

WATER AND SANITATION DEPARTMENT



TENDER REFERENCE: **USD WS 04-2021/22**

TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED

VOLUME 1: General Clauses, Tender Procedures, Contract Data, Pricing Data, Schedule of Quantities and Scope of Works



EXPANDED PUBLIC WORKS PROGRAMME

A Tender for Category **Level 6** Civil Engineering (**CE**) or higher CIDB Registered Contractors

ISSUED BY:	PREPARED BY:
The Divisional Head <u>Water and Sanitation Department</u> P O Box 1022 PRETORIA 0001	The Divisional Head <u>Water and Sanitation Department</u> P O Box 1022 PRETORIA 0001
Tel: (012) 358 6464 Fax: (012) 358 7763 / 086 210 1831	Tel: (012) 358 6464 Fax: (012) 358 7763 / 086 210 1831

Registered Name of Tenderer:	
Trading Name of Tenderer:	
Registration No. of Entity:	
Postal address of Tenderer:	
Contact Person:	CoT Vendor No:
Tel. No.:	E-mail Address:
Cell No.:	Fax No:
CIDB CRS Number(s):	

©
Copyright
City of Tshwane

In compliance
with THE CIDB
standards for
uniformity

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF
TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

PORTION 1 : TENDER

PART T1 : TENDERING PROCEDURES

T1.1 TENDER NOTICE AND INVITATION TO TENDER

CITY OF TSHWANE WATER AND SANITATION DEPARTMENT



Contract No: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF
TRENCHLESS AND CONVENTIONAL METHODS IN THE
CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

Tenders are hereby invited for the above services.

Tenderers should have a Construction Industry Development Board (CIDB) contractor grading designation **Level 6 Civil Engineering (CE) or higher**.

Tenders will be evaluated on the basis of awarding points for price and Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution. The 90/10 Preference Point System will be applied to this Tender. Only locally produced goods or locally manufactured goods, meeting the stipulated minimum threshold for local production and content will be considered.

The tender documents will be obtainable for download on www.etender.gov.za or www.tshwane.gov.za from **18 January 2022**.

**A COMPULSORY CLARIFICATION MEETING with a representative of the Employer will take place at 6894 Bokhutlo Street, Soshanguve-L (Erf 3211), Opposite Magistrates court.
Coordinates: 25° 31' 49.96"S, 28° 06' 49.11"E Pretoria, on the 03 February 2022 at 10:00.**

The lowest or any tender will not necessarily be accepted, and the Municipality reserves the right to accept a tender as a whole or in part.

Tenders must remain valid for a period of **90 days** after the closing date for the submission of tenders, during which period a tender may not be amended or withdrawn and may be accepted at any time by the Municipality.

The closing time for receipt of tenders is at 10:00 on 24 February 2022. Tenders will be received on the closing date and time shown, must be enclosed in sealed envelopes bearing the applicable tender heading and reference number, as well as the closing time and due date, and must be submitted in the tender box situated at the Procurement Advice Centre (at the entrance to the C. de Wet Centre), C de Wet Centre, 175 DF Malan Drive, Pretoria West, 0183. Tenders will be opened at the latter address at the time indicated.

TECHNICAL ENQUIRIES:	Employer's Agent:	John Mhlanga
	Telephone:	012 358 7789
	Fax:	012 358 7763
	E mail:	JohnMh@TSHWANE.GOV.ZA

SUPPLY CHAIN EQUIRIES:	Employer's Agent:	Ms Lukkiet Thobejane
	Telephone:	012 358 6282
	E mail:	lukkiet3@tshwane.gov.za

Ms. M MUTLANENG
CITY MANAGER

T1 TENDERING PROCEDURES

CITY OF TSHWANE WATER AND SANITATION DEPARTMENT

Contract: USD WS 04-2020/21

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF
TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

DESCRIPTION		COLOUR
CONTENTS LIST OF VOLUME		
PORTION 1	TENDER	
Part T1	Tendering Procedures (Volume 1)	
Section T1.1	Tender Notice and Invitation to Tender	White
Section T1.2	Tender Data	Pink
Section T1.3	Standard Conditions of Tender	Pink
Part T2	Returnable Documents (Volume 1)	
Section T2.1	List of Returnable Documents	Yellow
Section T2.2	Returnable Schedules	Yellow
PORTION 2	CONTRACT	
Part C1	Agreements and contract data (Volume 1)	Yellow
Section C1.1	Forms of offer and acceptance	
Section C1.2	Contract data	
Section C1.3	Form of Guarantee	
Section C1.4	Guarantee (Cash Deposit)	
Section C1.5	Health and Safety Agreement	
Section C1.6	Adjudicator's Agreement	

Part C2	Pricing Data (Volume 1)	Yellow
Section C2.1	Pricing Instructions	
Section C2.2	Schedule of Quantities	
Section C2.3	Summary of Schedules	
Part C3	Scope of Work	Blue
Section C3.1	Description of the Works (Volume 1)	
Section C3.2	Engineering (Volume 1)	
Section C3.3	Procurement (Volume 1)	
Section C3.4	Construction (Volume 1)	
Section C3.5	Management (Volume 1)	
Section C3.6	Particular Specifications and Variations and Additions to the Standard Specifications	
Section C3.7	Corrections and Amendments to the Standard Specifications For Municipal Civil Engineering Works, Third Edition 2005	
Section C3.8	Health and Safety Specifications (Volume 1)	
Section C3.9	References to the Scope of Works In Terms Of the Environmental Management Plan (Volume 1)	

T1.2 TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annex C of the Construction Industry Development Board's (CIDB) Board Notice 423 of 2019 (contained in Government Gazette No. 42622 of 08 August 2019), bound into section T1.3.

The Standard Conditions of Tender makes several references to the Tender Data. The Tender Data also contains project-specific amendments to the Standard Conditions of Tender applicable to this document. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

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

Reference to relevant clauses in Standard Conditions of Tender		Addition or Variation to Standard Condition of Tender
C.1.1	Actions	The Employer is THE CITY OF TSHWANE . The term "bid" in the context of this standard is synonymous with the term "tender".
C.1.2	Tender documents	<p><u>Volume 1: General Clauses, Tender Procedures, Contract Data, Pricing Data, Schedule of Quantities and Scope of Works,</u></p> <p>This document in which are bound the Tender Procedures, Returnable Documents, Agreements and Contract Data</p> <p><u>Volume 2: Construction Specifications and Drawings</u></p> <p>This document in which are bound the Project Specifications and Drawings</p>
C.1.3	Interpretation	<p><i>Replace this sub-clause with the following:</i></p> <p>These Conditions of Tender, the Tender Data, List of Returnable Documents and Returnable Schedules which are required for tender evaluation purposes, shall form part of the Contract arising from the invitation to tender.</p>
C.1.3.2		
C.1.3	Interpretation	<p>Add the following new clauses:</p> <p>"1.3.4 The Tender documents have been drafted in English. The contract arising from the invitation of tender shall be interpreted and construed in English."</p> <p>"1.3.5 The following words will have the same meaning:</p> <p style="text-align: center;">CITY OF TSHWANE, COT or CTMM"</p>
C.1.4	Communication and Employer's Agent	<p>Agent: Tlou Consulting (R Moodley)</p> <p>Tel: Telephone: 082 923 8906</p> <p>E-mail address: ravain@tlouconsult.co.za</p>
C.2.1	Eligibility	Only those Tenderers who are registered with the CIDB, or are capable of being registered prior to the evaluation of submissions, 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 Level 6 Civil Engineering (CE) or higher Class of construction work, are eligible to have their tenders evaluated.

		<p>Joint ventures are eligible to submit tenders provided that:</p> <ol style="list-style-type: none"> 1. Every member of a joint venture is registered with the CIDB 2. The lead partner has a contractor grading designation in the 6 CE or higher Class of construction work; not lower than one level below the required grading designation in the class of works construction works under consideration and possess the required recognition status; and 3. The combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor designation determined in accordance with the sum tendered for an 6 CE or higher Class of construction work, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations
		<p>Add the following new clause:</p> <p>MANDATORY DOCUMENTS</p> <p>Failure to submit the document list below will lead to disqualification and the bidder will not be evaluated further.</p> <p>The following additional documents list should be included in the tender document submitted for tender evaluation purposes:</p> <ol style="list-style-type: none"> 1. CIDB Grading of 6CE or higher certificate; 2. Site Agent must have at least a qualification of NQF level 6 or higher in Civil Engineering. 3. Safety Officer with SACPCMP Registration.
C.2.2	Cost of tendering	<p>Add the following to the sub-clause C2.2.1:</p> <p>“Accept that the Employer will not compensate the tenderer for any costs incurred in attending interviews in the office of the Employer or the Employer’s Agent (if required).”</p>
C2.5	Reference Documents	<p>Add the following:</p> <p>The following standards and conditions of contract will be applicable under this Contract:</p> <ul style="list-style-type: none"> • The document “<i>Standard Specifications for Municipal Civil Engineering Works, Third Edition, 2005</i>” issued by the General Manager: Roads and Stormwater of the City of Tshwane. <p>This document is obtainable at the Procurement Advice Centre, C de Wet Centre, 175 DF Malan Drive, Pretoria West or free of charge on the website www.tshwane.gov.za.</p> <ul style="list-style-type: none"> • The document “<i>General Conditions of Contract for Construction Works, Third Edition (2015) of the South African Institution of Civil Engineering (SAICE)</i>”. <p>Tenderers, Contractors and Sub-contractors shall obtain their own copies of this document for tendering purposes and for use for the duration of the Contract from SAICE via their website www.saice.org.za</p>

Part T1: Tendering Procedures

		All international standard specifications and codes listed and referenced in the Project and Particular Specifications.
C.2.7	Clarification meeting	<p>Where applicable, details of the compulsory clarification meeting with a representative of the Employer are stated in the Tender Notice and Invitation to Tender (Section T1.1 of the document).</p> <p>Confirmation of attendance will be recorded on site in the attendance register to be signed by all tenderers and in the Site Inspection Certificate included in Section T2.2 of the Document.</p> <p>Tender documents will not be made available at the site visit and/or clarification meeting. Detail relating to the collection of tender documents is indicated in the Tender Notice and Invitation to Tender (Section T1.1 of the document).</p>
C.2.8	Seek clarification	<p>Replace the contents of the clause with the following:</p> <p>“Request clarification of the tender documents, if necessary, by notifying the Employer’s Official or the Employer’s Agent, indicated in the Tender Notice and Invitation to Tender, in writing at least seven working days before the closing time stated in the foregoing tender notice and clause C2.15.”</p>
C.2.9	Insurance	<p>Add the following to the clause</p> <p>“Accept that the submission of a Tender shall be construed as an acknowledgement by the Tenderer that he is satisfied with, where applicable, the insurance cover the Employer will affect under the contract.”</p>
C2.10	Pricing the tender offer	<p>Add the following sub-clause 2.10.5:</p> <p>“A digital copy of the Bill of Quantities can be obtained from the Employer’s Agent at the office of the Engineer upon sufficient notice.”</p>
C.2.11	Alterations to documents	<p>Add the following to the clause:</p> <p><u>“In the event of a mistake having been made, it shall be crossed out in black ink and the corrected entry made above in black ink and shall be accompanied by the full signatures of the authorised signatories next to every correction.</u></p> <p><i>No correction fluid may be used.</i> If correction fluid has been used, the tender as a whole will not be considered.</p> <p>The Municipality will reject the bid if corrections are not made in accordance with the above.”</p>
C.2.12	Alternative tender offers	<p>Replace sub-clause C2.12.1 with:</p> <p>“Alternative offers will only be considered if tenderer(s) have submitted a fully completed main offer. For alternative offers, a complete separate detailed activity, quantities and bill/price schedule must be submitted as a separate document.</p> <p>Tenderers must provide for each offer a typed copy on CD (Word and PDF format) of the above schedule with their offers.”</p>
C.2.13	Submitting a Tender Offer	
C.2.13.2		Replace the contents of the clause with the following:

Part T1: Tendering Procedures

		<p>“Return all volumes of the tender document to the Employer after completion of the relevant sections of each volume in their entirety, either electronically (if they were issued in electronic format) or by writing in black ink.</p> <p>All volumes are to be left intact in its original format and no pages shall be removed or re-arranged.</p> <p>Each Tenderer is required to return the complete set of returnable documents as listed in Part T2 with all the required information supplied and completed in all respects.”</p>
C2.13.3		<p><u>Add the following</u> to the clause:</p> <p>“Submission of copies of the tender document is NOT required. Tenderer will be required to submit the completed ORIGINAL tender documents as listed above in C1.2 PLUS any required supporting documentation.”</p>
C.2.13.4		<p><u>Add the following</u> to the clause:</p> <p>“Only authorised signatories may sign the original and all copies of the tender offer where required in terms of C.2.13.3</p> <p>In the case of a ONE-PERSON CONCERN submitting a tender, this shall be clearly stated.</p> <p>In case of a COMPANY submitting a tender, include a copy of a <u>resolution by its board of directors</u> authorising a director or other official of the company to sign the documents on behalf of the company.</p> <p>In the case of a CLOSE CORPORATION submitting a tender, include a copy of a <u>resolution by its members</u> authorising a member or other official of the corporation to sign the documents on each member's behalf.</p> <p>In the case of a PARTNERSHIP submitting a tender, <u>all the partners</u> shall sign the documents, unless one partner or a group of partners has been authorised to sign on behalf of each partner, in which case <u>proof of such authorisation</u> shall be included in the Tender.</p> <p>In the case of a JOINT VENTURE/CONSORTIUM submitting a tender, include <u>a resolution</u> of each company of the Joint Venture together with a resolution by its members authorising a member of the Joint Venture to sign the documents on behalf of the Joint Venture.</p> <p>In cases where the Tenderer has not submitted proof of authorisation with the Tender, the Employer reserves the right to, at any time after the closure of the Tender, but before the award of the Tender, request the Tenderer to provide proof of authorisation within 7 (seven) calendar days from date of notification.</p> <p><u>Accept that failure to submit proof of authorisation to sign the tender shall result in a Tender Offer being regarded as non-responsive.</u>”</p>
C.2.13.5		<p>The Employer's address for delivery of tender offers and identification details to be shown on each tender offer package are as follows:</p> <p>Correct Tender Reference no. : USD WS 04-2021/22 Correct Tender description : TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED Closing time : 10:00</p>

		<p>Closing date : 24 February 2022</p> <p>Each tender shall be enclosed in a sealed envelope, bearing the correct identification details and shall be placed in the tender box located at:</p> <p>PROCUREMENT ADVICE CENTRE (TENDER BOX AT THE ENTRANCE OF C DE WET CENTRE) C DE WET CENTRE, 175 E`skia Mphahlele Drive, PRETORIA WEST, 0183</p> <p>This address is 24 hours available for delivery of Tender offers.</p> <p>The name and address of the tender shall be entered on the back of the envelope.</p>
C.2.13.6		A two-envelope procedure will not be followed.
C.2.13.10		<p>Add the following new sub-clause 2.13.10:</p> <p>Accept that all conditions, which are printed or written upon any stationary used by the Tenderer for the purpose of or in connection with the submission of a tender offer for this Contract, which is in conflict with the conditions laid down in this document shall be waived, renounced and abandoned.</p>
C.2.14	Information and Data to be completed in all respects	<p>Add the following to the clause:</p> <p>“The Tenderer is required to enter information in the following sections of the document:</p> <p>Section T2.2 : Returnable Schedules Section T2.3 : Technical Schedules Section C1.1 : Form of Offer and Acceptance Section C1.2 : Contract Data (Part 2) Section C2.2 : Bill of Quantities</p> <p>The above sections shall be signed by the Tenderer (and witnesses where required). Individual pages should only be initialled by the successful Tenderer and by the witnesses after acceptance by the Employer of the Tender Offer.</p> <p>The Tenderer shall complete and sign the Form of Offer prior to the submission of a Tender Offer.</p> <p>The Schedule of Deviations (if applicable) shall be signed by the successful Tenderer after acceptance by the Employer of the Tender Offer.</p> <p>Accept that the Employer shall in the evaluation of tenders take due account of the Tenderer's past performance in executing for similar building works of comparable magnitude, and the degree to which he possesses the necessary technical, financial and other resources to enable him to complete the Works successfully within the contract period.</p> <p>Satisfy the Employer and Engineer as to his ability to perform and complete the Works timeously, safely and with satisfactory quality, by furnishing details in Part T2 – Returnable Documents.</p> <p><u>Accept that failure to provide the information and data required in the Returnable Documents, including the Technical Schedules shall result in a Tender Offer being regarded as non-responsive.</u></p>

Part T1: Tendering Procedures

		Accept that the Employer is restricted in accordance with clause 5 (1) of the Construction Regulations, 2014, to only appoint a contractor whom he is satisfied has the necessary competencies and resources to carry out the work safely. Accept that submitting inferior and inadequate information relating to health and safety (as required in clause 2.23) shall be regarded as justifiable and compelling reasons not to accept the Tender Offer of the Tenderer scoring the highest number of tender evaluation points.
C.2.15	Closing Time	
C.2.15.1		Details of the closing time for submission of tender offers are stated in the Tender Notice and Invitation to tender (Section T.1.1 of the document).
C.2.16	Tender Offer validity	The Tender Offer validity period is 90 days .
C.2.16.1		<u>Add the following</u> to the Clause “If the tender validity expires on a Saturday, Sunday or public holiday, the Tender Offer shall remain valid and open for acceptance until the closure of business on the following working day.”
C.2.16.5		<u>Add the following</u> new clause: Accept that should the Tenderer unilaterally withdraw his tender during the tender validity period, the Employer shall, without prejudice to any other rights he may have, be entitled to accept any less favourable tender for the Works from those received, or to call for fresh tenders, or to otherwise arrange for execution of the Works, and the Tenderer shall pay on demand any additional expense incurred by the Employer on account of the adoption of the said courses, as well as either the difference in cost between the tender withdrawn (as corrected in terms of clause 3.9 of the Conditions of Tender) and any less favourable tender accepted by the Employer or the difference between the tender withdrawn (as corrected) and the cost of execution of the Works by the Employer as well as any other amounts the Employer may have to pay to have the Works completed.
C.2.18	Provide other material	
C.2.18.1		<u>Add the following</u> to the clause: “Accept that if requested, the Tenderer shall within 7 days of the date upon which he is requested to do so, submit a full report from his banker as to his financial standing. The Employer may, in its discretion, and subject to the provisions of Section 4(1)(d) of the State Tender Board Act 86 of 1968, condone any failure to comply with the foregoing condition. Accept that the Employer or his agent reserves the right to approach the Tenderer's banker or guarantor(s) as indicated in the tender document, or the bankers of each of the individual members of any joint venture that is constituted for purposes of this Contract, with a view to ascertaining whether the required guarantee will be furnished, and for purposes of ascertaining the financial strength of the Tenderer or of the individual member of such venture.”
C.2.19	Inspections, tests and analysis	Add the following at the end of the clause: “....or upon written request.”.
C2.22	Return of other tender documents	Return all retained tender documents prior to the closing time for the submission of Tender Offers.
C.2.23	Certificates	Refer to part T2: Returnable Documents for a list of documents that are to be returned with the tender.

Part T1: Tendering Procedures

Add the following new clause: "C.2.24"	Canvassing and obtaining of additional information by tenderer	<p>"Accept that no Tenderer shall make any attempt either directly or indirectly to canvass any of the Employers officials or the Employer's agent in respect of his tender, after the opening of the tenders but prior to the Employer arriving at a decision thereon."</p> <p>"No Tenderer shall make any attempt to obtain particulars of any relevant information, other than that disclosed at the opening of tenders."</p>
Add the following new clause: "C.2.25"	Prohibitions on awards to persons in service of the state	<p>"Accept that the Employer is prohibited to award a tender to a person</p> <ol style="list-style-type: none"> who is in the service of the state; or if that person is not a natural person, of which any director, manager, principal shareholder or stakeholder is a person in the service of the state; or a person who is an advisor or consultant contracted with the municipality <u>or</u> municipal entity. <p>"In the service of the state" means to be –</p> <ol style="list-style-type: none"> a member of – <ul style="list-style-type: none"> any municipal council; any provincial legislature; or the National Assembly or the National Council of Provinces; a member of the board of directors of any municipal entity; an official of any municipality or municipal entity; an employee of any national or provincial department; provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999); a member of the accounting authority of any national or provincial public entity; or an employee of Parliament or a provincial legislature." <p>In order to give effect to the above, the questionnaire for the declaration of interests in the tender of persons in service of state in part T2 – Returnable Documents must be completed."</p>
Add the following new clause: "C.2.26"	Awards to close family members of persons in the service of the state	<p>"Accept that the notes to the Employer's annual financial statements must disclose particulars of any award of more than R2000 to a person who is a spouse, child or parent of a person in the service of the state (defined in clause 2.25), or has been in the service of the state in the previous twelve months, including –</p> <ol style="list-style-type: none"> the name of that person; the capacity in which that person is in the service of the state; and the amount of the award. <p>In order to give effect to the above, the questionnaire for the declaration of interests in the tender of persons in service of state in part T2 – Returnable Documents must be completed in full and signed."</p>
Add the following new clause: "C.2.27"	Vendor registration	<p>"Accept that each contractor is required to register as a supplier / service provider on the City of Tshwane's vendor register before any payment can be done. Accept that if the Tenderer is already registered as a vendor, it is required to record the vendor number in space provided on the cover page of this Tender document.</p> <p>Vendor registration documents are available from the Procurement Advice Centre or can be downloaded from https://vendorportal.tshwane.gov.za/</p> <p>Accept that all parties of a joint venture or consortium submitting a tender shall comply with the requirements of this clause"</p>

Part T1: Tendering Procedures

Add the following new clause: "C.2.28"	Tax Clearance Certificate	"In the case of a Joint Venture/Consortium the tax clearance certificate must be for the Joint Venture/Consortium or individual valid tax clearance certificates for all the members of the Joint Venture/Consortium."
C.3.1 C.3.1.1	Respond to requests from tenderer	Replace the contents of the clause with the following: Respond to a request for clarification received up to five (5) working days before the Tender closing time stated in the Tender Data and notify all Tenderers who collected procurement documents within two (2) working days of the same date.
C.3.4 C.3.4.1	Opening of Tender submissions	The time and location for the tender submissions and details of the tender opening are stated in the Tender Notice and Invitation to Tender (Section T1.1 of the document).
C.3.5	Two-envelope system	A two-envelope procedure will not be followed.
C.3.8 C.3.8.1	Test for responsiveness	Add the following to the sub-clause: Failure on the part of the Tenderer to submit a tender offer as stipulated in clause C2.13 prior to the closing time as stipulated in clause C2.15 shall be just cause for the Employer to consider the tender offer as being non-responsive Failure on the part of the Tenderer to submit any one of the returnable documents or certificates listed in clause C2.23 within the period stipulated shall be just cause for the Employer to consider the tender offer as being non-responsive.
C3.9	Arithmetical errors, omissions and discrepancies	Replace the contents of the clause with the following: Check responsive tender offers for arithmetical errors, correcting them in the following manner: a) If a bill of quantities (or schedule of quantities or schedule of rates) applies and there is an error in the line item total resulting from the product of the unit rate and the quantity, the unit rate shall govern and the line item total shall be corrected. b) Where there is an error in the total of the prices, either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the corrected total of the prices shall govern. c) Where there is a discrepancy between the amount indicated in the Tenderer's tender offer and the corrected amount obtained after completing the above steps, the corrected amount shall govern. Notify a tenderer upon written request received after the closing date of tenders of all arithmetical errors made by that particular tenderer.
C.3.11	Evaluation of Tenders	Add the following to the sub-clause: Method 1 as described in Clause 3.11.2 will be used to evaluate all responsive tender offers,

		<p>Or</p> <p>Method 2 as described in Clause 3.11.3 will be used to evaluate all responsive tender offers,</p> <p>where the Points scored for Price is:</p> <p>in accordance with Clause 3.11.4 where the financial value inclusive of VAT of one or more responsive tender offers equals or is less than R50 000 000; or</p> <p>in accordance with Clause 3.11.5 where the financial value inclusive of VAT of all responsive tenders received has a value in excess of R50 000 000.</p>
<p>Add the following new clause:</p> <p>C.3.11.2</p>		<p>Method 1: Price and Preference</p> <p>In the case of a price and preference:</p> <ol style="list-style-type: none"> 1) Score tender evaluation points for price 2) Score points for B-BBEE contribution <p>Add the points scored for price and B-BBEE.</p>
<p>Add the following new clause:</p> <p>C.3.11.3</p>		<p>Method 2: Functionality, Price and Preference</p> <p>In the case of functionality, price and preference:</p> <ol style="list-style-type: none"> 1) Score functionality, rejecting all tender offers that fail to achieve the minimum number of points for functionality as stated in the Tender Data. 2) No tender must be regarded as an acceptable tender if it fails to achieve the minimum qualifying score for functionality as indicated in the tender invitation. <p>Tenders that have achieved the minimum qualification score for functionality must be evaluated further in terms of the preference points system prescribed in clauses C3.11.4 and C3.11.5 below.</p>

No	Functionality		Points earned	Multiplying factor	Maximum points awarded	Final points awarded
i)	Having specific project experience in trenchless replacement/rehabilitation:					
a)	Tenderer must have successfully executed project(s) in replacement of network pipes (water/sewer) through trenchless pipe bursting and/or lining methods for pipe diameters ranging from 150 to 450 mm. The tenderer must submit proof of experience in the form of appointment letters supported by contactable testimonials or letters	Projects	Maximum points allowed is 40			
		One (1) trenchless replacement of network pipes project	5	X2	10	
		Two (2) trenchless replacement of network pipes project	10		20	
		Three (3) or more trenchless	20		40	

Part T1: Tendering Procedures

	of referrals. No points will be allocated if proof of experience is not submitted.	replacement of network pipes project				
b)	Contractor's representative (site agent) experience in trenchless replacement of water/sewer pipes (150 to 450 mm). The Tenderer shall submit a brief summary of abovementioned site agent's project experience in trenchless replacement of pipes, supported by a certified qualification, CV and by letters of referrals/testimonials attached to the tender. No points will be allocated if supporting documents are not submitted.	Site Agent experience	Maximum points allowed is 15			
		At least 3 years' experience of trenchless replacement of network pipes	5	X1	5	
		At least 5 years' experience of trenchless replacement of network pipes	10		10	
		>=8 years' experience of trenchless replacement of network pipes	15		15	
ii)	Owned or hired construction equipment, as set out in applicable returnable schedules:					
a)	Minimum of 1 x Pipe bursting equipment suitable to burst large diameter (150 – 450 mm) sewer pipes. As proof, submit proof of ownership together with the specification/manual of the equipment. In the case where equipment are hired, additional to abovementioned proof, a pre-contract agreement from hiring companies/supplier for the duration of the contract (3 years) must be submitted altogether.	Plant: Pipe Bursting	Maximum points allowed is 30			
		Pipe bursting equipment	30	X1	30	
iii)	Tenderers located within the boundaries of Tshwane					
a)	One of the following maximum associated points can be obtained by the Tenderer when his/her business is located within the	Location	Maximum points allowed is 15			
		City of Tshwane	15	X1	15	
		Gauteng Province	10		10	

		<p>(4)(d) The points scored by tender in respect of B-BBEE contribution contemplated in subparagraph (4)(b) must be added to the points scored for the price as calculated in accordance with subparagraph (4)(a).</p> <p>(4)(e) Subject to paragraph 3.13 the contract must be awarded to the tender who scores the highest total number of points.</p>																				
<p>Add the following new clause:</p> <p>C.3.11.5</p>		<p>The 90/10 preference points system for acquisition of services, works or goods with a Rand value above R 50 million.</p> <p>(5)(a) The following formula must be used to calculate the points for price in respect of tenders with a Rand value above R50 000 000 (all applicable taxes included):</p> $\left[1 - \frac{Pt - Pmin}{Pmin} \right]$ <p>Ps = 90</p> <p>Where</p> <p>Ps = Points scored for the comparative price of tender or offer under consideration;</p> <p>Pt = Comparative price of tender or offer under consideration; and</p> <p>Pmin = Comparative price of lowest acceptable tender or offer.</p> <p>(5)(b) Subject to subparagraph (5)(c), points must be awarded to a tender for attaining the B-BBEE status level of contributor in accordance with the table below:</p> <table><tr><th>B-BBEE status level of contributor</th><th>Number of points</th></tr><tr><td>1</td><td>10</td></tr><tr><td>2</td><td>9</td></tr><tr><td>3</td><td>6</td></tr><tr><td>4</td><td>5</td></tr><tr><td>5</td><td>4</td></tr><tr><td>6</td><td>3</td></tr><tr><td>7</td><td>2</td></tr><tr><td>8</td><td>1</td></tr><tr><td>Non-compliant contributor</td><td>0</td></tr></table> <p>(5)(c) A maximum of 10 points may be allocated in accordance with subparagraph (5)(b).</p> <p>(5)(d) The points scored by tender in respect of B-BBEE contribution contemplated in subparagraph (5)(b) must be added to the points scored for the price as calculated in accordance with subparagraph (5)(a).</p> <p>(5)(e) Subject to paragraph 3.13 the contract must be awarded to the tender who scores the highest total number of points.</p>	B-BBEE status level of contributor	Number of points	1	10	2	9	3	6	4	5	5	4	6	3	7	2	8	1	Non-compliant contributor	0
B-BBEE status level of contributor	Number of points																					
1	10																					
2	9																					
3	6																					
4	5																					
5	4																					
6	3																					
7	2																					
8	1																					
Non-compliant contributor	0																					
C.3.16	Registration of the award	<p>Add the following to the clause:</p> <p>Notice of non-acceptance of the tender will not be sent to individual unsuccessful tenderers. Particulars of the accepted tender can be obtained from the Employer' Agent.</p>																				

C.3.17	Provide Copies of Contract	One signed copy of the contract shall be provided by the Employer to the successful Tenderer.
--------	----------------------------	---

T1.3 STANDARD CONDITIONS OF TENDER

CIDB STANDARD CONDITIONS OF TENDER

(August 2019 Edition)

(As contained in Annexure C of the CIDB Standard for Uniformity in Construction Procurement – August 2019)

C.1 General

C.1.1 Actions

C.1.1.1 The employer and each tenderer submitting a tender offer shall comply with these conditions of tender. In their dealings with each other, they shall discharge their duties and obligations as set out in C.2 and C.3, timeously and with integrity, and behave equitably, honestly and transparently, comply with all legal obligations and not engage in anticompetitive practices.

C.1.1.2 The employer and the tenderer and all their agents and employees involved in the tender process shall avoid conflicts of interest and where a conflict of interest is perceived or known, declare any such conflict of interest, indicating the nature of such conflict. Tenderers shall declare any potential conflict of interest in their tender submissions. Employees, agents and advisors of the employer shall declare any conflict of interest to whoever is responsible for overseeing the procurement process at the start of any deliberations relating to the procurement process or as soon as they become aware of such conflict and abstain from any decisions where such conflict exists or recuse themselves from the procurement process, as appropriate.

Note: 1) A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.

2) Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.

C.1.1.3 The employer shall not seek and a tenderer shall not submit a tender without having a firm intention and the capacity to proceed with the contract.

C.1.2 Tender Documents

The documents issued by the employer for the purpose of a tender offer are listed in the tender data.

C.1.3 Interpretation

C.1.3.1 The tender data and additional requirements contained in the tender schedules that are included in the returnable documents are deemed to be part of these conditions of tender.

C.1.3.2 These conditions of tender, the tender data and tender schedules which are required for tender evaluation purposes, shall form part of any contract arising from the invitation to tender.

C.1.3.3 For the purposes of these conditions of tender, the following definitions apply:

a) **conflict of interest** means any situation in which:

- i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfil his or her duties impartially;
- ii) an individual or tenderer is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or

- iii) incompatibility or contradictory interests exist between an employee and the tenderer who employs that employee.
- b) **comparative offer** means the price after the factors of a non-firm price and all unconditional discounts it can be utilised to have been taken into consideration;
- c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process;
- d) **fraudulent practice** means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels;

C.1.4 Communication and employer's agent

Each communication between the employer and a tenderer shall be to or from the employer's agent only, and in a form that can be readily read, copied and recorded. Communications shall be in the English language. The employer shall not take any responsibility for non-receipt of communications from or by a tenderer. The name and contact details of the employer's agent are stated in the tender data.

C.1.5 Cancellation and Re-Invitation of Tenders

- C.1.5.1 An employer may, prior to the award of the tender, cancel a tender if-
 - a) due to changed circumstances, there is no longer a need for the engineering and construction works specified in the invitation;
 - b) funds are no longer available to cover the total envisaged expenditure; or
 - c) no acceptable tenders are received.
 - d) there is a material irregularity in the tender process.
- C.1.5.2 The decision to cancel a tender invitation must be published in the same manner in which the original tender invitation was advertised
- C.1.5.3 An employer may only with the prior approval of the relevant treasury cancel a tender invitation for the second time.

C.1.6 Procurement procedures

C.1.6.1 General

Unless otherwise stated in the tender data, a contract will, subject to C.3.13, be concluded with the tenderer who in terms of C.3.11 is the highest ranked or the tenderer scoring the highest number of tender evaluation points, as relevant, based on the tender submissions that are received at the closing time for tenders.

C.1.6.2 Competitive negotiation procedure

- C.1.6.2.1 Where the tender data require that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of C.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of C.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.
- C.1.6.2.2 All responsive tenderers or at least a minimum of not less than three responsive tenderers that are highest ranked in terms of the evaluation criteria stated in the tender data shall be invited to enter into competitive negotiations based on the principle of equal treatment, keeping confidential the proposed solutions and associated information.

Notwithstanding the provisions of C.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

- C.1.6.2.3 At the conclusion of each round of negotiations, tenderers shall be invited by the employer to revise their tender offer based on the same evaluation criteria, with or without adjusted weightings. Tenderers shall be advised when they are to submit their best and final offer.
- C.1.6.2.4 The contract shall be awarded in accordance with the provisions of C.3.11 and C.3.13 after tenderers have been requested to submit their best and final offer.

C.1.6.3 Proposal procedure using the two stage-system

C.1.6.3.1 Option 1

Tenderers shall in the first stage submit technical proposals and, if required, cost parameters around which a contract may be negotiated. The employer shall evaluate each responsive submission in terms of the method of evaluation stated in the tender data, and in the second stage negotiate a contract with the tenderer scoring the highest number of evaluation points and award the contract in terms of these conditions of tender.

C.1.6.3.2 Option 2

- C.1.6.3.2.1 Tenderers shall submit in the first stage only technical proposals. The employer shall invite all responsive tenderers to submit tender offers in the second stage, following the issuing of procurement documents.
- C.1.6.3.2.2 The employer shall evaluate tenders received during the second stage in terms of the method of evaluation stated in the tender data and award the contract in terms of these conditions of tender.

C.2 Tenderer's obligations

C.2.1 Eligibility

- C.2.1.1 Submit a tender offer only if the tenderer satisfies the criteria stated in the tender data and the tenderer, or any of his principals, is not under any restriction to do business with employer.
- C.2.1.2 Notify the employer of any proposed material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used by the employer as the basis in a prior process to invite the tenderer to submit a tender offer and obtain the employer's written approval to do so prior to the closing time for tenders.

C.2.2 Cost of tendering

- C.2.2.1 Accept that, unless otherwise stated in the tender data, the employer will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer complies with requirements.
- C.2.2.2 The cost of the tender documents charged by the employer shall be limited to the actual cost incurred by the employer for printing the documents. Employers must attempt to make available the tender documents on its website so as not to incur any costs pertaining to the printing of the tender documents.

C.2.3 Check documents

Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.

C.2.4 Confidentiality and copyright of documents

Treat as confidential all matters arising in connection with the tender. Use and copy the documents issued by the employer only for the purpose of preparing and submitting a tender offer in response to the invitation.

C.2.5 Reference documents

Obtain, as necessary for submitting a tender offer, copies of the latest versions of standards, specifications, conditions of contract and other publications, which are not attached but which are incorporated into the tender documents by reference.

C.2.6 Acknowledge addenda

Acknowledge receipt of addenda to the tender documents, which the employer may issue, and if necessary, apply for an extension to the closing time stated in the tender data, in order to take the addenda into account.

C.2.7 Clarification meeting

Attend, where required, a clarification meeting at which tenderers may familiarize themselves with aspects of the proposed work, services or supply and raise questions. Details of the meeting(s) are stated in the tender data.

C.2.8 Seek clarification

Request clarification of the tender documents, if necessary, by notifying the employer at least five (5) working days before the closing time stated in the tender data.

C.2.9 Insurance

Be aware that the extent of insurance to be provided by the employer (if any) might not be for the full cover required in terms of the conditions of contract identified in the contract data. The tenderer is advised to seek qualified advice regarding insurance.

C.2.10 Pricing the tender offer

- C.2.10.1 Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes except Value Added Tax (VAT), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable fourteen (14) days before the closing time stated in the tender data.
- C.2.10.2 Show VAT payable by the employer separately as an addition to the tendered total of the prices.
- C.2.10.3 Provide rates and prices that are fixed for the duration of the contract and not subject to adjustment except as provided for in the conditions of contract identified in the contract data.
- C.2.10.4 State the rates and prices in Rand unless instructed otherwise in the tender data. The conditions of contract identified in the contract data may provide for part payment in other currencies.

C.2.11 Alterations to documents

Do not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations.

C.2.12 Alternative tender offers

- C.2.12.1 Unless otherwise stated in the tender data, submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted as well as a schedule that compares the requirements of the tender documents with the alternative requirements that are proposed.
- C.2.12.2 Accept that an alternative tender offer must be based only on the criteria stated in the tender data or criteria otherwise acceptable to the employer.
- C.2.12.3 An alternative tender offer must only be considered if the main tender offer is the winning tender.

C.2.13 Submitting a tender offer

- C.2.13.1 Submit one tender offer only, either as a single tendering entity or as a member in a joint venture to provide the whole of the works identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.
- C.2.13.2 Return all returnable documents to the employer after completing them in their entirety, either electronically (if they were issued in electronic format) or by writing legibly in non-erasable ink.
- C.2.13.3 Submit the parts of the tender offer communicated on paper as an original plus the number of copies stated in the tender data, with an English translation of any documentation in a language other than English, and the parts communicated electronically in the same format as they were issued by the employer.
- C.2.13.4 Sign the original and all copies of the tender offer where required in terms of the tender data. The employer will hold all authorized signatories liable on behalf of the tenderer. Signatories for tenderers proposing to contract as joint ventures shall state which of the signatories is the lead partner whom the employer shall hold liable for the purpose of the tender offer.
- C.2.13.5 Seal the original and each copy of the tender offer as separate packages marking the packages as "ORIGINAL" and "COPY". Each package shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.
- C.2.13.6 Where a two-envelope system is required in terms of the tender data, place and seal the returnable documents listed in the tender data in an envelope marked "financial proposal" and place the remaining returnable documents in an envelope marked "technical proposal". Each envelope shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.
- C.2.13.7 Seal the original tender offer and copy packages together in an outer package that states on the outside only the employer's address and identification details as stated in the tender data.
- C.2.13.8 Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.
- C.2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the tender data.

C.2.14 Information and data to be completed in all respects

Accept that tender offers, which do not provide all the data or information requested completely and in the form required, may be regarded by the employer as non-responsive.

C.2.15 Closing time

- C.2.15.1 Ensure that the employer receives the tender offer at the address specified in the tender data not later than the closing time stated in the tender data. Accept that proof of posting shall not be accepted as proof of delivery.
- C.2.15.2 Accept that, if the employer extends the closing time stated in the tender data for any reason, the requirements of these conditions of tender apply equally to the extended deadline.

C.2.16 Tender offer validity

- C.2.16.1 Hold the tender offer(s) valid for acceptance by the employer at any time during the validity period stated in the tender data after the closing time stated in the tender data.
- C.2.16.2 If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period with or without any conditions attached to such extension.
- C.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted. If the validity period stated in C.2.16 lapses before the employer evaluating tender, the contractor reserves the right to review the price based on Consumer Price Index (CPI).
- C.2.16.4 Where a tender submission is to be substituted, a tenderer must submit a substitute tender in accordance with the requirements of C.2.13 with the packages clearly marked as "SUBSTITUTE".

C.2.17 Clarification of tender offer after submission

Provide clarification of a tender offer in response to a request to do so from the employer during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No change in the competitive position of tenderers or substance of the tender offer is sought, offered, or permitted.

Note: Sub-clause C.2.17 does not preclude the negotiation of the final terms of the contract with a preferred tenderer following a competitive selection process, should the Employer elect to do so.

C.2.18 Provide other material

- C.2.18.1 Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment.

Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.
- C.2.18.2 Dispose of samples of materials provided for evaluation by the employer, where required.

C.2.19 Inspections, tests and analysis

Provide access during working hours to premises for inspections, tests and analysis as provided for in the tender data.

C.2.20 Submit securities, bonds and policies

If requested, submit for the employer's acceptance before formation of the contract, all securities, bonds, guarantees, policies and certificates of insurance required in terms of the conditions of contract identified in the contract data.

C.2.21 Check final draft

Check the final draft of the contract provided by the employer within the time available for the employer to issue the contract.

C.2.22 Return of other tender documents

If so instructed by the employer, return all retained tender documents within twenty-eight (28) days after the expiry of the validity period stated in the tender data.

C.2.23 Certificates

Include in the tender submission or provide the employer with any certificates as stated in the tender data.

C.3 The employer's undertakings

C.3.1 Respond to requests from the tenderer

- C.3.1.1 Unless otherwise stated in the tender Data, respond to a request for clarification received up to five (5) working days before the tender closing time stated in the Tender Data and notify all tenderers who collected tender documents.
- C.3.1.2 Consider any request to make a material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used to prequalify a tenderer to submit a tender offer in terms of a previous procurement process and deny any such request if as a consequence:
 - a) an individual firm, or a joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements;
 - b) the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or
 - c) in the opinion of the Employer, acceptance of the material change would compromise the outcome of the prequalification process.

C.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until three (3) working days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who collected tender documents.

C.3.3 Return late tender offers

Return tender offers received after the closing time stated in the Tender Data, unopened, (unless it is necessary to open a tender submission to obtain a forwarding address), to the tenderer concerned.

C.3.4 Opening of tender submissions

C.3.4.1 Unless the two-envelope system is to be followed, open valid tender submissions in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data. Tender submissions for which acceptable reasons for withdrawal have been submitted will not be opened.

C.3.4.2 Announce at the meeting held immediately after the opening of tender submissions, at a venue indicated in the tender data, the name of each tenderer whose tender offer is opened and, where applicable, the total of his prices, number of points claimed for its BBBEE status level and time for completion for the main tender offer only.

C.3.4.3 Make available the record outlined in C.3.4.2 to all interested persons upon request.

C.3.5 Two-envelope system

C.3.5.1 Where stated in the tender data that a two-envelope system is to be followed, open only the technical proposal of valid tenders in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data and announce the name of each tenderer whose technical proposal is opened.

C.3.5.2 Evaluate functionality of the technical proposals offered by tenderers, then advise tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of tenderers, who score in the functionality evaluation more than the minimum number of points for functionality stated in the tender data, and announce the score obtained for the technical proposals and the total price and any points claimed on BBBEE status level. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for functionality.

C.3.6 Non-disclosure

Not disclose to tenderers, or to any other person not officially concerned with such processes, information relating to the evaluation and comparison of tender offers, the final evaluation price and recommendations for the award of a contract, until after the award of the contract to the successful tenderer.

C.3.7 Grounds for rejection and disqualification

Determine whether there has been any effort by a tenderer to influence the processing of tender offers and instantly disqualify a tenderer (and his tender offer) if it is established that he engaged in corrupt or fraudulent practices.

C.3.8 Test for responsiveness

C.3.8.1 Determine, after opening and before detailed evaluation, whether each tender offer properly received:

- a) complies with the requirements of these Conditions of Tender,
- b) has been properly and fully completed and signed, and
- c) is responsive to the other requirements of the tender documents.

C.3.8.2 A responsive tender is one that conforms to all the terms, conditions, and specifications of the tender documents without material deviation or qualification. A material deviation or qualification is one which, in the Employer's opinion, would:

- a) detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work,
- b) significantly change the Employer's or the tenderer's risks and responsibilities under the contract, or
- c) affect the competitive position of other tenderers presenting responsive tenders, if it were to be rectified.

Reject a non-responsive tender offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.

C.3.9 Arithmetical errors, omissions and discrepancies

C.3.9.1 Check responsive tenders for discrepancies between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern.

C.3.9.2 Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with C.3.11 for:

- a) the gross misplacement of the decimal point in any unit rate;
- b) omissions made in completing the pricing schedule or bills of quantities; or
- c) arithmetic errors in:
 - (i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or
 - (ii) the summation of the prices.

C.3.9.3 Notify the tenderer of all errors or omissions that are identified in the tender offer and either confirm the tender offer as tendered or accept the corrected total of prices.

C.3.9.4 Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows:

- a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected.
- b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.

C.3.10 Clarification of a tender offer

Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer.

C.3.11 Evaluation of tender offers

The activities associated with evaluating tender offers are as follows:

- a) Open and record tender offers received
- b) Determine whether or not tender offers are complete
- c) Determine whether or not tender offers are responsive
- d) Evaluate tender offers
- e) Determine if there are any grounds for disqualification
- f) Determine acceptability of preferred tenderer
- g) Prepare a tender evaluation report
- h) Confirm the recommendation contained in the tender evaluation report

C.3.11.1 General

The employer must appoint an evaluation panel of not less than three persons conversant with the proposed scope of works to evaluate each responsive tender offer using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

The CIDB Standard Conditions of Tender are based on a procurement system that satisfies the following system requirements:	
Requirement	Qualitative interpretation of goal
Fair	The process of offer and acceptance is conducted impartially without bias, providing simultaneous and timely access to participating parties to the same information.
Equitable	Terms and conditions for performing the work do not unfairly prejudice the interests of the parties.
Transparent	The only grounds for not awarding a contract to a tenderer who satisfies all requirements are restrictions from doing business with the employer, lack of capability or capacity, legal impediments and conflicts of interest.
Competitive	The system provides for appropriate levels of competition to ensure cost effective and best value outcomes.
Cost effective	The processes, procedures and methods are standardized with sufficient flexibility to attain best value outcomes in respect of quality, timing and price, and least resources to effectively manage and control procurement processes.

C.3.12 Insurance provided by the employer

If requested by the proposed successful tenderer, submit for the tenderer's information the policies and / or certificates of insurance which the conditions of contract identified in the contract data, require the employer to provide.

C.3.13 Acceptance of tender offer

Accept the tender offer; if in the opinion of the employer, it does not present any risk and only if the tenderer:

- a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement;
- b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract;
- c) has the legal capacity to enter into the contract;
- d) is not; insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act No. 2008, bankrupt or being wound up, has his/her affairs administered by a court or a judicial officer, has suspended his/her business activities or is subject to legal proceedings in respect of any of the foregoing;
- e) complies with the legal requirements, if any, stated in the tender data; and
- f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest.

C.3.14 Prepare contract documents

C.3.14.1 If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the tender documents to take account of:

- a) addenda issued during the tender period,
- b) inclusion of some of the returnable documents and
- c) other revisions agreed between the employer and the successful tenderer.

C.3.14.2 Complete the schedule of deviations attached to the form of offer and acceptance, if any.

C.3.15 Complete adjudicator's contract

Unless alternative arrangements have been agreed or otherwise provided for in the contract, arrange for both parties to complete formalities for appointing the selected adjudicator at the same time as the main contract is signed.

C.3.16 Registration of the award

An employer must, within twenty-one (21) working days from the date on which a contractor's offer to perform a construction works contract is accepted in writing by the employer, register and publish the award on the cidb Register of Projects.

C.3.17 Provide copies of the contracts

Provide to the successful tenderer the number of copies stated in the Tender Data of the signed copy of the contract as soon as possible after completion and signing of the form of offer and acceptance.

C.3.18 Provide written reasons for actions taken

Provide upon request written reasons to tenderers for any action that is taken in applying these conditions of tender but withhold information which is not in the public interest to be divulged, which is considered to prejudice the legitimate commercial interests of tenderers or might prejudice fair competition between tenderers.

CONTRACT NO: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED

Volume 1: General Clauses, Tender Procedures, Contract Data, Pricing Data, Schedule of Quantities and Scope of Works

Portion T1: Tender

Part T2: Returnable Documents

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF
TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

PORTION 1 : TENDER

PART T2 : RETURNABLE DOCUMENTS

CONTRACT NO: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED

Volume 1: General Clauses, Tender Procedures, Contract Data, Pricing Data, Schedule of Quantities and Scope of Works
Portion T1: Tender

Part T2: Returnable Documents

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF
TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

T2.1 LIST OF RETURNABLE DOCUMENTS

CONTENTS

RD.A RETURNABLE DOCUMENTS REQUIRED FOR TENDER EVALUATION PURPOSES

Note: *Failure to submit the applicable documents will result in the tender offer being disqualified from further consideration.*

Document Name	Reference	Confirmation of Document Included <i>(Tenderers may use this column to confirm documents have been completed and included in the tender)</i>
Invitation to Tender (MBD 1)	Form RDA 1	
Form of Offer and Acceptance	Section C1.1	
Declaration of Interest in tender of persons in service of state	Form RDA 2	
Declaration of Tenderer's past supply chain management practises	Form RDA 3	
Declaration Certificate for Local Production and Content for Designated Sectors (MBD 6.2)	Form RDA4	
Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E)	Form RDA5	

RD.B RETURNABLE DOCUMENTS REQUIRED FOR PREFERENTIAL PROCUREMENT EVALUATION PURPOSES

Note: *Failure to submit the applicable documents will result in the tender offer being awarded with 0 (zero) preference points.*

Document Name	Reference	Confirmation of Document Included <i>(Tenderers may use this column to confirm documents have been completed and included in the tender)</i>
Preference Points claim form in terms of the Preferential procurement regulations 2017 (90/10 version)	Form RDB1	

RD.C ADDITIONAL RETURNABLE DOCUMENTS REQUIRED FOR TENDER EVALUATION PURPOSES

Note: Failure to submit the applicable document will result in the Tenderer having to submit same upon request within 7 days and if not complied with, will result to the tender offer being disqualified from further consideration [See also clause 2.18 of the Standard Conditions of Tender]

Document Name	Reference	Confirmation of Document Included
Valid Tax Clearance Certificate	-	
Schedule of Tenderer's experience	Form RDC1	
Schedule of Proposed Subcontractors	Form RDC2	
Schedule of Plant and Equipment	Form RDC3	
Compliance with Occupational Health and Safety Act (OHSA)(Act 85 of 1993)	Form RDC4	
Record of services provided to organs of state	Form RDC5	
Company information for tenders greater than R 10 million	Form RDC6	
Classification of Business	Form RDC7	
Certificate of Authority of Signatory	Form RDC8	
Municipal Accounts of the Business as well as each Registered Director of Business	-	
Status of Concern Submitting Tender	Form RDC9	
Proof of Registration with the CIDB in the applicable category or higher	-	
Certificate of independent bid determination	Form RDC10	
Bank Rating Report	Form RDC11	

RD.D ADDITIONAL RETURNABLE DOCUMENTS THAT WILL BE INCORPORATED INTO THE CONTRACT

Note: *Failure to submit the applicable documents will result in the tender offer being disqualified from further consideration.*

Document name	Reference	Confirmation of Document Included
First Programme and Method Statements	Form RDD1	
Estimated Monthly Expenditure on Contract Works by Tenderer	Form RDD2	
Key-Personnel / Management and Supervisory Staff <ul style="list-style-type: none">Site Agent must have at least a qualification of NQF level 6 or higher in Civil Engineering.Safety Officer with SACPCMP Registration.	Form RDD3	
Quality Management Systems	Form RDD4	

RD.E OTHER DOCUMENTS THAT WILL BE INCORPORATED INTO THE CONTRACT

Document Name	Reference	Confirmation of Document Included
Record of Addenda to Tender Documents	Form RDE 1	
Proposed Amendments	Form RDE 2	
Cost Price Adjustment (CPA) – Imported Content (FOREX)	Form RDE 4	
Form of Offer and Acceptance	Section C1.1	
Contract data (Part 2: Data provided by the Contractors)	Section C1.2	
Activity Schedules / Bills of Quantities	Section C2	

Note: *Failure to submit the applicable documents will result in the tender offer being disqualified from further consideration.*

CONTRACT NO: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED

Volume 1: General Clauses, Tender Procedures and Contract Data

Portion T1: Tender

Part T2: Returnable Documents

CITY OF TSHWANE

WATER AND SANITATION DEPARTMENT

INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF
TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

T2.2 RETURNABLE SCHEDULES

RDA 1

MBD 1

PART A- INVITATION TO TENDER

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE CITY OF TSHWANE METROPOLITAN MUNICIPLAITY					
BID NUMBER:		CLOSING DATE:		CLOSING TIME:	
DESCRIPTION:					
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).					
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT <i>CLIENT'S SCM OFFICES</i> (AS PER THE TENDER ADVERT-T1.1)					
SUPPLIER INFORMATION					
NAME OF BIDDER:					
POSTAL ADDRESS:					
STREET ADDRESS:					
TELEPHONE NUMBER:	CODE		NUMBER		
CELLPHONE NUMBER:					
FACSIMILE NUMBER:	CODE		NUMBER		
E-MAIL ADDRESS:					
VAT REGISTRATION NUMBER:	TCS PIN:		OR	CSD No:	
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK THE APPLICABLE BOX]	<input type="checkbox"/> Yes <input type="checkbox"/> No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT:	<input type="checkbox"/> Yes <input type="checkbox"/> No	
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES, ANSER PART B.3]	
TOTAL NUMBER OF ITEMS OFFERED			TOTAL BID PRICE	R	
SIGNATURE OF BIDDER			DATE		
CAPACITY UNDER WHICH THIS BID IS SIGNED					
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:			TECHNICAL INFORMATION MAY BE DIRECTED TO:		
DEPARTMENT			CONTACT PERSON		
CONTACT PERSON			TELEPHONE NUMBER		
TELEPHONE NUMBER			FACSIMILE NUMBER		
FACSIMILE NUMBER			E-MAIL ADDRESS		

E-MAIL ADDRESS			
1. BID SUBMISSION:			
1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.			
1.2. ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR ONLINE			
1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.			
2. TAX COMPLIANCE REQUIREMENTS			
2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.			
2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.			
2.3 APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA .			
2.4 FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.			
2.5 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.			
2.6 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.			
2.7 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.			
3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS			
3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?			<input type="checkbox"/> Yes <input type="checkbox"/> No
3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA?			<input type="checkbox"/> Yes <input type="checkbox"/> No
3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?			<input type="checkbox"/> Yes <input type="checkbox"/> No
3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?			<input type="checkbox"/> Yes <input type="checkbox"/> No
3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?			<input type="checkbox"/> Yes <input type="checkbox"/> No
IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.			

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID. NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE.

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

RDA 2

DECLARATION OF INTEREST IN TENDER OF PERSONS IN SERVICE OF STATE

THIS FORM MUST BE COMPLETED IN FULL AND SIGNED. FAILURE TO COMPLY WILL RESULT IN THE TENDER BEING DISQUALIFIED.

(Refer to Clauses 2.25 and 2.26 in the Tender Data)

1. Is the employer/owner of the bidder in the service of the state? **YES / NO (INDICATE)**

If so, state particulars:

.....

2. If the provider is not a natural person, whether any of its directors, managers, principal shareholders or stakeholder is in the service of the state, or has been in the service of the state in the previous twelve months: **YES / NO (INDICATE)**

If so, state particulars:

.....

3. Whether a spouse, child or parent of the provider or of a director, manager, shareholder or stakeholder referred to in subparagraph 2 is in the service of the state, or has been in the service of the state in the previous twelve months: **YES / NO (INDICATE)**

If so, state particulars:

.....

4. Is an employer / owner of the bidder a person who is an advisor or consultant contracted with the municipality or municipal entity: **YES / NO (INDICATE)**

If so, state particulars:

.....

5. Are the Tenderer or any of the members of the tendering entity involved in another entity for this particular tender: **YES / NO (INDICATE)**

If so, state particulars:

.....

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

RDA 3

DECLARATION OF TENDERER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

1. This Municipal tender document must form part of all tenders invited.
2. 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. The tender of any Tenderer may be rejected if that Tenderer, or any of its directors have:
 - a. abused the Municipality's / Municipal entity's supply 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; or
 - d. been listed in the Register for Tender Defaulters in terms of Section 29 of the Prevention and Combating of Corrupt Activities Act, 2004 (Act 12 of 2004).
4. In order to give effect to the above, this form must be completed in full and signed. Failure to comply will result in the tender being disqualified. The following questionnaire must be completed and submitted with the tender:

ITEM	QUESTION	RESPONSE	
4.1	<p>Is the Tenderer, any of its directors listed on the National Treasurer's database as a company or persons prohibited from doing business with the public sector? (Companies for persons who are listed on this database were informed in writing of this restriction by the National Treasury after the <i>audi alteram partem</i> rule was applied)</p>	Yes	No
	If so, furnish particulars:		
4.2	<p>Is the Tenderer 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, 2004 (Act 12 of 2004)? (To access this Register enter the National Treasury's website, www.treasury.gov.za, click on the icon "Register for Tender Defaulters" or submit your written request for a hard copy of the Register to facsimile number 012-326-5445)</p>	Yes	No
	If so, furnish particulars:		
4.3	<p>Was the Tenderer or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?</p>	Yes	No
	If so, furnish particulars:		
4.4	<p>Was any contract between the Tenderer and the Municipality / Municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?</p>	Yes	No
	If so, furnish particulars:		

4.5	Does the tenderer or any of its directors owe any Municipal rates and taxes or Municipal charges to the Municipality/Municipal entity, or to any other Municipality/Municipal entity, that is in arrears for more than three months?	Yes	No
	If so, furnish particulars:		

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

FORM RDB 1

MBD6.1: PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution.

NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017.

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all bids:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 The value of this bid is estimated to be above R50 000 000 (all applicable taxes included) and therefore the 90/10 preference point system shall be applicable;

1.3 Points for this bid shall be awarded for:

(a) Price; and

(b) B-BBEE Status Level of Contributor.

1.4 The maximum points for this bid are allocated as follows:

	POINTS
PRICE	90
B-BBEE STATUS LEVEL OF CONTRIBUTOR	10
Total points for Price and B-BBEE must not exceed	100

1.5 Failure on the part of a bidder to submit proof of B-BBEE Status level of contributor together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

2. DEFINITIONS

- (a) **“B-BBEE”** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (b) **“B-BBEE status level of contributor”** means the B-BBEE status of an entity in terms of a code of good practice on black economic empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;

- (c) **“bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals;
- (d) **“Broad-Based Black Economic Empowerment Act”** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (e) **“EME”** means an Exempted Micro Enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (f) **“functionality”** means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.
- (g) **“prices”** includes all applicable taxes less all unconditional discounts;
- (h) **“proof of B-BBEE status level of contributor”** means:
- 1) B-BBEE Status level certificate issued by an authorized body or person;
 - 2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;
 - 3) Any other requirement prescribed in terms of the B-BBEE Act;
- (i) **“QSE”** means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (j) **“rand value”** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

3. POINTS AWARDED FOR PRICE

3.1 THE 80/20 PREFERENCE POINT SYSTEMS

A maximum of 90 points is allocated for price on the following basis:

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

Where

P_s	=	Points scored for price of bid under consideration
P_t	=	Price of bid under consideration
P_{\min}	=	Price of lowest acceptable bid

4. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTOR

- 4.1 In terms of Regulation 6 (2) and 7 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of Points
1	20
2	18

3	12
4	10
5	8
6	6
7	4
8	2
Non-compliant contributor	0

5. BID DECLARATION

5.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

6. B-BBEE STATUS LEVEL OF CONTRIBUTOR CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 4.1

6.1 B-BBEE Status Level of Contributor: . = (maximum of 10 points)

Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.

7. SUB-CONTRACTING

7.1 Will any portion of the contract be sub-contracted?

(Tick applicable box)

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

7.1.1 If yes, indicate:

- i) What percentage of the contract will be subcontracted.....%
- ii) The name of the sub-contractor.....
- iii) The B-BBEE status level of the sub-contractor.....
- iv) Whether the sub-contractor is an EME or QSE

(Tick applicable box)

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

- v) Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations, 2017:

Designated Group: An EME or QSE which is at least 51% owned by:	EME √	QSE √
Black people		
Black people who are youth		
Black people who are women		

Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		
Black people who are military veterans		
OR		
Any EME		
Any QSE		

8. DECLARATION WITH REGARD TO COMPANY/FIRM

8.1 Name of company/firm:.....

8.2 VAT registration number:.....

8.3 Company registration number:.....

8.4 TYPE OF COMPANY/ FIRM

☐ Partnership/Joint Venture / Consortium

☐ One person business/sole propriety

☐ Close corporation

☐ Company

☐ (Pty) Limited

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

8.6 COMPANY CLASSIFICATION

☐ Manufacturer

☐ Supplier

☐ Professional service provider

☐ Other service providers, e.g. transporter, etc.

[TICK APPLICABLE BOX]

8.7 MUNICIPAL INFORMATION

Municipality where business is situated:

Registered Account Number:

Stand Number:

8.8 Total number of years the company/firm has been in business:

8.9 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contributor indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 6.1, the contractor
- iv) If the B-BBEE status level of contributor has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –
 - (a) disqualify the person from the bidding 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 bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury 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.

WITNESSES

1.

2.

.....
SIGNATURE(S) OF BIDDERS(S)

DATE:

ADDRESS:

RDA 4

MBD 6.2: DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS

This Municipal Bidding Document (MBD) must form part of all bids invited. It contains general information and serves as a declaration form for local content (local production and local content are used interchangeably).

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2017, the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:2011 (Edition 1) and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].

1. General Conditions

- 1.1. Preferential Procurement Regulations, 2017 (Regulation 8) make provision for the promotion of local production and content.
- 1.2. Regulation 8.(2) prescribes that in the case of designated sectors, organs of state must advertise such tenders with the specific bidding condition that only locally produced or manufactured goods, with a stipulated minimum threshold for local production and content will be considered.
- 1.3. Where necessary, for tenders referred to in paragraph 1.2 above, a two stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.
- 1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.
- 1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

$$LC = [1 - x / y] * 100$$

Where

x is the imported content in Rand

y is the bid price in Rand excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) on the date of advertisement of the bid as indicated in paragraph 3.1 below.

The SABS approved technical specification number SATS 1286:2011 is accessible on [http://www.thedti.gov.za/industrial development/ip.jsp](http://www.thedti.gov.za/industrial%20development/ip.jsp) at no cost.

- 1.6. A bid may be disqualified if this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule) are not submitted as part of the bid documentation;
- 2. The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid is/are as follows:**

<u>Description of services, works or goods</u>	<u>Stipulated minimum threshold</u>
Valve Products & Actuators	70% [TOTAL]
Check Valves (low pressure)	70%
Check Valves (high pressure)	70%
Butterfly Valves (low pressure)	70%
Butterfly Valves (high pressure)	70%
Ball Valves (low pressure)	70%
Ball Valves (high pressure)	70%
Gate Valves (low pressure)	70%
Gate Valves (high pressure)	70%
Diaphragm Valves (low pressure)	70%
Knife Gate Valves (low pressure)	70%
Safety or Relief (low pressure)	70%
Taps, Cocks (low pressure)	70%
Manual Actuators (low pressure)	70%
Pressure Reducing (low pressure)	70%
Plug Valves (low pressure)	70%
Plug Valves (high pressure)	70%
Control Valves (low pressure)	70%
Control Valves (high pressure)	70%
Disc Valves (low pressure)	70%
Electrical and Telecom Cable Products	90% [TOTAL]
Low Voltage	90%
Low Cost Reticulation	90%
Medium Voltage	90%
Optical Fibre Cables	90%
Copper Telecom Cables	90%
Air Insulated MV Switchgear	50% [TOTAL]
Instrument Transformers	15%
Busbars	5%
Housing	25%
Switching Devices	5%
Steel Power Pylons	100% [TOTAL]
Steel Power Pylons	100%
Monopole Pylons	100%
Steel Substation Structures	100%
Powerline Hardware	100%
Street Lighting Steel Poles	100%
Steel Lattice Towers and Masts	100%
Steel Products and Components for Constructions:	
Fabricated Structural Steel	100%
Joining/Connecting Components	100%
Frames	100%
Roof and Cladding	100%
Fasteners	100%
Wire Products	100%
Ducting & Structural Pipework	100%
Gutters, downpipes & launders	100%
Plates (>4.5mm thick & supplied in flat pieces)	100%
Sheets (<4.5mm thick & supplied in coils)	100%
Galvanised & colour coated Coils	100%
Wire Rod and Drawn Wire	100%

Sections (Channels, Angles, I-beams, H-beams)	100%
Reinforcing Bars	100%
Plastic Pipes	100% [TOTAL]
Polyvinyl chloride (PVC) pipes	100%
High density polyethylene (HDPE) pipes	100%
Pumps, Medium Voltage (MV) Motors and Associated Accessories	70% [TOTAL]
End Suction Centrifugal (single stage)	70%
End Suction Centrifugal (single stage, solids handling)	70%
Multistage Centrifugal (medium-high)	70%
Horizontal split casing	70%
Vertical Turbine (radial, mixed and axial)	70%
Positive Displacement	70%
Positive Displacement (Diaphragm)	70%
Self priming Centrifugal (single stage, end suction)	70%
Slurry (vertical cantilever)	70%
Slurry (single stage)	70%
Vacuum (liquid ring)	70%
Centrifugal (vertical spindle)	70%
Centrifugal (single stage, process)	70%
Centrifugal (single stage, chemical)	70%
Medium Voltage Electric Motor	70% [TOTAL PER UNIT]
Casting or Frame Fabrication	100%
Fabrication & winding of stator core	100%
Fabrication & winding of rotor core	100%
Accessories	100%
Assembly & testing of fully-built unit	100%
Steel Pipes Fittings and Specials	
Bare	100%
Galvanised	100%
Galvanised and Coated	80%
Forged Fittings (Flanges)	100%

3. Does any portion of the goods or services offered have any imported content?
(Tick applicable box)

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

- 3.1 If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by SARB for the specific currency on the date of advertisement of the bid.

The relevant rates of exchange information is accessible on www.resbank.co.za

Indicate the rate(s) of exchange against the appropriate currency in the table below (refer to Annex A of SATS 1286:2011):

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

NB: Bidders must submit proof of the SARB rate (s) of exchange used.

4. Where, after the award of a bid, challenges are experienced in meeting the stipulated minimum threshold for local content the dti must be informed accordingly in order for the dti to verify and in consultation with the AO/AA provide directives in this regard.

LOCAL CONTENT DECLARATION
(REFER TO ANNEX B OF SATS 1286:2011)

LOCAL CONTENT DECLARATION BY CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY (CLOSE CORPORATION, PARTNERSHIP OR INDIVIDUAL)

IN RESPECT OF BID NO.

ISSUED BY: (Procurement Authority / Name of Institution):

.....

NB

- 1 The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.
- 2 Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on http://www.thedti.gov.za/industrial_development/ip.jsp. Bidders should first complete Declaration D. After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C. **Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph (c) below.** Declarations D and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

I, the undersigned, (full names),

do hereby declare, in my capacity as

of(name of bidder entity), the following:

- (a) The facts contained herein are within my own personal knowledge.
- (b) I have satisfied myself that:
 - (i) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2011; and
- (c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 3.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C:

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SATS 1286:2011	R
Stipulated minimum threshold for local content (paragraph 3 above)	
Local content %, as calculated in terms of SATS 1286:2011	

If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above.

The local content percentages for each product has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 3.1 above and the information contained in Declaration D and E.

- (d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SATS 1286:2011.
- (e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2011, may result in the Procurement Authority / Institution imposing any or all of the remedies as provided for in Regulation 14 of the Preferential Procurement Regulations, 2017 promulgated under the Preferential Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

SIGNATURE: _____

WITNESS No. 1 _____

DATE: _____

WITNESS No. 2 _____

DATE: _____

RDA 5

MBD 6.3: Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E)

SATS 1286.2011

Annex C

(C1) Tender No.

(C2) Tender description:

(C3) Designated product(s):

(C4) Tender Authority:

(C5) Tendering Entity name:

(C6) Tender Exchange Rate:

(C7) Specified local content %

Note: VAT to be excluded from all calculations

Pula

EU

GBP

Calculation of local content

Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Tender value net of exempted imported content	Imported value	Local value	Local content % (per item)
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)

Tender summary

Tender Qty	Total tender value	Total exempted imported content	Total Imported content
(C16)	(C17)	(C18)	(C19)

(C20) Total tender value

(C21) Total Exempt imported content

(C22) Total Tender value net of exempt imported content

(C23) Total Imported content

(C24) Total local content

(C25) Average local content % of tender

Signature of tenderer from Annex B

Date:

SATS 1286.2011

Annex D

(D1) Tender No.

(D2) Tender description:

Note: VAT to be excluded from all calculations

(D3) Designated Products:

(D4) Tender Authority:

(D5) Tendering Entity name:

(D6) Tender Exchange Rate:

Pula

EU

GBP

A. Exempted imported content

Calculation of imported content

Summary

Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)
(D19) Total exempt imported value										R 0	

This total must correspond with Annex C - C 21

B. Imported directly by the Tenderer

Calculation of imported content

Summary

Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Total imported value
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)	(D30)	(D31)

(D32) Total imported value by tenderer R 0

C. Imported by a 3rd party and supplied to the Tenderer

				Calculation of imported content						Summary	
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)

(D45) Total imported value by 3rd party R 0

D. Other foreign currency payments

		Calculation of foreign currency payments			Summary of payments
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange	Local value of payments
(D46)	(D47)	(D48)	(D49)	(D50)	(D51)

(D52) Total of foreign currency payments declared by tenderer and/or 3rd party

Signature of tenderer from Annex B

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above R 0

Date:

This total must correspond with Annex C - C 23

SATS 1286.2011

Annex E

Local Content Declaration - Supporting Schedule to Annex C

(E1) Tender No.		Note: VAT to be excluded from all calculations
(E2) Tender description:		
(E3) Designated products:		
(E4) Tender Authority:		
(E5) Tendering Entity name:		

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
(E9) Total local products (Goods, Services and Works)			R O

(E10) **Manpower costs** (Tenderer's manpower cost) R O

(E11) **Factory overheads** (Rental, depreciation & amortisation, utility costs, consumables etc.) R O

(E12) **Administration overheads and mark-up** (Marketing, insurance, financing, interest etc.) R O

(E13) Total local content R O

This total must correspond with Annex C - C24

Signature of tenderer from Annex B

Date: _____

FORM RDC 1 SCHEDULE OF TENDERER'S EXPERIENCE

The following is a statement of similar work successfully executed by myself / ourselves:

EMPLOYER, CONTACT PERSON AND TELEPHONE NUMBER.	DESCRIPTION OF CONTRACT	VALUE OF WORK INCLUSIVE OF VAT (RAND)	DATE COMPLETED
1. _____ (Name) (Telephone Number)	_____ _____ _____	_____ _____ _____	_____ _____ _____
2. _____ (Name) (Telephone Number)	_____ _____ _____	_____ _____ _____	_____ _____ _____
3. _____ (Name) (Telephone Number)	_____ _____ _____	_____ _____ _____	_____ _____ _____
4. _____ (Name) (Telephone Number)	_____ _____ _____	_____ _____ _____	_____ _____ _____
5. _____ (Name) (Telephone Number)	_____ _____ _____	_____ _____ _____	_____ _____ _____

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

FORM RDC 2 SCHEDULE OF PROPOSED SUBCONTRACTORS

You, the client, are hereby notified that it is our intention to employ the following Subcontractors for work on this contract.

If we are awarded a contract, we agree that this notification does not change the requirement for us to submit the names of proposed Subcontractors in accordance with requirements in the contract for such appointments. If there are no such requirements in the contract, then your written acceptance of this list shall be binding between us.

	NAME AND ADDRESS OF PROPOSED SUBCONTRACTOR	NATURE AND EXTENT OF WORK
1.		
2.		
3.		
4.		
5.		

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

FORM RDC 3 SCHEDULE OF PLANT AND EQUIPMENT

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

1. Details of major equipment that is owned by and immediately available for this contract.

QUANTITY	DESCRIPTION, SIZE, CAPACITY, ETC.

(Attach additional pages if more space is required)

2. Details of major equipment that will be hired, or acquired for this contract if my/our tender is acceptable.

QUANTITY	DESCRIPTION, SIZE, CAPACITY, ETC.

(Attach additional pages if more space is required)

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

FORM RDC 4 COMPLIANCE WITH OHSA (Act 85 of 1993)

Tenderers are required to satisfy the Employer and the Engineer as to their ability and available resources to comply with the above by answering the following questions and providing the relevant information required below.

1. Is your company familiar with the OHSA (ACT 85 of 1993) and its Regulations <u>and</u> do you have a copy available?	YES	NO
2. Who will prepare your company's Health and Safety Plan? Provide a copy of the person/s curriculum vitae/s or company profile.		
3. Does your company have a health and safety policy? If YES provide a copy.	YES	NO
4. How is this policy communicated to your employees? Provide supporting documentation to prove such communication	YES	NO
5. Does your company keep record of safety aspects of each site where work is performed? If YES, what records are kept?	YES	NO
6. Does your company conduct monthly safety meetings? If YES, provide copies of the Minutes of the last 2 meetings held.	YES	NO
7. Does your company have a safety officer in its employment, responsible for overall safety of your company? If YES, explain his/her duties and provide a copy of his/her CV (<i>only if not the same person as in question 2 above</i>) If NO, indicate who will be appointed as safety officer for this project and provide a copy of his/her CV.	YES	NO
8. Indicate the total number of employees in the Company.	.....
9. Does your company have trained first aid employees? If YES, indicate who.	YES	NO
10. Does your company have a safety induction training programme in place? If YES, provide a summary of topics covered in such induction training programme	YES	NO

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

FORM RDC 5 RECORD OF SERVICES PROVIDED TO ORGANS OF STATE

Tenderers are required to complete this record in terms of the Supply Chain Management Regulations issued in terms of the Municipal Finance Management Act of 2003.

Include only those contracts where the tenderer identified in the signature block below was directly contracted by the Employer. Tenderers must not include services provided in terms of a sub-contract agreement.

Where contracts were awarded in the name of a joint venture and the tenderer formed part of that joint venture, indicate in the column entitled "Title of the contract for the service" that the contract was in joint venture and provide the name of the joint venture that contracted with the employer. In the column for the value of the contract for the service, record the value of the portion of the contract performed (or to be performed) by the tender. Complete the record or attach the required information in the prescribed tabulation.

All services commenced or completed to an organ of state in the last five years

#	Organ of state, i.e. national or provincial department, public entity, municipality or municipal entity.	Title of contract for the service	Value of contract for service incl. VAT (Rand)	Date completed (State current if not yet completed)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				

(Attach additional pages if more space is required.)

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

FORM RDC 6

COMPANY INFORMATION FOR TENDERS GREATER THAN R10 MILLION

1. The tenderer is required by law to prepare annual financial statements for auditing and is therefore requested to provide audited annual financial statements:

- for the past three years; or
- since their establishment if established during the past three years.

Indicate whether these have been included in the tender:

YES / NO

2. Does the tenderer have any undisputed commitments for Municipal services towards a municipality or other service provider in respect of which payment is overdue for more than 30 days? **YES / NO**

If so, state particulars

.....

3. Have any contracts been awarded to the tenderer by an organ of state during the past five years?

YES / NO

If so, state particulars

.....

4. Has there been any material non-compliance or dispute concerning the execution of such contract?

YES / NO

If so, state particulars

.....

5. Is any portion of the goods or services expected to be sourced out from outside the Republic?

YES / NO

If so, state what portion and whether any portion of payment from the Municipality is expected to be transferred out of the Republic.

.....

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

FORM RDC 7 CLASSIFICATION OF BUSINESS

1. THE SMALL BUSINESSES ARE DEFINED IN THE NATIONAL SMALL BUSINESS ACT, 1996 (ACT 102 OF 1996).

2. INFORMATION FURNISHED WITH REGARD TO THE CLASSIFICATION OF THE SMALL BUSINESSES

a. **Indicate** whether the company/entity is defined as a **small, medium or micro** enterprise by the National Small Business Act, 1996 (Act 102 of 1996). **YES / NO**

b. If the response to paragraph is **YES**, the following must be completed:

i. Sector/sub-sector in accordance with the Standard Industrial classification

.....

ii. Size or class

.....

iii. Total full-time equivalent of paid employees

.....

iv. Total annual turnover

.....

v. Total gross asset value (fixed property excluded)

.....

(A schedule indicating the different sectors is attached to this form.)

The tenderer should substantiate the information provided above by submitting the following documentation:

- c. A letter from the tenderer's auditor or an affidavit from the South African Police Services confirming the correctness of the abovementioned information,
- d. Company profile indicating the tenderer's staff compliment, and
- e. 3-year financial statement or since their establishment if established during the past 3 years.

CONTRACT NO: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED

Volume 1: General Clauses, Tender Procedures, Contract Data, Pricing Data, Schedule of Quantities and Scope of Works

Portion T1: Tender

Part T2: Returnable Documents

“SCHEDULE” (See definition of ‘small businesses’ in section)

SIZE OF CLASS	THE TOTAL FULL-TIME EQUIVALENT OF PAID EMPLOYEES	TOTAL TURNOVER	TOTAL GROSS ASSET VALUE (FICED PROPERTY EXCLUDED)
AGRICULTURE			
Medium	100	R 5 mil	R 5 mil
Small	50	R 3 mil	R 3 mil
Very Small	10	R 500 000	R 500 000
Micro	5	R 200 000	R 100 000
MINING AND QUARRYING			
Medium	200	R 39 mil	R 23 mil
Small	50	R 10 mil	R 6 mil
Very Small	20	R 4 mil	R 2 mil
Micro	5	R 200 000	R 100 000
MANUFACTURING			
Medium	200	R 51 mil	R 19 mil
Small	50	R 13 mil	R 5 mil
Very Small	20	R 5 mil	R 2 mil
Micro	5	R 200 000	R 100 000
ELECTRICITY, GAS & WATER			
Medium	200	R 51 mil	R 19 mil
Small	50	R 13 mil	R 5 mil
Very Small	20	R 5.1 mil	R 1.9 mil
Micro	5	R 200 000	R 100 000
CONSTRUCTION			
Medium	200	R 26 mil	R 5 mil
Small	50	R 6 mil	R 1 mil
Very Small	20	R 3	R 500 000
Micro	5	R 200 000	R 100 000
RETAIL AND MOTOR TRADE & REPAIR SERVICES			
Medium	200	R 39 mil	R 6 mil
Small	50	R 19 mil	R 3 mil
Very Small	20	R 4 mil	R 600 000
Micro	5	R 200 000	R 100 000
WHOLESALE TRADE, COMMERCIAL AGENTS AND ALLIED SERVICES			
Medium	200	R 64 mil	R 10 mil
Small	50	R 32 mil	R 5 mil
Very Small	20	R 6 mil	R 600 000
Micro	5	R 200 000	R 100 000

Continued on next page...

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.....

