



## CLUSTER

Human Settlement, Engineering, and Transport

## UNIT

Engineering

## DEPARTMENT

Development Engineering

### PROCUREMENT DOCUMENT

### INFRASTRUCTURE

Documents are to be obtained, free of charge, in electronic format, from the [National Treasury's eTenders website](#) or the [eThekweni Municipality's website](#).

**Contract No: 3V-28530**

**Contract Title:** The Provision of Incremental Services to Informal Settlements within the Southern Region: Roads, Footpaths and Associated Stormwater Control in Ward 111 Settlement eMlaza J17

**Est. CIDB Grade/ Class: 3 CE**

### CLARIFICATION MEETING AND QUERIES

**Clarification Meeting:** Compulsory Clarification Meeting

**Meeting Location, Date, Time:** eMlaza J17 Site, Mbalane Road, eMlaza (Ward 111-Councilor Office)  
GPS Coordinates: 29°56'24.24"S 30°51'38.31"E  
On 25 March 2024 at 10h00

**Queries can be addressed to:** Patson Tumba  
Tel: 031 266 8382  
**The Employer's Agent's:** eMail: Patsont@bvikn.co.za. Email queries to be submitted by 25  
**Representative:** March 2024 and consolidated answers to questions will be uploaded  
02 April 2024

### TENDER SUBMISSION

**Delivery Location:** The Tender Box in the foyer of the Municipal Building  
166 KE Masinga Road, Durban

**Closing Date/ Time:** Friday, 05 April 2024 at 11h00

**FACSIMILE, eMAIL, or POSTED TENDERS WILL NOT BE ACCEPTED**

**Issued by:**

ETHEKWINI MUNICIPALITY

Deputy Head: Development Engineering

FOR OFFICIAL USE ONLY

Tenderer Name:			VAT Registered: Yes No
	Price (excl)	VAT	Price (incl)
Submitted: R		R	R
Corrected: R		R	R

**FOR OFFICIAL USE ONLY**

Tenderer Name:			VAT Registered: Yes No
	Price (excl)	VAT	Price (incl)
Submitted: R	R	R	R
Corrected: R	R	R	R

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**PART T1: TENDERING PROCEDURES**

**T1.1.1: TENDER NOTICE AND INVITATION TO TENDER**

Tenders are hereby invited for the Provision of Incremental Services to Informal Settlements within the Southern region: Roads, Footpaths and Associated Stormwater Control in Ward 111, Settlement eMlaza J17 for a period of 6 months.

<b>Subject</b>	<b>Description</b>	<b>Tender Data Ref.</b>
<b>Employer</b>	The Employer is the eThekweni Municipality as represented by: Deputy Head: <b>Development Engineering</b>	F.1.1.1
<b>Tender Documents</b>	Documents can only be obtained in electronic format, issued by the eThekweni Municipality. Documentation can be downloaded from the <b>National Treasury's eTenders website</b> or the <b>eThekweni Municipality's Website</b> . The <u>entire document</u> should be printed (on A4 paper) and suitably bound by the tenderer.	F.1.2
<b>Eligibility</b>	It is <u>estimated</u> that tenderers should have a CIDB contractor grading designation of <b>3 CE</b> (or higher). The CIDB provisions in relation to a Contractor's Potentially Emerging (PE) status <u>do not</u> apply.	F.2.1.1
<b>Clarification Meeting</b>	<b>eMlaza J17 Site, Mbalane Road, eMlaza (Ward 111-Councilor Office)</b> <b>GPS Coordinates: 29°56'24.24"S 30°51'38.31"E</b> <b>On 25 March 2024 at 10h00</b>	F.2.7
<b>Seek Clarification</b>	Queries relating to these documents are to be addressed to the Employer's Agent's Representative whose contact details are: <b>Patson Tumba</b> <b>Tel: 031 266 8382</b> <b>eMail: Patsont@bvikn.co.za</b>	F.2.8
<b>Submitting a Tender Offer</b>	Tender offers shall be delivered to: <b>The Tender Box in the foyer of the Municipal Building</b> <b>166 KE Masinga Road, Durban</b>	F.2.13
<b>Closing Time</b>	Tender offers shall be delivered on or before <b>Friday, 05 April 2024</b> at or before <b>11h00</b> .	F.2.15
<b>Evaluation of Tender Offers</b>	<b>The 80/20</b> Price Preference Point System, as specified in the PPPFA Regulations 2022 will be applied in the evaluation of tenders. Refer to Clause F.3.11 of the Tender Data for the <b>Specific Goal(S)</b> for the awarding of Preference Points, and other related evaluation requirements.	F.3.11

Requirements for sealing, addressing, delivery, opening and assessment of tenders are further 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:  
Deputy Head: **Development Engineering**

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

- 1) This procurement document.
- 2) "General Conditions of Contract for Construction Works – 3<sup>rd</sup> 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.
- 3) "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.
- 4) Drawings, issued separately from this document, or bound in Section C3.4 (as an Annexure).
- 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 Employer's current (as at advertising date) Supply Chain Management Policy.
  - The Preferential Procurement Policy Framework Act No 5 of 2000, and the Preferential Procurement Policy Framework Act Regulations (2022).
  - 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).
  - SANS 1921:2004 – Construction and Management Requirements for Works Contract,

Parts 1-3.

- Any other eThekwini Policy documents referenced in the Tender Documents.

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

- <https://www.etenders.gov.za/>
- <https://www.durban.gov.za/pages/business/procurement>

The entire downloaded document should be printed on white A4 paper (single-sided) and suitably bound by the tenderer.

**F.1.4 Communication and employer's agent:** The Employer's Agent's Representative is:

**Patson Tumba**

**Tel: 031 266 8382**

**eMail: Patsont@bvikn.co.za**

The Tenderer's contact details, as indicated in the Contract Data: Clause C1.2.2.2 "Data to Be Provided by Contractor", shall be deemed as the only valid contact details for the Tenderer for use in communications between the Employer's Agent and the Tenderer.

## F.2: TENDERER'S OBLIGATIONS

### F.2.1.1 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 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) The tenderer has not submitted, with this tender, a valid Letter of Good Standing from the Compensation Commissioner as proof of being registered and in good standing with the compensation fund. Reference is to be made to Returnable Document T2.2.13.
- (g) The tender fails to complete and sign the Declaration of Municipal Fees in T2.2: "Returnable Documents" and submits the required documentation. Reference is to be made to Returnable Document T2.2.12.

SCM Policy (Cl.14(4)) requires suppliers/ service providers/ contractors to be registered on the eThekweni Municipality Central Supplier Database or be in a position to be so before the award.

In the event of the Tenderer not being registered on the eThekweni Municipality's Central Supplier Database, the tenderer must register on the internet at [www.durban.gov.za](http://www.durban.gov.za) by following these links:

- Business
- Supply Chain Management (SCM)
- Accredited Supplier and Contractor's Database.

The following are to be noted:

- (a) The information for registration as in the possession of the eThekweni 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.

#### F.2.1.2 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** 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.

It should be noted that this contract is not part of a Targeted Development Programme (TDP). The CIDB provisions in relation to a Contractor's Potentially Emerging (PE) status do not apply.

#### F.2.1.3 Eligibility: Tenderer's Experience

Only those tenderers that can demonstrate experience, by the submission of the specified returnable document in T2.2 (duplicated for each experience submission), and supply the associated documentation/ information, in works of a similar nature, within the past 7 years, will be eligible to have their tenders evaluated in terms of Clause F.3.11.

Tenderers may submit experience gained as Sub-Contractors or Main Contractors.

**Returnable form T2.2.16: “Eligibility: Experience of Tenderer” is to be duplicated for each experience submission, as may be required.**

Contact details of the Client or Main Contractor (if experience was gained as a sub-contractor), is required to be provided on the above-mentioned form. The contact details may be used by the Employer to verify the information, pertaining to the experience submission, as provided by the Tenderer. Should the Employer’s reasonable attempts to make contact with the Client or Main Contractor, to verify the information provided, fail (for whatever reason), that specific experience submission will be considered invalid.

Where works are still in progress the value of completed work as detailed on the most recent payment to the Contractor / Sub-Contractor is to be used in the experience submission.

In the event of a Joint Venture (JV) tendering for this contract, experience gained by the separate entities making up the JV may be used as experience provided that the experience requirement, as stipulated in **Table 2**, is satisfied, and that the required documentation/ information is provided.

The documentation/ information that is required is specified on **Table 1**: “Documentation / Information Requirements” (which includes the Notes below the table), and the experience requirement is as stated on **Table 2**: “Tenderer’s Experience Requirement”.

**Table 1: Documentation / Information Requirements**

Note: an “X” in this table indicates that the associated documentation must be provided, if applicable.	Proof of Sub-Contract Agreement	Letter of Award OR Form of Offer & Acceptance	Most recent Payment Certificate OR Invoice with Quantities summary	Final Payment Certificate OR Invoice with Quantities summary	Completion Certificate	<b>NB</b> Scope of Work
	<b>Note 1</b>	<b>Note 2</b>	<b>Note 3</b>	<b>Note 4</b>	<b>Note 5</b>	<b>Note 6</b>
<b>Works as Sub-Contractor</b>						
Current Contracts	X	/	X	/	/	X
Completed Contracts	X	/	/	X	/	X
<b>Works as Main Contractor</b>						
Current Contracts	/	X	X	/	/	X
Completed Contracts	/	X	/	X	X	X
<b>Failure to submit the returnable form T2.2.16, <u>and</u> provide the above supporting documentation/ information, for each submission of experience, will invalidate that experience submission</b>						



Table 1: NOTES	
Note 1	Must include the names of the parties, the managing entity's name, the effective dates, and the signature(s) page, all pertaining to the agreement.
Note 2	Issued by the Client / Employer.
Note 3	Proof of the most recent payment received from the Main Contractor or Client/ Employer, OR most recent submitted INVOICE, with a summary breakdown of quantities.
Note 4	Proof of the final payment received from the Main Contractor or Client/ Employer, OR most recent submitted INVOICE, with a summary breakdown of quantities.
Note 5	Issued by the Client/ Employer.
Note 6	<p><b>NB: Without this information the experience submission cannot be considered.</b></p> <ul style="list-style-type: none"> <li>This submission must indicate how the works carried out, either as a Sub-Contractor or a Main Contractor, is similar (see Table 2: Tenderer's Experience Requirement) to the Scope-of-Work of this specific tender.</li> <li>If executed as a Sub-Contractor, the Scope-of-Work should be indicative of only the works carried out by the Sub-Contractor, and not the overall Scope-of-Work of the main contract.</li> <li>If executed as a Main Contractor, the overall contract Scope-of-Work is to be provided.</li> <li>The description of the Scope-of-Work is to be inserted into the returnable form in T2.2.16, or if available as a hard copy (max. 2 pages) attached to the form with the other relevant, associated, supporting documentation.</li> </ul>

**Table 2: Tenderer's Experience Requirement**

Provision of Civil Infrastructure and Ancillary Works
<ul style="list-style-type: none"> <li>Projects of a similar nature that will be considered will be one, or a combination of, the following types of projects: new road construction, gravel to surfaced road upgrades, access road construction, and provision of interim roadway &amp; footpaths related services to informal settlements.</li> <li>Each project must consist of at least two of the following elements: bulk earthworks, roadway layer-works, asphalt roadway surfacing, kerbing / channelling, concrete sidewalk / walkway construction, stormwater drainage, retaining structures, dealing with underground services (watermains, sewers, electricity / communication infrastructure).</li> </ul>

Experience Requirement: Contract(s) with works of a similar nature, within the past 7 years
A minimum of 2 contracts, <u>each</u> with a value of 50% of the tender value submitted for this tender. Contracts may have been executed as a Sub-Contractor.

**Note:** The failure to complete the relevant returnable form T2.2.16 for each submission of experience AND supply the associated, relevant, documentation (as specified on Table 1) will invalidate the experience submission.

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

"Documents are to be obtained, free of charge, in electronic format, from the **National Treasury's eTenders website** or the **eThekwini Municipality's Website**. The entire electronically downloaded document should be printed on white A4 paper (single-sided) 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 websites specified in F.1.2. Tenderers are to ensure that the eTenders website is consulted for any published addenda pertaining to this tender up to 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 physical or 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:**  
**eMlaza J17 Site, Mbalane Road, eMlaza (Ward 111-Councilor Office)**  
**GPS Coordinates: 29°56'24.24"S 30°51'38.31"E**  
**On 25 March 2024 at 10h00**

In the event of a Compulsory Clarification Meeting, Tenderers must sign the attendance register in the name of the tendering entity. The Tenderer's representative(s) at the clarification meeting must be able to clearly convey the discussions at the meeting to the person(s) responsible for compiling the entity's tender offer.

- 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. : **3V-28530**
- Contract Title : **The Provision of Incremental Services to Informal Settlements within the Southern Region: Roads, Footpaths and Associated Stormwater Control in Ward 111 Settlement eMlaza J17**

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

**The Tender Box in the foyer of the Municipal Building  
166 KE Masinga Road, Durban**

Tenderers are to include, with their paper ("hard copy") submission, a memory-stick containing an electronically scanned (300 dpi resolution) Public Document Format (PDF) copy of their complete bid submission. This PDF file should be named using the contract number and the Tenderer's name, eg. – **Tenderers Name.PDF**". The memory-stick must be labelled with the Tenderer's name and securely fixed to the paper submission.

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, 05 April 2024**
- Time : **11h00**

- F.2.16 Tender offer validity:** The Tender Offer validity period is 120 Days from the closing date for submission of tenders.

- F.2.23 Certificates:** Refer to **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.

**Tenderers are to include, at the back of their tender submission document, a printout of the required documents/ certificates.**

The Form of Offer (C1.1.1), Data to be provided by the Contractor (C1.2.2.2), and the Bill of Quantities (C2.2) are also required to be completed in full.

**Tax Clearance**

Reference is also to be made to returnable form T2.2.3: "Tax Compliance Status PIN/ Tax Clearance Certificate".

SARS has introduced a new Tax Compliance Status System. Tenderers must 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. This TCS PIN is to be entered on Returnable Document T2.2.1: "Compulsory Enterprise Questionnaire". Separate Tax Clearance Certificates / TCS PINs are required for each entity in a Joint Venture.

Failure to comply will make the tender non-responsive.

#### **Compensation Commissioner**

Reference is also to be made to returnable form T2.2.13: "Eligibility: Registration with Compensation Commissioner".

The tenderer is to supply proof of being registered and in good standing with the compensation fund by submitting a valid **Letter of Good Standing** from the Compensation Commissioner.

Failure to comply will make the tender non-responsive.

#### **Central Supplier Database (CSD)**

Reference is also to be made to returnable form T2.2.14: "Eligibility: CSD Registration Report".

The entities (full) **CSD 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.

#### **CIDB Registration**

Reference is also to be made to returnable form T2.2.15: "Eligibility: Verification of CIDB Registration and Status".

Registration with the CIDB must be reflected as "Active" at time of tender closing.

Tenderers are to include with their submission a printout of their **CIDB Registration**, 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 CIDB printout(s) is to be indicated on the printout.

### **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 same platform(s) as the Tender Notification (refer to F.1.2)."
- 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, 6<sup>th</sup> Floor, Engineering Unit Building, 166 KE Masinga Road, Durban.

**F.3.11 Evaluation of Tender Offers:**

**Eligibility**

Tenders will be checked for compliance with the ELIGIBILITY requirements, as specified in T1.2.2 Clause F.2.1. Tenderers not in compliance will be deemed non-responsive.

**Preference Point System**

The procedure for the evaluation of responsive tenders is **PRICE AND PREFERENCE** 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 (2022).

**Price Points**

The **80/20** preference points system will be applied. The Formula used to calculate the **Price Points (max. 80)** will be according to that specified Regulation 4.1.

**Preference Points**

Reference is also to be made to T2.2.7: “MBD 6.1: Preference Points Claim”.

The Preference Points (20) will be derived from points allocated/ claimed for **Specific Goals** as indicated in the table(s) below, according to the specified **Goal/ Category Weightings**.

- **Ownership Goal**  
Goal Weighting: 40%

The tendering entity’s **Percentage Ownership**, in terms of the **Ownership Category(s)** listed below, is to be used in the determination of the tenderer’s claim for **Preference Points**.

<b>Ownership Categories</b>	<b>Criteria</b>	<b>80/20</b>	<b>90/10</b>
<b>Race: Black (w1)</b>	Equals 0%	0	n/a
	Between 0% and 51%	1.92	n/a
	Greater or equal to 51% and less than 100%	3.84	n/a
	Equals 100%	4.8	n/a
<b>Gender: Female (w2)</b>	Equals 0%	0	n/a
	Between 0% and 51%	1.12	n/a
	Greater or equal to 51% and less than 100%	2.24	n/a
	Equals 100%	2.8	n/a
<b>Disabilities (w3)</b>	Equals 0%	0	n/a
	Between 0% and 51%	0.16	n/a
	Greater or equal to 51% and less than 100%	0.32	n/a
	Equals 100%	0.4	n/a
<b>Maximum Goal Points:</b>		<b>8</b>	<b>n/a</b>

The **Weightings** of the **Ownership Categories** will be:

- w1 = 60%, w2=35%, w3=5% (where: w1 + w2 + w3 = 100%)

**Proof of claim as declared on MBD 6.1** (1 or more of the following will be used in verifying the tenderer's status)

- Companies and Intellectual Property Commission registration document (CIPC)
- CSD report.
- B-BBEE Certificate of the tendering entity.
- Consolidated BBBEE Certificate if the tendering entity is a Consortium, Joint Venture, or Trust (Issued by verification agency accredited by the South African Accreditation System).
- Agreement for a Consortium, Joint Venture, or Trust.

• **RDP Goal: The promotion of South African owned enterprises**

Goal Weighting: 40%

The tendering entity's **Address** (as stated on the National Treasury Central Supplier Database (CSD) or on the eThekweni Municipality Vendor Portal) is to be used in the determination of the tenderer's claim for **Preference Points** for this Specific Goal.

Location	80/20	90/10
Not in South Africa	0	n/a
South Africa	2	n/a
Kwa Zulu Natal	4	n/a
eThekweni Municipality	8	n/a
<b>Maximum Goal Points:</b>	8	n/a

**Proof of claim as declared on MBD 6.1** (1 or more of the following will be used in verifying the tenderer's status)

- CSD report

• **RDP Goal: The promotion of enterprises located in a specific municipal area**

Goal Weighting: 20%

The tendering entity's **Address** (as stated on the National Treasury Central Supplier Database (CSD) or on the eThekweni Municipality Vendor Portal) is to be used in the determination of the tenderer's claim for **Preference Points** for this Specific Goal. The **regions** and **zones** (or wards) within the eThekweni Municipality are as specified on the Part C4: "Site Information" of this procurement document.

Municipal Area	80/20	90/10
Not within eThekweni Municipality	0	n/a
Within eThekweni Municipality	1	n/a
Within the specified region / Adjoining Wards	2	n/a
Within the specified zone / Project Ward(s)	4	n/a
<b>Maximum Goal Points:</b>	4	n/a

**Proof of claim as declared on MBD 6.1** (1 or more of the following will be used in verifying the tenderer's status)

- CSD Report

**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:

- 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.
- 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**.

