



**SHIRE OF MURWEH**

# MURWEH SHIRE COUNCIL

**Quotation for:**

**Morven Freight Hub**

**Site Works – Excavation of Surface Drains**

**QUOTATIONS CLOSE AT 2:00PM FRIDAY 7th FEBRUARY 2020**



B&A REFERENCE No.: 192169

QUOTATION No. MRH4. 19-20  
January 2020

## 1 CONDITIONS OF QUOTATION

1. The Tenderer shall state: -
  - (a) in the case of an individual, full Christian or given names, surname and address;
  - (b) in the case of a business name, the names and addresses of all proprietors and the address of the Principal place of business;
  - (c) in the case of a company, the full name of the company and the address of the registered office of the company.
  
2. Every quotation shall be enclosed in a single sealed envelope addressed to :-

The Chief Executive Officer  
Murweh Shire Council  
PO Box 63  
Charleville QLD 4470

and be endorsed on the front of the envelope: -

### **QUOTATION No. MRH4. 19-20**

Quotation for Site Works – Morven Freight Hub – Excavation of Surface Drains.

Documents required to be lodged must include:

- Quotation Form
  - Completed Schedule of Prices
  - Completed Works Programme & Methodology Schedule
3. Quotations shall be lodged in the tender box in the office of Murweh Shire Council, 95-101 Alfred Street, Charleville before 2:00pm Friday 7<sup>th</sup> February 2020.

Any quotation lodged after the above closing time shall not be considered unless there is evidence satisfactory to Council that such quotation: -

- (a) was delivered to a place nominated by Council for the closing of quotations, before the specified closing time; or
- (b) was despatched to a place nominated by Council in sufficient time before the specified closing time for quotations to reach that place under normal circumstances but was still in the course of delivery at the specified closing time.

Council at its discretion may reject a quotation delivered after the closing time for the receipt of quotations no matter what the reason being for the late delivery.

Franking machine stamps will not be accepted as proof of the date of posting of a tender received after the specified closing time for the receipt of quotations.

4. Quotations may only be sent or transmitted direct to the office of Council by facsimile or email with the prior approval of the Principal. No other forms of lodgement by electronic means will be accepted. No guarantee as to the confidentiality of information can be given for any quotations sent electronically to the Principal.

Quotations lodged by a Tenderer or Agent in facsimile form, in accordance with subclauses (2) and (3), will be considered by Council.

5. Every quotation lodged shall contain a statement by the Tenderer that the quotation price is fixed and no increase will be sought from or imposed on Murweh Shire Council, except as varied with the approval of Council.
6. Tenderers shall show in the quotation the time within which the quotation will be fulfilled.
7. Council may accept the quotation that in view of all the circumstances appears to be the most advantageous, or may decline to accept any quotation.
8. Canvassing of Councillors is prohibited and may lead to outright rejection of a quotation.

## QUOTATION FORM

NAME OF TENDERER: .....

ADDRESS OF TENDERER: .....

.....

ABN: .....

LICENCE No.:  
(where applicable) .....

QUOTATION AMOUNT:  
(GST inclusive) .....

DATE FOR COMPLETION: .....

SIGNATURE OF TENDERER: .....

DATE: .....

SIGNATURE OF WITNESS: .....

DATE: .....

**Note:**

1. The quotation shall be a fixed price lump sum valid for 3 months from date of closing.
2. The quotation prices set out herein are fixed and no increase will be sought from or imposed on Murweh Shire Council except as varied according to the specification attached.
3. The lowest or any quotation will not necessarily be accepted.







## 2 QUOTATION INFORMATION

### 2.1 Information to be Supplied with Quotation

Complete all schedules attached to this quotation document (if any).

### 2.2 Fixed Price Quotation

The Quotation shall be a for a FIXED PRICE LUMP SUM. The Quotation shall NOT be subject to variation on account of rise and fall of wage rates or materials prices. No increase will be sought from or imposed on Murweh Shire Council except as varied according to this specification.

### 2.3 Multiple Quotations

Tenderers are permitted to quote on more than one of the separate Quotations forming part of the Works and may offer a discount should they be successful in more than one of those Quotations.

### 2.4 Assessment Criteria

The following assessment criteria and relevant weighting will be applied to analysis of tenders received prior to selection of the successful tenderer.