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

CONTRACT NO: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED

Volume 1: General Clauses, Tender Procedures, Contract Data, Pricing Data, Schedule of Quantities and Scope of Works

Portion T1: Tender

Part T2: Returnable Documents

“SCHEDULE” (See definition of ‘small businesses’ in section) – ...Continued from previous page

SIZE OF CLASS	THE TOTAL FULL-TIME EQUIVALENT OF PAID EMPLOYEES	TOTAL TURNOVER	TOTAL GROSS ASSET VALUE (FICED PROPERTY EXCLUDED)
CATERING, ACCOMMODATION AND OTHER TRADE			
Medium	200	R 13 mil	R 3 mil
Small	50	R 6 mil	R 1 mil
Very Small	20	R 5.1 mil	R 1.9 mil
Micro	5	R 200 000	R 100 000
TRANSPORT, STORAGE & COMMUNICATIONS			
Medium	200	R 26 mil	R 6 mil
Small	50	R 13 mil	R 3 mil
Very Small	20	R 3 mil	R 600 000
Micro	5	R 200 000	R 100 000
FINANCE & BUSINESS SERVICES			
Medium	200	R 26 mil	R 5 mil
Small	50	R 13 mil	R 3 mil
Very Small	20	R 3 mil	R 500 000
Micro	5	R 200 000	R 100 000
COMMUNITY, SOCIAL AND PERSONAL SERVICES			
Medium	200	R 13 mil	R 6 mil
Small	50	R 6 mil	R 3 mil
Very Small	20	R 1mil	R 600 000
Micro	5	R 200 000	R 100 000

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

FORM RDC 8 CERTIFICATE OF AUTHORITY OF SIGNATORY

RESOLUTION of a meeting of the Board of *Directors / Members / Partners of:

.....
(Legally correct full name and registration number, if applicable, of the Enterprise)

Held at (place)

On (date)

RESOLVED that:

1. The Enterprise submits a Bid / Tender to the City of Tshwane in respect of the following project:

.....
.....

(Project description as per Bid / Tender Document)

Bid / Tender Number: (Bid/Tender No as per Bid/Tender Document)

2. Mr/Mrs/Ms:

In *his/her capacity as: (Position in the Enterprise)

And who will sign as follows:

be, and is hereby, authorised to sign the Bid/Tender, and any and all other documents and/or correspondence in connection with and relating to the Bid/Tender to the Enterprise mentioned above.

	NAME	CAPACITY	SIGNATURE
1			
2			
3			
4			
5			
6			
7			

NOTE:

- *Delete which is not applicable
- NB: This resolution must be signed by all the Directors/Members/Partners of the Bidding Enterprise
- Should the number of Directors/Members/Partners exceed the space available above, additional names and signatures must be supplied on a separate page.

ENTERPRISE STAMP

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

CERTIFICATE OF AUTHORITY FOR JOINT VENTURES AND CONSORTIA

This Returnable Schedule is to be completed by joint ventures.

(Attach additional pages if more space is required.)

We, the undersigned, are submitting this tender offer in a Joint Venture / Consortium and hereby authorise Mr/Ms authorised signatory of the company acting in the capacity of lead partner, to sign all documents in connection with the tender offer and any contract resulting from it on our behalf.

Registered Name Of Firm	Reg. Number	% Of Contract Value	Address	Duly Authorized Signatory	Mark (x) Lead Partner

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

FORM RDC 9 STATUS OF CONCERN SUBMITTING TENDER

1. General

State whether the tenderer is a company, a closed corporation, a partnership, a sole practitioner or a joint venture:

(Mark the appropriate option below)

Public Company

Private Company

Closed Corporation

Partnership

Sole Proprietary

Joint Venture

Co-operative

2. Information to Be Provided

If the Tendering Entity is a:		Documentation to be submitted with the tender
1	<u>Closed Corporation</u> , incorporated under the Close Corporation Act, 1984, Act 69 of 1984	CIPRO CK1 or CK2 (Copies of the founding statement) and list of members
2	<u>Private Company</u> incorporated with share capital, under the companies Act, 1973, Act 61 of 1973 (including Companies incorporated under Art 53 (b))	Copies of: a) CIPRO CM 1 - Certificate of Incorporation b) CIPRO CM 29 – Contents of Register of Directors, Auditors and Officers c) Shareholders Certificates of all Members of the Company.
3	<u>Private Company</u> incorporated with share capital, under the companies Act, 1973, Act 61 of 1973 in which any, or all, <u>shares are held by another</u> Closed Corporation or company with, or without, share capital.	Copies of documents referred to in 1 and/or 2 above in respect of all such Closed Corporations and/or Companies
4	<u>Public Company</u> incorporated with share capital, under the companies Act, 1973, Act 61 of 1973 (including Companies incorporated under Art 21).	A signed statement of the Company's Secretary confirming that the Company is a public Company. Copy of CM 29
5	Sole Proprietary or a Partnership	Copy of the Identity Document of: a) such Sole Proprietary, or b) Each of the Partners in the Partnership

CONTRACT NO: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED

Volume 1: General Clauses, Tender Procedures, Contract Data, Pricing Data, Schedule of Quantities and Scope of Works

Portion T1: Tender

Part T2: Returnable Documents

If the Tendering Entity is a:		Documentation to be submitted with the tender
		Certified copy of the Partnership agreement.
6	Co-operative	CIPRO CR2 - Copies of Company registration document. (The percentage of work to be done by each partner must clearly be indicated on Form RDB1 (or RDB2 as applicable) of the tender document: MBD6.1 Preference Points Claim Form in terms of the Preferential Procurement Regulations 2001)
7	Joint Venture	All the documents (as described above) as applicable to each partner in the JV as well as a certified copy of the Joint Venture agreement. (The percentage of work to be done by each partner of the joint venture must clearly be indicated in the Joint Venture Agreement)

Note:

- 1.) If the shares are held in trust provide a copy of the Deed of Trust (only the front page and pages listing the trustees and beneficiaries are required) as well as the Letter of Authority as issued by the Master of the Supreme Court, wherein trustees have been duly appointed and authorised, must be provided.
- 2.) Include a copy of the Certificate of Change of Name (CM9) if applicable.

3. Registered for Vat Purposes in Terms of The Value-Added Tax Act, (Act Nr. 89 of 1991)

(Make an X in the appropriate space below)

Yes

☐

No

☐

REGISTRATION NO:

.....

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

.....

DATE:

.....

.....

RDC10

INDEPENDENT BID DETERMINATION

1. This Municipal Bidding Document (MBD) must form part of all bids¹ invited.
2. 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 *per se* prohibition meaning that it cannot be justified under any grounds.
3. 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. 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. In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid.

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 of 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.

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 statement that I certify to be true and complete in every respect:

I certify, on behalf of: _____ that:

(Name of Bidder)

1. I have read and 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 authorised 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 authorised 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, based on their qualifications, abilities or experience; and
 - b. Could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and 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 form, 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 services 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; or
 - f. Bidding with the intention not to win the bid.

8. In addition, there have been no consultations, communications, agreements or arrangement 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 to the awarding of the contract.
10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practises 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 form conduction 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.

³ Joint venture of Consortium means an associations of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

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

RDC11 BANK RATING REPORT

Banking Details:

Bank: _____

Branch: _____

Name of Account: _____

Account No: _____

Type of Account: _____

The Tenderer shall affix a Bank Rating Report, stamped and verified by the bank, to this page.

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

RDD 1 FIRST PROGRAMME AND METHOD STATEMENTS

Attach as part of your tender submission a first programme with supporting method statements.

Note:

1. If the NEC3 Engineering and Construction Contract applies to the contract, the programme should include all the requirements of a programme submitted for acceptance per clause 31.2, together with any other information requested in the Scope of Work.

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

FORM RDD 2

ESTIMATED MONTHLY EXPENDITURE ON CONTRACT WORKS BY TENDERER

The tenderer shall, in the table below, state the estimated cash flow on the contract based on his preliminary programme, his tendered unit rates and his submission of payment certificates to the Employer. Amounts for Contract Price Adjustment shall not be included.

Payment Certificate No.	Amount (VAT Included)					
	a	b	a-b			Cumulative cash flow
	Payments Received	Expenditure		Net cash flow		
1	None		d		j=d	
2			e		k=j+e	
3			f		l=k+f	
4			g		m=l+g	
5			h		n=m+h	
6			etc		etc	
7						
8						
9						
10						
11						
12						
13						
etc						
Maximum negative cash flow: take the largest negative number in the last column and write it here						

From what sources will you fund the above amount (e.g. funds internally available, bank overdraft, loan, partner (his source), etc.)

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

FORM RDD 3

KEY PERSONNEL / MANAGEMENT AND SUPERVISORY STAFF

The Tenderer shall insert in the spaces below, the name of key personnel to be engaged on the Contract.

	NAME	CATEGORY *	QUALIFICATION	EXPERIENCE (YEARS RELEVANT)	LOCAL OR NON – LOCAL
1.		CONTRACT'S MANAGER			
2.		CIVIL SITE AGENT			
3.		ELECTRICAL TECHNICIAN / TEAM LEADER			
4.		MECHANICAL TECHNICIAN / TEAM LEADER			
5.		HEALTH AND SAFETY OFFICER			
6.					
7.					
8.					
9.					

(Attach additional pages if more space is required.)

* The Contractor shall fill in the various categories, e.g. Foreman, Trainers, Plant Operators, Clerks, Technicians, Laboratory Assistants, etc as required.

Note: Failure to comply with the requirements of a full time site agent as noted under item C3.3.5 will result in disqualification of your tender.

Note: Please ensure that a CV with certified copies of applicable qualifications for all the key personnel entered in the table above is attached on submission of your tender document.

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

FORM RDD 4 QUALITY MANAGEMENT SYSTEMS

Briefly describe the construction quality system incorporated by the tenderer in his organisation and which will be applicable to this Contract.

	Internal	External	Name of responsible Company /or Person (In case of Person, give years of experience and qualification)
Survey: Setting out of the works and control			
Testing Laboratory			
Additional quality systems			

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

FORM RDE 1 RECORD OF ADDENDA TO TENDER DOCUMENTS

We confirm that the following communications received from the Employer before submission of this tender, amending or amplifying the tender documents, have been taken in account in this tender offer:

	DATE	TITLE OR REFERENCE
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

FORM RDE 2 PROPOSED AMENDMENTS

The Tenderer should record any deviations or qualifications he may wish to make to the tender documents in this Returnable Schedule. Alternatively, a tenderer may state such deviations and qualifications in **a covering letter to his tender and reference such letter in this schedule.**

The Tenderer's attention is drawn to clause 3.8 of the Standard Conditions of Tender referenced in the Tender Data regarding the Employer's handling of material deviations and qualifications.

PAGE	CLAUSE OR ITEM	PROPOSAL

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

.....

SIGNATURE:

.....

DATE:

.....

FORM RDE 4
COST PRICE ADJUSTMENT (CPA)
IMPORTED CONTENT (FOREX)

Is/Are the tender price/s firm until the end of contract period?

(YES/NO)

If not:

IMPORTED CONTENT:

When the price/s is/are subject to the rate of exchange, submit the price basis on which the exchange rate will be based (e.g. F.O.B. value, fixed value in respect of foreign exchange, etc.)

(i) exchange rate upon which the bid price is based

.....

.....

.....

.....

(ii) What portion of the bid price (percentage or amount) will be affected by variations in the exchange rate?

.....

.....

.....

.....

NB: *Tenderers are also required to submit a bank statement or an auditor's report regarding the actual exchange rate in respect of the transaction value paid to the overseas supplier.*

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.

Person Authorized to sign Tender:

FULL NAME (BLOCK LETTERS):

SIGNATURE:

DATE:

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION
OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

PORTION 2: CONTRACT

PART C1: AGREEMENTS AND CONTRACT DATA

CONTENTS

C1.1a	FORM OF OFFER AND ACCEPTANCE (Part A)	3
	OFFER	3
	ACCEPTANCE (Part A)	4
	SCHEDULE OF DEVIATIONS (Part A)	6
C1.1b	FORM OF OFFER AND ACCEPTANCE (Part B)	7
	OFFER	7
	ACCEPTANCE (Part B)	8
	SCHEDULE OF DEVIATIONS (Part B)	10
C1.1c	FORM OF OFFER AND ACCEPTANCE (Part C)	11
	OFFER	11
	ACCEPTANCE (Part C)	12
	SCHEDULE OF DEVIATIONS (Part C)	14
C1.2.	CONTRACT DATA	15
C1.2.1	GENERAL CONDITIONS OF CONTRACT	15
C1.2.2	VARIATIONS AND ADDITIONS TO THE CONDITIONS OF CONTRACT (SPECIAL CONDITIONS)	16
C1.2.3	DATA PROVIDED BY THE EMPLOYER	33
C1.3	FORM OF GUARANTEE	38
C1.4	GUARANTEE (CASH DEPOSIT)	41
C1.5:	HEALTH AND SAFETY AGREEMENT	42
C1.6	ADJUDICATOR'S AGREEMENT	44

C1.1a FORM OF OFFER AND ACCEPTANCE (Area A)

OFFER

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

STAMP

USD WS 04-2020/21: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED (Part A)

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 returnable 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 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 figures).....

..... (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 AND ON BEHALF OF THE TENDERER:

NAME(s): (BLOCK LETTERS)

CAPACITY of authorized agents:

SIGNATURE(s) of authorized agents:

SIGNED at on this day of

WITNESSES: (Full name – BLOCK LETTERS – and signature)

1.

2.

ACCEPTANCE (Area A)

By signing this part of this 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 T1	Tendering Procedures
Part T2	Returnable Documents
Part C1	Agreements and Contract Data, (which includes this Agreement)
Part C2	Pricing Data
Part C3	Scope of Work
Part C4	Site Information

and drawings and documents or parts thereof, which may be incorporated by reference into above listed Parts.

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.

The Tenderer shall within two weeks after receiving a letter of acceptance, contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data. Failure to fulfil 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.

FOR AND ON BEHALF OF THE EMPLOYER:

NAME(s): (BLOCK LETTERS)

CAPACITY of authorized agents:

SIGNATURE(s) of authorized agents:

SIGNED at on this day of

WITNESSE(s): (Full name – BLOCK LETTERS – and signature)

1.

2.

SCHEDULE OF DEVIATIONS (Area A)

Notes:

1. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender;
2. A Tenderer's covering letter shall not be included in the final contract document. Should any matter in such, letter, which constitutes a deviation as aforesaid become the subject of agreements reached during the process of, offer and acceptance, the outcome of such agreement shall be recorded here;
3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here;
4. Any change or addition to the tender documents arising from the above agreements and recorded here shall also be incorporated into the final draft of the Contract.

4.1	Subject	.....
	Details	.....
4.2	Subject	.....
	Details	.....
4.3	Subject	.....
	Details	.....
4.4	Subject	.....
	Details	.....
4.5	Subject	.....
	Details	.....

C1.1b FORM OF OFFER AND ACCEPTANCE (Area B)

OFFER

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

STAMP

USD WS 04-2020/21: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED (Part B)

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 returnable 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 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 figures).....

..... (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 AND ON BEHALF OF THE TENDERER:

NAME(s): (BLOCK LETTERS)

CAPACITY of authorized agents:

SIGNATURE(s) of authorized agents:

SIGNED at on this day of

WITNESSES: (Full name – BLOCK LETTERS – and signature)

1.

2.

ACCEPTANCE (Area B)

By signing this part of this 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 T1	Tendering Procedures
Part T2	Returnable Documents
Part C1	Agreements and Contract Data, (which includes this Agreement)
Part C2	Pricing Data
Part C3	Scope of Work
Part C4	Site Information

and drawings and documents or parts thereof, which may be incorporated by reference into above listed Parts.

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.

The Tenderer shall within two weeks after receiving a letter of acceptance, contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data. Failure to fulfil 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.

FOR AND ON BEHALF OF THE EMPLOYER:

NAME(s): (BLOCK LETTERS)

CAPACITY of authorized agents:

SIGNATURE(s) of authorized agents:

SIGNED at on this day of

WITNESSE(s): (Full name – BLOCK LETTERS – and signature)

1.

2.

SCHEDULE OF DEVIATIONS (Area B)

Notes:

1. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender;
2. A Tenderer's covering letter shall not be included in the final contract document. Should any matter in such, letter, which constitutes a deviation as aforesaid become the subject of agreements reached during the process of, offer and acceptance, the outcome of such agreement shall be recorded here;
3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here;
4. Any change or addition to the tender documents arising from the above agreements and recorded here shall also be incorporated into the final draft of the Contract.

4.1 Subject

Details

4.2 Subject

Details

4.3 Subject

Details

4.4 Subject

Details

4.5 Subject

Details

C1.1c FORM OF OFFER AND ACCEPTANCE (Area C)

OFFER

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

STAMP

USD WS 04-2020/21: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED (Part C)

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 returnable 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 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 figures).....

..... (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 AND ON BEHALF OF THE TENDERER:

NAME(s): (BLOCK LETTERS)

CAPACITY of authorized agents:

SIGNATURE(s) of authorized agents:

SIGNED at on this day of

WITNESSES: (Full name – BLOCK LETTERS – and signature)

1.

2.

ACCEPTANCE (Area C)

By signing this part of this 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 T1	Tendering Procedures
Part T2	Returnable Documents
Part C1	Agreements and Contract Data, (which includes this Agreement)
Part C2	Pricing Data
Part C3	Scope of Work
Part C4	Site Information

and drawings and documents or parts thereof, which may be incorporated by reference into above listed Parts.

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.

The Tenderer shall within two weeks after receiving a letter of acceptance, contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data. Failure to fulfil 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.

FOR AND ON BEHALF OF THE EMPLOYER:

NAME(s): (BLOCK LETTERS)

.....

CAPACITY of authorized agents:

.....

SIGNATURE(s) of authorized agents:

.....

SIGNED at on this day of

WITNESSE(s): (Full name – BLOCK LETTERS – and signature)

1.

2.

SCHEDULE OF DEVIATIONS (Area C)

Notes:

1. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender;
2. A Tenderer's covering letter shall not be included in the final contract document. Should any matter in such, letter, which constitutes a deviation as aforesaid become the subject of agreements reached during the process of, offer and acceptance, the outcome of such agreement shall be recorded here;
3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here;
4. Any change or addition to the tender documents arising from the above agreements and recorded here shall also be incorporated into the final draft of the Contract.

4.1 Subject
Details

4.2 Subject
Details

4.3 Subject
Details

4.4 Subject
Details

4.5 Subject
Details

C1.2. CONTRACT DATA

C1.2.1 GENERAL CONDITIONS OF CONTRACT

The General Conditions of Contract applicable to this Contract shall be the General Conditions of Contract for Construction Works, Third Edition (2015) of the South African Institution of Civil Engineering (SAICE), read together with the Variations and Additions to the Conditions of Contract (Special Conditions of Contract) as well as the Data provided by Employer.

Tenderers, Contractors and Subcontractors shall obtain their own copies of the document General Conditions of Contract for Construction Works, Third Edition (2015) for tendering purposes and for use for the duration of the Contract from the Secretary of the South African Institution of Civil Engineering, Private Bag X200, Halfway House, Midrand, 1685 and shall bear all expenses in this regard.

C1.2.2 VARIATIONS AND ADDITIONS TO THE CONDITIONS OF CONTRACT (SPECIAL CONDITIONS)

The following variations and additions to the **GENERAL CONDITIONS OF CONTRACT FOR CONSTRUCTION WORKS, THIRD EDITION (2015)**, shall apply to this Contract:

CLAUSE or SUB-CLAUSE	SPECIAL CONDITIONS
1.1	<p><u>Add the following</u> new paragraph to Sub-Clause 1.1.1.5:</p> <p>The Commencement Date shall not be later than 28 days after the date of delivery of Letter of Acceptance unless otherwise agreed in terms of the Contract.</p>
	<p><u>Add the following</u> new Sub-Clause 1.1.1.35:</p> <p>“Letter of Acceptance means the written communication by the Employer to the Contractor recording the acceptance by the Employer of the Contractor’s Bid.”</p>
1.2	<p><u>Add the following</u> to the clause:</p> <p>1.2.1.3 “Sent by facsimile, electronic or any like communication irrespective of it being during office hours or otherwise.”</p> <p>1.2.1.4 “Posted to the Contractor’s address and delivered by the postal authorities.”</p> <p>1.2.1.5 “Delivered by a courier service and signed for by the recipient or his representative.”</p>

<p>1.2.</p>	<p><u>Add the following</u> new Sub-Clause 1.2.3.1:</p> <p>“The Employer has authorised the Group Head: Utility Services to act on his behalf in respect of this Contract, save for such duties or functions.</p> <p>1.2.3.1.1 which other holders of office ex officio execute on behalf of the Employer; or</p> <p>1.2.3.1.2 for which the Group Head: Utility Services has no authority and the Employer’s approval is required before execution thereof.”</p>
<p>3.2.</p>	<p><u>Add the following</u> to Sub-Clause 3.2.3</p> <p>The Engineer is required to obtain the approval of the Employer:</p> <p>3.2.3.1 for expenditure on the Contract to exceed the Contract Price;</p> <p>3.2.3.2 prior to the execution of any of the following duties or functions:</p> <p><i>1.1.1.5 Delivery of the written notice to commence the execution of the Works.</i></p> <p><i>3.3.1 Nomination of person as Engineer's Representative.</i></p> <p><i>3.3.4 Authorisations to Engineer's Representative or any other person.</i></p> <p><i>5.6 Approval of programme of construction.</i></p> <p><i>5.9.7 Approval of Contractor's designs.</i></p> <p><i>4.10.1 Approval to use the Site for other purposes such as housing.</i></p> <p><i>6.3 Variation Orders in respect of variations which are not small.</i></p> <p><i>5.8 Approval to work on special non-working days and between sunset and sunrise (night).</i></p>

	<p>5.11.2 <i>Suspension of progress of Works.</i></p> <p>5.7.2 <i>Permission to carry out work by day and by night.</i></p> <p>5.12.1 <i>Granting of extension of time.</i></p> <p>5.13.2.1 <i>Reduction of penalty for delay.</i></p> <p>6.6 <i>Instruction to expend on Provisional and Prime Cost Sums.</i></p> <p>6.11 <i>Adjustment of Preliminary and General allowances.</i></p> <p>5.14.2 <i>The issue of a Certificate of Practical Completion.</i></p> <p>5.14.4 <i>The issue of a Certificate of Completion.</i></p> <p>5.16.1 <i>The issue of a Final Approval Certificate.</i></p> <p>7.8.1 <i>Order to execute work of repair, etc, during the Defects Liability Period.</i></p> <p>7.8.2.2 and 6.4 <i>Determination of value of repair work.</i></p>
3.3.	<p><u>Add the following</u> new Sub-Clause 3.3.7, 3.3.8 and 3.3.9</p> <p>The Employer may, in his sole discretion, provide technical support services to the Contractor.</p> <p>The technical team providing such support services will be appointed and remunerated by the Employer. In the case of EPWP Contractor Learnership Programmes, support services may be provided by the Department of Public Works. The technical team will consist of the Engineer and a person or persons acting as Training, Construction and Materials Managers or Construction Mentor, depending on the services to be provided and the scope of the functions to be executed.</p> <p>3.3.7.1 In addition to his duties and functions in terms of 2.1, the Engineer will co-ordinate the work of the technical team providing the support services.</p>

	<p>3.3.7.2 The Construction Manager acts as mentor to the Contractor in respect of the following functions, which are described fully in the CESA document, Guideline Contract Specific Data C4- Construction Management Services of the Form of Agreement for Consulting Services for Labour -Intensive Construction Projects:</p> <ul style="list-style-type: none"> i) Programming the execution of the works. ii) Interpretation of drawings, specifications and related contractual matters. iii) Workforce structuring, employment and management. iv) Guidance to expedite work progress/ improve productivity. v) Setting out of works. vi) Safety measures and legislation requirements. vii) Materials handling. viii) Tools and equipment needs. ix) Financial matters. x) Training requirements. xi) Security aspects. xii) Quality control systems. <p>3.3.8 The Materials Manager is responsible for the following functions which are described fully in the CESA document, <u>Guideline Contract Specific Data C5-Materials Procurement Services of the Form of Agreement for Consulting Services for Labour -Intensive Construction Projects on the Contract:</u></p> <ul style="list-style-type: none"> i) Establishment of stores. ii) Determination of store administration procedures. iii) Determination of requirements of store staff. iv) Employment of store staff. v) Staff guidance, supervision and training. vi) Acquisition of materials. vii) Issue of materials. viii) Upholding of an assets register. ix) Insurance of assets. <p>3.3.9 The main role of the Mentor is to support the Learner Contractor and to impart knowledge that will enable the Contractor to compete independently as soon as possible. The Mentor provides a wide range of support and advice functions, including but not limited to advice with regards to:</p> <ul style="list-style-type: none"> (i) Finance and dealing with banks
--	--

	<ul style="list-style-type: none"> (ii) Business management (iii) Contract management (iv) Procurement of materials and other required services (v) Technical and engineering (vi) Construction Planning and Management (vii) Fulfilling of statutory and tax obligations (viii) Labour and human resource advice
2.	<p><u>Add the following</u> new sub-clause 2.6:</p> <p>“For conventional construction works the Basic Conditions of Employment Act of 1997 (Act No 75 of 1997) shall apply and the minimum employment conditions which will apply shall be guided by the latest Sectorial Determination: Civil Engineering Sector published from time to time.</p> <p>Basic Conditions of Employment Act of 1997 (Act No 75 of 1997) as per Government Notice R63 of 25 January 2002, shall apply to works described in the Scope of Work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.”</p>
2.	<p><u>Add the following</u> new sub-clause 2.7:</p> <p>“The Contractor shall comply with the Occupational Health and Safety Specification prepared by the Employer in terms of the Construction Regulations, 2014 promulgated in terms of Section 43 of the Occupational Health and Safety Act (Act No. 85 of 1993).</p> <p>Without limiting the Contractor’s obligations in terms of the Contract, the Contractor shall before commencement of the Works or any part thereof, be in the possession of an approved Health and Safety Plan.”</p>
2.	<p><u>Add the following</u> new sub-clause 2.8:</p> <p>“Notwithstanding any actions which the Employer may take, the Contractor accepts sole liability for due compliance with the relevant duties, obligations, prohibitions, arrangements, and procedures imposed by the Occupational Health and Safety Act, 1993 (Act 85 of 1993), and all its regulations, including the Construction Regulations, 2014, for which he is liable as mandatory. By entering into this Contract, it shall be deemed that the parties have agreed in writing to the above provisions in terms of Section 37(2) of the Act. The Contractor shall sign the Occupational Health and Safety Agreement for Contract Work in the City of Tshwane Metropolitan Municipality included in section C1.5.</p>

2.	<p><u>Add the following</u> new sub-clause 2.9:</p> <p>The Employer retains an interest in all inquiries conducted under this Contract in terms of Section 31 and/or 32 of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and its Regulations following any incident involving the Contractor and/or Sub-Contractor and/or their employees. The Contractor shall notify the Employer in writing of all investigations, complaints or criminal charges which may arise pursuant to work performed under this Contract in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and Regulations.”</p>
2.	<p><u>Add the following</u> new sub-clause 2.10:</p> <p>“Contractor’s Designer</p> <p>The Contractor and his designer shall accept full responsibility and liability to comply with the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and the Construction Regulations, 2014 for the design of the Temporary Works and those part of the Permanent Works which the Contractor is responsible to design in terms of the Contract”</p>
8.6.	<p><u>Add the following</u> to SUB-Clause 8.6.1.5:</p> <p>“As an alternative to a guarantee, the Contractor may deposit with the Employer a cash amount in a sum equal to the amount stated in the Data provided by Employer. All the provisions in respect of the guarantee apply mutatis mutandis to the cash deposit accept that the amount deposited will be repaid to the Contractor within 35 days after the issue of the Certificate or Certificates of Completion in respect of the whole of the permanent works.”</p>
4.5.	<p><u>Add the following</u> new Sub-Clauses:</p> <p>4.5.5 On the request of the Contractor, the Employer may, in his sole discretion, provide a support service to the Contractor in the giving of notices and in obtaining requisite consents, permissions and permits.</p> <p>4.5.6 On the request of the Contractor and certified by the Employers Agent as payable by the Contractor, the Employer may, in his sole discretion, advance funds to the Contractor in the form of a cheque in favour of the relevant institution or body, to facilitate the Contractor in complying with the provisions of this Clause.</p>

	<p>The Contractor shall provide proof to the Employers Agent of all payments effected by him.</p> <p>The Employer will deduct the sums advanced by the Employer and adjusted in accordance with the Contract Price Adjustment Formula or other rise-and-fall provision applicable to the Contract, from future payment certificates of the Contractor, if such sums are payable by the Contractor in the ordinary course of his business.</p> <p>The Employer will not advance funds in respect of cyclic sums payable by the Contractor in the ordinary course of his business.</p>
4.11.	<p><u>Add the following</u> to sub-Clause 4.11.1.</p> <p>Notwithstanding the wording of this Clause, on request of the Contractor the Employer may in his sole discretion, provide trade-skills training to the Contractor's employees to improve their competency and efficiency commensurate with the requirements of the Works.</p>
8.6	<p>Insurances</p> <p><u>Replace</u> Clause 8.6. with the following new Clause 8.6. :</p> <p>8.6.1 Without limiting the Contractor's/Sub-contractor's obligation in terms of the Contract, the Employer will affect and maintain for the duration of the Contract until the issuing of the Final Approval Certificate at the end of the Defects Liability Period, the following insurances in the name of the Contractor (including all Subcontractors whether nominated or otherwise):</p> <p>8.6.1.1 The Employer's insurer will indemnify the Contractor/Sub-contractor against physical loss of or damage to any part of the Property. The insurance amount paid will not exceed the maximum contract value or the final contract value estimated at inception including free issue materials where applicable as stated in the Contract Data:</p> <ul style="list-style-type: none"> a) Whilst in transit including loading and unloading whilst temporarily stored at any premises en route to or from the Contract Site within the Territorial Limits. b) From the time of unloading, dismantling or preparation at the Contract Site and thereafter until the Property Insured has been officially accepted by the Employer and becomes his responsibility by means of a notice of completion certificate or similar evidence of legal transfer of risk. c) During the contractual Defects Liability or Maintenance Period which shall not exceed the period reflected in the Schedule but only so far as the Contractors and/or Sub-Contractors may be liable for such loss or damage under the defects liability or maintenance condition/s of the Insured Contract.

	<ul style="list-style-type: none"> d) Removal of debris; e) Surrounding property; f) Work Away; g) Off Site Storage; h) Temporary repairs; i) Contribution Clause – Marine; j) Escalation during Contract Period; k) Post Loss Escalation; l) Automatic Reinstatement; m) Principals Maintenance; n) Property taken over; o) Beneficial Occupation; p) Escalation due to Currency fluctuation; q) Manufacturers Guarantees <p>8.6.1.2 The Employer's insurer will indemnify the Contractor/Sub-contractor against all sums for which the Contractor/Sub-contractor shall become legally liable towards third party claimants to pay for and in consequence of:</p> <ul style="list-style-type: none"> a) Accidental death of or bodily injury to or illness or disease contracted by any person (excluding employees of the Contractor/Sub-contractor);
--	--

	<p>b) Accidental physical loss or damage to tangible property occurring during the Period of Insurance and arising out of or in connection with the performance of the Insured Contract at the Contract Site as defined in the Schedule. The maximum limit of indemnity for any one event is R10-million in respect of contracts with a contract value of up to R50-million (excluding VAT).</p>
	<p>8.6.2 <u>Insurance Premium payable</u></p> <p>The Employer will pay the insurance premium for the works damage and public liability insurance cover. The insurance premium will be calculated based on the approved Capital Budget per financial year and the insurance premium will be charged out to the relevant departments by the Section: Insurance and Risk Management.</p>
	<p>8.6.3 <u>Additional insurance by the Employer</u></p> <p>The Employer shall be free to effect at his own cost any additional insurance, which he deems necessary in own interest to cover loss or damage not insured in terms of the insurance policies of Sub-Clause 1 of this Clause.</p>
	<p>8.6.4 <u>Additional insurance by Contractor/Sub-contractor</u></p> <p>The Contractor and Sub-contractor shall be free to effect and maintain at their own cost any additional insurance which the Contractor/Sub-contractor deem necessary to cover damage, loss or injury not insured in terms of the insurance effected by the Employer's insurer. The cost of the additional insurance will be for the account of the Contractor/Sub-contractor.</p>
	<p>8.6.5 <u>Contractor satisfied with insurance</u></p> <p>The submission of a tender shall be construed as acknowledgement by the Contractor that he is satisfied with the insurance cover affected by the Employer.</p>
	<p>8.6.6 <u>Contractor to observe conditions</u></p> <p>The Contractor shall give all notices and observe all conditions and requirements imposed by the relevant insurance policies, which shall be binding on the Contractor.</p>
	<p>8.6.7 <u>Contractor to Insure</u></p> <p>The Contractor/Sub-contractor must obtain for the duration of the contract until the issuing of the Defects Certificate or the end of the Maintenance Period, the following insurance policies at an insurance</p>

	<p>company within 14 (fourteen) days of the notification of acceptance of the tender and must pay all premiums and supply proof thereof to the relevant Project Manager, 30 (thirty) days before the inception of the contract, that the policies have been taken out and that all premiums have been paid:</p> <ul style="list-style-type: none"> a) All Risk Insurance cover with regards to all Plant and Materials and Equipment, owned, leased, or hired by the Contractor that are used in the execution of the contract for the full replacement value thereof. b) Motor Vehicle and Liability Insurance cover indicating the registration numbers of the vehicles owned, leased, or hired by the Contractor that are used in the execution of the contract to the amount of at least R10-million per claim with the number of claims unlimited. c) SASRIA cover for motor vehicles and Plant and Materials and Equipment owned, leased, or hired by the Contractor that are used in the execution of the contract for the full replacement value thereof. d) In respect of Plant and Materials and Equipment and Motor Vehicles brought onto the Site by or on behalf of Subcontractors, the Contractor shall be deemed to have complied with the provisions of this Sub-Clause by ensuring that such Subcontractors have similarly insured such Plant and Materials and Equipment and Motor Vehicles. e) Proof must also be submitted that the Contractor complies with the conditions of the following legislation: <ul style="list-style-type: none"> - Compensation for Occupational Injuries and diseases, 1993. - Unemployment Insurance Act, 1996. - The Contractor shall in respect of the Site of the contract works appoint in writing a Section 16 appointee to meet the requirements of the Health and Safety Act, No. 85 of 1993 as amended. <p>8.6.8 The Project Manager involved must furnish the required insurance documentation 30 (thirty) days before the inception of the contract to the Section: Insurance and Risk Management.</p> <ul style="list-style-type: none"> a) In addition to any statutory obligations and/or requirements contained in the General Conditions of Contract, the Contractor shall notify the Employer and the Project Manager of every occurrence within 48 (forty-eight) hours giving the circumstances, nature and an estimate of the loss or damage.
--	---

	<p>b) The Project Manager will be responsible to complete and submit the relevant claim documentation for each incident within 30 (thirty) days after the incident occurred to the Section: Insurance and Risk Management. Should the incident be reported by the Project Manager more than 30 (thirty) days after the incident occurred to the Section: Insurance and Risk Management, the claim will only be considered if the claim documentation is accompanied by a letter from the relevant Strategic Executive Officer motivating the reason(s) for the late reporting of the incident, but the Project Manager must take note the Insurer might repudiate the loss if it is found that the insurers rights have been compromised as a result of the late reporting.</p> <p>c) The following documentation must be included with the claim documentation:</p> <ul style="list-style-type: none"> - Photos of damages caused or suffered as proof or substantiation of the claims. <p>d) In the event of Insured Property being damaged during the Contract Works beyond economical repair, the property must be safeguarded and be handed over to the Employer's insurer for salvage.</p> <p>e) The Section: Insurance and Risk Management will inform the Employer's insurer of the incident. The Contractor/Subcontractor shall afford all reasonable access to the Site to the Employer, the Project Manager, the Employer's insurers and/or representatives for the purpose of assessment of any loss or damage.</p> <p>8.6.10 <u>Reporting of catastrophic incidents</u></p> <p>In the event of an occurrence, which is likely to give rise to a claim, under the insurance policy effected by the Employer, with an estimated loss or damage of more than R250 000,00, the Contractor and the Project Manager will adhere to the following procedures:</p> <p>a) In addition to any statutory obligations and/or requirements contained in the General Conditions of Contract, the Contractor shall notify the Employer and the Project Manager of every occurrence within 24 (twenty-four) hours giving the circumstances, nature and an estimate of the loss or damage.</p> <p>b) The Project Manager must notify the Section: Insurance and Risk Management on the same day that the Contractor/Sub-contractor has notified the Project Manager of the incident.</p> <p>c) The Section: Insurance and Risk Management will notify the Employer's insurer of the incident. The Contractor/Sub-contractor shall afford all reasonable access to the Site to the Employer, the Project Manager, the Employer's insurers and/or representatives for the purpose of assessment of any loss or damage.</p>
--	--

	<p>d) The Project Manager will be responsible to complete and submit the relevant claim documentation for each incident within 30 (thirty) days after the incident occurred to the Section: Insurance and Risk Management. Should the incident be reported by the Project Manager more than 30 (thirty) days after the incident occurred to the Section: Insurance and Risk Management, the claim will only be considered if the claim documentation is accompanied by a letter from the relevant Strategic Executive Officer motivating the reason(s) for the late reporting of the incident. Should the relevant claim documentation not be submitted within 30 (thirty) days, the claim will be repudiated.</p> <p>8.6.11 <u>Reporting of crime related incidents</u></p> <p>All crime related incidents, losses, or shortages irrespective of the value, must be reported within 24 (twenty-four) hours by the person who was involved or who has discovered the incident to the nearest South African Police Services (SAPS) station. The name of the Police Station, Investigation Officer and the Case number must be obtained and stated on the Contractor Claim Form. Should the incident not be reported to the SAPS, the claim will be repudiated.</p> <p>8.6.12 <u>Claim documentation</u></p> <p>The Project Manager must obtain all relevant information from the Contractor/Sub-contractor and complete the Contractor Claim Form, included in this report as Annexure B that is available on the Intranet. The project number must be stated on the Contractor Claim Form.</p> <p>The Project Manager must submit with the Contractor Claim Form a detailed cost sheet indicating the estimate of the loss or damage.</p> <p>Any misrepresentation, misdescription or non-disclosure of material facts, at the option of the insurers, can result in claims submitted being declared null and void.</p> <p>8.6.13 <u>Authorization of claim forms</u></p> <p>It is imperative that a formally delegated official or his nominee of the Employer should authorize the Contractor Claim forms as proof of the appropriate authorization, verification and approval of claims submitted. The Strategic Executive Officer must provide an authorization letter to the Section: Insurance and Risk Management stating the names and the specimen signatures of the delegated official or his nominee within 30 (thirty) days from approval of this report by Council. Should the delegated official or his nominee not sign the relevant claim form, the claim will be repudiated as this may lead to inappropriate independent verification of the validity of claims, thereby increasing the risk of insurance fraud and consequent reputation damage to the Employer.</p>
--	--

	<p>8.6.14 <u>Contractor to pay deductibles</u></p> <p>Any claim in terms of the insurance affected by the Employer shall be subject to the Contractor being responsible for the payment of the amount stated in the Annexure to the Policies as being the deductible (first amount payable or Excess) as defined in the Certificate of Insurance issued by the Employer's insurer in terms of the Policy.</p>
	<p>8.6.15 <u>Settlement of claims</u></p> <p>All incidents reported to the Section: Insurance and Risk Management in respect of an occurrence, which is likely to give rise to a claim will be forwarded to the Employer's insurer who will take the necessary actions for the settlement of any such claims.</p> <p>The Contractor <u>shall negotiate</u> for the settlement of claims with the Employer or the Employer's insurer through the Section: Insurance and Risk Management. The Employer's Chief Financial Officer will authorize all settlements of claims.</p> <p>Should action for the settlement of any such claim to the satisfaction of the Project Manager not be taken by the Contractor/sub-contractor within 30 (thirty) days after receipt of such claim by the Contractor/sub-contractor, the Employer or the Employer's insurer may settle any such claim, after giving the Contractor notice of its intention to do so; provided that no such claim shall be settled by the Employer or the Employer's insurer without first consulting the Contractor/sub-contractor.</p> <p>The foregoing provisions of this Sub-Clause shall apply mutatis mutandis to any such claim received by the Contractor directly.</p>
5.12.	<p><u>Add the following</u> new sub-Clause 5.12.5 and 5.12.6</p> <p>5.12.5 Critical Path Provision</p> <p>A delay in so far as extension of time is concerned, will be regarded as a delay only if, on a claim by the Contractor in accordance with the General Conditions of Contract, the Employers Agent rules that all progress on an item or items of work on the critical path of the approved programme for the execution of the Works by the Contractor, has been brought to a halt. Delays on normal working days only, based on a working week, of five normal working days, will be taken in account for the extension of time.</p>
	<p>5.12.6 Extension of time due to Abnormal Rainfall</p> <p>Extension of time due to abnormal rainfall shall be determined by means of Method 1, if rainfall records and/or values derived from rainfall records are</p>

	supplied in the Scope of Work, otherwise Method 2 shall apply.
	<p>Method 1: Rainfall Formula Method</p> <p>The rainfall records and/or values derived from rainfall records from a suitable rainfall station near the Site, which are supplied in the Project Specifications, shall be considered suitable for the determination of extension of time due to abnormal rainfall in accordance with this method.</p> <p>Extension of time arising from abnormal rainfall, shall be calculated separately for each calendar month or part thereof for the full period of completion of the Contract, including any extension thereof, in accordance with the rainfall formula given below:</p> $V = (Nw - Nn) + \frac{(Rw - Rn)}{X}$ <p>If V is negative and its absolute value exceeds Nn, then V shall be equal to minus Nn.</p> <p>If V is positive and greater than the number of calendar days in the calendar month under consideration, V shall be taken as equal to the number of calendar days in the relevant calendar month.</p> <p>The symbols shall have the following meanings:</p> <p>V = extension of time in calendar says in respect of the calendar month under consideration.</p> <p>Nw = actual number of days during the calendar month on which a rainfall of Y mm or more has been recorded.</p> <p>Rw = actual rainfall in mm for the calendar month under consideration.</p> <p>Nn = average number of days as derived from existing rainfall records, on which a rainfall or Y mm or more has been recorded for the calendar month. Rainfall records and/or the derived values of Nn will be provided in the Specifications.</p> <p>Rn = average rainfall in mm for the calendar month, as derived from existing rainfall records. Rainfall records and/or the derived values of Rn will be provided in the Project Specifications.</p>

	<p>X = 20, unless otherwise provided in the Project Specifications.</p> <p>Y = 10, unless otherwise provided in the Project Specifications.</p> <p>The total extension of time shall be the algebraic sum of the monthly totals for the period under consideration. However, if the grand total is negative the time for completion shall not be reduced on account of abnormal rainfall. Extension of time for parts of a month shall be calculated by pro rata values of N_n and R_n being used.</p> <p>The factor $(N_w - N_n)$ shall be considered to represent a fair allowance for variations from the average number of days during which rainfall exceeds Y mm and wet conditions prevented or disrupted work.</p> <p>The factor $(\frac{R_w - R_n}{X})$ shall be considered to represent a fair allowance for variations from the allowance for variations from the average number of days when wet conditions further to that allowed for the factor $(N_w - N_n)$, prevented or disrupted work during the calendar month.</p> <p>Accurate rain gauging shall be taken at a suitable point on Site and the Contractor shall, at his own expense, take all necessary precautions to ensure that the rain gauges cannot be interfered with.</p> <p>This formula does not take into account further on concurrent delays which could be caused by other abnormal climatic conditions such as floods, which have to be determined separately in accordance with Sub-Clause (42.5) (Critical Plan Provision) hereof.</p> <p>Method 2: Expected Delay Method</p> <p>The Contractor shall make provision in his programme for the execution of the Works, for an expected delay of "n" normal working days (based on a working week of five normal working days) due to normal rainfall, for which he will not receive any extension of time.</p> <p>Unless otherwise provided in the Project Specifications, the value of "n" shall be taken as equal to the tendered time for completion of the Works in months, rounded off to an integer.</p>
--	---

	<p>Extension of time during normal working days will be granted to the degree to which actual delays as determined in accordance with Sub-Clause (42.5) (Critical Path Provision) hereof, exceed the number of "n" normal working days.</p> <p>The value of "n" does not take into account further or concurrent delays which are caused by other abnormal climatic conditions such as floods, which have to be determined separately in accordance with Sub-Clause (42.5) (Critical Path Provision) hereof.</p>
6.6.	<p><u>Add the following</u> to sub-Clause 6.6.2:</p> <p>The amount of the charge to be paid to the Contractor shall be in the same proportion to the actual amount paid to the Contractor as the charge included by the Contractor in his Tender bears to the Prime Cost Sum in the Tender.</p>
6.10.4.	<p><u>Replace</u> the wordings "within 7 days" and "within 28 days" in Clause 6.10.4 with the wording "within 7 working days: and "within 35 working days".</p>
6.10.6.	<p><u>Replace</u> sub-Clause 6.10.6.2 with the following:</p> <p>6.10.6.2 No interest shall be payable to the Contractor upon any moneys retained or overdue in terms of the Contract.</p>
6.10.	<p><u>Add the following</u> new sub-Clause 6.10.10:</p> <p>6.10.10The Contractor shall be paid at Pretoria in the currency of the Republic of South Africa only at the Office of the Chief Financial Officer of the CITY OF TSHWANE, unless otherwise stated in the Data provided by Employer.</p>
5.14.5.5	<p><u>Replace</u> Clause 5.14.5.5 with the following new Clause 5.14.5.5:</p> <p>Insurance of the Works shall cease in terms of Clause 8.6. of the Special Conditions of Contract.</p>

CONTRACT PRICE ADJUSTMENT SCHEDULE	
Clause	Contract Data
1.	<p><u>Replace</u> the definitions of the relevant indices with the following:</p> <p>“L” is the “<u>Labour Index</u>” and shall be the “Consumer Price Index Indices and percentage change according to area” for the urban area "City of Tshwane" and as published in the Consumer Price Index Statistical Release. PO 141 (additional tables) of Statistics South Africa.</p> <p>“P” is the “<u>Plant Index</u>” and shall be the “Civil Engineering Plant Index – Production price Index Statistical Release PO 142.1 of Statistics South Africa.</p> <p>“M” is the “<u>Materials Index</u>” and shall be the “Production Price Index for <u>materials</u> used in certain industries - Building and Construction - Civil Engineering” as published in the Production Price Index Statistical Release PO 142.1 of Statistics South Africa.</p> <p>“F” is the “<u>Fuel Index</u>” and shall be the “Diesel oil – Coast and Witwatersrand Index – Production Price Index for selected materials” as published in the Production Price Index Statistical Release PO 142.1 Statistics South Africa.</p>

C1.2.3 DATA PROVIDED BY THE EMPLOYER

Clause/Option		Data
1.	Definitions	The legal name of the Employer is:
1.1.1.15		CITY OF TSHWANE METROPOLITAN MUNICIPALITY
1.1.1.16	Physical address:	Capitol Towers North, 225 Madiba Street, Pretoria Postal address:
1.1.1.17	The Group Head:	Mr Stephens Notoane Water and Sanitation Department steven@tshwane.gov.za
5.1.1.1	Postal Address:	P.O. Box 1022 PRETORIA 0001
5.8.1	The name of the Employers Agent is:	Philip Botha / John Mhlanga PhilipB2@tshwane.gov.za JohnMh@tshwane.gov.za
	The address of the Employers Agent is:	Room A617, Capitol Towers North, 225 Madiba Street, Pretoria
		..... The special no-working days are official builders' holidays plus statutory public holidays.
5.3	Commencement and Insurance	
5.3.1		The time to deliver the Insurances is 14 days after receipt of Letter of Acceptance
5.3.1		The liability of the Insurance shall be for 10% of the Tender Sum (excluding

Clause/Option	Data
	contingencies and VAT)
5.3 Commencement of the Works	
5.3.1	The documentation required before commencement with Works execution are:
	<ul style="list-style-type: none"> • Health and Safety Plan (Refer to Clause 4.3) • Initial programme and cash flow forecast (Refer to Clause 5.6) • Security (Refer to Clause 6.2) • <i>Proof that all contributions required in terms of the provisions of the Workman's Compensation Act (Act no 30 of 1941) as amended in 1993, 2002 have been paid (Refer to Cause 4.3.2)</i> • <i>A certified copy of Unemployment Insurance Certificate, Act of 1996 (Refer to Clause 4.3.2)</i>
	The Contractor shall commence executing the Works within 14 days from the Commencement Date
5. Program of the Works	
5.6.1	The Contractor shall deliver his programme of work within 14 days from the Commencement Date
8.6 Insurances <i>(refer variations and additions to Conditions of Contract)</i>	
8.6.1	The Employer shall arrange this insurance
	A copy of the policy and the list of excesses may be obtained from
	<p>Contractors All Risk and Liability Insurance</p> <p>Ms. Morongwa Mokoena (Tel: 012 358 1126) (morongwam@tshwane.gov.za)</p> <p>Mrs Ronett Marlow-Reid (Tel: 012 358 1131) (ronettm@tshwane.gov.za)</p> <p>Mr Lawrence Matjila (Tel: 012 358 1374) (lawrencem@tshwane.gov.za)</p>
8.6.7	The value of plant and materials supplied by the Employer to be included in the insurance sum is: R 0 (zero)
8.6.14	Construction Plant:
	The Contractor shall arrange this insurance. Contractor to insure. Policy to be approved by Employer
	Responsibility for payment of deductibles in respect of Insurance of Works as well as Public Liability Insurance: The Contractor shall pay any deductibles

Clause/Option		Data
1.1.1.14	Time for Practical Completion	
5.5		The time for completion of the works: Agreed period per package order awarded during the 36 months contract period
5.13.1	Penalty for delay	The penalty for failing to complete the Works is R1 000 per day
6.2.1	Type of security for due performance:	<ul style="list-style-type: none"> Guarantee from approved financial institution or cash deposit. The Form of Guarantee is to contain the wording of the pro forma document included as C1.3 or C1.4 contained herein.
	Liability of performance guarantee/cash deposit	The liability of the guarantee shall be for 10 (ten) % of the Contract Sum of the Work Package allocated, excluding contingencies and VAT.
6.8	Adjustment in Prices	
6.8.2		<p>The value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values:</p> <p><i>If the value of x is not 0.1 then:</i></p> <p>The value of "x" is <i>0.15 the portion, expressed as a decimal of unity, not subject to adjustment.</i></p> <p>The values of the coefficients are:</p> <p>a = 0.15 <i>Labour</i></p> <p>b = 0.35 <i>Contractor's equipment</i></p> <p>c = 0.35 <i>Material</i></p> <p>d = 0.15 <i>Fuel</i></p> <p>The urban area nearest the site is the City of Tshwane</p> <p>The base month is <i>the month prior to closing of the tender</i></p>
6.10	Interim Payments	
6.10.2		The percentage advance on materials not yet built into the Permanent Works is 80%
6.10.3		The percentage retention on the amounts due to the Contractor is 10% (excl. VAT)
6.10.3		The limit of retention money is 10% of contract amount.
6.10.3		A Retention Money Guarantee is not permitted

Clause/Option		Data
1.1.1.13	Defects	The Defects Liability Period is 12 months
10.5	Settlement of Disputes	
10.5.1		Dispute resolution shall be by Adjudication
10.6.1		The determination of disputes shall be by Court proceedings.

C1.2.4 DATA PROVIDED BY THE CONTRACTOR

Clause/Option		Data																											
1. 1.1..1.9	Definitions	<p>The legal name of the Contractor is:</p> <p>Physical address:</p> <p>.....</p> <p>Postal address:</p> <p>.....</p> <p>Fax Number:</p> <p>E-mail:</p>																											
6.4	Valuation of Variations	<p>The percentage allowance to cover profits and overhead charges for dayworks is:</p> <p>_____ %. (Maximum of 15% will be allowed)</p>																											
5,5 5.5.1	Extension of time for completion	<p>The Works shall be completed within..... months.</p>																											
6.8 6.8.3	Adjustments in Prices	<p>The variation in cost of Special Materials is:</p> <table border="1"> <thead> <tr> <th>Type of Special Material</th> <th>Unit</th> <th>Rate or Price</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	Type of Special Material	Unit	Rate or Price																								
Type of Special Material	Unit	Rate or Price																											

C1.3 FORM OF GUARANTEE

WHEREAS

THE CITY OF TSHWANE

(hereinafter referred to as the "Council"),

enters into a Contract (No.) with

.....
(hereinafter referred to as the "Contractor")

for

AND WHEREAS in terms of the General Conditions of the Contract the Contractor is required to furnish an acceptable independent guarantee for the due and proper fulfilment by him of all his duties and obligations in terms of the said contract.

NOW THEREFORE we the undersigned

..... [full names of authorized agent(s)]

and acting in my/our capacity as

and

and as such duly authorized thereto, do hereby bind the said

(hereinafter referred to as the "Guarantor") as surety and co-principal Debtor in *solidum* for the sum of

R (.....

.....)

for the due and proper fulfilment by the Contractor of all or any of his duties and obligations in terms of the said Contract. This guarantee shall not be interpreted as accessory to the contract between Council and the Contractor.

The Guarantor further undertakes, in the event of the Contractor failing duly and properly to fulfil any of his duties and obligations in terms of the said Contract, or if the Contractor is placed under provisional liquidation or in the event of termination of the Contract by the Council in terms of the General Conditions of Contract, to pay to the Council, the said sum of R) or

.....
such portion thereof as may be required by the Council, immediately upon receiving written demand from the Council which written demand shall be addressed to the Guarantor at
(*domicilium* address).

The Guarantor further hereby renounces the benefits of the legal exceptions:

Exceptio non numerate pecuniae

Exception non causa debiti

Beneficium duobus vel pluribus reis debendi

Beneficium ordinis deu excussionis

Beneficium Divisionis

and all other defence which could be pleaded against the validity of this guarantee, with the meaning and effect of which it declares itself to be fully acquainted.

This undertaking shall remain in full force and effect up to and including the date of issue of the Certificate of Completion, as provided for in the General Conditions of Contract, unless the Guarantor is advised in writing by the Council of his intention to institute claims, and the particulars thereof, in which event this guarantee shall remain in full force and effect until all such claims have been paid or liquidated. . Notwithstanding the aforesaid, the Council may at its' sole discretion elect to have the amount provided for under this guarantee, paid out directly to it in the case of breach of contract by the Contractor by giving the Guarantor written notice to that effect, notwithstanding the fact that the Council may decide not to institute any further legal action against the contractor.

This document is not negotiable or transferable.

NAME(s): (BLOCK LETTERS)

CAPACITY of authorized agents:

SIGNATURE(s) of authorized agents:

SIGNED at on this day of

WITNESSE(s): (Full name – in block letters – and signature)

1.

2.

ANNEXURE A

LIST OF INSTITUTIONS FROM WHO CONTRACT/DEPOSIT GUARANTEES CAN BE ACCEPTED.

1. ABSA Bank
2. Credit Agricole Indosuez (South Africa Branch)
3. Development Bank of South Africa
4. FirstRand Bank
5. ING Bank N.V. (South Africa Branch)
6. Investec Bank
7. Landbank
8. National Housing Finance Co.
9. Nedcor Bank
10. South African Reserve Bank
11. Standard Bank
12. AIG South Africa
13. Credit Guarantee Insurance Co
14. Emerald Insurance Company
15. Federated Employers Mutual Assurance Co
16. Global Insurance Company
17. Guardrisk Insurance Company
18. Hannover Re:
19. Home Loan Guarantee Company
20. Lion of Africa Insurance Company
21. Metropolitan Life
22. Metropolitan Odyssey Ltd
23. MUA Insurance
24. Mutual & Federal Insurance Company
25. Rand Mutual Assurance Company
26. Regent Insurance Company
27. SA Eagle Insurance Company
28. Lombard Insurance.

C1.4 GUARANTEE (CASH DEPOSIT)

CONTRACT NO.:

Employer: CITY OF TSHWANE

Contractor:

Description of Contract:

I/We, the undersigned,

(Contractor)

deposit herewith cash *a bank certified cheque", in the amount of

....., as

as surety for the due performance of the Contract by the abovementioned Contractor, and for all losses, damages and expenses that may be suffered or incurred by the Employer as a result of non-performance of the Contract by the Contractor, renouncing all benefits from the legal exceptions *ordinis seu excussions et divisions* no value received and all other exceptions which might or could be pleaded against the surrender of this deposit.

The deposit shall be returned to the Contractor on the issue of the Completion Certificate in terms of the Contract, unless the Contractor is advised in writing by the Employer before issue of the said Certificate of his intention to institute claims and the particulars thereof, in which event this deposit shall remain in force until all such claims are paid or settled.

FOR AND ON BEHALF OF Contractor

NAME(s): (BLOCK LETTERS)

CAPACITY of authorized agents:

SIGNATURE(s) of authorized agents :

SIGNED at on this day of

WITNESS(s): (Full name – BLOCK LETTERS – and signature)

1.

2.

C1.5: HEALTH AND SAFETY AGREEMENT

ARTICLE OF AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL SAFETY ACT, 1993 BETWEEN

THE CITY OF TSHWANE
(Hereinafter referred to as the "EMPLOYER")
AND

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

Herein represented by in his/her capacity as
duly authorised by virtue of a resolution dated,

Attached hereto Annexure A, of the said

..... (herein after referred to as the
"CONTRACTOR")

.....
WHEREAS the CONTRACTOR is the mandatory of the EMPLOYER as contemplated in an agreement in respect of

..... Contract number

AND WHEREAS section 37 of the Occupational Health and Safety act, 1993 (Act 85 of 1993, hereinafter referred to as the "ACT"), imposes certain powers and duties upon the EMPLOYER.

AND WHEREAS the parties have agreed to enter into an agreement in terms of section 37(2) of the ACT.

NOW THEREFORE the parties agree as follows:

- (a) The CONTRACTOR undertakes to acquaint the appropriate officials and employees of the CONTRACTOR with all relevant provisions of the ACT and the regulations promulgated in terms thereof.
- (b) The CONTRACTOR undertakes that all relevant duties, obligations and prohibitions imposed in terms of the ACT and Regulations will be fully complied with. Provided that should the EMPLOYER prescribe certain arrangements and procedures, that same shall be observed and adhered to by the CONTRACTOR, his officials and employees. The CONTRACTOR shall bear the onus of acquainting himself/herself/itself with such arrangements and procedures.
- (c) The CONTRACTOR hereby accepts sole liability for such due compliance with the relevant duties, obligations, prohibitions, arrangements and procedure, if any, imposed by the ACT and Regulations and the EMPLOYER expressly absolves the EMPLOYER from itself being obliged to comply with any of the aforesaid duties,

obligations, prohibitions, arrangements and procedure as the case may be.

- (d) The CONTRACTOR agrees that any duly authorised officials of the EMPLOYER shall be entitled, although not obliged, to take such steps as may be necessary to ensure that the CONTRACTOR has complied with the undertakings as more fully set out in paragraphs 1 and 2 above, which steps may include, but shall not be limited to, the right to inspect any appropriate site or premises occupied by the CONTRACTOR, or to inspect any appropriate records held by the CONTRACTOR or to take such steps it may deem necessary to remedy the default of the CONTRACTOR at the cost of the CONTRACTOR.
- (e) The CONTRACTOR shall be obliged to report forthwith to the EMPLOYER any investigations, complaint or criminal charge which may arise as a consequence of the provisions of the ACT and Regulations, pursuant to work performed in terms of this agreement, and shall, on written demand, provide full details in writing of such an investigation, complaint or criminal charge as the case may be.

FOR AND ON BEHALF OF THE **EMPLOYER**:

NAME(s): (BLOCK LETTERS)

CAPACITY of authorized agents:

SIGNATURE(s) of authorized agents:

SIGNED at on this day of

WITNESSES: (Full name – in block letters – and signature)

1.

2.

FOR AND ON BEHALF OF THE **CONTRACTOR**:

NAME(s): (BLOCK LETTERS)

CAPACITY of authorized agents:

SIGNATURE(s) of authorized agents:

SIGNED at on this day of

WITNESSES: (Full name – in block letters – and signature)

1.

C1.6 ADJUDICATOR'S AGREEMENT

This agreement is made on the _____ day of _____
between:

_____ (name of company /
organisation)

of

—

_____ (address) and

_____ (name of company /
organisation)

of

—

_____ (address) (the Parties) and

_____ (name of
Adjudicator)

of _____

_____ (address) (the Adjudicator).

Disputes or differences may arise/have arisen¹ between the Parties under a Contract dated
_____ and known as

and these disputes or differences shall be/have been² referred to adjudication in accordance with the CIDB Adjudication Procedure, (hereinafter called "the Procedure") and the Adjudicator may be or has been requested to act.

IT IS NOW AGREED as follows:

- 1 The rights and obligations of the Adjudicator and the Parties shall be as set out in the Procedure.
- 2 The Adjudicator hereby accepts the appointment and agrees to conduct the adjudication in accordance with the Procedure.
- 3 The Parties bind themselves jointly and severally to pay the Adjudicator's fees and expenses in accordance with the Procedure as set out in the Contract Data.
- 4 The Parties and the Adjudicator shall at all times maintain the confidentiality of the adjudication and shall endeavour to ensure that anyone acting on their behalf or through them will do likewise, save with the consent of the other Parties which consent shall not be unreasonably refused.
- 5 The Adjudicator shall inform the Parties if he intends to destroy the documents which have been sent to him in relation to the adjudication and he shall retain documents for a further period at the request of either Party.

¹ Delete as necessary

² Delete as necessary

SIGNED by: _____

Name: _____

who warrants that he / she is duly authorised to sign for and on behalf of the first Party in the presence of

SIGNED by: _____

Name: _____

who warrants that he / she is duly authorised to sign for and behalf of the second Party in the presence of

SIGNED by: _____

Name: _____

the Adjudicator in the presence of

Witness _____

Name: _____

Address: _____

Witness: _____

Name _____

Address: _____

Witness: _____

Name: _____

Address: _____

Date: _____

Date: _____

Date: _____

Contract Data

1	The Adjudicator shall be paid at the hourly rate of R _____ in respect of all time spent upon, or in connection with, the adjudication including time spent travelling.
2	The Adjudicator shall be reimbursed in respect of all disbursements properly made including, but not restricted to: (a) Printing, reproduction and purchase of documents, drawings, maps, records and photographs. (b) Telegrams, telex, faxes, and telephone calls. (c) Postage and similar delivery charges. (d) Travelling, hotel expenses and other similar disbursements. (e) Room charges. (f) Charges for legal or technical advice obtained in accordance with the Procedure.
3	The Adjudicator shall be paid an appointment fee of R _____. This fee shall become payable in equal amounts by each Party within 14 days of the appointment of the Adjudicator, subject to an Invoice being provided. This fee will be deducted from the final statement of any sums which shall become payable under item 1 and/or item 2 of the Contract Data. If the final statement is less than the appointment fee the balance shall be refunded to the Parties.
4	The Adjudicator is/is not ³ currently registered for VAT.
5	Where the Adjudicator is registered for VAT, it shall be charged additionally in accordance with the rates current at the date of invoice.
6	All payments, other than the appointment fee (item 3) shall become due 7 days after receipt of invoice, thereafter interest shall be payable at 5% per annum above the Reserve Bank base rate for every day the amount remains outstanding.

³ Delete as necessary

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION
OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

PORTION 2: CONTRACT

PART C2: PRICING DATA

(NOTE: All pages of this section shall be printed on YELLOW paper)

PRICING DATA

INDEX

C2.1	PRICING INSTRUCTIONS.....	3
C2.2	PRICE SCHEDULE (AREA A).....	6
C2.3	PRICE SCHEDULE (AREA B).....	7-37
C2.4	PRICE SCHEDULE (AREA C).....	7-37

TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED

C2.1 PRICING INSTRUCTIONS

1. General

1.1 This section provides the tenderer with guidelines and requirements with regard to the completion of the Bill of Quantities. The Schedule has to be completed in black ink and the tenderer is referred to the Tender Specifications in regard to the correction of errors.

1.2 The Bill of Quantities shall be read with all the documents which form part of this Contract.

1.3 The following words shall have the meanings hereby assigned to them:

Unit: The unit of measurement for each item of work in terms of the Specifications and the Project Specifications.

Quantity: The number of units of work for each item.

Rate: The payment per unit of work at which the tenderer tenders to do the work.

Amount: The product of the quantity and the rate tendered for an item.

Lump sum: An amount tendered for an item, the extent of which is described in the Bill of Quantities, the Specifications and the Project Specifications, but the quantity of work of which is not measured in any units.

1.4 Reference shall be made to the General and Special Conditions of Contract regarding Provisional and Prime Costs Sums.

2. Pay Items

2.1 The method of measurement published by the City of Tshwane Metropolitan Municipality in section 001 clause 04 and the clauses titled "Measurement and Payment" in the various sections of the Standard Specifications for Municipal Civil Engineering Works, Third Edition 2005, is applicable, subject to the variations and amendments contained in section C3.5.

2.2 Descriptions in the Bill of Quantities are abbreviated and comply generally with those in the Standard Specifications. The measurement and payment clause of each Standard Specification, read together with the relevant clauses of the Scope of Work, set out what ancillary or associated activities are included in the rates for the operations specified. Should any requirements of the measurement and payment clause of the applicable Standard Specification, or the Scope of Work, conflict with the terms of the Bill of Quantities, the

requirements of the Standard Specification or Scope of Work, as applicable, shall prevail.

- 2.3 The item numbers appearing in the Bill of Quantities refer to the corresponding item number in the standard specifications or as amended in the Scope of Work. In the latter case, the item number is prefixed with the letter "B". The same applies to new clauses added to the standard specifications.
- 2.4 Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.
- 2.5 The quantities set out in the Bill of Quantities are the estimated quantities of the Works, but the Contractor will be required to undertake whatever quantities may be directed by the Engineer from time to time. The Contract Price for the completed contract shall be computed from the actual quantities of work done, valued at the relevant unit rates and prices.
- 2.6 The units of measurement described in the Bill of Quantities are metric units. Abbreviations used in the Bill of Quantities are as follows:

mm	=	millimetre	h	=	hour
m	=	metre	kg	=	kilogram
km	=	kilometre	t	=	ton (1000kg)
m ²	=	square metre	no.	=	number
m ² .pass	=	square metre pass	sum	=	lump sum
ha	=	hectare	MN	=	meganewton
m ³	=	cubic metre	MN.m	=	meganewton-metre
m ³ .km	=	cubic metre-kilometre	PC sum	=	Prime Cost sum
l	=	litre	Prov sum	=	Provisional sum
kl	=	kilolitre	%	=	Per cent
MPa	=	megaspascal	kW	=	kilowatt

3. Rates

- 3.1 The prices and rates to be inserted in the Bill of Quantities are to be full inclusive prices for the work described under the several items. Such prices and rates shall cover all costs and expenses that may be required in and for the execution of the work described, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the documents on which the tender is based, as well as overhead charges and profit. Reasonable prices shall be inserted as these will be used as a basis for assessment of payment for additional work that may have to be carried out.
- 3.2 A price or rate is to be entered against each item in the Bill of Quantities, whether the quantities are stated or not. An item against which no price is entered or where a word or phrase such as "included" or "provided elsewhere" will be accepted as a rate of nil (R0,00) having been entered against such items and covered by the other prices or rates in the Schedule.
Any work executed to which such a pay item applies, shall be measured under the appropriate items in the Bill of Quantities and valued at a rate of nil (R0,00). The rate of nil shall be valid

irrespective of any change in the quantities during the execution of the Contract.

- 3.3 The Tenderer shall fill in a rate against all items where the words “rate only” appears in the amount column. The intention is that, although no work is foreseen under such item and no quantities are consequently given in the quantity column, the tendered rate shall apply should work under this item be actually required.
- 3.4 Except where rates only are required, the Tenderer shall insert all amounts to be included in his total tendered price in the “Amount” column and show the corresponding total tendered price.
- 3.5 The tenderer shall not group together a number of items and tender one rate for such group of items.
- 3.6 All rates and sums of money quoted in the Bill of Quantities shall be in rands and whole cents. Fractions of a cent shall be discarded.
- 3.7 All prices and rates entered in the Bill of Quantities must be **excluding** VAT. VAT will be added last on the summary page of the Bill of Quantities.
- 3.8 Should excessively high unit prices be tendered, such prices may be of sufficient importance to warrant rejection of a tender by the Employer.

CORRECTION OF ENTRIES MADE BY TENDERER

Any entry made by the Tenderer in the Bill of Quantities, forms, etc, which the tenderer desires to change, shall not be erased or painted out. A line shall be drawn through the incorrect entry and the correct entry shall be written above in black ink and the full signature of the Tenderer shall be placed next to the correction.

