



CLUSTER

Trading Services

UNIT

Water and Sanitation

DEPARTMENT

Special Projects

PROCUREMENT DOCUMENT

INFRASTRUCTURE

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

Contract No.: **WS-7802**

Contract Title: Southern Aqueduct Upgrade : WP#03, WP#04, WP#05, WP#06

Est. CIDB Grade/ Class: **8 CE**

CLARIFICATION MEETING AND QUERIES

Clarification Meeting: **Compulsory Clarification Meeting**

Meeting Location, Date, Time: **3 Prior Road Durban, Water and Sanitation Head office , 1st floor Room 103 on 07 March 2024 at 11:00 (Midday)**

Queries can be addressed to: **Siduduzo Mtshali. Email queries to be sent by 19 March 2024 and consolidated question and answers to be uploaded on 26 March 2024**
The Employer's Representative: **Tel: 031-311-8794; eMail: Siduduzo.mtshali@durban.gov.za**

TENDER SUBMISSION

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

Closing Date/ Time: **Friday, 12 April 2024** at **11h00**

FACSIMILE, eMAIL, or POSTED TENDERS WILL NOT BE ACCEPTED

Issued by:

ETHEKWINI MUNICIPALITY

Deputy Head: **Special Projects**

Date of Issue: **01/03/2024**

Document Version 24/02/2023(c)

Tenderer Name:

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

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

Tenders are hereby invited for the works for the:

Southern Aqueduct Upgrade : WP#03, WP#04, WP#05, WP#06 Construction of approximately 2200m of DN1400 from the Westville Tunnel Exit to 38 Alexander Av & through the North Park Nature Reserve to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.

Southern Aqueduct Upgrade: WP#04 Construction of approximately 1800m of DN1600 from High Wycombe Road to Roger Sishi Road to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.

Southern Aqueduct Upgrade: WP#05 Construction of approximately 1850m of DN1400 from Roger Sishi Road to Westville Tunnel Entrance to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.

Southern Aqueduct Upgrade: WP#06 Construction of approximately 1900m of DN1600 from Durban Heights WTW to High Wycombe Road to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.

Subject	Description	Tender Data Ref.
Employer	The Employer is the eThekweni Municipality as represented by: Deputy Head: Special Projects	F.1.1.1
Tender Documents	Documents can only be obtained in electronic format, issued by the eThekweni Municipality. Documentation can be downloaded from the National Treasury's eTenders website or the eThekweni Municipality's Website . The <u>entire document</u> should be printed (on A4 paper) and suitably bound by the tenderer.	F.1.2
Eligibility	It is <u>estimated</u> that tenderers should have a CIDB contractor grading designation of 8 CE (or higher). The CIDB provisions in relation to a Contractor's Potentially Emerging (PE) status <u>do not</u> apply.	F.2.1.1
Clarification Meeting	3 Prior Road Durban, Water and Sanitation Head office , 1st floor Room 103 on 07 March 2024 at 11:00 (Midday)	F.2.7
Seek Clarification	Queries relating to these documents are to be addressed to the Employer's Agent's Representative whose contact details are: Siduduzo Mtshali. Email queries to be sent by 19 March 2024 and consolidated question and answers to be uploaded on 26 March 2024 Tel: 031-311-8794; eMail: Siduduzo.mtshali@durban.gov.za	F.2.8
Submitting a Tender Offer	Tender offers shall be delivered to: The Tender Box in the foyer of the Municipal Building 166 KE Masinga Road, Durban	F.2.13
Closing	Tender offers shall be delivered on or before Friday, 12 April 2024 at or	F.2.15

Time	before 11h00 .
Evaluation of Tender Offers	The 80/20 Price Preference Point System, as specified in the PPPFA Regulations 2022 will be applied in the evaluation of tenders. Refer to Clause F.3.11 of the Tender Data for the Specific Goal(S) for the awarding of Preference Points, and other related evaluation requirements. F.3.11

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

PART T1: TENDERING PROCEDURES
T1.2: TENDER DATA

T1.2.1 STANDARD CONDITIONS OF TENDER

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

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

T1.2.2 TENDER DATA

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

F.1: GENERAL

F.1.1 The employer: The Employer for this Contract is the eThekweni Municipality as represented by: Deputy Head: **Special Projects**

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

- 1) This procurement document.
- 2) The NEC4 Engineering and Construction Contract (June 2017), copies of which may be obtained from South African Institution of Civil Engineering (tel 011-805 5947) or Engineering Contract Strategies (tel 011 803-3008) and the additional conditions contained in the Z clauses described in the Contract Data.
- 3) SANS 1200 Specifications hereinafter referred to as the Standard Engineering Specifications. This document is obtainable separately, and Tenderers shall obtain their own copies of the applicable Sections.
- 4) Drawings, issued separately from this document, or bound in Section C3.4 (as an Annexure).
- 5) In addition, Tenderers are advised, in their own interest, to obtain their own copies of the following acts, regulations, and standards referred to in this document as they are essential for the Tenderer to get acquainted with the basics of construction management, the implementation of preferential construction procurement policies, and the participation of targeted enterprise and labour.
 - The Employer's current (as at advertising date) Supply Chain Management Policy.
 - The Preferential Procurement Policy Framework Act No 5 of 2000, and the Preferential

Procurement Policy Framework Act Regulations (2022).

- The Occupational Health and Safety Act No 85 and Amendment Act No 181 of 1993, and the Construction Regulations (2014).
- The Construction Industry Development Board Act No 38 of 2000 and the Regulations issued in terms of the Act (July 2013).
- SANS 1921:2004 – Construction and Management Requirements for Works Contract, Parts 1-3.
- Any other eThekweni Policy documents referenced in the Tender Documents.

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

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

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

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

Siduduzo Mtshali. Email queries to be sent by 19 March 2024 and consolidated question and answers to be uploaded on 26 March 2024

Tel: 031-311-8794; eMail: Siduduzo.mtshali@durban.gov.za

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

F.2: TENDERER'S OBLIGATIONS

F.2.1.1 Eligibility: General

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

- (a) the Tenderer does not comply with the legal requirements as stated in the Employer's current SCM Policy.
- (b) the Tenderer cannot provide proof that he is in good standing with respect to duties, taxes, levies and contributions required in terms of legislation applicable to the work in the contract.
- (c) In the event of a Compulsory Clarification Meeting:
 - i) the Tenderer fails to attend the Compulsory Clarification Meeting.
 - ii) the Tenderer fails to have form "Certificate of Attendance at Clarification Meeting / Site Inspection" (in T2.2) signed by the Employer's Agent or his representative.
- (d) in the case of JV submissions, two or more JV entities have common directors / shareholders or common entities tendering for the same works.
- (e) at the time of closing of tenders, the Tenderer is not registered on the National Treasury Central Supplier Database (CSD) as a service provider. In the case of a Joint Venture, this requirement will apply individually to each party in the Joint Venture.
- (f) The tenderer has not submitted, with this tender, a valid Letter of Good Standing from the Compensation Commissioner as proof of being registered and in good standing with the compensation fund. Reference is to be made to Returnable Document T2.2.13.

- (g) The tender fails to complete and sign the Declaration of Municipal Fees in T2.2: “Returnable Documents” and submits the required documentation. Reference is to be made to Returnable Document T2.2.12.

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

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

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

The following are to be noted:

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

F.2.1.2 **Eligibility: CIDB**

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

Joint ventures are eligible to submit tenders provided that:

- (a) Every member of the joint venture is registered (as “Active”) with the CIDB (at time of tender closing),
- (b) The lead partner has a contractor grading designation in the **CE** class of construction work and has a grading designation of not lower than one level below the required grading designation, and
- (c) The combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations (2013) is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a **CE** class of construction work or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations.

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

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

“Documents are to be obtained, free of charge, in electronic format, from the **National Treasury’s eTenders website** or the **eThekweni Municipality’s Website**. The entire electronically downloaded document should be printed on white A4 paper (single-sided) and suitably bound by the tenderer.

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

“Addenda will be published, in electronic format, on the websites specified in F.1.2. Tenderers are to ensure that the eTenders website is consulted for any published addenda pertaining to this tender up to three days before the tender closing time as stated in the Tender Data.”

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

F.2.7 Clarification meeting:
3 Prior Road Durban, Water and Sanitation Head office , 1st floor Room 103 on 07 March 2024 at 11:00 (Midday)

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

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

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

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

Contract No.: WS - 7802

Contract No.: Southern Aqueduct Upgrade : WP#03, WP#04, WP#05, WP#06

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

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

Tenderers are to include, with their paper (“hard copy”) submission, a memory-stick containing an electronically scanned (300 dpi resolution) Public Document Format (PDF) copy of their complete bid submission. This PDF file should be named using the contract number and the Tenderer’s name, eg. “**WS-7802 – Tenderers Name.PDF**”. The memory-stick must be labelled with the Tenderer’s name and securely fixed to the paper submission.

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

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

- Date : **Friday, 12 April 2024**
- Time : **11h00**

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

F.2.20 Submit securities, bonds, policies: The tenderer is required to submit with his tender a letter of intent from an approved insurer undertaking to provide the Performance Bond to the format included in T2.2 of this procurement document.

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

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

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

Tax Clearance

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

SARS has introduced a new Tax Compliance Status System. Tenderers must submit a **Tax Compliance Status PIN** (TCS PIN) instead of an original Tax Clearance Certificate. This TCS PIN can be used by third parties to certify the taxpayer’s real-time compliance status. This TCS PIN is to be entered on Returnable Document T2.2.1: “Compulsory Enterprise Questionnaire”. Separate Tax Clearance Certificates / TCS PINs are required for each entity in a Joint Venture.

Failure to comply will make the tender non-responsive.

Compensation Commissioner

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

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

Failure to comply will make the tender non-responsive.

Central Supplier Database (CSD)

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

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

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

CIDB Registration

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

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

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

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

The date of obtaining the CIDB printout(s) is to be indicated on the printout.

F.3: THE EMPLOYER'S UNDERTAKINGS

F.3.1.1 Respond to requests from the tenderer: Replace the words “five working days” with “three working days”.

F.3.2 Issue addenda: Add the following paragraph: “Addenda will be published, in electronic format, on the same platform(s) as the Tender Notification (refer to F.1.2).”

F.3.4 Opening of Tender Submissions: Tenders will be opened immediately after the closing time for

tenders. The public reading of tenders will take place in the SCM Boardroom, 6th Floor, Engineering Unit Building, 166 KE Masinga Road, Durban.

F.3.11 Evaluation of Tender Offers:

Eligibility

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

Functionality

FUNCTIONALITY will be evaluated to determine the responsiveness of tenders received. The minimum score for FUNCTIONALITY is **70 points**. Those tenders not achieving the minimum score will be deemed non-responsive.

The functionality Criteria, Sub-Criteria, Points per Criteria/ Sub-Criteria, Returnable Documentation and Schedules, Method of Evaluation, and Prompts for Judgement are as specified in T1.2.3: "Additional Conditions of Tender".

Preference Point System

The procedure for the evaluation of responsive tenders is **PRICE AND PREFERENCE** in accordance with the Employer's current SCM Policy, the Preferential Procurement Policy Framework Act (5 of 2000), and the Preferential Procurement Policy Framework Act Regulations (2022).

Price Points

The **80/20** preference points system will be applied. The Formula used to calculate the **Price Points (max. 80)** will be according to that specified Regulation 5.1.

Preference Points

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

The Preference Points (either 20 or 10) will be derived from points allocated/ claimed for **Specific Goals** as indicated in the table(s) below, according to the specified **Goal/ Category Weightings**.

- **Ownership Goal**

Goal Weighting: 40%

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

Ownership Categories	Criteria	80/20	90/10
Race: Black (w1)	Equals 0%	0	n/a
	Between 0% and 51%	1.28	n/a
	Greater or equal to 51% and less than 100%	2.56	n/a
	Equals 100%	3.2	n/a
Gender: Female (w2)	Equals 0%	0	n/a
	Between 0% and 51%	0.96	n/a
	Greater or equal to 51% and less than 100%	1.92	n/a
	Equals 100%	2.4	n/a
Disabilities (w3)	Equals 0%	0	n/a
	Between 0% and 51%	0.96	n/a
	Greater or equal to 51% and less than 100%	1.92	n/a
	Equals 100%	2.4	n/a
Maximum Goal Points:		8	n/a

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

- w1 = 40%, w2=30%, w3=30% (where: w1 + w2 + w3 = 100%)

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

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

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

Goal Weighting: 20%

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

Municipal Area	80/20	90/10
Not within eThekweni Municipality	1	n/a
Within eThekweni Municipality	2	n/a
Within the specified region / Adjoining Wards	3	n/a
Within the specified zone / Project Ward(s)	4	n/a
Maximum Goal Points:	4	n/a

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

- CSD Report

• **RDP Goal: The promotion SMMEs owned by PPG – Contracts > R5m**

Goal Weighting: 40%

The tendering entity's **Commitment to Sub-Contracting** (to Sub-Contractors conforming to the specified ownership demographics) the **percentage works**, as specified below, is to be used in the determination of the tenderer's claim for **Preference Points** for this Specific Goal.

Contract Participation Goal	80/20	90/10
Sub-contracting 0%	2	n/a
Sub-contracting <25%	4	n/a
Sub-contracting 25%	6	n/a
Sub-contracting ≥25% and <50%	8	n/a
Maximum Goal Points:	8	n/a

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

- Contract Participation Goal Plan (% work to be allocated)

Targeted Procurement

(SCMP Cl.23) After tender submissions have been evaluated in terms of the **Preference Point System** and the highest points scorer has been ascertained, the requirements of targeted procurement will be applied according to the provisions of the SCM Policy.

Targeted Procurement requirements are specified in the "**Additional Conditions of Tender**" in T1.2.3.4.

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

- The tenderer submits a **valid Tax Clearance Certificate OR Tax Compliance Status PIN**, issued by the TCS System of the South African Revenue Services, or has made arrangements to meet outstanding tax obligations.
- The tenderer is **registered, and "Active", with the Construction Industry Development Board**, at time of tender closing, in an appropriate contractor grading designation.
- 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.
- 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.
- 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.
- The tenderer is **registered and in good standing with the compensation fund or with a licensed compensation insurer**.
- The Employer is reasonably satisfied that the tenderer has in terms of the Construction Regulations, 2014, issued in terms of the Occupational Health and Safety Act, 1993, the **necessary competencies and resources to carry out the work safely**.

The Municipality does not bind itself to accept the lowest or any tender. It reserves the right to accept the whole or any part of a tender to place orders. Bidders shall not bind the Municipality to any minimum quantity per order. The successful Tenderer (s) shall be bound to provide any quantities stipulated in the specification.

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

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

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

Tenderers are to include, with their “hard copy” submission, a memory-stick containing an electronically scanned (300 dpi resolution) Public Document Format (PDF) copy of their complete bid submission. This PDF file should be named using the contract number and the Tenderer’s name, eg. “**WS-7740– Tenderers Name.PDF**”. The memory-stick must be labelled with the Tenderer’s name and securely fixed to the paper submission.

T1.2.3 ADDITIONAL CONDITIONS OF TENDER**T1.2.3.1 Appeals**

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

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

T1.2.3.2 Prohibition on awards to persons in the service of the state

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

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

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

T1.2.3.3 Code of Conduct and Local Labour

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

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

T1.2.3.4 Targeted Procurement

(SCMP Cl.52.21(d) If feasible to contract for a contract above R30m, an organ of state must apply subcontracting to advance designated groups.

(SCMP Cl.52.21(e) Tenders that are between the contract value of R5m and R30m (incl.) must, where feasible, allow for subcontracting in line with the Council approved Economic Empowerment Framework.

Refer to **Economic Empowerment Framework**.

T1.2.3.5 Functionality Specification

Functionality Evaluation is applicable to this tender.

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

Functionality Criteria / Sub Criteria		Maximum Points Score
Tenderer's Experience		40
Project Organogram and Experience of Key Staff	Contracts Manager	15
	Site agent	15
	Foremen	10
Preliminary Programme		10
Construction Methodology & Quality Control		10
Maximum possible score for Functionality (M_s)		100

The minimum number of evaluation points for Functionality is **70**. Only those tenderers who achieve the minimum number of Functionality evaluation points (or greater) will be eligible to have their tenders further evaluated.

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

Level 0	Level 1	Level 2	Level 3	Level 4
0	40	70	90	100

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

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

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

- **“successfully completed”** implies a project has been completed on time and to specification;
- **“experience”** implies experience on projects of a similar nature;
- **“accredited degree / diploma”** implies a minimum 3-year qualification within the built environment, from a registered University or Institute of Technology.
- **“Key Staff”** persons under the age of 65 years.

Criterion: Tenderer's Experience	
Level 0	No information provided; OR submission of no substance / irrelevant information provided
Level 1	To have successfully completed <u>1 project</u> of a similar nature within the past 10 years.
Level 2	To have successfully completed <u>2 to 3 projects</u> of a similar nature within the past 10 years.
Level 3	To have successfully completed <u>4 to 5 projects</u> of a similar nature within the past 10 years.
Level 4	To have successfully completed <u>6 to 7 projects</u> of a similar nature within the past 10 years.
Level 5	To have successfully completed <u>8+ projects</u> of a similar nature within the past 10 years.

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

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

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

PART T2: RETURNABLE DOCUMENTS

T2.1 LIST OF RETURNABLE DOCUMENTS

T2.1.1 General

The Tender Submission Documentation must be submitted in its entirety. All forms must be properly completed as required.

The Tenderer is required to complete each and every Schedule and Form listed below to the best of their ability as the evaluation of tenders and the eventual contract will be based on the information provided by the Tenderer. Failure of a Tenderer to complete the Schedules and Forms to the satisfaction of the Employer will inevitably prejudice the tender and may lead to rejection on the grounds that the tender is non-responsive.

T2.1.2 Returnable Schedules, Forms and Certificates

Entity Specific

T2.2.1	Compulsory Enterprise Questionnaire	18
T2.2.2	Certificate of Attendance at Clarification Meeting	20
T2.2.3	Tax Compliance Status PIN / Tax Clearance Certificate	21
T2.2.4	Contractor's Health and Safety Declaration.....	22
T2.2.5	MBD 4: Declaration of Interest	24
T2.2.6	MBD 5: Declaration for Procurement Above R10 Million	26
T2.2.7	MBD 6.1: Preference Points Claim Form ITO the Preferential Regulations	27
T2.2.8	MBD 8: Declaration of Bidder's Past SCM Practices	30
T2.2.9	MBD 9: Certificate of Independent Bid Determination	32
T2.2.10	Joint Venture Agreements (if applicable)	35
T2.2.11	Record of Addenda to Tender Documents (if applicable).....	36

Eligibility

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

Technical or Functionality Evaluation

T2.2.16	Experience of Tenderer	41
T2.2.17	Proposed Organisation and Staffing	42
T2.2.18	Key Personnel.....	43
T2.2.19	Experience of Key Personnel.....	44
T2.2.20	Preliminary Programme	45
T2.2.21	Construction Approach, Methodology, and Quality Control	46
T2.2.22	Schedule of Proposed Subcontractors	47
T2.2.23	Plant and Equipment.....	48
T2.2.24	Contractor's Health and Safety Plan	49

T2.2 RETURNABLE SCHEDULES, FORMS, AND CERTIFICATES

The returnable schedules, forms, and certificates, as listed in T2.1.2, can be found on pages [18](#) to [36](#).

NOTE

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

T2.2.1 COMPULSORY ENTERPRISE QUESTIONNAIRE

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

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

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

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

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

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

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

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

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

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

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

NAME (Block Capitals): _____

Date

SIGNATURE: _____

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

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

This is to certify that:

(tenderer name):

of (address):

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

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

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

Particulars of person(s) attending the meeting:

Name:	Name:
Signature:	Signature:
Capacity:	Capacity:

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

Name:

Signature:

Date:

T2.2.3 TAX COMPLIANCE STATUS PIN / TAX CLEARANCE CERTIFICATE

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

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

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

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

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

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

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

NAME (Block Capitals): _____

Date

SIGNATURE: _____

T2.2.4 CONTRACTOR'S HEALTH AND SAFETY DECLARATION

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

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

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

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

Declaration by Tenderer

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

Circle Applicable	
Yes	NO
Yes	NO
YES	NO

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

- 4 Details of resources I propose:
(Note: Competent resources shall include safety personnel such as a construction supervisor and construction safety officer as defined in Regulation 8, and competent persons as defined in Regulations 9, 10, 11, 12, 13, 14, 16, 17, 20, 21, 22, 23(1), 24, 25, 26, 27, 28 and 29, as applicable).
 - (a) Details of the competent and qualified key persons from my company's own resources, who will form part of the contract team:

NAMES OF COMPETENT PERSONS	POSITIONS TO BE FILLED BY COMPETENT PERSONS

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

- (i) By whom will training be provided?
- (ii) When will training be undertaken?
- (iii) Positions to be filled by persons to be trained or hired:

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

- Name of proposed subcontractor:
- Qualifications or details of competency of the subcontractor:

- 5 I, the undersigned, hereby undertake, if this tender is accepted, to provide, before commencement of the works under the contract, a suitable and sufficiently documented Health and Safety Plan in accordance with Regulation 7(1) of the Construction Regulations, which plan shall be subject to approval by the Client.
- 6 I, the undersigned, confirm that copies of this company's approved Health and Safety Plan, the Client's Safety Specifications as well as the OHS 1993 Construction Regulations 2014 will be provided on site and will at all times be available for inspection by the Principal Contractor's personnel, the Client's personnel, the Employer's Agent, visitors, and officials and inspectors of the Department of Labour.
- 7 I, the undersigned, hereby confirm that adequate provision has been made in the tendered rates and prices in the Bill of Quantities to cover the cost of all resources, actions, training and all health and safety measures envisaged in the OHS 1993 Construction Regulations 2014, and that I will be liable for any penalties that may be applied by the Client in terms of the said Regulations (Regulation 33) for failure on the Principal Contractor's part to comply with the provisions of the Act and the Regulations.
- 8 I, the undersigned, agree that failure to complete and execute this declaration to the satisfaction of the Client will mean that this company is unable to comply with the requirements of the OHS 1993 Construction Regulations (2014) and accept that this tender will be prejudiced and may be rejected at the discretion of the Client.

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

NAME (Block Capitals): _____

Date

SIGNATURE: _____

T2.2.5 MBD 4: DECLARATION OF INTEREST

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

- (a) a member of:
 - (i) any municipal council.
 - (ii) any provincial legislature.
 - (iii) the national Assembly or the national Council of provinces.
- (b) a member of the board of directors of any municipal enterprise.
- (c) an official of any municipality or municipal enterprise.
- (d) an employee of any national or provincial department, national or provincial public enterprise or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999).
- (e) a member of the accounting authority of any national or provincial public enterprise.
- (f) an employee of Parliament or a provincial legislature.

“Shareholder” means a person who owns shares in the company and is actively involved in the management of the company or business and exercises control over the company.

- 1 No bid will be accepted from persons **in the service of the state**¹.
- 2 Any person, having a kinship with persons **in the service of the state**, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to **persons in service of the state**, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority and/or take an oath declaring his/her interest.
- 3 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

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

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

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

3.10 Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid?

YES	NO
-----	----

If yes, furnish particulars:

3.11 Are you, aware of any relationship (family, friend, other) between any other bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid?

YES	NO
-----	----

If yes, furnish particulars:

3.12 Are any of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state?

YES	NO
-----	----

If yes, furnish particulars:

3.13 Are any spouse, child or parent of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state?

YES	NO
-----	----

If yes, furnish particulars:

3.14 Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract ?

YES	NO
-----	----

If yes, furnish particulars:

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

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

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

NAME (Block Capitals):

Date

SIGNATURE:

**T2.2.6 MBD 5: DECLARATION FOR PROCUREMENT ABOVE R10 MILLION
(ALL APPLICABLE TAXES INCLUDED)**

For all procurement expected to exceed R10 million (all applicable taxes included), bidders must complete the following questionnaire.

	Circle Applicable		
1.0 Are you by law required to prepare annual financial statements for auditing?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; padding: 2px;">YES</td> <td style="width: 50%; text-align: center; padding: 2px;">NO</td> </tr> </table>	YES	NO
YES	NO		
1.1 If YES, submit audited annual financial statements for the past three years or since the date of establishment if established during the past three years.			
2.0 Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; padding: 2px;">YES</td> <td style="width: 50%; text-align: center; padding: 2px;">NO</td> </tr> </table>	YES	NO
YES	NO		
2.1 If NO, this serves to certify that the bidder has no undisputed commitments for municipal services towards any municipality for more than three months or other service provider in respect of which payment is overdue for more than 30 days.			
2.2 If YES, provide particulars.			
3.0 Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; padding: 2px;">YES</td> <td style="width: 50%; text-align: center; padding: 2px;">NO</td> </tr> </table>	YES	NO
YES	NO		
3.1 If YES, provide particulars.			
4.0 Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; padding: 2px;">YES</td> <td style="width: 50%; text-align: center; padding: 2px;">NO</td> </tr> </table>	YES	NO
YES	NO		
4.1 If YES, provide particulars.			

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

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

NAME (Block Capitals):

Date

SIGNATURE:

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

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

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

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

1.0 GENERAL CONDITIONS

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

- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 The applicable preference point system for this tender is the 90/10 preference point system.

1.3 Preference Points for this tender shall be awarded for:

- **Price and Specific Goals:** 90 (price) and 10 (specific goals), in terms of 1.2 above.
- The total Preference Points, for Price and Specific Goals, is 100.

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

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

2.0 DEFINITIONS

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

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

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

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

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

3.0 FORMULA FOR CALCULATION OF PREFERENCE PRICE POINTS

3.1 PROCUREMENT OF GOODS AND SERVICES

POINTS AWARDED FOR PRICE: A maximum of 80 or 90 points is allocated for price on the following basis:

<u>80 / 20 Points System</u>	OR	<u>90 / 10 Points System</u>
$P_s = 80 \left(1 - \frac{P_t - P_{min}}{P_{min}} \right)$		$P_s = 90 \left(1 - \frac{P_t - P_{min}}{P_{min}} \right)$

Where:

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

4.0 POINTS AWARDED FOR SPECIFIC GOALS

- 4.1 In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goal(s) stated in **Table 1** below, as supported by proof/ documentation stated in the **Conditions of Tender**:
- 4.2 In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of:
- (a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system, or
 - (b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,
- then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

TABLE 1: Specific Goals for the tender and maximum points for each goal are indicated per the table below.

Tenderers are to indicate their points claim for each of the Specific Goals in the shaded blocks.

The Specific Goals to be allocated points in terms of this tender	Maximum Number of points ALLOCATED (80/20 system)	Maximum Number of points ALLOCATED (90/10 system)	Number of points CLAIMED (80/20 system)	Number of points CLAIMED (90/10 system)
Ownership Goal: Race (black)	3.2	n/a		n/a
Ownership Goal: Gender (female)	2.4	n/a		n/a
Ownership Goal: Disabilities	2.4	n/a		n/a
RDP Goal: The promotion of enterprises located in a specific municipal area.	8	n/a		n/a
RDP Goal: The promotion of SMMEs owned by PPG (contracts >R5m)		n/a		n/a
Total CLAIMED Points (20 Maximum)				n/a

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

I acknowledge that:

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

NAME (Block Capitals): _____

Date

SIGNATURE: _____

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

- 1.0 This Municipal Bidding Document must form part of all bids invited.
- 2.0 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3.0 The bid of any bidder may be rejected if that bidder, or any of its directors have:
 - a) abused the municipal entity's supply chain management system or committed any improper conduct in relation to such system.
 - b) been convicted for fraud or corruption during the past five years.
 - c) wilfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years.
 - d) been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).
- 4.0 In order to give effect to the above, the following questions must be completed and submitted with the bid.

4.1 Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector?

(Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer / Authority of the institution that imposed the restriction after the audi alteram partem rule was applied.)

The Database of Restricted Suppliers now resides on the National Treasury's website (www.treasury.gov.za) and can be accessed by clicking on its link at the bottom of the home page.

Circle Applicable	
YES	NO

4.1.1 If YES, provide particulars.

.....

.....

4.2 Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)?

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

YES	NO
-----	----

4.2.1 If YES, provide particulars.

.....

.....

4.3 Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?

YES	NO
-----	----

4.3.1 If YES, provide particulars.

.....

.....

4.4 Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?

YES	NO
-----	----

4.4.1 If YES, provide particulars.

.....
.....

4.5 Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?

YES	NO
-----	----

4.5.1 If YES, provide particulars.

.....
.....

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

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

NAME (Block Capitals):

Date

.....

SIGNATURE:

.....

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

- ¹ Includes price quotations, advertised competitive bids, limited bids and proposals.
- ² Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.
- ³ Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

- 1.0 This Municipal Bidding Document (MBD) must form part of all **bids**¹ invited.
- 2.0 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or **bid rigging**).² Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.
- 3.0 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:
- a. take all reasonable steps to prevent such abuse;
 - b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and
 - c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.
- 4.0 This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of **bid rigging**.
- 5.0 In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid.

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

(Bid Number and Description)

in response to the invitation for the bid made by:

(Name of Municipality / Municipal Entity)

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

I certify, on behalf of:

(Name of Bidder)

that:

1. I have read and I understand the contents of this Certificate.
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect.
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
 - (a) has been requested to submit a bid in response to this bid invitation.
 - (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience.
 - (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder.
6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement, or arrangement with any competitor. However, communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.

7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
 - (a) prices.
 - (b) geographical area where product or service will be rendered (market allocation).
 - (c) methods, factors or formulas used to calculate prices.
 - (d) the intention or decision to submit or not to submit, a bid.
 - (e) the submission of a bid which does not meet the specifications and conditions of the bid.
 - (f) bidding with the intention not to win the bid.

8. In addition, there have been no consultations, communications, agreements, or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.

9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

NAME (Block Capitals):

Date

SIGNATURE:

T2.2.10 JOINT VENTURES AGREEMENTS

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

T2.2.11 RECORD OF ADDENDA TO TENDER DOCUMENTS

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

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

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

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

NAME (Block Capitals): _____

Date

SIGNATURE: _____

T2.2.12 ELIGIBILITY: DECLARATION OF MUNICIPAL FEES

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

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

.....
 (full name of Company / Close Corporation / partnership / sole proprietary/Joint Venture)

(hereinafter referred to as the TENDERER) are, as at the date hereunder, fully paid or an Acknowledgement of Debt has been concluded with the Municipality to pay the said charges in instalments.

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

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

I acknowledge that should the aforesaid Municipal charges fall into arrears, the Municipality may take such remedial action as is required, including termination of any contract, and any payments due to the Contractor by the Municipality shall be first set off against such arrears.

- Where the tenderer’s place of business or business interests are outside the jurisdiction of eThekweni municipality, a copy of the accounts/ agreements from the relevant municipality are to be provided.
- Where the tenderer’s Municipal Accounts are part of their lease agreement, then a copy of the agreement, or an official letter to that effect, is to be provided.

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

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

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

NAME (Block Capitals): _____

Date

SIGNATURE: _____

.....

T2.2.13 ELIGIBILITY: REGISTRATION WITH COMPENSATION COMMISSIONER

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

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

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

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

Clause 82: Employer to furnish returns of earnings

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

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

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

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

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

Clause 89: Mandators and contractors

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

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

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

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

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

NAME (Block Capitals): _____

Date

SIGNATURE: _____

T2.2.14 ELIGIBILITY: CSD REGISTRATION REPORT

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

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

CSD Registration Reports can be obtained from the National Treasury’s CSD website at <https://secure.csd.gov.za/Account/Login>.

The date of obtaining the printout is to be indicated on the printout.

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

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

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

NAME (Block Capitals): _____

Date

SIGNATURE: _____

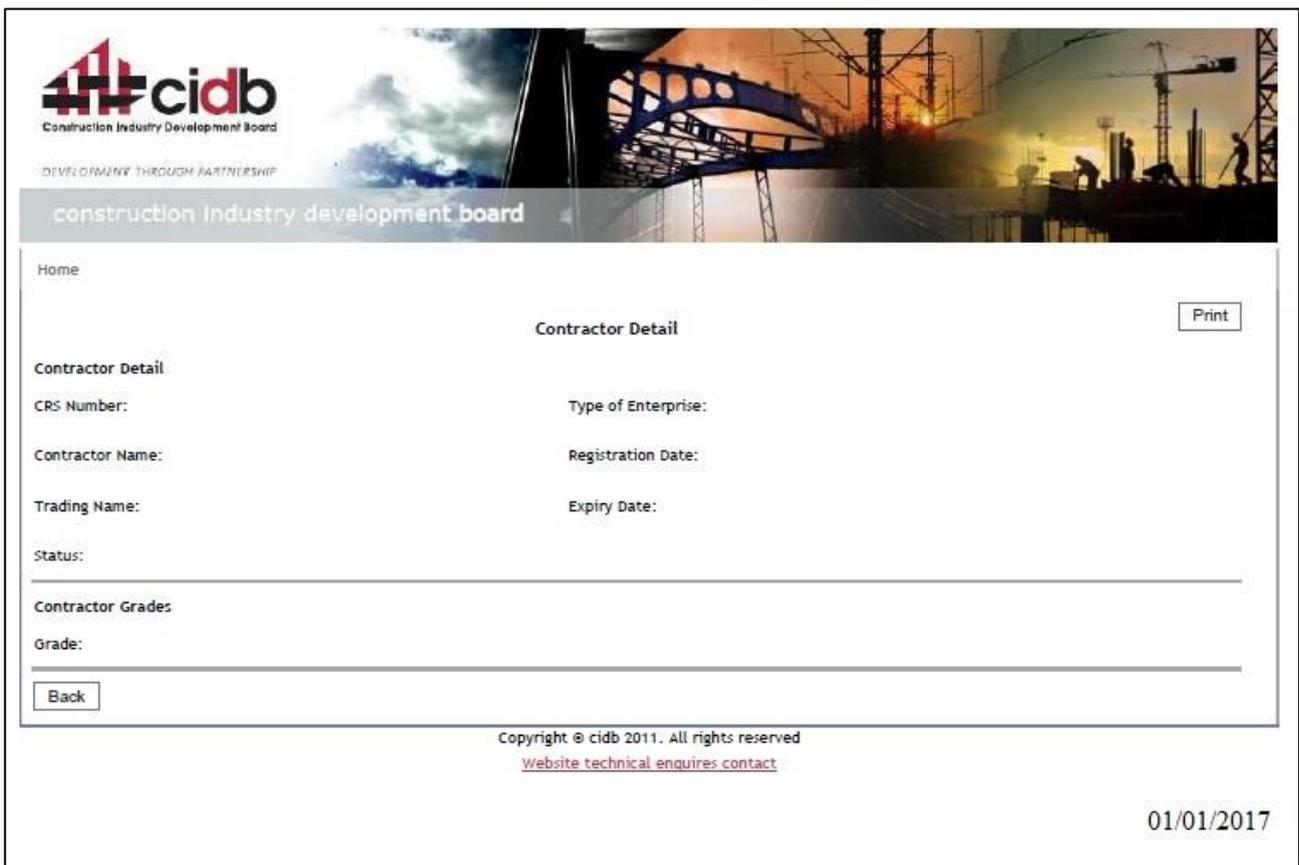
T2.2.15 ELIGIBILITY: VERIFICATION OF CIDB REGISTRATION AND STATUS

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

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

CIDB Registrations can be obtained from the CIDB website at <https://registers.cidb.org.za/PublicContractors/ContractorSearch>. The date of obtaining the printout is to be indicated on the printout.

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



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

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

NAME (Block Capitals): _____

Date

SIGNATURE: _____

T2.2.17 PROPOSED ORGANISATION and STAFFING

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

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

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

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

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

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

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

NAME (Block Capitals): _____

Date

SIGNATURE: _____

T2.2.18 **KEY PERSONNEL**

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

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

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

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

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

NAME (Block Capitals): _____

Date

SIGNATURE: _____

.....

T2.2.19 EXPERIENCE OF KEY PERSONNEL

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

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

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

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

Each CV should be structured under the following headings:

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

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

NAME (Block Capitals): _____

Date

SIGNATURE: _____

T2.2.21 CONSTRUCTION APPROACH, METHODOLOGY, AND QUALITY CONTROL

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

Construction Approach and Methodology

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

Quality Control

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

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

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

NAME (Block Capitals):**Date****SIGNATURE:**

T2.2.23 PLANT and EQUIPMENT

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

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

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

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

Attach additional pages if more space is required

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

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

Attach additional pages if more space is required

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

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

NAME (Block Capitals): _____

Date

SIGNATURE: _____

T2.2.24 CONTRACTOR'S HEALTH AND SAFETY PLAN

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

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

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

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

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

NAME (Block Capitals): _____

Date

SIGNATURE: _____

PART C1: AGREEMENT AND CONTRACT DATA

PART A WP#03

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade : WP#03, WP#04, WP#05, WP#06](#)

C1.1: FORM OF OFFER AND ACCEPTANCE

C1.1.1: OFFER

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

Contract No: **WS-7802**

Contract Title: **Southern Aqueduct Upgrade : WP#03, WP#04, WP#05, WP#06**

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*) : :

C1.2: CONTRACT DATA**C1.2.1 CONDITIONS OF CONTRACT**

The conditions of contract are the NEC4 Engineering and Construction Contract (June, 2017), copies of which may be obtained from the South African Institution of Civil Engineering (tel 011-805 5947) or Engineering Contract Strategies (tel 011 803-3008) and the additional conditions contained in the Z clauses below.

Each item of data given below is cross-referenced to the sub-clause in the *conditions of contract* to which it mainly applies.

C1.2.2 CONTRACT DATA**C1.2.2.1 DATA TO BE PROVIDED BY THE EMPLOYER**

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for Main Option	
	Main Option	B: Priced Contract with Bill of Quantities
	Dispute Resolution Option	W1: Dispute resolution procedure
	Secondary Options	X1: Price adjustment for inflation
	(incorporating amendments)	X2: Changes in the law
		X7: Delay Damages
		X13: Performance bond
		X16: Retention
		Z: Additional Conditions of Contract
10.1	The <i>Employer</i> is:	eThekweni Municipality Water and Sanitation Physical: Postal: Telephone: Fax: E-Mail: The name of the Employer's Agent is: Siduduzo Mtshali
10.1	The <i>Project Manager</i> is:	To be confirmed after Contract Award.
10.1	The <i>Supervisor</i> is:	To be confirmed after Contract Award.
11.2(3)	The works are:	Southern Aqueduct Upgrade: WP#03 – Construction of approximately 2200m of DN1400 from the Westville Tunnel Exit to 38 Alexander Av & through the North Park Nature Reserve to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.

11.2(8)	The following items will be included on the Risk Register:	<ul style="list-style-type: none"> The safe removal and disposal of Prestressed Cement Pipelines Provision of adequate lateral support and shoring to prevent excavation collapse or damage to surrounding services Disruptions to existing services Temporary works required to ensure that the Prestressed Concrete Pipe is operational while the new steel pipeline is being constructed. Management and Facilitation of specialist and CPG Sub-Contractors Any other associated risks deemed applicable for the Contract
12.2	The <i>law of the contract</i> is:	The law of the Republic of South Africa subject to the jurisdiction of the Courts of South Africa.
13.1	The <i>language of this contract</i> is:	English
13.3	The <i>period for reply</i> is:	Two (2) weeks
2	The Contractor's Main Responsibilities	
21.1	The <i>Contractor</i> shall design the following parts of the works:	<ul style="list-style-type: none"> All temporary measures required to implement the scope of works All temporary works required to keep the plant operational as described in C3.2.3 Provision of lateral support for deep, restricted excavations. All mechanical and electrical equipment supplied and installed under this Contract.
24.1	The <i>Contractor</i> shall employ at least the following:	One Contracts Manager, one Site Agent and one general foreman for the duration of the Contract. The key personnel employed during the Contract period shall have the necessary qualifications and experience required to meet a Level 4 in terms of the Functionality prompts outlined in Clause F.3.11.9 of the Contract Document.
3	Time	
31.1	The <i>Contractor</i> is to submit a first programme for acceptance:	Within 2 weeks of the instruction from the Project Manager to submit that programme
31.2	The <i>starting date</i> is:	to be confirmed after award.
11.2(3)	The <i>completion date</i> is:	A maximum of 15 months (excluding public holidays and the annual builder's break) from the <i>starting date</i> .
31.2	Non-working days are:	<ul style="list-style-type: none"> Weekends Public holidays The annual statutory builder's holiday commencing on the first working day after 15 December and work resuming on the first working day after 5 January the next year.
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than:	Four (4) weeks.

