Tender

for

Contract Number

2020-002

Shared Path Construction: Yarram

Tenders Closing
Tenders addressed to the Wellington Shire Council, are returnable by 2.00pm on Wednesday 21 August 2019

Practical Completion Date
28 February 2020
Tender Documents - Table of Contents

Part A   Conditions of Tendering

Part B   Form of Tender, Scope of Works & Schedules

Part C   Specification
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         Section 2 - General Provisions
         Section 3 - General Specifications (Roadworks)

Part D   Occupational Health and Safety

Part E   General Conditions of Contract

Part F   Health and Safety Agreement

Part G   Appendices
Part A - Conditions of Tendering

1.0 Type Of Contract
1.1 The Contract shall be a LUMP SUM contract not subject to price adjustment for rise and fall in prices.
1.2 General conditions of contract, excluding occupational health and safety provisions, shall be Australian Standard 4000-1997: General Conditions of Contract

2.0 Documents To Be Submitted
2.1 Tenderers should note that the following information must be submitted as part of the formal tender:
   2.1.1 Part B: All pages completed with all information as requested.
   2.1.2 Tender Evaluation Criteria: Information to comply with the tender evaluation criteria (refer to Clause 8.0 in this section).
   2.1.3 Addendum Notices (if issued).

3.0 Tenderer To Fully Inform Themselves
3.1 A tenderer is required to acquaint himself/herself with all conditions in relation to the tenders prior to submitting a tender.
3.2 If a tenderer finds any discrepancy, error or omission in the tender documents, they must notify the Principal in writing as soon as possible and before the date and time fixed for the closing of tenders.
3.3 A tenderer is deemed to:
   3.3.1 have examined the tender documents, and any other information made available in writing by the Principal to the tenderer for the purpose of tendering;
   3.3.2 have examined all information that is relevant to the risks, contingencies and any other circumstance that may have an effect on the tenders;
   3.3.3 be satisfied as to the correctness and sufficiency of the tenders;
   3.3.4 be satisfied that the price covers all the cost of complying with all the obligations of the tender documents.

4.0 Lodgement Of Tenders
4.1 The tender closing date for the contract is:
   2.00pm Wednesday 21 August 2019.
4.2 The tender must be submitted in a sealed envelope.
4.3 Tender Submission
   4.3.1 It is the sole responsibility of the Tenderer to ensure that the Tender is deposited in the Tender Box before the nominated closing time. The Principal shall not accept responsibility for tenders not in the tender box by the closing date and time if the tenderer uses postal services.
   4.3.2 Tenders are to be deposited in the Tender Box in the entrance foyer of:
      Wellington Shire Council
      18 Desailly Street
      SALE VIC 3850
   4.3.3 Tender Envelope to be addressed as follows:
      Contract No.: 2020-002
      Closing Date: 21 August 2019
      Wellington Shire Council
      18 Desailly Street
      SALE VIC 3850
5.0 Tenders By Facsimile Or E-Mail And Late Tenders
   5.1 Tenders by facsimile or e-mail shall not be accepted.
   5.2 Late tenders shall not be accepted.

6.0 Acceptance Of Tenders
   6.1 The Principal shall not be bound to award a contract to the lowest tenderer or any
       tenderer.
   6.2 The Principal shall make all reasonable efforts to award contracts arising from the
       tenders.
   6.3 Tenders shall only be accepted from Tenderers who have:
       6.3.1 Registered with the Council via tender section of Wellington Shire Council
       6.3.2 Paid the non-refundable fee of $100.00 (including GST) for the tender documents
           by posting a cheque directly to Council's Project Manager, or by visiting the
           Council Offices at the Port of Sale Building, 70 Foster Street, Sale.

7.0 Digitised Form Of Tender And Schedules
   7.1 On written request the Principal's Project Manager will provide an electronic copy of the
       Form of Tender and accompanying schedules on Microsoft Word.

8.0 Tender Evaluation Criteria
   8.1 Mandatory Criteria
       The criteria for Experience, Risk Management and Organisation are mandatory
       criteria and are assessed to determine a pass or fail.
       To pass the tender submission must demonstrate the knowledge and ability to meet
       these criteria, if the tenderer fails to do this the tender is eliminated from the evaluation
       process and not considered any further.
       For civil works current Vic Roads pre-qualified contractors are considered to pass the
       above.

### Relevant Experience

<table>
<thead>
<tr>
<th>Purpose</th>
<th>To demonstrate evidence of relevant experience to provide the services and outcomes tendered for under the Contract.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Required</td>
<td>Details of previous experience are to be provided for:</td>
</tr>
<tr>
<td></td>
<td>• Similar work in the past 5 years.</td>
</tr>
<tr>
<td></td>
<td>• This includes dates, project location, duration, project cost client and referees, personnel used by Tenderer.</td>
</tr>
</tbody>
</table>

### Risk Management

<table>
<thead>
<tr>
<th>Purpose</th>
<th>To demonstrate relevant knowledge of risk management and OH &amp; S systems to be used for the Contract.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Required</td>
<td>Details to be provided for:</td>
</tr>
<tr>
<td></td>
<td>• Environmental management system</td>
</tr>
<tr>
<td></td>
<td>• OHS Management System Questionnaire.</td>
</tr>
<tr>
<td></td>
<td>• Current Insurance's appropriate to the services required to complete the contract.</td>
</tr>
<tr>
<td></td>
<td>Previous contracts with the Principal will be used in assessing the contractor's Risk Management and OH&amp;S capabilities.</td>
</tr>
</tbody>
</table>
Organisation

<table>
<thead>
<tr>
<th>Purpose</th>
<th>To demonstrate evidence of organisational capacity to manage and resource personnel to complete works as specified in the Contract and within the time frame required.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Required</td>
<td>Details to be provided for</td>
</tr>
<tr>
<td></td>
<td>- Key management personnel and systems in place, or proposed, to manage the Contract.</td>
</tr>
<tr>
<td></td>
<td>- Financial ability to fund project.</td>
</tr>
<tr>
<td></td>
<td>- Technical experience and competence of key managers / supervisors / foreman for the Contract.</td>
</tr>
<tr>
<td></td>
<td>- Equipment owned or available that shall be used on the Contract</td>
</tr>
<tr>
<td></td>
<td>- Other contractual commitments in the time frame proposed for this contract.</td>
</tr>
<tr>
<td></td>
<td>Previous contracts with the Principal will be used in assessing the contractor’s organisational capabilities.</td>
</tr>
</tbody>
</table>

8.2 Weighted Criteria

Weighted Criteria shall be evaluated on the following criteria listed in order of importance.

Price - 80%

<table>
<thead>
<tr>
<th>Purpose</th>
<th>To provide best value total cost to the Principal for specified scope and outcomes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Required</td>
<td>• Form of Tender.</td>
</tr>
<tr>
<td></td>
<td>• Price Schedules.</td>
</tr>
<tr>
<td></td>
<td>• Details to be provided for all costings and quantities allowed to ensure all requirements can be met for the Contract.</td>
</tr>
</tbody>
</table>

Ability to meet specific timeframes - 20%

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Ability to meet specific timeframes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Required</td>
<td>Details to be provided for</td>
</tr>
<tr>
<td></td>
<td>• Contractors other commitments during the proposed construction period.</td>
</tr>
<tr>
<td></td>
<td>• Proposed strategy for completion of works during proposed construction period.</td>
</tr>
</tbody>
</table>

9.0 General

9.1 The whole of the tender documents and any addendum or additional information provided during the tender process shall form part of the formal instrument of agreement to be signed with the successful tenderer.

9.2 Tenderers shall be responsible for all costs incurred by them in tendering.

9.3 Tenderers must submit a conforming tender. If the tenderer wishes to submit an alternative tender, they may do so, but the alternative tender shall not replace the conforming tender. All alternative tenders must be submitted in separate envelopes and marked “ALTERNATIVE TENDER”.

9.4 Any addendum issued by the Principal has a Receipt of Addendum Notice. This notice shall be signed and submitted with the Form of Tender.

9.5 Tenders submitted shall remain valid, and shall not be withdrawn, amended or varied except with the approval of the Principal, for a period of ninety (90) days from the date of closing of the Tender.

9.6 The Principal will consider alternative tenders that provide a benefit to council in the form of cost savings and / or improved outcome.

9.7 For the purposes of avoiding confusion and uncertainty, the Principal and selected tenderer/s will, before the contract is awarded, agree to meet with the Principal, identify
safety risks involved with the scope of works and agree with the Principal as to whom will control and manage the safety matters which arise from the identified risks.

10.0 Code Of Tendering
10.1 The Principal is committed to the Victorian Civil Construction Industry's Best Practice for Tendering and Contract Management, May 2008, to ensure a fair and just tendering procedure for all tenderers.

11.0 Principals Project Requirements
11.1 The Principal's project requirements are described in the following documents:
   - Scope of Contract
   - Specification
   - Worksite location
   - Detailed Plans
11.2 It shall be the tenderer's responsibility to obtain any other information required to prepare and submit his/her tender.

12.0 Tender Enquiries
Any enquiries regarding this Tender may be directed to:

Projects Unit
Wellington Shire Council
18 Desailly Street
Sale VIC 3850.

Project Manager:    Lucy Spooner
Telephone:        03 5142 3091
Facsimile:         03 5142 3501
Mobile:            0408 004 907
E-mail            lucys@wellington.vic.gov.au

Coordinator Projects:  Ray Weber
Telephone:        03 5142 3174
Facsimile:         03 5142 3501
Mobile:            0409 338 294
E-mail            raymond.weber@wellington.vic.gov.au
## Part B - Form of Tender, Scope of Works & Schedules

<table>
<thead>
<tr>
<th>Schedule Number</th>
<th>Schedule Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>Form of Tender – 2020-002</td>
</tr>
<tr>
<td>-</td>
<td>Scope of Contract</td>
</tr>
<tr>
<td>1</td>
<td>Price Schedule – Shared Path Construction: Yarram</td>
</tr>
<tr>
<td>11a</td>
<td>Schedule of Rates for Additional Works</td>
</tr>
<tr>
<td>11b</td>
<td>Schedule of Rates for Day Works</td>
</tr>
<tr>
<td>21</td>
<td>Tenderer Information</td>
</tr>
<tr>
<td>22</td>
<td>Management / Supervisory Information</td>
</tr>
<tr>
<td>23</td>
<td>Subcontractors / Sub-consultants</td>
</tr>
<tr>
<td>25</td>
<td>Gravel Pit Information</td>
</tr>
<tr>
<td>31</td>
<td>Occupational Health &amp; Safety Management System Questionnaire</td>
</tr>
</tbody>
</table>
Form of Tender - Contract 2020-002  
(To be submitted with Tender)

The party/parties [delete whichever is not applicable] specified below hereby tender to undertake the Contract referred to in the Tender Documents and Conditions of Tendering to which this Schedule is attached in consideration of the making of the payments at the rates specified below for the provision of the Services.

<table>
<thead>
<tr>
<th>Sched.</th>
<th>Description</th>
<th>Items</th>
<th>Lump Sum Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shared Path Construction: Yarram Total Lump Sum Ex GST</td>
<td>All Items</td>
<td>$___________________</td>
</tr>
<tr>
<td></td>
<td>GST 10%</td>
<td></td>
<td>$___________________</td>
</tr>
<tr>
<td></td>
<td>TOTAL INCLUDING GST</td>
<td></td>
<td>$___________________</td>
</tr>
</tbody>
</table>

It is acknowledged that, until the execution of a formal agreement, this document shall evidence the contract between the parties.

Name and Address of Tenderer(s):

...

DATED this . . . . . . . day of . . . . . . . 2019.

1. If the tenderer is a company, it must execute this tender under seal:

   THE COMMON SEAL of ..................................  )
   was hereunto affixed in accordance with its  )
   Articles of Association in the presence of:  )
   ....................................................... Director  )
   ....................................................... Secretary  )

2. If the tenderer is a body corporate other than a company, the appropriate sealing clause should be inserted:

3. Tenderer is an individual:

   SIGNED SEALED AND DELIVERED  )
   by .....................................................  )
   in the presence of  )
   .......................................................... Witness  )

4. Tenderer is a partnership (add extra execution clauses as necessary):

   SIGNED SEALED AND DELIVERED  )
   by .....................................................  )
   in the presence of  )
   .......................................................... Witness  )

   SIGNED SEALED AND DELIVERED  )
   by .....................................................  )
   in the presence of  )
   .......................................................... Witness  )
Scope of Works
(To be submitted with Tender)

1.0 GENERAL
1.1 The works include supply & placement of a concrete of various widths along James Street, Growse Street, and Nicol Street in Yarram.

1.2 All works shall be carried out to the satisfaction of the Superintendent and in accordance with:
   1.2.1 the Contract;
   1.2.2 Infrastructure Design Manual (IDM);
   1.2.3 VicRoads Standard Specifications;
   1.2.4 Austroads Standard Specifications; and
   1.2.5 relevant Australian Standards.

1.3 The Works include supply of all labour, equipment, consumables, supervision, and management to complete the contract including:

***Note: concrete treatment types are provided in section 1.4 below***

JAMES & GROWSE STREET
- Supply and construction of 1500-2500mm wide Type 1 footpath including disposal of existing concrete path and other redundant structures (approx. 1977 square meters);
- Supply and construct pram crossings in accordance with IDM SD200;
- Excavation, disposal and supply and construction of B2 kerb and channel as indication on the plans (approx. 25.0 linear meters);
- Saw cutting and construction of existing asphalt seal and road pavement at pram crossing / kerb, and reconstruction in accordance with IDM SD130.
- Sawcut, excavate and dispose of existing driveways. Supply and construction of Type 1 concrete driveways from back of kerb to edge of new path, ensuring smooth transition between both and matching existing crossover widths. Vehicle crossovers to be constructed in accordance with IDM SD240 & SD245 (approx. 179 square meters);
  - Fall across driveways to be determined on-site to the satisfaction of the Superintendent to prevent cars bottoming out;
  - Note: driveways are set out approximately on provided plans and final location to be set out on site to the approval of the Superintendent.
- Supply and install kerb adaptor as specified below.
- Supply and install shared path linemarking and bollards as indicated on the plans, noting that there will be 8 locations in total for which both bollards and line marking are to be installed (drawings do not show exact locations, to be confirmed onsite with the Superintendent);
- Saw cutting and construction of existing asphalt seal and road pavement at pram crossing and reconstruction in accordance with IDM SD130.

NICOL STREET
- Supply and construction of 1200mm wide Type 1 footpath, including disposal of existing concrete path and other redundant structures (approx. 290 square meters);
- Note: Driveways are not to be reconstructed along Nicol Street;
Limit of works and additional details are provided in Appendix 8.

NOTES:

(*) All quantities given are approximately only. It is the Contractor's responsibility to calculate the quantities required. No variations will be entertained for increased quantities after awarding of the contract.

- Existing street trees on the south side of James Street and the east side of Growse Street to the limit of works are to be removed by others prior to works commencing.

1.4 Concrete Treatments:

1.4.1 **Type 1:** 125mm thick, 25MPa, SL72 mesh, reinforced concrete footpath. Reinforcement, bedding, tooled joints and expansion joints are to be provided in accordance with IDM standard drawings SD205, SD210 and SD215;

1.4.2 **Tooled joints are to be constructed at 2500 mm centres along the shared path with expansions joints at 15.0 m centres, all other sections to be in accordance with IDM SD205;**

1.4.3 IDM compliant flexible joint to be placed around existing concrete works and service pits/poles. Dowel bars required between all other sections of concrete. Contractor to match all service pits;

1.4.4 All finished concrete surface levels shall have fall to prevent water ponding in accordance with IDM standards or as agreed with the Superintendent;

1.5 Kerb Adaptor Details:

1.5.1 Supply and install qty 2 heavy-duty hot dip galvanised kerb adaptors at locations specified as “planter box” on provided plans (allow 45 locations).

1.5.2 Exact locations are to be set out by Superintendent on-site prior to back of kerb being cut out;

1.5.3 Kerb adaptors to be installed at 930mm centres at each location;

1.5.4 All other “planter box” works are to be completed by others and will not form part of this contract.

1.6 The Contractor shall excavate and remove existing concrete, asphalt, soil and vegetation as required to complete the works;

1.7 Existing signage to be relocated out of limit of path to the satisfaction of the Superintendent;

1.8 The Superintendent shall be notified at least two working days prior to completion to allow inspection and approval of:

1.8.1 the excavated surface prior to placement of bedding material; and

1.8.2 formwork and reinforcement placement prior to pouring of concrete.

1.9 The Contractor shall supply all labour, traffic management, equipment, supervision and consumables required to complete the works;

1.10 The Contractor must allow at least 10 working days to obtain a Memorandum of Authorisation (MoA) from the date of submission of a valid TMP & MoA application to Wellington Shire Council. This is to allow for Traffic Management processes and Vic Roads requirements. No extension of time claims will be considered in relation to this process;

1.11 The Contractor shall liaise with all affected surrounding residents for the duration of the works, including the provision of a letter drop a minimum of one week prior to commencing works on-site;

1.12 The Contractor shall liaise with all service authorities as required;

1.13 Any ‘graffiti’ damage concrete will be rejected by the Superintendent and must be reinstated at the cost of the contractor;

1.14 The Contractor shall inform and seek Shire based Arborist’s directions before pruning tree roots or branches.
1.15 The Contractor is responsible for all site reinstatement and clean up upon completion of works including linemarking that may be removed due to pram crossing works.

Name of Tenderer:  .................................................................................................................................

Signed: ................................................................................................................................................
### Schedule 1

(To be submitted with Tender)

**Works:** Shared Path Construction: Yarram  
**Road:** James Street, Growse Street, Nicol Street  
**Locality:** Yarram  
**Map Reference:** VicRoads Country Directory Map No. 692 – Grid B3, B4 & C4

#### Construction Method

Access to properties must be maintained as much as practicable and notice given prior to restricting access.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>General Description (All works to be performed in accordance with adopted plans and Specification)</th>
<th>Unit Qty</th>
<th>Unit Price (Ex GST)</th>
<th>Total Price (Ex GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Supply of all labour, equipment, consumables, supervision, and management necessary for the construction of civil works, in accordance with the Scope of Works and the Contract. It is the Contractor’s responsibility to calculate quantities required. No variations will be entertained for increased quantities after awarding of the contract.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Site Establishment & Demobilisation**

1.01 Site establishment including location of existing services and payment of any fees as required by the relevant service authorities. Establish and maintain all necessary plant and equipment on site and de-mobilise and clean-up following completion of works, including all traffic management & control devices and services.

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit Qty</th>
<th>Unit Price (Ex GST)</th>
<th>Total Price (Ex GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Item</td>
<td>$___________</td>
<td></td>
</tr>
</tbody>
</table>

**JAMES STREET (SOUTH) & GROWSE STREET**

**Engineering Services & Testing**

1.02 Concrete Strength Tests

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit Qty</th>
<th>Unit Price (Ex GST)</th>
<th>Total Price (Ex GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. 6</td>
<td>$___________</td>
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</tbody>
</table>

**Earthworks**

1.03 Excavate and remove all redundant structures including, but not limited to, kerbing, concrete structures and sealed pavement.