Please Note:

- **The quantities of the Bill of Quantities is for tender evaluation purposes only.**
- **The rates are fixed but the quantities will vary subject to the scope of work per project and the availability of budget.**
- **No interest as a result of late payments will be paid by the City of Tshwane.**
- **The project will be implemented through the use of a maximum of three contracts.**
- **Each Area will have one Contractor appointed.**
- **In case of non-performance by a service provider in their allocated area, apart from termination of the contract, a contractor from another area will be required to assist with work in the area of the non-performing service provider depending on the performance of the contractor from another area as well as the availability of savings and or contingencies of the other contract until a new contractor is appointed in the affected area.**

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION
OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

C2.2 PRICE SCHEDULE (AREA A)

Civil works required for Contract: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED

CONTENTS

SERIES 0: GENERAL

SECTION 001: GENERAL REQUIREMENT AND CHARGES
SECTION 002: ENGINEER'S ACCOMMODATION

SERIES 1: ANCILLARY WORKS

SECTION 101: SITE CLEARING AND GRUBBING
SECTION 102: ACCOMMODATION OF TRAFFIC
SECTION 201: GENERAL

SERIES 2: EARTHWORKS

SECTION 201 : GENERAL
SECTION 202: TRENCHING

SERIES 3: SEWERS

SECTION 302: CONSTRUCTION

SERIES 5: DRAINAGE AND EROSION PROTECTION

SECTION 503: KERBING AND CHANNELLING

SERIES 6: ROAD AND PARKING AREAS

SECTION 606: BASE AND ASPHALT SURFACING
SECTION 608: ROAD AND SURFACING REHABILITATION AND OVERLAY
CONSTRUCTION
SECTION 609: SEGMENTED PAVING

SERIES 8: SPECIFIC WORKS

SECTION B810: CLEANING OF SEWERS
SECTION B811: CCTV INSPECTION OF SEWERS
SECTION B815: REHABILITATION/ REPLACEMENT OF SEWERS BY TRENCHLESS
METHODS

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION
OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

C2.3 PRICE SCHEDULE (AREA B)

Civil works required for Contract: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED

CONTENTS

SERIES 0: GENERAL

SECTION 001: GENERAL REQUIREMENT AND CHARGES
SECTION 002: ENGINEER'S ACCOMMODATION

SERIES 1: ANCILLARY WORKS

SECTION 101: SITE CLEARING AND GRUBBING
SECTION 102: ACCOMMODATION OF TRAFFIC
SECTION 201: GENERAL

SERIES 2: EARTHWORKS

SECTION 201 : GENERAL
SECTION 202: TRENCHING

SERIES 3: SEWERS

SECTION 302: CONSTRUCTION

SERIES 5: DRAINAGE AND EROSION PROTECTION

SECTION 503: KERBING AND CHANNELLING

SERIES 6: ROAD AND PARKING AREAS

SECTION 606: BASE AND ASPHALT SURFACING
SECTION 608: ROAD AND SURFACING REHABILITATION AND OVERLAY
CONSTRUCTION
SECTION 609 : SEGMENTED PAVING

SERIES 8: SPECIFIC WORKS

SECTION B810: CLEANING OF SEWERS
SECTION B811: CCTV INSPECTION OF SEWERS
SECTION B815: REHABILITATION/ REPLACEMENT OF SEWERS BY TRENCHLESS
METHODS

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION
OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

C2.4 PRICE SCHEDULE (AREA C)

Civil works required for Contract: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED

CONTENTS

SERIES 0: GENERAL

SECTION 001: GENERAL REQUIREMENT AND CHARGES
SECTION 002: ENGINEER'S ACCOMMODATION

SERIES 1: ANCILLARY WORKS

SECTION 101: SITE CLEARING AND GRUBBING
SECTION 102: ACCOMMODATION OF TRAFFIC
SECTION 201: GENERAL

SERIES 2: EARTHWORKS

SECTION 201 : GENERAL
SECTION 202: TRENCHING

SERIES 3: SEWERS

SECTION 302: CONSTRUCTION

SERIES 5: DRAINAGE AND EROSION PROTECTION

SECTION 503: KERBING AND CHANNELLING

SERIES 6: ROAD AND PARKING AREAS

SECTION 606: BASE AND ASPHALT SURFACING
SECTION 608: ROAD AND SURFACING REHABILITATION AND OVERLAY
CONSTRUCTION
SECTION 609: SEGMENTED PAVING

SERIES 8: SPECIFIC WORKS

SECTION B810: CLEANING OF SEWERS
SECTION B811: CCTV INSPECTION OF SEWERS
SECTION B815: REHABILITATION/ REPLACEMENT OF SEWERS BY TRENCHLESS
METHODS

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES O: GENERAL - GENERAL REQUIREMENTS AND CHARGES : SECTION 001

Item	Description	Unit	Qty	Rate	Amount
B001.01	Preliminary and General Charges(as specified in Part C3.8 Corrections and Amendments to the Standard Specifications, Section 001: General requirement and Charges, B31: Measurement and Payment)				
	B001.01.01 Fixed charges	Sum	1		
	B001.01.02 Time-related charges	month/per project	36		
	B001.01.03 The Contractor's establishment on site	Number	9		
B001.03 Li	Excavate by hand to expose existing services, and backfill	m3	50		
B001.04	Compliance with the Occupational Health and Safety Act and applicable regulations				
	B001.04.01 Provision of Health and Safety Plan	Lsum/per project	1		
	B001.04.02 Provision of Health and Safety file	Lsum/per project	1		
	B001.04.03 Provision of construction supervisors	per month/per project	36		
	B001.04.04 Provision of a Safety Officer (full time)	per month/per project	36		
	B001.04.08.01 Implementation of OHS Act (including provision of personal protective clothing, equipment, training, safety fences, etc.)	Lsum/per project	1		
	B001.04.08.02 Implementation of COVID regulations (including provision for training, equipment, facilities, etc.)	Lsum/per project	1		
B001.05	Community Liason officer				
	B001.05 .01 Salary	Psum	1	1,200,000.00	1,200,000.00
	B001.05 .02 Charges required by the Contractor on subitem B001.05.01 above	%	1		
B001.06	Security guards(as specified in Part C3.8 Corrections and Amendments to the Standard Specifications, Section 001: General requirement and Charges, B31: Measurement and Payment)				
SC	B001.06.01 Appointment of Local Security Company	per month/per site	1		
B001.07	Provision of construction and materials manager	per month/per project	1		
B001.09	Training of targeted subcontractors and labourers				
	B001.09 .01 Training of targeted labourers (R200 000 per site)	Psum	1	1,000,000	1,000,000.00
	B001.09 .02 Charges required by the Contractor on subitem B001.09.01 above	%	1		
B001.10	Sums stated provisionally				
	B001.10.01 Expenditure on daywork items (wages paid to workmen)	Psum	1	100,000	100,000.00
	B001.10.02 Expenditure on daywork items (plant cost)	Psum	1	50,000	50,000.00
B001.11	Sums stated provisionally				
	B001.11.01 Materials to be used during the excavation of dayworks	Psum	1	50,000	50,000.00
	B001.11.02 Extra-Over on B001.06.01 for mark-up	%			
B001.12	DAYWORKS				
	B001.12.01 Labour				
	B001.12.01.01 Qualified Artisans	hour	Rate Only		
	B001.12.01.02 Foreman (9hour/day)	w/day	Rate Only		
	B001.12.01.03 Semi-skilled (9 hour/day)	w/day	Rate Only		
	B001.12.01.04 Labourer (9 hour/day)	w/day	Rate Only		
	B001.12.02 Plant Hire : Work Rates on Site				
carry forward					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES O: GENERAL - GENERAL REQUIREMENTS AND CHARGES : SECTION 001

Item	Description	Unit	Qty	Rate	Amount
				brought forward	
	B001.12.02.01 Tipper Truck				
	B001.12.02.01.01 1 m3 (small)	hour	Rate Only		
	B001.12.02.01.02 3 m3 (large)	hour	Rate Only		
	B001.12.02.02 Flatbed Truck				
	B001.12.02.02.01 1 ton (small)	hour	Rate Only		
	B001.12.02.02.02 3 ton (large)	hour	Rate Only		
	B001.12.02.03 LDV (0.5 ton)	hour	Rate Only		
	B001.12.02.04 Wheel Loader O&K L5	hour	Rate Only		
	B001.12.02.05 Motor Grader John Deere	hour	Rate Only		
	B001.12.02.06 Back-actor O&K MH4	hour	Rate Only		
	B001.12.02.07 Tractor Loader-Backhoe Case 480 D	hour	Rate Only		
	B001.12.02.08 Pedestrian Roller				
	B001.12.02.08.01 Bomag BW 90	hour	Rate Only		
	B001.12.02.08.02 Bomag BW 61	hour	Rate Only		
	B001.12.02.10 Concrete Mixer				
	B001.12.02.10.01 170 l (small)	hour	Rate Only		
	B001.12.02.10.02 280 l (large)	hour	Rate Only		
	B001.12.02.10.03 Miscellaneous				
	B001.12.02.10.03.01 Compressor 250 Cfm.	hour	Rate Only		
	B001.12.02.10.03.02 Water Pump with 25 l/s	hour	Rate Only		
	B001.12.02.10.03.03 Water Pump with 10 l/s	hour	Rate Only		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES 0 : GENERAL - ENGINEERS ACCOMMODATION : SECTION 002

Item	Description	Unit	Qty	Rate	Amount
B002.01	Services				
	002.01.01 Services for Office	month/per project	36		
B002.02 SC/Li	Maintenance of area around offices	month/per project	36		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES 1 : ANCILLARY WORKS - SITE CLEARING AND GRUBBING : SECTION 101

Item	Description	Unit	Qty	Rate	Amount
101.01	Clearing and Grubbing				
SC/Li	101.01.01 Areas	m2	1500		
101.02	Cutting and removal of large trees with a girth				
SC/Li	101.02.01 Exceeding 1m to 2m	No	3		
SC/Li	101.02.02 Exceeding 2m to 3m	No	2		
101.03	Grubbing and removal of large stumps and roots or large trees with a girth:				
SC/Li	101.03.01 Exceeding 1m to 2m	No	5		
SC/Li	101.03.02 Exceeding 2m to 3m	No	5		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES 1 : ANCILLARY WORKS - ACCOMMODATION OF TRAFFIC : SECTION 102

Item	Description	Unit	Qty	Rate	Amount
102.12	Provision of temporary bridges for maintaining access to properties				
SC	102.12.01 Temporary pedestrain bridges	No	25		
SC	102.12.02 Temporary vehicular bridges	No	10		
102.13	Moving of temporary bridges to and their re-erection in entirely new positions				
SC/Li	102.13.01 Temporary pedestrian bridges	No	10		
SC/Li	102.13.02 Temporary vehicular bridges	No	10		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES 2 : EARTHWORKS - GENERAL : SECTION 201

Item	Description	Unit	Qty	Rate	Amount
201.02	Temporary stockpiling of material	m3	500		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES 2 : EARTHWORKS - TRENCHING : SECTION 202

Item	Description	Unit	Qty	Rate	Amount
202.01 (LI/SC)	Trench excavations.				
(LI/SC)	202.01.01 Up to 1.0m deep	m3	1,742		
	202.01.02 Over 1.0m and up to 2m deep	m3	20,964		
	202.01.03 Over 2m and up to 3m deep	m3	7,223		
	202.01.04 Over 3m and up to 4m deep	m3	4,081		
	202.01.05 Over 4m and up to 5m deep	m3	3,906		
202.02 (LI/SC)	Extra over item 202.01, 202.03, 202.04 for excavating in-				
	202.02.02 Hard material	m2	25		
202.03 (LI/SC)	Excavations outside the normal trench profile	m3	814		
202.04 (LI/SC)	Hand excavation (extra over item 202.01)	m3	150		
202.06 (LI/SC)	The backfilling of trenches (excluding backfill around the pipe barrel) with material obtained from excavations	m3	21,842		
202.07 (LI/SC)	Extra over item 202.06 for using backfill material obtained -				
	202.07.01 From borrow areas	m3	4,375		
	202.07.02 From sources provided by the Contractor	m3	1,089		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES 3 : SEWERS - CONSTRUCTION : SECTION 302

Item	Description	Unit	Qty	Rate	Amount
302.01	Supplying, laying, jointing of sewer pipes irrespective of depth/width of trench.				
	302.01.01. 160mm Class PE100 PN 6, SDR26	m	1,304		
	302.01.02. 200mm Class PE100 PN 6, SDR26	m	145		
	302.01.03. 225mm Class PE100 PN 6, SDR26	m	2		
	302.01.04. 250mm Class PE100 PN 6, SDR26	m	7		
	302.01.05. 280mm Class PE100 PN 6, SDR26	m	2		
	302.01.06. 315mm Class PE100 PN 6, SDR26	m	54		
	302.01.07. 355mm Class PE100 PN 6, SDR26	m	14		
	302.01.08. 400mm Class PE100 PN 6, SDR26	m	3		
	302.01.09. 450mm Class PE100 PN 6, SDR26	m	8		
	302.01.10. 500mm Class PE100 PN 6, SDR26	m	3		
	302.01.11. 560mm Class PE100 PN 6, SDR26	m	3		
	302.01.12. 630mm Class PE100 PN 6, SDR26	m	3		
302.02	Construction of pipe bedding				
	302.02.01 Class B bedding				
	302.02.01.01. 160mm Class PE100 PN 6, SDR26	m	1,304		
	302.02.02. 200mm Class PE100 PN 6, SDR26	m	145		
	302.02.03. 225mm Class PE100 PN 6, SDR26	m	2		
	302.02.04. 250mm Class PE100 PN 6, SDR26	m	7		
	302.02.05. 280mm Class PE100 PN 6, SDR26	m	2		
	302.02.06. 315mm Class PE100 PN 6, SDR26	m	54		
	302.02.07. 355mm Class PE100 PN 6, SDR26	m	14		
	302.02.08. 400mm Class PE100 PN 6, SDR26	m	3		
	302.02.09. 450mm Class PE100 PN 6, SDR26	m	8		
	302.02.10. 500mm Class PE100 PN 6, SDR26	m	3		
	302.02.11. 560mm Class PE100 PN 6, SDR26	m	3		
	302.02.12. 630mm Class PE100 PN 6, SDR26	m	3		
302.09	Construction of manholes up to 1.0m deep				
SC	302.09.01 For sewers 300mm in diameter and smaller				
	302.09.01.01 Type III	No	25		
302.10	Extra over 302.06 for construction of manholes in excess of 1.0m deep				
SC	302.10.01 For sewers 300mm in diameter and smaller				
	302.10.01.01 Type III	m	25		
302.12	Supplying and installing manhole covers and frames				
SC	302.12.01 SANS 558 Type 4 circular	No	10		
carry forward					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES 3 : SEWERS - CONSTRUCTION : SECTION 302

Item	Description	Unit	Qty	Rate	Amount
brought forward					
302.14	302.12.02 SANS 558 Type 2A circular	No	10		
	302.12.03 Precast concrete cover with type 2A CI frame	No	10		
	302.12.04 Precast concrete cover with type 4 CI frame	No	10		
	Supplying and placing selected backfill material around and up to 300mm above pipe barrels using				
	302.14.01 Excavated material	m3	5,152		
B302.23 SC	302.14.02 Imported material	m3	4,184		
	Supply and install lamphole covers and frames for rodding eyes	No	10		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES 5 : DRAINAGE AND EROSION PROTECTION - KERBING AND CHANNELLING : SECTION 503

Item	Description	Unit	Qty	Rate	Amount
503.01	Concrete kerbing				
	503.01.01 to match existing kerbing	m	50		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES 6 : ROAD AND PARKING AREAS - GRAVEL PAVEMENT LAYERS : SECTION 601

Item	Description	Unit	Qty	Rate	Amount
601.02	Gravel layers constructed from material obtained from borrow pits:				
	601.02.01 Subgrade				
	601.02.01.01 Compacted to 90% of modified AASHTO density	m3	15		
	601.02.01.02 Compacted to 93% of modified AASHTO density	m3	15		
	601.02.01.03 Compacted to 95% of modified AASHTO density	m3	15		
	601.02.02 Subbase				
	601.02.02.01 Compacted to 95% of modified AASHTO density	m3	15		
	601.02.02.02 Compacted to 97% of modified AASHTO density	m3	15		
	601.02.03 Base				
	601.02.03.01 Compacted to 98% of modified AASHTO density	m3	15		
601.03	Gravel layers constructed from material obtained from material obtained from excavations:				
	601.03.01 Subgrade				
	601.03.01.01 Compacted to 90% of modified AASHTO density	m3	10		
	601.03.01.02 Compacted to 93% of modified AASHTO density	m3	10		
	601.03.01.03 Compacted to 95% of modified AASHTO density	m3	10		
	601.03.02 Subbase				
	601.03.02.01 Compacted to 95% of modified AASHTO density	m3	10		
	601.03.02.02 Compacted to 97% of modified AASHTO density	m3	10		
	601.03.03 Base				
	601.03.03.01 Compacted to 98% of modified AASHTO density	m3	10		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES 6 : ROAD AND PARKING AREAS - BASE AND ASPHALT SURFACING : SECTION 606

Item	Description	Unit	Qty	Rate	Amount
606.01	Asphalt base				
	606.01.01 Prime the stabilised area 60% emulsion	m2	250		
606.02	Asphalt surfacing (50mm)				
	606.02.01 Continuously graded	m2	250		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES 6 : ROAD AND PARKING AREAS - ROAD AND SURFACING REHABILITATION AND OVERLAY : SECTION 608

Item	Description	Unit	Qty	Rate	Amount
608.04	Treatment type 2 (crusher-sand seal) using :				
	608.04.01 60% spray-grade emulsion	ℓ	40		
	608.04.02 60% An application of doubly washed slurry-seal aggregate	m3	15		
608.10	Single-seal surface treatment where 80/100 penetration grade bitumen is used -				
	608.10.01 with 6,7 mm aggregate	m2	250		
	608.10.02 with 9,5 mm aggregate	m2	Rate only		
608.14	Application of fog spray				
	608.14.01 60%-spray-grade emulsion	ℓ	40		
	608.14.02 30%-spray-grade emulsion	ℓ	Rate only		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES 6:ROAD AND PARKING AREAS - SEGMENTED PAVING : SECTION 609

Item	Description	Unit	Qty	Rate	Amount
609.05	Construction of segmented paving with material supplied by the Employer or from the stockpile				
SC	609.05.01 Segmental-block paving	m2	250		
	609.05.02 Concrete-slab paving	m2	250		
609.06	Extra over on item B609.05.01 for the supply of new material	m2	150		
609.07	Extra over on item B609.05.02 for the supply of new material	m2	150		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

CLEANING OF SEWERS : SECTION B810

Item	Description	Unit	Qty	Rate	Amount
B810.01	Removal of sand, silt, roots, etc. (all causes) from sewer pipes using various rodding equipment for pipe diameter::				
SC	B810.01.01 100mm inside diameter	m	500		
	B810.01.02 150mm inside diameter	m	5000		
	B810.01.03 200mm inside diameter	m	500		
	B810.01.04 225mm inside diameter	m	500		
	B810.01.05 300mm inside diameter	m	1500		
	B810.01.06 350mm nominal diameter	m	500		
	B810.01.07 375mm nominal diameter	m	500		
	B810.01.08 400mm nominal diameter	m	500		
	B810.01.09 425mm nominal diameter	m	500		
B810.02	Removal of isolated point blockages from sewer pipes using various rodding equipment for pipe diameter:				
SC	B810.02.01 100mm inside diameter	No	50		
	B810.02.02 150mm inside diameter	No	100		
	B810.02.03 200mm inside diameter	No	50		
	B810.02.04 225mm inside diameter	No	50		
	B810.02.05 300mm inside diameter	No	100		
	B810.02.06 350mm nominal diameter	No	50		
	B810.02.07 375mm nominal diameter	No	50		
	B810.02.08 400mm nominal diameter	No	50		
	B810.02.09 425mm nominal diameter	No	50		
B810.04	Removal of sand, silt, roots, etc. (all causes) using high pressure water jetting equipment at ± 450 Bar pressure for pipe diameter				
	B810.04.01 100mm	m	500		
	B810.04.02 150mm	m	1000		
	B810.04.03 230mm	m	500		
	B810.04.04 300mm	m	250		
	B810.04.05 350mm	m	100		
	B810.04.06 375mm	m	100		
	B810.04.07 400mm	m	100		
	B810.04.08 450mm	m	100		
	B810.04.09 525mm	m	100		
	B810.04.10 >525mm	m	100		
B810.05	Removal of silt, fat, etc. (all causes) using combination of vacuum jetting methods apart from high pressure equipment for sewer pipes (Vactor or similar) for pipe diameter				
	B810.05.01 100mm	m	50		
	B810.05.02 150mm	m	500		
	B810.05.03 230mm	m	50		
carry forward					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

CLEANING OF SEWERS : SECTION B810

Item	Description	Unit	Qty	Rate	Amount
brought forward					
	B810.05.04 300mm	m	250		
	B810.05.05 350mm	m	50		
	B810.05.06 375mm	m	50		
	B810.05.07 400mm	m	50		
	B810.05.08 450mm	m	50		
	B810.05.09 525mm	m	50		
	B810.05.10 >525mm	m	50		
B810.06	Combination truck with a storage size of 10 kl or better, complete with high pressure washing and vacuum suction facility	day	20		
B810.07	Water tanker, 10 kl	day	20		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

CCTV INSPECTION OF SEWERS : SECTION B811

Item	Description	Unit	Qty	Rate	Amount
B811.01	Closed-Circuit Pan-and-Rotate Television Inspection of sewer lines for pipe diameter:				
	B811.01.01 100mm inside diameter	m	250		
	B811.01.02 150mm inside diameter	m	1250		
	B811.01.03 200mm inside diameter	m	100		
	B811.01.04 225mm inside diameter	m	100		
	B811.01.05 300mm inside diameter	m	500		
	B811.01.06 350mm nominal diameter	m	100		
	B811.01.07 375mm nominal diameter	m	100		
	B811.01.08 400mm nominal diameter	m	100		
	B811.01.09 >=425mm nominal diameter	m	100		
B811.04	Extra over item B811.01 Blocking of sewers before inspection for pipe diameter:				
	B811.04.01 100-300mm	No	50		
	B811.04.02 325-600mm	No	10		
	B811.04.03 >600mm	No	5		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES 8 : REHABILITATION/ REPLACEMENT OF SEWERS BY TRENCHLESS METHODS : SECTION B815

Item	Description	Unit	Qty	Rate	Amount
B815.01	Dealing with sewer flows by gravity pipe/temporary ditch diversion during sliplining and pipecracking	m	250		
B815.02	Dealing with sewage flow by overpumping with a water pump able to handle peak dry weather flow				
	B815.02.01 Up to 15 litres /second	hrs	350		
	B815.02.02 Between 15 and 25 litres /second	hrs	350		
B815.03 (LI/SC)	Breaking and repairing of access openings through manhole walls per manhole	No.	25		
B815.04 (LI/SC)	Breaking and repairing benching and channeling in existing manhole to accommodate	No.	25		
B815.05	Supply and installation of pipes.				
	B815.05.01. 160mm Class PE100 PN 6, SDR26 into existing 100mm Clay/uPVC/PF	m	4,800		
	B815.05.02. 160mm Class PE100 PN 6, SDR26 into existing 150-160mm Clay/uPVC/PF	m	11,200		
	B815.05.03. 200mm Class PE100 PN 6, SDR26 into existing 110-160mm Clay/uPVC/PF - upsize	m	2,000		
	B815.05.04. 225 mm Class PE100, PN 6, SDR26 into existing 180-210mm Clay/uPVC/PF	m	50		
	B815.05.05. 250 mm Class PE100, PN 6, SDR26 into existing 220-230mm Clay/uPVC/PF	m	58		
	B815.05.06. 250mm Class PE100 PN 6, SDR26 into existing 110-160mm Clay/uPVC/PF - upsize	m	58		
	B815.05.07. 250mm Class PE100 PN 6, SDR26 into existing 200mm Clay/uPVC/PF - upsize	m	58		
	B815.05.08. 280 mm Class PE100, PN 6, SDR26 into existing 240-260mm Clay/uPVC/PF	m	20		
	B815.05.09. 280 mm Class PE100, PN 6, SDR26 into existing 200mm Clay/uPVC/PF - upsize	m	750		
	B815.05.10. 315mm Class PE100, PN 6, SDR26 into existing 230mm Clay/uPVC/PF - upsize	m	150		
	B815.05.11. 355 mm Class PE100, PN 6, SDR26 into existing 280-330mm Clay/uPVC/PF	m	50		
	B815.05.12. 400mm Class PE100, PN 6, SDR26 into existing 340-375mm Clay/uPVC/PF	m	100		
	B815.05.13. 450mm Class PE100, PN 6, SDR26 into existing 380-420mm Clay/uPVC/PF	m	10		
	B815.05.14. 500mm Class PE100, PN 6, SDR26 into existing 430-460mm Clay/uPVC/PF	m	10		
	B815.05.15. 560mm Class PE100, PN 6, SDR26 into existing 470-520mm Clay/uPVC/PF	m	10		
	B815.05.16. 630mm Class PE100, PN 6, SDR26 into existing 470-520mm Clay/uPVC/PF	m	10		
B815.06	Service reconnections				
(LI/SC)	B815.06.01 For newly laid 160mm OD				
	B815.06.01.01 With Type B connection (Without lamphole and previously called Type 1)	No.	250		
	B815.06.01.02 With Type A or Type C connections (Previously called Type 2 or Type 3)	No.	250		
	B815.06.01.03 With Type B connection (Previously called Type 4)	No.	250		
(LI/SC)	B815.06.02 For newly laid 200 - 300mm OD				
	B815.06.02.01 With Type B connection (Without lamphole and previously called Type 1)	No.	25		
	B815.06.02.02 With Type A or Type C connections (Previously called Type 2 or Type 3)	No.	25		
	B815.06.02.03 With Type B connection (Previously called Type 4)	No.	25		
(LI/SC)	B815.06.03 For newly laid >=315mm OD				
	B815.06.03.01 With Type B connection (Without lamphole and previously called Type 1)	No.	5		
	B815.06.03.02 With Type A or Type C connections (Previously called Type 2 or Type 3)	No.	5		
	B815.06.03.03 With Type B connection (Previously called Type 4)	No.	5		
carry forward					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES 8 : REHABILITATION/ REPLACEMENT OF SEWERS BY TRENCHLESS METHODS : SECTION B815

Item	Description	Unit	Qty	Rate	Amount
brought forward					
B815.07 (LI/SC)	Point repairs				
	B815.07.01 Point repair by replacing pipe	No.	35		
(LI/SC)	(Extra over item 302.01 if pipe is replaced during point repair as specified)	No.	10		
B815.08 (LI/SC)	B815.07.02 Point repair of backfall in new pipe	No.	10		
B815.08 (LI/SC)	Breaking and removing concrete surrounded erf connections	m3	5		
B815.09 (LI/SC)	Reinstate Back-Drop manholes to suit HDPE pipe.	No.	1		
B815.10	Re-rounding existing pipe	m	10		
B815.11	Material testing				
	B815.11.01 Control test for E - Modulus	No.	1		
B815.12 (LI/SC)	Removal / clearing of obstructions over launch or exit pits or sewer lateral connections and replace	Hrs	25		
B815.13	Connect existing sewer line to newly laid sewers.				
	B815.13.01 For newly laid sewer of 160mm OD	No.	25		
	B815.13.02 For newly laid sewer of 200mm OD	No.	1		
	B815.13.03 For newly laid sewer of 250mm OD	No.	1		
	B815.13.04 For newly laid sewer of 280mm OD	No.	1		
	B815.13.05 For newly laid sewer of 315mm OD	No.	5		
	B815.13.06 For newly laid sewer of 355mm OD	No.	1		
	B815.13.07 For newly laid sewer of 400mm OD	No.	1		
	B815.13.08 For newly laid sewer of 450mm OD	No.	1		
	B815.13.09 For newly laid sewer of 560mm OD	No.	1		
	B815.13.10 For newly laid sewer of 630mm OD	No.	1		
B815.14 (LI/SC)	Breaking of concrete surfaces & reinstating with 25 MPa concrete to the original state	m2	25		
B815.15 (LI/SC)	Reinstating existing brickwork pavement according to specifications	m2	25		
B815.16	Installation of CIPP Liner				
	B815.16.01 Structural liner for diameters				
	B815.16.01.01 160mm	m	250		
	B815.16.01.02 Greater than 160mm up to 200mm	m	80		
	B815.16.01.03 Greater than 200mm up to 300mm	m	80		
	B815.16.01.04 Greater than 300mm up to 400mm	m	80		
	B815.16.01.05 Greater than 400mm up to 500mm	m	80		
	B815.16.02 Non-structural liner for diameters				
	B815.16.02.01 160mm	m	150		
	B815.16.02.02 Greater than 160mm up to 200mm	m	50		
	B815.16.02.03 Greater than 200mm up to 300mm	m	50		
	B815.16.02.04 Greater than 300mm up to 400mm	m	50		
	B815.16.02.05 Greater than 400mm up to 500mm	m	50		
carry forward					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

SERIES 8 : REHABILITATION/ REPLACEMENT OF SEWERS BY TRENCHLESS METHODS : SECTION B815

Item	Description	Unit	Qty	Rate	Amount
brought forward					
B815.17	Service reconnections to newly laid sewers by CIPP Liners	No	25		
B815.18	Installation of "Top Hat" sections at service connections	No	5		
B815.19	Point repair by short sections of CIPP				
	B815.19.01 CIPP Short sections straight	No	5		
	B815.19.02 CIPP short sections with lateral pretrusion	No	5		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA A)

PART C2: PRICING DATA: SUMMARY

SERIES 0: GENERAL	
SECTION 001: GENERAL REQUIREMENTS AND CHARGES	
SECTION 002: ENGINEERS ACCOMMODATION	
SERIES 1: ANCILLARY WORKS	
SECTION 101 : SITE CLEARING AND GRUBBING	
SECTION 102 : ACCOMMODATION OF TRAFFIC	
SERIES 2 : EARTHWORKS	
SECTION 201 : GENERAL	
SECTION 202 : TRENCHING	
SERIES 3 : SEWERS	
SECTION 302 : CONSTRUCTION	
SERIES 5 : DRAINAGE AND EROSION PROTECTION	
SECTION 503 : KERBING AND CHANNELING	
SERIES 6 : ROAD AND PARKING AREAS	
SECTION 601 : GRAVEL PAVEMENT LAYERS	
SECTION 606 : BASE AND ASPHALT SURFACING	
SECTION 608 : REHABILITATION AND OVERLAY CONSTRUCTION	
SECTION 609 : SEGMENTED PAVING	
SERIES 8: SPECIFIC WORKS	
SECTION B810 : CLEANING OF SEWERS	
SECTION B811: CCTV INSPECTION OF SEWERS	
SECTION B815 : REHABILITATION/ REPLACEMENT OF SEWERS BY TRENCHLESS METHODS	
(a) SUB-TOTAL(CONTRACT PRICE)	
(b) CONTINGENCIES 10% OF (a)	
(c) ESCALATION ALLOWANCE 5% OF [(a) + (b)]	
TOTAL = (a) + (b) + (c) = TENDER AMOUNT	
VAT @ 15%	
TENDER AMOUNT carried forward to Form of Offer - Part A	

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES O: GENERAL - GENERAL REQUIREMENTS AND CHARGES : SECTION 001

Item	Description	Unit	Qty	Rate	Amount
B001.01	Preliminary and General Charges(as specified in Part C3.8 Corrections and Amendments to the Standard Specifications, Section 001: General requirement and Charges, B31: Measurement and Payment)				
	B001.01.01 Fixed charges	Sum	1		
	B001.01.02 Time-related charges	month/per project	36		
	B001.01.03 The Contractor's establishment on site	Number	9		
B001.03 Li	Excavate by hand to expose existing services, and backfill	m3	50		
B001.04	Compliance with the Occupational Health and Safety Act and applicable regulations				
	B001.04.01 Provision of Health and Safety Plan	Lsum/per project	1		
	B001.04.02 Provision of Health and Safety file	Lsum/per project	1		
	B001.04.03 Provision of construction supervisors	per month/per project	36		
	B001.04.04 Provision of a Safety Officer (full time)	per month/per project	36		
	B001.04.08.01 Implementation of OHS Act (including provision of personal protective clothing, equipment, training, safety fences, etc.)	Lsum/per project	1		
	B001.04.08.02 Implementation of COVID regulations (including provision for training, equipment, facilities, etc.)	Lsum/per project	1		
B001.05	Community Liason officer				
	B001.05 .01 Salary	Psum	1	1,200,000.00	1,200,000.00
	B001.05 .02 Charges required by the Contractor on subitem B001.05.01 above	%	1		
B001.06	Security guards(as specified in Part C3.8 Corrections and Amendments to the Standard Specifications, Section 001: General requirement and Charges, B31: Measurement and Payment)				
SC	B001.06.01 Appointment of Local Security Company	per month/per site	1		
B001.07	Provision of construction and materials manager	per month/per project	1		
B001.09	Training of targeted subcontractors and labourers				
	B001.09 .01 Training of targeted labourers (R200 000 per site)	Psum	1	1,000,000	1,000,000.00
	B001.09 .02 Charges required by the Contractor on subitem B001.09.01 above	%	1		
B001.10	Sums stated provisionally				
	B001.10.01 Expenditure on daywork items (wages paid to workmen)	Psum	1	100,000	100,000.00
	B001.10.02 Expenditure on daywork items (plant cost)	Psum	1	50,000	50,000.00
B001.11	Sums stated provisionally				
	B001.11.01 Materials to be used during the excavation of dayworks	Psum	1	50,000	50,000.00
	B001.11.02 Extra-Over on B001.06.01 for mark-up	%			
B001.12	DAYWORKS				
	B001.12.01 Labour				
	B001.12.01.01 Qualified Artisans	hour	Rate Only		
	B001.12.01.02 Foreman (9hour/day)	w/day	Rate Only		
	B001.12.01.03 Semi-skilled (9 hour/day)	w/day	Rate Only		
	B001.12.01.04 Labourer (9 hour/day)	w/day	Rate Only		
	B001.12.02 Plant Hire : Work Rates on Site				
carry forward					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES O: GENERAL - GENERAL REQUIREMENTS AND CHARGES : SECTION 001

Item	Description	Unit	Qty	Rate	Amount
				brought forward	
	B001.12.02.01 Tipper Truck				
	B001.12.02.01.01 1 m3 (small)	hour	Rate Only		
	B001.12.02.01.02 3 m3 (large)	hour	Rate Only		
	B001.12.02.02 Flatbed Truck				
	B001.12.02.02.01 1 ton (small)	hour	Rate Only		
	B001.12.02.02.02 3 ton (large)	hour	Rate Only		
	B001.12.02.03 LDV (0.5 ton)	hour	Rate Only		
	B001.12.02.04 Wheel Loader O&K L5	hour	Rate Only		
	B001.12.02.05 Motor Grader John Deere	hour	Rate Only		
	B001.12.02.06 Back-actor O&K MH4	hour	Rate Only		
	B001.12.02.07 Tractor Loader-Backhoe Case 480 D	hour	Rate Only		
	B001.12.02.08 Pedestrian Roller				
	B001.12.02.08.01 Bomag BW 90	hour	Rate Only		
	B001.12.02.08.02 Bomag BW 61	hour	Rate Only		
	B001.12.02.10 Concrete Mixer				
	B001.12.02.10.01 170 l (small)	hour	Rate Only		
	B001.12.02.10.02 280 l (large)	hour	Rate Only		
	B001.12.02.10.03 Miscellaneous				
	B001.12.02.10.03.01 Compressor 250 Cfm.	hour	Rate Only		
	B001.12.02.10.03.02 Water Pump with 25 l/s	hour	Rate Only		
	B001.12.02.10.03.03 Water Pump with 10 l/s	hour	Rate Only		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES 0 : GENERAL - ENGINEERS ACCOMMODATION : SECTION 002

Item	Description	Unit	Qty	Rate	Amount
B002.01	Services				
	002.01.01 Services for Office	month/per project	36		
B002.02 SC/Li	Maintenance of area around offices	month/per project	36		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES 1 : ANCILLARY WORKS - SITE CLEARING AND GRUBBING : SECTION 101

Item	Description	Unit	Qty	Rate	Amount
101.01	Clearing and Grubbing				
SC/Li	101.01.01 Areas	m2	1500		
101.02	Cutting and removal of large trees with a girth				
SC/Li	101.02.01 Exceeding 1m to 2m	No	3		
SC/Li	101.02.02 Exceeding 2m to 3m	No	2		
101.03	Grubbing and removal of large stumps and roots or large trees with a girth:				
SC/Li	101.03.01 Exceeding 1m to 2m	No	5		
SC/Li	101.03.02 Exceeding 2m to 3m	No	5		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES 1 : ANCILLARY WORKS - ACCOMMODATION OF TRAFFIC : SECTION 102

Item	Description	Unit	Qty	Rate	Amount
102.12	Provision of temporary bridges for maintaining access to properties				
SC	102.12.01 Temporary pedestrain bridges	No	25		
SC	102.12.02 Temporary vehicular bridges	No	10		
102.13	Moving of temporary bridges to and their re-erection in entirely new positions				
SC/Li	102.13.01 Temporary pedestrian bridges	No	10		
SC/Li	102.13.02 Temporary vehicular bridges	No	10		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES 2 : EARTHWORKS - GENERAL : SECTION 201

Item	Description	Unit	Qty	Rate	Amount
201.02	Temporary stockpiling of material	m3	500		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES 2 : EARTHWORKS - TRENCHING : SECTION 202

Item	Description	Unit	Qty	Rate	Amount
202.01 (LI/SC)	Trench excavations.				
(LI/SC)	202.01.01 Up to 1.0m deep	m3	1,742		
	202.01.02 Over 1.0m and up to 2m deep	m3	20,964		
	202.01.03 Over 2m and up to 3m deep	m3	7,223		
	202.01.04 Over 3m and up to 4m deep	m3	4,081		
	202.01.05 Over 4m and up to 5m deep	m3	3,906		
202.02 (LI/SC)	Extra over item 202.01, 202.03, 202.04 for excavating in-				
	202.02.02 Hard material	m2	25		
202.03 (LI/SC)	Excavations outside the normal trench profile	m3	814		
202.04 (LI/SC)	Hand excavation (extra over item 202.01)	m3	150		
202.06 (LI/SC)	The backfilling of trenches (excluding backfill around the pipe barrel) with material obtained from excavations	m3	21,842		
202.07 (LI/SC)	Extra over item 202.06 for using backfill material obtained -				
	202.07.01 From borrow areas	m3	4,375		
	202.07.02 From sources provided by the Contractor	m3	1,089		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES 3 : SEWERS - CONSTRUCTION : SECTION 302

Item	Description	Unit	Qty	Rate	Amount
302.01	Supplying, laying, jointing of sewer pipes irrespective of depth/width of trench.				
	302.01.01. 160mm Class PE100 PN 6, SDR26	m	1,304		
	302.01.02. 200mm Class PE100 PN 6, SDR26	m	145		
	302.01.03. 225mm Class PE100 PN 6, SDR26	m	2		
	302.01.04. 250mm Class PE100 PN 6, SDR26	m	7		
	302.01.05. 280mm Class PE100 PN 6, SDR26	m	2		
	302.01.06. 315mm Class PE100 PN 6, SDR26	m	54		
	302.01.07. 355mm Class PE100 PN 6, SDR26	m	14		
	302.01.08. 400mm Class PE100 PN 6, SDR26	m	3		
	302.01.09. 450mm Class PE100 PN 6, SDR26	m	8		
	302.01.10. 500mm Class PE100 PN 6, SDR26	m	3		
	302.01.11. 560mm Class PE100 PN 6, SDR26	m	3		
	302.01.12. 630mm Class PE100 PN 6, SDR26	m	3		
302.02	Construction of pipe bedding				
	302.02.01 Class B bedding				
	302.02.01.01. 160mm Class PE100 PN 6, SDR26	m	1,304		
	302.02.02. 200mm Class PE100 PN 6, SDR26	m	145		
	302.02.03. 225mm Class PE100 PN 6, SDR26	m	2		
	302.02.04. 250mm Class PE100 PN 6, SDR26	m	7		
	302.02.05. 280mm Class PE100 PN 6, SDR26	m	2		
	302.02.06. 315mm Class PE100 PN 6, SDR26	m	54		
	302.02.07. 355mm Class PE100 PN 6, SDR26	m	14		
	302.02.08. 400mm Class PE100 PN 6, SDR26	m	3		
	302.02.09. 450mm Class PE100 PN 6, SDR26	m	8		
	302.02.10. 500mm Class PE100 PN 6, SDR26	m	3		
	302.02.11. 560mm Class PE100 PN 6, SDR26	m	3		
	302.02.12. 630mm Class PE100 PN 6, SDR26	m	3		
302.09	Construction of manholes up to 1.0m deep				
SC	302.09.01 For sewers 300mm in diameter and smaller				
	302.09.01.01 Type III	No	25		
302.10	Extra over 302.06 for construction of manholes in excess of 1.0m deep				
SC	302.10.01 For sewers 300mm in diameter and smaller				
	302.10.01.01 Type III	m	25		
302.12	Supplying and installing manhole covers and frames				
SC	302.12.01 SANS 558 Type 4 circular	No	10		
carry forward					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES 3 : SEWERS - CONSTRUCTION : SECTION 302

Item	Description	Unit	Qty	Rate	Amount
brought forward					
302.14	302.12.02 SANS 558 Type 2A circular	No	10		
	302.12.03 Precast concrete cover with type 2A CI frame	No	10		
	302.12.04 Precast concrete cover with type 4 CI frame	No	10		
	Supplying and placing selected backfill material around and up to 300mm above pipe barrels using				
	302.14.01 Excavated material	m3	5,152		
B302.23 SC	302.14.02 Imported material	m3	4,184		
	Supply and install lamphole covers and frames for rodding eyes	No	10		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES 5 : DRAINAGE AND EROSION PROTECTION - KERBING AND CHANNELLING : SECTION 503

Item	Description	Unit	Qty	Rate	Amount
503.01	Concrete kerbing				
	503.01.01 to match existing kerbing	m	50		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES 6 : ROAD AND PARKING AREAS - GRAVEL PAVEMENT LAYERS : SECTION 601

Item	Description	Unit	Qty	Rate	Amount
601.02	Gravel layers constructed from material obtained from borrow pits:				
	601.02.01 Subgrade				
	601.02.01.01 Compacted to 90% of modified AASHTO density	m3	15		
	601.02.01.02 Compacted to 93% of modified AASHTO density	m3	15		
	601.02.01.03 Compacted to 95% of modified AASHTO density	m3	15		
	601.02.02 Subbase				
	601.02.02.01 Compacted to 95% of modified AASHTO density	m3	15		
	601.02.02.02 Compacted to 97% of modified AASHTO density	m3	15		
	601.02.03 Base				
	601.02.03.01 Compacted to 98% of modified AASHTO density	m3	15		
601.03	Gravel layers constructed from material obtained from material obtained from excavations:				
	601.03.01 Subgrade				
	601.03.01.01 Compacted to 90% of modified AASHTO density	m3	10		
	601.03.01.02 Compacted to 93% of modified AASHTO density	m3	10		
	601.03.01.03 Compacted to 95% of modified AASHTO density	m3	10		
	601.03.02 Subbase				
	601.03.02.01 Compacted to 95% of modified AASHTO density	m3	10		
	601.03.02.02 Compacted to 97% of modified AASHTO density	m3	10		
	601.03.03 Base				
	601.03.03.01 Compacted to 98% of modified AASHTO density	m3	10		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES 6 : ROAD AND PARKING AREAS - BASE AND ASPHALT SURFACING : SECTION 606

Item	Description	Unit	Qty	Rate	Amount
606.01	Asphalt base				
	606.01.01 Prime the stabilised area 60% emulsion	m2	250		
606.02	Asphalt surfacing (50mm)				
	606.02.01 Continuously graded	m2	250		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES 6 : ROAD AND PARKING AREAS - ROAD AND SURFACING REHABILITATION AND OVERLAY : SECTION 608

Item	Description	Unit	Qty	Rate	Amount
608.04	Treatment type 2 (crusher-sand seal) using :				
	608.04.01 60% spray-grade emulsion	ℓ	40		
	608.04.02 60% An application of doubly washed slurry-seal aggregate	m3	15		
608.10	Single-seal surface treatment where 80/100 penetration grade bitumen is used -				
	608.10.01 with 6,7 mm aggregate	m2	250		
	608.10.02 with 9,5 mm aggregate	m2	Rate only		
608.14	Application of fog spray				
	608.14.01 60%-spray-grade emulsion	ℓ	40		
	608.14.02 30%-spray-grade emulsion	ℓ	Rate only		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES 6:ROAD AND PARKING AREAS - SEGMENTED PAVING : SECTION 609

Item	Description	Unit	Qty	Rate	Amount
609.05	Construction of segmented paving with material supplied by the Employer or from the stockpile				
SC	609.05.01 Segmental-block paving	m2	250		
	609.05.02 Concrete-slab paving	m2	250		
609.06	Extra over on item B609.05.01 for the supply of new material	m2	150		
609.07	Extra over on item B609.05.02 for the supply of new material	m2	150		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

CLEANING OF SEWERS : SECTION B810

Item	Description	Unit	Qty	Rate	Amount
B810.01	Removal of sand, silt, roots, etc. (all causes) from sewer pipes using various rodding equipment for pipe diameter::				
SC	B810.01.01 100mm inside diameter	m	500		
	B810.01.02 150mm inside diameter	m	5000		
	B810.01.03 200mm inside diameter	m	500		
	B810.01.04 225mm inside diameter	m	500		
	B810.01.05 300mm inside diameter	m	1500		
	B810.01.06 350mm nominal diameter	m	500		
	B810.01.07 375mm nominal diameter	m	500		
	B810.01.08 400mm nominal diameter	m	500		
	B810.01.09 425mm nominal diameter	m	500		
B810.02	Removal of isolated point blockages from sewer pipes using various rodding equipment for pipe diameter:				
SC	B810.02.01 100mm inside diameter	No	50		
	B810.02.02 150mm inside diameter	No	100		
	B810.02.03 200mm inside diameter	No	50		
	B810.02.04 225mm inside diameter	No	50		
	B810.02.05 300mm inside diameter	No	100		
	B810.02.06 350mm nominal diameter	No	50		
	B810.02.07 375mm nominal diameter	No	50		
	B810.02.08 400mm nominal diameter	No	50		
	B810.02.09 425mm nominal diameter	No	50		
B810.04	Removal of sand, silt, roots, etc. (all causes) using high pressure water jetting equipment at ± 450 Bar pressure for pipe diameter				
	B810.04.01 100mm	m	500		
	B810.04.02 150mm	m	1000		
	B810.04.03 230mm	m	500		
	B810.04.04 300mm	m	250		
	B810.04.05 350mm	m	100		
	B810.04.06 375mm	m	100		
	B810.04.07 400mm	m	100		
	B810.04.08 450mm	m	100		
	B810.04.09 525mm	m	100		
	B810.04.10 >525mm	m	100		
B810.05	Removal of silt, fat, etc. (all causes) using combination of vacuum jetting methods apart from high pressure equipment for sewer pipes (Vactor or similar) for pipe diameter				
	B810.05.01 100mm	m	50		
	B810.05.02 150mm	m	500		
	B810.05.03 230mm	m	50		
carry forward					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

CLEANING OF SEWERS : SECTION B810

Item	Description	Unit	Qty	Rate	Amount
brought forward					
	B810.05.04 300mm	m	250		
	B810.05.05 350mm	m	50		
	B810.05.06 375mm	m	50		
	B810.05.07 400mm	m	50		
	B810.05.08 450mm	m	50		
	B810.05.09 525mm	m	50		
	B810.05.10 >525mm	m	50		
B810.06	Combination truck with a storage size of 10 kl or better, complete with high pressure washing and vacuum suction facility	day	20		
B810.07	Water tanker, 10 kl	day	20		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

CCTV INSPECTION OF SEWERS : SECTION B811

Item	Description	Unit	Qty	Rate	Amount
B811.01	Closed-Circuit Pan-and-Rotate Television Inspection of sewer lines for pipe diameter:				
	B811.01.01 100mm inside diameter	m	250		
	B811.01.02 150mm inside diameter	m	1250		
	B811.01.03 200mm inside diameter	m	100		
	B811.01.04 225mm inside diameter	m	100		
	B811.01.05 300mm inside diameter	m	500		
	B811.01.06 350mm nominal diameter	m	100		
	B811.01.07 375mm nominal diameter	m	100		
	B811.01.08 400mm nominal diameter	m	100		
	B811.01.09 >=425mm nominal diameter	m	100		
B811.04	Extra over item B811.01 Blocking of sewers before inspection for pipe diameter:				
	B811.04.01 100-300mm	No	50		
	B811.04.02 325-600mm	No	10		
	B811.04.03 >600mm	No	5		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES 8 : REHABILITATION/ REPLACEMENT OF SEWERS BY TRENCHLESS METHODS : SECTION B815

Item	Description	Unit	Qty	Rate	Amount
B815.01	Dealing with sewer flows by gravity pipe/temporary ditch diversion during sliplining and pipecracking	m	250		
B815.02	Dealing with sewage flow by overpumping with a water pump able to handle peak dry weather flow				
	B815.02.01 Up to 15 litres /second	hrs	350		
	B815.02.02 Between 15 and 25 litres /second	hrs	350		
B815.03 (LI/SC)	Breaking and repairing of access openings through manhole walls per manhole	No.	25		
B815.04 (LI/SC)	Breaking and repairing benching and channeling in existing manhole to accommodate	No.	25		
B815.05	Supply and installation of pipes.				
	B815.05.01. 160mm Class PE100 PN 6, SDR26 into existing 100mm Clay/uPVC/PF	m	4,800		
	B815.05.02. 160mm Class PE100 PN 6, SDR26 into existing 150-160mm Clay/uPVC/PF	m	11,200		
	B815.05.03. 200mm Class PE100 PN 6, SDR26 into existing 110-160mm Clay/uPVC/PF - upsize	m	2,000		
	B815.05.04. 225 mm Class PE100, PN 6, SDR26 into existing 180-210mm Clay/uPVC/PF	m	50		
	B815.05.05. 250 mm Class PE100, PN 6, SDR26 into existing 220-230mm Clay/uPVC/PF	m	58		
	B815.05.06. 250mm Class PE100 PN 6, SDR26 into existing 110-160mm Clay/uPVC/PF - upsize	m	58		
	B815.05.07. 250mm Class PE100 PN 6, SDR26 into existing 200mm Clay/uPVC/PF - upsize	m	58		
	B815.05.08. 280 mm Class PE100, PN 6, SDR26 into existing 240-260mm Clay/uPVC/PF	m	20		
	B815.05.09. 280 mm Class PE100, PN 6, SDR26 into existing 200mm Clay/uPVC/PF - upsize	m	750		
	B815.05.10. 315mm Class PE100, PN 6, SDR26 into existing 230mm Clay/uPVC/PF - upsize	m	150		
	B815.05.11. 355 mm Class PE100, PN 6, SDR26 into existing 280-330mm Clay/uPVC/PF	m	50		
	B815.05.12. 400mm Class PE100, PN 6, SDR26 into existing 340-375mm Clay/uPVC/PF	m	100		
	B815.05.13. 450mm Class PE100, PN 6, SDR26 into existing 380-420mm Clay/uPVC/PF	m	10		
	B815.05.14. 500mm Class PE100, PN 6, SDR26 into existing 430-460mm Clay/uPVC/PF	m	10		
	B815.05.15. 560mm Class PE100, PN 6, SDR26 into existing 470-520mm Clay/uPVC/PF	m	10		
	B815.05.16. 630mm Class PE100, PN 6, SDR26 into existing 470-520mm Clay/uPVC/PF	m	10		
B815.06	Service reconnections				
(LI/SC)	B815.06.01 For newly laid 160mm OD				
	B815.06.01.01 With Type B connection (Without lamphole and previously called Type 1)	No.	250		
	B815.06.01.02 With Type A or Type C connections (Previously called Type 2 or Type 3)	No.	250		
	B815.06.01.03 With Type B connection (Previously called Type 4)	No.	250		
(LI/SC)	B815.06.02 For newly laid 200 - 300mm OD				
	B815.06.02.01 With Type B connection (Without lamphole and previously called Type 1)	No.	25		
	B815.06.02.02 With Type A or Type C connections (Previously called Type 2 or Type 3)	No.	25		
	B815.06.02.03 With Type B connection (Previously called Type 4)	No.	25		
(LI/SC)	B815.06.03 For newly laid >=315mm OD				
	B815.06.03.01 With Type B connection (Without lamphole and previously called Type 1)	No.	5		
	B815.06.03.02 With Type A or Type C connections (Previously called Type 2 or Type 3)	No.	5		
	B815.06.03.03 With Type B connection (Previously called Type 4)	No.	5		
carry forward					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES 8 : REHABILITATION/ REPLACEMENT OF SEWERS BY TRENCHLESS METHODS : SECTION B815

Item	Description	Unit	Qty	Rate	Amount
brought forward					
B815.07 (LI/SC)	Point repairs				
	B815.07.01 Point repair by replacing pipe	No.	35		
(LI/SC)	(Extra over item 302.01 if pipe is replaced during point repair as specified)	No.	10		
B815.08 (LI/SC)	B815.07.02 Point repair of backfall in new pipe	No.	10		
B815.08 (LI/SC)	Breaking and removing concrete surrounded erf connections	m3	5		
B815.09 (LI/SC)	Reinstate Back-Drop manholes to suit HDPE pipe.	No.	1		
B815.10	Re-rounding existing pipe	m	10		
B815.11	Material testing				
	B815.11.01 Control test for E - Modulus	No.	1		
B815.12 (LI/SC)	Removal / clearing of obstructions over launch or exit pits or sewer lateral connections and replace	Hrs	25		
B815.13	Connect existing sewer line to newly laid sewers.				
	B815.13.01 For newly laid sewer of 160mm OD	No.	25		
	B815.13.02 For newly laid sewer of 200mm OD	No.	1		
	B815.13.03 For newly laid sewer of 250mm OD	No.	1		
	B815.13.04 For newly laid sewer of 280mm OD	No.	1		
	B815.13.05 For newly laid sewer of 315mm OD	No.	5		
	B815.13.06 For newly laid sewer of 355mm OD	No.	1		
	B815.13.07 For newly laid sewer of 400mm OD	No.	1		
	B815.13.08 For newly laid sewer of 450mm OD	No.	1		
	B815.13.09 For newly laid sewer of 560mm OD	No.	1		
	B815.13.10 For newly laid sewer of 630mm OD	No.	1		
B815.14 (LI/SC)	Breaking of concrete surfaces & reinstating with 25 MPa concrete to the original state	m2	25		
B815.15 (LI/SC)	Reinstating existing brickwork pavement according to specifications	m2	25		
B815.16	Installation of CIPP Liner				
	B815.16.01 Structural liner for diameters				
	B815.16.01.01 160mm	m	250		
	B815.16.01.02 Greater than 160mm up to 200mm	m	80		
	B815.16.01.03 Greater than 200mm up to 300mm	m	80		
	B815.16.01.04 Greater than 300mm up to 400mm	m	80		
	B815.16.01.05 Greater than 400mm up to 500mm	m	80		
	B815.16.02 Non-structural liner for diameters				
	B815.16.02.01 160mm	m	150		
	B815.16.02.02 Greater than 160mm up to 200mm	m	50		
	B815.16.02.03 Greater than 200mm up to 300mm	m	50		
	B815.16.02.04 Greater than 300mm up to 400mm	m	50		
	B815.16.02.05 Greater than 400mm up to 500mm	m	50		
carry forward					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

SERIES 8 : REHABILITATION/ REPLACEMENT OF SEWERS BY TRENCHLESS METHODS : SECTION B815

Item	Description	Unit	Qty	Rate	Amount
brought forward					
B815.17	Service reconnections to newly laid sewers by CIPP Liners	No	25		
B815.18	Installation of "Top Hat" sections at service connections	No	5		
B815.19	Point repair by short sections of CIPP				
	B815.19.01 CIPP Short sections straight	No	5		
	B815.19.02 CIPP short sections with lateral pretrusion	No	5		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA B)

PART C2: PRICING DATA: SUMMARY

SERIES 0: GENERAL	
SECTION 001: GENERAL REQUIREMENTS AND CHARGES	
SECTION 002: ENGINEERS ACCOMMODATION	
SERIES 1: ANCILLARY WORKS	
SECTION 101 : SITE CLEARING AND GRUBBING	
SECTION 102 : ACCOMMODATION OF TRAFFIC	
SERIES 2 : EARTHWORKS	
SECTION 201 : GENERAL	
SECTION 202 : TRENCHING	
SERIES 3 : SEWERS	
SECTION 302 : CONSTRUCTION	
SERIES 5 : DRAINAGE AND EROSION PROTECTION	
SECTION 503 : KERBING AND CHANNELING	
SERIES 6 : ROAD AND PARKING AREAS	
SECTION 601 : GRAVEL PAVEMENT LAYERS	
SECTION 606 : BASE AND ASPHALT SURFACING	
SECTION 608 : REHABILITATION AND OVERLAY CONSTRUCTION	
SECTION 609 : SEGMENTED PAVING	
SERIES 8: SPECIFIC WORKS	
SECTION B810 : CLEANING OF SEWERS	
SECTION B811: CCTV INSPECTION OF SEWERS	
SECTION B815 : REHABILITATION/ REPLACEMENT OF SEWERS BY TRENCHLESS METHODS	
(a) SUB-TOTAL(CONTRACT PRICE)	
(b) CONTINGENCIES 10% OF (a)	
(c) ESCALATION ALLOWANCE 5% OF [(a) + (b)]	
TOTAL = (a) + (b) + (c) = TENDER AMOUNT	
VAT @ 15%	
TENDER AMOUNT	carried forward to Form of Offer - Part B

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES O: GENERAL - GENERAL REQUIREMENTS AND CHARGES : SECTION 001

Item	Description	Unit	Qty	Rate	Amount
B001.01	Preliminary and General Charges(as specified in Part C3.8 Corrections and Amendments to the Standard Specifications, Section 001: General requirement and Charges, B31: Measurement and Payment)				
	B001.01.01 Fixed charges	Sum	1		
	B001.01.02 Time-related charges	month/per project	36		
	B001.01.03 The Contractor's establishment on site	Number	9		
B001.03 Li	Excavate by hand to expose existing services, and backfill	m3	50		
B001.04	Compliance with the Occupational Health and Safety Act and applicable regulations				
	B001.04.01 Provision of Health and Safety Plan	Lsum/per project	1		
	B001.04.02 Provision of Health and Safety file	Lsum/per project	1		
	B001.04.03 Provision of construction supervisors	per month/per project	36		
	B001.04.04 Provision of a Safety Officer (full time)	per month/per project	36		
	B001.04.08.01 Implementation of OHS Act (including provision of personal protective clothing, equipment, training, safety fences, etc.)	Lsum/per project	1		
	B001.04.08.02 Implementation of COVID regulations (including provision for training, equipment, facilities, etc.)	Lsum/per project	1		
B001.05	Community Liason officer				
	B001.05 .01 Salary	Psum	1	1,200,000.00	1,200,000.00
	B001.05 .02 Charges required by the Contractor on subitem B001.05.01 above	%	1		
B001.06	Security guards(as specified in Part C3.8 Corrections and Amendments to the Standard Specifications, Section 001: General requirement and Charges, B31: Measurement and Payment)				
SC	B001.06.01 Appointment of Local Security Company	per month/per site	1		
B001.07	Provision of construction and materials manager	per month/per project	1		
B001.09	Training of targeted subcontractors and labourers				
	B001.09 .01 Training of targeted labourers (R200 000 per site)	Psum	1	1,000,000	1,000,000.00
	B001.09 .02 Charges required by the Contractor on subitem B001.09.01 above	%	1		
B001.10	Sums stated provisionally				
	B001.10.01 Expenditure on daywork items (wages paid to workmen)	Psum	1	100,000	100,000.00
	B001.10.02 Expenditure on daywork items (plant cost)	Psum	1	50,000	50,000.00
B001.11	Sums stated provisionally				
	B001.11.01 Materials to be used during the excavation of dayworks	Psum	1	50,000	50,000.00
	B001.11.02 Extra-Over on B001.06.01 for mark-up	%			
B001.12	DAYWORKS				
	B001.12.01 Labour				
	B001.12.01.01 Qualified Artisans	hour	Rate Only		
	B001.12.01.02 Foreman (9hour/day)	w/day	Rate Only		
	B001.12.01.03 Semi-skilled (9 hour/day)	w/day	Rate Only		
	B001.12.01.04 Labourer (9 hour/day)	w/day	Rate Only		
	B001.12.02 Plant Hire : Work Rates on Site				
carry forward					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES O: GENERAL - GENERAL REQUIREMENTS AND CHARGES : SECTION 001

Item	Description	Unit	Qty	Rate	Amount
				brought forward	
	B001.12.02.01 Tipper Truck				
	B001.12.02.01.01 1 m3 (small)	hour	Rate Only		
	B001.12.02.01.02 3 m3 (large)	hour	Rate Only		
	B001.12.02.02 Flatbed Truck				
	B001.12.02.02.01 1 ton (small)	hour	Rate Only		
	B001.12.02.02.02 3 ton (large)	hour	Rate Only		
	B001.12.02.03 LDV (0.5 ton)	hour	Rate Only		
	B001.12.02.04 Wheel Loader O&K L5	hour	Rate Only		
	B001.12.02.05 Motor Grader John Deere	hour	Rate Only		
	B001.12.02.06 Back-actor O&K MH4	hour	Rate Only		
	B001.12.02.07 Tractor Loader-Backhoe Case 480 D	hour	Rate Only		
	B001.12.02.08 Pedestrian Roller				
	B001.12.02.08.01 Bomag BW 90	hour	Rate Only		
	B001.12.02.08.02 Bomag BW 61	hour	Rate Only		
	B001.12.02.10 Concrete Mixer				
	B001.12.02.10.01 170 l (small)	hour	Rate Only		
	B001.12.02.10.02 280 l (large)	hour	Rate Only		
	B001.12.02.10.03 Miscellaneous				
	B001.12.02.10.03.01 Compressor 250 Cfm.	hour	Rate Only		
	B001.12.02.10.03.02 Water Pump with 25 l/s	hour	Rate Only		
	B001.12.02.10.03.03 Water Pump with 10 l/s	hour	Rate Only		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES 0 : GENERAL - ENGINEERS ACCOMMODATION : SECTION 002

Item	Description	Unit	Qty	Rate	Amount
B002.01	Services				
	002.01.01 Services for Office	month/per project	36		
B002.02 SC/Li	Maintenance of area around offices	month/per project	36		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES 1 : ANCILLARY WORKS - SITE CLEARING AND GRUBBING : SECTION 101

Item	Description	Unit	Qty	Rate	Amount
101.01	Clearing and Grubbing				
SC/Li	101.01.01 Areas	m2	1500		
101.02	Cutting and removal of large trees with a girth				
SC/Li	101.02.01 Exceeding 1m to 2m	No	3		
SC/Li	101.02.02 Exceeding 2m to 3m	No	2		
101.03	Grubbing and removal of large stumps and roots or large trees with a girth:				
SC/Li	101.03.01 Exceeding 1m to 2m	No	5		
SC/Li	101.03.02 Exceeding 2m to 3m	No	5		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES 1 : ANCILLARY WORKS - ACCOMMODATION OF TRAFFIC : SECTION 102

Item	Description	Unit	Qty	Rate	Amount
102.12	Provision of temporary bridges for maintaining access to properties				
SC	102.12.01 Temporary pedestrain bridges	No	25		
SC	102.12.02 Temporary vehicular bridges	No	10		
102.13	Moving of temporary bridges to and their re-erection in entirely new positions				
SC/Li	102.13.01 Temporary pedestrian bridges	No	10		
SC/Li	102.13.02 Temporary vehicular bridges	No	10		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES 2 : EARTHWORKS - GENERAL : SECTION 201

Item	Description	Unit	Qty	Rate	Amount
201.02	Temporary stockpiling of material	m3	500		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES 2 : EARTHWORKS - TRENCHING : SECTION 202

Item	Description	Unit	Qty	Rate	Amount
202.01 (LI/SC)	Trench excavations.				
(LI/SC)	202.01.01 Up to 1.0m deep	m3	1,742		
	202.01.02 Over 1.0m and up to 2m deep	m3	20,964		
	202.01.03 Over 2m and up to 3m deep	m3	7,223		
	202.01.04 Over 3m and up to 4m deep	m3	4,081		
	202.01.05 Over 4m and up to 5m deep	m3	3,906		
202.02 (LI/SC)	Extra over item 202.01, 202.03, 202.04 for excavating in-				
	202.02.02 Hard material	m2	25		
202.03 (LI/SC)	Excavations outside the normal trench profile	m3	814		
202.04 (LI/SC)	Hand excavation (extra over item 202.01)	m3	150		
202.06 (LI/SC)	The backfilling of trenches (excluding backfill around the pipe barrel) with material obtained from excavations	m3	21,842		
202.07 (LI/SC)	Extra over item 202.06 for using backfill material obtained -				
	202.07.01 From borrow areas	m3	4,375		
	202.07.02 From sources provided by the Contractor	m3	1,089		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES 3 : SEWERS - CONSTRUCTION : SECTION 302

Item	Description	Unit	Qty	Rate	Amount
302.01	Supplying, laying, jointing of sewer pipes irrespective of depth/width of trench.				
	302.01.01. 160mm Class PE100 PN 6, SDR26	m	1,304		
	302.01.02. 200mm Class PE100 PN 6, SDR26	m	145		
	302.01.03. 225mm Class PE100 PN 6, SDR26	m	2		
	302.01.04. 250mm Class PE100 PN 6, SDR26	m	7		
	302.01.05. 280mm Class PE100 PN 6, SDR26	m	2		
	302.01.06. 315mm Class PE100 PN 6, SDR26	m	54		
	302.01.07. 355mm Class PE100 PN 6, SDR26	m	14		
	302.01.08. 400mm Class PE100 PN 6, SDR26	m	3		
	302.01.09. 450mm Class PE100 PN 6, SDR26	m	8		
	302.01.10. 500mm Class PE100 PN 6, SDR26	m	3		
	302.01.11. 560mm Class PE100 PN 6, SDR26	m	3		
	302.01.12. 630mm Class PE100 PN 6, SDR26	m	3		
302.02	Construction of pipe bedding				
	302.02.01 Class B bedding				
	302.02.01.01. 160mm Class PE100 PN 6, SDR26	m	1,304		
	302.02.02. 200mm Class PE100 PN 6, SDR26	m	145		
	302.02.03. 225mm Class PE100 PN 6, SDR26	m	2		
	302.02.04. 250mm Class PE100 PN 6, SDR26	m	7		
	302.02.05. 280mm Class PE100 PN 6, SDR26	m	2		
	302.02.06. 315mm Class PE100 PN 6, SDR26	m	54		
	302.02.07. 355mm Class PE100 PN 6, SDR26	m	14		
	302.02.08. 400mm Class PE100 PN 6, SDR26	m	3		
	302.02.09. 450mm Class PE100 PN 6, SDR26	m	8		
	302.02.10. 500mm Class PE100 PN 6, SDR26	m	3		
	302.02.11. 560mm Class PE100 PN 6, SDR26	m	3		
	302.02.12. 630mm Class PE100 PN 6, SDR26	m	3		
302.09	Construction of manholes up to 1.0m deep				
SC	302.09.01 For sewers 300mm in diameter and smaller				
	302.09.01.01 Type III	No	25		
302.10	Extra over 302.06 for construction of manholes in excess of 1.0m deep				
SC	302.10.01 For sewers 300mm in diameter and smaller				
	302.10.01.01 Type III	m	25		
302.12	Supplying and installing manhole covers and frames				
SC	302.12.01 SANS 558 Type 4 circular	No	10		
carry forward					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES 3 : SEWERS - CONSTRUCTION : SECTION 302

Item	Description	Unit	Qty	Rate	Amount
brought forward					
302.14	302.12.02 SANS 558 Type 2A circular	No	10		
	302.12.03 Precast concrete cover with type 2A CI frame	No	10		
	302.12.04 Precast concrete cover with type 4 CI frame	No	10		
	Supplying and placing selected backfill material around and up to 300mm above pipe barrels using				
	302.14.01 Excavated material	m3	5,152		
B302.23 SC	302.14.02 Imported material	m3	4,184		
	Supply and install lamphole covers and frames for rodding eyes	No	10		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES 5 : DRAINAGE AND EROSION PROTECTION - KERBING AND CHANNELLING : SECTION 503

Item	Description	Unit	Qty	Rate	Amount
503.01	Concrete kerbing				
	503.01.01 to match existing kerbing	m	50		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES 6 : ROAD AND PARKING AREAS - GRAVEL PAVEMENT LAYERS : SECTION 601

Item	Description	Unit	Qty	Rate	Amount
601.02	Gravel layers constructed from material obtained from borrow pits:				
	601.02.01 Subgrade				
	601.02.01.01 Compacted to 90% of modified AASHTO density	m3	15		
	601.02.01.02 Compacted to 93% of modified AASHTO density	m3	15		
	601.02.01.03 Compacted to 95% of modified AASHTO density	m3	15		
	601.02.02 Subbase				
	601.02.02.01 Compacted to 95% of modified AASHTO density	m3	15		
	601.02.02.02 Compacted to 97% of modified AASHTO density	m3	15		
	601.02.03 Base				
	601.02.03.01 Compacted to 98% of modified AASHTO density	m3	15		
601.03	Gravel layers constructed from material obtained from material obtained from excavations:				
	601.03.01 Subgrade				
	601.03.01.01 Compacted to 90% of modified AASHTO density	m3	10		
	601.03.01.02 Compacted to 93% of modified AASHTO density	m3	10		
	601.03.01.03 Compacted to 95% of modified AASHTO density	m3	10		
	601.03.02 Subbase				
	601.03.02.01 Compacted to 95% of modified AASHTO density	m3	10		
	601.03.02.02 Compacted to 97% of modified AASHTO density	m3	10		
	601.03.03 Base				
	601.03.03.01 Compacted to 98% of modified AASHTO density	m3	10		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES 6 : ROAD AND PARKING AREAS - BASE AND ASPHALT SURFACING : SECTION 606

Item	Description	Unit	Qty	Rate	Amount
606.01	Asphalt base				
	606.01.01 Prime the stabilised area 60% emulsion	m2	250		
606.02	Asphalt surfacing (50mm)				
	606.02.01 Continuously graded	m2	250		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES 6 : ROAD AND PARKING AREAS - ROAD AND SURFACING REHABILITATION AND OVERLAY : SECTION 608

Item	Description	Unit	Qty	Rate	Amount
608.04	Treatment type 2 (crusher-sand seal) using :				
	608.04.01 60% spray-grade emulsion	ℓ	40		
	608.04.02 60% An application of doubly washed slurry-seal aggregate	m3	15		
608.10	Single-seal surface treatment where 80/100 penetration grade bitumen is used -				
	608.10.01 with 6,7 mm aggregate	m2	250		
	608.10.02 with 9,5 mm aggregate	m2	Rate only		
608.14	Application of fog spray				
	608.14.01 60%-spray-grade emulsion	ℓ	40		
	608.14.02 30%-spray-grade emulsion	ℓ	Rate only		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES 6:ROAD AND PARKING AREAS - SEGMENTED PAVING : SECTION 609

Item	Description	Unit	Qty	Rate	Amount
609.05	Construction of segmented paving with material supplied by the Employer or from the stockpile				
SC	609.05.01 Segmental-block paving	m2	250		
	609.05.02 Concrete-slab paving	m2	250		
609.06	Extra over on item B609.05.01 for the supply of new material	m2	150		
609.07	Extra over on item B609.05.02 for the supply of new material	m2	150		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

CLEANING OF SEWERS : SECTION B810

Item	Description	Unit	Qty	Rate	Amount
B810.01	Removal of sand, silt, roots, etc. (all causes) from sewer pipes using various rodding equipment for pipe diameter::				
SC	B810.01.01 100mm inside diameter	m	500		
	B810.01.02 150mm inside diameter	m	5000		
	B810.01.03 200mm inside diameter	m	500		
	B810.01.04 225mm inside diameter	m	500		
	B810.01.05 300mm inside diameter	m	1500		
	B810.01.06 350mm nominal diameter	m	500		
	B810.01.07 375mm nominal diameter	m	500		
	B810.01.08 400mm nominal diameter	m	500		
	B810.01.09 425mm nominal diameter	m	500		
B810.02	Removal of isolated point blockages from sewer pipes using various rodding equipment for pipe diameter:				
SC	B810.02.01 100mm inside diameter	No	50		
	B810.02.02 150mm inside diameter	No	100		
	B810.02.03 200mm inside diameter	No	50		
	B810.02.04 225mm inside diameter	No	50		
	B810.02.05 300mm inside diameter	No	100		
	B810.02.06 350mm nominal diameter	No	50		
	B810.02.07 375mm nominal diameter	No	50		
	B810.02.08 400mm nominal diameter	No	50		
	B810.02.09 425mm nominal diameter	No	50		
B810.04	Removal of sand, silt, roots, etc. (all causes) using high pressure water jetting equipment at ± 450 Bar pressure for pipe diameter				
	B810.04.01 100mm	m	500		
	B810.04.02 150mm	m	1000		
	B810.04.03 230mm	m	500		
	B810.04.04 300mm	m	250		
	B810.04.05 350mm	m	100		
	B810.04.06 375mm	m	100		
	B810.04.07 400mm	m	100		
	B810.04.08 450mm	m	100		
	B810.04.09 525mm	m	100		
	B810.04.10 >525mm	m	100		
B810.05	Removal of silt, fat, etc. (all causes) using combination of vacuum jetting methods apart from high pressure equipment for sewer pipes (Vactor or similar) for pipe diameter				
	B810.05.01 100mm	m	50		
	B810.05.02 150mm	m	500		
	B810.05.03 230mm	m	50		
carry forward					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

CLEANING OF SEWERS : SECTION B810

Item	Description	Unit	Qty	Rate	Amount
brought forward					
	B810.05.04 300mm	m	250		
	B810.05.05 350mm	m	50		
	B810.05.06 375mm	m	50		
	B810.05.07 400mm	m	50		
	B810.05.08 450mm	m	50		
	B810.05.09 525mm	m	50		
	B810.05.10 >525mm	m	50		
B810.06	Combination truck with a storage size of 10 kl or better, complete with high pressure washing and vacuum suction facility	day	20		
B810.07	Water tanker, 10 kl	day	20		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

CCTV INSPECTION OF SEWERS : SECTION B811

Item	Description	Unit	Qty	Rate	Amount
B811.01	Closed-Circuit Pan-and-Rotate Television Inspection of sewer lines for pipe diameter:				
	B811.01.01 100mm inside diameter	m	250		
	B811.01.02 150mm inside diameter	m	1250		
	B811.01.03 200mm inside diameter	m	100		
	B811.01.04 225mm inside diameter	m	100		
	B811.01.05 300mm inside diameter	m	500		
	B811.01.06 350mm nominal diameter	m	100		
	B811.01.07 375mm nominal diameter	m	100		
	B811.01.08 400mm nominal diameter	m	100		
	B811.01.09 >=425mm nominal diameter	m	100		
B811.04	Extra over item B811.01 Blocking of sewers before inspection for pipe diameter:				
	B811.04.01 100-300mm	No	50		
	B811.04.02 325-600mm	No	10		
	B811.04.03 >600mm	No	5		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES 8 : REHABILITATION/ REPLACEMENT OF SEWERS BY TRENCHLESS METHODS : SECTION B815

Item	Description	Unit	Qty	Rate	Amount
B815.01	Dealing with sewer flows by gravity pipe/temporary ditch diversion during sliplining and pipecracking	m	250		
B815.02	Dealing with sewage flow by overpumping with a water pump able to handle peak dry weather flow				
	B815.02.01 Up to 15 litres /second	hrs	350		
	B815.02.02 Between 15 and 25 litres /second	hrs	350		
B815.03 (LI/SC)	Breaking and repairing of access openings through manhole walls per manhole	No.	25		
B815.04 (LI/SC)	Breaking and repairing benching and channeling in existing manhole to accommodate	No.	25		
B815.05	Supply and installation of pipes.				
	B815.05.01. 160mm Class PE100 PN 6, SDR26 into existing 100mm Clay/uPVC/PF	m	4,800		
	B815.05.02. 160mm Class PE100 PN 6, SDR26 into existing 150-160mm Clay/uPVC/PF	m	11,200		
	B815.05.03. 200mm Class PE100 PN 6, SDR26 into existing 110-160mm Clay/uPVC/PF - upsize	m	2,000		
	B815.05.04. 225 mm Class PE100, PN 6, SDR26 into existing 180-210mm Clay/uPVC/PF	m	50		
	B815.05.05. 250 mm Class PE100, PN 6, SDR26 into existing 220-230mm Clay/uPVC/PF	m	58		
	B815.05.06. 250mm Class PE100 PN 6, SDR26 into existing 110-160mm Clay/uPVC/PF - upsize	m	58		
	B815.05.07. 250mm Class PE100 PN 6, SDR26 into existing 200mm Clay/uPVC/PF - upsize	m	58		
	B815.05.08. 280 mm Class PE100, PN 6, SDR26 into existing 240-260mm Clay/uPVC/PF	m	20		
	B815.05.09. 280 mm Class PE100, PN 6, SDR26 into existing 200mm Clay/uPVC/PF - upsize	m	750		
	B815.05.10. 315mm Class PE100, PN 6, SDR26 into existing 230mm Clay/uPVC/PF - upsize	m	150		
	B815.05.11. 355 mm Class PE100, PN 6, SDR26 into existing 280-330mm Clay/uPVC/PF	m	50		
	B815.05.12. 400mm Class PE100, PN 6, SDR26 into existing 340-375mm Clay/uPVC/PF	m	100		
	B815.05.13. 450mm Class PE100, PN 6, SDR26 into existing 380-420mm Clay/uPVC/PF	m	10		
	B815.05.14. 500mm Class PE100, PN 6, SDR26 into existing 430-460mm Clay/uPVC/PF	m	10		
	B815.05.15. 560mm Class PE100, PN 6, SDR26 into existing 470-520mm Clay/uPVC/PF	m	10		
	B815.05.16. 630mm Class PE100, PN 6, SDR26 into existing 470-520mm Clay/uPVC/PF	m	10		
B815.06	Service reconnections				
(LI/SC)	B815.06.01 For newly laid 160mm OD				
	B815.06.01.01 With Type B connection (Without lamphole and previously called Type 1)	No.	250		
	B815.06.01.02 With Type A or Type C connections (Previously called Type 2 or Type 3)	No.	250		
	B815.06.01.03 With Type B connection (Previously called Type 4)	No.	250		
(LI/SC)	B815.06.02 For newly laid 200 - 300mm OD				
	B815.06.02.01 With Type B connection (Without lamphole and previously called Type 1)	No.	25		
	B815.06.02.02 With Type A or Type C connections (Previously called Type 2 or Type 3)	No.	25		
	B815.06.02.03 With Type B connection (Previously called Type 4)	No.	25		
(LI/SC)	B815.06.03 For newly laid >=315mm OD				
	B815.06.03.01 With Type B connection (Without lamphole and previously called Type 1)	No.	5		
	B815.06.03.02 With Type A or Type C connections (Previously called Type 2 or Type 3)	No.	5		
	B815.06.03.03 With Type B connection (Previously called Type 4)	No.	5		
carry forward					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES 8 : REHABILITATION/ REPLACEMENT OF SEWERS BY TRENCHLESS METHODS : SECTION B815

Item	Description	Unit	Qty	Rate	Amount
brought forward					
B815.07 (LI/SC)	Point repairs				
	B815.07.01 Point repair by replacing pipe	No.	35		
(LI/SC)	(Extra over item 302.01 if pipe is replaced during point repair as specified)	No.	10		
B815.08 (LI/SC)	B815.07.02 Point repair of backfall in new pipe	No.	10		
B815.08 (LI/SC)	Breaking and removing concrete surrounded erf connections	m3	5		
B815.09 (LI/SC)	Reinstate Back-Drop manholes to suit HDPE pipe.	No.	1		
B815.10	Re-rounding existing pipe	m	10		
B815.11	Material testing				
	B815.11.01 Control test for E - Modulus	No.	1		
B815.12 (LI/SC)	Removal / clearing of obstructions over launch or exit pits or sewer lateral connections and replace	Hrs	25		
B815.13	Connect existing sewer line to newly laid sewers.				
	B815.13.01 For newly laid sewer of 160mm OD	No.	25		
	B815.13.02 For newly laid sewer of 200mm OD	No.	1		
	B815.13.03 For newly laid sewer of 250mm OD	No.	1		
	B815.13.04 For newly laid sewer of 280mm OD	No.	1		
	B815.13.05 For newly laid sewer of 315mm OD	No.	5		
	B815.13.06 For newly laid sewer of 355mm OD	No.	1		
	B815.13.07 For newly laid sewer of 400mm OD	No.	1		
	B815.13.08 For newly laid sewer of 450mm OD	No.	1		
	B815.13.09 For newly laid sewer of 560mm OD	No.	1		
	B815.13.10 For newly laid sewer of 630mm OD	No.	1		
B815.14 (LI/SC)	Breaking of concrete surfaces & reinstating with 25 MPa concrete to the original state	m2	25		
B815.15 (LI/SC)	Reinstating existing brickwork pavement according to specifications	m2	25		
B815.16	Installation of CIPP Liner				
	B815.16.01 Structural liner for diameters				
	B815.16.01.01 160mm	m	250		
	B815.16.01.02 Greater than 160mm up to 200mm	m	80		
	B815.16.01.03 Greater than 200mm up to 300mm	m	80		
	B815.16.01.04 Greater than 300mm up to 400mm	m	80		
	B815.16.01.05 Greater than 400mm up to 500mm	m	80		
	B815.16.02 Non-structural liner for diameters				
	B815.16.02.01 160mm	m	150		
	B815.16.02.02 Greater than 160mm up to 200mm	m	50		
	B815.16.02.03 Greater than 200mm up to 300mm	m	50		
	B815.16.02.04 Greater than 300mm up to 400mm	m	50		
	B815.16.02.05 Greater than 400mm up to 500mm	m	50		
carry forward					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

SERIES 8 : REHABILITATION/ REPLACEMENT OF SEWERS BY TRENCHLESS METHODS : SECTION B815

Item	Description	Unit	Qty	Rate	Amount
brought forward					
B815.17	Service reconnections to newly laid sewers by CIPP Liners	No	25		
B815.18	Installation of "Top Hat" sections at service connections	No	5		
B815.19	Point repair by short sections of CIPP				
	B815.19.01 CIPP Short sections straight	No	5		
	B815.19.02 CIPP short sections with lateral pretrusion	No	5		
Total carried forward to Summary					

Contract No: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED. (AREA C)

PART C2: PRICING DATA: SUMMARY

SERIES 0: GENERAL	
SECTION 001: GENERAL REQUIREMENTS AND CHARGES	
SECTION 002: ENGINEERS ACCOMMODATION	
SERIES 1: ANCILLARY WORKS	
SECTION 101 : SITE CLEARING AND GRUBBING	
SECTION 102 : ACCOMMODATION OF TRAFFIC	
SERIES 2 : EARTHWORKS	
SECTION 201 : GENERAL	
SECTION 202 : TRENCHING	
SERIES 3 : SEWERS	
SECTION 302 : CONSTRUCTION	
SERIES 5 : DRAINAGE AND EROSION PROTECTION	
SECTION 503 : KERBING AND CHANNELING	
SERIES 6 : ROAD AND PARKING AREAS	
SECTION 601 : GRAVEL PAVEMENT LAYERS	
SECTION 606 : BASE AND ASPHALT SURFACING	
SECTION 608 : REHABILITATION AND OVERLAY CONSTRUCTION	
SECTION 609 : SEGMENTED PAVING	
SERIES 8: SPECIFIC WORKS	
SECTION B810 : CLEANING OF SEWERS	
SECTION B811: CCTV INSPECTION OF SEWERS	
SECTION B815 : REHABILITATION/ REPLACEMENT OF SEWERS BY TRENCHLESS METHODS	
(a) SUB-TOTAL(CONTRACT PRICE)	
(b) CONTINGENCIES 10% OF (a)	
(c) ESCALATION ALLOWANCE 5% OF [(a) + (b)]	
TOTAL = (a) + (b) + (c) = TENDER AMOUNT	
VAT @ 15%	
TENDER AMOUNT	carried forward to Form of Offer - Part C

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION
OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

PORTION 2: CONTRACT

PART C3: SCOPE OF WORK

Contents

C3.1	DESCRIPTION OF THE WORKS	7
C3.1.1	EMPLOYER'S OBJECTIVES	8
C3.1.2	OVERVIEW OF THE WORKS.....	9
C3.1.3	EXTENT OF THE WORKS.....	10
C3.1.4	OBJECTIVE EVALUATION.....	12
C3.1.5	NATURE OF THE WORK.....	12
C3.1.6	LOCATION OF THE SITE.....	17
C3.1.7	GEOTECHNICAL INFORMATION	17
C3.1.8	SUPPLY OF MATERIALS	17
C3.1.9	QUALITY CONTROL	17
C3.2	ENGINEERING	19
C3.2.1	EMPLOYER'S DESIGN	20
C3.2.2	LIST OF DRAWINGS	20
C3.3	PROCUREMENT	21
C3.3.1	PREFERENTIAL PROCUREMENT PROCEDURES	22
C3.3.2	SCOPE OF SUBCONTRACTOR WORK.....	22
C3.3.3	PREFERRED SUBCONTRACTORS / SUPPLIERS.....	22
C3.3.4	SUBCONTRACTING PROCEDURES.....	22
C3.3.5	SCOPE OF SUBCONTRACT WORKS.....	23
C3.3.6	ATTENDANCE ON SUBCONTRACTORS.....	24
C3.3.7	EVALUATION CRITERIA	25
C3.4	CONSTRUCTION.....	35
C3.4.1	WORKS SPECIFICATIONS.....	36
C3.4.2	SITE FACILITIES AND ESTABLISHMENT.....	36
C3.4.3	PLANT AND CONSTRUCTION EQUIPMENT	42

PART C3: Scope of Work

C3.4.4	SUPPLY OF MATERIALS	43
C3.4.5	MATERIALS.....	43
C3.4.6	SCHEDULE OF QUANTITIES	44
C3.4.7	CONSTRUCTION ISSUES	46
C3.4.8	CONTRACTOR’S EMPLOYEES	54
C3.5	MANAGEMENT.....	81
C3.5.1	APPLICABLE SANS 1921 STANDARDS.....	82
C3.5.2	CONSTRUCTION PROGRAMME.....	91
C3.5.3	RECORDING OF WEATHER AND EXTENSION OF TIME DUE TO ABNORMAL RAINFALL.....	95
C3.5.4	MANAGEMENT MEETINGS	97
C3.5.5	FORMS FOR CONTRACT ADMINISTRATION	97
C3.5.6	ELECTRONIC PAYMENTS	97
C3.5.7	DAILY RECORDS.....	97
C3.5.8	BONDS AND GUARANTEES	97
C3.5.9	PAYMENT CERTIFICATES.....	97
C3.5.10	PERMITS.....	97
C3.5.11	PROOF OF COMPLIANCE WITH THE LAW	97
C3.5.12	INSURANCE PROVIDED BY THE EMPLOYER	98
C3.5.13	COMMUNITY PARTICIPATION	98
C3.5.14	CONSTRUCTION MANAGMEENT SERVICE REQUIREMENTS	99
C3.5.15	MATERIALS MANAGEMENT SERVICE REQUIREMENTS	105
C3.5.16	MODE OF SERVING NOTICES AND DIRECTIONS TO THE CONTRACTOR	106
C3.5.17	ANNEXURES	106
C3.6	APPOINTMENT OF COMMUNITY LIAISON OFFICER (CLO).....	106
C3.7	PARTICULAR SPECIFICATIONS AND VARIATIONS AND ADDITIONS TO THE STANDARD SPECIFICATIONS	107

C3.8	CORRECTIONS AND AMENDMENTS TO THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005.....	113
SERIES 0: GENERAL.....		114
SECTION 001: GENERAL REQUIREMENTS AND CHARGES.....		114
SECTION 002: ENGINEER'S ACCOMMODATION.....		126
SERIES 1: ANCILLARY WORKS.....		128
SECTION 101: SITE CLEARING AND GRUBBING.....		128
SERIES 2: EARTHWORKS.....		129
SECTION 201: GENERAL		129
SERIES 3: SEWERS.....		130
SECTION 301: MATERIALS.....		130
SECTION 302: CONSTRUCTION		130
SERIES 5: DRAINAGE AND EROSION PROTECTION.....		131
SECTION 503: KERBING AND CHANNELING		131
SERIES 8: SPECIFIC WORKS.....		132
SECTION B810: CLEANING OF SEWERS AND REMOVAL OF BLOCKAGES.....		132
SECTION B811: CLOSED-CIRCUIT TELEVISION CAMERA, INSPECTIONS OF SEWERS.....		138
SECTION B815: REHABILITATION / REPLACEMENT OF SEWERS BY TRENCHLESS METHODS		159
C3.9	OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION FOR THE APPOINTMENT OF SERVICE PROVIDERS FOR TRENCHLESS REPLACEMENT OF SEWERS IN THE CITY OF TSHWANE: 3 YEAR PERIOD	213
C3.9.1	DEFINITIONS	214
C3.9.2	INTRODUCTION.....	214
C3.9.3	SCOPE.....	216
C3.9.4	GENERAL OCCUPATIONAL HEALTH AND SAFETY PROVISIONS.....	216
C3.9.4.1	HAZARD IDENTIFICATION AND RISK ASSESSMENT (CONSTRUCTION REGULATION 9)	216
C3.9.4.2	LEGAL REQUIREMENTS.....	218

PART C3: Scope of Work

C3.9.4.3	STRUCTURE AND RESPONSIBILITIES	218
C3.9.4.4	MANDATORIES.....	222
C3.9.4.5	ADMINISTRATIVE CONTROLS AND THE OCCUPATIONAL HEALTH AND SAFETY FILE	223
C3.9.4.6	OCCUPATIONAL HEALTH AND SAFETY GOALS AND OBJECTIVES AND ARRANGEMENTS FOR MONITORING AND REVIEW OF OCCUPATIONAL HEALTH AND SAFETY PERFORMANCE...	224
C3.9.4.7	NOTIFICATION OF CONSTRUCTION WORK (CONSTRUCTION REGULATION 4)	224
C3.9.4.8	TRAINING, AWARENESS AND COMPETENCE	225
C3.9.4.9	CONSULTATION, COMMUNICATION AND LIAISON	228
C3.9.4.10	CHECKING, REPORTING AND CORRECTIVE ACTIONS.....	229
C3.9.4.11	INCIDENT REPORTING AND INVESTIGATION	230
C3.9.5	OPERATIONAL CONTROL	232
C3.9.5.1	EMERGENCY PREPAREDNESS, CONTINGENCY PLANNING AND RESPONSE	232
C3.9.5.2	FIRST-AID (GENERAL SAFETY REGULATION 3)	233
C3.9.5.3	SECURITY.....	233
C3.9.5.4	ACCOMMODATION OF TRAFFIC	233
C3.9.5.5	LIFTING TACKLE.....	234
C3.9.5.6	CONSTRUCTION VEHICLE AND MOBILE PLANT OPERATORS.....	235
C3.9.5.7	CONSTRUCTION VEHICLES AND MOBILE PLANT (CONSTRUCTION REGULATION 23).....	235
C3.9.5.8	USE AND STORAGE OF FLAMMABLES (CONSTRUCTION REGULATION 25).....	236
C3.9.5.9	HOUSEKEEPING (CONSTRUCTION REGULATION 27)	236
C3.9.5.10	STACKING AND STORAGE (CONSTRUCTION REGULATION 28).....	237
C3.9.5.11	STORAGE OF FLAMMABLE AND HAZARDOUS CHEMICALS (HAZARDOUS CHEMICAL SUBSTANCES REGULATIONS).....	238
C3.9.5.12	FIRE PREVENTION AND PROTECTION	238
C3.9.5.13	EATING, CHANGING, WASHING AND TOILET FACILITIES (CONSTRUCTION REGULATION 30)	238
C3.9.5.14	PERSONAL AND OTHER PROTECTIVE EQUIPMENT (SECTIONS 8, 15 AND 23 OF THE OHSACT).....	239

PART C3: Scope of Work

C3.9.5.15 PORTABLE ELECTRICAL TOOLS AND EQUIPMENT (ELECTRICAL MACHINERY REGULATION 9)	240
C3.9.5.16 PUBLIC HEALTH AND SAFETY (SECTION 9 OF THE OHSACT)	241
C3.9.5.17 HAZARDOUS CHEMICAL SUBSTANCES	241
C3.9.5.18 EXCAVATIONS (CONSTRUCTION REGULATION 13)	242
C3.9.5.19 WORKING IN CONFINED SPACES (SUCH AS MANHOLES)	244
C3.9.5.20 WORKING OVER OR CLOSE TO WATER	246
C3.9.5.21 TRANSPORTATION OF EMPLOYEES	246
C3.9.6 HEALTH AND SAFETY POLICY	247
C3.9.7 COST FOR HEALTH AND SAFETY MEASURES DURING THE CONSTRUCTION PROCESS	247
C3.9.8 PROJECT SPECIFIC RISK ASSESSMENT REQUIREMENTS	248
C3.9.9 OVERVIEW OF ANNEXURES	248
C3.9.10 ENQUIRIES	248
C3.10 REFERENCES TO THE SCOPE OF WORKS IN TERMS OF THE ENVIRONMENTAL MANAGEMENT PLAN	304

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION
OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

C3.1 DESCRIPTION OF THE WORKS

C3.1.1 EMPLOYER'S OBJECTIVES

The employer's objectives are to appoint service providers to replace, upgrade and/or augment existing public infrastructure to improve the service delivery to the community.

