

TRANSNET NATIONAL PORTS AUTHORITY

an Operating Division **TRANSNET SOC LTD**

[Registration Number 1990/000900/30]

REQUEST FOR PROPOSAL (RFP)

**FOR THE: PROVISION OF SERVICES TO UPGRADE THE EXISTING TRANSNET NATIONAL PORTS
AUTHORITY (TNPA) NATIONAL FIRE SERVICE INFRASTRUCTURE AND EQUIPMENT PROJECT
(PHASE 2A) IN THE PORT OF CAPE TOWN FOR A PERIOD OF 1 (ONE) YEAR.**

RFP NUMBER	: TNPA/2024/06/0007/67960/RFP
ISSUE DATE	: 15 NOVEMBER 2024
COMPULSORY BRIEFING	: 27 NOVEMBER 2024
CLOSING DATE	: 13 DECEMBER 2024
CLOSING TIME	: 16H00 PM
TENDER VALIDITY PERIOD	: 12 WEEKS FROM CLOSING DATE

PROVISION OF SERVICES TO UPGRADE THE EXISTING TRANSNET NATIONAL PORTS AUTHORITY (TNPA) NATIONAL FIRE SERVICE INFRASTRUCTURE AND EQUIPMENT PROJECT (PHASE 2A) IN THE PORT OF CAPE TOWN FOR A PERIOD OF 1 (ONE) YEAR.		
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T1.1 TENDER NOTICE AND INVITATION TO TENDER

SECTION 1: NOTICE TO TENDERERS

1. INVITATION TO TENDER

Responses to this Tender [hereinafter referred to as a **Tender**] are requested from persons, companies, close corporations or enterprises [hereinafter referred to as a Tenderer].

It is estimated that **Tenderers must** have a **CIDB contractor grading of 7GB or higher**.

DESCRIPTION	PROVISION OF SERVICES TO UPGRADE THE EXISTING TRANSNET NATIONAL PORTS AUTHORITY (TNPA) NATIONAL FIRE SERVICE INFRASTRUCTURE AND EQUIPMENT PROJECT (PHASE 2A) IN THE PORT OF CAPE TOWN FOR A PERIOD OF 1 (ONE) YEAR.
TENDER DOWNLOADING	This Tender may be downloaded directly from the National Treasury eTender Publication Portal at www.etenders.gov.za and the Transnet website at https://transnetetenders.azurewebsites.net (please use Google Chrome to access Transnet link) FREE OF CHARGE .

COMPULSORY TENDER CLARIFICATION MEETING	<p>A Compulsory Tender Clarification Meeting will be conducted at The Port of Cape Town, Maritime Training Centre (Red house opposite SAPS Police station), 1 Coode Crescent on the 27th November 2024 at 11:00 AM [11 O'clock] for a period of ± 2 (Two) hours. [Tenderers to provide own transportation and accommodation].</p> <p>The Compulsory Tender Clarification Meeting will start punctually, and information will not be repeated for the benefit of Tenderers arriving late</p>
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	<p>A Site visit/walk will take place, tenderers are to note:</p> <ul style="list-style-type: none"> • Tenderers are required to wear safety shoes, goggles, long sleeve shirts, high visibility vests and hard hats. • Tenderers without the recommended PPE will not be allowed on the site walk. • Tenderers and their employees, visitors, clients and customers entering Transnet Offices, Depots, Workshops and Stores will have to undergo breathalyser testing. • All forms of firearms are prohibited on Transnet properties and premises. • The relevant persons attending the meeting must ensure that their identity documents, passports or driver's licences are on them for inspection at the access control gates. <p>Certificate of Attendance in the form set out in the Returnable Schedule T2.2-01 hereto must be completed and submitted with your Tender as proof of attendance is required for a compulsory site meeting and/or tender briefing.</p> <p>Tenderers are required to bring this Returnable Schedule T2.2-01 to the Compulsory Tender Clarification Meeting to be signed by the <i>Employer's</i> Representative.</p> <p>Tenderers failing to attend the compulsory tender briefing will be disqualified.</p>
CLOSING DATE	<p>16H00 PM on 13 December 2024</p> <p>Tenderers must ensure that tenders are uploaded timeously onto the system. If a tender is late, it will not be accepted for consideration.</p>

2. TENDER SUBMISSION

Transnet has implemented a new electronic tender submission system, the e-Tender Submission Portal, in line with the overall Transnet digitalization strategy where suppliers can view advertised tenders, register their information, log their intent to respond to bids and upload their bid proposals/responses on to the system.

a) The Transnet e-Tender Submission Portal can be accessed as follows:

Log on to the Transnet eTenders management platform website (<https://transnetetenders.azurewebsites.net>);

- Click on "ADVERTISED TENDERS" to view advertised tenders;
- Click on "SIGN IN/REGISTER – for the tenderer to register their information (must fill in all mandatory information);
- Click on "SIGN IN/REGISTER" - to sign in if already registered;
- Toggle (click to switch) the "Log an Intent" button to submit a bid;
- Submit bid documents by uploading them into the system against each tender selected.
- **Tenderers are required to ensure that electronic bid submissions are done at least a day before the closing date** to prevent issues which they may encounter due to their internet speed, bandwidth or the size of the number of uploads they are submitting. Transnet will not be held liable for any challenges experienced by Tenderers as a result of the technical challenges. Please do not wait for the last hour to submit.

- **A Tenderer can upload 30mb per upload and multiple uploads are permitted.**

b) The tender offers to this tender will be opened as soon as possible after the closing date and time. Transnet shall not, at the opening of tenders, disclose to any other company any confidential details pertaining to the Tender Offers / information received, i.e. pricing, delivery, etc. The names and locations of the Tenderers will be divulged to other Tenderers upon request.

c) Submissions must not contain documents relating to any Tender other than that shown on the submission.

d) **Tenderers must ensure the filenames of the documents intended for upload do not contain special characters, e.g. #, %, etc. The use of special characters will result in document upload failure. Filenames should be limited to alphabetical and/ or numerical characters only**

3. CONFIDENTIALITY

All information related to this tender is to be treated with strict confidentiality. In this regard Tenderers are required to certify that they have acquainted themselves with the Non-Disclosure Agreement. All information related to a subsequent contract, both during and after completion

thereof, will be treated with strict confidence. Should the need however arise to divulge any information gleaned from provision of the Works, which is either directly or indirectly related to Transnet's business, written approval to divulge such information must be obtained from Transnet.

4. DISCLAIMERS

Tenderers are hereby advised that Transnet is not committed to any course of action as a result of its issuance of this Tender and/or its receipt of a tender offer. In particular, please note that Transnet reserves the right to:

- 4.1.** Award the business to the highest scoring Tenderer/s unless objective criteria justify the award to another tenderer.
- 4.2.** Not necessarily accept the lowest priced tender or an alternative Tender;
- 4.3.** Go to the open market if the quoted rates (for award of work) are deemed unreasonable;
- 4.4.** Should the Tenderers be awarded business on strength of information furnished by the Tenderer, which after conclusion of the contract is proved to have been incorrect, Transnet reserves the right to terminate the contract;
- 4.5.** Request audited financial statements or other documentation for the purposes of a due diligence exercise;
- 4.6.** Not accept any changes or purported changes by the Tenderer to the tender rates after the closing date;
- 4.7.** Verify any information supplied by a Tenderer by submitting a tender, the Tenderer/s hereby irrevocably grant the necessary consent to the Transnet to do so;
- 4.8.** Conduct the evaluation process in parallel. The evaluation of Tenderers at any given stage must therefore not be interpreted to mean that Tenderers have necessarily passed any previous stage(s);
- 4.9.** Unless otherwise expressly stated, each tender lodged in response to the invitation to tender shall be deemed to be an offer by the Tenderer. The Employer has the right in its sole and unfettered discretion not to accept any offer.

4.10. Not be held liable if tenderers do not provide the correct contact details during the clarification session and do not receive the latest information regarding this Tender with the possible consequence of being disadvantaged or disqualified as a result thereof.

4.11. Transnet reserves the right to exclude any Tenderers from the tender process who has been convicted of a serious breach of law during the preceding 5 [five] years including but not limited to breaches of the Competition Act 89 of 1998, as amended. Tenderers are required to indicate in tender returnable on **T2.2-21, [Breach of Law]** whether or not they have been found guilty of a serious breach of law during the past 5 [five] years.

4.12. Transnet reserves the right to perform a risk analysis on the preferred tenderer to ascertain if any of the following might present an unacceptable commercial risk to the employer:

- *unduly high or unduly low tendered rates or amounts in the tender offer;*
- *contract data of contract provided by the tenderer; or*
- *the contents of the tender returnables which are to be included in the contract.*

5. Transnet will not reimburse any Tenderer for any preparatory costs or other work performed in connection with this Tender, whether or not the Tenderer is awarded a contract.

6. NATIONAL TREASURY'S CENTRAL SUPPLIER DATABASE

Tenderer are required to self-register on National Treasury's Central Supplier Database (CSD) which has been established to centrally administer supplier information for all organs of state and facilitate the verification of certain key supplier information. The CSD can be accessed at <https://secure.csd.gov.za/>. Tenderer are required to provide the following to Transnet in order to enable it to verify information on the CSD:

Supplier Number: and Unique registration reference number.....

Transnet urges its clients, suppliers and the general public

to report any fraud or corruption to

TIP-OFFS ANONYMOUS: 0800 003 056 OR Transnet@tip-offs.com

SECTION 1: SBD1 FORM

PART A INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF TRANSNET NATIONAL PORTS AUTHORITY, A DIVISION TRANSNET SOC LTD						
BID NUMBER: TNPA/2024/06/0007/67960/RFP	ISSUE DATE:	15/11/2024	CLOSING DATE:	13/12/2024	CLOSING TIME:	16:00
DESCRIPTION	PROVISION OF SERVICES TO UPGRADE THE EXISTING TRANSNET NATIONAL PORTS AUTHORITY (TNPA) NATIONAL FIRE SERVICE INFRASTRUCTURE AND EQUIPMENT PROJECT (PHASE 2A) IN THE PORT OF CAPE TOWN FOR A PERIOD OF 1 (ONE) YEAR.					
BID RESPONSE DOCUMENTS SUBMISSION						
RESPONDENTS ARE TO UPLOAD THEIR BID RESPONSE PROPOSALS ONTO THE TRANSNET SYSTEM AGAINST EACH TENDER SELECTED (please refer to section 2, paragraph 3 for a detailed process on how to upload submissions): https://transnetetenders.azurewebsites.net						
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO			TECHNICAL ENQUIRIES MAY BE DIRECTED TO:			
CONTACT PERSON	Gontsejalo Mohutsiwa		CONTACT PERSON	Gontsejalo Mohutsiwa		
TELEPHONE NUMBER	N/A		TELEPHONE NUMBER	N/A		
FACSIMILE NUMBER	N/A		FACSIMILE NUMBER	N/A		
E-MAIL ADDRESS	tnpatenderenquiries3@transnet.net		E-MAIL ADDRESS	tnpatenderenquiries3@transnet.net		
SUPPLIER INFORMATION						
NAME OF BIDDER						
POSTAL ADDRESS						
STREET ADDRESS						
TELEPHONE NUMBER	CODE		NUMBER			
CELLPHONE NUMBER						
FACSIMILE NUMBER	CODE		NUMBER			
E-MAIL ADDRESS						
VAT REGISTRATION NUMBER						



SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:	OR	CENTRAL SUPPLIER DATABASE	UNIQUE REGISTRATION REFERENCE NUMBER: MAAA
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE	TICK APPLICABLE BOX] <input type="checkbox"/> Yes <input type="checkbox"/> No	B-BBEE STATUS LEVEL SWORN AFFIDAVIT		[TICK APPLICABLE BOX] <input type="checkbox"/> Yes <input type="checkbox"/> No
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED FOR PURPOSES OF COMPLIANCE WITH THE B-BBEE ACT]				
1 ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ENCLOSE PROOF]	2 ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES, ANSWER QUESTIONNAIRE BELOW]	
QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS				
IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? <input type="checkbox"/> YES <input type="checkbox"/> NO				
DOES THE ENTITY HAVE A BRANCH IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO				
DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO				
DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? <input type="checkbox"/> YES <input type="checkbox"/> NO				
IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? <input type="checkbox"/> YES <input type="checkbox"/> NO				
IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 1.3 BELOW.				

PART B

TERMS AND CONDITIONS FOR BIDDING

**NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS
MAY RENDER THE**

1. TAX COMPLIANCE REQUIREMENTS

- 1.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
- 1.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARSTO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.
- 1.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.
- 1.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
- 1.5 IN BIDS WHERE UNINCORPORATED CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE

BID INVALID.

SIGNATURE OF BIDDER:

CAPACITY UNDER WHICH THIS BID IS SIGNED:

(Proof of authority must be
submitted e.g. company resolution)

DATE:

T1.2 TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annexure C of the CIDB Standard for Uniformity in Engineering and Construction Works Contracts published in Board Notice 423 of 2019 in Government Gazette No 42622 of 8 August 2019.

The Standard Conditions of Tender make several references to Tender data for detail that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

Each item of data given below is cross-referenced in the left-hand column to the clause in the Standard Conditions of Tender to which it mainly applies.

Clause	Data
C.1.1 The <i>Employer</i> is	Transnet SOC Ltd (Reg No. 1990/000900/30)
C.1.2 The tender documents issued by the <i>Employer</i> comprise:	
Part T: The Tender	
Part T1: Tendering procedures	T1.1 Tender notice and invitation to tender T1.2 Tender data
Part T2 : Returnable documents	T2.1 List of returnable documents T2.2 Returnable schedules
Part C: The contract	
Part C1: Agreements and contract data	C1.1 Form of offer and acceptance C1.2 Contract data (Part 1 & 2) C1.3 Form of Securities
Part C2: Pricing data	C2.1 Pricing instructions C2.2 Bill of Quantities
Part C3: Scope of work	C3.1 Works Information
Part C4: Site information	C4.1 Site information
C.1.4 The Employer's agent is: Name:	Procurement Lead Gontsejalo Mohutsiwa

Address: **eMendi Admin Building
N2 Neptune Road, Off Klub Road
Port Of Ngqura
Port Elizabeth.**

E – mail TNPATenderenquiries3@transnet.net

C.2.1 Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:

1. Stage One - Eligibility Criteria schedule: Pre-qualification.

1.1) Compulsory Clarification Meeting Attendance.

An authorised representative of the tendering entity or a representative of a tendering entity that intends to form a Joint Venture (JV) must attend the compulsory clarification meeting in terms C2.7.

1.2) Construction Industry Development Board (CIDB) – 7GB or Higher

Only those tenderers who are registered with the CIDB Grading of **7GB or Higher** or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, designation of **7GB or higher** class of construction work, are eligible to have their tenders evaluated.

- a) Joint Venture (JV) Joint ventures are eligible to submit tenders subject to the following:
- 1.** every member of the joint venture is registered with the CIDB;
 - 2.** the lead partner has a contractor grading designation of not lower than one level below the required class of construction works under consideration and possesses the required recognition status; and
 - 3.** the combined Contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a Contractor grading designation determined in accordance with the sum tendered for a **7GB or higher** class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations, the tenderer shall provide a certified copy of its signed joint venture agreement.



1.3) Valid Professional registration for the following Key personnel.

- A. *Professional Construction Project Manager* – **Pr.CPM** registered with the South African Council for the Project and Construction Management Professions (**SACPCM**) **or PMP** registered with the project Management Institute.
- B. *Professional Construction Manager* – **Pr.CM** registered with the South African Council **for the Project and Construction Management Professions (SACPCM)**.
- C. *Professional Structural Engineer, Civil Engineer & Electrical Engineer (Pr. Eng or Pr. Tech Eng)* registered with the Engineering Council of South Africa (**ECSA**).
- D. *Construction Health and Safety Officer* - South African Council for the Project and Construction Management Professions (**SACPCM**).

Note: This tender requires that the tenderer include professionally registered consultants with his tender. Consultants cannot register with the CIDB and therefore should not be part of a JV as this will result in disqualification of the tender. Contractors should either have the resources in-house or sub-contract them.

If professionally registered consultants are going to be sub-contracted, in order for them to be evaluated, they must be listed in form "T2.2 - 16 - Schedule of Proposed sub-contractors".

1.4) Submission of a signed and completed form of offer and acceptance

1.5) Submission of a completed Bill of Quantities (BOQ).

2. Stage Two - Functionality:

Only those tenderers who obtain the minimum qualifying score for functionality will be evaluated further in terms of price and the applicable preference point system. The minimum qualifying for score for functionality is **60 points**.

The evaluation criteria for measuring functionality and the points for each criteria and, if any, each sub-criterion are as stated in C.3.11 below.

3. Stage Three – Evaluation of Final weighted Score:

Only tenders that achieve the minimum qualifying score for functionality will be evaluated further in accordance with the **80/20 or 90/10** preference points systems as described in Preferential Procurement Regulations - 2022.



80 Points for price will be allocated where the financial value of the lowest acceptable tender received has a value equal to or below R50 million, inclusive of all applicable taxes,
or

90 Points for price will be allocated where the financial value of the lowest acceptable tender received has a value above R50 million, inclusive of all applicable taxes.

Thresholds	Minimum Threshold
Technical Evaluation Criteria	60 Points

Evaluation Criteria	Final Weighted Scores
Price	80/90
Specific goals - Scorecard	20/10
TOTAL SCORE:	100

Either The 80/20 or 90/10 Preference point system will apply

20 or 10 tender evaluation points will be awarded to tenderers who complete the preferencing schedule and who are found to be eligible for the preference claimed.

Should the evidence required for any of the Specific Goals applicable in this tender not be provided, a tenderer will score zero preference points for that particular "Specific Goal".

In terms of Transnet Preferential Procurement Policy (TPPP) and Procurement Manuals, the following preference points must be awarded to a bidder who provides the relevant required evidence for claiming points.

Specific Goals	Number of points (80/20 system)	Number of points (90/10 system)
B-BBEE Status Level of Contributor 1 or 2.	06	03
30% Black Women Owned Entities.	04	02
The promotion of supplier development through subcontracting of a minimum of 30% of the value of the contract to/with EMEs and/or QSEs 51% owned by black people, youth, women or disabled people.	10	05
Non-compliant and/or B-BBEE Level 3-8 contributors.	00	00
Total points for Specific Goals	20	10



The following Table represents the evidence to be submitted for claiming preference points for applicable specific goals in a particular tender:

Specific Goals	Acceptable Evidence
B-BBEE Status Level of Contributor 1 or 2.	<p>A valid B-BBEE Certificate issued in terms of the Construction Sector Codes (CSC000) from a Verification Agency accredited by the South African Accreditation System [SANAS] / Sworn-Affidavit B-BBEE Certificate as per DTIC guidelines;</p> <p>(In the case of a JV, a consolidated scorecard will be accepted)</p>
30% Black Women Owned Entities	<p>A valid B-BBEE Certificate issued in terms of the Construction Sector Codes (CSC000) from a Verification Agency accredited by the South African Accreditation System [SANAS] / Sworn-Affidavit B-BBEE Certificate as per DTIC guidelines;</p> <p>Certified copy of ID Documents of the Owners which are 30% black women.</p>
<p>The promotion of supplier development through sub-contracting or JV for a minimum of 30% of the value of a contract to South African Companies which are:</p> <ol style="list-style-type: none"> I. 30% Black Women, 51% black Youth and 51% people with disabilities II. Entities with a specified minimum B-BBEE level (1 and 2) III. EMEs and/or QSEs who are 51% black-owned 	<p>Sub-contracting agreements and Declaration / Joint Venture Agreement. Certified copy of ID Documents of the Owners and B-BBEE Certificate / Affidavit (in case of JV, a consolidated scorecard will be accepted) of the sub-contracted entities.</p>



The maximum points for Price & Specific Goals for this bid are allocated as follows:

DESCRIPTION	POINTS
Price	80/90
1 - B-BBEE Status Level of Contribution 1 or 2 2 - 30% Black Women Owned Entities 3 - The promotion of supplier development through sub-contracting or JV for a minimum of 30% of the value of a contract to South African Companies which are: <ul style="list-style-type: none"> • 30% Black Women, 51% black Youth and 51% people with disabilities • Entities with a specified minimum B-BBEE level (1 and 2) • EMEs and/or QSEs who are 51% black-owned 	20/10
Total points for Price and Specific Goals must not exceed	100

Note: Transnet reserves the right to carry out an independent audit of the tenderers' scorecard components at any stage from the date of close of the tenders until completion of the contract.

4. Stage Four – Objective Criteria:

Objective criterion to justify award to someone other than the highest ranked bidder must have been stated in the bid documents and can be used at this stage.

Transnet will award the tender to the highest scoring bidder/s unless objective criteria exist that justify the award to another bidder. Transnet may apply the objective criteria in this bid process as follows

- Bidder(s) is not in good standing with Transnet National Ports Authority due to a poor track record of past performance with Transnet SOC Ltd and or Transnet National Ports Authority;
- There is clear, uncontrived and/or overwhelming evidence and/or facts that the bidder has or continues to be in breach of any of the provisions contained in the Integrity Pact **(T2.2-23)**;
- The Probity check undertaken by Transnet National Ports Authority establishes the existence of any unmitigated risks which would have a negative impact on the project;
- Unless the appointment of the bidder would result in a negative impact on Transnet's Return on Investment;



- It is necessary to rotate Suppliers to promote opportunities for other suppliers, in circumstances where the bidder has been awarded business previously and the award of the tender will result in inequitable allocation of business;
- The tenderer or its members, directors, partners:
- Is under restrictions as contemplated in the Integrity Pact **(T2.2-23)**
- Is a subject of a process of restriction by Transnet or other state institution that Transnet may be aware of and there is a clear, uncontrived and/or overwhelming evidence and/or facts in relation to the alleged wrongdoing on the basis of which the restriction process has been initiated;
- In relation to the proposed contract, a due diligence exercise to validate the bidder's proposal that demonstrate that it does not possess the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract, or has submitted a tender offer that is considered too low.
- Has no legal capacity to enter into the contract;
- Is insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act, 2008, being wound up, has its affairs administered pursuant to a court order, has ceased or suspended their business activities, or is subject to legal proceedings in respect of any of the foregoing;
- Does not comply with the legal requirements, if any, stated in the tender data; and
- Not able to perform the contract free of conflicts of interest.

5. Stage Five – Risk Assessment:

In accordance with CIDB Standard Conditions of Tender, clause C.3.13, a risk assessment will be done on the award of this tender to ascertain whether there will be a potential unacceptable risk to the employer which can't be mitigated satisfactorily prior to award. Risks identified will purely come with the information supplied with tenders during tender evaluation, i.e. need to be clarified for mitigation thereof.

The risks, root causes and mitigations will be identified as part of this process. This done in keeping with the prescripts of CIDB Standard for Uniformity, **Annexure C**, Standard Conditions of Tender, C.3.13.



6. Stage Six – Post Tender Negotiations. If applicable.

Post tender negotiation with preferred bidder [2nd and 3rd ranked bidders (if required) in a sequential and not simultaneous manner] if pricing is not market related.

7. Stage Seven – Award of Business.

C.2.7 The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender. ***Tenderers must complete and sign the attendance register.*** Addenda will be issued to, and tenders will only be received from those tendering entities including those entities that intends forming a joint venture appearing on the attendance register.

Tenderers are also ***required to bring their RFP document to the briefing session and have their returnable document T2.2-01 certificate of attendance*** signed off by the Employer's authorised representative.

C.2.12 No alternative tender offers will be considered.

C.2.13.3 Each tender offer shall be in the **English Language**.

C.2.13.5 The *Employer's* details and identification details that are to be shown on each tender offer are as follows:

Identification details:	<p>The tender documents must be uploaded with:</p> <ul style="list-style-type: none"> ▪ Name of Tenderer: ▪ Contact person and details: ▪ The Tender Number: TNPA/2024/06/0007/67960/RFP ▪ The Tender Description: Provision Of Services To Upgrade The Existing Transnet National Ports Authority (TNPA) National Fire Service Infrastructure And Equipment Project (Phase 2a) In The Port Of Cape Town For A Period Of 1 (One) Year.
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Documents must be marked for the attention of: ***Employer's Agent***
As stated on Clause C1.4

C.2.13.9 Telephonic, telegraphic, facsimile or e-mailed tender offers will not be accepted.

C.2.15 The closing time for submission of tender offers is:
Time: **16:00 PM** on the **13 of December 2024**.

Location: The Transnet e-Tender Submission Portal:
(<https://transnetetenders.azurewebsites.net>);

NO LATE TENDERS WILL BE ACCEPTED

C.2.16 The tender offer validity period is **12 weeks** after the closing date. Tenderers are to note that they may be requested to extend the validity period of their tender, on the same terms and conditions, if Transnet's internal evaluation and governance approval processes has not been finalised within the validity period.

C.2.23 **The tenderer is required to submit with their tender:**

1. A valid Tax Clearance Certificate issued by the South African Revenue Services.
Tenderers also to provide Transnet with a TCS PIN to verify Tenderers compliance status.
2. A **valid B-BBEE Certificate** from a Verification Agency accredited by the South African Accreditation System [**SANAS**], or a **sworn affidavit** confirming annual turnover and level of black ownership, in line with the code of good practice, together with the tender;
3. A valid CIDB certificate in the correct designated grading; **7GB or Higher**
4. Proof of registration on the Central Supplier Database;
5. Letter of Good Standing with the Workmen's compensation fund by the tendering entity or separate Letters of Good Standing from all members of a newly constituted JV.

C.3.11 The minimum number of evaluation points for functionality is: **60 Points**

The procedure for the evaluation of responsive tenders is Functionality, Price and Preference:

Only those tenderers who attain the minimum number of evaluation points for Functionality will be eligible for further evaluation, failure to meet the minimum threshold will result in the tender being disqualified and removed from any further consideration.

Functionality Criteria

The functionality criteria and maximum score in respect of each of the criteria are as follows:



Summary Technical Evaluation Criteria	Weighting points	Scoring Guideline
<p>T2.2-04: Evaluation Schedule – Previous Experience</p> <p>The Tenderer is required to demonstrate performance in comparable projects of similar size and nature.</p>	20	<p>The Tenderer shall submit:</p> <p>1) A Reference letter, should be on company letterhead, dated and signed or Completion certificate of past/current comparable projects in the construction of similar works - 8 Points</p> <p>2) Mechanical HVAC Contractor:</p> <p>Demonstrated experience in HVAC installations, maintenance, and repair work, Experience working with various HVAC systems, including split systems, ducted systems, VRF (Variable Refrigerant Flow) systems – 4 Points</p> <p>3) Mechanical Fire Contractor:</p> <p>(a) Demonstrated experience in Fire installations, maintenance, and repair work, Experience working with various Fire systems, including hose reels, hydrants, and fire extinguishers, as well as fire detection (panels, sensors, sirens) systems – 4 Points</p> <p>4) Civil Engineering Contractor: Tenders to Submit a detailed portfolio of projects demonstrating competency in the Key area of specialty as mentioned in the scope of service for: - 4 Points</p> <ul style="list-style-type: none"> • Site Supervision • Construction • Material Testing • Hand-over and Close-out



<p>T2.2-05: Evaluation Schedule – Project organogram, management & CVs of key personnel:</p> <p>The Tenderer must provide a detailed organogram showing on-site and off-site personnel.</p> <p>The organogram must include a clear and precise indication of each team members' function with detailed and well-structured descriptions of roles and responsibilities.</p> <p>a) Site Personnel capability and capacity to support the project execution must be submitted in the form of detailed CV's, copies of qualification (where applicable) and registration (where applicable).</p> <p>b) Detailed CV's must demonstrate that Site Personnel have sufficient knowledge, experience, qualifications (where applicable) and registration (where applicable) to provide the required goods and services on the construction of similar projects.</p> <p>c) All personnel to be in employment by the bidder, proof submitted in the form of payslip or appointment letter or employment contract. A letter of intent for personnel outside the employment of the bidder to be included with CV's.</p>	20	<p>1) Construction Project Manager:</p> <p>BSc/BEng/BTech (or higher) qualification & a Valid registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Construction Project Manager – 4 Points</p> <p>2) Construction Manager:</p> <p>BSc/BEng/BTech (or higher) qualification & a Valid registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Construction Project Manager – 4 Points.</p> <p>3) Civil Engineering Site Agent/Construction Manager - minimum (S4) National Diploma in Civil Engineering or equivalent qualification with 10 Years' Experience in relevant infrastructure projects, construction of urban roads and Civil Engineering – 4 Points.</p> <p>4) Electrical Engineer</p> <p>BSc/BEng/BTech or qualification. & a Valid registration with the ECSA (Pr Eng / Pr Tech Eng) registered – 4 Points</p> <p>5) Structural Engineer</p> <p>BSc/BEng/BTech or qualification & a Valid registration with the ECSA (Pr Eng / Pr Tech Eng) registered – 4 Points.</p>
<p>T2.2-06: Evaluation Schedule - Quality Management</p> <p>Due consideration must be given to the deliverables required to execute and complete the contract as per the:</p> <ul style="list-style-type: none"> TNPA-QUAL-REQ-14.1 _General Quality Requirements for Contractors and Suppliers (Annexure A of the RFP) ISO 9001:2015 Quality Management Systems (QMS) requirements and must include: 	10	<p>The scoring will be as follows:</p> <p>1) Quality Manual aligned to ISO 9001:2015 - 2 Points.</p> <p>2) Project Quality Plan (PQP) - 2 Points</p> <p>3) Quality Officer – 4 Points</p> <p>4) Quality Control Plan (QCP) – 2 Points</p>



<p>1. Quality Manual that is aligned to ISO 9001:2015 QMS requirements.</p> <p>2. Project Quality Plan must be project specific and be aligned to the TNPAQUAL- REQ-14.1_General Quality Requirements for Contractors and Suppliers.</p> <p>3. CV of Quality Officer supplemented by Qualification - ISO 9001:2015 QMS training certificates (Implementation of QMS and Auditing).</p> <p>The Quality Officer MUST have a minimum of 3 years' quality experience in construction projects.</p> <p>4. Quality Control Plans must be in line with the scope of works detailing the Engineering works (i.e., Civil, structural, electrical, mechanical, Marine etc.)</p>		
<p>T2.2-07: Evaluation Schedule - Health and Safety Management:</p> <p>The Tenderer shall submit its Health and Safety documentation to the Employer at the time of tender, demonstrating the ability to manage health and safety relating to the scope of work.</p>	10	<p>1. Signed Health & Safety Plan as per scope of work – 2 Points.</p> <p>2. Detailed activity-based project specific Task risk assessment (RA) – 2 Points.</p> <p><i>Indicating major activities of the project:</i></p> <ul style="list-style-type: none"> • Site establishment; • Excavations; • Installation of poles, fence and gates. • Working at Heights <p>3. Registered Safety Officer: CV's, Qualifications, Certification, Health and Safety Training and Valid Registration with SACPCMP shall be submitted for the following personnel:</p> <ul style="list-style-type: none"> - Construction Health and Safety Officer – 2 Points



		<p>4. Signed and dated Health & Safety Policy signed by the Chief Executive Officer – 2 Points.</p> <p>5. Safety Questionnaire</p> <p>The questionnaire must be fully completed. Points will be allocated to the critical areas identified in the questionnaire – 2 Points.</p> <p>1. Letter of good standing; 2. Health and safety plan; 3. Induction; and 4. Health and Safety resource</p>
<p>T2.2-08: Evaluation Schedule - Environmental Management:</p> <p>The Tenderer shall submit its Environmental documentation to the Employer at the time of tender, demonstrating the ability to manage environmental aspects of the scope of work.</p>	10	<p>1) The tenderer must provide a project specific Environmental Management Plan – 3 Points.</p> <p>2) The tenderer must provide an Environmental Policy signed by Top Management – 1 Points</p> <p>3) Provide a CV of an Environmental Officer as indicated on the project organogram and clearly showing the years of experience and the Environmental duties or functions – 2 Points</p> <p>4) Tenderer must ensure that the submitted CV of the Environmental Officer is similar to that of a resource on the project team organogram. Failure to meet this requirement a score of zero (0) will be allocated – 2 Points</p> <p>5) Tenderer must provide minimum of 3 projects where construction environmental management duties have been executed including a brief description of such duties – 2 Point.</p>
<p>T2.2-09: Evaluation Schedule - Programme:</p> <p>The Tenderer provides the proposed programme in PDF either in Microsoft project or Primavera P6</p> <p>(The soft copy will be requested during evaluation stage) The tenderer shall provide the proposed programme detailed to minimum of level 4.</p>	10	<p>1) Starting date and completion date are stated, and the programme does not exceed 12 months. (Shown Column and Gantt Chart) – 1 Point.</p> <p>2) Activities to be logically linked using critical path method (CPM). (Show the Critical path, Predecessors and Successors Column) – 2 Points.</p> <p>3) All activities as per level 4 – 2 Points.</p>



		<p>4) The TNPA activities calendar on the schedule should represent the actual work week/month used. E.g., weekends, public holidays are marked as non-working days from start to finish date – 1 Point.</p> <p>5) All activity durations to be realistic and activities that can be measured in days, Weeks and Months. (Show the duration Column) – 2 points.</p> <p>6) Programme submission (Software) in PDF either Microsoft project or Primavera P6 – 2 Points.</p>
<p>T2.2-10: Evaluation Schedule – Method Statement:</p> <p>Proposed Approach/ Methodology/Method Statement:</p> <p>Bidders exhibits a clear understanding of the Project and has shown correct sequencing with a concise method statement for all activities incorporating best practices.</p>	20	<p>1) Mechanical Engineering Works</p> <ul style="list-style-type: none"> - Project method statement proposal follows logical and sequential order in accordance with the submitted project schedule/programme – 5 Points <p>2) Civil Engineering Works:</p> <ul style="list-style-type: none"> - The contractor must submit a detail Work methodology for the resourcing and execution of the technical work. Furthermore, the Contractor must provide a detailed Civil Engineering Work methodology procedure – 5 Points <p>3) Control and Instrumentation Works:</p> <ul style="list-style-type: none"> - The contractor must submit a detail Work methodology for the resourcing and execution of the ICT and Security Network works. - Furthermore, the Contractor must provide a detailed construction/installation methodology procedure – 5 Points <p>4) Architectural (Building) Works:</p> <ul style="list-style-type: none"> - The contractor must submit a detail Work methodology for the resourcing and execution of the building works. - Furthermore, the Contractor must provide a detailed construction methodology procedure – 5 Points
Total Points	100	

Functionality shall be scored independently by not less than 2 (two) evaluators and averaged in accordance with the following schedules:

- **T2.2-04 Evaluation Schedule:** Previous experience
- **T2.2-05 Evaluation Schedule:** Management & CVs of Key Personnel.
- **T2.2-06 Evaluation Schedule:** Quality Management
- **T2.2-07 Evaluation Schedule:** Health and Safety Management
- **T2.2-08 Evaluation Schedule:** Environmental Management
- **T2.2-09 Evaluation Schedule:** Programme
- **T2.2-10 Evaluation Schedule:** Method Statement

Each evaluation criteria will be assessed in terms of scores of **0, 20, 40, 60, 80 or 100**

The scores of each of the evaluators will be averaged, weighted and then totalled to obtain the final score for functionality, unless scored collectively. **(See CIDB Inform Practice Note #9).**

Note: Any tender not complying with the above-mentioned requirements, will be regarded as non-responsive and will therefore not be considered for further evaluation. This note must be read in conjunction with Clause C.2.1.

C.3.13 Tender offers will only be accepted if:

1. The tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;
2. The tenderer does not appear on Transnet's list for restricted tenderers and National Treasury's list of Tender Defaulters;
3. The tenderer has fully and properly completed the Compulsory Enterprise Questionnaire **(T2.2-18)** and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the Employer or potentially compromise the tender process and persons in the employ of the state.
4. Transnet reserves the right to award the tender to the tenderer who scores the highest number of points overall, unless there are objective criteria which will justify the award of the tender to another tenderer.



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2024/06/0007/67960/RFP

DESCRIPTION OF THE WORKS: PROVISION OF SERVICES TO UPGRADE THE EXISTING TRANSNET NATIONAL PORTS AUTHORITY (TNPA) NATIONAL FIRE SERVICE INFRASTRUCTURE AND EQUIPMENT PROJECT (PHASE 2A) IN THE PORT OF CAPE TOWN FOR A PERIOD OF 1 (ONE) YEAR.

C.3.17 The number of paper copies of the signed contract to be provided by the Employer is 1 (one).

T2.1 List of Returnable Documents

2.1.1 These schedules are required for pre-qualification and eligibility purposes:

2.1.2 Stage One

T2.2-01 Stage 1.1: Eligibility Criteria Schedule - Certificate of attendance at Compulsory Tender Clarification Meeting.

T2.2-02 Stage 1.2: Eligibility Criteria Schedule – Valid CIDB Registration.

T2.2-03 Stage 1.3: Eligibility Criteria Schedule – Valid Professional Registration for key Personnel.

Stage 1.4: Eligibility Criteria Schedule – C1.1: Form of offer & Acceptance

Stage 1.5: Eligibility Criteria Schedule – C2.2: Priced activity schedule

2.1.3 Stage Two as per CIDB: these schedules will be utilised for evaluation purposes:

T2.2-04 Evaluation Schedule: Previous experience

T2.2-05 Evaluation Schedule: Project Organogram Management & CVs of Key Personnel.

T2.2-06 Evaluation Schedule: Quality Management

T2.2-07 Evaluation Schedule: Health and Safety Management

T2.2-08 Evaluation Schedule: Environmental Management

T2.2-09 Evaluation Schedule: Programme

T2.2-10 Evaluation Schedule: Method Statement

2.1.4 Returnable Schedules:

General:

T2.2-11 Authority to submit a tender

T2.2-12 Record of addenda to tender documents

T2.2-13 Letter of Good Standing

T2.2-14 Risk Elements

T2.2-15 Availability of equipment and other resources

T2.2-16 Schedule of proposed Subcontractors

T2.2-17 Site Establishment requirements

Agreement and Commitment by Tenderer:

T2.2-18 CIDB SFU ANNEX G Compulsory Enterprise Questionnaire

T2.2-18 SBD 4 Bidder's Disclosure

T2.2-18 SBD 6.1 Preference Points claim Form

T2.2-19 Non-Disclosure Agreement

T2.2-20 RFP Declaration Form

-
- T2.2-21** RFP – Breach of Law
 - T2.2-22** Certificate of Acquaintance with Tender Document
 - T2.2-23** Service Provider Integrity Pact
 - T2.2-24** Supplier Code of Conduct
 - T2.2-25** Agreement in terms of Protection of Personal Information Act
 - T2.2-26** Domestic Prominent Influential Persons (DPIP) Or Foreign Prominent Public Officials (FPPO)

1.3.2 Bonds/Guarantees/Financial/Insurance:

- T2.2-27** Insurance provided by the Contractor
- T2.2-28** Form of Intent to provide a Performance Guarantee
- T2.2-29** Forecast Rate of Invoicing
- T2.2-30** Three (3) years audited financial statements
- T2.2-31** Job Creation Schedule

2.2 C1.1 Form of Offer & Acceptance

2.3 C1.2 Contract Data

2.4 C1.3 Forms of Securities

2.5 C2.1 Pricing Instructions (Bill of Quantities)

2.6 C2.2 Bill of Quantities

T2.2-01: Eligibility Criteria Schedule:

Certificate of Attendance at Tender Clarification Meeting

This is to certify that

(Company Name)

Represented
by:

(Name and
Surname)

Was represented at the compulsory tender clarification meeting

Held at:	Port of Cape Town	
On (date)	27 November 2024	Starting time: 11H00

Particulars of person(s) attending the meeting:

Name

Signature

Capacity

Attendance of the above company at the meeting was confirmed:

Name

Signature

**For and on Behalf of the
Employers Agent.**

Date

T2.2-02: Eligibility Criteria Schedule - CIDB Grading Designation

Note to tenderers:

Tenderers are to indicate their CIDB Grading by filling in the table below. **Attach a copy of the CIDB Grading Designation or evidence of being capable of being so registered.**

CRS Number	Status	Grading	Expiry Date

1. Only those tenderers who are registered with the CIDB or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a **7GB or higher** class of construction work, are eligible to have their tenders evaluated.

2. Joint Venture (JV)

Joint ventures are eligible to submit tenders subject to the following:

1. every member of the joint venture is registered with the CIDB;
2. the lead partner has a contractor grading designation of not lower than one level one level below the required grading designation in the class of construction works under consideration and possesses the required recognition status; and
3. the combined Contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a Contractor grading designation determined in accordance with the sum tendered for a **7GB or higher** class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations
4. the Contractor shall provide the employer with a certified copy of its signed joint venture agreement;
5. and in the event that the joint venture is an 'Incorporated Joint Venture' the Memorandum of Incorporation to be provided within 4 (four) weeks of the Contract Date.

T2.2-03 Eligibility Criteria Schedule: Pre-qualification schedules: Valid Professional Registration.

Tenderers are required to comply with the following pre-qualification criteria, **Failure to meet the stipulated requirements will lead to the disqualification of the tenderers bid:**

a) Valid Proof of Registration with SACPCMP/PMP for the Project Manager.

No.	Key Persons	Name & Surname	Valid Professional Registration attached (Yes/No)
1	Professional Construction Project Manager – Pr. CPM registered with SACPCMP or a PMP registered with the Project Management Institute- USA.		
2	Professional Construction Manager -Pr.CM registered with SACPCMP		

Valid Professional Registration with SACPCMP/PMP

Name Of Company:

I/We _____

In my capacity as:

do hereby certify that (Name)

is a professionally registered member of SACPCMP/PMP

Certificate Number:

*** A Valid certificate must be attached**

SIGNED at on this _____ day of _____

b) Valid Proof of Registration with the Engineering Council of South Africa (ECSA)

No.	Key Persons	Name and Surname	Valid Professional Registration attached (Yes/No)
1	Structural Engineer – Pr Eng / Pr Tech Eng.		
2	Civil Engineer - Pr Eng / Pr Tech Eng.		
3	Electrical Engineer – Pr Eng / Pr Tech Eng.		

Valid Professional Registration with ECSA

Name Of Company:

I/We _____

In my capacity as:

do hereby certify that (Name)

is a professionally registered member of ECSA.

Certificate Number:

*** A Valid certificate must be attached**

SIGNED at on this _____ day of _____

c) Valid Proof of Registration with the SA Council for the Project and Construction Management Professionals (SACPCMP).

No.	Key Persons	Name and Surname	Valid Professional Registration attached (Yes/No)
1	Construction Health and Safety Officer		

Valid Professional Registration with SACPCMP

Name Of Company:

I/We _____

In my capacity as:

do hereby certify that (Name)

is a professionally registered member of SACPCMP

Certificate Number:

*** A Valid certificate must be attached**

SIGNED at on this _____ day of _____

T2.2 – 04: Evaluation Schedule - Previous Experience -20 Points.

The Tenderer is required to demonstrate performance in comparable projects of similar size and nature, The Tenderer shall submit:

NOTE: Where sub-contractors are to be used by the tenderer, their experience will only be evaluated if those sub-contractors are listed on returnable form T2.2-16 – Schedule of Proposed Sub-contractors.

1. A Reference letter, should be on the Client company letterhead, dated and signed or Completions certificate of past comparable projects in the construction of similar works as detailed in the Works Information with reference to the construction and refurbishment of building structure.

2. Sufficient references to substantiate experience indicated (client name and contact details, project description, year of project completion, duration, contract value, and subcontractors).

3. Mechanical HVAC Contractor:

(a) Demonstrated experience in HVAC installations, maintenance, and repair work. Experience working with various HVAC systems, including split systems, ducted systems, VRF (Variable Refrigerant Flow) systems, etc.

4. Mechanical Fire Contractor:

(a) Demonstrated experience in Fire installations, maintenance, and repair work. Experience working with various Fire systems, including hose reels, hydrants, and fire extinguishers, as well as fire detection (panels, sensors, sirens) systems, etc.

5. Civil Engineering Contractor:

Tenders to submit a detailed portfolio of projects demonstrating competency in the Key area of specialty as mentioned in the scope of service for:

- Site Supervision
- Construction
- Material Testing
- Hand-over and Close-out

The table below indicates the method of scoring that will be followed to evaluate the previous experience submitted by the Tenderer:

The Tenderer is required to demonstrate performance in comparable projects of similar size and nature.	The tenderer shall demonstrate the following:						
	Total 20	No response	Very Poor	Poor	Acceptable Response	Good Response	Excellent Response
		(0%)	(20%)	(40%)	(60%)	(80%)	(100%)
<p>1) The Tenderer shall submit:</p> <p>a) A Reference letter, should be on the Clients company letterhead, dated and signed or Completions certificate of past/ comparable projects in the construction of similar works as detailed in the Works Information with reference to the construction and refurbishment of building structure.</p>	6	<p>The tenderer submitted a letter or completion certificate that does not meet the above requirements is invalid even if it is submitted e.g.</p> <p>(Reference letter or completion certificate not submitted or does not meet the minimum requirements indicated (client name and contact details, project description, year of project completion, duration, contract value, and subcontractors).</p>	The tenderer submitted x 1 project with Reference letter or Completion certificate of past/ comparable projects in the construction of similar completed project.	The tenderer submitted x 2 projects with Reference letters or Completion certificates of past/ comparable projects in the construction of similar completed projects.	The tenderer submitted x 3 projects with Reference letters or Completion certificates of past comparable projects in the construction of similar completed projects.	The tenderer submitted x 4 projects with Reference letters or Completion certificates of past/t comparable projects in the construction of similar completed projects.	The tenderer submitted x 5 or more projects with Reference letters or Completion certificates of past/ comparable projects in the construction of similar completed projects.

		(0)	(20%)	(40%)	(60%)	(80%)	(100%)
<p>2) Mechanical HVAC Contractor:</p> <p>(a) Demonstrated experience in HVAC installations, maintenance, and repair work. Experience working with various HVAC systems, including split systems, ducted systems, VRF (Variable Refrigerant Flow) systems, etc.</p> <p>(b) Contractors must hold a valid refrigeration handling license issued by the South African Qualification and Certification Committee for Gas (SAQCC Gas).</p>	4	<p>The tenderer Failed to provide required information or inadequate information is provided to determine a score.</p> <p>1) No demonstration of previous experience.</p> <p>2) No submission of certifications</p>	<p>The tenderer Provided experience in comparable projects in the construction of similar completed project X 1-2 projects as per (a) Contractor holds valid SAQCC Gas certification.</p>	<p>The tenderer submitted Provided experience in comparable projects in the construction of similar completed project X 3 -4 projects as per (a) Contractor holds valid SAQCC Gas certification.</p>	<p>The tenderer submitted Provided experience in comparable projects in the construction of similar completed project X 5 -6 projects as per (a) Contractor holds valid SAQCC Gas certification</p>	<p>The tenderer submitted Provided experience in comparable projects in the construction of similar completed project X 7 -8 projects as per (a) Contractor holds valid SAQCC Gas certification</p>	<p>The tenderer submitted Provided experience in comparable projects in the construction of similar completed project X 9 or more projects as per (a) Contractor holds valid SAQCC Gas certification</p>

		(0)	(20%)	(40%)	(60%)	(80%)	(100%)
3) Mechanical Fire Contractor: (a) Demonstrated experience in Fire installations, maintenance, and repair work. Experience working with various Fire systems, including hose reels, hydrants, and fire extinguishers, as well as fire detection (panels, sensors, sirens) systems, etc. (b) Contractors must hold a valid refrigeration handling license issued by the South African Qualification and Certification Committee for Fire (SAQCC Fire).	5	<p>The tenderer Failed to provide required information or inadequate information is provided to determine a score.</p> <p>1) No demonstration of previous experience.</p> <p>2) No submission of certifications</p>	<p>The tenderer Provided experience in comparable projects in the construction of similar completed project X 1-2 projects as per (a) and the Contractor holds a valid SAQCC Gas certification.</p>	<p>The tenderer submitted Provided experience in comparable projects in the construction of similar completed project X 3 -4 projects as per (a) and the Contractor holds a valid SAQCC Gas certification.</p>	<p>The tenderer submitted Provided experience in comparable projects in the construction of similar completed project X 5 -6 projects as per (a) and the Contractor holds a valid SAQCC Gas certification</p>	<p>The tenderer submitted Provided experience in comparable projects in the construction of similar completed project X 7 -8 projects as per (a) and the Contractor holds a valid SAQCC Gas certification</p>	<p>The tenderer submitted Provided experience in comparable projects in the construction of similar completed project X 9 or more projects as per (a) and the Contractor holds a valid SAQCC Gas certification</p>

		(0)	(20%)	(40%)	(60%)	(80%)	(100%)
<p>4) Civil engineering Contractor:</p> <p>Tenders to submit a detailed portfolio of projects demonstrating competency in the Key area of specialty as mentioned in the scope of service for:</p> <ul style="list-style-type: none"> • Site Supervision • Construction • Material Testing • Hand-over and Close-out <p>This will be assessed as a number of services counted as per the key area/s mentioned.</p> <p>(1) Parking Areas, Roads and Highways,</p> <p>(2) Pavement and Materials,</p> <p>(3) Hydraulics and Hydrology (Stormwater Drainage),</p> <p>(4) Bulk Earthworks,</p> <p>(5) Traffic and Transportation</p>	5	The tenderer Failed to provide required information or inadequate information is provided to determine a score.	The tenderer Provided insufficient information and/or not related (or Covers 1 service)	The tenderer Provided information that Covers 2 services)	The tenderer Provided information that Covers 3 services)	The tenderer Provided information that Covers 4 services)	The tenderer Provided information that Covers 5 services)

T2.2 – 05 Evaluation Schedule Project Organogram, Management & CVs of Key Personnel – 20 Points.

The Tenderer must provide a detailed organogram showing on-site and off-site personnel. The organogram must include a clear and precise indication of each team members' function with detailed and well-structured descriptions of roles and responsibilities.

- **Site Personnel capability and capacity to support the project execution** must be submitted in the form of detailed CV's, copies of qualification (where applicable) and Professional registration (where applicable).
- **Detailed CV's must demonstrate that Site Personnel have sufficient knowledge, experience, qualifications** (where applicable) and Professional registration (where applicable) to provide the required services on the construction of similar projects.
- **All personnel to be in employment by the bidder**, proof submitted in the form of Pay-slip or **appointment letter or employment contract**. *A letter of intent for personnel outside the employment of the bidder to be included with CV.*

Attached submissions to this schedule:

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The table below indicates the method of scoring that will be followed to evaluate the previous experience submitted by the Tenderer:

The Tenderer is required to demonstrate performance in comparable projects of similar size and nature.	Total 20	The tenderer shall demonstrate the following:					
		No response	Very Poor	Poor	Acceptable Response	Good Response	Excellent Response
		(0)	(20%)	(40%)	(60%)	(80%)	(100%)
Project Manager: a) BSc/BEng/BTech/ (Or higher) qualification. b) Valid registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Project Manager. c) 5 or more years of relevant experience. d) Experience with NEC3 Engineering Construction Contracts	4	Failed to provide required information or inadequate information is provided to determine a score. No organogram submitted/ Functionality is not achieved.	CV submitted with BSc/BEng/BTech qualification (or higher) in Project Management. Valid registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Construction Project Manager.	CV submitted with BSc/BEng /BTech qualification (or higher) in Project Management with less than 4 years of relevant experience in similar projects. Valid registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Project Manager.	CV submitted with BSc/BEng/BTech qualification (or higher) in Project Management with 5 -6 years of relevant experience in similar projects. Valid registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Project Manager.	CV submitted with BSc/BEng/BTech qualification (or higher) in Project Management with 7 -9 years of relevant experience in similar projects. Valid registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Project Manager.	CV submitted with BSc/BEng/BTech or (or higher) in Project Management with 10 years of relevant experience in similar projects. Valid registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Project Manager.
		(0)	(20%)	(40%)	(60%)	(80%)	(100%)

<p>Construction Manager:</p> <p>a) BSc/BEng/BTech/ (Or higher) qualification.</p> <p>b) Valid registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Construction Manager.</p> <p>c) 5 or more years of relevant experience.</p> <p>d) Experience with NEC3 Engineering Construction Contracts</p>	4	<p>Failed to provide required information or inadequate information is provided to determine a score.</p> <p>No organogram submitted/ Functionality is not achieved.</p>	<p>CV submitted with BSc /BEng/BTech qualification (or higher) in Construction Management with less than 2 Years of relevant experience in similar projects.</p> <p>- Valid registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Construction Manager.</p>	<p>CV submitted with BSc/BEng/BTech qualification (or higher) in Construction Management with 3- 4 years of relevant experience in similar projects.</p> <p>- Valid registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Construction Manager.</p>	<p>CV submitted with BSc/BEng/BTech qualification (or higher) in Construction Management with 5 -6 years of relevant experience in similar projects.</p> <p>- Valid registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Construction Manager.</p>	<p>CV submitted with BSc/BEng/BTech qualification (or higher) in Construction Management with 7 -9 years of relevant experience in similar projects.</p> <p>- Valid registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Construction Manager.</p>	<p>CV submitted with BSc/BEng/BTech qualification (or higher) in Construction Management with 10 or more years of relevant experience in similar projects.</p> <p>- Valid registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Construction Manager.</p>
		(0)	(20%)	(40%)	(60%)	(80%)	(100%)

Civil Engineering Site Agent/Construction Manager – minimum (S4) National Diploma in Civil Engineering or equivalent qualification with 10 Years’ experience in relevant infrastructure projects, construction of urban roads and Civil Engineering	4	No minimum qualification / no response	Minimum qualification with less than 4 years’ experience in relevant infrastructure projects	Minimum qualification with 4 - 5 years’ experience in relevant infrastructure projects	Minimum qualification with 6 – 7 years’ experience in relevant infrastructure projects	Minimum qualification with 8 - 9 years’ experience in relevant infrastructure projects	Minimum qualification with 10 or more years’ experience in relevant infrastructure projects
Electrical Engineer a) BSc/BEng/BTech (Or higher) qualification. b) Valid registration with the ECSA (Pr Eng / Pr Tech Eng/Pr Cert Eng) registered. c) 5 or more years of relevant experience. d) Experience with the NEC3 Engineering and Construction Contract	4	The tenderer Failed to provide required information or inadequate information is provided to determine a score. No organogram submitted/ Functionality is not achieved.	CV submitted with BSc/BEng/BTech qualification (or higher) in Electrical Engineering with 2 years or less of relevant experience in similar projects. Valid registration With the Engineering Council of South Africa (ECSA) as Professional Pr Eng / Pr Tech Eng) registered.	CV submitted with BSc/BEng/BTech qualification (or higher) in Electrical Engineering with 3 - 4 years of relevant experience in similar projects. Valid registration with the Engineering council of South Africa (ECSA) as a Professional Pr Eng / Pr Tech Eng) registered.	CV submitted with BSc/BEng/BTech qualification (or higher) in Electrical Engineering with 5 – 6 years of relevant experience in similar projects. Valid registration with the Engineering council of South Africa (ECSA) as a Professional Pr Eng / Pr Tech Eng) registered.	CV submitted with BSc/BEng/ qualification (or higher) in Electrical Engineering with 7 - 9 years of relevant experience in similar projects. Valid registration with the Engineering council of South Africa (ECSA) as a Professional Pr Eng / Pr Tech Eng) registered.	CV submitted with BSc/BEng/ qualification (or higher) in Electrical Engineering with 10 or More years of relevant experience in similar projects. Valid registration with the Engineering council of South Africa (ECSA) as a Professional Pr Eng / Pr Tech Eng) registered.
		(0)	(20%)	(40%)	(60%)	(80%)	(100%)

<p>Structural Engineer</p> <p>a. BSc/BEng/BTech (or higher) qualification.</p> <p>b. Valid registration with the ECSA (Pr Eng / Pr Tech Eng/Pr Cert Eng) registered.</p> <p>c. 5 or more years of relevant experience.</p> <p>d. Experience with the NEC3 Engineering and Construction Contract</p>	<p>4</p>	<p>The tenderer Failed to provide required information or inadequate information is provided to determine a score.</p> <p>No organogram submitted/ Functionality is not achieved.</p>	<p>CV submitted with BSc/BEng/BTech qualification (or higher) in Structural Engineering with less than 2 years of relevant experience in similar projects.</p> <p>Valid registration With the Engineering Council of South Africa</p> <p>(ECSA) as a Professional Pr Eng / Pr Tech Eng) registered.</p>	<p>CV submitted with BSc/BEng/BTech qualification (or higher) in Structural Engineering with 3 - 4 years of relevant experience in similar projects.</p> <p>Valid registration with the Engineering Council of South Africa</p> <p>(ECSA) as a Professional Pr Eng / Pr Tech Eng) registered.</p>	<p>CV submitted with BSc/BEng/BTech qualification (or higher) in Structural Engineering with 5 – 6 years of relevant experience in similar projects.</p> <p>Valid registration with the Engineering council of South Africa</p> <p>(ECSA) as a Professional Pr Eng / Pr Tech Eng) registered.</p>	<p>CV submitted with BSc/BEng/BTech qualification (or higher) in Structural Engineering with 7 - 9 years of relevant experience in similar projects.</p> <p>Valid registration with the Engineering council of South Africa</p> <p>(ECSA) as a Professional Pr Eng / Pr Tech Eng) registered.</p>	<p>CV submitted with BSc/BEng/ qualification (or higher) in Structural Engineering with 10 or More years of relevant experience in similar projects.</p> <p>Valid registration with the Engineering council of South Africa</p> <p>(ECSA) as a Professional Pr Eng / Pr Tech Eng) registered.</p>
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T2.2-06: Evaluation Schedule - Quality Management - 10 points

Due consideration must be given to the deliverables required to execute and complete the contract as per the:

- TNPA-QUAL-REQ-14.1 _General Quality Requirements for Contractors and Suppliers **(Annexure A)**
- ISO 9001:2015 Quality Management Systems (QMS) requirements and must include:
 1. **Quality Manual** that is aligned to ISO 9001:2015 QMS requirements.
 2. **Project Quality Plan** must be project specific and be aligned to the **TNPAQUAL-REQ-14.1**_General Quality Requirements for Contractors and Suppliers.
 3. **CV of Quality Officer** supplemented by **Qualification** - ISO 9001:2015 QMS training certificates (Implementation of QMS and Auditing). The Quality Officer **MUST** have a minimum of 3 years' quality experience in construction projects.
 4. **Quality Control Plans** must be in line with the scope of works detailing the Engineering works (i.e., Civil, structural, electrical, mechanical, Marine etc.) These QCP's shall identify all inspections as detailed in the scope of works together with other tests and verifications required to demonstrate that the works comply with the scope of works, specifications, and drawings.

The scoring will be as follows:

	Quality Manual aligned to ISO 9001:2015 must include the following requirements: 1. Context of the organization 2. Leadership 3. Support 4. Operations 5. Performance Evaluation	Project Quality Plan (PQP) for the contract, which includes the following requirements: 1. Scope of works 2. Control of documented information 3. Resources 4. Audits 5. Control of non-conforming outputs	Quality Officer		Quality Control Plan (QCP) which includes the following requirements: 1. Sequence of activities 2. Procedure/code specifications 3. Intervention points 4. Field inspection checklist 5. Relevant signatories
			Experience	Education	
Points (10)	2	2	2	2	2
Score (0)	No Submission to determine score/Functionality is not met				
Score (20)	Quality Manual contains one (1) of The five (5) QMS requirements.	Project Quality Plan contains one (1) of the five (5) PQP requirements.	One (1) year Quality experience in construction projects	Submitted Qualifications not relating to Quality/Engineering	Quality Control Plan contains one (1) of the five (5) QCP requirements.
Score (40)	Quality manual contains two (2) of The five (5) QMS requirements.	Project Quality Plan contains two (2) of the five (5) PQP requirements.	Two (2) years Quality experience in construction projects.	ISO 9001:2015 QMS training certificate (Implementation of QMS)	Quality Control Plan contains two (2) of the five (5) QCP requirements.

Score (60)	Quality manual contains three (3) of the five (5) QMS requirements.	Project Quality Plan contains three (3) of the five (5) PQP requirements.	Three (3) years Quality experience in construction projects.	ISO 9001:2015 QMS training certificate (Implementation of QMS and Auditing)	Quality Control Plan contains three (3) of the five (5) QCP requirements.
Score (80)	Quality manual contains four (4) of the five (5) QMS requirements.	Project Quality Plan contains four (4) of the five (5) PQP requirements.	Four (4)- ten (10) years Quality experience in construction projects.	Quality Diploma, Technical Diploma and ISO 9001:2015 QMS certificates (Implementation of QMS)	Quality Control Plan contains four (4) of The five (5) QCP requirements.
Score (100)	Quality manual contains all five (5) of the QMS requirements.	Project Quality Plan contains all five (5) of the PQP requirements.	More than ten (10) years Quality experience in construction projects.	Quality Diploma, Technical Diploma and ISO 9001:2015 QMS training certificates (Implementation of QMS and Auditing)	Quality Control Plan contains all five (5) of the QCP requirements.

T2.2-07: Evaluation Schedule: Health and Safety Requirements (10 Points)

Submit the following documents as a minimum with your tender:

1. Signed Health and Safety Plan as per scope of work in line with TNPA Health & Safety Specification and the tenderer must include these minimum requirements:

- Project Scope
- Health and Safety Policy
- Hazard Identification and Risk Assessment
- Legal & Other requirements
- Accountabilities and Responsibilities
- Competence, training and awareness
- Occupational Health and Hygiene
- Working at Heights
- Incident Reporting and Investigation
- Audits and Inspections
- Valid letter of good standing with insurance body

2. Detailed activity-based project specific Risk Assessment (RA), aligned to scope of work and TNPA Baseline Risk Assessment.

- Site Clearance/ Establishment.
- Building platform.
- Bulk services i.e. Electrical, Water, Stormwater, Sewer and Fibre.
- Boundary and Screen Walls.
- Fire Station Building.
- Entrance and Exit Roof i.e. Steel Structure.
- Carports.
- Road Re-alignment.
- Parking area.
- Working at Heights.

3. Submit CV, Qualifications and Valid proof of registration with SACPCMP for:

- Construction Health and Safety Officer: must have National Diploma/B-Tech: Safety Management/Environmental Health/Risk Management qualification with at least 5 years experience relevant to the scope of work.

4. Safety, Health & Environmental Policy signed and dated by the Chief Executive Officer. List the five elements -

- Commitment to Safety and prevention of pollution,
- Continual improvement,
- Compliance to legal requirements, appropriate to the nature of contractor's activities,
- Hold management accountable for development of the safety systems
- Include objectives and targets.

5. Complete and return with tender documentation the Contractor Health & Safety Questionnaire included as a returnable, attach all required supporting documents.

