TECHNICAL SPECIFICATION
KELLYS ROAD DON RIVER BANK STABILISATION
CONTRACT NUMBER: T2425.30

Table of Contents

1. INTRODUCTION 3
2. PURPOSE 3
3. AVAILABLE INFORMATION 3
4. COMMERCIAL REQUIREMENTS 5
5. GENERAL REQUIREMENTS 8
6. BUSINESS MANAGEMENT SYSTEMS 10
7. STANDARDS 19
8. WORK CATEGORY REQUIREMENTS 20

1. INTRODUCTION

Banana Shire Council (Council) has been activated under a declared event, resulting in damage to the regions local road network. Council requires restoration works for its public assets to be carried out under the Disaster Recovery Funding Arrangements (DRFA) Program.

2. PURPOSE

The purpose of this specification is to:

1. Ensure that the quality of restoration works supplied to Council by the Contractor, are of satisfactory durability, strength and appearance, meets all relevant standards; and
2. Specify essential technical and operational requirements pertaining to Disaster Recovery Funding Arrangement (DRFA) works included in this Contract.

3. AVAILABLE INFORMATION

3.1 Labour, Equipment and Materials

The Scope of Work requires the Contractor to provide, at their own cost and expense, all transport, labour, traffic control, materials, plant & equipment, signage, electronic systems and processes, office and site facilities, for the proper and complete performance of the works.

The scope of work includes reconstructing eligible essential public assets, damaged by the eligible disaster, to their pre-disaster function in accordance with the Queensland Disaster Funding Guidelines June 2021 Clause 9.1 (3) Assistance available.

Traffic Control must be provided in accordance with the Queensland Guide for Temporary Traffic Management (QGTTM) and associated standards.

The Contractor shall take a sustainable approach to material management. The following information is available to help with your understanding of intended scope of this project:

- General Specification (Appendix A)
- Site (Appendix B)
- Schedule K1 – Price Schedule (Appendix C)
- Design (Appendix D1)
- Technical Data (Appendix D2)
- Design Assumptions (Appendix D3)
- Technical Specification (Appendix E)
- Minimum Traffic Signage Requirements (Appendix F)

The Contractor shall familiarise themselves as to the nature of the Site of the Works and of all matters and things relating to the WUC, 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.

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.

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 Work from GPS coordinates or Recover and a qualified Surveyor is to be engaged to undertake the set out (if applicable).

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 (but shall not be obliged to do so for the benefit of the Contractor), 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 used by the contractor for the WUC 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.

3.2 Work Scheduling priorities

The Contractor shall program the Works in accordance with priorities issued by the Superintendent. The Superintendent will work with the Contractor to minimise disruption to the community and prioritise high risk works.

Key considerations include:

- QRA Program of Work (POW) completion dates
- School zones
- High Traffic volumes roads
- Community areas
- Tourist precincts
- Conflicts with other construction projects
- Intersections with DTMR roads including Traffic Disruption Notices and Road Corridor Permits if required

3.2 Work Categories

All Works shall be managed using the work categories and treatment types as set out in Schedule K1 – Price Schedule, Queensland Reconstruction Authority (QRA) Treatment Guide 2020–21 and issued in accordance with the approved Program of Work.

4. COMMERCIAL REQUIREMENTS

4.1 Issuance of Work and Contractor/s Payment Claims

4.1.1 Scheduled Quantities and Associated Costs

a) Quantities listed by the Superintendent are to be treated as maximum values. No variations will be considered for each line item nominated in the Schedule of Rates without the express written approval by the Superintendent or Delegated Officer.

b) All costs associated with the initial Site establishment and transportation, labour, traffic control, materials, plant & equipment, signage, and electronic resources must be included in the Price Schedule 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.

4.1.2 Issuance of work

a) The Contractor shall develop a Works Program for WUC utilizing the base data provided in Schedule K1 – Price Schedule and submit to the Superintendent for approval. Approval shall not be unreasonably withheld by the Superintendent.

b) Following approval of the Works Program by the Superintendent, the Superintendent shall issue approval to commence by the issuance of Possession of Site to the Contractor to commence.

c) The Contractor shall maintain and update the Works Program on a weekly basis and provide an electronic copy of the updated plan to the Superintendent.

4.1.3 Site Pre-Works Package

The following documentation and information must be provided to the Superintendent as a requirement of the Principal giving access to or possession of the Site and within the times stated within the General Conditions of Contract if applicable, or thereafter the earlier of:

a) 20 Business Days after the Date of Acceptance of Tender; and
b) 5 Business Days prior to any scheduled pre-start meeting.

Item	Description	Relevant clause
A.	Updated Program	Clause 32 of the General Conditions of Contract. Refer clause 9 of the General Specification
B	Dilapidation Survey	
C	Work health and safety documentation (including, if applicable, evidence of payment of fees and lodgement of notice appointing Contractor as principal contractor)	Clause 12A of the General Conditions of Contract
D	Environmental Management plan	Clause 14.1 of the General Specification

E	Traffic Management Plan and Traffic Guidance Schemes	Clause 18 of the General Specification
F	Evidence of Insurance	Clause 19 of the General Conditions of Contract
G	Service locations	Clause 2.1 (b) of the General Specification
H	Quality Management Plan, including Lot Plan and Inspection and Testing Plans (ITPs)	Clause 29.2 (b) of the General Conditions of Contract
I	WHS Management Plan	Clause 11B of the General Conditions of Contract

The Contractor is to undertake "Before You Dig Australia" (formerly 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 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.

4.1.4 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, the cost of providing temporary services shall be considered as being included in the Contract Sum, 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.

4.1.5 Works Management

All works shall be performed in accordance with Section 8 and all other provisions of the Specification. The Works shall be recorded using the RECOVER software application.

4.1.6 Claim Submission Package

On completion of the Works being claimed for the corresponding month, and prior to submission of a final Invoice, the Contractor must submit a Payment Claim and a Quality Assurance Pack

including any Quality Assurance documentation & associated test results.

Confirmation that material used is compliant with the Maintenance Gravel requirements.

a) Payment Claim - The Payment claim shall include the following details:
   i) Date of claim
   ii) Scheduled items including unique ID Codes
   iii) Dates of completed work/s
   iv) Purchase Order number;
   v) Project number

b) Quality Assurance Pack - The Quality Assurance Pack shall include the following:
   i) Lot coversheets
   ii) Delivery dockets
   iii) Copy of the Traffic Guidance Scheme (TGS) and daily check sheets
   iv) Evidence of environmental inspections or reports
   v) Inspection Test in accordance with the Treatment Guidelines specified below.
   vi) Data Collection - Using RECOVER Software - update Submission Description Reference number using the 'Restoration' button and carryout the following:
      i. Progression Photos (Including plant and equipment)
      ii. Completion Date
      iii. Completion Photos

All submitted payment claims and invoices must, as a minimum, include the following information in addition statutory invoice information:

i) Contract Number / Project / Job Number
ii) Purchase Order Number
iii) Claim Period (The month in which the claim is submitted)
iv) Construction Period (The period within which the works were completed)
v) Quality Assurance Documents (QA) / Inspection Test Plan (ITP)
vi) Statutory Declarations

Invoices must be dated on or after the date the Payment Schedule.

