3. The Nature of the Proposal

3.1 Scope of the Project

3.1.1 Rail and In-loading

Rail Line

The rail line, approximately 14 km in length, will run from just east of Mt Larcom, past East End Junction (and the proposed Aldoga provisioning and maintenance yard) and link to the in-loading balloon loop.

A final rail corridor is yet to be determined. The broad study area within which the corridor will be located is shown in Figure 1-2.

Rail Loop

The proposed location and configuration of the rail loop is shown in Figure 2-1.

The balloon loop will be developed in stages with multiple loops added as the Project evolves. The loops will have the capacity to accommodate up to 2,250 m long trains. There will be space for two trains to concurrently in-load on any loop (or along the rail access if appropriate) – one unloading and one queuing. Trains would be provisioned on the exit road.

Trains will unload via bottom dump to dump hoppers. Train unloading will take between 1.5 and 2 hours.

Product will be transferred via a belt feeder to the receival conveyor and then to the shuttle head for loading to the in-loading conveyor.

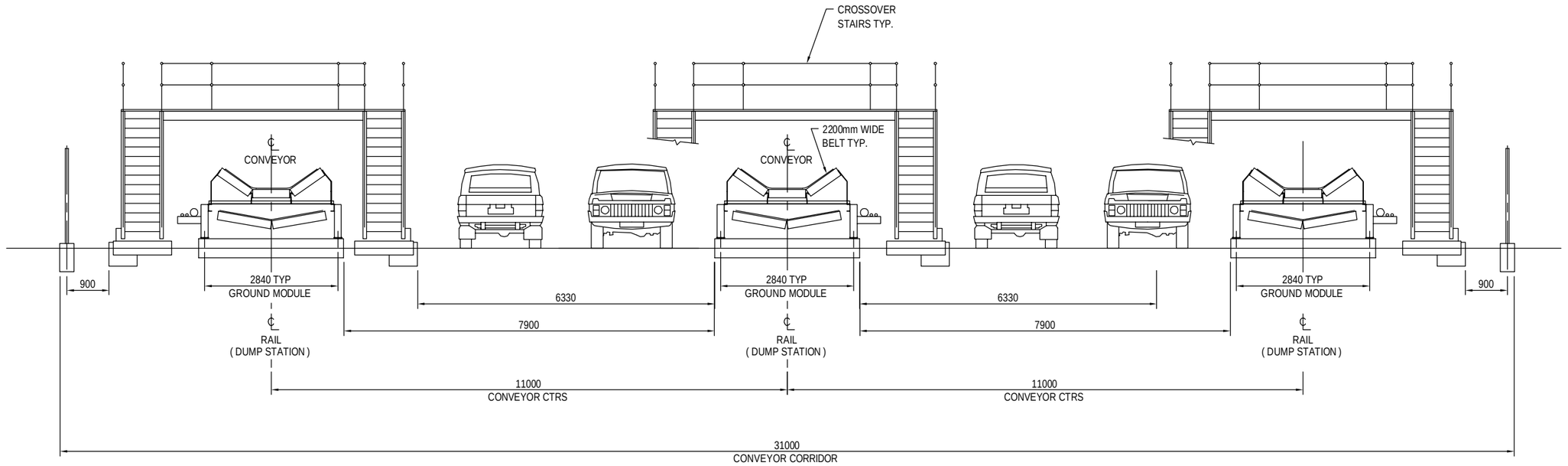
The rail receival will consist of:

- Train weigh bridge;
- Suspended dump hopper with grating and rail bridge;
- Receival conveyor with shuttle head to stockyard transfer conveyors;
- Tramp iron magnet;
- Belt weigher and moisture monitor (if required);
- Sampling station;
- Rail receival building and rail interface;
- Control room; and
- Ancillary equipment such as overhead crane, dust suppression spray systems, fire detection and protection systems, wagon wheel wash and rail dump station water management system.

In-loading Corridor

In-loading conveyors will transfer coal to the stockyard.

An indicative section of the conveyors and access roads along the corridor are shown in Figure 3-1. The corridor makes provision for up to three conveyors with a total width of approximately 31 m.