- Letter of Good Standing
- Safety Induction/ orientation booklet or similar
- Valid ISO 45001: 2018 Certification
- Previous H&S Recognition Certificate

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The scoring of the Tenderer's Health and safety requirements will be as follows:

Points (10)	2	2	2	2	2
	Signed Health and Safety Plan as per scope of work in line with TNPA H&S specification. 1.Project Scope 2.Health and Safety Policy 3.HIRA 4.Legal & Other requirement 5.Accountabilities and Responsibilities 6.Competence, training and awareness 7.Occupational Health and Hygiene 8.Working @ Heights 9.Incident Reporting and Investigation 10.Audits and Inspections	Detailed activity-based project specific Risk Assessments (RA), aligned to scope of work, TNPA baseline risk assessment, and TNPA H&S Specification. <ul style="list-style-type: none"> • Site Clearance/ Establishment. • Building platform. • Bulk services i.e. Electrical, Water, Stormwater, Sewer and Fibre. • Boundary and Screen Walls. • Fire Station Building. • Entrance and Exit Roof i.e. Steel Structure. • Carpots. • Road Re-alignment. • Parking area. • Working at Heights. 	Submit CV, Qualifications and Valid proof of registration with SACPCMP for: <ul style="list-style-type: none"> • Construction Health and Safety Officer: must have National Diploma/B-Tech: Safety Management/Environmental Health/Risk Management qualification with at least 5 years experience relevant to the scope of work. 	Signed and dated Health and Safety Policy: 1) Commitment to Safety, Pollution Prevention 2) Continual Improvement 3) Compliance to Legal requirements 4) Holding management accountable for development of safety systems 5) Included objectives and targets.	Complete and return with tender documentation the Contractor Health & Safety Questionnaire included as a returnable, attach all required supporting documents. <ul style="list-style-type: none"> • Valid Letter of Good Standing • Safety Induction/ orientation booklet or similar • Valid ISO 45001: 2018 Certification • Previous H&S Recognition Certificate

Score 0	No response – Generic document submitted or irrelevant to the project.	No response - Risk assessment methodology is provided but not aligned to project scope and Risk Assessment not signed.	No response - No information provided or Qualifications/Registration with SACPCMP not provided.	No response - The Tenderer has submitted no information or Health & Safety Policy not signed and dated.	No response - Health and Safety questionnaire is not fully completed and no supporting documents attached.
Score 20	The tenderer has submitted a project specific H&S Plan including (2)- (3) stated employer's requirements	Risk assessment methodology is provided with the risk assessment. 2- 3 major activities are provided in task-based risk assessment and are aligned to the project.	Construction Health and Safety Officer has formal qualification and valid registration with SACPCMP (listed in criteria) with 1 year or less experience relevant to the scope of work.	Safety, Health & Environmental Policy signed and dated by the Chief Executive Officer including one (1) key element.	The tenderer has submitted one (1) document either Contractor Safety Questionnaire or supporting documents.
Score 40	The tenderer has submitted a project specific H&S Plan including (4)- (5) stated employer's requirements	Risk assessment methodology is provided with the risk assessment. 4-5 major activities are provided in task-based risk assessment and are aligned to the project.	Construction Health and Safety Officer has formal qualification and valid registration with SACPCMP (listed in criteria) with >1 year - ≤2 years experience relevant to the scope of work.	Safety, Health & Environmental Policy signed and dated by the Chief Executive Officer including two (2) key elements.	The tenderer has submitted two (2) documents either Contractor Safety Questionnaire or supporting documents.
Score 60	The tenderer has submitted a project specific H&S Plan including (6)- (7) stated employer's requirements	Risk assessment methodology is provided with the risk assessment. 6 -7 major activities are provided in task-based risk assessment and are aligned to the project.	Construction Health and Safety Officer has formal qualification and valid registration with SACPCMP (listed in criteria) with >2 years - ≤3 years experience relevant to the scope of work.	Safety, Health & Environmental Policy signed and dated by the Chief Executive Officer including three (3) key elements.	The tenderer has submitted three (3) documents either Contractor Safety Questionnaire or supporting documents.
Score 80	The tenderer has submitted a project specific H&S Plan including (8)- (9) stated employer's requirements	Risk assessment methodology is provided with the risk assessment. 8-9 major activities are provided in task-based risk assessment and are aligned to the project.	Construction Health and valid registration with SACPCMP and Safety Officer has formal qualification (listed in criteria) with >3 years - ≤4 years experience relevant to the scope of work.	Safety, Health & Environmental Policy signed and dated by the Chief Executive Officer including four (4) key elements.	The tenderer has submitted four (4) documents either Contractor Safety Questionnaire or supporting documents.



Score 100	The tenderer has submitted a project specific H&S Plan including (10) stated employer’s requirements	Risk assessment methodology is provided with the risk assessment. 10 major activities are provided in task-based risk assessment and are aligned to the project.	Construction Health and Safety Officer has formal qualification and valid registration with SACPCMP (listed in criteria) with >4 years - >5 years or more experience relevant to the scope of work.	Safety, Health & Environmental Policy signed and dated by the Chief Executive Officer including all five (5) key elements.	The tenderer has submitted five (5) documents either Contractor Safety Questionnaire or supporting documents.
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Contractor Safety Questionnaire

1. Safe Work Performance										
1A	Injury Experience / Historical Performance – Alberta								0.5	
	Use the previous three years injury and illness records to complete the following:									
	Year									
	Number of medical treatment cases									
	Number of restricted workday cases									
	Number of lost time injury cases									
	Number of fatal injuries									
	Total recordable frequency									
	Lost time injury frequency									
	Number of worker manhours									
	Action taken to prevent re-occurrence									
	1	Medical Treatment Case	Any occupational injury or illness requiring treatment provided by a physician or treatment provided under the direction of a physician							
	2	Restricted Workday Case	Any occupational injury or illness that prevents a worker from performing any of his/her craft jurisdiction duties							
	3	Lost Time injury Cases	Any occupational injury that prevents the worker from performing any work for at least one day							
	4	Total Recordable Frequency	Total number of Medical Treatment, Restricted Work and Lost Time Injury cases multiplied by 200,000 then divided by total manhours							
5	Lost Time Injury Frequency	Total number of Lost Time Injury cases multiplied by 200,000 then divide by total manhours								
1B	Workers' Compensation Experience									
	Use the previous three years injury and illness records to complete the following (if applicable):									
	Industry Code:			Industry Classification:						
	Year									
	Industry Rate									
	Contractor Rate									
	% Discount or Surcharge									
	Is your Workers' Compensation account in good standing? (Please provide letter of confirmation) 0.5						Yes		No	
2. Citations										
2A	Has your company been cited, charged or prosecuted under Health, Safety and/or						Yes		No	

Contractor Safety Questionnaire

	Environmental Legislation in the last 5 years?							
	If yes, provide details:							
2B	Has your company been cited, charged or prosecuted under the above Legislation in another Country, Region or State?				Yes		No	
	If yes, provide details:							
3. Citations								
	Does your company have a Certificate of Recognition?				Yes		No	
	If yes, what is the	Certificate No:		Issue Date:				
4. Safety Program								
4A	Submit your company written health and safety plan?							2
	Submit for provide a copy for review							
4B	Submit your company pocket safety booklet for field distribution?							0.5
4C	Health and safety plan should contain the following elements							
		Yes	No		Yes	No		
	Health and Safety Policy			Equipment Maintenance				
	Incident Management and reporting			Emergency Preparedness/Response				
	Recordkeeping & Statistics			Hazard Assessment and Risk Management and training				
	Reference to Legislation			Safe Work Practices				
	General Rules & Regulations			Safe Work Procedures and Safe operating procedures				
	Roles and responsibilities			Workplace Inspections				
	Responsibilities			Investigation Process				
	PPE Standards			Training Policy & Program				
	Environmental Standards			Communication Processes				
	Work Program or look ahead plan			Competency and Training				
5. Training Program								
5A	Attach orientation program for new hire employees?							1
	include a course outline. Does it include any of the following:							
		Yes	No		Yes	No		
	General Rules & Regulations			Confined Space Entry				
	Emergency Reporting			Trenching & Excavation				
	Injury Reporting			Signs & Barricades				
	Legislation			Dangerous Holes & Openings				
	Right to Refuse Work			Rigging & Cranes				
	Personal Protective Equipment			Mobile Vehicles				
	Emergency Procedures			Preventative Maintenance				

Contractor Safety Questionnaire

	Project Safety Committee			Hand & Power Tools		
	Housekeeping			Fire Prevention & Protection		
	Ladders & Scaffolds			Electrical Safety		
	Fall Arrest Standards			Compressed Gas Cylinders		
	Aerial Work Platforms			Weather Extremes		
5B	Submit a program for training newly hired or promoted supervisors? Tenderer must submit an outline for evaluation which include instruction on the following:					1
		Yes	No		Yes	No
	Employer Responsibilities			Safety Communication		
	Employee Responsibilities			First Aid/Medical Procedures		
	Due Diligence			New Worker Training		
	Safety Leadership			Environmental Requirements		
	Work Refusals			Hazard Assessment		
	Inspection Processes			Pre-Job Safety Instruction		
	Emergency Procedures			Drug & Alcohol Policy		
	Incident Investigation			Progressive Disciplinary Policy		
	Safe Work Procedures			Safe Work Practices		
	Safety Meetings			Notification Requirements		
6. Safety Activities						
6A	Do you conduct safety inspections?	Yes	No	Weekly	Monthly	Quarterly
	Describe your safety inspection process (include participation, documentation requirements, follow-up, report distribution)					
	Who follows up on inspection action items?					
6B	Do you hold site safety meetings for field employees? If Yes, how often?	Yes	No	Daily	Weekly	Biweekly
6C	Do you hold site meetings where safety is addressed with management and field supervisors?	Yes	No	Weekly	Biweekly	Monthly
6D	Is pre-job safety instruction provided before to each new task?	Yes	No			
	Is the process documented?	Yes	No			
	Who leads the discussion?					
6E	Do you have a hazard assessment process?	Yes	No			
	Are hazard assessments documented?	Yes	No			
	If yes, how are hazard assessments communicated and implemented on each project?					
	Who is responsible for leading the hazard assessment process?					
6F	Submit your company policies and procedures for environmental protection, spill clean-up, reporting, waste disposal, and recycling as part of the Health & Safety Program?					
6G	How does your company measure its H&S success? Attach separate sheet to explain					
7. Safety Stewardship						

Contractor Safety Questionnaire

7A	Are incident reports and report summaries sent to the following and how often?	Yes	No	Monthly	Quarterly	Annually
	Project/Site Manager					
	Vice President/Managing Director					
	Safety Director/Manager					
	President/Chief Executive Officer					
7B	How are incident records and summaries kept? How often are they reported internally?	Yes	No	Monthly	Quarterly	Annually
	Incidents totalled for the entire company					
	Incidents totaled by project					
	Subtotalled by superintendent					
	Subtotalled by foreman					
7C	How are the costs of individual incidents kept? How often are they reported internally?	Yes	No	Monthly	Quarterly	Annually
	Costs totalled for the entire company					
	Costs totaled by project					
	Subtotalled by superintendent					
	Subtotalled by foreman/general foreman					
7D	Does your company track non-injury incidents?	Yes	No	Monthly	Quarterly	Annually
	Near Miss					
	Property Damage					
	Fire					
	Security					
	Environmental					

8. Personnel

List key health and safety officers planned for this project. Attach resume (CV and qualification).

0.5

Name	Position / Title	Designation	
		Category	SACPCMP Number

9. References

List the last three company's your form has worked for that could verify the quality and management commitment to your occupational Health & Safety program

Name and Company	Address	Telephone Number

T2.2-08: Evaluation Schedule: Environmental Management (10 Points)

The Tenderer must review the following documents in preparation to meeting the environmental requirements, namely:

- a) **Transnet Integrated Management System (TIMS)** Policy Commitment Statement.
- b) Transnet Construction Environmental and Sustainability Specification (CESS) **TRN-IMS- GRP-GDL-014.4 Rev 3.0**
- c) Transnet Construction Environmental Management Standard Operating Procedure (**CEM SOP**). **009-TCC-CLO-SUS-11386 Rev 1.0**

1. The tenderer must provide a project specific **Environmental Management Plan**. This plan must be clear on the following:
 - a. A description of the environmental impacts that need to be avoided, managed and mitigated, a description of how those impacts will be avoided, managed and mitigated (impact management actions).
 - b. The method and frequency of monitoring the implementation of the impact management actions.
 - c. A description of how the environmental incidents will be managed on site.
 - d. An indication of the roles and responsibilities in the implementation of the impact management actions.
 - e. Records to be kept.
 - f. How non-conformance/non-compliance will be dealt with.
2. The tenderer must provide an **Environmental Policy** signed by Top Management that displays the following key components, namely:
 - a. Commitment to comply with all applicable environmental laws, regulations and standards.
 - b. Commitment to pollution prevention
 - c. Emphasize the organisation's commitment to continual improvement in environmental performance.
 - d. Address the sustainable use of resources/ resource conservation.
 - e. Commitment to communicate to all employees working for or on behalf of the Contractor.
3. Provide a CV showing environmental staff competencies, experience and **environmental qualification (Degree/Diploma)** relevant to environmental management functions, who will form part of the key environmental officer. (**Proof of Qualification must be submitted**).
4. The tenderer must provide a **list of projects** where construction environmental management duties have been executed including a brief description of such duties as listed on **company's experience reference letters. The format below must be used:**

Project Name	Start date	End Date	Brief Description of the Environmental Duties in the Project.
1			
2			
3			

Attached submissions to this schedule:

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By signing this Tender Schedule, the tenderer confirms that they will comply with the aboverequirements and in particular Transnet policy statements and environmental specifications.

Signed	Date
_____	_____
Name	Position
_____	_____
Tenderer	

The scoring of the Tenderer's Environmental Submission will be as follows:

1. Site specific Environmental management system

	Environmental Management Plan	Environmental Policy	Environmental Officer Qualification	Environmental Officer Experience	List of projects where construction environmental management duties have been executed
Points	3	1	2	2	2
Score 0	The Tenderer has submitted no information to determine a score.	The Tenderer has submitted no information to determine a score.	The Tenderer has submitted no information or submitted Qualifications not in the Natural Science or Environmental Studies to determine a score.	Environmental officer has <1 year of relevant on-the-job experience.	The Tenderer has submitted no information to determine a score.
Score 20	EMP only responds to 1-2 of the items listed under paragraph 1 in T2.2-08.	Policy addresses 1 of the required elements listed under paragraph 2 in T2.2-08.	Environmental officer is in possession of a Certificate in Natural Science or Environmental Studies	Environmental officer has ≥1 year but ≤3 years of relevant on-the-job experience.	Tenderer has only executed environmental management duties in 1 project.
Score 40	EMP only responds to 3 of the items listed under paragraph 1 in T2.2-08.	Policy addresses 2 of the required elements listed under paragraph 2 in T2.2-08.	Environmental officer is in possession of a Diploma in Natural Science or Environmental Studies	Environmental officer has >3 years but ≤4 years of relevant on-the-job experience.	Tenderer has only executed environmental management duties in 2 projects.

Score60	EMP only responds to 4 of the items listed under paragraph 1 in T2.2-08.	Policy addresses 3 of the required elements listed under paragraph 2 in T2.2-08.	Environmental officer is in possession of a Bachelor's degree/ B Tech in Natural Science or Environmental Studies.	Environmental officer has >4 years but ≤8 years of relevant on-the-job experience.	Tenderer has only executed environmental management duties in 3 projects.
Score 80	EMP only responds to 5 of the items listed under paragraph 1 in T2.2-08.	Policy addresses 4 of the required elements listed under paragraph 2 in T2.2-08.	Environmental officer is in possession of a Bachelor's degree with Honours in Natural Science or Environmental Studies.	Environmental officer has >8 but ≤10 years relevant on-the-job experience.	Tenderer has only executed environmental management duties in 4 projects.
Score 100	EMP responds to all the items listed under paragraph 1 in T2.2-08.	Policy addresses all of the required elements listed under paragraph 2 in T2.2-08.	Environmental officer is in possession of a master's degree in Natural Science or Environmental Studies.	Environmental officer has > 10 years of relevant on-the-job experience.	Tenderer has only executed environmental management duties in 5 projects.

T2.2- 09 Evaluation Schedule: Programme (10 Points)

Note to tenderers:

The Tenderer provides the proposed programme and/or refers to his proposed programme and electronic programme developed using a scheduling software tool.

The tenderer shall provide the proposed programme detailed to minimum of level 4 showing as a minimum the following:

▪ **Ability to provide the services:**

Ability to provide the services in terms of the *Employer's* requirements within the required timeframe indicating, in a logical sequence, the order and timing of the services that will take place in order to Provide the Works clearly indicating the capacity & capability to achieve the dates stated in the Contract Data.

▪ **Provision of Dates:**

The *Contractor* clearly indicates in the schedule all key milestones, activities & information related to the following –

- Float,
- Time Risk Allowances,
- Health and safety requirements,
- Procedures set out in this contract,
- Work by the *Employer* and Others,
- Access to a part of the site if later than its *access date*,
- Acceptances,
- Plant & Materials and other things to be provided by the employer,
- Information by Others,
- *starting date*, *access dates*, Key Dates and Completion Date
- planned Completion for each Key Date for each option and the complete works

▪ **Resourcing & Equipment:**

The *Tenderer indicates* for each operation, a statement of how the *Tenderer* plans to do the work identifying the principal Equipment and other resources which he plans to use.

The *Contractor's* programme shows the following levels:

- **Level 1 Master Schedule** – defines the major operations and interfaces between engineering design, procurement, fabrication and assembly of Plant and Materials, transportation, construction, testing and pre-commissioning, commissioning and Completion.



- **Level 2 Project Schedule** – summary schedules 'rolled up' from Level 3 Project Schedule described below
- **Level 3 Project Schedule** – detailed schedules generated to demonstrate all operations identified on the programme from the starting date to Completion.
- The Project Manager notifies any subsequent layouts and corresponding filters on revised programmes
- **Level 4 Project Schedule** – detailed discipline speciality level developed and maintained by the Contractor relating to all operations identified on the programme representing the daily activities by each discipline.

The Tenderer must demonstrate the facility meets the minimum requirement.	Total 10	<i>The tenderer shall demonstrate the following:</i>					
		No response	Very Poor	Poor	Acceptable Response	Good Response	Excellent Response
		(0)	(20%)	(40%)	(60%)	(80%)	(100%)
Starting date and completion date are stated, and the programme does not exceed 12 months. (Shown Column and Gantt Chart)	1	No Response or Duration is not shown = 0%	Duration is 13 months or more = 20%	Duration is greater than 12 months but less than 13 months (Show Column or Gantt Chart) = 40%	Duration is greater than 11 months but not more than 12 months (Show Column or Gantt Chart) = 60%	Duration is greater than 10 months but less than 11 months (Show Column or Gantt Chart) = 80%	Duration is less than 10 months (Show Column or Gantt Chart) = 100%
Activities to be logically linked using critical path method (CPM). (Show the Critical path, Predecessors and Successors Column)	2	No response or programme does not link activities using CPM = 0	All Activities on Critical Path not linked using CPM and open ends in Predecessors and Successors (Show the Critical path, Predecessors and Successors Column or Gantt Chart) = 20%	All Activities on Critical Path partially linked using CPM and open ends in Predecessors and Successors (Show the Critical path, Predecessors and Successors Column or Gantt Chart) = 40%	All Activities on Critical Path properly linked using CPM and no open ends in between Predecessors and Successors (Show the Critical path, Predecessors and Successors Column or Gantt Chart) = 60%	All Activities on Critical Path properly linked using CPM and no open ends in between Predecessors and Successors (Show the Critical path, Predecessors and Successors Column or Gantt Chart) No open ends in between Predecessors and Successors on Sub critical and all activities linked = 80%	All Activities are Completely linked using CPM with no open ends except for Start and Finish activities, no constraints) No open ends in between Predecessors and Successors on Sub critical and all activities linked and No linking on Work Breakdown Structure = 100

		(0)	(20%)	(40%)	(60%)	(80%)	(100%)
All activities as per level 4	2	No response or partially complete or schedule submission is not level 4, 3 or 2 (i.e., Level 1) = 0	The schedule is partially complete and detailed (level 2) = 20	The schedule is detailed (level 3) = 40	The schedule is complete and detailed (level 4) = 60	The schedule is complete and detailed Level 4 and Basis of schedule submitted = 80	The schedule is complete and detailed Level 4 and Basis of schedule submitted and Key Milestones = 100
The TNPA activities calendar on the schedule should represent the actual work week/month used. E.g., weekends, public holidays are marked as non-working days from start to finish date	1	No response = 0	The TNPA activities calendar on the schedule should represent the actual Weekends or Public holidays are marked as working days from start to finish date = 20	The TNPA activities calendar on the schedule should represent the actual Weekends are marked as working days from start to finish date = 40	The TNPA activities calendar on the schedule should represent the actual Weekends, public holidays are marked as non-working days from start to finish date = 60	The TNPA activities calendar on the schedule should represent the actual Weekends, public holidays, and builders break are marked as non-working days from start to finish date = 80	The TNPA activities calendar on the schedule should represent the actual Weekends, public holidays, and builders' breaks are marked as non-working days and float from start to finish date = 100
All activity durations to be realistic and activities that can be measured in days, Weeks and Months. (Show the duration Column)	2	No response = 0	All Activities durations to be realistic are broken down into Months (Show the duration Column) = 20	All Activities durations to be realistic are broken down into Months and Weeks (Show the duration Column) = 40	All activities durations to be realistic are broken down into Months, Weeks, and days (Show the duration Column) = 60	All activities durations to be realistic are broken down into Weeks and days (Show the duration Column) = 80	All activities durations to be realistic are broken down into days (Show the duration Column) = 100
Programme submission (Software) in PDF either Microsoft project or Primavera P6, showing resource loading and cashflow forecast	2	No response = 0	Programme submitted not in Microsoft Project nor Primavera P6 nor Excel = 20	Programme submitted in Excel = 40	Programme submitted in either Microsoft project or Primavera P6 = 60	Programme submitted in either Microsoft project or Primavera P6 including resource loading (Show the resource Column or Gantt Chart) = 80	Programme submitted in either Microsoft project or Primavera P6 including resource loading and cashflow forecast (Show the resource and cost Column or Gantt Chart) = 100

T2.2 – 10 Method statement – 20 Points.

Proposed Approach/ Methodology/Method Statement:

Bidders exhibits a clear understanding of the Project and has shown correct sequencing with a concise method statement for all activities incorporating best practices.

1) Mechanical Engineering Works:

- 1.1.** Project method statement proposal follows logical and sequential order in accordance with the submitted project schedule/programme.
- 1.2.** A description of how the works are to be carried out in relation to manage the refurbishment and the upgrade of the facility in accordance with designs requirements.
- 1.3.** Lift Supply, Installation, Testing, Commissioning and Maintenance Plan.
- 1.4.** Fire Systems (Suppression and detection Supply, Installation, Testing, Commissioning and Maintenance Plan
- 1.5.** HVAC System Supply, Installation, Testing, Commissioning and Maintenance Plan
- 1.6.** Monitoring and review - Details of how the scope of the works will be monitored supervised and evaluated.
- 1.7.** Waste and Rubble management plan

2) Civil Engineering Works:

The contractor must submit a detail Work methodology for the resourcing and execution of the technical work.

Furthermore, the Contractor must provide a detailed Civil Engineering Work methodology procedure covering the below items:

- 2.1)** Contract Details - Details of the nature of the Civil Engineering services that is to be undertaken.
- 2.2)** Method of Work - A description of how the works are to be carried out in relation to the design stages, scope, drawing deliverables at each stage, condition assessments, site conditions and site-specific hazards and considerations.
- 2.3)** Risk Assessments - The inclusion of any risk assessments, project specific health and safety issues which will assist in the identification and management of task specific hazards

- 2.4)** Operative Competence - Skills available, including certification, accreditation and training
- 2.5)** Monitoring and review - Details of how the scope of the works will be monitored supervised and evaluated
- 2.6)** Implementation Methodology is aligned to project scope
- 2.7)** Methodology shows execution, handover and close-out stages
- 2.8)** Foreseeable construction-related risks are identified on method statement.
- 2.9)** All stakeholders have been identified
- 2.10)** All relevant approvals from authorities have been identified.

3. Control and Instrumentation Works:

The contractor must submit a detail Work methodology for the resourcing and execution of the ICT and Security Network works.

Furthermore, the Contractor must provide a detailed construction/installation methodology procedure covering the below items:

- 3.1)** CCTV camera installation.
- 3.2)** CCTV Cabling Installation.
- 3.3)** CCTV System Configuration.
- 3.4)** Interior Access control equipment installation (access control on building doors and cabling)
- 3.5)** Exterior Access control equipment installation (boom-gate and spike system and turnstile)
Access Control equipment Configuration.
- 3.6)** Public Address Infrastructure.
- 3.7)** ICT Network Infrastructure (LAN connections, fiber cabling, etc.)

4. Architectural (Building) Works:

The contractor must submit *a detailed Work methodology* for the resourcing and execution of the building works.

Furthermore, the Contractor must provide a detailed construction/installation methodology procedure covering the below listed items:

- 4.1)** Masonry work
- 4.2)** Timber Roof Trusses
- 4.3)** Facade Cladding - Aluminium
- 4.4)** Fire Rated Drywall Construction
- 4.5)** Fire Rated Glazing Installations
- 4.6)** Aluminium and Steel Window Frame Installations
- 4.7)** Steel and Timber Mezzanine Floor Construction
- 4.8)** Steel Truss: new installation OR repair of existing
- 4.9)** Plumbing and Drainage
- 4.10)** Interior finishes Including Floor and Wall tiling, painting, etc.

Attached submissions to this schedule:

.....

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The table below indicates the method of scoring that will be followed to evaluate the Method Statement submitted by the Tenderer:

<i>The Tenderer is required to demonstrate the following</i>	<i>The tenderer shall demonstrate the following:</i>						
	Total 20	No response	Very Poor	Poor	Acceptable Response	Good Response	Excellent Response
		(0)	(20%)	(40%)	(60%)	(80%)	(100%)
Mechanical Engineering Works 1. Project method statement proposal follows logical and sequential order in accordance with the submitted project schedule/programme. 2. A description of how the works are to be carried out in relation to manage the refurbishment and the upgrade of the facility in accordance with designs requirements. 3. Lift Supply, Installation, Testing, Commission and Maintenance Plan 4. Fire Systems (Suppression and detection Supply, Installation, Testing, Commissioning and Maintenance Plan 5. HVAC System Supply, Installation, Testing, Commissioning and Maintenance Plan. 6. Monitoring and review - Details of how the scope of the works will be monitored supervised and evaluated. 7. Waste and Rubble management plan	5	The Tenderer's Submission does not address any of the requirements. The Tenderer's submission does not address the (3) Three Compulsory Requirements (3, 4 & 5) in detail and compliance to scope of work	Submission has addressed compulsory requirements (3, 4 & 5) in detail and compliance to scope of work but missing four of the sub-criteria elements	Submission has addressed compulsory requirements (3, 4 & 5) in detail and compliance to scope of work but missing Three of the sub-criteria elements	Submission has addressed compulsory requirements (3, 4 & 5) in detail and compliance to scope of work but missing Two of the sub-criteria elements	Submission has addressed compulsory requirements (3, 4 & 5) in detail and compliance to scope of work but missing one of the sub-criteria elements	Submission has addressed compulsory requirements (3, 4 & 5) in detail and compliance to scope of work and is missing none of the sub-criteria elements

		(0)	(20%)	(40%)	(60%)	(80%)	(100%)
<p>Civil Engineering Works:</p> <p>The contractor must submit a detailed Work methodology for the resourcing and execution of the technical work.</p> <p><i>Furthermore, the Contractor must provide a detailed Civil Engineering Work methodology procedure covering the below items:</i></p> <p>(1) Contract Details - Details of the nature of the Civil Engineering services that is to be undertaken.</p> <p>(2) Method of Work - A description of how the works are to be carried out in relation to the design stages, scope, drawing deliverables at each stage, condition assessments, site conditions and site-specific hazards and considerations</p> <p>(3) Risk Assessments - The inclusion of any risk assessments, project specific health and safety issues which will assist in the identification and management of task specific hazards</p> <p>(4) Operative Competence - Skills available, including certification, accreditation and training</p> <p>(5) Monitoring and review - Details of how the scope of the works will be monitored supervised and evaluated</p> <p>(6) Implementation Methodology is aligned to project scope</p> <p>(7) Methodology shows execution, handover and close-out stages</p> <p>(8) Foreseeable construction-related risks are identified on method statement</p>	5	No response or None of the items are addressed	The Submission has addressed 1 – 2 Items	Submission has addressed 3 – 5 Items	Submission has addressed 6 – 7 Items	Submission has addressed 8 – 9 Items	Submission has addressed all 10 items

<p>(9) All stakeholders have been identified</p> <p>10) All relevant approvals from authorities have been identified</p>							
		(0)	(20%)	(40%)	(60%)	(80%)	(100%)
<p>Control and Instrumentation Works:</p> <p>The contractor must submit a detailed Work methodology for the resourcing and execution of the ICT and Security Network works.</p> <p><i>Furthermore, the Contractor must provide a detailed construction/installation methodology procedure covering the below items:</i></p> <ol style="list-style-type: none"> 1. CCTV camera installation 2. CCTV Cabling Installation 3. CCTV System Configuration 4. Interior Access control equipment installation (access control on building doors and cabling) 5. Exterior Access control equipment installation (boom-gate and spike system and turnstile) Access Control equipment Configuration 6. Public Address Infrastructure 7. ICT Network Infrastructure (LAN connections, fiber cabling, etc.) 	5	Submission has addressed 1 or fewer items	Submission has addressed 2 items	Submission has addressed 3 – 4 Items	Submission has addressed 5 Items	Submission has addressed 6 items	Submission has addressed all 7 Items

		(0)	(20%)	(40%)	(60%)	(80%)	(100%)
<p>Architectural (Building) Works:</p> <p>The contractor must submit a detailed Work methodology for the resourcing and execution of the building works.</p> <p><i>Furthermore, the Contractor must provide a detailed construction methodology procedure covering the below items:</i></p> <ol style="list-style-type: none"> 1. Masonry work 2. Timber Roof Trusses 3. Facade Cladding – Aluminum 4. Fire Rated Drywall Construction 5. Fire Rated Glazing Installations 6. Aluminum and Steel Window Frame Installations 7. Steel and Timber Mezzanine Floor Construction 8. Steel Truss: new installation OR repair of existing 9. Plumbing and Drainage 10. Interior finishes Including Floor and Wall tiling, painting, etc. 	5	Submission has addressed 1 or No items.	Submission has addressed 2- 3 items	Submission has addressed 4- 5 items	Submission has addressed 6- 7 items	Submission has addressed 8- 9 items	Submission has addressed all 10 items

T2.2-11: Authority to submit a Tender

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for his category of organisation or alternatively attach a certified copy of a company / organisation document which provides the same information for the relevant category as requested here.

A - COMPANY	B - PARTNERSHIP	C - JOINT VENTURE	D - SOLE PROPRIETOR

A. Certificate for Company

I, _____ chairperson of the board of directors _____
_____, hereby confirm that by resolution of the
board taken on _____ (date), Mr/Ms _____,
acting in the capacity of _____, was authorised to sign all
documents in connection with this tender offer and any contract resulting from it on behalf of
the company.

Signed

Date

Name

Position

Chairman of the Board of Directors

B. Certificate for Partnership

We, the undersigned, being the **key partners** in the business trading as _____

_____ hereby authorise Mr/Ms _____

acting in the capacity of _____, to sign all documents in

connection with the tender offer for Contract _____ and any

contract resulting from it on our behalf.

Name	Address	Signature	Date

NOTE: This certificate is to be completed and signed by the full number of Partners necessary to commit the Partnership. Attach additional pages if more space is required.

C. Certificate for Joint Venture

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise

Mr/Ms _____, an authorised signatory of the company

_____, acting in the capacity of lead

partner, to sign all documents in connection with the tender offer for Contract _____

_____ and any contract resulting from it on our behalf.

This authorisation is evidenced by the attached power of attorney signed by legally authorised signatories of all the partners to the Joint Venture.

Furthermore we attach to this Schedule a copy of the joint venture agreement which incorporates a statement that all partners are liable jointly and severally for the execution of the contract and that the lead partner is authorised to incur liabilities, receive instructions and payments and be responsible for the entire execution of the contract for and on behalf of any and all the partners.

Name of firm	Address	Authorising signature, name (in caps) and capacity

D. Certificate for Sole Proprietor

I, _____, hereby confirm that I am the sole owner of the
business trading as _____.

Signed

Date

Name

Position

Sole Proprietor

T2.2-12: Record of Addenda to Tender Documents

This schedule as submitted confirms that the following communications received from the *Employer* before the submission of this tender offer, amending the tender documents, have been taken into account in this specific tender offer:

	Date	Title or Details
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		



T2.2-13 Letter/s of Good Standing with the Workmen’s Compensation Fund

Attached to this schedule is the Letter/s of Good Standing.

- 1.
- 2.
- 3.
- 4.

Name of Company/Members of Joint Venture:

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Part T2: Returnable Schedules

T2.2-14: Risk Elements

T2.2-16: Schedule of Proposed Subcontractors

The tenderer is required to provide details of all the sub-contractors that will be utilised in the execution of the *works*. ***If sub – contractors are not listed on this Returnable Form, they will not be evaluated.***

Tenderer to note that after award, any deviations from this list of proposed sub-contractors will be subject to acceptance by the *Project Manager* in terms of the *Conditions of Contract*.

Provide information of the Sub-contractors below:

Name of Proposed Subcontractor		Address			Nature of work		Amount of Worked	Percentage of work	
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships		Military Veterans	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	

Name of Proposed Subcontractor		Address			Nature of work		Amount of Worked	Percentage of work	
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships		Military Veterans	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	

Name of Proposed Subcontractor		Address			Nature of work		Amount of Worked	Percentage of work	
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships		Military Veterans	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships		Military Veterans
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships		Military Veterans
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

[illegible]

T2.2-18: ANNEX G Compulsory Enterprise Questionnaire

The following particulars hereunder must be furnished.

In the case of a Joint Venture, separate enterprise questionnaires in respect of each partner/member must be completed and submitted.

Section 1: Name of enterprise: _____

Section 2: VAT registration number, if any: _____

Section 3: CIDB registration number, if any: _____

Section 4: CSD number: _____

Section 5: Particulars of sole proprietors and partners in partnerships

Name	Identity number	Personal income tax number

* Complete only if sole proprietor or partnership and attach separate page if more than 3 partners

Section 6: Particulars of companies and close corporations

Company registration number _____

Close corporation number _____

Tax reference number: _____

Section 7: The attached SBD4 must be completed for each tender and be attached as a tender requirement.

Section 8: The attached SBD 6 must be completed for each tender and be attached as a requirement.

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise:

- i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;
- ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and
- v) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed	Date
Name	Position
Enterprise name	

SBD 6.1

PREFERENCE POINTS CLAIM FORM

This preference form must form part of all bids invited. It contains general information and serves as a claim for preference points for Broad-Based Black Economic Empowerment [**B-BBEE**] Status Level of Contribution.

Transnet will award preference points to companies who provide valid proof of their B-BBEE status using either the latest version of the generic Codes of Good Practice or Sector Specific Codes (if applicable).

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all bids:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 Either the **80/20 or 90/10 preference point system** will apply

1.3 Preference points for this bid shall be awarded for:

- (a) Price; and
- (b) B-BBEE Status Level of Contribution.

1.4 The maximum points for this bid are allocated as follows:

Specific Goals	Number of points (80/20 system)	Number of points (90/10 system)
B-BBEE Status Level of Contributor 1 or 2	06	03
30% Black Women Owned Entities	04	02
The promotion of supplier development through subcontracting of a minimum of 30% of the value of the contract to/with EMEs and/or QSEs 51% owned by black people, youth, women or disabled people	10	05
Non-compliant and/or B-BBEE Level 3-8 contributors	00	00

1.5 Failure on the part of a bidder to submit proof of B-BBEE status level of contributor together with the bid will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

- 1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

2. DEFINITIONS

- (a) **"all applicable taxes"** includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies;
- (b) **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (c) **"B-BBEE status level of contributor"** means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (d) **"bid"** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the supply/provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;
- (e) **"Broad-Based Black Economic Empowerment Act"** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (f) **"EME"** means an Exempted Micro Enterprise as defines by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (g) **"functionality"** means the ability of a bidder to provide goods or services in accordance with specification as set out in the bid documents
- (h) **"Price"** includes all applicable taxes less all unconditional discounts.
- (i) **"Proof of B-BBEE Status Level of Contributor"**
 - i) the B-BBEE status level certificate issued by an authorised body or person;
 - ii) a sworn affidavit as prescribed by the B-BBEE Codes of Good Practice; or
 - iii) any other requirement prescribed in terms of the B-BBEE Act.
- (j) **"QSE"** means a Qualifying Small Enterprise as defines by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (k) **"rand value"** means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties.

3. POINTS AWARDED FOR PRICE

3.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 or 90/10

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right) \quad \text{or} \quad P_s = 90 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

P_s = Points scored for comparative price of bid under consideration

P_t = Comparative price of bid under consideration

P_{\min} = Comparative price of lowest acceptable bid

4. EVIDENCE REQUIRED FOR CLAIMING SPECIFIC GOALS

4.1 In terms of Transnet Preferential Procurement Policy (TPPP) and Procurement Manuals, preference points must be awarded to a bidder for providing evidence in accordance with the table below:

Specific Goals	Acceptable Evidence
B-BBEE Status Level of Contributor 1 or 2	B-BBEE Certificate / Sworn - Affidavit / CIPC B-BBEE Certificate (in case of JV, a consolidated scorecard will be accepted) as per DTIC guidelines.
30% Black Women Owned Entities	<ul style="list-style-type: none"> B-BBEE Certificate / Sworn- Affidavit / B-BBEE CIPC Certificate (in case of JV, a consolidated scorecard will be accepted) as per DTIC guideline and Certified copy of ID Documents of the Owners which are 30% black women.
The promotion of supplier development through subcontracting of a minimum of 30% of the value of the contract to/with EMEs and/or QSEs 51% owned by black people, youth, women or disabled people	<ul style="list-style-type: none"> Sub-contracting agreement(s) and declaration. Subcontractors CIPC registration documents. Subcontractors B-BBEE Certificate / Sworn - Affidavit / CIPC B-BBEE Certificate as per DTIC guidelines. Certified copy of ID Documents of the Owners which are 51% owned by black women, youth and disabled people. Doctor's note confirming the disability and/or Employment Equity Act 1(EEA1) form.

- 4.2 The table below indicates the required proof of B-BBEE status depending on the category of enterprises:

Enterprise	B-BBEE Certificate & Sworn Affidavit
Large	Certificate issued by SANAS accredited verification agency
QSE	Certificate issued by SANAS accredited verification agency Sworn Affidavit signed by the authorised QSE representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership (only black-owned QSEs - 51% to 100% Black owned) [Sworn affidavits must substantially comply with the format that can be obtained on the DTI's website at www.dti.gov.za/economic_empowerment/bee_codes.jsp .]
EME¹	Sworn Affidavit signed by the authorised EME representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership Certificate issued by CIPC (formerly CIPRO) confirming annual turnover and black ownership Certificate issued by SANAS accredited verification agency only if the EME is being measured on the QSE scorecard

- 4.3 A trust, consortium or joint venture (including unincorporated consortia and joint ventures) must submit a consolidated B-BBEE Status Level verification certificate for every separate bid.
- 4.4 Tertiary Institutions and Public Entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.
- 4.5 A person will not be awarded points for B-BBEE status level if it is indicated in the bid documents that such a bidder intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended sub-contractor is an EME that has the capability and ability to execute the sub-contract.
- 4.6 A person awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an EME that has the capability and ability to execute the sub-contract.

¹ In terms of the Implementation Guide: Preferential Procurement Regulations, 2017, Version 2, paragraph 11.11 provides that in the Transport Sector, EMEs can provide a letter from accounting officer or get verified and be issued with a B-BBEE certificate by SANAS accredited professional or agency as the Transport Sector Code has not been aligned to the generic Codes. EMEs in the Transport Sector are not allowed to provide a sworn affidavit as the generic codes are not applicable to them.

4.7 Bidders are to note that the rules pertaining to B-BBEE verification and other B-BBEE requirements may be changed from time to time by regulatory bodies such as National Treasury or the DTI. It is the Bidder's responsibility to ensure that his/her bid complies fully with all B-BBEE requirements at the time of the submission of the bid.

5. BID DECLARATION

5.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

6. B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 6.1

6.1 B-BBEE Status Level of Contribution: . =(maximum of 10 or 20 points)

(Points claimed in respect of paragraph 6.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.

7. SUB-CONTRACTING

7.1 Will any portion of the contract be sub-contracted? (***Tick applicable box***)

YES		NO	
-----	--	----	--

7.1.1 If yes, indicate:

- i) What percentage of the contract will be subcontracted.....%
- ii) The name of the sub-contractor.....
- iii) The B-BBEE status level of the sub-contractor.....
- iv) Whether the sub-contractor is an EME or QSE.

(***Tick applicable box***)

YES		NO	
-----	--	----	--

8. DECLARATION WITH REGARD TO COMPANY/FIRM

8.1 Name of company/firm:.....

8.2 VAT registration number:.....

8.3 Company registration number:.....

8.4 TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One person business/sole propriety
- ☐ Close corporation
- ☐ Company
- ☐ (Pty) Limited

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....
.....
.....

8.6 COMPANY CLASSIFICATION

- ☐ Manufacturer
- ☐ Supplier
- ☐ Professional Service provider
- ☐ Other Service providers, e.g. transporter, etc.

[TICK APPLICABLE BOX]

8.7 Total number of years the company/firm has been in business:.....

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contribution indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If a bidder submitted false information regarding its B-BBEE status level of contributor,, which will affect or has affected the evaluation of a bid, or where a bidder has failed to declare any subcontracting arrangements or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have

- (a) disqualify the person from the bidding process;
- (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
- (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
- (d) if the successful bidder subcontracted a portion of the bid to another person without disclosing it, Transnet reserves the right to penalise the bidder up to 10 percent of the value of the contract;
- (e) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the audi alteram partem (hear the other side) rule has been applied; and
- (f) forward the matter for criminal prosecution.

WITNESSES

- 1.
- 2.

.....

SIGNATURE(S) OF BIDDERS(S)

DATE:

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest² in the enterprise, employed by the state? **YES/NO**

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of State institution

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

² the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

2.2.1 If so, furnish particulars:

.....
.....

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract?
YES/NO

2.3.1 If so, furnish particulars:

.....
.....

3 DECLARATION

I, _____ the _____ undersigned,
(name)..... in submitting
the accompanying bid, do hereby make the following statements that I certify to
be true and complete in every respect:

- 3.1 I have read and I understand the contents of this disclosure;
- 3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
- 3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

³ Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

3.6 I am aware that, in addition and without prejudice to any other remedy provided

to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....
Signature	Date
.....
Position	Name of bidder

T2.2-19 NON-DISCLOSURE AGREEMENT

Note to tenderers: This Non-Disclosure Agreement is to be completed and signed by an authorised signatory:

THIS AGREEMENT is made effective as of day of 20..... by and between:

TRANSNET SOC LTD

(Registration No. 1990/000900/30), a company incorporated and existing under the laws of South Africa, having its principal place of business at Transnet Corporate Centre 138 Eloff Street , Braamfontein , Johannesburg 2000

and

.....
(Registration No.), a private company incorporated and existing under the laws of South Africa having its principal place of business at
.....
.....

WHEREAS

Transnet and the Company wish to exchange Information [as defined below] and it is envisaged that each party may from time to time receive Information relating to the other in respect thereof. In consideration of each party making available to the other such Information, the parties jointly agree that any dealings between them shall be subject to the terms and conditions of this Agreement which themselves will be subject to the parameters of the Tender Document.

IT IS HEREBY AGREED

1. INTERPRETATION

In this Agreement:

- 1.1 **Agents** mean directors, officers, employees, agents, professional advisers, contractors or sub-contractors, or any Group member;
- 1.2 **Bid** or **Bid Document** (hereinafter Tender) means Transnet's Request for Information [**RFI**] Request for Proposal [**RFP**] or Request for Quotation [**RFQ**], as the case may be;
- 1.3 **Confidential Information** means any information or other data relating to one party [the **Disclosing Party**] and/or the business carried on or proposed or intended to be carried on by that party and which is made available for the purposes of the Bid to the other party [the **Receiving Party**] or its Agents by the Disclosing Party or its Agents or recorded in agreed minutes following oral disclosure and any other information otherwise made available by the Disclosing Party or its Agents to the Receiving Party or its Agents, whether before, on or after the date of this Agreement, and whether in writing or otherwise, including any information, analysis or specifications derived from, containing or reflecting such information but excluding information which:

- 1.3.1 is publicly available at the time of its disclosure or becomes publicly available [other than as a result of disclosure by the Receiving Party or any of its Agents contrary to the terms of this Agreement]; or
- 1.3.2 was lawfully in the possession of the Receiving Party or its Agents [as can be demonstrated by its written records or other reasonable evidence] free of any restriction as to its use or disclosure prior to its being so disclosed; or
- 1.3.3 following such disclosure, becomes available to the Receiving Party or its Agents [as can be demonstrated by its written records or other reasonable evidence] from a source other than the Disclosing Party or its Agents, which source is not bound by any duty of confidentiality owed, directly or indirectly, to the Disclosing Party in relation to such information;
- 1.4 **Group** means any subsidiary, any holding company and any subsidiary of any holding company of either party; and
- 1.5 **Information** means all information in whatever form including, without limitation, any information relating to systems, operations, plans, intentions, market opportunities, know-how, trade secrets and business affairs whether in writing, conveyed orally or by machine-readable medium.

2. **CONFIDENTIAL INFORMATION**

- 2.1 All Confidential Information given by one party to this Agreement [the **Disclosing Party**] to the other party [the **Receiving Party**] will be treated by the Receiving Party as secret and confidential and will not, without the Disclosing Party's written consent, directly or indirectly communicate or disclose [whether in writing or orally or in any other manner] Confidential Information to any other person other than in accordance with the terms of this Agreement.
- 2.2 The Receiving Party will only use the Confidential Information for the sole purpose of technical and commercial discussions between the parties in relation to the Tender or for the subsequent performance of any contract between the parties in relation to the Tender.
- 2.3 Notwithstanding clause 2.1 above, the Receiving Party may disclose Confidential Information:
 - 2.3.1 to those of its Agents who strictly need to know the Confidential Information for the sole purpose set out in clause 2.2 above, provided that the Receiving Party shall ensure that such Agents are made aware prior to the disclosure of any part of the Confidential Information that the same is confidential and that they owe a duty of confidence to the Disclosing Party. The Receiving Party shall at all times remain liable for any actions of such Agents that would constitute a breach of this Agreement; or
 - 2.3.2 to the extent required by law or the rules of any applicable regulatory authority, subject to clause 2.4 below.
- 2.4 In the event that the Receiving Party is required to disclose any Confidential Information in accordance with clause 2.3.2 above, it shall promptly notify the Disclosing Party and cooperate with the Disclosing Party regarding the form, nature, content and purpose of such disclosure or any action which the Disclosing Party may reasonably take to challenge the validity of such requirement.

2.5 In the event that any Confidential Information shall be copied, disclosed or used otherwise than as permitted under this Agreement then, upon becoming aware of the same, without prejudice to any rights or remedies of the Disclosing Party, the Receiving Party shall as soon as practicable notify the Disclosing Party of such event and if requested take such steps [including the institution of legal proceedings] as shall be necessary to remedy [if capable of remedy] the default and/or to prevent further unauthorised copying, disclosure or use.

2.6 All Confidential Information shall remain the property of the Disclosing Party and its disclosure shall not confer on the Receiving Party any rights, including intellectual property rights over the Confidential Information whatsoever, beyond those contained in this Agreement.

3. RECORDS AND RETURN OF INFORMATION

3.1 The Receiving Party agrees to ensure proper and secure storage of all Information and any copies thereof.

3.2 The Receiving Party shall keep a written record, to be supplied to the Disclosing Party upon request, of the Confidential Information provided and any copies made thereof and, so far as is reasonably practicable, of the location of such Confidential Information and any copies thereof.

3.3 The Company shall, within 7 [seven] days of receipt of a written demand from Transnet:

3.3.1 return all written Confidential Information [including all copies]; and

3.3.2 expunge or destroy any Confidential Information from any computer, word processor or other device whatsoever into which it was copied, read or programmed by the Company or on its behalf.

3.4 The Company shall on request supply a certificate signed by a director as to its full compliance with the requirements of clause 3.3.2 above.

4. ANNOUNCEMENTS

4.1 Neither party will make or permit to be made any announcement or disclosure of its prospective interest in the Tender without the prior written consent of the other party.

4.2 Neither party shall make use of the other party's name or any information acquired through its dealings with the other party for publicity or marketing purposes without the prior written consent of the other party.

5. DURATION

The obligations of each party and its Agents under this Agreement shall survive the termination of any discussions or negotiations between the parties regarding the Tender and continue thereafter for a period of 5 [five] years.

6. PRINCIPAL

Each party confirms that it is acting as principal and not as nominee, agent or broker for any other person and that it will be responsible for any costs incurred by it or its advisers in considering or pursuing the Tender and in complying with the terms of this Agreement.

7. ADEQUACY OF DAMAGES

Nothing contained in this Agreement shall be construed as prohibiting the Disclosing Party from pursuing any other remedies available to it, either at law or in equity, for any such threatened or actual breach of this Agreement, including specific performance, recovery of damages or otherwise.

8. PRIVACY AND DATA PROTECTION

- 8.1 The Receiving Party undertakes to comply with South Africa's general privacy protection in terms Section 14 of the Bill of Rights in connection with this Tender and shall procure that its personnel shall observe the provisions of such Act [as applicable] or any amendments and re-enactments thereof and any regulations made pursuant thereto.
- 8.2 The Receiving Party warrants that it and its Agents have the appropriate technical and organisational measures in place against unauthorised or unlawful processing of data relating to the Tender and against accidental loss or destruction of, or damage to such data held or processed by them.

9. GENERAL

- 9.1 Neither party may assign the benefit of this Agreement, or any interest hereunder, except with the prior written consent of the other, save that Transnet may assign this Agreement at any time to any member of the Transnet Group.
- 9.2 No failure or delay in exercising any right, power or privilege under this Agreement will operate as a waiver of it, nor will any single or partial exercise of it preclude any further exercise or the exercise of any right, power or privilege under this Agreement or otherwise.
- 9.3 The provisions of this Agreement shall be severable in the event that any of its provisions are held by a court of competent jurisdiction or other applicable authority to be invalid, void or otherwise unenforceable, and the remaining provisions shall remain enforceable to the fullest extent permitted by law.
- 9.4 This Agreement may only be modified by a written agreement duly signed by persons authorised on behalf of each party.
- 9.5 Nothing in this Agreement shall constitute the creation of a partnership, joint venture or agency between the parties.
- 9.6 This Agreement will be governed by and construed in accordance with South African law and the parties irrevocably submit to the exclusive jurisdiction of the South African courts.

Signed		Date	
Name		Position	
Tenderer			

T2.2-20: TENDER DECLARATION FORM

NAME OF COMPANY: _____

We _____ do hereby certify that:

1. Transnet has supplied and we have received appropriate tender offers to any/all questions (as applicable) which were submitted by ourselves for tender clarification purposes;
2. we have received all information we deemed necessary for the completion of this Tender;
3. at no stage have we received additional information relating to the subject matter of this tender from Transnet sources, other than information formally received from the designated Transnet contact(s) as nominated in the tender documents;
4. we are satisfied, insofar as our company is concerned, that the processes and procedures adopted by Transnet in issuing this TENDER and the requirements requested from tenderers in responding to this TENDER have been conducted in a fair and transparent manner; and
5. furthermore, we acknowledge that a direct relationship exists between a family member and/or an owner / member / director / partner / shareholder (unlisted companies) of our company and an employee or board member of the Transnet Group as indicated below: *[Respondent to indicate if this section is not applicable]*

FULL NAME OF OWNER/MEMBER/DIRECTOR/

PARTNER/SHAREHOLDER:

ADDRESS:

Indicate nature of relationship with Transnet:

[Failure to furnish complete and accurate information in this regard may lead to the disqualification of your response and may preclude a Respondent from doing future business with Transnet]

We declare, to the extent that we are aware or become aware of any relationship between ourselves and Transnet (other than any existing and appropriate business relationship with Transnet) which could unfairly advantage our company in the forthcoming adjudication process, we shall notify Transnet immediately in writing of such circumstances.

6. We accept that any dispute pertaining to this tender will be resolved through the Transnet Supply Chain Management (SCM) Complaints and Allegations Office process and will be subject to the Terms of Reference of SCM Complaints and Allegations Office. The Transnet Supply Chain SCM Complaints and Allegations Office process must first be exhausted before judicial review of a decision is sought. (Refer "Important Notice to respondents" below).
7. We further accept that Transnet reserves the right to reverse a tender award or decision based on the recommendations of SCM Complaints and Allegations Office without having to follow a formal court process to have such award or decision set aside.

For and on behalf of duly authorised thereto
Name:
Signature:
Date:

IMPORTANT NOTICE TO RESPONDENTS

- Transnet established the SCM Complaints and Allegations Office to investigate any material complaint in respect of any tenders regardless of the value. Should a Respondent have any material concern regarding a tender process, a complaint may be lodged with Transnet SCM Complaints and Allegations Office for further investigation.
- It is incumbent on the Respondent to familiarise himself/herself with the Terms of Reference for the Transnet SCM Complaints and Allegations Office, details of which are available for review at Transnet's website www.transnet.net.
- An official complaint form which will be shared upon receipt of a complaint should be completed and submitted, together with any supporting documentation, to groupscmcomplaints@transnet.net
- All Respondents should note that a complaint must be made in good faith. If a complaint is made in bad faith, Transnet reserves the right to place such a bidder on its List of Excluded Bidders.

T2.2-21: REQUEST FOR PROPOSAL – BREACH OF LAW

NAME OF COMPANY: _____

I / We _____ do hereby
certify that ***I/we have/have not been*** found guilty during the preceding 5 (five) years of a
serious breach of law, including but not limited to a breach of the Competition Act, 89 of
1998, by a court of law, tribunal or other administrative body. The type of breach that the
Tenderer is required to disclose excludes relatively minor offences or misdemeanours, e.g.
traffic offences.

Where found guilty of such a serious breach, please disclose:

NATURE OF BREACH:

DATE OF BREACH:

Furthermore, I/we acknowledge that Transnet SOC Ltd reserves the right to exclude any
Tenderer from the tendering process, should that person or company have been found guilty
of a serious breach of law, tribunal or regulatory obligation.

Signed on this _____ day of _____ 20____

SIGNATURE OF TENDER

T2.2-22 Certificate of Acquaintance with Tender Documents

NAME OF TENDERING ENTITY:

1. By signing this certificate I/we acknowledge that I/we have made myself/ourselves thoroughly familiar with, and agree with all the conditions governing this RFP. This includes those terms and conditions of the Contract, the Supplier Integrity Pact, Non-Disclosure Agreement etc. contained in any printed form stated to form part of the documents thereof, but not limited to those listed in this clause.
2. I/we furthermore agree that Transnet SOC Ltd shall recognise no claim from me/us for relief based on an allegation that I/we overlooked any tender/contract condition or failed to take it into account for the purpose of calculating my/our offered prices or otherwise.
3. I/we understand that the accompanying Tender will be disqualified if this Certificate is found not to be true and complete in every respect.
4. For the purposes of this Certificate and the accompanying Tender, I/we understand that the word "competitor" shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:
 - a) has been requested to submit a Tender in response to this Tender invitation;
 - b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
 - c) provides the same Services as the Tenderer and/or is in the same line of business as the Tenderer
5. The Tenderer has arrived at the accompanying Tender independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive Tendering.
6. In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
 - a) prices;
 - b) geographical area where Services will be rendered [market allocation]

- c) methods, factors or formulas used to calculate prices;
 - d) the intention or decision to submit or not to submit, a Tender;
 - e) the submission of a tender which does not meet the specifications and conditions of the tender; or
 - f) Tendering with the intention not winning the tender.
7. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Services to which this tender relates.
8. The terms of the accompanying tender have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening or of the awarding of the contract.
9. I/We am/are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to tenders and contracts, tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [NPA] for criminal investigation. In addition, Tenderers that submit suspicious tenders may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

Signed on this _____ day of _____ 2024

SIGNATURE OF TENDERER

T2.2-23 Service Provider Integrity Pact

Important Note: All potential tenderers must read this document and certify in the RFP Declaration Form that that have acquainted themselves with, and agree with the content.

The contract with the successful tenderer will automatically incorporate this Integrity Pact and shall be deemed as part of the final concluded contract.

INTEGRITY PACT

Between

TRANSNET SOC LTD

Registration Number: 1990/000900/30

("Transnet")

and

The Contractor (hereinafter referred to as the "Tenderer/Service Providers/Contractor")

PREAMBLE

Transnet values full compliance with all relevant laws and regulations, ethical standards and the principles of economical use of resources, fairness and transparency in its relations with its Tenderers/Service Providers/Contractors.

In order to achieve these goals, Transnet and the Tenderer/Service Provider/Contractor hereby enter into this agreement hereinafter referred to as the "Integrity Pact" which will form part of the Tenderer's/Service Provider's/Contractor's application for registration with Transnet as a vendor.

The general purpose of this Integrity Pact is to agree on avoiding all forms of dishonesty, fraud and corruption by following a system that is fair, transparent and free from any undue influence prior to, during and subsequent to the currency of any procurement and/or reverse logistics event and any further contract to be entered into between the Parties, relating to such event.

All Tenderers/Service Providers/Contractor's will be required to sign and comply with undertakings contained in this Integrity Pact, should they want to be registered as a Transnet vendor.

1 OBJECTIVES

- 1.1 Transnet and the Tenderer/Service Provider/Contractor agree to enter into this Integrity Pact, to avoid all forms of dishonesty, fraud and corruption including practices that are anti-competitive in nature, negotiations made in bad faith and under-pricing by following a system that is fair, transparent and free from any influence/unprejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:
 - a) Enable Transnet to obtain the desired contract at a reasonable and competitive price in conformity to the defined specifications of the works, goods and services; and
 - b) Enable Tenderers/Service Providers/Contractors to abstain from bribing or participating in any corrupt practice in order to secure the contract.

2 COMMITMENTS OF TRANSNET

Transnet commits to take all measures necessary to prevent dishonesty, fraud and corruption and to observe the following principles:

- 2.1 Transnet hereby undertakes that no employee of Transnet connected directly or indirectly with the sourcing event and ensuing contract, will demand, take a promise for or accept directly or through intermediaries any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the Tenderer, either for themselves or for any person, organisation or third

party related to the contract in exchange for an advantage in the tendering process, Tender evaluation, contracting or implementation process related to any contract.

- 2.2 Transnet will, during the registration and tendering process treat all Tenderers/ Service Providers/Contractor with equity, transparency and fairness. Transnet will in particular, before and during the registration process, provide to all Tenderers/ Service Providers/Contractors the same information and will not provide to any Tenderers/Service Providers/Contractors confidential/additional information through which the Tenderers/Service Providers/Contractors could obtain an advantage in relation to any tendering process.
- 2.3 Transnet further confirms that its employees will not favour any prospective Tenderers/Service Providers/Contractors in any form that could afford an undue advantage to a particular Tenderer during the tendering stage, and will further treat all Tenderers/Service Providers/Contractors participating in the tendering process in a fair manner.
- 2.4 Transnet will exclude from the tender process such employees who have any personal interest in the Tenderers/Service Providers/Contractors participating in the tendering process.

3 OBLIGATIONS OF THE TENDERER / SERVICE PROVIDER

- 3.1 Transnet has a '**Zero Gifts**' Policy. No employee is allowed to accept gifts, favours or benefits.
 - a) Transnet officials and employees **shall not** solicit, give or accept, or from agreeing to solicit, give, accept or receive directly or indirectly, any gift, gratuity, favour, entertainment, loan, or anything of monetary value, from any person or juridical entities in the course of official duties or in connection with any operation being managed by, or any transaction which may be affected by the functions of their office.
 - b) Transnet officials and employees **shall not** solicit or accept gifts of any kind, from vendors, suppliers, customers, potential employees, potential vendors, and suppliers, or any other individual or organisation irrespective of the value.
 - c) Under **no circumstances** should gifts, business courtesies or hospitality packages be accepted from or given to prospective suppliers participating in a tender process at the respective employee's Operating Division, regardless of retail value.
 - d) Gratuities, bribes or kickbacks of any kind must never be solicited, accepted or offered, either directly or indirectly. This includes money, loans, equity, special privileges, personal favours, benefit or services. Such favours will be considered to constitute corruption.

- 3.2 The Tenderer/Service Provider/Contractor commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its Tender or during any ensuing contract stage in order to secure the contract or in furtherance to secure it and in particular the Tenderer/Service Provider/Contractor commits to the following:
- a) The Tenderer/Service Provider/Contractor will not, directly or through any other person or firm, offer, promise or give to Transnet or to any of Transnet's employees involved in the tendering process or to any third person any material or other benefit or payment, in order to obtain in exchange an advantage during the tendering process; and
 - b) The Tenderer/Service Provider/Contractor will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any employee of Transnet, connected directly or indirectly with the tendering process, or to any person, organisation or third party related to the contract in exchange for any advantage in the tendering, evaluation, contracting and implementation of the contract.
- 3.3 The Tenderer/Service Provider/Contractor will not collude with other parties interested in the contract to preclude a competitive Tender price, impair the transparency, fairness and progress of the tendering process, Tender evaluation, contracting and implementation of the contract. The Tenderer / Service Provider further commits itself to delivering against all agreed upon conditions as stipulated within the contract.
- 3.4 The Tenderer/Service Provider/Contractor will not enter into any illegal or dishonest agreement or understanding, whether formal or informal with other Tenderers/Service Providers/Contractors. This applies in particular to certifications, submissions or non-submission of documents or actions that are restrictive or to introduce cartels into the tendering process.
- 3.5 The Tenderer/Service Provider/Contractor will not commit any criminal offence under the relevant anti-corruption laws of South Africa or any other country. Furthermore, the Tenderer/Service Provider/Contractor will not use for illegitimate purposes or for restrictive purposes or personal gain, or pass on to others, any information provided by Transnet as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 3.6 A Tenderer/Service Provider/Contractor of foreign origin shall disclose the name and address of its agents or representatives in South Africa, if any, involved directly or indirectly in the registration or tendering process. Similarly, the Tenderer / Service Provider / Contractor of South African nationality shall furnish

the name and address of the foreign principals, if any, involved directly or indirectly in the registration or tendering process.

- 3.7 The Tenderer/Service Provider/Contractor will not misrepresent facts or furnish false or forged documents or information in order to influence the tendering process to the advantage of the Tenderer/Service Provider/Contractor or detriment of Transnet or other competitors.
- 3.8 Transnet may require the Tenderer/Service Provider/Contractor to furnish Transnet with a copy of its code of conduct. Such code of conduct must address the compliance programme for the implementation of the code of conduct and reject the use of bribes and other dishonest and unethical conduct.
- 3.9 The Tenderer/Service Provider/Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 3.10 The Tenderer/Service Provider/Contractor confirms that they will uphold the ten principles of the United Nations Global Compact (UNGC) in the fields of Human Rights, Labour, Anti-Corruption and the Environment when undertaking business with Transnet as follows:

a) Human Rights

- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
- Principle 2: make sure that they are not complicit in human rights abuses.

b) Labour

- Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- Principle 4: the elimination of all forms of forced and compulsory labour;
- Principle 5: the effective abolition of child labour; and
- Principle 6: the elimination of discrimination in respect of employment and occupation.

c) Environment

- Principle 7: Businesses should support a precautionary approach to environmental challenges;
- Principle 8: undertake initiatives to promote greater environmental responsibility; and

- Principle 9: encourage the development and diffusion of environmentally friendly technologies.

d) Anti-Corruption

- Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

4 INDEPENDENT TENDERING

4.1 For the purposes of that Certificate in relation to any submitted Tender, the Tenderer declares to fully understand that the word "competitor" shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:

- a) has been requested to submit a Tender in response to this Tender invitation;
- b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
- c) provides the same Goods and Services as the Tenderer and/or is in the same line of business as the Tenderer.

4.2 The Tenderer has arrived at his submitted Tender independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive tendering.

4.3 In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

- a) prices;
- b) geographical area where Goods or Services will be rendered [market allocation];
- c) methods, factors or formulas used to calculate prices;
- d) the intention or decision to submit or not to submit, a Tender;
- e) the submission of a Tender which does not meet the specifications and conditions of the RFP; or
- f) tendering with the intention of not winning the Tender.

