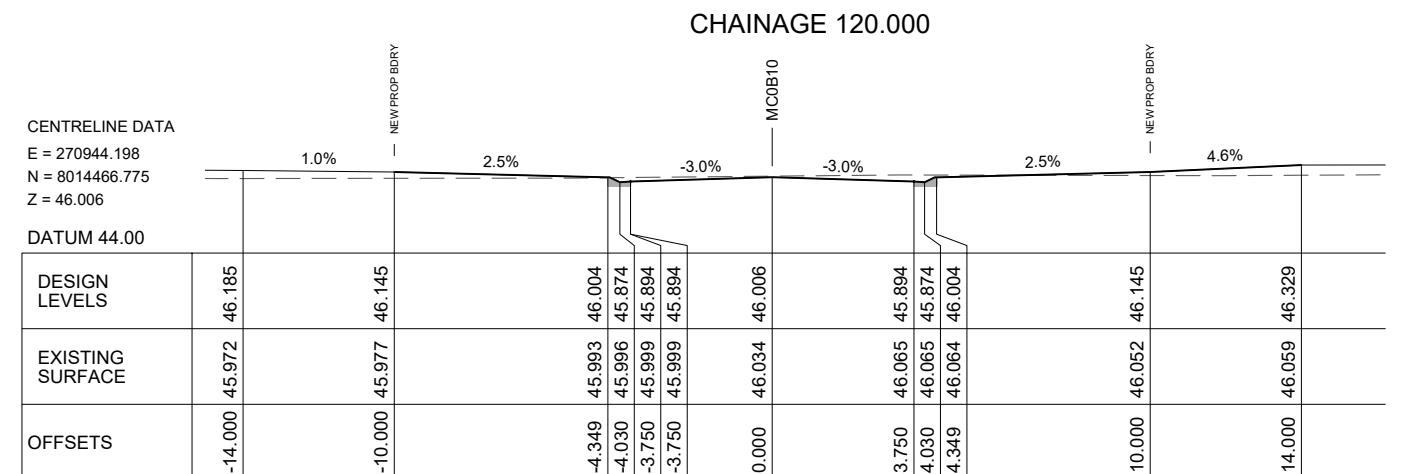
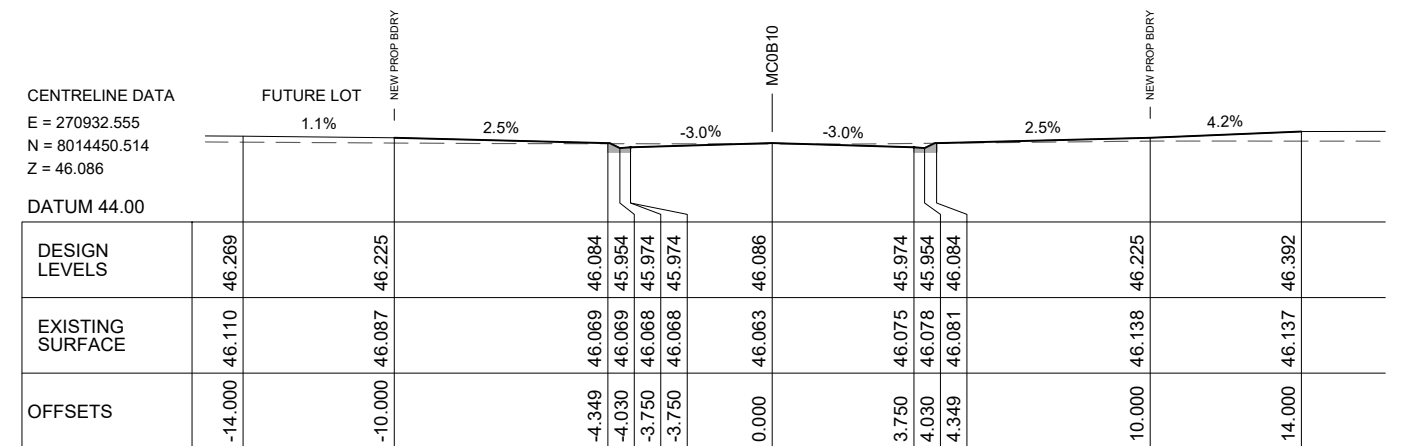
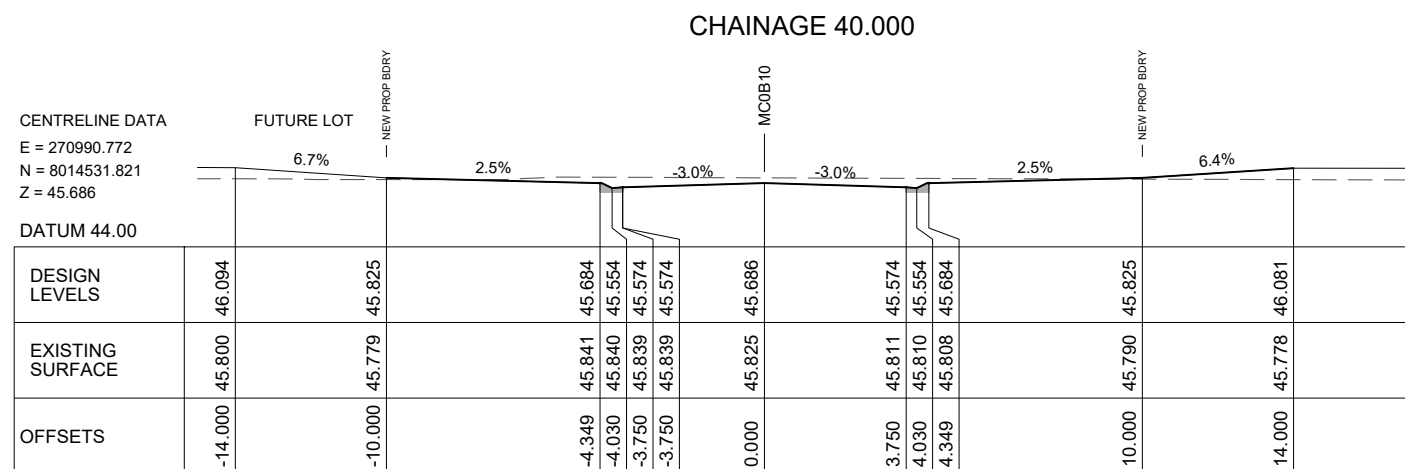
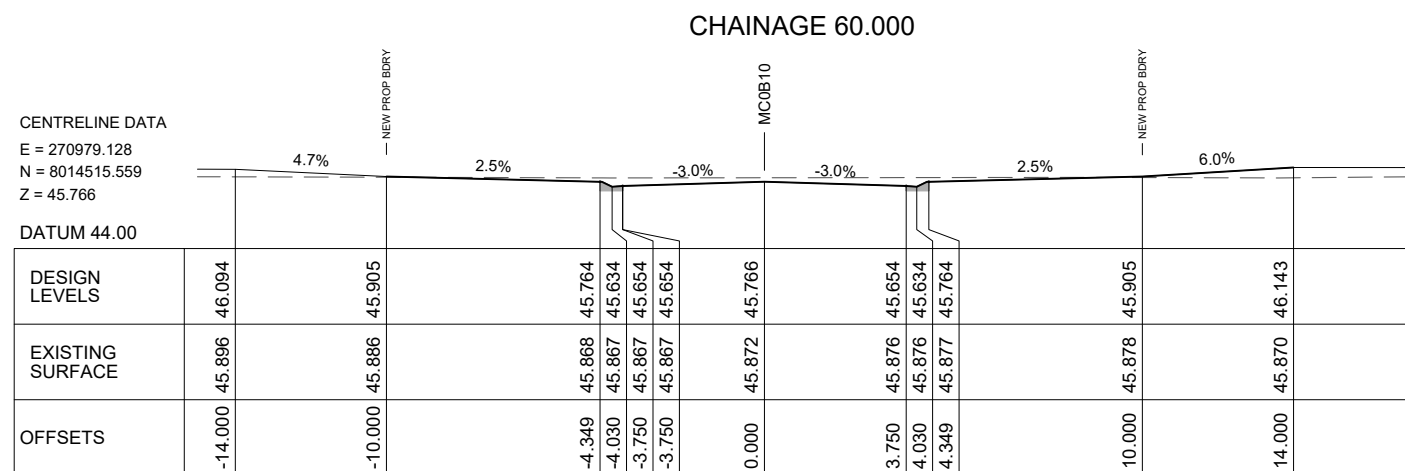
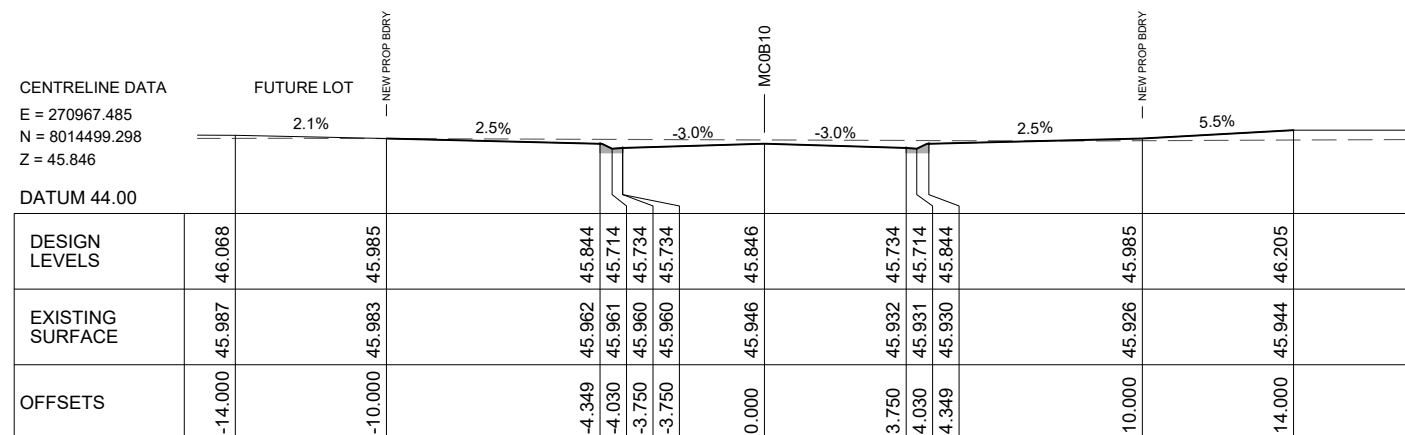
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DRAWN	B. MOOREHEAD	CHECKED	A. BORZI
APPROVED	J JENTZ	* SIGN	DATE 27.09.22
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DOOMADGEE ABORIGINAL SHIRE COUNCIL		Plan 26 of 32
DOOMADGEE SERVICED ALLOTMENTS MARRADGEE ROAD SUBDIVISION - STAGE 1 ROAD CROSS SECTIONS - MC0A10 - SHEET 1 OF 1		
Status	CONSTRUCTION	Drg No 60628959-MAR-01-XS-01 Rev. 0