TENEMENT TO TERMINAL LTD.
YARWUN COAL TERMINAL PROJECT

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INDICATIVE CROSS SECTION OF IN-LOADING CONVEYOR CORRIDOR

Figure 3-1

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Plot Date: 2 March 2012 - 11:59 AM Plotted by: Liam Houghton/Brisbane/GHD/AU Cad File No: G:\41\24484\Document Transfer\Outgoing\2012-03-02 Gis Figures\41-24484-FIG 3-1.dwg

3.1.2 Stockyard

Site Filling and Improvements

Ground improvements works will be undertaken on proposed Lot 101 (Figure 3-2) to raise the site level to +4.5 m AHD (+7.0 m LAT). There are a range of options being considered for these works including:

- Surcharge with / without stone columns;
- Excavating and replacing the soft clay layer – up to 3.5 m deep;
- Vacuum consolidation;
- Soil cement columns;
- Vibro / dynamic compacting / grouting; and
- Geogrid raft/piled raft.

As the prefeasibility phase progresses, the final fill method will be determined and investigated to identify management and mitigation methods.

It is proposed that filling works would commence and advance from the landward side of the site with lining and the placement of riprap on the final external face occurring once filling is complete. Filling works within the area of tidal influence would be scheduled during neap tidal cycles to avoid interaction with marine water. Geotextile material would be used in the areas potentially impacted by tidal movement to minimise any potential impact of filling works to water quality. Options for site access to transport the fill to the site are being investigated to identify a route that minimises impacts on State and Commonwealth matters. Current options are still being examined and include trucking in the fill or transporting it via the existing rail line which runs past the northern sector of the site.

The source of the fill is being investigated with the main options being to use fill from one of the following:

- Dredge spoil, subject to approval of the resource owner, from current approved dredging operations via trucking of dewatered sediments;
- Imported fill material from an approved quarry source; or
- A combination of the above.

3TL is seeking approval for the dredging and disposal of 4.036 Mm^3 of spoil (Section 3.1.3). It is proposed that this material will be disposed of on proposed Lots 101 and 103 (Figure 3-3) or other approved dredged spoil disposal locations.

Stockyard Operation

Blending of coal will occur on arrival in the stockyard. Coal will be stacked and reclaimed with a bucket wheel stacker / reclaimer. The stockyard will consist of a central berm equipped with two stacker / reclaimers and two yard conveyors (one per machine). Dozers will be used to provide additional dead storage outside the reach of the machines, but within each bay.

An indicative plan and cross section of the stockyard is shown in Figure 3-4 and Figure 3-5 respectively. Specific dimensions will be developed as the design progresses. Stockpiles will be approximately 1,100 m long and will become shorter as development moves north. Each stockpile will have up to 600,000 tonnes of capacity, giving storage for about 5% of the annual throughput. Ultimately the stockyard may accommodate a number of shorter stockpiles to allow for a mix of coal type and to meet coal company requirements for export. The final configuration will depend on the mix of customers using the terminal.

LEGEND

- Highway
- Main Road
- Secondary Road
- Existing Railway
- Extent of Site Filling

1:15,000 (at A4)

