

PART E

TECHNICAL REQUIREMENTS

PART E - TECHNICAL REQUIREMENTS CONTENTS

	Page
E1 NOTICE.....	1
E2 SCOPE OF WORKS.....	1
E3 GENERAL INSTRUCTIONS.....	2
E4 ACCESS TO SITE.....	3
E5 EARTHWORKS.....	3
E6 ASPHALT PAVING.....	6
E7 SAFETY LINE AND COPING COATING.....	8
E8 INFORMATION PROVIDED BY THE PRINCIPAL	9
APPENDIX E1 - GEOTECHNICAL REPORT (Separate pdf file)	
APPENDIX E2 - SERVICES SEARCH (Separate pdf file)	
APPENDIX E3 – X FALL DESIGN	
APPENDIX E4 – PLATFORM FURNITURE STATION GUIDELINES	
APPENDIX E5 – PROPPING PLATFORM WALL	

E1 NOTICE

Part E of the RFT is to be read with all the parts of the RFT, drawings, the geo-technical report and any other documentation forming part of the Tender Documents.

No section of Part E of the RFT shall be extracted from the whole of the RFT for pricing by subcontractors (or for any other reason) without the inclusions of the Preamble Part and those Parts of the RFT applicable to the trade.

E2 SCOPE OF WORKS

E2.1 General

By submitting this Tender, the Contractor warrants that it will maintain all RailCorp clearances and standard requirements while carrying out the Works.

The scope of works includes but is not limited to the supply of all plant, equipment, materials and labour as specified herein, completed to a standard accepted by the Superintendent.

The following shall comprise a summary of the major items of work but shall not reduce the Contractor's obligations under the Contract to carry out all works specified:-

- Comply with the design levels provided in Appendix E3 Cross Fall Design. Ensure final platform surface level complies with a minimum 1:50 grade.
- Removal of platform fixtures (seats & bins) and reinstatement at the new appropriate level at completion of resurfacing.
- Adjustment of existing service pits on the platform as necessary.
- Removal and disposal of existing asphalt on platforms to the extent necessary to perform the described works.
- Comply with geotechnical report S21991/2-AD
- Remove and dispose approximately the top 250mm of sub-grade material and dispose
- Replace the necessary quantity of sub-grade material complying with DGB20
- Roll layer of geofabric (Bidim A24) over the full length of 'weak spots'
- Re-sheeting of platform to a thickness of 30mm for the entire platform.
- Saw cut asphaltic concrete 1m from the edge of coping with hand held Saw and remove asphalt with minimal disturbance to the coping edge
- Re-sheet with 40mm asphaltic concrete within 1m of the coping edge over the length of the platform
- Compact subgrade with hand held tool along coping edge
- Provision of yellow lines for full length on both platforms
- Paint both platform copings with white non-slip coating and re-instate any markings eg night safe marking and car marking.
- Adjust as necessary platform furniture height to comply with RailCorps standard station design guidelines(refer to Appendix E4)

- Hand dig around all rail services
- Ensure electrician and plumber are on call, in case of an emergency
- Secure platform walls as detailed in Appendix E5 Propping Platform Walls and remove all fixtures returning to original form
- Identify and remove redundant footings and services
- Protect track against contamination
- Provide appropriate work site protection staff during the works and to attend pre-possession meeting.
- Certification of infrastructure (Civil, signal, electrical) if required.
- Ensure all site construction staff are Track Awareness PW01 qualified
- Protection and clean up of existing structures and platform furniture affected by the work
- Ensure all steps after resurfacing leading into Booking Office comply with the Building Code of Australia.
- Make provision and ensure all steps after resurfacing leading into Booking Office comply with the Building Code of Australia.
- Contractors must make provision to adjust step heights using materials similar to the existing steps or that approved by the Superintendents Representatives.

Note:

- 1 The Works are to be undertaken and completed on two weekends of track possession:

Possession 1: **0200 hrs Saturday 12 May 2007 to 0200 hrs Monday 14 May 2007**

Possession 2: **0200 hrs Saturday 14 July 2007 to 0200 hrs Monday 16 July 2007**

These are 48 hour track possession – however at all Track Possessions approximately 6 hours of available working time will be lost (approximately 4 hours at the start and 2 hours at the end of the possession) due to switching activities and other procedures.

The technical requirements part of this RFT provides details of the work to be carried out and the standard of work to be achieved by the Contractor.

- 2 All machinery/equipment to be utilised on the platforms must be less than a total combined **weight of 2 Tons.**

E2.2 Access

Remove fences as necessary for access, maintaining site safety and the safety of the public and the Principal's employees at all times.

Fences are to be reinstated at the completion of the work.

Access for plant materials will be required by vehicle access across tracks utilising timber sleepers and ballast to form track crossing with layer of geo-fabric below to collect spillage and prevent track work damage and contamination.

