



CLUSTER

Human Settlement, Engineering, and Transport

UNIT

Engineering

DEPARTMENT

Roads Provision

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: 3R - 23938

Contract Title: Flood Remediation – Construction and replacement of gabion boxes and road layerworks for Ikhwezi road 1 and road 2, replacement of concrete road for Valley Drive in Molweni area, Ward 9 and replacement of bridge culvert for Phoshwane road, Embo area, Ward 8 - Outer West

Est. CIDB Grade/ Class: 4 CE

CLARIFICATION MEETING AND QUERIES

Clarification Meeting: Compulsory Clarification Meeting

Meeting Location, Date, Time: On Tuesday, 11 May 2023 at 10:00am at Number 15 Hospital Road (Corner of Delamore road and Hospital Road) in Hillcrest and there will be site visits thereafter.

Queries can be addressed to: Zanele Skosana
The Employer's Agent's: Tel: 031-765 3147
Representative: eMail: zanele.skosana@durban.gov.za

TENDER SUBMISSION

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

Closing Date/ Time: Friday, 19 May 2023 at 11h00

FACSIMILE, eMAIL, or POSTED TENDERS WILL NOT BE ACCEPTED

Issued by:

ETHEKWINI MUNICIPALITY

Deputy Head: Roads Provision

Date of Issue: 05/05/2023

Document Version 24/02/2023(a)

FOR OFFICIAL USE ONLY

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

INDEX to PROCUREMENT DOCUMENT

TENDER PART	Part T1	TENDERING PROCEDURES		Page
		T1.1	Tender Notice and Invitation to Tender	
		T1.1.1	Tender Notice and Invitation to Tender	2
		T1.2	Tender Data	
		T1.2.1	Standard Conditions of Tender	3
		T1.2.2	Tender Data (<i>applicable to this tender</i>)	3
		T1.2.3	Additional Conditions of Tender	12
	Part T2	RETURNABLE DOCUMENTS		Page
		T2.1	List of Returnable Documents	13
		T2.2	Returnable Schedules, Forms and Certificates	14

CONTRACT PART	Part C1	AGREEMENT AND CONTRACT DATA		Page
		C1.1	Form of Offer and Acceptance	
		C1.1.1	Offer	39
		C1.1.2	Acceptance	40
		C1.1.3	Schedule of Deviations	41
		C1.2	Contract Data	
		C1.2.1	Standard Conditions of Contract	42
		C1.2.2	Contract Data	42
		C1.2.3	Additional Conditions of Contract	48
	Part C2	PRICING DATA		Page
		C2.1	Pricing Assumptions / Instructions	50
		C2.2	Bill of Quantities (separate page numbering system)	52
	Part C3	SCOPE OF WORK		Page
		C3.1	Project Description and Scope of Contract	63
		C3.2	Project Specifications	64
		C3.3	Standard Specifications	79
		C3.4	Particular Specifications	133
		C3.5	Contract and Standard Drawings	134
		C3.6	Annexures	138
	Part C4	SITE INFORMATION		Page
		C4.1	Locality Plan	139
		C4.2	Conditions on Site	140
		C4.3	Test Results	140

PART T1: TENDERING PROCEDURES**T1.1.1: TENDER NOTICE AND INVITATION TO TENDER**

Tenders are hereby invited for the works of Flood damage remediation for the construction and replacement of gabion boxes and road layerworks for Ikhwezi road 1 and 2, replacement of concrete road for Valley Drive in Molweni area, Ward 9 and the construction and replacement of culvert bridge for Phoshwane road in Ward 8 at Embo area. The works entails bulk earthworks, stormwater drainage works, construction of box culverts, gabion boxes, concrete road works including road layerworks.

Subject	Description	Tender Data Ref.
Employer	The Employer is the eThekweni Municipality as represented by: Deputy Head: Roads Provision	F.1.1.1
Tender Documents	Documents can only be obtained in electronic format, issued by the eThekweni Municipality. Documentation can be downloaded from the National Treasury's eTenders website or the eThekweni Municipality's Website . The <u>entire document</u> should be printed (on A4 paper) and suitably bound by the tenderer.	F.1.2
Eligibility	It is <u>estimated</u> that tenderers should have a CIDB contractor grading designation of 4 CE (or higher). The CIDB provisions in relation to a Contractor's Potentially Emerging (PE) status <u>do not</u> apply.	F.2.1.1
Clarification Meeting	On Tuesday, 11 May 2023 at 10:00am at Number 15 Hospital Road (Corner of Delamore road and Hospital Road) in Hillcrest and there will be site visits thereafter.	F.2.7
Seek Clarification	Queries relating to these documents are to be addressed to the Employer's Agent's Representative whose contact details are: Zanele Skosana Tel: 031-765 3147 eMail: zanele.skosana@durban.gov.za	F.2.8
Submitting a Tender Offer	Tender offers shall be delivered to: The Tender Box in the foyer of the Municipal Building 166 KE Masinga Road, Durban	F.2.13
Closing Time	Tender offers shall be delivered on or before Friday, 19 May 2023 at or before 11h00 .	F.2.15
Evaluation of Tender Offers	The 80/20 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 Specific Goal(S) 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: **Roads Provision**

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 – 3rd Edition 2015" issued by the South African Institution of Civil Engineering (GCC 2015). This document is obtainable separately, and Tenderers shall obtain their own copies.
- 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) 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 eThekweni Policy documents referenced in the Tender Documents.

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

1. <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:
Zanele Skosana
Tel: 031-765 3147
eMail: zanele.skosana@durban.gov.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 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:
 - a) the Tenderer fails to attend the Compulsory Clarification Meeting.
 - b) 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 by following these links:

1. Business
2. Supply Chain Management (SCM)

3. 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.2.1.1 Eligibility: CIDB

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

Joint ventures are eligible to submit tenders provided that:

- Every member of the joint venture is registered (as "Active") with the CIDB (at time of tender closing),
- 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
- 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.2.1.2 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	NB Scope of Work
	Note 1	Note 2	Note 3	Note 4	Note 5	Note 6
Works as Sub-Contractor						
Current Contracts	X		X			X
Completed Contracts	X			X		X
Works as Main Contractor						
Current Contracts		X	X			X
Completed Contracts		X		X	X	X
Failure to submit the returnable form in T2.2, and provide the above supporting documentation/ information, for each submission of experience, will invalidate that experience submission						

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	NB: Without this information the experience submission cannot be considered. - 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. - 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. - If executed as a Main Contractor, the overall contract Scope-of-Work is to be provided. - The description of the Scope-of-Work is to be inserted into the returnable form in T2.2, or if available as a hard copy (max. 2 pages) attached to the form with the other relevant, associated, supporting documentation.

Table 2: Tenderer's Experience Requirement

Provision of Roads and Ancillary Works
- Projects of a similar nature that will be considered will be one, or a combination of, the following types of projects: new road construction, road widening/upgrades, intersection improvements, gravel to surfaced road upgrades, access road upgrades, major parking areas, and provision of interim roadway related services to informal settlements. - Each project must consist of at least two of the following elements: bulk earthworks, roadway layer-works, asphalt roadway surfacing, kerbing / channelling, sidewalk / walkway construction, traffic calming measures, stormwater drainage, retaining structures, dealing with underground services (watermains, sewers, electricity / communication infrastructure). - Projects that are excluded are road rehabilitation projects, road maintenance projects, and the construction of gravel roads.

Experience Requirement: Contract(s) with works of a similar nature, within the past 7 years

A minimum of 3 contracts, each with a value of 50% of the tender value submitted for this tender.
Contracts must have been executed as the Sub-Contractors or Main Contractors.

Note: The failure to complete the relevant returnable form in T2.2 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 "Documents are to be obtained, free of charge, in electronic format, from the **National Treasury's eTenders website** or the **eThekweni Municipality's Website**. The entire electronically downloaded document should be printed on white A4 paper (single-sided) and suitably bound by the tenderer.

F.2.6 Acknowledge addenda:

"Addenda will be published, in electronic format, on the National Treasury's eTenders website (see F.2.2.2 above). Tenderers are to ensure that the eTenders website is consulted for any published addenda pertaining to this tender 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:

On Tuesday, 11 May 2023 at 10:00am at Number 15 Hospital Road (Corner of Delamore road and Hospital Road) in Hillcrest and there will be site visits thereafter.

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. : **3R - 23938**
- Contract Title : **Flood Remediation – Construction and replacement of gabion boxes and road layerworks for Ikhwezi road 1 and road 2, replacement of concrete road for Valley Drive in Molweni area, Ward 9 and replacement of bridge culvert for Phoshwane road, Embo area, Ward 8 - Outer West**

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 "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. “**XX-xxxx – Tenderers Name.PDF**”. The memory-stick must be 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, 19 May 2023**
- 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.

CIDB Registration

Refer also to returnable form in T2.2: “Eligibility: Verification of CIDB Registration and Status”.

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 above printout(s) is to be indicated on the printout. Registration with the CIDB must be reflected as “Active” at time of tender closing.

Tax Clearance

Refer also to returnable form in T2.2: “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.

Central Supplier Database (CSD)

Refer also to returnable form in T2.2: “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.

Compensation Commissioner

Refer also to returnable form in T2.2: “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.

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, 6th 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 (either 20 or 10) 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: 80%

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**.

Ownership Categories	Criteria	80/20	90/10
Race: Black (w1)	Equals 0%	0	n/a
	Between 0% and 51%	4.8	n/a
	Greater or equal to 51% and less than 100%	9.6	n/a
	Equals 100%	12	n/a
Gender: Female (w2)	Equals 0%	0	n/a
	Between 0% and 51%	1.6	n/a
	Greater or equal to 51% and less than 100%	3.2	n/a
	Equals 100%	4	n/a
Disabilities (w3)	Equals 0%	-	n/a
	Between 0% and 51%	-	n/a
	Greater or equal to 51% and less than 100%	-	n/a
	Equals 100%	-	n/a
Maximum Ownership Goal Points:		16	n/a

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

- w1 = 75%, w2=25%, w3=0% (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: 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.

Location	80/20	90/10
Not in South Africa	0	n/a
South Africa	1	n/a
Kwa Zulu Natal	2	n/a
eThekweni Municipality	4	n/a
Maximum RDP Goal Points:	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:

- (a) The tenderer submits a **valid Tax Clearance Certificate OR Tax Compliance Status PIN**, issued by the TCS System of the South African Revenue Services, or has made arrangements to meet outstanding tax obligations.
- (b) The tenderer is **registered, and “Active”, with the Construction Industry Development Board**, at time of tender closing, in an appropriate contractor grading designation.
- (c) The tenderer or any of its directors/shareholders is **not listed on the Register of Tender Defaulters** in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector.
- (d) The tenderer has not:
 - Abused the Employer’s Supply Chain Management System; or
 - Failed to perform on any previous contract and has been given a written notice to this effect.
- (e) The tenderer has completed the **Compulsory Enterprise Questionnaire** and there are no conflicts of interest which may impact on the tenderer’s ability to perform the contract in the best interests of the employer or potentially compromise the tender process.
- (f) The tenderer is **registered and in good standing with the compensation fund or with a licensed compensation insurer**.
- (g) The employer is reasonably satisfied that the tenderer has in terms of the Construction Regulations, 2014, issued in terms of the Occupational Health and Safety Act, 1993, the **necessary competencies and resources to carry out the work safely**.

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.

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. The municipality has a firm intention to proceed with the work, subject to funding being identified.

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

F.3.17 Copies of contract: The number of paper copies of the signed contract to be provided by the Employer is ONE (1).

Tenderers are to include, with their “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. **“XX-xxxx – Tenderers Name.PDF”**. The memory-stick must be securely fixed to the paper submission.

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.

T1.2.3.4 Targeted Procurement

Targeted Procurement provisions are not applicable to this tender.

T1.2.3.5 Functionality Evaluation is not applicable to this tender.

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.....	15
T2.2.2	Certificate of Attendance at Clarification Meeting	17
T2.2.3	Tax Compliance Status PIN / Tax Clearance Certificate	18
T2.2.4	Contractor's Health and Safety Declaration.....	19
T2.2.5	MBD 4: Declaration of Interest	21
T2.2.6	MBD 5: Declaration for Procurement Above R10 Million	23
T2.2.7	MBD 6.1: Preference Points Claim Form ITO the Preferential Regulations	24
T2.2.8	MBD 8: Declaration of Bidder's Past SCM Practices	27
T2.2.9	MBD 9: Certificate of Independent Bid Determination	29
T2.2.10	Joint Venture Agreements (if applicable)	32
T2.2.11	Record of Addenda to Tender Documents (if applicable).....	33

Eligibility

T2.2.12	Eligibility: Declaration of Municipal Fees	34
T2.2.13	Eligibility: Registration with Compensation Commissioner	35
T2.2.14	Eligibility: CSD Registration Report	36
T2.2.15	Eligibility: Verification of CIDB Registration and Status	37
T2.2.16	Eligibility: Experience of Tenderer	38

T2.2 RETURNABLE SCHEDULES, FORMS, AND CERTIFICATES

The returnable schedules, forms, and certificates, as listed in T2.1.2, can be found on pages 15 to 33.

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	MAAA
1.6	eThekweni Supplier Database: Reference number (PR), if any:	PR
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	
2.0	Particulars of sole proprietors and partners in partnerships (attach separate pages if more than 4 partners)	
	Full Name	Identity No.
		Personal income tax No. *
2.1		
2.2		
2.3		
2.4		
3.0	Particulars of companies and close corporations	
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:

- | | |
|---|--|
| ☐ a member of any municipal council | ☐ a member of any provincial legislature |
| ☐ an official of any municipality or municipal entity | ☐ a member of an accounting authority of any national or provincial public entity |
| ☐ a member of the board of directors of any municipal entity | ☐ a member of the National Assembly or the National Council of Province |
| ☐ 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) | ☐ 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:

- | | |
|---|--|
| ☐ a member of any municipal council | ☐ a member of any provincial legislature |
| ☐ an official of any municipality or municipal entity | ☐ a member of an accounting authority of any national or provincial public entity |
| ☐ a member of the board of directors of any municipal entity | ☐ a member of the National Assembly or the National Council of Province |
| ☐ 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) | ☐ 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:

- authorizes the employer to verify the tenderers tax clearance status from the South African Revenue Services that it is in order.
- 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.
- 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.
- 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.
- 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

If Functionality is applicable as part of tender evaluation, reference is to be made to Clause F3.11.9 of the of the Conditions of Tender.

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 OHSA 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 OHSA 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 OHSA 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 OHSA 1993 Construction Regulations 2014 will be provided on site and will at all times be available for inspection by the Principal Contractor's personnel, the Client's personnel, the Employer's Agent, visitors, and officials and inspectors of the Department of Labour.
- 7 I, 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 OHSA 1993 Construction Regulations 2014, and that I will be liable for any penalties that may be applied by the Client in terms of the said Regulations (Regulation 33) for failure on the Principal Contractor's part to comply with the provisions of the Act and the Regulations.
- 8 I, 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 OHSA 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**¹.
- 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 YES NO	
3.8 Are you presently in the service of the state?	
If yes, furnish particulars:	
3.9 Have you been in the service of the state for the past twelve months?	
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	
YES	NO
1.0 Are you by law required to prepare annual financial statements for auditing?	
1.1 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.	
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?	
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?	
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?	
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).
- the 90/10 system for requirements with a Rand value above 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 or 90 (price) and 20 or 10 (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 or 90 points is allocated for price on the following basis:

80 / 20 Points System

OR

90 / 10 Points System

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

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

Where:

P_s = Points scored for price of tender under consideration

P_t = Price of tender under consideration

P_{min} = 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**:

- 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 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of:
 - an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system, or
 - any other invitation for tender, that either the 80/20 or 90/10 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 90/10 and 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 reference the Tender Data in F.3.11 for guidance on completing this claim form.

