CONSTRUCTION MANAGEMENT PLAN

For:	Transnet Port Terminals (TPT), Saldanha
Project Name:	FEL3 - Saldanha Bulk Terminal Equipment Refit: Stacker Reclaimers, Ship Loaders and Tippler 2. (Phase-4: Stacker Reclaimer 3)
Project Number:	Z.5200160
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Client:	Transnet Port Terminals (TPT)
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Project Manager:	Graham Handley
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Approved by:	G Handley
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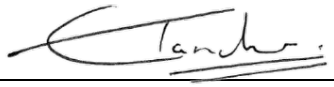
Prepared by: 

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Table of Contents

1. Owners Objectives and Benefits

The Bulk Material Handling (BMH) Equipment Refurbishment project is required to ensure the optimal operational use and availability of the existing BMH equipment at the BTS. Execution of the four-phase project, is scheduled to coincide with the annual Iron Ore Industry shut.
The objective of the project is revenue protection.
This refurbishment project is not an equipment upgrade and no increase in throughput or extension of design life of equipment will therefore be realized.

This scope is related to **Phase 4**. This includes the refurbishment of the following equipment only:

- Stacker Reclaimer 3 and Tripper Car 3

The critical success factors for the completion of FEL 4 are:

- On-time funding approval
- No procurement delays
- Comprehensive risk analysis and evaluation with mitigations in place
- Execution delivered on time and to budget
- A well-defined mitigation plan that engages all stakeholders resulting in no volume losses
- Zero H&S incidents

A Post Implementation review (PIR) will be carried out on the equipment to assess the success of the project. PIR factors:

- Availability >95%
- Reliability >98%

The benefits of the project are:

- Sustained terminal volume throughput and income
- Long term viability of the terminal
- Reduction in downtime
- Reduction in breakdown frequencies
- Achieve machine end of life
- Safe and reliable terminal
- Savings in maintenance costs

2. Introduction

2.1 Purpose

The purpose of the Construction Management Plan (CMP) for the Bulk Terminal Saldanha, Equipment Refit, is to define the methods and construction management elements that will be used to effectively manage the execution of the works at the terminal within the confines of the Business Case and Owner Requirement Specification, and also contains a framework for the successful execution of the construction activities by the Project Team.

The CMP establishes the execution philosophy and defines the organisation, work processes and systems necessary for execution of the works.

- The information outlined in this document is used to help ensure that the project is executed and completed in a timely and efficient manner and that the facilities designed and constructed will satisfy the project functional requirements.
- The CMP is structured to provide control over the execution and the requirements for each phase/discipline in the project.
- The CMP is a working document and is updated and detailed as the project progresses through the execution phases of construction, commissioning, proofing and hand over.
- The CMP is designed to always have the latest information available. It is the Project Manager's and Construction Manager's responsibility to update this document and to ensure that the latest information is available.

This CMP is complemented by the following separate documents:

- Owner Requirements Specification;
- Operational Readiness Plan (volume mitigation plan);
- Project Execution Plan;
- Project Health and Safety Management Plan;
- Project Environmental Management Plan;
- Quality Management Plan;
- Project Schedule;
- Security Management Plan;
- Project Risk Register;
- Project Legal Register;

2.2 Scope

The scope of this document includes:

- Construction Management prior to site establishment, up to the completion of commissioning/handover and site close-out;
- The responsibilities of the Construction Management Consultant (CMC)- and Support Services Team;
- The responsibilities of the Principal Contractor and his subcontractors;
- The responsibilities of the Client;
- Processes for Site Administration;

In line with Transnet Port Terminals' (TPT's) Owner Requirement Specification (ORS) the refurbishment is to ensure that the Bulk Material Handling equipment reaches end of life and to ensure that the machinery is safe for operation for the remainder of the operational period.

The majority of the equipment and structures at this terminal has passed their mid-life and require extensive repairs.

This FEL-3 report provides details for the refurbishment and repairs of the terminal. It has been decided to split the execution works into 4 distinct phases:

- Phase 1: Ship Loader-2 and Stacker Reclaimer-2 (Base Case approved)
- Phase 2: Ship Loader-1 and Stacker Reclaimer-4 (Base Case approved)
- Phase 3: Stacker Reclaimer 1 (Base Case approved)
- Phase 4: Stacker Reclaimer 3 and Tippler 2* (This submission)

*Tippler 2 is dependent on the completion of Tippler 3 and as such will be executed via a separate BCase

2.3 Document Status

This is a live document that will be updated periodically during the Construction Execution Phases when required.

3. Construction Management prior to Site Establishment

3.1 General Site Description

The Saldanha Terminal on South Africa's West Coast is the country's only dedicated iron-ore terminal. The Saldanha port is linked by rail to key iron-ore mines in the Northern Cape, making it the ideal gateway for the export of seaborne iron-ore.

The Saldanha Terminal is comprised of two operational terminals, namely the Bulk Terminal (BTS) and the Multi-purpose Terminal (MPT) (refer Figure 1 below).

Figure 1. Saldanha Terminal - BTS in the foreground and MPT top right

The MPT is currently a four (4) berth facility that handles a mix of commodities including dry bulk and break bulk cargo for both import and export. The BTS is a specialized iron ore export facility with dedicated equipment for offloading (from rail), storing and exporting (loading onto ships) different grades of iron ore. The iron ore capacity at the BTS is sixty (60) million tons per annum

The BTS's bulk handling equipment includes:

- Two (2) Tandem rotary tipplers;
- Four (4) Stacker-reclaimers (SR) (Figure 2);
- Two (2) Ship Loaders (SL) (Figure 3); and
- Twenty five (25) inter-connected conveying belts.