4.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Goods or Services to which his/her tender relates.

- 4.5 The terms of the Tender as submitted have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official Tender opening or of the awarding of the contract.
- 4.6 Tenderers are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to Tenders and contracts, Tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [NPA] for criminal investigation and/or may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.
- 4.7 Should the Tenderer find any terms or conditions stipulated in any of the relevant documents quoted in the Tender unacceptable, it should indicate which conditions are unacceptable and offer alternatives by written submission on its company letterhead, attached to its submitted Tender. Any such submission shall be subject to review by Transnet's Legal Counsel who shall determine whether the proposed alternative(s) are acceptable or otherwise, as the case may be.

5 DISQUALIFICATION FROM TENDERING PROCESS

- 5.1 If the Tenderer/Service Provider/Contractor has committed a transgression through a violation of section 3 of this Integrity Pact or in any other form such as to put its reliability or credibility as a Tenderer/Service Provider/Contractor into question, Transnet may reject the Tenderer's / Service Provider's / Contractor's application from the registration or tendering process and remove the Tenderer/Service Provider/Contractor from its database, if already registered.
- 5.2 If the Tenderer/Service Provider/Contractor has committed a transgression through a violation of section 3, or any material violation, such as to put its reliability or credibility into question. Transnet may after following due procedures and at its own discretion also exclude the Tenderer/Service Provider /Contractor from future tendering processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, which will include amongst others the number of transgressions, the position of the transgressors within the company hierarchy of the Tenderer/Service Provider/Contractor and the amount of the damage. The exclusion will be imposed for up to a maximum of 10 (ten) years. However, Transnet reserves the right to impose a longer period of exclusion, depending on the gravity of the misconduct.

- 5.3 If the Tenderer/Service Provider/Contractor can prove that it has restored the damage caused by it and has installed a suitable corruption prevention system, or taken other remedial measures as the circumstances of the case may require, Transnet may at its own discretion revoke the exclusion or suspend the imposed penalty.

6 TRANSNET'S LIST OF EXCLUDED TENDERERS (BLACKLIST)

- 6.1 The process of restriction is used to exclude a company/person from conducting future business with Transnet and other organs of state for a specified period. No Tender shall be awarded to a Tenderer whose name (or any of its members, directors, partners or trustees) appear on the Register of Tender Defaulters kept by National Treasury, or who have been placed on National Treasury's List of Restricted Suppliers. Transnet reserves the right to withdraw an award, or cancel a contract concluded with a Tenderer should it be established, at any time, that a tenderer has been restricted with National Treasury by another government institution.
- 6.2 All the stipulations on Transnet's restriction process as laid down in Transnet's Supply Chain Policy and Procurement Procedures Manual (CPM included) are included herein by way of reference. Below follows a condensed summary of this restriction procedure.
- 6.3 On completion of the restriction procedure, Transnet will submit the restricted entity's details (including the identity number of the individuals and registration number of the entity) to National Treasury for placement on National Treasury's Database of Restricted Suppliers for the specified period of exclusion. National Treasury will make the final decision on whether to restrict an entity from doing business with any organ of state for a period not exceeding 10 years and place the entity concerned on the Database of Restricted Suppliers published on its official website.
- 6.4 The decision to restrict is based on one of the grounds for restriction. The standard of proof to commence the restriction process is whether a "*prima facie*" (i.e. on the face of it) case has been established.
- 6.5 Depending on the seriousness of the misconduct and the strategic importance of the Goods/Services, in addition to restricting a company/person from future business, Transnet may decide to terminate some or all existing contracts with the company/person as well.
- 6.6 A Service Provider or Contractor to Transnet may not subcontract any portion of the contract to a blacklisted company.

6.7 Grounds for blacklisting include: If any person/Enterprise which has submitted a Tender, concluded a contract, or, in the capacity of agent or subcontractor, has been associated with such Tender or contract:

- a) Has, in bad faith, withdrawn such Tender after the advertised closing date and time for the receipt of Tenders;
- b) has, after being notified of the acceptance of his Tender, failed or refused to sign a contract when called upon to do so in terms of any condition forming part of the Tender documents;
- c) has carried out any contract resulting from such Tender in an unsatisfactory manner or has breached any condition of the contract;
- d) has offered, promised or given a bribe in relation to the obtaining or execution of the contract;
- e) has acted in a fraudulent or improper manner or in bad faith towards Transnet or any Government Department or towards any public body, Enterprise or person;
- f) has made any incorrect statement in a certificate or other communication with regard to the Local Content of his Goods or his B-BBEE status and is unable to prove to the satisfaction of Transnet that:
 - (i) he made the statement in good faith honestly believing it to be correct; and
 - (ii) before making such statement he took all reasonable steps to satisfy himself of its correctness;
- g) caused Transnet damage, or to incur costs in order to meet the contractor's requirements and which could not be recovered from the contractor;
- h) has litigated against Transnet in bad faith.

6.8 Grounds for blacklisting include a company/person recorded as being a company or person prohibited from doing business with the public sector on National Treasury's database of Restricted Service Providers or Register of Tender Defaulters.

6.9 Companies associated with the person/s guilty of misconduct (i.e. entities owned, controlled or managed by such persons), any companies subsequently formed by the person(s) guilty of the misconduct and/or an existing company where such person(s) acquires a controlling stake may be considered for

blacklisting. The decision to extend the blacklist to associated companies will be at the sole discretion of Transnet.

7 PREVIOUS TRANSGRESSIONS

- 7.1 The Tenderer/Service Provider/Contractor hereby declares that no previous transgressions resulting in a serious breach of any law, including but not limited to, corruption, fraud, theft, extortion and contraventions of the Competition Act 89 of 1998, which occurred in the last 5 (five) years with any other public sector undertaking, government department or private sector company that could justify its exclusion from its registration on the Tenderer's/Service Provider's/Contractor's database or any tendering process.
- 7.2 If it is found to be that the Tenderer/Service Provider/Contractor made an incorrect statement on this subject, the Tenderer/Service Provider/Contractor can be rejected from the registration process or removed from the Tenderer/Service Provider/Contractor database, if already registered, for such reason (refer to the Breach of Law Returnable Form contained in the document.)

8 SANCTIONS FOR VIOLATIONS

- 8.1 Transnet shall also take all or any one of the following actions, wherever required to:
- a) Immediately exclude the Tenderer/Service Provider/Contractor from the tendering process or call off the pre-contract negotiations without giving any compensation to the Tenderer/Service Provider/Contractor. However, the proceedings with the other Tenderer/Service Provider/Contractor may continue;
 - b) Immediately cancel the contract, if already awarded or signed, without giving any compensation to the Tenderer/Service Provider/Contractor;
 - c) Recover all sums already paid by Transnet;
 - d) Encash the advance bank guarantee and performance bond or warranty bond, if furnished by the Tenderer/Service Provider/Contractor, in order to recover the payments, already made by Transnet, along with interest;
 - e) Cancel all or any other contracts with the Tenderer/Service Provider/Contractor; and
 - f) Exclude the Tenderer/Service Provider/Contractor from entering into any Tender with Transnet in future.

9 CONFLICTS OF INTEREST

- 9.1 A conflict of interest includes, inter alia, a situation in which:
- a) A Transnet employee has a personal financial interest in a tendering / supplying entity; and

- b) A Transnet employee has private interests or personal considerations or has an affiliation or a relationship which affects, or may affect, or may be perceived to affect his / her judgment in action in the best interest of Transnet, or could affect the employee's motivations for acting in a particular manner, or which could result in, or be perceived as favouritism or nepotism.

9.2 A Transnet employee uses his / her position, or privileges or information obtained while acting in the capacity as an employee for:

- a) Private gain or advancement; or
- b) The expectation of private gain, or advancement, or any other advantage accruing to the employee must be declared in a prescribed form.

Thus, conflicts of interest of any Tender committee member or any person involved in the sourcing process must be declared in a prescribed form.

9.3 If a Tenderer/Service Provider/Contractor has or becomes aware of a conflict of interest i.e. a family, business and / or social relationship between its owner(s)/ member(s)/director(s)/partner(s)/shareholder(s) and a Transnet employee/ member of Transnet's Board of Directors in respect of a Tender which will be considered for the Tender process, the Tenderer/Service Provider/ Contractor:

- a) must disclose the interest and its general nature, in the Request for Proposal ("RFX") declaration form; or
- b) must notify Transnet immediately in writing once the circumstances has arisen.

9.4 The Tenderer/Service Provider/Contractor shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any committee member or any person involved in the sourcing process, where this is done, Transnet shall be entitled forthwith to rescind the contract and all other contracts with the Tenderer/Service Provider/Contractor.

10 DISPUTE RESOLUTION

10.1 Transnet recognises that trust and good faith are pivotal to its relationship with its Tenderer / Service Provider / Contractor. When a dispute arises between Transnet and its Tenderer / Service Provider / Contractor, the parties should use their best endeavours to resolve the dispute in an amicable manner, whenever possible. Litigation in bad faith negates the principles of trust and good faith on which commercial relationships are based. Accordingly, following a blacklisting process as mentioned in paragraph 6 above, Transnet will not do business with a company that litigates against it in bad faith or is involved in any action that reflects bad faith on its part. Litigation in bad faith includes, but is not limited to the following instances:

- a) **Vexatious proceedings:** these are frivolous proceedings which have been instituted without proper grounds;

- b) **Perjury:** where a Tenderer / Service Provider / Contractor make a false statement either in giving evidence or on an affidavit;
- c) **Scurrilous allegations:** where a Tenderer / Service Provider / Contractor makes allegations regarding a senior Transnet employee which are without proper foundation, scandalous, abusive or defamatory; and
- d) **Abuse of court process:** when a Tenderer / Service Provider / Contractor abuses the court process in order to gain a competitive advantage during a Tender process.

11 GENERAL

- 11.1 This Integrity Pact is governed by and interpreted in accordance with the laws of the Republic of South Africa.
- 11.2 The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the law relating to any civil or criminal proceedings.
- 11.3 The validity of this Integrity Pact shall cover all the tendering processes and will be valid for an indefinite period unless cancelled by either Party.
- 11.4 Should one or several provisions of this Integrity Pact turn out to be invalid the remainder of this Integrity Pact remains valid.
- 11.5 Should a Tenderer/Service Provider/Contractor be confronted with dishonest, fraudulent or corruptive behaviour of one or more Transnet employees, Transnet expects its Tenderer/Service Provider/Contractor to report this behaviour directly to a senior Transnet official/employee or alternatively by using Transnet's "Tip-Off Anonymous" hotline number 0800 003 056, whereby your confidentiality is guaranteed.

The Parties hereby declare that each of them has read and understood the clauses of this Integrity Pact and shall abide by it. To the best of the Parties' knowledge and belief, the information provided in this Integrity Pact is true and correct.

I duly authorised by the tendering entity, hereby certify that the tendering entity are **fully acquainted** with the contents of the Integrity Pact and further **agree to abide by it** in full.

Signature

Date

T2.2-24 : Supplier Code of Conduct

Transnet SOC Limited aims to achieve the best value for money when buying or selling goods and obtaining services. This however must be done in an open and fair manner that supports and drives a competitive economy. Underpinning our process are several acts and policies that any supplier dealing with Transnet must understand and support. These are:

- **The Transnet Procurement Policy – A guide for Tenderers.**
- **Section 217 of the Constitution - the five pillars of Public PSCM (Procurement and Supply Chain Management): fair, equitable, transparent, competitive and cost effective;**
- **The Public Finance Management Act (PFMA);**
- **The Broad Based Black Economic Empowerment Act (BBBEE)**
- **The Prevention and Combating of Corrupt Activities Act (PRECCA); and**
- **The Construction Industry Development Board Act (CIDB Act).**

This code of conduct has been included in this contract to formally appraise Transnet Suppliers of Transnet's expectations regarding behaviour and conduct of its Suppliers.

Prohibition of Bribes, Kickbacks, Unlawful Payments, and Other Corrupt Practices

Transnet is in the process of transforming itself into a self-sustaining State Owned Enterprise, actively competing in the logistics industry. Our aim is to become a world class, profitable, logistics organisation. As such, our transformation is focused on adopting a performance culture and to adopt behaviours that will enable this transformation.

1. Transnet SOC Limited will not participate in corrupt practices. Therefore, it expects its suppliers to act in a similar manner.

- Transnet and its employees will follow the laws of this country and keep accurate business records that reflect actual transactions with, and payments to, our suppliers.
- Employees must not accept or request money or anything of value, directly or indirectly, from suppliers.
- Employees may not receive anything that is calculated to:
 - Illegally influence their judgement or conduct or to ensure the desired outcome of a sourcing activity;

- Win or retain business or to influence any act or decision of any person involved in sourcing decisions; or
- Gain an improper advantage.
- There may be times when a supplier is confronted with fraudulent or corrupt behaviour of Transnet employees. We expect our Suppliers to use our “Tip-offs Anonymous” Hot line to report these acts. (0800 003 056).

2. *Transnet SOC Limited is firmly committed to the ideas of free and competitive enterprise.*

- Suppliers are expected to comply with all applicable laws and regulations regarding fair competition and antitrust practices.
- Transnet does not engage with non-value adding agents or representatives solely for the purpose of increasing BBBEE spend (fronting).

3. *Transnet’s relationship with suppliers requires us to clearly define requirements, to exchange information and share mutual benefits.*

- Generally, suppliers have their own business standards and regulations. Although Transnet cannot control the actions of our suppliers, we will not tolerate any illegal activities. These include, but are not limited to:
 - Misrepresentation of their product (origin of manufacture, specifications, intellectual property rights, etc);
 - Collusion;
 - Failure to disclose accurate information required during the sourcing activity (ownership, financial situation, BBBEE status, etc.);
 - Corrupt activities listed above; and
 - Harassment, intimidation or other aggressive actions towards Transnet employees.
- Suppliers must be evaluated and approved before any materials, components, products or services are purchased from them. Rigorous due diligence is conducted and the supplier is expected to participate in an honest and straight forward manner.
- Suppliers must record and report facts accurately, honestly and objectively. Financial records must be accurate in all material respects

- ***Conflicts of Interest***

A conflict of interest arises when personal interests or activities influence (or appear to influence) the ability to act in the best interests of Transnet SOC Limited.

- Doing business with family members.
- Having a financial interest in another company in our industry.

Where possible, contracts will be negotiated to include the above in the terms of such contracts. To the extent such terms are not included in contractual obligations and any of the above code is breached, then Transnet reserves its right to review doing business with these suppliers.

I, _____ of _____
(insert name of Director or as per Authority Resolution from Board of Directors) (insert name of Company)

hereby acknowledge having read, understood and agree to the terms and conditions set out in the "Transnet Supplier Code of Conduct."

Signed this on day _____ at

Signature

T2.2-25 Agreement in terms of Protection of Personal Information Act, 4 of 2013 ("POPIA")

1. PREAMBLE AND INTRODUCTION

- 1.1. The rights and obligation of the Parties in terms of the Protection of Personal Information Act, 4 of 2013 ("POPIA") are included as forming part of the terms and conditions of this contract.

2. PROTECTION OF PERSONAL INFORMATION

- 2.1. The following terms shall bear the same meaning as contemplated in Section 1 of the Protection of Person information act, No. of 2013 "(POPIA)":
- consent; data subject; electronic communication; information officer; operator; person; personal information; processing; record; Regulator; responsible party; special information; as well as any terms derived from these terms.
- 2.2. The Operator will process all information by the Transnet in terms of the requirements contemplated in Section 4(1) of the POPIA:
- Accountability; Processing limitation; Purpose specification; Further processing limitation; Information quality; Openness; Security safeguards and Data subject participation.
- 2.3. The Parties acknowledge and agree that, in relation to personal information of Transnet and the information of a third party that will be processed pursuant to this Agreement, the Operator is () hereinafter Operator and the Data subject is "Transnet". Operator will process personal information only with the knowledge and authorisation of Transnet and will treat personal information and the information of a third party which comes to its knowledge as confidential and will not disclose it, unless so required by law or subject to the exceptions contained in the POPIA.
- 2.4. Transnet reserves all the rights afforded to it by the POPIA in the processing of any of its information as contained in this Agreement and the Operator is required to comply with all prescripts as detailed in the POPIA relating to all information concerning Transnet.
- 2.5. In terms of this Agreement, the Operator acknowledges that it will obtain and have access to personal information of Transnet and the information of a third party and agrees that it shall only process the information disclosed by Transnet in terms of this Agreement and only for the purposes as detailed in this Agreement and in accordance with any applicable law.
- 2.6. Should there be a need for the Operator to process the personal information and the information of a third party in a way that is not agreed to in this Agreement, the Operator must request consent
- 2.7. from Transnet to the processing of its personal information or and the information of a third party in a manner other than that it was collected for, which consent cannot be unreasonably withheld.

- 2.8. Furthermore, the Operator will not otherwise modify, amend or alter any personal information and the information of a third party submitted by Transnet or disclose or permit the disclosure of any personal information and the information of a third party to any third party without prior written consent from Transnet.
- 2.9. The Operator shall, at all times, ensure compliance with any applicable laws put in place and maintain sufficient measures, policies and systems to manage and secure against all forms of risks to any information that may be shared or accessed pursuant to the services offered to Transnet in terms of this Agreement (physically, through a computer or any other form of electronic communication).
- 2.10. The Operator shall notify Transnet in writing of any unauthorised access to personal information and the information of a third party, cybercrimes or suspected cybercrimes, in its knowledge and report such crimes or suspected crimes to the relevant authorities in accordance with applicable laws, after becoming aware of such crimes or suspected crime. The Operator must inform Transnet of the breach as soon as it has occurred to allow Transnet to take all necessary remedial steps to mitigate the extent of the loss or compromise of personal information and the information of a third party and to restore the integrity of the affected personal information as quickly as is possible.
- 2.11. Transnet may, in writing, request the Operator to confirm and/or make available any personal information and the information of a third party in its possession in relation to Transnet and if such personal information has been accessed by third parties and the identity thereof in terms of the POPIA.
- 2.12. Transnet may further request that the Operator correct, delete, destroy, withdraw consent or object to the processing of any personal information and the information of a third party relating to the Transnet or a third party in the Operator's possession in terms of the provision of the POPIA and utilizing Form 2 of the POPIA Regulations.
- 2.13. In signing this addendum that is in terms of the POPIA, the Operator hereby agrees that it has adequate measures in place to provide protection of the personal information and the information of a third party given to it by Transnet in line with the 8 conditions of the POPIA and that it will provide to Transnet satisfactory evidence of these measures whenever called upon to do so by Transnet.

The Operator is required to provide confirmation that all measures in terms of the POPIA are in place when processing personal information and the information of a third party received from Transnet:

YES	
-----	--

NO	
----	--

2.14. Further, the Operator acknowledges that it will be held liable by Transnet should it fail to process personal information in line with the requirements of the POPIA. The Operator will be subject to any civil or criminal action, administrative fines or other penalty or loss that may arise as a result of the processing of any personal information that Transnet submitted to it.

2.15. Should a Tenderer have any complaints or objections to processing of its personal information, by Transnet, the Tenderer can submit a complaint to the Information Regulator on <https://www.justice.gov.za/inforeg/>, click on contact us, click on complaints.IR@justice.gov.za

3. **SOLE AGREEMENT**

3.1. The Agreement, constitute the sole agreement between the parties relating to the subject matter referred to in paragraph 1.1 of this and no amendment/variation/change shall be of any force and effect unless reduced to writing and signed by or on behalf of both parties.

Signed at _____ on this _____ day of _____ 2024

Name: _____

Title: _____

Signature: _____

.....(Pty) Ltd
(Operator)

Authorised signatory for and on behalf of(Pty) Ltd who warrants that he/she is duly authorised to sign this Agreement.

AS WITNESSES:

1. Name: _____ Signature: _____

2. Name: _____ Signature: _____

T2.2-26: Domestic prominent influential persons (DPIP) or foreign prominent public officials (FPPO)

Transnet is free to procure the services of any person within or outside the Republic of South Africa in accordance with applicable legislation. Transnet shall not conduct or conclude business transactions, with any Respondents without having:

- Considered relevant governance protocols;
- Determined the DPIP or FPPO status of that counterparty; and
- Conducted a risk assessment and due diligence to assess the potential risks that may be posed by the business relationship.

As per the Transnet Domestic Prominent Influential Persons (DPIP) and Foreign Prominent Public Officials (FPPO) and Related Individuals Policy available on Transnet website.

<https://www.transnet.net/search/pages/results.aspx?k=FPIDP#k=DPIP>,

Respondents are required to disclose any commercial relationship with a DPIP or FPPO (as defined in the Policy) by completing the following section:

The below form contains personal information as defined in the Protection of Personal Information Act, 2013 (the "Act"). By completing the form, the signatory consents to the processing of her/his personal information in accordance with the requirements of the Act. Consent cannot unreasonably be withheld.

Is the Respondent
(Complete with a "Yes" or "No")

A		Closely Related to a DPIIP/FPPO		Closely Associated to a DPIIP/FPPO	
----------	--	--	--	---	--

List all known business interests, in which a DPIIP/FPPO may have a direct/indirect interest or significant participation or involvement.

	Name of Entity / Business	Role in the Entity / Business (Nature of interest/ Participation)	Shareholding %	Registration Number	Status (Mark the applicable option with an X)	

Respondents declaring a commercial relationship with a DPIIP or FPPO are to note that Transnet is required to annually publish on its website a list of all business contracts entered into with DPIIP or FPPO. This list will include successful Respondents, if applicable.

T2.2-27: Insurance provided by the *Contractor*

Clause 84.1 in NEC3 Engineering & Construction Contract (June 2005)(amended June 2006 and April 2013) requires that the *Contractor* provides the insurance stated in the insurance table except any insurance which the *Employer* is to provide as stated in the Contract Data.

Please provide the following details for insurance which the *Contractor* is still to provide. Notwithstanding this information all costs related to insurance are deemed included in the tenderer's rates and prices.

Insurance against (See clause 84.2 of the ECC)	Name of Insurance Company	Cover	Premium
Liability for death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract			
Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R5 000 000.00			
Insurance in respect of loss of or damage to own property and equipment.			

To Whom It May Concern,

CERTIFICATE OF INSURANCE: TRANSNET (SOC) LIMITED – PRINCIPAL CONTROLLED INSURANCE

In our capacity as Insurance Brokers to the Transnet Group of Companies, we hereby certify that the undermentioned insurances are currently in place:

INSURED: Transnet (SOC) Limited

PERIOD: 1 April 2024 to 31 March 2025 (Both days inclusive)

DIVISION: Transnet Freight Rail, Transnet Engineering, Transnet Properties, Transnet Pipelines, Transnet National Ports Authority and Transnet Port Terminals

THE INSURED'S VAT NO: 4720103177

THE INSURED'S COMPANY REGISTRATION NO: 1990/000900/30

POSTAL ADDRESS (Head Office) Carlton Centre, 150 Commissioner Street, Johannesburg, 2001

CONTRACT WORKS INSURANCE

Cover Provided : Contract Works - Physical loss or damage to the Property Insured which being materials, plant and other things for incorporation into the permanent works.

Insurer : Mirabilis (Santam Limited)

Policy Number : MZAR35023-CAR

The Contract Site : Any location within the Territorial Limits upon which The Insured Contract is to be executed or carried out as more fully defined in The Insured Contract documents together with so much of the surrounding area as may be required or designated for the performance of The Insured Contract.

Territorial Limits : The Republic of South Africa.

Additional Co-Insureds:

The Contractor: All Contractors undertaking work in connection with The Insured Contract including the Employer to the extent that the Employer undertakes work in connection with The Insured Contract;

Sub-Contractors: All Sub-Contractors employed by the Contractor and all other Sub- Contractors (whether nominated or otherwise) engaged in fulfilment of The Insured Contract; and to the extent required by any contract or agreement; transporters, suppliers, manufacturers, vendors, other persons, persons providing storage facilities, plant

owners and/or operators in respect of liability loss or damage arising out of The Insured Contract; project managers, architects, land surveyors, quantity surveyors, engineers and other advisors or consultants or sub-consultants appointed in the performance of the Insured Contract activities arising at the Contract Site provided always that any such person shall not be insured hereunder in respect of liability loss or damage arising out of such person's error or omission in the performance of the professional services for which he was appointed;

Provincial & Government: any Local Provincial or Government Department with which the Insured enters into any contract or agreement for the performance of The Insured Contract; all for their respective rights and interests.

Insured Contracts : All Contracts (including any undertaking awarded or commenced prior to Inception of the Period of Insurance) involving design, construction, Performance Testing and Commissioning in respect of the Works and shall Include capital expenditure, upgrade, modification, maintenance or overhaul, refurbishment, renovation, retrofitting or alterations and additions to existing facilities undertaken by the Insured or other Insured Parties acting on their behalf but **excluding**;

- a) contracts which at award stage have a value in excess of R 1,000,000,000;
- b) contracts with an estimated construction period exceeding 48 months but increasing to 60 months in respect of rail maintenance contracts and Transnet Freight and Rail contracts for logistical support for inline inspections and identification of defects over a 5 year period in respect of Transnet's pipeline assets (excluding Defects Liability/Maintenance period);
- c) contracts involving construction or erection of petrochemical manufacturing plant(s) but this exclusion shall not apply to pipelines and other associated works undertaken by or on behalf of the Insured;
- d) contracts in or on any aircraft;
- e) Off-shore contracts;
- f) Wet Risk Contracts which at award exceeds R500,000,000;
- g) Dam Contracts
- h) Tunnel contracts which at award exceeds R50,000,000;
- i) Tunnel contracts using tunnel boring machines;
- j) Underground Mining Contracts;
- k) Horizontal Directional Drilling Contracts which at award exceeds R50,000,000;
- l) Horizontal Directional Drilling Contracts where total drilling exceeds 1 km;
- m) Horizontal Directional Drilling Contracts for pipe diameters greater than 76 cm.

Definitions

1. *"Off-shore contracts" means all works and installations in the sea or on the seabed including dredging which are accessible only by ship boat barge or helicopter and do not constitute normal wet works like harbours moles bridges wharves or sewage or cooling water intake or outlet facilities. "OffShore Contracts" shall include oilrigs and oil platforms (but not including oil platforms when connected to the land on completion). The term shall not apply to pre-fabrication works on land associated with an Off-Shore Contract.*

- 2 *"Wet Risk Contracts" shall mean any Contract and/or Works where more than thirty-five (35) percentile of its value is in a permanent body of water or is below the high water mark of any tidal body of water. The term shall include contracts for the construction of wharves, piers, marinas, causeways, breakwaters, jetties, dry docks and offshore pipelines when connected directly to on-shore facilities and canal developments. Wet Risks shall exclude Off- Shore Contracts;*
- 3 *"Dam Contracts", which term shall include weirs and hydroelectric projects involving the construction of dams or weirs;*
- 4 *"Horizontal Directional Drilling Contracts", means micro-tunnelling work for the construction of tunnels utilising surface based horizontal directional drilling equipment.*
- 5 *Tunnels" means Tunnels (Including declines) involving all of the following;*
 - (a) Works below ground level; and
 - (b) Tunnelling machinery below ground level; and
 - (c) A tunnelling crew operating the machinery below ground level;
 - (d) But shall not include Horizontal Directional Drilling Contracts
- 6 *"Horizontal Directional Drilling Contracts", means micro-tunnelling work for the construction of tunnels utilising surface based horizontal directional drilling equipment.*
- 7 *"Underground Mining Contracts", which shall mean any contract involving underground mining.*

Testing Period: 120 Days not consecutive.

Maintenance Period : 12 Months

Main Policy Extensions :

- Costs & Expenses - Limited to a maximum of R50,000,000.
- Expediting Measures – Limited to a maximum of R50,000,000.
- Professional Fees In Reinstatement Of Property Insured - Limited to a maximum of R50,000,000.
- Costs & Expenses For Removal Of Debris No Damage - Limited to a maximum of R50,000,000.
- Surrounding Property in care custody or control of the contractor – Limited to a maximum of R55,000,000.
- Fire Brigade & Public Authorities - Limited to a maximum of R10,000,000.
- Public Authority Reinstatement Costs - Limited to a maximum of R20,000,000
- Public Relationship Costs - Limited to a maximum of R1,000,000.
- Records - Limited to a maximum of R2,000,000.
- Removal to Gain Access - Limited to a maximum of R20,000,000

- Road Reserve and Servitude Extensions - Limited to a maximum of R10,000,000
- Search & Locate Costs - Limited to a maximum of R20,000,000.
- Borrowing Of Plant For Commissioning Purposes - Limited to a maximum of R10,000,000
- Escalation during Construction – 30%
- Marine Contribution Clause
- Claim Preparation Costs – Limited to a maximum of R10,000,000

Main Policy Exclusions :

- War
- Nuclear Energy Risks
- Terrorism
- Computer Loss General Exception
- DE4 (All types of Works) for defective material workmanship design plan or specification.
- LEG 3 (Mechanical or Electrical Engineering Works only) for defective material workmanship design plan or specification. Limited to maximum of 10% of the total estimated contract value in the aggregate.
- Loss or damage arising during air transit or any ocean voyage or whilst in storage thereafter.
- Occurring during any defects/maintenance period unless cause occurred prior to such defects/maintenance period
- Disappearance or by shortage revealed during routine inventory or periodic stocktaking.
- Consequential loss of whatsoever nature.
- Normal wear and tear, normal atmospheric conditions, rust, erosion, corrosion or oxidation.
- Due to its own explosion breakdown or derangement occurring after the Testing Period which has operated under load conditions.
- Second hand property due to its own electrical or mechanical breakdown or explosion.
- Cyber and Data
- Beneficial Occupation – 12 months
- Risk Mitigation – Safety Measures with Respect to Precipitation, Flood and Inundation – 10 years return period

Deductibles:

In respect of loss or damage:

Major Perils shall mean damage caused by storm, rain, tempest, wind, flood, theft, malicious damage, subsidence, collapse, earthquake, testing or commissioning and the consequences of defective design, specification, materials or workmanship (DE4).

Minor Perils shall mean damage caused by a peril not defined as Major Perils defined above.

Contracts with a contract value :

Major perils

Minor perils

0 to R100,000,000	R25,000	R15,000
R100,000,001 to R250,000,000	R50,000	R15,000
R250,000,001 to R500,000,000	R100,000	R25,000
R500,000,001 to R1,000,000,000	R150,000	R25,000

Minimum wet risk deductible of R100,000 per occurrence to apply.

Electrical Cables, Wiring and Accessories 10% of claim minimum R100,000

LEG 3 Deductible (Only in respect of Mechanical and Electrical contracts);

Contracts with a contract value	Deductible
0 to R500,000,000	R1,000,000 per occurrence
R500,000,001 to R1,000,000,000	R1,500,000 per occurrence

PUBLIC LIABILITY

Cover Provided : Contract Works Public Liability – cover the Insured's legal liability in respect of loss or damage or injury to third parties arising out of work performed in respect of the Insured Contracts.

Insurer : Stalker Hutchinson (Santam Limited)

Policy Number: 6000/132335

Territorial Limits : The Republic of South Africa.

Insured Contracts: All contracts (including any undertaking awarded or commenced prior to inception of the period of Insurance) involving design, construction, performance testing and commissioning in respect of the works and shall include capital expenditure, upgrade, modification, maintenance or overhaul, refurbishment, renovation, retrofitting or alterations and additions to existing facilities undertaken by the Insured or other Insured Parties acting on their behalf but **Excluding**:

- a) Contracts which at award stage have a value in excess of R 1,000,000,000.
- b) Contracts with an estimated construction period at award exceeding 48 months but 60 months in respect of contracts awarded prior to 1 April 2020 for rail maintenance contracts For Transnet Freight & Rail and for Transnet Pipeline's logistical support for inline inspections and identification of defects in respect of Transnet's pipeline assets (all excluding Defects Liability/Maintenance period).
- c) Contracts with a Contractual Defects Liability Maintenance Period exceeding 24 months.
- d) Contracts involving construction or erection of petrochemical manufacturing plant(s) but this exclusion shall not apply to pipelines and other associated works undertaken by or on behalf of the Insured.
- e) Contracts in or on any aircraft.
- f) Off-shore contracts - "Off-shore contracts" means all works and installations in the sea or on the seabed and do not constitute normal Wet Risk Contracts like

harbours, moles, bridges, wharves or sewage or cooling water intake or outlet facilities, piers, marinas, causeways, breakwaters, jetties, dry docks and offshore pipelines when connected directly to onshore facilities and canal developments. "Off-Shore contracts" shall include oilrigs and oil platforms.

Policy Limits:

Contractors Public Liability	R100,000,000 any one occurrence / unlimited during the Period of Insurance
Contractors Negligent Removal or weakening of Support	R100 000 000 any one occurrence and R100,000,000 per site in the aggregate during the Period of Insurance.
Statutory Legal Defence Costs	*R5 000 000 in the aggregate during the Period of Insurance.
Arrest / Assault / Defamation	*R5 000 000 in the aggregate during the Period of Insurance.
Prevention of Access	*R5 000 000 in the aggregate during the Period of Insurance.
Trespass / Nuisance	*R5 000 000 in the aggregate during the Period of Insurance.
Claims Preparation Costs	R5 000 000 any one occurrence

*Where the limits are noted as in the aggregate during the policy period of insurance, that such aggregated limit is applicable to all Transnet Insured Contracts collectively and in total and does not apply to each contract separately.

Deductible(s) : R50,000 per occurrence but increased to R5,000,000 in respect of Spread of Fire and/or Hot Works and R250,000 in respect of Sudden and Accidental Pollution and/or Goods on the Hook and/or R150,000 in respect of Developers Removal of Support.

General Policy Exclusions :

The policy does not cover:-

- deliberate, conscious and intentional disregard to take reasonable precautions.
- fines, penalties, punitive and exemplary damages.
- Pollution unless caused by a sudden, unintended and unexpected occurrence.
- cost of removing, nullifying or cleaning up the effects of pollution unless caused by a sudden, unintended and unexpected occurrence.
- the hazardous nature of asbestos.
- War And Terrorism Risks.
- Nuclear Risks.

- Actual or alleged unlawful competition, unfair practices, abuse of monopoly power, cartel activities
- Compulsory Insurance
- Loss or damage and any consequence therefrom to any Data. •
- Sanctions Exclusion
- Grid Failure

PROFESSIONAL INDEMNITY

Cover Provided :

Professional Indemnity

- a) In respect of damages which the Insured shall become legally liable to pay in consequence of neglect, error or omission by or on behalf of the Insured in the conduct or execution of their Professional Activities and Duties as defined.
- b) Prior To Handover/Rectification - against loss arising out of any defect in the works discovered prior to the issue of any practical completion or take-over certificate provided that any such defects are caused by a negligent breach of a Professional Activity or Duty by the Insured in consequence of neglect, error or omission by or on behalf of the Insured.

Insurer :

Stalker Hutchinson (Santam Limited)

Policy Number:

6000/132337

Jurisdiction :

Worldwide excluding North America

Insured Contracts:

All contracts (including any undertaking awarded or commenced prior to inception of the period of Insurance) involving design, construction, performance testing and commissioning in respect of the works and shall include capital expenditure, upgrade, modification, maintenance or overhaul, refurbishment, renovation, retrofitting or alterations and additions to existing facilities undertaken by the Insured or other Insured Parties acting on their behalf but **Excluding**:

- a) Contracts which at award stage have a value in excess of R 1,000,000,000.
- b) Contracts with an estimated construction period at award exceeding 48 months (excluding Defects Liability/Maintenance period).
- c) Contracts with a Contractual Defects Liability Maintenance Period exceeding 24 months.
- d) Contracts involving construction or erection of petrochemical manufacturing plant(s) but this exclusion shall not apply to pipelines and other associated works undertaken by or on behalf of the Insured.
- e) Contracts in or on any aircraft.
- f) Off-shore contracts - "Off-shore contracts" means all works and installations in the sea or on the seabed and do not constitute normal Wet Risk Contracts like harbours, moles, bridges, wharves or sewage or cooling water intake or outlet facilities, piers, marinas, causeways, breakwaters, jetties, dry docks and offshore pipelines when connected directly to onshore facilities and canal developments. "Off-Shore contracts" shall include oilrigs and oil platforms.

Limit Of Indemnity: Professional Indemnity - *R100,000,000 in the aggregate during the policy period of insurance.

*Where the limit is noted as in the aggregate during the policy period of insurance, that such aggregated limit is applicable to all Transnet Insured Contracts collectively and in total and does not apply to each contract separately.

Policy Extension
Limits Of Indemnity:

Claims Preparation Costs - *R7,500,000 in the aggregate during the policy period of insurance.
Loss of Documents - *R2,000,000 in the aggregate during the policy period of insurance.
Statutory Defence Costs - *R5,000,000 in the aggregate during the policy period of insurance.
Defamation - *R5,000,000 in the aggregate during the policy period of insurance.
Infringement of Copyright - *R5,000,000 in the aggregate during the policy period of insurance.

*Where the limits are noted as in the aggregate during the policy period of insurance, that such aggregated limit is applicable to all Transnet Insured Contracts collectively and in total and does not apply to each contract separately.

Deductibles: R5,000,000 each and every but R10,000 in respect of Claims Preparation Costs, Loss of Documents, Statutory Defence Costs, Defamation and Infringement Of Copyright.

Policy Special Conditions : Condition precedent to liability that the Insured is fully qualified and registered with the relevant Industry Body/Association in terms of legislation as applicable.

Prior to hand over/rectification – the insured must give prior written notice to the Insurers of the intention to take remedial action to rectify such defect and obtain the Insurers' written agreement to such action being taken and the costs and expenses expected to be expended.

Policy Main Exclusions:

- Excludes all consequential loss other than cost of re-design, rectification and replacement as a consequence of the defect.
- Excludes Supervision.
- Excludes liability arising out of environmental impairment / pollution
- Excludes the cost of removing, nullifying or cleaning-up the effects of environmental impairment/ pollution.
- Excludes war, invasion, acts of foreign enemies, hostilities or warlike operations (whether war be declared or not), civil war, rebellion, revolution, insurrection, civil commotion assuming the proportions of or amounting to an uprising, military or usurped power, any act of terrorism and nuclear risks.
- Excludes fines, penalties, punitive and exemplary damages, multiplication of compensatory damages and/or any other noncompensating damages of any kind.

- Excludes liability from the hazardous nature of asbestos.
- Excludes medical malpractice.
- Excludes failure to meet contractual requirements relating to efficiency, output or durability.
- Excludes failure to meet completion dates
- Excludes the estimation of probable costs other than cost advice and cost planning services normally provided by a Quantity Surveyor or Project manager.
- Excludes incorrect authorisation of payment.
- Excludes breach of any statutory regulation.
- Excludes liability from the insolvency, liquidation or judicial management of the Insured.
- Excludes the certification of value of work executed by any contractor where the Insured has an equity interest in such contractor;
- Excludes liability due to unlawful competition, unfair practices, abuse of monopoly power, cartel activities or breach of a competitions ac
- Sanctions Exclusion
- Grid Failure

This certificate of the insurance cover arranged is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend or alter the coverage afforded by the policies issued by Insurers.

Dennis Govender



Chief Broking Officer

T2.2-28: Form of Intent to Provide a Performance Guarantee

It is hereby agreed by the Tenderer that a Performance Guarantee drafted **exactly** as provided in the tender documents will be provided by the Guarantor named below, which is a **bank or insurer registered in South Africa**:

Name of Guarantor
(Bank/Insurer)

Address

The Performance Guarantee shall be provided within **2 (Two)** weeks after the Contract Date defined in the contract unless otherwise agreed to by the parties.

Signed

Name

Capacity

On behalf of (name of
tenderer)

Date

Confirmed by Guarantor's Authorised Representative

Signature(s)

Name (print)

Capacity

On behalf of Guarantor
(Bank/insurer)

Date



T2.2-29: Forecast Rate of Invoicing

Tenderer to submit the forecast rate of invoicing (cash-flow) based on the Tender Price and Tender Programme.

<p>Index of documentation attached to this schedule:</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
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T2.2-30: Three (3) years audited financial statements

Attached to this schedule is the last three (3) years audited financial statements of the single tenderer/members of the Joint Venture.

NAME OF COMPANY/IES and INDEX OF ATTACHMENTS:

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T2.2-31: JOB-CREATION SCHEDULE

The Government has identified State Owned Enterprises sourcing activities as a key enabler to achieve the National Development Plan (NDP) objective of reducing unemployment from the current baseline of 28% to 6%.

*In order to give effect to these job creation objectives, **Tenderers are required to provide the following undertaking of new jobs that will be created** (either by them or by their subcontractors) should they be awarded this tender.*

Tenderers to note, that if successful, any deviations from the Job creation Schedule in the contract phase will be subject to acceptance by the *Project Manager* in terms of the Conditions of Contract. Please also note the applicable Z clauses in Contract Data by *Employer*.

- (a) Please indicate total number of new jobs that will be created over the term of the contract:

Total number and value of new jobs created	Total number of new jobs	Total rand value of new jobs created

- (b) Of the total number of new jobs created, please indicate the number and value of new jobs to be created for the following designated groups:

	Total number of new jobs	Total rand value of new jobs
Black men		
Black women		
Black Youth		
Black people living in rural or underdeveloped areas or townships		
Black People with Disabilities		

- (c) Of the total number of new jobs created, please indicate the number of skilled, semi-skilled and unskilled new jobs that will be created over the term of the contract:

	Total number of Skilled jobs	Total number of Semi-skilled jobs	Total number of Unskilled jobs
Black men			
Black women			
Black Youth			
Black people living in rural or underdeveloped areas or townships			
Black People with Disabilities			
Other			

(d) Please indicate the number of new jobs to be created, broken down per quarter over the term of the contract.

Year 1	Q1	Q2	Q3	Q4
Total number of new jobs				
Number of new jobs for Black men				
Number of new jobs for black women				
Number of new jobs for black youth				
Number of new jobs for black people living in rural or underdeveloped areas or townships				
Number of new jobs for black People with Disabilities				
Number of new jobs for other categories				
Number of new skilled jobs				
Number of new semi-skilled jobs				
Number of new unskilled jobs				

C1.1: Form of Offer & Acceptance

Offer

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of:

The Provision of services To Upgrade The Existing Transnet National Ports Authority (TNPA) National Fire Service Infrastructure And Equipment Project (Phase 2a) In The Port Of Cape Town For A Period Of 1 (One) Year.

The tenderer, identified in the Offer signature block, **has examined the documents listed in the Tender Data and addenda thereto as listed in the Returnable Schedules, and by submitting this Offer has accepted the Conditions of Tender.**

By the representative of the tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance the tenderer offers to perform all of the obligations and liabilities of the *Contractor* under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the *conditions of contract* identified in the Contract Data.

The offered total of the Prices exclusive of VAT is	R
Value Added Tax @ 15% is	R
The offered total of the Prices inclusive of VAT is	R
(in words)	

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the *Contractor* in the *conditions of contract* identified in the Contract Data.

Signature(s)			
Name(s)			
Capacity			
For the tenderer:			
Name & signature of witness		Date	
Tenderer's CIDB registration number:			

Acceptance

By signing this part of this Form of Offer and Acceptance, the *Employer* identified below accepts the tenderer's Offer. In consideration thereof, the *Employer* shall pay the *Contractor* the amount due in accordance with the *conditions of contract* identified in the Contract Data. Acceptance of the tenderer's Offer shall form an agreement between the *Employer* and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Scope of Work: Works Information
Part C4	Site Information

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any).

Unless the tenderer (now *Contractor*) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s)			
Name(s)			
Capacity			
for the Employer	Transnet SOC Ltd		
Name & signature of witness		Date	

Schedule of Deviations

Note:

1. To be completed by the Employer prior to award of contract. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer's covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

No.	Subject	Details
1		
2		
3		
4		
5		

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Form shall have any meaning or effect in the contract between the parties arising from this Agreement.

	For the tenderer:		For the Employer
Signature			
Name			
Capacity			
On behalf of			Transnet SOC Ltd
Name & signature of witness			
Date			

C1.2 Contract Data

Part one - Data provided by the *Employer*

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option	
		B: Priced contract with bill of quantities
	dispute resolution Option	W1: Dispute resolution procedure
	and secondary Options	
		X2 Changes in the law
		X4: Parent company guarantee
		X7: Delay damages
		X13: Performance Bond
		X16: Retention
		X18: Limitation of liability
		Z: <i>Additional conditions of contract</i>
	of the NEC3 Engineering and Construction Contract June 2005 (amended June 2006 and April 2013)	
10.1	The <i>Employer</i> is:	Transnet SOC Ltd (Registration No. 1990/000900/30)

Clause	Statement	Data
	Address	Registered address: Transnet Corporate Centre 138 Eloff Street Braamfontein Johannesburg 2000
	Having elected its Contractual Address for the purposes of this contract as:	Transnet National Ports Authority Port of Cape Town South Arm Road Cape Town 8001
10.1	The <i>Project Manager</i> is: (Name)	Leandra Beveridge
	Address	Port of Cape Town South Arm Road Cape Town 8001
10.1	The <i>Supervisor</i> is: (Name)	TBA
	Address	Port of Cape Town South Arm Road Cape Town 8001
11.2(13)	The <i>works</i> are	To Upgrade The Existing Transnet National Ports Authority (TNPA) National Fire Service Infrastructure And Equipment Project (Phase 2a) in The Port Of Cape Town For A Period Of 1 (One) Year.
11.2(14)	The following matters will be included in the Risk Register	<ol style="list-style-type: none"> 1) <i>Absence of Signage on site.</i> 2) <i>Existing overhead services</i> 3) <i>Contact with live electrical conductors</i> 4) <i>Unplanned or uncontrolled collapse of structure during demolition</i> 5) <i>Asbestos – discovery during general dismantling and soft stripping</i>

Clause	Statement	Data		
11.2(15)	The <i>boundaries of the site</i> are	As stated in Part C4.1."Description of the Site and its surroundings"		
11.2(16)	The Site Information is in	Part C4		
11.2(19)	The Works Information is in	Part C3		
12.2	The <i>law of the contract</i> is the law of	the Republic of South Africa subject to the jurisdiction of the Courts of South Africa.		
13.1	The <i>language of this contract</i> is	English		
13.3	The <i>period for reply</i> is	Two (2) weeks		
2	The Contractor's main responsibilities	No additional data is required for this section of the <i>conditions of contract</i> .		
3	Time			
11.2(3)	The <i>completion date</i> for the whole of the <i>works</i> is	Twelve (12) Months from the Start date		
11.2(9)	The <i>key dates</i> and the <i>conditions</i> to be met are:	Condition to be met	<i>key date</i>	
		1	Demolition Survey	TBA
		2	HAZOP Study	TBA
		3	Testing & Commissioning.	TBA
		4	Handover and Project Close-out.	TBA
30.1	The <i>access dates</i> are	Part of the Site		Date
		1	TBA	TBA
		2	TBA	TBA
31.1	The <i>Contractor</i> is to submit a first programme for acceptance within	2 weeks of the Contract Date.		
31.2	The <i>starting date</i> is	TBA		
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than	Two (2) weeks.		

Clause	Statement	Data
35.1	The <i>Employer</i> is not willing to take over the <i>works</i> before the Completion Date.	
4	Testing and Defects	
42.2	The <i>defects date</i> is	Fifty-two (52) weeks after Completion of the whole of the <i>works</i> .
43.2	The <i>defect correction period</i> is	Two (2) weeks
5	Payment	
50.1	The <i>assessment interval</i> is monthly on the	Twenty fifth (25 th) day of each successive month.
51.1	The <i>currency of this contract</i> is the	South African Rand.
51.2	The period within which payments are made is	Payment will be effected on or before the last day of the month following the month during which a valid Tax Invoice and Statement were received.
51.4	The <i>interest rate</i> is	the prime lending rate of Rand Merchant Bank.
6	Compensation events	
60.1(13)	The <i>weather measurements</i> to be recorded for each calendar month are,	the cumulative rainfall (mm)
		the number of days with rainfall more than 10 mm
		the number of days with minimum air temperature less than 0 degrees Celsius
		the number of days with snow lying at 08:00 hours South African Time
		and these measurements:
	The place where weather is to be recorded (on the Site) is:	The <i>Contractor's</i> Site establishment area
	The <i>weather data</i> are the records of past <i>weather measurements</i> for each calendar month which were recorded at:	The City of Cape Town

Clause	Statement	Data
	and which are available from:	South African Weather Service 012 367 6023 or info3@weathersa.co.za .
8	Risks and insurance	
80.1	These are additional <i>Employer's</i> risks	None
84.1	The <i>Employer</i> provides these insurances from the Insurance Table	
	1 Insurance against:	Loss of or damage to the <i>works</i> , Plant and Materials is as stated in the Insurance policy for Contract Works/ Public Liability.
	Cover / indemnity:	to the extent as stated in the insurance policy for Contract Works / Public Liability
	The deductibles are:	as stated in the insurance policy for Contract Works / Public Liability
	2 Insurance against:	Loss of or damage to property (except the <i>works</i> , Plant and Materials & Equipment) and liability for bodily injury to or death of a person (not an employee of the <i>Contractor</i>) arising out of or in connection with the performance of the Contract as stated in the insurance policy for Contract Works / Public Liability
	Cover / indemnity	Is to the extent as stated in the insurance policy for Contract Works / Public Liability
	The deductibles are	as stated in the insurance policy for Contract Works / Public Liability
	3 Insurance against:	Loss of or damage to Equipment (Temporary Works only) as stated in the insurance policy for contract Works and Public Liability
	Cover / indemnity	Is to the extent as stated in the insurance policy for Contract Works / Public Liability
	The deductibles are:	As stated in the insurance policy for Contract Works / Public Liability

Clause	Statement	Data	
	4 Insurance against:	Contract Works SASRIA insurance subject to the terms, exceptions and conditions of the SASRIA coupon	
	Cover / indemnity	Cover / indemnity is to the extent provided by the SASRIA coupon	
	The deductibles are	The deductibles are, in respect of each and every theft claim, 0,1% of the contract value subject to a minimum of R2,500 and a maximum of R25,000.	
	Note:	The deductibles for the insurance as stated above are listed in the document titled "Certificate of Insurance: Transnet (SOC) Limited Principal Controlled Insurance."	
84.2	The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract for any one event is	The <i>Contractor</i> must comply at a minimum with the provisions of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended.	
	The <i>Contractor</i> provides these additional Insurances	1	Where the contract requires that the design of any part of the <i>works</i> shall be provided by the <i>Contractor</i> the <i>Contractor</i> shall satisfy the <i>Employer</i> that professional indemnity insurance cover in connection therewith has been affected

Clause	Statement	Data	
		2	Where the contract involves manufacture, and/or fabrication of Plant & Materials, components or other goods to be incorporated into the <i>works</i> at premises other than the site, the <i>Contractor</i> shall satisfy the <i>Employer</i> that such plant & materials, components or other goods for incorporation in the <i>works</i> are adequately insured during manufacture and/or fabrication and transportation to the site.
		3	Should the <i>Employer</i> have an insurable interest in such items during manufacture, and/or fabrication, such interest shall be noted by endorsement to the <i>Contractor's</i> policies of insurance as well as those of any sub-contractor
		4	Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R 5 000 000
		7	The insurance coverage referred to in 1, 2, 3, and 4 above shall be obtained from an insurer(s) in terms of an insurance policy approved by the <i>Employer</i> . The <i>Contractor</i> shall arrange with the insurer to submit to the <i>Project Manager</i> the original and the duplicate original of the policy or policies of insurance and the receipts for payment of current premiums, together with a certificate from the insurer or insurance broker concerned, confirming that the policy or policies provide the full coverage as required. The original policy will be returned to the <i>Contractor</i> .

Clause	Statement	Data
84.2	The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the <i>Contractor</i>) caused by activity in connection with this contract for any one event is	Whatever the <i>Contractor</i> requires in addition to the amount of insurance taken out by the <i>Employer</i> for the same risk.
84.2	The insurance against loss of or damage to the works, Plant and Materials as stated in the insurance policy for contract works and public liability selected from:	Principal Controlled Insurance policy for Contract
9	Termination	There is no additional Contract Data required for this section of the <i>conditions of contract</i> .
10	Data for main Option clause	
B	Priced contract with Bill of Quantities	No additional data is required for this Option.
60.6	The <i>method of measurement</i> is	The Bill of Quantities have been measured in accordance with SANS 1200 unless indicated otherwise.
11	Data for Option W1	
W1.1	The <i>Adjudicator</i> is	Both parties will agree as and when a dispute arises. If the parties cannot reach an agreement on the <i>Adjudicator</i> , the Chairman of the Association of Arbitrators will appoint an <i>Adjudicator</i> .
W1.2(3)	The <i>Adjudicator nominating body</i> is:	The Chairman of the Association of Arbitrators (Southern Africa)
	If no <i>Adjudicator nominating body</i> is entered, it is:	the Association of Arbitrators (Southern Africa)
W1.4(2)	The <i>tribunal</i> is:	Arbitration

Clause	Statement	Data
W1.4(5)	The <i>arbitration procedure</i> is	The Rules for the Conduct of Arbitrations of the Association of Arbitrators (Southern Africa)
	The place where arbitration is to be held is	Cape Town, Western Cape, South Africa
	The person or organisation who will choose an arbitrator - if the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is	The Chairman of the Association of Arbitrators (Southern Africa)
12	Data for secondary Option clauses	
X2	Changes in the law	No additional data is required for this Option
X4	Parent company guarantee	No additional data is required for this Option
X7	Delay damages	
X7.1	Delay damages for Completion of the whole of the <i>works</i> are	Thirty thousand rands (R30 000.00) per day
X13	Performance bond	
X13.1	The amount of the performance bond is	Ten per cent (10%) of the total of the Prices
X16	Retention	
X16.1	The retention free amount is	Nil
	The retention percentage is	Five per cent (5%) on all payments certified.
X18	Limitation of liability	

Clause	Statement	Data
X18.1	The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to:	Nil
X18.2	For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to:	The deductible of the relevant insurance policy
X18.3	The <i>Contractor's</i> liability for Defects due to his design which are not listed on the Defects Certificate is limited to:	The cost of correcting the Defect
X18.4	The <i>Contractor's</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	The Total of the Prices
X18.5	The <i>end of liability date</i> is	Five (5) years after Completion of the whole of the works
Z	<i>Additional conditions of contract are:</i>	
Z4	Additional clause relating to Performance Bonds and/or Guarantees	
Z4.1		The Performance Guarantee under X13 above shall be an irrevocable, on-demand performance guarantee, to be issued exactly in the form of the Pro Forma documents provided for this purpose under C1.3 (Forms of Securities), in favour of the <i>Employer</i> by a financial institution reasonably acceptable to the <i>Employer</i> .

<p>Z5</p> <p>Z5.1</p>	<p>Additional clauses relating to Joint Venture</p>	<p>Insert the additional core clause 27.5</p> <p>27.5. In the instance that the <i>Contractor</i> is a joint venture, the <i>Contractor</i> shall provide the <i>Employer</i> with a certified copy of its signed joint venture agreement, and in the instance that the joint venture is an 'Incorporated Joint Venture,' the Memorandum of Incorporation, within 4 (four) weeks of the Contract Date.</p> <p>The Joint Venture agreement shall contain but not be limited to the following:</p> <ul style="list-style-type: none"> • A brief description of the Contract and the Deliverables; • The name, physical address, communications addresses and domicilium citandi et executandi of each of the constituents and of the Joint Venture; • The constituent's interests; • A schedule of the insurance policies, sureties, indemnities and guarantees which must be taken out by the Joint Venture and by the individual constituents; • Details of an internal dispute resolution procedure; • Written confirmation by all of the constituents: <ul style="list-style-type: none"> i. of their joint and several liabilities to the <i>Employer</i> to Provide the Works; ii. identification of the lead partner in the joint venture confirming the authority of the lead partner to bind the joint venture through the <i>Contractor's</i> representative; iii. Identification of the roles and responsibilities of the constituents to provide the Works.
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Clause	Statement	Data
		<ul style="list-style-type: none"> Financial requirements for the Joint Venture: <ul style="list-style-type: none"> iv. the working capital requirements for the Joint Venture and the extent to which and manner whereby this will be provided and/or guaranteed by the constituents from time to time; v. the names of the auditors and others, if any, who will provide auditing and accounting services to the Joint Venture.
Z5.2		<p>Insert additional core clause 27.6</p> <p>27.6. The <i>Contractor</i> shall not alter its composition or legal status of the Joint Venture without the prior approval of the <i>Employer</i>.</p>
Z6	Additional obligations in respect of Termination	
Z6.1		<p>The following will be included under core clause 91.1:</p> <p>In the second main bullet, after the word 'partnership' add 'joint venture whether incorporate or otherwise (including any constituent of the joint venture)' and</p> <p>Under the second main bullet, insert the following additional bullets after the last sub-bullet:</p> <ul style="list-style-type: none"> commenced business rescue proceedings (R22) repudiated this Contract (R23)
Z6.2	Termination Table	<p>The following will be included under core clause 90.2 Termination Table as follows:</p> <p>Amend "A reason other than R1 – R21" to "A reason other than R1 – R23"</p>
Z6.3		Amend "R1 – R15 or R18" to "R1 – R15, R18, R22 or R23."

Clause	Statement	Data
Z7	Right Reserved by the Employer to Conduct Vetting through SSA	
Z7.1		<p>The <i>Employer</i> reserves the right to conduct vetting through State Security Agency (SSA) for security clearances of any <i>Contractor</i> who has access to National Key Points for the following without limitations:</p> <ol style="list-style-type: none"> 1. Confidential – this clearance is based on any information which may be used by malicious, opposing or hostile elements to harm the objectives and functions of an organ of state.
		<ol style="list-style-type: none"> 2. Secret – clearance is based on any information which may be used by malicious, opposing or hostile elements to disrupt the objectives and functions of an organ of state. 3. Top Secret – this clearance is based on information which may be used by malicious, opposing or hostile elements to neutralise the objectives and functions of an organ of state.
Z8	Additional Clause Relating to Collusion in the Construction Industry	
Z8.1		The contract award is made without prejudice to any rights the <i>Employer</i> may have to take appropriate action later with regard to any declared tender rigging including blacklisting.
Z9	Protection of Personal Information Act	
Z9.1		The <i>Employer</i> and the <i>Contractor</i> are required to process information obtained for the duration of the Agreement in a manner that is aligned to the Protection of Personal Information Act.

Clause	Statement	Data
Z10		Intellectual Property Rights
Z10.1		IP Rights remain vested in the originator and shall not be used for any reason whatsoever, other than carrying out the service
Z10.2		The <i>Contractor</i> gives the employer irrevocable, transferrable, non-exclusive, royalty free license to use and copy all IP related to the works for the purpose of construction, repairing, demolishing, operating, and maintaining the works.
Z10.3		The Contractor shall indemnify and hold the employer harmless against and from any claim alleging an infringement of IP rights ("the claim") which arises out of or relating to:

C1.2 Contract Data

Part two - Data provided by the *Contractor*

The tendering *Contractor* is advised to read both the NEC3 Engineering and Construction Contract - June 2005 (with amendments June 2006 and April 2013) and the relevant parts of its Guidance Notes (ECC3-GN) in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on pages 156 to 158 of the ECC3 Guidance Notes.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

Clause	Statement	Data
10.1	The <i>Contractor</i> is (Name):	
	Address	
	Tel No.	
	Fax No.	
11.2(8)	The <i>direct fee percentage</i> is	%
	The <i>subcontracted fee percentage</i> is	%
11.2(18)	The <i>working areas</i> are the Site and	
24.1	The <i>Contractor's</i> key persons are:	
	1 Name:	
	Job:	
	Responsibilities:	
	Qualifications:	
	Experience:	
	2 Name:	
	Job	
	Responsibilities:	
	Qualifications:	
	Experience:	

		CV's (and further key persons data including CVs) are appended to Tender Schedule entitled T2.2 - 05.
11.2(14)	The following matters will be included in the Risk Register	
31.1	The programme identified in the Contract Data is	
B	Priced contract with bill of quantities	
11.2(21)	The <i>bill of quantities</i> is in	
11.2(31)	The tendered total of the Prices is	: (in figures) :(in words), excluding VAT
	Data for Schedules of Cost Components	<i>Note "SCC" means Schedule of Cost Components starting on page 60 of ECC, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC.</i>

B	Priced contract with bill of quantities	Data for the Shorter Schedule of Cost Components		
41 in SSCC	The percentage for people overheads is:	%		
21 in SSCC	The published list of Equipment is the last edition of the list published by			
	The percentage for adjustment for Equipment in the published list is	% (state plus or minus)		
22 in SSCC	The rates of other Equipment are:	Equipment	Size or capacity	Rate

61 in SSCC	The hourly rates for Defined Cost of design outside the Working Areas are	Category of employee		Hourly rate
62 in SSCC	The percentage for design overheads is	%		
63 in SSCC	The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are:			

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C1.3 Forms of Securities

Pro forma Performance Guarantee

For use with the NEC3 Engineering & Construction Contract - June 2005 (with amendments June 2006 and April 2013)

The conditions of contract stated in the Contract Data Part 1 include the following Secondary Option:

Option X13: Performance bond

The pro forma document for this Guarantee is provided here for convenience but is to be treated as part of the Works Information.

The organisation providing the Guarantee does so by copying the pro forma document onto its letterhead without any change to the text or format and completing the required details. The completed document is then given to the Employer within the time stated in the contract.

The Performance Bond needs to be issued by an institution that are reasonably acceptable to the Employer.

Transnet may choose to not to accept an Issuer. Should the issuer not being accepted, the performance bond needs to be replaced by an issuer that are acceptable to Transnet. Issuers need to be verified for acceptance by Transnet before a performance bond is issued.

Pro-forma Performance Bond (for use with Option X13)

(to be reproduced exactly as shown below on the letterhead of the Surety)

Transnet SOC Ltd
C/o **Transnet National Ports Authority**

Transnet Corporate Centre
138 Eloff Street
Braamfontein
Johannesburg
2000

Date:

Dear Sirs,

PERFORMANCE BOND FOR CONTRACT NO. TNPA/2024/06/0007/67960/RFP

With reference to the above numbered contract made or to be made between

TRANSNET SOC LIMITED, REGISTRATION NO. 1990/000900/30 (the *Employer*) and

_____ (the *Contractor*), for

For The Provision Of Services To Upgrade The Existing Transnet National Ports Authority (TNPA) National Fire Service Infrastructure And Equipment Project (Phase 2a) In The Port Of Cape Town For A Period Of 1 (One) Year. (the *works*).

I/We the undersigned _____

on behalf of the
Guarantor _____

of physical address _____

and duly authorised thereto do hereby bind ourselves as Guarantor and co-principal debtors in solidum for the due and faithful performance of all the terms and conditions of the Contract by the *Contractor* and for all losses, damages and expenses that may be suffered or incurred by the *Employer* as a result of non-performance of the Contract by the *Contractor*, subject to the following conditions:

1. The terms *Employer*, *Contractor*, *Project Manager*, *works* and Completion Certificate have the meaning as assigned to them by the *conditions of contract* stated in the Contract Data for the aforesaid Contract.
2. We renounce all benefits from the legal exceptions "Benefit of Excussion and Division", "No value received" and all other exceptions which might or could be pleaded against the

validity of this bond, with the meaning and effect of which exceptions we declare ourselves to be fully acquainted.

3. The *Employer* has the absolute right to arrange his affairs with the *Contractor* in any manner which the *Employer* deems fit and without being advised thereof the Guarantor

shall not have the right to claim his release on account of any conduct alleged to be prejudicial to the Guarantor. Without derogating from the foregoing compromise, extension of the construction period, indulgence, release or variation of the *Contractor's* obligation shall not affect the validity of this performance bond.