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). Tenderer to complete	Number of points CLAIMED (90/10 system)
Ownership Goal: Race (black)	12	n/a		n/a
Ownership Goal: Gender (female)	4	n/a		n/a
Ownership Goal: Disabilities	-	n/a		n/a
RDP Goal: The promotion of South African owned enterprises.	4	n/a		n/a
Total CLAIMED Points (20 Maximum)				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) and can be accessed by clicking on its link at the bottom of the home page.

- 4.1.1 If YES, provide particulars.

.....

.....

- 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) by clicking on its link at the bottom of the home page.

- 4.2.1 If YES, provide particulars.

.....

.....

- 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.

.....

.....

Circle Applicable	
YES	NO

YES	NO
-----	----

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**

- ¹ Includes price quotations, advertised competitive bids, limited bids and proposals.
- ² 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.
- ³ Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

- 1.0 This Municipal Bidding Document (MBD) must form part of all **bids**¹ 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**).² 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 consortium³ 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://cfoonline.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.

 CENTRAL SUPPLIER DATABASE FOR GOVERNMENT	Report Date:	
	Report Ran By:	
CSD REGISTRATION REPORT		
SUPPLIER IDENTIFICATION		
Supplier number		Have Bank Account
Is supplier active?		Total annual turnover
Supplier type		Financial year start date
Supplier sub-type		Registration date
Legal name		Created by
Trading name		Created date
Identification type		Edit by
Government breakdown		Edit date
Business status		Restricted Supplier
Country of origin		Restriction Last Verification Date
South African company/CC registration number		

Tenderers 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

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 " .

Tenderer's CIDB Grade:	1*	2*	3*	4*	5*	6*	7*	8*	9*	Experience as a:	Sub-Contractor*	Main Contractor*
Client / Employer:	Entity Name:											
	Contact Name:											
	Contact Tel:											
	Contact Cell:											
	Contact email / other:											
Client OR Main Contractor's Details 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:											
Contract Details	Contract Number:											
	Contract Title:											
	Has this Contract been completed?									Y*	N*	
Tendered Value (Contract Sum) OR Sub-Contract Value:	R									Final Contract Price OR Final Value of Sub-Contract:		
										R		

Contract Scope-of-Work (Description of Works components)	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, <u>and</u> 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: **3R - 23938**

Contract Title: **Flood Remediation – Construction and replacement of gabion boxes and road layerworks for Ikhwezi road 1 and road 2, replacement of concrete road for Valley Drive in Molweni area, Ward 9 and replacement of bridge culvert for Phoshwane road, Embo area, Ward 8 - Outer West**

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

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

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

R..... (In words)

.....)

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

For the Tenderer:

*** Name of Tenderer (organisation)** :

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

*** Name (of signatory in capitals)** :

Capacity (of Signatory) :

Address :

:

Telephone :

Witness:

Signature : **Date** :

Name (in capitals) :

Notes:

*** Indicates what information is mandatory.**

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

C1.1: FORM OF OFFER AND ACCEPTANCE**C1.1.2: FORM OF ACCEPTANCE****This Form will be completed by the Employer**

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

The terms of the contract are contained in:

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

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

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

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

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

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

Name (*of signatory in capitals*) :

Capacity (*of Signatory*) :

Name of Employer (*organisation*) :

Address :

:

Witness:

Signature : **Date** :

Name(*in capitals*) :

C1.1: FORM OF OFFER AND ACCEPTANCE**C1.1.3: SCHEDULE OF DEVIATIONS****This form will be completed by THE EMPLOYER and ONLY THE SUCCESSFUL TENDERER**

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

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

FOR THE TENDERER**FOR THE EMPLOYER**

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

C1.2: CONTRACT DATA

C1.2.1 CONDITIONS OF CONTRACT

C1.2.1.1 GENERAL CONDITIONS OF CONTRACT

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

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

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

C1.2.2 CONTRACT DATA

C1.2.2.1 DATA TO BE PROVIDED BY THE EMPLOYER

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

1.1.1.14 The **time for achieving Practical Completion**, from the Commencement Date is **20 Weeks**. The period as stated in 5.3.2, and the 7 days referred to in 5.3.3, are included in the above time for achieving Practical Completion. The special non-working days as stated in 5.8.1 are excluded from the above time for achieving Practical Completion.

1.1.1.15 The Employer is the eThekweni Municipality as represented by:
Deputy Head: **Roads Provision**

1.2.1.2 The address of the Employer is:
Physical: Engineering Unit, 166 K.E. Masinga Road, DURBAN, 4001
Postal: Engineering Unit, P O Box 680, DURBAN, 4000
Telephone: 031-322-2879
E-Mail: sandile.masondo@durban.gov.za

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

1.2.1.2 The address of the Employer' Agent is: Engineering Unit, 166 K.E. Masinga Road, DURBAN, 4001
Physical: Engineering Unit, 166 K.E. Masinga Road, DURBAN, 4001
Postal: Engineering Unit, P O Box 680, DURBAN, 4000
Telephone: 031-322-2861
E-Mail: balan.govender@durban.gov.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:

- "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.
- "experience" implies experience on projects of a similar nature.
- "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)
- CV(s) of Key Site Staff (refer to Clause 4.11.1)
- CPG Implementation Plan

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 2500** (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:

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

- 6.5.1.2.3 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:

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

	STATS SA Statistical Release	Table	Description	Coefficient
(a) "L" is the "Labour Index"	P0141	Table A	Geographic Indices; CPI per Province; Kwa-Zulu Natal	a = 0.28
(i) "P" is the (j) "Contractor's Equipment Index"	P0151.1	Table 4	Plant and Equipment	b = 0.28
1. "M" is the "Materials Index"	P0151.1	Table 6	Civil Engineering Material (excluding bitumen)	c = 0.38
• "F" is the "Fuel Index"	P0142.1	Table 1	Coke, petroleum, chemical, rubber and plastic products; Coal and petroleum products; Diesel	d = 0.06

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: **R 1,000 000,00**.
- Maximum first excess: **R 20 000,00**.

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 2 000 000,00**.
- 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: **R1 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: **Nil**.

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

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

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

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

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

C1.2.2.2 DATA TO BE PROVIDED BY CONTRACTOR

1.1.1.9 The legal name of Contractor is:

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

1.2.1.2 The Physical address of the Contractor is:

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

The Postal address of the Contractor is:

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

The contact numbers of the Contractor are:

Telephone:

Fax:

The E-Mail address of the Contractor is:

.....

C1.2.3 ADDITIONAL CONDITIONS OF CONTRACT**C1.2.3.1 COMMUNITY LIAISON OFFICER**

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

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

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

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

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) 8 & 9**. 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% PPG** (Priority Population Group) 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

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

- Category of Employment

Category A: Employed as Local Labour for this contract only Category B: Temporarily employed by the Contractor Category C: Permanently employed by the Contractor
--

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.

C2.2: BILL OF QUANTITIES

The Bill of Quantities follows and comprises of 17 pages. The pages are numbered BoQ 1 to BoQ 13

PART C3: SCOPE OF WORK

	<u>PAGE</u>
C3.1 PROJECT DESCRIPTION AND SCOPE OF CONTRACT	63
C3.2 PROJECT SPECIFICATIONS	64
PS.1 Programme, Method of Work, and Accommodation of Traffic	
PS.2 Services	
PS.3 Watermains	
PS.4 Sewers	
PS.5 Stormwater	
PS.6 Electrical Plant	
PS.7 Telkom S.A. Limited / Neotel Plant	
PS.8 CCTV Plant	
PS.9 Management of the Environment	
PS.10 Occupational Health and Safety	
C3.3 STANDARD SPECIFICATIONS	79
C3.3.1 Listing of the Standard Specifications	
C3.3.2 Amendments to the Standard Specifications	
C3.4 PARTICULAR SPECIFICATIONS	133
C3.4.1 Part AH - OHS 1993 Safety Specification (2014)	
C3.4.2 Standard Environmental Management Plan for Civil Engineering Construction Works	
C3.5 CONTRACT AND STANDARD DRAWINGS	134
C3.5.1 Contract Drawings / Details	
C3.5.2 Standard Drawings	
C3.6 ANNEXURES	138

C3.1: PROJECT DESCRIPTION AND SCOPE OF CONTRACT**C3.1.1 Description of Works**

Ikhwezi road 1 and 2 are access roads located in Molweni area, Ward 9 and Phoshwane road is an access road located in Embo area, Ward 8.

These roads were damaged by the April 2022 floods and therefore require repairs. The contract entails the reinstatement of road pavement layers, improvement / construction of stormwater drainage system or culverts, protection works in a form of gabions boxes and gabion mattresses, kerbing as well as the removal of rocks and debris from the vicinity of the stream and roadway.

Valley drive is an access road located in Molweni area, Ward 9. The work consists of the removal of an asphalt road (50m) along the stream on Valley Drive and replacing it with a concrete road. The construction of a 70m concrete v-drain, the refurbishment of an existing stormwater inlet and laying a 10m stormwater pipeline (450mm) also forms part of the scope of works. The installation of concrete bollards on either side of the road adjacent to the stream is also required.

C3.1.2 Description of Site and Access

The sites are located in Molweni area (Ward 9) and Embo area (Ward 8), west of Durban.
Refer to Item C4.1: Locality Sketch

C3.1.3 Nature of Ground and Subsoil Conditions

There are no records supplied for the ground conditions of the site

C3.2: PROJECT SPECIFICATION

PREAMBLE

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

C3.2.1 GENERAL

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

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

PS.1.1 Preliminary Programme

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

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

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

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

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

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

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

- (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: A minimum of two lanes of traffic (one in each direction) is expected to flow at all times.
- (9) Community and Labour Disruptions.
- (10) Work stoppages
- (11) Business and associated Forum Disruptions

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.

The contractor is to liaise with each of the service owners to identify service management strategies, irrespective of it being new or existing. The works sequence may require revision to accommodate any delay that may be experienced by the contractor in managing the service. This will require a revision of the contract programme without a change in contract duration or end dates.

The mechanisms to deal with service relocations may be one or a combination of the following processes:

- Identification of service relocation/renewal scope of work in consultation with the service owner.
- Preparation of a tender and bill of quantities for service management in consultation with service owner or the employer's agent.
- Sourcing prices for the works done through a process directed by the employer's agent that subscribes to a fair, transparent and equitable practices.
- The Contractor will appoint and manage the sub-contractor
- Manage the workflow process, risk, time, cost, quality of the sub-contractor.
- Where the service provider choses to undertake the service management at their own accord, then the contractor will facilitate payment after agreement with the Employer's Agent. The contractor is also required to manage the process of risk, time, cost, quality of the service provider.

It is noted that the above procedures are aimed at putting the responsibility of the service management in the hands of the contractor, who is best suited to mitigate contract risk in this regard.

This contract will not make provisions for any extension of time or delay relating to service management. The contract programme must reflect a realistic timeline that attends to the service management scope of this project.

The programme will be reviewed at the monthly site meetings at which the contractor shall provide sufficient details that will allow the comparison of completed work per activity against the original approved programme. The contractor shall indicate what resources and programme changes he intends to implement in order to remedy any activity that has fallen behind. The Engineer may demand from the Contractor a major revision of the programme. Such a revision shall be submitted for approval within fourteen days of the demand

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.

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.

General

The payment of the PC sum items to deal with service relocations may be one or a combination of the following processes:

- Identification of service relocation/renewal scope of work in consultation with the service owner.
- Preparation of a tender and bill of quantities for service management in consultation with service owner or the employer's agent.
- Sourcing prices for the works done through a process directed by the employer's agent that subscribes to a fair, transparent and equitable practices.
- The Contractor will appoint and manage the sub-contractor
- Manage the workflow process, risk, time, cost, quality of the sub-contractor.
- Where the service provider chooses to undertake the service management at their own accord, then the contractor will facilitate payment after agreement with the Employer's Agent. The contractor is also required to manage the process of risk, time, cost, quality of the service provider.

It is noted that the above procedures are aimed at putting the responsibility of the service management in the hands of the contractor, who is best suited to mitigate contract risk in this regard.

This contract will not make provisions for any extension of time or delay relating to service management. The contract programme must reflect a realistic timeline that attends to the service management scope of this project.

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 shall 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. Relocations shall run concurrently with programmed activities. No delay costs will be entertained resulting from failure of service owners to timeously and suitably relocate / lower their affected service. Delays shall be adjusted and accommodated in the project's construction period.

All service relocations shall be completed and finalised within the contract period or sooner. No delay / disruption / standing time claims will be entertained for service relocations, known and unknown, inter-alia service department liaison / design drawing preparation, procurement of materials, installation / relocation, backfilling, coordinating / protecting the service, damages to services. It is reiterated that the Contractor is fully responsible for all service relocations, liaison and verification / design in consultation with the Employer's Agent's Representative for approval, followed by the associated programming and execution.

The identification, protection, relocation and renewal of any underground and overhead service forms part of the scope of this contract. Accordingly, the responsibility of dealing with these services in whatever way deemed necessary by the service owner or employer's agent, belongs to the contractor.

The contractor is to liaise with each of the service owners to identify service management strategies, irrespective of it being new or existing. The works sequence may require revision to accommodate any delay that may be experienced by the contractor in managing the service. This will require a revision of the contract programme without a change in contract duration or end dates. Meetings, communication, timeframes, correspondence and records of reference shall be collated and accurately recorded and stored or filed.

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 rates for excavation.

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 for this work shall be paid under C2.1.2.5.

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 eThekwini 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 eThekwini 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 eThekwini 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. No delay claims / stoppages etc. for affected services will be entertained for any service relocations, known and unknown, inter-alia service department liaison / design drawing preparation, procurement of materials, installation / relocation, backfilling, coordinating / protecting the service, damages to services.

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.

PS.3 WATERMAINS

PS.3.1 General

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

Relocation of services shall generally be covered by the relevant Service department. Generally, work shall only commence on the relocation / installation of new service once the bulk earthworks have been completed and roughly trimmed to a level along a substantial portion of the affected services route. In addition, no sidewalk, verge, median or island shall be surfaced or top soiled until all work on the services has been completed. The contractor shall prove the position of the watermain, valves, hydrants and waterlines and shall be included in the tenderers rates for excavation.

Any tie-ins to the existing live mains are normally done by the Water Supply Branch of eThekweni Municipality. Metro Water will be responsible for any re-lay should the need arise. The Contractor shall liaise with the relevant Department on time frames and requirements to complete the work satisfactorily. Relocations shall run concurrently with programmed activities. No delay costs will be entertained resulting from failure of service department to timeously and suitably relocate / lower their affected service.

Delays shall be adjusted and accommodated in the project's construction period. All service relocations shall be completed and finalised within 2 months or sooner of the commencement date. No delay / disruption / standing time claims will be entertained during this period for service relocations, known and unknown, inter-alia service department liaison / design drawing preparation, procurement of materials, installation / relocation, backfilling, coordinating / protecting the service, damages to services.

Furthermore, no delay / disruption / standing time claims will be entertained during the rest of the construction period for service relocations up to the practical completion date. It is reiterated that the Contractor is fully responsible for all service relocations, liaison and verification / design in consultation with the Employer's Agent's Representative for approval, followed by the associated programming and execution. Where independent plumbers recommended / approved by Metro Water, who are on the plumbers and eThekweni database, it will be required that the works is measured / quantified and that a minimum of 3 quotations are received for consideration in terms of MFMA legislation.

The contractor is to liaise with each of the service owners to identify service management strategies, irrespective of it being new or existing. The works sequence may require revision to accommodate any delay that may be experienced by the contractor in managing the service. This will require a revision of the contract programme without a change in contract duration or end dates.