Figure 2. Stacker-reclaimer at BTS

Figure 3. Ship loaders at the BTS

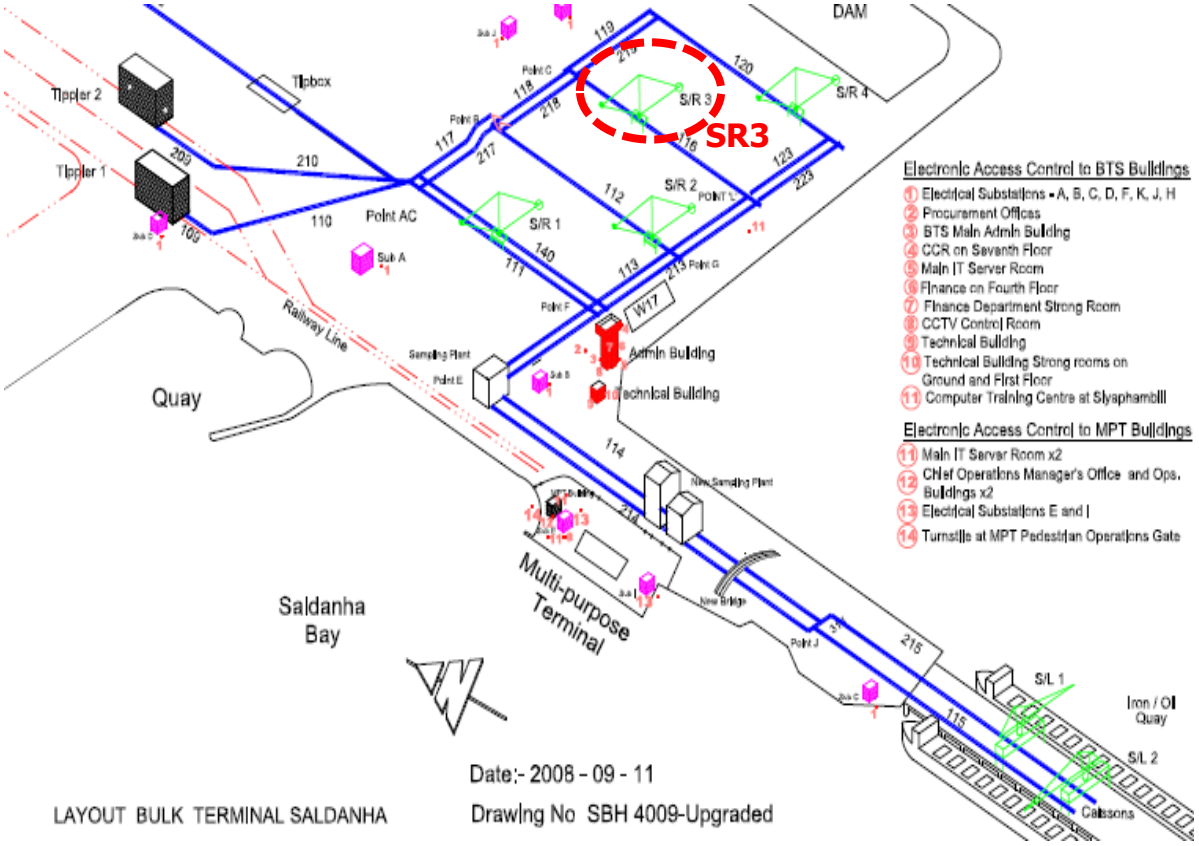
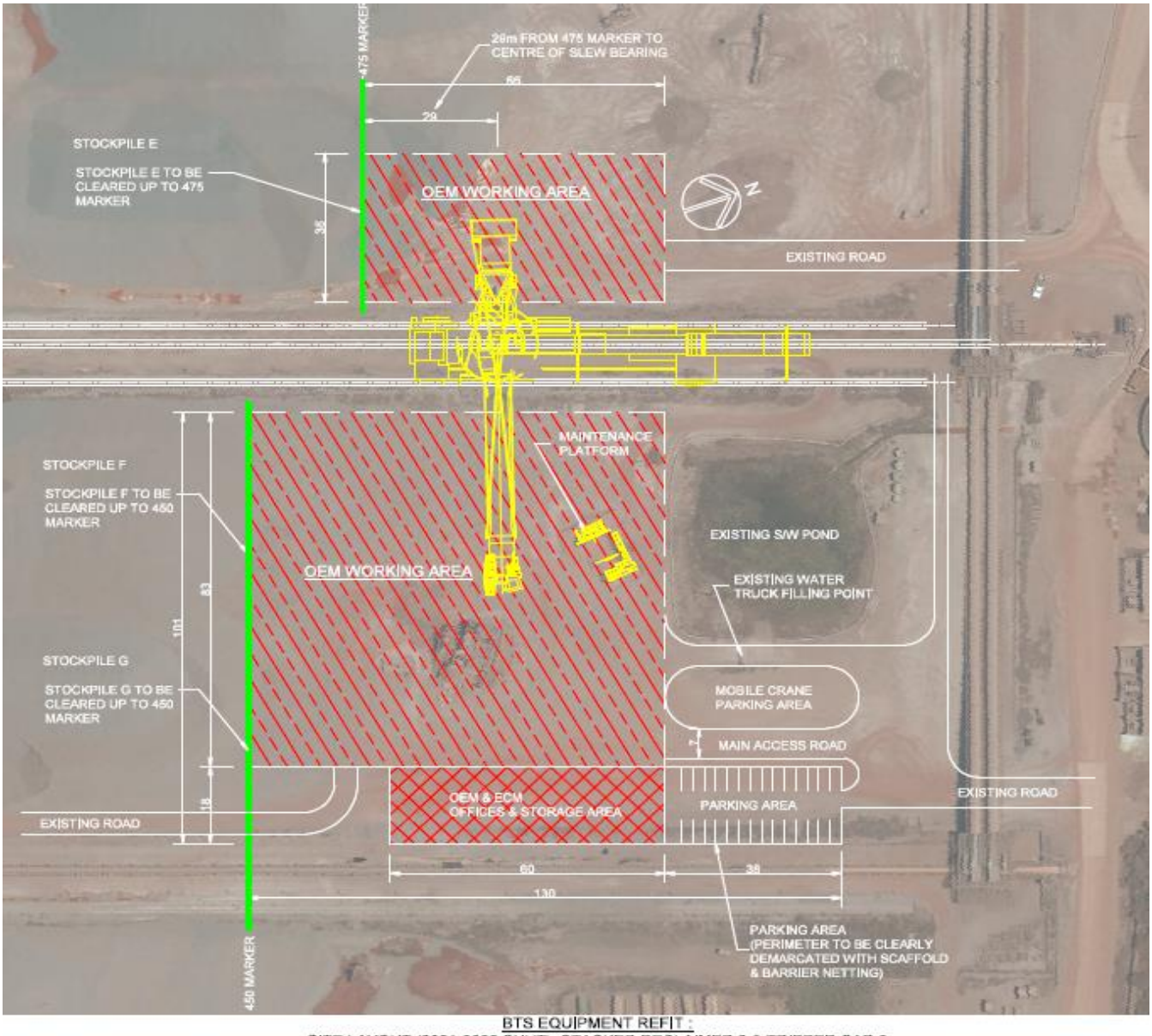


Figure 3. Schematic layout of the Saldanha Bulk Terminal

3.2 Contractor Site Establishment & Traffic Management

The Contractor's site offices, ablutions and minor stores may be located on site at identified areas and sited to not hinder work or operational activities. Final yard and lay down areas to be determined prior to construction.



BTS EQUIPMENT REFIT :
SITE LAYOUT (2021-2022 SHUT): STACKER RECLAIMER 3 & TRIPPER CAR 3
(SCHEMATIC SITE LAYOUT – NOT TO SCALE)
DATE: 24/08/2020

SR3 laydown area and site facilities

A site walkabout was scheduled with the BTS Operations- and Safety/Security Management teams where potential areas for site establishment and lay down areas for material and equipment, were identified

The surrounding existing infrastructure poses a major limitation on lay down space available for storing of materials. The contractor will need to take cognisance of this fact when planning the works and delivery of materials. Principal Contractors to submit traffic control plan and allow for flagmen to manage. There is no anticipated major traffic disruption on the Port main route from and to the construction area.

3.3 Site Office Facilities

The Project Administration and Management Team will be based at the existing Technical Building of the BTS. This office is suitably equipped to provide full functionality for the Project Team, TPT Project Manager, CMC Project Manager, Project Planner, Document Controller, etc.

The Site Supervisory Team; Construction Manager, Supervisors and Safety, Environmental- and Quality Officers will be located in container site units, placed on site at the designated areas.

3.4 Project Schedule

A project execution schedule has been provided detailing the sequence of events. The project schedule has been structured to include all project milestones. The Basis of the Schedule is included within the FEL 3 reports doc. no. Z.5200160-BOS.

The following milestone dates are supported in the presented schedule.

