DRFA PROGRAM UNSEALED ROADS
Technical Specification

DRFA PROGRAM SEALED ROADS TENDER– RECONSTRUCTION WORKS

Contract Number: T2324.32

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TECHNICAL SPECIFICATION

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 existing and intended scope of this project:

- Locality Map (Appendix A);
- Scope of Works including a listing of the damaged locations and the proposed treatments (Appendix B)
- QRA Treatment Guide 2018 – Appendix C
- Banana Shire Council Standard Drawing R003-A, Tables "Banana Shire Council Gravel – Material Properties" and "Banana Shire Council Gravel Material Screening" - refer to Appendix D; and

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

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

A locality map is provided as Appendix A

The scope of works is detailed in Appendix B – Pricing Schedule.

Typical works on sealed and unsealed roads include but not limited to: -

- Bitumen spray seal, 2-coat
- Bulk excavate surplus material and remove from site
- Bulk excavate surplus material to spoil
- Bulk fill – imported
- Bulk fill – local
- Edge Repair
- Heavy shoulder grading - incorporating 50mm of imported material
- Patch repair - patch local unbound pavement failure (<20m2). Includes 2 coat bitumen seal
- Pothole Repair <1m2
- Reconstruct reinforced concrete
- Reconstruct unbound granular base. Excludes seal
- Reconstruct unbound granular pavement. Excludes seal
- Reconstruct unsealed shoulder - repair isolated shoulder failure (<20m2)
- Reinstate Linemarking
- Repair with flowable concrete

- Replace guardrail
- Reshape table drain (1 side)
- Rock protection

These works include the unsealed road works as a part of this program. The Contractor shall carry out the following works:

- Provide road maintenance services to specified Council roads including but not limited to Bulk Excavate Surplus Material, Gravel Resheeting, Gravel Top-up, Reshaping Table Drains, Replacement of Guideposts and Markers, Drainage Works and other minor miscellaneous works if needed. Full details of works are listed in the Scope of Works.
- Coordinate and Execute in an expeditious manner considering safety, quality, environment, and traffic management for the works included in the scope.

The scope of works includes but is not limited to:

- Site Establishment and dis-establishment.
- Provision of all supervision, plant, materials and labour to deliver road restoration and associated works as per this specification.
- Provision of traffic control as per the current MUTCD, including the drafting and implementation of Traffic Management Plans for the works.
- Development and implementation of Quality, Safety and Environmental Management Plans including Erosion and Sediment Control Plan for the duration of works.
- Removal and reinstatement of any guidepost, sign, or marker within the worksite to perform the works.
- Removal of the material from the shoulder to enable drainage of the pavement and shoulder to the table drain or other appropriate collection point.
- De-grassing and tyning of the existing shoulder, the incorporation of gravel and watering, mixing, compaction and trimming of the surface material.
- Watering and compaction of the surface, if required.
- Broom the sealed surface to remove any loose material if required for traffic.
- All other operations in the Applicable Specifications.
- 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.
- Obtain all necessary approvals for water extraction. The approval requires completion of paperwork for water extraction records.
- 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.
- Regular communication with the Council and its Superintendent throughout the Project
- Cooperation with the Council and its Superintendent for compliance testing should this be required.
- Cooperation and coordination, using “best for project” mindset
- 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.
- 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).

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

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 include the following during the site establishment: -

- Sanitary facilities, shelters, storage facilities which are required for the Contractor's establishment on the Site and execution of the work under the Contract;
- Provision of all services for construction purposes as required;
- Maintenance and security of site facilities; and
- 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.

12. EXISTING SERVICES

The Contractor is to undertake "Dial Before You Dig" (DBYD) for all operations.

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.

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.

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.

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 System shall include at least the following Hold Points. Those marked "Mandatory" shall be Mandatory Hold Points.

DNRM Approval for Water Extraction	MANDATORY HOLD POINT
Gabion Works (if Ordered)	MANDATORY HOLD POINT
Shotcreting Works	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.

Witness Points

A Witness Point is defined as a position in the progress of the Contractor's Activities, where the Contractor must notify it's QA Officer 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.

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.