0 100 200 300 400 500

Meters

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 56

N

Tenement to Terminal Ltd
Yarwun Coal Terminal Project

Approximate Extent of
Site Filling for Early Civil Works

Job Number 41- 24484
Revision A
Date 10/04/2012

Figure 3-2

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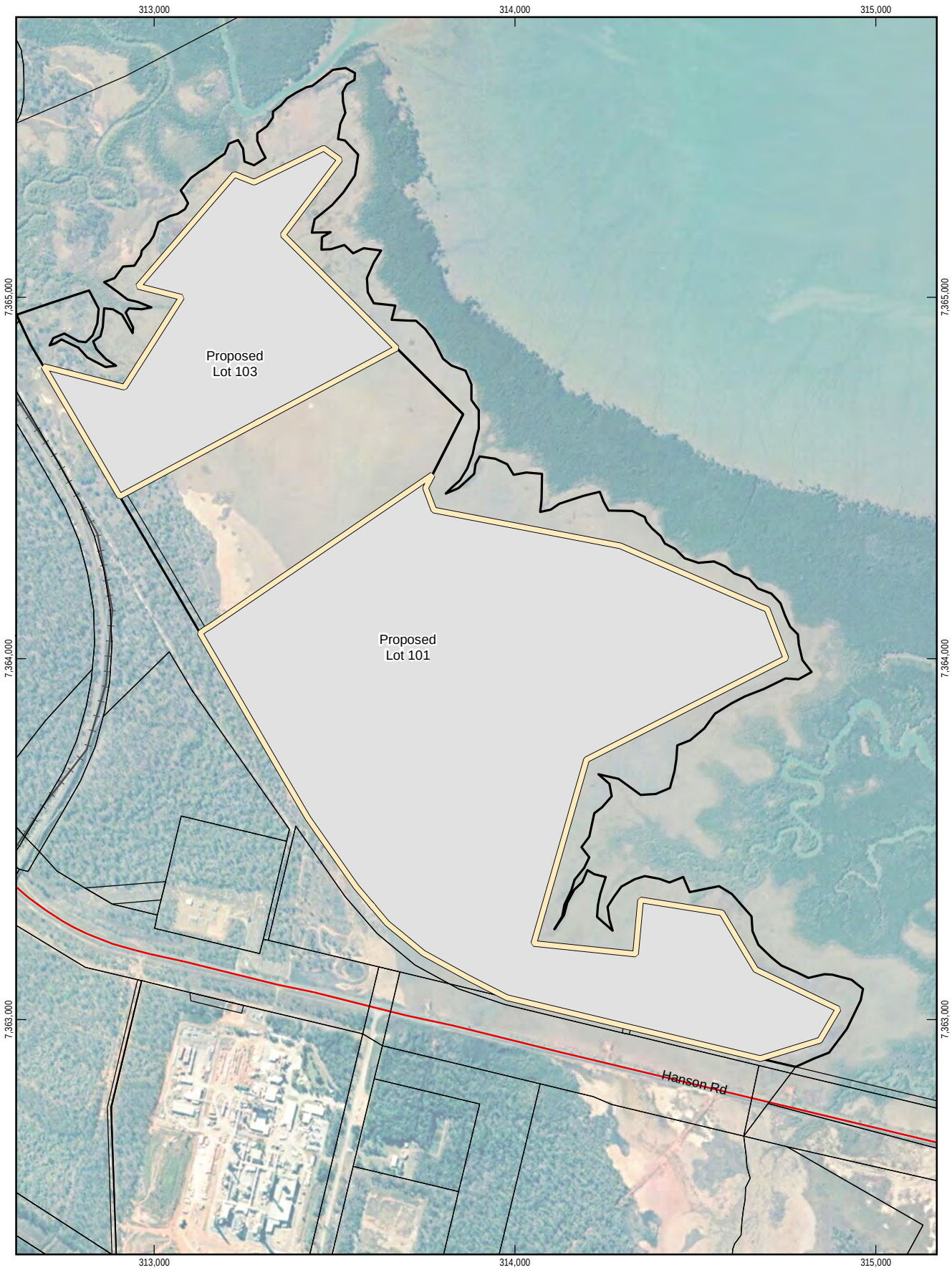

LEGEND

- Existing Railway
- Highway
- Main Road
- Secondary Road
- Extent of Site Filling
- Cadastral Boundary

1:15,000 (at A4)

