



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

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

ENGINEERING UNIT
ROADS PROVISION DEPARTMENT

PROCUREMENT DOCUMENT
INFRASTRUCTURE

CONTRACT No.: 1R-47183

TITLE: Chester Cele Crescent Road Widening in Umlazi-G of Ward 79

Clarification Meeting: There will be no clarification meeting. Bidders are requested to submit email queries to Brenden.isereepersad@durban.gov.za related to the bid. All email queries are to be submitted by **19 November 2021**. Email questions and queries will be consolidated and posted on eTenders/Municipal website for the benefit of all Tenderers by **22 November 2021**.

Issued by:

ENGINEERING UNIT
ROADS PROVISION DEPARTMENT

Date of Issue: November 2021

Document Version: 01/04/2021 (b)

NAME OF TENDERER:

INDEX

<u>PART</u>	<u>PAGE</u>
<u>TENDER</u>	
T1 TENDERING PROCEDURES	
T1.1 Tender Notice and Invitation to Tender	(white) 2
T1.2 Tender Data	(pink) 3
T1.2.1 Standard Conditions of Tender	
T1.2.2 Tender Data (applicable to this tender)	
T2 RETURNABLE DOCUMENTS	
T2.1 List of Returnable Documents	(yellow) 11
T2.2 Returnable Schedules, Forms and Certificates	(yellow) 12
<u>CONTRACT</u>	
C1 AGREEMENT AND CONTRACT DATA	
C1.1 Form of Offer and Acceptance	(yellow) 34
C1.1.1 Offer	
C1.1.2 Acceptance	
C1.1.3 Schedule of Deviations	
C1.2 Contract Data	(yellow) 37
C2 PRICING DATA	
C2.1 Pricing Assumptions / Instructions	(yellow) 47
C2.2 Bill of Quantities (with separate page numbering)	(yellow) 49
C3 SCOPE OF WORK	
C3.1 Project Description and Scope of Contract	(blue) 63
C3.2 Project Specifications	(blue) 64
C3.3 Standard Specifications	(blue) 76
C3.4 Particular Specifications	(blue) 121
C3.5 Contract and Standard Drawings	(blue) 199
C3.6 Annexures	(blue) 200
C4 SITE INFORMATION	
C4.1 Locality Plan	(green) 201
C4.2 Conditions on Site	(green) 202
C4.3 Test Results	(green) 202

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

Tenders are hereby invited for the works to widen Chester Cele Road from an existing $\pm 2.5\text{m}$ width to a specified designed widened width of $4,5\text{m}$ on the right and left edges of the road as per the design plans with layerworks and as per the pavement design. Also included is the construction of minor bulk earthworks, Fig.6 mountable kerbing with concrete fillet, construction of terrace block retaining walls as well as other related ancillary works which forms part of the Scope of Works.

(F.1.1.1) The Employer is the eThekweni Municipality as represented by HEAD: ENGINEERING

It is estimated that tenderers should have a CIDB contractor grading designation of 2 CE (or higher).

(F.1.2) Tenders must be submitted on official tender documentation issued in electronic format) by the eThekweni Municipality. Electronically downloaded documentation, obtainable from the National Treasury's eTenders website, should be printed in its entirety, and suitably bound by the tenderer. Hard copy formats will not be issued.

The physical collection of tender documents has been suspended at time of this tender; tender documents will only be available electronically on the National Treasury's eTenders website.

(F.2.7) There will be no clarification meeting. Bidders are requested to submit email queries to Brenden.isereepersad@durban.gov.za related to the bid. All email queries are to be submitted by **19 November 2021**. Email questions and queries will be consolidated and posted on eTenders/Municipal website for the benefit of all Tenderers by **22 November 2021**.

(F.2.8) Queries relating to these documents may be addressed to the Employer's Agent's Representative whose contact details are: Brenden Isereepersad , 031 311 7973 (t) , Brenden.isereepersad@durban.gov.za

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

(F.2.15) Tender offers shall be delivered on or before Friday, **26 November 2021** at or before 11:00

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

PART T1: TENDERING PROCEDURES**T1.2: TENDER DATA****T1.2.1 STANDARD CONDITIONS OF TENDER**

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

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

T1.2.2 TENDER DATA

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

F.1: GENERAL

F.1.1 The employer: The Employer for this Contract is the eThekweni Municipality as represented by: **HEAD: ENGINEERING**

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

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

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

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

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

F.1.4 The employer's agent: The Employer's agent is

- Andrew de Souza (Pr.Eng)
- Tel: 031 311 7623 (t)
- Email: Andrew.Desouza@durban.gov.za

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

F.2: TENDERER'S OBLIGATIONS

F.2.1 Eligibility: A Tenderer will not be eligible to submit a tender if:

- (a) the Tenderer does not comply with the legal requirements as stated in the Employer's current SCM Policy;
- (b) the Tenderer cannot provide proof that he is in good standing with respect to duties, taxes, levies and contributions required in terms of legislation applicable to the work in the contract;
- (c) In the event of a Compulsory Clarification Meeting:
 - i) the Tenderer fails to attend the Compulsory Clarification Meeting;
 - ii) the Tenderer fails to have form "Certificate of Attendance at Clarification Meeting / Site Inspection" (in Part T2.2) signed by the Employer's Agent or his representative.
- (d) in the case of JV submissions, two or more JV entities have common directors / shareholders or common entities tendering for the same works.
- (e) at the time of closing of tenders, the Tenderer is not registered on the National Treasury Central Supplier Database (CSD) as a service provider. In the case of a Joint Venture, this requirement will apply individually to each party in the Joint Venture.
- (f) If the tenderer is required by law to prepare annual financial statements for auditing, the tenderer must submit their audited annual financial statements:
 - i) for the past three years; or
 - ii) since their establishment if established during the past three years;
 If the tenderer is not required by law to prepare audited financial statements, then the tenderer must submit a Public Interest (PI) Score, whereby if the PI score is above 350 points then the bidder must submit audited financial statements.

F.2.1.1 Eligibility: Only those tenderers who are registered (as "Active") with the CIDB (at time of tender closing), in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a CE class of construction work, are eligible to have their tenders evaluated.

Joint ventures are eligible to submit tenders provided that:

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

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

F.2.1.2 Eligibility: Tenderer's Experience

Only those tenderers that can demonstrate experience, by the submission of the specified 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.

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".

Tenderers may submit experience gained as Sub-Contractors.

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

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.

Returnable form "Experience of Tenderer" is included in Part T2. This form should be duplicated for each experience submission, as may be required.

Table 1: Documentation / Information Requirements

	Proof of Sub-Contract Agreement Note 1	Letter of Award OR Form of Offer & Acceptance Note 2	Most recent Payment Certificate with Quantities summary Note 3	Final Payment Certificate with Quantities summary Note 4	Completion Certificate Note 5	NB Scope of Work Note 6
Works as Sub-Contractor						
Completed Contracts	Yes	No	No	Yes	No	Yes
Works as Main Contractor						
Completed Contracts	No	Yes	No	Yes	Yes	Yes
NOTES						
Note 1	Must include the names of the parties, the effective dates, and the signature(s) page, all of 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, with a summary breakdown of quantities.					
Note 4	Proof of the final payment received from the Main Contractor or Client / Employer, 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. <ul style="list-style-type: none"> • This submission must indicate how the works carried out, either as a Sub-Contractor or a Main Contractor, is similar (see Tenderer's Experience table) 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 Part T2, or if available as a hard copy (max. 2 pages) attached to the form with the other relevant, associated, supporting documentation. 					
Failure to provide this supporting documentation / information, for each submission of experience, will invalidate that submission						

Table 2: Tenderer's Experience Requirement

Provision of Roads and Ancillary Works
<ul style="list-style-type: none"> • 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 (asphalt, concrete and gravel) rehabilitation projects, road (asphalt, concrete and gravel) 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, <u>each</u> with a value of 50% of the tender value submitted for this tender, with 1 contract aligned specifically to this tender's scope of works.

Failure to complete the relevant returnable form in Part T2 (for each experience submission) and supply the associated letter of award and completion certificate will invalidate the experience submission.

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

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

No hard copies will be issued.

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

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

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

F.2.7 Clarification meeting: There will be no clarification meeting. Bidders are requested to submit email queries to Brenden.isereepersad@durban.gov.za related to the bid. All email queries are to be submitted by **19 November 2021**. Email questions and queries will be consolidated and posted on eTenders/Municipal website for the benefit of all Tenderers by **22 November 2021**.

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. : 1R-47183
- Contract Title : Chester Cele Crescent Road Widening in Umlazi-G of Ward 79

The Employer's address for delivery of tender offers is: the Municipal Building, 166 K.E. Masinga

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

If registered on the eThekweni Municipality's Vendor Portal, tender submissions can be made electronically via URL: <https://ethekwinivendor.durban.gov.za/tenders/availabletenders/>

Parts of each tender offer communicated on paper shall be submitted as an original.

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, 26 November 2021
- Time : 11:00

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

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

CIDB Registration

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

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

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

Tax Clearance

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

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

B-BBEE Status Level of Contribution

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

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

The requirements are summarised in the following table:

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

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

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

Central Supplier Database (CSD)

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

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

F.3: THE EMPLOYER'S UNDERTAKINGS

- F.3.1.1 Respond to requests from the tenderer:** Replace the words “five working days” with “three working days”.
- F.3.2 Issue addenda:** Add the following paragraph: “Addenda will be published, in electronic format, on the National Treasury’s eTenders website. In the event that the Clarification Meeting is compulsory, Addenda will only be issued to those tendering entities appearing on the Clarification Meeting Register.”
- F.3.4 Opening of Tender Submissions:** Tenders will be opened immediately after the closing time for tenders. The public reading of tenders will not take place due to COVID Protocols
- F.3.11 Evaluation of Tender Offers:** The procedure for evaluation of responsive Tender Offers will be in accordance with the Employer’s current SCM Policy, the Preferential Procurement Policy Framework Act (5 of 2000), and the Preferential Procurement Policy Framework Act Regulations (January 2017).

The procedure for the evaluation of responsive tenders is Price and Preference.

The **80/20** preference points system will be used where the financial value (incl. VAT) of one or more responsive tender offers have a value that equals or is less than R 50,000,000. The Formula used to calculate the **Price Points**, and the **Preference Points** that will be allocated, will be according to the specified PPPFA Regulations.

Only locally produced goods, services, or works, or locally manufactured goods, with a stipulated

minimum threshold for Local Production and Content will be considered.

F.3.13 Acceptance of tender offer: In addition to the requirements of Clause F.3.13 of the Standard Conditions of Tender, tender offers will only be accepted if:

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

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

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

The additional conditions of tender are:**ACT.1 Appeals**

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

The City Manager
Attention Ms S. Pillay eMail: Simone.Pillay@durban.gov.za
P O Box 1394
DURBAN, 4000

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

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

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

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

ACT.3 Code of Conduct and Local Labour

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

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

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

T2.1.1 General

The Tender Document must be submitted as a whole. All forms must be properly completed as required, and the document shall not be taken apart or altered in any way whatsoever.

The Tenderer is required to complete each and every Schedule and Form listed below to the best of his ability as the evaluation of tenders and the eventual contract will be based on the information provided by the Tenderer. Failure of a Tenderer to complete the Schedules and Forms to the satisfaction of the Employer will inevitably prejudice the tender and may lead to rejection on the grounds that the tender is not responsive.

