

Part D. Description of the Works or Services

D1.0.1 Background

RailCorp is the new integrated rail entity in New South Wales, combining StateRail and the greater metropolitan function of the Rail Infrastructure Corporation (RIC) to provide safer, cleaner, more secure and more reliable rail transport. RailCorp owns and maintains the rail infrastructure in the greater metropolitan Sydney region and delivers the CityRail and CountryLink passenger services.

RailCorp has three major operating groups responsible for delivering rail services, namely; Train Services, Customer Services, and Infrastructure Group. These three major operating divisions are supported by a number of corporate divisions including Corporate Finance, Information Communication Technology (ICT), Strategy, Safety, Human Resources, Corporate Counsel, Property and Communications and Sectorisation. ICT is responsible for the delivery of effective solutions to meet RailCorp's information technology needs.

The Station Passenger Information (SPI) team, within the ICT, is responsible for installation and maintenance of all SPI projects and devices with installations geographically bounded by the RailCorp electric train network.

RailCorp requires the design of brackets, and installation of RailCorp provided racks, platform and concourse housings and associated equipment and associated services on the Northern and North Shore Lines (25 stations) plus Homebush Control Centre.

D1.0.2 Tender Site Inspection

RailCorp highly recommends that Contractor attend both site meetings.

A Northern Line site inspection will be held on 19th December 2007 commencing at North Strathfield station Manager's office at 9am

A North Shore Line site inspection will be held on 20th December 2007 commencing at Waverton station Manager's office at 9am.

All attendees must have appropriate PPE and RailCorp RISI cards in possession.

(Contractor/Representative attending this site inspection must bring their RISI/Track Safety Awareness certificates, steel cap boots and RailCorp approved high visibility safety vests. Failure to wear correct PPE will mean Contractor can not participate in site pre-tender meeting.)

A NSW Construction Green Card is required at Construction sites to be visited (eg: Turramurra)

D1.0.3 Layout drawings

Layout drawings for each station are provided in ATTACHMENT D1 - Drawings. Each station drawing details the relevant equipment locations at the station.

D1.0.4 Phases of project

Under this Contract the Contractor shall provide project delivery in multiple phases as detailed below:

Phase 1:

A. Design brackets for all stations in accordance with the respective specification. The design

must be submitted to RailCorp for review two weeks prior to the commencement of site works.

B. Submit detailed schedule of works.

Phase 2:

- A. Install RailCorp provided rack, platform and concourse housings and associated equipment at each station
- B. Install RailCorp provided equipment at Homebush Control Centre.

Phase 3:

- A. Provide commissioning support as required by RailCorp as specified below.

D1.0.5 Compliance to standards and authorities

The Contractor must ensure the Works comply with the requirements and recommendations of all statutory authorities having jurisdiction over the Works, with this Specification and with all relevant Australian Standards and RailCorp Low Voltage Electrical Services Standards.

In particular, the Works shall comply with: -

- a. AS3000 - SAA Wiring Rules;
- b. Service Rules, Regulations and Requirements of RailCorp
- c. AS2053 – Conduits and fittings for Electrical Installation;
- d. AS3008 – Electrical Installation – Selection of cables;
- e. AS2052 - Metallic Conduits and Fittings;
- f. New South Wales Service and Installation Rules;
- g. Compliance with WorkCover and RailCorp safety Requirements; and
- h. All other relevant standards as further described or as applicable.

D1.1 Contract Drawings

The drawings enclosed in Attachment D1 are diagrammatic only and the exact positions of all equipment shall be determined on site in consultation with RailCorp Representative.

D1.2 Standard of Work

The Works shall conform to the requirements of statutory authorities having jurisdiction over the respective portions. In particular where an authority requires that the Works be carried out by licensed persons, a suitably licensed person shall carry out the Works.

Where RailCorp's Representative considers fittings, accessories, apparatus or quality of work is not consistent with good trade practice or standards or that any plant is inferior in quality or deficient in quantity to that specified, the RailCorp Representative may give notice in writing setting forth the defects or deficiency. Such condemnation or refusal shall be conclusive.

Rejected work or materials shall be removed from site within twenty-four (24) hours of notice of rejection. Defective work shall be reconstructed in accordance with the specified requirements.

The Contractor shall make the works areas clean as a very minimum as when they arrived.

The Contractor shall vacuum the insides of all housings before installing electronic devices and after as required before leaving site.

If the Contractor finds as a result of removing structures such as rollovers the site requires cleaning, then they must clean before the new housings and SPI racks are installed.

D1.3 Working in Railway Environment

The Contractor shall familiarise himself with the protocols and requirements involved in working on RailCorp property including working in proximity to rail lines, working hour restrictions and daily reporting to the Station Manager.