0 100 200 300 400 500

Meters

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 56

N

Tenement to Terminal Ltd
Yarwun Coal Terminal Project

Job Number	41- 24484
Revision	A
Date	10/04/2012

Extent of Ultimate Site Filling

Figure 3-3

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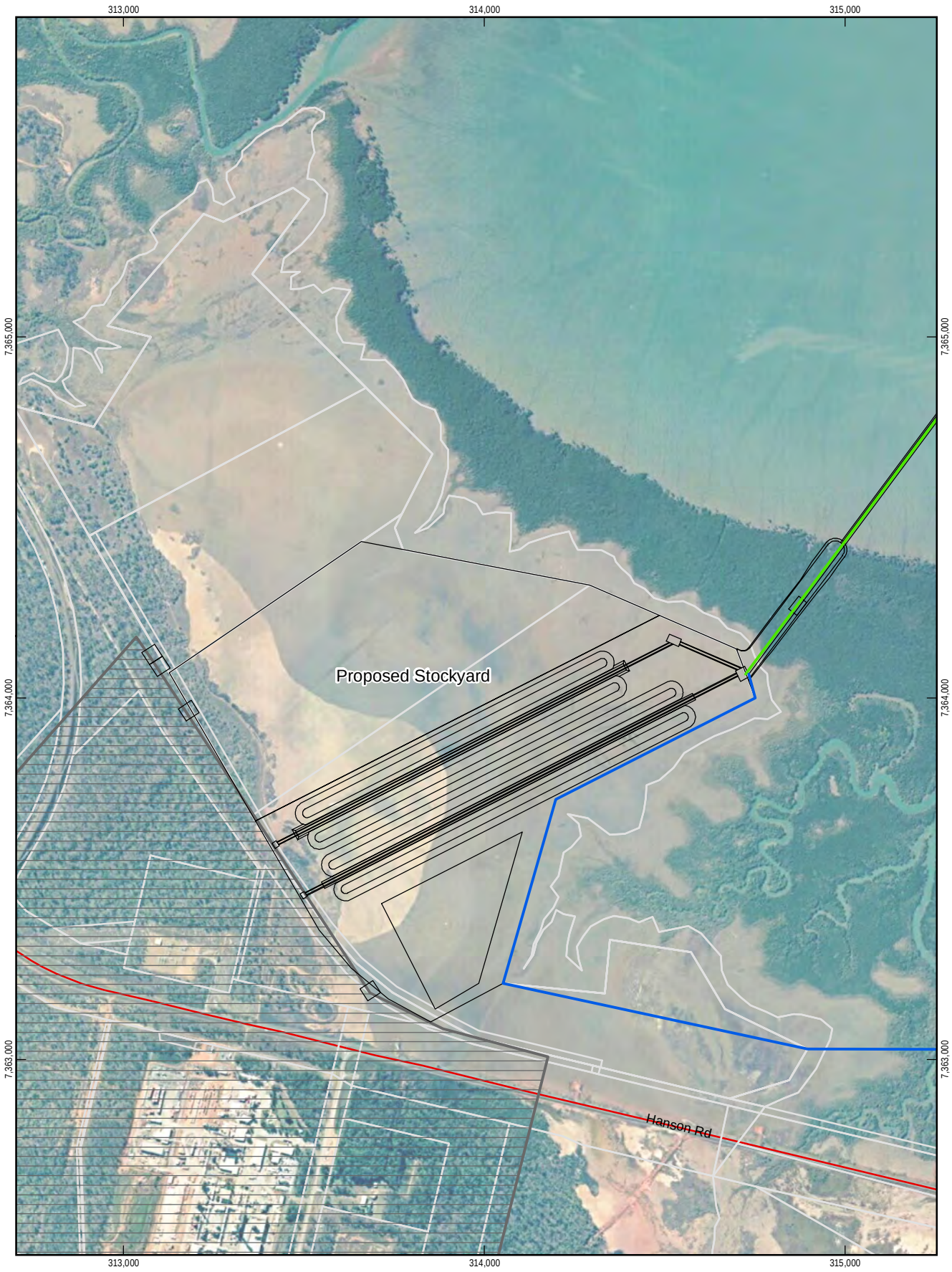

LEGEND

- Highway
- Main Road
- Secondary Road
- Proposed Infrastructure
- Proposed Jetty Approach
  - Option 1
  - Option 2
- Cadastral Boundary
- In-loading Conveyor Study Area

1:15,000 (at A4)

0 100 200 300 400 500

Meters

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 56

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Yarwun Coal Terminal Project

Job Number 41- 24484
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Date 10/04/2012