35.1	The <i>Employer</i> is not willing to take over the <i>works</i>	Until completion has been achieved.
4	Testing and Defects	
42.2	The <i>defects date</i> is:	52 weeks after Completion
43.2	The <i>defect correction period</i> is:	2 weeks
5	Payment	
50.1	The <i>assessment interval</i> is:	Four (4) weeks
51.1	The <i>currency</i> of the contract is:	South African Rand (ZAR)
51.2	The period within which payments are made is:	Within 30 calendar days following the date on which a valid tax invoice and statement, including a copy of the <i>Project Manager's</i> corresponding payment certificate, were received.
51.4	The <i>interest rate</i> is:	The Prime Lending Rate of the Standard Bank of South Africa at the time an interest payment is due.
6	Compensation Events	
60.1(13)	The <i>weather measurements</i> to be recorded for each calendar month are:	<ol style="list-style-type: none"> 1. The cumulative rainfall for the month (mm) 2. The number of days with rainfall more than 10mm
60.1(13)	The place where weather is to be recorded on site is:	At the Construction Site Office and the records are to be kept on site in a file clearly marked for this purpose.
60.1(13)	The <i>weather data</i> are:	The records of past <i>weather measurements</i> for each calendar month which were recorded at a site nearest to that of the <i>works</i> and which are available from the SA Weather Services at King Shaka International Airport (032 436 3817).
<i>It is noted that the NEC4 ECC4 compensation event procedures governing weather events place a significant burden on the Contractor to prove that the events exceeded a 1 in 10 year return event.</i>		
60.1(21)	The <i>additional compensation events</i> are:	No other events shall be deemed as compensation events.
7	Title	
No additional data is required for this section of the <i>conditions of contract</i> .		
8	Liabilities and Insurance	
84.1	The <i>Employer</i> provides these insurances:	Nil.
84.2	The <i>Contractor</i> provides these insurances:	
	Insurance Against	Minimum amount of cover of minimum limit of indemnity
	Loss of or damage to the <i>works</i> , Plant and Materials	The replacement cost, including the amounts for the replacement of Plant and Materials provided by the Employer
	Loss of or damage to Equipment	The replacement cost

Liability for loss of or damage to property (except the works, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) caused by activity in connection with this contract	R10 000 000 (Ten million Rands (ZAR)) With cross liability so that the insurance applies to the Parties separately
Liability for death of or bodily injury to employees of the Contractor arising out of and in the course of their employment in connection with this contract	Whatever the Contractor deems desirable in addition to that which is prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended
Liability in respect of Contract Works SASRIA insurance subject to terms exceptions and conditions of the SASRIA coupon policy	Cover / indemnity is to the extent provided by the SASRIA coupon policy
Third Party Public Liability Insurance	<ul style="list-style-type: none"> • 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 10,000,000. • 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.
Ground Support Insurance	<ul style="list-style-type: none"> • 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 10,000,000. • Maximum first excess: R 20,000.
Principal's own surrounding property insurance	<ul style="list-style-type: none"> • Minimum amount for any one occurrence unlimited as to the number of occurrences against any claim for damage which may occur to the Council's own surrounding property: R 10,000,000. • Maximum first excess: R 20,000
Insurance of Works	<ul style="list-style-type: none"> • Minimum amount for additional removal of debris (no damage): R 500,000 • Minimum amount for temporary storage of materials off site, excluding Contractor's own premises: R 10,000,000 • Minimum amount for transit of materials to site: R 5,000,000.

9 TitleNo additional data is required for this section of the *conditions of contract*.**10 Data for Main Options**

B	Priced Contract with Bill of Quantities	The method of measurement is the relevant SANS 1200 Standard Specifications measurement and payment clauses, Particular Specifications and Project Specifications applicable to the whole of the works.
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11 Data for Option W1 Dispute Resolution

W1.1	The <i>Adjudicator</i> is:	To be mutually agreed upon by the Parties prior to commencement of the Contract.
W1.2(3)	The <i>Adjudicator nominating body</i> is:	The Association of Arbitrators (Southern Africa)
W1.4(2)	The <i>tribunal</i> is:	a South African court of law

12 Data for Secondary Option Clauses

X1 Price Adjustment for Inflation

X1.1(a)	The <i>Base Date Index (B)</i> is:	The month prior to the month in which the tender closes
X1.1 (b)	The <i>Latest Index (L)</i> is:	The Price Adjustment Factor (PAF) shall be calculated as follows:

$$PAF = (1 - x) \left[\frac{aL_L}{L_B} + \frac{bP_L}{P_B} + \frac{cM_L}{M_B} + \frac{dF_L}{F_B} - 1 \right]$$

Where the latest indices for each applicable index is as follows:

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

With:

- The proportion not subject to adjustment: **x = 0.10**.
- The Index shall be based on **December 2016 = 100**.

X7 Delay Damages

X7.1	Delay damages for Completion of the <i>works</i> are:	R 20,000 per day
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X13 Performance Bond

X13.1	The amount of the <i>performance bond</i> is:	10% of the value of the contract. The performance bond shall have no specific expiry date, and shall remain valid until the issue of <i>Completion</i> . The format and content of the performance bond shall be to the satisfaction of the Employer and/or Project Manager.
X16	Retention	
X16.1	The <i>retention free amount</i> is:	Nil.
X16.1	The <i>retention percentage</i> is:	10% of each interim payment certificate up to a limit of 5% of the Contract Value. Interest shall not be paid on retention withheld by the Employer.
Z	Additional Conditions of Contract	
Z1	The Contractor shall not commence working until they have:	<ul style="list-style-type: none"> • An approved project specific health and safety plan in terms of the Occupational Health and Safety Act, 1993: Construction Regulations, 2014 and complied with the initial requirements thereof. • An approved CPG Implementation Plan • All Contract Insurances in place • An approved construction programme • An approved performance bond in place.
Z2	The <i>Project Manager</i> shall seek the specific approval of the Employer before executing the following:	Authorise any expenditure in excess of the Tender Sum plus 7.5% contingencies.

Job

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Responsibilities:

.....

Qualifications:

.....

Experience:

.....

3 Name:

.....

Job

.....

Responsibilities:

.....

Qualifications:

.....

Experience:

.....

CV's (and further key persons' data including CVs) are appended to Tender Schedule entitled

.....

Data for Schedules of Cost Components

B Priced contract with bill of quantities

The percentage for people, equipment, material and all other company overheads and associated costs is deemed to be included in the rates given in the Bill of Quantities.

C1.2.2.3 ROLES OF THE PARTIES

Clause	Project Manager	Supervisor	Contractor
Core clauses			
10.1	To act as stated in the contract and in a spirit of mutual trust and co-operation	To act as stated in the contract and in a spirit of mutual trust and co-operation	To act as stated in the contract and in a spirit of mutual trust and cooperation
13.1	To communicate in a form which can be read, copied, and recorded	To communicate in a form which can be read, copied, and recorded	To communicate in a form which can be read, copied and recorded
13.3	To reply to a communication within the <i>period for reply</i>	To reply to a communication within the <i>period for reply</i>	To reply to a communication within the <i>period for reply</i>
13.4	To reply to a communication submitted or resubmitted for acceptance. To state reasons for non-acceptance		To resubmit a communication which is not accepted within the <i>period of reply</i>
13.5	To notify any agreed extension to the <i>period for reply</i>		Agree/not agree to extension to <i>period for reply</i>
13.6	To issue certificates to the <i>Employer</i> and the <i>Contractor</i>	To issue certificates to the <i>Project Manager</i> and the <i>Contractor</i>	
13.7	To communicate notifications separately from other communications.		To communicate notifications separately from other communications
13.8	May withhold acceptance of a submission by the <i>Contractor</i> .		
14.2	To notify the <i>Contractor</i> before delegating any actions or cancelling any delegation	To notify the <i>Contractor</i> before delegating any actions or cancelling any delegation	
14.3	May give an instruction which changes the Works Information or a Key Date		
14.4			
15.1	To reply to the <i>Contractor's</i> proposal for adding to the Working Areas. To state reasons for non-acceptance		May submit a proposal for adding to the Working Areas to the <i>Project Manager</i> for acceptance
16.1	To give early warning of matters with delay, cost, performance implications or meeting a Key Date. To enter early warning matters in the Risk Register.		To give early warning of matters with delay, cost or performance implications or delay meeting a Key Date
16.2	May give instructions to <i>Contractor</i> to attend risk reduction meeting. May instruct others to attend if Other agrees.		May give instruction to <i>Project Manager</i> to attend risk reduction meeting and may instruct others to attend if Other agrees
16.3	To co-operate at early warning / risk reduction meetings		To cooperate at early warning / risk reduction meetings
16.4	To record decisions made by revising the Risk Register and issuing to <i>Contractor</i> . To instruct change to Works Information, if required, at the same time as issuing the revised Risk Register.		
17.1	To give notice of ambiguities or inconsistencies in the documents. To give instructions resolving ambiguities or inconsistencies.		To give notice of ambiguities or inconsistencies in the documents
18.1	To give instructions changing the Works Information in the event of illegality or impossibility in the Works Information		To give notice of any illegality or impossibility in the Works Information
19.1	To give an instruction dealing with an event described		
20.1			To Provide the Works in accordance with the Works Information
21.1			To design such parts of the <i>works</i> as stated in the Works Information
21.2	To accept particulars of the <i>Contractor's</i> design or give reasons for non- acceptance		To submit particulars of his design for acceptance as required by the Works Information
23.1	To accept particulars of the design of Equipment or to give reasons for non-acceptance		To submit when instructed particulars of design of items of Equipment
24.1	To accept replacement persons proposed by the <i>Contractor</i> or to give reasons for non-acceptance		To employ key persons as stated in the Contract Data or acceptable replacements. To submit the name, qualifications and experience of proposed replacement person
24.2	May instruct the <i>Contractor</i> to remove an employee having stated his reasons		To remove any employee on the <i>Project Manager's</i> instructions

Clause	Project Manager	Supervisor	Contractor
Core clauses			
25.1			To cooperate with Others in obtaining and providing information. To share the Working Areas with Others as stated in the Works Information
25.2	To assess the cost incurred if the Contractor does not provide the services and other things		To provide services and other things. To pay the cost assessed for not providing facilities and services
25.3	To assess the additional cost		To pay <i>Employer's</i> cost incurred if work does not meet a condition for a Key Date
26.2	To accept proposed Subcontractors or to give reasons for non-acceptance		To submit the names of proposed Subcontractors for acceptance. To appoint a Subcontractor only after the <i>Project Manager</i> has accepted him
26.3	To accept proposed subcontract conditions or to give reasons for non-acceptance		To submit the proposed conditions of contract for each subcontract for acceptance. To appoint a Subcontractor on the proposed conditions of subcontract only after the <i>Project Manager</i> has accepted them
27.1			To obtain approval of his own design from Others where necessary
27.2			To provide access to the <i>works</i> to the <i>Project Manager</i> , <i>Supervisor</i> and Others
27.3			To obey instructions given by the <i>Project Manager</i> or the <i>Supervisor</i> which are in accordance with the contract
27.4			To act in accordance with health and safety regulations
30.1			To start work on Site on or after the first possession / access date. To do the work so that Completion is on or before the Completion Date
30.2	To decide the date of Completion. To certify Completion within one week of completion		
30.3			To do the work so that the condition stated for each Key Date is met by the Key Date.
31.1			To submit a programme for acceptance within a period stated in the Contract Data
31.2			To show details in each programme as listed
31.3	To accept the <i>Contractor's</i> programme within two weeks of submission or to give reasons for non-acceptance		To do the work so that the condition stated for each Key Date is met by the Key Date
32.1			To show details in revised programmes as listed
32.2 and 31.3	To accept a revised programme or to give reasons for non-acceptance		To submit a revised programme when instructed to or as required in the Contract Data
33.1			
34.1	May instruct <i>Contractor</i> to stop or not start any work and later to re-start or start it.		
35.1			
35.2			
35.3	To certify within one week the date when the <i>Employer</i> takes over any part of the <i>works</i>		
36.1	May instruct the <i>Contractor</i> to submit a quotation for acceleration. To state changes to the Key Dates to be included in the quotation.		
36.2			To submit a quotation for acceleration when so instructed or give reasons for not doing so
40.2			To provide materials, facilities and samples for tests and inspections as stated in the Works Information
40.3	-	To notify the <i>Contractor</i> of his tests and inspections before	To notify the <i>Supervisor</i> of tests and inspections before they start.

Clause	Project Manager	Supervisor	Contractor
Core clauses			
		they start and afterwards of the results.	To notify the <i>Supervisor</i> of the results of tests and inspections. To notify the <i>Supervisor</i> before doing work which would obstruct tests or inspections
40.4			To correct Defects revealed by tests or inspections and to repeat such tests or inspections
40.5	-	To do tests and inspections without causing unnecessary delay to work or payment	
40.6	To assess the cost incurred by the Employer in repeating a test or inspection after a Defect is found.	-	To pay the assessed cost incurred by the <i>Employer</i> in repeating tests or inspections
41.1		To notify the <i>Contractor</i> of the results of the test or inspection on Plant and Materials required by the Works Information to be tested or inspected before delivery.	To wait for notification from the <i>Supervisor</i> before bringing to the Working Areas those Plant and Materials that the Works Information states are to be inspected or tested before delivery
42.1		May instruct the Contractor to search for a Defect and to give reasons for searches which are instructed	To carry out searches as instructed by the <i>Supervisor</i>
42.2		To notify the Contractor of Defects found before the defects date	To notify the <i>Supervisor</i> of Defects found before the <i>defects date</i>
43.1			To correct Defects
43.2			To correct notified defects before the end of the <i>defect correction period</i>
43.3		To issue the Defects Certificate at the later of the defects date and the last defect correction period	
43.4	To arrange for the <i>Employer</i> to allow access and use to the <i>Contractor</i> of any part of the works needed for the correction of Defects after taking over		
44.1	May propose to Contractor that Works Information should be changed to avoid correction of a Defect		May propose to <i>Project Manager</i> that Works Information should be changed to avoid correction of a Defect
44.2	To change the Works Information, the Prices and the Completion Date if a quotation for not correcting Defects is accepted		To submit a quotation for reduced Prices or an earlier Completion Date or both
45.1	To assess the cost of having Defects corrected by others if the <i>Contractor</i> fails to correct notified Defects within the <i>defect correction period</i> even though access was given		To pay the assessed costs of notified Defects being corrected by others because they were not corrected within the <i>defect correction period</i> even though access was given
45.2	To assess the cost of correcting Defect where Contractor not given access to correct it		To pay cost assessed of correcting Defect where access not given
50.1	To assess the amount due for payment at each assessment date. To decide the first assessment date to suit the procedures of the parties	Measures and certifies the work	
50.3	To retain one quarter of the Price for Work Done to Date until the <i>Contractor</i> has submitted a first programme showing information required		
50.4	To consider any application from the <i>Contractor</i> when assessing amounts due for payment. To give the Contractor details of how amounts due have been assessed		May submit application for payment on or before the assessment date
50.5	To correct any wrongly assessed amount due in a later payment certificate		
51.1	To certify payment within one week of each assessment date		To pay <i>Employer</i> if an interim assessment reduces the amount due from that already paid
51.2			
51.3	To assess interest to be paid on correcting amounts		
61.1	To notify the Contractor of compensation events which arise from the giving of instructions or changing of earlier decisions. To instruct the contractor to submit quotations		To put instructions or changed decisions into effect

Clause	Project Manager	Supervisor	Contractor
Core clauses			
61.2	May instruct the contractor to submit quotations for a proposed instruction or proposed changed decision		
61.3			To give notice of a compensation event
61.4	To decide within one week of notification (or such longer period as the <i>Contractor</i> agrees) whether the Prices, the Key Dates and the Completion Date should be changed when the Contractor notifies a compensation event. To notify the <i>Contractor</i> of the decision and instruct the contractor to submit quotations		May notify the <i>Project Manager</i> if the <i>Project Manager</i> does not notify his decision to the <i>Contractor</i> within one week (or longer if agreed)
61.5	To decide whether the Contractor did not give any early warning of a compensation event which could have been given and to notify the Contractor of his decision		
61.6	To state assumptions for the assessment of compensation events in the event that the effects are too uncertain to be forecast reasonably To notify a correction to any assumptions later found to have been wrong		
62.1	To discuss with the Contractor different ways of dealing with the compensation event that are practicable May instruct the <i>Contractor</i> to submit alternative quotations		To discuss with the <i>Project Manager</i> different ways of dealing with the compensation event that are practicable. To submit alternative quotations for compensation events if instructed to do so. May submit quotations for other methods of dealing with the compensation event
62.2			To submit details of his assessment with each quotation. To include alterations to the Accepted Programme with the quotation if the compensation event has altered the programme for the remaining work
62.3	To reply to quotations for compensation events within two weeks of the submission		To submit quotations for compensation events within three weeks of being instructed to do so
62.4	To give reasons to the Contractor when instructing the submission of a revised quotation		To submit revised quotations for compensation events within three weeks of being instructed to do so
62.5	To extend the time allowed for the submission of quotations and replies if the Contractor agrees To notify the Contractor of any agreed extensions for the submission of quotations or replies		
62.6			May notify the <i>Project Manager</i> if the <i>Project Manager</i> does not reply to a quotation within the time allowed. To state which quotation is to be treated as having been accepted
63.5	To assess the event as if the Contractor had given an early warning if the Project Manager has notified the Contractor of his decision under clause 61.5		To assess the event as if the <i>Contractor</i> had given an early warning if the <i>Project Manager</i> has notified the <i>Contractor</i> of his decision under clause 61.5
63.9	To correct the description of a condition for a Key Date if a change to the Works Information makes the description incorrect To take the correction into account when assessing the compensation event for the change to the Works information		To take the correction into account when assessing the compensation event for the change to the Works Information
64.1	To assess a compensation event: <ul style="list-style-type: none"> • If the Contractor has not submitted a quotation and details within the time allowed • If the <i>Project Manager</i> decides the Contractor has not assessed the compensation event correctly • If the <i>Contractor</i> has not submitted a required programme 		

Clause	Project Manager	Supervisor	Contractor
Core clauses			
	<ul style="list-style-type: none"> If the <i>Project Manager</i> has not accepted the <i>Contractor's</i> latest programme 		
64.2	To assess a compensation event using his own assessment of the programme: <ul style="list-style-type: none"> If there is no Accepted Programme If the <i>Contractor</i> has not submitted a revised/alterd programme for acceptance as required 		
64.3	To notify the <i>Contractor</i> of any assessments made (inclusive of details) of a compensation event within the period allowed to the <i>Contractor</i> for his quotation		
64.4			May notify the <i>Project Manager</i> if <i>Project Manager</i> did not assess a compensation event within the time allowed. To state which quotation is to be treated as having been accepted
65.1	To implement compensation events notifying the <i>Contractor</i> of accepted quotations; or his own assessments; or a <i>Contractor's</i> quotation treated as having been accepted by the <i>Project Manager</i>		
71.1		To mark Equipment, Plant and Materials outside the Working Areas for payment purposes	
72.1			To remove Equipment from the Site when it is no longer needed
73.1	To instruct the <i>Contractor</i> how to deal with objects of value, historical or other interest		To notify the finding of any object of value, historical or other interest. Not to move the object without instructions
81.1			To carry risks which are not the <i>Employer's</i> risk from the starting date until the Defects Certificate is issued
82.1			To replace loss or repair damage to the works, Plant and Materials until the Defects Certificate is issued
83.1			To indemnify the <i>Employer</i> against claims etc., due to <i>Contractor's</i> risks
84.1			To provide insurances as required by the contract
85.1	To accept policies and certificates of insurance submitted by the <i>Contractor</i> or to give reasons for non-acceptance		To submit insurance policies and certificates for acceptance as required by the contract
85.3			To comply with the terms and conditions of insurance policies
86.1			To pay the costs incurred by the <i>Employer</i> in covering insurances which are the <i>Contractor's</i> responsibility
87.1	To submit to the <i>Contractor</i> policies and certificates for insurances to be provided by the <i>Employer</i> as required by the contract		To accept insurance policies and certificates provided by the <i>Employer</i> if they comply with the contract
87.3			May insure a risk which the <i>Employer</i> should insure if the <i>Employer</i> does not submit a required policy or certificate
90.1	To issue a termination certificate promptly when either Party gives notice of termination for reasons complying with the contract		To notify the <i>Project Manager</i> and the <i>Employer</i> , giving details of reasons before terminating
90.4	To certify final payment within 13 weeks of termination		
90.5			To do no further work to Provide the Works after the termination certificate has been issued
92.1			
92.2	To notify the <i>Contractor</i> that the <i>Employer</i> no longer needs Equipment to which the <i>Contractor</i> has title		To leave the Working Areas and remove Equipment on termination. To remove Equipment promptly from Site when <i>Project Manager</i> notifies him that <i>Employer</i> no longer needs it
Option B: Priced contract with bill of quantities			
36.3	To change the Completion Data, the Prices and Key Dates when a quotation for acceleration I		

Clause	Project Manager	Supervisor	Contractor
Core clauses			
	accepted and to accept the revised programme.		
60.6	To correct mistakes in the <i>bill of quantities</i> which are departures from the rules in the <i>method of measurement</i> due to ambiguities or inconsistencies		
63.11	Make his own assessment using the Shorter Schedule of Cost Components		
63.13	To include changes to the Prices and to the Completion Date when notifying implementation of a compensation event		To assess a compensation event using rates or lump sums instead of Defined Cost if the <i>Project Manager</i> agrees
65.4	To include changes to the Prices, the Completion Date and to Key Dates when notifying implementation of a compensation event		To include changes to the Prices, the Completion Date and to Key Dates when notifying implementation of a compensation event

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.

The Contractor shall, after discussing with the CLO, Ward Councillor and the municipality's ISD structures, indicate clearly to the CLO all conditions of remuneration on his / her contract. Given the various responsibilities of the CLO, as well as the need to be available to the Contractor at all times, payment on an hourly basis may not be advisable. The Contractor will be required to confirm the conditions of employment and / or remuneration to the Project Manager in writing.

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

C1.2.3.2 EMPLOYMENT OF LOCAL LABOUR

It is a condition of contract that the contractor will be required to employ local labour as specified in eThekweni Council Policy "The use of CLOs and Local Labour". The contractor will be required to ensure that a minimum of 50% of the labour force is made up of local labour. For the purposes of this contract, "Local labour" will be deemed to be any **persons who reside within Ward(s) 70, 71**. 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)

C1.2.3.3.1 Background

It is a condition of contract that the contractor must allow for a minimum of **30%** of the contract value (excluding PC Sum items and Fixed Cost allowances) to be subcontracted to contractors who are **>51% BLACK OWNED**. Proof of payment to the subcontractors will be required to verify that the minimum has been achieved.

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

Following appointment, the Contractor shall liaise with the Ward Councillor(s) / CLO(s) and eThekweni Municipality's ISD structures to source suitable CPG sub-contractors within the local ward(s) where works shall take place.

The contractor is to ensure that priority be given to EMEs and QSEs that fall within the local ward(s), thereafter the surrounding wards and finally eThekweni Municipality as a whole, depending on the skills available in the area being considered.

If no suitable sub-contractors are found within the local ward(s), then the Contractor must demonstrate this clearly to the Employer and Project Manager, before attempting to source sub-contractors from neighbouring areas.

The Employer, Project Manager and CLO will then confirm if the subcontractor is based in the correct Ward and if the requirements of this clause have been adhered to.

The CPG target will be calculated from the Total Contract Value (Excl. VAT) subtracting Preliminary and General Items, Provisional Sums and Day Works as per the following formula:

$$\text{CPG Target} = 30\% \times (\text{Contract Value} - \text{P\&G} - \text{Prov. Sums} - \text{PC Sums} - \text{Day Works})$$

The appointment of both CPG and specialised Sub-contractors shall only be formalised on the basis of the presentation of a suitable and compliant sub-contracting agreement in the SAICE General Conditions of Sub-contracting for Construction Works First Edition 2018 format or other acceptable format.

C1.2.3.3.2 Contractor's Supervision of CPG Contractors

It is a further condition of contract that the contractor is also required to Supervise, Mentor and Transfer Skills to the selected subcontractors. The contractor will remain responsible for providing proper supervision of all subcontractors and will be responsible for the quality of work produced.

The Contractor will be required to provide and appoint one person who will be dedicated for mentoring and managing the CPG Sub-contractors throughout the duration of their Works.

The Contractor shall take full responsibility of the works done by the CPG Sub-contractors. Some of the aspects of mentorship will include:

- Pricing / calculating rates
- Business Management
- Basic contractual matters
- Transfer of some construction skills
- Calculation of quantities
- Preparing payment certificates

The Contractor will further be responsible to provide all the material required by the 1CE CPG Sub-contractors to enable them to successfully complete their work.

The appointment of CPG Sub-contractors shall only be formalised on the basis of the presentation of suitable and compliant sub-contracting agreements in the CIDB format, or another acceptable format.

The Contractor is required to monitor the performance of each appointed sub-contractor and report the performance to the Employer in formats and details as will be indicated from time to time by the Project Manager.

C1.2.3.3.3 Measurement and Payment

a) Fixed Charge Unit: Sum

A fixed charge-item has been included in the Bill of Quantities for the sourcing of suitable CPG Contractors within the local ward(s), and the rate tendered shall cover all costs associated with identifying, sourcing and appointing CPG Contractors, as well as all costs associated with drawing up all applicable sub-contracting agreements and no additional payment shall be made in this regard. Payment under this item shall only be made upon receipt of an applicable sub-Contracting agreement between the Contractor and the CPG Sub-Contractor(s).

b) Time-Related Unit: Sum

A time-related item has been included in the Bill of Quantities for the management, supervision and training of the CPG contractors throughout the duration of the Contract, and the rate tendered shall cover all costs associated with this.

C1.2.3.4 FTE (Full Time Equivalent) EMPLOYMENT INFORMATION

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

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

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

- Category of Employment

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

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

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

The information is to be forwarded in a format acceptable to the Project Manager, 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 Project Manager.

In addition to the tax invoice, to be submitted by the Contractor with his monthly statement, the Employer reserves the right to withhold payment until the monthly FTE information has been

forwarded to the Project Manager. 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

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

C1.2.3.6 CURTAILMENT OF SCOPE

During the Contract, the Employer may order that portions of the works be removed from the Scope of the Contract due to budget availability. Should this be the case, the Contractor shall not be entitled to any claims regarding loss of turnover. Should curtailment of scope be ordered, the Employer and Contractor shall agree to a reduction in the overall contract period, and accordingly, the allowance in terms of time-related preliminary and general costs.

PART C1: AGREEMENT AND CONTRACT DATA

PART B WP#04

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade: WP#04](#)

C1.1: FORM OF OFFER AND ACCEPTANCE

C1.1.1: OFFER

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

Contract No: **WS-7802**

Contract Title: **Southern Aqueduct Upgrade: WP#04**

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

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

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

R..... (In words
)

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

For the Tenderer:

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

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

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

Capacity (of Signatory) :

Address :

:

Telephone :

Witness:

Signature : **Date** :

Name (in capitals) : :

Notes:

*** Indicates what information is mandatory.**

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

C1.1: FORM OF OFFER AND ACCEPTANCE

C1.1.2: FORM OF ACCEPTANCE

This Form will be completed by the Employer

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

The terms of the contract are contained in:

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

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

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

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

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

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

Name (*of signatory in capitals*) :

Capacity (*of Signatory*) :

Name of Employer (*organisation*) :

Address :

:

Witness:

Signature : **Date** :

Name(*in capitals*) : :

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

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

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

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

FOR THE TENDERER

FOR THE EMPLOYER

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

C1.2: CONTRACT DATA**C1.2.1 CONDITIONS OF CONTRACT**

The conditions of contract are the NEC4 Engineering and Construction Contract (June, 2017), copies of which may be obtained from the South African Institution of Civil Engineering (tel 011-805 5947) or Engineering Contract Strategies (tel 011 803-3008) and the additional conditions contained in the Z clauses below.

Each item of data given below is cross-referenced to the sub-clause in the *conditions of contract* to which it mainly applies.

C1.2.2 CONTRACT DATA**C1.2.2.1 DATA TO BE PROVIDED BY THE EMPLOYER**

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for Main Option	
	Main Option	B: Priced Contract with Bill of Quantities
	Dispute Resolution Option	W1: Dispute resolution procedure
	Secondary Options	X1: Price adjustment for inflation
	(incorporating amendments)	X2: Changes in the law
		X7: Delay Damages
		X13: Performance bond
		X16: Retention
		Z: Additional Conditions of Contract
10.1	The <i>Employer</i> is:	eThekweni Municipality Water and Sanitation Physica Postal: Telephone: Fax: E-Mail: The name of the Employer's Agent is: Siduduzo Mtshali
10.1	The <i>Project Manager</i> is:	To be confirmed after Contract Award.
10.1	The <i>Supervisor</i> is:	To be confirmed after Contract Award.
11.2(3)	The works are:	Southern Aqueduct Upgrade: WP#04 – Construction of approximately 1800m of DN1600 from High Wycombe Road to Roger Sishi Road to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe

11.2(8)	The following items will be included on the Risk Register:	<ul style="list-style-type: none"> • The safe removal and disposal of Prestressed Cement Pipelines • Provision of adequate lateral support and shoring to prevent excavation collapse or damage to surrounding services • Disruptions to existing services • Temporary works required to ensure that the Prestressed Concrete Pipe is operational while the new steel pipeline is being constructed. • Management and Facilitation of specialist and CPG Sub-Contractors • Any other associated risks deemed applicable for the Contract
12.2	The <i>law of the contract</i> is:	The law of the Republic of South Africa subject to the jurisdiction of the Courts of South Africa.
13.1	The <i>language of this contract</i> is:	English
13.3	The <i>period for reply</i> is:	Two (2) weeks
2	The Contractor's Main Responsibilities	
21.1	The <i>Contractor</i> shall design the following parts of the works:	<ul style="list-style-type: none"> • All temporary measures required to implement the scope of works • All temporary works required to keep the plant operational as described in C3.2.3 • Provision of lateral support for deep, restricted excavations. • All mechanical and electrical equipment supplied and installed under this Contract.
24.1	The <i>Contractor</i> shall employ at least the following:	One Contracts Manager, one Site Agent and one general foreman for the duration of the Contract. The key personnel employed during the Contract period shall have the necessary qualifications and experience required to meet a Level 4 in terms of the Functionality prompts outlined in Clause F.3.11.9 of the Contract Document.
3	Time	
31.1	The <i>Contractor</i> is to submit a first programme for acceptance:	Within 2 weeks of the instruction from the Project Manager to submit that programme
31.2	The <i>starting date</i> is:	to be confirmed after award.
11.2(3)	The <i>completion date</i> is:	A maximum of 15 months (excluding public holidays and the annual builder's break) from the <i>starting date</i> .
31.2	Non-working days are:	<ul style="list-style-type: none"> • Weekends • Public holidays • The annual statutory builder's holiday commencing on the first working day after 15 December and work resuming on the first working day after 5 January the next year.
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than:	Four (4) weeks.

35.1	The <i>Employer</i> is not willing to take over the <i>works</i>	Until completion has been achieved.
4	Testing and Defects	
42.2	The <i>defects date</i> is:	52 weeks after Completion
43.2	The <i>defect correction period</i> is:	2 weeks
5	Payment	
50.1	The <i>assessment interval</i> is:	Four (4) weeks
51.1	The <i>currency</i> of the contract is:	South African Rand (ZAR)
51.2	The period within which payments are made is:	Within 30 calendar days following the date on which a valid tax invoice and statement, including a copy of the <i>Project Manager's</i> corresponding payment certificate, were received.
51.4	The <i>interest rate</i> is:	The Prime Lending Rate of the Standard Bank of South Africa at the time an interest payment is due.
6	Compensation Events	
60.1(13)	The <i>weather measurements</i> to be recorded for each calendar month are:	<ol style="list-style-type: none"> 3. The cumulative rainfall for the month (mm) 4. The number of days with rainfall more than 10mm
60.1(13)	The place where weather is to be recorded on site is:	At the Construction Site Office and the records are to be kept on site in a file clearly marked for this purpose.
60.1(13)	The <i>weather data</i> are:	The records of past <i>weather measurements</i> for each calendar month which were recorded at a site nearest to that of the <i>works</i> and which are available from the SA Weather Services at King Shaka International Airport (032 436 3817).
<i>It is noted that the NEC4 ECC4 compensation event procedures governing weather events place a significant burden on the Contractor to prove that the events exceeded a 1 in 10 year return event.</i>		
60.1(21)	The <i>additional compensation events</i> are:	No other events shall be deemed as compensation events.
7	Title	
No additional data is required for this section of the <i>conditions of contract</i> .		
8	Liabilities and Insurance	
84.1	The <i>Employer</i> provides these insurances:	Nil.
84.2	The <i>Contractor</i> provides these insurances:	
	Insurance Against	Minimum amount of cover of minimum limit of indemnity
	Loss of or damage to the <i>works</i> , Plant and Materials	The replacement cost, including the amounts for the replacement of Plant and Materials provided by the Employer
	Loss of or damage to Equipment	The replacement cost

Liability for loss of or damage to property (except the works, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) caused by activity in connection with this contract	R10 000 000 (Ten million Rands (ZAR)) With cross liability so that the insurance applies to the Parties separately
Liability for death of or bodily injury to employees of the Contractor arising out of and in the course of their employment in connection with this contract	Whatever the Contractor deems desirable in addition to that which is prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended
Liability in respect of Contract Works SASRIA insurance subject to terms exceptions and conditions of the SASRIA coupon policy	Cover / indemnity is to the extent provided by the SASRIA coupon policy
Third Party Public Liability Insurance	<ul style="list-style-type: none"> • 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 10,000,000. • 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.
Ground Support Insurance	<ul style="list-style-type: none"> • 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 10,000,000. • Maximum first excess: R 20,000.
Principal's own surrounding property insurance	<ul style="list-style-type: none"> • Minimum amount for any one occurrence unlimited as to the number of occurrences against any claim for damage which may occur to the Council's own surrounding property: R 10,000,000. • Maximum first excess: R 20,000
Insurance of Works	<ul style="list-style-type: none"> • Minimum amount for additional removal of debris (no damage): R 500,000 • Minimum amount for temporary storage of materials off site, excluding Contractor's own premises: R 10,000,000 • Minimum amount for transit of materials to site: R 5,000,000.

9 TitleNo additional data is required for this section of the *conditions of contract*.**10 Data for Main Options**

B	Priced Contract with Bill of Quantities	The method of measurement is the relevant SANS 1200 Standard Specifications measurement and payment clauses, Particular Specifications and Project Specifications applicable to the whole of the works.
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11 Data for Option W1 Dispute Resolution

W1.1	The <i>Adjudicator</i> is:	To be mutually agreed upon by the Parties prior to commencement of the Contract.
W1.2(3)	The <i>Adjudicator nominating body</i> is:	The Association of Arbitrators (Southern Africa)
W1.4(2)	The <i>tribunal</i> is:	a South African court of law

12 Data for Secondary Option Clauses

X1 Price Adjustment for Inflation

X1.1(a)	The <i>Base Date Index (B)</i> is:	The month prior to the month in which the tender closes
X1.1 (b)	The <i>Latest Index (L)</i> is:	The Price Adjustment Factor (PAF) shall be calculated as follows:

$$PAF = (1 - x) \left[\frac{aL_L}{L_B} + \frac{bP_L}{P_B} + \frac{cM_L}{M_B} + \frac{dF_L}{F_B} - 1 \right]$$

Where the latest indices for each applicable index is as follows:

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

With:

- The proportion not subject to adjustment: **x = 0.10**.
- The Index shall be based on **December 2016 = 100**.

X7 Delay Damages

X7.1	Delay damages for Completion of the <i>works</i> are:	R 20,000 per day
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X13 Performance Bond

X13.1	The amount of the <i>performance bond</i> is:	10% of the value of the contract. The performance bond shall have no specific expiry date, and shall remain valid until the issue of <i>Completion</i> . The format and content of the performance bond shall be to the satisfaction of the Employer and/or Project Manager.
X16 Retention		
X16.1	The <i>retention free amount</i> is:	Nil.
X16.1	The <i>retention percentage</i> is:	10% of each interim payment certificate up to a limit of 5% of the Contract Value. Interest shall not be paid on retention withheld by the Employer.
Z Additional Conditions of Contract		
Z1	The Contractor shall not commence working until they have:	<ul style="list-style-type: none"> • An approved project specific health and safety plan in terms of the Occupational Health and Safety Act, 1993: Construction Regulations, 2014 and complied with the initial requirements thereof. • An approved CPG Implementation Plan • All Contract Insurances in place • An approved construction programme • An approved performance bond in place.
Z2	The <i>Project Manager</i> shall seek the specific approval of the Employer before executing the following:	Authorise any expenditure in excess of the Tender Sum plus 7.5% contingencies.

Job

.....

Responsibilities:

.....

Qualifications:

.....

Experience:

.....

3 Name:

.....

Job

.....

Responsibilities:

.....

Qualifications:

.....

Experience:

.....

CV's (and further key persons' data including CVs) are appended to Tender Schedule entitled

.....

Data for Schedules of Cost Components

B Priced contract with bill of quantities

The percentage for people, equipment, material and all other company overheads and associated costs is deemed to be included in the rates given in the Bill of Quantities.

C1.2.2.3 ROLES OF THE PARTIES

Clause	Project Manager	Supervisor	Contractor
Core clauses			
10.1	To act as stated in the contract and in a spirit of mutual trust and co-operation	To act as stated in the contract and in a spirit of mutual trust and co-operation	To act as stated in the contract and in a spirit of mutual trust and cooperation
13.1	To communicate in a form which can be read, copied, and recorded	To communicate in a form which can be read, copied, and recorded	To communicate in a form which can be read, copied and recorded
13.3	To reply to a communication within the <i>period for reply</i>	To reply to a communication within the <i>period for reply</i>	To reply to a communication within the <i>period for reply</i>
13.4	To reply to a communication submitted or resubmitted for acceptance. To state reasons for non-acceptance		To resubmit a communication which is not accepted within the <i>period of reply</i>
13.5	To notify any agreed extension to the <i>period for reply</i>		Agree/not agree to extension to <i>period for reply</i>
13.6	To issue certificates to the <i>Employer</i> and the <i>Contractor</i>	To issue certificates to the <i>Project Manager</i> and the <i>Contractor</i>	
13.7	To communicate notifications separately from other communications.		To communicate notifications separately from other communications
13.8	May withhold acceptance of a submission by the <i>Contractor</i> .		
14.2	To notify the <i>Contractor</i> before delegating any actions or cancelling any delegation	To notify the <i>Contractor</i> before delegating any actions or cancelling any delegation	
14.3	May give an instruction which changes the Works Information or a Key Date		
14.4			
15.1	To reply to the <i>Contractor's</i> proposal for adding to the Working Areas. To state reasons for non-acceptance		May submit a proposal for adding to the Working Areas to the <i>Project Manager</i> for acceptance
16.1	To give early warning of matters with delay, cost, performance implications or meeting a Key Date. To enter early warning matters in the Risk Register.		To give early warning of matters with delay, cost or performance implications or delay meeting a Key Date
16.2	May give instructions to <i>Contractor</i> to attend risk reduction meeting. May instruct others to attend if Other agrees.		May give instruction to <i>Project Manager</i> to attend risk reduction meeting and may instruct others to attend if Other agrees
16.3	To co-operate at early warning / risk reduction meetings		To cooperate at early warning / risk reduction meetings
16.4	To record decisions made by revising the Risk Register and issuing to <i>Contractor</i> . To instruct change to Works Information, if required, at the same time as issuing the revised Risk Register.		
17.1	To give notice of ambiguities or inconsistencies in the documents. To give instructions resolving ambiguities or inconsistencies.		To give notice of ambiguities or inconsistencies in the documents
18.1	To give instructions changing the Works Information in the event of illegality or impossibility in the Works Information		To give notice of any illegality or impossibility in the Works Information
19.1	To give an instruction dealing with an event described		
20.1			To Provide the Works in accordance with the Works Information
21.1			To design such parts of the <i>works</i> as stated in the Works Information
21.2	To accept particulars of the <i>Contractor's</i> design or give reasons for non- acceptance		To submit particulars of his design for acceptance as required by the Works Information
23.1	To accept particulars of the design of Equipment or to give reasons for non-acceptance		To submit when instructed particulars of design of items of Equipment
24.1	To accept replacement persons proposed by the <i>Contractor</i> or to give reasons for non-acceptance		To employ key persons as stated in the Contract Data or acceptable replacements. To submit the name, qualifications and experience of proposed replacement person
24.2	May instruct the <i>Contractor</i> to remove an employee having stated his reasons		To remove any employee on the <i>Project Manager's</i> instructions

Clause	Project Manager	Supervisor	Contractor
Core clauses			
25.1			To cooperate with Others in obtaining and providing information. To share the Working Areas with Others as stated in the Works Information
25.2	To assess the cost incurred if the Contractor does not provide the services and other things		To provide services and other things. To pay the cost assessed for not providing facilities and services
25.3	To assess the additional cost		To pay <i>Employer's</i> cost incurred if work does not meet a condition for a Key Date
26.2	To accept proposed Subcontractors or to give reasons for non-acceptance		To submit the names of proposed Subcontractors for acceptance. To appoint a Subcontractor only after the <i>Project Manager</i> has accepted him
26.3	To accept proposed subcontract conditions or to give reasons for non-acceptance		To submit the proposed conditions of contract for each subcontract for acceptance. To appoint a Subcontractor on the proposed conditions of subcontract only after the <i>Project Manager</i> has accepted them
27.1			To obtain approval of his own design from Others where necessary
27.2			To provide access to the <i>works</i> to the <i>Project Manager</i> , <i>Supervisor</i> and Others
27.3			To obey instructions given by the <i>Project Manager</i> or the <i>Supervisor</i> which are in accordance with the contract
27.4			To act in accordance with health and safety regulations
30.1			To start work on Site on or after the first possession / access date. To do the work so that Completion is on or before the Completion Date
30.2	To decide the date of Completion. To certify Completion within one week of completion		
30.3			To do the work so that the condition stated for each Key Date is met by the Key Date.
31.1			To submit a programme for acceptance within a period stated in the Contract Data
31.2			To show details in each programme as listed
31.3	To accept the <i>Contractor's</i> programme within two weeks of submission or to give reasons for non-acceptance		To do the work so that the condition stated for each Key Date is met by the Key Date
32.1			To show details in revised programmes as listed
32.2 and 31.3	To accept a revised programme or to give reasons for non-acceptance		To submit a revised programme when instructed to or as required in the Contract Data
33.1			
34.1	May instruct <i>Contractor</i> to stop or not start any work and later to re-start or start it.		
35.1			
35.2			
35.3	To certify within one week the date when the <i>Employer</i> takes over any part of the <i>works</i>		
36.1	May instruct the <i>Contractor</i> to submit a quotation for acceleration. To state changes to the Key Dates to be included in the quotation.		
36.2			To submit a quotation for acceleration when so instructed or give reasons for not doing so
40.2			To provide materials, facilities and samples for tests and inspections as stated in the Works Information
40.3	-	To notify the <i>Contractor</i> of his tests and inspections before	To notify the <i>Supervisor</i> of tests and inspections before they start.

