



Documents may be obtained,
free of charge, in electronic format,
from the eTenders website.

Reference is to be made to
Clause F.1.2 of the
Tender Data.

Cleansing and Solid Waste

Plant and Engineering

PROCUREMENT DOCUMENT

INFRASTRUCTURE

CONTRACT No.: WS 7411

TITLE: Western Waste Management Facility - Contract A – Roads,
Platforms, Services and Buildings

Clarification Meeting: A Compulsory Clarification Meeting will be held at 22 Electron Road,
Springfield on 12 December 2022 at 09:00

Issued by:
Cleansing and Solid Waste Unit

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NAME OF TENDERER:

INDEX

<u>PART</u>	<u>PAGE</u>
<u>TENDER</u>	
T1 TENDERING PROCEDURES	
T1.1 Tender Notice and Invitation to Tender	(white) 2
T1.2 Tender Data	(pink) 3
T1.2.1 Standard Conditions of Tender	
T1.2.2 Tender Data (applicable to this tender)	
 T2 RETURNABLE DOCUMENTS	
T2.1 List of Returnable Documents	(yellow) 14
T2.2 Returnable Schedules, Forms and Certificates	(yellow) 15
 <u>CONTRACT</u>	
C1 AGREEMENT AND CONTRACT DATA	
C1.1 Form of Offer and Acceptance	(yellow) 49
C1.1.1 Offer	
C1.1.2 Acceptance	
C1.1.3 Schedule of Deviations	
C1.2 Contract Data	(yellow) 52
 C2 PRICING DATA	
C2.1 Pricing Assumptions / Instructions	(yellow) 61
C2.2 Bill of Quantities (with separate page numbering)	(yellow) 63
 C3 SCOPE OF WORK	
C3.1 Project Description and Scope of Contract	(blue) 133
C3.2 Project Specifications	(blue) 135
C3.3 Standard Specifications	(blue) 145
C3.4 Particular Specifications	(blue) 171
C3.5 Contract and Standard Drawings	(blue) 182
C3.6 Annexures	(blue) 184
 C4 SITE INFORMATION	
C4.1 Locality Plan	(green) 217
C4.2 Conditions on Site	(green) 218
C4.3 Test Results	(green) 218

PART T1: TENDERING PROCEDURES
T1.1: TENDER NOTICE AND INVITATION TO TENDER

Tenders are hereby invited for the works to **Western Waste Management facility - Contract A - Roads, Platforms, Services and Buildings**

(F.1.1.1) The Employer is the eThekweni Municipality as represented by **L. Moodley**

It is estimated that tenderers should have a CIDB contractor grading designation of **8CE**(or higher).

(F.1.2) Documents can be obtained in electronic format, issued by the eThekweni Municipality:

- Electronically downloaded documentation is obtainable from the National Treasury's eTenders website or the eThekweni Municipality's Vendor Portal. The entire document should be printed and suitably bound by the tenderer.

(F.2.7) **A Compulsory clarification meeting will be held at 22 Electron Road, Springfield on 12 December 2022 at 09:00**

(F.2.8) Queries relating to these documents may be addressed to the Employer's Agent's Representative whose contact details are: **L. Moodley**, 031-322 4575 (t) , Logan.Moodley2@durban.gov.za

(F.2.13) Tender offers shall be delivered to **the Municipal Building, 166 K.E. Masinga Road** and placed in the tender box located in the ground floor foyer.

(F.2.15) Tender offers shall be delivered on or before **Friday, 27 January, 2023** at or before **11:00**

Requirements for sealing, addressing, delivery, opening and assessment of tenders are stated in the Tender Data

PART T1: TENDERING PROCEDURES

T1.2: TENDER DATA

T1.2.1 STANDARD CONDITIONS OF TENDER

The conditions of tender are the Standard Conditions of Tender as contained in Annex F of the CIDB Standard for Uniformity in Construction Procurement (July 2015) as published in Government Gazette No 38960, Board Notice 136 of 2015 of 10 July 2015.

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

T1.2.2 TENDER DATA

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

F.1: GENERAL

F.1.1 The employer: The Employer for this Contract is the eThekweni Municipality as represented by: [L. Moodley](#)

F.1.2 Tender documents: The Tender Documents issued by the Employer comprise:

- 1) This procurement document.
- 2) Drawings, issued separately from this document (or alternately: Bound in Section C3.4 as an Annexure).
- 3) “General Conditions of Contract for Construction Works – 3rd Edition 2015” issued by the South African Institution of Civil Engineering (GCC 2015). This document is obtainable separately, and Tenderers shall obtain their own copies.
- 4) “City of Durban Technical Specifications” hereinafter referred to as the Standard Engineering Specifications. This document is obtainable separately, and Tenderers shall obtain their own copies of the applicable Sections.
- 5) In addition, Tenderers are advised, in their own interest, to obtain their own copies of the following acts, regulations, and standards referred to in this document as they are essential for the Tenderer to get acquainted with the basics of construction management, the implementation of preferential construction procurement policies, and the participation of targeted enterprise and labour.
 - The Occupational Health and Safety Act No 85 and Amendment Act No 181 of 1993, and the Construction Regulations (2014).
 - The Construction Industry Development Board Act No 38 of 2000 and the Regulations issued in terms of the Act (July 2013).
 - The Preferential Procurement Policy Framework Act No 5 of 2000, and the Preferential Procurement Policy Framework Act Regulations (January 2017).
 - SANS 1921:2004 – Construction and Management Requirements for Works Contract, Parts 1-3.
 - The Employer’s current Supply Chain Management Policy.
 - Any other eThekweni Policy documents referenced in the Tender Documents.

Electronically downloaded documentation is obtainable from the National Treasury’s **eTenders Website** or the eThekweni Municipality’s **Website** at URLs:

- <https://ethekwinivendor.durban.gov.za/tenders/availabletenders/> ; or
- <https://etenders.treasury.gov.za/>

The entire downloaded document should be printed and suitably bound by the tenderer.

- **F.1.4 The employer's agent:** The Employer's agent is
 - IX/Wilson and Pass JV
 - Tel: 031 254 5700 (t)
 - Email: Mike.r@ixengineers.co.za

The tenderer's contact details as indicated in the Contract Data under Clause C1.2.2.2 "Data to Be Provided by Contractor" shall be deemed as the only applicable contact details for the tenderer for use in communications between the employer's agent and the tenderer after the closing time stated in the Tender Data.

F.2: TENDERER'S OBLIGATIONS

F.2.1 Eligibility: General

A Tenderer will not be eligible to submit a tender if:

- (a) the Tenderer does not comply with the legal requirements as stated in the Employer's current SCM Policy;
- (b) the Tenderer cannot provide proof that he is in good standing with respect to duties, taxes, levies and contributions required in terms of legislation applicable to the work in the contract;
- (c) In the event of a Compulsory Clarification Meeting:
 - i) the Tenderer fails to attend the Compulsory Clarification Meeting;
 - ii) the Tenderer fails to have form "Certificate of Attendance at Clarification Meeting / Site Inspection" (in Part T2.2) signed by the Employer's Agent or his representative.
- (d) in the case of JV submissions, two or more JV entities have common directors / shareholders or common entities tendering for the same works.
- (e) at the time of closing of tenders, the Tenderer is not registered on the National Treasury Central Supplier Database (CSD) as a service provider. In the case of a Joint Venture, this requirement will apply individually to each party in the Joint Venture.

F.2.1.1 Eligibility: CIDB

Only those tenderers who are registered (as "Active") with the CIDB (at time of tender closing), in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a CE 8 class of construction work, are eligible to have their tenders evaluated.

Joint ventures are eligible to submit tenders provided that:

- (a) Every member of the joint venture is registered (as "Active") with the CIDB (at time of tender closing);
- (b) The lead partner has a contractor grading designation in the CE class of construction work and has a grading designation of not lower than one level below the required grading designation; and
- (c) The combined contractor grading designation calculated in accordance with the Construction

Industry Development Regulations (2013) is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a CE class of construction work or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations.

F.2.2.2 The cost of the tender documents: Replace this paragraph with the following:

“Documents may be obtained, free of charge, in electronic format, from the National Treasury’s eTenders website or the eThekweni Municipality’s Website. The entire electronically downloaded document should be printed and suitably bound by the tenderer.

F.2.6 Acknowledge addenda: Add the following paragraphs to the clause:

“Addenda will be published, in electronic format, on the National Treasury’s eTenders website (see F.2.2.2 above). Tenderers are to ensure that the eTenders website is consulted for any published addenda pertaining to this tender until three days before the tender closing time as stated in the Tender Data.”

“Acknowledgement of receipt of the addenda will be by the return of the relevant completed, dated and signed portion of the addenda, to the address / fax number / email address as specified on the addenda. Failure of the tenderer to comply with the requirements of the addenda may result in the tender submission being made non-responsive.”

F.2.7 Clarification meeting: A Compulsory clarification meeting will be held at 22 Electron Road, Springfield on 12 December 2022 at 09:00

In the event of a Compulsory Clarification Meeting, Tenderers must sign the attendance register in the name of the tendering entity. Addenda will be issued to, and tenders will be received only from, those tendering entities appearing on the attendance list.

F.2.12 Alternative tender offers: No alternative tender offers will be considered.

F.2.13 Submitting a tender offer: Submissions must be submitted on official submission documentation issued (either in hard copy or in electronic format) by the eThekweni Municipality.

Identification details to be shown on each tender offer package are:

- Contract No. : WS 7411
- Contract Title : Western Waste Management Facility - Contract A – Roads, Platforms, Services and Buildings

The Employer’s address for delivery of tender offers is:

[the Municipal Building, 166 K.E. Masinga Road](#)

and placed in the **Tender Box** located in the ground floor foyer

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

F.2.15 Closing time: The closing time for delivery of tender offers is:

- Date : [Friday, 27 January, 2023](#)
- Time : 11:00

F.2.16 Tender offer validity: The Tender Offer validity period is 12 weeks (84 Days) from the closing time for submission of tenders.

F.2.20 Submit securities, bonds, policies: The tenderer is required to submit with his tender a letter of

intent from an approved insurer undertaking to provide the Performance Bond to the format included in Part T2.2 of this procurement document.

F.2.23 Certificates: Refer to **Part T2.1** for a listing of certificates that must be provided with the tender. All certificates must be valid at the time of tender closing.

CIDB Registration

Tenderers are to include with their submission a printout of their registration with the CIDB, obtained from the CIDB website (<https://registers.cidb.org.za/PublicContractors/ContractorSearch>).

The Joint Venture Grading Designation Calculator should be used when submitting as a Joint Venture (<https://registers.cidb.org.za/PublicContractors/JVGradingDesignationCalc>).

The date of obtaining the above printouts is to be indicated on the printout. Registration with the CIDB must be reflected as “Active” at time of tender closing.

Tax Clearance

SARS has introduced a new Tax Compliance Status System. Tenderers can submit a Tax Compliance Status PIN (TCS PIN) instead of an original Tax Clearance Certificate. This TCS PIN can be used by third parties to certify the taxpayer’s real-time compliance status.

Separate Tax Clearance Certificates / TCS PINs are required for each entity in a Joint Venture.

B-BBEE Status Level of Contribution

The Amended Construction Sector Code (Government Gazette No.41287) is applicable to the B-BBEE compliance measurement of all entities that fall within the Construction Sector.

The requirements for measurement and verification of entities are contained in the “Amended Code Series CSC000: Framework for Measuring Broad Based Black Economic Empowerment in the Construction Sector”, as published in Notice 931 of 2017, Government Gazette No.41287 of 01/12/2017.

The requirements are summarised in the following table:

Enterprise Type	Total Annual Revenue (R million)	Ownership and Annual Turnover
EME: Built Environment Professional	< R1.8m	May present an affidavit OR a certificate issued by the CIPC OR
EME: Contractor	< R3.0m	authorised B-BBEE verification certificate (as below)
Reference should be made to Cl.3.6.2.4.1 of the Amended Construction Sector Code regarding the above exceptions.		
EME: Built Environment Professional	< R6m	Must present an authorised B-BBEE verification certificate by a SANAS accredited Verification Agency
EME: Contractor	< R10m	
QSE: Built Environment Professional	≥ R6.0m and < R25m	
QSE: Contractor	≥ R10.0m and < R50m	
Large Enterprise	>R50m	

The requirements for measurement of Joint Ventures is described in Cl.2.8 of the Amended Construction Sector Code. The compilation of a consolidated verification certificate is required.

B-BBEE Verification Certificates must be from a Verification Agency accredited by the South African National Accreditation System (SANAS).

Central Supplier Database (CSD)

The entities (full) Registration Report, obtained from the National Treasury Central Supplier Database, is to be included in the tender submission (<https://secure.csd.gov.za>).

Separate CSD Registration Reports are required for each entity in a Joint Venture.

F.3: THE EMPLOYER'S UNDERTAKINGS

- F.3.1.1 Respond to requests from the tenderer:** Replace the words “five working days” with “three working days”.
- F.3.2 Issue addenda:** Add the following paragraph: “Addenda will be published, in electronic format, on the National Treasury’s eTenders website. In the event that the Clarification Meeting is compulsory, Addenda will only be issued to those tendering entities appearing on the Clarification Meeting Register.”
- F.3.4 Opening of Tender Submissions:** Tenders will be opened immediately after the closing time for tenders. The public reading of tenders will take place in the SCM Boardroom, 6th Floor, Engineering Unit Building, 166 KE Masinga Road, Durban.
- F.3.11 Evaluation of Tender Offers:** The procedure for evaluation of responsive Tender Offers will be in accordance with the Employer’s current SCM Policy, the Preferential Procurement Policy Framework Act (5 of 2000), and the Preferential Procurement Policy Framework Act Regulations (January 2017).

The procedure for the evaluation of responsive tenders is **Method 2 (Price and Preference with functionality)**.

The **90/10** preference points system will be used where the financial value (incl. VAT) of all responsive tenders received have a value in excess of R 50,000,000. The Formula used to calculate the **Price Points**, and the **Preference Points** that will be allocated, will be according to the specified PPPFA Regulations.

Only locally produced goods, services, or works, or locally manufactured goods, with a stipulated minimum threshold for Local Production and Content will be considered.

- F.3.11.9** The value of W_2 is 100. The Functionality criteria (and sub criteria if applicable) and maximum score in respect of each of the criteria are as follows:

Functionality Criteria / Sub Criteria		Maximum Points Score
Tenderer's Experience		45
Project Organogram and Experience of Key Staff	Contracts Manager	15
	Site agent	20
	Foremen	10
Preliminary Programme		5
Construction Methodology & Quality Control		5
Maximum possible score for Functionality (M_s)		100

The minimum number of evaluation points for Functionality is **60**. Only those tenderers who achieve the minimum number of Functionality evaluation points (or greater) will be eligible to have their tenders further evaluated.

Functionality shall be scored by not less than three evaluators and the scores of each of the evaluators will be averaged, weighted and then totalled to obtain the final score for Functionality. Each evaluation criteria will be assessed in terms of six indicators and scores allocated according to the following table:

Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
0	20	40	60	80	100

Evaluation criteria will be adjudicated according to submissions made in accordance with the following schedules, which are found in Part T2.2: Returnable Schedules:

Functionality Criteria	Returnable Schedules
Tenderer's Experience	<ul style="list-style-type: none"> Experience of Tenderer
Project Organogram and Experience of Key Staff	<ul style="list-style-type: none"> Proposed Organisation and Staffing Key Personnel CV's with Experience of Key Personnel
Preliminary Programme	<ul style="list-style-type: none"> Preliminary Programme
Construction Methodology & Quality Control	<ul style="list-style-type: none"> Construction Approach, Methodology, and Quality Control Schedule of Proposed Subcontractors Plant and Equipment

Unless otherwise stated, evaluation criteria will be adjudicated with respect to the contract specific Scope of Work, as specified in Part C.3. In this regard the following definitions apply to the evaluation criteria prompts for judgement:

- “**successfully completed**” implies a project has been completed on time and to specification;
- “**similar nature**” implies to a combination of, new road construction, road widening/upgrade, bulk earthworks and projects that were of a value of at least 70% of this tender’s value, and had a comparable Scope of Work in terms of technical requirements and operations Or projects at a CIDB grading of one level lower, equal to or higher than the contractor grading designation determined in accordance with the sum tendered for a CE class of construction work;
- “**experience**” implies experience on projects of a similar nature; Similar nature means one, or a combination of, new road construction, road widening/upgrade, bulk earthworks. Services and building experience will also be beneficial;
- “**accredited degree / diploma**” implies a minimum 3 year qualification within the built environment, from a registered University or Institute of Technology.

Criterion: Tenderer’s Experience	
Note: Projects of a similar nature that will be considered shall be one, or a combination of, new road construction, road widening/upgrade, bulk earthworks.	
Level 0	No information provided; OR submission of no substance / irrelevant information provided
Level 1	To have successfully completed <u>1 project</u> of a similar nature within the past 20 years.
Level 2	To have successfully completed <u>2 to 3 projects</u> of a similar nature within the past 20 years.
Level 3	To have successfully completed <u>3 to 5 projects</u> of a similar nature within the past 20 years.
Level 4	To have successfully completed <u>6 to 8 projects</u> of a similar nature within the past 20 years.
Level 5	To have successfully completed <u>9+ projects</u> of a similar nature within the past 20 years.

Criterion: Project Organogram and Experience of Key Staff			
	CONTRACTS MANAGER	SITE AGENT	FOREMAN
Level 0	No information provided OR submission of no substance / irrelevant information provided OR less than 2 year's experience OR Relevant accredited diploma / degree and less than 1 year's experience.	No information provided OR submission of no substance / irrelevant information provided OR less than 2 year's experience. OR Relevant accredited diploma / degree and less than 1 year's experience.	No information provided OR submission of no substance / irrelevant information OR Less than 2 year's experience.
Level 1	Relevant accredited diploma / degree and minimum 1 year's experience.	Relevant accredited diploma / degree and minimum 1 year's experience.	Minimum 2 year's experience.
Level 2	Relevant accredited diploma / degree and minimum 2 year's experience.	Relevant accredited diploma / degree and minimum 2 year's experience.	Minimum 3 year's experience.
Level 3	Relevant accredited diploma / degree and minimum 4 year's experience.	Relevant accredited diploma / degree and minimum 4 year's experience.	Minimum 5 year's experience.
Level 4	Relevant accredited diploma / degree and minimum 7 year's experience.	Relevant accredited diploma / degree and minimum 7 year's experience.	Minimum 8 year's experience.
Level 5	Relevant accredited diploma / degree and minimum 9 year's experience.	Relevant accredited diploma / degree and minimum 9 year's experience.	Minimum 10 year's experience.

Criterion: Preliminary Programme	
Level 0	No information provided; OR submission of no substance / irrelevant information provided
Level 1	The tenderer has misunderstood certain aspects of the Scope of Work and does not deal with the critical aspects of the project.
Level 2	The programme does not adequately deal with the critical characteristics of the project or the plan and manner in which risk is to be managed.
Level 3	Programme covers all the applicable individual activities which are in an acceptable sequence, with appropriate durations, and is in accordance with generally accepted construction practice, and is in line with Clause 1.1.1.14 of the Conditions of Contract (time for achieving Practical Completion). Programme must show the critical path
Level 4	In addition to the requirements of level 3, the programme covers all activities, meetings, requirements and is sufficiently flexible to accommodate changes that may be required during execution within project completion time.
Level 5	In addition to the requirements of level 4, the program covers all activities, meetings, requirements and accommodates changes and details ways to improve the overall project outcome within the completion time.

Criterion: Construction Methodology & Quality Control	
Level 0	No information provided; OR submission of no substance / irrelevant information provided
Level 1	The technical approach / methodology, plant and equipment is poor and gives no relevant information in satisfying the projects objectives Quality control statement is poor with no relevant information
Level 2	The technical approach and/or methodology is less than acceptable and unlikely to satisfy project objectives or requirements. Plant and equipment is unlikely to provide adequate protection of the works. Quality control statement is generic.
Level 3	Brief overview of a site specific methodology which encompasses all programmed activities in appropriate order and includes staff, plant and equipment resources, including subcontractors if applicable, a brief description of preparatory work, construction processes including finishing works for each activity. Quality control statements are site specific with statements covering required sampling and testing requirements for the programmed activities.
Level 4	The methodology is specifically tailored to address specific project requirements. The methods and approach to managing risk etc. are specifically tailored to the critical characteristics of the project. The plant and equipment are specifically tailored to the project requirements and are sufficiently adaptable to accommodate changes that may be required during execution Quality control statements are site specific covering required sampling and testing for programmed activities including site specific quality control checklist for programmed activities
Level 5	Besides meeting the “above Level 4” rating, the important issues are approached in an innovative and efficient way, indicating that the tenderer has excellent knowledge of working in the projects environment and producing the required final product. Plant and equipment proposals and ownership/provision arrangements are most likely to ensure a satisfactory project outcome. Quality control statements are site specific covering required sampling and testing for all programmed activities including site specific quality control checklist for all programmed activities

- F.3.13 Acceptance of tender offer:** In addition to the requirements of Clause F.3.13 of the Standard Conditions of Tender, tender offers will only be accepted if:
- (a) The tenderer submits a valid Tax Clearance Certificate OR Tax Compliance Status PIN, issued by the TCS System of the South African Revenue Services, or has made arrangements to meet outstanding tax obligations;
 - (b) The tenderer is registered, and “Active”, with the Construction Industry Development Board, at time of tender closing, in an appropriate contractor grading designation;
 - (c) The tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;
 - (d) The tenderer has not:
 - Abused the Employer’s Supply Chain Management System; or
 - Failed to perform on any previous contract and has been given a written notice to this effect;
 - (e) The tenderer has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the tenderer’s ability to perform the contract in the best interests of the employer or potentially compromise the tender process;
 - (f) The tenderer is registered and in good standing with the compensation fund or with a licensed compensation insurer;
 - (g) The employer is reasonably satisfied that the tenderer has in terms of the Construction Regulations, 2014, issued in terms of the Occupational Health and Safety Act, 1993, the necessary competencies and resources to carry out the work safely.
 - (h) If this tender is subject to “Local Content and Production”, the tenderer must complete and sign MBD 6.2 and attach Annexure C (of SATS 1286:2011).
 - (i) The Municipality does not bind itself to accept the lowest or any tender. It reserves the right to accept the whole or any part of a tender to place orders. Bidders shall not bind the Municipality to any minimum quantity per order. The successful Tenderer (s) shall be bound to provide any quantities stipulated in the specification.
- F.3.15 Complete adjudicator’s contract:** Refer to the **General Conditions of Contract** and the **Contract Data**.
- F.3.17 Copies of contract:** The number of paper copies of the signed contract to be provided by the Employer is **ONE (1)**. **Bidders are required to submit their complete tender scanned and saved onto a memory stick.**

The additional conditions of tender are:

ACT.1 Appeals

In terms of Regulation 49 of the Municipal Supply Chain Management Regulations persons aggrieved by decisions or actions taken by the Municipality, may lodge an appeal within 14 days of the decision or action, in writing to the Municipality. All appeals (clearly setting out the reasons for the appeal) and queries with regard to the decision of award are to be directed to:

The City Manager

Attention Ms S. Pillay eMail: Simone.Pillay@durban.gov.za

P O Box 1394

DURBAN, 4000

ACT.2 Prohibition on awards to persons in the service of the state

Clause 44 of the Supply Chain Management Regulations states that the Municipality or Municipal Entity may not make any award to a person:

- (a) Who is in the service of the State;
- (b) If that person is not a natural person, of which a director, manager, principal shareholder or stakeholder is a person in the service of the state; or
- (c) Who is an advisor or consultant contracted with the municipality or a municipal entity.

Should a contract be awarded, and it is subsequently established that Clause 44 has been breached, the Employer shall have the right to terminate the contract with immediate effect.

ACT.3 Code of Conduct and Local Labour

The Tenderers shall make themselves familiar with the requirements of the following policies that are available on web address: <ftp://ftp.durban.gov.za/cesu/StdContractDocs/>:

- Code of Conduct;
- The Use of CLOs and Local Labour.

PART T2: RETURNABLE DOCUMENTS
T2.1: LIST OF RETURNABLE DOCUMENTS

T2.1.1 General

The Tender Document must be submitted as a whole. All forms must be properly completed as required, and the document shall not be taken apart or altered in any way whatsoever. The Tenderer is required to complete each and every Schedule and Form listed below to the best of his ability as the evaluation of tenders and the eventual contract will be based on the information provided by the Tenderer. Failure of a Tenderer to complete the Schedules and Forms to the satisfaction of the Employer will inevitably prejudice the tender and may lead to rejection on the grounds that the tender is not responsive.

T2.1.2 Returnable Schedules, Forms and Certificates

Company Specific

Certificate of Attendance at Clarification Meeting	16
Certificate of Authority	17
Declaration of Municipal Fees	18
Compulsory Enterprise Questionnaire	19
Tax Compliance Status PIN / Tax Clearance Certificate	21
B-BBEE Status Level of Contribution Certificate	22
CSD Registration Report	23
Contractor's Health and Safety Declaration	24
Verification of CIDB Registration and Status	26

Consolidated MBD Documents

MBD2: Tax Clearance Certificate Requirements	29
MBD4: Declaration of Interest	29
MBD5: Declaration for Procurement Above R10 Million (if applicable)	30
MBD6.1: Preference Points Claim Form ITO the Preferential Regulations	30
MBD6.2: Declaration Certificate for Local Production and Content (if applicable)	30
MBD8: Declaration of Bidder's Past SCM Practices	32
MBD9: Certificate of Independent Bid Determination	32

Technical and Evaluation

Experience of Tenderer	35
Proposed Organisation and Staffing	36
Key Personnel	37
Experience of Key Personnel	38
Preliminary Programme	42
Construction Approach, Methodology, and Quality Control	43
Schedule of Proposed Subcontractors	44
Plant and Equipment	45
Contractor's Health and Safety Plan	46

Contractual

Joint Venture Agreements (if applicable)	47
Record of Addenda to Tender Documents	48
Form of Offer	49
Bill of Quantities	63

T2.1.3 Preferential Procurement Schedules and Affidavits

In the event of the Tenderer not being registered with the eThekwini Municipality, the tenderer must register on the internet at www.durban.gov.za by following these links:

- eThekwini Municipality
 - City Government
 - Administration
 - Administrative Clusters
 - Finance
 - Supply Chain Management
 - Accredited Supplier and Contractor's Database.

NOTES

- (a) The information for registration as in the possession of the eThekwini Municipality will apply.
- (b) It is the Tenderer's responsibility to ensure that the details as submitted to the Municipality are correct.
- (c) Tenderers are to register prior to the submission of tenders.

T2.2: RETURNABLE SCHEDULES, FORMS, AND CERTIFICATES

The returnable schedules, forms, and certificates as listed in T2.1.2 can be found on the pages 16 to 49.

CERTIFICATE OF ATTENDANCE AT CLARIFICATION MEETING / SITE INSPECTION

This is to certify that:

(tenderer name)

of (address)

.....

was represented by the person(s) named below at the Clarification Meeting held for all tenderers, the details of which are stated in the Tender Data (F.2.7).

I / We acknowledge that the purpose of the meeting was to acquaint myself / ourselves with the site of the works and / or matters incidental to doing the work specified in the tender documents in order for me / us to take account of everything necessary when compiling our rates and prices included in the tender.

Particulars of person(s) attending the meeting:

Name:

Name:

Signature:

Signature:.....

Capacity:

Capacity:.....

Attendance of the above person(s) at the meeting is confirmed by the Employer's Agent's Representative, namely:

Name:

Signature:

Date:

CERTIFICATE OF AUTHORITY

Indicate the status of the tenderer by ticking the appropriate box hereunder.

COMPANY	<input type="checkbox"/>	CLOSE CORPORATION	<input type="checkbox"/>	PARTNERSHIP	<input type="checkbox"/>	JOINT VENTURE	<input type="checkbox"/>	SOLE PROPRIETOR	<input type="checkbox"/>
Refer to Notes at the bottom of the page									

I / We, the undersigned, being the Chairperson (Company), Member(s) (Close Corporation), Partners (Partnership), Sole Owner (Sole Proprietor), Lead Partner (JV), in the company / business trading as:

.....

hereby authorise Mr/Mrs/Ms

acting in the capacity of

to sign all documents in connection with the tender for **Contract No. WS 7411** and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

Notes

The following documents must be attached to the back inside cover to this procurement document:

- If a Company : a "Resolution of the Board" in this regard.
- If a Joint Venture : a "Power of Attorney" signed by the legally authorised signatories of all the partners to the Joint venture.

DECLARATION OF MUNICIPAL FEES

I, the undersigned, do hereby declare that the Municipal fees of

.....
 (full name of Company / Close Corporation / partnership / sole proprietary/Joint Venture)
 (hereinafter referred to as the TENDERER) are, as at the date hereunder, fully paid or an Acknowledgement of Debt has been concluded with the Municipality to pay the said charges in instalments.

The following account details relate to property of the said TENDERER:

<u>Account</u>	<u>Account Number:</u> to be completed by tenderer.
Consolidated Account No.	<input type="text"/>
Electricity	<input type="text"/>
Water	<input type="text"/>
Rates	<input type="text"/>
JSB Levies	<input type="text"/>
<u>Other</u>	<input type="text"/>
<u>Other</u>	<input type="text"/>

I acknowledge that should the aforesaid Municipal charges fall into arrears, the Municipality may take such remedial action as is required, including termination of any contract, and any payments due to the Contractor by the Municipality shall be first set off against such arrears. ATTACHED, to the back inside cover of this document, please find copies of the above account's and or agreements signed with the municipality.

- Where the TENDERER'S place of business or business interests are outside the jurisdiction of eThekweni municipality, a copy of the accounts/agreements from the relevant municipality must be attached (to the back inside cover of this document).
- Where the tenderer's Municipal Accounts are part of their lease agreement, then a copy of the agreement, or official letter to that effect is to be attached (to the back inside cover of this document).

NAME : (Block Capitals)

SIGNATURE : DATE:
 (of person authorised to sign on behalf of the Tenderer)

COMPULSORY ENTERPRISE QUESTIONNAIRE

The following particulars must be furnished. In the case of a joint venture, a separate questionnaire in respect of each partner must be completed and submitted.

- 1) **Name of enterprise:**
- 2) **VAT registration number, if any:**
- 3) **CIDB registration number, if any:**
- 4) **Particulars of sole proprietors and partners in partnerships**

Full Name	Identity number*	Personal income tax number *

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

5) **Particulars of companies and close corporations**

Company registration number, if applicable:

Close corporation number, if applicable:

Tax Reference number, if any:

6) **Record in the service of the state**

Indicate by marking the relevant boxes with a cross, if any sole proprietor, partner in a partnership or director, manager, principal shareholder or stakeholder in a company or close corporation is currently or has been within the last 12 months in the service of any of the following:

- a member of any municipal council
- a member of any provincial legislature
- a member of the National Assembly or the National Council of Province
- a member of the board of directors of any municipal entity
- an official of any municipality or municipal entity
- an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999)
- a member of an accounting authority of any national or provincial public entity
- an employee of Parliament or a provincial legislature

Name of sole proprietor, partner, director, manager, principal shareholder or stakeholder	Name of institution, public office, board or organ of state and position held	Status of service (tick appropriate column)	
		Current	Within last 12 months

Insert separate page if necessary

7) **Record of spouses, children and parents in the service of the state**

Indicate by marking the relevant boxes with a cross, if any spouse, child or parent of a sole proprietor, partner in a partnership or director, manager, principal shareholder or stakeholder in a company or close corporation is currently or has been within the last 12 months in the service of any of the following:

- | | |
|--|---|
| <input type="checkbox"/> a member of any municipal council | <input type="checkbox"/> an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999) |
| <input type="checkbox"/> a member of any provincial legislature | <input type="checkbox"/> a member of an accounting authority of any national or provincial public entity |
| <input type="checkbox"/> a member of the National Assembly or the National Council of Province | <input type="checkbox"/> an employee of Parliament or a provincial legislature |
| <input type="checkbox"/> a member of the board of directors of any municipal entity | |
| <input type="checkbox"/> an official of any municipality or municipal entity | |

Name of spouse, child or parent	Name of institution, public office, board or organ of state and position held	Status of service (tick appropriate column)	
		Current	Within last 12 months

Insert separate page if necessary

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

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

Signed Date

Name Position

Enterprise Name

TAX COMPLIANCE STATUS PIN / TAX CLEARANCE CERTIFICATE

Reference is made to F.2.23 of the Conditions of Tender.

SARS has introduced a new Tax Compliance Status System. Tenderers can submit a Tax Compliance Status PIN (TCS PIN) instead of an original Tax Clearance Certificate. This TCS PIN can be used by third parties to certify the taxpayer's real-time compliance status.

Separate Tax Clearance Certificates / TCS PINs are required for each entity in a Joint Venture.

Tenderers are to attach to this page a printout of their Tax Compliance Status PIN (TCS PIN) OR an original Tax Clearance Certificate.

NAME : (Block Capitals)

SIGNATURE : DATE:
(of person authorised to sign on behalf of the Tenderer)

B-BBEE STATUS LEVEL OF CONTRIBUTION CERTIFICATE

Reference is made to F.2.23 of the Conditions of Tender.

The Amended Construction Sector Code (Government Gazette No.41287) is applicable to the B-BBEE compliance measurement of all entities that fall within the Construction Sector.

The requirements for measurement and verification of entities are contained in the “Amended Code Series CSC000: Framework for Measuring Broad Based Black Economic Empowerment in the Construction Sector”, as published in Notice 931 of 2017, Government Gazette No.41287 of 01/12/2017.

The requirements are summarised in the following table:

Enterprise Type	Total Annual Revenue (R million)	Ownership and Annual Turnover
EME: Built Environment Professional	< R1.8m	May present an affidavit OR a certificate issued by the CIPC OR
EME: Contractor	< R3.0m	authorised B-BBEE verification certificate (as below)
Reference should be made to Cl.3.6.2.4.1 of the Amended Construction Sector Code regarding the above exceptions.		
EME: Built Environment Professional	< R6m	Must present an authorised B-BBEE verification certificate by a SANAS accredited Verification Agency
EME: Contractor	< R10m	
QSE: Built Environment Professional	≥ R6.0m and < R25m	
QSE: Contractor	≥ R10.0m and < R50m	
Large Enterprise	>R50m	

The requirements for measurement of Joint Ventures is described in Cl.2.8 of the Amended Construction Sector Code. The compilation of a consolidated verification certificate is required.

Tenderers are to attach to this page an affidavit, or a B-BBEE certificate issued by an authorised SANAS accredited Verification Agency.

NAME : (Block Capitals)

SIGNATURE : DATE:
(of person authorised to sign on behalf of the Tenderer)

CSD REGISTRATION REPORT

Reference is made to F.2.23 of the Conditions of Tender.

Clause F.2.1 of the Conditions of Tender – “Eligibility”, requires a tenderer to be registered at the time of tender closing on the National Treasury Central Supplier Database (CSD) as a service provider.

Tenderers are to attach to this page a printout of their CSD Registration Report, as obtained from the National Treasury’s CSD website <https://secure.csd.gov.za/Account/Login>. The date of obtaining the printout is to be indicated on the printout.

The following is an example of the beginning of the printout obtained from the above website.

CENTRAL SUPPLIER DATABASE FOR GOVERNMENT

Report Date: _____

Report Ran By: _____

CSD REGISTRATION REPORT

SUPPLIER IDENTIFICATION

Supplier number	_____	Have Bank Account	_____
Is supplier active?	_____	Total annual turnover	_____
Supplier type	_____	Financial year start date	_____
Supplier sub-type	_____	Registration date	_____
Legal name	_____	Created by	_____
Trading name	_____	Created date	_____
Identification type	_____	Edit by	_____
Government breakdown	_____	Edit date	_____
Business status	_____	Restricted Supplier	_____
Country of origin	_____	Restriction Last Verification Date	_____
South African company/CC registration number	_____		

NAME : (Block Capitals)

SIGNATURE : DATE:
(of person authorised to sign on behalf of the Tenderer)

CONTRACTOR'S HEALTH AND SAFETY DECLARATION

Refer to Clause F3.11.9 for Functionality Points evaluation prompts (if applicable).

In terms of Clause 5(1)(h) of the OHS Act 1993 Construction Regulations 2014 (referred to as "the Regulations" hereafter), a Principal Contractor may only be appointed to perform construction work if the Client is satisfied that the Principal Contractor has the necessary competencies and resources to carry out the work safely in accordance with the Occupational Health and Safety Act No 85 of 1993 and the OHS Act 1993 Construction Regulations 2014.

To that effect a person duly authorised by the tenderer must complete and sign the declaration hereafter in detail.

Declaration by Tenderer

1. I the undersigned hereby declare and confirm that I am fully conversant with the Occupational Health and Safety Act No 85 of 1993 (as amended by the Occupational Health and Safety Amendment Act No 181 of 1993), and the OHS Act 1993 Construction Regulations 2014.
2. I hereby declare that my company has the competence and the necessary resources to safely carry out the construction work under this contract in compliance with the Construction Regulations and the Employer's Health and Safety Specifications.
3. I propose to achieve compliance with the Regulations by one of the following:

Tenderers are to Circle Applicable

- | | |
|---|---------------|
| (a) From my own competent resources as detailed in 4(a) hereafter: | YES NO |
| (b) From my own resources still to be appointed or trained until competency is achieved, as detailed in 4(b) hereafter: | YES NO |
| (c) From outside sources by appointment of competent specialist Subcontractors as detailed in 4(c) hereafter: | YES NO |

4. Details of resources I propose:

(Note: Competent resources shall include safety personnel such as a construction supervisor and construction safety officer as defined in Regulation 8, and competent persons as defined in Regulations 9, 10, 11, 12, 13, 14, 16, 17, 20, 21, 22, 23(1), 24, 25, 26, 27, 28 and 29, as applicable).

- (a) Details of the competent and qualified key persons from my company's own resources, who will form part of the contract team:

NAMES OF COMPETENT PERSONS	POSITIONS TO BE FILLED BY COMPETENT PERSONS

(b) Details of training of persons from my company's own resources (or to be hired) who still have to be trained to achieve the necessary competency:

(i) By whom will training be provided?

(ii) When will training be undertaken?

(iii) List the positions to be filled by persons to be trained or hired:
.....
.....

(c) Details of competent resources to be appointed as subcontractors if competent persons cannot be supplied from own company:

Name of proposed subcontractor:

Qualifications or details of competency of the subcontractor:
.....
.....

5. I hereby undertake, if my tender is accepted, to provide, before commencement of the works under the contract, a suitable and sufficiently documented Health and Safety Plan in accordance with Regulation 7(1) of the Construction Regulations, which plan shall be subject to approval by the Client.

