WATER AND SANITATION BUSINESS UNIT

INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION

TENDER REFERENCE: WSBU 01 2025/26

TENDER FOR THE APPOINTMENT OF A CONTRACTOR FOR THE COMPLETION OF BULK WATER (STEEL PIPE) AND WATER RETICULATION IN MAMELODI EXT 11

VOLUME 1

`

A Tender for Category **8CE or Higher** CIDB Registered Contractors

ISSUED BY:	**PREPARED BY:**
The Divisional Head Supply Chain Management Tshwane House 320 Madiba Street Pretoria 0002 Tel: 012 358 0343	The Group Head Water and Sanitation Business Unit PO Box 1022 PRETORIA 0001 Tel: 012 345-4101/3773

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):	
Offer:	

Only bidders registered on the Central Supplier Database and with CSD Number will be considered for this tender as it is a requirement from National Treasury.

In compliance with THE CIDB standards for uniformity

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PORTION 1: TENDER

PART T1: TENDER PROCEDURES

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T1.1 TENDER NOTICE AND INVITATION TO TENDER

WSBU 01 2025/26

CITY OF TSHWANE
WATER AND SANITATION BUSINESS UNIT

TENDER FOR THE APPOINTMENT OF A CONTRACTOR FOR THE COMPLETION OF BULK WATER (STEEL PIPE) AND WATER RETICULATION IN MAMELODI EXT 11 FOR A PERIOD OF 2 YEARS

Tenders are hereby invited for the above services.

Tenderers should have a CIDB contractor grading designation of **8CE** or higher.

Tenders are hereby invited for the above work.

Tenders will be evaluated on the basis of awarding points for the **90/10** ***Preference*** Point System will be applied to this tender.

A **COMPULSORY CLARIFICATION MEETING** with a representative of the Employer will take place at the boardroom of the Water and Sanitation Department, Room A701, Capitol Towers North, 225 Madiba Street, Pretoria, 0001 **on the 28 August 2025 at 10h00.**

The lowest or any tender will not necessarily be accepted, and the Municipality reserves the right to accept any tender as a whole or in part or no tender.

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of **90 days** after the closing date for the submission of tenders, during which period a tender may not be amended or withdrawn and may be accepted at any time by the Municipality.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 **10h00 on the 16 September 2025.** 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 addressed to the Executive Director, SUPPLY CHAIN MANAGEMENT, PRETORIA, 0001 and must be submitted in the tender box situated at **Tshwane House, 320 Madiba Street, Pretoria, 0002**. Tenders will be opened at the latter address at the time indicated.

Only bidders registered on the central supplier database (CSD) and with a CSD number will be considered for this tender, as this is a requirement from the National Treasury.
"Note: Bidders are required to submit electronic copies of the bid either by memory stick/USB flash drive/CD/DVD together with the hard copy of the Bid/Proposals".

ENQUIRIES: **Raesibe Masenya**
Tel (Office): **(012) 358 5809**
E-Mail: **raesibema@tshwane.gov.za**

T1.2 TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in **Annexure C** of **Standard for Uniformity in Engineering and Construction Works Contracts (Board Notice 423 Government Gazette No 42622 of 8 August 2019)**, bound into Section T1.3

The Standard Conditions of Tender makes several references to the Tender Data. 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 below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.

CLAUSE NUMBER		TENDER DATA
C.1.1	Actions	The Employer is **City of Tshwane Metropolitan Municipality**
C.1.2	Tender Documents	Volume 1: Tender Document **THE TENDER** **Part T1: Tendering Procedures** T1.1 Tender notice and invitation to tender T1.2 Tender data T1.3 Standard conditions of tender **Part T2: Returnable documents** T2.1 List of returnable documents T2.2 Returnable schedules **THE CONTRACT** **Part C1: Agreements and contract data** C1.1 Form of offer and acceptance C1.2 Contract data **Part C2: Pricing data** C2.1 Pricing assumptions C2.2 Pricing schedule **Part C3: Scope of work** C3 Scope of work **ANNEXURES**
C.1.3 *C.1.3.4*	Interpretation	**Add** the following new clause: *The tender documents have been drafted in English. The contract arising from the invitation to tender shall be interpreted and construed in English*
C.1.4	Communication and Employer's Agent	Agent: **Batatise Consulting Engineers** Address: **Stoney Ridge Office Park, Cnr Witkoppen and Paulshof, Unit B, 1 Waterford Place, Kleve Hill Park Sandton, Johannesburg, 2151** Tel (Office): **(010) 442 6759 / 076 778 5879** Contact Name: **Jerald Chinyanganya** E-Mail: **jerald@batatiseconsulting.com**

CLAUSE NUMBER		TENDER DATA
	The details of the Employer is:	Employers name: **Raesibe Masenya** Physical Address: **225 Madiba Street, Capitol Towers North Pretoria, 0001** Landline: **012 358 5809** E-Mail Address: **Raesibema@tshwane.gov.za**
C.2.1	Eligibility	All the following mandatory requirements must be complied with, or the tender will be regarded as non-responsive and not be considered further.

Mandatory criteria	**Supporting evidence**
CIDB Grading of 8CE or Higher	Valid CIDB grading certificate
Site Agent with a NQF Level 6 or higher in civil engineering qualification. **Experience**: **3 years and above**	Certified copy of qualification and detailed CV indicating years of experience are compulsory.
Contracts Manager with a NQF Level 7 or Higher in Civil Engineering and registered with South African Council for Project and Construction Management Professions (SACPCMP) as a Professional Project and Construction Manager **Experience: 4 years and above**	Certified copy of qualification, SACPCMP registration and detailed CV indicating years of experience are compulsory.
General Foreman with NQF 6 or higher qualification. **Experience: 3 years and above**	Certified copy qualification (Civil Engineering or related) and detailed CV indicating years of experience are compulsory.
Company Experience: Proof of **3 projects or above** relevant projects completed in the past 5 years of similar type (bulk pipelines projects)	Appointment letter and approved Completion Certificate and/or Final Approval Certificate to be attached
Pipe Jacking company experience (Series 8 (Chambers JKL) of the bill of quantity and C3.6 of scope of works) For in house pipe jacking the bidder should submit the following:	1 or more projects completion certificates or reference letter **(in the client letterhead)** as proof of completed pipe jacking works. Provide a list of pipe jacking related plant if the pipe jacking is done inhouse.
Pipe Jacking company experience Should the bidder not meet the above requirements then the bidder must submit with the tender a letter of agreement between the bidder and a specialist in the pipe jacking area of expertise and submit the following	Signed Memorandum of agreement / understanding between the bidder and the specialist pipe jacking company. 1 or more projects completion certificates as proof of completed pipe jacking works.
Health and Safety Officer must be registered with the South African Council for Project and	Copy of SACPCMP Registration Certificate

CLAUSE NUMBER		TENDER DATA
		Construction Management Professions (SACPCMP) as a Construction Health and Safety Officer (CHSO). |
		Joint ventures are eligible to submit tenders provided that: 1. every member of a joint venture is registered with the CIDB within 21 days of the closing date of tenderers; 2. the lead partner has a contractor grading designation in the ***7CE or higher*** class of construction work; 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 in accordance with the sum tendered for a ***8CE 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.
C.2.2	Cost of Tendering	The employer will not compensate the tenderer for any costs incurred in attending interviews or making any submissions in the office of the employer.
C.2.5	Reference Documents	**Add the following:** Unless specified otherwise in this document, the following standards and conditions of contract will be applicable under this Contract: • The document **"*Standard Specifications for Municipal Civil Engineering Works", Third Edition, 2005*"** issued by the Divisional Head: Roads and Stormwater of the City of Tshwane. • This document is obtainable free of charge on the website www.tshwane.gov.za. • The latest print version as current at 30 days before close of tenders of the document **"*General Conditions of Contract for Construction Works 3rd Edition, 2015*"** including corrections thereto as current at 30 days before close of tenders, as published by the *South African Institution of Civil Engineering.* • The document may be purchased in hard copy from the *South African Institution of Civil Engineering* or may be purchased online as an electronic reference document in PDF format by following the relevant links on www.saice.org.za. The corrections may be downloaded from the SAICE website www.saice.org.za .
C.2.7	Clarification meeting	The arrangements for a **compulsory** clarification meeting are as stated in the tender notice and invitation to tender. Confirmation of attendance will be recorded on site in the attendance register to be signed by all tenderers. Addenda will be issued to and tenders received from those tendering entities appearing on the attendance register. Tender documents will not be made available at the clarification meeting.
C.2.8	Seek clarification	**Replace** the clause with the following: *Request clarification of the tender documents, if necessary, by notifying the employer at least* **7 (seven) working days** *before the closing time stated in the tender data.* The document is downloadable on the National Treasury website (www.etenders.gov.za) and City of Tshwane website (www.tshwane.gov.za)

CLAUSE NUMBER		TENDER DATA
C.2.9	Insurance	**Add** the following to the clause 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.2.12	Alternative offers	Alternative tender offers will **not** be considered.
C.2.13	Submitting a tender offer	• The tender offer **shall be completed in non-erasable black ink** • Any entry made by the tenderer in the document 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 **non-erasable black ink** and the **full signature** of the tenderer shall be placed next to the correction.
C.2.13.3		Parts of each tender offer communicated on paper shall be submitted as **an original, plus a scanned copy in PDF format on a compact disc**. **In addition to the hard copy submission, each tenderer is required to submit a scanned copy of the fully completed and signed tender submission document. This is to be on a memory stick attached to the original tender submission documents, adequately identifiable as belonging to the tenderer, be in PDF format scanned at 400 DPI, and be in full colour.**
C.2.13.4		**Add** the following to the clause *Only authorised signatories may sign the original and all copies of the tender offer where required.* *In the case of a **ONE-PERSON CONCERN** submitting a tender, this shall be clearly stated.* *In the case of a **COMPANY** submitting a tender, include a copy of a **resolution by its board of directors** authorising a director or other official of the company to sign the documents on behalf of the company.* *In the case of a **CLOSE CORPORATION** submitting a tender, include a copy of a **resolution by its members** authorising a member or other official of the corporation to sign the documents on each member's behalf.* *In the case of a **PARTNERSHIP** submitting a tender, **all the partners** 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 **proof of such authorisation** shall be included in the Tender.* *In the case of a **JOINT VENTURE/CONSORTIUM** submitting a tender, include **a resolution 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.* ***Accept that failure to submit proof of authorisation to sign the tender shall result in the tender offer being regarded as non-responsive.***
C.2.13.5		The identification details are: Tender Reference: **WSBU 01 2025/26** Tender Description: **Tender for the appointment of a contractor for the completion of bulk Water (Steel pipe) and water reticulation in Mamelodi Ext 11** Closing Time: **10:00** Closing Date: **16 September 2026**

CLAUSE NUMBER		TENDER DATA
		Each tender shall be enclosed in a sealed envelope, bearing the correct identification details and shall be placed in the tender box located at: **PROCUREMENT ADVICE CENTRE** **(TENDER BOX AT THE ENTRANCE OF TSHWANE HOUSE)** **TSHWANE HOUSE** **320 MADIBA STREET** **PRETORIA CBD** **0001** This address is 24 hours available for delivery of tender offers. Please ensure that all required compliance documents are included upon submission as no additional documents will be requested from bidders after closing.
C.2.13.9		**Telephonic, telegraphic, telex, facsimile or e-mailed offers will <u>not be</u> accepted.**
C.2.13.10		**<u>Add</u>** the following sub- clause C.2.13.10: *Accept that all conditions, which are printed or written upon any stationery used by the Tenderer for the purpose of or in connection with the submission of a tender offer for this Contract, which are in conflict with the conditions laid down in this document shall be waived, renounced and abandoned.*
C.2.14	Information and data to be completed in all respects	**<u>Add</u>** the following to the clause: *The Tenderer is required to enter information in the following sections of the document:* *Section T2.2 : Returnable Schedules* *Section C1.1 : Form of Offer and Acceptance* *Section C1.2 : Contract Data (Part 2)* *Section C2.2 : Pricing schedule* *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.* *The Tenderer shall complete and sign the Form of Offer prior to the submission of a Tender Offer.* *The Schedule of Deviations (if applicable) shall be signed by the successful Tenderer after acceptance by the Employer of the Tender Offer.* *Accept that failure on the part of the Tenderer to submit any one of the Returnable Documents listed in Part T2 – Returnable Documents within the period stipulated, shall be just cause for the Employer to consider the tender offer as being regarded as non-responsive.* *Accept that the Employer shall in the evaluation of tender offers take due account of the Tenderer's past performance in the execution of similar engineering 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. Satisfy the Employer and the Engineer as to his ability to perform and complete the Works timeously, safely and with satisfactory quality, and furnish details in Part T2 – Returnable Documents.*
C.2.15	Closing time	The closing time for submission of tender offers is stated in the tender notice and invitation to tender.
C.2.16	Tender offer validity	The validity period for the tender after closure is **90 days**. CoT shall have right and power to extend any tender validity period beyond any initial validity period set and subsequent extensions. SCM

CLAUSE NUMBER		TENDER DATA
		shall ensure that an extension of validity is requested in writing from all bidders before the validity expiry date. Extension of validity shall be finalised while the quotations/bids are still valid.
C.2.16.5		**Add** the following new clause *If the tender validity period expires on a Saturday, Sunday or public holiday, the tender offer shall remain valid and open for acceptance until closure of business on the following working day.*
C.2.16.6		Add the following 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.2.17	Clarification of Tender Offer after Submission	Replace the contents of the clause with the following clause: "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 resulting from the product of the unit rate and the quantity by the adjustment of certain line-item totals. No change in the unit rate or prices or substance of the Tender Offer is sought, offered, or permitted."
C.2.19	Inspections, tests and analysis	The Tenderer must provide access during working hours to his premises for inspections on request.
C.2.23	Certificates	Refer to part T2 of this procurement document for a list of the documents that are to be returned with the tender.
C.2.24	*Canvassing and obtaining of additional information by tenderers*	**Add** the following new clause *The Tenderer shall not make any attempt either directly or indirectly to canvass any of the Employer's 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.* *The Tenderer shall not make any attempt to obtain particulars of any relevant information, other than that disclosed at the opening of tenders.*
C.2.25	*Prohibitions on awards to persons in service of the state*	**Add** the following new clause *The Employer is prohibited to award a tender to a person -* *a) who is in the service of the state; or* *b) 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* *c) a person who is an advisor or consultant contracted with the municipality or municipal entity.* ***In the service of the state** means to be -* *a) a member of:-* *• any municipal council;* *• any provincial legislature; or*

CLAUSE NUMBER		TENDER DATA
		• *the National Assembly or the National Council of Provinces;* *b) a member of the board of directors of any municipal entity;* *c) an official of any municipality or municipal entity;* *d) an employee of any national or provincial department;* *e) provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);* *f) a member of the accounting authority of any national or provincial public entity; or* *g) an employee of Parliament or a provincial legislature.* 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 of this procurement document must be completed.
C.2.26	*Awards to close family members of persons in the service of the state*	**Add** the following new clause *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 F2.25), or has been in the service of the state in the previous twelve months, including -* *a) the name of that person;* *b) the capacity in which that person is in the service of the state; and* *c) the amount of the award.* 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 of this procurement document must be completed.
C.2.27	*Vendor registration*	**Add** the following new clause *The tenderer will be required registering as a supplier/ service provider on the City of Tshwane's vendor register before any payment can be done.* *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.* *Vendor registration documents are available from the Procurement Advice Centre or can be downloaded from:* http://www.tshwane.gov.za/Business/Pages/Registration-of-Suppliers-(Vendors).aspx *All parties of a joint venture or consortium submitting a tender shall comply with the requirements of this clause.*
C.2.28	*Tax*	**Add** the following new clause ***National Treasury SCM Instruction no. 7 of 2017/18 clause 4 application during SCM Processes state that:*** *The designated official(s) must verify the tenderer's tax compliance status prior to the finalisation of the award of the tender or price quotation.* *Where the recommended tenderer is not tax compliant, the tenderer should be notified of their non-compliant status and the tenderer must be requested to submit to the municipality or municipal entity, within 7 working days, written proof from South African Revenue Services of their tax compliance status or proof from SARS that they have made an arrangement to meet their outstanding tax obligations. The proof of tax compliance status submitted by the tenderer to the municipality or municipal entity must be verified via the Central Supplier Database or eFiling.* *Accept that the tenderer will be rejected if such tenderer fails to provide proof of tax compliance status in terms of clause 4.2 of National Treasury SCM Instruction no. 7 of 2017/18*

CLAUSE NUMBER		TENDER DATA
C2.29	*B-BBEE Status Level of Contributor*	**Add** the following new clause *A valid B-BBEE Verification Certificate from a Verification Agency accredited by the South African Accreditation System (SANAS) or a Registered Auditor approved by the Independent Regulatory Board of Auditors (IRBA) or an Accounting Officer as contemplated in the Close Corporation Act (CCA) must be submitted with this tender document* *In the case of a Joint Venture/Consortium a valid B-BBEE Status Level of Contributor certificate must be submitted by each individual party to the Joint Venture/Consortium.* *Failure by the tenderer to comply with this clause will result in the tenderer scoring 0 points for preference.*
C.3.1	Respond to requests from the tenderer	
C.3.1.1		The employer will respond to requests for clarification up to **7 (seven) working days** before the tender closing time.
C.3.4	Opening of tender submissions	Tenders will be opened immediately after the closing time for tenders. Bidders are also requested to refer to the City's website were there closing register will be published. **Only the tenderer's name will be announced**
C.3.11	Evaluation of tender offers	***All tenderers who submitted responsive tenders will be evaluated*** **evaluated in 3 stages namely:** Stage 1: Administrative compliance Stage 2: Mandatory requirements Stage 3: Preference Points System Method 2 will be used to evaluate all responsive tender offers in terms of Clause C.3.11.2 of the Standard Conditions of Tender **Add** the following new clause: 1. **STAGES OF EVALUATION** This bid will be evaluated in three evaluation stages namely**:** • **Stage 1**: Administrative compliance • **Stage 2:** Mandatory requirements • **Stage 3:** Preference Points System 90/10 1. **STAGE 1: ADMINISTRATIVE COMPLIANCE** All the bids will be evaluated against the administrative responsiveness requirements as set out in the list of returnable documents. **A compulsory site meeting and briefing session to be held:**

CLAUSE NUMBER	TENDER DATA		
	Compulsory Returnable Documentation (Submission of these are compulsory)	**Submitted (YES or NO)**	**Checklist (Guide for Bidder and the Bid Evaluation Committee)**
	a) To enable The City to verify the bidder's tax compliance status, the bidder must provide; • Tax compliance status PIN. or • Central Supplier Database (CSD)		Tax status must be compliant before the award.
	b) A copy of their Central Supplier Database (CSD) registration; or indicate their Master Registration Number / CSD Number;		CSD must be valid.
	c) Confirmation that the bidding company's rates and taxes are up to date: Original or copy of Municipal Account Statement of the Bidder (bidding company) not older than 3 months and account must not be in arrears for more than ninety (90) days; or ,signed lease agreement or In case of bidders located in informal settlement, rural areas or areas where they are not required to pay Rates and Taxes a letter from the local councillor confirming they are operating in that area		Was a Municipal Account Statement or landlord letter provided for the bidding company? The name and / or addresses of the bidder's statement correspond with CIPC document, Address on CSD or Company profile? Are all payment(s) up to date (i.e. not in arrears for more than 90 days?
	d) In addition to the above, confirmation that all the bidding company's owners / members / directors / major shareholders rates and taxes are up to date: • Original or copy of Municipal Account Statement of all the South African based owners / members / directors / major shareholders not older than 3 months and the account/s may not be in arrears for more than ninety (90) days; or a signed lease agreement of owners / members / directors / major shareholders or In case of bidders located in informal settlement, rural areas or areas where they are not required to pay Rates and Taxes a letter from the local councillor confirming they are residing in that area		Was a Municipal Account Statement or landlord letter provided for the bidding company? The name and / or addresses of the bidder's statement correspond with CIPC document, Address on CSD or Company profile? Are all payment(s) up to date (i.e. not in arrears for more than 90 days?
	e) Duly Signed and completed MBD forms (MBD 1, 4, 5, 8 and 9) The person signing the bid documentation must be authorized to sign on behalf of the bidder. Where the signatory is not a Director / Member / Owner / Shareholder of the company, an official letter of authorization or delegation of authority should be submitted with the bid document. **NB: Bidders must ensure that the directors, trustees, managers, principal shareholders, or stakeholders of this company, declare**		All documents fully completed (i.e. no blank spaces)? All documents fully signed by (any director / member / trustee as indicated on the CIPC document, alternatively a delegation of authority would be required? Documents completed in black ink (i.e. no "Tippex" corrections, no pencil, no other colour ink, or

CLAUSE NUMBER	TENDER DATA		
	any interest in any other related companies or business, whether or not they are bidding for this contract. *See Question 3.14 of MBD 4. Failure to declare interest will result in a disqualification*		**non-submission of the MBD forms**, will be considered)?
	f) Audited Financial Statements for the most recent three (3) years or Audited Financial Statements from date of existence for companies less than three years old. **NB**: The bidder must submit signed audited annual financial statements for the most recent three years, or if established for a shorter period, submit audited annual financial statements from date of establishment. If the bidder is not required by law to prepare signed annual financial statements for auditing purposes, then the bidder must submit proof that the bidder is not required by law to prepare audited financial statements.		Applicable for tenders above R10m in conjunction with MBD 5) Are Audited financial statements provided (Audited financials must be signed by auditor) Or proof that the bidder is not required by law to prepare audited financial statements.
	g) Joint Ventures (JV) – (Only applicable when the bidder tenders as a joint venture) Where the bidder bids as a joint venture (JV), the required or relevant documents as per (a) to (f) above must be provided for all JV parties. In addition to the above the bidder must submit a Joint Venture (JV) agreement signed by the relevant parties. **NB**: It is a condition of this bid that the successful bidder will continue with the same Joint Venture (JV) for the duration of the contract unless prior approval is obtained from the City.		If applicable. JV agreement provided? JV agreement complete and relevant? Agreement signed by all parties? All required documents as per (i.e. a to f) must be provided for all partners of the JV.
	h) Bidder attended a compulsory briefing session where applicable		A compulsory briefing register must be signed by the bidder. **Bidders will be disqualified should they fail to attend compulsory briefing session**
	i) Pricing schedule (All items must be quoted for in pricing schedule and if not, all items are quoted the bidder will be disqualified). Unless the tender is awarded per item or per section where the bidder only quoted the items or sections, they are interested in.		Incomplete pricing schedule results in totals being incomparable. Bidder must be disqualified. **Bidder will be disqualified should they make corrections on the price schedule without attaching a signature or initialising thereto.**

CLAUSE NUMBER	TENDER DATA

		Bidder will be disqualified should they use tippex/ correction ink, on the price schedule.

2. STAGE 2: MANDATORY REQUIREMENTS

It is expected that the bidder will deploy experienced key personnel that have in the past tenant installation/fit-out works, and this team should possess the relevant skills adequate for performing the tasks set out in this specification document.

The following information must be provided:

Mandatory criteria	**Supporting evidence**
CIDB Grading of 8CE or Higher	Valid CIDB grading certificate
Site Agent with a NQF Level 6 or higher in civil engineering qualification. **Experience**: **3 years and above**	Certified copy of qualification and detailed CV indicating years of experience are compulsory.
Contracts Manager with a NQF Level 7 or Higher in Civil Engineering and registered with South African Council for Project and Construction Management Professions (SACPCMP) as a Professional Project and Construction Manager **Experience: 4 years and above**	Certified copy of qualification, SACPCMP registration and detailed CV indicating years of experience are compulsory.
General Foreman with NQF 6 or higher qualification. **Experience: 3 years and above**	Certified copy qualification (Civil Engineering or related) and detailed CV indicating years of experience are compulsory.
Company Experience: Proof of **3 projects or above** relevant projects completed in the past 5 years of similar type (bulk pipelines projects)	Appointment letter and approved Completion Certificate and/or Final Approval Certificate to be attached
Pipe Jacking company experience (Series 8 (Chambers JKL) of the bill of quantity and C3.6 of scope of works) For in house pipe jacking the bidder should submit the following:	1 or more projects completion certificates or reference letter **(in the client letterhead)** as proof of completed pipe jacking works. Provide a list of pipe jacking related plant if the pipe jacking is done inhouse.
Pipe Jacking company experience Should the bidder not meet the above requirements then the bidder must submit with the tender a letter of agreement between the bidder and a specialist in the pipe jacking area of expertise and submit the following	Signed Memorandum of agreement / understanding between the bidder and the specialist pipe jacking company. 1 or more projects completion certificates as proof of completed pipe jacking works.

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<tr><th>CLAUSE NUMBER</th><th>TENDER DATA</th></tr>
<tr><td></td><td>
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<tr><td>Health and Safety Officer must be registered with the South African Council for Project and Construction Management Professions (SACPCMP) as a Construction Health and Safety Officer (CHSO).</td><td>Copy of SACPCMP Registration Certificate</td></tr>
</table>

3. STAGE 3: PREFERENCE POINT SYSTEM

The preferential point system used will be the 90/10 points system in terms of the Preferential Procurement Policy Framework Act, 2000 (Act 5 of 2000) Regulations 2022
• 90 points for price
• 10 points for specific goals
<table>
<tr><th>Specific goals</th><th>90/10 preference point system</th><th>Proof of specific goals to be submitted</th></tr>
<tr><td>BB-BEE score of companies
• Level 1
• Level 2
• Level 3
• Level 4
• Level 5
• Level 6
• Level 7
• Level 8
• Non-compliant</td><td>
• 4 Points
• 3.5 Points
• 3 Points
• 2.5 Points
• 2 Points
• 1.5 Points
• 1 Point
• 0.5 Points
• 0 Points</td><td>Valid Certified copy of BBBEE certificate. For EME’s and QSE’s copy of a valid Sworn affidavit.</td></tr>
<tr><td>EME and/ or QSE</td><td>1 Point</td><td>Valid Sworn affidavit</td></tr>
<tr><td>At least 51% of Women-owned companies</td><td>1 Point</td><td>Certified copy of Identity Document/s</td></tr>
<tr><td>At least 51% owned companies by People with disability</td><td>1 Point</td><td>Medical Certificate with doctor’s details (Practice Number, Physical Address and contact numbers)</td></tr>
<tr><td>At least 51% owned companies by Youth</td><td>1 Point</td><td>Certified copy of Identity Document/s</td></tr>
<tr><td>Local Economic Participation
• City of Tshwane
• Gauteng
• National</td><td>
2 Points
1 Point
1 Point</td><td>Municipal Account statement/Lease agreement.</td></tr>
</table>
</td></tr>
<tr><td>C.3.13 Acceptance of Tender Offer</td><td>Tender offers will only be accepted if:

a.) the tenderer complies with the eligibility criteria stated in clause C.2.1
b.) the tenderer is able to provide proof of tax compliance status in terms of clause 4.2 of National Treasury SCM Instruction no. 7 of 2017/18;
c.) the tenderer is not in arrears for more than 3 months with municipal rates and taxes and municipal service charges;</td></tr>
</table>

CLAUSE NUMBER		TENDER DATA
		d.) the tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector; e.) the tenderer has not: i) abused the Employer's Supply Chain Management System; or ii) failed to perform on any previous contract and has been given a written notice to this effect. f.) the tenderer has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the employer or potentially compromise the tender process and persons in the employ of the state are permitted to submit tenders or participate in the contract; g.) the tenderer is registered and in good standing with the compensation fund or with a licensed compensation insurer;
C. 3.17	Copies of Contract	**One** signed copy of contract shall be provided by the Employer to the successful Tenderer.

T1.3 STANDARD CONDITIONS OF TENDER

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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 only required for tender evaluation purposes, shall not 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 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 organisation 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 organisation which 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 organ of state may, prior to the award of the tender, cancel the tender if-

(a) due to changed circumstances, there is no longer a need for the services, works or goods requested; or

(b) funds are no longer available to cover the total envisaged expenditure;

(c) no acceptable tenders are received; or

(d) there is a material irregularity in the tender process.

C.1.5.2 The decision to cancel the tender 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 a 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.3.8 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 not less than three responsive tenderers that are highest ranked in terms of the evaluation method and evaluation criteria stated in the tender data, shall be invited in each round to enter into competitive negotiations, based on the principle of equal treatment and 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 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 may 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 may only be considered in the event that the main tender 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, services or supply 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, 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, test 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 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.

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.

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.

c) 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.

Consider the rejection of a tender offer if the tenderer does not correct or accept the correction of the arithmetical error in the manner described above.

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 Standard Conditions of Tender standardize the procurement processes, methods and procedures from the time that tenders are invited to the time that a contract is awarded. They are generic in nature and are made project specific through choices that are made in developing the Tender Data associated with a specific project.

Conditions of tender are by definition the document that establishes a tenderer’s obligations in submitting a tender and the Employer’s undertakings in soliciting and evaluating tender offers. Such conditions establish the rules from the time a tender is advertised to the time that a contract is awarded and require Employers to conduct the process of offer and acceptance in terms of a set of standard procedures

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.

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.

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 unacceptable commercial 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, 2008, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his 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.3.16.2 After the successful tenderer has been notified of the Employer's acceptance of the tender, notify other tenderers that their tender offers have not been accepted.

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.

PART T2: RETURNABLE DOCUMENTS

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T2.1 LIST OF RETURNABLE DOCUMENTS

RD.A MANDATORY RETURNABLE DOCUMENTS

Note: Failure to submit, fully complete and sign the applicable documents and submit all required attachments will result in the tender offer being disqualified from further consideration

Document Name	Reference	Confirmation of Document Included (Tenders may use this column to confirm documents have been completed and included in the tender)
Compulsory Enterprise Questionnaire	Form RD.A.1	
MBD 4: Declaration of interest in tender of persons in service of state	Form RD.A.2	
MBD 8: Declaration of tenderer's past supply chain management practises	Form RD.A.3	
MBD 9: Certificate of independent tender determination	Form RD.A.4	
Certificate of authority of signatory	Form RD.A.5	
Certificate of authority of signatory for joint ventures and consortia	Form RD.A.6	
Proof of registration in terms of the Project and Construction Management Profession Act 48 of 2000	Form RD.A.7	

RD.B RETURNABLE DOCUMENTS REQUIRED FOR PREFERENTIAL PROCUREMENT EVALUATION PURPOSES

Note: Failure to submit, fully complete and sign the applicable documents and submit all required attachments will result in the tender offer being awarded 0 (zero) preference points

Document Name	Reference	Confirmation of Document Included (Tenders may use this column to confirm documents have been completed and included in the tender)
Valid B-BBEE Status Level of Contributor Certificate	Form RD.B.1	
MBD 6.1: Preference points claim form in terms of the Preferential Procurement Regulations, 2022	Form RD.B.2	
B-BBEE Exempted Micro Enterprise – Sworn Affidavit	Form RD.B.3	
Promotion of local enterprises (Local Economic Participation)	Form RD.B.4	
AT LEAST 51% WOMEN OWNED COMPANIES AND AT LEAST 51% OWNED COMPANIES BY YOUTH Certified copy of Identity Document/s proof of ownership (Sworn affidavit for B-BBEE qualifying small enterprise or Exempt Micro Enterprises, CIPC registration or any other proof of ownership	Form RD.B.5	
AT LEAST 51% OWNED COMPANIES BY PEOPLE WITH DISABILITY Medical Certificate with doctor's details (Practice Number, Physical Address and contact numbers) proof of ownership (Sworn affidavit for B-BBEE qualifying small enterprise or Exempt Micro Enterprises, CIPC registration or any other proof of ownership	Form RD.B.6	

RD.C ADDITIONAL RETURNABLE DOCUMENTS REQUIRED FOR TENDER EVALUATION PURPOSES

Document Name	Reference	Confirmation of Document Included (Tenders may use this column to confirm documents have been completed and included in the tender)
Proof of registration on CSD with National Treasury	RD.C.1	
MBD 5: Declaration for procurement above R10 million (all applicable taxes included)	RD.C.2	
Proof of Registration with CIDB	RD.C.3	
Compliance with OHSA (Act 85 of 1993)	RD.C.4	
Record of services provided to organs of state	RD.C.5	
Schedule of plant and equipment	RD.C.6	
Status of concern submitting tender	RD.C.7	
Letter of intent to provide a performance bond	RD.C.8	

RD.D OTHER DOCUMENTS THAT WILL FORM PART OF THE CONTRACT

Note: ***Failure to submit, fully complete and sign the applicable documents and submit all required attachments will result in the tender offer being disqualified from further consideration***

Document Name	Reference	Confirmation of Document Included (Tenders may use this column to confirm documents have been completed and included in the tender)
Record of addenda to tender documents	RD.D.1	
Mandatory requirements (company experience and key staff)	RD.D.2	
Evaluation Schedule: Tenderer's experience	RD.D.3	
Schedule of tenderer's experience	RD.D.4	
Evaluation Schedule: Experience of key personnel	RD.D.5	
Key personnel	RD.D.6	
Curriculum vitae of key personnel	RD.D.7	

T2.2 RETURNABLE SCHEDULES

TABLE OF CONTENTS

FORM RD.A.1 COMPULSORY ENTERPRISE QUESTIONNAIRE

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

Section 1: Name of Enterprise:

Section 2: VAT registration number, if any:

Section 3: CIDB registration number, if any:

Section 4: CSD number:

Section 5: Particulars of sole proprietors and partners in partnerships:

Name*	**Identity Number***	**Personal Income Tax Number***

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

Section 6: Particulars of companies and close corporations

Company registration number:

Close corporation number:

Tax reference number:

Section 7: MBD4 issued by National Treasury must be completed for each tender and be attached as a tender requirement.

Section 9: MBD8 issued by National Treasury must be completed for each tender and be attached as a tender requirement.

Section 10: MBD9 issued by National Treasury must be completed for each tender and be attached as a tender requirement.

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

i) authorizes the employer to verify the tenderers tax clearance status from the South African Revenue Services that it is in order;

ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;

iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;

iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and

v) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed:		**Date:**	
Name:		**Position**	
Enterprise Name:			

FORM RD.A.2 MBD 4: DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state[1].

2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority.

3. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

3.1 Full name of bidder or his/her representative: _____

3.2 Identity Number: _____

3.3 Position occupied in Company: (director, trustee, shareholder[2]) _____

3.4 Company Registration Number: _____

3.5 Tax Reference Number: _____

3.6 VAT Registration Number: _____

3.7 The names of all directors / trustees / shareholders members, their individual identity numbers and state employee numbers must be indicated in paragraph 4 below.

3.8 Are you presently in the service of the state?

[1] MSCM Regulations: "in the service of the state" means to be –
(a) a member of –
  (i) any municipal council;
  (ii) any provincial legislature; or
  (iii) the national Assembly or the national Council of provinces;

(b) a member of the board of directors of any municipal entity;
(c) an official of any municipality or municipal entity;
(d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);
(e) a member of the accounting authority of any national or provincial public entity; or
(f) an employee of Parliament or a provincial legislature

[2] Shareholder" means a person who owns shares in the company and is actively involved in the management of the company or business and exercises control over the company.

YES	NO

If yes, furnish particulars _____

3.9 Have you been in the service of the state for the past twelve months?

YES	NO

If yes, furnish particulars _____

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

YES	NO

If yes, furnish particulars _____

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

YES	NO

If yes, furnish particulars _____

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

YES	NO

If yes, furnish particulars _____

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

YES	NO

If yes, furnish particulars _____

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

YES	NO

If yes, furnish particulars _____

4. Full details of directors / trustees / members / shareholders:

Full Name	Identity Number	State Employee 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 the tender:

Full name (in BLOCK letters): _____

Signature: _____

Date: _____

FORM RD.A.3 MBD 8: DECLARATION OF TENDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTISES

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 it's 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, the following questionnaire must be completed and submitted with the tender:

Item	Question	Response	
4.1	Is the tenderer, any of it's 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 *audi alteram partem* rule was applied)**	**YES**	**NO**
	If so, furnish particulars:		
4.2	Is the tenderer or any of it's 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)? (**The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.**)	**YES**	**NO**
	If so, furnish particulars:		
4.3	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?	**YES**	**NO**
	If so, furnish particulars:		

Item	Question	Response	
4.4	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:		
4.5	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?	**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.

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

Person authorized to sign the tender:

Full name (in BLOCK letters): _____

Signature: _____

Date: _____

FORM RD.A.4 MBD 9: CERTIFICATION OF INDEPENDENT TENDER DETERMINATION

1. This Municipal Bidding Document (MBD) must form part of all bids [3]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 tendering (or bid rigging[4]). Collusive tendering 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 tender of any tenderer if that tenderer 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 tendering process or the execution of the contract.

4. This will serve as a certificate of declaration that would be used by institutions to ensure that, when tenders are considered, reasonable steps are taken to prevent any form of tender-rigging.

5. In order to give effect to the above, the attached Certificate of Tender Determination must be completed and submitted with the tender.

[3] Includes price quotations, advertised competitive bids, limited bids and proposals.

[4] Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

I, the undersigned, in submitting the accompanying tender:

WSBU 01 2025/26: Tender for the appointment of a contractor for the completion of bulk water (steel pipe) and water reticulation in Mamelodi Ext 11 for a period of 2 years
in response to the invitation for the tender made by

City of Tshwane Metropolitan Municipality

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 tenderer)

1. I have read and understand the contents of this certificate;

2. I understand that the accompanying tender will be disqualified if this certificate is found not to be true and complete in every aspect;

3. I am authorised by the tenderer to sign this certificate, and to submit the accompanying tender, on behalf of the tenderer;

4. Each person whose signature appears on the accompanying tender has been authorised by the tenderer to determine the terms of, and to sign, the tender, on behalf of the tenderer;

5. For the purposes of this Certificate and the accompanying tender, I understand that the word "competitor"" shall include any individual or organization, other that the tenderer, whether or not affiliated with the tenderer who:

    a. Has been requested to submit a tender in response to this tender invitation, based on their qualifications, abilities or experience; and
    b. Could potentially submit a tender in response to this tender invitation, based on their qualifications, abilities or experience; and provides the same goods and services as the tenderer and/or is in the same line of business as the tenderer.

6. The tenderer has arrived at the accompanying tender independently form, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium[3][5] will not be construed as collusive tendering.

7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement of arrangement with any competitor regarding:

    a. Prices;
    b. Geographical area where product of services will be rendered (market allocation);
    c. Methods, factors of formulas used to calculate prices;
    d. The intention or decision to submit or not to submit, a tender;
    e. The submission of a tender which does not meet the specifications and conditions of the tender; or
    f. Tendering with the intention not to win the tender.

[5] Joint venture or consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

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 tender invitation relates.

9. The terms of the accompanying tender have not been, and will not be, disclosed by the tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender 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 tenders and contracts, tenders 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.

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 the tender:

Full name (in BLOCK letters):	
Signature:	
Date:	

FORM RD.A.5 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 tender to the Tshwane Metro Municipality in respect of the following project:

Tender Number:	**WSBU 01 2025/26**
Tender Description:	Tender for the appointment of a contractor for the completion of bulk water (steel pipe) and water reticulation in Mamelodi Ext 11 for a period of 2 years

2. *Mr/Ms: _____

in *his/her capacity as _____

and who will sign as follow:

Proof signature	Proof signature

be, and is hereby authorised to sign the tender, and any and all other documents and/or correspondence in connection with and relating to the tender for the enterprise mentioned above

NAME	CAPACITY	SIGNATURE

Note:	Enterprise stamp
1. *Delete which is not applicable. 2. IMPORTANT: This resolution must be signed by all the directors/members/ partners of the tendering enterprise. 3. Should the number of directors/members/partners exceed the space available above, additional names and signatures must be supplied on a separate page.	

FORM RD.A.6 CERTIFICATE OF AUTHORITY OF SIGNATORY FOR JOINT VENTURES AND CONSORTIA

*Joint venture/consortium name: _____

We, the undersigned, are submitting this tender in a *joint venture/consortium and hereby authorise *Mr/Ms _____ authorised signatory of the enterprise _____ acting in the capacity of lead partner to sign the tender, and any and all other documents and/or correspondence in connection with and relating to the tender for the *joint venture/consortium mentioned above.

Registered name of enterprise	Registration number	% of contract value	Address	Duly authorised signatory	Mark with (x) for lead partner

Note:

1. *Delete which is not applicable.
2. IMPORTANT: This resolution must be signed by all the parties of the joint venture/consortium and every duly authorised signatory for each party to the joint venture/consortium must complete a Form RD.C.15.
3. Should the number of directors/members/partners exceed the space available above, additional names and signatures must be supplied on a separate page.

FORM RD.A.7 PROOF OF REGISTRATION IN TERMS OF THE PROJECT AND CONSTRUCTION MANAGEMENT PROFESSION ACT 48 OF 2000

The tenderer must provide proof of persons in their <u>full-time employ</u> that are registered in terms of Construction Management Profession Act, 2000 (Act 48 of 2000). The tenderer must confirm that registered employees are in their full-time employ by means of a declaration to this effect on the company's letterhead and duly signed.

NAM	REGISTRATION			Confirm full time employed
	Professional Category	Disciplin	SACPCMP Number	

(Attach required documentary proof to this page)

The undersigned, who warrants that he / she is duly authorized 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.	
<u>Person authorized to sign the tender:</u>	
Full name (in BLOCK letters):	
Signature:	
Date:	

FORM RD.B.1 VALID B-BBEE STATUS LEVEL OF CONTRIBUTOR CERTIFICATE

Submit B-BBEE Verification Certificate from a Verification Agency accredited by the South African Accreditation System (SANAS) or a Registered Auditor approved by the Independent Regulatory Board of Auditors (IRBA) or an Accounting Officer as contemplated in the Close Corporation Act (CCA).

NOTE:

1. Attach original copy of B-BBEE Verification Certificate to this page.

2. In the case of a joint venture / consortium parties must each attach original copy of their B-BBEE Verification Certificates.

FORM RD.B.2 PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

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

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

1. GENERAL CONDITIONS

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

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

1.2 **To be completed by the organ of state**
(*delete whichever is not applicable for this tender*).

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

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:
(a) Price; and
(b) Specific Goals.

1.4 **To be completed by the organ of state:**
The maximum points for this tender are allocated as follows:

	Points
PRICE	90
SPECIFIC GOALS	10
TOTAL POINTS FOR PRICE AND SPECIFIC GOALS	**100**

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

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

2. DEFINITIONS

(a) **"tender"** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;
(b) **"price"** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;

(c) **"rand value"** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

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

(e) **"the Act"** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

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

80/20 or 90/10

$$Ps = 80\left(1 - \frac{Pt - P\,min}{P\,min}\right) \quad \text{or} \quad Ps = 90\left(1 - \frac{Pt - P\,min}{P\,min}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. POINTS AWARDED FOR PRICE

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

80/20 or 90/10

$$Ps = 80\left(1 + \frac{Pt - P\,max}{P\,max}\right) \quad \text{or} \quad Ps = 90\left(1 + \frac{Pt - P\,max}{Pmax}\right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals

stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below.
(Note to organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.
***Note to tenderers: The tenderer must indicate how they claim points for each preference point system.*)**

Specific goals	**90/10 preference point system**	**Points allocated**
BB-BEE score of companies • Level 1 • Level 2 • Level 3 • Level 4 • Level 5 • Level 6 • Level 7 • Level 8 • Non-compliant	• 4 Points • 3.5 Points • 3 Points • 2.5 Points • 2 Points • 1.5 Points • 1 Point • 0.5 Points 0 Points	
EME and/ or QSE	1 Point	
At least 51% of Women-owned companies	1 Point	
At least 51% owned companies by People with disability	1 Point	
At least 51% owned companies by Youth	1 Point	
Local Economic Participation • City of Tshwane • Gauteng • National	2 Points 1 Point 1 Point	

N.B For points to be allocated as per above the tenderers will be required to submit proof of documentation as evidence for claims made. Any tenderer that does not submit evidence as stated in the bid document to claim applicable points will be allocated zero point

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm…….

4.4. Company registration number: ……...

4.5. TYPE OF COMPANY/ FIRM

- Partnership/Joint Venture / Consortium
- One-person business/sole propriety
- Close corporation
- Public Company
- Personal Liability Company
- (Pty) Limited
- Non-Profit Company
- State Owned Company

[Tick applicable box]

4.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I 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 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;
iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –

(a) disqualify the person from the tendering process;
(b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
(c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
(d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
(e) forward the matter for criminal prosecution, if deemed necessary.

……
SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME: ……
DATE: ……
ADDRESS: ……
……
……
……

FORM RD.B.3 B-BBEE EXEMPTED MICRO ENTERPRISE – SWORN AFFIDAVIT

I, the undersigned

Full Name & Surname																
Identity Number							-					-			-	

Hereby declare under oath as follow:

1. The contents of this statement are to the best of my knowledge a true reflection of the facts.
2. I am a member / director / owner of the following enterprise and am duly authorised to act on its behalf.

Enterprise Name	
Trading Name	
Registration Number	
Enterprise Address	

3. I hereby declare under oath that:

   - The enterprise is _____ % black owned;
   - The enterprise is _____ % black woman owned;
   - Based on the audited management accounts and other information available on the _____ financial year, the income did not exceed R 10,000,000 (ten million rands);
   - Please confirm on the below the B-BBEE level contributor, by ticking the applicable box.

100% Black owned	**Level One** (135% B-BBEE procurement recognition)	
More than 51% Black owned	**Level Two** (125% B-BBEE procurement recognition)	
Less than 51% Black owned	**Level Four** (100% B-BBEE procurement recognition)	

4. The entity is an empowering supplier in terms of the dti Codes of Good Practice
5. I know and understand the contents of the contents of this affidavit and I have no objection to take the prescribed oath and consider the oath binding on my conscience and on the owners of the enterprise which I represent in this matter.
6. The sworn affidavit will be valid for a period of 12 (twelve) month from the date signed by the commissioner.

Deponent Signature:	Date:
Commissioner of oaths (Signature and stamp)	

FORM RD.B.4 PROMOTION OF LOCAL ENTERPRISES

The City of Tshwane has mandated the promotion of local enterprises. To comply with this the tenderer must provide proof of the type of business unit and whether the unit resides within the Tshwane and will be scored as follow:

90/10 preference point system applies:

	Promotion of local enterprises
No Response (score 0)	The tenderer did not respond or comply with this evaluation schedule. A score of 0 will also be awarded for any misrepresentation made in this regard,
Satisfactory (score 1)	The tenderer operates a head office or fully staffed office or his sole office outside the boundaries of Gauteng Province. (I.e. no business unit or office resides within the boundaries of Tshwane Metropolitan Municipality)
Good (score 1)	The tenderer's office resides within the boundaries of Gauteng Province. (I.e. no business unit or office resides within the boundaries of Tshwane Metropolitan Municipality)
Very good (score 2)	The tenderer's office resides within the boundaries of the Tshwane Metropolitan Municipality.

Municipal Rates & Taxes not older than three months from tender advertisement date or Valid Lease Agreement should be attached as evidence.

(If necessary, the tenderer will be requested to present the office / business unit to officials of the City)

The undersigned, who warrants that he / she is duly authorized 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 the tender:

Full name (in BLOCK letters): _____

Signature: _____

Date:

The undersigned, who warrants that he / she is duly authorized 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 the tender:

Full name (in BLOCK letters): _____

Signature: _____

Date:

FORM RD.B.5 AT LEAST 51% WOMEN OWNED COMPANIES AND AT LEAST 51% OWNED COMPANIES BY YOUTH

The City of Tshwane has mandate for the promotion At least 51% Women owned companies and At least 51% owned companies by youth. To comply with this the tenderer must provide Certified copy of Identity Document/s that proof that company is 51% owned by Women or youth

	Promotion of At least 51% Women owned companies and At least 51% owned companies by youth
No Response (score 0)	The tenderer did not respond or comply with this evaluation schedule. A score of 0 will also be awarded for any misrepresentation made in this regard,
Good (score 1	Certified copy of Identity Document/s that proof that company is 51% owned by Women and proof of ownership (Sworn affidavit for B-BBEE qualifying small enterprise or Exempt Micro Enterprises, CIPC registration or any other proof of ownership
Good (score 1)	Certified copy of Identity Document/s that proof that company is 51% owned by youth and proof of ownership (Sworn affidavit for B-BBEE qualifying small enterprise or Exempt Micro Enterprises, CIPC registration or any other proof of ownership

(If necessary the tenderer will be requested to present the office / business unit to officials of the City)

The undersigned, who warrants that he / she is duly authorized 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 the tender:

Full name (in BLOCK letters): _____

Signature: _____

Date:

FORM RD.B.6 AT LEAST 51% OWNED COMPANIES BY PEOPLE WITH DISABILITY

The City of Tshwane has mandate for the promotion of At least 51% owned companies by People with disability. To comply with this the tenderer must provide Medical Certificate with doctor's details (Practice Number, Physical Address and contact numbers that proof that company is 51% owned by People with disability

	Promotion of At least 51% owned companies by People with disability
No Response (score 0)	The tenderer did not respond or comply with this evaluation schedule. A score of 0 will also be awarded for any misrepresentation made in this regard,
Good (score 1)	Medical Certificate with doctor's details (Practice Number, Physical Address and contact numbers and proof of ownership (Sworn affidavit for B-BBEE qualifying small enterprise or Exempt Micro Enterprises, CIPC registration or any other proof of ownership

(If necessary the tenderer will be requested to present the office / business unit to officials of the City)

The undersigned, who warrants that he / she is duly authorized 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 the tender:

Full name (in BLOCK letters): _____

Signature: _____

Date:

FORM RD.C.1 PROOF OF REGISTRATION ON CSD WITH NATIONAL TREASURY

1. Attach original or certified copy of CSD registration certificate to this page.

2. In the case of a joint venture / consortium (excluding consulting engineering partners) the joint venture / consortium must attach original or certified copy of their CSD registration certificate to this page.

FORM RD.C.2 MBD 5: DECLARATION FOR PROCUREMENT ABOVE R10 MILLION

1. The tenderer is required by law to prepare annual financial statements for auditing their audited annual financial statements:

   i) for the past three years; or

   ii) Since the 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. Has 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 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 outside 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.

I accept that the state may act against me should this declaration prove to be false.

Person authorized to sign the tender:

Full name (in BLOCK letters): _____

Signature: _____

Date: _____

FORM RD.C.3 PROOF OF REGISTRATION WITH THE CIDB

1. Attach original or certified copy of CIDB registration certificate to this page.

2. In the case of a joint venture / consortium (excluding consulting engineering partners) parties must each attach original or certified copy of their CIDB registration certificate.

Firm	**CRS Number**	**CIDB Grading**	**Lead Partner** (Indicate with X)
Combined CIDB Grading for Joint Venture / Consortium:			

(Calculator is available at https://registers.cidb.org.za/common/jvcalc.asp)

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 the tender:

Full name (in BLOCK letters): _____

Signature: _____

Date: _____

FORM RD.C.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.

(Tick applicable box)

1. Are your company familiar with the OHSA (ACT 85 of 1993) and its Regulations?	**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. Do 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.	**YES**	**NO**
5. Do your company keep record of safety aspects of each site where work is performed? If **YES** what records are kept?	**YES**	**NO**
6. Do your company conduct monthly safety meetings? If **YES**, who is the chairperson of the meeting, and attend these meetings?	**YES**	**NO**
7. Do your company have a safety officer in its employment, responsible for overall safety of your company? If **YES**, explain his duties and provide a copy of his CV	**YES**	**NO**
8. Do your company have trained first aid employees? If **YES**, indicate who.	**YES**	**NO**
9. Do your company have a safety induction training programme in place? If **YES**, provide a copy.	**YES**	**NO**
10. Does your company conduct medical surveillance for its employees?	**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 the tender:

Full name (in BLOCK letters): _____

Signature: _____

Date: _____

FORM RD.C.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 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.				

