

Description of the Works: For the Provision of Security Fencing Infrastructure in the Port of Durban for a Period of Fifteen (15) Months.

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## PART C3: SCOPE OF WORK

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## C3.1 EMPLOYER'S WORKS INFORMATION

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## SECTION 1

### 1 Description of the *works*

#### 1.1 Executive overview

The Port of Durban is one of South African's nine commercial ports, which must adhere to the International Ship and Port facility (ISPS) code requirements. The port must secure all its assets by means of physical barriers (fencing) which will also ensure that the port complies with the requirements of the ISPS code. In terms of the International ship and Port Facility Security code and Maritime Security Regulation Act, 2004, measures must be taken to protect TNPA asset, customers, employees, passenger vessel and the Port facility against terrorism, sabotage, stowaways/illegal immigrants, armed robbery, etc.

Currently the Port is faced with three key issues in terms of Port security requirements, these issues are:

- Ageing security infrastructure in the Port.
- Lack of fencing in certain areas within the Port.
- Existing fences not meeting acceptable security standards.

##### **Ageing infrastructure:**

In certain areas in the Port the existing security fencing infrastructure has reached the end of its design life span as a result the fences in these areas are heavily corroded to a point that the anchor poles are no longer able to support the fencing panels and the fence is falling down. These challenges areas are experienced at:

- Island View 9.
- South Pier (TNPA Security house)

##### **Lack of fencing infrastructure:**

Currently there are critical areas that are not fenced, they are completely exposed and these areas are at:

- Bat Centre to Schoeman's bridge.
- North Pier.
- I & J canal road.

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- Marine to Subway.
- Pleasure Island.
- Bayhead road (Near Allan Dalton)

#### **Existing fences not meeting security standards.**

Currently there are areas that are fenced, however they do not meet acceptable security standards as these fences are easy to remove thus making the areas accessible to vagrants/trespassers. These areas are at:

- Maydon Wharf Security Centre
- Roads and Tracks, (Hlanganani building)
- Maydon Wharf 15
- Fynnland Security Centre

The Port of Durban requires security upgrade and improvements to comply with the legislative requirement in terms of the International Ship and Port Security Code (ISPS). As a port of entry, it is a legislative requirement for the Port to secure all its assets by means of a physical barrier (fencing) to ensure a secure and safe environment.

Port Security Fencing Infrastructure project covers the supply and installation of the hot dip galvanised palisade fencing, hot dip galvanised Press High Mesh Fence security fence , supply and installation manual gates (swing and sliding) with shackles and padlocks, careful removal of the existing fence (wire mesh, concrete slabs and brickwork) and gates, compliance with OHS Act and Construction Regulations including Port Health, Safety and Environmental Regulations and any other work as may be required.

The *works* that the *Contractor* is to perform *involve*

#### **North Pier:**

- Removal and disposal of existing plastic handrails.
- Installation of new industrial palisade fence.
- Installation of new Press High Density Mesh Fence.
- Install new sliding gate.

### **Island View 9**

- Removal and disposal of existing damaged mesh wire fence.
- Installation of new industrial palisade fence.
- Install 3 X new double leaf swing gate.

### **Fynnland security office**

- Installation of new industrial palisade fence.

### **Maydon Wharf 15**

- Removal and disposal of existing pre-cast concrete palisade fence.
- Installation of new industrial steel palisade fence.
- Install new double leaf swing gate.

### **Maydon Wharf Security Centre**

- Removal and disposal of existing double leaf swing gate.
- Removal and disposal of existing pre-cast concrete palisade fence.
- Installation of new Press High Density Mesh Fence.
- Install new double leaf swing gate

### **I &J and Canal Road**

- Removal and disposal of existing guardrails.
- Installation of new industrial steel palisade fence.

### **Marine Services to Subway**

- Removal and disposal of existing steel palisade fence.
- Installation of new industrial steel palisade fence.

### **Pleasure Island**

- Installation of new industrial steel palisade fence.
- Install new single leaf pedestrian gate.

### **Bat Centre to Schoeman Bridge**

- Installation of new industrial steel palisade fence.

### **Road and Tracks (Hlanganani)**

- Removal and disposal of existing pre-cast concrete palisade fence.
- Installation of new Press High Density Mesh Fence.

### **Bay head (Allan Dalton)**

- Installation of new industrial steel palisade fence.
- Install new double leaf swing gate.

### **South Pier (Security house)**

- Installation of new industrial steel palisade fence.
- Install new double leaf swing gate.

**NB:** There are areas within the Port which are contaminated with asbestos material, Contractor may during excavation come across pockets of asbestos material, should the Contractor come across asbestos they should notify TNPA Project Manager immediately and stop excavations and call out the AIA (Asbestos Impact Assessment Personnel) who will be appointed by the contractor.

## 1.2 Employer's objectives

The *Employer's* objectives are

- Ensure that the Port of Durban complies with Merchant Shipping Act, 59 of 1991, National Ports Act 12 of 2005 and the Marine Security Regulations 2004.
- Ensure that the Port of Durban security infrastructure required are adequate to protect the employees, assets including external Port users.
- Eliminate existing risks that the Port is currently faced with due to lack of proper security infrastructure.
- Upgrade Port infrastructure to modern and acceptable standards.
- Increase safe operating conditions; hence eliminate the risk of vagrants entering and intimidating employees.

## 1.3 Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
TNPA	Transnet National Ports Authority
CA	Contract Administrator
PM	Project Manager
PEO	Project Environment Officer
AIA	Authorized 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
CHSMP	Contractor Health and Safety Management Plan
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 coordinating Committee
ISPS	International Ship and Port Security
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
QC	Quality Control
CQA	Contractor's Quality Assurance
QCM	Quality Control Manager
R&D	Research and Development
SANS	South African National Standards
SABS	South African Bureau of Standards
SASRIA	South African Special Risks Insurance Association
SES	Standard Environmental Specification
SHE	Safety, Health and Environment
SHEC	Safety, Health and Environment coordinator
SIP	Site Induction Programme
SMP	Safety Management Plan
SSRC	Site Safety Review Committee
PPE	Personal Protective Equipment
HSSE	Health, Safety, Security and Environmental
NRS	National Regulatory Standard
NEC3 ECC	NEC3 Engineering and Construction Contract
SAPS	South African Police Services
SAT	Site Acceptance Tests
SSA	State Security Agency
HSMP	Health and Safety Management Plan
IP66	Ingress Protection rating for harsh conditions (dust tight, water jet tight)



IP	Industrial Participation
IR	Industrial Relations
IPP	Industrial Participation Policy
IPO	Industrial Participation Obligation
IPS	Industrial Participation Secretariat

## 2 Engineering and the *Contractor's* design

### 2.1 *Employer's* design

- 2.1.1 The *Employer's* design for the *works* is: The *Employer's* design for the *works* is: Details of industrial steel palisade and Press High Density Mesh fence, details of gates, foundations and fixing details, drawings and specifications.
- 2.1.2 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.
- 2.1.3 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.

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

- 2.2.1 The *Contractor* is to design the following parts of the *works*: Any temporary works that the *Contractor* may deem necessary for the installation of the new works.
- 2.2.2 The Contractor warrants that the equipment and workmanship shall be of the highest grade, installed in a practical and first class manner in accordance with Best Practice and ready and complete for full operation at Works Completion.
- 2.2.3 Unless expressly stated to form part of the design responsibility of the Employer as stated under 2.1 Employer's design above and whether or not specifically stated to form part of the design responsibility of the Contractor under this paragraph 2.2, all residual design responsibility and overall responsibility for the total design solution for the works rests with the Contractor .
- 2.2.4 The tenderer shall submit with his tender the drawings and specifications sheets of the proposed fences and gates.

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

- 2.3.1 The *Contractor* shall address the following procedures: : Prior to procurement of fencing material, the *Contractor* shall submit to the Client "Transnet National Ports Authority" the final proposed specifications for review and acceptance.
- 2.3.2 The review period is a minimum of two (2) weeks from the date of receipt of the Contractor's design pack, this period can be extended provided both parties "Contractor and Employer agree in writing to extend.
- 2.3.3 The Employer will provide written comments on the Contractor's proposed specifications for the Contractor to clarify or note, the Contractor will either incorporate the comments or clarify issues raised and assure the Employer that the specifications addresses all issues raised.
- 2.3.4 Once the review and comments process is finalized, the *Employer* will sign off for the acceptance of the *Contractor's* proposed specifications and drawings. **NB:** It shall be noted that the sign off for acceptance does not relieve the *Contractor* of his responsibility and accountability for the design.
- 2.3.5 Documentation Submission

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 the Works Information (Refer to section 6.2).

## 2.4 Review and Acceptance of *Contractor* Documentation

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

In undertaking the '*Works*' (including all incidental services required), the Supplier shall conform and adhere to the requirements of the '*Contractor* Document Submittal Requirements' Standard included in the *Works Information* (Refer to section 6.2).

## 2.5 Other requirements of the *Contractor's* design

2.5.1 The *Contractor's* design complies with the following:

Altitude	Sea level
Ambient temperature	0°C to 45°C
Relative humidity	50% to 100%
Atmosphere	Heavy saline

## 2.6 Use of *Contractor's* design

2.6.1 The *Contractor* grants the *Employer* a licence to use the copyright in all design data presented to the *Employer* in relation to the *works* for 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*.

2.6.2 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*.

## 2.7 Design of Equipment

2.7.1 Not applicable

## 2.8 Equipment required to be included in the *works*

2.8.1 None

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

2.9.1 The *Contractor* provides the following: The *Contractor* shall be required to furnish brochure for the fences to be supplied in terms of this contract.



- 2.9.2 The *Contractor* provides brochure in an A4 hard covered, red, grease and waterproof binder, using 2 ring type binders.
- 2.9.3 Drawings and charts larger than A4 are folded and those greater than A3 are enclosed in an A4 plastic pocket of adequate strength.
- 2.9.4 **As-Built/Final Documentation**

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 *Works Information* (Refer to section 6.2).

### 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* complies with *Employer's* Site entry and security control, permits, and Site regulations.
- 3.1.3 The Contractor bears all costs incurred in providing Contractor's personnel with ID cards and access permits to the site.
- 3.1.4 The Contractor is specifically excluded from entering the Employer's Operational Areas which are outside the Site and Working Areas. The Contractor plans and organises his work in such a manner so as to cause the least possible disruption to the Employer's operations.
- 3.1.5 The Contractor ensures the safe passage of Contractor's traffic to and around the Site and Working Areas at all times that includes providing flagmen, protective barriers, signage, etc for protection, direction and control of traffic.
- 3.1.6 The Contractor keeps daily records of his Equipment used on Site and the Working Areas (distinguishing between owned and hired Equipment) with access to such daily records available for inspection by the Project Manager at all reasonable times.
- 3.1.7 The Contractor complies with the following entry and exit permissions and restrictions for personnel at the Site requirements of the Employer:
- 3.1.8 All Contractor's personnel to provide access permit when entering the sites, permits are obtainable from the TNPA permit office and it is the responsibility of the Contractor to apply for its employees and Sub-Contractors permits.
- Contractor will be granted sectional access to working areas which will be agreed upfront prior to commencement of the works.
  - Contractor's personnel will be required to comply with the Port of Durban operational requirements, the Contractor will be required to familiarize themselves with these requirements at tender stage so that they can make necessary provisions in their final tender offer.
- 3.1.9 The Contractor complies with the following access / egress permissions and restrictions for personnel and Equipment within the Site boundaries requirements of the Employer:
- Port's existing entry points, the Contractor's attention is specifically drawn to the sizes of the entry points to various sites. The Contractor's equipment shall be able to fit through the existing entry points.
  - Prior to bringing equipment to site the Contractor will be required to notify the Project Manager as per the NEC 3 communication procedures and provide details of the

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equipment to be brought to site and obtain approval from the Project Manager, the Contractor can only bring equipment once the Project Manager issues approval in writing.