T2.1.2 Returnable Schedules, Forms and Certificates

Company Specific

Certificate of Attendance at Clarification Meeting	13
Certificate of Authority	14
Declaration of Municipal Fees	15
Compulsory Enterprise Questionnaire	16
Tax Compliance Status PIN / Tax Clearance Certificate	18
B-BBEE Status Level of Contribution Certificate	19
Verification of CIDB Registration and Status	20
CSD Registration Report	21
Contractor's Health and Safety Declaration	22

Eligibility: Experience of Tenderer

Experience of Tenderer: Works as Main Contractor/ Sub-Contractor	24
--	----

Consolidated MBD Documents

MBD2: Tax Clearance Certificate Requirements	25
MBD4: Declaration of Interest	
MBD6.1: Preference Points Claim Form ITO the Preferential Regulations	
MBD8: Declaration of Bidder's Past SCM Practices	
MBD9: Certificate of Independent Bid Determination	

Contractual

Joint Venture Agreements (if applicable)	31
Record of Addenda to Tender Documents	32
Amendments, Qualifications and Alternatives	33
Form of Offer	34
Bill of Quantities	49

T2.1.3 Preferential Procurement Schedules and Affidavits

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

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

NOTES

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

T2.2: RETURNABLE SCHEDULES, FORMS, AND CERTIFICATES

The returnable schedules, forms, and certificates as listed in T2.1.2 can be found on the pages 13 to 22.

CERTIFICATE OF ATTENDANCE AT CLARIFICATION MEETING / SITE INSPECTION

This is to certify that:

(tenderer name)

of (address)

.....

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

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

Particulars of person(s) attending the meeting:

Name:

Name:

Signature:

Signature:.....

Capacity:

Capacity:.....

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

Name:

Signature:

Date:

CERTIFICATE OF AUTHORITY

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

COMPANY	CLOSE CORPORATION	PARTNERSHIP	JOINT VENTURE	SOLE PROPRIETOR
Refer to Notes at the bottom of the page				

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

.....

hereby authorise Mr/Mrs/Ms

acting in the capacity of

to sign all documents in connection with the tender for **Contract No. 1R-47183** and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

Notes

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

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

DECLARATION OF MUNICIPAL FEES

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

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

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

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

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

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

NAME : (Block Capitals)

SIGNATURE : DATE:

(of person authorised to sign on behalf of the Tenderer)

COMPULSORY ENTERPRISE QUESTIONNAIRE

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

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

Full Name	Identity number*	Personal income tax number *

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

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

Company registration number, if applicable:

Close corporation number, if applicable:

Tax Reference number, if any:

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

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

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

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

Insert separate page if necessary

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

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

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

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

Insert separate page if necessary

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

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

Signed Date

Name Position

Enterprise Name

TAX COMPLIANCE STATUS PIN / TAX CLEARANCE CERTIFICATE

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

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

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

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

NAME : (Block Capitals)

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

B-BBEE STATUS LEVEL OF CONTRIBUTION CERTIFICATE

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

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

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

The requirements are summarised in the following table:

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

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

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

NAME : (Block Capitals)

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

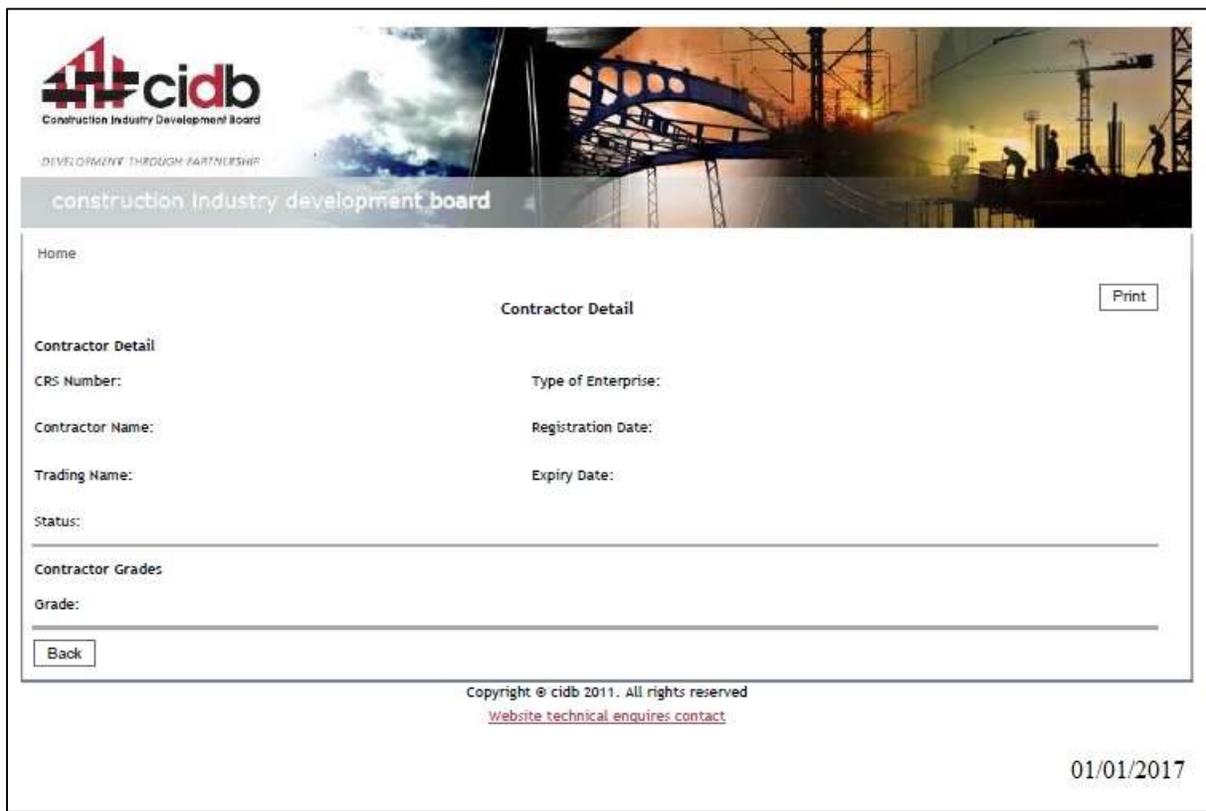
VERIFICATION OF CIDB REGISTRATION AND STATUS

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

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

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

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



NAME : (Block Capitals)

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

CSD REGISTRATION REPORT

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

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

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

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

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

NAME : (Block Capitals)

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

CONTRACTOR'S HEALTH AND SAFETY DECLARATION

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

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

Declaration by Tenderer

1. I the undersigned hereby declare and confirm that I am fully conversant with the Occupational Health and Safety Act No 85 of 1993 (as amended by the Occupational Health and Safety Amendment Act No 181 of 1993), and the OHS Act 1993 Construction Regulations 2014.

2. I hereby declare that my company has the competence and the necessary resources to safely carry out the construction work under this contract in compliance with the Construction Regulations and the Employer's Health and Safety Specifications.

3. I propose to achieve compliance with the Regulations by one of the following:

Tenderers are
to Circle Applicable

(a) From my own competent resources as detailed in 4(a) hereafter: **YES NO**

(b) From my own resources still to be appointed or trained until competency is achieved, as detailed in 4(b) hereafter: **YES NO**

(c) From outside sources by appointment of competent specialist Subcontractors as detailed in 4(c) hereafter: **YES NO**

4. Details of resources I propose:

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

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

NAMES OF COMPETENT PERSONS	POSITIONS TO BE FILLED BY COMPETENT PERSONS

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

(i) By whom will training be provided?

(ii) When will training be undertaken?

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

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

Name of proposed subcontractor:

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

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

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

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

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

NAME : (Block Capitals)

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

ELIGIBILITY: EXPERIENCE OF TENDERER

Experience Eligibility are specified in Clause F.2.1.1.2 of the Conditions of Tender in Part T1.2. 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 a " 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:																				
Employer's Agent (Engineer) OR Main Contractor's Details	Entity Name:																				
	Contact Name:																				
	Contact Tel:																				
	Contact Cell:																				
	Contact email / other:																				
Contract Details	Contract Number:																				
	Contract Title:																				
	Has this Contract been completed?										Y'	N'	Commencement Date:								
													d	d	m	m	2	0	y	y	
												Completion Date (if applicable):	d	d	m	m	2	0	y	y	
Tendered Value (Contract Sum) OR Sub-Contract Value:										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 with Quantities summary	Final Payment Certificate 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 provide this supporting documentation / information, for each submission of experience, will invalidate that submission					

NAME : (Block Capitals)

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

CONSOLIDATED MUNICIPAL BIDDING DOCUMENTS

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

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

NOTES

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

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

SECTION A: GENERAL ENTERPRISE INFORMATION

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

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

Full Name	Identity No.	State Employee No.	Personal income tax No. *

Use additional pages if necessary

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

SECTION B: MBD 2: TAX CLEARANCE CERTIFICATE REQUIREMENTS

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

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

SECTION C: MBD 4: DECLARATION OF INTEREST

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

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

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

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

SECTION E: MBD 6.1: PREFERENCE POINTS CLAIM ITO THE PREFERENTIAL REGULATIONS

Preference points for this tender shall be awarded as per the Tender Data and the Preferential Procurement Regulations (2017). Failure on the part of a tenderer to submit a B-BBEE Verification Certificate from a Verification Agency accredited by the South African Accreditation System (SANAS), or a Sworn Affidavit for an EME, or sworn affidavit for a QSE (in line with the revised BBBEE codes of Good Practice), together with the bid will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed. The Employer reserves the right to require of a tenderer, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the Employer.

1.0	B-BBEE Status Level of Contribution claimed:		
	Will any portion of the contract be sub-contracted?	YES	NO
	If YES, indicate:		
	(i) what percentage of the contract will be subcontracted?		
	(ii) the name of the sub-contractor?		
	Name:		
	(iii) the B-BBEE status level of the sub-contractor?		
2.0	(iv) whether the sub-contractor is an EME?	YES	NO

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

SECTION G: MBD8: DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

This Municipal Bidding Document must form part of all bids invited. It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system. The bid of any bidder may be rejected if that bidder, or any of its directors have:

- abused the municipal entity's supply chain management system or committed any improper conduct in relation to such system;
- been convicted for fraud or corruption during the past five years;
- wilfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
- 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).

In order to give effect to the above, the following questions must be answered.

1.0	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.	YES	NO
	If yes, furnish particulars:		
2.0	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.	YES	NO
	If yes, furnish particulars:		
3.0	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?	YES	NO
	If yes, furnish particulars:		
4.0	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
	If yes, furnish particulars:		
5.0	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
	If yes, furnish particulars:		

Ref	Description	Complete or Circle Applicable
SECTION H: MBD9: CERTIFICATE OF INDEPENDENT BID DETERMINATION		
<p>Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).² Collusive bidding is a pe se prohibition meaning that it cannot be justified under any grounds.</p>		
<p>Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:</p>		
<p>(a) take all reasonable steps to prevent such abuse; (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.</p>		
<p>The following MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.</p>		
<p>In order to give effect to the above, the following Certificate of Bid Determination must be completed and submitted with the bid. The undersigned, in submitting the accompanying bid, in response to the invitation for the bid do hereby make the following statements that I certify to be true and complete in every respect:</p>		
1.0	I have read and I understand the contents of this Certificate;	
2.0	I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;	
3.0	I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;	
4.0	Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;	
5.0	For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:	
	a) has been requested to submit a bid in response to this bid invitation;	
	b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and	
	c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder.	
6.0	The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium ³ will not be construed as collusive bidding. (Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.	
7.0	In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:	
	a) prices;	
	b) geographical area where product or service will be rendered (market allocation);	
	c) methods, factors or formulas used to calculate prices;	
	d) the intention or decision to submit or not to submit, a bid;	
	e) the submission of a bid which does not meet the specifications and conditions of the bid;	
	f) bidding with the intention not to win the bid.	
8.0	In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.	
9.0	The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.	
10.0	I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No. 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No. 12 of 2004 or any other applicable legislation.	