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit Qty</th>
<th>Unit Price (Ex GST)</th>
<th>Total Price (Ex GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Item</td>
<td>$___________</td>
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</table>

1.04 Supply, place and compact min 100mm compacted depth Class 3 20mm FCR bedding for all concrete structures

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit Qty</th>
<th>Unit Price (Ex GST)</th>
<th>Total Price (Ex GST)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Item</td>
<td>$___________</td>
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</table>

1.05 Supply, place and compact 30mm Type N Size 10mm Asphalt including tack coat to prepared crushed rock surface against kerb

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit Qty</th>
<th>Unit Price (Ex GST)</th>
<th>Total Price (Ex GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Item</td>
<td>$___________</td>
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</tbody>
</table>

**Concrete Works**

1.06 Supply and construct 2500mm wide sections Type 1 concrete footpaths as specified and in accordance with IDM SD205, SD210 & SD215

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit Qty</th>
<th>Unit Price (Ex GST)</th>
<th>Total Price (Ex GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Item</td>
<td>$___________</td>
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</table>

1.07 Supply and construct pedestrian laybacks in accordance with the specification and IDM SD200

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit Qty</th>
<th>Unit Price (Ex GST)</th>
<th>Total Price (Ex GST)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Item</td>
<td>$___________</td>
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</tbody>
</table>

1.08 Supply and construct vehicle crossovers from BOK to edge of shared path in accordance with IDM SD240 & SD245

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit Qty</th>
<th>Unit Price (Ex GST)</th>
<th>Total Price (Ex GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Item</td>
<td>$___________</td>
<td></td>
</tr>
</tbody>
</table>

**Kerb Works**

1.09 Supply and install hot dip galvanised kerb adaptors as specified and shown in the plans

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit Qty</th>
<th>Unit Price (Ex GST)</th>
<th>Total Price (Ex GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. 90</td>
<td>$___________</td>
<td></td>
</tr>
</tbody>
</table>

1.10 Supply, place and compact B2 kerb and channel in accordance with IDM SD130 and the specification

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit Qty</th>
<th>Unit Price (Ex GST)</th>
<th>Total Price (Ex GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Item</td>
<td>$___________</td>
<td></td>
</tr>
</tbody>
</table>

**Service Alterations**

1.11 Adjust sewer manhole pit lid to match new path

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit Qty</th>
<th>Unit Price (Ex GST)</th>
<th>Total Price (Ex GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$___________</td>
<td></td>
</tr>
<tr>
<td>Item No.</td>
<td>General Description</td>
<td>Unit</td>
<td>Qty</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------</td>
<td>------</td>
<td>-----</td>
</tr>
<tr>
<td>1.12</td>
<td>Relocate existing signage out of path as required to achieve the design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.13</td>
<td>Supply and install flat top shared path bollards at all road crossings and as specified</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.14</td>
<td>Supply and install shared path linemarking as specified</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.15</td>
<td>Reinstatement of disturbed areas with minimum 100mm topsoil (including, supply, spreading, seeding, and fertilising).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.16</td>
<td>Reinstall road pavement linemarking as required</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JAMES STREET (NORTH) &amp; NICOL STREET</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.17</td>
<td>Concrete Strength Tests</td>
<td>No. 2</td>
<td></td>
</tr>
<tr>
<td>1.18</td>
<td>Excavate and remove all redundant structures including, but not limited to, kerbing, concrete structures and sealed pavement.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.19</td>
<td>Supply, place and compact min 100mm compacted depth Class3 20mm FCR bedding for all concrete structures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.20</td>
<td>Supply, place and compact 30mm Type N Size 10mm Asphalt including tack coat to prepared crushed rock surface against kerb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.21</td>
<td>Supply and construct 1200 – 1500mm wide sections Type 1 concrete footpaths as specified and in accordance with IDM SD205, SD210 &amp; SD215</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.22</td>
<td>Supply and construct pedestrian laybacks in accordance with the specification and IDM SD200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.23</td>
<td>Supply and construct vehicle crossover from BOK to edge of path in accordance with IDM SD240 &amp; SD245</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.24</td>
<td>Reinstatement of disturbed areas with minimum 100mm topsoil (including, supply, spreading, seeding, and fertilising).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL CONTRACT SUM (EX GST)** $___________

**GST APPLICABLE - 10%** $___________

**TOTAL CONTRACT SUM (INC. GST)** $___________

(Totals to be carried forward to the Form of Tender)

Name of Tenderer: ...........................................................

Signed: ...............................................................................

Contract No. 2020-002  Tender Documents  Page 13 of 58
## Schedule 11a - Schedule of Rates for Additional Works
*(To be submitted with Tender)*

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>RATE (Ex GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reconstruction of concrete structure (including removal of existing spoil, place &amp; compact crushed rock base and joint treatments and full reinstatement)</td>
<td>m²</td>
<td>$__________</td>
</tr>
<tr>
<td>1.1</td>
<td>125mm thick with SL 72 mesh reinforcement (25Mpa)</td>
<td>m²</td>
<td>$__________</td>
</tr>
<tr>
<td>1.2</td>
<td>B2 Kerb and Channel</td>
<td>lin.m</td>
<td>$__________</td>
</tr>
<tr>
<td>2</td>
<td>Reconstruction of concrete pram crossings to IDM.</td>
<td>item</td>
<td>$__________</td>
</tr>
<tr>
<td>3</td>
<td>Supply &amp; application of repair mortar to a level finished surface</td>
<td>m²</td>
<td>$__________</td>
</tr>
<tr>
<td>4</td>
<td>Saw Cutting (Concrete and Asphalt).</td>
<td>lin.m</td>
<td>$__________</td>
</tr>
<tr>
<td>5</td>
<td>Supply &amp; install sign sleeve</td>
<td>Item</td>
<td>$__________</td>
</tr>
<tr>
<td>6</td>
<td>Concrete testing (slump test &amp; compressive strength test)</td>
<td>item</td>
<td>$__________</td>
</tr>
<tr>
<td>7</td>
<td>Supply and install hot dip galvanised kerb adaptor</td>
<td>item</td>
<td>$__________</td>
</tr>
<tr>
<td>8</td>
<td>Supply, place and compact 30mm Type N 7mm asphalt</td>
<td>m²</td>
<td>$__________</td>
</tr>
<tr>
<td>9</td>
<td>Compaction test</td>
<td>each</td>
<td>$__________</td>
</tr>
</tbody>
</table>

Name of Tenderer: ........................................................................................................................................

Signed: .........................................................................................................................................................
# Schedule 11b - Schedule of Rates for Dayworks

*(To be submitted with Tender)*

<table>
<thead>
<tr>
<th>ITEM</th>
<th>GENERAL DESCRIPTION</th>
<th>Specific description of Contractor’s plant and labour</th>
<th>UNIT</th>
<th>RATE (Ex GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Backhoe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Truck</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Vibrating Sheepsfoot Roller</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Excavator - 20T</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Grader - 100kw</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Water Truck</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Tractor/Slasher</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Tractor &amp; Roller</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Self-Propelled MT Roller</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Self-Propelled SD Roller</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Rubber Tyred Loader - 1.5cu.m</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Labour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Foreman</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Air Compressor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Bobcat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Rectification of soft spot</td>
<td></td>
<td>m²</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Float charge for plant not working on site</td>
<td></td>
<td>Item</td>
<td></td>
</tr>
</tbody>
</table>

All plant rates include machine and operator.

Name of Tenderer: ...........................................................................................................................................

Signed: ...........................................................................................................................................................
## Schedule 21 - Tenderer Information Details
*(To be submitted with Tender)*

Tenderers are required to submit such information as is necessary to enable the Principal to assess their ability to carry out works specified in individual tenders. This questionnaire has been prepared to assist tenderers in supplying this information.

### General Details

<table>
<thead>
<tr>
<th>1. Tenderer’s Name:</th>
<th>........................................................................................................</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Address:</td>
<td>........................................................................................................</td>
</tr>
<tr>
<td>3. Town:</td>
<td>........................................................................................................</td>
</tr>
<tr>
<td>4. Post Code:</td>
<td>........................................................................................................</td>
</tr>
<tr>
<td>5. Telephone Number:</td>
<td>........................................................................................................</td>
</tr>
<tr>
<td>6. Facsimile No:</td>
<td>........................................................................................................</td>
</tr>
<tr>
<td>7. Mobile Phone:</td>
<td>........................................................................................................</td>
</tr>
<tr>
<td>8. Address for service of notices</td>
<td>........................................................................................................</td>
</tr>
</tbody>
</table>
| 9. Is the Tenderer an: | ☐ Individual ?  
                          ☐ Partnership ?  
                          ☐ Limited Liability Company ? |
| 10. Trading name   | ........................................................................................................ |
| 11. If a partnership, give name and address of partners: | ........................................................................................................ |
| 12. A.B.N. number: | ........................................................................................................ |
| 13. If a limited liability company, give A.C.N. number: | ........................................................................................................ |
| 14. How many years has the Tenderer been in business as a contractor under its present business name? | ........................................................................................................ |
| 15. How many years experience has the Tenderer had in the type of work it would be required to perform under this Contract? | ........................................................................................................ |
| 16. Details of Professional Indemnity Insurance (minimum $1,000,000 with runoff period of 10 yrs). Details of Public Liability Insurance (min. $10,000,000) | ........................................................................................................ |
### Work of a similar type that the tenderer has done in the past 5 years.

<table>
<thead>
<tr>
<th>Description of Work</th>
<th>Contract Sum ($)</th>
<th>Date Commenced</th>
<th>Date Completed</th>
<th>Client and Location of Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Experience of the key personnel of the tenderer in the type of work it would be required to perform under this contract?

<table>
<thead>
<tr>
<th>Name and Position</th>
<th>Client and Location of Work</th>
<th>In what capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Financial referees (list details)

<table>
<thead>
<tr>
<th>Banks or other financial institution from which references may be obtained</th>
<th>Contact person</th>
<th>Phone number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Professional referees (list details)

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Organisation</th>
<th>Phone number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Name of Tenderer: ..........................................................................................................................

Signed: ..............................................................................................................................................
Schedule 22 - Management / Supervisory Personnel
(To be submitted with Tender)

<table>
<thead>
<tr>
<th>Designation (Name and Qualifications/Experience)</th>
<th>Numbers</th>
<th>Contract Commitment (% figure)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Project Foreman / Supervisor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. OH&amp;S Officer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Surveyor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Project Manager - to have principal responsibility for the project and able to take general control of the project, visiting the site regularly.
2. Project Foreman / Supervisor - to be competent to direct the whole of the workforce on site, shall be allocated wholly to the project and shall normally be resident on site throughout working hours.
3. OH&S Officer - to be experienced in OH&S issues.
4. Surveyor - to be experienced and able to take control of all project surveying requirements.

Name of Tenderer: ...........................................................................................................................................

Signed: ..........................................................................................................................................................
### Schedule 23 - Subcontractors / Sub-Consultants

*(To be submitted with Tender)*

*(Make copies of this schedule if more space is required)*

Sub-Consultant/s Nominated for Design Work or Subcontractor/s Nominated for Construction Works

<table>
<thead>
<tr>
<th>Company 1</th>
<th>Subcontractor or Sub-consultant</th>
<th>Subcontractor ☐ Sub-consultant ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Address</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Telephone</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Person to be used and position</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Person to be used and position</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company 2</th>
<th>Subcontractor or Sub-consultant</th>
<th>Subcontractor ☐ Sub-consultant ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Address</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Telephone</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Person to be used and position</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Person to be used and position</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company 3</th>
<th>Subcontractor or Sub-consultant</th>
<th>Subcontractor ☐ Sub-consultant ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Address</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Telephone</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Person to be used and position</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Person to be used and position</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company 4</th>
<th>Subcontractor or Sub-consultant</th>
<th>Subcontractor ☐ Sub-consultant ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Address</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Telephone</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Person to be used and position</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Person to be used and position</td>
<td></td>
</tr>
</tbody>
</table>

Name of Tenderer: .................................................................

Signed: ..............................................................................
# Schedule 25 – Quarry / Gravel Pit Information

*(To be submitted with Tender)*

*(Make copies of this schedule if more space is required)*

## Quarry Name:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Location / Address:</td>
</tr>
<tr>
<td>2.</td>
<td>Operator:</td>
</tr>
<tr>
<td>3.</td>
<td>Telephone Number:</td>
</tr>
<tr>
<td>4.</td>
<td><strong>Permit Number:</strong> Attach copy of Work Authority approval to extract material</td>
</tr>
<tr>
<td>5.</td>
<td>Permit Expiry Date:</td>
</tr>
<tr>
<td>6.</td>
<td>Approximate Gravel Reserve Quantity:</td>
</tr>
<tr>
<td>7.</td>
<td>Parts of contract to be supplied from this pit</td>
</tr>
</tbody>
</table>

## Gravel Pit Name:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Location / Address:</td>
</tr>
<tr>
<td>2.</td>
<td>Operator:</td>
</tr>
<tr>
<td>3.</td>
<td>Telephone Number:</td>
</tr>
<tr>
<td>4.</td>
<td><strong>Permit Number:</strong> Attach copy of Work Authority approval to extract material</td>
</tr>
<tr>
<td>5.</td>
<td>Permit Expiry Date:</td>
</tr>
<tr>
<td>6.</td>
<td>Approximate Gravel Reserve Quantity:</td>
</tr>
<tr>
<td>7.</td>
<td>Parts of contract to be supplied from this pit</td>
</tr>
</tbody>
</table>

Name of Tenderer: ...........................................................................................................

Signed: ...............................................................................................................................
**Schedule 31 - Occupational Health & Safety Management System Questionnaire**  
*(To be submitted with Tender)*

*This questionnaire forms part of Principal's tender evaluation process and is to be completed by Tenderers and submitted with their tender offer. Tenderers may be required to verify their responses in the questionnaire by providing evidence of relevant matters.*

Are you currently compliant in Rapid contractor for works with Wellington Shire Council?  
**YES / NO**

If **YES**, you are not required to complete this questionnaire but ensure you read Occupational Health and Safety information contained.

**No** proceed with questionnaire below

If you are the successful contractor, further project specific safety documentation will be required before the project begins.

**Questionnaire**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 OHS Policy and Management</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1 Is there a written company health and safety policy?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2 Is there a company OHS Management System manual or plan?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.3 Does the company have an OHS Management System certified by a recognised independent authority (eg: SafetyMAP)? If <strong>Yes</strong> provide details.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....................................................................................................</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.....................................................................................................</td>
<td></td>
</tr>
<tr>
<td><strong>2 Safe Work Practices and Procedures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1 Does the company provide and maintain systems of work which are safe and without risks to health so far as is reasonably practicable?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2 Does the company provide and maintain plant and equipment which are safe and without risks to health so far as is reasonably practicable?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3 Does the company make arrangements for the safe use, handling, storage or transport of plant so far as is reasonably practicable?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4 Does the company make arrangements for the safe use, handling, storage or transport of substances so far as is reasonably practicable?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5 Does the company maintain the workplace under its management and control in a safe condition so far as is reasonably practicable?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.6 Does the company provide adequate facilities for the welfare of employees at any workplace under the company’s management and control so far as is reasonably practicable?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.7 Does the company provide such information, instruction, training or supervision to employees as is necessary to enable the persons to perform their work in a safe way?

2.8 Does the company have reasonably practicable means of ensuring that persons other than its employees are not exposed to risks to their health and safety arising from the conduct of the company’s undertaking?

2.9 Does the company have reasonably practicable means of ensuring that any workplace it manages or controls is safe and the means of entering and leaving the workplace are also safe and without risks to health

3 OHS Training

3.1 Does your company provide health and safety training?

3.2 Is a record maintained of all training and induction programs undertaken for employees in your company?

4 Health and Safety Workplace Inspection

Yes  No

4.1 Are regular health and safety inspections at worksites undertaken?

4.2 Are standard workplace inspection checklists used to conduct health and safety inspections?

4.3 Is there a procedure by which employees can report hazards at workplaces?

5 OHS Performance Monitoring

5.1 Is there a system for recording and analysing health and safety performance statistics?
   *If Yes, provide details.*

5.2 Has the company ever been convicted of an occupational health and safety offence?
   *If Yes, provide details.*
## 6 Company References

6.1 Please provide the following information for the three (3) most recent contracts completed by the company:

<table>
<thead>
<tr>
<th>Contract Description</th>
<th>Contract 1</th>
<th>Contract 2</th>
<th>Contract 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Client</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contact</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phone Number</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of lost time injuries</th>
<th>Contract 1</th>
<th>Contract 2</th>
<th>Contract 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of person days on contract</th>
<th>Contract 1</th>
<th>Contract 2</th>
<th>Contract 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total days lost due to injuries</th>
<th>Contract 1</th>
<th>Contract 2</th>
<th>Contract 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Name of Tenderer: ..................................................................................................................................

Signed: ..............................................................................................................................................
## Part C - Specification

<table>
<thead>
<tr>
<th>Section Number</th>
<th>Section Title</th>
</tr>
</thead>
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<td>General Provisions</td>
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<td>3</td>
<td>Concrete Footpath, Kerb &amp; Channelling, and Edgings</td>
</tr>
</tbody>
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Section 1 - Contract Specific Clauses

1.1 General
The Contractor shall supply all labour, equipment and consumables to complete the Contract. All work shall be carried out in accordance with the Contract and the current VicRoads Standard Specification for Roadworks and Bridgeworks.

1.2 Drawings
Refer to appendix 8 for drawings relating to the Typical Cross Sections for construction and sealing as required. Cross sections are to be modified during construction in accordance with codes of good practice.

1.3 Survey and Design
The contractor is responsible for all survey necessary for the confirmation of the typical cross section required.

1.4 Drainage
The Contractor shall be responsible for investigating all existing culverts. The contractor must ensure that at the completion of works:
- No properties have drainage issues resulting from the works;
- All pipes in the vicinity of the works are clear of sedimentation; and
- Table drains are clear of debris and free flowing.

1.5 Sub-grade
The Contractor shall be responsible for constructing, rolling, stabilising or otherwise improving the subgrade so as to demonstrate to the Superintendent's satisfaction that the subgrade is suitable.

1.6 Pavement
The contractor shall be responsible for the provision of suitable bedding materials, placement, moisture content, compaction and testing, in accordance with VicRoads Standard Section 304. This may include provision of rehabilitating existing pavements.

1.7 Property Accesses
The contractor shall be responsible for the relocation, alteration and rehabilitation of property entrances as required for the satisfactory completion of the works.

1.8 Reinstatement
It shall be a requirement of this Contract that on practical completion, all operational areas shall be reinstated or made good to its original condition prior to commencing works.