Notwithstanding such analysis, Council reserves the right to select the submission that in view of all the circumstances appears to be the most advantageous.

| Criteria  | Weighting |
|---|-----------|
| Price   | 50%       |
| Use of local suppliers and sub-contractors                        | 20%       |
| Previous experience in similar projects in far western Queensland | 10%       |
| Contract commencement date / contract period                      | 20%       |

### 2.5 Enquiries

Tenderers shall be deemed to have satisfied themselves of all aspects of the proposed works and the contents of this quotation document prior to submission of their quotation.



Enquiries during the quotation period shall be directed to either Council's Director of Corporate Services Ken Timms ph 46568355, who will be Principal's Representative for the works, or Bryan Payne of Brandon & Associates ph: 46223799, who will be Superintendent for the works or Francis Amsalem of Brandon & Associates ph: 46223799, who will be Superintendent's Representative for the works.

## **2.6 Visit Site**

Tenderers are requested to visit the site and determine and verify the nature and extent of proposed works prior to submitting their quotation.

The site of works is located on Lots 101-104 on M23210, approximately 650m east of the Morven railway crossing on the Warrego Highway, and is shown on the cover sheet of the Project Drawings.

Access to the site during preparation of quotations shall be arranged via contact with Ken Timms of Murweh Shire Council ph 46568355.

## **2.7 Interpretation of Contractor Responsibility**

All references in this Specification to requirements of the Contractor shall relate only to the extent of works to be undertaken by the Contractor for this part of the Works and not to the Works as a whole, unless explicitly stated in the Specification.

However, each Contractor shall be required to attend on each other Contractor as relevant and as necessary for satisfactory completion of the whole of the Works.

## **2.8 Discrepancies**

Should a Tenderer find discrepancies in or omissions from the Specification, or be in doubt as to their meaning, they shall at once notify the Superintendent and obtain a ruling on the matter. The whole of the work shall be executed to the true intent of the Specification.

## **2.9 Permits and Approvals**

The Contractor will be required to comply with relevant conditions included in the Approval for Operational Works, including submission of required certificates of workmanship. The contents of the Approval for Operational Works (Council Planning File# BA7370; State

Government File# 1808-6705 SDA) are available for perusal at the office of Murweh Shire Council. Relevant requirements are included in the Job Specification.

Additionally, if applicable, the Contractor will be required to obtain approval from Queensland Rail before undertaking any work in the rail corridor.

Written evidence of all other required permits and approvals shall be provided to Council before commencement on site.

Known service locations are shown in the Project Drawings, however no locating or potholing of any existing services have been carried out to date. The Contractor is responsible for arranging with the appropriate authorities to determine the location, depth and connectivity of all existing services which may affect the works and report any potential clashes to the Superintendent prior to commencement of any construction works.

The Contractor is responsible for the protection of all existing services from damage. Any works damaged as a result of construction are to be reinstated to requirements of the relevant authority at the Contractor's cost.

## **2.10 Work Health and Safety**

The Contractor will be appointed the Principal Contractor in respect of the work that is the subject of this contract, in accordance with provisions of the Work Health and Safety Act and Regulation.

The initial completion and lodgement of Notification of Principal Contractor form shall be the responsibility of the Principal. The Contractor shall be responsible for all other requirements under the Act and regulation, including completion and lodgement of other forms, notices and work plans, use of appropriately trained and qualified staff and payment of other fees. Copies of all notices, permits and approvals shall be forwarded to the Superintendent's Representative if requested.

The Contractor shall prepare a Work Health and Safety Plan specific to this project covering the full extent of their intended construction operations including work procedures and/or process statements. The Plan shall be prepared in accordance with the Act and any guidelines available from the Department of Industrial Relations and be submitted to the Superintendent's Representative for review prior to commencement of the works. The cost of developing and updating the plan shall be borne by the Contractor.

The Contractor shall promptly notify the Superintendent's Representative of any occurrence of the following and furnish a written report detailing the action taken:

- accidents involving death or personal injury
- accidents involving loss of time
- incidents with accident such as equipment failure, slides, cave-ins and the like.

### **2.11 Portable Long Service Leave Levy**

The initial completion and lodgement of the Notification and Payment Form and payment of the Levy shall be the responsibility of the Principal.

All other requirements shall be the responsibility of the Contractor.

### **2.12 Supervision**

The Contractor shall ensure work is supervised at all times by an appropriately qualified and experienced person.

### **2.13 Licensed Persons**

Only persons appropriately licensed shall supervise the particular trade aspect of work on the project.

### **2.14 Insurance**

Contract work insurance should be effected by the Contractor.

### **2.15 Electrical Power & Water Supply**

The Contractor shall be responsible for arranging supply of temporary electrical power and water for their own purposes as required for the works.