Key Milestones	Date
2020 Milestones:	
Gate Review	15 February 2021
CAPIC Approval by	31 March 2021
2021 Milestones:	
Contract Award by (Principal Contractor & CMC)	31 July 2021
Site Establishment Start	20 September 2021
Execution Start	27 September 2021
Cold Commissioning Complete	09 October 2021
Hot Commissioning Complete	11 October 2021
Sectional Close Out 2021 Complete	30 November 2021
2022 Milestones:	
Site Establishment Start	31 August 2022
Execution Start	13 September 2022
Cold Commissioning Complete	15 October 2022
Hot Commissioning Complete	18 October 2022
Sectional Close Out 2022 Complete	30 November 2022

Key Milestones	Date
2020 Milestones:	
Gate Review	15 February 2021
CAPIC Approval by	31 March 2021
2021 Milestones:	
2023 Milestones:	
Deliver of Spares/Refurbished Components	31 July 2023
Final Close Out Complete	30 November 2023

3.5 Scope of Works

The High Level Deliverables for the FEL4 execution (Phase 4 refit) include:

1. Execute volume mitigation plan agreed with Clients
2. Procurement and contract award
3. Manage execution of the work & ensure adherence to Transnet's standards & procedures
4. Test, commission and certify completion of the works
5. Draw up project close-out documentation

The tables below list the high level scope of works to be completed during the FEL4 execution:

STACKER RECLAIMER 3:

EQUIPMENT REFIT PROJECT (PHASE 4) STACKER RECLAIMER 3			
SOW No	**DESCRIPTION**	**Sum/No**	**QTY**
1	Preliminary and General, project management and overhead costs, all labour, cranage, equipment, vehicles, tools, access requirements, assessing free issue equipment, civils works for site establishment and execution of works, also including meeting the requirements of Health & Safety, Environmental, Quality, Construction Management, Execution and Commissioning, as stipulated in the Scope of Work Includes for any training/familiarization of installed equipment Contractor to provide a detailed cost breakdown for this item.	Sum	1

2	SR3 & TC3 high pressure Cleaning	Sum	1
3	Boom tip repair (Including replacement of Wear Bars)	Sum	1
4	Replace Wear bars on Boom Tip	Sum	1
5	Drive/Idle wheel assemblies (New)	No.	8
6	Drive/Idle wheel assemblies (Refurb))	No.	8
7	Single Idle Wheel assemblies for tripper car (New)	No.	5
8	Single Idle Wheel assemblies for tripper car (Refurb)	No.	5
9	Double Idle Wheel assemblies for tripper car (New)	No.	4
10	Double Idle Wheel assemblies for tripper car (Refurb)	No.	4
11	Wheels for SR (Drwg 700520). All remaining wheels to be replaced	No.	64
12	Centralised Automatic Lube System - refurbish	Sum	1
13	Travel Brakes. Supply and install (supply 32. i.e 48 less the 16 supplied with the wheel assemblies)	Sum	1
14	Slew Drive Reducers (set of 3)	Sum	1
15	Slew drive reducers - 3 x spare	Sum	1
16	Bucket Wheel Installation. Contractor to install complete bucket wheel system. Components free issue from terminal.	Sum	1
17	Refurb old Bucket Wheel & Receiving chute	Sum	1
18	Hose reel.	No.	1
19	Rail Clamps.	No.	2
20	Operator Cab (Stainless steel Cab)	No.	1
21	Operators Chair	No.	1
22	S/R T Bar Festoon	No.	1
23	Slew Cable Carrier	No.	1

24	Main Power Cable Reel	No.	1
25	Slew Drive VFD's (1 x Set)	Sum	1
26	Travel Drive VFD's (1 x Set)	Sum	1
27	Bucket wheel VFD Only (1 x Set)	Sum	1
28	VFD spares	Sum	1
29	Main PLC Enclosure	No.	1
30	3D scan	No.	1
31	Boom/incline/Tripper idlers support frames - replace all. 1 x set as spare	Sum	2
32	Corrosion Protection (SR and Tripper car)	Sum	1
33	Pr Eng Signoff of support trestles	sum	1
34	Containers for storage of long lead items on site (will become BTS property)	No.	6
35	Luffing cylinder, manifold. Replace with new. Supply x 1 spare with stand and test pack.	No.	2
36	Structural/weld repairs	Sum	1
37	Boom Conveyor Drive Train. Supply and install 1 x set. Supply 2 x spare	No.	3
38	Incline Conveyor Drive Train. Supply and install 1 x set. Supply 2 x spare	No.	3
39	Boom and Incline Conveyor Pulleys. Supply and install 1 x set. Supply 2 x spare	No.	3
40	Supply and replace Obsolete Simmocode Modules in the Gantry MCC	Sum	1
41	Fire Escape DAVIT system to Operators Cabin	Sum	1
42	Replace Air conditioning within Gantry E-House & Seal Roof	Sum	1
43	Refurbish Dust Suppression System	Sum	1

4. Construction Strategy

4.1 General Construction Execution

The Principal Contractor is required to comply with all Health and Safety, Environmental, Quality, Security, Industrial Relations and other procedures as specified in the Works Information. Management of these procedures will be undertaken by the CMC Contractor under the control of the TPT Project Manager.

4.2 Construction Methodology

Construction is to be carried out in an approach that will minimize disruption to site activities. Schematic layout of the Saldanha Bulk Terminal in Section 3.1 shows the Terminal Layout for the iron ore export facility, with the highlighted sectors showing the area for the Phase-3 project.

The refurbishment of the equipment/infrastructure will ensure that TPT is able to maintain the existing iron ore export volumes. This will also ensure that the plant and machinery are safe for operation. The contractors will be required to comply with all relevant construction industry standards as specified or at the very least "good engineering practice".

4.2.1 Outage Plan

The terminal has one maintenance shutdown period per annum for major maintenance and conducts 2 x 12-hour maintenance windows per month (per equipment) for less intrusive work.

The current proposed annual outage for 2021:

- 10 days: 28 September 2020 – 07 October 2020

The 10 day maintenance shut of 2021 is co-ordinated between TFR, TNPA, TPT, Shipping lines and mines and is unlikely to change. To minimize overall impact to throughput export volumes, the equipment refit project has been phased (phase 1-4) and will coincide with the 10 day annual shut.

It is anticipated that there will be volume losses generate by the equipment refit phases and these will be mitigated by exporting via the Multi-Purpose Terminal (MPT)

For details of the mitigation actions, refer to the Mitigation Plan see Z.5200160-MP.

4.2.2 Construction Sequencing / Details

The work will be carried out in accordance with all Contractors schedule of works to be submitted, assessed and accepted by the TPT Project Manager.

This Schedule, level 5 Microsoft Projects, hourly schedule is to comply with all stipulations contained within the procurement document requirements and shall show clear logical methodology and the critical path for undertaking of the works within the stipulated time constraint.

Careful planning and attention to detail will ensure timely and successful completion of the works and that projects objectives are met.

The construction sequencing is to advise the contractor of the approach in minimising disruptions to operations carried out at the Port, this does not limit the contractor to execute work as per this document, it only serves to inform the preferable approach, and this is subject to change as the project approaches execution, to suit any site changes and arrangements.

4.2.2.1 Construction effect on operations

This section covers the construction effects on the current productivity of BTS for the Port of Saldanha; for further details refer to the Mitigation Plan (Z.5200160-MP) for each activity that directly effects operations.

Stacker Reclaimer 3

There are four Stacker Reclaimers positioned in the BTS stock yard, during phase 4 The impacts on operations will be:

- Mitigation for volume losses will lead to machinery and trucks to load and transport iron ore, from the Iron Ore stockyard to the MPT for export.
- The stock yard will need to be reconfigured.
- Stockpile E, F & G is to be cleared to the 450 & 475m marker. This is to allow enough space for the construction area. (refer to figure in section 3.2, for further clarification)
- A stockyard management plan will need to be agreed upon to reflect the stockyard management requirements prior to and post the equipment refurbishment project.
- A demarcated lay down area will be required within SR3's stacking area
- Impact for delivering large equipment needs to be co-ordinated with operations.
- SR3 construction site will be demarcated, and access will be restricted

- SR3 to be placed in a secure maintenance state

4.2.3 Construction precautions

The following measures will be put in place when refurbishing the various components in the Bulk Terminal of Saldanha.