(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 the tender:

Full name (in BLOCK letters): _____

Signature: _____

Date:

FORM RD.C.6 SCHEDULE OF PLANT AND EQUIPMENT

The following are lists of the major items of relevant equipment that I/we presently own/lease and will have available for this contract or will hire/acquire for this contract as proof of the requirements for Clause F.3.13 b) of the Conditions of Tender

Major equipment owned/leased that is immediately available for the execution of the works	
Quantity	**Description, size, capacity etc.**

(Attach additional pages if more space is required)

Major equipment that will be hired or acquired for the execution of the works	
Quantity	**Description, size, capacity etc.**

(Attach additional pages if more space is required)

FORM RD.C.8 STATUS OF CONCERN SUBMITTING TENDER

1. General

State whether the tenderer is a company, a closed corporation, a partnership, a sole practitioner, a joint venture/consortium or a co-operative

Public Company	
Private Company	
Closed Corporation	
Partnership	
Sole Proprietary	
Joint Venture / Consortium	
Co-operative	

(Mark the appropriate option)

2. Information to be provided

If the Tendering Entity is a:		**Documentation to be submitted with the tender**
1	Closed Corporation, incorporated under the Close Corporation Act,1984, Act 69 of 1984	CIPRO CK1 or CK2 (Certified copies of the founding statement) and list of members
2	Private Company incorporated with share capital, under the companies Act, 1973, Act 61of 1973 (Including Companies incorporated under Art 53 (b))	Certified 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, plus a signed statement of the Company's Auditor, certifying each Member's ownership/shareholding percentage relative to the total.
3	Private Company incorporated with share capital, under the companies Act, 1973, Act 61of 1973 in which any, or all, shares are held by another Closed Corporation or company with, or without, share capital.	Certified copies of documents referred to in 1 and/or 2 above in respect of all such Closed Corporations and/or Companies
4	Public Company incorporated with share capital, under the companies Act, 1973, Act 61of 1973 (Including Companies incorporated under Art 21)	A signed statement of the Company's Secretary confirming that the Company is a public Company.
5	Sole Proprietary or a Partnership	Certified copy of the Identity Document of: a) such Sole Proprietary, or b) Each of the Partners in the Partnership Certified copy of the Partnership agreement.

If the Tendering Entity is a:		Documentation to be submitted with the tender
6	Co-operative	CIPRO CR2 - Certified copies of Company registration document.
7	Joint Venture / Consortium	All the documents (as described above) as applicable to each partner in the joint venture / consortium as well as a certified copy of the joint venture / consortium 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
2. Include a certified copy of the Certificate of Change of Name (CM9) if applicable.

3. Registered for VAT proposes in terms of the Value-Added Tax Act (89 of 1991)

Yes	
No	

(Make an X in the appropriate space)

REGISTRATION NO: _____

FORM RD.C.10 LETTER OF INTENT TO PROVIDE A PERFORMANCE BOND

It is hereby agreed that a Performance Bond drafted **exactly** as set out in the attached examples (See Section C1.3: Form of Guarantee) will be provided by the Surety named below:

Name of Surety (Bank or Insurer) _____

Address: _____

_____

_____

Signed:

_____

Name: _____

Capacity: _____

On behalf of Tenderer (name of tenderer) _____

Date: _____

CONFIRMED BY Surety's Authorised representative

Signature(s):

_____

Name (print): _____

Capacity _____

On behalf of Surety (Bank or Insurer)

_____

Date: _____

Note: Refer to the Annexure to **C1.3 Form of Guarantee** for the List of Institutions from who Contract/Deposit Guarantees will be accepted.

FORM RD.D.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	REFERENCE	TITLE
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 the tender:

Full name (in BLOCK letters): _____

Signature: _____

Date: _____

FORM RD.D.2 MANDATORY REQUIREMENTS

Mandatory criteria	**Supporting evidence**
CIDB Grading of 8CE or Higher	Valid CIDB grading certificate
Site Agent with a NQF Level 6 or higher in civil engineering qualification. **Experience**: **3 years and above**	Certified copy of qualification and detailed CV indicating years of experience are compulsory.
Contracts Manager with a NQF Level 7 or Higher in Civil Engineering and registered with South African Council for Project and Construction Management Professions (SACPCMP) as a Professional Project and Construction Manager **Experience: 4 years and above**	Certified copy of qualification, SACPCMP registration and detailed CV indicating years of experience are compulsory.
General Foreman with NQF 6 or higher qualification. **Experience: 3 years and above**	Certified copy qualification (Civil Engineering or related) and detailed CV indicating years of experience are compulsory.
Company Experience: Proof of **3 projects or above** relevant projects completed in the past 5 years of similar type (bulk pipelines projects)	Appointment letter and approved Completion Certificate and/or Final Approval Certificate to be attached
Pipe Jacking company experience (Series 8 (Chambers JKL) of the bill of quantity and C3.6 of scope of works) For in house pipe jacking the bidder should submit the following:	1 or more projects completion certificates or reference letter **(in the client letterhead)** as proof of completed pipe jacking works. Provide a list of pipe jacking related plant if the pipe jacking is done inhouse.
Pipe Jacking company experience Should the bidder not meet the above requirements then the bidder must submit with the tender a letter of agreement between the bidder and a specialist in the pipe jacking area of expertise and submit the following	Signed Memorandum of agreement / understanding between the bidder and the specialist pipe jacking company. 1 or more projects completion certificates as proof of completed pipe jacking works.
Health and Safety Officer must be registered with the South African Council for Project and Construction Management Professions (SACPCMP) as a Construction Health and Safety Officer (CHSO).	Copy of SACPCMP Registration Certificate

Proposed detailed organisation and staffing plan in the form of an organogram to be implemented on this project. Append all documentary proof to support your submission failing which the submission will be rejected.

Curriculum Vita's including experience, level of education and training, and positions held for each of the key staff including certified copies of the qualifications:

The undersigned, who warrants that he / she is duly authorized 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 the tender:	
Full name (in BLOCK letters):	
Signature:	
Date:	

FORM RD.D.3 EVALUATION SCHEDULE: TENDER'S EXPERIENCE

The experience of the tenderer or joint venture partners in the case of an unincorporated joint venture or consortium as opposed to the key staff members / experts in similar projects or similar areas and conditions in relation to the scope of work over the last seven years will be evaluated.

Tenderers must complete Form RD.D.4: Schedule of Tender's Experience and Form RD.C.5: Record of Services Provided to comply with this schedule.

The scoring of the tenderer's experience will be as follows:

	Tenderer's experience
No Response (score 0)	The tenderer did not respond or comply with this evaluation schedule. A score of 0 will also be awarded for any misrepresentation made in the schedule of experience.
2-3 projects (score 12)	Tenderer has completed between 2 and 3 Bulk water projects.
4-5 Projects (score 18)	Tenderer has completed between 4 and 5 Bulk water projects.
6-7 Projects (score 24)	Tenderer has completed between 6 and 7 Bulk water projects.
>7 Projects (score 30)	Tenderer has completed more than 7 Bulk water projects.

The undersigned, who warrants that he / she is duly authorized 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 the tender:

Full name (in BLOCK letters): _____

Signature: _____

Date:

FORM RD.D.4 SCHEDULE OF TENDERER'S EXPERIENCE

The following is a statement of similar work successfully executed by myself/ourselves. Signed Copies of reference or testimonial letters of the completed relevant projects to be attached.

Employer, contact person and telephone number	Description of contract	Value of work & Value of Fees	Date completed

(Attach additional pages if more space is required)

FORM RD.D.5 EVALUATION SCHEDULE: EXPERIENCE OF KEY PERSONNEL

The experience of assigned staff member in relation to the scope of work will be evaluated from two different points of view:

1) General experience (total duration of professional activity), level of education and training and positions held of each discipline specific team leader; and

2) The education, training, skills and experience of the Assigned Staff in the specific sector, field, subject, etc. which is directly linked to the list of services areas provided (Form RD.D.3 Service Areas Provided).

Tenderers must complete Form RD.D.6: Key Personnel to comply with this schedule. A CV (see Form RD.D.7: Curriculum Vitae Of Key Personnel) of the Site Agent, General Foreman, Concrete team leader and Welding supervisor of not more than 3 pages should be attached to this schedule:

The undersigned, who warrants that he / she is duly authorized 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 the tender:
Full name (in BLOCK letters): _____
Signature: _____
Date:

FORM RD.D.6 KEY PERSONNEL

The tenderer shall list in the table below the key personnel to be engaged for this project.

Refer to clause C.2.1 of Part T1: Eligibility (mandatory requirements)
Note: Form RD.D.7 must be complete for each person listed below.

	NAME	PROFESSIONAL REGISTRATION CATEGORY	Number of years post registration experience
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

(Attach additional pages if more space is required)

FORM RD.D.7 CURRICULUM VITAE OF KEY PERSONNEL

Note: This form should be completed for each key person listed in Form RD.D.6.

Name:	**Date of birth:**
Profession:	**Nationality:**
Qualifications:	
Professional membership:	
Number of years post registration experience:	
Name of employer (firm):	
Current position:	**Years with firm:**
Employment record: (list in chronological order starting with earliest work experience)	
Experience record pertinent to required service:	
Certification: **I, the undersigned, certify that to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience.** _____ _____ *(Signature of person named in schedule)* Date:	

PORTION 2: CONTRACT

PART C1: AGREEMENTS AND CONTRACT DATA

CONTENTS

C1.1 FORM OF OFFER AND ACCEPTANCE

STAMP

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

WSBU 01 2025/26: TENDER FOR THE APPOINTMENT OF A CONTRACTOR FOR THE COMPLETION OF BULK WATER (STEEL PIPE) AND WATER RETICULATION IN MAMELODI EXT 11 FOR A PERIOD OF 2 YEARS.

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 of the obligations and liabilities of the Contractor under the Contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the Conditions of Contract identified in the Contract Data.

THE OFFERED TOTAL OF PRICES <u>INCLUSIVE</u> 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.

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

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 C3	Scope of Work
Part C4	Site Information

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

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

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[1].

[1] *As an alternative, the following wording may be used:*

Notwithstanding anything contained herein, this agreement comes into effect two days after the submission by the Employer of one fully completed original copy of this document including the schedule of deviations (if any), to a courier-to-counter delivery / counter-to-counter delivery /door-to-counter delivery / door-to-door delivery / courier service (delete that which is not applicable), provided that the Employer notifies the Tenderer of the tracking number within 24 hours of such submission. Unless the Tenderer (now Contractor) within seven 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.

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

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 .....

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

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

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

NAME(s): (in 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 **EMPLOYER**:

NAME(s): (in 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. ....

C1.2 CONTRACT DATA

TABLE OF CONTENTS

C.1.2.1 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 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

The following variations and additions to the General Conditions of Contract for Construction Works, Third Edition (2015), shall apply to this contract:

CLAUSE / SUB-CLAUSE	VARIATION / ADDITION
1.1	**Add** the following definitions: *1.1.1.35 "Work Package" is work to be carried out under this contract.* *1.1.1.36 "Package Order" is an instruction to carry out a Work Package.*
1.2.1	**Add** the following to the clause: *1.2.1.3 Sent by facsimile, electronic or any like communication irrespective of it being during office hours or otherwise.*
1.2.3	**Add** the following to the clause: *1.2.3.1 The Employer has authorised the* **Group Head: Water and Sanitation** *to act on his behalf in respect of this Contract, save for such duties or functions:* *1.2.3.1.1 which other holders of office ex officio execute on behalf of the Employer; or* *1.2.3.1.2 for which the* **Group Head: Water and Sanitation** *has no authority and the Employer's approval is required before execution thereof.*
4.3	**Add** the following new sub-clause: *1.3.3 Wages and conditions of work:* *i. 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 Sectoral Determination: Civil Engineering Sector published from time to time.* *ii. 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.*
	Add the following new sub-clause: *4.3.4 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.*
	Add the following new sub-clause:

CLAUSE / SUB-CLAUSE	VARIATION / ADDITION
	4.3.5 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.
	Add the following new sub-clause: *4.3.6 Contractor's Designer* *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*
5.12	**Add** the following new sub-clause *5.12.5 Critical path provision* *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 Engineer 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.*
	Add the following new sub-clause *5.12.6 Extension of time due to abnormal rainfall* *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 supplied in the Scope of Work, otherwise Method 2 shall apply.* *Method 1: Rainfall formula method* *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.* *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:* $$V = (N_w - N_n) + \frac{(R_w - R_n)}{X}$$ *If V is negative and its absolute value exceeds N_n, then V shall be equal to minus N_n.*

CLAUSE / SUB-CLAUSE	VARIATION / ADDITION
	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. *The symbols shall have the following meaning:* *V = Extension of time in calendar days in respect of the calendar month under consideration* *N_w = Actual number of days during the calendar month on which a rainfall of Y mm or more has been recorded.* *R_w = Actual rainfall in mm for the calendar month under consideration.* *N_n = 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 N_n will be provided in the Specifications.* *R_n = Average rainfall in mm for the calendar month, as derived from existing rainfall records. Rainfall records and/or the derived values of R_n will be provided in the Project Specifications.* *X = 20 unless otherwise provided in the Project Specifications* *Y = 10 unless otherwise provided in the Project Specifications* *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.* *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.* *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.* *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.* *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 Plath Provision) hereof.* *<u>Method 2: Expected delay method</u>* *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.*

CLAUSE / SUB-CLAUSE	VARIATION / ADDITION
	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. *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.* *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.*
6.1	**Add** the following new sub-clause: *6.1.2 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 relive the Contractor in any way of his obligations either in contract or in delict.*
	Add the following new sub-clause *6.1.3 The 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.*
8.6	**Replace** clause 8.6 with the following: ***8.6 Insurances*** *8.6.1 Without limiting the Contractor's/Sub-contractor's obligation in terms of the Contract, the Employer will effect and maintain for the duration of the Contract until the issuing of the Defects Certificate or the end of the Maintenance Period, the following insurances in the name of the Contractor (including all Subcontractors whether nominated or otherwise):* *8.6.2 The Employer's insurer will indemnify the Contractor/Sub-contractor against physical loss of or damage to any part of the Property Insured not exceeding the maximum contract value or the final contract value estimated at inception including free issue materials were applicable as stated in the Contract Data:* *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;* *d. Removal of debris;* *e. Surrounding property*

CLAUSE / SUB-CLAUSE	VARIATION / ADDITION
	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* *8.6.3 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:* *a. Accidental death of or bodily injury to or illness or disease contracted by any person (excluding employees of the Contractor/Subcontractor);* *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 minimum 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).* *8.7 Insurance premium payable* *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 budget per financial year and the insurance premium will be charged out to the relevant departments by the Section: Insurance and Risk Management.* *8.8 Additional insurance by the Employer* *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 8.6.1.1 of this Clause.* *8.9 Additional insurance by the Contractor / Subcontractor* *The Contractor and Sub-contractor shall be free to effect and maintain at their own cost any additional insurance which the Contractor/Subcontractor 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/Subcontractor.* *8.10 Contractor satisfied with insurance* *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.* *8.11 Contractor to observe conditions*

CLAUSE / SUB-CLAUSE	VARIATION / ADDITION
	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. *8.12 Contractor to insure* *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 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:* *a. All Risk Insurance cover with regard 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 compiled 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:* - *Compensation for Occupational Injuries and disease, 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.* *8.13 The Employer's Agent involved must furnish the required insurance documentation 30 (thirty) days before the inception of the contract to the Section: Insurance and Risk Management.* *8.14 Reporting of incidents* *In the event of an occurrence, which is likely to give rise to a claim under the insurance policy affected by the Employer, the Contractor / Subcontractors and Project Manager will adhere to the following procedures:* *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 Employer's Agent of every occurrence within 48 (forty-eight) hours giving the circumstances, nature and an estimate of the loss or damage.* *b. The Employer's Agent will be responsible to complete and submit the relevant claim documentation for each incident within 30 (thirty) days*

CLAUSE / SUB-CLAUSE	VARIATION / ADDITION
	after the incident occurred to the Section: Insurance and Risk Management. Should the incident be reported by the Employer's Agent 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 Director 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. *c. The following documentation must be included with the claim documentation:* *- Photos of damages caused or suffered as proof or substantiation of the claims.* *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.* *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 Employer's Agent, the Employer's insurers and/or representatives for the purpose of assessment of any loss or damage.* *8.15 Reporting of catastrophic incidents* *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 Employer's Agent will adhere to the following procedures:* *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 Employer's Agent Manager of every occurrence within 24 (twenty-four) hours giving the circumstances, nature and an estimate of the loss or damage.* *b. The Employer's Agent 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.* *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 Employer's Agent, the Employer's insurers and/or representatives for the purpose of assessment of any loss or damage.* *d. The Employer's Agent 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.*

CLAUSE / SUB-CLAUSE	VARIATION / ADDITION
	8.16 Reporting of crime related incidents *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.* *8.17 Claim documentation* *The Employer's Agent 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.* *The Employer's Agent must submit with the Contractor Claim Form a detailed cost sheet indicating the estimate of the loss or damage.* *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.* *8.18 Authorization of claim forms* *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 Director 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.* *8.19 Contractor to pay deductibles* *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.* *8.20 Settlement of claims* *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.* *The Contractor shall negotiate 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.*

CLAUSE / SUB-CLAUSE	VARIATION / ADDITION
	Should action for the settlement of any such claim to the satisfaction of the Employer's Agent 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. *The foregoing provisions of this Sub-Clause shall apply mutatis mutandis to any such claim received by the Contractor directly.*

C1.2.3 DATA PROVIDED BY THE EMPLOYER

<table>
<tr><th colspan="2">CLAUSE/OPTION</th><th colspan="2">DATA</th></tr>
<tr><td>1.1.1.13</td><td>The Defects Liability period is:</td><td colspan="2"><u>12 (twelve) months</u> from the date of the Certificate of Completion.</td></tr>
<tr><td>1.1.1.14</td><td>The time for achieving Practical Completion is:</td><td colspan="2">24 (twenty-four) months</td></tr>
<tr><td>1.1.1.15</td><td>The name of the Employer is:</td><td colspan="2">City of Tshwane Metropolitan Municipality.</td></tr>
<tr><td>1.1.1.26</td><td>The Pricing Strategy is:</td><td colspan="2">Re-measurement Contract</td></tr>
<tr><td rowspan="3">1.2.1.2</td><td rowspan="3">The address of the Employer is:</td><td>Physical Address:</td><td>225 Madiba Street, Pretoria, 0001</td></tr>
<tr><td>Postal Address:</td><td>P.O. Box 1022
PRETORIA
0001</td></tr>
<tr><td>E-Mail Address:</td><td><u>Raesibema@tshwane.gov.za</u></td></tr>
<tr><td>1.1.1.16</td><td>The name of the Employer’s Agent is:</td><td colspan="2">Batatise Consulting Engineers</td></tr>
<tr><td>1.2.1.2</td><td>The address of the Employer’s Agent is:</td><td>Physical Address:</td><td>Stoney Ridge Office Park
Cnr Witkoppen and Paulshof, Unit B, 1 Waterford Place, Kleve Hill Park Sandton,
Johannesburg, 2151</td></tr>
<tr><td></td><td></td><td>Postal Address:</td><td></td></tr>
<tr><td></td><td></td><td>E-Mail Address:</td><td>jerald@batatiseconsulting.com</td></tr>
<tr><td>3.1.3</td><td></td><td colspan="2">
• The Employer’s Agent is required to obtain approval of the Employer:

for expenditure on the Contract to exceed the Contract Price;
prior to the execution of any of the following duties of functions:

<table>
<tr><th>CLAUSE</th><th>DUTY/FUNCTION</th></tr>
<tr><td>3.2.4</td><td>Authorization to Employer’s Agent Representative or any other person</td></tr>
<tr><td>3.3.1</td><td>Nomination of person as Employer’s Agent Representative</td></tr>
<tr><td>4.10.1</td><td>Approval to use the Site for any other purpose such as housing</td></tr>
<tr><td>5.3.1</td><td>Delivery of the written notice to commence the execution of the works</td></tr>
<tr><td>5.6.3</td><td>Approval of programme of construction</td></tr>
<tr><td>5.7.2</td><td>Permission to carry out work by day and by night</td></tr>
<tr><td>5.8.1.1</td><td>Approval to work on special non-working days and between sunset and sunrise</td></tr>
<tr><td>5.9.7</td><td>Approval of Contractor’s designs</td></tr>
<tr><td>5.11</td><td>Suspension of progress of the Works</td></tr>
<tr><td>5.13.2</td><td>Reduction of penalty for delay</td></tr>
<tr><td>5.14.2</td><td>The issue of a Certificate of Practical Completion</td></tr>
<tr><td>5.14.4</td><td>The issue of a Certificate of Completion</td></tr>
</table>
</td></tr>
</table>

		<table><tr><td>5.16.1</td><td>The issue of a Final Approval Certificate</td></tr><tr><td>6.3.1</td><td>Variation Orders in respect of variations which are not small</td></tr><tr><td>6.6</td><td>Instruction to expend on Provisional and Prime Cost Sums</td></tr><tr><td>6.11</td><td>Adjustment of Preliminary and General allowances</td></tr><tr><td>7.8.1</td><td>Order to execute work of repair, etc, during the Defects Liability Period</td></tr><tr><td>7.8.2</td><td>Determination of value of repair work</td></tr><tr><td>8.2.2.2</td><td>Order to repair and make good damage arising from any excepted risk</td></tr></table>
5.3.1	The documentation required before commencement with Works execution are:	• Health and Safety Plan (Refer to Clause 4.3) • Initial programme (Refer to Clause 5.6) • Security (Refer to Clause 6.2) • 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) • A certified copy of Unemployment Insurance Certificate, Act of 1996 (Refer to Clause 4.3.2) or proof of registration
5.3.2	The time to submit the documentation required from the Commencement Date is:	14 days
5.8.1	The non-working days are:	Sundays
	The special non-working days are:	• Annual builders holiday • Statutory public holidays
5.13.1	The penalty for failing to complete the works is:	The penalty for failing to complete the Works is **1/30 of 1%** of the Contract Sum (Excluding VAT) PER Calendar Day. Penalties will be deducted for 6 months, thereafter the Contract will be terminated.
5.16.3	The latent defect period is:	**10 (ten) Year**
6.2.1	Type of security for due performance:	• 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 contained herein.
	Liability of performance guarantee	Performance guarantee (*10% (ten percent)* of the Contract Sum of the project allocated, excluding contingencies and VAT).
6.2.2	Retention money guarantee	**Not** permitted
6.8.2	Adjustment in rates and/or prices	• The value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values: "L" is the "Labour Index" and shall be Gauteng, under CPI as published by Statistics South Africa. "P" is the "Plant Index" and shall be Plant and equipment, under Mining and construction plant and equipment price index as published by Statistics South Africa. "M" is the "Material Index" and shall be Civil Engineering – total, under Civil engineering material price indices as published by Statistics South Africa.

<table>
<tr><td></td><td></td><td>"F" is the "Fuel Index" and shall be Diesel, under PPI as published by Statistics South Africa.

<table><tr><td>Coefficient</td><td>Description</td><td>Value</td></tr><tr><td>X</td><td>Portion not subject to adjustment</td><td>0.10</td></tr><tr><td>A</td><td>Labour</td><td>0.20</td></tr><tr><td>B</td><td>Civil Engineering Plant</td><td>0.35</td></tr><tr><td>C</td><td>Civil Engineering Materials</td><td>0.30</td></tr><tr><td>D</td><td>Fuel</td><td>0.15</td></tr></table>(Coefficients a, b, c and d must sum to one)

• The urban area nearest the Site is <u>Tshwane</u>.
• The base month is <u>the month prior to the closing of the procurement process required for a financial offer</u>.</td></tr>
<tr><td>6.8.3</td><td>Price adjustment for variations in the cost of special materials</td><td>Not allowed</td></tr>
<tr><td>6.10.1.5</td><td>The percentage on materials not yet built into the Permanent Works is:</td><td>80% (Eighty percent)</td></tr>
<tr><td rowspan="2">6.10.3</td><td>Percentage retention is:</td><td>10% (ten percent) exclusive of VAT of monthly invoice</td></tr>
<tr><td>The limit of retention money is:</td><td>5% (five percent) of Contract Sum, excluding contingencies and VAT.</td></tr>
<tr><td rowspan="4">8.6</td><td>Insurance of the Works and Public Liability Insurance</td><td>The Employer shall arrange this insurance.

A copy of the policy and the list of excesses may be obtained from

Contractors All Risk and Liability Insurance
Ms. Morongwa Mokoena (Tel: 012 358 1126) (morongwam@tshwane.gov.za)
Mrs Ronett Marlow-Reid (Tel: 012 358 1131) (ronettm@tshwane.gov.za)
Mr Lawrence Matjila (Tel: 012 358 1374) (lawrencem@tshwane.gov.za)</td></tr>
<tr><td>The value of plant and materials supplied by the Employer to be included in the insurance sum is:</td><td>R 0 (zero)</td></tr>
<tr><td>Responsibility for payment of deductibles in respect of Insurance of Works as well as Public Liability Insurance:</td><td>Deductibles are the responsibility of the Contractor</td></tr>
<tr><td>Construction Plant:</td><td>Contractor to insure. Policy to be approved by Employer</td></tr>
<tr><td>10.5</td><td>Determination of disputes</td><td>Ad-hoc Adjudication Board</td></tr>
<tr><td>10.5.3</td><td>Number of Adjudication Board members to be appointed:</td><td>One</td></tr>
<tr><td>10.6</td><td>Disagreement with Adjudication Board's decision, refer matters to:</td><td>Court proceedings</td></tr>
</table>

C1.2.4 DATA PROVIDED BY THE CONTRACTOR

CLAUSE/OPTION		DATA		
1.1.1.9	The name of the Contractor is:			
1.2.1.2	The address of the Contract is:	• Physical Address:		
		• Postal Address:		
		• Facsimile:		
		• E-Mail Address:		
6.2.1	The security to be provided by the Contractor shall be	Performance guarantee (*10% (ten percent)* of the Contract Sum of the project allocated, excluding contingencies and VAT)		
6.8.3	Price adjustments for variations in the cost of special materials	The variation in cost of special materials is:		
		Type of material	Unit	Base Rate or Price

C1.3 FORM OF GUARANTEE

WHEREAS

The City of Tshwane Metropolitan Municipality
(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. The 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 de 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.

FOR AND ON BEHALF OF THE BANKER/INSURER:

BANKER/INSURER: _____

NAME:
(in BLOCK letters) _____

CAPACITY:
(of authorized agent) _____

SIGNATURE:
(of authorized agent) _____

SIGNED at _____ on this _____ day of _____

WITNESSES:
(Full name in BLOCK letters and signature)

1. _____ _____

2. _____ _____

ANNEXURE

List of some institutions from which contract /deposit guarantees can be accepted. The contractor can utilize other institutions as long as they are registered with the NCR.

ABSA Bank
Credit Agricole Indosuez (South Africa Branch)
Development Bank of South Africa
FirstRand Bank
ING Bank N.V. (South Africa Branch)
Investec Bank
Landbank
National Housing Finance Co.
Nedcor Bank
South African Reserve Bank
Standard Bank
AIG South Africa
Credit Guarantee Insurance Co
Emerald Insurance Company
Federated Employers Mutual Assurance Co
Global Insurance Company
Guardrisk Insurance Company
Hannover Re:
Home Loan Guarantee Company
Lion of Africa Insurance Company
Metropolitan Life
Metropolitan Odyssey Ltd
MUA Insurance
Mutual & Federal Insurance Company
Rand Mutual Assurance Company
Regent Insurance Company
SA Eagle Insurance Company
Lombard Insurance.

C1.4 HEALTH AND SAFETY AGREEMENT

Article of Agreement in terms of Section 37(2) of the Occupational Safety Act, 1993 between

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

Tender for the appointment of a contractor for the completion of bulk water (steel pipe) and water reticulation in Mamelodi Ext 11 for a period of 2 years

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 CONTRACTOR:

NAME:
(in BLOCK letters) _____

CAPACITY:
(of authorized agent) _____

SIGNATURE:
(of authorized agent) _____

SIGNED at _____ on this _____ day of _____

WITNESSES:
(Full name in BLOCK letters and signature)

1. _____ _____

2. _____ _____

FOR AND ON BEHALF OF THE EMPLOYER:

NAME:
(in BLOCK letters) _____

CAPACITY:
(of authorized agent) _____

SIGNATURE:
(of authorized agent) _____

SIGNED at _____ on this _____ day of _____

WITNESSES:
(Full name in BLOCK letters and signature)

1. _____ _____

2. _____ _____

C1.5 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 arisen[1] between the Parties under a Contract dated _____ and known as _____

and these disputes or differences shall be/have been[2] 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: _____	SIGNED by: _____	SIGNED by: _____
Name: _____	Name: _____	Name: _____
who warrants that he / she is duly authorised to sign for and on behalf of the first Party in the presence of	who warrants that he / she is duly authorised to sign for and behalf of the second Party in the presence of	the Adjudicator in the presence of
Witness _____	Witness: _____	Witness: _____
Name: _____	Name _____	Name: _____
Address:	Address:	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

PRICING DATA

INDEX

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 Data 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.

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.

Sum: An amount tendered for an item, the extent of which is described in the Bill of Quantities, the Specifications and the Drawings (if applicable), but the quantity of work of which is not measured in any units.

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

2. Pay Items

2.1 The method of measurement published by the City of Tshwane 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 for all civil works, subject to the variations and amendments contained in section C3.4.3.

2.2 For preliminary and general charges, the method of measurement and payment shall be as specified in Volume 2 of the contract documents. Measurement and payment of mechanical and electrical equipment shall be as described in the Particular Specification, as amended, or as described in the Schedule of Quantities.

2.3 Descriptions in the Bill of Quantities are abbreviated and comply generally with those in the Specifications. The measurement and payment clause in the 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 in the Specification, or the Scope of Work, conflict with the terms of the Bill of Quantities, the requirements of the Specification or Scope of Work, as applicable, shall prevail.

2.4 The item numbers appearing in the Bill of Quantities refer to the corresponding item number in the 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 Specifications.

2.5 Those parts of the contract to be constructed using labour-intensive methods have been marked in the bill of quantities with the letter LI in a separate column filled in against every item so designated. The works, or parts of the works so designated are to be constructed using labour-intensive methods only. The use of plant to provide such works, other than plant specifically provided for in the scope of work, is a variation to the contract. The items marked with the letters LI are not necessarily an exhaustive list of all the activities which must be done by hand, and this clause does not supersede any of the requirements in the generic labour intensive specification in the Scope of Works.

2.6 Payment for items which are designated to be constructed labour-intensive (either in this schedule or in the Scope of Works) will not be made unless they are constructed using labour-intensive methods. Any unauthorised use of plant to carry out work which was to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.

2.7 Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.

2.8 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.

2.9 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
PS	=	Pipe Special number	V	=	Valve number

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 such 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.

3.4 The Tenderer shall not group together a number of items and tender one rate for such group of items.

3.5 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.

3.6 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.

3.7 Should excessively high unit prices be tendered, such prices may be of sufficient importance to warrant rejection of a tender by the Employer.

3.7.1 Where the Contractor is required to furnish detailed drawings and designs or other information in terms of the Contract Documents and no specific payment item has been included for this, all associated costs shall be deemed to have been provided for and included in the unit rates and sum amounts tendered for the items scheduled in the Bill of Quantities, and separate additional payments will not be made.

4. LABOUR-INTENSIVE CONSTRUCTION

4.1 Those parts of the contract to be constructed using labour-intensive methods have been marked in the schedule of quantities with the letters LIC. The works, or parts of the works so designated are to be constructed using labour-intensive methods only in accordance with the *Guidelines for the implementation of Labour-Intensive Infrastructure Projects under the Extended Public Works Programme (EPWP)* included under section C3.7.1 in volume 1.

The items marked LIC are not necessarily an exhaustive list of all the activities which must be done by hand, and this clause does not over-ride any of the requirements in the generic labour-intensive specification included under section C3.7.1 of volume 1.

4.2 Payments for items which are designated to be constructed labour-intensively will not be made unless they are constructed using labour-intensive methods. Any unauthorised use of plant to carry out work which was to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.

5. PIPE SCHEDULE

5.1 Pipes, fittings and specials are scheduled separately in the Pipe Schedules for each Section. The individual Pipe Schedule totals have to be carried forward to the relevant item in each Section.

5.2 The following abbreviations are used in the Pipe Schedule:

dia	-	diameter	uPVC	-	Unplasticised Polyvinyl Chloride
mat	-	material	MS	-	Mild Steel
SS	-	Stainless Steel	AS	-	As Specified
c to f	-	centre to face	GMS	-	Galvanised Mild Steel
d.f	-	double flanged	o.a	-	overall
p.f	-	puddle flange	CI	-	Cast Iron
NB	-	Nominal Bore	w.t	-	wall thickness

5.3 Applicable general material and corrosion protection specifications for the Pipe Schedule Items are (unless otherwise specified):

(a) All mild steel pipes and fittings shall be treated with a polyamide-cured epoxy system similar and equal to Carboline 891 externally and internally as specified in Particular Specification PLQ to a dry film thickness of at least 300 micron.

(b) Mild steel pipes shall comply with the requirements of Particular Specification PLN and SABS 719 Grade A pipes.

(c) All bolts, nuts and washers shall be manufactured from grade 304 stainless steel for above ground and below water level applications and from galvanised mild steel for pipes installed below ground. Allowance shall be made for two washers under each bolt and nut.

(d) All rates shall be consistent for similar items of the same material and diameter. Where amendments are ordered, new rates shall be calculated by direct interpolation between the tender rates for the nearest two similar items. Only when amended or new items fall outside the range of similar items for which rates have been tendered, will new rates be negotiated.

(e) Unless otherwise stated, the dimensions and drilling of flanges shall comply with the requirements of SABS 1123, Table 16 for pipes with a diameter of 150 mm and smaller and Table 10 for diameters exceeding 150 mm.

5.4 No pipes, fittings or specials shall be ordered unless authorised by the engineer in writing.

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.

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
CONTRACT NO: WSBU 01 2025/26
SCHEDULE A: GENERAL REQUIREMENTS AND ENGINEERS ACCOMODATION
SECTION 001

ITEM	PAYMEN	DESCRIPTION	UNIT	QT	RATE	AMOUNT
		GENERAL REQUIREMENTS AND CHARGES				
		Refer to part C3.6 for indication of what the tendered lump sum shall include.				
	B001.01	**Preliminary and general charges**				
	B001.01.01	Fixed charges	L/SUM	1		
	B001.01.02	Time-related charges	month	24		
	1.02	**Locating existing services**	L/SUM	1		
	LI001.03	**Excavate by hand to expose existing services,and**	m³	250		
	1.04	**Compliance with Occupational Health and Safety Act and applicable regulations**				
	B001.04.01	Provision of Health and Safety plan	L/SUM	1		
	B001.04.02	Provision of Health and Safety file	L/SUM	1		
	001.04.04	Provision of a safety officer(Full-time)	Months	24		
	001.04.05	Health and Safety training	L/SUM	24		
	001.04.06	Provision of personal protective clothing and equipment	L/SUM	1		
	001.04.07	Provision of safety fences, signs and barricades	L/SUM	1		
	B001.05	**Community liaison officer**	P/SUM	1	R 500,000.00	R 500,000.00
	B001.07	**Provision for administration of local contractors**	Months	24		
	B001.08	**Training of Targeted Labour and local SMME (3 quotations to be requested from reputable service providers and approved by the client)**	P/SUM	1.00	R 1 500 000.00	R 1,500,000.00
		TOTAL CARRIED FORWARD TO SUMMARY				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
CONTRACT NO: WSBU 01 2025/26
SCHEDULE A: GENERAL REQUIREMENTS AND ENGINEERS ACCOMODATION
SECTION 002

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		ENGINEER'S ACCOMMODATION				
	2.01	**Services**				
	B002.01.01	Services for offices and laboratories	month	24.00		
	B002.01.02	Services for cooking and ablution facilities on Site for the Engineer's Site staff	month	24.00		
	2.02	**Treatment and maintenance of areas surrounding offices and laboratories**	L/Sum	1.00		
	B002.03	**Office and Laboratory accomodation**	L/Sum	1.00		
	B002.04	**Provision of survey equipments and assistants**	P/SUM	1.00		
TOTAL CARRIED FORWARD TO SUMMARY						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
CONTRACT NO: WSBU 01 2025/26
SCHEDULE B: BULK PIPELINE FROM CONNECTION TO WATER RETICULATION
SECTION 101

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	101	**SITE CLEARING AND GRUBBING**				
	101.01	**Clearing and grubbing**				
	B101.01.01	Strips on pipeline route up to 2.5m wide for bulk water pipelines	m	1 270.00		
	B101.02 (LI)	**Cutting and removing large trees with a girth:**				
	101.02.01	Exceeding 1m and up to and including 2m	No	8.00		
	101.04	**Reclearing areas (only on the written instructions of the Engineer)**				
	104.01.02	Strips on pipeline route up to 2.5m wide	m	254.00		
	LI101.03	**Grubbing and the removal of the stumps and roots of large trees with a girth:**				
	101.03.01	Exceeding 1m and up to and including 2m	No	5.00		
	101.05	**Removal and Disposal of specific elements**				
	101.05.01	Concrete Kerbing/Kerbing combination	m	1 300.00		
	101.05.02	Concrete or brick elements (reinforced or unreinforced)	m^3	100.00		
	101.05.02.01	Demolition of existing floor slabs	m^3	250.00		
	101.05.02.02	Block Paved driveways and walkways	m^2	500.00		
		TOTAL CARRIED FORWARD TO SUMMARY				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
CONTRACT NO: WSBU 01 2025/26
SCHEDULE B: BULK PIPELINE FROM CONNECTION TO WATER RETICULATION
SECTION 102

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	102	**ACCOMMODATION OF TRAFFIC**				
	102.4	**Watering of bypasses**	kl	240.00		
	102.05	**Blading of bypasses by motor grader**	km pass	6.00		
	102.07	**Existing roads used as bypasses**	prov/sum	1.00	R 150,000.00	R 150,000.00
	102.1	**Temporary fencing and gates**				
	102.10.01	Temporary fencing	m	500.00		
	102.10.02	Temporary gates	No	5.00		
	102.12	**Provision of temporary bridges for maintaining access to properties**				
	102.12.01	Temporary pedestrian bridges	No	15.00		
	102.12.02	Temporary vehicular bridges	No	15.00		
	102.13	**Moving of temporary bridges to and their re-erection in entirely new positions**				
	102.13.01	Temporary pedestrian bridges	No	30.00		
	102.13.02	Temporary vehicular bridges	No	30.00		
	B102.14	**Temporary traffic-control facilities**				
	B102.14.01	Flagmen	lump sum	1.00		
	102.14.02	Portable STOP and GO-Ry signs	No	5.00		
	102.14.04	Road signs, TR-series, 1200mm in diameter or 900mm x 675mm if rectangular	No	10.00		
	102.14.07	Danger plates and delineators	No	6.00		
	102.14.08	Movable barricades (chevron and ROAD CLOSED types)	No	4.00		
	102.14.10	Plastic New Jersey Barrier	No	25.00		
	102.15	**Re-use or removal of traffic-control facilities**				
	102.15.02	Roads signs, TR and TW-series	No	10.00		
	102.15.04	Danger plates and delineators	No	6.00		
	102.15.05	Plastic New Jersey Barrier	No	30.00		
TOTAL CARRIED FORWARD TO SUMMARY						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
CONTRACT NO: WSBU 01 2025/26
SCHEDULE B: BULK PIPELINE FROM CONNECTION TO WATER RETICULATION
SECTION 103

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	103	OVERHAUL				
	103.01	Overhaul on material hauled outside the defined free-haul boundaries	m^3-km	34 765.50		
TOTAL CARRIED FORWARD TO SUMMARY						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
CONTRACT NO: WSBU 01 2025/26
SCHEDULE B: BULK PIPELINE FROM CONNECTION TO WATER RETICULATION

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		TRENCHING				
	202.01	**Trench excavations**				
	202.01.01	Up to 1,5 m wide				
	202.01.01.01	Up to 1,5m deep	m^3	1,155.00		
	202.01.01.02	Over 1,5m to 2,0m deep	m^3	1,540.00		
	202.01.01.03	Over 2,0m to 3,0m deep	m^3	5,390.00		
	202.02	**Extra over items 202.01, 202.03, and 202.04 excavating in -**				
	202.02.01	Intermediate excavation	m^3	5,659.50		
	202.02.02	Hard material	m^3	2,425.50		
	2020.3	**Excavations outside the normal trench profile**	m^3	808.50		
	202.04	**Hand excavation (extra over item 202.01)**	m^3	404.25		
	202.06	**The backfilling of trenches (excluding the pipe barrel) with material obtained from excavations**	m^3	3,740.93		
	202.07	**Extra over items 202.06 and 202.13 for material obtained -**				
	202.07.01	From sources provided by the Contractor	m^3	2,170.55		
	202.08	**Backfilling additional excavations in trench using -**				
	202.08.01	Class 20MPa/ 19mm concrete	m^3	10.00		
	202.08.02	Concrete aggregate, max size 38mm	m^3	50.00		
	202.10	**Removal of spoil material**				
	202.10.01	To positions provided by the contractor	m^3	808.50		
	202.12	**Extra over item 202.06 for additional backfill to 93% of modified AASHTO density reserves**	m^3	100.00		
	202.13	**Backfilling trenches with soilcrete**	m^3	100.00		
	202.14	**Reinstatement of Bitumen surfaced roads**	m^2	125.00		
		TOTAL CARRIED FORWARD TO SUMMARY				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11

CONTRACT NO: WSBU 01 2025/26

SCHEDULE B: BULK PIPELINE FROM CONNECTION TO WATER RETICULATION

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	402	**WATER RETICULATION AND WATER MAINS CONSTRUCTION**				
	LI402.01	**Supplying, laying and jointing of water pipes irrespective of depth**				
	402.01.01	Mild steel pipes to SANS 719 from Grade S235 / 300 WA / X42 / X56 steel with bevelled ends to BS 534, with fusion bonded medium density polyethylene (FBMDPE) (Sintakote II) external coating to table 1 of AS 4321-1995 and liquid epoxy (Sigmaline SF23) internal lining. Pipes to be in 9.144m lengths. All site welding of joints to be denso wrapped.				
	402.01.01.01	1 000mm NB (1 042 OD) x 10mm wall thickness	m	70		
	402.01.02	Mild steel pipes to SANS 719 from Grade S235 / 300 WA / X52 / X56 steel with bevelled ends to BS 534, 3-Layer High Density External Coating to table 1 of AS 4321-1995 and liquid epoxy (Sigmaline SF23) internal lining. Pipes to be in 9.144m lengths. All site welding of joints to be denso wrapped.				
	402.01.02.01	1 000mm NB (1 016 OD) x 10mm wall thickness	m	30		
	402.01.03	Mild steel pipes to SANS 719 from Grade S235 / 300 WA / X42 / X56 steel with bevelled ends to BS 534, with fusion bonded medium density polyethylene (FBMDPE) (Sintakote II) external coating to table 1 of AS 4321-1995 and liquid epoxy (Sigmaline SF23) internal lining. Pipes to be in 9.144m lengths. All site welding of joints to be denso wrapped.				
	402.01.03.01	700mm NB (711 OD) x 8mm wall thickness	m	1100		
	402.01.04	Mild steel pipes to SANS 719 from Grade S235 / 300 WA / X52 / X56 steel with bevelled ends to BS 534, 3-Layer High Density External Coating to table 1 of AS 4321-1995 and liquid epoxy (Sigmaline SF23) internal lining. Pipes to be in 9.144m lengths. All site welding of joints to be denso wrapped.				
	402.01.04.01	700mm NB (711 OD) x 8mm wall thickness	m	70		
	LI402.02	**Extra over item 3.5.1.1 and item 3.5.1.3 for providing and installing fittings, valves and specials:**				
	LI402.02.01	**Bends, long radius, up to and including 15°**				
	LI402.02.01.01	1 000mm NB (1 016 OD) x 10mm wall, plain- ended for field welding	no	5		
	LI402.02.01.02	700mm NB (711 OD) x 10mm wall, plain-ended for field welding	no	9		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
CONTRACT NO: WSBU 01 2025/26
SCHEDULE B: BULK PIPELINE FROM CONNECTION TO WATER RETICULATION
SECTION 402

		TOTAL BROUGHT FORWARD				
	LI402.02.02	**Bends, long radius, over 15° up to and including 30°**				
	LI402.02.02.01	1 000mm NB (1 016 OD) x 10mm wall, plain- ended for field welding	no	2		
	LI402.02.02.02	700mm NB (711 OD) x 10mm wall, plain-ended for field welding	no	3		
	LI402.02.03	**Bends, long radius, over 30° up to and including 45°**				
	LI402.02.03.01	1 000mm NB (1 016 OD) x 10mm wall, plain- ended for field welding	no	1		
	LI402.02.03.02	700mm NB (711 OD) x 10mm wall, plain-ended for field welding	no	2		
	LI402.02.04	**Bends, long radius, over 45° up to and including 90°**				
	LI402.02.04.01	1 000mm NB (1 016 OD) x 10mm wall, plain- ended for field welding	no	1		
	LI402.02.04.02	700mm NB (711 OD) x 10mm wall, plain-ended for field welding	no	1		
	402.02.04.02	**Wraparound sleeves, radiation-crosslinked polyethylene modified ("Raychem/WPCT" or approved equal)**	no	463		
	B 402.02	**<u>Protective pipe wrapping system for pipe joints, bends and all other exposed steel pipe specials & flanges</u>**				
	B402.02.01	Denso Priming Solution (or approved equal)	l	20		
	B402.02.02	Denso Profiling Mastic (or approved equal)	kg	400		
	B402.02.03	Denso Petrolatum Tape (or approved equal)	m	2500		
	B402.02.04	Denso PVC non-adhesive tape (or approved equal)	m	3482		
	B402.02.05	Wrapper plates, 150-mm wide x 8mm thick mild steel, curvature to suit OD of 700mm & 1000mm nominal diameter steel pipe	no	20		
	B402.02.06	Wrought steel plate flanges prepared for field welding to				
	B402.02.06	700-mm nominal diameter	no	8		
	B402.02.07	1000-mm nominal diameter	no	8		
	402.03	**Encasement of pipes with**				
	402.03.01	Class 25/19 concrete	m^3	10		
	402.03.02	Soilcrete	m^3	200		
	402.04	Providing thrust blocks using class 25/19 concrete	m^3	40		
	B402.05	Bars with 12 mm dia Reinforcement for item 402.04	t	5		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
CONTRACT NO: WSBU 01 2025/26
SCHEDULE B: BULK PIPELINE FROM CONNECTION TO WATER RETICULATION
SECTION 402

ITE	PAYMEN	DESCRIPTION	UNI	QTY	RATE	AMOUNT
		TOTAL BROUGHT FORWARD				
	402.05	**Supplying and placing unscreened selected backfill material under, alongside and up to 200mm above pipe barrels using:**				
	402.05.01	Excavated Material	m³	5,500		
	402.05.03	Imported material from sources provided by the Contractor	m³	3,500		
	402.06	**Extra over item 402.05 for screening excavated material for selected backfill**	m³	2,500		
	402.08	**Installation of marker blocks**	no	20		
	402.10	**Sterilizing of pipelines**				
	402.10.01	700mm dia	m	100		
	402.10.02	1000mm dia	m	980		
		TOTAL CARRIED FORWARD TO SUMMARY				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
CONTRACT NO: WSBU 01 2025/26
SCHEDULE B: BULK PIPELINE FROM CONNECTION TO WATER RETICULATION
SECTION 403

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	403	**WATER RETICULATION AND WATER MAINS TESTING**				
	403.01	**Hydraulic field-testing of pipelines irrespective of type or class**				
	403.01.01	700mm dia	m	3,085.00		
	403.01.02	1000mm dia	m	1,080.00		
	B404	**Testing Of Linings And Coatings**				
	B404.1	Epoxy linings and coatings of steel pipes of the following steel pipe sizes: 1042mm diameter x 12 m (x4 No) and 711mm diameter x 6m (x48 No)	Prov Sum	1.00	R 150,000.00	R 150,000.00
	B404.2	Repairs of steel pipes as described in item 404.1	Prov Sum	1.00	R 850,000.00	R 850,000.00
	B404.3	Handling fee for item 404.1 & item 404.2	%	1000000.00		
TOTAL CARRIED FORWARD TO SUMMARY						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
CONTRACT NO: WSBU 01 2025/26
SCHEDULE B: BULK PIPELINE FROM CONNECTION TO WATER RETICULATION
SECTION 501

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	501	**SUBSURFACE DRAINS AND DRAINAGE BLANKETS**				
	501.01	**Crushed stone**				
	501.01.01	Graded crushed stone	m^3	170		
	501.02	**Procuring of filter sand**	lump sum	1		
	501.03	**Placing of filter sand**	m^3	85		
	501.04	**Geotextiles (Bidim U24 or similar)**	m^2	2,200		
	501.05	**Pipes in subsurface drains**				
	501.05.01	uPVC Pipes complete with couplings				
	501.05.01.01	110mm dia perforated	m	1,100		
TOTAL CARRIED FORWARD TO SUMMARY						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
CONTRACT NO: WSBU 01 2025/26
SCHEDULE B: BULK PIPELINE FROM CONNECTION TO WATER RETICULATION
SECTION 903

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	903	**QUALITY CONTROL TESTING**				
	903.06	**Other special tests requested by the Engineer (Inspection of the welding and the Denso wrapping)**				
	903.06.01	Cost of testing	Pc Sum	1	R300,000.00	R300,000.00
TOTAL CARRIED FORWARD TO SUMMARY						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
CONTRACT NO: WSBU 01 2025/26
SCHEDULE B: BULK PIPELINE FROM CONNECTION TO WATER RETICULATION
SECTION B10

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	BSeries 10	**CATHODIC PROTECTION SYSTEM FIXED CHARGE ITEMS** **Cathodic Protection (ACTIVE SYSTEM) to be undertaken by sub- contractor (3 quotations to be requested from reputable service providers and approved by the client)**				
	BSection 1001	Overheads, charges & profits on Item B1001.01				
	B1001.01	Cathodic Protection (Active system) to be undertaken by sub- contractor (3 quotations to be requested from reputable service providers and approved by the client)	Prov Sum	1.00	R 2 000 000.00	R 2 000 000.00
	B1001.02	Overheads, charges & profits on Item B1001.01	%	2000000		
TOTAL CARRIED FORWARD TO SUMMARY						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11

SCHEDULE C: BULK VALVE CHAMBERS

CONTRACT NO: WSBU 01 2025/26

ITE	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
CHAMBER A - WATER CONNECTION CHAMBER						
	402.01	**Supplying, laying and jointing of water pipes irrespective of depth:(Short pipe runs):**				
	402.01.01	**Mild steel pipes to API 5L Grade x42 steel plate with liquid epoxy (Sigmaline SF23) external coating and internal lining, with flanges drilled to SANS 1123**				
	402.01.01.01	**Short straight pipe sections with puddle flange, flanged one end & Plain ended one end to withstand 2500kPa working pressure, Flanges drilled to SANS 1123 Table 2500/3 :**				
	402.01.01.01.01	900mm NB, A = 1250mm, B = 900mm 10mm wall. Including removable pressure reading gauge and mounting to steel pipe to CoT Detail (Item A6)	No	1.00		
	402.01.01.02	**Bends, long radius, all ends flanged:**				
	402.01.01.02.01	900mm NB x 10 degrees (item A8)	No	1.00		
	402.01.01.02.02	1000mm NB x 90 degrees (item A5)	No	1.00		
	402.01.01.03	**Unequal Tee**				
	402.01.01.03.01	1000mm x 1000mm NB (item A2)	No	1.00		
	402.02	**Extra over item 402.01 for providing and installing fittings, valves and specials:**				
	402.02.01	**Isolating valves, butterfly valve, ductile iron body & disc (epoxy powder coated), double flanged and drilled to SANS 1123. Gear box fitted, handwheel operated.**				
	402.02.01.01	1000mm NB PN25 (item A3)	No	1.00		
	402.02.01.02	1000mm NB PN25 (item A3)	No	1.00		
	402.02.02	**Dismantling Joints:**				
	402.02.02.01	1000mm NB, PN25 (Item A4)	No	1.00		
	402.02.03	**Flanges Adaptors**				
	402.02.03.01	1000mm NB, PN25 (Item A1)	No	2.00		
	402.02.04	**Flanges to SANS1123/25**				
	402.02.04.01	900mm NB	No	1.00		
	402.02.04.02	1000mm NB	No	7.00		
		Total Carried Forward				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO: WSBU 01 2025/26