Liaise with Council for provision and use of water for construction purposes, which will be made available at no cost to the Contractor provided sufficient supply is available at the time.

Arrangements for permanent power and water supply to the site are the responsibility of Council.

## 2.16 Special Working Hours and Operations

Refer to the Job Specification section “Working Hours and Working Days”.

No constraints on working hours or operations additional to the above and those imposed by relevant legislation will be applied by Council provided strict adherence to legislation is maintained.

## 2.17 Time for Completion

Council has certain commitments in respect of the effective operation of the Morven Freight Hub. In particular, the work must be substantially completed by 17<sup>th</sup> of April 2020, with only minor finishing tasks being permissible outside that period.

An expedited construction programme, minimisation of disruption to operational effectiveness, timely completion of critical elements and timely completion of the project as a whole are therefore of significant importance to Council in assessment of the most suitable Contractor for this project.

Ensure the enclosed Works Programme and Methodology Schedule is completed in an accurate and informative manner and submitted with the Schedule of Prices.

All work shall be completed prior to the agreed date for completion. Failure to complete the works within the specified time (after allowance for approved extensions) shall incur Liquidated Damages of One Thousand Dollars (\$1000.00) per day or part thereof.

## 2.18 Payment

Progress payments will be made in accordance with the Schedule of Prices and on satisfactory completion of all approved works for which payment is requested.

Payment for items of work will not be made unless all associated works have been completed to the satisfaction of the Superintendent’s Representative.

The Contractor shall provide all applicable test results and documentation detailing compliance with the relevant standards and/or specification to the Superintendent’s Representative with each claim. Payment for items for which required documentation has not been provided will be made at the sole discretion of the Superintendent.

## 2.19 Defects Liability

A defects liability period of six (6) months shall be applicable to work performed under this quotation.

Retention money equivalent to five per cent (5%) of the final quotation amount, including any variations, shall be held by Council pending successful completion of this period.

### 3 JOB SPECIFICATION

#### 3.1 SCOPE

Works to be completed for construction of Surface Drains 1 and 2 are envisaged to include, but may not be limited to, the following:

- Earthworks:
  - The existing natural surface of the cleared area is to be brought to new shape and profile.
  - Prepare earthworks for the Surface Drains to provide a suitable drainage surface for characteristic flows.
  - Construction of earthworks shall be in accordance with the earthworks specification and other relevant specifications below.
- Surface drainage:
  - Provide temporary drainage measures as detailed in the specification below until such a time as the surface drains are completed.

#### 3.2 EXTENT OF WORKS

Surface Drains #1 and #2 are to be constructed in the locations and to the alignments and cross-sections as shown in the drawings.

Extent of works to be completed for the Excavation of Surface Drains is envisaged to include, but may not be limited to, the following:

- Earthworks:
  - The existing natural surface of the cleared area is to be brought to new shape and profile, approaching 6,800m<sup>3</sup> of earthworks in cut between both drains.
  - Compaction of the excavated surfaces required to produce a reasonably even surface meeting the requirements below.
  - Finished earthworks to surface drains shall be free-draining along its full length and across its full cross-section and be free from any holes and localised depressions.
- Surface drainage:
  - Measures shall be taken to preserve the natural flow of water to the extent practical such that the existing topography can effectively drain into the surface drains to be constructed.
  - Natural surface fall is generally towards the south-south-east.

Note that some work items may be scheduled as “if ordered” and due to funding constraints some work items may be deleted prior to commencement.

### **3.3 WORKS UNDER SEPARATE QUOTATIONS**

Work to be performed under separate quotations include:

- Clearing and grubbing.
- Earthworks to all other areas.
- Pavement construction.

### **3.4 WORKS BY THE PRINCIPAL**

Work to be performed by the Principal shall include:

- Project signage.

### **3.5 DRAWINGS**

Project Drawings are WAG-0001 A001 Revision 2 – WAG-0001 A903 Revision 2.

### **3.6 REFERENCE DOCUMENTS AND STANDARDS**

Standard construction specifications from the Capricorn Municipal Development Guidelines (CMDG) suite shall apply to this project as listed in Schedule A enclosed, unless varied herein. These specifications are available for download from:-

<http://www.cmdg.com.au/Guidelines/ConstructionSpecifications/ConstructionSpecifications.html>

Unless otherwise specified in the Contract, and where applicable, materials and workmanship shall be in accordance with the relevant standard of the Standards Australia.

### **3.7 SIGNAGE**

#### **3.7.1 PROJECT SIGNAGE**

Murweh Shire Council will supply and fix appropriate project signage on site.