4.2 Site

The Contractor/s will be required to examine the Site and its surroundings prior to commencing of works on site. Before commencing ground works, locate and mark existing underground services in the areas that will be affected by the earthworks operations

4.3.1 Hours of Work

a) The working hours and workings days for work on the site are stated in Item 22A.' Noise shall be maintained at a minimum in accordance with local law.
   a. Refer https://www.banana.qld.gov.au/downloads/download/50/local-laws

4.4 Site Management

a) The Contractor/s is to promptly advise the Superintendent of any cancellations or delays because of inclement weather and/or breakdowns of plant and/or equipment.

b) Where Works have commenced and are paused (i.e. overnight) and are subject to changed trafficable conditions (i.e. storm events), the Contractor/s are responsible for ensuring that sufficient safety and environmental control measures are in place for the

management of the Site. Including but not limited to the following:

i) Aftercare Signage
ii) Erosion Controls

The contractor must take time and date stamped photographs of control measure prior to leaving site forward to the Superintendent or delegated officer.

c) In the event of adverse and/or extreme weather events negatively impacting on the work Sites, it will be deemed the Contractor/s responsibility to carry out any repairs/rectification works.

d) Site restoration requirement where existing ground surfaces are not required to be varied as part of the works, restore them to the condition existing at the commencement of the work under the contract.

e) Fencing to be reinstated along existing lines using materials commensurate with existing. Fence to be re-tensioned to match existing.

f) All costs associated with this Clause 4.4 are the responsibility of the Contractor.

4.5 Crew Availability

The Superintendent may request additional resources (multiple crews) to meet program/ conflicting project requirements. The Contractor shall facilitate such requests when provided a minimum of 3 weeks' notice.

5. GENERAL REQUIREMENTS

The WUC includes unsealed road works as a part of this program. The Contractor shall conduct the following during the undertaking of works:

a. Coordinate and execute in an expeditious manner considering safety, quality, environment, and traffic management for the works included in the scope.
b. Cooperation and collaboration, using "best for project" mindset.
c. Site Establishment and dis-establishment.
d. Provision of all supervision, plant, materials and labour to deliver road restoration and associated works as per the Contract
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. All other operations in the Scope of Works.
h. Obtain all necessary Approvals for completion of works from the relevant authorities, i.e., the Department of Natural Resources (DNR) and the Department of Transport and Main Roads (DTMR), if work is adjoining a state-controlled road.
i. Obtain all necessary Approvals for water extraction. The Approval requires completion of paperwork for water extraction records.
j. Maintenance of haul roads, including the use of unsealed roads for the WUC, 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.

k. Sequencing works as to not damage already completed works.

All works performed must comply with the Construction work Code of Practice May 2018 and Traffic Management for Construction or Maintenance Work Code of Practice 2008, which is to extend to all sub-contractors, consultants, and suppliers engaged by the successful Contractor/s for the purposes of the delivery of the Contract requirements.

The Contractor/s is to ensure that, whilst performing works associated with this Contract, a current hard copy and electronic copy of all required accreditations, licenses, and Management Systems, including Work Health and Safety Management documents, are available and on Site at all times.

The Council is committed to providing a high standard of customer service and requires Contractor/s to maintain this standard. Contractor/s shall at all times operate in accordance with the Banana Shire Council Code of Conduct and promote a positive public image for the Council, be courteous to members of the public and the Council's employees. The Code of Conduct can be found online www.banana.qld.gov.au/downloads/file/5205/code-of-conduct-employees.

The Contractor/s shall be responsible for communications to emergency services and the DTMR. In the case of communication with the DTMR, if required, it is the Contractor/s responsibility to provide the necessary traffic disruption forms and accompanying compliant TGS and TMP documentation to the DTMR, if required. The Council will be responsible for any media enquiries concerning the Contract, or individual programs of work.

Any use of Sub-Contractors to perform works on behalf of the Contractor must have prior written approval by the Superintendent. The Contractor will be required to provide details of sub-contractor management procedures prior to engagement to ensure capability to perform the works in accordance with the General Terms and Conditions of Contract.

Utility and service identification, protection and permit approvals are the responsibility of the Contractor/s.

The Contractor/s is responsible for the provision of water supply to all Sites. This includes obtaining permits from the relevant authority, where necessary.

The Superintendent may at its sole discretion remove any personnel from the site or any other Council premises.

5.8 Clean Up

The Contractor/s is responsible for leaving all work Sites in a clean and tidy condition at the end of each day.

5.9 Provision of Lights

a) The Contractor/s is responsible for providing sufficient lighting to all Sites, including stockpile locations; and
b) The Contractor/s is responsible for the provision of Hydraulic Lighting Towers where required.
c) Where available, the Council supports and encourages the Contractor/s to utilise solar light facilities for the provision of lighting at relevant sites.

5.10 Traffic Control

The Contract is responsible for ensuring all Traffic Control is provided in accordance with the requirements set out in Appendix F – Minimum Traffic Signage Requirements.

6. BUSINESS MANAGEMENT SYSTEMS

6.1 Business Management Systems and Management Plans

The Contractor/s must prepare and maintain a Business Management Systems and Management Plans in accordance with this Clause 6.
Documents supporting these processes must be submitted to the Superintendent for approval prior to the commencement of the Contract. The Superintendent will notify the Contractor/s of acceptance in writing.

The Management Systems and Management Plans must be submitted to the Superintendent:

i) in final form prior to the Commencement Date; and
ii) after any changes are made.

The Management Systems and Plans must include:

i) a method of identifying and recording risks or processes related to the provision of services and subsequent procedures to manage same;
ii) a documented review process;
iii) a process of continual improvement;
iv) a process to identify and monitor relevant legislation and standards as they relate to this Contract;
v) identified targets and objectives to be achieved;
vi) record management system to record, maintain and monitor the systems;
vii) periodic auditing of the systems;
viii) a process to identify and monitor all delays experienced regardless of responsibility for the delay; and
ix) other items as required by the Superintendent from time to time.

Compliance with the Management Systems and Plans does not release or discharge the Contractor from compliance with its obligations under this Contract.

To enable the Superintendent to monitor and audit the Contractor compliance with its obligations under this Contract, the Contractor/s must at all times, allow the Superintendent prompt and unhindered access to the Contractor staff, systems, plans and records as used by the Contractor in connection with the WUC.

6.1 Work Health and Safety Management System

a) The Contractor/s must develop, implement, maintain and comply with an occupational health and safety management system, personal protective equipment guidelines in accordance with ISO 45001:2018 and the Work Health and Safety Regulation 2011 (or any higher standard that amends or replaces that standard); or
b) Other applicable system accepted by the Superintendent.

6.2.1 Safety – Minimum Standards

a) WHS Obligations

The Contractor is responsible for the health and safety of its Personnel and any other person affected by its performance of the Works under the Contract.

The Contractor must ensure adequate facilities, suitable precautions and safeguards are provided for the welfare at work of its Personnel, including ensuring access to those facilities.

The Contractor must provide the Superintendent, on request, with evidence (including any documents specifically requested) that it and its Personnel, are complying with applicable WHS Requirements.

b) WHS Risk Management

The Contractor must ensure it has systems in place to identify, assess, control, eliminate (or if it is not possible to eliminate reduce so far as is reasonably practicable) and review risks and hazards at the Site and connected with the WUC. The appropriate systems are to be reviewed and maintained periodically and regularly as appropriate.

c) Inspections

The Contractor must ensure that it regularly conducts health, safety and security audits relating to the Contractor carrying out the performance of the work at the Site, retains copies of audit documents and promptly provides the Superintendent with copies of such audit documents upon request.

Should the Superintendent observe, in its opinion, an unsafe act or become aware of a planned unsafe act in relation to the WUC, it has the authority to direct the Contractor or any of the Contractor's Personnel concerned, to cease the unsafe performance of the WUC. The Contractor shall, at its sole expense, modify its method in order to satisfy the Superintendent that the WUC are proceeding in a safe manner.