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

- The Contractor's personnel and Sub-Contractors on site are restricted from accessing areas outside the approved working area.
- The Contractor shall comply with the Working hours of the Port and department of labour regulated working hours, therefore the Contractor's working hours to be aligned accordingly. In the event such alignment cannot be achieved the Contractor shall make a written request to the Project Manager clearly indicating proposed working times including weekends which the Project Manager for consideration.

3.1.11 The Contractor keeps daily records of his people engaged on the Site and Working Areas including Sub-Contractors with access to such daily records available for inspection by the Project Manager at all reasonable times.

3.1.12 Health and safety facilities on Site

3.1.13 All health and safety matters associated with the works will be dealt with in accordance with Occupational Health & Safety Act, 1993 (Act No. 85 of 1993) and the Transnet National Ports Authority Health and Safety Specifications contained in to this Works Information.

3.1.14 The Contractor shall prepare, implement and administer the Contractor's Health and Safety Management Plan (CHSMP). The Health and Safety Management Plan must provide a systematic method of managing hazards and implementing control measures.

3.1.15 The Contractor must prepare and submit the Safety file to the Project Manager for acceptance. The Safety file will then be submitted to the TNPA Legal & Compliance Department for approval before start of the works.

3.1.16 Further to clause 2.3.1, pre-employment medical examinations as well as exit medicals will be required and must further include for chest X-rays. These medical examinations must be carried out by a registered Occupational Health practitioner. All costs associated will be to the Contractor's account.

3.1.17 The Contractor ensures that its Sub-Contractors comply with the requirements of the CHSMP.

3.1.18 The Contractor performs the works and all construction activities within the Site and Working Areas in accordance with the CHSMP.

3.1.19 The Contractor complies with the requirements stated under paragraph 6.3 of C3.1 Employer's Works Information.

3.1.20 The Contractor complies with the CEMP, SES and PES in the construction of the works, all as described under paragraph 6.4 of C3.1 Employer's Works Information

3.1.21 Environmental controls, fauna & flora, dealing with objects of historical interest

3.1.22 Title to Materials from demolition and excavation

3.1.23 The Contractor has title to all Materials arising from excavation and demolition in the performance of the works with the exception of: with title to such Materials (as referenced above) remaining with the Employer. The Project Manager shall instruct the Contractor how to label, mark, set aside and/or dispose of such materials for the benefit of the Employer in accordance with ECC3 Clause 73.1.

3.1.24 Cooperating with and obtaining acceptance of others

3.1.25 The project will be executed in an operational environment, the Port will remain operational for the entire duration of the contract.

- 3.1.26 The *Contractor* performs the *works* and co-operates with The Employer (including the agents of the Employer) who operates on Site during the entire duration of the Contract period.
- 3.1.27 The *Contractor* performs the *works* and co-operates with others, of whom the Contractor is to be notified once appointed by the Employer, who operate on Site during the entire duration of the Contract period.
- 3.1.28 Publicity and progress photographs
- 3.1.29 The Contractor does not advertise the Contract or the project to any third party, nor communicate directly with the media (in any jurisdiction) whatsoever without the express written notification and consent of the Project Manager.
- 3.1.30 The Contractor obtains the permission and approval of the Project Manager before erecting any notice boards or using the details of the contract in any advertising media.
- 3.1.31 The Contractor provides a complete digital photographic record of the progress of the construction of the works to the Project Manager, monthly as part of the Contractor's monthly programme narrative report. The digital photographic equipment used shall be intrinsically safe, where applicable.
- 3.1.32 The Contractor provides progress photographs at bi-weekly progress meetings in a CD format.
- 3.1.33 *Contractor's Equipment*
- 3.1.34 All plant used by the Contractor on site shall be properly maintained and operated. All vehicles on public roads shall be roadworthy, with the necessary licences and safety requirements. A checklist/register shall be implemented which lists the operators qualifications and medical records.
- 3.1.35 The *Contractor* complies with the following
- The *Contractor* shall submit a comprehensive list of equipment, intended for use on this contract.
  - The use of all such equipment shall be subject to approval by the *Project Manager*, though such approval shall not relieve the *Contractor* of any of their responsibilities under the contract.
- 3.1.36 Equipment provided by the *Employer*
- No Equipment will be provided by the *Employer*.
- 3.1.37 Site services and facilities:
- 3.1.38 The *Contractor's* site establishment area(s) is to be within the *Contractor's* boundary of the area that will be confirmed with the successful *Contractor* after award and shall be clearly sign posted and be compliant with the relevant safety regulations and restrictions that might be in place until the *Contractor* has de-established from site. The site establishment layout must be approved by the *Project Manager*.
- 3.1.39 The *Contractor* shall ensure that the area used has a suitable continuous security fence and the necessary access gates. All preparation and fencing, etc shall be done by the *Contractor* and shall be for his account, this includes clearing away and leaving clean and clear at completion.
- 3.1.40 The *Contractor* shall provide, maintain and remove lockable portable chemical type toilets.
- 3.1.41 Facilities provided by the *Contractor*:
- 3.1.42 The Contractor is required to provide, for the sole use of the Project Manager, a 6m by 2.4m insulated air-conditioned office container-type boardroom with chemical toilet, windows and a lockable door. Furniture requirements are two desks, four chairs and a fridge. The site for the Project Manager's office will be within a designated area. The site offices may form part of the Contractor's site office complex, but a separate entrance is essential. They shall be equipped in terms of the requirements laid down in SANS 1200 AB (SABS 1200 AB) with air-conditioning. The Contractor shall provide at least 3 x Power points per office.
- 3.1.43 The Contractor ensures that the site establishment area is compliant with the relevant safety regulations and restrictions, is clearly sign posted, and has a suitable security fence, lighting and the necessary access control gates.

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- 3.1.44 All costs for preparation of the site establishment area are for the Contractor's account.
- 3.1.45 The Contractor submits details of the layout of his site establishment to the Project Manager for his acceptance.
- 3.1.46 The Contractor installs a metering device, accepted by the Project Manager, immediately downstream at each of the Employer's connections from where he draws services. The Contractor provides the Project Manager details of his monthly consumption of potable water and power.
- 3.1.47 The Contractor is responsible for his own connection to the Employer's services and for the reticulation of his services from the connection point. The cost of meters, connections, reticulation and all other usage costs associated with the provision of services are for the Contractor's account.
- 3.1.48 The Contractor provides the Project Manager with a "Certificate of Compliance" (COC), by an "Accredited" Person as defined by the OHS Act, in respect of his Construction Power electrical installation. The Project Manager only makes construction power available upon receipt of the COC.
- 3.1.49 The Construction Manager (or his nominated representative) conducts routine inspections of the Contractor's construction power reticulation and power tools. If found to be un-safe and / or non-compliant with statutory requirements, the electrical power supply is disconnected until the Contractor rectifies all defaults.
- 3.1.50 The Contractor provides, at his cost, for his staff and that of the Employer, a sufficient number of toilets and maintains them in a clean and sanitary working condition.
- 3.1.51 The Contractor provides temporary lighting and fencing around every section occupied by him during the phased construction of the works.
- 3.1.52 Such fencing demarcates and secures the construction area. The fencing is erected before any work starts and is removed only upon completion of the work in that area.
- 3.1.53 The Contractor is responsible for all costs for such lighting and fencing, including access control into and out of these restricted areas.
- 3.1.54 Wherever the Contractor provides facilities (either his own or for the Project Manager and/or Supervisor) and all items of equipment, involving, inter alia, offices, accommodation, laboratories, materials storage, etc, within the Working Areas, then the Contractor makes good and provides full reinstatement to the land (including all apparatus of the Employer and Others in, on or under the land) and surrounding areas to its original standard, upon dismantling of such facilities and items of Equipment.
- 3.1.55 Upon completion, and within one month of the date of acceptance of the works, the Contractor completely removes from the Site and Working Areas all his Equipment, including the foundations of any structures, stores, office accommodation or any other asset belonging to him, and leaves the Site and Working Areas in a tidy condition to the satisfaction of the Project Manager.
- 3.1.56 No excess or discarded materials or equipment may be buried or dumped within the port boundary.
- 3.1.57 The Employer does not provide any security for the Site and Working Areas. The Contractor provides same and indemnifies and holds indemnified the Project Manager and Employer against any claims and actions that may arise out of Site and Working Area security.
- 3.1.58 No housing is available for the Contractor's employees. The Contractor makes his own arrangements to house his employees and transports them to site in a closed vehicle specifically designed for passenger transport (bus or similar) accepted by the Project Manager.
- 3.1.59 Wherever the Employer provides facilities for the Contractor's use and the Contractor adapts such facilities for use, then the Contractor makes good and provides full reinstatement to the land (including all apparatus of the Employer and Others in, on or under the land) and surrounding areas to its original standard upon dismantling of such facilities and hand-back to the Employer.
- 3.1.60 Wherever the Contractor provides facilities (either his own or for the Project Manager and/or Supervisor) and all items of Equipment, involving, inter alia, offices, accommodation,

laboratories, Materials storage, compound areas etc, within the Working Areas, then the Contractor makes good and provides full reinstatement to the land (including all apparatus of the Employer and Others in, on or under the land) and surrounding areas to its original standard, upon dismantling of such facilities and items of Equipment.