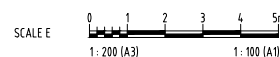


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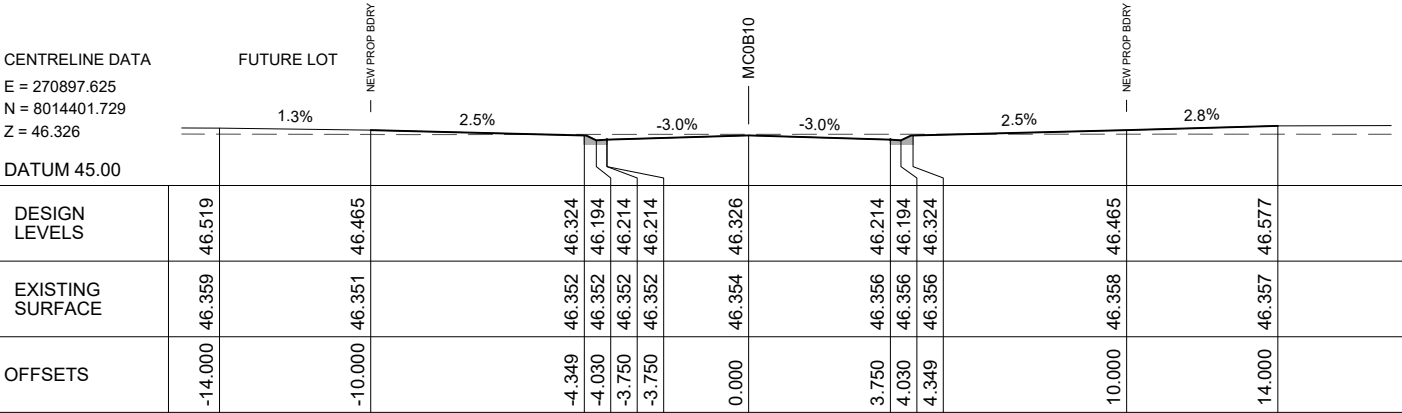
DOOMADGEE ABORIGINAL SHIRE COUNCIL

an 27 of 32

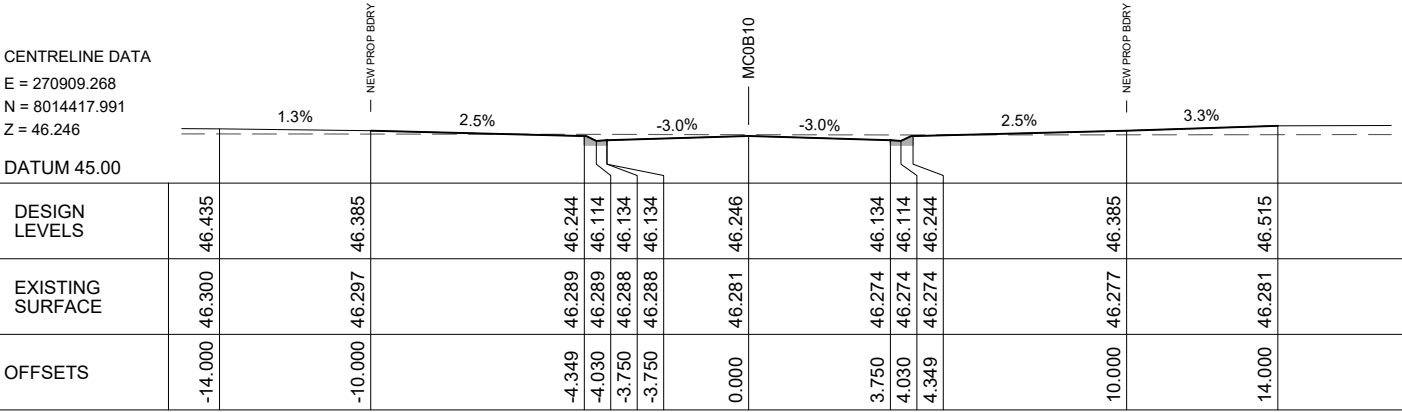
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MARRADGEE ROAD SUBDIVISION - STAGE 1
ROAD CROSS SECTIONS - MC0B10 - SHEET 1 OF 4