At the beginning of each shift, the Contractor's personnel will report to the Station Manager and 'sign in' on the record book kept at each station. They will also co-ordinate with the Station Manager to avoid passenger inconvenience.

D1.4 Hazardous Materials (Asbestos, Lead Based Paint etc.)

The stations may include hazardous materials. The asbestos at some stations has been removed.

The Contractor may perform a Hazardous Materials investigation if they deem necessary.

Where hazardous materials are found in the immediate vicinity of the proposed cable route, the Contractor shall submit his proposed actions to allow the construction of the cable route, recognizing the risks associated with the hazardous materials. The proposal shall include any claimed additional costs and time implications associated with the variation to the work. RailCorp, at its sole discretion may accept the Contractor's proposal or engage others to proceed with the variation to the works.

Under no circumstances shall materials or products containing asbestos, asbestos compounds or other carcinogenic or hazardous materials be used in the Works. No constructional equipment containing such materials shall be brought onto site. This prohibition applies regardless of the size or percentage content of asbestos or carcinogenic material in the item in question. Materials used as alternatives to those that traditionally contained asbestos shall be clearly marked by the manufacturer as asbestos free.

Should the Contractor fail to comply with the provisions of the preceding paragraph, the materials or equipment shall be immediately removed from site and the Contractor shall bear all costs associated including disposal, the provision of protective clothing, cleaning, cost of labour and replacement materials, making good, testing, lost time and the cost of any industrial disputes attributed to the presence of asbestos or carcinogenic materials.

Important Note: The RailCorp hazardous register (ref **RailCorp Northern and North Shore HazMat Register 231107.zip**) is attached as part of this RFQ however the Contractor is obligated to rely on their investigation and using the RailCorp hazardous register is at the Contractor's risk. The Contractor must not assume that RailCorp has an up-to-date hazardous register for each station in place.

D1.5 Heritage

The list provided below indicate which stations on the State Heritage Register. The Contractor shall devise installation methodologies and shall design platform indicator housing mounting brackets that reflect and take into account the heritage aspects and install cable routes and conduits work in a manner, which is not in any way detrimental to the heritage sensitive structures and items.

Contractor to submit proposed design within two weeks from award of contract for platform indicator housing mounting arrangements on heritage structures, detailing dimensions and materials being used.

RailCorp to approve the design for the platform indicator housing mounting arrangements.

North Shore & Northern Heritage status

North Shore Line	RailCorp Heritage status (s170)	NSW Government Heritage status
Waitara		
Wahroonga	Yes	Yes
Warrawee	Yes	
Turramurra	Yes	
Pymble	Yes	
Gordon	Yes	Yes
Killara	Yes	
Lindfield	Yes	
Roseville	Yes	
Artarmon	Yes	
St Leonards	Yes	
Wollstonecraft		
Waverton	Yes	Yes
Northern Line		
Hornsby	Yes	
Normanhurst		
Thornleigh		
Pennant Hills		
Beecroft	Yes	
Cheltenham		
Eastwood		
Denistone	Yes	
West Ryde		
Meadowbank		
Concord West	Yes	
North Strathfield	Yes	

D1. General Requirements

D1.1 Installation of Platform Indicator housings

General

- Contractor shall design and manufacture brackets, supported by engineering certificate, for the mounting of platform indicator housings to awnings on Northern and North Shore Line stations.
- Relocation of awning lights due to the position of platform indicators
- Platform indicators to be installed by the Contractor at the stations designated in Appendix A.
- Document Ref. **SPI North Shore Line Station Drawing Layouts.pdf** and **SPI Northern Line Station Drawing Layouts.pdf** details the location and number of platform indicator housings to be installed by the Contractor. See Appendix C – Drawing List.
- Platform indicator housings are supplied by RailCorp and will be delivered kerb side at each station.
- Document Ref. **SPI Housing drawings.PDF** details the design of a platform indicator housing. These platform indicator housings are made of 1 module.
- Drawing will be supplied after award of the design for the platform indicator housings in a two module arrangement.
- Platform indicators housing must be mounted horizontally.
- The bottom of the platform indicators housings must be a minimum of 2.4 meters above the platform surface. RailCorp representative to be notified before installation if the bottom of the platform indicator housing is below the minimum 2.4 meters.