6. I confirm that copies of my company's approved Health and Safety Plan, the Client's Safety Specifications as well as the OHSa 1993 Construction Regulations 2014 will be provided on site and will at all times be available for inspection by the Principal Contractor's personnel, the Client's personnel, the Employer's Agent, visitors, and officials and inspectors of the Department of Labour.

7. I hereby confirm that adequate provision has been made in my tendered rates and prices in the Bill of Quantities to cover the cost of all resources, actions, training and all health and safety measures envisaged in the OHSa 1993 Construction Regulations 2014, and that I will be liable for any penalties that may be applied by the Client in terms of the said Regulations (Regulation 33) for failure on the Principal Contractor's part to comply with the provisions of the Act and the Regulations.

8. I agree that my failure to complete and execute this declaration to the satisfaction of the Client will mean that I am unable to comply with the requirements of the OHSa 1993 Construction Regulations 2014, and accept that my tender will be prejudiced and may be rejected at the discretion of the Client.

NAME : (Block Capitals)

SIGNATURE : DATE:
(of person authorised to sign on behalf of the Tenderer)

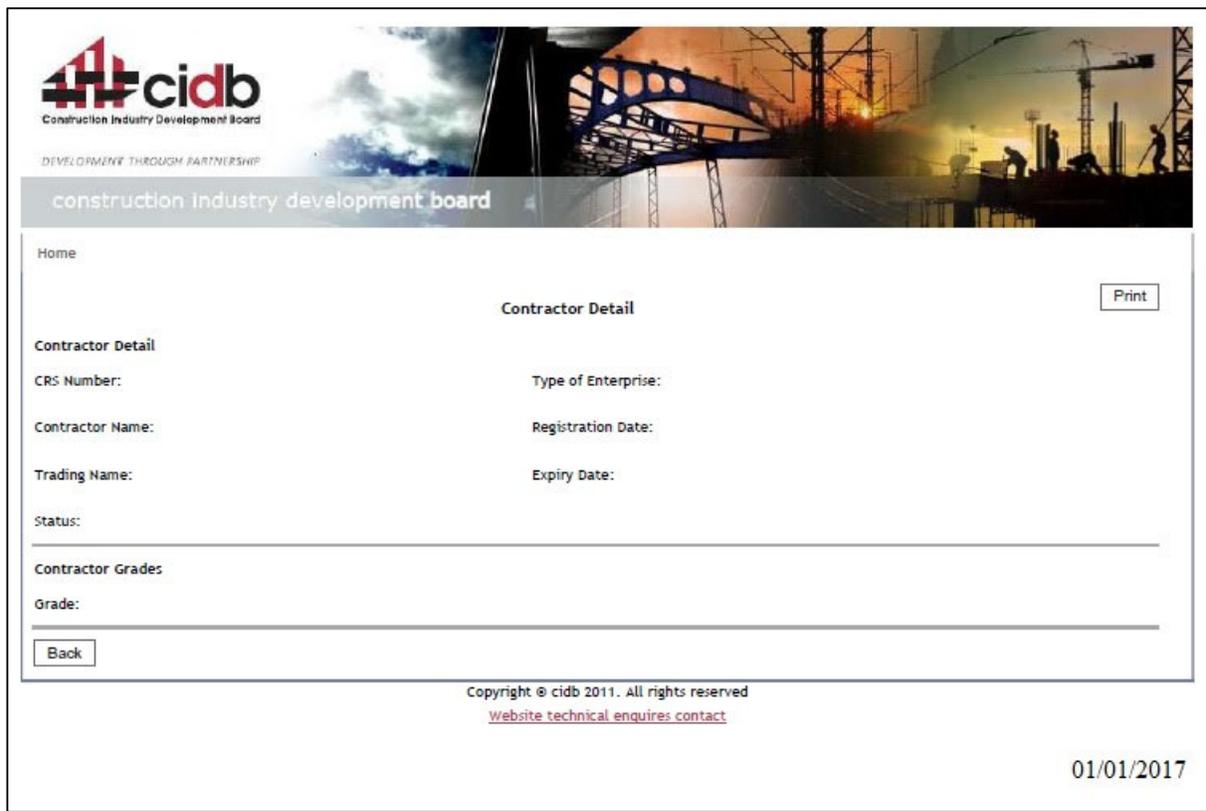
ELIGIBILITY: VERIFICATION OF CIDB REGISTRATION AND STATUS

Reference is made to F.2.23 of the Conditions of Tender.

Clause F.2.1.1 of the Conditions of Tender – “Eligibility”, requires a tenderer to be registered, as “Active”, with the CIDB (at time of tender closing), in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a CE 8 class of construction work.

Tenderers are to attach to this page a printout of their registration with the CIDB, as obtained from the CIDB website <https://registers.cidb.org.za/PublicContractors/ContractorSearch>. The date of obtaining the printout is to be indicated on the printout.

The following is an example of a printout obtained from the above website.



NAME : (Block Capitals)

SIGNATURE : DATE:
 (of person authorised to sign on behalf of the Tenderer)

CONSOLIDATED MUNICIPAL BIDDING DOCUMENTS

The following SECTIONS are required to be completed as part of this procurement document

<u>Section</u>	<u>Description</u>	<u>Required?</u>
A	General Enterprise Information	Yes
B	MBD2: Tax Clearance Certificate Requirements	Yes
C	MBD4: Declaration of Interest	Yes
D	MBD5: Declaration for Procurement Above R10 Million	Yes
E	MBD6.1: Preference Points Claim Form ITO the Preferential Regulations	Yes
F	MBD6.2: Declaration Certificate for Local Production and Content for Designated Sectors.....	No
G	MBD8: Declaration of Bidder’s Past SCM Practices	Yes
H	MBD9: Certificate of Independent Bid Determination	Yes
I	Confirmations, Authorities, Certifications, Acknowledgements and Signatures	Yes

NOTES

- MBD4. MSCM Regulations: “in the service of the state” means to be:
- (a) a member of –
 - (i) any municipal council;
 - (ii) any provincial legislature; or
 - (iii) the national Assembly or the national Council of provinces;
 - (b) a member of the board of directors of any municipal enterprise;
 - (c) an official of any municipality or municipal enterprise;
 - (d) an employee of any national or provincial department, national or provincial public enterprise or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);
 - (e) a member of the accounting authority of any national or provincial public enterprise; or
 - (f) an employee of Parliament or a provincial legislature.
- “Shareholder” means a person who owns shares in the company and is actively involved in the management of the company or business and exercises control over the company.
- MBD9. Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

Ref	Description	Complete or Circle Applicable
-----	-------------	-------------------------------

SECTION A: GENERAL ENTERPRISE INFORMATION

1.0	Full Name of bidder or his or her representative	
1.1	ID Number of bidder or his or her representative	
1.2	Position occupied in the enterprise	
2.0	Name of enterprise:	
2.1	Tax Reference number, if any:	
2.2	VAT registration number, if any:	
2.3	CIDB registration number, if any:	
2.4	Company registration number, if applicable:	
2.5	Close corporation number, if applicable:	
2.6	eThekwini Supplier Database: Reference number (PR), if any:	
2.7	South African Revenue Service: Tax Compliance Status PIN:	
2.8	National Treasury Central Supplier Database Registration number	
2.9	Department of Labour: Registration number	
2.10	Department of Labour: Letter of Good Standing Certificate number	

3.0 The names of all directors / trustees / shareholders / members / sole proprietors / partners in partnerships, their individual identity numbers and state employee numbers must be indicated below. In the case of a joint venture, information in respect of each partnering enterprise must be completed and submitted

Full Name	Identity No.	State Employee No.	Personal income tax No. *
Use additional pages if necessary			

Ref	Description	Complete or Circle Applicable
-----	-------------	-------------------------------

SECTION B: MBD 2: TAX CLEARANCE CERTIFICATE REQUIREMENTS

It is a condition of bid that the taxes of the successful bidder must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the bidder’s tax obligations.

- 1.0 In order to meet this requirement bidders are required to complete the TCC 001: “Application for a Tax Clearance Certificate” form and submit it to any SARS branch office nationally. The Tax Clearance Certificate Requirements are also applicable to foreign bidders / individuals who wish to submit bids.
- 2.0 SARS will then furnish the bidder with a Tax Clearance Certificate that will be valid for a period of 1 (one) year from the date of approval.
- 3.0 The original Tax Clearance Certificate must be submitted together with the bid (attached to the inside back cover of this procurement document). Failure to submit the original and valid Tax Clearance Certificate will result in the invalidation of the bid. Certified copies of the Tax Clearance Certificate will not be acceptable.
- 4.0 In bids where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Clearance Certificate.
- 5.0 Copies of the TCC 001: “Application for a Tax Clearance Certificate” form are available from any SARS branch office nationally or on the website www.sars.gov.za.
- 6.0 Applications for the Tax Clearance Certificates may also be made via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.
- 7.0 Notwithstanding Clauses 1.0 to 6.0 above: Since 18 April 2016, SARS has introduced a new Tax Compliance Status System (TCS). As part of this enhanced system, tenderers can now submit a Tax Compliance Status PIN instead of an original Tax Clearance Certificate (TCC). This TCS PIN can be used by third parties to certify the taxpayer’s real-time compliance status. This number, if available, is to be entered in Item 2.7 of Section A of these consolidated Municipal Bidding Documents.
For further particulars please contact your nearest SARS branch, or call the SARS Contact Centre on 0800 00 7277, or log onto SARS eFiling.

SECTION C: MBD 4: DECLARATION OF INTEREST

No bid will be accepted from persons “in the service of the state”. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority and/or take an oath declaring his/her interest. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

1.0 Are you presently in the service of the state? If yes, furnish particulars:	YES	NO
2.0 Have you been in the service of the state for the past twelve months? If yes, furnish particulars:	YES	NO
3.0 Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid? If yes, furnish particulars:	YES	NO
4.0 Are you, aware of any relationship (family, friend, other) between any other bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid? If yes, furnish particulars:	YES	NO
5.0 Are any of the company’s directors, trustees, managers, principle shareholders or stakeholders in service of the state? If yes, furnish particulars:	YES	NO
6.0 Are any spouse, child or parent of the company’s directors, trustees, managers, principle shareholders or stakeholders in service of the state? If yes, furnish particulars:	YES	NO
7.0 Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract ? If yes, furnish particulars:	YES	NO
8.0 The names of all directors / trustees / shareholders / members / sole proprietors / partners in partnerships, their individual identity numbers and state employee numbers are indicated in SECTION A of these Consolidated Municipal Bidding documents.		

Ref	Description	Complete or Circle Applicable	
SECTION D: MBD 5: DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED)			
For all procurement expected to exceed R10 million (all applicable taxes included), bidders must complete the following questionnaire.			
1.0	Are you by law required to prepare annual financial statements for auditing? If YES, you will be required to submit audited annual financial statements (on request during the tender evaluation period) for the past three years or since the date of establishment if established during the past three years.	YES	NO
2.0	Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days? If NO, this serves to certify that the bidder has no undisputed commitments for municipal services towards any municipality for more than three months or other service provider in respect of which payment is overdue for more than 30 days. If YES, provide particulars on a letterhead. (Attach this letter to the back inside cover of this procurement document).	YES	NO
3.0	Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract? If YES, provide particulars on a letterhead. (Attach this letter to the back inside cover of this procurement document).	YES	NO
4.0	Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic? If YES, provide particulars on a letterhead. (Attach this letter to the back inside cover of this procurement document).	YES	NO

SECTION E: MBD 6.1: PREFERENCE POINTS CLAIM ITO THE PREFERENTIAL REGULATIONS			
Preference points for this tender shall be awarded as per the Tender Data and the Preferential Procurement Regulations (2017). Failure on the part of a tenderer to submit a B-BBEE Verification Certificate from a Verification Agency accredited by the South African Accreditation System (SANAS), or a Sworn Affidavit for an EME, or sworn affidavit for a QSE (in line with the revised BBBEE codes of Good Practice), together with the bid will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed. The Employer reserves the right to require of a tenderer, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the Employer.			
1.0	B-BBEE Status Level of Contribution claimed: Will any portion of the contract be sub-contracted? If YES, indicate: (i) what percentage of the contract will be subcontracted? (ii) the name of the sub-contractor? Name: (iii) the B-BBEE status level of the sub-contractor?	YES	NO
2.0	(iv) whether the sub-contractor is an EME?	YES	NO

The undersigned, certify that the B-BBEE status level of contribution indicated in paragraph 1.0 above qualifies the company / firm for preference points and acknowledges that the remedies as per Clause 14 of the Preferential Procurement Regulations (2017) shall apply.

SECTION F: MBD 6.2: DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS	
This Municipal Bidding Document (MBD) must form part of all bids invited. It contains general information and serves as a declaration form for local content (local production and local content are used interchangeably). Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2017 and the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2011 (Edition 1) and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].	

- 1.0 General Conditions
- 1.1 Preferential Procurement Regulations, 2017 (Regulation 8) makes provision for the promotion of local production and content.
- 1.2 Regulation 8.(1) prescribes that in the case of designated sectors, where in the award of bids local production and content is of critical importance, such bids must be advertised with the specific bidding condition that only locally produced goods, services or works or locally manufactured goods, with a stipulated minimum threshold for local production and content will be considered.
- 1.3 Where necessary, for bids referred to in paragraph 1.2 above, a two-stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.
- 1.4 A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.

Ref	Description	Complete or Circle Applicable								
1.5	<p>The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:</p> $LC = [1 - x / y] * 100$ <p>Where: x is the imported content in Rand y is the bid price in Rand excluding value added tax (VAT).</p> <p>Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by the South African Reserve Bank (SARB) at 12:00 on the date of advertisement of the bid as required in paragraph 4.1 below.</p> <p>The SABS approved technical specification number SATS 1286:2011 is accessible on http://www.thedti.gov.za/industrial development/ip.jsp at no cost.</p>									
1.6	<p>A bid may be disqualified if –</p> <p>(a) this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule) are not submitted as part of the bid documentation; and</p> <p>(b) the bidder fails to declare that the Local Content Declaration Templates (Annex C, D and E) have been audited and certified as correct.</p>									
2.0	Definitions									
2.1	“bid” includes written price quotations, advertised competitive bids or proposals;									
2.2	“bid price” price offered by the bidder, excluding value added tax (VAT);									
2.3	“contract” means the agreement that results from the acceptance of a bid by an organ of state;									
2.4	“designated sector” means a sector, sub-sector or industry that has been designated by the Department of Trade and Industry in line with national development and industrial policies for local production, where only locally produced services, works or goods or locally manufactured goods meet the stipulated minimum threshold for local production and content;									
2.5	“duly sign” means a Declaration Certificate for Local Content that has been signed by the Chief Financial Officer or other legally responsible person nominated in writing by the Chief Executive, or senior member / person with management responsibility (close corporation, partnership or individual).									
2.6	“imported content” means that portion of the bid price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or its subcontractors) and which costs are inclusive of the costs abroad (this includes labour and intellectual property costs), plus freight and other direct importation costs, such as landing costs, dock duties, import duty, sales duty or other similar tax or duty at the South African port of entry;									
2.7	“local content” means that portion of the bid price which is not included in the imported content, provided that local manufacture does take place;									
2.8	“stipulated minimum threshold” means that portion of local production and content as determined by the Department of Trade and Industry; and									
2.9	“sub-contract” means the primary contractor’s assigning, leasing, making out work to, or employing another person to support such primary contractor in the execution of part of a project in terms of the contract.									
3.0	<p>The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid is/are as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Description of services, works or goods</th> <th style="text-align: right;">Stipulated minimum threshold</th> </tr> </thead> <tbody> <tr> <td>.....</td> <td style="text-align: right;">..... %</td> </tr> <tr> <td>.....</td> <td style="text-align: right;">..... %</td> </tr> <tr> <td>.....</td> <td style="text-align: right;">..... %</td> </tr> </tbody> </table>	Description of services, works or goods	Stipulated minimum threshold % % %	
Description of services, works or goods	Stipulated minimum threshold									
..... %									
..... %									
..... %									
4.0	Does any portion of the services, works or goods offered have any imported content?	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 10px;">YES</td> <td style="padding: 2px 10px;">NO</td> </tr> </table>	YES	NO						
YES	NO									
4.1	<p>If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by the SARB for the specific currency at 12:00 on the date of advertisement of the bid.</p> <p>The relevant rates of exchange information is accessible on www.reservebank.co.za.</p> <p>Indicate the rate(s) of exchange against the appropriate currency in the table below (refer to Annex A of SATS 1286:2011):</p> <p>US Dollar: <input style="width: 50px;" type="text"/> Pound Sterling: <input style="width: 50px;" type="text"/> Euro: <input style="width: 50px;" type="text"/> Yen: <input style="width: 50px;" type="text"/> Other: <input style="width: 50px;" type="text"/></p> <p>NB: Bidders must submit proof of the SARB rate (s) of exchange used.</p>									
5.0	Were the Local Content Declaration Templates (Annex C, D and E) audited and certified as correct?	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 10px;">YES</td> <td style="padding: 2px 10px;">NO</td> </tr> </table>	YES	NO						
YES	NO									
5.1	<p>If yes, provide the following particulars:</p> <p>(a) Full name of auditor:</p> <p>(b) Practice number: (c) Telephone number: Cell number:</p> <p>(d) Email address:</p> <p>(Documentary proof regarding the declaration will, when required, be submitted to the satisfaction of the Accounting Officer / Accounting Authority)</p>									
6.0	Where, after the award of a bid, challenges are experienced in meeting the stipulated minimum threshold for local content the dti must be informed accordingly in order for the dti to verify and in consultation with the Accounting Officer / Accounting Authority provide directives in this regard.									

SECTION G: MBD8: DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES				
<p>This Municipal Bidding Document must form part of all bids invited. It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.</p> <p>The bid of any bidder may be rejected if that bidder, or any of its directors have:</p> <p>a) abused the municipal entity's supply chain management system or committed any improper conduct in relation to such system;</p> <p>b) been convicted for fraud or corruption during the past five years;</p> <p>c) wilfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or</p> <p>d) been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).</p> <p>In order to give effect to the above, the following questions must be answered.</p>				
1.0	<p>Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector?</p> <p>Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer / Authority of the institution that imposed the restriction after the audi alteram partem rule was applied. The Database of Restricted Suppliers now resides on the National Treasury's website (www.treasury.gov.za) and can be accessed by clicking on its link at the bottom of the home page.</p> <p>If yes, furnish particulars:</p>	<table border="1"> <tr> <td>YES</td> <td>NO</td> </tr> </table>	YES	NO
YES	NO			
2.0	<p>Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)?</p> <p>The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.</p> <p>If yes, furnish particulars:</p>	<table border="1"> <tr> <td>YES</td> <td>NO</td> </tr> </table>	YES	NO
YES	NO			
3.0	<p>Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?</p> <p>If yes, furnish particulars:</p>	<table border="1"> <tr> <td>YES</td> <td>NO</td> </tr> </table>	YES	NO
YES	NO			
4.0	<p>Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?</p> <p>If yes, furnish particulars:</p>	<table border="1"> <tr> <td>YES</td> <td>NO</td> </tr> </table>	YES	NO
YES	NO			
5.0	<p>Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?</p> <p>If yes, furnish particulars:</p>	<table border="1"> <tr> <td>YES</td> <td>NO</td> </tr> </table>	YES	NO
YES	NO			

SECTION H: MBD9: CERTIFICATE OF INDEPENDENT BID DETERMINATION
<p>Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).² Collusive bidding is a pe se prohibition meaning that it cannot be justified under any grounds.</p> <p>Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:</p> <p>(a) take all reasonable steps to prevent such abuse;</p> <p>(b) reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and</p> <p>(c) cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.</p> <p>The following MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.</p> <p>In order to give effect to the above, the following Certificate of Bid Determination must be completed and submitted with the bid. The undersigned, in submitting the accompanying bid, in response to the invitation for the bid do hereby make the following statements that I certify to be true and complete in every respect:</p>

- 1.0 I have read and I understand the contents of this Certificate;
- 2.0 I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
- 3.0 I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
- 4.0 Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
- 5.0 For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
 - a) has been requested to submit a bid in response to this bid invitation;
 - b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
 - c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder.

-
- 6.0 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium³ will not be construed as collusive bidding. (Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.
- 7.0 In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
- a) prices;
 - b) geographical area where product or service will be rendered (market allocation);
 - c) methods, factors or formulas used to calculate prices;
 - d) the intention or decision to submit or not to submit, a bid;
 - e) the submission of a bid which does not meet the specifications and conditions of the bid;
 - f) bidding with the intention not to win the bid.
- 8.0 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 9.0 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 10.0 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No. 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No. 12 of 2004 or any other applicable legislation.

SECTION I: CONFIRMATIONS, AUTHORITIES, CERTIFICATIONS, ACKNOWLEDGEMENTS and SIGNATURES

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

- 1.0 Confirms that the contents of these Consolidated MBD returnable questionnaires (comprising 8 pages) fall within my personal knowledge and are to the best of my Knowledge and belief, both true and correct;
- 2.0 Confirms that neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercise, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- 3.0 Confirms that no partner, member, director or other person, who wholly or partly exercise control over the enterprise, has within the last five years been convicted of fraud or corruption;
- 4.0 Confirms that I/we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the bidders or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest;
- 5.0 Certify that the B-BBEE status level of contribution indicated in Section E.1: Item 1.0 qualifies the enterprise for preference points and acknowledges that the remedies as per Clause 14 of the Preferential Procurement Regulations (2017) shall apply. In the event of a contract being awarded as a result of points claimed, the enterprise may be required to furnish documentary proof to the satisfaction of the employer that the claims are correct;
- 6.0 Accept that, in addition to cancellation of a contract, action may be taken against me should these declarations prove to be false.

Signed Date

Name Position

PROPOSED ORGANISATION and STAFFING

Refer to Clause F3.11.9 for Functionality Points evaluation prompts (if applicable).

The tenderer should propose the structure and composition of their team i.e. the main disciplines involved, the key staff member / expert responsible for each discipline, and the proposed technical and support staff and site staff.

The roles and responsibilities of each key staff member / expert should be set out as job descriptions. In the case of an association / joint venture / consortium, it should, indicate how the duties and responsibilities are to be shared.

The tenderer must attach his / her organization and staffing proposals to this page. (this is to include both the on-site and off-site staffing resources used for this project)

In addition to any lists, this information should also be shown in an organogram format (flow chart) clearly indicating the staff hierarchy and reporting lines, again for on- and off-site resources.

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

NAME : (Block Capitals)

SIGNATURE : DATE:
(of person authorised to sign on behalf of the Tenderer)

KEY PERSONNEL

Refer to Clause F3.11.9 for Functionality Points evaluation prompts (if applicable).

The Tenderer shall list below the personnel which he intends to utilize on the Works, including key personnel (Contract’s Manager, Site Agent, and Foremen) which may have to be brought in from outside if not available locally.

CATEGORY OF EMPLOYEE	NUMBER OF PERSONS	
	KEY PERSONNEL, PART OF THE CONTRACTOR'S ORGANISATION	KEY PERSONNEL TO BE IMPORTED IF NOT AVAILABLE LOCALLY
Site Agent, Project Managers		
Foremen, Quality Control and Safety Personnel		
Technicians, Surveyors, etc		
Artisans and other Skilled workers		
Plant Operators		
Unskilled Workers		
Others:.....		
.....		

Note: CVs of key personnel may be requested during the contract period.

NAME : (Block Capitals)

SIGNATURE : DATE:
(of person authorised to sign on behalf of the Tenderer)

EXPERIENCE OF KEY PERSONNEL

Refer to Clause F3.11.9 for Functionality Points evaluation prompts (if applicable).

The experience of assigned staff member in relation to the Scope of Work will be evaluated from three different points of view:

- 1) General experience (total duration of professional activity), level of education and training and positions held of each discipline specific team leader.
- 2) The education, training, skills and experience of the Assigned Staff in the specific sector, field, subject, etc which is directly linked to the scope of work.
- 3) The key staff members' / experts' knowledge of issues which the tenderer considers pertinent to the project e.g. local conditions, affected communities, legislation, techniques etc.

A CV of the contract manager, site agent(s) and general foreman of not more than 2 pages should be attached to this schedule:

Each CV should be structured under the following headings:

- a) Personal particulars
 - name
 - date and place of birth
 - place (s) of tertiary education and dates associated therewith
 - professional awards
- b) Qualifications (degrees, diplomas, grades of membership of professional societies and professional registrations)
- c) Skills
- d) Name of current employer and position in enterprise
- e) Overview of post graduate / diploma experience (year, organization and position)
- f) Outline of recent assignments / experience that has a bearing on the scope of work

NAME : (Block Capitals)

SIGNATURE : DATE:
(of person authorised to sign on behalf of the Tenderer)

CURRICULUM VITAE TEMPLATE

Proposed role in the project:

1. Family name

2. First name:

3. Date of birth

4. Nationality

5. Education

Institution (Date from – Date to)	Degree(s) or Diploma(s) obtained

6. Membership of professional bodies

.....

.....

.....

7. Other skills (e.g. computer literacy)

.....

.....

8. Present position:

.....

.....

9. Present Organisations:

(Name of Company/
Employer)

.....

10. Years within the Organization:

11. Key qualifications (relevant to the project)

.....

.....

.....

.....

12. Professional experience

Date (From – To) (mm/yy)			
Organization			
Location			
Position			
Description of duties			
Reference:	Name		
	Position		
	Contact Details	Tel	
		Cell	
e-mail			

Date (From – To) (mm/yy)			
Organization			
Location			
Position			
Description of duties			
Reference:	Name		
	Position		
	Contact Details	Tel	
		Cell	
e-mail			

Date (From – To) (mm/yy)			
Organization			
Location			
Position			
Description of duties			
Reference:	Name		
	Position		
	Contact Details	Tel	
		Cell	
e-mail			

Date (From – To) (mm/yy)			
Organization			
Location			
Position			
Description of duties			
Reference:	Name		
	Position		
	Contact Details	Tel	
		Cell	
e-mail			

13. Other relevant information (e.g. Publications)

Resource available declaration

I,, hereby declare that I am aware of the inclusion of my Curriculum Vita in the proposed project team and make myself available for this project.

Signature

CONSTRUCTION APPROACH, METHODOLOGY, AND QUALITY CONTROL

Construction Approach and Methodology

The construction approach and methodology must respond to the Scope of Work and outline the proposed approach to undertake the work showing a detailed programme including health and safety aspects, the use of plant and resources for this Project.

Quality Control

The quality control statement must discuss what tests and control measures are to be employed on site to attain the specified results and is to cover the program associated activities.

The tenderer must attach his / her Construction Methodology and Quality Control information to this page.

NAME : (Block Capitals)

SIGNATURE : DATE:
(of person authorised to sign on behalf of the Tenderer)

PLANT and EQUIPMENT

The following are lists of major items of relevant equipment that I / we presently own or lease and will have available for this contract if my / our tender is accepted.

(a) Details of major equipment that is owned by me / us and immediately available for this contract.

DESCRIPTION (type, size, capacity etc)	QUANTITY	YEAR OF MANUFACTURE

Attach additional pages if more space is required

(b) Details of major equipment that will be hired, or acquired for this contract if my / our tender is accepted

DESCRIPTION (type, size, capacity etc)	QUANTITY	HOW ACQUIRED	
		HIRE/ BUY	SOURCE

Attach additional pages if more space is required

The Tenderer undertakes to bring onto site without additional cost to the Employer any additional plant not listed but which may be necessary to complete the contract within the specified contract period.

NAME : (Block Capitals)

SIGNATURE : DATE:
(of person authorised to sign on behalf of the Tenderer)

CONTRACTOR'S HEALTH AND SAFETY PLAN

Refer to Clause F3.11.9 for Functionality Points evaluation prompts (if applicable).

At tender stage only a brief overview (**to be attached to this page**) of the tenderer's perception on the safety requirements for this contract will be adequate.

Only the successful Tenderer shall submit separately the Contractor's Health and Safety Plan as required in terms of Regulation 7 of the Occupational Health and Safety Act 1993 Construction Regulations 2014.

The detailed safety plan will take into consideration the site specific risks as mentioned under **Part C.3: Project Specification**. A generic plan will not be acceptable.

NAME : (Block Capitals)

SIGNATURE : DATE:
(of person authorised to sign on behalf of the Tenderer)

JOINT VENTURES AGREEMENTS

Joint Venture agreement and Power of Attorney Agreements to be attached here (if applicable).

RECORD OF ADDENDA TO TENDER DOCUMENTS

I / We confirm that the following communications received from the Employer or his representative before the date of submission of this tender offer, amending the tender documents, have been taken into account in this tender offer.

ADD.No	DATE	TITLE OR DETAILS
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

NAME : (Block Capitals)

SIGNATURE : DATE:
(of person authorised to sign on behalf of the Tenderer)

PART C1: AGREEMENT AND CONTRACT DATA

C1.1: FORM OF OFFER AND ACCEPTANCE

C1.1.1: OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract in respect of the following works:

Contract No: WS 7411

Contract Title: Western Waste Management Facility - Contract A – Roads, Platforms, Services and Buildings

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

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

*** The offered total of the prices inclusive of Value Added Tax is:**

R..... (In words
.....)

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document to the Tenderer before the end of the period of validity stated in the Tender Data, whereupon the Tenderer becomes the party named as the Contractor in the Conditions of Contract identified in the Contract Data.

For the Tenderer:

* Name of Tenderer (organisation) :

* Signature (of person authorized to sign the tender) :

* Name (of signatory in capitals) :

Capacity (of Signatory) :

Address :

:

Telephone :

Witness:

Signature : Date :

Name(in capitals) : :

Notes:

* Indicates what information is mandatory.

Failure to complete the mandatory information and sign this form will invalidate the tender.

C1.1: FORM OF OFFER AND ACCEPTANCE

C1.1.2: FORM OF ACCEPTANCE

This Form will be completed by the Employer

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

The terms of the contract are contained in:

- Part C1 : Agreement and Contract Data, (which includes this Agreement)
- Part C2 : Pricing Data, including the Bill of Quantities
- Part C3 : Scope of Work
- Part C4 : Site Information

and the schedules, forms, drawings and documents or parts thereof, which may be incorporated by reference into Parts C1 to C4 above.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules as well as any changes to the terms of the Offer agreed by the Tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be duly signed by the authorised representatives of both parties.

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

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the Tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the Tenderer (now Contractor) within five days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this Agreement, this Agreement shall constitute a binding contract between the parties.

Signature (*person authorized to sign the acceptance*) :

Name (*of signatory in capitals*) :

Capacity (*of Signatory*) :

Name of Employer (*organisation*) :

Address :

:

Witness:

Signature : **Date** :

Name(*in capitals*) : :

C1.1: FORM OF OFFER AND ACCEPTANCE
C1.1.3: SCHEDULE OF DEVIATIONS

This form will be completed by THE EMPLOYER and ONLY THE SUCCESSFUL TENDERER

- 1. **Subject** :
- Details** :
- :
- 2. **Subject** :
- Details** :
- :
- 3. **Subject** :
- Details** :
- :

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

FOR THE TENDERER

FOR THE EMPLOYER

.....	Signature	.....
.....	Name (<i>in capitals</i>)	.....
.....	Capacity	.....
.....	Name and Address of	.....
.....	Organisation	.....
.....	
.....	Witness Signature	.....
.....	Witness Name	.....
.....	Date	.....

C1.2: CONTRACT DATA

C1.2.1 CONDITIONS OF CONTRACT

C1.2.1.1 GENERAL CONDITIONS OF CONTRACT

The Conditions of Contract are the **General Conditions of Contract for Construction Works (2015 3rd Edition)**, (**GCC 2015**) published by the South African Institution of Civil Engineering. Copies of these conditions of contract may be obtained from the South African Institution of Civil Engineering (Tel: 011-805-5947, Fax: 011-805-5971, E-mail: civilinfo@saice.org.za).

The Contract Data (including variations and additions) shall amplify, modify, or supersede, the GCC 2015 to the extent specified below, and shall take precedence and shall govern.

Each item of data given below is cross-referenced to the clause in the GCC 2015 to which it mainly applies.

C1.2.2 CONTRACT DATA

C1.2.2.1 DATA TO BE PROVIDED BY THE EMPLOYER

1.1.1.13 The **Defects Liability Period**, from the date of the Certificate of Completion, is **1 Year**

1.1.1.14 The **time for achieving Practical Completion**, from the Commencement Date is **88 Weeks**. The period as stated in 5.3.2, and the 7 days referred to in 5.3.3, are included in the above time for achieving Practical Completion. The special non-working days as stated in 5.8.1 are excluded from the above time for achieving Practical Completion.

1.1.1.15 The Employer is the eThekweni Municipality as represented by:
Cleansing and Solid Waste : Deputy Head ; Cleansing and Solid Waste

1.2.1.2 The address of the Employer is:
Physical: 22 Electron Road, Springfield, DURBAN, 4001
Postal: P O Box 1083, DURBAN, 4000
Telephone: 031-322 4575 (t)
Fax: 031 322 2521(f)
E-Mail: Logan.Moodley2@durban.gov.za

1.1.1.16 The **name of the Employer's Agent** **IX/Wilson and Pass JV**

1.2.1.2 The address of the Employer' Agent is:
Physical: **IX engineers (Pty) Ltd, 21 The Boulevard, Westway Office Park, Harry Gwala Road, Westville, 2630**
Postal: **PO Box 299 Westville, 3630**
Telephone: **031 254 5700 (t)**
Fax: **031 265 8498 (f)**
E-Mail: **Mike.r@ixengineers.co.za**

1.1.1.26 The **Pricing Strategy** is by **Re-measurement Contract**.

3.2.3 The Employer's Agent shall obtain the **specific approval of the Employer** before executing any of his functions or duties according to the following Clauses of the General Conditions of Contract:

- **6.3: Council approval in order to authorise any expenditure in excess of the Tender Sum plus 10% contingencies.**

4.11.1 To carry out and complete the works, the Contractor shall employ a competent Contracts Manager, Site Agent and Foreman as part of the key staff. It is a requirement for the Contractor's Contracts Manager, Site Agent and Foreman to each have relevant experience including experience on projects of a similar nature. The CV's of the Contracts Manager, Site Agent and the Foreman should be submitted to the Employer's Agent's Representative for acceptance by the Department (reference is made to Cl.5.3.1 of the Contract Data). Key staff are to have equal or higher experience and qualifications than what was submitted at time of tender.

5.3.1 The **documentation required** before commencement with Works execution are:

- Health and Safety Plan (refer to Clause 4.3)
- Initial Programme (refer to Clause 5.6)
- Security (refer to Clause 6.2)
- Insurance (refer to Clause 8.6)

5.3.2 The **time to submit the documentation** required before commencement with Works is **14 Days**.

5.3.3 Add the following paragraph:

"If a construction work permit, in terms of Clause 3(1) of the Construction Regulations (2014), is applicable, the instruction to commence carrying out of the works may only be issued once the construction work permit has been obtained by the Employer's Agent. If a construction work permit is applicable, the contractor shall allow for a minimum period of 37 days, after the submission (or re-submission) of the documentation referred to in Clause 5.3.1., for the issuing of the construction work permit."

5.8.1 The **non-working days** are **Saturdays and** Sundays.

(5.1.1) The **special non-working** days are:

- All statutory holidays as declared by National or Regional Government.
- The year-end break:
 - Commencing on the first working day after 15 December.
 - Work resumes on the first working day after 5 January of the next year.

5.8.1 Delete the words "sunset and sunrise" and replace with "17:00 and 07:00".

5.12.2.2 **Abnormal Climatic Conditions (Rain Delays)** - The numbers of days per month, on which work is expected not to be possible as a result of rainfall, for which the Contractor shall make provision, is given in the table below. During the execution of the Works, the Employer's Agent's Representative will certify a day lost due to rainfall only if at least 75% of the work force and plant on site could not work during that specific working day.

Extension of time as a result of rainfall shall be calculated monthly being equal to the number days certified by the Employer's Agent's Representative as lost due to rainfall, less the number of days allowed for as in table below, which could result in a negative figure for certain months. The total extension of time for which the Contractor may apply, shall be the cumulative algebraic sum of the monthly extensions. Should the sum thus obtained be negative, the extension of time shall be taken as NIL.

<u>Month</u>	<u>Days Lost</u>	<u>Average Rainfall</u>	<u>Month</u>	<u>Days Lost</u>	<u>Average Rainfall</u>
January	4*	134	July	1	39
February	3	113	August	2	62
March	3	120	September	2	73

April	2	73	October	3	98
May	2	59	November	3	108
June	1	28	December	1*	102
TOTAL	27	1009mm	* = The number of working days lost allows for the annual statutory Construction holiday in December and January of each year.		

- 5.13.1 The **penalty for delay** in failing to complete the Works is **R 10 000 per day**.
- 5.13.2 **The penalty for damaging threatened or designated grassland is set out in the Environmental Management Plan and the Biodiversity Offset Authorisation.** This penalty shall be to the Contractor's account. Reinstatement of damaged irreplaceable KZN sourveld grassland and / or purchase of compensatory grassland shall be carried out under the directions of CSW's environmental division and competent authority shall also be to the Contractor's account. This grassland shall be identified, surveyed, and fenced prior to commencement of the works.
- 5.14.1 **The requirements for achieving Practical Completion** will be determined by the Employer's Agent (in consultation with the Contractor) and recorded in the minutes of the first Site Meeting / Handover Meeting. (Refer to 1.1.1.24 for a generic definition.) The requirements are to be regularly reviewed with respect to any variations to the Contract.
- 5.16.3 The **latent defect liability** period is **10 Years**.
- 6.2.1 **Security (Performance Guarantee):** Delete the word "selected" and replace it with "stated".

The liability of the Performance Guarantee shall be as per the following table:

Value of Contract (incl. VAT)	Performance Guarantee Required
Less than or equal to R 1m	Nil
Greater than R 1m and less than or equal to R 10m	5% of the Contract Sum
Greater than R 10m	10% of the Contract Sum

6.8.2 **Contract Price Adjustment Factor:** The value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule (GCC 2015 - page 86) with the following Indices / Descriptions / Coefficients:

- The proportion not subject to adjustment: **x = 0.10**.
- The base month will be the month prior to the month in which tenders close.
- The Index for Labour, Plant, and Materials shall be based on **December 2021 = 100**.
- The Index for Fuel shall be based on **December 2020 = 100**.

