

PART C3: SCOPE OF WORK

Document reference	Title	No of page
he	This cover page	
C3.1	<i>Employer's Works Information</i>	
<i>Annexure A</i>	<i>SAMSA recognised organisation</i>	
<i>Annexure H:</i>	<i>Particular Electrical Specification</i>	
<i>Annexure G:</i>	<i>Standard Electrical Specification</i>	
<i>Annexure I:</i>	<i>MCC Design Schedules</i>	
Total number of pages	

PART C3: SCOPE OF WORK.....	1
SECTION 1.....	4
1 Description of the <i>works</i>	4
1.1 Executive Overview	4
1.2 <i>Employer's</i> objectives	4
1.3 Interpretation and terminology	5
2 Engineering and the <i>Contractor's</i> design.....	6
2.1 <i>Employer's RDD technical design and Specification</i>	6
2.2 Parts of the <i>works</i> which the <i>Contractor</i> is to design	6
2.3 Procedure for submission and acceptance of <i>Contractor's</i> design	7
2.4 The Contractors Documents Required Before Site Execution	7
2.5 Review and Acceptance of Contractor Documentation	8
2.6 Contractor's Design Development & Construction Implementation Key Personnel ...	8
2.7 Use of Contractor's design	9
2.8 Equipment required to be included in the <i>works</i>	9
2.9 As-built drawings, operating manuals, and maintenance schedules.....	9
3 Construction	9
3.1 Temporary <i>works</i> , Site services & construction constraints.....	9
4. Electrical & Mechanical Engineering Works.....	18
4. List Of Drawings	21
4.5. Drawings issued by the <i>Employer</i>	21
SECTION 2.....	22
5. Management and start up	22
5.5. Management meetings	22
5.6. Documentation Control.....	22
5.7. Safety risk management	22
5.8. Environmental constraints and management	24
5.9. Quality assurance requirements	25
5.10. Provision of bonds and guarantees	26

5.11.	Records of Defined Cost, payments & assessments of compensation events kept by <i>Contractor</i>	26
5.12.	The <i>Contractor's</i> Invoices	26
5.13.	People	27
6.	INDUSTRIAL ACTION BY CONTRACTOR EMPLOYEES	28

C3.1 EMPLOYER'S WORKS INFORMATION

Contents

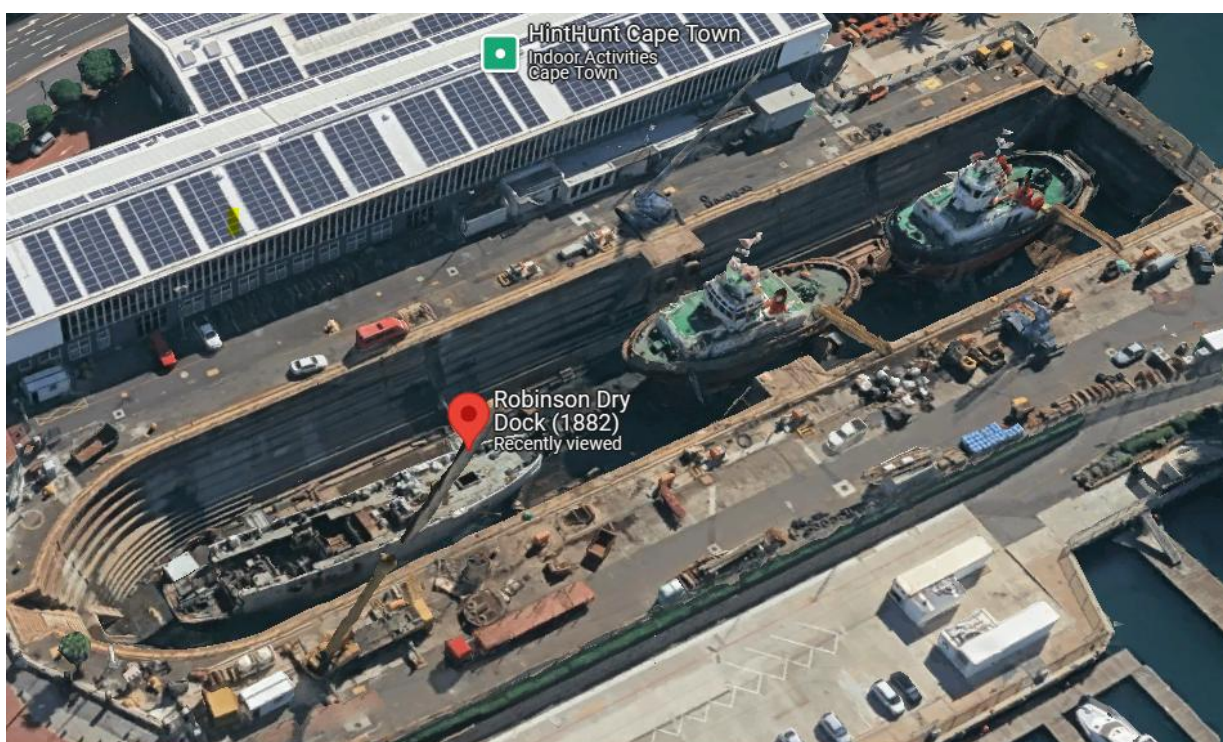
SECTION 1

1 Description of the *works*

1.1 Executive Overview

The *works* that the *Contractor* is to perform *involves* repairing and replacing the damaged dewatering system equipment with the same or modern technology to bring RDD back to its original operation and efficiency. The Works include:

- Perform eye-ball inspection and provide repair and replacement specifications.
- Confirm 'Client List- scope of works 'of all defects for approval by Client,
- Decommissioning, dismantling, and transportation of the existing dewatering system equipment, for repair and return equipment when completely repaired with test certificates.
- Procurement of all replacement material and equipment for the complete installation and commissioning of the new dewatering system,
- Provide a suitably qualified team for the site installation, commissioning, and handover of the new dewatering system.