### 3.7.2 TRAFFIC AND PEDESTRIAN SIGNAGE

The Contractor will be responsible for supply, fixing and maintenance of all relevant and applicable construction traffic and pedestrian signage during the course of the construction work which they undertake.

Care and consideration are to be given to on site conditions to avoid any visual obstruction of the sign(s) along the intended course of approaching traffic and pedestrians. Signs should be orientated at approximately right angles to and facing the traffic they are intended to serve.

The exact location of all signs shall be confirmed on site prior to installation.

Traffic and pedestrian signage shall be in accordance with AS1742 Manual of Uniform Traffic Control Devices.

### 3.7.3 SAFETY SIGNAGE

The Contractor will be responsible for supply, fixing and maintenance of all relevant and applicable construction safety signage during the course of the construction work which they undertake.

Safety signage shall be in accordance with requirements of WorkSafe Queensland.

## 3.8 SITE MEETINGS

At approximately fortnightly intervals the Contractor or their representative shall attend a project meeting on site, which shall also be attended by Sub- Contractors as required by the Superintendent.

## 3.9 CONTACTS

The Contractor shall submit the names and telephone numbers of all responsible people who may be contacted after hours within seven (7) days of acceptance of tender.

## 3.10 SITE FACILITIES AND STORAGE

The Contractor shall provide and maintain all statutory and necessary amenities and sanitary facilities in accordance with the Workplace Health and Safety Act and Regulations for their



workers and other associated persons lawfully upon the site and remove them on completion of the Works.

The Contractor shall be responsible for the connection, maintenance during the contract and removal upon completion of all temporary services including potable water, power and telecommunications.

### **3.11 WORKING HOURS AND WORKING DAYS**

In general, no constraints on working hours or operations other than those imposed by relevant legislation will be applied by Council provided strict adherence to legislation is maintained.

Nominal working hours: 6.30am to 6.30pm unless approved otherwise. Maintain compliance with acoustic quality objectives for noise levels as per Schedule 1 of the Environmental Protection (Noise) Policy e.g. during defined daytime hours (7.00am to 6.00pm) limit exterior sound levels at residential receptor points to 50dB(A) with a peak limit of 65dB(A).

Nominal working days: Monday to Saturday inclusive. No work involving audible noise shall be undertaken on Sundays or proclaimed public holidays.

The Contractor shall give at least 2 days clear notice of any request to vary approved working hours or working days. Approval by the Superintendent or Murweh Shire Council to vary the working hours and working days may include conditions.

### **3.12 SURVEY SET OUT AND CONTROL**

The Principal will establish the initial survey bench marks and allotment boundaries prior to commencement of the works. An electronic copy of the pre-development engineering survey upon which the design has been based will be provided upon request.

The Contractor shall be responsible for the setting out of all works in accordance with the drawings, maintenance of the bench marks including re-establishment of any disturbed marks, survey control during the course of construction, pre-development survey verification if considered necessary, post stripping survey and post development survey.

#### **3.12.1 SETOUT NOTES**

Level datum for the works is A.H.D. (Australian Height Datum)

Setout shall be made by digital engineering data and confirmed on site by a licensed surveyor prior to construction.

### **3.13 LEVELS AND QUANTITIES**

Locations, levels and quantities are indicative only for tender purposes and are to be confirmed prior to construction in consultation with the Superintendent.

Liaise as required with the Superintendent in formation and trimming of building and construction platforms.

Finished surface levels are to be graded uniformly between levels indicated on the drawings.

The Contractor shall be held entirely responsible for the correct setting out of the works in the positions indicated on the Drawings and shall certify all levels and dimensions and provide suitable permanent marks for the determination of all lines and levels that may be referred to during the progress of the works.

Existing levels shown on the Drawings are approximate and for tender purposes only. The Superintendent and Principal will accept no responsibility whatsoever for any variation in the actual levels from those shown and no extra caused through variation will be allowed in any circumstances.

### **3.14 DELIVERY OF MATERIALS**

Deliveries are to be during normal working hours. Ensure safety of workers, general public and property during loading and unloading operations. Wherever possible the Contractor shall avoid using any newly constructed sections for delivery of materials.

Direct access to the site from Warrego Highway is permitted in approved location(s). Site facilities and material stockpile sites shall not be located within the Warrego Highway road reserve.

### **3.15 TRUCKING**

Convey soils, earth, sand, loose debris and the like to or from the site in a manner that will prevent dropping of materials on streets. Ensure that the wheels, tracks and body surfaces of all vehicles and plant leaving the site are free of mud and that dust or mud is not carried on to

adjacent paved streets or other areas. The Contractor shall be responsible for clean-up of any material deposited onto public roads.