ITE	PAYMENT	DESCRIPTION	UNI	QTY	RATE	AMOUNT
		TOTAL BROUGHT FORWARD				
	Series 7	**STRUCTURES**				
	Section 701	**FOUNDATIONS FOR STRUCTURES**				
	701.01	**Additional foundation investigations**	Prov Sum	1.00	R50,000.00	R50,000.00
	701.02	**Excavation for structures**				
	701.02.01	Excavation of soft material situated in the following depth ranges:				
	701.02.01.01	0 m up to 2 m	m³	5.00		
	701.02.01.02	Exceeding 2 m up to 4 m	m³	3.00		
	701.02.02	Extra over sub-item 701.02.01 for excavation in hard material irrespective of depth	m³	4.80		
	701.02.03	Extra over sub-item 701.02.01 for additional excavation required by the Engineer after the excavation has been completed	m³	0.80		
	701.04	**Dewatering of foundation excavations**	Lump Sum	1.00		
	701.05	**Backfill to excavations utilizing:**				
	701.05.01	Material from the excavations compacted to:				
	701.05.01.01	95% of Mod AASHTO	m³	6.00		
	701.05.02	**Imported Material compacted to:**				
	701.05.02.01	95% of Mod AASHTO (Min G7 material to TRH14)	m³	6.00		
	B701.14	**Removal of spoil material**				
	B701.14.01	To positions provided by the contractor	m³	4.00		
	Section 702	**FALSEWORK, FORMWORK AND CONCRETE FINISH**				
	702.02	**Formwork class F2 surface finish**				
	702.02.01	Single-surface formwork				
	702.02.01.01	Plane, horizontal, internally to soffit of main roof slab	m²	5.00		
	702.02.01.01	Plane, horizontal, externally to soffit of main roof slab	m²	5.00		
	702.02.02	Double-surface formwork (both sides measured)				
	702.02.02.01	Plane, vertical, to walls	m²	5.00		

TOTAL CARRIED FORWARD	

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO: WSBU 01 2025/26

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		TOTAL BROUGHT FORWARD				
	702.06	**Formwork to openings**	m^2	2.00		
	Section 703	**STEEL REINFORCEMENT FOR STRUCTURES**				
	703.03	**Welded steel fabric for -**				
	703.03.01	Floor slab of building				
	703.03.01.01	Ref 395	kg	30.00		
	703.04	**Reinforcement for: All foundations, walls, column, slab and roof slab**				
	703.04.02	High-yield-stress steel				
	703.04.02.01	Bars with 8 mm dia	t	0.10		
	703.04.02.02	Bars with 10 mm dia	t	0.19		
	703.04.02.03	Bars with 12 mm dia	t	2.10		
	703.04.02.04	Bars with 16 mm dia	t	2.30		
	Section 704	**CONCRETE**				
	704.01	Cast in situ concrete				
	704.01.01	Class 30/19 mm concrete. Concrete for water retaining structures as per specialist design: Cement content to be 420 kg/m^3 Cement type to be CEM2 B-V Water Cement Ratio to be 0.4				
	704.01.01.01	Foundation and walls	m^3	10.00		
	704.01.01.02	Roof slabs	m^3	10.00		
	704.01.02	Class 15/19 concrete				
	704.01.02.01	75 mm thick blinding layer and forming around sump	m^3	2.00		
	704.01.02.02	Concrete Screed to Falls (1 Cement CEM 1 : 5 River sand)	m^3	1.50		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO: WSBU 01 2025/26

		TOTAL CARRIED FORWARD				
	B701.15	MISCELLANEOUS VALVE CHAMBER ITEMS				
	B701.15.01	Stainless steel cat ladders supplied and installed as per CoT details (Drawing No 7515-VC222). Approx 3 m long, with 20 dia plug welded rungs, bolted to wall and floor with chemical anchors; all inclusive.	No	1.00		
	B701.15.02	250mmØ x 1180mm Bollard supplied and installed: with exposed aggregate planted to 300mm deep	No	1.00		
	B701.15.03	Waterproofing: 3 Coats of a Heavy waterproofing compound applied to the external walls.	m^2	55.00		
	B701.15.04	Manhole Access: "Screw Lid" manhole access unit supplied and installed as manufactured by "Concrete Doors and Vaults" or similar approved. Refer CoT Detail Drawing No 7515-VC223.	No	1.00		
	B701.15.05	Strap and Pipe Support steel work on concrete pedestal: Refer CoT Detail Drawing No 7515-VC219. Concrete for support work measured elsewhere.	No	4.00		
	B701.15.06	Proof Air vent supplied and installed complete: Refer CoT Detail Drawing No 7515-VC222.	No	1.00		
	B701.15.07	500mm x 500mm Sump completely supplied and installed with 150mm x 110mm PVC-U Sewer Gulley with CI Grate at low point. Refer CoT Detail Drawing No 7515-VC207.	No	1.00		
		TOTAL CARRIED TO SUMMARY				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS

CONTRACT NO:WSBU 01 2025/26
SECTION 400

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
CHAMBER B - WATER METER CHAMBER						
	402.01	Supplying, laying and jointing of water pipes irrespective of depth:(Short pipe runs):				
	402.01.01	Mild steel pipes to API 5L Grade x42 steel plate with liquid epoxy (Sigmaline SF23) external coating and internal lining, with flanges drilled to SANS 1123				
	402.01.01.01	Short straight pipe sections with puddle flange, flanged one end & Plain ended one end to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25:				
	402.01.01.01.01	900mm NB, A = 1250mm, B = 900mm x 10mm wall (Item B9)	No	1.00		
	402.01.01.01.02	700mm NB, A = 1250mm, B = 1000mm x 10mm wall (Item B1)	No	2.00		
	402.01.01.02	**Short straight pipe sections flanged both ends to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25 :**				
	402.01.01.02.01	700mm NB, A = 3500mm, B = 700mm x 10mm wall (Item B5)	No	2.00		
	402.01.01.02.02	500mm NB, A = 3500mm, B = 700mm x 10mm wall (Item B3)	No	1.00		
	402.01.01.03	**Combination straight pipe piece & Concentric reducer special, flanged both ends to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25 :**				
	402.01.01.03.01	700mm x 500mm NB, A = 430mm, B = 1520mm, C = 500 x 10mm wall (Item B6)	No	1.00		
	02.01.01.04	**Reducers, concentric, flanged both ends to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25 :**				
	402.01.01.04.01	500mm x 700mm NB, A = 430mm, B = 1520mm, C = 500 x 10mm wall (Item B7)	No	1.00		
	402.02	**Extra over item 402.01 for providing and installing fittings, valves and specials:**				
	402.02.01	**Isolating valves, butterfly valve, ductile iron body & disc (epoxy powder coated), double flanged and drilled to SANS 1123. handwheel operated.**				
	402.02.01.01	700mm NB PN25 (item B2)	No	2.00		
	402.02.02	**H-strainer, Ductile iron GGG40 Body and cover, stainless steel strainer on a ductile iron removable frame, 2mm mesh diameter, 32mm diameter flushing port ball valve, fusion bonded epoxy coated, Flanged and drilled to SANS 1123 (Claval or similar approved)**	No	1.00		
	402.02.02.01	500mm NB PN25 (item B8)	No	1.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS

CONTRACT NO: WSBU 01 2025/26
SECTION 400

		TOTAL BROUGHT FORWARD				
	402.02.03	**BULK WATER METER : Series 'WPD' Turbine Water Meter, 25 Bar rated, Cast iron body. Double flanged. Manufacturer's standard epoxy coating. 40º C. Including connection port for Radio Transmitter Unit (Cellular Phone System) and future addition of a sensor/pulser but excluding sensor, pulser and any other accessories not mentioned above.**				
	402.02.03.01	500mm NB PN25 (item B4)	No	1.00		
	402.02.04	**Dismantling Joints:**				
	402.02.04.01	500mm NB, PN25 (Item B5)	No	1.00		
	402.02.05	**Flanges to SANS1123/25**				
	402.02.05.01	700mm NB	No	14.00		
	402.02.05.02	900mm NB	No	8.00		
	402.02.05.03	1000mm NB	No	1.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO: WSBU 01 2025/26
SECTION 700

		BALANCE CARRIED FORWARD				
	Series 7 **Section 701**	**STRUCTURES** **FOUNDATIONS FOR STRUCTURES**				
	701.01	Additional foundation investigations	Prov Sum	1.00	R 50,000.00	R 50,000.00
	701.02	**Excavation for structures**				
	701.02.01	Excavation of soft material situated in the following depth ranges:				
	701.02.01.01	0 m up to 2 m	m³	100.00		
	701.02.01.02	Exceeding 2 m up to 4 m	m³	130.00		
	701.02.02	Extra over sub-item 701.02.01 for excavation in hard material irrespective of depth	m³	50.00		
	701.02.03	Extra over sub-item 701.02.01 for additional excavation required by the Engineer after the excavation has been completed	m³	100.00		
	701.04	Dewatering of foundation excavations	Lump Sum	1.00		
	701.05	**Backfill to excavations utilizing:**				
	701.05.01	**Material from the excavations compacted to:**				
	701.05.01.01	95% of Mod AASHTO	m³	230.00		
	701.05.02	**Imported Material compacted to:**				
	701.05.02.01	95% of Mod AASHTO (Min G7 material to TRH14)	m³	80.00		
	B701.14	**Removal of spoil material**				
	B701.14.01	To positions provided by the contractor	m³	80.00		
	Section 702	**FALSEWORK, FORMWORK AND CONCRETE FINISH**				
	702.02	**Formwork class F2 surface finish**				
	702.02.01	Single-surface formwork				
	702.02.01.01	Plane, horizontal, internally to soffit of main roof slab	m^2	40.00		
	702.02.01.02	Plane, horizontal, externally to soffit of main roof slab	m^2	40.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO: WSBU 01 2025/26
SECTION 700

		TOTAL BROUGHT FORWARD				
	702.02.02	Double-surface formwork (both sides measured)				
	702.02.02.01	Plane, vertical, to walls	m^2	300.00		
	702.06	**Formwork to openings**	m^2	20.00		
	Section 703	**STEEL REINFORCEMENT FOR STRUCTURES**				
	703.03	**Welded steel fabric for -**				
	703.03.01	Floor slab of building				
	703.03.01.01	Ref 395	kg	250.00		
	703.04	**Reinforcement for: All foundations, walls, column, slab and roof slab**				
	703.04.02	High-yield-stress steel				
	703.04.02.01	Bars with 8 mm dia	t	0.09		
	703.04.02.02	Bars with 10 mm dia	t	0.09		
	703.04.02.03	Bars with 12 mm dia	t	4.00		
	703.04.02.04	Bars with 16 mm dia	t	0.60		
	703.04.02.05	Bars with 20 mm dia	t	0.01		
	Section 704	**CONCRETE**				
	704.01	**Cast in situ concrete**				
	704.01.01	Class 30/19 mm concrete. Concrete for water retaining structures as per specialist design: Cement content to be 420 kg/m^3 Cement type to be CEM2 B-V Water Cement Ratio to be 0.4				
	704.01.01.01	Foundation and walls	m^3	50.00		
	704.01.01.02	Roof slabs	m^3	15.00		
	704.01.02	Class 15/19 concrete				
	704.01.02.01	75 mm thick blinding layer and forming around sump	m^3	4.00		
	704.01.02.02	Concrete Screed to Falls (1 Cement CEM1:5 River sand)	m^3	4.00		
	B701.15	**MISCELLANEOUS VALVE CHAMBER ITEMS**				
	B701.15.01	Stainless steel cat ladders supplied and installed as per CoT details (Drawing No 7515-VC222). Approx 3 m long, with 20 dia plug welded rungs, bolted to wall and floor with chemical anchors; all inclusive.	No	1.00		
	B701.15.02	250mmØ x 1180mm Bollard supplied and installed: with exposed aggregate planted to 300mm deep, refer CoT detail	No	4.00		
	B701.15.03	Waterproofing: 3 Coats of a Heavy waterproofing compound applied to the external walls.	m^2	320.00		
	B701.15.04	Manhole Access: "Screw Lid" manhole access unit supplied and installed as manufactured by "Concrete Doors and Vaults" or similar approved. Refer CoT Detail Drawing No 7515-VC223.	No	1.00		
	B701.15.05	Strap and Pipe Support steel work on concrete pedestal: Refer CoT Detail Drawing No 7515-VC219. Concrete for support work measured elsewhere.	No	2.00		
	B701.15.06	Vermin Proof Air vent supplied and installed: Refer CoT Detail Drawing No 7515-VC222.	No	2.00		
	B701.15.07	500mm x 500mm Sump completely supplied and installed with 150mm x 110mm PVC-U Sewer Gulley with CI Grate at low point. Refer CoT Detail Drawing No 7515-VC207.	No	1.00		
		CHAMBER B TOTAL CARRIED FORWARD TO SUMMARY				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO:WSBU 01 2025/26
SECTION 400

CHAMBER C & F - AIRVALVE CHAMBERS

	402.01	**Supplying, laying and jointing of water pipes irrespective of depth:(Short pipe runs):**				
	402.01.01	**Mild steel pipes to API 5L Grade x42 steel plate with liquid epoxy (Sigmaline SF23) external coating and internal lining, with flanges drilled to SANS 1123/25**				
	402.01.01.01	**Equal Tees, flanged One End & Plain Ended on two ends:**				
	402.01.01.01.01	700mm NB (item F1)	No	2.00		
	402.01.01.01.02	1000mm NB (item C1)	No	2.00		
	402.01.01.02	**Blank flange with hole and welded branch (for fitting of air valve):**				
	402.01.01.02.01	700mm NB x 150mm NB flanged branch, 8mm wall (item F4)	No	2.00		
	402.01.01.02.02	1000mm NB x 150mm NB flanged branch, 10mm wall (item C4)	No	2.00		
	402.02	**Extra over item 402.01 for providing and installing fittings, valves and specials:**				
	402.02.01	**Isolating valves to SABS 664, resilient seal gate valve, LHC, non-rising spindle with hand wheel, complete with right angle (90°) mitre gear, flanged and drilled to SANS 1123/25, fusion bonded epoxy coating internally & externally**				
	402.02.01.01	150mm NB PN25 (Item C3 & F3)	No	4.00		
	402.02.02	**Air Release and Vacuum Break Valve, Fig RBX 2501BP, complete with ¼" bleed port fitted with ¼" Chrome plated brass ball valve and a ¼" brass hex nipple, 2500kPa rated. Mild steel fusion bonded epoxy coa ted ends (Vent-o-mat or approved equal)**				
	402.02.02.01	150mm NB (item C2 & F2)	No	4.00		
	402.02.03	**Flanges to SANS1123/25**				
	402.02.03.01	150mm NB	No	4.00		
	402.02.03.02	1000mm NB	No	8.00		
	402.02.03.03	700mm NB	No	8.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO:WSBU 01 2025/26
SECTION 700

		TOTAL BROUGHT FORWARD					
	Series 7 **Section 701**	**STRUCTURES** **FOUNDATIONS FOR STRUCTURES**					
	701.01	Additional foundation investigations	Prov Sum	1.00	R 50,000.00	R	50,000.00
	701.02	**Excavation for structures**					
	701.02.01	**Excavation of soft material situated in the following depth ranges:**					
	701.02.01.01	0 m up to 2 m	m³	56.00			
	701.02.01.02	Exceeding 2 m up to 4 m	m³	40.00			
	701.02.02	Extra over sub-item 701.02.01 for excavation in hard material irrespective of depth	m³	6.00			
	701.02.03	Extra over sub-item 701.02.01 for additional excavation required by the Engineer after the excavation has been completed	m³	19.20			
	701.04	**Dewatering of foundation excavations**	Lump Sum	1.00			
	701.05	**Backfill to excavations utilizing:**					
	701.05.01	Material from the excavations compacted to:					
	701.05.01.01	95% of Mod AASHTO	m³	96.00			
	701.05.02	**Imported Material compacted to:**					
	701.05.02.01	95% of Mod AASHTO (Min G7 material to TRH14)	m³	5.00			
	B701.14	**Removal of spoil material**					
	B701.14.01	To positions provided by the contractor	m³	5.00			
	Section 704	**CONCRETE**					
	704.01	Cast in situ concrete					
	704.01.01	Class 30/19 mm concrete. Concrete for water retaining structures as per specialist design: Cement content to be 420 kg/m³ Cement type to be CEM2 B-V Water Cement Ratio to be 0.4					
	704.01.01.01	Base	m³	2.00			
	704.01.02	Class 15/19 concrete					
	704.01.02.01	75 mm thick blinding layer and forming around sump	m³	2.00			
	704.01.02.02	Concrete Screed to Falls (1 Cement CEM1:5 River sand)	m³	1.00			
	B705.04	**Construction of Air Valves Chambers using:**					
	B705.04.01	Using 2000mm precast concrete rings including roof roof slab with manhole lid	No	20.00			
	B705.05	Construction of a 200mm layer of coarse aggregate using:					
	B705.05.01	a) 9.5mm stones	m³	1.00			
	B705.05.02	b) 13.2mm stones	m³	1.00			
	B705.05.02	c) 19mm stones	m³	4.00			

	TOTAL CARRIED FORWARD TO SUMMARY							

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO:WSBU 01 2025/26
SECTION 400

CHAMBER D & G - SCOUR VALVE CHAMBERS

	401.01	**Supplying, laying and jointing of water pipes irrespective of depth:(Short pipe runs):**				
	402.01.01	**Mild steel pipes to API 5L Grade x42 steel plate with liquid epoxy (Sigmaline SF23) external coating and internal lining, with flanges drilled to SANS 1123**				
	402.01.01.01	**Short straight pipe sections with puddle flange, both ends flanged with puddle flange to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25 :**				
	402.01.01.01.01	200mm NB, A = 950mm, B = 200mm x 4.5mm wall (Item D4 & G4)	No	3.00		
	402.01.01.02	**Unequal Tee, plain ended Two Ends and Flanged One End**				
	402.01.01.02.01	700mm NB x 200mm NB, 8mm wall (Item G1)	No	2.00		
	402.01.01.02.02	1000mm NB x 200mm NB, 10mm wall (Item D1)	No	1.00		
	402.02	**Extra over item 402.01 for providing and installing fittings, valves and specials:**				
	402.02.01	**Isolating valves to SABS 664, resilient seal gate valve, LHC, non-rising spindle with hand wheel, complete with right angle (90 °) mitre gear, flanged and drilled to SANS 1123, 2500/3, fusion bonded epoxy coating internally & externally**				
	402.02.01.01	200mm NB PN25 (Item D2 & G2)	No	3.00		
	402.02.02	**Dismantling Joints:**				
	402.02.02.01	200mm NB, PN25 (Item D3 & G3)	No	3.00		
	402.02.03	**Flanges to SANS1123/25**				
	402.02.03.01	200mm NB	No	15.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO:WSBU 01 2025/26
SECTION 700

		TOTAL CARRIED FORWARD				
	Series 7 **Section 701**	**STRUCTURES** **FOUNDATIONS FOR STRUCTURES**				
	701.01	Additional foundation investigations	Prov Sum	1.00	R 50,000.00	R 50,000.00
	701.02	Excavation for structures				
	701.02.01	Excavation of soft material situated in the following depth ranges:				
	701.02.01.01	0 m up to 2 m	m³	232.00		
	701.02.01.02	Exceeding 2 m up to 4 m	m³	69.00		
	701.02.02	Extra over sub-item 701.02.01 for excavation in hard material irrespective of depth	m³	120.40		
	701.02.03	Extra over sub-item 701.02.01 for additional excavation required by the Engineer after the excavation has been completed	m³	189.40		
	701.04	**Dewatering of foundation excavations**	Lump Sum	1.00		
	701.05	**Backfill to excavations utilizing:**				
	701.05.01	**Material from the excavations compacted to:**				
	701.05.01.01	95% of Mod AASHTO	m³	101.00		
	701.05.02	**Imported Material compacted to:**				
	701.05.02.01	95% of Mod AASHTO (Min G7 material to TRH14)	m³	30.00		
	B701.14	**Removal of spoil material**				
	B701.14.01	To positions provided by the contractor	m³	200.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO:WSBU 01 2025/26
SECTION 700

		TOTAL BROUGHT FORWARD				
	Section 702	**FALSEWORK, FORMWORK AND CONCRETE FINISH**				
	702.02	**Formwork class F2 surface finish**				
	702.02.01	Single-surface formwork				
	702.02.01.01	Plane, horizontal, internally to soffit of main roof slab	m^2	75.00		
	702.02.01.02	Plane, horizontal, externally to soffit of main roof slab	m^2	15.00		
	702.02.02	Double-surface formwork (both sides measured)				
	702.02.02.01	Plane, vertical, to walls	m^2	180.00		
	702.06	**Formwork to openings**	m^2	4.00		
	Section 703	**STEEL REINFORCEMENT FOR STRUCTURES**				
	703.03	**Welded steel fabric for -**				
	703.03.01	Floor slab of building				
	703.03.01.01	Ref 395	kg	355.50		
	703.04	**Reinforcement for: All foundations, walls, column, slab and roof slab**				
	703.04.02	High-yield-stress steel				
	703.04.02.01	Bars with 8 mm dia	t	0.30		
	703.04.02.02	Bars with 10 mm dia	t	1.50		
	703.04.02.03	Bars with 12 mm dia	t	3.00		
	703.04.02.04	Bars with 16 mm dia	t	18.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO:WSBU 01 2025/26
SECTION 700

		TOTAL BROUGHT FORWARD				
	Section 704	**CONCRETE**				
	704.01	**Cast in situ concrete**				
	704.01.01	Class 30/19 mm concrete. Concrete for water retaining structures as per specialist design: Cement content to be 420 kg/m³ Cement type to be CEM2 B-V Water Cement Ratio to be 0.4				
	704.01.01.01	Foundation and walls	m³	58.00		
	704.01.01.02	Roof slabs	m³	19.20		
	704.01.02	Class 15/19 concrete				
	704.01.02.01	75 mm thick blinding layer and forming around sump	m³	7.20		
	704.01.02.02	Concrete Screed to Falls (1 Cement CEM1:5 River sand)	m³	4.80		
	B701.15	**MISCELLANEOUS VALVE CHAMBER ITEMS**				
	B701.15.01	Stainless steel cat ladders supplied and installed as per CoT details (Drawing No 7515-VC222). Approx 3 m long, with 20 dia plug welded rungs, bolted to wall and floor with chemical anchors; all inclusive.	No	3.00		
	B701.15.02	250mmØ x 1180mm Bollard supplied and installed: with exposed aggregate planted to 300mm deep, refer CoT detail	No	8.00		
	B701.15.03	Waterproofing: 3 Coats of a Heavy waterproofing compound applied to the external walls.	$_{m}2$	90.00		
	B701.15.04	Manhole Access: "Screw Lid" manhole access unit. Refer CoT Detail Drawing No 7515-VC223.	No	3.00		
	B701.15.05	Strap and Pipe Support steel work on concrete pedestal: Refer CoT Detail Drawing No 7515-VC219. Concrete for support work measured elsewhere.	No	6.00		
	B701.15.06	Vermin Proof Air vent supplied and installed: Refer CoT Detail Drawing No 7515-VC222.	No	6.00		
	B701.15.07	500mm x 500mm Sump completely supplied and installed with 150mm x 110mm PVC-U Sewer Gulley with CI Grate at low point. Refer CoT Detail Drawing No 7515-VC207.	No	3.00		
		CHAMBER D & G TOTAL CARRIED FORWARD TO SUMMARY				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11 SCHEDULE C:
BULK VALVE CHAMBERS
CONTRACT NO:WSBU 01 2025/26
SECTION 400

CHAMBER N - PRV CHAMBER

	402.01	**Supplying, laying and jointing of water pipes irrespective of depth:(Short pipe runs):**				
	402.01.01	**Mild steel pipes to API 5L Grade x42 steel plate with liquid epoxy (Sigmaline SF23) external coating and internal lining, with flanges drilled to SANS 1123**				
	402.01.01.01	**Short straight pipe sections with puddle flange, Flanged One End and Plain Ended One End to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25 :**	No	1.00		
	402.01.01.01.01	700mm NB, A = 1250mm, B = 700mm x 8mm wall. Including removable pressure reading gauge and mounting to steel pipe to CoT Detail (Item N1)				
	402.01.01.02	**Short straight pipe sections with puddle flange and concentric reducer, both ends flanged with puddle flange to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25 :**				
	402.01.01.02.01	100 mm x 200mm NB, A = 1630mm, B = 100mm, C=200mm x 4.5mm wall. Including removable pressure reading gauge and mounting to steel pipe to CoT Detail (Item N15)	No	1.00		
	402.01.01.02.02	300mm x 600mm NB, A = 1757mm, B = 300mm, C=600mm x 4.5mm wall. Including removable pressure reading gauge and mounting to steel pipe to CoT Detail (Item N28)	No	1.00		
	402.01.01.03	**Short straight pipe sections with puddle flange, both ends flanged with puddle flange to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25 :**				
	402.01.01.03.01	500mm NB, A = 1250mm, B = 500mm x 4.5mm wall (Item N26)	No	1.00		
	402.01.01.04	**Short straight pipe sections with concentric reducer, both ends flanged to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25:**				
	402.01.01.04.01	400mm X 500mm NB, A = 1456mm, B = 400mm, C=500mm x 6mm wall (Item N25)	No	1.00		
	402.01.01.05	**Short straight pipe sections, both ends flanged to withstand 2500kPa working pressure, Flanges drilled to SANS 1123 Table 2500/3:**				
	402.01.01.05.01	50mm NB, A = 449mm, B =50mm x 4.5mm wall (Item N20)	No	1.00		
	402.01.01.05.02	50mm NB, A = 1238mm, B =50mm x 4.5mm wall (Item N18)	No	2.00		
	402.01.01.05.03	50mm NB, A = 1138mm, B =50mm x 4.5mm wall (Item N32)	No	1.00		
	402.01.01.05.04	100mm NB, A = 833mm, B =200mm x 4.5mm wall (Item N13)	No	2.00		
	402.01.01.05.05	100mm NB, A = 867mm, B =200mm x 4.5mm wall (Item N11)	No	2.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11 SCHEDULE
C: BULK VALVE CHAMBERS
CONTRACT NO:WSBU 01 2025/26
SECTION 400

		TOTAL BROUGHT FORWARD				
	402.01.01.05.06	100mm NB, A = 811mm, B =200mm x 4.5mm wall (Item N17)	No	1.00		
	402.01.01.05.07	300mm NB, A = 500mm, B =300mm x 4.5mm wall (Item N6)	No	1.00		
	402.01.01.05.08	400mm NB, A = 978mm, B =300mm x 4.5mm wall (Item N22)	No	1.00		
	402.01.01.06	**Bends, long radius, all ends flanged drilled to SANS 1123/25:**				
	402.01.01.06.01	50mm NB x 90 degrees, 4.5mm wall (Item N21)	No	1.00		
	02.01.01.06.02	100mm NB x 90 degrees, 4.5mm wall (Item N2)	No	1.00		
	402.01.01.07	**Manifolds all ends flanged drilled to SANS 1123/25:**				
	402.01.01.07.01	100mm NB manifold with a 50mm branch. Branch to be reinforced with 5mm collar (item N14)	No	1.00		
	402.01.01.07.02	300mm NB manifold with a 100mm branch. Branch to be reinforced with 5mm collar (N8)	No	1.00		
	402.01.01.07.03	700mm NB manifold with a 300mm NB branch, 2x100mm NB branches, 50mmNB Branch & 400mm NB Branch. All Branches to be reinforced with 5mm collar (N3)	No	1.00		
	402.01.01.08	**Blank flange :**				
	02.01.01.08.01	500mm NB, 54mm wall (Item N27)	No	1.00		
	402.01.01.08.02	700mm NB, 54mm wall (Item N31)	No	2.00		
	402.02	**Extra over item 402.01 for providing and installing fittings, valves and specials:**				
	402.02.01	**Isolating valves to SABS 664, resilient seal gate valve, LHC, non-rising spindle with hand wheel, complete with right angle (90°) mitre gear, flanged and drilled to SANS 1123/25, fusion bonded epoxy coating internally & externally**				
	402.02.01.01	50mm NB PN25 (Item N16)	No	1.00		
	402.02.01.02	100mm NB PN25 (Item N9)	No	3.00		
	402.02.01.03	300mm NB PN25 (Item N4)	No	2.00		
	402.02.01.05	400mm NB PN25 (Item N23)	No	1.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11 SCHEDULE
C: BULK VALVE CHAMBERS
CONTRACT NO:WSBU 01 2025/26
SECTION 400

		TOTAL BROUGHT FORWARD				
	402.02.02	**Combination Pressure Reducing & Flow Control Valve : Combination Pressure Reducing and Rate of Flow Control Valve complete with orifice plate, or similar approved with additional strainer and check valve functions. S.G. iron body. Buna N diaphragm. Stainless steel Internals. Double flanged and drilled to SABS 1123/25. Manufacturer's standard epoxy coating**				
	402.02.02.01	50mm NB PN25 (Item N19)	No	1.00		
	402.02.02.02	100mm NB PN25 (Item N12)	No	2.00		
	402.02.02.03	300mm NB PN25 (Item N7)	No	1.00		
	402.02.02.04	50mm NB PN25 (Item N34)	No	1.00		
	402.02.02.05	100mm NB PN25 (Item N17)	No	2.00		
	402.02.02.06	300mm NB PN25 (Item N32)	No	1.00		
	402.02.03	**Dismantling Joints:**				
	402.02.03.01	100mm NB, PN25 (Item N10)	No	1.00		
	402.02.03.02	300mm NB, PN25 (Item N5)	No	1.00		
	402.02.03.03	400mm NB, PN25 (Item N24)	No	1.00		
	402.02.04	**Flanges Adaptors , drilled to SANS1123/25**				
	402.02.04.01	250mm NB, PN25 (Item N29)	No	1.00		
	402.02.04.02	600mm NB, PN25 (Item N30)	No	1.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO:WSBU 01 2025/26
SECTION 700

		BALANCE BROUGHT FORWARD						
	Series 7 **Section 701**	**STRUCTURES** **FOUNDATIONS FOR STRUCTURES**						
	701.01	Additional foundation investigations	Prov Sum	1.00	R	50,000.00	R	50,000.00
	701.02	**Excavation for structures**						
	701.02.01	**Excavation of soft material situated in the following depth ranges:**						
	701.02.01.01	0 m up to 2 m	m³	180.00				
	701.02.01.02	Exceeding 2 m up to 4 m	m³	130.00				
	701.02.02	Extra over sub-item 701.02.01 for excavation in hard material irrespective of depth	m³	124.00				
	701.02.03	Extra over sub-item 701.02.01 for additional excavation required by the Engineer after the excavation has been completed	m³	77.50				
	701.04	**Dewatering of foundation excavations**	Lump Sum	1.00				
	701.05	**Backfill to excavations utilizing:**						
	701.05.01	**Material from the excavations compacted to:**						
	701.05.01.01	95% of Mod AASHTO	m³	182.00				
	701.05.02	**Imported Material compacted to:**						
	701.05.02.01	95% of Mod AASHTO (Min G7 material to TRH14)	m³	32.00				
		TOTAL CARRIED FORWARD						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO:WSBU 01 2025/26
SECTION 700

		TOTAL BROUGHT FORWARD				
	B701.14	**Removal of spoil material**				
	B701.14.01	To positions provided by the contractor	m³	160.00		
	Section 702	**FALSEWORK, FORMWORK AND CONCRETE**				
		FINISH				
	702.02	**Formwork class F2 surface finish**				
	702.02.01	Single-surface formwork				
	702.02.01.01	Plane, horizontal, internally to soffit of main roof slab	m²	50.00		
	702.02.01.02	Plane, horizontal, externally to soffit of main roof slab	m²	50.00		
	702.02.02	Double-surface formwork (both sides measured)	m²			
	702.02.02.01	Plane, vertical, to walls		160.00		
	702.06	**Formwork to openings**	m²	20.00		
	Section 703	**STEEL REINFORCEMENT FOR STRUCTURES**				
	703.03	**Welded steel fabric for -**	m²			
	703.03.01	Floor slab of building				
	703.03.01.01	Ref 395		450.00		
	703.04	**Reinforcement for: All foundations, walls, column, slab and roof slab**				
	703.04.02	High-yield-stress steel	kg			
	703.04.02.01	Bars with 8 mm dia		0.06		
	703.04.02.02	Bars with 10 mm dia		0.28		
	703.04.02.03	Bars with 12 mm dia	t	0.45		
	703.04.02.04	Bars with 16 mm dia	t	10.00		
	703.04.02.05	Bars with 20 mm dia	t	2.00		
	703.04.02.06	Bars with 25 mm dia	t	0.77		
	Section 704	**CONCRETE**				
	704.01	**Cast in situ concrete**	t			
	704.01.01	Class 30/19 mm concrete. Concrete for water retaining structures as per specialist design: Cement content to be 420 kg/m³ Cement type to be CEM2 B-V Water Cement Ratio to be 0.4				
	704.01.01.01	Foundation and walls		30.00		
	704.01.01.02	Roof slabs		12.00		
	704.01.02	Class 15/19 concrete	m³			
	704.01.02.01	75 mm thick blinding layer and forming around sump	m³	4.00		
	704.01.02.02	Concrete Screed to Falls (1 Cement CEM1:5 River sand)		4.00		
	B701.15	**MISCELLANEOUS VALVE CHAMBER ITEMS**	m³			
	B701.15.01	Stainless steel cat ladders supplied and installed as per CoT details (Drawing No 7515-VC222). Approx 3 and floor with chemical anchors; all inclusive. m long, with 20 dia plug welded rungs, bolted to wall	m³ No	1.00		
	B701.15.02	250mmØ x 1180mm Bollard supplied and installed: with exposed aggregate planted to 300mm deep, refer CoT detail		4.00		
	B701.15.03	Waterproofing: 3 Coats of a Heavy waterproofing compound applied to the external walls.	No	160.00		
	B701.15.04	Manhole Access: "Screw Lid" manhole access unit Refer CoT Detail Drawing No 7515-VC223.	m2	1.00		
	B701.15.05	Strap and Pipe Support steel work on concrete pedestal: Refer CoT Detail Drawing No 7515-VC219. Concrete for support work measured elsewhere.	No	12.00		
	B701.15.06	Vermin Proof Air vent supplied and installed: Refer CoT Detail Drawing No 7515-VC222.	No	2.00		
	B701.15.07	500mm x 500mm Sump completely supplied and installed with 150mm x 110mm PVC-U Sewer Gulley with CI Grate at low point. Refer CoT Detail Drawing No 7515-	No	1.00		
		CHAMBER N TOTAL CARRIED FORWARD TO SUMMARY				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
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SECTION 400

CHAMBER O - RETICULATION CONNECTION BULK CHAMBER

	402.01	**Supplying, laying and jointing of water pipes irrespective of depth:(Short pipe runs):**				
	402.01.01	**Mild steel pipes to API 5L Grade x42 steel plate with liquid epoxy (Sigmaline SF23) external coating and internal lining, with flanges drilled to SANS 1123/16**				
	402.01.01.01	**Short straight pipe sections with puddle flange, both ends flanged to withstand 1600kPa working pressure, Flanges drilled to SANS 1123/16 :**				
	402.01.01.01.01	250mm NB, A = 1250mm, B = 250mm x 4.5mm wall (Item O2)	No	4.00		
	402.01.01.01.03	400mm NB, A = 1590m, B = 620mm x 4.5mm wall (Item O11)	No	2.00		
	402.01.01.01	**Combination straight pipe piece & Concentric reducer special, flanged both ends to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25 :**				
	402.01.01.01.04	600mm x 400mm NB, A = 400mm, B = 380mm, C = 600 x 10mm wall (Item O18)	No	1.00		
	402.01.01.02	**Short straight pipe sections, both ends flanged to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/16:**				
	402.01.01.02.01	400mm NB, A = 1352mm, B = 400mm x 4.5mm wall (Item O13)	No	1.00		
	402.01.01.02.02	400mm NB, A = 1042mm, B = 400mm x 4.5mm wall (Item O14)	No	1.00		
	402.01.01.02.03	400mm NB, A = 681mm, B = 400mm x 4.5mm wall (Item O19)				
	402.01.01.03	**Bends, Elbows, all ends flanged drilled to SANS 1123/16:**				
	402.01.01.03.01	250mm NB x 90 degrees, 4.5mm wall (Item O16)	No	4.00		
	402.01.01.04	**Equal Tees, all ends flanged, Flanges drilled to SANS 1123/16:**				
	402.01.01.04.01	250mm x 250mm NB , A = 650, B = 280mm x 4.5mm wall (Item O10)	No	2.00		
	402.01.01.04.02	400mm x 400mm NB , A = 810, B = 405mm x 4.5mm wall (Item O1)	No	2.00		
	402.01.01.05	**Unequal Tees, all ends flanged, Flanges drilled to SANS 1123/16:**				
	402.01.01.05.01	400mm NB x 250mm NB , A = 810, B = 405mm x 4.5mm wall (Item O5)	No	1.00		
	402.01.01.06	**Reducers, concentric, ends flanged to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/16:**				
	402.01.01.06.01	400mm NB x 250mm NB, A = 280, 4.5mm wall (Item O15)	No	1.00		
	402.01.01.06.0	500mm NB x 400mm NB, A = 330, 4.5mm wall (Item O20)	No	1.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
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		TOTAL BROUGHT FORWARD				
	402.02	**Extra over item 402.01 for providing and installing fittings, valves and specials:**				
	402.02.01	**Isolating valves to SANS 664, resilient seal gate valve, LHC, non-rising spindle with hand wheel, complete with right angle (90°) mitre gear, flanged and drilled to SANS 1123/16, fusion bonded epoxy coating internally & externally**				
	402.02.01.01	250mm NB PN16 (Item O6)	No	4.00		
	402.02.01.02	400mm NB PN16 (Item O3)	No	4.00		
	402.02.02	**Dismantling Joints:**				
	402.02.03.01	250mm NB, PN16 (Item O7)	No	2.00		
	402.02.03.02	400mm NB, PN16 (Item O4)	No	3.00		
	402.02.03	**Flange Adaptors Flanges drilled to SANS 1123/16**				
	402.02.04.01	250mm NB, PN16 (Item O8)	No	4.00		
	402.02.04.02	400mm NB, PN16 (Item O9)	No	1.00		
	402.02.04.03	600mm NB, PN16 (Item O17)	No	1.00		
	402.02.04.04	500mm NB, PN16 (Item O21)	No	1.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11 SCHEDULE
C: BULK VALVE CHAMBERS
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700

		TOTAL BROUGHT FORWARD				
	Series 7	**STRUCTURES**				
	Section 701	**FOUNDATIONS FOR STRUCTURES**				
	701.01	**Additional foundation investigations**	Prov Sum	1.00	R 50,000.00	R 50,000.00
	701.02	**Excavation for structures**				
	701.02.01	**Excavation of soft material situated in the following depth ranges:**				
	701.02.01.01	0 m up to 2 m	m^3	110.00		
	701.02.01.02	Exceeding 2 m up to 4 m	m^3	135.00		
	701.02.02	Extra over sub-item 701.02.01 for excavation in hard material irrespective of depth	m^3	82.00		
	701.02.03	Extra over sub-item 701.02.01 for additional excavation required by the Engineer after the excavation has been completed	m^3	30.00		
	701.04	**Dewatering of foundation excavations**	Lump Sum	1.00		
	701.05	**Backfill to excavations utilizing:**				
	701.05.01	**Material from the excavations compacted to:**				
	701.05.01.01	95% of Mod AASHTO	m^3	180.20		
	701.05.02	**Imported Material compacted to:**				
	701.05.02.01	95% of Mod AASHTO (Min G7 material to TRH14)	m^3	16.00		
	B701.14	**Removal of spoil material**				
	B701.14.01	To positions provided by the contractor	m^3	80.80		
	Section 702	**FALSEWORK, FORMWORK AND CONCRETE FINISH**				
	702.02	**Formwork class F2 surface finish**				
	702.02.01	Single-surface formwork				
	702.02.01.01	Plane, horizontal, internally to soffit of main roof slab	$_m2$	30.00		
	702.02.01.02	Plane, horizontal, externally to soffit of main roof slab	$_m2$	30.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11 SCHEDULE C:
BULK VALVE CHAMBERS
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		TOTAL BROUGHT FORWARD				
	702.02.02	Double-surface formwork (both sides measured) Plane,				
	702.02.02.01	vertical, to walls	$_{m}2$	240.00		
	702.06	**Formwork to openings**	$_{m}2$	20.00		
	Section 703	**STEEL REINFORCEMENT FOR STRUCTURES**				
	703.03	**Welded steel fabric for -**				
	703.03.01	Floor slab of building Ref 395				
	703.03.01.01	**Reinforcement for: All foundations, walls, column, slab and roof slab**	kg	110.00		
	703.04	High-yield-stress steel Bars				
	703.04.02	with 8 mm dia Bars with 10				
	703.04.02.01	mm dia Bars with 12 mm dia	t t	0.07		
	703.04.02.02	Bars with 16 mm dia Bars	t t	0.14		
	703.04.02.03	with 20 mm dia Bars with 25	t t	0.30		
	703.04.02.04	mm dia **CONCRETE**		6.50		
	703.04.02.05			1.00		
	703.04.02.06	**Cast in situ concrete**		0.02		
	Section 704	Class 30/19 mm concrete.				
	704.01	Concrete for water retaining structures as per specialist design: Cement content to be 420 kg/m³ Cement type to be CEM2 B-V Water Cement Ratio to be 0.4				
	704.01.01	Foundation and walls Roof	m³			
		slabs	m³			
	704.01.01.01	Class 15/19 concrete		35.00		
	704.01.01.02	75 mm thick blinding layer and forming around sump Concrete	m³	8.00		
	704.01.02	Screed to Falls (1 Cement CEM1:5 River sand)	m³			
	704.01.02.01			3.00		
	704.01.02.02			3.00		
		MISCELLANEOUS VALVE CHAMBER ITEMS				
	B701.15	Stainless steel cat ladders supplied and installed as per CoT details (Drawing No 7515-VC222). Approx 3 m long, with 20 dia plug welded rungs, bolted to wall and floor with chemical anchors; all inclusive.	No			
	B701.15.01			1.00		
		250mmØ x 1180mm Bollard supplied and installed: with exposed aggregate planted to 300mm deep, refer CoT detail	No			
	B701.15.02	Waterproofing: 3 Coats of a Heavy waterproofing compound applied to the external walls.	$_{m}2$	4.00		
	B701.15.03			135.00		
		Manhole Access: "Screw Lid" manhole access unit Refer CoT Detail Drawing No 7515-VC223.	No			
	B701.15.04	Strap and Pipe Support steel work on concrete pedestal: Refer CoT Detail Drawing No 7515-VC219. Concrete for support work measured elsewhere.	No	1.00		
	B701.15.05	Vermin Proof Air vent supplied and installed: Refer CoT Detail Drawing No 7515-VC222.	No	3.00		
	B701.15.06	500mm x 500mm Sump completely supplied and installed with 150mm x 110mm PVC-U Sewer Gulley with CI Grate at low point. Refer CoT Detail Drawing No 7515-VC207.	No	2.00		
	B701.15.07			1.00		
		CHAMBER O TOTAL CARRIED FORWARD TO SUMMARY				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
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SECTION 400

CHAMBER E - R3/4/7 CONNECTION

	402.01	**Supplying, laying and jointing of water pipes irrespective of depth:(Short pipe runs):**				
	402.01.01	**Mild steel pipes to API 5L Grade x42 steel plate with liquid epoxy (Sigmaline SF23) external coating and internal lining, with flanges drilled to SANS**				
	402.01.01.01	**Short straight pipe sections with puddle flange, Flanged One End and Plain Ended One End, flange to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25 :**				
	402.01.01.01.01	700mm NB, A = 1250mm, B = 700mm x 8mm wall (Item E1)	No	1.00		
	402.01.01.01.02	700mm NB, A = 2185mm, B = 700mm x 8mm wall (Item E10)	No	1.00		
	402.01.01.01.03	1000mm NB, A = 1300mm, B = 1000mm x 8mm wall (Item E8)	No	1.00		
		Combination straight pipe piece & Concentric reducer special,with puddle flange, Flanged One End and Plain Ended One End to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25 :				
	402.01.01.01.04	1000mm x 700mm NB, A = 1000mm, B = 1250mm, C = 700 x 10mm wall (Item E9)	No	1.00		
	402.01.01.02	**Equal Tees, all ends flanged, Flanges drilled to SANS 1123/25:**				
	402.01.01.02.01	700mm NB , A = 2511, B = 711mm x 8mm wall (Item E4)	No	1.00		
	402.01.01.03	**Unequal Tees, all ends flanged, Flanges drilled to SANS 1123/25:**				
	402.01.01.03.01	1000mm x 700mm NB , A = 2100, B= 1052mm, 8mm wall, (Item E7)	No	1.00		
	402.02	**Extra over item 402.01 for providing and installing fittings, valves and specials:**				
	402.02.01	**Isolating valves, butterfly valve, ductile iron body & disc (epoxy powder coated), double flanged and drilled to SANS 1123. Gear box fitted, handwheel operated .**				
	402.02.01.01	700mm NB PN25 (Item E3)	No	2.00		
	402.02.02	**Reducers, concentric, ends flanged to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25:**				
	402.02.02.01	1000mm x 700mm NB, L = 560mm, 8mm wall	No	1.00		
	402.02.03	**Dismantling Joints:**				
	402.02.03.01	700mm NB, PN25 (Item E5)	No	1.00		
	402.02.03.02	1000mm NB, PN25 (Item E11)	No	1.00		
	402.02.04	**Repair Couplings (Restraining) Flanges drilled to SANS 1123/25**				
	402.02.04.01	700mm NB, PN25 (Item E2)	No	2.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
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SECTION 700

		TOTAL BROUGHT FORWARD					
	Series 7 **Section 701**	**STRUCTURES** **FOUNDATIONS FOR STRUCTURES**					
	701.01	**Additional foundation investigations**	Prov Sum	1.00	R 50,000.00	R	50,000.00
	701.02	**Excavation for structures**					
	701.02.01	**Excavation of soft material situated in the following depth ranges:**					
	701.02.01.01	0 m up to 2 m	m³	165.00			
	701.02.01.02	Exceeding 2 m up to 4 m	m³	170.00			
	701.02.02	Extra over sub-item 701.02.01 for excavation in hard material irrespective of depth	m³	170.00			
	701.02.03	Extra over sub-item 701.02.01 for additional excavation required by the Engineer after the excavation has been completed	m³	75.00			
	701.04	**Dewatering of foundation excavations**	Lump Sum	1.00			
	701.05	**Backfill to excavations utilizing:**					
	701.05.01	**Material from the excavations compacted to:**					
	701.05.01.01	95% of Mod AASHTO	m³	100.00			
	701.05.02	**Imported Material compacted to:**					
	701.05.02.01	95% of Mod AASHTO (Min G7 material to TRH14)	m³	20.00			
	B701.14	**Removal of spoil material**					
	B701.14.01	To positions provided by the contractor	m³	255.00			
		TOTAL CARRIED FORWARD					

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
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SECTION 700

		TOTAL BROUGHT FORWARD				
	Section 702	**FALSEWORK, FORMWORK AND CONCRETE FINISH**				
	702.02	**Formwork class F2 surface finish**				
	702.02.01	Single-surface formwork				
	702.02.01.01	Plane, horizontal, internally to soffit of main roof slab	m^2	36.00		
	702.02.01.01	Plane, horizontal, externally to soffit of main roof slab	m^2	36.00		
	702.02.02	Double-surface formwork (both sides measured)				
	702.02.02.01	Plane, vertical, to walls	m^2	170.00		
	702.06	**Formwork to openings**	m^2	10.00		
	Section 703	**STEEL REINFORCEMENT FOR STRUCTURES**				
	703.03	**Welded steel fabric for -**				
	703.03.01	Floor slab of building				
	703.03.01.01	Ref 395	kg	260.00		
	703.04	**Reinforcement for: All foundations, walls, column, slab and roof slab**				
	703.04.02	High-yield-stress steel				
	703.04.02.01	Bars with 8 mm dia	t	0.14		
	703.04.02.02	Bars with 10 mm dia	t	1.00		
	703.04.02.03	Bars with 12 mm dia	t	0.30		
	703.04.02.04	Bars with 16 mm dia	t	6.50		
	703.04.02.05	Bars with 20 mm dia	t	1.00		
	703.04.02.06	Bars with 25 mm dia	t	0.10		
	Section 704	**CONCRETE**				
	704.01	**Cast in situ concrete**				
	704.01.01	Class 30/19 mm concrete. Concrete for water retaining structures as per specialist design: Cement content to be 420 kg/m^3 Cement type to be CEM2 B-V Water Cement Ratio to be 0.4				
	704.01.01.01	Foundation and walls	m^3	75.00		
	704.01.01.02	Roof slabs	m^3	9.00		
	704.01.02	Class 15/19 concrete				
	704.01.02.01	75 mm thick blinding layer and forming around sump	m^3	5.00		
	704.01.02.02	Concrete Screed to Falls (1 Cement CEM1:5 River sand)	m^3	5.00		
	B701.15	**MISCELLANEOUS VALVE CHAMBER ITEMS**				
	B701.15.01	Stainless steel cat ladders supplied and installed as per CoT details (Drawing No 7515-VC222). Approx 3 m long, with 20 dia plug welded rungs, bolted to wall and floor with chemical anchors; all inclusive.	No	1.00		
	B701.15.02	250mmØ x 1180mm Bollard supplied and installed: with exposed aggregate planted to 300mm deep, refer CoT detail	No	4.00		
	B701.15.03	Waterproofing: 3 Coats of a Heavy waterproofing compound applied to the external walls.	m^2	160.00		
	B701.15.04	Manhole Access: "Screw Lid" manhole access unit .Refer CoT Detail Drawing No 7515-VC223.	No	1.00		
	B701.15.05	Strap and Pipe Support steel work on concrete pedestal: Refer CoT Detail Drawing No 7515-VC219. Concrete for support work measured elsewhere.	No	2.00		
	B701.15.06	Vermin Proof Air vent supplied and installed: Refer CoT Detail Drawing No 7515-VC222.	No	1.00		
	B701.15.07	500mm x 500mm Sump completely supplied and installed with 150mm x 110mm PVC-U Sewer Gulley with CI Grate at low point. Refer CoT Detail Drawing No 7515-VC207.	No	1.00		
		CHAMBER E TOTAL CARRIED FORWARD TO SUMMARY				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
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SECTION 800

	Item	Description	Unit	Qty	Rate	Amount
	804	**PIPE JACKING AND BORING**				
	804.01	**Establishment of site**				
	804.01.01	Pipe jacking	lump sum	1.00		
	804.02	Access to and from the thrust and reception pits	lump sum	1.00		
	804.03	**Excavating in soft material for:**				
	B804.03.01	Thrust and reception pits	m^3	2,650.00		
	804.04	Extra over item 804.03 for excavating hard material	m^3	1,060.00		
	804.05	**Backfilling the :**				
	804.05.01	Thrust and reception pits with:				
	804.05.01.01	Excavated material	m^3	1,325.00		
	804.05.01.02	Imported material	m^3	100.00		
	B804.06	Supply of culverts to be jacked				
	B804.06.01	2.5m x 2.0m Class Jacking Concrete rectangular Portals as per SANS 986	m	322.00		
	B804.07	**Jacking of culverts through:**				
	B804.07.01	Soft Material	m^3	1,010.00		
	B804.07.02	Hard Material	m^3	1,885.00		
	B 804.09	**Supply, jointing and inserting pipes**				
	B 804.09.01	Mild steel pipes to SANS 719 from Grade S235 / 300 WA / X52 / X56 steel with bevelled ends to BS 534, with fusion bonded medium density polyethylene (FBMDPE) (Sintakote II) external coating to table 1 of AS 4321-1995 and liquid epoxy (Sigmaline SF23) internal lining. Pipes to be in 6.0m lengths. All site welding of joints to be denso wrapped.				
	B 804.09.01.	700mm NB (711 OD) x 8mm wall	m	322.00		
	B804.13	**The grouting of voids for culvert jacking: Between box culverts and surrounding material after jacking has been completed:**				
	B804.10.01	Unforseen and exposed during jacking	kg	350.00		
	B804.10.02	Between pipeline and surrounding material after jacking has been completed	kg	160.00		
		Total Carried Forward				

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		Total Carried Forward				
	402.1	**Supplying, laying and jointing of water pipes irrespective of depth:(Short pipe runs):**				
	402.01.01	**Handling, laying and jointing of water pipes irrespective of depth:**				
	402.01.01.01	Mild steel pipes to SANS 719 grade C steel plate with liquid epoxy (Sigmaline SF23) external coating and internal lining.				
	02.01.01.01.	700mm NB (711 OD) x 8mm wall	m	10.00		
	402.01.02	Extra over item 3.84.1 for providing and installing fittings, valves and specials:				
	402.01.02.01	**Short straight pipe sections with puddle flange, Flanged One End, Plain Ended One End to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25 :**				
	402.01.02.01	700mm NB, A = 1250mm, B = 700mm x 8mm wall (Item J1, K1 & L1)	No	6.00		
	402.01.02.02	**Short straight pipe sections, both ends flanged to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25:**				
	402.01.02.02	700mm NB, A = 1908mm, B = 700mm x 8mm wall (Item K9)	No	1.00		
	402.01.02.02	700mm NB, A = 2216mm, B = 700mm x 8mm wall (Item K8)	No	1.00		
	402.01.02.03	**Bends, Special with a 150mm branch welded on, branch to be reinforced with a 5mm coller, all ends flanged drilled to SANS 1123/25:**				
	402.01.02.03	700mm NB x 90 degrees, 8mm wall (Item J2, K2 & L2)	No	9.00		
	402.01.02.03	**Bends, all ends flanged drilled to SANS 1123/25:**				
	402.01.02.03	700mm NB x 90 degrees, 8mm wall (Item J5, K5 & L5)	No	3.00		
	402.01.02.04	**Flange Adaptors Flanges drilled to SANS 1123/25**				
	402.01.02.04	700mm NB, PN25 (Item J6, K6 & L6)	No	6.00		
	402.02	Extra over item 402.01 for providing and installing fittings, valves and specials:				
	02.02.01	Isolating valves to SABS 664, resilient seal gate valve, LHC, non-rising spindle with hand wheel, complete with right angle (90°) mitre gear, flanged and drilled to SANS 1123/25, fusion bonded epoxy coating internally & externally				
	402.02.01.01	150mm NB PN25 (Item J3, K3 & L3)	No	9.00		
		TOTAL CARRIED FORWARD				