1.2 Employer's objectives

The *Employer's* objectives are to acquire the services of a suitably qualified and resourced contractor to repair and replace damaged components and equipment within the affected pumphouse area. The Contractor is to procure all materials and equipment and execute all the works associated with the Robinson Dry Dock (RDD) dewatering system repairs project

1.3 Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
AIA	Authorised Inspection Authority
BBBEE	Broad Based Black Economic Empowerment
CEMP	Construction Environmental Management Plan
CDR	Contractor Documentation Register
CDS	Contractor Documentation Schedule
CIRP	Contractor's Industrial Relations Practitioner
CR	Construction Regulation
CRL	Contractor Review Label
CSHEO	Contractor's Safety, Health and Environmental Officer
CM	Construction Manager
DTI	Department of Trade and Industry
DWG	Drawings
ECSA	Engineering Council of South Africa
EO	Environmental Officer
EPC	Energy Performance Certificate
HAZ	Hazardous Area Zone
HAZOP	Hazard and Operability Study
HSSP	Health and Safety Surveillance Plan
INC	Independent Nominated Consultant
IB	Inspection Body
IP	Industrial Participation
Abbreviation	Meaning given to the abbreviation
AIA	Authorised Inspection Authority
BBBEE	Broad Based Black Economic Empowerment
CEMP	Construction Environmental Management Plan
CDR	Contractor Documentation Register
CDS	Contractor Documentation Schedule
CIRP	Contractor's Industrial Relations Practitioner
CR	Construction Regulation
CRL	Contractor Review Label
CSHEO	Contractor's Safety, Health and Environmental Officer
CM	Construction Manager
DTI	Department of Trade and Industry
DWG	Drawings
ECSA	Engineering Council of South Africa
EO	Environmental Officer
EPC	Energy Performance Certificate

HAZ	Hazardous Area Zone
HAZOP	Hazard and Operability Study
HSSP	Health and Safety Surveillance Plan
INC	Independent Nominated Consultant
IB	Inspection Body
IP	Industrial Participation
IR	Industrial Relations
IPP	Industrial Participation Policy
IPO	Industrial Participation Obligation
IPS	Industrial Participation Secretariat
IRCC	Industrial Relations Co-ordinating Committee
JSA	Job Safety Analysis
LED	Light Emitting Diode
Native	Original electronic file format of documentation
PES	Project Environmental Specifications
PHA	Preliminary Hazard Assessment
PIRM	Project Industrial Relations Manager
PIRMP	Project Industrial Relations Policy and Management Plan

2 Engineering and the *Contractor's* design

2.1 *Employer's RDD technical design and Specification*

The Employer avails all drawings and specifications developed in the Detailed Design as follows:

Drawing Number	Drawing Title	Revision
PF07/2021	Electrical Schematics-MCC 20022023	0
11-311-03-02	Dewatering system piping	0
800 DAX2B	Butterfly valve	0

Table 1. Employer's RDD Design Reports Documents

The Employer's Specifications for Electrical Works is described in the following documents. The Contractor shall be required to execute the works in accordance with the following specifications:

- ANNEXURE H: Particular Electrical Specification
- ANNEXURE G: Standard Electrical Specification
- ANNEXURE I: MCC Design Schedules

2.2 *Parts of the works which the Contractor is to design*

2.2.1 The Contractor is to design the following parts of the works:

- The Contractor will undertake a detailed design layout for the new elevated panel mountings only.
- The Contractor undertakes to repair and replace all aspects of the Employer's RDD Design to the "Issue for Construction" level; and assumes all professional liability for the performance against design intent.

- In cases where specific duties and/or performance criteria are provided, the Contractor shall use such duties and performance criteria for tender purposes only. The final duties and performance criteria shall be the determination of the Contractor.

2.3 Procedure for submission and acceptance of *Contractor's* design

General Requirements for the *Contractor* Design Documents:

- This section refers to the requirements relating to the information and drawings to be submitted by the Contractor for acceptance and/or approval by the Employer prior to purchase and manufacture of any plant or equipment.
- Three hard copies and soft (PDF) copy of any document for acceptance and/or approval by the Employer shall be always submitted.
- A register of all documents submitted for acceptance and/or approval shall be kept up to date and provided with each submission,
- All drawings shall be to scale and prepared according to the latest issue of SANS 10111, or equivalent.
- All Layout and General Arrangement drawings shall be A1.
- Each submission of the Contractor's documentation shall be accompanied by a Contractor's Notice stating such readiness for review.
- All submissions for acceptance and/or approval shall be signed by the Contractor's competent person to indicate approval from his side.
- The Contractor shall submit all his design documentation to the Engineers or Project Manager for review and acceptance. The Employer undertakes to review and accept the design documentation within a period of 2 (two) weeks.
- On receipt of the reviewed documentation, the Contractor shall make any modifications as requested or marked up and resubmit the revised documentation to the Project Manager within two weeks. Queries regarding comments or changes shall be addressed with the Project Manager prior to re-submittal.
- Any re-submittals, which do not include the changes or comments as indicated by the Employer, will be returned to the Contractor to be corrected. The Contractor shall re-issue the revised documentation incorporating all comments and other specified details not included in the previous issue within two working days of receipt of the marked-up document.
- The Contractor's documentation shall be issued to the Project Manager under cover of the Contractor's Transmittal Note indicating all Contract references (i.e. Project No, Contract No, etc.) as well as the Contractor's Project Document Number, Revision Number, Title and chronological listing of transmitted documentation. Formats of Contractor data submitted is dependent on the project procedure and shall be specified by the Project Manager, upon the notified request of the Contractor.
- The Contractor shall also provide any design package software files to the Employer, in the format specified by the Employer, if so requested, in order to review and/or verify drawings and designs.
- Acceptance of documentation will in no way relieve the Contractor of his responsibility for the correctness of information or conformance with his obligation to provide the works. This obligation vests solely with the Contractor

2.4 The Contractors Documents Required Before Site Execution

- The Contractor shall, no later than 2 weeks of project kick-off, submit the following execution plans for review and acceptance by the Employer:

Table 4. Contractor's Documents Required Before Site Establishment

<u>Item No</u>	<u>Description of Contractor's Document</u>
1	Procurement Plan
1.1	<ul style="list-style-type: none"> Procurement plan showing major events such as critical OEM equipment and any other long lead items. The plan shall show for each event the following: <ul style="list-style-type: none"> Date of Order Placement, Fabrication schedule identifying all critical factory acceptance tests (FAT's) and QCP inspection dates where applicable, and Site delivery schedules showing date of arrival on site
2	Fabrication Quality Data Pack
2.1	<ul style="list-style-type: none"> Fabrication quality files for fabricated items including: Pumps & valves
3	Environmental Management File
3.1	Complete the Environmental Management File in accordance with the requirements of the Transnet Environmental Governance Framework and any additional requirements advised by the Employer's Environmental Manager/ Specialist.
4	Commissioning Plans
4.1	<ul style="list-style-type: none"> Commissioning management plans that conform to Section 3 of the General Standards Specifications: Training, Testing, and Commissioning. The contractor's attention is especially drawn to the requirement for a 30-day commissioning period stipulated in section 3.5.