Meetings, communication, timeframes, correspondence and records of reference shall be collated and accurately recorded and stored or filed.

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 PH.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

Tenderer's attention is drawn to the following points regarding the sewers to be installed / relocated as part of this contract. Relocation of services shall generally be covered by the relevant Service department. Generally, work shall only commence on the relocation / installation of new service once the bulk earthworks have been completed and roughly trimmed to a level along a substantial portion of the affected services route. In addition, no sidewalk, verge, median or island shall be surfaced or top soiled until all work on the services has been completed.

The contractor shall prove the position of the watermain, valves, hydrants and waterlines and shall be included in the tenderers rates for excavation. Any tie-ins to the existing live sewer mains are normally done by the Wastewater Branch of eThekweni Municipality. Metro Wastewater will be responsible for any re-lay should the need arise.

The Contractor shall liaise with the relevant Department on time frames and requirements to complete the work satisfactorily during the construction period. Relocations shall run concurrently with programmed activities. All service relocations shall be completed and finalised within 2 months or sooner of the commencement date. No delay / disruption / standing time claims will be entertained during this period for service relocations, known and unknown, inter-alia service department liaison / design drawing preparation, procurement of materials, installation / relocation, backfilling, coordinating / protecting the service, damages to services.

Furthermore, no delay / disruption / standing time claims will be entertained during the rest of the construction period for service relocations up to the practical completion date. It is reiterated that the Contractor is fully responsible for all service relocations, liaison and verification / design in consultation with the Employer's Agent's Representative for approval, followed by the associated programming and execution. Where independent plumbers recommended / approved by Metro Water / Metro Waste Water ,

who are on the plumbers and eThekweni database, it will be required that the works is measured / quantified and that a minimum of 3 quotations are received for consideration in terms of MFMA legislation. Adequate measures and safety measures / shoring etc. must be taken into consideration as some of the sewers may be relatively deep.

The contractor is to liaise with each of the service owners to identify service management strategies, irrespective of it being new or existing. The works sequence may require revision to accommodate any delay that may be experienced by the contractor in managing the service. This will require a revision of the contract programme without a change in contract duration or end dates.

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

Extensive stormwater improvements is required on the works. Existing stormwater pipes which are affected may be replaced with new pipes Pipe sizes vary from standard 375mm Class100D and upwards. Bulk of new stormwater shall be 450mm Class 100D and 900mm Class 100D pipes. Excavations are of varying depths in many different materials ranging from soft, intermediate or hard materials. Shoring will be required to protect works during installation in excess of the safety working depths as indicated in the OHS standards. All service relocations shall be completed and finalised within 2 months or sooner of the commencement date. No delay / disruption / standing time claims will be entertained during this period for service relocations, known and unknown, inter-alia service department liaison / design drawing preparation, procurement of materials, installation / relocation, backfilling, coordinating / protecting the service, damages to services.

Furthermore, no delay / disruption / standing time claims will be entertained during the rest of the construction period for service relocations up to the practical completion date. It is reiterated that the Contractor is fully responsible for all service relocations, liaison and verification / design in consultation with the Employer's Agent's Representative for approval, followed by the associated programming and execution

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

There are existing electrical poles and electricity lines in the works area. Special attention must be paid to ensure there is no damage to the existing electricity infrastructure. The Tenderer is responsible to communicate and actioned the relocation of the electrical poles and cables with the Electricity department as per PS.2.3

PS.6.1 General

Various types of electrical cables including high voltage, low voltage, street lighting and domestic connection cables are 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

The existing lighting will be removed in stages and replaced in the centre median / intersection corners. Relocation will 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

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

PS.6.4 Relocation of Existing Services

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

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

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 are existing in the contract area.

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 are existing in the contract area.

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:

Describe issues relating to OH&S and the Regulations

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 OHSA 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 OHSA Construction Regulations

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

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

PS.11 SITE SECURITY

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

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

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

PS.12 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.

PS. 13 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 one CLO who resides in Ward 9 & 8, selected and approved through the Ward Councillor or appointed representative, 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. Handling costs and profit in respect of the provided Invoiced Amounts shall not exceed a maximum of 10% as per the gazetted hourly labour rate based on the table of the minimum wage in South Africa and with reference to CIDB and for a full days active production on site verified by time and attendance register. The CLO shall not be appointed to another site or other employment and is to be in attendance for the full day based on the active days that the contractor works on the site.

PS.14 STREAM / WATER DIVERSION

The Contractor shall divert water away from the working area. The contractor is responsible to maintain the diversion throughout the contract. The contractor is liable to any damages to working area or surrounding areas caused by failure of the diversion. The unit of measurement shall be Sum and the rate shall include all plant, labour and materials required for establishment, safety, maintenance and de-establishment of the water diversion.

PS.15 SURVEY AND SETTING OUT

- (1) The Engineer shall establish the basic reference pegs and benchmarks on the Site and give to the Contractor the particulars thereof in sufficient time to enable the Contractor to meet his approved

program.

- (2) After compliance by the Engineer with the provisions of Sub-Clause (1), the Contractor shall be responsible for the true and proper setting out of the Works and for the provision of all necessary instruments, appliances and labour in connection therewith.

The Contractor shall carefully protect and preserve all benchmarks, sight-rails, pegs and other things used in setting out the Works.

The checking of any setting-out or of any line or level by the Engineer shall not relieve the contractor of his responsibility for the correctness thereof.

If required, payment for the above will be made under the applicable items as scheduled in the Preliminary & General Section of the Bill of Quantities referencing this clause

PS.16 SUPPLY AND INSTALL CONCRETE BOLLARDS (1.2M HIGH)

The Contractor's rate shall include for all plant, labour, materials and setting out necessary for the construction of the concrete bollards as specified by the engineer on site.

PS.17 STAKEHOLDER MANAGEMENT AND LIAISON

The construction environment is one of uncertainty in terms of participation expected from various bodies, organisations and community structures that may present themselves in various guise and forms.

The employer has identified this as a contractual risk, but is unable to directly influence actions that will mitigate these risks. It is therefore a condition of this contract that any risk pertaining to the above stated conditions are placed as the sole responsibility of the contractor who is best suited to and possesses the most influence in identifying, mitigating and managing these risks.

The contractor is therefore required to take whatever steps deemed necessary to prevent any delays or cost implications to the project, by actively putting in place a Stakeholder Management Plan that deals with:

- Create a Stakeholder Register which identifies all stakeholders at the onset and throughout the duration of the contract
- Categorizing of stakeholders according to their interests, influence and contribution to the project
- Rating of stakeholders according to their influence and power on the project
- Addressing and communicating contractual opportunities to the identified groups
- Identifying Risks associated with stakeholders
- Continuous mitigation of Risks in terms of the Stakeholder Management Plan

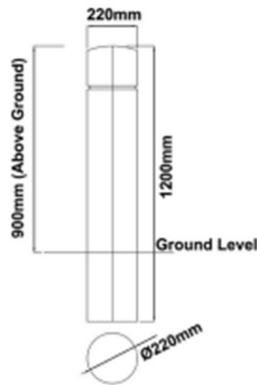
The identification of Stakeholders and the contents of the Stakeholder Management Plan must be continuously updated, and shall be approved by the Employer's Agent.

The provisions of this payment item, as a monthly Time related rate, is to cover all actions required by the contractor in terms of preventing any delays or added cost implications to this project. This risk is deemed to have been transferred to the contractor.

There will be no liability in the form of extension of time, Preliminary and General payment items and standing time costs attributable to the Employer in terms of any disruption arising from the actions of the identified or unidentified stakeholders.

PS.18 SUPPLY AND INSTALL CONCRETE BOLLARDS (1.2M HIGH)

The Contractor shall supply and install a precast plain concrete bollard which is 1.2m in total height, with 0.9m protruding above the ground as shown on the image below. The Contractor's rate shall include for all plant, labour, materials and setting out necessary for the construction of the concrete bollards as specified by the engineer on site.

**PS.19 CONCRETE GRADE 20/19 FOR CONCRETE BOLLARDS FOOTINGS**

The Contractor shall excavate a depth of 300mm into the stream bed material and cast a concrete footing for the bollards as specified by the Engineer. The Contractor's rate shall include for all plant, labour, excavation into all types of in-situ material, materials and setting out necessary for the construction of the concrete footings.

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.

Part	Description	Date of Issue	
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
EH	Steel Guardrails & Conc. Median Barriers		
F	Protection Works	July	1992
PF	Pressure Pipelines: Other Than Steel		
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

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 DD	Earthworks for Structures
PS EB	Graded Crushed Stone
PS EC	Cement Treated Graded Crushed Stone
PS ED	Road Asphalt
PS EF	Kerbs and Haunches
PS EG	Sidewalks, Footpaths and Median Areas
PS EH	Steel Guardrails & Conc. Median Barriers
PS F	Protection Works
PS PG	Non Pressure Pipelines and Pc Culverts
PS PH	Manholes and Appurtenant Drainage Works
PS PJ	Pipe Jacking
PS TA	Road Signs
PS TB	Road Markings

PS.AB PRELIMINARY AND GENERAL SPECIFICATION**INDEX**

PS.AB.1	SITE FACILITIES
PS.AB.1.1	Temporary Offices for Engineer and Staff
PS.AB.1.2	Contractor's Camp Site and Depot
PS.AB.1.3	Accommodation of Employees
PS.AB.1.4	Power Supply, Water and other Services
PS.AB.2	SERVICE CONNECTION FEE
PS.AB.3	TELEPHONE
PS.AB.4	NOTICE BOARD
PS.AB.5	ROAD DEVIATIONS AND TRAFFIC CONTROL
PS.AB.6	EMPOWERMENT STRATEGIES
PS.AB.6.1	Contractor Participation Goal
PS.AB.7	CONTRACTORS SUPERINTENDANCE
PS.AB.8	PROGRESS PHOTOGRAPHS
PS.AB.9	ALLOWANCE FOR ADDITIONAL LOCAL LABOUR
PS.AB.10	RAISING AND LOWERING OF EXISTING VALVES
PS.AB.11	PROVING OF EXISTING SERVICES

PS.AB.1 SITE FACILITIES**PS.AB.1.1 Temporary Offices for Engineer and Staff**

No offices are required for the exclusive use by the Engineer and/or his staff. The contractor is required to include in his rates for the provision of an office equipped with office furniture for use by the Engineer and/or his staff for the progress and technical meetings.

PS.AB.1.2 Contractor's Camp Site and Depot

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 recommended position of the camp site/store yard will be pointed out by the Engineer. However the Contractor may, if he prefers to have a camp site at another location of the work, site it elsewhere provided that he first obtains the written permission of the landowner, and subsequently the Engineer, to do so.

Any clearing of the site that is necessary and the making good after de-establishment will be the responsibility of the Contractor.

The following conditions shall apply:

- (k) None of the existing roads shall be damaged in any way.
- (ii) No waterborne sewerage facilities or potable water connection are available on the site.
The Contractor shall make his own arrangements in this regard.
- (iii) No electrical facilities exist on site.

- (iv) 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; Head: Real Estate and/or Head 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.AB.1.3 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.AB.1.4 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 Service Unit. The Contractor will be responsible for arranging for 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.

PS.AB.2 SERVICE CONNECTION FEE

Should the Contractor require either additional connection or increased power supply, any additional costs shall be to the Contractor's account.

PS.AB.3 TELEPHONE

No requirement for telephone

PS.AB.4 NOTICE BOARD

The typical notice board layout is given in Part C3.6.1. The following requirements shall apply with regards to the notice board.

PS.AB.5 ROAD DEVIATIONS AND TRAFFIC CONTROL

- a) Allowance has been made in the Bill of Quantities for deviations under the relevant items in Part AB – Preliminary and General of the Bill of Quantities. Costs of any additional deviations required by the contractor shall be included in the rates tendered and at the contractors own cost

It shall be assumed that if no deviations are listed then no deviations will be measured as part of this contract.

- b) Deviations required by the contractor shall comply with the requirements of Clause AB.7. 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.
- c) On deviations provided in terms of *b)* 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 for compliance with this clause.
- d) Unless indicated otherwise over the entire length and for the duration of the contract, traffic is required to be accommodated in both direction at all times.
- e) At all times sign posting shall be detailed in the part of this document: "Safety in Road Construction"

PS.AB.6 EMPOWERMENT STRATEGIES**PS.AB.6.1 Contractor Participation Goal**

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 100% black owned. Proof of payment to the subcontractors will be required to verify that the minimum has been achieved.

A minimum of 10% of the contract value (excluding PC Sum items and Fixed Cost allowances) must be subcontracted to Priority Black Enterprises (i.e. enterprises which are 100% owned by individuals which are from the Priority Population Group).

A minimum of 10% of the total CPG requirement, must be from **Ward 9 & 10**.

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

PS.AB.7 CONTRACTORS SUPERINTENDANCE

The contractor shall deploy full time based suitable candidates on site for quality control, coordination of responsibilities to all site employees including subcontractors.

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

PS.AB.8 PROGRESS PHOTOGRAPHS

Progress photographs will be required from the Contractor.

The Contractor is to submit BOTH a CD and USB weekly with photographs depicting progress of works on site. Where required by the Engineer, the Contractor must be able to print a minimum of 30 photographs in colour per month.

In addition, digital and aerial photographs shall be taken every second month across the entire site, or at the discretion of the Employer's Agent. This shall include the use of a drone to capture the images.

The images shall be the property of the eThekweni Municipality, and may be used from time to time to update the public on the progress of the works, whether at direct community engagements or broader publications such as newspapers and social media posts.

PS.AB.9 ALLOWANCE FOR ADDITIONAL LOCAL LABOUR

The contractor must use his own discretion and make provisions for the employment of additional local labour that may be required on the contract as a result of demands by the local community.

The contractor is advised to consider the contract duration and gazetted labour rates when pricing this item.

PS.AB.10 REPAIR / RAISING AND LOWERING OF EXISTING VALVES

Due to the dangerous situation occurring when 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 Waste Service Unit. Tolerances on valve cover levels shall be as specified in clause PH.6.5. Before final setting in position of valve covers the Contractor shall liaise with the Engineer regarding the direction in which covers shall be.

PS.AB.11 PROVING EXISTING SERVICES

The unit of measurement shall be the cubic metre (m³) with various depth horizons starting with up to 1,5 m depth and thereafter in 0,5 m increments.

The unit rate for proving existing services shall include for -

- (1) all as items (1), (5), (7), (8), and (9) of clause DB.8.5;
- (4) for proving services anywhere within the contract area and in advance of the main excavation; and
- (5) special care in excavation by hand in vicinity of services.

PS.AH OCCUPATIONAL HEALTH AND SAFETY UNIT SPECIFICATION

INDEX

PS.AH.1 OCCUPATIONAL HEALTH AND SAFETY UNIT SPECIFICATION

PS.AH.1 OCCUPATIONAL HEALTH AND SAFETY UNIT SPECIFICATION

The contractor shall allow in their cost provision for complying with all the requirements as covered in the:

2. Site Specific Health and Safety Specification in terms of 2014 Construction Regulations, referenced C3.4.3
3. Covid 19 Health and Safety Specification document, referenced C3.4.4 together with the
4. Baseline Risk assessment document in terms of Construction Regulation 5.1 (a), referenced C3.4.5

These documents are found under Part C3: Scope of Works subheading C3.4 Particular Specifications.

PS.B SITE CLEARANCE**INDEX**

PS.B.1	REMOVAL OF WIRE MESH FENCE AND STORE ON SITE FOR RE-USE
PS.B.2	BUILDINGS, STRUCTURES, UNDERGROUND OBSTRUCTIONS
PS.B.3	REMOVAL OF STRUCTURES ABOVE GROUND
PS.B.4	REMOVAL OF BRICKWORK
PS.B.5	REMOVAL OF ROADWAYS

PS.B.1 BUILDINGS, STRUCTURES, UNDERGROUND OBSTRUCTIONS

The unit of measurement cubic metre (m³). The rate shall cover all those operations specified in clause B.5.5.