- 3.1.61 Unless expressly stated as a responsibility of the Employer, all residual requirements for the provision of facilities and all items of Equipment necessary for the Contractor to Provide the Works remains the responsibility of the Contractor.
- 3.1.62 The *Employer* provides the following facilities for the *Contractor*
- 3.1.63 For the duration of the Contract, the Employer will provide an area, free of charge, for the Contractor to establish his offices, lay down areas, stores, workshops, and other Contractor's Equipment.
- 3.1.64 The Contractor ensures that this site establishment area is compliant with the relevant safety regulations and restrictions, is clearly sign posted, and has a suitable security fence, lighting and the necessary access control gates.
- 3.1.65 The Employer will point out connection points for services such as water, power etc. The Contractor is responsible for his own connection to the Employer's services AND for the reticulation of his services from the connection point. The cost of meters, connections, reticulation and all other usage costs associated with the provision of services are for the Contractor's account.
- 3.1.66 Wherever the Employer provides facilities (including, inter alia, temporary power, water, waste disposal, telecommunications etc) for the Contractor's use within the Working Areas and the Contractor adapts such facilities for use, then the Contractor makes good and provides full reinstatement to the land (including all apparatus of the Employer and Others in, on or under the land) and surrounding areas to its original standard upon dismantling of such facilities and hand-back to the Employer.
- 3.1.67 Unless expressly stated as a responsibility of the *Employer* as stated under 5.1.11 Site services and facilities, all residual requirements for the provision of facilities and all items of Equipment necessary for the *Contractor* to Provide the *Works* remains the responsibility of the *Contractor*.
- 3.1.68 Existing premises, inspection of adjoining properties and checking work of Others
- 3.1.69 The *Contractor* is required to conduct the detailed physical inspection and photographic survey of the areas where new fences will be installed, record the condition of these facilities. The *Contractor* shall submit to the *Project Manager* a detailed condition and photographic survey report. On completion of the project the *Contractor* and the *Project Manager* will do a physical inspection of the facilities to ascertain the condition after construction, the inspection and photographic report will be used as the reference document.
- 3.1.70 The *Contractor* will be held responsible for any damage to existing structures and surfacing caused by the *Contractor* during the execution of the contract; fair wear and tear excluded, and shall repair it to the satisfaction of the Supervisor on conclusion of the Works. For this purpose a joint inspection with the Supervisor will be carried out prior to occupation of the site(s) and any existing damage noted.
- 3.1.71 Underground services, other existing services, cable and pipe trenches and covers
- 3.1.72 The known existing services that will be affected during the execution of the project are but not limited to:
- Electrical cable.
  - Water lines.
  - Storm water pipes.
  - Sewer lines.

**NB:** The abovementioned services are operational and will remain operational for the entire duration of the *Contractor*. The *Contractor* will be required to do a proper inspection of the

services to identify those that are on the way of the works and will require to either be temporarily or permanently relocated and make necessary provisions in their tender offer, this to be done at tender stage.

- 3.1.73 There will be a significant volume of excavations to be done under this project which might affect underground services, the *Contractor* will be required to obtain excavation permits prior to commencing with excavations. The permit is obtainable from the Port Engineering department of TNPA. As a guide only the *Project Manager* provides the *Contractor* with copies of as-built drawing(s) showing various known existing underground services for his information. It is however possible that there is other existing services, which are not reflected, and which may affect the *works*.
- 3.1.74 The *Contractor* establishes the location of the various existing services situated within the Site and Working Areas, and records all such information on “marked-up” drawing(s) which remain available for reference at all times.
- 3.1.75 The *Contractor* exercises due care and attention in carrying out any excavation work to avoid damage or disruption to existing services. The *Contractor* accordingly consults the *Project Manager* prior to undertaking any excavation work.
- 3.1.76 Should the *Contractor* fail to exercise the requisite care and attention in carrying out the excavation work, the *Contractor* will be held liable for any claims arising out of damage caused by such excavation.
- 3.1.77 Control of noise, dust, water and waste
- 3.1.78 Before moving Equipment onto the Site and Working Areas and commencing operations, the *Contractor* submits his proposed methods of construction which demonstrate the measures taken to avoid and or reduce any nuisance arising from dust, noise and vibration for acceptance by the *Project Manager*
- 3.1.79 Sequences of construction or installation
- 3.1.80 The *Contractor* will be required to provide proposed construction sequence for various sites for review and approval by TNPA.
- 3.1.81 Access to working areas will be agreed upfront with the *Contractor*, access to sites will be granted according to the approved construction sequence.
- 3.1.82 The *Contractor* complies with the following:
- Sequence and execute the works in a manner that accommodates operations and others working in the Port.
  - Completes the works as per agreed sectional Completion Dates per phase before moving to the next phase.
  - The *Contractor* does not work beyond the boundaries of each phase issued for construction
- 3.1.83 The *Contractor* complies with the following constraints in the execution of the *works*:
- Existing infrastructure fixed on the ground and cannot be temporarily relocated to make way for the new works.
  - Existing electrical cables with limited or no slack for flexibility to temporarily move out of the way for new works.
  - Limited working space due to existing infrastructure in the Port.

## 4 Plant and Materials Standards and Workmanship

### 4.1 Investigation, Survey and Site Clearance

- 4.1.1 The *Contractor* will be responsible for the setting out of the works.
- 4.1.2 The *Contractor* validates the information provided by the *Project Manager* and records all existing and final levels on a survey drawing and presents this to the *Project Manager* for acceptance.
- 4.1.3 Prior to commencing the works the *Contractor* records any defects or inaccuracies related to the existing infrastructure that they will be tying into and presents this record to the *Project Manager* for acceptance. Only items recorded in this manner will be accepted as having pre-existed the Works and the remedying of all other damage will be the *Contractors* responsibility and for his cost.

## 4.2 Building works

- 4.2.1 Where the Association of South African Quantity Surveyors Model Preamble for Trades 1999 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 Model Preamble for Trades 1999 (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 Model Preamble for Trades 1999 (whether standard or written as a particular project specification) contained in this paragraph 4.2 of C3.1 *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 Manager's* express duty to resolve any ambiguity or inconsistency in the *Works Information* under ECC Clause 17.1.
- 4.2.4 Within the Model Preambles for Trades 1999, 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 1999 mention "rates" for measured work and any contractual statements relating to payment, all such statements shall be discounted, with the ECC *conditions of contract* taking precedence.
- 4.2.5 Within the Model Preambles for Trades 1999, 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 ECC Contract Data - Part one states the main option to apply within the ECC Contract between the Parties.
- 4.2.6 Within the Model Preambles for Trades 1999, B. ALTERATIONS, B.2 MATERIALS FROM THE ALTERATIONS, CREDIT, ETC and C. EARTHWORKS, C1.4 Materials from demolitions shall not apply. C3.1 *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*.
- 4.2.7 Within the Model Preamble for Trades 1999 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*.
- 4.2.8 Within the Model Preamble for Trades 1999 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*.
- 4.2.9 The principles, meanings and interpretation stated and established within paragraphs 6.2.1 to 6.2.8 with respect to the Model Preambles for Trades 1999 equally apply to the other Model Preambles for Trades 1999 references used within this paragraph 4.2 of C3.1 *Employer's Works Information*.

Description of the Works: For the Provision of Security Fencing Infrastructure in the Port of Durban for a Period of Fifteen (15) Months.

### 4.3 Civil Engineering and Structural Works

- 4.3.1 Where the SANS 1200 series of Specifications are used within the Works Information, the following interpretations and meanings shall apply:
- 4.3.2 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.
- 4.3.3 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 Manager's express duty to resolve any ambiguity or inconsistency in the *Works Information* under ECC Clause 17.1.
- 4.3.4 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);
- 4.3.5 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);
- 4.3.6 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.
- 4.3.7 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).
- 4.3.8 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*.
- 4.3.9 Within SANS 1200 A: GENERAL 7.1 PLANT, the following applies:
- Where the word or expression "Plant" is used, read "Equipment".
- 4.3.10 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*.
- 4.3.11 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*.
- 4.3.12 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".



- 4.3.13 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*.
- 4.3.14 Within SANS 1200 A: GENERAL 5 TESTING, the following applies:  
Where the word or expression "Engineer" is used, read "*Supervisor*".
- 4.3.15 SANS 1200 A: GENERAL 8 MEASUREMENT AND PAYMENT, is deleted in entirety. Assessment and payment is in accordance with the conditions of contract (and the ECC main and secondary options stated therein).
- 4.3.16 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*.

#### 4.4 Other [Particular Specifications]

##### Removal and disposal:

The *Contractor* will be responsible for the removal of all existing installations that are on the way of the new fences, these include plastic handrails, steel guardrails, concrete palisade fence and gates. It is the responsibility of the Contractor to familiarise themselves with the details of how these installations are fixed on the ground.

##### Earthworks

Generally all earthworks shall comply with the following:

- All excavations to be done in accordance with SANS 1200A and as detailed in drawings.
- Open excavations to be barricaded with high visibility barricading tape at all times.
- *Contractor* to obtain excavation permits prior to commencing with excavation activity.

**NB:** There are areas within the Port which are contaminated with asbestos material, Contractor may during excavation come across pockets of asbestos material, should the Contractor come across asbestos they should notify TNPA Project Manager immediately and stop excavations and call out the AIA (Asbestos Impact Assessment Personnel) who will be appointed by the contractor.

##### **North Pier**

##### Industrial Steel palisade fence on concrete surface

- Fence to be hot dip galvanized industrial steel palisade fence 3000mm x 2500mm high.
- Fence Bearers (horizontal stringers): These are to be 50mm x 50mm x 5mm angle iron. These are to be placed 300mm from top paling and 250mm from the bottom paling.
- Palings: These are to be 40mm x 40mm x 5mm angle iron Pales and 2.5m long. Palings must be spaced at 135mm centres. Palings to have a 50mm clearance from the ground.
- Fence posts to be IPE120 RSJ Post and 2550mm high.
- Posts to be welded with 160mm x 160mm x 10mm steel base plates with holding down bolts.
- Holding down bolts to be Carbon Steel Anchor Bolt M12, fixing holes diameter 12mm, length 100mm.

##### Industrial Steel palisade on Ground

- Fence to be hot dip galvanized industrial steel palisade fence 3000mm x 2500mm high.
- Fence Bearers (horizontal stringers): These are to be 50mm x 50mm x 5mm angle iron. These are to be placed 300mm from top paling and 250mm from the bottom paling.
- Palings: These are to be 40mm x 40mm x 5mm angle iron Pales and 2.5m long. Palings must be spaced at 135mm centres. Palings to have a 50mm clearance from the ground.
- Fence posts to be IPE120 RSJ Post and 2550mm high.
- Posts to be 2550 high above ground and cast in concrete footings, 400 x 400 x 900 mm deep.



- Concrete strength to be 25Mpa

#### Press High Density Mesh Fence

- Press High Mesh Fence panels to be 3350mm x 2500mm high of hot dip galvanized and Polymetic 6000 coated Press Density Mesh Fence.
- All fence fixtures to be hot galvanized and Polymetic 6000 coated.
- Press High Mesh Fence panels: Panels aperture size (centres) to be 76.2mm x 12.7mm and wire diameter to be 3.5mm.
- Panels shall be reinforced with 4 x 50mm deep 'V' formation horizontal recessed bands (rigidity).
- Panels shall have 2 x 70° flanges along sides (internal fixtures- all fixtures shall be on the inside of fence line)
- Panel shall have 1 x 90° flange along top and 1 x 30° flange along toe (integrated rigid angle).
- Panels shall be fixed to posts through line wires using 8 x double bolt comb clamps and 8 x Single bolt comb clamps using 24 x Anti vandal bolts.
- 100mm high toughened steel Shark Tooth spike shall be affixed to panel edge, internally at 150mm intervals using Anti-vandal bolts. Spike finish shall be galvanized, then Polymetic 6000 coated.
- Posts to be 76mm x 44mm x 2500mm high hot dip galvanized and then Polymetic 6000 coated and cast into concrete footings.
- Concrete footings to be 400 x 400 x 900 mm deep.
- Concrete strength to be 25Mpa.