2.5 Review and Acceptance of Contractor Documentation

The Contractor submits documentation as the 'Works Information' requires to the Project Manager for review and acceptance.

In undertaking the 'Works' (including all incidental services required), the Supplier shall conform and adhere to the requirements of the 'Contractor Document Submittal Requirements' Standard.

2.6 Contractor's Design Development & Construction Implementation Key Personnel

- a) The Contractor shall provide a fully resourced design development team to ensure successful implementation of the project. As a minimum, the team shall include the following key resources:

Main Contractor's Design Development Key Resources

Resource	Minimum Qualification
Project Manager (Pr.CPM)	SACPCMP Registered
Electrical Engineer(Instrumentation) (Pr. Eng) /Pr.Tech	ECSA Registered
Project Planner	Primavera / Microsoft Projects Competent

2.7 Use of Contractor's design

The Contractor grants the Employer a license to use the copyright in all design data presented to the Employer in relation to the works [listed in Section 2.2] for any purpose in connection with the construction, reconstruction, refurbishment, repair, maintenance, and extension of the works [listed in Section 2.2] with such license being capable of transfer to any third party without the consent of the Contractor.

The Contractor vests in the Employer full title guarantee in the intellectual property and copyright in the design data created in relation to the works designed in Section 2.2

2.8 Equipment required to be included in the works

2.8.1 None

2.9 As-built drawings, operating manuals, and maintenance schedules

2.9.1 *The Contractor shall, 2 weeks prior to the 30-day commissioning period, and prior to the beneficial handover of the system furnish the Employer with the following documentation (in PDF, Hard Copy, and DWG formats) for review and acceptance and/or approval:*

Table 6. Contractor's Required Documentation Before Handover

<u>Item No</u>	<u>Description of Contractor's Document</u>
1	As Built Documentation
1.1	Electrical Schematics
1.2	Dewatering system piping
1.3	Butterfly valve
1.4	Operation and Maintenance Manuals

3 Construction

3.1 Temporary works, Site services & construction constraints

3.1.1 *Employer's Site entry and security control, permits, and Site Regulations*

- a) The Contractor is required to follow the entry requirements stipulated by TNPA and shall take out temporary security permits for all staff working within the operational harbour. The Contractor will be required to attend the designated Port Safety Inductions and must comply with the requirements of the TNPA SHE Specification before port access permits and the site is handed over for construction. All costs incurred will be borne by the Contractor.
- b) The Contractor shall make his own arrangements for the accommodation of all labour and shall comply with the requirements of the respective authorities. Control of access for the construction plant onto public roads shall be in accordance with the requirements of the relevant roads authority and the Port Authority and arranged by the Contractor.
- c) The Contractor shall comply with the Employer's site entry and security control requirements. The Contractor is required to produce an inventory of material, plant, and equipment when entering and exiting TNPA premises.
- d) The Contractor shall not be permitted to remove TNPA material, plant, and equipment without a permit issued by the Project Manager or Site Supervisor.
- e) The Contractor is specifically excluded from entering the Employer's Operational Areas which are adjacent to the Site and Working Areas.
- f) The Contractor plans and organises his work in such a manner so as to cause the least possible disruption to the Employer's operations.
- g) The Contractor ensures the safe passage of Contractor's traffic to and around the Site and Working Areas at all times this includes providing flagmen, protective barriers, signage, etc. for protection, direction and control of traffic.
- h) The Contractor ensures that any of his staff, labour and Equipment moving outside of the allocated Site and Working Areas does not obstruct the operations of the Port of Port of Cape Town.
- i) The Contractor ensures that all his construction staff, labour, and Equipment remain within his allocated and fenced-off construction area.
- j) The Contractor shall comply with all security requirements applicable to the site. No direct payment for security measures shall be made by the Employer and the Contractor shall make adequate provision in his tendered rates for all security measures that are deemed necessary by him to protect and safeguard his staff, plant, materials and equipment.
- k) All Contractor's staff and labour comply with TNPA operational safety requirements and are equipped with all necessary PPE and high visibility apparel.

3.1.3. The Permits Obtainable from the Employer Prior Any Site Works:

Site Inductions:

- a) The Contractor shall follow the entry requirements stipulated by TNPA. He shall attend the designated Port Safety Inductions and must comply with the requirements of the TNPA SHE Specifications.

3.1.4. Access to Site Security and Site Regulations:

- a) The Contractor's workforce shall be issued with project-specific site access cards on completion of induction. The following items must be furnished with each application for an identity card:
- b) A letter on the Contractor's company letter head stating the applicant's full names, ID number, reason for requesting the ID card, area in TNPA that he/she shall be working, a summary of the work to be done and the start and end date of the contract;
- c) A letter signed by the TNPA Security Manager (or delegated person) after perusing the above documentation, confirming the request for an ID card.
- d) A completed application form (available from TNPA Customer Services); and

- e) Positive identification of the applicant (green bar-coded RSA ID, new smart ID document or driver's license).
- f) Temporary Access Permits for specialised visits, valid on the day of issue only, are obtainable from the TNPA Permit Office. The following items must be furnished with each application for a Temporary Access Permit:
- g) A letter on the Contractor's company letterhead stating the applicant's full names, ID number, and reason for requesting the ID card and area in TNPA where he/she shall be working;
- h) A letter of confirmation on an MC letterhead signed by the MC Manager overseeing the contract with the Contractor/contracting company;
- i) Positive identification of the applicant (green bar-coded RSA ID or driver's license or new smart ID document or driver's license); and
- j) Identification document copies shall be original copies certified (by SAPS) ID copies.