The works are to be executed using primarily trenchless technology construction, pipe bursting and in some specific circumstances CIPP lining will be executed. Personnel directly involved with the installation of pipes using pipe bursting shall have received training and shall have related experience. Only qualified staff who have been instructed and have experience in the use of butt-fusion and electro fusion equipment shall be permitted to perform polyethylene pipe welding and installation of electro fusion couplings, as applicable.

Works earmarked for labour-intensive construction will be numbered with a prefix "LI" in the bill of quantities to distinguish them from conventional construction works. Such work shall be constructed using local workers who are temporarily employed in terms of the project specification. These local workers must be sourced from the City of Tshwane (CoT) EPWP Central Database.

During the contract the contractor will be required to make use of subcontractors to execute dedicated portions of the work. Only approved tendered rates will apply for work executed. The contractor will be compensated for the site supervision, material management additionally to assist the local sub-contractors; training, managing and personal protective clothing that may be required for the sub-contractors.

Work earmarked for subcontractors will be numbered with a prefix "SC" in the bill of quantities to distinguish them from the conventional construction works. Such work shall be constructed by subcontractors who will be temporarily employed in terms of the project specifications.

It is the requirement of the CoT to appoint up to three service providers with a CIDB grading of at least 6CE or higher to execute the works. This tender is a rate only tender and the tender rates will be approved. The scope and quantities of the Bill of Quantities will be for tender evaluation purposes only. The rates will be fixed however the quantities will vary subject to the scope of work per project and the availability of budget.

It has to be emphasised that these contract appointments are to be executed through the entire Tshwane area, however the aim is that each appointment will focus mostly on a specific area and not overlap with other service providers. The contractor must therefore make

provision in his rates for all travelling and related costs. No additional payment will be made for these costs and therefore the tender rates must be all inclusive.

C3.1.2 OVERVIEW OF THE WORKS

The work to be done will be specialised TRENCHLESS REPLACEMENT OF SEWERS, mainly by the pipe bursting method, whereby selected structurally degraded sewers are burst open by specialised equipment while at the same time pulling in a new HDPE pipe. Beforehand launch and exit pits are hand excavated as well as existing sewer connections. Afterwards sewer connections are re-instated, and rehabilitation is done.

This contract is targeting network sewers as well as some collector sewers. Most network sewers are situated in midblock positions. Replacement by open excavation is seldom advisable due to the high cost that would be involved, the proximity of structures, challenges dealing with the life sewer flow, paving and gardens and the inconvenience and danger to the community of extensive open excavations.

In certain instances, pipe bursting is not advisable: mostly very deep sewers and sewers underneath structures. The existing sewers are then lined by cured-in-place pipe (CIPP) method or alternative lining materials. In most cases very little cleaning is necessary. CCTV inspections are done as a quality control measure, both before and after.

Project specifications B810 Cleaning of Sewers, B811 Inspection of Sewers and B815 Replacement of Sewers by trenchless methods in C3.8: Amendments and additions to the Standard Specifications apply.

C3.1.3 EXTENT OF THE WORKS

The site of the proposed works is located within the boundaries of the City of Tshwane. Approximately 60km of sewer pipes have already been identified for sewer pipe replacement, however, the length of sewers to be finally replaced under this contract will be dependent on the availability and allocated budget in the respective financial years.

The project will be implemented through the use of a maximum of three contracts, one Contractor in each area and shall be implemented and administered independently. A Contractor should be grade CIDB 6CE or higher to qualify for one area.

The Bidders' attention is drawn to the fact that the highest scoring bidder will be given priority to be appointed for their preferred Area, the second highest scoring bidder will be given the second priority and the third highest scoring bidder will be allocated the last remaining Area. Should a bidder score the highest points in more than one Area, such a bidder will only be allocated their preferred Area and other service providers will be considered for other Areas.

The contracts shall be compiled as follows:

Area A:

This Contract will mainly be executed within the boundaries of Region 1.

The scope comprises an estimated quantity of approximately 20 000m pipe.

CIDB 6CE or higher will be required.

Area B:

This Contract will mainly be executed within the boundaries of Region 3.

The scope comprises an estimated quantity of approximately 20 000m pipe.

CIDB 6CE or higher will be required.

Area C:

This Contract will mainly be executed within the boundaries of Regions 2, 4, 5, 6 and 7.

The scope comprises an estimated quantity of approximately 20 000m pipe.

CIDB 6CE or higher will be required.

CONTRACTOR	AREA	REGIONS	PLANNED SCOPE / CONTRACTOR (m)	PLANNED SCOPE / CONTRACTOR / FINANCIAL YEAR (m)		
				2021/22 FY	2022/23 FY	2022/24 FY

PART C3: Scope of Work

CONTRACTOR 1	AREA A	1	20 000	6 667	6 667	6 667
CONTRACTOR 2	AREA B	3	20 000	6 667	6 667	6 667
CONTRACTOR 3	AREA C	2, 4, 5, 6, 7	20 000	6 667	6 667	6 667
Total			60 000	20 000	20 000	20 000

Further, allowance has been made for nine site establishments in each area over the 3-year contract period for the execution of the scope of work. Each establishment in the area of convenience or proximity to the works, will be administered as a project with a defined scope for which the Contractor will be expected to submit a programme for approval. Should the Contractor not complete the project within the approved programme, all time related costs shall cease for the project/site in question.

In the event of non-performance of a Contractor in their appointed area, apart from termination of the contract, the City of Tshwane reserves the right to select a contractor from another area to assist with completion of the works. The selection of the support from the appointed Contractors will be based on performance and at the discretion of the City of Tshwane.

Extent of the Works

- Locating existing Services not identified by other Utilities and Agencies.
- Hand excavation to expose sewer connections.
- Hand excavation of launch and retrieve pits to accommodate trenchless equipment.
- Preparation of the trench bottom at launch and retrieval pits before bedding construction.
- Laying of different diameter sewer pipeline types (conventional trench construction).
- Installing new HDPE pipe by means of Trenchless Technology methods.
- Cutting exactly positioned holes in the newly replaced pipe to re-connect the sewer connections to the new pipe with new material.
- Reconnection of lateral connections.
- Point repair where needed when cable can't be threaded.
- Repairing manhole benching and sealing off new pipe at manholes.
- Backfilling and compaction of the excavations and reinstatement.
- All of the above, as well as other related items are to be done as per project specifications.

C3.1.4 OBJECTIVE EVALUATION

The Bidders' attention is drawn to the fact that the highest scoring bidder will be given priority to be appointed for their preferred Area, the second highest scoring bidder will be given the second priority and the third scoring bidder will be allocated the last remaining Area. Should a bidder score the highest points in more than one Area, such a bidder will only be allocated their preferred Area and other service providers will be considered for other Areas.

Bidders are expected to indicate their preferred area on the table below by indicating "Preferred Area number 1, Preferred Area number 2, Preferred Area number 3" on the spaces provided.

Description	Contractor's Preferred Area
Area A	
Area B	
Area C	

Should a need arise, the tender will be subjected to a negotiation process with certain bidders. This negotiation process will be handled in terms of the Supply Chain Management Policy to curb any potential financial loss to the City.

C3.1.5 NATURE OF THE WORK

a) Conventional and trenchless construction methods

- The construction method will be trenchless pipe bursting. However, the portions of pipe installation where launch, retrieve and lateral excavations are done are considered conventional pipe laying and the remaining portions must be considered as trenchless pipe bursting and have to be priced under the respective payment items.

b) Labour intensive construction methods (EPWP)

- Excavate by hand to expose existing services and backfill.
- Clear and grub of site.
- Cutting and removing trees.

PART C3: Scope of Work

- Grubbing and the removal of the stumps and roots of large trees.
- Flagmen.
- Hand trimming.
- Hand excavation.
- Backfilling of trench.
- Laying and jointing of sewer pipes irrespective of depth.
- Install erf connections.

The City of Tshwane (CoT) has a mandate and responsibility to fight poverty, build clean, healthy, safe and sustainable communities. To achieve this, the City adopted an Integrated Poverty Reduction and Community Development Strategy which requires all departments to cooperate and contribute towards poverty reduction through employing EPWP participants on projects. Therefore, the Water and Sanitation Division is committed to utilize participants that are registered on the CoT Central Database on all projects. The aim is to ensure commitment by each contractor on a project to utilize 50% of its personnel of the EPWP Central Database in order to enhance poverty alleviation and the uplifting of participants.

The successful contractor appointed will have to request labour from the EPWP Office that will do a random selection from the Central Database. Fifty percent of all personnel on a project must be appointed from the Central Database provided by the EPWP Office. The idea is to place beneficiaries in the correct or appropriate project roles/occupations to help them achieve income capacity and/or to equip them through skills development. The contractor must provide data about the number of beneficiaries required, qualifications, type of placement/occupation and gender before the project starts. The successful contractor appointed must accommodate students that are in need of practical training or in- service training. One student per region per annum must be trained on this contract. The minimum wage as per Sectoral Determination: Civil Engineering Sector published in the Government Gazette will be payable for students.

c) Subcontracting as condition of tender

Subcontracting in accordance with the Preferential Procurement Policy Framework Act 2000, Preferential Procurement Regulation 2017 will be applicable to this appointment.

A minimum of 30% of the value of the contract must be subcontracted to one or more of the following advance designated groups:

- An EME or QSE

Definitions:

- “EME” means an exempted micro enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act.
- “QSE” means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act.

The following activities are earmarked for subcontracting but is not all compulsory as long as the minimum of 30% subcontracting is adhered to. The contractor will need to submit monthly statements and proof of payments made to subcontractors to ensure that the above requirement is adhere too.

- Establishment of construction camp.
- Supply of ablution facilities on site.
- Fencing.
- Training of Targeted Labour.
- Provision of a safety officer.
- Security on site.
- Clear and grub of site.
- Cutting and removing large trees.
- Grubbing and the removal of the stumps and roots of large trees.
- Removal of spoil material.
- Provision of traffic signs and Plastic New Jersey Barriers.
- Trimming.

PART C3: Scope of Work

- Supply and placing of topsoil.
- Re-clearing areas when instructed by the engineer.
- Landscaping of trees and shrubs.
- Installation of lateral connections.
- Construction of segmental block paving.
- Concrete paving.
- Concrete Kerbing.
- Hiring of plant.

Only approved tendered rates will apply for work executed and the contractor must ensure that the subcontractors are paid a market related price for work done. The contractor will be compensated for the additional site supervision, management of subcontractors, material management, training and personal protective clothing that may be required for the subcontractors per month per subcontractor appointed in accordance with the Preferential Procurement Regulation 2017.

d) Construction and Materials Manager

The Main Contractor will be required to appoint a Materials and Construction Manager to mentor, train and assist the appointed subcontractors with the daily activities. The appointed Materials and Construction Manager must have a NQF Level 5 qualification for EPWP labour intensive construction works.

The Contractor will adopt the following structure for the selecting, training and appointing of subcontractor(s) for this project:

1. The successful subcontractor(s) will then enter into a written agreement/contract with the principal contractor.
2. The principal contractor should make provision for administration of subcontractors. The principal contractor must provide a construction and material manager to assist subcontractor(s) with their construction work. The principal contractor will be paid to provide a construction and material manager to the subcontractor(s) via the contract that will be awarded to the principal contractor. All items that are suitable for subcontractors are marked with "SC" in the Bill of Quantities. The principal contractor will price

PART C3: Scope of Work

all items marked “SC” as well, except in the case of a nominated sub-contractor(s). These tariffs will be binding on the principal contractor if the work is executed by the principal contractor as would be the case should no suitable subcontractor(s) be available. The tariffs on the “SC”-items tendered by the principal contractor will also be used as an index in the evaluation process for appointing subcontractors.

3. The principal contractor can hold the subcontractor(s) responsible for the quality and quantity of work done by them through their agreement/contract, but will be ultimately responsible and liable for the work done being the principal contractor and mentor to the subcontractor(s).
4. The principal contractor will submit a performance evaluation report to the Client, the CoT, and to the CIDB for their records should the subcontractor(s) being registered with the CIDB, in the process of registering or planning to register with the CIDB after the completion of the construction works on the project.
5. The principal contractor must ensure that each subcontractor(s) Health and Safety Management Plan is implemented and maintained on their portion of the Works.
6. A monthly progress report including an annexure of the performance of subcontractors will be submitted on a monthly basis.

The above structure will ensure that subcontractors with potential to be trained and given the opportunity to be appointed as subcontractor(s) and to gain valuable experience under the mentorship of a construction and materials contractors manager.

C3.1.6 LOCATION OF THE SITE

The works will be executed within the City of Tshwane (CoT) boundaries.

A detail map will be provided indicating sewer lines already identified for possible pipe replacement.

C3.1.7 GEOTECHNICAL INFORMATION

Only general data on prevalent geotechnical characteristics is available. No dedicated geotechnical investigation has been compiled for this contract. The Tenderer should however convince himself of the ground conditions of the works, before the Tenderer completes the tender document. The Contractor must take note that only soft or hard material will be paid, no intermediate material will be paid under this contract. See B202.

C3.1.8 SUPPLY OF MATERIALS

All material required for this contract shall be supplied by the Contractor. The Contractor shall take care that no delay is caused due to a shortage of material. Therefore, material required shall be ordered well in advance.

While care had been taken in calculating the quantities, the Contractor shall check the quantities before ordering. No claims for payment of excess or incorrect materials due to such shall be entertained.

C3.1.9 QUALITY CONTROL

It is the responsibility of the Principal Contractor to deliver work of quality and accuracy that is in accordance with the specifications and drawings, and the Principal Contractor shall at his own cost provide a quality control system for his work and provide experienced Engineers, Foreman, Surveyors, Technicians and other Technical Personnel together with the necessary transport, instruments and plant to ensure that proper supervision and positive control be applied on the job at all times.

The cost of all supervision and control, test included, performed by the Principal Contractor, shall be included in the relevant rates for the different items when tendering, except where separate provision has been made in the sections of the specifications.

The Principal Contractor's attention is drawn to the stipulations of the different sections of the specifications regarding the minimum frequency of tests to ensure proper quality control. The Principal Contractor shall increase this frequency if he deems fit to ensure appropriate control.

The Principal Contractor shall, at the completion of each part of the work and requesting approval thereof by the Engineer, submit all applicable test results, measurements and levels to indicate if it conforms to the relevant specifications.

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION
OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

C3.2 ENGINEERING

C3.2.1 EMPLOYER'S DESIGN

STANDARDS AND CODES OF PRACTICE

The following design standards for Civil Engineering Infrastructure will apply:

- i) Principles and standards for the design and construction of water and sanitation systems in the City of Tshwane by the Utility Services Department: Water and Sanitation Division of the CoT (Revised January 2017).
- ii) *General Conditions of Contract for Construction Works, Third Edition (2015) of the South African Institution of Civil Engineering (SAICE).*
- iii) *Standard Specifications for Municipal Civil Engineering Works of the City of Tshwane (Third Edition 2005).*

Most of the designs will be done in house by the City of Tshwane: Water and Sanitation Design Office. The designs are in accordance with the Standard Specifications for Municipal Civil Engineering Works, Third Edition 2005. It is however also envisaged that some of the works to be executed may be designed by Consulting Engineering Firms.

Take note: The information contained in the drawings, relating to the position, material and size of the existing pipe, may not be 100% accurate.

C3.2.2 LIST OF DRAWINGS

Layout drawings of the intended work sites etc. will not be issued before appointment. Such drawings will be shown at the site clarification meeting, if available in time.

The Principal Contractor will receive 2 sets of construction drawings, of which 1 set shall be designated for as-built records and updated by the Principal Contractor on a daily basis. The latter shall be:

- Made available to the Engineer or his/her duly authorised representative within 24 hours on request.
- Submitted to the Engineer with the completion of each project.

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION
OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

C3.3 PROCUREMENT

C3.3.1 PREFERENTIAL PROCUREMENT PROCEDURES

The City of Tshwane promotes preferential procurement. The philosophy of the process and mechanisms of points scoring system are described in Annexure A, which is included in the returnable documents section T2.2

C3.3.2 SCOPE OF SUBCONTRACTOR WORK

The Principal Contractor will be required to make use of subcontractors as stipulated in the Preferential Procurement Policy Framework Act, 2000: Preferential Procurement Regulations, 2017

C3.3.3 PREFERRED SUBCONTRACTORS / SUPPLIERS

The successful tenderer must subcontract a minimum of 30% of the value of the contract to the following categories as stipulated in clause 9.2 of the Preferential Procurement Regulations, 2017. :

- a) An EME or QSE

C3.3.4 SUBCONTRACTING PROCEDURES

The Principal Contractor shall advertise and call for competitive tenders in respect of each portion of the works that are required to be subcontracted in terms of the contract in accordance with the relevant provision of the latest edition of the CIDB Standard for Uniformity in Construction Procurement. The Contract Data in the associated procurement documents shall be based on the GCC form of subcontracting with minimal project specific variations and amendments that do not change their intended usage.

The Employer together with the Principal Contractor shall evaluate the tenders received in accordance with the provision of the Standard Conditions of tender. The evaluation panel shall comprise equal representatives from the Employer and from the Principal Contractor.

The Principal Contractor shall without delay enter into contract with the successful tendering subcontractor based on their accepted tender submission.

The Contractor shall remain responsible for providing the subcontracted portion of the works as if the work had not been subcontracted.

Note: 1 The CIDB Best Practice Guideline D1, Subcontracting Arrangements, provides guidance on the selection of a suitable form of subcontract.

2 Provision in the Pricing Data should be made for provisional sums for portions of the works that are to be subcontracted in this manner.

C3.3.5 SCOPE OF SUBCONTRACT WORKS

The Contractor should ensure that such subcontractor has the necessary experience and expertise to undertake the proposed activities. Any such approval shall be binding and will not relieve the Contractor of any contractual obligations in terms of the Contract.

(a) Programming and monitoring

- The Contractor shall be required to provide as part of his initial programme and updated as necessary in accordance thereof the following:
 - Clear indication in the programme the timing and duration of all local BE subcontractor.
 - Projected cash flow aligned to the programme for local BE subcontractors.
- Only work certified by the Engineer as having been completed by the BE subcontractor shall be eligible for inclusion.
- The Contractor will be required to provide proof of payments to BE subcontractor's on a monthly basis as part of the payment certificate. Proof shall as a minimum consist of a signed copy of the subcontractor's invoice to the Contractor for inclusion in the interim payment certificates and the subcontractor's interim payment certificate summary page in a format to be approved by the Engineer.
- The Employer reserves the right to request documentary proof of such payments and shall entitle the Employer to terminate the Contract if the payments have not been made in accordance with certified interim payment certificates.
- The Contractor shall be required to ensure that payment to BE subcontractors shall not deviate by more than 20% of the programmed value in any interim monthly payment certificate. Failure by the Contractor to achieve this shall require substantiation and if necessary, adjustment of the programme to indicate how compliance will be achieved.

C3.3.6 ATTENDANCE ON SUBCONTRACTORS

The Contractor shall in terms of the Clause 4.4.2 of the GCC for Construction Works (Second edition 2010) be responsible for the subcontractors' acts, faults and defects as if they were his own.

The acceptance of this tender shall not be construed as an approval of any or all of the listed subcontractors. Should any or all of the subcontractors not be approved subsequent to the acceptance of the tender, it shall in no way invalidate this tender, and the tendered unit rates for the various items of work shall remain final and binding even if an unlisted subcontractor is approved by the Employer.

C3.3.7 EVALUATION CRITERIA

The bid will be evaluated in the following stages:

- Stage 1: Admin Compliance
- Stage 2: Local content
- Stage 3: Mandatory Requirements
- Stage 4: Functional Evaluation
- Stage 5: 90/10

NB: The City reserves the right to appoint more than one service provider up to a maximum of three (3) service providers.

STAGE 1: ADMIN COMPLIANCE

- Company registration certificate
- Rates and taxes or lease agreement
- BBBEE certificate
- CSD summary report

STAGE 2: LOCAL CONTENT

LOCAL CONTENT AND PRODUCTION The tenderers will be evaluated on the compliance of the minimum threshold for local production and content for the required goods as per Regulation 8 (1) of the PPPFA, 2017

DESCRIPTION	LOCAL CONTENT %
Plastic pipes	100%

NOTE: Bidders should first complete Annexure D. After completing Annexure D, bidders should complete Annexure E and then consolidate the information on Annexure C. Annexure C should be fully completed and signed and then submitted with the bid documentation at the closing date and time of the bid in order to substantiate the Annexure made in paragraph (c) below. Annexures D and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Annexures C, D and E with the actual values for the duration of the contract.

STAGE 3: MANDATORY REQUIREMENTS

The following are considered mandatory criteria and failure to submit the required documentation will render the tender non-complaint:

Minimum plant, equipment and personnel per area	Required evidence
CIDB Grading of 6CE or higher certificate	Proof of active CIDB grading
Site Agent must have at least a qualification of NQF level 6 or higher in Civil Engineering	Certified copy of qualifications
Safety Officer with SACPCMP Registration	Certified copy of SACPCMP certificate

PART C3: Scope of Work

STAGE 4: FUNCTIONAL EVALUATION – AREA A

Functionality (Max 100 points)

No	Functionality		Points earned	Multiplying factor	Maximum points awarded	Final points awarded
i)	Having specific project experience in trenchless replacement/rehabilitation:					
a)	Tenderer must have successfully executed project(s) in replacement of network pipes (water/sewer) through trenchless pipe bursting and/or lining methods for pipe diameters ranging from 150 to 450 mm. The tenderer must submit proof of experience in the form of appointment letters supported by contactable testimonials or letters of referrals. No points will be allocated if proof of experience is not submitted.	Projects	Maximum points allowed is 40			
		One (1) trenchless replacement of network pipes project	5	X2	10	
		Two (2) trenchless replacement of network pipes project	10		20	
		Three (3) or more trenchless replacement of network pipes project	20		40	
b)	Contractor's representative (site agent) experience in trenchless replacement of water/sewer pipes (150 to 450 mm). The Tenderer shall submit a brief summary of abovementioned site agent's project experience in trenchless replacement of pipes, supported by a certified qualification, CV and by letters of referrals/testimonials attached to the tender. No points will be allocated if supporting documents are not submitted.	Site Agent experience	Maximum points allowed is 15			
		At least 3 years' experience of trenchless replacement of network pipes	5	X1	5	
		At least 5 years' experience of trenchless replacement of network pipes	10		10	
		>=8 years' experience of trenchless replacement of network pipes	15		15	
ii)	Owned or hired construction equipment, as set out in applicable returnable schedules:					
a)	Minimum of 1 x Pipe bursting equipment suitable to burst large	Plant: Pipe Bursting	Maximum points allowed is 30			

PART C3: Scope of Work

No	Functionality		Points earned	Multiplying factor	Maximum points awarded	Final points awarded
	diameter (150 – 450 mm) sewer pipes. As proof, submit proof of ownership together with the specification/manual of the equipment. In the case where equipment are hired, additional to abovementioned proof, a pre-contract agreement from hiring companies/supplier for the duration of the contract (3 years) must be submitted altogether.	Pipe bursting equipment	30	X1	30	
iii)	Tenderers located within the boundaries of Tshwane					
a)	One of the following maximum associated points can be obtained by the Tenderer when his/her business is located within the boundaries of that specific region from where operations are executed. Points can only be obtained when proof of Tenderers water and lights account is submitted.	Location	Maximum points allowed is 15			
		City of Tshwane	15	X1	15	
		Gauteng Province	10		10	
		Outside Gauteng Province	5		5	
			TOTAL POINTS		MAX 100	
NB: Bids will first be evaluated on Functionality Points. A minimum functionality score of 70% (70 points) must be achieved. Failure to meet this minimum score will lead to disqualification of the bid.						

STAGE 3: FUNCTIONAL EVALUATION – AREA B

Functionality (Max 100 points)

No	Functionality		Points earned	Multiplying factor	Maximum points awarded	Final points awarded
i)	Having specific project experience in trenchless replacement/rehabilitation:					
a)	Tenderer must have successfully executed project(s) in replacement of network pipes (water/sewer) through trenchless pipe bursting and/or lining methods for pipe diameters ranging from 150 to 450 mm. The tenderer must submit proof of experience in the form of appointment letters supported by contactable testimonials or letters of referrals. No points will be allocated if proof of experience is not submitted.	Projects	Maximum points allowed is 40			
		One (1) trenchless replacement of network pipes project	5	X2	10	
		Two (2) trenchless replacement of network pipes project	10		20	
		Three (3) or more trenchless replacement of network pipes project	20		40	
b)	Contractor's representative (site agent) experience in trenchless replacement of water/sewer pipes (150 to 450 mm). The Tenderer shall submit a brief summary of abovementioned site agent's project experience in trenchless replacement of pipes, supported by a certified qualification, CV and by letters of referrals/testimonials attached to the tender. No points will be allocated if supporting documents are not submitted.	Site Agent experience	Maximum points allowed is 15			
		At least 3 years' experience of trenchless replacement of network pipes	5	X1	5	
		At least 5 years' experience of trenchless replacement of network pipes	10		10	
		>=8 years' experience of trenchless replacement of network pipes	15		15	
ii)	Owned or hired construction equipment, as set out in applicable returnable schedules:					
a)	Minimum of 1 x Pipe bursting equipment suitable to burst large	Plant: Pipe Bursting	Maximum points allowed is 30			

PART C3: Scope of Work

No	Functionality		Points earned	Multiplying factor	Maximum points awarded	Final points awarded
	diameter (150 – 450 mm) sewer pipes. As proof, submit proof of ownership together with the specification/manual of the equipment. In the case where equipment are hired, additional to abovementioned proof, a pre-contract agreement from hiring companies/supplier for the duration of the contract (3 years) must be submitted altogether.	Pipe bursting equipment	30	X1	30	
iii)	Tenderers located within the boundaries of Tshwane					
a)	One of the following maximum associated points can be obtained by the Tenderer when his/her business is located within the boundaries of that specific region from where operations are executed. Points can only be obtained when proof of Tenderers water and lights account is submitted.	Location	Maximum points allowed is 15			
		City of Tshwane	15	X1	15	
		Gauteng Province	10		10	
		Outside Gauteng Province	5		5	
			TOTAL POINTS		MAX 100	
NB: Bids will first be evaluated on Functionality Points. A minimum functionality score of 70% (70 points) must be achieved. Failure to meet this minimum score will lead to disqualification of the bid.						

STAGE 3: FUNCTIONAL EVALUATION – AREA C

Functionality (Max 100 points)

No	Functionality		Points earned	Multiplying factor	Maximum points awarded	Final points awarded
i)	Having specific project experience in trenchless replacement/rehabilitation:					
a)	Tenderer must have successfully executed project(s) in replacement of network pipes (water/sewer) through trenchless pipe bursting and/or lining methods for pipe diameters ranging from 150 to 450 mm. The tenderer must submit proof of experience in the form of appointment letters supported by contactable testimonials or letters of referrals. No points will be allocated if proof of experience is not submitted.	Projects	Maximum points allowed is 40			
		One (1) trenchless replacement of network pipes project	5	X2	10	
		Two (2) trenchless replacement of network pipes project	10		20	
		Three (3) or more trenchless replacement of network pipes project	20		40	
b)	Contractor's representative (site agent) experience in trenchless replacement of water/sewer pipes (150 to 450 mm). The Tenderer shall submit a brief summary of abovementioned site agent's project experience in trenchless replacement of pipes, supported by a certified qualification, CV and by letters of referrals/testimonials attached to the tender. No points will be allocated if supporting documents are not submitted.	Site Agent experience	Maximum points allowed is 15			
		At least 3 years' experience of trenchless replacement of network pipes	5	X1	5	
		At least 5 years' experience of trenchless replacement of network pipes	10		10	
		>=8 years' experience of trenchless replacement of network pipes	15		15	
ii)	Owned or hired construction equipment, as set out in applicable returnable schedules:					
a)	Minimum of 1 x Pipe bursting equipment suitable to burst large	Plant: Pipe Bursting	Maximum points allowed is 30			

PART C3: Scope of Work

No	Functionality		Points earned	Multiplying factor	Maximum points awarded	Final points awarded
	diameter (150 – 450 mm) sewer pipes. As proof, submit proof of ownership together with the specification/manual of the equipment. In the case where equipment are hired, additional to abovementioned proof, a pre-contract agreement from hiring companies/supplier for the duration of the contract (3 years) must be submitted altogether.	Pipe bursting equipment	30	X1	30	
iii)	Tenderers located within the boundaries of Tshwane					
a)	One of the following maximum associated points can be obtained by the Tenderer when his/her business is located within the boundaries of that specific region from where operations are executed. Points can only be obtained when proof of Tenderers water and lights account is submitted.	Location	Maximum points allowed is 15			
		City of Tshwane	15	X1	15	
		Gauteng Province	10		10	
		Outside Gauteng Province	5		5	
			TOTAL POINTS		MAX 100	
NB: Bids will first be evaluated on Functionality Points. A minimum functionality score of 70% (70 points) must be achieved. Failure to meet this minimum score will lead to disqualification of the bid.						

STAGE 5: 90/10

The 90/10-point system as prescribed in Preferential Procurement Regulation 2017.

The system comprises of the following two elements:

- a) Price 90 points
- b) BBBEE Contributor level 10 points
- c)

Evaluation in terms of the 90/10 preference point system

The bid will be evaluated in terms of the 90/10-point system as stipulated in the Preferential Procurement Regulations, 2017. 90 points will be allocated for price and 10 points for attaining the B-BBEE status level of contributor.

Points for price will be calculated only for shortlisted bidder/s as follows:

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

Where

P_s = Points scored for competitive price of bid or offer under consideration

P_t = Competitive price of bid or offer under consideration; and

P_{\min} = Competitive price of lowest acceptable bid or offer

The maximum possible score that can be achieved for price is 80 points

POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTION

In terms of Regulation 5 (2) and 6 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (80/20 system)

PART C3: Scope of Work

1	10
2	9
3	6
4	5
5	4
6	3
7	2
8	1
Non-compliant contributor	0

- A bidder who qualifies as an EME in terms of the B-BBEE Act must submit a sworn affidavit confirming Annual Total Revenue and Level of Black Ownership.

CONTRACT NO: USD WS 04-2021/22

TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED

C3.4 CONSTRUCTION

C3.4.1 WORKS SPECIFICATIONS

The applicable "Standard Specifications" shall be the document "Standard Specifications for Municipal Civil Engineering Works, Third Edition 2005", issued by the Executive Director: Roads and Stormwater of the City of Tshwane, read together with the Particular Specifications.

Tenderers, Contractors and Subcontractors shall obtain their own copies of the document "Standard Specifications for Municipal Civil Engineering Works, Third Edition 2005", for tendering purposes and for use for the duration of the Contract from the Procurement Advice Centre, C de Wet Centre, 175 DF Malan Drive, Pretoria West and shall bear all expenses in this regard.

The Standard Specifications have been written to cover all types of municipal civil engineering works and it may therefore cover work not applicable to this contract.

The Particular Specifications together with the Drawings and Bill of Quantities clearly indicate the sections of the Standard Specifications which apply to this contract.

Section C3.7 covers references to the Particular Specifications in the Standard Specifications as well as variations and additions to the Standard Specifications.

Section C3.8 covers corrections and amendments to the Standard Specifications for Municipal Civil Engineering Works, Third Edition 2005.

C3.4.2 SITE FACILITIES AND ESTABLISHMENT

a) Contractors Experience

The successful tenderer shall be fully trained and experienced in Conventional Construction Methods for laying pipes and be fully trained in the specified methods of Pipe Bursting for handling and installing pipe with bursting equipment. Only qualified staff who has been instructed in the use of butt-fusion/electro fusion equipment shall be permitted to perform polyethylene pipe welding. The successful tenderer or his subcontractor shall be fully trained and experienced in EPWP Labour Intensive Construction and will need to submit proof of NQF5 level qualification.

The Contractor is required to furnish satisfactory evidence that he has had actual

PART C3: Scope of Work

experience in the type of work for which he is tendering and must submit the evidence with his tender a statement on the prescribed form attached to this contract. The evidence must include details of the employing authority, nature of works, value of works and year completed.

A comprehensive organogram of the company must be submitted with the tender that clearly indicated the existing resource that will be utilized to execute the work successfully. The following points must be included in the operational plan: Infrastructure, equipment, labour.

b) Contractor's camp site

The CoT will not provide land for the use of a site camp, it is the responsibility of the contractor to obtain a site camp. The contractor shall provide a suitable site for his camp and for accommodating the work force. The choice of the site for the establishment of the camp, offices and the layout thereof, shall be approved.

The camp site shall be cleared and grubbed and properly fenced with a security fence around the perimeter. The Contractor is to provide his own security at the camp or on the site if required at his own expense.

After completion of the contract, the Contractor shall remove all his temporary buildings, plant and equipment. The site shall be made good and be left in a neat and tidy condition before a certificate of completion shall be issued.

c) Water supply

Water for the Works shall be drawn from municipal mains, where available, through authorised metered connections only. The Contractor must bear the costs of all fees, deposits and water consumed. These costs are to be included in the rates in the Schedule of Quantities for the various construction methods and operations. The Contractor shall make his own arrangements with the Municipality's Water and Sanitation Division, to obtain a metered connection, giving at least 14 days' notice. The size of the connection provided will be as specified in the By-Laws and the Contractor must provide on-site storage should he consider this necessary.

PART C3: Scope of Work

The current tariffs applicable are available from the Water and Sanitation Division. The Contractor can only draw water from fire hydrants specified by the Municipality in exceptional circumstances and then only after written authority has been granted. When permission is granted the water must be drawn through a metered stand-pipe issued by the Water and Sanitation Division.

The Contractor shall cease to operate until other arrangements have been made for the supply of water. No claims for delays so caused will be considered.

d) Ablution Facilities

The Principal Contractor shall, at each construction area, provide sufficient portable chemical latrine units. The latrine units shall be serviced daily and kept in a hygienic and orderly state to the approval of the engineer. No separate payment shall be made for this requirement and the costs thereof shall be deemed to be included in the rates billed for the contractor's time-related obligations. All ablution facilities as stipulated in the Occupational Health and Safety act must be provided and no separate payment shall be made for the requirement.

e) Electric power supply

The Contractor shall make his own arrangements for the supply of electric power to suit his own and the Engineer's requirements and operations.

The cost of providing connections, any transformer sub-stations and switchgear, generators, fuel and/or overhead power lines or underground cables required to supply the electric power shall be included in the rates entered in the Schedule.

The cost of electric power consumption for construction, rock drilling, machinery operations, lighting, ventilation and domestic uses is to be included in the rates in the Schedule of Quantities for the various construction methods and operations.

f) Cellular Telephone

It is a requirement of the contract that the contractor shall equip his site agent(s) and foremen with a cellular telephone to allow for effective communication between the

PART C3: Scope of Work

contractor's supervisory personnel and the Engineer's supervisory staff. All the applicable contact details must be made available to the Engineer and Employer as well as the staff on site. All costs associated with the provision of cellular telephones for the contractor's personnel shall be deemed to be included in rates billed for time-related charges.

g) Site Facilities required by the Engineer

The Engineer does not require housing for personnel or laboratory facilities, but an office suitable for site meetings needs to be provided.

h) Access road

Where the locality of the Works requires it, the Contractor shall grade or construct, and keep in good and constant repair, temporary access roads connecting public roads in the vicinity with the Works. Such roads must be of a sufficiently high standard for reliable access of heavy transport vehicles in all weathers and shall communicate with all parts of the Works.

i) Use of site

All notice boards, sign boards and advertisements on the site shall be subject to the Engineer's approval.

The Contractor shall take all precautions to preserve trees other than those which, of necessity, must be removed for the purpose of fulfilling the Contract.

The Contractor shall maintain the site in a clean, orderly and sanitary condition and shall take all necessary steps and precautions to prevent the pollution of the surrounding area by his employees or animals in any way. These steps and precautions shall be to the satisfaction of the Engineer and Medical Officer of Health of Tshwane.

j) Precautions against nuisance

The Contractor's attention is drawn to the fact that operations are being conducted in

PART C3: Scope of Work

an urban area and in the presence of passing traffic. Special precautions must be taken to protect the public and to prevent unnecessary noise, dust or other nuisance.

Plant used on the Works shall be as efficiently silenced as possible and noisy operations will be permitted only between the hours of 7.00 a.m. and 5.00 p.m. Any work outside normal hours will be permitted only on the written authority of the Engineer.

Wherever machinery is excavating or loading material which is liable to form a dust nuisance, an effective method of spraying water over the cut area and loaded material shall be installed. Tarpaulins shall be provided to cover trucks and prevent dust blowing from loads during transport.

Any rock or debris falling from trucks on the roads in use by the public shall be removed immediately. Precautions shall be taken to prevent fouling of public roads of completed construction by trucks transporting muddy material. The Engineer may order the Contractor continuously to broom off and clean roads where the mud tracking of vehicles or falling debris may constitute a danger to the travelling public.

k) Sanitary accommodation

The Contractor shall provide, maintain, move to positions as required and finally remove proper sanitary accommodation at each work front. Sanitary accommodation shall be properly screened and its use strictly enforced. The situation of sanitary accommodation prescribed in terms of the Sanitary General By-Laws shall be approved by the Engineer as being convenient for the person whose use it is intended.

The sanitary accommodation provided must be adequately ventilated, properly disinfected and kept in a thoroughly clean condition at all times.

The Contractor shall make arrangements for the provision of the sewer connection in the case of water closets or the removal of pails in the case of pail closets.

The Contractor shall bear all costs associated with the provision of sanitary accommodation. Compensation for these costs will be made under the relevant item in the Schedule of Quantities.

PART C3: Scope of Work

l) Work in servitudes

The Contractor shall give 7 days in advance notice to both the Engineer and the property owner of his intention to commence work in a servitude. The Contractor shall not permit his workmen and labourers to use the servitude as a temporary right-of-way and shall carry out the work expeditiously and with minimum inconvenience to the occupiers and to owners of adjacent property.

The Contractor shall take all necessary precautions for the protection of persons, livestock, buildings and property.

The soil shall be kept segregated and all gardens, fences, paths, etc. shall be reinstated to their former condition.

Where acquisition of servitude has not been finalised it may not be possible to obtain continuity of the work. The Contractor will be required temporarily to omit such sections until instructed that the work may proceed.

No extra payment will be made to the Contractor should it become necessary to omit sections and return to them later. It is not intended, however, that the Contractor should be called upon to return to the Site after all other sections of the contract have been completed and the Contractor has removed his plant and equipment.

Trees removed in a servitude shall remain the property of the stand owners if required by them.

m) Access to premises

The Contractor shall maintain adequate access to all public and private property at all times unless otherwise sanctioned by the Engineer. Details of the proposed methods of providing access shall be submitted to the Engineer for approval before such access is restricted. Any claims arising from impeded access shall be wholly the responsibility of the Contractor.

Provision shall be made to allow sanitary services to stands to be unimpeded.

PART C3: Scope of Work

Where necessary to permit access or egress, the Contractor shall provide for the laying of planks or other temporary covering over excavated and filled works or over concrete or asphalted surfaces in order to protect the work from damage.

Any temporary wooden bridges shall be provided with suitable tubular or other hand rails and horizontal members shall be placed at 0,3 m, 0,6 m, 0,9 m and 1,2 m above the level of the boards.

Vehicular access must be maintained to properties at the end of each day's work unless the Contractor has made alternative arrangements with the occupiers.

n) Waterways

Free waterways shall be maintained in gutters, drains, streams, etc. and existing conditions shall not be changed by depositing spoil in waterways or by diverting water into private property.

The Contractor shall settle all claims and make good any damage at his own expense should flooding of private or public property occur through waterways being obstructed or diverted as a result of his operations.

C3.4.3 PLANT AND CONSTRUCTION EQUIPMENT

All items of plant used on the Works shall be approved, modern, efficient plant, well suited to the purpose for which the Contractor uses them and shall be properly maintained. Items of plant which leak oil or which, in the opinion of the Engineer, generate excessive noise, smoke, or other nuisance shall be removed from the Works. The Engineer's decision in this respect shall be final and binding upon the Contractor.

All vehicles used on the Works are to be in sound mechanical condition and shall conform to and be operated in accordance with the Gauteng Provincial Ordinance and the Gauteng Provincial Road Traffic regulations. All vehicles must be fully insured against accident or loss, including third party risk and the Contractor shall produce evidence of this if required by the Engineer.

The Contractor shall be deemed to have established the extent to which mechanical plant can be used for excavating and refilling before the submission of his tender. The Engineer's authority to use mechanical plant will not be unreasonably withheld, but if, in the Engineer's

opinion, circumstances exist which make it desirable that the use of plant should be suspended either temporarily or permanently, the Contractor shall change the method of performing the work affected at his own cost and he shall be deemed to have no cause for claim against the Municipality on account of having to continue the work by another method nor shall he be deemed to have cause for claim if any order issued by the Engineer result in the mechanical plant having to stand idle for a period of any duration whatsoever or having to be removed.

In particular, where it is impossible due to proximity to existing structures or services to excavate except by hand methods, then in such cases it shall be deemed reasonable for the purpose of this clause for the Engineer to withhold authority to use mechanical plant.

C3.4.4 SUPPLY OF MATERIALS

Notwithstanding any provisions of the contract terms of which the Contractor is required to provide all materials necessary for the construction of the Works, the Municipality will not supply any materials.

C3.4.5 MATERIALS

a) General

All materials supplied shall be to SANS applicable specification as amended or where no such specification exists, to the approval of the Engineer. Specifications not contained in the document may be examined by arrangement at the Water and Sanitation Division. It will be required from each contractor to supply proof of conformation to the relevant SANS specifications of all material envisaged to be used on the contract to the Engineer for his approval.

b) Storage

All materials shall be stored in storage areas which shall be agreed by the Engineer and shall be fenced with 1,8m high chain link fencing and a lockable gate. Pipes shall be stacked off the ground and covered to prevent deterioration through ultra-violet attack.

C3.4.6 SCHEDULE OF QUANTITIES

Refer to the Pricing Instructions in Part C2 for more information.

The Schedule of Quantities include, as far as can be determined, every class of operation, construction and material which the Principal Contractor is likely to be called upon to perform or supply.

All measurements shall be net and no allowance will be made for cutting, waste, laps, etc.

Should there be any doubt or obscurity as to the meaning of any particular item, the Tenderer must obtain an explanation of such item from the Engineer prior to submitting his tender. No claims for extras arising from any doubt or obscurity will be admitted after delivery of the tender.

Reference to clauses in the General Conditions of Contract and the Specification have been made against certain items in the Schedule for the purpose of highlighting the provisions of those clauses, but all relevant Contract requirements will, nevertheless, be applicable to each of these items.

The quantities given are stated purely for evaluation purpose. This is a rates only tender and therefore the rates will be approved. The quantities are only a guide to the estimated value of the contract.

The successful Tenderer shall however be bound to replace/upgrade whatever lengths of sewer pipes as the Municipality may actually require during the period of the contract irrespective of the extent to which the total as set out in the Schedule of Quantities may be in excess or below the estimated quantities scheduled.

Tenders not accompanied by a fully priced and extended copy of the Schedule of Quantities will be regarded as informal and reported accordingly.

Upon adjudication of tenders, the unit prices will be taken as correct and any errors in the extensions and/or additions in the priced Schedules will be corrected to comply with the unit prices. Consequently, total tender price will be adjusted.

In cases where any unit price is considered to be too high or too low such price may be of sufficient importance to warrant rejection of the tender.

1. Contractor to price all items

If any item in the Schedule is not priced, it will be understood that the item will be supplied or performed free of charge, an allowance covering it having been made in other items.

2. Items not mentioned

Should the Tenderer wish to price any fixed charge or time related obligation, arising out of the work described in the Contract Documents but not specifically mentioned in the Schedule of Quantities, he is to do so in the spaces provided in Series 0 of the Schedule.

3. Day work

Where the Engineer orders work to be executed on a day work basis rates will be paid as per tender rate.

In all the above cases the cost and wages shall be those in force at the time when the work is carried out and consequently no further adjustment for escalation will be applied.

No additional payments over and above those listed above will be made for Head Office charges, profit, small tools such as picks, shovels, barrows, trowels, hand saws, chisels and all items of a like nature or protective clothing as these are deemed to be included in the percentage additions.

Likewise, site supervision and staff including foreman and walking gangers are included in the percentage additions, but the time of gangers working with their gangs will be paid for as workmen.

C3.4.7 CONSTRUCTION ISSUES

1. CLEANING OF PIPES

Pipe laying operations and precautions taken during pipe laying shall be aimed at eliminating the necessity for cleaning of completed lines. However, if, in the opinion of the Engineer, foreign material has entered or remained in the pipelines, the Principal Contractor shall arrange for the mains to be cleaned prior to CCTV/testing.

The cost of cleaning including the cost of water used, if any, shall be for the Principal Contractor's account.

2. EXCAVATION BACKFILLING AND REINSTATEMENT

Excavation, backfilling and reinstatement shall be carried out in accordance with the Project Specification and the Standard Specification for Municipal Civil Engineering work. All excavations shall be performed in terms of the Construction Regulations, 2014 of the Occupational Health and Safety Act.

3. EXCAVATIONS

a) Trenches - Roads

Categories 1 to 3 roads (road categories to be obtained from Roads and Transport Division) may only be crossed using trenchless methods. If trenchless methods for some reason cannot be used, special permission to excavate must be obtained from Roads and Transport Division.

Even if a trenching machine is used, road surfaces shall first be cut with a diamond tipped saw or other approved method. After the trench has been backfilled and compacted, the road surface has to be cut again, 200mm from the edge, on both sides of the trench.

If a trenching machine is used for road crossings, the road shall first be cut with a diamond tipped saw, or other approved method. All trenches across the road shall be cut at right angles to the kerb. Damage to the road surfaces beyond the trench widths specified shall be repaired at the Principal Contractors expense.

PART C3: Scope of Work

The complete closure of any road shall not be permitted without the written consent of the Engineer.

During the time that the trenches have been backfilled and the time that the road surface is reinstated, the Principal Contractor will be responsible for the maintenance on the road.

The trench will be backfilled above the selected material with G5 material in 150mm layers, stabilised with 3% cement, compacted to 95% MOD AASHTO. No haulage will be paid separate but the rate for haulage must be included in items 202.

b) Trenches – Paving and driveways etc.

The last 450mm of backfill in the trench will be done with G5 material, compacted to 93% MOD AASHTO. Payment will be in accordance with items 202. No haulage is payable.

c) Removal of Excavated Material

Excavated material shall not remain on the work site for more than 96 hours.

The Principal Contractor's scheduled rates shall cover the cost of complying with this restriction including, inter alia, the cost of removing off site to temporary stockpiles and then returning to site, excavated material suitable for use as backfill or bedding. No haulage will be paid separately.

d) Maintenance of Excavations

The Principal Contractor shall be solely and entirely responsible for maintaining excavations in a safe condition and this responsibility shall be in no way diminished by any instruction by the Engineer to take additional or improved protection or precautionary measures.

It should be noted by tenderers that plastic tape is not regarded as adequate protection around excavations and its use for that purpose shall not be allowed.

Plastic New Jersey barricades or shade net fabric together with wire and anchor poles will be used. The rate under item 202 must include full compensation for the moving and maintenance of all barricades for the duration of the contract.

e) Intermediate Material

No intermediate material will be paid under this contract. Only soft or hard material will be paid.

Hard material will be classified as material where mechanical plant, such as compressors and jack hammers or blasting is required.

4. TESTING OF BACKFILL MATERIAL

The compacted density of the backfill material shall be in accordance with Section 202 of the Standard Specification.

If the required compacted density cannot be achieved with the excavated material, G5 material will be imported and compacted to the required density for base layers.

Payment will be made under item 202. of the Standard Specifications and no haulage will be paid separately.

The Principal Contractor will be required to submit at least 3 lab tests for compaction, or as required by the Engineer. No payment will be approved if these tests have not been submitted and meet the required specification. Cost for the required test must be included in the rates. No additional payment will be done for the compaction tests.

5. REINSTATEMENT

All repairs to Kerbings, Interlocking Blocks, Paving Slabs and Bricks will be carried out by the contractor.

General Issues regarding paving, concrete and kerbing repair work

- Work will only commence once the DCP tests have been received and approved.

PART C3: Scope of Work

- A dimensioned sketch of the repairs must be provided (on the job card) by the Contractor.
- All materials must comply with the relevant SANS specifications or as specified by the Engineer.
- The removal of all excess material, rubble, etc. to an approved dumping site, must be included in the tendered rates and must be removed within 2 days from the work has been completed.
- No haulage will be paid separately but has to be included in tendered rates.
- Barricades must be erected on the perimeter of all areas where work is in progress, during curing time and to barricade any excess material.
- A quality control method must be submitted by the Contractor to control the repairs of concrete and paving. This quality control method must be approved by the Engineer.
- The Contractor needs to submit a photo attached to all job cards of the repair work before work is done and a photo of the completed job card from the same angle. Each photo must have the job card number clearly indicated on the photo.
- The Engineer will request random core drill test of any concrete work in order to verify the concrete strength. No additional cost will be paid for these tests and the contractor must allow for this in the tendered rates.
- The contractor must ensure that sufficient communication exists between the contractor and the Engineer.

6. CONSTRUCTION OF CONCRETE ON PROJECTS

The repairs will be done in accordance with the Standard Specification of Municipal Engineering Works Series 6. At all conventional construction sites it will be the responsibility of the Principal Contractor to ensure that the compaction of existing structures is in accordance with specifications and that concrete is cut square before any work can commence.

- The specified compressive strength of concrete must be 25 MPa.
- The concrete must be cut square/rectangular before repairs are carried out and any additional compaction needed must be done. No separate payment will be made for cutting. This must be included in the rate for the repairs of concrete.

PART C3: Scope of Work

- The texture and finishing of the concrete must be at least of the same standard as the existing concrete, and must comply with the minimum acceptable standard or as specified by the Engineer.
- Concrete pavements will be painted according to section 806 of the Standard Specification for Municipal work if required.
- The concrete must have a minimum thickness of 100mm with the exception of parking areas and entrances where concrete must be at least the thickness of the adjacent concrete, but not less than 100mm.
- Joints in concrete pavement must be provided at positions and spacing as indicated by the Engineer or to match those of the existing concrete. All joint edges must be finished off with a nosing tool.
- On sidewalks a minimum length of 1m will be repaired.

The trench will be compacted up to the existing ground level. In order to repair the concrete the top part of backfilling has to be removed, the cost for the haulage of this excess material to an approved dumping site has to be included in the tendered rates. No haulage will be paid.

No additional rate will be paid for travelling costs and these costs has to be included in tendered rate.

7. CONSTRUCTION OF SEGMENTAL BLOCK PAVING ON PROJECTS

The repairs will be done in accordance with the Standard Specification of Municipal Engineering Works Series 6. At all conventional construction sites it will be the responsibility of the Principal Contractor to ensure that the compaction of existing structures is in accordance with specifications before any work can commence. Where compaction is acceptable, the paving can be repaired. Refer to drawing STD008 1 of 1.

- A pre-cast or in-situ cast concrete edge restraint will required at the edge of all driveways and sidewalks as specified on drawing STD008 1 of 1.
- The specified compressive strength of concrete must be 25 MPa.
- The texture and finishing of the concrete must be at least of the same standard as the existing concrete, and must comply with the minimum acceptable standard or as specified by the Engineer.

PART C3: Scope of Work

- The bedding sand and sand for jointing must be according to section 609 of the Standard Specification of Municipal Engineering Works.
- The repaired paving must be at least of the same standard as the original paving, and must comply with the minimum acceptable standard or as specified by the Engineer.
- The original blocks must be used for the repairs, if in good condition. If these original blocks are not available or are damaged new blocks of an approved similar design and finish must be supplied by the contractor.
- On sidewalks a minimum length of 1m will be repaired.

At all conventional construction site the trench will be compacted up to the existing ground level. In order to repairs the paving the top part of backfilling has to be removed, the rates for the haulage of this excess material to an approved dumping site have to be included in the tendered rates. No haulage will be paid.

No additional rate will be paid for travelling costs and these costs has to be included in tendered rate.

8. KERBING

The repairs of all kerbing will be done in accordance with the Standard Specification of Municipal Engineering Works Series 5. Refer to drawing STD007 1 of 2.

1. Semi vertical kerbing

- Pre-cast kerbs fig 7 in SANS 927:1969 will be used.
- Pre-cast kerbing of at least the same standard as the existing kerbing must be used.

2. Slope kerbing

- Kerbings to be done in accordance with Drawing STD007 1 of 2.
- The texture and finishing of the concrete will be at least of the same standard as the existing concrete.
- The minimum length of kerbing to be repaired will be 1m.

Backfilling and compaction behind kerbing must be carried out accordance with the specification (series 6).

If the road surface has been repaired before the paving is done, the Principal Contractor will be responsible to fix the gap between the kerbing and the tar with premix bitumen. No additional rate will be paid for this; it has to be included in the tendered rate.

9. INSPECTION AT INTERMEDIATE STAGES OF CONSTRUCTION

The Principal Contractor shall call for an inspection of the works at the following intermediate stages of construction:

- i) After completion of the trench excavation and preparation of the trench bottom; and before any pipe is laid.
- ii) After the selected backfill material has been placed around the pipe; and before the remainder of the trench is backfilled.

Work shall not progress through the specified stages without the approval of the Engineer or his representative on site.

Failure to comply with the provision of this clause shall result in the suspension of work for a period as determined by the Engineer.

10. EXTENSION OF TIME DUE TO UNPREDICTABLE WEATHER CIRCUMSTANCES

Extension of time will not be considered for normal adverse weather conditions but only for abnormal rainfall or saturated conditions and will be calculated in accordance with Sub-Clause 42(6), Method 1 of the Special Conditions of Contract.

The rainfall records for Station 0513314 (Pretoria Forum) for the period 1961 to 1990 are given in the column below. The average values of Rn and Nn can be taken as the norm for this contract.

PART C3: Scope of Work

Month	Rn	Nn
January	136	4.4
February	75	2.5
March	82	2.4
April	51	1.8
May	13	0.5
September	7	0.3
July	3	0
August	6	0.2
September	22	0.7
October	71	2.2
November	98	3.5
December	110	3.7

11. CCTV PIPE TEST

Completed pipelines shall be CCTV inspected according to the specification. The fully completed CCTV footage and data must be submitted to the Engineer for evaluation. Only after the Engineer has approved that the pipe has been replaced according to the specification will those related items be paid. The CCTV inspections must be claimed under items 810. Only one CCTV inspection will be paid per line. In the instance where the initial CCTV shows the pipe is not replaced according to specification the Contractor will have to correct the line according to specification and re-CCTV the line at his own cost. All pipe cleaning that might be necessary to execute the CCTV inspection will be for the account of the Contractor and must be included in the payment items.

C3.4.8 CONTRACTOR'S EMPLOYEES

This section below will be used as a guideline but the Basic Conditions of Employment Act (Act No 75 of 1997) and the Labour Relations (Act No 66 of 1995) will still govern.

1. MINIMUM EMPLOYMENT CONDITIONS FOR CONVENTIONAL CONSTRUCTION WORKS

Contractors shall comply with the Basic Conditions of Employment Act (Act No 75 of 1997).

As a determination has not been made in terms of the aforesaid Act for the building sector, the minimum employment conditions which will apply to this Contract shall be guided by the Sectoral Determination: Civil Engineering Sector published in the Government Gazette dated 16 February 2007.

The following minimum conditions shall apply to this Contract and Contractors shall include such conditions in employment contracts. The minimum wage will be adjusted yearly as new rates are published in the Government Gazette.

1.1 Employment contracts

The Contractor shall enter into an employment contract with every one of his/her employees, including short-term contracts i.e. contracts in which employment commencement and employment termination dates are specified. Short-term employment contracts will also apply an employee employed for only one day.

1.2 Normal working hours

Normal working hours are from 07:00 to 17:00 from Monday to Friday. A tea break is taken from 09:00 to 09:15 and lunch from 12:30 to 13:00.

Actual hours to work and be paid for is 9 hours per day. If a lunch break of one (1) hour is taken then the normal working day will be as follow:

Morning work sessions from 07:00 to 12:00, lunch break from 12:00 to 13:00, and afternoon sessions from 13:00 to 17:00.

1.3 Minimum wages

Minimum wages shall be according to the Government Gazetted rates for the Civil Engineering Sector for Gauteng Province (Regulation Gazette No 9360 Vol. 542). For a full day's work the hourly rate shall be multiplied by 9. Normal 5-day week hours of work shall be 45 hours and the wage calculated according to the applicable hourly rate.

Overtime pay shall be 1.5 times the ordinary wage. An employee shall be paid fortnightly.

Wages should be increased by CPI excluding owner's equivalent rent plus two percentage points for the second and third years of the determination. The CPI to be used is the one that is published by StatsSA six weeks prior to the scheduled increment date. Below are the recommendations of the Department regarding new minimum wage levels:

The Wage Schedule was published by the Minister of Labour on 14 September 2018 Government Notice R951.

Wage will be adjusted when new rates are published by the Minister of Labour.

Wage Schedule up to 31 August 2021

A: The new minimum hourly wage rates for Task Grades 1 - 9 effective **1 September 2019** shall be as follows: See appendix below;

Task rate	Hourly rate as per proration date up to 31 Aug 2019 adjusted by 7,5%	Hourly rate from 1 Sept 2019 to 31 Aug 2020 adjusted by 7,5%	Hourly rate from 1 Sept 2020 to 31 Aug 2021 adjusted by 7,5%
1	R34,45	R37,04	R39,82
2	R35,26	R37,90	R40,75
3	R36,24	R38,96	R41,88
4	R37,59	R40,41	R43,44
5	R42,54	R45,73	R49,16
6	R4,29	R51,91	R55,80
7	R55,31	R59,45	R63,92
8	R62,01	R66,66	R71,66
9	R70,09	R75,35	R81,00

1.4 Short time (excluding short time due to inclement weather)

If for reasons, which may be ascribed to the employee, e.g. arriving late for work or taking an afternoon off, the hours not worked shall be deducted from the daily wage calculation.

1.5 Short time resulting from inclement weather

- i. If the Contractor informs his/her employees that no work will be done the following day due to inclement weather, no payment will be due to the employee for such a day.
- ii. If the Contractor has not informed his/her employees that no work will be done due to inclement weather and no work or less than four (4) hours of work is possible during a day, the Contractor must pay the employee for four (4) hours of work. If more than four (4) hours of work is done, the Contractor shall pay the employee for the number of hours worked.

1.6 Vacation leave

If an employee has been in full time employment for more than four (4) months, he/she shall be entitled to 1 day's paid leave for every seventeen (17) days the employee worked or was entitled to payment.

1.7 Family responsibility leave

If an employee has been in full time employment for more than four (4) months, he/she shall be entitled to three days paid leave in a leave cycle of thirty-six (36) months of employment:

- i. When the employee's child is born;
- ii. When the employee's child is sick;
- iii. In the event of death of the employee's spouse or life partner, parent, grandparent, child or grandchild.

The employee shall provide the required proof to the Contractor of the event, failing which the leave shall be unpaid leave

1.8 Maternity leave

(a) An employee is entitled to at least four consecutive months' maternity leave.

(b) An employee may commence maternity -

- at any time from four weeks before the expected date of birth, unless otherwise agreed; or
- on a date from which a medical practitioner or a midwife certifies that it is necessary for the employee's health or that of her unborn child.

'(c) No employee may work for six weeks after the birth of her child. unless a medical practitioner or midwife certifies that she is fit to do so.

(d) An employee who has a miscarriage during the third trimester of pregnancy or bears a stillborn child is entitled to maternity leave for six weeks after the miscarriage or stillbirth, whether or not the employee had commenced maternity leave at the time of the miscarriage or stillbirth.

(e) An employee must notify an employer in writing (unless the employee is unable to do so) of the date on which the employee intends to -

- commence maternity leave; and
- return to work after maternity leave.

(f) Notification in terms of subsection (5) must be given -

- at least four weeks before the employee intends to commence maternity leave or
- if it is not reasonably practicable to do so or. as soon as is reasonably practicable.

(g) The payment of maternity benefits will be determined by the Minister subject to the provisions of the Unemployment Insurance Act. 1966 (Act No. 30 of 1966).

1.9 Sick leave

The employee shall be entitled to one (1) day's paid sick leave of normal wages for every twenty-six (26) days worked.

If an employee is absent for three (3) or more consecutive days, the employee shall provide a sick certificate from a registered medical practitioner to qualify for sick leave payment. If such certificate is not provided, no sick leave payment will be due to the employee.

1.10 Piece work

Irrespective of the quantity of work done under a piece work system during a working week, the employee shall be entitled to a minimum of a week's wages determined as if no piece work applied.

The Contractor or employee may terminate an employment contract by giving notice of termination of not less than:

- i. On short period contracts i.e. a contract which states from which date work employment commences and on which day employment terminates, the terms of the employment contract shall apply;
- ii. One week if employee has been employed for four (4) weeks or less, unless it is a short-term project;
- iii. Two (2) weeks if employee has been employed for more than four (4) weeks but not more than one (1) year;
- iv. Four (4) weeks if employee has been employed for more than one year.

2. EMPLOYMENT CONDITIONS FOR LABOUR-INTENSIVE WORKS AND CONSTRUCTION

The Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in

PART C3: Scope of Work

Government Notice N° R63 of 25 January 2002, as reproduced below, shall apply to works described in scope of work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.

This clause contains the standard terms and conditions for workers employed in elementary occupations on an Expanded Public Works Programme (EPWP). These terms and conditions do NOT apply to persons employed in the supervision and management of an EPWP.

2.1 Terminology

- (a) “department” means any department of the State, implementing agent or contractor;
- (b) “employer” means any department, implementing agency or contractor that hires workers to work in elementary occupations on a EPWP;
- (c) “workers” means any person working in an elementary occupation on a EPWP;
- (d) “elementary occupation” means any occupation involving unskilled or semi-skilled work;
- (e) “management” means any person employed by a department or implementing agency to administer or execute an EPWP’
- (f) “task” means a fixed quantity of work;
- (g) “task-based work” means work in which a worker is paid a fixed rate for performing a task;
- (h) “task-rated worker” means a worker paid on the basis of the number of tasks completed;
- (i) “time-rated worker” means a worker paid on the basis of the length of time worked.

2.2 Terms of Work

2.2.1 Workers on an EPWP are employed on a temporary basis.

2.2.2 A worker may NOT be employed for longer than 24 months in any five-year cycle on an EPWP.

2.2.3 Employment on an EPWP does not qualify as employment as a contributor for the purposes of the Unemployment Insurance ACT 30 of 1966.

2.3 Normal Hours of Work

2.3.1 An employer may not set tasks or hours of work that require a worker to work:

- (a) more than forty hours in any week;
- (b) on more than five days in any week; and
- (c) for more than eight hours on any day.

2.3.2 An employer and worker may agree that a worker will work four days per week. The worker may then work up to ten hours per day.

2.3.3 A task-rated worker may not work more than a total of 55 hours in any week to complete the tasks allocated (based on a 40-hour week) to that worker.

2.4 Meal Breaks

2.4.1 A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.

2.4.2 An employer and worker may agree on longer meal breaks.

2.4.3 A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.

- 2.4.4 A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

2.5 Special Conditions for Security Guards

- 2.5.1 A security guard may work up to 55 hours per week and up to eleven hours per day.
- 2.5.2 A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.

2.6 Daily Rest Period

Every worker is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.

2.7 Weekly Rest Period

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").

2.8 Work on Sundays and Public Holidays

- 2.8.1 A worker may only work on a Sunday or public holiday to perform emergency or security work.
- 2.8.2 Work on Sundays is paid at the ordinary rate of pay.
- 2.8.3 A task-rated worker who works on a public holiday must be paid –
- (a) the worker's daily task rate, if the worker works for less than four hours;
 - (b) double the worker's daily task rate, if the worker works for more than four hours.

2.8.4 A time-rated worker who works on public holiday must be paid –

- (a) the worker's daily rate of pay, if the worker works for less than four hours on the public holiday;
- (b) double the worker's daily rate of pay, if the worker works of more than four hours on the public holiday.

2.9 Sick Leave

2.9.1 Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause.

2.9.2 A worker who is unable to work on account of illness or injury is entitled to claim one day's sick leave for every full month that the worker has worked in terms of a contract.

2.9.3 A worker may accumulate a maximum of twelve days' sick leave in a year.

2.9.4 Accumulated sick-leave may not be transferred from one contract to another contract.

2.9.5 An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.

2.9.6 An employer must pay a time-rated worker the worker's daily rate for a day's sick leave.

2.9.7 An employer must pay a worker sick pay on the worker's usual payday.

2.9.8 Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is –

- (a) absent from work for more than two consecutive days; or
- (b) absent from work on more than two occasions in any eight-week period.

2.9.9 A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.

2.9.10 A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational injuries and Disease Act.

2.10 Maternity Leave

2.10.1 A worker may take up to four consecutive month's unpaid maternity leave.

2.10.2 A worker is not entitled to any payment or employment-related benefits during maternity leave.

2.10.3 A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.

2.10.4 A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.

2.10.5 A worker may begin maternity leave –

- (a) four weeks before the expected date of birth; or
- (b) on an earlier date –
 - i. if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or
 - ii. if agreed to between employer and worker; or
- (c) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.

2.10.6 A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the

miscarriage or stillbirth.

2.10.7 A worker who returns to work after maternity leave, has the right to start a new cycle of twenty-four months employment, unless the EPWP on which she was employed has ended.

2.11 Family Responsibility Leave

2.11.1 Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances –

- (a) when the employee's child is born;
- (b) when the employee's child is sick;
- (c) in the event of a death of –
 - i. the employee's spouse or life partner;
 - ii. the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling.

2.12 Statement of Conditions

2.12.1 An employer must give a worker a statement containing the following details at the start of employment –

- (a) the employer's name and address and the name of the EPWP;
- (b) the tasks or job that the worker is to perform; and
- (c) the period for which the worker is hired or, if this is not certain, the expected duration of the contract;
- (d) the worker's rate of pay and how this is to be calculated;
- (e) the training that the worker will receive during the EPWP.

2.12.2 An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.

2.12.3 An employer must supply each worker with a copy of these conditions of employment.

2.13 Keeping Records

2.13.1 Every employer must keep a written record of at least the following –

- (a) the worker's name and position;
- (b) in the case of a task-rated worker, the number of tasks completed by the worker;
- (c) in the case of a time-rated worker, the time worked by the worker;
- (d) payments made to each worker.

2.13.2 The employer must keep this record for a period of at least three years after the completion of the EPWP.

2.14 Payment for the Labour-intensive Component of the Works

Payment for works identified in the Scope of Work as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the scope of work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.

2.14.1 An employer must pay all wages at least monthly in cash or by cheque or into a bank account.

2.14.2 A task-rated worker will only be paid for tasks that have been completed.

2.14.3 An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer.

2.14.4 A time-rated worker will be paid at the end of each month.

2.14.5 Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

2.14.6 Payment in cash or by cheque must take place –

- (a) at the workplace or at a place agreed to by the worker;
- (b) during the worker's working hours or within fifteen minutes of the start or finish of work;
- (c) in a sealed envelope which becomes the property of the worker.

2.14.7 An employer must give a worker the following information in writing –

- (a) the period for which payment is made;
- (b) the numbers of tasks completed or hours worked;
- (c) the worker's earnings;
- (d) any money deducted from the payment;
- (e) the actual amount paid to the worker.

2.14.8 If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it.

2.14.9 If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

2.15 Deductions

2.15.1 An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.

2.15.2 An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.

2.15.3 An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order or arbitration award concerned.

2.15.4 An employer may not require or allow a worker to –

- (a) repay any payment except an overpayment previously made by the employer by mistake;
- (b) state that the worker received a greater amount of money than the employer actually paid to the worker; or
- (c) pay the employer or any other person for having been employed.

2.16 Health and Safety

2.16.1 Employers must take all reasonable steps to ensure that the working environment is healthy and safe.

2.16.2 A worker must –

- (a) work in a way that does not endanger his/her health and safety or that of any other person;
- (b) obey any health and safety instruction;
- (c) obey all health and safety rules of the EPWP;
- (d) use any personal protective equipment or clothing issued by the employer; and
- (e) report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

2.17 Compensation for Injuries and Diseases

2.17.1 It is the responsibility of the employers (other than a contractor) to arrange for all persons employed on a EPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.

2.17.2 A worker must report any work-related injury or occupational disease to their employer or manager.

2.17.3 The employer must report the accident or disease to the Compensation Commissioner.

2.17.4 An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months.

The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

2.18 Termination

2.18.1 The employer may terminate the employment of a worker for good cause after following a fair procedure.

2.18.2 A worker will not receive severance pay on termination.

2.18.3 A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the manager the employer in advance to allow the employer to find a replacement.

2.18.4 A worker who is absent for more than three consecutive days without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available of the balance for the 24-month period.

7.18.5 A worker who does not attend required training events, without good reason will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

2.19 Certificate of Service

On the termination of employment, a worker is entitled to a certificate stating –

- (a) the worker's full name;
- (b) the name and address of the employer;
- (c) the EPWP on which the worker worked;
- (d) the work performed by the worker;
- (e) any training received by the worker as part of the EPWP;
- (f) the period for which the worker worked on the EPWP; and
- (g) any other information agreed on by the employer and worker.

2.20 Monthly reporting

Contractors must report monthly on labour beneficiaries on the project and submit this with the monthly payment certificates. The beneficiary information records require:

- i. the name, surname, date of birth and a unique identity number,
- ii. gender, disability status,
- iii. education and literacy level,
- iv. daily wage to be received, and
- v. training attended.

On a monthly basis, contractors must confirm the number of people at work daily by maintaining daily site attendance registers that will be summarised into a monthly attendance register by the construction.

3. EMPLOYMENT CONDITIONS FOR LABOUR INTENSIVE WORKS AND CONSTRUCTION FOR EPWP

The Ministerial Determination No 4, Expanded Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice N° R347 of 4 May 2012, as reproduced below, shall apply to works described in scope of work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.

This clause contains the standard terms and conditions for workers employed in elementary occupations on an Expanded Public Works Programme (EPWP). These terms and conditions do NOT apply to persons employed in the supervision and management of a EPWP.

Refer to Part C4 for the basic conditions for EPWP.

4. EMPLOYMENT CONDITIONS FOR SUB-CONTRACTORS

The City of Tshwane aims that each project issued by the Municipality focus on uplifting the community and ensuring that skills are transferred to the subcontractors through the projects in and around Tshwane. In trying to implement this policy the appointed Contractor is required to subcontract 30% of this project to subcontractors in

PART C3: Scope of Work

accordance with the Preferential Procurement Policy Framework Act 2000, Preferential Procurement Regulation 2017 will be applicable to this appointment.

The contractor will be held responsible for appointing, managing and payment of the subcontractors. The contractor will need to finance these payments to the subcontractors.

4.1 Terminology

“Employer” means the contract that hires Subcontractor to work in elementary occupations on the project;

“Subcontractor” means

- An EME or QSE
- An EME or QSE which is at least 51% owned by black people who are youth
- An EME or QSE which is at least 51% owned by black people who are women

Definitions:

- “EME” means an exempted micro enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act.
- “QSE” means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act.

“SC task” means a fixed quantity of work identified in the Schedule of Quantities as being earmarked for Subcontracting;

“SC task-based work” means work in which a Subcontractor is paid a fixed rate for performing a SC task;

4.2 Terms of Work

The Contractor will be required to handle all communications and negotiations with the subcontractors

PART C3: Scope of Work

Subcontractors are employed for a specific SC task as identified in the Schedule of Quantities and as per the rate by Subcontractor.

A subcontractor will be employed for the duration of the SC task as per the Schedule of Quantities or as per the written agreement between the employer and the Subcontractors.

Employment of a Subcontractors does not qualify as employment as a contributor for the purposes of the Unemployment Insurance Act 30 of 1966.

The Subcontractors will need to adhere to the normal hours of work and conditions of employment as specified in the tender document.

The contractor will need to manage the subcontractors and ensure that tasks are completed in accordance with the contract requirements.

4.3 Statement of Conditions

An employer must give the Subcontractors a statement containing the following details at the start of employment:

- (a) The employer's name and address and the name of the project.
- (b) The tasks or job that the Subcontractors is to perform.
- (c) The period for which the Subcontractors is hired or, if this is not certain, the expected duration of the contract.
- (d) Supply of materials.
- (e) The training that the Subcontractors will receive during the project.

A copy of this written agreement between the employer and the Subcontractors must be kept at the site office at all times. This agreement will be available to the Engineer should disputes or queries arise.

Each Subcontractor should be given a fair chance to price the work area marked in the Schedule of Quantities for Subcontracting. The employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.

The contractor will need to use his own discretion when appointing a Subcontractor and will need to ensure that the codes of “Best Practice” is adhere to at all times.

An employer must supply each Subcontractor with a copy of these conditions of employment.

The employer will NOT be required to supply tools or any equipment to the subcontractors.

4.4 Keeping Records

Every employer must keep written record of at least the following:

- (a) The Subcontractor’s name and employment requirements.
- (b) In the case of a task-rated Subcontractors, the number of tasks completed by the Subcontractors.
- (c) In the case of a time-rated Subcontractors, the time worked by the Subcontractors;
- (d) Payments made to each Subcontractor.

The employer must keep this record for a period of at least three years after the completion of the project.

4.5 Payment for the Subcontracting component of the works

Payment for works identified in the Schedule of Quantities as being “SC” shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the scope of work. Any non-payment for such works shall not relieve the contractor in any way from his obligations either in contract or in delict.

An employer must pay the subcontractors on a fortnightly (2 week) cycle in cash or by cheque or into a bank account.

A Subcontractor’s worker will only be paid for the portion of the tasks or the task that have been completed as per the agreement.

An employer must give the Subcontractors the following information in writing:

- (a) The period for which payment is made.
- (b) The LIC tasks completed.
- (c) The Subcontractor's earnings;
- (d) Any money deducted from the payment.
- (e) The actual amount paid to the subcontractor.

If the subcontractor is paid in cash or by cheque, this information must be recorded on the envelope and the subcontractor must acknowledge receipt of payment by signing for it.

If a subcontractor's employment is terminated, the employer must pay all monies owing to that subcontractor within two weeks of termination of employment.

Should the employer be found guilty of failing to pay the subcontractor on time the employer will be subject to paying a penalty of R1000/day. This money will be payable to the Client.

4.6 Deductions

An employer may not deduct money from a subcontractor's payment unless the deduction is required in terms of a law.

An employer must deduct and pay to the SA Revenue Services any income tax that the subcontractor is required to pay.

An employer who deducts money from a subcontractor's pay for payment to another party must pay the money to that person within the time period and other requirements specified in the agreement, law, court order or arbitration award concerned.

An employer may not require or allow a subcontractor to –

- (a) Repay any payment except an overpayment previously made by the employer by mistake;

- (b) State that the subcontractor received a greater amount of money than the employer actually paid to the subcontractor; or
- (c) Pay the employer or any other party for having been employed.

4.7 Health and Safety

Employers must take all reasonable steps to ensure that the subcontractor environment is healthy and safe. The subcontractor needs to adhere to all EMP requirements of the employer.

4.8 Termination

The employer may terminate the employment of a subcontractor for good cause after following a fair procedure.

A subcontractor will not receive severance pay on termination.

A subcontractor will be required to give notice to terminate employment. Notice to terminate employment should be made at least two weeks in advance to allow the employer to find a replacement.

4.9 Certificate of Service

On the termination of employment, a subcontractor is entitled to a certificate stating –

- (a) The subcontractor's full name;
- (b) The name and address of the employer;
- (c) The tasks on which the subcontractor worked or completed;
- (d) The work performed by the subcontractor under the project;
- (e) Any training received by the subcontractor was employed;
- (f) The period for which the subcontractor was employed; and
- (g) Any other information agreed on by the employer and local sub-contractor.

4.10 Training of Targeted Labour

The Contractor shall provide all the necessary Accredited training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.

The cost of the formal training of targeted labour, shall be measured and paid for in the schedule of quantities of this contract document.

The Contractor shall do nothing to dissuade targeted labour from participating in training programmes and shall take all reasonable steps to ensure that each beneficiary is provided with two days of formal training for every 22 days worked.

An allowance equal to 100% of the task rate or daily rate shall be paid by the Contractor to workers who attend formal training, in terms of above.

This training should take place as close to the project site as practically possible. The CoT and/or Consulting Engineer will ensure that training arrangements for participants are in place and appointment of the training provider facilitated in time.

Proof of compliance with the requirements must be provided by the Contractor to the Employer prior to submission of the final payment certificate.

5. EMPLOYMENT OF UNSKILLED AND SEMI-SKILLED WORKERS IN LABOUR-INTENSIVE WORKS

5.1 Requirements for the Sourcing and Engagement of Labour

5.1.1 Unskilled and semi-skilled labour require for the execution of all labour-intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.

5.1.2 The rate pay set as per Government Gazetted rates for the Civil Engineering Sector for Gauteng Province (Regulation Gazette No 9360 Vol. 542) Task grade 1 (General Worker). For a full day's work the hourly rate shall be multiplied by 9. This shall be reviewed as stipulated in the regulation

5.1.3 Tasks established by the Contractor must such that:

- (a) the average worker completes 5 tasks per week in 40 hours or less; and
- (b) the weakest worker completes 5 tasks per week in 55 hours or less.

