TECHNICAL SPECIFICATION

DRFA Program - Defence Road Betterment
Reconstruction Works
Contract No.: T2425.23

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1. INTRODUCTION

The work under this contract includes all necessary civil works for the restoration of road and drainage assets as specified in the scope of works.

The work shall include the supply and transportation to site of all necessary labour, materials, plant and equipment, including survey, testing, cleaning up, reporting, administration and any associated work necessary for the completion of the work.

Further details of works are provided in Scope of Works and the Treatment Specification.

2. AVAILABLE INFORMATION

The following information is available to help with your understanding of intended scope of this project:

- Locality Map - Site (Appendix A);
- Price Schedule including a listing of the damaged locations and the proposed treatments(Appendix B);
- QRA Treatment Guide 2021 (Appendix C);
- Defence Road Betterment Technical Specification (Appendix D (This Document));
- Defence Road Betterment General Specification (Appendix E);
- Defence Road Betterment - IFC Drawings (Appendix F); and
- Scope of Works (Part 5)

The Contractor shall familiarise themselves as to the nature of the Site of the Works and of all matters and things relating to the Works, including but not limited to the nature of ground, slope stability, services and amenities, in ground services, condition of the sites, access to the sites and likely weather conditions.

3. SCOPE OF WORKS

3.1 The Works Under the Contract (WUC) are located in the Locality Map area of the Banana Shire Council.

Typical works within the WUC include but not limited to:

(a) Construct unbound pavement;
(b) Sprayed bituminous treatments;
(c) Replace regulatory, warning and hazard sign faces including posts;
(d) Install road edge guide posts;
(e) Removal or demolition of culverts
(f) Rock protection for Inlet/ Outlets
(g) Supply and installation of geotextile
(h) Supply and installation of steel-reinforced concrete pipe culvert components, for culvert drainage structure
(i) Supply and installation of Precast concrete end structures to culverts
(j) Bulk excavation

3.2 These WUC includes work within the road corridor as a part of this program. The Contractor shall carry out the following works:

(a) Provide road rehabilitation works to Defence Road including but not limited to roadway formation, spray seal, drainage, and road furniture.

Full details of works are listed in The Scope Appendix B – Schedule K1 – Price Schedule and Part 5 – Scope of Works

(b) Coordinate and Execute in an expeditious manner considering safety, quality, environment, and traffic management for the works included in the scope.

3.3 The scope of works includes but is not limited to:

(a) Site Establishment and dis-establishment.

(b) Provision of all supervision, plant, materials and labour to deliver road restoration and associated works as per this specification.

(c) Provision of traffic control as per the current MUTCD, including the drafting and implementation of Traffic Management Plans for the works.

(d) Development and implementation of Quality, Safety and Environmental Management Plans including Erosion and Sediment Control Plan for the duration of works.

(e) Removal and reinstatement of any guidepost, sign, or marker within the worksite to perform the works.

(f) Removal of the material from the shoulder to enable drainage of the pavement and shoulder to the table drain or other appropriate collection point.

(g) De-grassing and tyning of the existing shoulder, the incorporation of gravel and watering, mixing, compaction and trimming of the surface material.

(h) Watering and compaction of the surface, if required.

(i) Broom the sealed surface to remove any loose material if required for traffic.

(j) All other operations in the Applicable Specifications.

(k) Obtain all necessary approvals for completion of works from the relevant authorities, i.e., the Department of Natural Resources and Mines (DNRM) and the Department of Transport and Main Roads (DTMR), if work is adjoining a state-controlled road.

(l) Obtain all necessary approvals for water extraction. The approval requires completion of paperwork for water extraction records.

(m) Maintenance of haul roads, including the use of unsealed roads for the Project, used during construction to maintain a safe road condition and minimise dust. The maintenance may include water carts, grading and rolling to ensure the road is in no worse condition following completion of works than before commencement.

(n) Regular communication with the Council and its Superintendent throughout the Project

(o) Cooperation with the Council and its Superintendent for compliance testing should this be required.

(p) Cooperation and coordination, using “best for project” mindset

(q) Provide the Superintendent with a weekly progress update via email by close of business on a Wednesday. The update shall include progress from the previous week, planned works for the next week, and any contract delivery issues.