Stockyard Arrangement

Figure 3-4

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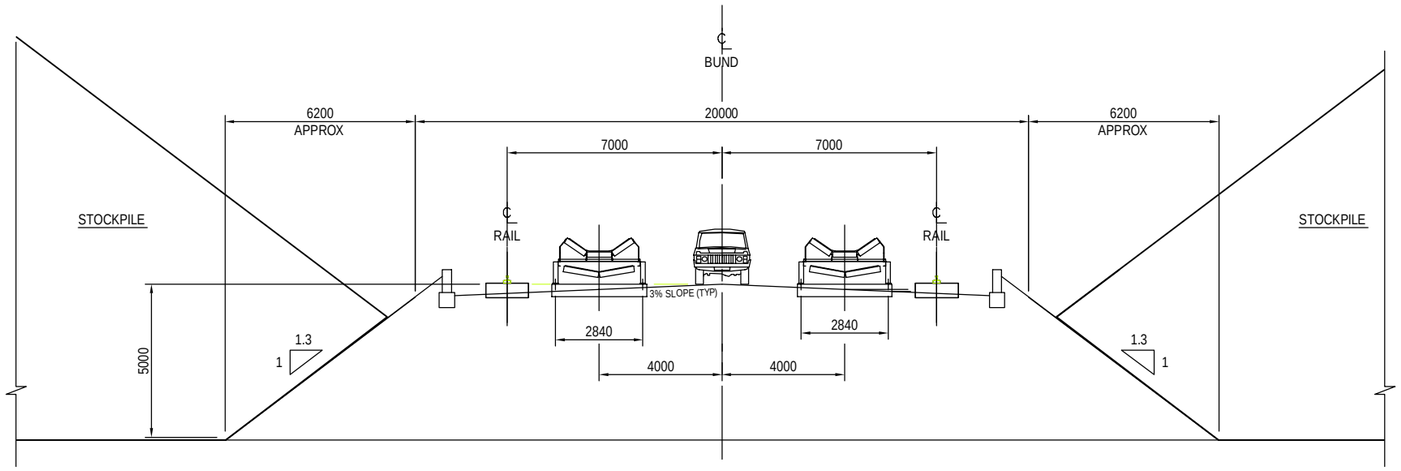
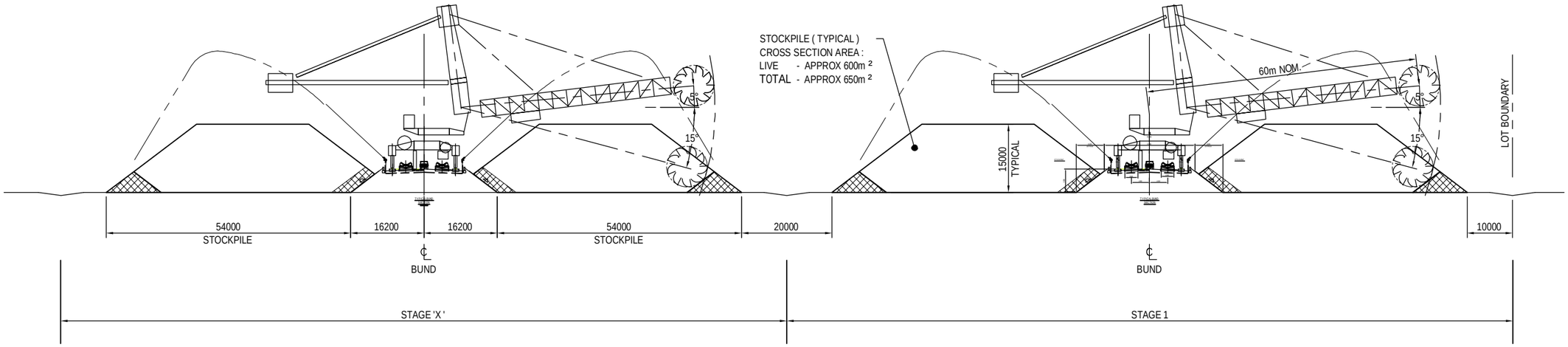


TYPICAL BUND
SECTION



TYPICAL SECTION
THROUGH STOCKYARD

TENEMENT TO TERMINAL LTD.
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STOCKYARD CONFIGURATION

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Date Mar 2012

Figure 3-5

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3.1.3 Out-loading

The Facility

Out-loading will require the construction of a piled jetty from land (Figure 2-2). Two alignment options are being considered (Section 2.2.3). Further investigation will occur during detailed design to select the preferred option. The configuration of the jetty with one out-loading conveyor is illustrated in Figure 3-6. When the terminal is expanded to two out-loading streams, the jetty will be widened (additional piles driven and the headstock extended) and the second out-loading conveyor will be installed on the other side of the access road.