5.1.4 The Contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of 5.1.3.

5.1.5 The Contractor shall, through all available community structures, inform the local community of the labour intensive works and the employment opportunities presented thereby. Preference must be given to people with

PART C3: Scope of Work

previous practical experience in construction and / or who come from households:

- (a) where the head of the household has less than a primary school education;
- (b) that have less than one full time person earning an income;
- (c) where subsistence agriculture is the source of income;
- (d) those who are not in receipt of any social security pension income.

5.1.6 The Contractor shall endeavour to ensure that the expenditure on the employment of temporary workers is in the following proportions:

- (a) 40% women;
- (b) 20% youth who are between the ages of 18 and 35; and
- (c) 2% on persons with disabilities.

5.2 Specific Provisions Pertaining to SANS 1914-5

5.2.1 Definitions

Targeted labour: Unemployment persons who are employed as local labour on the project.

5.2.2 Contract participation goals

5.2.2.1 There is no specified contract participation goal for the contract. The contract participation goal shall be measured in the performance of the contract to enable the employment provided to targeted labour to be quantified.

5.2.2.2 The wages and allowances used to calculate the contract participation goal shall, with respect to both time-related and task rated workers, comprise all wages paid and any training allowance paid in respect of agreed training programmes.

5.2.3 Terms and conditions for the engagement of targeted labour

Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

5.2.4 Variations to SANS 1914-5

5.2.4.1 The definition for net amount shall be amended as follows:

Financial value of the contract upon completion, exclusive of any value added tax or sales tax which the law requires the Employer to pay the Contractor.

5.2.4.2 The schedule referred to in 5.2 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and the number of formal training provided to targeted labour.

5.3 Training of Targeted Labour

5.3.1 The Contractor shall provide all the necessary Accredited training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.

5.3.2 The cost of the formal training of targeted labour, shall be measured and paid for in the schedule of quantities of this contract document.

5.3.3 The Contractor shall do nothing to dissuade targeted labour from participating in training programmes and shall take all reasonable steps to ensure that each beneficiary is provided with two days of formal training for every 22 days worked.

5.3.4 An allowance equal to 100% of the task rate or daily rate shall be paid by the Contractor to workers who attend formal training, in terms of 5.3.3 above.

5.3.5 This training should take place as close to the project site as practically possible. The CoT and/or Consulting Engineer will ensure that training arrangements for participants are in place and appointment of the training provider facilitated in time.

5.3.6 Proof of compliance with the requirements of 5.3.2 to 5.3.4 must be provided

by the Contractor to the Employer prior to submission of the final payment certificate.

6. COMMUNITY LIAISON OFFICER

6.1 The successful tenderer shall appoint a Community Liaison Officer (CLO) as per the Code of good practice for the appointment of CLOs.

- (a) A Community Liaison Officer (CLO) for liaison with the recipient community: The CLO is responsible to liaise with the community on a Capital Expenditure (CAPEX) project's detailed construction activities, process any complaints from the community, and convey them to the project management.
- (b) A Community Liaison Officer (CLO) for Capital Expenditure (CAPEX) projects has to be person who has the trust of the community, the Project Steering Committee (PSC) and the contractor.
- (c) The appointment of the CLO shall be done in accordance with the approved recruitment policy of the City of Tshwane.

6.2 The CLO shall attend all site and other meetings concerning the project.

6.3 The agreement shall make provision for the payment by the Contractor to the CLO a maximum amount calculated as follows:

Wage per month = City of Tshwane's T5-level monthly notch-1 (Prior to deductions)

City of Tshwane's T5-level monthly notch-1 is R18 172.00 for the period 01/07/2020 to 30/06/2021. The remuneration of the CLO will be escalated each financial year by an amount equal to the general increase of the City of Tshwane as published/gazetted.

Community Strategy

The CLO shall be available full time on site when contractor is active. Furthermore it will be required of him to liaise any pertinent communication to the community. He shall attend all site and technical meetings as well as steering committee meetings as well as steering committee meetings happen after hours.

- 6.4** Only one CLO shall be appointed per project. If the project spans over more than one Ward, the relevant Project Steering Committee shall agree on one CLO to be appointed by the Contractor. Should no agreement be found as envisaged, the relevant Project Manager together with the PSC, or their nominees, will interview prospective appointees and in their discretion appoint such CLO.

Notwithstanding the above, if the vastness of the project requires the use of more than one CLO, this will be permitted provided that the total monthly sum paid to all CLOs shall not exceed the amount allowed for in paragraph 7.3.

- 6.5** Should the Contractor experience any difficulties with the community, these difficulties shall immediately be brought to the attention of the Department/Project Manager who shall arrange a meeting with the relevant Ward Councillor(s) and the CLO to resolve such difficulties.
- 6.6** The main Contractor shall ensure that any subcontractor he may appoint shall adhere to these conditions but also subject to the provisions applicable to the duration of such subcontract.
- 6.7** Should any of the above conditions be less favourable than any Bargaining Council Agreement or Act applicable to the Contractor, the more favourable condition will apply.

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION
OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

C3.5 MANAGEMENT

C3.5.1 APPLICABLE SANS 1921 STANDARDS

The following parts of SANS 1921 (Construction and management requirements for construction works) and associated specifications are applicable:

SANS 1921-1: General engineering and construction works

SANS 1921-2: Accommodation of traffic on public roads occupied by the contractor

SANS 1921-3: Structural steelwork

SANS 1921-4: Third party management support in works contracts

SANS 1921-5: Earthworks activities, which are to be performed by hand

SANS 1921-6: HIV/AIDS awareness

The associated specification data are as follows:

SANS 1921-1: General engineering and construction works	
	Specification data
	<p>The requirements for drawings, information and calculations for which the contractor is responsible are:</p> <p>The Contractor shall supply the Engineer with all the relevant and required information to complete the as-built drawings.</p>
4.2.1	The responsibility strategy assigned to the contractor for the works is: A
4.2.2	The structural engineer is:....(not applicable.)
4.2.3	Drawings and other information are to be submitted in accordance with the contractor's programme.
4.3	<p>The Contractor shall submit within the period stated in the Contract Data a suitable and realistic construction programme for the consideration of the Engineer.</p> <p>The programme shall be in the form of a Gant Chart in Microsoft Project format and shall include the following details:</p> <p>A work breakdown structure, identifying the major activity groups.</p> <p>For each activity group further details shall be provided with regard to the scheduled start and end dates of individual activities.</p> <p>The linkages between activities shall be clearly indicated and the logical network upon which the programme is based should be separately</p>

SANS 1921-1: General engineering and construction works	
	Specification data
	<p>submitted to the Engineer if requested. Any constraints shall be classified as being time-related or resource-related.</p> <p>The critical path(s) shall be clearly indicated and floats on non-critical activities shall be shown.</p> <p>The Contractor shall indicate the working hours per day, night, week and month allowed for in the programme.</p> <p>Where relevant the Contractor shall state the production rates for key activities, e.g. earthworks, etc.</p> <p>Together with the programme as detailed above the contractor shall submit to the Engineer a cash flow projection in Microsoft Project format, indicating projected monthly invoice amounts. The cash flow projection shall be updated at monthly intervals to reflect actual payments to date and anticipated further payments, and shall be linked to the programme.</p> <p>The programme shall be reviewed at the monthly site meetings at which the Contractor shall provide sufficient detail that will allow the comparison of completed work per activity that has fallen behind. The updated programme shall be submitted to the Engineer at least two days prior to the monthly meetings.</p> <p>If the programme has to be revised by reason of the Contractor falling behind his programme, he shall produce a revised programme showing how he intends to regain lost time in order to ensure completion of the Works within the time for completion as defined in the General Conditions of Contract or any granted extension of time. Any proposal to increase the tempo of work shall be accompanied by positive steps to increase production by providing more labour and plant on site, or by using the available labour and plant on site, or by using the available labour and plant in a more efficient manner.</p> <p>Failure on the part of the Contractor to submit the programme or to work according to the programme or revised programmes shall be sufficient reason for the Engineer to take steps as provided in the General Conditions of Contract.</p> <p>The approval by the Engineer of any programme shall have no contractual significance other than that the Engineer will be satisfied that the work is carried out according to such programme and that the Contractor</p>

PART C3: Scope of Work

SANS 1921-1: General engineering and construction works	
	Specification data
	<p>undertakes to carry out the work in accordance with the programme. It shall not limit the right of the Engineer to instruct the Contractor to vary the programme if required by circumstances. The Contractor is also referred to the applicable clauses of the General Conditions of Contract when drawing up his programme.</p> <p>As soon as all downstream construction activities from FDS no3 have been certified as completed and FDS no 3 can be commissioned, sub clause 51.6 will apply. The Construction program has to be submitted and comply to the above mentioned.</p> <p>The planning, programme, cash flow projections and method statements are to comply with the following: Microsoft Project format</p>

SANS 1921-1: General engineering and construction works	
	Specification data
	<p>The samples of materials, workmanship and finishes that the Contractor is to provide and deliver to the Employer are: The requirements are stated in the specifications.</p>
4.12.2	<p>The fabrication drawings which the Contractor is to provide and deliver to the Employer are: None.</p>
4.14.3	<p>The office accommodation, equipment, accommodation for site meetings and other facilities for the use by the Employer and his agents are: As specified in the Scope of Works</p>
4.14.6	<p>The requirements for the provision and erection of sign boards are: As stated in the Specifications.</p>
4.17.1	<p>The requirements for the termination, diversion or maintenance of existing services are::....(not applicable.)</p>

PART C3: Scope of Work

SANS 1921-1: General engineering and construction works	
	Specification data
4.17.3	Services that are known to exist on the site are shown on the drawings
4.17.4	The requirements for the detection apparatus are: As stated in the Specifications.
4.18	The additional health and safety requirements are: As stated in the Specifications and elsewhere in the documents.
4.22	The works to be undertaken by nominated and selected subcontractors comprise:
Variations:	
4.1.10	Degree of accuracy II shall be applicable unless stated otherwise in the drawings or specification.
4.2.4	The time frame for acceptance is 10 working days
Additional clauses:	
4.1.1 p)	Add this new clause: "Appoint a community liaison officer (CLO) to assist with the community liaison with the beneficiary community."
4.23	Add this new clause: "4.23 Community participation" Community participation consists of engagement of Project Steering Committees (PSC). A PSC will be established for the project, by the Ward Councillor. The functions of the PSC will be to: Assist in monitoring the project. Ensure that the community provide assistance to the Contractor to ensure that he can execute the contract in accordance with the specifications and within time. Encourage the community to participate in the Labour-intensive construction. Identify skills, skilled personnel and suppliers in the towns. The PSC will not have the power to: Give any instructions to the Contractor, except through the Engineer.

PART C3: Scope of Work

SANS 1921-1: General engineering and construction works	
	Specification data
	Become involved in the daily operations of the Contractor or interfere with the contract works.
	A monthly meeting will be held with the PSC to discuss relevant matters. The site agent and resident engineer will attend the meetings. The Contractor will have to report on progress, deviations from the programme, financial matters community related aspects, general problems and co-operation at the meeting. The PSC members will not receive any remuneration for attending, and they must provide their own transport."

SANS 1921-2: Accommodation of traffic on public roads occupied by the contractor	
	Specification data
	The Contractor shall design all the temporary culverts: Not applicable
4.6.1	The length of half-width roads under construction shall not exceed: Not applicable.
4.6.3	The length of road shall be limited to: Not applicable.
4.10.1	<p>The Contractor shall provide the following traffic control facilities:</p> <p>Traffic-control devices such as flagmen, STOP and GO signs, traffic signals.</p> <p>Statuary permanent and temporary road signs and barricades.</p> <p>Channelization devices and barricades including delineators, cones, road studs, road marking, etc.</p> <p>Barriers such as New Jersey, plastic movable barriers, etc.</p> <p>Warning devices on plant and construction vehicles.</p> <p>Road markings.</p>
Additional clauses:	
4.1.4	<p>Add this new clause:</p> <p>"Failure to maintain road signs, warning signs, etc, in a good condition shall constitute ample reason for the Engineer to bring the works to a stop until the road signs, etc, have been repaired to his satisfaction.</p>

PART C3: Scope of Work

	<p>The Contractor may not commence constructional activities 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 Volume 2 Chapter 13.</p> <p>The Contractor shall submit proposals in connection with directional signs to the engineer for approval prior to construction.”</p>
--	--

PART C3: Scope of Work

SANS 1921-3 Structural steelwork: (not applicable.)	
	Specification data
	The flow dividing structures (FDS) will consist of structural steelwork. The responsibility strategy assigned to the steelwork contractor for the work is: A.
4.2.2	The steelwork structural engineer is.... n.a.
4.3.2.1	The site will be ready for steelwork to commence on: n.a.
4.3.2.1	The requirements for sequencing of the works are: None The times for completing of the sections are: To be confirmed during construction. The procedures to be followed are: As indicated in the specifications. Matters that affect the programme are: As indicated in the programme.
4.3.3.2	The steelwork contractor is required to provide the steelwork structural engineer with a detailed method statement for the erection of each structure at least 2 weeks before construction commences.
4.4.2.4	The steelwork contractor is required to provide the following facilities for test purposes: n.a.
4.4.3.4	The following items and procedures need to be tested / certified by a recognized body: n.a.
4.5.1.1	Information, drawings and calculations provided to the steelwork contractor will be provided in the following format: n.a.
4.5.1.2	The steelwork contractor is to provide information in the following format: Not applicable.
4.5.3.1 or 4.5.3.2	Drawings and other information are to be submitted in accordance with the contractor's accepted programme.
4.5.3.4	The steelwork contractor is required to submit the following additional information with general arrangement drawings to the employer for approval: Not applicable.

PART C3: Scope of Work

4.5.3.6	The steelwork contractor is required to submit “as erected “ drawings- Not applicable.
4.7.6	The contractor is required to make his own arrangements for the provision of the following services: Water, electricity and sanitary services
4.7.9	The requirements for the provision and erection of sign boards are: As indicated in the specifications.
4.10.2	The requirements for the protection, termination, diversion or maintenance of existing services are: As indicated in the specifications and elsewhere in the documents.
4.10.4	Services which are known to exist on site are: As indicated on the drawings.
4.11.1	The specific health and safety requirements are: As indicated elsewhere in the documents.
4.11.3	The contractor is required to submit a report on the assessment and management of risk.
4.11.4	The steelwork contractor is required to enclose the steelwork for the protection of the public and others.

PART C3: Scope of Work

SANS 1921-4: Third-party management support in works contracts	
	Specification Data
	There is no third-party management support in this Contract.

SANS 1921-5: Earthworks activities that are to be performed by hand	
	Specification Data
	:....(not applicable.)

Note: The Employer's requirement is that certain activities be performed by labour-intensive methods.

In the Bill of Quantities items to be carried out with labour-intensive methods are indicated with (LI).

SANS 1921-6: HIV / AIDS awareness				
	Specification Data			
	A qualified service provider is a service provider that is accredited by CoT Health and Social Development and appears on the list of recognized service providers CoT Health and Social Development. The contact particulars of qualified service providers shall be obtained by the Contractor from the Employer at commencement of the Contract.			
	Name	Tel	Fax	e-mail
4.2.1 (a)	Apart for the initial programme, the HIV / AIDS awareness programme is to be repeated at 4-month intervals throughout the duration of the contract.			
Variations:				

<i>Additional clauses:</i>	

C3.5.2 CONSTRUCTION PROGRAMME

The Contractor shall submit within the period stated in the Contract Data a suitable and realistic construction programme for the consideration of the Engineer. The Engineer will further request the programme to be updated regularly as and when new projects are allocated to the Contractor. No work will be allowed to commence before a program is submitted and approved by the Engineer.

The programme shall be in the form of a Gantt chart and shall include the following details:

- A work breakdown structure, identifying the major activity groups.
- For each activity group further details shall be provided with regard to the scheduled start and end dates of individual activities.
- The linkages between activities shall be clearly indicated and the logical network upon which the programme is based shall be separately submitted to the engineer if requested. Any constraints shall be classified as being time-related or resource-related.
- The critical path(s) shall be clearly indicated and floats on non-critical activities shall be shown.
- The Contractor shall indicate the working hours per day, night, week and month allowed for in the programme.
- Where relevant the Contractor shall state the production rates for key activities, e.g. earthworks, etc.
- Refer to the GCC 2010 for programme requirements besides the above.

Together with the programme as detailed above the contractor shall submit to the engineer a cash flow projection, indicating projected monthly invoice amounts. The cash flow projection shall be updated at monthly intervals to reflect actual payments to date and anticipated further payments.

The programme will be reviewed at the monthly site meetings at which the Contractor shall provide sufficient detail that will allow the comparison of completed work per activity that has fallen behind. The updated programme shall be submitted to the Engineer at least two days prior to the monthly meetings.

If the programme has to be revised by reason of the Contractor falling behind his programme, he shall produce a revised programme showing how he intends to regain lost time in order to ensure completion of the Works within the time for completion as defined in the relevant GCC or any granted extension of time. Any proposal to increase the tempo of work must be accompanied by positive steps to increase production by providing more labour and plant on site, or by using the available labour and plant on site, or by using the available labour and plant in a more efficient manner.

Failure on the part of the Contractor to submit the programme or to work according to the programme or revised programmes shall be sufficient reason for the Engineer to take steps as provided in the GCC.

The approval by the Engineer of any programme shall have no contractual significance other than that the Engineer will be satisfied that the work is carried out according to such programme and that the Contractor undertakes to carry out the work in accordance with the programme. It shall not limit the right of the Engineer to instruct the Contractor to vary the programme if required by circumstances.

1. Sequence of the works

The sequence of the works shall be such that the Contractor adhere to a three-block construction system. This system concentrates construction in a specific area to ensure quick and effective completion of all construction activities. Before moving to a fourth block, the first block must be completed and a certificate for practical completion issued by the Engineer.

2. Accommodation of traffic

The following contain the Employer's general requirements for accommodating the traffic during construction:

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.

Failure to maintain road signs, warning signs, etc., in a good condition shall constitute ample reason for the engineer to bring the works to a stop until the road signs, etc., have been repaired to his satisfaction.

The contractor may not commence constructional activities 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 Volume 2 Chapter 13.

The contractor shall submit proposals in connection with directional signs to the engineer for approval prior to construction.

Sufficient signage shall be provided, erected and relocated as necessary by the contractor to reroute traffic onto the deviations. It is proposed that traffic is deviated as follows: See Volume 2: Drawings.

Each team working on this contract will need to have a competent person who will be responsible for the setting out of the road signs daily. Proof accredited of training will need to be provided to the CoT before any team will be allowed to start work.

C3.5.3 RECORDING OF WEATHER AND EXTENSION OF TIME DUE TO ABNORMAL RAINFALL

The Contractor shall erect an effective rainfall gauge on the site of the works and record the daily rainfall figures in the site diary. The site diary shall be handed to the employer's representative for his signature no later than 10 days after rain that is considered to justify an extension of time occurs.

Extension of time due to abnormal rainfall shall be determined by means of Method 1: Rainfall Formula Method, where rainfall records and/or values derived from rainfall records are supplied in the Scope of Work, otherwise Method 2 shall apply. Method 1 and 2 are defined and described in the Contract Data.

In the case where Method 2: Expected Delay Method applies, the following is applicable:

Extension of time resulting from abnormal rainfall or other forms of inclement weather for items on the critical path of the programme shall be calculated according to the requirements of Method 2 (Critical-path method). The value of "n" working days per calendar month as specified in this clause shall be two (2) working days. If no abnormal rainfall or other inclement weather periods occur during a specific calendar month (or months), the n-values as specified shall not be taken as accumulating over the contract period. If the n-days allowed for in the programme of work are not taken up by standing time due to abnormal rainfall or inclement weather conditions, they will fall away and will not be considered in extension of time claims which may arise later during the contract period.

A working day, or portion thereof, shall be considered as lost when the engineer agrees that no work could have been undertaken on any item falling within the critical path. The contract extension of time arising from inclement weather shall be agreed upon between the engineer's and the contractor's representatives. The days upon shall be recorded in the minutes of the monthly site meetings.

Rainfall records at Rainfall station 0513/556 Ramkie-oor-Willows, for the period 01-01-1999 to 31-12-2008 are reproduced in the accompanying table and the monthly averages (Rn and Nn) for this period shall, for the purposes of this Contract, be taken as normal.

CONTRACT NO: USD WS 04-2021/22: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED

PART C3: Scope of Work

RAINFALL RECORDS FOR PERIOD: 01-01-1999 TO 31-12-2008

RAINFALL STATION: 0513/556 RAMKIE-00R-WILLOWS

SOURCE OF INFORMATION: SOUTH AFRICAN WEATHER SERVICE

YEAR	COEFF	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
	Nn	4	3.5	2.8	1	0.9	0.2	0	0.3	0.6	2.3	3.3	4.4	23.3
	Rn	149.5	117.6	81.1	36.8	22.3	9.0	0.7	7.4	19.8	69.7	92.2	120.8	726.8
1999	Nw	0	1	3	1	1	1	0	0	0	1	3	9	20
	Rw	27.7	39.6	72.7	42.2	36.0	14.0	0.0	0.0	10.5	16.0	56.6	223.3	538.6
	V	-4.0	-3.5	-0.2	0.3	0.8	1.1	0.0	-0.3	-0.6	-2.3	-2.1	9.7	-1.2
2000	Nw	4	7	6	2	1	0	0	0	1	5	5	7	38
	Rw	180.0	268.5	151.8	60.3	19.5	5.3	0.0	5.1	24.9	188.3	124.5	104.4	1132.6
	V	1.5	11.0	6.7	2.2	0.0	-0.2	0.0	-0.3	0.7	8.6	3.3	1.8	35.3
2001	Nw	3	4	2	0	2	0	0	0	0	3	3	3	20
	Rw	76.1	126.6	26.5	28.2	59.9	3.2	0.0	0.0	7.3	89.0	115.0	82.8	614.6
	V	-4.0	0.9	-2.8	-1.0	3.0	-0.2	0.0	-0.3	-0.6	1.7	0.8	-3.3	-5.8
2002	Nw	3	3	0	1	1	0	0	1	0	2	2	6	19
	Rw	77.1	66.6	19.6	32.9	22.5	10.8	0.0	24.7	5.0	58.0	37.2	132.3	486.7
	V	-4.0	-3.1	-2.8	-0.2	0.1	-0.1	0.0	1.6	-0.6	-0.9	-3.3	2.2	-11.1
2003	Nw	5	2	2	0	0	0	0	0	0	2	2	1	14
	Rw	142.9	114.0	38.7	1.6	0.0	2.8	0.2	0.0	2.0	72.8	87.0	35.7	497.7
	V	0.7	-1.7	-2.8	-1.0	-0.9	-0.2	0.0	-0.3	-0.6	-0.1	-1.6	-4.4	-12.9
2004	Nw	3	5	5	2	1	0	0	0	0	1	5	6	28
	Rw	82.0	179.4	182.8	46.7	38.0	10.5	1.9	0.0	1.0	20.0	92.6	219.1	874.0
	V	-4.0	4.6	7.3	1.5	0.9	-0.1	0.1	-0.3	-0.6	-2.3	1.7	6.5	15.2
2005	Nw	7	1	3	2	0	0	0	0	4	0	3	0	20
	Rw	194.9	59.0	90.1	79.1	0.0	0.0	0.0	1.2	106.6	13.5	89.6	14.3	648.3
	V	5.3	-3.5	0.7	3.1	-0.9	-0.2	0.0	-0.3	7.7	-2.3	-0.4	-4.4	4.7
2006	Nw	5	8	0	1	0	0	0	2	0	1	2	2	21
	Rw	385.8	219.9	37.1	31.8	3.8	0.0	0.0	42.5	0.4	30.9	91.5	147.6	991.3
	V	12.8	9.6	-2.8	-0.3	-0.9	-0.2	0.0	3.5	-0.6	-2.3	-1.3	-1.1	16.4
2007	Nw	1	1	0	0	0	1	0	0	1	6	2	6	18
	Rw	64.7	22.5	12.3	20.3	0.0	35.3	2.6	0.0	40.2	169.5	57.7	137.3	562.4
	V	-4.0	-3.5	-2.8	-1.0	-0.9	2.1	0.1	-0.3	1.4	8.7	-3.0	2.4	-0.8
2008	Nw	9	3	7	1	3	0	0	0	0	2	6	4	35
	Rw	263.9	80.2	179.3	25.0	43.5	8.0	1.8	0.0	0.0	39.1	170.1	110.9	921.8
	V	10.7	-2.4	9.1	-0.6	3.2	-0.2	0.1	-0.3	-0.6	-1.8	6.6	-0.9	22.9
	ΣNw	40	35	28	10	9	2	0	3	6	23	33	44	233
	ΣRw	1495.1	1176.3	810.9	368.1	223.2	89.9	6.5	73.5	197.9	697.1	921.8	1207.7	7268.0

*No data available

C3.5.4 MANAGEMENT MEETINGS

Monthly meeting dates will be arranged with the Contractor during construction.

C3.5.5 FORMS FOR CONTRACT ADMINISTRATION

Will be arranged with the Contractors during construction.

C3.5.6 ELECTRONIC PAYMENTS

Will be arranged with the Contractors during construction.

C3.5.7 DAILY RECORDS

Will be arranged with the Contractors during construction.

C3.5.8 BONDS AND GUARANTEES

As stated in the Conditions of Contract and the Contract Data.

C3.5.9 PAYMENT CERTIFICATES

Will be arranged with the Contractors during construction.

C3.5.10 PERMITS

As specified in Part C3.7 under item B001.08 Security guards (regarding clear identification and employment tags).

C3.5.11 PROOF OF COMPLIANCE WITH THE LAW

Requirements are listed in Part T2: Returnable Documents.

C3.5.12 INSURANCE PROVIDED BY THE EMPLOYER

Details of the Employer's insurance are included in Appendix D of the Contract documents.

C3.5.13 COMMUNITY PARTICIPATION

PROJECT STEERING COMMITTEE (PSC)

A PSC comprises representatives of stakeholder groups in the area in which a project will be implemented. The PSC will only be established for CAPEX projects, not for internal CoT community programmes.

The functions of the PSC covers all phases of the project life cycle and can be summarized as follows:

Ensure that the community provide assistance to the contractor to ensure that he can execute the contract in accordance with the specifications and within time;

Communicating with the stakeholder groups;

Assisting the technical team, where possible, to develop alternatives and solutions for identified problems;

Monitoring the project to ensure that it is implemented according to the agreements in the previous phases

Being consulted by the technical team if changes need to be made to the agreed mitigating factors.

PROCESS FOR SELECTION OF PROJECT STEERING COMMITTEES (PSCS):

The relevant Ward Councillor shall, in cooperation with the Office of the Speaker and the Expanded Public Works Programme (EPWP) Division, facilitate an initial public meeting for the community and stakeholders to enable them to nominate members for the Project Steering Committees (PSC).

All initial public meetings have to be open to the public and the media, and be publicised in advance by the Office of the Speaker.

The nominated members of the PSC will then elect a Chairperson and Deputy Chairperson at their first PSC sitting.

The committee, shall consist of representatives of:

- (a) The Ward Councillor(s)
- (b) The Client / (Clients Representative)
- (c) The Engineer
- (d) The Contractor
- (e) The CLO(s)
- (f) Members of Ward Committees nominated at the public meeting

PSC members will not be remunerated for their role throughout the project's lifespan. Upon accepting nomination for the PSC, PSC candidate must acknowledge this fact in writing.

In the event of the PSC not being constituted as envisaged above, or becomes dysfunctional, the Expanded Public Works Programme (EPWP) Division, in consultation with the Ward Councillor, may nominate members to the Project Steering Committee (PSC).

In the event that the Ward Councillor is unable to cooperate with the Regional Expanded Public Works Programme (EPWP) Coordinator, the EPWP Division shall, in consultation with the Group Head Human Capital Management, and the Group Head Community and Social Development departments, nominate members to the PSC.

C3.5.14 CONSTRUCTION MANAGMEENT SERVICE REQUIREMENTS

The Contractor shall appoint a Construction Manager whose duties will be to provide construction management, managing subcontractors and materials management services in line with the employer's objective as stated in, Description of Work.

1. General

The construction manager shall, in order to achieve the employer's objectives stated in Clause 3.1.1, Description of Work,

PART C3: Scope of Work

- a) comply with agreements made with the employer and the local community, if any, monitor and report on project expenditure and costs and construction progress, and co-ordinate site activities,
- b) advise, assist and train the supported contractor on the job in terms of the contract between the employer and the supported contractor, and, if so required in the specification data, arrange for the supply of certain items of equipment and the supply and delivery to site of materials,
- c) Remain impartial in his dealings with the employer and the supported contractor,
- d) Engage, on behalf of and with the approval of the employer, specialist contractors to execute parts of the works and coordinate the work of supported contractors and the specialist contractors,
- e) Cooperate with other professional service providers appointed by the employer,
- f) visit the site at appropriate intervals during the various stages of construction in order to confirm that the supported contractor is making satisfactory progress, that he shows technical competence in the execution of all aspects of the works and generally fulfils all contractual obligations,
- g) Provide continuous support to the supported contractor in order to ensure that the employer's objectives are achieved,
- h) Operate within any structured framework developed by the employer to enable interim payments to be made to supported contractors within relatively short time frames,
- i) provide site facilities for the employer and his agents, as provided for in the specification data,
- j) Ensure the economic and efficient use of all plant and, to this end, maintain adequate records of plant usage,
- k) maintain detailed records of all costs relating to the construction of the works including those relating to the provision of construction management services, and report to the employer at intervals not exceeding one month on the financial status of the contract, and
- l) Assist supported contractors in registering with a public body, if required, in terms of the specification data.

2. Construction stage requirements

2.1. General

PART C3: Scope of Work

Following the award of the contract to the supported contractor, the construction manager shall, as a minimum,

- a) Attend site and coordination meetings conducted by the employer and his agents,
- b) Arrange weekly or fortnightly site progress meetings with the supported contractor and record and distribute the minutes thereof,
- c) liaise with the employer at coordination meetings at regular, agreed intervals and keep him fully informed regarding all aspects of the supported contractors' contracts,
- d) Confirm insurance arrangements, notify insurers of all claims and ensure that all insurance policies are maintained,
- e) Bring to the attention of the employer without delay any deficiencies in materials or in work performed by the supported contractor and follow up corrective actions which might be prescribed,
- f) Inspect all exposed services, report in writing any damage to the employer and, subject to the approval of the employer, take the necessary action to have the damage repaired.
- g) Implement and monitor approved security arrangements and recommend and implement changes which might be necessary, where required by the employer in terms of the specification data, arrange for the supply and erection of suitable name boards,
- h) Maintain and update the assets register,
- i) Monitor the progress of the supported contractor and submit monthly progress reports to the employer which provide information relating to:

- I progress in relation to the programme,
- II costs incurred in respect of materials, labour, plant, transport, specialist contractors and construction management services,
- III the actual cash flow compared with the predicted cash flow,
- IV expected savings or excess expenditure,
- V site meetings,
- VI details of plant hired, including standing-time charges, breakdowns and reasons for the use thereof, and

VII details regarding the theft of materials issued to site,

- j) Coordinate and monitor the activities of the supported contractor and others involved in the works,
- k) Maintain all necessary site records and documentation including those pertaining to personnel on site, equipment, progress, deliveries of materials to supported contractors, variations to their respective contracts, quantities of work executed, etc.,
- l) Ensure that the supported contractor implements a systematic testing programme,
- m) Review and monitor the supported contractor's quality control systems,
- n) Establish and maintain a list of defects and ensure that these are remedied,
- o) Brief supported contractors on health and safety requirements, and
- p) Verify claims for payment to supported contractors and other parties in accordance with the provisions of the contract.

2.2. Advice and assistance to the supported contractor

The construction manager shall, as a minimum,

- a) Process and resolve supported contractors' queries regarding the interpretation of drawings, specifications and contractual matters pertaining to their respective contracts,
- b) Motivate and guide supported contractors and, where necessary, recommend measures to expedite their progress,
- c) Assist supported contractors with

- I the preparation and updating of a realistic and achievable programme,
- II the setting out of the works
- III the management, administration and employment of their work forces,
- IV the performance of their contracts
- V all registrations required in terms of legislation and all applicable taxes and levies,
- VI the preparation of payment certificates
- VII the handing over of the works to the employer upon completion, and
- VIII liaison with external organizations and the local community with regard

to the works, and

- d) Assist the supported contractor on safety measures which shall be implemented in order to comply with safety legislation.

2.3. Training

The construction manager shall, as a minimum,

- a) Teach the supported contractors how to assess and order materials required for incorporation into the works,
- b) Train, advise and guide supported contractors both in-house and on the job with regard to the following aspects of the contract:
 - I the basic work techniques required to perform the contract;
 - II the need to develop communication skills;
 - III what is expected of a supported contractor;
 - IV health and safety requirements;
 - V the need to execute appropriate tasks correctly the first time;
 - VI how to submit claims for payments;
 - VII how to control and motivate their work forces;
 - VIII the necessity for planning;
 - IX how to prepare and use construction programmes;
 - X the relationship between tender pricing, productivity and profit; and
 - XI payment procedures for payments required in terms of the law, including all applicable taxes and levies, and
- c) Act generally as a mentor to the supported contractor and facilitate, when appropriate, training of the supported contractor by other organisations.

2.4. Tools and equipment

The construction manager shall, as a minimum,

- a) Advise supported contractors regarding their hand-tool requirements and assist them with the procurement thereof,
- b) Arrange for the timeous supply and cost-effective use of items of equipment and plant required for the execution of the works which supported contractors are not, in terms of their contracts, required to provide,

- c) Arrange for the supply of calibrated testing equipment to supported contractors, as required, and ensure that tests are properly carried out and the results forwarded to the relevant parties that require such information, and
- d) Arrange for the supply of all fuel and power required for the operation of power-driven equipment and tools.

2.5. Materials (where materials management services are provided to supported contractors)

The construction manager shall, where a materials manager has been appointed, as a minimum,

- a) Provide the materials manager with a programme of materials requirements, based on the programmes of supported contractors, at the commencement of their respective contracts and update such programmes as necessary,
- b) Review supported contractors' requests for materials, adjust quantities, if necessary, and forward orders timeously to the materials manager,
- c) Arrange with the materials manager for the delivery of materials direct to the site, where necessary,
- d) Where required, collect materials from the materials manager's store and deliver to the site,
- e) Monitor and approve the overnight storage of unused materials on the site by supported contractors or, should such materials not be suitable for overnight storage on site, arrange for their return to the store,
- f) Determine appropriate allowances for tolerances and wastage on items where such allowances are not laid down in the supported contractor's scope of work, and
- g) Reconcile quantities of materials issued to supported contractors with quantities used in the works and issue a materials reconciliation certificate to supported contractors upon completion of the works.

2.6. Post-construction stage requirements

After the completion of the works associated with supported contractors' contracts, the construction manager shall, as a minimum,

- a) Compile a completion report that includes:

- I the final cost of the works in respect of materials, labour, plant, transport, supervision and construction management services;
 - II the time of completion relative to the programme;
 - III the nature and extent of training received by the supported contractor;
 - IV details of damage to services and insurance claims;
 - V details of the construction and establishment costs; and
 - VI details of actual expenditure compared with projected expenditure,
- b) Monitor remedial work undertaken during the defects liability period and advise and assist the supported contractor as necessary, and
 - c) Return, if required, to the employer or dispose of in accordance with the employer's instructions, all items of equipment on the register of assets.

C3.5.15 MATERIALS MANAGEMENT SERVICE REQUIREMENTS

The materials manager shall, in order to achieve the employer's objectives,

- a) Procure, store and issue materials for incorporation into the works either to the construction manager, who will deliver such materials to the place of work or directly to the supported contractor,
- b) Establish a stores facility which is capable, at short notice, of supplying all the materials required for the project in a reliable, efficient and cost-effective manner,
- c) Establish and implement management procedures and systems for procuring, storing, issuing and accounting for materials that
 - I take cognizance of specific storage requirements for individual materials,
 - II comply with the employer's procurement policies and procedures,
 - III provide for quality checks upon delivery,
 - IV provide for the processing and timeous payment of statements for materials supplied and the delivery of materials on site,
 - V account for the quantities of materials that are procured, stored and issued to or on behalf of each individual supported contractor,
 - VI ensure that records are readily auditable and protect the employer against corruption and theft, and
 - VII allow the employer to be informed monthly as to the status of all aspects of the materials management,

- d) Ensure that all possible trade and settled discounts are obtained and that the most favourable prices are paid for materials, and
- e) Ensure that all materials purchased and issued comply fully with the employer's specifications embodied in the scope of work of the supported contractor's contract or in the contract with the employer.

C3.5.16 MODE OF SERVING NOTICES AND DIRECTIONS TO THE CONTRACTOR

All notices and directions to the Contractor shall be in writing and shall be deemed to have been duly served and binding on the Contractor if:

- a) Given personally to the Contractor's Site Representative, or
- b) Addressed to the Contractor and sent by post, telex or telefax or delivered by hand to the Contractor's recorded business address, or
- c) if entered in the site instruction book by the Engineer.

C3.5.17 ANNEXURES

Attach data sheets, completed returnable schedules, particular specification, drawings, sketches and the like, which are referred to in this document.

C3.6 APPOINTMENT OF COMMUNITY LIAISON OFFICER (CLO)

A community liaison officer will be appointed from the local community. The liaison office will, amongst other duties, be responsible for the liaison with the beneficiary community. The appointment should be done in accordance to the City of Tshwane's Recruitment policy of EPWP and the Code of Good Practice for the appointment of Community Liaison Officers

Provision for the payment of the liaison officer has been made in the Pricing Data.

The successful tenderer shall enter into an agreement with the Ward Councillor/Ward Committee whereby the Ward Councillor shall provide to the Contractor with a Community Liaison Officer (CLO) for liaison with the recipient community.

The CLO shall attend all site and other meetings concerning the project.

The agreement shall make provision for the payment by the Contractor to the CLO a maximum amount per month (plus general increases) of – entry level of B1 - level 1 scale.

Only one CLO shall be appointed per project. If the project spans over more than one Ward, the relevant Ward Councillors shall agree on one CLO to be appointed by the Contractor. Should no agreement be found as envisaged, the relevant Project Manager together with the General Manager: Integrated Community Development, or their nominees, will interview prospective appointees and in their discretion appoint such CLO.

Notwithstanding the above, if the vastness of the project requires the use of more than one CLO, this will be permitted provided that the total monthly sum paid to all CLOs shall not exceed the amount allowed for as set out above.

Should the Contractor experience any difficulties with the community, these difficulties shall immediately be brought to the attention of the Department/Project Manager who shall arrange a meeting with the relevant Ward Councillor(s) and the CLO to resolve such difficulties.

The main Contractor shall ensure that any Sub-Contractor he may appoint shall adhere to these conditions but also subject to the proviso's applicable to the duration of such sub-contract.

Should any of the above conditions be less favourable than any Bargaining Council Agreement or Act applicable to the Contractor, the more favourable condition will apply.

C3.7 PARTICULAR SPECIFICATIONS AND VARIATIONS AND ADDITIONS TO THE STANDARD SPECIFICATIONS

The following references from, and variations and additions to the Standard Specifications will be valid for this Contract.

The clauses and pay items in this portion of the Particular Specifications are numbered "B" followed by a number corresponding to the number of the relevant clause or pay item in the Standard Specifications. New clauses and pay items not covered by clauses or pay items in the Standard Specifications, if included here, are also designated "B" followed by a number. These numbers follow on the last clause or pay item number used in the relevant section of the Standard Specifications.

SERIES 1: ANCILLARY WORK

Add the following:

“SECTION 107: GENERIC LABOUR-INTENSIVE SPECIFICATION

Scope

This specification establishes general requirements for activities which are, where instructed by the Engineer, to be executed by hand and are indicated with "LI" (labour-intensive) in bold in the bills of quantities.

The tendered rates paid extra over the standard or particular items shall be in full compensation for the additional cost of all labour, plant, material and working methods required by the Contractor to do the work as scheduled using labour-intensive methods.

Precedence

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this Contract, the requirements of this specification shall prevail.

Hand excavatable material is:

- a) Granular materials:
 - i) where consistency when profiled may in terms of Table 1 be classified as very loose, loose, medium dense, or dense; or
 - ii) where the material is a gravel with a maximum particle size of 10 mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100 mm;
- b) Cohesive materials:
 - i) where consistency when profiled may in terms of Table 1 be classified as very soft, soft, firm, stiff and stiff/very stiff; or

PART C3: Scope of Work

- ii) where the material is a gravel with a maximum particle size of 10 mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100 mm;

Note

- 1) A boulder, a cobble and gravel is material with a particle size greater than 200 mm, between 60 and 200 mm.
A dynamic cone penetrometer is an instrument used to measure the insitu shear resistance of a soil comprising a drop weight of approximately 10 kg, which falls through a height of 400 mm and drives a cone having a maximum diameter of 20 mm (cone angle of 60° with respect to the horizontal) into the material being used.

Table 1: Consistency of materials when profiled

GRANULAR MATERIALS		COHESIVE MATERIALS	
CONSISTENCY	DESCRIPTION	CONSISTENCY	DESCRIPTION
Very loose	Crumbles very easily when scraped with a geological pick	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle
Loose	Small resistance to penetration by sharp end of a geological pick	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40 mm; can be moulded by fingers with some pressure
Medium dense	Considerable resistance to penetration by sharp end of a geological pick	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in up to 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade
Dense	Very high resistance to penetration by the sharp end of geological pick; requires many blows for excavation	Stiff	Can be indented by thumb-nail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers

PART C3: Scope of Work

Very dense	High resistance to repeated blows of a geological pick	Very stiff	Indented by thumb-nail with difficulty; slight indentation produced by blow of a geological pick point
------------	--	------------	--

Trench excavation

All hand excavatable material in trenches having a depth of less than 1.5 meters shall be excavated by hand.

Compaction of backfilling to trenches (areas not subject to traffic)

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100 mm. Each layer shall be compacted using hand stampers –

- a) To 90% Proctor density;
- b) Such that in excess of 5 blows of a dynamic cone penetrometer (DCP) are required to penetrate 100mm of the backfill, provided that the backfill does not comprise more than 10% gravel of less than 10mm in size and contains no isolated boulders, or
- c) Such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

PART C3: Scope of Work

Excavation

All hand excavatable material including topsoil classified as hand excavatable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material, which presents the possibility of danger or injury to workers, shall not be excavated by hand.

Clearing and grubbing

Grass and small bushes shall be cleared by hand.

Shaping

All shaping shall be undertaken by hand.

Loading

All loading shall be done by hand, regardless of the method of haulage.

Haul

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.

Offloading

All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilized for haulage.

Spreading

All material shall be spread by hand.

Compaction

Small areas may be compacted by hand provided that the specified compaction is achieved.

Grassing

All grassing shall be undertaken by sprigging, sodding, or seeding by hand.

Stone pitching and rubble concrete masonry

PART C3: Scope of Work

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must be collected, loaded, off loaded and placed by hand.

Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.

Grout shall be mixed and placed by hand.

Manufactured Elements

Elements manufactured or designed by the Contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry unit and edge beams shall not individually, have a mass of more than 320kg. In addition the items shall be large enough so that eight workers can conveniently and simultaneously acquire a proper hand hold on them.”

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION
OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

**C3.8 CORRECTIONS AND AMENDMENTS TO THE STANDARD SPECIFICATIONS
FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005**

SERIES 0: GENERAL

SECTION 001: GENERAL REQUIREMENTS AND CHARGES

B08: CONTRACTOR'S ACTIVITIES ON PRIVATE PROPERTY

B08.02: Execution of the Works

ADD THE FOLLOWING:

"The contractor shall be liable to repair all damage to private property at his own cost unless such damage is a necessary, unavoidable consequence of the work, in which case the repair will be measured and paid for under applicable rates or day works on submission of receipts for material and labour costs. The Contractor should remove all surplus materials and debris from site on a daily basis."

B09: WORKMEN TO BE KEPT WITHIN BOUNDS

ADD THE FOLLOWING:

"Workmen shall remain at all times within the servitude of the sewer line, and **SHALL** not be permitted to venture onto the property of private owners without the consent of such owners. If the owner is unavailable the Contractor shall first obtain approval from the Engineer's representative."

B13: PROTECTION OF EXISTING SERVICES

B13.01: General

ADD THE FOLLOWING:

"The approximate positions of all known existing services are shown on the drawings. Refer to section C3.4.5 Existing Services regarding the exposing of existing services."

B13.05: Alterations and repairs to existing services

PART C3: Scope of Work

The following telephone numbers will be applicable in the event of damage to existing services:

Water	:(012) 358 2111
Sewerage	:(012) 358 5865/37
Roads and stormwater	:(012) 358 8000
Electricity	:(012) 358 4388

B14: NOTICES, SIGNS AND ADVERTISEMENTS

ADD THE FOLLOWING:

"The standard nameboard of the City of Tshwane is specified for civil work and detailed on the drawings and the Contractor shall have all relevant information written on the nameboard. The Contractor shall appoint a qualified sign writer to execute the work, and all information shall be displayed according to the Engineer's requirements.

The signboards should contain the following information:

Project description:

Contract number:

Contractor's name:

Blasting date:

Blasting time:

Contractor's cell/emergency number:

Engineer's Representative cell number:

B17: SAFE WORKING CONDITIONS

The list of telephone numbers to be displayed in terms of the last paragraph of this clause is the following:

(a) Services information

Electricity CoT	:	Bothongo Plaza East, 5 th floor, room 530
Contact numbers	:	012 358 4388

PART C3: Scope of Work

012 358 4189

012 358 4193

Water/Sewerage : Capitol Towers North, 6th floor

Contact numbers : 012 358 7689

012 358 7983

012 358 7976

Roads and Stormwater : Capitol Towers North, 4th floor

Contact numbers : 012 358 4810

012 358 7741

012 358 3740

012 358 7740

Telkom

Contact numbers : 012 311 7829

012 311 3411

(b) Emergency services

Electricity: (012) 358 8514 / 358 8550 / 0801 111 556

Sewer: (012) 358 5865 / 5837 (Depot) (012) 358 2111 (after hours)

Traffic control: (012) 358 7595/6

Water: (012) 358 2111 (after hours)

B30 COMMUNITY LIASON OFFICER

ADD THE FOLLOWING:

For the Community Liason Officer/Labour Desk Officer: A Community Liaison Officer is a level 5 post. The CLO will receive any general increase as for Tshwane employees. Should it happen that the CLO is employed for a continuous period of longer than one year; he will receive a scale increment.

Where applicable, suit able candidates will be nominated by the Steering Committee for consideration. The final decision will rest with the Engineer.

B31: MEASUREMENT AND PAYMENT

B001.01: Preliminary and general charges

ADD THE FOLLOWING:

"Calculations for time-related charges will be made on a pro-rata basis in the event of time extensions being granted which is limited to a particular activity or a particular portion of the work. The Contractor shall submit the breakdown of the time-related charges (as per the pro-formas included at the end of this section of the project specifications) to the Engineer at the same time as the surety (which has to be submitted in terms of the GCC 2015) so that it can be included in the final Contract document."

The tendered rate under sub item 001.01.01 shall represent that part of the contractor's fixed charges for the completion of all projects within the three year period and shall accordingly be compensated on a pro-rated basis for each individual project/site.. No fixed charges shall be paid to the contractor if his services are not required within the three year period.

Change the following:

Item	Description	Unit
B001.01.02	Time Related Charge	Month/per project

The unit of measurements shall be in months per project over the three year period.

PART C3: Scope of Work

The tendered rates under sub item 001.01.02 shall represent that part of the contractor's preliminary and general charges which is related to the time required for the completion of each project within the three-year period. The number of months payable shall only be the number of months the contractor shall be employed on a project. No time related charges shall be paid to the contractor if his services are not required within the three-year period. The monthly rate will be for each project done per month.

B001.01.03 The Contractor's establishment on site

ADD THE FOLLOWING:

Item	Description	Unit
B001.01.03	The Contractor's establishment on site	Number

The unit of measurement shall be the number of occurrences/projects on which the Contractor is obligated to establish a site camp.

The Tendered rates shall include full compensation for the establishment of a site camp and the charges incurred as per clause 29 of section 001 in the standard specifications for municipal civil engineering works, third edition 2005.

B001.04: Compliance with the Occupational Health and Safety Act and applicable regulations

Change the following:

Item	Description	Unit
B001.04.01	Provision of a Health and Safety plan	Lump sum/per project

The lump sum tendered per project shall include full compensation for the provision and maintenance of a health and safety plan, risk assessment, permit applications and notifications as called for in the act and regulations for both the main contractor and subcontractors.

Eighty per cent (80%) of the amount will be paid when an approved health and safety plan has been received by the client. A further 10% will be paid when the value of all work done, excluding escalation, exceeds one-half of the Tender Price, and the remaining 10% will be payable when the completion certificate has been issued.

The payment for provision of a Health and Safety plan will be made per project."

B001.04.02: Provision of a Health and Safety file

Change the following:

Item	Description	Unit
B001.04.02	Provision of a Health and Safety file	Lump sum/per project

The lump sum tendered per project shall include full compensation for the provision and maintenance of a health and safety file on site containing all the documentation required in terms of the act and applicable regulations for both the main contractor and subcontractors.

The payment will be made in four equal instalments when the value of all permanent work done, excluding escalation, reaches 25%, 50% and 75% of the Tender Price. The final payment will be made when a consolidated health and safety file is handed to the client on completion of the works.

The payment for provision of a Health and Safety file will be made per project.”

B001.04.03: Provision of a construction supervisor

Change the following:

Item	Description	Unit
B001.04.03	Provision of a construction supervisor	per month/per project

The lump sum tendered shall include full compensation for the provision of one or more competent and experienced construction supervisors per project as may be necessary for the duration of the construction work.

The payment for a construction supervisor will be made per month per project.”

B001.04.04: Provision of a safety officer (full-time)

Change the following:

Item	Description	Unit
B001.04.04	Provision of a safety officer (full-time)	per month/per project

The lump sum tendered shall include full compensation for the provision of a competent and experienced safety officer, full-time per project, for the duration of the construction work.

The payment for a full-time safety officer will be made per month per project.”

B001.04.08 Implementation of Health and Safety Plan

Add the following:

Item	Description	Unit
B001.04.08.01	Implementation of OHS Act	Lump sum/per project

The tendered lump sum shall include **health and safety training, provision of personal protective clothing and equipment, provision of safety fences, signs and barricades,** and other obligations not specifically covered here for the main contract and subcontractors appointed on this contract.

Price the item to allow for all labourers on site to wear the necessary protective clothing including an orange overall. All labourers must also wear a bright reflected jacket over their overall. On the front of the jacket (coat) the “City of Tshwane” name must appear with the CoT logo. On the back the letters “EPWP” must appear. The contractor needs to provide personnel with an identification card in order to ensure that everybody on site can be identified at all times. All vehicles and plant will have stickers on, that indicates that the contractor is appointed by CoT to execute the work.

The payment will be made pro-rata related to the time.”

Add the following:

Item	Description	Unit
B001.04.08.02	Implementation of COVID regulations	Lump sum/per project

The tendered lump sum shall include for the supply and provision of all training, screening, facilities and equipment and other obligations not specifically covered here for the main contract and subcontractors appointed on this contract that is necessary to comply with COVID regulations.

The payment will be made pro-rata related to the time.”

B001.05 Community Liaison Officer

Change the following:

Item	Description	Unit
B001.05	Community Liaison Officer	per month/per project

The tendered rate shall include full compensation for the appointment of a community liaison officer for the duration of the construction works per project allocated to the contractor.

Payments shall be made in monthly instalments for the number of months each community liaison officer is employed. The rate will be the City of Tshwane’s minimum T1-level monthly notch-1, and adjusted each financial year by an amount equal to the general increase of the City of Tshwane as published/gazetted in, and include a 10% mark-up fee for the contractor.

ADD THE FOLLOWING ITEMS:

B001.06 Appointment of Local Security Company

(Safeguarding the Contractor’s construction Camp, the Client, the Contractor and Engineer or his representatives and any other visitors)

Add the following:

Item	Description	Unit
B001.06	Appointment of Local Security Company	per month / per site

(Safeguarding the Contractor's construction Camp, the Client, the Contractor and Engineer or his representatives and any other visitors)

The rate tendered shall include full compensation for the appointment of a Local Security Company for the duration of each project.

Payments shall be made per month per site, upon proof of payment to the Local Security Company. In the event of the construction period exceeding the tendered completion period and no extension of time been granted, the Contractor shall still pay the Local Security Company the specified remuneration, but shall not be re-imbursed therefore. The rate will make provision for security at each project site.

The rate tendered shall include full compensation for sufficient security services as specified, as well as for 24-hour armed response security service in addition to the normal security arrangements provided by the Contractor, to patrol the whole area of construction work as described in the payment items. This security service shall be in place prior to the demolition/taking down of any existing fencing and shall remain in place until completion of all work on the premises as indicated.

This security service shall also include if applicable, for the guarded protection of all Contractors' gates in temporary fences to control vehicle and personnel movement.

The security services to be provided will include record keeping of all entrance and exit vehicles and people at each point of entrance or exit to the site for the full duration of the Contract.

The rate tendered shall also include full compensation for the following requirements:

No labourers will be allowed to wander in the work area after hours.

No labourers will be allowed to sleep alongside the work area, only in a designated and fenced camp with security guards with the written approval of the Engineer.

All labourers working in these areas must be clearly identifiable by a unique overall colour as well as an employment tag.

PART C3: Scope of Work

Should it be required that the Contractor must work after hours or weekends, the relevant community security representative must be contacted and informed thereof prior to any work being done.

Communication and collaboration between the Contractor and the community will be carried out on a constant basis to help improve the security.

A security plan must be compiled for the Engineer's approval and recommendations before any Construction commences.

The sums will be paid to the Contractor in equal monthly amounts based on the programmed duration for the works on the different premises.

The Contractor shall note that payment for any normal security arrangements required in terms of the Contract shall not be included in this item, but will be deemed to be included in all other rates and prices.

B001.07 Provision of construction and materials manager

Add the following:

Item	Description	Unit
B001.07	Provision of construction and materials manager	per month/project

The unit of measurement shall be per month per project for the provision of competent and experienced construction and materials manager as may be necessary for the duration of construction work.

The Contractor will be required to make use of subcontractors execute dedicated portions of the work. The Contractor will be responsible for all work executed on his behalf or under his supervision and/or management by all subcontractors. Only approved tendered rates will apply for the work executed, it is the responsibility of the Contractor to agree these rates with the local subcontractor.

The contractor is responsible for all work executed on his behalf or under his supervision and/or management by all subcontractors.

The appointment of subcontractors must be approved by the Engineer for each project.

PART C3: Scope of Work

NOTE: The Engineer shall not negotiate directly with subcontractors and all problems relating to payment, programming, workmanship, etc., are matters between the Contractor and his subcontractors. “

Item	Description	Unit
B001.09	Training	
B001.09.01	Training of targeted labourers	Prov sum
B001.09.02	Charges required by the Contractor on sub-item B001.09.01 above The provisional sum allowed for in item B001.09.01 will be used for reimbursing the Contractor for the actual invoiced charges paid by him to approved training organisations appointed by the Contractor. Where the unit of measurement for sub item B001.09.02 is specified as a percentage, the Contractor shall be paid the respective percentage (as stated by the Contractor in his tender) of the amount certified by the Engineer for payment under the related sub item B001.09.01. <ul style="list-style-type: none"> The contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety. The contractor shall be responsible for scheduling the training of workers and shall take all reasonable steps to ensure that each beneficiary is provided with a minimum of six (6) days of formal training if he/she is employed for 3 months or less and a minimum of ten (10) days if he / she is employed for 4 months or more. 	Percentage (%)

PART C3: Scope of Work

Item	Description	Unit
	<ul style="list-style-type: none"> • The contractors shall do nothing to dissuade targeted labour from participating in the abovementioned training programmes. An allowance equal to 100% of the task rate or daily rate shall be paid by the contractor to workers who attend formal training, in terms of 1.3.4 above. • Proof of compliance with the requirements of 1.3.2 to 1.3.6 must be provided by the Contractor to the Employer prior to submission of the final payment certificate. • A minimum of 10 workers must be trained during the contract project period. <p>All labourers on site must wear the necessary protective clothing including an orange overall. All labourers must also wear a bright reflected jacket over their overall. On the front of the jacket (coat) the “City of Tshwane” name must appear with the CoT logo. On the back the letters “EPWP” must appear with the CoT logo.</p>	

SECTION 002: ENGINEER'S ACCOMMODATION

B 02: OFFICE AND LABORATORY ACCOMMODATION

Change the following:

Item	Description	Unit
B002.01.01	Services for offices	per month/project

The unit of measurement shall be per month per project. The payment for services of offices will be made per month per project."

Change the following:

Item	Description	Unit
B002.02	Maintenance of area around offices	per month/project

The unit of measurement shall be per month per project. The payment for Maintenance of area around offices will be made per month per project."

B 02.02: Offices

One office, which shall also serve as conference room, shall be constructed at the construction site for the exclusive use of the Engineer.

The office shall have floor dimensions of at least 4m x 8m. Window area shall be at least 15% of the total floor area. All windows shall be fitted with gauze and blinds.

The following fittings, furniture and equipment conforming to the specifications in this clause shall be supplied in the office:

- a) One (1) office desk, 0,73m high, with a surface area of at least 1,5m
- b) Two (2) steel cupboards, 1,8m high x 900mm wide x 450mm deep with a lock and two keys each.
- c) One (1) 4-drawer filing cabinet with locking facilities.
- d) One air-conditioning unit, capable of both heating and cooling the air in the office, to an acceptable standard, which must be on a working condition at all times.
- e) 2 x 1,8m double 80 Watt fluorescent type lights.
- f) One (1) conference table for 7 people capable of holding size A0 drawings.

PART C3: Scope of Work

- g) Eight (8) padded office chairs.
- h) Two (2) waste paper baskets.
- i) One (1) suitable mounted rain gauge, type and position approved by the Engineer.
- j) Pin-boards with sufficient space to mount at least 3-A0 size drawings.
- k) All windows must have Venetian type blinds.
- l) 3 x 15A plug units. Earth leakage shall be provided.

B 02.03: Laboratories

ADD THE FOLLOWING:

"All testing shall be carried out by an approved laboratory engaged by the Contractor at his own cost. These costs will be deemed to be included in the rates tendered for the items of work requiring testing. These tests will be regarded as satisfying the requirements both of process control and acceptance control as specified in section 901."

B 02.04: Carports

ADD THE FOLLOWING:

"Three carports need be constructed for the exclusive use of the Engineer. The carports shall be of a size big enough to fully enclose a double cab bakkie – current shape with 1.0m to spare all round. The carports shall be closed in on three sides with 90% shade netting in order to protect vehicles from the weather."

"

B 02.07: Ablution units

ADD THE FOLLOWING:

"The Contractor shall erect two ablution units for use by the Engineer, his personnel and visitors in accordance with the details shown on the drawings or as approved by the Engineer. One unit shall be clearly marked as being available for males and one as being available for females."

B 03: HOUSING

ADD THE FOLLOWING:

"Housing for the Engineer's staff need not be provided."

B 04: SERVICES

B 04.02: Water, electricity, gas and telephone

ADD THE FOLLOWING:

Potable water at normal household pressure and electric power supply is required for the duration of the contract 24 hours per day.

Telephone and data facilities:

Normal landline must be provided for the use of both the Engineer and the Contractor. In addition a separate data line must be provided (ISDN/ADSL), Telkom Simple or similar. If a normal data line and landline cannot be provided, an acceptable alternative must be provided. There must be a permanent dedicated e-mail address.

SERIES 1: ANCILLARY WORKS

SECTION 101: SITE CLEARING AND GRUBBING

B 06: THE CUTTING OF TREES

B 06.03: Preservation of trees

ADD THE FOLLOWING:

"The penalty in respect of damage to, or unauthorized removal of trees, irrespective of type or size, that have been marked or indicated by the Engineer to be preserved, will be R5 000,00 per tree."

SERIES 2: EARTHWORKS

SECTION 201: GENERAL

B 02 DEFINITIONS

B 02(c)(i) Hand excavations

ADD THE FOLLOWING:

"The classification of excavations as hand excavations will be done by the Engineer on site."

B 06 SURPLUS MATERIAL

Spoil sites will not be provided by the Employer.

B 07 STOCKPILING OF MATERIALS

ADD THE FOLLOWING AT THE END OF THE FIRST PARAGRAPH:

"All stockpile sites for temporary stockpiling of material will be indicated by the Engineer on site when necessary. The temporary stockpiling of materials will only be paid for when carried out on the written instruction of the Engineer."

SECTION 202: TRENCHING

B16: Measurements for certificates

Standard Specifications:

B202.03: Classification of Materials Excavated

Add the following:

"All excavations in soft and intermediate material will be measured and paid for under item 202.01 as soft material."

SERIES 3: SEWERS

SECTION 301: MATERIALS

B04 ACCESSORIES

ADD THE FOLLOWING NEW CLAUSE:

"B04.07 Supply and install only the cover portion of lamp hole cover and frame

Where pipes have to be replaced after open excavation or where reticulation pipes have to be laid according to the Engineer's instruction, new sewer pipe lines shall be constructed using high density polyethylene (HDPE) pipes as specified in the relevant schedules in Series B815."

SECTION 302: CONSTRUCTION

B14 MEASUREMENT AND PAYMENT

ADD THE FOLLOWING ITEM:

ITEM	DESCRIPTION	UNIT
B302.23	<p>Supply and install lamp hole covers and frames for rodding eyes</p> <p>The unit of measurement shall be the number of each cover and frame installed.</p> <p>The tendered rates shall include full compensation for supplying and installing the covers and frames and for the cost of all labour, equipment and appurtenant materials required to carry out the work."</p>	number

SERIES 5: DRAINAGE AND EROSION PROTECTION

SECTION 503: KERBING AND CHANNELING

B 08 MEASUREMENT AND PAYMENT

ADD THE FOLLOWING NEW ITEM:

ITEM	DESCRIPTION	UNIT
503.01 (SC/LI).	Concrete kerbing .01 to match existing kerbing The tendered rate shall include for everything described under Section 503.01. Only hand excavation and hand operated equipment will be allowed for construction. Concrete will be mixed, placed and levelled by hand."	metre

SERIES 8: SPECIFIC WORKS

ADD THE FOLLOWING:

SECTION B810: CLEANING OF SEWERS AND REMOVAL OF BLOCKAGES

B01 –DEFINITIONS

2.01 - Removal of Blockages

A blockage will have to be removed in a section between 2 manholes if it is difficult or impossible to carry out other operations such as cleaning, inspection or rehabilitation of sewers due to damming up in manholes. The blockage will typically be removed with sewer rods and augers. Removal of blockages entails restoring the sewer to a fair operational state and does not imply cleaning of the pipes.

2.02 - Cleaning of Sewers

Removal of all roots, flush to the inner pipe surface, sand, silt etc. (all causes) from partially blocked pipes to increase capacity using the specified cleaning equipment and in the process restoring the pipe to nearly the hydraulic capacity of a similar new pipe. (Provided the pipe is in good structural condition).

NB: The pipe may not be damaged in any way by the cleaning process.

B02 - CLEANING METHODS: GENERAL

THE CHOICE OF CLEANING METHOD FOR DIFFERENT CIRCUMSTANCES WILL HAVE TO BE APPROVED BY THE CLIENT/ENGINEER.

All cleaning operations can be carried out working upstream or downstream according to the Contractor's preference. Debris, roots etcetera which may cause a blockage further downstream must however be caught and removed at the first convenient manhole. The Contractor will be held responsible for the immediate removal of any blockage, failing which

any costs incurred by the Council department teams in removing the blockage / repairing the damage will be recovered from the Contractor.

B03 - DISPOSAL OF MATERIAL / SEWERAGE

All materials from drain cleaning / unblocking must be dumped at a site as supplied by the Contractor and to the acceptance of the Engineer. This approved site as well as any transportation method shall be in compliance with the relevant regulations. The Contractor shall indicate the sites he proposes to use in writing to the Engineer.

B04 - REMOVAL OF BLOCKAGES

Blockages can only be removed using conventional sewer cleaning equipment (sewer drain rods, ratchet and augers) or with methods approved by the Engineer.

B05 - SUGGESTED CLEANING METHODS

B05.01 – Dragging

All cleaning will be performed by using a pair of mechanically operated winches, with a lifting strength of at least 5 Tons each with at least 200m of 8mm wire cable plus a manhole roller with the strength to hold the cable near to the Central Axis of the sewer line, so as not to damage the pipework.

The full range of equipment to ensure the cleaning of sewer line ranging in diameter 100mm to 600mm, both inclusive and the cleaning procedure shall be as follows:

- a The dragging of a steel bucket, with a rear section that has the ability to be opened and closed to allow excessive debris to be released. This procedure is continued until no debris is removed from pipe.
- b The dragging of a porcupine consisting of stines made of at least 8mm wire cable through the pipeline. This procedure is continued until no debris is removed.
- c The dragging of a double wire brush through the pipeline until no debris is removed.
- d The dragging of a double squeegee / rubber plunger until finally clean.

B05.02 - Root Augers and Chain Flailing

Steel rods with a root auger, as close as possible in size to the diameter of the pipes being cleaned, is pushed into the pipe in a corkscrew motion breaking away the worst root congestion. After the root auger has reached the next manhole, it is removed and a root cutter of diameter as close as possible to the pipe diameter is attached as well as a power rodding machine. Roots are then removed in the backwards direction. Roots must be removed flush to the inner surface of the pipe. After satisfactory removal of roots, the rods are again inserted into the pipe up to the next manhole where a wire brush is attached for the next pass followed by a plunger.

Alternative methods such as using chain-flailing to remove roots may only be used with the Engineer's permission and provided pipes are not damaged by the cleaning method. If the Tenderer intends to use alternative methods he should clearly indicate so on the form Alterations by Tenderers and provide specifications for the equipment he intends using.

B05.03 - Water Jetting

In general, high-pressure water jet machines will typically be used in the following instance:

As a post - CCTV inspection cleaning action. The jetting then may be done at relative low pressure, $\pm 80 - 100$ bar, in order to remove fat or debris or at high pressure ± 450 bar in order to remove roots. The last mentioned action will only be allowed if the Engineer is satisfied that the pipes are in sound structural condition and that no damage should result from the cleaning action. If, however, damage does occur during the operation, the Contractor must stop all cleaning action in that specific section of the pipe pending further instructions by the Engineer. When the Contractor is instructed to remove roots, they should be cut off flush against the side of the pipes.

The Contractor is responsible to supply water for use in the jetting machines whether this is done by hoses from fire hydrants or by water tankers. Water will not be supplied by the Council free of charge and the Contractor shall not be allowed to use household water from garden hoses etc. Road safety procedures must be adhered to at all times especially when crossing roads with water supply houses.

B06 - REPORTS AND QUALITY CONTROL

Unless the Engineer gives instructions to the contrary, all pipes must be inspected by CCTV camera within 1 week after cleaning. If this inspection shows the cleaning to have been ineffective, the pipe must be re-cleaned and re-inspected to the Engineer's satisfaction at the Contractor's cost. The Contractor will be responsible for all cost and organizing with regards to these inspections. For the sake of efficient cleaning operations, it is highly recommended that the (sub) Contractor have his own CCTV camera on site during the cleaning operation.

If the Engineer is satisfied that the cleaning process is generally successful on the first attempt, random inspections at places indicated by the Engineer will be allowed. All discretion in these instances will rest with the Engineer and he will be the sole arbiter. The sample size will be determined by the Engineer according to recognized statistical principles.

Statistical parameters: Normal distribution, probability must be 95% that any given inspection will determine that a specific pipe section has no severe cleaning faults).

GIS/CAD layout plan on which pipes actually cleaned / inspected are shown in buffered format and with the pipe number or a sequential follow number indicated shall be handed to the Engineer as part of the progress reporting at monthly site meetings. On these drawings, the amount of material removed in buckets should also be indicated. Alternatively, the cleaned pipes can be indicated in electronic format.

B09 - MEASUREMENT AND PAYMENT

Add the following pay items:

ITEM	DESCRIPTION	UNIT
B810.01 (.01 to .09)	Removal of sand, silt, roots, etc. (all causes) from sewer pipes using various rodding equipment for pipe diameter: The unit of measurement shall be the metre of each size of pipe cleaned and approved, measured centre to centre of adjacent manholes. The tendered rate shall include full compensation, inter alia for the use of equipment as specified, or any other related and approved equipment, to clean pipes of the specified internal	m

PART C3: Scope of Work

ITEM	DESCRIPTION	UNIT
	<p>diameter partially or completely blocked by an cause and the removal of such material, and transportation and dumping thereof at an approved site, for over pumping if necessary, for extra (over and above inspection as billed in item 811.02).</p> <p>CCTV inspections to provide proof of cleaning and any other related activity such as the filling in or reports, etc.</p>	
B810.02 (.01 to .09)	<p>Removal of isolated point blockages from sewer pipes using various rodding equipment for pipe diameter:</p> <p>The unit of measurement shall be the number of blockages cleared.</p> <p>The tendered rate shall include full compensation, inter alia for the use of equipment as specified, or any other related and approved equipment, to remove blockages in pipes of the specified internal diameter as specified.</p>	No
B810.04 (.01 to .10)	<p>Removal of sand, silt, roots, etc. (all causes) using high pressure water jetting equipment at +450Bar pressure for pipe diameter:</p> <p>The unit of measurement shall be the metre of each size of pipe cleaned and approved, measured centre to centre of adjacent manholes.</p> <p>The tendered rate shall include full compensation, inter alia for the use of equipment as specified, or any other related and approved equipment, to remove sand, silt, roots etc. in pipes of the specified internal diameter as specified.</p>	m
B810.05 (.01 to .10)	<p>Removal of silt, fat, etc. (all causes) using combination of vacuum jetting methods apart from high pressure equipment for sewer pipes (Vactor or similar) for pipe diameter:</p>	m

PART C3: Scope of Work

ITEM	DESCRIPTION	UNIT
	<p>The unit of measurement shall be the metre of each size of pipe cleaned and approved, measured centre to centre of adjacent manholes.</p> <p>The tendered rate shall include full compensation, inter alia for the use of equipment as specified, or any other related and approved equipment, to remove sand, silt, roots etc. in pipes of the specified internal diameter as specified.</p>	
B810.06	<p>Combination truck with a storage size of 10 kl or better, complete with high pressure washing and vacuum suction facility</p> <p>The unit of measurement shall be the time taken to remove blockage.</p> <p>The tendered rate shall include full compensation for provision of a combination vacuum and jetting truck and operators. The tank shall have the following minimum specification: Tank capacity of 10Kl, jetting pump rate of 320-350l/min, vacuum pump suction rate of 1600-2—m³/hr, with control arm/boom mounted to truck.</p>	Day
B810.06	<p>Water tanker, 10 kl</p> <p>The unit of measurement shall be the time taken to utilise tanker for various operations.</p> <p>The tendered rate shall include full compensation, inter alia for the use of equipment as specified, or any other related and approved equipment, for various construction operations requiring supply or provision of water.</p>	Day
B811.01 (.01 to .09)	<p>Closed circuit pan and rotate CCTV inspection of sewers for pipe diameter:</p>	m

PART C3: Scope of Work

ITEM	DESCRIPTION	UNIT
	<p>The unit of measurement shall be the metre of each size of pipe inspected, measured centre to centre of adjacent manholes.</p> <p>The tendered rate shall include full compensation for a long-range crawler camera capable of high resolution laser profiling and acoustic sensor technology, offering both tethered and untethered configuration, allowing full control via. steering, pan and tilt CCTV.</p>	
B811.04	<p>Extra over item B811.01 Blocking of sewers before inspection for pipe diameter:</p> <p>The unit of measurement shall be the number of sewers blocked to facilitate inspection or repair.</p> <p>The tendered rate shall include full compensation for the supply and installation of inflatable or mechanical plugs for the various diameter categories indicated capable of withstanding back/test pressures up to 5bar.</p>	No.

ADD THE FOLLOWING:

SECTION B811: CLOSED-CIRCUIT TELEVISION CAMERA, INSPECTIONS OF SEWERS

B01: SCOPE OF WORK

Five different types of CCTV related operations are envisaged in these specifications:

“Normal” CCTV inspections on existing sewer pipes ranging in size from 100mm upwards, with pipe material being usually clay pipe for pipe sizes up to 300mm, and reinforced concrete for the rest. “Normal” inspections can also be done on recently cleaned sewers. Formal reports are required.

PART C3: Scope of Work

CCTV inspections done on “difficult” network sewers where normal cameras cannot pass even after one or two cleaning attempts. Such inspections would call for alternative smaller than “normal” cameras. These cameras can be still tractorized or can be push/pull type cameras with some sort of distancing device (sleigh, brushes, packing). Formal reports are required.

Where “special” inspections are not able to complete inspections from manhole to manhole and where a lack of sufficient data or lateral positions from as-built plans exist, specialist inspections with the aim of locating laterals will be called for. The contractor can make use of specialist radio detection equipment, ground-penetrating radar or any other suitable and effective means. Formal reports are required.

Where outfall sewers are inspected, inspections will be done using a combination CCTV, laser and sonar unit, typically mounted on a “surfboard”

Where existing sewers have already been CCTV inspected and sufficient material exist (videos, reports, plans) to positively identify the pipe and incidents, the Contractor can be asked to generate reports from existing material for inclusion into the Tshwane CCTV database, using proprietary software such as Picview, supplied by Pipe Inspections Cameras & Systems. Formal reports are required.

Simplified CCTV inspections done directly by the rehabilitation contractor as part of the rehabilitation or pipe bursting process. Such inspections will also form part of quality control by the rehabilitation contractor. Typical applications is after welding and bead removal, after pipe bursting, before and after liner installation etc. (but not constituting formal post rehabilitation inspection) The contractor is required to have a camera available on site for his own use. Such inspections are to be spot-checked by the Client’s representatives. Formal reports are not called for but the Client’s representatives are to be informed in certain instances, as specified elsewhere.

Post rehabilitation inspections: Formal reports are required for post rehabilitation inspections. In certain instances, CCTV inspections plus radar will be required.

B02 – DEFINITIONS

B02.01: Normal inspections

PART C3: Scope of Work

CCTV inspections done, as also specified elsewhere, using a tractorized camera fit for the purpose and having external dimensions, including the tractor, not exceeding 10.5cm wide, 57cm long and 10cm high with wheels for inspecting a 150mm diameter pipe fitted (10cm for 100mm pipe).

B03: SPECIFICATIONS FOR MAINLINE CCTV INSPECTIONS

B03.01: INSPECTION EQUIPMENT

The contractor must give full details on his available CCTV related equipment, and his compliance or otherwise with all relevant specifications.

B03.01.01 - Camera on tractor

- .01 Generally, the camera must be transported through the pipe on a tractor system, to allow for smooth transportation of the camera through the pipe. The tractor must be controllable at various speeds in forward and reverse and must be able to operate in pipes from 150mm upwards. The tractor speed must be displayed on the video at all times and should never exceed speeds as specified in B05.04.
- .02 The camera mounted on the tractor must be mounted in such a manner as to transport the camera within 10% of the centre of the pipe in the case of network inspections.
- .03 All inspections must be done with a pan-and-rotate camera. The pan-and-rotate camera must have the ability to execute "pre-programmed" commands for effective and efficient scanning of joints. The system must have the capability to download to the database, the cameras relevant viewing angles. This camera must be fully remote control including remote focus, iris and light control. The camera must pan and rotate to view all critical incidents and laterals.

B03.01.02 - Camera Vehicles

- .01 All CCTV inspection equipment shall be neatly compartmentalized and transported in suitable vehicles.
- .02 All vehicles must have the ability to determine their current location (x, y GPS position of the vehicle on site) in order to be able to verify the correct inspection manhole in conjunction with the GIS co-ordinates (preferably the measured co-ordination or, if not available, the approximate co-ordinates as captured on the GIS from as-built information).

B03.01.03 - Inspection Range

The Contractor shall ensure that the equipment used has a minimum range of inspection of 180m allowing for 2 manhole lengths.

B03.01.04 - Flow control equipment

The Contractor shall have at least a range of flow control equipment to be able to block pipe diameter from 100mm – 600mm diameter.

B03.01.05 – Recordings

- .01 As a minimum requirement, recordings on portable USB Hard drive medium shall be accepted – at least 1 Terabyte hard drives or bigger must be used for storage of data and provided to the client after each certificate as a deliverable.
- .02 The format of the DVD video file format must be approved by the Engineer.
- .03 Correct adjustments of the recording apparatus and its associated electronic equipment shall be demonstrated by a recording, when required by the Client's agents, of a colour test pattern showing colour definition and picture resolution for a minimum period of 30 seconds.

PART C3: Scope of Work

- .04 DVD's, where applicable as a recording medium, are to be labelled with the following information:

Council name

Contract number

DVD number

Suburb

Contractor's name

Date

Ownership of and copyright on the data will vest in the COT.

B03.01.06 - Road Safety Specification

- .01 The Inspection unit shall be provided with one amber-flashing beacon, which shall comply with and be operated in accordance with the Road Vehicle Lighting Regulations.
- .02 Road signs and cones shall be carried at all times and displayed in accordance with Safety Regulations.
- .03 Bright coloured overalls, fluorescent over jackets or belts be available on each unit at all times, sufficient in number and worn to provide safe working conditions in road reserves at all times of night and day for the maximum number of operatives at any given time.

B03.01.08 - Health and Sewer Safety Equipment

- .01 Oxygen deficiency and gas detector apparatus per unit, regularly serviced and operable.
- .02 Fresh air breathing apparatus – face mask and demand value, 10 minute compressed air supply.
- .03 Approved vertical lift full safety harness.
- .04 Personal equipment per operative:
- Safety helmet
- Safety boots

PART C3: Scope of Work

- Sewer wading boots
- Disposable protective gloves
- .05 Correct size First Aid Kit suitable for the number of operatives per unit.
- .06 Facilities for washing to include:
 - Soft soap
 - Disinfectant
 - Clean water
- .07 Radio Equipment and cellular phone for onsite communication.
- .08 Fire extinguisher.

B03.02 - LINEAR MEASUREMENT

- .01 The CCTV monitor display shall incorporate an automatically updated record in metres and tenths of metres of the camera location within the pipelines accurate to $\pm 1\%$ or 0.3m whichever is the greater.
- .02 The metre reading entered onto the display at the start of the survey must represent the actual distance from the accepted start of the length of sewer or pipeline. This then requires that the meter reading can be zeroed from the control console as well as the ability to enter any distance that may be required. The metreage shall start to register immediately the camera starts to move.
- .03 The Contractor shall ensure that precise location of defects or missing manholes can be made from the surface to a depth of at least 6m. **The Contractor will be held liable for any inaccuracies in linear measurement beyond the allowed tolerances resulting in extra excavation, delays etc.** The accuracies of linear measurement shall be checked by plotting laterals (as inspected) and laterals (as-built) on a thematic map as described in B04.04. In addition, the Contractor shall be required from time to time to double inspect at random, if the Client is not satisfied as to linear accuracy by comparison between inspections before cleaning with inspections after cleaning and inspections after rehabilitation.

In addition, if on any specific section of pipe to be rehabilitated, laterals marked out according to CCTV reports are not found within the tolerances specified, then the

CCTV contractor will be asked to re-inspect at his cost, with radiosonde attached to the camera and to mark the position of laterals on the surface.

B03.03 - SLOPE MEASUREMENT

- .01 The camera system must be capable of measuring the slope of the pipe being inspected. The instantaneous angle must be filtered and is to be displayed on the screen and recorded on DVD. Raw inclinometer data is also to be stored for downloading to the database for the purpose of pipe profiling. The camera system must be capable of down loading to the database, no less than three readings per meter of pipe inspected.
- .02 Where available, as-built slopes on all sewerage pipes to be inspected will be provided to the contractor. The as-built slopes must be inputted into the database by the contractor in order to enhance the accuracy of the resultant pipeline profile.
- .03 The as-built line on the display must be surrounded by buffer zones in different colours or shades representing at least where critical backfalls would start (where a critical backfall represents an invert level deviation of more than 50% of the internal diameter).