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:

Item	Works/ Locations	Quality Verification Requirements		Minimum Testing Frequency
		Description	Property Tested	
7.5 Bulk Fill 7.6 Bulk Fill (Culvert Area) 7.11 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
7.8 Cement Stabilise	Base	Compaction	Maximum Dry Density (MDD)	1 test per 100m^3 OR 1 test per road whichever is greater
7.10 Demolish and Remove Existing (Existing Stabilised Pavement)	Subgrade	Compaction	Maximum Dry Density (MDD)	1 test per 250m^3 OR 1 test per road whichever is greater
		Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
Medium/Heavy Formation Grading	Subgrade (existing pavement)	Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
		Crossfall	-	1 per 50m OR 1 per section
7.12 Gravel Resheeting	Subgrade (existing pavement)	Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
		Crossfall	-	1 per 50m OR 1 per section
	Base	Materials (Gravel)	Particle Size Distribution and Atterberg Limits	1 test per material source
		Compaction	Maximum Dry Density (MDD)	1 test per 100m^3 OR 1 test per road whichever is greater
		Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
		Crossfall	-	1 per 50m OR 1 per section
7.16 Reconstruct (Unsealed)	Subgrade (existing pavement)	Compaction	Maximum Dry Density (MDD)	1 test per 250m^3 OR 1 test per road whichever is greater
		Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
		Crossfall	-	1 per 50m OR 1 per section
	Base	Materials (Gravel)	Particle Size Distribution and Atterberg Limits	1 test per material source
		Compaction	Maximum Dry Density (MDD)	1 test per 100m^3 OR 1 test per road whichever is greater
		Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
		Crossfall	-	1 per 50m OR 1 per section

7.17 Reconstruct Roads (Sealed)	Subgrade	Compaction	Maximum Dry Density (MDD)	1 test per 250m^3 OR 1 test per road whichever is greater
		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 250m^3 OR 1 test per road whichever is greater
		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 100m^3 OR 1 test per road whichever is greater
		Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
7.18 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 100m^3 OR 1 test per road whichever is greater
		Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
7.21 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 250m^3 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 250m^3 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 100m^3 OR 1 test per road whichever is greater
		Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)
7.31 Shotcreting	Concrete	Materials	Compressive strength	1 test per materials
			Slump	1 test per batch
7.32 Trim to Grade	Existing Pavement	Vertical deflection	Visual Inspection (Proof roll)	All sections (where possible)

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. The treatment descriptions have been prepared in accordance with the QRA Treatment Guides 2018. A Copy of the QRA Treatment Guides is provided in the tender documentation as supporting guides to the treatments – refer to Appendices C.

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 offer is to be based.

UNSEALED ROAD TREATMENTS

Light Formation Grading

Light formation grading is the appropriate activity to restore rideability and formation shape by light trimming the road surface to fill scours and other depressions.
Scarifying, compaction, importation of water and gravel and table drain works are excluded in this treatment.

Medium Formation Grading

Medium formation grading is the appropriate activity to restore rideability and formation shape to the pre-disaster profile.
Includes roughening of the top 50mm of roadway (by grader), clearing and grubbing to remove light vegetation and grass, recovery of suitable material from table drains (by grader), addition of water and compaction.
Importation of gravel is excluded in this treatment.

Heavy Formation Grading

Heavy formation grading is the appropriate activity to reinstate the formation shape to the pre-disaster profile.
Includes tyning of the top 100mm (150mm if supported by evidence of deeper rutting), clearing and grubbing and recovery of suitable material from table drains (by grader), laying imported gravel, addition of water, trimming and compaction.
Importation of gravel is excluded in this treatment.

Gravel/Material Supply only

The gravel material shall meet the specification specified in Banana Shire Council Standard Drawing R003-A, Tables "Banana Shire Council Gravel – Material Properties" and "Banana Shire Council Gravel Material Screening" - refer to Appendix D.
Gravel finished surface tolerance is +/- 10mm

Gravel Resheeting

Gravel re-sheeting should be placed in a single layer at the specified depth and in a single layer compacted to a dry density ratio of not less than 100% standard compaction.
The contractor shall carryout one density test per 500m or item. The compaction standard for each lot or item shall be represented by the characteristic value of the relative compaction results.
The initial work is to prepare the road subgrade by shaping from edges of the shoulder to form a surface parallel to the finished level. Before placing imported gravel, the shaped subgrade shall be rolled to the correct crossfall with a steel drum roller, adding water as necessary, until there is no visible deflection under the roller.
The finished surface of the gravel re-sheeting layer shall have a uniform surface with coarse particles slightly exposed and free from loose, segregated and contaminated areas.
Gavel re-sheeting shall be compacted to 98% MDD in accordance with TMR Test No Q142A-2014.
HOLD POINT
The crossfall shall be 4% on straight sections with a tolerance of +/- 0.5%.

Gravel/Material Supply only

The gravel material shall meet the Councils specification as follows;

Sieve Size(mm)	Percent Passing (%)
37.5	100 – 100
26.5	90 - 100
19.0	80 - 100
2.36	35 - 65
0.425	15 - 50
0.075	10 - 40

Shrinkage Product: 100-365 (calculated: Linear Shrinkage x Percent Passing 0.425mm sieve)

Grading Coefficient: 16-34 (calculated: { [Percent Passing 26.5mm sieve – Percent Passing 2.36mm sieve] x Percent Passing 4.75mm sieve} /100)

4 day Soak CBR: Min 40 (at 98% STD MDD)

Gravel finished surface tolerance is +/- 10mm

The Contractor is provide material testing results demonstrating their ability to provide a conforming material. 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 EA approved quarry. Council's gravel pits will not be available for use due to commitments under the annual maintenance and capital works programs.