(r) Provide the Superintendent with a monthly progress report by the date nominated by the Superintendent. The information shall include progress from the previous months' works, photographs, planned works for the next month, any issues affecting the contract delivery, adjusted monthly expenditure, safety statistics, audits (e.g., safety/environmental).

(s) Provide Inspection Testing Plans (ITPs) for all the completed works.

(t) The Handover Data includes as-constructed drawings, test results, photos, the register for the completed works etc.

Tenderers are to note that Council, may at its sole and unfettered discretion, amend/modify the scope of works at any time during the contract.

Complementary/Betterment treatments may be substituted for scope where an upgraded treatment is considered appropriate.

If the scope of works is amended/modified, the Contractor is not entitled to any compensation.

4. DIMENSIONS AND LEVELS

The Contractor must not rely on dimensions and levels provided by the Principal and must obtain or check all measurements before commencing the Works. The Contractor shall verify details of existing work before modifying it. Any discrepancies must be reported to the Superintendent immediately.
Specific (spot) levels shown on drawings take precedence over contour lines and ground profile lines.

5. SURVEY

Standard AHD and Geocentric Datum of Australia (GDA94) is the basis of all levels and coordinates associated with the Works unless stated otherwise.
The contractor is responsible for setting out of the Works from the PSM's and a qualified Surveyor is to be engaged to undertake the set out (if applicable).

6. CERTIFICATION OF DESIGN

Where the Contract requires design works to be carried out which would require the designer to be registered under the Professional Engineers Act 2002 (Qld), the following is applicable:

- ensure that the design of the Works is supervised at all relevant times by a designer who is a RPEQ and experienced in work similar to the Works; and
- provide RPEQ certification in a form acceptable to the Principal in respect of the adequacy and suitability of the design of the specified parts of the scope of works.

7. MATERIAL, PLANT & EQUIPMENT AND LABOUR

All materials used in the works under contract (WUC) are to be the best of their respective kinds and in accordance with the current specifications of the Standards Association of Australia for those particular materials where such specifications are applicable and do not otherwise conflict with an express requirement of this Contract. If there is no relevant Australian Standard, the British Standard Specification if any, will apply.
The Superintendent may require samples of any or all materials to be submitted for its approval before their use. Whether the Superintendent has called for samples or not, all materials used in the WUC are subject to the Superintendent's written approval: -

a) the Contractor may request the Superintendent to direct that alternative materials or equipment be substituted; and

b) the Superintendent may, if the Superintendent is of the opinion that the characteristics of type, quality, appearance, finish, method of construction and/or performance are not less than is required by the Contract, direct a variation for the convenience of the Contractor allowing the substitution.

The Contractor shall provide

(a) all materials, plant, personnel and other items of work necessary for the proper completion of WUC or the compliance by the Contractor with any of its other obligations under the Contract, (including items which are not expressly mentioned in the Contract but which are obviously and indispensably necessary for the proper completion of such work or the compliance of the Contractor with its other obligations under the Contract).

All plant and equipment shall be appropriately licenced/registered and worthy for use in accordance with current legislative requirements and manufacturer's specifications.

All work shall be carried out by suitably qualified persons having experience in the particular types of work to be executed.

8. TMR SPECIFICATIONS

Where there is no specific reference made to a works specification, Transport and Main Roads (TMR) Queensland Standard Specifications apply. Copies of TMR Specifications are not included in this document. The Contractor should inform themselves of the relevant TMR Drawings and Specifications relating to the Works, including but not limited to:

- Amendment register
- MRTS01 Introduction to Technical Specifications
- MRTS02 Provision for Traffic
- MRTS04 General Earthworks
- MRTS05 Unbound Pavements
- MRTS10 Plant-Mixed Lightly Bound Pavements
- MRTS11 Sprayed Bituminous Treatments (Excluding Emulsion)
- MRTS12 Sprayed Bituminous Emulsion Surfacing
- MRTS14 Road Furniture
- MRTS22 Supply of Cover Aggregate
- MRTS27 Geotextiles (Separation and Filtration)
- MRTS28 Contractor's Site Facilities and Camp
- MRTS38 Pavement Drains
- MRTS43 Supply of Armourstone
- MRTS45 Road Surface Delineation
- MRTS50 Specific Quality System Requirements
- MRTS51 Environmental Management
- MRTS52 Erosion and Sediment Control
- MRTS56 Construction Surveying
- MRTS70 Concrete
- TMR Standard Drawing 1561
- TMR Standard Drawing 1565

9. PRINCIPAL PAID MATERIALS

If applicable and where the contract specifies that the Principal is responsible to pay for materials for use by the Contractor in the WUC, details shall be clearly specified in an attachment to the contract.