The wharf will be capable of servicing vessels ranging from Handymax (40,000 dead weight tonnes (DWT)) to Cape class (220,000 DWT). The out-loading conveyor will operate at up to 8,000 tph.

Two types of ship loader are being considered (Section 2.2.5). Further investigation will occur during detailed design to select the preferred option.

The facility will operate 24 hours per day, 365 days a year. A 180,000 DWT vessel would be filled over three tidal cycles. During busy periods, a vessel would depart the berth on a high tide, the next vessel would arrive in ballast as soon as practicable and be loaded ready to leave approximately 37.5 hours after the departure of the original vessel.

An initial estimate, based upon a mix of vessels, indicates that there would be around 500 vessels visiting the coal terminal each year once it reaches the 50 Mtpa export capacity.

Dredging and Spoil Disposal

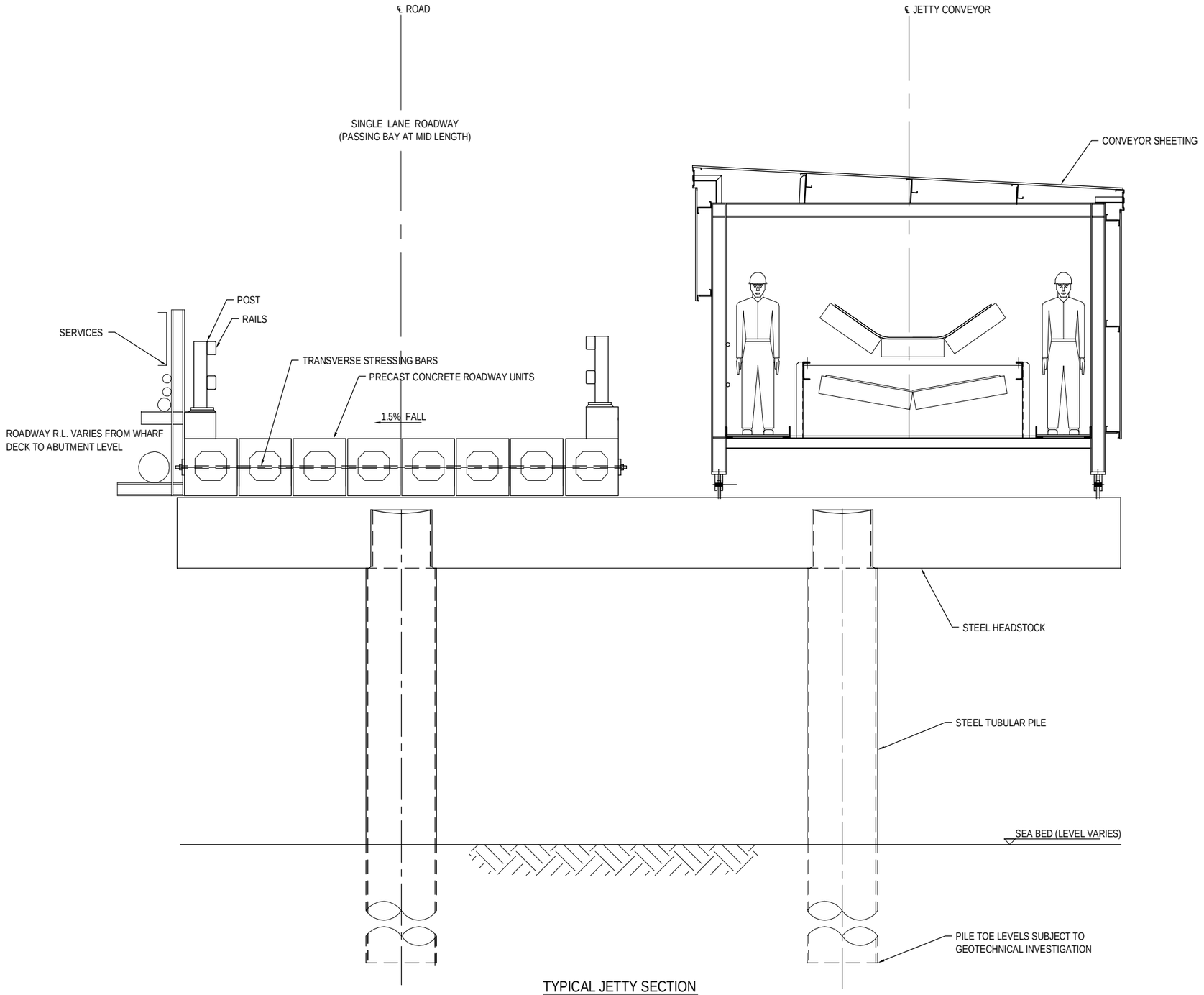
Dredging of the swing basin, approach channel, berth pockets and shipping channel extension will be to the same depths as RG Tana and WICET.