3.1.5. Permit to Work:

- a) In addition to statutory requirements, the Contractor must be in possession of a Permit to Work, as issued by TNPA, before commencing any activities on Site.
- b) Permits shall be issued and cleared on the conditions as below:
 - Safety File vetted and approved by Safety Agent; and
 - TNPA Safety Inductions completed.

c) Permit Requirements:

- Method Statement (each Task Scope of work) aligned to the approved method statement;
- Risk Assessment (each Task Risk Assessment) aligned to the approved method statement;
- Lock-out systems are in place;
- Comply with confined space procedures;
- Contingencies as required;
- All work to be screened and authorized before a permit to work is issued;
- Additional precautions by Hot work Inspector;
- Permit validity is for 5 days maximum for general hot work

d) Port Rules 154 Hot Work Permit Requirements:

The Contractor must be in possession of a hot work permit for any and all hot works:

- A hot work permit application costs R300, is valid for 5 days consecutively and is obtainable from the TNPA Fire department
- The foreman and the competent fire watcher are to be in attendance ensuring compliance throughout all hot work activities;
- Fire Watcher shall be in place and remain on standby 30 minutes after the completion of hot work for the day to ensure that all hot spots are eliminated or extinguished;
- Fire extinguishers and a charged water line to be placed at strategic points and to be in a state of readiness;
- Ensure that all ignition sources feed/ supply (generators; gas cylinders) are kept and stored outside the perimeters of the hazard zone;

- Work is only to commence once the appropriate permit and risk assessment has been completed and signed off. NO PERMIT- NO WORK;
 - Positive ventilation cocoons complete with wet fire blankets are to be constructed to contain sparks from the hot works. The cocoon shall be inspected and signed off by the supervisor prior to use.
- e) Ensure that there is compliance with TNPA safe working distance from the berth/ship edge (30 meters):
- a) All work must stop immediately when an emergency evacuation alarm is sounded – evacuate the area to the assembly point; and
 - b) Emergency Evacuation Procedures to be displayed and communicated to all personnel.
 - c) Please note: The above precautions are not limited and additional precautions or requirements may be mandatory, subject to the Risk Assessment of the task/activity.
- 3.1.6. The Contractor complies with the following entry (and exit) permissions and restrictions for personnel at the Site requirements of the Employer:
- a) There are three main entrances to the Port of Cape Town: Marine Drive Entrance, Christian Barnard Entrance, and Duncan Road Entrance.
 - b) General public safety is a matter of priority for the project and its stakeholders, the Contractor is therefore required to have all employees registered on the works/access permits with the TNPA Security Department.
- 3.1.7. Restrictions to access on Site, roads, walkways and barricades
- a) The Contractor is hereby made aware that the works are situated in various areas within the Port Prescient, some within the operational yards and some within public space.
- The Contractor shall take due care when establishing their workspace within these areas. Adequate warning signage and personnel shall be provided and maintained by the Contractor all in compliance with the local bylaws and the South African Traffic Signs Manual (SATSM).
- b) The Contractor shall be responsible for providing a temporary barricade fence between the port operations, roadway and railway traffic, and the construction sites and maintaining, providing, and/or relocating the fence, if required for construction purposes, to ensure the boundary fence is continuous, and the Contractor shall make allowance for it in his Price and Programme.
- 3.1.8. The Contractor complies with the following access/egress permissions and restrictions for personnel and Equipment within the Site boundaries requirements of the Employer:
- a) All vehicles are subject to security checks and all Plant and Equipment brought into the Port and leaving the Port are required to be security cleared by the relevant authorities (Project Manager and TNPA Security Manager) before access or exit is granted, as the situation may require.
 - b) The Contractor is required to arrange for the clearing of the items with the Project Manager and the TNPA Security Manager well in advance of the access or exit requirement to avoid delays in the provision of the Works.

- c) The Contractor ensures that any of his staff, labour and Equipment moving outside of his allocated Sites and Working Areas does not obstruct the Employer's operations. To this end access routes are allocated and co-ordinated by the Contractor in liaison with the Project Manager.
- d) The Contractor ensures the safe passage of traffic, to and around the various sites and Working Areas at all times. This includes providing flagmen, protective barriers, signage, etc. for protection, direction and control of traffic.
- e) The Contractor shall provide designated, signed and demarcated walkways for all personnel who are required to traverse between the different working areas at the various sites. Personnel outside of the designated walkways are required to be conducting work activities, and when traversing, are required to use the designated walkways.
- f) The Contractor plans and organises his work in such a manner so as to cause the least possible disruption to the Employer's operations.
- g) The Contractor to obtain the correct permits for working in HAZ Zone 1 and HAZ Zone 2 classified areas (Tanker Basin and Eastern Mole) before conducting works.

3.1.9. People restrictions on Site; hours of work, conduct, and records:

- a) The Contractor is prohibited from entering the Employer's Operational Areas unless authorised to do so.
- b) The Contractor plans and organizes his work in such a manner so as to cause the least possible disruption to the Employer's operations.
- c) The Contractor ensures that all his construction staff, labour, and Equipment remain within his allocated and fenced-off construction areas.
- d) The Contractor keeps daily records of all people, plant, and equipment engaged on the Site and Working Areas (including Sub-contractors) with access to such daily records available for inspection by the Project Manager at all reasonable times (summarised activity and progress for the day must be mentioned). The site diary shall include site information such as weather, incidents that have occurred, and the nature of the work that has been done on that day.

3.1.10. The Contractor complies with the following hours of work for his people (including Subcontractors) employed on the Site:

- a) Normal working hours for the majority of TNPA staff at the Port of Cape Town are from 08:00 to 16:30, Monday to Friday, Inclusive. However, the port is operational 24 hours and 365 days of the year providing access to incoming vessels and tenants in the vicinity.

3.1.11. The Contractor does not advertise the contract or the project to any third party, nor communicate directly with the media (in any jurisdiction) whatsoever without the express written notification and consent of the Project Manager.

3.1.12. Contractor's Equipment

- a) The Contractor keeps daily records of his equipment used on site and the working areas (distinguishing between owned and hired equipment) with access to such daily records available for inspection by the Project Manager at all reasonable times. All plant used by the Contractor on site shall be properly maintained and operated. All vehicles on public roads shall be roadworthy, with the necessary licenses and safety requirements. A checklist or register shall be implemented which lists the operators' qualifications and records.
- b) All equipment to be supplied by the Contractor shall comply with the relevant standard specifications. Any tools, test equipment and devices needed for installation, testing and commissioning shall be provided by the Contractor. Where applicable, the equipment used shall be intrinsically safe. No equipment shall be provided by the Employer.