4. This bond will lapse on the earlier of

- the date that the Guarantor receives a notice from the *Project Manager* stating that the Completion Certificate for the whole of the *works* has been issued, that all amounts due from the *Contractor* as certified in terms of the contract have been received by the *Employer* and that the *Contractor* has fulfilled all his obligations under the Contract, or
- the date that the Surety issues a replacement Performance Bond for such lesser or higher amount as may be required by the *Project Manager*.

5. Always provided that this bond will not lapse in the event the Guarantor is notified by the *Project Manager*, (before the dates above), of the *Employer's* intention to institute claims and the particulars thereof, in which event this bond shall remain in force until all such claims are paid and settled.

6. The amount of the bond shall be payable to the *Employer* upon the *Employer's* demand and no later than 7 days following the submission to the Guarantor of a certificate signed by the *Project Manager* stating the amount of the *Employer's* losses, damages and expenses incurred as a result of the non-performance aforesaid. The signed certificate shall be deemed to be conclusive proof of the extent of the *Employer's* loss, damage and expense.

7. Our total liability hereunder shall not exceed the sum of:

(say) _____

R _____

8. This Performance Bond is neither negotiable nor transferable and is governed by the laws of the Republic of South Africa, subject to the jurisdiction of the courts of the Republic of South Africa

Signed _____ on _____ day of _____ 2024
at _____ this _____



TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2024/06/0007/67960/RFP

DESCRIPTION OF THE WORKS: PROVISION OF SERVICES TO UPGRADE THE EXISTING TRANSNET NATIONAL PORTS AUTHORITY (TNPA) NATIONAL FIRE SERVICE INFRASTRUCTURE AND EQUIPMENT PROJECT (PHASE 2A) IN THE PORT OF CAPE TOWN FOR A PERIOD OF 1 (ONE) YEAR

Signature(s)		
Name(s) (printed)		
Position in Guarantor company		
Signature of Witness(s)		
Name(s) (printed)		

PART 2: PRICING DATA

Document reference	Title	No of pages
C2.1	Pricing instructions: Option B	5
C2.2	The <i>Bill of Quantities</i>	116

C2.1 Pricing instructions: Option B

1. The *conditions of contract*

1.1. How the contract prices work and assesses it for progress payments

Clause 11 in NEC3 Engineering and Construction Contract, June 2005 and 2013 (ECC) Option B states:

Identified and defined terms	11	
	11.2	<p>(21) The Bill of Quantities is the <i>bill of quantities</i> as changed in accordance with this contract to accommodate implemented compensation events and for accepted quotations for acceleration.</p> <p>(22) Defined Cost is the cost of the components in the Shorter Schedule of Cost Components whether work is subcontracted or not excluding the cost of preparing quotations for compensation events.</p> <p>(28) The Price for Work Done to Date is the total of</p> <ul style="list-style-type: none"> the quantity of the work which the <i>Contractor</i> has completed for each item in the Bill of Quantities multiplied by the rate and a proportion of each lump sum which is the proportion of the work covered by the item which the <i>Contractor</i> has completed. <p>Completed work is work without Defects which would either delay or be covered by immediately following work.</p> <p>(31) The Prices are the lump sums, and the amounts obtained by multiplying the rates by the quantities for the items in the Bill of Quantities.</p>

This confirms that Option B is a re-measurement contract, and the bill comprises only items measured using quantities and rates or stated as lump sums. Value related items are not used. Time related items are items measured using rates where the rate is a unit of time.

1.2. Function of the Bill of Quantities

Clause 55.1 in Option B states, "Information in the Bill of Quantities is not Works Information or Site Information." This confirms that instructions to do work or how it is to be done are not included in the Bill, but in the Works Information. This is further confirmed by Clause 20.1 which states, "The *Contractor* Provides the Works in accordance with the Works Information." Hence the *Contractor* does **not** Provide the Works in accordance with the Bill of Quantities. The Bill of Quantities is only a pricing document.

1.3. Guidance before pricing and measuring.

Employers preparing tenders or contract documents, and tendering contractors are advised to consult the sections dealing with the bill of quantities in the NEC3 Engineering and Construction Contract (June 2005) Guidance Notes before preparing the *bill of quantities* or before entering rates and lump sums into the *bill*.

Historically bill of quantities-based contracts in South Africa have been influenced by the different approaches of the civil engineering and building sectors of the industry through their respective discipline based standard forms of contract and methods of measurement. This is particularly apparent in the approach to the Preliminary and General bill. On the other hand, because ECC caters for a number of disciplines in the same contract, including electrical works, a different approach not currently found in local methods of measurement to the Preliminary & General bill items may have been used.

The NEC approach to the P & G bill assumes use will be made of method related charges for Equipment applied to Providing the Works based on durations shown in the Accepted Programme, fixed charges for the use of Equipment that is required throughout the construction phase, time related charges for people working in a supervisory capacity for the period required, and lump sum charges for other facilities or services not directly related to performing work items typically included in other parts of the bill.

2. Measurement and payment

2.1. Symbols

The units of measurement described in the Bill of Quantities are metric units abbreviated as follows:

Abbreviation	Unit
%	percent
h	hour
ha	hectare
kg	kilogram
kl	kilolitre
km	kilometre
km-pass	kilometre-pass
kPa	kilopascal
kW	kilowatt
l	litre
m	metre
mm	millimetre
m ²	square metre
m ² -pass	square metre pass
m ³	cubic metre
m ³ -km	cubic metre-kilometre
MN	meganewton
MN.m	meganewton-metre

MPa	megapascal
No.	number
Prov sum ¹	provisional sum
PC-sum	prime cost sum
R/only	Rate only
sum	Lump sum
t	ton (1000kg)
W/day	Workday

2.2. General assumptions

- 2.2.1. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance has been made in the quantities for waste.
- 2.2.2. The Prices and rates stated for each item in the Bill of Quantities shall be treated as being fully inclusive of all work, risks, liabilities, obligations, overheads, profit, and everything necessary as incurred or required by the *Contractor* in carrying out or providing that item.
- 2.2.3. Clause 63.13 in Option B provides that these rates and Prices may be used as a basis for assessment of compensation events instead of Defined Cost.
- 2.2.4. Where this contract requires detailed drawings, designs, or other information to be provided, and no rates or prices are included in the *bill* specifically for such matters, then the *Contractor* is deemed to have allowed for all costs associated with such requirements within the tendered rates and Prices in the Bill of Quantities.
- 2.2.5. An item against which no Price is entered will be treated as covered by other Prices or rates in the *bill of quantities*. If several items are grouped together for pricing purposes, this will be treated as a single lump sum.

¹ Provisional Sums should not be used unless absolutely unavoidable. Rather include specifications and associated bill items for the most likely scope of work, and then change later using the compensation event procedure if necessary. This is because tenderers cannot programme effectively for unknown scopes of work

2.2.6. The quantities contained in the Bill of Quantities may not be final and do not necessarily represent the actual amount of work to be done. The quantities of work assessed and certified for payment by the *Project Manager* at each assessment date will be used for determining payments due and not the quantities given in the Bill of Quantities.

2.2.7. The short descriptions of the items of payment given in the *bill of quantities* are only for the purposes of identifying the items. More detail regarding the extent of the work entailed under each item is provided in the Works Information.

2.3. Amplification of or assumptions about measurement items

For the avoidance of doubt the following is provided to assist in the interpretation of descriptions given in the *method of measurement*. In the event of any ambiguity or inconsistency between the statements in the *method of measurement* and this section, the interpretation given in this section shall be used.

C2.2 The *Bill of Quantities*

Item No	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<p><u>BILL OF QUANTITIES</u></p> <p>NOTES</p> <p>In accordance with the NEC3 contract, this is an Option B: Remeasurement priced contract with bill of quantities.</p> <p>The Employer provides the bill of quantities which is priced by the Contractor.</p> <p>The contract price is the sum of prices for all items in the bill which may include lump sums for certain items.</p> <p>When the work is done, if it is found by remeasurement that the estimated quantity is not correct, it is corrected, and payment is made to the Contractor to reflect the actual work conducted.</p>				

Item No	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<p>The monetary amounts that the Contractor fills in, in this document, shall be deemed to be algebraically accurate and fully inclusive of the following:</p> <p>Inductions, permitting, all SHERQ requirements as per the Employer's requirements, risk assessments by relevant authorities as determined by the Employer and Statutory Bodies, inspections and audits, planning, all Plant and Materials and Equipment required to undertake the complete scope of the works, access requirements for Plant and Materials and Equipment, certification of Equipment and vessels, fuels and lubricants and any other consumables, demolition and disposal of existing materials and equipment, all diving work below water and on the water surface, underwater installation by diving, procurement, offloading, material and equipment handling, storage, fabrication, equipment and infrastructure refurbishment, testing, modifications, welding, bolting, production, corrosion protection, rigging, trial fitting, marking, packing, transportation, mechanical and civil land structural and electrical and control installations, electrical and control system hook-ups and wiring, punch listing, cold and hot commissioning, trial operation, handover and project management and any other requirements not specifically mentioned but required as per industry and engineering and construction legislation and requirements.</p>				

Item No	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
	SANS 1200 A	<u>SECTION 1</u> <u>PRELIMINARY AND GENERAL</u> <u>BILL NO.1: PRELIMINARIES</u> PREAMBLES <u>Fixed preliminary items</u> Fixed preliminary items will be valuated and paid on a proven cost basis up to the total value <u>Time related preliminary items</u> Time related preliminary items will be paid on the proportion of: Value of the price of work done to date per the Project Manager's assessment (excluding activities related to materials, escalation, and compensation events) over the contract value excluding preliminaries costs <u>FIXED-CHARGE ITEMS</u> <u>Contractual requirements</u>				
1.		Permits and Site Access	sum	1.00		
2.		Establishment of Facilities on the Site	sum	1.00		
3.		Supply and install electrical connection on site camp	sum	1.00		
4.		Supply and install a water connection to site camp	sum	1.00		
5.		Removal of site establishment.	sum	1.00		
6.		Rehabilitation of site	sum	1.00		
Total Carried Forward						

Item No	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
7.		Compilation and provision to the Employer of all as-built documentation and any other associated contract documentation, including but not limited to hard copy as built drawings, operations, and maintenance where applicable	sum	1.00		
8.		Cost for compliance to Environmental Management Plan	item	1.00		
9.		Tools and Equipment	sum	1.00		
10.		Cost for compliance to construction regulation	item	1.00		
11.		All other contractual obligations	sum	1.00		
12.		Hoarding and sign boards	sum	1.00		
13.		Cost compliance to Health & safety and Quality regulation.	sum	1.00		
<u>TIME-RELATED ITEMS</u>						
14.		Company and head office overhead costs for duration of construction.	months	12.00		
15.		On site staff	months	12.00		
16.		Supervision for the duration of the project.	months	12.00		
17.		Accommodation office for site employees	months	12.00		
Total Carried Forward						

Item No	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
18.		Lockable site office for the use of Employer's staff (minimum size 3m x 5m) including the following services: Daily cleaning, 230V AC power, telecommunication facilities, office furniture (minimum of 2).	months	12.00		
19.		Ablution and latrine facilities	months	12.00		
20.		Provision of water and electricity	months	12.00		
21.		On site security to protect the contractor's assets	months	12.00		
22.		Cost for compliance to Health and Safety regulation	months	12.00		
23.		Cost for compliance to Environmental Management Plan	months	12.00		
24.		Cost for compliance to Quality Management Plan	months	12.00		
25.		Tipper truck (to the nearest dump site does not exceed 60km radius)	no.	50.00		
26.		TLB	Hrs	40.00		
27.		Crane	Hrs	250.00		
28.		Provision of Waste bins	months	12.00		
29.		Scaffolding	months	12.00		
30.		Tools and equipment.	months	12.00		
END OF SECTION 1						
Total Carried Forward						
Total of Section 1 Carried Forward to Final Summary						R

Item No	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
	SANS 1200 B	<p><u>SECTION 2: CIVIL WORKS</u></p> <p><u>BILL 1: ALTERATIONS</u></p> <p>PREAMBLES</p> <p>For preambles refer to "Model Preambles for Trades"</p> <p>SUPPLEMENTARY PREAMBLES</p> <p>Demolitions and Works on Site</p> <p>The Contractor will be held solely responsible for any damage to persons and property and for the safety of the structures.</p> <p>Old materials from alterations except were described to be re-used or handed over, become the property of the contractor</p> <p>Old materials to be carted away</p> <p>Old materials from alterations except were described as re-used or handed over, as well as all rubbish, etc. must be regularly carted from the site and not be allowed to accumulate on or around the site.</p> <p>Old materials to be re-used</p> <p>None of the old materials are to be used for new work except where specifically described as being set aside for re-use.</p> <p>Handing over of materials</p>				

Item No	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>General</u>				
		The contractor shall carry out the whole works with as little mess and noise as possible and with a minimum of disturbance to the occupants of the building. The contractor shall provide proper protection and provide, erect, and remove when directed, any temporary tarpaulins that may be necessary during the progress of the works, all to the satisfaction of the Client's Project Manager.				
		<u>Existing services</u>				
1.		Detection, exposure, protection, and alterations to existing services	Sum	1		
		<u>SITE CLEARANCE</u>				
2.		Demolish and remove structures/buildings and dismantle steelworks, etc.	Sum	1		
3.		Breakup existing bituminous surfaces	m2	1850		
		<u>REMOVAL OF EXISTING WORK</u>				
4.		Removal of an existing structural steel staircase	no.	1		
5.		Removal of existing mezzanine floor including supporting beams and posts	m2	270		
6.		Removal of existing drywall partitioning.	m2	154		
7.		Removal of an existing structural steel walkway, including supports	m2	49		
8.		Removal of an existing Prefabricated container	no.	1		
Total Carried Forward						

Item No	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
9.		Remove existing roof sheeting's. <u>Taking out Aluminium windows including windowsills and Aluminium blinds.</u>	m2	1142		
10.		600 x 900mm window	no.	15		
11.		1500 x 500mm window	no.	4		
12.		3300 x 1615mm window	no.	1		
13.		2000 x 950mm window	no.	3		
14.		4300x 1700mm window	no.	3		
15.		4300x 425mm window	no.	3		
16.		2460 x 1615mm window	no.	6		
17.		3630 x 1540mm window	no.	4		
18.		3070 x 2630mm window	no.	1		
19.		1000 x 2805mm window	no.	6		
20.		1570 x 3260mm window	no.	1		
21.		3300x 2125mm window	no.	2		
22.		600 x 500mm window	no.	1		
23.		1200 x 1560mm window	no.	4		
24.		Remove existing windowsills	m2	220		
Total Carried Forward						

Item No	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>Taking out timber doors including steel frames</u>				
25.		Remove 910x2100mm two panel door including steel frame and make good of surface	no.	11		
26.		Remove double fire door including frame and make good of surface	no.	2		
		<u>DEMOLITION</u>				
27.		Break down and remove existing 230mm thick brick wall	m2	15		
28.		Break down and remove existing 115mm thick brick wall	m2	95		
29.		Break down and remove existing concrete floor, (ground floor for lift and fire truck parking) with average depth of 300mm	m2	130		
		<u>OPENINGS THROUGH EXISTING FLOOR</u>				
30.		Break down and remove existing concrete	m3	116.85		
		<u>REMOVAL OF EXISTING FENCING</u>				
31.		Take down and remove Steel fence approximately 2.4m high	m	157.78		
32.		Double gate 4m x 1.8m high.	no.	2		
33.		Cut through 150 thick existing floor slabs.	m2	60		
Total Carried Forward						

Item No	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
34.		<u>ADDITIONS</u> <u>Cladding</u> Aluminium systems or equally approved aluminium composite panel cladding comprising of composite aluminium panels, consisting of a 0.5mm thick aluminium alloy AA3004 facing sheet bonded to a polyethylene core, fixed to aluminium sub-structure with side surround toggled to captive nut rail fixed to sub-structure with minimum fixing zone of 110mm. The whole to be designed and installed by an approved specialist, all in accordance with the manufacturer's instructions.	m2	737		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
	SANS 1200 D	<p><u>BILL NO. 2: EARTHWORKS</u></p> <p><u>PREAMBLES</u></p> <p>The Contractor is referred to the relevant clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>View site</u></p> <p>Before submitting his tender, the contractor shall visit the site and satisfy himself as to the nature and extent of the work to be done and the value of the materials contained in the buildings or portions of the buildings to be demolished. No claim for any variations of the contract sum in respect of the nature and extent of the work or of inferior or damaged materials will be entertained</p> <p><u>General</u></p> <p>Carting away of excavated material</p> <p>Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stockpiles situated on the building site</p>				

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
1.	SANS 1200DA	<u>Breaking of existing brick structures</u> Completely breakdown and remove existing brick structures. Including the demolition of substructure components and dispose to a site identified by the contractor. All safe environmental protocols to be adhered to.	no.	1		
2.		<u>EXCAVATION</u> <u>Excavation in earth.</u> Trenches not exceeding 2m deep	m3	26		
3.		Excavation for carport bases not exceeding 2m deep	m3	40		
4.		Holes not exceeding 2 m deep	m3	12		
5.		Excavation in earth not exceeding 2m deep for pipe trenches	m3	42		
6.		Lift pit exceeding 2m deep	m3	14.00		
7.		<u>Earthworks-Pipe and chamber (Small works)</u> <u>Restricted excavation</u> Restricted excavation for manholes in all materials and use for backfilling or dispose	m3	18.00		
8.		Extra-over for intermediate excavation	m3	3.60		
9.		Extra-over for hard rock excavation	m3	1.80		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
10.	SANS 1200 LC	<u>Bases Compaction</u> Rip, scarify and compact 150mm thick in-situ material to 90% Mod AASHTO for manholes, valve chambers, effluent separation tank and building foundations	m3	2.50		
11.		<u>Excavation-Communication Reticulation</u> Excavate in all materials for trenches, backfill, compact, and dispose of surplus material	m3	88.00		
12.		<u>Extra over items</u> Intermediate excavation	m3	18.00		
13.		Excavate unsuitable material from trench bottom and dispose of it	m3	9.00		
14.		<u>Manholes</u> Excavate, supply, and construct light duty electrical manholes	no.	5		
15.		<u>Excavate for holes and trenches not exceeding 2 m deep.</u> Soft rock at 10%	m3	15.49		
16.		Hard rock at 5%	m3	6.64		
17.		Risk of collapse to sides of trenches not exceeding 2m deep	m2	42.13		
18.		Risk of collapse to sides of the trenches exceeding 2m deep.	m2	10		
19.		Extra over excavation for cart away surplus excavated material	m3	22.13		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
20.		Cart away material to a dumping site to be located by the contractor not exceeding 60km radius. <u>Back excavation of vertical sides of excavations in earth for working space Including backfilling compacted to 98% Mod AASHTO density</u>	m3	936.4		
21.		Exceeding 500mm and not exceeding 1.5m deep	m2	15		
22.		Exceeding 1.5 m and not exceeding 3m deep <u>Risk of collapse of excavations</u>	m2	22		
23.		Sides of trench and hole excavations not exceeding 1,5m deep <u>Keeping excavations free of water</u>	m2	86		
24.		Keeping excavations free of all water other than subterranean water <u>Filling etc, other than bulk excavation</u>	no.	16		
25.		Earth filling obtained from the excavations and/or prescribed stockpiles on site, compacted to 95% Mod AASHTO density.	m3	90		
26.		Filling with G2 graded crushed stones supplied and carted onto site by the contractor, compacted in layers of 150mm to a density of at least 98%Mod.AASHTO	m3	90		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
27.		Filling with G4 graded crushed stones supplied and carted onto site by the contractor, compacted in layers of 150mm to a density of at least 98%Mod.AASHTO	m3	90		
28.		Filling with G7 graded crushed stones supplied and carted onto site by the contractor, compacted in layers of 150mm to a density of at least 98% Mod AASHTO	m3	90		
29.		Filling with G5 supplied and carted onto site by the contractor, compacted in layers of 150mm to a density of at least 95% Mod AASHTO	m3	90		
30.		150mm RIP and recompact in-situ to 98% Mod AASHTO	m3	90		
<u>Pavement Parking</u>						
31.		Cut to spoil in one operation to a dump site located by the contractor	m3	1246.46		
<u>Walkways Paving</u>						
32.		Cut to spoil in one operation to a dump site located by the contractor not exceeding 60km radius from the site	m3	55.67		
33.		Cart away surplus material to dumpsite located by contractor not exceeding 60 km radius	m3	140		
<u>Compaction of surfaces</u>						
34.		Compaction of ground surfaces, including scarifying for a depth of 150mm, compacted to 98% Mod AASHTO density	m2	510		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
35.		<u>Soil poisoning</u> Soil insecticide in accordance with SANS 5859, to bottom and sides of trenches	m2	510		
36.		<u>Testing</u> DCP testing on the underlaying soil.	no.	18		
37.		<u>Supply, lay, bed, and prove duct</u> Supply, lay, bed, and prove SANS 61386-24 approved 110mm diameter flexible HDPE ducts	m	524		
38.		Supply and install SANS 61386-24 approved draw wires	m	2010		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
1.	SANS 1200 LD	<u>BILL NO.3: SEWER AND STORMWATER</u>				
		<u>SEWER</u>				
		<u>Sewer (Guard House)</u>				
		<u>Supply, lay, mount joint, bed, and test pipeline</u>				
		Supply, lay, mount, joint, bed and air test 40mm dia. Class 9 u-PVC	m	35		
2.		<u>Connecting to existing sewer</u>				
		Excavate, break, connect to and re-build the existing connecting manhole	sum	1		
3.		Supply, deliver, install, and commission pump system	no.	1		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>BILL NO.4: ROADWORKS AND PARKING</u>				
		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>ASPHALT BASE AND SURFACING</u>				
		<u>Removal of topsoil</u>				
1.	SANS 1200 DM	Remove topsoil to a nominal depth of 150 mm, stockpiling and maintaining	m3	30.00		
		<u>Treatment of roadbed</u>				
2.		Roadbed preparation and compaction of material to minimum of 90% MAMDD (100% sand)	m3	300		
		<u>Cut to fill</u>				
3.		Compact to 90% MAMDD (100% for sand)	m3	25		
	SANS 1200 MH	<u>Asphalt surfacing:</u>				
4.		40mm thick Continuously graded Asphalt, 50/70 penetration grade bitumen	ton	180		
5.		100mm cores in Asphalt	no.	2		
6.		Construct 150mm G2 cement stabilised base compacted to 95% Mod AASHTO density	m3	285.67		
7.		Construct G4 subbase layer 150mm thick obtained from commercial sources, mix, shape and compact to 95% Mod AASHTO density.	m3	85.67		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
8.		Construct G7 subbase layer 150mm thick obtained from commercial sources, mix, shape and compact to 93% Mod AASHTO density	m3	285.67		
9.		150mm IN-SITU sub grade compacted to 93% Mod AASHTO density	m3	285.67		
<u>Prime Coat</u>						
10.		Emulsion prime Spray type Colprime or similar approved.	m2	1850		
<u>Variation in quantity of</u>						
11.		Prime	m2	1850		
12.		Tack	m2	1850		
13.		Bituminous binder (50/70 penetration grade)	t	0.80		
<u>PAVEMENT LAYERS</u>						
14.		Supply and lay 80mm paving blocks Type S-A, Class 35 with chamfers in herring-bone pattern and 20mm sand bedding layer	m2	150		
15.		20mm Sand blinding (river sand)	m3	6		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
16.	SANS 1200 ME	<u>Subbase</u> <u>Construct subbase course with material from commercial sources</u> 150mm thick to Asphalt Platform (G4 material compacted to 95% MAMDD)	m3	270		
17.		150mm thick to S-A Block paving (G5 material compacted to 95% MAMDD)	m3	30		
18.	SANS 1200 MF	<u>Base</u> <u>Construct base with material from commercial sources:</u> 150mm thick (G2 material compacted to 98% MAMDD) to Asphalt platform	m3	270		
19.		<u>KERBS AND CHANNELS</u> Cast IN-SITU backing concrete channel. Refer to drawing pack.	m	31		
20.		20/19mm Pre-cast concrete barrier kerb for straight kerbing (Fig. 4) 150mm. Refer to drawing THB-106 N6-2096-SH-42	m	31		
21.		Screed 70mm thick screed	m	31		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
	SANS 1200 MM	<u>ROAD MARKINGS</u>				
		<u>Road marking paint</u>				
		<u>White lines (broken or unbroken)</u>				
22.		100 mm wide	m	500		
23.		300 mm wide	m	60		
24.		White lettering and symbols	m2	5		
		<u>Setting out and pre-marking</u>				
25.		Lines	km	0.35		
		<u>Yellow lines (broken or unbroken)</u>				
26.		150 mm width	m	15		
27.		Yellow characters and symbols	m2	16		
28.		Setting out and pre marking the lines (Excluding traffic island markings lettering and symbols)	km	0.35		
		<u>ROAD SIGNS</u>				
29.		Sign faces with painted or galvanized (as stated) background. Symbols, characters, legend, and borders in engineering grade retroreflective material with signboards constructed from traffic sign (1.4mm thick)	No.	6		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
30.		<u>COVERED PARKING BAY</u> Parking canopy. Refer to Drawing No. SLA-0007-01.	m2	163.00		
31.		75mm diameter UPVC down pipe (UPVC Gutter to drain to Harvesting tanks)	m	125,40		
32.		Supply, deliver and install 10 kl Rainwater Harvesting tank.	no.	4		
33.		110mm diameter UPVC Down pipe (Main Building)	m	51		
34.		75mm diameter UPVC Down pipes (Guard House)	m	6		
<u>FENCING</u>						
<u>Excavations and concrete measured in respective trades</u>						
<u>Fencing:</u>						
35.		Construct 1,8 m high security fence complete to detail including Welded mild steel wrap panel, 100mm high galvanised "shark tooth" type spike rails, 60mm-75 single bolt clamping plate and 60mm-175 double bolt clamping plate. Refer to drawing no.SLA-0008-01	m	180		
36.		Supply, deliver and install 1.5 m high galvanised fence screen netting. Refer to drawing no.SLA-0008-01	m	95		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
37.		Extra over item 85mm- 45mm taper post sealed with UV stabilized with 12mm diameter base pin.	no.	164		
<u>VEHICLE ACCESS SLIDING GATE</u>						
38.		Steel frame welded to gated post including 100mm x 100mm x 5mm Gate post. (6 m long) including automation as per the works information. Refer to drawing no.SLA-0008-01	no.	1		
39.		Extra over Steel frame welded to gated post, rollers bolted to frame 3.78m Angle iron track, handle with padlock Welded mild steel wrap panel.	no.	1		
<u>PEDESTRIAN ACCESS SLIDING GATE</u>						
40.		100 x 100 x 5mm Gate post with Hinges, 75 x 75 x 2mm Square tubing, Welded mild steel wrap panel and Handle with padlock (2,6 m) as per the works information. Refer to drawing no.SLA-0008-01.	no.	1		
<u>TRAFFIC SIGNAL</u>						
41.		Supply and Install Traffic light (6m high). Refer to drawing no.SLA-0009-01.	no.	3.00		
<u>FLAGPOLE</u>						
42.		60mmØ X 4.5mm Galvanised steel PIPE. Refer to drawing no.SLA-0009-01.	m	2.8		
43.		50mmØ X 4mm Galvanised steel PIPE	m	10		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
44.		152 x 32mm Galvanised steel Rope cleat	no.	2.00		
45.		60mm Ø X 3mm end capping and 30mm diameter pulley	no.	2.00		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<p><u>BILL NO. 5: CONCRETE, FORMWORK AND REINFORCEMENT</u></p> <p><u>PREAMBLES</u></p> <p>The Contractor is Referred to the relevant Clauses in the separate document Model Preambles for Trades (2017 Edition) and to the Supplementary Preambles which are incorporated in this Bill</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>Cost of tests</p> <p>The costs of making, storing, and testing of concrete test cubes as required under clause 7 'Tests' of SANS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the Engineer. The testing shall be undertaken by an independent firm or institution nominated by the Contractor to the approval of the Engineer (Test cubes are measured separately)</p> <p>Formwork</p> <p>Descriptions of formwork shall be deemed to include use and waste only (except were described as left in or permanent), for fitting together in the required forms, wedging, plumbing, and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use</p>				

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
1.	SANS 1200 G	Formwork to sides of bases, pile caps, ground beams, etc., have been measured provisionally and will only be paid for where it is specifically prescribed by the Project Manager for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in Earthworks				
		<u>15MPa/19mm unreinforced concrete</u>				
		50mm blinding to trenches, bases etc.	m3	50.00		
		<u>30MPa/19mm reinforced concrete</u>				
2.		Strip footing	m3	30.00		
3.		Pad footing	m3	20.00		
4.		Concrete Plinth	m3	25.00		
5.		Bases	m3	20.00		
6.		Lift pit bases	m3	15.00		
7.		Lift pit walls	m3	30.00		
8.		Surface bed	m3	68.00		
9.		Filling to cavity of hollow walls	m3	12.00		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
10.		Concrete roof slab and beams	m3	88.00		
		<u>Encasement of cable ducts</u>				
11.		Encasement of 110mm HDPE cable ducts in grade 30/19 mm concrete	m3	93.00		
		<u>Skim Coating</u>				
12.		Skim coat to cover all imperfections in concrete walls	m3	60		
		<u>Mass concrete 15Mpa/19mm stone in footing cast against excavated surface.</u>				
13.		Concrete base and ground beam	m3	22		
		<u>Test cubes</u>				
14.		Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional) (Set of 6)	no.	42.00		
		<u>FORMWORK</u>				
15.		Rough formwork to sides of Bases	m2	20.00		
16.		Lift pit walls	m2	36.00		
17.		Smooth formwork to sides and soffits of slab	m2	43.00		
18.		Smooth formwork to beams	m2	10.00		
		<u>Finishing top surfaces of concrete smooth with a power float</u>				
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
19.		Surface beds, slabs, etc.	m2	436.00		
		<u>REINFORCEMENT (CPAP WORK GROUP NO. 114)</u>				
		<u>High tensile steel reinforcement to structural concrete work</u>				
20.		Various Diameter bars. (All in accordance with engineers' details), concrete plinths, bases et.	ton	7.5		
21.		All diameter bars in lift base and walls.	ton	6		
22.		All diameter bars beams and slabs	ton	26		
23.		All diameter bars Pad and strip footing	ton	7.2		
		<u>MOVEMENT JOINTS</u>				
		<u>Expansion joints with bitumen impregnated soft board between vertical concrete and brick surfaces</u>				
24.		Not exceeding 300mm wide	m	23.00		
		<u>Fabric reinforcement</u>				
25.		Type 395 Mesh reinforcement in concrete surface beds etc.	m2	839.00		
26.		Type 888 Mesh reinforcement in concrete surface beds, etc.	m2	22.00		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>BILL NO.6: MASONRY</u>				
		<u>MASONRY</u>				
		<u>PREAMBLES</u>				
		For preambles see "Model Preambles for trades (2008 Edition)" and applicable Supplementary Preambles as specified in the Trades. The said Model and Supplementary Preambles apply to all work described in this document. Tenderers are therefore referred to these documents for the full meaning and intention of all descriptions and no claims of any kind whatsoever will be entertained in this regard.				
		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Brickwork</u>				
		<u>Substructure</u>				
1.		280mm thick brickwork in foundation	m2	24		
2.		115mm thick brickwork in foundation	m2	10		
		<u>Superstructure</u>				
3.		280mm thick Cavity wall	m2	94		
4.		230mm thick wall	m2	24		
5.		115mm thick wall	m2	174		
6.		500mm mass brick wall	m3	4		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
7.		<u>Face brickwork</u> 280mm thick Extra over brickwork for face brickwork on one side	m2	94		
9.		<u>Brickwork reinforcement</u> 75mm wide reinforcement built horizontally	m	577		
10.		150mm wide reinforcement built horizontally.	m	584		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
1.		<p><u>ALL PAINTING TO BE DONE TO TNPA MARINE SPECIFICATION AND RELEVANT</u></p> <p><u>MANUFACTURER'S INSTRUCTIONS. OWNER TO VERIFY COLOUR.</u></p> <p>Supply and apply water based intumescent coating to all shutter ply boarding (top surface and under side)</p>	sum	1		
2.		<p>Supply and apply three-layer intumescent coating (corrosion protective primer, base coat, and top seal) to all structural steel components</p>	sum	1		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
1.		<u>BILL NO.7: WATER PROOFING</u> <u>Damp proofing of walls and floors</u> 350 Micron UPVC plastic under slab	m2	861.00		
2.		<u>SEALING STRIPS, JOINTS SEALANTS, ETC</u> An approved sealant on backing cord in accordance with manufactures specification	m	232		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
<u>BILL NO.8: SANITARY FITTINGS</u>						
<u>Supply, deliver and Install Sanitary fittings. All items must be referenced according to the design and specifications provided in the drawing pack.</u>						
1.		900mm W x 600mm Double sink	no.	2		
2.		High pressure shower head	no.	8		
3.		Shower drain with stainless steel grid. 100x100mm	no.	8		
4.		Shower mixers tap and column at 900mm high	no.	8		
5.		Shower curtain including rod 1m wide	no.	8		
6.		SS Sink (kitchen). 900mm W x 600mm	no.	1		
7.		Hand wash basin. 550mm W x 400mm	no.	11		
8.		Toilet Pans including seats	no.	8		
9.		Flushing cisterns D- code 385x170mm	no.	8		
10.		Urinal including flush valves. 750mm high	no.	6		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>BILL NO.9: CARPENTRY AND JOINERY</u> <u>PREAMBLES</u> The contractor is Referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill Replace windows with double glazed window including sills and blinds <u>PURPOSE MADE ALUMINIUM WINDOWS:</u> WO1 Supply and install as per drawings, aluminium window 600 x 900mm high overall. Refer to drawing no.ASC-0003-01. WO2 Supply and install as per drawings, aluminium window 600 x 900mm high overall. Refer to drawing no.ASC-0003-01. WO3 Supply and install as per drawings, aluminium window 1500 x 500mm high overall. Refer to drawing no.ASC-0003-01. WO4 Supply and install as per drawings, aluminium window 3300 x 1615mm high overall. Refer to drawing no.ASC-0003-01. WO5 Supply and install as per drawings, aluminium window 2000 x 950mm high overall. Refer to drawing no.ASC-0003-01.				
1.		WO1 Supply and install as per drawings, aluminium window 600 x 900mm high overall. Refer to drawing no.ASC-0003-01.	no.	11		
2.		WO2 Supply and install as per drawings, aluminium window 600 x 900mm high overall. Refer to drawing no.ASC-0003-01.	no.	4		
3.		WO3 Supply and install as per drawings, aluminium window 1500 x 500mm high overall. Refer to drawing no.ASC-0003-01.	no.	4		
4.		WO4 Supply and install as per drawings, aluminium window 3300 x 1615mm high overall. Refer to drawing no.ASC-0003-01.	no.	1		
5.		WO5 Supply and install as per drawings, aluminium window 2000 x 950mm high overall. Refer to drawing no.ASC-0003-01.	no.	3		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
6.		W08 Supply and install as per drawings, aluminium window 4300x 1700mm high overall. Refer to drawing no.ASC-0003-01.	no.	3		
7.		W09 Supply and install as per drawings, aluminium window 4300x 425mm high overall. Refer to drawing no.ASC-0003-01.	no.	1		
8.		W10 Supply and install as per drawings, aluminium window 4300 x 425mm high overall. Refer to drawing no.ASC-0003-01.	no.	2		
9.		W11 Supply and install as per drawings, aluminium window 2460 x 1615mm high overall. Refer to drawing no.ASC-0003-01.	no.	6		
10.		W12 Supply and install as per drawings, aluminium window 3630 x 1540mm high overall. Refer to drawing no.ASC-0003-01.	no.	4		
11.		W13 Supply and install as per drawings, aluminium window 3070 x 2630mm high overall. Refer to drawing no.ASC-0002-01.	no.	1		
12.		W15 Supply and install as per drawings, aluminium window 1000 x 2805mm high overall. Refer to drawing no.ASC-0002-01.	no.	6		
13.		W16 Supply and install as per drawings, aluminium window 1570 x 3260mm high overall. Refer to drawing no.ASC-0002-01.	no.	1		
14.		W17 Supply and install as per drawings, aluminium window 3300x 2125mm high overall. Refer to drawing no.ASC-0002-01.	no.	2		
15.		Supply, deliver and install as per drawings, aluminium top hung window 600 x 500mm high overall.	no.	1		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
16.		Supply, deliver and install as per drawings, aluminium sliding window 1200 x 1560mm high overall.	no.	4		
		<u>LOUVRE</u>				
17.		1200 X 1000mm weather louvre	no.	1		
18.		1250 X 1000mm weather louvre	no.	3		
19.		500 X 500mm weather louvre	no.	1		
		<u>DOORS</u>				
		<u>Galvanized steel doors</u>				
		<u>SUPPLY AND INSTALL</u> <u>PURPOSE MADE:</u>				
20.		Aluminium door 900x2032mm	no.	40		
21.		Anti bandit door 930x2095mm	no.	1		
		<u>FIRE RATED DOORS</u>				
22.		D15 Aluminium double door 1800x2032mm	no.	1		
23.		D8 fire rated hardboard double door	no.	3		
		<u>POWDER COATED ALUMINIUM</u> <u>SECTIONAL ROLL UP & TILT</u> <u>SECTIONAL OVERHEAD TYPE</u>				
24.		Supply and install 4500 x 4000mm heavy duty roller shutter with motor.	no.	2		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
25.		<u>BLINDS</u> An approved horizontal modular system sun louvre system comprising 0,6 mm thick 70S panels fixed to fascade of building	m2	194		
26.		<u>CANOPY</u> New steel and glass canopy. Refer to drawing pack.	no.	1		
27.		<u>TILES</u> <u>FLOORING: SUPPLY AND INSTALL</u> Carpet tiles as per the client's specification	m2	283		
28.		Extreme sport vinyl sheeting	m2	38		
29.		Epoxy resin	m2	533		
30.		Rubber tiles	m2	65		
31.		Porcelain tiles	m2	38		
32.		Floor tiles (Female and male toilet, showers, and change room), Laundry and PARAPL	m2	115		
33.		Timber flooring	m2	80		
34.		<u>Wall Tiles</u> Supply and Install wall tiles in the bathrooms as per the client's specification	m2	260.58		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
35.		<u>SKIRTING</u> 100mm high tile skirting	m	18		
36.		100 mm high skirting (main building)	m	230		
37.		<u>CEILING</u> Supply, deliver and install 6mm thick ceiling boards. (cut to fit), manufactured in accordance with sans 9001:2000 carrying SANS 803:2005 mark, fixed to 38x38mm timber battens at 600mm centres to brickwork using 32x2,5mm serrated ceiling nails at 150mm centres, minimum of 12mm from edge of board. all joints to be covered using h-profile steel jointing strips. all in accordance with the manufacturer's recommendations.	m2	610		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<p><u>BILL NO.10: IRONMONGERY</u></p> <p><u>PREAMBLES</u></p> <p>The Model Preambles for Trades (2008 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said Model Preambles will be entertained</p> <p>The Model Preambles for Trades (2008 edition) as published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said Model Preambles will be entertained</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>Proprietary items: Where applicable, the manufacturers' names or product catalogue titles are given in sub-headings preceding the items</p> <p>Prices are to be based on the specific products/articles specified. Should tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures, etc clarifying the features of the products/articles offered</p>				

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		On request, returnable samples are to be provided to the Principal Agent for consideration				
		<u>DOOR HANDLES</u>				
1.		Supply, deliver and install Aluminium door handles	no.	68		
2.		Supply, deliver and install locks in accordance with the design and specifications	No.	34.		
		<u>HINGES, BOLTS, LATCHES ETC.</u>				
3.		Stainless Steel Butt hinges to manufacturer's specs, subject to architect's approval	no.	68		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>BILL NO.11: STRUCTURAL STEEL</u>				
		<u>All structural steel shall comply and be as per specification</u>				
1.		254x146x41 Stanchion	ton	4		
2.		175x6.0 Stanchions	ton	3.4		
3.		76 x 3.5 Galvanized C.H. S (Circular Hollow Section)	ton	2		
4.		89x4.0 CHS (Circular Hollow Section) Tie member	ton	3		
5.		165x4.0 CHS (Circular Hollow Section)	ton	3		
6.		Eaves beam 89x3 C.H.S. (Circular Hollow Section)	ton	3		
7.		SHS Square Hollow Section stanchion 174x6.0mm	ton	2.6		
8.		Haunch cut from 254x146x31l and welded to stanchion & end plate	ton	1.28		
9.		175x75x20x3.5mm Purlins	no.	10		
10.		60x60x6 Rafter bracing	ton	1.6		
11.		40x40x4 L SAG RODS (Suspended Adjustable Galvanized Rods)	ton	1.48		
12.		254x146x31l rafter	m	68		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
13.		100x100x4mm thick plate welded to eaves beam	ton	2.6		
14.		200x200x6mm thick galvanized plate	ton	1,2		
15.		140x100x6mm plate to be welded to rafter	ton	1.8		
16.		90x100x6mm plate	ton	1.3		
17.		350x350x10mm baseplate	ton	1.2		
18.		450x280x20 thick base plate	ton	2		
19.		6mm thick stiffener	ton	1.2		
20.		60x60x6mm "L" back-to-back	ton	1.5		
21.		160 "IPE" shape steel section secondary beam @600mm c/c	ton	2		
22.		200 "IPE" shape steel section primary beams	ton	1.3		
23.		100 "IPE" shape steel section secondary beams @450mm c/c	ton	1		
24.		140 "IPE" shape steel section secondary beams @450mm c/c	ton	2		
25.		356x171x45 primary beam "I"	ton	2		
26.		Allowance for Mezzanine floor connections (All connection including plates, bolts etc.)	sum	1		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
27.		<u>GALVANISED STEEL STAIRS</u> Hot dip galvanised steel staircase completes including structural steel columns and supports, landings, walkways, and all necessary plates, fixing etc, fixed to concrete bases and building structure	no.	2		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>BILL NO.12: ROOF</u>				
		<u>PREAMBLES</u>				
1.		0.5mm thick IBR profile roofs sheeting's on 50 x 76mm SA pine battens. Spaced @720mm on isolation on engineered prefab timber trusses spaced @600mm (Guard house)	m2	32		
2.		0.5mm thick IBR profile roofs sheeting's on 50 x 76mm SA pine battens. Spaced @720mm on isolation on engineered prefab timber trusses spaced @1500mm (main building)	m2	900		
3.		Roof trusses (from SANS timber)	m2	24		
4.		38 x 114 SA pine tie beam	m	88		
5.		Galvanized mild steel bolts with heads, nuts & washers	no.	56		
6.		38 x 50 pine or brandering pine battens (timber battens)	m	101		
7.		38 x 38 Pine brandering for ceiling	m	67		
8.		Bulldog timber connectors	m	150		
9.		Bend sheeting up	m	150		
10.		Other Accessories	sum	1		
		<u>INSULATION</u>				
11.		135mm thick insulation blanket laid over purlins	m2	900		
Total Carried Forward to Section Summary						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>BILL NO.13: METALWORK</u>				
1		26mm diameter M24 holding down bolt with head, nut and washer and including maintaining in position and cast into concrete	no.	50		
2		13mm diameter M12 holding down bolt with head, nut and washer and including maintaining in position and cast into concrete	no.	150		
3		18mm diameter M16 holding down bolt with head, nut and washer and including maintaining in position and cast into concrete	no.	53		
Total Carried Forward to Section Summary						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
1		<u>BILL NO.14: PARTIONING DRYWALLS</u> 115mm nominal width drywall, 12,5mm plasterboard (120min fire rating) on 63.5mm stud <u>END OF SECTION 2</u>	m2	324		
Total Carried Forward to Section Summary						R

BILL NO.	SECTION 2 SUMMARY	AMOUNT
1	BILL NO.1: ALTERATIONS	
2	BILL NO.2: EARTHWORKS	
3	BILL NO.3: STORMWATER	
4	BILL NO.4: ROADWORKS AND PARKING	
5	BILL NO.5 CONCRETE, FORMWORK AND REINFORCEMENT	
6	BILL NO.6: MASONRY	
7	BILL NO.7: WATERPROOFING	
8	BILL NO.8: SANITARY FITTINGS	
9	BILL NO.9: CARPENTRY AND JOINERY	
10.	BILL NO.10: IRONMONGERY	
11.	BILL NO.11: STRUCTURAL STEEL	
12.	BILL NO.12: ROOF	
13.	BILL NO.13: METALWORK	
14.	BILL NO.14: PARTIONING DRYWALLS	
TOTAL EXCLUDING VAT CARRIED TO FINAL SUMMARY		R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>SECTION NO: 3 MECHANICAL</u>				
		<u>BILL NO. 1: LIFT</u>				
		<u>Design, Supply, Install, Commission and Handover passenger lift</u>				
1.		630 kg / 8-person capacity Passenger Lift with single telescopic side entry to be installed in concrete elevator shaft Car Dimensions = 1100 X 1400	sum	1		
2.		"Lateral Propping" of existing wall to enable lift shaft construction.	sum	1		
		<u>Sundry Item</u>				
3.		Allow for professional design approval for the lift by a Mechanical, Structural and Electrical Engineer.	sum	1		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>BILL NO. 2: HVAC SYSTEM</u>				
		<u>HVAC (HEATING, VENTILATION AND AIRCONDITIONING)</u>				
		<u>Ground floor:</u>				
		<u>FRESH AIR SUPPLY FANS</u>				
1.		Supply, install, test, commission and hand over FAF-01 Explosion proof Axial Fan c/w (2-OFF) 1.5 Dia POD type sound attenuator (Ducted Fan) attenuator - ø716, 2142 air qty ducted fan, 7.5kw, 79kg	no.	1		
2.		Supply, Install, test Commission and hand over 1200x1000 weather louvre c/w 2-off 600x500 filters & vermin mesh @ 2150	no.	3		
3.		Supply, Install, test, Commission, and hand over 2-off 500x500 primary washable panel filter	no.	1		
4.		Supply, Install, test Commission and hand over 2-off 500x500x300 self-support pocket secondary filters	no.	1		
		<u>EXTRACTION FANS</u>				
5.		Supply, Install, test, Commission, and hand over EAF-01 flush Mounted wall extract fan, 184 air qty, 345 x 375mm wall opening, 0.0441kw, as per drawings.	no.	2		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
6.		Supply, Install, test Commission and hand over EAF-02 flush Mounted wall extract fan, 68air qty, 245 x268mm wall opening, 0.034kw, as per drawings.	no.	1		
7.		Supply, Install, test Commission and hand over EAF-03 flush Mounted wall extract fan, 1250air qty 500mm diameter wall opening 350kW. as per drawings	no.	1		
8.		Supply, Install, test Commission and hand over EAF-04 200 diameter axial extract fan c/w (2-OFF) 1.5 Dia POD type sound attenuator (Ducted Fan) as per drawings.	no.	1		
9.		Supply, Install, test Commission and hand over EAF-05 250 diameter axial extract fan c/w (2-OFF) 1.5 Dia POD type sound attenuator (Ducted Fan) as per drawings.	no.	2		
<u>GARAGE JET FANS</u>						
10.		Supply, Install, test Commission and hand over AJF-01 Slim-Line Car Park axial Jet Thrust Fanc/w (2-OFF) 1.5 Dia POD type sound attenuator (Ducted Fan) - 2850speed, 3000 air qty,2.35kW, 70kg, as per drawings.	no.	03		
<u>AIR CONDITIONING INDOOR UNIT (SUPPLY, INSTALL, TEST, COMMISSION, AND HANDOVER)</u>						
11.		ACU-02 Indoor 262 air qty 6.8kW cooling capacity and 7kW heating capacity. Absorbed Power0.53kW	no.	3		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
12.		ACU-03 Indoor 142 air qty 3.6 kW cooling capacity and 7kW heating capacity. Absorbed Power 0.42kW	no.	4		
13.		ACU-05 indoor & Outdoor 142 air qty 4.2kW cooling capacity and 4.2kW heating capacity. absorbed Power 1.115kW	no.	1		
14.		ODU-01 VRF(Outdoor) 61.6kW cooling capacity and 69.3kW heating capacity. Absorbed Power 17.35kW	no.	1		
<u>AIR TERMINALS AND DAMPERS</u>						
<u>Refer Drawing No. M-TBH-106N62101.</u>						
15.		FAG-01 PE Fresh Air Grille (With Plenum Box) grille size 600 x300mm, 20-550ls air qty	no.	18		
16.		FAG-02 PE Fresh Air Grille (With Plenum Box) grille size 300 x150mm, 20-160ls air qty	no.	2		
17.		DG-01 AGS-T Door Grille next size 550 x400mm,	no.	23		
18.		MBD-01 Manual Blade Damper neck size 100mm diameter	no.	4		
19.		MBD-03 Manual Blade Damper neck size 300 x 250mm	no.	1		
20.		Manual Blade Damper neck size 200mm diameter	no.	4		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
21.		MBD005 Manual Blade Damper neck size 200mm diameter	no.	4		
22.		MBD-06 Manual Blade Damper neck size 250mm diameter	no.	6		
23.		MBD-07 Manual Blade Damper neck size 250 x 200mm	no.	1		
24.		MBD-08 Manual Blade Damper neck size 500 x 400mm	no.	1		
25.		MBD-09 Manual Blade Damper neck size 200 x 150mm	no.	1		
26.		EAG-01 PE Extract Air Grille (With Plenum Box) neck size 500 x 300mm	no.	2		
27.		EAD-01 Exhaust Round Diffuser 200mm diameter	no.	9		
		<u>CO DETECTION (SUPPLY, INSTALL, COMMISSION AND HAND OVER)</u>				
28.		An approved standalone gas control panel, 24V, 100mA, mount height 1.2m AFFL	no.	1		
29.		An approved CO GAS SENSOR, 24V, 70mA, Range 695m2, mount height 850mm AFFL	no.	2		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>DUCT WORK</u>				
		<u>DUCTWORK TO BE MANUFACTURED FROM GALVANISED SHEET METAL AND INSTALLED IN ACCORDANCE WITH SABS 1238 AND SABS 0173. DUCT SIZES INDICATE CLEAR INSIDE DIMENSIONS. ROUND DUCTING TO BE OF THE SPIRAL WOUND TYPE UNLESS INDICATED OTHERWISE. (SUPPLY, INSTALL, TEST, COMMISSION AND HAND OVER)</u>				
		<u>Galvanised sheet metal duct:</u>				
30.		200 x 100mm Duct	m	1.5		
31.		200 x 150mm Duct	m	15		
32.		200x200mm Duct	m	5		
33.		250 x 200mm Duct	m	10.4		
34.		250 x 250mm Duct	m	8.5		
35.		300 x 200mm Duct	m	2.51.6		
36.		300 x 250mm Duct	m	9.3		
37.		300 x 300mm Duct	m	6.5		
38.		400 x 300mm Duct	m	3		
39.		400 x 400mm Duct	m	3		
40.		500 x 400mm Duct	m	3.59		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
41.		600x300mm Duct	m	2.7		
42.		Indoor 262 air qty 6.8 kW cooling capacity and 7kW heating capacity, 0.53kW	no.	2		
43.		600 x 400mm Duct	m	3.89		
44.		600 x 500mm Duct	m	4		
45.		800 x 500mm Duct	m	3.2		
46.		800 x 600mm Duct	m	6.6		
<u>SUPPLY AIR DUCTING, INCLUDING FLEXIBLES, TO BE EXTERNALLY INSULATED WITH 25MM FRK, UNLESS STATED OTHERWISE. PLENUM BOXES TO BE INTERNALLY INSULATED. EXPOSED SUPPLY AIR DUCTING WITHIN THE CONDITIONED SPACE NEED NOT BE INSULATED UNLESS SPECIFICALLY REQUESTED.</u> <u>SPIRAL AIR DUCT:</u>						
47.		200mm diameter duct	m	10		
48.		250mm diameter duct	m	2.5		
49.		300mm diameter duct	m	8.2		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>FIRST FLOOR</u>				
		<u>FRESH AIR FAN</u>				
50.		FAF-02 explosion proof axial supply air fan, 1.5 diameter Type Sound Attenuator - Ø636, 2581 air qty ducted fan, 2.2kW, 59kg, as per drawing	no.	3		
51.		Supply, Install, Commission and hand over 1200x1000 weather louvre c/w 2-off 600x500 filters & vermin mesh @ 2150	no	1		
52.		Supply, Install, Commission and hand over 2-off 500x500 primary washable panel filter	no	1		
53.		Supply, Install, Commission and hand over 2-off 500x500x300 self-support pocket secondary filters.	no	1		
		<u>EXTRACT AIR FANS</u>				
		<u>SUPPLY, INSTALL, COMMISSION AND HAND OVER EAF-05 250 DIAMETER AXIAL EXTRACT FAN C/W (2-OFF) 1.5 DIA POD TYPE SOUND ATTENUATOR (DUCTED FAN) AS PER DRAWINGS.</u>				
		<u>AIR CONDITIONING INDOOR UNIT</u>				
54.		ACU-01 Indoor 232 air qty 4.5kW cooling capacity and 5kW heating capacity, 0.47kW	no.	2		
55.		ACU-02 Indoor 262 air qty 6.8 kW cooling capacity and 7kW heating capacity, 0.53kW	no.	2		
56.		ACU-03 Indoor 142 air qty 3.6kW cooling capacity and 4kW heating capacity, 0.42kW	no.	6		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
57.		ACU-01 Indoor 383 air qty 9.3kW cooling capacity and 9.8kW heating capacity, 0.76kW	no.	1		
58.		500 x 300mm Duct	m	7.79		
		<u>AIR TERMINALS AND DAMPERS</u> <u>Refer to drawing No. M-TBH-106N62102</u>				
59.		FAG-01 Fresh Air Grille (With Plenum Box) Grille size 600x300mm, 20-550ls air qty	no.	14		
60.		DG-01 Door Grille neck size 550 x400mm,	no.	13		
61.		MDB-01 Manual Blade Damper neck size 100mm diameter	no.	6		
62.		MBD-02 Manual Blade Damper neck size 125mm diameter	no.	1		
63.		MBD-05 Manual Blade Damper neck size 200mm diameter	no.	2		
64.		MBD-07 Manual Blade Damper neck size 300 x 200mm	no.	1		
65.		MBD-10 Manual Blade Damper neck size 500 x 300mm	no.	1		
66.		EAD-01 Exhaust Round Diffuser 200mm diameter	no.	3		
67.		2.4M ridge mounted multipurpose fire ventilators, marine resistant material, colour to architect specification, with fusible link to activate at 93°C, bird guards, 750 x2280mm	no.	8		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
68.		<p>Slope mounted natural smoke & heat exhaust ventilators or similar, marine resistant material with fusible links to activate at 93°C, with roof upstand base and bird guards. 1930 x 2040mm</p> <p><u>DUCTWORK</u></p> <p><u>DUCTWORK TO BE MANUFACTURED FROM GALVANISED SHEET METAL AND INSTALLED IN ACCORDANCE WITH SABS 1238 AND SABS 0173. DUCT SIZES INDICATE CLEAR INSIDE DIMENSIONS. ROUND DUCTING TO BE OF THE SPIRAL WOUND TYPE UNLESS INDICATED OTHERWISE.</u></p> <p><u>GALVANISED SHEET METAL DUCT</u></p>	no.	4		
69.		200 x 100mm Duct	m	10		
70.		200x150mm Duct	m	10.5		
71.		200x200mm Duct	m	2.6		
72.		250 x 150 mm Duct	m	4.5		
73.		250 x 200mm Duct	m	12		
74.		250 x 200mm Duct	m	12		
75.		300 x 250mm Duct	m	11.96		
76.		400 x 250mm Duct	m	2.85		
77.		400 x 300mm Duct	m	5.7		
78.		500 x 300mm Duct	m	8.5		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
79.		800 x 600mm Duct <u>SUPPLY AIR DUCTING, INCLUDING FLEXIBLES, TO BE EXTERNALLY INSULATED WITH 25mm FRK, UNLESS STATED OTHERWISE. PLENUM BOXES TO BE INTERNALLY INSULATED. EXPOSED SUPPLY AIR DUCTING WITHIN THE CONDITIONED SPACE NEED NOT BE INSULATED UNLESS SPECIFICALLY REQUESTED.</u> <u>Spiral air duct:</u>	m	13.58		
80.		200mm diameter duct	m	6		
81.		<u>TESTING</u> Vertical hot water storage tank with dual coil and backup heating element c/w all pipe work, valves, gauges, drip tray, vacuum breakers, shut-off valve on cold water side, multi valve (pressure-temperature control valve c/w piping to drain), thermostat, self-sacrificing anode, power wiring from isolator. Installed according to the specifications of the manufacturer.	no.	1		
82.		Hot water Circulating pump. Pump setups complete with power wiring from isolator, all necessary accessories and pipe work as per drawing specification	no.	1		
83.		Insulation for all hot water pipework, plant, fittings, and valves as per specifications.	sum	1		
84.		Pipe hangers and supports	sum	1		
Total Carried Forward						

TRANSNET NATIONAL PORTS AUTHORITY
TENDER NUMBER: TNPA/2024/06/0007/67960/RFP
DESCRIPTION OF THE WORKS: PROVISION OF SERVICES TO UPGRADE THE EXISTING TRANSNET NATIONAL PORTS
AUTHORITY (TNPA) NATIONAL FIRE SERVICE INFRASTRUCTURE AND EQUIPMENT PROJECT (PHASE 2A) IN THE PORT
OF CAPE TOWN FOR A PERIOD OF 1 (ONE) YEAR

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
85.		Testing and Commissioning	sum	1		
Total Carried to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
1.		<p><u>BILL NO.3: FIRE SYSTEM</u></p> <p><u>MECHANICAL WORK</u></p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>The Contractor is Referred to the relevant Clauses in the separate document Model Preambles for Trades (2008 Edition) and to the Supplementary Preambles which are incorporated in this Bill</p> <p><u>FIRE SYMBOLS, SUPPRESSION AND DETECTION</u></p> <p>Supply, deliver, and install, test, commission, and handover the following fire protection system, complete with fire extinguishers, hose reel, and all related signage, brackets, supports and all necessary accessories, as per the manufacturer's recommendations.</p> <p><u>GROUND FLOOR</u></p> <p><u>EMERGENCY EVACUATION:</u></p> <p>Fire symbols</p> <p><u>FIRE DETECTION</u></p> <p><u>Supply, install, test, commissioning, and handover</u></p> <p><u>Smoke detector:</u></p>	no.	64		
Total Brought Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
2.		Apollo or similar approved, XP 95 optical smoke detector AP-XP-O, 23D rating, 17-28V DC, 4mA (under alarm conditions)-20 to 60 degrees Celsius, white polycarbonate V-0 rated to UL94, led emitting red light, Sa	no.	29		
3.		<u>Fire control panel:</u> Advanced or similar approved 1-4 loop fire control panel, MX-5404, IP30, 200-240V, 1,4A continuous maximum 5A loop current, batteries as per SANS requirements, SANS 10400T, EN54-2, EN54-13	no.	1		
4.		<u>Manual call point:</u> Intelligent Manual Call Point *MCP), IP44,17-35V DC, AmA (under alarm conditions) continuous, -40 to 70 degrees Celsius, 180g flame retardant polycarbonate, with MCP hinged protective flap	no.	4		
5.		<u>FIRE SUPPRESSION</u> <u>Supply, install, test, commissioning, and Handover</u> <u>Fire hydrant:</u> Tamper proof fire hydrant valve right angle 80mm brass tamper proof key, 80mm male 3 BSP, 65mm female instantaneous coupling,4,72kg brass with fire cabinet to house 30m hose.	no.	3		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
6.		<u>Fire extinguisher:</u> An approved 5kg carbon dioxide 770mm high with 138mm diameter, 14.4kg(full) range 1-4m, with hose, horn and wall bracket, fire cabinet to house extinguishes.	no.	3		
7.		An approved 9kg dry chemical powder 545mm high with 179mm diameter, 13.2kg(full) range 1-4m, with hose, horn and wall bracket, fire cabinet to house extinguishes.	no.	5		
8.		An approved 4.5kg dry chemical powder 435mm high with 179mm diameter, 7.8kg(full) range 1-4m, with hose, horn and wall bracket, fire cabinet to house extinguishes.	no.	5		
9.		<u>Fire hose reel:</u> An approved hose reel (fixed type) 1500mm (wall bracket) 575mm (disc), 19.4kg (with hose), Hose ID 20mm x30m, pressure 300kPa(working), -30 degrees Celsius with fixed wall bracket dust cover.	no.	2		
10.		<u>NB Galvanised mild steel pipe:</u> <u>Supply, deliver, install, test, commission, and handover all Fire appliances and piping complete with all auxiliary fittings (inclusive of all dopers and risers)</u>				
11.		80mm diameter pipe	m	19.49		
		100mm diameter pipe	m	54.56		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
12.		150mm diameter pipe	m	9.12		
		<u>Reducer:</u>				
13.		80mm -100mm diameter galvanised steel reducer	no.	2		
14.		100mm - 150mm diameter galvanised steel reducer	no.	2		
		<u>SITE FIRE SUPPRESSION</u>				
		<u>Supply, install, test and commissioning</u>				
		<u>Fire hydrant:</u>				
15.		An approved tamper proof fire hydrant valve right angle 80mm brass tamper proof key, 80mm male 3 BSP, 65mm female instantaneous coupling, 4.22kg brass located at drill area.	no.	1		
16.		110mm diameter standpipe to hydrant	m	12		
17.		An approved Squat fire hydrant underground straight 80mm brass tamper proof key, 80mm male 2.5 London rounded head, 65mm female instantaneous coupling, 13kg stainless steel, located at drill area.	no.	1		
18.		110mm diameter standpipe to hydrant	m	18		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
19.		<u>Fire extinguisher:</u> An approved 9kg dry chemical powder 545mm high with 179mm diameter, 13.2kg(full) range 1-4m, with hose, horn and wall bracket, fire cabinet to house extinguishes, located at drill area.	no.	1		
20.		<u>Booster connection:</u> An approved right angle double booster right angle 80mm brass tamper proof key, 80mm male 3 BSP, 65mm female instantaneous coupling, 2kg brass located in ground floor.	no.	1		
21.		<u>Supply, deliver and install all Fire appliances and piping complete with all auxiliary fittings (inclusive of all dopers and risers)</u> 100mm diameter buried pipe on outside of building to booster connection	m	6.78		
22.		<u>FIRST FLOOR</u> <u>FIRE DETECTION</u> Supply, install, test and commissioning				
23.		<u>Sounder beacon:</u> Open area sounder beacon, IP65, 17-60V DC, 5mA continuous -25 to 70 degrees Celsius, Flame-retardant polycarbonate, 100dB(A) with sounder beacon base.	no.	1		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
24.		<u>Sounder:</u> Externally powered sounder nexus 120 sounder (KL-NX120-SR), IP66, 10-60V DC, continuous -25 to 70 degrees Celsius, 1.8kg 120 Db(A) with sounder base and power supply.	no.	1		
25.		<u>Smoke detector:</u> Optical smoke detector, 23D rating, 17-28V DC, 4mA (under alarm conditions)-20 to 60 degrees Celsius, white polycarbonate V-0 rated to UL94, led emitting red light	no.	27		
26.		<u>Heat detection:</u> Optical multi-sensor optical/heat detector, IP44, 17-28V D, 4mA (under alarm conditions)-20 to 60 degrees Celsius, white polycarbonate V-0 rated to UL94, led emitting red light	no.	3		
27.		<u>Manual call point:</u> Intelligent MCP, IP44, 17-35V DC, 4mA (under alarm conditions) continuous, -40 to 70 degrees Celsius, 180g flame retardant polycarbonate, with MCP hinged protective flap	no.	3		
28.		<u>FIRE SUPPRESSION</u> <u>SANS 10400T,1910,1086, EN 694</u> Supply, install, test commissioning, and handover				
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
29.		<u>Fire hydrant:</u> Tamper proof fire hydrant valve right angle 80mm brass tamper proof key, 80mm male 3 BSP, 65mm female instantaneous coupling, 4,72kg brass with fire cabinet to house 30m hose.	no.	2		
30.		<u>Fire extinguisher:</u> 5kg carbon dioxide 770mm high with 138mm diameter, 14.4kg(full) range 1-4m, with hose, horn and wall bracket, fire cabinet to house extinguishes.	no.	1		
31.		9kg dry chemical powder 545mm high with 179mm diameter, 13.2kg(full) range 1-4m, with hose, horn and wall bracket, fire cabinet to house extinguishes.	no.	3		
32.		4.5kg dry chemical powder 435mm high with 179mm diameter, 7.8kg(full) range 1-4m, with hose, horn and wall bracket, fire cabinet to house extinguishes.	no.	3		
33.		6L Wet chemical 430mm high with 164mm diameter, 7.8kg(full), with fire cabinet to house extinguishes.	no.	1		
34.		Other Accessories	sum	1		
35.		<u>Fire hose reel:</u> An approved hose reel (fixed type) 1500mm (wall bracket) 575mm (disc), 19.4kg (with hose), Hose ID 20mm x30m, pressure 300kPa(working), -30 to 60 degrees Celsius with fixed wall bracket dust cover.	no.	2		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
36.		<u>NB Galvanised mild steel pipe:</u> <u>Supply, deliver, install, test, commission, and handover all Fire appliances and piping complete with all auxiliary fittings (inclusive of all dopers and risers)</u> 80mm diameter pipe	m	3.76		
37.		<u>Connection to water main:</u> 110mm diameter Isolation valve to be encased in valve chamber underground in connection to water main	no.	1		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>BILL NO. 4: WATER RETICULATION</u>				
		For the supply, delivery, installation testing and Commissioning of the Water reticulation system including connection pipework, supports, hangers, pipe fittings, valves, pumps, and control systems as per the manufacturer's specification and recommendations. Provision shall also be made for all plinths/foundations required under the relevant plant.				
		<u>WATER RETICULATION EQUIPMENT</u>				
		<u>PUMBLING</u>				
1.	SANS 460	Testing and Commissioning	sum	1		
		<u>PIPE LENGTHS</u>				
		<u>Copper pipes</u>				
2.		Supply and install 65mm diameter HW	m	133.04		
3.		Supply and install 32mm diameter HW	m	68.34		
4.		Supply and install 32mm diameter HWR	m	68.34		
5.		Supply and install 20mm diameter HW	m	26		
6.		Supply and install 15mm diameter HW.	m	15		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>COLD WATER SYSTEM</u>				
7.		15mm diameter	m	22		
8.		20mm diameter	m	32		
9.		22mm diameter	m	20		
10.		25mm diameter	m	20		
11.		32mm diameter	m	15		
12.		40mm diameter	m	10		
13.		65mm diameter	m	132		
		<u>Supply and install Valves</u> <u>Refer to Water Reticulation</u> <u>Drawings</u> <u>Cold water valve</u>				
14.		Supply and install	no.	32		
		<u>Hot water valve</u>				
15.		Supply and install	no.	22		
		<u>Supply and install Reducers</u>				
16.		32 mm diameter	no.	2		
17.		20mm-20mm HW	no.	2		
18.		35-25mm HW	no.	2		
		<u>Dropper</u>				
19.		Supply and install 15 mm diameter dropper.	no.	8		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
20.		Supply and install 30 mm diameter dropper.	no.	4		
21.		<u>Risers</u> Supply and install.	no.	4		
22.		<u>WATER RETICULATION</u> Water Reticulation Equipment –11 kW heating capacity Heat Pump unit - water heat pump together with all accessories and fittings as per the specifications and manufacturer's requirements.	no.	2		
<u>END OF SECTION 3</u>						
Total Carried Forward to Section Summary						R