- “L” is the “Labour Index”
- “P” is the “Contractor’s Equipment Index”
- “M” is the “Materials Index”
- “F” is the “Fuel Index”

STATS SA Statistical Release	Table	Description	Coefficient
P0141	Table A	Geographic Indices; CPI per Province; Kwa-Zulu Natal	a = 0.2
P0151.1	Table 4	Plant and Equipment	b = 0.4
P0151.1	Table 6	Civil Engineering Material (excluding bitumen)	c = 0.25
P0142.1	Table 1	Coke, petroleum, chemical, rubber and plastic products; Coal and petroleum products; Diesel	d = 0.15

6.8.3 Price adjustments for **variation in the cost of the special material(s)** listed below, will be allowed.

Bitumen - escalation will be calculated using the “Rise and Fall” method as determined by the Employer. The base price for bitumen on this contract shall be the ruling price of 50/70 grade bitumen based on the “Shell Whole Sale List Selling Price for Penetration Grade Bitumen”, seven (7) days prior to the closing date of tenders.

6.10.1.5 The **percentage advance** on materials not yet built into the Permanent Works is **80%**.

The **percentage advance** on Plant not yet supplied to Site: **Not Required**

6.10.3 **Retention Money:** Delete the word “selected”.

The percentage retention on the amounts due to the Contractor is 10%.

The limit of “retention money” is 5% of the Contract Sum.

Should the Contract Price exceed the Contract Sum then the limit of “retention money” is 5% of the Contract Price.

Interest will not be paid on retention withheld by the Employer.

8.6.1.1.2 The **value of Plant and materials** supplied by the Employer to be included in the insurance sum: **Not Required**

8.6.1.1.3 The **amount to cover professional fees** for repairing damage and loss to be included in the insurance sum: **Not Required**

8.6.1.2 **SASRIA Coupon Policy** for Special Risks to be issued in joint names of Council and Contractor for the full value of the works (including VAT).

8.6.1.3 The limit of indemnity for **liability insurance**: **R 10 000 000**.

8.6.1.4 **Ground Support Insurance:**

- Minimum amount for any one occurrence, unlimited as to the number of occurrences, against any claim for damages or loss caused by vibration and / or removal of lateral support:
- **R 2 000 000**
- Maximum first excess: **R 10 000**.

8.6.1.5 Furthermore, the insurance cover effected by the Contractor shall meet the following requirements:

Third Party Insurance (Public Liability)

- Minimum amount for any one occurrence, unlimited as to the number of occurrences, for the period of the contract, inclusive of the maintenance period: **R 1 000 000**.
- Consequential loss to be covered by policy: **Yes**
- Liability section of policy to be extended to cover blasting: **R 5 000 000**
- Maximum excess per claim or series of claims arising out of any one occurrence: **R 20 000**

Principal's own surrounding Property Insurance

- Minimum amount for any one occurrence unlimited as to the number of occurrences against any claim for damage which may occur to the Council's own surrounding property:
- **R 1 000 000**
- Maximum first excess: **R 10 000**

Insurance of Works

- Minimum amount for additional removal of debris (no damage): **Nil**
- Minimum amount for temporary storage of materials off site, excluding Contractor's own premises: **Nil**
- Minimum amount for transit of materials to site: **Nil**

8.6.5 **Approval by Employer:** At the end of the sub-clause, add the following paragraph:

"Except where otherwise provided in the Special Conditions of Contract, the insurance cover effected by the Contractor in terms of this clause shall not carry a first loss amount greater than those set out below:

Contract Price	First Loss
Less than R 100,000	R 5,000
R 100,000 to R 500,000	R 10,000
R 500,000 to R 1,000,000	R 20,000
R 1,000,000 to R 2,000,000	R 30,000
R 2,000,000 to R 4,000,000	R 40,000
Greater than R 4,000,000	R 50,000

The insurance policy shall contain a specific provision whereby cancellation of the policy prior to the end of the period referred to in Cause 8.2.1 cannot take place without the prior written approval of the Employer."

10.7.1 **Failing ad-hoc adjudication, the determination of disputes shall be by arbitration.**

C1.2.2.2 DATA TO BE PROVIDED BY CONTRACTOR

1.1.1.9 The legal name of Contractor is:

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

1.2.1.2 The Physical address of the Contractor is:

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

The Postal address of the Contractor is:

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

The contact numbers of the Contractor are:

Telephone:

Fax:

The E-Mail address of the Contractor is:

.....

C1.2.3 ADDITIONAL CONDITIONS OF CONTRACT

C1.2.3.1 COMMUNITY LIAISON OFFICER

The Ward Councillor(s) in whose ward(s) work is to be done will, collectively, identify a community liaison officer (CLO) for the project and make the person known to the Contractor within two days of being requested to do so. The Contractor will be required to enter a written contract with the CLO that specifies:

- The hours of work and the wage rate of the CLO (200% of the Civil Engineering Industry minimum wage).
- The duration of the appointment.
- The duties to be undertaken by the CLO which could include:
 - Assisting in all respects relating to the recruitment of local labour.
 - Acting as a source of information for the community and councillors on issues related to the contract.
 - Keeping the Contractor advised on community issues and issues pertaining to local security.
 - Assisting in setting up any meetings or negotiations with affected parties.
 - Keeping a written record of any labour or community issue that may arise.
 - Any other duties that may be required by the Contractor.

Responsibility for the identification of a pool of suitable labour shall rest with the CLO, although the Contractor shall have the right to choose from that pool. The Contractor shall have the right to determine the total number labourers required at any one time and this may vary during the contract.

The Contractor shall have the right to replace labour that is not performing adequately. Should such occasion arise, it must be done in conjunction with the CLO.

In addition, a Social Facilitator may be required to liaise and negotiate with local communities on matters including but not restricted to issues involving the direct employment of local labour. A Social Facilitator will only be appointed on the instruction of the Engineer.

Payment: The CLO and the Social Facilitator will be reimbursed from the PC Sum item in the Preliminary & General Section of the Bill of Quantities.

C1.2.3.2 EMPLOYMENT OF LOCAL LABOUR

It is a condition of contract that the contractor will be required to employ local labour as specified in eThekweni Council Policy “The use of CLOs and Local Labour”. The contractor will be required to ensure that a minimum of 50% of the labour force is made up of local labour. For the purposes of this contract, “Local labour” will be deemed to be any **persons who reside within Ward 7**. The contractor will be required to provide proof of authenticity of local labour. Signed confirmation by the appointed CLO will suffice for this.

No additional costs will be entertained due to this Particular Specification. The contractor will remain responsible for providing proper supervision of all labour and will be responsible for the quality of work produced.

C1.2.3.3 CONTRACTOR PARTICIPATION GOAL (CPG)

It is a condition of contract that the contractor must allow for a minimum of **30%** of the contract value (excluding PC Sum items and Fixed Cost allowances) to be subcontracted to **an EME or QSE which is at least 51% owned by black people**. CPG subcontractors shall be from Ward 7 and only if such subcontractors cannot be sourced from Ward 7, then sourced from adjacent wards, and then only from elsewhere within eThekweni Municipality. Proof of payment to the

subcontractors will be required to verify that the minimum has been achieved.

The penalty for not achieving the specified CPG will be 0.5% of the contract value (excluding PC Sum items and Fixed Cost allowances) for every 1% of CPG not achieved.

C1.2.3.4 FTE (Full Time Equivalent) EMPLOYMENT INFORMATION

It is a condition of contract that the Contractor supplies the Employer’s Agent’s Representative with information in respect of the employment of all foremen, artisans and labour (skilled and unskilled) employed to work on this contract. The information required is:

- Initials (per ID doc)
- Last Name (per ID doc)
- ID Number
- Disability (y / n)
- Education Level

Level 1 Unknown	Level 2 No Schooling	Level 3 Grade 1-3	Level 4 Grade 4	Level 5 Grade 5-6
Level 6 Grade 7-8	Level 7 Grade 9	Level 8 Grade 10-11	Level 9 Grade 12	Level 10 Post Matric

- Category of Employment

<p>Category A: Employed as Local Labour for this contract only Category B: Temporarily employed by the Contractor Category C: Permanently employed by the Contractor</p>

In addition, the following information is required in respect of each person listed above, on a monthly basis:

- Number of days worked during the month;
- Daily wage rate;
- Number of training days during the month.

The information is to be forwarded in a format acceptable to the Employer’s Agent’s Representative, but preferably in the form of an emailed EXCEL file (an original file, to be used as a template, will be issued to the Contractor). Contractors without computer facilities will be required to submit a hard copy of the information in a format as agreed to between the Contractor and the Employer’s Agent’s Representative.

In addition to the tax invoice, to be submitted by the Contractor with his monthly statement, mentioned in Clause 6.10.4 of GCC 2015, the Employer reserves the right to withhold payment until the monthly FTE information has been forwarded to the Employer’s Agent’s Representative. No additional payment for complying with the above will be made and the Contractor is to make allowance for complying through the time related P & G items (sum) under Part AA: Preliminaries, of the Bill of Quantities.

C1.2.3.5 PERFORMANCE MONITORING OF SERVICE PROVIDERS

The Contractor shall be subjected to “Performance Monitoring” assessments in terms of the applicable Section of the Employer’s Supply Chain Management Policy.

Key Performance Indicators (KPIs) are specified in the Part C3: Scope of Works, or will be discussed and agreed with the Contractor before commencement of the contract.

C1.2.3.7 EXCEPTED RISKS (Clause 8.3)

Pursuant to Clause 8.3 of the Conditions of Contract (GCC 2015), the Employer shall not be liable for the payment of standing time costs as a result of the occurrence of any of the “Excepted Risks” as defined under Clause 8.3.

However, the Employer shall reimburse the Contractor in respect of plant de-establishment and re-establishment costs as a result of “Excepted risks” when a written instruction to de-establish is issued to the Contractor.

C2.1: PRICING ASSUMPTIONS / INSTRUCTIONS

C2.1.1 GENERAL

The Bill of Quantities forms part of the Contract Documents and must be read and priced in conjunction with all the other documents comprising the Contract Documents (refer to F.1.2 of the Tender Data).

C2.1.2 PRICING INSTRUCTIONS AND DESCRIPTION OF ITEMS IN THE SCHEDULE

Measurement and payment shall be in accordance with the relevant provisions of Clause 8 of each of the Standard Engineering Specifications referred to in the Scope of Work. The Preliminary and General items shall be measured in accordance with the provisions of C2.1.8.

The descriptions of the items in the Bill of Quantities are for identification purposes only and comply generally with those in the Standard Engineering Specification.

Clause 8 of each Standard Engineering Specification, read together with the relevant clauses of the Scope of the works, set out what ancillary or associated work and activities are included in the rates for the operations specified. Should any requirements of the measurement and payment clause of the applicable Standard Engineering Specification, or the Scope of the works, conflict with the Bill of Quantities, the requirements of the Standard Engineering Specification or Scope of the work, as applicable, shall prevail.

C2.1.3 QUANTITIES REFLECTED IN THE SCHEDULE

The quantities given in the Bill of Quantities are estimates only, and subject to re-measuring during the execution of the work. The Contractor shall obtain the Employer's Agent's detailed instructions for all work before ordering any materials or executing work or making arrangements for it.

The Works as finally completed in accordance with the Contract shall be measured and paid for as specified in the Bill of Quantities and in accordance with the General and Special Conditions of Contract, the Specifications and Project Specifications and the

Drawings. Unless otherwise stated, items are measured net in accordance with the Drawings, and no allowance has been made for waste.

The validity of the contract will in no way be affected by differences between the quantities in the Bill of Quantities and the quantities finally certified for payment.

C2.1.5 MONTHLY PAYMENTS

Unless otherwise specified in the Specifications and Project Specifications, progress payments in Interim Certificates, referred to in Clause 6.10.1 of the General Conditions of Contract, in respect of "sum" items in the Bill of Quantities shall be by means of interim progress instalments assessed by the Employer's Agent and based on the measure in which the work actually carried out relates to the extent of the work to be done by the Contractor.

C2.1.4 PROVISIONAL SUMS / PRIME COST SUMS

Where Provisional Sums or Prime Cost sums (PC Sum) are provided for items in the Bill of Quantities, payment for the work done under such items will be made in accordance with Clause 6.6 of the General Conditions of Contract. The Employer reserves the right, during the execution of the works, to adjust the stated amounts upwards or downwards according to the work actually done under the item, or the item may be omitted altogether, without affecting the validity of the Contract.

The Tenderer shall not under any circumstances whatsoever delete or amend any of the sums inserted in the "Amount" column of the Bill of Quantities and in the Summary of the Bill of Quantities unless ordered or authorized in writing by the Employer before closure of tenders. Any unauthorized changes made by the Tenderer to provisional items in the schedule, or to the provisional percentages and sums in the Summary of the Bill of Quantities, will be treated as arithmetical errors.

C2.1.6 PRICING OF THE BILL OF QUANTITIES

The prices and rates to be inserted by the Tenderer in the Bill of Quantities shall be the full inclusive prices to be paid by the Employer for the work described under the several items, and shall include full compensation for all costs and expenses that may be required in and for the completion and maintenance during the defects liability period of all the work described and as shown on the drawings as well as all overheads, profits, incidentals and the cost of all general risks, liabilities and obligations set forth or implied in the documents on which the Tender is based.

Each item shall be priced and extended to the "Total" column by the Tenderer, with the exception of the items for which only rates are required (Rate Only), or items which already have Prime Cost or Provisional Sums affixed thereto. If the Contractor omits to price any items in the Bill of Quantities, then these items will be considered to have a nil rate or price.

All items for which terminology such as "inclusive" or "not applicable" have been added by the Tenderer will be regarded as having a nil rate which shall be valid irrespective of any change in quantities during the execution of the Contract.

All rates and amounts quoted in the Bill of Quantities shall be in Rands and Cents and shall include all levies and taxes (other than VAT). VAT will be added in the Summary of the Bill of Quantities.

C2.1.7 "RATE ONLY" ITEMS

The Tenderer shall fill in rates for all items where the words "Rate Only" appear in the "Total" column. "Rate Only" items have been included where:

- (a) an alternative item or material is contemplated;
- (b) variations of specified components in the make-up of a pay item may be expected; and
- (c) no work under the item is foreseen at tender stage but the possibility that such work may be required is not excluded.

For "Rate Only" items no quantities are given in the

"Quantity" column but the quoted rate shall apply in the event of work under this item being required. The Tenderer shall however note that in terms of the Tender Data the Tenderer may be asked to reconsider any such rates which the Employer may regard as unbalanced.

C2.1.8 PRELIMINARY AND GENERAL

The Preliminary and General Section is provided to cover the Contractor's expenses incurred in complying with the requirements of the tender documents and consists of the following parts:

- SANS 1200A : Preliminary and General
- Ethekwini Standard Specifications Part AH: Occupational Health and Safety

Fixed Charge Items: Each item should be priced separately and, subject to the Engineer certifying in terms of **Clause 6.7 of the General Conditions of Contract** that the work has been done, payment will be made as follows:

- (i) the total amount due when the certified value fixed charge items in this section is less than 5% of the net contract price;
- (ii) when the certified value of fixed charge items in this section is greater than 5% of the net contract price, payment will be limited to 5% of the net contract price. The remainder will be paid when the value of the work done under the contract, excluding the value of fixed charge items in this section, is greater than 50% of the net contract price, excluding the value of fixed charge items in this section.

Time Related Items: Any Time Related items not priced shall be deemed to be covered by the prices of other items in the section.

Payment of Time Related items in this section will be made throughout the contract period, the amount per month being the value of the item divided by the completion in months or, if specified in weeks, the equivalent number of months, in terms of **Clause 5.5 of the General Conditions of Contract**. The final monthly increment will only be paid upon the issue of a completion certificate.

C2.2: BILL OF QUANTITIES

The Bill of Quantities follows and comprises of 57 pages. The pages are numbered 64 to 131

A: PRELIMINARY AND GENERAL

1: FIXED CHARGES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 A	SECTION 1: FIXED-CHARGE ITEMS					
A1	8.3	FIXED-CHARGE ITEMS					
A1.1	8.3.1	Contractual Requirements	Sum				
A1.2	8.3.2	Establish Facilities on the Site :					
	8.3.2.1	a) Facilities for Engineer (SANS 1200 AB)					
	PSAB 3.2	i) Offices: 3 furnished rooms with air-conditioning, wi-fi connection and 3 carports	Sum				
	PSAB 4.1	ii) Cell phones allowances	Sum				
	PSAB 3.1	iii) Contract Sign Boards (supply and install)	No.	1			
A1.3		b) Facilities for Contractor	Sum				
A1.4	8.3.3	Other fixed-charge obligations	Sum				
A1.5		Dealing with water on the works	Sum				
A1.6	8.3.4	Remove Engineer's and Contractor's Site establishment on completion	Sum				
		Environmental management plan obligations					
A1.7	PS.9	Contractor's initial obligations in respect the Environmental Management Plan contained with the contract document	Sum				
A1.8	8.9 PSA 8.9 PSA 5.3	As Built Drawings	Sum				
A1.9	EM SES - Portion AH PSA 8.10	Occupational Health and Safety Act and Construction Obligations					
		(a) Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Sum				
		(b) Submission of the Health & Safety File to the Employer complete, and to the satisfaction of the Employer (on completion of the works)	Sum				
Total Carried Forward To Summary							

A: PRELIMINARY AND GENERAL

2: TIME RELATED

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 A	SECTION 2: TIME-RELATED ITEMS					
A2	8.4	TIME-RELATED ITEMS					
A2.1	8.4.1	Contractual Requirements	Sum				
A2.2	8.4.2	Operate and maintain facilities on the Site:					
	8.4.2.1	a) Facilities for Engineer for duration of construction (SANS 1200 AB)					
		i) Offices: 3 furnished rooms with air-conditioning, wi-fi connection and 3 carports	Sum				
	PSAB 4.1	ii) Cell phones allowances	Sum				
		iv) Survey equipment and 2 survey assistants	Sum				
	8.4.2.2	b) Facilities for Contractor for duration of construction, except where otherwise stated	Sum				
A2.3	8.4.3	Supervision	Sum				
A2.4	8.4.4	Company and head office overhead costs	Sum				
A2.5	8.4.5	Other time-related obligations	Sum				
		Environmental management plan obligations					
A2.6	PS.9	Contractor's time related items and cost in maintaining all obligations in respect of the Environmental Management Plan contained with the contract document	Sum				
A2.7	PSA 8.13 PS 11	Provision of Security of Works, Personnel, Plant and Equipment	Sum				
A2.8	EM SES - Portion AH PSA 8.10	Occupational Health and Safety Act and Construction Obligations					
		(c) Time-related obligations for the updating and amending the risk assessments, the safe work procedures, the project H&S file and the H&S plan, and for full compliance with all H&S matters during construction of the works under the contract.	month	20			
Total Carried Forward To Summary							

A: PRELIMINARY AND GENERAL

3: PROVISIONAL SUMS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 A	SECTION 3: SUMS STATED PROVISIONALLY BY ENGINEER					
A3	8.5	SUMS STATED PROVISIONALLY BY ENGINEER					
A3.1		For work to be done by Contractor and valued in terms of Clause 6 of the General Conditions of Contract					
		a) Buildings					
		i) Offices	PSum			3 640 000	00
		ii) Staff Building and Canteen	PSum			1 377 000	00
		iii) Gate House	PSum			200 000	00
		iv) Weighbridge Kiosk	PSum			150 000	00
A3.2		Allowance for an Environmental Officer					
		a) Monthly audits by an approved Environmental Officer	PSum			200 000	00
		b) Overheads, charges and profit on item (a) above	%	200 000			
A3.3	PSA 8.10	Health and Safety Audit on Site					
		a) Monthly by an approved Service provider	PSum			200 000	00
		b) Overheads, charges and profit on item (a) above	%	200 000			
A3.4	PSA 7.5	Check testing instructed by the Engineer					
		a) From a commercial laboratory (Prov)	PSum			50 000	00
		b) Overheads, charges and profit on item (a) above	%	50 000			
A3.5	PSA 8.5	Allowance for a Community Liaison Officer					
		a) For the duration of the contract	PSum			250 000	00
		b) Overheads, charges and profit on item (a) above	%	250 000			
A3.6	PSA 8.5	Allowance for a Social Facilitator					
		a) For the duration of the contract	PSum			250 000	00
		b) Overheads, charges and profit on item (a) above	%	250 000			
Total Carried Forward To Summary							

A: PRELIMINARY AND GENERAL

4: TEMPORARY WORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 A	SECTION 4: TEMPORARY WORKS					
A4	8.8	TEMPORARY WORKS					
A4.1	8.8.2 PSA 8.8.2 PSA 5.2	Deal with traffic and maintain road (or accommodation of traffic)	Sum				
A4.2	8.8.3	Protect Transnet Tower enclosure until construction in vicinity complete	Sum				
A4.3	PS 9.1	Temporary protection and fencing of sensitive grasslands adjacent to platforms and roads. (Must be impassable to all vehicles)	m	1000			
A4.4	8.8.4	Existing services					
		a) Excavate by hand in soft material to expose services	m ³	50			
		b) Temporary protection of services	Sum				
Total Carried Forward To Summary							

A: PRELIMINARY AND GENERAL

5: DAYWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SABS 1200 A	SECTION 2: DAYWORKS					
A5	8.7 PSA 8.7	Daywork					
A5.1		Labour					
		a) Labourer	hours	500			
		b) Gang Leader	hours	100			
		c) Skilled worker (tradesman)	hours	50			
		d) Surveyor	hours	20			
A5.2		Plant					
		a) 6m³ tip truck	hours	20			
		b) 10m³ tip truck	hours	20			
		c) 6000 litre watercart	hours	20			
		d) 10 000 litre watercart	hours	20			
		e) TLB case 480D or similar, 4,6t 39 kW	hours	20			
		f) Pedestrian roller Bomag 60 or similar	hours	20			
		g) Pedestrian roller Bomag 90 or similar	hours	20			
		h) Compressor 250 c.f.m with 2 paving breakers	hours	20			
		i) Hitachi UH 121 excavator or similar 26t 121kW	hours	20			
		j) 7 tonne flatbed crane truck	hours	20			
		k) Bulldozer Cat D6D or similar 14200kg 104kW	hours	20			
		l) Bulldozer Komatsu D31 or similar 6590kg 49kW	hours	20			
		m) Grader Cat 140g or similar 16500kg 112kW	hours	20			
		n) Front end loader cat 930 or similar 9620kg 75kW	hours	20			
		o) Roller: Bomag 518 or similar					
		1) Smooth drum	hours	20			
		2) Padfoot	hours	20			
		p) Hitachi WH051D wheel excavator or similar 10,566kW	hours	20			
		q) Grid roller and tractor	hours	20			
Total Carried Forward To Summary							

A: PRELIMINARY AND GENERAL

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
A1	FIXED CHARGES	.....
A2	TIME RELATED	.....
A3	PROVISIONAL SUMS	.....
A4	TEMPORARY WORKS	.....
A5	DAYWORKS	.....
Total Carried Forward To Summary Of Schedules		.....

B: ROADS AND EARTHWORKS

1: SITE CLEARANCE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 C	SECTION 1 : SITE CLEARANCE					
B1.1		CLEAR SITE					
B1.1.1	8.2.1 PSC 8.2.1	Clear and grub Site					
		i) MR461	ha	2.6			
		ii) Road 0	ha	3.7			
		iii) Road 1	ha	0.2			
		iv) Transnet Road	ha	0.9			
		v) Platform 1	ha	2.0			
		vi) Platform 2	ha	2.0			
		viii) Track Road	ha	0.4			
		ix) Stormwater Detention Dam 2	ha	0.4			
		xi) Western Cut-off Drain	ha	0.5			
B1.1.2	8.2.3	Remove and grub all trees and tree stumps regardless of girth					
		i) MR461	ha	0.2			
		ii) Road 0	ha	0.8			
		iii) Road 1	ha	0.1			
		viii) Track Road	ha	0.5			
		xi) Western Cut-off Drain	ha	0.4			
B1.1.3	8.2.7	Remove pipes / cables					
		i) Existing MR461 - stormwater pipes	m	100			
		i) Existing MR461 - electrical cable	m	900			
B1.1.4	8.2.8	Demolish and remove existing stormwater manholes and headwalls					
		i) MR461	No.	10			
B1.1.5	8.2.9	Cart materials and debris to unspecified spoil sites off site (provisional)					
		i) MR461	t.km	1 000			
B1.1.6		Remove existing road surfacing and layers to spoil or stockpile					
		i) Existing MR461	m ³	3 000			
Total Carried Forward							

B: ROADS AND EARTHWORKS

1: SITE CLEARANCE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
B1.2	SANS 1200 D 8.3.2	EXCAVATION					
B1.2.1	8.3.1.2	Remove topsoil to nominal depth 150mm, stockpile, and maintain					
		i) MR461	m ²	26 000			
		ii) Road 0	m ²	37 000			
		iii) Road 1	m ²	2 000			
		iv) Transnet Road	m ²	9 000			
		v) Platform 1	m ²	20 000			
		vi) Platform 2	m ²	19 500			
		viii) Track Road	m ²	4 000			
		ix) Stormwater Detention Dam 2	m ²	4 000			
		xi) Western Cut-off Drain	m ²	4 000			
Total Carried Forward To Summary							

B: ROADS AND EARTHWORKS

2: EARTHWORKS (ROADS, SUBGRADE)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 DM	SECTION 2: EARTHWORKS (ROADS, SUBGRADE)					
B2.1		TREATMENT OF ROAD-BED					
B2.1.1	8.3.3(a)	Road-bed preparation and compaction of material					
B2.1.1.1		Compact to 93 % mod. AASHTO maximum density					
		i) MR461	m ³	1 480			
		ii) Road 0	m ³	2 420			
		iii) Road 1	m ³	260			
		iv) Transnet Road	m ³	550			
		v) Platform 1	m ³	1 000			
		vi) Platform 2	m ³	1 740			
		viii) Track Road	m ³	460			
		xi) Western Cut-off Drain	m ³	4 000			
B2.1.2	8.3.3(b)	In-place treatment of road-bed in intermediate or hard material					
B2.1.2.1		Ripping					
		i) MR461	m ³	1 280			
		ii) Road 0	m ³	2 080			
		iv) Transnet Road	m ³	260			
		v) Platform 1	m ³	860			
		viii) Track Road	m ³	100			
		xi) Western Cut-off Drain	m ³	2 000			
B2.1.2.2		Blasting					
		i) MR461	m ³	3 160			
		ii) Road 0	m ³	5 780			
		iv) Transnet Road	m ³	620			
		v) Platform 1	m ³	700			
		viii) Track Road	m ³	450			
B2.1.2.3	PSDM 5.2.2.2	Shape and compact top of blasted rock roadbed with 5 passes of a 1 ton smooth drum vibratory roller					
		i) MR461	m ²	4 220			
Total Carried Forward							

B: ROADS AND EARTHWORKS

2: EARTHWORKS (ROADS, SUBGRADE)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
		ii) Road 0	m ²	6 900			
		iv) Transnet Road	m ²	820			
		v) Platform 1	m ²	2 840			
		viii) Track Road	m ³	660			
B2.1.3	PSDM 5.2.9	Benching on slopes steeper than 1v:5h					
		ii) Road 0	m ³	2 000			
		iii) Road 1	m ³	100			
		vi) Platform 2	m ³	2 000			
		viii) Track Road	m ³	500			
		xi) Western Cut-off Drain	m ³	1 500			
B2.2		EARTHWORKS					
B2.2.1	8.3.4	Cut to fill					
B2.2.1.1		Compact to 93 % mod. AASHTO maximum density in 150mm layers G10 (CBR>3)					
		i) MR461	m ³	3 500			
		ii) Road 0	m ³	13 000			
		iii) Road 1 (from Road MR461)	m ³	5 000			
		iv) Transnet Road	m ³	1 500			
		v) Platform 1	m ³	2 500			
		vi) Platform 2	m ³	35 000			
		viii) Track Road	m ³	6 750			
		ix) Stormwater Detention Dam 2	m ³	500			
		xi) Western Cut-off Drain (from Road 0 or Platform 1)	m ³	8 260			
B2.2.1.2	PSDM 5.2.4.2	Rockfill, process, and compact					
		ii) Road 0	m ³	5 000			
		vi) Platform 2	m ³	5 000			
		xi) Western Cut-off Drain (from Road 0 or Platform 1)	m ³	6000			
Total Carried Forward							

B: ROADS AND EARTHWORKS

2: EARTHWORKS (ROADS, SUBGRADE)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
B2.2.2	8.3.5	Selected layer					
B2.2.2.1	PSDM 3.2.1	a) From Site or Stockpile					
B2.2.2.1.1		Compacted to 93% MoD AASHTO 150mm thick layer G9 (CBR>7)					
		i) MR461	m ³	1 900			
		ii) Road 0	m ³	2 780			
		iii) Road 1 (from Road MR461)	m ³	140			
		iv) Transnet Road	m ³	280			
		v) Platform 1	m ³	1 140			
		viii) Track Road	m ³	280			
B2.2.2.2	PSDM 3.2.1	b) Imported from commercial source					
B2.2.2.2.1		Compacted to 95% MoD AASHTO 150mm thick layer G7 (CBR>15)					
		i) MR461	m ³	1 900			
		ii) Road 0	m ³	2 780			
		iii) Road 1	m ³	140			
		iv) Transnet Road	m ³	280			
		v) Platform 1	m ³	1 140			
		viii) Track Road	m ³	280			
B2.2.2.2.2		Compacted to 95% MoD AASHTO 150mm thick layer G7 to shoulder infill (CBR>15)					
		i) MR461	m ³	180			
		ii) Road 0	m ³	300			
		iii) Road 1	m ³	60			
		iv) Transnet Road	m ³	240			
B2.2.3	8.3.6	Extra-over items B2.2.2.1 for excavating and breaking down material in:					
B2.2.3.1	PSDM 3.1 PSD 3.1.2	Hard excavation					
		i) MR461	m ³	960			
		ii) Road 0	m ³	1 400			
		iii) Road 1	m ³	80			
Total Carried Forward							

B: ROADS AND EARTHWORKS

2: EARTHWORKS (ROADS, SUBGRADE)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
		iv) Transnet Road	m ³	160			
		v) Platform 1	m ³	580			
		viii) Track Road	m ³	160			
B2.2.4	8.3.7	Cut to spoil or stockpile from					
B2.2.4.1	PS 5.2.2.4	Soft excavation					
		i) MR461	m ³	63 700			
		ii) Road 0	m ³	40 000			
		iv) Transnet Road	m ³	10 650			
		v) Platform 1	m ³	27 150			
		viii) Track Road	m ³	1 000			
		ix) Stormwater Detention Dam 2	m ³	5 900			
B2.2.4.2	PSDM 3.1 PSD 3.1.2	Hard excavation					
		i) MR461	m ³	27 950			
		ii) Road 0	m ³	52 100			
		iv) Transnet Road	m ³	1 500			
		v) Platform 1	m ³	30 500			
		ix) Stormwater Detention Dam 2	m ³	2 050			
B2.2.4.3		Boulder excavation Class A					
		i) MR461	m ³	64			
		ii) Road 0	m ³	74			
		iv) Transnet Road	m ³	12			
		v) Platform 1	m ³	62			
		ix) Stormwater Detention Dam 2	m ³	6			
B2.2.4.4		Boulder excavation Class B					
		i) MR461	m ³	640			
		ii) Road 0	m ³	740			
		iv) Transnet Road	m ³	120			
		v) Platform 1	m ³	620			
		ix) Stormwater Detention Dam 2	m ³	60			
Total Carried Forward							

B: ROADS AND EARTHWORKS

2: EARTHWORKS (ROADS, SUBGRADE)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
B2.2.5	8.3.8	Removal of oversize material	m ³	100			
B2.3	8.3.13	SURFACE FINISHES					
B2.3.1		Topsoiling from site or stockpile					
		i) MR461	m ²	8 250			
		ii) Road 0	m ²	12 000			
		iii) Road 1 (from Road MR461)	m ²	900			
		iv) Transnet Road	m ²	5 350			
		v) Platform 1	m ²	1 350			
		vi) Platform 2	m ²	4 600			
		viii) Track Road	m ²	1 400			
		ix) Stormwater Detention Dam 2	m ²	1 350			
B2.3.2		Extra over B2.3.1 for imported topsoil					
		i) MR461	m ²			Rate Only	
B2.3.3		Grassing					
		a) Hydroseeding					
		i) MR461	m ²	8 250			
		ii) Road 0	m ²	12 000			
		iii) Road 1 (from Road MR461)	m ²	900			
		iv) Transnet Road	m ²	5 350			
		v) Platform 1	m ²	1 350			
		vi) Platform 2	m ²	1 650			
		viii) Track Road	m ³	1 400			
		ix) Stormwater Detention Dam 2	m ³	1 350			
		b) Full coverage sods					
		i) MR461	m ²	450			
		ii) Road 0	m ²	600			
		iii) Road 1 (from Road MR461)	m ²	50			
		iv) Transnet Road	m ²	300			
		v) Platform 1	m ²	100			
Total Carried Forward							

B: ROADS AND EARTHWORKS

2: EARTHWORKS (ROADS, SUBGRADE)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
		vi) Platform 2	m ²	250			
		viii) Track Road	m ³	100			
		ix) Stormwater Detention Dam 2	m ³	100			
B2.4	8.3.16 PSDM 3.2.1	GRAVEL SURFACING					
B2.4.1		Gravel surface layer imported from commercial sources					
B2.4.1.1		Compacted to 98% MoD AASHTO 150mm thick layer G6 Wearing Course (CBR>25)					
		i) MR461 (Wide Shoulder)	m ³	60			
		iv) Transnet Road	m ³	60			
		viii) Track Road	m ³	240			
B2.4.1.2		Compacted to 98% MoD AASHTO 250mm thick layer G6 Wearing Course (CBR>25)					
		ii) Road 0	m ²	1 300			
		v) Platform 1	m ²	940			
B2.5	1200 D PSD 8.3.2	Restricted Excavation (where directed by the Engineer)	m ³				Rate Only
Total Carried Forward To Summary							

B: ROADS AND EARTHWORKS

3: SUBBASE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 ME	SECTION 3: SUBBASE					
B3.1	8.3.5	Process material by means of:					
B3.1.1	PSME 8.2.1	Mechanical modification					
		i) MR461	m ³	735			
		ii) Road 0	m ³	810			
B3.1.2		Stabilizing					
		i) MR461	m ³	2 205			
		ii) Road 0	m ³	2 430			
		iii) Road 1	m ³	200			
		viii) Track Road	m ³	260			
B3.2	PSME 1.2	Crushing					
		a) Establish on site and remove on completion	Sum			Rate Only	
		b) Multi stage crushing and screening	m ³			Rate Only	
B3.3	8.3.8	Stabilizing agent					
B3.3.1		Portland cement					
		i) MR461	t	180			
		ii) Road 0	t	195			
		iii) Road 1	t	20			
		viii) Track Road	t	25			
B3.4	1200 ME 8.3.3	Construct subbase with material from commercial sources					
B3.4.1		Compacted to 98% MoD AASHTO 150mm thick layer G5 (CBR>45)					
		i) MR461	m ³	2 940			
		ii) Road 0	m ³	3 240			
		iii) Road 1	m ³	200			
		iv) Transnet Road	m ³	80			
		v) Platform 1	m ³	2 260			
		viii) Track Road	m ³	520			
Total Carried Forward							

B: ROADS AND EARTHWORKS

3: SUBBASE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
B3.4.2		Compacted to 97% MoD AASHTO 150mm thick layer G5 to shoulders (CBR>45)					
		i) MR461	m ³	275			
		ii) Road 0	m ³	150			
		iii) Road 1	m ³	25			
		iv) Transnet Road	m ³	55			
		viii) Track Road	m ³	120			
Total Carried Forward To Summary							

B: ROADS AND EARTHWORKS

4: BASE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 MF	SECTION 4: BASE					
B4.1	8.3.3	Construct base with material from commercial sources					
B4.1.2		b) Graded crushed stone					
B4.1.2.1		Compacted to 100% MoD AASHTO 150mm thick layer G2					
		i) MR461	m ³	1 640			
		ii) Road 0	m ³	1 640			
		iii) Road 1	m ³	110			
B4.2	8.3.5	Process base by means of:					
B4.2.1	PSME 8.2.1	Mechanical modification					
		ii) Road 0	m ³	200			
B4.2.4		d) Stabilization					
		viii) Track Road	m ³	260			
B4.3	8.3.8	Stabilizing agent					
		Portland cement					
		viii) Track Road	t	25			
Total Carried Forward To Summary							

B: ROADS AND EARTHWORKS

5: ASPHALT BASE AND SURFACING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 MH	SECTION 5: ASPHALT BASE AND SURFACING					
B5.1		PRIME COAT					
B5.1.1	8.5.1	Prime coat using:					
B5.1.1.1		Type MSP-1 (0.7 litre/m ²)					
		i) MR461	m ²	11 000			
		ii) Road 0	m ²	10 000			
		iii) Road 1	m ²	600			
B5.1.2	8.5.5	Variations in quantities of prime:					
B5.1.2.1		Type MSP-1	ℓ			Rate Only	
B5.2		ASPHALT SURFACING					
B5.2.1	8.5.4	Continuously graded surfacing using:					
B5.2.1.1		a) bitumen Type 50/70 Penetration Grade					
		Maximum stone size 28mm					
B5.2.1.1.1		1) 40mm thick					
		i) MR461	m ²	11 000			
		ii) Road 0	m ²	10 000			
		iii) Road 1	m ²	600			
B5.2.1.1.2	8.5.5	Variations in quantities of bituminous binder:					
		a) bitumen Type 50/70 Penetration Grade	ℓ			Rate Only	
Total Carried Forward To Summary							

B: ROADS AND EARTHWORKS

7: KERBING AND CHANNELLING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 MK	SECTION 7: KERBING AND CHANNELLING					
B7.1		CONCRETE KERBING AND CHANNELLING					
B7.1.2	8.2.2	Fig 1 pre-cast barrier kerb with 300mm cast-in-situ channel / fillet complete					
		ii) Road 0	m	180			
B7.2		ANCILLARIES OPEN DRAINS					
B7.2.1		EXCAVATION					
B7.2.1.1	SANS 1200 DB 8.3.2(a)	Excavate in all materials for open drains, compact, and dispose of surplus/unsuitable material:					
		i) MR461	m ³	270			
		ii) Road 0	m ³	100			
		iv) Transnet Road	m ³	70			
		v) Platform 1	m ³	50			
B7.2.1.2	8.2.6.2	a) Trim excavations and compact base in soft and intermediate material					
		i) MR461	m ²	1 200			
		ii) Road 0	m ²	450			
		iv) Transnet Road	m ²	100			
		v) Platform 1	m ²	75			
B7.2.2	8.2.8	c) Concrete lining to Vee drain complete as per drawings, including formwork, joints, curing and finishing (25MPa, 150 thick)					
		i) MR461	m	810			
		ii) Road 0	m	300			
		iv) Transnet Road	m	200			
		v) Platform 1	m	150			
B7.3		Extra-over B7.1 for kerbs on a radius					
		a) For radius less than 15 and greater than 5m					
		ii) Road 0	m	30			
		b) For radius less than 5m and greater than 1m					
		ii) Road 0	m	20			
Total Carried Forward							