#### Sliding Gate

- Gates to be hot dip galvanized and powder coated sliding gate, gate size: 10 000mm x 2500mm high with 75mm x 75mm x 2mm tubing frame, including 40mm x 40mm x 5mm angled pales at 135mm centres.
- Gate frame to have three cross bearers. Centre cross bearer to be placed equal distance between the top and bottom bearer. Gate to be provided with 2 x 80mm roller coaster wheels fitted with all bearings, as detailed on gate drawings.
- Gate Posts: to be 225 x 225 x 8mm thick square hollow gate post. The gate must be installed with rubber rollers at top for a smooth movement of the gate as detailed on gate drawings.
- Sliding gate track to be 25mm x 25mm x 3mm iron fixed to metal base plate welded fishtail concreted in track concrete slab. The track must be perfectly level.
- Track concrete slab: to be 300mm wide x 400mm thick and minimum concrete strength to be 25Mpa. The slab must extend 1.5 m on either ends of the track.
- Track slab to be re-enforced with two sheets of Weldmesh Ref 772, refer to SANS 1024:2012 Edition 2.2. Mesh to have 50mm cover refer to drawings for details.
- Concrete must have a slump of 50 to 75mm.
- Surface of concrete to be wood float finish. All exposed edges to be neatly nosed off. All in-situ material to be re-compacted.

#### **Schoeman Bridge to Bat Centre**

##### Industrial steel palisade on Ground

- Fence to be hot dip galvanized industrial steel palisade fence 3000mm x 2500mm high.
- Fence Bearers (horizontal stringers): These are to be 50mm x 50mm x 5mm angle iron. These are to be placed 300mm from top paling and 250mm from the bottom paling.
- Palings: These are to be 40mm x 40mm x 5mm angle iron Pales and 2.5m long. Palings must be spaced at 135mm centres. Palings to have a 50mm clearance from the ground.
- Fence posts to be IPE120 RSJ Post and 2550mm high.
- Posts to be 2550 high above ground and cast in concrete footings, 400 x 400 x 900 mm deep.
- Concrete strength to be 25Mpa.

**Note:** New fence to tie into the existing steel palisade fence at bat centre and to end at the corner of Berthing Services Building (approx. 130m), there shall be no fencing behind the

building. The fencing will begin at the South East corner of the building and tie in with existing fence at Schoemans Bridge (approx. 240m)

### **Marine to Subway**

#### Industrial steel palisade on Ground

- Fence to be hot dip galvanized industrial steel palisade fence 3000mm x 2500mm high.
- Fence Bearers (horizontal stringers): These are to be 50mm x 50mm x 5mm angle iron. These are to be placed 300mm from top paling and 250mm from the bottom paling.
- Palings: These are to be 40mm x 40mm x 5mm angle iron Pales and 2.5m long. Palings must be spaced at 135mm centres. Palings to have a 50mm clearance from the ground.
- Fence posts to be IPE120 RSJ Post and 2550mm high.
- Posts to be 2550 high above ground and cast in concrete footings, 400 x 400 x 900 mm deep.
- Concrete strength to be 25Mpa.

**Note:** The fence shall tie in with the existing steel palisade fence at Marine Building and will be discontinued at the wall of the subway (85m), the fence will be installed from the subway into the first light pole (35m)

### **Pleasure Island**

#### Industrial steel palisade on Ground

- Fence to be hot dip galvanized industrial steel palisade fence 3000mm x 2500mm high.
- Fence Bearers (horizontal stringers): These are to be 50mm x 50mm x 5mm angle iron. These are to be placed 300mm from top paling and 250mm from the bottom paling.
- Palings: These are to be 40mm x 40mm x 5mm angle iron Pales and 2.5m long. Palings must be spaced at 135mm centres. Palings to have a 50mm clearance from the ground.
- Fence posts to be IPE120 RSJ Post and 2550mm high.
- Posts to be 2550 high above ground and cast in concrete footings, 400 x 400 x 900 mm deep.
- Concrete strength to be 25Mpa.

#### Single leaf swinging pedestrian gate

- Gate to be 2000mm x 2500mm high hot dip galvanized and powder coated with the similar standards as the High Tech Invisible fence. All connections and joints to be welded to form rigid frames or assembled with corner fittings.
- Hinges shall not twist or turn under the action of the gate, shall be so arranged that a closed gate cannot be lifted off the hinges to obtain entry.
- Gate post/hinge orientation is to suit fence layout.

Adjust gate to operate smoothly, easily, and quietly, free from binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

### **I & J Canal Road**

#### Industrial steel palisade on ground

- Fence to be hot dip galvanized industrial steel palisade fence 3000mm x 2500mm high.
- Fence Bearers (horizontal stringers): These are to be 50mm x 50mm x 5mm angle iron. These are to be placed 300mm from top paling and 250mm from the bottom paling.
- Palings: These are to be 40mm x 40mm x 5mm angle iron Pales and 2.5m long. Palings must be spaced at 135mm centres. Palings to have a 50mm clearance from the ground.
- Fence posts to be IPE120 RSJ Post and 2550mm high.
- Posts to be 2550 high above ground and cast in concrete footings, 400 x 400 x 900 mm deep.
- Concrete strength to be 25Mpa.

### **Maydon Wharf Security Building**

#### Press High Density Mesh Fence

- Press High Mesh Fence panels to be 3350mm x 2500mm high of hot dip galvanized and Polymetic 6000 coated Press Density Mesh Fence.
- All fence fixtures to be hot galvanized and Polymetic 6000 coated.
- Press High Mesh Fence panels: Panels aperture size (centres) to be 76.2mm x 12.7mm and wire diameter to be 3.5mm.
- Panels shall be reinforced with 4 x 50mm deep 'V' formation horizontal recessed bands (rigidity).
- Panels shall have 2 x 70° flanges along sides (internal fixtures- all fixtures shall be on the inside of fence line).
- Panel shall have 1 x 90° flange along top and 1 x 30° flange along toe (integrated rigid angle).
- Panels shall be fixed to posts through line wires using 8 x double bolt comb clamps and 8 x Single bolt comb clamps using 24 x Anti vandal bolts.
- 100mm high toughened steel Shark Tooth spike shall be affixed to panel edge, internally at 150mm intervals using Anti-vandal bolts. Spike finish shall be galvanized, then Polymetic 6000 coated.
- Posts to be 76mm x 44mm x 2500mm high hot dip galvanized and then Polymetic 6000 coated and cast into concrete footings.
- Concrete footings to be 400 x 400 x 900 mm deep.
- Concrete strength to be 25Mpa.

#### Sliding Gate

- Gates to be 6000mm x 2500mm high formed of the same specification as the High Tech Invisible fence (as per the attached drawings). Including all necessary sliding wheels, rail locking mechanisms as detailed in drawings.
- Gate Posts: Supply and install 225 x 225 x 8mm thick square hollow gate post. The gate must be installed with rubber rollers at top for a smooth movement of the gate.
- Sliding gate track to be 25mm x 25mm x 3mm iron fixed to metal base plate with welded fishtail which are to be cast in track concrete. The track must be perfectly level.
- Track concrete slab: to be 300mm wide x 400mm thick and minimum concrete strength to be 25Mpa. The slab must extend 1.5 m on either ends of the track.
- Track slab to be re-enforced with two sheets of Weldmesh Ref 772, refer to SANS 1024:2012 Edition 2.2. Mesh to have 50mm cover refer to drawings for details.
- Concrete must have a slump of 50 to 75mm.
- Surface of concrete to be wood float finish. All exposed edges to be neatly nosed off. All in-situ material to be re-compacted.

#### **Roads and Tracks (Hlanganani)**

##### Press High Density Mesh Fence

- Press High Mesh Fence panels to be 3350mm x 2500mm high of hot dip galvanized and Polymetic 6000 coated Press Density Mesh Fence.
- All fence fixtures to be hot galvanized and Polymetic 6000 coated.
- Press High Mesh Fence panels: Panels aperture size (centres) to be 76.2mm x 12.7mm and wire diameter to be 3.5mm.
- Panels shall be reinforced with 4 x 50mm deep 'V' formation horizontal recessed bands (rigidity).
- Panels shall have 2 x 70° flanges along sides (internal fixtures- all fixtures shall be on the inside of fence line).
- Panel shall have 1 x 90° flange along top and 1 x 30° flange along toe (integrated rigid angle).
- Panels shall be fixed to posts through line wires using 8 x double bolt comb clamps and 8 x Single bolt comb clamps using 24 x Anti vandal bolts.
- 100mm high toughened steel Shark Tooth spike shall be affixed to panel edge, internally at 150mm intervals using Anti-vandal bolts. Spike finish shall be galvanized, then Polymetic 6000 coated.
- Posts to be 76mm x 44mm x 2500mm high hot dip galvanized and then Polymetic 6000 coated and cast into concrete footings.
- Concrete footings to be 400 x 400 x 900 mm deep.
- Concrete strength to be 25Mpa.

**Maydon Wharf Berth15**Industrial steel palisade on ground

- Fence to be hot dip galvanized industrial steel palisade fence 3000mm x 2500mm high.
- Fence Bearers (horizontal stringers): These are to be 50mm x 50mm x 5mm angle iron. These are to be placed 300mm from top paling and 250mm from the bottom paling.
- Palings: These are to be 40mm x 40mm x 5mm angle iron Pales and 2.5m long. Palings must be spaced at 135mm centres. Palings to have a 50mm clearance from the ground.
- Fence posts to be IPE120 RSJ Post and 2550mm high.
- Posts to be 2550 high above ground and cast in concrete footings, 400 x 400 x 900 mm deep.
- Concrete strength to be 25Mpa.

Sliding Gate

- Gates to be 16 000 000mm x 2500mm high formed of the same specification as the High Tech Invisible fence (as per the attached drawings). Including all necessary sliding wheels, rail locking mechanisms as detailed in drawings.
- Gate Posts: Supply and install 225 x 225 x 8mm thick square hollow gate post. The gate must be installed with rubber rollers at top for a smooth movement of the gate.
- Sliding gate track to be 25mm x 25mm x 3mm iron fixed to metal base plate with welded fishtail which are to be cast in track concrete. The track must be perfectly level.
- Track concrete slab: to be 300mm wide x 400mm thick and minimum concrete strength to be 25Mpa. The slab must extend 1.5 m on either ends of the track.
- Track slab to be re-enforced with two sheets of Weldmesh Ref 772, refer to SANS 1024:2012 Edition 2.2. Mesh to have 50mm cover refer to drawings for details.
- Concrete must have a slump of 50 to 75mm.
- Surface of concrete to be wood float finish. All exposed edges to be neatly nosed off. All in-situ material to be re-compacted.
- Adjust gate to operate smoothly, easily, and quietly, free from binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

**Fynnland Security**Industrial steel palisade on ground

- Fence to be hot dip galvanized industrial steel palisade fence 3000mm x 2500mm high.
- Fence Bearers (horizontal stringers): These are to be 50mm x 50mm x 5mm angle iron. These are to be placed 300mm from top paling and 250mm from the bottom paling.
- Palings: These are to be 40mm x 40mm x 5mm angle iron Pales and 2.5m long. Palings must be spaced at 135mm centres. Palings to have a 50mm clearance from the ground.
- Fence posts to be IPE120 RSJ Post and 2550mm high.
- Posts to be 2550 high above ground and cast in concrete footings, 400 x 400 x 900 mm deep.
- Concrete strength to be 25Mpa.