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

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

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

Signed Date

Name Position

CONTRACTUAL

JOINT VENTURES AGREEMENTS

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

RECORD OF ADDENDA TO TENDER DOCUMENTS

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

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

NAME : (Block Capitals)

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

AMENDMENTS, QUALIFICATIONS AND ALTERNATIVES

(This is not an invitation for amendments, deviations or alternatives but should the Tenderer desire to make any departures from the provisions of this contract he shall set out his proposals clearly hereunder. The Employer will not consider any amendment, alternative offers or discounts unless forms (a), (b) and (c) have been completed to the satisfaction of the Employer).

I / We herewith propose the amendments, alternatives and discounts as set out in the tables below:

(a) AMENDMENTS

PAGE, CLAUSE OR ITEM NO	PROPOSED AMENDMENT

- (1) *Amendments to the General and Special Conditions of Contract are not acceptable;*
- (2) *The Tenderer must give full details of all the financial implications of the amendments and qualifications in a covering letter attached to his tender.*

(b) ALTERNATIVES

PROPOSED ALTERNATIVE	DESCRIPTION OF ALTERNATIVE

- (1) *Individual alternative items that do not justify an alternative tender, and an alternative offer for time for completion should be listed here.*
- (2) *In the case of a major alternative to any part of the work, a separate Bill of Quantities, programme, etc, and a detailed statement setting out the salient features of the proposed alternatives must accompany the tender.*
- (3) *Alternative tenders involving technical modifications to the design of the works and methods of construction shall be treated separately from the main tender offer.*

(c) DISCOUNTS

ITEM ON WHICH DISCOUNT IS OFFERED	DESCRIPTION OF DISCOUNT OFFERED

- (1) *The Tenderer must give full details of the discounts offered in a covering letter attached to his tender, failing which, the offer will be prejudiced.*

NAME : (Block Capitals)

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

PART C1: AGREEMENT AND CONTRACT DATA

C1.1: FORM OF OFFER AND ACCEPTANCE

C1.1.1: OFFER

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

Contract No: **1R-47183**

Contract Title: **Chester Cele Crescent Road Widening in Umlazi-G of Ward 79**

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.

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

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 3rd Edition 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 3rd Edition 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 **04 Months**. 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:

ENGINEERING UNIT : HEAD: ENGINEERING

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: 031-311-7326 (t)

Fax: 031-311-7321 (f)

E-Mail: Lihle.Mkhize@durban.gov.za

1.1.1.16 The **name of the Employer's Agent** is Andrew de Souza (Pr.Eng)

1.2.1.2 The address of the Employer' Agent is:

Physical: Engineering Unit, 166 K.E. Masinga Road, DURBAN, 4001

Postal: Engineering Unit, P O Box 680, DURBAN, 4000

Telephone: 031 311 7623 (t)

Fax: 031 311 7321 (f)

E-Mail: Andrew.Desouza@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 CVs of the Site Agent and the Foreman should be submitted to the Employer's Agent's Representative for acceptance by the Department (reference is made to Cl.5.3.1 of the Contract Data).

Note:

- i) "similar nature" implies projects that were of a value of at least 70% of this tender's value, and had a comparable Scope of Work in terms of technical requirements and operations;
- ii) "experience" implies experience on projects of a similar nature;
- iii) "accredited degree / diploma" implies a minimum 3 year qualification within the built environment, from a registered University or Institute of Technology.

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

- **Health and Safety Plan (refer to Clause 4.3)**
- **Initial programme (refer to Clause 5.6)**
- **Insurance (refer to Clause 8.6)**
- **CV(s) of Key Site Staff (refer to Clause 4.11.1)**

- 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."

- 5.4.2 The access and possession of Site shall not be exclusive to the Contractor but as set out in the Site Information.

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

- (5.1.12) 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:

- The proportion not subject to adjustment: **x = 0.10**.
- The base month will be the month prior to the month in which tenders close.
- The Index for Labour, Plant, and Materials shall be based on **December 2016 = 100**.
- The Index for Fuel shall be based on **December 2020 = 100**.

	STATS SA Statistical Release	Table	Description	Coefficient
• "L" is the "Labour Index"	P0141	Table A	Geographic Indices; CPI per Province; Kwa-Zulu Natal	a = 0.28
• "P" is the "Contractor's Equipment Index"	P0151.1	Table 4	Plant and Equipment	b = 0.28
• "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 35/50 grade bitumen from Durban SAPREF Refinery, 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.

8.3.2 **Excepted Risks**

The contents of Clause 8.3.2 (Claim for excepted risks) are deleted and replaced with the following:

"The Contractor shall take all reasonable actions to avoid or overcome any delays to Practical Completion caused by or arising from the excepted risks listed in Clause 8.3.1. The costs of any such actions are borne by the Contractor and the Contractor shall not be entitled to make a claim for additional costs incurred as a result thereof, regardless of the number, frequency, or duration of such excepted risks.

If, in carrying out the Works, despite the Contractor having taken such reasonable actions, any of the excepted risks listed in Clause 8.3.1, other than pertaining to the damage or physical loss referred to in Clause 8.2.2.2, causes the Contractor to suffer delay to Practical Completion, the Contractor shall be entitled to make a claim for an extension of time in accordance with Clause 10.1. Notwithstanding anything contained elsewhere in the Contract, the Contractor shall not be entitled to make a claim for additional costs incurred as a result of any of the excepted risks listed in Clause 8.3.1, regardless of the number, frequency or duration of such excepted risks.

Should the Contractor wish to mitigate the additional costs it is incurring as a result of any of the excepted risks listed in Clause 8.3.1, the costs of any such mitigation are borne by the Contractor and the Contractor shall not be entitled to make a claim for additional costs incurred as a result thereof, regardless of the number, frequency or duration of such excepted risks”.

- 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 2,000,000.00**
 - Maximum first excess: **R 10,000.00**
- 8.6.1.5 Furthermore, the insurance cover effected by the Contractor shall meet the following requirements:

Third Party Insurance (Public Liability)

- Minimum amount for any one occurrence, unlimited as to the number of occurrences, for the period of the contract, inclusive of the maintenance period: **R 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: **R 20,000.00**

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: **R500,000.00.**
- 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 79**. 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 requirement of this contract that a minimum of 5% of the value of the contract (excluding contingencies and provisional items) shall be subcontracted to black emerging contractors that are >76% PPG (Priority Population Group) owned and fall within the designated groups listed below whom must be registered on the eThekweni Municipality database. The principle contractor shall provide proof that this target has been achieved, failing which a penalty shall be applied.

- (a) an EME or QSE;
- (b) an EME or QSE which is at least 51% owned by black people;
- (c) an EME or QSE which is at least 51% owned by black people who are youth;
- (d) an EME or QSE which is at least 51% owned by black people who are women;

- (e) an EME or QSE which is at least 51% owned by black people with disabilities;
- (f) an EME or QSE which is 51% owned by black people living in rural or underdeveloped areas or townships;
- (g) a cooperative which is at least 51% owned by black people;
- (h) an EME or QSE which is at least 51% owned by black people who are military veterans; or
- (i) more than one of the categories referred to in paragraphs (a) to (h).

In addition to the above, the eThekweni Municipal Council has adopted a framework for empowerment strategies for contracts between R5m and R30m.

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

- Category of Employment

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

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

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

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

C1.2.3.5 PERFORMANCE MONITORING OF SERVICE PROVIDERS

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

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

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 11 pages.

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	76
C3.3.1 Listing of the Standard Specifications	
C3.3.2 Amendments to the Standard Specifications	
C3.4 PARTICULAR SPECIFICATIONS	121
C3.4.1 Part AH - OHS Act 1993 Safety Specification (2014)	
C3.4.2 Standard Environmental Management Plan for Civil Engineering Construction Works	
C3.4.2 Standard Environmental Management Plan for Civil Engineering Construction Works	
C3.5 CONTRACT AND STANDARD DRAWINGS	199
C3.5.1 Contract Drawings / Details	
C3.5.2 Standard Drawings	
C3.6 ANNEXURES	200

C3.1: PROJECT DESCRIPTION AND SCOPE OF CONTRACT

C3.1.1 Description of Works

This Contract entails the widening of approximately 120m of Chester Cele Road from an existing $\pm 2,5$ m width to a specified designed widened width of 4,5m on the right and left edges of the road as per the design plans with layerworks and as per the pavement design. Also included is the construction of minor bulk earthworks, Fig.6 mountable kerbing with concrete fillet, construction of terrace block retaining walls as well as other related ancillary works which forms part of the Scope of Works.

- (a) Earthworks:
- Excavation for the layer works required for the proposed road upgrade.
 - Undercutting the formation for subgrade improvement layers, if required.
- (b) Roadworks:
- Import, process and compact a 150mm thick G7 subgrade improvement layer (where instructed by the Employer's Agent).
 - Import, process and compact of a 150 mm thick G7 layer to 95% Mod. A.A.S.H.T.O.
 - Import, process and compact of a 150 mm thick G5 layer to 95% Mod. A.A.S.H.T.O.
 - Import, process and compact of a 150 mm thick G2 layer to 98% Mod. A.A.S.H.T.O.
 - Supply and lay 40mm compacted thickness Sa-S14, asphalt wearing course compacted to 93% RICE density.
 - Excavate for kerb and channel / fillet in existing asphalt layers (where instructed by the Employer's Agent).
 - Supply and lay Fig.6/Fig 12 kerbing and concrete channel / fillet (where instructed by the Employer's Agent).
 - Import, process and compact dump rock material.
 - Installation of road traffic signs painting of road markings.
- (c) Structures:
- Excavation for earth retaining systems.
 - Construction of Terrace Block type or approved similar for retaining structures.
- (d) Protection Works:
- Importing, process and compaction of approved topsoil.
 - Supply and laying of approved grassing.

C3.1.2 Description of Site and Access

Chester Cele Crescent is located in Umlazi-G of Ward 79.
(refer to item C4.1: Locality Sketches)

C3.1.3 Nature of Ground and Subsoil Conditions

Refer to Item C4.2: Conditions on Site (if applicable]

C3.2: PROJECT SPECIFICATION**PREAMBLE**

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

C3.2.1 GENERAL**PS.1 PROGRAMME, METHOD OF WORK, AND ACCOMMODATION OF TRAFFIC**

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

PS.1.1 Preliminary Programme

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

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

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

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

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

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

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

- (1) Time required for service relocations. In general, at least eight (12) weeks' notice is required by all the Municipal Departmental service organisations before the respective work teams can be deployed on site.

- (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 and to the local business properties are to be maintained at all times unless prior written permission to close the access has been obtained, by the Contractor, from the property owner / occupier, and approved of by the Engineer.
- (8) Traffic restrictions.
- (9) Attention must be paid to the accommodation of pedestrians and traffic during the period of the contract. Adequate safe pedestrian accommodation must be provided for the full duration of the contract.
- (10) The Contractor shall allow for all signs, barricades, delineators, and temporary road markings under the applicable items in the Bill of Quantities.
- (11) The main services affected by the proposed roadworks include overhead and underground cables and lighting of Metro Electricity, as well as underground watermains of Metro Water, stormwater pipes and sewer pipes. Tenderers shall refer to Clause PS.4, PS.5, PS.6 and PS.7 when considering the programme of works.
- (12) In general, at least ten (10) days is required for test results to be made available for material classification testing done on material delivered to site intended to be used in the layerworks.
- (13) The main services affected by the proposed roadworks include underground cables and lighting of the Ethekwini Electricity Department, the possibility of Ethekwini Municipality's CCTV as well as underground stormwater and sewer lines belonging to Ethekwini Municipality. Tenderers shall refer to Clauses PS.2 to PS.8 when considering the programme of works.