- RailCorp to approve mounting arrangements proposed by Contractor. The Contractor must submit proposed design to RailCorp Representative for review a minimum of 2 weeks before commencement of installation.
- The platform indicator housings must be mounted such that the whole housing does NOT cross the track side of the yellow line as marked on each platform surface.
- 4 x 24" LCD screens supplied by RailCorp to be installed by the Contractor into each platform indicator housing.
- 1 x PC supplied by RailCorp to be installed by the Contractor into each platform indicator housing or PC box as near as practicable to the main platform indicator housing module.
- Un-terminated power cable, provided by RailCorp, to be terminated by the Contractor into each module of the platform indicator housing. Work to be performed by a qualified electrician.
- The Contractor shall ensure that each housing is earthed.
- Fiber optic multimode duplex orange patch cable with SC-SC connectors and restraint jackets supplied by the Contractor to be plugged by the Contractor into each PC. The Contractor should allow as an minimum average of 10metre cables with the minimum of 2 metro and maximum of 20metres.
- The fiber optic cable shall be installed in rigid conduit where practicable. The conduit must be coloured to match the surrounding structure (building/awning etc...)
- Power cables, provided by RailCorp, to be plugged by the Contractor into GPO inside each platform indicator housing to feed power to LCDs, PC, fans and electronic locks.
- VGA cables supplied by RailCorp to be plugged by the Contractor into each LCD and PC.
- For a single module platform housing, the estimated weight of 1 x platform indicator housing is 200KG. Note these estimated weights are without the PC or Screens.
- For a dual module platform housing, the estimated weight of 1 x platform indicator housing is 150KG and the platform PC box 50KG. Note these estimated weights are without the PC or Screens.
- The Contractor SHALL NOT drill into any RailCorp roof, truss or awning structure without written authorization from the RailCorp representative.
- The structural certification to include:
 - Awning structure soundness
 - Brackets soundness with Visio drawings and materials to be used
 - Detailed information explicitly explaining certification granted
- The Contractor shall report any faults to the RailCorp representative eg; fans not working.

Structural works detail

- The Contractor must submit a proposed design of mounting arrangements to RailCorp for review a minimum of two weeks before commencement of installation for each station.
- The Contractor is to design and manufacture the connecting structures required for mounting the platform indicator housings to the platform awning structures at each of the stations.
- The brackets are to be made of electroplated or hot dipped galvanized steel with the bolts greater or equal to 10mm diameter and being of high tensile steel. Any site welding of brackets shall be treated afterwards.
- Brackets & bolts to be painted with Dulux line 910
- The Contractor shall not drill into or reduce structural integrity to any RailCorp structure such as by welding, unless authorised in writing by the designated RailCorp representative.
- The Contractor must obtain and deliver to RailCorp before installation commences, structural approval certificates of the structural integrity of the RailCorp awning structures loaded with the proposed brackets and housings for each of the housings.
- The Contractor shall deliver to RailCorp structural approval certificates of the proposed mounting arrangements before installation begins. The adequacy of these connecting structures is to be certified by a qualified structural engineer.
- At the end of the project all structural approvals must be submitted in electronic format. Final payment (Practical Completion) will depend on the production of this complete set of certificate.

- The supporting mechanism for the platform indicator housings must be designed such that when mounted NO portion of the housing crosses the track-side of the yellow line as marked on each platform surface.
- Brackets to be designed to hide cabling if possible. All cabling inside brackets must be in conduits.