In addition, start and end backfall incidents must be displayed on the pipeline profile and the “depth” of backfall (fall in invert level) must be computed and displayed.

The start and end of a critical backfall as determined by inclinometer, must be fed to the database and logged as an incident.

B03.04 - DATA DISPLAY (VIEWED ON THE MONITOR SCREEN AND DVD)

- .01 A data generator shall electronically generate and clearly display on the viewing monitor and video recording a continuous record of data in an alpha numeric form containing the following minimum information:

Automatic update of the camera’s metreage position in the pipeline from adjusted zero to relevant point.

Pipe dimensions

PART C3: Scope of Work

Pipeline, location, road name and manhole reference numbers.

Instantaneous angle and upstream/downstream direction of inspections.

- .02 The size and position of all text including meterage must be such that it can be adjusted or moved anywhere on the screen, so as not to interfere with the main subject of the picture.
- .03 The text generator must have a function that will remove and replace all data on screen so as to allow an unobstructed view of the entire screen when required.
- .04 The text generator shall have a real time clock and calendar on screen to indicate the progress on the survey.

B03.05 - QUALITY CONTROL

B03.05.01 - Picture Quality (Minimum Standards)

- .01 The electronic systems, television camera and monitor, shall provide a live picture of not less than 400 lines definition in real full colour and with no interference. The pictures shall be sufficiently sharp so that any fault can be seen clearly.
- .02 Pan-and-rotate cameras must have adjustable focus. The adjustment of focus and iris shall provide a focal range from 3mm to infinity with at least 62° angle of view lens. The distance along the pipe in focus from the initial point of observation shall be a minimum of twice the vertical height of the pipe.
- .03 The combination of object illumination and light sensitivity of the camera shall be adequate to obtain an effective picture of the structure of the sewers or pipelines to be surveyed without loss of contrast or flare out of picture or shadowing.
- .04 The camera system must provide lighting to illuminate the pipe sufficiently to allow for the detection of cracks and other structural defects in the pipe. The lighting must be of such a nature that the natural colour of the pipe is recorded (No black & white CCTV will be acceptable).

- .05 Suitable test devices shall be provided and be available throughout the contract to enable practical demonstration of the systems abilities.

For colour tube type cameras, the test card shall be the Marconi Regulation Chart No 1 or equivalent with a colour bar, clearly defined with no tinting to show the following:

White
Yellow
Cyan
Green
Magenta
Red
Blue
Black

The camera shall be positioned centrally and parallel to the test card at a distance where the full test card just fills the monitor screen. The card shall be illuminated evenly and uniformly without any reflection.

The electronic systems, television camera and monitor shall be of such quality as to enable the following to be achieved:

Shades of Grey

The grey scale shall show equal changes in brightness ranging from black to white with a minimum of five stages.

Linearity

A background grid shall show squares of equal size, without convergence / divergence over the whole of the picture. The centre circle should appear round and have the correct height / width relationship.

Resolution

PART C3: Scope of Work

For colour tube type cameras, the live picture shall be capable of registering a minimum of 250 lines and can be clearly visible with no interference. The resolution shall be checked with the monitor colour turned down.

Colour

For colour CCTV, with the monitor control adjusted for correct saturation, the six colours plus black and white shall be clearly resolved with the primary and complementary colours in order of decreasing luminance. The grey scale shall appear in contrasting shades of grey with no tint.

Colour Contrasting

For colour CCTV, to ensure the camera shall provide similar results when used with its own illumination source, the lighting shall be fixed in intensity prior to commencing the survey and the white balance set to the colour temperature emitted. In order to ensure colour constancy, ideally no variation in illumination shall take place during the survey.

The contractor shall include with his tenders submission, a DVD medium of at least 100m of sewer filmed with equipment intended for use on this contract. If the tender is accepted, these shall define the required standard of picture quality for the contract. Where the engineer rejects any survey pictures, the Contractor shall take remedial action to provide that the survey file is of an acceptable standard.

B03.05.02 - Reporting

.01 Inspection Standards

.01 All reporting shall be done according to the latest version of the Sewer Classification Manual as published by Sight Lines or concept CTMM Standardized Specifications for CCTV inspections, when available. An abridged version with photographs shall be within the operator's sight within all times.

.02 CCTV Operator Standards

PART C3: Scope of Work

All CCTV operators must be able to present certification on request that they have within the last year completed successfully a CCTV Operator Training / Revision Course.

.03 Reporting Accuracies

The Contractor shall maintain the following accuracies:

Header accuracy:	100%
Incident and grading accuracy:	90%

Operations are to be checked at random by a nominated person on the Contractors staff as to accuracy of reporting, graphs drawn up and presented to the Client at 3 monthly intervals.

.04 Maximum camera speeds

The maximum camera speeds wherefrom reporting is done shall be:

0,1 m/s for normal inspections on existing pipes 200mm in diameter and smaller.
0,15 m/s for the same but bigger than 200mm in diameter.
0,2 m/s for inspections on newly laid or newly replaced / rehabilitated pipe.

B03.05.03 - Quality Assurance Plan

.01 General

The Contractor must have a responsible person in his organisational setup in overall charge of the CCTV and cleaning operations. This person will have an overall quality control monitoring function as part of his duties.

The Contractor shall prepare a quality plan as a means of ensuring that product conforms to specified requirements. The Contractor shall define and document how the requirements for quality will be met.

The Contractor shall identify and plan for the processes, which directly affect quality and shall ensure that these processes are carried out under controlled conditions. Controlled conditions shall include the following:

Documented procedures, where the absence of such procedures could adversely affect quality.

Use of suitable equipment, and a suitable working environment.

Compliance with reference standards / codes, quality plans and / or documented procedures. Monitoring and control of suitable process parameters and product characteristics as detailed in this standard.

Suitable maintenance of equipment to ensure continuing process capability.

Records shall be maintained for qualified processes, equipment and personnel, as appropriate.

.02 Verification of the Quality Process

The Contractor shall establish and maintain documented procedures to verify that the specified quality requirements are met. The required verification and the records to be established, shall be detailed in the quality plan or documented procedures.

.03 Control of Inspection, Measuring and Test Equipment

PART C3: Scope of Work

The Contractor shall establish and maintain documented procedures to control, calibrate and maintain inspection, measuring and test equipment (including test software) used by the supplier to demonstrate the conformance of product to the specified requirements, inspection, measuring and test equipment shall be used in a manner which ensures that the measurement uncertainty is known and is consistent with the required measurement capability.

The Contractor shall

Identify all inspection, measuring and test equipment that can affect product quality, and calibrate and adjust them at prescribed intervals, or prior to use, against certified equipment having a known valid relationship to internationally or nationally recognised standards. Where no such standards exist, the basis used for calibration shall be documented.

Maintain calibration records for inspection, measuring and test equipment.

B04 - DATABASE SOFTWARE AND REQUIREMENTS

B04.01 - Software Specifications

The database front-end and management software currently used by the Client is PIC Data 2000. The software is Windows 2000 compatible. The database software currently used is Microsoft Access but the front-end is Oracle compatible. The database is capable of:

Importing of CCTV camera reports.

Critical data error detection and reporting

Filtering of data by criteria or dates.

Importation of pipe diameters, manhole numbers, pipe slopes and root theme.

Automatic generation of CCTV inspection job cards as well as cleaning or rehabilitation job cards.

Automatic video search from database.

Automatic report generation in several combination choices.

Job card history

A decision support module for future replacement rehabilitation.

Filtering and show the history of events on any pipeline in chronologic order.

PART C3: Scope of Work

The Employer will consider any other database proposal submitted by tenderers, provided that all the existing systems can be incorporated into the proposal at no extra cost to the Employer and that the new database is compatible with Picdata. Such proposals should be detailed on the provided "ALTERATIONS BY TENDERER" form and be supported by brochures and demonstrations in the form of electronic media at the time of tender. No later submissions will be entertained and the Contractor's experience in this field is of utmost importance.

B04.02 - Report Specifications

All inspections to be done according to COT Pipe Inspection and Sewer Classification Manual.

Manhole report must be categorised between the different sections of the manhole, like rings, steps, benching, cover frame, lid.

Manhole report consisting of:

Manhole number

Suburb

Street Name

Street Number

Stand Number

Manhole Type

Manhole cover GPS co-ordinates (x, y, z)

Manhole depth to base of pipe.

Manhole benching condition.

Manhole general condition.

CCTV inspection report consisting of:

Suburb

Street Name

Street Number

Stand Number (s)

Pipe Number

Pipe diameter

Inclinometer data

PART C3: Scope of Work

Defects reported and graded

Lateral identification (including orientation and erf number)

End inspection data

Digitized photographs representative of all major and critical faults in a section of pipeline.

Cleaning inspection report consisting of:

Suburbs

Street Name

Street Number

Stand Number (s)

Pipe Number

Pipe diameter

Method of cleaning

Cleaning distance

Pre or post CCTV cleaning

B04.03 - Decision Support Module

The decision support module must be accessible from the main database front-end directory. It must give rough guidance on:

If point repairs or replacement / rehabilitation is indicated.

Approximate cost of point repairs (if indicated and provided the pipe is afterwards in good serviceable condition – that point repairs are cost effective.

Approximate cost of replacement by pipe bursting (if replacement is indicated).

Approximate cost of replacement by soft liners (if replacement is indicated).

B04.04 - Thematic Maps

If required the contractor must produce thematic maps per suburb (see annexure for sample) showing

Type A (to be e-mailed in electronic format (.pdf or similar) when inspection on suburb is complete) along with results obtained from B04.03 in spreadsheet format.

Grading (total)

PART C3: Scope of Work

Grading (divided by inspection length)

Incidents (severe and up) as symbols

Pipes to be replaced.

Type B (to be e-mailed in electronic format (.pdf format or similar) along with certificate)

Work completed shown chronologically on the same plan (CCTV, cleaning)

Work not accessible.

The Contractor shall keep a copy of these maps in his operating room.

B04.05 - Additional information needed by Contractor

In the above regard, external database information will be supplied to the contractor.

At the start of the contract, the Contractor will be supplied with the GIS (ARCVIEW, .shp files) including all relevant information required for the execution of the works. As-built manhole depths, pipe slopes and diameter, the root/network theme etc. will be supplied.

B04.06 - Job cards and History of inspections

All inspections are to be done from job cards to be issued by the Contractor for his operators. The database front-end must include the facility to compile “history” of inspections (upstream / downstream), cleaning, re-inspections (upstream / downstream), rehabilitation/replacement, post –rehabilitation inspections. The database front-end must have the facility to display the history when a job card is issued and to prevent duplication of inspections (with override option). All job cards are to be issued by the Contractor (only the Client and his representative will have the final say on whether pipes are to be inspected, cleaned, rehabilitated / replaced or point repaired and will instruct the Contractor in this regard without obstructing the flow of work. Jobcards shall include (inter alia) Detail from GIS showing pipes plus pipe numbers to be inspected, Date, Operation, Operator, Pipe number, GIS length, Operation length and Upstream/Downstream (if applicable), Comments and Name of Person issuing job card. A summary of the History sorted per pipe number and including the above headings of the work certified shall accompany each certificate.

B04.07 - Inspections database backups

PART C3: Scope of Work

Once a month, along with a certificate, the Contractor must supply the complete merged database and DVD footage on a portable USB Hard drive medium. **At least 1 Terabyte hard drives or bigger must be used for storage of data and provided to the client after each certificate as a deliverable.**

B05 - LATERAL INSPECTIONS

B05.01 - Scope of Work

Inspections on laterals before replacement of main pipe.

When there is evidence of broken laterals, water infiltration from the lateral or root infiltration from the lateral while a mainline inspection is being done the first time, the Client should be advised who will then instruct the Contractor with regards to lateral inspections on a specific section.

Inspections on laterals to determine the connection position.

These inspections will be done with or without integrated radio detection equipment.

Inspections on laterals after replacement of the mainline.

This will be done for quality control.

B05.02 - Inspection Equipment used for previously impassable inspections

.01 Camera Equipment

The Contractor shall make use of a push-pull type camera (ELS) or similar with distancing device (sleigh, brushes, packing). The camera alone will have maximum dimensions of 70mm x 100mm long. The camera must be colour and can be fixed-focus forward looking. The flexible rod spool will have 100m capacity and the system should be able to negotiate 90 degree bends in 100mm private drains. On average, the system should be able to negotiate at least 50m in a 100mm house drain.

PART C3: Scope of Work

The camera control unit must be portable and equipped with an integrated video unit. Video recordings must be made.

.02 Flow control equipment

This will not normally be necessary provided the Contractor can make suitable arrangements with house owners but the equipment should be at hand to ensure a dry inspection.

B05.03 - Linear Measurement

A calibrated flexible rod system will be acceptable.

B05.04 - Data Display

.01 The data generator shall display at least the pipe number, suburb, street, street number and erf number.

B05.05 - Quality Control

- | | | |
|-----|------------------|------------------|
| .01 | Picture quality: | As for B03.05.01 |
| .02 | Reporting | As for B03.05.02 |

B05.06 - Database Software and requirements

.01 Reporting specifications

All reporting shall be done according to the Sewer Classification Manual. Reports should consist of:

Place identification as specified under B05.04

Defects reported and graded

Defect photographs digitally captured at least 1 per lateral.

End inspection data

Reports may be generated with PicView or similar.

B07 - GENERAL

B07.01 - Accuracy of data supplied

The existing GIS data was drawn in from available as-built plans approximately ten years ago. Deviations of sewers, construction of sewer extensions and other alterations etc. occurred in the intervening period and will not necessarily be included in the GIS project handed to the Contractor at the start of the contract. Council will not accept any liability for any additional costs incurred by the Contractor due to inaccuracy of information handed to the Contractor. Council maintenance teams will assist whenever possible in finding missing manholes, in clearing blockages, etc. The contractor will assign temporary pipe numbers / manhole numbers if GIS information proves incorrect in the field and provide sketches of the correct situations to the Client.

B07.02 - Sequence of Inspections

The sequence of inspections will be at the Contractor's discretion. The Contractor should not however spread his operations too thin, should endeavour to concentrate in one area at a time and to finish one suburb before commencing inspections in the next. The Engineer will from time to time instruct the Contractor in this regard.

B07.03 - Access to properties

The Contractor's attention is drawn to legal requirements regarding access to private properties and should make all reasonable arrangements in this regard. Council is not responsible for any failure on the Contractor's part to gain access to properties. The Contractor will be expected to respect privacy and to make prior arrangements if necessary. The Contractor will be expected to always show official approved identification / letters of introduction before gaining access to private properties.

B07.04 - Inspection Procedure

All meterage measured by the camera must be from manhole centre to manhole centre starting at zero from start manhole. Each inspection must be registered from a manhole, i.e. The contractor may not inspect from one manhole through an intermediate manhole to another manhole without entering the intermediate manholes data and report.

B10 - MEASUREMENT AND PAYMENT

Add the following items:

ITEM		UNIT
B811.01 (.01 to .10)	<p>Closed-Circuit Pan-and-Rotate Television Inspection of sewer lines for pipe diameter:</p> <p>The unit of measurement shall be the metre of each size of pipe inspected, measured centre to centre of adjacent manholes or to the stopping point whichever is applicable.</p> <p>The tendered rate shall include full compensation for, inter alia, the Closed-Circuit television inspection lengths of sewer lines before cleaning, as specified, and for any other related activity such as manhole inspections, reporting etc.</p>	m
B811.03 .01 to .10	<p>CCTV Inspection of previously impassible sewer lines for pipe diameter:</p> <p>All diameters</p> <p>The unit of measurement shall be the metre of pipe inspected, measurement centre to centre of adjacent manholes or to the stopping point whichever is applicable.</p> <p>The tendered rate shall include full compensation for, inter alia, CCTV inspections of, sewer lines, as specified, and for any other related activity such as manhole inspections, processing inspection video tape through Picview, reporting etc.</p>	m

PART C3: Scope of Work

<p>B811.04 .01 to .03</p>	<p>Extra over item B811.03 for blocking sewer lines during CCTV survey</p> <p>Extra over item B811.03 Blocking of sewers before inspection for pipe diameter:</p> <p>.01 100-300mm .02 325-600mm .03 >600mm</p> <p>All diameters</p> <p>The unit of measurements shall be the number of times a pipe section is blocked off for purposes of cctv inspections.</p> <p>The tendered rates shall include full compensation for all aspects involved in the insertion, operation, monitoring and removal processes.</p>	<p>No</p>
<p>B811.05</p>	<p>Extra over item B811.01 and B811.03 for managing to complete inspection.</p> <p>The unit of measurement shall be the number of inspections completed from manhole to manhole.</p>	<p>No</p>
<p>B811.06</p>	<p>Lateral inspection by CCTV camera</p> <p>The unit of measurement shall be the metre of pipe inspected measured from the entry point.</p> <p>The tendered rate shall include full compensation for the inspections, irrespective of distance irrespective of the number of inspections done per day.</p>	<p>m</p>

PART C3: Scope of Work

B811.07	<p>Extra-over item B811.06 for locating connection</p> <p>The unit of measurement shall be the number of connections successfully located and which could not be located by conventional mainline inspections. Only one payment per connection located shall be made irrespective of different methods used.</p>	No
B811.08	<p>Locating connections by radio detection methods only:</p> <p>The unit of measurement shall be the number of connections successfully located and which could not be located by conventional mainline inspections. Only one payment per connection located shall be made irrespective of different methods used.</p>	No
B811.09	<p>Production of Thematic maps, type A as specified:</p> <p>The unit of measurement shall be the number of maps produced.</p> <p>The rate shall include full compensation for production of 1 A0 size print as specified.</p>	No
B811.10	<p>Production of Thematic maps, type B as specified:</p> <p>The unit of measurement shall be the number of maps produced.</p> <p>The rate shall include full compensation for production of 1 A0 size print as specified.</p>	No

SECTION B815: REHABILITATION / REPLACEMENT OF SEWERS BY TRENCHLESS METHODS

B815.01 - Scope of Specification

This specification shall cover the rehabilitation of sanitary sewers by Trenchless methods.

The following will be covered:

Replacement of Sewers by pipe bursting

Rehabilitation of Sewers by installing cured-in-place liners

Point repairs

B815.02 - Definitions

.01 Pipe Bursting

General

Pipe bursting is a process by which a bursting unit splits and/or fractures the existing pipe while simultaneously installing new high density polyethylene pipe (HDPE) of the same or larger size into the annulus created by the forward movement of the bursting tool. Pipe Bursting is an alternative to the replacing of underground infrastructure by open cutting. The most commonly used pipe bursting methods are pneumatic or percussive, hydraulic and static. The main difference between methods is the manner in which the force is generated and transferred to the host pipe during the bursting operation.

Pipes can be replaced by approximately the same size HDPE pipe or upsized – replaced by a bigger size. The success of the pipe bursting project is highly dependent on soil conditions, existing pipe material and condition. Burst length coupled with soil conditions, depth and new pipe diameter are critical factors in the planning of the pipe bursting process.

Dynamic (On-line) Pipe Bursting

Dynamic Pipe Bursting is done by creating an impact load in the pipe by applying a “hoop” stress into the pipe causing it to burst in tension. The Dynamic Bursting system consists of a 24,000 or 33,000 class Horizontal Directional Drill and a Pneumatic (Air Impactor TM) or Mechanical (Rotary Impactor) bursting tool. Both systems rely on

percussive hammering action to break out the old pipe in which the tool travels. Simultaneously the new replacement pipe is installed into the space created by the bursting tool. The Horizontal Directional Drill is used to drill from the surface down to and through the section(s) of pipe to be replaced then back up to the surface where the appropriate bursting tool is attached to the drill rod. The Horizontal Directional Drill then pulls the bursting tool into the pipe providing a constant tension pulling force and maintaining correct line and grade while the tool bursts the pipe. The technique is aimed at the replacement of gravity pipes as well as pressure pipes and is suitable for diameters of from 150mm to 300mm.

Pneumatic Pipe Bursting

Pneumatic Pipe Bursting is done by creating an impact load in the pipe by applying a “hoop” stress into the pipe causing it to burst in tension. This technique uses a pneumatic bursting head with a properly sized expander, and relies on percussive hammering action to break out the old pipe in which the tool travels. Simultaneously the new replacement pipe is installed into the space created by the pneumatic bursting head and expander. A winch cable is attached to the nose of the bursting head to maintain correct line and grade by providing constant pulling tension and enhancing the percussive force. Winching forces up to 20 tons are typical for this method. This technique is primarily aimed at the replacement of gravity pipes as well as pressure pipes, and has been used in diameters ranging from 100mm to 1400mm or larger.

Hydraulic Pipe Bursting

Rather than the pipe being burst from the transfer of a pulling or hammering radial force into the place of the pipe diameter, the bursting head diameter expands, fragmenting the pipe from the inside.

The bursting head is equipped with “petals” which open and close under hydraulic pressure. Using hydraulic cylinders, the bursting head first expands to crack the host pipe, then contracts to allow the winch to pull the pipe string forward, while tension is applied to the nose of the head using a winch cable to maintain directional stability. Hydraulic bursting is primarily used for on-line replacement of sewers and gravity pipelines 150mm to 500mm in diameter or larger.

Static Pipe Bursting

In Static Pipe Bursting a pulling force is applied to a tapered or blunt nosed bursting head through steel rods, chain or cable and new pipe is simply pulled behind the burst head through the old pipe. In this process the old pipe fails in tension created by the radial force applied to the pipe wall from by the bursting head. As the bursting head advances, the old pipe is fragmented and compressed into the adjacent soil and the new pipeline is simultaneously installed in the void. The static pipe bursting winch equipment is modelled after high-powered hydraulic jacks, mounted horizontally, or a high-tension drum type of winch. Pulling forces of up to 225 tons are typical for this method. This method is used in pipes 100mm to 1 000mm in diameter or larger.

.02 Slip lining

Slip lining basically entails pushing or pulling a new pipeline into the old one. HDPE pipe is the most common material used for the new pipe. The annulus may or may not be necessary to provide restraint or to increase ring stiffness.

.03 Liners

.01 Cured-in-place lining

A fabric tube impregnated with polyester or epoxy resin is inserted into the existing pipeline and inflated against the pipe wall and cured by hot water, steam or ultra-violet light.

.04 Point Repairs

Where structural faults in an existing pipe are localized it may be more economical to do point repairs rather than to replace / rehabilitate between manholes. A rule of thumb says that if less than 25% of the pipe length is affected point repairs are indicated. Even though minor faults in the pipe remain after point repairs it will be cost effective if the effective life span of the pipe is thereby substantially increased.

Various types of point repairs:

PART C3: Scope of Work

Excavating an existing pipe and replacing a short section with the same material. Excavation could also be done to eliminate an existing fault such as a backfall prior to rehabilitation by cured-in-place liners or replacement by pipe bursting.

Sleeve or patch repairs – using felt impregnated with polyester or epoxy. This can be a short length of cured-in-place liner using the same methods as applicable for cured-in-place liners or epoxy impregnated liners pressed against the pipe side using an inflatable packer while the sewer is live.

Resin injection

Positioning a packer across a joint, pressure testing and, if needed, injecting a sealing gel into the joint between the packers.

Fill-and-Drain systems

Pipe sections between manholes are isolated and filled from a manhole with an environmentally safe chemical solution such as sodium silicate for a specified period. The first solution is then drained and a second solution applied from the manhole. The second solution reacts with the first forming an impermeable gel at leakage points.

Robotic Repairs

Proprietary robots are used to:

- a) Inspect and remove protrusions, expose cracks etc. and
- b) Apply epoxy mortar to points to be sealed.

Mechanical Joint Sealing

Installing across a joint a metal band or clip faced with an elastomeric material which forms a seal with the inner surface of the pipe.

Pipe re-rounding

Re-rounding is not a stand-alone technique but is used to re-shape a deformed pipe prior to patch repair or relining. An expander unit is used to re-round the pipe and to install plastic or metal clip which holds the pipe fragments in position until a patch or liner is installed.

B815.03: Replacement of sewers by pipe bursting

.01 Scope of Work

While analysing the CCTV inspection database, the Engineer will identify replacement or upgrading work to be done. Pipe bursting will be the replacement method from manhole to manhole, but the Engineer will identify:

Where pipe bursting would be the preferred replacement method, an assessment of the degree of improvement in grade after the replacement will be made and, if necessary, the Contractor will be instructed to do an open excavation point repair (including lifting, bedding and backfilling the HDPE pipe all according to pipe laying specifications).

Where CIPP (cured-in-place pipe) lining would be the preferred replacement method: Where critical back falls or unacceptable faults such as broken pipe incidents are present in the existing line the Contractor will be instructed to do an open excavation point repair **before** commencing with installing the CIPP liner (including lifting the existing pipe if applicable, or replacement thereof if necessary, reconstruction of bedding and backfilling. all according to pipe laying specifications).

Where point repairs without replacement of the rest of the pipe section have to be done. Rates will be called for point repair by open excavation and for point repair by installing a 1.5m section of CIPP liner without excavation. The Contractor will be instructed as to which method to use. In general this will be determined by the nature of the fault to be repaired and other circumstances such as depth, cost and external structures present etc.

.02 Quality Assurance

The Contractor will be primarily responsible for quality assurance during the project. Likewise the Contractor will be responsible for any costs associated with corrective measures required to replace or repair items not meeting the quality standards specified by the Contracting Authority where such measures are necessary due to the Contractors fault.

.03 Submittals by the Contractor

The Contractor shall submit the following items for review and approval by the Contracting Authority in accordance with the Contract Documents. Approval of the submittals by the Contracting Authority shall be obtained prior to ordering pipe materials and/or the start of the pipe replacement process.

- .01 Certifications of training by the pipe bursting systems manufacturer stating that the operators have been fully trained in the use of the pipe bursting equipment by an authorized representative of the equipment manufacturer. Alternately the contractor may provide a letter of intent of training, to include course outline, from an authorized representative of the equipment manufacturer.
- .02 Certifications from the pipe manufacturer of training in the proper method for handling and installing the new pipe.
- .03 Certifications of training by the pipe fusion equipment manufacturers or a recognized pipe manufacturer that the operators have been fully trained in the use of the fusion equipment by an authorized representative of the equipment manufacturer.
- .04 Detailed construction procedures, and layout plans to include sequence of construction. A project schedule on MS Project shall be provided according to the Engineer's requirements and updated on a daily basis. The updated project schedule, a financial report and adjusted cash flow shall be presented to the Engineer once a month before the last day of the month.
- .05 Locations, sizes and construction methods for the service reconnection pits.
- .06 Methods of construction, reconnection and restoration of existing service laterals.
- .07 Detailed descriptions of the methods of modifying existing manholes.
- .08 Detailed procedures for the installation and bedding of the new pipe in the launching and receiving pits.

PART C3: Scope of Work

- .09 Sewer bypass plans, methods and list of equipment to be utilized.
- .10 Manufacturer's technical data showing complete information on material composition, physical properties and dimensions of the new pipe and fittings. Manufacturer's recommendations for transport, handling, storage, and repair of pipe and fittings shall be included.
- .011 Traffic control plans.
- .012 Contingency plans for the following potential conditions:
 - a. Unforeseen obstruction(s) causing burst stoppage, such as unanticipated change(s) in host pipe material, repair section(s), concrete encasement(s) or cradle(s), buried or abandoned manhole(s) or changes in direction not depicted on maps provided by the Contracting Authority.
 - b. Substantial surface heave occurs due to the depth of the existing pipe vs. the amount of upsizing.
 - c. Damage to existing service connections and to the replacement pipeline's structural integrity, and methods of repair.
 - d. Damage to other existing utilities.
 - e. Loss of and return to line and grade.

.04 Materials

- .01 The conventional sewer pipe replacement shall consist of Class PE100, PN6, SDR26 High Density Polyethylene Pipe (HDPE), complying with SANS 4427. Where, in the opinion of the Engineer, thicker walled HDPE pipes are required, or if Class PE100, PN6, SDR26 should not be available, a new rate will be negotiated.

The HDPE piping shall be supplied in the maximum possible lengths that diameter and handling constraints will permit in order to reduce the number of site welded joints. The handling of HDPE piping shall be in accordance with the manufacturer's standards and to the approval of the Engineer.

The Contractor shall install a new pipe sufficient in diameter to renew the sewer to the required flow capacity as specified by the Contracting Authority.

The Contractor shall install pipe made of virgin materials.

The new pipe shall be homogenous throughout and shall be free of visible cracks, holes, foreign material, blisters, or other deleterious faults.

Dimension Ratios: The wall thickness (SDR) of the new HDPE pipe shall conform to the tolerances specified by the Pipe Manufacturer and/or as approved by the Contracting Authority.

The material colour of the new pipe shall be black unless the pipe supplier can supply a different colour at the same price, in which case it should be white.

.02 Delivery Storage and Handling of Pipe and Materials

The Contractor shall transport, handle, and store pipe and fittings as recommended by manufacturer and in areas to the Engineer's approval. New pipe and fittings that are damaged before or during installation it shall be repaired or replaced, as recommended by the manufacturer or required by the Contracting Authority. The costs of such repair or replacement shall be borne by the Contractor and be accomplished prior to proceeding with the project. The Contractor shall deliver, store and handle other materials as required to prevent damage. Materials that are damaged or lost shall be repaired or replaced by the Contractor at no additional expense to the Contracting Authority.

.05 Plant and Equipment

Plant, equipment and tools to be used by the Contractor in the execution of his work shall be of good quality, sound design and modern manufacture. Plant and equipment must be suitable for its required purpose, must be of the proper type to ensure that the work is carried out efficiently and to the required standards and must be maintained in a state of efficiency to the satisfaction of the Engineer.

The Contractor shall ensure that adequate equipment is available for the entire pipe bursting and sliplining process. This shall include equipment for the maintenance of

PART C3: Scope of Work

sewer flows, pipe cleaning, CCTV inspection, point repairs, butt welding of HDPE pipes, pressure testing of long welded HDPE pipe, pipe bursting, sliplining of the existing sewer pipe and testing of the relined sewer. Where pipe bursting is required to accommodate an HDPE pipe of the same or bigger diameter as the original, the equipment shall be suitable for exerting the necessary forces without damage to the manholes. The bursting head shall create a big enough hole that an annulus of in the order of 20mm all-round the new pipe is created. In wet clayish collapsing soil the bursting length shall be reduced to suit the equipment's capability and in order to prevent stoppage. In general the equipment shall be able to operate in varying soil conditions.

.06 Locating Services

The Contracting Authority shall provide the Contractor with all available documents relating to the location of services adjacent to the pipe to be replaced. Prior to commencing work the Contractor shall verify the location of all adjacent services that might be damaged by the pipe bursting process. The minimum clearance from other utilities shall be approximately 0,65m. The Contracting Authority may at its discretion reduce the minimum clearance.

The Contractor shall, when ordered to do so by the Engineer, expose all interfering and crossing services by spot excavating at the intersecting point. The cost of exposing these services shall be paid in accordance with Contract bid items as defined elsewhere in the Contract.

Where utilities have to be protected this will be done in consultation with the Engineer and in accordance with the prescription of the relevant service provider.

The Contractor shall exercise due diligence in locating and avoiding known services. The Contractor will be held liable in the case of damage to known services.

.07 Sub-Surface Conditions

When Pipe Bursting is specified, the Contracting Authority will furnish the Contractor with all the necessary information listed in the Contract Documents.

PART C3: Scope of Work

The Contractor shall verify this information in the field. All additional subsurface investigations deemed necessary by the Contractor to complete the work shall be included in the Tender at no additional cost to the Contracting Authority. Copies of all reports and information obtained by the Contractor shall be provided to the Contracting Authority.

The minimum depth of cover over the installed pipe shall be ten times the amount of displacement from the diameter of the existing pipe or 0,93m from the top of the existing pipe, whichever is greater. The Contractor may, with the prior approval of the Contracting Authority reduce the minimum depth of cover.

Settlement or heaving of the ground surface during or after construction will not be allowed unless soil conditions are not favourable in which case the Engineer will give instruction to that effect. The Contractor is solely responsible for the costs for repairing any surface heaving where soil conditions were favourable.

.08 Locating Service Connections

Job cards will be issued to the Contractor containing all known information regarding the location of sewer connections. This information will come from the primary source of CCTV inspections. Where available, location of sewer connections from the secondary source of as-built records will also be given to the Contractor.

In order to expedite reconnection the Contractor shall locate all and expose all sewer service connections prior to pipe insertion. The Contractor shall exercise due diligence in excavating the existing pipe sufficiently to allow for uniform circumferential expansion of the existing pipe through the service connection pit. Excavation for service connections shall be assumed to have a width, measured across the centreline of the main pipe of 1m, measured at the bottom of the trench. The trench width of launch and exit pits shall still be that prescribed by the Standard Specifications for Municipal Civil Engineering Works 2005. The trench width is equal to o.d. plus 2*200mm.

Under certain circumstances the Engineer will allow a wider trench width (to be determined). This extra width will be paid under the item 202.03 "Excavations outside the normal trench width"

PART C3: Scope of Work

The max length and width of these excavations shall be as follows:

- For house connections:

Diameter	Number of connections	Trench width	Trench length
160mm	1	1m	1.5m
	2 to 3	1m	Up to 4.5m
200mm	1	1m	1.5m
	2 to 3	1m	Up to 4.5m
250mm	1	1.2m	1.5m
	2 to 3	1.2m	Up to 4.5m
280mm to 315mm	1	1.2m	1.5m
	2 to 3	1.2m	Up to 4.5m

- For retrieve pits:

Diameter	Trench width	Trench length
160mm	1m	2.4m
200mm	1m	2.4m
250mm	1m	2.4m
280mm	1m	2.4m
400mm	1m	2.8m
450mm	1m	3m
500mm	1m	3.2m

- For launch pits:

Depth increments	Diameter	Trench width	Trench length
Up to 1m	160-280mm	1m	3.75m
1 to 1.5m	160-280mm	1m	3.75m
1.5 to 2m	160-280mm	1m	4m
2 to 2.5m	160-280mm	1m	4.5m
2.5m to 3m	160-280mm	1m	5m
3 to 3.5m	160-280mm	1m	5.5m

PART C3: Scope of Work

Up to 1m	300-500mm	1m	3.75m
1 to 1.5m	300-500mm	1m	3.75m
1.5 to 2m	300-500mm	1m	4m
2 to 2.5m	300-500mm	1m	5m
2.5m to 3m	300-500mm	1m	6m
3 to 3.5m	300-500mm	1m	7m

The Contractor, in conjunction with the Engineer's Representative, must take all reasonable care in ensuring that the connections of all visible houses that obviously must connect to the relevant sewer have been found by using CCTV inspection data, as built information, finding cleaning eyes etc. Pipe bursting may not begin before all connections have been located and before the Engineer's Representative's approval. Upon commencement of the bursting process, pipe insertion shall be continuous and without interruption from one entry point to another, except as approved by the Engineer.

All excavations shall be done according to the relevant requirements of Section 804 and Section 202.

.09 Pipe Joining

.01 The HDPE pipe shall be joined by means of heat fusion using approved butt welding equipment in order to construct a leak proof joint and in accordance with the DVS 2207 and 2208 and the DIN 16963 Specification until SABS 1671 and 0268 becomes available. Threaded or solvent-cement joints and connections are not permitted. All equipment and procedures shall be used in strict compliance with the manufacturer's recommendations. The contractor shall provide certification and the welder / operator has successfully completed an approved training course and is qualified to weld the size and class of HDPE pipe to be used on this contract. The Contractor shall agree with the Engineer on the welding parameters to be used and test welds shall be carried out, tested and approved before the welding on Site can commence.

The Contractor shall provide a digital thermometer or similar for the accurate measurement of the weld temperatures. A welding record is required for each

section of the construction site and shall be handed over to the Engineer's representative on a daily basis.

The Contractor shall provide a certificate of calibration for the welding plant to be used. The certificate shall bear the model number of the welding machine to be used on site, the name and address of certifying agent, the date of the test and a statement as to the accuracy of the temperature and pressure gauges on the machine in question.

A certificate of calibration dated prior to the date on the letter of appointment is not acceptable.

No separate payment shall be made for the calibration of the welding plant as required in this Contract.

The butt-fused joint shall be true alignment and shall have uniform rollback beads resulting from the use of proper temperature and pressure. The joint shall be allowed adequate cooling time before removal of pressure. The fused joint shall be watertight and shall have tensile strength equal to or greater than that of the pipe.

Welding should preferably be done on a mandrill in order to avoid bead removal, but failing this the Contractor must use specialised bead removal equipment to remove 98% of the internal bead in 100 and 150mm pipes leaving only the bottom 1 or 2mm of bead and avoiding cutting into the welded pipe or leaving strings or half-removed bead. The Contractor is expected to pay special attention in his quality control system to welding and bead removal and to self-inspect with his own CCTV camera kept permanently available on site or at the site office. A video record of such inspections must be kept and handed over to the Engineer's representative. No separate payment shall be made for the use of the Contractor's CCTV inspection equipment in this instance. The Contractor shall hand over to the Engineer on a daily basis dated bundles of beads removed. All joints shall be subject to acceptance by the Contracting Authority prior to insertion.

PART C3: Scope of Work

The Contractor shall cut out and replace defective joints at no additional cost to the Contracting Authority. Any section of the pipe with a gash, blister, abrasion, nick, scar or other deleterious fault greater in depth than ten percent (10%) of the wall thickness (ASTM 585), shall not be used and must be removed from the site. However, a defective area of the pipe may be cut out and the joint fused in accordance with the procedures stated above. In addition, any section of the pipe having other defects such as concentrated ridges, discoloration, excessive spot roughness, pitting, variable wall thickness or any other defect of manufacturing or handling as determined by the Contracting Authority shall be discarded and not used.

Special precaution must be taken when transporting the HDPE pipe from the site where it is welded to the point where it is to be launched into the existing main. Pipes shall not be dragged along the ground as this will cause unacceptable scratches. The actual method of transport must be to the Engineer's approval. When the pipe is launched it shall be supported on roller cages.

.02 Terminal sections of pipe that are joined within the insertion or exit pit shall be connected with a mechanical coupling (e.g. a Kimberley Coupling or a full circle stainless repair clamp), Electro Fusion Couplings or a non-shear restraint coupling. All connections shall be in conformance with the manufacturer's installation procedures.

.03 If the pipe burst has to be terminated at a concrete surrounded road crossing a suitable made-up adaptor consisting of a Kimberley coupling / uPVC straight / uPVC to clay adaptor or similar shall be used.

.10 Bypassing of Flows

During execution of the work the Contractor shall be responsible for continuity of sanitary sewer service. The maximum time permitted for consumers to be without a sewerage service is six hours. Written notice, to the Engineer's approval, must be given to affected residents 24 hours before shutdown. In this notice the residents must be informed of the time period the service will be out of action and of the Contractors intended schedule for restoring the full service as well as his contingency plans.

The Contractor, at the sole discretion of the Engineer, may plug the main line sewer at an existing upstream Manhole. In general the Contractor will be allowed to burst low flowing network sewers without having special measures for diverting the flow in place provided the resulting sewage backup does not cause any overflows whatsoever.

However, to cater for the risk of stoppages occurring due to unforeseen circumstances, the Contractor must have a 24 hour standby service for maintaining the existing sewage flow **in any section of work covered by the Contract**. The Contractor shall be responsible for providing standby sewage tankers, sewage pumps or any other acceptable means to pump or remove sewage from the manholes where backup of the flow occurs as a result of the Contractor's operations and discharging it into manholes downstream from the work area without overloading the downstream flow at any stage. Emergency excavation in order to restart the pipe bursting operation and all repairs shall be carried out without delay. The Contractor shall be solely responsible for clean-up, repair, property damage costs and claims resulting from failure to ensure overflows do not occur.

If the bursting operation cannot feasibly be completed without the risk of overflows occurring, the Contractor shall bypass the main sewer flow around the pipe to be replaced and into adjacent sanitary sewers and shall submit a detailed plan in this regard to the Contracting Authority for approval.

No open channel flow on street level or the discharging of any sewage into the stormwater system will be allowed. Any pumping at night times, over weekends or on public holidays will have to be silenced by a suitable method.

Pumps and the bypass lines shall be of adequate capacity and size to handle all flows without sewage backup to private property. The Contractor shall be solely responsible for clean-up, repair, property damage costs and claims resulting from failure of the diversion system.

The Contractor shall submit specifications for all pumping equipment to the Contracting Authority for approval. A list of all backup equipment to be held in reserve on the job shall be provided. Barring unforeseen circumstances outside of the Contractor's control, the Contractor will not be allowed to pump overnight or over weekends.

All costs for plugging, temporary lines, sewerage tankers, by-pass pumping etc. required during installation of the pipe shall be subsidiary to the pipe reconstruction item and shall be paid under day works items but the Engineer reserves the right to disallow payment if in his opinion the use of such measures could have been avoided by the Contractor/ was necessary due to the Contractor's negligence.

.11 Cleaning of Sewers

For pipe bursting the Contractor should simply ensure that there are no foreign objects such as rocks, bricks or stones present in the line which could impact on the success of the pipe bursting operation by creating point loads on the newly installed HDPE pipe. Simple removal of these objects by wire brush or squeegee is all that is required and must be allowed for in the pipe bursting rate. Roots, Fat, sand etc. do not have to be removed.

This cleaning will be included in the pipe bursting rate.

.12 Pipe Bursting

.01 Equipment Details

The Tenderer shall include full details of the type of pipe cracking equipment he intends to use, the number of pipe bursting tools in his possession as well as of all related equipment, the serial numbers of the equipment and the age of the equipment. **Refer to Functional evaluation C3.3.7.**

.02 The Pipe Bursting Process

The HDPE pipe, made up of a series of shorter lengths welded together on Site, shall be attached to the pipe bursting tool and inserted into the existing pipe at a launch pit. The existing pipe is burst by a nose cone at least 20mm bigger in radius than the HDPE pipe in order to minimize friction forces on the HDPE

pipe and strong enough to withstand the forces generated by the pipe bursting process. The pipe bursting process is terminated at a receiving pit.

The pipe bursting tool shall be designed and manufactured to force its way through existing pipe materials by fragmenting the pipe and compressing the old pipe sections into the surrounding soil as it progresses. The bursting unit shall generate sufficient force to burst and compact the existing pipeline. See manufacturer's specifications for tool sizes recommended for various pipe diameters as well as parameters associated with tool sizes for allowable upsize percentages. The bursting action of the tool shall increase the external dimensions sufficiently to break the existing pipe and simultaneously expand the surrounding ground sufficiently to permit pulling the new pipe through the annular space with the minimum friction.

The bursting unit shall pull the polyethylene (PE) pipe with it as it moves forward from the insertion pit. The bursting head shall incorporate a shield / expander to prevent collapse of the hole ahead of the new pipe insertion. The pipe bursting unit shall be remotely controlled. Sectional replacement pipe shall be pushed as well as pulled behind the bursting head.

Should the nose cone get stuck, the equipment can be retrieved by using the point repair excavation procedures. If the obstruction proves to be localised, the point repair excavation can be altered to act as a launching pit to continue with the pipe bursting process. Payment for this additional work will be based on the tendered launching pit rate.

If the exposed obstruction proves to be extensive, the pipe bursting procedure will be terminated at the point repair excavation and open trench construction methods will have to be used.

The Engineer reserves the right to require a rescheduling of the construction programme to accommodate the unforeseen subsurface conditions. The Council also reserves the right to terminate the construction in the particular area.

PART C3: Scope of Work

The HDPE pipe must be continuous throughout the entire length of the sewer except for breaks at manholes where a change in grade, elevation or direction of the existing sewer pipe or the use of the manhole as a receiving station prevents the continuous insertion of the HDPE pipe.

The pipe shall also be continuous through the sections where portions of the existing sewer pipe have been removed, such as at launching or receiving trenches and at point repairs.

Where the pipe is not continuous through a manhole, the pipe ends shall only be built into the manhole walls once the pipe bursting has been completed, any stresses due to the pipe bursting operation have dissipated and the pipe has assumed its final position.

The finished pipe shall be as free as commercially practicable from visual defects such as foreign inclusions, pinholes and improper trimming of the inner welds. The pipe shall be totally watertight and free of any leakage into or from the pipe to the surrounding ground. Any defects attributable to the contractor which will affect, in the foreseeable future, the integrity or strength of the pipe or which could result in undue maintenance costs or which point to a deviation from specifications on the Contractor's part, shall be repaired at the Contractor's expense, in a manner mutually agreed to by the Engineer and the Contractor.

The pipe bursting process should start early enough in the day to ensure that the process, including temporary sewerage reconnections after the prescribed relaxation period, barring unforeseen circumstances, can be completed during normal working hours on the same day.

.03 Burst Lengths

The standard pipe burst shall be from manhole to manhole with a length generally not exceeding 100m (average 60m). If the Contractor does a pipe burst through a manhole (2sections) he does so at his own recognizances.

.04 General Guidelines for the use of Lubricants

Lubrication shall be used if in the opinion of Contractor such lubrication is necessary to ensure the successful completion of the job. The Contractor shall use a lubricant approved by the Contracting Authority.

When the new pipe is equal to or greater than twice the diameter of the existing pipe.

Burst length exceeds 90m.

Diameter of new pipe exceeds 300mm.

Host pipe is under groundwater.

Free flowing soil conditions.

As recommended by the pipe bursting equipment manufacturer.

Rocky non-compactable soil.

Use of Lubricants is included in the pipe bursting rate.

Specific to Pneumatic Pipe Bursting

The nose cone shall be fitted with a swivel attachment to reduce the twist transmission between the winch cable and the nosecone.

The winch shall be fitted with a direct load gauge to measure the winching load. At the end of each day's winching, the Contractor will provide the Engineer with copies of the forces recorded at the start of the pull and during the pull at increments of 20m winching distance.

A combination of pneumatic and hydraulic systems must be used by the Contractor when circumstances warrant it.

Specific to Static Pipe Bursting

The jacking forces shall be recorded during installations at the start of the pull and at 20m intervals as well as at any high points in between.

Due regard shall be taken of the manufacturer's recommendation as to yield stress of the HDPE pipe, as well as to the equipment manufacturer's recommendations as to the use of lubricants. The jacking forces applied should not cause stresses in the new pipe greater than the maximum stress on the linear part of the stress/strain curve for the particular size pipe installed.

Increases in pipe class or type to make up for equipment shortcomings will not be allowed.

Control of Workflow

The following typical maximum times per job are allowed:

Setting out, excavations – 2 weeks maximum

Pipe bursting – 1 working day maximum

Re-instatement of connections only – 2 days maximum

Re-instatement of manholes – 2 days maximum

All compaction – 2 days maximum

Surface re-instatement – 1 month maximum

The above activities may or may not overlap, as applicable. Only the main activities are listed. Periods stated are from start to finish of an activity. No excavation will be allowed open for more than 1 month. (Replacement complete, backfilling complete) Surface reinstatement must be complete within one further month. (Total project time per section shall not exceed two months.

The Contractor shall keep a record in his daily diary of the daily activities. The state of completion of the different sections shall be recorded on a spreadsheet giving full and immediate (daily) detail of the state of different jobs. In addition project management shall be done on a monthly basis on MS Project. The MS

PART C3: Scope of Work

Project shall constitute the full Bill of Quantities also broken down into individual jobs with rand value as a total resource cost. The Contractor shall supply on a monthly basis a progress report giving reasons for cashflow variations and adjusted cashflow.

.13 Launch and Exit Pits

The Contractor shall provide openings in the existing pipelines for use as launching and receiving pits for the pipe cracking operations.

Launch and exit pits should usually be located outside of heavy traffic areas, e.g. intersections, etc., and generally near manholes. Excavations for launch and exit pits shall be assumed to have a width equal to the lesser of actual and that prescribed by the Standard Specifications For Municipal Civil Engineering Works 2005 using the outside diameter of the new pipe as the base value in the calculation and a length the lesser of actual or 2 times the depth of the existing pipe for the launch pit and the lesser of the machine length or actual for the exit pit.

The pipe shall be bedded and installed within the launching and exit pits to correct line and grade. Bedding and backfill shall be as for new pipe construction. Re-connection to the manhole (built in with concrete/ mortar) and to the length installed by pipe bursting (by Kimberly coupling) shall only be done once any residual pipe bursting forces have dissipated. Instead of Kimberley couplings, electro fusion couplings may be used.

No reconnected short piece of pipe installed in a launch or exit pit may be closed up without having been inspected by the Engineer's representative. Inspected reconnected laterals on a section of pipe will have to be signed off in a site Inspection Book before backfilling may take place.

All excavations shall be done according to the relevant requirements of and Section 202, but payment for shoring will be made as part of normal excavation tariffs.

.14 Service Re-Connections

The installed pipe shall be allowed the manufacturer's recommended amount of time for cooling and relaxation due to tensile stressing prior to any reconnection of service lines.

A uPVC heavy duty saddle made up of a injection moulded y piece (160x100 if applicable) with the minimum at the bottom cut off to be still able to comfortably fit over the HDPE pipe, with the rubber rings still fitted plus a 3mm neoprene rubber seal PE60 PSA sponge glued to the saddle, shall be strapped to the HDPE pipe in a suitable position.

Two 19 mm straps shall be positioned on the inside of the socket ends. The straps shall be of grade 304 stainless steel with a 2B finish.

Instead of the saddle as described above, an electro fusion coupling or an "Inserta tee coupling" may be used.

Reconnections shall be made after pipe bursting is finished, and after the prescribed relaxation period, if necessary. At the clay pipe side a suitable uPVC / clay adaptor, shall be used. **If the existing drain is in very poor condition, the Contractor must inform the Engineer who will instruct him on whether to open up to a suitable place or to the latest cleaning eye.** The lateral shall be built to suit using heavy duty structured wall uPVC pipe from the clay pipe side towards the main pipe with the hole on the main pipe being the last item before installing the constructed lateral. The hole into the new main pipe shall be marked out using a saddle template. In shape the hole shall consist of an oval corresponding to the projection of the barrel onto the new HDPE pipe. The cut shall be made using an electric or pneumatically driven hole saw. The edges of the hole shall be smooth and free of burrs.

The installation shall be made to fit without unnecessary strain anywhere. Signs of strain will be treated as a fault. The reconnection must be watertight, especially at the saddle side. A pressure test on

selected installations will be required by the Engineer. Alternative methods for re-connecting must be approved by the Engineer.

Where existing concrete surround has to be removed before a reconnection can be made in the same place, the Contractor may re-connect at the closest possible point next to the existing connection.

Concrete surround shall only be utilised if unavoidable and on instruction of the Engineer.

The slope of the existing laterals toward the newly installed sewer main shall be maintained at the existing percentage of grade. For reconstructed laterals, a minimum slope of two percent (2%) or as specified by the Contracting Authority is required.

No reconnected lateral may be closed up without having been inspected by the Engineer's representative. Inspected reconnected laterals on a section of pipe will have to be signed off in a site Inspection Book before backfilling may take place.

If the works has to be left overnight or over the weekend temporary reconnections shall be made or the Contractor shall accommodate the normal sewerage runoff in some other manner approved by the Engineer. Sewerage build-up at the spot where the reconnection to the newly installed pipe is to be made will not be tolerated. The bedding will have to conform to normal pipe laying standards. The temporary reconnecting shall comprise installing the saddles as specified and making the holes in the HDPE pipe as specified and clamping flexible hoses to the saddle and to the clay pipe end. The installation shall follow the standard drawing connection types.

Some of the existing sewer connections are of the Type 2, and/or Type 3. (Refer to Figure 5 in Section 10). Redoing such connections to the newly laid sewers should be a fairly standard procedure. Some of the existing sewer connections are however of Type 1. (Refer to Figure 4 in Section 10). In most of these cases the whole connection is encased in concrete, resulting in a total collapse when it is exposed for reconnection. In these cases redoing of the

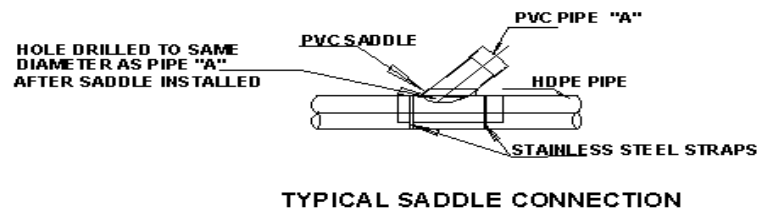
PART C3: Scope of Work

connection requires the following additional material and related work over and above the standard procedure:

110mm dia. pipe up to 1m length

110mm 90 deg. bend

110mm 45 deg. bend



PE60 PSA sponge must be glued inside the saddle over the full space between edges.

In cases where stand connections are connected IL to IL, the erf connection shall be elevated in liaison with the instructions of the Engineer.

Provision has been made in the Schedule of Quantities for each of the above Types of reconnections to be done by the Contractor, and the Contractor must satisfy himself that his tendered rate will cover everything necessary to execute the work.

.15 Breaking and Restoring at Manholes

The extent of the work required, will differ between jobs:

In general on a manhole side where pipe bursting is to be done openings need to be broken out where the existing pipe joins the manhole to accommodate the new pipe. **Please note that manholes may or may not have existing steps or that existing steps may be rusted or inoperable.**

PART C3: Scope of Work

If the pipe bursting is continuous through the manhole or if otherwise necessary such as for an upsize the manhole benching needs to be broken out.

The Contractor shall restore all manholes and associated surface areas to their original condition or as required by the Contracting Authority and specified in the description of work.

Prior to restoring manholes the installed pipe shall be allowed the manufacturer's recommended amount of time, but not less than four (4) hours, for cooling and relaxation due to tensile stressing prior to sealing the annulus or backfilling the insertion pit. Sufficient excess length of new pipe, but not less than 50 – 100mm, shall be allowed to protrude into the manhole to provide for occurrence.

Following the relaxation period, the newly installed pipe shall be sealed (not restrained) at the Manhole in accordance with the manufacturers recommended procedures and with a material approved by the Contracting Authority. Suggested procedure: The pipe ends are sealed with a single PVC socket slid over the HDPE pipe ends. The PVC socket must be grouted or otherwise built into the existing manhole walls. The PVC sockets must be treated with solvent cement and sand. They must have a tight enough fit over the HDPE pipe to effect a water tight seal but should not restrain the HDPE pipe completely, leaving it free to move inside the socket under residual stress relaxation or daily thermal expansion/ contraction etc.

Restoration of the bottom of the Manhole shall be done as follows:

For restorations, up to 75mm, mortar shall be used comprising OPC and dolomite aggregate. The mortar design mix shall meet or exceed 25MPa compressive strength at 28 days. The Contractor may, with the approval of the Contracting Authority, incorporate grout additives to improve flow properties, provided that the minimum compressive strength requirements are met.

For restorations greater than 75mm concrete shall be used. Concrete shall be at least grade 15/19

Channel(s) and benching must be scabbed and reformed to match the HDPE pipe dimensions where the existing channelling was in-situ formed.

Partial reparation of unnecessarily damaged channelling with concrete / cement mortar is not acceptable. Unnecessarily damaged benching must be repaired by the Contractor at his own expense. Smooth transitions between the liner and glazed earthenware channels or similar are acceptable for size for size replacement. If the pipe bursting is done through a manhole, without a break in the lining pipe, and no other sewers join the main in that manhole the top quarter of the pipe (0.5m in length) shall be cut off for access and inspection purposes and the benching chipped back and made good along the pipe.

.16 Point Repairs

The circumstances when point repairs could be requested under this contract are:

Where, after pipe bursting, critical backfalls exist in the existing pipe the Contractor will be requested to excavate down to the new pipe, lift the affected section of the pipe and reinstate or construct the bedding to the correct level, followed by construction of the blanket layer, backfilling etc. An extra-over point repair rate will be paid for lifting the newly installed pipe. If, as a result of factors outside of the Contractor's control, the Engineer deems it necessary to replace a section of the newly installed pipe, the Contractor will do the same but will replace the affected section with a short piece of HDPE pipe plus Kimberly couplings. The pipe laying rate will be paid for the short piece and a separate rate for the Kimberly couplings. Wherever possible the newly installed pipe will be retained and point loads etc. will simply be removed and replaced by proper bedding etc.

Payment will be made under the appropriate rates of section 815 where applicable. Excavation width will be equal to the lesser of actual and that prescribed by the Standard Specifications For Municipal Civil Engineering Works 2005 using the outside diameter of the existing pipe as the base value in the calculation, and a length the lesser of actual and the fault length as specified plus 0.5m on each side.

Point repairs necessitated by the Contractor's lack of quality control will have to be fixed at his own cost.

All excavations shall be done according to the relevant requirements of Section 202, but payment for shoring will be made as part of normal excavation tariffs.

.17 Quality Control

Tenderers are requested to prepare a quality control plan to ensure that the product conforms to specified requirements in all respects. A central aspect of the Contractor's quality control will revolve around CCTV inspections. The Contractor is expected to have CCTV inspection unit(s) suitable to inspect the results of welding and bead removal and of the fully installed pipe permanently on site. No CCTV inspection of laterals will be required. The CCTV unit suitable to inspect the finished product must be tractor mounted, must be able to record onto video or DVD and be equipped with an inclinometer and able to do pan-and-rotate inspections.

The inspections must be compatible with the existing CTMM CCTV database and .pdb files must be produced and handed over to the Engineer for inclusion in the database. The inspections must be done according to the CTMM CCTV inspection manual. Operators must undergo CCTV inspection training. Failure to be able to meet these requirements will disqualify any tender. The first inspection on the installed pipe will be paid for, but subsequent inspections where faults caused by the Contractor are involved will not be paid for.

.18 Notification of Residents

All residents having sewerage connections to a section of pipe to be replaced shall be informed well in advance of the intended work on an approved notification letter to be delivered by the Contractor. Letters shall be hand delivered by the Contractor and shall contain among other things a request for an appointment with the resident. At this meeting the Engineer's representative shall be present as well. The intended work shall be explained to the resident

PART C3: Scope of Work

and detail arrangements shall be made concerning access, temporary removal of structures, plants etc.

In addition, written notice, to the Engineer's approval, must be given to residents that will be directly affected by a shutdown in the sewerage service 24 hours before shutdown. In this notice the residents must be informed of the time period the service will be out of action and of the Contractors intended schedule for restoring the full service as well as his contingency plans

The Contractor shall keep a record of letters delivered, and meetings held and a summary of arrangements made. If no one is found at home the first time a second visit after hours must be made. If necessary a registered letter must be sent to the resident. The resident should be requested to sign for the letter and to sign next to the summary of arrangements made.

After completion of all works the resident should be requested to sign as to his satisfaction with the completed works on his property.

The Contractor will be paid for paving re-laid and for removal of temporary structures, covering over manholes etc. under Dayworks, if according to the Engineer's representative such labour is not insubstantial. All other actions in this regard will not be separately paid for and must be allowed for under the rates.

The Contractor must keep a digital photographic record of the state of residents' properties before starting the works. The photographs must be kept on a suitable format, must be available for perusal by the Engineer's representative and must be named and related to stand and job numbers.

The Contractor will be held liable for wilful or negligent damage to residents' properties. Purely accidental damage to residential property will be considered by the Engineer for claim submittal. The Contractor will in any case be liable for an amount of damage at least equal to the excess amount payable. The Engineer will be the sole judge if an insurance claim is warranted.

.19 Slip lining and Grouting

.01 Scope of Work

In cases where HDPE pipes are installed as corrosion protection liners inside concrete sewer pipes the annulus between the HDPE lining and the existing concrete pipe shall be grouted to prevent buckling of the lining in the event of a collapse of the corroded concrete pipe.

.02 Annulus grouting General

The grouting is to be executed between manholes. The lining shall be filled with water to avoid floating and the grouting operation shall be carried out in steps.

If annulus grouting is required the Contractor shall prepare a detailed method statement for his proposed grouting procedure and obtain the approval of the Engineer before proceeding. The method statement shall, inter alia, address the following:

Venting provision to prevent air locks

Maximum distance of grout travel

Details of grout mix, drying shrinkage and 28 day strength

Detail description of procedure

Quality control tests to be done

Disposal of unacceptable and surplus grout

.20 Breaking of concrete to expose house connections

(Type 1, 2 and 4 or Type A, B and C)

In instances where house connections are encased in concrete, the concrete is to be broken out by manual or mechanical means to expose the original earthenware pipe and the disposal of spoil material.

PART C3: Scope of Work

- .21 Breaking of concrete surfaces and reinstating with 25 MPa concrete to the original state.

Concrete surfaces are to be cut prior to breaking out to ensure straight cut lines when re-instating with 25 MPa concrete. Surface finish is to match the existing surface whether it is smooth steel towelled or wood floated. Joints are to be finished with a Joint Nosing tool. Spoil material must be disposed to legal dumping site.

- .22 Reinstating brickwork paving

Paving brickwork shall be of the same quality as the existing. Fill material is to be compacted to 93% Mod AASHTO density. The brickwork is to be laid on a sand bedding at least 25mm thick, to the same pattern as the existing. Spoil material must be disposed to a legal dumping site.

- .23 Testing

The Contractor shall, when required to by the Engineer, after replacing a section of sewer main, fill it with water to produce an appropriate pressure head within the pipe section. After a period of ten minutes, water is to be added to allow for absorption by pipes or joints and the escape of air.

He water shall then be allowed to stand for an additional period of thirty minutes and the water lost determined for the section. The loss shall not exceed three litres per hour per 100m length of pipe per 25mm nominal internal diameter.

The above test procedure will be measured per test carried out, and the unit rate tendered for each test shall include the supply of water, materials, plant, labour and equipment required to undertake the testing.

B815.04 – PARTICULAR PROJECT SPECIFICATION: CURED IN PLACE PIPE

B815.04.01 - GENERAL

B815.04.01.1 - Description

There are numerous techniques, products and proprietary systems that have been developed for the cured-in-place pipe (CIPP) trenchless renewal method (TRM). The intention of this specification is not to exclude any of the available CIPP products, but to rather ensure that:

- The CIPP product and materials meets standard specifications for handling of the effluent discharging through the pipe for the duration of the intended design life,
- The method of installation and curing meets standard requirements and specifications,
- The Contractor is suitably experienced and qualified to complete the installation and ancillary requirements,
- The Client is issued with sufficient information to adequately adjudicate the performance of a proposed system and the ability of the installation contractor.

The work involves the provision of all equipment, materials, labour and incidentals required to rehabilitate an existing pipe by means of the installation of a CIPP.

B815.04.01.1.1 - Scope

The lining of existing sewer mains through CIPP methods forms a portion of the greater inspection, rehabilitation and new works required to reinstate the integrity of the city's sewer system. The initial cleaning and CCTV inspection of the sewer pipe is dealt with under the particular specification attached.

All point repairs, replacement of pipe sections and manhole repairs that are required on the existing sewer line prior to lining being effected, will be completed by the main civil contractor appointed by the Client. This specification therefore deals only with the CIPP lining procedure.

The liner must be designed to withstand internal exposure to normal municipal sewage flows, which would include flows emanating from residential, commercial and industrial sites, and may also include gases and liquids including hydrogen sulphide, carbon monoxide, carbon dioxide and diluted sulphuric acid.

The Contractor will be required to deal with all sewer flows entering the pipe section for the duration of the installation procedure and all other provisions required whilst working on a live and operational sewer system.

PART C3: Scope of Work

The Contractor will be required to manage the existing municipal staff that will assist in the manual operations of the pump stations during the rehabilitation work. The Contractor will be required to make provision for payment of overtime for this staff, should work extend outside normal working hours.

B815.04.01.1.2 - Requirements

The following items shall be deemed minimum requirements for the work:

The products shall be supplied by manufacturers regularly engaged in the manufacture of CIPP products to the satisfaction of the Client.

The installation Contractor shall be experienced in the preparation and installation of a CIPP, and/or be certified to complete the supply and installation of any proprietary systems, and shall issue to the Client a certified copy of such license agreement prior to commencement of the work.

B815.04.01.2 - References and Standards

The following references form part of this Specification. In the event of any conflict between the requirements of this Specification and those of the listed documents, the requirements of this Specification shall prevail. The latest edition of the following documents shall be used.

B815.04.01.2.1 - Material and Corrosion Standards

The following resin standards are particular to UV cured CIPPs:

DIN 16946/2

DIN 18820/1

B815.04.01.2.2 - Structural Element Standards

The following standards may be prescribed for the liner felt and resins respectively.

ASTM D5199: Standard Method for Measuring Nominal Thickness of Geotextiles and Geomembranes

ASTM E1251: Standard Practice for General Techniques for Qualitative Infrared Analysis

B815.04.01.2.3 Installation Standards

The following ASTM standards are applicable.

ASTM F1216: Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of Resin-impregnated Tube.

ASTM F1743: Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP).

The standard method of installation will be through inversion of the liner. The Client may approve installation by winching-in methods provided the liner tube and resins conform to the materials and curing sections of the specifications listed above.

B815.04.01.2.4 Testing Standards

The following ASTM standards are applicable.

ASTM D543: Standard Test Methods for Resistance of Plastics to Chemical Reagents.

ASTM D638: Standard Test Methods for Tensile Properties of Plastic.

ASTM D790: Standard Test Methods for Unreinforced and Reinforced Insulating Materials Flexural Properties of Plastics and Electrical.

ASTM D2990: Standards Test Method for Tensile, Compressive and Flexural Creep and Creep-Rupture of Plastic.

B815.04.01.2.5 - General Sewer Construction Specifications

All work on pipelines will follow the general principles of sewer design and pipeline construction and rehabilitation. Should any defects in the CIPP liner require the contractor to excavate and reconstruction sections of the pipeline, the Contractor shall request from the

Client the relevant standard technical and safety specifications for sewer construction and civil works to which the work must conform.

B815.04.01.2.6 - Safety Standards and Regulations

The Contractor is to ensure that the work is conducted within existing safety and construction regulations, and health standards. This pertains to all aspects of the work including amongst others, handling of the products, storage of products and installation of the liner, working with scaffolding and entering confined spaces.

B815.04.01.3 - Warranty

The Contractor shall provide the Client with a warrantee for the liner and associated works for a period of one (1) year from completion and final acceptance. The terms of the warrantee shall cause the Contractor to repair or replace failed or damaged pipe or liner as a result of faulty materials or installation during this defects liability period. At the end of the defects liability period, the Client may at his own expense perform a CCTV inspection of the sewer to confirm the condition of the liner.

B815.04.01.4 - CIPP Technical supervision

The Contractor shall provide suitably trained technical staff and supply a record of their prior experience in installing CIPPs to the Client 7 days prior to the installation commencing.

B815.04.02 - METHODS AND MATERIALS

B815.04.02.1 - Liner tube

The CIPP liner tube shall consist of one or more layers of needled felt or an equivalent non-woven and/or woven material compatible with, and capable of carrying resin and withstanding installation pressures and curing temperatures.

The CIPP liner tube shall be continuous over the entire length from manhole to manhole and free from defects such as foreign inclusions, dry spots, pinholes and de-laminations.

PART C3: Scope of Work

The Contractor is responsible to check and verify through on-site measurement, the required lengths prior to impregnation and installation of the liner. The Contractor must ensure that the liner is free from visible defects including amongst others tears, holes, cuts and foreign material prior to installation.

All wrinkles in the installed liner tube that are deemed to reduce the hydraulic capacity of the sewer by more than 5% shall be removed and repaired by the Contractor at his cost. The Contractor shall recommend the repair method, and shall not commence until the method is reviewed and approved by the Client.

B815.04.02.2 - Resin

Unless otherwise specified, the resin shall be an unsaturated, thermosetting, polyester, vinyl-ester or epoxy resin able to cure in the presence or absence of water, and a catalyst compatible with the insertion process.

The temperature for cure shall be recommended by the resin manufacturer.

In the instance of UV cured liners, the resin should comprise an unsaturated polyester resin corresponding to resin type 1140 according to DIN 16946/2 and are classified as group 3 resins in line with DIN 18820/1.

B815.04.02.3 - Design and Physical Properties

The contractors design, approved by a Registered Civil Engineer, must be submitted to the Client for approval prior to the work commencing. The design shall not deviate from that offered by the Contractor at Tender stage.

B815.04.02.3.1 - Thickness design

The liner thickness design should be based on the following criteria:

Pipe condition	=	Partially deteriorated
Pipe ovality	=	3%
Allowable deflection	=	5%
Other criteria set out below		

B815.04.02.3.2 - Loading

The liner should be designed to withstand all internal and external loads, and in particular soil, paving, traffic and hydrostatic pressures.

Maximum depth of pipeline below GL	=	4.0m
Depth of water table below GL	=	0.5m

B815.04.02.3.3 - Standards

The CIPP system should comply with the following minimum standards:

Characteristic	Test Method	Polyester Resin	Vinyl-Ester & Epoxy Resins
Flexural Strength	ASTM D790	30 N/mm ²	35 N/mm ²
Flexural Modulus (Short term)	ASTM D790	1725 N/mm ²	2070 N/mm ²
Flexural Modulus (Long term)		865 N/mm ²	1035 N/mm ²
Tensile Strength	ASTM D638	865 N/mm ²	1035 N/mm ²

B815.04.02.3.4 - Calculations

All calculations shall be signed and endorsed by a Registered Civil Engineer and submitted to the Client if so requested.

B815.04.02.3.5 - Inside diameter

The fabricated dimension of the liner tube shall be such that it will fit the internal circumference of the existing pipe, whilst making allowance for stretching due to insertion and deterioration of the pipe walls.

B815.04.02.3.6 - Wet-out

The tube shall be vacuum impregnated with a resin and catalyst system and all materials and methods utilised shall be in accordance with the requirements of the particular system.

B815.04.02.3.7 - Minimum thickness

The minimum thickness of the liner is to be determined by the Contractor, in association with his material suppliers and design engineers.

B815.04.02.3.8 - Chemical resistance and corrosion requirements

Chemical resistance tests shall be completed at the Contractors expense and shall be in accordance with the requirements of Section 8 of ASTM F1216, Section X2, Chemical Resistance Tests for polyester resins and completed in accordance with Test Method D543. Proof of meeting these requirements shall be furnished to the Client at least 7 days prior to commencement of the work.

B815.04.02.3.9 - Long term performance studies

The resin manufacturer shall supply accelerated long term testing results of the resin in terms of ASTM D543 to the Client's satisfaction.

B815.04.02.4 - Sealing at manholes

Should a tight fit not exist at the interface between the new liner and the manhole, a seal at the manholes consisting of a resin mixture compatible with the new CIPP liner may be applied in accordance with the manufacturer's specifications.

B815.04.02.5 - Laterals and service connections

B815.04.02.5.01 – Cutting

The Contractor will be responsible for locating the position of all service connections entering the host pipe during the preliminary CCTV inspection of the pipe. The recording of the chainages, orientation and size of the lateral shall be recorded in the format prescribed in the CCTV Inspection specification.

All service connections must be reinstated through trenchless means involving CCTV cameras and robotic cutters, or man entry. No excavations will be allowed to reinstate connections unless ordered by the Client. The cut in the liner for the service connection may not exceed 100% of the size of the service connection.

The service connection shall be restored to at least 90% of their original capacity and be free from sharp edges or protrusions which could result paper, debris and rags accumulating and resulting in a blockage.

B815.04.02.5.02 – Sealing after openings

Where required a “top hat” section must be installed.

B815.04.02.6 - Completion Requirements

The Contractor will be required to submit all pre- and post-installation CCTV inspection data as specified by the Client.

The Contractor shall also submit records and proof of the following:

Resin and liner compliance test results.

Testing results for samples taken during installation.

Contractors log and quality assurance records required during the installation, curing and cool down processes.

B815.04.03 - INSTALLATION

The Contractor shall submit a method statement detailing amongst others:

- The method of dealing with existing sewer flows.
- Interface with cleaning and CCTV procedure.
- Interface with main contractor regarding spot and civil repairs.

Wetting out location and procedures

- Pre-liner insertion
- Liner insertion
- Curing
- Testing
- Reinstatement of service connections
- Post insertion CCTV inspection of sewer

Where water is used for liner insertion and curing, it must be sourced, purchased and transported by the contractor. The source of water may be in excess of 20km from the works and the contractor may have to programme his work around the limited hours of water supply experienced during the day.

B815.04.03.1 - Access points

Access to the host pipe will be through existing manholes. Excavation for liner insertion will not be permitted, however in certain instances the removal of manhole cover slabs may be allowed subject to approval from the Client.

The Contractor will be fully responsible for the maintenance of traffic on public roads, including all requirements (including signage) during the execution of the works. The Contractor will be required to adhere to the cities regulations in terms of applications for road closure and traffic diversion.

Where installation is required on private property, typically for mid-block sewers, the contractor may be required to work in limited space. Where possible, the Contractor must ensure that no damage to private property is incurred.

B815.04.03.2 - Cleaning and inspection

The cleaning and CCTV inspection will be two fold. Firstly to finalise the condition assessment, and secondly, to provide a clear unobstructed host pipe for the liner to be inserted into. It will be responsibility of the Contractor to programme these works so as to limit duplication of cleaning and CCTV operations. Any assumptions or allowances in this regard should be indicated by the Contractor at Tender stage.

The initial cleaning and CCTV will be paid for under the investigatory portion of the work, and will only be paid for once per pipe reach. All subsequent cleaning and inspection work will be deemed to be included in the CIPP operation and will be paid for under the unit rates for CIPP installation, even if the CIPP procedure does not immediately follow the initial cleaning and inspection works.

B815.04.03.3 - Over pumping and bypass of sewage

The Contractor shall provide for adequate flow control measures and equipment including but not limited to required pumping and bypassing of all flows entering the pipe. This will include the provision and maintenance of all plant, equipment and labour for the duration of the installation procedure.

B815.04.03.4 - Line obstructions and point repairs

The line shall be cleared of obstructions such as solids, dropped joints, intruding service connections or collapsed pipe that may prevent installation of the liner through trenchless means. If the preliminary cleaning and CCTV inspection reveals an obstruction that cannot be removed by conventional remote sewer equipment, then a point repair excavation shall be made to remove or repair the obstruction by the main civil contractor prior to the CIPP lining procedure taking place. This may require that the CIPP lining take place well after the initial cleaning and inspection operations. The Contractor will not be entitled to standing time in such instances.

Roots and fat shall be removed in the designated sections as part of the initial cleaning and CCTV operations.

Where required, the Contractor must install a 1,5m CIPP short section as a point repair to an isolated defect in an existing pipe.

B815.04.03.5 - Resin impregnation

The Contractor shall designate a location where the liner will be impregnated with resin prior to installation through vacuum or other approved means. The Contractor shall allow the Client to inspect the wetting out process.

The impregnated tube shall be transported from the designated location to the site in such a manner so as to not compromise the integrity of the system through damage or exposure to direct sunlight to the Clients satisfaction. This may include preparation of refrigerated transportation containers.

B815.04.03.6 - Liner insertion

The provision of a pre-liner may be required. The use of a pre liner will be specified by the manufacturers or the licensee.

The impregnated tube shall be inserted into the existing pipe through the existing manhole chambers by means of hydrostatic inversion, compressed air inversion, winching, or other means approved by the Client to fully extend the liner from launching to receiving manhole. Where the liner is inserted through winching, records of forces induced on the liner during insertion must be recorded.

The use of a non-toxic oil-based lubricant may be used to reduce friction during installation. The lubricant should have no detrimental effect on the tube, should not support bacteria growth or affect the general characteristics of domestic sewage.

B815.04.03.7 - Curing and cool down

All equipment, plant and testing equipment, installation and quality management staff must be provided by the Contractor during the curing procedure. The equipment and plant must be

approved by the licensee for proprietary systems as being suitable for executing the curing procedure.

The success of the curing procedure is determined by the provision of suitable staff, equipment and adherence to strict curing procedures by maintaining specified durations of execution, temperature environments and control.

The curing measures must be specified by the manufacturer and approved by the Client at least 7 days prior to insertion of the liner. The curing process shall consider the host pipe material, ambient temperature, resin/catalyst system, moisture level and thermal conductivity of the soil.

Where the curing procedure involves the circulation of hot water, air or steam, the Contractor shall ensure that heat source piping is fitted with continuous monitoring thermocouples to gauge the temperature of the incoming and outgoing curing medium. Due to the nature of the thermal curing process, the liner should be fully inflated to form a tight fit against the host pipe throughout the curing procedure.

In the instance of curing by UV light, the liner is normally winched into position. The Contractor must allow for the installation of temporary packers and transitions to allow the insertion of the UV lights whilst maintaining internal air pressure in the uncured liner. The number, wattage and speed of light distribution must be specified by the proprietary system licensee or the resin manufacturer.

The curing shall be deemed complete when all criteria stipulated by the manufacturer in terms of curing have been met, and the exposed section of the liner appears to be hard and sound.

In the instance of hot water and steam cured liners, the Contractor should ensure that a correct cool down procedure is followed, which would include cooling of the internal temperature to manufacturers specified limits (normally 38°C for water and 45°C for steam cured resins) and thereafter releasing the internal hydrostatic or air pressure from the liner, ensuring that a vacuum is not developed that may damage the liner.

In all instances the cool down procedure or release of the internal pressure in the liner shall not commence until such time as the Contractor has satisfied himself that all criteria for successful curing have been met.

B815.04.03.8 - Sealing and service connections

All service connections should be reinstated at the earliest opportunity, once the installation, curing, cooling and testing procedures of the liner have been completed, but no later than 24 hours after curing has been completed.

B815.04.03.9 - Finishing and Clean-up

After installation, the Contractor shall promptly restore the sites of operation to a condition similar to that prior to work commenced, to the satisfaction of the Client. All excess material and rubble shall be disposed of by the Contractor at his own cost. The work shall be deemed incomplete and final payment will not be effected until the clean-up procedure is complete.

The Contractor will be required to complete the visual conformance inspection of the sewer and provide all testing results and installation records to the Client.

B815.04.04 - QUALITY CONTROL AND ASSURANCE

B815.04.04.1 - Submission of manufactures certificates

The Contractor shall provide all certification for the manufacturer that the liner materials are in compliance with the listed specifications.

The Contractor shall also provide certification of the liner demonstrating that the liner tube is correctly sized to avoid the formation of wrinkles or folds.

All testing must be completed by a third party registered laboratory.

B815.04.04.2 - Compliance testing

A minimum of two (2) samples will be collected for each insertion length between manholes, of sufficient size to provide five (5) specimens for flexural and tensile testing.

The samples shall preferably be prepared from waste sections of liner that has been wetted out, and should be representative of the installed section of liner. The samples should be

cured in the down tube where circulating hot water is used and in the silencer where steam is used for curing.

In the instance of UV curing, a single length (per the manufacturer's minimum requirements) shall be prepared for testing.

B815.04.04.3 - Allowable pulling forces

The Contractor shall inform the Client as to the maximum pulling force that can be used whilst inserting the liner without rupture or affecting the properties of the tube. The Contractor shall also provide measurement devices to accurately record the forces induced on the liner during installation.

B815.04.04.4 - Allowable elongation of flexible tube

The Contractor shall mark the precise length of the anticipated run prior to insertion on the liner. After installation the length of elongation shall be calculate and should not exceed 3% of the original length. The Client may reject any length of liner where the elongation exceeds the allowable.

B815.04.04.5 - Water tightness

The Contractor will not be required to complete a pressure test on the completed pipe.

B815.04.04.6 - Visual inspection

The visual inspection of the completed liner must be in accordance with ASTM F1216, Section 8.4 and meet the requirements of the particular project specification for CCTV Inspection attached.

The Contractor must provide a continuous log of curing criteria and measurements effected during the curing procedure. This information will be critical in evaluating criteria for the acceptance of the liner by the Client. Failure to provide such information or information to support the measurements during the curing procedure may result in the Contractor being required to replace the pipe section at his own cost.