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		TOTAL BROUGHT FORWARD				
	402.02.02	**Air Release and Vacuum Break Valve, Fig RBX 2501BP, complete with ¼" bleed port fitted with ¼" Chrome plated brass ball valve and a ¼" brass hex nipple, 2500kPa rated. Mild steel fusion bonded epoxy coated ends**				
	402.02.02.01	150mm NB	No	6.00		
	Series 7	**STRUCTURES**				
	Section 701	**FOUNDATIONS FOR STRUCTURES**				
	701.01	**Additional foundation investigations**	Prov Sum	1.00	R 100,000.00	R 100,000.00
	701.02	**Excavation for structures**				
	701.02.01	Excavation of soft material situated in the following depth ranges:				
	701.02.01.01	0 m up to 2 m	m³	1,000.00		
	701.02.01.02	Exceeding 2 m up to 4 m	m³	1,650.00		
	701.02.02	Extra over sub-item 701.02.01 for excavation in hard material irrespective of depth	m³	795.00		
	701.02.03	Extra over sub-item 701.02.01 for additional excavation required by the Engineer after the excavation has been completed	m³	265.00		
	701.04	**Dewatering of foundation excavations**	Lump Sum	1.00		
	701.05	**Backfill to excavations utilizing:**				
	701.05.01	Material from the excavations compacted to:				
	701.05.01.01	95% of Mod AASHTO	m³	850.00		
	701.05.02	Imported Material compacted to:				
	701.05.02.01	95% of Mod AASHTO (Min G7 material to TRH14)	m³	170.00		
	B701.14	**Removal of spoil material**				
	B701.14.01	To positions provided by the contractor	m³	5,280.00		
		TOTAL CARRIED FORWARD				

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		TOTAL BROUGHT FORWARD				
	Section 702	**FALSEWORK, FORMWORK AND CONCRETE FINISH**				
		Formwork class F2 surface finish				
	702.02.01	Single-surface formwork				
	702.02.01.01	Plane, horizontal, internally to soffit of main roof slab	m^2	132.00		
	702.02.01.02	Plane, horizontal, externally to soffit of main roof slab	m^2	132.00		
	702.02.02	Double-surface formwork (both sides measured)				
	702.02.02.01	Plane, vertical, to walls	m^2	1,500.00		
	702.06	**Formwork to openings**	m^2	120.00		
	Section 703	**STEEL REINFORCEMENT FOR STRUCTURES**				
	703.03	**Welded steel fabric for -**				
	703.03.01	Floor slab of building				
	703.03.01.01	Ref 395	kg	530.00		
	703.04	**Reinforcement for: All foundations, walls, column, slab and roof slab**				
	703.04.02	High-yield-stress steel				
	703.04.02.01	Bars with 8 mm dia	t	3.80		
	703.04.02.02	Bars with 10 mm dia	t	15.30		
	703.04.02.03	Bars with 12 mm dia	t	76.00		
	703.04.02.04	Bars with 16 mm dia	t	47.00		
	Section 704	**CONCRETE**				
	704.01	**Cast in situ concrete**				
	704.01.01	Class 30/19 mm concrete. **Concrete for water retaining structures as per specialist design:** **Cement content to be 420 kg/m³** **Cement type to be CEM2 B-V** **Water Cement Ratio to be 0.4**				
	704.01.01.01	Foundation and walls	m^3	550.00		
	704.01.01.02	Roof slabs	m^3	130.00		
		TOTAL CARRIED FORWARD				

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		TOTAL BROUGHT FORWARD				
	704.01.02	Class 15/19 concrete				
	704.01.02.01	75 mm thick blinding layer and forming around sump	m^3	10.00		
	704.01.02.02	Concrete Screed to Falls (1 Cement CEM1:5 River sand)	m^3	10.00		
	B701.15	**MISCELLANEOUS VALVE CHAMBER ITEMS**				
	B701.15.01	Stainless steel cat ladders supplied and installed as per CoT details (Drawing No 7515-VC222). Approx 3 m long, with 20 dia plug welded rungs, bolted to wall and floor with chemical anchors; all inclusive.	No	6.00		
	B701.15.02	250mmØ x 1180mm Bollard supplied and installed: with exposed aggregate planted to 300mm deep, refer CoT detail	No	24.00		
	B701.15.03	Waterproofing: 3 Coats of a Heavy waterproofing compound applied to the external walls.	m^2	1,250.00		
	B701.15.04	Manhole Access: "Screw Lid" manhole access unit supplied and installed as manufactured by "Concrete Doors and Vaults" or similar approved. Refer CoT Detail Drawing No 7515-VC223.	No	6.00		
	B701.15.05	Strap and Pipe Support steel work on concrete pedestal: Refer CoT Detail Drawing No 7515-VC219. Concrete for support work measured elsewhere.	No	12.00		
	B701.15.06	Vermin Proof Air vent supplied and installed: Refer CoT Detail Drawing No 7515-VC222.	No	12.00		
	B701.15.07	500mm x 500mm Sump completely supplied and installed with 150mm x 110mm PVC-U Sewer Gulley with CI Grate at low point. Refer CoT Detail Drawing No 7515-VC207.	No	6.00		
	B701.15.08	7.0m x 3.56m Galvanised Rectagrid Grid (D60 / 25x5.5mm Banded). Completely supplied, installed and bolted with 10mmØ Hilti Anchor Bolts to concrete using 60x50x4mm Galvanised plates welded to steel grid at 400mm c/c. Refer CoT Detail Drawing No 7515-VC221.	No	3.00		
	B701.15.09	3.0m x 2.6m Galvanised Rectagrid Grid (D60 / 25x5.5mm Banded). Completely supplied, installed and bolted with 10mmØ Hilti Anchor Bolts to concrete using 60x50x4mm Galvanised plates welded to steel grid at 400mm c/c. Refer CoT Detail Drawing No 7515-VC221.	No	3.00		
		TOTAL CARRIED FORWARD TO SUMMARY				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO:WSBU 01 2025/26
SECTION 400

CHAMBER P - RETICULATION CONNECTION WATER METER CHAMBER

	402.01	**Supplying, laying and jointing of water pipes irrespective of depth:(Short pipe runs):**				
	402.01.01	**Mild steel pipes to API 5L Grade x42 steel plate with liquid epoxy (Sigmaline SF23) external coating and internal lining, with flanges drilled to SANS 1123**				
	402.01.01.01	**Short straight pipe sections with puddle flange, flanged both ends to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25 :**				
	402.01.01.01	250mm NB, A = 1250mm, B = 250mm 4.5mm wall. Including removable pressure reading gauge and mounting to steel pipe to CoT Detail (Item P7)	No	2.00		
	402.01.01.01	600mm NB, A = 1250mm, B = 600mm 6mm wall. Including removable pressure reading gauge and mounting to steel pipe to CoT Detail (Item P2)	No	2.00		
	402.01.01.03	**Combination straight pipe piece & Concentric reducer special, flanged both ends to withstand 2500kPa working pressure, Flanges drilled to SANS 1123/25 :**				
	402.01.01.03	600mm x 400mm NB, A = 380mm, B = 2233mm, C = 400 x 10mm wall (Item P8)	No	2.00		
	402.01.01.03	250mm x 200mm NB, A = 205mm, B = 2510mm, C = 200 x 10mm wall (Item P3)	No	2.00		
	402.02	**Extra over item 402.01 for providing and installing fittings, valves and specials:**				
	402.02.01	**BULK WATER METER :** **Turbine Water Meter, 16 Bar rated, Cast iron body. Double flanged. Manufacturer's standard epoxy coating. 40º C. Including connection port for Radio Transmitter Unit (Cellular Phone System) and future addition of a sensor/pulser but excluding sensor, pulser and any other accessories not mentioned above.**				
	402.02.01.01	200mm PN16 (Item P10)	No	1.00		
	402.02.01.02	400mm PN16 (Item P5)	No	1.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO:WSBU 01 2025/26
SECTION 400

		TOTAL BROUGHT FORWARD				
	402.02.02	**Dismantling Joints:**				
	402.02.02.01	200mm NB, PN16 (Item P10)	No	1.00		
	402.02.02.02	400mm NB, PN16 (Item P5)	No	1.00		
	402.02.03	**Flanges Adaptors**				
	402.02.03.01	250mm NB, PN16 (Item P6)	No	2.00		
	402.02.03.02	600mm NB, PN16 (Item P1)	No	2.00		
	402.02.04	**Flanges to SANS1123/16**				
	402.02.04.01	200mm NB	No	2.00		
	402.02.04.02	250mm NB	No	1.00		
	402.02.04.02	400mm NB	No	1.00		
	402.02.04.02	600mm NB	No	1.00		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO:WSBU 01 2025/26
SECTION 700

		BALANCE BROUGHT FORWARD				
	Series 7 **Section 701**	**STRUCTURES** **FOUNDATIONS FOR STRUCTURES**				
	701.01	**Additional foundation investigations**	Prov Sum	1.00	R 50,000.00	R 50,000.00
	701.02	**Excavation for structures**				
	701.02.01	Excavation of soft material situated in the following depth ranges:				
	701.02.01.01	0 m up to 2 m	m³	90.00		
	701.02.01.02	Exceeding 2 m up to 4 m	m³	90.00		
	701.02.02	Extra over sub-item 701.02.01 for excavation in hard material irrespective of depth	m³	10.00		
	701.02.03	Extra over sub-item 701.02.01 for additional excavation required by the Engineer after the excavation has been completed	m³	40.00		
	701.04	**Dewatering of foundation excavations**	Lump	1.00		
	701.05	**Backfill to excavations utilizing:**				
	701.05.01	Material from the excavations compacted to:				
	701.05.01.01	95% of Mod AASHTO	m³	100.00		
	701.05.02	Imported Material compacted to:				
	701.05.02.01	95% of Mod AASHTO (Min G7 material to TRH14)	m³	14.00		
	BB701.14	**Removal of spoil material**				
	BB701.14.0	To positions provided by the contractor	m³	80.00		
	702	**FALSEWORK, FORMWORK AND CONCRETE FINISH**				
	702.02	**Formwork class F2 surface finish**				
	702.02.01	Single-surface formwork				
	702.02.01.0	Plane, horizontal, internally to soffit of main roof slab	m²	32.00		
	702.02.01.01	Plane, horizontal, externally to soffit of main roof slab	m²	32.00		
	702.02.02	Double-surface formwork (both sides measured)				
	702.02.02.01	Plane, vertical, to walls	m²	125.00		
	702.06	**Formwork to openings**	m²	20.00		
	703	**STEEL REINFORCEMENT FOR STRUCTURES**				
	703.03	**Welded steel fabric for -**				
	703.03.01	Floor slab of building				
	703.03.01.0	Ref 395		116.00		
	703.04	**Reinforcement for: All foundations, walls, column, slab and roof slab**				
	703.04.02	High-yield-stress steel	kg			
	703.04.02.0	Bars with 8 mm dia		0.09		
	703.04.02.0	Bars with 10 mm dia		0.09		
	703.04.02.03	Bars with 12 mm dia	t	2.60		
	703.04.02.04	Bars with 16 mm dia	t	0.60		
	703.04.02.0	Bars with 20mm dia	t	0.01		

TOTAL CARRIED FORWARD	

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE C: BULK VALVE CHAMBERS
CONTRACT NO:WSBU 01 2025/26
SECTION 700

	TOTAL BROUGHT FORWARD					
	Section 704	**CONCRETE**				
	704.01	**Cast in situ concrete**				
	704.01.01	Class 30/19 mm concrete. Concrete for water retaining structures as per specialist design: Cement content to be 420 kg/m³ Cement type to be CEM2 B-V Water Cement Ratio to be 0.4				
	704.01.01.0	Foundation and walls	m³	32.00		
	704.01.01.02	Roof slabs	m³	8.00		
	704.01.02	Class 15/19 concrete				
	704.01.02.0	75 mm thick blinding layer and forming around sump	m³	10.00		
	704.01.02.02	Concrete Screed to Falls (1 Cement CEM1:5 River sand)	m³	13.00		
	B701.15	**MISCELLANEOUS VALVE CHAMBER ITEMS**				
	B701.15.01	Stainless steel cat ladders supplied and installed as per CoT details (Drawing No 7515-VC222). Approx 3 m long, with 20 dia plug welded rungs, bolted to wall and floor with chemical anchors; all inclusive.	No	1.00		
	B701.15.02	250mmØ x 1180mm Bollard supplied and installed: with exposed aggregate planted to 300mm deep, refer CoT detail	No	4.00		
	B701.15.03	Waterproofing: 3 Coats of a Heavy waterproofing compound applied to the external walls.	m2	125.00		
	B701.15.04	Manhole Access: "Screw Lid" manhole access unit. Refer CoT Detail Drawing No 7515-VC223.	No	1.00		
	B701.15.05	Strap and Pipe Support steel work on concrete pedestal: Refer CoT Detail Drawing No 7515-VC219. Concrete for support work measured elsewhere.	No	4.00		
	B701.15.06	Vermin Proof Air vent supplied and installed: Refer CoT Detail Drawing No 7515-VC222.	No	2.00		
	B701.15.07	500mm x 500mm Sump completely supplied and installed with 150mm x 110mm PVC-U Sewer Gulley with CI Grate at low point. Refer CoT Detail Drawing No 7515-VC207.	No	1.00		
	CHAMBER E TOTAL CARRIED FORWARD TO SUMMARY					

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE D: WATER RETICULATION
CONTRACT NO:WSBU 01 2025/26

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	101	**SITE CLEARING AND GRUBBING**				
	101.01	**Clearing and grubbing**				
	B101.01.02	Strips on pipeline route up to 2.5m wide for water reticulation	m	35161.104		
	B101.02	**Cutting and removing large trees with a girth:**				
	101.02.01	Exceeding 1m and up to and including 2m	No	15		
	101.04	**Reclearing areas (only on the written instructions of the Engineer)**				
	104.01.02	Strips on pipeline route up to 2.5m wide	m	10,548		
	LI101.03	**Grubbing and the removal of the stumps and roots of large trees with a girth:**				
	101.03.01	Exceeding 1m and up to and including 2m	No	20		
	101.05	**Removal and Disposal of specific elements**				
	101.05.02	Concrete or brick elements (reinforced or unreinforced)	m^3	50		
	B101.05.02.01	Demolition of existing floor slabs	m2	30		
	B101.05.02.02	Block Paved driveways and walkways	m^2	1,000		
	B101.05.03	Asphalt surfacing	m^2	700		
TOTAL CARRIED FORWARD TO SUMMARY						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE D: WATER RETICULATION
CONTRACT NO:WSBU 01 2025/26
SECTION 102

ITEM	PAYMEN	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	102	**ACCOMMODATION OF TRAFFIC**				
	102.04	**Watering of bypasses**	kl	211		
	102.05	**Blading of bypasses by motor grader**	km pass	5		
	102.07	**Existing roads used as bypasses**	prov sum	1	R 20,000.00	R 20,000.00
	102.10	**Temporary fencing and gates**				
	102.10.01	Temporary fencing	m	84		
	102.10.02	Temporary gates	No	5		
	102.12	**Provision of temporary bridges for maintaining access to properties**				
	102.12.01	Temporary pedestrian bridges	No	20		
	102.12.02	Temporary vehicular bridges	No	20		
	102.13	**Moving of temporary bridges to and their re-erection in entirely new positions**				
	102.13.01	Temporary pedestrian bridges	No	20		
	102.13.02	Temporary vehicular bridges	No	20		
	102.14	**Temporary traffic-control facilities**				
	102.14.01	Flagmen	month	24		
	102.14.02	Portable STOP and GO-Ry signs	No	4		
	102.14.04	Road signs, TR-series, 1200mm in diameter or 900mm x 675mm if rectangular	No	15		
	102.14.07	Danger plates and delineators	No	10		
	102.14.08	Movable barricades (chevron and ROAD CLOSED types)	No	4		
	102.14.10	Plastic New Jersey Barrier	No	33		
	102.15	**Re-use or removal of traffic-control facilities**				
	102.15.02	Roads signs, TR and TW-series	No	15		
	102.15.04	Danger plates and delineators	No	10		
	102.15.05	Plastic New Jersey Barrier	No	48		
TOTAL CARRIED FORWARD TO SUMMARY						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE D: WATER RETICULATION
CONTRACT NO:WSBU 01 2025/26
SECTION 103

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	103	**OVERHAUL**				
	B103.01	Overhaul on material hauled outside the defined free-haul boundaries	m³km	169,883		
TOTAL CARRIED FORWARD TO SUMMARY						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE D: WATER RETICULATION
CONTRACT NO:WSBU 01 2025/26
SECTION 202

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		TRENCHING				
	202.01	**Trench excavations**				
	202.01.01	Up to 1,0 m wide				
	202.01.01.01	Over 1,0m and up to 1,5m deep	m^3	52,742		
	202.01.01.02	Over 1,5m to 2,0m deep	m^3	2,059		
	202.02	**Extra over items 202.07.02.01,202.07.02.03, 202.07.02.04 and 202.07.02.09 for excavating in -**				
	202.02.02	Hard material	m^3	21,920		
	202.03	**Excavations outside the normal trench profile**	m^3	5,480		
	202.04	**Hand excavation (extra over item 202.01)**	m^3	2740		
	202.06	**The backfilling of trenches (excluding backfill around the pipe barrel) with material obtained from excavations**	m^3	41,101		
	202.07	**Extra over items 202.06 and 202.13 for using backfill material obtained -**				
	202.07.01	From sources provided by the Contractor	m^3	16,440		
	202.08	**Backfilling additional excavations in trench floor, using -**				
	202.08.01	Class 20MPa/ 19mm concrete	m^3	10		
	202.08.02	Concrete aggregate, max size 38mm	m^3	250		
	202.1	**Removal of spoil material**				
	202.10.01	To positions provided by the contractor	m^3	13,700		
	202.12	**Extra over item 202.06 for additional compaction of backfill to 93% of modified AASHTO density in road reserves**	m^3	150		
	202.13	**Backfilling trenches with soilcrete**	m^3	60		
	202.14	**Reinstatement of Butimensurfaced roads**	m^2	219		
TOTAL CARRIED FORWARD TO SUMMARY						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE D: WATER RETICULATION
CONTRACT NO:WSBU 01 2025/26
SECTION 402

ITEM	PAYME	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	402	**WATER RETICULATION AND WATER MAINS CONSTRUCTION**				
	LI402.01	**Supplying, laying and jointing of water pipes irrespective of depth**				
	LI402.01.01	**uPVC Class 12 pipes as per the SANS 966 Part 1 (or similar) on a bedding for flexible pipes**				
	402.01.01.01	110mm dia	m	10,100		
	402.01.01.02	160mm dia	m	800		
	402.01.01.03	200mm dia	m	2,070		
	402.01.01.04	250mm dia	m	600		
	402.01.01.05	315mm dia	m	275		
	402.01.01.06	25mm dia	m	5600		
	402.01.01.07	630mm dia	m	200		
	402.01.01.08	500mm dia	m	400		
	LI402.01.02	**O-PVC Class 500, PN 12.5 pipes as per the ISO 16422:2014 (or similar) on a bedding for flexible pipes**				
	402.01.02.01	400mm dia	m	1,600		
	LI402.02	**Extra over item 402.01 for providing and installing fittings, valves and specials:**				
	402.02.01	**11.25 Degree Class 16 uPVC Bends**				
	402.02.01.01	110mm dia	No	36		
	402.02.01.02	160mm dia	No	4		
	402.02.01.03	200mm dia	No	7		
	402.02.01.04	250mm dia	No	2		
	402.02.01.05	315mm dia	No	1		
	402.02.02	**11.25 Degree, segmented medium radius steel bends with Klamflex couplings for PVC-O**				
	402.02.01.01	400mm dia	No	8		
	402.02.03	**22.5 Degree Class 16 uPVC Bends**				
	402.02.03.01	110mm dia	No	32		
	402.02.03.02	160mm dia	No	2		
TOTAL CARRIED FORWARD						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE D: WATER RETICULATION
CONTRACT NO:WSBU 01 2025/26
SECTION 402

	TOTAL BROUGHT FORWARD					
	402.02.03.03	200mm dia	No	1		
	402.02.03.04	250mm dia	No	4		
	402.02.03.05	315mm dia	No	1		
	402.02.04	**22.5 Degree, segmented medium radius steel bends with Klamflex couplings for PVC-O**				
	402.02.04.01	400mm dia	No	9		
	402.02.05	**45 Degree Class 16 uPVC Bends**				
	402.02.05.01	90mm dia	No	2		
	402.02.05.01	110mm dia	No	37		
	402.02.05.02	160mm dia	No	5		
	402.02.05.03	200mm dia	No	1		
	402.02.05.04	250mm dia	No	4		
	402.02.05.05	315mm dia	No	1		
	402.02.05.06	355mm dia	No	1		
	402.02.06	**45 Degree, segmented medium radius steel bends with Klamflex couplings for PVC-O**				
	402.02.06.01	400mm dia	No	1		
	402.02.07	**90 Degree Class 16 uPVC Bends**				
	402.02.07.01	110mm dia	No	53		
	402.02.07.02	160mm dia	No	2		
	402.02.07.03	200mm dia	No	1		
	402.02.07.04	250mm dia	No	1		
	402.02.07.05	315mm dia	No	1		
	402.02.05.06	355mm dia	No	1		
	TOTAL CARRIED FORWARD					

		TOTAL BROUGHT FORWARD				
	402.02.08	**90 Degree, segmented medium radius steel bends with Klamflex couplings for PVC-O**				
	402.02.08.01	400mm dia	No	1		
	402.02.05	**Supply and install HDPE Type IV Class 16 erf connections complete as shown on drawings, including excavation, backfilling, excluding saddles.**				
	402.02.05.01	25mm dia Double Long erf connection	No	507		
	402.02.05.02	25mm dia Single Long erf connection	No	24		
	402.02.05.03	25mm dia Double Short erf connection	No	503		
	402.02.05.04	25mm dia Single Short erf connection	No	39		
	402.02.06	**SG iron fittings Grade 14 according to SABS 546, bitumen dipped, socket ending for uPVC piping according to SABS 966 with rubber rings for 1600 kPa working pressure.**				
	402.02.06.01	**Reducers**				
	402.02.06.1.1	110 mm x 75mm dia.	No	5		
	402.02.06.1.2	110 mm x 90mm dia.	No	5		
	402.02.06.1.3	160 mm x 75mm dia.	No	3		
	402.02.06.1.4	160 mm x 90mm dia.	No	5		
	402.02.06.1.5	160 mm x 110mm dia.	No	15		
	402.02.06.1.6	200 mm x 75mm dia.	No	4		
	402.02.06.1.7	200 mm x 90mm dia.	No	4		
	402.02.06.1.8	200 mm x 110mm dia.	No	2		
	402.02.06.1.9	200 mm x 160mm dia.	No	1		
	402.02.06.1.10	250 mm x 90mm dia.	No	4		
	402.02.06.1.11	250 mm x 110mm dia.	No	1		
	402.02.06.1.12	250 mm x 160mm dia.	No	3		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE D: WATER RETICULATION
CONTRACT NO:WSBU 01 2025/26
SECTION 402

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		TOTAL BROUGHT FORWARD				
	402.02.06.1.13	250 mm x 200mm dia.	No	1		
	402.02.06.1.14	315 mm x 250mm dia.	No	3		
	402.02.06	SG iron fittings Grade 14 according to SABS 546, bitumen dipped, socket ending for uPVC piping according to SABS 966 with rubber rings for 1600 kPa working pressure.				
	402.02.06.01	**Reducers**				
	402.02.06.1.1	110 mm x 75mm dia.	No	5		
	402.02.06.1.2	110 mm x 90mm dia.	No	5		
	402.02.06.1.3	160 mm x 75mm dia.	No	3		
	402.02.06.1.4	160 mm x 90mm dia.	No	5		
	402.02.06.1.5	160 mm x 110mm dia.	No	15		
	402.02.06.1.6	200 mm x 75mm dia.	No	4		
	402.02.06.1.7	200 mm x 90mm dia.	No	4		
	402.02.06.1.8	200 mm x 110mm dia.	No	2		
	402.02.06.1.9	200 mm x 160mm dia.	No	1		
	402.02.06.1.10	250 mm x 90mm dia.	No	3		
	402.02.06.1.11	250 mm x 110mm dia.	No	1		
	402.02.06.1.12	250 mm x 160mm dia.	No	3		
	402.02.06.1.13	250 mm x 200mm dia.	No	1		
	402.02.06.1.14	315 mm x 250mm dia.	No	3		
	402.02.06.02	**Equal T-Pieces for:**				
	402.02.06.02.1	110 x 110 Tee	No	68		
	402.02.06.02.2	160 x 160 Tee	No	15		
	402.02.06.02.3	200 x 200 Tee	No	10		
	402.02.06.02.4	250 x 250 Tee	No	8		
	402.02.06.02.5	315 x 315 Tee	No	2		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE D: WATER RETICULATION
CONTRACT NO:WSBU 01 2025/26
SECTION 402

		TOTAL BROUGHT FORWARD				
	402.02.06.07	**Unequal Tee**				
	402.02.06.07.1	110mm dia x 90mm dia	No	5		
	402.02.06.07.2	160mm dia x 90mm dia	No	4		
	402.02.06.07.3	160mm dia x 110mm dia	No	2		
	402.02.06.07.4	200mm dia x 75mm dia	No	6		
	402.02.06.07.5	200mm dia x 90mm dia	No	3		
	402.02.06.07.6	200mm dia x 110mm dia	No	4		
	402.02.06.07.7	250mm dia x 90mm dia	No	5		
	402.02.06.07.8	250mm dia x 160mm dia	No	1		
	402.02.06.07.9	315mm dia x 160mm dia	No	2		
	402.02.06.08	**End cap**				
	402.02.06.08.1	75mm dia.	No	2		
	402.02.06.08.2	90mm dia.	No	220		
	402.02.06.08.3	110mm dia.	No	18		
	402.02.06.08.4	160mm dia.	No	20		
	402.02.06.08.5	315mm dia.	No	2		
	402.02.06.08.6	400mm dia.	No	23		
	402.02.07	**Mild Steel flanged reducer, flanged to SANS 1123 Table 1600/3**				
	402.02.07.01	**Reducers**				
	402.02.07.01.01	400 mm x 90mm dia.	No	6		
	402.02.07.01.02	400 mm x 110mm dia.	No	3		
	402.02.07.01.03	400 mm x 315mm dia.	No	3		
	402.02.07.02	Equal Tees				
	402.02.07.02.01	400 x 400 Tee	No	14		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE D: WATER RETICULATION
CONTRACT NO:WSBU 01 2025/26
SECTION 402

		TOTAL BROUGHT FORWARD				
	402.02.07.03	**Unequal Tee**				
	402.02.07.03.01	400mm dia x 250mm dia	No	2		
	402.02.07.03.02	400mm dia x 110mm dia	No	2		
	402.02.07.03.03	400mm dia x 80mm dia	No	2		
	402.02.08	**Class 16 gate valves with socketed ends, anti-clockwise closing non-rising spindle type for the following sizes:**				
	402.02.08.01	110mm dia	No	1		
	402.02.08.02	160mm dia	No	1		
	402.02.08.03	200mm dia	No	1		
	402.02.08.04	250mm dia	No	1		
	402.02.08.05	315mm dia	No	1		
	402.02.08.06	400mm dia	No	1		
	402.02.09	**Class 16 flanged gate valves with caps (flanged, flanges drilled to table 16), anti-clockwise closing non-rising spindle type for the following sizes:**				
	402.02.09.01	110mm dia	No	68		
	402.02.09.02	160mm dia	No	3		
	402.02.09.03	200mm dia	No	3		
	402.02.09.04	250mm dia	No	3		
	402.02.09.05	315mm dia	No	3		
	402.02.09.06	400mm dia	No	3		
	402.02.10	**Outlet standard 40mm dia BSP thread. Saddles to fit the following pipes:**				
	402.02.10.01	110mm dia	No	1,074		
	402.02.10.02	160mm dia	No	24		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE D: WATER RETICULATION
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SECTION 402

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		TOTAL BROUGHT FORWARD				
	402.02.10.03	200mm dia	No	23		
	402.02.10.04	250mm dia	No	43		
	402.02.10.05	315mm dia	No	16		
	402.02.10.06	400mm dia	No	46		
	402.02.11	**SABS ISO 4427 PE100 Class PN 12.5 HDPE pipes (including all fittings and couplings)**				
	402.02.11.01	25mm dia.	m	3,506		
	402.02.12	**Viking Johnson maxi fit repair coupling**				
	402.02.12.01	75mm dia	No	12		
	402.02.12.02	90mm dia	No	18		
	402.02.12.03	110mm dia	No	8		
	402.02.12.04	160mm dia	No	4		
	402.02.12.05	200mm dia	No	10		
	402.02.12.06	250mm dia	No	1		
	402.02.12.07	315mm dia	No	2		
	402.02.12.08	400mm dia	No	4		
	402.02.13	**Flange adaptors**				
	402.02.13.01	110mm dia	No	1		
	402.02.13.02	160mm dia	No	1		
	402.02.13.03	200mm dia	No	1		
	402.02.13.04	250mm dia	No	1		
	402.02.13.05	315mm dia	No	1		
	402.02.13.06	400mm dia	No	8		
	402.03	**Encasement of pipes with**				
	402.03.01	Class 15/19 concrete	m^3	10		
	402.03.02	Soilcrete	m^3	10		
		TOTAL CARRIED FORWARD				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE D: WATER RETICULATION
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SECTION 402

		TOTAL BROUGHT FORWARD				
	402.04	**Providing thrust blocks using class 15/19 concrete**	m^3	29		
	402.05	**Supplying and placing unscreened selected backfill material under, alongside and up to 200mm above pipe barrels using:**				
	402.05.03	Imported material from sources provided by the Employer	m^3	6,923		
	402.06	**Extra over item 402.05 for screening excavated material for selected backfill**	m^3	1,385		
	402.07	**Valve chambers complete for:**				
	402.07.01	Flanged gate valves not exceeding 200mm in dia:				
	402.07.01.01	110mm dia	No	74		
	402.07.01.02	160mm dia	No	3		
	402.07.01.03	200mm dia	No	3		
	402.07.01.04	250mm dia	No	3		
	402.07.02	Flanged gate valves exceeding 200mm in dia:				
	402.07.02.01	315mm dia	No	3		
	402.07.02.02	400mm dia	No	3		
	402.09	**Installation of hydrants**				
	402.09.01	Supply and install Tamper proof double-lug with stainless steel spindle as shown on drawing 7515-W106	No	55		
	402.10	**Sterilizing of pipelines**				
	402.10.01	110mm dia	m	10,100		
	402.10.02	160mm dia	m	800		
	402.10.03	200mm dia	m	2,070		
	402.10.04	250mm dia	m	600		
	402.10.05	315mm dia	m	262		
	402.10.06	400mm dia	m	1,600		
		TOTAL CARRIED FORWARD TO SUMMARY				

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE D: WATER RETICULATION
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SECTION 403

ITEM	PAYM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	403	**WATER RETICULATION AND WATER MAINS TESTING**				
	403.01	**Hydraulic field-testing of pipelines**				
	403.01.01	110mm dia	m	10,100		
	403.01.02	160mm dia	m	800		
	403.01.03	200mm dia	m	2,070		
	403.01.04	250mm dia	m	600		
	403.01.05	315mm dia	m	275		
	403.01.06	400mm dia	m	1,600		
	403.01.07	500mm dia	m	1,000		
TOTAL CARRIED FORWARD TO SUMMARY						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE D: WATER RETICULATION
CONTRACT NO:WSBU 01 2025/26
SECTION 501

ITEM	PAYMEN	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	501	**SUBSURFACE DRAINS AND DRAINAGE BLANKETS**				
	501.01	**Crushed stone**				
	501.01.01	Graded crushed stone	m³	562		
	501.02	**Procuring of filter sand**	Prov/Su	1	R 50,000.00	R 50,000.00
	501.03	**Placing of filter sand**	m³	562		
	501.04	**Geotextiles (Bidim U24 or similar)**	m2	5,620		
	501.05	**Pipes in subsurface drains**				
	501.05.01	uPVC Pipes complete with couplings				
	501.05.01.01	110mm dia perforated	m	3,747		
TOTAL CARRIED FORWARD TO SUMMARY						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SCHEDULE D: WATER RETICULATION
CONTRACT NO:WSBU 01 2025/26
SECTION 804

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	804	**PIPE JACKING AND BORING**				
	804.01	**Establishment of site**				
	804.01.01	Pipe Boring	lump sum	1.00		
	804.02	Access to and from the thrust and reception pits	lump sum	1.00		
	804.03	**Excavating in soft material for:**				
	B804.03.02	Pipe boring pits	m³	50		
	804.04	Extra over item 804.03 for excavating hard material	m³	36		
	804.05	**Backfilling the :**				
	804.05.02	Pipe boring pits with:				
	804.05.02.01	Excavated material	m³	50		
	804.05.02.02	Imported material	m³	35		
	804.08	**Boring of holes through:**				
	804.08.01	**Soft material**				
	804.08.01.02	500mm Dia Hole	m	170		
	804.08.02	**Hard material**				
	804.08.02.02	500mm Dia Hole	m	34		
	804.09	**Supply, jointing and inserting pipes**				
	804.09.01	400mm HDPE PE100 Class PN16 as per the SANS ISO 4427	m	40		
	804.09.02	500mm HDPE PE100 Class PN16 as per the SANS ISO 4427	m	170		
	804.11	**Grouting of voids for pipe boring**				
	804.11.01	315mm diameter pipe	m	40		
	804.11.02	500mm diameter pipe	m	170		
	804.12	**Timbering and shoring left temporarily in the thrust and reception pits and pipe boring pits**	week	3		
TOTAL CARRIED FORWARD TO SUMMARY						

COMPLETION OF BULK WATER (STEEL PIPE) AND RETICULATION IN MAMELODI EXTENSION 11
SUMMARY OF SECTIONS
CONTRACT NO: WSBU 01 2025/26

SECTION	DESCRIPTION	AMOUNT (PER SECTION)	TOTAL AMOUNT
1	**SHEDULE A: GENERAL REQUIREMENTS AND ENGINEERS ACCOMODATION**		
001	GENERAL REQUIREMENTS AND CHARGES		
002	ENGINEER'S ACCOMMODATION		
1	**SUB-TOTAL SHEDULE A**		
	SCHEDULE B: BULK PIPELINE FROM CONNECTION TO WATER RETICULATION		
101	SITE CLEARING AND GRUBBING		
102	ACCOMMODATION OF TRAFFIC		
103	OVERHAUL		
202	TRENCHING		
402	WATER RETICULATION AND WATER MAINS CONSTRUCTION		
403	WATER RETICULATION AND WATER MAINS TESTING		
501	SUB-SURFACE DRAINS & DRAINAGE BLANKET		
903	QUALITY CONTROL TESTING		
B10	CATHODIC PROTECTION		
2	**SUB-TOTAL SCHEDULE B**		
	SCHEDULE C: BULK VALVE CHAMBERS		
	VALVE CHAMBER A		
	VALVE CHAMBER B		
	VALVE CHAMBER C & F		
	VALVE CHAMBER D & G		
	VALVE CHAMBER N		
	VALVE CHAMBER O		
	VALVE CHAMBER E		
	VALVE CHAMBER J, K & L		
	VALVE CHAMBER P		
3	**SUB-TOTAL SHEDULE C**		
	SCHEDULE D: WATER RETICULATION		
101	SITE CLEARING AND GRUBBING		
102	ACCOMMODATION OF TRAFFIC		
103	OVERHAUL		
202	TRENCHING		
402	WATER RETICULATION AND WATER MAINS CONSTRUCTION		
403	WATER RETICULATION AND WATER MAINS TESTING		
501	SUB-SURFACE DRAINS & DRAINAGE BLANKET		
804	PIPE JACKING		
4	**SUB-TOTAL SHEDULE D**		
5	**SUB-TOTAL A**		
6	CONTINGENCIES 10%		
7	**SUB-TOTAL B**		
	ESCALATION 5%		
	SUB-TOTAL C		
8	VAT	15.00%	
9	**TOTAL CARRIED FORWARD TO FORM OF OFFER**		

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PORTION 2: CONTRACT

PART C3: SCOPE OF WORK

SCOPE OF WORK

INDEX

NOTE: ALL DRAWINGS REFERED TO UNDER THIS SECTION OF THE TENDER DOCUMENT ARE INCLUDED UNDER VOLUME 2

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C3.1 DESCRIPTION OF THE WORKS

C3.1 DESCRIPTION OF THE WORKS

3.1.1 EMPLOYER'S OBJECTIVES

The employer's objectives are to upgrade and complete the Bulk Water and Reticulation with Metered Yard Connections in Mamelodi Ext.11.

Works earmarked for Labour Intensive construction methods will be numbered with a prefix "LI" in the bill of quantities to distinguish them from the conventional construction works. Such work shall be constructed using local workers who are temporarily employedin terms of the project specification.

Work earmarked for Local Sub-contractors 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 local subcontractors who will be temporarily employed in terms of the project specifications.

The Contractors will be appointed with a minimum Construction Industry Development Board (CIDB) grading of **8CE or Higher.**

3.1.2 OVERVIEW OF THE WORKS

The works consists of an upgrade and relocation of the Mamelodi/Bronberg bulk water line which is currently in operation and is directly linked to the R5 and R6 reservoir zones through a PRV system. The works also include construction of a water reticulation network and new installation of bulk water pipeline and the associated concrete chambers. Below is the original scope of work for the project.

(i) 1042mm diameter x 1010m long x 42 steel pipeline from Chamber A to Chamber E is installed.

(ii) 711mm diameter x 2010m long x 42 steel pipeline from Chamber E to Chamber P is installed.

(iii) 2500 x 2000m x 200 jacking box culverts has been installed across the GPDRT Road Reserve.

(iv) Chamber A, B, C, D & G has been constructed.

(v) 110mm diameter x 6500m long pipeline water reticulation has been installed.

3.1.3 EXTENT OF THE WORKS

Below is the scope of work remaining after the contractor was terminated. The extent of the Works consists of:

3.1.3.1 Construction of new 1042mm diameter x 7 0 m long X42 steel pipeline from Connection Chamber A to Chamber E complete;

3.1.3.2 Construction of new 711mm diameter x 980 m long X 42 steel pipeline from ChamberE to Chamber P complete;

3.1.3.3 Pipe Jacking 2500 x 2000 x 200mm jacking box culverts across one GPDRT Roads Reserves and below one Transnet Railway line including all associated access chambers.

3.1.3.4 Construction of various other chambers on the bulk pipe line;

3.1.3.5 Construction of new 110 mm diameter x 7430 m long pipeline water reticulation;

3.1.3.6 Construction of new 160 mm diameter x 788 m long pipeline water reticulation;

3.1.3.7 Construction of new 200 mm diameter x 2066 m long pipeline water reticulation;

3.1.3.8 Construction of new 250 mm diameter x 590 m long pipeline water reticulation;

3.1.3.9 Construction of new 315 mm diameter x 262 m long pipeline water reticulation;

3.1.3.10 Construction of new 400 mm diameter x 1500 m long pipeline water reticulation;

3.1.3.11 Construction of 1 871 house connections;

3.1.3.12 Replacement of existing steel pipework to uPVC where necessary;

3.1.3.13 Decommissioning of old pipelines and structures;

3.1.3.14 Cathodic protection of steel pipeline.

3.1.4 Nature of the Works

a) Conventional construction methods

- The excavation of the trenches and installation of the pipes will be done conventionally due to the size of the pipes.
- The construction of the valve chambers will be done conventionally due to the specialist skills needed and nature of work.
- The pipe jacking across gautrans road reserves and Transnet railway line will be done by suitably qualified and experienced personnel and equipment or sub-contractor.

b) Labour Intensive Construction methods (EPWP)

Items deemed suitable for construction using labour intensive construction methods are prefixed “LI” in the schedule of quantities. The employer’s further objective is to optimise labour opportunities, and the contractor shall be required to construct the works accordingly. The “LI” activities, inter alia, include but are not limited to:

- Excavate by hand to expose existing services and backfill.
- Cutting and removing of large trees with girth.
- Grubbing and removal of the stumps and roots of large trees with girth.
- The preparation of the bedding and blanket in pipe trenches.
- Laying and jointing of water pipes irrespective of depth.
- Install pipe fittings.
- Backfilling and compaction of the pipe trenches and around valve chambers and manholes.
- The installation of the security fence.
- Fixing damaged fences and walls.

c) Construction and Materials Manager

The Main Contractor will be required to appoint a Materials and Construction Manager to mentor, train and assist the appointed local emerging contractors and the daily activities are listed in C3.5.6 and C3.5.7. The minimum qualification for the materials manager will be a National Diploma in Civil Engineering or a NationalCertificate (N6) in Civil Engineering.

In areas where required by the Engineer the contractor will be required to make use of local emerging contractors to execute dedicated portions of the work. Only approved tendered rates will apply for work executed and the contractor must ensure that the local emerging contractors are paid a market-related price for work done. The contractor will be compensated for the additional site supervision, management of local emerging contractors, material management, training and personal protective clothing that may be required for the local emerging contractorsas a percentage value of the work done by the subcontractor.

3.1.5 Local Economic Participation Specification

3.1.5.1 PREAMBLE

The City of Tshwane has a long-term commitment to the protection and Participation of local business and industry, including the Participation and support of construction skills and – capacity. In addition, the municipality is committed to the provision of as many job opportunitiesas possible to its local communities and therefore to the consistent pursuance and achievementof the objectives of EPWP. Having regard for the specialized nature of this project, the municipality in its role as Employer requires the maximum possible level of Local Economic Participation, as defined in this contract, as well is the maximum possible level of employmentof local skills and labour. This specification therefore forms a very important aspect of this contract, which will be enforced and will require the full attention of the Contractor for the duration of the contract.

3.1.5.2 DEFINITIONS

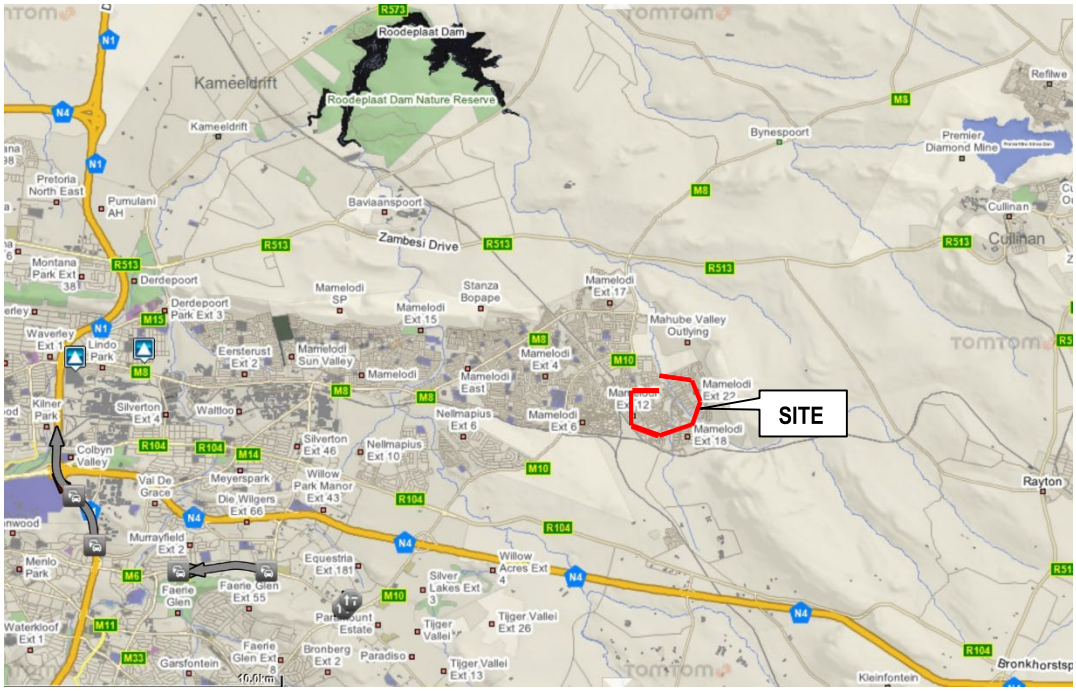
"**Local Sub-Contractor"** means a legal business entity with its registered office and/or physical address in the City of Tshwane municipal area, duly registered with the Construction Industry Participation Board (CIDB) and with the required CIDB grading and who has actively conductedbusiness in the City of Tshwane municipal area for a period of more than 12 months.

"**Local Supplier"** means a legal business entity with its registered office and/or physical address in the City of Tshwane municipal area who has actively conducted business in the City of Tshwane municipal area for a period of more than 12 months and who supplies goods or materials directly to the end user.

3.1.6 Location of Site

Mamelodi Ext 11 is an informal settlement that is in the Mamelodi Township. The Mamelodi Township is located approximately 28 km East of the Pretoria CBD along the M8 (Stromvoel) corridor.

GPS coordinates are 25°42'09"S, 28°19'38"E, please refer to Figure 1 below:



3.1.7 Geotechnical Information

Site Conditions

A geotechnical investigation for the pipe jacking positions is being conducted.

3.1.8 Existing Services

All existing services shall be indicated to the contractor where after he will assume full responsibility for maintaining these in good running order. It shall be understood that the production of the existing plant shall in no way be impaired during the contract.

3.1.9 Surveying and Cadastral Beacons (including Stand pegs)

The Contractor shall be held responsible for the cost incurred in replacing or repositioningof any cadastral beacons which may have been disturbed by his actions.

Under no circumstances shall cadastral beacons be replaced by unauthorized persons and the Engineer shall be informed immediately of such disturbed beacons. The Engineer shall arrange for the replacement of any beacons by a competent Land Surveyor.

3.1.10 Supplying of Materials

All materials 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.

3.1.11 Quality Control

It is the responsibility of the Contractor to deliver work of quality and accuracy that is in accordance with the specifications and drawings, and the Contractor shall at his own costprovide a quality control system 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. This also includes work done by subcontractors, including nominated subcontractors for specialized work or otherwise.

The cost of all supervision and control, test included, performed by the 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 Contractor’s attention is drawn to the stipulations of the different sections of the specifications regarding the minimum frequency of test to ensure proper quality control. The Contractor shall increase this frequency if he deems fit to ensure appropriate control.

The 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 that it conforms with the relevant specifications.

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C3.2 ENGINEERING

C3.2 ENGINEERING

C3.2.1 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 Service Delivery Department: Water and Sanitation of the CoT (Revised July 2004).

ii) Standard specification for municipal Civil Engineering Works Series 4: Water Reticulation and Water Mains (September 2000) as supplied by the Water and the Environment Department, Water Supply Division of the City Council of Pretoria (Incorporated in the City of Tshwane).

iii) Guidelines for the provision of engineering services and amenities in residentialtownship development by the National Housing Board (Red Book).

iv) General Conditions of Contract for Construction Works (2015) (3rd Edition) by the South African Institution of Civil Engineers.

v) Standard Specifications for Municipal Civil Engineering Works of the City of Tshwane (Third Edition 2005).

C3.2.2 DESIGN & SPECIFICATIONS

C3.2.2.1 PIPELINES (STEEL PIPES)

1. Description of Steel Pipes and Specials

Underground Pipes:

Steel pipes shall be Grade X42 in terms of API 5L. Stainless steel pipes shall be Grade 316 in terms of ASTM A312. Steel and stainless-steel pipes shall be epoxy lined and coated in compliance with SANS 1217 to a dry film thickness of 600 micron minimum.

Underground flanges shall be covered in profiling mastic and double tape wrapped.

Fittings and Specials (within valve chamber or reservoir or cast into concretein reservoir or through valve chamber walls):

Steel pipe fittings and specials shall be Grade X42 in terms of API 5L. Stainless steel pipe fittings and specials shall be Grade 316 in terms of ASTM A312. Steel and stainless steel pipes shall be epoxy lined and coated in compliance with SANS 1217 to a dry film thickness of 600 micron minimum.

2. Dimensional Specification of Pipes

All pipes to conform to API 5L or SANS 719.

3. Coating Specification

Fusion Bonded Polyethylene Coatings

The pipe coating shall be Sintakote II complying with all aspects of AS 1193, AS 4131 and AS 4321 of the latest revisions.

All coating materials shall be supplied complete with an original ISO 17050-1 Certificates of Conformity (COC) for the materials, clearly indicating compliance with all mechanical, physical and chemical properties of the coating, as defined in AS 4321, AS 1193 and AS 4131.

The supplier shall ensure that testing takes place as per AS 4321 Appendix A, as defined in **Table A1** for the pipeline coating at the mill. In addition to this, a detailedthird-party report indicating compliance per the 5 Yearly Type Testing shall be included in the bid and shall be approved by the client in writing before productioncommences. The annual testing as per **Table A1** shall also be submitted with the bid and shall be approved by the client in writing before production commences.

The minimum Dry Film Thickness (DFT) shall be 2.3 mm minimum or as per **Table 1** of AS 4321 for the different pipeline diameters as agreed by the Client.The pipeline frequency of testing during production shall be as per AS 4321.

Table 2.

The surface profile shall be angular and at least 60µ-75µ and the dust and debris level shall never exceed Class 2 ISO 8502-3 during production, the latter shall be confirmed during production on every 5th pipe and records shall form part of the hand-over pack issued to the Client. The cutback distance of the coating will be 75mm from the pipe end.

Three Layer Polyethylene (3LPE) Coatings

The 3LPE coating shall comply with ISO 21809-1, the Canadian Specification CSA Z245.20/Z245.21 is not applicable.

The materials supplied as part of the 3LPE coating, including the Fusion Bonded Epoxy (FBE), Copolymer adhesive and Polyethylene (PE) outer coating shall be supplied with ISO 10474 or EN 10204 Inspection Certificates 2.1 and 2.2, giving the results of the testing of coated pipes, as supplied on the contract/purchase order and signed by a representative of the client which has been duly authorised to issue such documents, by the client in writing.

Pipeline production and coating may not take place without a client approved Inspection and Testing Plan (ITP) document providing an overview of the sequence of inspections and tests, including appropriate resources and procedures. The client shall approve the ITP and Quality Control Procedure (QCP)in writing prior to coating production commencing.

Subsequent to the approval of the documentation detailed above, a Procedure Qualification Trial (PQT) shall take place and shall be witnessed by the client or theduly appointed and authorised person appointed by the client to witness that application of the coating and subsequent inspection/testing of its properties, to confirm that the Application Procedure Specification (APS) is adequate to produce a coating with the specified properties, carried out prior to the start of production.

The 3LPE shall be Type B coating, as per ISO 21809-1 **Table 1**.The

3LPE coating shall as a minimum be as follows:

FBE	0.30 mm
Adhesive	0.20 mm
HDPE	2.00 mm

The 3LPE shall have minimum total thickness as above, and on heavier wall pipesit shall comply with class B3, as per ISO 21809-1 **Table 2**.
The applicator shall use epoxy material that is in accordance with **Table 3**, ClassB, as per ISO 21809-1 and shall test the materials/ensure compliance as detailed above in accordance with ISO 10474 or EN 10204.
The applicator shall use adhesive material that is in accordance with **Table 4**,

Class B, as per ISO 21809-1 and shall test the materials/ensure compliance as detailed above in accordance

with ISO 10474 or EN 10204.

The applicator shall use PE/PP material that is in accordance with **Table 5**, Class B, as per ISO 21809-1 and shall test the materials/ensure compliance as detailed above in accordance with ISO 10474 or EN 10204.