D1.2 Installation of Concourse Indicator Housings

General

- Concourse indicators to be installed by the Contractor at the stations designated in Appendix A.
- Document Ref. **SPI North Shore Line Station Drawing Layouts.pdf** and **SPI Northern Line Station Drawing Layouts.pdf** details the location and number of concourse indicator housings to be installed by the Contractor.
- Concourse indicator housings are supplied by RailCorp and will be delivered to station kerb side. The Contractor shall unload the housings from the delivery vehicle and transport to location of installation. A Protection Officer ('PO') is required for all platform works, which also includes transportation of housings if occurs via platform. No transportation of housings is allowed when a train is approaching, is on platform or is departing.
- Document **SPI Housing drawings.PDF** details the design of the concourse indicator housing. Each concourse indicator housing set may comprise of one or modules, and each module also includes a plinth. Note that when set includes more than one module the left hand side will include access holes on the right hand side, the middle module(s) includes access holes on both sides and the right hand module access holes on the left hand side.
- There may be locations where only one housing is required, this meaning special wiring will be require, the details to be supplied by RailCorp when situation is identified.
- All concourse indicators shall be mounted on the supplied plinth.
- Plinth must be mounted horizontally and concourse housings must be installed such that they are aligned in the horizontal and vertical axis.
- All concourse indicators in each set shall be parallel wired such that opening of one module with RFID opens all modules in the particular set that the RFID was used. The usage of an RFID to access a set shall not affect the locks in any way of other sets.
- 1 x 40" LCD screen supplied by RailCorp to be installed by the Contractor into each concourse indicator housing
- 1 x PC supplied by RailCorp to be installed by the Contractor into each concourse indicator housing.
- Un-terminated power cable, provided by RailCorp, to be terminated by the Contractor into each module of the concourse indicator housing. Work to be performed by a qualified electrician. The termination junction box and all GPOs in all modules shall be labeled with DB, location of DB and CB.
- The Contractor shall ensure that each housing is earthed.
- Fiber optic multimode duplex orange patch cable with SC-SC connectors and restraint jackets to be supplied, installed in conduit and plugged by the Contractor into each PC.
- Power cables, provided by RailCorp, shall be plugged into GPO inside each concourse indicator housing to feed power to LCD's, PC, fans and electronic locks. All locks and fans are to be tested by the Contractor before closing doors and any failures shall be reported to RailCorp before the doors are closed.
- VGA cables supplied by RailCorp to be plugged by the Contractor into each LCD and PC.
- The estimated weight of 1 x module is 190 Kg and the estimated weight of 1 x single module length plinth is 35 Kg. Note these estimated weights are without the PC or screens.
- In some situations the Contractor will be required to remove the rollovers and deliver to the RailCorp Heritage Department. The address to be supplied will be in the Sydney Metropolitan area. Where the rollovers removed exposes unpainted surfaces which are not to be covered by the concourse indicators the Contractor is required to paint with matching colour of the surrounding structure/wall etc...
- The Contractor to install a RailCorp supplied padlock to each screen.

- The Contractor to install RailCorp supplied security strips onto the doors of the housings and test that the housings open and close correctly afterwards.
- The Contractor shall report any faults to the RailCorp representative eg; fans not working.

Structural works detail

- Due to the housings being on a narrow footprint, they are required affixing to a nearby structure to prevent forward/backwards movement. The Contractor must submit a proposed design of mounting arrangements to RailCorp for review a minimum of two weeks before commencement of installation for each station.
- The Contractor to install plinths using chemset type fixing materials unless directed by RailCorp.
- The Contractor to use maximum care so as not to damage floor tiles. If tile are damaged the Contractor is responsible for repair.
- The Contractor is to design and manufacture the connecting structures required for mounting the concourse indicator housings to the nearby structures at each of the stations.
- The brackets are to be made of electroplated or hot dipped galvanized steel. Any site welding of brackets shall be treated afterwards.
- The Contractor shall not drill into or reduce structural integrity to any RailCorp structure such as by welding, unless authorised in writing by the designated RailCorp representative.
- The Contractor must obtain and deliver to RailCorp before installation commences, structural approval certificates (certified by a qualified structural engineer) of the structural integrity of the RailCorp loaded structures with the proposed brackets if any and housings.
- At the end of the project all structural approvals must be submitted in electronic format. Final payment (Practical Completion) will depend on the production of this complete set of certificate.
- Brackets to be designed to hide cabling if possible. All cabling inside brackets must be in conduits.

D1.3 Installation of Train Information Screen (TIS)

- The Contractor to install supplied VESA 19" LCD screen supplied by RailCorp as directed for each location as per following:
 - Using only wall mounting VESA brackets supplied by RailCorp and installed by Contractor or
 - Using wall mounting bracket with VESA adapter supplied and installed by Contractor with VESA brackets supplied by RailCorp or
 - Pole through desk with either one or two screens supplied by RailCorp and installed by Contractor or
 - Desk mounted using desk mounted supplied by RailCorp with screen.
- UTP cable provided by RailCorp to be plugged by the Contractor into each RailCorp supplied PC and RailCorp supplied media converter.
- Fiber optic multimode duplex orange patch cable with SC-SC connectors and restraint jackets to be supplied, installed in conduit and plugged by the Contractor into each PC. The Contractor is to utilize LSZH conduit inside buildings, and where practicable utilize rigid conduit. The Contractor shall take extreme care when handling fiber to ensure the bending radius and condition of the fiber is not reduced. The Contractor should allow for at least three meters of conduit works for each TIS. Works may include penetrations through desks.
- Power cables, provided by RailCorp, to be plugged by the Contractor into near-by GPO to feed power to LCD, PC and media converter.
- VGA cables supplied by RailCorp to be plugged by the Contractor into each LCD and PC.
- Contractor shall mount the PC nearby as agreed with RailCorp. The Contractor shall design and supply and install PC mounting bracket.
- RailCorp to approve mounting arrangements proposed by Contractor. The Contractor must submit proposed design to RailCorp Representative for review a minimum of two weeks before commencement of installation.
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D1.4 Rack Fit Out