The Contractor may elect to provide an approved wheel shaker such as a cattle grid or a rock surface at the entry / exit point to the site where deemed necessary to reduce the amount of material on vehicle tyres.

The Contractor shall comply with any and all vehicle load restrictions and route restrictions imposed by the local government or Department of Transport and Main Roads. No additional payment will be made for compliance with this requirement.

### **3.16 DUST CONTROL**

The Contractor shall comply with the Clean Air Act.

The Contractor shall undertake construction in such a way as to minimise the generation of dust and shall if necessary alter or discontinue construction operations when prevailing winds are likely to cause dust to be blown onto adjoining residential areas.

### **3.17 ENVIRONMENTAL MANAGEMENT**

The Contractor shall prepare an Environmental Management Plan (EMP) covering the full extent of the works and submit for approval prior to commencement. In addition to statutory requirements, the EMP shall address all relevant items in this project specification. Cost of developing and updating the plan shall be borne by the Contractor.

The Contractor shall be responsible for obtaining any necessary licences, permits or approvals statutory or governing bodies for environmental activities and payment of any associated fees.

The Contractor shall protect from damage all trees and other plants which need not be removed or destroyed for construction operations, or which are shown on the Drawings or specified to be retained, or which are beyond the limits of the Works.

The Contractor shall minimise disturbance to existing fauna and shall notify the Superintendent of the presence of protected or endangered fauna and follow any instructions in regards to the protection of fauna.

Stockpiles of topsoil, sand, aggregate, spoil or other material capable of being moved by the action of running water shall be stored clear of drainage paths and prevented from entering the road and/or surface drainage system.

### **3.18 SITE DRAINAGE**

Provide for effective preventive precautions to minimise ingress of any excess water into the site of works.

The Contractor shall divert any water interfering with progress of the Works, keep trenches free from water while the Works are in progress and prevent any injury to the Works by water.

Adequate drainage of all working areas shall be maintained throughout the period of construction to ensure surface water runs off without ponding, except where ponding forms part of a planned erosion and sedimentation control system. The Contractor shall have proper and approved pumping equipment for keeping the trenches and excavation constantly dewatered during the time the works are in progress

Ensure disposal of water from any source during the construction of the Works in a manner that will not cause injury to persons or property or to ground surfaces, or cause any interference with other works. Inform the appropriate Authorities and obtain all necessary permits and approvals before disposing of water from the site.

The Contractor shall be responsible for removal and replacement and/or drying out any work or material damaged by water to the satisfaction of the Superintendent and for the costs of any consequent delays to the operations.

### **3.19 SEDIMENT CONTROL**

The Contractor shall prepare an Erosion and Sediment Control Plan (ESCP) covering the full extent of the works and submit for approval prior to commencement of work. The ESCP must demonstrate the type and location of all temporary erosion and sediment control measures that will be progressively installed for each stage of the construction as well as those that will be installed following completion of construction. The ESCP shall include details of the frequency of inspection, reinstatement and rectification. Cost of developing and updating the plan shall be borne by the Contractor.

### 3.19.1 TEMPORARY DRAINS

Runoff from areas exposed during the work shall be controlled by construction of temporary contour banks or drains and/or temporary diversion banks or drains. They may require progressive implementation and frequent alteration as the work progresses.

### 3.19.2 TEMPORARY SEDIMENT TRAPS

Temporary sediment-trapping devices shall be provided during construction to remove sediment from sediment-laden runoff flowing from areas of 0.5 hectares or more before the runoff enters natural watercourses or adjacent land.

## 3.20 EARTHWORKS

### 3.20.1 GENERAL

All earthworks are to be carried out in accordance with CMDG Construction Specification C242 and under Level Two geotechnical control in accordance with AS3798 Guidelines for Earthworks for Commercial and Residential Developments except if specified otherwise herein.

### 3.20.2 NATURAL SURFACE AND EARTHWORKS MATERIALS

The Contractor shall be responsible for any assumptions in relation to the nature and types of the materials encountered in excavations and the bulking and compaction characteristics of materials incorporated in embankments.

Where material from excavations is not acceptable for use in embankments, the Contractor can elect to spoil it in approved locations or remove it from the site.

Where a deficiency of material for embankment construction is thereby created, the Contractor shall make good that deficiency from sources of material meeting quality requirements for embankment material. The cost of making good such deficiency of material shall be borne by the Contractor.