Clause	Project Manager	Supervisor	Contractor
Core clauses			
		they start and afterwards of the results.	To notify the <i>Supervisor</i> of the results of tests and inspections. To notify the <i>Supervisor</i> before doing work which would obstruct tests or inspections
40.4			To correct Defects revealed by tests or inspections and to repeat such tests or inspections
40.5	-	To do tests and inspections without causing unnecessary delay to work or payment	
40.6	To assess the cost incurred by the Employer in repeating a test or inspection after a Defect is found.	-	To pay the assessed cost incurred by the <i>Employer</i> in repeating tests or inspections
41.1		To notify the <i>Contractor</i> of the results of the test or inspection on Plant and Materials required by the Works Information to be tested or inspected before delivery.	To wait for notification from the <i>Supervisor</i> before bringing to the Working Areas those Plant and Materials that the Works Information states are to be inspected or tested before delivery
42.1		May instruct the Contractor to search for a Defect and to give reasons for searches which are instructed	To carry out searches as instructed by the <i>Supervisor</i>
42.2		To notify the Contractor of Defects found before the defects date	To notify the <i>Supervisor</i> of Defects found before the <i>defects date</i>
43.1			To correct Defects
43.2			To correct notified defects before the end of the <i>defect correction period</i>
43.3		To issue the Defects Certificate at the later of the defects date and the last defect correction period	
43.4	To arrange for the <i>Employer</i> to allow access and use to the <i>Contractor</i> of any part of the works needed for the correction of Defects after taking over		
44.1	May propose to Contractor that Works Information should be changed to avoid correction of a Defect		May propose to <i>Project Manager</i> that Works Information should be changed to avoid correction of a Defect
44.2	To change the Works Information, the Prices and the Completion Date if a quotation for not correcting Defects is accepted		To submit a quotation for reduced Prices or an earlier Completion Date or both
45.1	To assess the cost of having Defects corrected by others if the <i>Contractor</i> fails to correct notified Defects within the <i>defect correction period</i> even though access was given		To pay the assessed costs of notified Defects being corrected by others because they were not corrected within the <i>defect correction period</i> even though access was given
45.2	To assess the cost of correcting Defect where Contractor not given access to correct it		To pay cost assessed of correcting Defect where access not given
50.1	To assess the amount due for payment at each assessment date. To decide the first assessment date to suit the procedures of the parties	Measures and certifies the work	
50.3	To retain one quarter of the Price for Work Done to Date until the <i>Contractor</i> has submitted a first programme showing information required		
50.4	To consider any application from the <i>Contractor</i> when assessing amounts due for payment. To give the Contractor details of how amounts due have been assessed		May submit application for payment on or before the assessment date
50.5	To correct any wrongly assessed amount due in a later payment certificate		
51.1	To certify payment within one week of each assessment date		To pay <i>Employer</i> if an interim assessment reduces the amount due from that already paid
51.2			
51.3	To assess interest to be paid on correcting amounts		
61.1	To notify the Contractor of compensation events which arise from the giving of instructions or changing of earlier decisions. To instruct the contractor to submit quotations		To put instructions or changed decisions into effect

Clause	Project Manager	Supervisor	Contractor
Core clauses			
61.2	May instruct the contractor to submit quotations for a proposed instruction or proposed changed decision		
61.3			To give notice of a compensation event
61.4	To decide within one week of notification (or such longer period as the <i>Contractor</i> agrees) whether the Prices, the Key Dates and the Completion Date should be changed when the Contractor notifies a compensation event. To notify the <i>Contractor</i> of the decision and instruct the contractor to submit quotations		May notify the <i>Project Manager</i> if the <i>Project Manager</i> does not notify his decision to the <i>Contractor</i> within one week (or longer if agreed)
61.5	To decide whether the Contractor did not give any early warning of a compensation event which could have been given and to notify the Contractor of his decision		
61.6	To state assumptions for the assessment of compensation events in the event that the effects are too uncertain to be forecast reasonably To notify a correction to any assumptions later found to have been wrong		
62.1	To discuss with the Contractor different ways of dealing with the compensation event that are practicable May instruct the <i>Contractor</i> to submit alternative quotations		To discuss with the <i>Project Manager</i> different ways of dealing with the compensation event that are practicable. To submit alternative quotations for compensation events if instructed to do so. May submit quotations for other methods of dealing with the compensation event
62.2			To submit details of his assessment with each quotation. To include alterations to the Accepted Programme with the quotation if the compensation event has altered the programme for the remaining work
62.3	To reply to quotations for compensation events within two weeks of the submission		To submit quotations for compensation events within three weeks of being instructed to do so
62.4	To give reasons to the Contractor when instructing the submission of a revised quotation		To submit revised quotations for compensation events within three weeks of being instructed to do so
62.5	To extend the time allowed for the submission of quotations and replies if the Contractor agrees To notify the Contractor of any agreed extensions for the submission of quotations or replies		
62.6			May notify the <i>Project Manager</i> if the <i>Project Manager</i> does not reply to a quotation within the time allowed. To state which quotation is to be treated as having been accepted
63.5	To assess the event as if the Contractor had given an early warning if the Project Manager has notified the Contractor of his decision under clause 61.5		To assess the event as if the <i>Contractor</i> had given an early warning if the <i>Project Manager</i> has notified the <i>Contractor</i> of his decision under clause 61.5
63.9	To correct the description of a condition for a Key Date if a change to the Works Information makes the description incorrect To take the correction into account when assessing the compensation event for the change to the Works information		To take the correction into account when assessing the compensation event for the change to the Works Information
64.1	To assess a compensation event: <ul style="list-style-type: none"> • If the Contractor has not submitted a quotation and details within the time allowed • If the <i>Project Manager</i> decides the Contractor has not assessed the compensation event correctly • If the <i>Contractor</i> has not submitted a required programme 		

Clause	Project Manager	Supervisor	Contractor
Core clauses			
	<ul style="list-style-type: none"> If the <i>Project Manager</i> has not accepted the <i>Contractor's</i> latest programme 		
64.2	To assess a compensation event using his own assessment of the programme: <ul style="list-style-type: none"> If there is no Accepted Programme If the <i>Contractor</i> has not submitted a revised/alterd programme for acceptance as required 		
64.3	To notify the <i>Contractor</i> of any assessments made (inclusive of details) of a compensation event within the period allowed to the <i>Contractor</i> for his quotation		
64.4			May notify the <i>Project Manager</i> if <i>Project Manager</i> did not assess a compensation event within the time allowed. To state which quotation is to be treated as having been accepted
65.1	To implement compensation events notifying the <i>Contractor</i> of accepted quotations; or his own assessments; or a <i>Contractor's</i> quotation treated as having been accepted by the <i>Project Manager</i>		
71.1		To mark Equipment, Plant and Materials outside the Working Areas for payment purposes	
72.1			To remove Equipment from the Site when it is no longer needed
73.1	To instruct the <i>Contractor</i> how to deal with objects of value, historical or other interest		To notify the finding of any object of value, historical or other interest. Not to move the object without instructions
81.1			To carry risks which are not the <i>Employer's</i> risk from the starting date until the Defects Certificate is issued
82.1			To replace loss or repair damage to the works, Plant and Materials until the Defects Certificate is issued
83.1			To indemnify the <i>Employer</i> against claims etc., due to <i>Contractor's</i> risks
84.1			To provide insurances as required by the contract
85.1	To accept policies and certificates of insurance submitted by the <i>Contractor</i> or to give reasons for non-acceptance		To submit insurance policies and certificates for acceptance as required by the contract
85.3			To comply with the terms and conditions of insurance policies
86.1			To pay the costs incurred by the <i>Employer</i> in covering insurances which are the <i>Contractor's</i> responsibility
87.1	To submit to the <i>Contractor</i> policies and certificates for insurances to be provided by the <i>Employer</i> as required by the contract		To accept insurance policies and certificates provided by the <i>Employer</i> if they comply with the contract
87.3			May insure a risk which the <i>Employer</i> should insure if the <i>Employer</i> does not submit a required policy or certificate
90.1	To issue a termination certificate promptly when either Party gives notice of termination for reasons complying with the contract		To notify the <i>Project Manager</i> and the <i>Employer</i> , giving details of reasons before terminating
90.4	To certify final payment within 13 weeks of termination		
90.5			To do no further work to Provide the Works after the termination certificate has been issued
92.1			
92.2	To notify the <i>Contractor</i> that the <i>Employer</i> no longer needs Equipment to which the <i>Contractor</i> has title		To leave the Working Areas and remove Equipment on termination. To remove Equipment promptly from Site when <i>Project Manager</i> notifies him that <i>Employer</i> no longer needs it
Option B: Priced contract with bill of quantities			
36.3	To change the Completion Data, the Prices and Key Dates when a quotation for acceleration I		

Clause	Project Manager	Supervisor	Contractor
Core clauses			
	accepted and to accept the revised programme.		
60.6	To correct mistakes in the <i>bill of quantities</i> which are departures from the rules in the <i>method of measurement</i> due to ambiguities or inconsistencies		
63.11	Make his own assessment using the Shorter Schedule of Cost Components		
63.13	To include changes to the Prices and to the Completion Date when notifying implementation of a compensation event		To assess a compensation event using rates or lump sums instead of Defined Cost if the <i>Project Manager</i> agrees
65.4	To include changes to the Prices, the Completion Date and to Key Dates when notifying implementation of a compensation event		To include changes to the Prices, the Completion Date and to Key Dates when notifying implementation of a compensation event

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.

The Contractor shall, after discussing with the CLO, Ward Councillor and the municipality's ISD structures, indicate clearly to the CLO all conditions of remuneration on his / her contract. Given the various responsibilities of the CLO, as well as the need to be available to the Contractor at all times, payment on an hourly basis may not be advisable. The Contractor will be required to confirm the conditions of employment and / or remuneration to the Project Manager in writing.

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

C1.2.3.2 EMPLOYMENT OF LOCAL LABOUR

It is a condition of contract that the contractor will be required to employ local labour as specified in eThekweni Council Policy "The use of CLOs and Local Labour". The contractor will be required to ensure that a minimum of 50% of the labour force is made up of local labour. For the purposes of this contract, "Local labour" will be deemed to be any **persons who reside within Ward(s) 70, 71**. 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)

C1.2.3.3.1 Background

It is a condition of contract that the contractor must allow for a minimum of **30%** of the contract value (excluding PC Sum items and Fixed Cost allowances) to be subcontracted to contractors who are **>51% BLACK OWNED**. Proof of payment to the subcontractors will be required to verify that the minimum has been achieved.

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

Following appointment, the Contractor shall liaise with the Ward Councillor(s) / CLO(s) and eThekweni Municipality's ISD structures to source suitable CPG sub-contractors within the local ward(s) where works shall take place.

The contractor is to ensure that priority be given to EMEs and QSEs that fall within the local ward(s), thereafter the surrounding wards and finally eThekweni Municipality as a whole, depending on the skills available in the area being considered.

If no suitable sub-contractors are found within the local ward(s), then the Contractor must demonstrate this clearly to the Employer and Project Manager, before attempting to source sub-contractors from neighbouring areas.

The Employer, Project Manager and CLO will then confirm if the subcontractor is based in the correct Ward and if the requirements of this clause have been adhered to.

The CPG target will be calculated from the Total Contract Value (Excl. VAT) subtracting Preliminary and General Items, Provisional Sums and Day Works as per the following formula:

$$\text{CPG Target} = 30\% \times (\text{Contract Value} - \text{P\&G} - \text{Prov. Sums} - \text{PC Sums} - \text{Day Works})$$

The appointment of both CPG and specialised Sub-contractors shall only be formalised on the basis of the presentation of a suitable and compliant sub-contracting agreement in the SAICE General Conditions of Sub-contracting for Construction Works First Edition 2018 format or other acceptable format.

C1.2.3.3.2 Contractor's Supervision of CPG Contractors

It is a further condition of contract that the contractor is also required to Supervise, Mentor and Transfer Skills to the selected subcontractors. The contractor will remain responsible for providing proper supervision of all subcontractors and will be responsible for the quality of work produced.

The Contractor will be required to provide and appoint one person who will be dedicated for mentoring and managing the CPG Sub-contractors throughout the duration of their Works.

The Contractor shall take full responsibility of the works done by the CPG Sub-contractors. Some of the aspects of mentorship will include:

- Pricing / calculating rates
- Business Management
- Basic contractual matters
- Transfer of some construction skills
- Calculation of quantities
- Preparing payment certificates

The Contractor will further be responsible to provide all the material required by the 1CE CPG

Sub-contractors to enable them to successfully complete their work.

The appointment of CPG Sub-contractors shall only be formalised on the basis of the presentation of suitable and compliant sub-contracting agreements in the CIDB format, or another acceptable format.

The Contractor is required to monitor the performance of each appointed sub-contractor and report the performance to the Employer in formats and details as will be indicated from time to time by the Project Manager.

C1.2.3.3.3 Measurement and Payment

c) Fixed Charge Unit: Sum

A fixed charge-item has been included in the Bill of Quantities for the sourcing of suitable CPG Contractors within the local ward(s), and the rate tendered shall cover all costs associated with identifying, sourcing and appointing CPG Contractors, as well as all costs associated with drawing up all applicable sub-contracting agreements and no additional payment shall be made in this regard. Payment under this item shall only be made upon receipt of an applicable sub-Contracting agreement between the Contractor and the CPG Sub-Contractor(s).

d) Time-Related Unit: Sum

A time-related item has been included in the Bill of Quantities for the management, supervision and training of the CPG contractors throughout the duration of the Contract, and the rate tendered shall cover all costs associated with this.

C1.2.3.4 FTE (Full Time Equivalent) EMPLOYMENT INFORMATION

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

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

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

- Category of Employment

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

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

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

The information is to be forwarded in a format acceptable to the Project Manager, 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 Project Manager.

In addition to the tax invoice, to be submitted by the Contractor with his monthly statement, the Employer reserves the right to withhold payment until the monthly FTE information has been forwarded to the Project Manager. 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

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

C1.2.3.6 CURTAILMENT OF SCOPE

During the Contract, the Employer may order that portions of the works be removed from the Scope of the Contract due to budget availability. Should this be the case, the Contractor shall not be entitled to any claims regarding loss of turnover. Should curtailment of scope be ordered, the Employer and Contractor shall agree to a reduction in the overall contract period, and accordingly, the allowance in terms of time-related preliminary and general costs.

PART C1: AGREEMENT AND CONTRACT DATA

PART C WP#05

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade: WP#05](#)

C1.1: FORM OF OFFER AND ACCEPTANCE

C1.1.1: OFFER

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

Contract No: **WS-7802**

Contract Title: **Southern Aqueduct Upgrade: WP#05**

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

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

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

R..... (In words
)

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

For the Tenderer:

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

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

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

Capacity (of Signatory) :

Address :

:

Telephone :

Witness:

Signature : **Date** :

Name (in capitals) : :

Notes:

*** Indicates what information is mandatory.**

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

C1.1: FORM OF OFFER AND ACCEPTANCE

C1.1.2: FORM OF ACCEPTANCE

This Form will be completed by the Employer

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

The terms of the contract are contained in:

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

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

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

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

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

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

Name (*of signatory in capitals*) :

Capacity (*of Signatory*) :

Name of Employer (*organisation*) :

Address :

:

Witness:

Signature : **Date** :

Name(*in capitals*) : :

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

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

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

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

FOR THE TENDERER

FOR THE EMPLOYER

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

C1.2: CONTRACT DATA**C1.2.1 CONDITIONS OF CONTRACT**

The conditions of contract are the NEC4 Engineering and Construction Contract (June, 2017), copies of which may be obtained from the South African Institution of Civil Engineering (tel 011-805 5947) or Engineering Contract Strategies (tel 011 803-3008) and the additional conditions contained in the Z clauses below.

Each item of data given below is cross-referenced to the sub-clause in the *conditions of contract* to which it mainly applies.

C1.2.2 CONTRACT DATA**C1.2.2.1 DATA TO BE PROVIDED BY THE EMPLOYER**

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for Main Option	
	Main Option	B: Priced Contract with Bill of Quantities
	Dispute Resolution Option	W1: Dispute resolution procedure
	Secondary Options	X1: Price adjustment for inflation
	(incorporating amendments)	X2: Changes in the law
		X7: Delay Damages
		X13: Performance bond
		X16: Retention
		Z: Additional Conditions of Contract
10.1	The <i>Employer</i> is:	eThekwini Municipality Water and Sanitation Physical: Postal: Telephone: Fax: E-Mail: The name of the Employer's Agent is: Siduduzo Mtshali
10.1	The <i>Project Manager</i> is:	To be confirmed after Contract Award.
10.1	The <i>Supervisor</i> is:	To be confirmed after Contract Award.
11.2(3)	The works are:	Southern Aqueduct Upgrade: WP#05 – Construction of approximately 1800m of DN1400 from Roger Sishi Road to Westville Tunnel Entrance to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe

11.2(8)	The following items will be included on the Risk Register:	<ul style="list-style-type: none"> • The safe removal and disposal of Prestressed Cement Pipelines • Provision of adequate lateral support and shoring to prevent excavation collapse or damage to surrounding services • Disruptions to existing services • Temporary works required to ensure that the Prestressed Concrete Pipe is operational while the new steel pipeline is being constructed. • Management and Facilitation of specialist and CPG Sub-Contractors • Any other associated risks deemed applicable for the Contract
12.2	The <i>law of the contract</i> is:	The law of the Republic of South Africa subject to the jurisdiction of the Courts of South Africa.
13.1	The <i>language of this contract</i> is:	English
13.3	The <i>period for reply</i> is:	Two (2) weeks
2	The Contractor's Main Responsibilities	
21.1	The <i>Contractor</i> shall design the following parts of the works:	<ul style="list-style-type: none"> • All temporary measures required to implement the scope of works • All temporary works required to keep the plant operational as described in C3.2.3 • Provision of lateral support for deep, restricted excavations. • All mechanical and electrical equipment supplied and installed under this Contract.
24.1	The <i>Contractor</i> shall employ at least the following:	One Contracts Manager, one Site Agent and one general foreman for the duration of the Contract. The key personnel employed during the Contract period shall have the necessary qualifications and experience required to meet a Level 4 in terms of the Functionality prompts outlined in Clause F.3.11.9 of the Contract Document.
3	Time	
31.1	The <i>Contractor</i> is to submit a first programme for acceptance:	Within 2 weeks of the instruction from the Project Manager to submit that programme
31.2	The <i>starting date</i> is:	to be confirmed after award.
11.2(3)	The <i>completion date</i> is:	A maximum of 15 months (excluding public holidays and the annual builder's break) from the <i>starting date</i> .
31.2	Non-working days are:	<ul style="list-style-type: none"> • Weekends • Public holidays • The annual statutory builder's holiday commencing on the first working day after 15 December and work resuming on the first working day after 5 January the next year.
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than:	Four (4) weeks.

35.1	The <i>Employer</i> is not willing to take over the <i>works</i>	Until completion has been achieved.
4	Testing and Defects	
42.2	The <i>defects date</i> is:	52 weeks after Completion
43.2	The <i>defect correction period</i> is:	2 weeks
5	Payment	
50.1	The <i>assessment interval</i> is:	Four (4) weeks
51.1	The <i>currency</i> of the contract is:	South African Rand (ZAR)
51.2	The period within which payments are made is:	Within 30 calendar days following the date on which a valid tax invoice and statement, including a copy of the <i>Project Manager's</i> corresponding payment certificate, were received.
51.4	The <i>interest rate</i> is:	The Prime Lending Rate of the Standard Bank of South Africa at the time an interest payment is due.
6	Compensation Events	
60.1(13)	The <i>weather measurements</i> to be recorded for each calendar month are:	5. The cumulative rainfall for the month (mm) 6. The number of days with rainfall more than 10mm
60.1(13)	The place where weather is to be recorded on site is:	At the Construction Site Office and the records are to be kept on site in a file clearly marked for this purpose.
60.1(13)	The <i>weather data</i> are:	The records of past <i>weather measurements</i> for each calendar month which were recorded at a site nearest to that of the <i>works</i> and which are available from the SA Weather Services at King Shaka International Airport (032 436 3817).
<i>It is noted that the NEC4 ECC4 compensation event procedures governing weather events place a significant burden on the Contractor to prove that the events exceeded a 1 in 10 year return event.</i>		
60.1(21)	The <i>additional compensation events</i> are:	No other events shall be deemed as compensation events.
7	Title	
No additional data is required for this section of the <i>conditions of contract</i> .		
8	Liabilities and Insurance	
84.1	The <i>Employer</i> provides these insurances:	Nil.
84.2	The <i>Contractor</i> provides these insurances:	
	Insurance Against	Minimum amount of cover of minimum limit of indemnity
	Loss of or damage to the <i>works</i> , Plant and Materials	The replacement cost, including the amounts for the replacement of Plant and Materials provided by the Employer
	Loss of or damage to Equipment	The replacement cost

Liability for loss of or damage to property (except the works, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) caused by activity in connection with this contract	R10 000 000 (Ten million Rands (ZAR)) With cross liability so that the insurance applies to the Parties separately
Liability for death of or bodily injury to employees of the Contractor arising out of and in the course of their employment in connection with this contract	Whatever the Contractor deems desirable in addition to that which is prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended
Liability in respect of Contract Works SASRIA insurance subject to terms exceptions and conditions of the SASRIA coupon policy	Cover / indemnity is to the extent provided by the SASRIA coupon policy
Third Party Public Liability Insurance	<ul style="list-style-type: none"> • 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 10,000,000. • 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.
Ground Support Insurance	<ul style="list-style-type: none"> • 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 10,000,000. • Maximum first excess: R 20,000.
Principal's own surrounding property insurance	<ul style="list-style-type: none"> • Minimum amount for any one occurrence unlimited as to the number of occurrences against any claim for damage which may occur to the Council's own surrounding property: R 10,000,000. • Maximum first excess: R 20,000
Insurance of Works	<ul style="list-style-type: none"> • Minimum amount for additional removal of debris (no damage): R 500,000 • Minimum amount for temporary storage of materials off site, excluding Contractor's own premises: R 10,000,000 • Minimum amount for transit of materials to site: R 5,000,000.

9 TitleNo additional data is required for this section of the *conditions of contract*.**10 Data for Main Options**

B	Priced Contract with Bill of Quantities	The method of measurement is the relevant SANS 1200 Standard Specifications measurement and payment clauses, Particular Specifications and Project Specifications applicable to the whole of the works.
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11 Data for Option W1 Dispute Resolution

W1.1	The <i>Adjudicator</i> is:	To be mutually agreed upon by the Parties prior to commencement of the Contract.
W1.2(3)	The <i>Adjudicator nominating body</i> is:	The Association of Arbitrators (Southern Africa)
W1.4(2)	The <i>tribunal</i> is:	a South African court of law

12 Data for Secondary Option Clauses

X1 Price Adjustment for Inflation

X1.1(a)	The <i>Base Date Index (B)</i> is:	The month prior to the month in which the tender closes
X1.1 (b)	The <i>Latest Index (L)</i> is:	The Price Adjustment Factor (PAF) shall be calculated as follows:

$$PAF = (1 - x) \left[\frac{aL_L}{L_B} + \frac{bP_L}{P_B} + \frac{cM_L}{M_B} + \frac{dF_L}{F_B} - 1 \right]$$

Where the latest indices for each applicable index is as follows:

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

With:

- The proportion not subject to adjustment: **x = 0.10**.
- The Index shall be based on **December 2016 = 100**.

X7 Delay Damages

X7.1	Delay damages for Completion of the <i>works</i> are:	R 20,000 per day
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X13 Performance Bond

X13.1	The amount of the <i>performance bond</i> is:	10% of the value of the contract. The performance bond shall have no specific expiry date, and shall remain valid until the issue of <i>Completion</i> . The format and content of the performance bond shall be to the satisfaction of the Employer and/or Project Manager.
X16	Retention	
X16.1	The <i>retention free amount</i> is:	Nil.
X16.1	The <i>retention percentage</i> is:	10% of each interim payment certificate up to a limit of 5% of the Contract Value. Interest shall not be paid on retention withheld by the Employer.
Z	Additional Conditions of Contract	
Z1	The Contractor shall not commence working until they have:	<ul style="list-style-type: none"> • An approved project specific health and safety plan in terms of the Occupational Health and Safety Act, 1993: Construction Regulations, 2014 and complied with the initial requirements thereof. • An approved CPG Implementation Plan • All Contract Insurances in place • An approved construction programme • An approved performance bond in place.
Z2	The <i>Project Manager</i> shall seek the specific approval of the Employer before executing the following:	Authorise any expenditure in excess of the Tender Sum plus 7.5% contingencies.

Job

.....

Responsibilities:

.....

Qualifications:

.....

Experience:

.....

3 Name:

.....

Job

.....

Responsibilities:

.....

Qualifications:

.....

Experience:

.....

CV's (and further key persons' data including CVs) are appended to Tender Schedule entitled

.....

Data for Schedules of Cost Components

B Priced contract with bill of quantities

The percentage for people, equipment, material and all other company overheads and associated costs is deemed to be included in the rates given in the Bill of Quantities.

C1.2.2.3 ROLES OF THE PARTIES

Clause	Project Manager	Supervisor	Contractor
Core clauses			
10.1	To act as stated in the contract and in a spirit of mutual trust and co-operation	To act as stated in the contract and in a spirit of mutual trust and co-operation	To act as stated in the contract and in a spirit of mutual trust and cooperation
13.1	To communicate in a form which can be read, copied, and recorded	To communicate in a form which can be read, copied, and recorded	To communicate in a form which can be read, copied and recorded
13.3	To reply to a communication within the <i>period for reply</i>	To reply to a communication within the <i>period for reply</i>	To reply to a communication within the <i>period for reply</i>
13.4	To reply to a communication submitted or resubmitted for acceptance. To state reasons for non-acceptance		To resubmit a communication which is not accepted within the <i>period of reply</i>
13.5	To notify any agreed extension to the <i>period for reply</i>		Agree/not agree to extension to <i>period for reply</i>
13.6	To issue certificates to the <i>Employer</i> and the <i>Contractor</i>	To issue certificates to the <i>Project Manager</i> and the <i>Contractor</i>	
13.7	To communicate notifications separately from other communications.		To communicate notifications separately from other communications
13.8	May withhold acceptance of a submission by the <i>Contractor</i> .		
14.2	To notify the <i>Contractor</i> before delegating any actions or cancelling any delegation	To notify the <i>Contractor</i> before delegating any actions or cancelling any delegation	
14.3	May give an instruction which changes the Works Information or a Key Date		
14.4			
15.1	To reply to the <i>Contractor's</i> proposal for adding to the Working Areas. To state reasons for non-acceptance		May submit a proposal for adding to the Working Areas to the <i>Project Manager</i> for acceptance
16.1	To give early warning of matters with delay, cost, performance implications or meeting a Key Date. To enter early warning matters in the Risk Register.		To give early warning of matters with delay, cost or performance implications or delay meeting a Key Date
16.2	May give instructions to <i>Contractor</i> to attend risk reduction meeting. May instruct others to attend if Other agrees.		May give instruction to <i>Project Manager</i> to attend risk reduction meeting and may instruct others to attend if Other agrees
16.3	To co-operate at early warning / risk reduction meetings		To cooperate at early warning / risk reduction meetings
16.4	To record decisions made by revising the Risk Register and issuing to <i>Contractor</i> . To instruct change to Works Information, if required, at the same time as issuing the revised Risk Register.		
17.1	To give notice of ambiguities or inconsistencies in the documents. To give instructions resolving ambiguities or inconsistencies.		To give notice of ambiguities or inconsistencies in the documents
18.1	To give instructions changing the Works Information in the event of illegality or impossibility in the Works Information		To give notice of any illegality or impossibility in the Works Information
19.1	To give an instruction dealing with an event described		
20.1			To Provide the Works in accordance with the Works Information
21.1			To design such parts of the <i>works</i> as stated in the Works Information
21.2	To accept particulars of the <i>Contractor's</i> design or give reasons for non- acceptance		To submit particulars of his design for acceptance as required by the Works Information
23.1	To accept particulars of the design of Equipment or to give reasons for non-acceptance		To submit when instructed particulars of design of items of Equipment
24.1	To accept replacement persons proposed by the <i>Contractor</i> or to give reasons for non-acceptance		To employ key persons as stated in the Contract Data or acceptable replacements. To submit the name, qualifications and experience of proposed replacement person
24.2	May instruct the <i>Contractor</i> to remove an employee having stated his reasons		To remove any employee on the <i>Project Manager's</i> instructions

Clause	Project Manager	Supervisor	Contractor
Core clauses			
25.1			To cooperate with Others in obtaining and providing information. To share the Working Areas with Others as stated in the Works Information
25.2	To assess the cost incurred if the Contractor does not provide the services and other things		To provide services and other things. To pay the cost assessed for not providing facilities and services
25.3	To assess the additional cost		To pay <i>Employer's</i> cost incurred if work does not meet a condition for a Key Date
26.2	To accept proposed Subcontractors or to give reasons for non-acceptance		To submit the names of proposed Subcontractors for acceptance. To appoint a Subcontractor only after the <i>Project Manager</i> has accepted him
26.3	To accept proposed subcontract conditions or to give reasons for non-acceptance		To submit the proposed conditions of contract for each subcontract for acceptance. To appoint a Subcontractor on the proposed conditions of subcontract only after the <i>Project Manager</i> has accepted them
27.1			To obtain approval of his own design from Others where necessary
27.2			To provide access to the <i>works</i> to the <i>Project Manager</i> , <i>Supervisor</i> and Others
27.3			To obey instructions given by the <i>Project Manager</i> or the <i>Supervisor</i> which are in accordance with the contract
27.4			To act in accordance with health and safety regulations
30.1			To start work on Site on or after the first possession / access date. To do the work so that Completion is on or before the Completion Date
30.2	To decide the date of Completion. To certify Completion within one week of completion		
30.3			To do the work so that the condition stated for each Key Date is met by the Key Date.
31.1			To submit a programme for acceptance within a period stated in the Contract Data
31.2			To show details in each programme as listed
31.3	To accept the <i>Contractor's</i> programme within two weeks of submission or to give reasons for non-acceptance		To do the work so that the condition stated for each Key Date is met by the Key Date
32.1			To show details in revised programmes as listed
32.2 and 31.3	To accept a revised programme or to give reasons for non-acceptance		To submit a revised programme when instructed to or as required in the Contract Data
33.1			
34.1	May instruct <i>Contractor</i> to stop or not start any work and later to re-start or start it.		
35.1			
35.2			
35.3	To certify within one week the date when the <i>Employer</i> takes over any part of the <i>works</i>		
36.1	May instruct the <i>Contractor</i> to submit a quotation for acceleration. To state changes to the Key Dates to be included in the quotation.		
36.2			To submit a quotation for acceleration when so instructed or give reasons for not doing so
40.2			To provide materials, facilities and samples for tests and inspections as stated in the Works Information
40.3	-	To notify the <i>Contractor</i> of his tests and inspections before	To notify the <i>Supervisor</i> of tests and inspections before they start.

Clause	Project Manager	Supervisor	Contractor
Core clauses			
		they start and afterwards of the results.	To notify the <i>Supervisor</i> of the results of tests and inspections. To notify the <i>Supervisor</i> before doing work which would obstruct tests or inspections
40.4			To correct Defects revealed by tests or inspections and to repeat such tests or inspections
40.5	-	To do tests and inspections without causing unnecessary delay to work or payment	
40.6	To assess the cost incurred by the Employer in repeating a test or inspection after a Defect is found.	-	To pay the assessed cost incurred by the <i>Employer</i> in repeating tests or inspections
41.1		To notify the <i>Contractor</i> of the results of the test or inspection on Plant and Materials required by the Works Information to be tested or inspected before delivery.	To wait for notification from the <i>Supervisor</i> before bringing to the Working Areas those Plant and Materials that the Works Information states are to be inspected or tested before delivery
42.1		May instruct the Contractor to search for a Defect and to give reasons for searches which are instructed	To carry out searches as instructed by the <i>Supervisor</i>
42.2		To notify the Contractor of Defects found before the defects date	To notify the <i>Supervisor</i> of Defects found before the <i>defects date</i>
43.1			To correct Defects
43.2			To correct notified defects before the end of the <i>defect correction period</i>
43.3		To issue the Defects Certificate at the later of the defects date and the last defect correction period	
43.4	To arrange for the <i>Employer</i> to allow access and use to the <i>Contractor</i> of any part of the works needed for the correction of Defects after taking over		
44.1	May propose to Contractor that Works Information should be changed to avoid correction of a Defect		May propose to <i>Project Manager</i> that Works Information should be changed to avoid correction of a Defect
44.2	To change the Works Information, the Prices and the Completion Date if a quotation for not correcting Defects is accepted		To submit a quotation for reduced Prices or an earlier Completion Date or both
45.1	To assess the cost of having Defects corrected by others if the <i>Contractor</i> fails to correct notified Defects within the <i>defect correction period</i> even though access was given		To pay the assessed costs of notified Defects being corrected by others because they were not corrected within the <i>defect correction period</i> even though access was given
45.2	To assess the cost of correcting Defect where Contractor not given access to correct it		To pay cost assessed of correcting Defect where access not given
50.1	To assess the amount due for payment at each assessment date. To decide the first assessment date to suit the procedures of the parties	Measures and certifies the work	
50.3	To retain one quarter of the Price for Work Done to Date until the <i>Contractor</i> has submitted a first programme showing information required		
50.4	To consider any application from the <i>Contractor</i> when assessing amounts due for payment. To give the Contractor details of how amounts due have been assessed		May submit application for payment on or before the assessment date
50.5	To correct any wrongly assessed amount due in a later payment certificate		
51.1	To certify payment within one week of each assessment date		To pay <i>Employer</i> if an interim assessment reduces the amount due from that already paid
51.2			
51.3	To assess interest to be paid on correcting amounts		
61.1	To notify the Contractor of compensation events which arise from the giving of instructions or changing of earlier decisions. To instruct the contractor to submit quotations		To put instructions or changed decisions into effect

Clause	Project Manager	Supervisor	Contractor
Core clauses			
61.2	May instruct the contractor to submit quotations for a proposed instruction or proposed changed decision		
61.3			To give notice of a compensation event
61.4	To decide within one week of notification (or such longer period as the <i>Contractor</i> agrees) whether the Prices, the Key Dates and the Completion Date should be changed when the Contractor notifies a compensation event. To notify the <i>Contractor</i> of the decision and instruct the contractor to submit quotations		May notify the <i>Project Manager</i> if the <i>Project Manager</i> does not notify his decision to the <i>Contractor</i> within one week (or longer if agreed)
61.5	To decide whether the Contractor did not give any early warning of a compensation event which could have been given and to notify the Contractor of his decision		
61.6	To state assumptions for the assessment of compensation events in the event that the effects are too uncertain to be forecast reasonably To notify a correction to any assumptions later found to have been wrong		
62.1	To discuss with the Contractor different ways of dealing with the compensation event that are practicable May instruct the <i>Contractor</i> to submit alternative quotations		To discuss with the <i>Project Manager</i> different ways of dealing with the compensation event that are practicable. To submit alternative quotations for compensation events if instructed to do so. May submit quotations for other methods of dealing with the compensation event
62.2			To submit details of his assessment with each quotation. To include alterations to the Accepted Programme with the quotation if the compensation event has altered the programme for the remaining work
62.3	To reply to quotations for compensation events within two weeks of the submission		To submit quotations for compensation events within three weeks of being instructed to do so
62.4	To give reasons to the Contractor when instructing the submission of a revised quotation		To submit revised quotations for compensation events within three weeks of being instructed to do so
62.5	To extend the time allowed for the submission of quotations and replies if the Contractor agrees To notify the Contractor of any agreed extensions for the submission of quotations or replies		
62.6			May notify the <i>Project Manager</i> if the <i>Project Manager</i> does not reply to a quotation within the time allowed. To state which quotation is to be treated as having been accepted
63.5	To assess the event as if the Contractor had given an early warning if the Project Manager has notified the Contractor of his decision under clause 61.5		To assess the event as if the <i>Contractor</i> had given an early warning if the <i>Project Manager</i> has notified the <i>Contractor</i> of his decision under clause 61.5
63.9	To correct the description of a condition for a Key Date if a change to the Works Information makes the description incorrect To take the correction into account when assessing the compensation event for the change to the Works information		To take the correction into account when assessing the compensation event for the change to the Works Information
64.1	To assess a compensation event: <ul style="list-style-type: none"> • If the Contractor has not submitted a quotation and details within the time allowed • If the <i>Project Manager</i> decides the Contractor has not assessed the compensation event correctly • If the <i>Contractor</i> has not submitted a required programme 		

Clause	Project Manager	Supervisor	Contractor
Core clauses			
	<ul style="list-style-type: none"> If the <i>Project Manager</i> has not accepted the <i>Contractor's</i> latest programme 		
64.2	To assess a compensation event using his own assessment of the programme: <ul style="list-style-type: none"> If there is no Accepted Programme If the Contractor has not submitted a revised/alterd programme for acceptance as required 		
64.3	To notify the <i>Contractor</i> of any assessments made (inclusive of details) of a compensation event within the period allowed to the <i>Contractor</i> for his quotation		
64.4			May notify the <i>Project Manager</i> if <i>Project Manager</i> did not assess a compensation event within the time allowed. To state which quotation is to be treated as having been accepted
65.1	To implement compensation events notifying the <i>Contractor</i> of accepted quotations; or his own assessments; or a <i>Contractor's</i> quotation treated as having been accepted by the <i>Project Manager</i>		
71.1		To mark Equipment, Plant and Materials outside the Working Areas for payment purposes	
72.1			To remove Equipment from the Site when it is no longer needed
73.1	To instruct the <i>Contractor</i> how to deal with objects of value, historical or other interest		To notify the finding of any object of value, historical or other interest. Not to move the object without instructions
81.1			To carry risks which are not the <i>Employer's</i> risk from the starting date until the Defects Certificate is issued
82.1			To replace loss or repair damage to the works, Plant and Materials until the Defects Certificate is issued
83.1			To indemnify the <i>Employer</i> against claims etc., due to <i>Contractor's</i> risks
84.1			To provide insurances as required by the contract
85.1	To accept policies and certificates of insurance submitted by the <i>Contractor</i> or to give reasons for non-acceptance		To submit insurance policies and certificates for acceptance as required by the contract
85.3			To comply with the terms and conditions of insurance policies
86.1			To pay the costs incurred by the <i>Employer</i> in covering insurances which are the <i>Contractor's</i> responsibility
87.1	To submit to the <i>Contractor</i> policies and certificates for insurances to be provided by the <i>Employer</i> as required by the contract		To accept insurance policies and certificates provided by the <i>Employer</i> if they comply with the contract
87.3			May insure a risk which the <i>Employer</i> should insure if the <i>Employer</i> does not submit a required policy or certificate
90.1	To issue a termination certificate promptly when either Party gives notice of termination for reasons complying with the contract		To notify the <i>Project Manager</i> and the <i>Employer</i> , giving details of reasons before terminating
90.4	To certify final payment within 13 weeks of termination		
90.5			To do no further work to Provide the Works after the termination certificate has been issued
92.1			
92.2	To notify the <i>Contractor</i> that the <i>Employer</i> no longer needs Equipment to which the <i>Contractor</i> has title		To leave the Working Areas and remove Equipment on termination. To remove Equipment promptly from Site when <i>Project Manager</i> notifies him that <i>Employer</i> no longer needs it
Option B: Priced contract with bill of quantities			
36.3	To change the Completion Data, the Prices and Key Dates when a quotation for acceleration I		

Clause	Project Manager	Supervisor	Contractor
Core clauses			
	accepted and to accept the revised programme.		
60.6	To correct mistakes in the <i>bill of quantities</i> which are departures from the rules in the <i>method of measurement</i> due to ambiguities or inconsistencies		
63.11	Make his own assessment using the Shorter Schedule of Cost Components		
63.13	To include changes to the Prices and to the Completion Date when notifying implementation of a compensation event		To assess a compensation event using rates or lump sums instead of Defined Cost if the <i>Project Manager</i> agrees
65.4	To include changes to the Prices, the Completion Date and to Key Dates when notifying implementation of a compensation event		To include changes to the Prices, the Completion Date and to Key Dates when notifying implementation of a compensation event

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.