E2.3 Safety

The site is to be maintained in a safe condition at all times, protecting the public and the Principal's employees who require access through the area of the works.

E3 GENERAL INSTRUCTIONS

The extent of work includes in addition to the specific scope itemised elsewhere, the following:

- Identification of existing public utility services and protection and/or arrange for diversion and, if necessary, as work progresses, including relocation or adjustment to access covers as required to suit new surface profiles or levels.
- Provision of all facilities necessary for workmen in accordance with relevant awards and regulations and for safe parking of plant and storage of equipment and materials.
- Ensuring that there are good transitions between new and existing work.
- Restoration of areas damaged by construction operations.

E3.1 Provision of Traffic

The Contractor shall make all arrangements to control pedestrian and vehicular traffic on platforms, footpaths, parking areas and public roads through the sites and shall install and maintain warning signs and safety devices in accordance with the **Australian Standard AS1742.3 – 1996: Manual of uniform traffic control devices – Traffic devices for work on roads.**

E3.2 Nature of ground

It shall be deemed that the Contractor has inspected the site and has fully acquainted himself with the nature of the ground, the sufficiency of the ground to support construction equipment and the extent of support required for excavations and temporary works.

E3.3 Environmental protection

Contaminants and refuse arising from the Works shall be collected and disposed of by appropriate methods approved by the Superintendent.

E3.4 Inclement weather

No increase to the contract sum shall be allowed on account of extensions of Time for Practical Completion, on account of wet or inclement weather or the consequences thereof.

E3.5 Temporary services

The Contractor shall provide temporary services including water, telephone, light and power as needed for this work.

E4 ACCESS TO SITE

The work is to be completed during periods as scheduled or as advised by the Superintendent.

During these periods buses will be provided for the transport of passengers.

The station will be open during normal hours for passengers to purchase tickets for the buses.

Passenger and goods trains will not be running on the tracks. However, there may be works trains running during the track closures, which will pass through the site from time to time.

Fencing removed for access must be reinstated in good condition at the end of the work period.

All assets (Ballast, Points, Signals, Tracks, Sleepers, Clips, etc) must be protected during construction.

E5 EARTHWORKS

E5.1 Standards

All testing shall be carried out by a NATA approved laboratory in accordance with the requirements of **AS 1289** *Methods of testing soils for engineering purposes*.

E5.2 Definitions

Fill – A general term for all material spread and compacted over the sub-grade to make up finished levels.

Base – A selected filling layer, spread and compacted to form an acceptable working surface.

E5.3 Fill

Fill Material: Inorganic, non-perishable material of the types specified, free of any sulfur content.

Types of Fill:

General Fill: Graded material, maximum particle size 20 mm.

Selected Fill: Granular material as follows:

- maximum particle size: 20 mm
- no more than 25 percent passing 20 µm sieve
- plasticity index: not greater than 15 % and not less than 2 %

Fill subgrade: Material in the top 150 mm shall have a maximum particle size of 20 mm.

E5.4 Site investigation

A site inspection has been carried out and a copy of the geo-technical report is included in Appendix E1 as information to the Contractor.

This report does not form part of the Contract. The site investigation and information given in the report, or shown on the drawings, is information on the nature of the

material encountered, and is not a complete description of conditions existing below the surface.

The accuracy of the information is not guaranteed and will not be a basis for cost variation.

E5.5 Cost of test

Testing shall be required by the Superintendent in relation to compaction of fill. Each layer of material shall be tested at suitable locations along the fill zone.

E5.6 Existing services

The Superintendent shall be notified immediately of any services or obstructions, which are not shown on the drawings and are discovered prior to and during the work.

Excavation by machine shall not be undertaken within 1 metre of all existing underground services without prior approval.

E5.7 Adjacent structures

Provide supports to adjacent structures where necessary.

No heavy machinery can work within one (1) metre from the back of coping. Only hand held machinery is permitted.

Machinery used one metre away from the back of the coping must be less than 2 tonnes in weight.

All points, signals, tracks, ballast, sleepers, clips, coping and others must be projected during construction.

E5.8 Dewatering

Provide temporary catch drains, sumps, pumping, bailing or whatever means is suitable and effective to ensure that all levelled areas are free of water.

Remove all free water and foreign matter before placing asphaltic concrete.

Prevent water flow over freshly laid work.

E5.9 Shoring

Provide necessary support to ensure safe working in accordance with WorkCover requirements.

Provide safety covers over holes.

If the Superintendent considers any support provided is insufficient, the Superintendent may order the provision of additional support.

E5.10 Excavations

Remove existing surface as required or as shown on the Drawings.

Excavate over the site to give the correct levels and profiles as the basis for fill and paving. Make allowance for compaction or settlement.