The applicator shall provide batch certificates supplied by the manufacturer of eachmaterial and shall contain the information given in **Table 6** ISO 21809-1. The batchcertificate shall state test methods and acceptance criteria. The applicator shall identify the materials and shall confirm that the certificates comply and relate to thespecified materials, as well as the requirements stipulated in Clauses 8.3.2 and 8.3.3 ISO 21809-1.

Prior to the start of coating production and any specified PQT, the applicator shall prepare an APS as per Clause 9.2 ISO 21809-1.

The APS, including any client approved written revisions, shall be approved by theClient prior to the start of production and any specified PQT and they shall comply with the requirements of **Table 7**, Class B coating system.

The APS shall be verified by a PQT in accordance with ISO 21809-1 **Annexure L**. The applicator shall applicator shall prepare an ITP and a daily log to record qualitycontrol data in accordance with **Annexure L** of ISO 21809-1.

Prior to the commencement of the surface preparation for the coating operations, avisual inspection shall be performed on the bare steel pipes in order to verify that there are no steel or weld defects (welding slag, spatter or raised/sharp edges) or contamination with oil, grease, soil, dirt and similar contaminants.

In the event that steel defects are detected they shall be rectified using a file, light grinding or any other suitable tool as stipulated in API 1104 Clause 13.10. This intervention shall not reduce the pipe wall thickness below the tolerances specifiedin the relevant Project Documents. In case the steel defect is of the nature that simple correction of this defect cannot be performed, the pipe affected by this defect shall be quarantined until the appropriate measures are taken.

In case oil, grease, or any other residues (e.g. adhesive materials or similar contaminants) are present, then they shall be removed using a high-pressure waterbased detergent cleaner, and/or a suitable “solvent” as per the requirements of SSPC-SP-1 Specification. In the event of other “adherent” contaminant beingpresent, then power tool brushes or any other appropriate method may be utilised in order to remove the contaminant from the pipe surface prior to grit blasting.

The blast cleaning abrasives shall be, at all times, kept dry, clean and free from contamination. The blast cleaning shall be performed when the following conditionsare satisfied:

- The steel surface temperature is at least 3ºC above the ambient dew point, which shall be checked using a calibrated hygrometer or other method approved by Client.

- The steel surface shall have no traces of moisture;
- The steel surface is protected from bad weather conditions such as rain or thestrong wind which can bring contaminants such as soil, sand, dirt, salt or any other such similar contaminant.

In the case that the steel surface temperature is less than 3ºC above the ambient dew point or traces of moisture are detected on the steel surface, the steel surface shall be heated using induction heating until the steel surface temperature is within the range of 50ºC to 60ºC. This temperature shall be maintained until all of the moisture has been removed from the steel surface.

Abrasive blast cleaning shall be in strict compliance with ISO 21809-1 Clause 10.1.2 with the exception that the profile shall be measured using ISO 8503-4 (Stylus method), replica tape is not permitted.

As per ISO 8502-3, the cleanliness of the steel surface shall be measured using the ISO Form: “Preparation of Steel Substrates before Application of Paint and Related Products – Test for the Assessment of Surface Cleanliness – Part 3: Pressure Sensitive Tape Method.” As prescribed, a strip of clear tension tape shallbe placed, tacky side down, onto the blasted steel surface of the pipe aftercleaning. The tape shall then be removed from the surface and placed on a piece of white glossy paper where it will be compared to the cleanliness levels provided in the ISO 8502-3 specification procedure. This shall not exceed a “Debris” and “Dust” level of Class/Level 2 at any given time and shall be recorded during pipe production on at least every 5th pipe to confirm compliance and records shall be kept for the client, which may be inspected at any given time.

The salt level on the bare steel pipe surface shall be measured according to ISO 8502-2 and shall be a maximum of 20 mg NaCl/m². The basic procedure of the testshall be to dampen circular piece of test paper of known area with a specified volume of laboratory water containing less than 0.1µg/cm² of salt. The test paper shall then be applied to the pipe for a period of 2 minutes, after which the test paper will be removed from the pipe and its resistivity measured. The salt content on the pipe will then be determined through the calibrated Salt Contamination Meter which uses the negative correlation between resistivity and salt content, along with empirically measured historical data to provide a reading.
If excessive salt contamination is established (≥20 mg NaCl/m²) during production

testing, then the applicator shall ensure that a “Pre-Wash” system shall be employed prior to coating in order to remove the salt without causing “flash rusting” or any other “surface contamination”. The “pre-wash” shall be performed and shall form an integral part of the production Pre-Qualification Testing (PQT) before acceptance of the “Pre-Wash” procedure.

The maximum time elapsed after completion of the abrasive blasting operation, pre-wash (if applicable) and the application of the P primer shall be 120 minutes if RH < 85% and 60 minutes if RH > 85%. At no time shall the steel surface temperature be allowed to drop below the dew point before application of the P Primer. Should either of these conditions apply, the surface preparation shall

be re-inspected and/or the surface preparation repeated as required.

The application of the 3LPE coating shall be in accordance with the approved APSin accordance with Clauses 10.2.2.3 and 4 of ISO 21809-1.

Inspection and testing shall be carried out in accordance with the approved APS and ITP and shall meet the minimum requirements as stipulated in ISO 21809-1 **Tables 8** and **9**.

Coating repairs shall be addressed via a client approved APS and PQT as per Clause 12 ISO 21809-1.

Pipeline marking shall be as per the Clients requirements but shall as a minimum include all aspects detailed in Clause 13 of ISO 21809-1.

Alternative Coatings

Alternative coatings which comply with the same or possess very similar coatings properties as those detailed above, may be considered by the client.

Rigid Polyurethane (RPU) coatings shall comply fully with EN 10290 and RPU suppliers shall verify compliance with an independent third party approved type testing report that is not more than 4 years old.

Toll manufactured RPU products shall also comply fully with AWWA C222 and/or EN 10290 and RPU suppliers shall verify compliance with an independent third party approved type testing report that is not more than 4 years old showing full compliance with all of those requirements defined in EN 10290 Table 4. The international “holding” company and/or overseas “registered brand” manufacturers test reports are not deemed to be acceptable, as the products are toll manufactured locally with the potential that local generic components are used. Testing of both toll manufactured and imported products is mandatory. Imported products shall be issued with an ISO 17050-1 Certificate of Conformity from the supplier (point of origin) stipulating compliance with all chemical, physical and mechanical properties of the applied product, as per ISO 10474 or EN 10204 Inspection Certificates 2.1 and 2.2 and shall comply in full with Table 4 of EN 10290 or AWWA C222 for RPU products.

The minimum mainline and FJR coating dry film thickness for the RPU systemshall be 300100µ.

1. Field Joint Repairs (FJR) External Coatings

On both FBMDPE and 3LPE coatings, only Client approved DVGW Certified and or other Client approved certification materials may be used. All materials shall comply to the requirements of EN 12068 Class C HT50°C UV for both tapes and heat shrinkable sleeves (HSS).

An ISO 17050-1 Certificate of Conformity from the supplier (point of origin) stipulating compliance with all chemical, physical and mechanical properties of theapplied product, as per ISO 10474 or EN 10204 Inspection Certificates 3.1.B and 3.1 shall be submitted i.e. the DVGW Type Test Report

and in-house batch testingfor the batch(s) to be supplied.

Pipeline FJR repairs may not take place without a client approved Inspection and Testing Plan (ITP) document providing an overview of the sequence of inspections and tests, including appropriate resources and procedures. The client shall approve the ITP and Quality Control Procedure (QCP) in writing prior any FJR construction/production commencing.

Subsequent to the approval of the documentation detailed above, a Procedure Qualification Trial (PQT) shall take place and shall be witnessed by the client or theduly appointed and authorised person appointed by the client to witness that application of the FJR and subsequent inspection/testing of its properties, toconfirm that the Application Procedure Specification (APS) is adequate to produce a FJR system with the specified properties, carried out prior to the start of construction.

For RPU mainline coatings, the same RPU material shall be utilised, once the Client has approved the APS, QCP and ITP. An ISO 17050-1 Certificate of Conformity from the RPU supplier (point of origin) stipulating compliance with all chemical, physical and mechanical properties of the applied product, as per ISO 10474 or EN 10204 Inspection Certificates 2.1 and 2.2 shall be submitted i.e. the EN 10290 Type Test Report and in-house batch testing for the batch(s) to be supplied as per EN 10290.

2. Lining Specification

The pipe lining shall be suitable for immersion as per SANS ISO 12944-2 Im1 (Immersion) and shall be SANS 241 compliant. The minimum dry film thickness shall be 600µm.

The lining shall comply fully with EN 15655/EN10339 and suppliers shall verify compliance with an independent third party approved type testing report that is notmore than 4 years old.

Toll manufactured products shall also comply fully with EN 15655/EN10339 and suppliers shall verify compliance with an independent third party approved type testing report that is not more than 4 years old showing full compliance with Table 1 for the toll manufactured product. The international “holding” company and/or overseas “registered brand” manufacturers test reports are not deemed to be acceptable, as the products are toll manufactured locally with the potential that local generic components are used. Testing of both toll manufactured and imported products is mandatory. Imported products shall be issued with an ISO 17050-1 Certificate of Conformity from the supplier (point of origin) stipulating compliance with all chemical, physical and mechanical properties of the applied product, as perISO 10474 or EN 10204 Inspection Certificates 2.1 and 2.2.

All lining products shall possess a SANS 241 Potable Water Certificate, which shallnot be more than 2 years old and issued by SANS. Products without a SANS 241 Potable Water Certificate, shall be tested, and shall be based upon product supplied from the Toll Manufacturing Company, which will be inspected and collected by the client and/or client’s representative from a production run. No material may be applied without the client approving in writing the SANS Potable Water Certificate.

Pipeline production and lining may not take place without a client approved Inspection and Testing Plan (ITP) document providing an overview of the sequence of inspections and tests, including appropriate resources and procedures. The client shall approve the ITP and Quality Control Procedure (QCP)in writing prior to lining production commencing.

Subsequent to the approval of the documentation detailed above, a Procedure Qualification Trial (PQT) shall take place and shall be witnessed by the client or theduly appointed and authorised person appointed by the client to witness that application of the lining and subsequent inspection/testing of its properties, to confirm that the Application Procedure Specification (APS) is adequate to produce a lining with the specified properties, carried out prior to the start of production.

The cutback distance from the pipe end will be 75 mm for pipes that can be man entered and field repaired (pipe dia larger than 500 mm), otherwise no cutback willbe accepted.

3. Field Joint Repairs (FJR) Internal Linings

All completed Internal Field Joint Repairs (IFJR) shall comply with EN 15655/EN10339 and shall be potable water compliant as per the latest SANS regulations governing potable water. The materials shall be fully compatible with the main lining system and all compatibility testing as per EN 15655 / EN10339 as well as hot water soak testing at the materials maximum operating temperature (e.g. 55°C) for 15 days followed by a full reassessment of all EN 15655/EN10339 tests

including adhesion testing onto

the overlapped main lining, which will be undertaken by an approved independent third-party testing house, which has beenapproved by the Engineer and/or CoT. All proposed materials will have a proven track record with traceable project history and contactable references. All materialsshall have a valid SANS 241 Certificate which shall not be more than 4 years old and, on the provision, that the material certified has not been changed or altered in anyway.

An ISO 17050-1 Certificate of Conformity from the supplier (point of origin) stipulating compliance with all chemical, physical and mechanical properties of theapplied product, as per ISO 10474 or EN 10204 Inspection Certificates 2.1 and 2.2shall be submitted as well as an in-house batch testing for the batch(s) to be supplied. The supplier's laboratory and testing facilities shall also be ISO 9001 certified and/or ISO 17025.

Pipeline IFJR repairs may not take place without a client approved Inspection and Testing Plan (ITP) document providing an overview of the sequence of inspections and tests, including appropriate resources and procedures. The client shall approve the ITP and Quality Control Procedure (QCP) in writing prior any IFJR construction commences.

In the case that the steel surface temperature is less than 3ºC above the ambient dew point or traces of moisture are detected on the steel surface, the steel surfaceshall be heated using induction heating until the steel surface temperature is withinthe range of 50ºC to 60ºC. This temperature shall be maintained until all of the moisture has been removed from the steel surface.

Abrasive blast cleaning shall be in strict compliance with ISO 21809-1 Clause 10.1.2 to SA3 with the exception that the profile shall be measured using ISO8503-4 (Stylus method), replica tape is not permitted.

As per ISO 8502-3, the cleanliness of the steel surface shall be measured using the ISO Form: "Preparation of Steel Substrates before Application of Paint and Related Products – Test for the Assessment of Surface Cleanliness – Part 3: Pressure Sensitive Tape Method." As prescribed, a strip of clear tension tape shallbe placed, tacky side down, onto the blasted steel surface of the pipe aftercleaning. The tape shall then be removed from the surface and placed on a piece of white glossy paper where it will be compared to the cleanliness levels provided in the ISO 8502-3 specification procedure. This shall not exceed a "Debris" and "Dust" level of Class/Level 2 at any given time and shall be recorded during site production on every IFJR pipe to confirm compliance and records shall be kept for the client, which may be inspected at any given time.

The salt level on the bare steel pipe surface shall be measured according to ISO 8502-2 and shall be a maximum of 20 mg NaCl/m². The basic procedure of the testshall be to dampen circular piece of test paper of known area with a specified volume of laboratory water containing less than 0.1µg/cm² of salt. The test paper shall then be applied to the pipe for a period of 2 minutes, after which the test paper will be removed from the pipe and its resistivity measured. The salt content on the pipe will then be determined through the calibrated Salt Contamination Meter which uses the negative correlation between resistivity and salt content, along with empirically measured

historical data to provide a reading.

Subsequent to the approval of the documentation detailed above, a Procedure Qualification Trial (PQT) shall take place on site and shall be witnessed by the client or the duly appointed and authorised person appointed by the client to witness that application of the IFJR and subsequent inspection/testing of its properties, to confirm that the Application Procedure Specification (APS) is adequate to produce an IFJR system with the specified properties, carried out priorto the start of construction and testing shall meet all of the requirements stipulated above.

4. Field Welding General

Field welding of pipes which have been lined will only be permitted in pipes of DN 450 and larger where a man is able to enter the pipe to make good the lining after welding and testing in accordance with API 1104 Clause 12.8 has been completed. Pipes of lesser diameter may be field welded where concrete linings will be made after the pipeline has been laid and all welds have been tested and approved.

At the discretion of the Engineer, roll welding will be permitted, provided analignment is maintained by use of skids or of structural framework to accommodatetwo or more lengths of pipe with an adequate number of roller dollies to prevent sag in the pipe. The entire root bead, however, shall be made with the pipe in a stationary position.

All pipes welded in the trench shall be properly laid and aligned before welding commences. Joint holes shall be excavated at all field welds. The Contractor shall not lift the pipe to provide adequate access for the welders to enable them to weld the joint.

The alignment of abutting ends shall be such that the offset will not exceed 1.5 mm. Line up clamps shall be used for joint “fit-ups”. The use of “bridges and wedges” or any method that may induce unnecessary stresses will not be permitted. Both ends of coated and lined pipes shall be wrapped for a distance of at least 800 mm on either side of the weld by means of a fire-resistant plastic, rubber or other approved material mat to ensure that weld spatter or other damageis not caused to the coating and lining during the welding process. The pipe trenchshall be kept free of all dirt and water in the vicinity of the weld until after all corrosion protection measures have been completed and approved.

Destructive testing as specified in API 1104 Clause 6.5 shall be carried out. The Contractor shall submit to the Engineer for approval a full procedure specification as detailed in API 1104 Clause 5.3 prior to any field welding being allowed.

5. Welding Procedure and Qualification of Welders

Welding shall only be done by qualified welders who satisfy the requirements of API Std. 1104, Clause 6 and who have been tested at the Contractor’s expense byan Independent Inspectorate.

Before any welding of pipeline materials commences, the qualification of welders shall have been

approved, all detailed welding procedure specifications with weld diagrams required for their completion shall have been submitted for approval in a neat form and the welding procedure qualification tests shall have been successfully concluded all in accordance with the relevant standard specifications. Each welder shall mark the pipe adjacent to the weld with the figure assigned to him.

Sufficient records shall be kept by the Contractor to ensure that all field welds can be subsequently identified with the welder concerned.

As far as practicable all out of trench welding shall preferably be done by an automatic submerged process and the Contractor shall provide all necessary plantto carry out this process. Manual submerged electric arc process (MSEAP) weldingmay be used where in-trench welding is done.

Pre- and post-heat treatment for welding shall be in accordance with API Std. 1104if required by same and the Contractor shall provide an approved shield to protect the pipe joint from wind and weather during heat treatment and welding.

6. Line Up

Pipes shall be lined up in such a manner as to prevent damage thereto. If the pipe to be used has a longitudinal seam, these seams shall be staggered by not less than twenty degrees and welded sections, or single lengths, shall be assembled insuch a manner that this seam shall remain in the top quadrant of the pipe during coating operations and after lowering into the trench.

7. Cleaning of Pipe Ends

Before welding, all foreign matter shall be removed from the bevelled ends. If any of the ends of the pipe joints are damaged to the extent that satisfactory welding contact cannot be obtained, the damaged pipe ends shall be cut and bevelled withan approved bevelling machine. These field bevels of pipe ends shall be made to the satisfaction of the Engineer. Should laminations, split ends, or other defects in the pipe be discovered, the joints of pipes containing such defects shall be cropped, repaired, or removed from the line as designated by the Engineer.

8. Cleaning of Pipe Ends

Before welding, all foreign matter shall be removed from the bevelled ends. If any of the ends of the pipe joints are damaged to the extent that satisfactory welding contact cannot be obtained, the damaged pipe ends shall be cut and bevelled withan approved bevelling machine. These field levels of pipe ends shall be made to the satisfaction of the Engineer. Should laminations, split ends, or other defects in the pipe be discovered, the joints of pipes containing such defects shall be cropped, repaired, or removed from the line as designated by the Engineer.

9. Weather Conditions

No welding shall be carried out during rain or high wind unless the welder and jointare adequately protected and sheltered, to ensure that the welding is not impaired.

10. Protection of Paintwork

Before welding commences, a suitable apron at least 800 mm wide shall be wrapped around both sides of the area to be welded to ensure that weld spatter or fallout from arc weld does not damage the paintwork.

During the welding of joints, the Contractor shall ensure that either rubber mats or other suitable material is laid in the pipe invert of epoxy lined steel pipes to protect the lining against damage by traffic or fall-out from arc welding at the joint. The mats shall be placed the full distance from the point of access up to the point of weld or weld inspection and shall be of sufficient width.

Workmen shall wear soft rubber soled shoes before entering lined pipes. Care shall be taken not to stroke arcs on the epoxy lined areas adjacent to the weld joint. Immediately before welding of joints, the protective tape between the ends ofconcrete or epoxy linings and coatings and pipe ends shall be removed.

11. Butt-Welding

Pipes and specials to be joined by field welding shall be supplied with ends bevelled for welding. All welding of joints shall comply with API Std. 1104 and only approved type welding rods shall be used.

If backing rings are used, they shall be placed in position and wedged up or adjusted so that the pipe ends are completely circular and properly mated. The space between abutting pipe ends, when aligned for welding, shall be such as to ensure complete penetration without burn-through. For pipes having the same dimensions, the spacing shall be approximately 1,5 mm.

The alignment of the abutting pipe ends shall be such as to minimize the offset between pipe surfaces. For pipes of the same nominal wall thickness, the offset shall not exceed 1,5 mm. Internal line-up clamps shall be used wherever practicable and may be removed after the root bead is 50 % completed,

provided that the completed part of the root bead is in segments of approximately equal lengths, spaced about the circumference of the pipe. If conditions make it difficultto prevent movement of the pipe, or if the weld will be unduly stressed, the root bead shall be completed before releasing clamp tension.

External line-up clamps shall be used where it is impracticable to use internal line- up clamps. Partial root beads made when using external clamps shall be uniformly spaced about the circumference of the pipe and shall have an accumulative lengthof not less than 50% of the pipe

circumference before the clamps are removed.

Tack-welding shall be carried out to maintain the root gap and position of the pipe ends during the welding proper. The number of tack-welds shall be kept to a minimum but shall not be less than four around the circumference of the pipe.

After proper preparation and tack-welding, the root bead shall be carried out followed by successive filler passes, and capper finish pass in accordance with theapproved welding procedure.

The filler and finish beads shall be deposited by an acceptable method and each filler bead shall be approximately 3 mm in thickness. Completed welds shall have areinforcing of not less than 0,8 mm and not more than 1,5 mm above the pipe surface around the entire perimeter of the weld, and the width of the finish or covershall be not more than 3 mm greater than the original groove.

The number of beads required shall be governed by the wall thickness of the pipe, so that the completed weld will have the reinforcement previously specified; provided, however, that each weld shall consist of at least three beads. No two beads shall be started at the same point. No mitre welds will be permitted, and all welds are to be at ninety degrees (± 5 degrees) to the axis of the pipe. All slag andscale shall be removed from each bead for visual inspection immediately after each bead is run.

In all field butt-welds where it is possible to work inside the pipe, the inside weld shall be done first. The chemical composition of weld metal and parent metal shall be similar, and the inner weld metal or reinforcement shall not extend more than 1 mm above the inside metal surface of a pipe or special, and any excess shall be removed by grinding.

Defects caused by stray welding arc flashes shall be removed by grinding, provided that the pipe wall thickness is not reduced to less than the specified minimum thickness, otherwise the portion shall be cut out and repaired.

12. Fillet Welding

Welding shall be as for butt-welding as applicable. All pipes of DN 600 and over shall be welded on both the outside and the inside.

13. Welding Alongside The Trench

The Contractor may butt-weld factory coated and/or lined steel pipes together alongside the edge of the trench to form continuous welded pipeline sections up toa maximum length of 45 m and to lower each section into the trench, provided the pipe, coating and/or lining are in no way damaged during these operations and provided furthermore that the deflection of the pipe barrel at any point during any stage of the operation does not exceed 2% of pipe outside diameter.

The linings and coatings of factory coated and/or lined pipes jointed together outside the trench shall be made good at these joints outside the trench.

14. Repair of Welds

Rectification of defective welds shall be in accordance with API Std. 1104 and to the satisfaction of the Engineer. All costs related to the repair of defective welds shall be borne by the Contractor. Defective welds shall be repaired immediately once they are found to be defective. The Engineer has the right to stop the Contractor proceeding with further pipe laying in the event of the Contractor delaying the rectification of defective welds. Furthermore, no consideration will be given to any claims arising from delays in construction resulting from such action.

15. Tests Required on Pipes

The following tests are required:

- Hydrostatic test on every pipe to a minimum of 90% of nominal yield strength.
- Radiographic, Ultrasonic and dye penetration tests on all welding.
- Check all pipes for dimensional compliance with relation to diameter.
- Tests to measure thickness of coating and lining.
- Spark test to check the uniformity and compliance of the lining and coating to ensure electrical isolation of steel material. Holiday Testing as per ASTM G62requirements for both internal and external coatings. Any repairs to the liningand coating due to either the spark test or the thickness tests will be done in adifferent colour or be clearly identified for later reference if any failures are experienced later in the lifespan of the pipeline.
- Data packs with all of the required ISO 10750-1 Certificates of Conformity for the coating materials, as well as ll of the required Quality Control Procedures (QCP) pertaining to the application and testing during production, as stipulated in the previous sections.

A report with all test results will be submitted to the client for storage and usage asand when required. The report will further exactly state any repairs to each pipe, and each pipe should indicate a unique reference no traceable for future reference.

C3.2.2.2 PIPELINES (RETICULATION)

DESCRIPTION OF DESIGN PARAMETERS	CATEGORY/APPLICATION	PROPOSED DESIGN STANDARD
Peak factors	Hourly Daily Weekly	3,40 1,80 1,40
Hydraulic design	Friction coefficient C (HazenWilliams)	140
Residual pressures	Maximum velocity	Less than 1,5 m/s
	Minimum head under instantaneouspeak demand	25 m
Material	Maximum head under zero flowconditions	90 m
	Minimum head under instantaneouspeak demand and fire flow.	8 m
	Water network	Class 12 uPVC
Minimum pipe diameters	House Connections	Class 16 Polyethylene pipes(PE100)
	Fire Hydrants	Tamper proof double-lug withstainless steel spindle
	Residential with Fire Hydrant	110 mm dia min.
Spacing of gate valves	Single House Connection (min)	40 mm dia, reducing to 25 aterf
	Double House Connection (min)	40 mm dia, branching to 2x25
	All areas	Any 500 m length of network need to be isolated by closingmax. 4 valves
Fire-risk categories	All areas	Low risk – Group 1
Design fire flow	All areas	1 Fire hydrant – 15 l/s
Spacing of fire hydrants	All areas	240 m Maximum
Watermeters & Watermeter boxes	Within 300-400mm outside boundary	AGB meter box complete with meter, valves & fittings, Model AGB 800 or similar
Standpipe s Garden taps	Between 1.0m and 1.5m insideboundary	20mm Heavy Pattern (code 108-20)SANS 226

Sterilizing of pipes	All pipes to be sterilized prior totesting	

NOTE: FOR THE POSITION OF SERVICES IN THE ROAD RESERVE REFER TO THE LATESTVERSION OF THE FOLLOWING DRAWINGS OBTAINABLE FROM THE ROADS AND STORMWATER DIVISION	
PLN001- 1 OF 4	Services Layout: 13m – 25m Road Reserves
PLN001 – 2 of 4	Services Layout: 8m – 10m Road Reserves
PLN001 – 3 of 4	Services Layout: 32m Road Reserves
PLN001 – 4 of 4	Services Layout Applicable to South-Western Region of Tshwane

C3.2.2.3 CORROSION PROTECTION OF SPECIALS, VALVES AND FLOWMETERS

1. SCOPE

This specification covers the corrosion protection of specials, valves and flow meters, subjected to environments with variable corrosive tendencies.

2. INTERPRETATIONS

2.1 Definitions

Refer to the definitions and terminology detailed in SANS ISO 12944-1

Lining
Refers to the internal coating of valves and pipes.

Coating
Refers to the external coating of valves and pipes.

3. APPROVAL PROCEDURE

3.1 Approvals before award of contract

Approval by the Engineer of the corrosion protection system, procedures and specific materials offered in the Tender. Legible copies of Manufacturer's data sheets shall be submitted for each product.

3.2 Application of protection material approvals

Information on the application of the coating system must be supplied by each tenderer, and must include minimum the following information, as defined in SANSISO 12944-3, SANS ISO 12944-4, SANS ISO 12944-7 and SANS ISO 12944-8, which shall include but not be limited to;

(a) Qualification of personnel

(b) Quality of equipment

(c) Pre-preparation

(d) Surface preparation

(e) Application

(f) Final acceptance

Note the Contractor shall be responsible for the submission and obtaining written approval from the Engineer for all Method Statements and Quality Control Procedure (QCP) and Application Procedure Specifications (APS), which shall be the Contractors detailed document describing the procedures, methods,

equipment, tools and qualification of personnel to be used for both the coating and lining application.

4. GENERAL REQUIREMENTS

4.1 Quality assurance and procedures

The production and application shall be in accordance with SANS ISO 9000, Quality System.

The Contractor shall be responsible for ensuring that he is fully conversant with therequirements of this specification, contract requirements, SANS ISO 12944-1 to 8 and the relevant coating systems.

4.2 Qualified staff

4.2.1 Application and Repairs (Factory and Site)

A high standard of workmanship is required. Only experienced personnel shall be used to carry out corrosion protection work and their qualifications shall be detailedin the relevant APS and Method Statements.

Execution and supervision of the work shall be based upon the minimum requirements stipulated in SANS ISO 12944-7 and detailed in the relevant Method Statements, APS and QCP documents.

4.3 Compatibility of materials

The Contractor shall ensure that metals or alloys are compatible or are adequatelyprotected if, in the galvanic series, there is more than 0,3volt difference in the galvanic potential.

4.3.1 Design precautions

All equipment shall be designed in accordance with the minimum requirements andguidelines stipulated in ISO 12944-8 and shall be submitted to the Engineer/client for written acceptance, prior to proceeding. The latter shall take into account the accessibility of areas prior to erection and subsequent to erection as well as areas where water entrapment may arise in line with SANS ISO 12944-3.

4.3.2 Corrosion prevention

The Contractor shall ensure that the following steps are taken to minimize corrosion:

a) If dissimilar metals are used, they need to be isolated and the method of isolation needs to be submitted for written acceptance by the Engineer/Client.

b) Use electrical insulators between two metals. Insulation must be complete; a bolt requires a sleeve as well as washers of an insulating material.

c) Joints and crevices between metals shall be sealed.

d) Where fastening is unavoidable, the fasteners shall be nobler (cathodic) than the base material. Fasteners shall be coated where possible and/or adequately electrically insulated between fasteners and the base material.

4.4 Equipment

4.4.1 Measuring equipment

The Contractor shall have the following fully calibrated measuring equipment required throughout the project duration at his shop or site at all times, so that he may comply with the relevant application standards/specifications, like EN10290 orEN 10289:

- Ambient temperature gauge
- Blast profile gauge
- Dew point instrument
- Dry film thickness gauge
- Electric insulation defect detector
- Surface temperature gauge
- Relative humidity instrument
- Wet film comb

All relevant equipment and/or instruments shall be calibrated daily in order to ensure compliance with all aspects of the specification and/or contract.

4.4.2 Spray equipment

Spray equipment shall be suitable for the production of high-quality work, capable of properly atomizing the material, agitating materials as required and equipped with suitable pressure regulators and gauges.

All spray equipment shall be fitted with suitable oil and moisture traps, which will ensure that oil and water is measured as per ASTM D4285 or client approved TestMethod.

4.4.3 Mixer

All equipment shall ensure full compliance with the application and/or specification and/or contract. The Contractor shall submit full details of the equipment they intend to use as part of this contract.

4.5 Handling and transport

4.5.1 Physical protection

Handling, Transport and Erection should comply with SANS ISO 12955-3 Clause 5.11 and the minimum requirements shall be stipulated by the Design Engineersand the Contractors Method Statement, shall be approved prior to implementation.

4.5.2 End covers

See Section 4.5.1 above

4.5.3 Lifting

See Section 4.5.1 above

4.5.4 Marking of valves, pipes, crates and bags

(a) Each valve, pipe and special shall be legibly, indelibly and durably marked, (in such a manner that the coating is not damaged), with the following information:

- Contract number,
- Project name,
- Nominal diameter,
- Hydrostatic test pressure,
- Item number.

(b) The bags and crates shall be tagged using metallic tags and shall indicate the following information:

- Contract number,
- Project name,
- Part numbers,
- Description,
- Sizes,
- Quantities.

Each bag or crate shall have the delivery address listed on a separatemetallic tag.

4.5.5 Transport Section 4.5.1.

The Site Engineer shall be notified of the delivery date and of any requirements regarding off-loading and storage at site.

4.5.6 Off-loading at site

The supplier shall be responsible for the transportation and off-loading of the equipment and other small components at the delivery site and shall take due cognizance of Section 4.5.1 above.

The final delivery inspection and acceptance of equipment supplied shall be undertaken on site after off-loading has been completed.

4.5.7 Damage

Any damage that occurs during the handling and storage of items at the Manufacturer/Contractor's works, including transportation to site, shall be repaired by the Manufacturer/Contractor at his own cost, in accordance with the specification and to the approval of the Engineer.

4.5.8 Rejection

The Engineer has the right to reject any damaged items and materials which have been delivered and off-loaded at site.

4.6 Coating systems

The final selection of all corrosion protection systems shall be submitted to the Engineer for approval before application. The QCP shall refer to the relevant system number listed in the tables below.

The following tables are abbreviated guidelines. The Contractor shall submit in writing the full specification and materials that they intend to use on this project and/or contract. The contractor's proposals must be approved in writing by the Engineer, prior to the contractor proceeding with any of the works. The systems are not listed in order of preference. Any item not listed below must be clarified in writing with the Engineer.

4.6.1 Valves and flow meters (including hand wheels)

Material	**Surface**	**System**	**Minimum DFT (µm)**
MS	Lining	ISO 12944-5 IM1A6.10 and SANS 241 potable water certified.	600
SG		EN 545 or ISO 2531 Epoxy / PU& SANS241	600
MS	Coating	ISO 12944-5 A5M.03 or A5M.04	400 500
SG		EN 545 or ISO 2531 Epoxy / PU	400

Proprietary supplier corrosion protection systems shall be reviewed and assessed in line with the specified and/or stipulated corrosion protection systems, prior to being accepted.

4.6.2 Gearboxes

Proprietary supplier corrosion protection systems shall be reviewed and assessed in line with the specified and/or stipulated corrosion protection systems, prior to being accepted.

Material	Surface	System	Minimu mDFT (µm)
CI S G	Lining	1 EN 545 or ISO 2531 Epoxy / PU&SANS 241	600
	Coating	EN 545 or ISO 2531 Epoxy / PU	400

4.6.3 Pipe Specials

Proprietary supplier corrosion protection systems shall be reviewed and assessed in line with the specified and/or stipulated corrosion protection systems, prior to being accepted.

Material	Surface	System	Minimu mDFT (µm)
MS	Lining	ISO 12944-5 IM1A6.10& SANS 241	600
	Coating	ISO 12944-5 IM3A6.10	600

- Pipe Specials Buried in Soil

Proprietary supplier corrosion protection systems shall be reviewed and assessed in line with the specified and/or stipulated corrosion protection systems, prior to being accepted.

Material	Surface	System	Minimu mDFT (µm)
MS	Lining	ISO 12944-5 IM1A6.10& SANS 241	600
	Coating	ISO 12944-5 IM3A6.10	600

4.6.3 Couplings, Flange Adaptors

Proprietary supplier corrosion protection systems shall be reviewed and assessed in line with the specified and/or stipulated corrosion protection systems, prior to being accepted.

Material	Surface	System	Minimu mDFT (µm)
MS	Lining	ISO 12944-5 IM1A6.10& SANS 241	600
	Coating	ISO 12944-5 IM3A6.10	600

4.6.4 Joints

Proprietary supplier corrosion protection systems shall be reviewed and assessed in line with the specified and/or stipulated corrosion protection systems, prior to being accepted.

Environment	Material	System	Minimum DFT (µm)
Flange faces	MS	EN 15655/EN10339	60 - 90

4.6.6 All SANS 62 fitting components to be Hot Dip Galvanised to SANS121 ISO 1461

4.7 Abbreviations and notes

ABS: Acryl-nitrile-butadiene-styreneAl : Aluminium
CI : Cast iron -grade 220CS : Cast steel
DCA : Die cast aluminium DFT : Dry film thickness FBE : Fusion-bonded Epoxy
FBP : Fusion-bonded Polyester FBPE: Fusion-bonded Polyethylene GRP: Glass fibre reinforced PolyesterHDG: Hot-dip galvanized
HDPE: High Density Polyethylene
ISO : International Standards Organisation
PC : Polycarbonate
PVC : Polyvinylchloride
MS : Mild steel – grade 300WA
SG : Spheroidal graphite cast iron – grade 420
SS : Stainless steel – grades 304, 304L, 316 and 316LUV : Ultra Violet
3Cr12: Corrosion resistant steelµm: Micrometer

The following items shall be approved by the Engineer

1. **Hot-dip galvanizing**
   Only for pipes up to 200 mm diameter maximum and flow less than 2 m/s.
   - Pipes shall not be embedded in concrete.
   - Water analysis shall be provided.
   - Pipes over 200 mm diameter to be coated with a duplex system

2. **Sealant**
   Interfaces of different environments shall be sealed with a Polyurethane or Polysulphide flexible sealant to be applied in accordance with the manufacturer's data sheets.

3. **Un-coated stainless steel**

   Only to be used if no galvanic reaction and anaerobic conditions are found.

4. **Pickle and passivate**

- If not in contact with less noble material.
- If exposed to anaerobic conditions seal-coat all crevices with
- Elastoplastic Epoxy.
- Shall be done by the dipping process.

5. Galvanic cells

Where a galvanic cell is situated within a water path <150 mm and concretecover <75 mm, the MS, 3Cr12 or SS shall be coated.

6. Anaerobic conditions

SS grade 316L shall be used under anaerobic and aggressive waterconditions.

7. Polyurethane for colour coding

Re-coatable or pure Aliphatic Polyurethane where required for colour coding.Only UV resistant Polyurethane shall be used.

8. Primers

Primers shall only be used in special cases i.e. over-coating of galvanizedsurfaces.

9. 3CR12

In view of superior corrosion resistance, coated 3CR12 material is preferred.

10. Mild steel

Mild steel may only be used where the pipe lining can be refurbished in situ

11. Items subjected to high temperatures

Items to be manufactured out of stainless steel or coated with heat resistantpaint.

12. Epoxy primer

Epoxy primer may not be required if appropriate two pack Epoxy/ Re-coatableor pure Aliphatic Polyurethane is being used.

6. MANUFACTURE AND PRE-PREPARATION

6.1 Responsibility

6.1.1 Pre-preparation

The Manufacturer or Refurbisher shall be responsible for all the pre-preparation of equipment prior to surface preparation. Pre-preparation shall be carried out to the approval of the Engineer.

6.1.2 Personnel

Pre-preparation shall be carried out by competent personnel, under the supervisionof an experienced supervisor.

6.1.3 Marking

All items shall be permanently and indelibly marked to identify each individual item as specified by the Engineer.

6.2 Fabrication requirements

6.2.1 Defects

All extrusions rolled steel and castings shall be clean and free of score marks, pits, protrusions, blisters, porosity, blowholes, cracks or any other flaws which may be detrimental and as defined in API 1104 shall be rejected and/or repaired in line with the requirements of API 1104.

The contractor shall provide full details of all defects and all defect repairs and the stipulated repair methods, detection methods and qualifications and certification of all equipment and/or personnel utilised to effect such repairs shall be submitted forwritten acceptance by the Engineer, before any repairs are undertaken.

6.2.2 Materials

6.2.2.1 Castings

Castings with defects exceeding the restrictions given in the latest edition of ASTM A781/781M for Steel and Steel Alloys and/or assessed in accordance with A802/A802M-95(2010)e1 Standard Practice for Steel Castings, Surface Acceptance Standards, Visual Examination and/or A903/A903M-99(2012) Standard Specification for Steel Castings, Surface Acceptance Standards, Magnetic Particle and Liquid Penetrant Inspection and/or A958/A958M-14 Standard Specification for Steel Castings, Carbon and Alloy, with Tensile Requirements, Chemical Requirements Similar to Standard Wrought Grades.

Small and repaired blowholes shall be tested as per the abovementioned ASTM standard to ensure materials compliance.

6.2.2.2 Corrosion resistant steels

Fabrication shall take place in dedicated areas separated from carbon steel.

All equipment used in the forming and manipulation of stainless-steel items during fabrication shall be clean and free of materials that may contaminate the metal withcarbon steel.

The manufacture of items from corrosion resistant steels shall be in accordance with the SASSDA's Information Series and the guidelines of the material supplier.

Discoloration caused by welding or cutting shall be mechanically cleaned bybuffing followed

by pickling and passivation in accordance with the SASSDA's Information Series and the guidelines of the material supplier.

Organic contamination shall be removed by degreasing.

Iron contamination shall be removed by pickling and passivation, by the dipping process after degreasing.

All surfaces shall be tested for free iron contamination by the water or the ferroxyl test method.

6.3 Structural, Tube, Pipeline and Contract Coatings

The Manufacturer or Refurbisher shall remove excessive oil, grease or other surface contaminants with a water-soluble solvent degreaser followed by rinsing with clean, soft water before the items are dispatched to the Corrosion Protection Contractor.

ASTM	D4285	Standard Test Method for Indicating Oil or Water in Compressed Air
EN	10290	Steel tubes and fittings for onshore and offshore pipelines. External liquid applied polyurethane and polyurethane-modified coatings
EN	10339	Steel tubes for onshore and offshore water pipelines. Internal liquid appliedepoxy linings for corrosion protection
EN	15655	Ductile iron pipes, fittings and accessories. Internal polyurethane lining forpipes and fittings. Requirements and test methods
SANS	241	Part 1: Microbiological, physical, aesthetic and chemical determinants
SANS	1344	Medium duty solvent detergent.
SANS	10064	The preparation of steel surfaces for coating.
SANS	8501-1	Preparation of steel substrates before application of paints and related products –visual assessment of surface cleanliness – Part 1: Rust gradesand preparation grades of un-coated steel substrates and of steel substrates after overall removal of previous coatings.
SANS ISO	8504-2	Preparation of steel substrates before application of paints and related products – Surface preparation methods – Part 2: Abrasive blast cleaning.
SANS ISO	8503	Preparation of steel substrates before application of paints and related products – Surface roughness characteristics of blast-cleaned steel substrates.

SANS ISO	12944-1 to 8	Paints and varnishes — Corrosion protection of steel structures by protective paint systems —Part 1 to 8
SANS Method	5770	Cleanliness of blast-cleaned steel surfaces for painting (freedom of solublesalts).
SANS Method	5772	Profile of blast-cleaned steel surfaces for painting (profile gauge).
SANS Method	5769	Cleanliness of blast-cleaned steel surfaces for painting (freedom from dustand debris).
ISO	11125	Preparation of steel substrates before application of plaints – metallic blast-cleaning abrasives.
ISO	11127	Preparation of steel substrates before application of paints – non-metallicblast-cleaning abrasives.

All corrosion protection systems shall be applied as per SANS ISO 12944-7 “Paints and varnishes — Corrosion protection of steel structures by protective paint systems — Part 7: Execution and supervision of paint work” with the required supervision and quality control, as defined in the said specification.

All relevant SANS ISO 12944-7 Method Statements and Quality Control Procedure(QCP) and Application Procedure Specification (APS) shall be submitted in writingby the Contractor to the Engineer/client for written acceptance and approval. It must be noted that these are the Contractors detailed documents describingprocedures, methods, equipment and tools used for coating application.

The aforementioned applies to steel, cast iron, aluminium, polymer, stainless steel and/or hot-dipped galvanised steel surfaces.

The contractor shall detail protective coating and repair coatings for all applications and structures, including for any of the contractually required systems detailed above.

The standards detailed below shall also be utilised by the Contractor, to ensure compliance with the specification and/or contract and/or purchase order.

C3.2.2.3 VALVES

BUTTERFLY VALVES

1. **GENERAL**

1.1 Standards/Specification

Butterfly valves shall be in accordance with BS EN 593 /SANS 1849/SANS 1849; failure to conform will lead to disqualification.

1.2 Type

Butterfly valves shall be of the doubled flanged, full-bore and “tight shut off” type with the replaceable resilient seal. Flange drilling according to SANS1123, PN 10, 16 and PN25. For pressures up to 16 bar, the valve will be a double eccentric disc type, and for pressures higher than 16bar a triple eccentric type. Metal seated valve will also be considered. All valves will be supplied complete with matching, uncoated, flanges both ends, bolted to valve complete with Klingerite gaskets. Valves shall be bi-directional sealing.

Gearboxes shall be of the self-locking worm/quadrant type with no backlash. Operation shall be by means of a pinion shaft driving the quadrant.
Worm shafts shall be fitted with roller bearing thrust bearings to ensure minimal operating effort and smooth rotary action of the input shafts.

End stops shall be of the travelling nut type enabling precise setting of the open/closed positions.

The enclosure shall conform to a minimum of IP67 to prevent the ingress of water and debris into the gearbox housing.

The gearbox to valve mounting flange shall have a groove from the input shaft to the edge of the flange to ensure early detection of any leakage from the valve shaft seals, if the shafts are open to the pipeline medium.

Gearboxes shall be packed with approved water resisting grease to the gearbox supplier’s specification.

Gearboxes shall in all instances be sized for fitting of actuators **(**Hand wheel operated valves included) on site without any additional modification. Actuator mounting flanges shall conform to ISO 5211. Hand wheel sizes will not exceed:

- 400mm diameter for PN16 valve sizes 300mm to 1000mm and
- 400mm diameter for PN25 for valve sizes 300mm and 800mm and
- 500mm diameter for valve sizes 800mm to 1000mm diameter.

Maximum rim pull, to ensure water tightness in the closed position, on the hand wheel may not exceed 300 N-m.

A fully enclosed spur gearing is required to comply with the requirement.

ALL Valves shall be LEFT HAND (counterclockwise) closing.

ALL Valves should be verified by Tests from SANS or other testing authority.

1.3 Flow rates

No cavitation in the fully open position shall be accepted. The maximum permissible flow rate at the maximum differential pressure across the valve and the head loss for the specified flow rate shall be stated in the Technical Schedule.

1.4 Operation

A butterfly valve shall close under the maximum specified head and flow rate and shall be functional in any position without variation of the blade position or flutter. Normal operation shall however be in either the fully open or fully closed position.

There shall be no interference in the water flow pattern through a valve except for the blade.

The blade shall close with a positive action with no possibility of slamming shut during any stage of the closing operation.

A butterfly valve shall be installed in a position allowing the valve to operate along the horizontal axis. The lower portion of the blade shall open towards the downstream side of the valve i.e. in the direction of flow. All valves shall be fitted with a gearbox complete with hand wheel for Left Hand Closing.

2 CONSTRUCTION AND OPERATIONAL REQUIREMENTS

2.1 Body

The hubs for the shaft-bearings and the gearbox mounting flange shall form an integral part ofthe valve body.

The body of the valve, and the gearbox, will be such that no studs are used to fasten the valve body to the pipe section, but bolts and nuts are to be used on all the flanges. An isolating flange with its isolating tubes can be fixed to the valve. A drawing must be provided as proof. If such drawing is not provided, the valve will not be considered.

2.2 Blade

The blade shall be a single casting or fabrication of optimum hydrofoil section with a smooth

continuous surface. The maximum combined stresses in the blade shall not exceed 20% of the yield stress of the material when the design pressure is applied on any of the two sides.

2.3 Seal Retaining Ring/s

The seal retaining ring/s, manufactured from stainless steel material, shall be coated to reduce galvanic corrosion. The recess for the retaining ring/s in the blade or body shall be coated to the specified corrosion protection specification or the seal face shall be assembled with a coat of heat fused epoxy of minimum 500 microns.

2.4 Seat and Seal

2.4.1 Soft seal butterfly valves PN 16 and 25 Bar or alternatively metal seated triple eccentric butterflyvalves.

Preference shall be given to a resilient seal arrangement that is removable, replaceable and adjustable in situ from the down-stream side of the valve, without having to remove the valve from the pipeline.

A continuously molded music note or tee type resilient seal is required and shall be fixed without the use of glue.

The edge of the seal retaining groove in the blade shall be nickel-chrome deposit welded before machining for an O-ring or music note type seal.

The resilient seal shall have non-weathering, non-sticking, long life properties and shall be compatible with the quality of potable water.

The seat profile shall be smooth and continuous and shall provide adequate "lead in" for the resilient seal to open and close on the stainless-steel seat only. The mounting flange of the removable seat in the body shall either be stainless steel deposit welded and machined level with the seat or the seat ring manufactured to cover the seat mounting flange.

The seat and seal shall be of a design preventing them from becoming loose and obviate water seepage under the seals or seats during all conditions of operation and testing.

2.4.2 Metal seated triple eccentric butterfly valves PN 25 Bar

High Performance Triple Eccentric Metal Seated Design Manufactured in accordance with BS 5155 Specification. Materials should be compatible with media and pressure requirements as per Clause 3. Valves shall have replaceable laminated seal in the body and a replaceable seat ring on the disc.

2.5 Mechanical Stops

To prevent over travel of the valve blade in the open or closed position, all valves shall have

adjustable mechanical stops incorporated in the gearbox.

2.6 Shafts

Shafts shall either be continuous or of a stub-shaft design configuration. Stub shafts shall extend into the blade hubs for a distance of at least 1.5 shaft diameters and shall not protrude from the hubs i.e. exposing the shaft.

Shafts shall be attached to the blade by means of keys, dowel pins, taper pins or any combination of the three. The connection shall be designed to transmit shaft torque equivalent to at least 75% of the torsional strength of the shaft. Dowel and taper pins shall be mechanicallysecured.

The idle shaft cover shall be manufactured from stainless steel and secured with stainless steel fasteners.

2.7 Bearings

Self-lubricating sleeve type bearings (bronze backed, Zinc free or PTFE (Polytetrafluoroethylene) backed self-lubricating, or bushes shall be fitted in the hubs of the valvebody. The bearing length will be a minimum of 1,5x shaft diameter.

Each valve shall be fitted with at least one adjustable thrust bearing or spacer disc set to hold the blade securely concentric with the body or seat if so required.

The valve stem shall be provided with two O ring seals on the shaft to protect the bearing from water seeping from the valve inside.

3. VALVE MATERIAL SPECIFICATION

Valve components, unless otherwise specified in the Project Specification, shall be constructed of the material specified in the following tables.

TEST REQUIREMENTS

SIZE DN	PRESSURE RATING (kPa)	HYDRAULIC TEST PRESSURE (kPa)	
		STRUCTURAL	SEAT
300 – 1 000	1 600	2 400	1 760
300 – 1 000	2 500	3 750	2 750

MATERIAL SPECIFICATION		
COMPONENT	**MATERIAL TYPE**	**MATERIAL SPECIFICATION**
BODY	SG (Spheroidal Graphite) IRON CAST STEEL	BS 2789 Gr 420/ SANS 936 SG 42ASTM A216 WCB BS 1504-161 Gr 480/ SANS 1465 Part 1SANS 1431 Gr 300WA
DISC	SG IRON CAST STEELMILD STEEL	BS 2789 Gr 420/ SANS 936 SG 42ASTM A216 WCB BS 1504-161 Gr 480/ SANS 1465 Part 1 SANS 1431 Gr 300WA
BODY SEAT (PN16) BODY SEAL for PN16 and PN25	NICKLE-CHROME STAINLESS STEEL	 BS 970, SS Gr 316 LAMINATED
BLADE / SEAL (PN16) BLADE SEAT RING(PN16 – 25)	ELASTOMER STAINLESS STEEL	EPDM 750 A SS Gr 304
SEAL RETAINING RING	STAINLESS STEEL	BS 970 Part 4, Gr 304 S15
SHAFTS	STAINLESS STEEL	BS 970 Part 4, Gr 431 S29
SHAFT BEARINGS/BUSHES	PHOSPHOR BRONZE SLEEVE TYPE ZINC FREE PTFE BACKED/ SELF LUBRICATING	BS 1400 PB1C (Cu, Sn10, P)BRONZE BACKED
SHAFT SEALS	RADIAL LIP SEAL / CUP SEAL / O-RING SEAL ELASTOMER	NITRILE / VITON SIMRIT NBR

IDLE SHAFT COVER	STAINLESS STEEL	BS 970 Part 4, Gr 304 S15
IDLE SHAFT THRUST BEARING/SPACER DISC	PHOSPHOR BRONZE	BS 1400 PB1C (Cu, Sn10, P) (for vertical installations)
EXTERNAL FASTENERS	STEEL (HOT DIP GALVANIZED) STAINLESS STEEL	SANS 1700 ASTM A193 Gr B8M, ASTM A439 Gr D2
INTERNAL FASTENERS	STAINLESS STEEL	ASTM A193 Gr B8M, ASTM A439 Gr D2

4. CORROSION PROTECTION

Damage to the corrosion protection or during testing or normal operation will not be acceptable. Valve body and closures shall be heat fused epoxy coated to a minimum of 500 microns internally and externally. Valves shall be packed and transported that no damage to the coatingis possible. Any visible damage to the valve at delivery will give the client authority to reject the complete delivery of all valves.

5. COMPLIANCE TO SPECIFICATIONS

If the City of Tshwane suspects that a valve does not comply with the specifications, the contractor will appoint a registered inspector which is acceptable to the City to perform checks to ensure compliance to the specifications. The cost of this inspection will be for the appointed supplier of the valve.

AIR RELEASE AND VACUUM CONTROL VALVES

1. GENERAL

1.1 Standards/Specification

Air release and vacuum control valves shall be in accordance with DIN – DVGW examination certificate, failure to conform will lead to disqualification.

2. TYPE

Air valves shall not exhibit the characteristics of dynamic closure in exhaust and vacuum mode. The valves shall be of the triple acting type, firstly allowing large volume air intake under vacuum conditions, secondly large volume of air discharge during filling with an anti-shock surge alleviating mechanism to prevent pipeline damage under controlled filling or surge conditions, and thirdly shall have an efficient small orifice mechanism to allow the exhausting of dis- entrained air under normal pipeline operation to prevent buildup of air in the pipeline.

The large intake and exhaust orifice of air valves shall be equal to the nominal size of the valve e.g. a 200mm valve shall have a 200mm inlet and outlet orifice. The valve shall incorporate an integral anti-shock (non-slam) orifice mechanism which shall operate automatically to limit transient pressure rise or water hammer induced by closure. An inherent feature of the valve design must be to ensure that the ball or float does not close before all the air has been released.