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.

The municipality has a firm intention to proceed with the work, subject to funding being identified. Notwithstanding clause F.1.1.3 of the Standard Conditions of Tender, the municipality reserves the right to award or not award the tender based on the municipalities available budget.

**F.3.15 Complete adjudicator's contract:** Refer to the General Conditions of Contract and the Contract Data.

### **T1.2.3 ADDITIONAL CONDITIONS OF TENDER**

#### **T1.2.3.1 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

#### **T1.2.3.2 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.

#### **T1.2.3.3 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 Submission Documentation must be submitted in its entirety. All forms must be properly completed as required.

The Tenderer is required to complete each and every Schedule and Form listed below to the best of their 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 non-responsive.

#### **T2.1.2 Returnable Schedules, Forms and Certificates**

##### **Entity Specific**

T2.2.1	Compulsory Enterprise Questionnaire.....	16
T2.2.2	Certificate of Attendance at Clarification Meeting.....	19
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T2.2.4	Contractor's Health and Safety Declaration.....	21
T2.2.5	MBD 4: Declaration of Interest	23
T2.2.6	MBD 5: Declaration for Procurement Above R10 Million.....	26
T2.2.7	MBD 6.1: Preference Points Claim Form ITO the Preferential Regulations.....	27
T2.2.8	MBD 8: Declaration of Bidder's Past SCM Practices.....	30
T2.2.9	MBD 9: Certificate of Independent Bid Determination.....	32
T2.2.10	Joint Venture Agreements (if applicable).....	35
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##### **Eligibility**

T2.2.12	Eligibility: Declaration of Municipal Fees.....	37
T2.2.13	Eligibility: Registration with Compensation Commissioner.....	38
T2.2.14	Eligibility: CSD Registration Report.....	39
T2.2.15	Eligibility: Verification of CIDB Registration and Status.....	40
T2.2.16	Eligibility: Experience of Tenderer.....	41



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**T2.2 RETURNABLE SCHEDULES, FORMS, AND CERTIFICATES**

The returnable schedules, forms, and certificates, as listed in T2.1.2, can be found on pages 16 to 42.

**NOTE**

The **Form of Offer** (C1.1.1), The **Data to be Provided by Contractor** (C1.2.2.2), and the **Bill of Quantities** (C2.2) are also required to be completed by the tenderer.

**T2.2.1 COMPULSORY ENTERPRISE QUESTIONNAIRE**

Ref	Description	Complete or Circle Applicable
1.1	Name of enterprise	
1.2	Name of enterprise's representative	
1.3	ID Number of enterprise's representative	
1.4	Position enterprise's representative occupies in the enterprise	
1.5	National Treasury Central Supplier Database Registration number	<b>MAAA</b>
1.6	eThekwini Supplier Database: Reference number (PR), if any:	<b>PR</b>
1.7	VAT registration number, if any:	
1.8	CIDB registration number, if any:	
1.9	Department of Labour: Registration number	
1.10	Department of Labour: Letter of Good Standing Certificate number	
<b>2.0 Particulars of sole proprietors and partners in partnerships (attach separate pages if more than 4 partners)</b>		
	<b>Full Name</b>	<b>Identity No.</b>
		<b>Personal income tax No. *</b>
2.1		
2.2		
2.3		
2.4		
<b>3.0 Particulars of companies and close corporations</b>		
3.1	Company registration number, if applicable:	
3.2	Close corporation number, if applicable:	
3.3	Tax Reference number, if any:	
3.4	South African Revenue Service: Tax Compliance Status PIN:	

**4.0 Record in the service of the state** (Insert on a separate page if necessary)

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:

- |   |  |
|---|--|
| <input type="checkbox"/> a member of any municipal council  | <input type="checkbox"/> a member of any provincial legislature  |
| <input type="checkbox"/> an official of any municipality or municipal entity  | <input type="checkbox"/> a member of an accounting authority of any national or provincial public entity |
| <input type="checkbox"/> a member of the board of directors of any municipal entity   | <input type="checkbox"/> a member of the National Assembly or the National Council of Province           |
| <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"/> 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 mths

**5.0 Record of spouses, children and parents in the service of the state** (Insert on a separate page if necessary)

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"/> a member of any provincial legislature  |
| <input type="checkbox"/> an official of any municipality or municipal entity  | <input type="checkbox"/> a member of an accounting authority of any national or provincial public entity |
| <input type="checkbox"/> a member of the board of directors of any municipal entity   | <input type="checkbox"/> a member of the National Assembly or the National Council of Province           |
| <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"/> an employee of Parliament or a provincial legislature                           |

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 mths

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

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

**NAME (Block Capitals):**

**Date**

**SIGNATURE:**

**T2.2.2 CERTIFICATE OF ATTENDANCE AT CLARIFICATION MEETING / SITE INSPECTION**

Reference is to be made to Clauses F.2.1(c) and F.2.7 of the Tender Data.

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: .....

**T2.2.3 TAX COMPLIANCE STATUS PIN / TAX CLEARANCE CERTIFICATE**

Reference is to be made to Clauses F.2.23 and F.3.13(a) of the Tender Data.

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.

The TCS PIN(s) are to be entered under item 3.4 on form **T2.1.2.1: Compulsory Enterprise Questionnaire**.

**Tenderers are to include, at the back of their tender submission document, a printout of their Tax Compliance Status PIN (TCS PIN) OR an original Tax Clearance Certificate.**

**Failure to include the required document will make the tender submission non-responsive.**

*I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, confirms that the information contained in this form is within my personal knowledge and is to the best of my belief both true and correct, and that the requested documentation has been included in the tender submission.*

**NAME (Block Capitals):**

**Date**

**SIGNATURE:**

**T2.2.4 CONTRACTOR'S HEALTH AND SAFETY DECLARATION**

Reference is to be made to Clauses F.2.1(e) and F.2.23 of the Tender Data.

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 - Yes or No)**:

- (a) From my own competent resources as detailed in 4(a) hereafter.
- (b) From my own resources still to be appointed or trained until competency is achieved, as detailed in 4(b) hereafter:
- (c) From outside sources by appointment of competent specialist Subcontractors as detailed in 4(c) hereafter:

Circle Applicable	
Yes	NO
Yes	NO
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) 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, the undersigned, hereby undertake, if this 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, the undersigned, confirm that copies of this company's approved Health and Safety Plan, the Client's Safety Specifications as well as the OHS 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, the undersigned, hereby confirm that adequate provision has been made in the 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 OHS 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, the undersigned, agree that failure to complete and execute this declaration to the satisfaction of the Client will mean that this company is unable to comply with the requirements of the OHS 1993 Construction Regulations (2014) and accept that this tender will be prejudiced and may be rejected at the discretion of the Client.

*I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, confirms that the information contained in this form is within my personal knowledge and is to the best of my belief both true and correct.*

**NAME (Block Capitals):**

**Date**

**SIGNATURE:**



**T2.2.5 MBD 4: DECLARATION OF INTEREST**

MSCM Regulations: “in the service of the state” means to be:

- (a) a member of:
  - (i) any municipal council.
  - (ii) any provincial legislature.
  - (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.
- (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.

- 1 No bid will be accepted from persons **in the service of the state**<sup>1</sup>.
- 2 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.
- 3 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

3.1 Name of enterprise	Complete T2.1.2.1 Item 1.1
Name of enterprise’s representative	Complete T2.1.2.1 Item 1.2
3.2 ID Number of enterprise’s representative	Complete T2.1.2.1 Item 1.3
3.3 Position enterprise’s representative occupies in the enterprise	Complete T2.1.2.1 Item 1.4
3.4 Company Registration number	Complete T2.1.2.1 Item 3.1 or 3.2
3.5 Tax Reference number	Complete T2.1.2.1 Item 3.3
3.6 VAT registration number	Complete T2.1.2.1 Item 1.7

3.7 The names of all directors / trustees / shareholders / members / sole proprietors / partners in partnerships, their individual identity numbers and state employee numbers must be indicated in paragraph 4 below. In the case of a joint venture, information in respect of each partnering enterprise must be completed and submitted.

	Circle Applicable
3.8 Are you presently in the service of the state?	YES NO
If yes, furnish particulars: .....	
.....	

3.9 Have you been in the service of the state for the past twelve months? YES NO  
 If yes, furnish particulars: .....

3.10 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? YES NO  
 If yes, furnish particulars: .....

3.11 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? YES NO  
 If yes, furnish particulars: .....

3.12 Are any of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state? YES NO  
 If yes, furnish particulars: .....

3.13 Are any spouse, child or parent of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state? YES NO  
 If yes, furnish particulars: .....

3.14 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? YES NO  
 If yes, furnish particulars: .....

4 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			

*I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, confirms that the information contained in this form is within my personal knowledge and is to the best of my belief both true and correct.*

**NAME (Block Capitals):**

**Date**

**SIGNATURE:**

**T2.2.6 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.

	Circle Applicable	
1.0 Are you by law required to prepare annual financial statements for auditing?	YES	NO
1.1 <b>If YES, submit audited annual financial statements for the past three years or since the date of establishment if established during the past three years.</b>		
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?	YES	NO
2.1 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.		
2.2 If YES, provide particulars. ..... .....		
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?	YES	NO
3.1 If YES, provide particulars. ..... .....		
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?	YES	NO
4.1 If YES, provide particulars. ..... .....		

**If required by 1.1 above, tenderers are to include, at the back of their tender submission document, a printout of their audited annual financial statements.**

*I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, confirms that the information contained in this form is within my personal knowledge and is to the best of my belief both true and correct, and, if required, that the requested documentation has been included in the tender submission.*

**NAME (Block Capitals):** \_\_\_\_\_ **Date** \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

**T2.2.7 MBD 6.1: PREFERENCE POINTS CLAIM**  
**In terms of THE PREFERENTIAL PROCUREMENT REGULATIONS (2022)**

**Reference is to be made to Clause F.3.11 of the Tender Data.**

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

**NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022**

**1.0 GENERAL CONDITIONS**

1.1 The following preference point systems are applicable to invitations to tender:

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

1.2 The applicable preference point system for this tender is the 80/20 preference point system.

1.3 Preference Points for this tender shall be awarded for:

- **Price and Specific Goals:** Either 80 (price) and 20 (specific goals), in terms of 1.2 above.
- The total Preference Points, for Price and Specific Goals, is 100.

1.4 Failure on the part of the tenderer to submit the required proof or documentation, in terms of the requirements in the Conditions of Tender for claiming specific goal preference points, will be interpreted that preference points for specific goals are not claimed.

1.5 The Municipality reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard of preferences, in any manner required by the Municipality.

**2.0 DEFINITIONS**

2.1 “**tender**” means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation.

2.2 “**price**” means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts.

2.3 “**rand value**” means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes.

2.4 “**tender for income-generating contracts**” means a written offer in the form determined by Municipality in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the Municipality and a third party that produces revenue for the Municipality, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions.

2.5 “**the Act**” means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

### 3.0 FORMULA FOR CALCULATION OF PREFERENCE PRICE POINTS

#### 3.1 PROCUREMENT OF GOODS AND SERVICES

**POINTS AWARDED FOR PRICE:** A maximum of 80 points is allocated for price on the following basis:

**80 / 20 Points System**

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

Where:

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

#### 4.0 POINTS AWARDED FOR SPECIFIC GOALS

4.1 In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goal(s) stated in **Table 1** below, as supported by proof/ documentation stated in the **Conditions of Tender**:

4.2 In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that if it is unclear whether the 80/20 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of:

- (a) an invitation for tender for income-generating contracts, that either the 80/20 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system, or
- (b) any other invitation for tender, that the 80/20 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 80/20 preference point system.

**TABLE 1:** Specific Goals for the tender and maximum points for each goal are indicated per the table below.  
**Tenderers are to indicate their points claim for each of the Specific Goals in the shaded blocks.**

The Specific Goals to be allocated points in terms of this tender	Maximum Number of points ALLOCATED (80/20 system)	Maximum Number of points ALLOCATED (90/10 system)	Number of points CLAIMED (80/20 system)	Number of points CLAIMED (90/10 system)
<b>Ownership Goal:</b> Race (black)	4.8	n/a		n/a
<b>Ownership Goal:</b> Gender (female)	2.8	n/a		n/a
<b>Ownership Goal:</b> Disabilities	0.4	n/a		n/a
<b>RDP Goal:</b> The promotion of South African owned enterprises.	8	n/a		n/a
<b>RDP Goal:</b> The promotion of enterprises located in a specific municipal area.	4	n/a		n/a
<b>Total CLAIMED Points (20 Maximum)</b>				n/a

I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, certify that the points claimed, based on the specific goals as specified in the tender, qualifies the tendering entity for the preference(s) shown.

I acknowledge that:

- 1) The information furnished is true and correct.
- 2) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form.
- 3) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct.
- 4) If the specific goals have been claimed or obtained on a fraudulent basis, or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have:
  - (a) disqualify the person from the tendering process.
  - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct.
  - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation.
  - (d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
  - (e) forward the matter for criminal prosecution, if deemed necessary.

**NAME (Block Capitals):**

**Date**

**SIGNATURE:**

**T2.2.8 MBD 8: DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES**

- 1.0 This Municipal Bidding Document must form part of all bids invited.
- 2.0 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.
- 3.0 The bid of any bidder may be rejected if that bidder, or any of its directors have:
  - a) abused the municipal entity's supply chain management system or committed any improper conduct in relation to such system.
  - b) been convicted for fraud or corruption during the past five years.
  - c) wilfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years.
  - 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).
- 4.0 In order to give effect to the above, the following questions must be completed and submitted with the bid.

4.1 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?

(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](http://www.treasury.gov.za)) and can be accessed by clicking on its link at the bottom of the home page.

4.1.1 If YES, provide particulars.

.....  
 .....

Circle Applicable	
YES	NO

4.2 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)?

The Register for Tender Defaulters can be accessed on the National Treasury's website ([www.treasury.gov.za](http://www.treasury.gov.za)) by clicking on its link at the bottom of the home page.

4.2.1 If YES, provide particulars.

.....  
 .....

YES	NO
-----	----

4.3 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?

4.3.1 If YES, provide particulars.

.....  
 .....

YES	NO
-----	----



4.4 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?

YES	NO
-----	----

4.4.1 If YES, provide particulars.

.....  
 .....

4.5 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?

YES	NO
-----	----

4.5.1 If YES, provide particulars.

.....  
 .....

*I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, confirms that the information contained in this form is within my personal knowledge and is to the best of my belief both true and correct.*

*I accept that, in addition to cancellation of a contract, action may be taken against me should this declaration prove to be false.*

**NAME (Block Capitals):**

**Date**

-----

**SIGNATURE:**

-----

## T2.2.9 **MBD 9: CERTIFICATE OF INDEPENDENT BID DETERMINATION**

### **NOTES**

- <sup>1</sup> Includes price quotations, advertised competitive bids, limited bids and proposals.
- <sup>2</sup> 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.
- <sup>3</sup> 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.

- 1.0 This Municipal Bidding Document (MBD) must form part of all **bids**<sup>1</sup> invited.
- 2.0 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**).<sup>2</sup> Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.
- 3.0 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:
- a. take all reasonable steps to prevent such abuse;
  - 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
  - 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.
- 4.0 This 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**.
- 5.0 In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid.

**CERTIFICATE OF INDEPENDENT BID DETERMINATION**

I, the undersigned, in submitting the accompanying bid:

-----  
(Bid Number and Description)

in response to the invitation for the bid made by:

-----  
(Name of Municipality / Municipal Entity)

do hereby make the following statements that I certify to be true and complete in every respect.

I certify, on behalf of:

-----  
(Name of Bidder)

that:

1. I have read and I understand the contents of this Certificate.
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect.
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. 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. 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.
  - (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder.
6. 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 consortium<sup>3</sup> will not be construed as collusive bidding.

7. 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. 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. 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. 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.

**NAME (Block Capitals):**

**Date**

**SIGNATURE:**

**T2.2.10 JOINT VENTURES AGREEMENTS**

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

**T2.2.11 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		

*I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, confirms that the information contained in this form is within my personal knowledge and is to the best of my belief both true and correct.*

***It is also confirmed that the requirements, as stated on the Addenda, have been complied with.***

**NAME (Block Capitals):** \_\_\_\_\_ **Date** \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

**T2.2.12 ELIGIBILITY: DECLARATION OF MUNICIPAL FEES**

Reference is to be made to Clause F.2.1(f)(ii) of the Tender Data.

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: to be completed by tenderer</u>										
Consolidated Account											
Electricity											
Water											
Rates											
JSB Levies											
Other											

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.

- 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 are to be provided.
- Where the tenderer’s Municipal Accounts are part of their lease agreement, then a copy of the agreement, or an official letter to that effect, is to be provided.

**Tenderers are to include, at the back of their tender submission document, a printout of the above account’s and or agreements signed with the municipality.**

**Failure to include the required document will make the tender submission non-responsive.**

*I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, confirms that the information contained in this form is within my personal knowledge and is to the best of my belief both true and correct, **and that the requested documentation has been included in the tender submission.***

**NAME (Block Capitals):** \_\_\_\_\_ **Date** \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

## **T2.2.13 ELIGIBILITY: REGISTRATION WITH COMPENSATION COMMISSIONER**

Reference is to be made to Clause F.2.1(f)(i) of the Tender Data.

The Occupational Injuries and Diseases Act (130 of 1993 as amended) (the Act) refers. A summary of the pertinent Clauses are listed below. The act is to be referenced for the full text of the clauses.

### **Clause 80: Employer to register with commissioner and furnish him with particulars**

The Act requires that an Employer carrying out business in the Republic to register with the Compensation Commissioner. Any person who fails to comply with the provisions of the this clause is guilty of an offence.

### **Clause 82: Employer to furnish returns of earnings**

The Act requires an Employer to furnish the commissioner with a return showing:

- The amount of earnings paid by him to his employees.
- Any further information as may be prescribed or as the commissioner may require.

Any Employer who fails to comply with the provisions of the this clause is guilty of an offence.

### **Clause 86: Assessment to be paid by an employer to commissioner**

The Act states that an Employer will receive notices of assessment from the commissioner. The Employer must pay the commissioner the assessment amount on the notices.

### **Clause 89: Mandators and contractors**

The Act requires a contractor (a person with a contract with a mandator) to register as an Employer in accordance with the provisions of the Act and pay the necessary assessments. Failing registration or payment of assessments, the mandator is required to pay the assessments in respect of the employees of the contractor. The mandator is allowed to recover the assessment amounts paid from the contractor.

The Department of labour issues contractors with a **Letter of Good Standing** if the contractor has complied with the requirement(s) of the Act and is in "good standing" with the Compensation Fund. Employers can check the validity of such Letters of Good Standing on the internet (<https://cfonline.labour.gov.za/VerifyLOGS> ).

**Tenderers are to include, at the back of their tender submission document, a printout of their most recent Letter of Good Standing from the Department of Labour.**

**Failure to include the required document will make the tender submission non-responsive.**

*I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, confirms that the information contained in this form is within my personal knowledge and is to the best of my belief both true and correct, **and that the requested documentation has been included in the tender submission.***

**NAME (Block Capitals):**

**Date**

**SIGNATURE:**



**T2.2.14 ELIGIBILITY: CSD REGISTRATION REPORT**

Reference is to be made to Clauses F.2.1(e) and F.2.23 of the Tender Data.