- Each refurbishment area will be demarcated from operations during refurbishment
- The demarcated area will be the responsibility of the Principal Contractor with regards to safety and construction procedures (TPT safety, environmental and CMC construction manager will be available on site to oversee compliance).
- The Principal Contractor must align to all the environmental policies of the Port (Disposal of material and spillages must be dealt with in a way that doesn't compromise the environmental standards of the workshop).
- Environmental & Safety personnel will always be available on site to ensure good practice is met by the contractors.
- It is recommended that, in coordination with Operations, fixed, planned timeslots in which construction and material delivery vehicles can access the construction area be established. This will ensure minimum interactions with operational vehicles.
- It is recommended that there should be controlled vehicle access to the site.

4.3 Material Supply

4.3.1 Materials Supplied by the Contractor

The Principal Contractor will be responsible for the management of all materials for the execution of the works.

4.3.2 Materials Supplied by Transnet

Transnet will issue some materials free of charge. The responsibility for their storage remains with the Principal Contractor.

5. Construction Phase

5.1 Kick-off meeting with Principal Contactor

Upon signing of the contract, the Project Manager conducts a kick-off meeting with the Principal Contractor. The purpose of this meeting is to:

- Introduce the TPT Project-; CMC- and Contractor's teams.
- Discuss Transnet's policies and procedures;
- Further emphasise the Safety, Environmental and Quality requirements;
- Highlight salient aspects of the project;
- Discuss contractual obligations of the parties;

- Issue of AFC drawings, where applicable;
- Issue of contractual and procedural templates;
- Discuss induction and access requirements;
- Requirements for the approval of the Principal Contractor's *Contractual Documentation*, prior to site access being granted, covering the following;
  - Site Mobilisation Plan
  - Safety Management Plan and Safety File
  - HAZOP studies (if required), Risk assessments, with mitigation plans and method statements,
  - Emergency Management Plan,
  - Industrial Relations Management Plan,
  - Security and Access Control Plan,
  - Quality Management Plan, with detail on QCP's, hold points and sign-off requirements
  - Detail Execution Schedule and progress management,
  - Site Execution Organigram, staffing, appointments and contact administration,
  - Risk Management
- Reinforce the use of proper communication channels;
- Highlight early procurement of all resources required to execute the works;
- Discuss mitigating measures of any risk items that may occur early in the contract;
- Emphasise the need for team work for the successful completion of the project.
- Finalise constructability with inputs from Client- and Project teams.
- Proposed meeting schedule and general communication.

5.2 Construction Facilities

5.2.1 Site Camp, laydown areas and Offices

The Contractor shall be responsible for the establishment of his site camp and arrangements for accommodation. Principal- and other Contractors to allow for all site facilities required, on construction site and site offices areas, as none will be available nor supplied by the Client. No living accommodation will be allowed inside the boundaries of the Port of Saldanha. The establishment must be in accordance with Transnet's Environmental and Safety Requirements.

5.2.2 Access

Access to site is available through the existing road network in the Port of Saldanha and via the TPT Terminal Control and Security at the Port of Saldanha Terminal. All TPT Security Policies will be strictly adhered to. The transport of Contractor's staff on open vehicles is not permitted on Transnet property.

5.2.3 Parking

Allowance to be made for enough, safe parking for all construction-, LDV- and other vehicles at the construction site and yard. Only reverse parking allowed.

5.2.4 Construction Water

Contractors will be responsible for obtaining the necessary water for construction purposes from tee-off points from the existing TPT supply pointed out by the Construction Manager. Enough and clean drinking water required for site staff must be supplied by the contractors in hygienic, auto-cooled, water bottles/containers.

5.2.5 Construction Electricity

Contractors will be responsible for making provision for all their electrical/power requirements and provide Gensets with refuelling requirements at their own cost for the duration of the construction period. The Principal Contactor is to install his own distribution box, to provide enough power for all contractor's requirements for welding, other heavy engineering works, site offices and area lighting requirements. This installation to be supported by Certificate of Competency (COC) obtained by Principal Contractor and submitted to the appointed Electrical Engineer from BTS.

5.2.6 Construction Waste Management

The contractors will be responsible for providing their own facilities to handle, contain, and dispose of both hazardous and domestic waste materials. This will be required for the duration of the construction period. The storage of oils, materials, chemicals, fuels and other to be used during the construction phase must not pose a risk to the surrounding environment. Temporary bunds must be constructed around chemical or fuel storage areas to contain possible spillages.
Sustainable management of waste through the waste hierarchy - reduce, reuse, and recycle. Any material waste will be disposed of in accordance with the requirements of the TPT Environmental and Waste Management procedures.

5.3 Management of Construction Issues

The key components of the construction strategy will be the following:

- Developing a safe working culture and environmental awareness on the construction site, adopting the approach and behaviour of "Zero Harm".
- A contracting strategy that allows for mobilisation of specific and specialist construction contractors and employees.

- Establishment of an CMC construction team under the leadership of the TPT Project Manager, which manages all aspects associated with the construction effort on the construction site.
- Working closely with the Bulk Terminal Saldanha (BTS) representative members to minimise disruptions to ongoing operations.
- Proper liaison and communication with all necessary stakeholders and role-players.

5.4 Constructability

5.4.1 Background

This project consists of the refurbishment of equipment to be reinstated to its original condition. The equipment will not be upgraded to allow for any increases in volume throughput. The replacement of components will be on a 'like for like' basis only and as such there will be no design work involved.

During the scope clarification meetings with the Client Team, BMH Specialist and TPT Project Manager, the team members have reviewed and provided constructability inputs to the planned execution in the areas of construction safety, construction methods, labour, materials and quality requirements in order to meet the objectives of safety, cost, schedule and quality. For further information refer to applicable FEL3 documentation.

Particular attention to finalise constructability aspects regarding the execution of the project will be provided during FEL4 stage. More detailed information, which will be used as inputs to finalise the constructability will be requested from the Principal Contractor as part of the tender returnable documentation. This will be included; project schedule, method statements, resource planning and Quality plan. Thus, constructability will be reviewed upon receipt of the Contractors tender documentation, prior to appointment.

The refit project, to be planned and executed in such a manner, to ensure minimal impact on the present operations, thereby ensures that the planned 60 million tons per year be handled by the Iron Ore Facility. For detail on planned mitigation of project impact, see project mitigation plan.

5.4.2 Client/BTS Operational Interfaces

All involved, Principal Contractor, other Sub-Contractors, Project Team and CMC Construction Team to understand the needs, objectives and technical requirements of the Client/BTS and the Refit Project.

Incorporate the client's internal procedures into the Construction Site Procedures

Ensure client representation and involvement in the following discipline areas:

- Health, Safety and Environmental
- Industrial Relations
- Security Management
- Technical and Quality
- Contractual Matters

Key individuals from Client to attend project meetings.

Special work permits are required when project work are executed, that might have an impact on the client's/BTS operations.

No work to be allowed within one metre of any structure supporting a conveyor that have not been locked out and permit with permit number issued to cover the scope of planned work.

The following permits. Signed-off by the client, need to be in place;

- Site establishment/mobilising permit.
- Permit to commence with Construction/Refurbishment work.
- Special Permit to execute work that might interfere with client's/BTS normal operations or that are within one metre of any conveyor.
- "Hot Work" and "Confined Space" working permits.
- Site de-establishment/de-mobilising permit.