All air valves shall be hydraulically drop tight when full of water and under pressures of between 1 metre (10 kPa) to 1,5 times the maximum operating pressure of the valve.

Valves required to isolate air valves for maintenance shall comply with the Valve Material Specification for the specific category of valve specified.

3. CONSTRUCTION AND OPERATIONAL REQUIREMENTS

3.1 Body

The valve body shall be flanged and be of a compact single chamber design. The ball or float(s) shall be easily accessible for maintenance purposes.

3.2 Float

The float guides shall be stainless steel designed to have sufficient clearance to ensure free operation and prevent any abrasion when subjected to frequent operation.

Cylindrical floats shall be manufactured from stainless steel. Floats shall not be able to adhere to the orifice sealing arrangement nor be affected by deposits on the float surface.

Floats shall not distort or suffer mechanical damage in any form when subjected to a structural strength test or conditions of frequent use.

3.3 Draining facility

Provision shall be made for the drainage of a valve, by means of a 6mm stainless steel ball valve and stainless-steel nipple, prior to removal or servicing and for the fitting of pressure gauges for testing purposes.

The stainless-steel nipple shall extend through the body to cover all the threads.

3.4 Weather covers

All air valves shall be supplied with robust, easily removable screens that will allow freedischarge or intake of air but shall exclude the ingress of objects that may cause damage or malfunction of the valves.

Screens shall be manufactured from stainless steel mesh.

4. CORROSION PROTECTION

Damage to the corrosion protection or during testing or normal operation will not be acceptable. Valve body and closures shall be heat fused epoxy coated to a minimum of 500 microns internally and externally. Valves shall be packed and transported that no damage to the coatingis possible. Any visible damage to the valve at delivery will give the client authority to reject the complete delivery of all valves.

4.1 Valve material specification

Valve components shall be constructed of the material specified in the following tables unless otherwise specified in the Project Specification.

Cylinder Float Type (DN 25-200)

SIZE DN (mm)	**PRESSURE RATING (kPa)**	**HYDRAULIC TEST PRESSURE (kPa)**	
25 - 200	1000/1600 / 2500	**STRUCTURAL**	**SEAT**
		1500/2400 / 3750	1500/2400 /3750

Material specification

COMPONENT	MATERIAL TYPE	MATERIAL SPECIFICATION
BODY/CLOSURE	SG (Spheroidal Graphite) IRON	BS 2789 Gr 420/12, GGG 40
BODY / CLOSURE SEAL		EPDM
FLOATS	STAINLESS STEEL	STAINLESS STEEL BS 970PARTY GRADE 316
EXTERNAL FASTENERS	STAINLESS STEEL CAPSCREWS	ASTM A193 GR B8M, ASTMA439 GR D2
FLOAT GUIDE	STAINLESS STEEL	STAINLESS STEEL BS970PARTY GRADE 316

Float type (DN 50-200)

SIZE DN (mm)	PRESSURE RATING (kPa)	HYDRAULIC TEST PRESSURE (kPa)	
50 - 200	1000/1600 / 2500	**STRUCTURAL**	**SEAT**
		1500/2400 / 3750	1500/2400/3750

5. COMPLIANCE TO SPECIFICATIONS

If the City of Tshwane suspects that a valve does not comply with the specifications, the contractor will appoint a registered inspector which is acceptable to the City to perform checks to ensure compliance to the specifications. The cost of this inspection will be for the appointed supplier of the valve.

RESILIENT SEAL GATE VALVES

1. GENERAL

1.1 Type

All valves shall be doubled flanged and of the resilient seal gate type, the gate of which shall be completely clear of the waterway in the fully open position. The gate valve shall be of the non-rising spindle type, fitted either with a hand wheel or cap top (type will be specified in the Schedule of Quantities). The valve shall be capable of withstanding the nominal pressure (PN) and specified test pressures from both sides. The gate shall operate satisfactorily underthe specified conditions and shall be Left Hand closing.

1.2 Specifications

The valve shall be manufactured in accordance with SANS 664 and carry the SANS mark or be JASWIC listed; failure to conform will lead to disqualification. Flange drilling shall be according to SANS 1123, PN10, PN16 and PN25. The manufacturer/supplier shall have the SANS 3000 cycle test done and provide certified copies to verify that the product passed the test.

PN25 valves shall have raised face flanges.

1.4 Body

The body shall be of rigid design to minimise distortion under pressure.

1.5 Operation

The gate valve shall be able to open and close satisfactorily under the specified flow rate and pressure.

1.6 Stem and thrust bearing

Two friction washers (sizes 50mm – 200mm) and thrust ball bearings (350mm – 600mm) shall be incorporated on the thrust collar to ensure smooth spindle operation as well as to reduce opening and closing torques.

The stem thrust collar shall bear against a ball thrust bearing.

1.7 Corrosion protection

Damage to the corrosion protection or the rubber-coated gate during testing or normaloperation will not be acceptable. Valve body and closures shall be heat-fused epoxy coated toa minimum of 500 microns internally and externally. Valves shall be packed and transported that no damage to the coating is possible. Any visible damage to the valve at delivery will givethe client authority

to reject the complete delivery of all valves.

2 CONSTRUCTION AND OPERATIONAL REQUIREMENTS

2.1 Resilient seal gate valves

Body, guides and shoes

The gate shall have optimally placed guides of wear resistant plastic so as reduce the torques as well as reduce wear between the rubber and the coating on the body.

The valve body shall incorporate a straight unobstructed body passage without pockets and shall have inclined seats and prominent gate guides to eliminate deposits in the valve body.

The guides shall be as deep and as long as possible but not protruding into the flow path to offer support in all gate positions.

The plastic antifriction shoes shall accurately fit the body guide profile to allow smooth operation of the gate with minimal shudder.

Gate

The gate shall be completely encapsulated in rubber and accurately molded to ensure drop tightness over the valve pressure range. The rubber coated gate shall be designed to offer an equal distribution of sealing pressure in all directions with a capacity to accept foreign matter up to 1mm in particle size. Documentation to prove that the rubber used for encapsulation comply with international health standards will be supplied and submitted with the tender documents, including a toxicity report with regards to toxins, taste and odour.ie potable water certificate.

The gate shall be a left-hand closing type.

For valves larger than 100mm the gate nut shall be a replaceable item.

Stem

A corrosion resistant stem seal arrangement shall include a scraper ring to prevent the ingress of foreign matter. A stem thrust collar shall be installed between anti-friction materials to ensure low operating forces. The stem seal arrangement shall be capable of being replaced under pressure.

Bonnet: Bolts and Gaskets

The bonnet S/S (stainless steel) cap screws shall be entirely sunk into the body casing, sealed and protected by reusable caps. Bolts will be stainless steel protected to standards in the material specification.

The valve shall have a preformed NBR (nitrile butadiene rubber) rubber gasket, O ring type, set in a recess between the Bonnet and Body. The gasket must fully encircle each bolt.

Spindle

The manufacturing of the spindle will be a cold rolled thread stainless steel type, with minimum diameter:

Valve size	80mm–110mm	150mm–160mm	200mm	250mm–600mm
Min Spindle diameter	25mm	28mm	32mm	34mm

2.2 Material

Valve components shall be constructed of the material specified in the following tables unless otherwise specified in the Project specification. Material certificates will be provided on delivery of the valves.

RESILIENT SEAL GATE VALVE (DN 50-600)

TEST REQUIREMENTS

SIZE DN	PRESSURE RATING (kPa)	HYDRAULIC TEST PRESSURE (kPa)	
		STRUCTURAL	SEAT
50 – 600	1 000	1 500	1 100
	1 600	2 400	1 750
	2 500	3 750	2 750

Hydro pressure test certificates must be provided with tender documents and on delivery of valves.

MATERIAL SPECIFICATION		
COMPONENT	**MATERIAL TYPE**	**MATERIAL SPECIFICATION**
BODY	Ductile Iron	SANS 1034, Gr 250WA
GATE	Ductile Iron, COATED	SANS 1034, Gr 250WA, Vulcanized EPDM ozone stabilized, UV resistant
BONNET	Ductile Iron	SANS 1034, Gr 250WA

SPINDLE	STAINLESS STEEL	EN 10254-4, X17CrNi16-2, Cold Rolled Thread
GATE NUT	BRONZE	EN 12165, CW614N

MATERIAL SPECIFICATION		
COMPONENT	**MATERIAL TYPE**	**MATERIAL SPECIFICATION**
STEM BUSH	PLASTIC	
BUSH / STEM/ STUFFINGBOX SEALS	O RING	NITRILE / VITON
PROFILE / SCRAPERRING	O RING	NITRILE / VITON
FRICTION RING	PLASTIC	
HAND WHEEL	SG IRON	SANS 1034, Gr 250WA
EXTERNAL FASTENERS	STEEL (HOT DIP GALVANIZED)	SANS 1700

C3.2.2.4 Pipe Jacking

1 SCOPE

This section covers the insertion, by jacking and boring, of underground pipes without disturbing the surface.

2 APPLICATIONS

The information regarding pipe jacking contained in this section is not limited to the jacking of circular precast concrete pipe sections but also applies to the jacking of rectangular, square and arched precast concrete sections. Where boring is to be carried out, the Contractor shall, as is the case for jacking, make use of an approved specialist firm.

3 DEFINITIONS

For the purposes of this section, the following words and expressions shall have the meanings hereby

assigned to them except where inconsistent with the context.

(a) Intermediate jacking station - A transverse joint in a jacked structure at which jacking is performed

(b) Jacking - The action of pushing a pipeline into position

(c) Jacking frame - A frame on which the jacks are mounted and through which the jacking forces are transmitted.

(d) Jacking structure - An assembly comprising the jacking frame, the permanent pipes to be jacked, and the shield.

(e) Lead pipe - A pipe that has a rebated end over which the trailing end of the shield is fitted and which is intended to be the first pipe to be used in the jacking process.

(f) Pilot hole - A hole with a maximum diameter of 50 mm, drilled to ensure that a subsequently bored, larger hole, will be properly aligned

(g) Pipe boring - The work involved in boring a horizontal hole and inserting a pipe therein.

(h) Pipe boring pits - Excavations at either end of the boring operation from and between which boring and pipe installation are carried out.

(i) Reception pit - An excavated shaft located at the end of a jacked section of a pipeline, from which the shield is recovered.

(j) Shield - A device located at the leading end of the jacking structure, which is intended to provide protection for workmen at the leading end and to prevent the collapse of the face of the tunnel excavation

(k) Thrust pit - An excavated shaft at the starting point of a jacking operation, in which the jacking structure and other equipment are installed and from which the jacking operations are carried out.

(l) Thrust plate - A steel plate placed against the end of the pipe against which the jack operates, and which is intended to ensure that the jacking forces are spread uniformly over the end face of the pipe.

(m) Thrust block - A temporary structure constructed inside the thrust pit for the purpose of transferring the jacking forces to the adjacent soil.

4 MATERIALS

4.01 Pipes

Unless otherwise specified, the pipes for jacking shall be reinforced concrete pipes of the SC type and D-load designation 100D which comply with the relevant requirements of SANS 677. The actual diameters of pipes supplied shall be not less than the nominal diameters given on the Drawings or stated in the Schedule of Quantities. In addition to withstanding the specified two (or three) edge-bearing test load, the pipes shall be capable of withstanding, without being damaged, the maximum longitudinal force to be transmitted by the jacks during jacking.

4.02 Other precast-concrete sections

Any precast-concrete sections, other than pipes, to be jacked shall comply with the requirements specified in the Project Specifications and as shown on the Drawings

4.03 Intermediate jacking stations

Under certain circumstances it may be necessary to provide one or more intermediate jacking stations between the thrust and reception pits. Such stations shall consist of a pair of modified jacking

pipes. In order to protect and form the joint between these pipes, the Contractor shall provide cylindrical mild steel sleeves with a wall thickness of at least 8 mm and of such length that they overlap the pipes for a distance of at least 150 mm on each side of the joint.

5 PLANT

5.01 General

The Contractor shall in the case of jacking, provide and use suitable equipment for handling pipes and placing them in position for jacking, for jacking the pipes, for the lubrication of the outer surface of the pipeline, and for excavation within the pipe and in the case of pipe boring, for boring the hole and for jointing and inserting the pipes.

5.02 Jacks

The jacks shall be fitted with a suitably calibrated pressure gauge in a good working order which will enable the actual jacking forces to be read at any time during the jacking operation. To transfer the load from the jacks to the pipes, suitable thrust plates and spacers shall be provided.

5.03 Shield

A suitable shield for fitting to the front of the lead pipe shall be provided by the Contractor to protect workmen and prevent the collapse of the face or roof of the excavation ahead of the jacked structure. The shield hall be directionally adjustable.

5.04 Lighting

The Contractor shall provide adequate lighting for the execution of the Works.

5.05 Guides

Where necessary, guides shall be provided within the thrust pit to facilitate initial directional control of the pipes.

5.06 Ventilation

Sufficient ventilation shall be provided to remove dust and to ensure safe working conditions.

6 SAFETY

6.01 General

The Contractor shall at all times observe adequate safety precautions on the Site as specified in clause 17 of section 001. Permission to proceed with the Works shall not in any way detract from the obligations and liabilities of the Contractor in regard to such safety or To the adequacy of the jacking structures and methods of working.

6.02 Safety of existing works

The pipeline shall be jacked or bored through under the relevant road, railway or other service or structure without disrupting the traffic and without disturbing the alignment or levels of the road surface, the tracks, or other relevant service or structure to an extent that may impair the safety of traffic or of the service or structure.

Jacking and boring operations shall commence at the lower level of the pipeline. Should Site conditions necessitate or permit jacking or boring to be carried out from the higher level of the pipeline, the Engineer's written approval shall be obtained before the work commences.

The Contractor shall not commence any work until the Engineer has specified, in writing, that the Contractor may proceed.

7 Excavation

Subject to the provisions of clause 09 above, the appropriate requirements of sections 201 and 202 shall apply.

(a) Classification of materials excavated - The materials excavated shall be classified as follows for payment purposes:

(i) Hard material:

Material which cannot be excavated efficiently except with the use of pneumatic tools, blasting or wedging and splitting and shall include boulders exceeding 0,15 m3 in volume.

For pipe boring operations, the material penetrated will be classified as hard when the Contractor can prove that the work cannot be efficiently carried out by using normal boring equipment and some other method, such as rock drilling, has to be used.

(ii) Soft material:

All material not classified as hard material.

Notwithstanding the above classification, all material in previously constructed fills, embankments and pavement layers and through which jacking or boring is carried out, shall be classified as soft material.

The decision of the Engineer as to the classification of the material shall be final and binding, and any objection as to the classification shall be made before the pipes are jacked or, in the case of pipe boring, some method other than boring is used.

Special reference shall be made to clause 16 of section 001 regarding the classification of excavated material in restricted areas.

(b) Thrust and reception pits and pipe boring pits

The Contractor shall be responsible for excavating the pits in the positions indicated on the Drawings at each end of the section of pipeline or sleeve that is to be jacked. These pits shall be of dimensions at least equal to the minimum dimensions needed for the Contractor's equipment and for safe and efficient working. The approximate dimensions of the pits that the Contractor intends to excavate shall be agreed upon with the Engineer before work commences. The excavated material shall be stockpiled for later backfilling.

The sides of the pits shall be adequately supported by timbers or by other approved means.

Where a pit adjoins a railway line or a heavily used road, the sides of the pit shall be shored during the entire operation to prevent any movement caused by vibration arising from rail or road traffic from occurring. The Contractor shall ensure that the pits are dewatered at all times.

(c) Jacking of pipes

Excavation shall be such that overbreak is kept to a minimum. No material shall be removed in advance of the leading edge where the leading edge is in unstable or loose material. If the material at the face starts to slip or run, excavation shall be stopped immediately and the Contractor shall take such action as may be necessary to stabilize the material before excavation is resumed.

Should any unforseen cavities be exposed during jacking, such voids shall be filled immediately with grout in a manner approved by the Engineer. To ensure a minimum of overbreak, the first concrete pipe used shall be so rebated that the outside diameters of the shield and the pipeline will not differ substantially. The Contractor shall ensure that the head of the excavation is drained at all times. Under no circumstances will jetting be permitted.

7.03 Jacking procedure

Each pipe shall be advanced by means of hydraulic jacks of adequate capacity which bear against a suitable thrust plate so as to distribute the thrust of the jacks uniformly over the end face of the pipe. The rear end of each jack shall so bear against a suitably designed structure as to transfer the force to the surrounding material and to distribute it evenly over an area large enough to ensure that the bearing capacity of the soil will not be exceeded and that no structure in the vicinity of the thrust pit will be disturbed. The Contractor may, with the written permission of the Engineer, inject a suitable lubricant through preformed holes in the structure or in the shield. Resilient packing material shall be inserted between the faces of successive pipe units so as to distribute the thrust evenly over the circumference of the pipes. At the conclusion of a day's work, the shield shall be jacked up to the tunnel face. If intermediate jacking stations are used, the trailing units shall be jacked forward until the jacks in the intermediate stations are in the unextended position. Spacers shall be placed between the jacking frame and the pipe with all the jacks being in the unextended position and ready to jack in an emergency.

7.04 Pipe boring

After the pits have been completed, and on the written instructions of the Engineer, a pilot hole shall be drilled using suitable equipment. After the pilot hole has been inspected and approved, it shall be enlarged by boring to the diameter required for the installation of the specified pipe.

7.05 Grouting and sealing

Before each jacking operation, the Contractor shall determine, in an approved manner, the average cross-section of the completed excavation ahead of the pipeline and shall submit his calculations to the Engineer on the same day.

These cross-sections, together with the external pipe diameter, shall be used for calculating the approximate volume of grout that will be needed after the entire jacking operation has been completed and will assist in determining whether all voids have been grouted.

When the jacked pipeline is in its final position, a sand -cement grout shall be injected to fill all voids between the jacked pipeline and the surrounding material. The grout shall have a strength equal to or better than a grout consisting of one part of cement and four parts of sand and shall have a slump of 120 mm.

Grouting shall commence at the lower end of the pipeline, and the grout shall be injected through holes drilled through walls of each pipe section.

These holes, which will also be used for checking the progress of the grout, shall be positioned in each side of the pipe on the line of its horizontal diameter, and also in the soffit of the pipe.

All holes in the pipeline shall be sealed with an approved epoxy sealant after the grouting has been completed.

The grouting of the pipes installed by means of pipe boring shall be carried out only on the written instructions of the Engineer and in a manner approved by the Engineer. The grout shall be the same

as the grout specified above for jacked pipes.

7.06 Backfilling

When jacking has been completed and the jacking frame and shield have been dismantled, the thrust and reception pits shall be backfilled to the extent indicated on the Drawings or as laid down in the Project Specifications or determined by the Engineer on the Site.

The pipe boring pits shall be backfilled, only when so instructed by the Engineer, using excavated or imported material compacted to at least the density of the undisturbed surrounding material.

When the installed pipe is part of a pipeline, the boring pits will form part of the pipeline trench and as such shall be backfilled in the manner specified in sections 106, 202, 302 and 402 as applicable. Payment for such backfilling will be made under the applicable sections.

Surplus excavated materials shall be disposed of as specified in the Project Specifications or as determined by the Engineer on Site.

8 AS-BUILT DRAWINGS

If an alternative design by the Contractor has been accepted or if the structure shown on the Tender Drawings has been modified to suit the jacking method, the Contractor shall, on completion of the work and before the final payment is made, supply the Engineer with transparencies showing details of the completed structure. Each such transparency shall be certified by the Contractor to be an accurate reflection of the work as constructed.

9 TOLERANCES

Subject to any requirements of the Project Specifications imposed on account of the gradient(s) of the pipeline or in view of the purpose for which it is required, the pipes shall be positioned within the tolerances given below.

Should the difference between the actual and the specified position or alignment of the finished pipeline exceed the value of the said tolerance to an extent as to involve additional costs in respect of locating, installing, supporting or maintaining any service of which the jacked or bored pipe forms part or that has been designed to be laid through the jacked or bored structure, the Contractor shall bear such additional costs, provided that the details of the work to be done to relocate, install, or support the said service have been provided and the order for the work to be done (by the Contractor or by others) has been given by the Engineer within 30 working days of the completion of the jacking or boring operation.

Permissible tolerance limits shall be as follows:

(a) Pipe jacking

(i) In plan	± 100 mm
(ii) Vertical	± 50 mm

(iii) Horizontal and vertical displacement between units at joints 10 mm maximum

Adjustment to line or level or both shall be gradual, and the manufacturer's permissible angular deflection of the pipes shall not be exceeded at any point.

(b) Pipe boring

(i) In plan	± 100 mm
(ii) Vertical	± 100 mm

WATER AND SANITATION BUSINESS UNIT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION

CONTRACT NO: WSBU 01 2025/26

TENDER FOR THE APPOINTMENT OF A CONTRACTOR FOR THE COMPLETION OF BULK WATER (STEEL PIPE) AND WATER RETICULATION IN MAMELODI EXT 11 FOR A PERIOD OF 2 YEARS

C3.3 PROCUREMENT

C3.PROCUREMENT

C.3.3.1 Preferential Procurement Procedures

Preferential procurement procedures

C3.3.1.1 Requirements

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 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 100% 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. Hundred 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 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.

C3.3.1.1.1 Employment of unskilled and semi-skilled labour in Labour Intensive Construction works

1. Requirements for the sourcing and engagement of labour

1.1 Unskilled and semi-skilled labour required for the execution of all labour-intensive works shall be sourced from the EPWP Office.

1.2 The guideline pay rate will be as set by the CIDB/ SAFCEC Gazetted rates

1.3 Tasks by the Contractor must be 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.

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 1.3.

C3.3.1.1.2 Appointment Process

C3.3.1.1.2.1 Project Steering Committee (PSC)

Section 6.1.3.1 of the Expanded Public Works Programme (EPWP) Recruitment Framework requires the Office of the Speaker, in consultation with the Ward Councillor, to hold a public meeting, and elect a Project Steering Committee (PSC).

Project Steering Committee will be limited to a minimum of four (4) members and a maximum of six (6) members, to avoid a situation of too many potential interest groups preventing the PSC from functioning.

C3.3.1.1.2.2 Community Liaison Officer

After selection of the PSC, at the same meeting indicated under item C3.3.1.1.2.1, residents and stakeholders in attendance are to vote for poll of three (3) potential CLO's coming from the community concerned.

In the event that a PSC is not constituted by public meeting, or cannot proceed with its work, as contemplated by section 6.1.3.5 of the Framework, the appointed PSC will nominate potential CLOs.

It is from this pool that the contractor, after interviewing the three (3) nominees and consultation with the PSC appoints the CLO.

Administrative processes for appointment of Community Liaison Officers.

- Minutes and an attendance register must be kept as evidence of the proceedings of the election meeting.
- The office of the speaker must submit the results (minutes) and attendance registrar of the community liaison officer election meeting to the chairperson of the PSC, the contractor and the Expanded Public Works Programme (EPWP) Division.
- The elected CLO will be appointed by the contractor for the duration of the project and also be remunerated by the contractor. Where the CLO is no longer available and another is appointed, the existing CLO shall cease to receive remuneration.
- An employment agreement containing the general terms and conditions of the contract, will be issued to the CLO and must be signed by the CLO before commencement of duties.
- A CLO will be appointed from the ward in which the project is executed.
- The CLO's will be remunerated according to the entry level basic salary of an Administrator

Officer position of the City of Tshwane (Task Level 5 notch 1). No benefits will be applicable.

The CLO must have the following attributes: -

- have credibility and standing in the community.
- have a strong personality.
- be able to be firm and decisive.
- be able to facilitate in disputes.
- be able to handle conflict.
- be able to keep minutes and records in a proper and orderly way.
- have a knowledge of labour laws and industrial relations (training will be provided where necessary).
- be objective and impartial.
- be fair.

C.3.3.2 Subcontracting

Subcontracting

C3.3.2.1 Scope of mandatory subcontract works

The contractor is to identify and present to the Engineer the works to be subcontracted. The following shall be subcontracted to the local subcontractors:

- Removal and reinstatement of Paving
- Establishment of the Contractor’s base camp or depot
- Site Clearance
- Selected trench excavations
- Pipe laying smaller than 200 diameters (service ducts)
- Erection of traffic signs and Markings
- Traffic calming measures
- Bedding
- Construction of chambers and junction boxes
- Construction of kerb inlet, and outlet structures
- Paving for walkways
- Laying of Edge beams and kerbing

C3.3.2.2 **PREFERRED SUBCONTRACTORS/SUPPLIERS**

Section 47 of the SCM Policy SUB-CONTRACTING

When subcontracting:

The City shall obligate main contractors or service providers to engage targeted enterprises in the performance of their contracts incorporating resource specifications.

(1) The appointed service provider must source competent and capable service providers and where applicable be registered with the relevant body and submit a list of sub-contractors for approval to the City of Tshwane.
(2) Sub-contracting entity should have at least equal B-BBEE level status and /or specific goals or higher than the main contractor.
(3) Minimum of 30% will be sub-contracted for this tender.
(4) Local economic participation should be given priority when making a list of potential subcontractors available

- City of Tshwane Participants with specific attention for the region in which the contract is to be executed should be given priority and the below competent and capable designated groups should be prioritized.

a) An EME or QSE
b) An EME or QSE which is at least 51% Black Owned
c) An EME or QSE which is at least 51% Owned by Black youth
d) An EME or QSE which is at least 51% Black Women Owned
e) An EME or QSE which is at least 51% owned by black people with disabilities
f) An EME or QSE which is 51% owned by black people living in rural or underdeveloped areas or townships
g) A cooperative which is at least 51% owned by black people
h) An EME or QSE which is at least 51% owned by black people who are military veterans; or
i) More than one of the categories referred to in paragraphs (a) to (h).

Should subcontractors within Tshwane not be identified, the appointed service provider can extend the list of subcontractors to:

- Gauteng Participants
- National participants

(5) In relation to a designated sector a contractor must not be allowed to 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 if the appointed Service Provider scored points for Local Content and Production.

C3.3.2.3.2 The contractor shall without delay to enter into a written contract with the successful tendering subcontractor based on their accepted tender submission.

C3.3.2.3.3 The contractor shall remain responsible for providing the subcontracted portion of the works as if the work had not been subcontracted.

C3.3.3 SUBCONTRACTING PROCEDURES FOR LOCAL SMME

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 SCM policy.

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

The ward councilor, PSC members and CLO shall confirm if the submitted bids originate within the ward where the works are being undertaken.

WATER AND SANITATION BUSINESS UNIT
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C3.4 CONSTRUCTION

C3.4 CONSTRUCTION

C3.4.1 Applicable standards

The applicable Standard Specifications shall be the document **Standard Specifications for Municipal Civil Engineering Works, Third Edition 2005**, issued by the Employer.

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, Tshwane House, 320 Madiba Street, Pretoria and shall bear all expenses in this regard. Also, freely available in electronic (pdf) format at:

http://www.tshwane.gov.za/documents/tenders/CTMM_Civil_Specification_2005.zip

The **Standard Specifications for Municipal Civil Engineering Works, Third Edition 2005** have been written to cover all types of municipal civil engineering works and it may therefore cover work not applicable to this contract.

C3.4.2 Plant and materials

All plant and material to be supplied by the Contractor.

C3.4.3 Construction equipment

All construction equipment to be supplied by the Contractor.

C3.4.4 Contractor's employees

C3.4.4.1 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 Amendment of Sectoral Determination 2: Civil Engineering Sector published in the Government Gazette dated 4th September 2012, as and when amended from time to time.

Contractors shall also take in considerations the clauses of the Government Gazette 39293 of 16 October 2015 regarding Bargaining Council for Civil Engineering Industry:Extension of Conditions of Employment amending collective agreements to non-parties.

The following minimum conditions shall apply to this Contract and Contractors shall include such conditions in employment contracts.

C3.4.4.1.1 Employment contracts

The Contractor shall enter 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.

C3.4.4.1.2 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.

C3.4.4.1.3 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). Fora 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 owners' equivalent rent (eoer) plus two percentage point for the second and third years of the determination. The CPI to be used is the one that is published by Stats SA six weeks prior to the scheduled increment date. Below are the recommendations of the Department regarding new minimum wages levels:

Table 1: Minimum wages per hour for all employees in the Civil Engineering Sector.

Task Grade	Hourly Rate as per promulgation date up to 31 August 2025	Hourly Rate from 1 September 2025 to 31 August 2026 (increase at 6.5%)	Hourly Rate from 1 September 2026 to August 2027
1	R51,00	R54,32	R57,85
2	R52,20	R55,59	R59,21
3	R53,65	R57,14	R60,85
4	R55,66	R59,28	R63,13
5	R63,02	R67,12	R71,48
6	R71,58	R76,23	R81,19
7	R81,97	R87,30	R92,97
8	R91,91	R97,88	R104,25
9	R103,38	R110,10	R117,26

C3.4.4.1.4 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.

C3.4.4.1.5 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 ofwork. If more than four (4) hours of work is done, the Contractor shall pay the employee for the number of hours worked.

C3.4.4.1.6 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.

C3.4.4.1.7 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

C3.4.4.1.8 Maternity leave

At least four (4) months unpaid leave.

C3.4.4.1.9 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 leavepayment. If such a certificate is not provided, no sick leave payment will be due to the employee.

C3.4.8.1.10 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 itis 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.

C3.4.4.2 EMPLOYMENT CONDITIONS FOR LABOUR INTENSIVE WORKS AND CONSTRUCTION

The Ministerial Determination 4, Expanded Public Works Programme (revised 2012) issued interms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour 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. The Ministerial Determination must be read in conjunction with the Code of Good Practises for the Expanded Public Works Programme as published in Government Notice N^{o} R64 of 25 January 2002,

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.

C3.4.4.2.1 Terminology

(a) "department" means any department of the State, implementing agent or contractor;

(c) "employer" means any department, implementing agency or contractor that hiresworkers to work in elementary occupations on a EPWP;

(d) "workers" means any person working in an elementary occupation on a EPWP;

(e) "elementary occupation" means any occupation involving unskilled or

semi-skilledwork;

(f) “management” means any person employed by a department or implementing agencyto administer or execute an EPWP’

(g) “task” means a fixed quantity of work;

(h) “task-based work” means work in which a worker is paid a fixed rate for performing atask;

(i) “task-rated worker” means a worker paid on the basis of the number of tasks completed;

(j) “time-rated worker” means a worker paid on the basis of the length of time worked.

C3.4.4.2.2 Terms of Work

i. Workers on an EPWP are employed on a temporary basis or contract basis.

C3.4.4.2.3 Normal Hours of Work

i. 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.
ii. An employer and worker may agree that a worker will work four days per week. Theworker may then work up to ten hours per day.
iii. A task-rated worker may not work more than a total of 55 hours in any week tocomplete the tasks allocated (based on a 40-hour week) to that worker.

C3.4.4.2.4 Meal Breaks

i. A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.
ii. An employer and worker may agree on longer meal breaks.
iii. 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.
iv. 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.

C3.4.4.2.5 Special Conditions for Security Guards

i. A security guard may work up to 55 hours per week and up to eleven hours per day.

ii. A security guard who works more than ten hours per day must have a meal break ofat least one hour or two breaks of at least 30 minutes each.

C3.4.4.2.6 Daily Rest Period

Every worker is entitled to a daily rest period of at least twelve consecutive hours. The daily rest period is measured from the time the worker ends work on one day untilthe time the worker starts work on the next day.

C3.4.4.2.7 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”).

C3.4.4.2.8 Work on Sundays and Public Holidays

i. A worker may only work on a Sunday or public holiday to perform emergency orsecurity work.

ii. Work on Sundays is paid at the ordinary rate of pay.

iii. 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 fourhours.

iv. 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 onthe public holiday;
(b) double the worker’s daily rate of pay, if the worker works of more than fourhours on the public holiday.

C3.4.4.2.9 Sick Leave

i. Only workers who work more than 24 hours per month have the right to claim sick-pay i terms of this clause.

ii. 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.

iii. A worker may accumulate a maximum of twelve days' sick leave in a year.

iv. Accumulated sick-leave may not be transferred from one contract to another contract.

v. An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.

vi. An employer must pay a time-rated worker the worker's daily rate for a day's sick leave.

vii. An employer must pay a worker sick pay on the worker's usual payday.

viii. 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-weekperiod.

ix. 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.

x. 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.

C3.4.4.2.10 Maternity Leave

i. A worker may take up to four consecutive month's unpaid maternity leave.

ii. A worker in not entitled to any payment or employment-related benefits during maternity leave.

iii. A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.

iv. 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.

v. A worker may begin maternity leave –

(a) four weeks before the expected date of birth; or

(b) on an earlier date –

- 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
- 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.

vi. A worker who has a miscarriage during the third trimester of pregnancy or bears astillborn child may take maternity leave for up to six weeks after the miscarriage orstillbirth.

vii. 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.

C3.4.4.2.11 Family Responsibility Leave

i. 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 –
   - the employee's spouse or life partner;
   - the employee's parent, adoptive parent, grandparent, child,adopted child, grandchild or sibling.

C3.4.4.2.12 Statement of Conditions

i. An employer must give a worker a statement containing the following details atthe 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.

ii. An employer must ensure that these terms are explained in a suitable language toany employee who is unable to read the statement.

iii. An employer must supply each worker with a copy of these conditions of employment.

C3.4.4.2.13 Keeping Records

i. Every employer must keep a written record of at least the following –

   a. the worker's name and position;
   b. copy of an acceptable worker identification;
   c. in the case of a task-rated worker, the number of tasks completed bythe worker;
   d. in the case of a time-rated worker, the time worked by the worker;
   e. payments made to each worker.

ii. The employer must keep this record for a period of at least three years after the completion of the EPWP.

C3.4.4.2.14 Payment for the Labour-Intensive Component of the Works

Payment for works identified in the Scope of Work as being labour-intensive shall onlybe 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.

i. An employer must pay all wages at least monthly in cash or by cheque or into a bank account.

ii. A worker may not be paid less than the minimum EPWP wage rate of R63.18 per day or per task. This will be adjusted annually on the 1st of November in line with inflation (available CPI as provided by StatsSA six (6) weeks before implementation).

iii. A task-rated worker will only be paid for tasks that have been completed.

iv. 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.

v. A time-rated worker will be paid at the end of each month.

vi. Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

vii. 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 startor finish of work;
   c. in a sealed envelope which becomes the property of the worker.

viii. 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.

ix. 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 forit.

x. 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.

C3.4.4.2.15 Deductions

i. An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.

ii. An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.

iii. 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.

iv. An employer may not require or allow a worker to –
a. repay any payment except an overpayment previously made by theemployer by mistake;
b. state that the worker received a greater amount of money than theemployer actually paid to the worker; or

c. pay the employer or any other person for having been employed.

C3.4.4.2.16 Health and Safety

i. Employers must take all reasonable steps to ensure that the working environmentis healthy and safe.

ii. A worker must –

a. work in a way that does not endanger his/her health and safety or thatof 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 theemployer;
e. report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

C3.4.4.2.17 Compensation for Injuries and Diseases

i. 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.

ii. A worker must report any work-related injury or occupational disease to their employer or manager.

iii. The employer must report the accident or disease to the Compensation Commissioner.

iv. 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.

C3.4.4.2.18 Termination

i. The employer may terminate the employment of a worker for good cause after following a fair procedure.

ii. A worker will not receive severance pay on termination.

iii. 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 advanceto allow the employer to find a replacement.

iv. 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 of the 24-month period.

v. A worker who does not attend the 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.

C3.4.4.2.19 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;
g. any other information agreed on by the employer and worker.

C3.4.4.3 LABOUR INTENSIVE COMPETENCIES OF SUPERVISORY AND MANAGEMENTSTAFF

Established contractors shall only engage supervisory and management staff in labour intensive works who have either completed, or for the period 1 April 2004 to 30June 2005, are registered for training towards the skills programme outlined in Table 1.

Emerging contractors shall have personally completed, or for the period 1 April 2004 to 30 June 2005 be registered on a skills programme for the NQF level 2-unit standard. All other site supervisory staff in the employment of emerging contractors must have completed, or for the period 1 April to 2004 to 30 June 2005 be registered on a skills programme for, the NQF level 2-unit standards or NQF level 4-unit standards.

TABLE 1: SKILLS PROGRAMME FOR SUPERVISORY AND MANAGEMENT STAFF

Foreman/ supervisor	4	Implement labour intensive ConstructionSystems and Techniques	This unit standard must be completed,and
		Use Labour Intensive Construction Methods to Construct and Maintain Waterand Sanitation	any one of these 3unit standards
		Use Labour Intensive Construction Methods to Construct and Maintain Waterand Sanitation Services	
		Use Labour Intensive ConstructionMethods to Construct, Repair and Maintain Structures	
Site Agent/ Manager(i.e. the contractor's most senior representative that isresident on the site.	5	Manage Labour Intensive ConstructionProcesses	Skills Programme against this single unit standard
Personnel	**NQF level**	**Unit standard titles**	**Skills programme description**
Team leader/ supervisor	4	Apply Labour Intensive ConstructionSystems and Techniques to Work Activities	This unit standard must be completed, and
		Use Labour Intensive Construction Methods to Construct and Maintain Water and Sanitation	any one of these 3unit standards
		Use Labour Intensive Construction Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour Intensive ConstructionMethods to Construct, Repair and Maintain Structures	

Details of these skills programmes may be obtained from the CETA ETQA manager(e-mail: Gerard@ceta.co.za, tell: 011 265 5900)

C3.4.4.4. EMPLOYMENT OF UNSKILLED AND SEMI-SKILLED WORKERS IN LABOUR-INTENSIVE WORKS

C3.4.4.4.1 Requirements for the Sourcing and Engagement of Labour

i. Unskilled and semi-skilled labour require for the execution of all labor-intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour – Part 5, 1st edition, 2002.

ii. 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.

iii. 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 6.1.3.

iv. The Contractor shall, through all available community structures, inform the local community of the labor-intensive works and the employment opportunities presented thereby. Preference must be given to people with 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.

v. The Contractor shall endeavor to ensure that the expenditure on theemployment of temporary workers is in the following proportions:
   a. 60 % women.
   b. 20 % youth who are between the ages of 18 and 35; and
   c. 2 % on persons with disabilities.

C3.4.4.4.2 Specific Provisions Pertaining to SANS 1914-5

i. Definitions

Targeted labour: Unemployment persons who are employed as local labour onthe project.

ii. Contract participation goals

a. 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.

b. 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.

iii. 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.

iv. Variations to SANS 1914-5

a. 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.

b. The schedule referred to in 5.2 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and thenumber of formal training provided to targeted labour.

C3.4.4.4.3 Training of Targeted Labour

i. The contractor shall provide all the necessary **Bold** 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.

ii. The cost of the formal training of targeted labour, shall be measured and paid for in the schedule of quantities of this contract document.

iii. 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.

iv. 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 (iii) above.

v. This training should take place as close to the project site as practically possible. The CoT will ensure that training arrangements for participants are in place and appointment of the training provider facilitated in time.

vi. The project Manager and Consulting Engineer shall approve the training providedprior to commencement of training

Proof of compliance with the requirements of (ii) to (iv) must be provided by the Contractor to the Employer prior to submission of the final payment certificate.

C3.4.4.5 COMMUNITY LIAISON OFFICER

C3.4.4.5.1 The successful tenderer shall enter into an agreement with the Ward Councilor/Ward Committee whereby the Ward Councilor shall provide the Contractor with the following if necessary:

a) A Community Liaison Officer (CLO) for liaison with the recipient community, who as part of his/her duties will also act as a Labour Desk Officer (LDO) for labour recruitment.

C3.4.4.5.2 The CLO shall attend all site and other meetings concerning the project.

C3.4.4.5.3 The CLO will be remunerated according to the entry level salary of Administrative Officer (B1-level monthly notch) in the city of Tshwane. CoT will provide the Contractor with the figures accordingly.

Community Strategy

The CLO shall be available full time on site when the contractor is active. Furthermore, it will be required of him to liaise any pertinent communication to the community.
He/she shall attend all site and technical meetings as well as steering committeemeetings as well as steering committee meetings happen after hours.

C3.4.4.5.4 Only one CLO shall be appointed per project. If the project spans more than one Ward, the relevant Ward Councilors 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 Executive Director: Integrated Community Development, ortheir 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 CLO's shall not exceed the amount allowed for in paragraph 5.3.

C3.4.4.5.5 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 Councilor(s) and the CLO to resolve such difficulties.

C3.4.4.5.5 The main Contractor shall ensure that any Sub-Contractor he may appoint shall adhere to these conditions but also subject to the provisos applicable to the duration of such sub-contract.

C3.4.4.5.6 Should any of the above conditions be less favorable than any Bargaining Council Agreement or Act applicable to the Contractor, the more favorable condition will apply.

C3.4.5 EXISTING SERVICES

Existing services consist of existing reservoir pipelines, overhead electrical reticulationand nominal stormwater drainage structures.

C3.4.6 Site establishment C3.4.6.1

Contractor's Camp site

The Contractor shall provide a suitable site for his camp and for accommodating the workforce. 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 thesite 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 conditionbefore a certificate of completion shall be issued.

C3.4.6.2 Water Supply

The Contractor shall make his own arrangement for potable and construction water. It shall be the responsibility of the contractor to apply for a water connection and water meter at CoT for his site camp. The contractor shall be responsible for payment of all water used. Water quality shall be verified before use in concrete is allowed.

C3.4.6.3 Power Supply

The Contractor shall make his own arrangements.

C3.4.6.4 Ablution Facilities

The 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.

C3.4.6.5 Cellular Telephone

It is a requirement of the contract that the contractor shall equip his site agent(s) with a cellular telephone to allow for effective communication between the contractor's supervisory personnel and the engineer's supervisory staff. All the applicable contact details must be made available to the Employer as well as the staff on site. All costs associated with the provision of cellular telephones for the contractor's personnel shall bedeemed to be included in rates billed for time-related charges.

C3.4.6.6 Site Facilities required by the Engineer

One office for site meetings for 10 – 12 people.Two carports for the engineers' exclusive use, with solid sheeting, not shade cover.An ablution unit for his exclusive use.

WATER AND SANITATION BUSINESS UNIT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION

CONTRACT NO: WSBU 01 2025/26

TENDER FOR THE APPOINTMENT OF A CONTRACTOR FOR THE COMPLETION OF BULK WATER (STEEL PIPE) AND WATER RETICULATION IN MAMELODI EXT 11 FOR A PERIOD OF 2 YEARS

C3.5 MANAGEMENT

C3.5 MANAGEMENT

1. 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 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 regarding 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 ifrequested. 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.

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 Clause 42 of the General Conditions of Contract or any granted extension of time. Any proposal to increase the tempo of work must be accompanied by positive steps to increase production by providingmore 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 Clause 9.2 of the General Conditions of Contract.
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. The Contractor is also referred to Clause 5.6 of the General Conditions of Contract when drawing up his programme.

2. Sequence of the works

The Contractor shall supply the proposed sequence of the works.

3. 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 andthe 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.

4. Extension of time on account of abnormal rainfall

- 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.

Extension of time due to abnormal rainfall for the purposes of this contract shall be determined by means of Method 1. The rainfall records at Rainfall Station, Pretoria University Proefplaas 0513435A4 for the period 2014 to 2020 reproduced in the accompanying table and the monthly averages, Rn and Nn, for this period, shall for the purpose of this Contract be taken as normal rainfall.

STATISTICAL INFORMATION: [0513465 1] PRETORIA UNIV PROEFPLAAS		
	RAINFALL	
Month	**Nn = Actual number of days during the calendar months inwhich a rainfall of more than Y-mm has been received**	**Rn = Average monthly rainfall in MM**
January	3,65	110,75
February	3,01	81,53
March	2,90	123,05
April	2,07	62,20
May	0,42	12,38
June	0,17	1,88
July	0,13	1,45
August	0,06	0,10
September	0,70	11,48
October	1,35	38,25
November	2,57	76,58
December	3,23	122,70
TOTAL	20,25	642,33

5. Community participation

Community participation consists of engagement of Project Steering Committees (PSC). A PSC will be established for the project. The functions of the PSC will beto:

- 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.
- 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

The committee, which may be chaired by the Ward Councillors, shall consist of representatives of:

(a) The Ward Councillor(s)
(b) The Client
(c) The Engineer
(d) The Contractor
(e) The CLO(s)
(f) Members of Ward Committees nominated by Ward Councillor(s)
(g) Local Security Company

6. Construction management service requirements

The Contractor shall appoint a Construction Manager whose duties will be to provide construction management and materials management services to the Local Emerging Contractors in line with the employer's objective as stated in Clause 3.1.1, Description of Work.

6.1 General

The construction manager shall, in order to achieve the employer's objectives stated in Clause 3.1.1, Description 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.

6.2 Construction stage requirements

6.2.1 General

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) liase 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,

- progress in relation to the programme,
- costs incurred in respect of materials, labour, plant, transport, specialist contractors and construction management services,
- the actual cash flow compared with the predicted cash flow,
- expected savings or excess expenditure,
- site meetings,
- details of plant hired, including standing-time charges, breakdowns and reasons for the use thereof, and
- 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 topersonnel 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 withthe provisions of the contract.

q) Provide a full-time **site agent**

6.2.2 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

- the preparation and updating of a realistic and achievable programme,
- the setting out of the works,
- the management, administration and employment of their work forces,
- the performance of their contracts,
- all registrations required in terms of legislation and all applicable taxes and levies,
- the preparation of payment certificates,
- the handing over of the works to the employer upon completion, and
- liaison with external organizations and the local community with regard to the works, and

d) advise the supported contractor on safety measures which shall be implemented in order to comply with safety legislation.

6.2.3 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:
   - the basic work techniques required to perform the contract;
   - the need to develop communication skills;
   - what is expected of a supported contractor;
   - health and safety requirements;
   - the need to execute appropriate tasks correctly the first time;
   - how to submit claims for payments;
   - how to control and motivate their work-forces;
   - the necessity for planning;
   - how to prepare and use construction programmes;
   - the relationship between tender pricing, productivity and profit; and
   - 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 organizations.

6.2.4 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.

6.2.5 Materials (where materials management services are provided to supportedcontractors)

The construction manager shall, where a materials manager has been appointed, as aminimum,

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.

6.2.6 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:
- the final cost of the works in respect of materials, labour, plant, transport, supervision and construction management services;
- the time of completion relative to the programme;
- the nature and extent of training received by the supported contractor;
- details of damage to services and insurance claims;
- details of the construction manager's staff and organizational structure, equipmentpurchased for the contract and establishment costs; and
- 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.

7. Materials management service requirements

7.1 General

The 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
- take cognizance of specific storage requirements for individual materials,
- comply with the employer's procurement policies and procedures,
- provide for quality checks upon delivery,
- provide for the processing and timeous payment of statements for materialssupplied and the delivery of materials to site,
- account for the quantities of materials that are procured, stored and issued to oron behalf of each individual supported contractor,
- ensure that records are readily auditable and protect the employer

against corruption and theft, and

- 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 settlement 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 contractors' contract or in the contract with the employer.

WATER AND SANITATION BUSINESS UNIT
INFRASTRUCTURE PLANNING AND IMPLEMENTATION DIVISION

CONTRACT NO: WSBU 01 2025/26

TENDER FOR THE APPOINTMENT OF A CONTRACTOR FOR THE COMPLETION OF BULK WATER (STEEL PIPE) AND WATER RETICULATION IN MAMELODI EXT 11 FOR A PERIOD OF 2 YEARS

C3.6 PARTICULAR SPECIFICATIONS AND VARIATIONS AND ADDITIONS TO THE STANDARD SPECIFICATIONS

C3.6 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 0: GENERAL

"**SECTION 001: GENERAL REQUIREMENTS AND CHARGES**

B001.01 Preliminary and General Charge

Add the following:

Over and above the normal requirements as specified, provision must be made for Site establishment and for a permanent EPWP sign board, in addition to the Contract Name Board. EPWP branding must be part of the sign board. This sign board will remain on site after completion of the contract to indicate that the service provided was done according to the EPWP guidelines. See **Part 7: Additional Documents** for particulars about the EPWP sign board.

Measurement and Payment:

B001.01.01 Fixed Charges **Lump Sum**

Payment of the lump sum tendered under subitem 001.01.01 shall be made in three separate instalments as follows:

• The first instalment, which is 40% of the lump sum, will be paid when the Contractor has met all his obligations to date under this section, the General Conditions of Contract and the Special Conditions of Contract, and where the value of work certified for payment, excluding materials on Site and any payments under preliminary and general items is equal to not less than 5% of the total value of the work listed in the Schedule of Quantities.

• The second instalment, which is 40% of the lump sum, will be made when the amount certified for payment, including retention monies but excluding the second instalment referred to herein, exceeds 50% of the Tender Price.

• The final payment, which is 20% of the lump sum, will be made when the Works have been certified as completed and the Contractor has fulfilled all his obligations to date under this section, the General Conditions of Contract and the Special Conditions of Contract.

Measurement and Payment:

B001.01. Time related Charge **Month**

The unit of measurements shall be in months over the contract period.

Add the following:

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 completionof all projects within the contract period, inclusive of providing security services. The number of months' payable shall only be the number of months the contractor shall be employed. No time-related charges shall bepaid to the contractor if the services are not required within the contract period.

B001.04.01 Provision and Implementation of Health and Safety File and Plan **Lump Sum**

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.

Add the following:

Price the item to allow for all labourers on site to wear the necessary protective clothing including overalls. 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 theCoT logo. On the back the letters "EPWP" must appear." Local labour wear orange EPWP overalls.

B001.05 Community Liaison Officer **Lump Sum**

The tendered rate shall include full compensation for the appointment of a community liaison officer for the duration of the contract works.

Payments shall be made in monthly instalments for the number of months one or more community liaison officer is employed.

B001.06. Compliance with Environmental Management Plan **Months**

The tendered rate shall include full compensation for complying with the Environmental Management plan and specification contained in Section C3.9.

Payments shall be made in monthly instalments for the number of months of the project.

B001.07 Provision for administration of local contractors **Lump Sum**

The unit of measurement shall be the number (No) of local emerging contractor(s) that needs

to be administrated by the principal contractor as may be necessary for the duration of the local emerging construction work.

The **Provision for Administration of Local Contractors** refers to the budgeted resources, processes, or contractual arrangements put in place to manage, coordinate, and oversee local subcontractors or suppliers involved in the project.

Main activities are listed below:

1. Coordination and Supervision
   Ensuring that local contractors' work aligns with project schedules, quality standards, and safety requirements.
2. Contract Management
   Handling contracts, payments, and documentation related to local contractors.
3. Communication
   Serving as the liaison between the main contractor or project management team and the local contractors to address issues, changes, or clarifications.
4. Compliance and Quality Control
   Verifying that local contractors meet regulatory and project-specific standards.
5. Logistics and Support
   Organizing permits, site access, equipment, and materials needed by local contractors.

B001.08 Training of targeted labor and local **Provisional Sum**

1.3 Training of targeted labour

1.3.1 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 workers' health and safety.

1.3.2 The project manager, together with the consultant, shall be responsible for providing of the Construction education and training authority (CETA) accredited training providers.

1.3.3 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.

1.3.4 The contractors shall do nothing to dissuade targeted labour from participating in the above-mentioned training programmes.

1.3.5 An allowance equal to 100% of the task rate or daily rate shall be paid by the contractorto workers who attend formal training, in terms of 1.3.4 above. Provision for allowances is

included in the provisional sum.

1.3.6 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.

All labourers on site must wear the necessary protective clothing including an overall. All labourers must also wear a bright reflected jacket over their overall. On the front of the overall the “City of Tshwane” name must appear with the CoT logo on the left-hand side and the EPWP sectorial logo must appear on the right. On the back, the letters “EPWP” must appear.

SECTION 002: ENGINEER’S ACCOMODATION

Measurement and Payment

B002.01.01 Services for offices and laboratories **Months**

Payment of the tendered rate shall be in full compensation for the services specified. Payments will be made in monthly instalments for the number of months the services is required on one or more projects.

B002.02 Treatment and maintenance of areas surrounding offices and laboratories **Months**

Payment of the tendered rate shall be in full compensation for the treatment and maintenance of the areas specified. Payments will be made in monthly instalments forthe number of months the treatment and maintenance is required on one or more projects.

B002.03 Offices and laboratories accommodation **Months**

Payment of the tendered rate shall be in full compensation for the supplying and erectingof the accommodation, fittings, furniture and equipment specified. Payments will be made in monthly instalments for the number of months the services is required on one ormore projects.

B002.04 Provision of survey equipment and assistants **Months**

Payment of the tendered rate shall be in full compensation for the provision and maintenance of survey equipment and the making available at least two survey assistants as specified. Payments will be made in monthly instalments for the number of months the services are required on one or more projects.