1.9 Tree Protection
1.9.1 Dealing with the Trees
- During the course of these works the Contractor will have to operate close to trees, both Council owned (e.g. nature strips) and private owned (adjacent to properties).
- Any damage to trees is not acceptable, damage includes incorrect pruning of branches or roots.
- The Contractor must have approval from the WSC Arborist prior to removing any branches or roots.
- Any approved root cutting will be by sharp saw blade (not machine e.g., bobcat or backhoe) and leave a clean cut (no tears). Where possible WSC shall undertake branch pruning prior to the Contractor starting works, such work will be at no cost to the Contractor. The Contractor must allow for five days' notice period for WSC's Arborist's to visit any site.
- Contractors should make themselves aware of the Australian Standard for pruning trees (AS4373-2007) and working with trees on construction sites (AS4970-2009).
- Should unauthorised damage to a tree or trees occur, the contractor shall be charged the cost of repair, restoration or removal and replacement, the required works and extent of works shall be determined by the WSC Arborist.
Section 2 - General Provisions

2.1 Definitions
For the purposes of this contract the “Principal” is Wellington Shire Council.

2.2 General Conditions of Contract
The General Conditions of Contract, excluding occupational health and safety provisions, shall be the Australian Standard General Conditions of Contract AS 4000 - 1997 as set out in Annexures A, B and C, of Part E of this Contract, as well as Principal’s Standard Formal Instrument of Agreement.

2.3 Nature of Contract
2.3.1 The contract is a Lump Sum contract without provisions for rise and fall of prices.
2.3.2 The Contractor must provide and pay for all services associated with the performance to fulfil the requirements of this Contract, unless specifically excluded in another section of this document.
2.3.3 Variations to quantity of scheduled works will be varied at the rate provided in the schedule at the time of tendering.

2.4 Commencement of Contract and Possession of Site
2.4.1 The Contractor must commence works no more than 14 days from the Date of Acceptance of the Tender.
2.4.2 The Contractor will have access to the site from the Date of Acceptance of the Tender in order to measure up and confirm dimensions for ordering materials and manufacture of components.
2.4.3 Works shall only commence on the following conditions being satisfied:
   2.4.3.1 provision of Certificate of currency for Public Liability Insurance;
   2.4.3.2 provision of Certificate of currency for Workers’ Compensation Insurance;
   2.4.3.3 provision of security;
   2.4.3.4 provision of a construction program;
   2.4.3.5 provision of a monthly cashflow;
   2.4.3.6 provision of access routes details;
   2.4.3.7 provision of gravel test results;
   2.4.3.8 provision of a Traffic Management Plan;
   2.4.3.9 provision of a Site Management Plan;
   2.4.3.10 attendance at a pre-works commencement meeting on site; &
   2.4.3.11 issue of a Notice of Possession of Site.

2.5 Correspondence
All correspondence shall be addressed to the Superintendent and shall quote the Contract number.

2.6 Program and Cashflow
2.6.1 Within fourteen (14) days after date of acceptance of tender and prior to commencement of works, the Contractor shall submit to the Superintendent for review a construction program (with critical path shown), and cashflow, which takes into account the requirements of the Contract.
2.6.2 The Contractor shall immediately notify the Superintendent of any delays or likely delays and confirm in writing within two (2) days.

2.7 Security and Retention
2.7.1 Prior to commencement of works on site, the Contractor shall provide and maintain 5% of the contract sum as security for the Contract. This 5% will be provided in the form of a bank guarantee with no sunset clause.
2.7.2 With the issue of the certificate of practical completion, the 5% security will convert to 5% retention and be retained until the expiry of the defects liability period.
2.8 Meetings

2.8.1 Within seven (7) days after date of acceptance of tender, the Contractor’s project staff shall attend a Post Award meeting at the Principal’s offices in Sale at a date and time to be agreed with the Superintendent. The meeting shall be chaired by the Superintendent and the minutes shall be recorded and distributed by the Superintendent.

2.8.2 The Contractor's project staff may be required to attend Contract meetings at the Principal's offices in Sale at a recurring date and time to be agreed with the Superintendent. The meeting shall be chaired by the Superintendent and the minutes shall be recorded and distributed by the Superintendent. The frequency of these meetings shall be determined at the Post Award Meeting.

2.8.3 Within fourteen (14) days prior to the dates of practical completion and the end of the defects liability period, the Contractor's project staff may be required to attend meetings at the Principal's offices in Sale at a date and time to be agreed with the Superintendent. The meeting agenda will include outstanding items and a performance review of the Contractor's quality of work on the Contract. The meeting shall be chaired by the Superintendent and the minutes shall be recorded and distributed by the Superintendent.

2.8.4 Standard meeting agenda shall be provided by the Superintendent.

2.9 Public Contact / Notification

2.9.1 The Contractor shall give the required prior notice to the Superintendent as listed below where disruption is likely to be significant:

<table>
<thead>
<tr>
<th>Disruption Type</th>
<th>Notice Requirement</th>
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<tbody>
<tr>
<td>Delays in excess of 30 minutes</td>
<td>2 working days notice to the Superintendent</td>
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<tr>
<td>Disruption to property access</td>
<td>2 working days notice to property owners &amp; the Superintendent</td>
</tr>
<tr>
<td>Closure of half of road</td>
<td>5 working days notice to the Superintendent</td>
</tr>
<tr>
<td>Closure of whole of road</td>
<td>5 working days notice to the Superintendent</td>
</tr>
</tbody>
</table>

2.9.2 The Contractor shall demonstrate an appropriate level of courtesy to both users of the road and abutting property owners during the course of the work. Where reasonable, issues raised by road users or property owners shall be resolved by the contractor, and otherwise documented and submitted to the Superintendent for information.

2.9.3 The contractor shall be responsible for liaising with all affected property owners prior to commencement of any works relating to driveway access, culverts, mail boxes and other private structures. This is necessary, as all of these structures are the property of the adjacent owner.

2.10 Quality Records

2.10.1 The Contractor shall obtain and maintain sufficient documentation and test records to ensure the Works comply with this Specification. Such documentation shall include, but not limited to, the following:

- 2.10.1.1 Statutory authorities approvals
- 2.10.1.2 Gravel test results
- 2.10.1.3 Compaction test results
- 2.10.1.4 Sealing application records

2.10.2 The Contractor shall submit originals of all Quality Records to the Superintendent at Practical Completion or when requested by the Superintendent.

2.11 Superintendent Inspections and Audits

2.11.1 The Superintendent and his/her representatives may carry out non-safety related inspections or audits as necessary to ensure that the Contractor is performing to Specification.

2.11.2 These inspections and audits may be used by the Principal to assess future tender submissions by the Contractor.

2.12 Contractor Inspections & Reporting

2.12.1 Contractor responsibilities include the following:

- Ensure that all work is performed to specification;
• Ensure that all work is performed in accordance with OH&S requirements and with road safety / traffic management requirements;
• Ensure that all work is performed in accordance with Appendix 3: Environmental Management Specification for Roadwork Projects;
• Check the extent of work completed is according to the program provided;
• Check sweeping, linemarking, stack-site cleanup and removal of temporary loose stones signs are carried out within six months of job completion;
• Report any non-conforming work;
• Maintenance of Quality Records.

2.13 Hold Points

2.13.1 The Contractor shall be aware of all hold points and contact the Superintendent for approval to proceed past hold points listed below, or as specified.
  • Approval of design, if required
  • Inspection of prepared subgrade
  • Inspection of prepared bedding prior to concrete pour
  • Inspection of trench bedding and pipe work prior to backfill
  • Inspection of kerb bed before pouring
  • Inspection of finished surface, prior to Asphalting.
Other hold points may be nominated by the Superintendent, at the Post Award Meeting, and during the course of the contract, where required.

2.13.2 The Contractor shall allow for at least two (2) working days of prior notice to the Superintendent of the Hold Point and allow for one (1) working day for the Superintendent or his representative to attend the site and inspect work.

2.13.3 If after providing the prior notice required and the Superintendent does not attend the site for inspection, the Contractor has the right to proceed without approval from the Superintendent.

2.14 Hours of Work

2.14.1 The Contractor shall carry out works within the hours set out below to complete the Contract:
  • 7:00am—6:00pm Monday to Friday
  • 7:00am—1:00pm Saturday

2.14.2 Any request for work outside these hours must be made in writing and approved by the Superintendent.

2.14.3 It shall be the Contractor’s responsibility to ensure it complies with all legislative requirements regarding hours of work.

2.15 Location and Modification/Protection of Services

2.15.1 The Contractor shall be responsible for determining the location of all services within the works site prior to commencing works on-site.

2.15.2 The contractor is to inform themselves of any issues with regard to services. They are to allow for costs of removal/modification/protection and reinstatement as part of the contract where necessary. If protection of powerlines is necessary during construction period, this is to be costed and organised by the contractor as part of the contract.

2.15.3 All works related to services are the responsibility of the contractor. All statutory authorities and/or owners are to be negotiated with directly by the contractor as required for the completion of this project.

2.15 Setting Out the Works

2.15.1 The Contractor shall be responsible for setting out the works.

2.16 Site Facilities

2.16.2 The Contractor shall provide all site facilities as required for completion of the contract. In locating these site facilities the contractor shall have regard for all requirements relating to public amenity and access as specified.
2.17 Traffic Management

2.17.3 Prior to commencement of works, the Contractor shall submit a Traffic Management Plan to the Superintendent for informational purposes only.

2.17.4 The Contractor is responsible for ensuring that all works comply with the Road Management Act 2004, the Road Management Act 2004 Worksite Safety – Traffic Management Code of Practice, and the submitted Traffic Management Plan.

2.18 Site Management & Environmental Guidelines

2.18.5 The Contractor shall submit a Site Management Plan to the Superintendent for informational purposes prior to commencement of works.

2.18.6 The site management plan must comply with all obligations including the following items:

2.18.6.1 Wellington Shire Council’s Environmental Management Specifications for Roadwork Projects (Appendix 3);

2.18.6.2 All other Items as required by legislation and this specification.

2.19 Reinstatement

2.19.7 It shall be a requirement of this Contract that on practical completion, all operational areas shall be reinstated or made good to their original condition prior to commencing works.

2.19.8 It shall be a requirement of this Contract that prior to commencing works, an on-site inspection shall be undertaken by the Contractor, the Superintendent and other Principal representatives to record existing site conditions and to determine acceptable rehabilitation methods for operational areas after completion of works.

2.19.9 It shall be the responsibility of the Contractor to store in appropriate conditions and to reinstate all letterboxes, signage and other roadside facilities, which were removed by the Contractor to facilitate construction works.

2.20 Access Routes to Site

2.20.10 The Contractor shall be responsible for any damages to roads used as access routes to the site.

2.20.11 Prior to commencement of work, the Contractor shall, for informational purposes only, provide the following:

2.20.11.1 Details of access routes to be used, including, but not limited to, those for transportation of gravel and pavement materials, sealing plant, etc; and

2.20.11.2 Details of measures to minimise risk, dust and inconvenience to road users and residences on the access routes.

2.21 Supply of Materials

2.21.12 All materials and workmanship shall be the respective kinds as described in the Drawings and / or Specification or, if not fully described, shall be in accordance with the relevant standard of the Standards Association of Australia.

2.22 De-watering

2.22.13 During the course of the work the Contractor shall divert all surface runoff water from the site necessary for the proper execution of the works, and provide, install and maintain all pumping plant and temporary diversion works necessary to keep the work site dry.

2.23 Work to be Done by Others

2.23.14 The Principal reserves the right to perform work or award other Contracts for works on or adjacent to the site.

2.23.15 If the above occurs, the Contractor shall be required to cooperate with all other Contractors and other work forces so as to avoid delay or hindrance to their work and to ensure that all work is performed expeditiously.

2.24 Defects Liability Period

2.24.1 The Defects Liability Period shall be as shown in Part E - General Conditions of Contract.
2.24.2 During the defects liability period, the Contractor shall regularly check the works and make good any washouts, sunken areas and any other defects which become obvious, or are brought to the attention of the Contractor, all to the satisfaction of the Superintendent.

2.24.3 The Superintendent may instruct the Contractor to perform urgent maintenance works, where in the opinion of the Superintendent there is a defect that requires urgent maintenance.

2.24.4 If the Superintendent determines the defect requires immediate action and the Contractor is unavailable, the Principal reserves the right to undertake remedial works and the cost of these works shall be a deduction from monies held in retention/security under the Contract.

2.25 Principal to be Indemnified

2.25.1 The Contractor shall keep the Principal indemnified against any legal liability, loss, claim or proceedings for personal injury to or any death of any person or for damage to property arising from the carrying out of the Works, except loss or damage caused by any negligent act, omission or default of the Principal, his servants or agents.

2.26 Safety and Protection of Works, Roadside Assets and Private Property

2.26.1 The Contractor shall provide, erect and maintain all barricades, guards, fences, temporary roadways, footpaths, signs and lighting. The Contractor shall provide and maintain all traffic warnings lawfully required by public or other authority or necessary for the protection of the Works or of other property or for the safety and convenience of the public and others and shall remove them when no longer required. Where reasonably practicable, the Contractor will fill all trenches and excavations at the end of the working day.

2.26.2 Any damage to assets on or adjacent to the work site that results from the actions of the Contractor or agents of the Contractor beyond that necessary for the execution of the works shall be repaired by the Contractor at the Contractor’s cost to the satisfaction of the Superintendent.

2.26.3 The Contractor shall take all reasonable care to protect private property from damage during the course of the works including gates, trees, fences, culverts and access tracks. Any damage that results from the actions of the Contractor or agents of the Contractor shall be repaired or reinstated by the Contractor at the Contractor’s cost to the satisfaction of the Superintendent.

2.27 Statutory Rules

2.27.1 The Contractor shall comply with the Occupational Health & Safety Act 2004, the Occupational Health & Safety Regulations 2017 and all other relevant statutory documents in respect of the work.

2.27.2 Other statutory requirements include, but are not limited to:

2.28.2.1 Equipment (Public Safety) Act 1994;

2.28.2.2 Equipment (Public Safety) Regulations 2017;


2.27.3 The Contractor shall take all reasonably practicable measures to minimise the risk to the Contractor’s staff, employees, sub-contractors, employees of the Principal, the Superintendent and the general public.

2.27.4 The Contractor shall provide information, instruction, training and supervision to all employees of the Contractor and any sub-contractors engaged by the Contractor in safe work practices and the requirements of relevant Regulations, Compliance Codes.
made under the *Occupational Health & Safety Act 2004* and other Standards as far as reasonably practicable.

### 2.28 Role of Contractor's Civil Engineer

2.28.1 The Contractor shall engage a qualified Civil Engineer who shall provide the following professional services to the Contractor, as necessary to ensure works are carried out and completed in accordance with the Contract:

- **2.29.1.1** Technical assistance to the Contractor;
- **2.29.1.2** Advice, solutions, instruction and/or supervision;

This service shall continue until the issue of the Final Certificate by Superintendent.

2.28.2 The Civil Engineer shall liaise with Principal’s Superintendent as required.
Section 3 – Road Construction and Widening – General

3.1 General
This section covers the requirement for the construction of cast-in-place concrete kerb and edgings (i.e. kerbs, channels, edge strips, and laybacks), concrete shared paths, footpaths, pram crossings, aprons, and paving.

3.2 Bedding Preparation
Bedding of conforming Class 3 crushed rock, as specified in Standard Drawings, shall be provided by the Contractor as follows:

3.2.1 Kerb, Kerb & Channelling, and Edgings:
Where kerbs or edgings are constructed over payment layers, bedding shall be provided between the pavement layer and the underside of the kerb or edging. Where kerbs or edgings are not constructed over pavement layers, bedding shall be not less than 75 mm compacted thickness and in accordance with IDM SD110.

3.2.2 Shared paths, Footpaths, Aprons and Paving:
Unless otherwise specified or shown on the drawings not less than 50mm compacted thickness and in accordance with IDM SD205.

3.2.3 Bedding shall be trimmed to the appropriate levels, moistened as necessary, and firmly compacted.

3.2.4 For footpaths, aprons and paving the foundation shall be brought true to grade and cross section as specified, or directed, by filling and excavating as necessary. All soft wet or unstable material shall be removed to a depth of not less than 75mm below the design level of the underside of the of the bedding and the resulting space refilled with bedding material moistened and compacted to form a stable foundation.

3.2.5 Immediately before concrete is placed, the bedding shall be moist but shall have no free water on the surface.

3.3 Tolerances on Line, Level and Shape
All surfaces shall be finished in conformity with the lines, grades, thickness and cross sections shown on the drawings or as specified, within the following limits:

3.3.1 Kerb, Kerb & Channelling, and Edgings shall be formed to ensure departure of the finished work from line and level shall not exceed +5mm vertically and +20mm horizontally at any point.

3.3.2 Shared paths, Footpaths, Aprons and Paving shall be shaped to match existing fixtures, e.g. pit covers, edgings and driveways, within +5mm. Elsewhere the departure of the finished work from line or level shall not exceed +10mm vertically and +20mm horizontally at any point, and the rate of change of deviation from line or level shall not exceed +10mm in 10m; except on curves in shaped areas, the deviation of the finished work from a 3 m straightedge shall not exceed +5mm vertically at any point.

3.3.3 Section dimensions shall not differ from those shown on the drawings by more than +5mm except that overall width shall not exceed the specified width by more than +15mm; and on dimensions less than 25mm the tolerance shall be +3mm.

3.3.4 Where median paving is to be constructed between kerb sections of the substantially the same level, the paving shall be crowned to produce a crossfall towards the edges not exceeding 3% nor less than 1%.

3.4 Expansion, Construction, Contraction, and Isolation Jointing
All concrete shall incorporate expansion, construction, and isolation jointing, as follows:

3.4.1 Kerb, Kerb & Channelling, and Edgings shall incorporate construction jointing in accordance with IDM SD110 & SD130.

3.4.2 Shared path, Footpath, Aprons, and Paving shall incorporate expansion jointing in accordance with IDM SD200 and SD120. All dowels are to be galvanised.

3.4.3 Shared path, Footpath, Aprons, and Paving shall incorporate construction and contraction jointing in accordance ISM SD200, SD215 and SD225.

3.4.4 Shared path, Footpath, Aprons, and Paving shall incorporate isolation jointing when abutting against existing kerb, edging and footings and around all manholes, pits, and poles in accordance with IDM SD220.
3.5 **Machine Extrusion – Kerb, Kerb & Channelling, and Edgings**

3.5.1 Concrete shall be fed to the machine at a uniform rate. The machine shall be operated to ensure a satisfactory compacted mass of concrete. Surfaces shall be smooth trowelled finished, substantially free from surface printing greater than 5mm diameter.

3.5.2 Where work using fixed forms is combined with extruded work and similar concrete mixes are used for both, the concrete in the fixed form sections shall be compacted to produce satisfactory compacted mass of concrete.

3.6 **Materials**

3.6.1 Unless otherwise specified or shown on the drawings, concrete shall be 25MPa strength grade 100mm slump complying with the requirements of AS 3600 – Concrete Structures.

3.6.2 Concrete used in kerb extrusion machines will not be subject to these compressive strength requirements but shall have a minimum cement content of 280kg/m³.