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 Engineer.

PS.1.3 Requirements for Accommodation of Traffic

PS.1.3.1 General

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

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

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

PS.1.3.2 Basic Requirements

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

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

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

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

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

PS.1.3.3 Traffic Safety Officer

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

PS.1.3.4 Payment

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

PS.1.3.5 Pedestrian movement

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

PS.1.3.6 Temporary Reinstatement

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

- (a) if the permanent reinstatement of such road or way is to be carried out by the appropriate authority or by some person other than the contractor (or any subcontractor to him), the contractor shall at his own cost and independently of any requirement of or

notice from the Engineer be responsible for the making good of any subsidence or shrinkage or other defect, imperfection or fault in the temporary reinstatement of such road or way, and for the execution of any necessary repair or amendment thereof from whatever cause the necessity arises, until the end of the period of maintenance in respect of works beneath such road or way until the authority or other person as aforesaid shall have taken possession of the site for the purpose of carrying out permanent reinstatement (whichever is the earlier), and shall indemnify and save harmless that Council against and from any damage or injury to the Council or to third parties arising out of or in consequence of any neglect or failure of the Contractor to comply with the foregoing obligations or any of them and against and from all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

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

PS.2 SERVICES

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

PS.2.1 Existing Services

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

PS.2.2 Proving Underground Services

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

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

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

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

When a service is not located in its expected position the Contractor shall immediately report such circumstances to the Employer's Agent who will decide what further searching or other necessary action is to be carried out and shall instruct the Contractor accordingly. The cost

of this additional searching shall be to the Council's cost and shall be paid for under DB.8.19 - Proving Existing Services.

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

When electrical cables are not in the positions shown on drawings of 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.

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

PS.2.3 New Services and Relocation of Existing

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

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

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

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

Services affected by the contract are described as follows:

- PS.4: Watermains;
- PS.5: Sewers;
- PS.6: Stormwater;
- PS.7: Electrical Cables / Lighting;
- PS.8: Telkom / Neotel;
- PS.9: 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.

The Contractor is to note that existing water mains 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 water mains.

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

It is not anticipated that any works involving sewer relocation will take place as part of this contract. The Tenderer's urgent attention is drawn to the possibility of existing sewer services which traverse the site of the works respectively 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 sewer mains

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

It is not anticipated that any works involving stormwater relocation will take place as part of this contract. The Tenderer's urgent attention is drawn to the possibility of existing stormwater systems which traverse the site of the works respectively and special care is to be taken in close proximity to these systems and connections. The existing system shall be proved on site by the Contractor prior to any construction work commencing in the vicinity of the stormwater system.

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

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

Tenderers are to read this clause in conjunction with Clauses PS.2.1

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 eThekweni 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 eThekweni Electricity throughout the contract.

PS.6.2 Street Lighting

If necessary, the existing lighting will be removed in stages and replaced at the discretion of eThekweni Electricity Department. Relocation will take place during this contract and be executed by eThekweni 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 eThekweni Electricity and it is stressed that the four week period referred to in Clause PS.2 is the minimum period required to enable eThekweni 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 / FIBRE OPTICS SERVICE PROVIDERS

No work to Telkom / Neotel / Fibre Optic Service Providers Plant is envisaged, but the tenderers attention is drawn to the fact that Telkom / Neotel / Fibre Optic Service Providers copper cables and fibre optic cables are existing in the contract area and possibly might have to be relocated.

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:

- (1) The area is bounded by residential / light industrial properties with moderate volumes of both pedestrian and vehicular traffic
- (2) The works will require machinery and plant of varying size.
- (3) The manual moving of heavy precast products will be required.
- (4) The gradient of the site is fairly steep. Plant and machinery need to be well controlled. Run-off from the site will have to be well managed.
- (5) The existence of underground and overhead electrical cables
- (6) The raw asphalt used will be delivered to site at a high temperature, which, after processing, remains hot for some time.

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

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

PS.10.2 Health and Safety Specifications and Plans to be submitted at tender stage**PS.10.2.1 Employer's Health and Safety Specification**

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

PS.10.2.2 Tenderer's Health and Safety Plan

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

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

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

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

The Contractor's Health and Safety Plan will be subject to approval by the Employer, or amendment if necessary, before commencement of construction work. The Contractor will not be allowed to commence work, or his work will be suspended if he had already commenced work, before he has obtained the Employer's written approval of his Health and Safety Plan.

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

A generic plan will not be acceptable.

PS.10.3 Cost of compliance with the OHS Act Construction Regulations

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

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

PS.11 AS BUILT DATA**PS.11.1 Submission of As-Built Data**

The Tenderer shall note the sum item 1.AB.4 covering the submission of as-built data. The Contractor shall supply the Engineer with:-

- A list of surveyed co-ordinates of cable duct markers and water main valve covers constructed or modified during the course of the contract.
- A list of surveyed invert and cover levels, and co-ordinates of all catch pits, headwalls and manholes constructed or modified during the course of the contract.
- Drawings and surveyed information in electronic format (PDF, DR4, DWG, DXF, TOT, ASCii, CSV) indicating road edge, kerbs, v – drains and retaining wall information.
- Material As-Built records of Material Testing results.

The completion certificate shall not be issued unless the above information has been forwarded to the Engineer.

PS. 12 APPROVED TIP

The approved tip is the Municipal landfill site at Marianhill. The Contractor will be permitted to dump material at this dump, free of charge, provided that he fulfills the following requirements:

- The Contractor shall obtain a completed authorisation form for this purpose from the Roads Provision Department beforehand.
- Each truck from the contract site shall present a completed authorisation form upon arrival at the tip site.
- The Contractor shall obtain a new authorisation form for each day that he intends to dispose of material at the tip site.

Should the Contractor fail to comply with these requirements, charges to dump material may be levied, for which the Contractor shall not be reimbursed.

The Contractor may be required to provide proof as to where material is being dumped. Weighbridge slips will be the only acceptable proof in the case of the Municipal tip site.

PS. 13 TESTING

Notwithstanding clause AB.6, The Contractor is to include in his rates for the cost of classification testing of all materials delivered to site intended for use in the layer works and for all density control testing of all layer works as per the pavement design illustrated on the contract drawings.

The Contractor is to provide results of all control testing to the Engineer. If satisfied, the Engineer will then give the Contractor written permission to proceed with the next stage of construction.

Random acceptance testing will be undertaken by the Roads Provision Department, Pavement and Geotechnical Engineering Branch.

The Contractor is to include in his rates for testing of all concrete items in accordance with clause C.7 of the Durban Standard Engineering Specifications.

PS.14 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.

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		
EL	Dumprock Subgrade Improvement		
EM	Concrete Surface to Roads		
F	Protection Works	July	1992
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 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 TA	Road Signs
PS TB	Road Markings

PS.AB PRELIMINARY AND GENERAL SPECIFICATION

<u>INDEX</u>	<u>PAGE</u>
PS.AB.1 SITE FACILITIES	..... 78
PS.AB.1.1 Temporary Offices for Engineer and Staff	..... 78
PS.AB.1.2 Contractor's Camp Site and Depot	..... 78
PS.AB.1.3 Accommodation of Employees	..... 79
PS.AB.1.4 Power Supply, Water and other Services	..... 79
PS.AB.2 SERVICES CONNECTION FEE	..... 79
PS.AB.3 TELEPHONE	..... 79
PS.AB.4 ROAD DEVIATIONS AND TRAFFIC CONTROL	..... 79
PS.AB.5 PROGRESS PHOTOGRAPHS	..... 80
PS.AB.6 NOTICE BOARD	..... 80

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

No offices are required for the Engineer and for the Engineer's staff.

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 at the Contractor's discretion and one that suits him. 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.

In addition to the requirements of SABS 1200A Clause 8.3.2.2 the following conditions shall also apply :

- (i) 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; Director : Real Estate and/or Director of Parks, Recreation and Beaches Department; or other owner. Particular attention should be directed to these requirements and written clearances from the relevant Departments or other owners will be required.

PS.AB.1.3 Accommodation of Employees

No employees except for security guards will be allowed to sleep or be accommodated on the site.

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 SERVICES CONNECTION FEE

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

PS.AB.3 TELEPHONE

Should the Contractor require telephones, allowance for the cost should be made under the relevant items in Part AB - Preliminary and General of the Bill of Quantities.

PS.AB.4 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 Contractor's own cost.

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

DEVIATION DESCRIPTION	CLASS

- (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 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 directions at all times.
- (e) At all times signposting shall be detailed in the part of this document: "Safety in Road Construction".

PS.AB.5 PROGRESS PHOTOGRAPHS

A provisional sum has been included under in the Bill of Quantities for the photographs to be taken at the discretion of the Engineer.

PS.AB.6 NOTICE BOARD

The typical notice board layout is given in Part C3.6. The following requirements shall apply with regards to the notice board.

The M.T.A.B. Section of the Notice Board is not required.

PS.B SITE CLEARANCE

<u>INDEX</u>	<u>PAGE</u>
PS.B.1 REMOVAL OF ROADWAY TO TIP	..... 81
PS.B.2 REMOVAL OF EXISTING SIDEWALK TO TIP	..... 81
PS.B.3 REMOVAL OF TREES	..... 81
PS.B.4 REMOVAL OF BRICKWORK	..... 81
PS.B.5 REMOVAL OF UN-REINFORCED and REINFORCED CONCRETE	..... 81
PS.B.6 REMOVAL OF FENCE	..... 81

PS.B.1 REMOVAL OF ROADWAY TO TIP

The unit of measurement shall be square metre (m²) and the rate shall include for the materials, labour and plant necessary for the careful removal of the asphalt/concrete roadway together with layerworks, removing debris, loading, transportation and spoiling at the approved tip.

PS.B.2 REMOVAL OF EXISTING SIDEWALK TO TIP

The unit of measurement shall be square metre (m²) and the rate shall include for the labour and plant necessary for the removal of the existing sidewalk, complete with layerworks and if present concrete channel/fillet and kerbing or asphalt haunching, removing debris, loading, transportation and spoiling at the approved tip.

PS.B.3 REMOVAL OF TREES

The unit of measurement shall be number (no.) and the rate shall include for the labour and plant necessary for the removal of the existing trees including de-stumping, backfilling and compacting cavities with suitable fill material, if required and as directed by Engineer or Environmental Control Officer and transporting to the approved tip and dumping or to be stored on site for future use.

PS.B.4 REMOVAL OF BRICKWORK

The unit of measurement shall be cubic metre (m³) and the rate shall include for the labour and plant necessary for the removal of the bricks, loading and transporting to the approved tip and spoiling.

PS.B.5 REMOVAL OF UN- REINFORCED and REINFORCED CONCRETE

The unit of measurement shall be cubic metre (m³) and the rate shall include for the materials, labour and plant necessary for the saw cutting, careful removal of the un-reinforced concrete structure, removing debris, loading, transportation to the approved tip and spoiling. No blasting permitted.

PS.B.6 REMOVAL OF FENCE

The unit of measurement shall be linear metre (m) and the rate shall include for the materials, labour and plant necessary for the excavation, careful removal of the fencing inclusive of poles, transporting to store yard / Contractor's camp site for re-use inclusive of re-installing the fencing and poles as directed by Engineer on Site.