10. TRAVEL TO AND FROM SITE

The Contractor is responsible for any costs related to daily travel to and from the site including vehicle, plant, fuel, maintenance, accommodation and any other costs.

11. MOBILISATION AND DEMOBILISATION

The Contractor shall provide the following:

(a) Sanitary facilities, shelters, storage facilities which are required for the Contractor's establishment on the Site and execution of the work under the Contract;

(b) Provision of all services for construction purposes as required;

(c) Project Signage;

(d) Maintenance and security of Site facilities; and

(e) Mobilisation and demobilisation of all Site facilities.

The Contractor shall be responsible for the security of the Contractor's Work Area and of construction plant and materials. Work sites shall be free from rubbish, waste materials and refuse of any description at all times. Disestablishment shall include removal of all surplus materials, rubbish, waste materials and refuse of any description from the work site and from all construction or storage areas. The Contractor shall make good any areas used within the work site for site compounds or similar, including leveling pavement. The Contractor shall remove any material or equipment related to the delivery of WUC, including discarded road signs, posts, pegs or guideposts no longer utilised within the WUC.

Project Signage minimum requirements are outlined in the Works Health and Safety Regulation 2011.
The Contractor must ensure that project signage:

(a) States the Contractor's name and telephone number;

(b) Show the location of the site office for the project; and

(c) Are clearly visible from outside the work place or the area of the workplace where the works are being undertaken.

12. EXISTING SERVICES

The Contractor is to undertake "Before You Dig Australia" (BYDA) (formerly *"Dial Before You Dig" (DBYD)*) for all operations. The Contractor shall provide records of approvals from service providers prior to commencing works within the proximity of the service identified on the service providers documentation or permit.

The Contractor shall make enquires to all authorities to determine the locations of services and shall exercise care in not disturbing these services during the execution of the works.

The location and size of services shown on the drawings should be considered approximate only. Confirmation shall be made on site with the assistance of authorities where possible.

The Contractor shall be responsible for the rectification of any services damaged or interfered with on the Work Site or during activities directly associated with the Works during the course of the Works. Rectification shall include details such as bedding and overlays of granular materials.

Should conflicts occur with services, the Contractor shall arrange to divert or relocate as required by the Superintendent.

Should conflicts occur with service mains, the Contractor shall notify the Superintendent promptly in writing and shall arrange to have the service relocated/diverted by the appropriate authority.

13. TEMPORARY SERVICES

The Contractor shall provide and maintain temporary services necessary for the execution of the work under the Contract, install such services in accordance with the requirements of the relevant authorities and pay charges in connection with the installation and use of such services. Unless there is a specific reference to the provision of temporary services in the contract scope of works, the cost of providing temporary services shall be considered as being included in the cost of the scope of works, unless otherwise agreed in writing by the Superintendent.

Such services shall be made available to Sub-contractors. On completion, the Contractor shall disconnect temporary services and clear away all traces.

Temporary Services includes detours and side-tracks etc.

14. INSPECTIONS, MONITORING AND COMPLIANCE TESTING

The Contractor shall be responsible for the quality of all products and services supplied under the Contract, and provide all necessary facilities and resources to perform the inspection and tests required to achieve the specified quality.

The Contractor's Quality Assurance System (QAS) shall clearly identify and details the contract requirements for inspections, monitoring and compliance testing.

Prior to the commencement of any services/works, the Contractor shall prepare and submit to the Superintendent or Superintendent's Representation for approval, an Inspection Test Plan (ITP) prepared in accordance the requirements of the tender specification.

The Contractor shall, for the duration of the Contract carry out inspections, monitoring and testing in accordance with the approved ITP, Quality Assurance System and the technical specification.

14.1 Inspections

When the Contractor is required to give notice to the Superintendent for inspections in accordance with the specification, the Contractor should arrange to have a representative freely available for consultation during the inspection. The Contractor should also supply all equipment and labour requested by the Superintendent to check any dimensions, levels, bearings or build quality relating to the works.