D1.4.1 Station works

A. General

- Attached station layout drawings provide locations of rack.
- The Contractor shall collect one SPI rack (per station) from 5/145 Arthur St. Homebush West or designated address in Sydney, transport to equipment room, install, wire and commission.
- All equipment below supplied by RailCorp (from 5/145 Arthur St. Homebush West or designated address in Sydney) to be collected, transported to each station equipment room and installed into rack at each station by the Contractor:
 - 1 x rack mountable server PC
 - 1 x rack mountable KVM LCD
 - 1 x rack mountable switch
 - 2 x rack mountable cable managers
 - 1 x rack mountable shelves.
 - 2 x rack mountable fiber patch panels.
 - 1 x PC to sit on rack mountable shelf.
 - 1 x UPS to be mounted
 - 1 X thermometer
- The power and data cabling diagrams will be supplied after award.

B. Power

- Un-terminated power cable, provided by RailCorp, to be terminated by the Contractor into each rack by a qualified electrician.
- Power cables, provided by RailCorp, to be plugged by the Contractor into GPO inside each rack to feed power to KVM LCD, PCs, switch and fans.
- The UPS is to be connected and powered on.
- The Contractor shall wire each SPI rack to include:
 - Double GPO to be installed external on the top of the rack
 - Connection from the external GPO to an internally side mounted power board
 - Hard wiring of air conditioner unit to external GPO.
- The air conditioning unit shall be adjusted to 21 DEG C and powered on by Contractor as per RailCorp supplied wiring diagram.
- The Contractor shall provide a condensate tray and fit on the outside of the rack at the bottom and connect securely a plastic condensate pipe.
- If air conditioning is not to be used, then RailCorp will supply fan units, also requiring Contractor to connect and power on.
- The Contractor shall seal the rack to prevent air flow to ensure air flow is circulated only within rack and air conditioner i.e.: not allow external air entering rack when door is shut.
- The Contractor shall close door of rack and test air conditioning unit.

C. Data

- VGA cables supplied by RailCorp to be plugged by the Contractor into each KVM, LCD and rack mountable PC.
- Fiber optic multimode duplex orange patch cable with SC-SC connectors and restraint jackets to be supplied, installed in conduit and plugged by the Contractor into each device. The Contractor shall take extreme care when handling fiber to ensure the bending radius and condition of the fiber is not reduced. The Contractor should supply, install and connect 100x fiber patch leads of 3m length in a professional manner acceptable to RailCorp for each station. The exact lengths to be determined after award in cooperation with RailCorp.
- The Contractor shall label ALL data cables as per cable schedule to be supplied by RailCorp.

D. Relocation works at St Leonards

- The Contractor shall transport old rack from site to RailCorp store – the address to be supplied after award.

- The Contractor shall relocate equipment from old rack to new rack on a RailCorp defined weekend, these works to mainly include relocating devices as listed above and patching data fiber leads.

E. Provision of Shelving

- The Contractor shall design, supply, install steel shelving at locations shown on provided drawings. RailCorp estimates shelving is required at 75% of stations and will consist of at a minimum 'Dexion Longspan' type four shelves 600mm deep by approximately two metres long by two metre high. The shelving shall be either dyna-bolted or chemset to flooring at a minimum of four points. The Contractor shall specify this allocated amount per station.
- The Contractor, in cooperation with the local Station Manager, shall relocate storage items from proposed rack location to new shelving, and clean rack location in preparation for SPI rack installation. The equipment to be supplied shall be approved by RailCorp before installation.

F. Connection of Audio equipment

- In consultation with RailCorp Project Manager and in cooperation with the Station Manager the Contractor shall re-connect various audio equipment as required. The Contractor shall allocate a provision for each station of 8 man hours for these works at weekend rates.

G. Provision of exhaust fan

- The Contractor shall supply, install and commission one exhaust ceiling fan (Specifications of 250mm diameter, maglev, 240VAC, 800cfm minimum flow, long life) connected by metal tubing to an industrial strength roof mounted weather proof rotating vent. RailCorp estimates provision is required at 75% of stations. The fan shall be installed in the room housing the SPI rack. If there is no ceiling the contractor shall install the fan integrated with the roof mounted rotating unit. There shall be a wall mounted switch to operate the fan. The switch shall be labeled with 'SPI exhaust fan' with model and type details, with DB and CB numbers and locations with trafolyte labels adjacent to switch. The equipment to be supplied shall be approved by RailCorp before installation. The Contractor shall specify this allocated amount per station.