Where specified, the contractor shall demolish, break-up and remove

- Buildings, walls, structures and all superficial obstructions on the site affected by the works or as indicated on the drawings down to natural ground level;
- Underground structures such as foundations, chambers constructed of brick work, concrete and reinforced concrete to a depth as directed by the engineer;
- Underground obstructions such as septic tanks and soak pits. The work involved shall consist of the following:
 - i. Excavation to expose the obstruction including upholding the sides of the excavation
 - ii. Breaking out, removal and disposal of the material causing the obstruction

Where the underground structures or obstructions are abandoned, any incoming or outgoing pipes shall be adequately sealed with concrete. All demolition material shall be disposed of at an approved tip

PS.B.2 REMOVAL OF STRUCTURES ABOVE GROUND

The unit of measurement cubic metre (m³). The rate shall cover everything required for the complete demolition of the building or structure, including blasting if necessary, down to natural ground level, but excluding the removal of foundations, and the disposal of material to an approved tip.

PS.B.3 REMOVAL OF ROADWAYS

The unit of measurement is cubic metre (m³) net in place before removal. The Contractor shall make allowance in his rate for the neat trimming of the existing roadworks where the new road is to tie into the existing road and the rate shall include all haulage to an approved tip. Separate items will be provided where materials are to be carefully removed and stored on site for re-use.

PS.B.4 REMOVAL OF EXISTING 2M HIGH GABION BOXES AND STORE FOR LATER USE

The unit of measurement is cubic metre (m³) net in place before removal. The Contractor shall make allowance in his rate for the carefully removal of gabion boxes and cage and stored on site for re-use.

PS.C CONCRETE WORKS**INDEX**

PS.C.1	NEW SABS SPECIFICATION FOR PORTLAND BASED CEMENT
PS.C.2	PLANT FOR CONCRETE WORK
PS.C.3	PLACING OF CONCRETE
PS.C.4	SUPPLY AND LAY TERRACE BLOCK OR SIMILIAR APPROVED
PS.C.6	SUPPLY OF GEOFABRIC
PS.C.7	PROVISION OF CLEAN COARSE SAND FOR RETAINING WALL
PS.C.8	NEW SABS SPECIFICATION FOR PORTLAND BASED CEMENT
PS.C.9	PORTLAND BLAST FURNACE CEMENT (CLAUSE C.3.1)
PS.C.10	MATERIALS AND PLANT FOR CONCRETE WORK
PS.C.11	PLACING OF CONCRETE
PS.C.12	CONCRETE TO WALL FOOTING
PS.C.13	MASS CONCRETE IN AND BETWEEN TOP ROW OF BLOCKS
PS.C.14	GRADE 20/26 AND 25/26 CONCRETE
PS.C.15	STONE MAT / V-DRAINS / CONCRETE TRAPEZOIDAL DRAINS TERRACE BLOCK
PS.C.16	CONCRETE SURFACING
PS.C.17	HAND PLACING OF CONCRETE
PS.C.18	PREPARATION OF UNDERLYING LAYERS
PS.C.19	LONGITUDINAL/TRANSVERSE JOINT TYPES
PS.C.20	TIE BARS
PS.C.21	FINISHING
PS.C.22	SMOOTHNESS OF SURFACING
PS.C.23	PROTECTION OF THE CONCRETE PAVEMENT
PS.C.24	CURING
PS.C.25	TESTS ON CONCRETE
PS.C.26	LIQUID SEALANT IN JOINTS BETWEEN CONCRETE AND ASPHALT PAVEMENT
PS.C.27	PANEL ANCHOR
PS.C.28	ANCHOR BLOCK

PS.C.1 NEW SABS SPECIFICATION FOR PORTLAND BASED CEMENT

The new SABS ENV. 197-1 (adopted in 1996) : Cement - composition, specification and conformity criteria Part 1 : Common Cement, replaces SABS 471 - 1979, SABS 626 - 1971 and SABS 831 - 1971 in Clause C.2 of Part C : Concrete Work. This also has reference to Part G : Prestressing, specifically for the cement for grouting of prestressing ducts.

PS.C.2 PLANT FOR CONCRETE WORK

Where the mixing and placing of concrete is concerned, the Contractor shall have at least one standby machine available for each operation of the processes of mixing, hoisting, transporting or placing. No concrete work may be commenced unless the above requirements are fully met.

PS.C.3 PLACING OF CONCRETE

No concrete is to be placed in the excavations until this has been approved by the Engineer or his Representative. The unit of measurement shall be cubic meters (m3) and it shall cover the supply, laying and vibration of concrete

PS.C.4 SUPPLY AND LAY TERRACE BLOCK OR SIMILIAR APPROVED

The rate of this item shall cover the supply and lay of terrace blocks form a retaining wall, excavation for the retaining wall, concrete sliders, sand infill to the blocks and laying of concrete on the top row of the retaining wall. The unit of measurement shall be in square meters (m2).

PS.C.5 BASE FOUNDATION FOR RETAINING WALL

The unit if measurement shall be linear meters (m). The rate shall cover for the excavation of the retaining wall foundation, supply and lay of the base and compaction of the subgrade material.

PS.C.6 SUPPLY OF GEOFABRIC

The unit of measurement shall be linear meters (m). The rate shall cover for the provision and laying of a Kaymat U44 or approved geofabric.

PS.C.7 PROVISION OF CLEAN COARSE SAND FOR RETAINING WALL

The retaining wall fill material shall conform to the requirements of a Clean Coarse Sand Material as described in TRH 14.

PS.C.8 NEW SABS SPECIFICATION FOR PORTLAND BASED CEMENT

The new SABS ENV. 197-1 (adopted in 1996): Cement - composition, specification and conformity criteria Part 1: Common Cement, replaces SABS 471 - 1979, SABS 626 - 1971 and SABS 831 - 1971 in Clause C.2 of Part C: Concrete Work. This also has reference to Part G: Prestressing, specifically for the cement for grouting of prestressing ducts.

PS.C.9 PORTLAND BLAST FURNACE CEMENT (CLAUSE C.3.1)

Portland Blast furnace cement may be used in any part or the works except in sewer pipes and where H.A.C. has been specified. The Contractor's attention is however drawn to the characteristics of concrete made with this material and he shall ensure that no excavations containing such concrete are backfilled or structures loaded until the concrete being covered or loaded has achieved sufficient strength to withstand the imposed loads.

PS.C.10 MATERIALS AND PLANT FOR CONCRETE WORK

Where the mixing and placing of concrete is concerned, the Contractor shall have at least one standby machine available for each operation of the processes of mixing, hoisting, transporting or placing. No concrete work may be commenced unless the above requirements are fully met. All concrete is to be ready-mix concrete from an accredited supplier. No hand mixing will be permitted except for restricted conditions whereby hand mixing may be permitted.

PS.C.11 PLACING OF CONCRETE

No concrete is to be placed in the excavations until this has been approved by the Engineer or his Representative.

PS.C.12 CONCRETE TO WALL FOOTING

The rate of payment for this work shall be cubic metre (m³) and the Contractor shall allow in his price for the supply of all materials required to fully construct, handling, levelling, vibrating, soft board expansion

joints, shuttering and Mesh Ref193 or 245 for the reinforced concrete wall footing as detailed on Drawing No.48815.

PS.C.13 MASS CONCRETE IN AND BETWEEN TOP ROWS OF BLOCKS

The rate of payment for this work shall be cubic metre (m³) and the Contractor shall allow in his price for the supply of all materials required to fully construct, shuttering, handling, levelling, and vibrating, for the mass concrete in and between the top rows of blocks as detailed on Drawing No.48815.

PS.C.14 GRADE 20/26 AND 25/26 CONCRETE

The rate of payment for this work shall be cubic metre (m³) and the Contractor shall allow in his price for the supply of all materials required to fully construct, shuttering, handling, levelling, and vibrating, for the concrete to wall footings, if required and as directed by Engineer on Site as well as for the encasement to ducts as detailed on Drawing No.48815.

PS.C.15 STONE MAT / V-DRAINS / CONCRETE TRAPEZOIDAL DRAINS / TERRACE BLOK

Should the Engineer's Representative consider the trench bottom to be unsuitable or ground water excessive, a mat of 26 mm stone of not less than 150 mm depth extending shall be spread before the concrete blinding is cast. Payment width will be limited to the width of the foundation slab / drain. The Engineer's Representative's decision in this respect shall be obtained before any material is used. No payment will be made for using a stone mat where this is not authorised. The rate of payment for this work shall be per cubic metre and the Contractor shall allow in his price for the supply of all materials required to fully construct, excavation, handling, levelling, vibrating, soft board expansion joints, shuttering and Mesh Ref193 or 245 for the reinforced concrete v-drains / concrete trapezoidal drains and Terrace Blok walls of the stone as detailed on Drawing No.48815. All concrete is to be ready-mix concrete from an accredited supplier.

PS.C.16 CONCRETE SURFACING

Concrete shall be cast in alternate panels with each panel making up the following dimensions width 2,25m, length 2.25m and nominal thickness 0,15m, with construction joints being formed both longitudinally and transversely. Payment for longitudinal and transverse joints will be paid separately.

No batching or hand mixing will be permitted.

The rate tendered for this item shall be per square meter (m²), for the specified thickness and compressive strength. The rate shall include for all plant, labour, and materials including preparatory works, formwork, texturing, curing and protection.

PS.C.17 HAND PLACING OF CONCRETE

No concrete is to be placed in the excavations until the base layer has been approved by the Engineer or his Representative.

The Contractor shall make allowance in his rates for hand placing of concrete and for fixing of tie bars as detailed in Drawing No. 48815.

The Contractors attention is drawn to the provisions of clause C.5.11, which states that concrete shall be

placed within one hour from the time of discharge.

The Contractor shall note that texturing and curing of the concrete pavement will NOT be measured separately. The Contractor shall therefore allow for this in his rate for concrete surfacing.

PS.C.18 PREPARATION OF UNDERLYING LAYERS

When the temperature of the subbase exceeds 20^o C the subbase shall be wetted in advance of the placing of the concrete, keeping the surface continuously wet for a period of at least one hour before placing the concrete.

Immediately before placing of the concrete the excess water shall be broomed off the road so as to ensure that the subbase is still damp when the concrete is placed, but without puddles of water or pockets of mud.

The wetting is of particular importance during hot dry weather and no concrete shall be placed on a subbase which has not been wetted or which has dried out.

PS.C.19 LONGITUDINAL/TRANSVERSE JOINT TYPES

The Schedule of Quantities provides the Contractor with longitudinal and transverse joint types. The Contractor shall price these types of joints.

The longitudinal and transverse joints to be constructed shall be as detailed on Drawing No. 48815. Payment shall be under item C.4 as required.

The Contractor's rate shall include for all plant, labour and materials necessary for the construction of the specific joint but shall NOT include the supply and fixing of tie bars which shall be measured separately.

PS.C.20 TIE BARS

Tie bars shall consist of Y10 deformed bars complying with the requirements of SABS 920 as detailed on Drawing No. 48815.

Tie bars of the required dimensions and spacing shall be placed at right angles to joints. Tie bars shall be free of paint, grease or other coatings that may affect bond with the concrete.

At construction joints, the one half of the tie bar shall be supported on the subbase by means of suitable stools while the other half shall project into the adjacent pavement.

PS.C.21 FINISHING

The surface shall be roughened with a light pass of a stiff bristled broom applied transversely across the width of the road to create striations of about 1,5mm to 3,0mm in depth. In order to ensure straight brush marks, the brush shall be operated against a straight-edge laid at right angles to the pavement centre line.

PS.C.22 SMOOTHNESS OF SURFACIN

The minimum number of surface irregularities permitted with a 3m rolling straight edge on each panel will be as follows:

10 mm – 2 No.
15 mm max – 1 No.

PS.C.23 PROTECTION OF THE CONCRETE PAVEMENT

The Contractor shall take precautions in the form of barricading and watchmen to keep pedestrians, cyclists, animals etc., off the freshly placed concrete, particularly outside normal working hours.

No vehicular traffic having an axle loading greater than 20 kN shall be run on the finished surface of a concrete pavement within a period of fourteen days of its completion, unless the Engineer permits a reduction of this period when the pavement is constructed during generally warm weather conditions. Rubber-tired vehicles having an axle loading less than 20 kN and traveling at speeds not exceeding 25 km/h may be permitted after a period of seven days from the completion of a concrete pavement.

No vehicle with an axle load in excess of 80 kN shall be run on the completed surface at any stage of the contract.

PS.C.24 CURING

Curing shall be in accordance with the provisions of clause C.5.13. Methods (b) and (c), as included in C.5.13.2, shall NOT be permitted on the finished pavement surface.

PS.C.25 TESTS ON CONCRETE

The Roads Provision Department shall supervise the slump and air content testing and the making of the concrete cubes for compressive strength testing. The Contractor shall be responsible for the sampling, the provision of all equipment including concrete cube moulds, and for curing. The transporting of the cubes shall be the Contractor's responsibility. The testing of the cubes shall be done by the Pavement and Geotechnical Engineering Laboratory.

The procedure for sampling, manufacture of test cubes, storing, curing and testing shall be in accordance with the TMH1 Method D1. The following deviations from the above procedure shall apply:

When test cubes are prepared by rodding, six specimens shall be prepared per batch and the average of the three cube strengths shall be taken as one test result.

In the case of concrete pavements a minimum of 6 test cubes shall be taken for each batch of concrete delivered to the site.

PS.C.26 LIQUID SEALANT IN JOINTS BETWEEN CONCRETE AND ASPHALT PAVEMENT

The liquid sealant used in joints between concrete and asphalt pavement shall be hot-poured type joint sealing compound placed in accordance with the manufacturer's specification. The Contractor is to submit sample specifications to the Engineer for approval prior to procuring of materials.

PS.C.27 PANEL ANCHOR

The Contractor's rate shall include for all plant, labour, materials and setting out necessary for the construction of the panel anchor as detailed in Drawing No. 48815.

PS.C.28 ANCHOR BLOCK

The Contractor's rate shall include for all plant, labour, materials and setting out necessary for the construction of the anchor block as detailed in Drawing No. 48815.

PS.ED.7 SAW CUT TO LONGITUDINAL AND TRANSVERSE JOINTS

The saw cut shall be cut with a diamond cutter to a neat uniform line 50 mm deep along the edge of the existing road where directed by the Engineer.

The unit of measurement for the saw cut shall be linear metre (m) and the rate shall cover the overall depth of cut.

PS.PH.5 INLET AND OUTLET HEADWALLS

Drawing number 38576 shows details of outlet headwalls. The unit of measure for these headwalls shall be Number (No.) and shall include for all labour, plant and materials required for the construction of the headwall inclusive of the base and cut-off walls.

The construction of brickwork shall be as specified in Clause F.5.6.3. Mortar shall conform to mix Class A as defined in the latest edition of the Standard Building Regulations.

PS.PH.7 ALTERATIONS TO EXISTING CATCHPITS

The cost of operation includes the removal of existing heavy-duty precast inlet covers, breaking and reconstructing the existing brickwork and resetting the cover or replacing with a new precast cover.