The Contractor shall be liable for any costs relating to additional inspections required as a result of the Contractor not being ready.

Inspections are to be timed to minimise the number of times that the Superintendent is required to travel to site.

Random audit type inspections of the works may be undertaken by the Superintendent at any time.

14.2 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 Contractors Quality Assurance Representative (QAR) and the Superintendent. If the Contractor proceeds beyond this point without the Hold Point's being observed, the Superintendent may direct the Contractor to halt the work and to remove any materials from the Site.

Hold Points in the construction process are a status of completion of the works at which the Contractor is not permitted to proceed beyond without the expressed direction of the Superintendent as to the acceptance of the works being presented. Hold points are subject to a notification period for the Superintendent to be notified of an impending hold point.

The Superintendent requires a minimum of 48-hours' notice to be provided prior to reaching a status of completed works for a hold point.

Construction Hold Point Summary:

- HOLD POINT 1 – Setting Out
- HOLD POINT 2 – Pavement Compaction Testing
- HOLD POINT 3 – Pavement Proof Roll
- HOLD POINT 4 – Pre-seal Inspection

Mandatory Hold Points shall apply prior to commencement of designated work lots or work items. Mandatory Hold Points shall be verified by the Superintendent. The Contractor's Quality Assurance System shall include at least the following Hold Points. Those marked "Mandatory" shall be Mandatory Hold Points.

1. Department of Natural Resources (DNR) Approval for Water Extraction	MANDATORY HOLD POINT

2. Completion of Dilapidation Survey	MANDATORY HOLD POINT
3. Compaction of Pavement prior to Bitumen Sealing	MANDATORY HOLD POINT
4. Submission of and response by Superintendent of Management Plans a) Traffic Management Plan	MANDATORY HOLD POINT

The Superintendent may direct the Contractor to insert additional Hold Points (including Mandatory Hold Points) in the Contractor's Inspection and Test Plans. The Superintendent may direct that any Mandatory Hold Point indicated in the Contractor's Inspection and Test Plans shall not be a Mandatory Hold Point.

14.3 Witness Points

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

1. Construction of trial section (if applicable)	WITNESS POINT
2. Removal and disposal of material not suitable for stabilisation (if applicable)	WITNESS POINT
3. Preliminary pulverisation (if applicable)	WITNESS POINT
4. Compacting and trimming surface prior to spreading of the stabilising agent (if applicable)	WITNESS POINT
5. Spreading stabilising agent (if applicable)	WITNESS POINT
6. Nominating the target depth (if applicable)	WITNESS POINT

14.4 Proceeding beyond a Hold Point or Witness Point

The Contractor shall give the Superintendent not less than two (2) working days' notice of its intention to proceed beyond a Hold Point.
The Contractor shall give the Superintendent not less than one (1) working days' notice of its intention to proceed beyond a Witness Point.

The Contractor shall ensure that all work lots or work items affected by the lot or item in question are conforming; and 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.

Test results shall be provided with the monthly report. Processing of monthly progress payments by the Principal may be delayed if monthly reporting information is not provided by the Contractor.

In the event of any non-conformance to the requirements of the Specification, the Contractor shall immediately advise the Superintendent the details of such non-conformance, including location in the Works, and the proposed remedial actions.

14.5 Compliance Testing

Compliance testing shall be carried out for each lot or item. The Contractor shall perform all compliance and testing in accordance with the minimum testing requirements to ensure that the works comply with the standards and requirements of the Contract.
Compliance testing shall be at the Contractor's expense and deemed to be included in the Contract Sum.

The Superintendent will have the right to be present at, or have a representative present at all tests, at the time of taking of samples and specimens and at the time of preparation of material for testing. The Superintendent may reject the results of tests carried out without reasonable notice to him and may direct that such tests will be repeated at the Contractor's expense.

The Contractor shall give sufficient notice to the Superintendent to enable any materials or workmanship to be examined prior to incorporation into the finalised Works and must give sufficient notice to the Superintendent to enable sighting of any test results required by the contract or ordering of any test results prior to incorporation of materials or workmanship into the finalised Works.

Tests undertaken throughout the duration of the Contract must be submitted to the Superintendent not more than two (2) Business Days following the date of testing. In the event that test results indicate non-compliance with quality targets, notification of non-compliances is to be notified to the Superintendent within not more than 24 hours of the time of the test.