B815.04.04.7 – Penalties

The following penalties will be levied on the Contractor for substandard work:

B815.04.05.6.1 - Elongation

At the sole discretion of the Client, should elongation of the line exceed the allowable during installation, the replacement of the liner and all ancillary costs will be for the Contractors account. Should the Client accept a liner that has been installed outside the limits of the allowable elongation percentage, the unit rate per meter of the installation will be reduced by 5%, per percent elongation above the allowable.

B815.04.05.6.2 - Thickness

The following payment criteria will be followed for installed liners that are less than the specified thickness.

Less than 5% deviation	-	no price adjustment
5% to 10%	-	10% reduction in unit rate
Greater than 10%	-	liner rejected by Client (replacement at Contractors cost)

B815.05 – MEASUREMENT AND PAYMENT

Add the following pay items:

ITEM	DESCRIPTION	UNIT
B815.01	<p>Dealing with sewage flow by gravity pipe / temporary ditch diversion.</p> <p>The unit of measurement shall be the number of m of temporary diverting pipe of whatever sort or diameter or temporary ditch needed to divert flow.</p> <p>The tendered rate shall include whatever ancillary works is needed such as blocking of flow.</p>	m
B815.02	<p>Dealing with sewage flow by over-pumping with a water pump able to handle peak dry weather flow</p> <p>.01 Up to 15 l/s .02 Between 15l/s and 25l/s</p> <p>The unit of measurement shall be the number of hours used.</p> <p>The tendered rate shall include all related cost items for installing, maintaining and removing the pump installation.</p>	hrs
B815.03	<p>Breaking and repairing of access openings through manhole walls.</p> <p>The unit of measurement shall be the number of manholes broken into and repaired irrespective of the number of openings.</p> <p>The tendered rated shall include, inter alia, for breaking of openings, removal of rubble from site and re-instate of manhole walls and all related work, as more clearly described in the Specifications.</p>	No

PART C3: Scope of Work

B815.04	<p>Breaking and repairing of benching and channelling in existing manhole to accommodate new pipe, including caulking in new pipe ends.</p> <p>The unit of measurement shall be the number of manholes affected and repaired irrespective of the number of pipes.</p> <p>The tendered rates shall include for all materials and labour necessary to repair and adjust benching to accommodate the new pipe, as well as to ensure proper bonding with the benching, and to cut open the new pipe if necessary.</p>	No
B815.05	<p>Supply and Installation of Pipes:</p> <p>.01. 160mm ClassPE100 PN 6, SDR26 into existing 100mm Clay/uPVC/PF</p> <p>.02. 160mm ClassPE100 PN 6, SDR26 into existing 150-160mm Clay/uPVC/PF</p> <p>.03. 200mm ClassPE100 PN 6, SDR26 into existing 160mm Clay/uPVC/PF - upsize</p> <p>.04. 225 mm Class PE100, PN 6, SDR26 into existing 180-210mm Clay/uPVC/PF</p> <p>.05. 250 mm Class PE100, PN 6, SDR26 into existing 220-230mm Clay/uPVC/PF</p> <p>.06. 250mm Class PE100 PN 6, SDR26 into existing 160mm Clay/uPVC/PF - upsize</p> <p>.07. 250mm Class PE100 PN 6, SDR26 into existing 200mm Clay/uPVC/PF - upsize</p> <p>.08. 280 mm Class PE100, PN 6, SDR26 into existing 240-260mm Clay/uPVC/PF</p> <p>.09. 280 mm Class PE100, PN 6, SDR26 into existing 200mm Clay/uPVC/PF - upsize</p> <p>.10. 315mm Class PE100, PN 6, SDR26 into existing 230mm Clay/uPVC/PF - upsize</p>	m

PART C3: Scope of Work

	<p>.11. 355 mm Class PE100, PN 6, SDR26 into existing 280-330mm Clay/uPVC/PF</p> <p>.12. 400mm Class PE100, PN 6, SDR26 into existing 340-370mm Clay/uPVC/PF</p> <p>.13. 450mm Class PE100, PN 6, SDR26 into existing 380-420mm Clay/uPVC/PF</p> <p>.14. 500mm Class PE100, PN 6, SDR26 into existing 430-460mm Clay/uPVC/PF</p> <p>.15. 560mm Class PE100, PN 6, SDR26 into existing 470-520mm Clay/uPVC/PF</p> <p>(List for different diameters and new pipe specifications)</p> <p>The unit of measurement shall be the metre of each size and type of pipe joined, installed, tested and approved, measured from centre to centre of adjacent manholes or to the point where the pipe bursting is terminated.</p> <p>The tendered rate shall include full compensation for welding the HDPE pipe into suitable lengths, for the use of equipment as specified to crack open the old pipe and to install the new pipe and for any related activity as specified and not covered elsewhere in pay items.</p>	
B815.06	<p>Service Re-connections</p> <p>.01 Size and type</p> <p>The unit of measurement shall be the number of house connections installed and approved for the different pipe diameters.</p> <p>The tendered rate shall include full compensation for supply of all materials and labour necessary to connect existing house connections to the newly installed sewer.</p>	No

PART C3: Scope of Work

B815.07	<p>Point repairs</p> <p>.01 Point repairs by replacing pipe</p> <p>Extra over items 302.01 if pipe is replaced during a point repair as specified.</p> <p>The unit of measurement shall be the number of point repairs. The unit rate shall include full compensation for breaking and removing the old pipe and for laying the new pipe including adaptors as specified. (Pipe length not to exceed 2m.)</p> <p>.02 Point repair of backfall in new pipe</p> <p>The unit of measurement shall be the metre of pipe lifted and shall include for making good the bedding and compaction of bedding but shall not include for backfill and compaction of backfill.</p>	No
B815.08	<p>Breaking and removing concrete surrounded erf connections</p> <p>The unit rate shall be the number of cubic metres broken and removed.</p> <p>The unit rate shall include full compensation for breaking concrete by whatever method and carting away plus dump site rates.</p>	m3
B815.09	<p>Reinstate backdrop manholes to suit HDPE pipe</p> <p>The unit of measurement shall be the number of manholes where an existing backdrop into the manhole must be reinstated.</p> <p>The unit rate shall include full compensation for labour and materials used (uPVC Y piece, straights and bends) to reinstate an existing backdrop manhole.</p>	No

PART C3: Scope of Work

B815.10	<p>Re-rounding</p> <p>Re-rounding of existing pipe in cases where the Engineer deems this necessary i.e. where negative curvatures occur or where unremovable obstructions occur as per specifications / inspection charts.</p> <p>The unit rate shall be the metres of re-rounding.</p> <p>The tendered rate includes full compensation for the cost of all related activities such as CCTV inspections, etc.</p>	m
B815.11	<p>Material Testing</p> <p>.01 Control test for E-modulus obtained as specified.</p> <p>The unit of measurement shall be the number of tests executed and reports produced.</p> <p>.02 Water test</p> <p>The unit of measurement shall be per test carried out and the rate shall include the supply of water, materials, plant. Labour, etc.</p>	<p>No</p> <p>No</p>
B815.12	Removal / clearing of obstructions over launch or exit pits or sewer lateral connections and replace	Hrs
B815.13	Connect existing sewer line to newly laid sewer.	No

PART C3: Scope of Work

	<p>The unit of measurement is number of connections for each diameter specified.</p> <p>The tendered rate shall include for labour, plant and material to be used in installation of the connection, but shall exclude backfilling.</p>	
B815.14	<p>Breaking of concrete surfaces and reinstating with 25 MPa concrete to the original state according to specifications.</p> <p>The unit of measurement shall be the square meter. The tenderer shall include cutting of edges before breaking irrespective of thickness and means of breaking, replacing of concrete to the original thickness with a minimum thickness of 50mm and shall also include finishing and curing of the reinstated concrete, as well as breaking, disposal and clearing after construction.</p>	m2
B815.15	<p>Reinstating existing brickwork paving according to specifications.</p> <p>The unit of measurement is the square meter. The tendered rate shall include for breaking out existing paving and replacing with existing or, if needed, similar matching brickwork. The rate shall also include jointing and pattern to match the existing as well as disposal of spoil material.</p>	m2
B815.16	<p>Installation of CIPP Liner</p> <p>Separate rates should be tendered for the following type of liners:</p> <p>.01 Structural liners – reinforced (3,5mm up to 200 diameter and 5mm bigger than 200 diameter)</p> <p>.01 160mm diameter</p> <p>.02 > 160mm diameter and \leq 200mm diameter</p> <p>.03 > 200mm diameter and \leq 300mm diameter</p>	<p>m</p> <p>m</p> <p>m</p>

PART C3: Scope of Work

	<p>.04 > 300mm diameter and \leq 400mm diameter</p> <p>.05 Greater than 400mm up to 500mm</p> <p>.02 Non-structural liners (5mm thick up to 200 diameter and 8mm thick bigger than 200 diameter)</p> <p>.01 160mm diameter</p> <p>.02 > 160mm diameter and \leq 200mm diameter</p> <p>.03 > 200mm diameter and \leq 300mm diameter</p> <p>.04 > 300mm diameter and \leq 400mm diameter</p> <p>The unit of measure shall be per linear meter of pipe rehabilitated. Measurement for rehabilitation shall be the actual distance measured from manhole to manhole/cleanout, of each size pipe, excluding manhole diameter per diameter of liner installed.</p> <p>Payment shall be made at the tendered unit rate per linear meter of pipe rehabilitated, with individual rates per diameter of liner installed. The unit rate includes all design, labour, equipment, incidentals, materials, flow control, dewatering, traffic control, post-cleaning, sealing the liner in the manholes, resident notification, provision of water, necessary permits, compliance tests, and all other rehabilitation work not included under other items, necessary to complete the rehabilitation as specified.</p>	<p>m</p> <p>m</p> <p></p> <p>m</p> <p>m</p> <p>m</p> <p>m</p>
B815.17	<p>Reinstatement of service connections to newly lined sewers by CIPP Liners</p> <p>The unit of measure shall be per number of connections reinstated.</p> <p>Payment will be made at the tendered rate for the location and reinstatement of the connections and must include for all labour, equipment, incidentals, materials, flow control and all other</p>	No

PART C3: Scope of Work

	requirements, not included under other items, necessary to complete the rehabilitation for all sizes of lateral connections.	
B815.18	<p>Installation of “Top Hat” sections at service connections</p> <p>The unit of measurement shall be the number of “Top Hat” sections installed.</p> <p>Payment will be made at the tendered rate for the installation of “Top Hat” sections into previously re-opened service connections. The rate must include for all labour, equipment, incidentals, materials, flow control and all other requirements, not included under other items, necessary to complete the installation of “Top Hat” sections.</p>	No
B815.19	<p>Installation of CIPP short section as Point repairs</p> <p>.01 CIPP short section, straight</p> <p>.02 CIPP short section, with service lateral protrusion</p> <p>The unit of measurement shall be the number of 1,5m short sections, straight installed or the number of short sections with lateral protrusion installed (suitable length).</p> <p>Payment will be made at the tendered rate for the installation of short sections, installed on a packer at predetermined positions.</p>	No No

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED

C3.9 OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION FOR THE APPOINTMENT OF SERVICE PROVIDERS FOR TRENCHLESS REPLACEMENT OF SEWERS IN THE CITY OF TSHWANE: 3 YEAR PERIOD

**OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION FOR CONTRACT
USD WS 04-2019/20: TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION
OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF TSHWANE: 3
YEAR PERIOD, AS AND WHEN REQUIRED**

C3.9.1 DEFINITIONS

In this document the following expressions shall bear the meanings assigned to them below:

- a) **Client** means any person for whom construction work is being performed and/or undertaken [i.e. City of Tshwane for purposes of this specification];
- b) **Construction Regulations** means the Occupational Health and Safety Act's, No 85 of 1993, new Construction Regulations that came into effect on 01 March 2014;
- c) **Occupational health and safety plan** means a sufficiently documented plan to the standards of the Client, which addresses hazards identified and includes safe working procedures to mitigate, reduce or control the hazards identified;
- d) **Occupational health and safety specification** means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons working, visiting, passing, staying and/or working close to the construction site and/or other applicable areas such as site camp;
- e) **OHSACT** means the Occupational Health and Safety Act, No 85 of 1993, as amended; and
- f) **Principal Contractor** means an employer, as defined by Section 1 of the OHSACT who performs construction work and is appointed by the Client to be in overall control and management of the construction site and works.

C3.9.2 INTRODUCTION

In terms of Construction Regulation 5(1)(b) of the OHSACT, the Client is required to compile an occupational health and safety specification for any intended project and provide such specification to prospective tenderers/bidders.

This specification has as objective to ensure that the principal contractor entering into a contract with the Client achieves and maintain an acceptable level of occupational health and safety performance and compliance. This document forms an integral part of the contract

PART C3: Scope of Work

between the Client and the principal contractor and the principal- and other contractors should make it part of any contract/s that they may have with other contractors and/or suppliers as far as this project is concerned.

Compliance with this document does not absolve the principal contractor from complying with any other minimum legal requirements and the principal contractor remains responsible for the health and safety of his employees, those of his mandatories as well as any persons coming on site or on adjacent properties as far as it relates to the construction activities.

City of Tshwane's commitment to Occupational Health, Safety & Environmental (SHE) Management

City of Tshwane is committed to responsible occupational health, safety and environmental management. This commitment is essential to protect the environment, employees, Mandatories, visitors and provide a work environment conducive to health and safety. Principal Contractors and their Contractors shall demonstrate their commitment and concern by:

- Ensuring that decisions and practices affecting occupational health, safety and environmental performance are consistent with the issued SHE specification;
- Ensuring adequate resources are made available for the effective implementation of occupational health, safety and environmental control and mitigation measures;
- Participating in hazard identification and risk assessments and design safety reviews;
- Communicating occupational health, safety and environmental management processes, strategies and control measures with all levels of employees, contractor and/or visitors;
- Ensuring visible leadership at all sites;
- Promoting and enforcing the use of correct types of Personal Protective Equipment (PPE);
- Reporting and investigation of incidents and accidents and ensuring actions are identified and implemented to prevent similar types of incidents reoccurring;
- Participating in Client audits and meetings and ensuring required actions are implemented within reasonable time frames on the site/project;
- Recognizing and commending safe work practices and coaching employees who require guidance;
- Applying and enforcing consequence management from deviations and transgressions of/from compliance to this SHE Specification noted and/or observed, where applicable;
- Carrying out safety observations, implement corrective and preventative actions and

giving immediate feedback;

- Encouraging employee participation in the formulation of work instructions and safety rules.

C3.9.3 SCOPE

To develop a project specific occupational health and safety specification that addresses the reasonable and foreseeable risks, exposures and aspects of occupational health and safety as affected by the abovementioned contract work.

The specification will provide the requirements that the principal contractor and other contractors will have to comply with in order to reduce the risks associated with the abovementioned contract work and that may lead to incidents causing injury and/or ill health, to a level as low as reasonably practicable and possible.

Any contractor interested in submitting a bid in response to the Client's formal tender for any construction project, has to prepare and include a draft occupational health and safety plan based on this specification and the OHSACT in its tender submission. The Client will evaluate this plan as part of its formal tender adjudication processes to ensure compliance with Construction Regulation 5 that stipulates that the Client may only appoint a contractor who has the necessary competencies and resources to carry of the work appointed for safely.

C3.9.4 GENERAL OCCUPATIONAL HEALTH AND SAFETY PROVISIONS

C3.9.4.1 HAZARD IDENTIFICATION AND RISK ASSESSMENT (CONSTRUCTION REGULATION 9)

- **Risk assessments**

Annexure 5 of this specification contains a list of risk assessment headings that have been identified by the Client as possibly applicable to the abovementioned contract work. It is, by no means, exhaustive and is only offered as assistance to the contractors intending to tender for the applicable works. It therefore remains the overall responsibility of the principal contractor to consider all applicable risks and pro-actively undertake risk assessments and implement appropriate risk mitigation measures.

- **Development of risk assessments**

PART C3: Scope of Work

Every principal contractor performing construction work shall, before the commencement of any construction work or work associated with the aforesaid construction work and during such work, ensure that risk assessments are undertaken by a competent person, appointed in writing, and the risk assessments shall form part of the occupational health and safety plan and be implemented and maintained as contemplated in Construction Regulation 7(1)(a).

The risk assessments shall include, at least:

- The identification of the current as well as emerging risks and hazards to which persons may be exposed to;
- The analysis and evaluation of the risks and hazards identified;
- A documented plan of safe working procedures (SWP) and any method statements to mitigate, reduce or control the risks and hazards that have been identified;
- A plan to monitor the application of the SWPs; and
- A plan to review the risk assessments as the work progresses and changes are introduced or incidents occurred which requires the re-evaluation of the processes/risk mitigation.

Based on the risk assessments, the principal contractor must develop a set of site-specific occupational health and safety rules that will be applied to regulate the occupational health and safety aspects of the construction.

The risk assessments, together with the site-specific occupational health and safety rules, must be submitted to the Client before mobilisation on site commences.

Despite the risk assessments listed in Annexure 5, the principal contractor is required to conduct a baseline risk assessment and the aforesaid risk assessments must be incorporated into the baseline risk assessment. The baseline risk assessment must further include the SWPs and the applicable method statements based on the risk assessments.

Hazard identification and risk assessments must be undertaken whilst SWPs must be developed for all out-of-scope work.

- **Review of risk assessments**

PART C3: Scope of Work

The principal contractor is to review the hazards identified, the risk assessments and the SWPs at each production planning and progress report meeting as the contract work develops and progresses and each time changes are made to the designs, plans and construction methods and/or processes.

It is also proposed that should an incident occur the SWPs and all other applicable processes be re-evaluated to ensure that the mitigation measures are still applicable and appropriate and if not a revision of the risk assessments be undertaken.

The principal contractor must provide the Client, other contractors and all other concerned or affected parties with copies of any changes, alterations or amendments as soon as possible but within 14 calendar days of such changes.

C3.9.4.2 LEGAL REQUIREMENTS

All Contractors entering into a contract with the Client shall, as a minimum, comply with the -

- OHSACT and a current, up-to-date copy of the OHSACT and its Regulations must be available on site at all times;
- Compensation for Occupational Injuries and Diseases Act, No 130 of 1993 (COIDA) as amended. The principal contractor will be required to submit a letter of registration and “good-standing” from the Compensation Commissioner or compensation insurer before being awarded the contract. A current, up-to-date copy of the COIDA must be available on site at all times; and
- Where work is being carried out on mine premises, the contractor will comply with the Mine Health and Safety Act and Regulations, No 29 of 1996) as amended, the Minerals Act and Regulations, No 50 of 1991 as amended and any other occupational health and safety requirements that the mine may specify. Current, up-to-date copies of these Acts must, if applicable, also be available on site at all times.

C3.9.4.3 STRUCTURE AND RESPONSIBILITIES

Overall supervision and responsibility for occupational health and safety

PART C3: Scope of Work

- a. The principal contractor [appointed in terms of Construction Regulation 5(1)(k)] is responsible to implement and maintain the occupational health and safety plan approved by the Client.
- b. The Chief Executive Officer (in terms of Section 16(1) of the OHSACT) of the principal contractor is to ensure that the Employer (as defined in the OHSACT) complies with the OHSACT. Annexure 1 "Legal Compliance Checklist" may be used for this purpose and assistance.
- c. The principal contractor's Chief Executive Officer may appoint any person reporting to him/her as Designated Person in terms of Section 16(2) of the OHSACT. Such Designated Person is responsible to assist the Chief Executive Officer to ensure that the Employer complies with the requirements of the OHSACT.
- d. The construction manager, assistant construction manager, construction supervisor and assistant construction supervisor(s) appointed in terms of Construction Regulation 8 are responsible for supervising the construction work and in specific to ensure that all work undertaken comply with the requirements of the OHSACT, its Regulations and the Client's specifications.

Operational responsibilities for occupational health and safety

The principal contractor shall appoint designated competent employees and/or other competent persons as outlined in the following list to assist with the operational responsibilities for occupational health and safety. This list is only the minimum requirement and is therefore in no way exhaustive.

PART C3: Scope of Work

Appointment description	Appointment required in terms of
Assistant construction manager	Construction Regulation 8(2)
Assistant construction supervisor	Construction Regulation 8(8)
Construction manager	Construction Regulation 8(1)
Construction supervisor	Construction Regulation 8(7)
Construction vehicle, mobile plant and machinery supervisor	Construction Regulation 23
Drivers of construction vehicles and operators of plant	Construction Regulation 23
Electrical appliances inspector	Construction Regulation 24
Emergency, security and fire coordinator	Construction Regulation 29
Excavation supervisor	Construction Regulation 13
First-aiders	General Safety Regulation 3
Firefighting equipment inspector	Construction Regulation 29
Hazardous chemical substances supervisor	Hazardous Chemicals Substances Regulations 10
Incident investigator	General Administrative Regulation 9
Ladder inspector	General Safety Regulation 13(a)
Lifting equipment inspector	Construction Regulation 22
Occupational health and safety committee	OHSACT Section 19
Occupational health and safety officer	Construction Regulation 8(5)
Occupational health and safety representatives	OHSACT Section 17
Person responsible for machinery	General Machinery Regulation 2
Risk assessor	Construction Regulation 9(1)
Stacking and storage supervisor	Construction Regulation 28
Traffic management supervisor	OHSACT Section 9(1)
Traffic safety officer	OHSACT Section 9(1)
Working on, over or next to water supervisor	Construction Regulation 26

PART C3: Scope of Work

These appointments must be in writing and the responsibilities clearly stated together with the period for which each appointment is made. This information must be communicated to and agreed with the appointees.

Copies of appointments must be submitted to the Client together with concise CV's of the appointees as part of the principal contractor's health and safety plan and if appointed copies of the appointments included in the occupational health and safety file.

All appointments must be approved by the Client and any changes of appointees or appointments must be communicated to the Client and agreed upon before being implemented.

The principal contractor must, furthermore provide the Client with an organogram of all contractors that he/she has appointed or intends to appoint and keep this list updated on a weekly basis.

Designation of occupational health and safety representatives (Section 17 of the OHSACT)

Where the principal contractor employs more than 20 persons [including the employees of other contractors (sub-contractors) and its supervisors] he has to appoint one occupational health and safety representative for every 50 employees or part thereof. General Administrative Regulation 6 requires that the election, appointment and subsequent designation of the occupational health and safety representatives be executed in consultation with employee representatives or employees. (Section 17 of the OHSACT as well as General Administrative Regulation 6 and 7 refer).

Occupational health and safety representatives have to be designated in writing and the designation must include the area of responsibility of the person and term of the designation.

Duties and functions of the occupational health and safety representatives (Section 18 of the OHSACT)

- a. The principal contractor must ensure that the designated occupational health
- b. Occupational health and safety representatives must be included in accident

And /or incident investigations.

- c. Occupational health and safety representatives must attend all occupational health and safety committee meetings.

Appointment of occupational health and safety committee (Section 19 of the OHSACT)

The principal contractor must establish an occupational health and safety committee consisting of all the designated occupational health and safety representatives together with a number of management representatives that are not allowed to exceed the number of occupational health and safety representatives on the committee and a representative of the Client who shall act as the chairperson without voting rights. The members of the occupational health and safety committee must be appointed in writing and copies of the appointments included in the occupational health and safety file.

The occupational health and safety committee must meet as a minimum on a monthly basis and consider, at least, the following agenda items:

- a) Opening and welcome.
- b) Members present, apologies and absent.
- c) Minutes of previous meeting.
- d) Matters arising from the previous meeting.
- e) Occupational health and safety representatives' reports.
- f) Incident and/or accident reports and investigations.
- g) Incident, accident and/or injury statistics.
- h) Other matters.
- i) Endorsement of registers and other statutory documents by a duly authorised representative of the principal contractor.
- j) Close and next meeting.

C3.9.4.4 MANDATORIES

It is a requirement that the principal contractor, when he appoints contractors or sub-contractors in terms of Construction Regulations 7(1)(c) includes an OHSACT Section 37(2) agreement (i.e. Agreement with Mandatory) in his agreement with such contractor.

C3.9.4.5 ADMINISTRATIVE CONTROLS AND THE OCCUPATIONAL HEALTH AND SAFETY FILE

The occupational health and safety file [Construction Regulation 7(1)(b)]

As required by Construction Regulation 7(1)(b), the principal contractor and other contractors will each keep an occupational health and safety file on site containing the following documents as a minimum:

- a) Copy of the construction work permit (for applicable projects) (Construction Regulation 3)
- b) Notification of construction work (Construction Regulation 4.).
- c) Updated copies of the OHSACT and its Regulations as well as the COID Act (General Administrative Regulation 4.).
- d) Proof of registration and good standing with the Compensation Commissioner or a COID Insurer [Construction Regulation 5(1)(j)].
- e) Occupational health and safety plan agreed with the Client including the underpinning risk assessment(s) and method statements [Construction regulation 7(1)].
- f) Copies of occupational health and safety committee meetings and other relevant minutes.
- g) Designs and/or drawings [Construction Regulation 7(1)(b)].
- h) A list of contractors (sub-contractors) including copies of the agreements between the parties, proof of good standing with the Compensation Commissioner or COID Insurer, and the type of work to be undertaken by each contractor (Construction Regulation 7).
- i) Appointment and designation forms as per paragraphs 4.3.1 and 4.3.2 above.
- j) The following registers:
 - k) Accident and/or incident register (Annexure 1 of the General Administrative Regulations);
 - l) Occupational health and safety representatives inspection register;
 - m) Construction vehicles and mobile plant inspections by controller;
 - n) Daily inspections of vehicles, plant and other equipment by the operator, driver and/or user;
 - o) Designer's inspections and structures record;
 - p) Inspection and maintenance of explosive actuated fastening devices;
 - q) Inspection of electrical installations (including inspection of portable electrical tools, electrical equipment and other electrical appliances);
 - r) Fall protection inspections;
 - s) First-aid box content;
 - t) Record of first-aid treatment;

PART C3: Scope of Work

- u) Fire equipment inspections and maintenance;
- v) Record of hazardous chemical substances kept and used on site;
- w) Ladder inspections;
- x) Machine safety inspections (including machine guards, lock-outs etcetera);
- y) Inspection registers and logbooks for lifting machines and –tackle (including daily inspections by drivers/operators);
- z) Inspections of scaffolding;
- aa) Inspections of stacking and storage;
- bb) Inspections of structures;
- cc) Pressure equipment inspections; and
- dd) Inspections of welding equipment.
- ee) All other applicable records.

The Client will conduct and evaluation of the principal contractor's occupational health and safety file from time to time.

C3.9.4.6 OCCUPATIONAL HEALTH AND SAFETY GOALS AND OBJECTIVES AND ARRANGEMENTS FOR MONITORING AND REVIEW OF OCCUPATIONAL HEALTH AND SAFETY PERFORMANCE

The principal contractor is required to maintain a casualty incident frequency rate (CIFR) of not more than four (See Annexure 2 to this document: "Measuring Injury Experience") and report on this to the Client on a monthly basis.

C3.9.4.7 NOTIFICATION OF CONSTRUCTION WORK (CONSTRUCTION REGULATION 4)

The principal contractor must, where the contract meets the requirements laid down in Construction Regulation 4, at least 7 days before construction work is to be carried out, notify the Department of Labour of the intention to carry out construction work and use the form (Annexure 2 in the Construction Regulations) for this purpose. A copy of the notification must be held on the occupational health and safety file and a copy must also be forwarded to the Client for record purposes.

C3.9.4.8 TRAINING, AWARENESS AND COMPETENCE

The contents and syllabi of all training required by the OHSACT and Regulations must be included in the principal contractor's occupational health and safety plan.

General induction training

All members of the contractor's site management as well as all the persons appointed as responsible for occupational health and safety in terms of the Construction and other Regulations will be required to attend a general induction session.

All employees of the principal and other contractors must be in possession of proof of general induction training.

All subsequent and newly appointed employees must also be subjected to the induction training as soon as possible after the appointment but prior to starting working on site.

Site-specific induction training

The principal contractor will be required to develop a contract work project specific induction training course based on the risk assessments for the contract work and train all employees and other contractors and their employees in this.

All employees of the principal and other contractors must be in possession of proof that they have attended a site-specific occupational health and safety induction training at all times.

Other training

- a) All operators, drivers and users of construction vehicles, mobile plant and other equipment must be in possession of valid proof of training and where applicable licenses or proof of competency.
- b) All employees in jobs requiring training in terms of the OHSACT and Regulations must be in possession of valid proof of training.
- c) Occupational health and safety training requirements [as required by the Construction Regulations and as indicated by the occupational health and safety specification and the risk assessment(s)] i.e. –

- General induction (Section 8 of the OHSACT);
- Site and job specific induction, including visitors (Sections 8 and 9 of the OHSACT);
- Site and project manager;
- Construction supervisor;
- Occupational health and safety representatives [Section 18 (3) of the OHSACT];
- Training of the appointees indicated in paragraphs 4.3.1 and 4.3.2;
- Operators and drivers of construction vehicles and mobile plant (Construction Regulation 23);
- Basic fire prevention and protection (Environmental Regulations 9 and Construction Regulation 29);
- Basic first-aid (General Safety Regulations 3);
- Storekeeping methods and safe stacking (Construction Regulation 28); and
- Emergency, security and fire coordinator.

Awareness and promotion

The principal contractor is required to have a promotion and awareness programme in place to create an occupational health and safety culture within employees as well as sub-contractors.

The following are some of the methods that may be used:

- Toolbox talks
- Posters
- Videos
- Competitions
- Suggestion schemes
- Participative activities such as employee “occupational health and safety circles”.

Notices and signs

The following notices and signs are, where applicable, compulsory on the construction site as well as the contractors' yards:

PART C3: Scope of Work

Area and/or activity where notice or sign is required	Notice or sign required in terms of
Display of notices and signs	General Safety Regulation 2B and SABS Code 1186
Entry	General Safety Regulation 2C(2)
First-aid	General Safety Regulation 3(6)
Toilets and change rooms	Facilities Regulation 2 (5) 4(2)(f)
Storage of flammable materials	General Safety Regulation 4(8)(a)(i) and (ii) [10(e) only applicable to contractor's yards]
Grinding wheels	Driven Machinery Regulation 8(1)(7)
Machinery	General Machinery Regulation 9 (Schedule D)
Explosive actuated fastening devices	Construction Regulation 21(2)(f)
Prohibition on smoking and eating or drinking at the workplaces where high risk substances [FR5 (1)] are stored or handled	Facilities Regulation 6(b)
Non-potable water	Facilities Regulation 7(B)
COVID 19 Signs	Construction Regulation

Competence

The principal contractor shall ensure that his and other contractors' employees appointed are competent and that all training required to undertake the work safely and without risk to health of their or other persons, has been successfully completed before work commences.

The principal contractor shall ensure that follow-up and refresher training is conducted on a regular basis as well as the contract work progresses and the work situation or requirements changes.

Records of all training must be kept on the occupational health and safety file for auditing purposes.

C3.9.4.9 CONSULTATION, COMMUNICATION AND LIAISON

The following arrangements will apply-

- a. Occupational health and safety liaison between the Client, the principal contractor, the other contractors, the designer and other concerned parties will be through the occupational health and safety committee. In the absence of a health and safety committee, the Client and principal contractor will agree on an alternative communication forum to be implemented.
- b. In addition to the above, communication may be directly to the Client or his appointed Agent, verbally (followed up in writing within 14 calendar days) or in writing, as and when the need arises.
- c. Consultation with the workforce on occupational health and safety matters will be through their supervisors, occupational health and safety representatives, the occupational health and safety committee and their elected trade union representatives, if any.
- d. The principal contractor will be responsible for the dissemination of all relevant occupational health and safety information to the other contractors, for example design changes agreed with the Client and the designer, instructions by the Client and/or his Agent, exchange of information between contractors, the reporting of hazardous and/or dangerous conditions and/or situations etcetera.
- e. The principal contractor will be required to do site safety walks with the Client and/or his Agent on a basis to be determined and agreed between the parties.
- f. The principle and other contractors will be required to conduct toolbox talks with their employees on at least a weekly basis and records of these including the topics discussed must be kept on the occupational health and safety file. Employees must acknowledge the receipt of toolbox talks which record must, likewise be kept on the occupational health and safety file.
- g. The principal contractor's most senior manager on site will be required to attend all the Client's occupational health and safety meetings.

- h. The Client or his Agent and the principal contractor will agree on the dates, times and venues of the occupational health and safety meetings.

C3.9.4.10 CHECKING, REPORTING AND CORRECTIVE ACTIONS

a. Monthly compliance assessment by Client [Construction Regulation 5(1)(0)]

The Client will be conducting a periodic assessment to comply with Construction Regulation 5(1)(o) and to confirm that the principal contractor has implemented and is maintaining the agreed and approved occupational health and safety plan.

b. Other assessments and inspections by the Client

The Client reserves the right to conduct other ad-hoc assessments and inspections as deemed necessary. This could include among others site safety walks.

c. Conducting an assessment

A representative of the principal contractor must accompany the Client on all assessments and inspections and may conduct his/her own inspection at the same time. Each party will, however, take responsibility for the results of his/her own assessment and/or inspection.

d. Contractor's assessments and inspections

The principal contractor is to conduct his own internal assessments and inspections to verify compliance with his own occupational health and safety plan and management system as well as the requirements of this specification and the compliance of other contractors under his/her control.

e. Inspections by occupational health and safety representatives and other appointees

Occupational health and safety representatives must conduct weekly inspections of their areas of responsibility and report thereon to their foreman or supervisor whilst other appointees must conduct inspections and report thereon as specified in their appointments for example vehicle, plant and machinery drivers, operators and users must conduct daily inspections before start-up.

f. Recording and review of inspection results

All the results of the abovementioned inspections must be in writing, reviewed at occupational health and safety committee meetings, endorsed by the chairperson of the meeting and placed on the occupational health and safety file.

g. Reporting of inspection results

The principal contractor is required to provide the Client with a monthly report in the format as per the attached Annexure 3: "Safety, Health and Environment Risk Management Report".

C3.9.4.11 INCIDENT REPORTING AND INVESTIGATION

a. Reporting of accidents and incidents (Section 24 and General Administrative Regulation 8 of the OHSACT)

The principal contractor must report all incidents where an employee is injured on duty to the extent that he/she:

- dies

PART C3: Scope of Work

- becomes unconscious
- loses a limb or part of a limb
- is injured or becomes ill to such a degree that he/she is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or continue with the activity for which he/she was usually employed

or where:

- A major incident occurred
- The health or safety of any person was endangered
- Where a dangerous substance was spilled
- The uncontrolled release of any substance under pressure took place
- Machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects
- Machinery ran out of control

to the Client within two calendar days and to the Provincial Director of the Department of Labour within seven calendar days from date of incident (Section 24 of the OHSACT and General Administrative Regulation 8), **except** that, where a person has died, has become unconscious for any reason or has lost a limb or part of a limb or may die or suffer a permanent physical defect, the incident must be reported to both the Client and the Provincial Director of the Department of Labour forthwith by telephone, telefax or e-mail. All other reports should still be completed and provided as required.

The principal contractor is required to provide the Client with copies of all statutory reports required in terms of the OHSACT within seven calendar days of the incident occurring.

The principal contractor is required to provide the Client with copies of all internal and external accident/incident investigation reports, including the reports contemplated in 4.11.2 (3) and (4) below, within seven calendar days of the incident occurring.

b. Accident and incident investigation (General Administrative Regulation 9)

- The principal contractor is responsible for the investigation of all accidents and/or incidents where employees and non-employees were injured to the extent that he, she and/or they had to be referred for medical treatment by a doctor, hospital or clinic.
- The results of the investigation to be entered into the accident and/or incident register.
- The principal contractor is responsible for the investigation of all minor and non-injury incidents as described in Section 24 (1) (b) and (c) of the OHSACT and keeping a record of the results of such investigations including the steps taken to prevent similar accidents/incidents in future.
- The principal contractor is responsible for the investigation of all road traffic accidents, related to the construction activities, and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.
- The Client reserves the right to hold its own investigation into an incident or call for an independent external investigation.

C3.9.5 OPERATIONAL CONTROL

C3.9.5.1 EMERGENCY PREPAREDNESS, CONTINGENCY PLANNING AND RESPONSE

- a. The Contractor must appoint a competent person to act as emergency controller and/or coordinator.
- b. The principal contractor must conduct an emergency identification exercise and establish what emergencies could possibly develop. He/she must then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that the Client may have in place.

- c. The principal contractor and the other contractors must hold regular practice drills of contingency plans and emergency procedures to test them and familiarise employees with them.

C3.9.5.2 FIRST-AID (GENERAL SAFETY REGULATION 3)

- a. The principal contractor must provide first-aid equipment and have qualified first-aider(s) on site as required by General Safety Regulation 3 of the OHSACT.
- b. The contingency plan of the principal contractor must include arrangements for the speedily and timeously transportation of injured and/or ill person(s) to a medical facility or getting emergency medical support to person(s) who may require it.
- c. The principal contractor must have firm arrangements with his contractors in place regarding the responsibility of these contractor's first-aid arrangements as well as treatment of injured and/or ill employees.

C3.9.5.3 SECURITY

- a. The principal contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must, amongst other, include the rule that non-employees will not be allowed on site unaccompanied.
- b. The principal contractor must develop a set of project applicable security rules and procedures and maintain these throughout the construction period.

C3.9.5.4 ACCOMMODATION OF TRAFFIC

- a. Where construction work is undertaken in, next to or close to a public road, the use of appropriate as well as a sufficient number of road signs is of paramount importance to protect employees against traffic and to warn all road users of the presence of construction work as well as construction employees/risks/vehicles.

PART C3: Scope of Work

- b. The principal contractor shall ensure that appropriate as well as a sufficient number of road signs are posted to protect employees against traffic and to warn all road users of the presence of construction work as well as construction employees/vehicles. These signs shall be repeated and utilised, where appropriate, as actual construction work is approached.
- c. The following signage is required as a minimum where construction work is undertaken in, next to or close to a public road:
 - “Construction work ahead” sign at least 45 meters before the start of the construction work;
 - “Lane narrows” sign 30 meters before the start of the construction work;
 - “Keep right/left” sign 15 meters before the start of the construction work and again where the tapering begins; and
 - Delineators and cones every 5 meters for the entire stretch of construction work.
- d. Where construction work includes excavations in or next to a public road, warning lights or visible boundary indicators should be provided after dark or when visibility is poor.
- e. The maintenance of all signage and especially those that is suitable after dark should be duly managed.
- f. Where appropriate duly trained flag persons should be deployed a good distance ahead of areas where traffic is deviated or lanes closed off. These flag persons should be managed assertively to ensure that they add optimal value and should they not do so they should be retrained and if necessary replaced.
- g. The community liaison officer (CLO) should also be sensitised on the optimal management of traffic and the risks involved and then be instructed to increase community awareness through talking to all stakeholders including the distribution of suitable information brochures.

C3.9.5.5 LIFTING TACKLE

The following requirements will apply to lifting tackle:

- a. Manufactured of sound material, well-constructed and free from latent defects;
- b. Clearly and conspicuously marked with an identity number;

PART C3: Scope of Work

c. Maximum mass load factor of safety:

- | | | |
|--|---|-----------|
| • Natural fibre ropes | - | 10(ten) |
| • Man-made fibre ropes and woven webbing | - | 06(six) |
| • Steel wire ropes – single rope | - | 06(six) |
| • Steel wire ropes – combination slings | - | 08(eight) |
| • Mild Steel chains | - | 05(five) |
| • High tensile/alloy steel chains | - | 04(four) |

- d. Steel wire ropes must be discarded (not used any further for lifting purposes) when wear and corrosion is evident and must be examined by a competent person every three months for this purpose and the results recorded in a designated log book.

C3.9.5.6 CONSTRUCTION VEHICLE AND MOBILE PLANT OPERATORS

The following requirements will apply to construction vehicle and mobile plant operators:

- a. Only certified and/or competent employees may be allowed to operate any construction vehicle and mobile plant.
- b. Only employees duly authorised to do so may operate any construction vehicle and mobile plant.
- c. Only employees physically and psychologically fit, i.e. in possession of a medical certificate of fitness, may be allowed to operate any construction vehicle and mobile plant.

C3.9.5.7 CONSTRUCTION VEHICLES AND MOBILE PLANT (CONSTRUCTION REGULATION 23)

Construction vehicles and mobile plant will initially during the competency evaluation process be inspected by the Client prior to being allowed on a project site and suppliers of hired vehicles, plant and equipment will be required to comply with this specification as well as the OHSACT and Regulations.

Construction vehicles and mobile plant must be:

- a. Of acceptable design and construction;
- b. Maintained in good working order;
- c. Used in accordance with their design and intention for which they were designed;
- d. Operated and/or driven by trained, competent and authorised operators/drivers. No unauthorised persons to be allowed to drive construction vehicles and mobile plant;
- e. Provided with safe and suitable means of access;

PART C3: Scope of Work

- f. Fitted with adequate signalling devices to make movement safe including reversing;
- g. Provided with roll-over protection;
- h. Inspected daily before start-up by the driver, operator and/or user and the findings recorded in a register/log book and any defects addressed as matter of urgency;
- i. Fitted with two head and two tail lights that is in good working condition whilst operating under poor visibility conditions; and
- j. Used for transporting persons must have seats firmly secured and sufficient for the number of persons being transported.

No loose tools, material etcetera is allowed in the driver and/or operators compartment/cabin nor in the compartment in which any other persons are transported.

No person may ride on construction vehicles and mobile plant except for in a safe place designed and provided for this purpose.

All construction vehicles and mobile plant daily inspection records must be kept in the occupational health and safety file.

C3.9.5.8 USE AND STORAGE OF FLAMMABLES (CONSTRUCTION REGULATION 25)

The principal contractor must ensure that:

- a. No person is required or permitted to work in a place where there is the danger of fire or an explosion due to flammable vapors being present unless adequate precautions is taken;
- b. Flammables stored on a construction site are stored in a well-ventilated, reasonably fire-resistant container, cage or room that is kept locked with consistent access control measures in place and sufficient firefighting equipment installed and fire prevention methods practiced for example proper housekeeping;
- c. Only one day's quantity of flammable is to be kept in the workplace; and
- d. Containers (including empty containers) to be kept closed to prevent fumes/vapours from escaping and accumulating in low lying areas.

C3.9.5.9 HOUSEKEEPING (CONSTRUCTION REGULATION 27)

The principal contractor must ensure that:

- a. Housekeeping is continuously implemented and maintained;

PART C3: Scope of Work

- b. Materials and equipment is properly stored;
- c. Scrap, waste and debris is removed off site regularly;
- d. Materials placed for use are placed safely and not allowed to accumulate or cause obstruction to the free-flow of pedestrians and vehicular traffic;
- e. An unimpeded work space is maintained for every employee;
- f. Every workplace is kept clean, orderly and free of tools and the likes that are not required for the work being done; and
- g. As far as is practicable, every floor, walkway, stair, passage and gangway is kept in good state of repair, skid-free and free of obstruction, waste and materials.

C3.9.5.10 STACKING AND STORAGE (CONSTRUCTION REGULATION 28)

The principal contractor must ensure that:

- a. A competent person is appointed in writing to supervise all stacking and storage on a construction site;
- b. Adequate storage areas are provided and demarcated;
- c. The storage areas are kept neat and under control;
- d. The base of any stack is level and capable of sustaining the weight exerted on it by the stack;
- e. The items in the lower layers can support the weight exerted by the top layers;
- f. Cartons and other containers that may become unstable due to wet conditions are kept dry;
- g. Pallets and containers are in good condition and no material is allowed to spill out;
- h. The height of any stack does not exceed 3 times the base unless stepped back at least half the depth of a single container at least every fifth tier or the approval of an inspector of the Department of Labour has been obtained to build the stacks higher with the aid of a machine. (The operator of the machine must be protected against items falling from overhead or off the stack and no items may overhang);
- i. The articles that make up a single tier are consistently of the same size, shape and mass;
- j. Structures for supporting stacks are structurally sound and able to support the mass of the stack;
- k. No articles are removed from the bottom of the stack first but from the top tier first;
- l. Anybody climbing onto a stack can and does do it safely and that the stack is sufficiently stable to support him or her;
- m. Stacks that are in danger of collapsing are broken down and restacked;
- n. Stability of stacks are not threatened by vehicles or other moving plant and machinery;

PART C3: Scope of Work

- o. Stacks are built in a header and stretcher fashion and that corners are securely bonded; and
- p. Persons climbing onto stacks do not approach unguarded moving machinery or electrical installations.

C3.9.5.11 STORAGE OF FLAMMABLE AND HAZARDOUS CHEMICALS (HAZARDOUS CHEMICAL SUBSTANCES REGULATIONS)

See paragraphs 5.8 above and 5.17 below.

C3.9.5.12 FIRE PREVENTION AND PROTECTION

The principal contractor must ensure that:

- a. The risk of fire is avoided;
- b. Sufficient and suitable storage of flammables is provided;
- c. All employees are instructed in the use of the firefighting equipment and know how to attempt to extinguish a fire;
- d. A sufficient number of employees are appointed and trained to act as an emergency team to deal with fires and other emergencies;
- e. Employees are informed regarding emergency evacuation procedures and escape routes;
- f. Emergency escape routes are kept clear at all times and clearly marked;
- g. Evacuation assembly points are demarcated and made known to employees;
- h. Evacuation is regularly practiced to ensure that all persons are evacuated timeously and;
- i. Roll call is held after evacuation to account for all employees and to ensure that no-one including visitors and disabled persons have been left behind; and
- j. A clearly audible, to all persons on site, siren or alarm is fitted and regularly tested.

C3.9.5.13 EATING, CHANGING, WASHING AND TOILET FACILITIES (CONSTRUCTION REGULATION 30)

1. Toilets

The provision of toilets for each sex is required in terms of the National Building Regulations and Construction Regulation 30.

Chemical toilets are allowed instead of the water borne sewerage type. Toilets have to be provided at a ratio of at least 1 toilet per 30 employees.

2. Showers

At least cold-water showers of some sort for each sex have to be provided at a ratio of at least 1 shower per 15 employees.

3. Change rooms

Some form of screened off changing facility must be provided separately for each sex.

4. Eating facility

Some form of eating facility sheltered from the sun, wind and rain must be provided.

C3.9.5.14 PERSONAL AND OTHER PROTECTIVE EQUIPMENT (SECTIONS 8, 15 AND 23 OF THE OHSACT)

The principal contractor is required to proactively identify the hazards in the workplace and deal with them on an ongoing basis. He/she must either remove them or, where impracticable take steps to protect employees and make it possible for them to work safely and without risk to health under the hazardous conditions.

Personal protective equipment should, however, be the last resort and there should always first be an attempt to apply re-engineering and other solutions to mitigating hazardous situations before the issuing of personal protective equipment is considered.

Where it is not possible to create an absolutely safe and healthy workplace the principal contractor is required to inform employees regarding this and issue, free of charge, suitable equipment to protect them from any hazards being present and that allows them to work safely and without risk to health in the hazardous environment.

PART C3: Scope of Work

It is a further requirement that the principal contractor maintain the said equipment that he/she instructs and trains the employees in the use of the equipment and ensures that the prescribed equipment is used by the employee/s in a consistent and correct manner.

Employees do not have the right to refuse to use and/or wear the equipment prescribed by the employer and, if it is impossible for an employee to use or wear prescribed protective equipment through health or any other valid reason, the employee cannot be allowed to continue working under the hazardous condition(s) for which the equipment was prescribed but an alternative solution has to be found that may include relocating the employee.

The principal contractor may **not charge any fee** for protective equipment prescribed by him or her **but may charge for equipment under the following conditions**, following a disciplinary hearing:

- Where the employee requests additional issue in excess of what is prescribed;
- Where the employee has blatantly abused or neglected the equipment leading to early failure; and
- Where the employee has lost the equipment.

C3.9.5.15 PORTABLE ELECTRICAL TOOLS AND EQUIPMENT (ELECTRICAL MACHINERY REGULATION 9)

Portable electrical tools and equipment includes every unit that takes electrical power from a 15 ampere plug point and is moved around for use in the workplace i.e. drills, saws, grindstones, portable lights, etcetera. In addition electrical appliances such as fridges, hotplates, heaters, and etcetera must be inspected regularly but at least on a weekly basis and maintained to the same standards as portable electrical tools and appliances.

The use, inspection and maintenance of portable electrical tools and equipment must be governed by the following:

- Regular inspections by a competent person appointed in writing;
- Inspection results must be recorded in a register;
- Only competent authorised persons are allowed to use portable electrical tools and equipment; and
- The correct protective equipment is worn/used whilst operating portable electrical tools and equipment.

This equipment -

- Must be maintained in good condition at all times to prevent an electrical shock to the user;
- The main source should incorporate an earth leakage protection device or receive power through a double wound transformer or be double insulated and clearly marked as such; and
- All equipment must be fitted with a switch to allow for safe and easy starting and stopping.

C3.9.5.16 PUBLIC HEALTH AND SAFETY (SECTION 9 OF THE OHSACT)

The principal contractor is responsible for ensuring that non-employees affected by the construction work are made aware of the dangers likely to arise from said construction work as well as the precautionary measures to be observed to avoid or minimise those dangers.

This includes among others:

- a. Non- employees entering the site for whatever reason;
- b. The surrounding community; and
- c. Passers-by the site.

Appropriate signage must be posted to this effect and all employees on site must be instructed to ensure that non-employees are protected at all times.

All non-employees entering the site must receive site applicable induction into the hazards and risks and the control measures for these.

C3.9.5.17 HAZARDOUS CHEMICAL SUBSTANCES

The principal contractor must ensure that:

- a. Employees receive the necessary information and training to be able to use, handle and store hazardous chemical substances safely;
- b. The risk assessments required in terms of Construction Regulation 9 include employee exposure to hazardous chemical substances and that the necessary measures be taken to protect persons from being detrimentally affected by hazardous chemical substances present or used in the workplace;

PART C3: Scope of Work

- c. Suppliers provide the necessary information in the form of material safety data sheets regarding hazardous chemical substances required to ensure the safe use, handling and storage of these substances;
- d. An up-to-date list is kept on site of hazardous chemical substances stored and used together with the material safety data sheet of the said hazardous chemical substances;
- e. Hazardous chemical substances containers be clearly marked as to the contents and main hazardous category e.g. "Flammable" or "Corrosive" and the reference number of the hazardous chemical substances on the list indicated above;
- f. No person eats or drinks in a hazardous chemical substances workplace; and
- g. Hazardous chemical substances waste is disposed of safely in terms of hazardous waste disposal requirements.

C3.9.5.18 C3.9.5.18 EXCAVATIONS (CONSTRUCTION REGULATION 13)

All excavation work has to comply with the following:

- C3.9.5.18.1 Excavation work must be carried out under the supervision of a competent person with at least two years practical experience in excavation work who has been appointed in writing.
- C3.9.5.18.2 Before excavation work begins the stability of the ground must be evaluated.
- C3.9.5.18.3 Whilst excavation work is being performed, the principal contractor must take suitable and sufficient steps to prevent any person from being buried or trapped by a fall or dislodgement of material.
- C3.9.5.18.4 No person may be required or permitted to work in an excavation that has not been adequately shored or braced.
- C3.9.5.18.5 Where the excavation is in stable material or where the sides of the excavation are sloped back to at least the maximum angle of repose measured relative to the horizontal plane, shoring or bracing may be left out **but only after** written permission has been obtained from the appointed competent person.
- C3.9.5.18.6 Shoring and bracing must be designed and constructed to safely support the sides of the excavation and prevent it from collapsing.

- C3.9.5.18.7 Where uncertainty exists regarding the stability of the soil the opinion of a competent professional engineer or professional technologist must be obtained, before excavation proceeds, whose opinion will be decisive. The opinion must be in writing and signed by the engineer or technologist as well as the appointed excavation supervisor.
- C3.9.5.18.8 No load or material may be placed near the edge of an excavation if it is likely to cause a collapse of the excavation, unless suitable shoring has been installed to be able to carry the additional load. Best practice requires a one meter clearance so as to reduce the pressure on the side walls as well as risk of material falling onto persons inside the excavation.
- C3.9.5.18.10 Every excavation must be provided with safe means of access. Should ladders be utilised for this purpose they should be duly secured.
- C3.9.5.18.11 The location and nature of any existing services such as water, electricity, gas, telecommunication etcetera must be established before any excavation is commenced with and any service that may be affected by the excavation must be protected and made safe for employees working in or near in the excavation.
- C3.9.5.18.12 Every excavation, including the shoring and bracing or any other method to prevent a possible collapse, must be inspected by the appointed competent person as follows:
- Daily before work commences
 - After an unexpected collapse of the excavation or part thereof
 - After substantial damage to any support
 - After rain
- C3.9.5.18.13 The results of any inspections must be recorded in a register kept on site in the health and safety file.
- C3.9.5.18.14 Every excavation accessible to the public or that is adjacent to a public road or thoroughfare or that threatens the safety of persons, must be adequately barricaded or fenced off, on all sides, to at least one meter high and as close

to the excavation perimeter as practicable. All such excavations must also be provided with warning lights or visible boundary indicators after dark or when visibility is poor.

C3.9.5.19 WORKING IN CONFINED SPACES (SUCH AS MANHOLES)

a. Ventilation

The confined space or manhole cover and two adjacent covers must be opened (i.e. a total of three manholes) and the confined space or manhole be allowed to ventilate for at least 15 minutes before entering the manhole. All open manholes must be barricaded and manned at all times.

A gas monitor must be lowered to the bottom of the confined space or manhole with a rope to test the presence of any toxic/flammable gas. If any gas is detected, the space or line must be force ventilated by means of a blower for at least 15 minutes where after the air must be tested again. Under no circumstances may any space or manhole be entered while there is a toxic/flammable gas present.

After the undertaking of the necessary work, the person in charge of the activities must confirm that all the employees are accounted for and ensure that all the manholes are properly closed and barricading removed.

b. Entering a confined space

When entering a confined space or manhole, the person entering the space or manhole must wear a safety harness, fully operational gas detector as well as a self-rescuer.

A lifeline must be attached to the safety harness and a person on the surface must be in continuous contact with the person in the manhole. At least one person on the surface must be trained in basic first-aid (level 1) with proof of such training as well as a fully equipped first aid box available on site.

No person shall remain within a confined space or manhole for a period of more than one hour at a time. A minimum of 5 minute rest periods on the surface must be taken after this period before re-entering.

PART C3: Scope of Work

Should the alarm sound on the gas monitor, all employees must exit the confined space or manhole and the immediate area must also be evacuated immediately. The area must be properly ventilated and re-tested before re-entering the confined space or manhole. Professional support should be called for if necessary.

Employees must be provided with flameproof lighting when entering deep manholes or manholes with the possibility of flammable gases. No naked lights, smoking or unprotected electrical apparatus which may cause sparks, shall be permitted in any manhole or confined space or in their vicinity.

c. General

All employees working in confined spaces or manholes must be issued with fully functioning gas monitoring equipment and safety harnesses as well as self-rescuers where applicable. All these employees must be trained (including refresher training on a regular and continuous basis) in the use thereof.

Where over-pumping between manholes is involved, only leak free pumping machines and conveyance tubes must be used and allowed. The necessary roads signs and barricading must also be utilised.

d. Safety equipment

All teams must be issued with fully functional gas monitoring equipment and safety harnesses and self-rescuers where applicable. All employees must be trained (including refresher training on a regular and continuous basis) in the use thereof.

e. General records

The following records shall be implemented and maintained by the principal contractor:

- Confined space entry permits
- Confined space entry registers
- Safety harness and gas monitoring equipment registers
- Risk assessments
- Incident registers

f. Training

- All employees that have to enter a confined space or manholes must be formally trained and confirmed competent before being required to enter such areas (new employees to complete this training and be declared competent before allowed to work in a confined space).
- Refresher courses must be attended by employees at least once every 2 years or immediately if new methodologies or equipment are adopted or acquired.
- Continuous on-site training and support by supervisory staff should be undertaken and enforced where required.

C3.9.5.20 WORKING OVER OR CLOSE TO WATER

Where construction or other support work is undertaken over or in close proximity to water or similar liquids such as wastewater and sludge, the principal contractor shall –

- a. Appoint a competent person in writing to supervise, control and inspect any work on or over or in close proximity of the water as well as the construction, installation, and dismantling of caissons and/or cofferdams and/or other support or safety structures;
- b. Ensure that written proof of the competence of above appointee is available on site;
- c. Ensure that risk assessments are carried out by the competent person before any work is undertaken, mitigation measures documented as well as implemented and thereafter evaluated on a daily basis;
- d. Undertake the necessary induction and refresher training;
- e. Ensure that measures for the timeous warning of flooding are in place;
- f. Ensure that provision is made to prevent employees from falling into the water and the rescuing of employees in danger of drowning;
- g. Ensure that where an employee is exposed to the risk of drowning by falling into the water, a lifejacket is provided to and worn by the employee; and
- h. Provide applicable personal protective equipment such as safety harnesses etcetera and enforce the utilisation thereof.

C3.9.5.21 TRANSPORTATION OF EMPLOYEES

- a. Any vehicle used to transport employees must have seats firmly secured and adequate for the number of employees to be carried.

- b. Regulation 247 of the National Road Traffic Act, Number 93 of 1996 (NRTA) stipulates that the principal contractor shall not allow employees to be transported in a vehicle unless the portion of the vehicle in which the employees are being conveyed is enclosed to a height of –
- at least 350 mm above the surface on which employees are seated; or
 - at least 900 mm above the surface on which employees are standing,
- in a manner and with a material of sufficient strength to prevent employees from falling from such vehicle when it is in motion.
- c. Regulation 247 of the NRTA also stipulates that the principal contractor shall also not allow any employees to be conveyed in the goods compartment of a vehicle together with any tools or goods, except their personal effects, unless that portion in which the employees are being conveyed is separated by means of a partition, from the portion in which such goods are being conveyed.

C3.9.6 HEALTH AND SAFETY POLICY

The principal contractor has to provide the Client, as an annexure to the health and safety plan, with a detailed health and safety policy outlining the principal contractor's stance on and principles adopted for health and safety.

C3.9.7 COST FOR HEALTH AND SAFETY MEASURES DURING THE CONSTRUCTION PROCESS

To enable the Client to comply with Construction Regulation 5(1)(g), all potential principal contractors submitting tenders/bids have to demonstrate to the Client that sufficient provision has been made for the cost to implement and maintain the health and safety plan proposed by the principal contractor to meet the requirements of this health and safety specification as well as that of the OHSACT and its Regulations.

A detailed schedule of costs has to be included in the health and safety plan submitted as part of the potential principal contractor's tender document. Failure by the principal contractor to adhere to this requirement will force the Client to reject the tender/bid in terms of Construction Regulation 5(1)(h)

C3.9.8 PROJECT SPECIFIC RISK ASSESSMENT REQUIREMENTS

See Annexure 5.

C3.9.9 OVERVIEW OF ANNEXURES

Annexure 1: Legal compliance assessment.

Annexure 2: Measuring injury experience.

Annexure 3: SHE risk management report.

Annexure 4: Guide to risk assessments.

Annexure 5: List of risk assessments.

C3.9.10 ENQUIRIES

For any enquiries regarding this occupational health and safety specification, please contact

Name: To be indicated at tender award

Annexure 1

Legal compliance assessment

Occupational health, -safety and environment: Risk assessment checklist

(Based on the Construction Regulations of the Occupational Health and Safety Act)

* Denotes items applicable to both construction sites, contractor plant and storage yards

ELEMENT	REMARKS
1. Administrative and legal requirements	
2. Education, training and promotion	
3. Public safety, security measures and emergency preparedness	
4. Personal protective equipment	
5. Housekeeping	
6. Ladders	
7. Electrical safeguarding	
8. Emergency, fire prevention and protection	
9. Excavations	
10. Tools	
11. Transport and materials handling equipment	
12. Site plant and machinery	
13. Plant and storage yard or site workshop specifics	
14. Workplace environment, health and hygiene	

1. Administrative and Legal Requirements

OHSACT Section or Regulation	Subject	Requirements	Yes/No
Construction Regulation 3	Application for construction work permit	Should the project qualifies to trigger this requirement - Application for permit lodged; Copy of construction permit in the OHS file; and Is the site specific permit number conspicuously displayed at the main entrance.	
Construction Regulation 4	Notice of carrying out Construction work	For construction projects where no permit is required - Was the Department of Labour notified; and Is a copy of notice available on-site.	
General Admin. Regulation 4	Copy of OHSACT	Updated copy of the OHSACT and Regulations on site. Readily available for perusal by all employees.	
COID Act Section 80 and Construction Regulation 5(1)(j)	Registration with Compensation Commissioner or other approved compensation insurer	Written proof of registration/Letter of good standing available on site.	
Construction Regulation 4 and 5(1)	OHSACT specification, plans and program	OHSACT spec received from City of Tshwane. OHSACT plan developed. OHSACT program implemented. Plans and program updated regularly.	
Section 8(2)(d)	Hazard identification and risk assessment	Competent risk assessor appointed in writing	

PART C3: Scope of Work

OHSACT Section or Regulation	Subject	Requirements	Yes/No
Construction Regulation 9		<p>Proof of risk assessor's competence available on site</p> <p>Risk assessment and –plan drawn up and updated.</p> <p>Baseline risk assessment undertaken prior to commencement of construction work.</p> <p>Copy of baseline risk assessment available on site.</p> <p>Continued risk assessments undertaken and recorded.</p> <p>Copies of ongoing risk assessments available on site.</p> <p>Employees and sub-contractors informed and trained by a competent person in the risk assessment before work commences and an ongoing basis thereafter.</p> <p>Health and safety committee or employee representatives consulted on the monitoring and review of the risk assessments.</p>	
Section 16(2)	Assigned duties (Managers)	Responsibility of complying with the OHSACT assigned to other person/s by CEO.	
Construction Regulation 8(1)	Designation of person ultimately responsible for occupational health and safety on site	Competent person appointed in writing as construction manager.	
Construction Regulation 8(2)	Designation of assistant for construction manager	Competent person appointed in writing as assistant construction manager.	

PART C3: Scope of Work

OHSACT Section or Regulation	Subject	Requirements	Yes/ No
Construction Regulation 8(7)	Designation of person responsible for ensuring occupational health and safety compliance	Competent person appointed in writing as construction supervisor.	
Construction Regulation 8(8)	Designation of assistant for responsible person	Competent person(s) appointed in writing as assistant construction supervisors.	
Section 17 & 18 and General Administrative Regulations 6 and 7	Election and designation of occupational health and safety representatives	More than 20 employees - one representative and one additional representative for each 50 employees or part thereof. Designation in writing, period and area of responsibility specified. Meaningful reports. Reports actioned by management.	
Section 19 and 20 and General Administrative Regulations 5	Occupational health and safety committee/s	Committee/s established. Members appointed in writing. Meetings held monthly. Minutes kept. Actioned by management.	
Section 37(1) and (2)	Agreement with mandataries, contractors and sub-contractors	Written agreement with contractors and sub-contractors. Updated list of contractors and sub-contractors displayed. Proof of Registration with Compensation Commissioner or Compensation Insurer as well as Letter of Good Standing. Construction Supervisor designated. Written arrangements regarding representatives and committee.	

PART C3: Scope of Work

OHSACT Section or Regulation	Subject	Requirements	Yes/No
		Written arrangements regarding first-aid.	
Construction Regulation 7(1)(c) and 7(2)(a)	Management of sub-contractors	Has the principal contractor – provided all sub-contractors with relevant sections of the client's OHS specification formally evaluated and approved all sub-contractors' OHS plans. ensured that the sub-contractors appointed made sufficient provision for the costs to be incurred to implement and maintain their OHS plan.	
Construction Regulation 7(1)(g)	Medical certificates of fitness	Are medical certificates of fitness (issued by an occupational health practitioners) specific to the construction work performed available for all employees on site	
Section 24 and General Administrative Regulation 8 COID Act Section 38, 39 and 41	Reporting of incidents (Department of Labour)	Incident reporting procedure displayed. All incidents in terms of section 24 reported to the Provincial Director, Department of Labour, within 3 days (Annexure 1 and/or WCL 1 or 2). Cases of occupational disease reported. Copies of reports available on site. Record of first-aid injuries kept.	
General Administrative Regulation 9	Investigation and recording of incidents	All injuries which resulted in the person receiving medical treatment other than first aid, recorded and investigated by investigator designated in writing.	

PART C3: Scope of Work

OHSACT Section or Regulation	Subject	Requirements	Yes/ No
		Copies of reports (Annexure 1) available on site. Tabled at committee meeting. Actioned taken by site management.	
Construction Regulation 13	Excavations	Competent person/s appointed in writing to supervise and inspect excavation work. Written proof of competence of above appointee/s available on site. Risk assessment carried out. Excavations inspected: before every shift; after any blasting; after an unexpected fall of ground; after any substantial damage to the shoring; and after rain. Inspections register kept. Method statement developed where explosives will be and/or are used.	
Construction Regulation 26	Water environments (including caissons and cofferdams)	Competent person appointed in writing to supervise, control and inspect work on or over water and the construction, installation, and dismantling of caissons and/or cofferdams. Written proof of competence of above appointee available on site. Risk assessment carried by a competent person on a daily basis. Inspection register kept.	
Construction Regulation 24	Inspection and maintenance of electrical installation	Competent person appointed in writing to inspect/test the installation and equipment.	

PART C3: Scope of Work

OHSACT Section or Regulation	Subject	Requirements	Yes/No
Electrical Machinery Regulations 9 and 10 Electrical Installation Regulations	and equipment (including portable electrical tools)	Written proof of competence of above appointee available on site. Inspections: Electrical installation and equipment inspected after installation, alterations and quarterly thereafter. Inspection registers kept. Portable electric tools and -lights and extension leads identified/numbered. Monthly visual inspection by user, issuer or storeman. Register kept.	
Construction Regulation 28 General Safety Regulation 8(1)(a)	Designation of stacking and storage supervisor	Competent persons with specific knowledge and experience designated to supervise all stacking and storage. Written proof of competence of above appointee available on site.	
Construction Regulation 29 Environmental Regulation 9	Designation of a person to coordinate emergency planning and fire protection	Person/s with specific knowledge and experience designated to coordinate emergency contingency planning and execution and fire prevention measures. Emergency evacuation plan: Developed and available on site; Drilled and practiced; and Records of drills and practices available on site. Fire risk assessment carried out. All fire extinguishing equipment: Identified and on register; Inspected weekly and inspection registers kept; Replaced after use; and Serviced annually.	

PART C3: Scope of Work

OHSACT Section or Regulation	Subject	Requirements	Yes/No
General Safety Regulation 3	First-aid	<p>Every workplace provided with sufficient number of first-aid boxes (required where 5 persons or more are employed).</p> <p>First-aid boxes freely available.</p> <p>Content of boxes as per the minimum requirements of the OHSACT.</p> <p>One qualified first-aider appointed for every 50 employees (required where more than 10 persons are employed).</p> <p>List of First-aiders and competency certificates available on site.</p> <p>Name and contact details of person in charge of first-aid box clearly displayed.</p> <p>Location of first-aid boxes clearly demarcated.</p> <p>Signs instructing employees to report all injuries and/or illness including first-aid injuries.</p>	
General Safety Regulation 2	Personal protective equipment (PPE)	<p>PPE risk assessment carried out.</p> <p>Items of PPE prescribed and use enforced.</p> <p>Records of issue kept.</p> <p>Undertaking by employee to use and/or wear PPE.</p>	
Hazardous Chemical Substances (HCS) Regulations Construction Regulation 25	Control of storage and usage of HCS and other flammables	<p>Competent person/s with specific knowledge and experience designated to control the storage and usage of HCS (including flammables).</p>	

PART C3: Scope of Work

OHSACT Section or Regulation	Subject	Requirements	Yes/No
		Written proof of competence of above appointee available on site. Risk assessment carried out. Register of HCS kept and/or used on site.	
Construction Regulation 23	Construction vehicles and earth moving equipment	Operators or drivers appointed to: Carry out a daily inspection prior to use; and Drive the vehicle or plant that he/she is competent to drive or operate. Written proof of competence of above appointee available on site. Record of daily inspections kept on site. Medical assessments.	
General Safety Regulation 13A	Inspection of Ladders	Competent person appointed in writing to inspect ladders. Ladders inspected at arrival on site and monthly thereafter. Inspections register kept on site.	

2. Education, training and promotion

Subject	Requirement	Yes/ No
*Occupational Health and Safety Policy as per OHSACT Section 7(1)	Policy signed by CEO and published and communicated to employees. Policy displayed on employee notice boards. Management and employees committed.	
*Company and site health and safety rules as per OHSACT Section 13(a)	Rules published. Rules displayed on employee notice boards. Rules issued and explained to employees with written proof hereof. Follow-up to ensure employees understand and adhere to the rules.	
*Induction and task safety training as per OHSACT Section 13(a)	All new employees receive health and safety induction training. Training includes task safety instructions. Employees acknowledge receipt of training. Follow-up to ensure employees understand and adhere to instructions.	
*General health and safety training as per OHSACT Section 13(a)	All employees receive basic health and safety training. Written proof kept. Operators of plant and equipment receive specialised training. Follow-up to ensure employees understand and adhere to instructions.	
*Occupational health and safety promotion	Incident experience board indicating among others - Number of hours worked without an injury; and Number of days worked without an injury. Safety grading - Board kept up to date. Relevant safety posters displayed and changed regularly. Employee notice board for health and safety notices. Site health and safety competitions. Company health and safety competition. Participation in regional health and safety competitions. Suggestion scheme.	

3. Public safety, security measures and emergency preparedness

Subject	Requirement	Yes/ No
*Notices and signs	<p>Notices and signs at entrances along perimeters indicating “No unauthorised entry” and “Entry at own risk”.</p> <p>Notices and signs at entrance instructing visitors and non-employees what to do, where to go and where to report on entering the site or yard with directional signs for example “Visitors to report to office”.</p> <p>Notices and signs posted to warn of overhead work and other hazardous activities for example General Warning Signs.</p>	
Site safeguarding	Nets, canopies, stills, fans etcetera to protect members of the public passing and/or entering the site.	
*Security measures	<p>Access control measures and register in operation.</p> <p>Security patrols after hours and weekends.</p> <p>Sufficient lighting after dark.</p> <p>Guard has access to telephone or other means of emergency communication.</p>	
*Emergency preparedness	<p>Emergency contact numbers displayed near telephone.</p> <p>Emergency evacuation instructions posted up on all notice boards (including employees' notice boards).</p> <p>Emergency contingency plan available on site or in yard.</p> <p>Doors open outwards and unobstructed.</p> <p>Emergency alarm audible all over (including in toilets).</p>	
*Emergency drill and evacuation	<p>Adequate number of employees trained to use fire equipment.</p> <p>Emergency evacuation plan available, displayed and practiced.</p> <p>(See Section 1 for designation and register).</p>	

4. Personal protective equipment (PPE)

PART C3: Scope of Work

Subject	Requirement	Yes/ No
*PPE needs analysis	Need for PPE identified and prescribed in writing.	
*Head protection	It is compulsory for all persons on site to wear safety helmets including sub-contractors and visitors (where prescribed).	
*Foot protection	All persons on site have to wear safety footwear including gumboots for concrete or wet work and non-slip shoes for roof work.	
*Eye and face protection	Eye and face protection (such as goggles, face shields, welding helmets) to be used when operating the following: Jack or kango hammers; Angle or bench grinders; Electric drills (overhead work into concrete, cement and bricks); Explosive actuated fastening devices; Concrete vibrators or pokers; Hammers and chisels; Cutting or welding torches; Arc welding equipment; Skill or bench saws; and Spray-painting equipment etcetera.	
*Hearing protection	Hearing Protectors (such as muffs, plugs) used when operating the following: Jack or kango hammers; Explosive actuated fastening devices; and Wood or aluminium working machines such as saws, planers, routers.	
*Hand protection	Protective gloves to be worn by employees handling or using: Cement, bricks, steel or chemicals; Welding equipment; Hammers and chisels; and Jack or kango hammers etcetera.	

PART C3: Scope of Work

Subject	Requirement	Yes/ No
*Respiratory protection	Suitable and efficient respirators to be worn correctly by employees handling or using: Dry cement; Dusty areas; Hazardous chemicals; Angle grinders; and Spray-painting etcetera.	
*Protective clothing	All jobs requiring protective clothing (such as overalls, rain wear, welding aprons etcetera) to be identified and clothing worn.	
*PPE issue and control	Identified equipment to be issued free of charge. All PPE should be maintained in good condition (i.e. regular checks). Workers instructed in the proper use and maintenance of PPE. Commitment obtained from wearer accepting conditions and to wear the PPE. Record of PPE issued kept on file.	

5. Housekeeping

Subject	Requirement	Yes/ No
*Scrap removal system	All items of scrap, unusable off cuts, rubble and redundant material removed from working areas on a regular basis. Scrap disposed of in designated containers or areas. Removal from site or yard on a regular basis.	
Stacking and storage	Stacking: Stable; On firm level surface or base;	

PART C3: Scope of Work

Subject	Requirement	Yes/ No
(See Section 1 for designation and register)	<p>Not leaning and/or collapsing; Irregular shapes bonded; Not exceeding 3 times the base; Stacks accessible; and Removal from top only.</p> <p>Storage: Adequate storage areas provided; Functional for example demarcated storage areas, racks, bins etcetera; Special areas identified and demarcated for example flammable gas, cement etcetera: Neat, safe, stable and square: Store and storage areas clear of superfluous material; Storage behind sheds etcetera should be neat and under control; and Storage areas free from weeds, litter etcetera.</p>	
*Waste control or reclamation	<p>Re-usable off cuts and other re-useable material removed daily and kept to a minimum in the work areas. All re-useable materials neatly stacked or stored in designated areas (i.e. nails removed or bent over in re-useable timber). Issue of hardware, nails, screws and cartridges etcetera should be controlled and return of unused items monitored.</p>	
Sub-contractors	Sub-contractors required to comply with the site or yard's housekeeping requirements.	

6. Ladders

Subject	Requirement	Yes/ No
*Physical condition, use and storage	Stepladders – hinges, stays, braces and stiles in order.	

PART C3: Scope of Work

Subject	Requirement	Yes/ No
(See Section 1 for designation and register)	<p>Extension ladders – ropes, rungs, stiles, safety latch and hook in order.</p> <p>Extension or straight ladders secured or tied at the bottom or top.</p> <p>No joined ladders used.</p> <p>All ladders stored on hooks or racks and not on ground.</p> <p>Ladders protrude 900 mm above landings, platforms or roof.</p> <p>Fixed ladders higher than 5 m have cages or fall arrest system.</p>	

7. Electrical safeguarding

Subject	Requirement	Yes/ No
*Physical condition of electrical appliances and tools	<p>Electrical Equipment and Tools (includes all items plugging in to a 15 Amp supply socket):</p> <p>Insulation and casing in good condition.</p> <p>Earth wire connected or intact where not of double insulated design.</p> <p>Double insulation mark where no earth wire.</p> <p>Cord in good condition/no bare wires/secured to machine & plug.</p> <p>Plug in good condition, connected correctly and correct polarity.</p>	

8. Emergency, fire prevention and protection

Subject	Requirement	Yes/ No
*Fire extinguishing equipment	<p>Fire Risks Identified and on record.</p> <p>Fire Extinguishing Equipment available for:</p> <p>Offices;</p>	

PART C3: Scope of Work

Subject	Requirement	Yes /No
(See Section 1 for designation and register)	General stores; Flammable store; Fuel storage tanks; Gas welding or cutting operations; and Where flammable substances are being used or applied.	
*Maintenance	Fire equipment serviced minimum annually, but preferably 6 monthly.	
*Location & Signs	Fire Extinguishing Equipment: Clearly visible; Unobstructed; and Sign posted including “No Smoking” and “No Naked Lights” where required i.e. (flammable store, gas store, fuel tanks etc.).	
* Storage issue and control of flammables (incl. gas cylinders)	Storage area provided for flammables with suitable doors, ventilation, bund etcetera. Flammable store neat and tidy with no Class A combustibles. Decanting of flammable substances carried out in ignition free and adequately ventilated area. Container bonding principles applied. Only sufficient quantities issued for one day's use. Special gas cylinder store or storage area. Gas cylinders stored, used and transported upright and secured in trolley, cradle or structure that is well ventilated. Types of gas cylinders identified and stored separately. Full cylinders stored separately from empty cylinders.	
*Storage, issue and control of Hazardous Chemical Substances (HCS) (See Section 1 for designation and register)	HCS storage principles applied i.e. products segregated. Provision made for leakage and spillage containment. Emergency (serviceable) showers and eye wash facilities provided. HCS under lock and key as well as controlled by designated person.	

PART C3: Scope of Work

Subject	Requirement	Yes /No
	Decanted or issued in containers with information and warning labels. Disposal of unwanted HCS by recognised disposal agent.	

9. Excavations

Subject	Requirement	
Excavations deeper than 1.5 m. (See Section 1 for designation and register)	Shored or braced to prevent caving or falling in. Provided with an access ladder. Excavations guarded, barricaded or lighted after dark in public areas. Soil dumped at least 1 m away from edge of excavation. On sloping ground soil dumped on lower side of excavation.	

10. Tools

Subject	Requirement	Yes/ No
*Hand tools	Shovels, Spades and Picks: Handles free from cracks and splinters; Handles fit securely; and Working end sharp and true. Hammers: Good quality handles, no pipe or reinforcing steel handles; Handles free from cracks and splinters; and Handles fit securely. Chisels: No mushroomed heads or heads chamfered;	

PART C3: Scope of Work

Subject	Requirement	Yes/ No
	<p>Not hardened; and</p> <p>Cutting edge sharp and square.</p> <p>Saws:</p> <p>Teeth sharp and set correctly; and</p> <p>Correct saw used for the job.</p>	

11. Transport and materials handling equipment

Subject	Requirement	Yes/ No
*Site vehicles	<p>All site vehicles, dumpers, bobcats, loaders etcetera checked daily before used by driver or operator.</p> <p>Inventory of vehicles used/operated on site.</p> <p>Inspection by means of a checklist and results recorded.</p> <p>No persons riding on equipment not designed for passengers.</p> <p>Site speed limit posted and not exceeded.</p> <p>Drivers and operators trained and licensed.</p> <p>Licenses available on site.</p> <p>No unauthorised persons allowed to drive or operate equipment.</p>	

12. Site plant and machinery

Subject	Requirement	Yes/ No
*Compressors	<p>Relief valves set, locked and sealed.</p> <p>Maximum safe working pressure (MSWP) indicated on face of pressure gauge face and not on glass cover.</p> <p>All drives adequately guarded.</p> <p>Receiver and lines drained daily.</p> <p>Hoses good condition and clamped, not wired.</p>	
*Gas welding and flame cutting equipment	<p>Only authorised and trained persons use the equipment.</p> <p>Torches and gauges in good condition.</p>	

PART C3: Scope of Work

Subject	Requirement	Yes/ No
	<p>Flashback arrestors fitted at cylinders and gauges.</p> <p>Hoses in good condition, correct type and all connections with clamps.</p> <p>Cylinders stored, used and transported in upright position, secured in trolley or cradle.</p> <p>Fire prevention control methods applied.</p> <p>Hot work permits.</p>	

13. Plant and storage yard or site workshop specifics

Subject	Requirement	Yes/ No
<p>OHSACT, Section 8(2)(1)</p> <p>General Machinery Regulation 2(1)</p> <p>Supervision of the use and maintenance of machinery</p>	<p>Persons with specific knowledge and experience designated to supervise the use and maintenance of machinery.</p> <p>Critical items of machinery identified, numbered and placed on register or inventory.</p> <p>Inspection or maintenance schedules for abovementioned.</p> <p>Inspections or maintenance carried out to above schedules.</p> <p>Results recorded.</p>	
<p>General Machinery Regulation 9(2)</p> <p>Notices regarding operation of machinery</p>	<p>Schedule D notice posted in work areas.</p>	
<p>Pressure Equipment Regulations</p> <p>Supervision of the use and maintenance of pressure equipment such as pressure vessels (PV)</p>	<p>Persons with specific knowledge and experience designated to Supervise the use and maintenance of PVs.</p> <p>PVs identified, numbered and placed on register.</p> <p>Manufacturers plate intact.</p> <p>Inspection or maintenance schedules for abovementioned.</p> <p>Inspections or maintenance carried out to above schedules.</p> <p>Results recorded and test certificates available.</p>	
Lock-out procedure	<p>Lock-out procedure in operation.</p>	

PART C3: Scope of Work

Subject	Requirement	Yes/ No
Ergonomics	Ergonomics survey conducted. Results on record. Survey results applied.	
Demarcation and colour coding	Demarcation principles applied. All services, pipes, electrical installation, stop-start controls, emergency controls etcetera colour coded to own published or SABS standard. Employees trained to identify colour coding.	
Portable and bench grinders	Area around grinder clear and trip/slip free. Bench grinders mounted securely and grinder generally in good condition. No excessive vibration. On and off switch or button clearly demarcated and accessible. Adequate guards in place. Tool rest – secure, square and maximum 2 mm gap. Stone or disk - correct type and size, mounted correctly and dressed. Use of eye protection enforced.	
Ancillary lifting equipment	Chain blocks, tirlors, jacks and mobile gantries etcetera identified and numbered on register. Chains in good condition and links no excessive wear. Lifting hooks – throat pop marked and safety latch fitted. SWL/MML marked or displayed.	