The Contractor shall, after discussing with the CLO, Ward Councillor and the municipality's ISD structures, indicate clearly to the CLO all conditions of remuneration on his / her contract. Given the various responsibilities of the CLO, as well as the need to be available to the Contractor at all times, payment on an hourly basis may not be advisable. The Contractor will be required to confirm the conditions of employment and / or remuneration to the Project Manager in writing.

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

C1.2.3.2 EMPLOYMENT OF LOCAL LABOUR

It is a condition of contract that the contractor will be required to employ local labour as specified in eThekweni Council Policy "The use of CLOs and Local Labour". The contractor will be required to ensure that a minimum of 50% of the labour force is made up of local labour. For the purposes of this contract, "Local labour" will be deemed to be any **persons who reside within Ward(s) 70, 71**. 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)

C1.2.3.3.1 Background

It is a condition of contract that the contractor must allow for a minimum of **30%** of the contract value (excluding PC Sum items and Fixed Cost allowances) to be subcontracted to contractors who are **>51% BLACK OWNED**. Proof of payment to the subcontractors will be required to verify that the minimum has been achieved.

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

Following appointment, the Contractor shall liaise with the Ward Councillor(s) / CLO(s) and eThekweni Municipality's ISD structures to source suitable CPG sub-contractors within the local ward(s) where works shall take place.

The contractor is to ensure that priority be given to EMEs and QSEs that fall within the local ward(s), thereafter the surrounding wards and finally eThekweni Municipality as a whole, depending on the skills available in the area being considered.

If no suitable sub-contractors are found within the local ward(s), then the Contractor must demonstrate this clearly to the Employer and Project Manager, before attempting to source sub-contractors from neighbouring areas.

The Employer, Project Manager and CLO will then confirm if the subcontractor is based in the correct Ward and if the requirements of this clause have been adhered to.

The CPG target will be calculated from the Total Contract Value (Excl. VAT) subtracting Preliminary and General Items, Provisional Sums and Day Works as per the following formula:

$$\text{CPG Target} = 30\% \times (\text{Contract Value} - \text{P\&G} - \text{Prov. Sums} - \text{PC Sums} - \text{Day Works})$$

The appointment of both CPG and specialised Sub-contractors shall only be formalised on the basis of the presentation of a suitable and compliant sub-contracting agreement in the SAICE General Conditions of Sub-contracting for Construction Works First Edition 2018 format or other acceptable format.

C1.2.3.3.2 Contractor's Supervision of CPG Contractors

It is a further condition of contract that the contractor is also required to Supervise, Mentor and Transfer Skills to the selected subcontractors. The contractor will remain responsible for providing proper supervision of all subcontractors and will be responsible for the quality of work produced.

The Contractor will be required to provide and appoint one person who will be dedicated for mentoring and managing the CPG Sub-contractors throughout the duration of their Works.

The Contractor shall take full responsibility of the works done by the CPG Sub-contractors. Some of the aspects of mentorship will include:

- Pricing / calculating rates
- Business Management
- Basic contractual matters
- Transfer of some construction skills
- Calculation of quantities
- Preparing payment certificates

The Contractor will further be responsible to provide all the material required by the 1CE CPG Sub-contractors to enable them to successfully complete their work.

The appointment of CPG Sub-contractors shall only be formalised on the basis of the presentation of suitable and compliant sub-contracting agreements in the CIDB format, or another acceptable format.

The Contractor is required to monitor the performance of each appointed sub-contractor and report the performance to the Employer in formats and details as will be indicated from time to time by the Project Manager.

C1.2.3.3.3 Measurement and Payment

e) Fixed Charge Unit: Sum

A fixed charge-item has been included in the Bill of Quantities for the sourcing of suitable CPG Contractors within the local ward(s), and the rate tendered shall cover all costs associated with identifying, sourcing and appointing CPG Contractors, as well as all costs associated with drawing up all applicable sub-contracting agreements and no additional payment shall be made in this regard. Payment under this item shall only be made upon receipt of an applicable sub-Contracting agreement between the Contractor and the CPG Sub-Contractor(s).

f) Time-Related Unit: Sum

A time-related item has been included in the Bill of Quantities for the management, supervision and training of the CPG contractors throughout the duration of the Contract, and the rate tendered shall cover all costs associated with this.

C1.2.3.4 FTE (Full Time Equivalent) EMPLOYMENT INFORMATION

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

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

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

- Category of Employment

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

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

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

The information is to be forwarded in a format acceptable to the Project Manager, 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 Project Manager.

In addition to the tax invoice, to be submitted by the Contractor with his monthly statement, the Employer reserves the right to withhold payment until the monthly FTE information has been

forwarded to the Project Manager. 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

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

C1.2.3.6 CURTAILMENT OF SCOPE

During the Contract, the Employer may order that portions of the works be removed from the Scope of the Contract due to budget availability. Should this be the case, the Contractor shall not be entitled to any claims regarding loss of turnover. Should curtailment of scope be ordered, the Employer and Contractor shall agree to a reduction in the overall contract period, and accordingly, the allowance in terms of time-related preliminary and general costs.

PART C1: AGREEMENT AND CONTRACT DATA

PART D WP#06

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade: WP#06](#)

C1.1: FORM OF OFFER AND ACCEPTANCE

C1.1.1: OFFER

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

Contract No: **WS-7802**

Contract Title: **Southern Aqueduct Upgrade: WP#06**

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

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

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

R..... (In words
)

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

For the Tenderer:

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

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

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

Capacity (of Signatory) :

Address :

:

Telephone :

Witness:

Signature : **Date** :

Name (in capitals) : :

Notes:

*** Indicates what information is mandatory.**

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

C1.1: FORM OF OFFER AND ACCEPTANCE

C1.1.2: FORM OF ACCEPTANCE

This Form will be completed by the Employer

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

The terms of the contract are contained in:

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

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

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

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

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

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

Name (*of signatory in capitals*) :

Capacity (*of Signatory*) :

Name of Employer (*organisation*) :

Address :

:

Witness:

Signature : **Date** :

Name(*in capitals*) : :

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

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

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

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

FOR THE TENDERER

FOR THE EMPLOYER

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

C1.2: CONTRACT DATA**C1.2.1 CONDITIONS OF CONTRACT**

The conditions of contract are the NEC4 Engineering and Construction Contract (June, 2017), copies of which may be obtained from the South African Institution of Civil Engineering (tel 011-805 5947) or Engineering Contract Strategies (tel 011 803-3008) and the additional conditions contained in the Z clauses below.

Each item of data given below is cross-referenced to the sub-clause in the *conditions of contract* to which it mainly applies.

C1.2.2 CONTRACT DATA**C1.2.2.1 DATA TO BE PROVIDED BY THE EMPLOYER**

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for Main Option	
	Main Option	B: Priced Contract with Bill of Quantities
	Dispute Resolution Option	W1: Dispute resolution procedure
	Secondary Options	X1: Price adjustment for inflation
	(incorporating amendments)	X2: Changes in the law
		X7: Delay Damages
		X13: Performance bond
		X16: Retention
		Z: Additional Conditions of Contract
10.1	The <i>Employer</i> is:	eThekweni Municipality Water and Sanitation Physical: Postal: Telephone: Fax: E-Mail: The name of the Employer's Agent is: Siduduzo Mtshali
10.1	The <i>Project Manager</i> is:	To be confirmed after Contract Award.
10.1	The <i>Supervisor</i> is:	To be confirmed after Contract Award.
11.2(3)	The works are:	Southern Aqueduct Upgrade: WP#06 – Construction of approximately 1900m of DN1600 from Durban Heights WTW to High Wycombe Road to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe

11.2(8)	The following items will be included on the Risk Register:	<ul style="list-style-type: none"> • The safe removal and disposal of Prestressed Cement Pipelines • Provision of adequate lateral support and shoring to prevent excavation collapse or damage to surrounding services • Disruptions to existing services • Temporary works required to ensure that the Prestressed Concrete Pipe is operational while the new steel pipeline is being constructed. • Management and Facilitation of specialist and CPG Sub-Contractors • Any other associated risks deemed applicable for the Contract
12.2	The <i>law of the contract</i> is:	The law of the Republic of South Africa subject to the jurisdiction of the Courts of South Africa.
13.1	The <i>language of this contract</i> is:	English
13.3	The <i>period for reply</i> is:	Two (2) weeks
2	The Contractor's Main Responsibilities	
21.1	The <i>Contractor</i> shall design the following parts of the works:	<ul style="list-style-type: none"> • All temporary measures required to implement the scope of works • All temporary works required to keep the plant operational as described in C3.2.3 • Provision of lateral support for deep, restricted excavations. • All mechanical and electrical equipment supplied and installed under this Contract.
24.1	The <i>Contractor</i> shall employ at least the following:	One Contracts Manager, one Site Agent and one general foreman for the duration of the Contract. The key personnel employed during the Contract period shall have the necessary qualifications and experience required to meet a Level 4 in terms of the Functionality prompts outlined in Clause F.3.11.9 of the Contract Document.
3	Time	
31.1	The <i>Contractor</i> is to submit a first programme for acceptance:	Within 2 weeks of the instruction from the Project Manager to submit that programme
31.2	The <i>starting date</i> is:	to be confirmed after award.
11.2(3)	The <i>completion date</i> is:	A maximum of 15 months (excluding public holidays and the annual builder's break) from the <i>starting date</i> .
31.2	Non-working days are:	<ul style="list-style-type: none"> • Weekends • Public holidays • The annual statutory builder's holiday commencing on the first working day after 15 December and work resuming on the first working day after 5 January the next year.
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than:	Four (4) weeks.

35.1	The <i>Employer</i> is not willing to take over the <i>works</i>	Until completion has been achieved.
4	Testing and Defects	
42.2	The <i>defects date</i> is:	52 weeks after Completion
43.2	The <i>defect correction period</i> is:	2 weeks
5	Payment	
50.1	The <i>assessment interval</i> is:	Four (4) weeks
51.1	The <i>currency</i> of the contract is:	South African Rand (ZAR)
51.2	The period within which payments are made is:	Within 30 calendar days following the date on which a valid tax invoice and statement, including a copy of the <i>Project Manager's</i> corresponding payment certificate, were received.
51.4	The <i>interest rate</i> is:	The Prime Lending Rate of the Standard Bank of South Africa at the time an interest payment is due.
6	Compensation Events	
60.1(13)	The <i>weather measurements</i> to be recorded for each calendar month are:	7. The cumulative rainfall for the month (mm) 8. The number of days with rainfall more than 10mm
60.1(13)	The place where weather is to be recorded on site is:	At the Construction Site Office and the records are to be kept on site in a file clearly marked for this purpose.
60.1(13)	The <i>weather data</i> are:	The records of past <i>weather measurements</i> for each calendar month which were recorded at a site nearest to that of the <i>works</i> and which are available from the SA Weather Services at King Shaka International Airport (032 436 3817). <i>It is noted that the NEC4 ECC4 compensation event procedures governing weather events place a significant burden on the Contractor to prove that the events exceeded a 1 in 10 year return event.</i>
60.1(21)	The <i>additional compensation events</i> are:	No other events shall be deemed as compensation events.
7	Title	
	No additional data is required for this section of the <i>conditions of contract</i> .	
8	Liabilities and Insurance	
84.1	The <i>Employer</i> provides these insurances:	Nil.
84.2	The <i>Contractor</i> provides these insurances:	
	Insurance Against	Minimum amount of cover of minimum limit of indemnity
	Loss of or damage to the <i>works</i> , Plant and Materials	The replacement cost, including the amounts for the replacement of Plant and Materials provided by the Employer
	Loss of or damage to Equipment	The replacement cost

Liability for loss of or damage to property (except the works, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) caused by activity in connection with this contract	R10 000 000 (Ten million Rands (ZAR)) With cross liability so that the insurance applies to the Parties separately
Liability for death of or bodily injury to employees of the Contractor arising out of and in the course of their employment in connection with this contract	Whatever the Contractor deems desirable in addition to that which is prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended
Liability in respect of Contract Works SASRIA insurance subject to terms exceptions and conditions of the SASRIA coupon policy	Cover / indemnity is to the extent provided by the SASRIA coupon policy
Third Party Public Liability Insurance	<ul style="list-style-type: none"> • 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 10,000,000. • 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.
Ground Support Insurance	<ul style="list-style-type: none"> • 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 10,000,000. • Maximum first excess: R 20,000.
Principal's own surrounding property insurance	<ul style="list-style-type: none"> • Minimum amount for any one occurrence unlimited as to the number of occurrences against any claim for damage which may occur to the Council's own surrounding property: R 10,000,000. • Maximum first excess: R 20,000
Insurance of Works	<ul style="list-style-type: none"> • Minimum amount for additional removal of debris (no damage): R 500,000 • Minimum amount for temporary storage of materials off site, excluding Contractor's own premises: R 10,000,000 • Minimum amount for transit of materials to site: R 5,000,000.

9 TitleNo additional data is required for this section of the *conditions of contract*.**10 Data for Main Options**

B	Priced Contract with Bill of Quantities	The method of measurement is the relevant SANS 1200 Standard Specifications measurement and payment clauses, Particular Specifications and Project Specifications applicable to the whole of the works.
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11 Data for Option W1 Dispute Resolution

W1.1	The <i>Adjudicator</i> is:	To be mutually agreed upon by the Parties prior to commencement of the Contract.
W1.2(3)	The <i>Adjudicator nominating body</i> is:	The Association of Arbitrators (Southern Africa)
W1.4(2)	The <i>tribunal</i> is:	a South African court of law

12 Data for Secondary Option Clauses

X1 Price Adjustment for Inflation

X1.1(a)	The <i>Base Date Index (B)</i> is:	The month prior to the month in which the tender closes
X1.1 (b)	The <i>Latest Index (L)</i> is:	The Price Adjustment Factor (PAF) shall be calculated as follows:

$$PAF = (1 - x) \left[\frac{aL_L}{L_B} + \frac{bP_L}{P_B} + \frac{cM_L}{M_B} + \frac{dF_L}{F_B} - 1 \right]$$

Where the latest indices for each applicable index is as follows:

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

With:

- The proportion not subject to adjustment: **x = 0.10**.
- The Index shall be based on **December 2016 = 100**.

X7 Delay Damages

X7.1	Delay damages for Completion of the <i>works</i> are:	R 20,000 per day
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X13 Performance Bond

X13.1	The amount of the <i>performance bond</i> is:	10% of the value of the contract. The performance bond shall have no specific expiry date, and shall remain valid until the issue of <i>Completion</i> . The format and content of the performance bond shall be to the satisfaction of the Employer and/or Project Manager.
X16	Retention	
X16.1	The <i>retention free amount</i> is:	Nil.
X16.1	The <i>retention percentage</i> is:	10% of each interim payment certificate up to a limit of 5% of the Contract Value. Interest shall not be paid on retention withheld by the Employer.
Z	Additional Conditions of Contract	
Z1	The Contractor shall not commence working until they have:	<ul style="list-style-type: none"> • An approved project specific health and safety plan in terms of the Occupational Health and Safety Act, 1993: Construction Regulations, 2014 and complied with the initial requirements thereof. • An approved CPG Implementation Plan • All Contract Insurances in place • An approved construction programme • An approved performance bond in place.
Z2	The <i>Project Manager</i> shall seek the specific approval of the Employer before executing the following:	Authorise any expenditure in excess of the Tender Sum plus 7.5% contingencies.

Job

.....

Responsibilities:

.....

Qualifications:

.....

Experience:

.....

3 Name:

.....

Job

.....

Responsibilities:

.....

Qualifications:

.....

Experience:

.....

CV's (and further key persons' data including CVs) are appended to Tender Schedule entitled

.....

Data for Schedules of Cost Components

B Priced contract with bill of quantities

The percentage for people, equipment, material and all other company overheads and associated costs is deemed to be included in the rates given in the Bill of Quantities.

C1.2.2.3 ROLES OF THE PARTIES

Clause	Project Manager	Supervisor	Contractor
Core clauses			
10.1	To act as stated in the contract and in a spirit of mutual trust and co-operation	To act as stated in the contract and in a spirit of mutual trust and co-operation	To act as stated in the contract and in a spirit of mutual trust and cooperation
13.1	To communicate in a form which can be read, copied, and recorded	To communicate in a form which can be read, copied, and recorded	To communicate in a form which can be read, copied and recorded
13.3	To reply to a communication within the <i>period for reply</i>	To reply to a communication within the <i>period for reply</i>	To reply to a communication within the <i>period for reply</i>
13.4	To reply to a communication submitted or resubmitted for acceptance. To state reasons for non-acceptance		To resubmit a communication which is not accepted within the <i>period of reply</i>
13.5	To notify any agreed extension to the <i>period for reply</i>		Agree/not agree to extension to <i>period for reply</i>
13.6	To issue certificates to the <i>Employer</i> and the <i>Contractor</i>	To issue certificates to the <i>Project Manager</i> and the <i>Contractor</i>	
13.7	To communicate notifications separately from other communications.		To communicate notifications separately from other communications
13.8	May withhold acceptance of a submission by the <i>Contractor</i> .		
14.2	To notify the <i>Contractor</i> before delegating any actions or cancelling any delegation	To notify the <i>Contractor</i> before delegating any actions or cancelling any delegation	
14.3	May give an instruction which changes the Works Information or a Key Date		
14.4			
15.1	To reply to the <i>Contractor's</i> proposal for adding to the Working Areas. To state reasons for non-acceptance		May submit a proposal for adding to the Working Areas to the <i>Project Manager</i> for acceptance
16.1	To give early warning of matters with delay, cost, performance implications or meeting a Key Date. To enter early warning matters in the Risk Register.		To give early warning of matters with delay, cost or performance implications or delay meeting a Key Date
16.2	May give instructions to <i>Contractor</i> to attend risk reduction meeting. May instruct others to attend if Other agrees.		May give instruction to <i>Project Manager</i> to attend risk reduction meeting and may instruct others to attend if Other agrees
16.3	To co-operate at early warning / risk reduction meetings		To cooperate at early warning / risk reduction meetings
16.4	To record decisions made by revising the Risk Register and issuing to <i>Contractor</i> . To instruct change to Works Information, if required, at the same time as issuing the revised Risk Register.		
17.1	To give notice of ambiguities or inconsistencies in the documents. To give instructions resolving ambiguities or inconsistencies.		To give notice of ambiguities or inconsistencies in the documents
18.1	To give instructions changing the Works Information in the event of illegality or impossibility in the Works Information		To give notice of any illegality or impossibility in the Works Information
19.1	To give an instruction dealing with an event described		
20.1			To Provide the Works in accordance with the Works Information
21.1			To design such parts of the <i>works</i> as stated in the Works Information
21.2	To accept particulars of the <i>Contractor's</i> design or give reasons for non- acceptance		To submit particulars of his design for acceptance as required by the Works Information
23.1	To accept particulars of the design of Equipment or to give reasons for non-acceptance		To submit when instructed particulars of design of items of Equipment
24.1	To accept replacement persons proposed by the <i>Contractor</i> or to give reasons for non-acceptance		To employ key persons as stated in the Contract Data or acceptable replacements. To submit the name, qualifications and experience of proposed replacement person
24.2	May instruct the <i>Contractor</i> to remove an employee having stated his reasons		To remove any employee on the <i>Project Manager's</i> instructions

Clause	Project Manager	Supervisor	Contractor
Core clauses			
25.1			To cooperate with Others in obtaining and providing information. To share the Working Areas with Others as stated in the Works Information
25.2	To assess the cost incurred if the Contractor does not provide the services and other things		To provide services and other things. To pay the cost assessed for not providing facilities and services
25.3	To assess the additional cost		To pay <i>Employer's</i> cost incurred if work does not meet a condition for a Key Date
26.2	To accept proposed Subcontractors or to give reasons for non-acceptance		To submit the names of proposed Subcontractors for acceptance. To appoint a Subcontractor only after the <i>Project Manager</i> has accepted him
26.3	To accept proposed subcontract conditions or to give reasons for non-acceptance		To submit the proposed conditions of contract for each subcontract for acceptance. To appoint a Subcontractor on the proposed conditions of subcontract only after the <i>Project Manager</i> has accepted them
27.1			To obtain approval of his own design from Others where necessary
27.2			To provide access to the <i>works</i> to the <i>Project Manager</i> , <i>Supervisor</i> and Others
27.3			To obey instructions given by the <i>Project Manager</i> or the <i>Supervisor</i> which are in accordance with the contract
27.4			To act in accordance with health and safety regulations
30.1			To start work on Site on or after the first possession / access date. To do the work so that Completion is on or before the Completion Date
30.2	To decide the date of Completion. To certify Completion within one week of completion		
30.3			To do the work so that the condition stated for each Key Date is met by the Key Date.
31.1			To submit a programme for acceptance within a period stated in the Contract Data
31.2			To show details in each programme as listed
31.3	To accept the <i>Contractor's</i> programme within two weeks of submission or to give reasons for non-acceptance		To do the work so that the condition stated for each Key Date is met by the Key Date
32.1			To show details in revised programmes as listed
32.2 and 31.3	To accept a revised programme or to give reasons for non-acceptance		To submit a revised programme when instructed to or as required in the Contract Data
33.1			
34.1	May instruct <i>Contractor</i> to stop or not start any work and later to re-start or start it.		
35.1			
35.2			
35.3	To certify within one week the date when the <i>Employer</i> takes over any part of the <i>works</i>		
36.1	May instruct the <i>Contractor</i> to submit a quotation for acceleration. To state changes to the Key Dates to be included in the quotation.		
36.2			To submit a quotation for acceleration when so instructed or give reasons for not doing so
40.2			To provide materials, facilities and samples for tests and inspections as stated in the Works Information
40.3	-	To notify the <i>Contractor</i> of his tests and inspections before	To notify the <i>Supervisor</i> of tests and inspections before they start.

Clause	Project Manager	Supervisor	Contractor
Core clauses			
		they start and afterwards of the results.	To notify the <i>Supervisor</i> of the results of tests and inspections. To notify the <i>Supervisor</i> before doing work which would obstruct tests or inspections
40.4			To correct Defects revealed by tests or inspections and to repeat such tests or inspections
40.5	-	To do tests and inspections without causing unnecessary delay to work or payment	
40.6	To assess the cost incurred by the Employer in repeating a test or inspection after a Defect is found.	-	To pay the assessed cost incurred by the <i>Employer</i> in repeating tests or inspections
41.1		To notify the <i>Contractor</i> of the results of the test or inspection on Plant and Materials required by the Works Information to be tested or inspected before delivery.	To wait for notification from the <i>Supervisor</i> before bringing to the Working Areas those Plant and Materials that the Works Information states are to be inspected or tested before delivery
42.1		May instruct the Contractor to search for a Defect and to give reasons for searches which are instructed	To carry out searches as instructed by the <i>Supervisor</i>
42.2		To notify the Contractor of Defects found before the defects date	To notify the <i>Supervisor</i> of Defects found before the <i>defects date</i>
43.1			To correct Defects
43.2			To correct notified defects before the end of the <i>defect correction period</i>
43.3		To issue the Defects Certificate at the later of the defects date and the last defect correction period	
43.4	To arrange for the <i>Employer</i> to allow access and use to the <i>Contractor</i> of any part of the works needed for the correction of Defects after taking over		
44.1	May propose to Contractor that Works Information should be changed to avoid correction of a Defect		May propose to <i>Project Manager</i> that Works Information should be changed to avoid correction of a Defect
44.2	To change the Works Information, the Prices and the Completion Date if a quotation for not correcting Defects is accepted		To submit a quotation for reduced Prices or an earlier Completion Date or both
45.1	To assess the cost of having Defects corrected by others if the <i>Contractor</i> fails to correct notified Defects within the <i>defect correction period</i> even though access was given		To pay the assessed costs of notified Defects being corrected by others because they were not corrected within the <i>defect correction period</i> even though access was given
45.2	To assess the cost of correcting Defect where Contractor not given access to correct it		To pay cost assessed of correcting Defect where access not given
50.1	To assess the amount due for payment at each assessment date. To decide the first assessment date to suit the procedures of the parties	Measures and certifies the work	
50.3	To retain one quarter of the Price for Work Done to Date until the <i>Contractor</i> has submitted a first programme showing information required		
50.4	To consider any application from the <i>Contractor</i> when assessing amounts due for payment. To give the Contractor details of how amounts due have been assessed		May submit application for payment on or before the assessment date
50.5	To correct any wrongly assessed amount due in a later payment certificate		
51.1	To certify payment within one week of each assessment date		To pay <i>Employer</i> if an interim assessment reduces the amount due from that already paid
51.2			
51.3	To assess interest to be paid on correcting amounts		
61.1	To notify the Contractor of compensation events which arise from the giving of instructions or changing of earlier decisions. To instruct the contractor to submit quotations		To put instructions or changed decisions into effect

Clause	Project Manager	Supervisor	Contractor
Core clauses			
61.2	May instruct the contractor to submit quotations for a proposed instruction or proposed changed decision		
61.3			To give notice of a compensation event
61.4	To decide within one week of notification (or such longer period as the <i>Contractor</i> agrees) whether the Prices, the Key Dates and the Completion Date should be changed when the Contractor notifies a compensation event. To notify the <i>Contractor</i> of the decision and instruct the contractor to submit quotations		May notify the <i>Project Manager</i> if the <i>Project Manager</i> does not notify his decision to the <i>Contractor</i> within one week (or longer if agreed)
61.5	To decide whether the Contractor did not give any early warning of a compensation event which could have been given and to notify the Contractor of his decision		
61.6	To state assumptions for the assessment of compensation events in the event that the effects are too uncertain to be forecast reasonably To notify a correction to any assumptions later found to have been wrong		
62.1	To discuss with the Contractor different ways of dealing with the compensation event that are practicable May instruct the <i>Contractor</i> to submit alternative quotations		To discuss with the <i>Project Manager</i> different ways of dealing with the compensation event that are practicable. To submit alternative quotations for compensation events if instructed to do so. May submit quotations for other methods of dealing with the compensation event
62.2			To submit details of his assessment with each quotation. To include alterations to the Accepted Programme with the quotation if the compensation event has altered the programme for the remaining work
62.3	To reply to quotations for compensation events within two weeks of the submission		To submit quotations for compensation events within three weeks of being instructed to do so
62.4	To give reasons to the Contractor when instructing the submission of a revised quotation		To submit revised quotations for compensation events within three weeks of being instructed to do so
62.5	To extend the time allowed for the submission of quotations and replies if the Contractor agrees To notify the Contractor of any agreed extensions for the submission of quotations or replies		
62.6			May notify the <i>Project Manager</i> if the <i>Project Manager</i> does not reply to a quotation within the time allowed. To state which quotation is to be treated as having been accepted
63.5	To assess the event as if the Contractor had given an early warning if the Project Manager has notified the Contractor of his decision under clause 61.5		To assess the event as if the <i>Contractor</i> had given an early warning if the <i>Project Manager</i> has notified the <i>Contractor</i> of his decision under clause 61.5
63.9	To correct the description of a condition for a Key Date if a change to the Works Information makes the description incorrect To take the correction into account when assessing the compensation event for the change to the Works information		To take the correction into account when assessing the compensation event for the change to the Works Information
64.1	To assess a compensation event: <ul style="list-style-type: none"> • If the Contractor has not submitted a quotation and details within the time allowed • If the <i>Project Manager</i> decides the Contractor has not assessed the compensation event correctly • If the <i>Contractor</i> has not submitted a required programme 		

Clause	Project Manager	Supervisor	Contractor
Core clauses			
	<ul style="list-style-type: none"> If the <i>Project Manager</i> has not accepted the <i>Contractor's</i> latest programme 		
64.2	To assess a compensation event using his own assessment of the programme: <ul style="list-style-type: none"> If there is no Accepted Programme If the Contractor has not submitted a revised/alterd programme for acceptance as required 		
64.3	To notify the <i>Contractor</i> of any assessments made (inclusive of details) of a compensation event within the period allowed to the <i>Contractor</i> for his quotation		
64.4			May notify the <i>Project Manager</i> if <i>Project Manager</i> did not assess a compensation event within the time allowed. To state which quotation is to be treated as having been accepted
65.1	To implement compensation events notifying the <i>Contractor</i> of accepted quotations; or his own assessments; or a <i>Contractor's</i> quotation treated as having been accepted by the <i>Project Manager</i>		
71.1		To mark Equipment, Plant and Materials outside the Working Areas for payment purposes	
72.1			To remove Equipment from the Site when it is no longer needed
73.1	To instruct the <i>Contractor</i> how to deal with objects of value, historical or other interest		To notify the finding of any object of value, historical or other interest. Not to move the object without instructions
81.1			To carry risks which are not the <i>Employer's</i> risk from the starting date until the Defects Certificate is issued
82.1			To replace loss or repair damage to the works, Plant and Materials until the Defects Certificate is issued
83.1			To indemnify the <i>Employer</i> against claims etc., due to <i>Contractor's</i> risks
84.1			To provide insurances as required by the contract
85.1	To accept policies and certificates of insurance submitted by the <i>Contractor</i> or to give reasons for non-acceptance		To submit insurance policies and certificates for acceptance as required by the contract
85.3			To comply with the terms and conditions of insurance policies
86.1			To pay the costs incurred by the <i>Employer</i> in covering insurances which are the <i>Contractor's</i> responsibility
87.1	To submit to the <i>Contractor</i> policies and certificates for insurances to be provided by the <i>Employer</i> as required by the contract		To accept insurance policies and certificates provided by the <i>Employer</i> if they comply with the contract
87.3			May insure a risk which the <i>Employer</i> should insure if the <i>Employer</i> does not submit a required policy or certificate
90.1	To issue a termination certificate promptly when either Party gives notice of termination for reasons complying with the contract		To notify the <i>Project Manager</i> and the <i>Employer</i> , giving details of reasons before terminating
90.4	To certify final payment within 13 weeks of termination		
90.5			To do no further work to Provide the Works after the termination certificate has been issued
92.1			
92.2	To notify the <i>Contractor</i> that the <i>Employer</i> no longer needs Equipment to which the <i>Contractor</i> has title		To leave the Working Areas and remove Equipment on termination. To remove Equipment promptly from Site when <i>Project Manager</i> notifies him that <i>Employer</i> no longer needs it
Option B: Priced contract with bill of quantities			
36.3	To change the Completion Data, the Prices and Key Dates when a quotation for acceleration I		

Clause	Project Manager	Supervisor	Contractor
Core clauses			
	accepted and to accept the revised programme.		
60.6	To correct mistakes in the <i>bill of quantities</i> which are departures from the rules in the <i>method of measurement</i> due to ambiguities or inconsistencies		
63.11	Make his own assessment using the Shorter Schedule of Cost Components		
63.13	To include changes to the Prices and to the Completion Date when notifying implementation of a compensation event		To assess a compensation event using rates or lump sums instead of Defined Cost if the <i>Project Manager</i> agrees
65.4	To include changes to the Prices, the Completion Date and to Key Dates when notifying implementation of a compensation event		To include changes to the Prices, the Completion Date and to Key Dates when notifying implementation of a compensation event

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.

The Contractor shall, after discussing with the CLO, Ward Councillor and the municipality's ISD structures, indicate clearly to the CLO all conditions of remuneration on his / her contract. Given the various responsibilities of the CLO, as well as the need to be available to the Contractor at all times, payment on an hourly basis may not be advisable. The Contractor will be required to confirm the conditions of employment and / or remuneration to the Project Manager in writing.

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

C1.2.3.2 EMPLOYMENT OF LOCAL LABOUR

It is a condition of contract that the contractor will be required to employ local labour as specified in eThekweni Council Policy "The use of CLOs and Local Labour". The contractor will be required to ensure that a minimum of 50% of the labour force is made up of local labour. For the purposes of this contract, "Local labour" will be deemed to be any **persons who reside within Ward(s) 70, 71**. 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)

C1.2.3.3.1 Background

It is a condition of contract that the contractor must allow for a minimum of **30%** of the contract value (excluding PC Sum items and Fixed Cost allowances) to be subcontracted to contractors who are **>51% BLACK OWNED**. Proof of payment to the subcontractors will be required to verify that the minimum has been achieved.

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

Following appointment, the Contractor shall liaise with the Ward Councillor(s) / CLO(s) and eThekweni Municipality's ISD structures to source suitable CPG sub-contractors within the local ward(s) where works shall take place.

The contractor is to ensure that priority be given to EMEs and QSEs that fall within the local ward(s), thereafter the surrounding wards and finally eThekweni Municipality as a whole, depending on the skills available in the area being considered.

If no suitable sub-contractors are found within the local ward(s), then the Contractor must demonstrate this clearly to the Employer and Project Manager, before attempting to source sub-contractors from neighbouring areas.

The Employer, Project Manager and CLO will then confirm if the subcontractor is based in the correct Ward and if the requirements of this clause have been adhered to.

The CPG target will be calculated from the Total Contract Value (Excl. VAT) subtracting Preliminary and General Items, Provisional Sums and Day Works as per the following formula:

$$\text{CPG Target} = 30\% \times (\text{Contract Value} - \text{P\&G} - \text{Prov. Sums} - \text{PC Sums} - \text{Day Works})$$

The appointment of both CPG and specialised Sub-contractors shall only be formalised on the basis of the presentation of a suitable and compliant sub-contracting agreement in the SAICE General Conditions of Sub-contracting for Construction Works First Edition 2018 format or other acceptable format.

C1.2.3.3.2 Contractor's Supervision of CPG Contractors

It is a further condition of contract that the contractor is also required to Supervise, Mentor and Transfer Skills to the selected subcontractors. The contractor will remain responsible for providing proper supervision of all subcontractors and will be responsible for the quality of work produced.

The Contractor will be required to provide and appoint one person who will be dedicated for mentoring and managing the CPG Sub-contractors throughout the duration of their Works.

The Contractor shall take full responsibility of the works done by the CPG Sub-contractors. Some of the aspects of mentorship will include:

- Pricing / calculating rates
- Business Management
- Basic contractual matters
- Transfer of some construction skills
- Calculation of quantities
- Preparing payment certificates

The Contractor will further be responsible to provide all the material required by the 1CE CPG

Sub-contractors to enable them to successfully complete their work.

The appointment of CPG Sub-contractors shall only be formalised on the basis of the presentation of suitable and compliant sub-contracting agreements in the CIDB format, or another acceptable format.

The Contractor is required to monitor the performance of each appointed sub-contractor and report the performance to the Employer in formats and details as will be indicated from time to time by the Project Manager.

C1.2.3.3.3 Measurement and Payment

g) Fixed Charge Unit: Sum

A fixed charge-item has been included in the Bill of Quantities for the sourcing of suitable CPG Contractors within the local ward(s), and the rate tendered shall cover all costs associated with identifying, sourcing and appointing CPG Contractors, as well as all costs associated with drawing up all applicable sub-contracting agreements and no additional payment shall be made in this regard. Payment under this item shall only be made upon receipt of an applicable sub-Contracting agreement between the Contractor and the CPG Sub-Contractor(s).

h) Time-Related Unit: Sum

A time-related item has been included in the Bill of Quantities for the management, supervision and training of the CPG contractors throughout the duration of the Contract, and the rate tendered shall cover all costs associated with this.

C1.2.3.4 FTE (Full Time Equivalent) EMPLOYMENT INFORMATION

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

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

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

- Category of Employment

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

In addition to the tax invoice, to be submitted by the Contractor with his monthly statement, the Employer reserves the right to withhold payment until the monthly FTE information has been forwarded to the Project Manager. 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

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

C1.2.3.6 CURTAILMENT OF SCOPE

During the Contract, the Employer may order that portions of the works be removed from the Scope of the Contract due to budget availability. Should this be the case, the Contractor shall not be entitled to any claims regarding loss of turnover. Should curtailment of scope be ordered, the Employer and Contractor shall agree to a reduction in the overall contract period, and accordingly, the allowance in terms of time-related preliminary and general costs.

PART C2: PRICING DATA

PART A WP#03

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade : WP#03, WP#04, WP#05, WP#06](#)

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 Project Manager'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, in respect of "sum" items in the Bill of Quantities shall be by means of interim progress instalments assessed by the Project Manager 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

The Employer reserves the right, during the execution of the works, to adjust the stated amounts for Provisional and Prime Cost (PC) Sums 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 Project Manager certifying 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. 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 22 pages. The pages are numbered PART A [BoQ 1](#) to [BoQ 22](#)

PART B WP#04

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade: WP#04](#)

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 Project Manager'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, in respect of "sum" items in the Bill of Quantities shall be by means of interim progress instalments assessed by the Project Manager 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

The Employer reserves the right, during the execution of the works, to adjust the stated amounts for Provisional and Prime Cost (PC) Sums 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 Project Manager certifying 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. 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 22 pages. The pages are numbered PART B BoQ 1 to BoQ 22.

PART C WP#05

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade: WP#05](#)

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 Project Manager'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, in respect of "sum" items in the Bill of Quantities shall be by means of interim progress instalments assessed by the Project Manager 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

The Employer reserves the right, during the execution of the works, to adjust the stated amounts for Provisional and Prime Cost (PC) Sums 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 Project Manager certifying 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. 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 24 pages. The pages are numbered PART C [BoQ 1 to BoQ 24](#)

PART D WP#06

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade: WP#06](#)

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 Project Manager'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, in respect of "sum" items in the Bill of Quantities shall be by means of interim progress instalments assessed by the Project Manager 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

The Employer reserves the right, during the execution of the works, to adjust the stated amounts for Provisional and Prime Cost (PC) Sums 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 Project Manager certifying 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. 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 23 pages. The pages are numbered PART D BoQ 1 to BoQ 23.

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C3.1: PROJECT DESCRIPTION AND SCOPE OF CONTRACT

PART A WP#03

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade : WP#03, WP#04, WP#05, WP#06](#)

C3.1.1 Description of Works

This project forms part of the broader upgrade of the Southern Aqueduct between Durban Height Water Treatment Works in Reservoir Hills to Umlazi that will augment and upgrade the existing bulk water supply to cater for this increased demand. There is also a need to temporarily repair and maintain the existing Prestressed Concrete Pipes that have been decommissioned.