The Contractor shall prepare and submit all necessary documentation and records as verification that installation, testing and commissioning has been successfully completed.

The Contractor is to provide, free of charge, any materials, labour, compressed air and equipment that may be necessary to carry out all testing required.

In addition to any test result provided during the month, all test results shall be provided and presented in an orderly and organised manner with the Contractor's monthly report. Processing of monthly progress payments by the Principal may be delayed if monthly reporting information is not provided by the Contractor or provided in an unsatisfactory manner.

In the event of any non-conformance to the requirements of the Specification, the Contractor shall make available to the Superintendent, a Non-Conformance Report (NCR) that details the non-conformance, including location in the works, and the proposed remedial actions. If any portion of the work fails to reach the specified testing requirements, that portion of the works so affected will be re-tested after rectification by the Contractor at the Contractor's expense.

A NATA-registered laboratory certified for the tests specified shall be engaged to undertake all compliance testing.

The minimum testing and inspection requirements are nominated below in Table 1:

Table 1: Minimum testing and inspection requirements

Item	Works/ Locations	Quality Verification Requirements		Minimum Testing Frequency
		Description	Property Tested	
Bulk Fill Bulk Fill (Culvert Area) Fill Scour (Table Drain)	General fill materials/ Selected fill materials	Materials	California Bearing Ratio (CBR)	1 test per material source
	Earthworks filling	Compaction	Maximum Dry Density (MDD)	1 test per 500m^3 OR 1 test per road whichever is greater
Cement Stabilise (if applicable)	Base	Compaction	Maximum Dry Density (MDD)	1 test per 100m^3 OR 1 test per road whichever is greater

Demolish and Remove Existing (Existing Stabilised Pavement)	Subgrade	Compaction	Maximum Dry Density (MDD)	1 test per 250m³ OR 1 test per road whichever is
		Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
Construct Pavement (Sealed)	Subgrade	Compaction	Maximum Dry Density (MDD)	1 test per 250m³ OR 1 test per road whichever is more frequent
		Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
	Subbase	Materials (Gravel)	Particle Size Distribution and Atterberg Limits	1 test per material source
		Compaction	Maximum Dry Density (MDD)	1 test per 250m³ OR 1 test per road whichever is more frequent
		Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
	Base	Materials (Gravel)	Particle Size Distribution and Atterberg Limits	1 test per material source
		Compaction	Maximum Dry Density (MDD)	1 test per 100m³ OR 1 test per road whichever is greater
		Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
		Crossfall	-	1 per 50m , two sides in a 2-way crossfall pavement measured from crown to shoulder
Reconstruct Unsurfaced Shoulder	Base	Materials (Gravel)	Particle Size Distribution and Atterberg Limits	1 test per material source
		Compaction	Maximum Dry Density (MDD)	1 test per 100m³ OR 1 test per road whichever is more frequent
		Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
Repair Pipe	Foundation Bedding/Haunch Zone	Materials	Particle Size Distribution and Atterberg Limits	1 test per material source
		Compaction	Maximum Dry Density (MDD)	1 test per 250m³ OR 1 test per pipe section whichever is greater
	Overlay Zone, Backfill/Side Zone	Materials	Particle Size Distribution and Atterberg Limits	1 test per material source
		Compaction	Maximum Dry Density (MDD)	1 test per 250m³ OR 1 test per pipe section whichever is greater
		Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
	Existing Pavement	Compaction	Maximum Dry Density (MDD)	1 test per 100m³ OR 1 test per road whichever is greater

		Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
After priming, or before application of an initial seal.	Pavement	Compaction	Ball Penetration	In the inner and outer wheel paths – that is, 2 tests at each test chainage per direction 5 test chainages per homogeneous section where the test sites selected are representative of the homogeneous section. Testing shall be completed between 24 to 48 hours prior to spraying. The Spray Seal Contractor or Subcontractor is to note the results from the Ball Penetration tests on their pre seal checklist or documentation, acknowledging understanding and acceptance of the results of the tests.

The location of each density test shall be chosen by a method of random stratified sampling and the relative compaction shall be determined by Test Method. Reporting and correction for oversize material is mandatory as part of the test. The density index of non-cohesive materials shall be determined using Test Methods in accordance with AS1289.