**Bay head (Allan and Dalton)**Industrial steel palisade on ground

- Fence to be hot dip galvanized industrial steel palisade fence 3000mm x 2500mm high.
- Fence Bearers (horizontal stringers): These are to be 50mm x 50mm x 5mm angle iron. These are to be placed 300mm from top paling and 250mm from the bottom paling.
- Palings: These are to be 40mm x 40mm x 5mm angle iron Pales and 2.5m long. Palings must be spaced at 135mm centres. Palings to have a 50mm clearance from the ground.
- Fence posts to be IPE120 RSJ Post and 2550mm high.
- Posts to be 2550 high above ground and cast in concrete footings, 400 x 400 x 900 mm deep.
- Concrete strength to be 25Mpa.

**Double Gate**

- Supply and Install Galvanized double swing Gates with overall size 30 000 mm x 2500mm high formed of 75mm x 75mm x 2mm tubing frame, including 40mm x 40mm x 5mm angled pales at 125mm centres. Including all necessary sliding wheels, rail locking mechanisms etc.
- Gate Posts: Supply and install 225mm x 225mm x 8mm thick square hollow gate post. The post will be installed at the centre of the Island and will allow the gate to open sideways from the centre of the road.
- Hinges shall not twist or turn under the action of the gate, shall be so arranged that a closed gate cannot be lifted off the hinges to obtain entry.
- Gate post/hinge orientation is to suit fence layout.
- Adjust gate to operate smoothly, easily, and quietly, free from binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

**Island View Berth 9****Industrial steel palisade on ground**

- Fence to be hot dip galvanized industrial steel palisade fence 3000mm x 2500mm high.
- Fence Bearers (horizontal stringers): These are to be 50mm x 50mm x 5mm angle iron. These are to be placed 300mm from top paling and 250mm from the bottom paling.
- Palings: These are to be 40mm x 40mm x 5mm angle iron Pales and 2.5m long. Palings must be spaced at 135mm centres. Palings to have a 50mm clearance from the ground.
- Fence posts to be IPE120 RSJ Post and 2550mm high.
- Posts to be 2550 high above ground and cast in concrete footings, 400 x 400 x 900 mm deep.
- Concrete strength to be 25Mpa.

**Double Gate**

- Supply and Install Galvanized double swing Gates with overall size 6000mm x 2500mm high formed of 75mm x 75mm x 2mm tubing frame, including 40mm x 40mm x 5mm angled pales at 125mm centres. Including all necessary sliding wheels, rail locking mechanisms etc.
- Gate Posts: Supply and install 225mm x 225mm x 8mm thick square hollow gate post. The post will be installed at the centre of the Island and will allow the gate to open sideways from the centre of the road.
- Hinges shall not twist or turn under the action of the gate, shall be so arranged that a closed gate cannot be lifted off the hinges to obtain entry.
- Gate post/hinge orientation is to suit fence layout.
- Adjust gate to operate smoothly, easily, and quietly, free from binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

**South Pier (Security House)****Industrial steel palisade on ground**

- Fence to be hot dip galvanized industrial steel palisade fence 3000mm x 2500mm high.
- Fence Bearers (horizontal stringers): These are to be 50mm x 50mm x 5mm angle iron. These are to be placed 300mm from top paling and 250mm from the bottom paling.
- Palings: These are to be 40mm x 40mm x 5mm angle iron Pales and 2.5m long. Palings must be spaced at 135mm centres. Palings to have a 50mm clearance from the ground.
- Fence posts to be IPE120 RSJ Post and 2550mm high.
- Posts to be 2550 high above ground and cast in concrete footings, 400 x 400 x 900 mm deep.
- Concrete strength to be 25Mpa.

Double swing gate

- Supply and Install Galvanized double swing Gates with overall size 6000mm x 2500mm high formed of 75mm x 75mm x 2mm tubing frame, including 40mm x 40mm x 5mm angled pales at 125mm centres. Including all necessary sliding wheels, rail locking mechanisms etc.
- Gate Posts: Supply and install 225mm x 225mm x 8mm thick square hollow gate post. The post will be installed at the centre of the Island and will allow the gate to open sideways from the centre of the road.
- Hinges shall not twist or turn under the action of the gate, shall be so arranged that a closed gate cannot be lifted off the hinges to obtain entry.
- Gate post/hinge orientation is to suit fence layout.
- Adjust gate to operate smoothly, easily, and quietly, free from binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

## 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.

Drawing number	Revision	Title
DH 62I0932-000-00	0	Proposed Security Fence North Breakwater
DH 62I0932-001-00	0	Proposed Security Fence Schoeman bridge to Bat Centre
DH 62I0932-002-00	0	Proposed Security Fence Marine Services to Subway
DH62I0932-003-00	0	Proposed Security Fence Pleasure Island
DH630912-003-00	0	Proposed Security Fence I&J Canal Road
DH63I0912-001-00	0	Proposed Security Fence Maydon Wharf Security Centre
DH63I0912-002-00	0	Proposed Security Fence Road & Tracks Depots
DH63I0912-004-00	0	Proposed Security Fence Maydon Wharf Berth15
DH65I0909-001-00	0	Proposed Security Fence Fynnland Security Centre
DH64I0905-000-00	0	Proposed Security Fence At Bayhead Road Entrance gate
DH65I0909-000-00	0	Proposed Security Fence Island View 9

Tender Number: TNPA 955

Description of the Works: For the Provision of Security Fencing Infrastructure in the Port of Durban for a Period of Fifteen (15) Months.

DH66I0903-000-00	0	Proposed Security Fence South Pier (Security house)
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Description of the Works: For the Provision of Security Fencing Infrastructure in the Port of Durban for a Period of Fifteen (15) Months.

## SECTION 2

### 6 Management and start up

#### 6.1 Management meetings

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

Title and purpose	Approximate time & interval	Location	Attendance by:
Overall Contract Progress and feedback.	Monthly on a day and time mutually to be agreed.	Port of Durban	Employer, Contractor, Supervisor, Project Manager, including relevant stakeholder's as may be deemed relevant
Contract Risk register and Compensation Events	Fortnightly on a day and time mutually to be agreed.	Port of Durban	Employer, Contractor, Supervisor, Project Manager, including relevant stakeholder's as may be deemed relevant
Site Inspections and quantity measurements	Ad hoc	Port of Durban	Employer, Contractor, Supervisor, Project Manager, including other stakeholder's as may be deemed relevant
Contractor Safety Meetings.	Fortnightly with Contractors. Day and time to be agreed.	Port of Durban	CM (Optional), TNPA Safety Advisors and Contractor Safety Officers and Contractor Management / Supervision.
Safety Pre-Mobilisation Meeting	Once off at the kick-off meeting.	Port of Durban	Employer, Contractor (appropriate key persons), Supervisor (as necessary and appropriate delegates), and Project Manager, including other stakeholder's as may be deemed relevant
Safety, Health and Environment Induction Training.	Once off Induction programme prior to commencing any work on site and each time for a new start.	Port of Durban	Employer, Contractor (all personnel to work on site), Supervisor, Project Manager, including other stakeholder's as may be deemed relevant

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

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

## 6.2 Documentation Control

- 6.2.1 Each supplier of documentation and data for the Project is responsible for ensuring that all documentation and data submitted conforms to the Project Standards and data Quality requirements in terms of numbering, uniqueness, quality, accuracy, format, completeness and currency of information. Data not meeting the Project Standards and data Quality requirements will be cause for rejection and returned to the *Contractor* for corrective action and re-submission.
- 6.2.2 The *Contractor* shall be responsible for the supply of all sub-supplier/sub-contractor/Manufacturer, etc. documentation and data, in the prescribed format, related to their package of work and shall ensure that these sub-suppliers have the capability to supply the necessary documentation and data in the required time frame and quality as outlined in the specified standards prior to awarding sub orders.
- 6.2.3 Electronic files submitted for the Project shall be clear of known viruses and extraneous "macros". The supplier of documentation is required to have, at all times, the latest generation of virus protection software and up to date virus definitions.
- 6.2.4 The *Contractor* must apply "wet signatures" to the original Documentation before scanning the signed original and prior to formal submission to the Project.
- 6.2.5 Final issues of all documentation shall be supplied to the Project in "wet signature" format along with the associated corresponding electronic 'native files' and PDF renditions.
- 6.2.6 The *Contractor* must ensure adequate resources are available to manage and execute the Document Control function as per the requirements of the Project.
- 6.2.7 The *Contractor* must ensure that the latest versions of the required application software and a suitable 'IT' Infrastructure are in place to support the electronic transmission of documentation.

## 6.3 Safety risk management

- 6.3.1 The *Contractor* complies with the following SMP:
- All health and safety matters associated with the *works* will be dealt with in accordance with Occupational Health & Safety Act, 1993 (Act No. 85 of 1993) and the Transnet National Ports Authority Health and Safety Specifications contained in **Annexure B** to this *Works Information*.
- 6.3.2 The contractor is to pay special attention and compliance to General Safety Regulations as promulgated in terms of the OSH Act (Act 85 of 1993) and compliance to Transnet Specification E4E, a copy of which is included with this tender.
- 6.3.3 COVID-19 Occupational Health and Safety measures in workplace
- 6.3.2.1 The *Contractor* is to implement Occupational Health and Safety measures to (reduce and eliminate) the escalation of COVID-19 infections in workplaces as set out in the Schedule adopted by the Minister of Employment and Labour, in terms of Regulation 10(8) of the National Disaster Regulations (Act No. 57 of 2002) and comply to all COVID-19 related guidelines issued by the government in this regard.
- 6.3.4 COVID 19 REQUIREMENTS
- COVID-19 Risk assessment
  - COVID-19 Risk assessment management plan
  - TNPA COVID-19 induction
  - COVID-19 Communication plan (Attendance registers DOL Directive 479, Risk assessment, etc.)
  - Appointment of COVID-19 Manager/Representative

- COVID-19 Operational Plan(include Return to work questionnaire, COVID-19 Reporting and investigation procedure, social distancing, Symptom screening procedure, sanitizing and disinfecting procedures, Cloth masks and other PPE, Measures in respect of workplaces to which public have access, Ventilation, Hygiene and cleaning measures and Waste Management, and not limited to the above specifications).
  - COVID-19 Registers and Checklists
- 6.3.5 It is a pre-requisite for the Contractor to develop, operate, and maintain a CHSMP which incorporates the principles outlined in the Employer Health and Safety Project Specification which is tailored for their scope of work. The Contractor must ensure that his Sub-Contractors comply with the requirements of the CHSMP.
- 6.3.6 The Contractor must perform the works having due regard to the CHSMP.
- 6.3.7 No alcohol is permitted on Site and within TNPA property. The Employer has a zero-tolerance policy in this regard and all personnel entering the Site will be required to undergo breathalyser tests.
- 6.3.8 The Contractor shall provide all personnel with the required and relevant Personal Protective Equipment (PPE) as detailed in the CHSMP.
- 6.3.9 Although not limited to, the following PPE is the minimum requirement:
- Hard hat
  - Safety boots with steel toe cap
  - High visibility reflective vests
  - Safety glasses
  - Any other job specific PPE required.
- 6.3.10 The Contractor shall provide transport for personnel in a safe manner. Transportation in the back of a light delivery vehicle is prohibited. The Contractor may transport workforce by means of busses to the respective areas of work. There is no additional payment for this and shall be deemed to have been included in the tendered rates.
- 6.3.11 For the purpose of the Occupational Safety and Health Act and Regulations (Act No. 85 of 1993) the site is transferred, for the duration of the contract, to the control of the contractor as if it is his property. As employer, he is in every respect responsible for the compliance with the provision of this Act, as well as the application of General Administration Regulations 13 to the employees of Transnet National Ports Authority who visit the site.