5.4.3 Support to Contractors

The following will be provided by the Project Team:

- Full support to all contractors and sub-contractors to ensure a successful project outcome.
- Provide the necessary support to ensure that the Quality Control system, including the inspection and test plans and quality verification documents are not only implemented, but are being executed to provide a quality project.
- Review contractor's purchased material for compliance to specifications.
- Review of all method statements from all contractors for accuracy, completeness and suitability for the intended application.
- Support in project controls to ensure that realistic and achievable schedules, scopes of work and progress units are being assigned.
- Manpower requirements will be evaluated based on approved schedule to ensure that the project objectives are met.

- Provide safety induction for contractor's personnel and monitor the activities of the contractor's safety representatives.

5.4.4 Health and Safety Management

The appointed H&S Agent will also review, together with the TPT Project Team, the Contractors H&S documentation to ensure that H&S during execution is adequately addressed.

Safety meetings will be held, and Safety Audits shall be conducted by Safety Agent.

Construction will be done in accordance with the approved Health and Safety Management Plan (Z.5200160-HSMP), contained in the FEL 3 documentation.

5.4.5 Environmental Management

Construction will be done in accordance with the approved Environmental Baseline Report (Z.5200160-EBR), contained in the FEL 3 documentation.

5.4.6 Quality Management

Construction will be done in accordance with the approved Quality Management Plan (Z.5200160-QMP), contained in the FEL 3 documentation.

5.4.7 Engineering and Method Statements

Engineering Execution Plans, supported by HAZOP studies (where applicable), and detail method statements, for all major Structural, Mechanical, Electrical Control and Instrumentation Engineering *works*, with to be submitted by the Principal Contractor, as prescribed in the tender documentation.

5.4.8 Security and Access Control

Security and access control will be implemented in accordance with the approved Security Management Plan (Z.5200160-SMP), contained in the FEL 3 documentation.

All Contractor's- and Construction Management personnel will require access to the construction site and will be subject to the process of induction and identity badges.

The contractor shall comply with the specific access requirements as dictated to by the Port of Saldanha Terminal, as well as any specific requirements which may be imposed by TPT. The Port of Saldanha Security and Site Access requirements will apply to this project, as work will be undertaken within the operational terminal. The contractor will however be required to implement the necessary security measures to protect both the

site and facilities during the construction period and is therefore required to secure their own works until final acceptance.

5.4.9 Industrial Relations

The management of Industrial Relations is deemed to be significant in order to ensure adherence to legislative requirements and to maximize the likelihood of Project Completion without any unplanned work stoppages due to Industrial Actions. An Industrial Relations Plan will be a requirement in the enquiry documentation and this will be used by the Contractor to manage industrial relations.

5.4.10 Communication Management

Communication will be done in accordance with the approved Communication Management Report (Z.5200160-CMR), contained in the FEL 3 documentation.

5.4.11 Risk Management

A Project Risk Register has been compiled and will be reviewed and updated at the commencement of the FEL-4 phase of the project and will form the basis of the project risk management. The risk register will be reviewed monthly during project meetings. Risk workshops will be held, attended by all specialist discipline leads and chaired by the TPT Risk Manager. Risks and early warnings will form part of the daily feedback meetings during execution.

Risks will be managed in accordance with the approved Project Risk Report (Z.5200160-PRR), contained in the FEL 3 documentation.

5.4.12 Interface

Close interface shall be required from the project team and the principle contractor's team during construction of the works to mitigate against any possible risks.

Daily meetings will be held between Project, Client, CMC, Principal Contractor teams to discuss Safety, Quality, Progress, Risks and interface issues and agree on remedial actions.

5.4.13 Procurement

Procurement will be done in accordance with the approved Procurement Report (Z.5200160-PR), contained in the FEL 3 documentation.

5.4.14 Sub-Contracting

All construction contractors are required to give preference to the employment of local labour. The Principal Contractor shall be responsible for managing and maintaining his own labour force.

5.5 Construction Execution Plan

5.5.1 Prior to Site Establishment

- Construction Planning
- SHE Policy and strategy
- Engineering and Procurement
- HAZOP studies (if applicable)
- Constructability
- Works information
- Organisation and Manpower Plan
- Site Facilities Plan
- Execution planning with focus on Safety & Risk mitigation

5.5.2 Construction Site Establishment Phase

- PC to submit and get approval for site establishment plan
- Clear Responsibilities of all involved with project
- Site Mobilisation
- PC site establishment control and appointments
- Site Handover to PC to commence with execution

5.5.3 Integration with Functional Areas

- Health, Safety & Environmental Management
- Industrial Relations
- Site Security and Access Control
- Emergency Management
- Site Engineering
- Construction Planning and Progress Measurement
- Site Logistics and Expediting
- Quality Control
- Cost Management
- Contract Administration
- Risk Management

- Site Administration
- Document Control

5.5.4 Commissioning, Testing and Handover

Commissioning, testing and handover will be done in accordance with the approved Commissioning Plan (Z.5200160-CP), contained in the FEL 3 documentation.

5.5.5 Site Demobilisation and Close-out

As soon as the Works have successfully passed any required Performance/Acceptance Test with only Category 'C' Punch List Items remaining with a commitment to complete the Category 'C' Punch List Items by an agreed date during the Defects Correction/Warranty Period and following the application by Contractor for a Completion Certificate, a Completion Certificate will be issued.

PC may commence with demobilisation and close-out of site, once he received a fully signed Completion Certificate.

- On completion of demobilisation, site cleaning and reinstated all areas to original state as received, the PC may apply for a "site de-establishment/de-mobilising permit", confirming that all requirements for demobilisation were met.

6. Roles and Responsibilities

6.1.1 Construction Management Organisation

The project organisation is shown on the project organogram, figure 3.
See figure 4, for the proposed Organogram for the CMC construction site execution team diciplines. Names will be linked to diciplines once the CMC is appointed.