3.1.13. The Contractor complies with the following permissions and restrictions in the use of Equipment as required by the Employer:

- a) Equipment used by the Contractor to provide the Works shall be prepared, painted, assembled and disassembled within the Contractor's Work Area and site boundaries or lay-down areas as authorised by the Project Manager.
- b) The Contractor is required to remove all equipment that is not part of the Works from site after completion of the Works and before de-establishment of the site.
- c) All and any equipment used by the Contractor for the provision of the Works shall comply to the Employer's SHEQ regulations and restrictions, or any other statutory Health and Safety requirements as directed by the Project Manager in liaison with the Employer's Engineers or the Employer's Consultants

3.1.14. Equipment provided by the Employer

- a) The Employer shall not provide any Equipment to the Contractor for the purposes of this contract.

3.1.15. Site services and facilities:

- a) The Contractor shall establish his construction offices, workshops and any other facilities within the prescribed battery limits of the site. All facilities established by the Contractor on the Site and Working Areas shall be done in a manner that does not adversely affect the environment. However, before construction can begin, the Contractor shall submit to the Project Manager for his approval, plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the Contractor proposes to put in place.
- b) The plans stated in 3.1.22a) shall detail the locality as well as the layout of the waste facilities for litter, kitchen refuse and workshop-derived effluents or waste. The Contractor's intended mitigation measures for any negative impacts on the site during construction shall be indicated on the plan.
- c) The Contractor shall comply with all security requirements applicable to the site. No direct payment for security measures shall be made and the Contractor shall make adequate provision in his tendered rates for all security measures that are deemed necessary by him to protect and safeguard his staff, plant, materials and equipment.

- d) During the construction of the works, the site shall at all times be kept in a neat and tidy condition. The Contractor shall provide for the cleaning up and carting away of all rubbish and debris of whatever kind throughout the duration of the contract. The Project Manager may order the Contractor to stop all work, until such time as, in his opinion, this condition has been observed. The cost of disposal and any other fees payable for disposal shall be deemed to be included in the rates.
- e) If the Contractor wants a temporary power supply from the Employer, the Contractor can follow the applications procedure through the EL&P Department whereby the Contractor will be liable for all connection cost as well as monthly electricity billing.
- f) The Contractor will supply his own potable water to the site office at his own cost, inclusive of showers and ablution facilities.
- g) Potable water supply for the use of drinking and site office requirements is not available and shall be provided by the Contractor at his own cost.
- h) The Contractor shall provide everything else necessary for Providing the Works.

3.1.16. The Employer provides the following facilities for the Contractor:

- a) The Employer will demarcate an area for the Contractors site offices and laydown area.
- b) The area will be made avail to the Contractor two weeks prior to commencement of construction.
- c) The Contractor shall, within one month of the date of completion of the works; remove from site all his equipment, material, stores and accommodation or any other asset belonging to him and leave the site in a tidy condition, to the satisfaction of the Project Manager.

3.1.17. Facilities provided by the Contractor:

- a) The Contractor is to provide all his site office-related accommodation at his own expense.
- b) The Contractor shall provide, for the Employer's approval, a site establishment plan for all facilities as he may require for the successful completion of the work, this includes:
 - i. Site Offices, complete with boardroom seating at least 10 persons with access to power, air conditioning, and internet.
 - ii. Mess Area,
 - iii. Ablutions, separate for male and female
 - iv. Showers
 - v. Stores for all consumables
 - vi. Workshops for any site fabrications
 - vii. Cordoning off of equipment and material lay down area and provision of an approved materials control system
- c) The Contractor is to provide all of his ablution and lavatories to the site camp at his own expense. These facilities should be kept in a tidy and sanitary condition with all waste products disposed of in accordance with the waste plan

- d) The Contractor is to provide all of his waste disposal bins at his own expense. These facilities should be kept in a tidy and sanitary condition with all waste products disposed of in accordance with the waste plan.

3.1.16. Control of noise, dust, water, and waste

The Contractor is to take appropriate measures to minimise the generation of noise and dust as a result of construction works, to the satisfaction of the Project Manager, or the person approved by the Project Manager.

3.1.17. The Contractor complies with the following constraints in the execution of the works:

- a) The Contractor will connect the new installations to existing cabling in accordance with SANS 10142 and ensure safe and effective operations of the equipment.
- b) Where required, the Contractor will request the power to be isolated at certain points from the TNPA EL&P department to ensure safe working operations.

3.5. The work to be done by the Completion Date

On or before the Completion Date, the Contractor shall have done everything required to provide the Works, including the work listed below, which is to be done before the Completion Date and in any case before the dates stated. The Project Manager cannot certify Completion until all the work listed below has been done and is also free of Defects, which would have, in his opinion, prevented the Employer from using the works and Others from doing their job.

Table 14. Operation and Maintenance Dates Item of work To be completed by

Item of work	To be completed by
Operation and Maintenance Manuals	2- weeks before the Completion Date.
Performance testing of the works in Clause 3.2.7, 3.2.8 & 3.2.9 under C3.1 Employer's Works Information.	2- weeks before the Completion Date.
As built drawings of all items mentioned in C3.1 Employer's Works Information	2 -weeks before the Completion Date.
Approval and Sign of Works by the Supervisor and Project Manager	2-weeks before the Completion Date.

3.2.2. Use of the works before Completion has been certified

In the event of the Works, not being completed by the contractual completion date, the Employer reserves the right to make use of the installation, without the Contractor having the benefit of final acceptance.

3.2.3. Commissioning

- a) The Contractor submits the commissioning protocol to the Project Manager for acceptance not less than 14 days before commissioning starts.
- b) The Contractor shall successfully demonstrate the following to the Project Manager prior to the commissioning of the Works:
 - Construction complete certificates signed by the Employer's Supervisor
 - Approved installation certificates signed by relevant Original Equipment Manufacturers
 - Demonstration that all equipment is powered and rotating in the designed direction
- c) This commissioning protocol includes all tests and inspections deemed necessary by the Contractor and Supervisor to prove to the Project Manager's satisfaction that all equipment has been delivered according to this specification and must include inter alia operational tests under simulated conditions, functional tests, tests to prove the integrity of the safety and limit systems and inspections for final quality, including paint and corrosion protection quality.
- d) The Contractor shall make available a team of engineers and skilled artisans to undertake the commissioning of the dewatering pump system in accordance with Section 3 of Annexure E: Training, testing, and Commissioning.