PS.DA EARTHWORKS: BULK**INDEX**

PS.DA.1	INTERPRETATIONS
PS.DA.2	GEOTECHNICAL INFORMATION
PS.DA.3	EXCAVATION OF MATERIAL FROM SITE
PS.DA.4	EXCAVATE UNSUITABLE MATERIAL BELOW EMBANKMENTS OR FORMATION
PS.DA.5	IMPORT SUITABLE FILL MATERIAL
PS.DA.6	COMPACTION OF FILL
PS.DA.7	FORMATION
PS.DA.8	TOLERANCES
PS.DA.9	RESTRICTED EXCAVATION
PS.DA.10	GEOFABRIC
PS.DA.11	OVERHAUL
PS.DA.12	STOCKPILE HANDLING
PS.DA.13	IMPORT, PLACE AND COMPACT GRAVEL MATERIAL

PS.DA.1 INTERPRETATIONS

The following shall be added to the list of definitions.

Top of earthworks: The top of earthworks shall be defined as the underside of the subbase or selected layers under roads, the base under sidewalks and the underside of the topsoil layer under verges and embankments.

PS.DA.2 GEOTECHNICAL INFORMATION

Tenderer's attention is drawn to Part C.4 of this contract document, "Site Information", which describes the geology of the area and the associated material properties.

PS.DA.3 EXCAVATION OF MATERIAL FROM SITE

- (a) Further to Clauses DA.8.1 and DA.8.3 Tenderer's are to note that the measurement of excavation of material on site is based on the cut volumes in place before excavation between the original ground levels after stripping of topsoil and the top of earthworks calculated from cross sections as described in Clause DA.8. 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.
- (b) The nature of the roadworks is such that a considerable amount of the excavation shall be in restricted conditions. No additional payment shall be made for such excavation and the Tenderer shall therefore make do allowance in the rates for Bulk Earthworks for any additional work or hand excavation.
- (c) The Contractor's attention is drawn to the presence of watermain in the road reserve area. The Contractor shall limit the size and type of construction plant used in this area so as not to damage the existing watermain. Any damage to the watermain due to the size and type of construction plant used will be to the Contractor's account.

No additional payment will be made for compliance with this clause and Tenderer's shall include in the relevant rate for all extra plant, labour and materials required to work in these areas.

PS.DA.4 EXCAVATE UNSUITABLE MATERIAL BELOW EMBANKMENTS OR FORMATION

Further to Clause DA.8.3 the rate shall also include for trimming the area excavated to the required level and compaction of the in-situ material.

PS.DA.5 IMPORT SUITABLE FILL MATERIAL

The fill material shall conform to the requirements for a G7 Material as described in TRH 14 with the following Amendments:-

- (a) The material shall be free of weathered shale and will be subject to the approval of the Engineer.

PS.DA.6 COMPACTION OF FILL

The second paragraph of Clause DA.8.5 is to be amended by substituting "top of earthworks" for 'formation' where it occurs.

PS.DA.7 FORMATION

The Tenderers shall make full allowance in the rates for areas of formation in cut or where the fill layer thickness is less than 150 mm.

PS.DA.8 TOLERANCES

Clause DA.6 shall be amended to read as follows:

The allowable tolerances shall be:

- (a) the design angle ± 2 degrees for the angle of the cut or fill slope;
- (b) not less than the design width, nor more than 300 mm greater than the design width for the transverse horizontal embankment width at any level; and
- (c) the layer thickness ± 20 mm for topsoil;
- (d) For the formation, the Contractor will be required to place level pegs longitudinally at 10 m intervals on the road construction contract and elevation tolerances shall be taken on a section of the works. (When a portion of the works is less than 500 m² one tolerance reading per 10 m² shall be taken).

In any section the average of the elevations taken shall be such that the average thickness of the succeeding layer or layers above the formation shall be not less than that specified/nor greater than that specified plus 20 mm.

The standard deviation of the differences between the actual and design levels shall not be greater than 10 mm.

PS.DA.9 RESTRICTED EXCAVATION

The nature of the excavations are such that portions of the excavation shall be in restricted conditions. No additional payment shall be made for such excavation and the Tenderer shall therefore make due allowance in the rates for any additional work or hand excavation.

PS.DA.10 GEOFABRIC

The geofabric shall comply with Clause PG.3.8.

The unit of measurement shall be the square metre (m²). The rate shall include for the supply of the material, laying, joining, cutting and waste.

PS.DA.11 OVERHAUL

Notwithstanding the requirements of Clause DA.8.10 no additional payment shall be made for overhaul.

PS.DA.12 STOCKPILE HANDLING

Tenderers are to note that no stockpile handling will be payable on this contract. Cut material suitable for fill, shall be placed directly into fill without being stockpiled. If this is not possible, the Tenderer shall include in the bulk earthworks rates, any costs that he would incur in stockpiling and subsequent rehandling of material.

PS.DA.13 IMPORT, PLACE AND COMPACT GRAVEL MATERIAL

The completed gravel material (G2 and G7 as described in TRH14) layer shall be measured in cubic metres (m³) compacted in place. The rate shall cover the supply, loading, transporting, dumping, spreading, and all processing of the layer.

PS.DB EARTHWORKS FOR PIPE TRENCHES**INDEX**

PS.DB.1	BEDDING AND BACKFILL MATERIALS
PS.DB.1.1	General
PS.DB.1.2	Stormwater Pipes
PS.DB.1.3	Location of Services
PS.DB.1.4	Relocation of Services
PS.DB.1.5	Repair and Adjustment of Various Services
PS.DB.2	EXCAVATION AND BACKFILLING - EXISTING SERVICES
PS.DB.3	EXCAVATION, BACKFILLING AND REINSTATEMENT OF TRENCHES (CLAUSE DB.5)
PS.DB.4	SHORING OF TRENCHES TO EXCAVATIONS
PS.DB.5	EXCAVATION FOR SERVICES TO BE LAID BY OTHERS
PS.DB.6	EXCAVATION IN ROAD AND PAVED AREAS
PS.DB.7	RESTRICTED EXCAVATION
PS.DB.8	BACKFILLING
PS.DB.9	COMPACTION OF TRENCHES
PS.DB.10	BACKFILLING OF SERVICE TRENCHES
PS.DB.11	OVERHAUL
PS.DB.12	GEOFABRIC BLANKET
PS.DB.13	SOIL COMPACTION TESTING
PS.DB.14	SAFEGAURDING OF EXCAVATIONS
PS.DB.15	BARRACADING OF EXCAVATIONS

PS.DB.1 BEDDING AND BACKFILL MATERIALS**PS.DB.1.1 General**

- 1) The measurement for bedding shall be the total through length along the centre of the pipeline measured HORIZONTALLY with deductions made for stormwater manholes.
- 2) The unit of measurement for bedding shall be the Linear Metre (m), and the rate shall include for the placing and compacting of the bedding material up to the underside of the backfill for the various pipe diameters.
- 3) Separate items have been included in the Bill of Quantities for the provision of bedding material from a Contractor's commercial source.
- 4) Backfill materials shall comply with Clause DB.3.4. An item has been allowed in the Bill of Quantities for the importation of backfill material where so ordered by the Engineer.
- 5) The Contractor shall allow for haulage in the rate for provision of imported bedding and backfill. No overhaul will be paid for these items.

PS.DB.1.2 Stormwater Pipes

- 1) All bedding to stormwater pipes on this Contractor shall be either Type "B" or Type "C" as is specified in Part DB of the Departmental Technical Specification.

PS.DB.1.3 Location of Services

The Contractor is required to locate existing services using information/plans from service providers and locating devices if the need arises. The measurement of payment shall be sum, and the rate shall include locating the existing services and marking these locations on site.

PS.DB.1.4 Relocation of Services

Where indicated, the Contractor will be required to relocate existing services under the supervision of the service provider. The unit of measurement shall be sum. The unit rate shall include for the excavation for services; relocation of services including haulage, placing of services at the new allocated area and backfilling of the service trenches.

PS.DB.1.5 Repair and Adjustment of Various Services

The cost of operation includes the repair, relocation, lowering and installation of various services with materials provided by the EThekweni Water Department. It also includes providing services connection to houses and the appointment of a Metro approved plumber. The unit of payment shall be sum.

PS.DB.2 EXCAVATION AND BACKFILLING - EXISTING SERVICES

The Tenderer's attention is drawn to the presence of existing services in the area. The Contractor may find it impractical to use mechanical plant for excavation on some portions of the works due to conditions caused by the presence of these services.

The Tenderer's attention is further drawn to the fact that his rates for excavation and backfilling must include for all costs associated with working around these existing services and their protection and accommodation, as no claim for extra payment will be accepted for increased working space or for the inability to use plant in any circumstances.

PS.DB.3 EXCAVATION, BACKFILLING AND REINSTATEMENT OF TRENCHES (CLAUSE DB.5.3.2)

Further to and notwithstanding the requirements of the Departmental Specification, Part DB, the following requirements in respect of trench excavation, backfilling and reinstatement shall be adhered to:

- 1) It is considered that portion of the excavated material will not comply with the specification for material suitable for backfilling. It will be the Contractor's responsibility to use selective methods of excavation to ensure that this unsuitable material does not contaminate other materials suitable for reuse.
- 2) It is anticipated that a portion of the material excavated for trenches in existing natural ground is likely to be classified as "Rock" in terms of Part DB of the Departmental Technical Specification, and that blasting methods will be employed to facilitate excavation. Tenderers are to note that the unit of measurement shall be the linear metre (m), and that the rate tendered shall be inclusive of all work or operations necessary to drill, blast, excavate, backfill, spoil or stockpile the material.
- 3) Where the Contractor chooses to trench by open excavation e.g. battering sides of the trenches, this over-excavation shall not be backfilled with unsuitable excavated material but shall be backfilled with the same imported material as used for the pay-width of the trench. Payment for the imported backfill shall be limited to the pay-width of the trench only and the Contractor shall allow in his rates for any extra backfill material that may be required as a result of over-excavating
- 4) Notwithstanding the method of trench excavation adopted by the Contractor, the restriction on the maximum trench width as defined in specification Clause DB.6.1 - must be strictly adhered to. Should the Contractor over-excavate the trench then he will be responsible for increasing the pipe strength and / or bedding class to be used, all to his cost.

The measurements for excavation shall be the total through-length along the centre-line of a pipeline measured HORIZONTALLY with deductions for manholes. In addition, trench depth will be measured vertically on the centre-line of the pipeline from the existing ground level to the invert level.

PS.DB.4 SHORING OF TRENCHES TO EXCAVATIONS

The Contractor shall be responsible for the design and installation of all shoring where applicable, which must not only comply with all of the relevant safety regulations pertaining to the provision of safe working conditions in earthwork excavations but also will provide sufficient lateral support to minimise any damage to adjacent structures, services or road surfaces.

In addition to the above and the requirements of Clause DB.5.3.2 (a) all excavations in road reserves and adjacent to structures and where excavations are in excess of 1,5 m in depth shall be supported with close shoring and no open or intermittent shoring of any description will be permitted.

The minimum requirements for shoring of these trench excavations shall be as follows:

- 1) Either ribbed steel trench sheeting of suitable thickness with an edged return for interlocking or suitably sized timber poling boards or runners are to be used. Adequate sized walings at suitable intervals are to be provided. Struts shall consist of either adjustable tubular steel jacks or timber suitably sized for the load application.
- 2) The shoring for the excavations shall be progressively installed as the excavation proceeds. Care being taken to ensure the soil is not removed within a minimum 300 mm of the toe of the runners.
- 3) Installation of shoring after the trench has been excavated to a depth in excess of 1,5 m is not acceptable.
- 4) Details of the proposed shoring must be supplied to the Engineer at least two weeks before the operation commences. During the backfilling, the sides of the trench including the road layers above any over-excavated sections are to be cut back to a point behind the over excavation.
- 5) No separate item has been allowed for in the Bill of Quantities and the Contractor shall allow in his excavation rates for shoring as necessary.

The cutting back of the trench sides shall be to the Contractor's account. Payment for reinstatement of the road hardening shall be based on the widths given in Clause DB.8.3.3.

PS.DB.5 EXCAVATION FOR SERVICES TO BE LAID BY OTHERS

Where indicated, the Contractor shall be required to excavate a trench for the installation of services by others. (Depth and width of trench shall be confirmed on site). The trench bottom shall be trimmed to comply with the tolerances specified under Clause DB.6.3, after which it shall be taken over by the service organisation. After installation of the services the trench shall be backfilled as part of the bedding operation to approximately 300 mm above the service.

Thereafter the Contractor shall continue the backfilling utilising suitable material from the trench excavation, in 150 mm layers which shall be compacted to 95% Mod. A.A.S.H.T.O. density. The unit of measurement shall be the cubic metre (m³) and the rate shall cover the work described under Clause DB.8.1.

PS.DB.6 EXCAVATION IN ROAD AND PAVED AREAS

Further to Clause DB.8.7 the rate tendered shall include for saw cutting the existing road asphalt.

PS.DB.7 RESTRICTED EXCAVATION

The nature of the trench excavations are such that a considerable amount of the excavation shall be in restricted conditions. No additional payment shall be made for such excavation and the Tenderer shall therefore make due allowance in the rates for any additional work or hand excavation.

PS.DB.8 BACKFILLING

Where bedding is compacted by saturation, no backfill material may be placed or compacted on top of this, until such time as the bedding has sufficiently dried so that it may provide suitable lateral support to the pipe walls prior to loading.

PS.DB.9 COMPACTION OF TRENCHES

Further to Clause DB.8.5, Tenderers are to note that in all cases the compaction of the trench bottom and the trench backfill shall be to 95% Mod. A.A.S.H.T.O. An extra-over item has not been included in the Bill of Quantities and tenderers shall include for these costs under the relevant excavate and backfill items.

PS.DB.10 BACKFILLING OF SERVICE TRENCHES

As part of the bedding operation, services laid or relocated by others will be backfilled by them to approximately 300 mm above the service. The backfill shall then be continued by the Contractor up to the original level. The backfilling shall be carried out using suitable material from the trench excavation, in 150 mm layers which shall be compacted to 95% Mod. A.A.S.H.T.O. density.

The unit of measurement shall be the cubic metre (m³) and the rate shall include for all plant and labour required to select, place and compact the material as specified.

PS.DB.11 OVERHAUL

Notwithstanding the requirements of Clauses DB.8.1 and DB.8.17 no additional payment shall be made for haulage.

PS.DB.12 GEOFABRIC BLANKET

The geofabric to stone bedding must comply with Clause PG.3.8 of Part PG : Non-Pressure Pipelines and Precast Concrete Culverts.

The unit of measurement shall be the square metre (m²). The rate shall include for its supply, laying, joining, cutting and waste.

PS.DB.13 SOIL COMPACTION TESTING

The compaction control testing shall be carried out by the Contractor at his own expense.

Position,	Roadways	Sidewalks Other Locations
Trench formation	1 No. per 30 lin m	1 No. per 100 lin m
Bedding Cradle &	2 No. per 30 lin m	1 No. per 100 lin m

Selected Fill Blanket		
Backfill	1 No. per layer per 15 m ² or part thereof	1 No. per 2 layers per 50 m ² or part thereof

The positions of the tests shall be selected by the Engineer. The cost of all control testing is covered under the Preliminary and General section of the Schedule of Quantities. Acceptance testing is undertaken by the relevant Durban Corporation Department at the discretion of the Engineer after reviewing the results of the control testing

PS.DB.14 SAFEGAURDING OF EXCAVATIONS

The precautions for excavations as specified in the relevant clauses in this section shall apply to all trench excavations.

The contractor or his agent or his representative shall take all the steps necessary to ensure that no person is required or allowed to work in a trench or any other unsupported overhanging excavation which is more than 1.0m deep and any excavation which has not been adequately supported, shored or braced if there is any danger whatsoever of the sides of the excavation collapsing. The support shoring or bracing to be designed and constructed by the contractor, shall be strong and sturdy enough to support the sides of the excavation in question.