The Conditions of Tender, Clause F.2.1: 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.

CSD Registration Reports can be obtained from the National Treasury's CSD website at <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.

**Tenders are to include, at the back of their tender submission document, a printout of their (full) CSD Registration Report.**

*I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, confirms that the information contained in this form is within my personal knowledge and is to the best of my belief both true and correct, **and that the requested documentation has been included in the tender submission.***

**NAME (Block Capitals):** \_\_\_\_\_

**Date**

**SIGNATURE:** \_\_\_\_\_

## T2.2.15 ELIGIBILITY: VERIFICATION OF CIDB REGISTRATION AND STATUS

Reference is to be made to Clause F.2.1.1 and F.2.23 of the Tender Data.

The Conditions of Tender, **Clause F.2.1.1: 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. The required class of construction work is specified in Clause F.2.1.1.

CIDB Registrations can be obtained from the CIDB website at <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 the beginning of the printout obtained from the above website.

Home

construction industry development board

Contractor Detail Print

Contractor Detail

CRS Number: \_\_\_\_\_ Type of Enterprise: \_\_\_\_\_

Contractor Name: \_\_\_\_\_ Registration Date: \_\_\_\_\_

Trading Name: \_\_\_\_\_ Expiry Date: \_\_\_\_\_

Status: \_\_\_\_\_

Contractor Grades

Grade: \_\_\_\_\_

Back

Copyright © cidb 2011. All rights reserved  
[Website technical enquires contact](#)

01/01/2017

**Tenderers are to include, at the back of their tender submission document, a printout of their registration with the CIDB.**

*I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, confirms that the information contained in this form is within my personal knowledge and is to the best of my belief both true and correct, and that the requested documentation has been included in the tender submission.*

**NAME (Block Capitals):** \_\_\_\_\_

**Date**

**SIGNATURE:** \_\_\_\_\_

**T2.2.16 ELIGIBILITY: EXPERIENCE OF TENDERER**

Reference is to be made to Clause F.2.1.2 of the Tender Data.

**This form is to be copied and used for each submission of experience, as may be required.**

Where options are provided ( ), only one (1) selected option should be clearly marked with an "X".

<b>Tenderer's CIDB Grade:</b>	1'	2'	3'	4'	5'	6'	7'	8'	9'	Experience as a:	Sub-Contractor'	Main Contractor'			
<b>Client / Employer:</b>	Entity Name:														
	Contact Name:														
	Contact Tel:										-	-			
	Contact Cell:										-	-			
	Contact email / other:														
<b>Client OR Main Contractor's Details</b> Should the Employer's reasonable attempts to make contact, to verify the information provided, fail (for whatever reason) this experience submission will be considered invalid.	Entity Name:														
	Contact Name:														
	Contact Tel:										-	-			
	Contact Cell:										-	-			
	Contact email / other:														
<b>Contract Details</b>	Contract Number:														
	Contract Title:														
	Has this Contract been completed?										Y	N			
											Commencement Date:	d d m m 2 0 y y			
										Completion Date (if applicable):		d d m m 2 0 y y			
Tendered Value (Contract Sum) OR Sub-Contract Value:										<b>R</b>		Final Contract Price OR Final Value of Sub-Contract:		<b>R</b>	

<b>Contract Scope-of-Work (Description of Works components)</b>	If available in hard copy, the Scope-of-Work can be attached. Only include the Scope-of-Work (contract description). <u>The Specification is not required.</u>

In addition to the Scope-of-Work (entered above or attached) the following documentation / information is required to be attached to the back of this form.					
Contractor Type and Contract Status	Proof of Sub-Contract Agreement	Letter of Award OR Form of Offer & Acceptance	Most recent Payment Certificate, OR most recent INVOICE, with Quantities summary	Final Payment Certificate, OR most recent INVOICE, with Quantities summary	Completion Certificate
Current Contract as Sub-Contractor	X		X		
Completed Contract as Sub-Contractor	X			X	
Current Contract as Main Contractor		X	X		
Completed Contract as Main Contractor		X		X	X

**Failure to submit this returnable form, and provide the above supporting documentation/ information, for each submission of experience, will invalidate that experience submission**

*I, the undersigned, who warrants that they are authorised to sign on behalf of the Tenderer, confirms that the information contained in this form is within my personal knowledge and is to the best of my belief both true and correct, and that the requested documentation has been included in the tender submission.*

**NAME (Block Capitals):** .....

**Date**

---

**SIGNATURE:**

-----  
-----

**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: **3V-28530**

Contract Title: **The Provision of Incremental Services to Informal Settlements within the Southern Region: Footpaths and Associated Stormwater Control in Ward 111, Settlement eMlaza J17**

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 3<sup>rd</sup> 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](mailto: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 **6 months**. The period as stated in 5.3.2, and the 14 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 included in the above time for achieving Practical Completion.

1.1.1.15 The Employer is the eThekweni Municipality as represented by:  
Deputy Head: **Development Engineering**

1.2.1.2 The address of the Employer is: Lorato Piki  
Physical : Engineering Unit, 166 KE Masinga Road, DURBAN, 4001  
Postal : Engineering Unit, P.O Box 680, DURBAN, 4000  
Telephone: 031-311-7770 (t)  
Fax: N/A  
E-Mail: [Lorato.Piki@durban.gov.za](mailto:Lorato.Piki@durban.gov.za)

1.1.1.16 The **name of the Employer's Agent** is

1.2.1.2 The address of the Employer' Agent is: Kugan Pather  
Physical : 2<sup>nd</sup> Floor - Pharos House, 70 Buckingham Terrace, WESTVILLE, 3630  
Postal : P.O Box 889, WESTVILLE, 3630  
Telephone: 031-266-8382 (t)  
Fax: 031-267-0728 (f)  
E-Mail: [kuganp@bvikn.co.za](mailto:kuganp@bvikn.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 **15%** contingencies.

4.11.1 To carry out and complete the works, the Contractor shall employ a competent Site Agent and Foreman as part of the key staff. It is a requirement for the Contractor's Site Agent and Foreman to each have a minimum of 3 years relevant experience including experience on projects of a similar nature. The CV's of the 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).

Note:

- i) "similar nature" implies 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.
- ii) "experience" implies experience on projects of a similar nature.
- iii) "accredited degree / diploma" implies a minimum 3-year qualification within the built environment, from a registered University or Institute of Technology.

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 3,500.00** (per Day).

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:

<b>Value of Contract (incl. VAT)</b>	<b>Performance Guarantee Required</b>
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

6.5.1.2.3 The **percentage allowance** to cover overhead charges for daywork are as follows:

- **80%** of the gross remuneration of workmen and foremen actually engaged in the daywork;
- **20%** on the net cost of materials actually used in the completed work.

No allowance will be made for work done, or for materials and equipment for which daywork rates have been quoted at tender stage.

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**.

	STATS SA Statistical Release	Table	Description	Coefficient
<ul style="list-style-type: none"> <li>• “L” is the “Labour Index”</li> </ul>	P0141	Table A	Geographic Indices; CPI per Province; Kwa-Zulu Natal	<b>a = 0.28</b>
<ul style="list-style-type: none"> <li>• “P” is the “Contractor’s Equipment Index”</li> </ul>	P0151.1	Table 4	Plant and Equipment	<b>b = 0.28</b>
<ul style="list-style-type: none"> <li>• “M” is the “Materials Index”</li> </ul>	P0151.1	Table 6	Civil Engineering Material (excluding bitumen)	<b>c = 0.38</b>
<ul style="list-style-type: none"> <li>• “F” is the “Fuel Index”</li> </ul>	P0142.1	Table 1	Coke, petroleum, chemical, rubber and plastic products; Coal and petroleum products; Diesel	<b>d = 0.06</b>

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 10,000,000.00**

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: **R2,000,000.00**

- Maximum first excess: **R 10,000.00.**

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 1,000,000.00**
- Consequential loss to be covered by policy: **Yes**
- Liability section of policy to be extended to cover blasting: **Nil**
- Maximum excess per claim or series of claims arising out of any one occurrence: **R20,000.00**.

**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: **R2,000,000.00**
- Maximum first excess: **R 10,000.00**.

**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: **R10,000.00**.

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:

<b>Contract Price</b>	<b>First Loss</b>
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.

Payment: The CLO 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(s) 111**. 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 **10%** of the contract value (excluding PC Sum items and Fixed Cost allowances) to be subcontracted to contractors who are **>51% black owned**. 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
- Employment Contracts

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

- Category of Employment

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

[For contract awards over R10m] The Contractor shall be subjected to “Performance Monitoring” assessments in terms of the applicable Section (S.53) of the Employer’s Supply Chain Management Policy.

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

**C1.2.3.6 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:

- Part AA: Preliminaries
- Part AB: General 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.

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**C2.2: BILL OF QUANTITIES**

The Bill of Quantities follows and comprises of 19 pages.

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**PART C3: SCOPE OF WORK**

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### **C3.1: PROJECT DESCRIPTION AND SCOPE OF CONTRACT**

#### **C3.1.1 Description of Works**

<b>Type of Works</b>	<b>Description of Works</b>
i) <b>Site Clearance</b>	General clearance including the removal of trees, concrete slabs, kerbs etc. and the removal and relocation of existing dwellings where necessary.
ii) <b>Roads</b>	Approximate total length of road = 60m The road is 3m wide, comprising of a 30mm asphalt wearing coarse, 150mm G4 material base compacted to 98% of MDD and a 150mm G7 material subbase compacted to 93% of MDD.
iii) <b>Footpaths</b>	Approximate total length = 270m. Two types of footpaths will be used for this contract, depending on the prevailing soil conditions. The contract drawings indicate the type of each footpath to be constructed.
<b>Type A</b>	100mm Thick, 1.5m wide Concrete Footpath (20Mpa/19mm), reinforced with Mesh Ref. 193 constructed on a 150mm in situ layer, ripped and recompacted to 95% Mod AASHTO.
<b>Type B</b>	100mm Thick, 1.5m wide Concrete Footpath (20Mpa/19mm), reinforced with Mesh Ref. 193 constructed on a 150mm imported G7 base layer and 150mm in situ subgrade layer, ripped and recompacted to 93% Mod AASHTO.
iv) <b>Drainage</b>	'V' Drains, shall form part of the drainage works. Approximate length of stormwater pipeline = 30m
v) <b>Protection Works</b>	The following types of retaining structures may need to be constructed: <ul style="list-style-type: none"> <li>• Dry Stack Retaining Blocks – Geolok G400s or similar approved</li> <li>• Gabion Retaining Walls</li> <li>• Reno Mattresses</li> </ul>

- **Co-operation with other Service Providers**

All interaction with various departments such as Water and Sanitation, Electricity, Telkom and Neotel are to run parallel to construction works should any of the above services be affected.

- **Approvals**

The contractor is to obtain approval in writing from the Engineer prior to commencing any works that deviate from drawings and/or specifications.

- **Access to land/buildings/sites**

The Contractor's attention is drawn to the fact that newly constructed structures may be encountered upon establishment on site. Should there be any obstructions encountered, the Contractor shall notify the Employer's Agent or his representative prior to commencing any further works.

- **Software Application for Programming**

For ease of submission and uniformity, it is a requirement that the construction programme

shall be prepared by the successful tenderer using *Microsoft Project*.

- **Quality Management**

The successful tenderer shall implement specific quality control measures to ensure that the works are constructed as per the standard specifications, project specifications and construction drawings. The Quality Management Plan shall be attached to returnable form "Construction Approach, Methodology and Quality Control" and reference shall be made to site control testing, construction supervision, structured monitoring mechanisms such as checklists and other measures/processes that the tenderer deems to be significant. The Employer's Agent or his representative will continually assess the quality of works on site and instructions will be provided for non-compliance accordingly.

- **Format of Communications**

Each instruction, certificate, submission, proposal, record, acceptance, notification, reply and other communication which this contract requires is to be communicated in a form which can be read, copied and recorded. Writing is to be in the language of this contract, i.e. English.

The contractor is to only receive instructions from the Engineer or the Engineer's representative. Should the contractor undertake any works from an instruction given to him by a third party, he will be solely responsible for any impacts thereof, including costs.

- **Management Meetings**

There will be a minimum of one (1) progress meeting per month. The contractor is to ensure that the Contracts Manager and Site Agent are present during this meeting. The CLO will be required to attend all progress meetings. This is over and above all meetings that the Contractor may deem necessary for the execution of the works.

- **Daily Records**

It is a requirement that a site diary with all relevant details be maintained on site. This diary must be signed off and agreed to by both the Employer's Agent or the Employer's Agent representative and Contractor, on a daily basis. These site diaries must accompany the Contractor's monthly payment certificates and payment shall not be processed should this not be complied to.

A suitable format of the site diary will be made available to the successful tenderer, by the Client.

- **Payment Certificates**

Payment certificates are to reach the Client by the 25<sup>th</sup> of each month. The following items are to accompany each payment certificate, but shall not be limited to the list below:

- vi) Tax Invoice – Tax invoice number, Contract number, Project Description, correctly dated, to include both the Client's and contractor's Tax numbers, physical and postal addresses and to be addressed to Deputy Head, Development Engineering.
- vii) Fully completed FTE's (Client to provide format)

- viii) Summary of supporting agreed measurements for period of claim – to be signed off by both the Contractor and Employer’s Agent or the Employer’s Agent representative.
  - ix) Updated cashflow reflecting Anticipated and Current expenditure together with mitigation measures if required.
  - x) Updated number of serviced sites reflecting Anticipated and Current fully serviced sites together with mitigating measures.
  - xi) CLO monthly payslip or Proof of payment signed by the CLO.
- **Property provided for the Contractor’s use**

Where possible, the Employer and/or Engineer will initially identify a proposed location for the Contractor’s camp site and storage yard, however, the responsibility lies on the Contractor to liaise with the CLO/Ward Councillor in order to locate a suitable site that is available for occupation. Strict adherence to PS.14 “Site Facilities Available” is to be maintained at all times and the Contractor will be responsible for any transgressions in this regard.

### **C3.1.2 Description of Site and Access**

A co-ordinate for a central point to the settlement is provided below. Refer to Section C4.1 “Locality Plan” for locality maps.

Settlement: 29°56'24.24"S 30°51'38.31"E

eMlaza J17 site is located in Umlazi Township within the eThekweni Municipality Southern Region under Ward 111. The project area can be accessed by travelling northwest on King Dingane Ave and turning right on Ngwenya Grove. Then travel for approximately 110m and turn right on Mugabe Road and travel for approximately 115m. Then continue on No 2504 Road for approximately 300m and Simelane Road for approximately 200m and turn left onto 1103 Street and continue for approximately 1.7km. Thereafter, continue on Dingani Road for approximately 1.5km and turn left on Zihlahla Road. Thereafter, travel for approximately 1.2km and turn right onto Mbalane Road for approximately 500m to reach eMlaza J17 site.

### **C3.1.3 Nature of Ground and Subsoil Conditions**

The existing terrain in the informal settlement ranges from moderate to steep. The grades of the natural terrain range from 2.0% to 40.0% in certain areas. The scope will include working within densely populated area with limited to no access for large machinery. The works will follow the boundaries of the informal/formal dwellings and structures.

## **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 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:

- (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 proving of services where directed by the Employer's Agent.

### **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 "SADC 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.

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**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.

**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 DB.8.19 - 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 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.

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**PS.3 WATERMAINS**

**PS.3.1 General**

No watermains will be installed or constructed under this Contract. However, the Tenderer's attention is drawn to the following points regarding the existing watermains. Extreme care must be taken/exercised when using vibratory compaction equipment in the vicinity of watermains since excessive vibration may easily damage the watermains/water pipelines and cause leaks to occur.

**PS.3.2 Water Main Valve Access**

Due to the dangerous situation occurring when water main valves are covered over, the Contractor shall maintain access to all water main valves at all times. During asphalt layer work, after each pass by the paving machine, the valves shall be exposed and access maintained in a safe condition.

Whatever method the Contractor chooses to use for this work, the cost of raising the valves from existing level to ultimate level shall be paid only once, irrespective of the number of times the valve is uncovered. Spacer rings required for the height adjustment of valve covers shall be supplied by the Water and Sanitation Unit. Tolerances on valve cover levels shall be as specified in clause PS.6.5. Before final setting in position of valve covers the Contractor shall liaise with the Employer's Agent regarding the direction in which covers shall be placed.

**PS.3.3 Restriction on Compactive Equipment**

The Contractor is to note that existing watermains traverse the site of the works and special care is to be taken in close proximity to these mains and connections. The existing mains and connections shall be proved on site by the Contractor prior to any construction work commencing in the vicinity of the watermains.

Under no circumstances will heavy road-making equipment, other heavy plant or vibratory compaction equipment be permitted to operate within 800 mm vertically or horizontally of the existing mains or connections. The permissible compaction plant within this restricted area shall be the equivalent of a "Bomag 90" under static compaction, or similar approved plant. When the roadworks are far enough advanced to provide a minimum of 800 mm cover to the existing mains, the above restriction will fall away.

The Contractor is to take cognisance of the above requirements when entering rates in the Bill of Quantities and in the programming of the works. No claim for additional payment based on the inability to use plant as a result of the requirements of this clause will be accepted. The Contractor will be held liable for any costs should the watermain or electrical cables be damaged during construction of the road.

**PS.4 SEWERS**

The contractor is to note that existing sewer pipes traverse the site of the works and special care is to be taken in close proximity to these mains and connections. Any existing mains and connections shall be proved on site by the contractor prior to any construction work commencing in the vicinity of the sewers. In some sections depending on the footpath profile, existing manholes

may have to be lowered.

**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**

Stormwater infrastructure shall be constructed as part of this contract as outlined in the project specification and reflected on the construction drawings. The contractor shall take due care when working in the vicinity of any existing stormwater infrastructure.

**PS.5.1 Blockage 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.

**PS.6 ELECTRICAL PLANT**

**PS.6.1 General**

Various types of electrical cables including high voltage, low voltage, street lighting and domestic connection cables may be affected by the contract. The laying, relocation and jointing of all cables will be carried out by eThekwini Electricity's work gangs, or agents appointed by them, whilst the excavation and backfilling forms part of this contract. Close liaison will therefore be necessary with eThekwini Electricity throughout the contract.

**PS.6.2 Street Lighting**

No existing lighting will be removed in this contract. However, if it is required during the project execution, the existing lighting will be removed in stages and replaced in the centre median / intersection corners by eThekwini Electricity's work gangs. Relocation may take place during this contract and be executed by eThekwini Electricity or their agents. It is a requirement that the street lighting be operational at all times.

**PS.6.3 MV / LV Cables**

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**

No work to Telkom / Neotel Plant is envisaged, but the tenderers attention is drawn to the fact that Telkom / Neotel copper cables and fibre optic cables may exist in the contract area. Extreme care must therefore be exercised when working near these services, once their approximate positions become known. The Contractor is advised to timeously advise Telkom/Neotel before commencing the abovementioned work.