In circumstances where the Superintendent requests additional tests in excess of the approved testing schedule/plan and where the results of the tests comply with the requirements of the Specification, the Contractor may request The Principal to reimburse the costs of the tests. The Contractor must provide evidence of the testing costs. The Principal shall not be responsible for costs relating to test results that do not meet the requirements of the Specification.

15. TREATMENT GUIDE

The following listing provides a common set of treatments for the scoping of road reconstruction works.

It is acknowledged that road construction work/activities can be interpreted differently. The following listing is provided to enable consistency of language and a common understanding of treatment inclusions/exclusions and methodology on which the Tenderer's Response is to be based.

The following sections apply to the works.

15.1 Unsealed Road Treatments

15.2 Clearing And Earthworks

15.3 Bituminous Seal Works

15.4 Road Furniture And Delineation

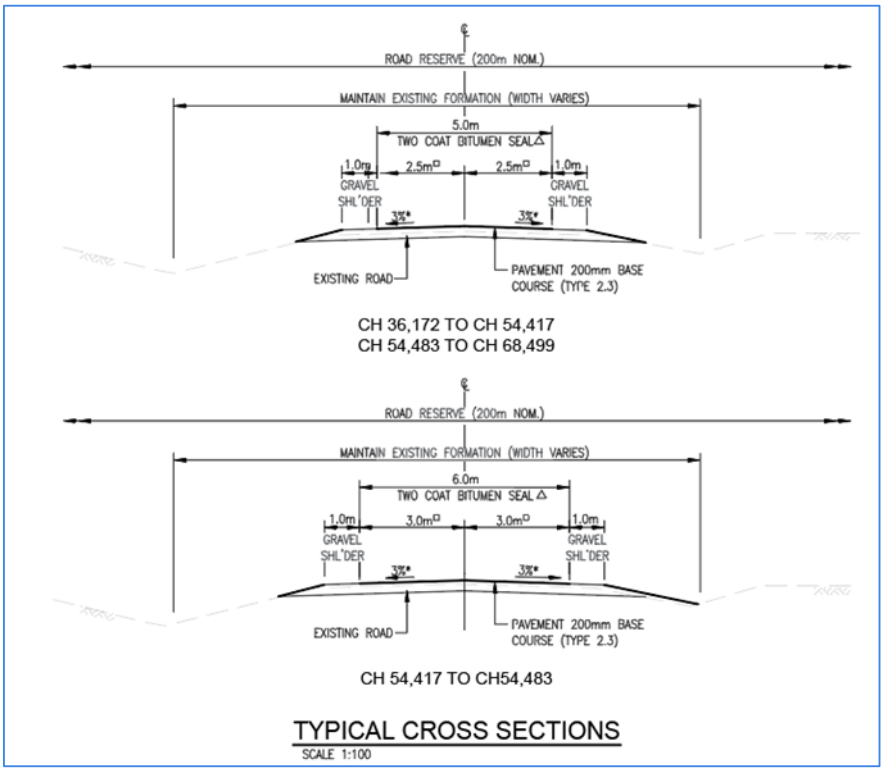
15.5 Drainage, Retaining Structures And Protective Treatments

15.1 UNSEALED ROAD TREATMENTS

15.1.1 Unbound Pavement Construction

The Contractor is to supply all plant, material and labour required to construct Unbound pavement in Type 2.3 in accordance with MRTS 05 (Min CBR=80%).

The Contractor is to be advised the Pavement crossfall varies (refer superelevation table on longitudinal sections), and the Pavement width varies at some curves.



Gravel when sourced from a commercial quarry is to comply with the following requirements:

1. The Contractor is provide material testing results demonstrating conformance with the specified materials.
2. Contractors must provide proof of licenses quarry operations, extraction permits and reporting compliance with Department of Natural Resources and Mines. The contractors quarry or subcontracted quarry must be an EA approved quarry.

Unbound pavements shall be constructed so that each individual layer is laid in one pass that meets the requirements of this MRTS05. The maximum lot sizes for unbound pavements shall be a continuous single layer constructed in one day's production

Individual compacted layer thicknesses shall be chosen to suit the construction process and the requirements of the Contract. Unless otherwise approved by the Superintendent, the completed layer thicknesses (after compaction and surface preparation) shall be in accordance with MRTS05 Table 8.3.3.