PS.C CONCRETE WORKS

<u>INDEX</u>	<u>PAGE</u>
PS.C.1 NEW SABS SPECIFICATION FOR PORTLAND BASED CEMENT	82
PS.C.2 PORTLAND BLAST FURNACE CEMENT (CLAUSE C.3.1)	82
PS.C.3 MATERIALS AND PLANT FOR CONCRETE WORK	82
PS.C.4 PLACING OF CONCRETE	82
PS.C.5 CONCRETE TO WALL FOOTING	83
PS.C.6 MASS CONCRETE IN AND BETWEEN TOP ROW OF BLOCKS	83
PS.C.7 GRADE 20/26 AND 25/26 CONCRETE	83
PS.C.8 STONE MAT / V-DRAINS / CONCRETE TRAPEZOIDAL DRAINS / TERRACE BLOK	83
PS.C.9 CONCRETE SURFACING	83
PS.C.10 HAND PLACING OF CONCRETE	83
PS.C.11 PREPARATION OF UNDERLYING LAYERS	84
PS.C.12 LONGITUDINAL/TRANSVERSE JOINT TYPES	84
PS.C.13 TIE BARS	84
PS.C.14 FINISHING	84
PS.C.15 SMOOTHNESS OF SURFACING	85
PS.C.16 PROTECTION OF THE CONCRETE PAVEMENT	85
PS.C.17 CURING	85
PS.C.18 TESTS ON CONCRETE	85
PS.C.19 LIQUID SEALANT IN JOINTS BETWEEN CONCRETE AND ASPHALT PAVEMENT	85
PS.C.20 PANEL ANCHOR	86
PS.C.21 ANCHOR BLOCK	86

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 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.3 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.4 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.5 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.48957.

PS.C.6 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.48957.

PS.C.7 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.48957.

PS.C.8 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.48957. All concrete is to be ready-mix concrete from an accredited supplier.

PS.C.9 CONCRETE SURFACING

Concrete shall be cast in alternate panels with each panel making up the following dimensions width 3m, length 3m 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.10 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. 48957.

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.11 PREPARATION OF UNDERLYING LAYERS

When the temperature of the subbase exceeds 20° 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.12 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. 48957. 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.13 TIE BARS

Tie bars shall consist of Y10 deformed bars complying with the requirements of SABS 920 as detailed on Drawing No. 48957.

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.14 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.15 SMOOTHNESS OF SURFACING

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.16 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-tyred 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.17 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.18 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.19 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.20 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. 48957.

PS.C.21 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. 48957.

PS.DA EARTHWORKS : BULK

<u>INDEX</u>	<u>PAGE</u>
PS.DA.1 INTERPRETATIONS	87
PS.DA.2 GEOTECHNICAL INFORMATION	87
PS.DA.3 EXCAVATION OF MATERIAL FROM SITE	87
PS.DA.4 EXCAVATE UNSUITABLE MATERIAL BELOW EMBANKMENTS OR FORMATION	88
PS.DA.5 IMPORT SUITABLE FILL MATERIAL	88
PS.DA.6 COMPACTION OF FILL	88
PS.DA.7 FORMATION	88
PS.DA.8 TOLERANCES	88
PS.DA.9 GEOFABRIC BLANKET	89
PS.DA.10 DEDUCTIONS FOR RETESTS	89
PS.DA.11 OVERHAUL	89
PS.DA.12 STOCKPILE HANDLING	89
PS.DA.13 STOCKPILE AREAS	89

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 sub base 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

There are no specific geotechnical or detail site information available. Geotechnical testing will be required at the top of subgrade level by a SANAS accredited Specialist Materials Laboratory. An item for this has been included in the Schedule of Quantities. The Tenderers urgent attention is drawn to the fact that the existing site conditions / insitu material is possibly that of intermediate to hard material. The Tenderer is to price for this relevant excavation items accordingly.

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 road works is such that a considerable amount of the excavation shall be in intermediate to possibly hard and restricted conditions. No additional payment shall be made for such excavation and the Tenderer shall therefore make due allowance in the rates for Bulk Earthworks for any additional work or hand excavation in restricted excavations.
- (c) The Contractor's attention is drawn to the presence of water mains 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 water main. Any damage to the water main 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 his/her relevant tendered rates for all extra plant (TLB, heavy duty excavators, woodpeckers, jackhammers / breakers), labour and materials required to work in these intermediate to possibly hard areas for the excavation of material from site.

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 or G9 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 as well as the Materials Testing Laboratory.
- (b) 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. The Contractor is to make allowance for bulking and shrinking in his rates.

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

Formation shall be defined as the surface to the underside of the G5 layer (top of G7) specified in the pavement design as processed to tolerances as defined in DA.5.5. The Tenderer 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 \pm 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 \pm 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 GEOFABRIC BLANKET

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.10 DEDUCTIONS FOR RETESTS

Deductions for retests are expanded in Clause DA.7 in the Standard Engineering Specifications.

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 re-handling of material.

PS.DA.13 STOCKPILE AREAS

Stockpile areas have been described under Clause DA.5.2.1.2 (a).

PS.DB EARTHWORKS FOR PIPE TRENCHES

<u>INDEX</u>	<u>PAGE</u>
PS.DB.1 BEDDING AND BACKFILL MATERIALS	..... 90
PS.DB.1.1 General	..... 90
PS.DB.1.2 Storm water Pipes	..... 90
PS.DB.1.3 Telkom Ducts	..... 90
PS.DB.2 EXCAVATION AND BACKFILLING - EXISTING SERVICES	..... 91
PS.DB.3 EXCAVATION, BACKFILLING AND REINSTATEMENT OF TRENCHES	..... 91
PS.DB.4 SHORING OF TRENCHES TO EXCAVATIONS	..... 92
PS.DB.5 EXCAVATION FOR SERVICES TO BE LAID BY OTHERS	..... 93
PS.DB.6 EXCAVATION IN ROAD AND PAVED AREAS	..... 93
PS.DB.7 RESTRICTED EXCAVATION	..... 93
PS.DB.8 COMPACTION OF TRENCHES	..... 93
PS.DB.9 BACKFILLING OF SERVICE TRENCHES	..... 93
PS.DB.10 OVERHAUL	..... 93
PS.DB.11 GEOFABRIC BLANKET	..... 93
PS.DB.12 WATERMAINS	..... 94

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 line valve chambers.
- 2) Bedding material required for the backfill of bell holes will be paid for by the Council.
- 3) 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.
- 4) Separate items have been included in the Bill of Quantities for the provision of bedding material from a Contractor's commercial source.
- 5) 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.
- 6) 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 Storm water Pipes

- 1) All bedding to storm water 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 Telkom Ducts / Neotel Ducts / Fibre Optic Service Providers Ducts

- 1) Notwithstanding Clause DB.3.6 of Part DB : "Earthworks for Pipe Trenches", only a clean sand containing no particles of diameter exceeding 10 mm, having a Plasticity Index (P.I.) not exceeding 10 and free from vegetation and lumps shall be used for the bedding cradle and selected fill blanket. It is anticipated that most of the bedding material will have to be provided from an off-site source. Bedding shall be constructed to the dimensions as is detailed on drawing 38589 : "Telkom Cable Ducts and Junction Box Details".

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.

No additional payment will be made for compliance with this clause and Tenderer's shall include in his/her relevant tendered rates for all extra plant (TLB, heavy duty excavators, woodpeckers, jackhammers / breakers), labour and materials required to work in these intermediate to possibly hard areas for the excavation of material from site.

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 (TLB, heavy duty excavators, woodpeckers, jackhammers / breakers) to ensure that this unsuitable material does not contaminate other materials suitable for reuse.
- 2) It is anticipated that a significant portion of the material excavated for trenches in existing natural ground is likely to be classified as "Intermediate to Hard" in terms of Part DB of the Departmental Technical Specification, and that blasting methods will NOT 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 excavate backfill, spoil or stockpile the material either using extra plant ie.TLB, heavy duty excavators, woodpeckers, jackhammers / breakers.
- 3) It is considered that portion of the excavated material will not comply with the specification for material suitable for backfilling in areas subject to traffic loading. If necessary and required, an item has been included in the Bill of Quantities for the disposal of unsuitable material to tip and the Contractors tendered rate for this item shall include for stockpiling if deemed necessary.
- 4) 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
- 5) 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.

No additional payment will be made for compliance with this clause and Tenderer's shall include in his/her relevant tendered rates for all extra plant (TLB, heavy duty excavators, woodpeckers, jackhammers / breakers), labour and materials required to work in these intermediate to possibly hard areas for the excavation of material from site.

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 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. The Contractor shall furnish the Engineer with his / her compaction test results.

PS.DB.9 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.10 OVERHAUL

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

PS.DB.11 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.12 WATERMAINS

- 1) Notwithstanding Clause DB.3.6 of Part DB : "Earthworks for Pipe Trenches", only a clean sand containing no particles of diameter exceeding 10mm, having a Plasticity Index (P.I.) not exceeding 10 and free from vegetation and lumps shall be used for the bedding cradle and selected fill blanket. It is anticipated that most of the bedding material will have to be provided from an off-site source. Bedding shall be constructed to the dimensions required for Class 'C' bedding.
- 2) Contractors are advised that the choice, placement and compaction of bedding and backfill materials are critical to the satisfactory performance of steel pipes. Therefore strict adherence to all specifications in this regard will be enforced.

The unit of measurement shall be the linear metre (m). The rate shall include for its supply, laying, joining, cutting and waste, plant and labour.

PS.EB GRADED CRUSHED STONE

<u>INDEX</u>	<u>PAGE</u>
PS.EB.1 BASE AND SUB-BASE	..... 104
PS.EB.2 PRIMING	..... 104

PS.EB.1 BASE AND SUB-BASE

The unit of measurement shall be cubic metre (m³) of compacted and completed material; the rate shall include for the supply of materials; labour; plant necessary for the transportation, laying; levelling; processing and compacting the layer to required specification and tolerance.

- (a) Details of the source of the supply of the base and sub-base material are required by the Engineer before road works commence.

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

No allowance will be made for bulking or shrinkage. The Contractor is to make allowance for bulking and shrinking in his rates for G2 and G5 material.

- (b) 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

<u>INDEX</u>	<u>PAGE</u>
PS.ED.1 SMOOTHNESS APPLICABLE TO WEARING COURSE	97
PS.ED.2 RESTRICTION ON PLACING OF ASPHALT	97
PS.ED.3 PATCHING OF EXISTING SURFACE	97
PS.ED.3.1 Construction	97
PS.ED.3.2 Materials	97
PS.ED.3.3 Measurement and Payment	97
PS.ED.4 WEARING COURSE	97
PS.ED.4.1 Asphalt Mix Requirements	97
PS.ED.4.2 Asphalt Mix Design	98
PS.ED.4.2.1 Sand Skeleton Mixes	99
PS.ED.4.2.1.1 Level I Design	99
PS.ED.4.2.1.1.1 Particular Mix Requirements – Mix Sa-S10	100
PS.ED.4.2.1.2 Level II Design	100
PS.ED.4.2.1.3 Level III Design	101
PS.ED.4.2.2 Warm Mix Asphalt	101
PS.ED.4.2.3 Mix Design Approval	101
PS.ED.4.2.3.1 Mix Design Approval Process	102
PS.ED.4.2.4 Mix Design Review	102
PS.ED.5 ASPHALT PRODUCTION	102
PS.ED.5.1 Mixing Plant	102
PS.ED.5.2 Quality Control	103
PS.ED.5.3 Quality Management System	103
PS.ED.5.2.2 Process Control	104
PS.ED.5.2.3 Acceptance Testing	105
PS.ED.5.2.4 On Site Mix Problems	105
PS.ED.6 LAYING OF ASPHALT	105
PS.ED.7 LONGITUDINAL AND TRANSVERSE JOINTS	106
PS.ED.8 SAW CUT TO LONGITUDINAL AND TRANSVERSE JOINTS	106
PS.ED.9 BINDER	106

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 "C" Road is required Chester Cele Crescent Road Widening in Umlazi-G of Ward 79.