**PS.8 CCTV PLANT**

No work to CCTV Plant is envisaged, but the tenderers attention is drawn to the fact that CCTV cables and fibre optic cables may exist in the contract area. Extreme care must therefore be exercised when working near these services, once their approximate positions become known. The Contractor is advised to timeously advise the relevant stakeholders if any services are encountered prior to proceeding with any works.

**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.

**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:

- (1) The project area consists of residential properties and the movement of pedestrians will have to be accommodated.
- (2) The works will require machinery and plant of varying size.
- (3) The manual moving of heavy precast products may be required.
- (4) The gradient of the site is fairly steep. Plant and machinery need to be well controlled.
- (5) Considering the prevailing terrain, run-off from the site will have to be well managed.

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 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 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 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 Act 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 SURVEY**

#### **PS.11.1 Survey for, and Preparation of, "As Built" Drawings**

The Contractor shall submit the following "As Built" data to the Design Consultant to complete the required "As Built" Drawings before a Certificate of Completion will be issued:-

##### Footpaths:

- Footpath centreline co-ordinates at 10 metre intervals and at all changes in direction

##### Stormwater and other services:

- Co-ordinates, invert and cover levels of all stormwater controls that have been modified or constructed as new, during the contract,
- Including but not limited to: open lined concrete drains, stormwater catchpits, manholes, kerb and channels, precast pipe culverts and outlet structures.
- Co-ordinates of all other services e.g. cable duct markers, valve covers, Telkom manholes etc. that have been either modified or constructed as new, during the contract.

General:

- Notwithstanding the above, the Contractor is to supply to the Design Consultant all other information necessary, to clearly indicate changes/modifications to the construction drawings during the contract period that will be required by the Design Consultant so that they can produce the “For Record” drawings.
- Each surveyed point shall be suitably coded and identifiable by the Design Consultant and shall be supplied on a CD/DVD, in an Ascii file with the following format:-
- Code[SPACE]XCo-ordinate[SPACE]YCoordinate[SPACE]Level[SPACE]Description
- The above information is to be given to an accuracy of three decimal places and is to be surveyed by a suitably qualified person.

In addition to the above, all ‘as built’ information must be provided on a drawing in Autocad and DXF format together with a hard (paper) copy format showing the modifications undertaken during the contract period.

Suitable checks on the accuracy of the information provided may be carried out by the Design Consultant and should any of the information provided be found to be inaccurate or untrue, the Employer reserves the right to withhold payment or to employ the services of an engineering surveyor to re-survey all the works listed above, at the Contractor’s expense. The Employer shall request a minimum of three quotations from three independent engineering surveyors of his choice, and the lowest quotation will be appointed and the cost thereof will be deducted from monies owing to the Contractor.

The ‘as built’ Data shall be the responsibility of the Contractor and shall be paid for under the item ‘Survey for, and preparation of, “as built” drawings’ in the Contractors Preliminary and General Costs.

The unit of measurement shall be the (sum) and the rate shall include for all components outlined in this specification. The Contractor must also forward to the Employer’s Agent, a materials “as built” spreadsheet in a format that is acceptable by the Client.

The completion certificate shall not be issued unless the above information in totality, has been forwarded to the Employer’s Agent.

**PS.11.2 Setting Out of Works**

The setting out of the works shall be the responsibility of the Contractor and shall be paid for under the item ‘setting out’ in the Contractor’s Preliminary and General Costs.

The unit of measurement shall be (sum) and the rate shall include for the following:

The Contractor shall do the setting out to and beyond the obstructions. Such obstructions shall be reported to the Employer’s Agent as soon as possible. No additional payment shall be made for listing and reporting these obstructions and the re-establishment to set out areas that were affected by the obstructions.

**PS.11.3 Additional Site Survey**

The Employer's Agent may instruct the contractor to conduct a survey during the course of the contract in order to facilitate re-design due to immovable obstructions or to facilitate the design of new settlements. The contractor will be required to submit all survey files in an Ascii format and drawings in a DXF/DWG format.

The unit of measurement shall be (PC Sum) and the rate shall include for the survey as directed by the Employer's Agent and the submission of all hardcopy and electronic files required by the Employer's Agent.

**PS.12 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.

It must be stressed that the process of negotiation will not be deemed as work stoppage.

Payment for this item shall be made under Section 1, Part AB of the Bill of Quantities.

**PS.13 PERFORMANCE MONITORING OF SERVICE PROVIDERS**

The performance of service providers that have been selected to provide assistance in the provision of a municipal service, otherwise than in circumstances where Chapter 8 of the Municipal Systems Act applies, is required, by Section 116 of the Municipal Finance Management Act, to be monitored and reported on (see Cl.53 of the SCM Policy).

Appropriate key performance indicators (KPIs) for the contract must be set by the Municipality as a yardstick for measuring performance.

The table below indicates the provisional KPIs which will be applicable to this contract and **an example** of how the scoring will be applied. The criteria will be reviewed and finalised prior to the commencement of construction. KPIs will be regularly evaluated and scored by the Employer and Engineer. Necessary measures will be taken should the scoring be consistently low.

KPI		Scoring (%)	
No.	Description	Month 1	Month "n"
1	Progress of Construction Works is consistent with approved Construction Programme.	95%	88%
2	Works are being carried out to specification.	75%	60%
3	Health and Safety Standards are being monitored adequately.	95%	85%
4	Health and Safety Standards are being maintained.	85%	75%

5	Conformance to Instructions issued.	65%	90%
6	Addressing of Labourer concerns.	80%	75%
7	Breach of Site Security.	95%	83%
8	Compliance with Environmental requirements	90%	83%
Legend			
KPI Score in excess of 90%			
KPI Score between 80% - 90%			
KPI Score below 80%			

**PS.14 SITE FACILITIES AVAILABLE**

**PS.14.1 Contractor's camp site and depot**

The Contractor's office for this contract shall be as required to fulfil his obligations under the Contract. The Contractor is responsible to provide a suitable site for his camp and to provide accommodation for his personnel and labourers. If the Employer can make any specific site available to the Contractor, such site will be pointed out to the Contractor.

(a) Contractor's camp site/store yard

The proposed position of the camp site/store yard will be pointed out by the Engineer. However, the responsibility lies on the Contractor to liaise with the CLO/Ward Councillor in order to identify a suitable site for occupation. The Contractor must first obtain the written permission of the landowner, and subsequently the Engineer, prior to occupation of the land. Any clearing of the site that is necessary and the making good after de-establishment will be the responsibility of the Contractor.

In addition to the requirements of SANS 1200 A clause 8.3.2.2 the following conditions shall also apply:-

- None of the existing roads shall be damaged in any way.
- Electrical and Potable water facilities may be available in the vicinity of the site but the contractor shall make his own arrangements for all connections.
- It shall be the responsibility of the Contractor to make good any damage caused to the camp site area or any improvements on it, including services, and for reinstating it to its former condition when vacated. The standard of reinstatement must be to the satisfaction of the Engineer, Director: Real Estate and/or Director of Parks, Recreation and Beaches Department; or other owner. Particular attention should be directed to these requirements and written clearances from the relevant Departments or other owners will be required.

**PS.14.2 Accommodation of Employees**

No employees, except for security guards, will be allowed to sleep or be accommodated on the site in urban areas. No housing is available for the Contractor's employees and the Contractor shall make his own arrangements to house his employees and to transport them to site.

No informal housing or squatting will be allowed. The Contractor shall provide the necessary ablution facilities at his camp site and the site of the works for the use of his employees. Chemical toilets only will be allowed where temporary facilities have to be provided.

**PS.14.3 Power supply, water and other services**

The Contractor shall make his own arrangements concerning the supply of electrical power, water and all other services. No direct payment will be made for the provision of electricity, water and other services. The cost thereof shall be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required, or in the Contractor's preliminary and general items as the case may be.

(a) Water for Works

The Contractor shall allow in his Establishment rates for the securing of a suitable water supply, the payment of any connection fee and for any water charges for the duration of the contract.

(b) Power supply for works

The power supply authority is eThekweni Electricity Services Unit. The contractor will be responsible for arranging whatever temporary supplies may be required and he will be required to bear all costs involved and to pay the ruling tariffs applicable to such supplies.

(c) Ablution facilities

The Contractor shall provide the necessary ablution facilities at the site of the works for the use of his employees. Chemical toilets only will be allowed where temporary facilities have to be provided.

**PS.15 TESTING**

**PS.15.1 Process control**

The Contractor shall arrange for all tests required for process control to be done by a laboratory acceptable to and approved by the Engineer.

The Contractor may establish his own laboratory on site or he may employ the services of an independent commercial laboratory. Whatever method is used, the Contractor must submit the results of tests carried out on materials and workmanship when submitting work for acceptance by the Engineer. The costs for these tests shall be deemed to be included in the relevant rates and no additional payment will be made for testing as required.

**PS.15.2 Acceptance control**

The process control test results submitted by the Contractor for approval of materials and workmanship may be used by the Engineer for acceptance control. However, before accepting any work, the Engineer may have further control tests carried out by a laboratory of his choice.

**PS.15.3 Retesting**

The tenderers' attention is drawn to clause AB.6 where it states that the contractor is responsible for the site control testing to confirm that all related site works are in accordance with the specification. Acceptance testing is undertaken by the Roads Department at the discretion of the Engineer after reviewing the results of the control testing.

Should the acceptance tests indicate that the work is not to the specification, the cost of any retest by the Engineer shall be to the Contractor's account. The cost has been determined at **R 1000,00 per set** of tests and shall be deducted from any payment due to the contractor.

**PS.16 NOTICE BOARD**

The notice board layout and colour scheme shall comply with the detail provided as per Annexure C3.6.1.

**PS.17 UNPACKING AND RECONSTRUCTION OF EXISTING RETAINING WALLS**

Where instructed by the Engineer, the contractor shall unpack existing retaining walls to allow for the construction of footpaths or roads and stormwater infrastructure.

The unit of measurement shall be square metre (m<sup>2</sup>) and the rate shall include for unpacking the wall, maintaining the blocks and reconstruction of the wall, where instructed. Concrete, soilcrete, excavations, trimming of embankment, stabilization of the embankment and drainage are measured elsewhere.

**PS. 18 HAULAGE OF MATERIAL**

All haulage under this contract will be considered as freehaul. The contractor is to price accordingly in his rates and no additional payment will be made in this regard.

**PS.19 REMOVAL OF UNWANTED MATERIAL**

The Contractor is responsible for the clearance and removal of all unwanted material arising from the works for the duration of the contract from site handover until completion. No payment will be authorized until all unwanted material resulting from the works has been removed from the site.

The waste must be disposed off at an approved tip-site. The composition of the waste is unknown and the contractor must envisage/expect different types of wastes.

Waste products could include:

Solid Wastes, Gaseous Wastes, Animal by-products, Biodegradable/Organic waste, Biomedical waste Bulky waste, Business waste, Chemical waste, Clinical waste, Commercial waste, Construction and demolition waste, Controlled waste, Consumable waste, Composite waste, Demolition waste, Domestic waste, Electronic waste, Food waste, Green waste, Grey water, Hazardous waste, Household waste, Human waste, Industrial waste, Inert waste, Kitchen waste, Litter, Liquid waste, Medical waste, Metabolic waste, Mixed waste, Municipal solid waste, Packaging waste, Post-consumer waste, Radioactive waste , Recyclable waste, Residual waste, Retail hazardous waste, Sewage, Toxic waste, Uncontrolled waste, Wastewater, etc.

All vegetation, rubble, excavated material and spoil from the clearing and excavations associated with the Works shall be transported and disposed of at an approved tip site. The Contractors attention is drawn to the fact that charges are levied at the Municipal Refuse Tip for the dumping of certain types of material. The Contractor shall therefore make due allowance in his rates for removal to tip to include for the above charges.

**PS.19.1 Penalties For Not Removing Unwanted Material By End Of Work Day**

A penalty of R1000/day shall be to the Contractor's account should he/she not remove and dispose of all unwanted material by the end of the work day's operation.

### **C3.3: STANDARD SPECIFICATIONS**

**C3.3.1** The Specifications on which this contract is based are the eThekiwini Municipality's (City of Durban) Standard Engineering Specifications (hereafter referred to as the Standard Engineering Specifications). This document is obtainable separately, and Tenderers shall obtain their own copies of the applicable Sections.

<b>Part</b>	<b>Description</b>	<b>Date of Issue</b>	
AB	General Specifications	July	1992
B	Site Clearance	March	1990
C	Concrete Work	February	1987
DA	Earthworks: Bulk	January	1985
DB	Earthworks for Pipe Trenches	July	1992
DD	Earthworks for Structures		
EB	Graded Crushed Stone	December	1988
ED	Road Asphalt	July	1992
EF	Kerbs and Haunches	July	1992
EG	Sidewalks, Footpaths and Median Areas	July	1992
EL	Dumprock Subgrade Improvement		
PG	Non Pressure Pipelines and Pc Culverts	July	1992
PH	Manholes and Appurtenant Drainage Works	July	1992
TA	Road Signs	October	1989
TB	Road Markings	October	1989

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### 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 AB	General Specifications
PS B	Site Clearance
PS C	Concrete Work
PS DA	Earthworks: Bulk
PS DB	Earthworks for Pipe Trenches
PS ED	Road Asphalt
PS EF	Kerbs and Haunches
PS EG	Sidewalks, Footpaths and Median Areas
PS F	Protection Works
PS PG	Non Pressure Pipelines and Pc Culverts
PS PH	Manholes and Appurtenant Drainage Works



## PRELIMINARY AND GENERAL SPECIFICATION

### PS.AB.2 Offices for Engineer and Staff

*Replace the existing clause with the following:*

An office with the following requirements must be provided for the Engineer:

- A desk with minimum dimensions of 1.5m x 0.8m and a high back chair.
- A plug point.
- A lockable steel filing cabinet.
- A whiteboard mounted on the office wall with dimensions of 1.8m x 1.2m.

For site meetings, the Contractor is to prepare a meeting area that accommodates a table and eight chairs.

### PS.AB.7 Road Deviations and Traffic Control

#### PS.AB.7.1 Deviations

*Add the following under this section:*

- (a) Deviations required by the Contractor shall comply with the requirements of the Engineer. Details shall be submitted to the Engineer for approval at least two weeks in advance of the date on which it is anticipated that work on the deviation will commence.
- (b) On deviations provided in terms of (a) above, the Contractor shall ensure at all times and during all weather conditions that all temporary surfaces that are intended to carry traffic are in fact trafficable with regard to reasonable standards of safety and comfort. No additional payment shall be made to the Contractor in this regard.
- (c) Unless indicated otherwise, where two-way traffic conditions exist, traffic shall be accommodated in both directions at all times.
- (d) The Contractor shall ensure that the full width of the road is available for traffic during the peak traffic periods (i.e. 07:00 - 08:30 and 16:00 to 17:30).
- (e) At all times signposting shall be as detailed in the part of this document: "Safety in Road Construction".
- (f) In accordance with the Road Traffic Act, only "new style" yellow/black traffic signs may be used at roadworks, and not the "old style" blue/red traffic signs.

### PS.AB.8 De-establishment and Re-establishment of Camp site

The Contractor is responsible for all costs associated with the de-establishment and re-establishment of the camp site, as and when required, and all additional costs related to this move.

The unit of measurement shall be the Sum per move unless otherwise stated.

**PS.B SITE CLEARANCE**

**PS.B.8 Measurement and Payment**

**PS.B.8.13 Removal of reinforced/unreinforced concrete**

*Replace the existing clause with the following:*

The contractor shall demolish reinforced/ unreinforced slabs as directed by the engineer to spoil. The unit of measurement shall be cubic metre (m<sup>3</sup>) and the rate shall include for the demolition of the concrete slab, plant, equipment and labour necessary and spoiling of the material in an approved site.

*Add the following new clause:*

**PS.B.8.24 Removal of informal Retaining structures**

During construction, informal retaining structures (tyres, sandbags, etc) may have to be removed to cater for the construction of new services.

The unit of measurement shall be square metre (m<sup>2</sup>) and the rate shall include for unpacking the retaining structure, stockpiling, disposing off at an approved tip-site, haulage etc. The contractor shall ensure that the embankment will remain safe/stable and does not pose any danger to the community during unpacking of the structure and the construction of the new services.

**PS.C CONCRETE WORKS**

**PS.C.5 Construction**

**PS.C.5.11 Placing of concrete**

*Add the following under this section:*

No concrete is to be placed in any excavation until prior approval has been received from the Engineer or his representative.

**PS.C.8 Measurement and Payment**

*Add the following new clause:*

**PS.C.8.4 Movement Joints for Footpaths**

Movement joints shall be constructed in accordance with the detail on drawing 49287-Sheet 3 of 3 and shall be constructed at 10m centres along the footpath alignment or where directed by the Engineer.

The unit of measurement shall be metre (m) and the rate shall include for all materials (polysulphide sealant, jointex joint filler etc.), labour, equipment etc.

*Add the following new clause:*

**PS.C.8.5 Saw Cut Joints for Footpaths**

Saw Cut Joints shall be constructed on footpaths as instructed by the Engineer. The contractor shall use the type of blade and equipment best suited to the hardness of the concrete, the type of aggregate and the site condition.

The unit of measurement shall be metre (m) and the rate shall include for all materials, labour and plant required. Refer to drawing 49287-Sheet 3 of 3.

*Add the following new clause:*

**PS.DA EARTHWORKS: BULK**

**PS.DA.5 Construction**

**PS.DA.5.2 Excavation of Material from Site**

*Add the following under this section:*

- (a) The material used for fill embankments and for the replacement of unsuitable material shall conform to the definition of "suitable material" as given in clause AB.1. This will apply to imported fill material as well as to material excavated from site.
- (b) Tenderers are reminded that the rates for excavation of material from site (DA.8.3) and imported fill (DA.8.4) include benching where applicable, and therefore the volume of soil excavated for benching purposes is not included in the earthwork quantities but must be allowed for in the relevant rates.
- (c) The nature of the works may require excavation in restricted conditions. No additional payment shall be made for such excavation and the Tenderer shall therefore make due allowance in the rates for Bulk Earthworks for any additional work or hand excavation.
- (d) For measurement and payment purposes, no allowance 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.
- (e) Blasting shall not be carried out without the previous consent of the Engineer. The consent will not be given where in the opinion of the Engineer blasting may give rise to unnecessary risk of damage to surrounding property, and other means of excavation are available to the Contractor. Where consent to blasting is given, such consent shall in no way relieve the Contractor of any liabilities under the contract. The Contractor shall conform to all Government regulations in regard to blasting, handling and storage of explosives.

**PS.DA.8 Measurement and Payment**

*Add the following new clause:*

**PS DA 8.11 Rip and recompact insitu subgrade material**

The unit of measure shall be the cubic metre (m<sup>3</sup>) of material that is ripped/scarified to a depth of 150mm, watered and compacted. The volume will be calculated in accordance with the authorised dimensions of the footpath/road and levelled cross sections.

The tendered rate shall include full compensation for the cost of scarifying/ripping the existing material, to a depth of 150mm, the application of water for compaction, mixing, shaping and compacting the material to the required density and for finishing the layer to the correct level.