HOLD POINT

(a) The Contractor shall not incorporate materials into the work, unless it has demonstrated that the material complies fully with the requirements of this MRTS05 before delivery of the material to site. Such conformance results shall be no more than 18 months old, unless otherwise agreed by the Administrator.

15.1.2 Reshape Table Drain

Consequential re-shaping of existing table drains/vee drains through degrassing will occur when carrying out unbound pavement construction. In these instances, no separate item is required for the inclusion of re-shaping

existing table drains.

15.1.3 In-situ Stabilisation (if applicable)

The works involves in-situ cement stabilisation of road pavement and shall include the following:

(a) Scarify and mix existing upper 150mm of the road formation with 3% - 5% GB cement;
(b) Trim and compact existing upper 150mm to 98% MDD.
(c) Cement insitu stabilisation is to be carried out in accordance with DTMR – MRS07B & MRTS07B Insitu Stabilised Pavements Using Cement or Cementitious Blends unless noted otherwise.
(d) Stabilising agent to be Type GP or GB cement.
(e) Water used shall be clean and free from oil, alkali, organic matter and other deleterious substances.
(f) Commence compaction and finishing immediately following satisfactory mixing. Complete the compacting and finishing within two (2) hours of adding water.
(g) Final surface shall be smooth, dense, closely knit, free from compaction planes and cracks and finished to the tolerances specified. Filling or addition of material to the surface of the pavement to meet tolerance requirements will not be permitted.
(h) Maintain the surface material at not less than its specified optimum moisture content during all finishing operations.
(i) Minimum compaction test required as per **Error! Reference source not found.**.

HOLD POINT

(a) Compaction shall be in accordance with TMR Test No Q142A-2014.
(b) The works shall be carried out in accordance with TMR Technical Specification MRTS07B Insitu Stabilised Pavements using Cement or Cementitious Blends.
(c) Prior to bitumen sealing, the Contractor shall organise a proof roll inspection with the Superintendent and a Ball Penetration test in accordance with Table 1.
(d) Where a Ball Penetration test result exceeds 3.0 mm, the surface shall not be sprayed unless otherwise approved by the Administrator.

15.2 CLEARING and EARTHWORKS

The Contractor is to supply all plant, material and labour required to undertake excavation and backfill materials in accordance with MRTS 04.

15.2.1 Clear Mixed Debris and Remove from Site

Clean up of the site and disposal of any waste/removed material in accordance with applicable State Government legislation or Local Government by-laws.

Importation of gravel is excluded in this treatment.

15.2.2 Bulk Fill

The works may involve the following:

(a) Backfilling of major scour areas using general fill materials; or

(b) Backfill with earth backfill material (CUT TO FILL)

(c) Backfill with select backfill material

(d) Backfill with cement stabilised granular material

(e) Backfill with stabilised sand

(f) Backfill with rock fill

(g) Trim and compact to reform the road surface, such that the surface is ready for new pavement construction.

15.2.3 Excavation

The works shall involve the following:

(a) Bulk excavation of soil or loose river material deposited on site; and

(b) Cart and dispose to the Superintendent's nominated stockpile or disposal site. The Contractor shall measure and keep record of the materials removed.

If the material to be removed exceeds the volume stated in the Tender Schedule, the Contractor shall gain the approval/agreement of the Superintendent prior to the commencement of works.
These materials may be re-used to restore the road formation if required. These materials shall be tested at the Contractor's expense if the materials are deemed to be re-used.

15.3 BITUMINOUS SEAL WORKS

The Contractor is to supply all plant, material and labour required to construct bituminous seal pavement in accordance with MRS11.

15.3.1 Bitumen 2-Coat Spray Seal

The works involves bituminous surfacing with the following seal details.

The design seal details is as follows:

(a) 1st Coat

i) C170 spray at 1.66L/m2

ii) 14mm aggregate spread at 114m2/m3; and

(b) 2nd Coat

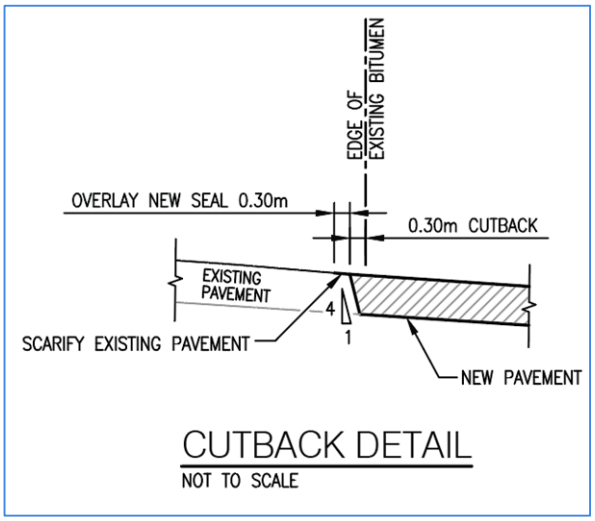
i) C170 spray at 1.04L/m2

i) 10mm aggregate spread at 166m2/m3.