The scope of work involves the installation of water infrastructure as described below: -

- The procurement and installation of approximately 2200m of DN1400 steel watermain to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.
- Temporary cross-connections to the prestressed concrete pipe
- Permanent cross connections (where required) to the existing steel pipe
- Decommissioning and removing the existing prestressed concrete pipes.
- The construction of scour valves, control valves, isolation valves, pressure reducing valves and air valve chambers. This includes chamber structures, excavation, all fittings, hydrants and specials, tie-ins, hydraulic testing and waterproofing.
- Dealing with existing services by way of protecting, relocating or crossing where applicable.
- Connection of drainage sumps into existing stormwater pipes.
- Rehabilitation and reconstruction of all road layerworks impacted, damaged or affected by this Contract.
- Liaison and interaction with eThekweni Water and Sanitation for system shut-down and operational interfaces.
- Provision and maintenance of vehicular access to adjacent properties and parkade areas.
- Appointment of a specialist sub-contractor to carry out a detailed investigation into stray currents and soil resistivity and the subsequent design and installation of a Cathodic Protection (CP) System.
- Appointment of a specialist sub-contractor to repair the prestressed concrete pipe joints using mechanical seals, comprising an internal EPDM band held in place by two stainless steel bands.
- Other works such as road-marking and painting etc. required for the completion of the project

C3.1.2 Description of Site and Access

Refer to C4.1: Locality Sketch.

C3.1.3 Nature of Ground and Subsoil Conditions

Refer to the Geotechnical Reports performed for the site reflected in Section C3.6.

PART B WP#04

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade: WP#04](#)

C3.1.1 Description of Works

This project forms part of the broader upgrade of the Southern Aqueduct between Durban Height Water Treatment Works in Reservoir Hills to Umlazi that will augment and upgrade the existing bulk water supply to cater for this increased demand. There is also a need to temporarily repair and maintain the existing Prestressed Concrete Pipes that have been decommissioned.

The scope of work involves the installation of water infrastructure as described below: -

- The procurement and installation of approximately 1800m of DN1600 steel watermain to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.
- Temporary cross-connections to the prestressed concrete pipe
- Permanent cross connections (where required) to the existing steel pipe
- Decommissioning and removing the existing prestressed concrete pipes.
- The construction of scour valves, control valves, isolation valves, pressure reducing valves and air valve chambers. This includes chamber structures, excavation, all fittings, hydrants and specials, tie-ins, hydraulic testing and waterproofing.
- Dealing with existing services by way of protecting, relocating or crossing where applicable.
- Connection of drainage sumps into existing stormwater pipes.
- Rehabilitation and reconstruction of all road layerworks impacted, damaged or affected by this Contract.
- Liaison and interaction with eThekweni Water and Sanitation for system shut-down and operational interfaces.
- Provision and maintenance of vehicular access to adjacent properties and parkade areas.
- Appointment of a specialist sub-contractor to carry out a detailed investigation into stray currents and soil resistivity and the subsequent design and installation of a Cathodic Protection (CP) System.
- Appointment of a specialist sub-contractor to repair the prestressed concrete pipe joints using mechanical seals, comprising an internal EPDM band held in place by two stainless steel bands.
- Other works such as road-marking and painting etc. required for the completion of the project

C3.1.2 Description of Site and Access

Refer to C4.1: Locality Sketch.

C3.1.3 Nature of Ground and Subsoil Conditions

Refer to the Geotechnical Reports performed for the site reflected in Section C3.6.

PART C WP#05

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade: WP#05](#)

C3.1.1 Description of Works

This project forms part of the broader upgrade of the Southern Aqueduct between Durban Height Water Treatment Works in Reservoir Hills to Umlazi that will augment and upgrade the existing bulk water supply to cater for this increased demand. There is also a need to temporarily repair and maintain the existing Prestressed Concrete Pipes that have been decommissioned.

The scope of work involves the installation of water infrastructure as described below: -

- The procurement and installation of approximately 1850m of DN1400 steel watermain to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.
- Temporary cross-connections to the prestressed concrete pipe
- Permanent cross connections (where required) to the existing steel pipe
- Decommissioning and removing the existing prestressed concrete pipes.
- The construction of scour valves, control valves, isolation valves, pressure reducing valves and air valve chambers. This includes chamber structures, excavation, all fittings, hydrants and specials, tie-ins, hydraulic testing and waterproofing.
- Dealing with existing services by way of protecting, relocating or crossing where applicable.
- Connection of drainage sumps into existing stormwater pipes.
- Rehabilitation and reconstruction of all road layerworks impacted, damaged or affected by this Contract.
- Liaison and interaction with eThekweni Water and Sanitation for system shut-down and operational interfaces.
- Provision and maintenance of vehicular access to adjacent properties and parkade areas.
- Appointment of a specialist sub-contractor to carry out a detailed investigation into stray currents and soil resistivity and the subsequent design and installation of a Cathodic Protection (CP) System.
- Appointment of a specialist sub-contractor to repair the prestressed concrete pipe joints using mechanical seals, comprising an internal EPDM band held in place by two stainless steel bands.
- Other works such as road-marking and painting etc. required for the completion of the project

C3.1.2 Description of Site and Access

Refer to C4.1: Locality Sketch.

C3.1.3 Nature of Ground and Subsoil Conditions

Refer to the Geotechnical Reports performed for the site reflected in Section C3.6.

PART D WP#06

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade: WP#06](#)

C3.1.1 Description of Works

This project forms part of the broader upgrade of the Southern Aqueduct between Durban Height Water Treatment Works in Reservoir Hills to Umlazi that will augment and upgrade the existing bulk water supply to cater for this increased demand. There is also a need to temporarily repair and maintain the existing Prestressed Concrete Pipes that have been decommissioned.

The scope of work involves the installation of water infrastructure as described below: -

- The procurement and installation of approximately 1900m of DN1600 steel watermain to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.
- Temporary cross-connections to the prestressed concrete pipe
- Permanent cross connections (where required) to the existing steel pipe
- Decommissioning and removing the existing prestressed concrete pipes.
- The construction of scour valves, control valves, isolation valves, pressure reducing valves and air valve chambers. This includes chamber structures, excavation, all fittings, hydrants and specials, tie-ins, hydraulic testing and waterproofing.
- Dealing with existing services by way of protecting, relocating or crossing where applicable.
- Connection of drainage sumps into existing stormwater pipes.
- Rehabilitation and reconstruction of all road layerworks impacted, damaged or affected by this Contract.
- Liaison and interaction with eThekweni Water and Sanitation for system shut-down and operational interfaces.
- Provision and maintenance of vehicular access to adjacent properties and parkade areas.
- Appointment of a specialist sub-contractor to pipe jack across the M19 Highway.
- Appointment of a specialist sub-contractor to carry out a detailed investigation into stray currents and soil resistivity and the subsequent design and installation of a Cathodic Protection (CP) System.
- Appointment of a specialist sub-contractor to repair the prestressed concrete pipe joints using mechanical seals, comprising an internal EPDM band held in place by two stainless steel bands.
- Other works such as road-marking and painting etc. required for the completion of the project

C3.1.2 Description of Site and Access

Refer to **C4.1: Locality Sketch**.

C3.1.3 Nature of Ground and Subsoil Conditions

Refer to the Geotechnical Reports performed for the site reflected in Section C3.6.

C3.2: PROJECT SPECIFICATION

PREAMBLE

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

C3.2.1 GENERAL

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

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

PS.1.1 Preliminary Programme

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

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

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

PS.1.2 Programme in Terms of Clause 31.2 of the Conditions of Contract

PS.1.2.1 General

It is essential that the construction programme, which shall conform in all respects to [Clause 31.2 of the Conditions of Contract](#), be furnished within the time stated in the Contract Data.

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

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

- (1) [Time required for service relocations.](#)
- (2) [Time allowances to be made for the ordering of special items.](#)

- (3) Notification required by service organisations.
- (4) Prioritization of a 200m section leading up to the Sunset Avenue road-crossing in Chatsworth with temporary cross-connections to the existing prestressed concrete pipes at either end.
- (5) Time allowances to be made for delays that are anticipated with service relocations
- (6) Allowance for work required out of normal hours for connections to the existing pipes requiring temporary shutdown of the existing aqueduct/s in operation.
- (7) Vehicular access to private property is to be maintained.
- (8) Traffic restrictions.

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

PS.1.2.2 Format

The Construction Programme to be submitted by the Contractor shall:

- (a) Be in the form of a GANTT chart
- (b) Clearly indicate the start and end dates and duration of all construction activities and identify the critical path
- (c) Include all requirements specified in Clause 31.2 of the conditions of contract
- (d) In addition to (c) above, include the following:
 - All activities with abnormal shift requirements, such as two shifts per day, six-day workweek, specified overtime, or work at times other than the normal working days or hours, clearly identified
- (e) Take full cognizance of all the Contractor's risks and obligations in terms of the Contract
- (f) Include a covering report containing the following information:
 - A summary of actual progress versus planned progress
 - A summary of deviations and the reasons for the same
 - A key milestone summary
 - An updated cash flow forecast
 - A critical actions items list

The Programme and all revisions thereto shall also be provided to the Supervisor and Project Manager in electronic digital format using the MS PROJECT software (version 2010 or later).

The Contractor shall use the Critical Path Method for time analysis, planning and scheduling of all activities required to complete the work, showing all necessary logic diagrams and clearly demonstrating the sequence of operations. All tasks and activities shown on any programme shall have properly linked and scheduled predecessors and successors, except for the starting and completion milestones, which shall only have successors and predecessors respectively. Scheduling details (such as relationships, duration and resources etc.) shall only be allocated to individual tasks – summary tasks may be summary tasks only and may not be utilized for programming/scheduling purposes.

The Project Manager will not accept any programme that uses float suppression techniques such as preferential sequences, special lead/lag logic restraints, extended activity times, or imposed dates, other than as required by the Contract.

The data provided in the Contractor Daily Reports/Dairies is the sole basis for updating the programme. For every in progress or completed activity the Actual Start and Finish dates and

Remaining Durations on the Schedule must match the dates in the Contractor's Daily Reports/Dairy.

PS.1.3 Requirements for Accommodation of Traffic

PS.1.3.1 General

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

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

"Road signs and markings shall comply with the requirements of the **"SADC Road Traffic Signs Manual - Volume 2: Roadworks Signing"**.

PS.1.3.2 Basic Requirements

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

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

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

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

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

PS.1.3.3 Traffic Safety Officer

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

PS.1.3.4 Payment

The Contractor's tendered rates for the relevant items in the Bill of Quantities shall include full

compensation for all possible additional costs which may arise from this, and no claims for extra payment due to inconvenience as a result of the modus operandi will be considered.

PS.1.3.5 Pedestrian Movement

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

PS.1.3.6 Temporary Reinstatement

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

- (a) if the permanent reinstatement of such road or way is to be carried out by the appropriate authority or by some person other than the contractor (or any subcontractor to him), the contractor shall at his own cost and independently of any requirement of or notice from the Engineer be responsible for the making good of any subsidence or shrinkage or other defect, imperfection or fault in the temporary reinstatement of such road or way, and for the execution of any necessary repair or amendment thereof from whatever cause the necessity arises, until the end of the period of maintenance in respect of works beneath such road or way until the authority or other person as aforesaid shall have taken possession of the site for the purpose of carrying out permanent reinstatement (whichever is the earlier), and shall indemnify and save harmless that Council against and from any damage or injury to the Council or to third parties arising out of or in consequence of any neglect or failure of the Contractor to comply with the foregoing obligations or any of them and against and from all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto.
- (b) where the authority or person as aforesaid shall take possession of the site as aforesaid in sections or lengths, the responsibility of the contractor under paragraph (a) of this sub-clause shall cease in regard to any such section or length at the time possession thereof is so taken, but shall during the continuance of the said period of maintenance continue in regard to any length of which possession has not been taken and the indemnity given by the contractor under the said paragraph shall be construed and have effect accordingly.

PS.2 SERVICES

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

PS.2.1 Existing Services

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

PS.2.2 Proving Underground Services

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

vicinity of underground services.

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

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

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

When a service is not located in its expected position the Contractor shall immediately report such circumstances to the Employer's Agent who will decide what further searching or other necessary action is to be carried out and shall instruct the Contractor accordingly. The cost of this additional searching shall be to the Council's cost and shall be paid for under **DB.8.19 - Proving Existing Services**.

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

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

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

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

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

PS.2.3 New Services and Relocation of Existing

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

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

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

shall be carried out by the Contractor.

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

Services affected by the contract are described as follows:

- **PS.3: Watermains;**
- **PS.4: Sewers;**
- **PS.5: Stormwater;**
- **PS.6: Electrical Cables / Lighting;**
- **PS.7: Telkom / Neotel;**
- **PS.8: CCTV;**

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

PS.2.4 Accommodation of Services

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

PS.3 WATERMAINS

PS.3.1 General

Tenderers' attention is drawn to the fact that there are existing water pipelines within the project area, and due care shall be taken to prove existing services wherever works are to be undertaken.

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

Tenderers' attention is drawn to the fact that there are existing sewer pipelines within the project area, and due care shall be taken to prove existing services wherever works are to be undertaken.

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

Tenderers' attention is drawn to the fact that there are existing stormwater drainage pipes within the project area, and due care shall be taken to prove existing services wherever works are to be undertaken.

PS.5.1 Blockage Stormwater Sewers

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

PS.6 ELECTRICAL PLANT**PS.6.1 General**

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

connection cables are affected by the contract. The laying, relocation and jointing of all cables will be carried out by eThekwini Electricity's work gangs, or agents appointed by them, whilst the excavation and backfilling forms part of this contract. Close liaison will therefore be necessary with eThekwini Electricity throughout the contract.

PS.6.2 Street Lighting

The existing lighting will be removed in stages and replaced in the centre median / intersection corners. Relocation will take place during this contract and be executed by eThekwini Electricity or their agents. It is a requirement that the street lighting be operational at all times.

PS.6.3 MV / LV Cables

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

PS.6.4 Relocation of Existing Services

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

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

The tenderers' attention is drawn to the fact that Telkom / Neotel copper cables and fibre optic cables may be present within the project area. The Contractor shall be required to contact the necessary service providers in good time prior to commencing with construction activities to confirm the presence of copper / fibre optic cables within the project area. The Contractor shall be responsible for the safety of all personnel involved in construction activity in the vicinity of fibre optic cables.

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 Project Manager 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 Project Manager.

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 Soil Erosion

The quality of topsoil in stockpiles will be maintained by measures including minimising contamination from other materials, minimising stockpiling periods and prevention of soil erosion by surface runoff or wind. Monitoring for erosion and soil erosion risk will be undertaken regularly to ensure that any erosion that occurs is mitigated as soon as possible. Potentially unstable areas shall be stabilised as soon as possible.

PS.9.4 Working in Watercourses

The Contractor shall execute the mitigation and control measures as specified in the Environmental Management Plan in order to preserve the natural environment in instances where the proposed pipeline may traverse any wetlands or watercourses. These objectives are as follows:

- Surface water legislative requirements must be complied with;
- Manage water quality; prevent sediment load from entering any water course;
- Concentrated flow must be managed to prevent downstream erosion and the impact on surface water quality; and
- Implement mitigation measures to minimise potential impacts.

PS.9.5 Flow of Water Around Excavations

Cofferdams shall be constructed around trenched areas in watercourses using sealed plastic bags filled with sand and means of conveyance must be provided for the flow of water to bypass the excavation. The flow of rivers is not to be restricted.

PS.9.6 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, as well as the provisions of Clause 4.19 of SANS 1921-1: 2004.

PS.9.7 Measurement and Payment Unit: Sum

Payment for compliance with the EMPr shall be made under the relevant fixed charge and time-related preliminary and general items in the Bill of Quantities and the rate shall include for all reports, meetings, documentation, equipment etc. required.

PS.9.8 Environmental Control Officer Unit: Prov. Sum

The Contractor shall, at commencement of the Contract, appoint an independent Environmental Assessment Practitioner (EAP) to monitor, audit and report to EDTEA on a monthly basis for the

duration of the Contract. A provisional sum has been included in the Bill of Quantities to cover the costs of these independent environmental audits.

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:

- Provision of adequate lateral support for deep, restricted excavations
- Accommodation of traffic.

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 Employer's Health and Safety Specification

The Employer's Health and Safety Specification will be provided following appointment.

PS.10.3 Protection of the Public

The Contractor is alerted to the fact that the project area is located within a developed area, and is traversed by several provincial / main roads. The Contractor in all his/her planning is to take account of the potential hazard to residents, particularly vehicles, pedestrians, children, pets and livestock and is to take every precaution to avoid accidents and injuries.

The site office area, pipe yard, the servitude/working strip and all other construction zones shall be fenced off to prevent unauthorized entry to the site. Gates shall be provided by the Contractor as required for construction access purposes. The Contractor shall be held responsible for the control of access at these gates at all times as well as to the worksite during removal and re-erection of fencing.

In populated areas and where directed by the Project Manager the Contractor shall also supply, install and maintain temporary fencing on both sides of the working area (servitude) and around the perimeter of all agreed additional working areas during construction for prevention of unauthorised access and shall remove on completion of the works.

PS.10.4 Barricades and Lighting

Requirements for barricading and lighting are stated Clause 4.18.2 of SANS 1921-1 (Section C3.5.1.3, to be read in accordance with SANS 1921-1 Clause 4.18.2) as well as under the applicable Standard Specifications for each construction activity as modified in the Project Specifications (Section C3.7).

PS.10.5 Cost of compliance with the OHSA Construction Regulations Unit: Sum

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

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

PS.11 SITE SECURITY

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

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

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

PS.12 PERFORMANCE MONITORING OF SERVICE PROVIDERS

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

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

The following KPIs will be applicable to this contract:

- (a) Construction Progress.
- (b) Timeous submission of payment quantities for processing of payment certificates.
- (c) Monthly FTE (Full Time Equivalent) Employment Information Reporting.
- (d) Tracking and attainment of CPG target.
- (e) Compliance with the OHS and EMPr

PS.13 FACILITIES TO BE PROVIDED BY THE CONTRACTOR**PS.13.1 Contractor's Site Establishment** *(Read with SANS 1921 - 1: 2004 Clause 4.14)*

The Contractor shall make his own arrangements for a depot site, for the establishment of his offices, workshops, stores, sheds, repair yards and all other facilities required by the Contractor for the execution of the Works adjacent or within the site. The Contractor shall provide on the depot site all his office accommodation and all associated facilities required for the adequate supervision, control and execution of the Works.

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

The area occupied shall be neatly fenced off to denote its limit. The Contractor shall be responsible for the proper upkeep and control and security of the area for the duration of the Contract and all structures and buildings shall be kept in good repair.

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

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

- None of the existing roads shall be damaged in any way.
- 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 Project Manager 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.13.2 Accommodation of Employees

No employees will be allowed to sleep or be accommodated on the site in urban areas.

No housing is available for the Contractor's employees and the Contractor shall make his own arrangements to house his employees and to transport them to and from the 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 will only be allowed where temporary facilities have to be provided.

PS.13.3 Power, Water and other Services

The Contractor shall make his own arrangements concerning the supply of electrical power, water and all other services necessary for the execution of the works. 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.

- 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.

- Power supply for works

The power supply authority is eThekweni Electricity Services 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.13.4 Supervisor's Office

No separate office buildings are required for the Supervisor. The Contractor shall however make provision in his own establishment for lockable air conditioned 80 m² of furnished offices, conference and sanitary facilities for the sole use of the Supervisor/his representative/s.

The Supervisor's office shall contain at least the following:

- Five standard office table or desk;
- Five office swivel chairs
- Ten office chairs.
- Two drawings tables
- Meeting facilities with a table and chairs to seat at least 10 people (for purposes of site meetings).
- Five Bookcases
- Three Filing Cabinets
- Three general purpose steel cabinets with shelves
- Three wall mounted pivot plan filing system
- Lighting
- Electric power plug points
- Printer, copier, scanner

Unless otherwise specified in the Contract Documentation, the fittings, furniture and equipment shall conform to the following requirements:

- Office desks shall have a surface area of at least 1,5 m² and shall be provided with at least three drawers, one of which can be locked.
- General-purpose steel cabinets shall have at least 1,5 m² shelf area and a volume of 0,7 m³ each. Each cabinet shall have a lock with two keys.
- Steel filing cabinets shall each be fitted with four drawers on runners. Each cabinet shall be fitted with a lock and shall be 1,3 m high, 460 mm wide and 600 mm from front to back.
- Shelves shall be suitable for storing all the contract files and documents.
- Electric power plug points shall be provided. Each office shall have at least two 15 ampere plug points.
- Lights shall be 1 500 mm, 58W fluorescent tubes or 1 500 mm, 22W LED tubes.
- Drawing tables shall have either an inclined or a horizontal drawing surface as may be required and a smooth top built to the dimensions instructed by the Engineer.
- Draughtsman's stools shall be fitted with a padded seat with an adjustable seat height.
- The conference table shall be large enough to seat twelve persons and shall have a surface area of at least 4m².
- Chairs shall be robust and comfortable.
- The colour combination printer, copier, scanner machines shall be capable of printing on either A3 & A4 sized paper or only on A4 sized paper as provided for in the Pricing Schedule.
- Blinds shall be either adjustable venetian blinds to permit light to enter the room or opaque roller blinds as specified and/or requested by the Engineer.
- Notice boards and white boards shall be provided as specified or as required by the Engineer.
- Bookcases shall have at least three shelves, each with a minimum length of 0,9 m.
- Wall mounted pivot plan filing systems shall be complete with wall rack and pivot brackets to accommodate ten plan clamps where each plan clamp can hold at least ten A0 size drawings.
- Where required by the Engineer, the Contractor shall provide and install air-conditioning units and heaters. Air-conditioning units shall be of the wall mounted split unit inverter type capable of either cooling or heating a room. The capacity of the air-conditioning units shall be adequate for the room area as recommended by the supplier thereof. Heaters shall be of a space-heating type without exposed elements and shall have a capacity of not less than 1.5 kW each.

The Contractor shall be responsible for the disposal of refuse and waste generated by his staff on a daily basis. The site is to be kept clean, neat and tidy, to the Employer's satisfaction.

PS.13.5 Telecommunication Services

A complete telecommunication and electronic data transfer service with uncapped Wi-Fi connectivity to the internet shall be provided for the use of all the Project Manager's site staff. Where landlines are available the Project Manager shall be provided with a direct independent telephone line that is not connected to the Contractor's telephone exchange and which can accommodate the number of extensions requested by Project Manager.

An item in the preliminary and general section of the BOQ has been provided for telecommunication services which will also cover the cost of the Supervisor's cell phone calls.

The Contractor is to provide his/her own telephone facilities on site.

PS.13.6 Dealing with Water

The Contractor shall pay special attention to the management and disposal of all water on site from whatever source. It is essential that all completed works or parts thereof are kept dry and properly drained. Claims for any delay and for repair of damage caused to the Works as a result of the Contractor's failure to properly manage rain and surface water, will not be considered.

PS.13.7 Disposal of Waste

The Contractor shall dispose of solid waste at the approved Municipal dump yard, or spoil site(s) that has (have) been approved for such use by the Local Authority. Buried waste shall be covered up on a daily basis and the Contractor shall rehabilitate the site prior to Practical Completion being reached. The Contractor shall dispose and cover up all surplus and unsuitable material in spoil areas that have been approved by the Municipality. He/she shall be responsible for all arrangements necessary to obtain access to such dump yards and spoil sites.

PS.13.8 Storage and Laboratory Facilities

No other storage facilities will be available or provided by the Employer and the Contractor is to make suitable arrangements to deliver materials as and when required for erection purposes and when called for by the Project Manager, whether such call be issued on or after the delivery date offered by the Tenderer.

No laboratory facilities will be available or provided by the Employer and the Contractor is to make suitable arrangements for all such laboratory facilities, whether on or off site. The Contractor shall arrange for process control testing to be undertaken by a Laboratory to be approved by the Project Manager. All process control testing that the Contractor is required to complete in terms of the Contract specifications shall be deemed to be covered by the relevant items in the tendered rates.

PS.13.9 Vehicles

No vehicles will be required for use by the Employer or his/her Representatives.

PS.13.10 Survey Equipment and Assistants

The Contractor shall, for the duration of the Contract, provide the following survey equipment for the exclusive use of the Supervisor and his staff:

- 1 upright reading automatic level with tripod;
- 1 metric levelling staff with protective cover bag;
- 6 ranging rods;
- 1 100 metre Stilon tape measure;
- 1 ± 2 kg hammer.

Whenever reasonably required by the Supervisor, the Contractor shall make available to the Supervisor or his representative, the following additional survey equipment:

- 1 tacheometer with tripod;
- 1 survey staff for tacheometer;

All such survey equipment provided by the Contractor shall be in good condition, properly calibrated and fit for the purpose and shall be kept fully serviceable at all times by the Contractor at his own cost. The Contractor shall have any defective equipment repaired or replaced at his own cost within 12 hours after notification by the Supervisor's staff.

Where required by the Supervisor, the Contractor shall at his own cost, promptly arrange for the recalibration of survey equipment provided.

No specific payment item has been included in the Bill of Quantities for complying with the provisions of this clause, and accordingly, the Contractor shall make provision for this in his tendered rates under the various items.

PS.13.11 Nameboards Unit: Sum

The Contractor shall provide, erect and maintain two (2) Contract name boards at such positions and locations directed by the Project Manager, which name boards shall, unless otherwise specified elsewhere in the Contract, comply with the requirements described hereunder.

Each name board shall be made of tempered hardboard with a thickness of at least 12 mm, so braced on the reverse side as to prevent warping and shall be mounted on two or more, as necessary, firmly planted poles. The painting of the boards shall comply with the relevant requirements of CKS 193 and the colours of the paints shall be an acceptable match to the applicable colours given in SANS 1091.

The Contractor shall keep the Contract name boards in good state of repair for the duration of the Contract and shall remove them on completion of the Contract.

PS.14 SURVEY

PS.14.1 Setting Out of Works

The Contractor will be responsible for the setting out of the Works.

The Contractor shall employ a competent surveyor approved by the Project Manager to set out the works in accordance with the Drawings. The Project Manager shall provide at least two beacons from which the whole of the Works can be accurately set and shall furnish the X and Y co-ordinate values for such beacons. Notwithstanding the above, the Contractor will be required to verify the accuracy of the beacons provided.

It will be the Contractor's responsibility to set out all the other points shown on the Drawings from the dimensions or co-ordinate values furnished by the Project Manager.

The Project Manager will assist in staking the location of pipelines and structures for which dimensions or co-ordinates are not provided. The Contractor shall be responsible for all other setting out of works in accordance with the Drawing and GPS coordinates provided. No pipelines or appurtenant structure will be routed or located through or on the fenced property or cultivated field of any resident without their written permission, and then only if the Project Manager has confirmed that no alternative route or location is available. Similarly, no pipeline or appurtenant structure shall be located less than three meters from any existing structure or building unless authorized as above.

The Contractor shall do the setting out to and beyond any and all obstructions. Such obstructions shall be reported to the Project Manager as soon as possible. No additional payment shall be made for listing and reporting these obstructions.

The Contractor shall be compensated for the setting out of works under the value-related item in the Preliminary and General Section of the Bill of Quantities. Interim payments for setting out shall be made on a "pro-rata" basis in accordance with the overall percentage of physical progress of the works

PS.14.2 Survey Beacons (Read with SANS 1921 - 1: 2004 Clause 4.15)

The Contractor shall take special precautions to protect all permanent survey beacons or pegs such as bench-marks, stand boundary pegs and trigonometrical beacons, regardless whether such beacons or pegs were placed before or during the execution of the Contract. If any such beacons or pegs are disturbed by the Contractor or his/her employees, the Contractor shall have them replaced by a registered land surveyor at his/her own cost.

PS.14.3 As-Built Drawings

The Contractor shall submit "As Built" data to the Project Manager to complete the required "As Built" Drawings before Completion. An item has been included in the Preliminary and General Section of the Bill of Quantities for this purpose. The unit of measurement shall be (sum) and the rate tendered shall include for the following:

- (a) A list of surveyed co-ordinates (in projected cartesian (X, Y, Z) and geographical coordinates (Lat, Long) for all infrastructure constructed during the contract, including (but not limited to) the following:
 - i. All bends, junctions and other applicable pipeline fittings
 - ii. All locations where a change in pipe diameter, class or material occurs
 - iii. Along the length all pipelines constructed at a maximum of 20m intervals
 - iv. All chambers constructed
 - v. All steel and concrete tanks
 - vi. All items whose location is required for the efficient operation of the scheme.
- (b) Where road crossings have been required, a list of surveyed finished road levels, kerblines, drains, embankments, services and intersections constructed or modified during the course of the contract.
- (c) All as-built data for any installations as required by the Project Manager.
- (d) Material as-builts, i.e. all compaction and classification results for layer-works.
- (e) All electronic files for the abovementioned information (Dwg, ASCII etc.)

In addition to the above, the Contractor will be required to mark up one complete set of prints of the construction drawings with the as-built information above and submit these to the Project Manager for his/her approval prior to the issue of the Certificate of Completion.

PS.14.4 Additional Site Survey Unit: Prov. Sum

The Project Manager may instruct the contractor to conduct a survey during the course of the contract in order to facilitate re-design due to immovable obstructions and to provide for new dwellings etc. The contractor will be required to submit all survey files in an Ascii format (.CSV) and drawings in a DXF/DWG format.

The unit of measurement shall be (Prov. Sum) and the rate shall include for the survey as directed by the Project Manager and the submission of all hardcopy and electronic files required by the

Project Manager.

The surveyor appointed by the contractor shall provide a quotation to the Project Manager prior to commencing with the additional survey as instructed by the Project Manager. Should, in the opinion of the Project Manager, the quotation provided be deemed unreasonable or not in line with market-related norms, the Project Manager reserves the right to reject the quotation and/or request further quotes from other surveyors to perform the works. Payment will be made in accordance with an approved quotation provided by the surveyor.

PS.15 MANAGEMENT MEETINGS

There will be a minimum of one (1) progress meeting per month, the purpose of which shall be to review and discuss the progress, programme and any other matters affecting the efficient execution of the project. The Contractor is to ensure that the Contracts Manager and Site Agent are present during all meetings. CLO(s) will be required to attend all progress meetings.

The Contractor shall prepare a report for presentation and discussion at each progress meeting, containing, inter alia, the following information:

- Overall Physical Progress, in accordance with a breakdown of tasks agreed between the Contractor and Project Manager
- Record of all rainfall experienced
- A record of all labour being utilised on site, split between male and female and adult (age > 35 years old) and youth (<35 years old).
- All site instructions issued since the last progress meeting
- A record of all plant currently being utilised on site
- Any delays encountered
- Any other information that may materially impact the achievement of the project goals.

All costs associated with the attendance and preparation of the requisite information at these site meetings shall be deemed to be included in the Contractor's tendered rates.

PS.16 RECORDS & REPORTING

PS.16.1 Daily Site Diary

The Contractor is to provide a triplicate site diary book, which is to be kept on site, for the purpose of keeping daily records in respect of work performed on the site and all significant events. The Project Manager will keep the top copy on his/her records and the Contractor will take the middle copy and the third copy will remain in the site diary book which will be kept on site for the duration of the Contract.

The site diary shall contain, inter alia, the following information:

- i. Rainfall – mm experienced, hours lost and nature of work affected.
- ii. Weather Conditions
- iii. Material Deliveries and Delivery Note Numbers
- iv. Work Performed (with specific activities mentioned e.g. excavation, clearance, bedding etc. and applicable reference points) and measured quantities
- v. Drawings issued including Drawing Numbers and Revisions
- vi. Any delays encountered (e.g. plant breakdowns, strikes etc.)
- vii. Number of labourers on site, broken down in terms of males, females, youth and disabled individuals
- viii. Plant on site

Lack of such information will lead to disqualification of any extension of time claims should they arise.

PS.16.2 Progress Reports

The Contractor submits summary progress reports to the Supervisor and Project Manager at weekly intervals in addition to the intervals for submission of revised programmes stated in the Contract Data.

The Contractor completes an assessment of all activities in progress and to completion to determine percentage complete, forecast completion dates, deviations from the Accepted Programme and proposes remedial actions to rectify deviations.

The reports shall indicate “progress this period” and “progress to date”, along with any other requirements indicated in the Works Information, as well as key information that will be indicated by the Project Manager and/or the Supervisor from time to time.

The Contractor’s monthly programme narrative report is submitted a week before the last Friday of each month, or as required by the Project Manager. The report shall indicate “progress this period” and “progress to date” and shall include, but is not limited to, the following (for each Section of the works):

- Progress achieved during the reporting period
- Latest Accepted Programme
- Deviations from the current Accepted Programme and action plans to rectify
- Project Milestones table – planned versus actual and forecast
- Status and performance of operations on the Site and Working Areas
- Status and performance of operations outside the Working Areas
- Cash Flow Forecast Report (See paragraph 2.7 to this Works Information)
- Digital photographic record of the progress of the works
- Critical action items list (top 10).

PS.17 PAYMENT CERTIFICATES & INVOICING

The Contractor shall, on a chosen date suitably prior to each assessment date prepare at his own cost a detailed schedule of all work undertaken up to the chosen date and submit this to the Supervisor. This schedule will usually comprise an updated bill of quantities reflecting the scheduled quantity, total quantity completed to date, quantity completed this period, all extended to values using the rates in the bill of quantities, along with appropriate summary tables. The format of this schedule will be as prescribed by the Project Manager and/or Supervisor and may vary from time to time.

The Supervisor shall be responsible for certifying the accuracy and correctness of this schedule and shall return it so certified to the Contractor within a period agreed between the Contractor and Supervisor and before the assessment date. Any communications and/or corrections to the claim schedule that may be required between the Supervisor and Contractor shall be dealt with promptly by both the Contractor and Supervisor, ensuring that the certified schedule is completed prior to the assessment date.

The Contractor shall submit to the Project Manager the Supervisor certified schedules for each section of work, along with any supporting or back-up documentation as may be requested by the Project Manager from time to time. These submissions must be made in the formats and using both the hardcopy and electronic digital systems prescribed by the Project Manager, which may vary from time to time.

Any failure to submit the required, Supervisor certified claim information by the agreed date will result in the assessment by the Project Manager being held over until the assessment interval following the correct submission of the required information. These assessments and certificates shall not be regarded as late and interest shall not be applicable.

Only following receipt of the complete and properly certified claim, per Section of Work, will the Project Manager make his assessments and issue payment certificates in accordance with the conditions of contract.

When the Project Manager certifies payment (see ECC4 Clause 51.1) following an assessment date, the Contractor complies with the Employer's procedure and format for invoice submission, as may be indicated to the Contractor by the Project Manager from time to time.

Invoices may only be submitted to the Employer through the Project Manager

The invoice must correspond to the Project Manager's assessment of the amount due to the Contractor as stated in the payment certificate.

PS.18 LANDOWNER'S REQUIREMENTS

PS.18.1 Nature of the Project Area

The project construction area is within a developed area. Whilst the Employer will normally provide liaison services, the Contractor shall observe normally accepted protocols applicable to contractors working in developed areas and their interactions with residents and their elected representatives. All costs associated with this shall be deemed to be included in the Contractor's tendered rates for works to be undertaken under this Contract.

PS.18.2 Notifications to Landowners

Prior to carrying out any work on any property, or disrupting any service to any property, the Contractor shall give the owner/occupier at least 14 days' notice in writing of his intention to commence work on such property (or to disrupt any service to such property) and shall, as far as possible, ensure that a signature (showing date and time) is received from the owner/occupier on a copy of the notice, acknowledging that the notice has been received. On completion of the work, the Contractor shall obtain individual, signed "clearance certificates" from all relevant property owners/occupiers, stating that their properties and/or services have been reinstated to their satisfaction. The Contractor shall keep a proper record of all notices issued and of all clearance certificates received. No separate payment will be made for complying with this requirement, and the Contractor will be deemed to have included allowances for this work in his various tendered rates.

PS.18.3 Providing Access to Properties

Road crossing and access to properties adjoining the works must be provided by the Contractor at all times. The Contractor shall, at his own expense, provide suitable crossings for residents, members of the public, and other Contractors requiring access across the Site. Such temporary trench crossings shall be in the form of portable bridges, temporary backfill or other approved means and shall be capable of permitting the safe passage of all vehicles including fully laden cane hauliers. The Contractor shall also be responsible for maintaining such crossings and for removing same when they are no longer required.

If as a result of restricted road reserve widths and the nature of the works, the construction of by-passes or lay-byes is not feasible, construction shall be carried out under traffic in order to provide access to the erven and properties.

The Contractor may, with the approval of the Project Manager, arrange with the occupiers of the

affected erven and properties to temporarily close off a portion of a street, road, foot-path or entrance, provided that the Contractor shall give due notice of the intended closure and its probable duration of the occupation and shall as punctually as possible re-open the route at the prescribed time. Where possible the road shall be made and re-opened to traffic overnight. Any such closure shall be an arrangement between the Contractor and the occupiers and shall not absolve the Contractor from his obligations under the Contract to provide access at all times. Barricades, traffic signs and drums shall be provided by the Contractor to suit the specific conditions.

No specific payment item for complying with this clause has been included in the Bill of Quantities, and all costs associated with complying with clause shall be deemed to be included in the Contractor's tendered rates.

PS.19 ELECTRONIC PAYMENTS TO EMPLOYEES

Payment of employees by electronic funds transfer will be permitted provided that the bank or financial institution that is proposed for the transfer of funds is adequately represented within the Municipal boundaries, including the provision of ATM facilities.

PS.20 QUALITY CONTROL

PS.20.1 Background

The Contractor will be solely responsible for the production of work that complies with the Specifications to the satisfaction of the Project Manager. To this end it will be the full responsibility of the Contractor to institute an appropriate Quality Assurance (QA) system on site. The Project Manager will audit the Contractor's Quality Assurance (QA) system on a regular basis to verify that adequate independent checks and tests are being carried out and to ensure that the Contractor's own control is sufficient to identify any possible quality problems which could cause a delay or failure.

The Contractor shall ensure that efficient supervisory staff, the required transport, instruments, equipment and tools are available to control the quality of his/her own workmanship in accordance with his/her QA-system.

PS.20.2 Specific Requirements

The Contractor's Quality Management System shall conform to International Standard ISO 9001 (or an equivalent standard acceptable to the Project Manager and Supervisor) as a minimum

The Contractor submits his Quality Management System documents to the Supervisor and Project Manager as part of his programme under ECC3 Clause 31.2 to include details of:

- Project Quality Plan (PQP) for the Contract;
- Quality Policy
- Index of Procedures to be used;
- A schedule of internal and external audits, and
- Inspections and Testing during the Contract

The Contractor's PQP includes or reference the quality plans of his Subcontractor(s).

The Contractor develops and maintains a comprehensive register of documents that will be generated throughout the Contract including all quality related documents as part of its PQP.

The Project Manager and/or Supervisor indicates those documents required to be submitted for either information, review or acceptance and the Contractor indicates such requirements

within his register of documents. The register shall indicate the dates of issue of the documents with the Project Manager and/or Supervisor responding to documents submitted by the Contractor for review or acceptance within the period for reply prior to such documents being used by the Contractor.

The Project Quality Plan means the Contractor's statements, which outlines strategy, methodology, resources allocation, Quality Assurance and Quality Control co-ordination activities to ensure that the works meet the standards stated in the Works Information

Inspection and testing means:

- Quality Control Plans
- Inspection Points
- Schedule of Inspections
- Field Inspection Checklists
- Inspection notification
- Inspection and testing
- Inspection release
- Special processes
- Welding Procedures
- Material traceability and certification

PS.20.3 Process Control Testing

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

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

PS.20.4 Acceptance Control Testing

The process control test results submitted by the Contractor for approval of materials and workmanship may be used by the Project Manager for acceptance control. However, before accepting any work, the Project Manager may have further control tests carried out by a laboratory of his/her choice. The cost of such additional tests will be paid for in the Contract, but tests that failed to confirm compliance with the specifications, will be for the account of the Contractor.

PS.21 PROOF OF COMPLIANCE WITH THE LAW

The Contractor shall be required to maintain evidence of the continued validity of all aspects to which he has witnessed compliance at the time of submission of his/her tender, as well as any permits required by nature of his/her operation. The Contractor will be deemed to have granted the Employer the right of inspection of such documentation in the possession of the Contractor at any time as well as to make his/her own independent investigations where necessary.

C3.3 STANDARD SPECIFICATIONS

C3.3.1 The Specifications on which this contract is based are the South African Bureau of Standards Standardised Specification for Civil Engineering Construction or “[SANS 1200 Guidelines](#).” This document is obtainable separately, and Tenderers shall obtain their own copies of the applicable Sections.