The contractor shall note that this clause does not relieve him of any obligations

PS.DB.15 BARRACADING OF EXCAVATIONS

All excavation areas are to be barricaded to the satisfaction of the engineer.

All costs arising from these requirements are to be included in the relevant rates for the excavation.

EARTHWORKS FOR STRUCTURES

INDEX

PS.DD.1	GENERAL
PS.DD.2	EARTHWORKS FOR STRUCTURES
PS.DD.3	STOCKPILE HANDLING
PS.DD.4	BACKFILLING OF EXCAVATION AND WORKING SPACE
PS.DD.5	EXCAVATION TO SPOIL
PS.DD.6	OVERHAUL

PS.DD.1 GENERAL

Excavations for [the retaining wall](#) shall be carried out in accordance with the Departmental Specification Part DD - Earthworks for Structures.

Tenderers shall note that the excavation for structures is measured to the neat dimensions of the foundation in plan as if excavated with vertical or battered sides, according to the type of wall constructed.

No extra over payment shall be made for restricted excavation. The Tenderer shall note the instances where the nature of the excavation is restricted, and shall make allowance in the excavation rates.

No payment will be made for stockpile handling. Cut material suitable for fill shall be placed directly into fill without being stockpiled. If this is not possible, the Tenderer shall include in the earthworks rate for any costs that he may incur as a result of stockpiling and the subsequent re-handling of the material.

The unnecessary stockpiling of excavated material adjacent to the roadway will not be permitted. The Contractor will make due allowance for this in his rates.

Over-excavation for the concrete base of the retaining structure will be in-filled with grade 25/26 mass concrete at the Contractor's own expense. The Contractor shall take due precaution to ensure this does not occur.

PS.DD.2 EARTHWORKS FOR STRUCTURES

Excavation shall be carried out in accordance with the Departmental Specification Part DD - Earthworks for Structures.

Excavated material shall be stockpiled on site for use as backfill. No material shall be taken to spoil unless the Engineer shall have issued written confirmation that the material is deemed unsuitable for re-use.

Tenderers shall note that unless indicated otherwise excavation for structures is measured to the neat dimensions of the foundation in plan as if excavated with vertical sides.

PS.DD.3 STOCKPILE HANDLING

Tenderers are to note that no stockpile handling will be payable on this contract. Cut material suitable for fill, shall be placed directly into fill without being stockpiled. If this is not possible, the Tenderer shall include in the bulk earthworks rates, any costs that he would incur in stockpiling and subsequent rehandling of material.

PS.DD.4 BACKFILLING OF EXCAVATION AND WORKING SPACE

Two separate types of backfill operations are required to complete the work of this contract.

1. The first is the backfilling with beach sand or imported clean coarse sand of the working space on either side of the culvert in the portions excavated under this contract. The measurement for this backfilling procedure shall be the volume calculated by multiplying the height of the culvert by 500 mm over the length of the culvert for both sides of the culvert, for the portion excavated under this contract.

The unit of measure shall be cubic metres (m³) and the rate shall cover the work described under Clause DD.8.3. Two separate items are provided in the Bill of Quantities. One for backfilling using beach sand from a stockpile on site and one for backfilling using imported clean coarse sand. The rate for the imported clean coarse sand must also include all royalties and all haulage costs.

No extra payment shall be made for river sand or imported material not authorised or placed outside the pay width.

2. The second is the backfilling of the excavation above the deck of the culvert which is excavated under this contract. The unit of measure shall be cubic metres (m³) and the rate shall cover the work described under Clause DD.8.3. The measurement for this backfilling procedure shall be the volume calculated by multiplying the pay depth by the pay width over the length of the culvert. The pay depth shall be measured from level of formation to the top of the culvert deck and the pay width shall be the width of the culvert plus 500 mm on either side of the culvert.

Two separate items are provided in the Bill of Quantities. One for backfilling using beach sand from a stock pile and another for backfilling using excavated material from stockpile.

No extra payment shall be made for work outside the pay width.

PS.DD.5 EXCAVATION TO SPOIL

Clause DD.8.2(12) shall be replaced by the following :

The unit rate for excavation to spoil shall include for separation from suitable material, loading, deposition and spreading of excess and unsuitable material.

PS.DD.6 OVERHAUL

All spoil sites require prior approval by the engineer in writing. If any material is spoiled off site without written approval from the engineer for the respective spoil site, then the cost of overhaul will be to the account of the contractor.

PS. DW DAYWORKS**INDEX**

PS.DW1	SCOPE
PSDW2	ORDERING OF DAYWORK
PSDW3	MEASUREMENT AND PAYMENT

PS.DW1 SCOPE

This section covers the listing of daywork items in accordance with the General Conditions of Contract Clause 37, for use in determining payment for work which cannot be quantified in specific units in the Bill of Quantities or work ordered by the Engineer during the construction period which was not foreseen at tender stage and for which no applicable rate exists in the Bill of Quantities.

PSDW2 ORDERING OF DAYWORK

No daywork shall be undertaken unless written authorization has been obtained from the Engineer.

PSDW3 MEASUREMENT AND PAYMENT

<i>Item</i>		<i>Unit</i>
PSDW3.1	Personnel during all hours	
	a) Unskilled labor	hour (h)
	b) Semi-skilled labor	hour (h)
	c) Skilled labor	hour (h)
	d) Ganger hour (h)	
	e) Flag person	hour (h)
PSDW3.2	Plant and Equipment	
	a) Tipper truck (10m ³ capacity or more)	hour (h)
	b) Water truck (10000 litre capacity)	hour (h)
	c) Tractor loader backhoe (TLB)	hour (h)
	d) Grader (AT140G or similar)	hour (h)
	e) Pedestrian roller (Bomag 90 or similar)	hour (h)
	f) Vibrating plate compactor (4kW capacity)	hour (h)
	g) Mobile air compressor (10m ³ /min. capacity)	hour (h)
	h) Paving breaker, air driven, including all attachments	hour (h)
	i) Concrete mixer (0,6m ³ capacity)	hour (h)
	j) Angle grinder (1 kW capacity)	hour (h)
PSDW3.3	Materials	
	a) Procurement of materials	Provisional Sum
	b) Contractor's handling costs, profit and all other charges in respect of sub item PSDW3.3	Percentage (%)
PSDW3.4	Transport	
	a) LDV (Bakkie)	Kilometre (km)
	b) Flatbed truck (10 tons)	Kilometre (km)

The unit of measurement of item 3.1 and 3.2 shall be the hour for the item of plant or personnel. Non-working hours for transport breakdown, lack of operator or any other reason shall not be measured. The time shall be taken from the time that the personnel and/or plant depart until return.

Measurement shall only be for work instructed and directed by the Engineer, where the Engineer considers no other appropriate rate is available in the Schedule of Quantities. Prior to the commencement of any

work by the labourers described under item 3.1, the Contractor must obtain written consent from the Engineer regarding the classification of all labourers in terms of “unskilled”, “semi-skilled” and “skilled” labourers.

The tendered rates for labour for pay item 3.1 shall include full compensation to cover overhead charges and profit, leave pay, bonuses, subsistence, allowances, employer’s contribution, additional payment for overtime where applicable, insurances, housing, site supervision, use of small hand tools and appliances, non-mechanical plant and equipment and consumable stores, for all administrative, supervisory, operative and contingent costs, relating to the supply of personnel.

The tendered rates for plant for pay item 3.2 shall be an all-inclusive hire charge for the use of the vehicle and driver or plant/equipment and operator and shall apply only to vehicles, plant and equipment nominated in writing by the Engineer, for all administrative, supervisory, operative and contingent costs, and profit, relating to the running of the plant.

The unit of measurement for pay sub item 3.3(a) shall be the amounts actually paid for the procurement of materials to be purchased and shall be made in accordance with the provision of the General Conditions of Contract. Only the actual quantities of materials used, as verified by the Engineer, shall be paid for.

The percentage tendered for pay sub item 3.3(b) shall be the percentage of the amounts actually paid for the procurement of materials as ordered under pay sub item 3.3(a) and shall be in full and final compensation in respect of the Contractor’s handling costs, profit and all other charges in connection with the procurement and supply of the materials to the point of usage.

The unit of measurement for pay item 3.4 shall be the kilometre distance that the vehicle travelled for transporting personnel and/or plant. All travelling shall be approved by the Engineer.

The tendered rate for pay item 3.4 shall include full compensation for the cost of the vehicle including fuel, maintenance depreciation and running costs.

The above-mentioned tendered rates shall be full compensation for the various items as specified and no further profit shall be paid.

The tendered rates shall be industry related and will be used in the sensitivity analysis during the adjudication of the tender.

PS.EB GRADED CRUSHED STONE**INDEX**

PS.EB.1	BASE AND SUB-BASE
PS.EB.2	PRIMING

PS.EB.1 BASE AND SUB-BASE

- a) The material for the graded crushed stone base shall conform to the requirements for a G2 graded crushed stone material as described in TRH 14 and will be subject to the prior approval of the Engineer's Representative.
- b) Details of the source of the supply of the base and sub-base material are required by the Engineer before roadworks commence.

A Certificate of Acceptance for these layers will only be issued by the Engineer when levels and densities are correct.

- c) No additional payment shall be made for restricted conditions, and the Tenderer shall therefore make due allowance in the rate for the graded crushed stone layer for any additional work (including hand work) required to place, spread, process and compact the layer in restricted conditions.

PS.EB.2 PRIMING

After the issue of the Certificate of Acceptance referred to in PS.EB.1, the sub-base shall then be primed with an Inverted Emulsion Primer conforming to S.A.B.S. 1260 of 1979 and applied at the rate of 0,6 l/m².

PS.ED ROAD ASPHALT**INDEX**

PS.ED.1	SMOOTHNESS APPLICABLE TO WEARING COURSE (CLAUSE ED.6.2)
PS.ED.2	RESTRICTION ON PLACING OF ASPHALT
PS.ED.3	PATCHING OF EXISTING SURFACE
PS.ED.3.1	Construction
PS.ED.3.2	Materials
PS.ED.3.3	Measurement and Payment
PS.ED.4	WEARING COURSE
PS.ED.5	LAYING OF ASPHALT
PS.ED.6	LONGITUDINAL AND TRANSVERSE JOINTS
PS.ED.7	SAW CUT TO LONGITUDINAL AND TRANSVERSE JOINTS
PS.ED.8	TECHNICAL SPECIFICATION FOR ASPHALT

PS.ED.1 SMOOTHNESS APPLICABLE TO WEARING COURSE (Clause ED.6.2)

The smoothness applicable to the wearing course shall be that specified in Clause ED 6.2(b). A Category " " Road is required for the Upgrade of 108796 Street.

PS.ED.2 RESTRICTION ON PLACING OF ASPHALT

The Contractor shall, wherever possible, complete the earthworks and compaction to sidewalks prior to the laying of the wearing course on the adjacent section of road so as to prevent construction plant and equipment from damaging the freshly laid wearing course.

PS.ED.3 PATCHING OF EXISTING SURFACE

Where existing roads are to be patched, or prior to resurfacing existing roads, those areas of the existing asphalt pavement which require patching will be marked by the Engineer.

PS.ED.3.1 Construction

In the areas to be patched the in-situ asphalt surfacing shall be removed to a depth of 100 mm. The sides shall be cut vertically with the edges square. The exposed surface shall be swept of all loose material, a tack coat applied to the bottom and sides and then patched with asphalt base course. After compaction the surface of the patch shall be flush with the adjacent road surface.

PS.ED.3.2 Materials

The asphalt base course shall comply with the requirements of Part ED : Road Asphalt.

PS.ED.3.3 MEASUREMENT AND PAYMENT

The unit of measurement shall be the square metre (m²) and the rate shall include for removal of the in-situ layers, trimming the sides, compaction, application of the tack coat, supply and laying of the asphalt, loading and haulage to the tip of excess material.

PS.ED.4 WEARING COURSE**Continuously Graded Wearing Course**

The continuously graded wearing course shall be a 40 mm compacted layer of hot asphalt (Mix "D")
The asphalt shall have the following properties:

Grading Envelope	
Sieve Size in mm	% Passing by Mass
19,00	100
13.20	96 ± 4%
9.500	82 ± 8%
4.750	60 ± 8%
2.360	44 ± 8%
1.180	32 ± 6%
0.600	23 ± 5%
0.300	15 ± 5%
0.150	9 ± 3%
0.075	6 ± 2%
Residual bitumen by mass (35/50 pen : Specified percentage 5.0 ± 0,3%.	

PS.ED.5 LAYING OF ASPHALT

(a) The Contractor shall supply the Engineer with the name of the asphalt Sub-Contractor before asphalt is laid.

The asphalt shall be laid by an approved paving machine. Hand-laying shall be permitted at the Engineer's discretion when the area involved is small. The asphalt shall not be laid if its temperature is below 140°C.

The asphalt shall be rolled in accordance with the method described in chapter VI of the Asphalt Institute Paving Manual (MS-8). The density of the layer shall satisfy the following:

$X \geq 93\% \text{ Maximum Theoretical Relative Density} + 0.5 S$ where:-

X - Arithmetic means of densities

S - Standard deviation

An acceptance certificate for this layer will be issued by the Engineer's inspector when all requirements have been met.

(b) Further to Clause ED.8.1, the rate tendered shall include for all extra work required to lay and compact the asphalt base and make-up courses in restricted areas.

PS.ED.6 LONGITUDINAL AND TRANSVERSE JOINTS

Tenderers are to note that the tendered rate per Section 3 Item ED.3 and 4 are not to include for saw cutting. If the Engineer requires the joint to be saw cut, the saw cutting to the longitudinal joint and transverse joint will be paid for under Section 3 Item ED.5 as an extra over to Section 3 Items ED.3 and 4.

A longitudinal joint is to be formed by cutting into the existing road surface by a width of 300 mm to a depth

of 50 mm where the new surface is to be tied longitudinally into the adjacent existing pavement as shown on Drawing No. 47929. The position of the joint shall be indicated by the Engineer on site. After cutting / milling the joint shall be swept of all loose material and painted with a tack coat.

Cutting of the joints shall only take place immediately prior to the laying of the wearing course.

The unit of measurement shall be linear metre (m). The rate tendered shall cover the neat cutting of the joint, the cutting of the additional 150 mm step into the existing adjacent asphalt base layers as shown on Drawing No. 47929 and the removal of all the old asphalt to tip off site inclusive of haulage.

PS.ED.7 SAW CUT TO LONGITUDINAL AND TRANSVERSE JOINTS

The saw cut shall be cut with a diamond cutter to a neat uniform line 50 mm deep along the edge of the existing road where directed by the Engineer.

The unit of measurement for the saw cut shall be linear metre (m) and the rate shall cover the overall depth of cut.

PS.ED.8 TECHNICAL SPECIFICATION FOR ASPHALT

Reference is made to the Technical Specification for Asphalt which is included in this project specification as item ED 8. The Technical Specification for Asphalt covers the design and manufacture of hot/warm mix asphalt.

In the event of any discrepancy between any item of the Standard Engineering Specification - Part ED and the ***Technical Specification for Asphalt***, the latter document shall take precedence.

Items within the ***Technical Specification for Asphalt*** which supersede, whole or in part, the Standard Engineering Specification include but are not limited to the following:

ED 3. MATERIALS

ED 4.1 MIXING PLANT

ED 7. TESTING

4. SCOPE

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”)

(A “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).

5. REFERENCES AND STANDARD SPECIFICATIONS

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 & 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

6. MATERIAL

6.1. 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.

6.2. Aggregates

6.2.1. 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).

6.2.2. 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".

6.2.3. 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.

6.2.4. 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

6.2.5. 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.

6.2.5.1. 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.