Figure 3: Project Organogram

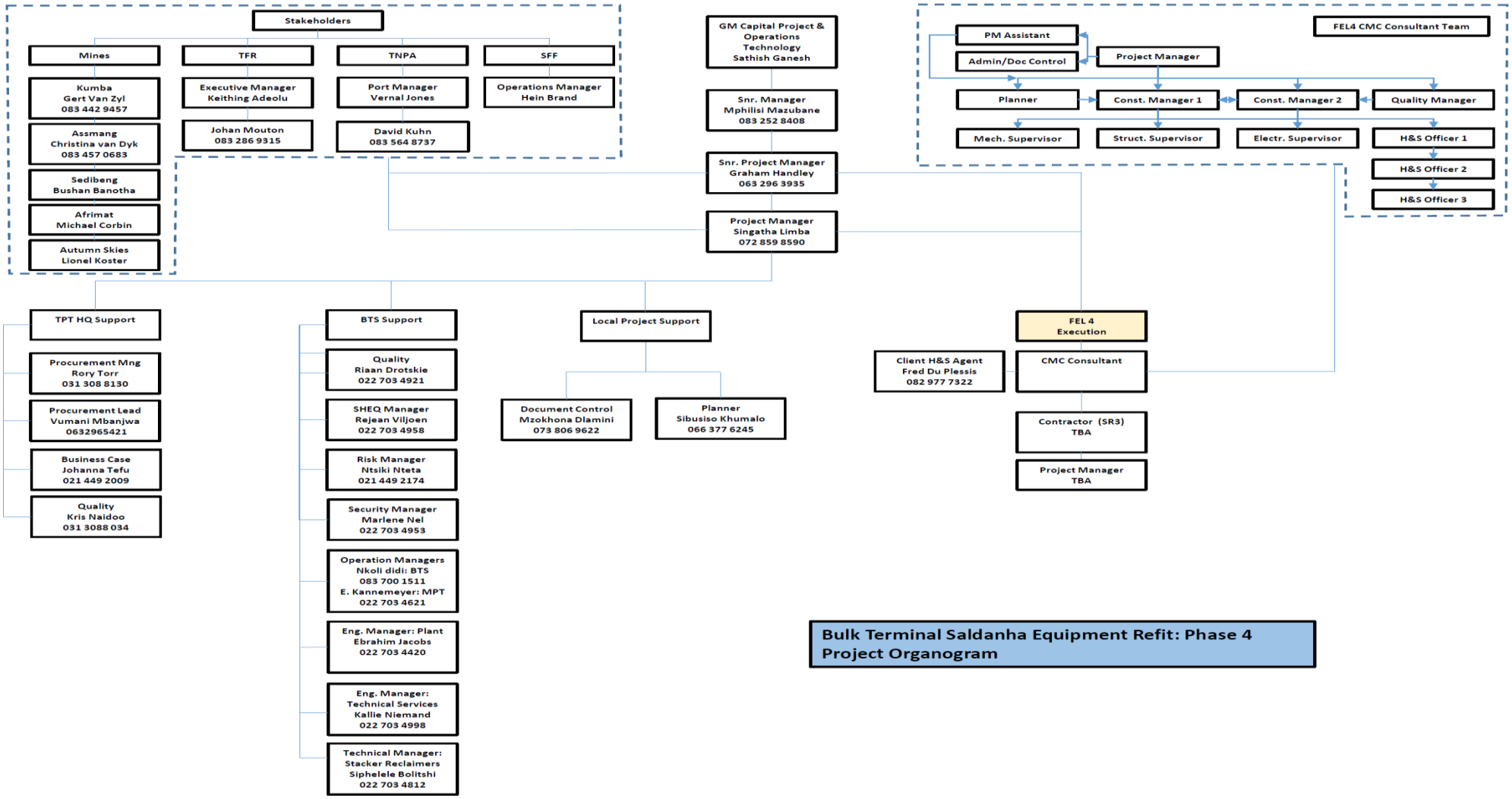
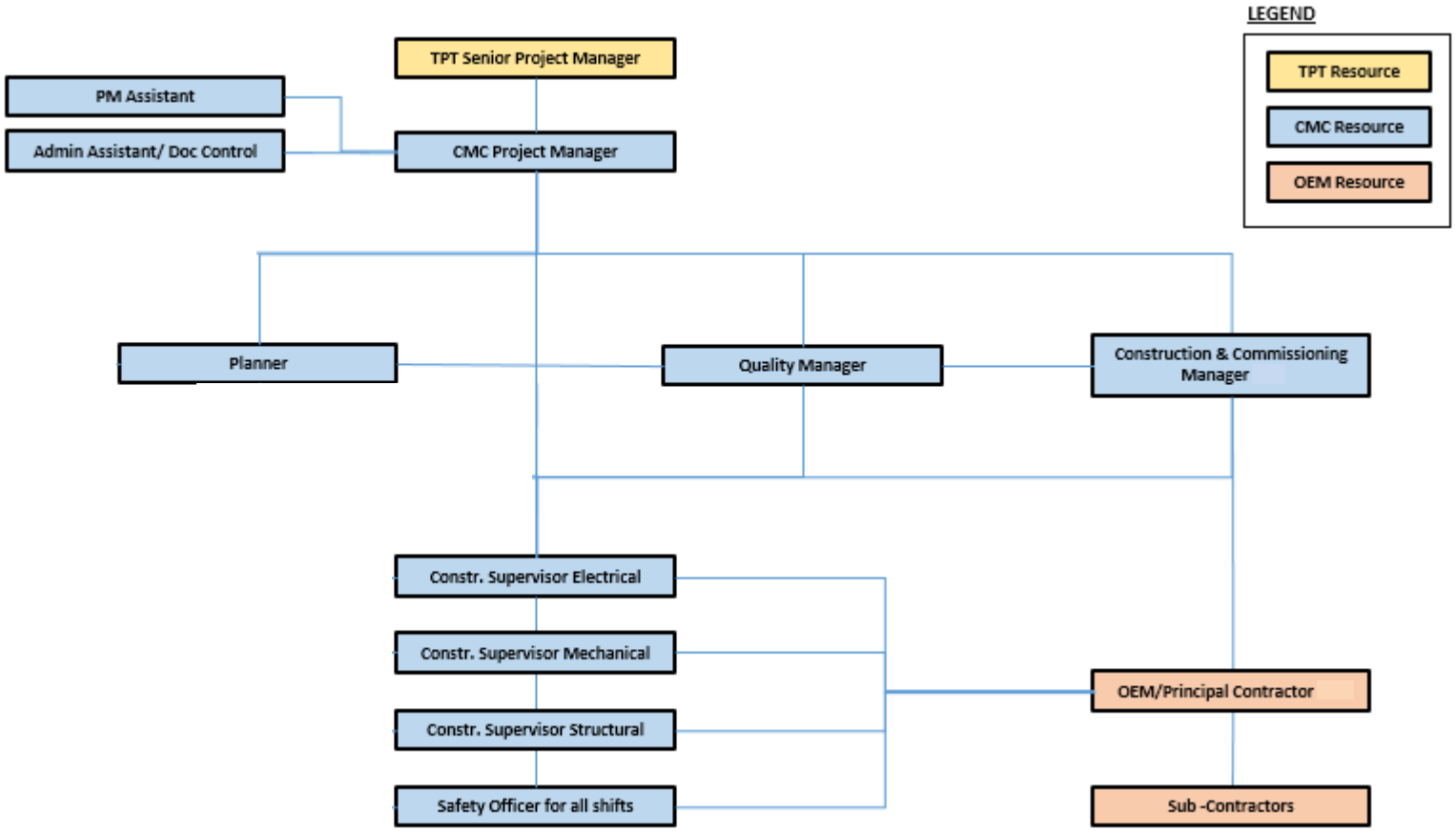


Figure 4: CMC Site Execution Team Organogram



6.1.2 CMC Project Manager

The Construction Management Consultant, Project Manager is responsible for the overall execution management of the Phase-4 refurbishing project and reports to the TPT Senior Project Manager.

6.1.3 Construction Manager/Commissioning Manager

The key responsibilities of the Construction Manager are:

- Health and Safety during Construction
- Environmental Management
- Technical Compliance with Works Information and execution of SoW within cost- Time- and Quality constrains.
- Completion of all site works and hand-over completed project for Commissioning.
- Integration- and communication support to all involved during construction
- Risk Mitigation
- Industrial- and labour relations harmony

Prior to and during the construction phase, the Construction Manager is responsible for:

- Ensuring that the necessary records are kept.
- Organising site mobilisation.
- Ensuring adequate supervision and monitoring of the Works and the Contractors on site.
- Establishing and managing, supported by the Site QA/QC co-ordinator, an efficient Quality Management Programme.
- Managing, supported by the site contract administration staff, the commercial aspects of the contract and compensation events.
- Managing, supported by the assigned Health and Safety Practitioner and Environmental Officer, the co-ordination of Health, Safety and Environmental policies and procedures.
- Managing site administration
- Reporting to the Project Manager any deviations from Policies/Procedures that arise.
- Verifying construction progress reports issued by the contractor.
- Leading the project construction closeout process.
- Interfacing with third parties.