Although not bound in nor issued with this Document, the following Sections of the Standardized Specifications of SANS 1200 shall form part of this Contract:

A	1986	GENERAL
AB	1986	ENGINEER'S OFFICE
C	1982	SITE CLEARANCE
D	1990	EARTHWORKS
DB	1989	EARTHWORKS (Pipe Trenches)
DK	1996	GABIONS AND PITCHING
DM	1981	EARTHWORKS (Roads, Subgrade)
G	1982	CONCRETE (Structural)
HA	1990	STRUCTURAL STEELWORK (Sundry Items)
HC	1988	CORROSION PROTECTION of STRUCTURAL STEELWORK
L	1983	MEDIUM PRESSURE PIPELINES
LB	1983	BEDDING (Pipes)
LE	1982	STORMWATER DRAINAGE
M	1996	ROADS (General)
ME	1981	SUB-BASE
MF	1981	BASE
MH	1996	ASPHALT BASE AND SURFACING
MM	1984	ANCILLARY ROADWORKS

The following SANS specifications are also referred to in this document and the Contractor is advised to obtain them from the Standards Division of SABS in Pretoria.

SANS 1921 (2004): Construction and Management Requirements for Works Contracts

Part 1: General Engineering and Construction Works;

Part 2: Accommodation of Traffic on Public Roads Occupied by the Contractor;

Part 5: Earthworks activities which are to be performed by hand;

The Bill of Quantities is based on the SANS 1200 system of specifications and measurement.

Where SANS specifications are available, these have been incorporated into the “Contract” section of this document.

Where overlapping specifications from the SANS 2001 series of specifications occur the appropriate SANS 1200 specifications have been incorporated in the Project Specifications. In such cases, the requirements of the latter shall prevail over the requirements of the SANS specification(s).

C3.3.2 AMENDMENTS TO THE STANDARD SPECIFICATIONS

INTRODUCTION

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

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

PS A	General
PS C	Site Clearance
PS D	Earthworks
PS DB	Earthworks for Pipe Trenches
PS DK	Gabions and Pitching
PS G	Concrete (Structural)
PS L	Medium Pressure Pipelines
PS LD	Sewers
PS LB	Bedding (Pipes)
PS LE	Stormwater Drainage
PS ME	Subbase
PS MF	Base
PS MH	Asphalt Base and Surfacing
PS MK	Kerbing and Channelling

PSA GENERAL (SABS 1200 A – 1986)**PSA 3 MATERIALS****PSA 3.1 Quality**

Where there is a standardisation mark for any material, all such material supplied shall bear the official standardisation mark.

Alternative materials or equipment proposed by the Contractor shall be tested. The test, as well as the materials or equipment, shall be approved by the Engineer prior to any such materials or equipment being built into the works and all costs involved in testing shall be deemed to be included in the rates tendered.

PSA 3.3 Applicable Standards for Cement

The standard cement specifications SABS 471, SABS 626, SABS 831 and SABS 1466 have been withdrawn and are replaced by the new SANS 50197-1 and -2: Common cements, and SANS 50413-1 and -2: Masonry Cement. These specifications will be applicable to this contract, and the descriptions and types of cements specified, will be based on the designations as defined in these specifications.

PSA 3.4 Ordering of Material

The quantities set out in the Schedule of Quantities have been carefully determined from calculations based on data available at the time and should therefore be considered to be only approximate quantities. The Contractor shall, before ordering materials of any kind, check with the Engineer whether or not the scope of work for which the materials are required is likely to change substantially. No liability or responsibility whatsoever shall be attached to the Employer for materials ordered by the Contractor except when ordered in accordance with the confirmation issued by the Engineer in writing.

PSA 4 PLANT**PSA 4.2 Contractor's Office Stores and Services**

The Contractor's camp shall be kept clean at all times and all surplus or rejected material shall be removed from site.

PSA 4.2.1 Site Diary

The site diary, in triplicate format, which will be supplied by the Contractor, must be filled in on a daily basis and submitted to the Project Manager or Supervisor on a daily basis. No claims will be considered without the site diary's schedules properly completed and submitted.

PSA 5 CONSTRUCTION**PSA 5.1 Survey****PSA 5.1.1 Setting out of the Works****Add the following:**

The Contractor will be responsible for the setting out of the works from the survey control provided by the Employer. It is the Contractor's responsibility to confirm the accuracy of the control prior to setting of the works.

PSA 5.1.3 As-Built Data**Add the following new Sub-clause:**

The Contractor shall submit the following "As-Built" data to the Project Manager to enable the Project Manager to complete the required record drawings before a Certificate of Completion will be issued:-

- (a) x, y, and z co-ordinates of every pipe joint. Note; each joint to be named after two adjacent pipes forming

the joint.

- (b) x, y and z co-ordinates of all scour valves, scour pipes and air valves.

The Contractor is required to tabulate this information in an electronic format that can be accessed on Microsoft Excel 2007 or higher. Authorisation by the Project Manager for the payment of the Certificate of Completion shall be withheld until all the above mentioned As-Built information has been provided to his satisfaction.

PSA 5.2 Watching, Barricading, Lighting and Traffic Crossings

Add the following:

Temporary Traffic Signs

The Contractor shall provide, erect and maintain on the site and at such positions on the approaches to the site all traffic signs necessary for the direction and control of traffic.

The details of all such signs, which shall conform to the current Road Traffic Ordinance and, and the departmental publication entitled "Safety in Road Construction", must be approved by the Project Manager before erection.

The signs shall be provided with reflectors or adequately illuminated at night in a manner approved by the Project Manager and kept clean and legible at all times. The Contractor shall reposition, cover or remove signs as required during the progress of the works.

PSA 5.4 Protection of Overhead and Underground Services

Replace with the following:

The Contractor is reminded of his obligations in terms of Clause 4 of the Conditions of Contract and Special Conditions of Contract to prove the actual position of all services on site before any work commences in the vicinity of the services. The Contractor is further required to measure accurately the chainage and level at which these services occur and to report this information to the Project Manager for comparison with the contract drawings prior to work commencing in the vicinity of the services.

The drawings illustrate the positions of services as accurately as has been possible to ascertain from existing records. However, it is possible that there are services existing which are not reflected on the Contract drawings which might have an effect on the works. Therefore, the Contractor must take cognisance of the above possibility and provide sufficient flexibility within his programme of works to accommodate any alterations that might be necessary.

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 adjustments, without the prior consent of the Project Manager.

Buried electrical and telephone cables shall be exposed using hand tools initially before allowing the uncontrolled use of picks and other implements, or before using machines to excavate. Supporting or diverting cables must be done by, or in consultation with, officials of the Electricity Service Unit, Eskom or Telkom respectively.

When cables are not in the positions shown on the drawings and cannot be found after proving trenches have been put down, assistance may be obtained by calling an official from the appropriate authority during office hours.

Existing services including water mains, sewer pipes, stormwater pipes and drains, electricity and telephone lines, cables, poles and conduits shall be protected, supported, maintained in service and restored to the condition in which found by the Contractor at his expense, or where necessary by the appropriate authority at the Contractor's expense.

Provided that where it is necessary to relocate such existing services, such relocation shall be arranged by and carried out at the Employer's expense.

PSA 5.8 Ground Access to Works

Add the following:

Where necessary the Contractor will make provision for temporary gates, ramps and roads to obtain access to the site. Where it involves these activities the Contractor will obtain the necessary approvals from the landowners to do so.

On completion of operations the Contractor shall restore the ground surface, wherever it may have been disturbed, to its original condition by filling in ruts with material similar to the material within the rut and levelling the ground and, where necessary, planting grass and shrubs as may be required. Any boundary fence which have been removed or damaged by these operations and activities shall be repaired and/or replaced at the Contractor's expense.

PSA 8 MEASUREMENT AND PAYMENT**PSA 8.2.2 Time Related Items****Add the following:**

An extension of time granted will not necessarily or automatically entitle the Contractor to additional payments of time related items. Additional payments for specific time related items after the granting of an extension of time must be motivated and substantiated by the Contractor and shall be subject to approval by the Project Manager.

PSA 8.5.2 Provisional Sums**Add the following new Sub-Clauses:**

A1.3.1 Additional tests required by the Project Manager.Unit: Provisional Sum

A1.3.2 Overheads and profit on item A1.3.1Unit: Percentage (%)

The provisional sum provided for additional authority tests shall cover the cost of acceptance control tests, carried out by a commercial laboratory, specifically ordered by the Project Manager.

The Contractor will still be required to carry out his own process control testing.

A1.3.3 Allowance for additional surveyUnit: Provisional Sum

A1.3.4 Overheads and profit on item A1.3.3Unit: Percentage (%)

The provisional sum provided for additional survey shall cover the cost of additional survey specifically ordered by the Project Manager.

A1.3.5 Allowance for relocation of servicesUnit: Provisional Sum

A1.3.6 Overheads and profit on item A1.3.5Unit: Percentage (%)

The provisional sum provided for the relocation of services shall cover the cost of the relocation of services carried out by other utility service providers.

A1.3.7 Allowance for third party quality inspectionUnit: Provisional Sum

A1.3.8 Overheads and profit on item A1.3.7Unit: Percentage (%)

The provisional sum provided for the third-party quality inspection shall cover this cost when specifically ordered by the Project Manager.

A1.3.9 Allowance for design, supply and install and commission temporary and permanent cathodic protection during the contract, including for specialist design and investigations as neededUnit: Provisional Sum

A1.3.10 Overheads and profit on item A1.3.9Unit: Percentage (%)

A1.3.11 Allowance for repair to prestressed concrete pipe joints using mechanical seals, comprising an internal EPDM band held in place by two stainless steel bands.Unit: Provisional Sum

A1.3.12 Overheads and profit on item A1.3.11Unit: Percentage (%)

PSA 8.7 Dayworks

Dayworks are covered in a separate particular Specification and are therefore measured in that section.

PSC SITE CLEARANCE (SABS 1200C – 1998)**PSC 3 MATERIALS****PSC 3.1 Disposal of Materials**

Replace the first paragraph with the following:

“All materials, other than that suitable for re-use in the Works, shall be disposed of at an approved tip. No burning of vegetation will be permitted.

Add the following:

The freehaul distance for this contract is unlimited. Contractors are to note that **no** overhaul will be paid.

The site is situated in a residential area and the Contractor shall ensure that all roads are to be kept clean, free of debris and pedestrians and property owners/tenants should have access to their properties at all times for the duration of the contract. Should the City of eThekweni indicate that roads have become soiled by material believed to be from this Contract, remedial measures shall be immediately instituted to rectify the situation. No additional costs or amounts shall be due or claimed for such remedial actions.

PSC -5 CONSTRUCTION**PSC 5.3 Clearing**

Add the following new Sub-clauses:

PSC 5.3.1 Sub-Clause 5.3.1

Where the pipeline route crosses an existing fence, a section of the fencing not exceeding 10.0m in length may be removed temporarily during construction and thereafter reinstated to a condition not worse than the original as soon as the pipeline has been installed and backfilled in the immediate vicinity of the crossing. For the period while the existing fence is dismantled, the Contractor shall erect, at the end of each day's operations, a temporary fence to close the gap in the existing fence.

PSC 8 MEASUREMENT AND PAYMENT**PSC 8.2 Scheduled Items****PSC 8.2.1 Clear and Grub**

Replace the first line with the following:

“The area designated by the Engineer to be cleared and grubbed will be measured in metres or to the nearest metre.”

The Contractor shall introduce parallel saw cut joints through the existing asphalt surface in all areas where removal of asphalt by milling is not being undertaken. The Contractor is to allow for sufficient depth of cutting to pass through an estimated 240 mm to 320 mm of asphalt.

Saw-cut asphalt is to be removed from site by milling or other method and disposed of as specified below.

PSC 8.2.10 Topsoil

Add to the Sub-Clause:

“The topsoil, where approved by the Engineer, shall be conserved for later use by stockpiling clear of the working area,”

PSC 8.2.11 Fences

Add the following new Sub-Clause:

Separate payment will be made for dealing with fences in the manner specified in PCS 5.3.1 above as scheduled.

Add the following new Sub-Clause:

PSC 8.2.13 Remove Pre-cast concrete kerb and store on site for re-use..... Unit: m

The unit of measurement shall be linear metres (m) net in place before removal and the rate shall cover the cost of removal as well as storage on site. Any damage to the kerbs will be the Contractors account.

PSC 8.2.14 Demolish and Remove Asphalt Surface.....Unit: m²

The unit of measurement shall be square metres (m²) net in place before removal. The rate shall include all works associated with milling or otherwise removing the asphalt layers to base course level (up to 320mm thick) or saw cutting the asphalt pavement parallel to the alignment on both sides and disposal of the material to an approved and licensed landfill site, including all disposal and dumping costs. The Contractor shall prove such disposal through weighbridge slips. The Contractor is to include for removal of asphalt surfacing in narrow widths from the main line to the valve chambers provided at the tie-in connections.

PSC 8.2.15 Saw-Cut Joints in Asphalt Surface.....Unit: m

The unit of measurement of saw cut joints in the existing asphalt surfacing shall be linear meters.

PSDB EARTHWORKS (PIPE TRENCHES) (SANS 1200 DB)**PSDB 1 BEDDING AND BACKFILL MATERIALS****PSDB 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 Cubic Metre (m³), 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.

PSDB 1.1 Watermains

- 1) "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.
- 3) Should the Contractor find that material excavated from the trench complies with the requirements of (1) and wish to utilise material excavated from the trench as bedding, cradle or blanket, such material shall be sieved prior to use to remove any particles greater than 10mm.

PS.DB.1.2 Sewer Pipes

- 1) Bedding for the sewers shall be class "C" for rigid pipe or "flexible" for flexible pipes. Where the sewer pipe offered is classified in accordance with [SABS 0102 part 1 1987](#) as a rigid pipe, the bedding shall be class "B" and for flexible / semi-flexible pipes, the bedding shall be as for flexible pipes as detailed in the Standard Engineering Specification Part DB, Earthworks for pipe trenches. However in the case of flexible / semi-flexible pipes the material to be used in the selected fill blanket and selected fill bedding cradle shall be selected granular material.

PSDB 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.

PSDB 3 MATERIALS

PS.DB.3 EXCAVATION, BACKFILLING AND REINSTATEMENT OF TRENCHES

- 1) It is considered that portion of the excavated material will not comply with the specification for material suitable for backfilling. It will be the Contractor's responsibility to use selective methods of excavation to ensure that this unsuitable material does not contaminate other materials suitable for reuse.

- 2) It is anticipated that a portion of the material excavated for trenches in existing natural ground may be classified as "Rock" in terms of Part DB and that blasting methods will be employed to facilitate excavation. Tenderers are to note that the unit of measurement shall be the cubic metre (m³), and that the rate tendered shall be inclusive of all work or operations necessary to drill, blast, excavate, backfill, spoil or stockpile the material.

- 3) 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. 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 off-site if deemed necessary. Temporary handling and/or stockpiling shall not be claimed separately, and the Contractor is to include in his rate for all works associated with this activity, delayed or not.

- 4) . No battering of excavations will be permitted, and the Contractor is to allow for lateral support on both sides of all excavations.

- 5) Notwithstanding the method of trench excavation adopted by the Contractor, the restriction on the maximum trench width 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.

PSDB 3.5 (c) Cement Stabilised Backfill

Add the following new sub-clause:

"Where scheduled or directed by the Engineer, backfill shall be stabilised with 5% cement by mass. The backfill material shall have a plasticity index not exceeding 10 and all material must pass through a sieve of aperture size not exceeding that specified in SANS 1200 LB, subclause 3.2.

The dry materials shall first be mixed in a cement mixer; where after sufficient water shall be added to produce the stiffest consistency available for placing and compacting with vibrators.

PSDB 3.6 Materials for Reinstatement of Roads and Paved Areas

Delete this sub-clause and replace with the following:

"Material used in the reinstatement of roadways shall fall into the following categories: -

- a) Foundation material recovered from the excavation of trenches in the existing roadways, shall, if so instructed by the Engineer, be set aside and re-used as subbase material. Asphalt surfacing removed by milling may be mixed with the excavated base and other pavement layers if, by so ordering, a suitable quality of material can be achieved for use in the lower layers of the road rehabilitation. Large lumps of asphalt of underlying base material shall not be permitted and shall be removed by sieving through a sieve with an aperture of 32mm. Asphalt surfacing removed by methods other than milling shall not be incorporated into any backfill and shall be disposed of as indicated above.
- b) New material, which shall conform to the requirements of: -
- Clause 3.2.1 of SANS 1200 ME for the subbase
 - Clauses 3.2 and 3.3 of SANS 1200 MF for the basecourse
 - Clause 3.2.2 of SANS 1200 ME for the gravel wearing course
 - Clause 3 of SABS 1200 MH for the asphalt surfacing”
- c) The edges of existing surfaces shall be trimmed to a depth of at least 100mm with an approved mechanical cutter to obtain even regular and straight joints and then painted with a primer. The permanent reinstatement shall comply of the following:

CATEGORY	TYPE OF ROAD	ASPHALT LAYER	CRUSHER RUN LAYER	TRENCH BACKFILL MATERIAL
A	Arterials, CBD Streets and Industrial Roads	240mm Mix D in 3 layers of 80mm each	150mm	CBR 7 or more
B	Residential Bus Route and Collector Roads	160mm Mix D in 2 layers of 80mm each	150mm	CBR 7 or more
C	Residential Roads	80mm Mix D	150mm	CBR 4 or more
D	Parking Areas and Access Roads	50mm Mix A	150mm	CBR 4 or more
E	Footpaths	25mm Mix A	75mm	CBR 4 or more

PSDB 3.7 SELECTION

Add the following to the clause:

Contractors are advised that the stockpiling of excavated material suitable for use as backfilling alongside trench excavations is strictly prohibited. Once excavated this material is to be removed and stockpiled in a suitable area as agreed with by the Employer and Engineer. All other excavated material unsuitable for re-use, either as backfill or for the formation of embankments shall be disposed of at the spoil site. No overhaul will be paid.

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 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 wallings 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 shall commence immediately upon removal of the asphalt surfacing and proofing of services in the immediate vicinity where the shoring is being installed.
- 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) A separate item has been allowed for in the Bill of Quantities for the provision of lateral support systems and the Contractor shall not allow in his excavation rates for shoring as necessary. Note that the rate provided is to cover all shoring, including that protection required under crossing services etc. The Contractor is to take this into account in his determination of rate and methodology.

The cutting back of the trench sides shall be to the Contractor's account.

PSDB 5 CONSTRUCTION

PSDB-5.1 Precautions

PSDB 5.1.4 Existing Services that intersect or Adjoin Trenches

Add the following to the clause:

In all cases where underground power or telephone cables, watermains or other services are shown on the drawings, either crossing or adjacent to the pipe, or where from site observations it can reasonably be accepted that such services are likely to exist where excavations are to take place, the Contractor shall, without instructions from the Engineer, carefully excavate by hand, to expose and prove position of such prior to the commencement of the main trenching operations in the area. The cost of this pilot trenching shall be included under payment clause D 8.3.8 – Excavation and Backfilling in All Materials. However, here any buried service is not located by the excavation of pilot trenches in the expected position the Contractor shall immediately report such a circumstance to the Engineer who will decide what further searching or other necessary action is to be carried out and instruct the Contractor accordingly. The cost of this additional searching shall be to the Employer's cost and will be paid for under item D 8.3.8- Proving Existing Services.

Should any service be damaged by the Contractor in carrying out the works and should it be found that the procedure 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.

The trench width required for proving of services need only be of sufficient width to enable the service to be exposed.

PSDB-5.1.5 Trench Excavations

Add the following additional sub clause:

"The precautions for excavations as specified in Clause 5.1.1 of SANS 1200 D, 1200 DA, shall also apply to all trench excavations.

The Contractor shall take all the steps necessary to ensure that no person is required or allowed to work in a

trench or any other unsupported overhanging excavation which more than 1,5 m is deep, and any excavation which has not been adequately supported, shored or braced if there is any danger whatsoever of the sides of the excavation collapsing. The support, shoring or bracing to be designed and constructed by the Contractor, shall be strong and sturdy enough to support the sides of the excavation in question.”

PSDB 5.4 Excavation

Add the following to the clause

General

- Excavation shall be undertaken in whatever material is encountered and to such levels and widths as are indicated on the drawings, in the specification and as instructed by the Engineer. Trench excavation shall be undertaken in narrow trenching conditions with vertical sides necessitating the use of shoring and open battered trench excavation will not be permitted unless otherwise stated in Project Specification.
- Control of the dimensions of the excavations shall be by means of boning rods and sight rails, an acceptable base beam device or other approved method. If the first method is used the Contractor shall erect sight rails over the centre of each horizontal or vertical bend and along the length of the excavation with a maximum distance of 30m apart and with a minimum number of 3 for any one length of excavation being undertaken. The centre line of the pipeline shall be denoted on each sight rail both back and front by a single vertical line and either side of the centre line painted with contrasting colours.
- The Contractor shall place a reference peg alongside each sight rail, take the levels and give their values to the Engineer.
- Unless otherwise approved by the Engineer the excavation of trenches shall commence from the lower reaches of the trench system and proceed uphill. The total length of open trench in advance of the backfilled trench shall be restricted to a maximum of 200m.
- Should the Contractor excavate to a greater depth than specified he shall, at his own expense, replace the excess material so removed with selected fill compacted to 93% Mod. AASHTO density, or grade 10/26 concrete if the use of selected fill is not practical.
- Where site conditions permit, all materials excavated and required for backfilling shall be removed and neatly stacked where possible along the higher side of the trench, care being taken to restrict the area so occupied so as to cause the minimum of obstruction. Care shall be taken to protect existing structures such as walls, fences, gateways and also hedges, trees, gardens, etc., from damage by material so stacked.
- It is envisaged that all excavation is likely to occur in soft sand and collapsible materials. The Contractor is to allow for the installation of sheet piles on all sides of all excavations. Adequate quantities of sheet piling materials are to be available for the contractor to meet his programme. No un-supported excavations will be permitted at any time and any damage to adjacent road works resulting from settlement into the excavations shall be repaired at the Contractor's expense.
- It is envisaged that the Contractor shall install sections of pipe through the existing road crossings in a single operation so as to minimize the impact on traffic movements. The Contractor is to take this into account in his programming, ordering processes and methodology.
- The Contractor is at liberty to utilize all materials excavated in his backfill, provided they comply with the requirements of the SANS Specifications for the appropriate work description. Sieving of the excavated material will, however, be necessary to remove all particles greater than 10mm maximum dimension.

PSDB 5.4.1 Blasting Restrictions

a) General

Blasting shall not be carried out without the prior consent of the Engineer. This consent will not be given where in the opinion of the Engineer, blasting may give rise to unnecessary risk or damage to surrounding property when other means of excavation are available to the Contractor. Where consent to blasting is given, such

consent shall in no way relieve the Contractor of any of his liabilities under the contract. The Contractor shall notify the Engineer 24 hours in advance of any blasting to be carried out on site.

b) Blasting Near Dwellings/Installations/Services

- Prior to any blasting being carried out, representatives of both the Employer and the Contractor shall thoroughly inspect each private property surrounding the site of the works for any structural defects. All defects shall be photographed by the Employer's photographer and brought to the property owner's attention in writing.
- The Contractor is to submit to the Engineer for approval a professional report on the proposed method of blasting to be adopted for the works.
- During the initial blasting on site the Engineer shall arrange for a survey to be carried out in order to monitor the magnitude of the blast vibrations and to establish the most vibration sensitive point on the perimeter of the site. Should it be required, the Contractor shall modify the adopted method of blasting as instructed by the Engineer.
- For every blast carried out on site the Contractor shall provide three vibro recorders and a peak particle velocity meter. Calibration certificates are to be supplied to the Engineer prior to commencing blasting on site. The Engineer shall arrange for random checking of the calibration of such instruments.
- The Contractor shall keep full records of every blast on site, e.g. number, depth and size of holes, amount and type of explosive used per hole, number of blasts at any one time, magnitude of recorded vibrations etc., a copy of which is to be forwarded to the Engineer.
- All blast surfaces are to be covered with mats and/or a suitable thickness of soft cover material all to the satisfaction of the Engineer.
- For every blast carried out on site, the Contractor shall cover the cordtex etc., with soft sandy material to dampen the noise levels of the blast all to the satisfaction of the Engineer.
- The maximum allowable peak particle velocity measured at any point 10m from the nearest structure to the blast shall not exceed 25mm/sec.

The Contractor shall include for all costs in complying with the above requirements/ conditions in the tendered rates for excavation.

Notwithstanding any of the requirements of the Specifications the Contractor will be required to carry out a sufficient number of test blasts (minimum 3), each comprising of a maximum number of 9 holes charged with small charges, in order to ascertain the attenuation effects of the in-situ material and to satisfy both himself and the Engineer that the proposed methods of blasting will not damage any existing services and/or dwellings and structures.

All persons occupying property in the vicinity shall be informed in writing at least 24 hours before the first blast and shall be informed of them warning procedures to be employed. In addition, before any blasting is carried out, the Contractor shall notify the Durban City Police in writing of proposed operations, the warning procedures to be employed, and the anticipated duration of the blasting operations.

Immediately prior to blasting, all approaches to the area shall be guarded by personnel carrying red warning

flags.

PSDB 5.5 Trench bottom

- **Add the following to the subclause:**

For welded steel pipes, the trench shall be widened and deepened over a suitable length at the joints to provide a minimum clearance of 500mm on each side of and beneath the pipe to allow working space for the jointing. The trench will also be widened and deepened over a suitable length at all air valve and scour valve installations to cater for the chamber. This additional excavation is to be included in the tendered rates.

In waterlogged conditions and/or where so instructed by the Engineer, a 150mm thick layer of imported single sized stone (19mm size unless otherwise instructed by the Engineer) with a geo- textile fabric filter surround ("Bidim" Grade A4 or similar approved) shall be constructed under the bedding layer specified for the pipes.

PSDB 5.6.3 Disposal of soft material

PSDB 5.6.3 Disposal of Soft Excavation Material

- **Add the following to the sub-clause:**

Material which the Engineer considers to be unsuitable for the bottom of the trench shall be excavated to depths as instructed and disposed of as surplus material. Surplus and/or unsuitable excavated material must be disposed of at the closest municipal dumpsite. The resultant space shall be refilled, as ordered, with approved material and compacted to a 93% Mod. AASHTO density.

PSDB-5.6.4 Disposal of soft, intermediate and hard rock material

Surplus and/or unsuitable excavated material must be disposed of at the closest municipal dumpsite. No overhaul will be paid and the rate is all inclusive for such disposal, including for any fees or charges levied in this regard.

PSDB-5.6.8 Transport for Earthworks for Trenches

For this Contract all haul will be regarded as free-haul and the cost of transportation of all materials will be deemed to be included in the rates and prices tendered in the schedule of quantities.

No overhaul will be payable on this Contract.

PSDB 5.7 Compaction

- **Add the following to DB 5.7:**

The unit rate for excavation and backfilling in all materials shall include for compacting backfill to 93% Mod. AASHTO density. Each trench shall be backfilled in layers not exceeding 300mm in thickness.

PSDB 5.7.2 Areas Subject to Traffic Loads

Replace sub-clause with the following:

- All backfill material shall be compacted to at least 95% Mod. AASHTO + 0.5 S (S = standard deviation).
- Backfill materials such as cohesion-less sand (Umgeni sand or similar, which is easily eroded) is not permitted.
- Bedding materials such as Umgeni sand or similar approved non-cohesive materials shall be compacted to 100% Mod. AASHTO by full saturation or similar methods approved by the Engineer, it being noted that the Contractor shall take all necessary precautions, at his own cost, to prevent the pipes from floating. Compaction of bedding materials to 100 % Mod. AASHTO is required for the entire contract. All costs for providing the water required for the saturation of the material shall be included in the tendered rates.
- Backfill materials for the road crossings shall be unspecified base crushed stone which the Contractor

will be required to obtain from a commercial source. Compaction of the material shall be to at least 96 % Mod. AASHTO + 0.5 S. In addition the backfill material shall be stabilised by the addition of 2 pockets of cement per cubic metre of backfill.

- In areas where normal compaction is ineffective and/or subsoil seepage is evident, 300mm of the unsuitable material must be replaced with 300mm of approved granular material as directed by the Engineer.

PSDB 5.7.3 Add the following additional sub-clause

Should any subsidence take place in any trench after filling and should the Contractor fail to attend to such settlement within 4 hours of being instructed to do so by the Engineer, then the Employer may take whatever steps are necessary such as erection of barricades, importing fill material, etc., at the Contractor's expense and without relieving him of any of his responsibilities under this contract.

PSDB 7.1 TESTING

Notwithstanding the contents of Clause 7.1, the Contractor shall bear the cost of all quality control tests regardless of whether the tests indicate acceptable compaction or not.

The following are the minimum frequencies for the process control tests to be executed by the CONTRACTOR at his own expense:

- Pipe bedding: one density test on each 25 m of pipe trench.
- Normal trench backfilling: one density test on every second layer for every 25 m of pipe trench.
- Backfilling in areas subject to vehicle loads: one test on each layer at intervals not exceeding 25m of pipe laid AND one test on each layer of 150 mm at each road crossing.

The positions of this minimum number of density tests shall be determined randomly by the Contractor and shall be clearly documented with the results. The results of the tests shall be submitted to the Engineer and shall prove to the Engineer that the work as a whole was done satisfactorily.

The Engineer could order additional tests, over and above the minimum tests. Payment for these tests will be made under Item 1.3.3 if the tests indicate that the density is as specified. If any tests fail, the cost of such tests shall be for the account of the Contractor.

PSDB 8 MEASUREMENT AND PAYMENT

PSDB 8.1 Basic Principles

Disposal of surplus and/or unsuitable material will be as specified in PSDB-5.6.3 and PSDB-5.6.4. No additional payment other than the tendered scheduled rates will be made for such disposal of material.

PSDB 8.3 Scheduled Items

PSDB-8.3.3 Excavation Ancillaries

PSDB-8.3.3.4 Overhaul

Delete this Clause and item as well as all references to restricted free-haul as overhaul is not applicable to this Contract.

PSDB-8.3.5 b) Services that adjoin a trench

- **Add the following:**

“All existing pipelines that trenches are to be excavated above shall be regarded as a service that adjoins the trench.”

PSDB 9 COMPACTION OF TRENCHES

Tenderers are to note that in all cases the compaction of the trench bottom and the trench backfill shall be to 95% Mod. AASHTO. 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.

PSDB 10 BACKFILLING OF SERVICE TRENCHES

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

PSL MEDIUM PRESSURE PIPELINES (SANS 1200 L)**PSL 3 MATERIALS**

The Contractor shall supply and install all pipes and fittings for the works except material which will be supplied by the Employer.

All pipes shall be API Schedule 40 steel pipes. All steel pipes shall be coated internally with Solvent Free Epoxy and externally with 2LPE coating.

All flanges on flanged couplings shall be drilled in accordance with Table 16 of BS4504.

All bends shall be minimum radius bends unless otherwise specified or indicated on drawings. The specials shall comply with the requirements of SANS Specification 719 unless otherwise specified and shall be manufactured with API schedule 40 pipes. Where specials have to be attached by welding the diameters of the specials shall exactly match those of the pipes supplied.

Except for the matching flanges supplied by the Employer in respect of the valves, the Contractor shall supply all other flanges on pipes and specials, suitable for the welding of the pipes and specials in accordance with Table 16 of BS 4504.

Bolts and Nuts shall be in accordance with SABS 1700 unless otherwise approved by the Engineer and shall project two threads beyond the run-out of the nuts. All bolts and nuts and washers shall be hot dip galvanised.

Electrolytic or other special corrosion protection methods are not required.

PSL 3.4 Steel Pipes, Fittings and Specials**PSL 3.4.1 General****Add the following to L 3.4.1:**

The pipes to be laid under this contract are DN1200 and DN1400 diameter steel pipes.

It is noted that certain special precautions need to be taken to avoid excessive deflections and over-stressing of the pipeline material during construction. Various physical properties as well as requirements and recommendations for construction of the pipeline are as follows:

Diameter (mm) NB	Outside Diameter (mm)	Length (m)	Grade	Plate Thickness (mm)	Mass kg/m	Coating	Lining	End Preparation
1400	1422	12.192	X42	11.1	379	2LPE	SFE	Plain
1600	1626	12.192	X42	12.0	470	2LPE	SFE	Plain

PSL 3.4.4 Fittings and Specials**Add the following to L 3.4.4:**

The lining and wrapping of specials, which are to be butt-welded, is to be terminated 100 mm from the end of the pipe. The lining of specials which are to be sleeve welded shall be taken to the end of the pipe and the wrapping is to be terminated 100 mm from the end. On flanged specials the wrapping and lining is to be taken to the end of the pipe.

Pipes up to and including 500 mm shall be sleeve welded with the sleeve having a width of 100 mm and the internal diameter being the measured outside diameter of pipe plus 3 mm. The ends of pipes shall be plain finished. Pipes larger than 600mm shall be finished for butt welding with a root face of 1.6mm (+0.8mm), beveled at an angle of 30 deg. (+5 deg., -0 deg.).

All specials shall be protected in accordance with clauses PSL 3.9.2.3. All electrodes used for welding of joints shall comply with SABS 455. All pipes are to be marked externally with one 50mm wide band of yellow enamel

paint at the quarter and mid-points of the length. Pipe lengths are to be hard stamped, within 50mm of the pipe end and adjacent to the weld seam, with the Contract number, item number and pipe number on the external face of each pipe, in characters not less than 5mm in height.

Hydraulic tests, to the requirements of SANS 719, Clauses 6, 7.3 and 5.2.4, shall be conducted on each pipe and the pipe number shall be indicated on each test certificate.

PSL 3.8 Jointing Material

Add the following as L 3.8.2:

Where flexible couplings are called for they shall be the double flanged and sleeve type, manufactured from rolled steel, and fitted with rubber rings suitable for jointing plain-ended pipes. They shall be of the slip-on type coupling and couplings comprising bolt over arrangements shall not be acceptable.

The rubber jointing rings shall be manufactured from first grade natural rubber to B.S. 2494 Class D. All bolts and nuts shall comply with SABS 135 or SABS. 136. Each sleeve shall be fitted with a centre register unless stated otherwise in the Project Specification.

Each coupling shall permit a repeated movement of 10 mm to cater for thermal expansion and contraction of the pipe, and allow for the following angular deflections:

- 6° up to and including 600 mm diameter;
- 5° over 600 mm up to and including 750 mm diameter;
- 4° over 750 mm up to and including 900 mm diameter;

- 3° over 900 mm up to and including 1 200 mm diameter;
- 2° over 1200 mm diameter.

Add the following to L 3.8.3:

Gaskets shall be manufactured from "Klinger 200" or other approved material which complies with the requirements for Grade B of B.S. 2815.

All gaskets shall be 3 mm thick and cut so that the annular section is completely within the bolt circle, i.e. ring gaskets with no bolt-holes.

All gaskets shall be purpose made. Hand cutting and trimming of gaskets on site will not be acceptable.

Care should be taken to ensure that all gaskets are packed properly and are not damaged by bending. For larger sizes the gaskets shall be suitably supported by wooden frames during transit and while in store.

Any item of pipework that is found to have flanges that are incorrectly drilled shall be rejected. Reaming of boltholes to oversize dimensions in order to make a particular piece fit shall not be permitted.

PSL 3.9 Corrosion Protection

The internal lining shall be Solvent Free Liquid Epoxy, applied in accordance with EWS Specifications.

The external coating shall be Visco-elastic Polyisobutene (2LPE) Coating systems, applied and repaired in accordance with the EWS Specification. Particular attention to EWS Specification PCS7 and the specification of the repair methodology following welding, is required.

PSL 3.9.2.3 Repairs to Coatings and Linings

Replace the clause with the following:

Visco-elastic Polyisobutene (2LPE) Coating and solvent free liquid epoxy lined or cement-mortar lined pipe shall be repaired as specified in this clause.

A. External Repairs

1. Detection of Defects in Visco-elastic Polyisobutene (2LPE) Coating by Holiday Tests

Each pipe length shall first be placed on suitable dunnage adjacent to the trench. The Contractor shall then arrange for Holiday tests to be undertaken on the accessible portion of the pipe coating surface by the non-destructive testing firm appointed in terms of this contract document or the Engineer's representative, whichever is applicable. It shall be a requirement of this contract that the Holiday testing device utilized be calibrated and approved by the Engineer prior to the conducting of any Holiday tests.

2. Repairs

Any damage to the coating system occurring during the manufacturing, storage or transportation of the coated pipes shall be repaired in accordance with the relevant repair procedure as follows utilizing the following materials:

Corrosion Protection Layer: Stopaq CZH Paste and CZH Wrappingband (or similar approved)

Mechanical Protection Layer – Option 1: Stopaq Outerwrap PVC (or similar approved)

Mechanical Protection Layer – Option 2: Stopaq Outerwrap PE (or similar approved)

Mechanical Protection Layer – Option 3: Stopaq PE Patch Repair Material (or similar approved)

Repair Procedure:

- a) Remove damaged coating with a razor knife; sand grinder, power wire brush or equivalent.
- b) Care should be taken not to expose the steel surface during the repair procedure.
- c) Eliminate all sharp edges.
- d) Clean the damaged area and adjacent pipe coating with a dry clean cloth to remove the presence of dust, dirt and any foreign material.
- e) Abrade (using sandpaper) the adjacent polyethylene coating extending 100mm beyond the damage.
- f) Clean damage area again.
- g) Fill voids and crevice's in damaged coatings with Visco-elastic paste material prior to the application of repair patches.
- h) Unroll the filler material and cut off the required amount, leaving the release paper in place.
- i) Firmly press the material into the damaged area by hand and remove the release paper.
- j) After filling the damaged area, remove the excess filler to create a smooth surface.
- k) Patch preparation:
 - Cut a patch of visco-elastic material large enough to extend a minimum of 50mm beyond the edge of the edge of the repair zone
 - Trim each corner of patch about 10-25mm at a 45° angle.
- l) Assist adhesion by removal of moisture with the use of a dry rag.
- m) Remove oil with the use of isopropanol.
- n) Remove the release liner from the cut repair patch.
- o) Place the repair patch on the damage point and smooth down by hand.
- p) Holiday detection shall be performed on repair using a maximum voltage of 15kV.
- q) Cover the coating with the relevant mechanical protection layer which has been specified on the project.

3. Scour and air valve tees and crotch plates

- i) Scour and air valve tees and crotch plates that are to be buried shall be protected in accordance with the requirements of A.4.a(i) above with due allowance being made for the 24-hour curing period.
- ii) Exposed specials in chambers including valves, flanges, crotch plates, flexible couplings etc. shall be protected by the application of "Copon Hycote 151", "Arc 982" or similar approved epoxy coating to a minimum dry film thickness of 300 microns. Surface preparation and application shall be strictly in accordance with the manufacturer's instructions.
- iii) When coating valves, care shall be taken to prevent the epoxy coating covering the descriptive name plates and flow direction indicators on the valves by masking off these plates.

4. Buried Valves

Buried valves or other appurtenances with intricate shapes will be inappropriate for wrapping with a tape system. Such items shall be protected by the application of a zinc-rich epoxy primer such as "Berger Master", "Zinc Anode 304" followed by two coats of a pitch extended epoxy resin coating such as "Fosroc Nitocote ET550", "Epilux 5 Coal Tar Epoxy" or similar approved to a minimum dry film thickness of 250 microns.

Alternatively, a petrolatum system "Denso" type or similar approved may be employed and then wrapped in polythene sheeting to the approval of the Engineer.

B. Internal Repairs – Epoxy Lined Pipes

1. Detection of Defects in Epoxy Lining by Holiday tests

Each pipe length shall be first placed in position in the trench, welded to the preceding pipe and the lining at the joint reinstated (see B.2.b of this Clause). Once all work is complete in a particular length of pipe, the Contractor shall arrange for the testing of the pipe with a "wet sponge" detector set at 90 Volts in order to detect any electrical insulation defects.

2. Surface Preparation

a) Defects in epoxy lining detected by holiday testing

At each pinhole detected by the Holiday test, the surrounding area shall be abraded to 25 mm beyond the defective area. It is to be noted that any cluster of pinholes within a radius of 25 mm shall be regarded as one defect. The abrasion shall be carried out with clean emery paper of 80 to 100 mesh so as to provide a suitably rough surface profile without causing the removal of excessive amounts of coating material.

b) Epoxy lining damaged by construction operations, joint repairs (including bends), lining to scour and air valve tees, access openings, stubs and valve bypasses

i) In order to avoid damage to the pipe lining occurring as a result of construction activities, all possible care shall be exercised during construction, the following procedures being required:

- Wet sacking or rubber matting shall be placed on the pipe invert at areas where welding or flame cutting operations are in progress to prevent damage to coating from weld spatter or molten metal. This requirement shall be strictly enforced.
- Foam shall be provided for the placing of tools etc. on the internal pipe surface.
- Soft-soled shoes shall be worn by all personnel working inside the pipe.

ii) All damaged and blistered epoxy lining shall be removed back to sound epoxy by mechanical grinding or other approved means.

iii) The exposed steel surface shall then be prepared in accordance with the requirements of section A.2.b(ii) and 1.2.b(iii) of the clause.