BILL NO.	SECTION 3 SUMMARY	AMOUNT
1	BILL NO.1: LIFT	
2	BILL NO.2: HVAC SYSTEM	
3.	BILL NO.3: FIRE SYSTEM	
4.	BILL NO. 4: WATER RETICULATION	
TOTAL EXCLUDING VAT CARRIED TO FINAL SUMMARY		R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>SECTION NO.4: CONTROL AND INSTRUMENTAL</u>				
		<u>BILL NO.1: CONTROL AND INSTRUMENTATION</u>				
		<u>Supply and install</u>				
1.		Supply, delivery, and Installation of an approved Biometric/Card Access Control Reader.	no.	16		
2.		Supply and Installation of an approved to Door station IP video intercom	no.	1		
3.		Supply and installation of an approved IP Video Intercom Receiver	no.	1		
4.		ICT Panel	no.	4		
5.		Push Bar and Strobe light Siren	no.	1		
6.		Supply and Installation of equal or similar approved to ZKTeco TS2011Pro Turnstile or similar approved - Waiste High - Drop Arm	no.	1		
7.		Supply, delivery, and Installation of Electromagnetic Door locks (maglock) equal or similar approved to Rivolt AC-MAG500 (500kg) 12 Vdc & Monitored LED including ZL bracket and armature plate	no.	9		
8.		Supply and Installation of equal or similar approved to Chamberlain CLDM1 Wireless Garage Door Monitor	no.	2		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
9.		Supply and Installation of Green resettable Break glass unit	no.	7		
10.		Supply, delivery and installation Fixed outdoor bullet IP Camera incl. mounting accessories and PSU (5MP HDR, IR PoE dual power) complete RJ45 connector	no.	8		
11.		Supply, delivery and installation Fixed indoor dome IP Camera incl. mounting accessories and PSU (5MP HDR, IR, PoE dual power) complete RJ45 connector	no.	17		
12.		Supply, delivery and installation PTZ Camera incl. mounting accessories and PSU (4MP, 30x, 120dB HDR, IR, PoE dual power) complete RJ45 connector	no.	4		
13.		Supply, delivery, and installation of equal or similar approved to XMP-K32 complete with housing, power cabling and PSU with back-up battery (12V/7Ah) and housing and accessories, complete RJ45 connector.	no.	5		
14.		Supply and Installation of Door Closer- Heavy Duty.	no.	11		
15.		Supply and install Qognify or similar approved VMS camera licenses.	no.	29		
16.		Supply, delivery and installation of equal or similar approved to Aluminium Screened PVC Grey Cable with tinned copper conductor (0.55mm2 Multi Core 8 pair).	m	1000		
17.		Supply, delivery, installation, and termination of CAT6 FTP ethernet cable (complete with terminations, labelling and associated accessories)	m	1500		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
18.		Supply, deliver and install and terminate of 2.5mm ² , 3 core PVC, ECC copper cable	m	500		
19.		Supply, delivery and installation of equal or similar approved to Aluminium Screened PVC Grey Cable with tinned copper conductor (Multi Core 8 pair)	m	150		
20.		Supply, delivery, installation, and termination of CAT6 FTP ethernet cable (complete with terminations, labelling and associated accessories)	m	2000		
21.		Autec Babylon (XMP-NT) or similar approved System Package Expansion Tags Licenses	sum	1		
22.		Access control systems and equipment training including Babylon User Training (new users) or similar approved.	sum	1		
23		Design, supply, delivery, installation, and commissioning of Traffic light signal system for the entrance facility to the Fire Building site to control traffic coming in and out of the site during normal operation with an override in case of emergencies, complete with 4 traffic light signals, cabling, control system and housing, traffic study	sum	1		
24.		Commissioning, testing and configuration of access control systems	sum	1		
25.		Compilation and provision of test certificates, handover files, etc.	sum	1		
26.		Ethernet CAT6 Inline surge protection	no.	8		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
27.		Camera configuration on VMS and NVR	sum	1		
28.		Configuration, commissioning and provision of test certificates, drawings, and any additional documents, et.	sum	1		
29.		Cable Management- HDG 150mm wide wire mesh complete with bends, t-joints, mounting accessories	sum	1		
30.		Design, supply, deliver, installation, integration, and commissioning of public address system includes but is not limited to speakers, microphones, controllers/amplifiers, housing, and cabling	sum	1		
31.		Configuration, testing and commissioning of PA system	sum	1		
32.		Compilation and provision of test certificates, handover files, etc.	sum	1		
33.		Supply and Installation of Data Outlet- CAT6 female RJ45 socket outlet flush mounted on 4x2 box	no.	1		
34.		Supply and Installation of Data LAN- CAT6 female RJ45 data socket outlets flush mounted on the power skirting	no.	40		
35.		Supply and Installation of Floor-box cradle power and data outlet, inclusive of all electrical power socket outlets and CAT6 RJ45 female data socket outlets (2)	no.	2		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
36.		Supply and Installation of Table-top power logic pop-up plug. The pop-up plug shall contain all electrical power socket outlets and CAT6 RJ45 female data socket outlets	no.	2		
37.		Supply, delivery and installation of 48 Port PoE 100Mbps Base T and 4x1/10Gbps SFP port Uplink IP base network switch or similar approved.	no.	3		
38.		Supply, delivery and installation of Single Mode 1.25G LC SFP 1310nm, Full Duplex (minimum 20km range) or similar approved.	no.	8		
39.		Supply, delivery, and Installation of equal or similar approved to WIFI Access Point (Cisco 9100 series complete with antennae, PoE)	no.	5		
40.		Supply, delivery, and installation of 43U 800mm Cabinet: (with cooling fans, breakers, blank plates, brush-panels, mounting accessories, cable management, PDU)	no.	1		
41.		Supply, deliver, installation of Optical Fibre 24 core CST G652D single mode - complete with associated accessories for installation, cable management and termination kits	m	500		
42.		Supply, deliver, installation of 19" Brush Panels	each	4		
43.		Supply, deliver, and installation of 24 port LC Fibre 2U Patch Panel (complete with fibre pigtails and LC connectors)	no.	2		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
44.		Supply, deliver, and installation of 24 CAT6 Patch panel (complete with RJ45-connectors and surge protection)	no.	5		
45.		Supply, delivery and installation of CAT6 patch leads (RJ45 Male to Male 0.5m, UTP)	no.	60		
46.		Supply, delivery and installation of LC-APC to LC-APC duplex patch leads Single Mode 1m	no.	10		
47.		ICT Network Configuration for Switches and Aps	sum	1		
48.		Supply, deliver, and installation of CAT 6 FTP ethernet cable for LAN point outlets and Wi-Fi access points complete with RJ45 terminations	m	1800		
49.		Splicing of the 24 cores of the 24-core fibre cable	each	24		
50.		Supply, delivery, installation, and configuration of Access Point Controller/gateway	each	1		
51.		ICT Network Configuration for Switches and AP's	each	1		
52.		Supply, delivery and installation of Single Mode 1.25G LC SFP 1310nm, Full Duplex (minimum 20km range) or similar approved.	each	6		
		<u>END OF SECTION 4</u>				
Total Carried Forward to Section Summary						R

BILL NO.	SECTION 4 SUMMARY	AMOUNT
1	BILL NO.1: CONTROL AND INSTRUMENTATION	
TOTAL EXCLUDING VAT CARRIED TO FINAL SUMMARY		R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>SECTION NO. 5: ELECTRICAL WORK</u>				
		<u>BILL NO.1: MEDIUM VOLTAGE ELECTRICAL RETICULATION</u>				
		<u>MINIATURE SUBSTATION Initial work</u>				
1.		Review the existing circuits in the existing mini sub, mark up single line drawing THB. 106.N6-2098 Sheet 1, submit to the employer's engineer before sending it to the mini sub manufacturer	sum	1		
		<u>MINIATURE SUBSTATION</u>				
2.		Supply, Delivery, Offloading and Installation of 630kVA 11750/420V low maintenance type RMU with internal arc outdoor type B Minisub, complete with switchgear as per single line drawing THB. 106.N6-2098 Sheet 1	sum	1		
3.		Design, Supply, and construct a concrete plinth for the 630kVA 11750/420V low maintenance type RMU with internal arc outdoor type B Minisub.	sum	1		
4.		Grading of the existing protection relays in integration of this connection.	sum	1		
5.		Test of the integrity of the existing Earth Mat. This works shall be conducted in accordance with TPD-004 Earthing Spec and SANS 10313.	sum	1		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
6.		Design, Supply, and Installation of Earth Mat for Proposed Mini Substation. This works shall be conducted in accordance with TPD-004 Earthing Spec and SANS 10313.	sum	1		
		<u>MEDIUM VOLTAGE CABLE AND TERMINATION</u>				
7.		240 mm², 3CORE PILC Copper SWA Cable	m	20		
8.		240 mm², 3CORE PILC Copper SWA Cable joint	no.	2		
9.		240 mm², 3CORE PILC Copper SWA termination kit	no.	2		
		<u>CABLE SLEEVE</u>				
10.		110mm diameter flexible cable sleeve (underground cable installation sleeve)	m	100		
		<u>EXCAVATION AND BACKFILLING</u>				
11.		Excavation for cable installation (Excavating and backfilling)	m3	250		
12.		Back filling using River sand or 3mm screened soil	m3	131.55		
13.		Back filling using 6mm screened soil	m3	131.55		
14.		Installation of Cable Danger Tape	m	310		
15.		Back filling using excavated soil from site	m3	100		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
16.		<u>Metering</u> Supply, Delivery, offloading and installation of an electrical smart meter for metering the Fire Building	no.	1		
17.		<u>TESTING AND COMMISSIONING</u> Testing and Commissioning of complete installation.	sum	1		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>BILL NO. 2: LOW VOLTAGE ELECTRICAL RETICULATION</u>				
		<u>LOW VOLTAGE CABLE AND TERMINATION</u>				
1.		10mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	m	500		
2.		25mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	m	100		
3.		35mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	m	200		
4.		50mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	m	200		
5.		120mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	m	500		
6.		240mm ² 3 core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	m	500		
7.		10mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable termination kit.	no.	4		
8.		25mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable termination kit.	no.	4		
9.		35mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable termination kit.	no.	4		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
10.		50mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable termination kit.	no.	4		
11.		120mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable termination kit.	no.	4		
12.		240mm ² 1core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable termination kit.	no.	4		
<u>CABLE SLEEVE</u>						
13.		160mm diameter flexible cable sleeve (underground cable installation sleeve)	m	100		
14.		110mm diameter flexible cable sleeve (underground cable installation sleeve)	m	100		
<u>EXCAVATION AND BACKFILLING</u>						
15.		Excavation for cable installation (Excavating and backfilling)	m3	500		
16.		Back filling using River sand or 3mm screened soil	m3	125		
17.		Back filling using 6mm screened soil	m3	200		
18.		Installation of Cable Danger Tape	m	625		
19.		Back filling using excavated soil from site	m3	200		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
20.		<u>TESTING AND COMMISSIONING</u> Testing and Commissioning of complete installation in accordance with SANS 10142-1 including the issue of COC certificates.	sum	1		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
1.		<p><u>BILL NO. 3: ELECTRICAL (GROUND FLOOR)</u></p> <p><u>DISTRIBUTION BOARD</u></p> <p>Design, Supply and installation of Distribution Board A, comprising of all the switch gear, earth leakage surge protection, labelling and wiring as per drawing No: TBH. 106.N6-2098 Sheet 7 and TPD - 002- DBSPEC</p>	each	1		
2.		<p>Design, Supply, and installation of Distribution Board C comprising of all the switch gear, earth leakage, surge protection, labelling and wiring as per drawing No: TBH. 106.N6-2098 Sheet 7 and TPD - 002- DBSPEC</p>	each	1		
3.		<p>Design, Supply, and installation of Lift Distribution Board, comprising of all the switch gear, earth leakage with overload protection, circuit breakers, labelling and wiring as per TPD - 002- DBSPEC</p>	each	1		
4.		<p><u>UPS</u></p> <p>Supply and Installation of a new equal or similar approved to Eaton/Schneider, modular, online double conversion, 30kVA, 400V UPS.</p>	each	1		
5.		<p><u>INTERIOR LIGHTING</u></p> <p>Supply and Installation of new equal or similar approved to Beka Dari 1200mm X 600mm, 70W recessed mounted</p>	each	32		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
6.		Supply and Installation of new equal or similar approved to Beka Dari 1200mm X 600mm, 70W recessed mounted, EMG/15 MIN	each	16		
7.		Supply and Installation of new equal or similar approved to Beka VLN LED 46W surfaced mounted	each	20		
8.		Supply and Installation of new equal or similar approved to Beka VLN LED 46W surfaced mounted, EMG/15 MIN	each	18		
9.		Supply and Installation of new equal or similar approved to Beka VLN LED 26W surfaced mounted	each	10		
10.		Supply and Installation of new equal or similar approved to Beka VLN LED 26W surfaced mounted, EMG/15 MIN	each	9		
11.		Supply and Installation of new equal or similar approved to Beka series 30 bulkhead LED 10W, surface mounted the wall, EMG/15 MIN	each	8		
12.		Supply and Installation of new equal or similar approved to Beka rondo LED, downlighter 10W recessed mounted.	each	40		
13.		Supply and Installation of new equal or similar approved to Beka rondo LED, downlighter 10W recessed mounted, EMG/15 MIN	each	20		
14.		Supply and Installation of new equal or similar approved to Phillips core line SPOT LED, downlighter 11W recessed mounted	each	50		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
15.		Supply and Installation of new equal or similar approved to Phillips core line SPOT LED, downlighter 11W recessed mounted, EMG/15 MIN	each	25		
16.		Supply and Installation of equal or similar approved to Legrand Arteor 16A two way one-lever light switch complete with recess mount box and cover plate	each	6		
17.		Supply and Installation of equal or similar approved to Legrand 16A three-way three-lever light switch complete with recess mount box and cover plate	each	5		
18.		Supply and Installation of new Legrand dimming switch or similar approved.	each	5		
19.		Supply and Installation of equal or similar approved to Schneider occupancy sensor 360°, 7m range complete with all the accessories	each	40		
		<u>POWER SUPPLY POINTS</u>				
20.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V Dedicated Single switch socket outlet (Red) mounted in power skirting	each	30		
21.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V single switched socket.	each	20		
		<u>Outlets (White) mounted in power skirting</u>				
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
22.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V single flush switch socket outlet (White), complete with recessed mount box and cover plate. (Installed 300mm above floor level)	each	10		
23.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V double flush switch socket outlet (White), complete with recessed mount box and cover plate. (Installed 300mm above floor level)	each	25		
24.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V double flush switch socket outlet (White), complete with recessed mount box and cover plate. (Installed 1350mm above floor level)	each	5		
25.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V single phase socket outlet with euro and USB outlet (Installed on power skirting)	each	20		
26.		Supply and Installation of equal or similar approved to Legrand Arteor 5A 230V single flush switch socket outlet (White), complete with recessed mount box and cover plate. (Installed in the ceiling)	each	10		
27.		Supply and Installation of equal or similar approved to Legrand Arteor 5A 230V double flush switch socket outlet (White), complete with recessed mount box and cover plate. (Installed in the ceiling)	each	10		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
28.		Supply and Installation of equal or similar approved to Legrand 16A 230V single phase cord grip isolator (Installed 1800mm above floor level)	each	10		
29.		Supply and Installation of equal or similar approved to Legrand 10A 230V single phase cord grip isolator (Installed 1800mm above floor level)	each	12		
30.		Supply and Installation of equal or similar approved to Legrand 16A 230V single phase isolator (Installed 1800mm above floor level)	each	10		
31		Supply and Installation of equal or similar approved to Legrand 25A 230V single phase isolator (position to be determined on site)	each	5		
32.		Supply and Installation of equal or similar approved to Legrand 10A single phase weatherproof isolator (Mounting position to be determined on site)	each	5		
33.		Supply and Installation of equal or similar approved to Legrand 10A 230V single phase cord grip isolator (To be installed in the ceiling)	each	5		
34.		Supply and Installation of equal or similar approved to Legrand 16A 230V single phase isolator (Mounting to be determined on site)	each	5		
35.		Supply and Installation of equal or similar approved to Legrand 16A 230V single phase weatherproof isolator (Mounting to be determined on site)	each	5		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
36.		Supply and Installation of equal or similar approved to Legrand 10A 400V three phase isolator (Mounting Position to be determined on site)	each	5		
37.		Supply and Installation of equal or similar approved to Legrand 30A 400V three phase weatherproof isolator (Mounting Position to be determined on site)	each	5		
38.		Supply and Installation of equal or similar approved to Legrand 40A 400V three phase isolator for the lift (Mounting Position to be determined on site)	each	2		
39.		Supply and Installation of equal or similar approved to Legrand 32A 400V three phase, 5-Pin, Industrial Plug with an integrated earth leakage (Mounting Position to be determined on site)	each	6		
40.		Supply and Installation of equal or similar approved to Legrand 16A 230V single phase socket outlets including extension leads for all the lights,	each	250		
		<u>LOW VOLTAGE CABLES</u>				
41.		6mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	m	200		
42.		6mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable termination kit.	no.	4		
43.		10mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	m	200		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
44.		10mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	no.	4		
		<u>WIRING</u>				
45.		Low Voltage 2.5 mm2 stranded house wiring for internal wiring - red	m	300		
46.		Low Voltage 2.5 mm2 stranded house wiring for internal wiring - white	m	300		
47.		Low Voltage 2.5 mm2 stranded house wiring for internal wiring - blue	m	300		
48.		Low Voltage 2.5 mm2 stranded house wiring for internal wiring - black	m	300		
49.		Low Voltage 2.5 mm2 stranded house wiring for internal wiring - green	m	300		
50.		Low Voltage 4 mm2 stranded house wiring for internal wiring - red	m	300		
51.		Low Voltage 4 mm2 stranded house wiring for internal wiring - white	m	300		
52.		Low Voltage 4 mm2 stranded house wiring for internal wiring - blue	m	300		
53.		Low Voltage 4 mm2 stranded house wiring for internal wiring - black	m	300		
54.		Low Voltage 4 mm2 stranded house wiring for internal wiring - green	m	300		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>PVC PRODUCTS, SLEEVES AND CONDUIT ACCESSORIES</u>				
55.		20 mm diameter PVC conduit, boxes, couples' adapters and accessories	sum	1		
56.		25 mm Diameter PVC conduit, boxes, couples' adapters and accessories	sum	1		
57.		32 mm Diameter PVC conduit, boxes, couples' adapters and accessories	sum	1		
58.		PVC trunking Wiring Consumable accessories including Lugs, Ferrules, Terminal Blocks, Screws, connections, compression glands etc.	sum	1		
59.		Conduit chasing	sum	1		
60.		Equal or Similar approved Legrand 3x70mm ² PVC Conduit	sum	1		
		<u>Power Skirting</u>				
61.		Supply and install 3-compartment (70 mm ²) power skirting complete with covers and accessories. (To be mounted along the wall).	sum	1		
62.		Supply and Installation of equal or similar approved to Legrand three-tier droppers	no.	10		
		<u>Cable Ladders and Accessories</u>				
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
63.		Supply and installation of powder coated hot dipped galvanised cable ladder including bends, T-Pieces, hot dipped galvanised threaded rod, fasteners, and accessories.	sum			
64.		Supply and installation of powder coated hot dipped galvanised wire mesh cable tray including bends, T-Pieces, hot dipped galvanised threaded rod, fasteners, and accessories.	sum			
65.		Supply and installation of powder coated hot dipped galvanised P9000 trunking including bends, T-Pieces, hot dipped galvanised threaded rod, fasteners, and accessories.	sum			
<u>EARTHING AND LIGHTNING PROTECTION</u>						
66.		Design, Supply and installation of the building earthing and lightning protection including down conductors, conduits for running down conductors, bonding bar, and other accessories.	sum	1		
<u>TESTING AND COMMISSIONING</u>						
67.		Testing and Commissioning of complete installation in accordance with SANS 10142-1 including the issue of COC certificates	sum	1		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>BILL NO. 4: ELECTRICAL (FIRST FLOOR)</u>				
		<u>DISTRIBUTION BOARD</u>				
1.		Design, Supply and installation of Distribution Board B, comprising of all the switch gear, earth leakage, surge protection, labelling and wiring as per drawing No: TBH. 106.N6-2098 Sheet 8 and TPD - 002- DBSPEC	each	1		
		<u>INTERIOR LIGHTING</u>				
2.		Supply and Installation of new equal or similar approved to Beka Dari 1200mm X 600mm, 70W recessed mounted	each	50		
3.		Supply and Installation of new equal or similar approved to Beka Dari 1200mm X 600mm, 70W recessed mounted, EMG/15 MIN	each	20		
4.		Supply and Installation of new equal or similar approved to Beka VLN LED 26W surfaced mounted	each	5		
5.		Supply and Installation of new equal or similar approved to Beka VLN LED 26W surfaced mounted, EMG/15 MIN	each	5		
6.		Supply and Installation of new equal or similar approved to Beka ECOBAY 224 LED, 146W Suspended on the roof structure	each	16		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
7.		Supply and Installation of new equal or similar approved to Beka ECOBAY 224 LED, 146W Suspended on the roof structure, EMG/15 MIN	each	15		
8.		Supply and Installation of new equal or similar approved to Beka LEDNOVA MINI 26W surfaced mounted	each	20		
9.		Supply and Installation of new equal or similar approved to Beka series 30 bulkhead LED 10W, surface mounted the wall, EMG/15 MIN	each	5		
10.		Supply and Installation of new equal or similar approved to Beka rondo LED, downlighter 10W recessed mounted.	each	30		
11.		Supply and Installation of new equal or similar approved to Beka rondo LED, downlighter 10W recessed mounted, EMG/15 MIN	each	20		
12.		Supply and Installation of new equal or similar approved to Phillips core line SPOT LED, downlighter 11W recessed mounted	each	10		
13.		Supply and Installation of new equal or similar approved to Phillips core line SPOT LED, downlighter 11W recessed mounted, EMG/15 MIN	each	10		
14.		Supply and Installation of equal or similar approved to Legrand 16A one way one-lever light switch complete with recess mount box and cover plate	each	6		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
15.		Supply and Installation of equal or similar approved to Legrand Arteor 16A two way one-lever light switch complete with recess mount box and cover plate	each	2		
16.		Supply and Installation of O-line P1000 Stainless Steel Unistrut	Sum	1		
17.		Supply and Installation of new Legrand dimming switch or similar approved.	each	4		
18.		Supply and install national photocell. Photocell shall be installed in a IP65 housing.	each	4		
19.		Supply and Installation of equal or similar approved to Schneider occupancy sensor 360°, 7m range complete with all the accessories	each	40		
<u>POWER SUPPLY POINTS</u>						
20.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V Dedicated Single switch socket outlet (Red) mounted in power skirting	each	60		
21.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V single switched socket outlets (White) mounted in power skirting	each	40		
22.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V single flush switch socket outlet (White), complete with recessed mount box and cover plate. (Installed 300mm above floor level)	each	25		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
23.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V double flush switch socket outlet (White), complete with recessed mount box and cover plate. (Installed 300mm above floor level)	each	10		
24.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V double flush switch socket outlet (White), complete with recessed mount box and cover plate. (Installed 1350mm above floor level)	each	10		
25.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V single phase socket outlet with euro and USB outlet (Installed on power skirting)	each	10		
26.		Supply and Installation of equal or similar approved to Legrand Arteor 5A 230V single flush switch socket outlet (White), complete with recessed mount box and cover plate. (Installed in the ceiling)	each	10		
27.		Supply and Installation of equal or similar approved to Legrand Arteor 5A 230V double flush switch socket outlet (White), complete with recessed mount box and cover plate. (Installed in the ceiling)	each	5		
28.		Supply and Installation of equal or similar approved to Legrand 16A 230V single phase cord grip isolator (Installed 1800mm above floor level)	each	5		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
29.		Supply and Installation of equal or similar approved to Legrand 20A 230V single phase cord grip isolator (Installed 1800mm above floor level)	each	5		
30.		Supply and Installation of equal or similar approved to Legrand 30A 230V single phase isolator (Installed 1800mm above floor level)	each	5		
31.		Supply and Installation of equal or similar approved to Legrand 30A 230V single phase isolator (Installed 1800mm above floor level)	each	20		
32		Supply and Installation of equal or similar approved to Legrand 10A 230V single phase cord grip isolator (To be installed in the ceiling void)	each	5		
33.		Supply and Installation of equal or similar approved to Legrand 16A 230V single phase isolator (Mounting to be determined on site)	each	5		
34.		Supply and Installation of equal or similar approved to Legrand 16A 230V single phase weatherproof isolator (Mounting to be determined on site)	each	5		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
35.		Supply and Installation of equal or similar approved to Legrand 16A 400V three phase isolator (Installed 1800mm above floor level)	each	5		
36.		Supply and Installation of equal or similar approved to Legrand 32A 400V three phase weatherproof isolator (Mounting Position to be determined on site)	each	5		
37.		Supply and Installation of equal or similar approved to Legrand 16A 230V single phase socket outlets including extension leads for all the lights,	each	250		
<u>LOW VOLTAGE CABLES</u>						
38.		6mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	m	200		
39.		6mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable termination kit.	sum	4		
40.		10mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	m	200		
41.		10mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	sum	4		
<u>WIRING</u>						
42.		Low Voltage 2.5 mm ² stranded house wiring for internal wiring - red	m	300		
43.		Low Voltage 2.5 mm ² stranded house wiring for internal wiring - white	m	300		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
44.		Low Voltage 2.5 mm2 stranded house wiring for internal wiring - blue	m	300		
45.		Low Voltage 2.5 mm2 stranded house wiring for internal wiring - black	m	300		
46.		Low Voltage 2.5 mm2 stranded house wiring for internal wiring - green	m	300		
47.		Low Voltage 4 mm2 stranded house wiring for internal wiring - red	m	300		
48.		Low Voltage 4 mm2 stranded house wiring for internal wiring – white	m	300		
49.		Low Voltage 4 mm2 stranded house wiring for internal wiring - blue	m	300		
50.		Low Voltage 4 mm2 stranded house wiring for internal wiring - black	m	300		
51.		Low Voltage 4 mm2 stranded house wiring for internal wiring - green	m	300		
<u>PVC PRODUCTS, SLEEVES AND CONDUIT ACCESSORIES</u>						
52.		20 mm diameter PVC conduit, boxes, couples' adapters and accessories	sum	1		
53.		25 mm Diameter PVC conduit, boxes, couples' adapters and accessories	sum	1		
54.		32 mm Diameter PVC conduit, boxes, couples' adapters and accessories	sum	1		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
55.		PVC trunking Wiring Consumable accessories including Lugs, Ferrules, Terminal Blocks, Screws, connections, compression glands etc.	sum	1		
56.		Equal or Similar approved Legrand 3x70mm ² Diameter PVC conduit, boxes, couples' adapters and accessories	sum	1		
57.		Conduit chasing	sum	1		
		<u>Power Skirting</u>				
58.		Supply and install 3-compartment (70 mm ²) power skirting complete with covers and accessories. (To be mounted along the wall).	sum	1		
59.		Supply and Installation of equal or similar approved to Legrand three-tier droppers	no.	10		
		<u>Cable Ladders and Accessories</u>				
60.		Supply and installation of powder coated hot dipped galvanised cable ladder including bends, T-Pieces, hot dipped galvanised threaded rod, fasteners, and accessories as per tender drawings.	sum	1		
61.		Supply and installation of powder coated hot dipped galvanised wire mesh cable tray including bends, T-Pieces, hot dipped galvanised threaded rod, fasteners, and accessories as per tender drawings	sum	1		
Total Carried Forward						

TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2024/06/0007/67960/RFP

DESCRIPTION OF THE WORKS: PROVISION OF SERVICES TO UPGRADE THE EXISTING TRANSNET NATIONAL PORTS AUTHORITY (TNPA) NATIONAL FIRE SERVICE INFRASTRUCTURE AND EQUIPMENT PROJECT (PHASE 2A) IN THE PORT OF CAPE TOWN FOR A PERIOD OF 1 (ONE) YEAR

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
62.		Supply and installation of powder coated hot dipped galvanised P9000 trunking including bends, T-Pieces, hot dipped galvanised threaded rod, fasteners, and accessories as per tender drawing.	sum	1		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
1.		<p><u>BILL NO.5: ELECTRICAL (GUARDHOUSE)</u></p> <p><u>DISTRIBUTION BOARD</u></p> <p>Design, Supply and installation of Distribution Board B, comprising of all the switch gear, earth leakage, surge protection, labelling and wiring as per drawing No: TBH. 106.N6-2098 Sheet 10 and TPD - 002- DBSPEC</p>	each	1		
2.		<p><u>INTERIOR LIGHTING</u></p> <p>Supply and Installation of new equal or similar approved to Beka series 30 bulkhead LED 10W, surface mounted the wall, EMG/15 MIN</p>	each	6		
3.		Supply and Installation of new equal or similar approved to Beka rondo LED, downlighter 26W recessed mounted.	each	6		
4.		Supply and Installation of new equal or similar approved to Beka rondo LED, downlighter 26W recessed mounted, EMG/15 MIN	each	6		
5.		Supply and Installation of equal or similar approved to Legrand 16A one way two-lever light switch complete with recess mount box and cover plate	each	2		
6.		Supply and install national photocell. Photocell shall be installed in a IP65 housing.	each	4		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
7.		Supply and Installation of equal or similar approved to Schneider occupancy sensor 360°, 7m range complete with all the accessories	each	5		
		<u>POWER SUPPLY POINTS</u>				
8.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V Dedicated Single switch socket outlet (Red) mounted in power skirting	each	5		
9.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V single switched socket outlets (White) mounted in power skirting.	each	5		
10.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V single phase socket outlet with euro and USB outlet (Installed on power skirting)	each	5		
11.		Supply and Installation of equal or similar approved to Legrand Arteor 16A 230V double flush switch socket outlet (White), complete with recessed mount box and cover plate. (Installed 1350mm above floor level)	each	2		
12.		Supply and Installation of equal or similar approved to Legrand 16A 230V single phase cord grip isolator (Installed 1800mm above floor level)	each	3		
13.		Supply and Installation of equal or similar approved to Legrand 10A 230V single phase cord grip isolator (Installed 1800mm above floor level)	each	3		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
14.		Supply and Installation of equal or similar approved to Legrand 16A 230V single phase weatherproof isolator (Mounting to be determined on site)	each	2		
15.		Supply and Installation of equal or similar approved to Legrand 16A 230V single phase socket outlets including extension leads for all the lights.	each	10		
<u>LOW VOLTAGE CABLES</u>						
16.		6mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	m	200		
17.		6mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable termination kit.	no.	4		
18.		10mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	m	200		
19.		10mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	no.	4		
<u>WIRING</u>						
20.		Low Voltage 2.5 mm ² stranded house wiring for internal wiring - red	m	50		
21.		Low Voltage 2.5 mm ² stranded house wiring for internal wiring - white	m	50		
22.		Low Voltage 2.5 mm ² stranded house wiring for internal wiring - blue	m	50		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
23.		Low Voltage 2.5 mm2 stranded house wiring for internal wiring - black	m	50		
24.		Low Voltage 2.5 mm2 stranded house wiring for internal wiring - green	m	50		
25.		Low Voltage 4 mm2 stranded house wiring for internal wiring - red	m	50		
26.		Low Voltage 4 mm2 stranded house wiring for internal wiring - white	m	50		
27.		Low Voltage 4 mm2 stranded house wiring for internal wiring - blue	m	50		
28.		Low Voltage 4 mm2 stranded house wiring for internal wiring - black	m	50		
29.		Low Voltage 4 mm2 stranded house wiring for internal wiring - green	m	50		
<u>PVC PRODUCTS, SLEEVES AND CONDUIT ACCESSORIES</u>						
30.		20 mm diameter PVC conduit, boxes, couples' adapters and accessories	sum	1		
31.		25 mm Diameter PVC conduit, boxes, couples' adapters and accessories	sum	1		
32.		32 mm Diameter PVC conduit, boxes, couples' adapters and accessories	sum	1		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
33.		PVC trunking Wiring Consumable accessories including Lugs, Ferrules, Terminal Blocks, Screws, connections, compression glands etc.	sum	1		
34.		Conduit chasing	sum	1		
35.		Equal or Similar approved Legrand 70mm ² Diameter PVC conduit, boxes, couples' adapters and accessories	sum	1		
<u>Power Skirting</u>						
36.		Supply and install 3-compartment (70 mm ²) power skirting complete with covers and accessories. (To be mounted along the wall).	sum	1		
37.		Supply and Installation of equal or similar approved to Legrand three-tier droppers	no.	10		
<u>Cable Ladders and Accessories</u>						
38.		Supply and installation of powder coated hot dipped galvanised cable ladder including bends, T-Pieces, hot dipped galvanised threaded rod, fasteners, and accessories as per tender drawings	sum	1		
39.		Supply and installation of powder coated hot dipped galvanised wire mesh cable tray including bends, T-Pieces, hot dipped galvanised threaded rod, fasteners, and accessories as per tender drawings	sum	1		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
40.		Supply and installation of powder coated hot dipped galvanised P9000 trunking including bends, T-Pieces, hot dipped galvanised threaded rod, fasteners, and accessories as per tender drawings.	sum	1		
41.		<p><u>EARTHING AND LIGHTNING PROTECTION</u></p> <p>Design, Supply and installation of the building earthing and lightning protection including down conductors, conduits for running down conductors, bonding bar, and other accessories.</p> <p><u>TESTING AND COMMISSIONING</u></p> <p>Testing and Commissioning of complete installation in accordance with SANS 10142-1 including the issue of COC certificates</p>	sum	1		
42.		Testing and Commissioning of complete installation in accordance with SANS 10142-1 including the issue of COC certificates	sum	1		
Total carried to section summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
		<u>BILL NO. 6: ELECTRICAL (PARKING)</u>				
		<u>Junction Box</u>				
1.		Design, Supply and installation of a Junction box	each	4		
		<u>Exterior LIGHTING</u>				
2.		Supply and Installation of new equal or similar approved to Beka VLN LED 26W surfaced mounted	each	8		
3.		Supply and Installation of new equal or similar approved to Beka VLN LED 26W surfaced mounted, EMG/15 MIN	each	8		
4.		Supply and Installation of O-line P1000 Stainless Steel Unistrut	sum	1		
5.		Supply and install national photocell. Photocell shall be installed in a IP65 housing.	each	2		
		<u>LOW VOLTAGE CABLES</u>				
6.		6mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	m	50		
7.		6mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable termination kit.	sum	4		
8.		10mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	m	50		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
9.		10mm ² 4core PVC insulated PVC bedded SWA PVC sheathed 600/1000V ECC cable.	sum	4		
		<u>WIRING</u>				
10.		Low Voltage 2.5 mm2 stranded house wiring for internal wiring - red	m	50		
11.		Low Voltage 2.5 mm2 stranded house wiring for internal wiring - white	m	50		
12.		Low Voltage 2.5 mm2 stranded house wiring for internal wiring - blue	m	50		
13.		Low Voltage 2.5 mm2 stranded house wiring for internal wiring - black	m	50		
14.		Low Voltage 2.5 mm2 stranded house wiring for internal wiring - green	m	50		
		<u>PVC PRODUCTS, SLEEVES AND CONDUIT ACCESSORIES</u>				
15.		20 mm diameter PVC conduit, boxes, couples' adapters and accessories	no.	1		
16.		25 mm Diameter PVC conduit, boxes, couples' adapters and accessories	no.	1		
17.		32 mm Diameter PVC conduit, boxes, couples' adapters and accessories	no.	1		
18.		PVC trunking Wiring Consumable accessories including Lugs, Ferrules, Terminal Blocks, Screws, connections, compression glands etc.	no.	1		
Total Carried Forward						

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
19.		<u>Cable Ladders and Accessories</u> Supply and installation of powder coated hot dipped galvanised P9000 trunking including bends, T-Pieces, hot dipped galvanised threaded rod, fasteners, and accessories as per tender drawings	sum	1		
20.		<u>EARTHING AND LIGHTNING PROTECTION</u> Design, Supply and installation of the building earthing and lightning protection including down conductors, conduits for running down conductors, bonding bar, and other accessories.	sum	1		
21.		<u>TESTING AND COMMISSIONING</u> Testing and Commissioning of complete installation in accordance with SANS 10142-1 including the issue of COC certificates	sum	1		
Total Carried forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Unit Rate	Amount
Total Brought Forward						
1.		<u>BILL NO.7: ELECTRICAL (LIGHT POLE RELOCATION)</u> <u>Light Pole Relocation</u> Relocate the lighting pole that is indicated on drawing: TBH. 106.N6-2098 Sheet 2. The new location of the lighting pole should be at least 5m from the original position.	sum	1		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Unit Rate	Amount
Total Brought Forward						
		<u>BILL NO. 8: DEMOLISHING WORK</u>				
1.		<u>DEMOLISHINGS</u> Dismantle and remove and transport to the nearest depot existing electrical equipment including, lights, socket outlets, conduit and associated electrical installation in the Fire building.	sum	1		
2.		Dismantle and remove and transport to the nearest depot the existing Mispion Bridge 200kVA, 11.75kV/400V Miniature substation.	sum	1		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Brought Forward						
1.		<u>BILL NO.9: SURVEY</u> <u>Survey</u> Perform an electrical underground survey	sum	1		
Total Carried Forward to Section Summary						R

Item No.	Payment Ref.	Description	Unit	Quantity	Rate	Amount
Total Carried Forward						
1		<u>BILL NO.10: STANDBY PLANT</u> <u>STANDBY DIESEL GENERATOR</u> <u>PLANT</u> Design, supply, and install a 200kVA, 400V diesel standby generator plant for continuous back-up operation. The generator shall be supplied and installed with an automatic changeover panel, battery charger and encased in a 3CR12 steel material with sound attenuation. The engine of the generator shall be similar or equal approved to Deutz, the alternator shall be similar or equal to Marelli with a power factor of 0.8 and 50Hz frequency and a similar or equal approved to deep sea converter. The generator plant shall be supplied with a 100m 4 core 240mm ² , ECC, SWA LV 600/1000V cable for connecting the main provisional facility incomer and the changeover panel. The generator plant shall be supplied with an 8 x 240mm ² , ECC, SWA LV 600/1000V termination kit for connecting the main provisional facility incomer and the changeover panel	sum	1		
2.		Testing and commissioning of the entire installation	sum	1		
3.		Allow for fuel to fill the tank to full capacity (100%) at the time of issuing the first delivery (handover)	sum	1		
4.		Training, Maintenance Manual and Documentation, including as built drawings: (four of each)	sum	1		
5.		Maintenance for one year (2 visits per month, for a period of 12 months). Maintenance shall start after the first Delivery Certificate has been issued	sum	1		
<u>END OF SECTION 5</u>						
Total Carried to Section Summary						R

BILL NO.	SECTION 5 SUMMARY	AMOUNT
1	BILL NO.1: MEDIUM VOLTAGE ELECTRICAL RETICULATION	
2	BILL NO.2: LOW VOLTAGE ELECTRICAL RETICULATION	
3.	BILL NO.3: ELECTRICAL (GROUND FLOOR)	
4.	BILL NO. 4: ELECTRICAL (FIRST FLOOR)	
5.	BILL NO.5: ELECTRICAL (GUARD HOUSE)	
6.	BILL NO.6: ELECTRICAL (PARKING)	
7.	BILL NO.7: ELECTRICAL (LIGHT POLE RELOCATION)	
8.	BILL NO.8: DEMOLISHING WORK	
9.	BILL NO.9: SURVEY	
10.	BILL NO.8: STANDBY PLANT STANDBY DIESEL GENERATOR PLANT	
TOTAL EXCLUDING VAT CARRIED TO FINAL SUMMARY		R

TRANSNET NATIONAL PORTS AUTHORITY
TENDER NUMBER: TNPA/2024/06/0007/67960/RFP
DESCRIPTION OF THE WORKS: PROVISION OF SERVICES TO UPGRADE THE EXISTING TRANSNET NATIONAL PORTS
AUTHORITY (TNPA) NATIONAL FIRE SERVICE INFRASTRUCTURE AND EQUIPMENT PROJECT (PHASE 2A) IN THE PORT
OF CAPE TOWN FOR A PERIOD OF 1 (ONE) YEAR

SECTION NO.	FINAL SUMMARY	AMOUNT
1	PRELIMINARIES & GENERAL	
2	CIVIL WORK	
3	MECHANICAL WORK	
4	CONTROL & INSTRUMENTAL WORK	
5	ELECTRICAL WORK	
TOTAL EXCLUDING VAT CARRIED TO FORM OF OFFER		R

PART C3: SCOPE OF WORK

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	Annexure B - Contractor's Environmental And Sustainability Specification Guidelines	18
	Annexure C - Transnet Integrated Management System Policy Statement	65
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	Annexure E - Baseline Risk Assessment	105
	Total number of pages	94 + 139

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SECTION 1

1 Description of the works

1.1 Executive overview

The strategic initiator of the TNPA National Fire Services Infrastructure and Equipment Upgrade Project originated from a study of the existing capabilities of the Fire and Emergency Services of TNPA conducted at the Ports of; Cape Town, Saldanha, Richards Bay, East London, Ngqura and Port Elizabeth. The national port is a high-risk area. Failure to control a fire in a particular risk area could have a catastrophic impact on the port and its users.

The study that was conducted by the Fire Protection Association of Southern Africa (FPASA). Based on the recommendations of the Fire Protection Association of Southern Africa (FPASA) study and the long-term vision of the TNPA Fire and Emergency Services department, the main purpose of this project is to provide infrastructure fit for use by the Fire Services Department at the Port of Cape Town to address the identified inadequacies. The upgrade of the infrastructure will provide the TNPA Fire and Emergency Services with a good platform from which to perform their duties and operations.

1.2 Employer's objectives

The main objective of the alterations and additions to the current building is to ensure that the Fire Services Department has adequate infrastructure to facilitate an efficient first response role to all risk areas of the port. The primary objective of Phase 2A of the project is to upgrade the existing MCD Training building of the Fire Services in the Port of Cape Town, this will allow the Fire and Emergency Services to effectively contain and efficiently prevent the escalation of any emergency event until the arrival of the respective Local Authority Emergency Services.

Phase 2B which will be done separately will provide the fire engine for the port. The benefits of upgrading the MCD training building to a Fire Station are to:

- Provide infrastructure required for effective and efficient first response.
- Opportunistically improve strategic location of Fire Services infrastructure.
- Improved operational facilities.
- Provide additional facilities (training facilities, lecture rooms, garages, Control room)

In addition to the above, the Employer's objectives are to achieve Completion of the Works by meeting the Completion Date whilst still maintaining the highest environmental, quality and safety standards and whilst minimising disruptions to ongoing port and terminal operations.

All construction works should comply to the South African National Building regulations and applicable SANS specification.

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
CD	Compact Disc
CDR	Contractor Documentation Register
CDS	Contractor Documentation Schedule
CRL	Contractor Review Label
CSHEO	Contractor's Safety, Health and Environmental Officer



CM	Construction Manager
DTI	Department of Trade and Industry
DWG	Drawings

EO	Environmental Officer
HAW	Hazard Assessment Workshop
HAZOP	Hazard and Operability Study
HSSP	Health and Safety Surveillance Plan
INC	Independent Nominated Consultant
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
CIRP	Contractor's Industrial Relations Practitioner
Native	Original electronic file format of documentation
PES	Project Environmental Specifications
PHA	Preliminary Hazard Assessment
PIRM	Project Industrial Relations Manager
PIRPMP	Project Industrial Relations Policy and Management Plan
PLA	Project Labour Agreements
PSIRM	Project Site Industrial Relations Manager
PSPM	Project Safety Program Manager
PSSM	Project Site Safety Manager
ProgEM	Programme Environmental Manager
ProjEM	Project Environmental Manager
QA	Quality Assurance
R&D	Research and Development
SANS	South African National Standards
SASRIA	South African Special Risks Insurance Association
SES	Standard Environmental Specification
SHE	Safety, Health and Environment
SHEC	Safety, Health and Environment Co-ordinator
SIP	Site Induction Programme
SMP	Safety Management Plan
SSRC	Site Safety Review Committee

2 Engineering and the *Contractor's* design

2.1 *Employer's* design

The design is based on the detailed design philosophy attached to this works information.

The *Employer* grants the *Contractor* a licence to use the copyright in design data presented to the *Contractor* for the purpose of the *works* (and the *Contractor's* obligation under paragraph 2.2 of the *Employer's Works Information*) ONLY.

2.1.1. The *Employer's* design for the *Works* is as follows:

Mechanical designs:

- Design of the heat, ventilation, and air-conditioning (HVAC) systems associated with the works.
- Design of water reticulation within the building associated with the works.
- Design of the manual fire suppression, protection & detection systems within the building associated with the works.
- Concept layout for automated fire suppression system within parts of the building associated with the works.
- Required specification for lift system within the building.
- The technical specification of all mechanical plant associated with the works for the above mentioned.

Civil designs:

- Building and civil works associated with the works.
- Building platform and parking area designs associated with works and reconstruction thereof.
- Bulk services designs (stormwater, sewer, water etc.) associated with the works.

Other designs:

- Design and construction of boundary fence associated with works.
- Electrical works designs such as lighting, load sizing and cabling associated with the works.
- Environmental works or designs which includes environmentally compliant ceilings, tiling and painting, landscaping, rain harvesting, and waste management facilities are one of the main items of the works.
- ICT and access control designs for the building.

2.1.2. Employer supplies the following:

- Works Information.
- Technical specifications.
- General Arrangement Drawings.

The drawings for providing the Works are listed in paragraph 5 of this Works Information.

The *Employer* grants the *Contractor* a license to use the copyright in design data presented to the *Contractor* for the purpose of the works ONLY.

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

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

2.2.1 Engineering works

2.2.1.1 All supporting infrastructure required to implement all of the *Employers'* designs, including but not limited to pipe supports or bridges, plant bases or plinths, plant supports and fixings.

2.2.1.2 All mechanical system's control systems as outlined in section 4.5 of this document necessary for the provision of the works.

- 2.2.1.3 All filtration, insulation and acoustic silencing plant as outlined in section 4.5 of this document necessary for the provision of the works;
- 2.2.1.4 Emergency and fire evacuation drawings and signage as outlined in section 4.5 of this document.
- 2.2.1.5 All workshop, drawings for the proposed HVAC system, and verify duct routing and clashes as well as fan position. All of this shall be verified by The Engineer before installation commences.
- 2.2.1.6 All drawings which depict the full HVAC, fire suppression and detection system, as well as the potable water system, and lift system within the building. These drawings are to be full as-built drawings.
- 2.2.1.7 Additionally, to the above designs, the Contractor is to design timber roof structure for the Guardhouse.
- 2.2.1.8 The *Contractor* is responsible in his design for the overall integration of the design of the Works with the design of the Employer as stated under 2.1 Employer's design above for the following parts of the Works:
- All supporting infrastructure required to implement all the Employers' high-level designs.
 - The Contractor is wholly responsible for all design coordination, integration and liaison activities involved the Works, and shall take all measures necessary and make all arrangements for activities such as meetings, inspections, endorsements, and any other activities required for the timeous completion of the Works and to the appropriate quality. When these activities require the involvement of the Employer's Professional Engineering team or any other stakeholders, the Contractor is required to make these arrangements with due consideration of the Employer's Professional Engineering team's availability and the availability of other stakeholders.
 - The Contractor shall submit detailed drawings and workshop details for all designs, both Contractor's designs and Employer's designs, to the Project Manager for acceptance by the Employer's Consultant or the Employer's Engineers.
 - Unless expressly stated to form part of the design responsibility of the Employer as stated under 1.5 Employer's design above and whether or not specifically stated to form part of the design responsibility of the Contractor under this paragraph 1.6, all residual design responsibility and overall responsibility for the total design solution for the Works rests with the Contractor.
 - The *Contractor* shall engage the services of ECSA - professionally registered Engineers and/or Technologists for all aspects of the Works for which the *Contractor* is to design.
 - The *Contractor* shall thus be wholly accountable and responsible for all aspects of his designs, including the implementation of all Statutory Safety, Health and Environmental Regulations of South Africa AND the particular requirements, specifications, and regulations of the Employer pertaining to Health and Safety, Environment, Quality and Engineering.
 - The *Contractor* shall be wholly accountable and responsible for the implementation of the aspects of his designs including commissioning, putting into service and handover of his constructed designs to the Employer, and his duly appointed ECSA registered Engineers shall be held accountable and responsible for these aspects of the Works for the lifetime duration of the Works.

2.3 Procedure for submission and acceptance of Contractor's design

2.3.1 The *Contractor* shall address the following procedures:

- 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 deliver both hard copies and electronic media copies (CD Rom) to the Project Manager either at the address stated within the Contract Data or at the Project site office.
- All electronic documentation shall be submitted by the Contractor in Adobe Acrobat (.PDF) and native file format.
- Acceptance of documentation by the Project Manager will in no way relieve the Contractor of responsibility for the correctness of information, or conformance with his obligation to provide the Works. This obligation rests solely with the Contractor.
- After review, a copy of the original reviewed/marked-up drawing/document, with the Project Manager's consolidated comments and document status marked on the Contractor Review Label, is scanned and the copy shall be returned to the Contractor under cover of the project's Transmittal Note for revision or re-submittal as instructed.
- The Contractor shall allow the Project Manager 2 weeks (unless otherwise stated and agreed) to review and respond to the Contractor's submission of their documentation, i.e. from time of receipt by the Project Manager to the time of despatch. However, work shall proceed without delay in the event of late return of the documentation by the Project Manager with prior notification in writing by the Contractor.
- On receipt of the reviewed documentation the Contractor shall make any modifications requested/marked-up and resubmit the revised documentation to the Project Manager within 2 weeks. Queries regarding comments/changes should be addressed with the Project Manager prior to re-submittal.
- Any re-submittals, which have not included the changes/comments identified, 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 2 working days of receipt of the marked-up document.
- The *Contractor* is required to undertake design safety reviews with the *Project Manager*, the *NEC Supervisor*, the *Employer's* Engineer's and Professional team, the *Employer's* Health and Safety Officers, the *Employer's* Environmental Officers, the *Employer's* Quality Assurance and Quality Control Officers and any other Specialists and/or Subject Matter Experts (SME) as deemed by the *Employer* necessary for the provision of the *Works*.

2.4 Review and Acceptance of Contractor Documentation

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

2.4.2 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 included in Annexure 1 (Refer DOC-STD-0001).

2.5 Use of Contractor's design

2.5.1 The Contractor grants the Employer a licence to use the copyright in all design data presented to the Employer in relation to the works any purpose in connection with the construction, re-construction, refurbishment, repair, maintenance, and extension of the works with such licence being capable of transfer to any third party without the consent of the Contractor.

2.5.2 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* as follows:

2.6 Other Requirements of The Contractor's Design

2.6.1 The *Contractor's* design shall comply with All Statutes, Standards, Specifications, Policies, Conventions, Requirements as referenced in Section 3 of this document and all Statutes, Standards, Specifications, Policies, Conventions, Requirements as referenced in any Annexures thereto.

2.7 Design of Equipment

2.7.1 The *Contractor* submits his design details for the following categories of his proposed principal Equipment to the *Project Manager* for his information only:

- Any formwork required to Provide the Works
- Equipment designed for the lifting of personnel to access any areas necessary to provide the Works which are not at ground level.
- Equipment designed for the lowering of personnel to access any areas necessary to provide the Works which are below ground level.

2.7.2 The following principal Equipment categories deployed for the Contractor to provide the Work require its design to be accepted by the Project Manager under ECC Clause 23.1:

- Specialist Equipment required to Provide the Works
- Rigging platforms and specialised rigging Equipment that may be required by the Contractor to Provide the Works.
- Launching platforms and incremental launching equipment that may be required by the Contractor to Provide the Works
- Temporary access platforms, ladders, walkways, scaffolds, and any other temporary structures required to provide the Works.
- The design of Equipment is considered in terms of this contract as Contractor's design and all applicable requirements of 1.5, 1.6, 1.7 and 1.8 of this document, shall apply.

2.7.3 Equipment required to be included in the *works*

- Any shuttering/formwork that is left in-situ as required by the design of the Works, notwithstanding it be Employer's Design or *Contractor's* design, and necessary for the provision of the Works.

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

The *Contractor* provides the following:

2.8.1 As Built/Final Documentation

- In undertaking the Works (including all incidental services required), the Contractor shall conform and adhere to the requirements of the Contractor Document Submittal Requirements Standard included in Annexure L (Refer DOC-STD-0001 Rev 03).
- Installation, Maintenance and Operating Manuals and Data Books
- The Contractor prepares three (3) marked up hard copies of the latest revision of the Employer documents/drawings to represent the As Built/Final status.

- The mark-ups shall be in RED pencil or pen and be complete and accurate. The Contractor submits same to the Project Manager under cover of a Contractor's Transmittal Note.
 - The Contractor provides manuals in an A4 hard covered, red, grease and waterproof binder, using 2 ring type binders. The manuals are well indexed and user friendly and include a summarized Table of Contents.
 - Drawings and charts larger than A4 are folded and those greater than A3 are enclosed in an A4 plastic pocket of adequate strength.
 - The Contractor submits the draft Table of Contents to the Project Manager for acceptance prior to the compilation and official submittal of the manuals.
 - The originals of all brochures shall be issued to the Project Manager. When a general brochure is applicable to a range of equipment, then the specific item, catalogue number or model number shall be stated, which is best achieved by introducing a separate index page, which cross-references the specific item to a tag number.
 - The address, phone numbers, fax numbers and reference numbers of all Sub-Contractors is provided.
 - Where manuals include drawings that still need to be revised to 'As-Built' status, and such manuals are required prior to 'As-Built' status, the manual will not be considered to be in its final form until the 'As-Built' version of each such drawing has been incorporated. The required number of copies of the manual(s) shall be as specified by the Project Manager and submitted per type or model number of equipment included in the contract, or as specified by the Project Manager. A typical example of what the binder/file(s) shall be marked with on the spine and the front cover is as follows:
 - Project No./Name
 - Manual Title, e.g., Installation, Maintenance and Operating Manual
 - FBS No. and Title
 - Manual Numbering (e.g., Volume 1 of 2, etc.)
 - Contract Number
 - Contractor Name
 - Unless otherwise stated in the CDS, the required number of copies of all As Built/Final/Data Packs shall be:
 - 3 x hard copies (Full size) including 1 x copy to be laminated in plastic enclosing 2 pages back-to-back for use by maintenance staff
 - 4 x CD Roms with Adobe Acrobat (.pdf) and Native formats
 - As Built/Final Documentation
 - The Contractor shall provide all the as-built drawings as called for in the Employer's standard specification.
 - The Contractor submits final documentation to the Project Manager before Completion. This final documentation is documentation for which no further review is required.
 - 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 Contractor shall conform and adhere to the requirements of the 'Contractor Document Submittal Requirements' Standard included in Annexure L (Refer DOC-STD-0001 Rev 03)
- 2.8.2 Installation, Maintenance and Operating Manuals and Data Books
- In undertaking the Works (including all incidental services required), the Contractor shall conform and adhere to the requirements of 'Contractor Document Submittal Requirements' Standard included in Annexure L (Refer DOC-STD-0001 Rev 03).

3 Construction

3.1 Temporary works, Site services & construction constraints

- 3.1.1 Employer's Site entry and security control, permits, and Site regulations.
- 3.1.2 The Contractor shall plan and coordinate his construction activities to minimise delays due to Contractor/others and Contractor/operation conflict, considering that there is limited space for site facilities.
- 3.1.3 The Contractor must take note of the construction access/traffic for this project as outlined in the construction management plan.
- 3.1.4 During construction planning, wind and weather downtime will need to be considered, specifically considering that the local wind climate at the Port of Cape Town may have a significant impact on lifting operations associated with the Project.
- 3.1.5 The Contractor is required to establish a well-planned site management system. To achieve this, the Contractor will provide a comprehensive well-planned work method and schedule followed by the submission of a detailed risk assessment for approval and implementation.
- 3.1.6 The Contractor shall develop a traffic management plan in order to ensure safety in construction as well as with the interface with port operations and the other port users.

3.2 Restrictions to access on Site, roads, walkways, and barricade

3.2.1 Access route to Site

- All vehicles are subject to security checks and all Plant and Equipment brought into the facility and leaving the facility are required to be security cleared by the relevant authorities (Project Manager and Port Security Manager) before access or exit is granted, as the situation may require.
- The Contractor is required to arrange for the clearing of the items with the Project Manager and the Port Security Officer well in advance of the access or exit requirement to avoid delays in the provision of the Works.
- The Contractor is hereby made aware that the areas adjacent to the sites are fully operational areas that form part of a working harbour environment, and the Contractor is to allow for any difficulties envisaged in his Price.
- The Contractor ensures that any of his staff, labour and Equipment moving outside of his allocated Site 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.
- 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.
- The Contractor shall provide designated, signed, and demarcated walkways for all personnel who are required to traverse between the different working areas on site. Personnel outside of the designated walkways are required to be conducting work activities, and when traversing, are required to use the designated walkways.
- The Contractor plans and organises his work in such a manner so as to cause the least possible disruption to the Employer's operations.

3.2.2 Barricades and fencing around site.

- The Contractor shall be responsible for providing a temporary barricade fence between the terminal operations and the construction site and maintaining, providing, and/or relocating, if required for construction purposes, and the Contractor shall make allowance for it in his Price and Schedule.
- The Contractor shall ensure that his site access gate is manned 24hrs a day for the duration of the Works and over any builder's breaks, by a Security Provider acceptable to the Project Manager and registered with the PSIRA and the Contractor shall make allowance for it in his Price and Schedule.

3.3 Restrictions to access on Site

- 3.3.1 The Contractor is prohibited from entering the Employer's Operational Areas which are adjacent to the Sites and Working Areas.
- 3.3.2 The Contractor plans and organises his work in such a manner to cause the least possible disruption to the Employer's operations.
- 3.3.3 The Contractor ensures that all his construction staff, labour, and Equipment remains within his allocated and fenced off construction areas.
- 3.3.4 People restrictions on Site; hours of work, conduct and records:
 - The working hours shall be in accordance with the requirements of the Department of Labour or with the agreement of the relevant trade unions. This information relating to working hours shall be supplied to the Project Manager prior to commencement of the proposed working hours.
 - All Contractor's staff and labour engaged in the provision of the Works shall comply with TNPA and - safety requirements and are equipped with all necessary PPE, high visibility apparel.
 - In the event that the Contractor requests to work overtime, the Contractor will be liable for the supervision cost required from the Employers team during the Works.
 - The Contractor keeps daily records of his people, Plant and equipment engaged on the Site and Working Areas (including Subcontractor's) with access to such daily records available for inspection by the Project Manager and/or the PIRM at all reasonable times (summarised activity and progress for the day must be mentioned).
- 3.3.5 Minimum requirements of people employed on the Site are as follows:
 - South African identity document or passport/ visa and work permit for foreign nationals.
 - Employment of local labour only for unskilled and semi-skilled job categories as per PIRPMP.
 - Secondment of skilled core/ permanent employees if skills are not locally available.
 - Pre-employment medical examinations; and
 - Induction in IR matters and conditions of employment on the Project.
 - The Contractor complies with the requirements of the IRCC involving the engineering construction Contractors engaged (including all future Contractors) by the Employer.

3.4 Completion, testing, commissioning, and correction of Defects

- 3.4.1 The *work* to be done by the Completion Date
 - On or before the Completion Date or Sectional Completion Date, the Contractor shall have done everything required to Provide the Works including removal of his establishment and equipment from the respective sites.
 - The Project Manager cannot certify Completion until all the work including that 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 work.