**PS.DB EARTHWORKS FOR PIPE TRENCHES**

**PS.DB.5 Construction**

**PS.DB.5.3.2 General**

*Add the following under paragraph (a) of this section:*

All trenches with a depth exceeding 1.5m shall be fully shored and the contractor is to include for this in his rates. Details of the proposed shoring shall be supplied to the Engineer at least two weeks before the operation commences. During the backfilling, the sides of the trench including the road/footpath layers above any over-excavated sections shall be cut back to a point behind the over-excavation. The cutting back of the trench sides shall be to the Contractor's account and payment for the excavation through road hardening, and reinstatement shall be based on the widths given in clause DB.8.3.3.

**PS.DB.8 Measurement and Payment**

**PS.DB.8.5 Excavation and Backfilling in All Materials**

*Replace Item "(8)" with the following:*

disposing of surplus material due to bulking, displacement by the pipe and a surplus resulting from importation of suitable backfill/bedding material as well as the disposal of any unsuitable material encountered within the trench. This shall also apply to any extra over payments relating to this clause.

**PS.ED ROAD ASPHALT**

*Replace the following Items within Part ED: "Road Asphalt"*

**PS.ED.1 Definitions**

The following definitions and abbreviations shall be used throughout the specifications: -

NMPS	Nominal maximum particle size
Sa	Sand skeleton mix
St	Stone skeleton mix
SMA	Stone mastic asphalt
EME	Enrobé à module élevé
UTFC	Ultra-thin friction course
WMA	Warm mix asphalt
BRASO	Bitumen rubber semi-open graded asphalt
S	Standard traffic and speed conditions
H	Heavy traffic and speed conditions

V	Very heavy traffic and speed conditions
E	Extreme traffic and speed conditions
R	Permanent deformation (Rutting) foremost consideration in mix
F	Fatigue foremost consideration in mix

**Table 1 – Definitions**

**PS.ED.1.1 Mix Nomenclature (or Mix Description)**

The following nomenclature shall be used for mixes used for the eThekweni Municipality.

A mix shall be defined from amongst the following mix types:-

- Sa
- St (currently not applicable for eThekweni roads unless as a special mix (e.g. SMA, EME))
- Special Mixes
  - SMA
  - EME
  - UTFC
  - BRASO
  - Proprietary Mixes

The mix type shall be further defined by the following :-

- the typical conditions under which a mix is to be used (type Sa mixes only)
  - S Standard conditions
  - H Heavy conditions
  - V Very heavy conditions
  - E Extreme conditions

The criteria for these conditions is based on the binder grade selection procedure outlined in Sabita Manual 35 (reproduced below).

Design Traffic (10 <sup>6</sup> E80's)	Traffic Speed (km/h)		
	< 20	20 – 80	> 80
< 0.3	S	S	S
0.3 – 3	H	S	S
> 3 - 10	V	H	S
> 10 – 30	E	V	H
> 30 – 100	E	E	V
> 100	E	E	E

**Table 2 – Traffic Loading Conditions**

- the NMPS of the mix
  - Permitted NMPS sizes are noted in Table 4.
- the critical failure consideration for the mix (optional for Type Sa and EME mixes)
  - F fatigue
  - R permanent deformation (rutting)
- The class of the mix (EME mixes only)
  - Either class 1 or class 2.

The mix types shall thus be labelled as follows:-

- “Mix type”-“Condition”-“NMPS”-“Failure Mode”-(Mix Class)”

- Examples
  - Sa-H14F  
This is a Sand Skeleton mix for use under Heavy traffic loading and speed conditions with Nominal Maximum Particle Size of 14.0mm that should lend itself to maximizing fatigue resistance.
  - EME-14R(2)  
This is an EME class 2 mix with Nominal Maximum Particle Size of 14.0mm designed for resistance to permanent deformation (rutting).
  - SMA-14  
This is an SMA mix with Nominal Maximum Particle Size of 14.0mm.

Note that the mixes SMA, EME, UTFC and BRASO (etc.) will actually fall into either the type Sa or St mixes. However, these mixes (like the proprietary mixes) are special mixes with very specific characteristics and associated design approaches and are thus specifically and separately named.

**PS.ED.2 Mix Design**

Mix designs are to be conducted in accordance with the documents noted in Table 4. Further reference should be made to Sabita Manual 24 “User Guide for the Design of Asphalt Mixes” as may be required.

Sand Skeleton Mixes	TRH 8/Sabita Manual 35	Design and use of asphalt in road pavements
Stone Mastic Asphalt (SMA)	TRH 8/Sabita Manual 35	Design and use of asphalt in road pavements (Appendix B)
Enrobé à Module Élevé (EME)	Sabita Manual 33	Design procedure for high modulus asphalt (EME)

**Table 3 – Asphalt Mix Design Documents**

Asphalt mixes shall be selected from the list of permitted mixes noted in Table 4. Mix requirements will be detailed in the project specification in terms of: -

- Mix description (as outlined in clause 4.2 Mix Nomenclature)
- The required level of design.

Mix Nomenclature	NMPS (mm)			
	7	10	14	20 <sup>1</sup>
Sa-S	X	X	X	
Sa-H		X	X	X
Sa-V			X	X
Sa-E			X	X
SMA		X	X	
EME			X	X
Proprietary and Other Mixes	To hold Agrément South Africa certification or subject to approval by Roads Provision. NMAS as per Manufacturer’s specification.			

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**Table 4 – eThekweni Asphalt Mixes**

Special asphalt mixes (e.g. UTFC, proprietary mixes, etc.) shall hold Agrément South Africa fit-for-purpose certification. Alternatively, the use of a particular mix shall be subject to the approval of the Roads Provision Department.

**PS.ED.2.1 Materials**

Materials shall conform to the requirements and recommendations outlined in Sabita Manual 35.

**PS.ED.2.1.1 Binders and Aggregates**

The specifications pertinent to specific raw materials should conform to accepted industry standards and shall be documented in the Asphalt Mix Design Report. These specifications shall be used for quality management purposes. Any deviations from standard industry practice as outlined in Sabita Manual 35 shall be documented in the Asphalt Mix Design Report and shall specifically be brought to the attention of the Roads Provision Department.

**PS.ED.2.1.2 Reclaimed Asphalt.**

The use of reclaimed asphalt (RA) is permitted subject to the limitations noted under the specific mix types. The inclusion of RA in a mix design shall be documented in the Asphalt Mix Design Report.

The incorporation of reclaimed asphalt into the mix should be guided by Sabita Manual 36/TRH 21 "Use of reclaimed asphalt in the production of asphalt".

**PS.ED.2.1.3 Warm Mix Asphalt Technologies/Additives**

The use of Warm Mix Asphalt (WMA) is permitted (and preferred) and shall be documented in the Asphalt Mix Design Report. The use of Warm Mix Asphalt should be guided by Sabita Manual 32 "Best practice guideline for warm mix asphalt".

**PS.ED.2.2 Mix Design**

No mixes may be supplied without submission of an Asphalt Mix Design Report and acceptance thereof by the Roads Provision Department.

The mix design process shall consist of a laboratory design, a plant trial and (if required) a paved trial for every mix supplied.

**PS.ED.2.2.1 Specific Mix Design Requirements**

**a) Sand Skeleton Mixes**

The reclaimed asphalt (RA) content of sand skeleton mixes shall be limited to 50% maximum.

The following additional requirements and guidelines should be taken into consideration for any particular level of mix design: -

**b) Level IA Design**

The design should also take into consideration the recommendations of Sabita Manual 27 “Guidelines for thin hot mix asphalt wearing courses on residential streets”.

Further to Sabita Manual 35 Table 23 (VMA), the VMA for the 7.1mm NMPS mix shall be 16% (target design voids 4%).

Mixes shall comply with the requirements noted in Tables 22, 23 and 24 of Sabita Manual 35. Mixes shall further comply with the requirements noted Table 5 (below).

Test	Requirement	Test Method / Reference
Filler/Binder Ratio	1.3 max.	Sabita Manual 35 cl. 4.3.4 Note 4.3
Binder Film Thickness (µm)	7.5 min.	Sabita Manual 35 cl. 5.5.1(4)(a)
Modified Lottman (TSR)	0.8 min.	ASTM D 4867 M
Air Permeability (@ 7% Voids) (x 10 <sup>-8</sup> cm <sup>2</sup> )	1.0 max.	TRH 8 App C
Marshall Stability, Flow and Quotient	Report	SANS 3001-AS2

**Table 5 – Empirical Performance Tests Level 1A**

#### c) Level IB Design

A maximum of 10% natural sand (by mass of mix aggregates) may be used in sand skeleton mix types designed to Level IB.

Although Sabita Manual 35 requires the use of a gyratory compactor for laboratory mix evaluation, the use of Marshall compaction will however be permitted. Gyratory compaction is nevertheless the preferred method of compaction. Briquettes for mix evaluation shall be compacted at the compaction effort noted in Table 6.

Gyratory	Marshall
AASHTO T 312	SANS 3001 AS1
N <sub>design</sub>	No. Blows
75	75+75

**Table 6 – Volumetric Compaction Requirements**

The empirical performance requirements for Level IB mixes shall be as indicated in Sabita Manual 35 save that the mix durability requirements noted in Table 28 of Sabita Manual 35 shall be altered to reflect a minimum Modified Lottman value of 0.8 for both Base and Wearing Course mixes.

#### d) Level II Design

Although Sabita Manual 35 recommends the use of a Level III design for traffic loading in excess of 30 million E80's, within an urban environment there are a number of roads falling within this traffic loading scenario but for which a Level III design is not warranted. The Level II design approach is thus acceptable for roads with this higher traffic loading. However, the laboratory compaction will be as noted in Table 7.



Design Traffic (E80's)	N <sub>design</sub>
3 to 30 million	100
> 30 million	125

**Table 7 – Level II Laboratory Compaction Requirements**

Therefore, in order to identify the requisite compaction parameters for a particular E80 design traffic loading, the Level II design will be labelled in the project specification as follows :-

- Level II(A)  
Level II(A) will cater for an E80 design traffic loading of less than or equal to 30 million E80's.
- Level II(B)  
Level II(B) will cater for an E80 design traffic loading of greater than 30 million E80's.

The mix durability requirements noted in Table 28 of Sabita Manual 35 shall be altered to reflect a minimum Modified Lottman value of 0.8 for both Base and Wearing Course mixes.

**e) Level III Design**

Level III designs (if required) will only be conducted on roads with a design traffic loading of greater than 30 million E80's in line with the recommendations of Sabita Manual 35.

The mix durability requirements noted in Table 28 of Sabita Manual 35 shall be altered to reflect a minimum Modified Lottman value of 0.8 for both Base and Wearing Course mixes.

**f) Stone Mastic Asphalt Mixes**

Stone Mastic Asphalt (SMA) mix designs are to be conducted in accordance with the guidelines set out in Sabita Manual 35 "Design and use of asphalt in road pavements – Appendix B".

SMA mixes are permitted for two NMPS:-

- 10mm
- 14mm

The mix design should ensure that the fine aggregate mortar should not induce dilation of the coarse aggregate stone skeleton after compaction on site thereby ensuring coarse aggregate interlock. Coarse aggregate for both NMPS shall be defined as all material retained on the 5mm sieve.

The use of "natural" sand and reclaimed asphalt (RA) shall not be permitted in SMA mixes.

The stability of the fine aggregate mortar will require enhancement with either cellulose fibre or through modification of the binder or both.

The SMA mix shall also conform to the requirements in Table 8.

Design Air Void Content (%)	4.0
Voids in Mineral Aggregate (VMA) (Min.)	17
Modified Lottman (TSR) (Min.)	0.7
Schellenberg Drainage Test (%) (Max.)	0.3
Air Permeability (@ 7% Voids) ( $\times 10^{-8}\text{cm}^2$ ) (Max.)	1.0

$VCA_{mix}^1$ (%)	$< VCA_{drc}^2$
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**Table 8 – SMA Mix Specifications**

Note 1.  $VCA_{mix}$  is the voids in coarse aggregate (>5mm) of the compacted mix.

Note 2.  $VCA_{drc}$  is the voids in coarse aggregate (>5mm) of the dry rodded coarse aggregate.

SMA mixes shall also conform to the permanent deformation requirements noted in Table 33 of Sabita Manual 35.

The mix design document should clearly document the process followed to meet the desired SMA characteristics.

**g) Enrobé à Module Élevé (EME) Asphalt Mixes**

EME mix design are to be conducted in accordance with the guidelines set out in Sabita Manual 33 “Interim design procedure for high modulus asphalt”.

EME mixes are permitted for two NMPS:-

- 14mm
- 20mm

The use of “natural” sand shall not be permitted in EME mixes.

The reclaimed asphalt (RA) content of EME mixes shall be limited to 20%.

The mix design document should clearly document the process followed to meet the desired EME characteristics.

**h) Warm Mix Asphalt**

Should a Warm Mix Asphalt be used in the mix, the mix design shall incorporate the use of such a technology/additive in the mix design process. Any consequential deviations from the guidelines set out in Sabita Manual 35 “Design and use of asphalt in road pavements – Appendix B”, Sabita Manual 33 “Design procedure for high modulus asphalt (EME)” or standard industry practice shall be brought to the attention of the Roads Provision Department and shall be documented in the mix design report.

The use of Warm Mix Asphalt should be guided by Sabita Manual 32 “Best practice guideline for warm mix asphalt”.

**i) Asphalt Mix Design Report**

Once satisfied that the laboratory design, the plant and (if required) paved trials meet the specified mix requirements, the Manufacturer shall submit an Asphalt Mix Design Report recording the essential information relating to the design. This shall be recorded on the relevant COTO “D3” form **and shall be supplemented with a report documenting any further information required in terms of this Technical Note.**

The final mix parameters (i.e. the Job Mix Formula (JMF)) will be based on the test results for the plant trial and will be used for production quality control and acceptance purposes.

The Manufacturer shall include the following “mix characteristics” as a part of his Mix Design Report submission: -

- A unique identification number for every mix design
- The use of any Warm Mix Asphalt technology/additive. The Manufacturer shall document the name and type of technology/additive to be used together with any other technical information pertinent to its use in the asphalt mix. The Manufacturer shall

further comment on any modifications to the “standard” mix design process consequential to the use of the Warm Mix Asphalt technology/additive.

- The recommended maximum mix temperature in the truck at the exit from the plant (in line with industry norms)
- The recommended minimum mix temperature in the truck on delivery (in line with industry norms)
- The minimum recommended mix temperature for compaction of the mix on site (in line with industry norms)
- Comment on any asphalt mix characteristics that should be brought to the attention of the asphalt paving/laying team on site (e.g. EME asphalt mix longitudinal joint construction)

Should substantial changes to material types and properties occur, the asphalt mix designs for affected mixes shall be reviewed and where necessary re-constituted and resubmitted for approval.

#### **j) Mix Design Acceptance Process**

It is not necessary for a new mix design to be compiled for every project. The Manufacturer may supply proof that an existing mix design is still current and has already been accepted by the Roads Provision Department. In the case of the submission of a new mix design, the Manufacturer shall submit his proposed mix design to the Roads Provision Department for acceptance of the mix design at least 2 weeks prior to initial supply of any particular mix.

Upon request by the Roads Provision Department, the Manufacturer shall supply samples of raw materials and any other relevant information as may be requested to facilitate acceptance of the mix design.

Once satisfied with the content of the mix design, the Senior Manager: Pavement & Geotechnical Engineering (or his nominee) will give signed acceptance for the mix.

#### **k) Mix Design Review**

Every mix design is to be reviewed at least annually. The review should include verification of the asphalt mix through testing of basic raw material properties and mix characteristics.

Should the binder, aggregate or mix characteristics of any particular mix differ significantly from the characteristics obtained in the initial mix design, then the mix shall be re-designed to meet the relevant volumetric and performance characteristics. In the event of a dispute over the significance of a particular characteristic, the Manufacturer shall undertake the appropriate performance test to prove compliance with the specification.

### **PS.ED.2.3 Asphalt Production**

#### **PS.ED.2.3.1 Mixing Plant.**

Asphalt shall be manufactured through a plant capable of meeting the full design requirements of any particular mix. The plant shall be operated and kept in a well maintained condition as directed by the Quality Management System. Records of such maintenance shall be made available on request. The plant shall be approved by the Roads Provision Department.

Sufficient reserves of raw materials shall be held at the plant for all mixes being supplied to the eThekweni Municipality to prevent delays in construction projects. It will be incumbent on

the plant manager to ascertain demand and time frames from Contractors or Municipal Departments to whom they are supplying mix.

All cold aggregates shall be stockpiled and protected in a manner that precludes the possibility of aggregate contamination from adjacent stockpiles, from the underlying ground or from weather conditions.

Binder storage tanks shall be provided and managed to ensure that there is no risk of contamination of different binder types. Binder storage tanks shall be heated and the binder circulated in such a manner that the binder is not degraded during heating. The heating and circulation of binders should conform to the recommendations of the binder supplier.

The plant and its operation shall conform to the requirements of the following legislation: -

- Occupational Health and Safety Act
- National Environmental Management : Air Quality Act

### **PS.ED.2.3.2 Quality Control.**

The Manufacturer shall have an active Quality Management System in place compliant with the quality processes outlined in Sabita Manual 35. The quality of mix produced shall be monitored as directed in the Manufacturer's Quality Management System. The asphalt mix constituents (i.e. binder and aggregates), and the asphalt mix produced shall be checked for compliance and consistency on a regular basis through routine process control testing. The results of such testing shall be made available for review by the Roads Provision Department at all times.

#### **a) Quality Management System**

The Quality Management System (QMS) should include documentation outlining the asphalt mix design process, the annual mix review process and processes pertaining to delivery of the asphalt mix.

The QMS shall also include any agreed frequency of split sampling of either raw mix constituents or asphalt mixes (prepared as agreed) with the Roads Provision Department. Such samples are to be delivered to the Roads Provision's Bitumen and Asphalt Laboratory located at the Roads Provision Asphalt Plant in uMhlathuzana Road. All samples shall be adequately and uniquely labeled so that the location of any related mix is readily traceable.

The QMS shall also document the processes to be followed whenever a deviation from specifications is identified. The Manufacturer shall provide full rectification of any work undertaken with such asphalt mix or materials.

The plant laboratory should preferably be SANAS accredited for the tests undertaken. However, should the laboratory not be SANAS accredited, the laboratory will need to be approved by the Roads Provision Department.

In line with these processes, the QMS should include as a minimum the material characterisation tests included in Table 10 for every type of mix supplied.

Quality Control Tests		Minimum Test Frequency	
Binder	Penetration		Every batch delivered
	Softening Point		Every batch delivered
	SA PG Binder Classification		1 per 6 months
Aggregate	Coarse Aggregate	Aggregate Grading	Every batch delivered
		Flakiness Index (Max.)	1 per month
		Aggregates BRD, ARD and Water Absorption	1 per month
		ACV, 10%FACT	1 per month
	Fine Aggregate	Polished Stone Value (Coarse Aggregates)	1 every year per stone type and source
		Aggregate Grading	Every batch delivered
		Aggregates BRD, ARD and Water Absorption	1 per month
		Sand Equivalent (Fine Aggregates)	Every batch delivered
Asphalt Mix	Temperature of Mix	In the truck at the exit weighbridge	Every load
		In the truck at the point of delivery	Every load
	Binder Content		1 test per 200 tons of output or part thereof per day
	Extracted Mix Aggregate Grading Analysis		1 test per 200 tons of output or part thereof per day
	Voids Analysis (Bulk Relative Density and Maximum Theoretical Relative Density)		1 test per 200 tons of output or part thereof per day

**Table 9 – Test Frequencies**

**b) Test Methods**

The test methods used in the design of asphalt mixes and quality management in the production of asphalt should be in line with those noted in Sabita Manual 35. However, the determination of the bulk density of asphalt mix in terms of SANS 3001-AS10 shall be modified as follows.