### 3.20.3 EXCAVATION

Construction of cuttings shall include all operations associated with the excavation of material within the limits of the batters including benching, treatment of cutting floors and transition from cut to fill.

Materials encountered in cuttings shall be loosened and broken down as required so that they are acceptable for incorporation in the Works.

The Contractor shall rip or loosen all material in cutting floors to a minimum depth of 200mm below the designed floor level for the width of the selected material zone (or subbase layer, where no selected material zone). The maximum dimension of any particles in the ripped or loosened zone shall not exceed 150mm.

Cut batters are to be at a maximum grade of 1 on 2 unless otherwise approved. In all cuttings, undulations in the general plane of the batter shall only be permitted where batters require progressive flattening at the ends of cuttings due to the presence of less stable material. Tops of all cut batters shall be neatly rounded.

Cut faces shall be cleaned of loose or unstable material progressively as the excavation proceeds and shall be maintained and cleaned of loose or unstable material regularly throughout the construction period.

### 3.20.4 SPOIL

Spoil is surplus material from excavations which is not required to complete the Works as specified or material from excavations whose quality is deemed to be unacceptable for incorporation in the Works.

Spoil shall be stockpiled in approved locations or otherwise shall be removed from the site. The Contractor shall be responsible for obtaining all necessary permissions and permits for the disposal of spoil at locations outside the site of works and shall comply with all conditions and requirements attached hereto.

Stockpiles shall not contain any timber or other rubbish and shall be trimmed to a regular shape. Maximum height of stockpiles shall not exceed 3 metres and the maximum batter slope shall not exceed 1 on 2.

### 3.20.5 BORROW MATERIAL

Borrow material to be used in the construction of embankments shall be either selected rocky fill, soil aggregate fill, decomposed granite or sandy fill and shall comply with the following:-

- Maximum particle size - 70 mm;
- Liquid Limit - not greater than 35%;
- Plasticity Index - not greater than 15%;
- Maximum value (P.I. x % of whole sample passing the 425µm sieve) - not greater than 360;
- Minimum laboratory unsoaked CBR at OMC and MDD – 10 under roadways and structures, 5 elsewhere.

The Contractor shall obtain the prior written consent of the Superintendent to the use of any borrow pits. Proposals in this regard shall be submitted at least three working days before borrowing is due to commence and shall specify the locations and maximum dimensions of each proposed borrow pit and shall include test results demonstrating compliance with quality requirements.

No material shall be carried or placed until the Contractor has received approval from the Superintendent that the material and proposed borrow locations are acceptable.

### 3.20.6 EMBANKMENT

Fill construction includes all operations associated with preparation of foundation areas on which fill material is to be placed, placing and compacting of approved material within areas from which any unsuitable material has been removed, placing and compacting of fill material and of materials of specified quality in nominated zones throughout the Works and all other activities required to produce embankments as specified to the alignment, grading and dimensions shown on the Drawings, scheduled herein and as approved by Council.

Embankment material shall have a CBR value not less than the specified value.

Methods of excavation, transport, depositing and spreading of fill material shall be selected so as to ensure that placed material is uniformly mixed.

Fill material for embankment construction shall be placed in conforming horizontal layers and compacted.

Rock material shall be broken down and evenly distributed through the fill material, and mixed with sufficient fine material as it is deposited to fill voids and produce a dense, compact layer. Maximum dimension, measured in any direction, of aggregate pieces in fill material for embankment construction shall not exceed two-thirds of the approved compacted layer thickness.

All fill batters are to be at a maximum grade of 1 on 4 unless indicated otherwise.

### 3.20.7 COMPACTION OF EARTHWORKS

In areas listed below, all layers shall be uniformly compacted to not less than the relative compaction specified before the next layer is commenced. Each layer of material shall be trimmed prior to and during compaction to avoid bridging over low areas. A smooth surface shall be presented at the top of each layer.

The following areas shall be compacted to provide a relative compaction of no less than 97% standard compaction determined by AS1289 for up to 300 mm below subgrade level beneath road pavements and 95% for the remainder:

- Each layer of material replacing unsuitable material;
- Compacted natural surface;
- The whole area on the floors of cuttings;
- Each layer of embankment greater than 300mm below subgrade level;
- Each layer of embankment within 300mm of subgrade level;
- Each layer of any selected specified quality material zone;
- Fill placed adjacent to structures up to 1 metre from the top of pavement.

Compaction shall be undertaken to obtain the specified relative compaction for the full depth of each layer and for the full width of the formation over the entire length of the work.