PS.ED.2 RESTRICTION ON PLACING OF ASPHALT

The Contractor shall, wherever possible, complete the earthworks, trimming of embankments and compaction to sidewalks / verges 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 tonnes (t) 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**PS.ED.4.1 Asphalt Mix Requirements**

There are a total of 9 mixes:-

- 9 sand skeleton mixes (i.e. continuously graded 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		
		10.0	14.0	20.0
Traffic Condition Category				
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

Table 5 Asphalt Mix Requirements

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

Table 6 Traffic Condition Risk Profiles

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

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

Table 7 Typical Mix Use

PS.ED.4.2 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 and a plant trial. Once satisfied that the laboratory design and plant trial meet the specified mix requirements, the contractor is to document the final mix parameters (i.e. the Job Mix Formula (JMF)). These parameters will be used for production quality control and acceptance purposes (see Table 9).

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

Table 9 Mix Parameters for the Job Mix Formula

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

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

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

PS.ED.4.2.1 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.

PS.ED.4.2.1.1 Level I Design

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

Asphalt mixes shall achieve the volumetric criteria noted in Table 11 at the compaction effort noted in Table 10 with a design air void content of 4%.

	Marshall	Gyratory
Traffic Condition Category ¹	SANS 3001 AS1	AASHTO T 312
	No. Blows	N _{design}
Standard (S)	75+45	75

Table 10 Volumetrics 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) ($\times 10^{-8}\text{cm}^2$)	1.0 max.	TRH 8 App C
Marshall Stability, Flow and Quotient	Report	SANS 3001-AS2

Table 12 Empirical Performance Tests (Level I)

PS.ED.4.2.1.1.1 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

PS.ED.4.2.1.2 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 ¹	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)	AMPT 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	HWTT Specification	
PG 58 Zone	6mm Rut	Stripping Point
No. of Passes (Min.)	16 000	10 000

Table 16 Hamburg Wheel Tracking Test Specifications**PS.ED.4.2.1.3 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 ¹	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)	AMPT dynamic modulus @ -5, 5, 20, 40, 55°C Loading frequencies of 0.1, 0.5, 1, 5, 10, 25 Hz	Report	AASHTO TP 79
Fatigue	Four-point beam fatigue test @ 5, 10 and 20°C, 10Hz to 50% stiffness reduction Strain levels 200, 400, 600µε	Report	AASHTO T 321

Table 18 Additional Temperatures for Stiffness and Fatigue Tests (Level III)**PS.ED.4.2.2 Warm Mix Asphalt**

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

PS.ED.4.2.3 Mix Design Approval

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

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

PS.ED.4.2.3.1 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.

PS.ED.4.2.4 Mix Design Review

Every mix design is to be reviewed at least annually or whenever there is a substantial change to material types and properties. 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 1
- Aggregate BRD, ARD and water absorption
- Mix binder content
- Mix BRD and MTRD and voids
- Particular mix type characteristics
 - Sand skeleton mixes
 - Level I design mix volumetrics
 - All requirements in Table 11 and Table 13 (as applicable)
 - Level I design mix performance characteristics
 - All requirements in Table 12
 - Level II design mix performance characteristics (Table 15)
 - Workability
 - Durability
 - Permanent deformation
 - Level III design mix performance characteristics (Table 15)
 - Workability
 - Durability
 - Permanent deformation

PS.ED.5 ASPHALT PRODUCTION**PS.ED.5.1 Mixing Plant**

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

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

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

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

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

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

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

PS.ED.5.2 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.

PS.ED.5.3 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 3 months	
Aggregate	Coarse Aggregate	Aggregate Grading	Every batch delivered
		Flakiness Index (Max.)	1 per month
		Aggregates BRD, ARD and Water Absorption	1 per month
		ACV, 10%FACT	1 per month

	Fine Aggregate	Polished Stone Value (Coarse Aggregates)	1 every year per stone type and source
		Aggregate Grading	Every batch delivered
		Aggregates BRD, ARD and Water Absorption	1 per month
		Sand Equivalent (Fine Aggregates)	Every batch delivered
		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

PS.ED.5.2.2 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.

PS.ED.5.2.3 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.

PS.ED.5.2.4 On Site Mix Problems

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

PS.ED.6 LAYING OF ASPHALT

- (a) The Contractor shall supply the Engineer with the name of the approved asphalt Sub-Contractor and asphalt mix design from the supplier 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 / restricted. The asphalt shall not be laid if its temperature is below 140°C and the Engineer shall have the right to reject the asphalt delivered to site. All costs incurred for rejected asphalt shall be borne by the Contractor. All standing time costs due to the rejected asphalt will not be paid by the Employer to the Contractor.

The asphalt shall be rolled in accordance with the method described in chapter VI of the Asphalt Institute Paving Manual (MS-8). A final density is required of at least 93% of the Maximum Theoretical Relative Density (MTRD) of the mix.

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, if required as directed by the Engineer on Site, the asphalt base and make-up courses in restricted areas.

PS.ED.7 LONGITUDINAL AND TRANSVERSE JOINTS

If necessary, Tenderer's 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. 48957. 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. 48957 and the removal of all the old asphalt to tip off site inclusive of haulage.

PS.ED.8 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.9 BINDER

The binder shall conform to SANS 4001-BT1 and have a penetration of 35/50 as determined through the mix design process.

PS.EF KERBS AND HAUNCHES

<u>INDEX</u>	<u>PAGE</u>
PS.EF.1 TYPE F BARRIER KERB	..... 107
PS.EF.2 Fig.12 / TYPE E CONCRETE EDGE RESTRAINT	..... 107

PS.EF.1 TYPE F BARRIER KERB

The kerbing to be used for this contract shall be Fig.6 barrier kerb as detailed on Drawing No. 48957.

The unit of measurement shall be per metre (m). The rate shall include all the materials, labour and plant necessary to fully construct as detailed on Drawing No.48957 inclusive for all excavation, compacting, shuttering, vibrating, concrete base, concrete fillet, mortar, jointing, expansion joints and continuous concrete haunching as complete.

PS.EF.2 Fig.12 / TYPE E CONCRETE EDGE RESTRAINT

The edge restraint kerbing to be used for this contract shall be Fig.12 / Type E as detailed on Drawing No. 48957.

The unit of measurement shall be per metre (m). The rate shall include all the materials, labour and plant necessary to fully construct as detailed on Drawing No.48957 inclusive for all excavation, compacting, shuttering, vibrating, concrete base, mortar, jointing, expansion joints and continuous concrete haunching as complete.

PS.EG SIDEWALKS, FOOTPATHS AND MEDIAN AREAS

<u>INDEX</u>	<u>PAGE</u>
PS.EG.1 CONCRETE ACCESS HARDENING AND SCOOPS	..... 108
PS.EG.2 TOLERANCES	..... 108
PS.EG.3 MEASUREMENT AND PAYMENT	..... 108

PS.EG.1 CONCRETE ACCESS HARDENING AND SCOOPS

Concrete access hardening and scoops shall consist of cast insitu grade 20/13 concrete laid either directly onto the compacted subgrade or onto a graded crushed stone base.

The concrete mix, mixing, batching, transporting, placing compaction and curing shall comply with the requirements of Part C Concrete Work.

The surface of the concrete shall have a wood float finish.

Pavement layer for the various scoop types shall be:

(a) Pedestrian and Residential: Concrete 100 mm thick.

PS.EG.2 TOLERANCES

The average thickness of the concrete shall not be less than that specified with a tolerance for any single reading of ± 10 mm.

The finished surface levels shall be within ± 5 mm of the design levels.

PS.EG.3 MEASUREMENT AND PAYMENT

The unit of measurement shall be square metres (m²) of completed area and the rate shall cover excavation, formation preparation, all necessary compaction, supply and application of weed killer, graded crushed stone, protection of adjacent areas and asphalt laid and compacted.

PS.EH STEEL GUARDRAILS AND CONCRETE MEDIAN BARRIERS

<u>INDEX</u>	<u>PAGE</u>
PS.EH.1 GENERAL	..... 109
PS.EH.2 MATERIALS	..... 109
PS.EH.3 CONSTRUCTION	..... 109
PS.EH.4 TOLERANCES	..... 109

PS.EH.1 GENERAL

The unit of measurement shall be the linear metre of guardrail. The tendered rate shall include for all materials, plant and labour required to fully construct.

PS.EH.2 MATERIALS

Guardrails and end wings shall be of plain carbon steel and together with bolts, nuts and washers shall be hot-dipped galvanised. The pre-cast concrete posts shall have a concrete strength of grade 30/26. The Tenderer shall make due allowance in his/her rates tendered for a 50mm concrete screed layer to set in the concrete posts.

PS.EH.3 CONSTRUCTION

Guardrails shall have a nominal length of 4,13 m and shall have three slotted holes. No punching or drilling of the guardrails or end wings shall be permitted once the rails have been galvanised.

Where the radius of the road is less than 50 m, the Contractor shall erect pre-curved guardrails to the radius shown on the relevant drawings.

Where the radius of the road is less than 50 m, the Contractor shall erect pre-curved guardrails to the radius shown on the relevant drawings.

End wings shall comply with Type 1(a) Standard in Fig. 2 of SABS 1350.

Anchor blocks shall be made from grade 20/26 concrete and shall be 1,0 m x 0,7 m x 0,7 m in size. The end of the first section of guardrail shall be cast into an anchor block with a 0,5 m long 16 mm H.T. bar placed through the bolt hole.

Splice bolts shall not be recessed. Bolts for the attachment of rails and end wings to supporting posts shall have a length of 450 mm of which 100 mm shall be threaded. Reinforcing plates are not required.

PS.EH.4 TOLERANCES

The level and line shall be as specified in the drawings with a tolerance of ± 10 mm.

PS.F PROTECTION WORKS

<u>INDEX</u>	<u>PAGE</u>	
PS.F.1	TOPSOILING	..... 110
PS.F.1.1	Materials	..... 110
PS.F.1.2	Measurement and Payment	..... 110
PS.F.2	WEEPHOLES IN BRICK RETAINING WALLS	..... 110
PS.F.3	EXCAVATION FOR FOOTINGS TO RETAINING WALL	..... 110
PS.F.4	DRAINAGE GRADE GEOFABRICS	..... 111
PS.F.5	50 mm Ø P.V.C. OR FIBRE CEMENT WEEPHOLES	..... 111
PS.F.6	OVERHAUL	..... 111
PS.F.7	RE-ERECTING OF FENCING	..... 111
PS.F.8	GABION BOX RETAINING WALL AND MATTRESSES	..... 111
PS.F.9	INTERLOCKING EARTH RETAINING SYSTEM / WALL	..... 111
PS.F.10	FLOW DIVERSIONS AND FLOODINGS	..... 112
PS.F.11	GRASSING	..... 112
PS.F.12	CATCHWATER DRAIN	..... 112

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, and glass, metallic and plastic substances.

The imported topsoil shall be obtained from a source approved by the Director: Parks.

A 1 kg sample of the topsoil shall be submitted for approval to the Engineer 4 weeks before the top soiling 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, and transport, mixing, distributing, spreading, trimming and finishing of the topsoil and compost mixture.

PS.F.2 WEEPHOLES IN BRICK RETAINING WALLS

Weep holes consisting of 50mm Ø PVC pipes are to be provided at 1250mm centres horizontally and 900mm centres vertically. Weep holes are to be backed by a 300x300x300mm no fines concrete block as detailed on Drawing No.48957.

PS.F.3 EXCAVATION FOR FOOTINGS TO RETAINING WALL

The unit of measurement shall be the cubic metre (m³) and the rate shall include for all materials, plant and labour necessary as specified in Clause DD.5 and DD.8.2.

No additional payment will be made for compliance with this clause and Tenderer's shall include in his/her relevant tendered rates for all extra plant (TLB, heavy duty excavators, woodpeckers, jackhammers / breakers), labour and materials required to work in these intermediate to possibly hard areas for the excavation of material from site.