**i. Asphalt Briquette/Core Bulk Density Test Method**

The bulk density of compacted asphalt mixtures shall be determined in accordance with SANS 3001-AS10:2011 Edition 1 save that the measurement of the volume of the specimen as stated in clause 6.2 shall not apply.

For general measurement of volume for non-absorptive mixes (generally VIM < 6%), the

method outlined in clause 6.4 of SANS 3001-AS10 shall be used.

However, for mixes suspected of being absorptive/porous, or in the event of a dispute over mix density, briquette or core density shall be determined by either the paraffin wax coating method (ASTM D 1188) or the automatic vacuum sealing method (ASTM D 6752).

The density of porous mixtures (generally VIM >15%) shall be measured in accordance with SANS 3001-AS10 with the measurement of volume as specified in clause 6.6.

**c) Process Control**

The temperature of the mix taken in the truck at the exit to the plant shall not exceed the value stated in the mix design. Furthermore, the temperature of the mix taken in the truck on delivery shall not be less than the value stated in the mix design.

Quality checks on mix production will be based on the Job Mix Formula (JMF) for the approved mix design. Tolerances on variation from the JMF are given in Table 10.

		Permissible Deviation from JMF (%)		
		Individual Results	Average of 3 Consecutive Results	
Aggregate Fraction - Grading	Sieve Size (mm)	28	± 5.0	± 3.0
		20	± 5.0	± 3.0
		14	± 5.0	± 3.0
		10	± 5.0	± 3.0
		7.1	± 5.0	± 3.0
		5	± 4.0	± 2.5
		2	± 4.0	± 2.5
		1	± 4.0	± 2.5
		0.6	± 4.0	± 2.5
		0.3	± 3.0	± 2.0
		0.15	± 2.0	± 1.5
	0.075	± 1.0	± 1.0	
Voids in the Mix (@ design compaction)		± 1.5	± 1.0	
Binder Content	General Mixes (Sa, SMA, EME, etc.)	± 0.3	± 0.2	
	Gap Graded & Bitumen Rubber	± 0.4	± 0.3	

**Table 10 – Job Mix Formula Tolerances**

All process control testing undertaken by the Manufacturer shall be signed off by the responsible person identified in the QMS and shall be made available to the Roads Provision Department.

All process control test results shall be referenced back to the unique Mix Design reference number.

Mix extraction gradings shall be made available within 48 hours of the asphalt being manufactured.

Binder content and void content shall be made available by 08:00am on the day following manufacture of the asphalt.

This specification covers the manufacture of hot/warm mix asphalt. There are a total of 15 hot/warm asphalt mixes covered in this specification:-

- 9 sand skeleton mixes
  - Designated “Sa”
  - 3 NMAS mix sizes
    - “10”, “14” mm and “20” mm
  - For use in :-
    - Standard traffic loading and speed conditions (“S”)
    - Heavy traffic loading and speed conditions (“H”)
    - Very Heavy traffic loading and speed conditions (“V”)
    - Extreme traffic loading and speed conditions (“E”)
- 4 SMA (stone skeleton) mixes
  - Designated “SMA”
  - 2 NMAS mix sizes
    - “10” mm and “14” mm
  - For use in :-
    - Very Heavy traffic loading and speed conditions (“V”)
    - Extreme traffic loading and speed conditions (“E”)
- 2 EME mixes
  - Designated “EME”
  - 2 NMAS mix sizes
    - “14” mm and “20” mm
  - For use in :-
    - Extreme traffic loading and speed conditions (“E”)

(An “Sa-H14” mix is thus a Sand Skeleton mix of Nominal Maximum Aggregate Size 14.0mm to be used in Heavy traffic loading and speed conditions. A description of every mix required can be found in Table 5).

Reference to the following standard specifications, guideline documents and codes of practice (Table 1) shall be deemed to be references to the latest issues of the relevant documents:-

SANS 9001	Quality management systems – Requirements
SANS 4001-BT1	Penetration grade bitumen
SANS 4001-BT3	Anionic bitumen road emulsions
SANS 4001-BT4	Cationic bitumen road emulsions
SANS 1083	Aggregates from natural sources
SANS 824	Lime for soil stabilization
SANS 50197-1	Cement – Part 1:Composition, specification and conformity criteria for common cements
SANS 1491:Part 1	Portland cement extenders - Part 1:Ground granulated blast-furnace slag
SANS 1491:Part 2	Portland cement extenders - Part 2:Fly ash
Act 85 of 1993	Occupational health and safety act
Act 39 of 2004	National environmental management :

	Air quality act
Sabita Manual 5	Guidelines for the manufacture and construction of hot mix asphalt
Sabita Manual 27	Guidelines for thin hot mix asphalt wearing courses on residential streets
Sabita Manual 32	Best practice guideline for warm mix asphalt
Sabita Manual 33	Interim design procedure for high modulus asphalt
Sabita Manual 35	Design and use of asphalt in road pavements
Sabita TG1	The use of modified bituminous binder in road construction
TRH 21	Hot mix recycled asphalt

**Table 1 Reference and Standard Specifications**

**PS.ED.3 Materials**

**PS.ED.3.2 Bituminous Binder**

Binder selection shall be guided by both the asphalt mix requirements outlined in section 4 and the South African PG Binder Classification System.

Straight run bituminous binders shall conform to SANS 4001-BT1 and shall be selected from penetration grades 10/20, 15/25, 35/50 or 50/70.

Modified binders shall be selected from A-E1, A-E2, A-P1 A-H1 or A-H2 and shall comply with the requirements of Tables 7 and 9 respectively from the Sabita Technical Guideline TG1.

The binder penetration grade, the type of modifier used (as applicable) and the SA PG Binder Classification shall be indicated in the mix design report.

**PS.ED.3.3 Coarse Aggregate**

Coarse aggregate shall comprise single sized, clean, unweathered material and shall be free from organic matter and other deleterious substances. The aggregate shall conform to the requirements of Table 2 “Aggregate Quality Requirements”. The grading and dust content of the aggregate shall comply with the requirements of Table 4302/8 of the COLTO Standard Specifications for Road and Bridge Works for State Road Authorities (1998).

**PS.ED.3.4 Fine Aggregate**

Fine aggregate shall consist of the mineral matter passing the 5,00 mm sieve and retained on the 0,075 mm sieve and shall consist predominantly of freshly crushed aggregate or clean, natural hard sand. Fine aggregate shall conform to the requirements of Table 2 “Aggregate Quality Requirements”. Material derived from the mechanical crushing or milling of rock shall be well graded between 5.0mm and 0.075mm. The grading and dust content of material derived from the natural disintegration of rock shall comply with the requirements of SANS 1083 Table 1 (Column 2). The use of natural sands is limited or prohibited in certain asphalt



mixes. These limitations are quantified under section 3.2.5 “Aggregate Blends”.

**PS.ED.3.5 Filler**

Filler shall comprise the material predominantly passing the 0.075 mm sieve and shall consist of either inert material (crushed rock fines) or an approved active filler or a combination thereof. Active filler shall consist of either milled blast furnace slag, hydrated lime, portland cement, fly-ash or a combination of these materials. Active fillers shall conform to the relevant SANS specification for the particular material. Filler shall also conform to the requirements of Table 2 “Aggregate Quality Requirements”.

The permissible active filler content in any asphalt mix shall be no more than 2% by mass of mix aggregates.

**PS.ED.3.7 Reclaimed Asphalt**

Fragments of asphalt obtained from the road or from stockpiles of discarded asphalt may be used in the manufacture of asphalt mixes. Reclaimed asphalt (RA) shall be characterized and processed in accordance with the recommendations set out in TRH 21 “Hot mix recycled asphalt”. The RA content of asphalt mixes shall be limited as noted in Table 3.

Mix Type	Maximum RA Content
Sand Skeleton Mixes	50%
SMA	0%
EME	20%

**Table 3 Permissible RA Content**

**PS.ED.3.8 Aggregate Blends**

Aggregates shall be blended in such a manner so as to produce an asphalt mix conforming to the requirements of each particular mix type and nominal maximum particle size. The required aggregate blending will be achieved through the mix design process.

**A. Sand Skeleton Mixes**

Aggregate gradings are required for 3 nominal maximum particle size (NMPS) mixes (ie. 10mm, 14mm and 20mm). The aggregate grading for these mixes shall be guided by the control points in Table 4.

Sieve Size (mm)	Percent Passing					
	Nominal Maximum Particle Size (NMPS)					
	10mm		14mm		20mm	
	Min.	Min.	Min.	Max.	Min.	Max.
37.5						
28					100	
20			100		80	100
14	100		80	100		85
10	80	100		85		
7.1		85				
5						
2	32	67	28	58	23	49

1						
0.6						
0.3						
0.15						
0.075	2	10	2	10	2	8

**Table 4 Sand Skeleton Asphalt Mix Grading Control Points**

A maximum of 10% natural sand (by mass of mix aggregates) may be used in sand skeleton mix types Sa-H, Sa-V and Sa-E.

The reclaimed asphalt (RA) content of sand skeleton mixes shall be limited to 50% maximum as noted in Table 3.

**B. Stone Mastic Asphalt (SMA) Mixes**

Stone Mastic Asphalt is a stone skeleton mix type. The aggregate grading for SMA mixes shall be guided by the requirement that the stone skeleton coarse aggregate structure is not diluted by the mastic in the voids of the stone skeleton structure. The use of “natural” sand shall not be permitted in SMA mixes.

The use of reclaimed asphalt (RA) shall not be permitted in SMA mixes.

SMA grading blends are required for two SMA NMPS mixes :-

- 10mm
- 14mm

**C. Enrobé à Module Élevé (EME) Mixes**

EME aggregate gradings shall be guided by the requirements outlined in Sabita Manual 33 “Interim design procedure for high modulus asphalt”.

The use of “natural” sand shall not be permitted in EME mixes.

The reclaimed asphalt (RA) content of EME mixes shall be limited to 20% maximum as noted in Table 3.

EME grading blends are required for two EME NMPS mixes:-

- 14mm
- 20mm

**D. Warm Mix Asphalt Technologies/Additives**

Warm Mix Asphalt (WMA) technologies/additives shall conform to the appropriate requirements outlined in SABITA Manual 32 “Best practice guideline for warm mix asphalt” and shall be approved prior to use. The contractor shall provide the Roads Provision Department with the name and type of technology/additive to be used together with any other technical information pertinent to its use in the asphalt mix.

Aggregate Property		Coarse Aggregate		Fine Aggregate (Crushed Rock)	Fine Aggregate (Natural Sand) <sup>1</sup>	Combined Total Fine Aggregate	Inert Filler	Active Filler
Parent Material		Clean unweathered crushed rock		Clean unweathered crushed rock	Clean natural fines not obtained from crushed parent rock	-	Unweathered rock dust	Approved commercial non-plastic material
		Sand Skeleton Mixes (Sa, EME)	Stone Skeleton Mixes (SMA)					
Grading		COTO Draft Standard Specifications for Road and Bridge Works for State Road Authorities		Well graded between 5.0mm and 0.075mm sieves	SANS 1083 Table 1 (Column 2)	Passing 5.0mm sieve	P <sub>0.075</sub> > 75%	P <sub>0.075</sub> > 75%
ACV (%) (max.)		25	21	25 (Parent rock)	-	-	-	-
10% FACT (Dry) (Min.)		160 kN	210 kN	-	-	-	-	-
10%FACT (Wet) (Min.)		75% of 10% FACT (Dry) Value	75% of 10% FACT (Dry) Value	-	-	-	-	-
Flakiness Index (Max.)	20mm & 14mm Aggregate	25		-	-	-	-	-
	10mm & 7.1mm Aggregate	30		-	-	-	-	-
	SMA Mixes	20		-	-	-	-	-
Polished Stone Value (Min.)		50		-	-	-	-	-
Water Absorption (%) (Max.)		1.0		1.5	1.5	1.5	-	-
Sand Equivalent (%) (Min.)		-		40	River	Pit	50	-
					80	50		
Methylene Blue Adsorption Value (Max.)		-		0.7	0.7	0.7	-	-
Permissible Content (% by Mass of Mix Aggregates)		-		-	0 - 10	-	-	0 - 2

1. Natural sand is not permitted in SMA mixes.

**Table 2 Aggregate Quality Requirements**

**PS.ED.4 Plant**

**PS.ED.4.1 Mixing Plant**

Asphalt shall be manufactured through a batch-mixing or drum-mixing plant (approved by the Roads Provision Department) such that the requirements of this specification can be met in full. The plant shall be operated and kept in a well maintained condition as directed by the Quality Management System. Records of such maintenance shall be made available on request.

All cold aggregates shall be stockpiled in a manner that precludes the possibility of aggregate contamination. At the very least aggregate stockpiles shall be physically separated on concrete slabs. Undue wetting/saturation of (particularly fine) aggregates shall also be prevented through covering (particularly fine) aggregate stockpiles with reinforced waterproof covers at all times when mixing is not in progress. Natural sand aggregates shall be pre-screened through a 13 mm screen before being fed into the cold feed hoppers.

Sufficient binder storage tanks shall be provided to ensure that adequate reserves are maintained for each binder type held without risk of contamination of binders. Binder storage tanks shall be heated in such a manner that the binder is not degraded during heating. The tanks shall also incorporate a circulating system for the binder.

The plant control panel shall enable the plant operator to have simultaneous view of the critical components of the plant inclusive of :-

- Binder storage temperature
- Cold hopper feed settings
- Hot aggregate bin masses (as appropriate)
- Binder feed rate
- Plant speed (as appropriate)
- Mixing temperature

The plant and its operation shall also conform to the requirements of the following legislation:-

- Occupational Health and Safety Act
- National Environmental Management : Air Quality Act

**PS.ED.4.4 Quality Control**

The quality of mix produced shall be monitored as directed in the contractor's Quality Management System. The asphalt mix constituents (i.e. binder and aggregates), and the asphalt mix produced shall be checked for compliance and consistency on a regular bases through routine process control testing. The results of such testing shall be available for review by the Roads Provision Department at all times.

**A. Quality Management System**

The Quality Management System (QMS) should include documentation outlining the asphalt mix design process, the annual mix review process and processes pertaining to delivery of the asphalt mix.

The QMS shall also include any agreed frequency of split sampling of either raw mix

constituents or asphalt mixes (prepared as agreed) with the Roads Provision Department. Such samples are to be delivered to the eThekweni Municipality's Bitumen and Asphalt Laboratory located at the Roads Provision Asphalt Plant in uMhlathuzana Road. All samples shall be adequately and uniquely labeled so that the location of any related mix is readily traceable.

The QMS shall also document the processes to be followed whenever a deviation from specifications is identified. The Contractor shall provide full rectification of any work undertaken with such asphalt mix or materials.

Where applicable, testing is to be conducted using the SANS 3001 series of test methods.

The plant laboratory should be SANAS accredited for the tests undertaken. However, should the laboratory not be SANAS accredited, the Roads Provision Department will need to approve the laboratory for any test result to be considered valid.

In line with these processes, the QMS should include as a minimum per mix design, the material characterisation tests included in Table 21.

Quality Control Tests		Minimum Test Frequency	
Binder		Penetration	Every batch delivered
		Softening Point	Every batch delivered
		SA PG Binder Classification	1 per 6 months
Aggregate	Coarse Aggregate	Aggregate Grading	Every batch delivered
		Flakiness Index (Max.)	1 per month
		Aggregates BRD, ARD and Water Absorption	1 per month
		ACV, 10%FACT	1 per month
		Polished Stone Value (Coarse Aggregates)	1 every year per stone type and source
	Fine Aggregate	Aggregate Grading	Every batch delivered
		Aggregates BRD, ARD and Water Absorption	1 per month
		Sand Equivalent (Fine Aggregates)	Every batch delivered
Methylene Blue Adsorption Value		1 per month	
Asphalt Mix	Temperature of Mix	In the truck at the exit weighbridge	Every load
		In the truck at the point of delivery	Every load
		Bitumen Content	1 test per 200 tons of output or part thereof per day
		Extracted Mix Aggregate Grading Analysis	1 test per 200 tons of output or part thereof per day
		Voids Analysis (Bulk Relative Density and Maximum Theoretical Relative Density)	1 test per 200 tons of output or part thereof per day

**Table 21 Test Frequencies**

**B. Process Control**

The mix temperature of the mix taken in the truck at the exit to the plant shall not exceed the value stated in the mix design. Furthermore, the temperature of the mix taken in the truck on delivery shall not be less than the value stated in the mix design.

Quality checks on mix production will be based on the Job Mix Formula (JMF) for the approved mix design. Tolerances on variation from the JMF are given in Table 22.

		<u>Permissible Deviation from JMF (%)</u>		
		<b>Individual Results</b>	<b>Average of 3 Consecutive Results</b>	
<b>Aggregate Fraction Grading</b>	<b>Sieve Size (mm)</b>	28	± 5.0	± 3.0
		20	± 5.0	± 3.0
		14	± 5.0	± 3.0
		10	± 5.0	± 3.0
		7.1	± 5.0	± 3.0
		5	± 4.0	± 2.5
		2	± 4.0	± 2.5
		1	± 4.0	± 2.5
		0.6	± 4.0	± 2.5
		0.3	± 3.0	± 2.0
		0.15	± 2.0	± 1.5
		0.075	± 1.0	± 1.0
<u>Voids in the Mix (@ design compaction)</u>		± 1.5	± 1.0	
<u>Binder Content</u>		± 0.3	± 0.2	

**Table 22 Mix Production Property Limits**

All process control testing undertaken by the contractor shall be signed off by the responsible person identified in the QMS and shall be made available to the Roads Provision Department.

- All process control test results shall be referenced back to the unique Mix Design reference number.
- Mix extraction gradings shall be made available within 48 hours of the asphalt being manufactured.
- Binder content and void content shall be made available by 08:00am on the day following manufacture of the asphalt.

Should the test results not be provided as required or should the results fall outside the applicable specifications, the Roads Provision Department reserves the right to suspend any supply until the results are produced and the mix is accepted.

The Contractor shall be responsible for rectification of any work completed (or partially completed) with asphalt mix that does not meet the specification to the satisfaction of the Roads Provision Department. The processes related to the rectification of such work shall be outlined in the QMS.

**C. Acceptance Testing**

After reviewing the results of the process control testing, the Roads Provision Department may elect to conduct their own testing of the binder, aggregates or asphalt mix produced. A copy of test results will be submitted to the Contractor as soon as they are available.

Should the acceptance tests indicate that the mix (or any part thereof) is not to specification, the cost of any re-test by the Council shall be to the Contractor's account and shall be deducted from any payments owed to the Contractor.