B: ROADS AND EARTHWORKS

8: ANCILLARY ROADWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 MM	SECTION 8: ANCILLARY ROADWORKS					
B8.1		GUARDRAILS					
B8.1.1	8.2.1	Supply and erect galvanized steel guardrails on timber posts, backfilled with material available on Site					
		ii) Road 0	m	450			
		iv) Transnet Road	m	30			
		v) Platform 1	m	50			
		viii) Track Road	m	100			
B8.1.2	8.2.2	Extra-over Item B8.1.1 for horizontally curved guardrails factory-bent to a radius of less than 45m					
		ii) Road 0	m	150			
		viii) Track Road	m	80			
B8.1.3	8.2.3	End Units					
		a) End wings					
		ii) Road 0	No.	10			
		iv) Transnet Road	No.	2			
		v) Platform 1	No.	2			
		viii) Track Road	No.	4			
		b) Terminal sections to standard detail using single guardrail sections					
		ii) Road 0	No.	6			
B8.1.4	8.2.4	Additional guardrail posts, as for Item B8.1.1					
		ii) Road 0	No.	30			
		iv) Transnet Road	No.	10			
		v) Platform 1	No.	20			
		viii) Track Road	No.	10			
B8.1.5	8.2.5	Reflector plates, supply and fix					
		ii) Road 0	No.	30			
		viii) Track Road	No.	20			
Total Carried Forward							

B: ROADS AND EARTHWORKS

8: ANCILLARY ROADWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
B8.1.6		Moveable concrete barriers (New Jersey Type or similar) 3m long					
		a) Supply and install	No.	20			
		b) Move to new position	No.	60			
B8.2		PERMANENT TRAFFIC SIGNS					
B8.2.1	8.3.1	Sign faces with painted or galvanized (as stated) background. Symbols, characters, legend, and borders in engineering grade retroreflective material with signboards constructed from					
B8.2.1.1		c) Sheet steel (1,6 mm thick),of area Over and Up to					
		- 2 m ²	m ²	4			
		2 m ² 10 m ²	m ²	6			
B8.2.1.2	8.3.2	Extra-Over Item B8.2.1.1 for using					
		a) Engineering grade retroreflective background (Prov.)	m ²	8			
B8.2.2	8.3.3	Sign Supports					
		c) Timber, diameter 145 mm - 175 mm pine (treated with CCA)	m	8			
B8.2.3	8.1.1 & 8.3.4	Excavation for sign supports and backfilling with in-situ material	m ³	4			
B8.2.4		STANDARD SIGNS ON TIMBER POSTS (supplied and installed completed,including support, excavation and backfill))					
		(a) Steel sheet regulatory warning and information signs					
		(1) Octagonal - 610mm					
		(ii) Road 0	No.	4			
		(iii) Road 1	No.	1			
		(iv) Transnet Road	No.	1			
		(2) Triangular - 900mm side					
		(i) MR461	No.	6			
		(ii) Road 0	No.	10			
		(iii) Road 1	No.	1			
		(iv) Transnet Road	No.	2			
Total Carried Forward							

B: ROADS AND EARTHWORKS

8: ANCILLARY ROADWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
		viii) Track Road	No.	2			
		(3) Round - 600mm dia					
		(i) MR461	No.	4			
		(ii) Road 0	No.	4			
		(iii) Road 1	No.	1			
		(iv) Transnet Road	No.	2			
		viii) Track Road	No.	2			
		(4) Rectangular - 200 mm wide x 800 mm high (Type W401/ W402)					
		(i) MR461	No.	4			
		(ii) Road 0	No.	10			
		(iii) Road 1	No.	2			
		(iv) Transnet Road	No.	2			
		(5) Rectangular - 450 mm wide x 450mm high (Type W405 / W406)					
		ii) Road 0	No.	16			
		iv) Transnet Road	No.	6			
		viii) Track Road	No.	10			
B8.3		ROAD MARKINGS					
B8.3.1	8.4.1	Non-reflectorized paint applied at nominal rate of 0,42 l/m ²					
B8.3.1.1		a) White lines (broken or unbroken)					
		i) 100mm width					
		1) MR461	km	1.5			
		2) Road 0	km	1.1			
		3) Road 1	km	0.1			
		ii) 150mm width					
		1) MR461	km	0.2			
		2) Road 0	km	0.1			
		3) Road 1	km	0.1			
Total Carried Forward							

B: ROADS AND EARTHWORKS

8: ANCILLARY ROADWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
B8.3.1.2		b) Yellow lines (broken or unbroken)					
		i) 150mm width					
		1) MR461	km	1.8			
		2) Road 0	km	0.1			
		3) Road 1	km	0.1			
B8.3.1.3		c) White characters and symbols					
		1) MR461	m ²	4			
		2) Road 0	m ²	6			
		3) Road 1	m ²	2			
B8.3.1.4		d) Yellow characters and symbols					
		1) MR461	m ²	3			
B8.3.1.5		e) Traffic island markings (any colour)					
		1) MR461	m ²	150			
B8.3.1.6		f) Red lines (broken or unbroken)					
		i) 100mm width					
		3) Road 1	km	0.2			
B8.3.2	8.4.2	Variation in rate of application from that stated for item B8.3.1					
B8.3.2.1		a) White paint					
		1) MR461	ℓ			Rate Only	
		2) Road 0	ℓ			Rate Only	
		3) Road 1	ℓ			Rate Only	
B8.3.2.2		b) Yellow paint					
		1) MR461	ℓ			Rate Only	
		2) Road 0	ℓ			Rate Only	
		3) Road 1	ℓ			Rate Only	
B8.3.2.3		c) Red paint					
		1) MR461	ℓ			Rate Only	
		2) Road 0	ℓ			Rate Only	
		3) Road 1	ℓ			Rate Only	
Total Carried Forward							

B: ROADS AND EARTHWORKS

8: ANCILLARY ROADWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
B8.3.3	8.4.4	Setting out and pre-marking of lines (excluding traffic island markings, characters, and symbols)					
		i) MR461	km	3.70			
		ii) Road 0	km	1.22			
		iii) Road 1	km	0.54			
Total Carried Forward To Summary							

B: ROADS AND EARTHWORKS

9: CONCRETE PAVEMENT

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 G	SECTION 9: CONCRETE PAVEMENT					
B9.1	8.4.3	CONCRETE					
	PSG 8.4.3	a) Class 30/20 concrete to road pavement					
		ii) Road 0	m ³	800			
		viii) Track Road	m ³	360			
		b) Approval of mix design	Sum				
		c) Anchors on slopes greater than 3% complete as per standard detail (excluding concrete)					
		1) Anchor block					
		ii) Road 0	m	20			
		viii) Track Road	m	16			
		2) Panel anchor					
		ii) Road 0	m	20			
		viii) Track Road	m	48			
		3i) End anchor					
		ii) Road 0	m	10			
		viii) Track Road	m	10			
		d) Coring and testing of cores					
		i) 100mm cores drilled from pavement	No.	20			
		ii) 150mm cores drilled from pavement and tested for crushing strength	No.	10			
B9.2	8.2	FORMWORK					
		a) Side forms including recess					
		ii) Road 0	m ²	250			
		viii) Track Road	m ²	750			
		b) 25mm x 25mm chamfer on ends					
		ii) Road 0	m	80			
		viii) Track Road	m	8			
Total Carried Forward							

B: ROADS AND EARTHWORKS

9: CONCRETE PAVEMENT

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
B9.3	8.3	REINFORCEMENT					
		a) High tensile steel reinforcement					
		1) Y10 tie bars (600mm long)					
		ii) Road 0	No.	400			
		viii) Track Road	No.	610			
B9.4	8.5	JOINTS					
	PSG 3.10	a) Sawn joints as per standard detail drawing					
		ii) Road 0	m ²	500			
		viii) Track Road	m ²	360			
	PSG3.10	b) Construction joints as per standard detail drawing					
		ii) Road 0	m ²	530			
		viii) Track Road	m ²	320			
	PSG3.10 PSG 3.11	c) Joint sealing as per standard detail drawing					
		ii) Road 0	m	1 030			
		d) Forming joints around manholes					
		ii) Road 0	m ²	36			
B9.5	8.4.4	TEXTURING					
	PSG 5.5.10	a) Burlap drag					
		ii) Road 0	m ²	3 200			
		b) Broom finish					
		ii) Road 0	m ²				Rate Only
		c) Rough transverse grooves on steep slopes					
		viii) Track Road	m ²	1 440			
B9.6	PSG 3.9	CURING					
B9.6.1		Curing compound (White pigmented, sprayed at 0.45 l/m ²)					
		ii) Road 0	m ²	3 200			
		viii) Track Road	m ²	1 440			
Total Carried Forward To Summary							

B: ROADS AND EARTHWORKS

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
B1	SITE CLEARANCE	.....
B2	EARTHWORKS (ROADS, SUBGRADE)	.....
B3	SUBBASE	.....
B4	BASE	.....
B5	ASPHALT BASE AND SURFACING	.....
B6	SEGMENTED PAVING	.....
B7	KERBING AND CHANNELLING	.....
B8	ANCILLARY ROADWORKS	.....
B9	CONCRETE PAVEMENT	.....
Total Carried Forward To Summary Of Schedules		.....

C: STORMWATER

1: PIPE TRENCHES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 DB	SECTION 1: PIPE TRENCHES					
C1.1		EXCAVATION					
C1.1.1	8.3.2(a) PSDB 3.1 PSDB 5.4 PSDB 8.3.2	Excavate in all materials for trenches backfill, compact, and dispose of surplus/unsuitable material, for pipes:					
C1.1.1.1		Over 100 up to 300 mm diam. for total trench depth (for subsoils):					
		Exceeding 0,0 m but not exceeding 1,0 m	m	700			
		Exceeding 1,0 m but not exceeding 2,0 m	m	200			
C1.1.1.2		Over 300 up to 600 mm diam. for total trench depth:					
		Exceeding 1,0 m but not exceeding 2,0 m	m	470			
		Exceeding 2,0 m but not exceeding 3,0 m	m	300			
		Exceeding 3,0 m but not exceeding 4,0 m	m	200			
C1.1.1.3		Over 600 up to 900 mm diam. for total trench depth:					
		Exceeding 1,0 m but not exceeding 2,0 m	m	50			
		Exceeding 2,0 m but not exceeding 3,0 m	m	50			
		Exceeding 3,0 m but not exceeding 4,0 m	m	20			
C1.1.2	8.3.2(b)	Extra-over items C1.1.1 for (prov):	m ³				
C1.1.2.1	PSDB 3.1	Hard rock excavation	m ³	65			
C1.1.3	8.3.2(c)	Excavate and dispose of unsuitable material from trench bottom (Provisional)	m ³	145			
C1.2		EXCAVATION. ANCILLARIES Make up deficiency in backfill material (Provisional)					
C1.2.1	8.3.3.1(a)	from other necessary excavations on site	m ³	400			
C1.3	8.3.4(a) PSDB 5.1.5	Shore trench					
C1.3.1		For trench deeper than 1.5m up to 3.0m	m	240			
C1.3.2		For trench deeper than 3.0m	m	80			
C1.4		EXISTING SERVICES					
C1.4.1		Excavate by hand in soft material to expose service					
C1.4.1.1	8.3.5(a)	Services that intersect a trench	No.	5			
Total Carried Forward							

C: STORMWATER

2: BEDDING (PIPES)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 LB	SECTION 2: BEDDING					
C2.1		PROVISION OF BEDDING					
C2.1.1		Imported from					
	8.2.2.1	a) Other necessary excavations or stockpile for					
		2) Selected fill blanket	m ³	800			
	8.2.2.3	c) Commercial sources (Provisional)					
		1) Selected granular material	m ³	720			
		2) Selected fill material	m ³	40			
		3) Single size crushed stone, 19mm	m ³	220			
C2.2	8.2.3	Concrete bedding (Provisional)	m ³	40			
C2.3		SEPARATION LAYER					
C2.3.1		Geotextile non-woven needle punched to					
	PSDK 3.1.4	a) Subsoil drains 200gsm	m ²	2 000			
	PSDK 3.1.4	b) Below road layers 340 gsm	m ²	800			
Total Carried Forward To Summary							

C: STORMWATER

3: STORMWATER DRAINAGE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
		SECTION 3:STORMWATER DRAINAGE					
C3.1	SANS 1200 LE	PIPES					
C3.1.1	8.2.1	Supply, handle, lay, bed on Class A bedding concrete pipe Type Spigot & Socket and Class 75D.					
		a) 450 mm diameter	m	80			
		b) 600 mm diameter	m	10			
C3.1.2	8.2.1	Supply, handle, lay, bed on Class B bedding, concrete pipe Type Spigot & Socket and Class 75D.					
		a) 450 mm diameter	m	430			
		b) 600 mm diameter	m	450			
		c) 750 mm diameter	m	90			
		d) 900 mm diameter	m	30			
C3.2	8.2.1	Supply, handle, lay, bed subsoil pipes:					
		a) 100mm dia	m	900			
C3.3	8.2.8	MANHOLES Construct complete with heavy duty cast iron covers and frames (Type 2B)					
		a) Type A up to 1,5 m deep	No.	4			
		b) Type B, up to 2.5 m deep	No.	3			
		c) Extra over (a) and (b) above for extra depth					
		i) Type A	m	4			
		ii) Type B	m	4			
C3.4	8.2.8	CATCHPITS Construct complete with heavy duty precast concrete cover and slabs					
		a) Type S2 (up to 1.5m depth)	No.	14			
		b) Type D3 (up to 1.5m depth)	No.	10			
		c) Extra over (a) and (b) above for extra depth	m	6			
C3.5	8.2.8	HEADWALLS Construct complete as per standard drawing for pipe of diameter					
		a) 600mm	No.	4			
		b) 750mm	No.	1			
		b) 900mm	No.	1			
Total Carried Forward							

C: STORMWATER

3: STORMWATER DRAINAGE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
C3.6	8.2.12	Extra-over item C3.1 for construction of inclined pipe culverts					
		a) 450 mm diameter	m	16			
		b) 600 mm diameter	m	12			
		c) 750 mm diameter	m	8			
		d) 900 mm diameter	m	4			
C3.7	8.2.10	ACCESSORIES					
C3.7.1		Covers and grids					
C3.7.1.1		Extra over or under C3.3(a) and (b) for Heavy Duty Cast Iron Grid and frame					
		a) 450 x 450	No.	9			
		b) 600 x 600	No.	16			
C3.7.1.2		Extra over or under C3.3(a) and (b), and C3.4(a) and (b) for Heavy Duty Polymer Concrete (including frame)					
		a) Grid 450 x 450	No.	9			
		b) Grid 600 x 600	No.	16			
		c) Cover Type 2B	No.	7			
C3.7.2		Step irons	No.	48			
Total Carried Forward To Summary							

C: STORMWATER

4: GABIONS AND PITCHING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 DK	SECTION 4: GABIONS AND PITCHING					
C4.1	SANS 1200 DB	EXCAVATION See Section D, DA, DE as applicable					
C4.1.1	8.3.2	Excavate for gabions and mattresses in soft materials and place in embankment for:					
		a) Gabion boxes	m ³	30			
		b) Reno mattresses	m ³	25			
		c) Terramesh (1m x 1m box with 3m tail)	m ³	15			
C4.1.2		Extra-over items C4.1.1 for excavation in:					
C4.1.2.1		hard material	m ³	15			
C4.2		GABIONS					
C4.2.1	8.2.1	Surface preparation for bedding of gabions	m ²	150			
C4.3	8.2.2	Construct gabions using PVC coated galvanised wire mesh					
		a) Toe mattresses of depth 0,25 m with diaphragms providing 2 m x 1 m cells	m ³	30			
		b) Foundation mattresses of depth 0,3 m with diaphragms providing 2 m x 1 m cells	m ³	25			
		c) Gabions of section 1,0 m x 1,0 m for walls	m ³	50			
		d) Terramesh of section (1m x 1m box (including 3m tail))	m ³	190			
C4.4	8.2.3	Extra-over item C4.3 for selected stone on exposed faces	m ²	100			
C4.5	8.2.4 PSDK 3.1.4	Geotextile (non-woven needle punched, 340 g/m ²) placed where ground water seepage occurs					
		a) below foundation mattresses	m ²	150			
		b) on slope behind wall	m ²	180			
Total Carried Forward To Summary							

C: STORMWATER

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
C1	PIPE TRENCHES	.....
C2	BEDDING	.....
C3	STORMWATER DRAINAGE	.....
C4	GABIONS AND PITCHING	.....
Total Carried Forward To Summary Of Schedules		.....

D: CONTAMINATED STORMWATER

1: PIPE TRENCHES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 DB	SECTION 1: PIPE TRENCHES					
D1.1		EXCAVATION					
D1.1.1	8.3.2(a) PSDB 3.1 PSDB 5.4 PSDB 8.3.2	Excavate in all materials for trenches backfill, compact, and dispose of surplus/unsuitable material, for pipes:					
D1.1.1.1		Over 100 up to 400 mm diam. for total trench depth:					
		Exceeding 0,0 m but not exceeding 1,0 m	m	10			
		Exceeding 1,0 m but not exceeding 2,0 m	m	310			
		Exceeding 2,0 m but not exceeding 3,0 m	m	200			
		Exceeding 3,0 m but not exceeding 4,0 m	m	90			
		Exceeding 4,0 m but not exceeding 5,0 m	m	70			
D1.1.2	8.3.2(b)	Extra-over items D1.1.1.1 incl. for (prov):					
D1.1.2.1	PSDB 3.1	Hard rock excavation	m ³	45			
D1.1.3	8.3.2(c)	Excavate and dispose of unsuitable material from trench bottom (Provisional)	m ³	35			
D1.2		EXCAVATION. ANCILLARIES Make up deficiency in backfill material (Provisional)					
D1.2.1	8.3.3.1(a)	from other necessary excavations on site	m ³	180			
D1.3	8.3.4(a)	Shore trench					
D1.3.1	PSDB 5.15	For trench deeper than 1.5m up to 3.0m	m	270			
D1.3.2		For trench deeper than 3.0m	m	110			
D1.4		EXISTING SERVICES					
D1.4.1	8.3.5	Services across and in trenches					
D1.4.1.1	8.3.5(a)	Services that intersect a trench	No.	2			
D1.4.1.2	8.3.5(b)	Services that adjoin a trench	m	40			
Total Carried Forward To Summary							

D: CONTAMINATED STORMWATER

2: BEDDING (PIPES)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 LB	SECTION 2: BEDDING					
D2.1		PROVISION OF BEDDING					
D2.1.1		Imported from					
	8.2.2.1	a) Other necessary excavations or stockpile					
		2) Selected fill blanket	m ³	135			
	8.2.2.3	c) Commercial sources (Provisional)					
		1) Selected granular material (sand)	m ³	310			
		2) Selected fill material	m ³	20			
Total Carried Forward To Summary							

D: CONTAMINATED STORMWATER

3: SEWERS (CONTAMINATED STORMWATER)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS	SECTION 3: CONTAMINATED STORMWATER PIPES					
D3.1	1200 LD	PIPEWORK					
D3.1.1	8.2.1 PSLD 3.1.8 PSLD 8.2.1	Supply, lay, joint, bed on Class Flexible Pipe bedding and test, HDPE contaminated stormwater pipes with welded joints					
D3.1.1.1		PN 6 PE 80					
		a) 200 mm diam.	m	110			
		b) 250 mm diam.	m	400			
		c) 300 mm diam.	m	90			
		d) 400 mm diam.	m	70			
D3.2	1200 LD 8.2.3	MANHOLES, ETC. Manholes to Standard Detail					
D3.2.1		1.0m dia precast concrete rings, complete with Heavy Duty Cast Iron cover and frame Type 2A, and including bitumen inner coating for depths over and up to					
		0.5 m 1,0 m	No.	1			
		1,0 m 1,5 m	No.	4			
		1,5m 2,0 m	No.	3			
		2,0 m 2,5 m	No.	1			
		2,5 m 3,0m	No.	1			
D3.3	8.2.10	ACCESSORIES					
D3.3.1		Covers and grids					
D3.3.1.1		Extra over or under D3.2 for Heavy Duty Polymer Concrete (including frame)					
		a) Type 2A	No.	9			
D3.3.1.2		Extra over or under D3.2 for Heavy Duty Cast Iron Grids (including frame)					
		a) 600mm x 600mm	No.	12			
Total Carried Forward To Summary							

D: CONTAMINATED STORMWATER

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
D1	PIPE TRENCHES	.....
D2	BEDDING	.....
D3	CONTAMINATED STORMWATER	.....
Total Carried Forward To Summary Of Schedules		.....

E SEWER

1: PIPE TRENCHES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 DB PSDB 3.1 PSDB 5.4 PSDB 8.2	SECTION 1: PIPE TRENCHES					
E1.1		EXCAVATION					
E1.1.1	8.3.2(a)	Excavate in all materials for trenches backfill, compact, and dispose of surplus/unsuitable material, for pipes:					
E1.1.1.1		Over 100 up to 300 mm diam. for total trench depth:					
		Exceeding 0,0 m but not exceeding 1,0 m	m	80			
		Exceeding 1,0 m but not exceeding 2,0 m	m	230			
		Exceeding 2,0 m but not exceeding 3,0 m	m	100			
		Exceeding 3,0 m but not exceeding 4,0 m	m	50			
		Exceeding 4,0 m but not exceeding 5,0 m	m	20			
		Exceeding 5,0 m but not exceeding 6,0 m	m	20			
E1.1.2	8.3.2(b)	Extra-over items E1.1.1 for (prov):					
E1.1.2.1	PSDB 3.1	Hard rock excavation	m ³	30			
E1.1.3	8.3.2(c)	Excavate and dispose of unsuitable material from trench bottom (Provisional)	m ³	30			
E1.2		EXCAVATION. ANCILLARIES Make up deficiency in backfill material (Provisional)					
E1.2.1	8.3.3.1(a)	from other necessary excavations on site	m ³	400			
E1.3	8.3.4(a)	Shore trench					
E1.3.1	PSDB 5.1.5	For trench deeper than 1.5m up to 3.0m	m	30			
E1.3.2		For trench deeper than 3.0m	m	20			
E1.4		EXISTING SERVICES					
E1.4.1	8.3.5	Services across and in trenches					
E1.4.1.1	8.3.5(a)	Services that intersect a trench	No.	1			
E1.4.1.2	8.3.5(b)	Services that adjoin a trench	m	20			
Total Carried Forward To Summary							

E SEWER

2: BEDDING (PIPES)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 LB	SECTION 2: BEDDING					
E2.1		PROVISION OF BEDDING					
E2.1.1		Imported from					
	8.2.2.1	a) Other necessary excavations or stockpile					
		2) Selected fill blanket	m ³	70			
	8.2.2.3	c) Commercial sources (Provisional)					
		1) Selected granular material	m ³	90			
		2) Selected fill material	m ³	80			
E2.2		PROTECTION SLAB					
E2.2.1		100mm Thick protection slab as per detail (Concrete Class 25/20)	m ³	3			
Total Carried Forward To Summary							

E SEWER

3: SEWERS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS	SECTION 3: SEWERS					
E3.1	1200 LD	PIPEWORK					
E3.1.1	8.2.1	Supply, lay, joint, bed on Class Flexible and test uPVC sewer pipes with socketed joints					
E3.1.1.1		150 mm diam., Class 34	m	500			
E3.2	1200 LD 8.2.3	MANHOLES, ETC. Manholes to standard drawing					
		1.0m dia precast concrete rings, complete with Heavy Duty Cast Iron cover and frame Type 2A, for depths over and up to					
		0.5 m 1,0 m	No.	4			
		1,0 m 1,5 m	No.	8			
		1,5 m 2,0 m	No.	4			
		2,0 m 2,5 m	No.	2			
		2,5 m 3,0m	No.	1			
E3.3	8.2.4	Extra-over item E3.2 for construction of backdrops and ramps including extra excavation, formwork, joints, etc., to standard drawing for depths over and up to					
		- 1,0 m	No.	1			
		1,0 m 2,0 m	No.	1			
		2,0 m 3,0 m	No.	1			
E3.4		SUNDRIES					
E3.4.1		Septic tank Type 1 - 9000 litre capacity (as per standard drawing) - complete	No.	2			
E3.4.2		Septic tank Type 2- 1700 litre capacity (as per standard drawing) - complete	No.	1			
E3.4.3		Soakaway (as per standard drawing) including excavation, stone, filter fabric, perforated pipe	m	40			
Total Carried Forward To Summary							

E SEWER

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
E1	PIPE TRENCHES	.....
E2	BEDDING	.....
E3	SEWERS	.....
Total Carried Forward To Summary Of Schedules		.....

F: WATERMAINS

1: PIPE TRENCHES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 DB	SECTION 1: PIPE TRENCHES					
F1.1		EXCAVATION					
F1.1.1	8.3.2(a) PSDB 3.1 PSDB 5.4 PSDB 8.3.2	Excavate in all materials for trenches backfill, compact, and dispose of surplus/unsuitable material, for pipes:					
F1.1.1.1		up to 150 mm diam. for total trench depth:					
		Exceeding 0,0 m but not exceeding 1,0 m	m	800			
		Exceeding 1,0 m but not exceeding 2,0 m	m	380			
F1.1.2	8.3.2(b)	Extra-over items F1.1.1.1 for (prov):					
F1.1.2.1	PSDB 3.1	Hard rock excavation	m ³	20			
F1.1.3	8.3.2(c)	Excavate and dispose of unsuitable material from trench bottom (Provisional)	m ³	30			
F1.2		EXCAVATION. ANCILLARIES Make up deficiency in backfill material (Provisional)					
F1.2.1	8.3.3.1(a)	from other necessary excavations on site	m ³	150			
F1.2.2	8.3.3.1(b)	by importation from designated borrow pits	m ³	50			
F1.2.3	8.3.3.1(c)	by importation from commercial or off-site sources selected by the Contractor	m ³	20			
F1.3	8.3.4(a)	Shore trench					
F1.3.1	PSDB 5.1.5	For trench deeper than 1.5m up to 3.0m	m	30			
F1.4		EXISTING SERVICES					
F1.4.1		Location					
F1.4.1.1		Excavate by hand in soft material to expose services	m ³	10			
F1.4.2		Dealing with services					
F1.4.2.1	8.3.5(a)	Services that intersect a trench					
		a) Cables	No.	2			
		b) Pipes up to 600 mm	No.	4			
F1.4.2.2	8.3.5(b)	Services that adjoin a trench					
		a) Cables	m	20			
		b) Pipes up to 600 mm	m	10			
Total Carried Forward To Summary							

F: WATERMAINS

2: BEDDING (PIPES)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 LB	SECTION 2: BEDDING					
F2.1		PROVISION OF BEDDING					
F2.1.1		Imported from					
	8.2.2.1	a) Other necessary excavations or stockpile					
		2) Selected fill blanket	m ³	200			
	8.2.2.3	c) Commercial sources (Provisional)					
		1) Selected granular material (sand)	m ³	280			
		2) Selected fill material	m ³	30			
Total Carried Forward To Summary							

F: WATERMAINS

3: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
		SECTION 3: WATER MAINS					
F3.1	SANS 1200 L	PIPELINE					
F3.1.1	8.2.1 PSDB 3.1 PSBD 5.4 PSBD 8.3.2	uPVC pipes Class 12: Supply, handle, lay, and bed with Flexible Pipe Bedding, Joint with spigot and socket couplings, test, and disinfect (potable water pipeline)					
		a) 75mm diam.	m	820			
		b) 110mm diam.	m	270			
F3.1.2	8.2.1	HDPE pipes Class PN 12 (PE80): Supply, handle, lay in Flexible Pipe Bedding, joint with compression type couplings, test, and disinfect (potable water pipelines)					
		a) 50mm diam.	m	90			
F3.1.3	8.2.1 PSDB 3.1 PSBD 5.4 PSBD 8.3.2	Hot dipped Galvanised Pipes with bolted flanges: Supply, handle, lay, join, test, and disinfect (potable water pipeline)					
		a) 75mm diam.	m	8			
		b) 110mm diam.	m	4			
F3.2		Extra-over item F3.1 for laying pipes through sleeve pipes	m	15			
F3.3		Extra-over item F3.1.3 for attaching steel pipe to side of tank					
		a) 75mm diam.	m	2			
		b) 110mm diam.	m	1			
F3.4		Extra-over item F3.1.3 for special wrapping of buried steel pipes (Denso tape or similar)					
		a) 75mm diam.	m	6			
		b) 110mm diam.	m	3			
F3.5	1200 L 8.2.5	SUPPLY AND FIT, INCL. BED, TEST AND DISINFECT (if for potable water) PIPES, VALVES, AND SPECIALS: (Short pipe runs)					
F3.5.1	SANS 1200 L	SPECIALS AND FITTINGS					
F3.5.1.1	8.2.2	Supply, lay, and bed, joint, incl cut pipes to length where required, test and disinfect: Extra-over items for pipe laying					
Total Carried Forward							

F: WATERMAINS

3: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
F3.5.1.1.1		Bends uPVC Class 12 Plain-ended incl couplings					
		a) 75mm diam. 11.25 deg.	No.	7			
		b) 75mm diam. 22.5 deg.	No.	6			
		c) 75mm diam. 45 deg.	No.	2			
		d) 75mm diam. 90 deg.	No.	6			
		e) 110mm diam. 11.25 deg.	No.	3			
		f) 110mm diam. 22.5 deg.	No.	2			
		g) 110mm diam. 45 deg.	No.	1			
		h) 110mm diam. 90 deg.	No.	1			
F3.5.1.1.2		Bends HDPE Class 12 Plain-ended incl couplings					
		a) 50mm diam. 45 deg.	No.	1			
		a) 50mm diam. 90 deg.	No.	1			
F3.5.1.1.3		Bends hot dipped galvanised steel flanged					
		a) 75mm diam. 90 deg.	No.	8			
		b) 110mm diam. 90 deg.	No.	2			
F3.5.1.1.4		Spool piece hot dipped galvanised steel flanged					
		a) 75mm diam. 90 deg.	No.	3			
		b) 110mm diam. 90 deg.	No.	1			
F3.5.1.1.5		Reducers uPVC Class 12 Plain-ended incl. couplings					
		a) 110mm to 75mm diam.	No.	1			
F3.5.1.1.6		Tee's (Equal legs) uPVC Class 12 Plain-ended incl. couplings					
		a) 75mm dia.	No.	2			
		b) 110mm dia.	No.	1			
F3.5.1.1.7		Hydrant Tee's (unequal legs) Cast iron 110/75 flanged on tee leg only	No.	2			
F3.5.1.1.8		Couplings (plain / flanged)					
		a) 75mm uPVC plain to 50mm HDPE plain	No.	2			
		b) 75mm uPVC plain to 75mm Galvanised Steel flanged	No.	2			
Total Carried Forward							

F: WATERMAINS

3: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
F3.5.1.1.9		c) 110mm uPVC plain to 110mm Galvanised Steel flanged Couplings (flanged)	No.	1			
F3.5.1.1.1.0		a) 75mm uPVC to 75mm Galvanised Steel End caps	No.	1			
		a) uPVC 75mm dia.	No.	1			
		b) HDPE 50mm dia.	No.	2			
F3.5.1.2	8.2.3	VALVES Supply, in valve box or install on concrete support, joint, incl cut pipes where necessary, test, hand closing, (non-) rising spindle.					
F3.5.1.2.1		Flanged Isolating Valve including flange adapters					
		a) 50mm diam. on HDPE pipe	No.	2			
		b) 75mm diam.on uPVC pipe	No.	9			
		c) 110mm diam.on uPVC pipe	No.	4			
F3.5.1.2.2		Flanged Isolating Valve on galvanised steel pipe					
		a) 75mm diam.	No.	2			
		b) 110mm diam.	No.	1			
F3.5.1.2.3		Flanged non-return valves including flange adapters					
		a) 75mm diam.	No.	1			
F3.5.1.2.4		Flanged air release valves including flange adapters					
		a) 75mm diam.	No.	2			
		b) 110mm diam.	No.	1			
F3.5.1.2.5		Level Control Valve on steel inlet pipe (flanged) (Bermad or similar approved)					
		a) 75mm diam.	No.	1			
F3.5.1.2.6		Flanged In-line water filter on steel pipe					
		a) 75mm diam.	No.	1			
F3.5.1.2.7		Flanged Water meter on steel pipe					
		a) 75mm diam.	No.	1			
Total Carried Forward							

F: WATERMAINS

3: MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
F3.6		b) 110mm diam. ANCILLARIES	No.			Rate Only	
F3.6.1	8.2.11	Anchor/Thrust blocks and pedestals					
F3.6.1.1		Type A to standard detail					
F3.7	8.2.12	a) Concrete Class 20/20 including formwork Concrete casing	m ³	8			
F3.8	8.2.13	VALVE CHAMBERS AND MANHOLES:					
F3.8.1		Hydrant above ground level including concrete encasement	No.	2			
F3.9		Marker posts	No.	20			
F3.10		MUNICIPAL CONNECTION					
F3.10.1		Tie into municipal connection, 75mm dia (including galvanised steel pipework and bends for above ground filter, meter and 2 No isolating valves)	Sum	1			
F3.11	SANS 1200 HA	WATER TANK					
F3.11.1	PSHA 8	c) 220 KL Pressed Steel Tank (Complete as per detail)	Sum	1			
Total Carried Forward To Summary							

F: WATERMAINS

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
F1	PIPE TRENCHES	.....
F2	BEDDING	.....
F3	WATER MAINS	.....
Total Carried Forward To Summary Of Schedules		.....

G: CABLE DUCTS

1: PIPE TRENCHES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 DB	SECTION 1: PIPE TRENCHES					
G1.1		EXCAVATION					
G1.1.1	8.3.2(a) PSDB 3.1 PSDB 5.4 PSDB 8.3.2	Excavate in all materials for trenches backfill, compact, and dispose of surplus/unsuitable material, for:					
G1.1.1.1		Over 500mm to 1000mm trench width for total trench depth:					
		Exceeding 0,0 m but not exceeding 1,0 m	m	90			
		Exceeding 1,0 m but not exceeding 2,0 m	m	70			
G1.1.1.2		Over 1000mm to 1500mm trench width for total trench depth:					
		Exceeding 0,0 m but not exceeding 1,0 m	m	90			
		Exceeding 1,0 m but not exceeding 2,0 m	m	70			
G1.1.2	8.3.2(b)	Extra-over items G1.1.1 for (prov):					
G1.1.2.1		Hard rock excavation	m ³	20			
G1.1.3	8.3.2(c)	Excavate and dispose of unsuitable material from trench bottom (Provisional)	m ³	10			
G1.2		EXCAVATION. ANCILLARIES Make up deficiency in backfill material (Provisional)					
G1.2.1	8.3.3.1(a)	from other necessary excavations on site	m ³	30			
Total Carried Forward To Summary							

G: CABLE DUCTS

2: BEDDING (PIPES)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 LB	SECTION 2: BEDDING					
G2.1		PROVISION OF BEDDING					
G2.1.1		Imported from					
G2.1.1.1	8.2.2.1	a) Other necessary excavations or stockpile					
		2) Selected fill blanket	m ³	50			
G2.1.1.2	8.2.2.3	c) Commercial sources (Provisional)					
		1) Selected granular material (sand)	m ³	100			
		2) Selected fill material	m ³	30			
		3) Concrete encasement Class 10/26	m ³	75			
Total Carried Forward To Summary							

G: CABLE DUCTS

3: CABLE DUCTS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SANS 1200 LC	SECTION 3: CABLE DUCTS					
G3.1	8.2.5	SUPPLY, LAY, BED, AND PROVE DUCTS					
G3.1.1		100 mm diam. uPVC pipes Class 34	m	450			
G3.1.2		160 mm diam. uPVC pipes Class 34	m	290			
G3.1.3		300 mm diam. Concrete pipes (Spigot and Socket, Class 75D)	m	30			
G3.2	8.2.7	DRAW PITS/MANHOLES COMPLETE					
G3.2.1		Cable Duct Marker and Headwall to standard detail	No.	24			
G3.3	PSLC3.4	CABLE PROTECTION					
G3.3.1	8.2.8	CABLE ROUTE MARKERS Complete, installed, and record submitted	No.	24			
Total Carried Forward To Summary							

G: CABLE DUCTS

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
G1	PIPE TRENCHES	.....
G2	BEDDING	.....
G3	CABLE DUCTS	.....
Total Carried Forward To Summary Of Schedules		.....