Status	CONSTRUCTION
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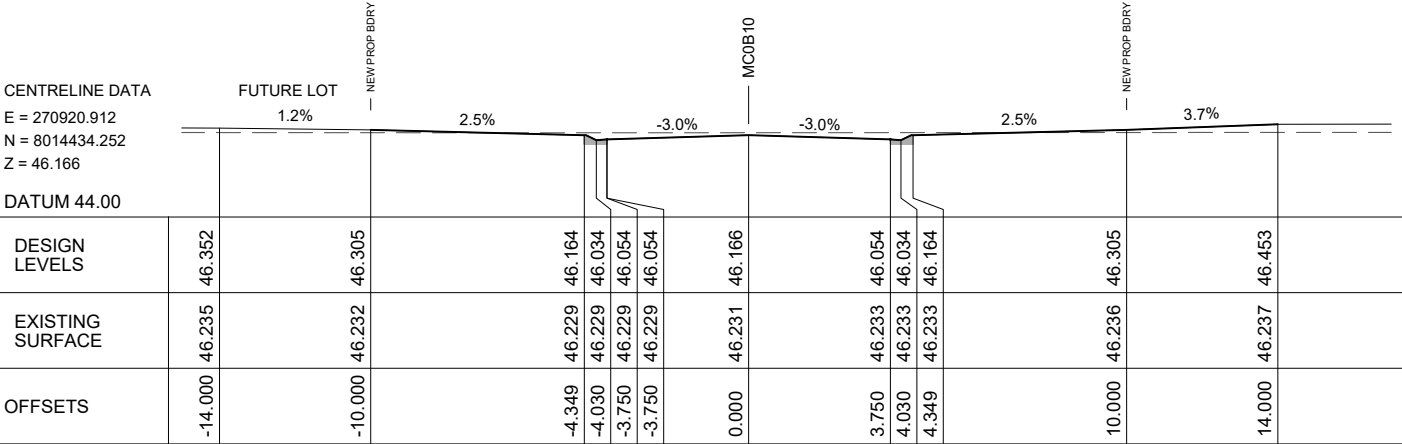
Drp No.	60628959-MAR-01-XS-02	Rev.	0
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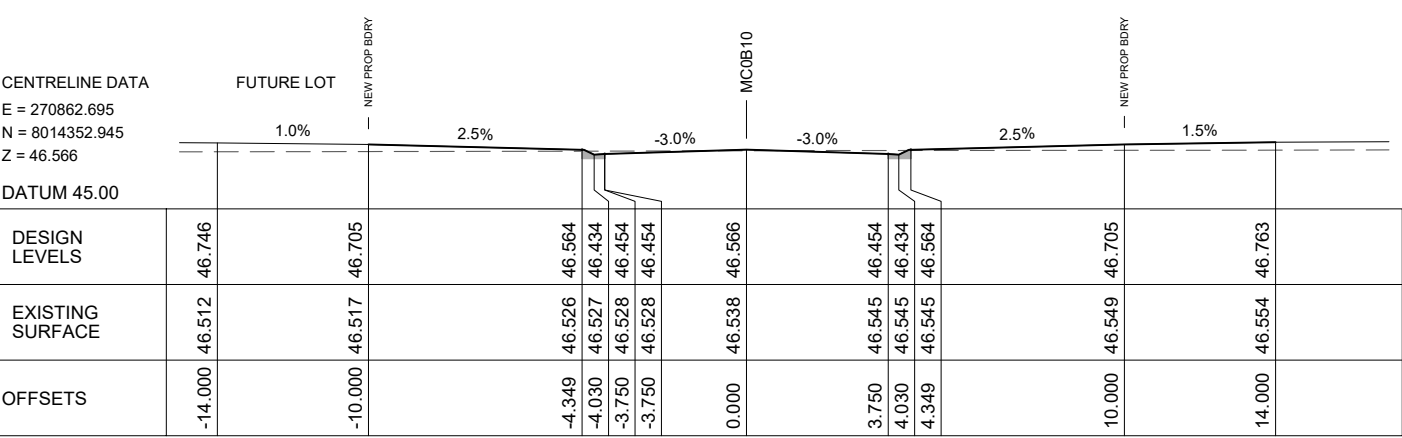
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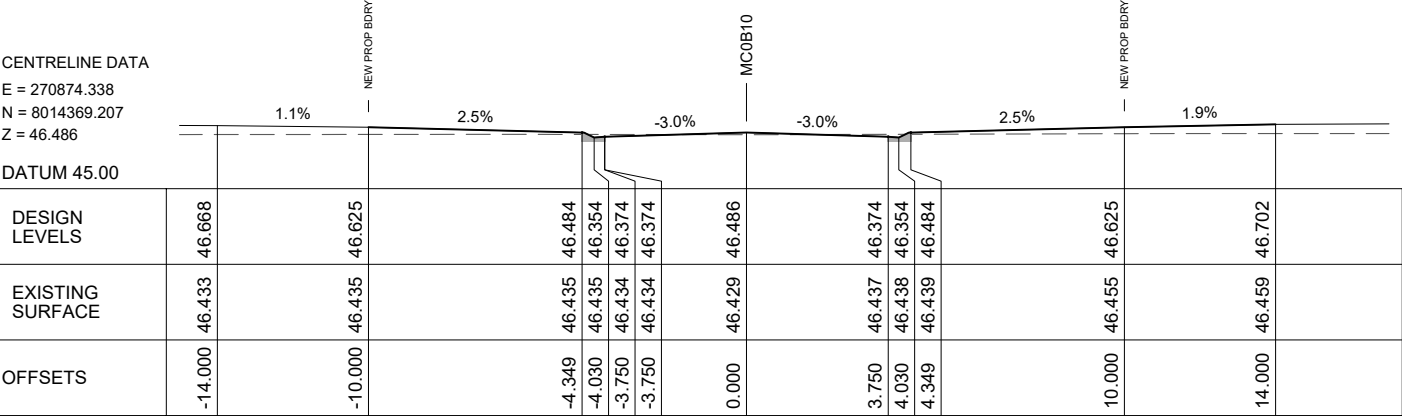
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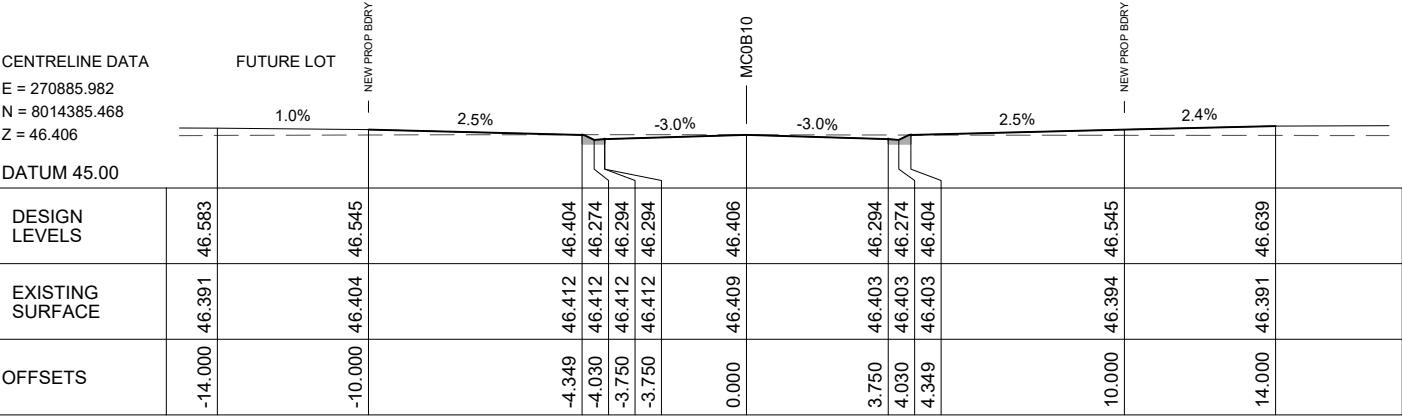
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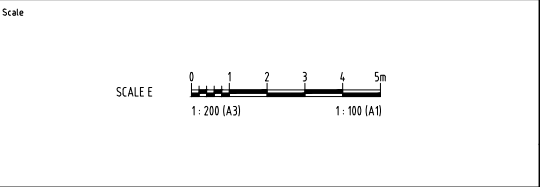
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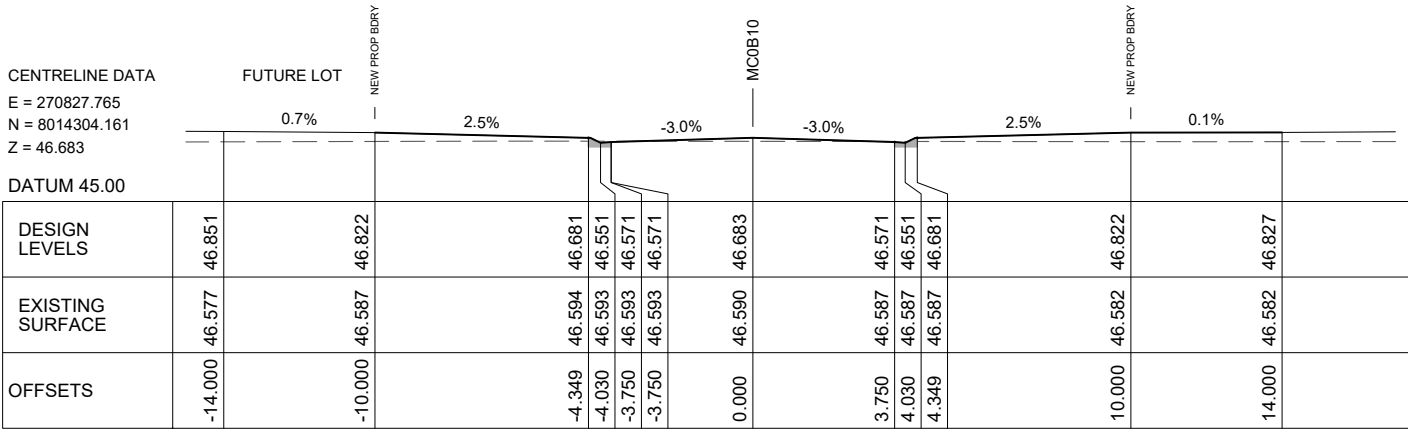
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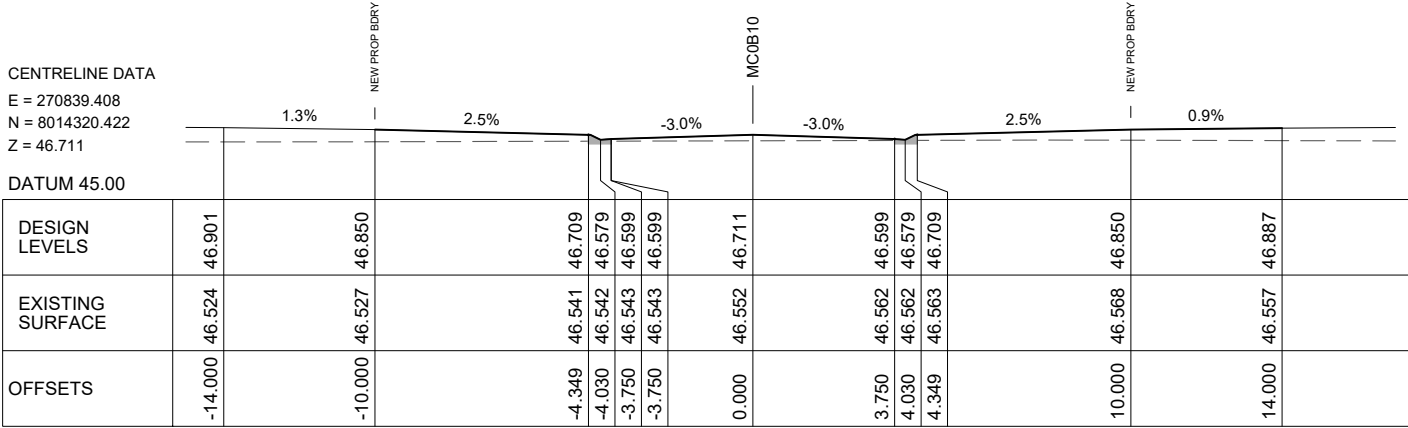
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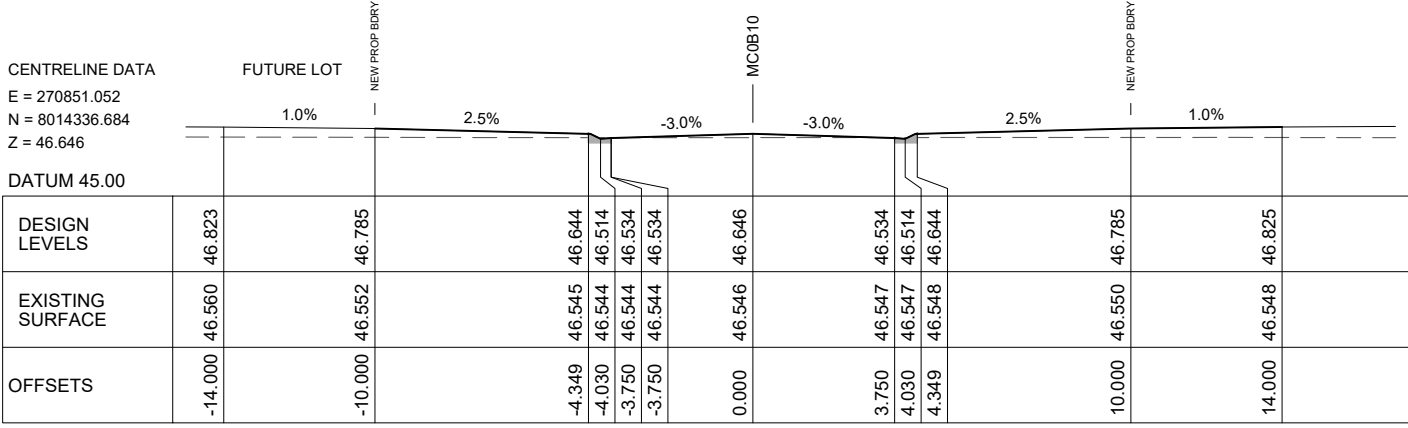
DOOMADGEE ABORIGINAL SHIRE COUNCIL		Plan 28 of 32
DOOMADGEE SERVICED ALLOTMENTS MARRADGEE ROAD SUBDIVISION - STAGE 1 ROAD CROSS SECTIONS - MC0B10 - SHEET 2 OF 4		
Status	CONSTRUCTION	Rev. 0
Org No.	60628959-MAR-01-XS-03	