SERIES 1: ANCILLARY WORK

SECTION 101: SITE CLEARING AND GRUBBING

Add the following:

B001.01.03 Strip 4-meter-wide **Meter**

The unit of measurement for clearing and grubbing is the meter. Only those areas or strips

designated by the Engineer shall be measured.

The tendered rates shall include full compensation for clearing the surface, removing boulders with a size of up to 0,15 m3, cutting trees with single or multiple trunks each witha girth of 1 m or less, grubbing the stumps and roots of such trees, cutting trunks and branches into transportable lengths, backfilling cavities, demolishing structures, and removing, transporting and disposing of material thus cleared, grubbed, cut and

demolished.

B06: The cutting of trees

B06.03: Preservation of trees

Add the following:

"The fine for unnecessary damage or unauthorized removal of trees is R3 000.00 (three thousand rand) per tree."

If any paving is to be removed to place the new water pipeline in position the rate for the breaking out and removal of the paving shall be claimed under item 101.01.01 in the Schedule of Quantities. No clearing and grubbing will be paid where the new pipelines are to be laid on the sidewalk (area between the road and the erf boundary fence).

It must be noted that the area between the erf boundary and the road must be clean, withno stones or rocks, which can damage any machine used to cut the lawn.

SECTION 102: ACCOMODATION OF TRAFFIC

Measurement and Payment

Add the following:

B102.14 Temporary traffic-control facilities **Lump Sum**

"A penalty of R 1 000,00 (one thousand rand) per non-conforming of temporary trafficcontrol will be charged"

"The tendered rate shall include full compensation for the dismantling, storing if necessary, transporting and re-erecting in a fresh position of the various items specifiedin item 102.14

Measurement and Payment

Add the following:

B102.14.01 Flagmen **Lump Sum**

The tendered amount for this item shall include full compensation for all flagmen who may be required to control traffic by way of flags or portable STOP and GO-RY signs and include the provision of flags. Payment will be made per month.

SECTION 103: OVERHAUL

Standard Specification

B103.01 Overhaul on material hauled outside the free-haul boundaries **Lump Sum**

Free haul distance from site is 5 Km from any working area of the site.

SECTION 107: GENERIC LABOUR-INTENSIVE SPECIFICATION

Scope

This specification establishes general requirements for activities which are to be executed by hand involving the following:

a) trenches having a depth of less than 1.5 meters
b) stormwater drainage
c) low-volume roads and sidewalks

Precedence

Where this specification conflicts 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

Hand excavatable material is classified as follows:

a) granular materials:
i) whose consistency when profiled may in terms of table 1 be classified as very loose, loose, medium dens, or dense; or
ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;

b) cohesive materials:
i) whose consistency when profiled may in terms of table 1 be classified as very soft, soft, firm, stiff and stiff / very stiff; or
ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100mm;

Note 1) A boulder, a cobble and gravel is material with a particle size greater than 200mm, between 60 and 200mm.

2) 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

400mm and drives a cone having a maximum diameter of 20mm (cone angle of 60˚ with respect to the horizontal) into the material being used.

Table 107. 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 30-40mm; 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 10mm; 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
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 excavateable 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 100mm. Each layer shall be compacted using hand stampers.

a) to 90% Proctor density;
b) such that in excess of 5 blows of a dynamic come penetrometer (DCP) is required to penetrate 100mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10mm 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.

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 undertaking by sprigging, sodding, or seeding by hand.

Stone pitching and rubble concrete masonry

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."

SERIES 4 : WATER RETICULATION AND WATER MAINS

B404.1 Epoxy linings and coatings of steel pipes of the following steel pipe sizes

1042mm diameter x 12 m (x4 No) and 711mm diameter x 6m (x48 No) Prov Sum

A manufacturer or steel pipe specialist will come to site to inspect the pipes and provide an inspection report and recommendation. Once the recommendation has been agreed upon by the client and engineer then the pipes will be recoated and relined on site or off site. Depending on the recommendation.

B404.2 Repairs of steel pipes as described in item 404.1 Prov Sum

This item refers to repairs of any kind of damage to the steel pipe as recommended by the manufacturer or steel specialist in item B404.1.

B404.3 Handling fee for item 404.1 & item 404.2 %

SERIES 700: STRUCTURES

Add the following:

B701.15.01 Stainless Steel Cat Ladder **No**

Stainless steel cat ladders supplied and installed as per CoT details (Drawing No 7515-VC222). Approx. 3 m long, with 20 dia plug welded rungs, bolted to wall and floor with chemical anchors; all inclusive.

B701.15.02 250mmØ x 1180mm Bollard **No**

250mmØ x 1180mm Bollard supplied and installed: Commodore Bollard or similar approved with exposed aggregate planted to 300mm deep.

B701.15.03 Waterproofing **m²**

Waterproofing: 3 Coats of a Heavy waterproofing compound applied to the external walls.

B701.15.04 Manhole Access **No**

Manhole Access: "Screw Lid" manhole access unit supplied and installed as manufactured by "Concrete Doors and Vaults" or similar approved. Refer CoT Detail Drawing No 7515-VC223.

B701.15.05 Strap and Pipe Support **No**

Strap and Pipe Support steel work on concrete pedestal: Refer CoT Detail Drawing No 7515-VC219. Concrete for support work measured elsewhere.

B701.15.06 Vermin Proof Air vent **No**

Vermin Proof Air vent supplied and installed complete: Refer CoT Detail Drawing No 7515-VC222.

B701.15.07 500mm x 500mm Sump **No**

500mm x 500mm Sump completely supplied and installed with 150mm x 110mm PVC- U Sewer Gulley with CI Grate at low point. Refer CoT Detail Drawing No 7515-VC207.

B705.04. Construction of Air Valves Chambers using: **No**

B705.04.01 Using 2000mm precast concrete rings including roof slab with heavyduty manhole lid (Type 2a)

B705.05. Construction of a 200mm layer of coarse aggregate using: **No**

B705.05.01 a) 9.5mm stones
B705.05.02 a) 13.2mm stones
B705.05.03 a) 19mm stones

B701.14. Removal of spoil material: **mt**

B705.14.01 To positions provided by the contractor

The unit of measurement shall be the cubic meter of material removed to spoil measured as specified in clause 06 of section 201.

The tendered rates shall include full compensation for loading the material and transporting it in the case of -

- Subitem 202.10.01 within the free-haul boundaries, and
- Subitem 202.10.02 for the full distance and for providing the dumping area and shall include any payments to the landowners.

The rates shall also include the provision of haul roads and the clearing up of haul roads and dumping areas on completion of the work. Spoil areas shall be finished off as specified for borrow areas in the third last paragraph of clause 05 of section 201.

Series 8: Specific Works

Measurement and Payment:

Add the following new clause:

B10. CATHODIC PROTECTION SYSTEM **Provisional Sum**

Cathodic Protection (ACTIVE SYSTEM) to be undertaken by sub- contractor (3 quotations to be requested from reputable service providers and approved by the client).

The provisional sum item will be paid in accordance with General Conditions of Contract (GCC), 3rd edition 2015, Clause 6.6.

Add the following new clause:

B804.06 Supply of Reinforced concrete jacking box culvers to be jacked for the following sizes:

B804.06.01 2.5m x 2.0m Class Jacking Concrete Rectangular Portals as per SANS 986

The tendered rate shall include all necessary work including lifting and placing into position the box culverts to be jacked and aligning them properly. The excavation of all jack pits will be paid for under item 804.03 and access to pits under item 804.03. The contractor will not be compensated for dealing with ground water issues in this item and therefore will keep the working area dry and safe to work in at his cost.

B804.07 Jacking of box culverts through:

B804.07.01 Soft Material
B804.07.02 Hard Material

The tendered rates shall include jacking box culverts through the stated groundconditions for the size given in item B804.06.

B804.09.01

Mild steel pipes to SANS 719 from Grade S235 / 300 WA / X52 / X56 steel with bevelled ends to BS 534, with fusion bonded medium density polyethylene (FBMDPE) (Sintakote II) external coating to table 1 of AS 4321-1995 and liquid epoxy (Sigmaline SF23) internal lining. Pipes to be in 6.0m lengths. All site welding of joints to be denso wrapped.

B804.09.01.01 700mm NB (711 OD) x 8mm wall

B804.13 The grouting of voids for culvert jacking: Between box culverts and surrounding material after jacking has been completed:

B804.13.01 2500mm x 2000mm jacking box culverts

The tendered rates shall include grouting as specified on item 804.06 for the box culvert sizes in this item.

WATER AND SANITATION BUSINESS UNIT
INFRASTRUCTURE PLANNING AND IMPLEMETATION DIVISION

CONTRACT: WSBU 01 2025/26

TENDER FOR THE APPOINTMENT OF A CONTRACTOR FOR THE COMPLETION BULK WATER (STEEL PIPE) AND WATER RETICULATION IN MAMELODI EXT 11 FOR A PERIOD OF 2 YEARS

C3.8 REFERENCES TO THE SCOPE OF WORKS IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS: HEALTH AND SAFETY SPECIFICATION

REFERENCES TO THE SCOPE OF WORKS IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS: HEALTH AND SAFETY SPECIFICATION

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12. **Annexures and Appointment Letters**

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Appointment letters

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C3.8 REFERENCES TO THE SCOPE OF WORKS IN TERMS OFTHE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS: HEALTH AND SAFETY SPECIFICATION

1. Introduction.

In terms of the Construction Regulation 5(1)(b) of the Occupational Health and Safety Act, No. 85 of 1993, the Client is required to compile a Health and Safety Specification for any intended project and provide such specification to any prospective Contractor who, on Appointment shall submit a Health and Safety plan which shall address the requirements of this specification.

This specification's objective is to ensure that any contractor entering into a Contract with City of Tshwane achieve an acceptable level of Occupational Health and Safety performance. This Document forms an integral part of the contract. Principal Contractor and Other Contractors should make it part of any contract that they may have with their Contractor and / or Occupational Health and Safety Act and its Associated Regulations should be taken into account when costing your portion of the works.

This document does not absolve the Client from complying with minimum legal requirements and the Client remains responsible for the health and safety of his employees and those of his mandatory's. Client or his appointed Agent, reserves the right to audit, monitor and where necessary regulate the site work activities of any Principal Contractor or appointed Sub-Contractor as per the Construction Regulation 5(1)(k) and 7(1) (c)(v).

The requirements stated in this document are the absolute minimum and the onus is placed on the Contractor to ensure compliance to the overall legislation. In order to ensure compliance, the Client or Client Agent shall conduct Audits on the Contractor as per schedule and ad-hoc bases as may be required.

2. Reference.

The Contractor shall in respect of all matters arising in the fulfilment of this Health and Safety Specification comply at his own expense with all laws, regulations, by-laws and requirements of local and or other authorities that may be applicable to the contract works. In this regard, special reference is made to the following Health and Safety and labour legislation, which does not constitute an exhaustive list.

- Occupational Health and Safety Act, Act No. 85 of 1993.
- Compensation for Occupational Injuries & Diseases Act, Act No. 130 of 1993.
- Hazardous Substances Regulation.
- Project and Construction Professions Act, Act 48 of 2000.
- National Road Traffic Act, Act No 93 of 1996.
- Prevention of Environmental Pollution Ordinance 21 of 1981.
- Water Services Act, Act No 108 of 1997.
- Any other Act passed in substitution of the above mentioned.

Occupational Health and Safety Management System Element.

2.1. Interpretation.

The scope of these specifications shall apply to all contractors as per legal definition contained in the construction regulations as well as any other contractors. The Clients operations and activities are governed by the
Occupational Health and Safety Act, Act 85 of 1993 and its regulations as well as the National Environmental Management Act, Act 107 of 1998.

2.2. Definitions

- **Agent** – Means any Competent person who acts as a representative for a client in managing the overall construction work performed for that client.
- **Client** – Means any person for whom construction work is performed.
- **Construction work** – means any work in connection with –
- The erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;
- The installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling. o The Construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or
- The moving of earth, cleaning of land, the making of an excavation, pilling, or any similar type of work;
- **COIDA Act** – Means the Compensation for Occupational Injuries & Diseases Act.
- **CR** – Means Construction Regulations.
- **Employer** – Means, subject to the provision of subsection (2), any person who employs or provide work for any person and remunerate that person but exclude a labour broker as defined in section (1) of the labour relations Act 1956 (Act No. 28 of 1956);
- **HCS** – Means Hazardous Chemical Substances.
- **Occupational Health and Safety and Environmental file** – Means a file, or other record in permanent form, containing the information required in this specification.
- **Occupational Health and Safety and Environmental plan** – Means a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified.
- **Occupational Health and Safety Specification** - Means a documented specification of all health, safety and environmental requirements pertaining to the associated works on a construction site or contract work, so as to ensure the health and safety persons as well as the protection of the environment.
- **Letter of Good Standing** – is the Letter from the Compensation commissioner which provides proof of registration and those payments are in order.
- **Contractor** – Means an employer, as defined in section 1 of the Act who performs construction

work and is appointed by the client to be in overall control and management of a part of or the whole of a construction site;

- **Project** - refers to the contract and has reference to the premises or any part thereof where the work which has been contracted for is to be performed.
- **Risk Assessment** – is the identification of undesired event and their causes and analysing the likelihood and potential consequences in order to make a value Judgement as to the acceptability or tolerability.
- **SHE** – Means Safety, Health and Environmental.

3. Duties of the Designer.

1. The designer of the structure must –

- Ensure that the applicable safety standard incorporated into these regulations, under section 24 of the Act, are complied with in the design.
- Take into consideration the Health and Safety Specification submitted by the Client.
- Before the contract is put out to tender, make available in a report to the Client.
- All relevant Health and Safety information about the design of the relevant structure that may affect the pricing of the construction work.
- The geotechnical –science aspects, where appropriate; and
- The loading that the structure is designed to withstand;
- Inform the Client in writing of any known or anticipated dangers or hazards relating to the construction work, and make available all relevant information required for the safe execution of the work upon being designed or when the design is subsequently altered;
- Refrain from including anything in the design of the structure necessitating the use of dangerous procedures or materials hazardous to the health and safety of persons, which can be avoided by modifying the design or by substituting materials;
- Take into account the hazards relating to any subsequent maintenance of the relevant structure and must make provision in the design for that work to be performed to minimize the risk;
- When mandated by the Client to do so, carry out the necessary inspections at appropriate stages to verify that the construction of the relevant structure is carried out in accordance with his design: provided that if the designer is not so mandated, the Client's appointed Agent in this regard is responsible to carry out such inspections.
- When mandated as contemplated in paragraph (g), stop any Contractor from executing any Construction work which is not in accordance with the relevant design's health and safety aspects: provided that if the designer is not so mandated, the Client's appointed agent in that regard must stop that contractor from executing that construction work;
- When mandated as contemplated in paragraph (g), in his or her final inspection of the contemplated structure in accordance with the National Building Regulations, include the health and safety aspects of the structure as far as reasonably practicable, declare the structure safe for use, and issue a completion certificate to the Client and a copy thereof to the contractor; and
- During the design stage, take cognisance of ergonomic design principles in order to minimise ergonomic related hazards in all phases of the life cycle of a structure.

2). The designer of temporary works must ensure that –

- All temporary works are adequately designed so that it will be capable of supporting all anticipated vertical and lateral loads that may be applied;
- The designs of temporary works are done with close reference to the structural design drawings issued by the contractor, and in the event of any uncertainty consult the contractor;
- All drawings and calculations pertaining to the design of temporary works are kept at the office of the temporary works designer and are made available on request by an inspector; and
- The loads caused by the temporary works and any imposed loads are clearly indicated in the design.

5. Principal Contractor.

5.1. Principal Contractor and Contractor Management and Supervision.

1. A Principal Contractor must –

- A principal Contractor must in writing appoint one full – time competent person as the Construction manager with the duty of managing all the construction work on a single site, including the duty of ensuring occupational health and safety compliance, and in the absence of the Construction Manager and alternate must be appointed by the principal contractor.
- A Principal Contractor must upon having considered the size of the project, in writing appoint one or more assistant construction managers for different sections thereof: Provided that the designation of any such person does not relieve the construction manager of any personal accountability for failing in his or her management duties in terms of the construction regulation.
- Where the Construction Manager has not appointed assistant construction managers as contemplated in sub-regulation (2), or in the opinion of the inspector, a sufficient number of such assistant construction manager in writing to appoint the number of construction managers indicated by the inspector, and those assistant construction managers must be regarded as having been appointed under sub-regulation (2).
- No Construction manager appointed under sub-regulation (1) may manage any construction on or in any construction site other than the site in respect of which he or she has been appointed.
- A contractor must, after consultation with the Client and having considered the size of the project, the degree of danger likely to be encountered or the accumulation of hazards or risks on the site, appoint a full-time construction health and safety officer in writing to assist in the control of all health and safety related aspects on site.
- No Contractor may appoint a Construction health and safety officer to assist in the control of health and safety related aspects on the site unless he or she is reasonably satisfied that the construction health and safety officer that he or she intends to appoint is registered with a statutory body approved by the chief inspector and has necessary competencies and resources to assist the contractor.
- A Construction Manager must in writing appoint Construction Supervisors responsible for construction activities and ensuring occupational health and safety compliance on the construction

site.

- A Contractor must, upon having considered the size of the project, in writing appoint one or more competent employees for different sections thereof to assist the
  Construction Supervisor contemplated in sub-regulation (7), and every such employees has, to the extent clearly defined by the contractor in the letter of appointment, the same duties as the Construction Supervisor: provided that the designation of any such employee does not relieve the construction supervisor of any personal accountability for falling in his or her supervisory duties in terms of the construction regulation.
- Where the Contractor has not appointed an employee as contemplated in sub-regulation (8), or in the opinion of an inspector, a sufficient number of such employees have not been appointed, the inspector must instruct the employer to appoint the number of employees indicated by the inspector, and those employees must be regarded as having been appointed under sub-regulation (8).
- No Construction Supervisor appointed under sub-regulation (7) may supervise any construction work on or in any construction site other than the site in respect of which he or she has been appropriately designated under sub-regulation (7).

5.2. Principal Contractor and Contractor Health and Safety Practitioners.

- The appointment of a full-time Health and Safety Officer will be required for the duration of the contracted work. It is incumbent on the Principal Contractor during the tender process to evaluate the scope and nature of risk related to the work in order to objectively determine the need for such an appointed. (The Client reserves the right to insist on the appointment of a health and safety officer where it deems the exposure to be of such a nature that a dedicated health and safety officer is required). The Contractors health and safety officer shall insist and support the contractor's construction manager to ensure that the Construction health and safety responsibilities are fulfilled and complied with the health and safety specifications and health and the health and safety plan.

5.3. **Principal Contractors and Employees Duties and Responsibilities.**

1. The Principal Contractor is responsible for adequately informing his employees and Contractors of all relevant information with regard to the client issued health and safety specifications and the Principal Contractors health and safety plan.
2. Employees are responsible for their own health and safety and others who may be affected by their activities. They must be made aware of their responsibilities during induction and awareness sessions some of which are:
   - Familiarising themselves with their workplace and health and safety procedures.
   - Working in a manner that does not endanger their lives and others.
   - Keeping their work area tidy.
   - Reporting all incidents / accidents and near misses.
   - Protecting fellow workers from injury.
   - Reporting unsafe acts and unsafe conditions.
   - Reporting any unsafe situation that may come to their attention.

- Carrying out lawful orders or instructions and obeying health and safety rules.
- Ensuring as far as possible no interaction with the public.

3. Every Employee must undergo site induction provided by the principal contractor before commencement of the contracted work. Only once this induction has been received, will each employee receive a site access permit. The Client will provide induction to all professional team members as well as principal contractor management pertaining to the management of safety on site.

   It must be highlighted to all employees, that anyone who becomes aware of any person disregarding a safety notice, instruction or regulation shall immediately report this to the person concerned. If the person persists, stop the person from working and report the matter to the project manager and the Principal Contractor Supervisor Immediately.

   No Person shall damage, alter, remove, render ineffective, or interfere with anything that has been provided for the protection of the site, or for the health and safety persons.

   No Person under the influence of alcohol, drugs or medication or any other condition that may render him incapable of controlling himself or of other persons under his charge shall be allowed to enter the site.

   All Safety and warning signs must be obeyed at all times.

   Entering or leaving the site may only be done via the official designated walkways, do not take short cuts, follow designated walkways to and from the site, walk, do not run, and be alert for motor vehicle traffic and mobile Equipment.

   All Employees must adhere to Health and Safety and Environmental and other site – specific rules which may be issued by the Client or his designated Agent. If any Principal Contractor’s Employees or his Sub-Contractor’s Employees have transgressed any of the requirements of the health and safety specifications, health and safety plan or site rules, then the employee may be removed from site and his or her site access revoked. The Principal Contractor must follow a process of disciplinary action which shall include re-training or inducting the employee (at the cost of the Principal Contractor) and provide proof thereof to the Client or Project manager and only upon the satisfaction of the Client or Project manager will the employee be allowed back on site.

6. Minimum Administration Requirements.

6.1. Assignment of the Principal Contractors or Contractors responsible persons to manage or supervise health and safety on site (CR 8 and Section 16 of the OHS Act).

The Principal Contractor and all Contractors must make supervisory appointments as well as other relevant appointments in writing (as stipulated by the OHSA and Construction regulation 2014). See attached Annexure “A” for more details and relevant appointments.

6.2. Compensation for Occupational Injuries and Diseases Act 130 of 1993 (COIDA)

The Principal Contractor and Contractor must also hold proof of workman’s compensation assurance registration in the form of a letter of good standing and forward a copy to the Principal Contractor before they commence work on site. A copy should also be available on site. No work will be permitted on the project unless these documents are in place.

6.3. Health and safety organogram

The Principal Contractor must prepare an organogram, outlining the site health and safety management structure and appointed competent persons, in cases where appointments have not been made, the organogram shall reflect the intended positions. The organogram must be updated when there are changes in the site management structure and updated accordingly. All health and safety appointments are to be indicated on the organogram, clearly identifying the individual as well as providing contact details.

6.4. Preliminary Hazards Identification and Risk assessments (CR9)

Every Contractor performing construction work shall, before the commencement of any construction work or work associated with the aforesaid construction work and during such work, cause a risk assessment to be performed by a competent person, appointed in writing, and the risk assessment shall form part of the health and safety plan and be implemented and maintain as contemplated in the construction regulation 9(1).

The following Risk Management process is to be adopted on the project:

1. A Contractor must, before the commencement of any construction work and during such construction work, have risk assessment performed by a competent person appointed in writing, which risk assessment form part of the health and safety plan to be applied on the site, and must include –

a) The identification of the risk and hazards to which persons may be exposed to,

b) An analysis and evaluation of the risks and hazards identification based on a document’s methods.

c) A documented plan and applicable safe work procedures to mitigate, reduce or control the risks

and hazards that have been identified;

d) A monitoring plan; and

e) A review plans.

2. A Contractor must ensure that as far as is reasonably practicable, ergonomic related hazards are analysed, evaluated and addressed in a Risk Assessment.
3. A Contractor must ensure that all employees under his or her control are informed, instructed and trained by a competent person regarding any hazards and the related work procedures and or control measures before any work commences, and thereafter at the times determined in the Risk assessment monitoring and review plan of the relevant site.
4. A Principal Contractor must ensure that all Contractors are informed regarding any hazards that are stipulated in the risk assessment before any work commences, and thereafter at the times that may be determined in the risk assessment monitoring and review plan of the relevant site.
5. A Contractor must consult with the health and safety committee or, if no health and safety committee exists, with a representative group of employees, on monitoring and review of the risk assessments of the relevant site.
6. A Contractor must ensure that copies of the risk assessments of the relevant site are available on site for inspection by an inspector, the client, the client agent, any contractor, employee representative, a health and safety representative or any member of the health and safety committee.
7. A contractor must review the relevant risk assessment –
   a) Where changes are affected to the design and or construction that results in a change to the risk profile; or
   b) When a major incident has occurred.

   The task risk assessment shall include, at least:
   - The identification of the risk and hazards to which persons may be exposed to.
   - The analysis and evaluation of the risk and hazards identified.
   - A documented plan of safe work procedures to mitigate, reduce or control the risks and hazards that have been identified.
   - A monitoring plans.
   - A documented review plan.
   - Based on the risk assessments, the contractor must develop a set of site-specific OHS rules and operating procedures that will be applied to regulate the OHS Aspects of the construction.
   - A copy of the risk assessment must be provided to the client for review.
   - The contractor will ensure that no person or employee may enter the site without undergoing comprehensive induction training in respect to the risk and hazards present at the time, and where required, will ensure the appropriate use of the correct personal protective equipment.
   - The Principal Contractor or contractor must ensure that all employees under his control have been informed, instructed, and trained by a competent person in respect to the hazards and risk identified.
   - The process as contemplated above is included in the health and safety plan.
   - No generic risk assessment will be accepted and approved.

6.5. General Record keeping

The Principal contractor and all contractors must keep and maintain health and safety records to demonstrate compliance with these specifications, with the OHS Act 85 of 1993, and with the construction regulations (2014). The principal contractor must also ensure that all records of the incidents / injuries, emergency procedures, training, planned maintenance inspections, monthly contractor audits, etc. are kept in the health and safety file(s) held in the site office. The principal contractor must ensure that every contractor keeps its own health and safety file, maintains the file and make it available on request (the file must include the contractor's health and safety plan). Such contractor safety files must be audited by the principal contractor.

6.6. Injuries or Incident Reporting and Investigation injuries are to be categorized into first aid, medical, lost time injury and fatal injuries. When reporting injuries to the client, these categories shall be used.

The Principal Contractor must investigate all injuries, with an Annexure 1 report being completed and filed. All contractors must report on the four (4) categories if injuries to the Principal contractor at least monthly. Contractors must investigate injuries and incidents involving their employees and forward a copy of the Annexure 1 investigation report to the principal contractor forthwith. The principal contractor must report all injuries to the client in the form of an injury report, at least monthly. The contractor must submit his incident reporting and investigation protocols for review by the clients.

All incidents reportable in terms of the provision of section 24 of the OHS Act, 1993 must be reported to the local Department of Labour in the prescribed manner within 14 days. (Note: no reports will be to the third parties without the client being notified of such intentions)

The Department of Labour contact number in Gauteng Province, City of Tshwane office, Pretoria239 Nana Sita Str, Pretoria central, 012 309 5000).

All contractors must immediately report all incidents where an employee is injured on duty to the extent that he or she:

- Dies.
- Becomes unconscious
- Losses of a limb or part of a Limb
- Is injured or becomes ill to such a degree that he or 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 or she was usually employed.

Or where:

- A major incident occurred.
- The health and 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.

The Contractor is required to provide the Client with copies of all internal and external accident / incident investigation reports including the reports contemplated above within 7 days of the incident occurring.

6.7. Preparation of Health and Safety Documentation (CR7)

It is the duty of the Principal contractor to ensure that all documentation that are required are kept or generated during the construction process and must be consolidated into one set of documents that must be handed over to the client upon the completion of the construction work. This should include instructions from the design team that will be required for the continued safe operation and maintenance of the new structure(s).

6.8. Offences and Penalties.

penalties may be imposed for on-going non-compliance with the provisions of the Client's health and safety specification and the Principal contractor's health and safety plan. Non-compliances noted during safety agent audits and visits will be categorised into three based on severity. These will be as follows:

- Life threatening situations – a prohibition notice will be issued. This activity must be seized immediately, and corrective measures taken.
- Serious injury possible – a contravention notice will be issued with a time frame for compliance stipulated. Failure to comply within the time frame may results in penalty per non – compliance item per day if the non – compliance persists.
- Minor or no injury may result – an improvement notice will be issued.

The corrective measures stipulated in the report / notice must be taken. The methodology used to decide the above levels will be directly linked to the risk assessments of the Principal contractor and contractors (e.g. High, Medium, Low) in the absence of a risk assessment the decision of the safety agent will be final.

6.9. Principal Contractor and Contractors Requirements.

In order to ensure this, the Principal Contractor must demonstrate to the Client that it has a suitable and sufficiently documented OHS Plan and that its contractors have the necessary competencies and resources to perform the construction work safely.

The Principal Contractor and Contractors must therefore submit the following documentation for perusal and verification by the Client and Principal Contractor respectively.

- Management Structure as envisaged at tender (organogram);
- Registration certificate with the Compensation Commissioner or any compensation insurer;

- Proof of Management training on the Occupational Health and Safety Act and other related training.
- Example copy of previous safety Committee meeting minutes and incident investigation report.

The principal Contractor and all Contractors Competent persons for the various risk management portfolios will fulfil the criteria as stipulated under the identification of “competent” in accordance with the Construction regulations 2014. This will be specific to the following appointments. (Refer to annexure “D” for an outline of legal assignment)

The Principal Contractor shall ensure that all their appointees are made aware of their accountabilities & responsibilities in terms of their appointment, and to advise and assist these appointees in the execution of their duties.

Appointment letters and Competency certificates which is signed by the 16.2 appointee, who refers to the relevant training certificate and proof of experience of appointees must be submitted with the Health and Safety plan.

All minimum required training is to be provided by accredited training services providers. Where legislation requires formal certification in lieu of experience then such proof of competency is to be provided by the contractor.

6.10. Costs for Health and Safety Compliance (CR7)

All parties binding to work on this construction project must ensure that they have made adequate provisions for the cost of complying with these specifications as well as with the OHS-ACT 1993 and incorporated Regulations as a minimum requirement in their tender documentation. That implies that sufficient time must be allowed for the implementation of the minimum OHS standards. No additional claims will be entertained at a later stage if a compliance requirement was prescribed in the OHS-ACT 1993, and its regulations or this specifications document. Refer to annexure “C” of this document for a breakdown of possible safety costs.

6.11. Contractors Health and Safety Plan (CR7(1)

1. Introduction:

Under the Construction Regulation (2014), the Principal Contractor is required to develop the Health and safety plan before work commences on site and to keep it up to date throughout the construction phase. The degree of details required in the Health and Safety plan for the Construction phase and the time and effort in preparing it should be in proportion to the nature, size and level of health and safety risks involved in the project.

All registered and Agreements with Mandatary documents must be signed before commencement on site.

2. What should the Construction Health and Safety Plan cover?

The Construction Health and Safety plan should set out in the arrangement for ensuring the Health and Safety of everyone carrying out the construction work and all others who may be affected by it. The plan must demonstrate management's commitment to safety and must include how safety responsibilities are assigned to different roles within the organisation.

3. What should be addressed as the key requirements in the Construction Health and safety plan?

- Provide a systematic method of managing hazards according to risk priority and must include all mobilization and site set up activities as per the Baseline Risk assessment.
- Methodology or Scope of works of what work is to be undertaken on site.
- Anticipated risks and hazards and mitigating controls to be implemented to reduce the risk.
- Competency of employees and proof of training.
- Resources or Equipment to be used on site.

4. Communication and Management of the work.

Site Safety Committee meetings will be held monthly or as determined by the associated risks on site. This does not preclude the requirement that each Contractor will implement and maintain their own safety meetings where applicable.

- In Addition to the above, communication may be directly to the Client or his appointed Agent, Verbally or in writing, as and when the need arises.
- Consultation with the workforce on 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.
- The site manager or his site Safety officer will be responsible for the dissemination of all relevant health and safety information to the other contractors, e.g. design changes agreed with the Client and the Designer, instructions by the Client and / or his or her agent, exchange of information between contractors, the reporting of hazardous / dangerous condition / situations etc.
- The Contractor will be required to conduct Toolbox talks with their employees on a weekly basis and records must be kept in the safety file, Employees must acknowledge the receipt of toolbox talks which record must be kept in the safety file.
- The construction manager or suitable designate of each appointed contractor will be required to attend all Site health and safety meetings.

7. **The client Identification and potential hazardous situation.**

1. The Client identification hazards.

The following hazards have been identified by the client as potential hazards for this construction work and must be incorporated in the contractor's site-specific task risk assessment.

- Site preparations.
- Blasting of rocks using explosives materials.
- Excavations.
- Traffic accommodation.
- Working near to or under overhead powerlines.
- Large movement of vehicle and machinery in close proximity of construction works.
- Manual handling work.
- Construction vehicles and transportation of personnel.
- Employee performing work while intoxicated.
- General members of the public or children transgressing on site.
- Contaminated ground.
- Working in an extreme hot water condition.
- Pipe jacking
- Working near railway line

The Contractor shall perform a hazard identification and risk assessment by a competent person, appointed in writing, on functions, activities and tasks relating to the work to be done, before any of the contract work can commence on site and a copy of the document must be presented to the Client Appointed Construction Health and Safety Agent. The documented risk assessments shall form part of the Occupational Health and Safety Plan and must include all plans as may be applicable, refer to the Client baseline risk assessment conducted by the Client Appointed Construction Health and Safety Agent as the minimum risks to be addressed in the Contractor, site and task specific risk assessments.

The Risk Assessment shall include, at least:

- A detailed **methods statement** of how the work is to be done including the controls and mitigating measures as identified during the risk assessments;
- The scope of all Safety, Health and Environmental hazards and risks as may be anticipated for the construction work.
- The identification of the risks and hazards to which persons may be exposed; the analysis and evaluation of the risks and hazards identified,
- A documented plan of safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;
- A monitoring plan and;
- A documented review plans.

Any Contractor shall cause the relevant risk assessment to be reviewed:

- Where changes are brought to the design and construction work;
- When an incident has occurred;
- At intervals not exceeding one month.

Based on the Risk Assessment, the Contractor must develop a set of site-specific Safety rules that will be applied to regulate the Safety, Health and Environmental aspects of the Construction work. All Contractors employees and sub-contractors must be advised of the risks they will be exposed to and must be trained in the methods or procedures to be used to mitigate those hazards or risks.

2. Unforeseeable hazards.

The Contractor shall ensure that mitigation and control strategies for hazards and risks as per assessment are implemented. The implementation of any risk management strategies shall consider the hierarchy of controls as well as the concepts of reasonably practicable when prioritizing suitable controls. In terms of the hierarchy of controls the following needs to be considered during selection;

- Elimination – Elimination of a hazard results in elimination of the associated risk. While elimination is the most desirable it is often the least practical, but it's not impossible.
- Engineering Control – modifying the engineering of the exposure source or interrupting the path between the employee and the exposure source will mitigate the risk.
- Personal protective equipment (PPE)

PPE is the least desirable option and should only be considered after all the above have been investigated or in conjunction with them. The Contractor shall ensure that his responsible persons and employees are provided with adequate personal protective equipment for the work they may perform in accordance to the risks outcomes and in accordance with the requirements of General Safety Regulation 2 (1) of the OHS Act and the PPE is worn accordingly.

Such personal protective equipment shall be maintained in a good working condition and users shall be trained in the reason for wearing and the correct use and care thereof. An employer or a user of machinery, as the case may be, shall take steps to ensure that no safety equipment or facility provided as required by this or any other regulation is removed from a workplace or from premises where machinery is used, except for the purpose of cleaning, repair, maintenance, modification, mending or replacement, and no person shall remove any such safety equipment or facility from a workplace or premises where machinery is used, except for the aforesaid purposes.

8. **Site Operational Requirements**

8.1. Excavations

1. A Contractor must –

a) Ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing for that purpose; and

b) Evaluate, as far as is reasonably practicable, the stability of the ground before exaction work begins.

2. A contractor who performs excavation work –

a) Must take reasonable and sufficient steps in order to prevent, as far as is reasonably practicable, any person from being buried or trapped by a fall or dislodgement of material in an exaction;

b) May not require or permit any person to work in an excavation which has not been adequately shored or braced: provided that shoring and bracing may not be necessary where

(i) The sides of the excavation are sloped to at least the maximum angle of repose measured relative to the horizontal plane; or

(ii) Such excavation is in stable material: provided that-

(aa) Permission has been given in writing by the appointed competent person contemplated in sub- regulation (1) upon evaluation by him or her of the site conditions; and

(bb) where any uncertainty pertaining to the stability of the soil still exists, the decision from a professional engineer or a professional technologist competent in excavations is decisive and such a decision must be noted in writing and signed by both the competent person contemplated in sub-regulation (1) and the professional engineer or technologist, as the case may be.

c) Must take reasonable steps to ensure that the shoring or bracing contemplated in paragraph (b) is designed and Constructed in a manner that renders it strong enough to support the sides of the excavations in question.

d) Must ensure that no load, material, plant or equipment is placed or moved near the edge of any excavation where it may cause its collapse and consequently endangers the safety of any person, unless precautions such as the provision of sufficient and suitable shoring or bracing are taken to prevent the sides from collapsing;

e) Must ensure that where the stability of an adjoining building, structure or road is likely to be affected by the making of an excavation, steps are taken to ensure the stability of such building, structure or road and the safety of person;

f) Must cause convenient and safe means of access to be provided to every excavation in which persons are required to work, and such access may not be further than six metres from the point where any worker within the excavation is working;

g) Must ascertain, as far as is reasonably practicable, the location and nature of electricity, water, gas or other similar services which may in any way be affected by the work to be performed and must before the commencement of excavation work that may affect any such service, take the steps that are necessary to render the circumstances safe for all persons involved;

h) Must ensure that every excavation, including all bracing and shoring, is inspected-

(i) Daily, prior to the commencement of each shift;

(ii) After every blasting operation;

(iii) After an unexpected fall of ground;

(iv) After damage to support; and

(v) After rain, by a competent person contemplated in sub-regulation (1), in order to ensure the safety of the excavation and of persons, and those results must be recorded in a register kept on site and made available on request to an inspector, the client, the client's agent, any other contractor or any employees.

i) Must cause every excavation which is accessible to the public or which is adjacent to public roads or thoroughfares, or whereby the safety of persons may be endangered, to be-

(i) Adequately protected by a barrier or fence of at least one metre in height and as close to the excavations as is practicable, and

(ii) Provided with warning illuminates or any other clearly visible boundary indicators at night or when visibility is poor, or have resort to any other suitable and sufficient precautionary measures where sub-paragraphs (i) and (ii) are not practicable.

j) Must ensure that all precautionary measures stipulated for confined spaces as determined in the General Safety regulations, 2003, are complied with by any person entering any excavations.

k) Must, where the excavations work involves the use of explosives, appoint a competent person in the use of explosives for excavations, and must ensure that a method statement is developed by that person in accordance with the applicable explosives legislation; and

l) Must cause warning signs to be positioned next to an excavation within which or where persons are working or carrying out inspections or test.

8.2. Construction Health and Safety Officer

- A Contractor must, after consultation with the Client and having considered the size of the project, the degree of danger likely to be encountered or the accumulation of hazards or risks on the site, appoint a full-time construction health and safety officer in writing to assist in the control of all health and safety related aspects on the site: provided that, where the question arises as to whether a construction health and safety officer is necessary, the decision of an inspector is decisive
- No contractor may appoint a construction health and safety officer to assist in the control of health and safety related aspects on the site unless he or she is reasonably satisfied that the construction health and safety officer that he or she intends to appoint has the necessary competencies and resources to assist the contractor to conduct at least the following duties:
- Health and safety audits and inspections including administrative and physical audits of all contractor's health and safety plans, files and Activities, and record findings in the form of audit report to be kept in the health and safety file; • Maintain the Principal Contractors Health and Safety plan and file; • Investigate near misses, incidents and injuries.
- Co-ordinates the function of reviewing the hazards identification and risk assessments;
- Assisting with methods statement and checking whether the responsible person follow

the safe work procedure.

8.3. Health and Safety Representative(s) (Section 17 of OHSA)

- The Principal contractor and all Contractors must ensure that Health and Safety Representatives are appointed under consultation with the employees and trained / informed to carry out their functions. The appointments must be in writing. The health and safety representatives could carry out monthly inspections keep records and report all findings to the responsible person or

safety officer forthwith and at a monthly health and safety meetings. At least one health and safety representative are required by all Employers. (Appoint one for the first 20 employees and an additional one for each group of up to 50 employees on site).

8.4. Health and Safety Committee (Section 19 of OHSA)

- The principal contractor must ensure that project Health and safety committee meetings are held monthly with minutes kept. Meetings must be chaired by the principal contractor's responsible person (CR 8 (1)). All Contractors responsible persons and health and safety representatives must attend the principal contractor's monthly health and safety meetings. The principal contractor's appointed supervisors must attend health and safety meetings.

8.5. Health and Safety Training

Induction

- The principal contractor must ensure that all site personnel undergo a site-specific health and safety induction training session before any worker starts with work. A record of attendance shall be kept in the health and safety file. The principal contractor will be required to induct all contractors' employees. Workers must carry some sort of proof of inductions on their person.

Awareness

- The principal contractor must ensure that, on site, periodic toolbox health and safety talks take place at least once every week. These talks should deal with risks relevant to the construction work at hand. Records of attendance must be kept in the health and safety file. Daily pre-task talks, and Daily safety task instructions are to be conducted by the appointed Construction Supervisor (CR8

(7))

Competence

All competent persons must have the knowledge, experience, training, and qualifications specific to the work they have been appointed to supervise, control, and carry out. This must be assessed on a regular basis e.g. training, evaluation, and periodic audits by the client, progress meetings, etc. the Principal Contractor is responsible to ensure that competent contractors are appointed to carry out construction work.

8.6. Health and Safety Audit, Monitoring and Reporting.

- A monthly Compliance audit will be done by Client (Construction regulation 5.1(0), Through the appointed safety Agent.

- The principal Contractor is obliged to conduct monthly audits on all Contractors appointed by him and kept audit reports in its health and safety file. Contractors must audit their sub-contractors and keep records of these audits in their health and safety file, made available on request by the Client, the Client Agent and an Inspector.

8.7. Emergency Procedure.

- The Principal Contractor must prepare a detailed Emergency Procedure / Evacuation plan prior to commencement on site. The Procedure / Plan must take into consideration the risks and potential incidents posed by work to be carried out on this project.

- The procedure must detail the response plan including the following key elements: List of key competent evacuation personnel. o Details of emergency services o Actions or steps to be taken in the event of the specific types of emergencies.

- Emergency procedure(s) shall include, but not be limited to: fire, chemical spillages, injuries to personnel, damage to property or material, equipment or plant, use of hazardous substances, bomb threats, major incidents or injuries, evacuation, etc. The principal Contractor must advise the Client in writing forthwith, of any emergency situations, together with a record of action taken. A contact list of all service providers (fire department, Ambulance, police, medical and hospital, etc.) must be maintained and made available to site personnel.

8.8. First aid Boxes & First Aid Equipment (GSR 3).

- The Principal Contractor and all Contractors shall appoint first Aider(s) in writing. The principal Contractor must appoint at least one first aider who must be certificated. Copies of valid certificates are to be kept on site. The principal Contractor must provide at least 1 (one) first aid box, adequately stocked at all times. All contractors with more than 5 employees shall supply their own first aid box. Contractors with more than 10 employees must have their own trained, certified first aider on site at all times.

- The contingency plan of the Contractor must include the arrangements for speedily and promptly transporting injured persons to a medical facility or securing emergency medical help to persons that may require it.

8.9. Personal Protective Equipment and Clothing.

- The principal contractor and Contractor must ensure that all site workers are issued with

and wear the appropriate PPE as indicated in the risk assessments.

- The principal Contractor and Contractors must make provision and keep adequate quantities of SANS approved PPE on site at all times according to their Risk assessment. The above procedure applies to contractors and their subcontractors, as they are all Employers in their own right and must therefore supply their own PPE. PPE issue register must be Completed, and record kept thereof.

8.10. Accommodation of Traffic.

- It is a requirement of this specification that traffic is accommodation taking into account the provisions of the latest edition of the South African Road Traffic Signs Manual (SARTSM). The latest version for use in the accommodation of traffic is volume 2, Chapter 13 of the June 1999 edition. Copies of the publication are available from the Government printer website.

Temporary traffic- control facilities

The Contractor shall provide, erect and maintain the necessary traffic –control devices, road signs, channelization devices, barricades, warning devices and road markings in accordance with these special provisions and as shown on the drawings and in the SARTSM and remove them when no longer required. It shall be incumbent upon the contractor to see to it that the abovementioned traffic-control devices are present where required at all times and are functioning properly.

(i) Traffic Control devices

At each signalized traffic control point, an all – weather shelter of at least three (3) square metres capable of accommodating two operators, with a clear window, a stable door, two chairs and a portable chemical toilet that shall be regularly maintained, shall be provided. Each control point shall have a 2 (two) phases signal system mounted on 3m high steel poles completed with all electrical wiring, a floodlight system of at least 2x 400w metal halide floodlights mounted onto a 9m high pole to light up the traffic control point and lighting along the road where the traffic will queue. The provision shall include for a sufficient continuous power supply to operate each traffic control point. Included in the establishment and operation of the traffic control devices shall be a communication system that allows the operators to communicate with each other. At each traffic control point, plastic moveable barriers, fitted with STOP sign to both sides, shall be provided to prevent vehicles from utilising the closed road lanes, these barriers shall be moved to open and close the relevant lanes for road users.

Records of opening and closing of closures and traffic counts shall be kept and submitted daily to the traffic safety officer.

(ii) Road signs and barricades.

The contractor shall be responsible for the protection and maintenance of all signs, and shall at his own cost replace any that have been damaged, lost, or stolen.

All temporary road signs required to remain in position for some time shall be pole mounted as shown on the drawings. All temporary road signs required to be moved more often shall be mounted on portable supports for the easy moving of signs to temporary positions. The only permitted method of ballasting the sign supports shall consist of durable sandbags filled with sand of adequate mass to prevent signs from being blown over by wind. The cost of the sandbags shall be included in the tendered rates for the various types of temporary road signs.

The covering of permanent road signs, if applicable, shall be by utilising a hessian bag that shall be pulled over the sign in the form of a hood and fastened to the signposts. Plastic bags or other materials and fastened by means of adhesive tape shall not be permitted. The cost of covering of permanent road signs shall be included in the tendered rates.

(iii) Channelization devices and barricades

Use of drums as channelization devices shall not be permitted.

Delineators Shall:

- Comply with the manufacturing and reflective requirements of the SARTSM and the blades shall be reversible with dimensions as indicated on the drawings.
- Have smooth and round edges and be mounted on a post and base. All components shall be of durable plastic material
- Have the lower edge of the reflective part of the delineator mounted not lower than 250mm above the road surface:
- Be capable of withstanding the movement of passing vehicles and gusting winds up to 60km/h in typical working conditions without falling over. To achieve this, the base shall be at least 0,18m2 and blasted by its own weight or with sandbag filled with sand. Together with its mounting be designed such that it will collapse in a safe manner under traffic impact.

Traffic cones manufactured in a fluorescent red-orange or red plastic material may be used only at short term lane deviations during daylight. Cones shall not be used on their own but shall be interspersed with delineators at a ratio not exceeding 3:1. Cones used on all deviations shall be 750mm high. Lane closure which continues into the nighttime shall be demarcated by delineators only.

On section of the road where the centreline has been obliterated, delineators shall be provided on both road edges at minimum 200m spacing on straight sections and at least 3 (three) visible on all curves.

(iv) Barriers

When applying these specifications, the Contractor must take cognisance of his liabilities relating to the installation of temporary works to provide protection to the permanent works and safety to his personnel an select a barrier system appropriate to his chosen work methodology. Particularly pertinent is the working width rating of a barrier system, the displacement width of system shall not exceed that available safe width to the nearest edge of the construction. All moveable barriers shall be installed in accordance with the manufacturer's instructions or generally accepted best practice and shall be submitted to the engineer to review and comment.

(v) Warning devices

All Construction vehicles and plant used on the works shall be equipped with rotating amber flashing lights and warning boards as specified. All vehicles and plant before being allowed onto the site shall obtain a clearance permit from the engineer.

Vehicle mounted flashing lights

Rotating lights shall have an amber lens of minimum height of 200mm and shall be mounted in such a way as to be highly visible from all directions. The lights on construction vehicles shall not be switched on while vehicles are being operated on unrestricted sections of a public road but shall be switched on while construction vehicles are operating within the accommodation of traffic area, as the vehicles decelerate to enter a construction area, as the vehicle accelerated to the general speed when entering road from a construction area. Lights on plant shall operate continuously while the plant is working alongside sections of road open to public traffic.

All LDV'S and cars operating on site shall also be equipped with rotating amber flashing lights which shall be placed so as to be highly visible and operated continuously while the vehicles are manoeuvring in or out of traffic or are travelling or parked alongside roads open to public traffic within the work areas.

Rotating lights and the "construction vehicles" signs on the contractor's vehicles and plant shall not be paid for separately but shall be included in the rates covering the use of the vehicles.

The Contractor shall apply and maintain lights together with temporary mounting brackets, to the approval of the engineer. Vehicles and plant that do not comply with these requirements shall be removed from the site.

Sign mounted flashing lights

Two amber flashing lights shall be vertically mounted on top of the traffic signs at each end of each traffic accommodation section as shown on the drawings.
The lights shall be operated during the hours of darkness.
Flashing illuminated Arrow Board

The arrow board shall be made up of light sources mounted on a backing board. A single shaft arrow will be required that can be used for both left and right direction. The light sources must be of LED type to improve visibility if used also during the day time.

Mobile variable Message sign (VMS)

The VMS shall be mobile and located in a safe position to convey to the travelling public of traffic conditions ahead and or inform a motorist of his actual travelling speed.

The mobile VMS system must be equipped with solar panels to provide an output of 400watt. It shall be stable for shocks up to 3G and wind speeds up to 120km/h.

The sign face shall not be less than 3m wide by 1.5m high to provide a full matrix LED with at least 50 and 27 pixels for the width and height respectively. Each pixel shall have 4 LED's and pixel spacing shall not be less than 60mm. an LED mask for contrast and shading shall be provided. The sign shall be able to display 3 lines by 10 characters. The cone of vision is to be 30 degrees.

The information displayed on each individual sign shall be controlled by a computer with internet connection operated by the contractor.

Flagmen shall be adequately trained in the standard flagging techniques as described in the SARTSM and be provided with conspicuous clothing such as safety jackets utilizing retro-reflective and / or fluorescent panels in red, yellow and/or white.

Flagmen shall have in their possession, at all times, certification that they have attended and passed an accredited course in flagging techniques before being allowed onto the construction site. Flags shall be made from bright red or red orange material and shall be square with a minimum side length of 600mm. the flag shall be attached to a staff at least 1.0m in length.

In terms of the lateral clearance and safety, flagmen shall stand on the shoulder of the lane of traffic that is being controlled and under no circumstances shall flagmen be permitted to stand within the traffic lane. In order to obtain maximum visual impact for the travelling public, flagmen shall stand-alone.

8.11. <u>Public & Site Visitors Health and Safety (Section 9 of the OHSA)</u>

- The contractor shall as far as it is reasonably practicable, be 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:
- Non-employees entering the site for whatever reason
- The surrounding community
- Passers-by to the site

8.12. Minimum Environmental Requirements.

- All contractors shall comply with the following environmental protection procedures and requirements

Spillages

- Streams, rivers and dams shall be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailing, wash water, organic materials and bituminous products. In the event of a spillage, the contractor shall be liable to arrange for professional service providers to clear the affected area.

- Responsibility for spill containment and treatment (whether hazardous or not) lies with the contractor. The individual causing a spill, or who discovers a spill, must report the incident to his or her DEO or the Engineer. The DEO will assess the situation in consultation with the engineer and act as required. In all cases, the immediate response shall be to contain the spill. The exact treatment of polluted soil/ water shall be determined by the contractor in consultation with the DEO and the engineer. Areas cleared of hazardous waste shall be revegetated according to the engineer's instructions.

- Should water downstream of the spill be polluted and fauna and flora show signs of deterioration or death, specialist hydrological or ecological advice will be sought for appropriate treatment and remedial procedure to be followed. The requirements for such inputs shall be agreed with the engineer. The costs of containment and rehabilitation shall be for the Contractor's account, including the cost of specialist input as well as the sampling and testing of the water quality upstream and downstream of the spill. Water quality sampling and

testing, and further treatment shall continue until upstream and downstream results correspond with each other.

Dust control

- Dust caused by construction activities shall be controlled by means such as water spray vehicles and applied at sufficient frequency so as not to cause nuisance to adjacent habitation or affect farming activities or natural vegetation. Vegetation cover should also be kept for as long as possible to reduce the area of exposed surfaces. Dust emissions from batching and screening plants shall be subject to the relevant legislation and shall be the subject of inspection by the relevant authorities.