#### D. On Site Mix Problems

The contractor shall also make himself available on site should the workability and compaction of the mix during the paving/laying operation be problematic in order to assist in trouble-shooting the cause of such problems. If the root cause of the problem is related to the asphalt mix design, the contractor shall re-evaluate his mix design to correct such issues and re-submit his mix design for approval.

#### PS.ED.5 Construction

##### PS.ED.5.1 Asphalt Mix Requirements

There are a total of 15 mixes required: -

- 9 sand skeleton mixes (i.e. continuously graded mixes)
- 4 SMA (stone skeleton) mixes
- 2 EME mixes

The required asphalt mixes are depicted in Table 5. However, traffic condition risk profiles require additional higher levels of design for particular mixes (Table 6).

<b>Sand Skeleton Mixes (Sa)</b>		Nominal Maximum Particle Size		
Traffic Condition Category		10.0	14.0	20.0
S	Standard Conditions	Sa-S10	Sa-S14	
H	Heavy Conditions	Sa-H10	Sa-H14	Sa-H20
V	Very Heavy Conditions		Sa-V14	Sa-V20
E	Extreme Conditions		Sa-E14	Sa-E20
Design Level	Mix Types			
Level I	Sa-S10, Sa-S14			
Level II	Sa-H10, Sa-H14, Sa-H20, Sa-V14, Sa-V20			
Level III	Sa-E14, Sa-E20			

<b>Stone Mastic Asphalt (SMA)</b>		Nominal Maximum Particle Size		
Traffic Condition Category		10.0	14.0	20.0
S	Standard Conditions			
H	Heavy Conditions			
V	Very Heavy Conditions	SMA-V10	SMA-V14	
E	Extreme Conditions	SMA-E10	SMA-E14	

<b>Enrobé à Module Élevé (EME)</b>		Nominal Maximum Particle Size		
Traffic Condition Category		10.0	14.0	20.0



S	Standard Conditions			
H	Heavy Conditions			
V	Very Heavy Conditions			
E	Extreme Conditions		EME-E14	EME-E20

**Table 5 Asphalt Mix Requirements**

Traffic Volume (million E80's)	Traffic Condition Category		
	Traffic Speed (km/h)		
	< 20	20 - 70	> 70
< 3	H	S	S
3 to 10	V	H	H
10 to 30	E	V	V
> 30	E	E	E

**Table 6 Traffic Condition Risk Profiles**

The typical use of various mix types and mix NMPS is portrayed in Table 7.

Asphalt Mix Use			Mix Type
Mix Nominal Maximum Particle Size (NMPS)			
10.0	14.0	20.0	
Patching/ Handwork	X	X	Sa
Wearing Course (Paved)	X	X	Sa, SMA
X	Base Course (Paved)		Sa, EME

**Table 7 Typical Mix Use**

**PS.ED.5.8 Asphalt Mix Design**

Asphalt mix designs are required for every mix supplied. Mix designs for each mix type are to be conducted in accordance with the guidelines noted in Table 8.

Sand Skeleton Mixes	Sabita Manual 35	Design and use of asphalt in road pavements
Stone Mastic Asphalt (SMA)	Sabita Manual 35	Design and use of asphalt in road pavements (Appendix B)
Enrobé à Module Élevé (EME)	Sabita Manual 33	Interim design procedure for high modulus asphalt

**Table 8 Asphalt Mix Design Guideline Documents**

The mix design process shall consist of a laboratory design, a plant trial and (if required) a paved trial. Once satisfied that the laboratory design and plant and paved trials meet the specified mix requirements, the contractor is to document the final mix parameters (i.e. the Job Mix Formula (JMF)). These parameters will be used for production quality control and acceptance purposes (see Table 9).

Grading
Voids in the Mix (@ design compaction)
Binder Content

**Table 9 Mix Parameters for the Job Mix Formula**

The contractor shall also include the following “mix characteristics” as a part of his mix design submission:-

- A unique identification number for every mix design
- The binder storage constraints (e.g. maximum storage times, etc.)
- The type of modifier used and the modified binder characteristics to TG1 (if applicable)
- Binder classification in terms of the SA PG Binder Classification System
- Whether the asphalt mix is using a Warm Mix Asphalt technology/additive. The contractor shall comment on any modifications to the “standard” mix design process consequential to the use of the Warm Mix Asphalt technology/additive.
- The maximum mix temperature in the truck at the exit from the plant (in line with industry norms)
- The minimum mix temperature in the truck on delivery (in line with industry norms)
- The minimum recommended mix temperature for compaction of the mix on site (in line with industry norms)
- Comment on any asphalt mix characteristics that should be brought to the attention of the asphalt paving/laying team on site (e.g. EME asphalt mix longitudinal joint construction)

Should substantial changes to material types and properties occur, the asphalt mix designs for affected mixes shall be reviewed and where necessary re-constituted and re-submitted for approval.

**PS.ED.5.8.1 Sand Skeleton Mixes**

Designs of sand skeleton asphalt mixes are to be conducted in accordance with the guidelines set out in Sabita Manual 35 “Design and use of asphalt in road pavements”. Designs are to be conducted in accordance with the appropriate level (i.e. I, II and III) as indicated in Table 5.

**A. Level I Design**

The Level I design is aimed primarily at verification of the mix volumetrics. However, a Level I design is a pre-requisite for the Level II and III designs.

Asphalt mixes shall achieve the volumetric criteria noted in Table 11 at the compaction effort noted in Table 10 (or Tables 14 or 17 as applicable) with a design air void content of 4%.

		Marshall	Gyratory
Traffic	Condition Category	SANS 3001	AASHTO
		AS1	T 312
		No. Blows	N <sub>design</sub>
Standard (S)		75+45	75

**Table 10 Volumetric Compaction Requirements (Level I)**

	NMPS		
	10	14	20
VMA (min.)	15	14	13
VFB	65 - 75	65 - 75	65 - 75

**Table 11 Mix Design Requirements (Level I)**

Asphalt mixes designed at Level I shall meet the requirements for the empirical performance tests noted in Table 12.

Test	Requirement	Test Method
Modified Lottman (TSR)	0.8 min.	ASTM D 4867 M
Indirect tensile strength (@ 25°C)	900 kPa - 1 650 kPa	ASTM D 6931-07
Dynamic creep (@ 40°C)	10 MPa min.	CSIR RMT 004
Water permeability	0.1mm/s - 4 mm/s	EN 12697-19
Air Permeability (@ 7% Voids) (x 10 <sup>-8</sup> cm <sup>2</sup> )	1.0 max.	TRH 8 App C
Marshall Stability, Flow and Quotient	Report	SANS 3001-AS2

**Table 12 Empirical Performance Tests (Level I)**

**A1. Particular Mix Requirements – Mix Sa-S10**

Mix Sa-S10 is to be utilized for lightly trafficked residential streets and patching (handwork). Due attention should be paid to the recommendations of Sabita Manual 27 “Guidelines for thin hot mix asphalt wearing courses on residential streets “ in the design of mix “Sa-S10”. The additional mix characteristics noted in Table 13 are also required.

	NMPS
	10
Filler/Binder Ratio (Max.)	1.3
Binder Film Thickness (Min.)	7.5

**Table 13 Mix Design Requirements**

**B. Level II Design**

The compaction requirements for the Level I design as a precursor to the Level II performance design shall be as noted in Table 14. The design air void content shall be 4%.

Traffic Condition Category	Marshall	Gyratory
	SANS 3001 AS1	AASHTO T 312
	No. Blows	N <sub>design</sub>
Heavy (H) & Very Heavy (V)	-	100

**Table 14 Volumetrics Compaction Requirements (Level II)**

In addition to meeting the mix requirements outlined in the Level I design, the mix design at Level II shall meet the performance characteristics noted in Tables 15 and 16.

Property	Test conditions	Specification	Test method
Workability	Superpave gyratory compactor - air voids after 25 gyrations (max.)	7%	ASTM D 6925
Durability	Modified Lottman test conditions (min.)	0.8	ASTM D 4867M
Stiffness/(dynamic modulus)	Dynamic modulus @ 20°C Loading frequencies of 0.1, 0.5, 1, 5, 10, 25 Hz	Report	AASHTO TP 79
Permanent deformation	HWTT at relevant number of passes	See Table 16	AASHTO T 324
Fatigue	Four-point beam fatigue test @ 10°C, 10Hz to 50% stiffness reduction Strain levels 200, 400, 600µε	Report	AASHTO T 321

**Table 15 Performance Tests (Level II)**

Temperature Zone	6mm Rut	Stripping Point
	No. of Passes (Min.)	
PG 58 Zone	16 000	10 000
PG 64 Zone	20 000	10 000

**Table 16 Hamburg Wheel Tracking Test Specifications**

**C. Level III Design**

The compaction requirements for the Level I design as a precursor to the Level III performance design shall be as noted in Table 17. The design air void content shall be 4%.

Traffic Condition Category	Marshall	Gyratory
	SANS 3001 AS1	AASHTO T 312
	No. Blows	N <sub>design</sub>
Extreme (E)	-	125

**Table 17 Volumetrics Compaction Requirements (Level III)**

In addition to meeting the mix requirements outlined in the Level I design, the mix design at Level III shall meet the performance characteristics noted in Tables 15 and 16 with the additional test temperatures for Stiffness and Fatigue as indicated in Table 18.

Property	Test conditions	Specification	Test method
Stiffness (dynamic modulus)	Dynamic modulus @ -5, 5, 20, 40, 55°C Loading frequencies of 0.1, 0.5, 1, 5, 10, 25 Hz	Report	AASHTO TP 79
Fatigue	Four-point beam fatigue test @ 5, 10 and 20°C, 10Hz to 50% stiffness reduction Strain levels 200, 400, 600µε	Report	AASHTO T 321

**Table 18 Additional Temperatures for Stiffness and Fatigue Tests (Level III)**

**PS.ED.5.8.2 Stone Mastic Asphalt Mixes**

Stone Mastic Asphalt (SMA) mix designs are to be conducted in accordance with the guidelines set out in Sabita Manual 35 “Design and use of asphalt in road pavements – Appendix B”.

SMA mixes are required for two NMPS:-

- 10mm
- 14mm

The mix design should ensure that the fine aggregate mortar should not induce dilation of the coarse aggregate stone skeleton mix after compaction on site thereby ensuring coarse aggregate interlock. Coarse aggregate for both NMPS will be defined as all material retained on the 5mm sieve.

The stability of the fine aggregate mortar will require enhancement with either cellulose fibre or through modification of the binder or both.

The compacted mix should form an impervious surfacing meeting the water permeability and air permeability requirements noted in Table 12.

The SMA mix shall also conform to the requirements in Table 19.

Design Air Void Content (%)	4.0
Bitumen Content (Min.)	6.0
Voids in Mineral Aggregate (VMA) (Min.)	17
Modified Lottman (TSR) (Min.)	0.7
Schellenberg Drainage Test (%) (Max.)	0.3
$VCA_{mix}^1$ (%)	$< VCA_{drc}^2$

Note 1.  $VCA_{mix}$  is the voids in coarse aggregate (>5mm) of the compacted mix.

Note 2.  $VCA_{drc}$  is the voids in coarse aggregate (>5mm) of the dry rodded coarse aggregate.

**Table 19 SMA Mix Specifications**

SMA type “V” and “E” mixes shall be subjected to and shall conform with the performance test requirements noted in Table 15. SMA type “E” mixes shall be subjected to the additional temperature test requirements noted in Table 18.

The SMA-E10 and SMA-E14 mixes shall conform to the Dynamic Modulus and Fatigue testing requirements noted in Table 20 (EME Performance Criteria).

A mix design is required for each SMA mix. The mix design document should clearly document the process followed to meet the desired SMA characteristics.

**PS.ED.5.8.3 Enrobé à Module Élevé (EME) Asphalt Mixes**

EME mix design are to be conducted in accordance with the guidelines set out in Sabita Manual 33 “Interim design procedure for high modulus asphalt”.

EME mixes are required for two NMPS:-

- 14mm
- 20mm

Performance criteria should conform to the requirements for a Class 2 EME as depicted in Table 20.

Property	Test	Method	Requirement (Class 2)
Workability <sup>1</sup>	Gyratory compactor (angle 1.25°), air voids after 45 gyrations	ASTM D6926	≤ 6%
Durability	Modified Lottmann, TSR	ASTM D4867	≥ 0.80
Resistance to permanent deformation	RSST-CH, 55°C, 5000 reps	ASTM T320	≤ 1.1% strain
Dynamic Modulus	Dynamic modulus at 10 Hz, 15°C	ASTM TP62	> 16 GPa
Fatigue	Beam fatigue test at 10 Hz, 10°C, to 50% stiffness reduction Strain levels 200, 400, 600µε	ASTM T321	≥ 1x10 <sup>6</sup> reps @ 260 µε

**Table 20 EME Performance Criteria**

EME type “E” mixes shall further be subjected to and shall conform with the performance test requirements for Stiffness (dynamic modulus), Permanent Deformation and Fatigue noted in Table 15 with the additional temperature test requirements noted in Table 18.

A mix design is required for each EME mix. The mix design document should clearly document the process followed to meet the desired EME characteristics.

**PS.ED.5.8.4 Warm Mix Asphalt**

Should a Warm Mix Asphalt be used in the mix, the mix design shall incorporate the use of such a technology/additive in the mix design process. Any consequential deviations from the guidelines set out in Sabita Manual 35 “Design and use of asphalt in road pavements – Appendix B”, Sabita Manual 33 “Interim design procedure for high modulus asphalt” or standard industry practice shall be brought to the attention of the Roads Provision Department and shall be documented in the mix design report.

#### **PS.ED.5.8.5 Mix Design Approval**

No mixes may be supplied without approval of the mix design by the Senior Manager : Pavement & Geotechnical Engineering, Roads Provision Department.

The contractor shall label every mix design with a unique identification number to facilitate traceability of mixes using the mix design.

#### **PS.ED.5.8.6 Mix Design Approval Process**

The contractor shall submit his proposed mix design to the Roads Provision Department for acceptance of the mix design at least 2 weeks prior to initial supply of any particular mix.

Upon request by the Roads Provision Department, the contractor shall also supply samples of raw materials. The minimum sample sizes shall be 50 kg for each aggregate type/size and 5 litres of bitumen/binder. The contractor shall also supply any other relevant information as may be requested.

Once satisfied with the content of the mix design, the Senior Manager : Pavement & Geotechnical Engineering (or his nominee) will give signed approval for the mix.

#### **PS.ED.5.8.7 Mix Design Review**

Every mix design is to be reviewed at least annually. The review should include verification of the asphalt mix through testing of at least the following characteristics:-

- Binder compliance with SANS 4001-BT1
- Modified binder compliance with TG1
- Binder classification in terms of the SA PG Binder Classification System
- Aggregate and filler compliance with Table 2
- Aggregate BRD, ARD and water absorption
- Mix BRD (@  $N_{design}$ ) and MTRD
- Particular mix type characteristics
  - Sand skeleton mixes
    - Level I design mix volumetric and performance characteristics
      - All requirements in Tables 11, 12 and 13 (as applicable) at the appropriate compaction (Table 10 for Level I designs and Table 14 for Level II and III designs).
    - Level II design mix performance characteristics (Table 15)
      - Workability
      - Durability
    - Level III design mix performance characteristics (Table 15)
      - Workability
      - Durability
  - SMA mixes
    - All requirements in Table 19
    - SMA mix performance characteristics (Table 15)
      - Durability
  - EME mixes
    - Mix performance characteristics (Table 20)
      - Workability
      - Durability

Should the binder, aggregate or mix characteristics of any particular mix differ significantly from the characteristics obtained in the initial mix design, then the mix shall be re-designed to meet the relevant volumetric and performance characteristics. In the event of a dispute over the significance of a particular characteristic, the contractor shall undertake the appropriate performance test to prove compliance with the specification.

#### **PS.ED.8 Measurement and Payment**

##### **PS.ED.8.2 Asphalt Wearing Course**

*Replace the existing clause with the following:*

The unit of measurement shall be tons (t) and the rate shall cover all amendments outlined in PS.ED1, PS.ED3, PS.ED4 and PS.ED5 as well as the remaining standard specifications that form part of Part ED. The rate shall include for all materials, storage, handling, mixing, transporting, sweeping the previous surface where necessary, spreading, jointing, compacting, protection to adjacent concrete kerbing, paving and testing other than those tests carried out by the Engineer in accordance with the specification.

*Add the following new clause:*

##### **PS.ED.8.5 Tack Coat**

The prime coat shall consist of MC-30 bitumen. No tack coat shall be applied during foggy or rainy weather or when, in the opinion of the Engineer, the wind strength is sufficient to interfere with the spray work. The surface of the base shall be cleaned and approval shall be obtained before any further work is done. A light sprinkling of water may be applied to assist penetration of the tack but care shall be taken to avoid saturating the base or subbase, and causing free water to appear on the surface.

The unit of measurement shall be square metre (m<sup>2</sup>) and the rate shall include for the provisions of this clause with an application rate of 0.3ℓ/m<sup>2</sup>.

#### **PS.EG SIDEWALKS, FOOTPATHS AND MEDIAN AREAS**

*Add the following new clause:*

##### **PS.EG.8.7 Precast Concrete Steps**

Where indicated on the construction drawings, precast concrete Bass steps (1.5m wide x 0.335m tread x 0.175m high) shall be constructed as part of the footpaths on a 50mm concrete base (20MPa/13mm).

The unit of measurement shall be number (No.) and the rate shall include all plant, labour, materials for the construction of the steps. Concrete base measured elsewhere.

*Add the following new clause:*



### PS.EG.8.8 Precast Handrails

Handrails shall be constructed where indicated on the footpath longitudinal sections and shall be fully compliant with the Standard drawing 49287-Sheet 3 of 3.

The unit of measurement shall be metre (m) and the rate shall include for the supply and the installation of the 50mmØ galvanised iron handrails including all plant, equipment and labour. Posts and concrete base are measured elsewhere.

*Add the following new clause:*

### PS.EG.8.9 Precast Handrail Posts for Footpaths

Precast concrete handrail posts (30MPa/13mm) shall be constructed as indicated on Standard drawing 49287-Sheet 3 of 3. The height of the post shall be 1.3m and it shall be reinforced with galvanized R10 bars.

The unit of measurement shall be number (No.) and the rate shall include for the supply and installation of the posts including all plant, equipment, labour etc.

*Add the following new clause:*

### PS.EG.8.10 Precast Concrete Bollards

Where indicated on the layout drawings or at the discretion of the Engineer during construction, precast concrete bollards shall be installed on footpaths. The bollard shall be fully compliant with drawing 49287-Sheet 3 of 3.

The unit of measurement shall be number (No.) and the rate shall include for the supply of all materials and the installation of the bollard including all plant, equipment and labour. The concrete base is measured elsewhere.