Table 1: Submission Completion Durations

Item of work	To be completed by
Submission of all data packs, quality assurance records and as-built drawings	30 days after Completion
Submission of all As-built drawings	30 days after Completion

3.4.2 Materials facilities and samples for tests and inspections

- The Contractor is required to provide all materials, facilities and samples for any tests required in Item 3 Plant and Material Standards and Workmanship below.
- Samples, tests, and inspections required of the Contractor, shall be as specified in the technical specifications and in section C4 of this document.
- The Contractor shall furnish samples of any that is other than, or different to, that specified by the Employer's Engineers, to the Supervisor for Acceptance by the Employer's Engineers. The Contractor is prohibited from installing said without the required prior authorization from the Employer's Engineers.
- The Contractor shall furnish samples of any that is proposed to be used in the Contractor's Designs to the Supervisor for Acceptance by the Employer's Engineers. The Contractor is prohibited from designing with, and subsequently installing said without the required prior authorisation from the Employer's Engineers. The Employer will not provide any material or facilities for the use of the Contractor, to perform tests or inspections.
- The Contractor shall give notice to the Supervisor of the required inspection not less than 48 hours before the inspection is required.
- Where these activities require the involvement of the Employer's Engineers or any other stakeholders, the Contractor is required to make these arrangements with due consideration of the availability of the required personal and provide sufficient notice for travel arrangements to be arranged.
- The Employer will not provide any materials or facilities for the use of the Contractor, to perform tests and inspections.

3.5 Pre-Commissioning Tests and Commissioning

- 3.5.1 The Contractor shall arrange for Factory Acceptance Testing (FATs) of all Electrical and Mechanical plant at the Supplier's Premises before any is dispatched to Site. The Factory Acceptance Testing shall be witnessed by the Employer's Engineers, but in doing so, the Employer's Engineers assume no responsibility or accountability for the proper functionality of Plant in any way whatsoever.
- 3.5.2 The Contractor shall arrange for Site Acceptance Testing (SATs) for the plant when it arrives on site. The Site Acceptance Testing shall be witnessed by the Employer's Engineers, but in doing so, the Employer's Engineers assume no responsibility or accountability for the proper functionality of Plant in any way whatsoever.
- 3.5.3 Simulations and Testing of Plant and Systems required of the Contractor, shall be specified in the technical specifications and in section C4 of this document.
- 3.5.4 The cost of FATs and SATs shall be included in the Contractor's price. Testing and Commissioning is considered part of the works and is to be done before completion.
- 3.5.5 The installation shall be comprehensively tested and commissioned as individual and integrated systems as may be required by the configuration, after the works are substantially complete.
- 3.5.6 The Contractor shall provide adequate and competent personnel for testing and commissioning of every installation and for the full duration of the commissioning process.
- 3.5.7 The commissioning shall include interaction between other services and Contractors where interdependence of installations is encountered.
- 3.5.8 The commissioning process shall, after all testing's has been completed be the final proving ground of the systems and during this procedure the installations shall be subjected to all possible inputs and actions which may be encountered under operational conditions. The Contractor shall prove the full operation, working and compliance of the installation in accordance with the specifications.

- 3.5.9 The Contractor shall provide the Project Manager with 2 weeks prior notice of all Testing and Commissioning activities to be undertaken.
- 3.5.10 The mechanical testing and commissioning shall be done as per the guidelines found in section 4.5.
- 3.5.11 The Contractor shall provide a detailed testing and commissioning plan which shall be approved prior to the start of any testing activities.
- 3.5.12 The commissioning programme shall include:
 - i. A schedule of plant to be commissioned, the proposed tests to be conducted and the testing methods and the range of acceptable results.
 - ii. Commissioning check sheets; and
 - iii. Commissioning programme dates and duration.
- 3.5.13 The Contractor shall supply all relevant test equipment, monitoring devices, network analysers, protocol testers/analysers etc. required to test and commission the complete works.
- 3.5.14 An accurate record of all commissioning and testing is to be taken and included in the handover documentation as a permanent record.

3.6 Take over procedures

- 3.6.1 Access given by the Employer for correction of Defects
- 3.6.2 The *Contractor* complies with the following constraints and procedures of the *Employer* where the *Project Manager* arranges access for the *Contractor* after Completion:
 - Access into areas already handed over by the *Contractor* for correction of any defect shall be subject to the approval of PEMT Operations, and these times shall be communicated to the *Contractor* by the Project Manager.
 - The areas required by the Contractor will need to be temporarily barricaded by the *Contractor* before the *Contractor* commences with any corrective work.
- 3.6.3 The *Contractor* complies with the following constraints and procedures of the *Employer* where the *Project Manager* arranges access for the *Contractor* after Completion:
 - Where the Contractor has to return to Site after Completion to rectify notified Defects, the Employer may either impose the same Site access / egress restrictions as communicated elsewhere under C3.1 Employer's Works Information at the starting date / access date stated under Contract Data - Part One, or as the Works are now in use or the Employer's occupation of the Site may be incrementally or substantially changed post Completion, there may be further access / egress restrictions as required by the Employer.
- 3.6.4 Performance tests after Completion
 - Mechanical performance tests shall be carried out as per the guidelines in section 4.5 of this document.

4 Engineering Scope of Works

4.1 Scope of Building Works

4.1.1 SECTION 1 - Description of the works

***Read in Conjunction with Annexure A – Architects Drawings, Annexure B – Sanitary Schedule and Annexure C – Finishes Schedule**

4.1.1.1 The architectural design involves the refurbishment of the existing Fire Station Building, associated facilities, and External Works. Architectural layout plans, sections, elevations, construction details and specifications are prepared for the above-mentioned works.

4.1.1.2 The proposed upgrade will provide the Fire Services department with a facility to operate from and allow them to effectively contain and prevent the escalation of any emergency event until the arrival of the respective Local Authority Emergency Services.

4.1.1.3 The site is owned by TNPA. It is a brown field site with existing buildings, fencing, pavements and bulk services. It is centrally located in the port and easily accessible in Duncan Road.

4.1.1.4 The design of the facility includes the following:

a) External Works:

External work includes but not limited to:

- New guard house.
- New carports including one bay for people with disabilities.
- Safe crossing markings for pedestrians.
- Rainwater tanks including concrete stands.
- New aluminium cladding to the façade.
- New escape staircase.
- 2 Flagpoles.
- Repairs to pavement.
- Road markings.
- Open parking bays.
- New perimeter fence.
- Motorized sliding vehicular gate.
- Pedestrian Gate.

b) Internal Circulation:

- New elevator and steel staircase.
- New walkway / link from new mezzanine floor to the existing first floor on the Southern side of the building.

c) New mezzanine floor:

The new mezzanine floor on northern side of the building: (including demolition and making good of the existing mezzanine floor and internal steel staircase). This area is designed to accommodate:

- Offices.
- Training room.
- Storeroom.
- Construction of offices will be from standard gypsum board partitioning with glazed view panels.

- Construction of drywall along the walkway to be fire rated with fire rated glazed view panels.
- d) The area under the new Mezzanine floor: This area is designed to accommodate:
- A gym.
 - One office.
 - Storerooms.
 - Workshop.
 - Adjacent to this, a new paraplegic toilet is provided.
- e) Complete renovation of existing Ground Floor (Southern side)
- Alterations to walls and drywall in office areas (refer to drawings).
 - Alterations to bathroom layouts.
 - Replacement of all sanitary fittings.
 - New laundry room.
- f) Complete renovation of existing First Floor (Southern side)
- Alterations to walls and drywall in office areas (refer to drawings).
 - Alterations to bathroom layouts.
 - Replacement of all sanitary fittings.
 - Alterations to Pause area including plumbing and electrical work.
- g) Replacement of all windows and doors.

4.1.2 SECTION 2 - Construction requirements

4.1.2.1 The contractor should be aware of all the engineering services installations that will be installed in the buildings and facilities and be familiar with the sequencing of the installations thereof. Further to this the contractor must be familiar with all the relevant SANS codes and all relevant Transnet requirements.

- A. The Model Preamble for Trades as published by the Association of South African Quantity Surveyors. Model Preamble for Trades 2008 shall be applicable to all the building Works associated with this contract. The following interpretations and meanings shall apply:
- B. In case of any conflict in interpretation, ambiguity, or discrepancy between any Model Preamble for Trades 2008 (whether standard or written as a particular project specification) contained in the Works Information and the conditions of contract, the conditions of contract shall take precedence within the ECC3 Contract.
- C. In case of any conflict in interpretation, ambiguity or discrepancy between any Model Preamble for Trades 2008 (whether standard or written as a particular project specification) contained in this paragraph of the Employer's Works Information and specific statements contained elsewhere in Employer's Works Information, the specific statements contained elsewhere shall prevail, without prejudice to the Project Manager's express duty to resolve any ambiguity or inconsistency in the Works Information.
- D. Within the Model Preambles for Trades 2008, the following amendments and interpretations shall apply:
- Where the word or expression "Principal Agent" is used, read "Project Manager" or "Supervisor" as the context requires.
 - Where the word or expression "Contractor" is used, read "Contractor".
 - Where the word or expression "Engineer" is used, read "Project Manager" or "Supervisor" as the context requires.

- Where the Model Preambles for Trades 2008 mention “rates” for measured work and any contractual statements relating to payment, all such statements shall be discounted, with the ECC3 conditions of contract taking precedence.
- E. Within the Model Preambles for Trades 2008, A. GENERAL, the following amendments and interpretations shall apply:
- Where the word or expression “bills of quantities” is used, this shall be discounted for the purposes of the Works Information. The ECC3 Contract Data Part One states the main option to apply within the ECC3 Contract between the Parties.
- F. Within the Model Preambles for Trades 2008, B. ALTERATIONS, B.2 MATERIALS FROM THE ALTERATIONS, CREDIT, ETC and C. EARTHWORKS, C1.4 Materials from demolitions shall not apply. Employer’s Works Information paragraph 3.1.6 states details of the Contractor’s title (if any) to Materials arising from excavations and/or demolitions and how such Materials are either to be disposed of or re-used in the works.
- G. Within the Model Preamble for Trades 2008 Q. PLUMBING AND DRAINAGE, Q.24 TESTS shall be deemed to be included within paragraph 3.2.1 of C3.1 Employer’s Works Information.
- H. Within the Model Preamble for Trades 2008 U. EXTERNAL WORKS, U.3.8 Process control tests shall be deemed to be included within paragraph 3.2.1 of C3.1 Employer’s Works Information.
- I. The principles, meanings and interpretation stated and established within paragraphs 1 to 8 with respect to the Model Preambles for Trades 2008 equally apply to the other Model Preambles for Trades 2008 references used within this paragraph 8.2 of C3.1 Employer’s Works Information.
- J. Standards Act 103 of 1977 and the standards and codes of practice contained in SANS 10400 shall be strictly adhered South African National Standards: The application of the National Building Regulations and to.
- K. Particular specifications provided by the Employer

4.1.2.2 Manufacturer’s instructions and specifications

- All materials and products shall be used and installed in strict accordance with the manufacturer’s instructions and specifications.
- In circumstances where the manufacturer offers any form of guarantee the contractor is to ensure the products are installed in such a manner as to cover the installation specifications of the guarantee.
- Where trade names are specified in the construction works equal or approved products could be considered by the project team. The appropriate product manuals or data sheets would need to be submitted for approval.

4.1.2.3 Use of locally manufactured materials and products

- Materials and products manufactured in South Africa shall be used in carrying out the work to which this specification refers, unless an imported product is prescribed specifically, or when no suitable locally manufactured product for the specific use is available.
- In circumstances where the manufacturer offers any form site supervision or routine quality audit for the installation and use of products to ensure the guarantee of their

product the contractor is to ensure these products are used in preference to any other manufacturer in lieu of the guarantee.

4.1.2.4 Samples

- The Contractor shall furnish without delay, such samples and/ or certificates as called for or may be called for by the Supervisor / Project manager. Materials and/or workmanship not corresponding with approved samples may be rejected. Samples for approval shall be required for paint colours, wall finishes, ceiling finishes and floor finishes. These approved samples shall remain on site for the duration of the Works. The samples are to be labeled or marked with the following minimum information thereon. Project name and number. Supplier's name and phone number. Product information eg. Size, guarantee, colour codes, thickness, material, finish etc. Any other information to assist in the approval process.

L. Roof Structure:

- The Contractor shall provide Engineer's certificate confirming the design, structural stability and installation of the roof structure on completion of the roof structure.
- Shop drawings shall be required for Engineers approval for steel roof structures.
- Roof to comply with PART L OF SANS 10400:
 - i. 0,9mm Aluminium A7 profile roof sheeting.
 - ii. Sheetting shall have a minimum 20-year guarantee for harsh coastal environment. Colour to be factory coated PVDF finish. Adequate fixings shall be provided to ensure extreme wind conditions.
 - iii. Approved neoprene polyclosures shall be procured for use at all apex and eaves junctions.
 - iv. All roofing installations to be in accordance with manufacturer's specification.

4.1.2.5 Waterproofing of roofing, slabs and walls:

- The Contractor shall furnish the Employer with a written guarantee covering materials and workmanship for all waterproofing specified or offered for new work and repairs to existing. This guarantee shall be signed by the Contractor and countersigned by the supplier of the materials used and underwritten by a recognised insurance company. The guarantee shall be valid for a 10-year period.
- Should any maintenance be required during the guarantee period, the Contractor shall allow for the cost of such in his tender price as the Contractor shall be held solely responsible for any leaks that occur during the guarantee period.

4.1.2.6 Steel Roof Trusses:

- Should any repairs or additional bracings to existing roof trusses be required, shop drawings shall be required for Engineers approval for steel roof structures.
- Contractor shall provide certificate of structural stability for the design.

4.1.2.7 Timber Roof Trusses:

- Truss manufacturers Engineer's certificate covering the design and installation of trusses shall be provided.
- Trusses and roof structure are to be designed for extreme wind conditions.
- Adequate storm clips and holding down brackets and galvanized hoop iron straps are to be installed as per the manufacturer's data sheets or instruction.

- All timber used is to be treated according to manufacturer's instruction and certification thereof is to be provided.
- Shop drawings shall be required for approval for of roof structures.

4.1.2.8 Ceilings

- All ceilings to be installed in accordance with the current code of practice for ceiling installation adopted by the South African Building Interior System Association (SABISA).
- Care to be taken to ensure that the fixing used for the suspension points should be able to support a safety factor of three times the design load of the ceiling.
- The ceiling erection should take place at a later stage in the building, when the building is clean and there is less likelihood of damage from other trades and exposure to the elements.
- The entire system grid, tees and suspension system and ceiling tile to conform to:
 - Fire Classification: Class B/B1/2
 - Sound Attenuation: 32dB
 - Thermal Conductivity: 0.25 (m².k)/W
 - Humidity: 99%
 - Light Reflection: 85%
 - Feature ceiling: Contractor shall provide shop drawings and all samples prior to installation.

4.1.2.9 Doors:

- All doors to have SABS certification.
- Contractor to ensure the certification thereof shall be provided.
- Fire Rated Door to be in strict accordance with the manufacturer's instructions and in compliance with SANS 1253:2004 and carrying the relevant SANS mark for 120 min fire rating.
- Frame to be minimum 1.6mm gauge red oxide primed galvanized steel frame to suit thickness of wall.

4.1.2.10 Partitions:

- All partition systems shall be installed as per manufacturer's specification.
- Partitions that are be installed shall be structurally stable, secure and firm.
- Partition system to be with overall thickness of 76mm with SoundTherm Insulation of partition, including any additional steel studding necessary at door openings, glazed or other apertures, abutments, ends, corners, etc. the joints taped over and flushed over with jointing compound prepared for painting.
- Fire rating certificate of partitions shall be provided for Fire protection: up to 60 minutes as per BS 476 parts 20 - 23.

4.1.2.11 Glazing, Shopfronts, and Windows

- All glazing and safety glazing shall comply with SANS 613 and the SANS Codes of practice.
- All safety glass shall carry the Manufacturer's warranty against any manufacturing defects and discoloration for a minimum period of 5 years.
- As per SANS 10400-N, an approved permanent safety stencil mark shall appear on each pane on all safety glass.
- Glazing and shopfront installations shall comply with SANS 10400-XA.
- All tinted glazing must have the required thermal protection (U-factor rating) to ensure compliance to SANS 10400-XA.
- Installation certificate by AAMSA approved contractor is required for all shopfront installations.
- All shop fronts and window sections shall be water tight and able to withstand coastal winds of up to 80m/sec.
- All glazing shopfronts and windows shall be designed stored installed as per manufacturer's specification

- For any design by the Contractor See also Part 2.2 of this document; design by contractor.
- Installation certificate by AAMSA approved Contractor is required for all shopfront installations.
- All shop fronts and window sections shall comply with SANS 613, be waterproof and able to withstand the coastal wind conditions in the Port of Cape Town.

4.1.2.12 Brickwork and Mortar joints

- All brickwork is to conform with the standards and guidelines as stipulated in the National Home Builders Registration Council Standards and Guidelines www.nhbrc.org
- Cement & Concrete Institute Publications on concrete, mortar, plaster- and construction detailing, www.cnci.org.za
- Clay Brick Association - Building contractors pocket handbook, www.claybrick.org
- Facebrick shall be selected and blended.
- Prior to bricklaying, proper setting out of brickwork shall be undertaken by the Contractor's bricklayer for variances in brick dimensions.
- Facebrick shall be kept clean and protected as the brickwork and construction progresses at all times.
- For any detail information required on stained or dirty facebrick, Manufacturer's Office shall be contacted for method of cleaning.
- The Contractor shall construct a facebrick sample wall of 10 courses high and 8 courses wide to gain the approval for the quality of the face hands workmanship.
- A similar wall is to be constructed and plastered to gain the approval for the quality of the plastering and workmanship.
- The wall shall remain constructed on site from the commencement of the project to the completion of the project.
- Mortar joints to face brickwork generally shall be 10mm in thickness with level bedding joints, vertical perp ends.
- Setting out of brick gauge shall be determined on site as average sizes of bricks may vary.
- Weather struck joint profile shall be well rubbed with a standard jointing tool of suitable size to ensure that the entire exposed surface on the joint presents a smooth and polished appearance.
- The use of DPC shall be provided and installed as per SANS 10021, to provide barrier against rising damp, water penetration from above and horizontal water penetration.
- SABS 248-1973: Bituminous damp proof course.
- SABS 298-1975: Mastic asphalt for damp proofing courses and tanking are further references to adhere to.
- Wall ties are to comply with SABS 28-1986: Metal ties for cavity walls.
- Facebrick to have a FBX finish and have a zone classification of 2, for harsh coastal climate.
- Facebrick coursing to be 230 X 115 and 85 high.
- External skin of all internal walls to be bitumen painted.
- Brickwork to be re-inforced in solid cement mortar joints with brickforce as per engineer's detail.
- GMS butterfly wire wall ties at 450mm maximum vertical centers and 600mm horizontal centers for cavity walls.

4.1.2.13 Painting

- Paint to be used on all surfaces are to carry a minimum guarantee period of 14 years.
- Manufacturer of the paint shall provide regular inspection to ensure the surface preparation and application of the products are in accordance with the manufacturer's instruction.
- Regular moisture tests are to be carried out to ensure the surfaces are thoroughly dry - no more than 12% moisture content is recommended.
- All products must be applied in strict accordance with the Manufacturers specification and product technical data sheet.

- On completion of painting, the contractor is to ensure the paint manufacturer provides the adequate documentation for the paint guarantee.

4.1.2.14 Plaster & Painted Area Procedures

- Ensure that surfaces are sound and free from dust, oil, grease, dirt, and debris. Surfaces must be thoroughly dry - no more than 12% moisture content.
- Prior to painting, establish and repair all causes of moisture in the structure such as rising/lateral dampness; water ingress from balconies etc. All to be done in strict accordance with approved damp proofing methods.
- All products must be applied in strict accordance with the Manufacturer Specification and Product Technical Data Sheet.
- The first finishing coat be tinted from a base 9 to a colour corresponding to the colour of the topcoat.
- This will reduce the number of topcoats required for full hiding. Inter-coat washing is essential for all coastal projects. When in close proximity to the ocean, it is important to ensure surfaces are free of contaminants, specifically salt deposits, before painting can commence. For surfaces exhibiting excessive chalkiness, a full coat of primer is necessary to aid adhesion. Prior to painting, establish and repair all causes of moisture in the structure such as rising/lateral dampness; water ingress from balconies etc. All to be done in strict accordance with approved damp proofing methods.

4.1.2.15 Application:

- Ensure surfaces are sound, clean and thoroughly dry - moisture content should not exceed 12%.
- Apply approved Trade Alkali Resistant Primer at 9m² per litre, as a primer to bare and chalky surfaces.
- Allow overnight drying. Fill minor plaster deficiencies with a Pre-Paint Multi-Purpose Ready Mix Crack Filler and allow to dry and sand smooth. For textured walls surface drag a dry paint brush through the still wet filler to best recreate the existing wall texture. Spot prime with approved Pre-Paint Multi-Purpose Ready Mix Crack Filler repaired areas with primer and allow drying. Finish the walls with 2 coats of Wallguard at 8-10m² per litre per coat with 4 hours drying time between coats.

4.1.2.16 Steel painting procedures

- Directly before the application of paint, the area to be painted shall be degreased with a suitable degreaser and left to dry.
- Paint shall only be applied under the following conditions:-
 - There is adequate light.
 - The steel temperature is between 5 and 50°C and at least 3°C above the dew point of the air.
 - The relative humidity of the air is between the limits specified by the paint supplier.
 - Wind does not interfere with the method used and sand and dust cannot be blown onto wet paint.
- Steelwork shall be supported on trestles, at least 900 mm off the ground for painting purposes.
- An adequate number of test readings shall be taken per square meter to determine the dry film thickness.
- The paintwork shall be acceptable if the average of the test readings taken falls within or exceeds the ranges given.
- Paintwork shall not be acceptable if any single test reading is less than the specified minimum thickness.
- An ultrasonic or electronic magnetic flux thickness measurement gauge shall be used, but in case of dispute, destructive testing shall be applied. The painted steelwork shall present a clean, neat appearance of uniform colour and gloss as applicable to the paint used.

Each coat of paint shall be applied as a continuous, even film of uniform thickness. More than one application of paint may be required to achieve the dry film thicknesses specified or to obliterate the colour of the previous coating.

- The use of thinners or solvents at any stage of the work is prohibited, unless specified by the paint manufacturer.
- Precautions shall be taken to prevent coatings from being applied to equipment nameplates, instrument glasses, signs etc.

4.1.2.17 For Map cracking vertical walls

- Before painting can commence, every problem must be repaired in strict accordance with best painting practice standards.
- High Pressure water clean the walls at 180-220 KPA operating pressure utilising a rotating nozzle, remove defective paint and or paint system back to a sound paint layer or bare plaster as well as exposing any friable plaster. Reinstall friable plaster with a suitable mortar mix and allow to dry out with a moisture content of 12% or below. Use a paint scraper to remove any loose edges of paint.
- Use P80 sandpaper to feather the edges of the tightly adhering paint.

4.1.2.18 Sanitary ware

- All sanware products shall be clear of material and manufacturing defects.
- Appraisal of the above shall be done against ruling manufacturing specifications and standards at the date of manufacture.
- The manufacturer of the sanware must be able to repair or exchanged defective product.
- All sanware products shall be installed by a registered or accredited manufacturer's installer.
- Sanware shall be used with or included in installations where water temperatures are outside of the temperature range stipulated for that product, or as laid down in the Standards for water supply and drainage (SANS 10252 & 10254) or an equivalent international standard.
- Products shall be installed according to manufacturer's installation instructions or according to valid Water Regulations and general good plumbing practice.
- All pipe work shall be flushed for clearance of dirt or debris in pipe-work prior to the use of terminal fittings.
- All sanware handling shall be as per manufacturer's instruction.
- All consumables e.g. filters, filter cartridges, aerators, batteries seals or hoses shall be used as per manufacturer's instruction.
- All sanitaryware shall carry a warranty valid for:
 - 20 years for taps & mixers, wastes, capillary and compression fittings
 - 5 years for showerheads.
 - 2 years for electronic mixers components and valves.
 - 2 years for valves (geyser and toilet)
 - 10 years for multi-layer pipe system must be used with compression fittings and Safe inserts.
 - 10 years on all baths, shower trays and vanities.
 - 10 years on all sanitaryware
 - 6 months on all toilet seats.

4.1.2.19 Aluminium

- Aluminium extrusions shall be of 6063-T6 alloy and temper.
- Aluminium sheet and strips shall be of 1200-H4 alloy and temper. Joints in all aluminium members shall be formed in an approved manner so that the joints are practically invisible.
- Screw heads, pins, rivets, etc shall be concealed as far as possible. 300 Series stainless steel screws and bolts shall be used for jointing and fixing aluminium work. The surfaces of all aluminium which are in contact with other materials when fixed shall be suitably insulated with a non-absorbent insulating material to prevent corrosion. All aluminium

work shall be suitably protected against damage, deterioration or discolouration caused by mortar droppings, paint, etc by taping with removable tape, covering with temporary casings or by covering with motor oil.

4.1.2.20 Anodizing of aluminium

- Aluminium described as “anodized” shall be treated with Grade 25 coating thickness for exterior use or Grade 15 for interior use as specified, to the required finish. All alloys to be anodized shall be suited to anodizing.

4.1.2.21 Protection of works

- The Contractor shall provide all necessary dust sheets, hoarding, etc. and shall exercise all necessary care to prevent marking surfaces, walls, floors, glass, electrical fittings, etc. and shall keep all parts of the works perfectly clean and free at all times from spotting, accumulation of rubbish, debris of dirt arising from the operations. Any surface disfigured or otherwise damaged shall be completely renovated or replaced as necessary by the Contractor at his own expense to the Supervisor’s approval. The premises shall be left clean and fit for occupation at completion of the work.

List of Architect’s Drawings is under section 7.1

List of Annexures

ANNEXURE A – Architects Drawings

ANNEXURE B – Sanitary Schedule

ANNEXURE C – Finishes Schedule

4.2 Civil Engineering Works

- 4.2.1 Where the SANS 1200 series of Specifications are used within the Works Information, the following interpretations and meanings shall apply:
- 4.2.2 In case of any conflict in interpretation, ambiguity or discrepancy between any SANS 1200 Specification (whether standard or written as a particular project specification) contained in the Works Information and the conditions of contract, the conditions of contract take precedence within the ECC contract.
- 4.2.3 In case of any conflict in interpretation, ambiguity or discrepancy between any SANS 1200 Specification (whether standard or written as a particular project specification) contained in this paragraph 4.3 of the Employer’s Works Information and specific statements contained elsewhere in C3.1 Employer’s Works Information, the specific statements contained elsewhere shall prevail, without prejudice to the Project Manger’s express duty to resolve any ambiguity or inconsistency in the Works Information under ECC Clause 17.1.
- 4.2.4 Within SANS 1200 A: GENERAL, the following amendments and interpretations shall apply:
 - Where the word or expression “Employer” is used, read “*Employer*”;
 - Where the word or expression “Contractor” is used, read “*Contractor*”;
 - Where the word or expression “Engineer” is used, read “*Project Manager*” or “*Supervisor*” as the context requires;
 - Where the word or expression “schedule of quantities” is used, this is deleted in entirety. Assessment and payment is in accordance with the *conditions of contract* (and the ECC main and secondary options stated therein);
- 4.2.5 Within SANS 1200 A: GENERAL 2.3 DEFINITIONS, the following apply:

- “Acceptable. Approved (Approval)” is interpreted as either a *Project Manager* or a *Supervisor* communication or instruction in relation to Works Information compliance, consistent with the *conditions of contract* as the context requires;
 - “Adequate” is deleted. The *Project Manager* notifies the *Contractor* where the *Contractor* has not complied with the *Works Information*;
 - “Measurement and payment” and the further definitions contained within 6.3 c) are deleted. Assessment and payment is in accordance with the conditions of contract (and the ECC main and secondary options stated therein);
- 4.2.6 Within SANS 1200 A: GENERAL 2.6 APPROVAL, the following applies:
- “Approval” by either the *Project Manager* and/or the *Supervisor* is without prejudice to ECC Clause 14.1 and, inter alia, ECC Clauses 13.1, 14.3 and 27.1.
- 4.2.7 SANS 1200 A: GENERAL 2.8 ITEMS IN SCHEDULE OF QUANTITIES, is deleted in entirety. Assessment and payment is in accordance with the conditions of contract (and the ECC main and secondary options stated therein).
- 4.2.8 SANS 1200 A: GENERAL 3.2 STRUCTURES AND NATURAL MATERIAL ON SITE, applies only to the extent that it is consistent with paragraph 3.1.6 of C3.1 *Employer’s Works Information*.
- 4.2.9 Within SANS 1200 A: GENERAL 7.1 PLANT, the following applies:
- Where the word or expression “Plant” is used, read “Equipment”.
- 4.2.10 SANS 1200 A: GENERAL 7.2 CONTRACTOR’S OFFICES, STORES AND SERVICES, applies but the *Project Manager* resolves any inconsistency with statements included within paragraph 3.1.12 of C3.1 *Employer’s Works Information*.
- 4.2.11 SANS 1200 A: GENERAL 3.1 SURVEY, applies only to the extent that it is consistent with paragraph 3.1.14 of C3.1 *Employer’s Works Information*.
- 4.2.12 Within SANS 1200 A: GENERAL 3.2 WATCHING, BARRICADING, LIGHTING AND TRAFFIC CROSSINGS, the following applies:
- Where the word or expression “specification” is used, read “Works Information”.
- 4.2.13 SANS 1200 A: GENERAL 3.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES applies only to the extent that it is consistent with the specific statements made elsewhere in C3.1 *Employer’s Works Information* and in any case and at all times consistent with the *conditions of contract*.
- 4.2.14 Within SANS 1200 A: GENERAL 5 TESTING, the following applies:
- Where the word or expression “Engineer” is used, read “*Supervisor*”.
- 4.2.15 SANS 1200 A: GENERAL 8 MEASUREMENT AND PAYMENT, is deleted in entirety. Assessment and payment are in accordance with the conditions of contract (and the ECC main and secondary options stated therein).
- 4.2.16 The principles, meanings and interpretation stated and established within paragraphs 6.3.1 to 6.3.15 with respect to SANS 1200 series and to SANS 1200 A: GENERAL equally apply to the other SANS 1200 specification references [state particulars of SANS 1200 used] used within this paragraph 6.3 of C3.1 *Employer’s Works Information*.
- 4.2.17 *Underground service detection survey*: the Contractor shall undertake an underground service detection survey to establish the positions and depths of the existing underground services. Mapped existing services layout plans are to be produced in order to identify any interferences with the works that need to be carried out on the site:
- A survey report is to be provided documenting the survey methodology, underground services identified, and the position and depths.

- The survey will be done in accordance with TMH11 as amended in 2013 and the survey shall be based on WGS84 system.
- Underground service identification includes but is not limited to the following:
 - Electrical HT and LT
 - Telecommunications
 - Water (Potable or Fire)
 - Sewage
 - Oil and gas
 - Stormwater
 - Other/unknown
- The underground service orientation shall meet the following conditions:
 - GPS coordinates according to the WGS84 South African Datum (Hartebeesthoek 94) are to be provided, mapping the route of each service identified. The spacing of the co-ordinates is to be taken in 2m intervals and at any junction point.
 - All junctions are to be determined such that a direction change in the service is clear. The average depth of the service is to be obtained in relation to the land levelling datum (MSL) & ground level in the area, with any critical variations in depth to be identified and documented.
 - The acceptable tolerance for the position is 0.3m (GPS Coordinate) and depth is 0.1m.
- The methodology should aim to be non-invasive/destructive (i.e. Ground Penetrating radar) or mitigate invasiveness (minimize excavation) in the identification of the services. If an invasive method is unavoidable, the Contractor will be responsible to rehabilitate the affected area to its original state once the work is completed.
- A complete set of AutoCAD, PDF and Microstation drawings are to be provided indicating all underground services within the boundary of the site (refer to drawing No.). The drawing must have all services labelled and colour coded as per a legend.
- Native drawings should be layered using colours and line types to make the drawings easier to read. The line types and colours to be used shall be according to ENG-STD-0001.

4.2.18 *Site clearance, earthworks and layer works:*

The works for site clearance, earthworks and layer works include the following:

- Clearing of site where required.
- Exposing of existing services where required.
- Demolition of existing concrete platforms, edge beams, kerb and channel in the perimeter of the site and at the entrance.
- Ripping and discarding of existing asphalt surface.
- Ripping of existing block pavers (north and east of Fire building).
- Bulk excavation and treatment of in-situ material (including dewatering).
- Construction/rework of G7 crushed stone subbase (from commercial sources where deficits must be made up).
- Construction of sidewalk block paving.
- Placing and compacting of sand bedding (commercially sourced).
- Construction of kerbs, fillets and channels.
- Permanent road signage.
- And any other work arising out of or incidental to the above or required of the Contractor for the proper completion of the works.

4.2.19 *"Site clearance, earthworks and layerworks"*, shall be read in conjunction with the following SANS, Transnet standard specifications and other relevant specification:

SANS Specifications	
SANS 1200 A	General
SANS 1200 C	Site Clearance
SANS 1200 D	Earthworks
SANS 1200 DM	Earthworks (roads, sub grade)
SANS 1200 GM	Concrete (small works)
SANS 1200 M	Roads (General)
SANS 1200 ME	Subbase
SANS 1200 MF	Base
SANS 1200 MF	Asphalt base and surfacing
SANS 1200 MJ	Segmented paving
SANS 1200 MK	Kerbing
SANS 1200 MM	Ancillary roadworks
SANS 10400	Series, A, C, D, F, G, P

4.2.20 *Sewer and stormwater drainage*: the works for the sewer and stormwater drainage include the following:

- Excavate, supply, bed and lay concrete Stormwater conduits.
- Excavate, supply, bed and lay Class 34 uPVC sewer pipes.
- Construction of storm water grid inlet and kerb inlet manholes.
- Construction of sewer manholes.
- And any other work arising out of or incidental to the above or required of the Contractor for the proper completion of the works.

4.2.21 “Sewer and stormwater drainage”, shall be read in conjunction with the following SANS standard specifications:

SANS Specifications	
SANS 1200 DB	Earthworks (Pipe trenches)
SANS 1200 LB	Bedding (Pipes)
SANS 1200 LD	Sewers
SANS 1200 LE	Stormwater Drainage

4.2.22 *Concrete works*: the works for the concrete include the following:

- Encasing of pipes where required.
- Concrete channel and fillet.
- Manhole covers and bases.
- Pedestrian scoop.

- Any other work Concrete Works arising out of or incidental to the above, or required by the Contractor for the proper completion of the works in accordance with the true meaning and intent of the contract documents.

4.2.23 Section 4.3.7, “Concrete works”, must be read in conjunction with the following specifications:

SANS Specifications	
SANS 1200 G	Concrete
SANS 1083:1994	Aggregates from natural sources
SANS 10100-2:1992	The Structural use of concrete – Part 2: Materials and execution of work
SANS 50197-1	Cement – composition, specifications and conformity criteria. Part 1: Common cements
SANS 1491-1	Portland cement extenders – Part 1 Ground granulated blast furnace slag
SANS 1491-2	Portland cement extenders – Part 2 Fly ash.
SANS 1491-3	Portland cement extenders – Part 3 Condensed Silica Fume
TRANSNET S420	Specification for Concrete Work

4.2.24 *Other Works*: the works for the miscellaneous items include the following:

- Construction and installation of new steel mesh (Clear-vu) fence.
- Installation of vehicle and pedestrian access gates.
- Installation of rainwater harvesting tanks.
- Installation of Macerator system in the new security kiosk to tie into existing sewer system.
- Pavement Marking in accordance with the SARTSM.

4.3 Structural Engineering Works

4.3.1 The scope of the structural engineering works include:

- Removal of an existing structural steel staircase. Structure is to be carefully detached from adjoining elements (i.e., Floor slab & mezzanine floor components), dismantled and removed.
- Removal of an existing mezzanine floor structure - To be carefully detached from adjoining elements (i.e. Portal frame stanchions and substructure columns), dismantled and removed.
- Removal of an existing structural steel walkway (residing above prefabricated container). Structure is to be carefully detached from adjoining elements (i.e., portion of existing steel walkway), dismantled and removed.
- Removal of an existing Prefabricated container (after existing walkway is removed).
- Part removal of existing floor slab at three locations (300x300mm removal area), as directed by the engineer, to enable DCP testing on underlying soil.
- Perform DCP tests at three locations and provide estimated allowable bearing capacity data for each test location. The relationship between estimated allowable bearing capacity and depth below ground level (underside of floor slab) shall be reflected graphically for each test location.
- Part removal of existing floor slab and underlying soil material, at two separate locations, for exposure and measurement of existing substructure columns and foundation.
- Reinstatement of removed portions of existing floor slab and soil material - as required.

- Construction of reinforced concrete bases for new mezzanine floor structure and walkway.
- Construction of new structural steel formed mezzanine floor and support structure.
- Construction of new structural steel formed Walkway and support structure.
- Construction of new Lift shaft. Lateral Propping/ support will be required for the existing wall against which the new lift shaft will be built.
- Construction of new Brick walls and strip type foundations.
- Construction of new Structural steel formed carports.
- Construction of new Perimeter fencing & access gate.
- Construction of a new guard house structure.
- Construction of a plinth to support a back-up generator.
- Installation of a Flagpole structure.

4.3.2 The following requirements & specifications apply to the structural engineering works:

CONCRETE, STEELWORK, FORMWORK AND REINFORCEMENT

4.3.2.1 Particular specifications

The following specifications shall apply:

- NB: All in situ concrete work (mass and reinforced) shall comply with SANS Specification 1200G ("8 Measurement and Payment" is not applicable) supplemented by the clauses in this section. Where SANS Specification 1200G and the clauses in this section are in conflict the clauses in this section shall take precedence.
- In addition, the "Model Preambles for Trades" as recommended and published by the Association of South African Quantity Surveyors, 1999 Edition, shall be read in conjunction with and shall apply to all items in the Bill of Quantities not covered by the 'SANS Standardised Specifications' SANS 1200 Series
- Where the term "plain concrete" appears in SANS Specification 1200G it shall be read as "mass concrete".

SANS Specifications	
SANS 1200 G	Concrete
SANS 2001: CC1	SANS 2001: CC1
SANS 1083:2006	Aggregates from natural sources
SANS 10100-2:2000	The Structural use of concrete – Part 2: Materials and execution of work
SANS 50197-1:2000	Cement – composition, specifications and conformity criteria. Part 1: Common cements
SANS 1491-1:2005	Portland cement extenders – Part 1 Ground granulated blast furnace slag
SANS 1491-2:2005	Portland cement extenders – Part 2 Fly ash.
SANS 1491-3:2006	Portland cement extenders – Part 3 Condensed Silica Fume
TRANSNET S420	Specification for Concrete Work
S437 (Transnet)	Concrete Pavement Cement

- Common cements, complying with SANS 50197-1 shall be used for all concrete work. On no account shall masonry cements be used for concrete work, even if the strength designations are the same as for common cements.
- The Supervisor for test purposes may require samples of cement from any one, or from every consignment. Cement in any consignment from which a sample may have been

taken for testing shall not be used until it has been approved. Allowance must be made for possible delay in that tests may take 10 days to carry out.

- Bags of cement shall be stacked in a waterproof, solidly constructed shed with a central door and a floor rendered damp-proof with a tarpaulin. The bags of cement shall be closely stacked (but not against walls) in order to reduce air circulation in such a manner that the cement is used in the order in which it was received, i.e. first in first out.

4.3.2.2 ALKALI REACTIVE CONCRETE

- Alkali Reactive Aggregates shall not be used in this project. The equivalent Na₂O content of the concrete shall not exceed 2, 0 kg/m³ where % Na₂O equivalent = % Na₂O + (0,658 x %K₂O)

4.3.2.3 AGGREGATES

- Fine and coarse aggregate shall comply with the relevant clauses of SANS 1083.
- Where aggregates have constituents, which in the opinion of the Project Manager, may give rise to damage due to alkali-aggregate reactions, the provisions of 6.3.3.3 shall be applicable.
- Evidence of compliance of the aggregates with the requirements of 6.3.3.1 & 6.3.3.2 shall be furnished as early as practical. No aggregate shall be delivered for use in the works until approval is given.
- Sand (fine aggregate):
 - The fine aggregates shall comply with the requirements of SANS Specification 1083. Other aggregates may be approved if they have a satisfactory history and / or test results.
 - No aggregate may be used until it has been approved. Samples having a mass of 25kg (16.5 litres) of the proposed aggregate to be used may be required by the Supervisor for test purposes. Samples having a mass of 25kg shall be forwarded every 3 months during concreting work and also if the source of supply is changed. Allowance must be made for possible delay in that the tests may take 14 days to carry out.

4.3.2.4 Admixtures

- Admixtures containing chlorides will not be permitted in reinforced concrete.

4.3.2.5 Cover blocks

- Cover blocks used to ensure the cover to reinforcement shall be made of cement mortar.
- Cover blocks shall be dense and have a minimum 28 day crushing strength of 30 MPa and shall be cured in water for at least 14 days before being used.
- Cover/spacer blocks made of plastic will not be permitted.

4.3.2.6 Concrete quality

- Prior to the start of any concrete work on site, the *Contractor* shall submit a quality assurance plan which will ensure compliance with specification and provide acceptable documentary evidence that all specified operations have been carried out satisfactorily.
- Where the minimum dimension to be placed during a single pour is larger than 600mm, and the cement content of the reinforced concrete exceeds the following:
 - Cement Types I and II/ * S : 400 kg/m³
 - Cement Types II/B-V and II/B-W : 450 kg/m³
- The *Project Manager* may require that measures be instituted to reduce heat development in the concrete.

4.3.2.7 Unreinforced concrete

Class A Concrete:

- Filling to cavity of hollow walls.

4.3.2.8 Unreinforced concrete cast against excavated surfaces

- 15 Mpa/19mm Concrete
- Surface blinding under footings and bases.

4.3.2.9 Reinforced concrete

- 30 MPa/19mm Concrete:
 - Bases.
 - Foundation beams.
 - Surface beds cast in panels on waterproofing.
 - Walls in foundations (Provisional).
 - Columns in foundations (Provisional).

4.3.2.10 Batching

- All cementitious binders shall be batched by full sack or by mass batching with approved precision weighing equipment.
- All aggregates shall be precisely measured by mass using approved precision weighing equipment, unless otherwise permitted by the Project Manager.
- Should any variation in the composition of the aggregate become apparent, the Project Manager shall be notified and a further sample of aggregate submitted immediately for his approval.

4.3.2.11 Concrete placing

- The size, shape and depth of any excavation shall be approved by the Project Manager before concrete is placed.
- Unless otherwise permitted by the Project Manager, no concrete shall be placed until the fixed reinforcement has been accepted by him and confirmed in writing by way of a release certificate.

4.3.2.12 Construction joints

- Unless otherwise shown on the drawings, the exact position of horizontal construction joints shall be marked on the formwork by means of grout checks in order to obtain truly horizontal joints.
- Stub columns, stub walls and stays on footings shall be cast integrally with the footing and not afterwards, even where another class of concrete is being used.
- Joint lines shall be so arranged that they coincide with features of the finished work.
- Where new concrete is to be cast against a hardened concrete surface, neat cement slurry mixed to a creamy consistency shall be brushed onto the cleaned concrete surface.
- Contraction joints shall be smooth and shall have one coat of limewash or PVA applied to the older surface prior to casting the fresher concrete.

4.3.2.13 Slip Joints between Concrete and Brickwork

- Slip joints shall be provided between brickwork and concrete slabs and beams by levelling up and towelling smooth the bearing surfaces of brickwork with 3:1 cement mortar and covering the bearings before the concrete is baste, with two layers of one side smooth tempered hardboard, with the smooth sides in contact.
- The ends and sides of beams and edges of concrete slabs shall be separated from the brickwork with 13mm thick bitumen impregnated soft board or expanded polyethylene strips placed vertically against the brickwork before the concrete is cast.
- Similar slip joints shall be provided between brickwork and concrete lintels cast In situ, but without soft board or expanded polyethylene strips at ends.

4.3.2.14 Movement Joints

- All movement joints are to be filled in with approved bitumen impregnated soft board or expanded polyethylene strip unless otherwise specified or detailed on drawings. Descriptions (prices) of movement joints shall be deemed to include formwork.

4.3.2.15 Grouting

- 25 MPa non-shrink cementitious grout:

- Bedding approximately 25mm thick under base plate including chamfered edges all round.

4.3.2.16 Curing compound

- Unless otherwise directed by the Project Manager, the curing compound shall be:
- An approved trafficable, resin-based, white pigmented, membrane forming for slopes flatter than 1:1.
- An approved clear, aesthetically acceptable, membrane forming for all other concrete surfaces, including beam and slab soffits.
- The curing compound shall comply with specification ASTM C309, except that the maximum permissible water loss in the test shall be 0, 40 kg/m².
- Alternatively, the curing compound shall be acceptable if the treated concrete retains 90% or more of its mixing water when subject to the test set out in BS 8110 Part 1 – Chapter 6.6.

4.3.2.17 Curing compound application

- The total application rate of the curing compound shall be the greater of the supplier's specification or 0.90 l/m². On textured concrete surfaces, the total application rate shall be 0.90 l/m².
- In cases of concrete surfaces with run-off problems, it may be necessary to apply more than one coat of membrane forming curing compound to obtain the specified total or cumulative application rate.
- Curing in accordance with SANS 1200 G shall commence on all concrete surfaces as soon as it is practical in the opinion of the Technical Officer.
- On unformed surfaces the curing compound shall be applied after finishing and as soon as the free water on the surface has disappeared and no water sheen is visible, but no so late that the liquid curing compound will be absorbed into the concrete.
- On formed surfaces, the exposed concrete shall be wet with water immediately after the forms are removed and kept moist until the curing compound is applied.
- Application of the curing compound shall begin once the concrete has reached a uniformly damp appearance with no free water on the surface.
- Application of the compound may be done by hand or power spray.
- The compound shall be applied at a uniform rate with two applications at right angles to each other to ensure complete coverage.
- Pigmented compounds, without a thixotropic agent, shall be adequately stirred to assure even distribution of the pigment during application.
- Unless otherwise directed by the Project Manager, the initial 24 hour curing of concrete surfaces not covered by formwork shall be carried out by ponding, covering with constantly wetted sand or mats, or continuous spraying in accordance with SANS 1200 G when the following climatic conditions occur:
 - Wind velocity greater than 5 m/s and/or
 - Ambient temperature is above 25 °C and/or
 - The relative humidity is below 60 %
- If plastic shrinkage occurs, the concrete, while still plastic, shall be re-vibrated, floated and re-coated with curing compound as if no curing has previously taken place.

4.3.2.18 Curing period

- The curing period for concrete containing only CEM 1 shall be 7 days.
- The curing period for concrete containing CEM 1 plus cement extenders (MGBS, FA) shall be 10 days.
- The curing period will start on completion of the concrete pour and for formed surfaces shall include the time for which forms are still in place after the pour.

4.3.2.19 Concrete records

- The Contractor shall maintain the following daily records for every part of the concrete structure and shall make these available at all times during the progress of the work for inspection by the Project Manager:
 - The date and time during which concrete was placed
 - Identification of the part of the structure in which the concrete was placed
 - The mixed proportions and specified strength
 - The type and brand of cement
 - The slump of the concrete
 - The identifying marks of test cubes made
 - Curing procedure applied to concrete placed
 - The times when shuttering was stripped and props removed
 - The date of despatch of the cubes to the testing laboratory
 - The test results
- The records shall be delivered to the Project Manager each week except in the case of sub-standard concrete, when the Project Manager shall be informed immediately.

4.3.2.20 Tolerances

- Deviations shall be within the limits listed in SANS 1200 G for degree of accuracy II unless otherwise specified.

4.3.2.21 Testing and monitoring

- Frequency of sampling and testing shall be as specified in SANS 1200 G

4.3.2.22 Cost of tests

- The costs of making, storing and testing of concrete test cubes as required under clause 7 'Tests' of SANS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the Project Manager. The testing shall be undertaken by an independent firm or institution nominated by the Contractor to the approval of the Project Manager (Test cubes are measured separately)
- If the quantity of concrete from which samples were taken exceeds 40 m³, it shall be subject to the testing of a minimum of 3 sets of samples per day from each grade of concrete placed in each independent structure.
- If the quantity of concrete from which samples were taken is less than 40 m³, it shall be subject to the testing of a minimum of 2 sets of samples per day from each grade of concrete placed in each independent structure.
- If the Contractor disputes the results of the tests on concrete cubes, the concrete represented by the cubes will be considered acceptable if the Contractor, at his own cost, proves to the satisfaction of the Project Manager that the estimated actual strength of cores taken from the structure, determined in accordance with SANS Standard Method SM 856, is not less than the specified strength.
- If the strength of the concrete fails to meet the acceptance criteria stipulated, the Project Manager may in his sole discretion and in addition to the options listed in SANS 1200 G:
 - accept the concrete subject to approved remedial measures being undertaken by the Contractor; or
 - permit the concrete to remain subject to the payment of a penalty. The penalty referred to will be determined as follows:

$$\text{Penalty} = V \times R \times F$$

Where

V = Volume (in the opinion of the Project Manager) of concrete of unsatisfactory strength represented by the test result.

R = Relevant scheduled rate

$$F = 1 - \sqrt{\frac{\text{Average strength of unsatisfactory concrete}}{\text{Specified strength} + 6 \text{ MPa}}}$$

Where the relevant scheduled rate (R) includes or excludes the cost of formwork, or where no formwork was involved.

4.3.2.23 Formwork

- Descriptions of formwork shall be deemed to include use and waste only (except where described as left in or permanent), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use.
- Formwork to sides of bases, pile caps, ground beams, etc. have been measured provisionally and will only be paid for where it is specifically prescribed by the Technical Officer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in Earthworks
- Rough formwork (degree of accuracy ii)
 - Rough Formwork to Sides:
 - ✓ Strip footings.
 - Bases.
 - ✓ Rectangular columns below ground
- Smooth formwork (degree of accuracy ii)
 - Smooth Formwork to sides:
 - ✓ Inner and outer face of shaft walls.
 - Rectangular and circular columns above ground
 - ✓ Edges not exceeding 300mm high
- Movement joints etc
 - Expansion joints with soft board between vertical concrete surfaces:
 - ✓ 12mm Joints not exceeding 300mm high.
 - Saw cut joints:
 - ✓ 3.2 x 50mm And 6.4 x 20mm saw cut joints in two operations in top of concrete.
 - ✓ Seal Sikaflex-11FC on backing chord to manufacturer's specification
 - ✓ Horizontal toggle construction joints through concrete including thick cement slurry to one face.
 - ✓ Surface beds not exceeding 300mmm thick.
- Reinforcement (provisional)
 - High tensile steel reinforcement to structural concrete work:
 - ✓ In various diameters and lengths
 - ✓ Mild steel reinforcement to structural concrete work
 - ✓ In various diameters and lengths
 - ✓ High tensile steel reinforcement to structural concrete work
 - Fabric reinforcement:
 - ✓ Fabric reinforcement type as specified on structural drawings.

4.3.2.24 Forming key to concrete for plaster, mosaic tiles and other finishes

- Where rough formwork has been used, surfaces of concrete to receive plaster, mosaic tiles and other finishes, shall, immediately after the formwork has been removed, be well wetted and wire brushed whilst the concrete is still green and then shushed over with 2:1 cement grout to form a key for the finish, all to the approval of the Supervisor. The shushing is to be allowed to set hard before the finish is applied.
- Where smooth formwork is used, surfaces of the concrete to receive plaster, mosaic tiles and other finishes shall be hacked, on the distinct understanding that hacking of concrete shall be at no extra cost to the employer.

- Surfaces of concrete receiving plaster or other finishes shall not be plastered or finished until the Supervisor has signified his opinion in writing that the surfaces are suitable to receive plaster or other finishes.

4.3.2.25 Sleeve Pieces and Ties

- Where it is necessary to leave plugs or holes in beams, slabs or any other reinforced concrete, all such plugs or holes must be situated in positions approved by the Supervisor before concreting. Where it is necessary to carry pipes, bolts, wires or any other fittings through reinforced concrete members, approved pipe sleeves must be provided and placed in position before concreting.
- Where waste, ventilation water, heating or other pipes under 100mm diameter pass through concrete slabs and beams, galvanised mild steel sleeve pieces or diameters shown or required shall be cast into such concrete slabs and beams.
- Chases shall be formed in edges of slabs or slots shall be formed in the slabs, or sizes required, where two or more pipes pass through together.
- All necessary bolts, plugs, brackets, cramps, etc. shall be cast into the concrete as the work proceeds.
- Where brickwork abuts against concrete, the brickwork is to be tied to the concrete with galvanized hoop-iron ties 1.6m thick by 32mm wide and approximately 600mm long to every third course of brickwork with one end of each tie cast approximately 150mm deep into the concrete. Where such fixing is impossible, i.e. where steel formwork is used, the ties are to be gun-nailed against concrete with steel nails to less than 38mm long.

4.3.2.26 Bagged Finish to Concrete

- Concrete surfaces to receive bagged finish shall be prepared by removing sharp projections and making good defects with 3:1 cement mortar. Finish by rubbing over the whole area with wet rough sacking and cement grout to obtain an even surface.

4.3.2.27 Power Floated Finish

- Power floated finish to floors etc. means that surfaces shall be floated mechanically to a smooth and even finish before the concrete has set. Small areas inaccessible to the machine are to be floated by hand. Under no circumstances is cement mortar to be added while floating the concrete.

4.3.2.28 "No Fines" Concrete

- "No-fines" concrete, for grading flat concrete roofs and the like to falls, shall be in the proportion of 12 parts 19 iron cubical stone to 1 part cement mixed with 20 litres water per bag of cement and be laid to falls of not less than 15mm per linear metre for mastic asphalt and not less than 20mm per linear metre for sheet roof covering. For heavy load applications special mix designs may be required.

- Fillets against upstands:
Form triangular fillets, size 100 x 100mm, in corners with walls, kerbs, etc. neatly mitred at angles, stopped where necessary and finished smooth ready to receive waterproofing.

- To raised floor, bases, etc:
No-fines" concrete for raised floors, bases, etc. shall be in the proportions specified. Finished smooth with 3:1 sand/ cement screed to receive waterproofing.

4.3.2.29 Lift Shafts

- Lift shafts may not deviate more than 25mm out of plumb over the full height of the shaft and must on no account have more than a 25mm 'spiral deviation' due to rotation of the formwork in the horizontal plane as the work proceeds.

4.3.2.30 Precast Concrete

- Materials

- Cement, water, aggregates and reinforcement shall be as described under: CONCRETE, FORMWORK AND REINFORCEMENT.
- Concrete
 - Concrete shall be as described under: CONCRETE, FORMWORK AND REINFORCEMENT and, unless otherwise specified. Class E concrete shall be used but with coarse aggregate of an appropriate size.
- Smooth Finish
 - Where described as “finished smooth from the mould” such surfaces shall have a layer of fine stuff composed of 1:4 (1 part cement and 4 parts clean fine sand by volume) packed against the faces of the mould before placing the concrete backing. The concrete backing shall be disposed into the moulds in a wet state (not dry pressed) while the facing is still wet.
 - Projections shall be rubbed off the faces shall be of even colour and free from blemishes, cracks and other imperfections. Salient angles shall be arras rounded.

STEEL WORK

4.3.2.31 Governing Codes and Standards

Specifications, codes and standards	
ANSI/AWS D1.1	Structural Welding Code - Steel
BS-EN 287 Part 1	Approval testing of welders/fusion welding
BS-EN 288 Part 3	Specification and approval of welding procedures for metallic materials
BS 5135	Metal arc welding of carbon and carbon manganese steels
BS 4360/SANS 50025	Weldable structural steel
BS 2573 Part 1	Classification, stress calculations and design of structures
BS 3923:	Methods for ultrasonic examination of welds
BS 2600:	Radiographic examination of fusion welded butt joints in steel
DIN 1026	Metric channels
ISO R657	Angles
SANS 10094	The use of high strength friction grip bolts and nuts
SANS 135	ISO metric bolts, screws and nuts (hexagon and square) (coarse thread free fit series)
SANS 136	ISO metric precision hexagon-head bolts and screws, and hexagon nuts (coarse thread medium fit series)
SANS 435	Mild steel rivet

4.3.2.32 Welding

- All the provisions of BS 5135 shall be complied with as far as applicable.
- Design of weld joints shall be such that crevices, overlaps, pockets, arc strikes and dead ends do not exist.
- All joints shall be completely seal welded in accordance with BS 5135. Special care must be taken to prevent the ingress of moisture into the tubular members by ensuring that

each such tubular member is airtight. "Stitch" welding will not be permitted. Only continuous welding will be accepted.

- Weld cracks, undercut, or pock marks will not be accepted.
- All welds on the load bearing frame structure, containers, piping, pipe line flanges, etc., shall be continuous and shall be visually inspected for cracks and other discontinuities.
- Welds on the main chords must be tested ultrasonically in accordance with BS 3923 or X-rayed in accordance with BS 2600 and those on minor joints by the dye-penetrant method. The equipment required for these tests must be supplied by the Contractor and the testing done at his cost.
- Steel, except in minor details, which has been partially heated, shall be properly annealed. (Electrically welded structural members excepted.)
- All brackets, clamps, lugs, straps, suspenders, etc. required for attaching mechanical and electrical equipment must be welded on prior to erection and special precautions must be taken not to damage welds or puncture tubes during erection.
- The welding of all rails shall be done by an approved method.
- Welding shall only be carried out by a coded welder according to SANS 10044, BS-EN 287 Part 1 and BS-EN 288 Part 3 or ANSI/AWS D1.1.
- All parts to be welded shall be thoroughly cleaned and dried before welding. The welding will only be done in dry surroundings and all steps taken to prevent hydrogen embrittlement.
- Where materials of different compositions are joined by welding, especially carbon steel to chrome steel, the filler welding method and post welding treatment shall be such that embrittlement and other degradation of both steel and filler is prevented.
- It must be ensured that welded joints are ductile.

4.3.2.33 Fasteners

- All bolts, nuts and rivets shall be manufactured in accordance with the following standards:

Specifications, codes and standards	
SANS 135	Commercial bolts and nuts Grade 4.6
SANS 136	Precision bolts and nuts Grade 8.8
SANS 10094	Friction Grip Bolts and nuts Grade General
SANS 435	Rivets

- All friction grip fasteners shall be hot dip galvanised, including high tensile bolts (and their nuts and washers), structural rivets and Huck bolts.
- All holding down bolts and nuts and brackets, as well as all fixing bolts, studs, nuts and washers shall be of stainless steel. Fixing rivets shall be of either stainless steel or brass.
- Bolts and set screws shall be locked in an approved manner and shall not be stressed in tightening to beyond the recommended loads.
- The quality of friction grip bolts, nuts and washers, bolt lengths, sizes of holes, tightening standards, surface condition of clamped components, shop and site assembling, and acceptance inspection of friction grip joints shall comply with the latest edition of SANS 10094. Certificates shall be supplied for all bolts of grade 8.8 and 10.9.
- All bolt and rivet holes must be accurate to size and location, the centres of holes shall not be placed nearer the edge of a plate than 1,5 diameters with an extra allowance of 3mm for sheared edges. All holes in the structural work shall be drilled or otherwise punched to a diameter not exceeding 1,5mm less than the diameter of the finished hole on the die side, and afterward reamed out to the exact size

- Where possible the adjoining parts forming a connection shall be drilled or reamed together, with holes not exceeding 1,5 mm diameter the rivet or bolt for which it is made. No rough or broken edge shall be left around any of the holes.
- For turned and fitted bolts, the holes shall be accurately drilled or reamed; the diameter of the hole shall not exceed the finished diameter of the bolt by more than 0,25mm.
- The holes, after assembly of the parts, shall be true throughout the thickness of all the parts and perpendicular to the axis of the member.
- Rivets shall be cup-headed or countersunk as required, unless otherwise specified. No rivet head shall contain less metal than does a length of the rivet equal to 1,25 times its diameter. All loose and defective rivets shall be cut and replaced by sound ones; also, others when required for the purpose of examining the work. Rivets shall be driven with pressure tools whenever possible and pneumatic hammers shall be used in preference to hand driving.
- All field rivets must be supplied with shanks of suitable length for pneumatic riveting.
- Bolts shall be of such a length as to accommodate a full nut when tightening up, and project at least two thread pitches beyond the nut. Excessive projection of threads beyond the nuts should be avoided.
- All bolts having countersunk heads shall have strong feathers forged on the neck and head to prevent turning and the bolt holes shall be cut to receive same. All nuts and bolts (excluding countersunk bolts) shall be furnished with circular washers of sufficient thickness, the outside diameter being at least twice the nominal diameter of the bolt, and washers fitted correctly.
- Where bolt heads or nuts are seated on bevelled surfaces of beams or channel flanges, bevelled washers must be inserted.

4.3.2.34 Joints and Mating Surfaces of Members

- Mating surfaces of members to be joined by high tensile steel bolts in friction grip shall be cleaned and primed as specified for the rest of the steelwork. Mating surfaces shall lay flat against each other to eliminate gaps which may allow ingress of water. After joining, the edges shall be sealed with an approved brand of Butyl/ Rubber sealing compound by means of a suitable caulking gun, or shall be seal welded.
- Other joints shall be formed by one of the following methods:
- The mating surfaces of members shall be blast cleaned, primed and protected prior to sub-assembly by the liberal application of caulking compound. While the compound is still wet, the members shall be bolted together and caulking compound which is squeezed out shall be completely removed.
- The mating surfaces shall be protected with the full corrosion protection system as specified, the surfaces joined together and the joint so formed shall be sealed with butyl rubber sealer.
- After being cleaned and primed the surface shall be joined together and the joint so formed shall be seal welded.
- The primer coating on mating surfaces must be applied not more than 4 hours after cleaning and the edges must be sealed within 3 weeks of assembly of the part.

4.3.2.35 Fabricated Parts

- All fabricated parts shall be properly fitted during assembly to result in properly aligned equipment having a neat appearance. Fabrications of load bearing members shall have no abrupt changes in cross section and regions of severe stress concentration. All sharp corners accessible by personnel during erection or operation shall be ground, rounded, or removed by other methods. Burrs, welding spatter and stubs of welding wire shall be removed.

4.3.2.36 Ballast or Counter Mass

- Tenderers must include for the supply of all necessary ballast or counter mass.
- These must preferably be of cast iron and be removable for maintenance of structural steelwork.
- Concrete ballast is not recommended but will be accepted provided the Tenderer satisfies Transnet that it will not cause corrosion of any steel parts.
- Fastenings used for removable pieces must be of non-corrosive material.
- Ballast must be in suitable shapes to be secured in position against movement but in sizes easily removable for maintenance.
- Lifting hooks or eyes of non-corrosive material and of adequate strength must be provided in the removable ballast pieces.
- Concrete ballast must be reinforced so as to prevent cracking or breaking and must be coated with an approved corrosion protection system for concrete.