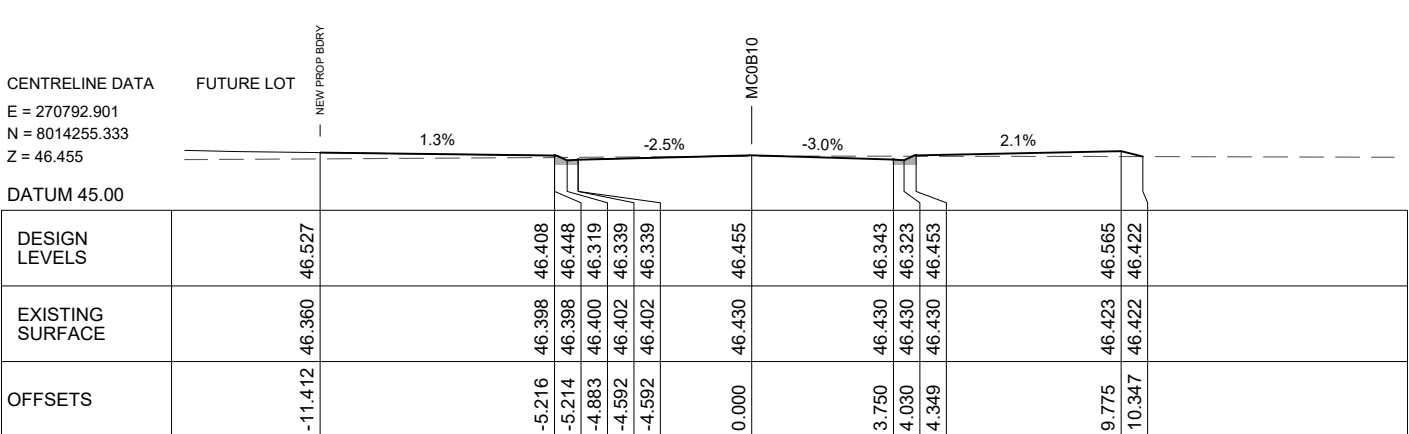
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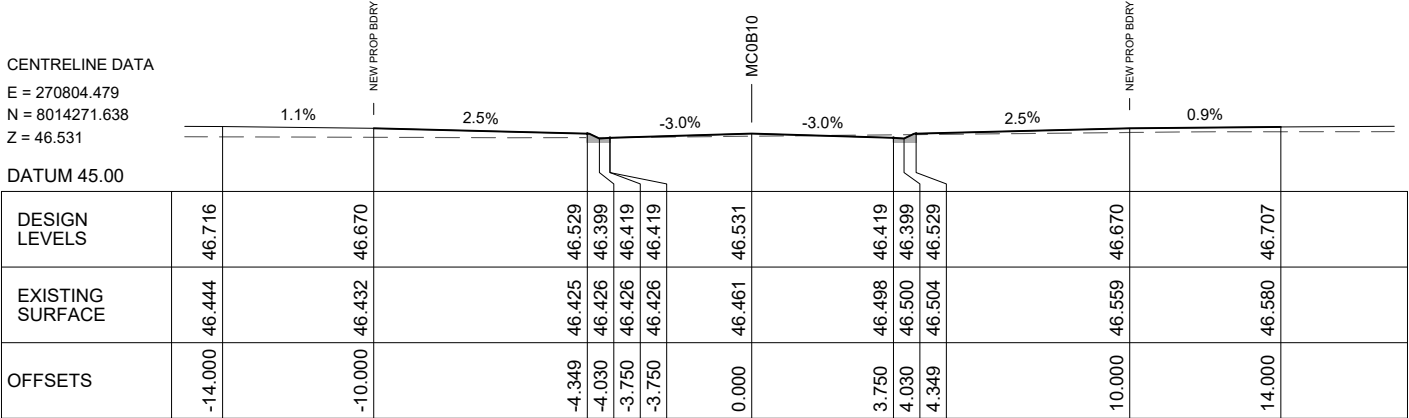
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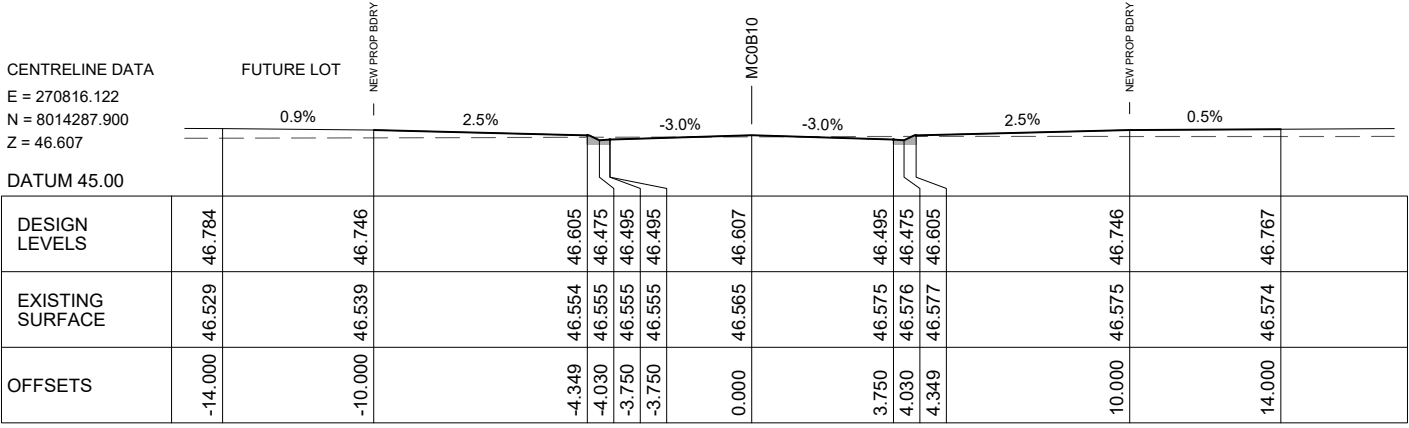
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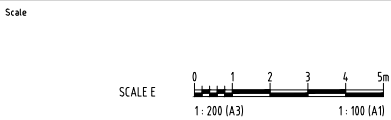
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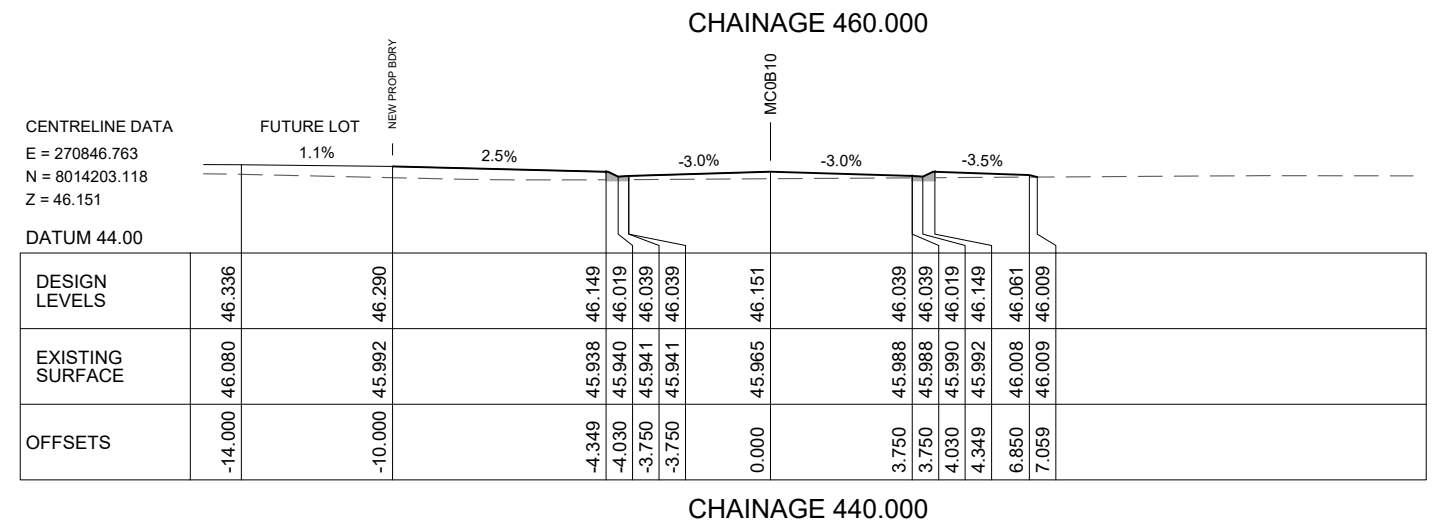
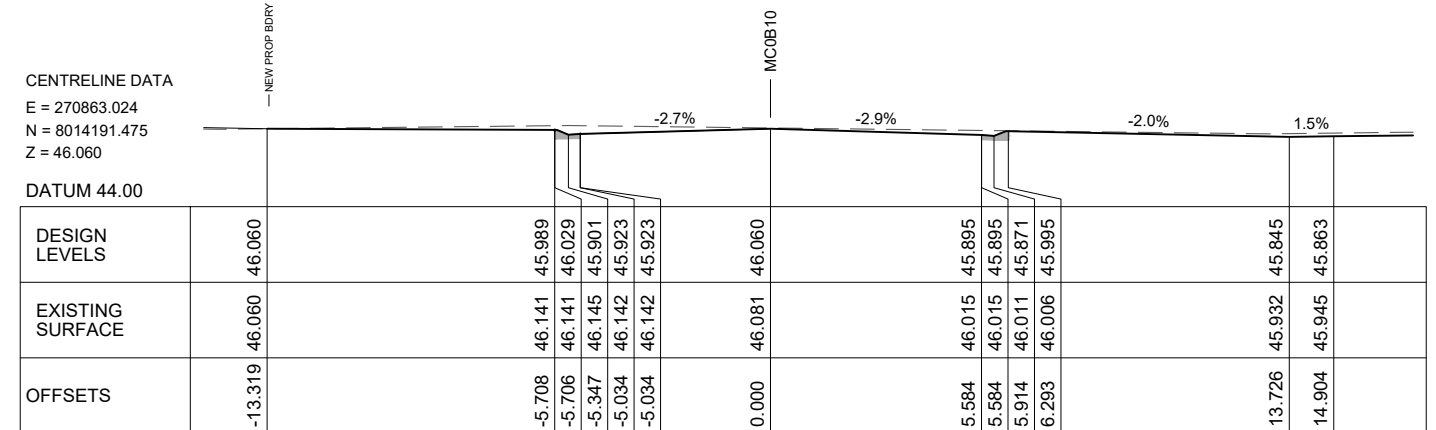
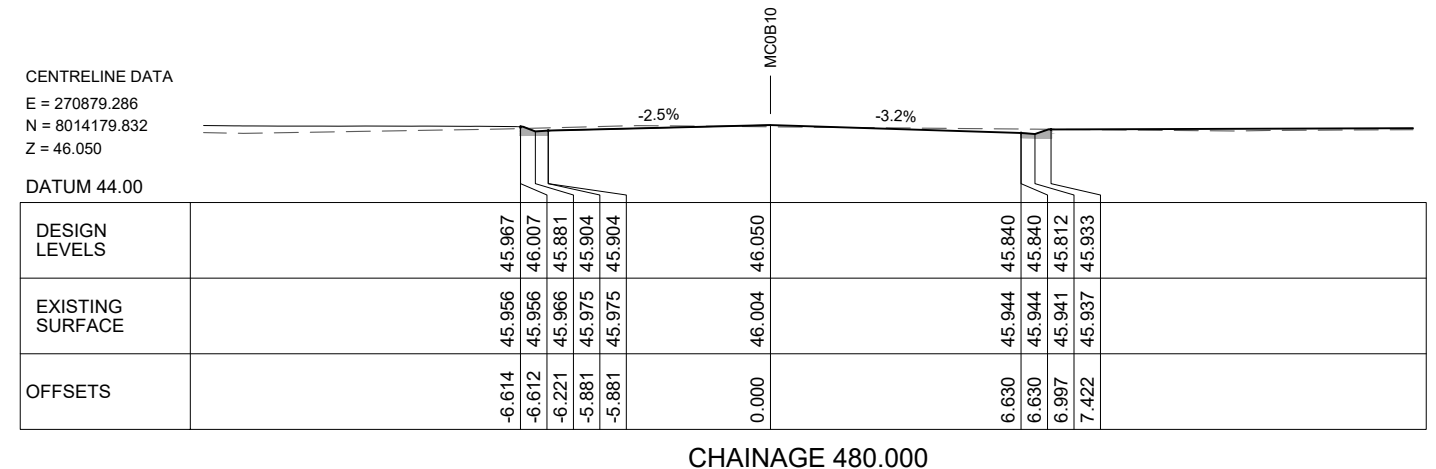