### 3.20.8 EARTHWORKS TESTING

The following testing frequencies will be applicable:

| Location   | Aspect   | Minimum Testing Frequency |
|------------|----------|---------------------------|
| Excavation | Geometry | 1 / 25m                   |



|   |                        |                        |
|---|------------------------|------------------------|
| Compacted natural surface   | Compaction             | 1 / 500m <sup>2</sup>  |
| Embankments - General   | Geometry               | 1 / 25m                |
|   | Material Quality - CBR | 1 / 1000m <sup>3</sup> |
|   | Compaction             | 1 / 500m <sup>3</sup>  |
|   | Moisture Content       | 1 / 500m <sup>3</sup>  |
| Road carriageway embankments  | Geometry               | 1 / 25m                |
|   | Material Quality - CBR | 1 / 500m <sup>3</sup>  |
|   | Compaction             | 1 / 250m <sup>3</sup>  |
|   | Moisture Content       | 1 / 250m <sup>3</sup>  |
| Floors of cuttings  | Material Quality - CBR | 1 / 1000m <sup>2</sup> |
|   | Compaction             | 1 / 500m <sup>2</sup>  |
| Fill Adjacent to Structures:<br>Bridges, Retaining Walls<br>and Cast-in-Situ Culverts | Compaction             | 1 / layer              |
|   | Moisture Content       | 1 / layer              |

In all cases, a minimum of two (2) tests will be required.

### 3.20.9 EARTHWORKS TOLERANCES

The horizontal location of any point on a surface or interface between material types shall not differ from the required location by more than  $\pm 50\text{mm}$  except for the following situations:

- for edges not adjacent to a structure,  $- 50\text{mm} / + 250\text{mm}$  (where the + tolerance is in the direction which increases the width of the earthworks)
- the width of an embankment at subgrade level shall not be less than that specified; and
- where alignment of the pavement with an existing structure is necessary, new work shall be joined to the existing in a smooth manner approved by the Superintendent.

Heights of earthworks measured anywhere on a layer surface shall not vary from those required by more than the tolerance stated below unless specified or approved otherwise. Average tolerances shall apply to results for a completed lot.

| Location | Vertical Tolerance (mm) |
|----------|-------------------------|
|----------|-------------------------|

|  |             |
|--|-------------|
| Subgrade level (individual results)                | + 25 / - 75 |
| Subgrade level (average)                           | + 10 / - 50 |
| Top of embankment, other than at subgrade level    | ± 50        |
| Top of in situ material below subgrade in cuttings | ± 50        |
| Inverts of drains                                  | ± 50        |

The gap beneath a three metre long straight-edge placed anywhere on the surface at subgrade level shall not exceed 25mm, due allowance being made for design shape where relevant.

The crossfall of the surface of the finished subgrade shall be maintained within 0.5% of that specified, providing that the pavement thickness will not be less than that specified or shown on the drawings.

All embankments, subgrade, benches, berms and drains shall not pond water and shall be free draining.

Tolerances for horizontal alignment of batters, measured at right angles to the design control line, shall be ± 300mm provided maximum batter slopes are achieved.

### 3.21 EXCAVATION IN ROCK

The Contractor is to include an “excavated” cubic metre rate for excavation in rock, however rock is not expected to be encountered on this site.

The definition of “rock” shall be material which cannot be ripped at a production rate of 3 cubic metres per hour by a Class 85 excavator (19-23t operating mass; 85-100kW nett engine power; 600mm maximum bucket width) equipped with a manufacturer-approved heavy duty / rock bucket with teeth fitted with high penetration boots.

The Contractor shall adopt construction practices and recommend design changes (if applicable) which minimise excavation in rock, prior to undertaking work could be readily foreseen to encounter rock.

### 3.22 DISPOSAL OF MATERIALS

Unless otherwise specified, all materials cleared and grubbed in accordance with this Specification shall become the property of the Contractor and shall be removed from the site and legally disposed of.

Unless otherwise approved in writing, disposal of timber and other combustible materials by burning shall not be permitted. Where approval is granted, the Contractor shall comply with all statutory requirements applicable to burning off and any such burning off shall be carried out in such a manner that no damage is done to any trees or property outside the limits of clearing. Smoke resulting from such burning off shall not cause a traffic hazard or other public nuisance.

### 3.23 DISPOSAL OF REFUSE

Remove from the site any refuse, including food scraps and the like resulting from work under the Contract and dispose of to an approved location or as otherwise approved by the Superintendent. Handle refuse in a manner so as to confine the material completely and prevent excessive dust or odour emission.