6.2.5.2. 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 dilated 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

6.2.5.3. 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

6.3. 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) ¹	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		COLTO Standard Specifications for Road and Bridge Works for State Road Authorities (1998) Table 4302/8		Well graded between 5.0mm and 0.075mm sieves	SANS 1083 Table 1 (Column 2)	Passing 5.0mm sieve	$P_{0.075} > 75\%$	$P_{0.075} > 75\%$
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		-	-
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

7. HOT/WARM MIX ASPHALT MIXES AND DESIGN

7.1. 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).

Sand Skeleton Mixes (Sa)		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			

Stone Mastic Asphalt (SMA)		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	

Enrobé à Module Élevé (EME)		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			Sa
Wearing Course (Paved)			Sa, SMA
	Base Course (Paved)		Sa, EME

Table 7 Typical Mix Use

7.2. 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.

7.2.1. 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.

7.2.1.1. Level I Design

The Level I design is aimed primarily at verification of the mix volumetric. 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%.

Traffic Condition Category	Marshall	Gyratory
	SANS 3001 AS1	AASHTO T 312
	No. Blows	N _{design}
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 ⁻⁸ cm ²)	1.0 max.	TRH 8 App C
Marshall Stability, Flow and Quotient	Report	SANS 3001-AS2

Table 12 Empirical Performance Tests (Level I)

7.2.1.1.1. 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

7.2.1.2. 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 _{design}
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

7.2.1.3. 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 _{design}
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)

7.2.2. **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.

7.2.3. 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 ¹	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 ⁶ 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.

7.2.4. 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.

7.2.5. 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.

7.2.5.1. 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.

7.2.6. 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.

8. ASPHALT PRODUCTION

8.1. 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

8.2. 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.

8.2.1. 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**8.2.2. 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.

			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		± 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.

i. 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.

ii. 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.EF KERBS AND HAUNCHES**INDEX**

- PS.EF.1 FIGURE 6 MOUNTABLE KERB AND CHANNEL / FILLET
- PS.EF.2 EXCAVATION FOR KERB AND CHANNEL / FILLET IN EXISTING GRADED STONE LAYER
- PS.EF.3 ADDITIONAL CONCRETE TO KERB FOUNDATION
- PS.EF.4 EXCAVATION FOR KERB AND CHANNEL / FILLET IN EXISTING ASPHALT LAYERS

PS.EF.1 FIGURE 6 MOUNTABLE KERB AND CHANNEL/FILLET

The kerbing to be used for this contract shall be Figure 6 mountable kerb and channel/fillet as detailed on Drawing

PS.EF.2 EXCAVATION FOR KERB AND CHANNEL/FILLET IN EXISTING GRADED STONE LAYER

The unit of measurement shall be the cubic metre (m³). The rate shall include all the materials, labour and plant necessary to scabble the existing G2 Graded Crushed Stone layer the width of the kerb base to be laid, the excavating, loading and transporting of surplus material to stockpile. The payment depth shall be 50 mm.

Over-excavation is likely to occur and this is to be made up in mortar (3 sand, 1 cement) Further to the above the rate tendered shall include for all additional mortar required to make up the over-excavated areas.

PS.EF.3 ADDITIONAL CONCRETE TO KERB FOUNDATION

The rates tendered for kerbs Type A and B shall be based on the minimum dimensions indicated on Standard Drawing no. 47929. Where the asphalt layers necessitate an increase in the kerb foundation thickness, the supply of this additional concrete shall be paid for separately. The unit of measurement shall be the cubic metre (m³) and shall cover the supply and placing of the concrete, compaction and any formwork that may be required.

PS.EF.4 EXCAVATION FOR KERB AND CHANNEL/FILLET IN EXISTING ASPHALT LAYERS

The unit of measurement shall be the cubic metre (m³). The rate shall include all the materials, labour and plant necessary to cut two parallel joints in the existing asphalt the width of the kerb base to be laid, the excavating, loading and transporting of surplus material to the approved tip. Saw cutting, if necessary, shall be measured separately.

PS.EH STEEL GUARD RAILS**INDEX**

PS.EH.1	STEEL GUARD RAILS
PS.EH.2	REFLECTIVE PLATES

PS.EH.1 STEEL GUARD RAILS

Where required by the Engineer, steel guard rails shall be installed in accordance with the details on standard drawing No. 38580.

- (a) The unit of measurement shall be the linear metre of guard rail shall cover the following:
 - all bolts, nuts, washers;
 - hot-dip galvanizing as specified; and
 - supply of pre-curved rails where necessary.
- (b) End wings shall be measured separately, and the rate shall include all bolts, nuts and washers
and hot-dip galvanizing as specified.
- (c) Precast concrete posts including bolt holes, reinforcement, excavation, 50 mm concrete blinding, compaction of backfill shall be measured for each unit post number

PS.EH.8.1 (e) REFLECTIVE PLATES

The rate shall cover the cost of supplying all materials and labour required to manufacture, paint and fix the reflector plates, as specified in the project specification or shown on the drawings

PS.F PROTECTION WORKS**INDEX**

PS.F.1	TOPSOILING
PS.F.1.1	Materials
PS.F.1.2	Measurement and Payment
PS.F.2	OVERHAUL
PS.F.3	RE-ERECTING WIRE MESH FENCING
PS.F.4	GABION BOX RETAINING WALL AND MATTRESSES
PS.F.5	GABION CAGES

PS.F.1 TOPSOILING**PS.F.1.1 Materials**

The soil shall be loamy with a well-defined crumb structure, neither too sandy nor too clayey. It shall contain evidence of fibrous plant roots and shall be free from perennial weed root stocks, stone, glass, metallic and plastic substances.

The imported topsoil shall be obtained from a source approved by the Engineer.

A sample of the topsoil shall be submitted to a SANAS accredited laboratory for testing as prescribed by the Engineer. Test results are to be forwarded to the Engineer for approval 4 weeks before the topsoiling operation commences

PS.F.1.2 Measurement and Payment

The unit of measurement shall be the square metre (m²). Further to Clause F.8.1 and F.8.2, the rate shall include for the purchase, supply, transport, mixing, distributing, spreading, trimming and finishing of the topsoil and compost mixture.

PS.F.2 OVERHAUL

Notwithstanding the requirements of Clause F.8.1 and Clause F.8.2, no additional payment shall be made for haulage. The rates tendered for items in Part F of the Bill of Quantities shall include the cost of haulage.

PS.F.4 GABION BOX RETAINING WALL AND MATTRESSES

Materials and construction shall be as is specified in Clause F.5.5 and F.6.3, and measurement and payment as is specified in Clause F.8.6 of the Standard Engineering Specification.

PS.F.10 GABION CAGES

Gabion boxes shall consist of double twisted, hexagonal wire mesh of nominal 80mm mesh, with 4,4mm o/d frame wire and 2,7mm o/d mesh wire. Complete with partitions at 1m centres. All wire to be mild steel to SANS 1580 – 1993, zinc coated by hot-dip galvanising to SANS 675 – 1993.

Mattresses shall consist of double twisted, hexagonal wire mesh of nominal 80mm mesh, with 4,0mm o/d frame and 3,5mm o/d mesh wire. Complete with partitions at 1m centres. All wire to be mild steel to SANS 1580 – 1993, zinc coated by hot dip galvanising to SANS 675 – 1993.

Weld mesh box or mattress gabion baskets will not be used.

The construction of gabions shall be labour intensive as the Engineer may instruct

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

PS.PG.1	SUBSOIL PIPES
PS.PG.2	SUBSOIL DRAINS AND OUTLETS
PS.PG.2.1	Connection of Subsoil Drains to Existing Stormwater System
PS.PG.2.2	Subsoil Termination Stub
PS.PG.3	STONE FOR SUBSOIL DRAIN FILTER
PS.PG.4	RIVER SAND BACKFILL FOR SUBSOIL DRAIN FILTER
PS.PG.5	GEOFABRIC BLANKET

PS.PG.1 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.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 Engineer.

Subsoil drains shall be type A, B or C as detailed on standard drawing No. 38575.

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.

PS.PG.2.1 CONNECTION OF SUBSOIL DRAINS TO EXISTING STORMWATER 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.2.2 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.PG.3 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.4 RIVER SAND 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:-

Sieve size mm	67	475	150	75
% Passing	100	90 -100	0 - 15	0 - 3

and having a Fineness Modulus of 2,0 - 3,5."

PS.PG.5 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.PH MANHOLES AND APPURTENANT DRAINAGE WORKS**INDEX**

PS.PH.1	MANHOLES AND INLETS
PS.PH.2	MANHOLES AND APPURTENANT WORKS: REVISED DRAWING NUMBERS
PS.PH.3	BRICKS
PS.PH.4	MANHOLES WITH TYPE S1, S2 AND D3 INLET COVERS
PS.PH.5	INLET AND OUTLET HEADWALLS
PS.PH.6	BRICK HEADWALLS TO DUCTS

PS.PH.1 MANHOLES AND INLETS

Tenderers are to note that manholes and inlets shall be measured according to type and varying depth only. The rate tendered for the manholes/inlets shall include for the different pipe sizes and benching configurations.

The Contractor shall note that the rate for inlets shall include the cost of the graded channel in front of the inlet and / or splay and the cost of the transition kerb and channel upstream and downstream from each inlet. This will not form part of the payment for kerb and channel.

PS.PH.2 MANHOLES AND APPURTENANT WORKS: REVISED DRAWING NUMBERS

Clause PH.3.2.1.1 second paragraph is replaced by the following:

Details of the precast concrete components of standard manholes are shown on standard drawings 38570 for both foul-water sewers and stormwater drains, 38574 for foul-water sewers and 38571 for stormwater drains.

Clause PH.5.11 first paragraph:

Standard drawing 21701 is replaced by drawing 38574.

PS.PH.3 BRICKS

Clause PH.3.1 first paragraph shall be replaced by the following:

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

PS.PH.4 MANHOLES WITH TYPE S1, S2 AND D3 INLET COVERS

A number of Type "A" and "B" stormwater manholes with various types of inlet covers have been scheduled on this contract. The manholes are schedule by type and in depth increments of 500 mm.

The unit of measurement shall be number (No.) and the tendered rate for each type shall include for the supply of all labour, plant and materials required to construct the manhole complete in accordance with the Standard Drawings and Specification, and inlet type cover as is specified in the contract drawings.

PS.PH.5 INLET AND OUTLET HEADWALLS

Drawing number 38576 shows details of outlet headwalls. The unit of measure for these headwalls shall be

Number (No.) and shall include for all labour, plant and materials required for the construction of the headwall inclusive of the base and cut-off walls.

The construction of brickwork shall be as specified in Clause F.5.6.3. Mortar shall conform to mix Class A as defined in the latest edition of the Standard Building Regulations.

PS.PH.6 BRICK HEADWALLS TO DUCTS

Ducts shall have brick headwalls constructed at each end of the ducts, as shown on standard Drawing No. 38581. Bricks for these headwalls shall be Non-Facing Extra (NFX) with a nominal compressive strength of 14 MPa to S.A.B.S. 227:1986. Construction of brickwork shall be as specified in clause F.5.6.3. Mortar shall conform to mix Class A as defined in the latest edition of the Standard Building Regulations.

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/>:

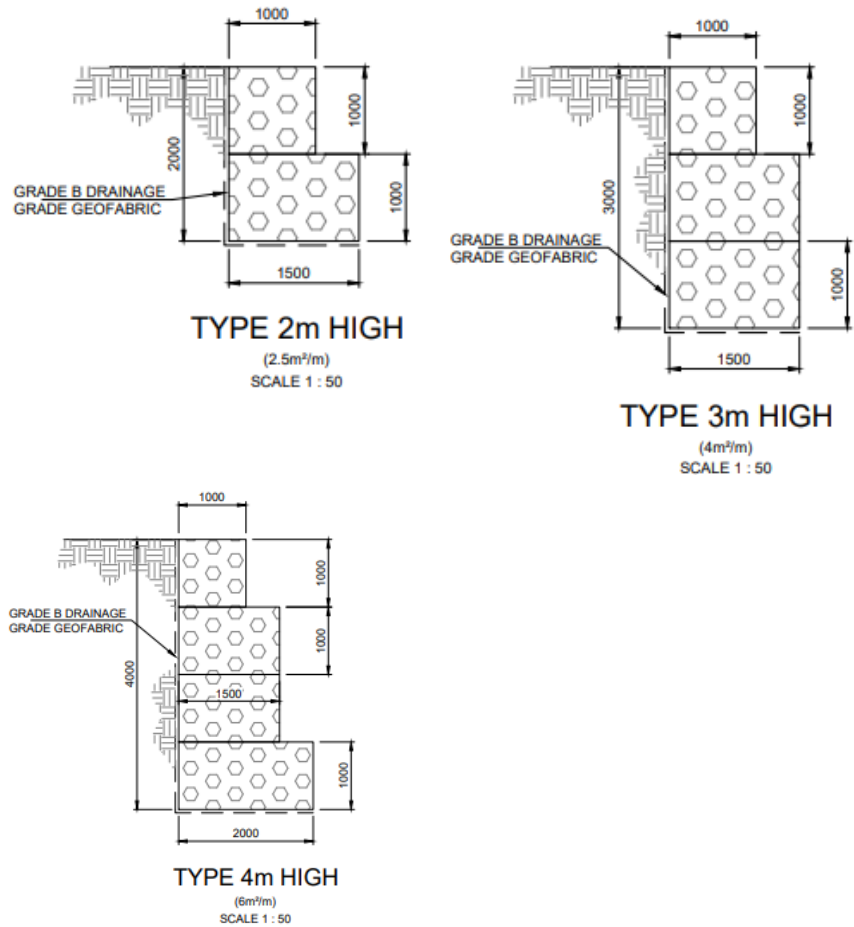
- C3.4.1 Part AH - OHSA 1993 Safety Specification
(26 Pages)