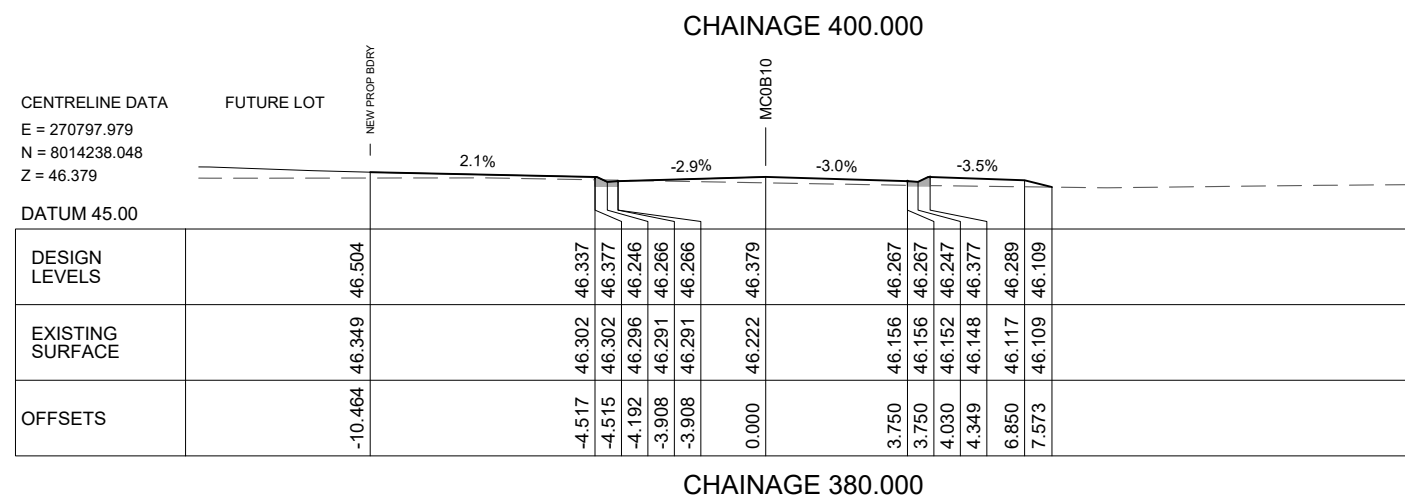
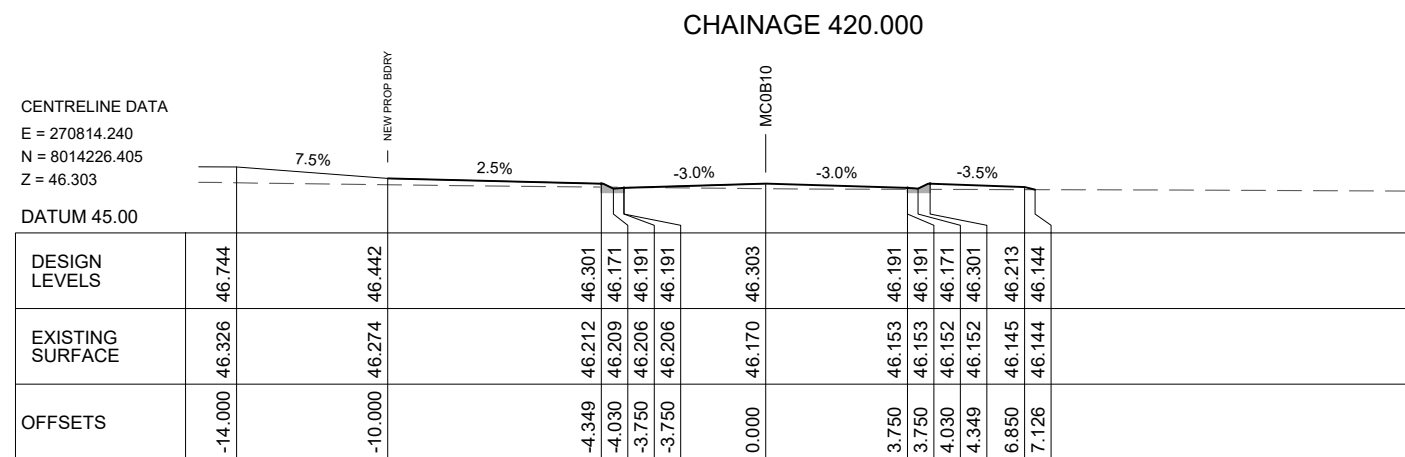
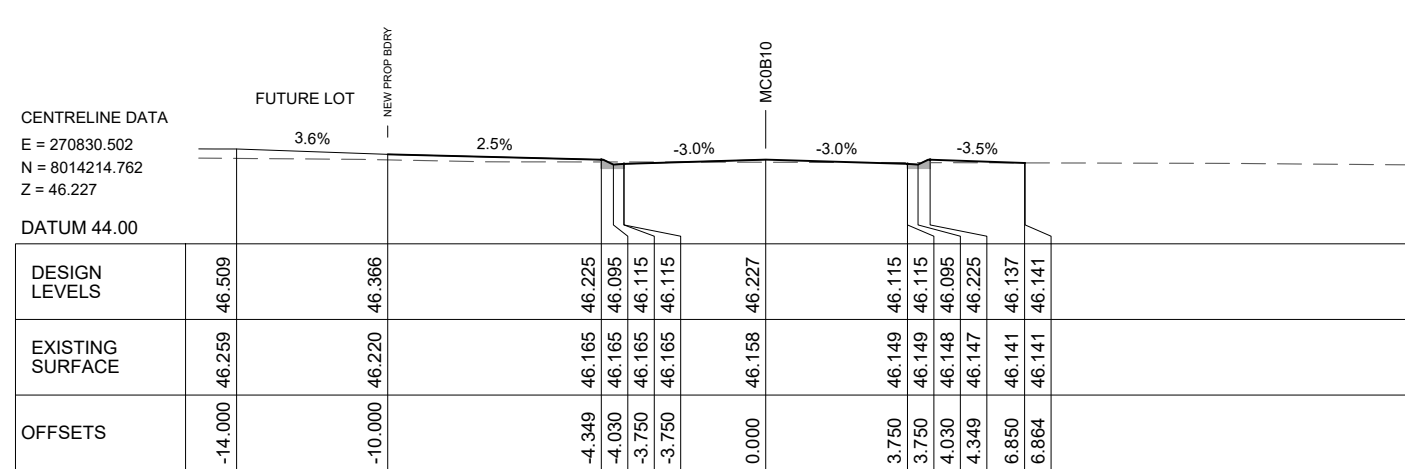
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DRAWN	B. MOOREHEAD	CHECKED	A. BORZI
APPROVED	J. JENTZ	DATE	27.09.22
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DOOMADGEE ABORIGINAL SHIRE COUNCIL		Plan 29 of 32
DOOMADGEE SERVICED ALLOTMENTS MARRADGEE ROAD SUBDIVISION - STAGE 1 ROAD CROSS SECTIONS - MC0B10 - SHEET 3 OF 4		
Status	CONSTRUCTION	Rev. 0
Org No.	60628959-MAR-01-XS-04	