The ceasing of the WUC, pending compliance with a safety Direction, will not relieve the Contractor of the responsibility to effectively perform the Contract.

If the Contractor fails to comply with a Direction under this clause, in addition to any other remedies, the Superintendent may, after providing reasonable notice to the Contractor, take the necessary steps to achieve compliance. The reasonable cost incurred by the Superintendent shall be a debt due and payable by the Contractor.

d) Training

The Contractor must ensure only appropriately experienced, skilled and qualified persons are engaged to carry out the WUC.

e) Incident Notification

If an Incident occurs at the Workplace at which the WUC are being undertaken, the Contractor must, in addition to, and not in derogation of the requirements of the Contract:

i) immediately verbally notify the Superintendent when any Incident occurs involving the Contractor performing the WUC, or to the members of the public or other persons on the Site;
ii) if applicable, immediately notify relevant Regulators in accordance with the relevant WHS Laws;
iii) within 24 hours of the Incident, submit a preliminary report to the Superintendent detailing the circumstances of the incident, its cause, and likely corrective measures to be implemented by the Contractor;

iv) conduct a formal investigation into the Incident and then provide the Superintendent with a copy of the written investigation report within ten (10) days of the Incident occurring;
v) provide copies of all documents and records requested by the Superintendent relevant to the Incident (including any correspondence with any relevant Authority or Regulator); and
vi) report the status of the implementation and outcomes of actions undertaken to the Superintendent as a result of the Investigation carried out by the Contractor. The Superintendent may review the effectiveness of such actions and may request additional actions and/or evidence of implementation which must be considered by the Contractor.

f) Workplace Health and Safety Officer

The Contractor shall as a minimum provide a Workplace Health and Safety Officer with Certificate IV in Work Health and Safety - Nationally recognised units of competency BSB41415 (latest qualification).

g) Personal Protective Equipment (PPE)

The following is the minimum PPE accepted on Site:

i) Steel capped footwear;
ii) Long sleeved shirts in high visibility colours;
iii) Full length cut-proof trousers, for workers using cutting equipment, or trousers for all other workers, unless directed otherwise by the Superintendent;
iv) Broad brimmed sun hat or safety helmet with broad brim;
v) Safety Eyewear in accordance with the relevant Australian Standard;
vi) Sunscreen SPF 30+.
vii) Hearing protection must be worn when operating machinery, or when working in close proximity to machinery that produces excessive noise which is capable of causing hearing damage.

h) Tools

The following tools shall not be used for works undertaken on this Contract:

i) 9-inch (230 mm) angle grinders
ii) Non-retractable knife

i) General Standards

The Contractor/s must in performing the WUC:

i) Ensure all staff employed under this Contract complete Council's On-Line Safety Induction process. Further details can be obtained from the Superintendent. The Contractor must ensure evidence of completed inductions are available on request by the Superintendent.

ii) Comply with all statutory Laws; including but not limited Environmental and

Workplace Health and Safety Legislation and Regulations;

iii) Comply with all reasonable directions given by the Superintendent, in relation to statutory legislation.

iv) Provide the Superintendent with a copy of any issued non-compliance work improvement notices issued by a statutory body.

v) Rectify any non-compliance as directed in the work improvement notice;

vi) Provide the Superintendent with a copy of the rectification notice;

vii) Leave the Site or any other premises of the Council secure, clean, orderly and fit for immediate use, having regard to the condition of the Site or any other premises of the Council immediately prior to the performance of WUC.

6.2 Environmental Management System

a) The Contractor/s must develop, implement, maintain and comply with an environmental management system in accordance with AS/ NZS ISO 14001 (or any higher standard that amends or replaces that standard); or

b) other applicable system as accepted by the Superintendent.

6.3 Environmental Minimum Standards

6.3.1 Handling hydrocarbon-based materials

a) The handling, storage, transport and use of bitumen shall comply with the requirements and practices outlined in the latest versions of the following documents:

i) Austroads – Bituminous Materials Safety Guide, AP-G41, and

ii) AAPA Advisory Note 7 – Guide to the Heating and Storage of Binders Sprayed Sealing and Asphalt Manufacture.

b) Daily risk assessments must document control measures and take into consideration risk to the environment and human health from proximity of water ways, spill prevention and management, workers and public safety.

6.3.2 Spill management

For any hazardous substance spill which occurs the following steps should occur:

a) Public access should be prevented to the immediate area where the spill has occurred and ensure that only personnel with the appropriate training and equipment deal with the spill (providing it is safe to do so).

b) Review relevant Safety Data Sheet (SDS) for the spilt chemical (SDS should be located where the chemicals are used and stored). The SDS will have specific instructions on how

to deal with chemical spills as well as first aid information. Safe work procedures should also be referred to.

c) Using appropriate PPE promptly cover the spill with absorbent material taking care not to spread the spill further. Ensure any liquids are contained using a bund to stop them escaping to stormwater drains or flow paths.

d) Waste should be transported and disposed of by a licensed operator/ facility in accordance with the Environment Protection Act and associated Regulation. The Council Representative should be notified immediately. If there is a hazard to health or property, call 000.

6.3.3 Noise Management

a) The Contractor shall take all reasonable and practicable measures to prevent or minimise the noise have been taken (the general environmental duty (Environmental Protection Act 1994).

b) Noise Management activities must be undertaken in accordance with provisions of Clause 4.3 Hours of Work (above).

c) Contractors should note Environmental Protection Act 1994, Schedule 1 Exclusions relating to environmental nuisance or environmental harm sections 17A, 440 and 440Q Part 1 Environmental nuisance excluded from sections 440 and 440Q when performing these services.

d) If regulatory Authorities impose quantitative limits on noise (for example, maximum noise levels or when noise can be generated) they are required to be complied with while providing WUC under each category of work specified.

e) Implementation of alternative works practices, or staging works where possible and practical.

f) Silencing / dampening of equipment where possible and no unnecessary idling of vehicles or plant

6.3.4 Waste and Resource Recovery

a) The below Councils should be used when managing project waste:
   i) AVOID unnecessary resource consumption;
   ii) REDUCE waste generation and disposal;
   iii) RE-USE waste resources without further manufacturing;
   iv) RECYCLE waste resources to make the same or different products;
   v) RECOVER waste resources, including the recovery of energy;
   vi) TREAT waste before disposal;
   vii) DISPOSE of waste only if there are no viable alternatives.

All litter must be collected, removed and disposed of by the Contractor once the Works are completed. The cost for litter disposal is the responsibility of the Contractor. If large items such as furniture have been illegally dumped the Superintendent's Representative must be advised, and the collection of large items will be the responsibility of Council. 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.

b) The Contractor and Operator must ensure that it is aware of its requirements under the Environmental Protection Act 1994, Section 440ZG Depositing prescribed water contaminants in waters.

c) The Contractor is responsible to manage waste or recovered resources in a way that does not impact on environmental values as described under the Environmental Protection Act 1994.

d) Where resources can be recovered and material may be fit for beneficial reuse, recovered resources must be taken to a facility that can lawfully receive these materials for reprocessing in accordance with the Environmental Protection Act 1994.

e) Remaining waste materials must be taken to a facility that can lawfully receive these materials for disposal in accordance with the Environmental Protection Act 1994.

f) Records must be kept and provided to the Superintendent on quantities of waste and recovered materials removed from the site and where the waste and recovered resources have been taken for disposal or reuse.

6.4.5 Biosecurity

a) The Contractor and Operator are to comply with the Queensland Biosecurity Act 2014 and be aware of their General Biosecurity Obligation under this legislation, to ensure they take all reasonable and practical steps to minimise the risks associated with invasive plants under their control.