3. Cleaning of Area to be Repaired

Grease and oil shall be removed with a non-volatile solvent (eg "Aquasolve", "Arc Nr.261 Safety Solvent Cleaner" or similar approved). The surface shall then be cleaned with potable water and allowed to dry completely. To this end adequate ventilation shall be provided.

4. Methods to Repair to be Carried Out**a) Defects in epoxy coating detected by Holiday tests**

- i) The roughened area of lining and the defect shall then be repaired by the application of a solvent free epoxy repair material (such as "Cupon Hycote 151", "Arc 982", "Arc 855", or similar approved) to a minimum dry thickness of 300 microns.

A "halo" of 1 to 2 mm of the abraded material shall be left uncovered around the repair.

The patch material shall be of a different colour to the pipe lining material.

- ii) In the application of the epoxy the following shall be strictly in compliance with the manufacturer's instructions:

- Method of application (type of brush or roller.)
- Over coating time
- Temperature range for application
- Mix proportions of activator to base. This shall be strictly enforced, and splitting of manufacturer-supplied packs shall be allowed only if subsequent bending is carried out strictly by mass to the correct proportions.
- Method of mixing base and activator.
- Number of coats to achieve the specified thickness.
- Safety aspects eg eye and hand protection, ventilation, fire precautions, etc.

- iii) After the repair has been adequately cured, the repair and the surrounding 250 mm of epoxy lining shall be tested for electrical insulation defects. No defects will be permitted.

b) Patch Repairs to Pipes Damaged by Construction Operations and Joint Repairs (including Bends)

- i) The roughened area of lining shall be repaired as described in B.4.a(i) above.
- ii) The requirements of Clauses B.4.a(ii) and (iii) above shall then be complied with.

c) Lining to scour and air valve tees, access openings, stubs and valve bypasses

- i) The repair procedure shall be as described in B.4.a(i), (ii) and (iii) above.

The epoxy repair material shall be applied to overlap the existing sound cement mortar lining by 25 mm at access openings, valve bypasses and scour tees.

PSL 4 PLANT**PSL 4.1 Handling and Rigging****Add the following to L 4.1:**

The Contractor shall supply, operate and maintain an adequate fleet of vehicles including cranes to be used for the safe conveyance of the pipes, specials and fittings.

The pipes and specials shall be handled with care at all times to avoid damage to them or to the protective coatings. The equipment for the purpose of loading, transporting, unloading and moving and the manner in which they are handled shall be subject to the approval of the Engineer.

During transport, the pipes and specials shall be supported on suitable pipe saddles such that all pipes and specials shall be separated so as not to bear against each other and shall be handled with care at all times to

avoid damage to them or to the protective coatings. The equipment for the purpose of loading, transporting, unloading and moving and the manner in which they are handled shall be subject to the approval of the Engineer.

The use of bare cables, chains, hooks or narrow skids will not be permitted and the Contractor shall supply canvas slings and padded skids and ramps of a sufficient width to prevent damage to the protective coating. The dragging or skidding of pipes and specials in contact with the ground shall not be permitted.

When handling 12m pipe lengths the pipes shall be lifted with band slings (minimum 300 mm wide) placed centrally around pipe at two points 6 metres apart.

PSL 5 CONSTRUCTION

PSL 5.1 Laying

PSL 5.1.1 General

Add the following to L 5.1.1:

It is of paramount importance that the right type and class of pipe be laid as shown on the longitudinal sections. Invert levels shown on the drawings are the levels of the interior surface of the pipes at the lowest point of cross section. However, levels at vertical curves shall be determined when the exact location of pipe joints within the influence of the curve is known.

Pipes and specials shall be lowered gently and carefully into the trench without jarring or bumping by crane, derrick or other approved lifting tackle and care shall be taken not to damage the pipe or its sheathing. Pipes and specials with soft sheathing shall be supported in stout wide canvas slings and no wooden blocks shall be used to support such pipes, either on the side or in the trench. Any supports required shall be formed with fine sand gravel.

The Contractor shall ensure that all pipe barrels are evenly supported over the whole of their length and that no weight is taken by the joints. The trench bottom, shall, where necessary, be accurately trimmed by hand and each pipe shall be firmly bedded down before backfilling is commenced.

The Contractor's special attention is drawn to the requirements for work in confined spaces and for the provision of shoring and sheet-piling of trenches and excavations.

It is noted that a through flow of air is required when work is to be carried out inside the pipeline. The necessary electrical equipment and fittings must be provided to produce this airflow. An Item in the Schedule of Quantities has been provided for complying with these requirements.

PSL 5.1.2 Damage

Add the following to L 5.1.2:

Inspection at the Laying Site

All pipes, specials, valves and fittings shall be carefully examined by the Contractor for internal and external damage at the following stages:

- (a) on arrival at laying site;
- (b) prior to laying;
- (c) after laying;
- (d) prior to backfilling; and
- (e) during backfilling.

All damage or defects of any kind shall be repaired by the Contractor in accordance with Clause 3.9.2.3 and to the satisfaction of the Engineer immediately after detection at any of the above inspections. Where, in the opinion of the Engineer, satisfactory repairs are practicable, the damaged materials shall be replaced by the

Contractor at his own cost.

PSL 5.1.3 Keeping Pipelines Clean

Add the following to L 5.1.3:

Exposed ends of the pipe in the trench shall be tightly closed by a suitable mild steel end cap at all times when pipelaying is not in progress.

Add the following as L 5.1.5:

Stacking of Pipes and Specials

Where a pipeyard is provided, all pipes and specials shall be neatly and methodically arranged on the ground on delivery, as directed by the Engineer. They shall be segregated according to diameters and working pressures and the various stacks shall be arranged and separated in such a way that a pipe of any diameter and working pressure can be located from the stacked position for transportation to its laying position without necessity of moving other pipes.

PSL 5.2 Jointing Methods

PSL 5.2.2 Flanges (Steel Pipelines)

Add the following to L 5.2.2:

Flanges to fittings or joints will generally be to SABS 1123. The Contractor shall be responsible for checking the flange drilling of all fittings and for supplying flanges drilled to match. No additional payment is to be made for this work and the Contractor is to allow for such in his rates.

Contractors are to allow in the rates for the supply and installation of mild steel pressed washers (two per bolt) for all flanged fittings. The washers shall have an ID of 2 mm greater than that of the bolt. Tenderers are to ensure that the length of the bolt includes allowance for the washers.

All bolts, nuts and washers used are to be electro galvanised and yellow passivated.

PSL 5.2.3 Welding (Steel Pipelines of Diameter 600 mm or greater)

Add the following to L 5.2.3:

Welding Procedures

Prior to the commencement of field welding, welding procedures shall be established and approved by the Engineer and thereafter such welding procedures shall be adhered to during subsequent construction and shall not be altered unless specifically authorised by the Engineer.

Tenderers shall, if required by the Engineer, provide a detailed description of all aspects of the welding technique to be employed both in jointing pipes in assemblies above trench level and in executing in-situ welds whether above or below ground level. The information required shall include a drawing of the prepared end for sleeve or butt-welding of flanges and pipes and shall describe the backing rings which must be removed. Records shall be kept by the Contractor to enable each weld to be subsequently identified with the welder concerned.

Procedure Qualification Tests

Before the Contractor commences routine field welding the procedure tests laid down in API 1104 clause 1.4 shall be carried out.

The minimum number of root bead welds, the minimum number of second bead welders and the type of clamp used (internal or external) shall be given in the description of the welding technique as specified above.

The Contractor shall maintain a record of all welders employed on the works giving particulars of each individual welder's qualification tests carried out in terms of API 1104, the cost of which shall be borne by the Contractor. Qualification testing of welders shall be conducted in the presence of the Engineer or his

representative.

Before a welder is employed on tack or root welds, he shall carry out a test tack and root weld on a pipe of the same materials and under conditions as close as possible to those experienced on the actual pipeline.

If icicles are present in the bore of the pipes or the weld metal projects more than 5 mm the welder shall not be permitted to undertake tack or root welding. The completed test weld pieces shall be visually examined and then radiographed. Should the weld appear sound it shall be subjected to approved root and face bend tests. Test pieces shall be retained by the Contractor and marked so that they can be identified with the welder carrying out the test.

Weather

Field welding shall not be performed when the surfaces to be welded are wet or during periods of high wind unless the operator and the work are properly protected and sheltered in an approved manner.

Preparation of Joint

Where scarf cutting of the pipe ends is required in the field the pipe ends shall be prepared by machining or machine flame cutting. Hand flame cutting shall not be permitted except under the following circumstances;

Field Welding

Steel pipes may be cut by hand flame as follows:

- (a) In the case of cement lined steel pipe, the cement lining shall be chipped back 50 mm after the initial cut and the pipe then re-cut ± 10 mm from the original cut in order to remove any "blow-back".
- (b) In the case of epoxy lined steel pipe, all damaged lining shall be removed and reinstated in compliance with the Clause 3.9.2.3.
- (c) All flame cuts shall be made good by grinding to form the correct gap between steel sections prior to welding.
- (d) Bevels may be cut by flame provided they are made good by grinding.

When jointing pieces by butt-welding the number of tack welds applied shall be kept to a minimum to be effective in holding the pipe ends securely and to maintain the required root gap prior to welding but shall in any case be not less than four.

Double ending of pipework shall not be allowed on 12m pipe lengths.

PSL 5.3 Setting of Valves, Specials and Fittings

Add the following to L 5.3:

Valves and fittings shall be installed in accordance with the manufacturer's instructions. Where valves are supplied by the Employer at Municipal depots they shall be collected by the Contractor at such depots and transported to the laying site. Valves shall be enclosed in chambers in accordance with the drawings and specifications and shall be installed with their operating spindles vertical. The Contractor shall supply the insertions and bolts necessary for the installation of the valves.

Jet dispersers shall be of the cone and splitter type cast in iron or steel with heavy zinc galvanising, to the Engineer's approval. Flanges and bolts shall be sealed in mastic after installation.

All air valves shall be set level.

All scour valves shall be installed in such a way that the spindle is vertical.

The Storage, Commissioning and Installation of Butterfly Valves

Butterfly valves shall be stored, installed and commissioned so that the valve blade seal is protected at all times from oxidation, ozone attack and the ingress of dirt.

Storage

- i) It is required that the valve is stored in the vertical position.
- ii) The valve should be stored in the cracked position (i.e. not shut).
- iii) The valve should not be stored in the vicinity of electrical equipment.
- iv) The valve should be stored under cover and protected from temperature extremes.

Installation and Commissioning

- i) Prior to the installation of the valve, all dust and dirt should be washed off the valve, particularly the seal, seat and any tapped holes in the valve body.
- ii) The seals of all valves shall be checked for complete closure when the valve blade is in the fully closed position. (See seal adjustment below).
- iii) The valve must not be lifted by the hand lever, valve actuator or the handwheel.
- iv) The valve must not be used for lining up the pipework.
- v) The valve should be left in the fully open position after installation and prior to commissioning of the system.

Seal Adjustment

To adjust the seal, a 0,004" feeler gauge and an Allen key are required.

With the valve in the fully closed position, it should be possible only with difficulty to introduce the feeler gauge between the valve blade seal and the seat.

If, due to seal movement during storage the feeler gauge can easily pass between the seal and seat, then the clamp ring socket head cap screws in the vicinity of the gap should be finger tightened with the Allen key so as to push the seal out and close the gap.

Payment

All costs incurred for the seal adjustment as stipulated above shall be included in the respective rates for installation of the valves.

PSL 6 TOLERANCES

Add the following to L 6:

The tolerances for the line and level of pipelines shall be as follows:

- (a) Positions of bends: within 150 mm of the locations shown on the drawings or as agreed with the Engineer;
- (b) level of pipe invert: within 25 mm of the level shown on the drawings;
- (c) location of pipe centre in plan; within 25 mm of the location shown on the drawings through the sleeves and culverts and elsewhere within 75 mm of position shown on the drawings.

PSL 7 TESTING**PSL 7.1 General**

Add the following to L 7.1:

Inspection

Facilities shall be provided to the Engineer so that he may be able to inspect, during the process of welding, any layer of weld metal. He may require any defective welds either to be cut out and rewelded or repaired at his discretion. The Contractor shall clean thoroughly all welds prior to inspection. The Engineer may require a number of completed joints, selected at random, to be cut for mechanical tests or to be selected for visual inspection, micro examination or examination by other means. When the Engineer orders the Contractor in writing to cut out and test joints the Contractor shall be paid for such work at day work rates.

If as a result of inspection and testing, the work of any welder is found to be unsatisfactory, the welder shall not be permitted to continue welding under this contract.

Standards of Acceptability

The completed welds shall comply with the requirements of clause 6.0 of API 1104. Work on which unauthorised repairs have been carried out may be rejected.

Repairs to Minor Faults

Faulty welds shall be rectified in accordance with clause 7.0 of API 1104.

All costs relative to the repair of faulty joints, including removal and replacement of the backfill and making good the wrapping and lining shall be borne by the Contractor.

PSL 7.2 Initial Tests on Welded Steel Pipes

PSL 7.2.1 Dye-Penetrant Test

Add the following to L 7.2.1:

All fillet welds shall be dye penetrant tested. Any reduction in the percentage of welds to be tested shall be at the sole discretion of the Engineer

PSL 7.2.2 Radiographic Examination

Add the following to L 7.2.2:

All butt welds shall be radiographically tested. Any reduction in the percentage of welds to be tested shall be at the sole discretion of the Engineer.

PSL 7.3 Standard Hydraulic Pipe Test

PSL 7.3.1 Test Pressure and Time of Test

Replace L 7.3.1.1, 7.3.1.2, 7.3.1.3 and 7.3.1.4 with the following:

Static Test

When the pipeline is filled with water, all scours and hydrants shall be opened fully for one minute or until the water emerges clean.

Pressure Test

A suitable pump shall be connected to the pipeline at a mutually agreed point.

The pressure in the pipeline under test shall be raised slowly by means of the pump and measured by a pressure gauge connected to the pipeline.

PSL 7.3.1.2 The required test pressure for all steel pipework shall be 2000 kPA.

The hydraulic testing of the pipelines is to be carried out in two stages:

- a) The pressure test as described above, is to be carried out with the pipeline fully blanked and all valves in the open position. All costs relating to this work inclusive of scouring, supplying and install blank flanges, spade pieces etc. are to be included in the rate for testing. The minimum duration of this test

will be 8 hours and 2 hours on non-steel pipelines.

- b) On successful completion of the pressure test as per (a) above, the Contractor is to remove all temporary blank flanges, spade pieces, etc. and pressurise the line to maximum working pressure against closed valves. Should any valve not be drop tight at this pressure the Contractor is to advise the Engineer in writing of all defects encountered. The duration of this test shall be 2 hours. (An item has been allowed for this work in the Schedule of Quantities).

All tests shall be carried out in the presence of the Engineer at such times and in such manner as he may direct.

The hydraulic testing of pipelines against closed valves shall not be allowed and provision shall therefore be made by the Contractor for the supply of all necessary bull-noses and blank flanges.

Water for testing shall be made available free of charge in the first instance but for the subsequent tests shall be charged to the Contractor's account.

A water connection will be provided by eThekweni Water for filling the pipeline for testing purposes.

The Contractor shall, at his own cost, provide a suitable means of conveying water from this connection to the mains to be tested, as well as a connection on the new pipeline in order that it may be filled. This connection shall be capped or removed to the satisfaction of the Engineer upon completion of the hydraulic test. Payment of this shall be allowed for under the rates for the hydraulic testing of the pipeline.

For hydraulic testing of the pipes sections after installations, as per Clause 7.3 of SABS 1200L, each test section shall be chosen such that it is subjected to a test pressure not exceeding 250m water head at the lowest point and not less than 200m at the highest point. This pressure shall be obtained by continuous pumping so as to ensure a gradual increase of pressure until the specified value is obtained.

After the entire piping system has been laid and all parts thereof have been tested to the satisfaction of the Engineers or the Engineers Representative and backfilled, the pipe system will be put into operation and the Contractor shall inspect and commission the same in the presence of the Engineer/his representative, to ensure that all valves and other equipment are operating satisfactory and to check that all pipe supports, brackets and the like are capable of withstanding the loads imposed on them.

Any faults or defects which are detected during this inspection shall be repaired by the Contractor, or where necessary, the defective parts or materials shall be replaced by the Contractor, to the satisfaction of the Engineer, all at the Contractors expense.

All items of equipment not specifically mentioned in the Specifications, shall be inspected during the commissioning period for proper operation and to verify that these items comply with the requirements of the Specification.

PSL 7.4 Tests on Epoxy Coatings

Add the following to L 7.4:

- e) Wet sponge test of SFE lining.

The Employer on submission of the originals of the test results and respective invoices to the Engineer will reimburse the Contractor for the cost of all successful tests.

Holiday testing of the tape wrapping and epoxy coating of the pipeline shall be carried out on site by the Contractor. However, at the Engineer's discretion, quotations may be called for holiday testing of the epoxy coating of the pipeline for quality assurance purposes, from a reputable non-destructive testing firm. The rate submitted shall be per linear metre.

- i) Notwithstanding the requirements of any other specification contained in or referred to in this document, the holiday testing of the epoxy coating shall be performed with the apparatus set at 15 000V for Visco-elastic Polyisobutene (2LPE) coating and 3500V for FBE and SFE coating.

- ii) The holiday testing of the tape wrap system shall be performed with the apparatus set at 3 500V.

The non-destructive testing firm approved by the Engineer shall be a nominated sub-contractor to the main Contractor.

It shall be the responsibility of the Contractor to ensure that all test points along the pipeline are individually

referenced and that this reference be reflected on the reports. Each test point (e.g. pipeline joints, butt joints in pipe specials, etc.) shall be indelibly marked on the pipe and cross-referenced to the pipeline chainage.

A DCVG survey will be carried out by the Employer after the issue of the Completion Certificate and the Contractor will be required to repair all defects discovered by the survey at his own cost.

The cost shall include excavation, repair materials, bedding, backfill and reinstatement to the satisfaction of the Engineer.

The Contractor shall ensure that the full length of the pipe to be placed in the trench is patched and holiday-tested prior to the pipe being laid in the trench. Holiday testing of the joints in the trench shall be carried out on completion of the welding and the required non-destructive testing by the Contractor.

PSL 8 MEASUREMENT AND PAYMENT

PSL 8.2 Scheduled Items

PSL 8.2.1 Supply, Lay and Bed Pipes Complete with Couplings

Add the following to L 8.2.1:

- (i) taking delivery of the pipe at the Municipal depot, provision of craneage, transporting and lowering pipes into trench, cutting to closures and preparing ends for jointing, laying true to line and level on prepared trench bed and jointing, including the supply of joint sleeves where required;
- (ii) bonding mechanical joints for electrical continuity;
- (iii) completing both internal and external protection at joints and making good any damage to sheathing or lining, which has occurred after acceptance at the
- (iv) pipeyard; and
- (v) all other operations necessary to complete laying not separately scheduled.

PSL 8.2.2 Extra-over 8.2.1 for the Supplying, Laying, and Bedding of Specials Complete with Couplings

Add the following to L 8.2.2:

The Contractor will only receive payment for a scarfed bend if the pipe is cut to fabricate the scarf bend.

PSL 8.2.3 Extra-over 8.2.1 for the Supplying, Fixing and Bedding of Valves

Add the following to L 8.2.3:

The unit rate for the installation of scour and air valves when supplied by the Employer shall include for taking delivery of the valve at the Municipal depot, provision of craneage, transporting to site and installing the valve as specified and shall allow for the supply of all nuts, bolts and gaskets as required.

PSL 8.2.11 Anchor blocks/Thrust blocks and pedestals

INSERT "concrete" BEFORE "and" IN THE LAST LINE OF THE LAST PARAGRAPH.

Add the following:

"The tendered rates shall also include the wrapping of uPVC pipes and fittings with Densopol 80 or a similar approved material where the pipes and fittings come into contact with concrete."

PSL 8.2.16 Cathodic Protection

Details of the elements of the Cathodic Protection System to be provided by a Nominated Sub-Contractor. The Civil Contractor is to liaise & cooperate with the CP specialist to ensure that the activities of the specialist proceed in the best possible manner.

Precise details of the location of elements of the Cathodic Protection System will be confirmed by the Engineer's Instructions on site, but the following points are noted:

- a. Continuity bonding is required around all in-line valves.
- b. Monitoring test points are to be installed in the line valve chambers, where shown.
- c. The Contractor shall obtain quotations for a full stray current and cathodic protection survey. A Provisional Sum has been included to cover this activity.
- d. In the event of the Cathodic Protection Specialist indicating a need for the introduction of Cathodic protection, the design as provided by that Specialist shall be implemented. A Provisional Sum has been included to cover these costs.
- e. DCVG (Direct Current Voltage Gradient) testing is required on the installed pipes.

PSLB BEDDING (PIPES) (SANS 1200 LB)**PSLB 3 MATERIALS****PSLB 3.1 Selected Granular Material****Add the following to LB 3.1:**

Notwithstanding Clause LB.3.1. 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. 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.

PSLB 3.2 Selected Fill Material**Add the following to LB 3.2:**

Only a clean sand containing no particles of diameter exceeding 20mm, having a Plasticity Index (P.I.) not exceeding 6 and free from vegetation and lumps shall be used for the selected fill blanket. It is anticipated that most of the fill material will have to be provided from an off-site source. Selected fill shall be constructed to the dimensions required for Class 'C' bedding.

PSLB 8 MEASUREMENT AND PAYMENT**PSLB 8.1 Principles****PSLB 8.1.1 Supply of Bedding Materials Measured Separately****Add the following to LB 8.1.1:**

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.

PSLG PIPE JACKING (SABS 1200 LG – 1983)

PSLG 2 INTERPRETATIONS

PSLG 2.3 Definitions

Add the Sub-Clause:

The Works. All the components making up the entire jacking operation including construction of both thrust and reception pits as well as the excavation, placing and jacking of the pipes together with all support activities.

PSLG 3 MATERIALS AND WORKMANSHIP PSLG 3.

PIPES FOR JACKING

Delete the Sub-Clause and substitute with the following:

Pipes for jacking shall be SC Type reinforced concrete manufactured in accordance with SABS 677: Concrete Non-Pressure Pipes as published in General Notice 463 of 9 July 1982 to the D load specified on the drawings. All pipe joints shall be sealed. The actual diameters of the pipes shall not be less than the nominal diameters given on the drawings or stated in the schedule.

In addition to withstanding the specified two (or three), edge bearing test-load, the pipes shall be capable of withstanding, without damage during jacking, the maximum longitudinal force to be transmitted by the Contractor's jacks and method of operation.

The design of the pipes shall be determined by the Contractor to suit the proposed method of construction but shall not be less than the class of pipe or type of pipe stated on the drawings or determined by the Project Manager. The pipes shall incorporate extended modified Ogee type joints which shall be seated by means of a rubber ring. On longer pipe jacks it may be necessary to use a rebated butt joint to withstand the higher jack forces. However, the decision of type of joint to use is that of the Contractor. Irrespective of joint type used the Contractor must adhere to the joint sealing details given in PSLG 3.1.2 below.

At least one hole shall be formed in the crown of each pipe to allow for the injection of both a lubricant, if required, and a final grout. The final layout of grout holes is the Contractor's responsibility.

The Contractor must ensure that the pipes shown on the drawings and mentioned in the documents can be jacked the full distance mentioned in the Scope of Work.

PSLG 3.1.1 Intermediate Jacking Pipes (New Sub-Clause)

In circumstances where it is desirable to use jacking pipes intermediate between manholes or junctions the number and type of such intermediate jacking pipes is to be determined by the Contractor. The joint between pairs of intermediate jacking pipes shall be protected externally by a cylindrical mild steel sleeve of wall thickness at least 8mm, which shall overlap the pipes on either side of the joint for a distance of at least 150mm. The joint is to allow a substantial and permanent caulked seal within the joint.

PSLG 3.1.2 Joints and Seals (New Sub-Clause)

It is the Contractor's choice as to type of joint used in the pipes to be jacked. However, applied forces used to jack the pipes must be uniformly distributed around the joint to avoid damaging the joint. Pipes that are delivered to site with damaged joints must be rejected by the Contractor.

A seal is required at each joint to minimise ingress of water. Ingress of water into the jacked pipes stemming from the joints should not exceed 5 litres per minute in total. The chipboard packing used to distribute stresses on the joints should be raked out to a depth of 25mm on the inside all round and sealed with a durable flexible sealing agent such as bituseal, thioflex or similar.

PSLG 5 CONSTRUCTION

PSLG 5.1.1 Authority to Jack Pipelines under Roads and Railway Lines

The Employer will obtain permission from the relevant authorities for jacking under roads and railway lines.

However, the Contractor is to confirm that such permission has been granted before commencing work.

PSLG 5.1.2 Competence

Jacking and excavation shall be supervised and undertaken by persons fully conversant with this work.

PSLG 5.1.4 Contractor Solely Responsible

Add to the Sub-Clause:

No approval of any material or plant and its operation, or of any construction procedure to be used will imply any relaxation of the requirements governing the quality of the materials or of the finished work or relieve the Contractor of his/her responsibilities under the Contract.

PSLG 5.2.3 Recording of Movements PSLG

5.2.3.1 General

Delete the Sub-Clause and substitute with the following:

The Contractor shall take movement measurements correct to 1,0mm and shall record any change in the line and level of road and railway line before the start of the Contract and at such intervals as directed by the Project Manager for a period up to 12 months after the issue of the Completion Certificate. However, no more than 15 sets of reading will be required in this period. A copy of these measurement records shall be made available to the Project Manager.

PSLG 5.2.3.2 Working under roadways

Add to the Sub-Clause:

The Contractor shall bear full responsibility for any consequential damage to persons and property resulting from subsidence.

PSLG 5.2.3.3 Working under railway lines (New Sub Clause)

Before jacking under railway lines the Contractor shall take elevation readings at the top (Crest) of the fill embankment and at the toe of the ballast as well as on top of each railway line along the centre line of the pipe jack and at intervals of 1 500 mm apart up to a distance of 9m from the pipe centre line. The profile of the railway embankment must be measured and recorded from toe to toe (of the embankment) before pipe jacking starts.

The intervals at which movement readings are to be taken over a period of 12 months is the same as mentioned above for roads (PSLG 5.2.3.1).

PSLG 5.2.3.4 Remedial Measures (New Sub-Clause)

All remedial measures will be carried out and completed to the standards set by the various controlling authorities.

Roads – Remedial measures plus time related professional costs needed to reinstate roads and fill embankments will be the Contractor's liability. Remedial measures are those relating to the need to put right settlement and movement of road surfaces, formation layers or fill embankments including providing all road safety markers, traffic control, or signs and all associated needs of the road authority to allow remedial work to proceed without danger to workers or traffic. The Contractor must arrange all matters regarding remedial work with the road authority. In most instances these measures will comprise jacking up concrete roads using grout and regrading to original elevation formation layers and premix surfacing as well as mending drainage fixtures where these have been damaged. All the remedial work will be directed by the Project Manager to his/her satisfaction and approval.

Railways – Remedial measures plus time related professional costs needed to reinstate railway lines and fill embankments will be the Contractor's liability. Remedial measures are those relating to the cost of realigning railway lines, regrading of ballast, and stabilising fill embankments. All the remedial work will be directed by the Project Manager to his/her satisfaction and approval. A provisional sum is given in the Bill of Quantities to cover the cost of strapping railway lines and provided for a signaller to activate speed deregulation.

PSLG 5.4 EXCAVATION**PSLG 5.4.1 General**

Except as required in terms of 5.2.5 SABS 1200 LG 1983 the provisions of SABS 1200 DA shall apply.

PSLG 5.4.2 Thrust Pits

In the second paragraph, delete the words "Factories, Machinery and Building Work Act, 1941 (Act 22 of 1941)" and replace with the words "Occupational Health and Safety Act 1995"

Add to the Sub-Clause:

Claims arising out of any accidents or incidents in or adjacent to these access pits will not be considered by the Employer.

Stormwater control measures around these pits are also necessary to prevent water ingress into the pits. Provision must be made by the Contractor to keep both thrust and reception pits free of seepage and stormwater.

Thrust pits will in general only be permitted at positions indicated on the drawings or where manholes or junctions are required. Jacking pits shall be of sufficient size to accommodate the jacking operation and any manhole structure to be constructed upon completion of the jacking. The approximate dimensions of the pits shall be agreed with the Project Manager before work commences. The Contractor will be required to design and construct all thrust blocks, bases and other temporary Works required to maintain the stability of the pits and shall demolish and remove these upon completion of the jacking operation and the Contractor shall take into account all such limiting factors when preparing his/her tender.

PSLG 5.4.2.1 Intermediate Jacking Pits (New Sub-Clause)

In circumstances where it is desirable to use jacking pits intermediate between manholes or junctions indicated on the drawings, the number and type of such intermediate jacking pits is to be determined by the Contractor. Such intermediate jacking pits will only be permitted where conditions of access and working space permit.

Full details of the intermediate jacking pits and the junction box constructed as a closure between the ends of the jacked pipes are to be submitted with the tender.

PSLG 5.4.3 Jacking of Pipeline PSLG**5.4.3.1 General****Add to the Sub-Clause:**

A lead pipe with a rebated front end over which the trailing end of the shield is fitted should be the first concrete pipe used. This should minimise overbreak. The extent of the payment line for grouting between the outer face of the sleeve and the excavation face will be limited to 10% of the outside diameter of the sleeve. Therefore, the excavation payment line will be outside diameter for the different sections of sleeves.

No material may be removed in advance of the leading edge of the shield in unstable or loose materials.

As the pipe is advanced, excavation is to take place within the lead pipe under the full time supervision of a responsible foreman to ensure that the end of the shield is always fully plugged with earth at a safe angle of repose within the pipe. The Contractor shall ensure that there is not uncontrolled flow of sand, mud or earth into the pipe which could result in imperilling excavation personnel or the formation of cavities above or around the sleeve pipe. If at any stage during the jacking operation such conditions arise the Contractor shall immediately plug the pipe and stabilise the material before proceeding with further work.

Should it be necessary, the Contractor shall allow for stabilising the soil by dewatering, chemical grouting, or any other approved means. The design of the shield shall be such as to permit the face to be completely or partially closed by boarding or similar to control material flow from the face.

During weekend or holiday stoppages the Contractor must make sure that a plug of soil is left in the shield.

PSLG 5.4.3.6 Continuous Jacking (New Sub-Clause)

In order to minimize problems due to the build-up of skin friction on a static pipe, the pipes are to be jacked continuously unless agreed to otherwise with the Project Manager, allowing for overnight stoppage.

PSLG 5.5 JACKING PROCEDURE**PSLG 5.5.1 Procedure****Add to the Sub-Clause:**

Each jack shall be fitted with a pressure gauge suitable calibrated such that the actual jacking forces can be read at any time.

Suitable packing of hard materials shall be inserted between the abutting vertical ends of the pipes in order to transfer the jacking force. The packing shall constitute a complete circle and be sufficiently wide to transfer the applied load.

A suitable adjustable shield is to be fitted to the front of the lead pipe. The shield is to incorporate cutting edges which can be varied by control jacks to maintain the pipe on line and level.

Pipe jacking may generally be carried out either up-grade or down-grade to suit the Contractors requirements subject to the approval of the Project Manager, and provided that provision is made by the Contractor for the necessary drainage required.

PSLG 5.5.2 Lubrication of Structure during Jacking**Add to the Sub-Clause:**

To ease pipe friction, the Contractor shall make provision for the injection of bentonite or other approved lubricant.

PSLG 5.6.1 Backfilling (New Sub-Clause)

Both thrust and reception pits must be backfilled as per the Geotechnical report recommendation. Backfill compaction rates must not be less than 90 percent Modified AASHTO with the top 1,5m of backfill being compacted to a minimum 92% Modified AASHTO. The backfill must be built up to at least 500mm above the natural ground level to prevent stormwater pounding around the excavation pits.

PSLG 5.7 Grouting and Plugging**Add to the Sub-Clause:**

The grout shall consist of cement/sand grout with mix ratio of 1:2 with plasticiser or as per the instruction.

PSLG 5.9 Markers (New Sub-Clause)

On completion of the pipe jacking activities the Contractor shall place standard eThekwini Water Services marker concrete posts at the start and end of each pipe jacking section.

PSLG 5.10 Recording Jacking Parameters (New sub-clause)

Throughout the jacking operation the Contractor is requested to take and record the following measurements.

- a) A plot of pressure (kN/m²) and total force (kN) originating from the combined force of all hydraulic jacks used to move pipes versus accumulative length of jacked pipe. As soon as a lubricant is used it must be recorded on the plot. If heavy ground water seepage is noted this must also be recorded on the plot. A time scale in days should also be used in conjunction with jacked length of pipe. It is also important to record start up force required to move pipes after a delay, i.e. after weekend.
- b) The dimensions of the thrust block used must be recorded as well as the accumulative thrust force on the block (kN) together with lateral movement of the thrust block (mm).

A copy of these measurement records shall be made available to the Project Manager.

PSLG 6 TOLERANCES AND MEASUREMENT

PSLG 6.2 Permissible Deviations

In the first line delete "100mm" and substitute with "50mm".

PSLG 8 MEASUREMENT AND PAYMENT

PSLG 8.2.1 Jacking Establishment

In the second paragraph add the words "and any intermediate jacking pits" after the words "thrust and reception pits".

PSLG 8.2.6 Supply and Install Pipes by Pipe Jacking Method, Complete with Excavations

Add to the Sub-Clause:

The rate shall include for grouting any voids around the pipe annulus which are a result of the pipe jacking operation.

PSLG 8.2.10 Standing Time for Pipe Jacking Gang and the Jacking Equipment

In the first paragraph, delete the words "Wage Act, 1957 (Act 5 of 1957)" and replace with the words "Basic Conditions of Employment Act No. 75 of 1997".

PSLG 8.2.12 Permanent Sealing

The unit of measurement will be cubic meter of pipe from open end to open end.

C3.4: PARTICULAR SPECIFICATIONS

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

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

- C3.4.1 Part AH: OHS Act 1993 Safety Specification
(26 Pages)
- C3.4.2 Part PEM: Standard Environmental Management Plan for Civil Engineering Construction Works
- C3.4.3 PAA: DAYWORK SCHEDULE
- C3.4.4 PART PCS: Departmental Specifications for Steel Pipes, 100mm to 2000mm Nominal Diameter.

**C3.4.1 PART AH: OCCUPATIONAL HEALTH AND SAFETY ACT 1993:
HEALTH AND SAFETY SPECIFICATION**

C3.4.2 PART PEM: ENVIRONMENTAL MANAGEMENT SPECIFICATION**PEM 1 PURPOSE**

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

PEM 2 RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT

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

PEM 3 TRAINING AND INDUCTION OF EMPLOYEES

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

PEM 4 COMPLAINTS REGISTER AND ENVIRONMENTAL INCIDENT BOOK

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

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

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

PEM 5 ENVIRONMENTAL SAFETY

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

PEM 5.1 Soil

- (a) Soil stockpiles must not be contaminated with oil, diesel, petrol, waste or any other foreign matter, which may contaminate adjacent soils.
- (b) All equipment must be inspected regularly for oil or fuel leaks before it is operated. Leakages must be repaired on mobile equipment or containment trays placed underneath immobile equipment until such leakage has been repaired.
- (c) Soil contaminated with oil must be appropriately treated and disposed of at a permitted landfill site or the soil can be regenerated using bio-remediation methods.
- (d) Runoff must be reduced by channelling water into existing surface drainage system.

PEM 5.2 Water

- (a) All fuel, chemical, oil, etc. spills must be confined to areas where the drainage of water can be controlled. Use appropriate structures and methods to confine spillages such as the construction of berms and pans, or through the application of surface treatments that neutralise the toxic effects prior to the entry into a water course.

PEM 5.3 Air

- (b) Oil absorbent fibres must be used to contain oil spilt in water.

- (a) Speed limits must be implemented in all areas, including public roads and private property to limit the levels of dust pollution.
- (b) Dust must be suppressed on access roads and construction sites during dry periods by the regular application of water or a biodegradable soil stabilisation agent. Water used for this purpose must be used in quantities that must not result in the generation of run-off.
- (c) The site-specific investigation will quantify the impact of dust on nearby wetlands, rivers and dams in terms of sedimentation. Mitigation measures identified during the site-specific study must be implemented.
- (d) The Contractor must notify the Principal of all schools within 50m of the site of proposed activities. The Principal must in turn ensure that children with allergies and respiratory ailments take the necessary precautionary measures during the construction period. The Contractor must ensure that construction activities do not disturb school activities e.g. dust clouds may reduce visibility affecting sports activities.
- (e) Waste must be disposed of, as soon as possible at a municipal transfer station, skip or on a permitted landfill site. Waste must not be allowed to stand on site to decay, resulting in malodours.
- (f) Noise control measures must be implemented. All noise levels must be controlled at the source. All employees must be given the necessary ear protection gear. IAP's must be informed of the excessive noise factors.
- (g) The Contractor must inform all adjacent landowners of any after-hour construction activities and any other activity that could cause a nuisance e.g. the application of chemicals to the work surface. Normal working hours must be clearly indicated to adjacent land owners.
- (h) No loud music is allowed on site and in construction camps.
- (i) No fires are allowed if smoke from such fires will cause a nuisance to IAP's.

PEM 5.4 Social and Cultural

- (a) Access by non-construction people onto any construction sites must be restricted. The Contractors activities and movement of staff must be restricted to designated construction areas only.
- (b) The Contractors crew must be easily identifiable due to clothing, identification cards or other methods.
- (c) Rapid migration of job seekers could lead to squatting and social conflict with resident communities and increase in social pathologies if not properly addressed. The Contractor must ensure that signs indicating the availability of jobs are installed.
- (d) Criteria for selection and appointment (by the Contractor) of construction labour must be established to allow for preferential employment of local communities. The Local Authority must be actively involved in the process of appointing temporary labourers.
- (e) Sub-Contractors and their employees must comply with all the requirements of this document and supporting documents e.g. the Contract document that applies to the Contractor. Absence of specific reference to the sub-contractor in any specification does not imply that the sub-contractor is not bound by this document.
- (f) No member of the construction workforce is allowed to wander around private property, except within the immediate surrounding of the site.

- (g) The Contractor must provide suitable sanitation facilities for site staff. Sanitation provided during the construction phase should be managed so that it does not cause environmental health problems. The use of the surrounding veld for toilet purposes is not permitted under any circumstance.
- (h) The Contractor must arrange for all his employees and those of his sub-contractors to be informed of the findings of the environmental report before the commencement of construction to ensure:
 - A basic understanding of the key environmental features of the work site and environments, and
 - Familiarity with the requirements of this document and the site-specific report.
- (i) Supervisory staff of the Contractor or his sub-contractors must not direct any person to undertake any activities which would place such person in contravention of the specifications of this document, endanger his/her life or cause him/her to damage the environment.
- (j) The demand for construction materials and supplies will have an effect on the local economy. This impact can be optimised by sourcing and purchasing materials locally and regionally wherever possible, insofar as the material complies with the design specification.
- (k) The Contractor must maintain a detailed complaints register. This must be forwarded, together with solutions, to the authorities when requested.

PEM 5.5 Aesthetics

- (a) Scenic Quality
- (b) Excavated material must be flattened (not compacted) or removed from site. No heaps of spoil material must be left on site once the Contractor has moved to a new construction site.
- (c) Any complaints from interest groups regarding the appearance of the construction site must be recorded and addressed promptly by the Contractor.

PEM 5.6 Archaeology and Cultural Sites

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

The Project Manager will inform the Contractor when work can resume.

PEM 5.7 Flora

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

PEM 5.8 Fauna

- (a) No species of animal may be poached, snared, hunted, captured or wilfully damaged or destroyed.
- (b) Snakes and other reptiles that may be encountered on the construction site must not be killed unless the animal endangers the life of an employee.
- (c) Anthills and/or termite nests that occur must not be disturbed unless it is unavoidable for construction purposes.
- (d) Disturbances to nesting sites of birds must be minimized.
- (e) The Contractor must ensure that the work site is kept clean and free from rubbish, which could attract pests.