## 6.4 Environmental constraints and management

- 6.4.1 The Contractor complies with the following the CEMP TNPA Port of Durban Specification, attached hereto as Employer CEMP Specification, Annexure C:
- 6.4.2 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.
- 6.4.3 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.
- 6.4.4 The PES may require higher minimal standards than those described in the SES as may be required by the Project Manager or Others.
- 6.4.5 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:
- 6.4.6 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
- 6.4.7 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 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.
- 6.4.8 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.
- 6.4.9 The Protection of the Environment Form shall be signed and submitted to the CM within 14 days after the Contract Date.
- 6.4.10 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.
- 6.4.11 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.
- 6.4.12 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.
- 6.4.13 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*.

- 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.
- 6.4.14 The list below is a list of some of the other issues that the Contractor must ensure he has planned for to meet the requirements of the environmental specifications. It is not a comprehensive list but serves as a guide:
- Cement and concrete batching
  - Workshop and maintenance of plant
  - Protection of natural fauna and flora
  - Protection of historical and archaeological artefacts
- 6.4.15 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 shall be issued by the SHEC and signed off by the Project Manager.
- 6.4.16 The Contractor complies with environmental inspections and audits as contained within CEMP.
- 6.4.17 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.
- 6.4.18 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.
- 6.4.19 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.
  - It is expected that the Contractor may during excavation come across pockets of asbestos material, should the Contractor come across asbestos they should notify TNPA Project Manager immediately and stop excavations and call out the AIA (Asbestos Impact Assessment Personnel) who will be appointed by the contractor.
  - To ensure that environmental issues are taken into account in the establishment of the Site offices and all other facilities on Site.

### **Site offices and facilities on site**

#### **Objective**

To ensure that environmental issues are taken into account in the establishment of the Site offices and all other facilities on Site.

#### **Scope**

The standard applies to all activities relating to the planning of the Site, Site establishment, and operation of the Site and closure of the Site.

#### **Site plan**

The *Contractor* shall establish his construction camps, offices, workshops, staff accommodation and any other facilities on the Site and Working Areas in a manner that does not adversely affect the environment. However, before construction can begin, the *Contractor* shall submit to the *Project Manager* for his approval, plans of the exact location,



extent and construction details of these facilities and the impact mitigation measures the *Contractor* proposes to put in place.

The plans shall detail the locality as well as the layout of the waste treatment facilities for litter, kitchen refuse, sewage and workshop-derived effluents. The Site offices should not be sited in close proximity to steep areas. It is recommended that the offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles are located as far away as possible from any water course as possible. Regardless of the chosen Site, the Contractor's intended mitigation measures shall be indicated on the plan.

### **Sewage**

Particular reference in the Site establishment plan shall be given to the treatment of sewage generated at the site offices and staff accommodation and at all localities on the Site where there will be a concentration of labour. Sanitary arrangements should be to the satisfaction of the CM.

Safe and effective sewage treatment will require one of the following sewage handling methods: septic tanks and soak-away, dry-composting toilets such as "enviro loos", or the use of chemical toilets which are supplied and maintained by a Subcontractor. The type of sewage treatment will depend on the location of the Site and the surrounding land uses, the duration of the contract and proximity (availability) of providers of chemical toilets. Should a soak-away system be used, it shall not be closer than 800 metres from any natural watercourse or water retention system. The waste material generated from these facilities shall be serviced on a regular basis.

Toilets and latrines shall be easily accessible and shall be positioned within walking distance from wherever employees are employed on the works. Use of the veld shall not, under any circumstances, be allowed.

Outside toilets shall be provided with locks and doors and shall be secured to prevent them from blowing over. The toilets shall also be placed outside areas susceptible to flooding. The Contractor shall arrange for regular emptying of toilets and shall be entirely responsible for enforcing their use and for maintaining such latrines in a clean, orderly and sanitary condition to the satisfaction of the Project Manager.

### **Effluent Management**

All effluent water from the camp / office Sites shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect water sources (streams, rivers, pans dams etc.). Only domestic type wastewater shall be allowed to enter this drain.

### **Waste Management**

#### **Objective**

To ensure that all waste generated during construction and commissioning of the facilities is properly disposed of.

Examples of typical construction waste which, could be expected on the Site are indicated in the following table:

**TABLE 2: EXAMPLE OF CONSTRUCTION WASTE CLASSIFICATION**

WASTE	CLASSIFICATION	
	HAZARDOUS	NON-HAZARDOUS
Clean soil		X
Construction debris contaminated by oil or organic compounds	X	
Empty drums (depends on prior use)	X	X
Empty paint and coating containers		X

<b>Waste paint and/or solvent</b>	<b>X</b>	
<b>Waste oil</b>	<b>X</b>	
<b>Phenolic waste</b>	<b>X</b>	
<b>Waste concrete</b>		<b>X</b>
<b>Rubble (not contaminated by oil or organic compounds)</b>		<b>X</b>
<b>Waste containing appreciable properties of fibrous asbestos</b>	<b>X</b>	
<b>Sewerage sludge</b>	<b>X</b>	
<b>Scrap metal</b>		<b>X</b>
<b>Explosive waste</b>	<b>X</b>	
<b>Waste timber</b>		<b>X</b>
<b>Waste Cable</b>		<b>X</b>
<b>PCB waste</b>	<b>X</b>	
<b>Waste plastic</b>		<b>X</b>
<b>Aerosol containers</b>	<b>X</b>	
<b>Batteries, light bulbs, circuit boards, etc.</b>	<b>X</b>	<b>X</b>
<b>Domestic waste</b>		<b>X</b>

### Scope

The standard applies to all construction, commissioning and Site activities that may lead to the generation of waste.

### Approach

Waste is grouped into general or hazardous, depending on its characteristics. The classification determines handling methods and the ultimate disposal of the Material.

General waste to be expected during construction includes the following:

- Trash (waste paper, plastics, cardboard, etc.) and food waste from offices, warehouses and construction personnel.
- Uncontaminated construction debris such as used wood and scrap metal.

Hazardous waste is waste, which has the potential, even in low concentrations, to have a significant adverse effect on public health and/or the environment. This would be on account of its inherent chemical and physical characteristics, such as toxic, ignitable, corrosive, carcinogenic or other property

### Waste avoidance and minimisation

A ladder approach to waste management is encouraged. Waste should preferably be managed in the following order:

- Prevent: by waste avoidance and minimisation during production
- Recycle: waste recycling, recovery and utilisation
- Treat: waste treatment in order to reduce toxicity and to minimise the quantities of waste
- Disposal: waste disposal, probably by incineration, destruction or landfill

### Waste Management

The Contractor is responsible for the removal from Site of all waste generated through the Contractor's activities. The Contractor shall ensure that all waste is removed to appropriate licensed waste management facilities.

- The classification of waste determines handling methods and the ultimate disposal of the Material. The Contractor shall manage hazardous wastes that are anticipated to be generated by his operations as follows:
- Characterise the waste to decide if it is general or hazardous
- Obtain and provide an acceptable container with label
- Place hazardous waste material in container
- Inspect the container on a regular basis as prescribed by the Contractor's waste environment management plan
- Track the accumulation time for the waste
- Haul the full container to the disposal Site
- Provide documentary evidence of proper disposal of the waste

The EO will work in conjunction with the Contractor's construction safety and industrial hygiene personnel to create a Contractor's Hazardous Materials Management Program. This program will establish the necessary protocol for proper handling and removal of hazardous Materials on the Site.

Information on each hazardous substance will be available to all persons on Site with the EO. Training and education about the proper use, handling, and disposal of the material will be available to all workers who will be handling the Material.

The EO must be informed of all activities that involve the use of hazardous substances to facilitate prompt response in the event of a spill or release.

The Contractor shall manage NON-HAZARDOUS / GENERAL WASTE that is anticipated to be generated by operations as follows:

- Determine if waste is non-hazardous and obtain containers for waste storage
- Notify waste hauler when container is full so that it can be removed and replaced with an empty
- On the Project, however, waste generating entities are directed to control the generation of non-hazardous waste by:
  - Eliminating waste generation or reducing the total volume
  - Reducing the degree of contamination of waste generated
  - Reclaiming materials otherwise considered waste

The Contractor shall therefore recycle NON-HAZARDOUS / GENERAL WASTE that is anticipated to be generated by its operations as follows:

Obtain and label recycling containers for:

- Office Waste
- Aluminium and steel cans
- Glass Bottles
- Scrap Metals
- Waste Timber
- And locate them within temporary office building and trailers
- Establish recycled material collection schedule
- Arrange for full bins to be hauled away

Spent batteries, circuit boards, and bulbs, while non-hazardous, require special collection and handling.

## **Vehicle and Equipment Refuelling**

### **Objective**

To eliminate / control fuel and oil spillage at refuelling facilities

### **Scope**

The standard applies to all refuelling, lubrication and oil changing requirements on all vehicles and machinery.

### **Refuelling**

Engine driven compressors, pumps, air conditioners, and arc welders can have small leaks (usually oil) that can accumulate to become spills, which require clean up. These leaks become more evident if the equipment remains in the same place for an extended period of time. Damaged fuel tanks, fuel hoses, and fuel pumps can be sources of significant fuel leaks. Hydraulic systems can blow gaskets or hoses resulting in large quantities of hydraulic fluid spilled to the ground and under lock and key arrangements.

### **Control**

No vehicles or machines shall be serviced or refuelled on Site except at designated servicing or refuelling locations, no oil or lubricant changes shall be made except at designate locations, or in case of breakdown or emergency repair.

The Contractor shall store fuel and oil at a secure area, which shall be bunded and designed with a liner or paved surface to prevent spillage from entering the ground.

The Contractor shall provide details of its proposed fuel storage and fuelling facility to the EO for approval, the design shall comply with the regulations of the Water Act (Act 36 of 1998), the Hazardous Substances Act (Act 15 of 1973), and the Environment Conservation Act (Act 73 of 1989).