3.7 **Testing**

3.7.1 Unless otherwise specified or shown on the drawings, concrete shall be tested on the basis of one test per 300 sp.m. or one test every 30 cu.m, whichever occurs on the most frequent.

3.7.2 Testing is to be undertaken by a NATA accredited testing laboratory at the contractors expense, with a copy of the test results provided to the superintendent.

3.7.3 Concrete used in kerb extrusion machines will not be subject to testing.

3.8 **Placement**

3.8.1 All concrete shall be mechanically vibrated once placed.

3.8.2 To avoid mix segregation, concrete shall not be allowed to drop over 2m vertically from any chute or kibble during placement.

3.8.3 Concrete splatter on adjoining assets and infrastructure shall be cleaned immediately following each concrete pour.

3.9 **Finish**

3.9.1 Concrete shall be edged along all boxing, abutting structures and footings.

3.9.2 Shared path, Footpath, Aprons, and Paving shall have a stippled or light broom finish unless stated otherwise on the drawings.

3.9.3 Kerb and Channelling shall have a smooth trowel finish.
Part D – Occupational Health & Safety

1. Definitions
In this Part:

1.1 “Construction Induction” has the same meaning as defined in Regulation 339 of Part 5.1, Division 3 of the Occupational Health and Safety Regulations 2017 (Vic).

1.2 “Construction Work” has the same meaning as defined in Regulation 321 of Part 5.1, Division 1 of the Occupational Health and Safety Regulations 2017 (Vic) and includes any work performed in connection with the construction, alteration, conversion, fitting out, commissioning, renovating, refurbishment, decommissioning, or demolition of any building or structure, or any similar activity.

1.3 “High Risk Construction Work” has the same meaning as defined in Regulation 322 of Part 5.1, Division 1 of the Occupational Health and Safety Regulations 2017 (Vic).

1.4 “Risk” is described as meaning the likelihood and consequence of that injury or harm occurring (in relation to any potential injury or harm).

1.5 “Safe Work Method Statement” (SWMS) has the same meaning as defined in Regulation 324 of Part 5.1, Division 1 of the Occupational Health and Safety Regulations 2017 (Vic).

1.6 “OHS Principal Contractor” has the same meaning as defined in Regulation 333 of part 5.1, Division 2 of Occupational Health and Safety Regulations 2017 (Vic).

2. Appointment of OHS Principal Contractor

2.1 For the purposes of Subdivision 2, Division 2 of Part 5.1 Occupational Health and Safety Regulations 2017 (Vic), Wellington Shire Council, as owner:
2.1.1 appoints the Contractor as its OHS Principal Contractor for the construction work performed on behalf of the owner; and
2.1.2 authorises the OHS Principal Contractor to manage or control the workplace to the extent necessary to discharge the duties imposed on an OHS Principal Contractor under Subdivision 2, Division 2 of Part 5.1, Occupational Health and Safety Regulations 2017 (Vic).

2.2 The Contractor accepts its appointment as OHS Principal Contractor.

2.3 The Contractor shall, as OHS Principal Contractor, ensure that it complies with its obligations under Subdivision 2, Division 2, Part 5.1, Occupational Health and Safety Regulations 2017 (Vic) in addition to all other applicable requirements relating to occupational health and safety.

2.4 The Contractor agrees that, as OHS Principal Contractor, it is responsible for all costs associated with performing the role of OHS Principal Contractor.

3. General Occupational Health & Safety Requirements

3.1 The Contractor must carry out the work under the Contract in a proper, timely and workmanlike manner with due diligence and expedition in accordance with:
3.1.1 the provisions of this Contract; and
3.1.2 any directions that may from time to time be given by the Superintendent other than in relation to matters agreed in Part D; and
3.1.3 its obligations under all applicable legislation including the Occupational Health and Safety Act 2004 (Vic) and any Regulations and Compliance Codes made pursuant to that legislation and other guidance material including, but not limited to, Australian Standards, which are in any way applicable to the performance of the work under the Contract.
3.2 The Contractor confirms that it has read and reviewed any tender documents of this contract and any tender documents form part of this contract inclusive of information detailed in drawings, designs, specifications and scope of works, Occupational Health and Safety, Quality and Environmental requirements and Request for Sub-Contractor Information.

4. Specific obligations under *Occupational Health and Safety Regulations 2017 (Vic)*

4.1 Where required, the Contractor is responsible for, but not limited to, the following:

4.1.1 elimination of risk to health or safety associated with construction work so far as is reasonably practicable;

4.1.2 risk control measures are reviewed if necessary and revised in accordance with Regulation 326 *Occupational Health and Safety Regulations 2017 (Vic)*;

4.1.3 preparation of and compliance with, a Safe Work Method Statement for high risk construction work, and revision of that SWMS in accordance with Regulation 328 *Occupational Health and Safety Regulations 2017 (Vic)*;

4.1.4 ensuring each of its own and its Sub-Contractor's employees produces or forwards a copy of their OH&S Construction Induction Card (within the meaning of Regulation 346 *Occupational Health and Safety Regulations 2017 (Vic)*)) to the Superintendent prior to Commencement of Works and records are kept in compliance with regulation 343 *Occupational Health and Safety Regulations 2017 (Vic)*; and

4.1.5 providing site specific occupational health and safety training pursuant to Regulation 330 *Occupational Health and Safety Regulations 2017 (Vic)*.

5. Legislative Compliance

5.1 The Contractor will inform itself of all relevant occupational health and safety legislation, standards and codes.

5.2 The Contractor must comply with and, where applicable, ensure that its employees, subcontractors and agents comply with any Acts, regulations, local laws and by-laws, Compliance Codes, Australian Standards and its own OHS policy and procedures which are applicable to this contract or the performance of the services under this contract.

6. Contractor OHS Management Systems

6.1 The Contractor’s OHS management system must, as a minimum requirement, comply with all duties of an employer specified in the *Occupational Health and Safety Act 2004 (Vic)*.

7. Tenderer OHS Management System Questionnaire

7.1 Tenderers shall complete the Tenderer OHS Management System Questionnaire.

7.2 Tenderers who do not complete the questionnaire shall be ineligible for selection unless pre-approved by the Principal.

7.3 Tenderers may be required to produce documentation to verify their responses noted in the questionnaire. The Principal may sight documentation and responses to the OHS Management System Questionnaire to verify the existence of those documents and the Tenderer’s responses. The Principal will not review the documentation with a view to approving that documentation. The request for production of the Questionnaire and any associated documentation does not constitute control of OHS matters by the Principal. By submission of the tender and questionnaire the Tenderer acknowledges and confirms as accurate all details contained in the questionnaire and any verifying documents.

8. Incident Notification

8.1 If the Contractor is required by sections 37 & 38 of the *Occupational Health and Safety Act 2004 (Vic)* to give any notice of an incident occurring during the performance by the
Contractor of works under the contract, the Contractor shall at the same time, or as soon thereafter as possible in the circumstances, give a copy of the notice to the Principal.

8.2 The Contractor must promptly notify the Principal of any accident, injury, property or environmental damage which occurs during the carrying out of the contract works. The Contractor shall, if requested, provide to the Principal a report giving complete details of the incident, including results of investigations into its cause, and any recommendations or strategies for prevention in the future.

9. Risk Assessment and Agreement regarding control of safety risks

The process
9.1 The process of assessing potential safety risks will start during the planning stages prior to the project commencing. The main advantage of commencing the risk assessment process during the planning stage is that proper control measures in relation to specific risks can be considered and planned for from the earliest possible point in time rather than waiting until the risks actually materialise. In addition, uncertainty, confusion and misunderstanding about respective responsibilities can also be eliminated or minimised to enable more effective risk management of safety matters.

9.2 The process is comprised of the following steps:
   9.2.1 The Principal will maintain a Contractor Pre-Qualification Register; and
   9.2.2 The Principal will identify a detailed Scope of Works; and
   9.2.3 The Principal will convene a meeting between its own relevant staff to identify safety risks involved in the detailed Scope of Works; and
   9.2.4 A meeting will be convened between the Principal and the contractor at which time the Safety Matter/Risk Matrix is completed; and
   9.2.4 The Safety Matter /Risk Matrix will be included into Part D of the contract.

The Safety Matter/Risk Matrix
9.3 The Safety Matter/Risk Matrix is designed to ensure a high level risk assessment of the project has been completed prior to the project’s commencement.

9.4 At the meeting between the Principal and the prospective contractor the Safety Matter/Risk Matrix will be completed. The Safety Risks arising from the scope of works the contractor will be engaged to perform should be identified by the parties and placed into the first column of the Matrix on the vertical axis. The parties should then consider each of the listed Safety Risks (vertical axis), as assessed, in conjunction with the Safety Matters (horizontal axis) in order to determine the appropriate risk control for each Safety Risk.

The Agreement
9.5 Agreement must then be reached between the parties as to who will have control and management in relation to the identified Safety Risk (vertical axis) under each of the Safety Matters (horizontal axis) in the Matrix.

9.6 Once agreement has been reached the completed safety risk matrix is to be included in Part D of this Contract.

General
9.7 To avoid doubt and for the purposes of enhancing health and safety outcomes and compliance with the statutory provisions under both State and Commonwealth legislation over the life of the works undertaken pursuant to this Agreement, the Principal and Contractor acknowledge and agree that:

9.7.1 the Contractor has control and management of the matters that give rise or may give rise to risks to health and safety as listed in Part D and indicated as under the Contractor’s control and management to the exclusion of the Principal;
9.7.2 the Principal has control and management of the matters that give rise or may give rise to risks to health and safety as listed in Part D and indicated as under the Principal's control and management to the exclusion of the Contractor;

9.7.3 the Contractor and Principal have co-existing control and management of the matters that give rise or may give rise to risks to health and safety as listed in Part D and indicated as under the co-existing control and management of the Principal and Contractor.

9.8 Where the respective control and management of a matter that gives rise or may give rise to risks to health and safety is not included or indicated in Part D or otherwise provided for in the Agreement, the Principal and Contractor acknowledge and agree that for the purpose of enhancing safety outcomes, the Contractor has control and management of that matter.

9.9 To avoid doubt, the Principal and the Contractor agree that the Principal does not control or manage any matters that give rise or may give rise to risks to the health and safety of the Contractor or its employees in relation to the work undertaken by the Contractor under this Contract.

9.10 To avoid doubt, the Principal and the Contractor agree that the matters and tasks set out at Part D for which the Contractor has management and control do not constitute part of the business or undertaking of the Principal.
# Safety Matter/Risk Matrix

*(To be considered prior to commencement of works)*

*(Make copies if required)*

<table>
<thead>
<tr>
<th>Work involving:</th>
<th>Provide and maintain systems of work</th>
<th>Provide and maintain plant and equipment</th>
<th>Safe use, handling, storage or transport of plant</th>
<th>Safe use, handling, storage or transport of substances</th>
<th>Workplace to be kept safe</th>
<th>Provision of adequate facilities</th>
<th>Provide information, instruction, training or supervision</th>
<th>Means of entering and leaving the workplace</th>
<th>Provide a safe workplace</th>
<th>Provide PPE</th>
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<tbody>
<tr>
<td>You should insert here the Safety Risks arising from the scope of works the contractor will be engaged to perform.</td>
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<tr>
<td>The parties should then consider each of the listed Safety Risks in this column, as assessed, in conjunction with the Safety Matters (horizontal axis) in order to determine the appropriate risk control for each Safety Risk.</td>
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</tbody>
</table>
Part E - General Conditions of Contract

Part A
Annexure to the
Australian Standard General Conditions of Contract
AS 4000-1997

This Annexure shall be completed and issued as part of the tender documents and, subject to any amendments to be incorporated into the Contract, is to be attached to the General Conditions of Contract and shall be read as part of the Contract.

Item

1  Principal
   (clause 1)
Wellington Shire Council
ABN 18 420 243 468

2  Principal's address
Wellington Shire Council
18 Desailly Street
Sale, Victoria 3850

3  Contractor
   (clause 1)
As defined by the Principal's Acceptance of Offer

ACN

4  Contractor's address


5  Superintendent
   (clause 1)
Project Engineer
ACN 18 420 243 468

6  Superintendent's address
Wellington Shire Council
18 Desailly Street
Sale, Victoria 3850

7  a) Date for practical completion
   (clause 1)
28 February 2020

   OR

   b) Period of time for practical completion
   (clause 1)

8  Governing law
   (page 5, clause 1(h))
Victoria
If nothing stated, that of the jurisdiction where the site is located

* If applicable, delete and instead complete equivalent Item in the separable portions section of the Annexure Part A
9  a) Currency  
   (page 5, clause 1 (g))
   $AU
   If nothing stated, that of the jurisdiction where the site is located
   
   b) Place for payments  
   (page 5, clause 1 (g))
   Sale
   If nothing stated, the Principal’s address
   
   c) Place of business of bank  
   (page 3, clause 1(d))
   Sale
   If nothing stated, the place nearest to where the site is located

10  Bills of quantities  
    (subclause 2.2)
    a) Alternative applying  
       (subclause 2.2)  
       Not Applicable
       If nothing stated, Alternative 1 applies
    
       b) If Alternative 2 applies,  
           is the bill of quantities  
           to be priced?  
           (subclause 2.2)
           No/Yes  (delete one)
           If neither deleted, the bill of quantities shall not be priced
    
       c) Lodgement time  
       (subclause 2.3(b))
       If nothing stated, 28 days after date of acceptance of tender

11  Quantities in schedule of rates,  
    limits of accuracy  
    (subclause 2.5(b))
    Upper Limit 25%
    Lower Limit 25%

12  Provisional sum,  
    percentage for profit and  
    attendance (clause 3)
    10%

*13  Contractor’s security
    a) Form  
       (clause 5)
       Unconditional Undertaking
    
       b) Amount or maximum  
           5% of the Contract Sum
           Percentage of contract sum If nothing stated, 5% of the contract sum  
           (clause 5)
    
       c) If retention moneys, percentage  
           Not Applicable
           of each progress certificate If nothing stated, 10%, until the limit in Item 13(b)  
           (clause 5 and subclause 37.2)
    
       d) Time for provision (except for  
           retention moneys)  
           7 days
           If nothing stated, within 28 days after date of acceptance of tender  
           (clause 5)
    
       e) Additional security for unfixed  
           plant and materials  
           Bank Guarantee Equal to the Item  
           (subclauses 5.4 and 37.3)

* If applicable, delete and instead complete equivalent Item in the separable portions section of the Annexure Part A
f) Contractor's security upon certificate of practical completion is reduced by 0% of amount held

No reduction in security will occur. If nothing stated, 50% of amount held (subclause 5.4)

*14 Principal's security

a) Form

(Not Applicable)

(b) Amount or maximum percentage of contract sum

(Not Applicable)

If nothing stated, nil (clause 5)

c) Time for provision

(Not Applicable)

If nothing stated, within 28 days after date of acceptance of tender (clause 5)

d) Principal's security upon certificate or practical completion is reduced by % of amount held

If nothing stated, 50% of amount held (subclause 5.4)

Principal-supplied documents

(subclause 8.2)

<table>
<thead>
<tr>
<th>Document</th>
<th>No. of copies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Scope of WUC</td>
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<tr>
<td>2 Specification</td>
<td>1</td>
</tr>
<tr>
<td>3 Drawings of WUC</td>
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<td></td>
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<tr>
<td>5</td>
<td></td>
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<tr>
<td>6</td>
<td></td>
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</table>

If nothing stated, 5 copies of the drawings, specification, bill of quantities or schedule of rates (if any)

16 Time for Superintendent's direction about documents

(Not Applicable)

14 days If nothing stated, 14 days (subclause 8.3)

17 Subcontract work requiring approval

(Not Applicable)

All Work

* If applicable, delete and instead complete equivalent item in the separable portions section of the Annexure Part A
Part A
AS 4000-1997

18  Novation
    (subclause 9.4)  Subcontractor  Particular part of WUC

19  Legislative requirements

    a) Those excepted
        (subclause 11.1)  Nil

    b) Identified WUC
        (subclause 11.2(a)(ii))  Nil

20  Insurance of the Works
    (clause 16)

    a) Alternative applying
        Alternative 1
        If nothing stated, Alternative 1 applies

        If Alternative 1 applies

        b) Provision for demolition and removal of debris
            $ Nil
            OR
            0% of the contract sum

        c) Provision for consultant's fees
            $ Nil
            OR
            0% of the contract sum

        d) Value of materials or things to be supplied by the Principal
            $ Nil

        e) Additional amount or percentage
            $ Nil
            OR
            0% of the total of paragraphs (a) to (d) in clause 16
**Public Liability insurance**
(clause 17)

a) Alternative applying

Alternative 1
If nothing stated, Alternative 1 applies

If Alternative 1 applies

b) Amount per occurrence shall be not less than

$10,000,000
If nothing stated, then not less than the *contract sum*

**Time for giving possession**
(subclause 24.1)

not less than 14 days of *date of acceptance of tender*
If nothing stated, 14 days

**Qualifying causes of delay**
Causes of delay for which EOTs will not be granted
(page 3, paragraph (b)(iii) of Clause 1 and subclause 34.3)

14 days
from the *commencement of works*

**Liquidated damages, rate**
(subclause 34.7)

$200 per day

**Bonus for early practical Completion**
(subclause 34.8)

a) Rate

$Nil per day

b) Limit

$0

OR

0% of *contract sum*
If nothing stated, there is no waiver

**Delay damages, other compensable causes**
(page 1, clause 1 and Subclause 34.9)

Not Applicable

* If applicable, delete and instead complete equivalent *Item in the separable portions* section of the Annexure Part A
27  Defects liability period
    (clause 35)  
    12 Months  
    If nothing stated, 12 months  

28  Progress Claims
    (subclause 37.1)  
    a) Times for progress claims  
       The last business day of each month for WUC done to the second last business day of that month  
    OR  
    b) Stages of WUC for progress claims  
       ………………………………………………………………………………………………  
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29  Unfixed plant and materials for which payment claims may be made
    (subclause 37.3)  
    Not Applicable  

30  Interest rate on overdue payments
    (subclause 37.5)  
    0% per annum  
    If nothing stated, 18% per annum  

31  Time for Principal to rectify inadequate possession
    (subclause 39.7)  
    28 days  
    If nothing stated, 14 days  

32  Arbitration
    (subclause 42.3)  
    a) Person to nominate an arbitrator  
       Local Branch President,  
       Institute of Arbitrators, Australia  
       If no-one stated, the President of the Australasian Dispute Centre
b) Rules for arbitration

If nothing stated:

a) rules 5-18 of the Rules of The Institute of Arbitrators, Australia for the Conduct of Commercial Arbitrations;

OR

b) if one or more of the parties are nationals of and habitually resident in, incorporated in, or where the central management and control is exercised in, different countries as between the parties, then the UNCITRAL Arbitration Rules shall apply and the appointing authority shall be the person provided in Item 32(c)

c) Appointing Authority under UNCITRAL Arbitration rules. If nothing stated, the President of the Australasian Dispute Centre
Part B

Annexure to the
Australian Standard General Conditions of Contract
AS 4000-1997

Deletions, amendments and additions

1 The following clauses have been deleted from the General conditions in AS 4000-1997

2 The following clauses have been amended and differ from the corresponding clauses in AS 4000-1997

3 The following clauses have been added to those of AS 4000-1997
This form may also be used where the Principal is required to provide an unconditional undertaking, by substituting Principal for Contractor and vice versa, wherever occurring.