Noise Control

- The contractor shall endeavour to keep noise generating activities to a minimum Noise that could cause a major disturbance, for instance blasting and crushing activities, should only be carried out during the hours prescribed by the conditions of contract (e.g. normal hours). Should such noise generating activities have to occur at any time outside normal hours the people in the vicinity of the noise-generating

activities shall be warned about the noise as well advance, and the activities kept to a minimum? Relevant legislation shall also be taken into consideration, and any practical mitigation measures adopted. No noise generating activity outside of normal hours, regardless of its proximity to residences, can take place without application to the engineer to approval. The application shall be accompanied by the noise containment measures proposed

ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES

The contractor shall undertake "good housekeeping" practices during construction as stated in the COLTO Standard Specifications for Roads and Bridges and the FIDIC conditions of contract. This will help avoid disputes on responsibility and allow for the smooth running of the contract as a whole. Good housekeeping extends beyond the wise practice of construction methods that leaves production in a safe state from the ravages of weather to include the care for and preservation of the environment within which the site is situated.

The construction activities addressed below shall become part of the contractor's obligations regarding his programme of work and incorporated into the required method statements for workmanship and quality control.

a) Site establishment

i) Site Plan

The site refers to an area with defined limits on which the project is located. The contractor shall establish his construction camps, offices, workshops, staff accommodation and testing facilities on the site in a manner that does not adversely affect the environment. However, before any site establishment can begin, the contractor shall submit to the ECO for his comments and to the engineer for his approval, plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the contractor proposes to put in place. The plans shall detail the locality as well as the layout of the waste management facilities for litter, kitchen refuse, sewage and workshop derived effluents. 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 offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles are located as far away as possible from any water course. No camp establishment, including satellite camps, can be placed within 32 metres of an identified wetland unless the contractor has applied to DWA and DEA and received authorisation to do so. Regardless of the chosen site, the contractor's intended mitigation measures shall be indicated on the plan. The site plan shall have been submitted and approved before establishment commences. Detailed, electronic colour photographs shall be taken of the proposed site before any clearing may commence. These records are to be kept by the ECO and the engineer for consultation during rehabilitation of the site in order that rehabilitation is, as a minimum, done to a standard similar to pre-construction activities.

ii) Vegetation

The contractor has a responsibility to inform his staff of the need to be vigilant against any practice that will have a harmful effect on vegetation.

The natural vegetation encountered on the site is to be conserved and left as intact as possible. Vegetation planted at the site shall be indigenous and in accordance with instructions issued by the engineer. Only trees and shrubs directly affected by the works, and such others as may be indicated by the engineer in writing, may be felled or cleared. In wooded areas where natural vegetation has been cleared out of necessity, the same species of indigenous trees as were occurring shall be re-established. Protected trees may not be removed without a permit

from the Department of Agriculture, Forestry and Fisheries.

Contravention of a notice of listed protected tree species under the National Forests Act, 1998 is regarded as a first category offence that may result in a fine or imprisonment for a period up to three years, or to both a fine and imprisonment.

Rehabilitation shall be undertaken using only indigenous tree, shrub and grass species. Special attention shall be given to any search and rescue operation identified during the environmental application process, removal to an on site nursery for continuous nurturing and protection and later replanting. The contractor should be alert to this procedure and apply to the engineer to approve it even though no allowance has been made in the contract documents. Any proclaimed weed or alien species that propagates during the contract period shall be cleared by hand before seeding.

Fires shall only be allowed in facilities or equipment specially constructed for this purpose. The need for a firebreak shall be determined in consultation with the engineer and the relevant authorities, and if required a firebreak shall be cleared and maintained around the perimeter of the camp and office sites. The contractor's staff shall at no time make fires for purposes of keeping out the cold unless they are contained in purpose-built containers capable of preventing runaway fires if knocked over and the ashes collected and safely and environmentally disposed of on a daily basis.

iii) Water management

Water for human consumption shall be available at the site offices and at other convenient locations on site.

All effluent water from the camp/office sites shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect water sources (streams, rivers, pans, dams etc.). Only domestic type wastewater shall be allowed to enter this system.

iv) Heating and cooking fuel

The contractor shall provide adequate facilities for his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. The contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.

b) Sewage management

Particular reference in the site establishment plan shall be given to the treatment of sewage generated at the site offices, site laboratory and staff accommodation and at all localities on the site where there will be a concentration of labour. Sanitary arrangements should be to the satisfaction of the engineer, the local authorities and legal requirements.

Safe and effective sewage treatment will require one of the following sewage handling methods: septic tanks and soak-away, dry-composting toilets such as "enviro loos", or the use of chemical toilets which are supplied and maintained by a specialist service provider. The type of sewage management will depend on the geology of the

area selected, the duration of the contract and proximity (availability) of providers of chemical toilets. Should a soak-away system be used, it shall not be closer than 800 metres from any natural water course or water retention system. The waste material generated from these facilities shall be serviced on a regular basis. The positioning of the chemical toilets shall be done in consultation with the engineer.

Toilets and latrines shall be easily accessible and shall be positioned within walking distance from wherever employees are employed on the works. Use of the veld for this purpose shall not, under any circumstances, be allowed.

Outside toilets shall be provided with locks and doors and shall be secured to prevent them from blowing over. The toilets shall also be placed outside areas susceptible to flooding. The contractor shall arrange for regular emptying of toilets and 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.

c) Waste management

The contractor's intended methods for waste management shall be outlined and implemented at the outset of the contract and shall be to the satisfaction of the engineer. Opportunities for avoiding, reducing, reusing and recycling of materials should be identified upfront, as should constraints for their implementation. All personnel shall be instructed to dispose of all waste in the proper manner.

i) Solid waste

Solid waste shall be stored in an appointed area in covered, tip-proof metal drums or similar container for collection and disposal. Disposal of solid waste shall be at a licensed landfill site or at a site approved by the relevant authority in the event that an existing operating landfill site is not within reasonable distance from the project area. No waste shall be burned or buried at or near the project area.

ii) Litter

No littering by construction workers shall be allowed and any locality where motorists are encouraged or forced to stop shall be effectively controlled for litter collection. During the construction period, the various contractor's facilities shall be maintained in a neat and tidy condition and the site shall be kept free of litter. Measures shall be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. At all places of work the contractor shall provide litter collection facilities for later safe disposal at approved sites.

Particular emphasis on litter control measures shall apply at stop/go facilities.

iii) Hazardous waste

Hazardous waste such as oils shall be disposed of at an approved landfill site. Special care shall be taken to avoid spillage of bitumen products such as binders or pre-coating fluid to avoid water-soluble phenols from entering the ground or contaminating surface water.

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 returned to the supplier's production plant. Any spillage of bituminous products shall be attended to immediately and affected areas shall be promptly reinstated to the satisfaction of the engineer.

d) Clearing the site

In all areas where the contractor intends to, or is required to clear the natural vegetation and soil, either within the road reserve, or at designated or instructed areas outside the road reserve, a plan of action shall first be submitted to the engineer for his approval. Working areas shall be clearly defined and demarcated on site to minimise the construction footprint. 'No-go- areas' and other sensitive areas shall also be clearly demarcated on site, and staff must be made aware of them.

The plan of action shall contain a photographic record and chainage/land reference of the areas to be disturbed. This shall be submitted to the engineer for his records before any disturbance/stockpiling may occur. The record shall be comprehensive and clear, allowing for easy identification during inspections.

ii) Excavation, hauling and placement

The contractor shall provide the ECO and the engineer with detailed plans of his intended construction processes prior to starting any cut or fill or layer. The plans shall detail the number of personnel and plant to be used and the measures by which the impacts of pollution (noise, dust, litter, fuel, oil and sewage), erosion, vegetation destruction and deformation of landscape will be prevented, contained and rehabilitated. Particular attention shall also be given to the impact that such activities will have on the adjacent built environment. The contractor shall demonstrate his "good housekeeping", particularly with respect to closure at the end of every day so that the site is left in a safe condition from rainfall overnight or over periods when there is no construction activity.

iii) Spoil sites

The contractor shall be responsible for the safe sitting, operation, maintenance and closure of any spoil site he uses during the contract period, including the defects notification period. This shall include existing spoil sites that are being re-entered. Before spoil sites may be used proposals for their locality, intended method of operation, maintenance and rehabilitation shall be given to the ECO for his comments and to the engineer for his approval. The location of these spoil sites shall have signed approval from the affected landowner before submission to the ECO and the engineer. No spoil site shall be located within 500m of a wetland and/or within 100m of any watercourse. A photographic record shall be kept of all spoil sites for monitoring purposes. This includes before the site is used and after re-vegetation. The use of approved spoil sites for the disposal of hazardous or toxic wastes shall be prohibited unless special measures are taken to prevent leaching of the toxins into the surrounding environment. Such special measures shall require the approval of the relevant provincial or national authority. The same shall apply for the disposal of solid waste generated from the various camp establishments. The engineer will assist the contractor in obtaining the necessary approval if requested by the contractor.
Spoil sites will be shaped to fit the natural topography. Depending on availability these sites shall receive a minimum of 75mm topsoil and be grassed with the recommended seed mixture. Appropriate grassing measures to minimise soil erosion shall be undertaken by the contractor. This may include both strip and full sodding. The

contractor may motivate to the engineer for other acceptable stabilising methods. The engineer may only approve a completed spoil site at the end of the defect's notification period upon receipt from the contractor of a landowner's clearance notice and an engineer's certificate certifying slope stability.

iv) Access to Site.

- The principal contractor or site manager will establish site access rules and implement and maintain these throughout the construction period. Access control must include the rule that non-employees will not be allowed on site unaccompanied.

- Access to site will be restricted to person working on site that attended a site-specific safety induction before starting work on site. Safety induction cards must be issued and carried by all persons at all times while on site. Visitors to site must be inducted and accompanied by a safety representative during their site visit.

8.13. Hours of Work.

- After hours work may only be done with prior approval of the Client Agent. Approval shall be subject to:

- Competent supervision being on site throughout the duration of the afterhours work.
- The contractor having a demonstrated history of adequate, problem free control and supervision of the work during normal working hours.

8.14. Blasting permit.

ER4(8) Any person who desires to use explosives in a workplace for any purpose shall apply in writing to the chief inspector of occupational health and safety for written approval.

CV of Blasting Manager.

ER12(1) In order to ensure that the provisions of the Act and these regulations in relation to explosives workplaces are complied with, an employer, self-employed person or user shall, subject to this regulation, in writing appoint a competent and certificated person in a fulltime capacity to be explosives manager in respect of every workplace where explosives are being used, tested, stored or manufactured:
provided that the appointment of an explosives manager shall not exempt the employer, self-employed person or user from any liability or responsibility contemplated in section 16 of the Act.

Method Statement / safe work Procedure for safe usage of Explosives.

ER12(4)(a)(i) approves in writing the rules, methods, materials, equipment and tools to be used in the danger area.

Blasting Plan.

ER4(5) Any person applying for a licence to manufacture, use, test or store explosives in the proposed explosives workplace or magazine shall submit draft schedule licences, certified by the explosive's manager, and drawings

in duplicate setting forth the following.

The contractor must confirm what type of cover they will have on the blast.

The must be having a valid Letter of good standing with the compensation commissioner or any compensation insurer.

9. Physical Requirements

9.1. Edge Protection and Barricading (CR10)

A Contractor must ensure that –

- All unprotected openings shall be adequately guarded, fenced, or barricaded or that similar means are used to safeguard any person from falling through such openings.
- No person is required to work in a fall risk position, unless such work is performed safely as contemplated in sub-regulation (2);
- A detailed fall protection plan including the rescue plan shall be drafted and implemented on site.

Note: Danger tape does not represent barricading, only a solid barricading will be allowed.

9.2. Housekeeping (CR 27)

The contractor must ensure that:

- Housekeeping is continuously implemented
- Waste and Debris are removed regularly
- Materials placed for use are place safely and not allowed to accumulate or cause obstruction to free movement of pedestrian and vehicle traffic.
- Waste and debris not to be removed by disposing from height, but by chute.
- Where practicable, construction site is fenced off to prevent access of unauthorised persons.
- Every workplace is kept clean, orderly and free of tools etc, that are not required for the work being done.

9.3. Stacking and Storage (Construction Regulation 28)

The contractor must ensure that a competent person is appointed in writing to supervise all stacking and storage on a construction site. Ensuring that stability of stacks is not threatened by vehicles or other moving plant and machinery.

Persons climbing onto stacks do not approach unguarded moving machinery or electrical installations

9.4. Fire Extinguishers and Fire Fighting Equipment (Construction Regulation 29)

The principal Contractor and relevant Contractors shall provide adequate, regularly serviced firefighting equipment located at strategic points on site, specific to the classes of fire likely to occur. The appropriate notices and signs must be posted up as required. A minimum of 4 9kg dry powder chemical fire extinguisher must be available in and around the site office established and also ensure that all construction vehicles are mounted with at least fire extinguisher. Whenever hot work is taking place, additional fire extinguishers must be on hand. Contractors are responsible for ensuring compliance with hot works procedures and must be in position of method statements detailing the safe working procedures. Hot works includes all work that generates a spark or flame and may therefore results in a

fire.

9.5. Severe Weather plan

Trenches or excavations, poor visibility due to rain, supervision will stop specific work due to hazard, re-assign work duties and or areas, and obtain further instructions from Project Management.

10. Plant, Machinery and Equipment.

10.1. Construction Vehicles & Mobile Plant (CR23)

- "Construction plant" includes all types of plant including but not limited to piling rigs, excavators, construction vehicles, compaction plant, lifting equipment.
- The principal contractor must ensure that such plant complies with the requirements of the OHS Act, Construction Regulation 2014 and any manufacturer's specifications. The principal Contractor and all relevant contractors must inspect and keep records of inspections on construction vehicles and mobile plant used on site. Only authorised or competent persons in the possession of the necessary training certificates and in possession of a certificate of medical fitness may operate construction vehicles and mobile plant. Appropriate PPE and clothing must always be provided and maintained in good condition. Reverse alarm must be installed on construction vehicles, i.e. trucks, vehicles; pedestrian traffic must be safely separated, preventing any unnecessary interfacing.

10.2. Bulk Earthworks and the Haulage of Ground.

PPE REQUIREMENTS

- Hard hat
- Overall
- Steel cap safety boots / shoes
- Dust masks when required
- Dust goggles
- Reflective vest

Traffic Control

- The contractor shall appoint a flagmen or Lady in writing.
- Adhere to all traffic signs is of vital importance
- Warning signs must be placed

Vehicles / Equipment

- All vehicles will always be roadworthy
- Pre-use check will be done against any approved checklist; all faulty items will be attended to.
- Brakes
- Lights
- Air / hydraulic
- Oil leaks
- The vehicles / Equipment will be withdrawn from service for repairs
- Brake testing will be done every shift before use (brake testing methods to be submitted)
- No major repairs or services will be carried out on site.

Vehicles and mobile equipment will be supplied with – • Fire Extinguisher

- Reflectors / Reflective tape
- Sides
- Front
- Reversing alarm

Operators / drivers

- Random alcohol / drug test must be done and results to be submitted.
- All drivers / operators will be appointed under OHS Act and Construction Regulation 21, in addition a competent person will also be appointed in writing to inspect the plant, refer to OHSA and Construction Regulation.
- If a driver / operator does not adhere to the rules and regulations, his appointment will be cancelled, and he will not be able to carry on his duty.
- No driver / operator will be appointed without proof of training, Driver's license and valid medical certificate.
- No training of drivers / operators on site.
- No passengers TLB or Excavators
- No eating or drinking allowed while operating plant.
- No vehicle will be left unattended with the engine running or the key in the ignition.

10.3. Pressure Equipment & Gas Bottles (Construction Regulations 23)

- The principal contractor and all relevant contractors shall comply with the pressure Equipment Regulations, including:
- Providing competency and awareness training to the operators / users.
- Providing the relevant PPE and Clothing.
- Inspect equipment regularly (every month) and keep records of inspections.
- Providing appropriate firefighting equipment (fire Extinguishers) on hand.
- Oxygen and acetylene bottles must be secured in an upright position, must not show signs of corrosion or damage and must have flash back arrestors fitted on both bottle and torch.

10.4. Hired Plant & Machinery.

- The principal Contractor shall ensure that any hired plant and machinery used on site is safe for use and complies with the minimum legislated requirements. The necessary requirements as stipulated in the OHS Act and Construction Regulations 2014 shall apply.

- The principal contractor shall ensure that operators hired with machinery are competent and that certificates are kept on site in the health and safety file.

- Any load test requirements and inspections in terms of the legislation must be complied with and copies of load test certificates and inspections must be kept in the health and safety file. All relevant contractors must ensure the same.

10.5. Driven Machinery.

- The principal Contractor and relevant contractors must ensure compliance with the driven machinery regulations, which includes carrying out risk assessments on the machines, inspecting machinery regularly, appointing a competent person to inspect and ensure maintenance, issuing PPE and relevant clothing, and training those who use machinery.

10.6. Ladders (GSR 13).

- The Principal Contractor must ensure that all ladders are inspected daily with monthly records kept, in good safe working order, the correct height for the task, extend at least 1 m above the landing, fastened and secured, and at a safe angle. Stepladders must be safe for use, must be the correct height for the task and the top two rungs may not be used. Records of inspections must be kept in a register on site. Contractors using their own ladders must ensure the same.

Occupational Health.

10.7. Industrial Hygiene (Exposure to Physical & Chemical Stress Factor).

- Exposure of workers to occupational health hazards and risks is very common in any work environment, especially in construction. Occupational exposure is a major problem and all contractors must ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards. Prevent inhalation, ingestion, and absorption through the skin of hazardous chemical substances.

10.8. Noise Induced Hearing Loss.

- Occupational noise emitted by construction machinery and power tools must be controlled as far as possible by implementing engineering solutions such as noise dampening, regular maintenance, servicing and inspection, screening off the noise and reducing the number of persons exposed. It is generally accepted that all employees on a construction site will be exposed to varying degree of noise.

- In view of this, the contractor shall ensure full compliance with the abovementioned regulation; furthermore, provide proof of the relative management process. The contractor is advised to pay attention to section 12 of the Noise-induced hearing Loss regulation.

10.9. Ergonomics.

- Ergonomics is the study of how workers relate to their workstations. We advise the principal Contractor and Contractors to take this into consideration when Conduction risk assessments,
- Thereby improving the worker-task relationship, which will in turn improve productivity and reduce chronic conditions such as back strains, Joint problems, and mental fatigue, amongst others.

10.10. Hazardous Chemical Substances (HCS)

- The Principal Contractor must ensure that the use, transport, and storage of HCS are carried out as prescribed in the HCS Regulations. The Principal Contractor and Contractors must ensure that all hazardous chemicals on site have material safety data sheet (MSDS) on site and the users are made aware of the hazards and precautions that need to be taken when using the chemicals. The first Aiders must be made aware of the MSDS's and how to treat HCS incidents appropriately. Copies of the MSDS's must be kept in the first box and in the store. All containers must be clearly labelled. Flammable substances must be stored separately, away from other materials, and in a well-ventilated area (appropriate cross ventilation). A competent person should be appointed to be in control of this portfolio. Fuel storage tanks must conform to the general environmental legislation and Environmental Management plan. The necessary safety signage must be posted up on the tanks – no naked flames, no smoking. Two 9kg fire extinguishers must be placed near to fuel tanks, but not within 5m of the tanks. These Extinguishers are over and above the minimum four required

for the site office and store.

10.11. Welfare (Construction Employees facilities / welfare facilities CR 30)

- The principal contractor must supply sufficient toilet (1 toilet per 30 workers), clean, lockable changing facilities, hand washing facilities, soap, toilet paper, and hand drying material. Waste bins must be strategically placed around site and emptied regularly. Workers must not be exposed to hazardous materials / substances while eating and must be provided with adequate sheltered eating areas complete with benches and tables. Stores may not double up a change rooms or mess areas.

10.12. Alcohol & Other drugs (General Safety Regulations 2A)

- The Contractor shall not permit any person who is or who appears to be under the influence of intoxicating liquor or drugs, to enter or remain at a workplace. No person at work shall be under the influence of or have in his or her possession or partake of or offer any other person intoxicating liquor or drugs.

- The Contractor as the case maybe, shall, in case where a person is taking medicines, only allow such person to perform duties at the workplace if the side effects of such medicine do not constitute a threat to the health or safety of the person concerned or other person at such workplace.

10.13. Reporting of Occupational Health Issues.

- As per the incident reporting and investigation requirements, it is essential that the Contractor advise the Client on any condition or occurrence where the health of any worker has been affected. Where an occupational health concern has been raised such incident is to be investigated as any other incident.

10.14. Occupational Health Medicals.

- Principal Contractor and the Contractors shall ensure that medicals are conducted and keep a record of medical fitness certificates in the safety file. Medicals must be issued as per Annexure 3 document.

10.15. Occupational Hygiene.

- The Principal Contractor shall take all reasonable steps as prescribed by the relevant regulations of the OHSA including Environmental Regulations for workplaces, Hazardous Chemical Substances, Asbestos, Lead and Noise induced hearing loss regulations to minimize the exposure of employees to Occupational Hygiene hazards including physical, chemical, biological, agronomical and physical.

PRINCIPAL CONTRACTOR'S ACCEPTANCE OF SPECIFICATION

I, _____ the Contractor, do hereby declare that my Company _____
Acknowledges having read and understood the conditions contained in this document and furthermore we agreed and accept to abide by the conditions and requirements of the OHS Act and all applicable regulations there under.
Contractor:_____

Date: _____

Witness:_____ Print Name: _____

Date: _____

Witness: _____ Print Name: _____

Date: _____

Annexure A - Assignment of responsible persons

The Principal Contractor must make all management appointments. Below is a list of possible appointments for this project. (Further appointment could become necessary as the project progresses)

No	OHS Act Ref	Appointment	Name of Appointee
1	Section 16	Overall Authority and Accountability	
2	Section 16(2)	Assignment of Duties	
3	CR 8(1)	Construction Manager	
4	CR 8(2)	Assistant Construction Manager	
5	CR 8(7)	Construction Supervisor	
6	CR8(8)	Assistant Construction Supervisor	
8	Section 17	Health and Safety Representative	
9	CR13(1)	Excavation Inspector	
10	CR8(5)	Safety officer	
11	CR9(1)	Risk Assessor	
12	GSR 3(4)	First Aiders	
13	CR 29(h)	Fire Equipment Inspector	
14	EMR 10(4)	Portable Electrical Tool Inspector	
15	GSR 13(a)	Ladder Inspector	
16	HCS Reg	Hazardous Chemical Substances Inspector	
17	GSR 3	Emergency Works Supervisor	
18	CR 23 (j)	Construction Vehicle and Mobile Plant Inspector	
19	CR 28(a)	Stacking and Storage Supervisor	
20	Good Practice	Flagmen / Lady	

CR	=	Construction Regulations
EMR	=	Electrical Machinery Regulations
DMR	=	Driven Machinery Regulations
GMR	=	General Machinery Regulations
ER	=	Environmental Regulations
GSR	=	General Safety Regulations
HCS	=	Hazardous Chemical Substances Regulations

Annexure B - Safe Work Procedures / Method Statements Requirements

The Principal Contractor shall in the form of preparation of method statements or Safe Work Procedures before such work begins. The onus remains on the Principal Contractor to Conduct a Task Risk Assessment and compile method statements for the Hazards (Construction regulations). Contractor appointed by the Principal contractor will be required to conduct the Necessary Risk Assessment and method statements and forward these to the Principal Contractor before such work begins.

Due to the fact that various structures will be constructed with varying engineering Designs, structure. Specific method statement will be required.

1. Traffic Management.
2. Blasting.
3. Pipe Jacking

Annexure C - Health and Safety Costing Guideline

As part of the tender submission, Contractors are required to submit a detailed breakdown as to the expenditure requirements with regard to the implementation and maintenance of the Health and Safety program. This check sheet serves as a guideline to the compilation of such costs and must be completed by the Contractor.

ITEMS COSTED		ESTIMATED COSTS
1	PERSONAL PROTECTIVE EQUIPMENT	
	Overalls	R
	Hard hats and safety glasses	R
	Safety Boots / shoes	R
	Visitors / Gloves	R
	Other	R
TOTAL		R
2	FIRE FIGHTING	
	Fire Extinguishers	R
	Training	R
	Surveys	R
	Other	R
TOTAL		R
3	HEALTH AND SAFETY PERSONNEL	
	Safety Manager	R
	Safety Officer	R
	Full time Safety Representatives if Required	R
	First Aiders	R
	External Auditors	R
TOTAL		R
4	FACILITIES	
	Provision of ablution facilities	R
	Services and Maintenance of ablution facilities	R
	Provision of eating areas	R
	Cleaning	R
TOTAL		R
5	FALL PREVENTION AND PROTECTION	
	Safety harnesses with double lanyards	R
	Lanyard extenders	R
	Scaffold hooks	R
	Lifeline and vertical fall arrest systems	R

	Scaffolding-material, erection and inspections	R
TOTAL		
6	INSURANCES	
	COIDA Cover for the project	R
	Liability Insurance	R
TOTAL		R
7	FIRST AID	
	First aid boxes	R
	Rescue equipment and stretchers	R
TOTAL		R
8	SIGNAGE	
	All signage as required by law, regulations, warning & information	R
	Posters for awareness	R
TOTAL		R

ITEMS COSTED		ESTIMATED COSTS
9	TRAINING	
	Health and Safety Representatives	R
	Health and Safety supervisory training	R
	First aid training	R
	Firefighting training	R
	Legal Liability training	R
	Risk Assessment training	R
	Other	
TOTAL		R
10	ELECTRICAL	
	Tags	R
	Permits books	R
	Callipers	R
	Other	R
TOTAL		R

Annexure D - Safety File Index

Note: This is the Example

1. She Policy
2. Client Safety specification
3. She Plan
4. Blasting Plan
5. Organogram
6. Mandatory appointments
7. General Appointments
8. Competence Certificates
9. Medical Fitness Certificates and Identity Documentation
10. Method statements
11. Risk Assessments
12. Risk assessment review & Monitoring plan.
13. Proof of risk assessment training
14. Safe work Procedures
15. Proof of fall protection plan training
16. Copy of the Acts and regulations
17. Biochemical Hazards
18. Emergency Procedure
19. Emergency telephone details
20. Accidents and Incidents Procedures
21. Annexure 1
22. Registers
23. Audits reports
24. Letter of good standing with the compensation commissioner
25. Site rules
26. Inductions
27. Toolbox talks
28. copy of SANS

AGREEMENT WITH MANDATARY & DESIGNATION OF PRINCIPAL CONTRACTOR.
IN TERMS OF SECTION 37(1) AND (2) OF OHS ACT 85 OF 1993 & REGULATION 5 (1)(K) OF CONSTRUCTION REGULATION 2014

WRITTEN AGREEMENT ENTERED INTO AND BETWEEN
(CLIENT AND PRINCIPAL CONTRACTOR)

CITY OF TSHWANE

AND

Agreement with Mandatory to be completed in black ink and each page and any changes made must be initialled.

AGREEMENT WITH MANDATORY IN TERMS OF SECTION 37 (1) AND (2)
DEFINATION OF MANDATARY
Includes an agent, a contractor or sub-contractor for work, but without derogating from his status in his own rights as an employer or user.

SECTION 37(1)
Whenever an employee does or omits to do any acts which it would be an offence in terms of this Act for the employer of such employee or a user to do or omit to do, unless it is proved that:

-

a) In doing or omitting to do that act the employee was acting without the connivance or permission of the employer or any such user;

b) It was not under any condition or in any circumstance within the scope of the authority of the employee to do or omit to do an act, whether lawful or unlawful, of the character of the act or omission charged; and

c) All reasonable steps were taken by the employer or any such user to prevent any act or omission of the kind in question, the employer or any such user himself shall be presumed to have done or omitted to do that act, and shall be liable to be convicted and sentenced in respect thereof; and the fact that he issued instructions forbidding any act or omission of the kind in question shall not, in itself, be accepted as sufficient proof that he took all reasonable steps to prevent the act or omission.

SECTION 37 (2)
The provisions of subsection (1) shall mutatis mutandis apply in the case of a mandatary of any employer or user,

except if the parties have agreed in writing to the arrangements and procedures between them to ensure compliance by the mandatary with the provisions of this Act.

REQUIREMENTS:

1. Your attention is drawn to "**General Duties of Employers to their Employees"** as required in terms of Section 8, furthermore the **"General Duties of Employers and Self-Employed persons to persons other than their employees"** Section 9 of the Act.

2. You are required to:

1. Sign a written "Agreement with Mandator" as provided for in terms of Section 37 (1) and (2) of the Act before commencing any work on site.

2. The Principal Contractor / Contractor must for his area ensure that all visitors undergo health and safety induction training pertaining to the hazards prevalent on the site. Furthermore, that the appropriate Risk Assessment mitigation measures are communicated to the visitors and the required P.P.E. (as required) issued and utilised. C.R. 7(6).

3. Ensure that all your employees receive the required Induction Training and have proof thereof.

Note: you must ensure that all employees under your control are informed, instructed and trained by a competent person regarding any hazards and the related safe work procedures before any work commences.

4. Ensure the provision of Welfare Facilities for your employees as per Construction Regulations 30.

5. Prepare a site-specific Health and Safety Plan reflecting the Client's Health and Safety Specification and obtain approval thereof.

6. Provide any contractor who is tendering for work and who would be reporting to you, with the required and pertinent sections of the Client's Health and Safety Specification.

7. Ensure that any such contractor so appointed as per C.R 7 (1) (C) (V) prepares a Health and Safety Plan which must be approved **prior** to any work commencing.

8. Ensure that your site establishment plan includes clear delineation of your lay-down areas and those of your duly appointed contractors.

9. Ensure that Methods Statements, Risk Assessments and Safe Work Procedures for any work are prepared in advance and properly communicated to all employees prior to work commencing.

10. Provide the Client /Client's Agent with the competencies and written appointment of the person appointed as the Site Construction Manager. C. R. 8 (1).

11. Provide the Client / Client's Agent with the competencies and written appointment of the person appointed as the Construction Supervisor. C.R 8 (7).

12. Provide the Client/ Principal Contractor with written designation of your nominated Health and Safety Representative as per Section 17 (1).

Note: Your Health and Safety Representative will be expected to attend the Client/ Principal Contractor safety meetings.

13. If you employ more than five (5) persons, you are required to provide your own First Aid Box. G.S.R 3 (2).

14. If you employ more than ten (10) persons, you are required to provide your own qualified First

Aider as per G.S.R. 3 (4). It is imperative that such First Aider qualification be aligned to the nature and degree of possible injury that could be sustained in accordance with the Risk Assessment analysis.

15. When working with or, where exposed to Hazardous Chemical Substances, comply with H.C.S. Regulation 3.

a) When working or exposed to Asbestos comply with Regulation G.N.R. 155 of 10 February 2002.

b) When working with or exposed to Lead comply with Regulation G.N.R. 236 of 28 February 2002.

16. When using a Material Hoist, comply with the requirements of C.R.19.

17. When Lifting Machinery and Lifting Tackle, comply with D.M.R. 18, C.R. 22 and the General Machinery Regulations.

Note: It is required that all Lifting activities are controlled and managed by a Banks Man, who has sufficient knowledge, training and experience and is appointed in writing.

18. When erecting / using Scaffolding comply with the requirements of SANS 10085" Access Scaffolding"

19. When erecting / using Suspended Scaffolding comply with the requirements of C.R. 17.

20. When engaging in Demolition work, comply with C.R. 14.

21. When engaging with blasting work, comply with Explosive Regulations as applicable and another explosives legislation, furthermore C.R. 14 (11).

22. When engaging construction work that involves the need for "Rope Access Work", comply with C.R. 18.

23. When engaging in Excavation work, comply with C.R. 13 and in addition the National Building Regulations Standards Act Part G 1 (3) (a), (b) and as applicable (4).

24. When installing or using Electrical Installations, comply with the requirements of C.R. 24.

Note: Electrician to provide copy of registration as per Electrical Installation Regulation 6 (1) & (2).

25. When using Construction Vehicles, comply with C.R. 23.

26. When using / erecting Temporary works, comply with C.R. 12 and ensure the appointment, in writing, of a competent temporary works designer.

27. When working over or in close proximity to Water, comply with C.R. 26.

28. Ensure that good Housekeeping, Stacking and Storage principles are applied on this project as per C.R. 27, 28 and G.S.R.8.

29. Ensure that appropriate measures are taken to avoid the risk of Fire / Explosion and comply with the requirements of C.R. 29.

30. It is inevitable that all construction work will create exposure to persons in a fall risk position – fall risk means: -any potential exposure to falling from, off or into. Therefore, a fall Protection plan must be developed, implemented, and maintained on site for all stages of construction (roof work included) as per the requirements of C. R. 10.

31. When using Explosive Actuated Fastening Devices, comply with C.R. 21.

32. When Welding, Flame Cutting / Soldering, comply with G.S.R. 9.

33. When working in Confined Spaces, comply with G.S.R 5.

1. You are responsible for the provision and maintenance of your own legal documentation and registers to comply with the requirements of the Act and Regulations. Furthermore, a copy of the Act must be available for perusal In the Principal Contractor's site office.

G.A.R. 4

2. You are required to comply with G.S.R. 2 (1) to (7) and provide your employees with: personal protective equipment which will allow them to carry out their work in a safe manner, e.g. hard hats, safety harnesses, gloves, safety footwear, eye protection, waterproof clothing, as determined by the Risk Assessment mitigation measures.

3. Reporting of incidents of Occupational Diseases shall be done in accordance with the provisions of Section 24 of the occupational health and safety Act. In addition, G.A.R. 8, as applicable.

4. Proof of registration with the Compensation Commissioner or licensed compensation insurer must be provided in accordance with the Compensation for Occupational Injuries and Diseases Act (No.130 of 1993). **NB:** No work may commence unless such

Letter of Good Standing with the appropriate insurer has been submitted to the client or Client's Agent for verification. In the event that your organisation is not registered with the compensation Commissioner or licensed compensation insurer you are to advise the Client who may at his discretion deduct the necessary amount from your progress payment and pay this over to the commissioner or licensed insurer. (See Section 80 of 89 of the COID Act)

Designation of Principal Contractor

Construction Regulation 5 (1) (K)

5. **CLIENT.**

(1) Client shall be responsible for the following in order to ensure compliance with the provisions of the construction Regulations:

a) Prepare a baseline risk assessment for an intended Construction project.

b) To prepare a suitable, sufficient documented and coherent site-specific health and safety specifications for the intended construction work, based on the baseline risk assessment contemplated in paragraph (a);

c) Include the health and safety specifications in the tender documents.

d) Ensure that potential principal contractors submitting tenders have made adequate provisions for the cost of health and safety measures.

e) Ensure that the principal contractor to be appointed has the necessary competencies and resources to carry out the construction work safely.

f) Take reasonable steps to ensure co-operation between all contractors appointed by the client to enable each of those contractors to comply with these regulations.

g) Ensure that before any work commences on a site that every principal contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the compensation for occupational injuries and diseases act 130 of 1993.

h) Appoint every principal contractor in writing for the project or part thereof on the construction site.

i) Discuss and negotiate with the principal contractor the contents of the principal contractor's health and safety plan contemplated in Regulation 7(1) and must thereafter finally approve that plan for implementation.

j) Ensure that periodic health and safety Audits and document verification are conducted at intervals mutually agreed upon between the principal contractor and any contractor, but at least once every 30 days.

k) Ensure that a copy of the health and safety audit report contemplated in paragraph (j) is provided to the principal contractor within 7 days after the audit.

l) Stop any contractor from executing a construction activity which poses a threat to the health and safety of persons which is not in accordance with the client's specification and the principal contractors health and safety plan.

(2) Where a fatality or permanent disability injury occurs on a construction site, the client must ensure that the contractor provides the provincial director with a report contemplated in section 24 of the act, in accordance with regulation 8 and 9 of the General Administrative Regulation 2013, and that the report includes the measurers that the contractor intends to implement to ensure a safe construction site as far as is reasonably practicable.

(3) Where more than one principal contractor is appointed as contemplated in sub regulation (1) (h), the client must take reasonable steps to ensure co-operation between all principal contractors and contractors in order to ensure compliance with these regulations.

ACCEPTANCE OF DESIGNATION
TO BE COMPLETED BY THE PRINCIPAL CONTRACTOR

In terms of the provisions of the Construction Regulations 5 (1) (K) of the Occupational Health and Safety Act 1993

I

_____

____acting for and on behalf of

_____**(Company/ Enterprise/Owner / user) undertake)** to ensure that the requirements and provisions of the Act and Regulations are complied with.

Signature:_____ Print Name:_____

(**Principal Contractor)**

Designation: _____ Date: _____

Mandatory – Workmen's Compensation Number: _____

Accordingly, you are advised of your duties and responsibilities as contemplated in the occupational health and safety act and its regulations. The National standard under section 43 and 44 of the OHS ACT. Notwithstanding your duties and responsibilities to comply with the construction regulations 2014, in particular Construction Regulation 7. You are to ensure the following:

That all Contractors appointed by you and reporting to you comply with the requirements as stipulated in the Construction Regulations, and furthermore that all information and specifications required to ensure the construction work is carried out in a safe manner and is carried over to all contractors reporting to you.

a) You shall provide and demonstrate a suitable, sufficiently documented and coherent site specific health and safety plan, based on the Client's documented health and safety specification contemplated in Regulation 5(1) (b), which plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the principal contractor as work progress.

b) You shall ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of annexure 3;

c) You shall ensure that potential contractors submitting tenders have made sufficient provision for health and safety measures during the construction process;

d) Ensure that before any work commences on a site that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the compensation for occupational injuries and Diseases Act

130 of 1993;

e) You shall appoint each contractor inwriting for the part of the project on the construction site (Regulation 7(1)(c)(v);

f) You shall where a contractor appoints another contractor to perform construction work, the duties determined in sub-regulation 7(1)(b) to (g) (Duties of the principal contractor) that apply to the principal contractor, apply to the contractor as if he or she were the principal contractor.

g) You shall ensure that the periodic site audit and document verification are conducted as intervals mutually agreed upon between the principal contractor and any contact, but at least once every 30 days;

h) You shall, in addition, to the documentation required in the health and safety file ensures compliance to sub-regulation 7(2) (duties of principal contractor and contractor), include and make available a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreements between the parties and the type work being done.

ACCEPTANCE BY MANDATARY

TO BE COMPLETED BY THE PRINCIPAL CONTRACTOR

In terms of the provisions of Section 37 (2) of the Occupational Health and Safety Act 1993
I_____
____acting for and on behalf of
_____**(Company/ Enterprise/Owner / user)**
undertake to ensure that the requirements and provisions of the Act and Regulations are complied with.

Signature:_____Print Name:_____
(**Principal Contractor)**
Designation: _____Date: _____
Mandatory – Workmen's Compensation Number: _____

TO BE COMPLETED BY THE CLIENT

Signature:_____ Print Name: _____
(**Client**)
Designation: Date: _____
Company:
_____
Project/Site_____

ANNEXURE 1

APPOINTMENT LETTERS

Company Logo

Company Name
Company Address
Company Address
Code

Attention: ***(Assistant Construction Supervisor's Name)***

APPOINTMENT OF THE ASSISTANT CONSTRUCTION SUPERVISOR IN TERMS OF CONSTRUCTION REGULATION 6(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 underyour 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 carriedout;
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; and
7. That any other interest in terms of health and safety with respect to the responsible area ismet.
8. You will accept the duties of the Construction Supervisor in his absence.

You are required to report any deviations of the above-mentioned instruction to **(*construction supervisor'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,2003.

Contractor's Representative full name Signature Date

Kindly confirm your acceptance of this appointment by completing the following:

I,…… ***(assistant construction supervisor)*** understand the implications of the appointment as detailedabove and confirm my acceptance.

Assistant construction supervisor's full name	Signature	Date

Company Logo

Company Name
Company Address
Company Address
Code

Attention: ***(Safety Officer's Name)***

APPOINTMENT OF THE CONSTRUCTION HEALTH AND SAFETY OFFICER IN TERMS OF CONSTRUCTION REGULATION 6(6)

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, 2003 are met. You shall also ensure that all appointed sub-contractors comply with the requirements as stipulated in the Construction Regulations, 2003.

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 theappointment as detailed above and confirm my acceptance.

_____ _____ _____

Construction Health & Safety Officer's full name Signature Date

Company Logo

Company Name
Company Address
Company Address
Code

Attention: ***(Construction Vehicle and Mobile Plant Inspector)***

APPOINTMENT OF THE CONSTRUCTION VEHICLE AND MOBILE PLANT INSPECTOR IN TERMS OF CONSTRUCTION REGULATION 21(1)(j)

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, 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,…….. **(*construction vehicles and mobile plant inspector's full name)*** understand the implicationsof the appointment as detailed above and confirm my acceptance.

Construction vehicles and mobile plant inspector's full name	Signature	Date

Company Logo

Company Name
Company Address
Company Address
Code

Attention: ***(Sub-Contractor's Name)***

APPOINTMENT OF SUB-CONTRACTOR IN TERMS OF THE CONSTRUCTION REGULATION 5(3)(b)

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 constructionwork)***.

You shall ensure that you meet all the requirements in terms of the Act and in terms ofthe section 37(2) agreement and the Construction Regulations, 2003. You shall also ensure that allcontractors appointed by yourself and reporting to you comply with the requirements as stipulatedin 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 safetyis 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 andconfirm my acceptance.

Sub-Contractor's Representative full name Signature Date

Company Logo

Company Name
Company Address
Company Address
Code

Attention: ***(Construction Supervisor's Name)***

APPOINTMENT OF THE CONSTRUCTION SUPERVISOR IN TERMS OF CONSTRUCTION REGULATION 6(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 underyour 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 ismet.
10. You will in writing delegate your duties to the Assistant Construction Supervisor while absentfrom 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 supervisor)*** understand the implications of the appointment as detailed above andconfirm my acceptance.

Construction Supervisor's full name	Signature	Date

Company Logo

Company Name
Company Address
Company Address
Code

Attention: ***(Excavation Work Supervisor's Name)***

APPOINTMENT OF THE EXCAVATION WORK SUPERVISOR IN TERMS OF CONSTRUCTION REGULATION 11(1)

I, ……***(contractor's name)*** hereby appoint, …….. ***(excavation work supervisor's name)*** as the excavationwork 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 asdetailed above and confirm my acceptance.

Excavation Work Supervisor full name	Signature	Date

Company Logo

Company Name
Company Address
Company Address
Code

Attention: ***(Form work and Support work supervisor's name)***

APPOINTMENT OF THE FORMWORK AND SUPPORT WORK SUPERVISOR IN TERMS OF CONSTRUCTION REGULATION 10(a)

I,…… ***(contractor name)*** hereby appoint,…….. **(*form work and support work supervisor's name)*** as the formwork and support work supervisor responsible for…….. ***(site address)*** to supervise and carry out allthe necessary inspections in terms of all formwork and support work as per the provided checklist.

You shall ensure that when becoming aware of any health and safety hazards in respect to formwork and support work that the necessary precautionary measures are taken and enforced. Hazards are reported in writing to the Construction, Health and Safety Officer and the ConstructionSupervisor.

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,…….. ***(formwork and support work supervisor's full name)*** understand the implications of theappointment as detailed above and confirm my acceptance.

Formwork and Support Work Supervisor's full name	Signature	Date

Company Logo

Company Name
Company Address
Company Address
Code

Attention: ***(Ladder Inspector's Name)***

APPOINTMENT OF THE LADDER INSPECTOR IN TERMS OF CONSTRUCTION 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 laddersthat 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 detailedabove and confirm my acceptance.

Ladder inspector's full name Signature Date

Company Logo

Company Name
Company Address
Company Address
Code

Attention: ***(Risk Assessor's Name)***

APPOINTMENT OF THE CONSTRUCTION SITE RISK ASSESSOR IN TERMS OF CONSTRUCTION REGULATION 7(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 analyzed 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 asdetailed above and confirm my acceptance.

Construction site Risk Assessor's full name	Signature	Date

Company Logo

Company Name
Company Address
Company Address
Code

Attention: ***(Scaffolding Supervisor's Name)***

APPOINTMENT OF THE SCAFFOLDING SUPERVISOR IN TERMS OF CONSTRUCTION REGULATION 14(2)

I, ……***(contractor's name)*** hereby appoint,…… **(*scaffolding supervisor's name*)** as the scaffolding supervisor responsible for,…… **(*site address)*** to supervise and carry out all the necessary inspections in terms of all scaffolding work. (Whether newly erected, altered or moved as per the provided checklist)

You shall ensure that when becoming aware of any health and safety hazards in respect toscaffolding work 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 timesmet.

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, ……***(scaffolding supervisor's full name)*** understand the implications of the appointment as detailedabove and confirm my acceptance.

Scaffolding Supervisor's full name	Signature	Date

Company Logo

Company Name
Company Address
Company Address
Code

Attention: ***(Stacking and Storage Supevisor's Name)***

APPOINTMENT OF THE STACKING AND STORAGE SUPERVISOR IN TERMS OF CONSTRUCTION REGULATION 26(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 asdetailed above and confirm my acceptance.

Stacking and Storage Supervisor's	Signature	

ANNEXURE 2

NOTIFICATION TEMPLATES

Company Logo

Company Name
Company Address
Company Address
Code

Attention: The Provincial Director
The Department of Labour
[Postal Address*]

NOTIFICATION OF CONSTRUCTION WORK ON CONTRACT [NUMBER] [CONTRACT DESCRIPTION]

In terms of regulation 3.(1) of the Construction Regulations , 2003 promulgated on 18 July 2003 in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), we hereby notify you of our intention to commence construction works on the abovementioned contract, which:

- Includes the demolition of a structure exceeding a height of 3 meters,
- Includes the use of explosives to perform the construction work,
- Includes the dismantling of fixed plant at a height greater than 3 meters,
- Will exceed 30 days or will involve more than 300 person days of construction,
- Includes excavation work deeper than 1 meter, or
- Includes working at a height greater than 3 meters above ground or a landing.

1. Parties involved on the Contract

1.1 The Principal Contractor is: [Contractor's Name]
[Contractor's postal address]
[Contractor's postal address]
Att: [Contractor's contact person and telephone number]

1.2 The Client (Employer) is: [Employer's Name]
[Employer's postal address]
Att: [Employer's contact person and telephone number]

1.3 The Client's Safety Agent is: [Safety Agent's Name]
[Safety Agent's postal address]
Att: [Safety Agent's contact person and telephone number]

1.4 The Contractor's Construction Supervisor is: [Contractor's Construction Supervisor's name and telephone number]

2. Details of the construction works

2.1 The physical address of the works is: [Physical address of works]
[Physical address of works]

2.2 The nature of the construction works is: [Provide a description of the works].

2.3 The expected commencement date of the Works is : [Insert expected commencement date]

2.4 The expected completion date of the works is : [Insert expected completion date]

2.5 The estimated maximum number of persons on the construction site:

2.6 A total of _____ contractors will be accountable to the Principal Contractor on the construction site during the execution of the Works. The names of the contractors already chosen are as follows: [Provide a list of the Contractor's subcontractors already appointed]

3. Other details

3.1 The Principal Contractor's compensation registration number is: _____

3.2 In terms of regulation 3. (3) a copy of this notification will be kept on site for inspection.

We trust the above is in order.

Yours faithfully,

_____ _____
Signature Date

* Postal Address of Provincial Director as indicated in regulation 1 of the General AdministrativeRegulations, 1996.

ANNEXURE 3

IDENTIFIED HEALTH AND SAFETY HAZARDS

ANNEXURE 3: IDENTIFIED HEALTH AND SAFETY HAZARDS

In terms of Regulation 4(1)(b) 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 orcontrol these hazards.

Potential Hazards

1. Commissioning of new installations
2. Confined space entry
3. Demolition/breaking into existing structures
4. Excavation shoring / brazing
5. Excavations been flooded during rain season
6. Explosives
7. Hazardous material handling / storage / management
8. Heat stress
9. Loading and off loading vehicles
10. Manual handling of materials
11. Plant and equipment integrity
12. Public and traffic safety
13. Requirements for plant isolations
14. Safe usage and storage of Oxygen, Acetylene and LPG cylinders
15. Scaffolding
16. Stacking and storage of equipment / materials
17. Tie-ins into existing equipment
18. Usage of compressed air and equipment
19. Work involving radio active sources
20. Working in operational areas
21. Working on live electrical installations / sub-stations / MCC rooms
22. Working on moving equipment.

WATER AND SANITATION BUSINESS UNIT
INFRASTRUCTURE PLANNING AND IMPLEMETATION DIVISION

CONTRACT NO:WSBU 01 2025/26

TENDER FOR THE APPOINTMENT OF A CONTRACTOR FOR THE COMPLETION BULK WATER (STEEL PIPE) AND WATER RETICULATION IN MAMELODI EXT 11 FOR A PERIOD OF 2 YEARS

C3.9 REFERENCES TO THE SCOPE OF WORKS IN TERMS OF THE ENVIRONMENTAL MANAGEMENT PLAN

C3.9 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 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.
Prevent long term environmental degradation.

The contractor must be made aware of the environmental obligations that are stipulated in thisdocument 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 my have a detrimental impact on theenvironment;
- Detailing the mitigation measures that will need to be taken, and the procedures fortheir 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 TshwaneMetropolitan 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 specificupgrades.

6. MITIGATION MEASURES

In setting mitigation measures, the practical implications of executing these measures must beborne 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 tosteep 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.

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 form the site on completion of thecontract. 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 theSite 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 form 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 $\pm$ 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.

6.4.2 Borrow material

The Contractor's attention is drawn to the requirements set forth by the Department of Mineraland 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 bedeemed to be included in existing rates in the schedule of quantities. Read with the Specification Section 203.

6.5 Discovery of archaeological sites, artifacts 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 an 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 therelocation 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 andgrassed to the Engineer's approval and at the Contractor's cost.

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 form contaminating water courses,
- 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 must be stored in a bunded area with adequate containment (at least 1,5 times the volume of the fuel) for potential spills and leaks.

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

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 environmentshall 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***
Establishment of site offices	*Siting of offices*	*Preferred areas would be flat areas along the route. Avoid steep areas as soil erosion could increase. Avoid water courses*	*001* *002.02.01*
	Site Plan	*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.*	*001* *002*
Site rehabilitation	*Cleanup*	*All construction material is to be removed from the site on completion of the contract.*	*001* *002* *104*

ENVIRONMENTAL COMPONENT	***ACTIVITY***	***MITIGATION***	***RELEVANT SECTION IN SPECIFICATIONS***
Vegetation	*On site*	*Vegetation planted on the site should be indigenous. Only trees directly affected by worksas indicated in writing by Engineer, shall be sawn off/removed*	*104*
	Weeds	*Clearance of weeds must be done by hand before seeding.*	*104*
	Grass cover	*The grass cover surrounding the construction site is to be left as in tact as possible or restored to its original condition.*	*104*
Water	*Available for human consumption*	*Water for human consumption must be tested and treated in accordance with recommendations.*	
Soil management	*Topsoil*	*The topsoil (± 300 mm) of any excavation shall be removed and stockpiled separately from underlying material in an appointment area*	*203* *104*
	Borrow material	*EMPR's for borrow pits to be submitted to the Department of Mineral and Energy Affairs for approval*	*201* *203*
Archaeological & Cultural sites	*Discover of archaeological sites of artefacts*	*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.*	*GCC*
Graves	*Discovery of graves*	*If a grave on site is uncovered, work in the immediate vicinity must be stopped and an undertaker should be contacted*	*GCC*
Waste management	*Solid & Construction waste*	*Solid waste is to be stored in an appointment area for collection and disposal. Disposal of wastewill be in a DWAF licensed landfill, and no waste may be burnt on site.*	
	Litter	*The site is to be kept free of litter*	*001*
Sewage treatment	*Toilet facilities*	*Adequate toilet facilities are to*	*001*

ENVIRONMENTAL COMPONENT	***ACTIVITY***	***MITIGATION***	***RELEVANT SECTION IN SPECIFICATIONS***
		be provided, and the siting of chemical toilets is to be done in consultation with the site engineer. Use of the veld for this purpose shall not be allowed.	*002*
Fuel, diesel & hazardous materials	*Hazardous Materials*	*All hazardous materials ie bitumen binders will be stored inan appointed area that is fencedand 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.*	
	Fuels	*All fuel tanks will be stored in an appointed area. Leakage will be avoided.*	
	Cooking fuel	*The Contractor should ensure that sufficient fuel is available for heating and cooking purposes should this be necessary.*	
	Oil, grease	*Oil, grease and cleaning materials from maintenance of vehicles shall be collected in a sump and sent back to supplier.*	
	Spillages	*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.*	
General considerations	*Lines of authority*	*A nominated representative of the contractor will be the designated environmental officer for the site.*	***RELEVANT SECTION IN SPECIFICATIONS***
	Reports	*The environmental officer will submit monthly reports to the Engineer who will verify the information*	

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*	