### **Spill Response**

The Contractor shall comply with the regulations of the Water Act (Act 36 of 1998), the Hazardous Substances Act (Act 115 of 1973), and the Environment Conservation Act (Act 73 of 1989).

The Contractor shall provide details for approval of its spill response plan in the event of any spills of fuel, oils, solvents, paints or other hazardous Materials. The plan will show measures to be taken to remove contaminated soils from Site and demonstrate complete removal of contamination.

The Contractor shall instruct construction personnel on the following spill prevention and containment responsibilities:

- Repair all leaks of hydrocarbons or chemicals as soon as possible
- Take all reasonable means to prevent spills or leaks
- Do not allow sumps receiving oil or oily water to overflow
- Prevent storm water run-off from contamination by leaking or spilled drums of oil or chemicals
- Do not discharge oil or contaminants into storm sewer system
- If a spill to land occurs, the Contractor is responsible for:
  - Immediate action to stop or reduce the spill and contain it
  - Actions necessary to prevent the spill from contaminating groundwater or off Site surface water

- Disposal of contaminated Material to location designated thereto
- Any spill to water has the potential to disperse quickly; therefore, the spill must be contained immediately using appropriate containment Equipment.
- If a spill to water occurs, the Contractor is responsible for:
  - Immediate action to stop or reduce the spill and contain it
  - Notifying the appropriate on-Site authorities
  - Actions necessary to prevent the spread of the contamination by deploying booms and/or absorbent Material
- Proper disposal of spilled Material

### **Spray Painting and Sandblasting**

#### **Objective**

To ensure that all spray painting and sandblasting on Site is done in a controlled manner where appropriate measures are taken to prevent paint contamination of the soil and to ensure that sandblasting grit/media is properly disposed of.

#### **Scope**

All spray painting and sandblasting on Site.

### **Spray Painting and Sandblasting**

Spray painting and sandblasting should be kept to a minimum. All painting should as far as practicable be done before Equipment and Material is brought on Site. Touch up painting is to be done by hand painting or by an approved procedure. A method statement shall be submitted to the SHEC for approval.

The Contractor will inform the EO of when and where spray painting or sandblasting is to be carried out prior to commencement of work. The EO will monitor these activities to ensure that adequate measures are taken to prevent contamination of the soil.

**NB:** If the area is in confined or high areas then a protection plan is to be issued for approval

### **Dust Management**

#### **Objective**

The Contractor (associated with activities such as earthworks, geotechnical surveys, piling, storm water drainage, construction of roads and railways, foundations, brick building, operating workshops, fencing, erecting construction camps, and batch plant activities, etc.) shall submit a dust control plan for approval by the EO.

#### **Scope**

Control of dust on the construction Site and access roads

### **Dust Management**

Material in transit should be loaded and contained within the load bin of the vehicle in such a way as to prevent any spillage onto the roads and the creation of dust clouds. If necessary, the load bin of the vehicle shall be covered with a tarpaulin to prevent dust.

Dust to be controlled on the unsurfaced access roads and Site roads using sprayed water. The Contractor is responsible for managing dust generated as a result of his activities. The CM will be responsible for the dust control of the Site and Working Areas.

Some dust control measures, which are normally applied during construction, are presented in this section for inclusion by the Contractor in the Contractor's dust control method statement.

These dust-mitigating procedures include the following:

- Limit vehicle speeds on unpaved roads to 20 km/h
- Wash the paved surfaces within the construction area twice a week
- Minimise haulage distances
- Apply water to gravel roads with a spraying truck when required
- Environmentally friendly soil stabilisers may be used as additional measures to control dust on gravel road and construction area
- Dust suppression measures will also apply to inactive construction areas. (An inactive construction Site is one on which construction will not occur for a month or more.)
- Construction Material being transported by trucks must be suitable moistened or covered to prevent dust generation.
- Strip and store topsoil in separate stockpiles with mounds not exceeding 2m in height to, among other things, to prevent wind-blown dust.
- Minimise disturbance of natural vegetation during right-of-way construction (e.g. transmission lines and erection of fences) to reduce potential erosion, run-off, and air-borne dust.
- Implement a system of reporting excessive dust conditions by construction personnel (as instructed through Environmental Awareness Training).
- Water for dust control shall be taken only from approved sources.

### **Storm Water and Dewatering Management**

#### **Objective**

To ensure that storm water and dewatering drainage across the Site occurs in a manner that will negate contamination by oils, fuels, litter and other waste and that will prevent erosion of the construction terrace.

#### **Scope**

All dewatering activities

### **Storm Water and Dewatering Management**

Water is a valuable resource in the area. Both the quality and quantity of water used by the Contractor should be considered in making resource conservation plans.

Potential construction phase impacts on surface water and groundwater are associated with construction are run-off and percolation, dewatering activities, and miscellaneous liquid wastes associated with construction activities.

In general, construction activities may affect water quality and/or quantity of ground water and/or surface water of the area.

The Contractor shall be aware that, apart from run-off from overburden emplacements and stock piles, storm water can also be contaminated from batch plants, workshops, vehicle wash-down pads, etc., and that contaminants during construction can include hydrocarbons from fuels and lubricants, sewerage from Employee ablutions, even excess fertiliser from rehabilitation areas, etc.

The Contractor shall take cognisance of the fact that discharges to controlled waters such as the sea, rivers, or groundwater or to sewerage systems are controlled under the South African Water Legislation.

#### **Surface run-off**

Construction activities such as surface grading and excavation will disturb surface areas on Site. This will increase the potential for soil erosion and subsequent sediment transport during periods of precipitation run-off or when excavation dewatering is required. Construction activities also have the potential to change local surface drainage and sediment transport patterns, Site floodplain delineation, and percolation rates into the soil.

**Dewatering**

Dewatering during the groundwork produces a surface water discharge that may require collection and sedimentation. Dewatering has also the potential to effect groundwater quality and quantity

**Wastewater**

Liquid wastes including used solvents, used lubricating oils, chemical flushing agents, spill clean-up wastes, painting wastes, and concrete mixing drum washings, etc., have the potential to affect surface water and groundwater quality.

**General**

- Temporary drainage must be established on Site during the construction period and until permanent drainage is in place. Contractors are responsible for maintaining the temporary drainage in their areas. The Contractors must provide secondary drainage that prevents erosion
- Contractors must effect good housekeeping in their areas to prevent contamination of drainage water
- The Contractor shall clear stagnant water

Specific water Management measures (surface and groundwater) for incorporation by the Contractor in the CEMP include the following:

- The Contractor shall ensure that no contaminated surface water shall flow off Site as a result of Contractor operations. Silt traps shall be constructed to ensure retention of silt on site and cut-off ditches shall be constructed to ensure no run-off from the SITE except at points where silt traps are provided.
- If applicable, the Contractor shall be responsible for collection, management, and containment within the Site boundaries of all dewatering from all general Site preparation activities. The dewatering water shall be contained within the Site boundaries by sequentially pumping or routing water to and from sub-areas within the Site as the construction activities proceed. No discharge of dewatering water to off Site land or surface water bodies will be allowed
- On Site drainage shall be accomplished through gravity flow. The surface drainage system shall consist of mild overland slopes, ditches, and culverts. The graded areas adjacent to buildings shall be sloped away with a 5% slope. Other areas shall have a minimum slope of 0, 2% or as otherwise indicated.
- Ditches shall be designed to carry a 25-years storm event with velocities in accordance to minimise erosion. Erosion protection shall consist of suitable stabilising surfaces in all ditches
- Culverts shall be designed to ensure passage of the 25-year storm peak run-off flow.
- Both structural and non-structural (vegetative) erosion control measures will be designed, implemented, and properly maintained in accordance with best management practices which will include the following:
  - Scheduling of activities to minimise the amount of disturbed area at any one time
  - Implementation of re-vegetation as early as feasible
  - Limiting construction traffic and/or avoidance thereof on access roads and areas to be graded to the extent feasible at drainage ditches.
  - Compacting loose soil as soon as possible after excavation, grading, or filling
  - Using silt fences, geo-textiles, temporary rip-rap, soil stabilisation with gravel, diversionary beams or swales, small sedimentation basins, and gravelled roads to minimise transport of sediment

- Implementing the erosion and sedimentation control plan and ensuring that construction personnel are familiar with and adhere to the plan
- Managing run-off during construction
- The Contractor shall be responsible for checking and maintaining all erosion and sedimentation controls

### **Rehabilitation**

#### **Objective**

To ensure that all areas affected by the project are appropriately rehabilitated and vegetated in a manner congruent with the surrounding biophysical environment. The prevention of the spread of alien invasive species.

The Contractor shall rehabilitate their laydown area upon Completion of work on Site. A rehabilitation plan will be submitted to the Project Manager and EO for approval at least six weeks before Completion. The following are critical issues to be included in that rehabilitation plans:

- Details of soil preparation procedures including proposed fertilisers or other chemicals being considered for use.
- A list of the plant species that will be used in the rehabilitation process. Note that these should all be indigenous species, and preferably species that are endemic to the area. The assistance of an appropriately qualified botanist should be sought in developing this list.
- Procedures for watering the planted areas (frequency of watering, methodology proposed).
- An indication of the monitoring procedures that will be put in place to ensure the successful establishment of the plants (duration and frequency of monitoring, proposed criteria for declaring the rehabilitation successful).
- Procedures for the prevention of the establishment and spread of alien invasive species.

### **Noise Management**

#### **Objective**

To maintain construction noise at the Site within required limits.

#### **Scope**

Construction noise at the construction Site.

#### **Noise Management**

- Keep all Equipment in good working order
- Operate Equipment within its specification and capacity and don't overload machines
- Apply regular Maintenance, particularly with regards to lubrication
- Operate Equipment with appropriate noise abatement accessories, such as sound hoods
- Noise control measures for incorporation by the Contractor in its noise control plan shall include the following:
- Ensure that the potential noise source will conform to the South African Bureau of Standards recommended code of practice, SABS Code 0103:1983, so that it will not produce excessive or undesirable noise when it is released.
- All the Contractors' Equipment shall be fitted with effective exhaust silencers and shall comply with the South African Bureau of Standards recommended code of practice, SABS Code 0103:1983, for construction plant noise generation.
- All the Contractors' vehicles shall be fitted with effective exhaust silencers and shall comply with Road Traffic Act (Act 29 of 1989) when any such vehicle is operated on a public road.

- If on Site noise control is not effective, protect the victims of noise (e.g. ear-plugs) by ensuring that all noise-related occupational health provisions are met. (Occupational Health and Safety Act, Act 85 of 1993).
- Normal machine working hours will be 06:00 – 22:00 Monday to Saturday. Outside these hours machine operations will be subject to approval. This does not define shift hours.

### **Protection of heritage resources**

#### **Objective**

To ensure the protection of archaeological, historical artefacts, or heritage resources discovered during construction activities.

#### **Scope**

Archaeological, historical artefacts or heritage resources discovered on or near the Site.

#### **Archaeological Sites**

If an artefact on Site is uncovered, work in the immediate vicinity shall be stopped immediately. The Contractor shall take reasonable precautions to prevent any person from removing or damaging any such article and shall immediately upon discovery thereof inform the Project Manager of such discovery. The South African Heritage Resources Agency is to be contacted who will appoint an archaeological consultant. The work may only resume once clearance is given in writing by the archaeologist.