H: FENCING

1: FENCING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
	SABS 1200 MM	SECTION 1: FENCING					
H1.1	PS	Setting out	Sum	1			
H1.2	SABS 1200 C 8.2.1	Clear and grub fence-line (strip of 3m width)	m	1 950			
H1.3		Localised trimming of ground-line to match fence	m ²	1 200			
H1.4		FENCING					
H1.4.1		Supply and install fence complete with posts and straining posts set in concrete					
H1.4.1.1	PSMM 8.2.1	a) ClearVu or similar approved, 1.8m height, welded mesh with maximum apertures not greater than 13mm hor. x 80mm vert.	m	1 950			
H1.4.1.2		b) Weld mesh, galvanised, 1.8m high with 50mm x 50mm aperture	m			Rate Only	
H1.4.1.3		c) Razor wire coil topping to fence	m			Rate Only	
H1.4.1.4	PSMM 8.2.1	d) Gates (installed by approved specialist sub-contractor)					
		i) Main Entrance at MR461 (2 x 5m sliding)	Sum				
		ii) Exit to Landfill on Road 0 (2 x 4m double leaf swing)	Sum				
		iii) Pedestrian entrance adjacent to MR461 (1 x 1m swing)	Sum				
		iv) Water tank entrance (2 x 2.5m double leaf swing)	Sum				
		v) Contractors mark-up on (i) to (iv) above	%				
Total Carried Forward To Summary							

H: FENCING

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
H1	FENCING	.....
Total Carried Forward To Summary Of Schedules		_____

I: ELECTRICAL

1: FIXED CHARGES

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
		SECTION 1: FIXED CHARGES					
I1.1		FIXED CHARGES					
I1.1.1		Fixed preliminary and general items required for the successful completion of the installation	Sum				
I1.1.2		Value related preliminary and general items required for the successful completion of the installation	Sum				
I1.1.3		Time related preliminary and general items required for the successful completion of the installation	Sum				
I1.2		LUMP SUMS					
I1.2.1		Compliance with the Occupational Health and Safety Act, 1993 and Construction Regulations, 2003. It is specifically stated that the employer shall prepare a documented health and safety specification for the works and that the employer shall ensure that the contractor has made provision for the cost of health and safety measures during the execution of the works. The contractor shall price opposite this item for compliance with the act and the regulations and the reasonable provisions of the aforementioned health and safety specifications.	Sum				
I1.2.2		Guarantee of complete installation for 12 months	Sum				
I1.2.3		Production and submittal of builders work drawings, installation / working drawings, shop drawings, all as specified	Sum				
I1.2.4		Operating & Maintenance Manuals, complete and to the satisfaction of the engineer and compliant with the specification	Sum				
I1.2.5		As Built Drawings, commented and approved, all as per the specification	Sum				
I1.2.6		Training of Client Staff and Operators	Sum				
I1.2.7		Monthly maintenance of complete installation including maintenance log book and monthly reports	No.	12.0			
I1.3		CONTRACTOR'S MARK-UP					
I13.1		Main Contractors mark-up on I1.1, I1.2 and I2 for attendance / managing of specialised sub-contractor	%				
Total Carried Forward To Summary							

I: ELECTRICAL

2: ELECTRICAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
		SECTION 2: ELECTRICAL					
12.1		CONNECTION					
12.1.1		New electrical connection to:500 kVA	PSum-			500 000	00
12.1.2		Profit & Attendance on electrical connection.If the percentage of Profit & Attendance is not indicated, a percentage of maximum 10% will be applied.	%	500 000.0			
12.1.3		500 kVA 11kV Miniature Substation complete with street light panel, circuit breakers etc. as specified. MV-switchgear to be a 3-switch Ring Main Unit.	Sum				
12.1.4		Earthing of miniature substation to achieve a maximum resistance of one (1) ohm.	Sum				
12.1.5		Plinth for Mini-sub	Sum				
12.1.6		Supply and install a 3 Phase kVA/kWh meter (equal and approved to ELSTER A1700) in the mini-sub complete with CT's, test block, modem and computer software.	Sum				
12.2		MEDIUM VOLTAGE CABLING					
		Supply, install and connect Medium Voltage Cabling:					
12.2.1		50mm ² XLPE x 3 core 11kV (6.35/11kV) in cable trenches	m	70.0			
12.2.2		50mm ² XLPE Cable - Termination per cable end	No.	2.0			
12.2.3		35mm ² PVC Insulated (Black) Copper Earth Wire	m	70.0			
12.2.4		Pressure Testing of XLPE Cable as per specification.	Sum				
12.2.5		Electrical Safety Notice Plates, as specified, per set.	No.	6.0			
12.3		FEEDER CABLES					
		Supply, install and connect 660/1000 Volt multi-core PVC insulated armoured cables (PVC/SWA/ECC) as specified:					
12.3.1		185mm ² x 4 core	m	190.0			
12.3.2		185mm ² x 4 core - per cable end termination	No.	2.0			
12.3.3		95mm ² x 4 core	m	130.0			
12.3.4		95mm ² x 4 core - per cable end termination	No.	2.0			
12.3.5		16mm ² x 4 core	m	135.0			
Total Carried Forward							

I: ELECTRICAL

2: ELECTRICAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
I2.3.6		16mm ² x 4 core - per cable end termination	No.	2.0			
I2.3.7		16mm ² x 2 core	m	120.0			
I2.3.8		16mm ² x 2 core - per cable end termination	No.	2.0			
I2.5		PVC SLEEVES					
I2.5.1		110mm diameter HDPE Corrugated - Colour BLACK	m	575.0			
I2.6		MANHOLES					
		Supply and install pre-fabricated manholes to accommodate multiple diameter					
I2.6.1		1000mm dia. round by 1000mm deep AXS 900R (axsCHAMBER Range) - C250 (250	No.	3.0			
I2.6.2		AXS 900R Lid for above manhole chamber - C250	No.	3.0			
I2.7		CABLE / SLEEVE EXCAVATIONS / TRENCHES					
		Trench excavations for cables and cable sleeves including bedding, temporary support of sides, keeping excavations dry, backfilling, compacting and removing of surplus material (measurements in cubic metres):					
I2.7.1		Pickable material	m ³	171.0			
I2.7.2		For soft rock	m ³	139.0			
		Back Filling (as per specification):					
I2.7.3		Bedding material - under cables and/or sleeves (200mm thick)	m ³	70.0			
I2.7.4		Blanket material - above cables and/or sleeves (200mm thick)	m ³	70.0			
I2.7.5		Filling material - above blanket to final ground level	m ³	80.0			
I2.7.6		Supply and install cable warning tape above cables in excavations:	m	450.0			
I2.7.7		Supply and install Cable Route Markers:	No.	10.0			
		CORE DRILLING					
		Core drill through concrete floor for allowing of sleeves penetration through floor					
I2.7.8		Sleeve diameter - 110mm	No.	3.0			
Total Carried Forward							

I: ELECTRICAL

2: ELECTRICAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
12.8		DISTRIBUTION KIOSKS / BOARDS, SWITCHGEAR AND EQUIPMENT					
12.8.1		KIOSK-MAIN (main connection after Genset)	Sum	1.0			
12.8.2		DB (Office DB - floor standing)	Sum	1.0			
12.8.3		DB (Workshop - floor standing)	Sum	1.0			
12.8.4		DB (Weigh-Bridge - floor standing)	Sum	1.0			
12.9		EMERGENCY GENERATOR					
		Supply, install, connect and commission an Emergency Generator Set, with diesel tank, control & change-over panel, battery charger, etc., complete as specified.:					
12.9.1		Emergency Generator • 400 kVA (minimum) Standby Power Emergency Generator Set, • Enclosed in canopy (soundproof container set), • Change-over Panel, • Controller(s) for automatic change-over and engine management must support Modbus TCP/IP Ethernet Connection Communication Protocol (RJ45 connector), to enable connection with BMS-system via TCP/IP ethernet connection.	Sum	1.0			
12.9.2		12-month Guarantee Maintenance after commissioning (2 x full servicing during this period) Pricing per service	No.	2.0			
12.9.3		Danger Signs and Notice Boards	Sum	1.0			
12.9.4		First Aid Kit	Sum	1.0			
12.9.5		Fire Extinguisher	Sum	1.0			
12.9.6		Pump - PC Amount - to pump diesel from ground floor to roof (pump head ± 40m)	Sum	1.0			
12.9.7		Crane - for rigging Genset into place	Sum	1.0			
Total Carried Forward To Summary							

I: ELECTRICAL

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
I1	FIXED CHARGES	.....
I2	ELECTRICAL	.....
Total Carried Forward To Summary Of Schedules		.....

J: BUILDINGS

1: WEIGHBRIDGE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
		SECTION 1: WEIGHBRIDGE					
J1.1	1200 DA	EXCAVATION					
J1.1.1	8.3.2	Excavate in all materials and backfill or place embankment for:					
		i) Weighbridge (including for foundation layers)	m ³	50.0			
J1.1.2		Extra-over item .2.1 for excavation in:					
		i) Hard rock material	m ³	10.0			
J1.1.3		TREATMENT OF ROAD-BED					
J1.1.3.1	8.3.3(a)	Road-bed preparation and compaction of material					
		i) Compact to 90 % mod. AASHTO maximum density	m ³	70.0			
J1.1.4	8.3.3(b)	In-place treatment of road-bed in intermediate or hard material					
		i) Blasting	m ³	20.0			
J1.2	SANS 1200 ME	SECTION : SUBBASE					
J1.2.1	8.3.1	Construct gravel subbase with material from commercial sources					
		i) 150 mm layers to foundation, compacted to 95% Mod AASHTO	m ³	150.0			
J1.3	SANS 1200 G 8.1.3	CONCRETE					
J1.3.1	8.4.2	Blinding layer in 20 MPa/40 mm concrete					
		i) 75 mm minimum thickness	m ²	50.0			
J1.3.2	8.4.3	Strength concrete: 20 MPa/40mm					
		i) Footings	m ³	5.0			
J1.3.3		Strength concrete: 30 MPa/40mm					
		i) Floor slabs	m ³	50.0			
		ii) Walls and plinths	m ³	10.0			
J1.4	8.1.1	FORMWORK					
J1.4.1	8.2.1	Rough walls below ground					
		i) Vertical plane	m ²	50.0			
Total Carried Forward							

J: BUILDINGS

1: WEIGHBRIDGE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
J1.4.2	8.2.2	Smooth vertical plane to:					
		i) Walls and plinths	m ²	150.0			
J1.4.3		Forming of tapered pockets to received load cell (smooth finish)	No.	16			
J1.5	8.1.2	STEEL REINFORCING					
J1.5.1	8.1.2.2	Mild steel bars	t	0.5			
J1.5.2	8.3.1 8.1.2.2	High-tensile steel bars	t	4.0			
J1.5.3	8.3.2	High-tensile welded mesh reinforcement	t	0.5			
J1.6	8.4.4	UNFORMED SURFACE FINISHES					
J1.6.1		Wood-floated finish (see PSG 7.2)					
		i) Floors	m ²	300.0			
		ii) Plinths and Walls	m ²	50.0			
J1.7	8.5	JOINTS					
		Expansion joints (10mm with polysulphide sealer)	m	40.0			
J1.8		WEIGHBRIDGE					
		Supply and install					
J1.8.1		Weighbridge deck complete including load cells (18.0m x 3.0m) including certificatin	PCsu m	2	750 000.00	1 500 000	00
J1.8.2		Contractors markup on J1.8.1	%	1 500 000			
J1.9		ANCILLIARY					
J1.9.1		Steel grid on brick piers (Rectagrid 60 x 4.5 or equivalent)	m ²	100			
J1.9.2		Brick piers to support Steel grid - 230 brickwork	m ²	50			
Total Carried Forward To Summary							

J: BUILDINGS

SUMMARY OF SECTIONS

SECTION	DESCRIPTION	AMOUNT (RAND)
J1	WEIGHBRIDGE	.....
Total Carried Forward To Summary Of Schedules		_____

SUMMARY OF SCHEDULES

SCHEDULE	DESCRIPTION	AMOUNT (RAND)
A	A: PRELIMINARY AND GENERAL	.....
B	B: ROADS AND EARTHWORKS	.....
C	C: STORMWATER	.....
D	D: CONTAMINATED STORMWATER	.....
E	E: SEWER	.....
F	F: WATERMAINS	.....
G	G: CABLE DUCTS	.....
H	H: FENCING	.....
I	I: ELECTRICAL	.....
J	J: BUILDINGS	.....
	SUBTOTAL 1	.....
1	CONTINGENCIES (10% OF SUBTOTAL 1)	.....
	SUBTOTAL 2	.....
2	CONTRACT PRICE ADJUSTMENT (10% OF SUBTOTAL 2)	.....
	SUBTOTAL 3	.....
3	VAT (15% OF SUBTOTAL 3)	.....
Total Carried Forward To Form Of Offer		.....

SUMMARY OF SCHEDULES

SCHEDULE	DESCRIPTION	AMOUNT (RAND)
A	A: PRELIMINARY AND GENERAL	.....
B	B: ROADS AND EARTHWORKS	.....
C	C: STORMWATER	.....
D	D: CONTAMINATED STORMWATER	.....
E	E: SEWER	.....
F	F: WATERMAINS	.....
G	G: CABLE DUCTS	.....
H	H: FENCING	.....
1	SUBTOTAL 1	.....
2	CONTINGENCIES (10% OF SUBTOTAL 1)	.....
3	SUBTOTAL 2	.....
4	CONTRACT PRICE ADJUSTMENT (10% OF SUBTOTAL 2)	.....
5	SUBTOTAL 3	.....
6	VAT (15% OF SUBTOTAL 3)	.....
Total (Carried Forward to Form of Offer)		.....

PART C3: SCOPE OF WORK

	<u>PAGE</u>
C3.1 PROJECT DESCRIPTION AND SCOPE OF CONTRACT	133
C3.2 PROJECT SPECIFICATIONS	135
PS.1 Programme, Method of Work, and Accommodation of Traffic	
PS.2 Services	
PS.3 Watermains	
PS.4 Sewers	
PS.5 Stormwater	
PS.6 Electrical Plant	
PS.7 Telkom S.A. Limited / Neotel Plant	
PS.8 CCTV Plant	
PS.9 Management of the Environment	
PS.10 Occupational Health and Safety	
C3.3 STANDARD SPECIFICATIONS	145
C3.3.1 Listing of the Standard Specifications	
C3.3.2 Amendments to the Standard Specifications	
C3.4 PARTICULAR SPECIFICATIONS	171
C3.4.1 Part AH - OHS 1993 Safety Specification (2014)	
C3.4.2 Standard Environmental Management Plan for Civil Engineering Construction Works	
C3.5 CONTRACT AND STANDARD DRAWINGS	182
C3.5.1 Contract Drawings / Details	
C3.5.2 Standard Drawings	
C3.6 ANNEXURES	184
C3.6.1 Site Specific Health and Safety Specification	
C3.6.2 Baseline Risk Assessment	

C3.1: PROJECT DESCRIPTION AND SCOPE OF CONTRACT

C3.1.1 Description of Works

The works comprise the construction of Phase A of the infrastructure works at the Western Waste Management Facility. This comprises bulk earthworks, roads, buildings and services.

Broadly the works consist of the following:

1. Relocation of a portion of MR461
2. Bulk Earthworks to Platforms 1 and 2
3. Construction of portion of Access Road 0
4. Underground Services comprising stormwater, water and sewer pipes
5. Construction of a brick single storey office building.
6. Construction of two weighbridges
7. Construction of fencing, gates and a gatehouse
8. Concrete paving to Road 0
9. Gravel surfacing to roads and platforms

C3.1.2 Description of Site and Access

The site is situated in the Shongweni area of Ethekewini Municipality and is accessed from MR461. The site is currently used for agriculture (predominantly sugar cane or grazing for local communities). See Item C4.1: Locality Sketch.

The area of the infrastructure is situated above the Shongweni escarpment and is accessed off MR461.

Certain areas immediately adjacent to the working area of the site are of extreme environmental sensitivity, and may not be traversed by machines or used for any construction purposes. These areas must be clearly demarcated and securely barricaded to prevent access of plant and vehicles onto the sensitive areas.

C3.1.3 Nature of Ground and Subsoil Conditions

The terrain is hilly with moderate to steep areas. The underlying soil is predominantly sandstone and hard material will be encountered at shallow depths over much of the site area.

A geotechnical investigation is currently under way and the resulting report will be shared with the successful tenderer. It must be noted that quantities related to intermediate, hard and boulder materials may be adjusted during the tender period once the investigation is completed.

Groundwater may be encountered in the water courses that traverse portions of the site.

C3.1.4 Scope of Works

The main items to be constructed under this contract are listed below (lengths or areas are approximate):

- a) Re-alignment of 800m of MR461, and a new intersection on MR461 to serve as access to the facility
- b) 1.8km of fencing including 3 gates
- c) 1.1km of primary internal road (Road 0 and Road 1)
- d) 300m of secondary internal roads (Transnet Tower Road and Tank Road)
- e) Bulk earthworks platforms (25 000 m²) including 1 earth dam
- f) Single storey buildings for offices / staff canteen and ablutions / 2 No weighbridges including kiosks, gatehouse.
- g) Associated services (Stormwater / Sewer / Water / Electricity) including a 220 kL water tank.

C3.1.5 Provisional programme

The contractor is to be aware of the following items that will affect the program and construction sequence:

- a) A portion of MR461 crosses the proposed development and is to remain open to traffic at all times. Hence, the realignment is to be done first, and then when this is open to traffic, portion of the existing MR461 may be demolished and work can commence within the infrastructure area.
- b) Access to the Transnet Tower is to be provided at all times. The new road to provide access to the tower (and water tank) should be constructed early in the program. Once completed the existing track across the infrastructure platforms can be removed.
- c) A separate contract will be awarded to construct Land Fill Cell #1 in the area to the east of the infrastructure area. Access to Cell #1 is to be provided across the site and the alignment of Road 0 (up to KM1.1) is to be used for this.

C3.1.6 Other service providers

The contractor is to be aware of the following other operations that will occur within the extent and the site and access is to be provided for these:

- a) Relocation of overhead electrical cables adjacent to MR461 and possible laying of new cables along MR461.
- b) Installation of watermains along MR461
- c) Access to the Transnet Tower by Transnet staff
- d) Access to the sugar cane area to the west of MR461 by Tongaat Hulett

The programming for these operations will be agreed between all parties and incorporated into this contractors' program.

C3.1.7 Reference Data

The following information will be made available to the contractor;

- a) Survey information (Drone survey)
- b) Environmental agreements
- c) Biodiversity Offset Authorisation
- d) Electrical works specification and details

C3.2: PROJECT SPECIFICATION

PREAMBLE

In the event of any discrepancy between a part or parts of the Standard or Particular Specifications and the Project Specification, the Project Specification shall take precedence. In the event of a discrepancy between the Specifications, (including the Project Specifications) and the drawings and / or the Bill of Quantities, the discrepancy shall be resolved by the Employer's Agent before the execution of the work under the relevant item.

C3.2.1 GENERAL

PS.1 PROGRAMME, METHOD OF WORK, AND ACCOMMODATION OF TRAFFIC

This Clause is to be read in conjunction with the provisions and obligations as contained in **SANS 1921-1 and SANS 1921-2**.

PS.1.1 Preliminary Programme

The Contractor shall include with his tender a preliminary programme on the prescribed form (**see Part T2.2: Preliminary Programme**) to be completed by all Tenderers. The programme shall be in the form of a simplified bar chart with sufficient details to show clearly how the works will be performed within the time for completion as stated in the Contract Data.

Tenderers may submit tenders for an alternative Time for Completion in addition to a tender based on the specified Time for Completion. Each such alternative tender shall include a preliminary programme similar to the programme above for the execution of the works, and shall motivate his proposal clearly by stating all the financial implications of the alternative completion time.

The Contractor shall be deemed to have allowed fully in his tendered rates and prices as well as in his programme for all possible delays due to normal adverse **weather conditions** (**refer to Clause 5.12.2.2**) and special non-working days (**refer to Clause 5.1.1.1**) as specified in the in the Contract Data.

PS.1.2 Programme in Terms of Clause 5.6 of the General Conditions of Contract

It is essential that the construction programme, which shall conform in all respects to **Clause 5.6 of the General Conditions of Contract**, be furnished within the time stated in the Contract Data (**refer to Clause 5.3.1/2**).

The preliminary programme to be submitted with the tender shall be used as basis for this programme.

The Tenderer's attention is drawn to the fact that a number of factors will affect the programming of and method of carrying out the works. The more important of these are:

- a) A portion of MR461 crosses the proposed development and this road is to remain open to traffic at all times. Hence, the realignment is to be done first, and then when this is open to traffic, work can commence within the infrastructure area.
 - b) Access to the Transnet Tower is to be provided at all times. The new road to provide access to the tower (and water tank) should be constructed early in the program. Once completed the existing track across the infrastructure platforms can be removed.
 - c) A separate contract will be awarded to construct Land Fill Cell #1 in the area to the east of the infrastructure area. Access to Cell #1 is to be provided across the site and the alignment of Road 0 (up to KM1.1) is to be used for this. The contractor shall construct the bulk earthworks for this road early in the program and allow the Cell Contractor access via this route or provide an alternative route.
 - d) Relocation of electrical cables adjacent to MR461 will need to be relocated once the bulk earthworks for the re-aligned road are complete. A lead time of 3 months notice is required for this and the works will take at least 2 months to complete.
- (1) Time required for service relocations.
 - (2) Time allowances to be made for the ordering of special items.
 - (3) Notification required by service organisations.
 - (4) Any special sequence in which work must be carried out. Must certain areas of work be finished before work commences on others?
 - (5) If delays are anticipated with service relocations the contractor should be asked to allow time.
 - (6) Is work required out of normal hours? (eg. to accesses).
 - (7) Vehicular access to private property is to be maintained.
 - (8) Traffic restrictions.

Those known, existing services in the area of the works have been depicted on the contract drawings. It is evident, however, that the status of existing service records as far as can be ascertained might not reflect the actual situation in the field. As such, due allowance has been made in the Bill of Quantities for the providing of services where directed by the Engineer.

PS.1.3 Requirements for Accommodation of Traffic

PS.1.3.1 General

Accommodation of traffic, where applicable, shall comply with **SANS 1921-2: 2004: Construction and Management Requirements for Works Contracts, Part 2: Accommodation of Traffic on Public Roads occupied by the Contractor**. The Contractor shall obtain this specification from Standards South Africa if accommodation of traffic will be involved on any part of the construction works.

Clause 4.10.4 of SANS 1921-2: 2004 shall be replaced with the following:

“Road signs and markings shall comply with the requirements of **“The South African Road Traffic Signs Manual - Volume 2: Roadworks Signing”**”.

PS.1.3.2 Basic Requirements

The travelling public shall have the right of way on public roads, and the Contractor shall make use of approved methods to control the movement of his equipment and vehicles so as not to constitute a hazard on the road.

The Contractor shall ensure that all road signs, barricades, delineators, flagmen and speed controls are effective and that courtesy is extended to the public at all times.

Failure to maintain road signs, warning signs or flicker lights, etc, in a good condition shall constitute ample reason for the Employer's Agent to suspend the work until the road signs, etc, have been repaired to his satisfaction.

The Contractor may not commence constructional activities affecting existing roads before adequate provision has been made to accommodate traffic in accordance with the requirements of this document and the South African Road Traffic Signs Manual.

The Contractor shall construct and maintain all temporary drainage works necessary for temporary deviations. The Contractor shall ensure that the existing property accesses are maintained at all times. Where necessary the Contractor shall make allowance in the rates for completing the work required to the accesses out of normal hours.

PS.1.3.3 Traffic Safety Officer

Where warranted by traffic conditions on or near the site, the Contractor shall nominate a suitable member of his staff as traffic safety officer to be responsible for the arrangement and maintenance of all the measures for the accommodation of traffic for the duration of the project. Duties of the traffic safety officer shall be in compliance with the Occupational Health and Safety Act 1993 and the Construction Regulations 2014.

PS.1.3.4 Payment

The Contractor's tendered rates for the relevant items in the Bill of Quantities shall include full compensation for all possible additional costs which may arise from this, and no claims for extra payment due to inconvenience as a result of the modus operandi will be considered.

PS.1.3.5 Pedestrian movement

The Contractor shall make provision for accommodating all pedestrian movements in the area of the works. Allowance shall be made in the relevant rates for any barricades and signs required.

PS.1.3.6 Temporary Reinstatement

Provided always that if in the course or for the purpose of the execution of the works or any part thereof any road or way shall have been broken up, then notwithstanding anything herein contained:

- (a) if the permanent reinstatement of such road or way is to be carried out by the appropriate authority or by some person other than the contractor (or any subcontractor to him), the contractor shall at his own cost and independently of any requirement of or notice from the Engineer be responsible for the making good of any subsidence or shrinkage or other defect, imperfection or fault in the temporary reinstatement of such road or way, and for the execution of any necessary repair or amendment thereof from whatever cause the necessity arises, until the end of the period of maintenance in respect of works beneath such road or way until the authority or other person as aforesaid shall have taken

possession of the site for the purpose of carrying out permanent reinstatement (whichever is the earlier), and shall indemnify and save harmless that Council against and from any damage or injury to the Council or to third parties arising out of or in consequence of any neglect or failure of the Contractor to comply with the foregoing obligations or any of them and against and from all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

- (b) where the authority or person as aforesaid shall take possession of the site as aforesaid in sections or lengths, the responsibility of the contractor under paragraph (a) of this sub-clause shall cease in regard to any such section or length at the time possession thereof is so taken, but shall during the continuance of the said period of maintenance continue in regard to any length of which possession has not been taken and the indemnity given by the contractor under the said paragraph shall be construed and have effect accordingly.

PS.2 SERVICES

This Clause is to be read in conjunction with the provisions and obligations as contained in **SANS 1921-1 and SANS 1921-2**.

PS.2.1 Existing Services

The Tenderer's attention is drawn to the numerous existing services in the area. Although every effort has been made to depict these services accurately the positions shown must be regarded as approximate.

The following services are known to exist in the works area:

- a) Electrical cables (overhead) adjacent to MR461 and connecting to the Transnet Tower.
- b) Stormwater pipes crossing MR461

PS.2.2 Proving Underground Services

This clause must be read in conjunction with **Clause DB.5.1.2**, the requirements of which shall be extended to cover all earthworks operations whether for trenching or bulk earthworks, in the vicinity of underground services.

It is stressed that all services in a particular area must be proven before commencing work in that area.

Insofar as bulk earthworks are concerned, where services are indicated on the drawings or where from site observations can reasonably be expected that such services are likely to exist where excavations are to take place, the Contractor shall without instructions from the Employer's Agent carefully excavate by hand to expose and prove their positions.

The cost of the proving trenches is to be included in the work covered by **Clause DA.8.3**.

When a service is not located in its expected position the Contractor shall immediately report such circumstances to the Employer's Agent who will decide what further searching or other necessary action is to be carried out and shall instruct the Contractor accordingly. The cost of this additional searching shall be to the Council's cost and shall be paid for under **D 8.3.8 - Proving Existing**

Services.

Should any service be damaged by the Contractor in carrying out the works and should it be found that the procedure as laid down in this clause has not been followed then all costs in connection with the repair of the service will be to the Contractor's account.

When electrical cables are not in the positions shown on drawings of eThekweni Electricity and cannot be found after proving trenches have been put down, assistance may be obtained by calling an official of the **Works Branch on Telephone No. 311-1111** during office hours, or by contacting **Control on Telephone No. 305-7171** after hours.

It should be noted that 33,000 Volt and 132,000 Volt cables may only be exposed by the eThekweni Electricity's personnel. The cables are usually protected by concrete covering slabs, and therefore if the slabs are inadvertently exposed, excavation work must stop, and the eThekweni Electricity shall be contacted immediately on the above telephone numbers.

Proving of services shall be completed at least two weeks in advance of the actual programmed date for commencing work in the area. The position of these services located must be co-ordinated and levelled by the Contractor, and the information given in writing to the Employer's Agent's Representative.

The requirements of this clause do not relieve the Contractor of any obligations as detailed in the Conditions of Contract or under **Clause 4.17 of SANS 1921-1**.

PS.2.3 New Services and Relocation of Existing

This clause shall be read in conjunction with **Clause PS.1**.

New services are either to be installed by the Contractor as part of the contract or by others during the contract period. In the latter case excavation and subsequent backfilling of the trench from the top of the bedding layer shall generally be carried out by the Contractor.

Relocation of services shall generally be carried out by the relevant services organisation. Generally their work shall include the excavating and bedding the service which will include backfilling to a depth of approximately 300 mm above the service. The remainder of the backfilling shall be carried out by the Contractor.

Generally work shall only commence on the installation of new services once the bulk earthworks have been completed and roughly trimmed to level along a substantial portion of the services route. In addition no sidewalk, verge, median or island shall be surfaced or topsoiled until all work on the services has been completed.

Services that may be affected by the contract are described as follows:

- **PS.3: Watermains;**
- **PS.4: Sewers;**
- **PS.5: Stormwater;**
- **PS.6: Electrical Cables / Lighting;**
- **PS.7: Telkom / Neotel;**

- PS.8: CCTV;

Further to the above, tenderers are referred to the services drawing and are to note that several minor cables / pipes may be encountered during excavation works which may require to be relocated to some extent. It is anticipated that the two week period required under PS.2.2 will allow sufficient time for these relocations.

PS.2.4 Accommodation of Services

Further to Clauses PS.1 and PS.2 of this specification, tenderers are to note that allowance must be made under this item and / or the appropriate rates, for all costs incurred as a result of complying with these clauses. It shall also cover liaison with the services organisations and accommodation of their work gangs / contractors on site.

PS.3 WATERMAINS

PS.3.1 General

No existing watermains traverse the site of the works.

Tenderer's attention is drawn to the following points regarding the watermains to be installed as part of this contract.

A new municipal supply main is to be laid along MR461, including the relocated section (by Ethekewini Municipality).

The internal reticulation forms part of this contract and includes the tie in, a supply line to a 220kL reservoir, and internal domestic and fire lines to various points on the site.

PS.4 SEWERS

No existing sewers traverse the site of the works.

The sewer reticulation to be installed is primarily a septic tank and soakaway system. Sewer lines are to be laid from each location to a septic tank near the Workshop. The discharge from the septic tank is fed to a soakaway and evaporation area in the area down-slope of Road 0 Km 0+900.

At no time may this sewer system be used for anything other than discharge from the buildings as per the design. No waste water or effluent or other liquid waste from construction operations is to be discharged into this system. The contractor is make provision elsewhere for the safe discharge of waste water or other liquid waste from the site. The cost of this provision is to included in the Site Establishment rates allowed for in the BoQ.

Should any waste from construction operations be discharged into the sewer system, then the contractor shall, at their own cost, clean or replace the components affected, as directed by and to the satisfaction of the Engineer.

PS.4.1 Blockage of Foul Water Sewers

The Contractor shall be responsible for ensuring that cementitious sludge, sand and rubble from the works do not enter the foul water reticulation system. The Contractor shall be liable for any costs incurred by the Council or others as a result of blockages in the reticulation system attributed to failure to comply with the above requirement.

PS.5 STORMWATER

There are existing stormwater pipes under MR461.

The stormwater system to be installed is divided into 2 distinct categories: clean stormwater (normal run-off from roads and platforms) and contaminated stormwater (run-off from areas that are used for the solid waste operations and where the run-off cannot be discharged directly to a natural water course).

The clean stormwater system comprises the following:

- Road crossings
- Side drains / top of cut drains or berms / toe of fill drains
- Low point collection from 'clean' platforms
- Collector pipes which discharge into a detention pond, from where the run-off is released at a controlled rate

The contaminated stormwater system comprises the following:

- Road crossings
- Low point collection from 'contaminated' platforms
- Collector pipes which discharge into a contaminated stormwater pond. There is no outfall from this pond (the water is to be tankered away or treated as part of CSW operations)

PS.5.1 Blockage of Stormwater Sewers

The Contractor shall be responsible for ensuring that cementitious sludge, sand and rubble from the works do not enter the stormwater reticulation system. The Contractor shall be liable for any costs incurred by the Council or others as a result of blockages in the reticulation system attributed to failure to comply with the above requirement.

On completion of the works, the systems, including the ponds noted above, shall be cleaned of all debris that may have entered the system during the construction period. This cleaning or temporary protection of the system shall be to the contractor's expense and subject to the approval by the Engineer.

PS.6 ELECTRICAL PLANT

There are existing overhead powerlines along the existing MR461 and up to the Transnet Tower. Power may only be interrupted while switching over to new powerlines under the direction of Metro Electricity.

PS.6.1 General

Various types of overhead electrical cables including medium voltage, low voltage, and connection cables are affected by the contract. The relocation and jointing of all cables will be carried out by eThekwini Electricity's work gangs, or agents appointed by them. Close liaison will therefore be necessary with eThekwini Electricity throughout the contract.

PS.6.2 Street Lighting

There is no existing street lighting on the site.

PS.6.3 MV / LV Cables

Certain MV / LV cables are to be replaced within the contract area. The actual cable work associated with this relocation and / or replacement of these cables will be carried out by eThekwini Electricity and it is stressed that the **two** week period referred to in Clause PS.2 is the minimum period required to enable eThekwini Electricity to be on site timeously.

PS.6.4 Relocation of Existing Services

Should it be necessary to adjust the line, level and / or position of any service not catered for in the contract to enable the construction to proceed the Contractor shall on no account effect such adjustment himself but shall notify the Engineer who will arrange for the work to be carried out at no cost to the Contractor.

PS.7 TELKOM S.A. LIMITED / NEOTEL PLANT

There is no Telkom or Openserve plant in this area and no new installations are planned for this contract. Provision of ducting below roads for future installations forms part of this contract.

PS.8 CCTV PLANT

There is no existing CCTV plant in this area and No CCTV Plant is envisaged for this contract.

PS.9 MANAGEMENT OF THE ENVIRONMENT

The Contractor shall pay special attention to the following:

PS.9.1 Natural Vegetation

The Contractor shall confine his operation to as small an area of the site as may be practical for the purpose of constructing the works.

Only those trees and shrubs directly affected by the works and such others as the Employer's Agent may direct in writing shall be cut down and stumped. The natural vegetation, grassing and other plants shall not be disturbed other than in areas where it is essential for the execution of the work or where directed by the Engineer.

Certain areas of the natural vegetation are considered off limits to all vehicles and

pedestrians. These areas will be pointed out to the Contractor by the Employer/ECO and shall be clearly demarcated and securely fenced or barricaded by the Contractor before commencing construction in the area to avoid accidental damage. In addition, the contractor shall provide a topographic survey of the demarcated areas and this survey shall form part of the site records and be added to as-built records. The fencing provided by the Contractor shall be a minimum of 1.2m high galvanised weld mesh, covered with an 80% green shade cloth for dust prevention, and shall be maintained in good order for the duration of the contract.

This temporary barricading or fencing must be erected to prevent any vehicles or plant from traversing the grassland or material being dumped or the surface disturbed in any way. This barricading or fencing is subject to approval by the Engineer and shall be completed before commencing any earthworks or site clearing operations. Should the grassland be damaged in any way, the fines mentioned in the EMP will apply.

This applies particularly to the primary KZN Sandstone Sourveld grassland along the ridge adjacent to the site which is shown on the drawings in green. This grassland is critically endangered and NO WORK MAY COMMENCE before the limits of the grassland have been marked on site by the Employer (coordinated by the ECO, Enviro Assets Manager and Contractor's surveyor).

Any disturbance will also have to be escalated to the authorities: namely KZN Wildlife, DFFE and EDTEA for their enforcement.

Provisional location of the protected grasslands is indicated in Annexure C4.2.

PS.9.2 Fires

The Contractor shall comply with the statutory and local fire regulations. He shall also take all necessary precautions to prevent any fires. In the event of fire the Contractor shall take active steps to limit and extinguish the fire and shall accept full responsibility for damages and claims resulting from such fires which may have been caused by him or his employees.

PS.9.3 Environmental Management Plan

In addition to the above, all requirements according to the Environmental Management Plan as detailed in C3.4: Particular Specifications, will be adhered to.

PS.10 OCCUPATIONAL HEALTH AND SAFETY

PS.10.1 General Statement

When considering the safety on site the Contractor's attention is drawn to the following:

- The terrain in parts of the works area, especially on road 0 and around the track road, is steep
- Numerous deep cuttings and trench excavations are planned

- The hard material encountered in cuttings or trenches may require blasting.
- Public traffic will be using MR461

It is a requirement of this contract that the Contractor shall provide a safe and healthy working environment and to direct all his activities in such a manner that his employees and any other persons, who may be directly affected by his activities, are not exposed to hazards to their health and safety. To this end the Contractor shall assume full responsibility to conform to all the provisions of the Occupational Health and Safety Act No 85 and Amendment Act No 181 of 1993, and the OHS Act 1993 Construction Regulations 2014 issued on 7 February 2014 by the Department of Labour.

For the purpose of this contract the Contractor is required to confirm his status as mandatory and employer in his own right for the execution of the contract by entering into an agreement with the Employer in terms of Section 37(2) of the Occupational Health and Safety Act.

PS.10.2 Health and Safety Specifications and Plans to be submitted at tender stage

PS.10.2.1 Employer's Health and Safety Specification

The Employer's Health and Safety Specification is included in **Part C3.4: Particular Specifications**.

PS.10.2.2 Tenderer's Health and Safety Plan

At tender stage only a brief overview of the tenderers perception on the safety requirements for this contract will be adequate. This will be attached to **Part T2.2: Contractor's Health and Safety Plan**.

Only the successful Tenderer shall submit a separate Health and Safety Plan as required in terms of Regulation 7 of the Occupational Health and Safety Act 1993 Construction Regulations 2014, and referred to in **Part T2.2: Contractor's Health and Safety Plan**.

The detailed safety plan will take into consideration the **site specific risks as mentioned under PS.10.1** and must cover at least the following:

- (i) A proper risk assessment of the works, risk items, work methods and procedures in terms of Regulations 9 to 29;
- (ii) Pro-active identification of potential hazards and unsafe working conditions;
- (iii) Provision of a safe working environment and equipment;
- (iv) Statements of methods to ensure the health and safety of subcontractors, employees and visitors to the site, including safety training in hazards and risk areas (*Regulation 7*);
- (v) Monitoring health and safety on the site of works on a regular basis, and keeping of records and registers as provided for in the Construction Regulations;
- (vi) Details of the Construction Supervisor, the Construction Safety Officers and other competent persons he intends to appoint for the construction works in terms of Regulation 8 and other applicable regulations; and
- (vii) Details of methods to ensure that his Health and Safety Plan is carried out effectively in accordance with the Construction Regulations 2014.

The Contractor's Health and Safety Plan will be subject to approval by the Employer, or amendment if necessary, before commencement of construction work. The Contractor will not be

allowed to commence work, or his work will be suspended if he had already commenced work, before he has obtained the Employer's written approval of his Health and Safety Plan.

Time lost due to delayed commencement or suspension of the work as a result of the Contractor's failure to obtain approval for his safety plan, shall not be used as a reason to claim for extension of time or standing time and related costs

A generic plan will not be acceptable.

PS.10.3 Cost of compliance with the OHS Construction Regulations

The rates and prices tendered by the Contractor shall be deemed to include all costs for conforming to the requirements of the Act, the Construction Regulations and the Employer's Health and Safety Specification as applicable to this contract. Should the Contractor fail to comply with the provisions of the Construction Regulations, he will be liable for penalties as provided in the Construction Regulations and in the Employer's Health and Safety Specification.

Items that may qualify for remuneration will be specified in the Employer's Health and Safety Specification.

PS.11 SITE SECURITY

The Contractor shall, for the duration of the contract, provide sufficient security and watchmen to adequately ensure the safety and protection of the works, the Contractor's staff, including local labour and subcontractors, and all site plant and construction equipment required for the works.

Site Security, in conjunction with the SAPS (where necessary), shall be responsible for removal of disruptive elements, that may interrupt the progress of the contract through acts such as, but not limited to, intimidation, threats of disruption, violent disruption, or criminal and illegal activity by the local community or independent organisations or entities that may result in slowing down or partial or total stoppage of the works.

Payment for this item shall be made under Section 2, Part A of the Bill of Quantities.

C3.3: STANDARD SPECIFICATIONS

C3.3.1 The Specifications on which this contract is based are the following:

- SANS 1200 – Standardized Specification for Civil Engineering Construction (**hereafter referred to as SANS 1200**). This document is obtainable separately, and Tenderers shall obtain their own copies of the applicable Sections. Only the latest available versions of these specifications are to be used.
- Ethekeiwini Municipality – Standard Specification for Electrical Works
-

C3.3.2 AMENDMENTS TO THE STANDARD SPECIFICATIONS

INTRODUCTION

In certain clauses the standard, standardized and particular specifications allow a choice to be specified in the project specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a particular contract. Details of such alternative or additional requirements applicable to this contract are contained in this part of the project specifications. It also contains additional specifications required for this particular contract.