3.2.4. Testing and Pre-commissioning

- a) Pre-Commissioning is to be carried out on major components and equipment supplied and/or installed by the Contractor on this Contract. Typically, this would include pumps, large valves HV and MV panels, and any items agreed with the Employer directly after awarding of the contract.
- b) These tests include appropriate inspections and functional tests to demonstrate that all items of equipment can be operated safely and at their design performance specification during the commissioning test.
- c) In particular, this includes proofing of all protection and safety devices, direction tests if applicable, loop checks, alignment checks, interlocks checks, and safety limit checks.
- d) The Contractor conducts pre-commissioning tests on the equipment at the Contractor's premises prior to delivery to the site.
- e) The Contractor performs testing as part of pre-commissioning. The Contractor establishes a QA system for the testing and commissioning of the MV and LV Systems Documentation is to be provided with sufficient detail to enable the complete commissioning of the electrical equipment and protection systems.
- f) The purpose of this documentation is to ensure that the commissioning of electrical plant and protection systems is performed according to acceptable historical standards. The objective is that:

- g) Tests required for the commissioning of protection systems are specified in enough detail,
- h) Resources are allocated to perform the tests,
- i) Accountability for the performance of the tests rests with the resource allocated,
- j) Documentation is available which indicates:
 - Test results
 - Equipment tested
 - The person who performed the test
 - The date on which the tests were performed
- k) These Pre-Commissioning Tests are carried out after the Contractor's own proving of the equipment and are conducted in the presence of the Supervisor.
- l) The required tests on all items of equipment will be agreed upon between the Supervisor and the Contractor. The Contractor provides the commissioning team with the necessary test equipment and ensures that the test equipment used has a valid calibration certificate.
- m) After successful completion of the Contractor's pre-commissioning tests, a Mechanical Completion Certificate will be issued by the Supervisor.

3.2.5. Access given by the Employer for correction of Defect

- a) The Employer shall notify the Contractor of any defects which are to be remedied within the Correction Defect Period. All areas on the construction site shall be made available to the Contractor, however, this shall yet again have to be done around the operations of the dock.
- b) All areas that are given to the Contractor for the correction of defects shall be properly cordoned off by the Contractor. Proper safety measures, as required by the Employer, must be adhered to at all times for the full duration of the defect correction undertaking.

3.2.6. Operational Maintenance after Completion

- a) Operational maintenance of all the equipment and system after completion of the Performance Test remains the responsibility of the Contractor until the Data Packs, Training Manuals and
- b) Maintenance and Operation Manuals have been delivered and accepted. No additional payment will be made for any maintenance which may become necessary during this period.

4. Electrical & Mechanical Engineering Works

4.4.1. Pumps and valves data sheets completed and signed off by OEM and complete with:

- Certified Drawings
- Pump and valve Routine Test Certificate
- Witness pump performance testing report
- Strip and overhaul the drainer pumps and Main pumps
- Manufacture new valves that come with classification.

4.4.2. Electrical motor data sheets completed and signed off by OEM including:

- Confirmation that the motors comply with the requirements of SANS 60034 25
- Valves (Including Penstock Valves) data sheets completed and signed off by OEM, complete with:
- Certified Drawings
- LV Switchgear and Control Gear Assemblies

4.2.3. LV Assemblies Design, including:

- Wiring Schematics and bus bar arrangement,
- Single line diagrams
- Cubicle components and door layouts,
- Switchgear room layout,
- General Arrangement Drawings.

4.2.4. LV Switchgear and Component datasheets data sheets completed and signed off by OEM, complete with:

- Certified Drawings and Factory Acceptance Test reports
- Electrical Reticulation drawings detailing: Cable Routes
- Trench design
- Cable supports
- Local Control Panel Locations

4.2.5. Local Control Panels Design, including:

- Wiring Schematics,
- Cubicle components and door layouts,
- Programmable Controller(s) and Control System

4.2.6. Programmable controllers and Control System design documentation including:

- Input/Output List

- Wiring Diagrams
- System Block Diagrams
- Functional Control Description
- Software Simulation Test Reports

4.2.7. Telemetry and SCADA design including:

- Control system architecture drawings
- Graphic Displays of Control and Server Room Layouts

4.2.8. UPS and PSU load calculations

4.2.9. Control System Component datasheets data sheets completed and signed off by OEM, complete with:

- Certified Drawings, and
- Operation and Maintenance Manuals
- Factory Acceptance Test reports

4.2.10. PLC, remote IO, and LCP panels design including:

- Panel and Rack Layouts
- Panel steelwork general arrangement drawings
- Cable and junction box schedules, and Wiring schematics

4.2.11. Instrumentation

Instrumentation design including:

- loop diagrams, and
- hook-up diagrams

4.2.12. Instrumentation list including:

- Make and model, and
- Range and set points.

4.2.13. Cable schedule for power and data. This shall include:

- Size, type, and construction
- Voltage rating,
- Duty, load and voltage drop, and
- Route length detailing start and finish points,

4.2.14. Instrument panel design including:

- Panel and Rack Layouts,
- Panel steelwork general arrangement drawings,
- Cable and junction box schedules, and
- Wiring schematics.

4.2.15. Instrumentation datasheets data sheets completed and signed off by the supplier, complete with:

- Certified Drawings,
- Operation and Maintenance Manuals, and

4.2.16. Factory Calibration certificates

4. List Of Drawings

4.5. Drawings issued by the *Employer*

This is the list of drawings issued by the *Employer* at or before the Contract Date and which apply

Drawing Number	Drawing Title	Revision
PF07/2021	Electrical Schematics-MCC 20022023	0
11-311-03-02	Dewatering system piping	0
800 DAX2B	Butterfly valve	0

SECTION 2

5. Management and start up

5.5. Management meetings

Regular meetings of a general nature may be convened and chaired by the *Project Manager* as follows:

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk register and compensation events	Once a month	Contractor Site office	Project Manager and Managing Contract. Contractor and their appropriate leads
Overall contract progress and feedback	Bi-Weekly on a Friday morning	Contractor Site office	Employer, Contractor & appropriate key persons, Employers Managing Contractor and Project Manager
Technical Progress Meeting	Weekly	Contractor Site office	Contractor & appropriate key persons, Employers Managing Contractor and Project Manager, Quality Assurance Representative
SHE meetings	Held once a week	Contractor Site office	Contractor Health & Safety Representatives & Employer SHE officer
Close Out Meeting	After contract completion	Project Manager Office	Full team from the Contractor and the Employers team as well

Meetings of a specialist nature may be convened as specified elsewhere in this Works Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *works*. Records of these meetings are to be submitted to the *Project Manager* by the person convening the meeting within five days of the meeting.