6.4.6 Protected Flora and Fauna

a) Where the Contractor or Operator's activities in relation to this Contract may have an impact on any fauna species listed as threatened (extinct in the wild, endangered or vulnerable) under the Nature Conservation Act, or any threatened species breeding place, the contractor should report this to the Superintendent's Representative.

b) Native vegetation is protected and regulated under the Nature Conservation Act 1992. Clearing and pruning should be kept to a minimum for the purposes necessary to maintain infrastructure located on the road, other than fences as per the exempt clearing work on land dedicated as a road under the Land Act 1994.

6.4.7 Cultural Heritage

a) The Contractor and Operator are to comply with the Laws including the Queensland Aboriginal Cultural Heritage Act 2003 and Queensland Torres Strait Islander Cultural Heritage Act 2003 and take all reasonable and practicable measures to ensure an activity does not harm cultural heritage (the "cultural heritage duty of care").

b) The Contractor and Operator are to comply with the Laws including the Queensland Heritage Act 1992 and take all reasonable and practicable measures to ensure an activity does not harm cultural heritage.

c) In the event an item of cultural heritage significance is detected, works must cease, and the Superintendent must be informed immediately.

6.4.8 Erosion and Sediment Control

a) The Contractor shall be responsible for planning, implementing and maintaining all erosion and sediment control measures in accordance with industry best practice. Works must ensure that contaminated waters do not leave the project site and are contained in a manner that avoids pollution to waters as per the requirements under the Environment Protection Act 1994.

6.5 Quality Management System

a) The Contractor/s must develop, implement, maintain and comply with a quality management system in accordance with AS/ NZS ISO 9001:2008 (or any higher standard that amends or replaces that standard); or

b) Other applicable system as accepted by the Superintendent.

c) The Contractor/s must provide the WUC in accordance with the provisions of Sections 7 Technical Standards and Section 8 Separable Portion Requirements within this document.

6.6 Risk Management System

a) The Contractor/s must develop, implement, maintain and comply with a risk management system in accordance with AS1742.3 Clause 2.2.3 and AS/NZ ISO 31000 (or any higher standard that amends or replaces that standard); or

b) Other applicable system as approved by the Superintendent.

6.7 Reporting and Site Specific Management Documentation and Compliance

6.7.1 Site Specific Reports & Plans

The Contractor/s will be required to develop Site specific Management Plans, which must be made available to the the Superintendent at the commencement of the WUC and during the life of the program of works. Any requirement for Site specific plans is to be approved by the Superintendent prior to commencement of works at a specific Site.

These include, but are not limited to:

a) Safety
   i) Construction Site Safety Plan;
   ii) Incident/ Emergency Management Plan;
   iii) WHS Site Management Plan
   iv) Traffic Management Plan;

b) Environment
   i) Environmental Management Plan (including Fauna/ Flora/ Cultural heritage protection);
   ii) Erosion and Sediment Control Plan;

c) Quality

i) Quality Management Plan;
ii) Inspection Test Plans
iii) Non-conformance Reports;

d) Communication
i) Construction Programs;
ii) ii) Communication Management Plan

6.7.2 Program of Works Reporting

As a minimum the following reports shall be utilised during the Contract Term to ensure delivery of the Program of Work, validation of competed work and the management of the Site. The the Superintendent may require additional reports or changes to the listed reports during the term of the Contract.

Regular communication with the Principal and its Superintendent and Superintendent's Representative throughout the WUC is required.

Program of Work Reporting			
Report Number	Report Title	Responsible Party	Frequency
A	Weekly Work Schedule	Contractor	Weekly – each Thursday
B	Monthly Progress Report	Contractor	Monthly – by the 25th of each month

6.7.3 Weekly Work Schedule

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

6.7.4 Monthly Progress Report

The Contractor shall provide in an Excel Format, a Project Schedule Report to the Superintendent by the date nominated by the Superintendent including but not limited to the following information:

a) List of completed sites including start and completion dates
b) List of incomplete sites including actual/planned start and planned completion dates
c) List of Audits Completed on site including Process and Final Product Audits and associated outcome (i.e. Compliant, Observation / Low Risk / Medium Risk / High Risk);
d) List of Incidents and/or Near Misses including incident date including whether the incident was a Lost time and/or Medical Treatment injury.
e) List of all staff and subcontract resources employed for the provision of the WUC

including man hours worked for the month in review.

f) Adjusted monthly expenditure and cash flow.

6.8 Incidents and Reporting

As a minimum the Contractor must provide verbal and or telephone advice by close of business on the day of the occurrence to the Superintendent in the event of the following:

a) Any Environmental or Quality incident, near miss or any other high-risk event.
b) Receipt of a complaint.
c) Any significant disruption to the program of WUC being provided.
d) Any damage to the Council's or other parties' property or essential services.
e) Any unserviceable network infrastructure identified at the Worksite.

Provide a written incident report within two full Business Days.

The Contractor must advise the Superintendent of any notifiable workplace incidents that occur while working on behalf of the Council. Verbal and or telephone advice is required by close of business on the day of the occurrence. The Superintendent may require that the Contractor complete the Council's incident report form.

The Contractor is required to notify any Statutory Body if an incident arises out of the conduct of a business or undertaking that results in the death, serious injury or serious illness of a person or involves a dangerous event.

The Contractor is required to notify the Department of Environment and Science if an incident arises out of the conduct of a business or undertaking that may have caused or threatens serious or material environmental harm.

6.9 Qualifications and Training of Staff

The Contractor:

a) Assumes full responsibility for ensuring Operators are assessed as competent for the tasks being undertaken.
b) Provides competency training under the Authorisation of a Registered Training Organisation (RTO) with appropriate scope where applicable.

All machinery is to be controlled by competent operators in possession of appropriate and current licenses/tickets.

The Contractor and their employees must hold a current 30215 QLD General Safety Induction (Construction Industry) Card, with copies to be forwarded to the the Superintendent prior to any employees undertaking duties under this contract.

For new staff, prior to commencing work, the Contractor shall forward to the Superintendent copies of all appropriate licenses and certificates and induction documentation.

The Contractor must provide adequate information, instruction, training and supervision to ensure that all employees are able to work in a safe manner. Skills and competencies must match the work activities within the contract. This includes plant operator tickets, statutory licensing and competency records. Copies of documents and records may be requested at any time during a Site audit conducted by the Superintendent's nominated Representative.

Personnel Details

a) The Contractor/s shall maintain a schedule of all employees utilised for the provision of WUC

i) Staff names
ii) Staff levels
iii) Staff years of experience
iv) All appropriate qualifications,
v) All required licenses

b) The Contractor shall and make available to the Superintendent or Representative upon request and reported to the the Superintendent monthly.

6.11 Performance management

Results from all audits shall be collated and a report compiled. This report will be used as an indicator of contract performance and may also be used to assist with customer complaints and management.

The Contractor will receive regular feedback on their performance from the Superintendent or Representative during the term of the Contract in an electronic format and during regular Performance Review Meetings.

The Superintendent or Representative will undertake audits of the Contractor's Management systems and processes. These audits monitor compliance with the accepted procedures and statutory obligations.

The Contractor must ensure that it cooperates and assists the Superintendent with any audit the Superintendent may conduct in relation to the Contractor's compliance with the Contract.

Where a breach of Contract Terms and Conditions or persistent poor performance is identified, the Superintendent, shall issue an Improvement Notice to the Contractor in accordance with the provision of the Contract.

The Contractor must undertake the necessary actions to meet the requirements of the Notice.

The Notice will be placed on the Improvement Notice Register as a record of the Contractor's ongoing Contract Performance.