Proof roll excavations for pavements and fill to determine the extent of any bad ground.

Notify the Superintendent of any soft areas that should be treated or replaced.

E5.11 Excavations generally

Suspend all earthworks during inclement weather, which could result in unsatisfactory work.

Excavations shall be free from loose earth and stones.

Provide an even surface for the asphaltic concrete.

E5.12 Disposal of spoil

All debris and surplus excavation material is to be removed from the site.

The Contractor shall be solely responsible for the safe and harmless disposal of surplus excavated material.

Do not burn without permission.

Store re-useable soil where directed.

E5.13 Bad ground

Should unsuitable material be encountered at the prescribed depths of excavation, or soft, wet and unstable areas develop during excavation obtain instructions from the Superintendent before carrying out additional excavations.

Backfill and compact to the correct levels as directed by the Superintendent.

E5.14 Preparation for fill

Prepare the ground surface to receive fill, where applicable.

Water and roll the sub-grade to achieve the required dry density ratio as stipulated in the Geotech Report (see Appendix E1).

E5.15 Placing fill

Place and compact all fill to the dimensions and levels as indicated on the Geotech Report (see Appendix E1).

The surface of the fill is to be self-draining.

Place fill in layers not exceeding the thickness stated below when measured loose and compact each layer as specified.

Maximum layer thickness: 150 mm.

E5.16 Compaction

Compact each layer of fill to the dry density ratio determined in Accordance with the Geotech Report (see Appendix E1).

Protect the works from damage by compaction operations.

Compact by hand if necessary to prevent damage or disturbance to services, pipe joints, within one (1) metre of the coping and the like.

The fill materials are to be within 2 % of the optimum moisture content determined to **AS 1289** for the fill type. During compaction the surface may be sprinkled lightly with water to replace moisture loss.

E5.17 Dry density ratio

Compact filling to the maximum dry density nominated on the drawings and determined by the methods of Section 5 of AS 1289, *Methods of Testing Soils for Engineering Purposes*.

E6 ASPHALT PAVING

E6.1 Extent of work

The work for this Contract consists of the supply of all labour, materials and equipment necessary to pave the length of the platform with asphalt to the extent shown on the drawing. The finished paving shall be suitable for use by pedestrians, occasional vehicles and trolleys.

E6.2 Standards

- a) The design, materials, workmanship and procedures for the asphalt work shall comply with the requirements set out in AS 2734 – 1984: *Asphalt (Hot-mixed) Paving – Guide to Good Practice*.
- b) The transportation of the asphalt shall also be in accordance AS 2150 – 1995: *Hot mix asphalt*.
- c) Any plant and equipment placed on the platform during the works shall meet the requirements of Rail Infrastructure Corporation Civil Engineering Standard CSI 031 – 2001: *Engineering works in the vicinity of platforms and structure footings*.

E6.3 Quality Assurance

A Specialist Contractor employing workmen skilled in type of work to be provided shall carry out the whole of the asphaltic paving work specified in this RFT.

E6.4 Guarantees

The Contractor shall give a written guarantee, against faulty workmanship and materials for a period of twelve (12) months from the date of Practical Completion.

E6.5 Materials general

The whole of the materials used in the asphalt paving work required under this contract shall be of first quality and shall comply with AS 2734 – 1984: *Asphalt (hot mixed) Paving – Guide to Good Practice*.

E6.6 Mix design

Asphaltic concrete to comply with the requirements for AC5 mix designation and shall use Class 320 bitumen binder in accordance with Section 3 of AS 2734.

E6.7 Removal of existing asphalt pavement

The Contractor shall remove all damaged or faulty pavement on the platform as instructed by the Superintendent.

E6.8 Preparation of surface

To the areas where new bitumen pavement is to be laid, provide a compacted surface to the levels indicated in accordance with Section 4 of AS 2734.

E6.9 Tack coating

A light uniform application of bitumen material shall be applied to the existing surface, as a tack coat, before paving in accordance with Section 5 of AS 2734.

E6.10 Transportation of asphalt

The delivery of asphalt shall be in accordance with Section 8 of AS 2150 – 1995: *Hot mix asphalt* and Section 6 of AS 2734.

E6.11 Spreading of asphalt

Asphalt shall be spread in accordance with Section 7 of AS 2734 and to a minimum compacted layer thickness of 25 mm unless otherwise directed by the Superintendent. The temperatures of asphaltic concrete at the time of placement shall be in accordance with Table 7.1 of AS 2734. The number and extent of joints in the asphalt layers shall be kept to a minimum. The safety of personnel and plant shall be of prime concern during asphalt paving. The safety precautions set out in AS 2734 Clause 7.11 shall be strictly observed.