Approved form or unconditional undertaking
(clause 1 – security)

At the request of ..................................................(the Contractor) and in consideration of ..................................................(the Principal) accepting this undertaking in respect of the Contract for .................................................................

.................................................................

.................................................................(the financial institution') unconditionally undertakes to pay on demand any sum or sums which may from time to time be demanded by the Principal to a maximum aggregate sum of .................................................................($..................................................)

The undertaking is to continue until notification has been received from the Principal that the sum is no longer required by the Principal or until this undertaking is returned to the financial institution or until payment to the Principal by the financial institution of the whole of the sum or such part as the Principal may require. Should the financial institution be notified in writing, purporting to be signed by ............ .................................................................for and on behalf of the Principal that the Principal desires

Payment to be made of the whole or any part or parts of the sum, it is unconditionally agreed that the financial institution will make the payment or payments to the Principal forthwith without reference to the Contractor and notwithstanding any notice given by the Contractor not to pay same.

Provided always that the financial institution may at any time without being required so to do pay to the Principal the sum of .................................................................($..................................................)

Less any amount or amounts it may previously have paid under this undertaking or such lesser sum as may be required and specified by the Principal and thereupon the liability of the financial hereunder shall immediately cease.

Dated at ...........................................this ...........................................day of ........................................... 20......
Part F – Health and Safety Agreement

KEY:

P=PRINCIPAL
C=CONTRACTOR
S=SHARED/CO-EXISTENT
### Part G - Appendices

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<td>Environmental Management Guidelines</td>
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<tr>
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<td>Vic Roads Standard Specifications for Roadworks and Bridgeworks – Standard Sections - Index</td>
<td>3</td>
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<td>8</td>
<td>Schedule of Drawings</td>
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<tr>
<td>9</td>
<td>VicRoads Standard Section 407 ‘Hot Mix Asphalt’</td>
<td>24</td>
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</tbody>
</table>
APPENDIX 3: ENVIRONMENTAL MANAGEMENT SPECIFICATIONS FOR ROADWORK PROJECTS - WELLINGTON SHIRE COUNCIL

These ‘Specifications’ outline the minimum acceptable standards for construction and maintenance works on WSC roadsides. They form part of the contract documents between WSC and works contractors as well as provide a set of guidelines to be adhere to for Council employees.

The aim of these Specifications is to ensure the safe function of roads for transport purposes while minimising the impact of works on native roadside vegetation and its associated range of values.

Construction Works and Maintenance Planning

S1 Road construction and maintenance works require a Planning Permit for the removal, destruction or lopping of native vegetation, unless the vegetation removal is exempted in accordance with the Wellington Planning Scheme and policies of this Management Plan.

S2 All Planning Permit applications for removal of vegetation on roadsides must be referred by WSC to the DSE.

S3 All road construction and widening works will require the production of plans that will detail the extent of vegetation clearance, an impact minimisation plan and details of any rehabilitation works required.

S4 Roadside Vegetation Assessment Maps will be consulted to determine the conservation status of the roadside vegetation.

S5 The Department of Council responsible for preparing road construction and maintenance plans where native roadside vegetation requires removal will consult other appropriate agencies (e.g., DSE, Aboriginal Affairs Victoria, Heritage Victoria, etc.) for advice during the plan preparation stage.

S6 Site Plans must include the following as a minimum:

(i) A clearly defined construction zone, this should include the actual construction area as well as turnout areas, equipment storage areas, parking areas for all vehicles, office and toilet sites, material storage areas and other potential areas of disturbance.

(ii) Details of the extent, location and type of vegetation to be removed. Note, only the minimum extent of vegetation necessary to achieve the objectives of the works should be planned to be removed. Plan attached in Appendix 6 – If required.

(iii) Areas of vegetation to be retained should be clearly indicated as exclusion zones, this includes any areas within the construction zone. The drip lines of trees will also be included within protected vegetation zones (that is outside the construction zone) whenever possible to minimise root damage and soil compaction. Plan attached in Appendix 6 – If required.

(iv) An indication of any merchantable timber to be removed (Note, DSE licence requirements apply).

(v) Define the most appropriate machinery to be used on the project (i.e., the appropriate size and type of plant that will get the job done yet minimise disturbance.)
(vi) A weed management program that identifies any necessary weed control, prior to commencement of works and/or vehicle hygiene requirements.

(vii) A site rehabilitation plan that indicates,

a) soil and water management programs in accordance with current EPA regulations,
b) an appropriate planting regime including plant locations, species types, densities etc.,
c) a weed control program for up to two years following construction.

This site rehabilitation plan must contain an on-going vegetation maintenance program for the two years following construction that can be carried out by either WSC staff or an appropriate WSC maintenance contractor.

(viii) A list of actions to be undertaken during construction to prevent erosion and the disturbance of native vegetation or other environmental damage, outside the construction zone. (e.g., temporary fencing may be necessary to ensure boundaries of construction and exclusion zones are identified on the ground).

(ix) An indication of any large trees or rare plants of high conservation significance located close to the road shoulder that may be considered a road safety hazard, and need to be protected by guardrails.

Training

S7 Council will only engage road contractors who have a project supervisor that has attended a Shire approved Environmental Care training course and can demonstrate effective environmental management skills. It is expected that contractors will run an Environmental Care training element as part of their induction for staff, before commencement of work on site.

S8 Council staff and crew will also be required to attend an approved Environmental Care training course and update their qualifications every five years.

On Site Management – Construction & Maintenance

S9 The construction zone and any exclusion zones will be clearly marked on the ground before the commencement of works, this will be carried out in consultation with WSC’s Environmental Planner on roadsides of High and Medium conservation significance. The drip lines of trees will also be included within exclusion zones (that is outside the construction zone) whenever possible, to minimise root damage and soil compaction.

S10 All on-ground staff must be informed by the project supervisor of the existence of any exclusion zones and the method of marking prior to the commencement of works.

S11 If temporary fencing is required (as in S6(viii)) ensure that it is erected prior to the commencement of works.

S12 The type and size of machinery used on the job will be selected to minimise disturbance to vegetation. (as per S6(v)).

S13 Only the minimum extent of vegetation necessary to achieve the objectives of the construction or maintenance works should be removed.
S14 Machinery will be confined to the existing road formation (including table drains), proposed alignment, established access tracks or the designated construction zone.

S15 Vehicles and machinery will be turned on sites that have minimal native vegetation (such as a designated wayside stop).

S16 Vehicles or construction machinery will not be parked in exclusion zones.

S17 Vehicles are not allowed to enter the roadside beyond the table drain, unless authorised by the WSC Project Officer.

S18 Construction works will be undertaken in stages to expose the smallest practical work area for the shortest time.

S19 The WSC Projects Officer responsible for supervising the project must be informed immediately should there be any disturbance within an exclusion zone.

S20 Fall vegetation in the direction that minimises damage to surrounding vegetation.

S21 For limb removal, use the 3 cut method (target pruning) to avoid damage to the bark below the cut.

S22 For disposal of debris and slash, chip native vegetation of diameter less than 10cm on site and stockpile in a cleared area. Spread chips over the site in the rehabilitation phase at the completion of works, if appropriate.

S23 If disposal of logs and larger material is necessary due to safety, amenity, fire protection or vermin control, firewood collection by the community may be allowed, provided it is in accordance with this Roadside Vegetation Management Plan (see section 3.1.2 Firewood Collection).

S24 The number of borrow pits used in construction works will be minimised. Where appropriate, borrow material will be obtained from within the construction zone. Borrow pits will be rehabilitated at the completion of works.

S25 Topsoil will be removed (where necessary) and stored separately. Stored material will only be used if weed free.

S26 Material resulting from construction works or drainage maintenance should not be windrowed or pushed up around existing vegetation.

S27 Road maintenance on High and Medium conservation value roadsides will be confined to the road formation including the table drain, unless safety is at risk of being compromised.

S28 Road maintenance work will ensure sight distances and clearance distances are maintained according to the classification of the road.

S29 Grading of shoulders and gravel roads will be minimised consistent with safe road use.

S30 Trunks of trees must not be damaged during grading and drainage maintenance operations.
S31 Where possible drainage should be directed into sections of roadside of lowest conservation value or into existing drains.

S32 Drains should be constructed and maintained:
- to discharge towards natural drainage lines and through established vegetation wherever possible;
- to reduce water velocity and run-off;
- to prevent waterlogging the road pavement and
- to disperse excess water from the road onto adjoining land with minimum disturbance to surrounding vegetation.

S33 Any works associated with drain maintenance should be confined to the road formation and associated drains, to minimise damage to surrounding vegetation.

S34 Near wetlands, carry out maintenance to minimise alterations in wetland hydrology.

S35 Do not direct spoil onto native vegetation or into drainage lines.

S36 For maintenance involving shoulder spraying (edge of seal spraying) herbicides should be used strictly in accordance with the manufacturers directions and the minimum amount of herbicide necessary to achieve the desired outcome should be used.

S37 Any herbicide to be applied must be used in accordance with the Code of Good Practice for Farm Chemical Spray Application.

**Weed Spread Minimisation**

S38 Preference will be given to using construction materials eg sand or gravel, that are obtained from the site. If they are imported, these materials will be obtained from disease free and weed free areas.

S39 Topsoil from weedy sites should not be mixed with weed free topsoil.

S40 Any topsoil from an external location needs to be approved by the WSC Projects Officer supervising the project.

S41 Stockpile sites should be located to minimise impacts on drainage and vegetation.

S42 Stockpile sites should be located in areas already cleared or disturbed.

S43 Construction works and road maintenance programs including grading and drain maintenance should not be carried out when noxious weeds are in seed. If noxious weeds are present on the site and are in seed they must not be disturbed.

S44 Noxious weeds located on stockpile sites must be killed or hand pulled and bagged to be destroyed off site, prior to any material being used.

S45 Vehicles and machinery that have been working in weedy or disease affected areas will be cleaned at an appropriate site of all soil and plant debris prior to the commencement of works at a new site.
S46 Shoulder grading must not be undertaken on roads designated as severely infested with noxious weeds such as African Lovegrass, unless the roads are graded during late winter or early spring or have been treated by DPI at least one month prior to grading. (Contact DPI to arrange scheduling of works)

S47 Any spoil collected from the shoulders of roads which is severely infested by noxious weeds must be carted to a designated noxious weed dumpsite within a municipal tip for burial or incineration.

**Soil and Nutrient Movement Minimisation**

S48 Drainage systems and batters will be constructed and maintained to control soil erosion and minimise nutrient transport in accordance with current EPA regulations. Sediment will be contained within the works area.

S49 All litter, waste, lubricants, containers etc including any effluent from on-site ablution facilities must be contained and removed from the site in an appropriate manner.

**Rehabilitation**

S50 On completion of works, the ground level will be restored (as close as practical) to follow the original contour. Windrowing and vegetation stacking is inappropriate.

S51 Loosen compacted subsoil before spreading topsoil over it. Rip subsoil to a minimum depth of 300mm. Do not rip within the dripline of trees.

S52 Re-spread topsoil as soon as possible to minimise sub-soil loss.

S53 To minimise the spread of weeds, use topsoil at the site of origin wherever possible.

S54 Water topsoil once spread, to minimise erosion by wind.

S55 Undertake revegetation works as soon as practical after completion of construction and maintenance works to minimise soil erosion and weed invasion.

S56 Local indigenous species will be the basis for all roadside rehabilitation works across the Wellington Shire.

S57 Areas of regenerating native vegetation will be identified and minimally disturbed during mowing, burning, spraying or slashing operations.

S58 Plants for revegetation must be planted in accordance with the Roadside Revegetation Guidelines Appendix 5 in this document.

S59 A mixture of trees, understorey and groundcover species must be planted as appropriate, as part of the revegetation works, to reflect the vegetation community originally located at the site. The Wellington Shire Environmental Planner will be consulted to advise on species ratios.
## Appendix 5 –
Vic Roads Standard Specifications for Roadworks and Bridgeworks –
Standard Sections – Index

**INDEX OF STANDARD SPECIFICATION SECTIONS FOR ROADWORKS AND BRIDGEWORKS**

*as at 18 June 2015*

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### FORMATION

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<td>205</td>
<td>Rock Fill</td>
<td>September 2013</td>
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<td>210</td>
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<td>290</td>
<td>Lime Stabilisation of Earthworks Materials</td>
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### FLEXIBLE PAVEMENTS

<table>
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<td>304</td>
<td>Unbound Flexible Pavement Construction</td>
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<td>306</td>
<td>Cementitious Treated Pavement Subbase</td>
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<td>307</td>
<td>In Situ Stabilisation of Pavements with Cementitious Binders</td>
<td>December 2008</td>
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<td>In Situ Stabilisation of Pavements with Foamed Bitumen Binder</td>
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<tr>
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<td>Preparation of Granular Pavements for Bituminous Surfacing</td>
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### ASPHALT AND SURFACE TREATMENTS

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<td>Removal of Pavement by Cold Planing</td>
<td>June 2014</td>
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<td>404</td>
<td>Stone Mastic Asphalt</td>
<td>April 2012</td>
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<tr>
<td>405</td>
<td>Regulation Gap Graded Asphalt</td>
<td>June 2014</td>
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<td>407</td>
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<td>December 2014</td>
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<tr>
<td>408</td>
<td>Sprayed Bituminous Surfacings</td>
<td>June 2013</td>
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<tr>
<td>409</td>
<td>Warm Mix Asphalt</td>
<td>July 2012</td>
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<td>410</td>
<td>Ultra Thin Asphalt</td>
<td>April 2015</td>
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<td>417</td>
<td>Open Graded Asphalt</td>
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<td>Bitumen Crumb Rubber Asphalt</td>
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<td>Lean Mix Asphalt</td>
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<td>Bituminous Slurry Surfacing</td>
<td>December 2014</td>
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<td>Surface Retexturing using High Pressure Water</td>
<td>June 2009</td>
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<td>High Friction Surface Treatment</td>
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<tr>
<td>503</td>
<td>Concrete Base and Lean Mix Concrete Subbase</td>
<td>August 2010</td>
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<td>520</td>
<td>Materials and Construction Plant for Roller Compacted Concrete Pavement Courses</td>
<td>September 2010</td>
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<td>Construction of Roller Compacted Concrete Base Courses</td>
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### BRIDGeworks

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<tr>
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<td>Excavations</td>
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<td>Cofferdams</td>
<td>July 2009</td>
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<td>Cylinders</td>
<td>March 2015</td>
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<td>Driven Piles</td>
<td>October 2013</td>
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<tr>
<td>606</td>
<td>Bored Cast-In-Place Piles (without Permanent Casing)</td>
<td>March 2015</td>
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<td>607</td>
<td>Continuous Flight Auger Piles</td>
<td>March 2015</td>
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<td>Cast-In-Place Socketed Piles (with Permanent Casing)</td>
<td>March 2015</td>
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<td>Structural Concrete</td>
<td>October 2013</td>
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<td>611</td>
<td>Steel Reinforcement</td>
<td>August 2014</td>
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<td>Post-Tensioning of Concrete Units</td>
<td>August 2010</td>
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<td>Falsework</td>
<td>March 2014</td>
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<td>614</td>
<td>Formwork</td>
<td>March 2014</td>
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<td>619</td>
<td>Manufacture, Testing and Delivery of Precast Reinforced Concrete Box Culverts</td>
<td>June 2011</td>
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<td>620</td>
<td>Precast Concrete Units</td>
<td>May 2009</td>
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<td>622</td>
<td>Pre-Tensioning of Concrete Units</td>
<td>September 2009</td>
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<td>626</td>
<td>Installation of Precast Concrete Crown Unit Culverts</td>
<td>February 2015</td>
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<td>630</td>
<td>Fabrication of Steelwork</td>
<td>October 2013</td>
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<td>Protective Treatment of Steelwork</td>
<td>February 2009</td>
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<td>Buried Corrugated Metal (Steel) Structures</td>
<td>August 2012</td>
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<td>Sheet Piles</td>
<td>October 2013</td>
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<td>Supply of Elastomeric Bearings</td>
<td>June 2010</td>
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<td>Pot Type Confined Elastomeric Bearings</td>
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<td>656</td>
<td>Installation of Elastomeric Bearings and Pads</td>
<td>June 2010</td>
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<td>Bridge Expansion Joints</td>
<td>August 2012</td>
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<td>Steel Bridge Barriers</td>
<td>October 2013</td>
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<td>Concrete and Combined Concrete and Steel Bridge Barriers</td>
<td>October 2013</td>
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<td>675</td>
<td>Cast Steel Barrier Railing Posts</td>
<td>May 2012</td>
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<td>680</td>
<td>Bonded Anchors</td>
<td>August 2012</td>
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<td>Cathodic Protection of Reinforced Concrete Structures</td>
<td>February 2010</td>
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<td>682</td>
<td>Reinforced Soil Structures</td>
<td>August 2010</td>
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<td>Soil Nail Walls</td>
<td>April 2015</td>
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<td>Sprayed Concrete</td>
<td>March 2013</td>
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<td>685</td>
<td>Anti-Graffiti Protection and Graffiti Removal</td>
<td>April 2015</td>
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<td>686</td>
<td>Coating of Concrete</td>
<td>April 2015</td>
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<td>Repair of Concrete Cracks</td>
<td>April 2015</td>
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<td>688</td>
<td>Fibre Reinforced Polymer Composite Strengthening of Concrete Structures</td>
<td>April 2015</td>
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<td>Cementitious Patch Repair of Concrete</td>
<td>December 2010</td>
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<td>Materials to be Supplied by VicRoads</td>
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### INCIDENTAL CONSTRUCTION