Discovery of an item of historical value or stopping the works would fall under compensation events 60.1(4) and/or (7), despite the manner in which the Works Information is written here.

#### **Graves and middens**

If a grave or midden is uncovered on Site, or discovered before the commencement of *work*, then all *work* in the immediate vicinity of the graves/middens shall be stopped and the *Project Manager* informed of the discovery. The National Monuments Council should be contacted and in the case of graves, arrangements made for an undertaker to carry out exhumation and reburial. The undertaker will, together with the National Monuments Council, be responsible for attempts to contact family of the deceased and for the Site where the exhumed remains can be re-interred.

### **Fire prevention**

#### **Objective**

To minimise the risk of uncontrolled fires.

#### **Scope**

All activities on or near the Site that could initiate an uncontrolled fire.

#### **Fire control**

Fires shall only be allowed in facilities or Equipment specially constructed for this purpose. A firebreak shall be cleared and maintained around the perimeter of the camp and office Sites.

All conditions incorporated in the requirements of the Occupational Health and Safety Act shall also be implemented.

### **Supply of water for human use**

#### **Objective**

To ensure that there is an adequate, safe water supply for all personnel on Site.

#### **Scope**

Managing the water supply on Site and controlling the abstraction of water from natural resources in the area.

#### **Collection of water from natural resources**

No water for domestic use (drinking water or for bathing or washing) shall be abstracted from any water resource (stream, river, or dam) without the express permission of the *Project Manager*. Such permission shall only be granted once it can be shown that the

Description of the Works: For the Provision of Security Fencing Infrastructure in the Port of Durban for a Period of Fifteen (15) Months.

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water is safe for use that there is sufficient water in the resource to meet the demand, and once permission has been obtained from the Department of Water and Sanitation in accordance with the requirements of the National Water Act.

#### **Provision of drinking water**

Water for human consumption shall be available at the Site offices and at other convenient locations on site. The generally acceptable standard is that a supply of drinking water shall be available within 200m of any point on the construction Site.

#### **Protection of livestock or game and the collection of firewood**

##### **Objective**

To prevent illegal activities potentially perpetrated by Site staff and to prevent the killing of any animals trapped in construction works or discovered on the construction Site or surroundings.

##### **Scope**

Managing the activities of Site staff during and after hours

##### **Poaching of livestock or game**

On no account shall any hunting or fishing activity of any kind be allowed. This includes the setting of traps, or the killing of any animal caught in construction works.

##### **Killing of animals**

On no account shall any animal, reptile or bird of any sort be killed. This specifically includes snakes or other creatures considered potentially dangerous discovered on Site. If such an animal is discovered on Site an appropriately skilled person should be summoned to remove the creature from the Site. Consideration should be given to selection and nomination of such a person prior to Site establishment. Where appropriate, training should be provided to at least two Site staff members.

##### **Collection of firewood**

The Contractor shall provide adequate facilities for all his staff so that they are not encouraged to supplement their comforts on Site by accessing what can be taken from the natural surroundings. The Contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.

#### **Environmental Awareness Training**

An Environmental Awareness Program is considered a necessary part of the Construction Environmental Management Plan for the Project. Training of the appropriate construction personnel will help ensure that all environmental regulations and requirements are followed to be defined in the relevant Method Statement to be prepared by the Contractor.

##### **Objectives of environmental awareness training are:**

- Environmental Management – protecting the environment from the effects of construction by making personnel aware of sensitive environmental resources
- Regulatory compliance – complying with requirements contained in project – specific permit conditions, also complying with requirements in regional and local regulations
- Problem recognition and communication – training personnel to recognise potential environmental problems, i.e. spills, and communicate the problem to the proper person for solution
- Liability control - non-compliance with regulatory requirements can lead to personal and corporate liability.

All individuals on the Project Construction Site will need to have a minimum awareness of environmental requirements and responsibilities. However, not all need to have the same degree of awareness. The required degree of knowledge is greatest for personnel in the Safety, Health, and Environmental Sections and the least for the manual personnel.

The Contractor shall keep a record of all the environmental related training of the personnel.

The lines of communication of the various personnel acting on behalf of the Project Manager who communicate to the Contractor and his key persons with respect to the CEMP will be advised on project kick-off meeting.

The CM is responsible (in the context of the CEMP only) for environmental management on the Site and Working Areas and reports to the Project Manager. The CM acts on behalf of the Project Manager

The SHEC is responsible, inter alia, for day-to-day environmental management on the Site and Working Areas through the implementation of the CEMP. The SHEC reports directly to the CM.

The EO is responsible for conducting day-to-day tasks required to ensure the CEMP is correctly implemented at the Site and Working Areas. The EO reports to the SHEC and the ProjEM.

The EO specific tasks are:

- Ensure compliance to the CEMP and environmental legislation.
- Report any environmental incidents to the Principal Contractor.
- Ensure relevant documentation is readily available (Daily, weekly and monthly inspections and tool box talks)
- Ensure environmental protection (litter control) and awareness
- Reporting of environmental incidents to relevant stakeholders

The CSHEO submits daily, weekly and monthly checklists in accordance with the CEMP to the SHEC.

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*.

## 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 the requirements of Health and Safety, design and procurement strategies/activities.
- 6.6.3
- 6.6.4 The *Contractor* complies with the *Employer's* programme state contract specific details and include as an Annexure as necessary when he submits his first programme.
- 6.6.5 The *Contractor* complies with the *Employer's* programme (i.e. estimated project duration of fifty-two (52) weeks [one year] inclusive of holidays, builder's holiday [16 December 2021 – 10 January 2022] and known special non-working days) when he submits his first programme.
- 6.6.6 Furthermore, the number of days in excess of the number of working days anticipated to be lost due to climatic conditions are already included on the estimated project duration (refer to Table A below).
- 6.6.7 The Contractor presents his first programme and all subsequently revised programmes (see ECC Clauses 31.2 and 32.1) in hard copy format and in soft copy format.
- 6.6.8 The Contractor uses Primavera version 3.1 for his programme submissions or a similar programme software package equivalent to Primavera version 3.1 subject to the prior written notification and acceptance by the Project Manager.
- 6.6.9 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.
- 6.6.10 It is incumbent upon the Contractor to submit a level-4 schedule/programme clearly showing the project duration and critical path for approval within 14 days of the award of this contract. The schedule/programme is to be discussed and agreed between the Contractor and Sub-Contractor's prior to submission; this must be subject to discussion and review by the Project Manager. No claim for an extension of time or acceleration must be entertained by Project Manager due to any failure of the Contractor and Sub-Contractor(s) to accommodate one another.
- 6.6.11 The Contractor's proposed construction programme must be in a bar chart form.
- 6.6.12 The Contractor must submit his programme within the time stated in 6.6.7 above, to the Project Manager for acceptance. The programme must be in the form of a bar chart or any other time-activity form acceptable to the Project Manager and must clearly show:
- The proposed rate of progress in order to complete the Works within the required period as tendered, showing the various activities, their durations and proposed re-sourcing levels (major plant and labour) for each element of the Works. Sufficient detail must be provided to enable the Project Manager to be able to gauge construction progress.
  - The sequence of activities and any dependencies (time or resource related) between them.
  - The critical path activities.
  - Key dates/information, etc. in respect of work to be carried out or to be provided by others.
  - The anticipated value of work to be done during each month i.e. monthly cash flows.
  - Other information specifically required by the Project Manager.
  - The Contractor shows on each revised programme he submits to the Project Manager a resource histogram showing planned versus actual progress, deviations from the accepted Programme and any other remedial actions proposed by the Contractor.
  - The Contractor must submit programme report information to the Project Manager at mutually agreed intervals in addition to the intervals for submission of revised programmes.
  - All activities, including establishment on site, trimming, finishing and the completion of all minor ancillary works are to be included in the programme.

**NB: The Contractor's performance must be strictly monitored on the provided and mutually agreed and accepted programme.**

## **6.7 Contractor's management, supervision and key people**

- 6.7.1 The Contractor employs a CSHEO as a key person under ECC Clause 24.1.
- 6.7.2 The Contractor shall further provide an adequate, experienced and stable project team for the duration of the contract as key person as required by the Employer under Contract Data.
- 6.7.3 The CSHEO reports to the SHEC on the Site. The CSHEO ensures that the works are subject to a prior environmental method statement(s) accepted by the Project Manager through TNPA Environment Department 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 It is a requirement of this contract that the Contractor will employ a full time, fully experienced Site Manager as key person who has been delegated sufficient authority to manage the contract efficiently on site during construction.
- 6.7.5 The Contractor shall provide 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.
- 6.7.6 The CSHEO tasks are:
- Daily, weekly and monthly inspections of the Site and Working Areas.
- 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 to the Project Manager
  - Attendance at all SHE meetings, toolbox talks and induction programmes.
  - Litter control and ensuring the Contractor clears litter from the Site and Working Areas; and
  - Ensuring that environmental signage and barriers are correctly placed.
- 6.7.7 The CSHEO submits daily, weekly and monthly checklists to the SHEC.
- 6.7.8 The Contractor employs a CIRP as a key person under ECC Clause 24.1.
- 6.7.9 The CIRP is based on the Site and ensures that all reports and IR requests are submitted accurately and in a timely manner to the Project Manager and CM.
- 6.7.10 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];
- 6.7.11 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**

No training workshops will be required on this project.

## 6.9 Insurance provided by the Employer

- 6.9.1 No insurance will be provided by the Employer as contained in the Contract Data – Part 1, The Contractor is required to provide an All Risk Insurance and this must be included on the tendered rates.

## 6.10 Plant and Materials

- 6.10.1 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*.
- 6.10.2 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.
- 6.10.3 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.
- 6.10.4 No Plant and Materials to be provided by the Employer for the Contractor to use in the works.

## 6.11 Tests and inspections before delivery

- 6.11.1 The Contractor must submit to the Supervisor details to certify that all the materials complies with the quality as per specification requirements.

## 6.12 Marking Plant and Materials outside the Working Areas

- 6.12.1 No Plant and Materials will be paid for before delivery and installation.

# SECTION 3

## C3.2 CONTRACTOR'S WORKS INFORMATION

The Contractor submits with his tender full technical drawings, details and specifications for all equipment and systems required for the works. These details shall include manufacturing, erection and application details where applicable, performance characteristics as well as any applicable warranties and guarantees.

The *Contractors* works shall include for, but not limited to:

- Setting out of the proposed fencing layouts,
- Supply and installation of hot dip galvanised industrial steel palisade fencing,
- Supply and installation of hot dip galvanised steel manual gates,
- Supply and installation of hot dip galvanised High Visibility fencing,

- Supply and installation of hot dip galvanised High Visibility manual gates,
- Supply and installation of hot dip galvanised shackles,
- Supply of padlocks (each with set of three keys),
- Demolition and removal of the existing infrastructure fencing, gates etc.,
- Asphalt and layer works where applicable.