The number of each clause and each payment item in this part of the project specifications consists of the prefix **PS** followed by a number corresponding to the number of the relevant clause or payment item in the standard specifications. The number of a new clause or payment item, which does not form part of a clause or a payment item in the standard specifications and which is included here, is also prefixed by PS, but followed by a new number which follows on the last clause or item number used in the relevant section of the standard specifications.

PS A	General Specifications
PS AB	Engineer's Office
PS C	Site Clearance
PS D	Earthworks: Bulk
PS DA	Earthworks (small works)
PS DB	Earthworks for Pipe Trenches
PS DE	Earthworks (small earth dams)
PS DK	Gabions and Pitching
PS DM	Earthworks for Roads, Subgrades
PS G	Concrete
PS HA	Structural Steelwork (small works)
PS L	Medium Pressure Pipelines
PS LB	Bedding (Pipes)
PS LC	Cable Ducts
PS LD	Sewers
PS LE	Stormwater Drainage
PS M	Roads (General)
PS ME	Subbase
PS MF	Base
PS MG	Bituminous surface treatment
PS MH	Asphalt Base and Surfacing
PS MK	Kerbing and Channelling
PS MJ	Segmented Paving
PS MM	Ancillary Roadworks

SABS 1200 A - 1986 : GENERAL

PSA 3 MATERIALS

PSA 3.1 Quality

All pipes, equipment and materials necessary for the Works should be provided with the SABS Mark of Approval where applicable. The Contractor shall furnish, at his own expense and without delay, such samples as are called for or may be called for by the Engineer, who may reject all materials or workmanship not corresponding with the approved sample.

Add the following new subclause:

PSA 3.3 Ordering of Materials

The quantities set out in the Schedule of Quantities have been carefully determined from calculations based on data available at the time and should therefore be considered to be only approximate quantities. The liability shall rest entirely and solely with the Contractor to determine before ordering, the required types and quantities of the various materials required for the completion of the Works in accordance with the Specifications and the Drawings issued to the Contractor for construction purposes.

Any reliance placed by the Contractor on the estimated quantities stated in the Schedule of Quantities issued for tendering purposes, or measurements made by the Contractor from the Drawings issued for tendering purposes, shall be entirely at the Contractor's risk and the Employer accepts no liability whatever in respect of materials ordered by the Contractor on the basis of Tender Documents.

PSA 4 PLANT

PSA 4.2 Contractor's Offices, Stores and Services

Add the following:

"No housing facilities are available for the Contractor's employees and the Contractor shall make his own arrangements to house his employees and to transport them to site.

Any temporary buildings erected by the Contractor or site offices, accommodation, stores, workshops and ablutions erected on the site must all be to size and at locations approved by the Employer.

The Contractor is responsible for all security of the Camp Site at his own cost".

PSA 5 CONSTRUCTION

PSA 5.1 Survey

PSA 5.1.1 Setting Out of the Works

The Contractor is responsible for placing and maintaining survey control pegs to be used in setting out the Works.

A full schedule of control beacons will be issued to the successful tenderer prior to the start of the Contract giving X, Y and Z co-ordinates. These control beacons are to be used by the Contractor for all survey requirements.

Add the following new Subsubclause:

PSA 5.1.3 As Built Data

The Tenderer shall note the Lump Sum item 1.38 covering the submission of as built data.

The Contractor shall supply the Engineer with:

- a) Road and platform surface levels and co-ordinates,
- b) Coordinates and levels at the corner of all buildings, structures and edges of surfacing,
- c) A list of surveyed invert and cover levels and co-ordinates of all drains, catchpits, downchutes, headwalls, cable duct markers and manholes constructed or modified during the course of the Contract,
- d) Subsoil drainage lines, water, sewer and contaminated stormwater pipelines.
- e) Fence lines
- f) Co-ordinates and final levels

The Completion Certificate shall not be issued unless the above information has been forwarded to the Engineer.

PSA 5.2 Accommodation of Traffic

The Contractor shall strictly comply with the following specifications:

- The Contractors working hours are to be between 07:00 to 17:00 Monday to Friday, excluding public holidays.
- The Contractor shall erect adequate traffic signs that conform to the requirements of the S.A. Road Traffic Signs Manual, maintain and keep them in good order.
- Public traffic must be accommodated on MR416 at all times. When tying new work into the existing road, adequate barricades, signage and temporary deviations must be provided, including flagmen if necessary.

The Contractor shall take the necessary care at all times in all his operations and use of his equipment to protect the public and to facilitate the movement of traffic - Clause 5.1 SABS 1200D has reference.

PSA 5.4 Protection of Overhead and Underground Services

The Contractor is to ensure at the start of the Contract that all known services are checked to ascertain whether they interfere with construction of the Works. If obstructions are found, the Engineer is to be notified timeously in writing so that adequate steps can be taken to effect the relocation of the obstructions. No claims for delays will be entertained unless, in the opinion of the Engineer, the Contractor has taken reasonable steps timeously to have the obstruction relocated.

PSA 5.5 Dealing with Water

The Contractor shall be responsible for handling all surface and subsurface water in such a way that construction can proceed with a minimum of risk and at no time shall overland flows be blocked. To this end the Contractor shall divert flow around the working area(s) if necessary. The Contractor shall also take particular care to ensure the safety of the Works against damage by flooding.

The cost of supplying and operating the equipment for dewatering of all excavations and controlling of stormwater and subsurface water on the Works will be held to be included in the Tender Sums in Section 1 of the Schedule of Quantities and no separate payment will be made for this work.

PSA 5.7 Safety

▪ **Add the following:**

“The Contractor will refer to Part C3.3, Particular Specifications, for the OSHA 1993 Safety Specification.”

▪ **and:**

“The Contractor shall provide security watchmen and all measures necessary to secure the works for the contract as he deems fit. The cost thereof will be deemed to be included in the relevant rates tendered. The Contractor must ensure that all his employees as well as the employees of his subcontractors are able to identify themselves as members of the construction team.

PSA 5.9 Site Diary

A site diary in triplicate format, which shall be supplied by the Contractor must be filled in on a daily basis and submitted to the Engineer on a weekly basis. No claims will be considered without the site diary’s schedules property completed (on a daily basis) and submitted.

PSA 6 TOLERANCES

PSA 6.1 Degrees of Accuracy

The Contractor shall construct each of the various parts of the Works to a degree II accuracy except where otherwise specified.

PSA 7 TESTING

Add the following new Subclause:

PSA 7.5 Acceptance Control Testing

A laboratory will not be required on site for the Engineer's use and all acceptance control testing shall be done through a commercial laboratory. The Contractor shall provide his own testing laboratory which shall be capable of carrying out all necessary testing for process control. The Contractor's laboratory shall be subject to the Engineer's approval. The Engineer shall be given free access to the results of testing carried out by the laboratory.

The cost of acceptance control testing carried out by the Engineer will not be for the Contractor's account and will be paid for under the Prime Cost Sum allowed for the Schedule of Quantities, unless the tests reveal that the material is not in accordance with the Specifications. In which case, the costs of such test shall be borne by the Contractor. Acceptance control testing will only be carried out on the written instruction of the Engineer.

PSA 8 MEASUREMENT AND PAYMENT

PSA 8.1 Measurement

Add the following new Subsubclause:

PSA 8.1.3 Security

The Tenderer must make allowance for the provision of security for his personnel, plant and equipment on the site or work points at his own cost. The cost of security is deemed to be included in Section 1: Preliminary and General.

PSA 8.5 Sums stated Provisionally by the Engineer

Amend the penultimate sentence of Subclause 8.5 to read:

"The percentage rate shall cover the Contractor's overheads, charges and profit on the work covered by the sums provisionally stated. Payment will be made on the basis of the sums actually paid for such work".

PSA 8.5 a) Employment of a Community Liaison Officer and a Social Facilitator

A Community Liaison Officer (CLO) and a Social Facilitator (SF) must be employed after consultation with the Area Based Officer/Manager and the Ward Councillor, by the Contractor, for the duration of the Contract as detailed in **Clause 10.19** and **Clause 10.20** of the Special Conditions of Contract. The CLO and SF will be selected from within the local community. Remuneration of the CLO and SF will be determined by the Engineer after consultation with the Employer and this salary will be paid by the Contractor.

The CLO and SF will become the entire responsibility of the Contractor as part of his normal workforce. The CLO will be appointed immediately before work commences, while the SF will be appointed as and when required.

PSA 8.6 Prime Cost Items

Amend the penultimate sentence of Subclause 8.6 to read:

"The percentage rate shall cover the Contractor's overheads, charges and profit on the work covered by the sums provisionally stated. Payment will be made on the basis of the sums actually paid for such work".

PSA 8.7 Daywork

All daywork rates are inclusive of supervision and all overheads. Daywork rates will apply irrespective of the conditions contained in Clause 5.7 of the General Conditions of Contract.

PSA 8.8 Temporary Works

PSA 8.8.2 Accommodation of Traffic

The tendered rate shall include for traffic accommodation as described in PSA 5.2 of this Document. This includes tie ins to existing roads and temporary deviations for public traffic.

Add the following new payment items:

PSA 8.9 As Built Drawings

The unit of measurement shall be the **Lump Sum** (Sum).

The tendered rate shall include for supplying the Engineer with "as built" surveys of the Works in marked up drawings, survey data in electronic format and schedules as described in PSA 5.1.3 of this Document. The survey is to include the X, Y and Z co-ordinates in an approved format.

PSA 8.10 Additional Employer's Obligations in Respect of the OHS Act

The unit of measurement shall be the **Lump Sum** (Sum).

The lump sum provided will be for any additional Employer's obligations in respect of the OHS Act. This lump sum is for the sole use by the Employer and only upon written instruction from the Engineer. A Contractor's mark-up is applicable to this item however, the Employer has the right to negotiate the Contractor's mark-up.

The rate tendered shall also allow for the requirements of the Site-Specific Health and Safety Specification and the Base Line Risk Assessment included as Annexures 3.6.1 and 3.6.2 within this document.

SABS 1200 AB - 1986 : ENGINEER'S OFFICE

PSAB 3 MATERIALS

PSAB 3.1 Nameboards

Add the following:

One Employer's nameboard shall be erected within one month of the commencement of construction and shall be placed where ordered by the Engineer. Any damage to this board shall be repaired within 14 days of a written instruction received from the Engineer. For details of the board refer to the Standard Drawings contained in this document.

Erection of One Contractor's nameboard that complies with the drawing(s) provided are required in the area of the Works, at a position approved by the Engineer, who may at any time order their removal if any objections are received.

The board shall be manufactured from materials specified in Clause 3.1 of SANS 1200 AB but shall conform in the painting, decorating and detail with the recommendations to the drawing attached.

All nameboards shall be removed 14 days prior to the date of the Final Approval Certificate.

PSAB 3.2 Office Building(s)

Replace the contents of this clause with the following: -

The Contractor shall supply, maintain and service three offices of 9m² minimum floor space and a ceiling height of 2.5m with lighting for the sole use of the Engineer and Employer.

The furniture stated SABS 1200 AB-1986 clause 3.2, (a.... j) shall be replaced by the following items to be provided in each site office:

- (a) One desk 1.5m long x 0.9m wide with four (4) drawers (one lockable).
- (b) One plan table, 1.2m long x 1.0m wide x 0.9m high, with a smooth top.
- (c) One Office swivel chair, two visitors' chairs.
- (d) An acceptable blind to each window.
- (e) A pin board, 1.5m long x 1.2m high for displaying plans and diagrams.
- (f) A whiteboard of 1m² size with 3 coloured markers and duster
- (g) Acceptable lighting
- (h) Provision of two 15-amp volt plug points with power supply
- (i) An air conditioner in proper working order.
A single unit of each of the following shall be supplied:
- (j) One A3 colour printer.
- (k) One small electric refrigerator.
- (l) a fire extinguisher which shall be properly maintained by the Contractor

The Contractor sum shall also include for a basin with running water, a lockable toilet for the exclusive use by the Engineer and Employer and 3 No. covered parking bays that shall be erected for the sole use by the Engineer, Employer and his staff.

The Contractor shall also supply, maintain and service a boardroom for 24m² minimum floor area able to seat 10 people for joint use by him and the Engineer. This room shall be equipped with adequate lighting, two power points, chairs, tables, a 2m² whiteboard, a 2.5m² pin board with stationary and an air-conditioner in proper working order.

The Contractor will be required to provide for daily cleaning of the Engineer's offices, boardroom and toilets. Payment for the cleaning of the offices will be deemed to be included in the Tenderer's General rates.

PSAB 4 PLANT

PSAB 4.1 Telephone

Replace clause 4.1 with the following:-

The Contractor will be required to supply the Resident Engineer and Employers graduate Engineer with a reliable internet, wifi or 3G / LTE for the duration of the Contract. The Contractor shall be responsible for the cost of all calls, installation, rental, supplies, maintenance, etc.

The Contractor will not be required to supply the Engineer with any mobile device / phone but the Contractor will be required to pay for all calls made from his phone pertaining to this Project up to a maximum amount of R1000.00 per month as soon as the contract has commenced.

PSAB 5 CONSTRUCTION

Add the following clauses:

PSAB 5.5 SURVEY EQUIPMENT

The Contractor shall upon request provide the following survey equipment on the Site from commencement to the completion of the Works.

- (a) 1 upright reading automatic level with tripod;
- (b) 1 metric levelling staff with protective cover bag;
- (c) ranging rods;
- (d) 1 x 50 metre Stilon tape measure and measuring wheel;
- (e) Wooden and steel pegs and hammers as required.

The equipment shall be provided for the exclusive use of the Engineer. The Contractor shall keep the equipment continuously insured against any loss, damage or breakage, and he shall indemnify the Engineer and the Employer against any claims in this regard. The Contractor shall also maintain the equipment in good working order throughout the Contract period.

The following additional equipment/services may be required from time to time by the Engineer and shall be supplied by the Contractor when required. The equipment/service may be shared with the Engineer.

- (f) Two chainmen to assist with levelling and surveying.
- (g) Spray paint (selected colour)

PSAB 5.6 Site Instruction books

The Contractor shall supply a triplicate book for site correspondence and inspection requests to the Engineer. Reasonable notice shall be allowed prior to inspections. All inspections requests and approval/disapproval thereof shall be recorded by the Site staff in writing. All

requests must be signed and dated by the Engineer before implementation.

The Contractor must ensure that a suitable site quality record system is put in place subject to approval by the Engineer to record that each section, or work item, complies with the relative works specification. Failure to update or provide sufficient records may result of a 10% interim payment reduction being withheld.

PSAB 8 MEASUREMENT AND PAYMENT

PSAB 8.2 Payment

Add the following payment clauses:

PSAB 8.2.1 Fixed and Time Related Charges

PSAB 8.2.2 Telephone

The unit of measurement shall be the Prime Cost Sum (PC Sum).

The Engineer shall reconcile the service provider's account each month for telephone / mobile calls made pertaining the Project and the Contractor shall reimburse the service provider directly within 7 days of receipt of the account.

PSAB 8.2.3 Survey Equipment

Payment for compliance with Clause PSAB 5.6 on the following basis:

Payment will be made for the supply of the equipment specified in clause PSAB 5.5 under the fixed P&G rate on verification by the Engineer that the equipment specified is on site. Should any of this equipment be removed from site during the course of the contract then any payments made for the supply of this equipment will be reversed out of the next interim certificate.

Payment will be made for the maintaining the above equipment in a suitable condition under the time related P&G rate.

SABS 1200C - 1980 : SITE CLEARANCE

PSC 1 SCOPE

The areas included for site clearance are generally vegetated and include sugar cane, grassland, existing roads and laydown areas.

PSC 8 MEASUREMENT AND PAYMENT

PSC 8.1 Basic Principles

All items shall include for removing of cleared material to a designated stockpile or spoil site within the overall landfill site at a location approved by the Engineer. Should the Contractor wish to use any other area for the disposal of soil, rubble, vegetation etc., its use shall be subject to the approval of the Engineer.

If vegetated areas are removed under topsoil stripping, cut to fill or cut to spoil, shaping of waste, etc., no payment will be made for clearing and grubbing.

PSC 8.2 Scheduled Items

PSC 8.2.1 Clear and Grub

The areas to be cleared and grubbed will be shown by the Engineer and clearing and grubbing will only be undertaken upon written instruction by the Engineer.

Designated grassed areas to be stripped of topsoil in one operation, shall be paid for under Section 5 of the Bill of Quantities (removal of topsoil) and no separate payment will be made for clearing and grubbing, if applicable.

The tendered rate shall also include for the clearing and removal of all boulders greater than 0,15m³ and of size up to 1m³, all large trees and tree stumps of girth greater than 1m, existing waste stockpiles and the leachate collection manhole.

SABS 1200 D - 1988 : EARTHWORKS

PSD 1 SCOPE

This section of the Specification controls the construction of the earthworks for the roadworks, platforms, dams and control berms, where applicable.

PSD 3 MATERIALS

PSD 3.1 Classification for Excavation Purposes

PSD 3.1.1 Method of Classifying

Classification of material other than soft shall be agreed upon prior to excavation commencing. The Contractor shall immediately inform the Engineer if and when the nature of the material being excavated changes to such an extent that a new Classification is warranted. Failure on the part of the Contractor to notify the Engineer timeously shall entitle the Engineer to classify the excavated material at his discretion.

PSD 3.1.2 Classes of Excavation

Irrespective of Classes of excavation stated in the SABS Specifications, all excavated material shall be classified as either hard or soft excavation.

The Classification of excavation shall be as follows:

- i) Hard excavation shall be classified as excavation in material which cannot be removed and loaded by normal constructional plant without first drilling and blasting.
- ii) Soft excavation shall be classified as per Subclause 3.1.2(a) and (b) of Clause 3 of SABS 1200 D.

PSD 3.3 Selection

The approval of a borrow area for a certain purpose does not necessarily mean that all material within that area is suitable for the specified purpose. What it does mean, is that the borrow area contains some suitable material. The onus is on the Contractor to ensure that only material that is indeed suitable, is removed and used for the specified purpose.

Where the Contractor is required to select material from excavations or stockpile for a specific purpose, the above provisions relating to borrow areas shall apply mutatis mutandis to excavations.

The Contractor shall not waste or contaminate materials that have been selected for a specific purpose.

PSD 5 CONSTRUCTION

PSD 5.1 Precautions

PSD 5.1.1 Safety

PSD 5.1.1.2 Safeguarding of excavations

Add the following subparagraph:

- g) The Contractor or his agent or his representative shall **not** require or allow any person to work in a trench or excavation more than 1,5m deep, and any excavation which has not been adequately supported or braced if there is a danger of the overhanging material or the sides of the excavation collapsing. The support, shoring or bracing to be designed and constructed by the Contractor, shall be strong and sturdy enough to support the sides of the excavation in question”.

PSD 5.2 Methods and Procedures

PSD 5.2.1 Site Preparation

PSD 5.2.1.1 Clearing or clearing and stripping of site

The areas specified to be cleared shall be stripped of all waste, vegetable matter and surface soil to a depth of 100mm, where applicable.

PSD 5.2.2 Excavation

PSD 5.2.2.1 Excavations for general earthworks and for structures

Add the following additional subparagraphs:

- f) Overbreak shall be backfilled at the Contractor’s expense and shall not be measured.
- g) The Contractor shall so plan his cut-to-fill operations that all excavated material is used in the manner that is most appropriate.

The Contractor shall conserve all suitable surplus material and he shall not borrow, spoil or waste any material unnecessarily. If excavated material designated for a particular purpose become contaminated, is incorrectly used or becomes unavailable through injudicious planning of excavation operations, the Contractor shall replace the contaminated material and make good any shortfall with material of quality at least equal to that of the said selected material.

Where selection of excavated material is required, the method of excavation shall be so arranged as to avoid double handling. Wherever possible excavated material shall be placed in its final position without being stockpiled. If stockpiling is unavoidable, materials intended for different uses shall be stockpiled separately”.

PSD 5.2.2.2 Borrow Pits

Add the following:

“Where it is specified that material shall be obtained from a designated borrow pit, the Contractor shall be responsible and include in his rates for making all arrangements for procuring the material. No payment will be made for the removal of overburden or stockpiling or clearing at the source and no extra over payment for excavating in intermediate, hard or boulder material shall apply”.

Add the following new Subsubclause:

PSD 5.2.2.4 Selection and Stockpiling

The approval or designation of a particular borrow area for a particular purpose will not imply that all the material is suitable for that purpose or should be used for that purpose. The Contractor shall select suitable material from that source, discard unsuitable material and

reserve material for other purposes as necessary. When required and as ordered by the Engineer, material shall be stockpiled for later use when the excavation thereof is unavoidable in order to excavate the material required at the time.

It is likely that several separate stockpiles for different materials will be required ; eg topsoil, G10 material only suitable for fill or future daily cover, G7 material suitable for layer works, old road layers recovered from MR461, blasted rock suitable for crushing etc

PSD 5.2.3 Placing and Compaction

PSD.5.2.3.1 Embankments

Clause D.5.2.3.1 shall be extended to include for benching and bonding as instructed in fill and platform slopes.

Clause D.5.2.3.1 shall also be extended to include for stockpiling as detailed in SABS 1200DM generally and by Clause 5.2.2.4.

PSD 5.2.3.2 Backfilling and compaction of trenches and excavations around structures

a) Restricted Work

The width of the restricted backfill behind any structure shall be as dimensioned on the drawings and as instructed by the Engineer on site. Restricted

PSD 5.2.5 Transport for Earthworks

PSD 5.2.5.2 Overhaul

There will be no overhaul measured in this contract. All haulage (including that from commercial sources) shall be considered freehaul. The cost of haulage shall be deemed to be covered by other rates in the Schedule of Quantities.

PSD 8.3.2 Restricted Excavation

Restricted excavation shall only be paid where the excavation is against a structure or an existing service or the existing fence at the Transnet Tower. Tie ins to the existing road earthworks will not be measured for payment.

Excavations for pipes and services shall be measured under SANS section DB.

SABS 1200 DB - 1989 : EARTHWORKS (PIPE TRENCHES)

PSDB 1 SCOPE

This section of the Specifications shall be extended to include for all pipes, drains, soakaways and septic tanks.

PSDB 3 MATERIALS

PSDB 3.1 Classes of Excavation

Irrespective of Classes of excavation stated in the SABS Specifications, all excavated material, including waste material, shall be classified as either hard or soft excavation.

The Classification of excavation shall be as follows:

- i) Hard excavation shall be classified as excavation in material which cannot be removed and loaded by normal constructional plant without first drilling and blasting.
- iii) Soft excavation shall be classified as per Subclause 3.1.2(a) and (b) of Clause 3 of SABS 1200 D.

PSDB 3.7 Selection

Replace the words "if he so wishes" in the first line of the second paragraph with the words "at his own cost".

PSDB 5 CONSTRUCTION

PSDB 5.1 Precautions

Add the following new subclause:

PSDB.5.1.5 Trench Excavations

The precautions for excavations as specified in Clause 5.1.1 of Section 1200D shall apply to all trench excavations.

The Contractor shall take all the steps necessary to ensure that no person is required or allowed to work in a trench or any other unsupported overhanging excavation which is more than 1,5m deep, and any excavation which has not been adequately supported, shored or braced if there is any danger whatsoever of the sides of the excavation collapsing. The support, shoring or bracing to be designed and constructed by the Contractor, shall be strong and sturdy enough to support the sides of the excavation in question.

PSDB 5.2 Minimum base width specified

Excavations for all drains and foundations shall be excavated to the dimensions as shown on the drawings. Payment will be made based on the width shown on the drawings.

PSDB 5.4 Excavation

Add the following:

For pipes constructed in fill areas, the fill must be placed to attain a minimum of 600mm above the crown of the pipe unless indicated otherwise on the drawings, before excavating the trench to the specified width. In such instances, payment for excavation shall be calculated from this level.

Where selected layers are specified above the pipe, excavation shall be measured from the bottom of the selected layer or from 600mm above the crown whichever is the lesser.

Excavation for manholes and other structures shall be included with an allowance of 600mm around the structure to provide working space. For subsoil pipes the excavation depth shall be the full depth as shown on the drawings.

PSDB 5.6.3 Disposal of soft excavation material

Excavation material, including waste material, from the trench which is classified as soft and has become surplus because of bulking, displacement by the pipe and importation shall be stockpiled on site or used as fill, as directed by the Engineer.

PSDB 8 MEASUREMENT AND PAYMENT

PSDB 8.1 Basic Principles

PSDB 8.1.4 Overhaul

There will be no overhaul measured in this contract. All haulage (including that from commercial sources) shall be considered freehaul.

PSDB 8.3 Scheduled Items

PSDB 8.3.2 Excavation

Clause 8.3.2 a) should now read:

- a) **“Excavate in all materials for trenches, backfill, compact and stockpile of surplus material.”**

All soft surplus material from trench excavations will be stockpiled on site or used as fill as directed by the Engineer.

The tendered rate for excavation should allow for adequate support, shoring or bracing protection.

In addition to the requirements of Subclause 8.3.2, the tendered rate for excavation shall also include for trimming the excavations and for compacting the base of the trenches to 95% mod AASHTO maximum density to a depth of 150mm.

Tenderers are to note that in all cases the compaction of the trench backfill shall be to 95% mod AASHTO density with the backfill layers not exceeding 150mm in thickness. The tendered rate for excavation and backfilling in all materials shall include for the increased compaction of the trench bottom excavations and backfill to 95% mod AASHTO density.

Excavation in fill shall be measured to a maximum of 1m above the crown of the pipe or service.

SABS 1200 DK - 1996 : GABIONS AND PITCHING

PSDK 1 SCOPE

This specification shall be extended to cover the geotextile components required for the separation layer under the reno mattress and behind gabion baskets.

PSDK 3 MATERIALS

PSDK 3.1.4 Geotextile

- a) **Non woven needle punched geotextile.**

The geotextile used for the separation layer or gabions shall be a non-woven polypropylene or polyester geofabric with a nominal mass of 340 g/m² and for the subsoil drains 200 g/m²:

The geotextile must be stable in the presence of chemicals typically found in a landfill and should be resistant to attack from these chemicals.

All geotextiles should be stable at a temperature of 100 °C.

PSDK 5 CONSTRUCTION

PSDK 5.4 Geotextile

- a) **Geotextile**

The geotextile shall be delivered to site in rolls covered with an opaque plastic sheet to prevent damage from sunlight, should the quantity allow.

All rolls (placed alongside one another or end-on-end) shall overlap by a minimum of 300mm or be sewn with a polyester thread or shall be heat bonded along overlapping edges.

A minimum thickness of 300mm of cover shall be kept between heavy equipment and the geotextile at all times.

No construction traffic shall be allowed directly on any of the laid geotextile.

PSDK 8 MEASUREMENT AND PAYMENT

PSDK 8.2 Scheduled Items

PSDK 8.2.4 Geotextile

PSDK 8.2.4.1 Non Woven Needle Punched Geotextile

The unit of measurement shall be the square metre (m²) of filter fabric supplied and installed as specified.

The tendered rate shall include full compensation for furnishing, procuring, cutting, overlapping, jointing, placing and protecting the filter fabric as specified as well as for wastage.

PSDM EARTHWORKS (Roads, Subgrade)

PSDM 1 SCOPE

This section of the Specification controls the bulk earthworks to be carried out on the roads, the selection and stockpiling of materials, the construction of road cuts and fills, layerworks required for the roads and layerworks to the paved areas of the platforms and stockpile areas.

The selected materials making up the engineered layers, shall be sourced by the Contractor, tested for compliance to the requirements set out below, before being imported.

PSDM 3 MATERIALS

PSDM 3.1 Classification for Excavation Purposes

Irrespective of the classification of excavation contained in the SABS Specifications, all excavated material shall be Classified as that stated in PSD 3.1.2 of this Document.

PSDM 3.2 Classification for Placing Purposes

PSDM 3.2.1 General

- a) The nomenclature used for the classification of the various material types to be used in the designed pavement layers is that defined in the NITRR documents TRH 4 and TRH 14.
- b) Where G or C class materials are called for in these Project Specifications, the material shall conform in all respects to the requirements of G or C class materials as described in TRH 14 in preference to the material properties given in Subclause 3.2.3.

Add the following new subclauses

PSDM 3.2.10 Selected Layers

Where G5, G7 and G9 materials are called for, they shall conform in all respects to the requirements as described in the NITRR document TRH 14.

PSDM-3.2.11 Gravel Surfacing

The material supplied for the gravel surfacing is to comply with that specified for the selected layer in PSDM-3.2.10 above.

PSDM 5 CONSTRUCTION

PSDM 5.2 Methods and Procedures

PSDM 5.2.1 Stripping of Site

The topsoil to be stripped shall be stripped specified by the Engineer together with the grass and grass roots (and sugar cane) and stockpiled as directed by the Engineer.

PSDM 5.2.2 Cut and Borrow

PSDM 5.2.2.2 Dimensions of Cuts

In addition:

- i) Overbreak shall be backfilled at the Contractor's expense and shall not be measured.
- ii) The minimum depth of blasting shall be 750mm and where depths of less than 750mm are required to form the final surfaces, the Contractor shall allow for the extra depth of blasting.
This extra volume will not be measured nor paid for and the Contractor shall backfill the over excavation at his expense.
In hard rock cuttings, blasting shall be extended at least 750mm below formation level (bottom of selected subgrade) and the surface trimmed to shape and level and then rolled with a minimum of 5 passes of a 5t flat drum vibratory roller.

PSDM 5.2.4 Fill

PSDM 5.2.4.1 Preparation

- a) Before any fill commences, the existing surface shall be surveyed, the existing ground line checked against the design grade and cross section and measured for cut and or fill quantities. The Engineer may then revise the design lines to suit the ground shape. Erosion gullies shall first be filled and, following normal practice, the top of 150mm shall be scarified and recompacted to 93% Mod AASHTO maximum density.

PSDM 5.2.4.2 Rock Fill

In addition to requirements of clause 5.2.4.2, rockfill shall be placed by pioneering methods, ie end tipped on the existing portion of the layer being placed and dozed over the edge.

PSDM 5.2.8.2 Overhaul

There will be no overhaul measured in this contract. All haulage (including that from commercial sources) shall be considered freehaul. The cost of haulage shall be deemed to be covered by other rates in the Bill of Quantities.

PSDM 5.2.9 Working on Slopes.

Where the slope, upon which the bulk fill or layerworks are to be constructed, is steeper than 1V: 5H, construction is to proceed from the lower level, in an upwards direction. The Contractor is to take cognizance of this when formulating construction methods and selecting plant.

Benches at least 3m wide shall be cut into any slope steeper than 1V: 5H before placing bulk fill.
Benches will be measured separately.

PSDM 7 TESTING

PSDM 7.2 Process Control

Where applicable, the average field cement content shall be greater than or equal to 0.6 times the specified cement content plus two times the standard deviation. A field cement content test shall be taken at the discretion of the Engineer.

PSDM 8 MEASUREMENT AND PAYMENT

PSDM 8.1 Basic Principles

Further to the requirements of Clause 8.1, the following shall apply:

a) **Bulking and Shrinkage**

For measurement and payment purposes, no allowances will be made for bulking or shrinkage and it shall be assumed that 1 cubic metre of excavated material from the site shall form 1 cubic metre of compacted fill. In the event of there being surplus material encountered on site due to bulking, the Tenderer shall allow in the relevant rates for the material to be spoiled. Similarly, should the material shrink the Tenderer shall allow for the importation of material.

b) **Volumes**

Measurement for bulk earthworks shall be made in fill from topographical survey and DTM modelling. The Tenderer is to make allowances for bulking or shrinkage or the loss of relevant materials and no extra or separate payment will be made due to the material losses.

c) **Restricted Work**

No extra or separate payment will be made for work considered to be of a restricted nature. These costs shall be deemed to be covered by other rates in the Schedule of Quantities.

d) **Stockpiling of material**

The Tenderer must note that it may be necessary to stockpile some of the excavated material before the fill areas become available. Allowance for any costs incurred in the stockpiling as described in Clause 8.3.11 must be made in the cut to fill / spoil / stockpiling rates as items have not been included in the Schedule of Quantities to cover stockpile handling.

PSDM 8.3 SCHEDULED ITEMS

PSDM 8.3.2 Removal of topsoil to stockpile

Topsoil shall be carefully stripped and stockpiled as directed by the Engineer, generally with the grass, roots etc. The depths and locations of stripping shall be determined by the Engineer on site.

PSDM 8.3.3 Treatment of Roadbed

The Bid rate shall also include for all restricted work where appropriate.

PSDM 8.3.4 Cut to Fill

The tendered rate shall include full compensation for all costs arising from the trimming of exposed surfaces to the required tolerance such that they are free of all protrusions, stones larger than 50mm, roots and other materials which may negatively affect the construction of the layers above.

PSDM 8.3.5 Selected Layers from Commercial Sources

In addition to the requirements of Clause DM-8.3.5, the following shall apply:

- a) the measured volume for all imported fill shall be cubic metre (m³) measured in place, as constructed and compacted to the specified dimensions shown on the drawings;
- b) the tendered rate shall include for all additional compaction requirements as specified;
- c) if applicable, the tendered rate for the stabilised layers shall also include for the operation of stabilising as well as the provision of the approved stabilising agent at a nominal rate of 4% by mass and shall thus include all operations and materials to satisfy the requirements of stabilising as described in the relevant Clauses of Part ME.
- d) If mechanical stabilisation is instructed by the Engineer, the component materials shall be measured separately. eg 70% G7 material from stockpile and 30% G4 material from commercial source.
- e) Where applicable, the tendered rate shall include for all restricted work as well as for satisfying the requirements of Section PSDM 5.2.9

PSDM 8.3.7 Cut to Spoil or Stockpile

In addition to Clause PSDM 8.3.4, the tendered rate shall also include for selection of the excavated material. The excavated material taken to stockpile shall be free of any rock or boulders in excess of 200mm in size. Any rock or boulders in excess of 200mm are to be separated out of the material and taken to a separate stockpile as ordered by the Engineer.

PSDM 8.3.13 Surface Finishes

- a) Topsoiling

The unit of measurement shall be the cubic metre (m³) of topsoil applied in a layer thickness of 100mm, measured on slope, as directed by the Engineer.

The Bid rate shall include full compensation for excavating and loading the topsoil, any compensation or royalties payable, transport, off loading, placing and spreading to the required thickness, levelling off a smooth surface and for removing any stones as specified. The Bid rate shall include for all overhaul and restricted work.

The topsoil is to be obtained from site or stockpile, but any shortfall may have to be imported from commercial sources.

If topsoil is obtained from a local, but not a recognised source, the Engineer reserves the right to inspect and approve the source prior to importation. In this regard, the Contractor shall supply suitable excavating equipment to dig test pits,

the costs of which are included in the rates.

In addition the Bid rate shall include for testing of the proposed topsoil to check the organic compounds in the topsoil. The Engineer shall be the sole authority to ascertain if the topsoil meets these requirements.

b) Grassing

The unit of measurement for hydroseeding or grass sodding shall be the square metre (m²).

For Tender purposes the following hydroseeding mix must be allowed for:

Grass Species	Common Name	Application : kg / ha
Eragrostis tef	Teff	3
Eragrostis curvula	Weeping lovegrass	11
Chloris gayana	Rhodes grass	14
Cenchrus ciliaris	Blue buffalo grass	6
Cynodon dactylon	Couch / Kweek	16
Digitaria Eriantha	Smuts finger grass	5
Total		55

The Tendered rates shall include for any restricted work.

Further to the requirements of Subclause 5.2.4.3, the tendered rate for hydroseeding shall include for adequate watering at regular and frequent intervals to ensure the proper growth of grass until the grass has established an acceptable cover and thereafter until the end of the maintenance period of the grass.

For Tendering purposes, the Contractor shall allow in his rate for 50kℓ of water to be applied evenly to the entire grassed area at fortnightly intervals. The grass must be planted and have an acceptable cover before the end of the acceptable growing season.

The Contractor shall further mow the grass on all areas where grass has been established, whenever so instructed by the Engineer, until the end of the maintenance period. For Tendering purposes this interval shall be assumed to be monthly. Weeds shall be controlled by approved means.

An acceptable grass cover shall mean that not less than 75% of the area grassed shall be covered with grass and that no bare patches exceeding 0.25m² in any area of 1m x 1m shall occur.

The maintenance period for grassing shall commence when an acceptable grass cover, as defined above, has been established and shall be one year.

SABS 1200 G - 1982 : CONCRETE (STRUCTURAL)

PSG 1 SCOPE

This specification has been extended to cover the construction of the concrete lined drains and the concrete pavement to the roadway.

PSG 3 MATERIALS

PSG 3.2 Cement

PSG 3.2.1 Applicable Specifications

The new SABS ENV. 197-1 (adopted in 1996): Cement – composition, specification and conformity criteria Part 1: Common Cement, replaces SABS 471 – 1971, SABS 626 – 1971 and SABS 831 – 1971 in Clause EM.2 of Part EM : Concrete Surface to Roads.

Add the following new Subclause:

PSG 3.9 Curing Compound

The curing compound used shall be a white pigmented resin based curing compound, complying with the requirements of ASTM C 309 except that the water loss as determined by the water retention test shall not exceed 0,040 g/cm².

A recent certificate from an approved testing laboratory shall be submitted certifying that the curing compound complies with the specifications. Further testing shall be carried out at regular intervals throughout the contract period on samples taken at the nozzle of the spraying equipment.

The curing compound shall be capable of being sprayed onto a wet surface without loss of stability or performance. This characteristic shall also be certified by the approved testing laboratory.

The curing compound shall be compatible with the cement used to avoid discolouration.

PSG 3.10 Silicon Seals

The joints shall be sealed with Plycol 327 applied after priming with Epidermix 317 or similar approved systems.

PSG 3.11 Joint Filler

The joint filler shall be Plycord 10 or Sandor Strip or Ethercord or similar approved systems, with PVC tape between backup strip and the sealant.

PSG 5 CONSTRUCTION

PSG 5.1 Reinforcement

PSG 5.1.2 Fixing

Delete from the eighth line:

“or, if permitted by the Engineer, by welding”

PSG 5.5 Concrete

PSG 8.4.3 Strength Concrete for Road Pavement

Concrete used for road base shall have a minimum compressive strength of 30 MPa and a minimum flexural strength of 3.8 MPa at 28 days.

The minimum cementitious content shall be 310kg/m³ with a water cement ratio not greater than 0.52.

No construction traffic will be permitted on the concrete pavement until the compressive strength exceeds 15MPa.

A mix design shall be prepared by an approved laboratory and submitted by the contractor for approval by the Engineer prior to laying concrete.

PSG 5.4.5 Joints in Concrete Pavements

Joints shall not be more than 4.5m apart.

Joints may be construction joints or sawcut joints. A construction joint shall be formed at the end of each day's work.