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<tr>
<td>701</td>
<td>Underground Stormwater Drains</td>
<td>January 2015</td>
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<td>702</td>
<td>Subsurface Drainage</td>
<td>March 2014</td>
</tr>
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<td>703</td>
<td>General Concrete Paving</td>
<td>January 2015</td>
</tr>
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<td>704</td>
<td>Precast Concrete Kerb</td>
<td>February 1998</td>
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<td>705</td>
<td>Drainage Pits</td>
<td>October 2013</td>
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<tr>
<td>706</td>
<td>Installation or Replacement of Utility Infrastructure within Road Reserves</td>
<td>December 2014</td>
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<td>707</td>
<td>Fencing</td>
<td>August 2010</td>
</tr>
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<td>708</td>
<td>Steel Beam Guard Fence</td>
<td>January 2014</td>
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<td>Guide Posts</td>
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<td>Fixing Raised Pavement Markers</td>
<td>July 1998</td>
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<td>Wire Rope Safety Barrier (WRSB)</td>
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<td>712</td>
<td>Block Paving</td>
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<td>713</td>
<td>Beaching</td>
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<td>714</td>
<td>Sign Installation</td>
<td>June 2015</td>
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<td>715</td>
<td>Gabions and Rock Mattresses</td>
<td>October 2013</td>
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<td>720</td>
<td>Landscape Works</td>
<td>May 2012</td>
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<td>Pavement Markings</td>
<td>October 2012</td>
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<td>730</td>
<td>Traffic Signal Installation</td>
<td>October 2013</td>
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<td>Road Lighting Installation</td>
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<td>733</td>
<td>Conduits and Pits for Underground Wiring and Cabling</td>
<td>October 2008</td>
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<td>750</td>
<td>Routine Maintenance (Lump Sum)</td>
<td>February 2015</td>
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<td>Routine Maintenance (Schedule of Rates)</td>
<td>March 2015</td>
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<td>751</td>
<td>Traffic Control Systems Maintenance</td>
<td>April 2015</td>
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<td>Routine Roadside Maintenance – Vegetation</td>
<td>March 2015</td>
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<td>760</td>
<td>Erection of Cantilever Sign and High-Mast Light Structures</td>
<td>July 2012</td>
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<td>Noise Attenuation Walls</td>
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### MATERIALS

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<thead>
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<th>Contract Item</th>
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<tr>
<td>801</td>
<td>Source Rock for the Production of Crushed Rock and Aggregates</td>
<td>October 2013</td>
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<td>802</td>
<td>Bituminous Cold and Warm Mixes</td>
<td>December 2014</td>
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<td>811</td>
<td>Gravel, Sand and Soft or Ripped Rock for Pavement Base and Subbase</td>
<td>February 2013</td>
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<td>812</td>
<td>Crushed Rock for Pavement Base and Subbase</td>
<td>October 2013</td>
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<td>Cementitious Treated Crushed Rock for Pavement Subbase</td>
<td>May 2013</td>
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<td>Crushed Scoria for Pavement Base and Subbase</td>
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<td>Crushed Concrete for Pavement Subbase and Light Duty Base</td>
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<td>Cementitious Treated Crushed Concrete for Pavement Subbase</td>
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<td>831</td>
<td>Aggregate for Sprayed Bituminous Surfacing</td>
<td>December 2014</td>
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<td>832</td>
<td>Sands for Sprayed Bituminous Surfacing</td>
<td>July 1993</td>
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<td>853</td>
<td>Hot Melt Bitumen Adhesive for Raised Pavement Marker Installation</td>
<td>February 1994</td>
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<td>860</td>
<td>Manufacture of Road Signs</td>
<td>December 2014</td>
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Appendix 8 – Drawing Schedule

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<thead>
<tr>
<th>No.</th>
<th>Drawing Title</th>
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<tr>
<td></td>
<td>WSC19-01-C-051 James Street Yarram Shared Path Construction</td>
</tr>
<tr>
<td>1</td>
<td>Cover Sheet</td>
</tr>
<tr>
<td>2</td>
<td>Plan – General Arrangement</td>
</tr>
<tr>
<td>3</td>
<td>Plan 1 &amp; 2</td>
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<tr>
<td>4</td>
<td>Plan 3 &amp; 4</td>
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<td>5</td>
<td>Plan 5 &amp; 6</td>
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<td>6</td>
<td>Standard Details 1</td>
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<td>7</td>
<td>Standard Details 2</td>
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<tr>
<td>8</td>
<td>Standard Details 3</td>
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<td>9</td>
<td>Linemarking Sheet 1</td>
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<td>10</td>
<td>Linemarking Sheet 2</td>
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</tbody>
</table>
FREE TO BE SUPPLIED BY CONTRACTOR

NOTE:
All kerb adaptors are to be an approved proprietary product constructed from either:
1. Heavy Duty Steel or Hot Dipped Galvanized Steel.
2. Steel kerb is to be neatly saw cut after kerb adaptor fitted into position. Be-kerb adaptor now available in gal steel.

HEAVY DUTY KERB ADAPTORS FOR ‘D2’ AND ‘SM2’ KERBS

SHARED PATH CONSTRUCTION
JAMES STREET
YARRAM

STANDARD DETAILS 1

SCALE 1:10

LAST UPDATED 20/03/2015

SD 140

INFORMATION

Infrastructure Design Manual Standard Drawings
Cape of the Infrastructure Design
Manual can be found on the
Design Manual website:
www.designmanual.com.au

CONCEPT ONLY

Site: MONO
Date: 27/05/2019
Approved Date: 22/06/2018

PROJECT

DESIGN MANAGER

SMEK DEPARTMENT

PROJECT NO.

WSE 19-01-C-051

ENGINEER:

SMEK ENGINEERING

TITLED:

WELLINGTON ESTATE

STAGE:

STANDARD DETAILS 1

NOTE:

CONCEPT ONLY

NOT TO SCALE

METER 0
SECTION 407 - HOT MIX ASPHALT

##Sections 173,175, 409 and 801 must be included in the Specification.

This section cross-references Sections 402, 404, 405, 410, 417, 421 and 423.
If any of these sections are relevant they should also be included in the specification, otherwise all
references to these sections should be struck out, ensuring that the remaining text is still coherent:

### 407.01 GENERAL

This section covers the requirements for the manufacture and placement of hot mix asphalt, including quality of materials, mix design, supply and placing of the asphalt.

The following supplementary VicRoads Standard Sections shall be read in conjunction with this
section where mixes other than hot mix asphalt and dense graded asphalt are required:

- Stone Mastic Asphalt Section 404
- Regulation Gap Graded Asphalt Section 405
- Warm Mix Asphalt Section 409
- Ultra Thin Asphalt Section 410
- Open Graded Asphalt Section 417
- Bitumen Crumb Rubber Asphalt Section 421
- Lean Mix Asphalt Section 423

If any cold planing is undertaken in association with placing of asphalt, Section 402 shall apply.

### 407.02 DEFINITIONS

**Asphalt Base Course**

Asphalt base course is that part of an asphalt pavement supporting the intermediate and wearing courses. It rests on the subgrade or pavement subbase.

**Asphalt Course**

An asphalt course comprises one or more layers of a single asphalt type.

**Asphalt Intermediate Course**

Asphalt intermediate course is that part of the asphalt pavement immediately under the wearing course. It rests on the asphalt base course.

**Asphalt Layer**

An asphalt layer comprises a single paving run of uniform asphalt.

**Asphalt Pavement**

Asphalt pavement comprises the combined thickness of all asphalt courses as defined in Clause 407.24.

**Asphalt Regulating Course**

Asphalt regulating course is an asphalt course of variable thickness applied to the road surface to adjust the shape prior to the wearing course or any other bituminous surfacing or re-surfacing.

**Asphalt Types (Dense Graded)**

Dense graded asphalt types L, N, V and H series mixes primarily used for wearing and regulation courses, and Type S series mixes are primarily used as structural mixes for intermediate and base courses. A brief description for the various types of dense graded asphalt is shown in Table 407.021.
### Table 407.021 Types of Dense Graded Asphalt

<table>
<thead>
<tr>
<th>Mix Designation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>A light duty Size 7 or 10 wearing course with low air voids and higher binder content for use in very lightly trafficked pavements.</td>
</tr>
<tr>
<td>N</td>
<td>A light to medium duty Size 7, 10 or 14 wearing course or regulating course for use in light to moderately trafficked pavements.</td>
</tr>
<tr>
<td>H</td>
<td>A heavy duty Size 7, 10 or 14 asphalt wearing course or regulating course for use in most heavily trafficked pavements.</td>
</tr>
<tr>
<td>V</td>
<td>A heavy duty Size 10 or 14 asphalt wearing course for heavily trafficked intersections.</td>
</tr>
<tr>
<td>HG</td>
<td>A multi purpose heavy duty Size 10 or 14 wearing course asphalt incorporating multigrade binder where a high resistance to deformation is required, particularly at heavily trafficked intersections.</td>
</tr>
<tr>
<td>HP</td>
<td>A high performance Size 10 or 14 heavy to very heavy duty wearing course asphalt incorporating a Polymer Modified Binder (PMB) where a high resistance to deformation and flexural cracking is required.</td>
</tr>
<tr>
<td>SI</td>
<td>A multi purpose Size 14 or 20 structural asphalt for intermediate course in heavy duty pavements or base course in medium duty pavements.</td>
</tr>
<tr>
<td>SF</td>
<td>A fatigue resistant Size 20 structural base course asphalt for heavy duty asphalt pavements with a total asphalt thickness in excess of 175 mm.</td>
</tr>
<tr>
<td>SP</td>
<td>A high performance heavy to very heavy duty Size 20 structural intermediate course asphalt incorporating a Polymer Modified Binder (PMB) for high resistance to deformation and flexural cracking.</td>
</tr>
<tr>
<td>SG</td>
<td>A multi purpose heavy duty Size 20 structural intermediate course asphalt incorporating a multigrade binder for high resistance to deformation particularly at very heavily trafficked intersections.</td>
</tr>
<tr>
<td>SS</td>
<td>A very stiff Size 20 structural intermediate course asphalt sometimes used to increase pavement stiffness for very large scale heavy duty asphalt pavements.</td>
</tr>
</tbody>
</table>

### Asphalt Wearing Course

Asphalt wearing course is the final part of the pavement upon which the traffic travels except for Open Graded Asphalt (OGA) where the wearing course is the layer beneath the OGA.

### Assigned Polished Stone Value

Assigned polished stone value is a friction rating derived from test results and is assigned to each source by VicRoads on the basis of past test data obtained from testing products.

### Binder

Binder is bitumen, multigrade binder or polymer modified binder (PMB) used to hold a mixture of aggregates together as a cohesive mass.

### Binder Film Index

Binder film index is an empirical calculation of theoretical thickness of the binder film around each aggregate particle within the asphalt mix having regard to the aggregate grading, surface area of the aggregates and binder content.
**Bulk Density**

Bulk density is the mass per unit volume of the compacted mix where the volume is the gross volume of the mix including the air voids.

**Coarse Aggregates**

Coarse aggregates are aggregates retained on a 4.75 mm AS sieve.

**Cold Joints**

Cold joint are where asphalt is placed against the exposed edge of an existing asphalt mat, where the existing mat has cooled to less than 80°C for bitumen and multigrade binders or to less than 100°C in the case of PMBs.

**Filler**

Filler is that portion of the aggregates passing the 0.075 mm sieve. It includes the combined mass of crusher dust, any added recycled fines from asphalt plant dust extraction filters and any added filler required to enhance the mix properties.

**Fine Aggregates**

Fine aggregates are aggregates passing a 4.75 mm AS sieve.

**Glass Fines**

Glass fines are recycled glass cullet crushed to a cubic shape and passing the 4.75 mm AS sieve.

**Hot Mix Asphalt (Asphalt)**

Asphalt is a designed and controlled mixture of coarse and fine aggregates, filler and binder which is mixed, spread and compacted to a uniform layer while hot. Asphalt types are designated by the use of symbols.

**In situ Air Voids**

In situ air voids represents the air voids in the field compacted mix on-site. It is based on a ratio of field density to maximum density.

**Manufactured Sand**

Manufactured sand is a material passing the 4.75 mm AS sieve produced by crushing igneous or metamorphic rock spalls or washed gravel.

**Maximum Density (Void free density)**

The maximum density is the density that could be achieved in a sample of asphalt if it were possible to compact it so as to exclude all air voids between coated aggregate particles. Sometimes this is referred to as the voids free bulk density (VFBD).

**Mineral Matter**

Mineral matter includes coarse and fine aggregates, plus filler.

**Particle Density**

Particle density is the mass of a dry particle of aggregate in air divided by volume of particle of aggregate excluding permeable voids.

**Placing**

Placing is the spreading and compacting of asphalt, including operations necessary for preparation of the surface.
Reclaimed Asphalt Pavement (RAP)

Reclaimed asphalt pavement is asphalt removed from an existing asphalt pavement, and re-processed by crushing and/or screening for recycling into new asphalt.

Registered Mix

Registered mix is an asphalt mix which has been placed on the VicRoads Asphalt Mix Design Register.

407.03 AGGREGATES

(a) General

The combined aggregate mixture shall consist of crushed rock or a mixture of crushed rock and sand or any RAP permitted under Clause 407.09.

Aggregates shall consist of clean, hard, durable, angular rock fragments of uniform quality.

(b) Source Rock

Source rock shall comply with the requirements of Section 801.

(c) Crushed Aggregate Products

(i) The Flakiness Index of each separate sized coarse aggregate fraction, with a nominal size of 10 mm or larger, shall comply with Table 407.031.

(ii) The unsound and marginal rock in that fraction retained on a 4.75 mm AS sieve excluding any RAP, shall not exceed the relevant percentages specified in Table 407.031.

<table>
<thead>
<tr>
<th>Type of Asphalt</th>
<th>Flakiness Index (%) (max)</th>
<th>Total of Marginal and Unsound Rock (% by mass) (max)</th>
<th>Unsound Rock (% by mass) (max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H and V Series</td>
<td>35</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>L, N, and S Series</td>
<td>35</td>
<td>10</td>
<td>5</td>
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</tbody>
</table>

(iii) The particle density of each separate sized aggregate fraction shall be provided by the source quarry at regular intervals (not exceeding 3 months).

(d) Crusher Fines and Manufactured Sand

Crusher fines and manufactured sand shall:

(i) consist of a uniformly graded product of separate particles from the crushing of rock which complies with the requirements of Clause 407.03(b) appropriate to the asphalt type being produced;

(ii) be free from lumps and aggregations;
(iii) comply with the grading limits specified in Table 407.032.

<table>
<thead>
<tr>
<th>Sieve Size AS (mm)</th>
<th>Crusher Fines Percentage Passing (by mass)</th>
<th>Manufactured Sand Percentage Passing (by mass)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.70</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>4.75</td>
<td>70 – 100</td>
<td>80 – 100</td>
</tr>
<tr>
<td>0.600</td>
<td>20 – 55</td>
<td>30 – 70</td>
</tr>
<tr>
<td>0.075</td>
<td>5 – 23</td>
<td>0 – 10</td>
</tr>
</tbody>
</table>

(iv) comply with the relevant requirements specified in Table 407.033.

(e) Natural Sand

Natural sand extracted from natural sand deposits shall consist of clean, hard, durable grains free from lumps, clay, mica and organic or harmful matter.

Where natural sand is accepted as washed sand for the registered mix, the Sand Equivalent Value of any such sand supplied for asphalt production shall not be less than 45.

Where natural sand is accepted as unwashed sand for the registered mix, the Plasticity Index of any sand supplied for asphalt production shall not be more than 3.

(f) Glass Fines

Glass fines shall:

(i) consist of a uniformly graded product with a maximum particle size of 5 mm, manufactured by crushing of recycled glass cullet

(ii) be generally free of contaminants such as paper, corks, metals, and other harmful materials (maximum limit of 2% by mass). Glass cullet shall be primarily container glass and shall not include glass from ceramics, cathode ray tubes, fluorescent light fittings and laboratory glassware

(iii) comply with the grading limits specified in Table 407.032 for manufactured sand

(iv) be cubical in shape, not sharp edged or elongated.

The use of glass fines as a replacement for natural sands shall be limited to intermediate and base course layers.

(g) Aggregates for Asphalt Used as Wearing Course

(i) Coarse aggregates shall be a mixture of separate one-sized aggregates blended together.

(ii) Coarse aggregates for Type, H, HG and HP asphalt shall have a minimum assigned Polished Stone Value (PSV) of 48. Coarse aggregates for Type V asphalt shall have a minimum PSV of 54.

(iii) Fine aggregates shall be a mixture of one or more sands and crusher fines.
For mixes designed by the Marshall method, the fraction passing the 4.75 mm AS sieve shall contain not less than 20% of natural sand. For wearing course mixes designed by the Austroads method using gyratory compaction, the quantity of natural sand may be less than 20%.

No mix shall contain more than 65% by mass of natural sand.

(h) Aggregates for Asphalt Used as Intermediate or Base Course

The combined aggregates shall consist either of crushed material or a mixture of crushed material and natural sands. The fraction of the mix passing the 4.75 mm AS sieve shall contain not more than 50% by mass of natural sands.

407.04 FILLER

Mineral filler shall comply with the requirements of Tables 407.041 and 407.042.

If any of the following added fillers are specified or required, they shall comply with the corresponding requirements below:

(a) hydrated lime complying with AS 1672 - Lime and limestones - Lime for building, and the requirements of Table 407.042

(b) cement kiln dust complying with the requirements of Tables 407.041 and 407.042

(c) ground limestone complying with the requirements of Tables 407.041 and 407.042

(d) ground granulated blast furnace slag (GGBFS) complying with AS 3582.2 and the requirements of Table 407.042

(e) portland cement complying with AS 3972

(f) fly ash produced from the combustion of black coal complying with Tables 407.041 and 407.042.

Table 407.041 Grading Limits
(fillers other than Hydrated Lime, Cement and GGBFS)

<table>
<thead>
<tr>
<th>AS Sieve Size (mm)</th>
<th>Percentage Passing by Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.600</td>
<td>100</td>
</tr>
<tr>
<td>0.300</td>
<td>95 – 100</td>
</tr>
<tr>
<td>0.075</td>
<td>75 – 100</td>
</tr>
</tbody>
</table>

Table 407.042 Test Requirements for Filler

<table>
<thead>
<tr>
<th>Filler Type</th>
<th>Test</th>
<th>Test Limit (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Combined Filler *</td>
<td>Dry Compacted Voids</td>
<td>38 (Min)</td>
</tr>
<tr>
<td>All Added Fillers</td>
<td>Moisture Content</td>
<td>3 (Max)</td>
</tr>
<tr>
<td>Cement Kiln Dust</td>
<td>Water Soluble Fraction</td>
<td>20</td>
</tr>
</tbody>
</table>

Note on Table 407.042

* The total combined filler is the total amount of all filler in the mix including any added filler.
407.05 BITUMINOUS MATERIALS

(a) Binders

The class of binder for each asphalt type shall be as specified in Table 407.051.

**Table 407.051 Class of Binder**

<table>
<thead>
<tr>
<th>Asphalt Type</th>
<th>Binder Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>L and N</td>
<td>C170 or C320 *</td>
</tr>
<tr>
<td>H, V, SI and SF</td>
<td>C320</td>
</tr>
<tr>
<td>HG and SG</td>
<td>M500/170</td>
</tr>
<tr>
<td>HP and SP</td>
<td>A10E ** PMB</td>
</tr>
<tr>
<td>SS</td>
<td>C600</td>
</tr>
</tbody>
</table>

**Notes on Table 407.051**

* C170 Binder shall be used if the mix contains more than 10% RAP.
** PMB Class A10E shall be used unless otherwise specified in Clause 407.24(e).