## PS.F PROTECTION WORKS

### PS.F.3 Materials

#### PS.F.3.7 Geolok G400 Blocks or similar approved

*Add the following new clause:*

Due to the numerous proprietary brands of gravity earth retaining systems, each with their particular design parameters, this office has provided the design based on the "Geolok G400" retaining blocks which have the following technical requirements:-

- (a) The blocks shall be cast in concrete with a minimum 28 days cube strength of 20 MPa. All aggregates and the concrete in general, shall conform to the requirements of Part C: Concrete of the Standard Engineering Specification.
- (b) The block shall be of the "closed back" type.
- (c) The proposed blocks shall have a unit mass equivalent to that as set out below:

Block	Equivalent Unit Mass Requirements
G400	675 kg/m <sup>2</sup>

- (d) The block shall be able to resist sliding shear of 9.80 kN per linear metre by means of a shear nib cast monolithic with the block.
- (e) The Engineer and any person authorised by him shall at all times have access to the works and to the pre-casting yard.
- (f) The blocks shall be delivered to site in such a manner that they do not become damaged. Any damaged, cracked, or blocks with any other defects shall be rejected by the Employer's Agent representative.

**PS.F.8 Measurement and Payment**

*Replace the existing clause with the following*

- PS.F.8.3** The unit of measurement shall be square metre (m<sup>2</sup>) and the rate shall include for the procuring and laying of Cynodon Dactylon grass – Bermuda sod which must be watered within 30 minutes of being laid. The application rate of the approved fertilizer is 40g/m<sup>2</sup>. The emergence of weeds and dead patches will not be accepted.

The rate shall cover the supply of grass and fertilizer, preparation, application of the fertilizer, planting and for the maintenance of the planted area (including cutting of grass).

*Add the following new clause:*

**PS.F.8.9 Construction of Dry Stack wall**

Taking cognisance of clause PS.F.3.7, the unit of measurement shall be square metre (m<sup>2</sup>) and the rate shall include for the supply and installation of Geolok G400 blocks or similar approved as indicated on standard drawing 49287-Sheet 3 of 3. The reinforced concrete base, stabilised fill material/soilcrete, weep holes, excavations, bidim, clean coarse sand and backfilling and compaction behind the wall are measured elsewhere.

*Add the following new clause:*

**PS.F.8.10 Soilcrete/Stabilised fill**

The unit of measurement shall be cubic metre (m<sup>3</sup>) and the rate shall include for the supply of G7 Gravel from commercial sources and the stabilising agent (Cement) with the mix ration 10:1 (G7:Cement). The rate is to also include for the mixing of the stabilised material to achieve a minimum UCS (Unconfined Compressive Strength) of 2 MPa and compacted to 93% MOD AASHTO and filling inside the blocks only where directed by the Engineer or as reflected on drawing 49287-Sheet 3 of 3.

*Add the following new clause:*

**PS.F.8.11 Drainage for Retaining Blocks**

Drainage will be controlled by 50mm dia. uPVC pipe with drain end securely wrapped in bidim and staggered at max. 1.5m c/c, refer to standard drawing 49287-Sheet 3 of 3.

The unit of measurement shall be number (No.) and the rate shall include for all materials, labour and plant required.

**PS.PG NON PRESSURE PIPELINES AND PRECAST CONCRETE CULVERTS**

**PS.PG.3 Materials**

**PS.PG.3.5 Subsoil Pipes**

The following clause shall replace Clause PG.3.5.

"These shall be "Geopipe" plastic subsoil pipes complying with SABS 791 as amended.

Hole Size : 5 ± 1 mm Diameter  
 Diameter of Pipe : 100 ± 10 mm.  
 Pipe Invert : 25% of the circumference of the pipe is to be free from slots or holes to form an invert to the pipe."

**PS.PG.3.8 Geofabric Blanket**

The geofabric shall comply with Clause PG.3.8 and the rate tendered shall include for wrapping the geofabric around either the subsoil pipe, subsoil drain or stone bedding.

**PS.PG.3.10 Stone for Subsoil Drain Filter / Retaining Wall**

The following clause shall replace Clause PG.3.10.

"The stone aggregate used for the subsoil drain filter shall consist of 19.0 mm crushed stone conforming to the following grading :

Sieve size mm	19.0	13.2	9.5	6.7	4.75
% Passing	100	85 - 100	0 - 50	0 - 25	0 - 5

**PS.PG.3.11 Riversand Backfill for Subsoil Drain Filter**

The following clause shall replace Clause PG.3.11.

"River sand for subsoil drain filter shall consist of clean river sand conforming to the following grading:- and having a Fineness Modulus of 2,0 - 3,5."

Sieve size mm	6.7	4.75	1.50	0.75
% Passing	100	90 - 100	0 - 15	0 - 3

**PS.PG.5 Construction**

**PS.PG.5.2 Subsoil Drains and Outlets**

Positions and type of subsoil drains have not been shown on the plans but will be indicated on site by the Employer's Agent.

Subsoil drains shall be type A, B or C as detailed on standard drawing No. 49287-Sheet 3 of 3. Subsoil pipes shall be "Geopipe" plastic pipes conforming to SABS 791. The outfall end of each run of subsoil drain shall be built into the nearest inlet/manhole or headwall in accordance with Clause PG 5.5, or into a special outlet structure as detailed on the project drawings and measured under part PH.

*Add the following new clause:*

## **PS.PG.8 Measurement and Payment**

### **PS.PG.8.14 Connection of Subsoil Drains to Existing System**

Where subsoil pipes require to be built into an existing stormwater inlet/manhole or headwall, the unit of measurement shall be **number (No.)**

The rate tendered shall include for all labour and materials to construct the connection in accordance with Clause PG.5.5. and for trimming the geofabric at the connection.

### **PS.PG.8.15 Subsoil Termination Stub**

The final 1 metre length of the subsoil drain before the manhole/catchpit shall be 100 mm diameter non-perforated U.P.V.C. pipe.

The unit of measurement shall be **number (No.)**. The rate shall include for the supply and laying of the pipe, and for all work necessary to tie into the stormwater manhole/catchpit.

## **PS.PH MANHOLES AND APPURTENANT DRAINAGE WORKS**

### **PS.PH.3 Materials**

#### **PS.PH.3.1 Bricks**

*Replace the existing clause with the following:*

Burnt clay masonry units for foul-water manholes, stormwater inlets, headwalls and inspection chambers shall be Non-Facing Extra (NFX) with a nominal compressive strength of 14 MPa to SABS 227:1986.

### **PS.PH.8 Measurement and Payment**

#### **PS.PH.8.2 Standard Foul-water or Stormwater Manholes**

*Maintain the standard specification and only replace item (d) with the following:*

Excavation for manholes shall be measured under the relevant trench excavation items in the applicable section within the Bill of Quantities utilizing payment clause DB 8.5 for the full volume of excavation required for the construction of the manhole. This includes any additional excavation/trench widening for the foundation base and manhole rings etc. All extra over payments for hard or rock material encountered in excavations for manholes shall be paid under the relevant items in part DB relying on the provisions of payment clause DB 8.5. No additional payment will be made for manhole excavation other than that which is stipulated in this clause.

#### **PS.PH.8.3 Standard Stormwater Inlets**

*Replace the existing clause with the following:*

The unit of measurement shall be number (No.) for the type of inlet and depth stated in the schedule of quantities.

The tendered rate for standard stormwater inlets shall include for the supply of all labour and materials to construct the inlet complete in accordance with the standard drawings and specification including forming of the invert, construction of concrete apron with length dependent

on the number of splays including serrations and setting inlet cover and slab to level, the cover and slab itself etc. Excavation for manholes shall be measured under the relevant trench excavation items in the applicable section within the Bill of Quantities utilizing payment clause DB 8.5 for the full volume of excavation required for the construction of the manhole. This includes any additional excavation/trench widening for the foundation base and manhole rings etc. All extra over payments for hard or rock material encountered in excavations for manholes shall be paid under the relevant items in part DB relying on the provisions of payment clause DB 8.5.

#### **PS.PH.8.7 Lowering Existing Sewer Manholes**

*Replace the existing clause with the following:*

Where the cover level of existing sewer manholes located in the alignment of a new footpath is higher than the finished design level of the footpath, manhole rings are to be cut such that the new manhole cover level is consistent with the level and slope of the footpath. Existing light duty manhole cover and frame are to be removed and spoiled and replaced with new heavy duty manhole cover and frames. Exposed reinforcing must be painted with sica top amatec 110 EC or similar approved.

#### **PS.PH.8.8 Breaking Into Existing Manholes**

*Replace the existing clause with the following:*

Where directed by the Engineer, the contractor shall break into an existing sewer/stormwater manhole in order to connect a new sewer/stormwater pipeline.

The unit of measurement shall be number (No.) and the rate shall include for breaking into the manhole for a maximum pipe diameter of 450mm, connecting the new pipeline and making good upon completion.

#### **PS.PH.8.9 Testing of Manholes**

*Replace the existing clause with the following:*

Where directed by the Engineer, sewer manholes shall be tested for watertightness. Tests shall be carried out by filling the manhole with water to the underside of the frame of the manhole chamber. After an initial period of 24 hours to allow for absorption, the drop in water level will be measured over a 24 hour period. The drop in water level during the test period shall not exceed 50 mm per metre depth.

The unit of measurement shall be number (No.) and the rate shall include for all plugs, stoppers and other equipment required as well as labour to seal the manhole and shall also include for supply, transport and disposal of the water used for the tests. Any leaking or defective manholes shall be made good by the Contractor at his own expense.

*Add the following new clause:*

#### **PS.PH.8.10 Headwalls**

Drawing number 49287- Sheet 3 of 3 reflects details of outlet headwalls. The unit of measurement for these headwalls shall be number (No.) and the rate shall include for all labour, plant and materials required for the construction of the headwall inclusive of excavation, construction of the

base, splitter blocks, walls, rebar, finishing etc as indicated on the drawing. This specification is to be read in conjunction with PS.PH.3.1.

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### **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)

### **C3.5: CONTRACT AND STANDARD DRAWINGS**

#### **C3.5.1 CONTRACT DRAWINGS / DETAILS**

49287-Sheet 1 of 3	Roads & Footpath Layout (eMlaza J17 Settlement)
49287-Sheet 2 of 3	Roads & Footpaths Longsection (eMlaza J17 Settlement)
49287-Sheet 3 of 3	Standard Details (eMlaza J17 Settlement)

#### **C3.5.2 STANDARD DRAWINGS**




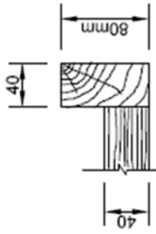
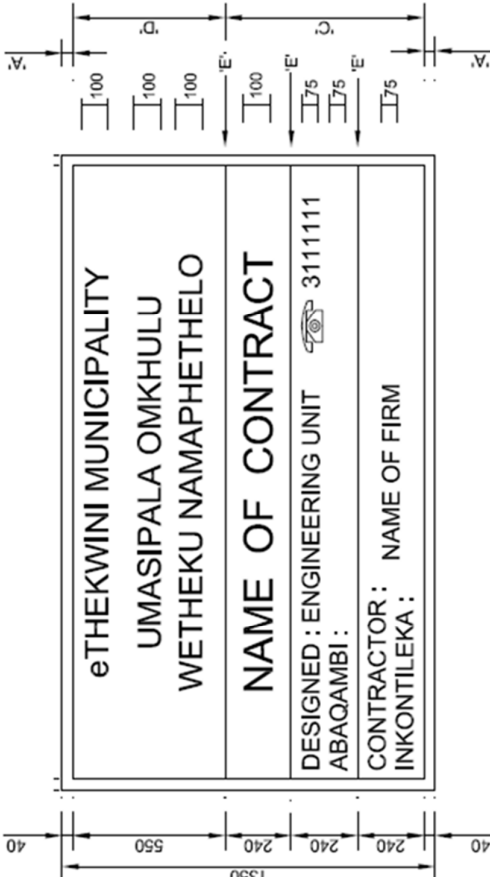

The Standard Drawings to which these Standard Engineering Specifications refer are listed below.

<b>Dwg No</b>	<b>Description</b>	<b>Date of Issue</b>	
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
38585	Water Connections, Pipework and Fittings	February	1990



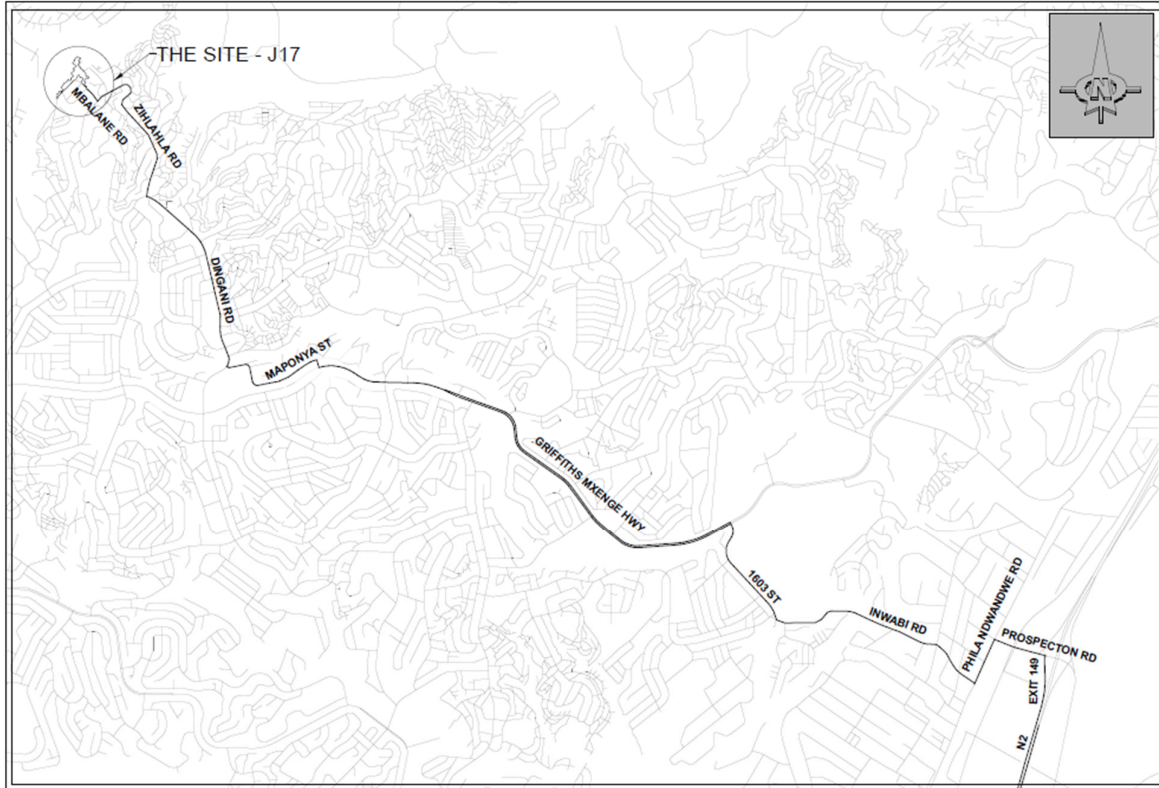
**C3.6: ANNEXURES**

**C3.6.1 TYPICAL NOTICE BOARD FOR ENGINEERING UNIT**

 <p><b>ENGINEERING UNIT</b> DEVELOPMENT ENGINEERING DEPARTMENT</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>PLAN DESCRIPTION</td><td>DWG. NO.</td></tr> <tr><td>CONTINUED FROM</td><td></td></tr> <tr><td>CONTINUED ON</td><td></td></tr> <tr><td>CROSS SECTION</td><td></td></tr> <tr><td>TYPICAL CROSS SECTION</td><td></td></tr> <tr><td>SURVEY LAYOUT</td><td></td></tr> </table>	PLAN DESCRIPTION	DWG. NO.	CONTINUED FROM		CONTINUED ON		CROSS SECTION		TYPICAL CROSS SECTION		SURVEY LAYOUT		 <p>REDUCED PLAN USE SCALE BELOW</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>C</td><td>15052000</td><td>NAME CHANGE</td></tr> <tr><td>D</td><td>27082001</td><td>NAME CHANGE</td></tr> <tr><td>E</td><td>14032003</td><td>NAME CHANGE</td></tr> <tr><td>Rev.</td><td>Date</td><td>Description</td></tr> <tr><td>Contract No.</td><td colspan="2"></td></tr> <tr><td>Project Title</td><td colspan="2" style="text-align: center;"><b>STANDARD DRAWING</b></td></tr> <tr><td>Drawing Title</td><td colspan="2" style="text-align: center;"><b>TYPICAL NOTICE BOARD FOR ENGINEERING UNIT</b></td></tr> </table>	C	15052000	NAME CHANGE	D	27082001	NAME CHANGE	E	14032003	NAME CHANGE	Rev.	Date	Description	Contract No.			Project Title	<b>STANDARD DRAWING</b>		Drawing Title	<b>TYPICAL NOTICE BOARD FOR ENGINEERING UNIT</b>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Scale</td><td>Reference</td></tr> <tr><td>Designed</td><td>Date 14/03/2003</td></tr> <tr><td>Checked</td><td>Drawn C.E.HONEY</td></tr> <tr><td>Manager (E.I.)</td><td></td></tr> <tr><td>DN: R.P.</td><td></td></tr> </table>	Scale	Reference	Designed	Date 14/03/2003	Checked	Drawn C.E.HONEY	Manager (E.I.)		DN: R.P.		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>A.M. Poulos</td><td>Head of Engineering</td></tr> <tr><td>Quantity</td><td>Sheet 1</td></tr> <tr><td>No.</td><td>40137E</td></tr> <tr><td></td><td>of 1 sheets</td></tr> </table>	A.M. Poulos	Head of Engineering	Quantity	Sheet 1	No.	40137E		of 1 sheets
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<p><b>HARDBOARD NOTICE BOARD FOR MITAB SUBSIDISED PROJECTS</b></p> 		<p><b>DETAIL OF SURROUND</b> SCALE 1:5</p> 		<p><b>NOTES:</b></p> <p>A. Raised surround painted white.</p> <p>B. White letters.</p> <p>C. Royal Blue background - Ref. Blue 0-013.</p> <p>D. Grey background - ref. Grey 8-089.</p> <p>E. White dividing lines.</p> <p>The face to be tempered hardboard in one piece. The colour numbers refer to those on the colour cards of British Standard 2660 of 1955.</p>			<p><b>AS BUILT</b></p>																																																	
																																																								

## PART C4: SITE INFORMATION

### C4.1 LOCALITY PLAN



eMlaza J17 site is located in Umlazi Township within the eThekweni Municipality Southern Region under Ward 111. The project area can be accessed by travelling northwest on King Dingane Ave and turning right on Ngwenya Grove. Then travel for approximately 110m and turn right on Mugabe Road and travel for approximately 115m. Then continue on No 2504 Road for approximately 300m and Simelane Road for approximately 200m and turn left onto 1103 Street and continue for approximately 1.7km. Thereafter, continue on Dingani Road for approximately 1.5km and turn left on Zihlahla Road. Thereafter, travel for approximately 1.2km and turn right onto Mbalane Road for approximately 500m to reach eMlaza J17 site.

**C4.2 CONDITIONS ON SITE**

The site is located alongside a stream. The slope can be characterized as gentle to moderate in the northern and western portions and slightly steep in the southern and eastern portions. The site is characterised by dense formal/informal dwellings on cut to fill platforms.

**C4.3 TEST RESULTS**

There are no specific test results.