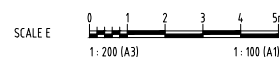


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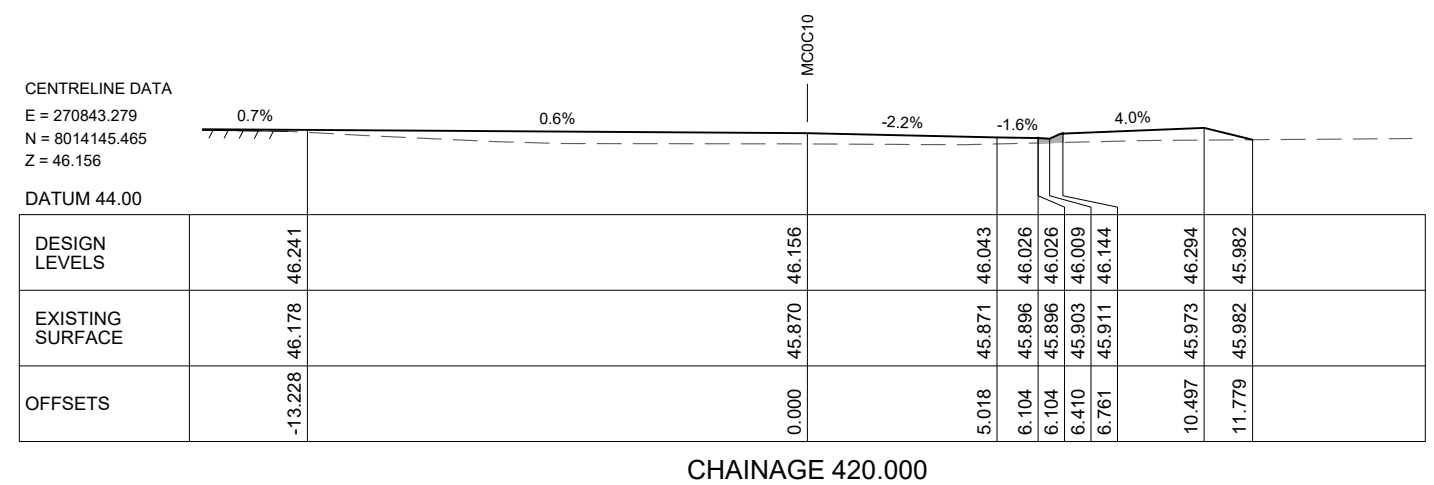
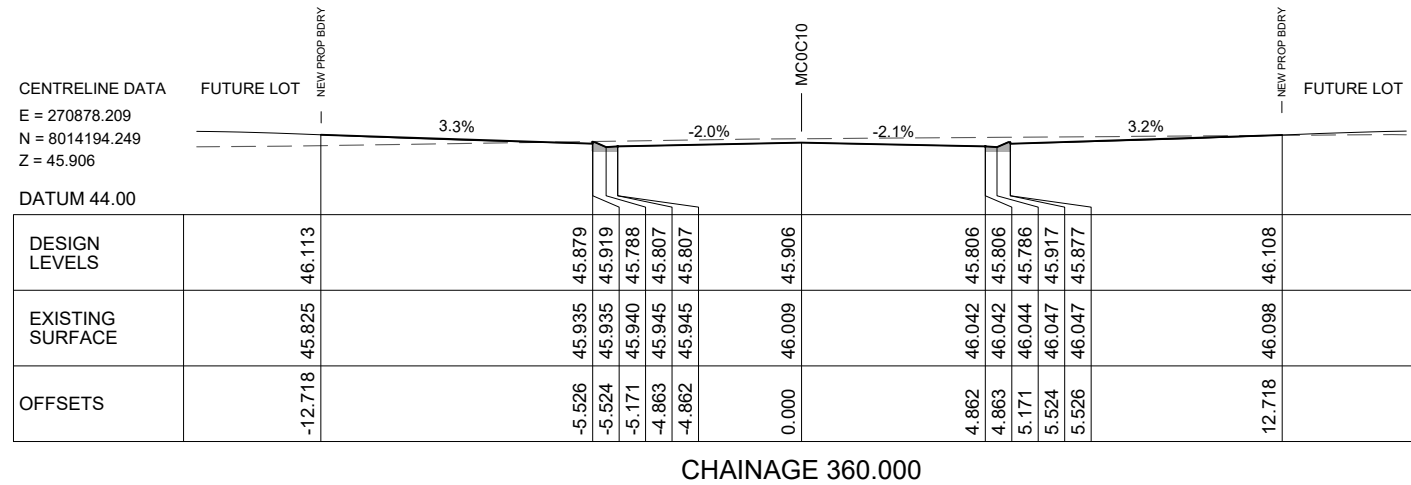
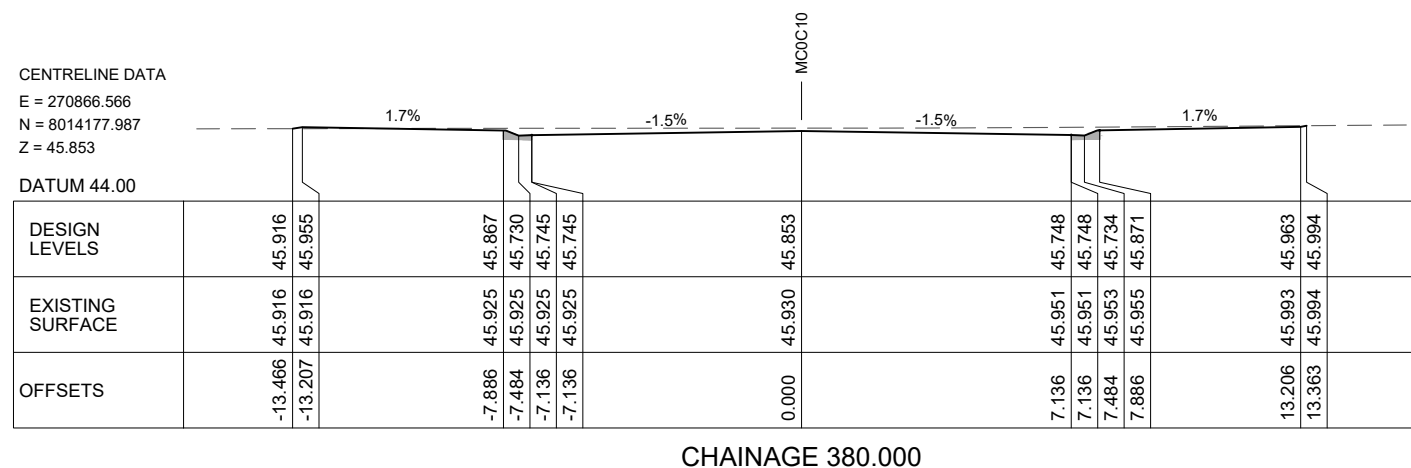
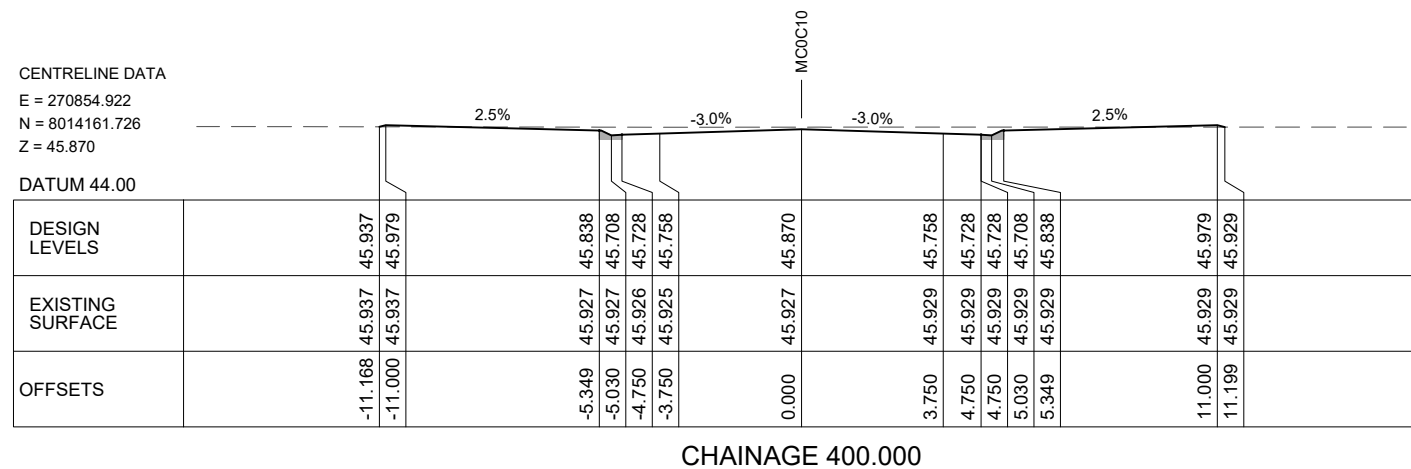
DOOMADGEE ABORIGINAL SHIRE COUNCIL