D1.4.2 Homebush Control Centre Works

E. Control room desk

- RailCorp provided small rack is to be collected, delivered and installed by the Contractor
- All equipment below supplied by RailCorp (from 5/145 Arthur St. Homebush West or designated address in Sydney) to be collected and installed on site by the Contractor into rack:
 - 4 x rack mountable PCs
 - 6 x desk mountable LCDs
 - 1 x rack mountable switch
 - 4 x rack mountable shelves.
- Power cables, provided by RailCorp, to be plugged by the Contractor into GPO to feed power to LCD, PCs, switch and fans.
- VGA, keyboard and mouse cables supplied by RailCorp to be plugged by the Contractor into each LCD and PC.
- The Contractor shall supply and install patch UTP cables for each devices, the average length envisaged to be 3m and ranging from 2m to 5m. All cables are to be labeled as per cable schedule to be supplied by RailCorp.

F. Computer room

a. General

- The Contractor shall collect one SPI rack (per station) from 5/145 Arthur St. Homebush West or designated address in Sydney, transport to equipment room, install, wire and commission.
- All equipment below supplied by RailCorp (from 5/145 Arthur St. Homebush West or designated address in Sydney) to be collected, transported to equipment room and installed into rack by the Contractor:

- 1 x rack mountable server PC
- 1 x rack mountable KVM LCD
- 1 x rack mountable switch
- 2 x rack mountable cable managers
- 1 x rack mountable shelves.
- 2 x rack mountable fiber patch panels.
- 1 x PC to sit on rack mountable shelf.
- 1 x UPS to be mounted
- 1 X thermometer
- The power and data cabling diagrams will be supplied after award.
 - b. Power**
 - Un-terminated power cable, provided by RailCorp, to be terminated by the Contractor into each rack by a qualified electrician.
 - Power cables, provided by RailCorp, to be plugged by the Contractor into GPO inside each rack to feed power to KVM LCD, PCs, switch and fans.
 - The UPS is to be connected and powered on.
 - The Contractor shall wire each SPI rack to include:
 - Double GPO to be installed external on the top of the rack
 - Connection from the external GPO to an internally side mounted power board
 - RailCorp will supply fan units, requiring Contractor to connect and power on.
 - c. Data**
 - VGA cables supplied by RailCorp to be plugged by the Contractor into each KVM, LCD and rack mountable PC.
 - Fiber optic multimode duplex orange patch cable with SC-SC connectors and restraint jackets to be supplied, installed in conduit and plugged by the Contractor into each device. The Contractor shall take extreme care when handling fiber to ensure the bending radius and condition of the fiber is not reduced. The Contractor should allocate a cost to supply, install and connect 100x fiber patch leads of 3m length in a professional manner acceptable to RailCorp for each station. The exact lengths to be determined after award in cooperation with RailCorp.
 - The Contractor shall label ALL data cables as per cable schedule to be supplied by RailCorp.

D2.3 Safety

- Copies of Pre Work brief (PWB) **must** be forwarded to RailCorp Representative within two weeks of completion of each shift at each station by email.
- Safe Work Method Statement (SWMS) **must** be submitted one week for review by email prior to construction of work. RailCorp reserves the right to **suspend** works and service notice of Safety non-compliance if these documents are not completed correctly or not provided.
- Safe work method statements (SWMS) must be submitted to RailCorp with RFQ offer. These must detail the method of works such as scaffolding, ladders, genie lift etc...
- The installers must comply with the OH&S Act (2000) and relevant RailCorp safety standards whilst working on RailCorp property.
- RailCorp will conduct random safety audits and random safety observations to ensure that installers are complying with the relevant RailCorp safety standards. The audit and observations results will be entered into the RailCorp supplier performance database, which **will** be used in tender evaluations of future projects.
- RailCorp will conduct random Drugs and Alcohol Tests.
- The Contractor must at his own expense provide all Safe Working arrangements and Worksite Protection for work within the rail corridor including Possession and Protection Officers & lookouts. Worksite Protection personnel must be drawn from RailCorp's accredited Worksite Protection panel, a copy of which is included below:

Company	Name	Title	Phone	Fax	Mobile
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Company	Name	Title	Phone	Fax	Mobile
Sweetha International	Praveen Challa	Director	9715 2833	9715 3844	0419 905 607
Multi Civil & Rail	Rick Jorgenson	Director	4272 8891	4272 8895	0424 381 449
MKB	Greg Dare	Contact	9670 1565	9670 1544	0418 644 611
Skilled Rail Servcies (probational member) – used ONLY if above members can not be utilised	Chris Reid	Contact	8337 9995	8337 9466	0419 490 150

RailCorp will not be liable for any cost or delays due to the use of the above Worksite Protection Companies.