1. The Contractor is responsible for submitting the seal design for the review of the Superintendent prior to commencing bituminous works.
2. The Contractor shall confirm the bitumen spray rate and aggregate spread rate with the Superintendent prior to the commencement of sealing works. Seal rates have been designed for flat grades spray and spread rates must be adjusted for seal on graded roads.
3. The Contractor is to be advised the Pavement width varies at some curves. Adjusted seal rates shall

be confirmed with the Superintendent prior to commencement of sealing works. All alternate or non-conforming seal design to be approved by superintendent.

The Contractor is to be aware of the cutback detail at tie into existing pavement.



HOLD POINT

(a) Spraying operation shall not commence until

a. Superintendent has reviewed Contractor's proposed Seal Design'
b. Ball Penetration testing has been completed, recorded and met tolerances;
c. Surface temperatures have been checked and met tolerances;
d. The pavement surface is inspected and approved by the Superintendent.

All bitumen works shall be undertaken in accordance with the DTMR - MRS11 & MRTS11 Sprayed Bituminous Surfacing (Excluding Emulsion), MRTS18 Polymer Modified Binder (including Crumb Rubber), MRTS20 Cutback Bitumen and MRS22 & MRTS22 Supply of Cover Aggregate unless noted otherwise.

The pre-coating agent used for the cover aggregates shall be DTMR approved products.
Finished surface tolerance is +/- 10mm over a 3m straight edge.

15.4 ROAD FURNITURE AND DELINEATION

Guidance and information systems shall be installed in accordance with MRS14 Mar 21.

15.4.1 Road Furniture

The works shall involve the following:

(a) Supply of regulatory, warning and hazard sign faces in accordance with Project Drawings; and
(b) Supply and install guide posts and/or markers.

15.4.2 Motor Grid (if applicable)

The works shall involve the following:

(a) Supply all materials, plant and Labor required to install Grid 9m wide, (2x4.5m Segments) in accordance with the current versions of TMR Standard Drawings 1561 and 1565.

(b) Supply all materials, plant and Labor required to install, fencing, 1200mm mm high, Rural Fencing, in accordance with TMR Standard Drawings 1600 and 1601.

(c) Fencing is to be matched neatly into the existing fence, and tensioned to ensure the integrity of the existing fence lines are maintained.

15.5 DRAINAGE, RETAINING STRUCTURES AND PROTECTIVE TREATMENTS

Drainage, retaining structures and protective treatments may include the following work operations. Contractor to refer to Price Schedule and relevant MRS specifications.

- Removal or demolition of culverts
- Removal or demolition of culvert end structures
- Clear blocked culvert with high pressure cleaning, ensuring the inlet/ outlets are free draining
- Rock protection for Inlet/ Outlet (various sizes)
- Supply and installation of geotextile, specified strength class and filtration class, in accordance with MRTS 27
- Precast concrete end structures to culverts

16. SALVAGED MATERIALS

Unless otherwise stated, all materials, plant equipment, fixtures and other items salvaged from the Site of the Works shall be the property of the Principal and shall not be removed from the site without the prior approval of the Superintendent. The Superintendent is to be immediately consulted when any find is made that is considered of relevant heritage value.

The Contractor is to obtain written approval from the Superintendent prior to removal from site of any material or material which is or may be suitable for use as fill on the site.
Material which is unsuitable for re-use should be transported and dumped in an approved dump area.

Approval for dumping of materials, not otherwise designated, should be obtained from the Superintendent.
Council operates a spoil permit system where residents can request approval to access spoil material. Disposal of spoil material to local residents is as by written direction and approval of the Superintendent. In these circumstances, The Contractor must be a willing participant in assisting with the management of this system