7. STANDARDS

This section outlines the Technical Standards, Guidelines, Codes of Practice and other documentation applicable to works performed under the Contract. The Contractor shall ensure all works are compliant with the Standards. Any deviation from the Standards must have the written approval of the Superintendent or Delegated Officer. These Standards shall extend to all sub-contractors.

7.1 Gravel Specification

The gravel material shall meet the specifications of Type 2.3.

7.2 Technical Standards

a) Queensland Reconstruction Authority (QRA) Treatment Guide 2020–21 – July 2021

b) The current version of the applicable Institute of Public Works Engineering Australia – Design Guidelines for Lower Order Road (Website http: //www.ipweaq.com)

c) Department of Transport and Main Roads Specification (Measurement)

i) MRS01 Introduction to Technical Specifications
ii) MRS02 Provision for Traffic and Annexure

d) Department of Transport and Main Roads Technical Specifications
i) MRTS01 Introduction to Technical Specifications
ii) MRTS02 Provision for Traffic
iii) MRTS03 Drainage Structures, Retaining Structures and Embankment Slope Protections
iv) MRTS04 General Earthworks
v) MRTS05 Unbound Pavements
vi) MRTS14 Road Furniture
vii) MRTS27 Geotextiles Separation and Filtration
viii) MRTS50 Specific Quality System Requirements
ix) MRTS52 Erosion and Sediment Control
x) QGTTM Queensland Guide to Temporary Traffic management
xi) AGTTM Austroads Guide to Temporary Traffic Management

7.3 Codes of Practice

a) The National Code of Practice for the Construction Industry 2018
b) Traffic Management for Construction or Maintenance Work Code of Practice 2008

7.4 Australian Standards

All materials and processing, where not otherwise specified herein, shall be in accordance with the relevant Australian Standards (AS) and referred to only by their allocated AS number. The latest available edition of those AS shall apply. Materials used for works under this Contract must conform to the standards.

a) AS1141 – 2021 Methods for Sampling and Testing Aggregates

8. WORK CATEGORY REQUIREMENTS

8.1 General Standards

8.1.1 Material Requirements

The gravel material shall meet the specifications of Type 2.3.

DNR Approval for Water Extraction	MANDATORY HOLD POINT
Completion of Dilapidation Survey	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.

A Witness Point is defined as a position in the progress of the works where the Contractor must notify the CQR and the Superintendent prior to proceeding and the option for witnessing the inspection or test may be exercised. If any do not attend, then work may nevertheless

proceed, unless otherwise instructed.

An Inspection Point is defined as a position in the progress of the works where the Superintendent is required to inspect an activity.

When the Contractor is required to give notice to the Superintendent for inspections in accordance with the Contract, 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 that are required as a result of the Contractor not being ready to facilitate an inspection.

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, site and Contractor's documentation of the works may be undertaken by the Superintendent at any time.

The Quality Management Plan shall address all Inspection, Hold and Witness Points identified elsewhere in the Contract, Specifications, TMR Specifications and applicable standards, including but not limited to the following:

Job Description	Inspection/ Witness / Hold Point
Setting out of the works: Including signage, traffic control, extent of the works, notification of residents and site facilities	Hold Point
Non-conformance to any specified criteria	Hold Point
Proof roll of subgrade and pavement layers (where required)	Inspection Point
Inspection of formwork and reinforcement prior to placing concrete (where required)	Hold Point
Placing of material (where required)	Witness Point
Final inspection prior to Practical Completion	Hold Point

The Contractor shall give the Superintendent not less than forty-eight (48) hours' notice of their intention for an Inspection, Witness or Hold point to be undertaken.

The Superintendent shall have the right to enter, for the purpose of inspection and testing at any time during working hours, any premises where articles for inclusion in the works are being manufactured or stored. The Contractor shall afford the Superintendent every opportunity to inspect any article which is manufactured or stored off-site prior to delivery to the site for inclusion in the works.

8.1.4 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.

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

8.1.5 Completed Work Evidence

The Contractor is to provide the Superintendent the following as a minimum as evidence for completed works:

(i) Completed Inspection Test Plans with associated checklists and testing certificates;
(ii) Gravel and Spoil Dockets
(iii) Completed lot register; and
(iv) Construction Photos.

8.2 General Notes

8.2.1 Section Content

Ground works generally, protection of trees, site clearing, excavation, placing and compacting fill, installation of geotextile, gabions and mattresses, sluiced rock fill, crib walls, earth reinforcement and ground anchors.

8.2.2 Definitions

i. Description and classification of soils: to AS 1726.
ii. Bad ground: ground unsuitable for the purposes of the works, including filling liable to subsidence; ground full of vegetative matter; ground containing cavities, faults or fissures; ground contaminated by harmful substances including oil, cement and chemicals; ground containing acid sulphate soil; or ground which is or becomes soft, wet and unstable; and the like.
iii. Non-rippable material: as defined in clause 7.8.
iv. Line of influence: a line extending downward and outward from the bottom edge of a footing, slab or pavement and defining the extent of foundation material having influence on the stability or support of the footings, slab or pavement.
v. Subgrade: the prepared formation on which a pavement or slab is constructed or the top portion of earthworks immediately below the pavement or slab. Subgrade is considered to be the top 150 mm in cuttings and the top 300 mm in embankment unless stated otherwise.
vi. Subgrade level: the top surface of the prepared subgrade on which a pavement or slab is constructed.
vii. Relative compaction: the ratio between the critical zone (trees): the area described by the greater of the vertical projection of the canopy or a radius of ten times the tree trunk diameter and extending to a depth of 750 mm below the ground.

8.2.3 Measurement

i. If provisional quantities are specified, or there have been variations to the contract dimensions of excavations, do not commence backfilling or place any permanent work in excavations until the quantities of excavation and backfilling have been agreed and recorded.

ii. Measurement Of Non-Rippable Material
iii. If payment is to be claimed for excavation in non-rippable material, do not remove the material until the level and (if applicable) class of material have been determined.

8.3 Quality Notes

8.3.1 Inspection
Witness Points
Give sufficient notice so that inspection may be made.

Hold Points
Do Not Proceed Without Approval, Give Sufficient Notice So That Inspection May Be Made.
If Rock Or Bad Ground Is Encountered, Give Notice Immediately And Obtain Instructions.

Refer table in this section of drawing ARO0388-C04.

8.3.2 Samples
i) General
Submit to the testing authority samples of the following:
i. each type of imported fill.
ii. each type of excavated material, which is to be re-used as select fill or embankment fill in the works.
iii.
ii) Identification
i. Attach a tag to each sample showing relevant information including description, source and nominal size of material.

2.3 Contractor's Submissions

Materials
Imported materials: Notify the supplier, source and suppliers description of all imported materials.
Recycled products: Notify the nature, source, proportions and method of incorporation of any added fillers or binders.
Imported fill: Submit certification or test results, which establish the compliance of imported fill.

8.4 Site Management

8.4.1 Existing Services

Marking
Before commencing ground works, locate and mark existing underground services in the areas that will be affected by the earthworks operations.

8.4.2 Dewatering

Keep earthworks free of surface water. Provide and maintain slopes, crowns and drains on excavations and embankments to ensure satisfactory drainage. Place construction including filling, paving, structures and services, on ground from which surface water has been removed. Protect freshly laid work from water damage.

8.4.3 Site Restoration

Requirement
Where existing ground surfaces are not required to be varied as part of the works, restore them to the condition existing at the commencement of the work under the contract.

8.5 Clearing

8.5.1 Site Clearing

Timing
Do not clear any area until commencement of other work in the area is imminent.