The Construction Manager shall ensure that the Principal Contractor's Safety File; Safety Management Plan, inclusive of all required documentation are in place and approved by TPT Project Manager and BTS Client, prior to the issuance of the Certificate.

6.1.4 Site Supervisors

Site Supervisors will be appointed, under the guidance of the Construction Manager and will be responsible for all daily activities under their control, including Safety-, Environmental-, Quality- and Progress Management.
Site Supervisor's responsibilities also extends further as described in the NEC3 suit of contract documentation and the latest Construction Regulations.

6.1.5 Site Quality Assurance Officer/Manager

The Site Quality Assurance Officer is responsible for:

- Preparing and maintaining internal audit schedule.
- Schedule enough audits to cover all functions of the project.
- Plan, prepare and conduct internal and external audits.
- Identify and initiate corrective action and monitor progress.
- Prepare corrective action/non-conformance and summary reports.
- Analyse data on quality related trends.
- Identify general areas for continuous improvement.
- Assist with the evaluation and assessment of potential suppliers to ensure compliance of contractors, suppliers and vendors.
- Compile assessment reports.
- Implementation of the Site aspects of the PQP in consultation with the Construction- and Project Managers.
- Coordinating the preparation of Field Inspection Packs (FIP) in preparation for pre-commissioning testing.
- Liaising with Contractor QA/QC personnel.
- Coordinating TPT's field inspections, sampling and testing activities identified in the Contractor QCP.
- Interfacing with Client Site representatives and any third-party inspection agencies on QA/QC matters, e.g. field survey activities.
- Coordination of Site QA / QC records, including:
  - NCR's, QIR, concession and deviation databases;
  - FIP's and field inspection checklists;
  - Inspection and NCR reports, etc.;
  - Contractor QCP;
  - Test results, etc.;
  - Mark-ups of P&ID's to record inspections;
  - Witness SAT requirements;
  - Check Data Books.
- Ensure adequate Site document controls are implemented and maintained.
- Assisting with the development of the project QC Inspection Schedule.

- Preparation and implementation of QC inspection procedures.
- Ensure that the required intervention points are identified in the Contractor QCP's and attended to ensure that the "Designers" fulfil their obligations are met.
- Identify the requirements for inspection agencies and inspection staff.
- Coordination of inspection resources (local and agency) including allocation of inspection assignments in accordance with the QC inspection plan.
- Ensure inspection resources are fully aware of respective Supplier inspection Scope of Work/Services, and Supplier specified QC requirements.
- Liaison with Procurement expeditors, with particular attention to managing QC aspects associated with the release of Supplier product.
- Review and distribution of inspection reports, and inspection releases.
- Work in conjunction with the respective discipline engineering leads to expedite and resolve issues identified during inspections.
- Coordination and expediting the resolution and distribution of Supplier non-conformance reports.
- Facilitation and coordination of Supplier pre-inspection meetings.
- Coordinate periodic audits of Supplier QC records and project audits to ensure compliance with approved working procedures and processes.
- In conjunction with the Engineer set up and maintain the QC records tracking system and ensure records of all inspections are maintained as well as non-compliance items.
- Manages the Quality Incident Reports, (QIR), Non-Conformance Reports, (NCR), from issue to close-out and maintain a NCR Register.
- Recommends and follows up corrective actions to prevent internal or external deficiencies.
- Provide representation at site contract meetings with respect to QA/QC matters.
- Supports the Change Management Process, FEQ's, Concessions, DCN’s, PCN's, etc.
- Reports to the Construction Manager and Project Quality Manager the status of Quality Management on a monthly basis.

Quality Management shall be carried out ensuring compliance with the approved Project Quality Plan (PQP), Quality Control Plan (QCP) and any specific requirements as detailed in the Works Information.

6.1.6 Health and Safety Officer

The Health and Safety Officer shall be responsible for, the items listed below for the areas under his responsibility during the shift worked:

- Site inspections
- Monthly audits
- Incident investigation

- Ensure contractors comply with the HS plan
- Monitor compliance to the established safety management system
- Ensure compliance with any other relevant acts, regulations and standards
- Be registered with SACPCMP or provide proof of registration progress.

In addition to the above:

- Assist with training for all levels of employees on health and safety procedures.
- Prepare induction content and assist with the preparation of other H&S training programme.
- Prepare and update emergency and other H&S procedures in conjunction with the Health and Safety Manager.
- Check all work procedures and method statements before they are issued to ensure that safety aspects of the operations are covered in accordance with the requirements of the HSE Plan.
- Promote awareness of injury prevention and damage control to all levels of employees.
- Keep up to date with the recommended codes of practice and new safety literature and circulate information applicable to each level of employee.
- Chair the H&S weekly meetings.
- Issue non-conformance reports for serious irregularities observed on site.
- Implement and administer Transnet Port Terminals safety procedures.
- Conduct monthly compliance safety audits, with Safety Agent.
- Assist the Project / Construction Manager in resolving conflicting requirements.
- Participate in Project Specific Risk Assessment and ensure that the Health and Safety
- Specification submitted to Contractors includes Project and Contract specific Health and Safety aspects.
- Verify that Contractors have prepared their Health and Safety Plans in accordance with the Health and Safety Specification, and arrange for the Construction Manager, Project Manager and Health & Safety Agent to approve the Health and Safety Plan.
- Arrange for the Project Specific Induction Training to be given to all Transnet Port Terminal Projects staff, Contractors and Visitors and facilitates Health and Safety Training Assist Construction Supervisors to continuously verify compliance by Contractors to Health and Safety requirements.
- Analyse Health and Safety performance and advice the Construction Manager and Project Manager on appropriate action to correct negative trends and to reinforce positive performance.

- Assist the Construction Manager in preparing an Emergency Management Plan by coordinating the inputs of the interested and affected parties and ensure integration of the plan with Transnet Operating Divisions.
- Investigate to identify the root causes of all incidents and near misses and ensure continuous follow-up in order to immediately correct unsafe acts and conditions.
- Report on Health and Safety performance and statistical process controls as directed by the Project/Construction Manager and Health and Safety Agent.
- Monitor and ensure that all factors likely to improve health and safety are taken into consideration such as Job Specific Hazard Assessments by Contractors, Daily Safety Task Instruction (DSTI), Contractor Housekeeping, Training, Occupational Health and Hygiene, Safe Systems of Work and Safe Work Procedures.
- Promote accurate communication on all Health and Safety matters with regards to safety committee meetings, inspections and audits findings.
- Conducts Health and Safety walkabouts, Visible Field Leadership (VFL) with Contractors and Transnet Port Terminals Construction Supervisors and directs appropriate corrective actions.

Health and Safety Management on site will be controlled by the delegated persons ensuring compliance with the TPT Health and Safety Guideline and any specific requirements contained in the Works Information.

Also refer to TPT's SHEQ Policy for inclusion in the Works Information.