CORROSION PROTECTION (SPECIFICATION HE9/2/8 - [Version 16] - July 2002)

4.3.2.37 Scope

- Structural steelwork in coastal area (within 10km from coast):
- Structural steelwork is to be protected against corrosion as follows:
 - This specification covers requirements for protective coating of iron and steel structures, electrical motors, gear boxes etc. against corrosion and must be read in conjunction with the main specification as well as the following (latest editions):-

Specifications, codes and standards	
SANS 10064	Preparation of steel surfaces for coating
SABS 121	Hot-dip (galvanized) zinc coatings
SANS 1091	National colour standards for paint
BS 5493	Code of practice for protective coating of iron and steel Structures against corrosion

4.3.2.38 Types of Corrosion Protection to be used

- The coatings specified in this specification are chosen according to BS 5439, Table 3, part 9, to ensure that the condition of the surface will be at least RE2 on the European scale of degree of rust, after 10 years in a environment of frequent salt spray, chemicals and polluted coastal atmosphere. During the 10 years, the normal maintenance painting will be done.
- The paint manufacturer shall guarantee the paint for at least 10 years.
- Should a tenderer wish to offer coating systems other than those specified, as an alternative, he shall submit full technical details and a list comparing all appropriate details of the alternatives proposed, with the original specified.
- Tenderers must ensure that the different coats they offer in their tenders are compatible with each other.
- The coating of proprietary items must be done according to Clause 3.
- All galvanized components including bolts and nuts but excluding walkway gratings, must be painted with the specified system, unless otherwise approved
- The following coating systems must be used unless otherwise specified in the main specification:

Substrate	Coat No	Generic Description	Dry Film Thickness (mm)
3CR12 steel	1	Surface tolerant epoxy primer	65-75
	2	Two component recoatable, polyurethane finish (Gloss)	65-75
Galvanized Steel	1	Surface tolerant epoxy primer	65-75
	2	Two component recoatable, polyurethane finish (Gloss)	65-75
Mild steel	1	Two component self-curing inorganic zinc ethyl silicate OR two component zinc rich polyamide cured epoxy primer	65-75
	2	Flexible recoatable high build polyamide cured MIO epoxy	125-150
	3	Two component recoatable, polyurethane finish (Gloss)	65-75

- The paint manufacturer's recommendations for the application of the different coating systems, curing time before handling or application of subsequent coats, health and safety recommendations etc. must be carefully adhered to.
- Paint contractors must have a quality management system which must be submitted to the Engineer for approval before commencement of the work.
- Galvanizing shall be done to SANS 121 heavy duty hot dip galvanizing to a thickness of at least 85mm. Electroplated components in zinc or cadmium are not acceptable.
- All mounting bolts, nuts, washers and brackets as well as all fixing bolts, studs nuts and washers shall be of stainless steel. Fixing rivets shall be of either stainless steel or brass.
- High tensile bolts for friction grip joints must be hot dip galvanized and painted. High tensile bolts must be certificated after galvanizing.
- The full paint system shall be applied to all surfaces which are to be covered with wear pads, linings etc.
- For steelwork which will be transported over long distances and erected on site the two pack epoxy primers is preferred.

4.3.2.39 Propriety Items

- Proprietary items such as gearboxes, motors, brakes etc. must either be painted according to this specification or where the coating system is equal to or exceeds this specification sufficient proof of the coating system applied must be provided. Items which are nearly equal to this specification shall be given a finishing coat according to this specification's thicknesses and final colours and to the following procedure:
 - A crosscut test must be done to SANS SM159 to determine if the original coating adheres correctly to the substrate.
 - The original coating shall be rubbed down to remove any smooth finishing to form a suitable key for the finish coat and any damaged areas prepared and patch primed with a suitable primer.
 - The item must then be detergent washed to remove any foreign matter, taking care that no dust, solvent etc. contaminates any working part of the item.
 - A test shall be done on the existing coat to ensure that the finish coat will not react with and cause undue dissolving and lifting of the existing coat. This can be done by applying a small quantity of the finishing coat thinners.
 - Should any undue dissolving or lifting occur, a suitable intermediate or barrier coat must be applied before the finishing coat is applied.
 - Proprietary items which failed the crosscut test and which generally have inadequate protection shall be dismantled and the full corrosion protection specification applied.

4.3.2.40 Surface Preparation

- All steel surfaces shall be detergent washed and fresh water rinsed to remove all oil,

grease and surface contaminates before shot blasting.

- Sharp edges shall be radiused and major roughness of welds shall be removed by grinding. Welding spatter and flux shall be removed.
- Components manufactured from hot rolled steel sections and steel plate shall be blast cleaned to base metal in accordance with SANS 10064 grade SA2½ - very thorough blast cleaning, to remove all mill scale, rust, weld spatter etc.
 - "Sharp" chilled iron shot, chilled iron grit, or granular abrasive slag is to be used to produce a proper degree of surface roughness.
 - Blast profile shall be determined by micrometre profile gauge, Keane-Tator surface profile comparator or Testex press-o-film.
 - The profile height shall be between 40 and 50mm at any point.
- Good quality blast cleaning and spray-painting equipment shall be used. Air used for spraying and blast cleaning shall be free from all traces of oil, water and salinity. Water and oil traps must be fitted to all equipment.
- Wheel abrading equipment shall not be used unless an angular profile the same as clause 4.3.3 is achieved.
- When wet blasting is done the primer shall be applied before oxidization starts or surface contamination occurs.
- Components manufactured from 3CR12 steel shall be lightly abraded. The components shall then be passivized by using a mixture of 10 - 15% nitric acid in water which is rinsed off after 10 - 15 minutes. The surface shall be neutralized to pH 7 before it is coated.
- Hot-dip galvanized components, galvanized bolts and nuts etc. shall be lightly abraded with a galvanizing pre-cleaner. The components shall then be washed with detergent and water and washed down with clean water until a water break free surface is achieved. Allow to dry thoroughly.

4.3.2.41 Joints and Mating Surfaces of Members

- Mating (faying) surfaces of members which have to be joined by high tensile steel bolts in friction grip shall be cleaned according to Clause 4 and painted with primer only.
 - After being assembled joints so formed shall be seal welded and painted or after the intermediate coat was applied the edges shall be sealed with an approved brand of paintable flexible sealant or mastic (e.g. Butyl rubber, polyurethane sealer or two component epoxy), by means of a suitable caulking gun.
- All rivets, bolts, welds, sharp edges etc. must be covered with a "stripe coat" of the primer or intermediate coat specified to ensure the correct dry film thickness on sharp edges, as well as sealing of bolt threads to head etc.
- All other mating surfaces must be sealed with an approved brand of flexible Butyl rubber, paintable Silicone, polyurethane sealer or two component epoxy sealer, and joined while still wet. All excess compounds must be completely removed.

4.3.2.42 Colour Codes

- Machinery and equipment shall be painted in the following final colours:-

Area	Colour	Code No. [SABS 1091 and International No's]
Mobile equipment (cranes, loaders etc.)		
a) Structure, machinery and electrical houses, operator's cabins, chutes, hoppers etc.	Transnet White	RAL 9016 RAL 7024 (Graphite gray)
b) Undercarriage, travel rubber tyred rims bogies, Industrial buildings, structures conveyor	Transnet dark grey	SABS 1091 GO4 (Blue grey) BS 381C-633
General		
a) Guards	Golden yellow	SABS 1091-B49 RAL 1003

Area	Colour	Code No. [SABS 1091 and International No's]
b) Sheaves	Orange	RAL 2008
c) Cable reels (Stainless steel	Orange	RAL 2008
d) Machine buffers and parts of machine which could constitute a serious hazard	Golden Yellow (High Gloss) with Luminous green stripes in chevron pattern	SABS B49 and Luminous green
e) Any exposed rotating part of machinery, electrical Switchgear (other than starting and stopping devices and emergency stop control), electrical services e.g. conduit and allied fittings	Light Orange (High Gloss)	SABS 1091 B26 BS 381C-557
f) Low voltage switchgear panels	Light grey	SABS 1091-G29
where orange is not aesthetically acceptable		BS 381C-631
g) medium voltage cable trays, switchgear and motors (3,3 kV and up)	Oxford Blue	SABS FO2 BS 381C-105 RAL5003
h) Starting devices, low voltage cable trays and switchgear	Mid Brunswick green (high gloss)	BS 381C-228 SABS1091-EO4 RAL6005
i) Parts of stationary machinery (Electrical, motors, gearboxes, brakes, transformers, etc.)	Light Grey	SABS G29 BS 381C-631
j) Hand levers, hand wheels, oiling points, handrails on walkways, ladders	Golden Yellow (High Gloss)	SABS 1091 B49 BS 381C-356
k) Stopping devices, grease points, motor fan covers and danger signs (not symbolic safety signs for which see SABS 1186)	Signal red (High Gloss)	SABS 1091 A11 BS 381C-537 RAL3001
l) Walkways (non-slip surfaces) (galvanized gratings not to be painted)	Shop floor green	
m) Informatory signs and notices (not symbolic safety signs for which see SABS 1186)	White on Emerald Green (High Gloss)	White on SABS 1091 E14 BS 381C- 228
Pipelines		
a) Reclaim water piping	Aluminium	
b. Slurry pipelines	Dark admiralty grey	SABS 1091-G12
c. Fire protection piping	Signal red	SABS 1091-A11
d. Wash water drainpipes	Light grey	SABS 1091-G29
e. Instrument air	White with Strong blue band	White and SABS 1091-F11
f. Plant air	White with Flag blue band	White and SABS 1091-FO4
g. Potable water	Grass green	SABS 1091-D14

- Colour bands for pipes shall be 75 mm wide for pipe sizes up to 150 mm diameter and 100 mm wide for 150 mm and above. The colour bands shall be applied to the pipe flanges, valves, junctions, walls or structures etc. in such a manner that the pipe may be

easily identifiable. On straight sections the maximum spacing shall be 100 x the pipe diameter.

4.3.2.43 Field Touch-up Painting

- Damaged and unpainted areas, fasteners, welds, etc. shall be cleaned by wire brushing with hand tool or power tool in a manner which will minimize damage to sound paint. Grinding will not be allowed. Rust spots shall be cleaned to bright metal. Thick edges of old paint abutting on bare metal surfaces shall be feathered by scraping and sanding.
- Where welding is required on areas already coated with the coating system, the coat should be stepped back for $\pm 30\text{mm}$ around the weld area.
- The paint shall be applied to match the original coats in accordance with the manufacturer's recommendations for the specific paint system.

Note: Inorganic zinc primers shall not be re-covered with an inorganic primer, but only with an organic zinc primer.

- Areas of damaged galvanizing shall be repaired with an approved cold galvanizing product or metal sprayed by the wire spraying process with Zinc, and then touched up with the specific paint system.

4.3.2.44 General

- Exposed machined surfaces must be coated with a strippable corrosion inhibitor (e.g. Tectyl).
- Where different materials will be in contact with each other and galvanic corrosion can occur the contact areas of the materials must be isolated from each other or the joints made water proof to prevent ingress of moisture.
- All components must be designed with corrosion prevention in mind and specifically the following:-
 - No entrapment of dirt, product, moisture etc.
 - No areas must be inaccessible for maintenance such as too narrow gaps etc.
 - Large flat areas rather than complicated shapes and profiles.
 - No sharp corners and discontinuous welds.
- Parts of equipment which are exposed to high temperatures must be coated with the following system:

Coat No	Generic Description	Dry Film Thickness (mm)
1	Two component self-curing inorganic zinc ethyl silicate	65-75
2	Single component high temperature moisture curing silicone with aluminium flakes	40

4.3.2.45 Maintenance Painting of Structures

- Areas which are only lightly corroded must be cleaned by means of high pressure water blasting or wire brushing by power tool and the following system applied:-

Coat No	Generic Description	Dry Film Thickness (mm)
1	Surface tolerant two pack epoxy primer with aluminium pigments	125-150
2	Same as first coat OR micaceous iron oxide (MIO) epoxy	125-150
3	Two component recoatable, polyurethane finish (Gloss)	65-75

- Alternatively, the Noxyde paint system can be used, consisting of two to three coats of water based Noxyde paint to achieve a DFT of 350 to 400 microns. Where the Noxyde system is used on areas other than slightly corroded structural areas, the following additional requirements must be observed:
- Very smooth surfaces (e.g. 3CR12, stainless steel or hot-dip galvanized components,

bolts, nuts and fittings, and HT bolts). Parts must be thoroughly degreased using OptiDegreaser, washed down with potable water, and immediately when dry, a single coat of OptiPrimeAqua applied.

- Paintable flexible sealant/mastic: Only sealant approved by the paint manufacturer may be used, and an initial coat of OptiPrimeAqua applied over it before the further coats of Noxyde are applied.
- Bolted/riveted connections: After blasting or and/or cleaning as required, apply a coat of OptiPrimeAqua and an additional stripe coat of Noxyde, in contrasting colour, to all bolt/nut and plate edges and crevices.
- The adhesion of old coatings must be verified by doing a cross cut adhesion test on selected areas.
- The compatibility of the new paint system on the old coating must be tested and guaranteed in writing by the paint supplier.
- The work and coating system must be guaranteed for a minimum of 12 months.
- All heavily corroded areas must be shot blasted to minimum SA2 and the three coat system indicated in clause 2.6 applied.
- Areas where the old coating is still sound need only be high pressure cleaned with a suitable solvent and coated with one of the primers suggested in clause 10.2 (as tie coat) and then with one of the top coats suggested in clause 2.6 to get the appropriate colour and finish. The minimum dry film thickness of this tie coat must be 75 microns and top coat must be 50 microns, but the previous coating colour shall be completely obliterated to present a uniform colour.
- Note: Inorganic zinc primers shall not be re-covered with an inorganic primer, but only with an organic zinc primer.
- Repairs to the insides of all the enclosed sections of the booms as well as the insides of the crane legs, sill beams, cross beams, pylon cross bracing members etc. shall be done as above but the top coat need not be applied.

4.4 Mechanical Engineering Works

4.4.1 Scope of work

- The *Contractor* shall supply, deliver, install, test and commission and handover the firefighting system and signage that will include, but is not limited to, fire hydrants, piping, valves, fire equipment signage, emergency and safety signage and all emergency evacuation plans.
- The *Contractor* shall supply, deliver, install, test and commission and handover the hot and cold-water reticulation system that will supply water to all taps, showers, hydroboils, hot water storage tanks. Heat pumps and toilets for the main building and the guard house.
- The *Contractor* shall design, supply, install, test and commission and handover all supporting infrastructure required for all mechanical works. Including but not limited to all structural supports for the fire and potable water reticulation systems with regard to, thrust blocks and anchoring down supports for the pipeline or bridges, plant bases or plinths, plant supports and fixings for all equipment. This is to be informed by water hammer analysis and thrust block restraint design
- The *Contractor* shall conduct flow and pressure analysis on all existing water tie in points to ensure sufficient flow and pressure requirements are met to comply to SANS and local regulations.
- The *Contractor* shall supply, install, test and commission and handover all control and actuation systems; MCC panels and Electrical Distribution Boards required for the mechanical Plant; and Electrical work including connection to power isolators, wiring between switchboards, unit mounted sensors, control devices, etc. and wiring between controllers and remote sensors, remote set point adjusters, etc.;
- The *Contractor* shall supply, install, test and commission and handover all painting and corrosion protection of Plant;
- The *Contractor* shall provide all detailed workshop and fabrication drawings, including pipe schedules, HVAC duct routing, services clashes and weld maps for acceptance prior

to the commencement of fabrication. This should be followed by all as-built drawings post installation of all items of the Works Information.

- The *Contractor* shall supply, deliver, install, test and commission and handover a lift system, and all auxiliary work required for said lift system to function as described in the provided lift specification attached in Annexure G of this Works Information. The *Contractor* shall appoint a certified and registered lift installer, as per the specification document, and ensure that all components, main and auxiliary, fit within the design specification as well as the architects drawing and dimension. All structural supports shall be designed supplied, delivered, installed, tested, and commissioned and handed over by The *Contractor* and the certified lift installer/manufacturer.
- The *Contractor* shall provide a detailed testing and commissioning plan including all FAT, SAT and Commissioning tests and activities prior to the commencement of any testing activities.
- The *Contractor* shall test and commission the systems in line with the guidelines as per the Works Information as well as the manufacturer's requirements and industry best practices.
- The *Contractor* shall provide Operation and Maintenance manuals that will include, but is not limited to, quality certificates and tests conducted during fabrication and installation, all FAT and SAT tests conducted, all commissioning documentation, detailed as built drawings and technical specifications of all plant and systems, operation methodologies and information, maintenance methodologies and information and details of spares and replacement components.
- The *Contractor* shall guarantee all installations and equipment for twelve (12) months after "practical completion" date of the completed installation, or sections thereof. This is the date confirmed in writing by the Project Manager.

4.4.2 General

- The Contractor shall inform themselves with local site conditions such as safety requirements, access area available on site, type of ground, space available for on-site fabrication, storage, transport, loading and unloading facilities, scaffolding, tackles and tools needed, as no claims by the Contractor, which may arise from ignorance of the site conditions, shall be considered.

4.4.3 Materials and Workmanship

- The Contractor shall ensure all materials shall be of the quality specified and the Contractor shall, furnish proof that the materials are of the specified quality. The Engineer is not responsible for Quality Assurance on behalf of the Contractor but shall be entitled to condemn unsatisfactory work.
- The Contractor shall ensure all materials and equipment used for the installations shall be new and undamaged. The Contractor shall, if requested by the Project Manager, provide samples of material and Plant for approval. If judged necessary by the Project Manager, such samples may only be returned after the completion of the installation, in order to ensure that the quality of the installed product is the same as that of the approved sample
- Material for which an SABS specification exists, shall be in accordance with such a specification, and shall bear the SABS mark.
- All fire protection Plant used shall originate from suppliers which have been certified in accordance with SABS ISO 9001 (ISO 9001) or SABS ISO 9002 (ISO 9002) for Quality assurance. Copies of certificates of approval shall be provided by the tenderers with their tenders. Plant designed to BS 5446, Fire systems for residential premises, or similar other standards, are not acceptable.

4.4.4 Design and Drawings

Design Responsibilities

- The Contractor shall ensure all Plant is positioned and installed in such a way as to ensure proper access for service and maintenance.
- The Contractor shall ensure That all control panels, wiring and components of the

electrical installation comply with all application safety codes standards and regulations.

- All electrical works associated with the mechanical plant shall comply with the requirements of electrical works detailed in this document.
- The Contractor shall ensure the designs must be cost effective and energy efficient.
- The Contractor shall furnish details of any Plant that is other than, or different to, that specified by the Employer's Engineers, to the Supervisor for Approval by the Employer's Engineers. The Contractor is prohibited from installing said without the required prior authorization from the Employer's Engineers. The approval shall only apply to the selection of the type of Plant and in doing so, the Employer's Engineers assume no responsibility or accountability for the proper functionality of Plant or associated systems designed by the Contractor in any way whatsoever.
- The Contractor shall ensure All design calculations and simulations shall be submitted to the Project Manager for acceptance by the Employer's Engineer together with the workshop Drawings. The drawings shall be submitted in PDF as well as DWG formats for all submissions. The Contractor shall price in the works for the submission of the calculations and drawings as well as schedule the time for acceptance of all designs and approval of plant type (should there be any deviation from the specifications).

4.4.5 Plant Supports, Bases and Foundations

- The Contractor shall design all foundations required for mechanical Plant as per the recommendations of the Plant suppliers and to comply with the requirements of the Works Information and Technical Specifications.
- The Contractor shall design supports, stands, hangers, and suspended platforms for equipment, tanks or other Plant as required.
- The Contractor shall design bases and plinths for all items of plant to comply with the requirements as specified in this document.
- The Contractor shall ensure that all designs of foundations, bases and plinths are compatible with the type of floor designed by the Structural Engineers and be able to tie into the floor to provide a continuous surface.

4.4.6 Workshop Drawings

- The Contractor shall ensure Preparation of complete workshop drawings is the responsibility of the Contractor. The workshop drawings must be prepared on the basis of:
- The Contractor shall ensure the latest Architect's, Structural Engineer's, Civil Engineer's and Electrical Engineer's drawings regarding co-ordination, layout and design;
- The Contractor shall make use of the actual Plant offered in the Tender and Approved by the Project Manager. No work may be put in hand before the relevant workshop drawings have been reviewed by the Project Manager for acceptance. The Employer's responsibility in this regard is limited to checking conformance with the works information and co-ordination with other disciplines where necessary This does not absolve the Contractor of any responsibility in terms of the contract or for errors or omissions in the shop drawings. Comments, amendments, or corrections of shop drawings are not intended to cause any variation in the cost of the work, and
- The Contractor shall include time in the schedule for acceptance of workshop drawings and Approval of Plant by the Employer. All workshop drawings submitted shall be signed by an ECSA registered Professional Engineer.
- The workshop drawings shall include but not be limited to the following:
 - P&ID showing the entire system layout and plant details;
 - Detailed drawings of all plant;
 - Plant Specifications, including fixing details and materials.
 - Piping schedules;
 - Detailed piping drawings, including joint details and positions;
 - Welding schedules and weld maps (if applicable);
 - Foundation, Plinth and Base details of all plant;
 - Corrosion protection specifications for all plant and materials;
 - Cable schedules; and

- General arrangement drawings and component lists for electrical and controls works associated with the mechanical plant.

4.4.7 Builders Work Drawings

- Openings
 - The Contractor shall show all openings and other finishes on layout drawings in such a way as to constitute a clear instruction to others.

4.4.8 Plant Foundations, Bases and Plinths

- The Contractor shall be responsible for providing detailed Builder's Work drawings for all foundations, plinths and plant bases as per the manufacturer's recommendations for the Plant selected.

4.4.9 Noise and Attenuation

- In respect of noise control and attenuation the Contractor shall be responsible for the selection, supply and installation of all sound attenuators, spring mounts, mass bases, flexible connections, spring hangers, etc. as required by the Contractor's detailed design to comply with all relevant SANS standards and the OHS Act.
- The Contractor shall ensure that where ducts and pipes pass through concrete, brick or other structural members and finishes. This is achieved without transmission of noise and vibration.

4.4.10 Responsibilities of the Contractor

- Ordering of Plant and Materials
 - The Contractor shall be responsible to ensure that the project programme is adhered to and that no delays are caused by late deliveries of Plant and materials. All other activities which must proceed placing of orders must be taken into account when the Contractor schedules his activities.
- *Storage of Materials and Plant*
 - The Contractor shall be responsible for the proper storage of all materials and Plant on site to ensure protection against the elements, damage by impact, dirt, builder's rubble dust theft etc.
- *Protection of the Works*
 - The Contractor shall programme his work to avoid damage by other Trades and shall be responsible for protection of the works against such damage until handover to the Client.
- *Accessibility*
 - The Contractor shall plan suitable accessibility for thermometers, gauges, controls, dampers and other devices which require reading adjustment, inspection, repair removal or replacement.
 - The Contractor shall design all systems and plant positioning to enable ease of maintenance or repair and provide sufficient space for removal or replacement of plant if required.
- *Weather Proofing*
 - All outdoor Plant shall be weatherproof and corrosion resistant including minor items such as screws fixers, brackets, etc.
 - The IP rating for waterproofing of all Plant must be accepted by the Project Manager.
 - In addition to the above mentioned, the Contractor may comment on aspects of the Employer's design with a view to improvement or cost saving but must draw to the attention of the Engineer any aspect of the design which in his view is not appropriate. The final decision and responsibility rests with the Engineer.
- Main Offer
 - The main tender price must include for the equipment specified herein, under the heading of Allowed in Tender. This does not necessarily indicate a general preference for the specified equipment but serves the purpose of ensuring that all Tenderers

include for the same major equipment in their Tender Price. Generally the specified equipment will be of the quality and in the price range, deemed appropriate for the project.

4.4.11 Service Conditions

The Plant and Material shall be designed and rated for continuous operation under the following conditions:

- *Ambient/Environment Conditions:*
 - All Plant and Material offered shall be rated for continuous operation under the following conditions:

4.4.12 External Conditions

Summer ambient	: 31.6 °C DB Maximum
Winter ambient	: 1 °C Minimum
Humidity	: Average of 69%
Altitude	: 33m above sea level

4.4.13 Internal Conditions (air-conditioned areas)

Summer	: 22.5 °C Dry bulb – 55 % Relative Humidity
Winter	: 22.5 °C Dry bulb – 55 % Relative Humidity

- *Noise levels*
 - Maximum noise levels caused by the operation of items of Plant shall comply with the OHS Act 85 of 1993 and all other regulations.
- *Normative References*
The following publications and specifications (latest edition) shall apply where contextually correct:

In addition to the specifications, the project shall comply with the following relevant Acts and Regulations as listed below:

- Occupational Health and Safety Act 85 of 1993.
- The S.A. National Building Regulations and Building Standards Act. (Act 103 of 1977);
- South African National Standards and Codes of Practice.
- IEC Standards and Recommendations.
- International Standards and Codes – ISO, DIN, BS, ASME, ASCE, ANSI, ASTM, EU, NFPA.
- The local, provincial or S.A. Government laws in force at the time.
- Construction Regulations 2014; and
- National Heritage Resource Act (Act 25 of 1999)

The SI (“Le Systeme International d’ Unites”) – Metric System of Units shall apply. Refer to SANS – M33A: The International Metric System: Guide to the use of the SI in South Africa.

The Contractor shall additionally read the Engineering Works Information for the mechanical works in conjunction to this with the Specifications provided separately in the annexures.

4.4.14 South African National Standards

Standard No.	Description
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SANS 10252	Water supply and drainage for buildings Part 1 and Part 2
SANS 10400-T	The application of the National Building Regulations Part T: Fire protection
SANS 10400-O	The application of the National Building Regulations Part O: Lighting and ventilation
SANS 10139	Fire detection and alarm systems for buildings - System design, installation and servicing
SANS 1200HC	Corrosion Protection of Structural Steelwork
SANS 1200 L	Medium Pressure Pipeline
SANS 10400	The Application of the National Building Regulations
SANS 659:2007	Cold water – Copper
SANS 1545	Safety rules for the construction and installation of lifts
SANS 4344	Steel wire ropes for lifts – minimum requirements
SANS 347: 2012	Categorization and conformity assessment criteria for all pressure equipment
SANS 32/SANS121	Hot Dip Zinc (galvanised) Coatings
SANS 10254: 2017	The Installation, maintenance, replacement and repair of fixed electric storage water heating systems
SANS 10139: 2012	Fire detection and alarm systems for buildings
SANS 10064	The preparation of steel surfaces for coating
SANS 763	Hot-dip (galvanised) zinc coatings
SANS 1091	National colour standards for paint
SANS 5493	Code of practice for protective coating of iron and steel structures against corrosion
SANS 10400 XA	Energy usage in buildings
SANS 1910	Portable refillable fire extinguishers
SANS 543	Fire hose reels
SANS 10400W	The application of the National Building Regulations Part W: Fire installation
SANS 1200 LB	Bedding (pipes)
SANS 10142	Code of Practice for the Wiring of Premises.
SANS 10147	Code of Practice for Refrigeration and air-conditioning installations
SANS 1387:2009	galvanized mild steel, medium weight
SANS 62	Pipes suitable for threading and of nominal size not exceeding 150 mm
SANS 1186	Standard signs and general requirements

SANS 1128-1:2010	Components of underground and above-ground hydrant systems
SANS 1461	Major hazard installation - Risk assessments

4.4.15 Other Specifications

Specification No.	Description
Government Notice	Pressure Equipment Regulations, 2009
	The General Electrical Specification for the Provincial Administration of the Republic of South Africa Part 2E
	The Municipal Fire Regulations.
	The Municipal by laws and any special requirements of the Supply Activities of the area or district concerned.
	The Occupational Health and Safety Act No 85 of 1993

4.4.16 Testing and Commissioning

- The Contractor shall provide a detailed testing and commissioning plan which shall be approved by the Project Manager prior to the start of any testing and commissioning activities. This includes the factory and site acceptance testing.
- The Commissioning of each system is done in accordance to the following high level procedure:
 - All work is inspected by the Contractor to ensure all defects are identified and rectified. The Contractor informs the Employer of all defects identified and the remedial action taken.
 - Once the defects identified by the Contractor have been rectified, the Contractor and the Supervisor shall jointly inspect the Works. Any further defects shall be recorded and categorised according to the following:
 - Defects that are urgent and require immediate attention to enable testing and commissioning to be completed
 - Defects that can be rectified after Commissioning
 - Items that are out of scope and require approval to be implemented
 - The Contractor and the Supervisor shall jointly inspect once all identified defects have been rectified
 - The Project Manager notifies the Contractor that commissioning may proceed.
 - A safety review is held with the Contractor, Supervisor, Project Manager, and necessary experts for the system being commissioned.
 - Each system and item of major equipment is thoroughly checked using an accepted pre-commissioning check list.
 - Functionality is checked for all items under no load conditions.
 - Once all checks are complete and functionality confirmed, the system is started under test conditions and then put into operation
 - Contractor rectifies all further defects identified during the commissioning process and previously identified defects including approved compensation events.
 - The Contractor and the Supervisor shall jointly inspect once all identified defects have been rectified.
 - The Contractor shall invite the Employers Engineer for all testing and commissioning activities at least 2 weeks prior to the start of the activities. the employers engineer must be present for all testing and commissioning activities.

4.4.17 Technical Specifications

- All *Design's* undertaken, *Plant's* and *Materials* supplied by the *Contractor* in agreement with the *Employer*, with the intention to execute the works detailed in this document, shall

fully comply with all Mechanical Specifications listed below.

Annexure D : Mechanical Technical Specifications Fire Suppression and Detection System

Annexure E : Mechanical Technical Specifications Water Reticulation System

Annexure F : Mechanical Technical Specification HVAC System

Annexure G : Mechanical Technical Specification Lift

Annexure H : Mechanical Design Report

4.5 Electrical Engineering Works

4.5.1 Scope of works

- The purpose of this document is to detail the works to be undertaken by the Contractor in relation to the refurbishment of the fire station in the Port of Cape Town. Within this document, the works detailed, to be undertaken by the *Contractor* includes but not limited to:
 - Dismantling and stripping of existing electrical equipment including Mispion Bridge Miniature substation, lights, socket outlets, conduit and associated electrical installation.
 - Supply, delivery, and installation of 11kV Medium Voltage (MV) cable.
 - Supply, delivery, and installation of 11kV/400V, 630kVA Miniature substation.
 - Supply, delivery, and installation of 320kVA, 400V low voltage (LV) Standby Generator
 - Supply, delivery, and installation of 30kVA, 400V LV uninterruptable power supply (UPS) system
 - Supply, delivery, and installation of LV cables.
 - Supply, delivery, erection and installation of LV kiosk for electrical power supply reticulation
 - Supply, delivery, and installation of interior luminaires for all buildings and facilities.
 - Supply, delivery and installation of building cabling, distribution board, wire ways and associates.
 - Commission and testing of the entire installation and hand over to the *Employer*.

- On some occasions, the *Contractor* may be required to undertake designs and submit them to the *Employer's* responsible personnel for approval. The high-level designs by the *Employer* which illustrates the overall design methodology is detailed and shown in the drawings and specifications accompanying this document. The *Contractor* shall read this document in conjunction with all the drawings and the specifications mentioned herein this document.

4.5.2 List of Abbreviations

Abbreviation	Description
°C	Degree Celsius
A	Ampere
AC	Alternating Current
ACB	Air Circuit Breaker
CCTV	Closed Circuit Television
DB	Distribution Board
ECC	Earth Continuity Conductor
FAT	Factory Acceptance Test
FEL	Front End Loading
Hz	Hertz
HDG	Hot Deep Galvanised
HML	High Mast Lighting
IEC	International Electrotechnical Commission
IP	Ingress Protection
kA	kilo-Amps
kV	kilo-Volts
LED	Light Emitting Diode
LV	Low Voltage
M	Metres
mm ²	Squared millimetres
MCB	Miniature Circuit Breaker
MCCB	Moulded Case Circuit Breaker
OEM	Original Equipment Manufacture
PAS	Public Address System
PVC	Polyvinyl chloride

RMU	Ring Main Unit
SAT	Site Acceptance Test
SWA	Steel Wire Armouring
SANS	South African National Standards
TCP	Transnet Capital Projects
UPS	Uninterrupted Power Supply
V	Volt/ Voltage
VCB	Vacuum Circuit Breaker
W	Watts
XLPE	Crossed Linked Polyethylene

4.5.3 Governing Codes, Standards and Specifications

4.5.3.1 SANS Standards

All *Design's* undertaken , *Plant's* and *Materials* supplied, *Equipments* to be used by the *Contractor*, in agreement with the *Employer*, with the intention to execute the works detailed in this document, shall comply as a minimum, to the requirements of the SANS/IEC standards listed in the table below. Where reference is made to a standard, the reference shall be taken to mean the latest edition of the standard, supplements and revisions thereto.

Standard No.	Description
SANS 32/SANS121	Hot Dip Zinc (galvanised) Coatings
SANS 156	Moulded-case circuit-breakers
SANS 767 – 1	Fixed earth leakage protection circuit-breakers
SANS 780	Distribution Transformers
SANS 950	Unplasticized chloride rigid conduit and fittings for use in electrical installations
SANS 1063	Earth rods, couplers and connections
SANS 1085	Wall outlet boxes for the enclosure of electrical accessories
SANS 1091	National colour standards for paint
SANS 1213	Mechanical cable glands
SANS 1279	Floodlight Luminaires
SANS 1433 – 1	Electrical terminals and connectors Part 1 terminal blocks having screw and screw less terminals
SANS 1433 – 2	Electrical terminals and connectors Part 2: Flat push-on connector

SANS 1507 (part 1 – 4)	Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1900/3300V) Part 1 - 4
SANS 1777	Photoelectric control units for lighting (PECUs)
SANS 10199	The design and installation of earth electrodes
SANS 60137	Insulating Bushings for Alternating Voltages above 1000V
SANS 60439 – 2	Low-voltage switchgear and controlgear assemblies Part 2: Particular requirements for bus bar trunking systems (busways)
SANS 60669 - 2 – 1	Switches for household and similar fixed electrical installations Part 2-1: Particular requirements - Electronic switches
SANS 60669 - 2 – 4	Switches for household and similar fixed electrical installations Part 2-4: Particular requirements - Isolating switches
SANS 60947 - 7 – 1	Low Voltage Switchgear and Controlgear Part 7 – 1: Ancillary equipment – Terminal blocks for copper conductors
IEC 60998 - 2 -1	Connecting devices for low-voltage circuits for household and similar purposes Part 2-1: Particular requirements for connecting devices as separate entities with screw-type clamping units
IEC 61643 – 1	Low-voltage surge protective devices Part 1: Surge protective devices connected to low-voltage power distribution systems - Requirements and tests

4.5.3.2 Codes of Practice

All *Design's*, *Construction* works (i.e excavation), *installation* works to be undertaken by the *Contractor*, in agreement with the *Employer*, with the intention to execute the works detailed in this document, and shall adhere to as a minimum, the requirements of the *Codes of Practice* listed in the table below. Where reference is made to a *Code of Practice*, the reference shall be taken to mean the latest edition of the *Code of Practice*, including latest amendments, supplements and revisions thereto.

Standard No.	Description
OHS Act 1993	Occupational Health and Safety Act (Electrical Installation regulations)
SANS 10142-1	Code of Practice for the Wiring of Premises Part 1 Low Voltage Installations.
SANS 10389-1	Exterior lighting Part 1: Artificial lighting of exterior areas for work and safety
SANS 10389-2	Exterior lighting Part 2: Exterior security lighting
SANS 10389-3	Exterior lighting Part 3: Guide on the limitation of the effects of obtrusive light from outdoor lighting installations
SANS 10114-1	Interior Lighting Part 1 The artificial lighting of Interiors

SANS 10114-2	Interior Lighting Part 2
SANS 10313	Code of Practice for protection of buildings against lightning

4.5.3.3 Transnet Specifications

All *Design's* undertaken, *Plant's* and *Materials* supplied by the *Contractor* in agreement with the *Employer*, with the intention to execute the works detailed in this document, shall comply in general with all associated Transnet Specifications listed below. It is understood that Transnet Specification requirements are more stringent than the SANS requirements, the *Contractor* is required to fully comply with the Transnet Specifications. In the case where SANS is stringent than Transnet Standard, the *Contractor* shall comply with SANS.

Specification No.	Description
TPD-001-EL&PSPEC	Technical specification for electrical installations to building other than dwelling houses
TPD-002-DBSPEC	Technical specification for low voltage distribution boards
TPD-003-CABLESPEC	Technical specification for the installation of medium and low voltage cables.
TPD-004-EARTHINGSPEC	Technical specification for earthing and the protection of buildings and structures against lightning.
TPD-010A-HIGHMASTSPEC-A	Specification for the design, supply and installation of high mast lighting
TPD-008-MINISUBSPEC	Specification for the supply, delivery, offloading and installation of miniature substations
TPD-011-UPSSPEC	Specification for the supply, delivery, offloading, installation and commissioning of an uninterrupted power supply (UPS) system
TPD-009-STANDBYPLANTSPEC	Specification for the supply, delivery, offloading, installation and commissioning of diesel driven standby generator sets

4.5.4 Plant Service Condition

4.5.3.4 Ambient/Environmental Conditions

All *Plant* and associates to be supplied by the *Contractor* shall be designed and rated for continuous operation under the following conditions:

Altitude	0 to 1800m above Sea Level.
Ambient temperature	-5°C to +40°C (daily average +35°C)
Relative humidity	As high as 96%
Lightning conditions	Severe, with a maximum lightning ground flash density of 0.9 flashes per km ² per annum

Atmosphere	Salt laden and corrosive industrial chemical and dust laden nature. Frequent heavy rains driven by wind reaching speeds of 100 Km/h and above
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4.5.3.5 Electrical Conditions

- **Low Voltage System**

The Low Voltage system of supply will be three phase, 4 – wire system, 50Hz alternating current (AC) at a nominal voltage of 400V.

The voltage may vary within the range of 95% to 105% of the nominal and all equipment installed shall be suitably rated.

- **Medium Voltage System**

The Medium Voltage system of supply will be three phase, 3 – wire system, 50Hz alternating current (AC) at a nominal voltage of 11kV.

The voltage may vary within the range of 95% to 105% of the nominal and all equipment installed shall be suitably rated.

Detailed Work to be carried out by the *Contractor*.

This works information shall be read in conjunction with the drawings listed in section 8.1, SANS listed in section 4.1, codes of practice listed in section 4.2 and Transnet specifications listed in section 4.3 herein this document.

All works to be carried out shall be performed with full adherence to safe practice of electrical installations as stipulated in SANS 10142-1, SANS 10142-2 and OHS Act 85 of 1993 (Electrical Installation Regulations).

4.5.5 Exterior & interior Works: Removal of existing Electrical installation

- The *Contractor* shall dismantle and remove existing electrical equipment including, lights, socket outlets, conduit and associated electrical installation in the Fire building. The *Contractor* shall dismantle and remove the existing Misplon Bridge 200kVA, 11.75kV/400V Miniature substation. The *Contractor* shall also remove and make safe the power supply to the existing area lighting. All electrical removed shall be transported to the TNPA electrical depot at the Port of Cape Town.

4.5.6 Exterior Works: MV Reticulation

- The *Contractor* shall supply, deliver and install , Medium Voltage, 240 mm², 3CORE XLPE insulated, PVC bedded, SWA, PVC sheathed 6.6/11kV cable from circuit breaker E49 in the Graving Dock substation to the Misplon Bridge miniature substation. The cable shall be installed and terminated in accordance to the cable manufacture's specification and in adherence to Transnet specification TPD-003-CABLESPEC. The *Contractor* shall ensure that the manufacturer's recommendations regarding the minimum cable bending radius is adhered to when installing the cable.
- The *Contractor* shall supply, deliver and install 2 x Medium Voltage 240 mm² 3CORE XLPE insulated PVC bedded, SWA, and PVC sheathed 6.6/11kV cable termination kits.
- The *Contractor* shall terminate the 240mm² 3CORE XLPE insulated PVC bedded, SWA, PVC sheathed 6.6/11kV Medium Voltage Cable in the new miniature substation at the Misplon Bridge. The *Contractor* shall grade the existing protection relays in integration of this connection. The grading of the protection relays shall be undertaken by a certified protection engineer or specialist.

- The *Contractor* shall test the integrity of the earth mat at the existing Misplon Bridge Miniature substation as per SANS 10199 and Transnet earthing specification TPD-004-EARTHINGSPEC prior to the new 11kV connection. This shall be done to ensure that the earth resistance of the existing earthing mat in the Misplon Bridge Miniature substation is lower than 1 ohm. The *Contractor* shall submit the test results to the *Employer's Engineer* through the *Project Manager*.
- The *Contractor shall* test and commission this installation in the presence of the *Employer's Engineer* and issue all compliance certificates associated with this installation in adherence to SANS10142-2, TPD-003-CABLESPEC, OHS Act 85 of 1993 and OEM specifications (Original Equipment Manufacturer) to the *Employers Project Manager* through Document Control.
- The medium voltage switching and control shall only be undertaken by Transnet National Ports Authority (TNPA) electrical personnel. The *Contractor* shall advise the *Project Manager* in writing three weeks prior to switching.

4.5.7 New Misplon Bridge Miniature Substation

- The *Contractor* shall supply and install uPVC sleeves with long radius bends from the trench to the medium voltage and low voltage compartments of the mini-substation plinth.
- The *Contractor* shall also supply, deliver, offload, install and commission 1 x 630kVA 11000/420V, 3-way RMU outdoor type Mini substation. The design of the Medium Voltage and Low Voltage Circuit breakers should be done in accordance to drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-01 (MS- MISPLON BRIDGE MINI-SUBSTATION -Single line diagram).
- The Mini Substation shall be supplied completely with the ring main unit (RMU) switches or circuit breakers, Medium Voltage Bus Bar System, Low Voltage Switchgear and Low Voltage Bus Bar system and all accessories including but not limited to glanding plate and Earth bar.
- The Mini substation shall be installed on top of an access cable chamber system and shall be positioned as per drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-02 - Power Supply reticulation layout). The Mini Substation shall contain access doors for the MV compartment, LV compartment and the Transformer compartment.
- The enclosure of the Mini Substation shall be made of 3CR12 stainless steel type of material with a thickness of 1.6mm and powder coated 40microns paint. The *Contractor* shall ensure that the Mini Substation fully complies with Transnet specification TPD-003-MINISUBSPEC.
- The Mini Substation shall contain the following signage:
 - Indication of the LV compartment, showing the rated voltage level, the Short-Circuit kA rating.
 - Indication of the MV compartment, showing the rated voltage level, the Short-Circuit kA rating.
 - Description of the RMU Switches indicating the source of the power or describing the destination of the feeder.
 - Full description of the type of cable (6.6/11kV Copper PVC insulated ECC, SWA), the size in mm² of the cable terminated in the associated RMU circuit breaker and the cable run length to/from the load/source.
- Indication of the transformer compartment indicating the kVA rating of the transformer, the primary Voltage of the transformer, the secondary Voltage of the transformer and the cooling type of the transformer. A caution signage on the transformer compartment shall be attached alerting personnel about the temperature of the surface of the material i.e. **Caution Hot Surface**.
- Electrocution danger sign in all compartments of the Mini Substation.

4.5.8 Exterior Works: Low Voltage Reticulation

4.5.8.1 Main distribution board

- The *Contractor* shall design, construct, supply, deliver and install main distribution board A. The main distribution board A shall be constructed according to Transnet specification TPD-002-DBSPEC and drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-07 - Ground Floor Single line diagram.
- The distribution board shall be inclusive of all switchgear, din rails, gland plate and shall be equipped with 30% spare ways. The proposed position of the main distribution board is shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-02 - Power Supply reticulation layout).
- The Low Voltage distribution board shall also be earthed as per earthing details shown on the drawing. Earthing shall be carried out in accordance to specification TPD-004-EARTHINGSPEC; "Specification for lightning protection and earthing".
- The *Contractor* shall supply and install low voltage cabling from the Mispion Bridge miniature substation to the main distribution board (DBM-A) via uPVC sleeves with long radius bends as shown on drawings number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-02 -power reticulation layout.
- The electrical installation of the main distribution board shall be carried out by a registered Master Electrician. The *Contractor* shall provide certificates for the main distribution board and all terminations used in the installation.
- The *Contractor* is required to test the installation in the presence of the Employer's Engineer and issue compliance certificates for the electrical installation, lightning protection and earthing system.
- The Main Distribution Board shall contain the following signage:
 - ✓ Name of the Distribution Board as indicated in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-07 ("**Main Distribution Board DB-A**").
 - ✓ Naming of the different sections of the Distribution Board i.e. Non-Essential Supply, Essential Supply.
 - ✓ The rated Voltage level of the Distribution Board.
 - ✓ The rated Short Circuit Current in all different sections of the distribution board.
 - ✓ The rated current in different sections of the distribution board.
 - ✓ Description of circuits fed by the associated circuit breaker as indicated in drawing number XCT.E.0007. XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-07 – Main Distribution board - Single line diagram.
 - ✓ Full description of the type of cable (Copper PVC insulated ECC, SWA), the size in mm² of the cable terminated in the associated circuit breaker and the cable run length to the load.
 - ✓ Danger sign in all sections of the Main Distribution board.

4.5.8.2 Generator and Standby Plant Changeover Panel

- The *Contractor* shall supply, deliver, offload and install 1 x 320kVA, 4 –Pole, 3 – phase, 50Hz, 400V rated Standby Diesel Generator *Plant* in the position as shown in drawing number XCT.E.0007. XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-01 - Main Power supply single line diagram. The Generator shall have a minimum Power Factor of 0.9. The Diesel Generator shall be designed and constructed in compliance with Transnet Specification TPD-009-STANDBYPLANTSPEC.
- The *Contractor* shall design, supply, deliver, offload and install a Mains/Standby Automatic Change over Panel. The Changeover Panel shall contain an Automatic Transfer switch rated; 4 – Pole, 400V, 435kA, and 650A with a handle for manual operation.
- The Changeover Panel shall allow top cable entry access to be aligned with the cable route to be provided in the building. The Changeover Panel shall be supplied on the same *Contract* as the Standby Generator. The Changeover Panel shall contain 3 LED indication lamps (Green for Mains in Operation, Orange for Standby Generator in operation and Red for non-of the supply system in operation).
- The Changeover Panel shall be fully equipped with a cable glanding plate, protective earth bar and all necessary mechanical supports accessories. The Changeover

Panel shall be made of 3CR12 type material and the paint shall be coated to 40 microns with a red colour.

4.5.9 Building: General

4.5.9.1 Uninterrupted Power Supply Unit (UPS)

- The *Contractor* shall design, construct, supply, deliver, offload and install a modular, online double conversion, 30kVA , 400V operating voltage UPS system according to Transnet Specification TPD-011-UPSSPEC. The UPS system shall be housed in the server room with all necessary provision for terminating 1 x 16mm² 4 core SWA ECC PVC insulated Copper cable providing supply from DB-A to the UPS system.
- The UPS Panel shall contain the following signage:
 - ✓ The description of the panel.
 - ✓ The kVA rating of the UPS system.
 - ✓ The in-going and out-going cable description (Copper PVC insulated ECC, SWA cable), the size in mm² .
 - ✓ Hazardous disclaimer for battery cabinet.
 - ✓ Danger sign for electrical power exposure.

4.5.9.2 Cable and Cable Way System

- The *Contractor* shall supply, deliver, offload, install and terminate a 240mm², 4-core low voltage 600/1000V, SWA, ECC, PVC insulated copper cable between the Mini Substation LV Compartment, the LV Main Distribution Board DB - A and the Generator Changeover panel as shown in drawing XCT.E.0007. XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-01& XCT.E.0007. XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-02. The 240mm² 600V/1000V, PVC insulated, ECC, SWA, 4 core LV cables shall be terminated, and glanded neatly and appropriately using suitable sized Cable Corrosion Glands.
- The *Contractor* shall supply, deliver, offload, install and terminate cables from DB-A to the guardhouse and the UPS/Server room as shown on drawing XCT.E.0007. XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-02 power reticulation layout. The *Contractor* shall supply and install uPVC sleeves with long radius bends from the existing cable trench in the ground floor to the server room and guardhouse as shown in drawing number XCT.E.0007 XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-02 - power reticulation layout. The OEM bending radii requirements of the cable shall be adhered to.

4.5.10 Building: Ground Floor

4.5.10.1 Lighting

- The Contractor shall supply and install luminaries as shown on drawing XCT.E.0007. XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-03 – Ground Floor lighting layout. The Contractor shall design, supply, deliver and install SABS approved, PVC conduit flush mounted in the wall. The PVC conduit shall be used as a wireway, linking all flush mounted PVC boxes to the distribution board and luminaires. All necessary accessories such as fasteners, bends, junction boxes, adaptors, etc shall be included to ensure a safe neat link for the conduit system.
- The Contractor shall supply, deliver, offload and install SABS approved PVC insulated house wire for all lighting circuits as shown in drawing XCT.E.0007 XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-02 -DB-A single line diagram. The PVC insulated wire shall comply with Transnet specification TPD-003-CABLESPEC.
- The light switch boxes and the conduit droppers if required shall be recessed into the wall, unless otherwise stated. All conduit terminations to light switch boxes shall be done using a PVC male adaptor and a suitable PVC washer.

- All luminaires shall be installed according SANS 10142-1 and specification No. TPD-001-EL&PSPEC; Specification for electrical installations to buildings other than dwelling houses.
- The Contractor shall supply, deliver and install occupancy sensors as detailed in drawing number XCT.E.0007 XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-03 - Ground Floor Lighting Layout. The time delay DIP switch setting on the occupancy sensors shall be set at thirty (30) minutes.
- The recessed luminaires shall be connected through individual 5A single socket outlets to isolate luminaires during maintenance.
- The Contractor shall supply, deliver and install 16A one lever light switches and light switch dimmers as shown in drawing number XCT.E.0007 XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-03 -Ground Floor lighting layout. The light switches shall be installed on PVC boxes.
- All electrical works pertaining to the electrical lighting should be done in accordance with the referenced drawing, if clarity is needed in any regard the electrical engineer should be contacted prior to any commencement of work.

4.5.10.2 Switched Socket Outlets

- The Contractor shall also supply, deliver, offload, install a 3-tier power skirting, one compartment shall be dedicate to Electrical and the other to Data/communications. The power skirting shall be supplied with all fastening accessories such as screws, and also end covers. The power skirting shall be installed in the position as indicated in drawing number XCT.E.0007 XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-05 - Ground Floor Power Layout.
- The Contractor shall supply, deliver and install 16A single, dedicated and non-dedicated switched socket outlets as shown in drawing number XCT.E.0007 XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-05 -Ground Floor Power Layout. The socket outlets shall be installed on the power skirting.
- The Contractor shall also supply, deliver and install 16A double, flush mount, switched socket outlets as shown in drawing number XCT.E.0007 XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-05 -Ground Floor Power Layout. The mounting height for the socket outlets is as shown in drawing number XCT.E.0007 XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-05 -Ground Floor Power Layout.
- The Contractor shall design, supply, deliver and install SABS approved, 20mm outer diameter, PVC conduits flush mounted in the wall. The PVC conduit shall be used as a wireway, linking all socket outlets to the distribution board. All necessary accessories such as fasteners, bends, junction boxes, adaptors, etc shall be included to ensure a safe neat link for the conduit system.
- The Contractor shall supply, deliver, offload and install SABS approved PVC insulated house wire for all socket outlet circuits as shown in drawing XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-07 -DB-A Single line diagram. The PVC insulated wire shall comply with Transnet specification TPD-003-CABLESPEC. The PVC insulated house wire shall be installed in conduit and trunking.
- The conduit droppers and the socket outlet boxes if required shall be cast into concrete and built into brick walls. All conduit terminations to socket outlet boxes shall be done using a PVC male adaptor and a suitable PVC washer.
- All PVC conduits, couplers, male adaptors, boxes and PVC adhesives shall be SABS approved.
- All socket outlets shall be installed according SANS 10142-1 and specification No. TPD: 001-EL&PSPEC; Technical specification for the supply and installation of electrical lighting and power in buildings other than dwelling houses.

4.5.10.3 Switched Isolators

- The Contractor shall supply, deliver, offload and install 20A flush mount, double pole, single phase, switched disconnecter (isolator) as shown in drawing number

XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-05 -Ground Floor Power Layout. The isolators shall be installed at various heights as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-05 -Ground Floor Power Layout.

- The *Contractor* shall also supply, deliver, offload and install surface mounted weatherproof, single phase and three phase switched disconnectors (isolators) as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-05 -Ground Floor Power Layout. The isolators shall be installed at positions indicated on drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-05 -Ground Floor Power Layout.
- The *Contractor* shall design, supply, deliver and install SABS approved, 20mm outer diameter and 32mm outer diameter, PVC conduits flush mounted in the wall. The PVC conduit shall be used as a wireway, linking all isolators to the distribution board. All necessary accessories such as fasteners, bends, junction boxes, adaptors, etc shall be included to ensure a safe neat link for the conduit system.
- The *Contractor* shall supply, deliver, offload and install SABS approved PVC insulated house wire for all isolator circuits as shown in drawing XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-05 - Ground Floor Power Layout. The PVC insulated wire shall comply with Transnet specification TPD-003-CABLESPEC. The PVC insulated house wire shall be installed in conduit.

4.5.10.4 Distribution Boards

- The *Contractor* shall design, construct, supply, deliver, offload and install a Low Voltage Distribution Board DB-A in the ground floor of the building as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-02 - Power reticulation layout.
- The distribution board shall be surface mounted on the wall. The distribution board shall be manufactured from 3CR12 stainless steel type material with a thickness of 1.6mm, IP20 and paint type shall be powder coated at 40 microns and shall allow for both bottom and top cable entry for ease of connection as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-07 - DB-A single line diagram.
- The distribution board shall be installed complete with the appropriate sized din rail, cover, spare ways cover and any other necessary mechanical accessories for support as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-07 - single line diagram. The Contractor shall conform to the paint colours indicated in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-07 -single line diagram.
- The Distribution Board shall contain the following signage;
 - ✓ Name of the Distribution Board as indicated in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-07 - single line diagram ("Distribution Board DB-A").
 - ✓ Naming of the different sections of the Distribution Board i.e. Non-Essential Supply or Essential Supply and UPS Supply.
 - ✓ The rated Voltage level of the Distribution Board.
 - ✓ The rated Short Circuit Current for distribution board.
 - ✓ The rated current rating for the distribution board.
 - ✓ Description of circuits fed by the associated circuit breaker as indicated in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-07 - single line diagram.
 - ✓ Full description of the type of cable (Copper PVC insulated ECC, SWA), the size in mm² of the cable terminated in the associated circuit breaker and the cable run length to the load.
 - ✓ Danger sign for electrical power exposure

4.5.10.5 Building Exterior Lighting

- The *Contractor* shall supply, deliver and install LED luminaires, surface mount, with IP65 rating as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-04 - First Floor lighting layout.
- The *Contractor* shall supply, deliver and install daylight level sensor switch, installed in a weatherproof York box (IP 65) with a window as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-04 -First Floor lighting layout.
- The *Contractor* shall design, supply, deliver and install SABS approved, 20mm outer diameter, PVC conduit flush mounted in the wall. The PVC conduit shall be used as a wireway, linking all flush mounted round PVC boxes to the photocell, distribution board and luminaires. All necessary accessories such as fasteners, bends, junction boxes, adaptors, etc shall be included to ensure a safe neat link for the conduit system.
- The *Contractor* shall supply, deliver, offload and install SABS approved PVC insulated house wire for all exterior lighting circuits as shown in drawing XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-08 – First Floor single line diagram. The PVC insulated wire shall comply with Transnet specification TPD-003-CABLESPEC. The wire shall be installed in the conduit system.

4.5.11 Building: First Floor

4.5.11.1 Lighting

- The Contractor shall supply and install luminaries as shown on drawing XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-04 -First Floor lighting layout. The Contractor shall design, supply, deliver and install SABS approved, PVC conduit flush mounted in the wall. The PVC conduit shall be used as a wireway, linking all flush mounted PVC boxes to the distribution board and luminaires. All necessary accessories such as fasteners, bends, junction boxes, adaptors, etc shall be included to ensure a safe neat link for the conduit system.
- The Contractor shall supply, deliver, offload and install SABS approved PVC insulated house wire for all lighting circuits as shown in drawing XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-08 -DB-B Single line diagram. The PVC insulated wire shall comply with Transnet specification TPD-003-CABLESPEC.
- The light switch boxes and the conduit droppers if required shall be recessed into the wall, unless otherwise stated. All conduit terminations to light switch boxes shall be done using a PVC male adaptor and a suitable PVC washer.
- All luminaires shall be installed according SANS 10142-1 and specification No. TPD-001-EL&PSPEC; Specification for electrical installations to buildings other than dwelling houses.
- The Contractor shall supply, deliver and install occupancy sensors as detailed in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-04 – First Floor lighting layout. The time delay DIP switch setting on the occupancy sensors shall be set at thirty (30) minutes.
- The recessed luminaires shall be connected through individual 5A single socket outlets to isolate luminaires during maintenance.
- The Contractor shall supply, deliver and install 16A one lever light switches and light switch dimmers as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-05 – First Floor lighting layout. The light switches shall be installed on PVC boxes.
- All electrical works pertaining to the electrical lighting should be done in accordance with the referenced drawing, if clarity is needed in any regard the electrical engineer should be contacted prior to any commencement of work.

4.5.11.2 Switched Socket Outlets

- The *Contractor* shall also supply, deliver, offload, install 3-tier power skirting, one compartment shall be dedicate to Electrical and the other to Data/communications.

The power skirting shall be supplied with all fastening accessories such as screws, and also end covers. The power skirting shall be installed in the position as indicated in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-06 – First Floor power layout.

- The *Contractor* shall supply, deliver and install 16A single, dedicated and non-dedicated switched socket outlets as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-06 – First Floor power layout. The socket outlets shall be installed on the power skirting.
- The *Contractor* shall also supply, deliver and install 16A double, flush mount, switched socket outlets as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-06-FF power layout. The mounting height for the socket outlets is as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-06 – First Floor power layout.
- The *Contractor* shall design, supply, deliver and install SABS approved, 20mm outer diameter, PVC conduits flush mounted in the wall. The PVC conduit shall be used as a wireway, linking all socket outlets to the distribution board. All necessary accessories such as fasteners, bends, junction boxes, adaptors, etc shall be included to ensure a safe neat link for the conduit system.
- The *Contractor* shall supply, deliver, offload and install SABS approved PVC insulated house wire for all socket outlet circuits as shown in drawing XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-06 -First Floor power layout. The PVC insulated wire shall comply with Transnet specification TPD-003-CABLESPEC. The PVC insulated house wire shall be installed in conduit and trunking.
- The conduit droppers and the socket outlet boxes if required shall be cast into concrete and built into brick walls. All conduit terminations to socket outlet boxes shall be done using a PVC male adaptor and a suitable PVC washer.
- All PVC conduits, couplers, male adaptors, boxes and PVC adhesives shall be SABS approved.
- All socket outlets shall be installed according SANS 10142-1 and specification No. TPD: 001-EL&PSPEC; Technical specification for the supply and installation of electrical lighting and power in buildings other than dwelling houses.

4.5.11.3 Switched Isolators

- The *Contractor* shall supply, deliver, offload and install 20A flush mount, double pole, single phase, switched disconnecter (isolator) as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-056-First Floor power layout. The isolators shall be installed at various heights as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-06 -First Floor power layout.
- The *Contractor* shall also supply, deliver, offload and install surface mounted weatherproof, single phase and three phase switched disconnectors (isolators) as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-06 -First Floor power layout. The isolators shall be installed at positions indicated on drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-06 -First Floor power layout.
- The *Contractor* shall design, supply, deliver and install SABS approved, 20mm outer diameter and 32mm outer diameter, PVC conduits flush mounted in the wall. The PVC conduit shall be used as a wireway, linking all isolators to the distribution board. All necessary accessories such as fasteners, bends, junction boxes, adaptors, etc shall be included to ensure a safe neat link for the conduit system.
- The *Contractor* shall supply, deliver, offload and install SABS approved PVC insulated house wire for all isolator circuits as shown in drawing XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-06 - First Floor power layout. The PVC insulated wire shall comply with Transnet specification TPD-003-CABLESPEC. The PVC insulated house wire shall be installed in conduit.

4.5.11.4 Distribution Boards

- The *Contractor* shall design, construct, supply, deliver, offload and install a Low Voltage Distribution Board DB-B in the ground floor of the building as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-08 - power reticulation layout. The distribution board shall be surface mounted on the wall. The distribution board shall be manufactured from 3CR12 type material with a thickness of 1.6mm, IP20 and paint type shall be powder coated at 40 microns and shall allow for both bottom and top cable entry for ease of connection as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-08 -DB-B single line diagram.
- The distribution board shall be installed complete with the appropriate sized din rail, cover, spare ways cover and any other necessary mechanical accessories for support as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-08 - DB-B single line diagram. The Contractor shall conform to the paint colours indicated in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-05 - DB-B single line diagram.
- The Distribution Board shall contain the following signage:
 - ✓ Name of the Distribution Board as indicated in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-08 - single line diagram ("Distribution Board DB-B").
 - ✓ Naming of the different sections of the Distribution Board i.e. Non-Essential Supply or Essential Supply.
 - ✓ The rated Voltage level of the Distribution Board.
 - ✓ The rated Short Circuit Current for distribution board.
 - ✓ The rated current rating for the distribution board.
 - ✓ Description of circuits fed by the associated circuit breaker as indicated in drawing number XCT.E.0007-xxxx- DB-B- single line diagram.
 - ✓ Full description of the type of cable (Copper PVC insulated ECC, SWA), the size in mm² of the cable terminated in the associated circuit breaker and the cable run length to the load.
 - ✓ Danger sign for electrical power exposure.

4.5.11.5 Earthing and Lightning Protection

- The *Contractor* shall supply, deliver, offload and install an earth bar configuration system with reference to a typical schematic layout shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-09 - Earthing & lightning layout. The earth bar configuration system shall be inclusive of but not limited to all bars, bolts, nuts, spring washer and the crimp lug. All abrasive materials used shall be stainless steel.
- The *Contractor* shall design, supply, deliver, offload and install a suitable earthing system to Main Distribution Board A, Distribution Board A, Distribution Board B and Distribution Board GH. Typical details of the stainless steel earth spike are shown in XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-09 - Earthing & lightning layout, detail 2.
- The *Contractor* shall also design, supply and install a suitable lightning protection system for the building as shown in the typical layout provided in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-09 - Earthing & lightning layout. The design of the lightning protection system shall conform to Transnet specification TPD: 004-EARTHINGSPEC, SANS 10142-1 and SANS 10313.
- The *Contractor* shall supply and install Aluminium earth protective bare solid conductor around the edges of the roof of the building. All necessary support accessories for installing this cable shall be included as part of the scope of this works.
- The *Contractor* shall also supply and install 1-core, flexible, PVC insulated, earth protective cable down conductors as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-09 - Earthing & lightning layout. The down conductors shall be installed in building downpipes or in recessed 32mm PVC conduit.

- The *Contractor* shall furthermore provide suitable earth test points with detailed name plates as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-09 - Earthing & lightning layout. The test joints shall include but not limited to; a fixed earth terminal with a 9.3kA rating for 1s and end pieces, allowing for termination of a 35mm² single core cable.

4.5.12 Guardhouse

4.5.12.1 Lighting

- The Contractor shall supply and install luminaires as shown on drawing XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 - Guard House Electrical Lighting & Power. The Contractor shall design, supply, deliver and install SABS approved, PVC conduit flush mounted in the wall. The PVC conduit shall be used as a wireway, linking all flush mounted PVC boxes to the distribution board and luminaires. All necessary accessories such as fasteners, bends, junction boxes, adaptors, etc shall be included to ensure a safe neat link for the conduit system.
- The Contractor shall supply, deliver, offload and install SABS approved PVC insulated house wire for all lighting circuits as shown in drawing XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 - Guard House Electrical Lighting & Power. The PVC insulated wire shall comply with Transnet specification TPD-003-CABLESPEC.
- The light switch boxes and the conduit droppers if required shall be recessed into the wall, unless otherwise stated. All conduit terminations to light switch boxes shall be done using a PVC male adaptor and a suitable PVC washer.
- All luminaires shall be installed according to SANS 10142-1 and specification No. TPD-001-EL&PSPEC; Specification for electrical installations to buildings other than dwelling houses.
- The Contractor shall supply, deliver and install occupancy sensors as detailed in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 - Guard House Electrical Lighting & Power. The time delay DIP switch setting on the occupancy sensors shall be set at thirty (30) minutes.
- The recessed luminaires shall be connected through individual 5A single socket outlets to isolate luminaires during maintenance.
- The *Contractor* shall supply, deliver and install 16A one lever light switches and light switch dimmers as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 - Guard House Electrical Lighting & Power. The light switches shall be installed on PVC boxes.
- All electrical works pertaining to the electrical lighting should be done in accordance with the referenced drawing, if clarity is needed in any regard the electrical engineer should be contacted prior to any commencement of work.