Extent
General: clear only the site areas to be occupied or affected by the works and any other areas that the contract specifically requires to be cleared.
Contractor's site areas: if not included within the areas specified above, clear generally only to the extent necessary for the performance of the works.

Clearing operations
Old works:
Remove old slabs, foundations, retaining walls, paving, abandoned services and the like to a depth of 300 mm below existing or finished surface or 500 mm below subgrade level (whichever is lower).
Refilling: unless otherwise specified, refill grub holes and the like with material similar to the surrounding soil.
Spoil to be removed from site to a location nominated by the Superintendent. (allow 50km return trip).

8.6 Tolerances

Surface level
General: provide finished subgrade that is evenly graded between level points, free draining and conform to the required tolerances.
Smoothness: as normally produced by a grader blade (except for batters without topsoil).
Tolerances: the limits in the table 5.1 apply to the finished surface unless overridden by the requirements for the finished level and thickness of the surfacing.

Refer TABLE 5.1 – TOLERANCES from drawings.

Other Ground Surfaces

Absolute Level Tolerance: ± 50 Mm, Provided The Area Matches Adjacent Construction.
Horizontal Surfaces
Absolute Tolerance: ± 50 Mm, Except Where Alignment With An Existing Road Structure Is Necessary. Join New Construction To The Existing Work In A Smooth Manner.

Batters

Slope: Average Slope Not Steeper Than Shown On The Drawings Nor More Than 10% Flatter, Provided That Flatter Slopes Do Not Encroach On Abutting Property.
Absolute Level Tolerance: For Cut Batters In Earth, ± 150 Mm And For Cut Batters In Rock And For Fill Batters, ± 300 Mm; Both Measured From The Average Slope Plane.
Topsoil To Batters: Absolute Level Tolerance ± 50 Mm, Provided The Area Matches Adjacent Construction.

8.7 Method Of Compaction And Testing

Requirement: Select The Methods Of Compaction And Compliance Testing To Suit The Material

Category Listed In Table 6.1.

Refer TABLE 6.1 - COMPACTION METHOD

8.7.1 Compacted Layer Method Of Construction

Stone size: Limit stone size in fill material to less than two-thirds of the uncompacted layer depth.
Execution: Place and compact fill material uniformly in layers.
Compaction layer thickness: comply with table 6.2 for the allowable loose layer thickness for the location and properties of the material being compacted. Where the uncompacted thickness of a layer would otherwise be less than the specified minimum thickness, a lesser thickness of newly placed material may be employed by loosening the underlying material to give a total depth equal to the minimum thickness.

8.7.2 Mechanical Interlock Method Of Construction
Execution: Place And Compact Coarse Granular Fill Material Uniformly In Layers. Roll Each Layer Until No Permanent Visible Lowering Of The Surface Occurs.

Minimum Thickness Of Uncompacted Layers: Greater Of 150 Mm Or 1.5 Times The Maximum Rock Size In The Layer.
Maximum Thickness Of Uncompacted Layers: Comply With Table 6.3 For The Specified Module Weights, Which Apply To Both Drawn And Self-Propelled Single Drum Rollers. Interpolate Layer Thickness For Module Weights Between The Listed Values.

Notes:

1. Field dry density to AS 1289.5.31, AS 1289.5.3.5 or AS 1289.5.8.1. If using AS 1289.5.8.1, calibrate the surface moisture-density gauge in accordance with AS 1289.5.8.4 before use on site.
2. Standard maximum dry density to AS 1289.5.1.1
3. Relative compaction (% of maximum dry density) to AS 1289.5.4.1
4. For plastic soils, compact soils designated under the unified classifications system as oh ch mh to not less that 92% nor greater than 96% of standard maximum dry density at moisture contents of between 90% and 120% of optimum moisture content.
5. Density index to AS 1289.5.6.1 maximum and minimum dry densities to as 1289.5.5.1
6. Average imposed bearing pressure of floor slab not to exceed 20 KPa. Imposed bearing pressures of strip and pad footings not to exceed 100 KPa.
7. In the context of this specification, road formation is deemed to include all the area within the designated road reserve. Structural formation is deemed to include the area under the paving plus a nominal 1.0m from the edge of the paved area.

8.8 Excavation

8.8.1 General

Extent
Site surface: Excavate over the site to give correct levels and profiles as the basis for construction, paving, filling, landscaping and the like. Make allowance for compaction or settlement.
Footings: Excavate for footings, pits, wells, shafts and the like, to the required sizes and depths. Confirm that the bearing capacity is as specified.

Preparation
Prior to excavating, cut any pavement wearing surface, concrete footpath, kerb and channel or the like by saw or other approved means to give a clean break line along the edge of excavation.

Existing footings, slabs and pavements
If excavation is required below the line of influence of an existing footing, slab or pavement, use methods that maintain the support of the footing, slab or pavement and ensure that the structure and

finishes supported by the footing are not damaged. Refer annexure.

8.8.2 Surface Drainage

Catch drains
Construct catch drains at the top of cuttings. Grade and trim the catch drains to ensure the free flow of water and connect to the drainage system. Install erosion protection measures where necessary.

Table drains
Profile: Neatly trim earth table drains to the required profile, grade and alignment. Install erosion protection measures where necessary.
Grading: Construct table drains with a minimum grade of 0.5% and with a maximum length of 50 m before diversion to drainage system.

8.8.3 Provisional Depths

Contract depths
The footing or pier depths shown on the Drawings are only a basis for measurement of quantities. Actual excavation levels will be determined based on material encountered.

8.8.4 Explosives

Do not use explosives. Refer annexure.

8.8.5 Bearing Surfaces

General
Provide horizontal bearing surfaces for load bearing elements including footings. Step to accommodate level changes. Make the steps to the appropriate courses if supporting masonry.
Deterioration
If the bearing surface deteriorates after approval, excavate further to a sound surface before placing the load bearing element.

8.8.6 Reinstatement of Excavation

General
Where excavation exceeds the required extent, whether because of bad ground (and where footing levels or the like are not varied) or as a result of excess excavation, reinstate to the correct depth and required bearing value.
Particular
Within the 'line of influence' of footings, beams or other structural elements: Refill over-excavation with concrete of strength appropriate to the loading, minimum 15 MPa. Refer annexure.
Below slabs or pavements: Refer to Clause 9.0.

8.8.7 Adjacent Structures

Temporary supports

General: Provide supports to adjacent structures where necessary, sufficient to prevent damage arising from the works.
Lateral supports: Provide lateral support using shoring.
Vertical supports: Provide vertical support where necessary using piling or underpinning or both.
Permanent supports
If permanent supports for adjacent structures are necessary and are not described, give notice and obtain instructions.

Encroachments
If encroachments from adjacent structures are encountered and are not shown on the drawings, give

notice and obtain instructions.
Rock bolting
Provide proprietary high strength steel bars or tubes anchored into holes drilled in the rock and tensioned against plates bearing on the rock face to provide temporary or permanent support for the rock face.

8.8.8 Non-Rippable Material

General
Where the methods of measurement require differentiation of non-rippable material, the following criteria apply. Machine classification to AS 2868.
Confined excavation

Definition: Excavation of trenches and to broader areas less than 1000 m2 in extent.
Classification: Classify material as non-rippable if any of the nominated classes of crawler excavator fitted with a heavy-duty bucket, cannot rip at a production rate (in situ volume) exceeding the nominated values. Fit bucket teeth with high penetration boots, approved by the machine manufacturer for use on the particular machine in rock.