E6.12 Compaction

- a) Compaction of the asphalt paving shall be carried out in accordance with Section 8 of AS 2734.
- b) Ensure that adjacent concrete surfaces are not damaged.
- c) No heavy machinery within one (1) of the back of the coping. Only hand held machinery is permitted.
- d) Machinery used one metre away from the back of the coping must be less than 2 tonnes in weight.
- e) The plant and equipment clearance requirements set out in RIC Engineering Standard CSI 031 are to be strictly maintained.

E6.13 Finished Pavement Surface Finish

The surface of the platform asphalt pavement is to finish flush with the rear of the finished platform coping. The permissible tolerance to the finished surface shall be 5mm deviation from a 3m straight edge. A 3 metre long straight edge shall be available at the paver to check the surface and tolerances during paving operations.

E6.14 Completion

Following the completion of the asphaltic paving work, all plant and equipment, residual materials, debris and rubbish is to be removed. The site is to be left in a clean and tidy condition to the satisfaction of the Superintendent.

E7 SAFETY LINE AND COPING COATING**7.1 SAFETY LINE****7.1.1 Extent of work**

The work consists of the supply of all labour, materials and equipment necessary to paint a temporary and a final and permanent new yellow safety line 75 mm wide on Platforms 1 and 2.

7.1.2 Material

Non-slip yellow road marking paint for the permanent yellow lines as used by the Roads and Traffic Authority. Glass beads are to be applied to the paint to improve night vision.

7.1.3 Surface

New bitumen shall have a minimum of one (1) week curing time before application of the yellow lines.

7.1.4 Surface preparation

Surface dryness is an important factor in applying paint to the platform asphalt. The platform shall be swept with a stiff broom to remove gravel and dust deposits.

Chewing gum shall be removed before painting using a paint scraper and a suitable commercial chewing gum remover.

Water blasting should be used to remove any remaining contaminants and the surface should be allowed to dry prior to applying paint to the platform asphalt.

7.1.5 Application

The yellow safety line shall be 75 mm in width and shall run the full length of the platforms. The outside edge of the line should be located at a distance of 750 mm to 850 mm from the platform edge. Ensure an even gap and good appearance.

Roadmarking paint is a flat paint and when sprayed and applied correctly an even non-skid coating with no high built areas will result.

The application of the road marking paint shall be carried out in accordance with Section 6 of AS 2311 and Section 8 of AS 2312 where applicable.

The line width tolerance will be ± 5 mm and the lines will be within 20 mm of the planned location. Variation from a 3 metre straight edge will not be greater than 5 mm.

7.1.6 Cleanup

All empty paint tins, used masking tape, etc shall be removed from the site. All paint spills and drops shall be removed before the contractor leaves the site.

7.2 COPING COATING

7.2.1 Extent of work

The work consists of the supply of all labour, materials and equipment necessary to apply a white non-slip coating to the coping along Platforms 1 and 2.

7.2.2 Material

White non-slip material approved by RIC Scientific Services.

An approved testing laboratory shall test the coefficient of friction of the coating.

The coefficient of friction of the coating is to be at least 0.4 for both wet and dry surfaces.

An acceptable product is 'DEGADUR' 450 SP or an approved equivalent.

7.2.3 Surface preparation

Discrepancies in the coping surface are to be filled where required. The coping surface shall be prepared by a method approved by the Superintendent to give the best possible coating adhesion.

The coping shall be swept with a stiff broom to remove gravel and dust deposits.

All chewing gum shall be removed before the coating is applied.

7.2.4 Application

The white coating shall be applied to the coping for the full length of the platforms.

The coating width is to be the same as the existing paint coating.

7.2.5 Cleanup

All empty paint tins, used masking tape and any other materials or rubbish shall be removed from the site. All paint spills and drops shall be removed before the contractor leaves the site.

E8 INFORMATION PROVIDED BY THE PRINCIPAL

The following documents is provided for Information only

E8.1 GEOTECHNICAL REPORT

Geo-Technical report as per Appendix E1

E8.2 SERVICE SEARCH INFORMATION

Previous services search documentation is provided for the information of the Contractor in Appendix E2. It is the Contractors responsibility to re-validate all such information prior to any site construction works and pay all associated costs.

APPENDIX E1

GEOTECHNICAL REPORT

(Note: This is provided as a Separate pdf file)

APPENDIX E2

SERVICES SEARCH

(Note: This is provided as a Separate pdf file)

This Services Search is for Railway related services only; Contractor still has to perform services search for other services.

APPENDIX E3

CROSS FALL DESIGN

(Note: This is provided as a Separate pdf file)

APPENDIX E4

PLATFORM FURNITURE GUIDELINES

(Note: This is provided as a Separate pdf file)

APPENDIX E5

PROPPING PLATFORM WALL

(Note: This is provided as a Separate pdf file)