- The Contractor shall always have a minimum crew of two personnel (excl PO) and the working areas shall always be barricaded from the public.

D2.5 Installation Times

- Installations can only be performed between operational peak hours or after operational peak hours.
- Notification of works must be provided to a RailCorp representative at least 48 hrs before work is planned to commence. Work may only commence after RailCorp representative approval.

D3. Delivery Details

D3.1 Completion Date

- See Section B1.3 Timing Details.

D3.2 Provide Installation Schedule

- The Contractor shall provide installation works in a serial format i.e.: installation commences at a new station works complete at current station, unless authorized in writing by RailCorp.
- The Contractor must provide a proposed delivery plan for the installation at all stations in Microsoft Project 98, 2000 or 2003 or in the form of a bar chart with RFQ offer.

D3.3 Commissioning

- Site support during testing and commissioning. The Contractor will keep a provision of a total of 64 person night shift hours (excluding the traveling time) per station and two Protection Officer night shift person day costs. This support will generally be required during 6PM to 6AM. The Contractor will be provided with a program for the commissioning work and given 48-hour confirmation of requirements for providing support.

D3.4 Warranty and Defects Response

- All costs associated with the repair or replacement of the equipment including transport costs shall be the responsibility of the Contractor.
- Where the defective item is readily removable, A RailCorp representative will arrange for the removal of the defective equipment and dispatch to the Contractor for

repair/replacement. The Contractor will return the repaired/replacement equipment within 10 working days.

- In other cases the Contractor will be required to attend at the site within 4 working days and repair and/or replace the defective item. In some cases access to the defective item may be limited to times outside of normal working hours. The permitted access times will be nominated by a RailCorp representative.
- Any warranty work on the RailCorp site shall be undertaken in accordance with the current site safety rules.
- The Contractor shall provide a warranty of three years from date of installation of all works, including but not limited to structural integrity due to installation methods.
- The Contractor shall retain copies and shall expect RailCorp to request and deliver within one week, during this time all structural certificates for a period of seven (7) years after completion of project.

The Contractor shall deliver at the completion of the project a full set of all drawings and structural certificates in both printed and electronic format.

D3.5 Resource Responsibilities

- The Contractor must resource the project for capacity of at least three concurrent work teams at each installation, however the exact number will vary as per installation site requirements
- RailCorp will provide at least one week before each site installation of requirements of number of teams required.
- Each Contractor installation team must consist of a minimum of three people.
- Each Contractor installation team must be resourced with and use as per SWMS:
 - A “genie”™ lift or similar type of manually operated material lift device with robust tie cables that can be affixed to nearby structure to prevent movement of the “genie”™ lift or similar type device towards track.
 - All lifting equipment must include maintenance records.
 - An approved ladder
- The Contractor shall make provision for transport and tools at its own cost.
- The Contractor must perform preparatory works on site prior to commissioning date to meet commitments during commissioning.

D3.6 Equipment Responsibilities

- The Contractor is responsible for the state of RailCorp equipment from pickup to site acceptance after installation works are complete. The Contractor is responsible for any damage in transit and during installation of equipment. The Contractor must notify in writing of any damage to equipment with digital photo, before loading commences.
- The Contractor is to take utmost care to ensure that the equipment is not handled and stressed in a manner that inflicts any damage or creates any hazard whatsoever. An example is over-tightening bolts or use of hammers to position bolts as this will incur stress on the bolts and may degrade structural integrity. RailCorp reserves the right to conduct random inspections and the Contractor shall incur repair costs if defects are identified.
- All equipment associated with the installation of the platform housings works shall be collected from the RailCorp Homebush West offices or at an address in the Sydney Metropolitan area to be designated by RailCorp after award of contract. RailCorp will have a maximum of three addresses and five pickups for each station installation works.
- The Contractor should allow for a comprehensive inspection with RailCorp staff to each site to verify locations of all equipment.
- The Contractor must notify RailCorp and include barcode on report of any damage of old equipment before decommissioning.

D4.0 Acceptance criteria of works

D4.1 Acceptance/Rejection

RailCorp reserves right to reject delivery and will most likely do so, if any detailed delivery requirements are not adhered to as specified in this tender document.

D4.2 Remediation of faults

The Contractor is obligated to commence fault remediation within 24 hours of RailCorp serving notice of a rejection for a critical fault and three working days for other faults.