1. Class 55 crawler excavator fitted with a maximum 450 mm wide bucket: Maximum production rate 1.5 m3 per hour.
2. Class 85 crawler excavator fitted with a maximum 600 mm wide bucket: Maximum production rate 3 m3 per hour.
3. Class 115 crawler excavator fitted with a maximum 750 mm wide bucket: Maximum production rate 4.5 m3 per hour.
4. Class 155 crawler excavator fitted with a maximum 900 mm wide bucket: Maximum production rate 7 m3 per hour.
5. Class 200 crawler excavator fitted with a maximum 1050 mm wide bucket: Maximum production rate 10 m3 per hour.

8.8.9 Other excavation

Classification: Classify material as non-rippable if the nominated classes of crawler tractor, equipped with a heavy duty, single tine parallelogram ripper (approved by the machine manufacturer for use on the particular machine in rock), cannot rip at a production rate (in situ volume) exceeding the nominated values.

1. Class 150C crawler tractor: Maximum production rate of 50 m3 per hour.
2. Class 200C crawler tractor: Maximum production rate of 75 m3 per hour.
3. Class 300C crawler tractor: Maximum production rate of 90 m3 per hour.
4. Class 400C crawler tractor: Maximum production rate of 105 m3 per hour.
5. Class 500C crawler tractor: Maximum production rate of 120 m3 per hour.
6. Class 600C crawler tractor: Maximum production rate of 135 m3 per hour.

8.9 Filling

8.9.1 Fill Material

General

Material type: Inorganic, non-perishable material.
Sulphur content: Do not use filling with sulphur content exceeding 0.5% within 0.5 m of cement bound elements (for example concrete structures or masonry), unless such elements are protected by impermeable membranes or by other suitable means.

Sources

Where directed, re-use material recovered from excavations on the site. Dry out recovered material

as necessary prior to use.

Recycled Material

Various products derived from resource recovery of construction and demolition waste from building waste; reclaimed asphalt pavement (RAP) from maintenance and rehabilitation activities; and reclaimed glass from the glass disposal industry blended to produce fill types meeting the requirement of this clause.

Low density foreign materials such as plastic, rubber, plaster, clay lumps and other friable material shall not exceed 3% by mass. Wood and other vegetable or decomposable matter shall be limited to a maximum of 0.5% by mass.

Crushed glass used in any recycled material blends shall be crushed to a cubic shape and able to pass the 4.75 mm AS sieve. It must be cleaned and free of any putrid odour.

Any blend of recycled materials shall be able to be classified as ‘clean fill’ or ‘clean earthen materials’ in accordance with Environmental Protection (Waste Management) Regulation 2008.

Fill types

General fill: Well graded material, maximum particle size 75 mm, plasticity index □ 55%.
Select fill: Granular material complying with the following properties.

i. Particle size: 75 mm maximum.
ii. Proportion passing 0.075 mm sieve: 25% maximum.
iii. Plasticity index: □2%, □ 15%.
iv. Soaked CBR: Not less than 15.

Road embankment fill: Well graded material with maximum plasticity index 35% and maximum particle size determined by location and layer thickness but not exceeding two-thirds of the uncompacted layer thickness.

Fill subgrade: Use Class 3 material or select fill.
Special fill: Refer annexure.

8.9.2 Preparation for Filling

General
Remove loose material, debris and organic matter.

Benching

If filling is to be placed against a ground surface that slopes more than 1V:4H, bench into the natural surface for at least 1 m at every 1 m change of level to form a key for the filling.

Underground slabs, pavements and other load bearing elements
Under filling that will support slabs, pavements and other load-bearing elements, compact the stripped surface as for filling. If necessary, loosen the material to a depth of 200 mm and adjust the moisture content.

Under earth mounds

Cultivate the ground by ripping to a depth of 200 mm before mound formation.
Rock

Remove any overhanging rock ledges. Remove any loose or unstable blocks of rock.
Geogrids

Approval: Obtain approval before incorporating geogrids.

Comply with Queensland Department of Transport and Main Roads Standard Specification MRTS 58 Subgrade Reinforcement using Pavement Geosynthetics.

8.9.3 Placing Fill

General

Layers: Place and compact fill in accordance with the compacted layer method of construction specified in Clause 6.2 to achieve the density specified in Table 6.3.

Placing at structures

General: Place and compact filling in layers simultaneously on both sides of structures, culverts and pipelines to avoid differential loading. Commence compaction of each layer at the structure and proceed away from it.
Placing against concrete: Do not place fill against concrete until the concrete strength is more than 80% of the specified strength.

Supports: Remove any temporary supports to excavations progressively as backfilling proceeds.

8.10 Subgrade Preparation

8.10.1 General

Trim the subgrade to an even surface free from loose material.

8.10.2 Compaction

Compact, or recompact, subgrade material to obtain the density specified in Table 6.3.
Subgrade affected by moisture.

Where the subgrade is unable to support construction equipment, or it is not possible to compact the overlying pavement because of high subgrade moisture content, perform one or more of the following:

1. Allow the subgrade to dry until it will support equipment and allow compaction.
2. Scarify the subgrade to a depth of 150 mm, work as necessary to accelerate drying, and recompact when the moisture content approximates the optimum.
3. Excavate the wet material and replace with Class 3 material or select fill.
4. Treat the material with lime mixed in by approved specialised plant.

8.10.3 Side drain, mitre drain and blanket course

General: Construct pavement drainage system to comply with Standard Drawing BSD-2041. For roads, construct side drains on both sides unless directed otherwise.
Construction: Do not allow construction equipment to travel or stand directly on constructed subsoil drains.

8.10.4 Springs or seeps

If springs or seeps are found, provide drainage as directed.

Draining depressions

If subgrade is replaced, grade depressions in the native material to drain to the subsoil drainage system or connect by mitre drains.

In rock subgrades, drain depressions with subgrade drains at least 150 mm wide, backfilled with coarse filter, and connected to the subsoil drainage system.

8.10.5 Unsuitable material

Remove roots, boulders, silt, organic matter and other unsuitable materials.
Remove or lime treat subgrade with a soaked CBR less than 3 to an approved depth which shall not be less than 150 mm. If removed, replace with Class 3 material or select fill.

8.10.6 Backfilling

Reinstate over-excavation, including excavation for grub holes to the correct level with class 3 material or select fill and compact to comply with Table 6.3.

8.10.7 Rectification

If a section of subgrade material fails to meet the required density after compaction, rework or rectify as follows:

1. Fill subgrades: Remove the non-complying material, replace with Class 3 material or select fill and recompact.
2. Cut subgrades: Rework the material or replace with Class 3 material or select fill and recompact.

8.10.8 Proof rolling

Requirement: Test the finished base for perceptible surface deformation or instability by proof rolling in the presence of the Superintendent.

Test method: Use a truck with a single rear axle with dual tyres with a loaded axle mass of 9 tonnes or a truck with tandem rear axles with dual tyres with a total loaded mass on the tandem axles of 16.5 tonnes. Use a minimum 600 kPa tyre pressure. Testing for perceptible surface deformation is exempt from the requirement for NATA accreditation.

Corrective Action: In areas of perceptible surface deformation or instability, remove and replace the material, or undertake other corrective action to the satisfaction of the Superintendent.

8.11 Soil Nails

1. DIWIDAG, high strength, GEWI PLUS (28mm) into 115mm (min) dia holes or greater using cement/ water grout. Refer soil nail schedule relevant to site for details
2. Soil nails should be kept central in the boreholes prior to grouting by using centralisers at not more than 3m spacing along the nail. The last centraliser shall be located not further than 500mm from the face
3. Soil nails shall be installed at an angle of 15 degrees below horizontal, unless noted otherwise
4. Spacing
   Horizontal Spacing: 1.5m
   Vertical: 3.0m
   i. Offsets: The top row of nails shall be offset between 0.5m and 0.75m from the crest of the cut face.
   ii. The bottom row of nails shall be offset between 0.5m and 0.75m from the toe/ base of the cut face.
5. The tolerance on drilled hole diameters is not in excess of 10mm with a minimum thickness of 30mm of grout cover at all locations.