PS.F.4 DRAINAGE GRADE GEOFABRICS

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.F.5 50 mm Ø P.V.C. OR FIBRE CEMENT WEEPHOLES

The unit of measurement shall be the number (No.) and the rate shall include for all the materials, labour and tools necessary to construct the weep holes as specified in Clause F.5.6.2. In addition to the no fines concrete block, the Contractor shall make allowance for the P.V.C. pipe to be filled with a no fines concrete plug as detailed on Drawing No.48957.

The rate shall also allow for disposal to tip of all excavated material and leaving the area in a tidy and clean condition.

PS.F.6 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.7 RE-ERECTING FENCING

The unit of measurement shall be linear metre (m) and the rate shall include for the re-erection of the entire fence system previously stored at camp site / store yard.

The rate shall also allow for all labour and materials necessary to complete the works; disposal to tip of all excavated material and leaving the area in a tidy and clean condition.

PS.F.8 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.9 INTERLOCKING EARTH RETAINING SYSTEMS / WALL

Approved Terrace Block TB300 and/or TB500 equivalent plantable interlocking earth retaining system and as directed by Engineer on Site. The materials required for the full construction of the retaining wall shall comply with the relative SABS standards. The rates shall be measured in square metres squared (m²) of slope area. The rate shall cover the supply and transport of

suitable and approved retaining blocks, 50mm Ø PVC pipe weepholes (inclusive of no fines concrete plug), 1300mm wide geofabric, materials, excavation, preparation, plant and labour and construction of the retaining wall fully as detailed in Drawing No.48957.

PS.F.10 FLOW DIVERSIONS AND FLOODING

Water flows continuously in some of the existing pipes, streams and culverts and it shall be necessary for the Contractor to deviate this flow from time to time during construction. The possibility of flooding should be borne in mind by the Contractor and he should effect relevant insurances as the Council will accept no responsibility whatsoever for any loss or damage from such flooding, including any loss or damage to the works.

No water shall enter the space between shutters while concreting of drainage structures is in progress.

The Contractors rates shall cover, if he deems necessary, for flow diversions and flooding.

PS.F.11 GRASSING

Grass planting / sodding shall be Cynodon Dactylon "creeping" variety. The area to be planted / sod shall be fertilised by the Contractor. The grass stolons shall be planted in moist soil at a maximum spacing of 150 mm in both directions. The full responsibility of maintaining the grassed areas shall rest with the Contractor. A satisfactory cover of grass is defined as a cover of living grass in which no bare patches exist larger than 0,1 m².

Maintenance shall include watering, re-fertilisation when necessary, re-grassing of unsatisfactory areas, weeding and any other work for the establishment of a satisfactory stand of grass as directed by Engineer on Site. Maintenance shall also include the repair of erosion damage to the grassed areas.

The work in grass planting / sodding shall be measured in square metres (m²) of area effectively covered with a satisfactory cover of living grass.

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

PS.F.12 CATCHWATER DRAINS

If required, the Contractor shall note that the catch water drain is to have 100mm thick topsoil lining with grass sodding formed.

The Contractor should further note that a portion of the material to be excavated for the catch water drain is classified as Intermediate to Hard in terms of Part DA, and "Hard" in terms of Part DB of the Departmental Technical Specification.

The rate tendered for the catch water drain shall include for all materials, labour and plant required to fully construct.

The catch water drain shall be constructed at positions determined by the Engineer on Site as the Contract progresses.

PS.PG NON-PRESSURE PIPELINES AND PRECAST CONCRETE CULVERTS

<u>INDEX</u>	<u>PAGE</u>
PS.PG.1 SUBSOIL PIPES	..... 113
PS.PG.2 SUBSOIL DRAINS AND OUTLETS	..... 113
PS.PG.2.1 Connection of Subsoil Drains to Existing Stormwater System	..... 113
PS.PG.2.2 Subsoil Termination Stub	..... 113
PS.PG.3 STONE FOR SUBSOIL DRAIN FILTER	..... 114
PS.PG.4 RIVER SAND BACKFILL FOR SUBSOIL DRAIN FILTER	..... 114
PS.PG.5 GEOFABRIC BLANKET	..... 114

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

The following clause shall replace Clause PG.3.10.

"The stone aggregate used for the subsoil drain filter shall consist of 13.2. 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 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

<u>INDEX</u>	<u>PAGE</u>
PS.PH.1 MANHOLES AND INLETS	..... 115
PS.PH.2 MANHOLES AND APPURTENANT WORKS : REVISED DRAWING NUMBERS	..... 115
PS.PH.3 BRICKS	..... 115
PS.PH.4 ABANDONED SEWER AND STORMWATER MANHOLES	..... 116
PS.PH.5 REINFORCED CONCRETE SLAB FOR BLINDING M.H.'S	..... 116
PS.PH.6 MANHOLES WITH TYPE S1, S2 AND D3 INLET COVERS	..... 116
PS.PH.7 INLET AND OUTLET HEADWALLS	..... 116
PS.PH.8 CONSTRUCTION OF MANHOLE / INLET OVER EXISTING STORMWATER PIPE	..... 116
PS.PH.9 CONVERT EXISTING MANHOLES TO INLETS	..... 116
PS.PH.10 BREAK INTO EXISTING BRICK MANHOLE/INLET FOR STORMWATER PIPE	..... 117
PS.PH.11 ALTERATIONS TO EXISTING MANHOLES AND STORMWATER INLETS INCLUDING RAISING AND LOWERING THE COVERS	..... 117
PS.PH.12 CONVERT EXISTING S1INLETS TO S2 INLETS.	..... 117

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 and excavation, backfilling and compacting around the newly constructed manholes and inlets in all materials.

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. Payment shall only be made once the manhole / inlet is 100% complete with cover lid.

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 ABANDONED SEWER AND STORMWATER MANHOLES

The existing manholes shall only be abandoned after the new sewer and all connections are completed and operational.

The manholes are to be broken down 1 m below the existing surface level and the void backfilled with suitable material after the incoming and outgoing sewers have been sealed with concrete.

PS.PH.5 REINFORCED CONCRETE SLAB FOR BLINDING M.H.'S

The supply of the reinforced concrete slab 1 500 mm by 1 500 mm by 250 mm thick for blind manholes is inclusive of shuttering, grade 25 / 26 concrete, and reinforcement steel - Y12 at 250 mm centres both ways).

PS.PH.6 MANHOLES WITH TYPE S1, S2, D3, D4 AND D5 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. Heavy duty manhole covers are required as part of this contract (ie. 150mm thick)

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.7 INLET AND OUTLET HEADWALLS

Standard 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, cut-off walls and splitter blocks, excavation, backfilling and compacting around the newly constructed manholes and inlets in all materials.

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.8 CONSTRUCTION OF MANHOLE / INLET OVER EXISTING STORMWATER PIPE

The unit of measurement shall be Number (No.).

Further to Clauses PH.8.2 and PH.8.3 the rate shall include for :

- (a) Breaking into the existing pipe and make good.
- (b) Cutting and reinstating the ends of the existing pipe.
- (c) The restricted working around the existing pipe.
- (d) Disposal of any spoil etc., to the tip.

PS.PH.9 CONVERT EXISTING INLETS TO MANHOLES

Where indicated, existing inlets shall be converted to standard manholes as shown on Standard Drawing 38571. The unit of measurement shall be number (No.) and in addition to the plant, labour and materials required to alter the inlet, the rate shall include for :

- (a) disposal of any spoil/rubble to tip,
 - (b) raising/lowering of the manhole cover by 0-300 mm from the original level,
 - (c) supply and setting of the new manhole covers and frames to the new levels.
- Separate items have been included in the Bill of Quantities to cover the different manhole types.

PS.PH.10 BREAK INTO EXISTING BRICK MANHOLE/INLET FOR STORMWATER PIPE

The unit of measurement shall be Number (No.). Separate items have not been scheduled for each diameter of pipe to be connected to a manhole. The unit rate for breaking into a brick manhole to connect a stormwater pipe shall include for all the materials, labour and plant necessary for :

- (a) The breaking into the existing manhole, including the demolition of the benching necessary to accommodate the pipe.
- (b) The building in of the stormwater pipe, including the re-shaping and making good of benching and the disposal of all resultant rubble to approved tip.

PS.PH.11 ALTERATIONS TO EXISTING MANHOLES AND STORMWATER INLETS INCLUDING RAISING AND LOWERING THE COVERS

Alterations to stormwater structures for this contract may be divided into two categories.

- (i) Where the cover is to be raised/lowered and set back less than 300 mm.
- (ii) Where the cover is to be raised/lowered and set back a distance of more than 300 mm but less than 800 mm.

In (i) above the Contractor shall be required to demolish a portion of the stormwater structure and corbel the brickwork to support the cover in its new position.

In (ii) above the Contractor shall be required to demolish a portion of the stormwater structure, cast an extension to the base, slab over as required and re-do the brickwork to support the cover in its new position. Details of this work are shown on Drawing No. 38573.

PS.PH.12 CONVERT EXISTING S1 INLETS TO S2 INLETS

Where indicated, existing S1 inlets shall be converted to a standard S2 inlets as shown on Drawing 38572. The unit of measurement shall be number (No.) and in addition to the plant, labour and materials required to alter the inlet, the rate shall include for :

- (a) disposal of any spoil/rubble to tip,
- (b) raising/lowering of the inlet cover by 0-300 mm from the original level,
- (c) supply and setting of the new inlet covers to the new levels.

PS.TA ROAD SIGNS

<u>INDEX</u>	<u>PAGE</u>
PS.TA.1 GENERAL	..... 118
PS.TA.2 ROAD SIGN BOARDS	..... 118
PS.TA.3 RE-ERECT ROAD SIGNS	..... 118
PS.TA.4 TEMPORARY ROAD SIGNS	..... 118
PS.TA.4.1 Materials	..... 118
PS.TA.4.2 Erection	..... 119
PS.TA.5 TIMBER POSTS	..... 119
PS.TA.6 DRUMS	..... 119
PS.TA.7 PROTECTION AND MAINTENANCE	..... 119

PS.TA.1 GENERAL

The Tenderer shall make allowance in the time related rates under Section 1.AB in the Bill of Quantities rates, repositioning, covering/uncovering, relocating or removing temporary signs and other forms of road furniture as required during the progress of the works.

PS.TA.2 ROAD SIGN BOARDS

Further to Item TA.8.1, tenderers are to note that the signs measured under this item are the various type of standard regulatory signs (e.g. stop, yield, keep left etc.).

Notwithstanding the requirements of Clause TA.8.1 the unit of measure shall be number (No.).

PS.TA.3 RE-ERECT ROAD SIGNS

The unit of measurement is number (No.) which shall consist of one pole and one sign.

The rate shall cover the cost of collecting the pole and sign from the site yard and planting of the pole in the PVC sign sleeve or ground, together with compacting the soil around the pole.

PS.TA.4 TEMPORARY ROAD SIGNS**PS.TA.4.1 Materials**

All temporary signs shall be manufactured from Chromadek steel plate as detailed under Clause TA.3.3 and retroflective material as follows:

Black semi-matt finish
 Yellow background Class I
 (with no red material)
 Yellow background Class II
 (if red material used)
 Red Class I

With the exception of signs R1, R2, R3, R1.5A and R1.5B, the temporary road signs shall be in accordance with the colour code for temporary road signs.

PS.TA.4.2 Erection

The temporary road signs shall be erected in a manner such that the face of the sign is not defaced, obscured or deflected in any way.