14. Workplace environment, health and hygiene

Subject	Requirement	Yes/ No
*Lighting	Adequate lighting in places where work is being executed for example stairwells and basements or after sunset.	

PART C3: Scope of Work

Subject	Requirement	Yes/ No
	Light fittings placed and installed causing no irritating or blinding glare.	
*Ventilation	Adequate ventilation, extraction and exhausting in hazardous areas for example where chemicals and adhesives are stored, welding takes place and where petrol or diesel motors are running in confined spaces or basements.	
*Noise	Tasks identified where noise exceeds 85 dBa. All reasonable steps taken to reduce noise levels at the source. Hearing protection used where noise levels could not be reduced to below 85 dBa.	
*Heat stress	Measures in place to prevent heat exhaustion in heat stress problem areas e.g. steel decks, when the WBGT index reaches 30 (see Environmental Regulation 4). Cold drinking water readily available when extreme temperatures are experienced.	
*Ablution facilities	Sufficient toilets provided for men and women separately i.e. 1 per 30 employees (National Building Regulations prescribe chemical toilets for Construction sites). Toilet paper available. Sufficient showers provided for men and women separately. Facilities for washing hands provided. Soap available for washing hands. Means of drying hands available. Changing facilities or area provided for men and women separately. Ablution facilities hygienic and clean.	
*Eating and cooking facilities	Adequate storage facilities provided. Weather protected eating area provided, separate from changing area. Refuse bins with lids provided. Facilities clean and hygienic.	

PART C3: Scope of Work

Subject	Requirement	Yes/ No
*Pollution of environment	Measures in place to minimize dust generation. Accumulation of empty cement pockets, plastic wrapping or bags, packing materials etcetera prevented. Spillage or discarding of oil, chemicals and dieseline into storm water and other drains prevented.	
*Hazardous chemical substances (See Section 1 for designation and register)	All substances identified and list available e.g. acids, flammables, poisons etc. Material Safety Data Sheets (MSDS) indicating hazardous properties and emergency procedures in case of incident on file and readily available. Substances stored safely.	

Name of person who have undertaken the assessment

Signature

Date

Received by

Designation

Date

Tabled at health and safety committee

Annexure 2

Measuring injury experience

Measuring injury experience

1. Background

Injury experience has traditionally been measured by the use of a disabling injury frequency rate, the so-called “DIFR”. The DIFR is calculated by multiplying the number of disabling injuries by 1 million and dividing by the number of person-hours worked.

The DIFR has recently been replaced internationally with a disabling injury incidence rate (DIIR). The only difference between the two rates are that the 1 million in the calculation is replaced with 200 000 (200 000 purported to be the number of hours and average person works in a lifetime).

The use of the two rates above has proved to be somewhat problematical as they are open to manipulation and disabling injuries are often “hidden” by returning the injured employee to the workplace so as not to lose a shift and therefore having to register a disabling injury.

The construction industry recently decided to promote the use of a new frequency rate based on the number of compensation injury claims, as these are more difficult to hide or manipulate because the reporting of compensational injuries is a legal requirement.

The industry is hoping that adoption of this new measurement of injury experience will enable the industry to monitor itself as far as work related injuries are concerned.

2. Compensation Incidence Frequency Rate (CIFR)

2.1 Formula

No of compensation claims X 200 000

*220 person hours X No of employees

2.2 Definitions

No of compensation claims: The number of claims lodged with the Commissioner or COID insurer for the period under review.

200 000: The fixed factor to align the rate with other rates used internationally.

Person hours worked Include: Hourly paid employees

Sub-contractors (No of employees X *220 each)

Staff (No of employees X *220 hours each)

220 person-hours: The *average number of hours worked by one employee in one month in the construction industry.

Note: * Overtime, absence on leave or sick leave, unrecorded after-hours time worked by senior and middle management factored into this average.

No of employees: The actual or average number of employees employed for the period under review.

Annexure 3

Safety, Health and Environment: Example of risk management report

Safety, Health and Environment (SHE): Example of risk management report

Please note that this is an example only and all information is fictitious.

XYZ Construction

SHE risk management report for the period January 2004 to March 2004

1. Introduction

We trust that this quarterly SHE Risk Management report will provide a clear picture of the company's performance as far as occupational health, safety and environment is concerned.

The first quarter of 2004 generally reflected an improvement in injury experience and indicates a decline in the number of injuries. Although Building was the only division where there was an increase in compensation claims, figures are still well down from the average 2003 figures. A sub-contractor experienced one fatality.

All divisions are eagerly awaiting the final implementation during May 2004 of the new electronic SHE Management system that will provide the tools to implement the SHE programme and make it available to all management and supervisory staff.

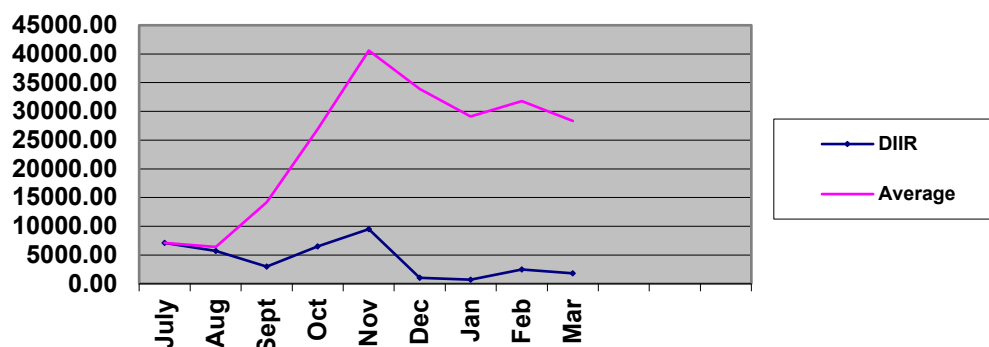
2. Incident statistics

2.1 Compensation Incident Frequency Rate (CIFR)

CIFR = $\frac{\text{No of compensation claims} \times 200\,000}{220 \text{ person hours} \times \text{No of employees}}$

2.2 Disabling Injury Incidence Rate (DIIR)

DIIR =
$$\frac{\text{No disabling injuries} \times 200\,000}{\text{Person hours worked}}$$



2.3. Other major incidents

Three other major incidents were experienced in the period under review:

A major trench collapsed at Job. 00123: XYZ Head Office, Braamfontein: No personnel injured, extensive damage to foundations: 3 days delay.

A concrete dumper ran away when its brakes failed. It smashed into the glass façade of the building on Job 00332: McDonalds, Randburg. The driver jumped off and was not injured. Cost of damage to façade: R45 000.

A storage hut on Job 00567: BP Petrol Station, Swartruggens was demolished by fire when the night watchman made a fire inside the storage hut which contained concrete vibrators and leveling machines. Cost of replacing the hut and machines: R30 000.

3. Risk areas

The following items of concern need priority consideration by management:

- 3.1. New employees must undergo pre-employment medical examinations to:
 - protect XYZ from possible claims at a later stage
 - ensure that only capable persons are employed
 - prevent injuries and illness in the workplace
 - enhance XYZ image

PART C3: Scope of Work

Vehicle drivers and plant operators must be instructed to inspect their vehicles daily before start-up using the prescribed checklists to ensure that these are safe to operate and in good condition.

4. Risk assessments

Three SHE risk assessments were conducted in February and March:

Job 00432:	Gillooly's Mall	Compliance: 56%
Job 00786:	Cullinan Head Office	Compliance: 83%
Job 00589:	Cleveland Station	Compliance: 76%

5. Training

One hundred and forty two employees, representing 7% of employees, attended nine training courses. *Our objective is to train 5,5% of employees on a quarterly basis.

Month	No. of Employees Trained	Course	Source
January	26	Induction	Internal
	15	OH&S Reps	Consultant
	3	Crane Drivers	External
February	23	Induction	Internal
	17	OH&S Reps	Consultant
March	43	Induction	Internal
	9	OH&S Reps	Consultant
	3	Bomag Rollers	Supplier
	3	First Aiders	St. John's

6. Legal matters

An inspector of the Department of Labour issued an improvement notice on Job 00987: Gilooly's Mall. The notice requires that all scaffolding comply with the SABS standards for the Erection and Maintenance of Access Scaffolding (SANS 085).

This is currently being attended to and the inspector will return on 15 April 2004 to ascertain if the notice has been complied with.

7. Occupational health matters

7.1 HIV Aids

The proposed clinic will soon be operational and we will then be able to send our employees who have tested positive for HIV/Aids to the clinic for counseling and eventual treatment when necessary.

The mobile clinic attended to and tested fifty employees on a voluntary basis at 3 sites this month. Eighteen of them tested positive.

7.2 Tuberculosis (TB)

The mobile clinic will be calling at Gilooly's Mall and Cleveland Station on 15 and 16 April 2004 respectively to screen employees for TB.

7.3 Noise

All suspected noise pollution areas have been identified and tested and the results are awaited. Employees working in areas testing over 85dBa will be issued with suitable hearing protectors.

8. Environmental measures

Inspectors from the Botswana Department of Environment visited Djwaneng and inspected the site and yard. They gave it a “clean bill of health” and advised that we should increase the dust control measures by spraying roads three times per day with water instead of the present twice per day.

9. Achievements and awards

- 9.1 The client at Djwaneng (Job 00786) awarded the XYZ site first position in the housekeeping competition conducted bi-monthly by the client’s SHE managers. The project manager and his team are to be congratulated for this sterling effort.
- 9.2 Job 0987: Refurbishment of Pretoria Main Railway Station has just completed 1 million compensation claim free days. This was no easy achievement if we consider the conditions being worked under after the extensive fire that caused major damage.

SHE Risk Manager

Source: SAFCEC Occupational Health and Safety Committee

Annexure 4

Guide to risk assessments

1. Nine steps to effective risk assessments

- | | |
|--------|---|
| Step 1 | Identifying the current as well as emerging hazard, risks or exposures. |
| Step 2 | Aim to identify major hazards, don't waste time on the minor and detail except if such hazard has the potential be repeat itself on a frequent basis. |
| Step 3 | Involve as many people as possible in the ongoing risk assessment process especially those at risk. |
| Step 4 | Gather all the information and analyse it. |
| Step 5 | Look at what actually could or has occurred including non-routine operations. |
| Step 6 | Use a systematic approach to ensure all hazards are adequately addressed. |
| Step 7 | Assess the risks identified or the risk has occurred by taking into account the effectiveness of current as well as controls under consideration. |
| Step 8 | Ensure the process is practical, realistic, cost and business effective. |
| Step 9 | Always record the assessment in writing including i.e. assumptions, date and why a particular decision has been made. |

2. How serious is it?

Probability

- A Common
- B Has Happened
- C Could Happen
- D Not Likely
- E Practically impossible

Consequences

- 1 Fatality or permanent disability.
- 2 Major injury.
- 3 Average Lost Time Injury.
- 4 Minor Injury.
- 5 Medical Treatment or less.

		Probability				
		A	B	C	D	E
Consequence	1	1	2	3	4	5
	2	2	3	4	5	6
	3	3	4	5	6	7
	4	4	5	6	7	8
	5	5	6	7	8	9

Risk rating

- 1 - 3 = Serious
- 4 - 5 = High
- 6 - 7 = Moderate
- 8 - 9 = Acceptable

Action

- Immediate (within 1 week).
- Within 1 month.
- > 4 weeks.
- No action but will consider from time to time.

Annexure 5

List of risk assessments/ Identified Hazards/Baseline risk assessment

Identified Hazards

In terms of Regulation 9 (1) (a) of the Construction Regulations 2003 the following hazards anticipated with the scope of work have been identified.

NOTE: The list of potential hazards is by no means intended to be all inclusive and is not limited to this list, and it remains the responsibility of the Contractor to identify all possible hazards with regards to his scope of work and to put measures in place to mitigate, reduce or control these hazards.

List of risk assessments/ Identified Hazards

Drivers – of vehicles
Confined space entry
Excavation shoring / brazing
Excavation been flooded during rainy season
Fire prevention and protection
Fuel supply
Hand tools
Loading supervisor
Loading/unloading - of trucks
Machine operator
Material delivery
Material handling
Public and traffic safety
Portable ladders
Refuelling vehicles/plant
Stacking and storage of equipment / materials
Site establishment
Traffic control
Trenches – Digging of
Usage of compressed air and equipment
Use of portable electrical tools
Work in confined spaces
Working close to existing services i.e. electrical, waste water etc
Working close to traffic
Working close to water

Annexure 6

LEGAL APPOINTMENTS TEMPLATES

ANNEXURE 6 LEGAL APPOINTMENTS TEMPLATES

Attention: **(Assistant Construction Manager 's Name)**

APPOINTMENT OF THE ASSISTANT CONSTRUCTION MANGER IN TERMS OF CONSTRUCTION REGULATION 8(2)

I, **(contractor's name)** hereby appoint **(assistant construction supervisor's name)** as the assistant supervisor responsible for **(site address)** to carry out the construction work of **(description of construction work and area of responsibility)**.

In terms of this appointment you are required to ensure that all construction work performed under your supervision is carried out as follows:

1. By persons suitably trained and competent to do such work.
2. That all persons are aware and understand the hazards attached to the work being carried out.
3. That the required risk assessments are carried out.
4. That precautionary measures are identified and implemented.
5. That discipline is enforced at the construction site at all times.
6. That all identified statutory requirements are met.
7. That any other interest in terms of health and safety with respect to the responsible area is met.
8. You will accept the duties of the Construction manager in his absence.

You are required to report any deviations of the above-mentioned instruction to **(construction manager's name)** and in his absence to the contractor's representative.

This appointment is valid from (date) to the completion of the stipulated construction work.

You shall submit a written weekly report any non-compliance with the Construction Regulations, 2014.

Contractor's Representative full name

Signature

Date

.....
Kindly confirm your acceptance of this appointment by completing the following:

I, **(assistant construction manager)** understand the implications of the appointment as detailed above and confirm my acceptance.

Assistant construction supervisor's

Signature

Date

Attention: **(Safety Officer's Name)**

APPOINTMENT OF THE CONSTRUCTION HEALTH AND SAFETY OFFICER IN TERMS OF CONSTRUCTION REGULATION 8(5)

I, **(contractor's name)** hereby appoint **(safety officer's name)** as the Construction Health and Safety Officer responsible for **(site address)** to manage all the health and safety issues as required in terms of the Act by establishing a health and safety program with elected health and safety Representatives. You shall ensure that all the requirements in terms of the Act and in particular in terms of the Construction Regulations, 2014 are met. You shall also ensure that all appointed sub-contractors comply with the requirements as stipulated in the Construction Regulations, 2014.

You shall further ensure that all records, registers and required lists are maintained and shall stop construction work upon identifying any non-compliance by any contractor; this includes stopping any work should the competency of the person carrying out such work be questionable.

This appointment is valid from **(date)** to the completion of the stipulated construction work.

_____	_____	_____
Contractor's Representative full name	Signature	Date

.....
Kindly confirm your acceptance of this appointment by completing the following:

I, **(construction health and safety officer's name)** understand the implications of the appointment as detailed above and confirm my acceptance.

_____	_____	_____
Construction Health & Safety Officer's full name	Signature	Date

Attention: **(Construction Vehicle and Mobile Plant Inspector)**

APPOINTMENT OF THE CONSTRUCTION VEHICLE AND MOBILE PLANT INSPECTOR IN TERMS OF CONSTRUCTION REGULATION 23(1) (d)

I, **(contractor's name)** hereby appoint **(construction vehicles and mobile plant inspector's name)** as the construction vehicles and mobile plant inspector responsible for **(site address)** to inspect on a daily basis all construction vehicles and mobile plant, as per the provided checklist.

You shall ensure that when becoming aware of any health and safety hazards in respect to construction vehicles and mobile plant that these hazards are reported in writing to the Construction Health and Safety Officer and Construction supervisor and the necessary precautionary measures are taken and enforced.

You shall further ensure that the requirements of the Construction Regulations, 2014 are at all times met.

This appointment is valid from **(date)** to the completion of the stipulated construction work.

_____	_____	_____
Contractor's Representative full name	Signature	Date

.....

PART C3: Scope of Work

Kindly confirm your acceptance of this appointment by completing the following:

I, (**construction vehicles and mobile plant inspector's full name**) understand the implications of the appointment as detailed above and confirm my acceptance.

Construction vehicles and mobile plant
Inspector's full name

Signature

Date

Attention: **(Sub-Contractor's Name)**

APPOINTMENT OF SUB-CONTRACTOR IN TERMS OF THE CONSTRUCTION REGULATION 7(c)

I, **(contractor's name)** hereby appoint **(sub-contractor's name)** as the sub-contractor responsible for **(site address)** to carry out the construction work of **(description of construction work)**.

You shall ensure that you meet all the requirements in terms of the Act and in particular in terms of the section 37(2) agreement and the Construction Regulations, 2014. You shall also ensure that all contractors appointed by yourself and reporting to you comply with the requirements as stipulated in the Construction Regulations, 2003.

You shall also ensure that all the information and specifications to ensure that the construction work is carried out in a safe manner are carried over to all contractors appointed and reporting to you.

You shall further ensure that all records, registers and required lists are maintained and that all persons appointed to carry out tasks as stipulated by these regulations are competent and have the necessary resources to complete their tasks effectively in such a manner that health and safety is not in any manner compromised.

This appointment is valid from (date) to the completion of the stipulated construction work.

You shall submit a written weekly report on all shortfalls that have not been met in terms of these regulations.

Contractor's Representative full name

Signature

Date

Kindly confirm your acceptance of this appointment by completing the following:

I, **(sub-contractor's name)** understand the implications of the appointment as detailed above and confirm my acceptance.

Sub-Contractor's Representative full name

Signature

Date

Attention: **(Construction Manger's Name)**

APPOINTMENT OF THE CONSTRUCTION SUPERVISOR IN TERMS OF CONSTRUCTION REGULATION 8(1)

I, **(contractor's name)** hereby appoint **(construction supervisor's name)** as the Supervisor responsible for **(site address)** to carry out the construction work of **(description of construction work and area of responsibility)**.

In terms of this appointment you are required to ensure that all construction work performed under your supervision is carried out as follows:

1. By persons suitably trained and competent to do such work;
2. That all statutory appointments have been completed;
3. That, where required, health and safety committees are established and that meetings are accordingly held;
4. That all persons are aware and understand the hazards attached to the work being carried out;
5. That the required risk assessments are carried out;
6. That precautionary measures are identified and implemented;
7. That discipline is enforced at the construction site at all times;
8. That all identified statutory requirements are met; and
9. That any other interests in terms of health and safety with respect to the responsible area is met.
10. You will in writing delegate your duties to the Assistant Construction Supervisor while absent from site.

You are required to report any deviations of the above-mentioned instructions to **(contractor's name)**.

This appointment is valid from **(date)** to the completion of the stipulated construction work. You shall submit a written weekly report on all shortfalls that have not been met in terms of these regulations.

Contractor's Representative full name

Signature

Date

Kindly confirm your acceptance of this appointment by completing the following:

I, **(construction manager)** understand the implications of the appointment as detailed above and confirm my acceptance.

Construction Manager's full name

Signature

Date

Attention: **(Excavation Work Supervisor's Name)**

APPOINTMENT OF THE EXCAVATION WORK SUPERVISOR IN TERMS OF CONSTRUCTION REGULATION 13 (1)(a)

I, **(contractor's name)** hereby appoint **(excavation work supervisor's name)** as the excavation work supervisor responsible for **(site address)** to supervise and carry out all the necessary inspections in terms of all excavation work as per the provided checklist.

You shall ensure that when becoming aware of any health and safety hazards in respect to excavation work that that these hazards are reported in writing to the Construction Health and Safety Officer and Construction supervisor and the necessary precautionary measures are taken and enforced.

You shall further ensure that the requirements of the Construction Regulations are at all times met.

This appointment is valid from **(date)** to the completion of the stipulated construction work.

Contractor's representative full name	Signature	Date
---------------------------------------	-----------	------

Kindly confirm your acceptance of this appointment by completing the following:

I, **(excavation work supervisor's full name)** understand the implications of the appointment as detailed above and confirm my acceptance.

Excavation Work Supervisor full name	Signature	Date
--------------------------------------	-----------	------

Attention: **(Ladder Inspector's Name)**

APPOINTMENT OF THE LADDER INSPECTOR IN TERMS OF THE GENERAL SAFETY REGULATION 13(A)

I, **(contractor's name)** hereby appoint **(ladder inspector's name)** as the ladder inspector responsible for **(site address)** to manage ladders on site. You should inspect the ladders as per the checklist at least once a week.

You shall ensure that when becoming aware of any health and safety hazards in respect to ladders that these hazards are reported in writing to the Construction Health and Safety Officer and Construction supervisor and the necessary precautionary measures are taken and enforced.

You shall further ensure that the requirements of the Construction Regulations, 2003 are at all times met.

This appointment is valid from **(date)** to the completion of the stipulated construction work.

Contractor's representative full name Signature Date

Kindly confirm your acceptance of this appointment by completing the following:

I, **(ladder inspector's full name)** understand the implications of the appointment as detailed above and confirm my acceptance.

Ladder inspector's full name Signature Date

Attention: **(Risk Assessor's Name)**

APPOINTMENT OF THE CONSTRUCTION SITE RISK ASSESSOR IN TERMS OF CONSTRUCTION REGULATION 9(1)

I, **(contractor's name)** hereby appoint **(risk assessor's name)** as the construction site risk assessor responsible for **(site address)** to carry out risk assessments prior to the commencement of construction work and any other risk assessment that may be required for the duration of the construction work.

You shall ensure that all risks are identified and analysed and that safe working procedures are drafted and implemented to reduce, mitigate or controls the hazards that were identified.

You will at least use the risk evaluation program with the provided checklists.

This appointment is valid from **(date)** to the completion of the stipulated construction work.

_____	_____	_____
Contractor's representative full name	Signature	Date

Kindly confirm your acceptance of this appointment by completing the following:

I, **(construction site risk assessor's name)** understand the implications of the appointment as detailed above and confirm my acceptance.

_____	_____	_____
Construction site Risk Assessor's full name	Signature	Date

Attention: **(Stacking and Storage Supervisor's Name)**

APPOINTMENT OF THE STACKING AND STORAGE SUPERVISOR IN TERMS OF CONSTRUCTION REGULATION 28 (a)

I, **(contractor's name)** hereby appoint **(stacking and storage supervisor's name)** as the stacking and storage supervisor responsible for **(site address)** to manage all stacking and storage on site.

You shall inspect all new stacking and there after as often as needed according to the checklist.

You shall ensure that when becoming aware of any health and safety hazards in respect to stacking and storage that these hazards are reported in writing to the Construction Health and Safety Officer and Construction supervisor and the necessary precautionary measures are taken and enforced.

You shall further ensure that the requirements of the Construction Regulations are at all times met.

On identifying any shortfalls or hazards convey such information in writing to the construction supervisor.

This appointment is valid from **(date)** to the completion of the stipulated construction work.

_____	_____	_____
Contractor's Representative full name	Supervisor	Date

Kindly confirm your acceptance of this appointment by completing the following:

I, **(stacking and storage supervisor's full name)** understand the implications of the appointment as detailed above and confirm my acceptance.

_____	_____	_____
Stacking and Storage Supervisor's	Signature	Date

Attention: First Aider

OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993), GENERAL SAFETY REGULATIONS 3(4) – FIRST AIDER

I, _____, having been appointed as contemplated in Section 16(2) of the Occupational Health and Safety Act (85 of 1993), hereby appoint you, _____, as First Aider for the _____.

RESPONSIBILITIES

1. Ensure you inspect the contents of the first aid box at least once per month.
2. Ensure all dressing undertaken is recorded on the treatment register.
3. Ensure deviations noted are reported to your supervisor.
4. Ensure the necessary signage is placed to define first aid box placement and responsible first aider's name.

Kindly confirm your acceptance of this appointment and understanding of the duties involved by signing this legal appointment.

Yours faithfully

SECTION 16 (2) APPOINTEE

I accept the appointment as set out above and confirm my understanding of the duties involved.

Signed: _____

Date: _____

Attention: Safety Representative

OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993)

SECTION 17 – HEALTH AND SAFETY REPRESENTATIVE

I, _____, having been appointed as contemplated in Section 16(2) of the Occupational Health and Safety Act (85 of 1993), hereby appoint you, _____, as Health and Safety Representative, as contemplated in Section 17 of the Occupational Health and Safety Act (85 of 1993).

You are hereby appointed from _____ until _____
as a Health and Safety Representative for the following project: _____.

RESPONSIBILITIES

1. Review the effectiveness of the Health and Safety measures within your area of responsibility;
2. Assess the potential hazards to the Health and Safety of the employees at the workplace;
3. Investigate the causes of incidents and all complaints from the employees relating to their Health and Safety;
4. Inspect the workplace and report on such inspection, and the aspects mentioned in (1), (2) and (3) above, to the employer;
5. Participate in the investigations into incidents, in your designated area as contemplated in Section 18 of the Occupational Health and Safety Act (85 of 1993).

Kindly confirm your acceptance of this appointment and understanding of the duties involved by signing this legal appointment.

Yours faithfully

SECTION 16 (2) APPOINTEE

PART C3: Scope of Work

I accept the appointment as set out above and confirm my understanding of the duties involved.

Signed: _____

Date: _____

Annexure 7

ACKNOWLEDGEMENT OF CITY OF TSHWANE OHS SPECIFICATION

Acknowledgement of CITY OF TSHWANE OHS Specification

Name of Contractor

I, the undersigned, hereby acknowledge that I have obtained copies of City of Tshwane OHS Specs and confirm that I fully understand them and the consequences of non-compliance.

Signed aton this Day of.....20.....

Signature of Contractor Manager

Date

Signature of Contractor Supervisor

Date

Witness 1 Witness 2

PART C3: Scope of Work

Table 1: COVID-19 Risk Assessment

TASK	HAZARD/ASPECT	HAZARDOUS EVENT AND LOSS EXPOSURE	PROBABILITY	CONSEQUENCE	RATING	PREVENTATIVE ACTION AND PROCEEDURE
Someone entering the workplace with CV19	Passing the virus on to other employees, causing illness and possible death Exposure at site access point (security control)	Medical treatment and lost time Respiratory infection that can lead to fatality's Site placed under quarantine that leads to loss of income and production	C	1	4	<ul style="list-style-type: none"> Symptomatic individuals will not be allowed entry. Hygiene requirements (handwashing etc.) and symptoms of CV19 included with Induction. CV19 Information posters placed in accessible locations in the workplace All employees and visitors, to receive induction training All employees to receive awareness training on COVID-19 and personal hygiene (Tool box talks) Adequately train identified personnel to perform regular COVID-19 screenings Provide compulsory medical screening equipment and keep documented record of screenings and should an employee be tested positive, then such an employee will be quarantined, and Department of Health must be contacted immediately (0800 029 999)
Someone becomes ill within the	Workers contracting CV19 by any	Enhancing the possibility of spreading the Covid 19 pandemic	C	1	4	<ul style="list-style-type: none"> Worker removed to a designated area at least 2 metres away from other people.

PART C3: Scope of Work

workplace	Means, causing illness and possible death	Endangering employees, or visitors Health				<ul style="list-style-type: none"> The individual will be sent home and advised to follow Governmental guidance. Workplace decontaminated following accepted standards. Relevant PPE to be issued All employees to receive awareness training on COVID-19 and personal hygiene (Toolbox talks) Adequately train identified personnel to perform regular COVID-19 screenings Provide compulsory medical screening equipment and keep documented record of screenings and should an employee be tested positive, then such an employee will be quarantined, and Department of Health must be contacted immediately (0800 029 999)
Contaminated workplace	Workers catching CV19 due to contaminated surfaces, causing illness and possible death	Enhancing the possibility of spreading the Covid 19 pandemic Endangering employees, or visitors Health	C	1	4	<ul style="list-style-type: none"> Formal cleaning regime introduced (Employees cleaning equipment and facilities more often). Hand sanitisers to be placed in readily accessible locations. Extra hygiene requirements enforced. Multi-use handtowels not allowed for drying hands. Relevant PPE to be issued Clean and disinfect objects that are regularly touched

PART C3: Scope of Work

						<ul style="list-style-type: none"> Adequate rubbish bins for the disposal of paper towels
Physical Proximity during workplace gatherings	Workers catching CV19 due to working closely with infected colleagues, causing illness and possible death	Enhancing the possibility of spreading the Covid 19 pandemic Endangering employees, or visitors Health	C	1	4	<ul style="list-style-type: none"> Social Distancing policy implemented. All work areas and activities been revaluated for the possibility of implementing social distancing (no handshaking, deferring large meetings etc.) Relevant PPE to be issued Clean and disinfect objects that are regularly touched CV19 Information posters placed in accessible locations in the workplace All employees and visitors, to receive induction training All employees to receive awareness training on COVID-19 and personal hygiene (Toolbox talks) Adequately train identified personnel to perform regular COVID-19 screenings Provide compulsory medical screening equipment and keep documented record of screenings and should an employee be tested positive, then such an employee will be quarantined, and Department of Health must be contacted immediately (0800 029 999)
	Workers unaware of risks from	Endangering employees, or visitors	C	1	4	<ul style="list-style-type: none"> A formal training program implemented to cover risks, symptoms and control measures.

PART C3: Scope of Work

General Ignorance	CV19 and become infected, causing illness and possible death	Health Medical treatment and lost time Respiratory infection that can lead to fatality's Site placed under quarantine that leads to loss of income and production				<ul style="list-style-type: none"> Attendance to all session's mandatory with attendance registers CV19 Information posters placed in accessible locations in the workplace All employees and visitors, to receive induction training kept on file as proof. All employees to receive awareness training on COVID-19 and personal hygiene (Toolbox talks)
Self-isolation of workers	Workers unaware of the need to (or how to) self isolate, causing further spread of disease and possible death	Endangering employees, or visitors Health Medical treatment and lost time Respiratory infection that can lead to fatality's Site placed under quarantine that leads to loss of income and production	C	1	4	<ul style="list-style-type: none"> A formal training program implemented to cover risks, symptoms and control measures. Attendance to all session's mandatory with attendance registers CV19 Information posters placed in accessible locations in the workplace All employees and visitors, to receive induction training kept on file as proof. All employees to receive awareness training on COVID-19 and personal hygiene (Toolbox talks)
Travel (Travelling across provincial borders)	Travelling across Provincial borders and afterwards returning	Enhancing the possibility of spreading the Covid 19 pandemic	C	2	8	<ul style="list-style-type: none"> Adhere to general travel ban by SA Government. Implement Alternatives to travel – postpone trips or hold meetings via video conferencing.

PART C3: Scope of Work

		Endangering employees, or visitors Health				<ul style="list-style-type: none"> • Social Distancing policy implemented. All work areas and activities been revaluated for the possibility of implementing social distancing (no handshaking, deferring large meetings etc.) • Relevant PPE to be issued Clean and disinfect objects that are regularly touched • CV19 Information posters placed in accessible locations in the workplace • All employees and visitors, to receive induction training
Symptomatic or exposed employee(s)	Workers are symptomatic of CV19 or has been in close contact with someone with CV19, causing further spread of disease and possible death	Endangering employees, or visitors Health Medical treatment and lost time Respiratory infection that can lead to fatality's Site placed under quarantine that leads to loss of income and production	C	1	4	<ul style="list-style-type: none"> • If worker is unfit for work, they will be booked off sick as per normal policy. • Symptomatic employees will be sent home. • Colleagues who came in contact with symptomatic workers will be informed of symptoms and advised to contact a doctor for guidance. • Working from home will be considered. • Relevant PPE to be issued • Adequately train identified personnel to perform regular COVID-19 screenings • Provide compulsory medical screening equipment and keep documented record of screenings and should an employee be tested positive, then such an employee will be

PART C3: Scope of Work

						quarantined, and Department of Health must be contacted immediately (0800 029 999)
Presenteeism	A worker catches CV19 because a Colleague continues working despite being unwell, causing further spread of disease and possible death	Endangering employees, or visitors Health Medical treatment and lost time Respiratory infection that can lead to fatality's Site placed under quarantine that leads to loss of income and production	c	1	4	<ul style="list-style-type: none"> Workers coming in contact with symptomatic ones will be informed of symptoms and advised to contact a doctor for guidance. Workplace will be decontaminated following Governmental guidance: Symptomatic individuals will not be allowed entry. Hygiene requirements (handwashing etc.) and symptoms of CV19 included with Induction. CV19 Information posters placed in accessible locations in the workplace All employees and visitors, to receive induction training All employees to receive awareness training on COVID-19 and personal hygiene (Toolbox talks) Adequately train identified personnel to perform regular COVID-19 screenings Provide compulsory medical screening equipment and keep documented record of screenings and should an employee be tested positive, then such an employee will be

PART C3: Scope of Work

						<p>quarantined, and Department of Health must be contacted immediately (0800 029 999)</p> <ul style="list-style-type: none"> Relevant PPE to be issued Clean and disinfect objects that are regularly touched
First Aid Training / CPR Manikin	Workers exposed to CV19 due to providing First Aid in the workplace or during CPR Training on Mannequin, causing further spread of disease and possible death	Endangering employees, or visitors Health Medical treatment and lost time Respiratory infection that can lead to fatality's Site placed under quarantine that leads to loss of income and production	C	1	4	<ul style="list-style-type: none"> Proper training of First Aid staff Use of correct equipment while giving First Aid Maintaining proper mannequin hygiene Relevant PPE to be issued Clean and disinfect objects that are regularly touched CV19 included with Induction. CV19 Information posters placed in accessible locations in the workplace All employees to receive awareness training on COVID-19 and personal hygiene (Toolbox talks)
Lack of accurate information / a failure to disseminate information	Employees unaware of risks from CV19 get infected due to lack of awareness of	Endangering employees, or visitors Health Medical treatment and lost time Respiratory infection that can lead to fatality's				<ul style="list-style-type: none"> A designated person will be appointed to monitor CV19 by signing up for immediate news updates and monitoring relevant Websites and News outlets. A risk communication plan will be implemented, ensuring timely updating/ sharing of information with all internal & external stakeholders

PART C3: Scope of Work

	control measures, causing further spread of disease and possible death	Site placed under quarantine that leads to loss of income and production				<ul style="list-style-type: none"> • CV19 included with Induction. • CV19 Information posters placed in accessible locations in the workplace • All employees and visitors, to receive induction training • All employees to receive awareness training on COVID-19 and personal hygiene (Toolbox talks)
--	--	--	--	--	--	--

PART C3: Scope of Work

Baseline Risk Assessment

Project/Dept:		City of Tshwane Ref No.			Scope of Risk Assessment:		Baseline		Next Review Date:		2021/03/04													
Date:		05/03/2020			Prepared by:		Rams Enterprise		Accountable Manager:			Simpitwe July												
1: Identify Hazards		2: Identify Risks					3: Analyse Risks					4: Evaluate Risks												
Hazard nr	Status	Hazard Identification	Risk Nr	Risk Owner	Associated risk	Abnormal Conditions	Cause(s) of the risk	What are the Consequences?	Existing Controls			Likelihood of the event and Consequence of each SHE element			Risk Priority Rating		Additional Tasks		Likelihood of the event and Consequence of each SHE element			Risk Priority Rating		
									Include: - Preventative Controls (actions taken to eliminate hazards or reduce the likelihood of the hazard occurring), and - Reactive Controls (action taken to reduce the immediate impact of the hazard occurring)	RCE Risk Control Effectiveness	LIKELIHOOD	Safety	Health	Environmental			Include: - Preventative Controls (actions taken to eliminate hazards or reduce the likelihood of the hazard occurring), and - Reactive Controls (action taken to reduce the immediate impact of the hazard occurring)	Safety	Health	Environmental				
1		Confined Space	1.1	Contractor	Fumes/ Gases	No	1. Fumes 2.Natural gas build up. 3. Insufficient ventilation.	1. Asphyxiation. 2.Fatality 3. Gas and oxygen monitoring 4.Medical treatment	1. Permit to work. 2.Budd system 3. Gas and oxygen monitoring 4. Flame proof lighting 5. Rotation of workers 6. Artificial ventilation.	P	B	2	2	2	2	IV	1. Supervision. 2. Conformance to procedures. 3. Monitoring and audit. 4. Rescue plan.	B	2	2	2	2	IV	
									1. Gas and oxygen monitoring on hourly basis 2. Purging								1. Training and awareness. 2. Toolbox talks. 3. Forced ventilation.	A	2	2	2	2	IV	
2		Blasting Operations	2.1	Contractor	Persons struck by debris	Yes	1.No provision of exclusion zone 2. Access to area by unauthorised persons	1.Medical treatment 2. fatality or serious injury 3. Damage to property	1. Exclusion zones. 2. Evacuation of personnel and machinery/equipment. 3. Approved risk assessments and method statements for blasting. 4.Pre-blast meetings.	F	B	1	1	1	1	IV	1.Warning sirens. 2.Guards at blasting parameters. 3. Controlled access. 4. Safe viewing distance.	B	1	1	1	1	IV	
			2.2	Contractor	Storage of explosives during the charging	No	1.Lack of adequate control measures	1. Fatality 2. Severe injury 3. Damage to property 4.Medical treatment	1. Segregation/ restrict access to the area.							IV	1. Signage around the blasting parameters 2. Supervision. 3. Locking of the entrance to the blast site/area.	B	2	1	1	1	IV	
																	1.Verification by the blaster. 2. Restricted control access. 3. Re-charging of the insfire.							
			2.3	Contractor	Misfire	Yes	1. Incorrect installation of explosives 2. Technical malfunction	1.Fatality 2.Property damage 3. Severe injuries 4. Medical treatment 5. Production loss	1. Notify explosive inspector. 2. Designated area for disposing misfired explosives.	P	C	4	4	4	3	II		B	2	2	1	1	IV	
			2.4	Contractor	Dust	No	1.Uncontrollable dust cloud	1.If effects from inhalation 2.Reduction in visibility. 3. Nuisance dust effect public.	1. Install rubber mats to contain amount of dust. 2. Exclusion zones.	P	B	1	1	1	1	IV	1. Supervision. 2. Appropriate PPE for persons on the direct path of the dust cloud. 3. Daily task risk assessment. 3. Assess a wind direction.	B	1	1	1	1	IV	

PART C3: Scope of Work

[illegible]

PART C3: Scope of Work

[illegible]

PART C3: Scope of Work

7	Mobile Crane Operations/Hi Up	6.3	Contractor	Foreign objects in the eye	Yes	<p>1. Inadequate suppression systems or extraction</p> <p>2. Failure to provide correct protective eye wear</p> <p>3. Failure to wear eye protection</p>	<p>1. Severe injuries</p> <p>2. Medical treatment</p>	<p>1. Eye protection</p>	F	C	3	3	1	I	<p>1. Eye wash stations. 2. Training and awareness.</p>	B	1	1	1	N
		7.1	Contractor	Collapse of crane	Yes	<p>1. Incorrectly assembled</p> <p>2. Incompetent erectors</p> <p>3. Failure to carry out inspection and testing</p> <p>4. Failure to carry out ground survey</p> <p>5. Incorrect purchasing / hire requirements</p>	<p>1. Serious injuries</p> <p>2. Fatalities</p> <p>3. Property damage</p>	<p>1. Certified and inspected prior to erection.</p> <p>2. Regular inspections.</p> <p>3. Certified and competent operator.</p>	F	B	6	6	4	I	<p>1. Competent supervisor to oversee the work.</p>	B	2	2	2	N
		7.2	Contractor	Dropping of load	Yes	<p>1. Incorrectly assembled</p> <p>2. Incompetent erectors</p> <p>3. Failure to carry out inspection and testing</p> <p>4. Incompetent slingers</p> <p>5. Use outside of safe parameters</p>	<p>1. Serious injuries</p> <p>2. Fatalities</p> <p>3. Property damage</p>	<p>1. certified slings.</p>	P	C	5	5	4	I	<p>1. Competent and certified operators.</p> <p>2. Adhere to safe working loads.</p> <p>3. Adequate communication methods.</p> <p>4. Wind monitoring devices.</p>	B	2	2	2	N
		7.3	Contractor	Uncontrolled load movements	Yes	<p>1. Failure to provide safe systems of work.</p> <p>2. Incompetent operators.</p> <p>3. Lack of adequate competent supervision.</p> <p>4. Failure to plan</p>	<p>1. Serious injuries</p> <p>2. Fatalities</p> <p>3. Property damage</p>	<p>1. Certified and competent crane operators</p> <p>2. Refresher training on crane operators</p> <p>3. exclusion zones</p> <p>4. communication between operator and the rigger</p> <p>5. Wind speed monitoring devices</p>	P	D	4	4	3	I	<p>1. Adequate communication methods.</p> <p>2. Wind monitoring devices.</p> <p>3. Use of guide ropes to stabilise the load.</p>	B	2	2	1	N
		7.4	Contractor	Collisions with structures or other cranes	Yes	<p>1. Failure to carry out lifting plan/survey.</p> <p>2. Obese proximity to structures.</p> <p>3. No use of anti-collision systems.</p> <p>4. Lack of adequate competent supervision.</p> <p>5. Failure to utilise limiters</p>	<p>1. Serious injuries</p> <p>2. Fatalities</p> <p>3. Property damage</p> <p>4. Production loss</p>	<p>1. Anti-collision devices.</p> <p>2. Certified and competent operator.</p>	P	D	5	5	3	I	<p>1. Locking mechanism for exclusion zone.</p> <p>2. Competent supervisors.</p> <p>3. Adequate communication methods.</p>	B	2	2	2	N
		7.5	Contractor	Falling of lifting accessories	Yes	<p>1. inadequate purchasing</p> <p>2. Failure to maintain and test.</p> <p>3. Damage due to incorrect storage</p> <p>4. Incorrect accessory employed</p>	<p>1. Serious injuries</p> <p>2. Fatalities</p> <p>3. Property damage</p> <p>4. Production loss</p>	<p>1. Daily inspection</p> <p>2. periodical testing and certification of lifting equipment</p>	P	C	5	5	3	I	<p>1. Competent and certified operators.</p> <p>2. Adhere to safe working loads.</p> <p>3. Adequate communication methods.</p> <p>4. Wind monitoring devices.</p>	B	2	2	2	N
		7.6	Contractor	Failure of hydraulic systems	Yes	<p>1. Failure to maintain and test</p> <p>2. Failure to inspect</p> <p>3. inadequate maintenance</p>	<p>1. Serious injuries</p> <p>2. Fatalities</p> <p>3. Property damage</p> <p>4. Production loss</p>	<p>1. Scheduled maintenance and inspection.</p> <p>2. Emergency stop buttons.</p>	F	B	5	5	2	I	<p>1. Competent and certified operators.</p> <p>2. Adhere to safe working loads.</p> <p>3. Adequate communication methods.</p> <p>4. Wind monitoring devices.</p>	B	2	2	2	N
		7.7	Contractor	Unauthorised operators	Yes	<p>1. Incompetent operator</p> <p>2. inadequate supervision</p> <p>3. inadequate security controls</p>	<p>1. Serious injuries</p> <p>2. Fatalities</p> <p>3. Property damage</p> <p>4. Production loss</p>	<p>1. Competent and certified operators.</p>	F	B	3	3	2	II	<p>1. Signing of daily log.</p> <p>2. Operators to carry their operator cards/permits.</p>	B	1	1	1	N
		7.8	Contractor	Human error	Yes	<p>1. Incompetent operator.</p> <p>2. Fatigue/ill health</p> <p>3. Lack of concentration</p> <p>4. Pressure of work</p>	<p>1. Serious injuries</p> <p>2. Fatalities</p> <p>3. Property damage</p>	<p>1. Supervision</p> <p>2. Rotation of workers.</p>	P	C	5	5	2	I	<p>1. Competent supervisor to oversee the work.</p> <p>2. Adequate communication.</p> <p>3. Adherence to rigging studies.</p>	B	2	2	1	N
		7.9	Contractor	Effects of wind	Yes	<p>1. Failure to identify maximum allowable wind speed.</p> <p>2. Failure to</p>	<p>1. Serious injuries</p> <p>2. Fatalities</p> <p>3. Property damage</p>	<p>1. Wind monitoring devices.</p> <p>2. Stop of working at high wind speed.</p>	F	C	2	2	1	II	<p>1. Competent supervisors to oversee the work.</p>	B	1	1	1	N
		7.10	Contractor	Rescue of operator	Yes	<p>1. Ill health</p> <p>2. Lack of planning</p> <p>3. Lack of training.</p>	<p>1. Injuries</p> <p>2. Fatalities</p>	<p>1. Emergency response plan (paramedics).</p>	F	B	4	4	1	II	<p>1. Adequate communication methods.</p>	B	2	2	1	N

PART C3: Scope of Work

8	Chemicals	8.1	Contractor	Improper storage	Yes	1. Lack of planning 2. Lack of knowledge 3. Decanting into unsuitable/unmarked receptacles. 1. Leaks into ground/ water supply	1. Serious injuries 2. Fatalities 3. Property damage	1. Designated storage area. 2. Banded walls. 3. MSDS. 4. Adequate ventilation.	P	C	3	3	3	I	1. Training and awareness. 2. Labelling of chemicals.	B	1	1	1	IV
		8.2	Contractor	Contamination	No	1. Accidental ingestion 2. Lack of information training 3. Failure to assess risk 4. Inadequate PPE 5. Skin absorption.	1. Medical treatment 2. Fatality or serious injury	1. Chemical spill kits. 2. Training on handling of spillages.	P	D	3	3	4	I	1. Provision of drip trays.	B	1	1	1	IV
		8.3	Contractor	Effect on persons	Yes	1. Lack of planning 2. Lack of financial resource 3. Failure to assess risk 4. Inadequate PPE 5. Skin absorption.	1. Injuries 2. Fatalities	1. Safety material data sheet 2. Medical surveillance 3. Training and awareness 4. PPE	F	B	3	3	1	II	1. Localised extraction fans. 2. Lockable storage facilities.	B	2	2	1	IV
9	Welfare facilities	9.1	Contractor	Inadequate supply	Yes	1. Lack of planning. 2. Lack of financial resource	1. Medical treatment	1. Ablution facilities provided. 2. Eating facilities provided.	P	C	1	1	2	II	None	B	1	1	1	IV
		9.2	Contractor	Inadequate maintenance	Yes	1. Lack of planning 2. Lack of financial resource	1. Medical Treatment	1. Maintenance contract in place.	P	C	2	2	2	II	1. Assign cleaning crews to each facility.	B	1	1	1	IV
		9.3	Contractor	Build up of waste	No	1. Lack of planning 2. Lack of financial resource	1. Transmittable diseases 2. Medical Treatment	1. Waste management contract. 2. Waste segregation. 3.	P	C	2	2	2	II	1. Schedule dates for waste collection.	B	1	1	1	IV
		9.4	Contractor	Spread of disease	Yes	1. Lack of planning 2. Lack of financial resource 3. Lack of knowledge 4. Lack of awareness.	1. Medical treatment 2. Fatalities	1. Daily cleaning of welfare facilities 2. Canteen and kitchen facilities 3. Training and awareness.	P	C	3	3	3	I	1. Fumigation of facilities. 2. Hand and surface disinfectant.	B	2	2	1	IV
		9.5	Contractor	Attraction of vermin	Yes	1. Lack of planning 2. Lack of financial resource 3. Lack of vermin control	1. Medical Treatment	1. Daily cleaning of welfare facilities 2. daily removal of waste.	P	B	2	2	2	IV	1. Fumigation of facilities	B	1	1	1	IV
				unpleasant smell																
10	Noise	10.1	Contractor	Hearing loss	Yes	1. Failure to identify sources 2. Lack of engineering controls. 3. Failure to identify pre-existing conditions and monitor	1. NHL. 2. Medical treatment 3. Occupational hearing loss disease	1. Designated noise zones. 2. Control of access. 3. Audiometric testing. 4. Quarterly reporting of NHL. 5. Provision of hearing protection.	P	C	3	3	1	I	1. Provision of adequate PPE. 2. City of Tshwane's Hearing Conservation Procedure 32-281/32-134	B	2	2	1	IV
		13.2	Contractor	Inadequate ear protection	Yes	1. Failure to assess risk 2. Inadequate purchasing	1. NHL. 2. Medical treatment 3. Occupational hearing loss disease	1. Baseline and periodical audiometric testing 2. Noise monitoring 3. Demarcation of noise zones. 4. HPE	P	C	3	3	1	I	1. Worker rotation. 2. noise exposure monitoring.					
		10.3	Contractor	Exceeding exposure limits	Yes	1. Failure to assess risk 2. Lack of knowledge 3. Failure to monitor	1. NHL. 2. Medical treatment 3. LTI	1. Rotation of workers.							1. Task specific risk assessment. 2. Competent supervision.	B	1	1	1	IV
11	Thermal Exposure	11.1	Contractor	Heat exposure	No	1. Prolong duration in the sun 2. Inadequate water consumption 3. Lack of knowledge and training	1. Medical treatment 2. First aid 3. Severe injury	1. Provision of sun screen. 2. Provision of water bottles. 3. Designated drinking water points. 4. Provision of sun visors.	P	D	3	3	1	I	1. Site directive on wearing of long sleeved clothing. 2. Work stoppage in excessive heat.	B	2	2	1	IV
		11.2	Contractor	Exposure to cold	Yes	2. Poor clothing selection 3.	1. Medical treatment 2. First aid 3. Severe injury	1. Training and awareness 2. Rotation of employees 3. PPE	F	B	1	1	1	IV	None	B	1	1	1	IV
		12.1	Contractor	Poor judgement	Yes	1. Excessive drug use and alcohol consumption	1. Fatality 2. Medical treatment 3. First aid 4. Damage to property 5. Production loss.	1. Random alcohol test. 2. Entrance medical test. 3. Training and awareness. 4. Cardinal rules.	P	C	4	4	1	I	1. EAP. 2. Implementation of City of Tshwane's Substance Abuse Procedure 32-37	B	2	2	1	IV
13	Civil unrest	13.1	Contractor	Violent behaviour	Yes	1. External influences 2. Lack of knowledge / communication	1. Severe injuries 2. First aid 3. Fatality	1. Weekly PLA forum. 2. ER plan.	P	B	2	2	1	IV	1. Grievance procedure 32-195.	B	1	1	1	IV
		13.2	Contractor	Inability to access/exit site	Yes	1. Erupting of violence 2. Lack of control 3. Lack of planning	1. Severe injuries 2. First aid 3. Fatality 4. Damage to property.	1. Security. 2. ER plan. 3. SAPS	F	B	1	1	1	IV	1. Grievance procedure 32-195.	B	1	1	1	IV

PART C3: Scope of Work

14	Lack of competencies	14.1	Contractor	Increase in incidents	Yes	1. Lack of knowledge or skill 2. Failure of management systems 3. Failure to supervise	1. Fatality 2. Medical treatment 3. First aid 4. Damage to property 5. Production loss	1. Competency certificates	P	B	2	2	1	I	1. Task specific training 2. Mentoring and coaching.	B	1	1	1	IV
		14.2	Contractor	Potential for injury	Yes	1. Lack of knowledge or skill 2. Failure of management systems 3. Failure to supervise	1. Training and experience 2. Supervision 3. Implementation of management system	1. Adequate Supervision 2. N	P	C	3	2		I						
		14.3	Contractor	Inadequate control/RA	Yes	1. Incompetent Risk Assessor	1. Appointment of competent risk assessor 2. Proper training on RA	1. Appoint competent RA 2. f	P	E	3	2		I						
		14.4	Contractor	Lack of planning	Yes	1. Failure of management system	1. Development and implementation of management system	1. Supervision 2. Pre-job plan	P	C	3	3		I						
		14.5	Contractor	Failure of statutory compliance	Yes	1. Failure to Audit	1. Statutory audit to be conducted	1. Statutory Audits	P	C	5	3		I						
15	Effects of weather	15.1	Contractor	High Winds	Yes	1. Natural causes	1. Stoppage of work 2. Wind monitoring and measurement	1. Wind speed monitors 2. Work stoppages during thunderstorms 3. Daily weather report	F	C	1	1	2	I	1. Provision of rain suit 2. Provide shelters can use during adverse weather.	B	1	1	1	IV
		15.2	Contractor	Rain/flooding		1. Natural causes	1. Stoppage of work 2. Monitoring and measurement	1. Stoppage of work 2. Monitoring and measurement	P	B	2	2		I						
		15.3	Contractor	Lightning		2. Natural causes	1. Stoppage of work	1. Stoppage of work 2. Monitoring and measurement	P	B	5	5		I						
16	Hot works	16.1	Contractor	Fire/explosion	Yes	1. Lack of procedural controls 2. Lack of housekeeping regime 3. Failure to provide correct fitting 4. Failure to plan 5. Failure to manage housekeeping	1. Medical treatment 2. First aid 3. First aid 4. Damage to property 5. Production loss	1. Severe injury 2. Medical treatment 3. First aid 4. Damage to property 5. Production loss	P	C	3	3	2	I	1. Emergency response plan 2. Competent supervisors to oversee the work.	B	2	2	1	IV
		16.2	Contractor	Burns	Yes	1. Lack of suitable PPE	1. Medical treatment 2. First aid 3. Production delays	1. Suitable welding and grinding gear	F	B	2	2	1	IV	1. Fire marshals 2. Fire extinguishers. 3. Training and awareness. 4. Competent supervisors to oversee the work.	B	1	1	1	IV
		16.3	Contractor	Arc eyes	Yes		1. Medical treatment 2. First aid treatment	1. Double eye protection 2. Face shield 3. Welding goggles	F	C	3	3	1	I	1. Training and awareness.	B	1	1	1	IV
		16.4	Contractor	Inhalation of fumes	Yes	1. Working in confined area 2. Lack of ventilation 3. Lack of supervision	1. Medical treatment 2. Respiratory disease 3. Fatality	1. Local Exhaust Ventilation 2. Gas monitoring devices 3. PPE/PE 4. Training and awareness.	F	B	2	2	1	IV	1. No additional measures	B	2	2	1	IV
17	Pedestrians	17.1	Contractor	Struck by vehicle	Yes	1. Failure to plan and demarcate 2. Failure to maintain 3. Failure to communicate 4. Failure to enforce	1. Fatality 2. Medical treatment 3. First aid 4. Damage to property 5. Production loss	1. Segregated walkways 2. Flashing beacons 3. Highly reflective clothing.	P	C	4	4	1	I	1. Training and awareness	B	2	2	1	IV
		17.2	Contractor	Unauthorised access	Yes	1. Failure to secure and manage 2. Failure to enforce 3. Failure to enforce	1. Fatality 2. Medical treatment 3. First aid 4. Damage to property	1. Site rules for accessing site and work areas.	P	D	1	1	1	I	1. Permit cards to be granted to authorised personnel only.	B	1	1	1	IV

PART C3: Scope of Work

17.3		Contractor	Slips/trips/falls	No	1. Failure to install and maintain surfaces 2. Provision of unsuitable footwear 3. Poor housekeeping standards. 4. Inadequate lighting	1. Severe injuries 2. Medical treatment 3. First aid 4. Damage to property 5. Production loss.	1. Good housekeeping	P	D	3	3	1	II	1. Segregated walkways.	B	2	2	1	IV
17.4		Contractor	Adjacent works	No	1. Failure to provide safe route 2. Failure to monitor	1. Fatality 2. Medical treatment 3. First aid 4. Damage to property 5. Production loss.	1. Barricading of work areas	P	C	4	4	1	II	1. Access control and access permit. 2. Joint risk assessment	B	2	2	1	IV
18.1	Radiation	Contractor	Exposure	Yes	1. Failure to plan 2. Inadequate storage 3. Improper use 4. Inadequate management procedures	1. Multiple fatalities 2. Disabling occupational disease 3. Medical treatment	1. Demarcation and signage of work areas.	F	B	5	5	5	II	1. Training and awareness 2. Restricted number of radiation workers 3. Flashing amber lights around the radius of the working area. 4. Guards around the perimeter.	B	2	2	2	IV
18.2		Contractor	Storage and transport	Yes	1. Improper transportation 2. Unauthorised driver	1. Irreversible occupational disease 2. Medical treatment	1. Radiation storage facility. 2. Appropriate signage on the vehicle. 3. Permit to transport radioactive sources. 4. Clearance certificates.	F	B	5	5	5	II	1. Security personnel stationed at the facility.	B	2	2	1	IV
18.3		Contractor	Unauthorised use	Yes	1. Lack of procedural controls 2.	1. Irreversible occupational disease 2. Medical treatment	1. Control access to area of use.	F	B	4	4	4	III	1. Guards around the perimeter 2. Flashing amber/warning lights. 3. Warning siren prior to Radiation work. 4. Visual checks of the area.	B	2	2	1	IV
22.4		Contractor	Theft or hijack of vehicle	Yes	1. Lack of secure storage. 2. Failure to adequately assess risk of theft	1. Irreversible occupational disease 2. Medical treatment	1. Secure storage facility.	P	C	5	5	5	II	1. Tracking and monitoring devices	B	2	2	1	IV
19.1	Lone working	Contractor	Lack of communication	Yes	1. Failure to provide means of communication 2. Inadequate procedures	1. Fatality 2. Medical treatment 3. First aid 4. Production loss.	1. Radio communication 2. Emergency telephone	F	B	4	4	1	III	1. Avoid lone working	B	1	1	1	IV
20.1	Vehicles	Contractor	Accident occurring on and off site	Yes	1. No means of tracking vehicles 2. No adequate means of communication 3. Procedure for investigating search and recovery.	1. Multiple fatalities and injuries 2. Medical treatment 3. First aid 4. Damage to property	1. Daily vehicle checklist 2. Amber lights 3. Head lights 4. Road worthy certificates. 5. Drivers licence, advanced driving. City of Tshwane drivers permit. Approved vehicles for construction	P	D	5	5	1	I	1. Bus services for personnel 2. Training and awareness on arrival 3. Adherence to statutory speed limits 4. Adherence to cardinal rule 3.	B	3	3	1	IV
20.2		Contractor	Maintenance	Yes	1. Failure to implement or adhere to maintenance schedule 2. Risk of incompetent engineers 3. Risk of makeshift repairs	1. Severe injuries 2. Medical treatment	1. Periodical maintenance and service of vehicles	P	C	3	3	2	II	1. On site road worthiness inspections 2. Issuing of vehicle permits	B	2	2	1	IV

PART C3: Scope of Work

[illegible]

PART C3: Scope of Work

25	Extended work hours	25.1	Contractor	Inconsistent, misused and non-statutory signage	Yes	1. Failure to adhere to statutory signage requirements 2. Failure to monitor incorrect or missing signage 3. Lack of knowledge	1. Fatalities. 2. Production loss. 3. Damage to property. 4. Medical treatment.	1. SANS and other statutory signage are the minimum requirement 2. Medupi SHE Specifications	P	D	4	4	3	I	1. Best practices	C	2	2	1	II
		25.2	Contractor	Fall asleep while working	Yes	1. Fatigue 2. Low energy level	1. Fatalities. 2. Production loss. 3. Damage to property. 4. Medical treatment.	1. Rotation of workers 2. Taking rest breaks	P	C	4	4	2	II	1. Buddy's yell 2. Regular rest periods (tea breaks, lunch)	B	2	2	1	IV
		25.3	Contractor	Poor product quality	Yes	1. Fatigue 2. Low energy level	1. Production delay	1. Rotation of workers	P	B	2	2	2	II	1. Competent supervisors to oversee the work.	B	1	1	1	IV
26	Exposed cables	26.2	Contractor	Delay of work	Yes	1. Fatigue 2. Low energy level	1. Production loss	1. Rotation of workers	P	B	2	2	2	II	1. Competent supervision to oversee the work 2. Job planning	B	1	1	1	IV
		26.3	Contractor	Electrocution	Yes	1. Overloading 2. Physical damage 3. Improper routine 4. Underground cables 5. Digging without a permit	1. Multiple fatalities and injuries. 2. Production loss.	1. Proper cable markers and correct routing of cables 2. Updated drawings 3. Exposed electrical cables 4. Exposed electrical cables 5. Height determine cables 5. Height	F	C	5	5	2	II	1. Competent supervision of the work	B	2	2	2	IV
		26.4	Contractor	Trip hazards	Yes	1. Poor cable management 2. Cables not buried 3. Cable covers not placed	1. Severe injuries. 2. Medical treatment. 3. First aid.	1. Exposed electrical cables are buried in the ground 2. Cable covers placed to protect the cables 3. Cables removed from walkways.	P	B	2	2	1	IV	1. Competent supervision of the work practices	B	1	1	1	IV
		26.5	Contractor	Damage to cables	Yes	1. Falling objects 2. Moving plant 3. Sharp objects	1. Production delay.	1. Bury cables 2. Placement of cable covers 3. Barricading.	P	C	5	5	2	II	1. Restrict access to area of work	B	2	2	1	IV
27	Compressed air	27.1	Contractor	Expulsion blow into people or objects	Yes	1. Poorly positioned down pipes 2. Use of air to blow 3. Horseplay 4. Inspection 5. Its performance 6. Over pressurising 7. Safety devices failing 8. Water contamination	1. Medical treatment. 2. Damage to property. 3. First aid treatment.	1. Training and awareness 2. PPE 3. Flash back arrestors 4. Maintenance and inspection	P	C	2	2	1	II	1. Restrict access to area of work 2. Supervision when working	B	1	1	1	IV
		27.2	Contractor	Vessel or pipe ruptures	Yes	1. Over pressurising 2. Inspection and maintenance failure 3. Defective vessels and pipes	1. Production delay.	1. Inspection and maintenance of vessels and pipes 2. Safety relief valves 3. Whip check	F	B	2	2	1	IV	1. Ensure quality vessel and pipes are used	B	1	1	1	IV
		27.3	Contractor	Noise	Yes	1. Pressurised air 2. High level noise	1. NHL. 2. Occupational hearing disease.	1. Hearing Protective Equipment 2. Demarcation of noise zones	P	B	3	3	1	II	1. Regular Audiometric tests 2. Veriphone earplugs.	B	2	2	2	IV
28	Compressed gas cylinder	28.1	Contractor	Falling and rolling of gas cylinders	Yes	1. Incorrect storage 2. Incorrect handling 3. Poor maintenance 4. Poor inspection or failed inspection or maintenance 5. Overheating 6. Valve broken off 7. Valve failure 8. Cylinders not secured while in use 10. Oil in gauges	1. Multiple fatalities. 2. Severe injuries. 3. Damage to property. 4. Damage to property.	1. Lockable designated storage facility 2. Adequate signage 3. Line extinguisher 4. First aid treatment 5. SABS approved hoses 6. Proper maintenance and inspection 7. Segregation of gases.	P	C	5	5	4	II	1. Training and awareness when handling gas cylinders	B	3	3	2	II
		28.2	Contractor	Explosion	Yes	1. Incorrect handling 2. Over heating 3. Poor maintenance 4. Ruptured vessels	1. Multiple fatalities. 2. Severe injuries. 3. Medical treatment. 4. Damage to property.	1. Flash back arrestor 2. Correct handling and storage 3. First aid treatment 4. Repairs and response.	P	B	5	5	4	II	1. Regular inspection of gas cylinders 2. Fire fighting equipment.	B	3	3	2	II
29	Contaminated water	29.1	Contractor	Spreading of disease	Yes	1. Discharge from tanks 2. Dam wall failure	1. Medical treatment. 2. Production delay.	1. Daily analysis of water	F	B	2	2	1	IV	1. Water filter system	B	1	1	1	IV

PART C3: Scope of Work

[illegible]

PART C3: Scope of Work

[illegible]

**CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION**

CONTRACT NO: USD WS 04-2021/22

**TENDER FOR REPLACEMENT OF SEWERS WITH COMBINATION
OF TRENCHLESS AND CONVENTIONAL METHODS IN THE CITY OF
TSHWANE: 3 YEAR PERIOD, AS AND WHEN REQUIRED**

**C3.10 REFERENCES TO THE SCOPE OF WORKS IN TERMS OF THE
ENVIRONMENTAL MANAGEMENT PLAN**

1. INTRODUCTION

The EMP will address the environmental impacts during the design, construction and operational phases of a project. Due regard must be given to environmental protection during the entire road project. In order to achieve this a number of environmental specifications/recommendations are made.

These are aimed at ensuring that the Contractor maintains adequate control over the project in order to -

- Minimise the extent of impact during construction;
- Ensure appropriate restoration of areas affected by construction; and
- Prevent long term environmental degradation.

The contractor must be made aware of the environmental obligations that are stipulated in this document, and declares himself/herself to be conversant of all relevant environmental legislation. The Contractor should also be aware that the Engineer will monitor the implementation of the procedures.

2. POLICY STATEMENT

The construction will be to the best management practices as identified to minimize the environmental impact of activities associated with the development.

3. OBJECTIVES OF THE EMP

The EMP has the following goals:

Identifying those construction activities that may have a detrimental impact on the environment.

Detailing the mitigation measures that will need to be taken, and the procedures for their implementation.

Establishing the reporting system to be undertaken during the construction.

The EMP also serves to highlight specific requirements that will be monitored during the development and should the environmental impacts not have been satisfactory prevented or mitigated, corrective action will have to be taken. The document should, therefore, be seen as a guideline that will assist in minimising the potential environmental impact of activities.

4. DESIGNATED ENVIRONMENTAL OFFICER

For the purpose of the EMP, a nominated representative of the Contractor should be the designated environmental officer for the project. The nominated representative of the Contractor will therefore be responsible for ensuring that the provisions of the EMP are complied with. The Engineer will be responsible for issuing instructions to the Contractor where environmental considerations call for action to be taken. The environmental officer will submit monthly reports to the Engineer on site who will verify the information.

5. LEGAL REQUIREMENTS

Under normal circumstances and EMP would be the end result or the final stage in the EIA procedure. However, a working agreement was negotiated between the National Department of Environmental Affairs and Tourism (DEAT) and the City of Tshwane Metropolitan Municipality. The agreement stipulates the project types the City of Tshwane Metropolitan Municipality need to submit to DEAT for approval and those project types the City of Tshwane Metropolitan Municipality do not need to submit for approval. For those actions that do not need approval, the City of Tshwane Metropolitan Municipality undertook to compile generic EMP's to assist to minimising degradation to the area. The following project types fall in this non-approval category: periodic maintenance, special maintenance, rehabilitation and specific upgrades.

6. MITIGATION MEASURES

In setting mitigation measures, the practical implications of executing these measures must be borne in mind. With early planning, both the cost and the impacts can be minimised.

6.1 Establishment of site offices

6.1.1 Site plan

The Contractor shall provide the Engineer on site with a plan detailing the layout of site offices facilities, such as chemical toilets, areas for stockpiling of material, storage of hazardous materials and provision of containers. The site offices should not be sited in close proximity to steep areas as this will increase soil erosion. Preferred locations would be flat areas along the route. If the route traverses water courses, streams and rivers, it is recommended that the site, and in particular the ablution facilities, aggregate stockpiles and hazardous material stockpiles are located as far away as possible from any water course as possible.

The site plan shall be submitted before the site hand over meeting. Read with Standard Specifications for Municipal Civil Engineering Works: Section 001 and 002.

PART C3: Scope of Work

6.1.2 Vegetation

The vegetation surrounding the site offices is to be left as intact as possible and vegetation planted at the site should be indigenous. Only trees directly affected by the works and such others as may be indicated by the Engineer in writing, may be sawn off/removed.

The project specification for the rehabilitation of the grass cover shall be strictly adhered to. Any proclaimed weed or alien invader plant shall be cleared by hand before seeding. Read with Specifications: 104 – Landscaping and grassing.

6.1.3 Rehabilitation

The site offices will require rehabilitation at the end of the contract. All construction material, including concrete slabs and braai areas are to be removed from the site on completion of the contract. Read with Specifications Sections 001, 002 and 104.

6.1.4 Water for human consumption

Water for human consumption must be tested and treated in accordance with recommendations.

6.2 Sewage treatment

Adequate toilet facilities are to be provided. Use of the veld for this purpose shall not, under any circumstances, be allowed. The Contractor shall be entirely responsible for enforcing their use and for maintaining such latrines in a clean, orderly and sanitary condition to the satisfaction of the Engineer. Latrines shall be positioned within walking distance from wherever employees are employed on the works.

Save and effective sewage treatment will require one of the following sewage handling methods: septic tanks and soak always, dry composting toilets such as “enviro loos”, or the use of chemical toilets which are supplied and maintained by a subcontractor. The type of sewage treatment will depend on the geology of the area selected, the duration of the contract and proximity (availability) of providers of chemical toilets is to be done in consultation with the Site Engineer.

Read with Specifications 104.

6.3 Waste management

Waste management and waste minimisation must be implemented at the outset of the contract.

6.3.1 Litter

No littering by construction workers are allowed. During the construction period, the facilities shall be maintained in a neat and tidy condition and the site is to be kept free of litter. Read with Specifications Sections 001 and 002.

6.3.2 Removal of solid waste

Solid waste is to be stored in an appointed area for collection and disposal. A refuse control system must be established for the collection and removal of refuse to the satisfaction of the Engineer. Disposal of solid waste will be in a Department of Water Affairs and Forestry (DWAF) licensed landfill site.

6.3.3 Hazardous waste

Hazardous waste such as bitumen, tar, oils, etc. shall be disposed of in a Department of Water Affairs and Forestry approved landfill site. Special care must be taken when using tar products such as tar prime or pre-coating fluid to avoid water-soluble phenols from entering the ground or contaminating water.

6.4 Soil management

6.4.1 Topsoil

The contract provides for the stripping and stockpiling of topsoil from the site for later reuse. Topsoil is considered to be of a minimum thickness of ± 300 mm of the natural soil, including all the vegetation and organic matter. The areas to be cleared of topsoil shall include the storage areas. Weeds appearing on the stockpiled topsoil shall be removed by hand before seeding. Soils contaminated by hazardous substances shall be disposed of in an approved Department of Water Affairs and Forestry waste disposal site.

PART C3: Scope of Work

6.4.2 Borrow material

The Contractor's attention is drawn to the requirements set forth by the Department of Mineral and Energy Affairs in terms of the submission of EMPR's for establishment, operation and rehabilitation of borrow pits and quarries. The cost of complying with the requirements shall be deemed to be included in existing rates in the schedule of quantities. Read with the Specification Section 203.

6.5 Discovery of archaeological sites, artefacts or graves.

6.5.1 Archaeological site

If an artefact on site is uncovered, work in the immediate vicinity must be stopped immediately. The Contractor shall take reasonable precautions to prevent any person from removing or damaging any such article and shall immediately upon discovery thereof inform the Engineer of such discovery. The National Monuments Council must be contacted who will appoint and archaeological consultant. Work may only resume once clearance is given in writing by the archaeologist. Read with General Conditions of Contract.

6.5.2 Graves

If a grave on site is uncovered, work in the immediate vicinity must be stopped and an undertaker as well as the National Monuments Council should be contacted. The undertaker will place advertisements in the newspapers concerning the grave. He will also provide for the relocation of bones, should it be necessary. Read with General Conditions of Contract.

6.6 Stockpiled material

The Contractor shall so plan his activities that materials excavated from borrow pits and cuttings, in so far as possible, can be transported direct to and placed at the point where it is to be used. However, should temporary stockpiling become necessary, the areas for the stockpiling of excavated and imported material must be indicated and demarcated on the site plan and approved in writing by the Engineer.

The area chosen shall be devoid of indigenous trees and shrubs. Care shall be taken to preserve all vegetation in the immediate area of these temporary stockpiles. After the stockpiled material has been removed, the site shall be reinstated as closely as possible to its original condition. All areas affected by stockpiling shall be landscaped, top soiled and grassed to the Engineer's approval and at the Contractor's cost.

PART C3: Scope of Work

Material milled out of the existing road surface that is temporarily stockpiled within the road reserve shall:

- be stockpiled so as to be as inconspicuous as possible;
- be prevented from contaminating water courses; and
- be cleared of weeds.

In all cases, the areas for stockpiling and disposal of construction rubble shall be approved by the Engineer before such operation commences.

Read with Series 2: Earthworks – Section 203.

6.7 Fuel, diesel and other hazardous materials

6.7.1 Hazardous materials

All hazardous materials i.e. bitumen binders shall be stored in an appointed area that is fenced and has restricted entry. Storage of bituminous products shall only take place using suitable containers to the approval of the Engineer.

Under no circumstances shall the spoiling of bituminous products on the site, over embankments, in borrow pits or any burying, be allowed. Unused or rejected bituminous products shall be taken to the supplier's production plant. No spillage of bituminous products shall be allowed on site. Affected areas shall be promptly reinstated to the satisfaction of the Engineer.

6.7.2 Fuel

Should any fuel storage tank be required on site, the Contractor shall ensure that he has complied with the necessary legal requirements for the erection of such tanks. Leakage must be avoided. The fuel and diesel areas should be bonded to accommodate any spillage or overflow from these activities.

6.7.3 Oil, grease

Oil, grease and cleaning materials from the maintenance of vehicles and machinery shall be collected in a sump and sent back to the supplier or, otherwise disposed of at a registered site.

6.7.4 Cooking oil

PART C3: Scope of Work

The Contractor should ensure that sufficient fuel is available for heating and cooking purposes should this be necessary.

6.7.5 Spillages

Streams, rivers and dams must be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous products. In the event of a spillage, prompt action must be taken by competent instances to clear the affected area.

6.8 General considerations

Complaints received regarding activities on the construction site pertaining to the environment shall be recorded in a designated register and the response noted with the date and action taken. This record must be submitted with the monthly reports.

Any avoidable non-compliance with the above-mentioned measures may be considered sufficient ground for withholding payment of part or all amounts to be paid for the said item.

7. MEASUREMENT AND PAYMENT

The Contractor shall not be separately reimbursed or compensated in respect of his compliance with the provisions of this part of the Scope of Works. All costs so incurred shall, save and except to the extent provided for the schedule of quantities under SECTION 001: GENERAL REQUIREMENTS AND CHARGES, be deemed to be included in the rates tendered for the various items of work listed in the schedule of quantities.

TABLE 1 SUMMARY OF MITIGATION MEASURES

ENVIRONMENTAL COMPONENT	ACTIVITY	MITIGATION	RELEVANT SECTION IN SPECIFICATIONS
<i>Establishment of site offices</i>	<i>Positioning of offices</i>	<i>Preferred areas would be flat areas along the route. Avoid steep areas as soil erosion could increase. Avoid water courses</i>	001 002.02.01
	<i>Site Plan</i>	<i>Contractor will provide engineer detail of layout of site facilities within two weeks of moving to the site ie chemical toilets, the demarcation of areas for stockpiling of materials, storage of hazardous materials and the provision of containers. The offices shall be fenced. The site plan will be submitted before the site hand over meeting.</i>	001 002
<i>Site rehabilitation</i>	<i>Clean-up</i>	<i>All construction material is to be removed from the site on completion of the contract.</i>	001 002 104
<i>Vegetation</i>	<i>On site</i>	<i>Vegetation planted on the site should be indigenous. Only trees directly affected by works as indicated in writing by Engineer, shall be sawn off/removed</i>	104
	<i>Weeds</i>	<i>Clearance of weeds must be done by hand before seeding.</i>	104
	<i>Grass cover</i>	<i>The grass cover surrounding the construction site is to be left as intact as possible or restored to its original condition.</i>	104

PART C3: Scope of Work

ENVIRONMENTAL COMPONENT	ACTIVITY	MITIGATION	RELEVANT SECTION IN SPECIFICATIONS
<i>Water</i>	<i>Available for human consumption</i>	<i>Water for human consumption must be tested and treated in accordance with recommendations.</i>	
<i>Soil management</i>	<i>Topsoil</i>	<i>The topsoil (± 300 mm) of any excavation shall be removed and stockpiled separately from underlying material in an appointed area</i>	203 104
	<i>Borrow material</i>	<i>EMPR's for borrow pits to be submitted to the Department of Mineral and Energy Affairs for approval</i>	201 203
<i>Archaeological & Cultural sites</i>	<i>Discover of archaeological sites of artefacts</i>	<i>If an artefact on site is uncovered, work in the immediate vicinity must be stopped immediately and an archaeological consultant must be contacted. Work may only resume once clearance is given in writing by the archaeologist.</i>	GCC
<i>Graves</i>	<i>Discovery of graves</i>	<i>If a grave on site is uncovered, work in the immediate vicinity must be stopped and an undertaker should be contacted</i>	GCC
<i>Waste management</i>	<i>Solid & Construction waste</i>	<i>Solid waste is to be stored in an appointment area for collection and disposal. Disposal of waste will be in a DWAF licensed landfill, and no waste may be burnt on site.</i>	
	<i>Litter</i>	<i>The site is to be kept free of litter</i>	001
<i>Sewage treatment</i>	<i>Toilet facilities</i>	<i>Adequate toilet facilities are to be provided, and the positioning of chemical toilets is to be done in consultation with the site engineer. Use of the veld for</i>	001 002

PART C3: Scope of Work

ENVIRONMENTAL COMPONENT	ACTIVITY	MITIGATION	RELEVANT SECTION IN SPECIFICATIONS
		<i>this purpose shall not be allowed.</i>	
<i>Fuel, diesel & hazardous materials</i>	<i>Hazardous Materials</i>	<i>All hazardous materials ie bitumen binders will be stored in an appointed area that is fenced and has restricted entry. No spoiling of bituminous products on site, over embankments, in borrow pits or any burning. No spillage of bituminous products shall be allowed on site.</i>	
	<i>Fuels</i>	<i>All fuel tanks will be stored in an appointed area. Leakage will be avoided.</i>	
	<i>Cooking fuel</i>	<i>The Contractor should ensure that sufficient fuel is available for heating and cooking purposes should this be necessary.</i>	
	<i>Oil, grease</i>	<i>Oil, grease and cleaning materials from maintenance of vehicles shall be collected in a sump and sent back to supplier.</i>	
	<i>Spillages</i>	<i>Streams, rivers or dams must be protected against spillages of pollutants mentioned in 6.7 (e). In the event of a spillage, prompt action must be taken to clear the affected area.</i>	
<i>General considerations</i>	<i>Lines of authority</i>	<i>A nominated representative of the contractor will be the designated environmental officer for the site.</i>	RELEVANT SECTION IN SPECIFICATIONS
	<i>Reports</i>	<i>The environmental officer will submit monthly reports to the Engineer who will verify the information</i>	

PART C3: Scope of Work

ENVIRONMENTAL COMPONENT	ACTIVITY	MITIGATION	RELEVANT SECTION IN SPECIFICATIONS
	Complaints	Complaints received regarding activities on the construction site pertaining to the environment should be recorded in a designated register, and the response noted with the date and action taken. This record must be submitted with the monthly report	