Approximately 6.64 Mm^3 of material will be dredged for the 3TL Project.

Dredging and disposal of approximately 0.54 Mm^3 of this material has been previously assessed as a component of the Western Basin EIS which covered development of the Targinie Channel. Dredging and disposal of approximately 1.554 Mm^3 and 0.51 Mm^3 of material from the proposed 3TL Berth 1 and Berth 2 areas respectively has also been assessed as a component of the EIS for the proposed Gladstone Pacific Nickel Project. Therefore, approximately 2.604 Mm^3 of material has been previously assessed for dredging and disposed elsewhere onshore within the port.

The EIS will assess the dredging and disposal of the balance of material (4.036 Mm^3) and for this material to be disposed of on proposed Lots 101 and 103 on SP235026, or other approved dredge spoil disposal locations.

3TL will be responsible for all dredging approvals, hence inclusion in this IAS. Responsibility for all dredging and spoil disposal and construction works including onshore bunding will be negotiated with GPCL if the project proceeds to the construction stage after obtaining all of its approvals.



TYPICAL JETTY SECTION
SCALE 1:25

0 0.5 1.0 1.5m
SCALE 1:50 AT ORIGINAL SIZE

TENEMENT TO TERMINAL LTD.
YARWUN COAL TERMINAL PROJECT

TYPICAL JETTY SECTION - STAGE 1

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Figure 3-6

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3.1.4 Facilities and Utilities

Administration facilities at the coal terminal would include:

- Workshop;
- Administration building
- Central control room;
- Site road network;
- Central stores building and yard;
- Central fuel storage facility;
- Sample station building;
- Vehicle parking area and amenities on the berth;
- Amenities;
- Central workshops and yard;
- Site security office and gate;
- Customs and AQIS office;
- Conveyor belt storage yard;
- Dump station control room;
- Staff and visitor's car park; and
- Vehicle wash down facilities.

The terminal will require a new substation. Annual power use is estimated at up to 140 GW.

Raw water will be drawn from the Gladstone Area Water Board raw water distribution network. It is envisaged that up to 1500 MLpa of raw water will be used for:

- Potable water (45 ML following treatment);
- Dust control and wheel wash at rail receival area;
- Belt wash, dust suppression and wash down on conveyors;
- Dust suppression on stockpiles, stacker reclaimers and ship loaders; and
- Fire water supply.

A site water management system will harvest rainwater and recycle site water as far as is practicable.

Sewage reticulation is not available and a package sewerage treatment plant will be required.

3.2 Project Schedule

Subject to securing all necessary approvals construction is scheduled to commence during early 2015 and to be completed around the middle of 2017.

3.3 Workforce

The construction and operations workforce is estimated at 600 and 200 personnel respectively.

3.4 Project Cost

The capital cost for the Project is estimated at $2.2 billion.