All longitudinal joints and the transverse joints to the end panel shall be recessed and tied. Where instructed by the Engineer, joints shall be sealed.

PSG 5.5.10 Concrete Surfaces

Concrete pavement surfaces shall be fully compacted by vibration then struck off with a straightedge and finished neatly to normal base tolerances.

Concrete pavement surfaces are vulnerable to shrinkage cracking so early application of curing compound is essential and saw cutting shall be done as soon as the concrete is hard enough to be cut, even if this is after normal work hours.

Exposed concrete surface finishes for all concrete shall be a wood float finish except for the road pavement that shall have a broom or other finish to the Engineer's instruction.

PSG 5.4.5 Laying Concrete Pavement on steep slopes

All concrete pavement laid at a slope steeper than 6% shall be laid from the bottom of the slope working uphill. Anchor panels and blocks shall be incorporated on roads with grades steeper than 3% at the spacing shown on the drawings.

PSG 8 MEASUREMENT AND PAYMENT

Basic Principle

- 1) No extra or separate payment will be made for work considered to be of a restricted nature, being for the narrow access corridor, the steepness of the site or for the difficulty of turnaround.
- 2) No extra or separate payment will be made for any additional formwork to the concrete. All formwork will be deemed to be included in the rates Bid for the concrete.

PSG 8.4 Scheduled Concrete Items

PSG 8.4.3 Strength Concrete for vee drains and minor drainage structures

The Bid rate will differentiate between the different elements of concrete works scheduled for this Contract.

The Bid rates for minor drainage structures such as concrete lined vee drains and channels shall include for the provision of all formwork, damp proof course, weep holes, reinforcing, curing of concrete, wood float finish, joints and other incidentals as detailed on the drawings and directed by the Engineer on site.

SABS 1200 HA - 1984 : STRUCTURAL STEELWORKS (SMALL WORKS)

PSHA 1 SCOPE

This specification covers the construction of a prefabricated galvanised steel water tank and associated galvanised steel fittings, including support beams, ladders, hatches, steel pipes and fittings up to the connection with UPVC water pipes

PSHA MATERIALS

PSHA 3.1 Steelwork

All steelwork for the water tank, including all fittings, support beams and steel pipework shall be hot dipped galvanised.

PSHA 3.1 Steel pipes and fittings

Steel pipes and fittings shall be prefabricated, then hot dipped galvanised and assembled on site, including couplings to uPVC water pipes. Flanges shall comply with the Ethekewini Municipality standard bolt layout.

PSHA 5.1 Shop Drawings

Contractor's Shop drawings will be required for the steel tank including the steel pipes and all fittings.

PSHA 8 MEASUREMENT AND PAYMENT

Basic Principle

- 1) Payment for the steel tank will be a Lump Sum for the entire tank up to the flanges of the welded pipes connections.
- 2) No extra or separate payment will be made for connections, fittings attached to the steel tank, including flanges to pipes, ladders, hatches, steel support beams, etc, installation, erection, testing, disinfecting and corrosion protection.
- 3) Valves and steel pipe fittings bolted to the steel tank will be measured separately under section L. The rate includes for all connections and corrosion protection.

SABS 1200 LB - 1983 : BEDDING (PIPES)

PSLB 3 MATERIALS

PSLB 3.1 Selected Granular Material

Add the following:

"Alternatively clean, coarse river sand may be used".

Add the following new Subclauses:

PSLB 3.5 Bedding Sand

Where shown on the drawings the backfill for drains shall be concrete sand (fine aggregate) or selected river sand as per the relevant requirements of SABS 1083. The material must be obtained from an approved source.

PSLB 3.6 Crushed Rock Aggregate

Where shown on the drawings, the backfill for drains and subsoil drains shall be as per the relevant requirements of SABS 1083. The material must be obtained from an approved source.

This layer shall also be clean rock crushed to the following specification:

- | | | |
|----|-----------------------|-------|
| a) | Maximum Particle Size | 19 mm |
|----|-----------------------|-------|

- b) Minimum Particle Size <10% passing the 13 mm sieve size
- c) Crushing Strength Values obtained from 10% fines aggregate crushing test 100kN
- d) The crushed rock must be washed to remove the fine particles.
- e) The Engineer will assess the Flakiness Index of the crushed rock visually and reject any aggregate that does not pass the visual inspection.

PSLB 5 CONSTRUCTION

PSLB 5.1 GENERAL

PSLB 5.15 Placing and Compacting Bedding Material

- a) For combined trenches, placing and compacting bedding around multiple pipes laid side by side shall be paid for only once, namely, for one placement and compaction, measured along the centre line of the trench.

PSLB 8 MEASUREMENT AND PAYMENT

PSLB 8.2 Scheduled Items

PSLB 8.2.2 Supply only of bedding by importation

PSLB 8.2.2.3 From commercial sources

Where applicable, the tendered rate shall also include for the placing of the crushed rock aggregate and coarse sand in the trenches and the levelling of the materials to the required level.

SABS 1200 LD - 1983 : SEWERS

PSLD 1 SCOPE

The scope of this specification has been extended to cover the contaminated stormwater pipes.

PSLD 3 MATERIALS

PSLD 3.1 Pipes, Fittings and Pipe Joints

PSLD-3.1.5 uPVC pipes shall be heavy duty class 34 pipes

PSLD 3.1.8 HDPE Pipes for the contaminated stormwater pipe

The HDPE pipes shall conform to SABS 533 Part II of 1982. The sizes referred to in both specifications and drawings are the minimum outside diameter.

Jointing procedures for HDPE pipes shall be as follows:

Pipe Diameter (mm)	Required Jointing Method
50	"Plasson" type compression coupling
110/160/200/250/300	Welding or Electrofusion welding on site

PSLD 8 MEASUREMENT AND PAYMENT

PSLD 8.2.1 Supply, Lay, Joint, Bed and Test Pipeline

The unit of measurement shall be the **meter** (m) measured in place along the pipe centreline, including the length of fittings.

The tendered rate shall include full compensation for procuring, furnishing, laying and jointing, bends, fittings and pressure testing the pipes as specified.

Where directed by the Engineer, it may be required to break into manholes to provide an inlet for the drains. The tendered rate shall be deemed to include for this occurrence as well as making good of the manhole after the pipe has been installed.

The tendered rate for HDPE pipes shall include for all welds and compression type couplings used.

Gravity pipes (sewers) shall be tested to the normal air tests and HDPE contaminated stormwater pipes shall be pressure tested to 50% of the rated pressure capacity of the pipe.

PSLD 8.2.3 Manholes

The unit of measurement shall be the number (No) implying the complete construction of the manholes, as detailed on the drawings, including excavation, backfill and cover.

The manhole number with the pipe descriptions, as directed by the Engineer on site, shall be painted on or attached to the inside of the manhole above the outlet of the pipe.

SABS 1200 ME - 1981 : SUBBASE

PSME 1 SCOPE

The scope of this specification has been extended to cover mechanical modification.

PSME 3 MATERIALS

The materials to be used for mechanical modification shall be normal road layer materials from site or commercial source which are intimately mixed together in situ to create an acceptable layer.

PSME 8 MEASUREMENT AND PAYMENT

PSME 8.2.1 The unit of measurement for modification shall be m³ of the entire layer for the mechanical modification extra over item.
The individual materials shall be paid at the tendered rate for that material for the proportion used, eg 75% of the layer volume paid for G6 from stockpile and 25% of the layer volume paid for G2 from commercial sources.

SABS 1200 MM - 1984 : ANCILLARY ROADWORKS

PSMM 1 SCOPE

The scope of this specification has been extended to cover security fencing and gates.

PSMM 3 MATERIALS

Fence Posts shall be hot dipped galvanized and polymer coated steel posts with waterproof caps. The posts shall have secure non removable fittings situated inside the fence and be securely set in concrete footings.

The fence shall be small mesh high tensile steel with apertures less than 13mm vertical and 80 mm horizontal to exclude bolt cutters, and shall be hot dipped galvanised and coated. (Clearvu or similar approved).

Gates, Gate Posts, sliding rails and all accessories shall be constructed of hot dipped galvanized steel.

Gates shall be lockable, robustly constructed and supported. The design of all gates shall be subject to approval by the Engineer.

PSMM 8 MEASUREMENT AND PAYMENT

PSMM 8.2.1 The unit of measurement for the Supply and erection of security fence shall be per m. This includes all costs associated with the fence, fence posts and foundations.

The unit of measurement for the Supply and erection of gates shall be per unit. This includes all costs associated with the gate, gateposts, hinges and locks, sliding rails and foundations.

C3.4: PARTICULAR SPECIFICATIONS

In addition to the Standardized and Project Specifications the following Particular Specifications / Policies shall apply to this contract and are available on web address:

<ftp://ftp.durban.gov.za/cesu/StdContractDocs/>:

- C3.4.1 Part AH - OHS Act 1993 Safety Specification
(26 Pages)

- C3.4.2 Standard Environmental Management Plan for Civil Engineering Construction Works
(24 Pages)

ENVIRONMENTAL MANAGEMENT SPECIFICATION

CONTENTS

- 1: PURPOSE**
- 2: RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT**
- 3: TRAINING AND INDUCTION OF EMPLOYEES**
- 4: COMPLAINTS REGISTER AND ENVIRONMENTAL INCIDENT BOOK**
- 5: ENVIRONMENTAL SAFETY**
- 6: MEASUREMENT AND PAYMENT**

ENVIRONMENTAL MANAGEMENT SPECIFICATION

1. PURPOSE

The purpose of the EMP is to encourage good management practices through planning and commitment with respect to environmental issues, and to provide rational and practical environmental guidelines to minimise disturbance of the natural environment.

2. RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT

The contractor will be responsible for environmental control on site during construction and the maintenance period. The construction activities will be monitored by an independent environmental specialist and audited against the EMP.

3. TRAINING AND INDUCTION OF EMPLOYEES

The contractor has a responsibility to ensure that all those people involved in the project are aware of and familiar with the environmental requirements for the project (this includes sub-contractors, casual labour, etc.).

4. COMPLAINTS REGISTER AND ENVIRONMENTAL INCIDENT BOOK

Any complaints received by the project team from the community will be recorded. The complaint will be brought to the attention of the site manager.

All complaints received will be investigated and a response given to the complainant within 28 days.

All environmental incidents occurring on the site will also be recorded.

5. ENVIRONMENTAL SAFETY

The management of impacts associated with various categories of concern is discussed as separate topics, indicated below.

5.1 Soil

- (a) Topsoil should be temporarily stockpiled, separately from (clay) subsoil and rocky material, when areas are cleared. If mixed with clay sub-soil the usefulness of the topsoil for rehabilitation of the site will be lost.
- (b) Stockpiled topsoil should not be compacted and should be replaced as the final soil layer. No vehicles are allowed access onto the stockpiles after they have been placed.
- (c) Stockpiled soil should be protected by erosion-control berms if exposed for a period of greater than 14 days during the wet season. The need for such measures will be indicated in the site-specific report.
- (d) Topsoil stripped from different sites must be stockpiled separately and clearly identified as such. Topsoil obtained from sites with different soil types must not be mixed.
- (e) Topsoil stockpiles must not be contaminated with oil, diesel, petrol, waste or any other foreign matter, which may inhibit the later growth of vegetation and micro-organisms in the soil.

- (f) Soil must not be stockpiled on drainage lines or near watercourses without prior consent from the Project Manager.
- (g) Soil should be exposed for the minimum time possible once cleared of invasive vegetation, that is the timing of clearing and grubbing should be co-ordinated as much as possible to avoid prolonged exposure of soils to wind and water erosion. Stockpiled topsoil must be either vegetated with indigenous grasses or covered with a suitable fabric to prevent erosion and invasion by weeds.
- (h) Limited vehicular access is allowed across rocky outcrops and ridges.
- (i) All cut and fill surfaces need to be stabilized with appropriate material or measures when major civil works are complete.
- (j) Erosion and donga crossings must be dealt with as river crossings. Appropriate soil erosion and control procedures must be applied to all embankments that are disturbed and destabilized.
- (k) All equipment must be inspected regularly for oil or fuel leaks before it is operated. Leakages must be repaired on mobile equipment or containment trays placed underneath immobile equipment until such leakage has been repaired.
- (l) Soil contaminated with oil must be appropriately treated and disposed of at a permitted landfill site or the soil can be regenerated using bio-remediation methods.
- (m) Runoff must be reduced by channelling water into existing surface drainage system.

5.2 Water

- (a) Adequate sedimentation control measures must be instituted at any river crossings when excavations or disturbance of a riverbanks or riverbeds takes place.
- (b) Adequate sedimentation control measures must be implemented where excavations or disturbance of drainage lines of a wetland may take place.
- (c) All fuel, chemical, oil, etc spills must be confined to areas where the drainage of water can be controlled. Use appropriate structures and methods to confine spillages such as the construction of berms and pans, or through the application of surface treatments that neutralise the toxic effects prior to the entry into a water course.
- (d) Oil absorbent fibres must be used to contain oil spilt in water.
- (e) During construction through a wetland, the majority of the flow of the wetland should be allowed to pass downstream.
- (f) Vehicular traffic across wetland areas must be avoided.
- (g) No dumping of foreign material in streams, rivers and/or wetland areas is allowed.
- (h) The wetland area and/or river must not be drained, filled or altered in any way including alteration of a bed and/or, banks, without prior consent from the DWAF. The necessary licenses must be obtained in terms of Section 21 and 22 of the National Water Act, 36 of 1998 from DWAF.
- (i) No fires or open flames are allowed in the vicinity of the wetland, especially during the dry season.

- (j) No swimming, washing (including vehicles and equipment), fishing or related activity is permitted in a wetland or river without written permission from the Project Manager.
- (k) Disturbances to nesting, breeding and roaming sites of animals in or adjacent to wetland areas must be minimized.

5.3 Air

Speed limits must be implemented in all areas, including public roads and private property to limit the levels of dust pollution.

Dust must be suppressed on access roads and construction sites during dry periods by the regular application of water or a biodegradable soil stabilisation agent. Water used for this purpose must be used in quantities that must not result in the generation of run-off.

The site-specific investigation will quantify the impact of dust on nearby wetlands, rivers and dams in terms of sedimentation. Mitigation measures identified during the site specific study must be implemented.

The Contractor must notify the Principal of all schools within 50m of the site of proposed activities. The Principal must in turn ensure that children with allergies and respiratory ailments take the necessary precautionary measures during the construction period. The Contractor must ensure that construction activities do not disturb school activities e.g. dust clouds may reduce visibility affecting sports activities.

Waste must be disposed of, as soon as possible at a municipal transfer station, skip or on a permitted landfill site. Waste must not be allowed to stand on site to decay, resulting in malodours.

Noise control measures must be implemented. All noise levels must be controlled at the source. All employees must be given the necessary ear protection gear. IAP's must be informed of the excessive noise factors.

The Contractor must inform all adjacent landowners of any after-hour construction activities and any other activity that could cause a nuisance e.g. the application of chemicals to the work surface. Normal working hours must be clearly indicated to adjacent land owners.

No loud music is allowed on site and in construction camps.

No fires are allowed if smoke from such fires will cause a nuisance to IAP's.

5.4 Social and Cultural

- (a) Access by non-construction people onto any construction sites must be restricted. The Contractors activities and movement of staff must be restricted to designated construction areas only.
- (b) The Contractors crew must be easily identifiable due to clothing, identification cards or other methods.
- (c) Rapid migration of job seekers could lead to squatting and social conflict with resident communities and increase in social pathologies if not properly addressed. The Contractor must ensure that signs indicating the availability of jobs are installed.

- (d) Criteria for selection and appointment (by the Contractor) of construction labour must be established to allow for preferential employment of local communities. The Local Authority must be actively involved in the process of appointing temporary labourers.
- (e) Sub-Contractors and their employees must comply with all the requirements of this document and supporting documents e.g. the Contract document that applies to the Contractor. Absence of specific reference to the sub-contractor in any specification does not imply that the sub-contractor is not bound by this document.
- (f) No member of the construction workforce is allowed to wander around private property, except within the immediate surroundings of the site.
- (g) The Contractor must provide suitable sanitation facilities for site staff. Sanitation provided during the construction phase should be managed so that it does not cause environmental health problems. The use of the surrounding veld for toilet purposes is not permitted under any circumstance.
- (h) The Contractor must arrange for all his employees and those of his sub-contractors to be informed of the findings of the environmental report before the commencement of construction to ensure:
 - A basic understanding of the key environmental features of the work site and environments, and
 - Familiarity with the requirements of this document and the site specific report.
- (i) Supervisory staff of the Contractor or his sub-contractors must not direct any person to undertake any activities which would place such person in contravention of the specifications of this document, endanger his/her life or cause him/her to damage the environment.
- (j) The demand for construction materials and supplies will have an effect on the local economy. This impact can be optimised by sourcing and purchasing materials locally and regionally wherever possible, insofar as the material complies with the design specification.
- (k) The Contractor must maintain a detailed complaints register. This must be forwarded, together with solutions, to the authorities when requested.

5.5 Aesthetics

(a) Scenic Quality

Damage to the natural environment must be minimized.

Trees and tall woody shrubs must be protected from damage to provide a natural visual shield. Excavated material must not be placed on such plants and movement across them must not be allowed, as far as practical.

The clearing of all sites must be kept to a minimum and surrounding vegetation must, as far as possible, be left intact as a natural shield.

No painting or marking of natural features must be allowed.

- (b) All above ground structures could be treated or painted to blend in with the natural environment.

- (c) Cut and fill areas, river and stream crossings and other soil stabilisation works must be constructed to blend in with the natural environment.
- (d) Natural outcrops, rocky ridges and other natural linear features, must not be bisected. Vegetation on such features must, as far as possible, not be cut unless absolutely necessary for construction.
- (e) Excavated material must be flattened (not compacted) or removed from site. No heaps of spoil material must be left on site once the Contractor has moved to a new construction site.
- (f) Any complaints from interest groups regarding the appearance of the construction site must be recorded and addressed promptly by the Contractor.

5.6 Archaeology and Cultural Sites

- (a) All finds of human remains must be reported to the nearest police station.
- (b) Human remains from the graves of victims of conflict, or any burial ground or part thereof which contains such graves and any other graves that are deemed to be of cultural significance may not be destroyed, damaged, altered, exhumed or removed from their original positions without a permit from the South African Heritage and Resource Agency (SAHRA).
- (c) Work in areas where artefacts are found must cease immediately.
- (d) Under no circumstances must the Contractor, his/her employees, his/her sub-contractors or his/her sub-contractors' employees remove, destroy or interfere with archaeological artefacts. Any person who causes intentional damage to archaeological or historical sites and/or artefacts could be penalised or legally prosecuted in terms of the National Heritage Resources Act, 25 of 1999.
- (e) A fence at least 2 m outside the extremities of the site must be erected to protect archaeological sites.
- (f) All known and identified archaeological and historical sites must be left untouched.
- (g) Work in the area can only be resumed once the site has been completely investigated. The Project Manager will inform the Contractor when work can resume.

5.7 Flora

- (a) All suitable and rare flora and seeds must be rescued and removed from the site. They must be suitably stored, for future use in rehabilitation.
- (b) The felling and/or cutting of trees and clearing of bush must be minimised.
- (c) Bush must only be cleared to provide essential access for construction purposes.
- (d) The spread of alien vegetation must be minimized.
- (e) Any incident of unauthorised removal of plant material, as well as accidental damage to priority plants, must be documented by the Contractor.

- (f) Woody vegetative matter stripped during construction must either be spread randomly throughout the surrounding veld so as to provide biomass for other micro-organisms and habitats for small mammals and birds, or it may be stockpiled for later redistribution over the reinstated topsoiled surface. No vegetative matter must be burnt or removed for firewood other than those removed during the grubbing and clearing phase. Such vegetation can be made available to the local inhabitants to be used as firewood.
- (g) No tree outside the footprint of the Works area must be damaged.

5.8 Fauna

- (a) No species of animal may be poached, snared, hunted, captured or wilfully damaged or destroyed.
- (b) Snakes and other reptiles that may be encountered on the construction site must not be killed unless the animal endangers the life of an employee.
- (c) Anthills and/or termite nests that occur must not be disturbed unless it is unavoidable for construction purposes.
- (d) Disturbances to nesting sites of birds must be minimized.
- (e) The Contractor must ensure that the work site is kept clean and free from rubbish, which could attract pests.

5.9 Infrastructure

- (a) The relevant authorities must be notified of any interruptions of services, especially the Local Municipality, National Road Agency, Spoornet, TELKOM and ESKOM. In addition, care must be taken to avoid damaging major and minor pipelines and other services.
- (b) The integrity of property fences must be maintained.
- (c) No telephone lines must be dropped during the construction operations, except where prior agreement by relevant parties is obtained. All crossings must be protected, raised or relocated as necessary.
- (d) All complaints and/or problems related to impacts on man-made facilities and activities must be promptly addressed by the Contractor and documented.
- (e) Storage Facilities
 - Proper storage facilities should be provided for the storage of oils, grease, fuels, chemicals and hazardous materials.
 - The Contractor must ensure that accidental spillage does not pollute soil and water resources.
 - Fuel stock reconciliation must be done on all underground tanks to ensure no loss of oil, which could pollute groundwater resources.
 - Cement must be stored and mixed on an impermeable substratum.

(f) Traffic Control

All reasonable precautions must be taken during construction to avoid severely interrupting the traffic flow on existing roads, especially during peak periods.

Before any work can start the Local Traffic Department must be consulted about measures to be taken regarding pedestrian and vehicular traffic control.

(g) Access Roads

The Contractor and the affected landowner must collaborate on the planning and construction of new access routes and the repair or upgrading of existing routes.

Access to the site must be controlled such that only vehicles and persons directly associated with the work gains access to the site.

Temporary access roads must not be opened until required and must be restored to its former state as soon as the road is no longer needed.

(h) Batching Plants

Concrete must be mixed only in an area demarcated for this purpose. All concrete spilled outside this area, must be promptly removed by the Contractor and taken to a permitted waste disposal site. After all concrete mixing is complete, all waste concrete must be removed from the batching area and disposed of at an approved dumpsite. Stormwater must not be allowed to flow through the batching area. Water laden with cement must be collected in a retention area for evaporation and not allowed to escape the batching area. Operators must wear suitable safety clothing.

(i) Chemical toilet facilities should be managed and serviced by a qualified company. No disposal or leakage of sewerage should occur on or near the site.

(j) Blasting

Blasting must not endanger public or private property.

Noise mufflers and/or soft explosives must be used to minimize the impact on animals.

All the provisions of the Explosives Act, 26 of 1956 and the Minerals Act, 50 of 1991 must be complied with.

The Contractor must take measures to limit flyrock.

5.10 Safety

- (a) Measures must be taken to prevent any interference that could result in flashover of power lines due to breaching of clearances or the collapse of power lines due to collisions by vehicles and equipment.
- (b) Measures must be taken during thunderstorms to protect workers and equipment from lightning strikes.
- (c) All tall structures must be properly earthed and protected against lightning strikes.

- (d) The process of excavation and back filling must be carried out as a sequential process following one another as quickly as possible. Excavations must only remain open for a minimum period of time and during this time they must be clearly demarcated. If excavations place the public at risk these sites must be fenced.
- (e) The residents directly affected by open trenches must be notified of the dangers. This will be done during the site-specific phase.

5.11 Waste

Solid Waste

- (a) Littering on site and the surrounding areas is prohibited.
- (b) Clearly marked litterbins must be provided on site. The Contractor must monitor the presence of litter on the work sites as well as the construction campsite.
- (c) All bins must be cleaned of litter regularly.
- (d) All waste removed from site must be disposed at a municipal/permitted waste disposal site.
- (e) Excess concrete, building rubble or other material must be disposed of in areas designated specifically for this purpose and not indiscriminately over the construction site.
- (f) The entire works area and all construction sites must be swept of all pieces of wire, metal, wood or other material foreign to the natural environment.
- (g) Contaminated soil must be treated and disposed of at a permitted waste disposal site, or be removed and the area rehabilitated immediately.
- (h) Waste must be recycled wherever possible.

Liquid Waste

- (a) The Contractor must maintain mobile toilets on site.
- (b) The Contractor must provide adequate and approved facilities for the storage and recycling of used oil and contaminated hydrocarbons. Such facilities must be designed and sited with the intention of preventing pollution of the surrounding area and environment.
- (c) All vehicles must be regularly serviced in designated area within the Contractors camp such that they do not drip oil.
- (d) All chemical spills must be contained and cleaned up by the supplier or professional pollution control personnel. Run-off from wash bays must be intercepted.

Hazardous Waste

- (a) No hazardous materials must be disposed of in the veld or anyplace other than a registered landfill for hazardous material. Hazardous waste must be stored in containers with tight lids that must be sealed and must be disposed at an appropriately permitted hazardous waste disposal site. Such containers must not be used for purposes other than those originally designed for.
- (b) The Contractor must maintain a hazardous material register.

5.12 Rehabilitation and Site clearance

- (a) When all major construction activities are completed, the site must be inspected to determine site-specific rehabilitation measures. This may be considered as unplanned work e.g. soil rehabilitation due to oil spills.
- (b) All temporary buildings and foundations, equipment, lumber, refuse, surplus materials, waste, construction rubble fencing and other materials foreign to the area must be removed.
- (c) If waste products cannot be recycled they must be disposed of at a permitted landfill site.
- (d) All drainage deficiencies including abandoned pit latrines and waste pits must be corrected.
- (e) Cut and fill areas must be restored and re-shaped.
- (f) The area must be restored to its natural vegetation condition using indigenous trees, shrubs and grasses as directed by a grassland and/or rehabilitation expert.
- (g) Borrow pits must be re-shaped into even slopes and surfaces to blend with the natural terrain and topsoil must be replaced.
- (h) The grass mix, shrubs and trees used for rehabilitation must be compatible with the species identified in the site-specific investigation.
- (i) Areas compacted by vehicles during construction must be scarified to allow penetration of plant roots and the regrowth of natural vegetation.

6. MEASUREMENT AND PAYMENT

No additional payment will be made to the Contractor to comply with the above actions as it will be deemed to be included in the rates tendered.

C3.5: CONTRACT AND STANDARD DRAWINGS

C3.5.1 CONTRACT DRAWINGS / DETAILS

301837-05-C-LL-101-001	Plan & Long Section Mr461 Ch0 – Ch480 Sheet 1/2
301837-05-C-LL-101-002	Plan & Long Section Mr461 Ch480 – Ch912 Sheet 2/2
301837-05-C-LL-102-001	Plan & Long Section Road 0 Ch0 – Ch480 Sheet 1/3
301837-05-C-LL-102-002	Plan & Long Section Road 0 Ch480 – Ch960 Sheet 2/3
301837-05-C-LL-102-003	Plan & Long Section Road 0 Ch960 – Ch1060 Sheet 3/3
301837-05-C-LL-103-001	Plan & Long Section Road 1 Ch0 – Ch160.756 Sheet 1/1
301837-05-C-LL-104-001	Plan & Long Section Transnet Rd Ch0 – Ch480 Sheet 1/2
301837-05-C-LL-104-002	Plan & Long Section Transnet Road Ch480 – Ch501.09 & Tank Road 1 Ch0 - Ch 16.469 Sheet 2/2
301837-06-C-LA-001-001	Extent Of Construction
301837-08-C-DT-101-001	Typical Road Sections
301837-08-C-DT-101-002	Typical Details
301837-08-C-DT-101-003	Typical Details
301837-08-C-DT-102-001	Weigh Bridge Details

C3.5.2 STANDARD DRAWINGS

The Standard Drawings to which these Standard Engineering Specifications refer are listed below.

Dwg No	Description	Date of Issue	
38570	Ring Manholes	February	1990
38571	Brick Manhole Details	February	1990
38572	Stormwater Inlet Details	February	1990
38573	Stormwater Inlet Special Details	February	1990
38574	Sewer Manholes: Ramp, Backdrop and Channelling Details	February	1990
38575	Sub-Soil Drain, Pipe Bedding and Pipe Protection Details	February	1990
38576	Headwall Details	February	1990
38577	Kerbing Details	February	1990
38578	Concrete Median Barriers	February	1990
38579	Vehicular and Pedestrian Scoops	February	1990
38580	Concrete Bollard and Steel Guard Rail	February	1990
38581	Retaining Wall, PC Steps, Staircase, Cable Ducts and Headwalls	February	1990
38582	Precast Concrete Fencing and Aluminium Gates	February	1990
38583	Wire Mesh Fence and Gate Details	February	1990
38584	Standard Hydrant Thrust Blocks and Trenches	February	1990
38585	Water Connections, Pipework and Fittings	February	1990
38586	DP & TC Manholes - Rectangular	February	1990
38587	DP & TC Manholes - "L" Shaped	February	1990
38588	DP & TC Manholes - "T" Shaped	February	1990
38589	DP & TC Cable Ducts and Junction Box Details	February	1990
43120	Typical Details of Grid Inlets	February	1990

C3.6: ANNEXURES

C3.6.1 Site Specific Health and Safety Specification



**ETHEKWINI MUNICIPALITY
Occupational Health & Safety Unit**

**Site Specific Health and Safety Specification in terms of 2014
Construction Regulations 5.1(b)**

Document Title	Site Specific Health and Safety Specification
Client	eThekweni Municipality – Water and Sanitation
Project Name	Western Waste Management Facility - Contract A – Roads, Platforms, Services and Buildings
Contract Number	WS7411
Compiled by (Safety Officer)	Name and Surname: Hlengiwe Njapha Signature <i>HJAPHA</i> Date: 29/09/2022
Approved by (Safety and Risk Manager)	Name and Surname: Arty Zondi Signature <i>Arty Zondi</i> Date: 29/09/2022
Revision Number	SSHSS 37/09/2022

PROJECT LOCALITY

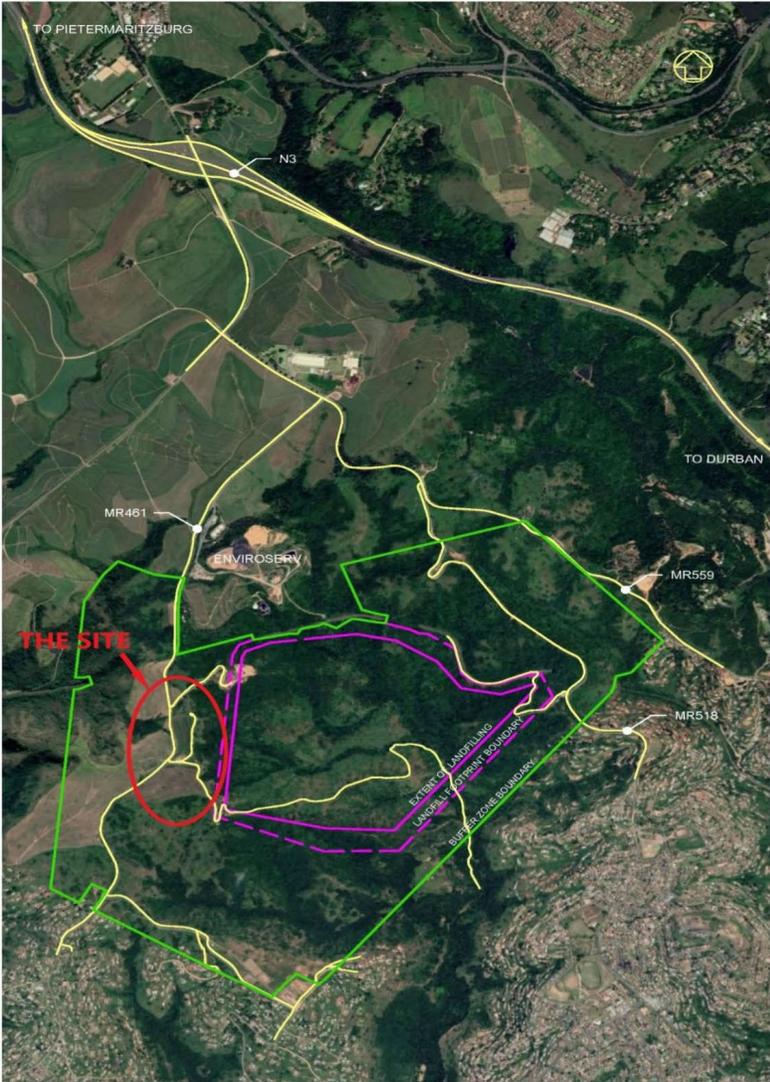


Table of contents

1. Project Description
2. Limitation of liability
3. Purpose of the Construction Health and Safety Specification
4. Project Health and Safety Cost
5. Scope of Work
6. Compensation for Occupational Injuries and Diseases Act, 130 of 1993
7. Application for Construction Work Permit
8. Management and Supervision of Construction
 - 8.1 Construction Manager
 - 8.2 Construction Health and Safety Officer
 - 8.3 Construction Supervisor
9. Principal Contractor's Health and Safety Plan
10. Hazard Identification and Risk Assessment
11. Health and Safety File
12. Health and Safety Representatives and Committee
13. Close-out and Consolidated Health and Safety File
14. Health and Safety Training
15. Incidents Management & First Aid
16. Health & Safety Audits
17. Fire Precautions on Construction Site
18. Electrical Installations on Construction Sites
19. Personal Protective Equipment (PPE) and Clothing
20. Occupational Health and Safety Signage
21. Duties of Principal Contractors and Contractors
22. Fall Protection and Working on Elevated Position
23. Excavation and Compaction
24. Public Health and Safety
25. Night Work and Weekend Work
26. Construction Employees Facilities
27. Cranes and Lifting Operations
28. Storage and use of Flammable liquids
29. Hazardous Chemical Substances
30. Explosive actuated fastening devices
31. Housekeeping and General Safeguarding on Construction Site
32. Construction Medicals
33. Stacking and Storage on Construction Site
34. Induction and Toolbox Talk Programme
35. Structures

1. PROJECT DESCRIPTION

Western Waste Management Facility - Contract A – Roads, Platforms, Services and Buildings

2. LIMITATIONS OF LIABILITY

The Principal Contractor shall enter into a Mandatory Agreement with the Client, as defined in Section 37(2) of the Occupational Health and Safety ACT.

The Principal Contractor shall ensure that each contractor appointed by the Principal Contractor and each sub-contractor appointed by a contractor also into a Mandatory Agreement with the Principal Contractor, as defined in Section 37(2) of the Occupational Health and Safety ACT. These agreements shall be included in the Principal Contractor's H&S File on site and be valid for the duration of the contractors' work on the construction site.

3. PURPOSE OF THE CONSTRUCTION H&S SPECIFICATION

This document defines the minimum management requirement that is to be implemented by the Principal Contractor/Contractor for the management of Health and Safety on any eThekweni Municipality project.

The aim of this document is to present the health and safety aspects that need to be controlled and managed on the project.

This Health and Safety specification identifies and encompasses the working behaviours and safe work practices that are expected of all employees, Vendors and Contractors, Sub-Contractors and Visitors, engaged on construction site.

Providing a guideline to comply with best Health & Safety practices and the Occupational Health and Safety Act 85/1993 as amended, including reference to applicable legislative requirement.

4. PROJECT HEALTH AND SAFETY COST

The Client must ensure that potential Principal Contractor submitting tenders have made adequate provision for the cost of health and safety measures. The Principal Contractor shall allow in their cost provision for complying with the requirements of this Client Health and Safety Specification; resources for the following H&S controls shall be in place.

	H&S cost item	Description
1.	Full /Part time safety officer	Full/Part time attendance on site of a SACPCMP registered safety officer from the start of construction until the end of project handover
2.	First Aiders	First Aid training
3.	Competent inspectors (trained, certified, competent)	Statutory inspections of excavations, temporary works, fire extinguishers, lifting equipment, lifting machinery, construction vehicles and mobile plant, portable electrical equipment, Electrical Installation Controller etc.
4	Medical certificate of fitness	Medical examination of all employees and certification of fitness by an Occupational Medicine Practitioner Pre- employment and annual
5	PPE	Standards set for all employees Including community and environment
6	Dust mitigation	To reduce dust exposure to the employees and the public
7	Public protection and barricading	Barricading, shoring and notices
8	Employee facilities	Refer to the Facilities Regulations (drinking water, change facility, personal lockers, and wash facilities, eating facilities, ablution toilets)
9	Traffic management	Traffic controller's training and traffic signage
10	Signage	All construction safety signage required for the project
11	Other	

5. SCOPE OF WORK

The works will broadly include but not limited to:

1. Relocation of a portion of MR461
2. Bulk Earthworks to Platforms 1 and 2
3. Construction of portion of Access Road 0
4. Underground Services comprising stormwater, water and sewer pipes
5. Construction of a brick single storey office building.
6. Construction of two weighbridges
7. Construction of fencing, gates and a gatehouse
8. Concrete paving to Road 0
9. Gravel surfacing to roads and platforms

6. COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT

The Principal Contractor, each contractor and each sub-contractor shall submit proof of Good Standing with COIDA Commissioner or a Mutual Association licensed in terms of Section 30 of COIDA, prior to starting any work on site.

A copy of the Letter of Good Standing with COIDA Commissioner must be included in the H&S Plan of each contractor working on the site and must remain updated for the duration of the construction work.

7. APPLICATION FOR CONSTRUCTION WORK PERMIT

The Principal Contractor shall assist the Client in compiling the evidence required by the Department of Labour for the issuing of the Construction Work Permit.

The Principal Contractor shall ensure that the H&S Plan presented for approvals includes:

- Evidence that the Principal Contractor made adequate provision for the cost of H&S measures
- Evidence that the Principal Contractor has the necessary competencies and resources to carry out the construction work safely.
- A copy of the Letter of appointment of the Construction Manager in terms of CR 8(1) + proof of his qualification, competence and registration where applicable.
- Proof of the registration of the Principal Contractors Health & Safety officer with the SACPCMP.

The Principal Contractor shall display the work permit number at the main site entrance. This display must be conspicuous to the satisfaction of the Department of Labor. The permit must be noticeable.

The construction works can only commence once the construction work permit is issued by the Department of Labor.

8. MANAGEMENT AND SUPERVISION OF CONSTRUCTION WORK

8.1 Construction Manager

The Principal Contractor shall appoint a full-time competent person as the construction manager with the duty of managing all construction on the site including the duty of ensuring occupational health and safety compliance.

The Construction Manager must demonstrate competency in relation to work being performed and the ability to manage construction work which may include making all statutory appointments in terms of health and safety.

8.2 Construction Health and Safety Officer

The Principal Contractor shall appoint a full-time/part-time competent Construction health and Safety Officer for the construction work. The Construction Safety Officer shall be full on the construction site for this project.

The Safety Officer shall be registered with the South African Council for the Projects and Construction Management Professions. Proof of competence and registration of the appointed Construction Safety Officer must be included in the H&S Plan.