All costs associated with the removal of refuse from the site shall be the responsibility of the Contractor.

### 3.24 INSPECTION AND TESTING REQUIREMENTS

The Contractor shall provide all necessary certificates and evidence of conformance of the completed works with the relevant specifications. Finished levels of subgrade and each pavement layer are to be provided in accordance with the relevant standards.

The Contractor shall provide minimum 48 hours advance notice of inspections required at the hold points nominated below:

- Stormwater drainage pipelines complete prior to backfilling;
- Water and sewerage reticulation during testing;
- Formwork, reinforcement and joints, prior to pouring of concrete;
- Cutting floors at subgrade depth;
- Subgrade prior to pavement placement;
- After placement of sub-base course and prior to placement of kerb and channel;
- At completion of kerb and channel and prior to placement of base course;
- Pavement complete after placement of base course and prior to surfacing;

- Proof rolling of structural foundations, subgrades and pavement layers;
- At Practical Completion; and
- At completion of Defects Liability Period.

Unless approved otherwise, all compliance testing shall be carried out by a National Association of Testing Authorities Australia (NATA) registered testing authority engaged by the Contractor. The Contractor shall provide original signed copies of all test certificates to the Superintendent's Representative at the completion of each stage of the works. Payment for compliance testing will be deemed to be included in the rate for undertaking the relevant item of work.

### **3.25 GUARANTEES**

Where in the Specification guarantees are called for, the Contractor shall obtain written guarantees and test certificates from the firms carrying out the work or supplying the goods, addressed to and handed to the Principal at Practical Completion. The date for start of the guarantee period shall be the Date of Practical Completion.

### **3.26 COMPLETION**

On completion, the Contractor shall ensure that the site is left in a fit and proper state and ready for operation.

The contractor shall restore all existing structures, fences, gardens, turf, walls, concrete or paved surfaces, roads and paths, trees and other property which have been effected by the works to a condition equivalent to that existing prior to commencement of the Works, unless the owner agrees otherwise. The owner will not have been deemed to so agree unless the Superintendent receives written confirmation of such agreement.

Except that any fences damaged or removed during the execution of the work shall be repaired or reinstated to the satisfaction of the Superintendent immediately the work has been completed at any particular location and an effective temporary fence shall be erected during the progress of the work.

## SECTION A STANDARD SPECIFICATIONS

The following standard construction specifications from the Capricorn Municipal Development Guidelines (CMDG) suite shall apply to this project. These specifications are available for download from:-

<http://www.cmdg.com.au/Guidelines/ConstructionSpecifications/ConstructionSpecifications.html>

| Specification No. | Specification Description          | Issue Date     |
|-------------------|------------------------------------|----------------|
| C201              | Control of Traffic                 | 3 – July 2018  |
| C202              | Rural Road Clear Zones             | 3 – July 2018  |
| C211              | Control of Erosion & Sedimentation | 2 – July 2018  |
| C212              | Clearing and Grubbing              | 3 – July 2018  |
| C213              | Earthworks                         | 2 – July 2018  |
| C220              | Stormwater Drainage                | 3 – July 2018  |
| C221              | Pipe Drainage                      | 1 – Oct 2007   |
| C222              | Precast Box Culverts               | 3 – July 2018  |
| C223              | Drainage Structures                | 3 – July 2018  |
| C224              | Open Drains                        | 1 – Oct 2007   |
| C230              | Subsurface Drainage                | 3 – July 2018  |
| C231              | Subsoil and Foundation Drains      | 3 – July 2018  |
| C232              | Pavement Drains                    | 2 – July 2018  |
| C233              | Drainage Mats                      | 2 – July 2018  |
| C241              | Stabilisation                      | 1 – Oct 2007   |
| C242              | Flexible Pavements                 | 1 – Oct 2007   |
| C244              | Sprayed Bituminous Surfacing       | 1 – Oct 2007   |
| C245              | Asphaltic Concrete Surfacing       | 3 – Nov 2019   |
| C261              | Pavement Markings                  | 2 – July 2018  |
| C262              | Signposting                        | 2 – July 2018  |
| C263              | Guideposts                         | 2 – April 2019 |
| C264              | Guardrail                          | 2 – April 2019 |
| C265              | Boundary Fencing                   | 2 – July 2018  |
| C271              | Concrete Minor Works               | 2 – July 2018  |
| C273              | Landscaping                        | 3 – Jan 2017   |
| C501              | Bushfire Protection                | 3 – July 2018  |

**SITE PHOTOS AVAILABLE ON REQUEST**

**DRAWINGS**