6.1.7 COVID 19 Compliance Officer

- The Contractor must appoint a Compliance Officer and are required to develop a company COVID-19 Workplace Plan, in a bid to facilitate the proper and effective application of the Occupational Health and Safety Act, the COVID-19 Direction on Health and Safety in the Workplace, issued by the Minister in terms of regulation 10(8) of the National Disaster Regulations and the regulations issued in terms of Section 27(2) of the Disaster Management Act.
- As a guideline, Transnet Ports Terminal Saldanha, have highlighted the minimum requirements that a contractor have to include in their Workplace Plan:

INDEX #	REQUIREMENT
1	COVID 19 Risk assessment and control plan

2	Social Distancing Measures
3	Hygiene Measures - disinfection / cleaning work place area(s); e.g. mess/ablution rooms, locker rooms, communal areas; etc.
4	Measures for Screening, Testing and Response to suspected and positive cases
5	Employee awareness, engagement and communication
6	Provision of Personal Protective Equipment (PPE) – Individual Cloth Mask
7	Provision of Personal Protective Equipment (PPE) – Other PPE and Hygiene Measures
8	Measures to control Public that may have access or is allowed to workplaces
9	Transportation arrangements of personnel
10	Waste Management of Disposable COVID-19 material, masks, gloves, etc.
11	Legal Reporting obligations (Employer and Employee)
12	Measures to Monitor and Enforce compliance

6.1.8 Contractor/Service Provider Professional Health and Safety Agent

An OHS Safety Agent has been appointed i.t.o. Construction Regulation 5 of OHS Act 85 of 1993 and CR (Construction Regulations) 2014.

The OHS Safety Agent is registered with SACPCMP as a Professional Health and Safety Agent.

The OHS Safety Agent will in the appointed capacity ensure that the following stipulations in terms of the Occupational Health and Safety Act, Act 85 of 1993 and specifically the CONSTRUCTION REGULATIONS 2014 be complied with, at all times within the area of jurisdiction:

a. Prepare a documented Health and Safety Specification for the construction work and provide any principal contractor with the same (completed – refer to H&S Management Plan).

b. Provide the principal contractor and his or her agent with any information which might affect the health and safety of any person at work carrying out construction work.

c. Ensure that each principal contractor's health and safety plan is implemented and maintained on the construction site: Provided that the steps taken, shall include

periodic audits at intervals mutually agreed upon between the client and principal contractor, but at least once every month.

d. Stop any contractor from executing construction work which is not in accordance with the principal contractor's health and safety plan contemplated in sub-regulation 5 (1)(q) for the site or which poses to be a threat to the health and safety of persons

e. Ensure that where changes are brought about, sufficient health and safety information and appropriate resources are made available to the principal contractor to execute the work safely

f. Ensure that every principal contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site

g. Ensure that potential principal contractors submitting tenders, have made provision for the cost of health and safety measures during the construction process.

h. The agent shall discuss and negotiate with the principal contractor the contents of the health and safety plan contemplated in sub regulation 5(1) and thereafter finally approve the health and safety plan for implementation.

i. A client shall ensure that a copy of the principal contractor's health and safety plan is available on request to an employee, inspector or contractor

j. No client shall appoint a principal contractor to perform construction work, unless the client is reasonably satisfied that the principal contractor that he or she intends to appoint has the necessary competencies and resources to carry out the work safely.

The scope of the OHS Safety Agent will be applicable to all activities of employees on the construction site.

6.1.9 Environmental Officer

The TPT Environmental Officer is responsible for conducting the tasks required to ensure that the CEMP and SES are implemented on the construction site.
The TPT Environmental Officer will conduct the following tasks:

- Ensure that environmental issues receive adequate attention in the site induction training.
- Prepare and conduct awareness training (e.g. posters, tool box talks, and signage).
- Conduct monthly observation & inspections and audit of all work places.
- Monitor the Contractor's compliance with the CEMP and SES on site.
- Conduct monthly observations and environmental audits of all Contractor's and work areas.
- Ensure that all environmental monitoring programmes (sampling, measuring, recording etc. when specified) are carried out according to protocols and schedules.

- Measurement of completed work (e.g. areas top soiled, re-vegetated, stabilised etc.).
- Maintain site documentation related to environmental management (permits, CEMP, method statements, reports, audits, monitoring results, receipts for waste removal etc.).
- Documentation to be maintained on the relevant site Document Control System.
- Attendance at scheduled SHE meetings and project coordination meetings.
- Inspect and report on environmental incidents and check corrective action.
- Keep a regular photographic record of all environmental incidents.
- Implementation of environmental-related actions arising out of the minutes from scheduled meetings.
- Management of complaints register.
- Review and Sign off Method Statements prepared by Contractor's.
- Audit Environmental Method Statements.
- Collate information received, including monitoring results into a monthly report to the Construction Manager showing progress against targets.
- The compilation of the Project Environmental Management File.

The key deliverables will include the compilation of:

- Project start-up Checklist;
- Monthly inspection/environmental audit report;
- Monitoring results;
- Site close-out reports;
- Incident reports;
- Environmental Incident Register;
- Environmental Non-Conformance Register;
- Complaints Register;
- Method Statements Register;
- Hazardous Substances Register;
- Site Close out Inspection.

6.1.10 Document Control

The Document Control Department is responsible for the quality checking of documentation, scanning, reproduction of documentation, preparing CD's, archiving, close-out and handover of documentation, as defined in the TPT Document Control Methodology.

The Document Control Department facilitates and controls the delivery of project document deliverables. These deliverables shall be determined and confirmed by the Document Controller and the Project Manager at project initiation. Document Controllers

shall report the progress on the delivery of documents deliverables throughout the lifecycle of the project.

All project correspondence of any nature and form shall be forwarded to Document Control for capturing and safekeeping. Project managers shall apply Transnet Information Classification Policy, Records Management Policy and their discretion to determine the criticality and value of project documents and thereafter advise and instruct Document Controllers whether to capture correspondence.

6.1.11 Industrial Relations Practitioner

The TPT/BTS Industrial Relations Practitioner shall support the TPT Project Manager and Construction Manager in overseeing the establishment of site wide policies appropriate to site conditions, and will participate in the committees established to co-ordinate among all the contractors in accordance with the requirement of the TPT IR Framework and Policy.

6.1.12 Principal Contractor and his Sub-Contractors

In addition to his responsibilities under the OHS Act, the Principal Contractor and his appointed Sub-Contractors are responsible for the following:

- Attending regular progress meetings as determined by the Project Manager;
- Attending regular technical meetings as determined by the Construction Manager;
- Monitoring and reporting of progress;
- Keeping and updating photographic records;
- Ensuring adequacy of resources;
- Complying with Transnet's Skills Development Programme;
- Abide to TPT safety and environmental policies and procedures ensuring the quality of completed work is in accordance with the specifications;
- Completing the works or parts thereof in accordance with the accepted programme;
- Supply as-built documents and testing and commissioning records in accordance with the contract and applicable legislation.

Before commencing the works, the Principal Contractor shall advise the Project Manager in writing of the name of their appointed Responsible Person(s) and their area(s) of responsibility.

6.1.13 All Personnel

Every person employed on the Project has a statutory duty to take reasonable care for the H&S of themselves and others as well as the environment that may be affected by their actions or omissions at work.

Regarding the statutory duties imposed on their employer, they must co-operate with their employer to enable him to comply with the relevant statutory provisions.
No person shall intentionally or recklessly interfere with or misuse anything provided for safety, health or welfare under the relevant statutory provisions.
All personnel shall:

- Wear or use the appropriate safety equipment and/or clothing and use the appropriate safety devices.
- Familiarize themselves with the relevant requirements of the Health and Safety Plan, the Environmental Plan and the appropriate requirements in any other related H&S document, plan, standard or guideline.
- Report any incidents and damage to property or equipment to their immediate supervisor, irrespective of whether persons are injured.
- Be encouraged to make suggestions to their respective supervisors and H&S Officers to improve H&S.
- Familiarise themselves with and adhere to the project golden rules and any other requirement the client or Consultant might prescribe.

7. Commissioning, Testing and Handover

Commissioning, testing and handover will be done in accordance with the approved Commissioning Plan (Z.5200160-CP), contained in the FEL 3 documentation.