Reshape Table Drain
Consequential re-shaping of existing table drains/vee drains, through recovery of displaced material, will occur when carrying out Medium formation grade, Heavy formation grading or Gravel resheet operations. In these instances, no separate item is required for the inclusion of re-shaping existing table drains.
In the absence of, or where not included in the adjacent pavement work item, a separate treatment item, and evidence of event related damage demonstrating silting, scour or blockage of the table drains is required for inclusion.

SEALED PAVEMENT REPAIRS

Pothole Repair
The works involves the removal of any cracked or loose material;
Cut back to sound pavement squaring and forming a vertical face;
Surface preparation and compact and apply tack coat; and
Place and compact asphalt premix and ensure finish surface is flushed with existing surface.

Pavement Repair
The works involves the removal of any cracked or loose material;
Cut back to sound pavement squaring and forming a vertical face;
Sub-grade preparation and compact;
Import, place and compact unbound granular material in layers to match adjoining surfaces;
Excludes all seal treatments (separate item).

In-situ Stabilisation
The works involves in-situ cement stabilisation of road pavement and shall include the following:
Scarify and mix existing upper 150mm of the road formation with 3% - 5% GB cement;
Trim and compact existing upper 150mm to 98% MDD.
HOLD POINT
Compaction shall be in accordance with TMR Test No Q142A-2014.
The works shall be carried out in accordance with TMR Technical Specification MRTS07B Insitu Stabilised Pavements using Cement or Cementitious Blends.

Excludes all seal treatments (separate item).

Reconstruct Unbound Granular Pavement
Removal of failed pavement material, reasonable allowance for replacement of unsuitable, compaction of subgrade, import and placement of unbound granular material in layers to match adjoining surfaces.
Excludes all seal treatments (separate item).

Shoulder Scour
Heavy shoulder grading combined with a gravel supply top/up included.

Reconstruct Unsealed Shoulder
Removal of failed material, reasonable allowance for replacement of unsuitable, compaction of subgrade, supply, placement and compaction of granular material.
Excludes all seal treatments and reshaping of table drains (separate items).

Heavy Shoulder Grading
Reinstatement of formation and profile Includes recovery of material from adjacent table drains where appropriate (by grader), incorporation of additional 50mm top up material, tyne <100mm depth, trimming and rolling, and brooming of adjacent sealed surface. Where material additional to the included 50mm is required a separate item for additional material shall be nominated.

Pavement Seals

Asphalt Surfacing ≤50mm Thickness
The works involves bituminous surfacing with 50mm of dense graded asphalt, DG14 mix including:
The removal of any cracked or loose material;
Forming a vertical face at least 50mm deep, on the hole edges; and
Surface preparation and tack coating.
Place and compact asphalt and ensure finish surface to be flushed with existing surface.
The works shall be carried out in accordance with TMR Technical Specification MRTS30 Dense Graded and Open Graded Asphalt.

Bitumen 2-Coat Spray Seal
The works involves bituminous surfacing with the following:
1st coat seal – Primerseal AMC5 spray at 1.5L/m2 with 14mm precoated aggregate spread at 110m2/m3; and
2nd coat seal – C170 (0.5% adhesion agent) spray at 1.5L/m2 with 10mm precoated aggregate spread at 130m2/m3.
The above bituminous treatments are indicative only and for pricing purposes. The Contractor shall submit the final seal design to Superintendent for approval prior to commencement of works.
The works shall be carried out in accordance with TMR Technical Specification MRTS11 Sprayed Bituminous Surfacing (Excluding Emulsion).

CLEARING and EARTHWORKS

All clearing and earthworks treatments include the following work operations:

- site establishment and disestablishment of all plant, labour and materials;
- establishment and disestablishment of traffic control;
- determination of the work area;
- clean up of the site and disposal of any waste/removed material in accordance with applicable current legislation.

Bulk Fill
The works shall involve the following:
Backfilling of major scour areas using general fill materials; and
Trim and compact to reform the road surface, such that the surface is ready for new pavement construction.

HOLD POINT
The bulk fill areas shall be compacted to 95% of maximum dry density (MDD) in accordance with Department of Transport and Main Roads (TMR) Test No. Q142A-2014.

Excavation
The works shall involve the following: -

- Bulk excavation of soil or loose river material deposited on site; and
- 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.