an 30 of 32

DOOMADGEE SERVICED ALLOTMENTS
MARRADGEE ROAD SUBDIVISION - STAGE 1
ROAD CROSS SECTIONS - MC0B10 - SHEET 4 OF 4

Status	CONSTRUCTION
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Drp No.	Rev.
60628959-MAR-01-XS-05	0

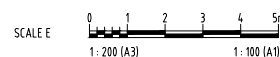


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DRAWN	B. MOOREHEAD	CHECKED	A. BORZI
APPROVED	J JENTZ 5587	DATE	27.09.22
			* DENOTES SIGNATURE ON ORIGINAL DRAWING ONLY

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DOOMADGEE ABORIGINAL SHIRE COUNCIL

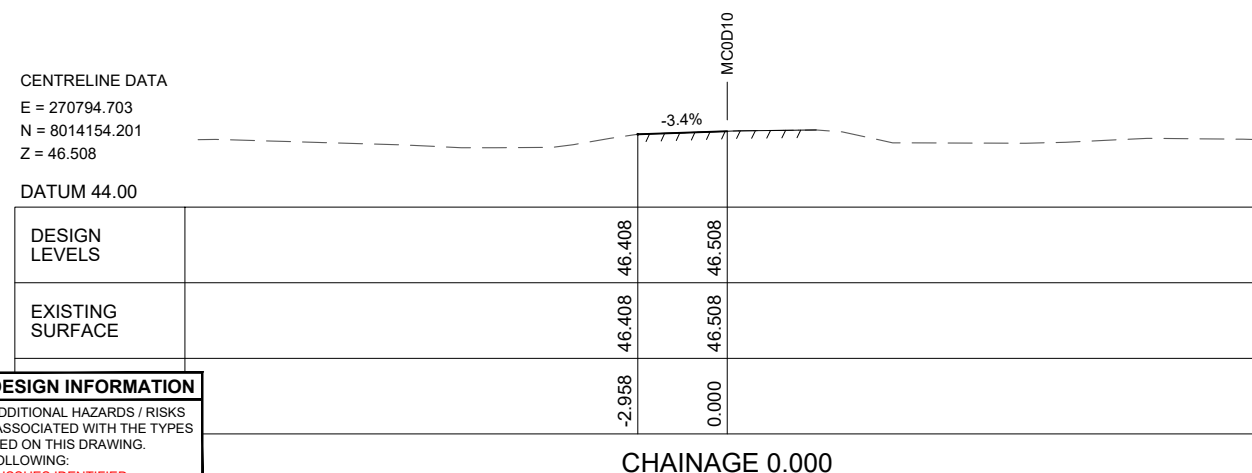
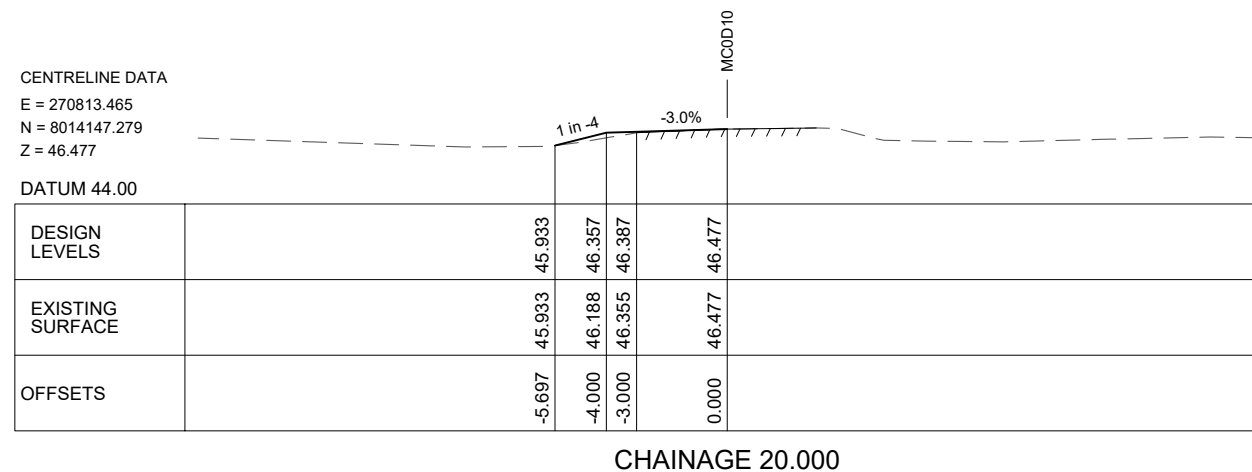
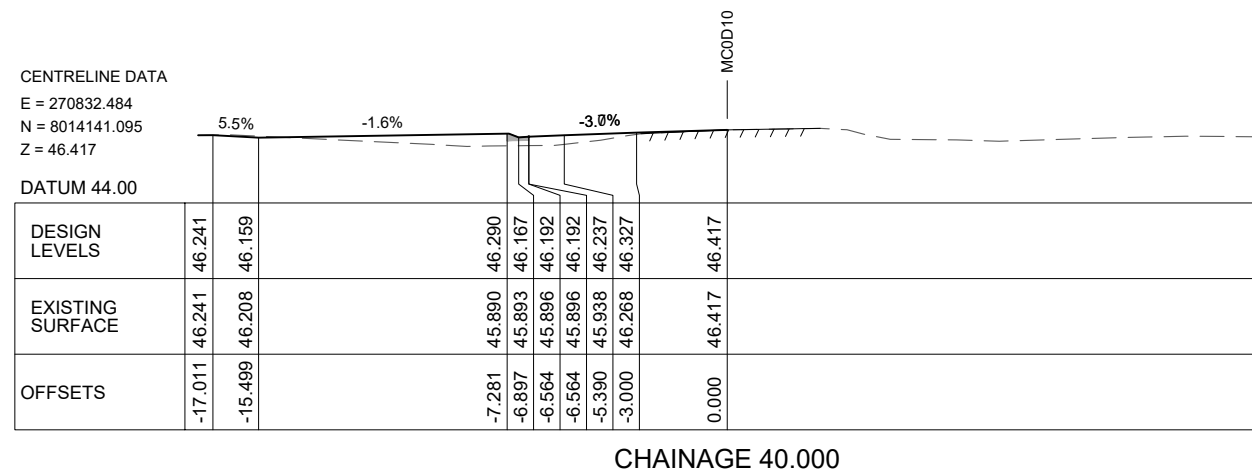
lan 31 of 32