8.3 Construction Supervisor

A Construction Manager must in writing appoint construction supervisors responsible for construction activities and ensuring occupational health and safety compliance on the construction site. A contractor must, upon having considered the size of the project, in writing appoint one or more competent employees for different sections thereof to assist the construction supervisor contemplated in sub regulation (7), and every such

employee has, to the extent clearly defined by the contractor in the letter of appointment, the same duties as the construction supervisor: Provided that the designation of any such employee does not relieve the construction supervisor of any personal accountability for failing in his or her supervisory duties in terms of this regulation.

9. PRINCIPAL CONTRACTOR'S HEALTH AND SAFETY PLAN

The Principal Contractor shall submit a suitable, sufficiently documented and coherent specific health and safety plan based on the Client documented Health and Safety Specification. The health and safety plan shall include but not limited to the following

- Objectives
- Scope of work
- Management of construction and supervision
- Monitoring and review plan
- Sub-contractor management
- Risk Assessment & Written Safe Working Procedures
- Roof work planning/ methodology
- Incident Management & First Aid
- Emergency procedures/ plan
- Fire Prevention & Protection
- Public Health and Safety
- Working Close to Existing Structures
- PPE Provision
- Health & Safety Signage
- Excavations
- Earthworks, Improvements , Compaction and use of Explosives
- Structures
- Site establishment
- Soil poisoning
- Existing services
- Demolishing Structures
- Construction Vehicles and Mobile Plants
- Hand & Electrical Tool Management
- Construction Employees Facilities
- Health & Safety Policies
- Health and Safety Training & Competencies
- Housekeeping
- Hazardous Chemicals
- Inductions

- Medicals
- Site Security
- Stacking and Storage
- Internal and external Audit
- Inspection Registers
- Toolbox Talks
- Site Establishment
- Removal of Rubble and Large Trees

10. HAZARD IDENTIFICATION AND RISK ASSESSMENT

The Principal Contractor shall before commencement of any construction and during such construction works have risk assessments performed by appointed competent person in writing which forms part of the health and safety plan to be applied.

The following problems will be encountered during construction Specific attention to be given to the following

- Methods of excavation
- Compaction equipment and the use thereof
- Blasting- fly rocks and Boulders,
- Drilling- Noise and Vibration,
- Handling of overburden and heavy machinery,
- Storage of diesel,
- Slope failures

The provisions of Regulation 9 of the Construction Regulations shall be followed in every detail.

11. HEALTH AND SAFETY FILE

The Client must discuss and negotiate with a Principal Contractor the content of the Health and Safety Plan and thereafter finally approve the Health and Safety plan for implementation. The recommended Health and Safety file shall include the following:

- Client Health & Safety Specification
- Principal Contractor Health & Safety Plan
- Letter of good standing
- Section 37.2 Mandatory Agreement
- Contractor appointment letter in terms of CR 5.1(k)

- Legal appointments and competencies (Site manager, Site supervisor, Safety officer, Risk assessor, Incident investigator, Fall protection planner, Temporary work designer, Temporary work supervisor, Electrical installation supervisor)
- Risk Assessments as per scope of work
- Written Safe Working Procedures as per risk assessment
- Incident/Accident Management Procedures
- Award letter from SCM
- Organogram as per appointments
- Copy of OHS Act and COID Act
- Environmental Management Procedures (Dumpsite, Water provision, Ablution, Waste management, Concrete works, Refuelling and spillage management, Hazardous chemicals storage and disposal, Environmental awareness training, No Go Areas, Protection of animals, Site demarcation ect.)
- Health and Safety Induction programme
- Emergency Procedures/ Plan
- Medical Fitness Certificate (Safety Officer, Site manager and Supervisor)
- Tool Box Talks Programme/ Plan
- SHE Policy
- Corona Virus

12. HEALTH AND SAFETY REPRESENTATIVES AND COMMITTEE

Health and Safety Representatives

- The Principal Contractor shall ensure that Health and Safety Representatives are appointed in writing and exercise their functions as defined in OHSA.
- The Principal Contractor shall elect and appoint a health and safety representative regardless of the number of employees on the site.
- The H&S representative shall at all times be on site and report to the Health and Safety Officer and Construction Manager.

Health and Safety Committee

- The Principal Contractor shall ensure that the H&S committee meets on a monthly basis
- The Principal Contractor's management and each contractor shall be represented at the H&S committee meeting; contractors with more than 20 employees shall have an H&S representative at each committee meeting and each contractor shall have a management member attending each H&S committee meeting.

13. CLOSE- OUT CONSOLIDATED HEALTH AND SAFETY FILE

The Principal Contractor shall compile a consolidated H&S file and hand over to the Water and Sanitation Unit. OHS Unit will conduct a project close out using the appropriate checklist before the completion of the project.

14. HEALTH AND SAFETY TRAINING

The Principal Contractor shall ensure that employees are trained on health and safety measures this shall include but not limited to:

- Written Safe Working Procedures
- Risk Assessments
- Health and Safety Plan
- Emergency Management Plan
- Induction
- Toolbox Talks
- MSDS

15. INCIDENTS MANAGEMENT & FIRST AID

All incidents and accidents as per Section of the Act must be reported, recorded and investigated as per General Administration Regulation 8 & 9

Where a fatality or permanent disabling injury or incident occurs on the Construction site, the Client must ensure that the Principal Contractor provides the Provincial Director with a report contemplated in Section 24 of the Act and the report includes the measures that the Principal Contractor intends to implement to ensure a safe construction site.

16. HEALTH AND SAFETY AUDITS

The Client must ensure that periodic health and safety audits are conducted at intervals mutually agreed upon between the Principal Contractor and the Client at least every 30 days, the copy of the health and safety audit report must be provided to the Principal Contractor within seven days after the audit.

17. FIRE PRECAUTIONS ON CONSTRUCTION SITE

The Principal Contractor shall provide suitable fire extinguishers which shall be serviced regularly in accordance with the manufacture's recommendations.

Safety signage shall be prominently displayed in all areas where fire extinguishers are located. The Principal Contractor shall arrange for training of the relevant personnel, in the use of fire extinguishers.

The provisions of Regulation 29 of the Construction Regulations as well as Regulation 9 of Environmental Regulation for Workplaces shall be followed in every detail.

18. ELECTRICAL INSTALLATIONS AND MACHINERY ON CONSTRUCTION SITE.

The Principal Contractor shall designate a competent electrician in writing who shall control all electrical installations.

All temporary electrical installations used by the contractor are inspected at least once a week by a competent person and the inspection findings are recorded in a register kept on the construction site.

All Electrical machinery is inspected by the authorized operator or user on daily basis using a relevant checklist prior to use and the inspection findings are recorded in a register kept on the construction site.

The provisions of Regulation 5, 6 & 9 of the Electrical Installation Regulations shall be followed in every detail.

19. PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

The Principal Contractor shall ensure that every employee is issued with, and wears SANS-approved P.P.E. as per the conducted risk assessment.

Failure to use protective equipment as per the risk assessment shall require disciplinary intervention and this process shall be documented in the induction.

No employer shall in respect of anything which he is in terms of this Act required to provide or to do in the interest of health or safety of an employee make any deductions from any employee's remuneration or require or permit any employee to make any payment to him or to any other person.

The provisions of Regulation 2 of the General Safety Regulations shall be followed in every detail.

20. OCCUPATIONAL HEALTH AND SAFETY SIGNAGE

The Principal Contractor shall erect and maintain quality safety signage

The signage shall include but is not limited to:

- The construction work permit number displayed at the entrance
- Access restrictions
- A sign indicating that all visitors must report to the site office and must be accompanied by the Principal Contractor when accessing the site
- The name and telephone number of the responsible person(s)
- Emergency telephone number(s)
- PPE to be worn at the particular site
- When falling objects may occur, relevant barricading and warning signs must be erected
- Excavations, heights structures, temporary structures and all risk areas must be indicated as per the specific methods defined in the H&S Plan.

21. DUTIES OF PRINCIPAL CONTRACTORS AND CONTRACTORS

Contractors and sub-contractors must be given a copy of the H&S specification and any additional specification issued by the Client and shall comply with these specifications integrally. All employers working on the site shall conform to the standard in the CHSS. All the duties of the Principal Contractor in this CHSS equally apply, in full, to contractors of such Principal Contractor and to sub-contractors of such contractors.

The Principal Contractor shall ensure that the comprehensive and updated list of all the contractors and sub-contractors on site includes:

- A reference to the agreements between the parties, including all contractors Section 37(2) agreements with the Principal Contractor
- The type of work being done
- The date of the approval of the H&S Plan
- The date of expiry of the COIDA certificate of good standing
- The date of the last monthly audit

Prior to the commencement of any construction activities can commence the contractor will

- Conduct a detailed Condition survey to identify the condition of the structures within 100m of the site fence and include fences and houses, the survey to include home owner's name, Structural photos of all structures. Provide 3 copies to the Engineer for review and acceptance.

The provisions of Regulation 7 of the Construction Regulations shall be followed in every detail.

22. FALL PROTECTION AND WORKING IN FALL RISK POSITIONS

The Principal Contractor shall ensure that the fall protection plan include a risk assessment for all work carried out from the fall risk position and the safe work procedures.

All employees working from fall risk position are subject to medical examination. The Training Programme must be in place for employees working from a fall risk position. The procedures addressing the inspection, testing and maintenance of all fall risk protection equipment. The rescue plan detailing procedure, personnel and suitable equipment to be used to rescue a person. The Principal Contractor must that a competent person is designated to be responsible for the preparation of the fall protection plan.

The provisions of Regulation 10 of the Construction Regulations shall be followed in every detail.

23. EXCAVATION AND COMPACTION

The Principal Contractor must ensure that all excavation and compaction work is carried out under the supervision of a competent person who has been appointed in writing for that purpose.

The Principal Contractor shall take cognizance of the geotechnical study pertaining to the conditions of the construction site and must plan all excavation work in accordance with the recommendations of the professional engineer.

The Principal Contractor must ensure that every excavation, including all bracing and shoring, is inspected daily, prior to the commencement of each shift and that no person enters the excavation or works in a risk zone until the excavation is assessed and declared safe.

All excavations must be left open for the minimum of time required and those that are left open on the site must be protected by a barrier or a fence of at least one meter in height as close to the excavation as is practicable. The protective barrier or fence must adequately prevent persons from falling into the excavation and barrier taping is not sufficient for this purpose

Excavation shoring and bracing, if required shall be designed by a designer appointed in writing who shall inspect and approve the installed shoring and bracing

Where persons work, inspect or test excavations, warning signs must be in place next to an excavation.

The provisions of Regulation 13 of the Construction Regulations shall be followed in every detail.

24. PUBLIC HEALTH AND SAFETY

The site shall at all times be secured to prevent the unauthorized access of persons to construction risk areas.

Appropriate health and safety signage shall be posted and access control to site must be exercised via a single access point.

All members entering the site must indicate in what capacity they are visiting the site.

The access point must be designed and constructed to allow for temporary parking, entry of construction vehicles, entry of personnel transport vehicles and entry of individual workers and other persons.

The principal Contractor shall ensure that each person visiting the site shall be inducted to the site and such abridged induction shall outline the hazards from on-site activities and the precautions to be observed to avoid or minimize those risks

Visitors must only enter when accompanied by a responsible person designated by the Principal Contractor.

25. NIGHT; WEEK –END WORK

No night or weekend work shall be performed unless authorized by the Principal Agent or Lead Engineers

Where week end work is planned the Principal Contractor shall ensure that its construction supervisor is on site, this applies even if only contractors or sub-contractors are working on the site

Where week end work is planned each contractor or sub-contractor shall ensure that its construction supervisor is on site, this applies even if the Principal Contractor's manager or supervisor is on the site.

26. CONSTRUCTION EMPLOYEES FACILITIES

The Principal Contractor shall provide at or within reasonable access of every construction site, the following clean, hygienic and maintained facilities:

- (a) Shower facilities after consultation with the employees or employees representatives, or at least one shower facility for every 15 persons;
- (b) at least one sanitary facility for each sex and for every 30 workers;
- (c) changing facilities for each sex; and
- (d) sheltered eating areas.

The provisions of Regulation 2, 3, 4, 6, 7, 9 of the Facilities Regulations shall be followed in every detail.

27. CRANES AND LIFTING OPERATIONS

The Principal Contractor must ensure the cranes used are:

Are designed and erected under the supervision of a competent person;
A relevant risk assessment and method statement are developed and applied; The effects of wind forces on the crane are taken into consideration and that a wind speed device is fitted that provides the operator with an audible warning when the wind speed exceeds the design engineer's specification; The bases for tracks for rail-mounted tower cranes are firm, level and secured; The tower crane operators are competent to carry out the work safely; and The tower crane operators have a medical certificate of fitness to work in such an environment, issued by an occupational health practitioner in the form of Annexure 3

28. STORAGE AND USE OF FLAMMABLE LIQUIDS

No flammable substances must be stored on site unless these are stored in a flammable store or cabinet approved by the Municipal Chief Fire Officer, no other materials shall be stored in the flammable store or cabinet

Where required the H&S Plan shall include a method statement detailing the safe use, storage, decanting and spill controls for all flammable liquids used and stored on site.

The provisions of Regulation 25 of the Construction Regulations shall be followed in every detail.

29. HAZARDOUS CHEMICAL SUBSTANCE

With respect to hazardous chemical substances used, the contractor shall ensure that:

- All MSDS are included in the H&S File
- A HCS risk assessment is included in the H&S Plan
- The safe use, storage, emergency procedures and safe disposal of hazardous substances are addressed in a method statement(s) included in the H&S Plan.
- Proof of competency and signed letters of appointment of the person responsible for chemical handling is included in the H&S File.

Any hazardous chemical substance intended to be applied on site during the project (i.e. after approval of the H&S Plan) shall be subject to an issue-based risk assessment and method statement which must be presented to the Client Agent prior to the substance being introduced on site.

The provisions of Regulation 3, 5, 7, 8, 9, 9A, 10, 11, 14, 15 of the Hazardous Chemical Substances Regulations shall be followed in every detail.

30. EXPLOSIVE AND FASTENING DEVICES

The principal Contractor shall submit proof of competency and the appointment letter of the person in charge of explosives as well as actuating fastening devices and of the person in charge of the issuing and collection of Explosives, cartridges and nails. This shall be placed in the H&S Plan.

The H&S Plan shall include the method statement for the safe use of explosives, actuating fastening devices including the type PPE, barricading and warning notice which the Contractor intends to use and the method of accounting for cartridges and nails and explosives.

The H&S Plan shall include proof of training and competency of all operators using explosive actuating fastening devices.

A template inspection register of explosive, and actuating fastening device shall be included in the H&S Plan.

A template record for the issuing and collection of explosives, cartridges and nails shall be included in the H&S Plan.

For the purpose of acquisition / transport of the cartridges the Principal Contractor is required to hold a permit in terms of the Explosive's Act. This permit for the transportation of Blank cartridges used in Power-Actuated Tools shall be placed in the H&S Plan:

- Application for registration, licenses and permits must be submitted by the Chief Inspectors Office in Pretoria.
- The Principal Contractor is required to be in possession of a continuous transport license but is not required in terms of the Explosives Act to hold a permit for the use of the blank cartridges.
- Once the cartridges are delivered to the appointed responsible person is then required to ensure that the Regulations governing the safe use of explosive powered tools in terms of the Construction Regulation 21 of the Occupational Health and Safety Act, Act 85 of 1993 are complied with.

The provisions of Regulation 21 of the Construction Regulations shall be followed in every detail.

31. HOUSEKEEPING AND GENERAL SAFE GUARDING ON CONSTRUCTION SITE

The Principal Contractor shall appoint a person responsible for general housekeeping and stacking and storage of materials and equipment on the entire site.

The provisions of Regulation 27 of the Construction Regulations shall be followed in every detail.

32. CONSTRUCTION MEDICALS

A Principal Contractor must ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an Occupational Health Practitioner in the form of Annexure 3.

33. STACKING AND STORAGE ON CONSTRUCTION SITE

A Principal Contractor must, in addition to compliance with the provisions for the stacking of articles in the General Safety Regulations, 2003, ensure that—
A competent person is appointed in writing with the duty of supervising all stacking and storage on a construction site; Adequate storage areas are provided; There are demarcated storage areas; and storage areas are kept neat and under control.

34. INDUCTION AND TOOLBOX PROGRAMME

No contractor may allow or permit any employee or person to enter any site, unless that employee or person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.

A contractor must ensure that all visitors to a construction site undergo health and safety induction pertaining to the hazards prevalent on the site and must ensure that such visitors have the necessary personal protective equipment.

A contractor must at all times keep on his or her construction site records of the health and safety induction training contemplated in sub-regulation (6) and such records must be made

available on request to an inspector, the client, the client's agent or the principal contractor. The Principal Contractor must ensure that the toolbox talks are conducted on weekly basis and the training records kept on the safety file

35. STRUCTURES

A contractor must ensure that all reasonably practicable steps are taken to prevent the uncontrolled collapse of any new or existing structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work; No structure or part of a structure is loaded in a manner which would render it unsafe; All drawings pertaining to the design of the relevant structure are

kept on site and are available on request to an inspector, other contractors, the client and the client's agent or employee.

DESIGNER COMMENTS ON HEALTH AND SAFETY SPECIFICATION

Designer’s Health and Safety Checklist

Name and address of Project _____

Item and Legal Reference	Y/N	Comment
CR 6(1) (a) Has the designer familiarized himself with the Construction Regulations 2014 (particularly Regulation 6) and the Safety Standards incorporated into these Regulations?	Yes	To be included as part
CR 6(1) (b) During the design stage, was the Client’s Health and Safety Specifications given due consideration?	yes	Included in Construction tender
The structural design aspects that could have an effect on the pricing of construction work?	yes	On site manufacturing was reviewed
The geotechnical-science aspects?	yes	Major Blasting and Hard rock removal Risk Identified to be addressed by contractor
The weight which the structure is designed to safely withstand?	yes	Standard design

<p>CR 6(1)(d)</p> <p>Has the designer communicated all known and anticipated hazards and risks associated with the construction of the designed structure?</p> <p>Furthermore, has the safe method statement been developed to ensure that construction work is safely executed?</p>	<p>yes</p>	<p>Contractor to note compaction risk close to existing structures</p> <p>Contractor to provide prior to construction can commence</p>
<p>CR 6 (1) (e)</p> <p>As far as is reasonably practicable, are the dangerous processes and materials been eliminated or replaced in the design?</p>	<p>Yes</p>	<p>Contractor to consider prior to construction can commence</p>
<p>CR 6(1) (f)</p> <p>Has due consideration been taken during the design stage, for the safe maintenance of the structure after its completion?</p>	<p>Yes</p>	<p>Access roads to be upgraded</p>
<p>CR 6 (g-i)</p> <p>Is the designer aware of his/her responsibility to carry out periodic site inspections to ensure that the structure is constructed correctly in accordance with the design?</p>	<p>Yes</p>	<p>Part of appointment of Engineer</p>
<p>CR 6(1) (j)</p> <p>Have all ergonomic hazards been considered for the lifecycle of the structure (i.e. during construction and after completion)?</p>	<p>Yes</p>	<p>Contractor will be restricted to normal working hours</p>

(Please ensure that the checklist is completed in full particularly the comments column)

Name of Designer _____

Designer's Title (e.g. Engineer, Architect) _____

Signature _____

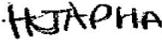
Date _____

C3.6.2 Baseline Risk Assessment



**ETHEKWINI MUNICIPALITY
Occupational Health & Safety Unit**

BASELINE RISK ASSESSMENT

Document Title	Baseline Risk Assessment
Client	EThekweni Municipality – Water and Sanitation
Project	Western Waste Management Facility - Contract A – Roads, Platforms, Services and Buildings
Contract Number	WS7411
Compiled by (Safety officer)	Name and Surname: Hlengiwe Njapha Signature:  Date: 05/10/2022
Approved by (Safety and Risk Manager)	Name and Surname: Hlengiwe Njapha  Signature: Date: 05/10/2022
Reference Number	BRA37/09/2022

BASELINE RISK ASSESSMENT

1. INTRODUCTION: In accordance with the Occupational Health and Safety Act, (Act 85 of 1993) the Legislator places specific requirements on an Employer. One of these is prescribed in Section 8(i) of the Act where it requires the Employer to ascertain the risks and dangers which may occur within the workplace or section of the workplace and then goes on to establish working procedures or practices.

2. PURPOSE: This is conducted to create a benchmark of the potential risks that apply to the whole project or business operation.

3. SCOPE: This assessment could be approached on a site, regional or national level concerning any facet of the business operation or process or activity.

4. REVIEW AND MONITORING PLAN

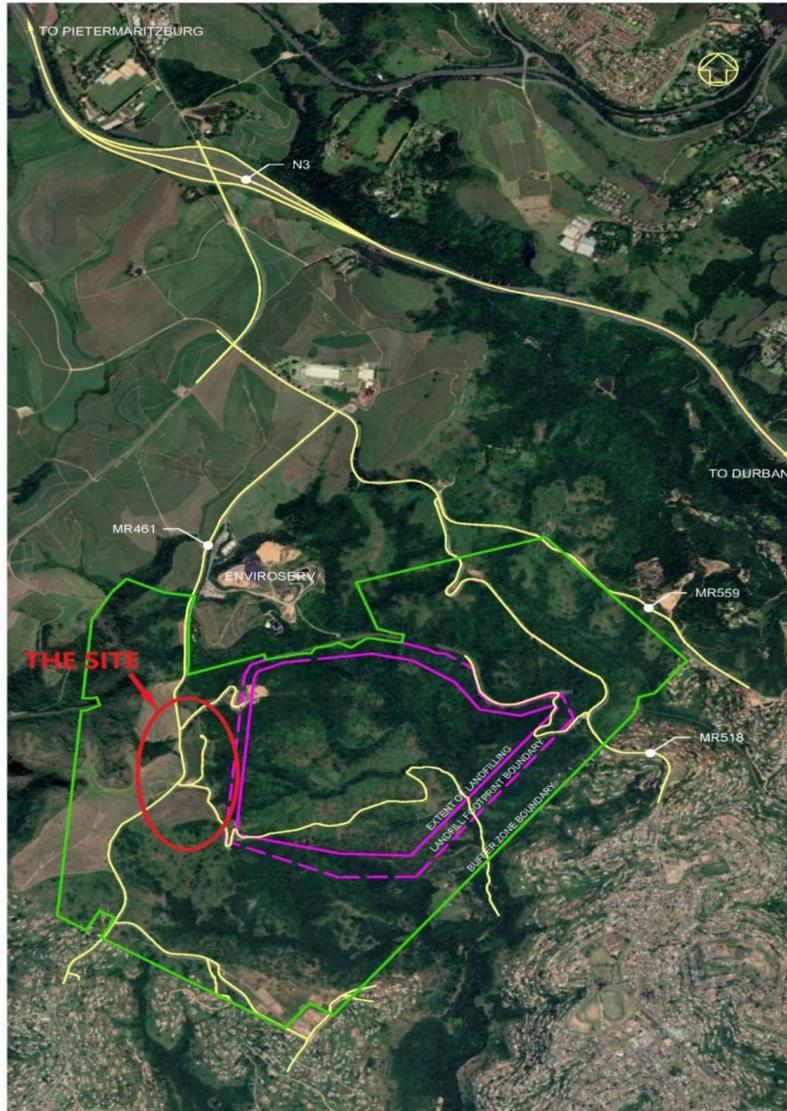
The risk assessment form part of the health and safety plan to be applied on the site and must include the following:

- (a) The identification of the risk and hazards to which persons may be exposed.
- (b) An analysis and evaluation of the risks and hazards identified based on a documented method

5. REFERENCES

- (a) Occupational Health & Safety Act and its Regulation
- (b) Tender Document WS7411

6. LOCALITY PLAN



SCOPE OF WORK

1. Relocation of a portion of MR461
2. Bulk Earthworks to Platforms 1 and 2
3. Construction of portion of Access Road 0
4. Underground Services comprising stormwater, water and sewer pipes
5. Construction of a brick single storey office building.
6. Construction of two weighbridges
7. Construction of fencing, gates and a gatehouse
8. Concrete paving to Road 0
9. Gravel surfacing to roads and platforms

1. RISK ESTIMATION AND EVALUATION

RISK CLASSIFICATION USING A RISK SCORE TECHNIQUE

Exposure (E) How frequently does the hazardous event occur		Risk classification
Continuously		10
Frequently (daily)		6
Occasionally (weekly)		3
Unusually (monthly)		2
Rarely (few a year)		1

Probability (P) The probability of a loss when the hazardous event does occur		Risk classification
Frequent (happens often)		10
Probable (quite possible)		6
Occasional (unusual, but possible)		3
Remotely possible (has happened somewhere)		1
Improbable (practically impossible)		0.5

Severity (S) Consequences of the hazardous event		Risk classification
Catastrophic many fatalities; or interruption of longer than 2 weeks; or asset or environmental damage (or both) exceeding R100m		100
Disaster (few fatalities; or interruption between one and 2 weeks; or asset or environmental damage (or both) exceeding R10m)		40
Very serious (one fatality; or interruption of 6 days; or asset or environmental damage (or both) exceeding R100,000		7
Important (temporary disability; or interruption between 6 and 24 hours; or damage exceeding R10,000		3
Noticeable (first aid needed; or interruption of less than 6 hours; damage exceeding R1000)		1

Risk classification (Risk score = E x P x S)	
Risk score	Risk classification
Over 400-----5	Very high risk - discontinue operation or activity
200 to 400 ----- 4	High risk - immediate correction needed
70 to 200----- 3	Substantial risk - correction needed
20 to 70----- 2	Possible risk - attention needed
Under 20 ----- 1	Risk accepted

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

1	Site Access								
	Activity	Hazard	Risk	Risk Evaluation			Risk Score	Risk level	Risk Rank
				E	P	S			
	Accessing the site using construction vehicles or walking to site. Delivering of equipment and material to the site	Excessive speed, head on collusion, employees knocked by moving vehicles. Road blocked off due to community protest. Manual Handling and excessive lifting.	Accidents, damage to equipment or severe injuries or death. Back injuries,	6	6	7	252		4
2	Site Establishment								
	Manual and mechanical clearing of the land. Off-loading and positioning of offices by mobile crane. Fencing. Installation of temporary water supply, electricity, ablution facilities	Dust, Snakes, Bees & Wasps. Incompetent operator. Poor connection of temporary services.	Poisoned and death. Collision/impacts of mobile lifting equipment loads and dropped loads with process plant, pipe work, electrical cables and people. Water leaks, Electrocution, improper connection	6	6	7	252		4

3	Site Fencing								
	Clearing bush using bush knives Digging holes using pick and spade	Manual handling of material Dust Moving vehicles	Manual handling injuries Dust being inhaled/getting in eyes Vehicle collision and damage	3	6	7	126		3
4	Existing Services								
	Identify the existing services	Snakes Unforeseen hazards Unknown/ Unidentified underground services	Poisoned and death. Personal injuries. Electrocution	6	6	7	252		4
5	Traffic Accommodation								
	Installation of temporally signs Traffic diverting/ Management	Knocked down by moving vehicles, poor demarcation/ displaying of misleading signs. Poor traffic management plan. Incompetent traffic controllers	Personal injuries or death. Road Accident	6	6	7	252		4
6	Working at height								
	Erection of Scaffolding by a Competent person	Unsafe scaffolding/ trestle scaffolds	Unsafe scaffolding could collapse resulting in critical injuries	6	6	7	252		4

7	Construction on Manholes								
	Manhole access Mechanical lifting of concrete manhole rings and roof slabs. Backfilling around the manhole.	Unsafe access. Unsafe lifting. Incompetent lifting operator.	Fall risks. Personal injuries. Damage to property	6	6	7	252		4
8	Tie Ins to existing manholes								
	Blank off all pipelines connected to the manhole	Improper lifting manhole covers Falling in a manhole Oxygen deficient	Personal injuries/death	6	6	7	252		4
9	Road work construction and asphaltting								
	Layer works Compaction Asphaltting	Nose, dust Inclement weather, including localized flooding Smoking/open fires Vibration (rolling compaction) Asphalt emulsion	Rain causing slippery conditions and localised flooding causing property damage, injury and possible death Heat stroke from being exposed to the	6	6	7	252		4

			sun for too long and sunburn Bush fires caused by cigarette/open fires causing smoke, inhalation possible death						
10	Excavation Work								
	Mechanical and manual excavation. Back filling mechanical and manual	Incompetent operator. Machine running out of control. Open excavation. Dust. Operating mobile plant next to open excavation.	Personal injury/possible disabling injuries. Property to damage Respiratory problem.	6	6	7	252		4
11	Bedding using sandy material and Pipe Laying								
	Accessing trenches Mechanical lifting of 34 HDuPVC Sewer Pipe	Trench collapse, falling objects/material Incorrect lifting of pipes	Personal injuries/death Injury to muscle	6	6	7	252		
12	Backfilling and Compaction								
	Lay the soil and weathered rock Operating a Bomag,	Dust Incompetent operator. Noise.	Respiratory problem Personal injuries and damage to property.	3	6	7	126		3

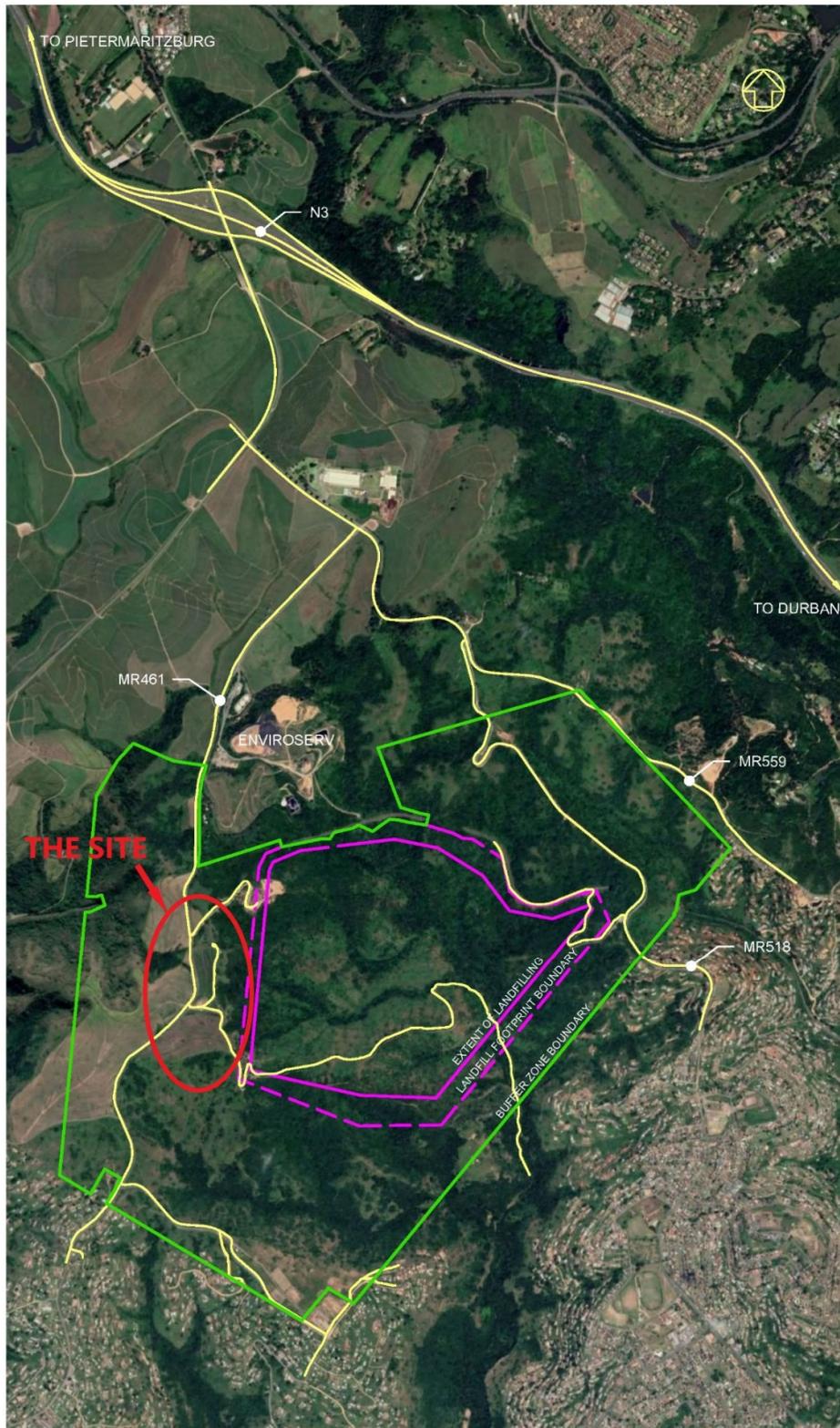
	Roller and a Wacker	Vibration.	Noise Induce. Hearing loss. Kidney problem. Body pain.							
13	Removal of rubble									
	Mechanical and manual loading of rubble Mechanical removal of trees Removal of rubble and trees to damp site	Dust, Mobile plant came into contact with trucks. Incompetent operator and lack of planning. Reckless driving.	Respiratory problem. Damage to equipment. Damage to property. Motor Vehicle Accident.	3	6	7	126			3
14	Construction of Pedestrian Walkways									
	Pouring of concrete by ready mix truck. Excavations for walkways. Manual and Mechanical Excavation.	Reckless driving. Incompetent operator. Unsafe hand tools.	Motor Vehicle Accident. Personal injuries.	3	3	7	63			2
15	Construction Mobile Plant and Equipment									
	Use of Plant & Equipment on site	Incompetent operator Unsafe plant & equipment. Collusion with other vehicles. Petrol and oil spillages.	Personal injuries. Motor vehicle accident. Environmental contamination.	6	6	7	252			4

16	Emergency Management									
	Development and Implementation of an Emergency Management Plan	Failure to have a basic, site specific emergency management plan. Workers not trained in the Emergency Plan. Insufficient or no emergency equipment or personnel.	Injury or damage to property. Inability to respond to emergencies. Insufficient or no emergency equipment.	6	6	3	108			3
17	Community Risk Management									
	Managing community risk	Failure to adequately monitor and manage the multi-faceted social issues.	Violent protests. Injury to employees and property damage.	6	6	3	108			3
18	Subcontractor Management									

	Managing subcontractors	Failure to adequately assess subcontractors S.H.E Management System before work commences and at regular intervals. Inadequate Supervision. Utilizing incompetent Subcontractors.	Injury and non-compliance to legislation. High level of employee unsafe behavior. Accidents and property damage.	6	6	3	108		3
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PART C4: SITE INFORMATION

C4.1 LOCALITY PLAN

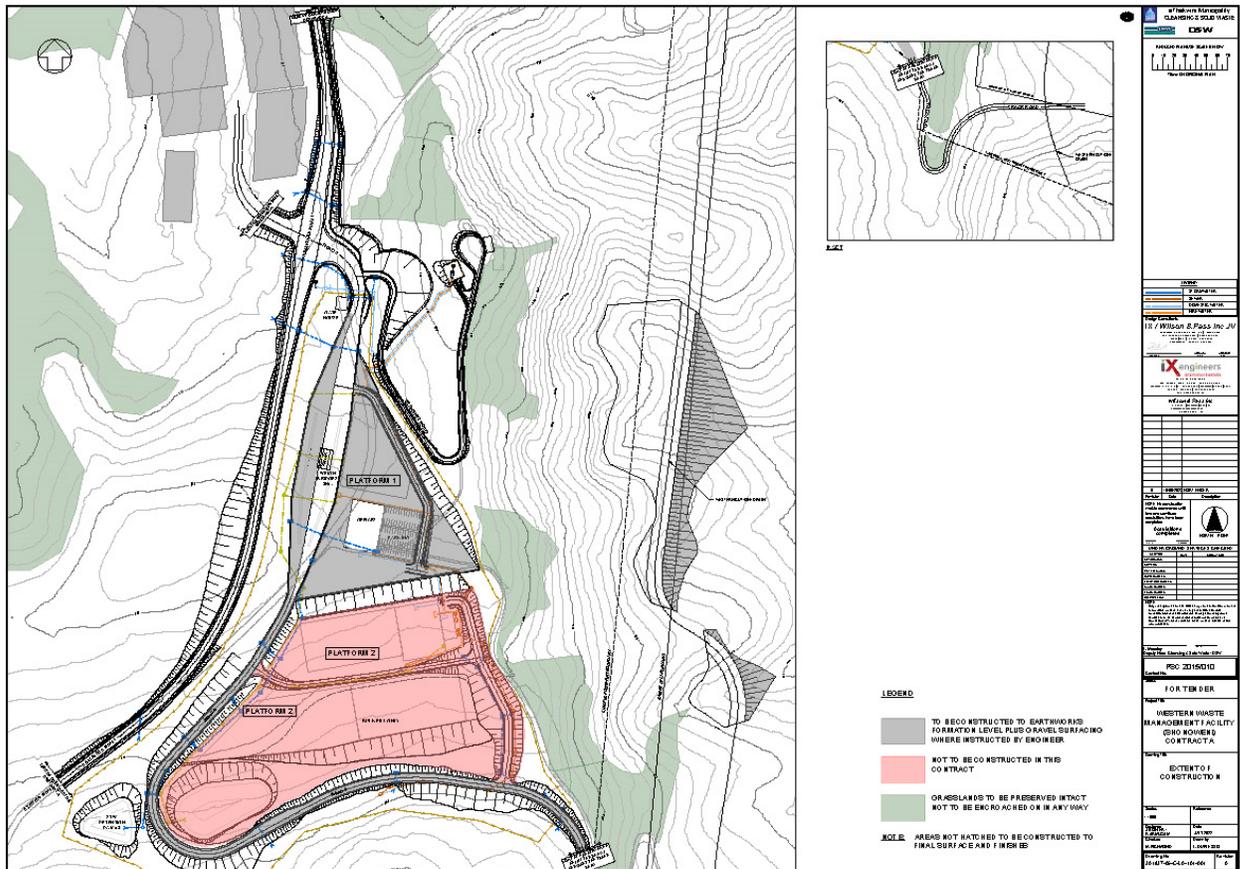


C4.2 CONDITIONS ON SITE

The site is currently used for agriculture (sugar cane and grazing of cattle) and can be considered a green fields site.

Portion of the site is currently under sugar cane and portion consists of natural grasslands with mixed grassland and bush below the escarpment.

An area of grassland immediately adjacent to the platform area of the site is of extreme environmental sensitivity and may not be traversed by machines, used for any construction purposes or be damaged / covered by any activity This area is shown on Drawing 301837-06-C-LA-101-001 (included below for reference) and restrictions on work adjacent to this section are detailed in clause PS 9.



C4.3 TEST RESULTS

There are no specific test results.