D5.0 Abbreviations

SPI – Station Passenger Information
NOEW – Notice of Electrical Works
COEC - Certificate of Electrical Compliance
PWB - Pre Work Brief
PI – Platform indicator
CI – Concourse indicator

Appendix A

Table Appendix A.1 SPI Indicators - North Shore Line

Station	Concourse	Platforms	Platform Type	SPI Rack	Concourse Indicators	Platform Indicators	TIS	TIS Comments	Indicator Comments	Other comments
Waitara	No	2	Island	1	0	2	2	SM AND BO		
Wahroonga	No	2	Island	1	0	2	2	SM AND BO		
Warrawee	No	2	Island	1	0	2	1	BO		
Turramurra	Future Yes	2	Island	1	2	4	2	SM AND BO	Construction site	
Pymble	No	2	Island	1	0	2	2	SM AND BO		
Gordon	Yes	4	1 Island, 1 single	1	2	4	5	2 BO, SM, Ctl P2/3, SOSA office	2x PIs on P1	
Killara	No	2	Island	1	0	2	2	P3 Ctrl room and BO		
Lindfield	Yes	3	1 Island, 1 single	1	3	3	2	SM AND BO		
Roseville	No	2	Island	1	0	2	2	SM AND BO		
Artarmon	No	2	Island	1	0	2	2	SM AND BO		
St Leonards	Yes	2	Single	1	0	6	4	1 per platform Ctl room, GAC and BO	2x per platform	
Wollstonecraft	No	2	Single	1	0	2	2	SM AND BO		
Waverton	No	2	Single	1	3	2	2	SM AND BO		
Subtotal				13	10	32	30			

Table Appendix A.2 SPI Indicators - Northern Line

Station	Concourse	Platforms	Platform Type	SPI Rack	Concourse Indicators	Platform Indicators	TIS	TIS Comments	PI Comments	Other comments
Hornsby	No	4	1 Island, 2 Single	0	0	4	0			
Normanhurst	No	2	Single	1	0	2	1	TIS - BO		
Thornleigh	No	3	1 Island, 1 Single	1	0	3	1	TIS - BO		
Pennant Hills	Yes	2	Single	1	2	4	3	TIS - 2x BO and SM	2x per platform	
Beecroft	No	2	Island	1	0	2	2	TIS - SM AND BO		
Cheltenham	No	2	Single	1	0	2	1	TIS - BO		
Eastwood	Yes	4	2 Island	1	3	8	5	TIS - 3 BO, Ctl P1/2, Ctl P3/4		
Denistone	Yes	4	2 Island	1	3	4	1	TIS - BO		
West Ryde	Yes	3	1 Island, 1 Single	1	3	3	4	TIS _ GAC and 3x BO		
Meadowbank	No	2	Single	1	0	2	1	TIS - BO		
Concord West	Yes	3	1 Island, 1 Single	1	3	3	1	TIS - BO		
North Strathfield	No	3	1 Island, 1 Single	1	0	3	1	TIS - BO		
Subtotal				11	15	40	22			

Appendix C – Revisions of drawings.

Sr. No.	Document Title	Revision No.	Drawing name in document
1	North Shore Line SPI Station Layouts.pdf	V3	Waverton Layout sheet 1 of 2
2		V3	Waverton Layout sheet 2 of 2
3		V2	Wollstonecraft Platform Layout
4		V2	St Leonards Concourse Layout
5		V2	St Leonards Platform Layout
6		V3	Artarmon Platform Layout
7		V3	Roseville Platform Layout
8		V3	Lindfield Platform Layout
9		V3	Killara Platform Layout
10		V3	Gordon Concourse Layout
11		V3	Gordon Platform Layout
12		V3	Pymble Platform Layout
13		V3	Turramurra Platform Layout
14		V2	Warrawee Platform Layout
15		V3	Wahroonga Platform Layout
16		V3	Waitara Platform Layout

Sr. No.	Document Title	Revision No.	Drawing name in document
1	Northern Line SPI drawing layouts.pdf	V2	Hornsby Platform Layout
2		V2	North Strathfield Platform Layout
2		V2	Concord West Platform Layout
3		V2	Meadowbank Platform Layout
4		0	Meadowbank Platform Layout
5		V2	West Ryde Platform Layout
6		V2	Denistone Platform Layout
7		V2	Eastwood Concourse Layout
8		V2	Eastwood Platform Layout
9		0	Cheltenham Platform Layout
10		V2	Beecroft Platform Layout
11		V2	Pennant Hills Concourse Layout
12		V2	Pennant Hills Platform Layout
13		0	Thornleigh Platform Layout
14		0	Normanhurst Platform Layout

Sr. No.	Document Title	Revision No.	Drawing name in document
1	SPI Housing drawings.pdf	A	Dual Cabinet Installation
2		A	Platform Overhead Display