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

C3.5: CONTRACT AND STANDARD DRAWINGS

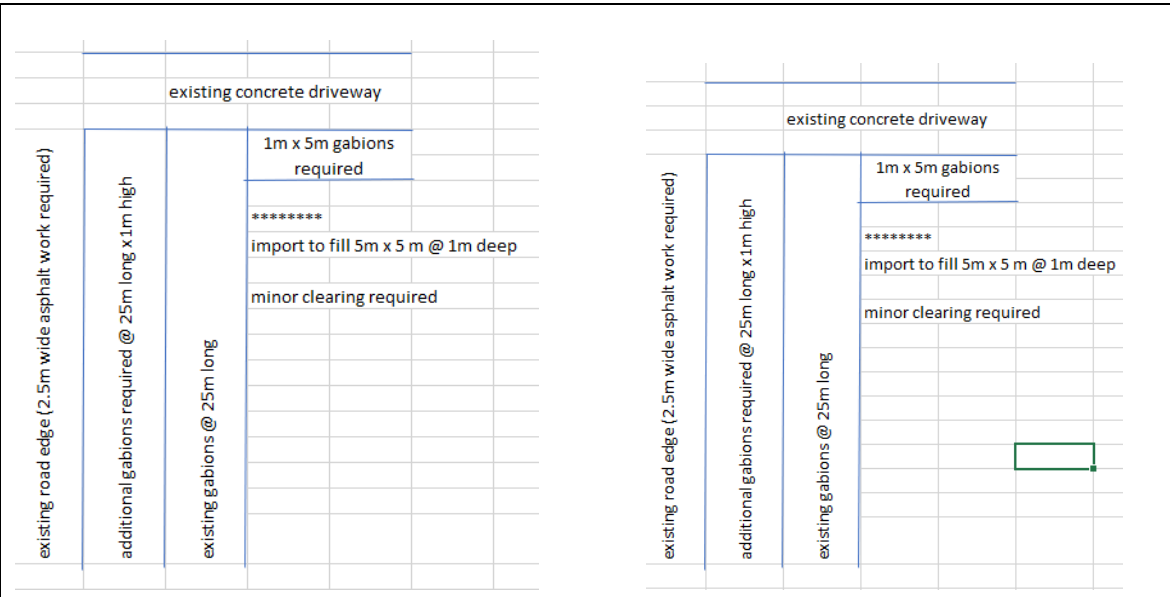
C3.5.1 CONTRACT DRAWINGS / DETAILS

1. GABION BOXES

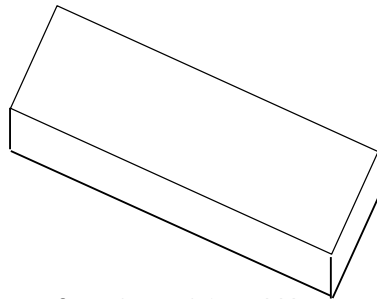
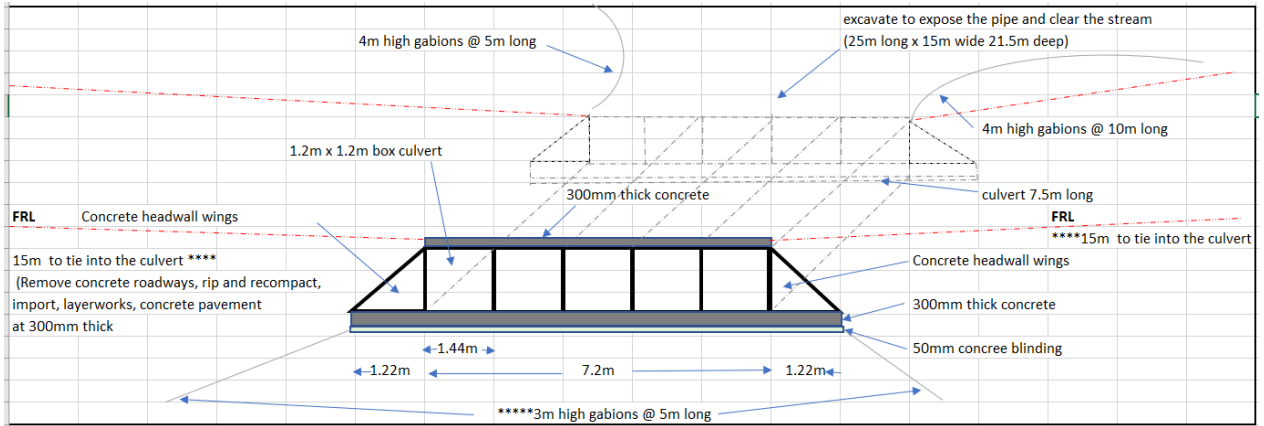


2. IKHWEZI ROAD 1 PLAN VIEW

IKHWEZI ROAD 2 PLAN VIEW



3. PHOSHWANE ROAD



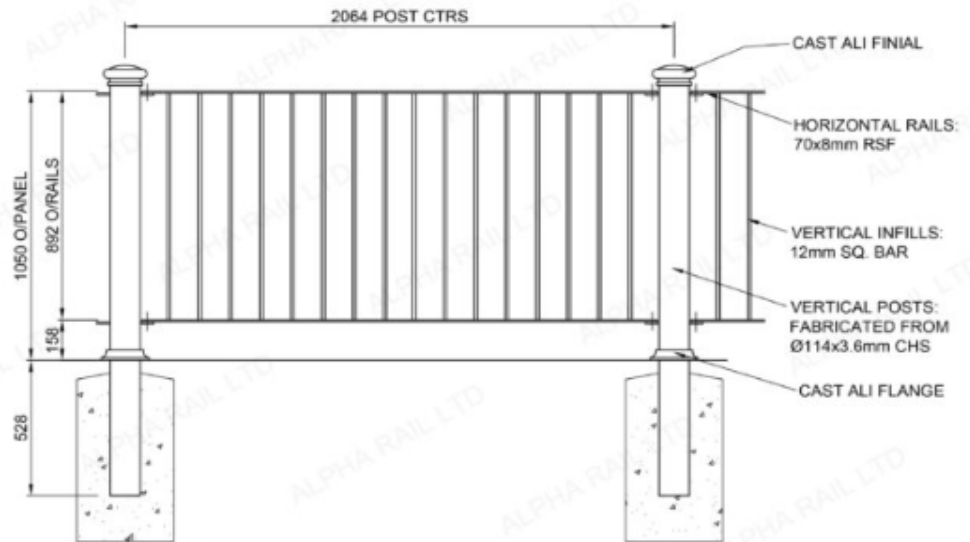
(30% - 60 %
slope)

D = 300mm

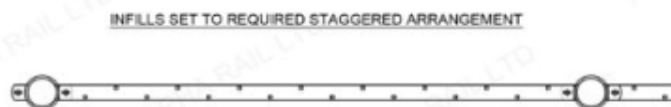
1m wide Concrete chutes

Sidewalk to vary from 1m to 1.2m width
(surrounded by mountable kerbs)
@ 130mm thick concrete, either side of the road

TYPICAL ELEVATION



PLAN VIEW



TYPICAL SKETCH FOR PRECAST CONCRETE HANDRAILS

4. VALLEY DRIVE



TYPICAL EXAMPLE



C3.5.2 STANDARD DRAWINGS

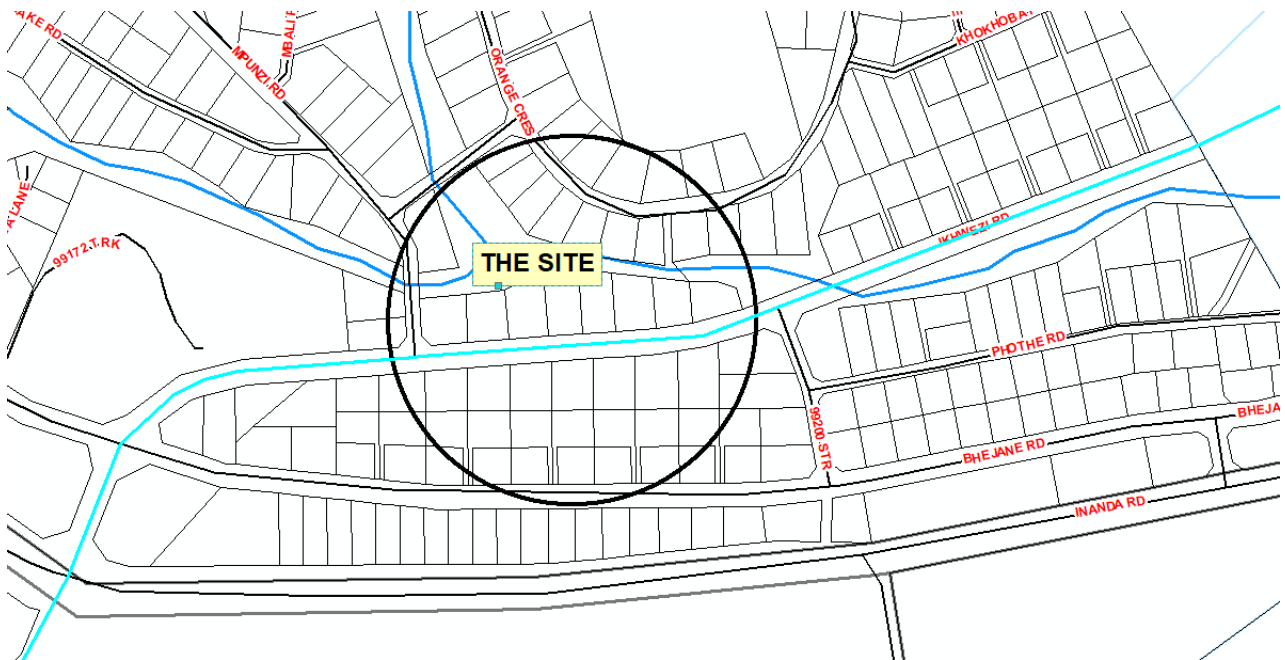
The Standard Drawings to which these Standard Engineering Specifications refer are listed below.

Dwg No	Description	Date of Issue	
38570	Ring Manholes	February	1990
38571	Brick Manhole Details	February	1990
38572	Stormwater Inlet Details	February	1990
38573	Stormwater Inlet Special Details	February	1990
38576	Headwall Details	February	1990
38577	Kerbing Details	February	1990
38581	Retaining Wall, PC Steps, Staircase, Cable Ducts and Headwalls	February	1990

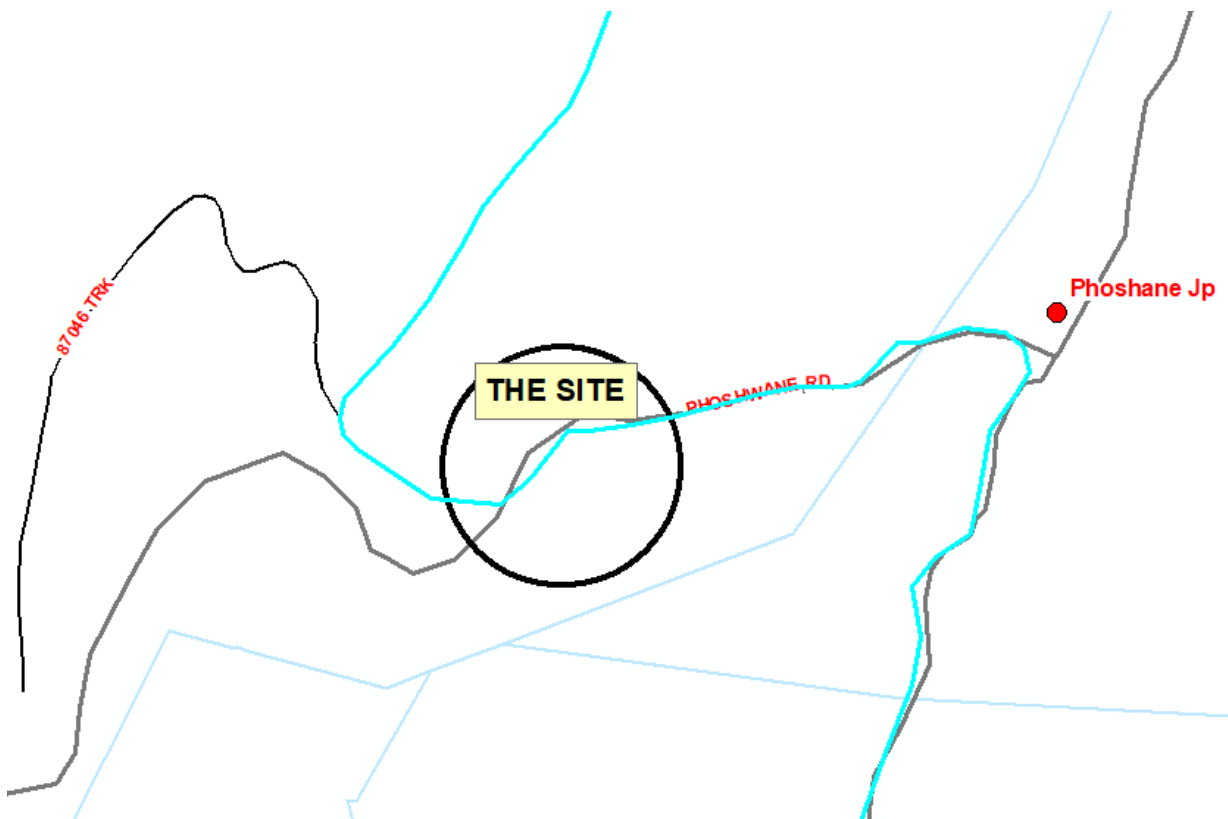
PART C4: SITE INFORMATION

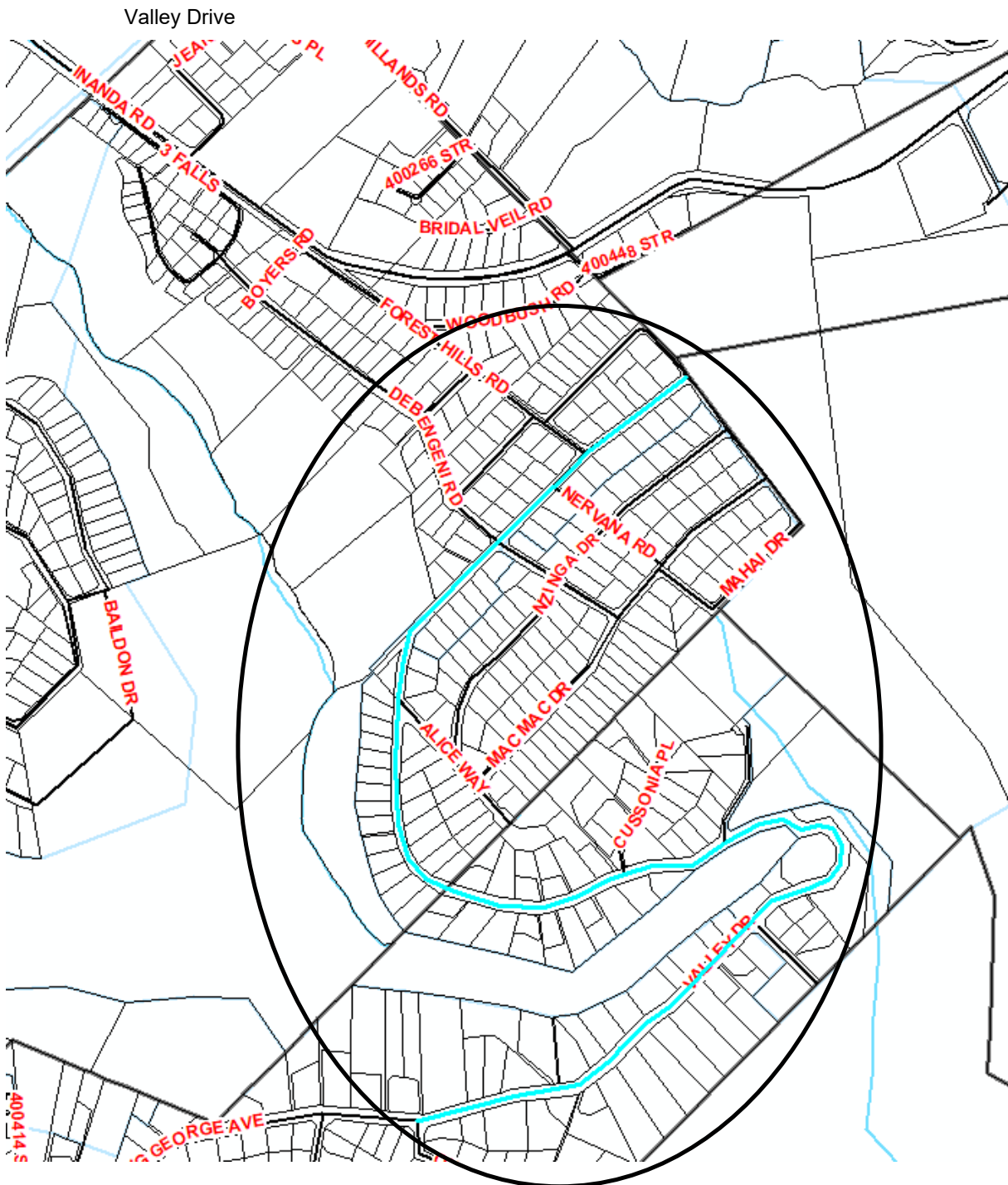
C4.1 LOCALITY PLAN

Ikhwezi Road 1 and 2



Phoshwane Road





C4.2 CONDITIONS ON SITE

There is no specific geotechnical information or other site information.

C4.3 TEST RESULTS

There are no specific test results.