6. The depth of the drilled hole shall not be in excess of 150mm of the design depth

7. The maximum offset of any soil nail shall not exceed 100mm vertically and 300mm horizontally.

8. Soil nails are to be terminated at the face using proprietary end fixings and shown in the project drawings

9. Soil nails are to be double corrosion protected

10. Soil nail installation and grouting shall be carried out within 24 hrs after the holes are drilled

11. Grouting

    a. to be undertaken in a bottom-up manner, by pumping grout into the bottom of the borehole through a grout tube, which is withdrawn as the hole is grouted
    b. Grout Density is to be no less than 1900 kg/m3
    c. Water used in grouting shall be clean and clear from oils, alkali, organics or vegetable matter and from any ingredients harmful to steel or cement grout.
    d. Cement grout shall be passed through a 2.36mm sieve aperture
    e. The grout shall be used as soon as practicable after mixing

8.12 Soil Nail Acceptance Testing (MRTS03)

Soil Nail testing and validation shall undertake in accordance with the requirements of MRTS 03.
The working loads shall be as specified in the project drawings

8.13 Horizontal Drains

i. Pipes are to be uPVC with a strength grade of not less than Class 18
ii. Holes are to be 100mm in diameter at an inclination of between 5-8 degrees above horizontal to ensure that the drains remain free draining
iii. Pipes are to be wrapped in geofabric, greenflo or approved equivalent
iv. Pipes are to be slotted in accordance with Project drawings
v. The location of the horizontal drains shall be confirmed onsite by the administrator or Principal's geotechnical engineer. This constitutes a HOLD POINT
vi. Horizontal Drains must meet the specifications and requirements as outlined in Austroads Publication ATS-22870: Horizontal Drains

8.14 Restoration Standard - Roadway

All grass and other vegetation shall be removed from the work area and disposed of in an approved manner. The existing formation material shall be shaped to form a surface parallel to the planned finished surface of the shoulder. This surface shall be wide enough to enable the completed formation to conform to the cross-section shape specified in the contract. Where the reformed surface is greater than 75 mm below the planned finished surface, the surface shall be watered and compacted to a firm condition with no visible vertical movement under the compaction equipment before material is added. Where the reformed surface is less than 75 mm below the planned finished surface, the surface shall be scarified to a depth of 75 mm below the planned finished surface and watered to enable compaction after new material has been added.

No water shall pond on the surface. The graded surface shall be watered and rolled to provide a sound tight surface with minimal loose stones and no visible vertical movement. The cross section shall be visually uniform

Testing Requirements

WITNESS POINT – for proof rolling of completed works.
Gravel resheeting (100mm or 150mm incorporated) shall be compacted to 100% MDD. The MDD of the finished pavement be determined using test methods in accordance with AS1289. The frequency of the tests shall be 1 test per 100m3 or 1 test per road, which is greater.

Construction	
Compaction subgrade	Proof roll (GVM 20t vehicle) – no visible deflection
Compaction pavement	Proof roll (GVM 20t vehicle) – no visible deflection

** HOLD POINT
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.

** HOLD POINT
The crossfall shall be 4% on straight sections with a tolerance of +/- 0.5%.

Material	
Approval for use	All materials need to be approved for use by the Superintendent prior to use.
Construction	
Segregation (Grading) – Visual	1/500m of road
Geometrics	
Horizontal, width compliance check	1 test per 100m
Crossfall primary	1 test per 50m (3 points across width)
Vertical, straight edge	1 test per 100m (L & R) (max deviation from a straight edge < 8mm).
Depth	Material Delivery dockets to verify quantity. Layer thickness

8.15 Units of Measurement

The following units of measure shall be applied to all Works performed under the contract:

Description	Unit
PRELIMINARIES	
Audit Testing as directed by Superintendent (Prov. Sum - If ordered)	PS
"As-built" Survey and provision of as-constructed drawings to Council format	Item
Quality Testing	Item
Relocating existing services (Prov. Sum - If ordered)	PS

Development of Management Plans:	
Traffic Management Plan	Item
Quality Management Plan	Item
Workplace Health and Safety Management Plan	Item
Implementation of Management Plans:	
Traffic Management Plan	Item
Quality Management Plan	Item
Workplace Health and Safety Management Plan	Item
Set out and Establishment	
Setting out works	Item
Project sign and public notification	Item
Site establishment and disestablishment	Item
EROSION AND SEDIMENT CONTROL	
Development of Contractors Erosion and Sediment Control Plan in Accordance with the requirements of Legislative requirements *(Environmental Protection Act, 1994)*	Item
Implementation of Erosion and Sediment Control Plan in accordance to Item 2.01	Item
EARTHWORKS	
Clear, grub and dispose of material off site as directed by the Superintendent (Provisional Qty)	m^2
Detailed excavation to meet required profile and remove spoil from Site (Provisional Sum)	m^3
Remove unsuitable material, dispose of on the Principal's property where directed and reinstate with acceptable materials from the Principal's property (Provisional Qty)	m^3
ROADWORKS	
Road Edge Guide Posts (Provisional Quantity)	No.
Grade and trim pavement box	m^3
Supply, load, cart, spread and compact TMR Type 2.3 base course material (compacted volume)	m^3
Speed Limit Sign R4-1A (Provisional Quantity, If Ordered)	No.
GEOTECHNICAL WORKS	
Design Validation	
Supply and Install, Design Validation Soil Nails complete in accordance with Project Drawings. Including grouting, centralisers, Nuts, Bearing Washers, and other ancillary items.	48
Acceptance Testing - Anchors	4

Production	
Supply and Install, Soil Nails complete in accordance with Project Drawings. Including grouting, centralisers, Nuts, Bearing Washers, and other ancillary items.	lm
Supply and install Horizontal Drains in accordance with Project Drawings	lm
Supply and Install, Mac-Mat-R accordance with Project Drawings. Including tie down trenching at crest, fixing pins along the face, Connection with Adjoining pannels	m²
Acceptance Testing - Anchors	No.
Supply all plant, labour and materials requried to install geofabric backing to rock armouring (Section A + Section B). Includes allowance for backing to Rock Armouring and Rock Toe	m²
Supply all plant, labour and materials requried to load, cart, spread and compact Rock Armouring & Rock Toe (Section A and B)	m³
LANDSCAPING	
Preparation of a Soil Management Plan – Construction – Form A	LS
Harvesting of site seed material [Native species - Grass/ Shrubbery]	LS
Installation of ameliorants to subsoil	m²
Ripping, cultivation, roughening	m²
Supply and install Hydroseed, native species mix, spray rates in Accordance with MRTS16 and Project Drawings	m²
Establishment Period [12 weeks]	LS
Establishment Period Watering (Provisional Quantity)	LS
Monitoring Period [12 weeks]	LS
Monitoring Period Watering (Provisional Quantity)	LS
Any other item necessary for the completion of the Works not included above, which, in the opinion of the Tenderer, requires pricing (Tenderer to provide details of each additional item with associated cost)	Item
MISCELLANEOUS	
Any other item necessary for the completion of the Works not included above, which, in the opinion of the Tenderer, requires pricing (Tenderer to provide details of each additional item with associated cost)	Item

8.16 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