All meetings are to be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register are not to be used for the purpose of confirming actions or instructions under the contract as these are to be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

5.6. Documentation Control

All safety documents shall comply with the TNPA Project Document Control Procedures

5.7. Safety risk management

6.3.1. The employer has a strict Health and Safety policy. Under the policy, the following apply:

- a) The Contractor's attention is directed to the TNPA SHE Specification for Construction, and in particular to his Health & Safety Management Plan, which must be submitted with his tender, as well as the requirements of the Occupational Health and Safety Act, 1993

(Act 85 of 1993) as amended and Regulations issued in terms thereof or un-repealed regulations issued in terms of the former Act no. 6 of 1983, in their entirety.

- b) The Contractor makes available and ensures compliance to the TNPA SHE Specification for Construction by its employees and Subcontractors in the language of this contract.
- c) The Contractor employs his own health and safety coordinator to ensure compliance with both TNPA SHE Specification for Construction and the Occupational Health & Safety Act and its latest regulations.
- d) The Contractor shall provide a Health & Safety Management Plan addressing the requirements in the TNPA SHE specification and a Baseline Risk Assessment addressing the construction activities. The Project Manager has the right to request additional specific work method statements should, in his opinion, this be required.
- e) The compliance with all applicable legislation, regulations issued in terms thereof, and TNPA safety rules, shall be entirely at the Contractor's cost, and shall be deemed to be allowed for in the tendered prices.
- f) Without derogating from the Act or any un-repealed regulations issued in terms of legislation, or without purporting to limit the Contractor's responsibilities, the following are brought to the Contractor's attention:
- g) The Contractor shall appoint a Health and Safety coordinator to liaise at least fortnightly with the Project Manager or Supervisor on matters pertaining to occupational health and safety.
- h) The Contractor shall advise the Project Manager of any hazardous, or potentially hazardous situation, which may arise from work being performed either by the Contractor or Sub-Contractor.
- i) A letter of good standing in terms of Section 80 (Employer to register with the Compensation Commissioner) of the Compensation for Occupational Injuries and Deceases Act 1993 (Act 130 of 1993) must also be furnished.
- j) All clauses in this contract pertaining to health and safety form an integral part of this contract, and any non-compliance therewith may be construed as breach of contract entitling the Employer to the appropriate remedies.
- k) The Contractor and his staff shall attend a compulsory induction course to be arranged by the Project Manager on or before the date when the site is made available to the Contractor.
- l) The Contractor's appointed Site Representative and the Project Manager shall finalise a site-specific HIRA (Hazard Identification and Risk Assessment) document, on the day of site handover to the Contractor. This site-specific HIRA document, based on a continuous HIRA, must cover site-specific hazards and the safe management of these hazards. The HIRA document must be signed by the above-mentioned representatives

as well as the Supervisor, and be approved by the Project Manager, before any construction work can commence.

- m) The OHS Act 85 of 1993 clearly states in the Safety Regulations Clause No. 2A:
- n) "INTOXICATION" An employer or user shall not permit any person who appears to be under the influence of intoxicating liquor or drugs, to enter or remain at a workplace". The Employer enforces this legislation by means of its Substance Abuse Policy, and therefore reserves the right to do substance abuse testing on anyone who enters his premises.
- o) The Contractor shall ensure that a suitably qualified safety representative is appointed, and monthly safety meetings are held. Written minutes of these safety meetings shall be forwarded to the Project Manager. All costs related to the safety aspects required under this contract will be carried by the Contractor and therefore be covered under the rates tendered.

5.8. Environmental constraints and management

- 5.8.1. The *Contractor* performs the *works* and all construction activities within the Site and Working Areas having due regard to the environment and to environmental management practices as more particularly described within the SES and PES.

The SES describes the minimal acceptable standard for environmental management for a range of environmental aspects commonly encountered on construction projects and sets environmental objectives and targets, which the *Contractor* observes and complies.

The PES may require higher minimal standards than those described in the SES as may be required by the *Project Manager* or Others.

The overarching obligations of the *Contractor* under the CEMP before construction activities commence on the Site and/or Working Areas is to provide an environmental method statement for a particular construction operation at the Site and/or Working Area by the *Contractor* and where requested by the CM and to comply with the following:

Where relevant, method statements, as detailed in the SES and PES, shall be provided by the *Contractor*. These include, but are not limited to, the following where applicable:

- Establishment of construction lay down area
- Hazardous and non-hazardous solid waste management
- Storm water management
- Contaminated water management
- Prevention of marine pollution
- Hydrocarbon spills
- Diesel tanks and refuelling procedures
- Dust control

- Spoil dumping
- Sourcing, excavating, transporting and dumping of fill material
- Noise and vibration control
- Removal of rare, endemic or endangered species
- Removal and stockpiling of topsoil
- Rodent and pest control
- Environmental awareness training
- Site division
- Emergency procedures for environmental incidents
- *Contractor's* SHE Officer
- Closure of construction laydown area

The *Contractor* shall ensure that his management, foremen, and the general workforce, as well as all suppliers and visitors to the Site have attended the Induction Programme prior to commencing any *work* on Site. If new personnel commence work on the Site during construction, the *Contractor* shall ensure that these personnel undergo the Induction Programme and are made aware of the environmental specifications on Site.

Where applicable, the *Contractor* ensures that he appoints a suitably qualified Subcontractor, to be approved by the *Project Manager*, to undertake the "Removal of rare, endemic or endangered species". This appointment must be completed at least three weeks before commencement of any other work on Site.