Classes 170, 320 and 600 bitumen used for production of asphalt shall comply with AS 2008 *Bitumen for pavements*. Bitumen used for Asphalt Types L, N, V and H shall comply with the additional requirement specified in Table 407.052.

**Table 407.052 Durability of Bitumen**

<table>
<thead>
<tr>
<th>Class of Bitumen</th>
<th>Durability * Minimum time to reach the specified apparent viscosity level (SAVL) days</th>
</tr>
</thead>
<tbody>
<tr>
<td>170</td>
<td>9</td>
</tr>
<tr>
<td>320</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

**Note on Table 407.052**

* Test for resistance to hardening when exposed to heat and air.

The viscosity of bitumen recovered from a sample of mixed asphalt prior to placement or from the roadbed after compaction, shall comply with the requirements specified in Table 407.053 and tested at the frequency specified in Table 407.111.

**Table 407.053 Viscosity Range of Bitumen Recovered from Mixed Asphalt**

<table>
<thead>
<tr>
<th>Class of Bitumen</th>
<th>Viscosity Range at 25°C kPa.s</th>
<th>Wearing Course</th>
<th>Intermediate Course</th>
<th>Base Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>170</td>
<td></td>
<td>200 - 600</td>
<td>200 - 1100</td>
<td>200 – 1600</td>
</tr>
<tr>
<td>320</td>
<td></td>
<td>500 - 1600</td>
<td>500 - 2300</td>
<td>500 – 3000</td>
</tr>
<tr>
<td>600</td>
<td></td>
<td>-</td>
<td>800 - 5500</td>
<td>800 – 5500</td>
</tr>
</tbody>
</table>

(b) Polymer Modified Binder (PMB) and Multigrade Binder

All PMB and multigrade binders shall comply with the test requirements specified in the Austroads Specification Framework for Polymer Modified Binders and Multigrade Bitumens as listed in Section 175.
The Contractor shall comply with the following requirements for supply and handling multigrade binder and PMB:

(i) material shall be handled in accordance with the manufacturer’s requirements
(ii) a product quality certificate and test report from the manufacturer shall be obtained for each delivery of material
(iii) material shall be transported and stored in such a manner to avoid contamination and/or deterioration of the product to the extent that it no longer complies with specified test properties.

(c) Bitumen Emulsion

Bitumen emulsion used for tack coating shall be a cationic rapid setting type complying with AS 1160. Bitumen emulsions for construction and maintenance of pavements. Emulsion diluted with water shall have a bitumen content of not less than 30%.

407.06 MIX DESIGN

All asphalt mixes proposed for use on VicRoads works shall be registered in accordance with VicRoads Code of Practice RC500.01.

All mix designs registered with VicRoads are issued a status according to compliance as:

- **General** Complies with the requirements of Code of Practice RC500.01.
- **Conditional** Mixes which do not comply in all respects with the requirements of Code of Practice RC500.01 but which are considered appropriate for use subject to conditions attached to the registration.
- **Expired** Superseded by another registered mix but details are retained for record purposes.

**HP** No asphalt shall be supplied until the mix has been registered and the Superintendent approves the mix for use. The Contractor shall only use asphalt mixes that are registered by VicRoads as ‘General’ mixes.

Approval of a registered mix for use under the Contract does not guarantee the handling properties or performance of the mix nor relieve the Contractor from contractual obligations in regards to rectification of defects.

The Superintendent shall be notified of any proposed changes to the components or proportions of components used in the registered mix.

New mix designs shall be carried out:

(a) where it is proposed to change the source grading or nature of the components or binders; and

(b) when current registered mix designs are more than three years old.

If a registered mix has unsatisfactory handling or field performance, the Contractor or Superintendent may request the mix be de-registered in accordance with Code of Practice RC500.01.

407.07 TOLERANCES ON MIX PRODUCTION

The production tolerances on the grading aim of the mix before compaction shall be as specified in Table 407.071. The tolerance on the binder content in the mix shall be ± 0.3% of the total mix by mass.
Table 407.071  Production Tolerances for Mix Grading

<table>
<thead>
<tr>
<th>Sieve Size AS (mm)</th>
<th>Tolerance on Percentage Passing (by mass)</th>
<th>Tolerance for Asphalt Types L, N, V, S and H series (% by Mass)</th>
<th>Tolerance for Asphalt Type S series (% by Mass)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Size 7</td>
<td>Size 10</td>
<td>Size 14</td>
</tr>
<tr>
<td>37.5</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>26.5</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>19.0</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>13.2</td>
<td>Nil</td>
<td>Nil</td>
<td>±6</td>
</tr>
<tr>
<td>9.5</td>
<td>Nil</td>
<td>±6</td>
<td>±6</td>
</tr>
<tr>
<td>6.70 - 4.75</td>
<td>±6</td>
<td>±6</td>
<td>±6</td>
</tr>
<tr>
<td>2.36 - 0.600</td>
<td>±5</td>
<td>±5</td>
<td>±5</td>
</tr>
<tr>
<td>0.300 - 0.150</td>
<td>±3</td>
<td>±3</td>
<td>±3</td>
</tr>
<tr>
<td>0.075</td>
<td>±1.0</td>
<td>±1.0</td>
<td>±1.0</td>
</tr>
</tbody>
</table>

Note on Table 407.071
If post compaction grading is checked by binder extraction and sieve analysis after placement, the positive tolerances shall be increased by one percentage point.

407.08  PRODUCTION OF ASPHALT

(a) Temperatures
The temperature of binder and aggregates at the mixing plant and the temperature of the asphalt as it is discharged from the mixing plant shall not exceed the limits specified in Table 407.081. Asphalt manufactured at temperatures in excess of the limits specified in Table 407.081 shall not be used.

Table 407.081  Maximum Mixing Temperatures

<table>
<thead>
<tr>
<th>Material</th>
<th>Temperature ºC (max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binder plant storage</td>
<td>185 *</td>
</tr>
<tr>
<td>Aggregates before binder is added</td>
<td>200</td>
</tr>
<tr>
<td>Asphalt at discharge from mixing plant</td>
<td>175</td>
</tr>
</tbody>
</table>

Note on Table 407.081
* This limit may vary for PMBs in accordance with the supplier’s recommendations.
(b) Mixing

The mixing period shall be such that at least 95% of the coarse aggregate particles are fully coated with binder.

After completion of mixing, the moisture content of the mix shall not exceed 0.5%.

(c) Hot Storage of Mixed Asphalt

Asphalt types with PMB, multigrade and C600 binders shall not be stored in hot bins for more than 8 hours prior to use. All other asphalt types shall not be stored in hot bins for more than 18 hours prior to use. Asphalt that is deemed unsuitable for use may be recycled by reprocessing and adding it to a new mix at a proportion not greater than 5% by mass of the total aggregates. Alternatively, it may be added to the RAP stockpile and re-processed to comply with the requirements of Clause 407.09.

407.09 ASPHALT RECYCLED FROM RECLAIMED ASPHALT PAVEMENT

(a) General Requirements

Reclaimed Asphalt Pavement (RAP) may be recycled by adding it to new asphalt during the mixing process subject to the following requirements:

(i) all mixes containing RAP shall be registered mixes

(ii) RAP shall consist of milled or excavated asphalt pavement free of foreign material such as unbound granular base, broken concrete or other contaminants and shall be crushed and screenings to a maximum size not exceeding the size of asphalt produced

(iii) the manufacturing process shall provide for addition of RAP to a batch plant pug mill or drum mixer separately from other mix components by a method that avoids damage to the mix by overheating

(iv) no RAP shall be added to Asphalt Types V, HP, HG, SS or SP.

(b) Unconditional use of RAP

The following mix types may contain the following maximum quantities of RAP provided that all relevant specification requirements are met for each mix type:

(i) Type L - Up to 20% by mass
(ii) Type N - Up to 15% by mass
(iii) Types H - Up to 10% by mass
(iv) Type SI and SG - Up to 20% by mass
(v) Type SF - Up to 30% by mass.

(c) Higher Percentages of RAP with Additional Performance Testing

The Superintendent may approve the use of a registered mix containing percentages of RAP up to 10% above the limits specified in Clause 407.09(b).

Representative samples of production asphalt shall be taken and tested at a frequency not less than that specified in Table 407.091.
The test results will be assessed on the basis of a ‘rolling average’ where the mean of the last three test results for the mix shall be within the specified range or in the case of asphalt particle loss, the value determined for the same mix without RAP inclusion. Test specimens for each test type shall be compacted to an air voids content as specified in VicRoads Code of Practice RC500.01 for that test type. Test specimens for Asphalt Particle Loss shall be prepared at the air voids content specified for the Moisture Sensitivity test.

The results shall be presented in such a way that trends can be readily ascertained for each asphalt type so corrective action can be taken when required.

**Table 407.091 Frequency of Testing for Mixes with High Percentages of RAP**

<table>
<thead>
<tr>
<th>Check Required</th>
<th>Minimum Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect Tensile Modulus</td>
<td>In each production month - One per 2,000 tonnes or part thereof.</td>
</tr>
<tr>
<td>Moisture Sensitivity (Minimum Wet Strength and Tensile Strength Ratio)</td>
<td>In each production quarter – One per 10,000 tonnes or part thereof.</td>
</tr>
<tr>
<td>Mix Cohesion (Asphalt Particle Loss Test on moisture conditioned and unconditioned specimens)</td>
<td>In each production quarter – One per 10,000 tonnes or part thereof.</td>
</tr>
</tbody>
</table>

(d) RAP Stockpile Management Requirements

For the use of high RAP content asphalt mixes the asphalt manufacturer’s quality plan shall include a RAP stockpile management plan meeting the following requirements:

(i) all RAP materials used for asphalt production shall be processed by blending, crushing and stockpiling

(ii) testing of the processed RAP stockpile to ensure uniformity of grading and binder content

(iii) ensure uniformity of the RAP stockpile properties by matching the registered asphalt mix design RAP gradings and bitumen content data with those RAP gradings and bitumen contents determined from multiple samples taken from the processed RAP stockpile

(iv) quality control testing of RAP stockpiles including a statistical assessment to measure variability of the product

(v) once the processed RAP stockpile has been assessed for compliance there shall be no more processed RAP added to that stockpile

(vi) address issues such as contamination, mixing of various sources of RAP during processing, fractionating of the processed RAP, and storage or stockpiling of the compliant processed RAP in a manner that ensures materials removed are representative of the cross section of the processed RAP stockpile.

During asphalt production, one sample shall be taken and tested for gradings and bitumen content from the processed RAP stockpile for every 1000 tonnes used.
407.10  RED ASPHALT  ##(strikethrough this clause if not required):##

The works include the provision of red asphalt at the sites listed in contract specific clauses.

Red asphalt shall consist of the following:

**Coloured Aggregate**

Further to Clause 407.03 the coarse aggregate for the red asphalt shall be sourced from the pink aggregate at Granite Rock Quarry, Deptford Road Granite Rock. Alternative aggregate sources may be considered by the Superintendent depending on the aggregate meeting the requirements of Section 801, and the ability of the aggregate to provide red coloured asphalt to the satisfaction of the Superintendent.

**Binder**

Further to Clause 407.05 the binder for the red asphalt shall be colourless, not black binder such as Mexphalte C – Shell pigmentable bitumen. Alternative binders may be considered by the Superintendent depending on the mix design properties and colour of the asphalt.

**Pigment**

Minox F201 shall be used to colour the asphalt mix. The asphalt mix shall contain a minimum 1.0% by mass of the pigment. Alternative pigments and minimum percentage by mass, may be considered by the Superintendent depending on the mix design properties and colour of the asphalt.

The Contractor shall provide alternative aggregate, testing aggregates, alternative binder, alternative pigments and coloured asphalt samples.

Red asphalt shall be registered in accordance with Clause 407.06.

407.11  FREQUENCY OF INSPECTION AND TESTING AT THE MIXING PLANT

The frequency shall not be less than that shown in Table 407.111, except that the Superintendent may agree to a lower frequency where the Contractor has implemented a system of statistical process control and can demonstrate that such lower frequency is adequate to assure the quality of the product.
<table>
<thead>
<tr>
<th>Checks Required</th>
<th>Minimum Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsound rock content and particle size distribution of each aggregate and sand component including processed RAP</td>
<td>On each production day: One test on each component unless certification of specification compliance is received for each delivery to the mixing plant.</td>
</tr>
<tr>
<td>Degradation Factor of crusher fines</td>
<td>At monthly intervals.</td>
</tr>
<tr>
<td>Plasticity Index of crusher fines and natural sand supplied as unwashed sand</td>
<td>At monthly intervals.</td>
</tr>
<tr>
<td>Sand Equivalent of natural sand supplied as washed sand</td>
<td>At monthly intervals.</td>
</tr>
<tr>
<td>Flakiness Index of coarse aggregate 10 mm and larger</td>
<td>At monthly intervals.</td>
</tr>
<tr>
<td>Particle Density of all aggregate components</td>
<td>At 3 monthly intervals</td>
</tr>
<tr>
<td>Maximum Density</td>
<td>At monthly intervals.</td>
</tr>
<tr>
<td>Viscosity of bitumen and multigrade binder at 60°C</td>
<td>Certification of specification compliance for each delivery of bitumen supplied to the mixing plant. At weekly intervals: where bitumen has been stored above 150°C for more than 14 days without the storage tank being topped up by more than 50% of its capacity. In cases where two or more bitumen classes are blended together to correct the viscosity, a viscosity test at 60°C shall be taken prior to use and at weekly intervals thereafter.</td>
</tr>
<tr>
<td>Viscosity at 165°, Torsional Recovery, and Softening Point of PMB</td>
<td>At weekly intervals: For PMB that has been stored above 165° for more than three days or between 140°C and 165°C for more than seven days without the storage tank being topped up by more than 50% of its capacity.</td>
</tr>
<tr>
<td>Scrutiny for segregation, uncoated particles, separated binder, excess binder or overheating before dispatch from the plant</td>
<td>Each loaded truck.</td>
</tr>
<tr>
<td>Temperature of asphalt before dispatch from the plant</td>
<td>Each loaded truck or at intervals of 15 minutes if more than one truck is dispatched in 15 minutes.</td>
</tr>
<tr>
<td>Binder Content and Full Sieve Analysis of Asphalt (full extraction test)</td>
<td>On each production day: One test per 250 tonnes or part thereof of the asphalt plant production on a representative sample taken from a delivery truck.</td>
</tr>
<tr>
<td>Moisture Content, Binder Content and Full Sieve Analysis of RAP (full extraction test)</td>
<td>At weekly intervals: One test on a representative sample of each 1,000 tonnes of RAP prior to use.</td>
</tr>
<tr>
<td>Viscosity of Recovered Bitumen at 25°C</td>
<td>As directed by the Superintendent – the average of three tests where asphalt Type V, H or Type SS is reasonably suspected of being over-heated or over-mixed.</td>
</tr>
</tbody>
</table>

The Contractor shall make available all completed work sheets, check lists and test reports for inspection at the mixing plant.
407.12 RATE OF DELIVERY

Asphalt shall be placed at the highest practicable rate in order to minimise the time traffic is disrupted and to avoid intermittent paving.

407.13 AMBIENT CONDITIONS FOR PLACING

The surface on which asphalt is to be placed shall be essentially dry and free from surface water.

(a) Intermediate and Base Courses

Asphalt shall not be placed when the majority of the area to be paved has a surface temperature of less than 5°C. Asphalt mixes with PMB and Class 600 binder shall not be placed when the majority of area to be paved has a surface temperature less than 10°C.

(b) Wearing Course

Wearing course asphalt shall not be placed when the majority of the area to be paved has a surface temperature of less than 10°C. Asphalt mixes with polymer modified binder shall not be placed when the majority of the area to be paved has a surface temperature less than 15°C.

407.14 SURFACE PREPARATION AND RAISING OR LOWERING OF MANHOLE AND VALVE COVERS

Where specified in Clause 407.24(d), all manhole and valve covers shall be raised or lowered to the new surface level prior to asphalt work commencing. Temporary ramping around each cover shall be provided and removed in accordance with the requirements of Clause 407.17(e) prior to asphalt surfacing being placed.

Prior to tack coating and placing of asphalt, the Contractor shall remove all harmful material and sweep clean the area upon which asphalt is to be placed.

407.15 TACK COAT

A tack coat shall be applied to the cleaned asphalt or sealed surface on which asphalt is to be placed unless the unsealed surface has been primed.

Tack coat shall consist of cationic bitumen emulsion and shall be applied only to a clean, essentially dry surface, free from surface water.

Tack coat shall be sprayed in a uniform film over the entire road surface.

The application rate for bitumen emulsion tack coat shall be 0.15 to 0.30 litres/m² (60% Bitumen content) or 0.30 to 0.60 litres/m² (30% bitumen content), except for joints and chases where rates shall be doubled.

Before asphalt is placed, sufficient time shall be allowed for the free water to evaporate and for the tack coat to cure and change in colour from brown to black.

Any tack coat not covered by asphalt shall be covered with clean grit or sand before the road is opened to traffic.

Where asphalt is to be spread over clean, freshly laid asphalt, or over a clean, primed surface, or where the depth of the layer exceeds 50 mm, the Contractor may omit the tack coat.
407.16  DELIVERY

(a) General

Delivery shall only be made during the hours listed for possession of site. Asphalt delivered to the site, which is segregated, has been overheated, is too cold, contains separated binder or uncoated particles which does not comply with the Specification shall be removed from the site.

(b) Delivery Dockets

Delivery docket shall show:

(i) name of supplier and location of plant
(ii) docket number
(iii) name of user
(iv) project name and location (or contract number)
(v) registered number or fleet number of the vehicle
(vi) date and time of loading
(vii) size and type of asphalt
(viii) empty and loaded mass of the vehicle, or the total of the electronically measured batch weights printed on the docket
(ix) class of binder, and proprietary name of modified binder
(x) temperature of load at mixing plant when measured.

Where asphalt is scheduled for measurement by mass, a copy of the delivery docket for each load shall be provided at the point of delivery, or delivered to the Superintendent at the end of each day’s work.

Where asphalt is measured by other means and for Lump Sum Contracts, the Contractor shall make delivery docket available for inspection on request by the Superintendent.

407.17  JOINTS AND JUNCTIONS

(a) General

The location of all joints shall be planned before work commences to achieve the specified offsets between layers and the final position of joints in the wearing course.

The number of joints shall be minimised by adopting good asphalt paving practices. If requested by the Superintendent, the Contractor shall produce drawings showing the location of longitudinal joints of asphalt layers in respect to the traffic lane lines.

All joints shall be well bonded and sealed and the surface across the joint shall meet the requirements of Clause 407.23.

All cold joints and abutting concrete edges shall be heavily tack coated.

Where cold joints are constructed, any loose or poorly compacted existing asphalt on the exposed edge shall be trimmed back to produce a face of fully compacted asphalt along the exposed edge before fresh asphalt is placed.
(b) Transverse Joints

All transverse joints shall be offset from layer to layer by not less than 2 m.

(c) Longitudinal Joints

(i) Longitudinal joints in the wearing course shall coincide with the location of intended traffic lane lines.