PEM 5.9 Infrastructure

- (a) The relevant private service authorities must be notified of any interruptions of services, especially the eThekweni Municipality, National Road Agency, Spoornet, TELKOM and ESKOM. In addition, care must be taken to avoid damaging major and minor pipelines and other services.
- (b) The integrity of property fences must be maintained.
- (c) No telephone lines must be dropped during the construction operations, except where prior agreement by relevant parties is obtained. All crossings must be protected, raised or relocated as necessary.
- (d) All complaints and/or problems related to impacts on man-made facilities and activities must be promptly addressed by the Contractor and documented.
- (e) Storage Facilities
 - Proper storage facilities should be provided for the storage of oils, grease, fuels, chemicals and hazardous materials.
 - The Contractor must ensure that accidental spillage does not pollute soil and water resources.
 - Fuel stock reconciliation must be done on all underground tanks to ensure no loss of oil, which could pollute groundwater resources.
 - Cement must be stored and mixed on an impermeable substratum.

(f) Traffic Control

All reasonable precautions must be taken during construction to avoid severely interrupting the traffic flow on existing roads, especially during peak periods.

Before any work can start the Local Traffic Department must be consulted about measures to be taken regarding pedestrian and vehicular traffic control.

(g) Access Roads

The Contractor and the affected landowner must collaborate on the planning and construction of new access routes and the repair or upgrading of existing routes.

Access to the site must be controlled such that only vehicles and persons directly associated with the work gains access to the site.

(h) Batching Plants

Concrete must be mixed only in an area demarcated for this purpose. All concrete spilled outside this area, must be promptly removed by the Contractor and taken to a permitted waste disposal site. After all concrete mixing is complete, all waste concrete must be removed from the batching area and disposed of at an approved dumpsite. Stormwater must not be allowed to flow through the batching area. Water laden with cement must be collected in a retention area for evaporation and not allowed to escape the batching area. Operators must wear suitable safety clothing.

(i) Chemical toilet facilities should be managed and serviced by a qualified company. No disposal or leakage of sewerage should occur on or near the site.

(j) Blasting

Blasting must not endanger public or private property.

Noise mufflers and/or soft explosives must be used to minimize the impact on animals.

All the provisions of the Explosives Act, 26 of 1956 and the Minerals Act, 50 of 1991 must be complied with.

The Contractor must take measures to limit flyrock.

PEM 5.10 Safety

- (a) Measures must be taken to prevent any interference that could result in flashover of power lines due to breaching of clearances or the collapse of power lines due to collisions by vehicles and equipment.
- (b) Measures must be taken during thunderstorms to protect workers and equipment from lightning strikes.
- (c) All tall structures must be properly earthed and protected against lightning strikes.
- (d) The process of excavation and back filling must be carried out as a sequential process following one another as quickly as possible. Excavations must only remain open for a minimum period of time and during this time they must be clearly demarcated. If excavations place the public at risk these sites must be fenced.
- (e) The residents directly affected by open trenches must be notified of the dangers. This will be done during the site-specific phase.

PEM 5.11 Waste

Solid Waste

- (a) Littering on site and the surrounding areas is prohibited.
- (b) Clearly marked litterbins must be provided on site. The Contractor must monitor the presence of litter on the work sites as well as the construction campsite.
- (c) All bins must be cleaned of litter regularly.
- (d) All waste removed from site must be disposed at a municipal/permitted waste disposal site.
- (e) Excess concrete, building rubble or other material must be disposed of in areas designated specifically for this purpose and not indiscriminately over the construction site.
- (f) The entire works area and all construction sites must be swept of all pieces of wire, metal, wood or other material foreign to the natural environment.
- (g) Contaminated soil must be treated and disposed of at a permitted waste disposal site or be removed and the area rehabilitated immediately.
- (h) Waste must be recycled wherever possible.

Liquid Waste

- (a) The Contractor must maintain mobile toilets on site.
- (b) The Contractor must provide adequate and approved facilities for the storage and recycling of used oil and contaminated hydrocarbons. Such facilities must be designed and sited with the intention of preventing pollution of the surrounding area and environment.
- (c) All vehicles must be regularly serviced in designated area within the Contractors camp such that they do not drip oil.
- (d) All chemical spills must be contained and cleaned up by the supplier or professional pollution control personnel. Run-off from wash bays must be intercepted.

Hazardous Waste

- (a) No hazardous materials must be disposed of in the veld or anyplace other than a registered landfill for hazardous material. Hazardous waste must be stored in containers with tight lids that must be sealed and must be disposed at an appropriately permitted hazardous waste disposal site. Such containers must not be used for purposes other than those originally designed for.
- (b) The Contractor must maintain a hazardous material register.

PEM 5.12 Rehabilitation and Site clearance

- (a) When all major construction activities are completed, the site must be inspected to determine site-specific rehabilitation measures. This may be considered as unplanned work e.g. soil rehabilitation due to oil spills.
- (b) All temporary buildings and foundations, equipment, lumber, refuse, surplus materials, waste, construction rubble fencing and other materials foreign to the area must be removed.
- (c) If waste products cannot be recycled they must be disposed of at a permitted landfill site.
- (d) All drainage deficiencies including abandoned pit latrines and waste pits must be

corrected.

PEM 6 MEASUREMENT AND PAYMENT

An item has been included in the Bill of Quantities to comply with the above actions.

C3.4.3 PART PAA: DAYWORK SCHEDULE

PAA. 1 GENERAL

In cases where the Engineer orders any variation in the form, quality or quantity of the work or any extra work to such an extent that the tendered rates for specific items are no longer applicable, or where a combination of tendered rates cannot be applied to compensate for such work, the Engineer may, in terms of the General Conditions of Contract, order that the amended or extra work be carried out as daywork at the cost of labour, plant and materials. For that purpose provision is made for the Contractor to tender his rates for labour and plant in the Daywork Schedule which forms part of this contract.

No work will be measured as daywork unless:

- (a) the Engineer agrees that the varied work is not in accordance with the specification or scope of a measured item in the contract;
- (b) the Engineer has issued an order in writing for the execution of such varied work; and
- (c) statements of plant and labour are submitted daily to the Engineer for his consideration and approval.

All work valued at the tendered rates in the Daywork Schedule will be subject to contract price adjustment as applicable to the Contract.

PAA 2 SALARIES AND WAGES OF WORKMEN

The amount to be paid for labour will be based on the rates tendered in the Daywork Schedule for the workers executing the work. The tendered rates shall be all-inclusive and shall be held to cover all charges for the Contractor's profits, timekeeping, clerical work, insurance, establishment, superintendence, the use of hand tools, etc., and no additional surcharge over and above the tendered rates will be applicable.

PAA 3 CONSTRUCTIONAL PLANT

The rates for constructional plant as tendered in the Daywork Schedule shall cover all costs, overheads and profit for the contractor and no further surcharge will be payable on the tendered rates. The cost of operators shall be included in the tendered rates except where otherwise specified in Clause PAA 5 (Measurement and Payment) hereafter.

Where plant or equipment for which no rates exist in the Daywork schedule are employed, the cost thereof shall be determined as agreed with the Engineer in terms of the General Conditions of Contract. In such case contract price adjustment will only be applicable if the agreed cost is based on rental rates at the time of the base month before closing of tenders, or if the ruling rates current at the time of the execution of the work are de-escalated to the base month.

The Contractor will be paid for the transport to and from the site of constructional plant not on site and specially ordered by the Engineer to be brought on site. No payment will be made for transport of equipment listed in the Contractor's Schedule of Constructional Plant in the tender document, or for equipment which has been removed from the site on request of the Contractor, or for equipment already on site, regardless of whether it appears on the Schedule of Constructional plant or not.

PAA 4 MATERIALS

Materials required for daywork items which cannot be compensated under existing rates and have to be purchased, will be paid for at cost, excluding VAT, plus a surcharge of 15%. The cost of materials provided for daywork at current rates at the time when the work is executed, will not be subject to contract price adjustment unless the prices of the materials are de-escalated to the base month for escalation.

- (g) Compactors
 - (i) (Specify type and mass)..... hour (h)
 - (ii) etc (for other types and masses)..... hour (h)
- (h) Compressors
 - (i) (Specify capacity and number of tools) hour (h)
 - (ii) etc (for other compressors and tools) hour (h)
- (i) Trucks
 - (i) (Specify type, and capacity) hour (h)
 - (ii) etc (for other trucks) hour (h)
- (j) Light delivery vehicles
 - (i) (Specify load capacity)kilometre (km)
 - (ii) etc (for other)kilometre (km)

<u>Item</u>	<u>Unit</u>
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PAA 5.3 Cost of materials delivered tosite (specify) P-Sum or as scheduled	
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The unit of measurement for subitem 5.2(a) is the ton constructional equipment multiplied by the kilometre distance over which the plant has been transported with a lowbed transporter as ordered by the Engineer.

The unit of measurement for subitems 5.2(b) to (i) is the hour or part thereof during which the item of plant had been in active use for the daywork operation, including stopping time of less than five minutes.

Where applicable travel time to and from the normal parking position on site, or the position of the most recent non-daywork activity, as well as stopping time exceeding five minutes shall be multiplied by a factor of 0,6. Time shall be measured by means of a vibrating clock card.

The unit of measurement for subitem 5.2(j) is the kilometre travelled to collect or transport small quantities of materials. Kilometres travelled in light delivery vehicles by supervisors in the execution of normal supervisory duties, shall not be measured for payment.

The tendered rates shall include full compensation for the supply, maintenance, service, repairs, depreciation as well as fuel, lubricants, licensing, insurance, overheads and profit. It shall also include the cost of drivers and operators except in the case of subitem PAA-5.2(h) where the operators of tools are paid for under labour.

C3.4.4 PART PCS: DEPARTMENTAL SPECIFICATIONS FOR STEEL PIPES, 100MM TO 2000MM NOMINAL DIAMETER**PCS 7: VISCO ELASTIC POLYISOBUTENE COATING (TWO LAYER POLYETHYLENE PIPE COATING SYSTEM)****SUB-CLAUSE PCS 7.3 TWO LAYER POLYETHYLENE PIPE COATING SYSTEM**

Add the following after the first paragraph:

Product Description

A factory applied double sided non-crystalline, prefab monolithic viscous polymer wrap coating with cold flow, self-healing, visco-elastic properties for corrosion prevention.

PRODUCT PROPERTIES		
Colour	Green	
Thickness	0.85mm	
Temperature Ranges	Operation Temp: -45 to + 95 °c	
Specific Electrical Resistance	>10 ⁸ Ω.m ²	EN12068 annex J
Density	1.4 - 1.6g/cm ³	
Elongation	100%	ASTM D 1000
Moisture Absorbtion	<0.03%	ASTM D 570
Adhesion	Tested at 23°C & 70°C - no adhesive failure	EN12068 annex J
Salt Spray Resistance	Tested for 720hr 5% NACL 85°C - no corrosion detected	ASTM D 117
Peel Test	Cohesive fracture	
Cathodic Disbondment	Tested at 23°C & 70°C - no disbondment observed. Defect (Ø 6mm) self healed	
Impact resistance	15J at -45°C no holidays detected at 23°C no holidays detected at 70°C no holidays detected	EN 10068 annex H
Indentation resistance	tested at 10N/mm ² at -45°C no holidays detected at 23°C no holidays detected at 70°C no holidays detected	EN12068 annex G
Self healing ability	Ø6mm at -45°C < 90 days at 23°C < 1 day at 70°C < 1 day	

Add the following new Sub-Clauses:

PCS 7.8 FIELD JOINTS

PCS 7.8.1 General

In all cases the visco-elastic Wrappingband material (Stopaq CZH) will be the inner corrosion protection layer.

There are options for the field joint system outer mechanical protection layer.

The change in the outer mechanical protection layer will only take place should there be a requirement for higher mechanical protection layer due to increased soil stress areas such as bridges, road crossings and sub water areas.

PCS 7.8.2 Product Description Visco-elastic Coating

Minimum requirements and the relevant test specification of the visco-elastic wrapping are given below:

- Thickness 1.8mm – 2.2mm (ISO 9001)
- Density 1.4 – 1.6g/cm³ (NEN 1833)
- Elongation >100% (ASTM D 1000)
- Moisture absorption <0.03% (ASTM D 570)
- Permeability <0.2g/m² day (ASTM E96)
- Temperature ranges:
 - Operational -45 to 95°C
 - Wrapping for application +5 to 70°C
 - Substrate for application -30 to 70°C
- Specific electrical resistance Rs> 10E8 Ohm.m² (EN 12068)
- Adhesion No adhesive failure (substrate: steel, PE, PP, bitumen fibreglass and FBE: residual protective layer >0.5mm) when tested at 23°C and 70°C (EN 12068)
- UV resistance No changes in properties when tested at 17.5 GJ/m² (EN 12068 annex F)
- Salt spray resistance No corrosion detected when tested for 720h/85°C/5% NaCl (ASTM B 117)
- Peel test Cohesive fracture

The Contractor shall provide full details of the visco-elastic wrapping material to be used (manufacturer and product number) as well as data and detail sheets for the application of the cold tape wrapping (manufacturer and product number) of the field joint repair system.

PCS 7.8.3 System Types and application processes

One of the following types of field joint repair systems shall be used subject to the approval of the Engineer based on proven material performance and proven field application methods for the final selected product:

PCS 7.8.3.1 System 1

The system shall comprise of a wrapping of visco-elastic corrosion protection material followed by the application of an additional cold applied tape wrapping for mechanical protection of the corrosion protection visco-elastic coating.

- i) **Surface preparation for System 1 (Visco-elastic corrosion coating wrapping plus outer mechanical tape wrapping) Hand Tool Cleaning or Power Tool Cleaning is required Prior to Application according to ISO 8501-3 - Blasting is NOT Required**
 - a) St 2 –Hand Tool Cleaning (equivalent to SSPC.SP2) Removal of all rust scale, mill scale, loose rust and loose paint to the degree specified by wire brushing, scraping, chipping, and sanding or other hand impact tools or by a combination of these methods. The substrate should be dry, have a faint metallic sheen and also be free of oil, grease, dust, soil, salts and other contaminants.
 - b) St 3 -Power Tool Cleaning (equivalent to SSPC.SP3)

- c) Removal of all rust scale, mill scale, loose paint, and loose rust to the degree specified by power wire brushes, power impact tools, power grinders, power sanders or by a combination of these methods. The substrate should be dry, have a pronounced metallic sheen and also be free of oil, grease, dirt, soil, and other contaminants. Surface should not be buffed or polished smooth.
 - d) Degrease surfaces with Isopropanol
 - e) The Steel surface temperature shall always be 3°C above the dew point to remove any moisture prior to application of the visco-elastic wrapping.
- ii) **Material for System 1 (Visco-elastic corrosion coating wrapping plus outer mechanical tape wrapping)**
- a) The visco-elastic wrapping component of the field joint repair system shall comprise of a low temperature, non-cross linked monolithic polymer wrap with cold-flow, self-healing properties. The wrapping material shall be non-toxic and fully resistant to water with a low gas- and water vapour permeability. The wrapping shall be based on a pure poly-isobutene compound technology.
 - b) The wrapping shall be viscous at all application temperatures, shall easily flow into irregularities of the substrate surface and shall automatically heal dents and cuts. The wrapping shall be suitable to be applied without any heating of the substrate.
 - c) The visco-elastic wrapping component shall be fully compatible with the coating material of the line pipe. The Contractor shall provide full details of the wrapping to be used (manufacturer and product number) as well as data and detail sheets.
- iii) **Application of System 1 (Visco-elastic corrosion coating wrapping plus outer tape mechanical wrapping)**
- 1) Visco-elastic coating wrapping
 - a) The application of the wrapping shall be in accordance with the wrapping material manufacturer's recommendations and the requirements below.
 - b) Apply the sticky side of the Wrappingband on the substrate. Avoid air enclosures and work the wrapping without tension onto the substrate surface and into surface irregularities.
 - c) Minimum overlap of the wrapping shall be 10mm on itself, on factory coated pipeline 50mm and the weld seam min. 30mm.
 - d) The wrapping shall be applied to at least 50mm beyond the cut-back edges of the surface prepared field joint.
 - e) Do not remove the release foil before application of the CZH. Remove only at the moment of adhesion of the CZH when applied to the surface.
 - 2) Finished Visco-elastic corrosion wrapping
 - a) Ensure that the wrapping is in full contact with the underlying surface with no wrinkles or bubbles.
 - b) Holiday detection shall be carried out in accordance with NACE RP0188.
 - 3) Application of outer mechanical wrapping
 - a) Align the edge of the tape 3mm inside the previously applied visco-elastic wrapping, to leave 3mm of the visco-elastic wrap visible. Press down firmly.

- b) Before spiral wrapping commences, a full circumferential wrap of tape shall be applied. The first circumferential wrap shall be applied without tension
 - c) Spiral wrap the tape with a 50% overlap. The tape shall be applied with tension. Finish the tape wrap 3 mm inside the previously applied viscous-elastic wrapping with two straight circumferential wrappings.
- 4) Finished Cold mechanical Wrapping
- a) Ensure that the tape is in full contact with the underlying surface with no wrinkles or bubbles.

PCS 7.8.3.2 System 2

The system shall comprise of a wrapping of visco-elastic corrosion protection material followed by the application of a Heat Shrink Sleeve (HSS) mechanical protection.

i) Material for System 2 (Visco-elastic corrosion coating wrapping plus HSS mechanical outer Protection)

The visco-elastic wrapping component of the field joint repair system shall be as for System 1 above. The HSS shall be compatible with the visco-elastic wrapping and the line pipe coating system.

ii) Surface Preparation for System 2 (Visco-elastic corrosion coating wrapping plus HSS mechanical outer protection)

The surface preparation of the field joint area shall be as for System 1 above.

iii) Application of System 2 (Visco-elastic corrosion coating Wrapping plus HSS Mechanical outer protection)

i) Visco-elastic Wrapping

The application of the wrapping shall be in accordance with the wrapping material manufacturer's recommendations and the requirements specified as per system 1 above.

ii) The HSS

The Contractor shall submit an HSS application Method Statement that will be technically reviewed in terms of the following application guideline:

- a) The wraparound heat shrink sleeve shall be moved into position, centered over the field joint cutback area with the overlap located at either the 10 o'clock or 2 o'clock position.
- b) The sleeve shall be overlapped by minimum 50 mm to ensure the correct sag is allowed for correct shrinking of HSS and to maintain residual circumferential (hoop) stress once installed onto the pipe.
- c) Centre and apply closure strip on the seam of the HSS. Heat the closure strip and tap on it until attachment is complete. Do not use siliconized roller.
- d) Two operators (one on each side of the field joint) shall begin by heating the centre of the sleeve around its circumference using propane torches. The torches shall be angled towards the centre of the field joint at all times during the initial shrinking phase. The operators will continue heating the sleeve from the centre towards the outer edges.

- e) If the sleeve backing becomes shiny or gives off smoke at any time during shrinking, the torch should be temporarily moved away from the subject area.
- f) The initial shrinking will be complete when the sleeve fully conforms to the entire underlying joint profile. Additional post heating shall then be applied to the outer ends of the sleeve at the overlap with the factory coating.
- g) The shrinking procedure shall be completed using long circumferential strokes over the entire sleeve surface area to ensure that a uniform bond is achieved.
- h) After the HSS has been installed, a soft J-Roller shall be used to promote contact between the sleeve and the field joint, focusing on the overlap area between the sleeve and the factory coating. The roller shall not be used over the circumferential weld seam area which is a region of critical importance due to thickness requirements. Otherwise, rolling shall be conducted per standard heat shrink sleeve installation procedures.
- i) The sleeve shall be considered well bonded to the adjacent factory coating when the adhesive and coating remain fused and adhesive begins to flow out of the sleeve edges, all around the circumference of the joint. If necessary, additional heating shall be applied to the required areas.

PCS 7.8.3.3 System 3

The system shall comprise of a wrapping of visco-elastic corrosion protection material followed by the application of a cold applied tape wrapping followed by a mechanical Outerglass Shield

- iii) **Material for System 3 (Visco-elastic corrosion coating wrapping plus Mechanical tape wrapping plus Outerglass Shield)**
 - a) The visco-elastic wrapping component of the field joint repair system and the Tape outer wrapping shall be as for System 1 above.
 - b) The Outerglass Shield shall be compatible with the visco-elastic wrapping and the line pipe coating system
- iv) **Installation of System 3 (Visco-elastic corrosion coating wrapping plus mechanical tape wrapping plus Outerglass Shield)**
 - a) Visco-elastic Wrapping and Mechanical tape wrapping

The application of the visco-elastic wrapping and mechanical tape wrapping shall be in accordance with the wrapping material manufacturer's recommendations and the requirements specified as above
 - b) Rubber gloves should always be worn during application of Outerglass Shield.
 - c) Outerglass Shield should be placed in water prior to application, in order to moisten the roll prior to application.
 - d) Outerglass Shield should always be applied employing a spiral wrap. Begin with a circumferential wrap and wrap with tension. Continue spiral wrapping with an overlap of 50% and moderate tension, end with a circumferential wrap leaving 3mm of visco-elastic exposed.
 - e) Depending on mechanical strength required and as per Engineers specifications several layers (2 to 6) may be applied.

PCS 7.9 SPECIALS, VALVES, AIR VALVES, COUPLINGS

PCS 7.9.1 Preparation Procedure

- a) The pipe piece to be coated must be excavated sufficiently so that it can be handled on all sides. Excavate 0.3m under the lowest point of the pipe.
- b) The working area must be kept dry during application.
- c) Check regularly whether the pipe stays above dew point by means of a dew point gauge.
- d) Drain (if necessary).
- e) Keep free from rain but provide sufficient ventilation with regard to dew point.

PCS 7.9.2 Base Surface Quality

- a) The surface to be coated must be clean and dry and free of loose parts. This can be achieved by either hand tool cleaning or Power tool cleaning to St 2. The substrate should have a faint metallic sheen and also be free of oil, grease, dust, soil and contaminants.
- b) Surface should not be buffed or polished smooth.
- c) At the spot where connection to the line pipe coating is, this must be bevelled under an angle of 30°.
- d) Should irregularities be found on the pipe at the coating interface, then management must be consulted.

PCS 7.9.3 Elbows, T-joints and Reducers

- a) Pre-cut Strips of Visco-elastic Wrappingband with a length to the circumference plus 75mm overlap. In the case of elbows the overlap on the exterior of the elbow is the determining position and should be at least 10mm.
- b) Place the Visco-elastic Wrappingband around the pipe working towards the imaginary centre of the elbow.
- c) Avoid air enclosures.
- d) In the case of T-joints pre-cut the Visco-elastic Wrappingband to a length of approximately 1.5 times the circumference. Apply the Visco-elastic Wrappingband from the centre outwards without tension.
- e) In the case of reducers apply the Visco-elastic Wrappingband from the larger diameter towards the smaller diameter.
- f) Apply Straight wraps with a minimum overlap of 10mm.
- g) Small folds may be repaired by pressing the Visco-elastic Wrappingband firmly onto the surface using an inside out direction, this will remove any trapped air and 100% adhesion can be achieved.
- h) Holiday test at 15kV.
- i) Apply the Outerwrap identically to the application of the Visco-elastic Wrappingband but with a 50% minimum overlap and with tension.

PCS 7.9.4 Coating of underground (insulation) flanges operating Temperature below 30°C

i) Application of Visco-elastic Wrappingband (Stopaq CZH) on the pipe section

- a) If there are any sharp pieces on the weld and/or redundant weld pieces, grind it and/or put an extra Layer of Visco-elastic Wrappingband over the welds.

- b) The first wrapping must be applied tightly to the existing coating on the brushed base surface. Then wrap with minimum 10mm overlap tightly to the flange space.
- c) After this an extra wrapping is applied on the transition of the existing coating and in such a way that it is overlapped by 5cm.

ii) Application of non-cross-linked polyolefin corrosion prevention putty (FN 4100) on the flanges

- a) To optimally apply the polyolefin putty (FN 4100) this should have a temperature between 15°C and 25°C.
- b) Fill up spaces between the flange faces with polyolefin putty (FN 4100) as much as possible.
- c) Remove redundant polyolefin putty (FN 4100) with a putty knife to a smooth whole.
- d) Apply the polyolefin putty (FN 4100) at an angle of approx. 45° on the outside of the flange and pipe.
- e) Ensure that the bolt ends are fully covered and that the bolts and nuts are under a layer of polyolefin putty (FN 4100).
- f) Spread the polyolefin putty (FN4100) bulb-shaped and clean the outer flange rims as much as possible.

iii) Application Visco-elastic Wrappingband (CZH) on the outer flange rim –

- a) Apply minimum 2 wrappings of visco-elastic wrapping band (CZH) on the outside of the flange in such a way that the bolts- and nuts-ends (which are covered with a layer of polyolefin putty (FN 4100) are extra protected by the wrapping band (CZH). The last coating is overlapped by 100mm.
- b) Holiday test at 15 kV.

iv) Application of Geotextile over the polyolefin putty (FN 4100)

- a) Achievement of extra mechanical strength is done by wrapping the entire flange with the Geotextile.
- b) Cut the Geotextile to size: Length: 3.2 x flange diameter. Width: bulb + (2 x 50mm).
- c) Fold the Geotextile around the polyolefin putty (FN 4100) to the bulb shape. The Geotextile must overlap itself by a minimum of 50mm. The Geotextile must cover 50mm of the adjoining visco-elastic wrapping band (CZH).
- d) Fasten the Geotextile to the visco-elastic wrapping band (CZH).

v) Application of Covering tape

- a) The Geotextile covered flange is further completely wrapped by cross layers of Covering tape.
- b) The Geotextile, as well as the Wrappingband on the pipe must be fully covered.

PCS 7.9.5 Coating of aboveground (insulation) flanges or Below Ground Operating Temp > 30°C

i) Application Single component non-thermosetting injection filler (FN4200) between the flange cheeks –

- a) First apply 2 strips of painter's tape on the rims of both flanges. This is to clean the rims for the next application after coating with non-thermosetting filler (FN4200).
- b) By using a pneumatic kit pistol with the help of the correct accessories (long flexible spray nozzle) the entire flange space is filled fully by spraying non-thermosetting filler (FN 4200) from inwards to outside. Use the flexible spray nozzle, in order fill very small spaces.
- c) After filling the redundant paste is removed with a putty knife and smoothed equally to the flange rims.
- d) Now the painter's tape can be removed and the surroundings are clear.

ii) Application of Visco-elastic wrapping band (CZH) on the pipe section –

- a) The application should be at a temperature between 40°C and 45°C, which is best to apply.
- b) If there are any sharp pieces on the weld and/or redundant weld pieces, grind it and/or put an extra layer of visco-elastic wrappingband over the welds.
- c) The first wrapping must be applied to the existing coating on the brushed base surface. Then wrap with minimum 10mm overlap to the flange face.
- d) After this an extra wrapping is applied on the transition of the existing coating and in such a way that it is overlapped by 5cm.

iii) Application of Visco-elastic (CZH) Paste on the flanges –

- a) Apply the visco-elastic (CZH) Paste at an angle of approx. 45° on the outside of the flange and pipe.
- b) Ensure that the bolt ends are fully covered and that the bolts and nuts are covered by a layer of visco-elastic (CZH) Paste.
- c) Spread the visco-elastic (CZH) Paste bulb-shaped and clean the outer flange rims as much as possible. If the thickness of 20mm visco-elastic (CZH) Paste is exceeded because of the flange size, apply a cord-bandage of visco-elastic Wrappingband (CZH).
- d) After this a next layer of visco-elastic (CZH) Paste can be applied.

iv) Application Visco-elastic wrapping band (CZH) on the outer flange rim

- a) Apply a minimum of 1 wrapping of visco-elastic Wrappingband (CZH) on the outside of the flange and in such a way that the nuts- and bolt ends (which are under a layer of visco-elastic (CZH) Paste) are extra protected by the visco-elastic wrapping band (CZH).
- b) The last wrapping is 100mm overlapped.
- c) Holiday Test at 15kV.

v) Application of Covering tape

- a) The flange is then completely wrapped by cross layers of Covering tape.
- b) The visco-elastic (CZH) Paste, as well as the visco-elastic Wrappingband on the pipe must be fully covered.

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

Southern Aqueduct Upgrade – WP#03 – Construction of approximately 2200m of DN1400 from the Westville Tunnel Exit to 38 Alexander Av & through the North Park Nature Reserve to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.

Drw No.	Description	Revision
A2210201-W-037-T00	GENERAL LAYOUT	T
A2210201-W-038-T00	OVERAL LAYOUT	T
A2210201-W-039-T00	LAYOUT PLAN AND LONGSECTION SHEET 1 OF 3	T
A2210201-W-040-T00	LAYOUT PLAN AND LONGSECTION SHEET 2 OF 3	T
A2210201-W-041-T00	LAYOUT PLAN AND LONGSECTION SHEET 3 OF 3	T
A2210201-W-047-T00	NEW 1400mmØ STEEL PIPE DETAIL 1: TYPE A - ISOLATION VALVE CHAMBER	T
A2210201-W-048-T00	NEW 1400mmØ STEEL PIPE DETAIL 1: TYPE B - ISOLATION VALVE CHAMBER	T
A2210201-W-049-T00	NEW 1400mmØ STEEL PIPE SCOUR VALVE L ARRANGEMENT DETAILS	T
A2210201-W-050-T00	NEW 1400mmØ STEEL PIPE AIR VALVE DETAIL (TYPE 1)	T
A2210201-W-051-T00	NEW 1400mmØ STEEL PIPE AIR VALVE DETAIL (TYPE 2)	T
A2210201-W-052-T00	STAINLESS STEEL LADDER DETAIL AIR VALVE DETAIL	T

PART B:

Southern Aqueduct Upgrade – WP#04 - Construction of approximately 1800m of DN1600 from High Wycombe Road to Roger Sishi Road to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.

Drw No.	Description	Revision
2200019-WP04-C-001	Water Layout Plan	T
2200019-WP04-C-002	Water Plan & Longitudinal Section Ch 0 -500	T
2200019-WP04-C-003	Water Plan & Longitudinal Section Ch 500 -1000	T
2200019-WP04-C-004	Water Plan & Longitudinal Section Ch 1000 -1500	T
2200019-WP04-C-005	Water Plan & Longitudinal Section Ch 1500 -1800	T
2200019-WP04-C-010	Isolating Valve and Chamber Details	T
2200019-WP04-C-011	Air Valve and Chamber Details	T
2200019-WP04-C-012	Scour Valve and Chamber Details	T
2200019-WP04-C-013	Cross Connection Details	T

PART C:

Southern Aqueduct Upgrade – WP#05 - Construction of approximately 1850m of DN1400 from Roger Sishi Road to Westville Tunnel Entrance to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.

Drw No.	Description	Revision
A2210201-W-042-T00	GENERAL LAYOUT	T
A2210201-W-043-T00	OVERAL LAYOUT	T
A2210201-W-044-T00	LAYOUT PLAN AND LONGSECTION SHEET 1 OF 3	T
A2210201-W-045-T00	LAYOUT PLAN AND LONGSECTION SHEET 2 OF 3	T
A2210201-W-046-T00	LAYOUT PLAN AND LONGSECTION SHEET 3 OF 3	T
A2210201-W-047-T00	NEW 1400mm ϕ STEEL PIPE DETAIL 1: TYPE A - ISOLATION VALVE CHAMBER	T
A2210201-W-048-T00	NEW 1400mm ϕ STEEL PIPE DETAIL 1: TYPE B - ISOLATION VALVE CHAMBER	T
A2210201-W-049-T00	NEW 1400mm ϕ STEEL PIPE SCOUR VALVE L ARRANGEMENT DETAILS	T
A2210201-W-050-T00	NEW 1400mm ϕ STEEL PIPE AIR VALVE DETAIL (TYPE 1)	T
A2210201-W-051-T00	NEW 1400mm ϕ STEEL PIPE AIR VALVE DETAIL (TYPE 2)	T
A2210201-W-052-T00	STAINLESS STEEL LADDER DETAIL AIR VALVE DETAIL	T

PART D:

Southern Aqueduct Upgrade – WP#06 - Construction of approximately 1900m of DN1600 from Durban Heights WTW to High Wycombe Road to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.

Drw No.	Description	Revision
J2301-CIV-T-001	Water Layout Plan	T
J2301-CIV-T-002	Water Plan & Longitudinal Section Ch 0 -500	T
J2301-CIV-T-003	Water Plan & Longitudinal Section Ch 500 -1000	T
J2301-CIV-T-004	Water Plan & Longitudinal Section Ch 1000 -1500	T
J2301-CIV-T-005	Water Plan & Longitudinal Section Ch 1500 -1900	T
J2301-CIV-T-006	Isolating Valve and Chamber Details	T
J2301-CIV-T-007	Air Valve and Chamber Details	T
J2301-CIV-T-008	Scour Valve and Chamber Details	T
J2301-CIV-T-009	Cross Connection Details	T
J2301-CIV-T-010	Pipe Jack Details	T

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 PART PCS: DEPARTMENTAL SPECIFICATIONS FOR STEEL PIPES, 100MM TO 2000MM
NOMINAL DIAMETER**

C3.6.2 Geotechnical Investigation

PART C4: SITE INFORMATION

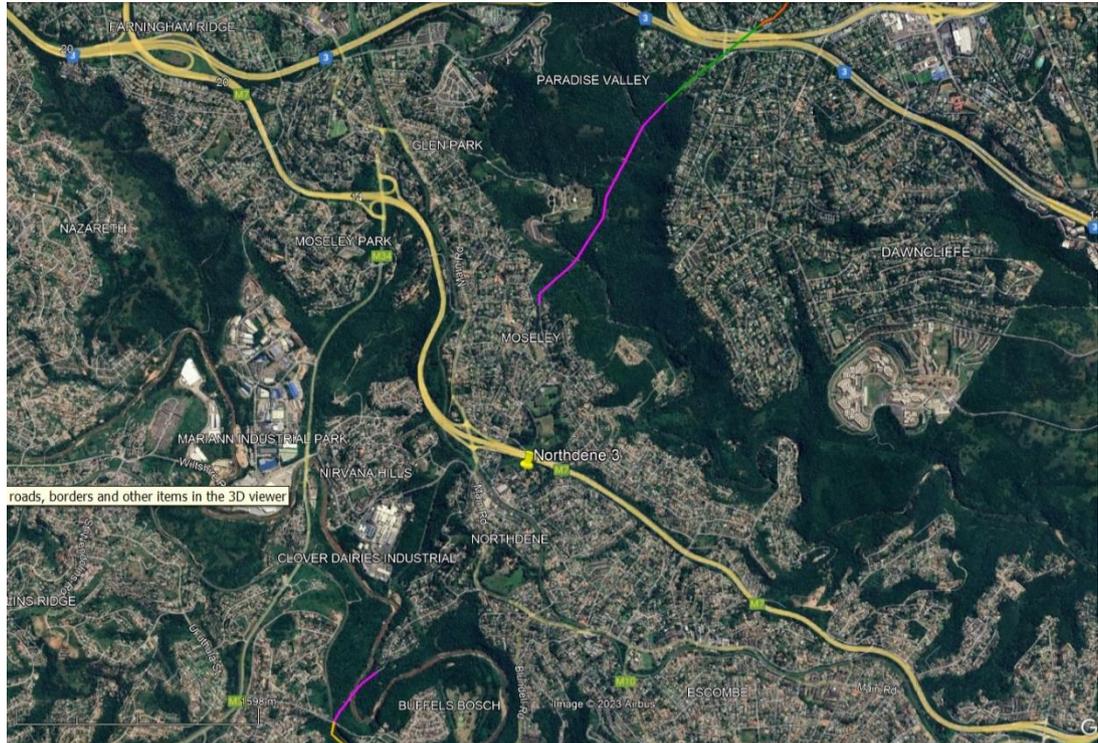
PART A

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade : WP#03, WP#04, WP#05, WP#06](#)

C4.1 LOCALITY PLAN

This contract is for Southern Aqueduct Upgrade – WP#03 – Construction of approximately 2200m of DN1400 from the Westville Tunnel Exit to 38 Alexander Av & through the North Park Nature Reserve to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.

**C4.2 CONDITIONS ON SITE**

Refer to the Geotechnical Report included as the Annexures

C4.3 TEST RESULTS

Refer to the Geotechnical Report included as the Annexures

PART B

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade: WP#04](#)

C4.1 LOCALITY PLAN

This contract is for Southern Aqueduct Upgrade – WP#04 – Construction of approximately 1800m of DN1600 from High Wycombe Road to Roger Sishi Road to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.

**C4.2 CONDITIONS ON SITE**

Refer to the Geotechnical Report included as the Annexures

C4.3 TEST RESULTS

Refer to the Geotechnical Report included as the Annexures

PART C

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade: WP#05](#)

C4.1 LOCALITY PLAN

This contract is for Southern Aqueduct Upgrade – WP#05 – Construction of approximately 1850m of DN1400 from Roger Sishi Road to Westville Tunnel Entrance to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.

**C4.2 CONDITIONS ON SITE**

Refer to the Geotechnical Report included as the Annexures

C4.3 TEST RESULTS

Refer to the Geotechnical Report included as the Annexures

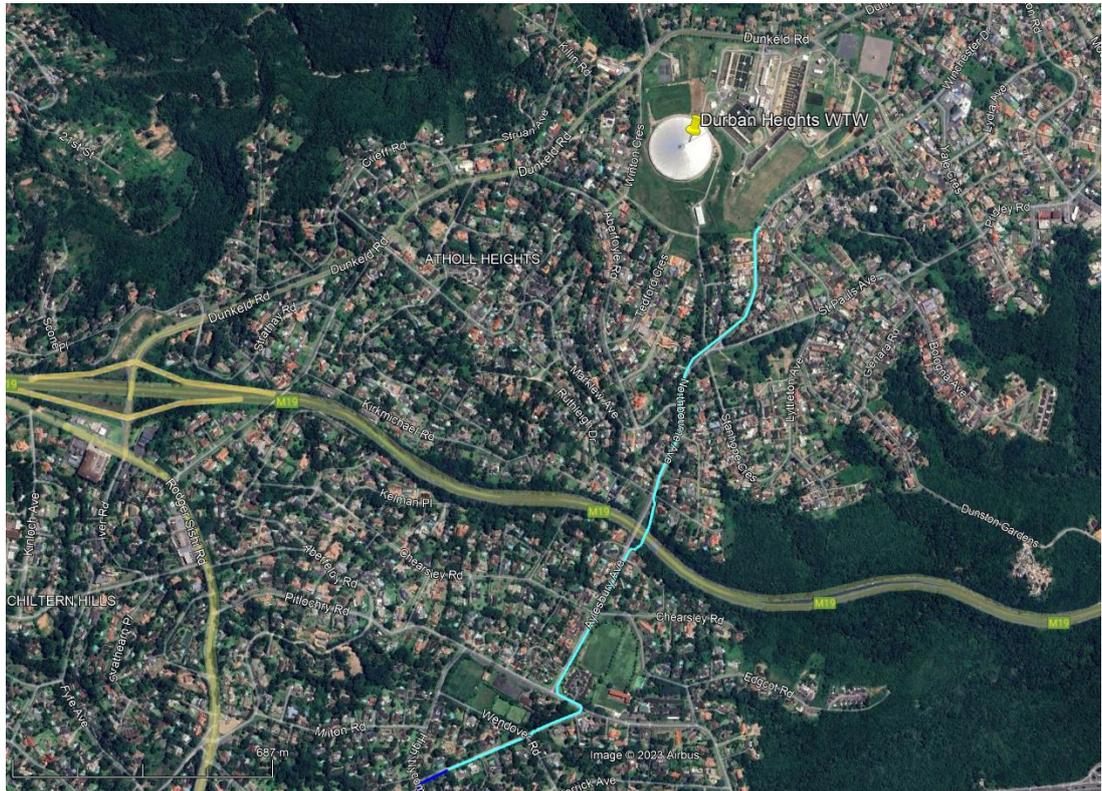
PART D

Contract No: [WS-7802](#)

Contract Title: [Southern Aqueduct Upgrade: WP#06](#)

C4.1 LOCALITY PLAN

This contract is for Southern Aqueduct Upgrade – WP#06 - Construction of approximately 1900m of DN1600 from Durban Heights WTW to High Wycombe Road to replace the existing Prestressed Concrete Pipe and augment the existing steel pipe.

**C4.2 CONDITIONS ON SITE**

Refer to the Geotechnical Report included as the Annexures

C4.3 TEST RESULTS

Refer to the Geotechnical Report included as the Annexures