4.5.12.2 Switched Socket Outlets

- The *Contractor* shall also supply, deliver, offload, install 3-tier power skirting, one compartment shall be dedicate to Electrical and the other to Data/communications. The power skirting shall be supplied with all fastening accessories such as screws, and also end covers. The power skirting shall be installed in the position as indicated in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 - Guard House Electrical Lighting & Power.
- The *Contractor* shall supply, deliver and install 16A single, dedicated and non-dedicated switched socket outlets as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 - Guard House Electrical Lighting & Power. The socket outlets shall be installed on the power skirting.
- The *Contractor* shall also supply, deliver and install 16A double, flush mount, switched socket outlets as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-05 -Guard House Electrical Lighting & Power. The mounting

height for the socket outlets is as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 - Guard House Electrical Lighting & Power.

- The *Contractor* shall design, supply, deliver and install SABS approved, 20mm outer diameter, PVC conduits flush mounted in the wall. The PVC conduit shall be used as a wireway, linking all socket outlets to the distribution board. All necessary accessories such as fasteners, bends, junction boxes, adaptors, etc shall be included to ensure a safe neat link for the conduit system.
- The *Contractor* shall supply, deliver, offload and install SABS approved PVC insulated house wire for all socket outlet circuits as shown in drawing XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 - Guard House Electrical Lighting & Power. The PVC insulated wire shall comply with Transnet specification TPD-003-CABLESPEC. The PVC insulated house wire shall be installed in conduit and trunking.
- The conduit droppers and the socket outlet boxes if required shall be cast into concrete and built into brick walls. All conduit terminations to socket outlet boxes shall be done using a PVC male adaptor and a suitable PVC washer.
- All PVC conduits, couplers, male adaptors, boxes and PVC adhesives shall be SABS approved.
- All socket outlets shall be installed according SANS 10142-1 and specification No. TPD: 001-EL&PSPEC; Technical specification for the supply and installation of electrical lighting and power in buildings other than dwelling houses.

4.5.12.3 Switched Isolators

- The *Contractor* shall supply, deliver, offload and install 20A flush mount, double pole, single phase, switched disconnecter (isolator) as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-05 -Guard House Electrical Lighting & Power. The isolators shall be installed at various heights as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 - Guard House Electrical Lighting & Power.
- The *Contractor* shall also supply, deliver, offload and install surface mounted weatherproof, single phase switched disconnectors (isolators) as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 - Guard House Electrical Lighting & Power. The isolators shall be installed at positions indicated on drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 - Guard House Electrical Lighting & Power.
- The *Contractor* shall design, supply, deliver and install SABS approved, 20mm outer diameter and 32mm outer diameter, PVC conduits flush mounted in the wall. The PVC conduit shall be used as a wireway, linking all isolators to the distribution board. All necessary accessories such as fasteners, bends, junction boxes, adaptors, etc shall be included to ensure a safe neat link for the conduit system.
- The *Contractor* shall supply, deliver, offload and install SABS approved PVC insulated house wire for all isolator circuits as shown in drawing XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 - Guard House Electrical Lighting & Power. The PVC insulated wire shall comply with Transnet specification TPD-003-CABLESPEC. The PVC insulated house wire shall be installed in conduit.

4.5.12.4 Distribution Boards

- The *Contractor* shall design, construct, supply, deliver, offload and install a Low Voltage Distribution Board DB-B in the ground floor of the building as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 - Guard House Electrical Lighting & Power.
- The distribution board shall be surface mounted on the wall. The distribution board shall be manufactured from 3CR12 type material with a thickness of 1.6mm, IP20 and paint type shall be powder coated at 40 microns and shall allow for both bottom and top cable entry for ease of connection as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 - Guard House Electrical Lighting & Power.

- The distribution board shall be installed complete with the appropriate sized din rail, cover, spare ways cover and any other necessary mechanical accessories for support as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-05 -Guard House Electrical Lighting & Power. The Contractor shall conform to the paint colours indicated in drawing number XCT.E.0007-xxxx-DB-GH single line diagram.
- The Distribution Board shall contain the following signage:
 - ✓ Name of the Distribution Board as indicated in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 - Guard House Electrical Lighting & Power. ("Distribution Board DB-GH").
 - ✓ Naming of the different sections of the Distribution Board i.e. Non-Essential Supply or Essential Supply.
 - ✓ The rated Voltage level of the Distribution Board.
 - ✓ The rated Short Circuit Current for distribution board.
 - ✓ The rated current rating for the distribution board.
 - ✓ Description of circuits fed by the associated circuit breaker as indicated in drawing number XCT.E.0007-xxxx- DB-GH- single line diagram.
 - ✓ Full description of the type of cable (Copper PVC insulated ECC, SWA), the size in mm² of the cable terminated in the associated circuit breaker and the cable run length to the load.
 - ✓ Danger sign for electrical power exposure.

4.5.12.5 Earthing and Lightning Protection

- The *Contractor* shall also design, supply and install a suitable lightning protection system for the C building as shown in the typical layout provided in drawing XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 -Guard House Electrical Lighting & Power. The design of the lightning protection system shall conform to Transnet specification TPD: 004-EARTHINGSPEC, SANS 10142-1 and SANS 10313.
- The *Contractor* shall supply and install Aluminium earth protective bare solid conductor around the edges of the roof of the building. All necessary support accessories for installing this cable shall be included as part of the scope of this *works*.
- The *Contractor* shall also supply and install 1-core, flexible, PVC insulated, earth protective cable down conductors as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 -Guard House Electrical Lighting & Power. The down conductors shall be installed in building downpipes or in recessed 32mm PVC conduit.
- The *Contractor* shall furthermore provide suitable earth test points with detailed name plates as shown in drawing number XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10 -Guard House Electrical Lighting & Power. The test joints shall include but not limited to; a fixed earth terminal with a 9.3kA rating for 1s and end pieces, allowing for termination of a 35mm² single core cable.

4.5.13 Testing and Commissioning the Entire Installation

- The *Contractor* shall conduct a Factory Acceptance Test (FAT) for all *Plant's* to be installed as part of the *Works* to be executed in this *Contract* prior to delivery to site. The FAT shall be conducted in the presence of the *Employer's Engineer*. The legal transfer of ownership from the *Plant's* supplier to the *Contractor* shall be held by the *Contractor* until the *Plant* is fully installed, tested commissioned on the *Employer's* designated site.
- The *Contractor* shall conduct a Site Acceptance Test (SAT) for all *Plant's* supplied, offloaded and delivered to the designated *Employer's* site. The SAT shall be conducted in the presence of the *Employer's Engineer*. The legal transfer of ownership from the *Plant's* supplier to the *Contractor* shall be held by the *Contractor* until the *Plant* is fully installed, tested commissioned on the *Employer's* designated site.

- The contractor shall test the entire installation, including but not limited to the MV installation, LV installation and the lighting installation as per SANS 10142-1 and hand over all relevant test certificates to the *Employers Project Manager* for acceptance. The *Contractor* shall hand over both MV and LV certificate of compliance as per the OHS Act of 85 and SANS 10142-1 and SANS1042-2 for the installations.
- The *Contractor* shall test and commission the entire Earthing and Lightning protection system as per Transnet Specification TPD-004-EARTHINGSPEC and SANS 10142-1 in the presence of the *Employer's Engineer*. The *Contractor* shall handover all test certificates to the *Employer's Project Manager* for acceptance by the *Employer's Engineer*.

List of Drawings is under Section 5.1

4.6 Process control and IT Works

4.6.1 Executive overview

The purpose of this document is to detail the works to be undertaken by the Contractor in relation to the refurbishment and upgrade of the existing National Fire Building in the Port of Cape Town. Within this document are the detailed works to be undertaken by the Contractor which includes but are not limited to:

- Dismantling and stripping of existing ICT equipment including network cables, network fibre ports, CCTV cameras, access control biometric scanners, magnetic locks and associated security installations.
- Removal of old Digital Signage and old public address system
- Supply, delivery and installation of fibre cables and network ports and associated server
- Supply, delivery and installation of access control system including biometric scanners, break glass units and magnetic locks.
- Supply, delivery and installation of public address system and digital signage where needed
- Supply, delivery and installation of CCTV cameras including dome cameras, fixed cameras and PTZ (pan/tilt/zoom) cameras to be connected to the Port's Security feed
- Design, supply, delivery, installation and commissioning of Traffic light signal system for the entrance facility to the Fire Building site to control traffic coming in and out of the site during normal operation with an override in case of emergencies
- Commission and testing of the entire installation and hand over to the Employer.

If required, the Contractor may undertake designs and submit them to the Employer's responsible personnel for approval. The high-level designs by the Employer, which illustrates the overall design and layout methodology, is detailed and shown in the drawings and specifications accompanying this document. The Contractor shall read this document in conjunction with all the drawings and the specifications mentioned in this document.

4.6.2 Standard of Work, Equipment and Materials

The ICT installation shall conform to the requirements of the latest edition and amendments of EIA/TIA 568 standards where applicable.

All equipment and material used shall be of high quality and the work shall be of a high standard of workmanship carried out by qualified staff under proper supervision by experienced and competent officers.

All equipment and material shall comply with the relevant National or International standard specification. Where equipment does not comply, it shall be submitted to the Project Manager for approval.

All installations, testing and terminations must be approved by the Transnet National Ports Authority (TNPA) Engineer prior to commissioning.

4.6.3 Service Conditions

The equipment shall be designed and rated for continuous operation under the following conditions: -

4.6.3.1 Ambient/Environment Conditions:

All equipment offered shall be rated for continuous operation under the following conditions:

Type of environment	Marine
Altitude	Sea Level
Ambient temperature	5 - 45°C
Relative humidity	Frequently 100%
Lightning conditions	Severe
Relative humidity	Up to 95% RH
Wind	120kmph
Atmospheric conditions	Salt laden. Electrolytic corrosion conditions prevail in all areas
Air Pollution	Heavily saline, corrosive dust, and industrial fumes

Governing Codes, Standards and Specifications

4.6.4 Codes and Standards

All Design's undertaken, Plant's and Materials supplied, Equipment to be used by the Contractor, in agreement with the Employer, with the intention to execute the works detailed in this document, shall comply as a minimum, to the requirements of the standards listed in the table below. Where reference is made to a standard the reference shall be taken to mean the latest edition of the standard, supplements and revisions:

Standard No.	Description
BS EN 54 Part 16	Design of Voice Alarm Control and Indicating equipment
SANS IEC 60529	Degrees of protection provided by enclosures (IP code)
EIA/TIA-568	EIA/TIA-568 Commercial Building Telecommunications wiring standard
EIA/TIA-569	EIA/TIA-569 Commercial Building for Telecommunications pathways and Spaces
SANS10400	The application of the National Building Regulations
IEEE/ISO/IEC 802.3	Standard for Ethernet
SANS 7240-16:2008	Part 16: Sound system control and indicating equipment
SANS 10142-1	Wiring of Premises: Part 1 Low Voltage Installations
SANS IEC 60794	Optical fibres Part 1-30: Measurement methods and test procedures — Fibre proof test
SANS 61073-1	Fibre optic interconnecting devices and passive components - Mechanical splices and fusion splice protectors for optical fibres and cables Part 1: Generic specification
SANS 10222-5-1-5	Electrical Security Installations: CCTV Installations- CCTV surveillance systems for use in security applications-maintenance requirements

4.6.5 Specifications applicable

Standard No.	Description
TPSSS20/05/2016	Group Security Management – Transnet Physical Security Systems Standard
	Transnet ICT Equipment Standardisation-2016-06-07_V2.01
SYS-P-0001	Transnet Projects Execution Technology Business Codification
DOC-P-0006	Project Documentation Management
	Transnet ICT Physical and Environmental Security Standard – v1.1
	Transnet Network Security Standard
HAS-STD-0001	TCP Health and Safety Management, Health and Safety Plan and Specification
SEC-SS: 01	TNPA Security Building Specification
ENG-STD-0001	CAD Standard
	Transnet Wireless Security Configuration Standard
	Transnet ICT Continuity Standard

4.6.6 Codes of Practice

All Design's, Construction works (i.e. excavation), installation works to be undertaken by the Contractor, in agreement with the Employer, with the intention to execute the works detailed in this document, and shall adhere to as a minimum, the requirements of the Codes of Practice listed in the table below. Where reference is made to a Code of Practice, the reference shall be taken to mean the latest edition of the Code of Practice, including latest amendments, supplements and revisions thereto.

Standard No.	Description
OHS Act 1993	Occupational Health and Safety Act (Electrical Installation regulations)
SANS 10142-1	Code of Practice for the Wiring of Premises Part 1 Low Voltage Installations.

4.6.7 Transnet Specifications

All Design's undertaken, Plant's and Materials supplied by the Contractor in agreement with the Employer, with the intention to execute the works detailed in this document, shall comply in general with all associated Transnet Specifications listed below. It is understood that Transnet Specification requirements are more stringent than the SANS requirements, the Contractor is required to fully comply with the Transnet Specifications. In the case where SANS is more stringent than Transnet Standard, the Contractor shall comply with SANS.

Specification No.	Description
TRANSNET GRO SECURITY	Transnet Group- Integrated Electronic Security and Related Systems Specification
TPD-002-DBSPEC	Technical specification for low voltage distribution boards
TPD-003-CABLESPEC	Technical specification for the installation of medium and low voltage cables.

4.6.8 Scope of works

This works information shall be read in conjunction with the drawings listed in section 6.4.6, SANS standards, codes of practice, and Transnet specifications listed herein this document. All works to be carried out shall be performed with full adherence to safe practice of electrical installations as stipulated in SANS 10142-1, SANS 10142-2 and OHS Act 85 of 1993 (Electrical Installation Regulations).

a) ICT Network Connection

- The Contractor shall supply and install a server as shown on drawing XCT.E.0007-1-000-K-LA-0003-1 All necessary accessories such as network cables, etc shall be included to ensure a fully functioning ICT network within the building.
- The Contractor shall supply and install LAN Switches as shown on drawing XCT.E.0007-1-000-K-LA-0003-1 All necessary accessories such as network cables, etc shall be included to ensure a fully functioning ICT network within the building. The LAN Switches will supply POE connection to all security and access control equipment that requires POE (Power Over Ethernet) power supply.
- The Contractor shall install network cables and terminate them as shown on drawing XCT.E.0007-1-000-K-LA-0003-1 This ICT network will connect to the TNPA corporate network.
- The Contractor shall install network Wi-Fi access points to be installed in general areas as shown on drawing XCT.E.0007-1-000-K-LA-0003-1.
- The Contractor shall install and terminate POE (Power Over Ethernet) cables as shown on drawings XCT.E.0007-1-000-K-LA-0003-1 to supply ICT connection and power supply to all relevant equipment.

- All equipment provided by the Contractor shall be protected from physical and environmental threats according to Transnet ICT Physical and Environmental Security Standards; Similarly the design and installation of hosts on the Transnet Corporate Network will conform to the Transnet Security Standard.

b) Public Address System

- The Contractor shall supply and install a Public Address system as shown on drawing XCT.E.0007-1-000-K-LA-0004-1 The Contractor shall design, supply, deliver and install approved Public Address system speakers and microphone.
- The Contractor shall install all relevant parts of the Public Address system as shown in drawing XCT.E.0007-1-000-K-LA-0004-1 The Public Address System will be powered via POE (Power Over Ethernet) and shall be connected and powered as such by the Contractor.
- The Contractor shall install the microphone in the Control Room as highlighted in drawing XCT.E.0007-1-000-K-LA-0004-1 The installation will allow the Public Address system to alert for general messages emergencies. The Public Address System shall also be integrated into the Fire Detection System to auto-engage fire alert alarm messages.
- The Contractor shall install the Public Address system in a manner that allows full operation in the event of the failure of a speaker or amplifier, as well as indicate the error in the system should there be a failure of a speaker or amplifier.
- The Public Address System to be installed by the Contractor shall be required to have protection from external sources of corruption.

c) Surveillance System

- The Contractor shall supply and install CCTV cameras as shown on drawing number XCT.E.0007-1-000-K-LA-0002-1. The CCTV cameras shall be integrated into the existing Port CCTV system whereby the cameras are monitored by Port Security.
- The settings and configurations of the cameras installed by the Contractor shall conform to the existing Port CCTV system.
- The Contractor shall supply each of the varied camera types to fulfil the uses of each of the different camera types, namely the Indoor Dome Type camera, the fixed surveillance camera and the PTZ (Pan/Tilt/Zoom camera) camera type. The camera models shall conform to Transnet ICT Equipment Standardization Specification to ensure detailed imagery, night time operation and compatibility with the existing CCTV system.
- Where applicable, the cameras shall be powered by POE (Power Over Ethernet), except in the case where POE and additional Power Supply is required (as in the case of the PTZ type camera).
- All cables and conductors (excluding fibre optic cables) by which the Contractor has connected and powered the CCTV system shall have surge protection.
- The Contractor shall ensure that all external cameras have IP67 rated housing to ensure protection from exposure to the elements.
- The Contractor shall provide an effective network protection and security strategy.
- The Contractor shall ensure that the CCTV system to be installed is powered through the UPS.

d) Access Control

- The Contractor shall supply and install an access control system that complies with the design layout in drawings XCT.E.0007-1-000-K-LA-0001-1.

- The access control system shall be comprised of Magnetic Locks for doors, biometric scanners, break glass units in case of emergency, a turnstyle and a front door intercom system.
- The Access Control System shall be compatible and integrated with the Port's existing system. The installation and component equipment shall comply with the Group Security Management – Transnet Physical Security Systems Standard.
- The Contractor shall supply and deliver equipment/hardware according to TNPA physical security operational philosophies, threat level requirements and TNPA Security Building Specification.
- All access control equipment are to be powered through the UPS and applicable equipment will be powered via POE (Power Over Ethernet) connected to the UPS.
- The Contractor shall supply and install Door monitor embedded Maglocks (one per single leaf door, two per double leaf door). The Maglock shall provide an audio and visual alert for unauthorized entry.
- The Contractor shall provide biometric scanners for offices/sensitive areas where access control is required. The biometric scanners will be powered through POE (Power Over Ethernet) by the UPS.
- The Contractor shall provide door monitors to monitor the status of the door.
- The Contractor shall provide a turnstyle to control access through the front entrance of the building into the Fire Facility. The turnstyle shall adhere to Transnet ICT Equipment Standardization Specification. The turnstyle shall be installed and powered by the UPS.
- A Digital Telephone Entry System shall be supplied and installed by the Contractor as shown in drawing XCT.E.0007-1-000-K-LA-0001-1. The contractor shall install the system with video capability in position at the front door of the National fire Facility. The video phone will be powered via POE through the UPS and connect via the ICT network to the control room as highlighted in drawing XCT.E.0007-1-000-K-LA-0001-1.
- The access control system provided by the Contractor shall be IP based and the Contractor will be required to connect it to the ICT network for communication.

5 List of Drawings

5.1 Drawings issued by the *Employer*

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

Note: Some drawings may contain both Works Information and Site Information.

Civil Drawings:

Drawing number	Revision	Title
XCT.E.0007-106-N6-2096-SH41	OA	Pavement, Stormwater, Bulk Services & Road Marking Setting Out
XCT.E.0007-106-N6-2096-SH42	OA	Pavement & Earthworks Setting Out
XCT.E.0007-106-N6-2096-SH43	OA	Type E2 Draw Chamber (Heavy Duty) Details

Electrical Drawings:

Drawing number	Revision	Title
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XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-01	OA	MS – Misplon Bridge Mini-Substation Single Line Diagram
XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-02	OA	Low Voltage Power Reticulation Layout
XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-03	OA	Ground Floor Lighting Layout
XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-04	OA	First Floor Lighting Layout
XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-05	OA	Ground Floor Power Layout
XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-06	OA	First Floor Power Layout
XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-07	OA	DB-A Ground Floor Main Distribution Board Single Line Diagram
XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-08	OA	DB-B First Floor Distribution Board Single Line Diagram
XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-09	OA	Earthing and Lightning Protection Layout
XCT.E.0007-1-000-E-LA-TBH.106.N6-2098-10	OA	Guardhouse Electrical Lighting & Power Layout

Architecture Drawings:

Drawing number	Revision	Title
XCT-E-0007-1-151-A-LA-0001-01	OA	Site Plan
XCT-E-0007-1-151-A-LA-0002-01	OA	Ground Floor Plan
XCT-E-0007-1-151-A-LA-0003-01	OA	First Floor Plan
XCT-E-0007-1-151-A-LA-0004-01	OA	Roof Plan
XCT-E-0007-1-151-A-LA-0006-01	OA	Ground Floor Ceiling Plan
XCT-E-0007-1-151-A-LA-0007-01	OA	First Floor Ceiling Plan
XCT-E-0007-1-151-A-LA-0010-01	OA	Guard House
XCT-E-0007-1-151-A-SE-0001-01	OA	Section A-A
XCT-E-0007-1-151-A-LA-0009-01	OA	Elevations
XCT-E-0007-1-151-A-SC-0001-01	OA	Door Schedule
XCT-E-0007-1-151-A-SC-0002-01	OA	Door and Window Schedule
XCT-E-0007-1-151-A-LA-0001-01	OA	Window Schedule

Structural drawings:

Drawing number	Revision	Title
XCT.E.0007-S-LA-0001-01	OA	Demolition Layouts
XCT.E.0007-S-LA-0002-01	OA	Ground Floor Layout and Details
XCT.E.0007-S-LA-0003-01	OA	First Floor Layout
XCT.E.0007-S-LA-0004-01	OA	Lift Shaft and Details
XCT.E.0007-S-LA-0005-01	OA	Staircases A and B
XCT.E.0007-S-LA-0006-01	OA	Guard House
XCT.E.0007-S-LA-0007-01	OA	Carports and Details
XCT.E.0007-S-LA-0008-01	OA	Fence and Gate Details
XCT.E.0007-S-LA-0009-01	OA	Flag Pole, Traffic Light and Generator Plinth Details

Mechanical drawings:

Drawing number	Revision	Title
XCT.E.0007-M-TBH106N62100-01	OA	Fire Suppression Layout Ground Floor
XCT.E.0007-M-TBH106N62100-02	OA	Fire Suppression Layout First Floor
XCT.E.0007-M-TBH106N62100-03	OA	Fire Suppression Layout Site Plan
XCT.E.0007-M-TBH106N62100-04	OA	Fire Detection Layout Ground Floor
XCT.E.0007-M-TBH106N62100-05	OA	Fire Detection Layout First Floor
XCT.E.0007-M-TBH106N62100-06	OA	Emergency Evacuation and Signage Layout Ground Floor
XCT.E.0007-M-TBH106N62100-07	OA	Emergency Evacuation and Signage Layout First Floor
XCT.E.0007-M-TBH106N62101-01	OA	HVAC System Ground Floor
XCT.E.0007-M-TBH106N62101-02	OA	HVAC System First Floor
XCT.E.0007-M-TBH106N62101-03	OA	HVAC System Longitudinal Elevations
XCT.E.0007-M-TBH106N62101-04	OA	HVAC System Lateral Elevations & Typical Mounting

Control and Instrumentation drawings:

Drawing number	Revision	Title
XCT.E.0007-1-000-K-LA-0001-01	OA	Access Control Concept Layout
XCT.E.0007-1-000-K-LA-0002-01	OA	CCTV Concept Layout
XCT.E.0007-1-000-K-LA-0003-01	OA	Public Address System Concept Layout
XCT.E.0007-1-000-K-LA-0004-01	OA	ICT Infrastructure Layout
XCT.E.0007-1-000-K-LA-0005-01	OA	Network Diagram Layout 1
XCT.E.0007-1-000-K-LA-0005-01	OA	Network Diagram Layout 1

SECTION 2

6 Management and start up

6.1 Management meetings

It is the Employer's specific intention that the Parties and their agents use the techniques of partnering to manage the contract by holding meetings designed to pro-actively and jointly manage the administration of the contract with the objective of minimising the adverse effects of risks and surprises for both Parties.

Regular recorded meetings will be convened and chaired by the Project Manager or his delegated representative. The meetings will be structured as listed in table 2:

Table 2: Meeting Structure

Title and purpose	Approximate time & interval	Location	Attendance by:
Kick-off meeting	Prior to commencement of construction	Port of Cape Town	Employer, Contractor (key persons) and Project Manager (appropriate delegates)
Contract progress meeting	Fortnightly	Port of Cape Town	Employer, Contractor (key persons) and Project Manager (appropriate delegates)
Risk Register and Compensation Events	Weekly	Port of Cape Town	Project Manager (and appropriate delegates), Supervisor (and appropriate delegates) and Contractor (appropriate key persons)
Monthly SHE meeting	Monthly	Port of Cape Town	Employer, Project Manager (and appropriate delegates), Contractor (line management, site Supervisors, safety officer, environmental officer and safety reps)
Safety workshop	Bi-weekly	On site	Contractor's site, Supervisors
Safety committee meeting	Every second month	Port of Cape Town	Employer, Contractor (key persons) and Project Manager (appropriate delegates)

The meetings will be designed to pro-actively and jointly manage the administration of the contract with the objective of minimising the adverse effects of risks and unforeseen events for both Parties.

A Project site meeting will be held at the Port of Cape Town and will be attended by the Project team and the Contractor's representative. The Senior Managers will attend monthly site meetings unless there are urgent matters to be resolved. A detailed report by the Contractor should be available to the project team and any issues arising from the with external stakeholders should be discussed. In general, the cut-off date for the report will be the Friday of previous week.

As a minimum the following items should be discussed and resolved at this meeting. Matters that cannot be resolved at this meeting should be referred to the next level of management of both parties for resolution.

- Project Manager's Overview/Executive Summary.
- SHE Statistics and Reports.
- Schedule and Progress.
- Cost Status Report.
- Construction and Commissioning Activities.
- Areas of Concern and Corrective Action.

All meetings shall be recorded using minutes or a register prepared and circulated by the Employer's Project Administrator. The meeting minutes will be circulated to all project team members, the Contractor's representative and the Project Management Office's Document Control. Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the conditions of contract to carry out such actions or instructions.

The risk management workshop will be held immediately after the weekly site meeting to discuss and find resolutions for the ten highest ranking risks during the construction. The updated risk register will be circulated with the Project progress meeting, site meeting minutes.

The Contractor will provide suitable on-site facilities for all meetings.

- The Contractor attends management meetings at the Project Manager's request as set out above. At these meetings the Contractor presents all relevant data including safety, health and environmental issues, progress reports, quality issues, Subcontractor management reports, as may be required.
- Meetings of a specialist nature may be convened as specified elsewhere in this Works Information, or if not so specified, be convened by persons at times and locations to suit the Parties, the nature and the progress of the works. Within five days of the meeting the person convening the meeting shall submit records of the meeting to the Project Manager.

6.2 Documentation Control

- The Contractor shall submit all document complying with the Employers standards and requirements. The Employer will issue all relevant documents and drawings, including revisions to the Contractor, but control, maintenance and handling of these documents will be the Contractor's sole responsibility and at its expense and managed with a suitable document control system.

6.3 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 the Transnet 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:
 - 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.
 - 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.
 - 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.
 - 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.
 - The Contractor and his staff shall attend a compulsory induction course to be arranged by the Employer on or before the date when the site is made available to the Contractor.
- 6.3.2 The *Contractor* ensures that its Subcontractors comply with the requirements of the SMP.
- 6.3.3 The *Contractor* performs the *works* having due regard to the HSSP.
- 6.3.4 The *Contractor* in the performance of the *works* establishes an incentive programme for its employees with respect to SMP compliance.
- 6.3.5 The *Contractor* complies with the requirements of the SSRC with respect to his own activities and others on the Site and Working Areas
- 6.3.6 The *Contractor* makes the SMP available to its employees and Subcontractors in the *language of this contract* and other local languages as required.
- 6.3.7 The *Contractor* participates in a HAZOP at intervals upon the instruction and direction of the *Project Manager*.
- 6.3.8 The *Contractor* completes a JSA prior to carrying out any operation on the Site and/or Working Area to the approval.
- 6.3.9 The lines of communication of the various personnel acting on behalf of the *Project Manager* who communicate directly with the *Contractor* and his key persons with respect to the SMP are contained within *Annexure*.
- 6.3.10 The roles and responsibilities of the various personnel acting on behalf of the *Project Manager* with respect to the SMP and health and safety issues are as stated in the paragraphs following:
- 6.3.11 The CM is responsible (in the context of the SMP only) for health and safety on the Site and Working Areas and reports to the *Project Manager*.

6.4 Environmental constraints and management

6.4.1 The *Contractor* complies with the following ENV-STD-001 Rev01 (CEMP):

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 Site have attended the Induction Programme [please define, state parameters and include as an Annexure as necessary] 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.

The Protection of the Environment Form [please insert relevant details via Environmental Department] shall be signed and submitted to the CM within 14 days after the Contract Date.

Where required, one of the first actions to be undertaken by the *Contractor* shall be to erect and maintain a temporary fence along the boundaries of the Site and Working Areas as applicable, and around any no-go areas identified on the layout plans, to the satisfaction of the *Project Manager*.

The plant search and rescue (if applicable) must be undertaken and completed prior to any Site clearance or any other construction activity that may damage the vegetation can commence on Site.

The *Contractor* must appoint a sufficient number of named assistants to the CSHEO to monitor environmental issues e.g. litter, spills, illegal activities, fence patrol, dust etc. These appointments, along with details of the individuals being appointed and job descriptions, must be sent to the *Project Manager* for his approval.

During the construction period, the *Contractor* complies with the following:

A copy of the SES, and the relevant PES shall be available on Site, and the *Contractor* shall ensure that all the personnel on Site (including Subcontractors and their staff) as well as suppliers are familiar with and understand the specifications contained in the SES (as amended by the PES).

Method statements that are required during construction must be submitted to the *Project Manager* for approval at least 20 days prior to the proposed commencement of the activity. Emergency construction activity method statements may also be required. The activities requiring method statements cannot commence if they have not been approved by the *Project Manager*.

The method statements for Completion by the Contractor are contained within Annexure [insert relevant Annexure].

Where applicable, the *Contractor* shall provide job-specific training on an *ad hoc* basis when workers are engaged in activities, which require method statements.

The *Contractor* shall ensure that any Materials delivery drivers are informed of all procedures and restrictions (e.g. which access roads to use, no go areas, speed limits, noise, etc) required by the CEMP before they arrive at Site and off load any Materials.

The *Contractor* shall be responsible for rehabilitating and re-vegetating all areas to the satisfaction of the *Project Manager* as detailed in the SES and PES.

The *Contractor* shall clear and clean the Site and Working Areas and ensure that everything not forming part of the *works* is removed from the Site and Working Areas and that all rehabilitation has taken place in accordance with the PES. An Environmental Closure Certificate [insert relevant details from Environmental Department and include in an Annex] has been issued by the SHEC and signed off by the *Project Manager*.

The Contractor complies with environmental inspections and audits as contained within Annexure

The *Contractor* makes copies of the CEMP, SES and PES available at the offices of the *Contractor* on Site. The *Contractor* ensures that all personnel on Site (including Subcontractors) are familiar with and understand the requirements of the CEMP.

6.4.2 The *Contractor* complies with the following SES:

The *Contractor* shall identify the kinds of environmental impacts that will occur as a result of his activities and then prepare separate method statements describing how each of those impacts will be prevented or managed so that the standards set out in this document are achieved. These method statements will be prepared in accordance with the requirements set out in the CEMP.

To ensure that environmental issues are taken into account in the establishment of the Site offices and all other facilities on Site.

- 6.4.3 The roles and responsibilities of the various personnel acting on behalf of the *Project Manager* with respect to environmental issues are stated in the paragraphs following.
- 6.4.4 The ProjEM is responsible for ensuring that the *Contractor* complies with the CEMP. The ProjEM acts on behalf of the *Project Manager*.
- 6.4.5 The *Contractor* complies with the CEMP, SES and PES. The *Contractor* abides by the instructions of the *Project Manager* regarding the implementation of the CEMP.

6.5 Quality assurance requirements

- 6.5.1 The *Contractor* shall have, maintain and demonstrate its use to the *Project Manager* (and/or the *Supervisor* to satisfy the requirements of paragraphs 7.4, 7.5, 3.2.1 and 3.2.8 as appropriate) the documented Quality Management System to be used in the performance of the *works*. The *Contractor's* Quality Management System shall conform to International Standard ISO 9001 (or an equivalent standard acceptable to the *Project Manager*).
- 6.5.2 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
- 6.5.3 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.
- 6.5.4 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*.
- 6.5.5 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* meet the standards stated in the *Works Information* [state further details as necessary which explains and defines what the Quality Plan involves]

6.6 Programming constraints

- 6.6.1 The *Contractor* shows on each programme he submits to the *Project Manager*, the requirements of the [CEMP, SES, PES and SMP state others as required] as described under paragraph 2.4 of the *Works Information*, together with the associated environmental method statements.
- 6.6.2 The *Contractor* shows on each programme he submits to the *Project Manager*, the requirements of [state further details as required. I anticipate paragraph 6.3 H&S issues need to be highlighted on the programme, paragraph 2 design issues and potentially paragraph 7 procurement issues. Hopefully it is obvious that the Contractor has to show construction (paragraph 5) operations on the programme, but the Project Manager might require various mandatory statements (e.g.) in relation to Equipment design and/or assembly / dismantling].
- 6.6.3 The *Contractor* complies with the *Employer's* programme when he submits his first programme.

- 6.6.4 The *Contractor* presents his first programme and all subsequently revised programmes (see ECC Clauses 31.2 and 32.1) in hard copy format [state specific details or cross-refer to suitable statements under paragraph 6.2 of C3.1 Employer's Works Information] and in soft copy format [state specific details or cross-refer to suitable statements under paragraph 2.2 of C3.1 Employer's Works Information].
- 6.6.5 The *Contractor* uses Primavera version 8.2 for his programme submissions or a similar programme software package equivalent to Primavera version 8.2 subject to the prior written notification and acceptance by the *Project Manager*.
- 6.6.6 The *Contractor* shows on his Accepted Programme and all subsequently revised programmes schedules showing the critical path or paths and all necessary logic diagrams demonstrating sequence of operations.
- 6.6.7 The *Contractor's* programme shows duration of operations in working days [please state here or by cross-reference elsewhere in C3.1 *Employer's* Works Information to normal hours of a working days and what is a normal working week].
- 6.6.8 The *Contractor's* programme shows the following levels:
- Level 1 Master Schedule – defines the major operations and interfaces between engineering design, procurement, fabrication and assembly of Plant and Materials, transportation, construction, testing and pre-commissioning, commissioning and Completion.
 - Level 2 Project Schedule – summary schedules 'rolled up' from Level 3 Project Schedule described below
 - Level 3 Project Schedule – detailed schedules generated to demonstrate all operations identified on the programme from the starting date to Completion. Individual operations will be assigned a code [state details here in C3.1 Employer's Works Information or how the Project Manager will communicate this to the Contractor, post Contract Date]. The *Project Manager* notifies any subsequent layouts and corresponding filters on revised programmes
 - Level 4 Project Schedule – detailed discipline speciality level developed and maintained by the *Contractor* relating to all operations identified on the programme representing the daily activities by each discipline
 - A narrative status report, which includes [state precise details status and performance of operations on the Site and Working Areas; status and performance of operations outside the Working Areas; manpower histograms; S-curve of overall progress; critical action items (top 10) and deviations from the Accepted Programme and action plan to rectify]
- 6.6.9 The *Contractor* shows on each revised programme he submits to the *Project Manager* a resource histogram showing planned progress versus actual, deviations from the Accepted Programme and any remedial actions proposed by the *Contractor*.
- 6.6.10 The *Contractor* submits programme report information to the *Project Manager* [state precise details] at [weekly] intervals in addition to the intervals for submission of revised programmes stated under Contract Data Part One.
- 6.6.11 The *Contractor's* weekly programme narrative report includes:
- Level 4 Project Schedule – showing two separate bars for each task i.e. the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted programme.
 - 3-week Look ahead Schedule - showing two separate bars for each task i.e. the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted programme.
 - Manpower Histogram – reflecting actual, forecasted and planned activities
 - S-curves – reflecting the actual percentage complete versus the planned percentage for the overall contract utilising the earned values as calculated by the detailed progress report.

6.6.12 The *Employer* (including the agents of the *Employer*) operates on Site during [either state specific calendar dates or timings when the *Contractor* has completed certain elements of the *works* etc].

6.6.13 Others [state specific third parties] operate on Site during [either state specific calendar dates or timings when the *Contractor* has completed certain elements of the *works* etc].

6.7 Contractor's management, supervision and key people

6.7.1 The Contractor provides an Organogram of all his key people (both as required by the Employer and as independently stated by the Contractor under Contract Data Part Two) and how such key people communicate with the Project Manager and the Supervisor and their delegates all as stated in the Employer's Works Information.

- The contractor shall have these key people as part of his team at minimum.
- Civil Engineer
- Electrical Engineer
- Construction manager (PrCPM accredited.)

6.7.2 The *Contractor* employs a CSHEO as a key person under ECC Clause 24.1

6.7.3 The CSHEO reports to the SHEC on the Site. The CSHEO ensures that the *works* (to include any part thereof) are subject to a prior environmental method statement(s) approved by the [insert specific details, is this Project Manager, CM or SHEO] and ensures that the CEMP is implemented by the *Contractor* in a timely and proper manner. The CSHEO provides the *Project Manager* with all environmental method statements.

6.7.4 The CSHEO tasks are:

Daily, weekly and monthly inspections of the Site and Working Areas [state specific distinguishing requirements per period]. The *Contractor* is referred to Annexure

Monitor compliance with the CEMP (to include the SES and PES) and the environmental method statements submitted to the *Project Manager*

- Reporting of an environmental incident [define further, consult with Environment Dept] to the *Project Manager*
- Attendance at all SHE meetings, toolbox talks [please insert details as to what this means] and induction programmes [explain what this means by reference to PES]
- Litter control and ensuring the *Contractor* clears litter from the Site and Working Areas; and
- Ensuring that environmental signage and barriers are correctly placed [this is superfluous unless specific Contractor obligations explain signs and barriers placement under the PES]

The CSHEO submits daily, weekly and monthly checklists [state what format or include Annexure pro forma as necessary] to the SHEC.

6.7.5 The *Contractor* employs a CIRP as a key person under ECC Clause 24.1.

6.7.6 The CIRP is based on the Site and ensures that all reports and IR requests are submitted accurately and in a timely manner to [insert specific details, is this Project Manager, CM, PIRM, PSIRM or SIRM].

6.7.7 The CIRP tasks are:

- Dedicated to human resources, industrial relations and any other *Contractor* employee related function;
- Resolve all human resources and industrial relations matters arising from the *Contractor's* employees;

- Represent the *Contractor* at all industrial relations meetings [state specific details within paragraph 6.1 management meetings of the *Works Information*];
- Represent the *Contractor* on the IRCC; and

6.7.8 The *Contractor* employs an HSR as a *key person* under ECC Clause 24.1

6.7.9 The *Contractor* provides an Organogram of all his key people (both as required by the *Employer* and as independently stated by the *Contractor* under Contract Data Part Two) and how such key people communicate with the *Project Manager* and the Supervisor and their delegates all as stated at paragraph 6.5 of C3.1 *Employer's Works Information*.

6.8 Training workshops and technology transfer

6.8.1 The *Contractor* facilitates the following requirements for training workshops:

- Pre-mobilization workshop, scheduled for one week prior to site establishment. Workshop will be attended by the site management team including site agents, all Contractor's Supervisors and safety personnel.
- Formal training as stipulated in the Health and Safety Project Specification 1124367-02-HS-SP-0001 to be attended by Contractors identified personnel before commencement of any works.

6.8.2 The *Contractor* provides the following documentation to the *Employer*:

- Health and Safety file, including Health and Safety Management Plan but not limited to:
- Valid company letter of good standing
- Medical certificates of fitness
- Incident management procedures;
- Performance reporting;
- Site training packages;
- Safe work method statements;
- Safety procedures;
- Risk assessment process and as well as risk assessments for all activities;
- Insurance provided by the Employer.

6.9 Insurance provided by the Employer

6.9.1 Insurance provided by the *Employer* is contained in the Contract Data – Part 1.

6.10 Contract change management

6.10.1 Change Management shall be implemented in line with the NEC ECC processes.

6.10.2 No additional requirements apply to ECC Clause 60 series.

6.11 Provision of bonds and guarantees

6.11.1 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.

- 6.11.2 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.

6.12 Records of Defined Cost, payments & assessments of compensation events kept by *Contractor*

- 6.12.1 The *Contractor* keeps the following records available for the *Project Manager* to inspect:

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

6.13 The *Contractor's* Invoices

- 6.13.1 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.

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

- 6.13.3 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

The invoice contains the supporting detail

- 6.13.4 The invoice is presented either by post or by hand delivery.

- 6.13.5 Invoices submitted by post are addressed to:

**Transnet National Ports Authority House
P O Box 4245, Cape Town, 8001
Port of Cape Town 8001
South Africa**

Invoices submitted by hand are presented to:

**Transnet National Ports Authority, a division of Transnet SOC limited
Port of Cape Town
TNPA House
South Arm Road
Cape Town
South Africa
8001**

6.14 People

- 6.14.1 Minimum requirements of people employed on the Site

6.14.2 The Contractor complies with the following PIRPMP

6.14.3 CONTRACTOR LIABILITY

1.1. 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;

1.2. 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.

1.3. 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.

1.4. 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.

1.5. 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.

6.14.4 INDUSTRIAL ACTION BY CONTRACTOR EMPLOYEES

1.1. 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.

1.2. 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.

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

1.3.1. 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.

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

1.3.2.1. Industrial incident report,

1.3.2.2. Attendance register,

1.3.2.3. Productivity / progress to schedule reports,

1.3.2.4. Operational contingency plan,

1.3.2.5. Site security report,

1.3.2.6. Industrial action intelligence gathered.

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

1.3.4. 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.

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

1.5. 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.

6.14.5 The *Contractor* complies with the requirements of the IRCC involving the engineering construction *Contractors* engaged (including all future *Contractors*) by the *Employer* [include details as appropriate ex:

6.14.6 The roles and responsibilities of the various personnel acting on behalf of the *Project Manager* with respect to IR issues are stated in the paragraphs following:

The PIRM is responsible for ensuring that the Contractor complies with the PIRPMP. The PIRM acts on behalf of the *Project Manager*.

6.14.7 The PIRM specific tasks are:

- To complete the PLA prior to the Contract Date; and
- To assign specific duties to the PSIRM.

6.14.8 The SIRM is responsible, *inter alia*, for day-to-day IR on the Site and Working Areas through the implementation of the PIRPMP. The SIRM reports directly to the PSIRM and the *Project Manager*.

6.14.9 The SIRM specific tasks are:

- To liaise with the Contractor prior to the commencement of construction activities (as per the Contractor's programme accepted by the Project Manager) with respect to IR issues under the SIP [insert contract specific details –include as an Annexure as necessary]

6.15 Plant and Materials

6.15.1 Quality

6.15.2 The *Contractor* provides Plant and Materials for inclusion in the *works* in accordance with SANS 1200A sub-paragraph 2.1, unless otherwise stated elsewhere in the *Works Information* provided by the *Employer*. All Plant and Materials are new, unless the use of old or refurbished goods and/or Materials are expressly permitted as stated elsewhere in this *Works Information* or as may be subsequently instructed by the *Project Manager*.

6.15.3 Where Plant and Materials for inclusion in the *works* originate from outside the Republic of South Africa, all such Plant and Materials are new and of merchantable quality, to a recognised national standard, with all proprietary products installed to manufacturers' instructions.

6.15.4 The *Contractor* replaces any Plant and Materials subject to breakages (whether in the Working Areas or not) or any Plant and Materials not conforming to standards or specifications stated and notifies the *Project Manager* and the *Supervisor* on each occasion where replacement is required.

6.15.5 Plant & Materials provided "no free issue" by the *Employer*

- 6.15.6 The Plant and Materials provided by the *Employer* are solely at the risk of the *Contractor* for inclusion in the *works*. The *Contractor* takes responsibility for ensuring the Plant and Materials do not contain a Defect(s) and are in compliance with the standards stated elsewhere in the *Works Information*.
- 6.15.7 The *Contractor* takes receipt of the Plant and Materials from the *Employer* in accordance with the following procedure:
- 6.15.8 The *Contractor* provides all other Plant and Materials necessary for the *works* not specifically stated to be provided “free issue” by the *Employer*.
- 6.15.9 *Contractor’s* procurement of Plant and Materials
- 6.15.10 Spares and consumables
- 6.15.11 The *Contractor* provides the following spares and consumables to the *Employer*.

6.16 Tests and inspections before delivery

- 6.16.1 The *Contractor* submits to the Supervisor details to certify that tests and inspections have been carried out on Plant and Materials by others which include:
- AIA
 - INC

6.17 Marking Plant and Materials outside the Working Areas

- 6.17.1 The *Contractor* prepares and marks items of Plant and Materials outside the Working Area with clearly defined markings.

6.18 Contractor’s Equipment (including temporary works).

- 6.18.1 The *Contractor* provides the *Project Manager* with relevant detail of the category of Equipment (or similar) for the execution of the *works*.

SECTION 3

C3.2 CONTRACTOR’S WORKS INFORMATION

The *Contractor* shall provide the following:

- Contractor proposed designs.
- Plant and Material specifications and schedule.
- All design criteria as mentioned in section 2.2 to 2.6 and
- Any other designs and specification that the *Contractor* deem necessary for the completion of works.

All designs carried out by the *Contractor* to be approved by the *Project Manager* or *Project Manager’s* representative

PART 4: SITE INFORMATION

1. Description of the Site and its surroundings

1.1. General description

Port of Cape Town Fire Station is located adjacent to the Yacht Basin with access onto Duncan Road, under the City of Cape Town.



The Port of Cape Town (POCT) conducted a Site Location Study to determine where the new Fire Department will be constructed. With this study, POCT EXCO approved the chosen site. Since the site approval the POCT Fire Services Department has relocated permanently to the old MCD Training Facility on Duncan Road. The site is large enough for the development, is located on a main port road and is central to all risk areas.

The Topography for the Site for the Port of Cape Town Fire Station is fairly flat.

1.2. Existing buildings, structures, and plant & machinery on the Site

- The site has existing building. It is located adjacent to a sea dock.

1.3. Subsoil information

General

A geotechnical laboratory: Controlab carried out the field investigations and laboratory testing including analysis and reporting of the results.

According to the geological map 3318 for Cape Town published by the Chief Director of Surveys and Mapping, the site under investigation falls within an area of reclaimed land and gritty sand.

Typical Horizons

Asphalt varying in thickness between 40mm and 50mm was profiled at TP1, TP2 and TP3. Imported fill material comprised of building rubble, weathered shale and clayey sand was profiled in TP1, (up to depth of 0.7m), TP2 (up to depth of 0,65m) and TP3 (up to depth of 0.88m) and appears to have been compacted in layers of up to 300 mm. The transported material profiled within the trial pits consisted of Aeolian sand/dune sand. The moisture conditions of the sand were very moist to wet, the consistency soft and the structures intact, No residual material was encountered.

Foundation Indicators

Three (3) Foundation Indicator tests were performed to determine the volumetric instability of the soils.

The expansiveness of the horizons tested was evaluated using Van der Merwe's method of classification. The PI of the whole sample was non-plastic for all samples tested, with the clay fraction (0.002mm sieve) being 3% for all samples tested. This was an indication that heave or swell will not be encountered, however, a possibility of collapsing should not be overlooked due to the single sized nature of the sand.

Collapse Potential	Severity of Problem
0% - 1%	No problem
1% - 5%	Moderate problem
5% - 10%	Problem
10% - 20%	Severe problem
> 20%	Very severe problem

SOURCE: Bryne & Berry (2008)

Three (3) Consolidation/Collapse Potential and swell tests were performed on material sampled from the trial pits. The collapse potential varied between 0.03% and 0.05% indicating a low potential for collapse, however, these low values could be due to the compaction effort applied on site before construction of the layer works and asphalt surfacing and as such, care should be taken in the platform and foundation design with regards to potential for collapse. The material showed no signs of swelling.

Two (2) samples were taken for pH and conductivity analysis from TP1 and TP2 at depths of 700-1600mm and 650-880mm respectively the results ranged from 12 $\mu\text{S/m}$ to 22 $\mu\text{S/m}$ and indicated mildly corrosive to corrosive risk.

Road Indicator Tests

Three (3) samples were tested to determine the suitability of the material to be used during construction. The material conformed to a G7 material classification, indicating that material similar to the samples tested would be suitable for use as backfill or material required for platforms.

DCP Tests

Dynamic Cone Penetrometer tests were performed adjacent to the trial pits. The penetration rate will be used to determine the estimated safe bearing values in accordance to the "Use and Interpretation of the Dynamic Cone Penetrometer (DCP) Test" by P Paige-Green and L Du Plessis. Due to the soft structure of the sand, the expected values of the safe bearing pressure were in the range of 120 – 150 kPa. However, due to the presence of ground water in the region of 2.4 meters below the surface we recommend reducing this.

Ground Water/Dampness

Ground water seepage was encountered in TP 2 and TP 3 at depths of 2.4m and 2.8m respectively. Minor or no subsoil drainage will be required.

Excavations

Excavations were done by machine (TLB) and all the depths of the excavations were only up to 2.4m to 2.9m. Excavation refusal was not recorded.

Geotechnical Summary and Recommendations

The investigation has indicated that the site is underlain by a thick horizon of transported Aeolian/dune sand from approximately 1 m below the surface. The depth and extent of the sand horizon is unknown as it was not possible to excavate the test pits deeper than 2.6m and 2.9m.

Due to the Aeolian sands encountered in the test pits, our recommendation is that stiffened reinforced strip footings or cellular raft foundations be considered. Based on previous experience as well as the DCP test results, we would recommend that the safe allowable bearing capacity should not exceed 120kPa, however due to the presence of groundwater in TP2 and TP 3 and depths of 2.4m and 2.8m, we recommend reducing this value in accordance with the chosen depth of founding and the dimensions of the base/footing.

Once the design levels for the foundation are known and the required depths of excavation have been achieved for the foundation construction, we recommend that pre-wetting and compaction of the founding material takes place prior to construction of the footing/bases. This will encourage any possible collapse as well as minimise the potential for differential settlement after construction.

1.4. Hidden services

The Site currently has an existing power reticulation. This is mainly to the existing buildings on site and sewer line is also available.

1.5. Other reports and publicly available information

The annexures include the complete geotechnical and survey reports to assist with method of working and programme and any designs done by Contractor.

A - Survey Report

_____ hereby acknowledge receipt and full
understanding of ***The Survey Report***

Signed on _____

Signature Of Tenderer

NPM GEOMATICS



**PROFESSIONAL LAND SURVEYORS
TOPOGRAPHICAL AND ENGINEERING SURVEYORS
SECTIONAL TITLE PRACTITIONERS
MEDIATION AND DISPUTE RESOLUTION**

(2005/032909/21)

Our Ref: 02/8600 Survey Report Rev0

SURVEY REPORT

TACHY SURVEY FOR THE TNPA NATIONAL FIRE SERVICES INFRASTRUCTURE UPGRADE AT THE CAPE TOWN HARBOUR

Purpose of the survey

The purpose of this survey was to do a tachy survey for the TNPA national fire services infrastructure upgrade at the Cape Town Harbour. This survey was done in June 2018.

Control System

This survey was linked onto a Cape Town Harbour control point called BM for both the horizontal and height calibration. Checks were then made onto two nearby town survey marks, namely 1M5 and 3J8. The checks yielded excellent results and therefore proves that the Cape Town Harbour control is based on the surrounding town survey marks.

Cape Town Harbour Control System

We received a control list from Zinzi Dlulane and Justice Ramulifho from the TNPA offices at Cape Town Harbour with the Y, X and height positions of a couple of benchmarks on site. We then used this control list to find benchmark BM which then checked it against the town survey mark.

In this survey, we have successfully established ourselves onto the Cape Town Harbour control system.

Accuracy of Survey

The survey has been carried out by PLATO registered persons under the supervision of the undersigned PLATO registered professional land surveyor. The accuracy is confirmed to meet the required accuracies expected in terms of the Land Survey Act, No 8 of 1997.

Survey Methods

This site was surveyed using a combination of GPS and total station observations.

Establishment of New Control

Three new benchmarks were established on site, namely BM1 – BM3. A GPS height was transferred from benchmark BM to new benchmark BM1. A spirit level run was then completed from BM1 through BM2 and BM3 to determine the new levelled heights of BM2 and BM3 relative to BM1.

Cadastral Data

The cadastral overlay shown on the plan has been sourced from a public domain spatial database. This data has not been verified by us for accuracy or correctness. If accurate cadastral information is required, you should contact either ourselves or another professional land surveyor for further advice.

General

The contours on the drawing were reduced to a 0.25m interval due to the flatness of the terrain.

Assistance

I was assisted by PLATO registered survey technician Mandla Mdluli.



ANDRE VAN NIEKERK

Pr.L (SA) - PLS1256

DATE: 14 June 2018

B - Site Development Plan

_____ hereby acknowledge receipt and full
understanding of ***The Site Development Plan***

Signed on _____

Signature Of Tenderer

SCHEDULE OF RIGHTS

PROPERTY DESCRIPTION:

ERF / Portion: ERF 10256-RE, FORESHORE

Township: -ha

Title Deed No:

ZONING INFORMATION:

Town Planning Scheme: CITY OF CAPE TOWN MUNICIPALITY PLANNING BY-LAW, 2015

Amendment Scheme No:

Use Zone : TRANSPORT 1: TRANSPORT USE

Annexure No:

DEVELOPMENT CONTROL MEASURES:

Permissible	Control	Actual
18.0M	Height of Buildings	X storeys (X0m meters above NGL)
XX%	Coverage	XX% = XXXXm²
0.XX	Floor Area Ratio	0.XX
XXXXm²	Floor Area	XXXXm²
XXXX	Density (Dwellings per ha.)	XXXX
XXXX	No Of Dwellings Units on Erf	XXXX
Building Line		

FOR EXAMPLE: to use the provisions of the scheme:
1. 20meters from the Red Line to the Yellow Line
2. 10meters along the Red Line (RDL) and
3. 20meters along the Yellow Line (YLL)

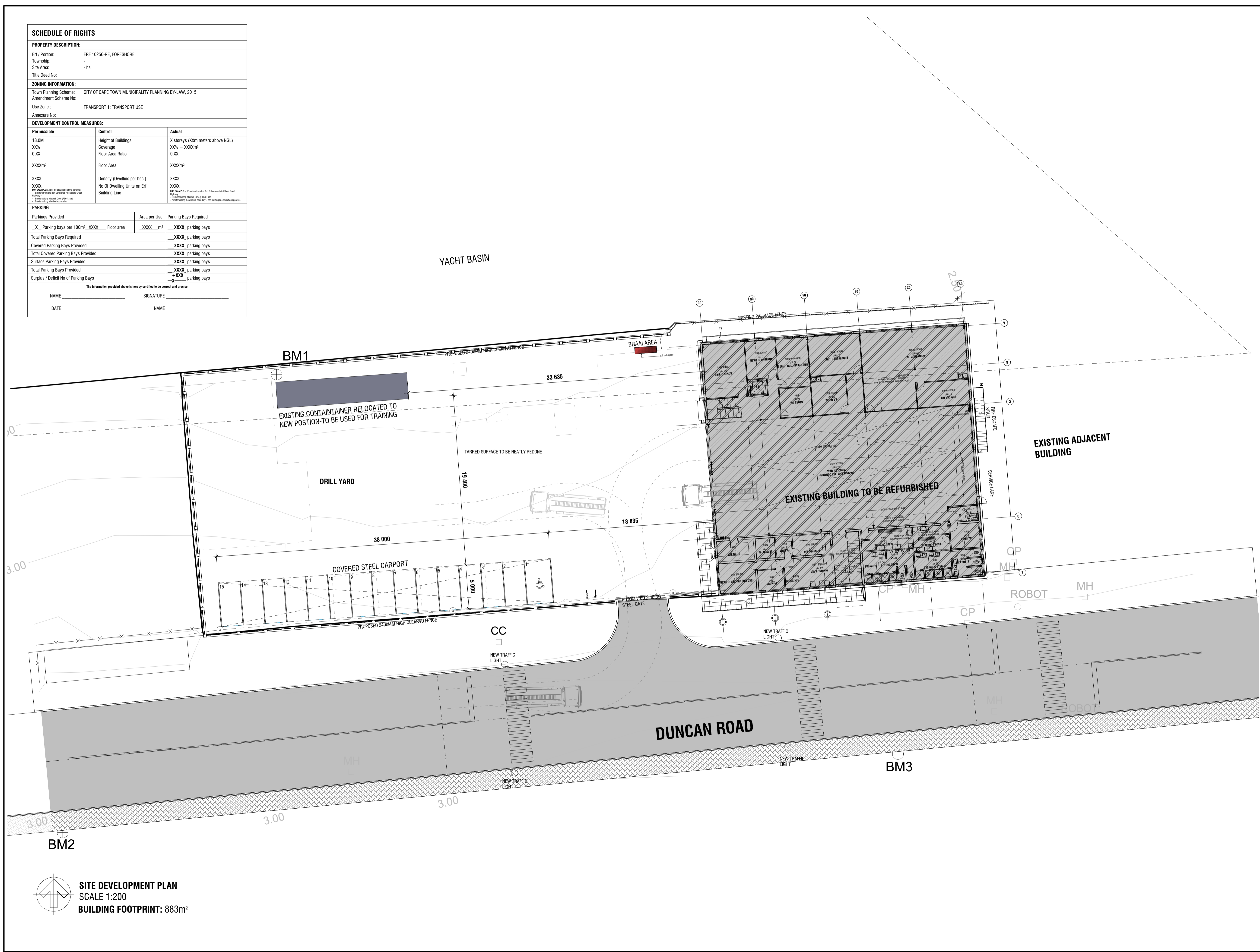
FOR EXAMPLE: 1. 15 meters from the Red Line to the Yellow Line
2. 10 meters along the Red Line (RDL) and
3. 20 meters along the Yellow Line (YLL) - see building line regulation appendix

PARKING

Parkings Provided	Area per Use	Parking Bays Required
X Parking bays per 100m² XXXX Floor area	XXXX m²	XXXX parking bays
Total Parking Bays Required		XXXX parking bays
Covered Parking Bays Provided		XXXX parking bays
Total Covered Parking Bays Provided		XXXX parking bays
Surface Parking Bays Provided		XXXX parking bays
Total Parking Bays Provided		XXXX parking bays
Surplus / Deficit No of Parking Bays		+ XXX parking bays

The information provided above is hereby certified to be correct and precise

NAME	SIGNATURE
DATE	NAME



GENERAL NOTES:

1 Contractor Notes:

No construction may proceed on site prior to the approval of drawings by the local authority. Any building work that commences prior to the building plan approval is completely at the owner's own risk.
The Architect may not be held responsible for any loss or damage whatsoever that may result from building works without approved building plans.
Contractor to verify all levels, heights and dimensions on site and to check same against the drawings before putting any work in hand. Levels are approximate and must be verified by the Contractor prior pricing and construction. Relative floor levels will be determined after installation of master datum.
Any discrepancies on drawings must be pointed out by the Contractor to the Architect prior to construction.
Contractor is responsible for correct setting out of the buildings, all external walls with particular reference to boundaries, building lines, etc. Any errors, discrepancies or omissions to be reported to the Architect immediately.
Contractor responsible to engage Building Inspector on each Construction Stage, to get full satisfaction in compliance with Local Authority by-law and regulations. - Burnt clay bricks only shall be used unless specific approval is obtained from the Architect alternative type of bricks.
Conditions: The civil/structural engineer is responsible for soil test.

2. Certificates required:

The following certificate of compliance to SABS and NBR standards may be required from the Contractor by the Architect.
FOUNDATION CERTIFICATE: Engineer.
DPC Council Inspector.
PLUMBING AND DRAINAGE: Specialist Sub-contractor.
ELECTRICAL INSTALLATION: Specialist Sub-contractor.
TRAFFIC AND ROAD MARKINGS: Engineer.
FIRE SAFETY CERTIFICATE: Specialist and/or Council.
ROOF STRUCTURE: Specialist Sub-contractor and/or Engineer.
CONCRETE SLABS: Specialist Sub-contractor.
WATERPROOFING: Specialist Sub-contractor.
GLAZING: Specialist Sub-contractor.

3. Materials and Finishes Notes:

All finishing products such as window frames, roof, tiles, cornices, etc. must be approved by the Architect before ordering and installation.
All product used must comply with SABS standards and Local Authority Requirements.
Quality of all materials and workmanship to comply with the relevant SABS and SANS specifications and shall conform to the Standards specified in the Standard Prescriptions in the Bill of Materials available for perusal at the Architect's office.
Contractor is to build in approved DPC's whether or not these are shown on drawings to all external walls at each floor, beam or parapet level and to all window, door, grill or other opening in external walls. All partition work to comply with SABS 882 on NBR.

4. Building Standard Notes:

All works must comply to the National Building Regulations and applicable SABS and NBRPC standards.
Drawings may not be scaled for construction purposes. Figured dimensions to be used at all times.
All drawings must be used in conjunction with one another.
Notes reflected on drawings apply for the entire project and works.
Any discrepancies on drawings must be pointed out by the Contractor to the Architect prior to construction and submission of the drawings. If in doubt see the Architect.
Contractors are to ensure that all details shown on this drawing are compliance with local authority by-law and regulations.
Contractors are to locate and identify existing services on site and to protect these from damage throughout the duration of the works.

5. Glazing Notes:

All glazing to comply with NBR(SANS)10400 - Part N) SABS 0137 & AMESA.
Glazing
Dimensions
Max. Size Pane
Normal glass thickness
0.75
4mm
1.50
6mm
2.10
3.20

6. Flashing Notes:

Provide U-bent flashing at all parapets and areas where the roof line changes.

7. Brickwork Expansion Joints Notes:

Refer to Engineer for brickwork expansion joints.

8. Revisions:

Refer to drawing list for latest revisions on drawings.
Any queries arising from all the above must be reported to the Architect for clarification before any work is put in hand.

REVISIONS

REV No	DATE	DESCRIPTION
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PRINCIPAL AGENTS

ARCHITECTS

QUANTITY SURVEYORS

CIVIL/STRUCTURAL ENG.

ELEC/MECHANICAL ENG.

CONTRACTOR

USER CLIENT

SIZE ON ORIGINAL DRAWING 100 mm

Consultant.

VNMM STRUCTURAL AND CIVIL ENGINEERING

SNE INETHEMA CONSULTANTS

Client.

TRANSNET national ports authority

PROJECT

PORT OF CAPE TOWN_FIRE STATION

TNPA National Fire Services Infrastructure and Equipment Upgrade Project

CONTRACT - SECTION

BUILDING OCCUPANCY CLASSIFICATION

DISCIPLINE

PROJECT STAGE

ARCHITECTURE

3

DESIGN DEVELOPMENT

DRAWING TITLE

SITE DEVELOPMENT PLAN

FILE No.

DESIGN

GIFT CHIGUDU

GIFT CHIGUDU

DRAWN

SCALE

INDICATED

JOSEPH SURE

CHECKED

RESPONSIBLE PROFESSIONAL

NAME & SURNAME

SIGNATURE

PR. NUMBER

JOSEPH SURE

7735 (SACAP)

DRAWING CO-ORDINATED

PROFESSIONAL CONSULTANT FIRM:

APPOINTED CONTRACTOR:

CAD SYSTEM

REVIT ARCHITECTURE

TNPA 682_CT-A-001

FILE NAME

SHEET SIZE

DRAWING NUMBER

REV

A1

TNPA 682_CT-A-001