(ii) Longitudinal joints in intermediate and base courses shall be offset from layer to layer by not less than 150 mm and shall be within 300 mm of the traffic lane line or the centre of traffic lane. Where new pavement abuts an existing pavement, the existing pavement shall be removed in steps to achieve an offset from layer to layer of not less than 150 mm.

(iii) Longitudinal joints shall be parallel to the traffic lanes.

(iv) Cold joints shall be avoided either by matching up all longitudinal joints over the full width of the carriageway each day or such lesser period depending on the rate of cooling of asphalt placed in the preceding run or by paving with two or more pavers in echelon. Subject to approval by the Superintendent, a longitudinal joint in the wearing course may be located up to 300 mm from the traffic lane line, or 300 mm from the centre of a traffic lane.

(d) Junctions

At junctions where the new asphalt mat is required to match the level of existing pavement surface at the limits of work, chases shall be cut into the existing pavement by cold planing as specified in Section 402.

The chase shall be cut by removal of a wedge of asphalt tapering from zero to a depth of 2.5 times the nominal size of the asphalt from the existing pavement to the minimum width as follows:

(i) at side streets and median openings - 600 mm

(ii) on through carriageways with a speed limit of 80 km/h or less - 3 m

(iii) on through carriageways with a speed limit of more than 80 km/h - 6 m.

(e) Treatment of Exposed Edges under Traffic

On completion of each day's work and prior to opening to traffic, the following treatment of exposed edges shall be adopted for asphalt work.

(i) Longitudinal Edges

All longitudinal joints within the trafficked area shall be matched up between paver runs except for a short section required to achieve the minimum offset between transverse joints. Any exposed longitudinal edges within the trafficked area shall be ramped down at a slope of not steeper than 5 horizontal to 1 vertical by constructing a temporary wedge of hot mixed or cold mixed asphalt. In unusual situations such as the sudden onset of inclement weather, a longer length of longitudinal joint may be exposed provided it is ramped down as specified.

(ii) Transverse Edges

At the end of the paving run in the transverse direction, the new asphalt mat shall be squared up to a straight line and ramped down by constructing a temporary wedge of hot mixed or cold mixed asphalt. Temporary ramping shall not be steeper than shown in Table 407.171.
Table 407.171 Maximum Grade of Temporary Ramping

<table>
<thead>
<tr>
<th>Posted Speed Limit (km/hr)</th>
<th>Maximum Ramp Grade (Horizontal to Vertical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>20 to 1</td>
</tr>
<tr>
<td>60</td>
<td>30 to 1</td>
</tr>
<tr>
<td>80</td>
<td>40 to 1</td>
</tr>
<tr>
<td>&gt; 80</td>
<td>50 to 1</td>
</tr>
</tbody>
</table>

(iii) Removal of Temporary Ramping

Before commencement of each day's work, all temporary ramping shall be removed by cutting back along a straight line to expose a vertical face of fully compacted asphalt at the specified layer depth.

407.18 COMMENCEMENT OF PLACING

HP The placement of asphalt on the sub-base or granular base for a new pavement or for an overlay of an existing bituminous surfaced pavement shall not commence until approval to proceed is obtained from the Superintendent.

407.19 REGULATING COURSE

A regulating course of asphalt of the type and size specified shall be placed for correction of longitudinal and transverse pavement shape so that the resulting surface is parallel with the finished surface.

407.20 SPREADING

(a) General

Asphalt shall be spread in layers at the compacted thicknesses shown on the drawings or specified.

All asphalt shall be spread with an asphalt paver except for small areas where use of a paver is not practicable.

(b) Level Control

Asphalt paver screed levels shall be controlled by a suitable combination of manual and automatic controls operating from fixed or moving references.

(c) Spreading

All asphalt shall be spread with a purpose designed asphalt paving machine to form a uniformly smooth asphalt mat complying with the requirements of Clause 407.23 without segregation, tearing or gouging.

The Contractor shall conduct spreading operations to ensure that the paver speed matches the rate of supply so that stoppages are minimised.
If the paver is required to stop and asphalt in front of the screed cools to below 120°C, a transverse joint shall be constructed.

For asphalt work carried out on a road to be opened for traffic at the completion of work each day, each layer of asphalt shall cover the full width of the trafficked area. The requirements of Clause 407.17(e) shall be followed in respect of the treatment required for exposed edges.

(d) Spreading by Hand

Hand spreading shall only be used for small areas where it is not practical to use a paver.

(e) Echelon Paving

Where specified in Clause 407.24(g) two pavers in echelon shall be used in locations where a full carriageway wider than 6 m is available clear of traffic.

The width of a single paving run shall not exceed 6 metres unless paving in echelon is proposed.

(f) Trafficking of Type SF Asphalt

Trafficking or placement of asphalt over Type SF asphalt is not permitted unless the majority of the Type SF asphalt has a surface temperature of 50°C or less and falling.

Where trafficking of the Type SF results in deformation of the asphalt, further trafficking shall cease until such time that the Type SF asphalt has adequately cooled to allow works to proceed without further damage.

407.21 COMPACTION

Asphalt shall be uniformly compacted to the standards specified in Clause 407.22 as soon as the asphalt has cooled sufficiently to support the rollers without undue displacement.

407.22 REQUIREMENTS FOR TESTING AND ACCEPTANCE OF COMPACTION

(a) General

Work shall be tested and accepted for compaction on either a test lot basis as provided in Clause 407.22(b) or on an approved procedural basis as provided in Clause 407.22(c). Where the total quantity of the particular size and/or type of asphalt supplied under the contract exceeds 300 tonnes, compaction shall be tested and accepted on a test lot basis. Acceptance of compaction for all other asphalt work will be on a procedural basis.

(b) Testing and Acceptance of Compaction on a Lot Basis

For small lots, the test procedure specified in Section 173 shall apply.

The density of extracted cores for the purposes of determining the bulk density for acceptance purposes or to check or assign offsets to a nuclear gauge shall be undertaken in accordance with VicRoads Codes of Practice 500.05 and 500.16.

A lot presented for testing consists of that part of a particular layer of asphalt which is placed in one day under uniform conditions and is essentially homogeneous in respect to material and appearance.
Sites for density testing shall be selected on an essentially random basis provided that no site shall be selected within 200 mm of a joint constructed against a cold edge.

For core sample tests, the layer thickness is the mean thickness of the core samples and for nuclear gauge tests, the layer thickness is the nominal layer thickness.

Asphalt Density Ratio is defined as the percentage ratio of the field bulk density to the assigned bulk density of the approved laboratory mix design.

The assigned maximum density of the asphalt shall be calculated from the 6 point rolling average maximum density of the production mix. Should a single maximum density of the production mix vary by more than ±0.5% of its rolling average then a check design or redesign should be initiated.

The Characteristic Value of Density Ratio is the calculated value of $\bar{x} - 0.92S$ for six tests per lot where $\bar{x}$ and S are respectively the mean and standard deviation of the individual density ratio test values for the lot.

The work represented by a lot of six tests shall be assessed as shown in Table 407.221.

**Table 407.221 Limits for Characteristic Density Ratio (Six Tests)**

<table>
<thead>
<tr>
<th>Characteristic Value of the Density Ratio (Rc)</th>
<th>Assessment</th>
<th>Characteristic Value of the Density Ratio (Rc)</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>For layers less than 50 mm thickness</td>
<td></td>
<td>For layers 50 mm thickness or greater</td>
<td></td>
</tr>
<tr>
<td>94.0% or more</td>
<td>Accept lot</td>
<td>96.0% or more</td>
<td>Accept lot</td>
</tr>
<tr>
<td>91.0% to 93.9%</td>
<td>Lot may be accepted at a reduced rate calculated by $P = 10 \text{ Rc} - 840$</td>
<td>91.0% to 95.9%</td>
<td>Lot may be accepted at a reduced rate calculated by $P = 6 \text{ Rc} - 476$</td>
</tr>
</tbody>
</table>

(Rc) is the Characteristic Value of the density ratio for the lot and (P) is the percentage of the relevant scheduled rate to be paid which shall not be greater than 100%.

Where the Contract is a lump sum Contract the relevant scheduled rate will be that shown in the ‘Rates for Variation Purposes’ schedule accompanying the lump sum tender. If no such rate is provided a variation will be considered in accordance with Clause 40.2 of the General Conditions of Contract - Valuation of Variations.

Where one or more individual core thicknesses are less than the relevant values shown in Table 407.222, they shall be discarded and the acceptance assessment modified in accordance with Table 407.223 provided that there remain at least four test values.

**Table 407.222 Minimum Thickness of Cores Extracted from the Pavement**

<table>
<thead>
<tr>
<th>Size of Asphalt</th>
<th>Individual Core Thickness (mm) min</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>20</td>
<td>40</td>
</tr>
</tbody>
</table>

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Table 407.223  Mean Density Ratio (less than six cores)

<table>
<thead>
<tr>
<th>For layers less than 50 mm thickness</th>
<th>For layers 50 mm thickness or greater</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Value of the Density Ratio (Rm)</td>
<td>Mean Value of the Density Ratio (Rm)</td>
</tr>
<tr>
<td></td>
<td>Assessment</td>
</tr>
<tr>
<td>95.5% or more</td>
<td>Accept lot</td>
</tr>
<tr>
<td>92.5% to 95.4%</td>
<td>Lot may be accepted at a reduced rate calculated by $P = 10 \text{ Rm} - 855$</td>
</tr>
</tbody>
</table>

(Rm) is the mean of the individual density ratios for the lot and (P) is the percentage of the relevant scheduled rate to be paid which shall not be greater than 100%.

In situ Air Voids and Characteristic In situ Air Voids shall be reported for each lot.

Percentage In situ Air Voids is defined as the ratio of In situ Air Voids to the Maximum Density of asphalt. Percentage In situ Air Voids represents the Air Voids of the compacted asphalt as placed onsite, and shall be determined as follows:

$$\text{In situ Air Voids} = \frac{\text{Maximum density} - \text{field bulk density}}{\text{Maximum density}} \times 100$$

The Characteristic Value of In situ Air Voids is the calculated value of $\bar{x} + 0.92S$ for six tests per lot where $\bar{x}$ and $S$ are the mean and standard deviation of the individual In situ Air Void test values for the lot, respectively.

(c) Acceptance of Compaction on a Procedural Basis

Acceptance of work as far as compaction is concerned shall be based on the adoption of approved placing procedures and a density test check plan that provides for a minimum test frequency of 5% of relevant lots to be tested. The test check plan shall provide for additional testing to demonstrate correction of non-conformance. Placing procedures shall be in accordance with AS 2150 – Hot mix asphalt.

407.23  SURFACE FINISH AND CONFORMITY WITH DRAWINGS

(a) General

For all asphalt works the following requirements shall apply for conformance with location, shape, alignment, and width.

(i) Surface Finish

The finished surface of asphalt wearing course shall be of uniform appearance, free of dragged areas, cracks, open textured patches and roller marks.

(ii) Kerb and Channel

Where asphalt is placed against kerb and channel the surface at the edge of the wearing course shall be either flush with or not more than 5 mm above the lip of the channel.
(iii) **Shape**

No point on the finished surface of the wearing course shall lie more than 4 mm below a 3 m straight edge laid either parallel to the centreline of the pavement or, except on crowned sections, at right angles to the centreline. For intermediate and base course layers, the distance below the straight edge shall not exceed 6 mm and 10 mm respectively.

(iv) **Alignment**

Where asphalt pavement is not placed against a concrete edging, the edge of asphalt layers shall not be more than 50 mm inside nor more than 100 mm outside, the designed offset from centreline or design line. Within these tolerances, the rate of change of offset of the edge of layer shall not be greater than 25 mm in 10 m.

(v) **Width**

Where asphalt pavement is not placed against a concrete edging, the width of asphalt layers shall not be less than the design or specified width of layer by more than 50 mm or greater than the design or specified width by more than 100 mm. The average width over any 300 m shall not be less than the design or specified width.

(b) **Conformity with Drawings for New Pavements and Major Pavement Rehabilitation Projects**

For pavement works where design drawings show the finished surface level and thickness of each pavement course, the surface level of each asphalt course shall be measured in accordance with the requirements of Section 173. Every test lot shall meet either a Scale A, B or C requirement as specified in Clause 407.24.

Unless otherwise specified in Clause 407.24(f), the maximum lot size for measurement and assessment of surface level shall be 4000 m².

(i) **Scale A and B Surface Level Requirements**

Each level measurement shall be taken at random locations over the area of the lot in accordance with the relevant Test Method and the number of measurements taken within each lot shall not be less than the number specified in Table 407.231.

The mean surface level and the variation in surface level for the base, intermediate and wearing courses within each lot shall meet the requirements of Table 407.232.

**Table 407.231 Minimum Number of Level Measurements per Lot**

<table>
<thead>
<tr>
<th>Scale of Surface Level Measurement</th>
<th>Minimum Number of Measurements Per Lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale A</td>
<td>80</td>
</tr>
<tr>
<td>Scale B</td>
<td>40</td>
</tr>
</tbody>
</table>
Table 407.232  Average Surface Level Tolerances for the Sub-base and Pavement Courses

<table>
<thead>
<tr>
<th>Scale of Surface Level Measurement</th>
<th>Granular or Cement Treated Subbase</th>
<th>Asphalt Layers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{x}$ Range (mm)</td>
<td>Max. S (mm)</td>
</tr>
<tr>
<td>Scale A</td>
<td>+4 to -8</td>
<td>8</td>
</tr>
<tr>
<td>Scale B</td>
<td>+6 to -12</td>
<td>13</td>
</tr>
</tbody>
</table>

Notes on Table 407.232

- $\bar{x}$ is the mean value of all level readings taken in the lot (a negative value designates a measured departure below the design level and positive value designates a surface level above the design level).
- $S$ is the standard deviation of all level readings taken in the lot.

For Scale A and Scale B level requirements, the Superintendent may agree to accept a lot which does not conform with the limits of Table 407.232 at a reduced payment, in accordance with Table 407.233. The value of the lot of work shall be calculated from the unit rates for pavement construction as specified in Clause 407.24(c).

Table 407.233  Payment Deduction for Surface Level

<table>
<thead>
<tr>
<th>Variation</th>
<th>Payment reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ($\bar{x}$) outside the specified limit up to a maximum of 25% of the limit.</td>
<td>8% plus 4% reduction for each 1 mm the mean value extends outside the tabulated limit</td>
</tr>
<tr>
<td>Standard Deviation ($S$) exceeding the specified limit up to a maximum of 35% of the limit.</td>
<td>8% plus 4% reduction for each 1 mm the Standard Deviation extends outside the tabulated limit</td>
</tr>
</tbody>
</table>

Note to Table 407.233

If both ($\bar{x}$) and ($S$) vary by more than the specified limit, the payment reduction shall be the sum of the payment reductions for both ($\bar{x}$) and ($S$).

(ii) Scale C Surface Level and Thickness Requirements

Surface level and thickness measurements shall be taken in accordance with the procedure specified in Section 173.

The level of the top of each asphalt course shall not differ from the specified level by more than 15 mm for intermediate and base courses and 10 mm for wearing course.

Where a uniform thickness of new asphalt pavement construction is specified, the mean thickness of a lot of asphalt shall be not less than the combined thickness of all asphalt courses specified in Clause 407.24 or shown on the drawings. For the purpose of this clause, the maximum lot size shall be not more than 4,000 m² of pavement area.
(c) Asphalt Overlays

Where a minimum average or nominal thickness of overlay is specified, and no existing pavement or finished levels are available, the average thickness of the overlay shall be calculated by:

\[
T = \frac{M}{D \times A} \times 1000
\]

Where:
- \( T \) is the thickness of overlay in millimetres
- \( A \) is the area of the job in square metres
- \( D \) is the mean field density of placed asphalt in tonnes/m³.
- \( M \) is the mass of asphalt used in tonnes

The average thickness of the overlay shall not be less than the specified thickness.

### 407.24 SCHEDULES OF DETAILS

#### (a) Asphalt Requirements (Clause 407.06)

<table>
<thead>
<tr>
<th>Course</th>
<th>Layer</th>
<th>Nominal Size of Asphalt (mm)</th>
<th>Type of Asphalt</th>
<th>Thickness of Layer (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wearing and Regulation (Section 417)</td>
<td>Open Graded</td>
<td>###:</td>
<td>###:</td>
<td>###:</td>
</tr>
<tr>
<td></td>
<td>Wearing</td>
<td>###:</td>
<td>###:</td>
<td>###:</td>
</tr>
<tr>
<td></td>
<td>Regulation</td>
<td>###:</td>
<td>###:</td>
<td>###:</td>
</tr>
<tr>
<td>Intermediate</td>
<td>Intermediate 1</td>
<td>###:</td>
<td>###:</td>
<td>###:</td>
</tr>
<tr>
<td></td>
<td>Intermediate 2</td>
<td>###:</td>
<td>###:</td>
<td>###:</td>
</tr>
<tr>
<td></td>
<td>Intermediate 3</td>
<td>###:</td>
<td>###:</td>
<td>###:</td>
</tr>
<tr>
<td>Base</td>
<td></td>
<td>###:</td>
<td>###:</td>
<td>###:</td>
</tr>
<tr>
<td>Combined Thickness of Asphalt Pavement (less the Open Graded Asphalt Wearing Course Layer)</td>
<td></td>
<td></td>
<td></td>
<td>###:</td>
</tr>
</tbody>
</table>

#### (b) Scales Compaction and Level/Thickness Control (Clause 407.23)

<table>
<thead>
<tr>
<th>Road Name</th>
<th>Location</th>
<th>Scale for Level / Thickness Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>###:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(c) Basis for Determining the Value of the Lot to be used for Price Deduction for Departure from Specified Surface Level and Density Requirements (Clauses 407.22 and 407.23).

<table>
<thead>
<tr>
<th>Location</th>
<th>Layer</th>
<th>Unit Price $/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td># #:</td>
<td># #:</td>
<td># #:</td>
</tr>
</tbody>
</table>


(d) Schedule of Manhole and Valve Covers to be Raised or Lowered to the New Finished Level Prior to Asphalt Overlay

<table>
<thead>
<tr>
<th>Location or Chainage</th>
<th>Direction or Carriageway</th>
<th>Lane</th>
<th>Cover Type (Manhole or Valve)</th>
</tr>
</thead>
<tbody>
<tr>
<td># #:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(e) Polymer Modified Binder if different to Class A10E (Clauses 407.05(a) and (b)) [strikethrough if 'default' Class A10E is to be used]:

The class of PMB required in the # #: course shall be Grade # #:.

(f) Maximum Size of Test Lots if different to 4,000 m² (Clause 407.23(c)) [strikethrough if the maximum lot size is to be 4,000 m²]:

The maximum size of test lot for assessment of compaction under Clause 407.22 and if applicable, compliance drawings under Clause 407.23 shall be # #: m².

(g) Paving in Echelon (Clause 407.20(e))

Two pavers in echelon shall be used on the through carriageways from # #: to # #:.