CONCRETE WORKS

Damage to concrete may include scouring, undermining, structural cracking, or total loss as a result of large or intense rainfall events.
All concrete works treatments include the following work operations: -

- site establishment and disestablishment of all plant, labour and materials;
- establishment and disestablishment of traffic control;
- determination of the work area;
- clean up of the site and disposal of any waste/removed material in accordance with applicable current legislation.

Reconstruct Concrete Kerb
Saw cut and remove existing kerb.
Prepare base and extrude/construct kerb.
Backfill with suitable material.

Reconstruct Reinforced Concrete
Demolish and remove existing concrete. Prepare base, form and position
Reinforcing.
Pour concrete, cure (where required) and finish surface.
Backfill adjoining surface.

Repair With Flowable Concrete
The works involves shotcreting of 200mm thick concrete including reinforcement and pinning.
Shotcrete shall be Grade N32 (32MPa). The steel reinforcing shall be welded steel wire reinforcing fabric SL82 and placed centrally. The fixing pins shall be 1.0m long N12 steel reinforcing bars.
The base/foundation shall be free of loose/organic material and sound tight prior to shotcreting.
HOLD POINT
The works shall be carried out in accordance with TMR Technical Specification MRTS03 Drainage, Retaining Structures and Protective Treatments.

DRAINAGE STRUCTURES

Repair Drainage Structure
The works shall involve the following:
Excavate and expose damaged pipe section;
Repair damaged area and cover with concrete; and
Backfill and compact;
HOLD POINT

Where the repair is located within a trafficable zone, restore and compact existing pavement material to 98% MDD.
HOLD POINT
The works shall be carried out in accordance with TMR Technical Specification MRTS03 Drainage, Retaining Structures and Protective Treatments.

PROTECTION WORKS

Rock Protection

The works involves bulk filling the washout area at culvert or drainage structure with rocks/boulders.
Rocks/boulders size and depth to match the size of the existing rock protection.
Preparation of the work area, placement of geotextile (where required), recovery of displaced rock, and placement of bulk rock.
Rock protection works shall be constructed in accordance with TMR Technical Specification MRTS03 Drainage, Retaining Structures and Protective Treatments.

Rock Mattresses

The use of rock mattresses provides an alternative treatment that is able to utilise smaller rock through a caging system. Although more labour intensive, and requiring the purchase/manufacturing of cages, significantly less rock, and more easily sourced rock (due to size) may result in a value for money alternative.
Works involve the preparation of the work area, placement of geotextile (where required), supply and installation cages, recovery of displaced rock, filling and wiring of cages.

Repair Stone Pitching

The works involves repairing the damaged stone pitching with cement grouting and rocks.
Grouted rock pitching shall consist of hard sound igneous, metamorphic or approved sedimentary rock which will not disintegrate in water.
Rock size and depth to match existing stone pitching surfacing.
All the voids shall be filled with a mortar mix consisting of 1 part Portland cement to 3 parts of Fine Sand. The mortar shall be applied by an appropriate means that allows the mortar to be worked between the stones, so that the voids are completely filled as far down as practical.
If any stones are not firmly held in position after the mortar has set, that mortar shall be removed from around the loose stones and the area re-grouted.
Rock surfaces shall be cleaned free of any coatings of mortar exposing the face of the rock.

ROAD FURNITURE and DELINEATION

All road furniture works include the following work operations:

- site establishment and disestablishment of all plant, labour and materials;
- establishment and disestablishment of traffic control;
- determination of the work area;
- the removal of damage road furniture;
- re-instatement of roadside furniture;
- clean up of the site and disposal of any waste/removed material in accordance with applicable current legislation.

Following restoration of sealed pavements, line-marking is generally required.
Line marking should be consistent with either the adjoining sections of road or the pre-disaster arrangement.
Reinstate line-marking includes the following work operations:

- establishment and disestablishment of traffic control;
- determination of the work area;
- cleaning the pavement in the work area (as required);
- spotting/symbolising;
- application of marking material.

OTHER TREATMENTS

Complementary /Betterment Works

CTB Floodway

Recent history has shown it has been an unfortunate constant for Banana Shire Council to be delivering overlapping reconstruction programs as a result of multiple events.
Council is considering a proactive management approach by constructing Cement Treated Base (CTB) Floodways at locations where recurring damage from multiple events has been identified.

Contractors must provide an offer for the complementary/betterment scope as detailed on the Pricing Worksheet. Council will evaluate the offers for the complementary/betterment scope and determine if any will be included in the contract scope for award.
Refer to the Floodway Treatment Sketch – Appendix F.
Council reserves the right to accept or reject any tender offer for complementary/betterment scope.

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

APPENDICIES

A. LOCALITY MAP
B. PRICING SCHEDULE AND SITE
C. QRA TREATMENT GUIDE 2021