Where necessary, for high visibility, the temporary signs shall be erected on 100 mm creosoted gum posts such that the underside of the sign is not less than 2,2 m above ground level. The post/s shall be supported in a drum/s which shall be ballasted and braced or stayed so that the sign cannot be blown over. In all other instances, the temporary signs shall be adequately secured to a drum.

PS.TA.5 TIMBER POSTS

The timber posts for the temporary sign supports shall be 100 mm diameter creosote gum posts.

PS.TA.6 DRUMS

All drums shall be white painted, 200 litre drums or similar approved by the Engineer. Drums shall not be used for delineation purposes.

PS.TA.7 PROTECTION AND MAINTENANCE

The Contractor shall protect and maintain all road furniture (road signs, delineators, drums, barriers, barricades etc.) throughout the course of the contract and shall be responsible for the cost of replacing any road furniture that may be damaged or stolen.

PS.TB ROAD MARKING

<u>INDEX</u>	<u>PAGE</u>
PS.TB.1 PLASTIC ROAD MARKING MATERIAL	..... 120
PS.TB.2 LETTERING, SYMBOLS AND TRAFFIC ISLAND MARKING	..... 121

PS.TB.1 PLASTIC ROAD MARKING MATERIAL

Further to Clause TB.3.1(c) the plastic road marking material shall comply with the requirements of Specification BS.3262, 1987 Part 3.

(a) The material shall consist of a light-coloured aggregate, pigment and extender, bound together with a thermoplastic resin, plasticised as necessary.

The approximate composition of the material as laid is dependant on the appropriate specification, but for example shall be:

Aggregate	40 parts
Solid Glass Beads	20 parts
Pigment and Extender	20 parts
Binder	20 parts

The proportioning of the various ingredients shall be such that the material, when in a molten state, can be sprayed readily onto the road surface to give an even line of good definition.

(b) Aggregate

The aggregate shall consist of white silica sand, crushed calcite calcined flint, quartz, or other approved aggregate.

(c) Reflectorisation

The solid glass beads incorporated in the mixture shall comply with the Class A category of BS 6088 (1981), that is:

Sieve	% Retained
0,18 mm	0 - 3
0,850 mm	5 - 20
0,425 mm	65 - 95
Below 0,425 mm	0 - 10

Minimum of spherical beads by number 70%

(d) Luminance

The luminance factor of white SPRAYPLASTIC shall be not less than 70.

The percentage decrease in the height of the cone of SPRAYPLASTIC shall not be more than 25 after testing for 48 hours at 23 C (temperate grade) or 40 C (semi-tropical or tropical grades).

(f) Low Temperature Impact Resistance

SPRAYPLASTIC shall pass the impact test when tested at -10 C (temperate grade) or -1 C (semi-tropical or tropical grades`).

(a) Abrasion resistance

The abrasive wear of SPRAYPLASTIC shall typically be less than 0,5 g per 100 revolutions.

PS.TB.2 LETTERING, SYMBOLS AND TRAFFIC ISLAND MARKING

Notwithstanding the requirements of Clause TB.8.1.2, traffic island marking shall be measured under Clause TB.8.1.1 lines.

C3.4: PARTICULAR SPECIFICATIONS

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

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

- C3.4.1 Part AH - OHS 1993 Safety Specification
(15 Pages)
- C3.4.2 Covid-19 Specification
(8 Pages)
- C3.4.3 OHS Baseline Risk Assessment
(29 Pages)
- C3.4.4 Standard Environmental Management Plan for Civil Engineering Construction Works
(24 Pages)

C3.5: CONTRACT AND STANDARD DRAWINGS**C3.5.1 CONTRACT DRAWINGS / DETAILS**

Tender Drawings provided:

DRAWING TITLE	DRAWING NUMBER
CHESTER CELE CRESCENT ROAD WIDENING IN UMLAZI-G OF WARD 79	
Dimensions, Setting out and Services Plan	48957 Sheet 01 of 01

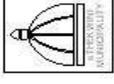
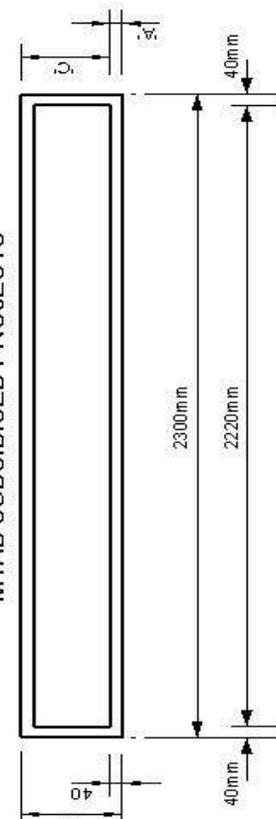
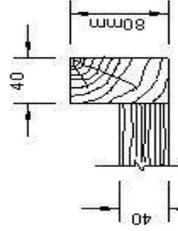
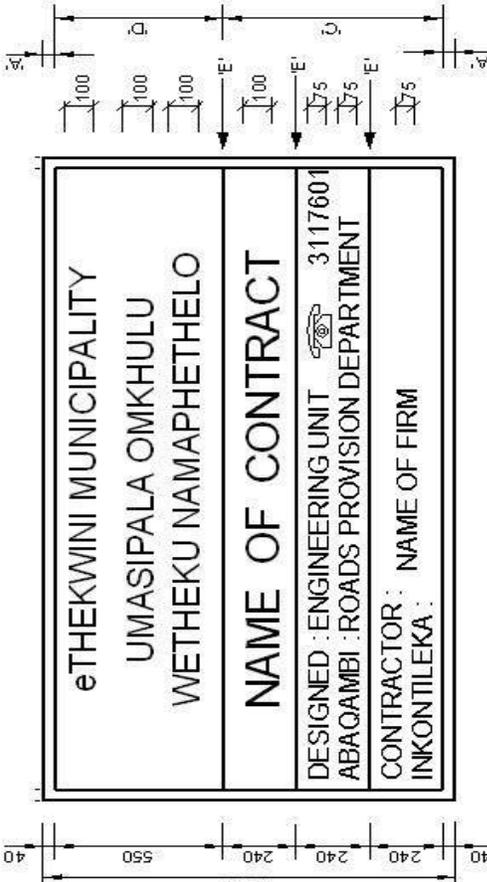
C3.5.2 STANDARD DRAWINGS

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

Dwg No	Description	Date of Issue	
38570	Ring Manholes	February	1990
38571	Brick Manhole Details	February	1990
38572	Stormwater Inlet Details	February	1990
38573	Stormwater Inlet Special Details	February	1990
38574	Sewer Manholes: Ramp, Backdrop and Channelling Details	February	1990
38575	Sub-Soil Drain, Pipe Bedding and Pipe Protection Details	February	1990
38576	Headwall Details	February	1990
38577	Kerbing Details	February	1990
38578	Concrete Median Barriers	February	1990
38579	Vehicular and Pedestrian Scoops	February	1990
38580	Concrete Bollard and Steel Guard Rail	February	1990
38581	Retaining Wall, PC Steps, Staircase, Cable Ducts and Headwalls	February	1990
38582	Precast Concrete Fencing and Aluminium Gates	February	1990
38583	Wire Mesh Fence and Gate Details	February	1990
38584	Standard Hydrant Thrust Blocks and Trenches	February	1990
38585	Water Connections, Pipework and Fittings	February	1990
38586	DP & TC Manholes - Rectangular	February	1990
38587	DP & TC Manholes - "L" Shaped	February	1990
38588	DP & TC Manholes - "T" Shaped	February	1990
38589	DP & TC Cable Ducts and Junction Box Details	February	1990
43120	Typical Details of Grid Inlets	February	1990

C3.6: ANNEXURES

C3.6.1 NOTICE BOARD

 <p>ENGINEERING UNIT ROADS PROVISION DEPARTMENT UMLAZI MUNICIPALITY</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>PLAN DESCRIPTION</td><td>DRWG. NO.</td></tr> <tr><td>CONTINUED FROM</td><td></td></tr> <tr><td>CONTINUED ON</td><td></td></tr> <tr><td>CROSS SECTIONS</td><td></td></tr> <tr><td>TYPICAL CROSS SECTION</td><td></td></tr> <tr><td>SURVEY LAYOUT</td><td></td></tr> </table>	PLAN DESCRIPTION	DRWG. NO.	CONTINUED FROM		CONTINUED ON		CROSS SECTIONS		TYPICAL CROSS SECTION		SURVEY LAYOUT		 <p>GRAPHIC SCALE BAR FROM METROLOGICAL UNIT</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>C</td><td>15/05/2000</td><td>NAME CHANGE</td></tr> <tr><td>D</td><td>27/08/2001</td><td>NAME CHANGE</td></tr> <tr><td>E</td><td>14/03/2003</td><td>NAME CHANGE</td></tr> <tr><td>REV.</td><td></td><td>Descr. Rev.</td></tr> </table>	C	15/05/2000	NAME CHANGE	D	27/08/2001	NAME CHANGE	E	14/03/2003	NAME CHANGE	REV.		Descr. Rev.	<p>Drawing Title</p> <p style="text-align: center;">STANDARD DRAWING</p> <p>Drawing File</p>	<p>TYPICAL NOTICE BOARD FOR ENGINEERING UNIT</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Scale</td><td>As Shown</td></tr> <tr><td>Design</td><td>14/03/2003</td></tr> <tr><td>Checked</td><td>C.E. ROONEY</td></tr> <tr><td>Author</td><td></td></tr> <tr><td>Unit</td><td></td></tr> </table>	Scale	As Shown	Design	14/03/2003	Checked	C.E. ROONEY	Author		Unit		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Drawing No</td><td>40137E</td><td>Rev</td><td>1</td></tr> <tr><td>Sheet</td><td></td><td>of</td><td>1</td></tr> </table>	Drawing No	40137E	Rev	1	Sheet		of	1
PLAN DESCRIPTION	DRWG. NO.																																															
CONTINUED FROM																																																
CONTINUED ON																																																
CROSS SECTIONS																																																
TYPICAL CROSS SECTION																																																
SURVEY LAYOUT																																																
C	15/05/2000	NAME CHANGE																																														
D	27/08/2001	NAME CHANGE																																														
E	14/03/2003	NAME CHANGE																																														
REV.		Descr. Rev.																																														
Scale	As Shown																																															
Design	14/03/2003																																															
Checked	C.E. ROONEY																																															
Author																																																
Unit																																																
Drawing No	40137E	Rev	1																																													
Sheet		of	1																																													
<p>HARDBOARD NOTICE BOARD FOR MTAB SUBSIDISED PROJECTS</p> 		<p>DETAIL OF SURROUND SCALE 1:5</p> 		<p>NOTES:</p> <ul style="list-style-type: none"> A. Raised surround painted white. B. White letters. C. Royal Blue background - Ref. Blue 0-013. D. Grey background - ref. Grey 6-089. E. White dividing lines. <p>The face to be tempered hardboard in one piece. The colour numbers refer to those on the colour cards of British Standard 2660 of 1955.</p>				<p>AS BUILT</p>																																								
<p>eTHEKWINI MUNICIPALITY UMASIPALA OMKHULU WETHEKU NAMAPHETHELO</p>		<p>NAME OF CONTRACT</p>		<p>DESIGNED : ENGINEERING UNIT 3117601 ABAQAMBI : ROADS PROVISION DEPARTMENT</p>		<p>CONTRACTOR : NAME OF FIRM INKONTILEKA :</p>																																										

C4.2 CONDITIONS ON SITE

There is no specific geotechnical information or other site information however the Tenderer's urgent attention is drawn to the possibility that the existing in-situ material / ground is considered to be mostly intermediate to hard and the Tenderer is encouraged to visit the site to check existing conditions onsite and price his / her rates accordingly.

C4.3 TEST RESULTS

There are no specific test results.