DOOMADGEE SERVICED ALLOTMENTS
MARRADGEE ROAD SUBDIVISION - STAGE 1
ROAD CROSS SECTIONS - MC0C10 - SHEET 1 OF 1

Status	CONSTRUCTION
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Drp No.	60628959-MAR-01-XS-06	Rev	0
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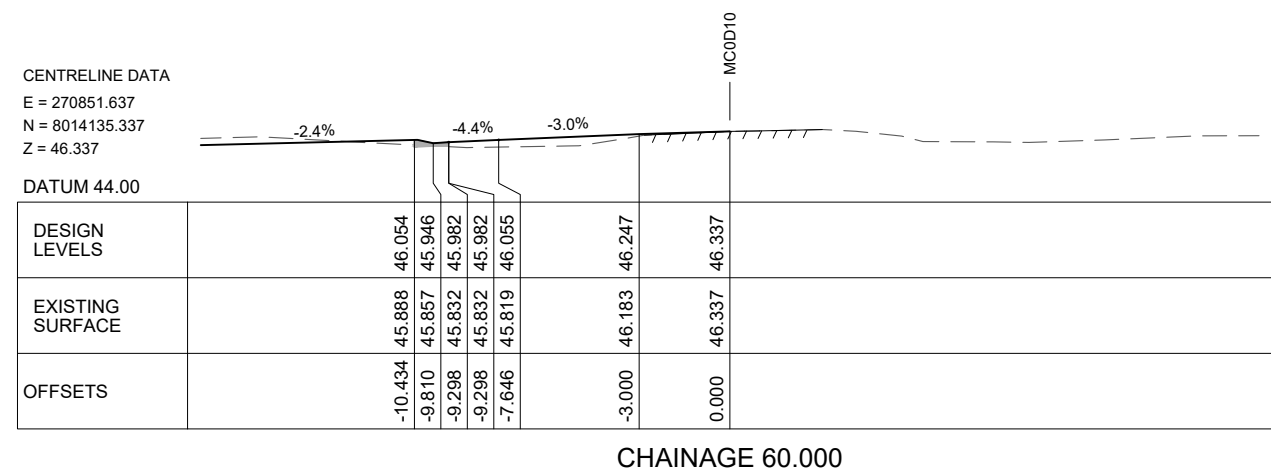
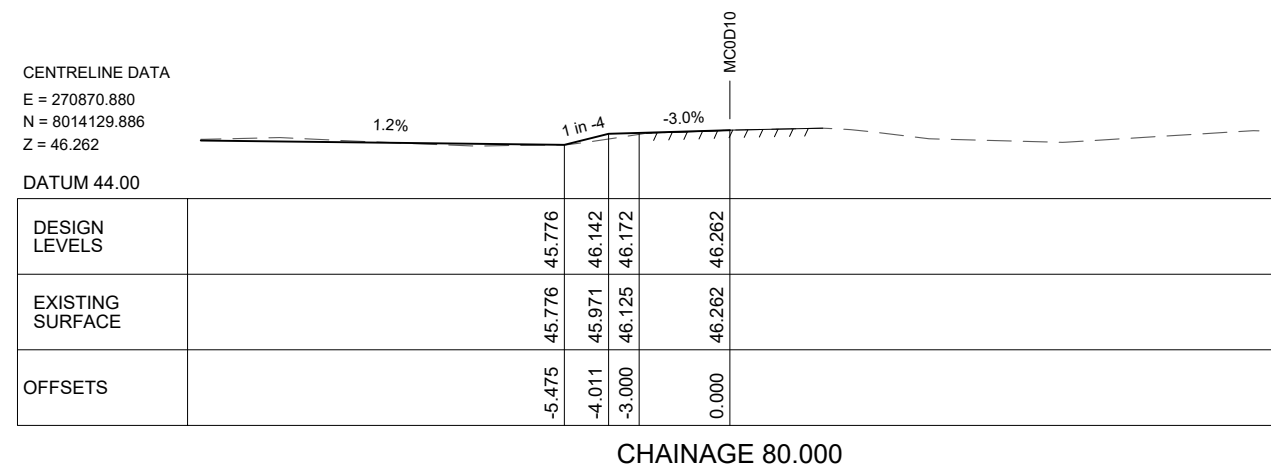
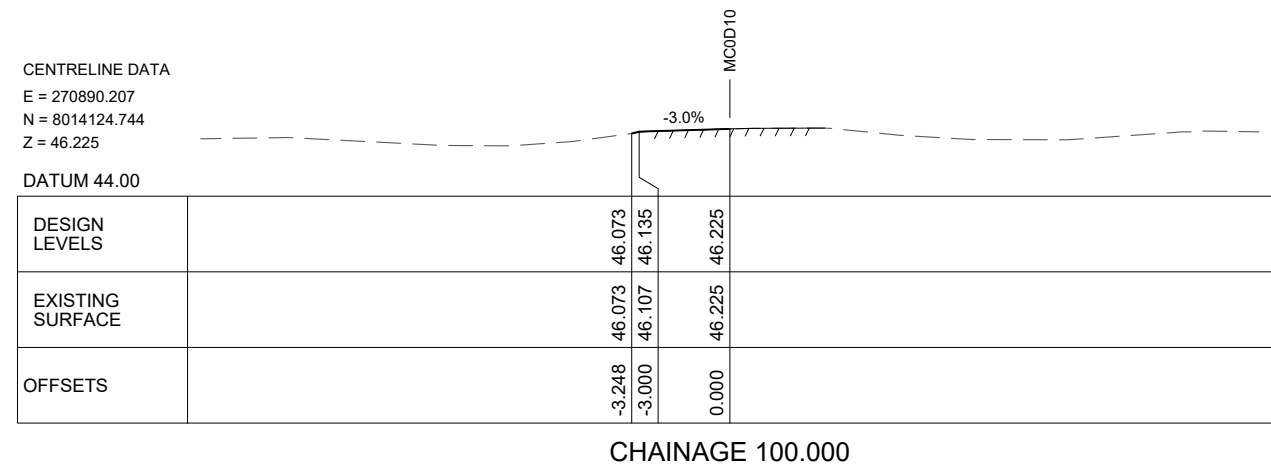
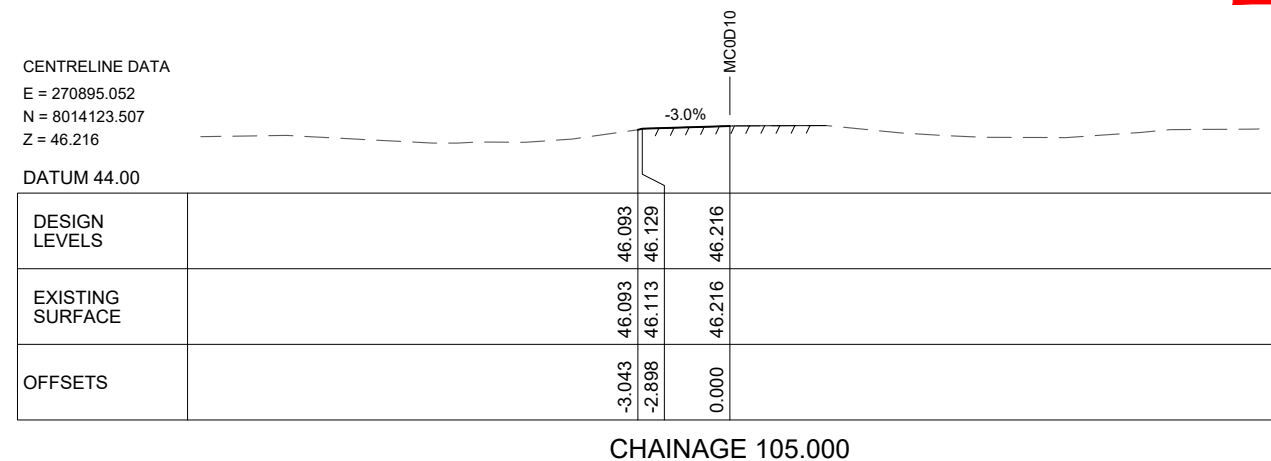
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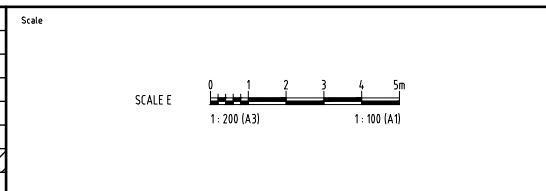
SAFETY IN DESIGN INFORMATION

THERE MAY BE ADDITIONAL HAZARDS / RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING. REFER TO THE FOLLOWING:

NO UNORDINARY ISSUES IDENTIFIED



This drawing is confidential and shall only be used for the purposes of this project.				
REVISIONS				
0	CONSTRUCTION ISSUE			
No.	BY	DATE	DESCRIPTION	APPD



THE SIGNING OF THIS TITLE BLOCK CONFIRMS THE DESIGN AND DRAFTING OF THIS PROJECT HAVE BEEN PREPARED AND CHECKED IN ACCORDANCE WITH THE AECOM QUALITY ASSURANCE SYSTEM TO ISO 9001-2000				
DESIGNED	K. TAYLER	CHECKED	A. BORZI	
DRAWN	B. MOOREHEAD	CHECKED	A. BORZI	
APPROVED	J JENTZ	* 5087	DATE	27.09.22
			* DENOTES SIGNATURE ON ORIGIN (TS-A) DRAWING FILE	

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DOOMADGEE ABORIGINAL SHIRE COUNCIL		Plan 32 of 32
DOOMADGEE SERVICED ALLOTMENTS MARRADGEE ROAD SUBDIVISION - STAGE 1 ROAD CROSS SECTIONS - MC0D10 - SHEET 1 OF 1		
Status	CONSTRUCTION	Drg No. 60628959-MAR-01-XS-07 Rev. 0