5.9. Quality assurance requirements

- 5.9.1. The *Contractor* submits his Quality Management System documents to the *Project Manager* as part of his programme under ECC Clause 31.2 to include details of:
- Quality Plan for the contract;
 - Quality Policy
 - Index of Procedures to be used; and
 - A schedule of internal and external audits during the contract
- 5.9.2. The *Contractor* develops and maintains a comprehensive register of documents that will be generated throughout the contract including all quality related documents as part of its Quality Plan.
- 5.9.3. The *Project Manager* indicates those documents required to be submitted for either information, review or acceptance and the *Contractor* indicates such requirements within his register of documents. The register shall indicate the dates of issue of the documents with the *Project Manager* responding to documents submitted by the *Contractor* for review or acceptance within the *period for reply* prior to such documents being used by the *Contractor*.

5.9.4. The Quality Plan means the *Contractor's* statement, which outlines strategy, methodology, resources allocation, QA and Quality Control co-ordination activities to ensure that the *works*

5.9.5. The Contractor facilitates the following requirements for training workshops:

The installation of the latest actuators and other related systems, especially the automation of the plant, will make a significant change in the operation and maintenance requirement for the requirement for the Employer. Both Operations and Maintenance personnel will be exposed to new technology.

5.9.6. *The Contractor arranges for the following technology transfer to the Employer:*

Contractor shall provide 2 sets (repeat) of formal training classes to suit the Employer's duty schedule.

Employer to advise suitable times and approximate attendance and provide facilities/ OH projector if required. Contractor shall provide suitably qualified and experienced training personnel supported by a curriculum vitae and include equipment supplier specialists where required

5.10. Provision of bonds and guarantees

5.10.1. The form in which a bond or guarantee required by the conditions of contract (if any) is to be provided by the *Contractor* is given in Part 1 Agreements and Contract Data, document C1.3, Sureties.

5.10.2. The *Contractor* provides a bond or guarantee as required by the conditions of contract concurrently with the execution by the Parties of the form of agreement for the ECC contract.

5.11. Records of Defined Cost, payments & assessments of compensation events kept by Contractor

5.11.1. The *Contractor* keeps the following records available for the *Project Manager* to inspect:

- Records of design employees location of work (if appropriate); and

5.11.2. The *Contractor* keeps the following records available for the *Project Manager* to inspect:

- Records of design employees location of work (if appropriate);
- Records of Equipment used and people employed outside the Working Areas (if applicable);
- and

5.12. The Contractor's Invoices

5.12.1. When the *Project Manager* certifies payment (see ECC Clause 51.1) following an assessment date, the *Contractor* complies with the *Employer's* procedure for invoice submission.

5.12.2. The invoice must correspond to the *Project Manager's* assessment of the amount due to the *Contractor* as stated in the payment certificate.

5.12.3. The invoice states the following:

Invoice addressed to Transnet SOC Ltd;

Transnet SOC Limited's VAT No: 4720103177;

Invoice number;

The *Contractor's* VAT Number; and

The Contract number [insert relevant details].

The invoice contains the supporting detail [insert relevant details].

5.12.4. The invoice is presented either by post or by hand delivery.

5.12.5. Invoices submitted by post are addressed to:

Transnet SOC Ltd

Port of Cape Town

P O Box 4245

Cape Town 8000

For the attention of Apelele Tyali

Invoices submitted by hand are presented to:

Transnet Nation Port Authority

Ship Repair

Duncan Road

V & A Waterfront

For the attention of Apelele Tyali

The invoice is presented as an original.

5.13. People

Minimum requirements of people employed on the Site

- Project Manager (Pr.CPM)
- Site Engineer

- Health and Safety
- Site Supervisors:
 - 1 x Electrical
 - 1 x Mechanical
- Electricians (C&I)- Minimum Trade Certificate in respective Engineering field with experience in construction projects similar to the works in this project
- Divers

5.13.1. **CONTRACTOR LIABILITY**

- a) The *Contractor* warrants that it will be liable to Transnet for any loss or damage caused by strikes, riots, lockouts or any labour disputes by and/or confined to the *contractor's* employees, which loss will include any indirect or consequential damages;
- b) The *Contractor* warrants that no negotiations or feedback meetings by the *Contractor's* employees shall take place on Transnet premises, whether owned or rented by Transnet.
- c) The *Contractor* shall give notice to Transnet of any industrial action by the *Contractor's* employees immediately upon becoming aware of any actual or contemplated action that is or may be carried out on Transnet's premises, whether owned or rented, and shall notify Transnet of all matters associated with such action that may potentially affect Transnet.
- D) The *Contractor* is responsible for educating its employees on relevant provisions of the Labour Relations Act which deal with industrial action processes, and the risks of non-compliance.
- E) The *Contractor* is required to develop a Contingency Strike Handling Plan, which plan the *Contractor* is obliged to update on a three-monthly basis. The *Contractor* must provide Transnet with this plan and all updates to the Plan. The *Contractor* is responsible to communicate with its employees on site details of the plan.

6. INDUSTRIAL ACTION BY CONTRACTOR EMPLOYEES

6.5. In the event of any industrial action by the Contractor's employees, the Contractor is required to provide competent contingency resources permitted in law to carry out any of the duties that are or could potentially be interrupted by industrial action in delivering the Service.

6.6. The Contractor warrants that it will compensate Transnet for any costs Transnet incurs in providing additional security to deal with any industrial action by the Contractor's employees.

6.7. In the event of any industrial action by the Contractor's employees, the Contractor is obliged:

6.7.1. To prepare and deliver to Transnet, within two (2) hours of the commencement of industrial action an Industrial Action Report. If the industrial action persists the Contractor is required to deliver the report at 8h30 each day.

6.7.2. The Industrial Action Report must provide at least the following information:

- a) Industrial incident report,
- b) Attendance register,
- c) Productivity / progress to schedule reports,
- d) Operational contingency plan,
- e) Site security report,
- f) Industrial action intelligence gathered.

6.7.3. The final Industrial Action Report is to be delivered 24 hours after finalisation of the industrial action.

6.7.4. The management of the Contractor is required to hold a daily industrial action teleconference with personnel identified by Transnet to discuss the industrial action, settlement of the industrial action, security issues and the impact on delivery under the contract.

6.8. The resolution of any disputes or industrial action by the Contractor's employees is the sole responsibility of the Contractor.

6.9. Access to Transnet premises by the Contractor and its employees is only provided for purposes of the Contractor delivering its services to Transnet. Should the Contractor and its employees not, for any reason, be capable of delivering its services Transnet is entitled to restrict or deny access onto its premises and unless otherwise authorized; such person will be deemed to be trespassing.

